PRIMELAB 1.0 MULTIMETER PHOTOMETER

Desktop Assistant Software

APP

CLOUD

YouTube

Sensor/Optics by

JENCOLOR

WATER TESTING
MADE IN GERMANY

Dear PrimeLab user,

We are pleased that you have decided to purchase a PrimeLab 1.0 Multitest kit to analyse your water.

With this kit you have acquired a device “**Made in Germany**”; developed by Water-i.d. GmbH in collaboration with JENCOLOR.

Your PrimeLab is like a modern Smartphone: small and handy, but packed with innovative technology and features you will soon not want to miss anymore.

For the first time ever a device has been developed, combining the unique **Jencolor** sensor technology with the experience of Water-i.d. GmbH and DTK Water (UK) in the field of reagents and water analysis, to produce a single sensor with only one light source to determine all water characteristics whose colour changes due to the addition of a reagent in the visible range of 380nm - 780nm.

Using the built-in *Bluetooth*® connectivity to the “PrimeLab Desktop Assistant” you can very easily manage measurement data and the respective customer data and develop your own recommendation system.
Register now as a PrimeLab user in the online PrimeLab community at www.primelab.org to receive valuable information and support by the PrimeLab Community.

We hope you will be very happy with YOUR PrimeLab!

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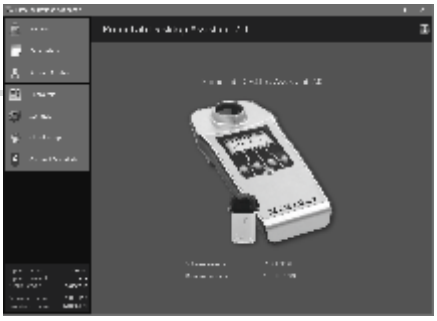
PrimeLab-Desktop-Assistant

The “PrimeLab Desktop Assistant” is a powerful tool to manage and evaluate your test results, to update your PrimeLab, for an upgrade installation of additional test methods and to develop dosage recommendations.



Parts list / Accessories

The following parts come as part of your kit or are available as optional accessories.

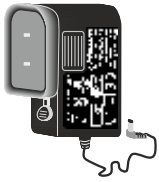
The quantities of some parts depend on the version (e.g. which reagents) you have purchased.

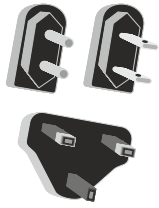
If anything is missing from your kit as pictured below as “In every kit” please immediately notify the vendor from whom you have purchased your PrimeLab!

In every kit

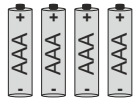
PrimeLab

Light shield for 16mm cuvette





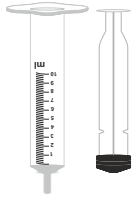
Power supply with exchangeable international mains adaptors



4 x AAA-batteries

CD-ROM PrimeLab Desktop-Assistant

Bluetooth®-USB-Dongle



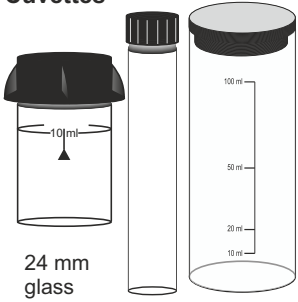
10 ml syringe

Cleaning brush

Stirring rod (variable quantities)

Depending on device variant

Cuvettes

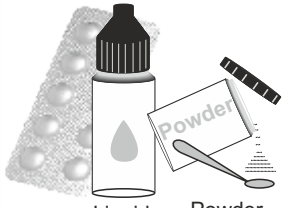


24 mm glass

16 mm glass

100ml plastic

Reagents

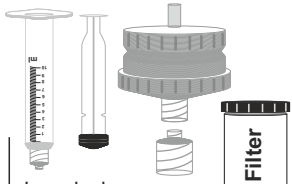


Tablets

Liquids

Powder

Misc.

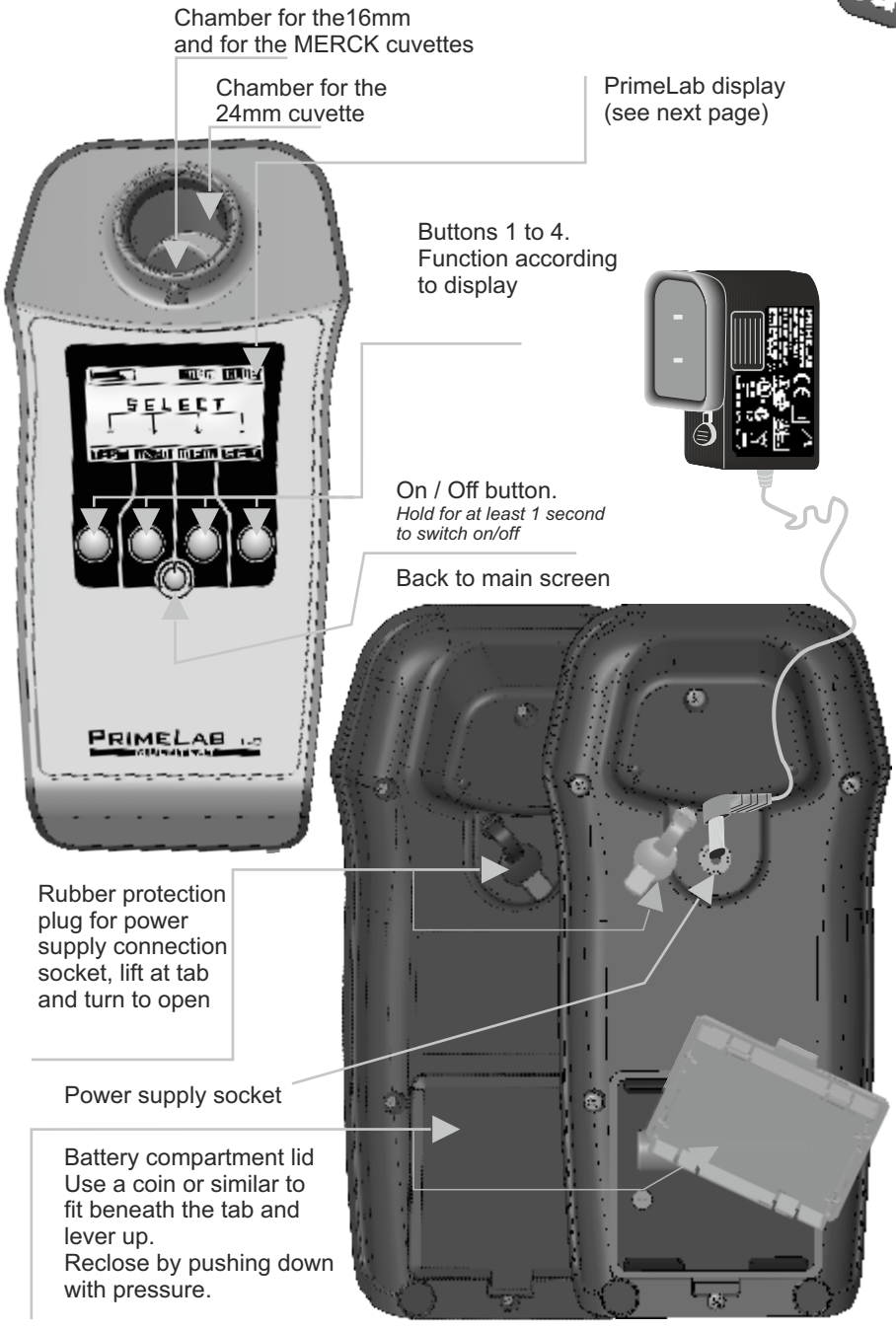


Luer-lock syringe (20ml)

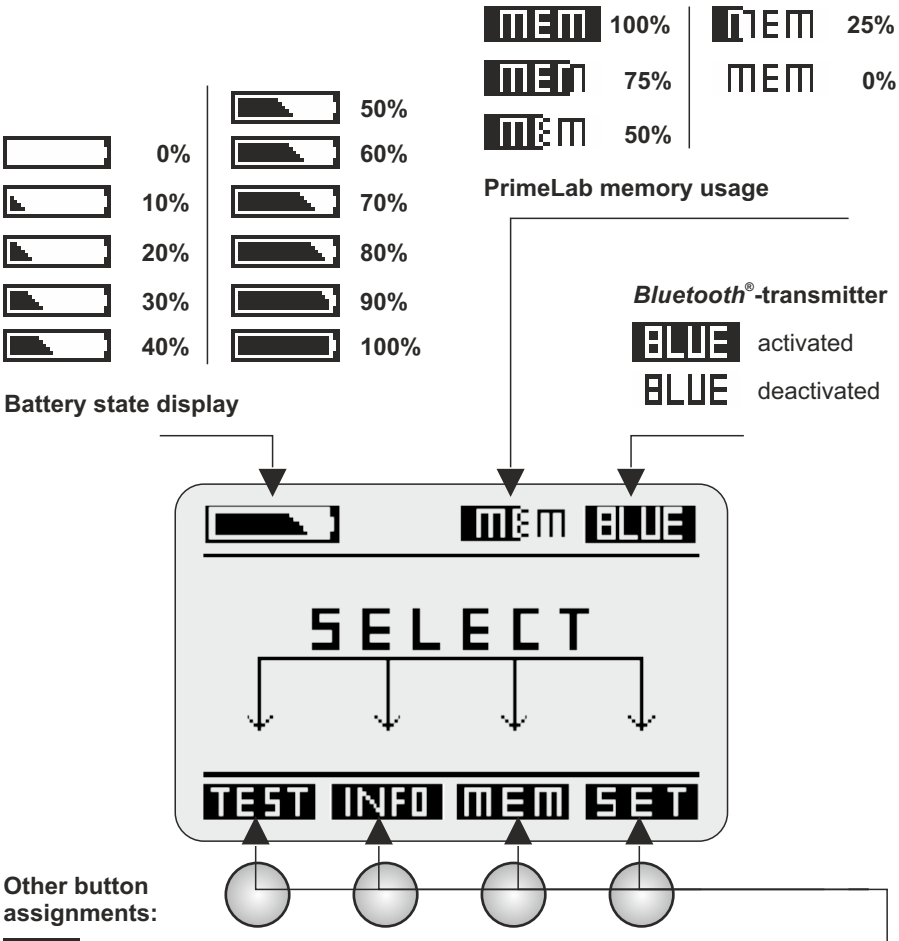
Filter-holder

Filter-papers

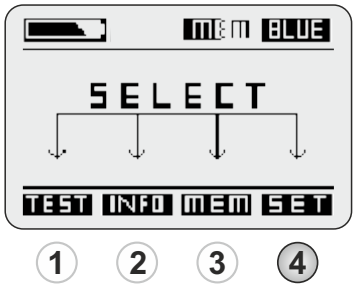
MERCK vial adapter



!!! Do not use rechargeable batteries.
Batteries are NOT charged during mains operation!!!


MEM 100%
MEM 75%
MEM 50%
MEM 25%
MEM 0%
PrimeLab memory usage
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Battery state display
Bluetooth®-transmitter
BLUE activated
BLUE deactivated
MEM BLUE
SELECT
TEST INFO MEM SET
Other button assignments:
Scroll down or decrease value
Scroll up or increase value
OK Confirm input / output
HOME Step back or return to start screen
SKIP Skip messages / skip countdown
BACK Step back
ZERO Initiate ZERO measurement (baseline)
TEST Initiate test
SAVE Save result
UNIT Convert result to different units
Assign of buttons 1 - 4 upon start:
TEST Menu TEST
INFO Menu INFO
MEM Menu MEMORY
SET Menu SETUP

Menu: SET (Setup)



Set device language

In the start menu press button 4 to access the SETUP menu.

In the setup list scroll up with button 2 and down with button 3 until the entry “Language” appears in white on black.

Then press button 4.

Scroll up and down in the list with button 2 or 3 respectively until the language you want to use appears in white on black.

Confirm the selection by pressing button 4.

Use button 1 to return to the main menu

Activate / deactive *Bluetooth*® transmitter

A connection with the PC and the PrimeLab Desktop Assistant is only possible if the Bluetooth® transmitter in your PrimeLab is activated

In the start menu press button 4 to access the SETUP menu.

In the setup list scroll up with button 2 and down with button 3 until the entry “*Bluetooth*®” appears in white on black.

Then press button 4.

Scroll up and down in the list with button 2 or 3 respectively until either “Activate” or Deactivate” appear in white on black as required.

Confirm the selection by pressing button 4.

Use button 1 to return to the main menu

Set date / time

Setting the correct date and time is important because each measurement value is saved with a date and time stamp.
The time can also be very easily set via the “PrimeLab Desktop Assistant”.

	In the start menu press button 4 to access the SETUP menu.
	In the setup list scroll up with button 2 and down with button 3 until the entry “Date/Time” appears in white on black.
	Then press button 4.
	In the list scroll up or down with button 2 or 3 respectively until the required entry (Date or Time) appears in white on black.
	Confirm your selection by pressing button 4.
	Below the number to be changed you will see a cursor (^). The time must be entered in the 24:00 hour mode, the date in the format DD.MM.YY. Use buttons 2 or 3 to increase or decrease the respective number.
	If and when the number is correct, press button 4 to confirm and move to the next position.
	When the last entry for the time or date has been made return to the sub-menu “Date/Time” by pressing button 4.
	When you are finished with setting the date and time, leave the sub-menu by pressing button 1 to return to the SETUP menu.

Set ideal ranges (parameters)

There is the option of selecting an ideal range for every test and measurement parameter by indicating in this menu which range (minimum and maximum) you would classify as “good” or “acceptable” for this particular parameter. According to your classification the results gained from subsequent measurements and tests will be rated as “OK”, “Low” or “High”.
The “PrimeLab Desktop Assistant” will also calculate the dosage recommendation on the basis of the minimum and maximum range limits set by you for the ideal range!

In the start menu press button 4 to access the SETUP menu.

In the setup list scroll up with button 2 and down with button 3 until the entry “Ideal range” appears in white on black.

Then press button 4.

Scroll up and down the list by pressing button 2 and 3 respectively until the required entry (parameter name) appears white on black.

Confirm your selection by pressing button 4.

First the minimum value must be entered. This, as well as the maximum value, must be within the specific measurement range for the particular parameter.

Adjust the minimum value by pressing button 2 and 3 (up and down).

Confirm the setting by pressing button 4.

Adjust the maximum value by pressing button 2 and 3 (up and down).

Save the settings by pressing button 4.

Calibration

Because of the innovative PrimeLab technology, especially in conjunction with the JENCOLOR MultiColour sensor, it is no longer necessary to return the photometer for calibration. The precision of the sensor is so good that the strength of the light source (LED) is measured and the system is calibrated on basis of the calculated value. Calibration should be carried out on a regular basis (e.g. at least 2 weekly) to ensure accurate test results at all times.

SET 4 — In start menu press button 4 to access the SETUP menu.

2 / 3 — In setup list scroll up with button 2 and down with button 3 until “Calibration” appears in white on black.

OK 4 — Press button 4.

2 / 3 — Select calibration procedures to be carried out by scrolling with keys 2 and 3 by the following list:
PrimeLab
Turbidity adapter
PTSA adapter
Fluorescein adapter
The calibration procedures ending on "adapter" are only needed for parameter-IDs 111 (PTSA) / 112 (Turbidity -NTU-) and 113 (Fluorescein). For all other parameter-IDs, first calcibration option "PrimeLab" is applicable.

OK 4 — Press button 4 to confirm your selection.

If you select “PrimeLab“:

The procedure described below is also shown on the display (3 steps) and can be read in its entirety by scrolling up and down with button 2 and button 3.
Calibration is initiated by pressing button 4 and should only be started after the steps described on the display / in the following description have been taken!

Light shield for 16mm Cuvette

If there is a cuvette inside the device, please remove it.

Place the “Light protection sleeve for 16 mm cuvette” in the (empty / with no cuvette inserted) sample chamber (align with ^ symbol!).

Press button 4 to start the calibration procedure.

TEST 4 — The calibration procedure takes no longer than 10 seconds and is confirmed with the message “Calibration successful”.

SAVE 4 — Press button 4 again to save the calibration value in the system and return to the sub-menu “SETUP”.

Continued...

Continued...

Calibration

The following refers to calibration of ID 111/112/113 (PTSA/Turbidity/Fluorescein):

As this Parameter uses an indirect light from above, it is essential to always ensure the correct amount of water in the vial, which is why exactly 10 ml of liquid should be taken when doing a test. To achieve this, use the pipette which is part of the Adapter-kit. Please change or clean the tip of the pipette after each measurement/calibration using destilled water.

Please perform a new calibration for the parameters of the ID111 / 112 / 113 if the measurement results obtained appear to be inaccurate or no longer correspond to the value of the standard solutions supplied.

If you select „Turbidity-adapter“:

You first have to perform a „PrimeLab calibration“ !!! See page „SET 4"

Calibration steps, as shown below, will be displayd on the PrimeLab as well. Please make sure the standard vials (0.5/10/1000 NTU) are free from fingerprints and dirt. Clean vials properly by using the cloth provided in your kit, prior inserting into the PrimeLab.

Use caution to shaking-/rest-instructions on the standard vials (0.5/10/1000 NTU):

0.5 NTU standard vial: Let vial rest for at least 3 hours before use for the calibration purposes. Turn vial **TWO TIMES** before you open it. **Do not shake!**
10 NTU standard vial: Turn vial **THREE TIMES** before you open it. **Do not shake!**
1000 NTU standard vial: **Shake vial heavily** before you open it!

Open „**0.5 NTU**“ standard vial and insert **without lid** and with forward arrow into the PrimeLab.

Set Turbidity adapter on top of the **open cell.**

TEST 4 Press TEST.

Remove vial from PrimeLab and close it properly for future use.

Open „**10 NTU**“ standard vial and insert **without lid** and with forward arrow into the PrimeLab.

Set Turbidity adapter on top of the **open cell.**

TEST 4 Press TEST.

Remove vial from PrimeLab and close it properly for future use.

Open „**1000 NTU**“ standard vial and insert **without lid** and with forward arrow into the PrimeLab.

Set Turbidity adapter on top of the **open cell.**

TEST 4 Press TEST.

ID 112 is now calibrated successfully.

Continued...

Continued...

Calibration

The following refers to calibration of ID 111/113 (PTSA/Fluorescein):

For ID 111 and ID 113 it is essential to always use the same vial for calibration as well as for testing as adapter shines from above and each vial has different bottom
Due to the above it is essential to always use the same vial for testing which has been used for calibration!

	If you select „PTSA-/ Fluorescein-adapter“:
	Select a 24mm glass vial for future PTSA and Fluorescein tests.
	Fill vial with 10ml of distilled water. **USE PIPETTE TO ENSURE 10ml!**
	Place vial into the PrimeLab. Do not close it!
	Place PTSA-/Fluorescein-adapter on top of the open cuvette.
TEST 4	Press TEST.
	Remove vial from PrimeLab.
	Empty vial.
	Fill vial with 10ml of reference-solution „500 ppb PTSA“ / „100 ppb Fluorescein“. **USE PIPETTE!**
	Place vial into the PrimeLab. Do not close it!
	Place PTSA-/Turbidity-adapter on top of the open cuvette.
TEST 4	Press TEST. Calibation was sucessful!
	Please use ONLY THIS VIAL for future PTSA/Flurescein tests!

Error Messages

During calibration and / or during the measurement, the following error messages might be displayed on the PrimeLab:

Adapter not recognized - Possible causes:

- Battery depleted
- Adapter incorrectly (eg diagonally) placed
- Wrong adapter used (eg PTSA instead Turbidity)
- Adapter-lense (bottom) or optical path in the sample chamber
- (PrimeLab) dirty or wet

Measurement failed - Possible causes:

- Battery depleted
- Adapter incorrectly (eg diagonally) placed
- The identified water sample does not match the turbidity curve
- Wrong adapter used (eg PTSA instead of Turbidity)
- Adapter-lense (bottom) or optical path in the sample chamber
- (PrimeLab) dirty or wet

If the message reads “Calibration: ERROR!” or “LED problem. Please check!” please abort the procedure and check that there is no cuvette in the sampling chamber and that the sampling chamber and especially the two “windows” on the sensor / LED level are clean (see also “Cleaning the device” on page A 3). Restart the calibration procedure.
If the device fails to calibrate after a second attempt it must be returned to the manufacturer for inspection.

Set display contrast

Please ensure that you have removed the protective foil from the display so the display quality is best.

In the start menu press button 4 to access the SETUP menu.

In the setup list scroll up with button 2 and down with button 3 until the entry “Display” appears in white on black.

Then press button 4.

Change the contrast setting by pressing button 2 and button 3 (up and down) until the contrast on the display is satisfactory.

Confirm the selected setting by pressing button 4.

Set Auto-Off time

You can determine after which time without any button being pressed or a measurement being taken the device will automatically switch off to save energy or preserve battery charge.

In the start menu press button 4 to access the SETUP menu.

In the setup list scroll up with button 2 and down with button 3 until the entry “Auto-Off” appears in white on black.

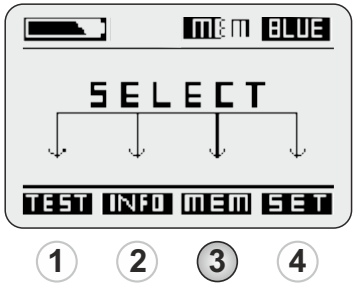
Then press button 4.

Change the time setting for the auto-off by pressing button 2 and button 3 (up and down). The preset default is 10 minutes.

Confirm the selected setting by pressing button 4.

Menu: MEM (Memory)

PrimeLab provides memory space for 100 test results.
If you attempt to save more than 100 results the respective oldest data set is overwritten.
We recommend the regular synchronizing of the test data with the “PrimeLab Desktop Assistant” to be able to view, edit and evaluate the data more easily and better.
Test results are assigned to a specific account as a matter of principle
Before each test run it is queried to which account the results are to be assigned.
If you choose not to use the account option just select the “Default” option as a standard account.



View test results _____ MEM 1 - 2
Delete test results _____ MEM 3 - 4

Browse test results

Press button 3 in the start menu to access the MEMORY menu.

First you will see how many data sets are saved in memory. “Used: 28/100” signifies, for example, that 28 saved data sets are stored in a maximum of 100 memory spaces available.

Scroll up and down the list using button 2 or 3 respectively until the entry “Browse results” appears white on black”.

Then press button 4.

Select the address data set to which you would like to have the saved test results displayed.

Confirm your selection by pressing button 4.

Scroll up and down the list using button 2 or 3 respectively and select either “View by test” (selection a) or “View all data” (selection b).

Confirm your selection by pressing button 4.

Selection a) You selected “View by test” to display a list sorted by parameters. Scroll up or down the list using the buttons 2 or 3 respectively until the required parameter list appears white on black.
Confirm the selected parameter group by pressing button 4 and then select the test method with the buttons 2 and 3 for which you would like to view the test results.

Confirm your selection by pressing button 4.

Now use the buttons 2 and 3 to scroll through the measurement results. These will be displayed in chronological order. If you have defined ideal ranges (Menu: Setup) the test results will display as “Low” / “OK” / “High”.

Press button 4 to change from a unit for which the result has been displayed (e.g. “mg/l $CaCO_3$” to “°dH”), as far as available, or you can delete the result directly.

Press button 1 to return one step back or up in the menu.

View test results

Continued...

Selection b) You selected “View all data” to see the stored test results for the respective address data set with **all parameters**.

Use buttons 2 and 3 to scroll through the saved test results. These will be shown chronologically. If you have defined ideal ranges (Menu Setup) the values will be rated with “Low / OK / High”. Press button 4 to change the unit in which this value is displayed (e.g. “mg/l $CaCO_3$” to “°dH”), as far as available, or immediately delete the entry.
Pressing button 1 will take you back up or back in the menu one step.

Clear test results

Press button 3 on the start menu to access the MEMORY menu,

First you will see how many data sets are saved in memory. “Used: 28/100” signifies, for example, that 28 saved data sets are stored in a maximum of 100 memory spaces available.

You now have two options to delete saved results:
Option 1) Delete all saved test results
Option 2) Selectively delete individual test results

Option 1)
Scroll up and down in the list using buttons 2 and 3 respectively, until the entry “Clear result” appears white on black.

Then press button 4.

You will then be asked if you really want to delete all saved data sets. Confirm this by pressing button 4 or abort the procedure by pressing button 1.

Option 2)
Scroll up and down the list using the button 2 (up) and 3 (down) until the entry “Browse results” appears in white on black.

Then press button 4.

Using the buttons 2 and 3 select an account you want to see the saved results for.

Confirm your selection by pressing button 4.

Scroll up and down the list using the button 2 and 3 respectively, and then select “View by test” (selection a) or “View all data (selection b).

Confirm your selection by pressing button 4.

Selection a) You have selected “View by test” to see the stored test results for this account sorted by parameters. Use button 2 and 3 to scroll up and down respectively until the parameter group in which you want to delete test results appears in white on black.

Confirm your selection by pressing button 4.

Now press button 2 or 3 to scroll to the parameter ID of which you want to delete test results.

Confirm your entry by pressing button 4” on page MEM 4

Continued...

Delete test results

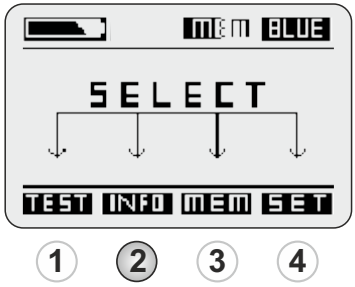
Continued...

OK 4	Confirm your entry by pressing button 4.
↓ 3	Press button 3 to select the option “Clear result”.
OK 4	Confirm your selection by pressing button 4.
OK 4	Just to make sure you are asked if you really want to delete this parameter ID of which you want to delete test results If you are sure please confirm by pressing button 4.
BACK 1	Press button 1 to go back one step.
	Selection b) You have selected “View all data” to be shown the saved test results for the particular account and for all parameters.
↓ 2 ↑ 3	By pressing button 2 or 3 to scroll up or down respectively select the data set you want to delete.
OK 4	Confirm your selection by pressing button 4.
↓ 3	By pressing button 3 select “Clear result”.
OK 4	Confirm your entry by pressing button 4.
OK 4	Just to make sure you are asked if you really want to delete this set of data. If you are sure please confirm by pressing button 4.
BACK 1	Press button 1 to go back one step.

left open for technical reasons

Menu: INFO

In the menu “Information” there is information on the firmware version of your device as well as device name, Bluetooth® address and the serial number.
In addition there is information regarding where you can obtain support for your device; further information is available through the software “PrimeLab Desktop Assistant”.



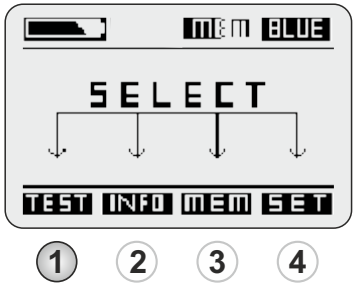
INFO 2	In the start menu, press button 2 to access the INFO menu.
2 3	Using button 2 and 3 to scroll up and down respectively through the selection list until the entry “Device” appears white on black.
OK 4	Confirm your selection by pressing button 4.
2 3	Using button 2 and 3 to scroll up and down respectively to view the various information details for your device; these include: device, brand, serial number, *Bluetooth*® address, device name (determined by you through the “PrimeLab Desktop Assistant”, firmware version, firmware date and whether a *Bluetooth*® module is installed or not.
OK 4 BACK 1	Press button 4 or 1 to return to the INFO menu.

In a second step select the entry “Support” to view the link to the PrimeLab website: www.primelab.org

left open for technical reasons

Menu: TEST

Below the various test procedures, depending on the parameters to be measured and the reagents to be used, are described.



! The list shown below of parameters which can be tested using the PrimeLab **is not final!**
Because PrimeLab can, through the use of the JENCOLOR sensor, measure all parameters developing a colour in the visible spectral range or clouding after addition of a reagent, the list of PrimeLab test procedures is extended all the time.

! Visit us on www.primelab.org or start your PrimeLab Desktop Assistant to find out about new test procedures of interest to you.
These can then be easily downloaded and activated in your PrimeLab after entering a code (fee required).

group/method	parameter	ID	range	unit	switch	reagent	page
Active Oxygen							
01-Act-oxi-MPS-tab	Active oxygen (MPS)	1	0 - 40	mg/l		tablet	1
Alkalinity							
05-Alkalinit-M-tab	Alkalinity-M	5	5 - 200	mg/l	°dH/°eH/ °fH/mmol/ mval/$K_{S4.3}$	tablet	3
121-Alka-M-HR-tab	Alkalinity-M HR	121	5 - 200	mg/l	HCO-3/°dH/ °eH/°fH/mmol/ $K_{S4.3}$/mval	tablet	5
06-Alkalinit-P-tab	Alkalinity P	6	5 - 300	mg/l	°dH/°eH/ °fH/mmol/ mval/$K_{S4.3}$	tablet	6
Aluminium							
04-Aluminium-tab	Aluminium	4	0 - 0.3	mg/l		tablet	8
Ammonia							
02-Ammonia-LR-tab	Ammonia (LR)	2	0 - 1	mg/l	NH_4/NH_3 NO_2/NO_3	tablet	10
155-AmmoniaHR-pre	Ammonia (HR)	155	1.0 - 50.0	mg/l	NH_4/NH_3	pre. vial	12
Acsamine							
125-Acsam.28F-liq	Acsamine 28F	125	0 - 100	mg/l		liquid	13
145-Acsam.CC-liq	Acsamine CC	145	0 - 100	mg/l		liquid	14
146-Acsam.CCA-liq	Acsamine CCA	146	0 - 100	mg/l		liquid	15
126-AcsamineDW-liq	Acsamine DW	126	0 - 100	mg/l		liquid	16
141-Acsa.DWBR1-liq	Acsamine DWBR1	141	0 - 100	mg/l		liquid	17
142-Acsam.DWC-liq	Acsamine DWC	142	0 - 100	mg/l		liquid	18
143-Acsam.SW-liq	Acsamine SW	143	0 - 100	mg/l		liquid	19
144-Acsam.SWC-liq	Acsamine SWC	144	0 - 100	mg/l		liquid	20
Boron							
07-Boron-tab	Boron	7	0 - 2	mg/l		tablet	21
Bromine							
08-Bromine-tab	Bromine	8	0 - 18	mg/l		tablet	23
63-Bromine-liq	Bromine	63	0 - 18	mg/l		liquid/ powder	25
128-Bromine-pp	Bromine	128	0.0 - 4.5	mg/l		powder	28
Carbohydrazide							
71-Carbohydra-liq	Carbohydrazide	71	0 - 1.3	mg/l		liquid	30
Chloramines							
95-Chloramines-tab	Chloramines	95	0 - 8	mg/l		tablet	31
Chloride							
10-Chloride-tab	Chloride	10	0.5 - 25	mg/l	NaCl	tablet	33
124-Chloride-liq	Cloride	124	0 - 100	mg/l		liquid	35
Chlorine							
11-Chlorine-tab	Chlorine	11	0 - 8.00	mg/l		tablet	36
12-Chlorine-liq	Chlorine	12	0 - 8.00	mg/l		liquid	39
129-Chlorine-pp	Chlorine	129	0.00 - 2.00	mg/l		powder	41
14-Chlorine-HR-tab	Chlorine HR (KI)	14	5 - 200	mg/l		tablet	43
15-Chlorine-HR-liq	Chlorine HR (KI)	15	0 - 200	mg/l		liquid	45
122-ChlorineMR-tab	Chlorine MR		0.00 - 10.00	mg/l		tablet	46

group/method	parameter	ID	range	unit	switch	reagent	page
Chlorine Dioxide							
16-Chlorin-Dio-tab	Chlorine Dioxide	16	0 - 15.0	mg/l		tablet	49
64-Chlorin-Dio-liq	Chlorine Dioxide	64	0 - 15.0	mg/l		liquid	52
130-Chl-Diox-pp	Chlorine Dioxide	130	0.00 - 5.00	mg/l		liquid+pow.	55
106-Chlorite-liq	Chlorite	106	0 - 8.0	mg/l		liquid	57
Chromium (hexavalent)							
94-Chromium-tab	Chromium	94	0 - 2.2	mg/l	CrO_4	tablet	59
103-Chromium-liq	Chromium	103	0 - 1	mg/l	CrO_4	liquid	60
COD							
79-COD-LR-pre	COD (LR)	79	0 - 150	mg/l		prep. vial	61
80-COD-MR-pre	COD (MR)	80	0 - 1500	mg/l		prep. vial	63
17-COD-HR-pre	COD (HR)	17	0 - 15000	mg/l		prep. vial	65
Colour							
107-Colour	Colour	107	15 - 500	mg/l		---	67
Copper							
18-Copper-tab	Copper	18	0 - 5	mg/l		tablet	71
19-Copper-pow	Copper	19	0 - 5	mg/l		powder	74
Cyanide							
158-Cyanide-pow	Cyanide	158	0.01 - 0.50	mg/l		pow. + liq.	76
Cyanuric Acid							
20-Cyanur-Acid-tab	Cyanuric Acid	20	2 - 160	mg/l		tablet	78
DBNPA							
65-DBNPA-liq	DBNPA	65	0 - 13	mg/l		liquid	79
82-DPNPA-tab	DBNPA	82	0 - 13	mg/l		tablet	81
DEHA							
21-DEHA-liq	DEHA	21	20 - 1000	µg/l	mg/l	liquid	82
DEWAN-50							
109-DEWAN50-liq	DEWAN-50	109	0 - 300	mg/l		liquid	84
Dissolved Oxygen							
163-DissOxyg-liq	Dissolved Oxygen	163	0 - 10	mg/l		liquid	86
Erythorbic Acid							
70-Erythorbic-Acid	Erythorbic Acid	70	0 - 3.5	mg/l		liquid	88
Fluorescein							
113-Fluorescein-Ad	Fluorescein	113	0 - 500	µg/l	$C_{20}H_{12}O_5$	---	89
Fluoride							
72-Fluoride-liq	Fluoride	72	0 - 2	mg/l		liquid	91
Hardness							
78-Hard-Cal-tab	Hardn. - Calcium	78	0 - 500	mg/l	°dH/°eH/°fH	tablet	93
09-Hard-Cal-HR-tab	Hardn. - Calcium (HR)	9	50 - 1000	mg/l	°dH/°eH/°fH	tablet	95
166-Hard-Cal-liq	Hadn. - Calcium	166	0 - 500	mg/l	°dH/°eH/°fH	liquids	97
56-Hard-tot-LR-tab	Hardn. - Total (LR)	56	2 - 50	mg/l	°dH/°eH/°fH Ca	tablet	99
57-Hard-tot-HR-tab	Hardn. - Total (HR)	57	20 - 500	mg/l	°dH/°eH/°fH Ca	tablet	101
148-Hard-tot-liq	Hardn. - Total (HR)	148	0 - 200	mg/l	°dH, °eH, °fH Ca	liquid	103

group/method	parameter	ID	range	unit	switch	reagent	page
Hydrazine							
23-Hydrazine-liq	Hydrazine	23	5 - 600	µg/l		liquid	105
Hydrocarbons							
160-Hydrocarbons	Hydrocarbons	160	0 - 1	NTU	YES / NO	-	107
Hydrogen Peroxide							
24-Hydr-Per-LR-tab	Hyd. Peroxide (LR)	24	0 - 3.8	mg/l		tablet	108
66-Hydr-Per-LR-liq	Hyd. Peroxide (LR)	66	0 - 3.8	mg/l		liquid	110
162-HydrPer-HR-tab	Hyd. Peroxide (HR)	162	0 - 200	mg/l		tablet	112
25-Hydr-Per-HR-liq	Hyd. Peroxide (HR)	25	0 - 200	mg/l		liquid	114
Hydroquinone							
26-Hydroquinon-liq	Hydroquinone	26	0 - 2.5	mg/l		liquid	115
Iodine							
27-Iodine-tab	Iodine	27	0 - 28	mg/l		tablet	116
67-Iodine-liq	Iodine	67	0 - 28	mg/l		liquid	118
Iron							
28-Iron-LR-tab	Iron (LR)	28	0 - 1	mg/l		tablet	120
29-Iron-MR-pow	Iron (MR)	29	0 - 10	mg/l		powder	122
127-Iron-MR-Fe-pow	Iron (MR) Ferrous	127	0 - 10	mg/l		powder	125
30-Iron-HR-liq	Iron (HR)	30	0 - 30	mg/l		liquid	126
132-Iron-tot-LR-pp	Iron total (LR)	132	0.00 - 3.00	mg/l		powder	129
149-Iron-Oil-liq	Iron in Oil	149	50 - 500	mg/l		liquid	131
Isothiazolinone							
88-Isothiazol-liq	Isothiazolonone	88	0 - 10	mg/l		liquid	133
Legionella							
147-Legionella-liq	Legionella	147	60 - 1000000	cfu/test		liquid	135
Magnesium							
93-Magnesium-tab	Magnesium	93	0 - 100	mg/l	$CaCO_3$	tablet	142
Manganese							
31-Manganes-LR-tab	Manganese (LR)	31	0.2 - 5	mg/l	MnO_4/$KMnO_4$	tablet	144
161-ManganVLR-tab	Manganese (VLR)	161	0 - 0.030	mg/l		tablet	146
Methylethylketoxime							
69-Methylethyl-liq	Methylethylketoxime	69	0 - 4.1	mg/l		liquid	148
Molybdate							
96-Molybdate-LR-tab	Molybdate (LR)	96	0 - 15	mg/l	Mo/Na_2MoO_4	tablet	149
32-Molybdat-HR-tab	Molybdate	32	1 - 100	mg/l	Mo/Na_2MoO_4	tablet	151
33-Molybdat-HR-liq	Molybdate (HR)	33	5 - 200	mg/l	Mo/Na_2MoO_4	liquid	153
134-Molybd-HR-pp	Molybdate (HR)	134	0 - 40	mg/l		powder	155
Nickel							
90-Nickel-HR-tab	Nickel (HR)	90	0 - 7	mg/l		tablet	157
100-Nickel-HR-liq	Nickel (HR)	100	0 - 10	mg/l		liquid	159
Nitrate							
34-Nitrate-pow	Nitrate	34	0.00 - 11.00	mg/l	N	liq./powder	161
Nitrite							
35-Nitrite-LR-tab	Nitrite (LR)	35	0 - 0.5	mg/l	NO_2/$NaNO_2$	tablet	163
36-Nitrite-HR-pow	Nitrite (HR)	36	5 - 200	mg/l	N/NO_2	powder	165

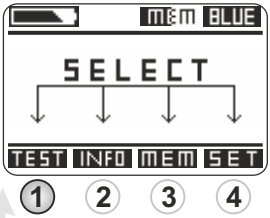
group/method	parameter	ID	range	unit	switch	reagent	page
Nitrite							
97-Nitrite-HR-tab	Nitrite (HR)	97	0 - 1500	mg/l	N/NO_2	tablet	167
101-Nitrite-HR-liq	Nitrite (HR)	101	0 - 3000	mg/l	N/NO_2	liquid	169
Nitrogen							
151-NitroTotLR-pre	Nitrogen-Total (LR)	151	0.5 - 25	mg/l	NH_4, NH_3	pre. vial	170
152-NitroTotHR-pre	Nitrogen-Total (HR)	152	5 - 150	mg/l	NH_4, NH_3	pre. vial	173
Ozone							
37-Ozone-tab	Ozone	37	0 - 5.4	mg/l		tablet	176
92-Ozone-liq	Ozone	92	0 - 5.4	mg/l		liquid	180
Peracetic Acid							
164-PeracA-LR-tab	Peracetic Acid	164	0 - 10	mg/l		tablets	183
165-PeracA-HR-tab	Peracetic Acid	165	0 - 300	mg/l		tablets	185
Permanaganate							
159-PTT-tab	Permanganate Time T.	159	0 - 100	%		tablet	187
Phenol							
98-Phenol-tab	Phenol	98	0 - 5	mg/l		tablet	189
pH							
40-pH-LR-tab	pH-value (LR)	40	5.2 - 6.8			tablet	191
38-pH-MR-tab	pH-value (MR)	38	6.4 - 8.4			tablet	193
39-pH-MR-liq	pH-value (MR)	39	6.4 - 8.4			liquid	195
41-pH-univ-tab	pH-Universal	41	5 - 11			tablet	197
42-pH-univ-liq	pH-Universal	42	4 - 11			liquid	199
PHMB							
43-PHMB-tab	PHMB	43	2 - 60	mg/l		tablet	201
Phosphate							
44-Phosphat-LR-tab	Phosphate (LR), ortho	44	0 - 4	mg/l	P / P_2O_5	tablet	203
45-Phosphat-LR-liq	Phosphate (LR), ortho	45	0 - 4	mg/l	P / P_2O_5	liquid/ powder	205
46-Phosphat-HR-tab	Phosphate (HR), ortho	46	0 - 80	mg/l	P / P_2O_5	tablet	207
47-Phosphat-HR-liq	Phosphate (HR), ortho	47	0 - 100	mg/l	P / P_2O_5	liquid	209
Phosphonate							
87-Phosphonate-liq	Phosphonate	87	0 - 20	mg/l	PBTC / NTP / HEDPA / EDTMPA / HMDTMPA / DETPMPA / HPA	liquid	211
Phosphonate							
110-Phosphon-tab	Phosphonate	110	0 - 20	mg/l	PBTC / NTP / HEDPA / EDTMPA / HMDTMPA / DETPMPA / HPA	tablet	214
153-PsphrTotLR-tab	Phosphorus-Total (LR)	153	0 - 2.6	mg/l	PO_4	pre. vial	217
154-PsphrTotHR-tab	Phosphorus-Total (HR)	154	0 - 52	mg/l	PO_4	pre. vial	219
Polyacrylate							
85-Polyacryl-liq	Polyacrylate	85	1 - 30	mg/l		liquid	221
Potassium							
48-Potassium-tab	Potassium	48	0.7 - 12	mg/l		tablet	223

group/method	parameter	ID	range	unit	switch	reagent	page
PTSA							
111-PTSA-Ad	PTSA	111	0 - 1000	µg/l		---	225
QAC							
83-QAC-tab	QAC	83	25 - 150	mg/l		tablet	227
Silica							
49-Silica-LR-liq	Silica (LR)	49	0 - 5	mg/l	Si	liquid/ powder	228
50-Silica-HR-pow	Silica (HR)	50	0 - 100	mg/l	Si	powder	230
Sod.-Hypochlorite							
51-Sodium-Hypo-tab	Sodium Hypochlorite	51	0.2 - 40	%		tablet	232
68-Sodium-Hypo-liq	Sodium Hypochlorite	68	0.2 - 40	%		liquid	234
Sulphate							
54-Sulphate-tab	Sulphate	54	5 - 100	mg/l		tablet	236
55-Sulphate-pow	Sulphate	55	5 - 100	mg/l		powder	237
Sulphide							
52-Sulphide-tab	Sulphide	52	0.04 - 0.5	mg/l	H_2S	tablet	238
140-Sulphide-Ha	Sulphide	140	0 - 0.7	mg/l		liquid	240
Sulphite							
53-Sulphite-LR-tab	Sulphite (LR)	53	0 - 10	mg/l	Na_2SO_3	tablet	242
105-Sulphite-HR-tab	Sulphite (HR)	105	5 - 50	mg/l	Na2SO3	tablet	244
Suspended solids							
81-Suspended-Sol	Suspended solids	81	0 - 750	mg/l		---	246
Tannic acid							
91-Tannic-acid-liq	Tannic acid	91	0 - 150	mg/l		liquid	248
Total Oxidant							
108-Total-Oxid-liq	Total Oxidant	108	0 - 8	mg/l		liquid	249
Tracer							
157-Tracer-Ad	TRACER	157	0 - 1000	µg/l		---	251
Transmission							
114-Transm-420nm	Transmission-420nm	114	0 - 100	%		---	252
115-Transm-470nm	Transmission-470nm	115	0 - 100	%		---	254
116-Transm-520nm	Transmission-520nm	116	0 - 100	%		---	256
117-Transm-570nm	Transmission-570nm	117	0 - 100	%		---	258
118-Transm-620nm	Transmission-620nm	118	0 - 100	%		---	260
119-Transm-670nm	Transmission-670nm	119	0 - 100	%		---	262
Turbidity							
59-Turbidity	Turbidity	59	20 - 1000	FAU	FTU	---	264
112-Turbidity-NTU	Turbidity-NTU	112	0 - 1000	NTU	FTU/FNU	---	266
Urea							
120-Urea-tab-liq	Urea	120	0.1 - 2.5	mg/l		tablet+liq.	268
150-UreaHR-tab-liq	Urea (HR)	150	0.2 - 5.0	mg/l		tablet+liq.	270
Watch							
156-Watch-Ad	Watch Products	156	0 - 1000	µg/l		---	272
Zinc							
62-Zinc-tab	Zinc	62	0 - 1	mg/l		tablet	273

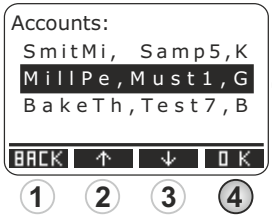
Test process for all parameters / test procedure

The steps up to the selection of the parameter to be determined (and the associated test procedure) are the same for all procedures. Below are the steps required to select the test procedure “11 chlorine tab” which is used as an example.

Please always observe the important information and details for an accurate measurement on pages “TEST-6” and “TEST-7”.

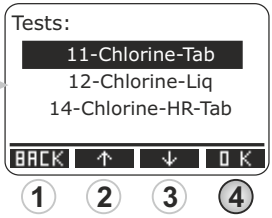


Start screen:
Press button 1 to access the menu “Test”.



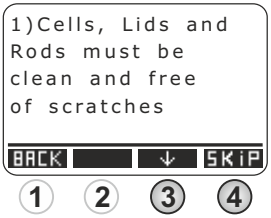
Press button 3 and/or 2 to select the account for which the test is to be performed.
Confirm your selection by pressing button 4.
The test results will then be saved in this account.
Use the PrimeLab software (Desktop Assistant) to store up to 20 accounts on the PrimeLab.
To do this, please refer to the section “PrimeLab Desktop Assistant”.

Press button 3 and/or 2 to select the parameter group containing the parameter/method you want to use for your test.



Press button 3 and/or 2 to select the parameter / test procedure to be used.
Confirm your selection by pressing button 4.
All further steps are described in the instructions to the individual test procedures.

Press button 2 in the test result to repeat the measurement without going through the steps again. 2



The safety notices pertaining to achieving accurate measurements are only displayed after each new start-up prior to your first mesurement. Scroll down using button 3 or skip with button 4.

Important notes for accurate testing

Please read the following instructions carefully because these must be strictly observed to ensure accurate measurements:

- Before inserting the cuvette into the sampling chamber please ensure that the cuvette is absolutely dry and clean, that there is no soiling by fingerprints etc., so that the light ray transmitted by the device for testing is not refracted or blocked. It is best to wipe the outside of the cuvette with a clean and dry cloth before inserting it.
- The cuvette lid, the cuvette itself and the stirring rod (if used) must be clean, to ensure that the samples to be tested are not contaminated by dirt, residues or remaining reagents of a previous test.
- Never clean cuvette, lid or stirring rod with a detergent as these will leave residues and could influence any subsequent tests.
- It is best to always use the same cuvette for any single parameter and to mark the cuvette on the outside on the bottom with a waterproof marker accordingly for this particular parameter.
- The cuvette must also be free of any scratches as these would divert the light ray transmitted during the test. Replace any scratched or damaged cuvettes with new ones.
- Make sure that you use only photometer grade reagents (PL range and Photometer tablets). Using RAPID reagents will lead to incorrect results!
- Check before each test run that the reagents used have not exceeded their best before date.
- Always keep the sampling chamber (where the cuvette is inserted) clean. On the left and right inside of the chamber you will see an opening and behind that a transparent plastic pane. The LED and the sensor are located behind these. Both panes must be dry and clean.
  Any soiling must be cleaned according to A-3 in these instructions.
- The measurement must be performed in a radiation-free environment which is not electromagnetically influenced. Keep mobile phones and radio devices away during sampling.
- Some reagents are classified as hazardous materials. These are identified as such on the packaging. In addition you can download safety specifications for the reagents offered by PrimeLab from the website www.primelab.org.
  Always adhere to the safety instructions on the packaging and in the safety specifications to prevent damages to yourself, the PrimeLab device and the environment.
- NEVER touch reagents with your fingers, pour them directly from the container into the water sample!
- Always close liquid reagent containers immediately after use.
  Always ensure uniform drop sizes are used.
- Air bubbles on the inside of the cuvette wall will result in incorrect measurements!
  If there are any bubbles carefully shake the cuvette to release these.

Continued...

Continued...

! Always conduct baseline (zero) measurements with the same cuvette used for the subsequent test. Always make sure that the triangular marking on the cuvette is aligned with the triangle on the front of the sampling chamber on the device. There are always small differences between cuvettes (tolerances due to production).

! The device must be acclimatised to the ambient temperature. Great differences between the device temperature and that of the environment can lead to the formation of condensation obstructing the optical system, which in turn will lead to incorrect measurements.

! The sampling chamber must be free from water or humidity, otherwise there will be the risk of damage to the electronics inside the device.

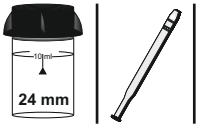
! **Please calibrate your PrimeLab on a regular basis (at least 2 weekly) as described in SET-4 of these instructions to obtain the best possible measurement results.**

! **PrimeLab must remain on a flat surface while testing as otherwise the LED light will not pass correctly through the sample water which will lead to incorrect results.**

left open for technical reasons

(01) Active Oxygen 0.00 - 40.00 mg/l (O_2) **Tablet**

Name on device: 01-Act-oxi-MPS-tab



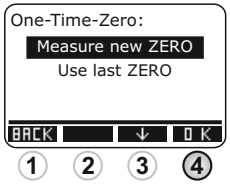
DPD N° 4 Photometer (TbsPD4...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "DPD N° 4 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

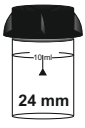
Continued...

Note(s)

-> The chemical to be identified with this test procedure is potassium mono-persulfate (MPS).

-> When preparing the measurement it is important to avoid any active oxygen escaping. This is done by using a pipette and shaking of the sample water. The measurement must be conducted immediately after taking the sample.

Name on device: 05-Alkalinit-M-tab



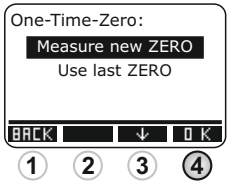
Alkalinity-M Photometer (TbsPTA...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Alkalinity-M Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

7) After the lapse of a 0:25 minute countdown the determined result is displayed.
UNiT 3 — Press button 3 to convert the result to different units (*).
OK 4 — Press button 4 to save the test result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

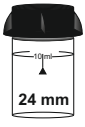
Note(s)

-> (*) Conversion to HCO-3, °dH, °eH, °fH, mmol (KS4.3), mval

-> In order to obtain as precise a result as possible it is essential that the water sample has a volume of exactly 10ml.

(121) Alkalinity-M HR 0 - 500 mg/l ($CaCO_3$) **Tablet**

Name on device: 121-Alka-M-HR-tab



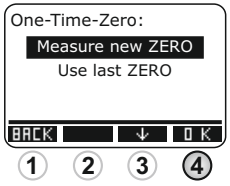
Alkalinity-M HR Photometer (TbsPTAHR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Alkalinity-M HR Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

7) After the lapse of a 1 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units(*)

8) Press button 4 to save the result together with date and time in the device.

Continued...

Note(s)

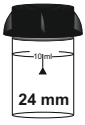
-> (*) Conversion to HCO-3, °dH, °eH, °fH, mmol (KS4.3), mval

-> In order to obtain as precise a result as possible it is essential that the water sample has a volume of exactly 10ml.

-> Extend the listed measurement range to 400 - 1000 mg/l by diluting your water sample as follows: 1:1 = 5 ml of sample water plus 5 ml of distilled water and continue with the test procedure. The test result displayed on the screen needs to be multiplied by 2.

(06) Alkalinity-P 5 - 300 mg/l ($CaCO_3$) **Tablet**

Name on device: 06-Alkalinit-P-tab



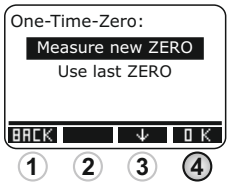
Alkalinity-P Photometer (TbsPAP...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Alkalinity-P Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 7) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4 8) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

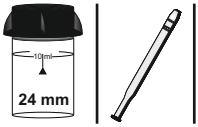
Continued...

Note(s)

-> (*) Conversion to °dH, °eH, °fH, mmol (KS4.3), mval

-> In order to obtain as precise a result as possible it is essential that the water sample has a volume of exactly 10ml.

Name on device: 04-Aluminium-tab



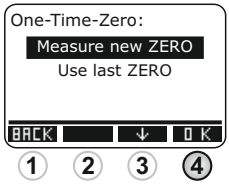
Aluminium N°1 Photometer (TbsHALM1...)
Aluminium N°2 Photometer (TbsPALM2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add an "Aluminium N° 1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

6) Add an "Aluminium N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4

8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

9) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

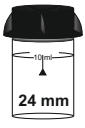
Note(s)

-> The temperature of your water sample should be between 20°C and 25°C.

-> Fluorides and polyphosphates in the sample water will reduce the measurement results. So long as no fluoride has been actively added this effect is negligible. Otherwise, the result will be, depending on the fluoride concentration in the water, 0.01 to 0.23 mg/l too low. To take this effect into account the fluoride content in the water must be determined in a separate procedure. Multiply the separately determined fluoride value with 0.4 and then add 1 to this result, which will render the factor by which the measurement result (aluminium) must be multiplied to get the correct value.
Example:
Determined fluoride value = 0.6 mg/l; multiplied with 0.4 = 0.24; plus 1 = 1.24 (= factor). Determined aluminium value = 0.15; multiply with the above factor (1.24) = 0.186 mg/l aluminium concentration.

-> Iron and manganese are eliminated by the reagent tablet and have no influence on the measurement result.

Name on device: 02-Ammonia-LR-Tab



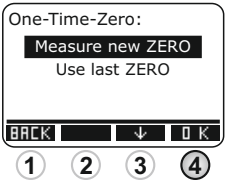
Ammonia N° 1 Photometer (TbsHAM1...)
Ammonia N° 2 Photometer (TbsPAM2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water (*) into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add an "Ammonia N° 1 Photometer" tablet (**) to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

6) Add an "Ammonia N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablets with a clean stirrer until both have completely dissolved.

TEST 4

8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3

9) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (***).

OK

10) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) The temperature of your water sample must not be below 20°C.

-> (**) The Ammonia N° 1 tablet will only dissolve completely after the Ammonia N° 2 tablet has been added.

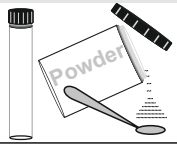
-> (***) The measurement result can be converted to the following units: NH_4, NH_3

-> extremely salty water must be treated to avoid incorrect test results.

(155) Ammonia (HR) 0.00 - 50.00 mg/l (N)

16mm vial

Name on device: 155-AmmoniaHR-pre



Ammonia HR vial
Ammonia Salicylate F5 Powder Pack
Ammonia Cynurate F5 Powder Pack

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Prepare 2 cells (16mm) Ammonia HR. Label one as zero cell.

2) Open the first cell (zero) and fill with 0.1ml deionised water.

3) Open the second cell (sample) and fill with 0.1ml of your sample.

4) Add 1 powder pillow Am. Silic. F5 to each vial.

5) Add 1 powder pillow Am. Cyan. F5 to each vial.

6) Swirl with clean stiring rod for app. 20 seconds until powder completely dissloved.

TEST 4 7) Reagents need to react press TEST to start 20:00 minutes countdown.

8) Place the COD adaptor into the device.

ZERO 4 9) Place the ZERO cell and the light protection cover and than press ZERO.

10) Remove the cell from the device.

TEST 4 11) Place the sample cell and the light protection cover into the device. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to NH_3, NH_4.

-> Expect tolerances of up to 25% at very low levels (0 - 5 mg/l). If you intend to measure low levels of Amminial, please use "Ammonia LR" parameter (ID02)

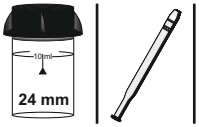
-> Adjust strong alkaline or acidic water samples to pH 7 by using 1 mol/l Hypochloric acid / 1 mol/l Soldium hydroxide, before performing the test

-> In presence of chlorine, add 0.1 mol/l Sodium thiolufate per 0.3 mg/l Cl2

-> In presence of Iron, measure the iron content of your water and add an iron standard solution with the same concentration to your ZERO vial (1st test step)

(125) Acsamine 28F 0 - 100 mg/l (AC28) Liquid

Name on device: 125-Acsam.28F-liq



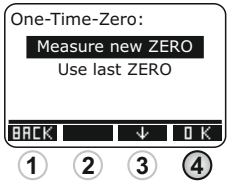
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

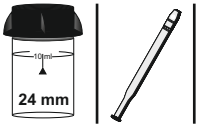
TEST 4 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(145) Acsamine CC 0 - 100 mg/l (AC CC) Liquid

Name on device: 145-Acsam.CC-liq



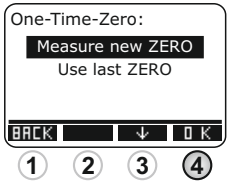
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

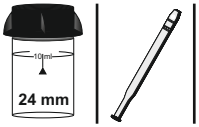
4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Name on device: 146-Acsam.CCA-liq



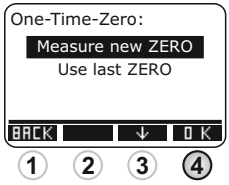
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

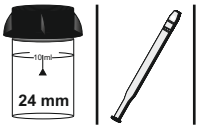
OK 4) 6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(126) Acsamine DW 0 - 100 mg/l (ACDW)

Liquid

Name on device: 126-AcsamineDW-liq



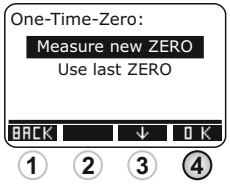
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

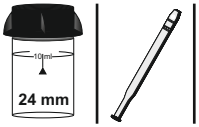
OK 4

6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(141) Acsamine DWBR1 0 - 100 mg/l (AC DWBR1) Liquid

Name on device: 141-Acsa.DWBR1-liq



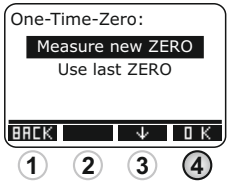
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

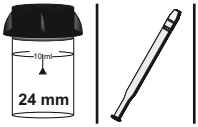
OK 4

6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(142) Acsamine DWC 0 - 100 mg/l (AC DWC) Liquid

Name on device: 142-Acsam.DWC-liq



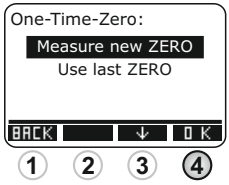
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

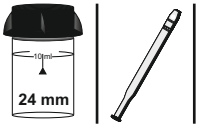
OK 4

6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(143) Acsamine SW 0 - 100 mg/l (AC SW) Liquid

Name on device: 143-Acsam.SW-liq



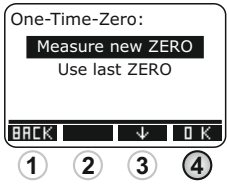
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

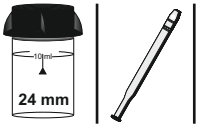
OK 4

6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(144) Acsamine SWC 0 - 100 mg/l (AC SWC) Liquid

Name on device: 144-Acsam.SWC-liq



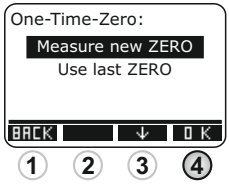
PL Acsamine 1 (PL65Acsa1)
PL Acsamine 2 (PL65Acsa2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Acsamine 1" and 25 drops (1 ml) "PL Acsamine 2" liquid reagent to the water sample in the cuvette.

TEST 4

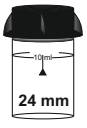
5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Name on device: 07-Boron-tab



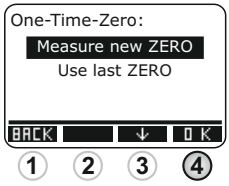
Boron N° 1 Photometer (TbsHBO1...)
Boron N° 2 Photometer (TbsPBO2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add **two** "Boron N° 1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

6) Add a "Boron N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 — 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 9) After the lapse of a 20 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units(*)

OK 4 — 10) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

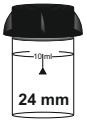
Note(s)

-> (*) The test result can be converted to the following unit: H_3BO_3

-> The pH value of the water sample should be between 6 and 7 pH.

-> The temperature of the water sample has an influence on the measurement precision and should be at 20°C (+/- 1°C).

Name on device: 08-Bromine-tab



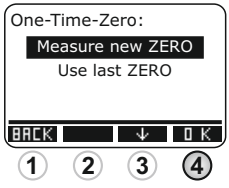
DPD N°1 Photometer (TbsPD1...)
Glycine (TbsHGC...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 — 7) The determined results for "**tBr**" (total/active bromine) is immediately displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> If the water sample contains chlorine and bromine both will be detected by the DPD reagent and shown in the test result. If this is not required, the measurement procedure must be amended as follows: After step 3 add a "DPD Glycine" tablet to the sample liquid. Empty the cuvette except for a few drops into a second clean vial.
Add a DPD N° 1 Photometer tablet to the first cuvette, which contains just a few drops and crush it with a clean stirrer. Now fill the sample water with the dissolved glycine tablet from the second cuvette into the first cuvette containing the crushed DPD N° 1 Photometer tablet. Mix the tablet with the liquid until it has dissolved completely. Wait for 2 minutes and then continue with step 6.

-> When preparing the measurement it is important to avoid any bromine escaping, which can happen during pipetting and shaking the sample. The measurement must be performed directly after sampling.

-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.

-> The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.

-> Water samples with parameter levels ´higher´ than the defined range may lead to errors with the DPD chemistry; resulting in an incorrect reading (possibly showing none detected). For measurement of higher bromine values please dilute the water sample prior to testing.

-> If the water sample contains other reducing chemicals (e.g. active oxygen, chlorine etc.) this will also be detected and be included in the result.

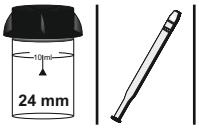
-> Water samples with a high calcium content resp. a high conductivity will render the sample cloudy, which is detrimental to the measurement precision. In this case use the "DPD N° 1 High Calcium (HC)".

(63) Bromine 0 - 18 mg/l (Br_2)

Liquid

+Powder

Name on device: 63-Bromine-liq



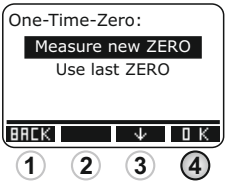
PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD Nitrite Powder (PLpow20DPDNitr)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.
(If chlorine is present in your sample and needs to be removed prior to testing - See Notes section for additional/modified procedure steps.)

4) Empty the cuvette except for a few drops.

5) Add 3 drops "PL DPD 1 A" and 3 drops "PL DPD 1 B“ liquid reagent into the same cuvette.

6) Fill sample water into the same cuvette up to the 10ml level.

TEST 4

7) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

8) The determined results for "**tBr**" (total/active bromine) is immediately displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note: If you require determination of ´combined´ and/or ´free´ bromine, please proceed with the following Steps 9 - 16.

9) Remove the lid, empty the cuvette completely and clean it thoroughly.

10) Fill 10ml sample water into a second clean 24mm cuvette.

11) Add 1 x 0.05mL (scoop) "PL DPD Nitrite" powder to the sample water in the cuvette.

12) Replace the lid on the cuvette and swirl this back and forth 5 times.

13) Add 3 drops "PL DPD 1 A" and 3 drops "PL DPD 1 B“ liquid reagent into the **empty** (first) cuvette.

14) Now fill this (first) cuvette with the sample water from the second cuvette.

15) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

16) The total result is displayed immediately, divided in
"aBr" = "active bromine“
"cBr" = "combined bromine“
"tBr" = "total bromine“
To scroll through the values please used the arrow up and down buttons. The result is saved when button 4 is pressed.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

-> If the water sample contains chlorine as well as bromine, this will be detected by the DPD reagent and displayed in the result. If you do not want chlorine to be detected together with brome the measurement procedure must be amended as follows: (Replace steps 3, 4 & 5 in Bromine procedure on Page 17 with these steps below):
3) Remove the cuvette from the chamber and unscrew the lid. Add 3 drops “PL DPD Glycine“ into the 10 ml sample water and swirl to mix.
4) Add 3 drops “PL DPD 1A“ and 3 drops “PL DPD 1 B“ into a second empty cuvette.
5) Pour the 10 ml of Glycine treated sample water from step 3 into the second cuvette in step 4 and continue with Bromine procedure from step 6 onwards.

-> When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then rinse thoroughly with distilled water.

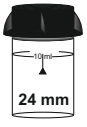
-> The DPD reagent used in this procedure buffers the pH value of the sample water in a range of 6.2 to 6.5 pH. If your sample water is very alkaline or acidic it must be adjusted to a pH range between 6 and 7 by adding 0.5 mol/l sulphuric acid or respectively 1 mol/l caustic soda.

-> Water samples with parameter levels ´higher´ than the defined range may lead to errors with the DPD chemistry; resulting in an incorrect reading (possibly showing none detected). For measurement of higher bromine values please dilute the water sample prior to testing.

-> If the water sample contains other reducing chemicals (e.g. active oxygen, chlorine etc.) this will also be detected and be included in the result.

-> Water samples with a high calcium content resp. a high conductivity will render the sample cloudy, which is detrimental to the measurement precision. In this case use the "DPD N° 1 High Calcium (HC)".

Name on device: 128-Bromine-pp



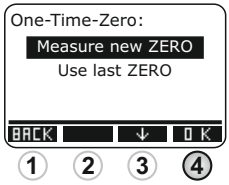
DPD Total Chlorine PP (ppDPDtotalCl)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add the content of a "DPD Total Chlorine" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) After the lapse of a 3 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> Alkalinity of more than 250 mg/l $CaCO_3$ affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Hydrochloric Acid before performing the test.

-> Acidity of more than 150 mg/l $CaCO_3$ affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.

-> Other oxidants, such as chlorine, chlorine dioxide, ozone, peroxides as well as iodine will interfere with the reagent reaction and will be part of the displayed value.

-> If oxidized manganese or oxidized chromium is present in the sample, sample needs to be pre-treated.

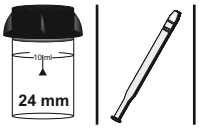
-> Hardness levels above 1000 mg/l $CaCO_3$ affect the measurement

-> Extreme pH-values of the sample need to be corrected to pH 6-7 before measuring the sample.

(71) Carbohydrazide 0 - 1.3 mg/l

Liquid

Name on device: 71-Carbohydra-liq



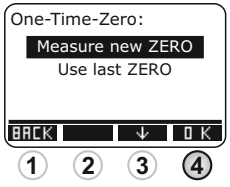
PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Oxygen Scavenger 1" and 25 drops (1mL) "PL Oxygen Scavenger 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

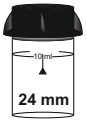
OK 4

6) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(95) Chloramines (Mono-/Di-) 0 - 8 mg/l ($fCl/NH_2Cl/NHCl_2$) Tablet

Name on device: 95-Chloramines-tab



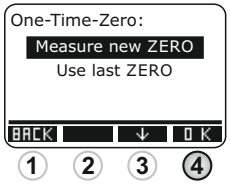
DPD N° 1 Photometer (TbsPD1...)
DPD N° 2 Photometer (TbsPD2...)
DPD N° 3 Photometer (TbsPD3...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 10 second countdown the total result is displayed as **"fCl" = "free chlorine"**. Press button 4 to save the result.

Continued...

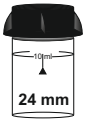
Continued...

	8) Remove the lid again and add a "DPD N° 2 Photometer" tablet into the same sample you have just used for determining "fCl".
	9) Crush the tablet with a clean stirrer until it is completely dissolved.
TEST 4	10) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
OK 4	11) After the lapse of a 10 second countdown the total result is displayed as **„NH_2Cl“ = „Mono-Chloramine“**. To scroll through the values please used the arrow up and down buttons. Press button 4 to save the result.
	12) Remove the lid again and add a "DPD N° 3 Photometer" tablet into the same sample you have just used for determining „NH_2Cl“.
	13) Crush the tablet with a clean stirrer until it is completely dissolved.
TEST 4	14) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
OK 4	15) After the lapse of a 2 minute countdown the total result is displayed, divided in: **„fCl“ = „free chlorine“** **„NH_2Cl“ = „Mono-Chloramine“** **„$NHCl_2$“ = „Di-Chloramine“** Scroll through the results using the buttons "arrow up" and "arrow down". Press button 4 to save the result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(10) Chloride 0.5 - 25 mg/l (Cl^-) Tablet

Name on device: 10-Chloride-tab



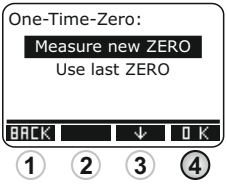
Chloride N° 1 Photometer (TbsHCRD1...)
Chloride N° 2 Photometer (TbsPCRD2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Chloride N° 1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add a "Chloride N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3) 9) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

Continued...

Continued...

OK
4

10) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) The test result can be converted to the following units:
NaCl

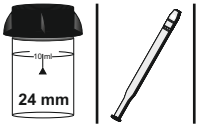
-> Avoid severe shaking of the water sample after adding the reagent, as this can lead to incorrect measurements.

-> The reagent used will cause fine clouding.

-> Other substances in the water that may react with silver nitrate in an acidic medium will lead to a falsification of the measurement result. Such species are bromide and iodine.

-> Very alkaline water should be neutralized before the measurement by adding nitric acid.

Name on device: 124-Chloride-liq



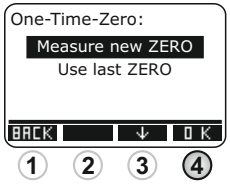
PL Chloride 1 (PL65Chloride1)
PL Chloride 2 (PL65Chloride2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 15 drops "PL Chloride 1" and 15 drops "PL Chloride 2" liquid reagent to the water sample in the cuvette.

TEST 4 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

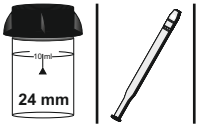
OK 4 6) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(11) Chlorine (free/combined/total) 0.00 - 8.00 mg/l (Cl_2)

Tablet

Name on device: 11-Chlorine-tab



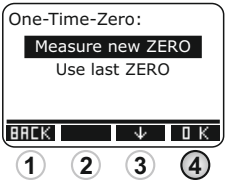
DPD N° 1 Photometer (TbsPD1...)
*DPD N° 1 HC Photometer (TbsPD1HC...)
DPD N° 3 Photometer (TbsPD3...)
*DPD N° 3 HC Photometer (TbsPD3HC...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 10 second countdown the determined result for "**fCl**" (**free chlorine**) is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

** for very limey water or water samples with a high conductivity*

Continued...

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After pressing the button 4 (OK) the measurement is continued to determine the total chlorine (tCl) and later also bonded chlorine (cCl). If this is not required the measurement can be termianted by pressing "HOME". IN this case only the value for free chlorine (fCl) is stored.

8) Remove the lid again and add a "DPD N° 3 Photometer" tablet into the same sample you have just used for determining "free chlorine".

9) Crush the tablet with a clean stirrer until it has completely dissolved.

10) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette.
Press TEST.

11) After the lapse of a 2 minute countdown the total result is displayed, divided in
"fCl" = "free chlorine“
"cCl" = "combined chlorine“
"tCl" = "total chlorine".
Scroll through the results using the buttons "arrow up" and "arrow down".
Press button 4 to save the result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> Sample water with a high calcium content or high conductivity will cloud the sample and deteriorate the measurement precision. In this case use the DPD N° 1 High Calcium (HC) and DPD N° 3 High Calcium (HC) tablets.

-> If the measuring water contains further reducing chemicals (e.g. active oxygen, bromine etc.) this will also be detected and is part of the result.

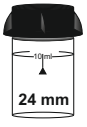
-> When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then thoroughly rinse with distilled water.

-> The DPD reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the DPD reagent is added.

-> Water samples with parameter levels ´higher´ than the defined range may lead to errors with the DPD chemistry; resulting in an incorrect reading (possibly showing none detected). For measurement of higher chlorine values please select the respective matching procedure.

Name on device: 12-Chlorine-liq



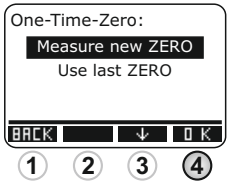
PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD 3 C (PL30DPD3C)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette.

5) Add 3 drops "PL DPD 1 A" and 3 drops "PL DPD 1 B“ liquid reagent into the empty cuvette.

6) Fill sample water into the same cuvette up to the 10ml level.

TEST 4

7) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

8) The determined results for "**fCl**" (**free chlorine**) is immediately displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

After pressing the button 4 (OK) the measurement is continued to determine the total chlorine (tCl) and later also bonded chlorine (cCl). If this is not required the measurement can be termianted by pressing "HOME". IN this case only the value for free chlorine (fCl) is stored.

9) Remove the cuvette from the chamber and unscrew the lid.

10) Add 3 drops "PL DPD 3 C" liquid reagent to the water sample in the cuvette.

11) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

12) After the lapse of a 2 minute countdown the total result is displayed, divided in
"fCl" = "free chlorine“
"cCl" = "combined chlorine“
"tCl" = "total chlorine".
Scroll through the results using the buttons "arrow up" and "arrow down". Press button 4 to save the result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

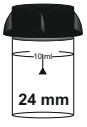
-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

-> The notes under ID 11 apply here as well.

-> Liquid reagents should be stored below 10°C and above 5°C in securely closed bottles.

(129) Chlorine free 0.00 - 2.00 mg/l (fCl_2) **Powder**

Name on device: 129-Chlorine-pp



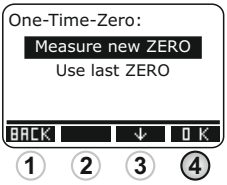
DPD Free Chlorine PP (ppDPDfreeCl)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add the content of a "DPD Free Chlorine" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

6) After the lapse of a 3 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> Alkalinity of more than 250 mg/l $CaCO_3$ affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.

-> Acidity of more than 150 mg/l $CaCO_3$ affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.

-> Other oxidants, such as bromine, chlorine dioxide, ozone, peroxides as well as iodine will interfere with the reagent reaction and will be part of the displayed value.

-> Organic chloramines may interfere. Monochloramines lead to higher readings (~0.1 mg/l at 3 mg/l monochloramines after 1 minute).

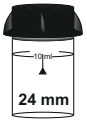
-> If oxidized manganese or oxidized chromium is present in the sample, sample needs to be pre-treated.

-> Hardness levels above 1000 mg/l $CaCO_3$ affect the measurement

-> Extreme pH-values of the sample need to be corrected to pH 6-7 before measuring the sample.

(14) Chlorine (KI) HR 5 - 200 mg/l (Cl_2) **Tablet**

Name on device: 14-Chlorine-HR-tab



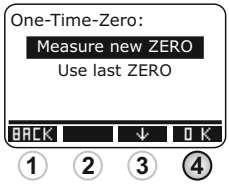
Chlorine HR (KI) Photometer (TbsPCLHR...)
Acidifying GP (TbsHAFG...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Chlorine HR (KI) Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add a "Acidifying GP" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4 — 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 — 9) After the lapse of a 10 second countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

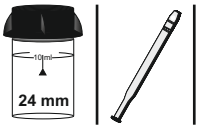
Continued...

Note(s)

-> In this procedure all oxidizing substances contained in the test liquid will be detected.

(15) Chlorine (KI) HR 0 - 200 mg/l (Cl_2) Liquid

Name on device: 15-Chlorine-HR-liq



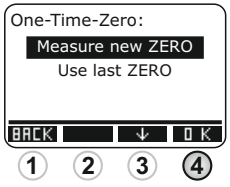
PL Chlorine HR 1 (PL65ClHR1)
PL Chlorine HR 2 (PL65ClHR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 3 drops "PL Chlorine HR 1" and 3 drops "PL Chlorine HR 2" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

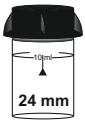
Note(s)

-> In this procedure all oxidizing substances contained in the test liquid will be detected.

-> Liquid reagents should be stored below 10°C and above 5°C and in securely closed bottles.

(122) Chlorine MR (free/combined/total) 0.00 - 10.00 mg/l (Cl_2) Tablet

Name on device: 122-ChlorineMR-tab



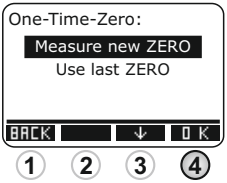
DPD N° 1 MR Photometer (TbsPD1MR...)
DPD N° 3 MR Photometer (TbsPD3MR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 MR Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 10 second countdown the determined result for "**fCl**" (**free chlorine**) is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

After pressing the button 4 (OK) the measurement is continued to determine the total chlorine (tCl) and later also bonded chlorine (cCl). If this is not required the measurement can be termianted by pressing "HOME". IN this case only the value for free chlorine (fCl) is stored.

8) Remove the lid again and add a "DPD N° 3 MR Photometer" tablet into the same sample you have just used for determining "free chlorine".

9) Crush the tablet with a clean stirrer until it has completely dissolved.

10) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette.
Press TEST.

11) After the lapse of a 2 minute countdown the total result is displayed, divided in
"fCl" = "free chlorine“
"cCl" = "combined chlorine“
"tCl" = "total chlorine".
Scroll through the results using the buttons "arrow up" and "arrow down".
Press button 4 to save the result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> Water samples with Chlorine level > 20 mg/l lead to incorrect results because the counter bleaches.

-> If the measuring water contains further reducing chemicals (e.g. active oxygen, bromine etc.) this will also be detected and is part of the result.

-> When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

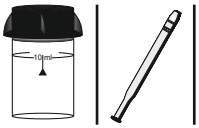
-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then thoroughly rinse with distilled water.

-> The DPD reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the DPD reagent is added.

-> Water samples with parameter levels ´higher´ than the defined range may lead to errors with the DPD chemistry; resulting in an incorrect reading (possibly showing none detected). For measurement of higher chlorine values please select the respective matching procedure.

(16) Chlorine Dioxide 0 - 15 mg/l (ClO_2) Tablet

Name on device: 16-Chlorin-Dio-tab



DPD N° 1 Photometer (TbsPD1...)
Glycine (TbsHGC...)

Measurement procedure:

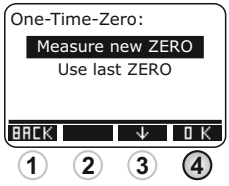
The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Please select either:
A) "Chlorine dioxide with chlorine" or
B) "Chlorine dioxide without chlorine"

A) Measurement procedure for "Chlorine dioxide with chlorine"

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Glycine" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Replace the lid on the cuvette and swirl it carefully to mix the liquids well.

7) Add a "DPD N° 1 Photometer" tablet in the second empty and clean cuvette.

Continued...

Continued...

8) Crush the tablet with a clean stirrer to a fine powdery mass.

9) Fill in the prepared water from the first cuvette.

10) Replace the lid on the cuvette and swirl it carefully to mix the solution well.

TEST 4

11) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

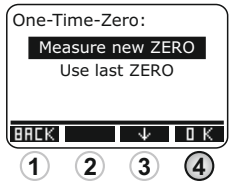
OK 4

12) After the lapse of a 10 second countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for "Chlorine dioxide without chlorine"

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

OK
4

7) After the lapse of a 10 second countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

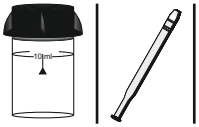
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

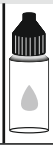
Note(s)

-> By selecting the procedure "Chlorine dioxide with chlorine" and adding the Glycine tablet the chlorine content of the water is eliminated.

-> Otherwise observe the notes as under ID11 (chlorine tablet).

Name on device: 64-Chlorin-Dio-liq





PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD Glycine (PL30DPDGlycine)

Measurement procedure:

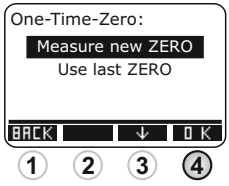
The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Please select either:
A) "Chlorine dioxide with chlorine" or
B) "Chlorine dioxide without chlorine"

A) Measurement procedure for "Chlorine dioxide with chlorine"

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 3 drops "PL DPD Glycine" liquid reagent to the water sample in the cuvette.

5) Replace the lid on the cuvette and swirl it carefully to mix the liquids well.

6) Add three drops of "PL DPD 1 A" and three drops of "PL DPD 1 B" into a second empty and clean cuvette.

7) Fill in the prepared water from the first cuvette.

Continued...

Continued...

TEST 4

8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

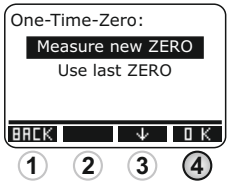
OK 4

9) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for "Chlorine dioxide without chlorine"

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Then add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" to the remaining test liquid in the cuvette.

5) Fill sample water into the same cuvette up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

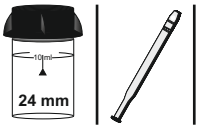
-> Observe the notes as under ID11 (chlorine tablet).

-> Liquid reagents should be stored below 10°C and above 5°C and in securely closed bottles.

(130) Chlorine Dioxide 0.00 - 5.00 mg/l (ClO_2)

Liquid
+Powder

Name on device: 130-Chl-Diox-pp



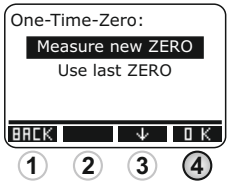
PL DPD Glycine (PL30DPDGlycine)
DPD Free Chlorine (PP) (ppDPDfreeCl)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 4 drops "PL DPD Glycine" liquid reagent to the test liquid in the cuvette.

5) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

6) Add the content of a "DPD Free Chlorine" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

TEST 4

7) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

8) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> Alkalinity of more than 250 mg/l $CaCO_3$ affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Hydrochloric Acid before performing the test.

-> Acidity of more than 150 mg/l $CaCO_3$ affect the measurement and the color development. Neutralize to pH 6-7 with 1 N Sodium Hydroxide before performing the test.

-> Bromine at all levels, Ozone (if >1.5 mg/l) and chlorine (if >6 mg/l) as well as iodine will interfere with the reagent reaction and will be part of the displayed value. Peroxides may interfere as well.

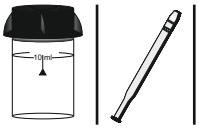
-> Organic chloramines may interfere. Monochloramines lead to higher readings (~0.1 mg/l at 3 mg/l monochloramines after 1 minute).

-> If oxidized manganese or oxidized chromium is present in the sample, sample needs to be pre-treated.

-> Hardness levels above 1000 mg/l $CaCO_3$ affect the measurement

-> Extreme pH-values of the sample need to be corrected to pH 6-7 before measuring the sample.

Name on device: 106-Chlorite-liq



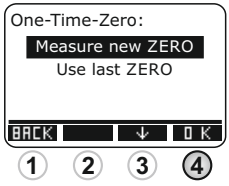
PL DPD Glycine (PL30DPDGlycine)
PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD 3 C (PL30DPD1A)
PL DPD Acidifying (PL30DPDAcidif)
PL DPD Neutralising (PL30DPDNeutr)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 3 drops "PL DPD Glycine" liquid reagent to the test liquid in the cuvette.

5) Replace the lid on the cuvette and swivel this back and forth 5 times.

6) Add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" into a second empty and clean cuvette.

7) Fill in the prepared water from the first cuvette.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

9) Remove the vial from the PrimeLab and set it aside. It is not required for this test.

10) Add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" into a second empty and clean cuvette.

Continued...

Continued...

	11) Fill sample water into the same cuvette up to the 10ml level.
	12) Add 3 drops "PL DPD 3 C" liquid reagent to the test liquid in the cuvette.
TEST 4	13) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
	14) Wait for the lapse of a 2 minute countdown.
	15) Remove the cuvette from the chamber and unscrew the lid.
	16) Add 3 drops "PL DPD Acidifying" liquid reagent to the test liquid in the cuvette.
TEST 4	17) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
	18) Wait for the lapse of a 2 minute countdown.
	19) Remove the cuvette from the chamber and unscrew the lid.
	20) Add 3 drops "PL DPD Neutralising" liquid reagent to the test liquid in the cuvette.
	21) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
OK 4	22) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / Underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

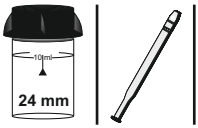
-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

-> The range of the side measurements performed during the Chlorite tests may be up to 8 mg/l whilst it is rather unlikely that the range of Chlorite can be tested up to 8 mg/l.

(94) Chromuim (hexavalent) 0 - 2.2 mg/l (Cr^{6+})

Tablet

Name on device: 94-chromium-tab



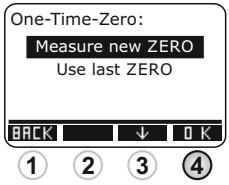
Chromium N° 1 (TbsHChro1...)
Chromium N° 2 (TbsHChro2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add one „Chromium N° 1" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved.

6) Add one "Chromium N° 2" tablet to the same cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note

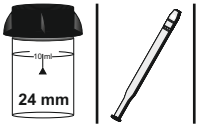
-> (*) Conversion to CrO_4

(103) Chromium (hexavalent) 0 - 1 mg/l (Cr^{6+})

Liquid

+Powder

Name on device: 103-Chromium-liq



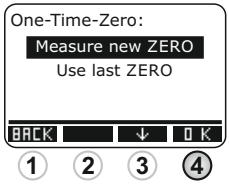
PL Chromate 1 (PLpow40Chromate1)
PL Chromate 2 (PL65Chromate2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops.

5) Add 1 x 0.05ml (scoop) "PL Chromate 1" powder and 15 drops of „PL Chromate 2" into the same cell.

6) Stir the mixture of powder and liquid reagent until all the powder has dissolved.

7) Add precisely 10 ml sample water to the same cuvette.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note

-> (*) Conversion to CrO_4

Name on device: 79-COD-LR-pre

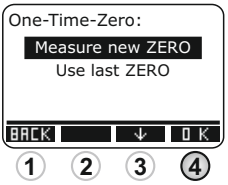
COD-79-LR

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Prepare two cells (16mm) "COD-79-LR". Label one as zero cell.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 9)
-> Use last ZERO = continue with step 11)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Open the first cell (zero) and fill with 2 ml deionised water.

3) Open the second cell (sample) and fill with 2 ml of your sample water.

4) Cap both cells and shake to mix. CAUTION: Cells turn hot!

5) Put the cells in a preheated thermoreactor for 120 minutes at 150°C.

6) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 60°C or less.

7) While warm invert cells several times to mix the contents well. Allow to cool to room temperature.

8) Place the adaptor for 16mm vials into the device.

ZERO (4) 9) Place the zero cell and the light protection cover into the device and then press ZERO.

10) Remove the cell from the device.

TEST (4) 11) Place the sample cell and the light protection cover into the device. Then press TEST.

Continued...

Continued...

OK
4

12) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Suspended particles in the zero cell and / or the sample cell lead to wrong test results. Make sure that any existing suspended solids have settled to the bottom of the cell and are not disturbed by the insertion into the PrimeLab.

-> Both cells used for the measurement (zero / sample) must be from the same production batch. The cell used for ZERO can be kept for other tests (of the same batch) but must be stored in the dark.

-> For COD content above 150 mg/l, the use of another method (COD MR / COD HR) is recommended to achieve accurate results.

-> Never insert hot cells into the PrimeLab measuring chamber!

-> This method is not suitable for water samples with Chloride values higher than 1,000 mg/l.

Name on device: 80-COD-MR-pre

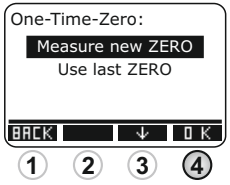
COD-80-MR

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Prepare two cells (16mm) "COD-80-MR". Label one as zero cell.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 9)
-> Use last ZERO = continue with step 11)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Open the first cell (zero) and fill with 2 ml deionised water.

3) Open the second cell (sample) and fill with 2 ml of your sample water.

4) Cap both cells and shake to mix. CAUTION: Cells turn hot!

5) Put the cells in a preheated thermoreactor for 120 minutes at 150°C.

6) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 60°C or less.

7) While warm invert cells several times to mix the contents well. Allow to cool to room temperature.

8) Place the adaptor for 16mm vials into the device.

ZERO 4) 9) Place the zero cell and the light protection cover into the device and then press ZERO.

10) Remove the cell from the device.

TEST 4) 11) Place the sample cell and the light protection cover into the device. Then press TEST.

Continued...

Continued...

OK
4

12) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Suspended particles in the zero cell and / or the sample cell lead to wrong test results. Make sure that any existing suspended solids have settled to the bottom of the cell and are not disturbed by the insertion into the PrimeLab.

-> Both cells used for the measurement (zero / sample) must be from the same production batch. The cell used for ZERO can be kept for other tests (of the same batch) but must be stored in the dark.

-> For COD content above 1500 mg/l, the use of another method (COD HR) is recommended to achieve accurate results.

-> Never insert hot cells into the PrimeLab measuring chamber!

-> This method is not suitable for water samples with Chloride values higher than 1,000 mg/l.

Name on device: 17-COD-HR-pre

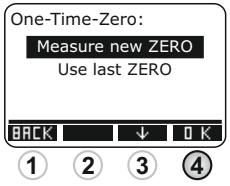
COD-17-HR

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Prepare two cells (16mm) "COD-17-HR". Label one as zero cell.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 9)
-> Use last ZERO = continue with step 11)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Open the first cell (zero) and fill with 0.2 ml deionised water.

3) Open the second cell (sample) and fill with 0.2 ml of your sample water.

4) Cap both cells and shake to mix. CAUTION: Cells turn hot!

5) Put the cells in a preheated thermoreactor for 120 minutes at 150°C.

6) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 60°C or less.

7) While warm invert cells several times to mix the contents well. Allow to cool to room temperature.

8) Place the adaptor for 16mm vials into the device.

ZERO 4) 9) Place the zero cell and the light protection cover into the device and then press ZERO.

10) Remove the cell from the device.

TEST 4) 11) Place the sample cell and the light protection cover into the device. Then press TEST.

Continued...

Continued...

OK
④ 12) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Suspended particles in the zero cell and / or the sample cell lead to wrong test results. Make sure that any existing suspended solids have settled to the bottom of the cell and are not disturbed by the insertion into the PrimeLab.

-> Both cells used for the measurement (zero / sample) must be from the same production batch. The cell used for ZERO can be kept for other tests (of the same batch) but must be stored in the dark.

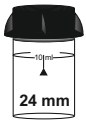
-> For COD content 10,000 mg/l, the use of another method (COD LR / COD MR) is recommended to achieve accurate results

-> Never insert hot cells into the PrimeLab measuring chamber!

-> This method is not suitable for water samples with Chloride values higher than 10,000 mg/l.

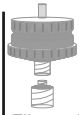
(107) Colour 0 - 500 mg/l (Pt-Co)

Name on device: 107-Colour



(*) Syringe

(*) Filter paper



(*) Filter adapter

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Select either:
A) „True colour“
B) „Apparent colour“

A) Measurement procedure for „True colour“

1.) Unscrew the two halves of the filter holder and place one filter circle (0.45µ) onto the base section.

2.) Screw the two parts together again, ensuring the O ring is correctly located.

3.) Fill a clean luer-lock syringe (20 ml) with deionised water.

4.) Connect the syringe to the filter holder and discharge the syringe to waste.

5.) Disconnect the syringe from the filter holder and refill syringe with destilled water.

6.) Fill a clean luer-lock syringe (20 ml) with deionised water.

7.) Connect the syringe to the filter holder and discharge the syringe to waste.

8.) Disconnect the syringe from the filter holder and refill syringe with destilled water.

9.) Fill a clean luer-lock syringe (20 ml) with deionised water.

10.) Connect the syringe to the filter holder and discharge the syringe to waste.

11.) Disconnect the syringe from the filter holder and refill syringe with destilled water.

Continued...

Continued...

	12.) Fill a clean luer-lock syringe (20 ml) with deionised water.
	13.) Connect the syringe to the filter holder and discharge the syringe to waste.
	14.) Disconnect the syringe from the filter holder and refill syringe with destilled water.
	15.) Fill a clean luer-lock syringe (20 ml) with deionised water.
	16.) Connect the syringe to the filter holder and discharge the syringe to waste, down to the 10 ml mark.
	17.) Filter the remaining 10 ml of destilled water into a clean 24mm vial.
ZERO 4	18.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.
	19.) Remove the cell and open the lid.
	20.) Disconnect the syringe from the filter holder and refill syringe with SAMPLE water.
	21.) Connect the syringe to the filter holder and discharge the syringe to waste.
	22.) Disconnect the syringe from the filter holder and refill syringe with SAMPLE water.
	23.) Connect the syringe to the filter holder and discharge the syringe to waste.
	24.) Disconnect the syringe from the filter holder and refill syringe with SAMPLE water.
	25.) Connect the syringe to the filter holder and discharge the syringe to waste, down to the 10 ml mark.
	26.) Filter the remaining 10 ml of SAMPLE water into a clean 24mm vial.
TEST 4	27.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press TEST.

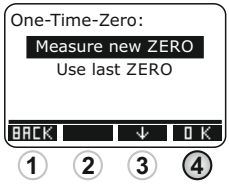
Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for „Apparent colour“

1.) Fill a cleaned cell (24mm) with 10 ml deionised water.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3.) Remove the cell and open the lid.

4.) Empty the cell.

5.) Rinse cell with this water sample and fill up to 10 ml mark.

6.) Close the lid.

TEST 4 7.) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> (*) Special accessories required / not included as standard equipment!

-> The sample water needs to have a yelowish to yellowish-brown coloration to be tested with this method which is based on the "Hazan Standard", developed by A. Hazen (EN ISO 7887:1994).

-> 1 Pt-Co equals 1 mg/L platinum (as chloroplatinate ion)

-> Analyse as soon as possible after taking the sample. Use clean glass or plastic containers for transport and avoid air contact of the sample water. Do not stir sample water. Store sample for max. 24 hours at a dark place at 4°C.

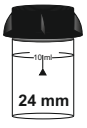
-> Test to be performed with sample water having room temperature.

-> The estimated detection limit is 15 units Pt-Co.

-> Use the same vial for ZERO and TEST.

(18) Copper (free/combined/total) 0.05 - 5 mg/l (Cu) **Tablet**

Name on device: 18-Copper-tab



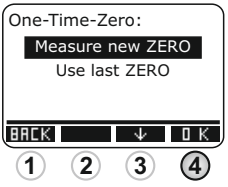
Copper N° 1 Photometer (TbsHCu1...)
Copper N° 2 Photometer (TbsPCu2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Copper N° 1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4) 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 7) The determined results for "**fCu**" (**free copper**) is immediately displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

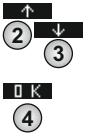
Continued...

Press button 4 (OK) to continue the measurement to determine the total copper content (tCu) and later also the combined copper (cCu). If this is not desired the measurement procedure can be terminated by pressing "HOME". In this case only the valule for free copper (fCu) is stored.

8) Remove the lid again and add a "Copper N° 2 Photometer" tablet into the same sample you have just used for determining "fCu" (free copper).

9) Crush the tablet with a clean stirrer until it has completely dissolved.

10) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette.
Press TEST.



11) The total result is displayed immediately, divided in
"fCu" = "free copper“
"cCu" = "combined copper“
"tCu" = "total copper"
To scroll through the values please used the arrow up and down buttons.
The result is saved when button 4 is pressed.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> For the analysis of total copper the following procedure is necessary:

- Add concentrated sulfuric acid to the test sample (1 ml per 100 ml of test sample). By boiling it for 10 minutes everything is dissolved. Now cool the test sample. Then add ammonia and bring the sample to a pH value of 3 – 5. The initial volume of 100 ml of fluid have to be filled up with deionized water. The analysis can now be performed as described with 10 ml of the liquid obtained.

- With organic compounds pretreated water may need to be oxidized (destruction of the copper complexes). Add concentrated sulfuric acid and concentrated nitric acid to the test sample (1 ml per 100ml each). Now cool the test sample. The analysis can now be performed as described.

-> For the analysis the water has to have a pH value of 4 - 6. Strongly acidic water having a pH value of <2 should be neutralized with 8 mol per litre potassium hydroxide KOH.

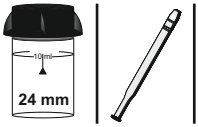
-> Not yet completely dissolved powder has no effect on the accuracy of the measurement.

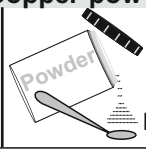
-> Disorders:

- Cyanide CN: To ensure full color development, the test sample had to be enriched with 0.2 ml of formaldehyde and wait 4 minutes. The analysis can now be performed as described. The test result must be multiplied by 1.02.

- Silver Ag +: Silver can cause blackening of the test sample. Add saturated potassium (10 drops per 75 ml). Then the test sample had to be poured through a fine filter. The analysis is now carried out as described with 10 ml of the filtered liquid.

Name on device: 19-Copper-pow





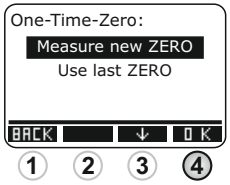
PL Copper 1 (PLpow20Cu1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

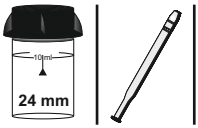
4) Add 2 x 0.05mL (scoops) "PL Copper 1" powder to the sample water in the cuvette.

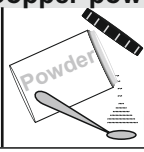
TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...





PL Copper 1 (PLpow20Cu1)

Continued...

Note(s)

-> For the analysis of total copper the following procedure is necessary:

- Add concentrated sulfuric acid to the test sample (1 ml per 100 ml of test sample). By boiling it for 10 minutes everything is dissolved. Now cool the test sample. Then add ammonia and bring the sample to a pH value of 3 – 5. The initial volume of 100 ml of fluid have to be filled up with deionized water. The analysis can now be performed as described with 10 ml of the liquid obtained.

- With organic compounds pretreated water may need to be oxidized (destruction of the copper complexes). Add concentrated sulfuric acid and concentrated nitric acid to the test sample (1 ml per 100ml each). Now cool the test sample. The analysis can now be performed as described.

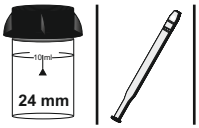
-> For the analysis the water has to have a pH value of 4 - 6. Strongly acidic water having a pH value of <2 should be neutralized with 8 mol per litre potassium hydroxide KOH.

-> Not yet completely dissolved powder has no effect on the accuracy of the measurement.

-> Disorders:

- Cyanide CN: To ensure full color development, the test sample had to be enriched with 0.2 ml of formaldehyde and wait 4 minutes. The analysis can now be performed as described. The test result must be multiplied by 1.02.

- Silver Ag +: Silver can cause blackening of the test sample. Add saturated potassium (10 drops per 75 ml). Then the test sample had to be poured through a fine filter. The analysis is now carried out as described with 10 ml of the filtered liquid.



PL Cyanide-11
PL Cyanide-12
PL Cyanide-13
(all included in PL158-kit)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

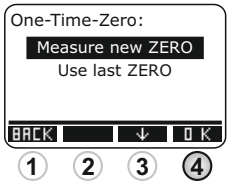
The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill a cleaned cell (24mm) with 8ml deionised water.

2) Add precisely 2ml sample water to the same cell.

3) Replace the lid on the cell and swivel this back and forth 5 times.

4) Do you want to use the last stored ZERO value?



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 5)
-> Use last ZERO = continue with step 7)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 5) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

6) Remove the cell and open the lid.

7) Add 2 scoops of PL Cyanide-11.

8) Replace the lid on the cell and swivel this back and forth 5 times.

9) Add 2 scoops of PL Cyanide-12.

10) Replace the lid on the cell and swivel this back and forth 5 times.

11) Add 3 drops PL Cyanide-13 to your sample. Shake the cell to mix the liquid.

TEST 4) 12) Close the lid. Gently shake the cell to mix the liquid. Press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

->Reagents to be stored at temperatures of +15°C to 25°C

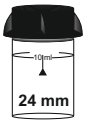
->This method only detects free Cyanide and Cyanides which can be destroyed by Chlorine

->Cyanide must be separated (distillation) before performing the test in case Thiocyanate, colorants, heavy metal complexes or aromatic amines are present

(20) Cyanuric Acid 0 - 160 mg/l

Tablet

Name on device: 20-Cyanur-Acid-tab



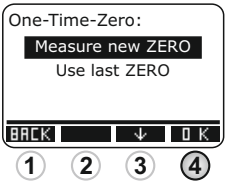
CYA-Test Photometer (TbsPCYA...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "CYA-Test Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until the tablet has completely dissolved (swirl for at least 1 minute). The water sample will become milky if there is cyanuric acid present in the sample.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

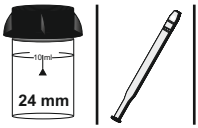
OK 4

7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> If a result > 100 mg/l is expected, a more precise measurement can be achieved by following dilution: 1 ml of test water + 9 ml distilled water. The result must be multiplied with 10.



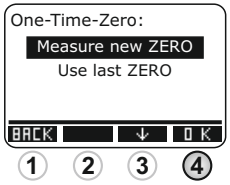
PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD 3 C (PL30DPD3C)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Then add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" to the remaining test liquid in the cuvette.

5) Fill sample water into the same cuvette up to the 10ml level.

6) Add 3 drops "PL DPD 3 C" liquid reagent to the water sample in the cuvette.

TEST 4) 7) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 8) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

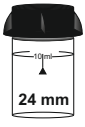
Continued...

Continued...

Note(s)

-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

Name on device: 82-DBNPA-tab



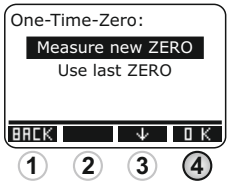
DPD 1 Photometer (TbsPD1...)
DPD 3 Photometer (TbsPD3...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

6) Add a "DPD N° 3 Photometer" tablet to the water sample in the cuvette.

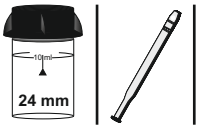
7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Name on device: 21-DEHA-liq



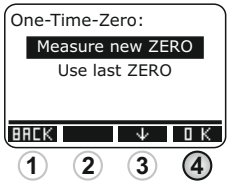
PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Oxygen Scavenger 1" and 25 drops (1mL) "PL Oxygen Scavenger 2" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

µg/l -> mg/l • µg/l = $\frac{\text{mg/l}}{1000}$

µg/l -> mg/l • µg/l = $\frac{\text{mg/l}}{1000}$

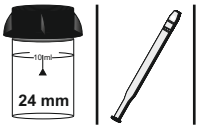
Continued...

Note(s)

-> Ferrous Iron will interfere with this test and can influence the readings.
To determine the Ferrous Iron concentration for correction purposes repeat the test without adding PL Oxygen Scavenger 1.
If the result is above 0.05mg/l subtract this value from the DEHA result.

-> During the 10 minute development period ensure the sample is kept in the dark.

Name on device: 109-DEWAN50-liq



PL-DX DEWAN-50 (KTES0302400007)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

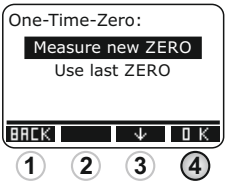
The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

↑ 2 ↓ 3 OK 4

Select either:
A) Range 0 - 150 mg/l DW-50
B) Range 150 - 300 mg/l DW-50

A) Range 0 - 150 mg/l DW-50

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 20 drops "PL-DX DEWAN-50" liquid reagent to the test liquid in the cuvette.

TEST 4 5) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 6) After the lapse of a 1 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4 7) Press button 4 to save the result together with date and time in the device.

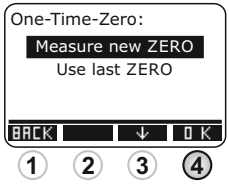
Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Range 150 - 300 mg/l DW-50

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 40 drops "PL-DX DEWAN-50" liquid reagent to the test liquid in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3) 6) After the lapse of a 1 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

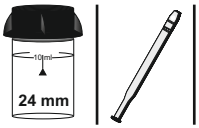
OK 4) 7) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

-> (*) Conversion of the measurement result to mg/l (H_2O_2)
-> More notes please see at ID 66 Hydrogen Peroxide

Name on device: 163-DissOxyg-liq



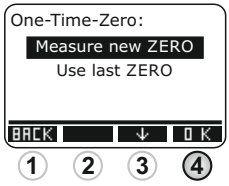
PL DissOx 1 (PL30DO1)
PL DissOx 2 (PL30DO2)
PL DissOx 3 (PL30DO3)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1.) Fill a cleaned cell (24mm) with 10 ml of your sample.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3.) Remove the cell and open the lid.

4.) Empty the cell. Clean careful the cell and the lid.

5.) Fill a 50ml glass bottle with the water you want to test up to the top.

6.) Apply the stopper (exceeding water will leak out).

7.) Remove the stopper.

8.) Add 5 drops “PL DissOx 1" into the glass bottle.

9.) Apply the stopper.

10.) Gently shake glass bottle for 01:00 minute.

TEST 4 11.) Press TEST to start 01:00 minute countdown.

12.) Remove the stopper.

13.) Add 5 drops “PL DissOx 2" into the glass bottle.

Continued...

Continued...

	14.) Apply the stopper.
	15.) Gently shake glass bottle for 01:00 minute.
TEST 4	16.) Press TEST to start 01:00 minute countdown.
	17.) Remove the stopper.
	18.) Add 10 drops “PL DissOx 3" into the glass bottle.
	19.) Apply the stopper.
	20.) Gently shake glass bottle for 01:00 minute.
TEST 4	21.) Press TEST to start 01:00 minute countdown.
	22.) Transfer 10 ml into the same vial, used for ZERO.
TEST 4	23.) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

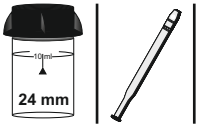
Notes

-> Make sure the 50 ml glass bottle is really filled up to the top and the water will run out when applying the stopper

(70) Erythorbic Acid 0 - 3.5 mg/l

Liquid

Name on device: 70-Erythorbic-Acid



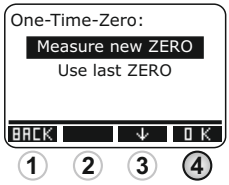
PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Oxygen Scavenger 1" and 25 drops (1mL) "PL Oxygen Scavenger 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

6) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(113) Fluorescein 0 - 500 µg/l ($C_{20}H_{10}Na_2O_5$)

Adapter

Name on device: 113-Fluorescein-Ad

PLSp-ADP-FLSC

PLSp-PIP10ml

PLSp-PIP10ml-tips

Only for calibration!

PLSp-RefFLSC

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Do ONLY use the cuvette which has been used to do calibration for this parameter!
Use 10ml Pipette to always properly dose exactly 10ml!

1) Fill sample water into the same cuvette up to the 10ml level.

2) Insert the cuvette WITHOUT LID into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette.

3) Place Fluorescein-Adapter on top of the open cuvette which already is placed into the PrimeLab measurement chamber.

TEST
4

4) Press TEST.

UNIT
3
OK
4

5) The determined result is immediately displayed. Press button 3 to convert the result to different units (*). Press button 4 to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> (*) Conversion to $C_{20}H_{12}O_5$

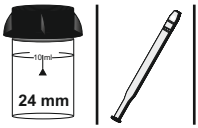
-> **Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.**

-> As this Parameter uses an indirect light from above, the shape of the bottom of the cell is important to the result. Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please change or clean the tip of the pipette after each measurement/calibration.

-> Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.

-> One of the following reasons can lead into receiving an error message: “check adapter”
- Weak or empty batteries (please change)
- Dirty lense (adapter)
- Wrong adapter used for this measurement (there are different adapter for different measurements, all looking the same)
- Adapter might not stay straight on PrimeLab
- Cuvette-hole (PrimeLab) might be dirty (check the two windows)
- Water sample might be too dark / not enough light can pass water sample to reach the sensor

Name on device: 70-Fluoride-liq



PL Fluoride 1 (PL65Fluoride1)
PL Fluoride 2 (PL65Fluoride2)

Measurement procedure:

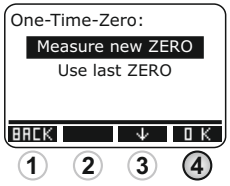
The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Please select either:
A) „Fluoride with chlorine“
B) „Fluoride without chlorine“

A) Measurement procedure for „Fluoride with chlorine“

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 10 drops „PL Fluoride 2" liquid reagent to the test liquid in the cuvette.

5) Replace the lid on the cuvette and swivel this back and forth 5 times.

6) Unscrew the lid.

7) Add precisely 50 drops "PL Fluoride 1" to the sample liquid in the cuvette.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

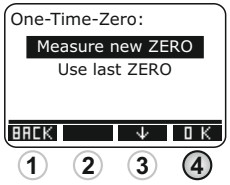
Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for „Fluoride without chlorine“

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add precisely 50 drops "PL Fluoride 1" to the sample liquid in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

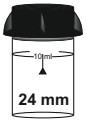
-> Waste and sea water must be distilled before testing.

-> Chlorine contents exceeding 5 mg/l can falsify the result.

-> In order to achieve precise test results water samples with a high fluoride content should be diluted before testing. The most precise values are achieved in the range of 1.2 mg/l. When diluting the water sample the result must, of course, be multiplied by the dilution factor!

(78) Hardness-Calcium 0 - 500 mg/l ($CaCO_3$) Tablet

Name on device: 78-Hard-Cal-tab



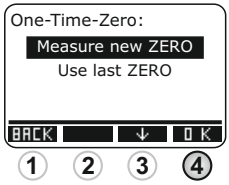
Calcium Hardness N° 1 Photometer (TbsPCH2...)
Calcium Hardness N° 2 Photometer (TbsPCH2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Calcium Hardness N° 1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add a "Calcium Hardness N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4 — 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 9) After the lapse of a 2 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

Continued...

Continued...

OK
4

10) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to °dH, °eH and °fH

-> If your reading is towards the upper limit of the test a dilution is recommnded.

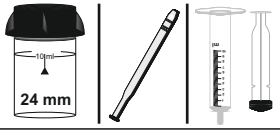
-> If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.

-> Ensure that you are using exactly 10 ml sample water volume.

-> Disturbance values in this measurement value:
Magnesium > 200 mg/l CaCO3
Zinc > 5 mg/l
Iron > 10 mg/l.

(9) Hardness-Calcium HR 50 - 1000 mg/l ($CaCO_3$) Tablet

Name on device: 09-Hard-Cal-HR-tab



Calcium Hardness Photometer (TbsPCH...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

This test method does not offer the OTZ (One Time Zero) function!

1) Fill 10ml **distilled water** into a clean 24mm cuvette.

2) Add one "Calcium Hardness Photometer" tablet to the same cuvette.

3) Crush the tablet with a clean stirrer until it has completely dissolved.

ZERO 4

4) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

5) Wait for the lapse of a 2 minute countdown.

6) Remove the cuvette from the chamber and unscrew the lid.

7) Now add 2ml of your sample water, so that with 12ml the cuvette is completely full.

8) Replace the lid on the cuvette and swirl this back and forth 5 times.

TEST 4

9) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

UNIT 3
OK 4

10) The determined result is immediately displayed. Press button 3 to convert the result to different units (*). Press button 4 to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> (*) Conversion to °dH, °eH and °fH

-> If your reading is towards the upper limit of the test a dilution is recommnded.

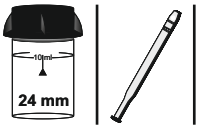
-> Steps 2 and 4 need to be performed quickly. Delays will deteriorate the measurement precision.

-> There are slight deviations in every tablet which may lead to different ZERO values. For this reason, the function *One-Time-Zero* is not included.

-> If your water sample is very alkaline or acidic it should be brought into a pH range between 4 and 10 by adding 1 mol/l acetic acid or respectively 1 mol/l caustic soda.

(166) Hardness-Calcium 0 - 500 mg/l ($CaCO_3$) Liquid

Name on device: 166-Hard-Cal-liq



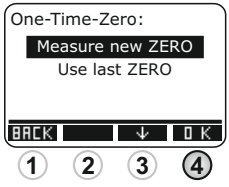
PL Calcium Hardness 1 (POL20CH1)
PL Calcium Hardness 2 (POL20CH2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill a clean cell (24mm) with 10 ml of your sample.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 3)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Close the lid, place the cell into the PrimeLab and press ZERO.

3) Remove the cell and open the lid.

4) Add 10 drops PL Calcium Hardness 1 into vial.

5) Close the lid. Shake cell to mix liquid.

6) Add 10 drops PL Calcium Hardness 2 into vial.

TEST 4 7) Close the lid, place the cell into the PrimeLab and press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> (*) Conversion to °dH, °eH and °fH

-> If your reading is towards the upper limit of the test a dilution is recommnded.

-> If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.

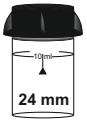
-> Ensure that you are using exactly 10 ml sample water volume.

-> Disturbance values in this measurement value:
Magnesium > 200 mg/l CaCO3
Zinc > 5 mg/l
Iron > 10 mg/l.

(56) Hardness-total (LR) 2 - 50 mg/l ($CaCO_3$)

Tablet

Name on device: 56-Hard-tot-LT-tab



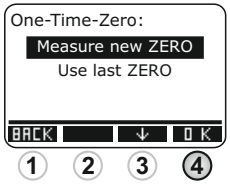
Total Hardness Photometer (TbsPTH...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Total Hardness Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 7) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4 — 8) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> (*) Conversion to °dH, °eH, °fH and Ca

-> If your sample water is very alkaline or acidic it should be brought to a pH value range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.

(57) Hardness-total (HR) 20 - 500 mg/l ($CaCO_3$) **Tablet**

Name on device: 57-Hard-tot-HR-tab

Total Hardness Photometer (TbsPTH...)

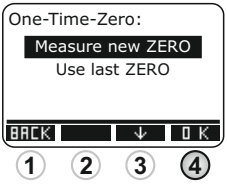
Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill **9ml distilled water** into a clean 24mm cuvette.

2) Add precisely 1ml sample water to the same cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 3)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Add a "Total Hardness Photometer" tablet to the water sample in the cuvette.

6) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4) 7) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3) 8) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4) 9) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
„Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

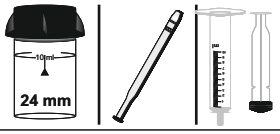
Note(s)

-> (*) Conversion to °dH, °eH, °fH and Ca

-> If your sample water is very alkaline or acidic it should be brought within the pH range between 4 and 10 by adding 1 mol/l acetic acid or resp. 1 mol/l caustic soda.

(148) Hardness-total (HR) 0 - 500 mg/l ($CaCO_3$) Liquid

Name on device: 148-Hard-tot-liq



PL Total Hardness 1
PL Total Hardness 2

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill a cleaned cell (24mm) with 10 ml of your sample.

(4)	2) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.
	3) Remove the cell and open the lid.
	4) Add 10 drops POL20TH1 to your sample. Shake the cell to mix the liquid.
	5) Close the lid. Shake the cell gently to mix the liquid.
	6) Add 4 drops POL10TH2 to your sample. Shake the cell to mix the liquid.
TEST (4)	7) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press TEST.
	8) Time left: 02:00 minutes.

Continued...

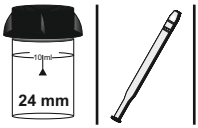
Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
„Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to °dH, °eH, °fH and Ca

-> Sulfide (high levels), Sulfite, Thiosulfate and Hydrosulfite interfere with the measurement



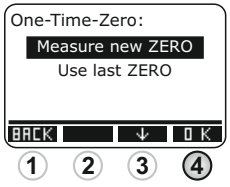
PL Hydrazine 1 (PL65Hydraz1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 10 drops "PL Hydrazine 1" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> mg/l (mg/l) deviated by 1000 results in µg/l (µg/l).
Example: 0.01 mg/l (mg/l) = 10 µg/l (µg/l).

-> The temperature of the water sample should be between 17°C and 25°C.

Name on device: 160-Hydrocarbons


PLSp-ADP-TRB


PLSp-PIP10ml


PLSp-PIP10ml-tips

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill a cleaned cell (24mm) with 2.5ml of your sample and 7.5ml of deionised water

2) Close the lid. Shake the cell gently to mix the liquid.

3) Open the lid.

4.) Place the cell into the PrimeLab (use caution to the arrow on the cell). Do NOT close the lid.

5.) Place TURBIDITY-ADAPTER on top of the open cuvette.

TEST
4

6.) Press TEST.

Interpretation:

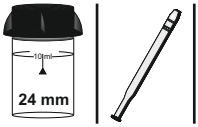
0 = PASSED
OR = FAILED

Note(s)

-> **Interferences:**
- Hazy test sample
- The presence of excessive detergents

(24) Hydrogen Peroxide (LR) 0 - 3.8 mg/l (H_2O_2) **Tablet**

Name on device: 24-Hydr-Per-LR-tab



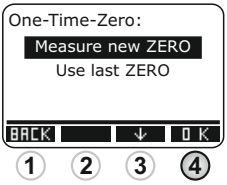
Hyd. Peroxide LR Photometer (TbsPHP...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "Hyd. Peroxide LR Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> If the measuring water contains further reducing chemicals (e.g. chlorine, active oxygen, bromine etc.) this will also be detected and is part of the result.

-> When preparing the measurement procedure it is important to avoid any Hydrogen Peroxide escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

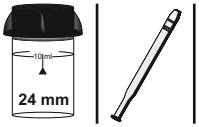
-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then thoroughly rinsed with distilled water.

-> The reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the reagent is added.

-> Water values outside the above measurement range defined for this parameter and this measurement procedure / this reagent can lead to incorrect measurements. For the measurement of higher hyd. peroxide values please select the respective matching procedure.

(66) Hydrogen Peroxide (LR) 0 - 3.8 mg/l (H_2O_2) Liquid

Name on device: 66-Hydr-Per-LR-liq



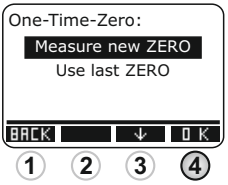
PL Hydrogen Peroxide LR 1 (PL30HydLRP1)
PL Hydrogen Peroxide LR 2 (PL30HydLRP2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Then add 3 drops of "PL Hydrogen Peroxide LR 1“ and 3 drops “PL Hydrogen Peroxide LR 2“ to the remaining test liquid in the cuvette.

5) Fill sample water into the same cuvette up to the 10ml level.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

-> If the measuring water contains further reducing chemicals (e.g. chlorine, active oxygen, bromine etc.) this will also be detected and is part of the result.

-> When preparing the measurement procedure it is important to avoid any Hydrogen Peroxide escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

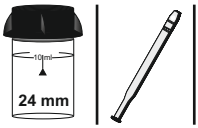
-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then thoroughly rinse with distilled water.

-> The reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the reagent is added.

-> Water values outside the above measurement range defined for this parameter and this measurement procedure / this reagent can lead to incorrect measurements. For the measurement of higher hyd. peroxide values please select the respective matching procedure.

(162) Hydrogen Peroxide (HR) 0 - 200 mg/l (H_2O_2) Tablet

Name on device: 24-Hydr-Per-LR-tab



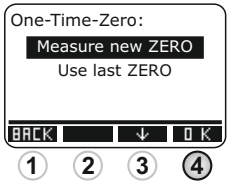
Acidifying PT Photometer (TbsHAPP...)
Hyd. Peroxide HR Photometer (TbsPHPHR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1.) Fill a cleaned cell (24mm) with 10 ml of your sample.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3.) Remove the cell and open the lid.

4.) Add 1 “Acidifying PT Photom.“ tablet to your sample.

5.) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

6.) Add 1 “Hyd. Perox. HR Photom.“ tablet to your sample.

7.) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

8.) Close the lid. Shake the cell gently to mix the liquid.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

TEST 4 9.) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Note(s)

-> If the measuring water contains further reducing chemicals (e.g. chlorine, active oxygen, bromine etc.) this will also be detected and is part of the result.

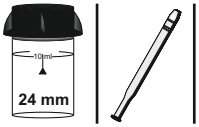
-> When preparing the measurement procedure it is important to avoid any Hydrogen Peroxide escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this could greatly reduce the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 g/l sodium hypochlorite solution for one hour and then thoroughly rinsed with distilled water.

-> If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the reagent is added.

(25) Hydrogen Peroxide (HR) 0 - 200 mg/l (H_2O_2) Liquid

Name on device: 25-Hydr-Per-HR-liq



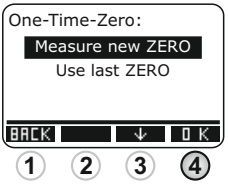
PL Hydrogen Peroxide HR 1 (PL65HydHRP1)
PL Hydrogen Peroxide HR 2 (PL65HydHRP2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 3 drops "PL Hydrogen Peroxide HR 1" and 3 drops "PL Hydrogen Peroxide HR 2" liquid reagent to the water sample in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

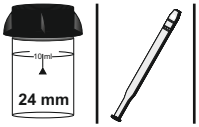
OK 4

6) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(26) Hydroquinone 0 - 2.5 mg/l ($C_6H_6O_2$) Liquid

Name on device: 26-Hydroquinon-liq



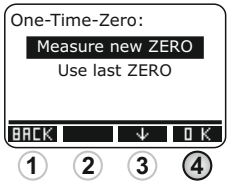
PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

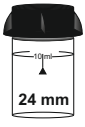
4) Add 6 drops "PL Oxygen Scavenger 1" and 25 drops (1mL) "PL Oxygen Scavenger 2" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Name on device: 27-Iodine-tab



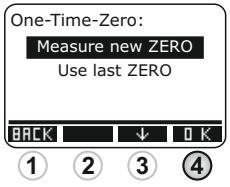
DPD N° 1 Photometer (TbsPD1...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved. Fill the cuvette with the sample water up to the 10ml level.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 — 7) After the lapse of a 10 second countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

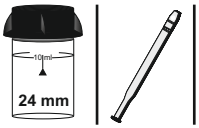
Continued...

Continued...

Note(s)

-> All oxidizing substances in the water sample, such as chlorine, active oxygen, bromine.. will also be detected and contained in the result.

Name on device: 67-Iodine-liq



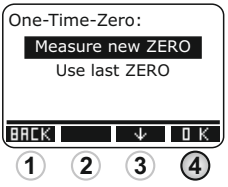
PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Then add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" to the remaining test liquid in the cuvette.

5) Fill sample water into the same cuvette up to the 10ml level.

TEST 4) 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

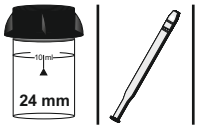
Continued...

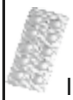
Note(s)

-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

-> All oxidizing substances in the water sample, such as chlorine, active oxygen, bromine.. will also be detected and contained in the result.

Name on device: 28-Iron-LR-tab





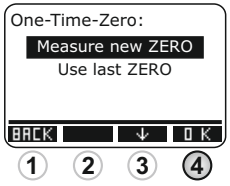
Iron LR Photometer (TbsPILR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add an "Iron LR Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 — 7) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

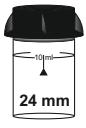
Continued...

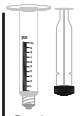
Note(s)

-> If the sample needs to be filtered (dissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.

-> If non soluble iron is expected to be in the water-sample, please filter (0.45 micron; special filter accessory needed) before running the test.

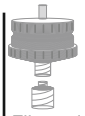
Name on device: 29-Iron-MR-pow



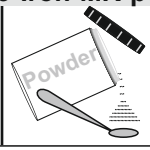


Syringe (*)

Filter paper (*)



Filter adapter (*)



PL Iron MR 1 (PLpow20IronMR1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Select either
A) "dissolved iron" (*) or
B) "total iron"

A) Measurement procedure for "dissolved iron"

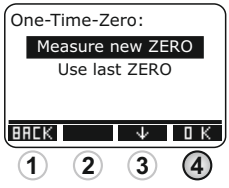
1) Unscrew the two halves of a clean and free of residues filter adapter*. Insert 25mm filter paper* (0.45 micron).

2) Close the two halves of the filter adapter with the filter paper inside. Make sure the seal ring is seated correctly.

3) Fill the 20ml filter syringe* (clean and free of residues) with 14ml of sample water.

4) Screw the filter adapter prepared in steps (1) and (2) onto the syringe point and empty it to the 10ml level.

5) Push the remaining 10ml in the syringe through the filter adapter into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 6)
-> Use last ZERO = continue with step 8)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

6) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

7) Remove the cuvette from the chamber and unscrew the lid.

Continued...

Continued...

8) Add 1 x 0.05mL (scoop) "PL Iron MR 1" powder to the sample water in the cuvette.

TEST 4

9) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

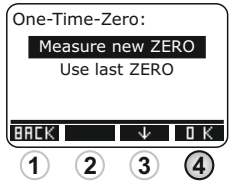
OK 4

10) After the lapse of a 3 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for "total iron"

1) Fill 10ml unfiltered sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 1 x 0.05mL (scoop) "PL Iron MR 1" powder to the sample water in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

6) After the lapse of a 3 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Special accessories required / not included as standard equipment!

-> If the sample needs to be filtered (dissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.

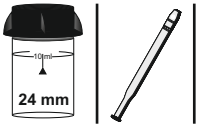
-> Very alkaline and acidic water samples must be adjusted to a pH value between 3 and 5 before commencing the measurement.

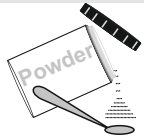
-> The measurement is not influenced by undissolved powder.

-> If the water samples contains visible rust the reaction time must be 5 minutes. In this case wait for 2 minutes before initiating the step "TEST“

(127) Iron (MR) Ferrous 0 - 10 mg/l (Fe^{2+}) **Powder**

Name on device: 127-Iron-MR-Fe-pow





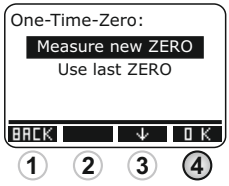
PL Iron MR 2 (PLpow20IronMR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 1 x 0.05 mL (scoops) "PL Iron MR 2" powder to the sample water in the beaker.

TEST 4 5) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

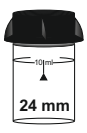
OK 4 6) After the lapse of a 3 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

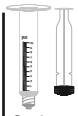
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Test needs to be carried out immediately after taking the sample.

Name on device: 30-Iron-HR-liq

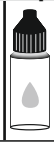




(*) Syringe

(*) Filter paper

(*) Filter adapter



PL Iron HR 1 (PL65IronHR1)
PL Iron HR 2 (PL65IronHR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Select either
A) "dissolved iron" (*) or
B) "total iron"

A) Measurement procedure for "dissolved iron"

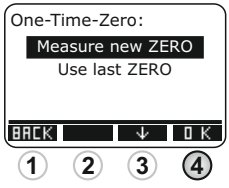
1) Unscrew the two halves of a clean and free of residues filter adapter*. Insert 25mm filter paper* (0.45 micron).

2) Close the two halves of the filter adapter with the filter paper inside. Make sure the seal ring is seated correctly.

3) Fill the 20ml filter syringe* (clean and free of residues) with 14ml of sample water.

4) Screw the filter adapter prepared in steps (1) and (2) onto the syringe point and empty it to the 10ml level.

5) Push the remaining 10ml in the syringe through the filter adapter into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 6)
-> Use last ZERO = continue with step 8)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

6) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

7) Remove the cuvette from the chamber and unscrew the lid.

Continued...

Continued...

8) Add 10 drops "PL Iron HR 1" liquid reagent to the water sample in the cuvette.

TEST 4

9) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

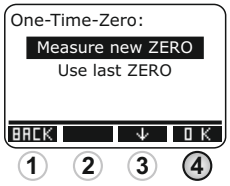
OK 4

10) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for "total iron"

1) Fill 10ml unfiltered sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 2 drops "PL Iron HR 2" liquid reagent to the test liquid in the cuvette.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

6) Wait for the lapse of a 2 minute countdown.

7) Remove the cuvette from the chamber and unscrew the lid.

Continued...

Continued...

8) Add 15 drops "PL Iron HR 1" liquid reagent to the test liquid in the cuvette.

9) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

10) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Special accessories required / not included as standard equipment!

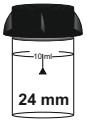
-> If the sample needs to be filtered (dissolved iron) it must be ensured that after filtration there are no more undissolved iron parts in the sample. If you are unsure, please repeat the filtration.

-> High nitrite values in the sample water can influence the measurement. If the sample water turns to red or pink after adding "PL Iron HR 1" drops a new sample needs to be taken with 0.1 g "TN1" powder added to it. After adding the powder wait for 2 minutes and then start the measurement procedure as described on the front page.

(132) Iron total (LR) 0.00 - 3.00 mg/l (Fe)

Powder

Name on device: 132-Iron-tot-LR-pp



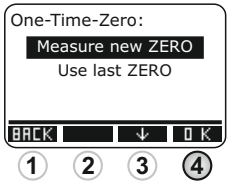
FerroVer® Iron (PP) (ppFerVer1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add the content of a "FerroVer® Iron" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

TEST 4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

6) After the lapse of a 3 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> If your sample contains rust, extend countdown to 05:00 minutes manually by waiting 02:00 minutes before pressing TEST.

-> Dilute samples with high Iron concentration as high iron samples inhibit colour development.

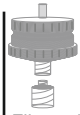
-> Iron Oxide requires pre-treatment of the sample (digestion and pH adjustment to 3-5 pH).

Name on device: 149-Iron-Oil-liq


Adapter


(*) Syringe

(*) Filter paper


(*) Filter adapter


beaker


TM-reagent-S (TM149reagS)
TM-reagent-E (TM149reagE)
TM-reagent-I (TM149reagI)
TM-reagent-C (TM149reagC)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Open the lid of a clean (new) beaker.

2) Add 3ml of TM-reagent-E into the beaker.

3) Add 1ml of TM-reagent-C into the beaker.

4) Add 5ml of TM-reagent-I into the beaker.

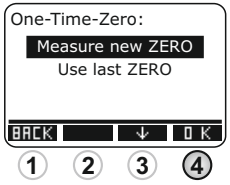
5) Close the lid of the beaker and shake/swirl beaker until reagents are mixed homogenously.

6) Place 3ml-vial-adapter into the PrimeLab.

7) Fill a clean luer-lock syringe with exactly 3ml of the water-part of your sample.

8) Empty syringe into a clean/new 3ml vial.

9) Place 3ml vial into the adapter and apply light shield.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 10)
-> Use last ZERO = continue with step 11)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

10) Press ZERO.

11) Remove light protection shield and 3ml vial.

12) Open the lid of a clean (new) beaker

Continued...

13) Add precisely 0.3ml of Oil-sample to the beaker.

14) Add 3ml of TM-reagent-S into the beaker.

15) Add 3ml of TM-reagent-E into the beaker.

16) Add 1ml of TM-reagent-C into the beaker.

17) Add 5ml of TM-reagent-I into the beaker.

18) Tightly close the lid and shake beaker vigorously for 2 minutes.

TEST 4 19) Press TEST to start 02:00 minutes countdown.

TEST 4 20) Let beaker rest for 10:00 minutes. Press TEST to start 10:00 minutes countdown.

21) Shake beaker vigorously for 30 seconds.

TEST 4 22) Let beaker rest for 00:30 minutes. Press TEST to start 00:30 minutes countdown.

23) Wait for the water to separate from Oil.

24) Fill a clean luer-lock syringe with exactly 3ml of the water-part of your sample.

25) Connect syringe to a one-way-0.45µ filter and discharge 3ml into a clean 3ml vial.

26) Place 3ml vial into the adapter and apply light shield.

TEST 4 27) Press TEST.

OK 4 28) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Use cuation to use exact amounts of sample as well as of reagents as indicated in the test procedure.

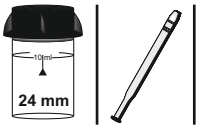
-> Always use new and clean vials and filter equipment. Do NOT re-use.

-> Keep 3ml-vials clean and free of fingerprints and dirt to avoid mis-readings.

(88) Isothiazolinone 0 - 10 mg/l (C_3H_3NOS)

Liquid

Name on device: 88-Isothiazol-liq



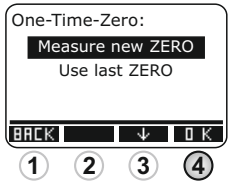
PL Isothiazolinone 1 (PL30Isoz1)
PL Isothiazolinone 2 (PL65Isoz2)
PL Isothiazolinone 3 (PL65Isoz3)
PL Isothiazolinone 4 (PL65Isoz4)
PL Isothiazolinone 5 (PL30Isoz5)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 4 drops "PL Isothiazolinone 1" to your sample.

5) Close the lid. Shake the cell gently to mix the liquid.

6) Add 15 drops "PL Isothiazolinone 2" to your sample.

7) Close the lid. Shake the cell gently to mix the liquid.

TEST 4) 8)Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

9) Add 17 drops "PL Isothiazolinone 3" to your sample.

10) Close the lid. Shake the cell gently to mix the liquid.

TEST 4) 11) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

12) Add 15 drops "PL Isothiazolinone 4" to your sample.

13) Close the lid. Shake the cell gently to mix the liquid.

Continued...

Continued...

TEST 4	14) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.
	15) Add 5 drops "PL Isothiazolinone 5" to your sample.
	16) Close the lid. Shake the cell gently to mix the liquid.
TEST 4	17) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Name on device: 147-Legionella-liq

Legipid-Kit (LGP-10/LGP-40/LGP-100)
2 x cuvettes for magnetic holder (LG-MCHB)
Magnetic holder (LG-MP2)
Plastic adapter for 1ml vials (PLSp-LegiAD-1)
Filter-kit (manual/professional) (LP-Fil-man/LP-Fil-Prof)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Please select:
A) Step-by-Step
B) Countdown + TEST
C) Only ZERO + TEST

A) Measurement procedure for A) Step-by-Step

1) Store all needed reagents at room temperature for 30 minutes.

2) Filter 1 liter of sample water through pre-filter and main-filter.
You can use 1-time-filter-kit or professional filter-kit.

3) Put used main filter in a clean flasc together with 10ml of "L0 Diluent".
Filter paper can be sizzled in small pieces.

4) Eluate filtered particles by shaking for 2 minutes.

5) Press OK to start 02:00 minutes countdown.

6) Place cuvettes LG-MHCB1 (left) and LG-MHCB2 (right) into magnetic holder (LG-MP2).

7) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.

8) Shake "L1 reagent" until suspension is completely homogeneous.

9) Add exactly 1ml of "L1 reagent" to each cuvette LG-MHCB1 and LG-MHCB2. Clean pipette needed in case you were not supplied with single doses.

10) Add sample with released filtration from flasc to LG-MHCB2 (right) up to line 3 (9ml). Use caution not to poor filter paperto LG-MHCB2.

11) Add "L0 Diluent" to cuvette LG-MHCB1 (left) up to line 3 (9ml).

12) Put lids on both cuvettes LG-MHCB1 and LG-MHCB2.

Continued...

Continued...

	13) Shake both cuvettes (LG-MHCB1 and LG-MHCB2), still placed in the magnetic holder and with magnet pulled away from the cuvettes, gently by inverting 3 times every 3 minutes for 15 minutes.
OK 4	14) Press OK to start 15:00 minutes countdown.
	15) Remove and discard lids from LG-MHCB1 and LG-MHCB2. Lids shall NOT be used for further steps!
	16) Push magnet towards/against cuvettes LG-MHCB1 and LG-MHCB2.
OK 4	17) Press OK to start 05:00 minutes countdown.
	18) Empty LG-MHCB1 and LG-MHCB2 (still in magnetic holder LG-MH) to the BACK whilst keeping magnet in place by pushing towards cuvettes with your thumb.
	19) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.
	20) Add "L2 washing buffer" to both cuvettes LG-MHCB1 and LG-MHCB2 up to line 2 (4.5ml).
	21) Swirl complete unit (without lids!) for 10 seconds until particles are suspended.
	22) Push magnet against cuvettes LG-MHCB1 and LG-MHCB2.
OK 4	23) Press OK to start 03:00 minutes countdown.
	24) Empty LG-MHCB1 and LG-MHCB2 (still in magnetic holder LG-MH) to the BACK whilst keeping magnet in place by pushing towards cuvettes with your thumb.
	25) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.
	26) Add exactly 1ml of "L3 Enzyme 1" to each cuvette LG-MHCB1 and LG-MHCB2. Clean pipette needed in case you were not supplied with single doses.
	27) Shake both cuvettes (LG-MHCB1 and LG-MHCB2), still placed in the magnetic holder and with magnet pulled away from the cuvettes, gently every 2 minutes for 10 minutes.
OK 4	28) Press OK to start 10:00 minutes countdown.

Continued...

Continued...

	29) Push magnet towards/against cuvettes LG-MHCB1 and LG-MHCB2.
OK 4	30) Press OK to start 03:00 minutes countdown.
	31) Empty LG-MHCB1 and LG-MHCB2 (still in magnetic holder LG-MH) to the BACK whilst keeping magnet in place by pushing towards cuvettes with your thumb.
	32) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.
	32) Add "L2 washing buffer" to both cuvettes LG-MHCB1 and LG-MHCB2 up to line 2 (4.5ml).
	34) Swirl complete unit (without lids!) for 10 seconds until particles are suspended.
	35) Push magnet towards/against cuvettes LG-MHCB1 and LG-MHCB2.
OK 4	36) Press OK to start 03:00 minutes countdown.
	37) Empty LG-MHCB1 and LG-MHCB2 (still in magnetic holder LG-MH) to the BACK whilst keeping magnet in place by pushing towards cuvettes with your thumb.
	38) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.
	39) Add "L2 washing buffer" to both cuvettes LG-MHCB1 and LG-MHCB2 up to line 2 (4.5ml).
	40) Swirl complete unit (without lids!) for 10 seconds until particles are suspended.
	41) Push magnet towards/against cuvettes LG-MHCB1 and LG-MHCB2.
OK 4	42) Press OK to start 03:00 minutes countdown.
	43) Empty LG-MHCB1 and LG-MHCB2 (still in magnetic holder LG-MH) to the BACK whilst keeping magnet in place by pushing towards cuvettes with your thumb.
	44) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.
	45) Add "L2 washing buffer" to both cuvettes LG-MHCB1 and LG-MHCB2 up to line 2 (4.5ml).

Continued...

Continued...

46) Swirl complete unit (without lids!) for 10 seconds until particles are suspended.

47) Push magnet towards/against cuvettes LG-MHCB1 and LG-MHCB2.

48) Press OK to start 03:00 minutes countdown.

49) Empty LG-MHCB1 and LG-MHCB2 (still in magnetic holder LG-MH) to the BACK whilst keeping magnet in place by pushing towards cuvettes with your thumb.

50) Brake seal of "L4 Enzyme 2", remove plastic protector, push plunger all the way down and shake vigorously for 10 seconds.

51) Pull magnet towards you and away from cuvettes LG-MHCB1 and LG-MHCB2.

52) Add exactly 1ml of "L4 Enzyme 2" to each cuvette LG-MHCB1 and LG-MHCB2. Clean pipette needed in case you were not supplied with single doses.

53) Swirl complete unit (without lids!) for 10 seconds until particles are suspended.

54) Shake both cuvettes (LG-MHCB1 and LG-MHCB2), still placed in the magnetic holder and with magnet pulled away from the cuvettes, gently for 2 minutes.

OK
4

55) Press OK to start 02:00 minutes countdown.

56) Add 3 drops or 100 µl "L5 Stopping Reagent" to both cuvettes LG-MHCB1 and LG-MHCB2 and swirl for 5 seconds WITHOUT lids.

57) Push magnet towards/against cuvettes LG-MHCB1 and LG-MHCB2.

OK
4

58) Press OK to start 05:00 minutes countdown.

59) Transfer 1ml from LG-MHCB1 (left) to a new, clean small vial "LG-CB". USE A CLEAN PIPETTE.

60) Place the black plastic "Legionella adapter" (PLSp-LegiAD-1) properly into the PrimeLab measuring chamber. Make sure it fits properly.

ZERO
4

61) Place filled 1ml LG-CB vial into the adapter. Place the light shield (PLSp-LS-1) on top and press ZERO.

62) Remove light shield and vial (LG-CB) but NOT the adapter from the PrimeLab.

Continued...

Continued...

63) Transfer 1ml from LG-MHCB2 (right) to a new, clean small vial „LG-CB". USE A CLEAN PIPETTE.

TEST 4 — 64) Place filled 1ml LG-CB vial into the adapter. Place the light shield (PLSp-LS-1) on top and press TEST.

OK 4 — 65) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for B) Countdown + TEST

1) Eluate filtered particles by shaking for 2 minutes.

OK 4 — 2) Press OK to start 02:00 minutes countdown.

OK 4 — 3) Press OK to start 15:00 minutes countdown.

OK 4 — 4) Press OK to start 05:00 minutes countdown.

OK 4 — 5) Press OK to start 03:00 minutes countdown.

OK 4 — 6) Press OK to start 10:00 minutes countdown.

OK 4 — 7) Press OK to start 03:00 minutes countdown.

OK 4 — 8) Press OK to start 03:00 minutes countdown.

OK 4 — 9) Press OK to start 03:00 minutes countdown.

OK 4 — 10) Press OK to start 03:00 minutes countdown.

OK 4 — 11) Press OK to start 02:00 minutes countdown.

OK 4 — 12) Press OK to start 05:00 minutes countdown.

ZERO 4 — 13) Place filled 1ml LG-CB vial into the adapter. Place the light shield (PLSp-LS-1) on top and press ZERO.

TEST 4 — 14) Place filled 1ml LG-CB vial into the adapter. Place the light shield (PLSp-LS-1) on top and press TEST.

Continued...

Continued...

OK ④ 15) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

C) Measurement procedure for C) ZERO + TEST

ZERO ④ 1) Place filled 1ml LG-CB vial into the adapter. Place the light shield (PLSp-LS-1) on top and press ZERO.

TEST ④ 2) Place filled 1ml LG-CB vial into the adapter. Place the light shield (PLSp-LS-1) on top and press TEST.

OK ④ 3) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

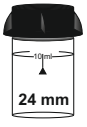
Continued...

Continued...

Note(s)

->	Result is displayed as “cfu/l” which is related to filtration of 1 liter of your sample.
->	If less than 1 liter is filtered, e.g. only 500ml, results needs to be read as “cfu/..” (e.g. cfu/500ml).
->	Once reagents are received, kit MUST be stored between +2°C and +8°C, preferrably at +4°C.
->	Expiry date of the reagents is 3 months from production date on.
->	Avoid contact with eyes. Wear protective gloves.
->	Certain isolates cannot be detected below 106 cfu.
->	Disposal of product according to local regulations. Products are stable and unlikely to react in a hazardous manner under normal conditions of use.
->	Do NOT re-use small 1ml vials (LG-CB).
->	Leave at least 12 cm space between multiple LG-MH (magnetic holders).
->	Reagents are supplied in excess. Do NOT re-use any leftover amounts of reagents.
->	When emptying cuvettes LG-MHCB, always do so to the BACK and never in front (magnet)!
->	You need to properly follow test procedure to avoid mis-readings.
->	Once lids of LG-MHCB are removed and to discarded, do NOT use them for any of the following test steps.
->	If you do more than 1 test at the same time, only one blanc/ZERO vial is needed.
->	We propose to use LG-MP4 automatic agitator plate to place up to 20 LG-MHCB cuvettes in case you do multiple tests at one time.
->	Measurement has to be performed immediately after the last step (countdown), as the color reaction might continue.
->	Leaving reagents at room temperature for 30 minutes before starting the test is essential.
->	When using larger units of reagents, immediately restore in fridge after use.
->	Depending on the water quality of the test water, the pre-filter have to be changed during the filter process, if it is too dirty.

Name on device: 93-Magnesium-tab



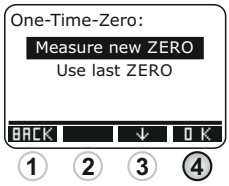
Magnesium Photometer (TbsPMag...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 9 ml distilled water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 3)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Add precisely 1ml sample water to the same cuvette.

ZERO 4

3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Add a "Magnesium" tablet to the water sample in the cuvette.

6) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4

7) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

8) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units(*)

OK 4

9) Press button 4 to save the result together with date and time in the device.

Continued...

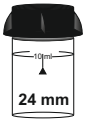
Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

-> (*) Conversion of the measurement result to $CaCO_3$ (Magnesium Hardness)

Name on device: 31-Manganes-LR-tab



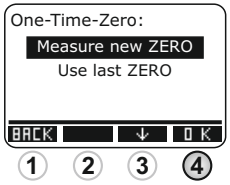
Manganese LR N°1 (TbsHMGNS1LR...)
Manganese LR N°2 (TbsPMGNS2LR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Manganese LR N°1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add a "Manganese LR N°2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3) 9) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

Continued...

Continued...

OK
4

10) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

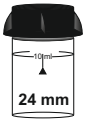
Note(s)

-> (*) Conversion of the measurement result to MnO_4 and $KMnO_4$

(161) Manganese VLR 0 - 0.030 mg/l (Mn)

Tablet

Name on device: 161-Manganes-VLR-tab



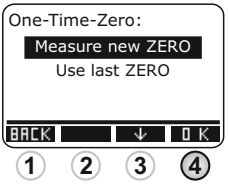
Manganese VLR N°1 (TbsHMGNS1VLR...)
Manganese VLR N°2 (TbsPMGNS2VLR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3) Remove the cell and open the lid.

4) Add 1 Manganese VLR N°1 tablet to your sample.

5) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

6) Add 1 Manganese VLR N°2 tablet to your sample.

7) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

8) Close the lid. Shake the cell gently to mix the liquid.

TEST 4 9) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

10) After the lapse of a 20:00 minutes countdown the determined result is displayed.

Continued...

Continued...

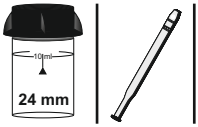
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Color formation is extremely temperature sensitive. A temperature of 20° +/- 1°C gives the optimum test results.
-> For optimum test results, the sample needs a standing period of 20 +/- 1 minute. Further color change and color development after this time should be ignored.

(69) Methylethylketoxime 0 - 4.1 mg/l (C_4H_9N-O) Liquid

Name on device: 69-Methylethyl-liq



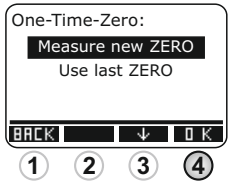
PL Oxygen Scavenger 1 (PL65OxyScav1)
PL Oxygen Scavenger 2 (PL65OxyScav2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL Oxygen Scavenger 1" and 25 drops (1mL) "PL Oxygen Scavenger 2" liquid reagent to the water sample in the cuvette.

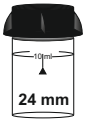
TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(96) Molybdat (LR) 0 - 15 mg/l (MoO_4) Tablet

Name on device: 96-Molybd-LR-tab



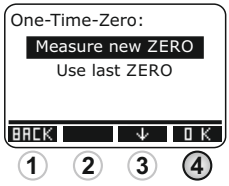
Molybdate LR N° 1 (TbsHMDL1...)
Molybdate LR N° 2 (TbsPMDL2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Molybdate LR N° 1" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved.

6) Add one „Molybdate LR N° 2" tablet to the same cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

9) After the lapse of a 2 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units(*)

OK 4) 10) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

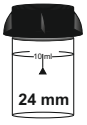
Notes

-> (*) Conversion of the measurement result to Mo and Na_2MoO_4

-> Filter sample if neccessary to test a clear sample.

(32) Molybdate 1 - 100 mg/l (MoO_4) Tablet

Name on device: 32-Molybdat-HR-tab



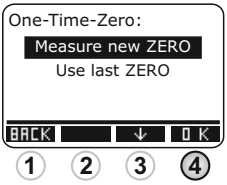
Molybdate HR N°1 (TbsHMDH1...)
Molybdate HR N°2 (TbsPMDH2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Molybdate HR N°1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add a "Molybdate HR N°2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4 — 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 9) The test result is immediately displayed. Press button 3 to convert the result to different units (*).

OK 4 — 10) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

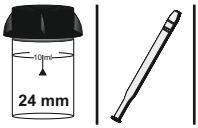
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion of the measurement result to Mo and Na_2MoO_4

(33) Molybdate (HR) 5 - 200 mg/l (MoO_4) Liquid

Name on device: 33-Molybdat-HR-liq



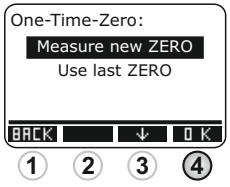
PL Molybdate 1 (PL65Moly1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO
4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 10 drops "PL Molybdate 1" liquid reagent to the water sample in the cuvette.

TEST
4

5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT
3

OK
4

6) The test result is immediately displayed. Press button 3 to convert the result to different units (*).
Press button 4 to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

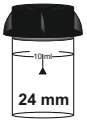
Note(s)

-> (*) Conversion of the measurement result to Mo and Na_2MoO_4

-> Extend the listed measurement range from 5 - 200 mg/l, to 10 - 400 mg/l by diluting your water sample as follows:
add 5 ml of sample water plus 5 ml of Molybdate free water and continue with the test procedure. To account for the dilution, the test result displayed on the screen needs to be multiplied by 2.

(134) Molybdate HR 0 - 40 mg/l (MoO_4) Powder

Name on device: 134-Molybd-HR-pp



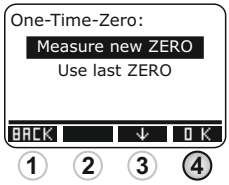
MolyVer® 1 (PP) (ppMolyVer1)
MolyVer® 2 (PP) (ppMolyVer2)
MolyVer® 3 (PP) (ppMolyVer3)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add the content of a "MolyVer® 1" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

5) Add the content of a "MolyVer® 2" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

6) Add the content of a "MolyVer® 3" powder pillow to the sample and swirl it for approximately 20 seconds, until the powder has dissolved.

TEST 4) 7) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 8) After the lapse of a 5 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

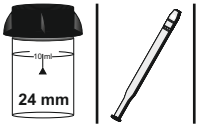
Note(s)

-> The following substances interfere with the measurement: Aluminium (> 50 mg/l), Chromium (> 1000 mg/l), Iron (> 50 mg/l), Nickel (> 50 mg/l), Nitrite (>2000 as NO2; can be eliminated by adding one Sulfamic Acid powder pillow to the sample).

-> In case sample contains >10 mg/l Copper, increases positive reading if test is not performed quickly enough before pressing TEST.

-> Highly buffered samples or samples with extreme pH levels may require pre-treatment.

Name on device: 90-Nickel-HR-tab



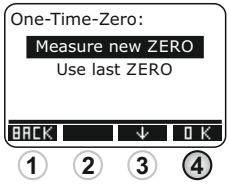
Nickel HR N° 1 Photometer (TbsHNickHR1...)
Nickel HR N° 2 Photometer (TbsPNickHR2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add one "Nickel HR N° 1" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved.

6) Add one "Nickel HR N° 2" tablet to the same cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

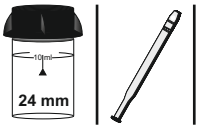
-> Ferrous Iron will interfere with this test and can influence the readings.

-> High EDTA levels (> 25 mg/l) will interfere with this test and can influence the reading (low reading).

-> High cobalt levels (> 0.5 mg/l) will interfere with this test and can influence the reading (high reading).

-> Polyphosphates in the sample does not influence the reading.

Name on device: 100-Nickel-HR-liq



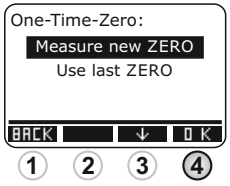
PL Nickel HR 1 (PL65NickHR1)
PL Nickel HR 2 (PL30NickHR2)
PL Nickel HR 3 (PL30NickHR3)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 0,5 ml "PL Nickel HR 1" liquid reagent to the test liquid in the cuvette.

TEST 4) 5) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 1 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

6) Unscrew the lid.

7) Add 5 drops "PL Nickel HR 2" liquid reagent to the test liquid in the cuvette.

8) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

Continued...

Continued...

9) Unscrew the lid.

10) Add 5 drops "PL Nickel HR 3" liquid reagent to the test liquid in the cuvette.

TEST 4

11) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

12) After the lapse of a 15 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

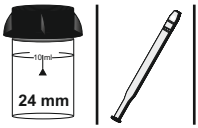
Notes

-> Ferrous Iron will interfere with this test and can influence the readings.

-> High EDTA levels (> 25 mg/l) will interfere with this test and can influence the reading (low reading).

-> High cobalt levels (> 0.5 mg/l) will interfere with this test and can influence the reading (high reading).

-> Polyphosphates in the sample does not influence the reading.



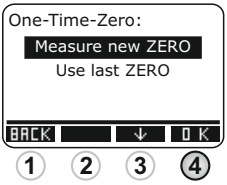
PL Nitrate 1 (PLpow20Nitra1)
PL Nitrate 2 (PL65Nitra2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 1 x 0.05mL (scoop) "PL Nitrate 1" powder to the sample water in the cuvette.

5) Replace the lid on the cuvette and swivel this back and forth 15 sec.

6) Add 10 drops "PL Nitrate 2" liquid reagent to the test liquid in the cuvette.

TEST 4) 7) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3) 8) After the lapse of a 15 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4) 9) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion of the measurement result to NO_3.

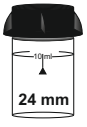
-> Make sure that the sample contains no air bubbles in the measurement. If this is the case, remove the air bubbles by tapping it with the cuvette.

-> Extend the listed measurement range to 0 - 110 mg/l (N) by taking 1 ml of sample water plus 9 ml of distilled water. The test result displayed on the screen needs to be multiplied by 10.

-> Best results are achieved between 0 – 6 mg/l (N) / 0 – 25 mg/l (NO_3). If your water sample is likely to contain more Nitrate, dilute the sample to bring it into the above mentioned measurement range. You can do so, by (e.g.) diluting 5 ml sample water plus 5 ml deionized water, measure as usual, multiply result x 2.

(35) Nitrite (LR) 0 - 0.5 mg/l (N) Tablet

Name on device: 35-Nitrite-LR-tab



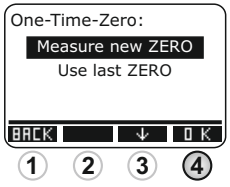
Nitrite LR Photometer (TbsPD4...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Nitrite LR Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4

6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

7) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

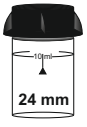
Continued...

Note(s)

-> (*) Conversion of the measurement result to $NaNO_2$, NO_2.

(36) Nitrite (HR) 5 - 200 mg/l ($NaNO_2$) **Powder**

Name on device: 36-Nitrite-HR-pow



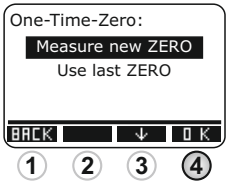
PL Nitrite HR 1 (PLpow40Nitra1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 1 x 0.5mL (scoop) "PL Nitrite HR 1" powder to the sample water in the cuvette.

TEST 4 — 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 6) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4 — 7) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

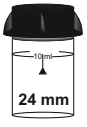
-> (*) Conversion of the measurement result to N, No_2.

-> Range 10 - 400 mg/l
5 ml sample water plus 5 ml Nitrite free water
The result displayed on the screen needs to be multiplied by 2

-> Range 50 - 2000 mg/l
1 ml sample water plus 9 ml Nitrite free water
The result displayed on the screen needs to be multiplied by 10

(97) Nitrite (HR) 0 - 1500 mg/l ($NaNO_2$) Tablet

Name on device: 97-Nitrite-HR-tab



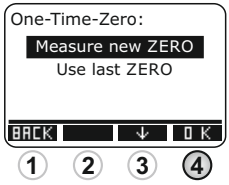
Nitrite HR N° 1 (TbsHNiHR1...)
Nitrite HR N° 2 (TbsPNiHR2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 9 ml distilled water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 3)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Add precisely 1ml sample water to the same cuvette.

ZERO 4

3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Add a "Nitrite HR N° 1" tablet to the water sample in the cuvette.

6) Crush the tablet with a clean stirrer until it is completely dissolved.

7) Add one "Nitrite HR N° 2" tablet to the same cuvette.

8) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4

9) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

10) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

-> Filter sample if neccessary to test a clear sample.

-> Make sure the temperature of your sample does not exceed 30°C.

-> High chlorine levels (> 30 mg/l) interfere with this test and can influence the reading.

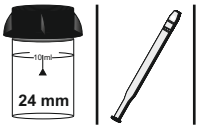
-> The test needs to be performed without a delay. Place the vial into the PrimeLab right after reagents have dissolved and lid is closed. Immediately press TEST. It is essential for the accuracy of this test to keep the countdown of 02:00 minutes right after dissolving the tablets/closing the lid/placing the vial into the PrimeLab.

-> **DO NEVER SHAKE THE VIAL!**

-> For expected values below 400 mg/l it is strongly recommended - to achieve the most accurate result - to better use ID 36 (Nitrite with powder reagents 0 - 200 mg/l; extended range 0 - 400 mg/l by 1:1 dilution).

(101) Nitrite (HR) 0 - 3000 mg/l ($NaNO_2$) Liquid

Name on device: 101-Nitrite-HR-liq



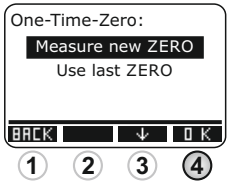
PL Nitrite HR 2 (PL65NitriteHR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 9 ml distilled water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 3)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Add precisely 1 ml sample water to the same cuvette.

ZERO 4 — 3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Add 15 drops "PL Nitrite HR 2" liquid reagent to the test liquid in the cuvette.

TEST 4 — 6) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

7) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units(*)

OK 4 — 8) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

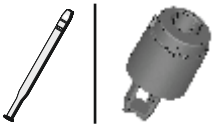
Notes

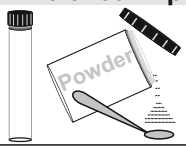
-> (*) Conversion of the measurement result to N and NO_2

(151) Nitrogen-Total (LR) 0.5 - 25 mg/l (N)

16mm vial

Name on device: 151-NitroTotLR-pre





Hydrox. LR vial
Persulfate powder packs
Reagent A powder packs
Reagent B powder packs
Acid LR/HR vial
DI-Water

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Select either:
A) „All steps"
B) „Only ZERO and TEST"

A) All steps:

1) Prepare 2 cells (16mm) Hydroxide LR. Label one as zero cell.

2) Add 1 powder pillow Pers.Powd.Pack to each vial.

3) Open the first cell (zero) and fill with 2ml deionised water.

4) Open the second cell (sample) and fill with 2ml of your sample.

5) Immediately close the lid and shake vial vigorously for 00:30 minutes.

TEST 4 6) Press TEST to start 00:30 minutes countdown.

7) Put the cells for 30:00 minutes at 100°C in a preheated thermoreactor.

TEST 4 8) Press TEST to start the countdown.

9) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 25°C or less.

10) Add 1 powder pillow Reagent A to each vial.

11) Immediately close the lid and shake vial vigorously for 00:20 minutes.

TEST 4 12) Press TEST to start 00:20 minutes countdown.

13) Proceed to next step to intitiate next countdown.

TEST 4 14) Reagents need to react press TEST to start 03:00 minutes countdown.

15) Add 1 powder pillow Reagent B to each vial.

16) Immediately close the lid and shake vial vigorously for 00:20 minutes

TEST 4 17) Press TEST to start 00:20 minutes countdown.

Continued...

Continued...

18) Proceed to next step to intitiate next countdown.

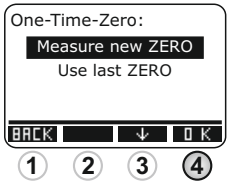
TEST 4 19) Reagents need to react press TEST to start 02:00 minutes countdown.

20) Open 1 Acid LR/HR vial(s) and add 2ml from ZERO vial to one. This is your new ZERO vial.

21) Add 2ml from former TEST vial to second new vial. This is your new SAMPLE vial.

22) Cap both cells and shake to mix. CAUTION: heat build-up!

23) Place the 16 mm adaptor into the device.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 22)
-> Use last ZERO = continue with step 25)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 25) Place the ZERO cell and the light protection cover and than press ZERO.

26) Remove the cell from the device.

TEST 4 27) Place the sample cell and the light protection cover into the device. Than press TEST.

B) Only ZERO and TEST:

1) Place the 16mm adaptor into the device.

ZERO 4 2) Place the ZERO cell and the light protection cover and than press ZERO.

3) Remove the cell from the device.

TEST 4 4) Place the sample cell and the light protection cover into the device. Than press TEST.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> **If you intend to use last ZERO, please ignore steps where you are asked to prepare a ZERO vial.**

-> (*) Conversion of the measurement result to NH_3, NH_4.

-> This test can be used for water, wastewater and seawater.

-> Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2)

-> Use volumetric pipettes to dose exactly 2ml of the Acid LR/HR reagent

-> Reagents might not dissolve entirely

-> Incubation time shall NOT exceed 30 minutes!

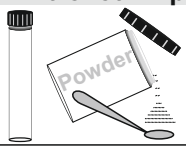
-> Step 20 to be performed by turning vial upside down and back, waiting for the solution to entirely flow down. Inverse 10 times

-> Zero vial can be stored and used for max. 7 days if stored in the dark

-> Sample needs to be diluted and measurement needs to be repeated if large quantities of nitrogen free, organic compounds are present, as they may interfere and reduce the effectiveness of the digestion

-> Bromide >60 mg/l and Chloride >1000 mg/l interfer and change result with +10%

Name on device: 152-NitroTotHR-pre



Hydrox. LR vial
Persulfate powder packs
Reagent A powder packs
Reagent B powder packs
Acid LR/HR vial
DI-Water

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Select either:
A) „All steps"
B) „Only ZERO and TEST"

A) All steps:

1) Prepare 2 cells (16mm) Hydroxide HR. Label one as zero cell.

2) Add 1 powder pillow Pers.Powd.Pack to each vial.

3) Open the first cell (zero) and fill with 0.5 ml deionised water.

4) Open the second cell (sample) and fill with 0.5 ml of your sample.

5) Immediately close the lid and shake vial vigorously for 00:30 minutes.

TEST 4 6) Press TEST to start 00:30 minutes countdown.

7) Put the cells for 30:00 minutes at 100°C in a preheated thermoreactor.

TEST 4 8) Press TEST to start the countdown.

9) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 25°C or less.

10) Add 1 powder pillow Reagent A to each vial.

11) Immediately close the lid and shake vial vigorously for 00:20 minutes.

TEST 4 12) Press TEST to start 00:20 minutes countdown.

13) Proceed to next step to intitiate next countdown.

TEST 4 14) Reagents need to react press TEST to start 03:00 minutes countdown.

15) Add 1 powder pillow Reagent B to each vial.

16) Immediately close the lid and shake vial vigorously for 00:20 minutes

TEST 4 17) Press TEST to start 00:20 minutes countdown.

Continued...

Continued...

18) Proceed to next step to intitiate next countdown.

19) Reagents need to react press TEST to start 02:00 minutes countdown.

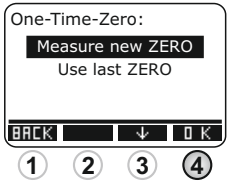
TEST 4

20) Open 1 Acid LR/HR vial(s) and add 2ml from ZERO vial to one. This is your new ZERO vial.

21) Add 2ml from former TEST vial to second new vial. This is your new SAMPLE vial.

22) Cap both cells and shake to mix. CAUTION: heat build-up!

23) Place the 16mm adaptor into the device.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 22)
-> Use last ZERO = continue with step 25)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

25) Place the ZERO cell and the light protection cover and than press ZERO.

26) Remove the cell from the device.

TEST 4

27) Place the sample cell and the light protection cover into the device. Than press TEST.

B) Only ZERO and TEST:

1) Place the 16mm adaptor into the device.

ZERO 4

2) Place the ZERO cell and the light protection cover and than press ZERO.

3) Remove the cell from the device.

TEST 4

4) Place the sample cell and the light protection cover into the device. Than press TEST.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> **If you intend to use last ZERO, please ignore steps where you are asked to prepare a ZERO vial.**

-> (*) Conversion of the measurement result to NH_3, NH_4.

-> This test can be used for water, wastewater and seawater.

-> Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2)

-> Use volumetric pipettes to dose exactly 2ml of the Acid LR/HR reagent

-> Reagents might not dissolve entirely

-> Incubation time shall NOT exceed 30 minutes!

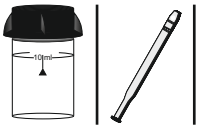
-> Step 20 to be performed by turning vial upside down and back, waiting for the solution to entirely flow down. Inverse 10 times

-> Zero vial can be stored and used for max. 7 days if stored in the dark

-> Sample needs to be diluted and measurement needs to be repeated if large quantities of nitrogen free, organic compounds are present, as they may interfere and reduce the effectiveness of the digestion

-> Bromide >60 mg/l and Chloride >1000 mg/l interfer and change result with +10%

Name on device: 37-Ozone-tab



DPD N° 1 Photometer (TbsPD1...)
DPD N° 3 Photometer (TbsPD1...)
Glycine (TbsHGC...)

Measurement procedure:

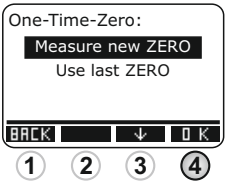
The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Please select either:
A) "Ozone with chlorine" or
B) "Ozone without chlorine“

A) Measurement procedure for “Ozone with chlorine”

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Add a "DPD N° 3 Photometer" tablet in the same cuvette.

6) Crush both tablets with a clean stirrer until these have dissolved completely.

7) Fill sample water into the same cuvette up to the 10ml level.

8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

	9) Wait for the lapse of a 2 minute countdown.
	10) Remove the lid, empty the cuvette completely and clean it thoroughly.
	11) Fill 10ml sample water into a second clean 24mm cuvette.
	12) Add a "Glycine" tablet to the water sample in the cuvette.
	13) Crush the tablet with a clean stirrer until this is completely dissolved.
	14) Replace the lid on the cuvette and swirl it carefully to mix the liquids well.
	15) Add a "DPD N° 1 Photomoter" tablet and one "DPD N° 3 Photometer" tablet into the first empty and clean cuvette.
	16) Crush the tablets with a clean stirrer to a fine powdery mass.
	17) Fill in the prepared water from the first cuvette.
TEST ④	18) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
OK ④	19) After the lapse of a 2 minute countdown the total result is displayed, divided in **"O3" = "Ozone“** **"tCl" = "total chlorine“** Scroll through the results using the buttons "arrow up" and "arrow down". Press button 4 to save the result.

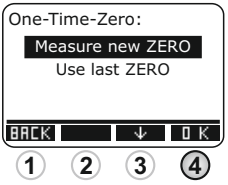
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

B) Measurement procedure for "Ozone without chlorine"

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Add a "DPD N° 1 Photometer" tablet to the sample in the cuvette.

5) Add a "DPD N° 3 Photometer" tablet in the same cuvette.

6) Crush both tablets with a clean stirrer until these have dissolved completely.

7) Fill sample water into the same cuvette up to the 10ml level.

TEST 4) 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save this together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

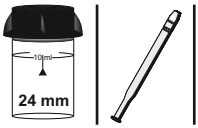
-> If the sample water contains further reducing chemicals (e.g. chlorine, activated oxygen, bromine etc.) this will also be detected and is included in the test results.

-> When preparing the measurement procedure it is important to avoid any chlorine escaping, which can happen during pipetting and shaking the sample. The measurement should be performed directly after sampling.

-> It is important that the measurement devices to be used have not been cleaned with household detergent, as this would greatly influence the measurement. To prevent any contamination the cuvette, the cuvette lid and the stirrer should be stored in a 0.1 % sodium hypochlorite solution for one hour and then thoroughly rinsed with distilled water.

-> The DPD reagent used in this procedure buffers the pH value of the sample water in the range between 6.2 and 6.5 pH. If your sample water is very alkaline or acidic this must be adjusted to a pH range between 6 and 7 by the addition of 0.5 mol/l sulphuric acid or resp. 1 mol/l caustic soda before the DPD reagent is added.

Name on device: 92-Ozone-liq



PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD 3 C (PL30DPD3C)
PL DPD Glycine (PL30DPDGlycine)

Measurement procedure:

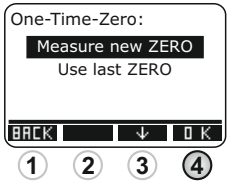
The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Please select either:
A) "Ozone with chlorine" or
B) "Ozone without chlorine“

A) Measurement procedure for “Ozone with chlorine”

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Then add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" to the remaining test liquid in the cuvette.

5) Add 3 drops "PL DPD 3 C" liquid reagent to the test liquid in the cuvette.

6) Fill sample water into the same cuvette up to the 10ml level.

7) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

8) Wait for the lapse of a 2 minute countdown.

9) Remove the lid, empty the cuvette completely and clean it thoroughly.

10) Fill 10 ml sample water into a second clean 24mm cuvette.

11) Add 3 drops "PL DPD Glycine" liquid reagent to the test liquid in the cuvette.

12) Add 3 drops of "PL DPD 1 A" and three drops of "PL DPD 1 B" into a second empty and clean cuvette.

13) Fill in the prepared water from the first cuvette.

TEST
4

14) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

15) After the lapse of a 2 minute countdown the total result is displayed, divided in:
"O_3" = "Ozone",
"tCl" = "Chlorine total".

OK
4

Scroll through the results using the buttons "arrow up" and "arrow down". Press button 4 to save the result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

B) Measurement procedure for "Ozone without chlorine"

1) Fill 10ml of the sample water into a clean 24mm cuvette.

ZERO
4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops. Then add 3 drops of "PL DPD 1 A" and 3 drops of "PL DPD 1 B" to the remaining test liquid in the cuvette.

5) Add 3 drops "PL DPD 3 C" liquid reagent to the test liquid in the cuvette.

Continued...

Continued...

	6) Fill sample water into the same cuvette up to the 10ml level.
TEST 4	7) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
	8) Wait for the lapse of a 2 minute countdown.

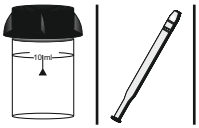
Note(s)

->	DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!
->	If the sample water contains further reducing chemicals (e.g. chlorine, activated oxygen, bromine etc.) this will also be detected and is included in the test results.
->	When preparing the measurement procedure it is important to avoid any ozone escaping. This is done by means of using a pipette and shaking the sample water. The measurement procedure must be performed directly after sampling.
->	Use of this test procedure and reagent on water samples with pH value outside of the 4-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14). For measuring higher ozone values please choose the respective matching measurement procedure.

(164) Peracetic Acid LR 0 - 10 mg/l (PAA)

Tablet

Name on device: 164-PeracA-LR-tab



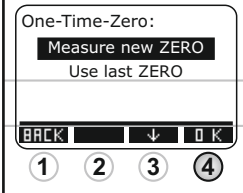
DPD N°4 (TbsD4...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill a cleaned cell (24mm) with 10ml of your sample.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3) Remove the cell and open the lid.

4) Add 1 DPD N°4 Photometer tablet to your sample.

5) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

TEST 4

6) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes:

-> Please use caution to not extend the countdown time.

-> Using the repeat button to repeat the test with the same sample will bring different results as the reagents will keep reacting.

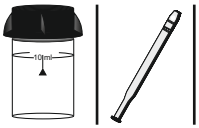
-> If your sample contains other oxidats, such as: Chlorine, Bromine, Chlorine Dioxide, Ozone...., those will be detected as well and will be part of the displayed value.

Continued...

(165) Peracetic Acid HR 0 - 300 mg/l (PAA)

Tablet

Name on device: 165-PeracA-HR-tab



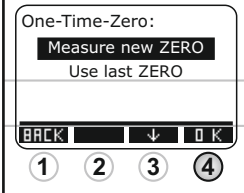
Chlorine HR (KI) Photometer (TbsD4...)
Acidifying GP (TbsPCLHR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill a cleaned cell (24mm) with 10ml of your sample.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3) Remove the cell and open the lid.

4) Add 1 Chlorine HR (KI) Photometer tablet to your sample.

5) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

TEST 4

6) Add 1 Acidifying GP tablet to your sample.

7) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

8) Close the lid. Shake the cell gently to mix the liquid.

9) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes:

-> Please use caution to not extend the countdown time.

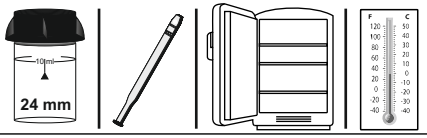
-> Using the repeat button to repeat the test with the same sample will bring different results as the reagents will keep reacting.

-> If your sample contains other oxidats, such as: Chlorine, Bromine, Chlorine Dioxide, Ozone...., those will be detected as well and will be part of the displayed value.

Continued...

(159) Permanganate Time Test 0 - 100 %A (Absorption) Tablet

Name on device: 159-PTT-tab



PTT Photometer (TbsPTT...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

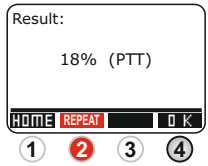
	1.) Set up the fridge to 15°C by using the thermostate according to the manual.
	2.) Fill a cleaned cell (24mm) with 10ml of your sample.
	3.) Close the lid.
	4.) Place the vial inside the fridge for 20:00 minutes.
ZERO 4	5.) Place the sealed "Methanol Zero" vial into the PrimeLab and press ZERO.
	6.) Remove the the cell from the PrimeLab and set it aside. It is not longer required for this test.
	7.) Remove the cell from the fridge.
	8.) Add 1 PTT Phot. tablet to your sample.
	9.) Crush the tablet with a clean stirring rod.
	10.) Close the lid.
	11.) Place the vial inside the fridge for 10:00 minutes.
TEST 4	12.) Press TEST to start 10:00 minutes countdown.
	13.) Remove the cell from the fridge.
	14.) Remove condensate on vial by using a dry soft cloth.
TEST 4	15.) Place the cell into the photometer (use caution to the arrow on the cell) and press TEST.

Continued...

Name on device: 159-PTT-tab

Continued...

test number	result	action
1st test / after 10 minutes	<29% PTT	**Abort test.** Tank is still highly contaminated. **No further testing**
	>29% PTT	**Replace vial in the fridge** and repeat test after **10 minutes** (step 16 by pressing REPEAT button = 2nd from left). Do **NOT** add another tablet!). If asked, select "use last ZERO"
2nd test / after 20 minutes	<29% PTT	**Abort test.** Tank is still highly contaminated. **No further testing**
	>29% PTT	Replace vial in the fridge and repeat test (step 16 by pressing „REPEAT button = 2nd from left) after 10 minutes (do **NOT** add another tablet!). If asked, select "use last ZERO"
3rd test / after 30 minutes	<29% PTT	**Abort test.** Tank is still contaminated. **No further testing**
	>29% PTT	Replace vial in the fridge and repeat test (step 16 by pressing „REPEAT button = 2nd from left) after 10 minutes (do **NOT** add another tablet!). If asked, select "use last ZERO"
4th test / after 40 minutes	<29% PTT	**Abort test.** Tank is still contaminated. **No further testing**
	>29% PTT	Replace vial in the fridge and repeat test (step 16 by pressing „REPEAT button = 2nd from left) after 10 minutes (do **NOT** add another tablet!). If asked, select "use last ZERO"
5th test / after 50 minutes	<29% PTT	**Abort test.** Tank is still contaminated. **No further testing**
	>29% PTT	**Abort test.** **Test has passed.** Tank is clean to Methanol standards. **Ready for next cargo**



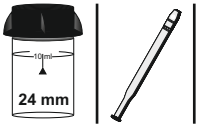
Note(s)

-> after adding the PTT tablet, sample is highly sensitive to light, air and temperature. Do NOT open the vial after PTT tablet has been added and lid got screwed on and keep it at constant temperature of 15°C

-> Interferences: turbid and/or colored water samples (before adding PTT tablet)

(98) Phenol 0 - 5 mg/l (C_6H_5OH) Tablet

Name on device: 98-Phenol-tab



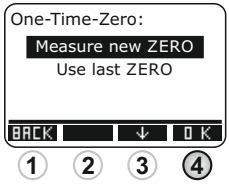
Phenol No.1 (TbsHPhen1...)
Phenol No.2 (TbsPPhen2...)
Phenol-CR (TbsHPhen3...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add one "Phenol N° 1" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved.

6) Add one "Phenol N° 2" tablet to the same cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

-> If your sample does contain copper, zinc, iron or manganese ions (up to 350 mg/l) add one Phenol CR tablet after ZERO. Crush and mix to dissolve.

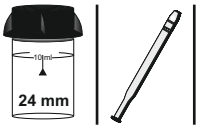
-> Level of > 20 mg/l hydrogen peroxide interferere with this test and can influence the reading.

-> High (free) chlorine levels (> 10 mg/l) interfere with this test and can influence the reading.

-> Alkalinity above 150 mg/l $CaCO_3$ as well as sulphite above 10 mg/l or more than 2 mg/l sulphide will interfere with this test and can influence the reading.

-> Some organic keto-enol compounds can lead to high readings.

Name on device: 40-pH-LR-tab



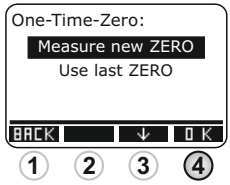
Bromocresolpurple (TbsPBRCP...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Bromocresolpurple" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4) 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

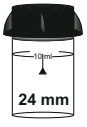
Continued...

Note(s)

-> Use of this test procedure and reagent on water samples with pH value outside of the 5.2 - 6.8 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

-> Depending on the salt content of your sample, the measurement result must be manually corrected according to the following scheme:
1 molar = -0.26 pH
2 molar = -0.33 pH
3 molar = -0.31 pH
with: 1 mol of salt (NaCl) = 5.8% = 58.4 g/l

Name on device: 38-pH-MR-tab



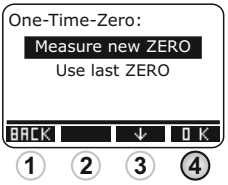
Phenol Red Photometer (TbsPCH...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Phenol Red Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

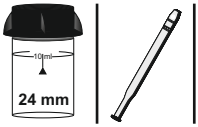
Note(s)

-> Use of this test procedure and reagent on water samples with pH value outside of the 6.5 - 8.4 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

-> If the alkalinity (or carbonate hardness) of your water sample is lower than KS4.3 = 0.07 mmol/l (= 35 mg/l CaCO3) this can lead to incorrect test results.

-> Depending on the salt content of your sample, the measurement result must be manually corrected according to the following scheme:
1 molar = -0.21 pH
2 molar = -0.26 pH
3 molar = -0.29 pH
with: 1 mol of salt (NaCl) = 5.8% = 58.4 g/l

Name on device: 39-pH-MR-liq



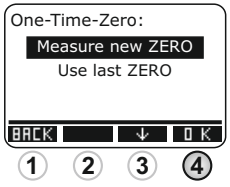
PL pH 6.4-8.4 (PL65PhenRed)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 6 drops "PL pH 6.4-8.4" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

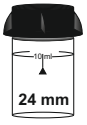
-> Use of this test procedure and reagent on water samples with pH value outside of the 6.5 - 8.4 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

-> High chlorine values in the sample water can lead to incorrect test results. In this case add a small grain of the chlorine-destroying chemical sodium thiosulfate to your sample before adding the liquid reagent.

-> Make sure the liquid reagent drops are of equal size.

-> Store the liquid reagent for best results below 10°C and above 5°C.

Name on device: 41-pH-univ-tab



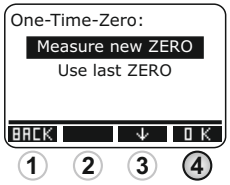
Universal pH Photometer (TbsPUPH...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Universal pH" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4) 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

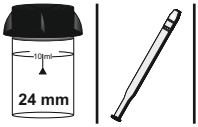
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Note(s)

-> Use of this test procedure and reagent on water samples with pH value outside of the 5-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

Name on device: 42-pH-univ-liq



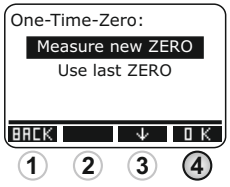
PL pH 4-11 (PL65UnivpH)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 10 drops "PL pH 4-11" liquid reagent to the water sample in the cuvette.

TEST 4) 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 6) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

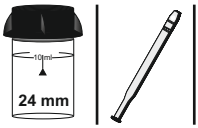
Continued...

Continued...

Note(s)

-> Use of this test procedure and reagent on water samples with pH value outside of the 4-11 range can lead to incorrect test results. If you are not sure we recommend a control measurement using e.g. an electronic meter (pH 0-14).

Name on device: 43-PHMB-tab



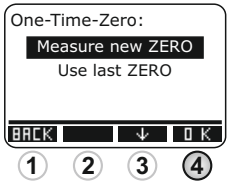
PHMB Photometer (Tbsµg/l...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "PHMB Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 — 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> It is important that all equipment coming in contact with sample water containing a reagent (cuvette, lid, stirrer) is cleaned using a brush, clear water and then distilled water, as otherwise the test kit will discolour over time.

-> Clean the vials with a brush immediately after analysis or let the vial rest until blue precipitate has formed.

-> Vials and stirring rod may be stained by blue color after use. In this case clean vials and stirring rods with Ethanol (96%)
or detergent if needed. Rinse vials and rods thoroughly with tap water and then with deionized water.

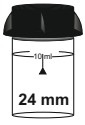
-> The test result is influenced by Total Alkalinity and Hardness.
The calibration of this method was performed by using water with the following characteristics:

Ca-Hardness:	200ppm CaCO3
Total Alkalinity:	120ppm CaCO3

(44) Phosphate -ortho- (LR) 0 - 4 mg/l (PO_4)

Tablet

Name on device: 44-Phosphat-LR-tab



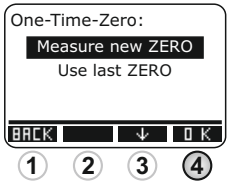
Phosphate (LR) N°1 Photometer (TbsHPPLR1...)
Phosphate (LR) N°2 Photometer (TbsPPPLR2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add **two** "Phosphate (LR) N° 1 Photometer" tablets to the water sample in the cuvette.

5) Crush both tablets with a clean stirrer until these have dissolved completely.

6) Add a "Phosphate (LR) N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4

8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3

9) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

Continued...

Continued...

OK
4

10) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to P, P_2O_5

-> With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted to ortho-phosphates before the test is begun.

-> The pH value of the sample water should be between 6 and 7 pH.

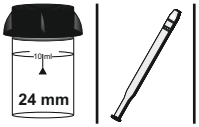
-> The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results:
Chromium > 100 mg/l
Copper > 10 mg/l
Iron > 100 mg/l
Nickel > 300 mg/l
Zinc > 80 mg/l

(45) Phosphate -ortho- (LR) 0 - 4 mg/l (PO_4)

Liquid

+Powder

Name on device: 45-Phosphat-LR-liq



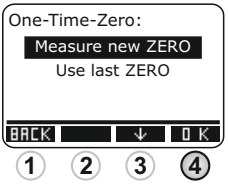
PL Phosphate LR 1 (PL65PPLR1)
PL Phosphate LR 2 (PLpow20PPLR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 25 drops (1 ml) "PL Phosphate LR 1" liquid reagent to the water sample in the cuvette.

5) Add 1 x 0.05mL (scoop) "PL Phosphate LR 2" powder to the sample water in the cuvette.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 7) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4 — 8) Press button 4 to save the result together with date and time in the device.

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to P, P_2O_5

-> With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted to ortho-phosphates before the test is begun.

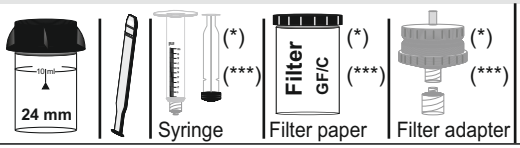
-> The pH value of the sample water should be between 6 and 7 pH.

-> The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results:
Chromium > 100 mg/l
Copper > 10 mg/l
Iron > 100 mg/l
Nickel > 300 mg/l
Zinc > 80 mg/l

(46) Phosphate -ortho- (HR) 0 - 80 mg/l (PO_4)

Tablet

Name on device: 46-Phosphat-HR-tab



Syringe | Filter paper | Filter adapter

Phosphate HR N° 1 Photometer (TbsHPPHR1...)
Phosphate HR N° 2 Photometer (TbsPPPHR2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

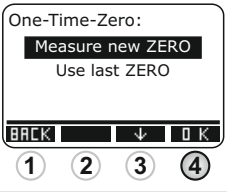
*** 1) Unscrew the two halves of a clean and free of residues filter adapter*. Insert 25mm filter paper* (GF/C).

2) Close the two halves of the filter adapter with the filter paper inside. Make sure the seal ring is seated correctly.

3) Fill the 20ml filter syringe* (clean and free of residues) with 14ml of sample water.

4) Screw the filter adapter prepared in steps (1) and (2) onto the syringe point and empty it to the 10ml level.

5) Push the remaining 10ml in the syringe through the filter adapter into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 6)
-> Use last ZERO = continue with step 8)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO
4

6) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

7) Remove the cuvette from the chamber and unscrew the lid.

8) Add **two** "Phosphate HR N°1 Photometer" tablets to the water sample in the cuvette.

9) Crush both tablets with a clean stirrer until these have dissolved completely.

Continued...

Continued...

10) Add a "Phosphate HR N°2 Photometer" tablet to the water sample in the cuvette.

11) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4

12) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3

13) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (**).

OK 4

14) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Special accessories required / not included as standard equipment!

-> (**) Conversion to P, P_2O_5

-> (***) Filter process is only needed in case of any suspended insoluble phosphate expected in your water sample (applicable for boiler water testing)

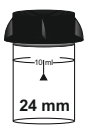
-> With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted to ortho-phosphates before the test is begun.

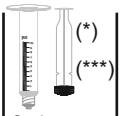
-> The pH value of the sample water should be between 6 and 7 pH.

-> The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results:
Chromium > 100 mg/l
Copper > 10 mg/l
Iron > 100 mg/l
Nickel > 300 mg/l
Zinc > 80 mg/l

(47) Phosphate -ortho- (HR) 0 - 100 mg/l (PO_4) Liquid

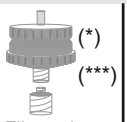
Name on device: 47-Phosphat-HR-liq





Syringe

Filter paper



Filter adapter

PL Phosphate HR 1 (PL65PPHR1)
PL Phosphate HR 2 (PL65PPHR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

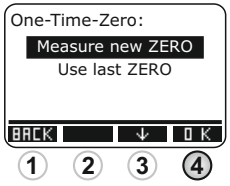
*** 1) Unscrew the two halves of a clean and free of residues filter adapter*. Insert 25mm filter paper* (GF/C).

2) Close the two halves of the filter adapter with the filter paper inside. Make sure the seal ring is seated correctly.

3) Fill the 20ml filter syringe* (clean and free of residues) with 14ml of sample water.

4) Screw the filter adapter prepared in steps (1) and (2) onto the syringe point and empty it to the 10ml level.

5) Push the remaining 10ml in the syringe through the filter adapter into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 6)
-> Use last ZERO = continue with step 8)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 6) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

7) Remove the cuvette from the chamber and unscrew the lid.

8) Add 25 drops (1ml) "PL Phosphate HR 1" and 25 drops (1ml) "PL Phosphate HR 2" liquid reagent to the water sample in the cuvette.

TEST 4) 9) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

UNIT 3

10) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (**).

OK 4

11) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Special accessories required / not included as standard equipment!

-> (**) Conversion to P, P_2O_5

-> (***) Filter process is only needed in case of any suspended insoluble phosphate expected in your water sample (applicable for boiler water testing)

-> With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted to ortho-phosphates before the test is begun.

-> The pH value of the sample water should be between 6 and 7 pH.

-> The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results:
Chromium > 100 mg/l
Copper > 10 mg/l
Iron > 100 mg/l
Nickel > 300 mg/l
Zinc > 80 mg/l

(87) Phosphonate 0 - 20 mg/l

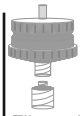
Liquid

+Powder

Name on device: 87-Phosphonate-liq

(*) Syringe

(*) Filter paper



(*) Filter adapter

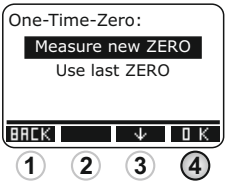
PL Phosphonate 1 (PLpow20PPHON1)
PL Phosphonate 2 (PLpow20PPHON2)
PL Phosphonate 3 (PL65PPHON3)
PL Phosphonate 4 (PLpow20PPHON4)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 8 ml distilled water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Add precisely 2 ml sample water to the same cuvette.

3) Replace the lid on the cuvette and swivel this back and forth 5 times.

ZERO 4) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the ZERO button.

5) Remove the cuvette from the chamber and unscrew the lid.

6) Add 1 x 0.05ml (scoop) "PL Phosphonate 1" powder to the sample water .

TEST 7) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 5 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

8) Remove the cuvette from the chamber and unscrew the lid.

9) Add 1 x 0.05ml (scoop) "PL Phosphonate 2" powder to the sample water .

TEST 10) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 2 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

Continued...

Continued...

11) Remove the cuvette from the chamber and unscrew the lid.

12) Fill the 20 ml syringe filter* (clean and residue-free) with the test water from the cuvette just used.

13) Unscrew the two halves of a clean and free of residues filter adapter*. Insert 25mm filter paper* (GF/C).

14) Close the two halves of the filter adapter with the filter paper inside. Make sure the seal ring is seated correctly.

15) Screw the filter adapter, preared in steps (1) and (2) onto the 20ml luer lock syringe.

16) Push the 10ml test liquid through the filter adapter into a clean 24 mm cell.

17) Add 10 drops "PL Phosphonate 3" liquid reagent to the test liquid in the cuvette.

TEST 4

18) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

19) The determined results for "tPO_4" (Organophosphonate + Phosphate as PO_4) is immediately displayed. Press button 4 to save this together with date and time in the device.

The test can be terminated at this stage if Phosphates are not present!

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

20) Remove the vial from the PrimeLab and set it aside. It is not required for this test.

21) Fill 8 ml distilled water into a clean 24mm cuvette.

22) Add precisely 2 ml sample water to the same cuvette.

23) Replace the lid on the cuvette and swivel this back and forth 5 times.

24) Unscrew the lid.

25) Add 10 drops "Phosphonate 3" liquid reagent to the test liquid in the cuvette.

Continued...

Continued...

26) Add 1 x 0.05ml (scoop) "PL Phosphonate 4" powder to the sample water .

TEST 4

27) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3

OK 4

28) After the lapse of a 10 minute countdown the total result is displayed, divided in:
"tPO$_4$" = "Organophosphonate + Phosphate as PO$_4$",
"PO$_4$" = "Phosphate as PO$_4$",
„Po$_4$ Org" = "Organophosphonate as PO$_4$".
Scroll through the results using the buttons "arrow up" and "arrow down".
Press button 3 to convert this into various measurement units (**).
Press button 4 to save the result.

Note(s)

-> (*) Special accessories required / not included as standard equipment!

-> (**) Conversion to PBTC, NTP, HEDPA, EDTMPA, HMDTMPA, DETPMPA, HPA

-> With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted to ortho-phosphates before the test is begun.

-> The pH value of the sample water should be between 6 and 7 pH.

Name on device: 110-Phosphon-tab

(*) Syringe

(*) Filter paper

(*) Filter adapter

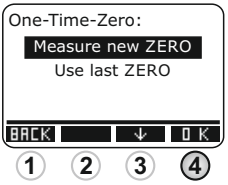
OrgaPhos-OX (TbsHOXOP...)
OrgaPhos No.1 (TbsPOPA...)
OrgaPhos No.2 (TbsPOPB...)
OrgaPhos No.3 (TbsHOPAX...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 8ml distilled water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 4)
-> Use last ZERO = continue with step 6)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Add precisely 2ml sample water to the same cuvette.

3) Replace the lid on the cuvette and swivel this back and forth 5 times.

ZERO 4) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the ZERO button.

5) Remove the cuvette from the chamber and unscrew the lid.

6) Add a "OrgaPhos-OX" tablet to the water sample in the cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 8) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 5 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

9) Remove the cuvette from the chamber and unscrew the lid.

10) Add a "OrgaPhos No.1" tablet to the water sample in the cuvette.

11) Crush the tablet with a clean stirrer until it is completely dissolved.

Continued...

Continued...

TEST 4 — 12) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 2 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

13) Remove the cuvette from the chamber and unscrew the lid.

14) Fill the 20 ml syringe filter * (clean and residue-free) with the test water from the cuvette just used.

15) Unscrew the two halves of a clean and free of residues filter adapter*. Insert 25mm filter paper* (GF/C).

16) Close the two halves of the filter adapter with the filter paper inside. Make sure the seal ring is seated correctly.

17) Screw the filter adapter, preared in steps (1) and (2) onto the 20ml luer lock syringe.

18) Push the 10ml test liquid through the filter adapter into a clean 24 mm cell.

19) Add a "OrgaPhos No.2" tablet to the water sample in the cuvette.

20) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4 — 21) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 — 22) After the lapse of a 5 minute countdown the determined results for "tPO_4" (Organophosphonate + Phosphate as PO_4) is immediately displayed. Press button 4 to save this together with date and time in the device.

The test can be terminated at this stage if Phosphates are not present!

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

23) Remove the vial from the PrimeLab and set it aside. It is not required for this test.

24) Fill 8ml distilled water into a clean 24mm cuvette.

25) Add precisely 2ml sample water to the same cuvette.

26) Add a "OrgaPhos No.3" tablet to the water sample in the cuvette.

27) Crush the tablet with a clean stirrer until it is completely dissolved.

28) Add a "OrgaPhos No.2 tablet to the water sample in the cuvette.

29) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4

30) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3

OK 4

31) After the lapse of a 5 minute countdown the total result is displayed, divided in:
"tPO$_4$" = "Organophosphonate + Phosphate as Po$_4$",
"PO$_4$" = "Phosphate as Po$_4$",
„Po$_4$ Org" = "Organophosphonate as Po$_4$".
Scroll through the results using the buttons "arrow up" and "arrow down".
Press button 3 to convert this into various measurement units (**).
Press button 4 to save the result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Special accessories required / not included as standard equipment!

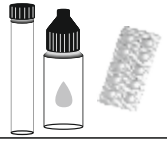
-> (**) Conversion to PBTC, NTP, HEDPA, EDTMPA, HMDTMPA, DETPMPA, HPA

-> With this procedure ortho-phosphate ions are detected. Other phosphates must therefore be converted to ortho-phosphates before the test is begun.

-> The pH value of the sample water should be between 6 and 7 pH.

Name on device: 153-PsphrTotLR-tab





Phosphorus LR vial
PL Phosphorus LR1
PL Phosphorus 2
Phosphate LR 1
Phosphate LR 2

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Add 5ml sample water into a new and clean Phosphorus LR cell.

2) Add 2 x 0.5ml scoops of PL Phosphorus 2.

3) Immediately close the lid and shake vial vigorously for 00:20 minutes.

TEST 4) Press TEST to start 00:20 minutes countdown.

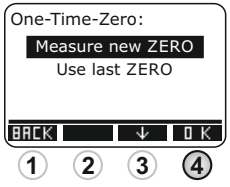
5) Put the cells for 30:00 minutes at 150°C in a preheated thermoreactor.

TEST 6) Press TEST to start 30:00 minutes countdown.

7) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 60°C or less.

8) Add 10 drops PL Phosphorus LR1 to your sample. Shake the cell to mix the liquid.

9) Place the COD adaptor into the device.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 10)
-> Use last ZERO = continue with step 13)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

10) Do you want to use the last stored ZERO value?

ZERO 11) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

12) Remove the cell and open the lid.

Continued...

Continued...

13) Add 2 Phosphate LR 1 tablets to your sample.

14) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

15) Add 1 Phosphate LR 2 tablet to your sample.

16) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

17) Close the lid. Shake the cell gently to mix the liquid.

TEST 4 18) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to PO_4.

-> Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2).

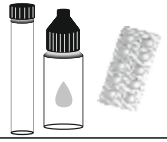
-> The pH value of the sample water should be between 6 and 7 pH.

-> The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results:
Chromium > 100 mg/l
Copper > 10 mg/l
Iron > 100 mg/l
Nickel > 300 mg/l
Zinc > 80 mg/l

(154) Phosphorus-Total (HR) 0.0 - 52.0 mg/l (P) 16mm vial

Name on device: 154-PsphrTotHR-tab





Phosphorus HR vial
PL Phosphorus HR1
PL Phosphorus 2
Phosphate HR 1
Phosphate HR 2

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Add 5ml sample water into a new and clean Phosphorus HR cell.

2) Add 2 x 0.5ml scoops of PL Phosphorus 2.

3) Immediately close the lid and shake vial vigorously for 00:20 minutes.

TEST 4) Press TEST to start 00:20 minutes countdown.

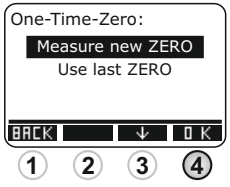
5) Put the cells for 30:00 minutes at 150°C in a preheated thermoreactor.

TEST 6) Press TEST to start 30:00 minutes countdown.

7) CAUTION: cells are hot! Remove the cells from the thermoreactor and allow to cool to 60°C or less.

8) Add 10 drops PL Phosphorus HR1 to your sample. Shake the cell to mix the liquid.

9) Place the COD adaptor into the device.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 10)
-> Use last ZERO = continue with step 13)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

10) Do you want to use the last stored ZERO value?

ZERO 11) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

12) Remove the cell and open the lid.

Continued...

Continued...

13) Add 2 Phosphate HR 1 tablets to your sample.

14) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

15) Add 1 Phosphate HR 2 tablet to your sample.

16) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

17) Close the lid. Shake the cell gently to mix the liquid.

TEST 4 18) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

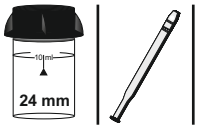
-> (*) Conversion to PO_4.

-> Remove powder from vial edges, lid and tube threads after adding powder (PL Phosphorus 2).

-> The pH value of the sample water should be between 6 and 7 pH.

-> The following contents of substances in the sample water can - at the respective concentration - falsify the measurement results:

Chromium	> 100 mg/l
Copper	> 10 mg/l
Iron	> 100 mg/l
Nickel	> 300 mg/l
Zinc	> 80 mg/l



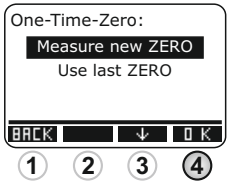
PL Polyacrylate 1 (PL65PLYA1)
PL Polyacrylate 2 (PL65PLYA2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 25 drops (1 ml) "PL Polyacrylate 1" liquid reagent to the test liquid in the cuvette.

5) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

6) Remove the lid again and now add 25 drops (1 ml) "PL Polyacrylate 2" liquid reagent in the same cuvette.

7) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

TEST 4) 8) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4) 9) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Continued...

Continued...

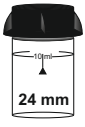
Note(s)

-> If the water sample has little or no turbidity after correctly adding the reagents, the water sample must be treated specially.
Ask the supplier of this set after a detailed instruction for pretreatment of the sample.

-> If unexpected / inconsistent test results appear, this can be due to a contamination of the sample or to confounding factors in the sample water.
Ask the suppliers of this set for a detailed statement to eliminate interference factors in the water sample.

(48) Potassium 0.7 - 12 mg/l (K) Tablet

Name on device: 48-Potassium-tab



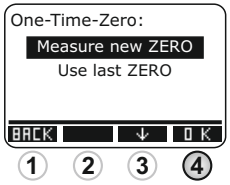
Potassium Photometer (TbsPPTST...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Potassium Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> By adding the "Potassium Photometer" tablet you get a cloudy solution.

Name on device: 111-PTSA-Ad

PLSp-ADP-PTSA

PLSp-PIP10ml

PLSp-PIP10ml-tips

Only for calibration!

PLSp-RefPTSA

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

Do ONLY use the cuvette which has been used to do calibration for this parameter!
Use 10ml Pipette to always properly dose exactly 10ml!

1) Fill sample water into the same cuvette up to the 10ml level.

2) Insert the cuvette WITHOUT LID into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette.

3) Place PTSA-Adapter on top of the open cuvette which already is placed into the PrimeLab measurement chamber.

TEST 4

4) Press TEST.

UNIT 3 OK 4

5) The determined result is immediately displayed. Press button 3 to convert the result to different units (*). Press button 4 to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> **Turbidity in samples may affect the PTSA result. Filter any turbid samples using GF/C filter paper before commencing PTSA measurement.**

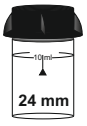
-> **Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.**

-> As this Parameter uses an indirect light from above, the shape of the bottom of the cell is important to the result. Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please change or clean the tip of the pipette after each measurement/calibration.

-> Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.

-> One of the following reasons can lead into receiving an error message: “check adapter”
• Weak or empty batteries (please change)
• Dirty lense (adapter)
• Wrong adapter used for this measurement (there are different adapter for different measurements, all looking the same)
• Adapter might not stay straight on PrimeLab
• Cuvette-hole (PrimeLab) might be dirty (check the two windows)
• Water sample might be too dark / not enough light can pass water sample to reach the sensor

Name on device: 83-QAC-tab



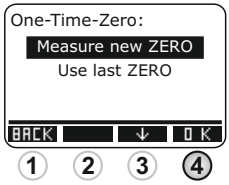
Acidifying GP (TbsHAFG...)
QAC HR Photometer (TbsPQAC...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Acidifying GP" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add an "QAC HR Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

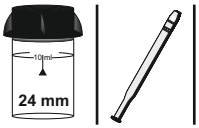
TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(49) Silica (LR) 0 - 5 mg/l (SiO_2) Liquid

Name on device: 49-Silica-LR-liq **+Powder**



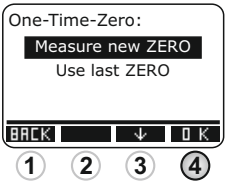
PL Silica LR 1 (PL65SilLR1)
PL Silica LR 2 (PL65SilLR2)
PL Silica LR 3 (PLpow40SilLR3)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 10 drops "PL Silica LR 1" liquid reagent to the water sample in the cuvette.

TEST 4 5) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

6) Wait for the lapse of a 5 minute countdown.

7) Remove the cuvette from the chamber and unscrew the lid.

8) Add 10 drops "PL Silica LR 2" liquid reagent to the water sample in the cuvette.

9) Add 3 x 0.05mL (scoops) "PL Silica LR 3" powder to the sample water in the cuvette.

TEST 4 10) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

UNIT
3

11) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK
4

12) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

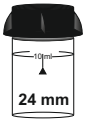
Note(s)

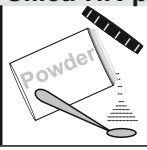
-> (*) Conversion to Si

-> The temperature of the water sample must be between 20°C and 30°C to ensure precise measurements.

(50) Silica (HR) 0 - 100 mg/l (SiO_2) **Powder**

Name on device: 50-Silica-HR-pow





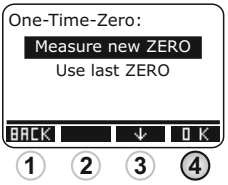
PL Silica HR 1 (PLpow20SilHR1)
PL Silica HR 2 (PLpow60SilHR2)
PL Silica HR 3 (PLpow10SilHR3)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 2 x 0.05mL (scoops) "PL Silica HR 1" powder to the sample water in the cuvette.

5) Add 4 x 0.05mL (scoops) "PL Silica HR 2" powder to the sample water in the cuvette.

TEST 4 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

7) Wait for the lapse of a 10 minute countdown.

8) Remove the cuvette from the chamber and unscrew the lid.

9) Add1 x 0.05mL (scoop) "PL Silica HR 3" powder to the sample water in the cuvette.

TEST 4 10) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

UNIT
3

11) After the lapse of a 2 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK
4

12) Press button 4 to save the result together with date and time in the device.

!

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to Si

-> The temperature of the water sample must be between 15°C and 25°C to ensure precise measurements.

-> Sulfide in the water sample will influence the measurement result.

-> Larger amounts of iron falsify the measurement result.

-> Phosphate content in the water higher that 60 mg/l will falsify the measurement result.

(51) Sodium Hypochlorite 0.2 - 40 % (NaOCl) Tablet

Name on device: 51-Sodium-Hypo-tab

Chlorine HR (KI) Photometer (TbsPCLHR...)
Acidifying GP (TbsHAFG...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Flush a syringe several times with your sample.

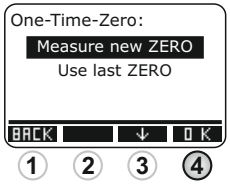
2) Fill a cleaned measuring cup (100ml) with 5ml of your sample.

3) Add 95ml chlorine-free water into the measuring cup (100ml). Stir with a clean stirrer.

4) Flush the syringe several times with the solution from step 3). Add 1ml into a clean measuring cup (100ml).

5) Add 99ml chlorine-free water into the measuring cup (100ml). Stir with a clean stirrer.

6) Fill a cleaned cell (24mm) with 10ml of your sample (step 5).



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 7)
-> Use last ZERO = continue with step 9)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

7) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

8) Remove the cuvette from the chamber and unscrew the lid.

9) Add a "Chlorine HR (KI) Photometer" tablet to the water sample in the cuvette.

10) Crush the tablet with a clean stirrer until this is completely dissolved.

Continued...

Continued...

	11) Add an "Acidifying GP" tablet to the water sample in the same cuvette.
	12) Crush the tablet with a clean stirrer until this is completely dissolved.
TEST 4	13) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
OK 4	14) After the lapse of a 10 second countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> The precision of the test results depends upon the precision of the diluting procedure.

(68) Sodium Hypochlorite 0.2 - 40 % (NaOCl) **Liquid**

Name on device: 51-Sodium-Hypo-liq

PL Chlorine HR 1 (PL65ClHR1)
PL Chlorine HR 2 (PL65ClHR2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Flush a syringe several times with your sample.

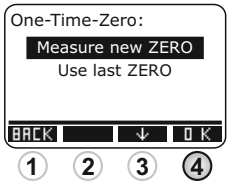
2) Fill a cleaned measuring cup (100ml) with 5ml of your sample.

3) Add 95ml chlorine-free water into the measuring cup (100ml). Stir with a clean stirrer.

4) Flush the syringe several times with the solution from step 3). Add 1ml into a clean measuring cup (100ml).

5) Add 99ml chlorine-free water into the measuring cup (100ml). Stir with a clean stirrer.

6) Fill a cleaned cell (24mm) with 10ml of your sample (step 5).



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 7)
-> Use last ZERO = continue with step 9)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

7) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

8) Remove the cuvette from the chamber and unscrew the lid.

9) Add 3 drops "PL Chlorine HR 1" and 3 drops "PL Chlorine HR 2" liquid reagent to the water sample in the cuvette.

TEST 4

10) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

Continued...

Continued...

OK
4

11) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

!

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> The precision of the test results depends upon the precision of the diluting procedure.

(54) Sulphate 5 - 100 mg/l (SO_4) Tablet

Name on device: 54-Sulphate-tab

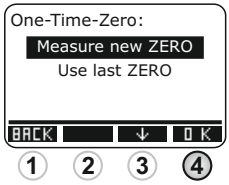
Sulphate Photometer (TbsPSULP...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Sulphate Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4 7) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Extend the listed measurement range from 5 - 100 mg/l, to 10 - 200 mg/l by diluting your water sample as follows: add 5 ml of sample water plus 5 ml of Sulphate free water and continue with the test procedure. To account for the dilution, the test result displayed on the screen needs to be multiplied by 2.

(55) Sulphate 5 - 100 mg/l (SO_4) Powder

Name on device: 55-Sulphate-pow

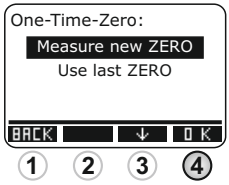
PL Sulphate 1 (PLpow10SULPHA1)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1.) Fill a cleaned cell (24mm) with 10 ml of your sample.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 2.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

3.) Remove the cell and open the lid.

4.) Add 1 x 0.05mL scoops of “PL Sulphate 1".

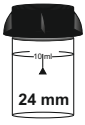
TEST 4 5.) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press TEST.

6.) Time left:
05:00 minutes.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(52) Sulphide 0.04 - 0.5 mg/l (S) **Tablet**

Name on device: 52-Sulphide-tab



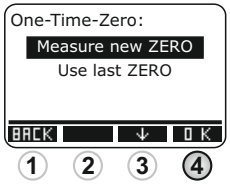
Sulphide N°1 Photometer (TbsHSULFD1100)
Sulphide N°2 Photometer (TbsPSULFD2100)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Sulphide N° 1 Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until this is completely dissolved.

6) Add a "Sulphide N° 2 Photometer" tablet to the water sample in the same cuvette.

7) Crush the tablet with a clean stirrer until this is completely dissolved.

TEST 4 — 8) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 9) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

Continued...

Continued...

OK
4

10) Press button 4 to save the result together with date and time in the device.

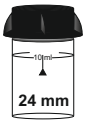
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> (*) Conversion to H_2S

-> The temperature of the water sample must be at 20°C to avoid inaccuracies in the measurement.

Name on device: 140-Sulphide-Ha






100ml

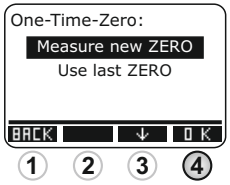

Sulfide 1 (HaSulfide1)
Sulfide 2 (HaSulfide2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10 ml distilled water into a clean 24 mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette completely.

5) Fill 10 ml sample water into a clean 100 ml beaker.

6) Add 1 ml "Sulfide 1" liquid to the sample water in the beaker.

7) Add 1 ml "Sulfide 2" liquid to the sample water in the beaker.

OK 4) 8) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the OK button and wait for the end of the 5 minute countdown.

9) Fill 10 ml of the treated sample water into a clean 24 mm/10 ml cuvette.

TEST 4) 10) Place the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

Continued...

Continued...

UNIT
3

11) After the lapse of a 10 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK
4

12) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

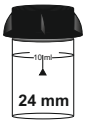
-> (*) Conversion to H_2S

-> The temperature of the water sample must be at 20°C to avoid inaccuracies in the measurement.

(53) Sulphite (LR) 0 - 5 mg/l (SO_3)

Tablet

Name on device: 53-Sulphite-LR-tab



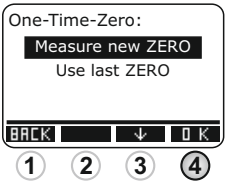
Sulphite LR Photometer (TbsPSULFTLR...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 — 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Sulphite LR Photometer" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it has completely dissolved.

TEST 4 — 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

UNIT 3 — 7) After the lapse of a 5 minute countdown the determined result is displayed. Press button 3 to convert this into various measurement units (*).

OK 4 — 8) Press button 4 to save the result together with date and time in the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

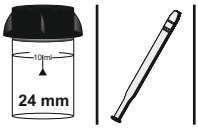
Continued...

Note(s)

-> (*) Conversion to Na_2SO_3

(105) Sulphite (HR) 0 - 300 mg/l (Na_2SO_3) Tablet

Name on device: 105-Sulfite-HR-tab



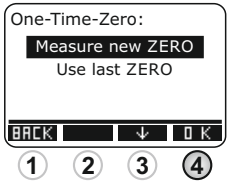
Sulphite HR N° 1 (TbsHSULFHR1...)
Sulphite HR N° 2 (TbsPSULFHR2...)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add a "Sulphite HR N° 1" tablet to the water sample in the cuvette.

5) Crush the tablet with a clean stirrer until it is completely dissolved.

6) Add a "Sulphite HR N° 2" tablet to the water sample in the cuvette.

7) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4) 8) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 9) After the lapse of a 2 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

10) Press button 3 to convert this into various measurement units (*).

Continued...

Continued...

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

-> (*) Conversion of the measurement result to SO_3

-> Filter sample if neccessary to obtain a clear solution.

-> Cell, lid and stirring rod need to be cleaned immediately after to prevent staining.

-> Expect low results if tannin or tannic acid is present.

-> Chlorine >250 mg/l
Nitrite >200 mg/l
Iron >20 mg/l
Sulphide >10 mg/l
cause interferences.

(81) Suspended solids 0 - 750 mg/l TSS

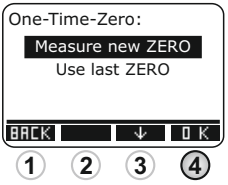
Name on device: 81-Suspended-Sol

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Pour 500 ml of sample water into a blender and mix at the highest speed for 2 minutes.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 6)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Fill 10ml distilled water into a clean 24mm cuvette.

ZERO 4) 3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Empty the cuvette completely.

6) Mix the sample water thoroughly, rinse the cuvette just used with sample water and then fill it with 10 ml of the sample water.

TEST 4) 7) Replace the lid on the cuvette and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 8) The determined result is immediately displayed. Press the "OK" button to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> To get a more accurate indication of the measured value, a gravimetrical determination of the water sample is necessary. Here, the water sample is filtered and the residue evaporated at about 100 degrees and weighed to the dried residue.

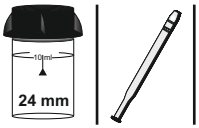
-> Make sure that the temperature of the water sample for measurement is equal to the temperature of the water sample with extraction of the water sample, otherwise measuring errors can occur.

-> In the best case do the measurement of the water sample immediately after extraction of the water sample. Otherwise, keep seven days in a closed glass or plastic container at max. 4 desgrees.

-> Make sure that the sample contains no air bubbles in the measurement. If this is the case, remove the air bubbles by tapping it with the cuvette.

(91) Tannic acid 0 - 150 mg/l (Tan. Ac.) Liquid

Name on device: 91-Tannic-acid-liq



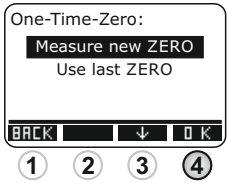
PL Tannin 1 (PL65Tannin1)
PL Tannin 2 (PL30Tannin2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 9ml distilled water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

2) Add precisely 1ml sample water to the same cuvette.

ZERO 4

3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Add 25 drops (1 ml) "PL Tannin 1" and 6 drops "PL Tannin 2" liquid reagent to the sample liquid in the cuvette.

6) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

TEST 4

7) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

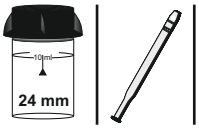
OK 4

8) After the lapse of a 20 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

(108) Total Oxidant 0 - 8 mg/l (Cl_2) Liquid

Name on device: 108-Total-Oxid-liq



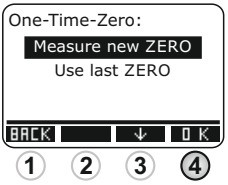
PL DPD 1 A (PL30DPD1A)
PL DPD 1 B (PL30DPD1B)
PL DPD 3 C (PL30DPD1A)
PL DPD Acidifying (PL30DPDAcidif)
PL DPD Neutralising (PL30DPDNeutr)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette except for a few drops.

5) Add three drops of "PL DPD 1 A" and three drops of "PL DPD 1 B" liquid reagent into the same cuvette.

6) Fill sample water into the same cuvette up to the 10ml level.

7) Add 3 drops "PL DPD 3 C" liquid reagent to the test liquid in the cuvette.

TEST 4) 8) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 2 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

9) Unscrew the lid.

10) Add 3 drops "PL DPD Acidifying" liquid reagent to the test liquid in the cuvette.

Continued...

Continued...

TEST 4	11) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 2 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.
	12) Unscrew the lid.
	13) Add 3 drops "PL DPD Neutralising" liquid reagent to the test liquid in the cuvette.
TEST 4	14) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
UNIT 3 OK 4	15) The determined result is immediately displayed. Press button 3 to convert the result to different units (*). Press button 4 to save the result together with date and time.

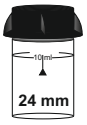
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Notes

-> DPD 1 A and DPD 1 B reagent MUST be added to the vial BEFORE water sample is added to avoid mis-readings!

-> (*) Conversion of the measurement result to mg/l (ClO_2)

Name on device: 157-Tracer-Ad




PLSp-ADP-PTSA


PLSp-PIP10ml

PLSp-PIP10ml-tips

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Rinse vial 3 times with your water sample.

2) Fill a cleaned cell (24mm) with 10ml of your sample.

3) Place the cell into the PrimeLab (use caution to the arrow on the cell). Do NOT close the lid.

4) Place PTSA-ADAPTER on top of the open cuvette.

TEST 4) Press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> **Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.**

1. As this Parameter uses an indirect light from above, the shape of the bottom of the cell is important to the result. Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please Change or clean the tip of the pipette after each measurement/calibration.
2. Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.
3. One of the following reasons can lead into receiving an error message: “check adapter”
   - Weak or empty batteries (please change)
   - Dirty lense (adapter)
   - Wrong adapter used for this measurement (there are different adapter for different measurements, all looking the same)
   - Adapter might not stay straight on PrimeLab
   - Cuvette-hole (PrimeLab) might be dirty (check the two windows)
   - Water sample might be too dark / not enough light can pass water sample to reach the sensor

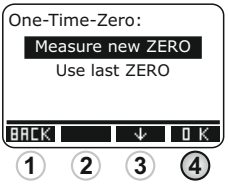
Name on device: 114-Transm-420nm

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Treat water sample according to the method you did chose.

TEST 4

5) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4

6) Ihnen wird nun unmittelbar das ermittelte Ergebnis angezeigt. Mit Drücken der Taste „OK“ wird der ermittelte Wert nebst Datum und Uhrzeit im Gerät gespeichert.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> With this method you can create your own parameters , use reagents from other manufacturers and / or perform processes with the PrimeLab that are not shown on the offered ID / parameters.
This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match:
(see also www.primelab.org, under the heading "The PrimeLab ", sub-heading "The sensor")

ID 114 / transmission 420nm - purple / bluish coloured samples
ID 115 / transmission 470nm - bluish-coloured samples
ID 116 / transmission 520nm - greenish coloured samples
ID 117 / transmission 570nm - yellowish coloured samples
ID 118 / transmission 620nm - orange coloured samples
ID 119 / transmission 670nm - reddish coloured samples

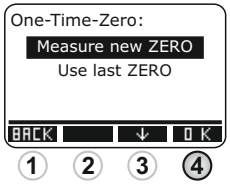
At the end of measurement you receive a value of "Transmission". "Transmission" in % means how much light (compared to ZERO measurement = 100%) on this colour wavelength after testing the water sample, eg Addition of a reagent.
Simply measure several water samples with different concentrations of the measured ingredient on the same wavelength to record your own values using the determined transmission results.

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Treat water sample according to the method you did chose.

TEST 4

5) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4

6) Ihnen wird nun unmittelbar das ermittelte Ergebnis angezeigt. Mit Drücken der Taste „OK“ wird der ermittelte Wert nebst Datum und Uhrzeit im Gerät gespeichert.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> With this method you can create your own parameters , use reagents from other manufacturers and / or perform processes with the PrimeLab that are not shown on the offered ID / parameters.
This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match:
(see also www.primelab.org, under the heading "The PrimeLab ", sub-heading "The sensor")

ID 114 / transmission 420nm - purple / bluish coloured samples
ID 115 / transmission 470nm - bluish-coloured samples
ID 116 / transmission 520nm - greenish coloured samples
ID 117 / transmission 570nm - yellowish coloured samples
ID 118 / transmission 620nm - orange coloured samples
ID 119 / transmission 670nm - reddish coloured samples

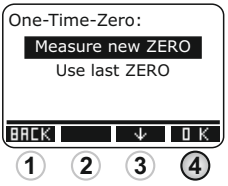
At the end of measurement you receive a value of "Transmission". "Transmission" in % means how much light (compared to ZERO measurement = 100%) on this colour wavelength after testing the water sample, eg Addition of a reagent.
Simply measure several water samples with different concentrations of the measured ingredient on the same wavelength to record your own values using the determined transmission results.

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Treat water sample according to the method you did chose.

TEST 4

5) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4

6) Ihnen wird nun unmittelbar das ermittelte Ergebnis angezeigt. Mit Drücken der Taste „OK“ wird der ermittelte Wert nebst Datum und Uhrzeit im Gerät gespeichert.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> With this method you can create your own parameters , use reagents from other manufacturers and / or perform processes with the PrimeLab that are not shown on the offered ID / parameters.
This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match:
(see also www.primelab.org, under the heading "The PrimeLab ", sub-heading "The sensor")

ID 114 / transmission 420nm - purple / bluish coloured samples
ID 115 / transmission 470nm - bluish-coloured samples
ID 116 / transmission 520nm - greenish coloured samples
ID 117 / transmission 570nm - yellowish coloured samples
ID 118 / transmission 620nm - orange coloured samples
ID 119 / transmission 670nm - reddish coloured samples

At the end of measurement you receive a value of "Transmission". "Transmission" in % means how much light (compared to ZERO measurement = 100%) on this colour wavelength after testing the water sample, eg Addition of a reagent.
Simply measure several water samples with different concentrations of the measured ingredient on the same wavelength to record your own values using the determined transmission results.

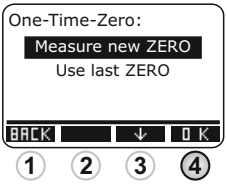
Name on device: 117-Transm-570nm

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Treat water sample according to the method you did chose.

TEST 4

5) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4

6) Ihnen wird nun unmittelbar das ermittelte Ergebnis angezeigt. Mit Drücken der Taste „OK“ wird der ermittelte Wert nebst Datum und Uhrzeit im Gerät gespeichert.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> With this method you can create your own parameters , use reagents from other manufacturers and / or perform processes with the PrimeLab that are not shown on the offered ID / parameters.
This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match:
(see also www.primelab.org, under the heading "The PrimeLab ", sub-heading "The sensor")

ID 114 / transmission 420nm - purple / bluish coloured samples
ID 115 / transmission 470nm - bluish-coloured samples
ID 116 / transmission 520nm - greenish coloured samples
ID 117 / transmission 570nm - yellowish coloured samples
ID 118 / transmission 620nm - orange coloured samples
ID 119 / transmission 670nm - reddish coloured samples

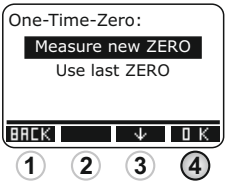
At the end of measurement you receive a value of "Transmission". "Transmission" in % means how much light (compared to ZERO measurement = 100%) on this colour wavelength after testing the water sample, eg Addition of a reagent.
Simply measure several water samples with different concentrations of the measured ingredient on the same wavelength to record your own values using the determined transmission results.

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Treat water sample according to the method you did chose.

TEST 4

5) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4

6) Ihnen wird nun unmittelbar das ermittelte Ergebnis angezeigt. Mit Drücken der Taste „OK“ wird der ermittelte Wert nebst Datum und Uhrzeit im Gerät gespeichert.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> With this method you can create your own parameters , use reagents from other manufacturers and / or perform processes with the PrimeLab that are not shown on the offered ID / parameters.
This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match:
(see also www.primelab.org, under the heading "The PrimeLab ", sub-heading "The sensor")

ID 114 / transmission 420nm - purple / bluish coloured samples
ID 115 / transmission 470nm - bluish-coloured samples
ID 116 / transmission 520nm - greenish coloured samples
ID 117 / transmission 570nm - yellowish coloured samples
ID 118 / transmission 620nm - orange coloured samples
ID 119 / transmission 670nm - reddish coloured samples

At the end of measurement you receive a value of "Transmission". "Transmission" in % means how much light (compared to ZERO measurement = 100%) on this colour wavelength after testing the water sample, eg Addition of a reagent.
Simply measure several water samples with different concentrations of the measured ingredient on the same wavelength to record your own values using the determined transmission results.

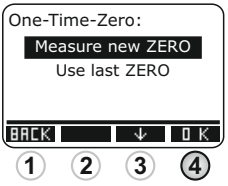
Name on device: 119-Transm-670nm

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4

2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Treat water sample according to the method you did chose.

TEST 4

5) Replace the cuvette in the sampling chamber in the PrimeLab. Make sure the arrow on the front of the cuvette is aligned. Press the TEST button.

OK 4

6) Ihnen wird nun unmittelbar das ermittelte Ergebnis angezeigt. Mit Drücken der Taste „OK“ wird der ermittelte Wert nebst Datum und Uhrzeit im Gerät gespeichert.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> With this method you can create your own parameters , use reagents from other manufacturers and / or perform processes with the PrimeLab that are not shown on the offered ID / parameters.
This requires that you familiarize yourself with the colorimetry of the water sample AFTER addition of the reagent that you want to use. Select the wavelength of your sample after addition of the reagent to be used by selecting the closest colour match:
(see also www.primelab.org, under the heading "The PrimeLab ", sub-heading "The sensor")

ID 114 / transmission 420nm - purple / bluish coloured samples
ID 115 / transmission 470nm - bluish-coloured samples
ID 116 / transmission 520nm - greenish coloured samples
ID 117 / transmission 570nm - yellowish coloured samples
ID 118 / transmission 620nm - orange coloured samples
ID 119 / transmission 670nm - reddish coloured samples

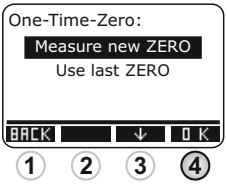
At the end of measurement you receive a value of "Transmission". "Transmission" in % means how much light (compared to ZERO measurement = 100%) on this colour wavelength after testing the water sample, eg Addition of a reagent.
Simply measure several water samples with different concentrations of the measured ingredient on the same wavelength to record your own values using the determined transmission results.

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml **distilled water** into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Empty the cuvette

5) Mix the sample water thoroughly, rinse the cuvette just used with sample water and then fill it with 10ml of the sample water.

TEST 4) 6) Replace the lid on the cuvette, swirl it carefully and insert it into the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4) 7) The determined result is immediately displayed. Press button 3 to convert the result to different units (*). Press button 4 to save the result together with date and time.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Note(s)

-> (*) conversion to FTU (same as FAU)

-> FAU stands for Formazin Absorption Units, different from the NTU (nephelometric) method.

-> The measurement should be conducted immediately after sampling.

-> Air bubbles will influence the measurement result.

-> Tinted water samples influence the result. In this case do not use distilled water (step 1) but rather filtered sample water for the ZERO adjustment.

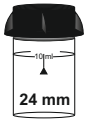
-> The Turbidity test measures the optical value of the sample which results from the scattering and absorption of light particles.
The amount of turbidity depends on variables such as size, shape, colour and the refractive nature of the particles.
This test is calibrated using Formazin Turbidity Standards and the readings are in terms of FAU (Formazin Attenuation Units).
This test can be used for daily plant monitoring and 1 FAU is equivalent to 1 NTU (Nephelometric Turbidity Unit).
This test is not suitable for USEPA reporting purposes as the optical method of measurement for FAU is very different than the NTU method.
However 1 NTU = 1 FTU = 1 FAU when traced to formazin primary standards.

(112) Turbidity-NTU 0.02 - 1000 (NTU)

Adapter

Only for calibration!

Name on device: 112-Turbidity-NTU



PLSp-ADP-TRB

PLSp-PIP10ml

PLSp-PIP10ml-tips

PLSp-RefTRB

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Mix the sample water thoroughly, rinse cuvette -to be used for the following measurement- several times and fill it with exactly 10ml of the sample water. For this, you HAVE TO use the 10ml pipette which came with your Turbidity Kit.

2) Insert the cuvette WITHOUT LID into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette.

3) Place Turbidity-Adapter on top of the open cuvette which already is placed into the PrimeLab measurement chamber.

TEST 4) Press TEST.

UNIT 3 OK 4) 5) The determined result is immediately displayed. Press button 3 to convert the result to different units (*). Press button 4 to save the result together with date and time.

!!! If low values (<20 NTU) are expected, we recommend to let the water sample (in the vial) rest for at least 05:00 minutes before presing TEST. As an alternative, you can also continue to repeat measurement in steps of 01:00 minute. The lowest value displayed can be taken as a result.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

Notes

-> (*) Conversion to FTU / FNU

-> **Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.**

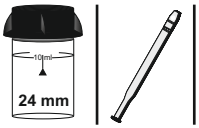
-> As this Parameter uses an indirect light from above, it is essential to always ensure the same level of water in each vial to be tested.
Exactly 10 ml of liquid need to be used which can be achieved by using the pipette provided with each kit.
Please change or clean the tip of the pipette after each measurement/ calibration by using destilled water.

-> If your PrimeLab was delivered with activated ID 112 (means you have NOT activated it afterwards), the device is already calibrated. You only have to make a new calibration again if you feel that results obtained are inaccurate. The calibration process is under SET - described > calibration.

-> The following factors affect the accuracy of the measurement result :
• a cell not thoroughly cleaned / residue from previous measurements
• scratches/water bubbles on the cell inner wall
• finger prints on the cell
• environmental influences, such as different or extreme temperatures, humidity or strong sunlight

-> One of the following reasons can lead into receiving an error message: “check adapter”
• Weak or empty batteries (please change)
• Dirty lense (adapter)
• Wrong adapter used for this measurement (there are different adapter for different measurements, all looking the same)
• Adapter might not stay straight on PrimeLab
• Cuvette-hole (PrimeLab) might be dirty (check the two windows)
• Water sample might be too dark / not enough light can pass water sample to reach the sensor

-> The turbidity measurement method ID 112 uses, is based on the Nephelometric principle, which is also described in DIN EN ISO 7027.



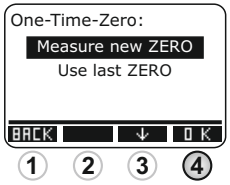
Ammonia N° 1 (TbsHAM1...)
Ammonia N° 2 (TbsPAM2...)
PL Urea 1 (PL30Urea1)
PL Urea 2 (PL10Urea2)

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 10ml of the sample water into a clean 24mm cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 2)
-> Use last ZERO = continue with step 4)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 2) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

3) Remove the cuvette from the chamber and unscrew the lid.

4) Add 2 drops "PL Urea 1" liquid reagent to the test liquid in the cuvette.

5) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

6) Add 1 drop "PL Urea 2" liquid reagent to the test liquid in the cuvette.

TEST 4) 7) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 5 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

8) Add a "Ammonia N° 1 Photometer" tablet to the water sample in the cuvette.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Continued...

Continued...

9) Crush the tablet with a clean stirrer until it is completely dissolved.

10) Add a "Ammonia N° 2 Photometer" tablet to the water sample in the cuvette.

11) Crush the tablet with a clean stirrer until it is completely dissolved.

TEST 4

12) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.

OK 4

13) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> Ammonia N° 1 tablet only dissolves entirely after Ammonia N° 2 tablet was added.

-> Samples with concentrations above 2 mg/l Urea may lead to results in between the measurement range. If so, please dilute sample with Urea free water and re-do the test.

-> Ammonia and chloramines will be detected together. The result displayed will show the sum of both.

-> Temperature of the sample needs to be between 20°C and 30°C.

-> Test needs to be carried out not later than 1 hour after taking the sample.

-> If sea water is tested, sample needs to be pre-treated with special conditioning powder before Ammonia N° 1 Photometer tablet is added.

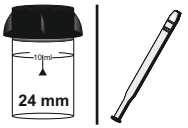
-> Do not store PL Urea 1 below 10°C as it might granulate.

-> PL Urea 2 needs to be stored between 4°C and 8°C.

(150) Urea (HR) 0.2 - 5.0 mg/l ($(NH_2)_2CO$)

Name on device: 150-UreaHR-tab-liq

Tablet +Liquid



Ammonia N° 1 (TbsHAM1...)
Ammonia N° 2 (TbsPAM2...)
PL Urea 1 (PL30Urea1)
PL Urea 2 (PL10Urea2)

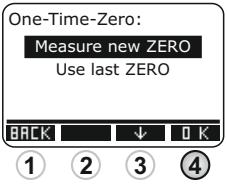
Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Fill 5ml distilled water into a clean 24mm cuvette.

2) Add precisely 5ml sample water to the same cuvette.



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 3)
-> Use last ZERO = continue with step 5)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) 3) Replace the screw lid on the cuvette and insert it into the PrimeLab sampling chamber. Align the arrow on the front of the cuvette. Press ZERO.

4) Remove the cuvette from the chamber and unscrew the lid.

5) Add 2 drops "PL Urea 1" liquid reagent to the test liquid in the cuvette.

6) Replace the lid on the cuvette and swivel it carefully to mix the solution well.

7) Add 1 drop "PL Urea 2" liquid reagent to the test liquid in the cuvette.

TEST 4) 8) Replace the lid. Swivel the cuvette to mix the liquid and the reagent until this is competely dissolved. Press the TEST button and wait for the end of the 5 minute countdown. The cuvette does not have to be inside the sampling chamber at this time.

9) Add a "Ammonia N° 1 Photometer" tablet to the water sample in the cuvette.

Continued...

Continued...

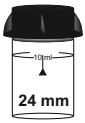
	10) Crush the tablet with a clean stirrer until it is completely dissolved.
	11) Add a "Ammonia N° 2 Photometer" tablet to the water sample in the cuvette.
	12) Crush the tablet with a clean stirrer until it is completely dissolved.
TEST 4	13) Replace the lid on the cuvette, swivel it carefully and insert it in the sampling chamber of the PrimeLab. Align the arrow on the front of the cuvette. Press TEST.
OK 4	14) After the lapse of a 10 minute countdown the determined result is displayed. Press button 4 to save the test result together with date and time on the device.

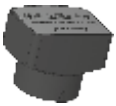
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

->	Ammonia N° 1 tablet only dissolves entirely after Ammonia N° 2 tablet was added.
->	Samples with concentrations above 2 mg/l Urea may lead to results in between the measurement range. If so, please dilute sample with Urea free water and re-do the test.
->	Ammonia and chloramines will be detected together. The result displayed will show the sum of both.
->	Temperature of the sample needs to be between 20°C and 30°C.
->	Test needs to be carried out not later than 1 hour after taking the sample.
->	If sea water is tested, sample needs to be pre-treated with special conditioning powder before Ammonia N° 1 Photometer tablet is added.
->	Do not store PL Urea 1 below 10°C as it might granulate.
->	PL Urea 2 needs to be stored between 4°C and 8°C.

Name on device: 156-Watch-Ad





PLSp-ADP-PTSA

PLSp-PIP10ml

PLSp-PIP10ml-tips

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Rinse vial 3 times with your water sample.

2) Fill a cleaned cell (24mm) with 10ml of your sample.

3) Place the cell into the PrimeLab (use caution to the arrow on the cell). Do NOT close the lid.

4) Place PTSA-ADAPTER on top of the open cuvette.

TEST 4) Press TEST.

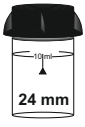
Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Note(s)

-> **Ensure that all parts are clean, dry and free of grease and the adapter must be placed firmly until it stops.**

1. As this Parameter uses an indirect light from above, the shape of the bottom of the cell is important to the result. Because the bottom of the cells can vary greatly it is imperative to always use the cell with which this parameter was also calibrated. It is essential to always ensure the correct amount of water in the cell, which is why exactly 10 ml of liquid should be taken by the pipette for the subsequent sample measurement. Please Change or clean the tip of the pipette after each measurement/calibration.
2. Calibrate this parameter via the calibration SET if you use another cell or you have the feel that the measurement result is inaccurate.
3. One of the following reasons can lead into receiving an error message: “check adapter”
   - Weak or empty batteries (please change)
   - Dirty lense (adapter)
   - Wrong adapter used for this measurement (there are different adapter for different measurements, all looking the same)
   - Adapter might not stay straight on PrimeLab
   - Cuvette-hole (PrimeLab) might be dirty (check the two windows)
   - Water sample might be too dark / not enough light can pass water sample to reach the sensor

Name on device: 62-Zinc-tab



Copper/Zinc LR Photometer (TbsRCZ...)
EDTA (TbsHED...)
DECHLOR (TbsHDC...) *optiona*l

Measurement procedure:

The steps up to the selection of the parameter value to be determined are the same for all procedures and described on page "TEST-5". **Please observe the important notes for accurate measurements on pages "TEST-8" and "TEST-9".**

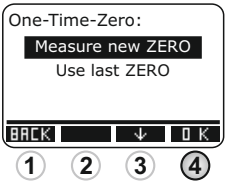
The individual steps of the measurement procedure are shown on the display.
Use button 3 (arrow down) to scroll through the steps.
Use button 4 to skip the notes.

1) Please select Zinc:
A: "in presence of chlorine“
B: "in absence of chlorine“

A) "in presence of chlorine“:

2) Fill a cleaned cell (24mm) with 10ml of your sample.

3) Do you want to use the last stored ZERO value?



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 4)
-> Use last ZERO = continue with step 6)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

5) Remove the cell and open the lid.

6) Add 1 Dechlor tablet to your sample.

7) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

8) Add 1 Copper/Zink LR tablet to your sample.

9) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

10) Close the lid. Shake the cell gently to mix the liquid.

TEST 11) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

12) Remove the cell and open the lid.

13) Add 1 EDTA tablet to your sample.

14) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

15) Close the lid. Shake the cell gently to mix the liquid.

TEST 16) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

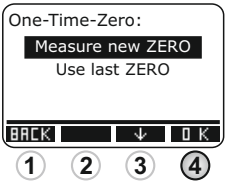
Continued...

Continued...

B) "in absence of chlorine“:

17) Fill a cleaned cell (24mm) with 10ml of your sample.

18) Do you want to use the last stored ZERO value?



If after switching on the device you have already performed the ZERO (baseline) adjustment for the same type, the following message is displayed:

-> Measure new ZERO = continue with step 19)
-> Use last ZERO = continue with step 21)

For the sake of precision select "Use last ZERO" only if the stored ZERO value is used with the same cuvette and the same water sample for the test!

ZERO 4 19) Close the lid, place the cell into the photometer (use caution to the arrow on the cell) and press ZERO.

20) Remove the cell and open the lid.

21) Add 1 Copper/Zink LR tablet to your sample.

22) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

23) Close the lid. Shake the cell gently to mix the liquid.

TEST 4 24) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

25) Remove the cell and open the lid.

26) Add 1 EDTA tablet to your sample.

27) Crush the tablet with a clean stirring rod until the tablet has completely dissolved.

28) Close the lid. Shake the cell gently to mix the liquid.

TEST 4 29) Place the cell into the device. Again, please use caution to the arrow on the cell. Than press TEST.

Possible messages in the line below the measurement value:
"low! / high! / good!":
Assessment of the measurement value relative to the ideal range defined by you.
"Overrange! / underrange!":
Measurement value for this parameter is outside the value range of this method.

Technical details

Your PrimeLab is a high-tech photometer of the latest generation.
Small and handy, but because of the installed JENCOLOR multi-spectral sensor and the wireless connection to the software package “PrimeLab Desktop Assistant” it is incredibly powerful.

Dimensions:	175 x 88 x 59mm
Weight:	160 g
Spectral range:	380nm - 780nm complete coverage by JENCOLOR Multi-Spectral-Sensor
Data transfer:	Internal *Bluetooth*® module and the included *Bluetooth*® USB dongle
Calibration:	Auto-calibration function through the JENCOLOR sensor
One-Time-Zero:	Intelligent OTZ (One-Time-Zero) function with recognition of ZERO types
Internal memory:	100 measurement data sets / 20 account data sets Unlimited through the PrimeLab software
Clock/Date:	RTC (Real-Time-Clock) with calendar function
Auto-Off:	Factory default setting = 10 minutes. Individual adjustment possible
Menu guidance:	Intuitive, display-controlled 4-button menu guidance; test instructions during measurement process
Power supply:	either 4 x 1.5 V AAA batteries or power adapter (100-240VAC, 50/60Hz, 0.2A -> 5.0VDC, 1200mA, 6W)
Display:	Graphic LCD display / monochrome
Languages:	German, English, Spanish, French More languages to follow soon
Environment:	5°C - 45°C / 30 - 90% rel. humidity
Water-proof rating:	The device is splash-proof
Reagents:	The calibration graphs for the individual parameters / measurement procedures are adjusted to the reagents offered by the manufacturer. Using reagents from other manufacturers may cause measurement deviations! Together with PrimeLab we deliver only high quality reagents “Made in Germany” or “Made in UK”!

Troubleshooting

Your PrimeLab has been designed for daily use.
User guidance is intuitive to prevent mistakes in operation.
In exceptional cases, however, the following error messages will be displayed.
Please regularly visit www.primelab.org to stay updated on the latest developments.

No calibration data. Please recalibrate!	Your PrimeLab is calibrated on the LED built into the device (brightness and colour). If this data is missing a manual calibration is required through menu “SET-4” (Setup).
Memory depleted. Delete old data!	100 test results are saved on the device. The memory is currently full. Please delete data through the menu “MEM” to make space available. It‘s even easier to delete data on device by using the PrimeLab Desktop Assistant software.
Measurement invalid Repeat test!	During a test a result was found that does not make sense to the device (e.g. incorrect reagent / colour, severely soiled cuvette or soiled sampling chamber etc.). Please repeat the test.
Low battery power Replace batteries!	The charge state of the batteries is too low for a reliable measurement. The batteries must be replaced or the device must be connected to mains power by means of the power supply and cable. **Do not use rechargeable batteries. Batteries are not recharged via the mains supply cable!**
LED failure! Check device!	The LED light received can not be evaluated. Repeat the step that has resulted in the error message. If this is displayed again, the device needs to be returned for inspection.
Underrange! Overrange!	The determined measurement value is outside the range set for this parameter. If “value too high!” is displayed you can repeat the test after diluting the water sample, the result will then have to be multiplied by the dilution factor.
Update incomplete	The update initiated through the PC has not been completely transferred to the device, repeat the update by initiating it again on the PC, so that the device can be used again.

! If your PrimeLab permanently malfunctions or cannot be started normally please start the PrimeLab by simultaneously pressing and holding the outer left and outer right button and pressing the ON button. The screen will display “Boot loader”. Now run an update through the “PrimeLab Desktop Assistant”!

Troubleshooting with adapters

During calibration and / or during the measurement, the following error messages might be displayed on the PrimeLab:

Error Message:	*Adapter not recognized*
Possible causes:	Battery depleted Adapter incorrectly (eg diagonally) placed Wrong adapter used (eg PTSA instead Turbidity) Adapter-lense (bottom) or optical path in the sample chamber (PrimeLab) dirty or wet
Error message:	*Measurement failed*
Possible causes:	Battery depleted Adapter incorrectly (eg diagonally) placed The identified water sample does not match the turbidity curve Wrong adapter used (eg PTSA instead of Turbidity) Adapter-lense (bottom) or optical path in the sample chamber (PrimeLab) dirty or wet

Cleaning the device

Clean your PrimeLab preferably without using detergents.

Use special care in the area of the sampling chamber (where the cuvettes are inserted). There you will find two round openings behind which there is a transparent plastic pane, and behind that the LED resp. the sensor.
If these areas are not clean this will have a negative influence on the measurement precision.

It is recommended to check these two openings regularly for soiling and clean them with a cotton swab dipped in a little clear water.

Do not exert any pressure on the openings and the panes as the panes might be pushed out, which would render the PrimeLab device unusable.

Also make sure that the two openings are completely dry after cleaning, without any residues and are lint-free.

CE Conformity declaration (EG / EU / ECC)

According to directive 2004/108/EC of the European Parliament and European Council of Dec. 15, 2004.

The manufacturer

Water-i.d. GmbH
Daimlerstr. 20
D-76344 Eggenstein-Leopoldshafen
Federal Republic of Germany

represented by the general manger
Dipl. Ec. Andreas Hock

herewith declares as follows:

The product “PrimeLab Multitest 1.0 Multitest”
complies with the requirements of the following standards:

EN 301 489-1 V1.9.2

Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services;
Part 1:
Common technical requirements

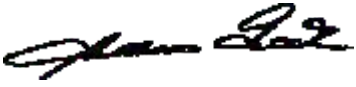
EN 301 489-1 V1.9.2

Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services;
Part 3:
Specific condition for Short-Range-Devices (SRD). Use on frequencies between 9 kHz and 40 GHz.

EN 61010-1:2010

Safety requirements for electrical equipment for measurement, control, and laboratory use.
Part 1:
General requirements

Eggenstein-Leopoldshafen, March 1, 2013
Dipl. Ec. Andreas Hock
General Manager



Guarantee policy

Guarantee claims in case of defects present in the device.

For this product, if bought new from the manufacturer, there is a two year warranty, as required by law, starting from the date of purchase as shown on the purchase receipt
This guarantee does not cover any parts installed in the device that were not purchased from the manufacturer of the device.

In case of a defect during the guarantee period the device is to be returned to the manufacturer who, at its discretion may either repair the device free of charge or replace it, under the condition that the device has not been tampered with or been used improperly, and that there have been no modifications or repairs on the device without the explicit written permission by the manufacturer.

When returning a device, always include the original purchase receipt and a precise description of the claim. If the purchase receipt and / or fault description are not included any guarantee processing is not possible and the sender will be sent the device in return and the sender will bear the return postage.

According to the legal requirements the device will, after guarantee services have been claimed, be subject to the guarantee conditions for the remaining duration of the original guarantee.

The manufacturer of the device is and shall not be liable for any damages or loss of revenue or savings as well as other consequent or collateral damages incurred in the past or the future by the user due to using or not being able to use the device.

The guarantee policy declared here is without prejudice to any further legal claims by the user versus the direct contractual partner.

The manufacturer guarantee for direct, indirect, special damages, consequential or collateral damages caused by the use of the device, its accompanying software or documentation, shall in no case whatsoever exceed the final price paid for the product.
The manufacturer does not offer any compensation upon return to the unit.

The manufacturer can not be held responsibly for damage due to improper handling of the device.
In case of improper handling of the device, user protection can not be guaranteed anymore.

Disposal (devices and batteries)

Disposal instructions according to
EU directive by the European Parliament and Council: 2002/96/EC
EU directive by the European Parliament and Council: 2006/66/EC

Environmental protection information
For the manufacture of your devices raw materials have had to be produced and processed.

The product may there contain hazardous substances with a negative effect on the environment if the device is not disposed of properly.

Disposal of the device
So that these hazardous substances do not enter our environment and contribute to a depletion of raw material resources we ask you to use the corresponding return and recycling systems (in Germany only!).

Return and recycling system can use or recycle most of the material contained in old electrical devices.

The symbol of the crossed-out waste bin indicates that you are asked to dispose of the device properly.

For further information about the collection, recycling and reprocessing systems please contact your local or regional waste disposal authority.

Users of the device located outside the Federal Republic of Germany are requested to return the device **by fully stamped mail (!)** to the following address:

Water-i.d. GmbH
Daimlerstrasse 20
D-76344 Eggenstein-Leopoldshafen
Germany

Disposal of batteries
EU directive 2006/66/EC prohibits the disposal of batteries through th household waste because batteries and accumulators may contain ha substance dangerous for the groundwater quality.
The device purchased by you contains batteries.
We are obliged by law to notify you that the batteries contained in the device must be disposed of properly at the special collection points or with the dealer where you have purchased the device.

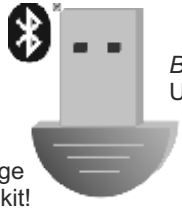
PrimeLab Desktop Assistant

With the "PrimeLab Desktop Assistant" you have acquired a powerful tool for the management and evaluation of your test results, for updating your PrimeLab, for a later installation of additional test procedures and for the development of dosage recommendations.

Install *Bluetooth*® USB dongle

! ***If the computer on which you want to install the "PrimeLab Desktop Assistant" is already fitted with Bluetooth® connectivity please UNDER NO CONDITION insert / install the Bluetooth® USB dongle supplied together with your PrimeLab!***

This may lead to a situation where your system can not establish any Bluetooth® connection at all. Instead of using the Bluetooth® USB dongle supplied with PrimeLab you can use an existing Bluetooth® installation in your computer or any other Bluetooth® adaptor to connect to PrimeLab!



Bluetooth®
USB dongle

Supplied free of charge
with every PrimeLab kit!

If after having carefully read and understood the above notice you want to install the *Bluetooth*® USB dongle supplied with your PrimeLab please follow the instructions below.

1) Make sure that your computer is using any one of the following operating systems: Windows 98, 98se, Me, 2000, XP, Vista, Windows 7

2) Insert the *Bluetooth*® USB dongle supplied with your PrimeLab into any empty USB slot of your computer. Check that the dongle is completely pushed into position. The black end of the dongle will flash in red.

3) Wait for the self-installation of the dongle. The installation progress is displayed in intervals on the bottom right of the screen.
This can take several minutes!

Please wait for the following message:
"New hardware has been installed and can now be used!"
Only then continue with the next step:
"Connect PrimeLab with your PC".

If the installation fails remove the dongle from the slot, restart your system and insert the USB dongle into a different USB slot, making sure that it is completely pushed in, so that the installation can be restarted.

First connection of PrimeLab with PC (pairing)

The advantage of using the *Bluetooth*® connectivity between PrimeLab and your PC is that the two devices only need to "pair" once.
This is the same procedure as between your mobile phone and your car.
Once the connection has been established no intervention is necessary at later connections. The devices will connect automatically and instantly.

The following steps describe the initial (and only) "pairing" of the two devices:

1) Make sure your PrimeLab is switched on and the *Bluetooth*® module is activated.
This is indicated by the "BLUE" in white on black is displayed on the top right margin of the display. If this is not the case follow the instructions on page "SET-1"

BLUE activated
BLUE deactivated

Fig. 1

2) Right click on the *Bluetooth*® symbol next to the system clock in the task bar (Fig. 1) and select "Add *Bluetooth*® device".
If you cannot see a *Bluetooth*® symbol in the task bar click on the *Bluetooth*® symbol in the Windows Control Panel. If there is no *Bluetooth*® symbol available there either, the *Bluetooth*® dongle has not been installed on your system. Check page PDA-1 for information on how to install *Bluetooth*® on your system.

3) In the next window (Fig. 2) all device are listed that may be connected to your PC. There must also be a device with a *Bluetooth*® icon and the name "PrimeLab" (first "Other", than, after a while "PrimeLab") followed by numbers (serial number). If this is not visible, then either your PrimeLab is switched off or the *Bluetooth*® transmitter in the device is not activated (see above).

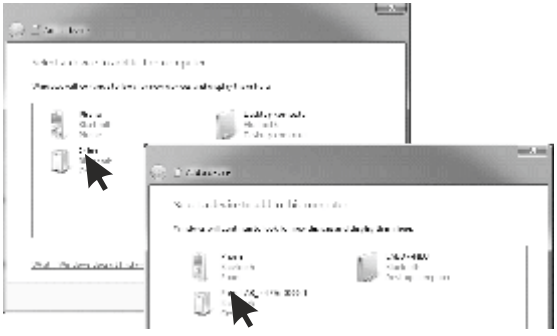


Fig. 2

Continued...

First connection of PrimeLab with PC (pairing)

Continued...

4) In the next window (Fig. 3) select the option “Enter the device‘s pairing code” and enter “0000” (four zeros) in the text box next to the option.
Then click on “Next”.

Fig. 3

The window in Fig. 4 is displayed when the connection has been successfully established.

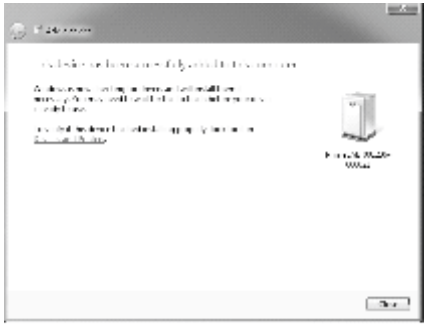


Fig. 4

So long as the *Bluetooth*® dongle in your PC is installed (don‘t remove!) and active, from now on your PrimeLab will, when it is switched on, connect automatically and without intervention with your PC when it is switched on!

In rare cases Windows will simply cancel the pairing.
In this case please delete PrimeLab as a connected device and reconnect as described above (see also PDA-38).

Installing the “PrimeLab Desktop Assistant”

The software “PrimeLab Desktop Assistant” provides the possibility to use an existing *Bluetooth*® connection between your PC and device to download measurement values, write address data on your device, and to remotely control your PrimeLab, load and install the most recent updates for your device and the software automatically from the internet, unlock new test procedures, set ideal value ranges and call support for various topics.

! Before installing the software you should have already connected the device with the computer using *Bluetooth*® (chapter PDA 1-3).

1) Insert the CD-ROM supplied in the drive of your PC. Installation should now start automatically. If the installation does not start automatically (depending on the configuration of your PC) change into the folder of the CD-ROM through Windows Explorer and double click the icon or file “Setup.exe” (Fig. 1). It is possible that some of the messages are displayed in another language.


setup.exe

Fig. 1

If “NET Framework” (a Windows application required for using the PrimeLab Desktop Assistant) is not installed on your computer this will be installed automatically before the steps described below. The computer may have to be restarted after the installation of “NET Framework”. The rest of the installation routine is self-explanatory!

2) In the first installation window select the language for the setup process. This is not (!) necessarily the same language as for the actual software.

3) In the next window accept the EULA (End User Licence Agreement).

4) In the window select the folder where the software is supposed to be installed on your PC, confirm the default or choose a different folder through the browse function.

Fig. 2

5) Fig. 2 illustrates the next step. Here you will determine the name for the entry in the START menu (the name of the folder in the programs folder under the START button) and whether PrimeLab Desktop Assistant can be used only by yourself or all users of the computer.

Continued...

Installing the “PrimeLab Desktop Assistant”

Continued...

Fig. 3

6) In the next window the installation progress is displayed. Finally the message “Installation complete” is displayed. Confirm this by clicking on “Continue” (Fig. 3).

Fig. 4

7) In the last window (Fig. 4) you have the choice of starting the “PrimeLab Desktop Assistant” immediately. Tick the respective field and click “Complete”.

Fig. 5

8) There is now a new entry in your Start menu: “PrimeLab Desktop Assistant” (Fig. 5) as well as a shortcut on your desktop. Double clicking the icon “PrimeLab” will start the software at any time.
Before you do this switch on your PrimeLab so that it may establish a *Bluetooth*® connection with your PC.

If, at a later time, you want to remove the software from your PC simply click on “Uninstall PrimeLab” in the Start menu entry.

The “PrimeLab Desktop Assistant” uses Microsoft .NET Framework, which is installed in version 4.5 on your PC during the installation.
.NET-Framework versions later than 4.5 will not work with the “PrimeLab Desktop Assistant”.

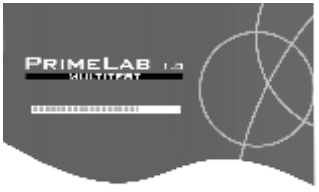
Start Software & automatic synchronisation of test data

1) Make sure that your PrimeLab is switched on and the *Bluetooth*® module is activated. This is indicated by the symbol “BLUE” in white on black in the top right-hand corner of your PrimeLab display. If this is not the case, please follow the instructions on page “SET 1”.

2) Click on the icon “PrimeLab” on your desktop or under START -> All programs -> PrimeLab Desktop Assistant.

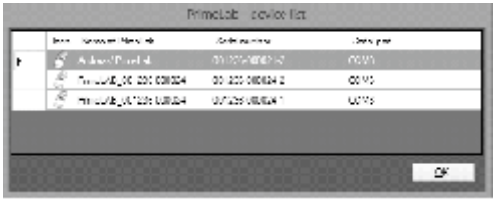

PrimeLab.exe

3) After a short while the window shown is displayed to inform you on the loading progress of the program. This can take some time because the software will look for PrimeLab devices connected to your PC via *Bluetooth*®, which will then be listed in the next selection window.
On the display of your PrimeLab the message “Remote control” should be displayed.



4a) If the message “No PrimeLab found” is displayed make sure that steps (1) and (2) can be confirmed, i.e. that PrimeLab is switched on and successfully connected to your PC. If the error message is repeated although you are certain that PrimeLab is switched on and connected to your PC via *Bluetooth*® right click (!) the *Bluetooth*® icon in the task bar or in Windows system control panel, select “Show *Bluetooth*® network devices”, click on in the PrimeLab symbol shown in the next window and select “Remove”. Then reconnect to PrimeLab as described on pages PDA-2 and PDA-3. Then restart the software “PrimeLab Desktop Assistant”.

4b) Normally the software will start with a selection window showing all connected PrimeLab devices. Select the device you want to work with and click on “OK”.



Continued...

Start software & automatic synchronisation of test data

Continued...

5a) When the software has detected measurement data on the PrimeLab there is a message “Data found on PrimeLab. Do you want to synchronize?”
Select “Yes” or “No”. The data sets are then automatically synchronized between software and device within a few seconds, and the software will assign the data to respective “accounts”.

In the following query window you are asked whether you want to delete the data just synchronized from the device; select “Yes or “No”. Please remember that the memory of the PrimeLab device is limited to 100 data sets.
You can delete occasionally or the PrimeLab will automatically add ´new´ data and delete ´old´ data one at a time on a ´rolling´ basis.

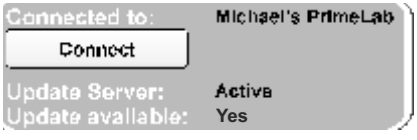
5b) If the firmware supplied with your device and the software stored on your computer are not compatible there will be an error message recommending an update after the loading of the software through the menu “SETUP”.

6) Please note there are two checks that can be done to confirm your PrimeLab photometer and the software package “PrimeLab Desktop Assistant“ are properly connected.

1) Above the ´Connect´ button you should see ´Connected to:´ and this narrative should be followed by the correct ´name´ and/or PrimeLab ´serial number´ that you have assigned to your PrimeLab photometer.

2) To the right side of the main screen is a small square ´PC´ box symbol. This box will be ´green´ when properly connected and ´red´ when connection is failed.

If you want to connect a different PrimeLab device with your software click on “Connect”. The software will restart.



Main screen & screen symbols

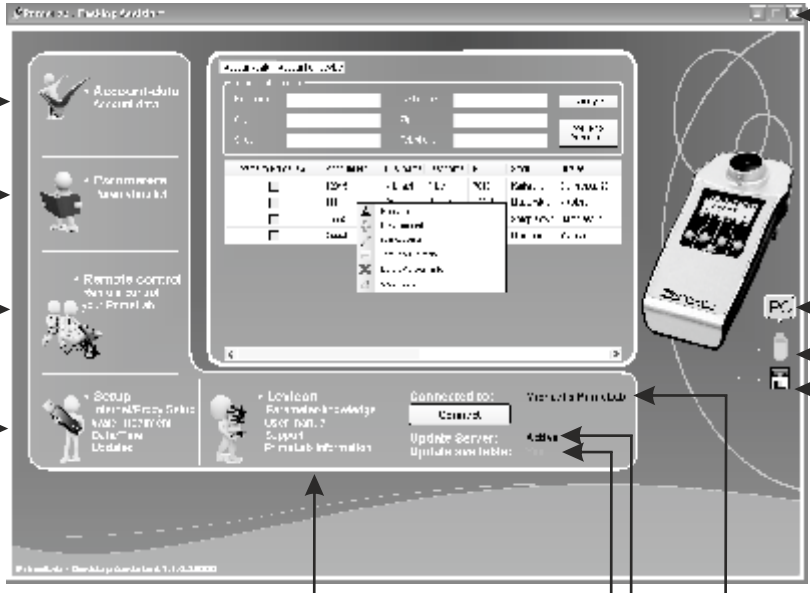
These menus are explained on the next pages. They are used for the remote control of your PrimeLab, for the administration of your measurement data, addresses and water treatment, generated dosage recommendations etc.

Next to this symbol the remaining memory space on the device is indicated in %.

Next to this symbol the remaining battery charge is displayed.

"Green" means: PrimeLab and PC connected via *Bluetooth*®.
"Red" means: No PrimeLab device connected with the software.

Terminate Software!



The menu "Lexicon" provides helpful information on PrimeLab and background on water quality, plus links to the support, the most recent operating instructions and general information on your device.

Display of the ´assigned´ PrimeLab device name/ confirmation that photometer and software are connected.

Indicates whether an internet connection to the update server is available

Indicates whether an update is available

left open for technical reasons

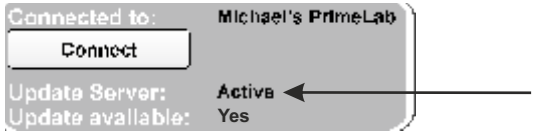
Menu: Setup

Use the setup menu in PrimeLab Desktop Assistant to configure your PrimeLab and for a connection to the internet, to run updates but also to later unlock new test procedures on your device. Here you also have the option to set date and time so that your measurement data is always stored against on the correct date.
The update itself, if required, is also available through the setup menu.

Menu: Setup

Menu: Setup / Set up Proxy

If the word “Active” is displayed under the “Connect” button and next to “Update server”, everything is fine and you can skip this chapter! If the word ´Inactive´ is displayed , follow the instructions below.

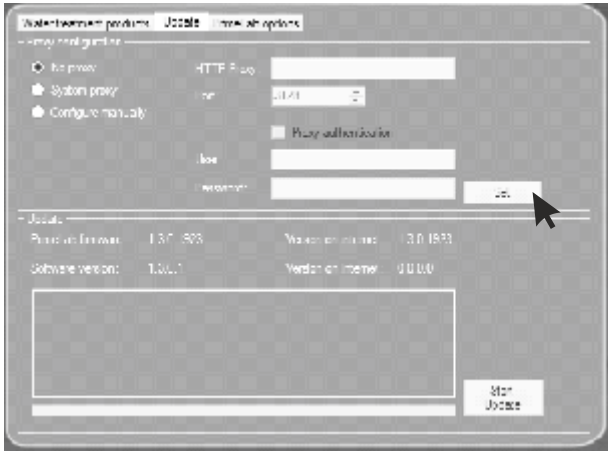


So that the PrimeLab Desktop Assistant can provide updates and further test procedures the software needs to be able to connect to the internet through your PC.

In most cases this is not a problem. The software uses the standard settings of your web browser (e.g. MS Internet Explorer) and the word “Active” appears next to “Update server:” on the screen.

Some networks, especially corporate networks are configured in a way that the connected computers access the internet through a separate machine, a so-called proxy server, which is set up so that a user name and password need to be entered. These settings must also be entered in this software.

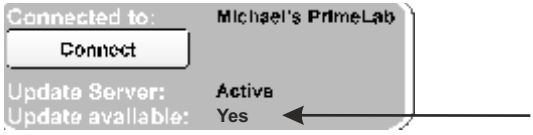
For this purpose click on the menu Setup and select the second tab (Update). It may be possible to achieve internet connection by selecting the field ´System Proxy´ and then clicking on ´Apply´. If, after restarting the software the entry next to “Update server” is still on “inactive” (below the “Connect” button you will need to provide more details on the proxy used by your system. For this please ask your system administrator!



Menu: Setup / Run update (software / firmware)

One great advantage of your PrimeLab lies in the fact that it can always be updated to the newest version and is never out of date!
We are developing new features and measurement procedures all the time, so that we will occasionally provide you with software and firmware (program running your PrimeLab, installed in your PrimeLab) updates, just like you know it from your Smartphone.

If below the button "Connect" and next to the "Update server" button the word "Inactive" is displayed you must first connect your software with the internet. For this purpose read the chapter "Setup: Setup

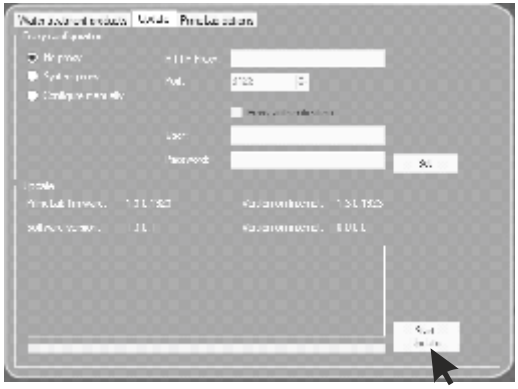


If next to "Update available" the word "No" is displayed an update cannot be loaded or your PrimeLab and the software is already running the latest version.

In the menu Setup click on the second tab (Update).

In the lower part of the tab "Update" you will see the number of the version currently used on PrimeLab and the software, and which versions are available on the update server.

Click on "Start update" and follow the instructions below.



It is best to run the update with the batteries of the PrimeLab fully charged or the device connected to mains power.
Never disconnect the power from the device during the update as this may cause damages or destroy the PrimeLab device.

If after an update your PrimeLab cannot be restarted switch it back on as follows:
Press and hold the left button and the right button on the device and press the Start button. The screen will now display "Boot loader".
Start the software and repeat the update!

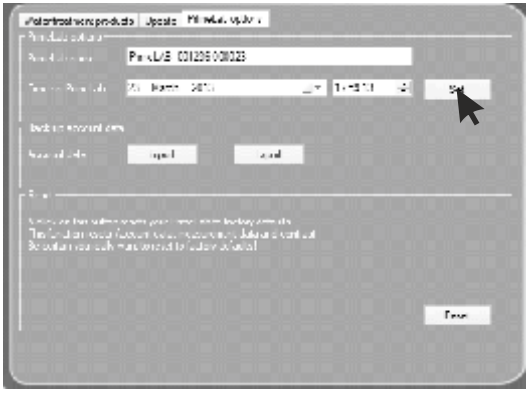
Menu: Setup / Assign a name to PrimeLab

Especially if you are using several PrimeLab devices (e.g. in a lab) it makes sense to assign a unique name to each PrimeLab device. This can be easily done as follows:

Click on the SETUP menu and select the third tab (“PrimeLab options”).

In the field “PrimeLab name” enter a name of your choice and confirm the entry by clicking “Set”.

The PrimeLab device will then be identified by the name assigned by you.



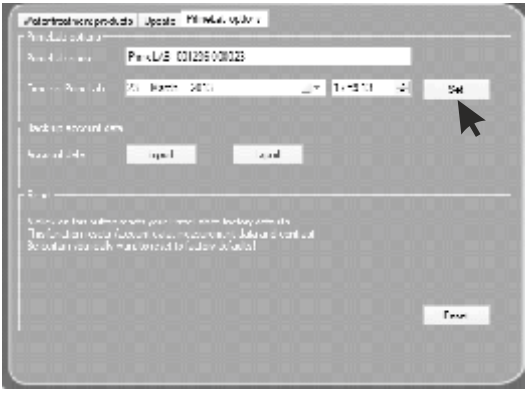
Menu: Setup / Adjust date and time

For each measurement the date and time of the measurement is also stored, so that a historic evaluation of the data is possible and to check which water data was recorded at what time.
It is recommended to always keep the date and time settings on your PrimeLab up to date.

Date and time settings can either be entered in the device itself (menu SET) or using the software.

In the menu SETUP select the third tab (PrimeLab options).

If necessary, change the entries under “Time in PrimeLab:” and then click on “Set”.



Menu: Setup / Import and export accounts

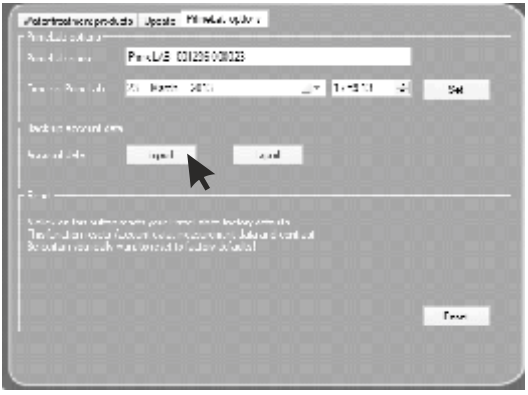
In the next chapter (“Account data”) you will learn about the central importance of the “Accounts” established in the software for your work with PrimeLab and the software “PrimeLab Desktop Assistant”.
So that you do not have to re-enter address data already stored on your computer the software has an import function you can use, saving time and effort.
In this menu you can also export accounts, in case you want to install the software on different computer and continue using the existing data.

Click the SETUP menu and then select third tab (PrimeLab options).

1) Importing external data:
To import external data, such as your customer database, the data will need to be converted to a portable format.

For this purpose copy the data into an Excel file.

Name the columns in the sequence as below and as follows:
(= field may not be empty)*



Column A* contains the surnames, line 1 is titled: **Name**
Column B* contains the first names, line 1 is titled: **Firstname**
Column C* contains the postal codes, line 1 is titled: **Zip**
Column D* contains the towns / cities, line 1 is titled: **City**
Column E* contains the street names, line 1 is titled: **Street**
Column F contains the mobile phone numbers, line 1 is titled: **Mobile**
Column G contains the customer account numbers, line 1 is titled: **Accountnumber**
Column H contains the phone numbers, line 1 is titled: **Telephone**
Column I contains the countries, line 1 is titled: **Country**
Column J contains the (federal) state details, line 1 is titled: **State**
Column K contains the email addresses, line 1 is titled: **Email**
Column L contains the fax numbers, line 1 is titled: F**ax**
Column M contains remarks and comments, line 1 is titled: **Account-Remarks**
Column N contains the volume of the measured water source in m³ (e.g. “50” for a 50 m³ pool), line 1 is titled: **Source-Volume**
Column O contains information on the measured water source (e.g. “pool”), line 1 is titled: **Source-Remarks**

The fields must not be formatted but stay in the standard Excel format “Standard” (click on “field”, then “format”, then “character” -> “Standard”)

Save this file containing your data as a file with the “.csv” extension (in Excel “Save as…” and select file format “.csv”).

Continued...

Menu: Setup / Import and export accounts

Continued...

Now click in the software on “Import” and select the file just created as described above.
The data is now imported and can be viewed and edited under “Accounts”.

2) Exporting “Account data:
If you want to backup the accounts saved in the “PrimeLab Desktop Assistant” software (! Not the measurement values!) there is the convenient “Export” function. For this purpose click on “Export” and in the windows that opens the file name and location where the data is to be saved.
All data exported is saved as a “.csv” file in the format as described under “Import”.

!

Exporting account data will not save measurement data and results! If you want to backup the whole system, e.g. to continue your work on another PC, it is recommended to copy the whole installation directory or folder (e.g. “c:\Programme\PrimeLab Desktop Assistant\”) and to paste that on the other computer.
In this case you must make sure that .NET Framework 4.5 is also installed on the other PC.
A complete backup function of the entire software including account data and measurement and test results will be available in the near future

Menu: Setup / Reset to factory defaults

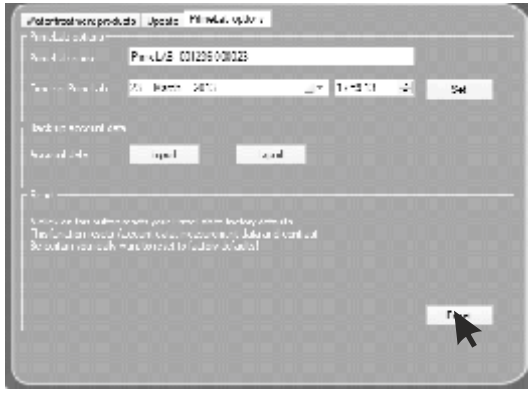
With this option you will reset your PrimeLab back to the original delivery state. The unlocked parameters and test procedures will remain unaffected by this reset to the factory default settings.

> **!** Before resetting your PrimeLab to the factory default settings you should synchronize the data on the device with the software.

Click on the SETUP menu and select the third tab (PrimeLab options).

Click on the button “Reset” to set the following settings of the device back to the factory default:

- **PrimeLab device name**
- **Accounts on the device**
- **Measurement data**
- **Contrast**



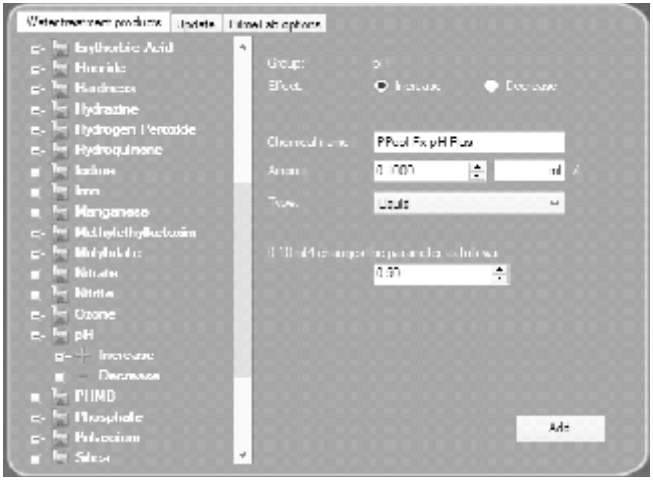
Menu: Setup / Enter water treatment products for dosage recommendations

The “PrimeLab Desktop Assistant” can be used make a dosage recommendation on the basis of the measurement results, so that the water on which the measurement is based can be returned to your defined quality range using water treatment products.
So that you can be as flexible as possible it is necessary that you not only define the ideal ranges for each measurement method (e.g. pH value ideal range = 7.20 – 7.40) and store the amount of water for each account (e.g. 50 m³ pool), but that you also save your individual water treatment products (e.g. pH Minus granulate), because the dosage recommendations will and can only be calculated on the basis of the information:

Measurement value – ideal range – water quantity (source) – water treatment product

Click on the SETUP menu and select the first tab (Water treatment products).

Select the water parameter for which you want to store water treatment products.



Now select if you want to enter a treatment product to increase or decrease the water value after adding it.
Depending on the selection either a green plus sign “+” or a red minus sign “-“ is displayed in front of your entry.

It is best to name your entry by using the actual name of the water treatment product.
In the following step you determine whether it is a liquid, granular or tablet water treatment product and the quantity (units determined by you, e.g. “ml”, “g” or “pc.”) per litre (“/l”) to change value by how much (also determined by you).
Refer to the details on the packaging or the instructions to your water treatment product.

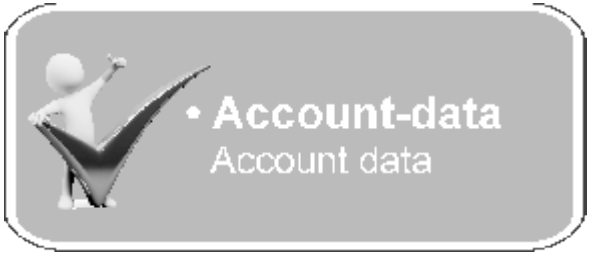
Repeat this for all water parameters for which you intend to provide dosage recommendations. You can enter more than one water treatment product per water parameter! The dosage recommendation will then consist of several suggestions.

Remove entries or change them by Select/Change and clicking on the respective buttons.

left open for technical reasons

Menu: Account data

The menu “Account data” is a central function of the “PrimeLab Desktop Assistant” software, because this is where you find the administration of the sources of the water samples and the measurements conducted with them.
“Accounts” can be clients of a lab, customers of a pool shop or a water service company, or even different pools, aquariums etc. of a single company.
Measurement results are always (!) associated with an account and can therefore be distinguished, neatly archived and managed.



Menu: Account data

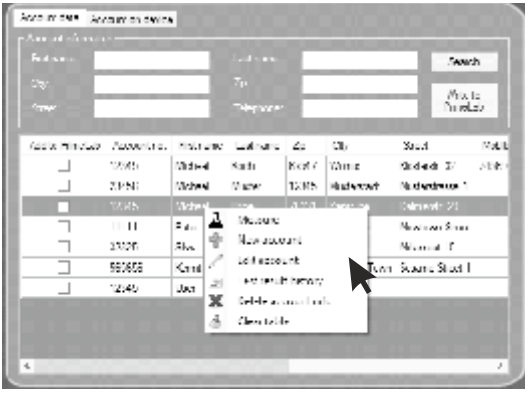
Menu: Account data / Add new account
Menu: Account data / Edit existing account
Menu: Account data / Delete account

The software has the function of importing external data, e.g. from your customer database, so that you do not have to re-enter huge amounts of data again. For more information see the chapter “Setup – Importing and exporting account data”.

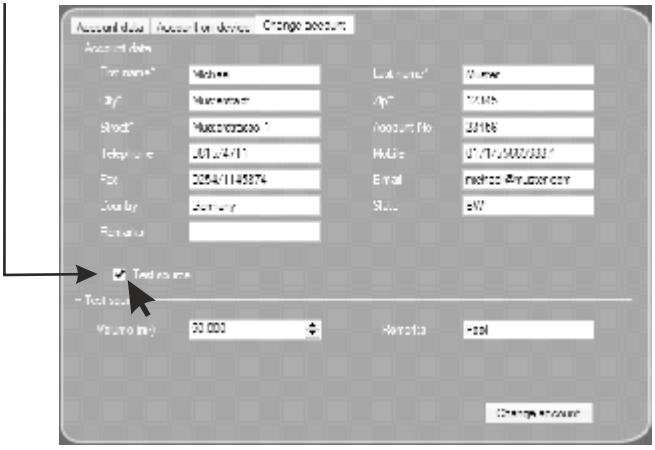
Click on the menu “Account data” and select the first tab (Account data).

With a right click (!) in the address data field open a submenu.

Select:
“New account” to create a new account
“Edit account” to edit data of an existing account
“Delete account” to delete an existing account



Under “Test basis” always include the volume of the measurement water source (in m³), because you must have this information to be able to calculate the dosage recommendations!



Menu: Account data / Write and remove accounts to/from PrimeLab

The “PrimeLab Desktop Assistant” can manage as many accounts as required, whilst on the PrimeLab device itself there is “only” sufficient memory space for 20 accounts and the associated 100 measurement values.

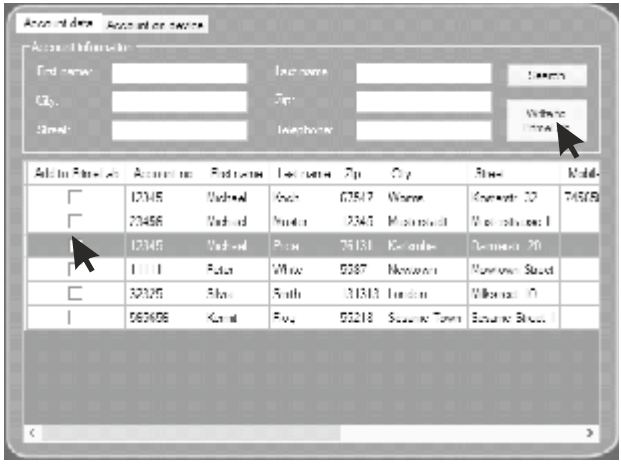
With a few clicks you can determine which accounts on the PrimeLab can be saved and selected.

Click on the menu “Account data”.

Under the first tab “Account data” all accounts saved in the software are displayed.

Under the tab “Account on PrimeLab” you can check which accounts are currently stored on the device.
Tick the box beside the account you want to remove from the device, then right click on the selected account data set to open a menu with the options to delete the account data set or only the measurement values associated with this particular account from the device.
So if you want to remove several accounts and / or measurement results from the device, simply tick the box beside the respective accounts to be removed before you right click to open the menu and select the delete command.

To save accounts (without the measurement results) from the database on the PrimeLab device, place a tick in the tab “Account data” in front of the respective accounts and then click on “Write to PrimeLab”.
If you try to save more than a total of 20 accounts on the PrimeLab an error message is displayed.



Menu: Account data / Manually read test data from the device

Whenever the software is started and the connection to PrimeLab is established a window is displayed offering the option to synchronize all data stored on the PrimeLab.
If this query is answered with “Yes” there is no need to manually synchronize any data, otherwise follow the instructions below.

To manually store measurement results in the database on your PC click on the menu “Account data”.

Under the second tab “Accounts on device” there is a listing of all account data currently stored on the PrimeLab.

Place a tick in the box beside the account whose measurement results you want to download.

Right click on the account and select the option “Load user and measurement data” in the submenu displayed.

If there is measurement data available, this is loaded onto the PC to the respective account, and there will be a report on how many data sets have been transferred.

Menu: Account data / Remote control the PrimeLab

The “PrimeLab Desktop Assistant” has the feature of conducting remotely controlled measurements, for which you prepare the settings and measurement steps on screen and the PrimeLab device itself is “only” used for the actual measurement. The advantage of this procedure is that the individual measurement steps are more extensively described on the software screen than on the PrimeLab device display and that the results can be directly saved on the PC, saving all synchronization work.
It is also easier to enter settings, such as the ideal value ranges, on the keyboard than through the buttons of the PrimeLab device.

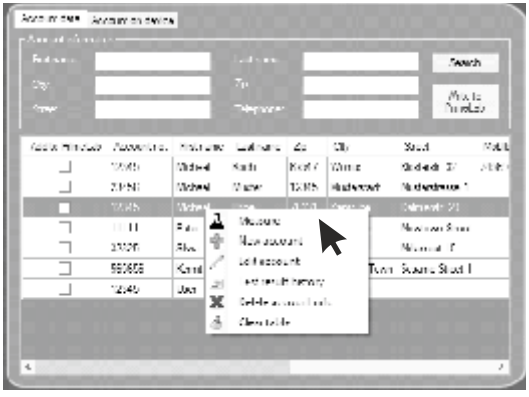
To initiate a remotely controlled measurement...
• either go directly into the menu “Remote control”

or

• select the menu “Account data” and then the first tab “Account data”. Double click on an account for which you want to conduct measurements and the main screen of the menu “Remote control” is opened. Then follow the instructions described in the section “Remotely controlled parameters / measurements”.

or

• select the menu “Account data” and the first tab “Account data”. Right click an account for which you want to conduct a measurement, and select from the submenu opened the entry “Start measurement”. The main screen of the menu “Remote control” is opened. Then follow the instructions described in the section “Remotely controlled parameters / measurements”.



or

• In the menu “Parameters” double click a measurement method. The main screen of the menu “Remote control” is displayed. Then follow the instructions described in the section “Remotely controlled parameters / measurements”.

Menu: Account data / Print test results (report)

One of the advantages of the “PrimeLab Desktop Assistant” is the feature that test results can be displayed in any conceivable manner, to provide a most extensive and historic overview of the test results collected.

In the menu “Account data” select the first tab “Account data”.

By entering a few characters of a search term in the search field (name, surname, etc.) and clicking on “Search” the account entries can be filtered.
Entering an “M” under first name and clicking on “Search” will reduce the list to all accounts with the field “First name” containing the letter “M”.

Right click on an account entry. From the menu opening up select the entry “Test result history” (Fig. 1).

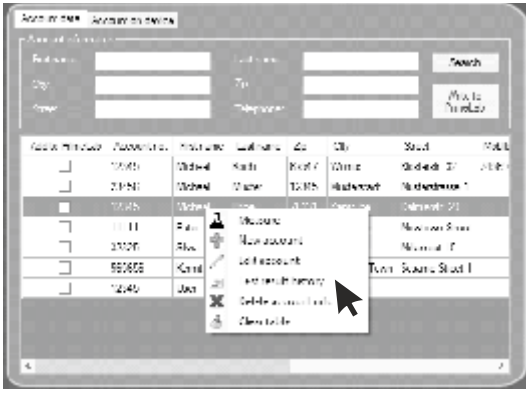


Fig. 1

A third tab is displayed “Result history” (Fig. 2).
You can further restrict the search results by selecting a date or only certain measurement methods.
Click on “Create report” to open a new window with a report as shown on the next page. The report can be printed and / or saved as an Excel file, as a Word document or exported as a PDF.

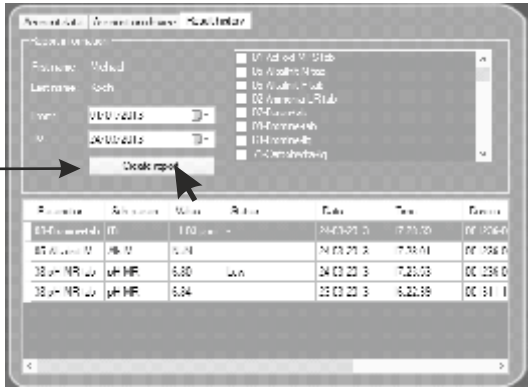
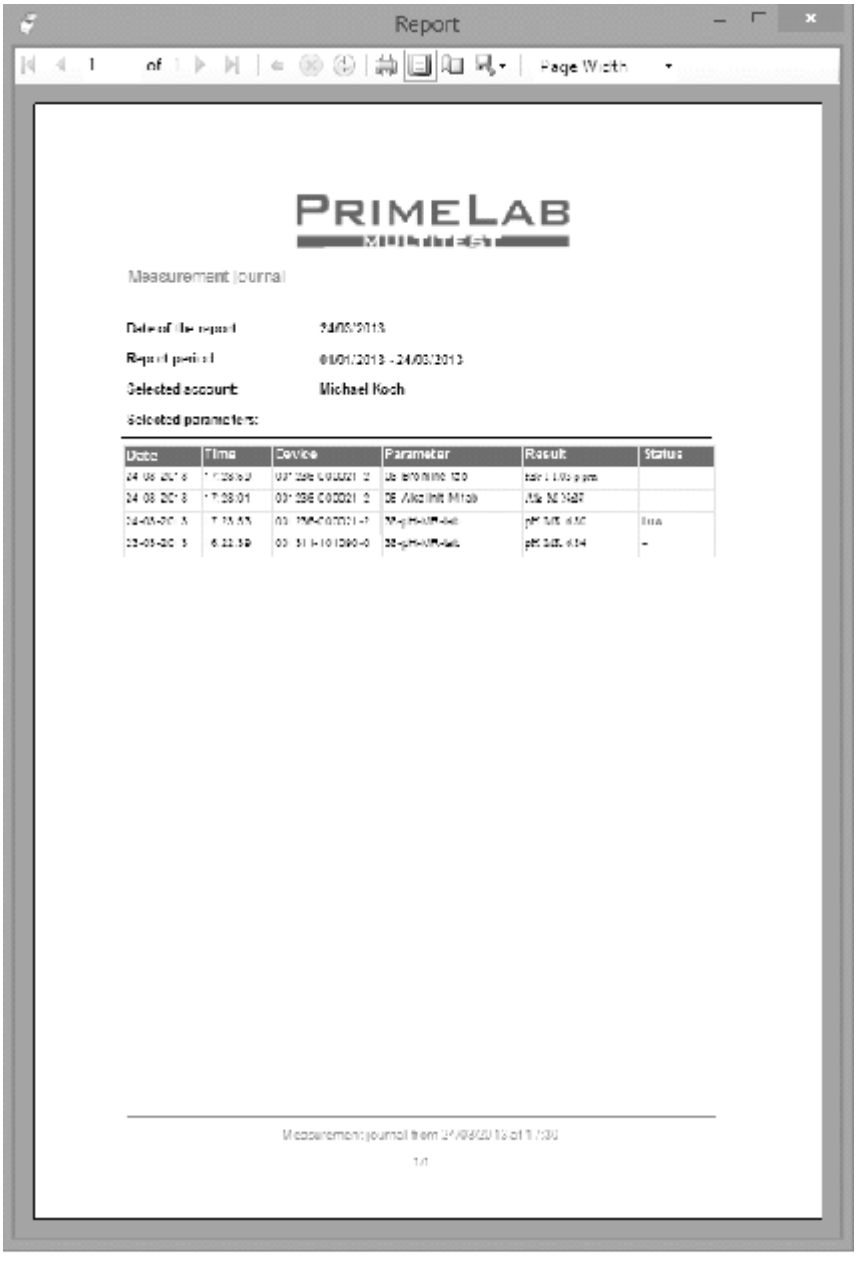


Fig. 2

Menu: Account data / Print test results (report)



Menu: Account data / Generate dosage recommendations

The most powerful feature of “PrimeLab Desktop Assistant” is the possibility to use the measurement results and individually determined ideal value ranges and water treatment products per parameter to have dosage suggestions calculated.

Select the menu “Account data” and then the first tab “Account data”.

By entering any number of characters of a search term in one of the search fields (name, surname …) and then clicking on “Search” the search results can be filtered. Entering an “M” under first name and clicking on “Search” will reduce the list to all accounts with the field “First name” containing the letter “M”.

Right click on an account entry. From the opened submenu select the entry “Test result history” (Fig. 1).
A third tab “Result history” (Fig. 2) is opened.
Restrict the results further as desired by entering a date range or selecting only certain measurement methods.

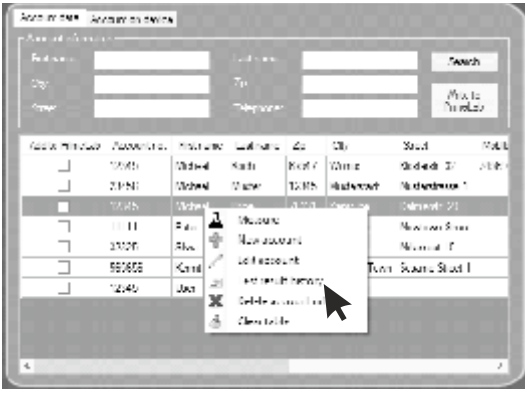


Fig. 1

Right (!) click on a measurement value, and in the now opening submenu select and click on “Dose recommendation”. A new window is opened where you can enter the desired ideal value range or confirm that shown on the next page.
The dosage recommendation can be printed and / or saved as an Excel file, a Word document or exported as a PDF.

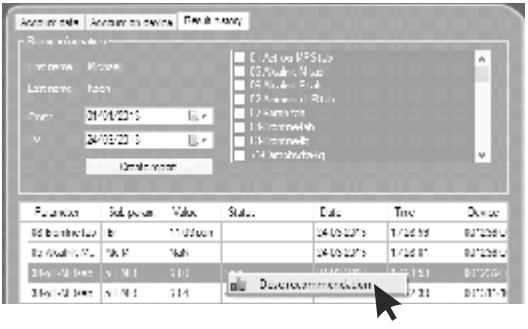
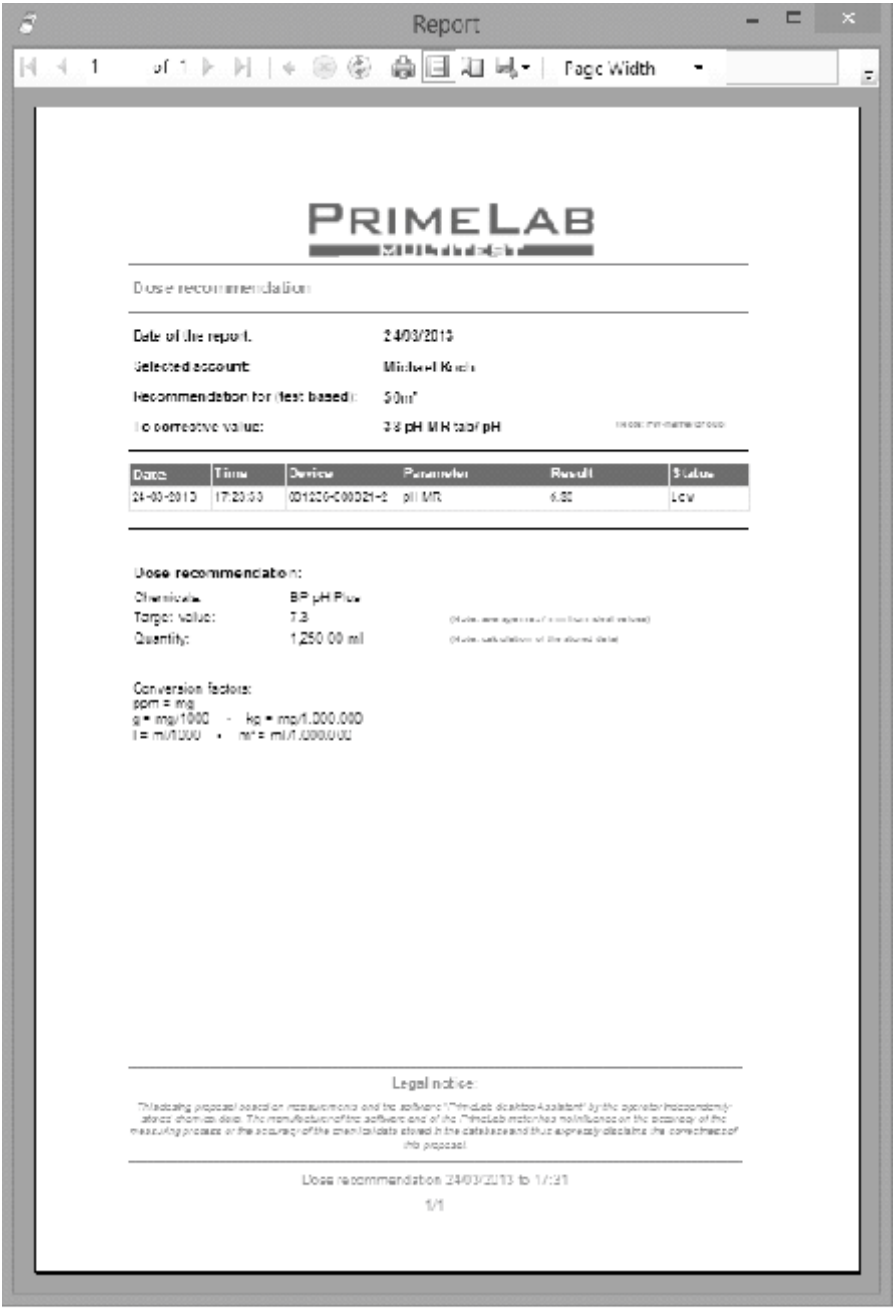


Fig. 2

To be able to generate a dosage recommendation the following must be provided or entered respectively:
the water treatment product for this parameter group (menu “Setup”)
the account to which the measurement result is associated, and the volume of the test water source (e.g. 50 m³ pool; menu “Account data”)

Otherwise an error message is generated!

Menu: Account data / Generate dosage recommendations



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Menu: Parameters

Use the menu “Parameter” to manage the measurement methods available in your PrimeLab and subsequently purchased, unlocked and installed.
The measurement methods are each associated with certain parameter groups. There can be more than one method to any parameter group, depending on the various reagent types (liquid, tablet, powder) and / or different measurement ranges.

Menu: Parameters

Menu: Parameter / Install new parameter on the device

By using the JENCOLOR sensor the PrimeLab device is able to test for all water values whose colour development after addition of a reagent occurs in the visible colour spectrum.
This also means that the list of water values that can be measured by PrimeLab will continuously grow.
So that your PrimeLab is always up-to-date you can acquire codes to unlock further parameters / measurement methods on your device.

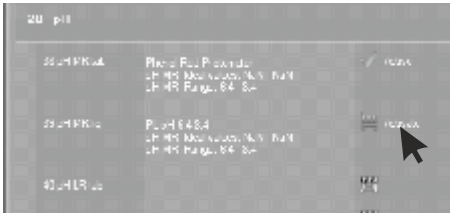
**Unlocking codes are not free of charge.
Please contact your specialist dealer
to acquire an unlocking code.**

Click on the menu “Parameters”.

Double click on the parameter group for which you want to activate a measurement method.

The following symbols will be shown behind the measurement methods after double clicking on the parameter group:
• green tick: This measurement method is activated and available
• construction sign: This measuring method is under development / not yet available
• shopping basket: This measurement method can be activated by a code

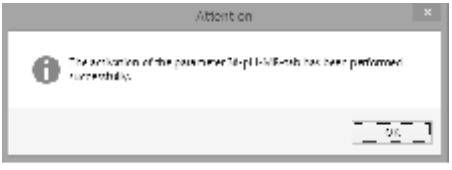
Click on the shopping basket.



In the following window enter the eight character unlocking code acquired from your dealer. Please mind upper and lower case characters in the code!

Confirm your entry by clicking “Activate”.

The measurement method activated by the code is immediately available and installed on PrimeLab.



Menu: Parameter / Remote control the PrimeLab

The “PrimeLab Desktop Assistant” has the feature of conducting remotely controlled measurements, for which you prepare the settings and measurement steps on screen and the PrimeLab device itself is “only” used for the actual measurement. The advantage of this procedure is that the individual measurement steps are more extensively described on the software screen than on the PrimeLab device display and that the results can be directly saved on the PC, saving all synchronization work.
It is also easier to enter settings, such as the ideal value ranges, on the keyboard than through the buttons of the PrimeLab device.

To initiate a remotely controlled measurement...

• either go directly into the menu “Remote control”

or

• select the menu “Account data” and then the first tab “Account data”.

Double click on an account for which you want to conduct measurements and the main screen of the menu “Remote control” is opened.
Then follow the instructions described in the section “Remotely controlled parameters / measurements”.

or

•select the menu “Account data” and the first tab “Account data”. Right click an account for which you want to conduct a measurement, and select from the submenu opened the entry “Start measurement”. The main screen of the menu “Remote control” is opened. Then follow the instructions described in the section “Remotely controlled parameters / measurements”.

or

• In the menu “Parameters” double click a measurement method. The main screen of the menu “Remote control” is displayed. Then follow the instructions described in the section “Remotely controlled parameters / measurements”.

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Menu: Remote control

Using the “Remote control” menu all measurements can be conducted conveniently from the PC. In this case PrimeLab works as a pure measurement sensor and no buttons need to be pressed on the device.
The menu “Remote control” is also used to define the ideal ranges per measurement method, which is important for the assessment of the test results (low / OK / high) and for the calculation of the dosage recommendations.

Menu: Remote control

Menu: Remote control / Remote control the PrimeLab
Menu: Remote control / Defining ideal ranges per test method

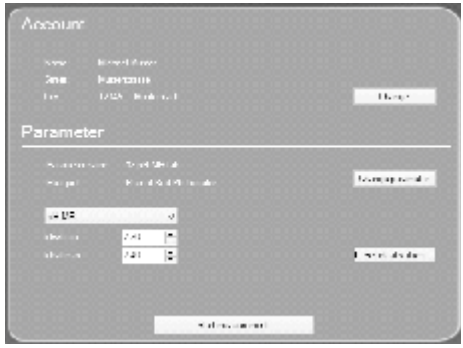
The “PrimeLab Desktop Assistant” has the feature of conducting remotely controlled measurements, for which you prepare the settings and measurement steps on screen and the PrimeLab device itself is “only” used for the actual measurement. The advantage of this procedure is that the individual measurement steps are more extensively described on the software screen than on the PrimeLab device display and that the results can be directly saved on the PC, saving all synchronization work.
It is also easier to enter settings, such as the ideal value ranges, on the keyboard than through the buttons of the PrimeLab device.

Click on the menu “Remote control”.

Next you must select the account for which the measurement is to be conducted. Each measurement must be associated to an account so that a historical management and the calculation of dosage recommendations are possible.

If the account is not the one for which the measurement is to be made click on “Change” to return to the account list.

Double click the account for the measurements are intended and you will be returned to the remote control panel. In the same manner select the measurement method you intend to use. If the shown method is not the intended one, click on “Change parameter” to return to the parameter list. Double click on the respective group and then double click on the measurement method to be used.

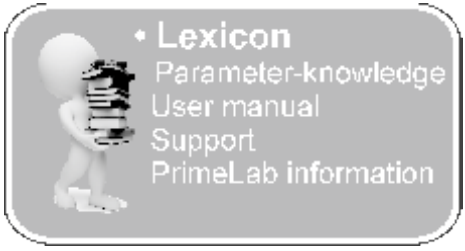


If desired, define ideal ranges by setting maximum and minimum values to receive an assessment of the result (saved with the test result) and to be able to generate later dosage recommendations with the data saved.
Measurement methods delivering several partial results (e.g. chlorine, bonded chlorine, total chlorine) ideal values can be defined for each partial result.

Now click on “Start measurement” to initiate the test procedure. You will then, depending on the measurement method, be guided in single steps through the test procedure.

Menu: Lexicon

The menu “Lexicon” contains valuable information for you, such as a concise water primer, the latest instruction manual, information on reagents and much more.



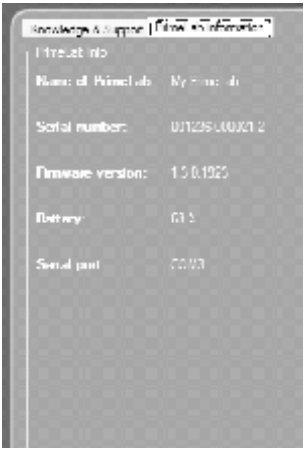
Menu: Lexicon

Menu: Lexicon / Information and support
Menu: Lexicon / Device information

Click on the menu “Lexicon”.

Information and support
On the first tab “FAQ & Support” there are several links to valuable information resources on www.primelab.org.
- Water lexicon (info on water parameters that can be measured using PrimeLab)
- Operating instructions (download link to the latest operating instructions for the PrimeLab and the “PrimeLab Desktop Assistant” as PDF)
- List of reagents for PrimeLab
- Contact the PrimeLab Support Team

Device information
On the second tab (“PrimeLab information”) you can find information about the device name, serial number, battery status, current version of the installed firmware and the virtual COM port used by Windows for the *Bluetooth*® connection.



Menu: Error messages

Most error messages generated by the “PrimeLab Desktop Assistant” are self-explanatory and will therefore not be discussed in detail; therefore not all error messages possible are including in the list below.

There was no PrimeLab found.

When / where: Starting the software

Cause / recommendation
• PrimeLab is not switched on
-> switch on PrimeLab and restart the software

• *Bluetooth*® transmitter (PrimeLab) not active
-> check whether the word BLUE is shown in white on black in the top right corner of the display. If not, activate the *Bluetooth*® transmitter by following the instructions in chapter SET of these operating instructions
• The *Bluetooth*® dongle (in the PC USB port) is either not inserted properly or defective
-> check whether the dongle is firmly pushed into the USB port and the light is flashing in red (if using the model supplied free of charge with PrimeLab). If the *Bluetooth*® dongle is in fact defective you can purchase any other *Bluetooth*® dongle to install on your PC. Then re pair the PrimeLab with your PC as described on pages PDA-2 and PDA-3.

• Windows lists PrimeLab as a paired device, but cannot establish the connection.
-> Call up the list of connected devices (if you are using the free dongle supplied with your PrimeLab you will see this list by right clicking the *Bluetooth*® symbol in the Task bar and selecting the entry “Show *Bluetooth*® network devices”). Select PrimeLab listed there, click on “Remove” and then re-pair PrimeLab as described on pages PDA-2 and PDA-3.

Generation of recommendation impossible because no chemicals have been deposited for the group.

When / where: When attempting to generate a dosage recommendation.

Cause / recommendation
• The “PrimeLab Desktop Assistant” can only calculate a dosage recommendation if all data required for this are available. These are:
-> Measurement value
-> Ideal range to be reached after following the dosage recommendation
-> Volume of the test source (e.g. pool: 50 m³)
-> Water treatment products / chemicals able to change the measurement values of the water towards the ideal values.
Water treatment products are deposited in the database as “decreasing” or “increasing” chemicals in the menu “SETUP / Water treatment products”.

Continued...

Menu: Error messages

Continued...

The report cannot be generated because no volume for the test source has been entered

When / where: When attempting to generate a dosage recommendation.

Cause / recommendation
• The “PrimeLab Desktop Assistant” can only calculate a dosage recommendation if all data required for this are available. These are:
-> Measurement value
-> Ideal range to be reached after following the dosage recommendation
-> Water treatment products / chemicals able to change the measurement values of the water towards the ideal values.
-> Volume of the test basis: Only if it is known how many litre or cubic metres water are the basis for the measurement, so for example a pool with 50 m³ water or an aquarium with 0,02 m³ water, the software will be able to calculate how much water treatment chemicals are required to change the current water quality value so that this is shifted within the ideal range.
The test basis volume is stored separately for each account. If this is missing, right click on the account, select “Edit account”, place a tick with “Test basis” and enter the volume in m³.

Import failed

When / where: When attempting to import external data (as accounts)

Cause / recommendation
• When importing account data the file must specially formatted.
-> The data to be imported must be saved as a “.csv” file. In addition the column headers must be in the exact sequence as described on pages PDA-14 and PDA-15 and they must not contain any spelling mistakes. Also, all fields must be formatted as “standard” and not as “text”, “number” etc.
Only then will the data be imported correctly.
Suggested workaround: Simply export existing account data and you will have a “.csv” file with the correct headers and the correct formatting. In this copy your account data, save the file and them import it in PrimeLab.