

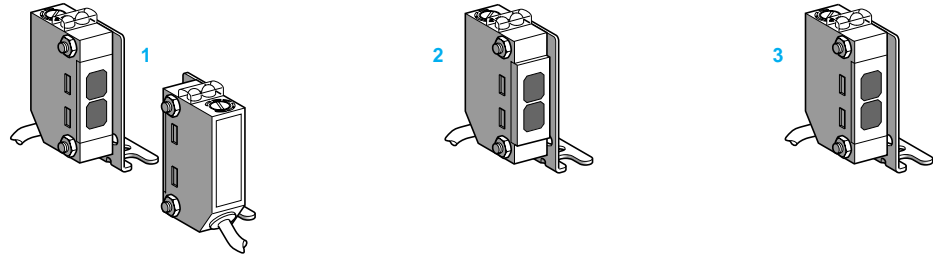
# Photo-electric detectors

Osiris® universal detectors  
 d.c. supply. Solid state output. Pre-cabled  
 With test output and protection against mutual interference

Accessories :  
 pages 2/118 to 2/123

References, characteristics

Miniature design



System	Thru-beam 1	Reflex 2	Polarised reflex 2	Diffuse 3		Convergent diffuse 2
Type of transmission	Infra-red	Infra-red	Red	Infra-red	Infra-red	Red
Nominal sensing distance (Sn)	7 m	3 m (with Ø 80 mm reflector)	2 m (with Ø 80 mm reflector)	0.70 m	0.10 m	0.015 m

## References

3-wire, PNP	Light or dark programmable switching	<b>XUM-H073534</b>	<b>XUM-H03353</b>	<b>XUM-H023539</b>	<b>XUM-H703535</b>	<b>XUM-H103535</b>	<b>XUM-H15353R</b>
3-wire, NPN	Light or dark programmable switching	<b>XUM-J073534</b>	<b>XUM-J03353</b>	<b>XUM-J023539</b>	<b>XUM-J703535</b>	<b>XUM-J103535</b>	<b>XUM-J15353R</b>
Transmitter		<b>XUM-H07301</b>	–	–	–	–	–
Weight (kg)		0.080	0.080	0.080	0.080	0.080	0.080

## Characteristics

<b>Product certifications</b>	CE, UL, CSA
<b>Ambient air temperature</b>	Operation : - 25...+ 55 °C. Storage : - 30...+ 70 °C
<b>Vibration resistance</b>	7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 68-2-6
<b>Shock resistance</b>	50 gn, 3 axes, 3 times
<b>Degree of protection</b>	IP 67 conforming to IEC 529
<b>Connection</b>	Pre-cabled, diameter 4.5 mm, length 2 m, wire c.s.a. : 6 x 0.2 mm <sup>2</sup> (5 x 0.2 mm <sup>2</sup> for thru-beam receiver, 3 x 0.2 mm <sup>2</sup> for thru-beam transmitter)
<b>Materials</b>	Case : ABS/PC ; lens : PMMA/PC ; cable : PVC
<b>Rated supply voltage</b>	<b>== 12...24 V with protection against reverse polarity</b>
<b>Voltage limits</b>	== 10...30 V (including ripple)
<b>Switching capacity (sealed)</b>	<b>≤ 100 mA with overload and short-circuit protection</b>
<b>Voltage drop, closed state</b>	≤ 1.5 V
<b>Current consumption, no-load</b>	Thru-beam : ≤ 50 mA ; reflex, diffuse : ≤ 35 mA
<b>Maximum switching frequency</b>	500 Hz
<b>Delays</b>	First-up : 1 ms ; recovery : 1 ms

Function table	Function	Thru-beam and reflex systems		Diffuse system	
		No object present in the beam	Object present in the beam	No object present in the beam	Object present in the beam
Output state (PNP or NPN) indicator : yellow LED (illuminated when detector output is ON)	Light switching				
	Dark switching				

# Photo-electric detectors

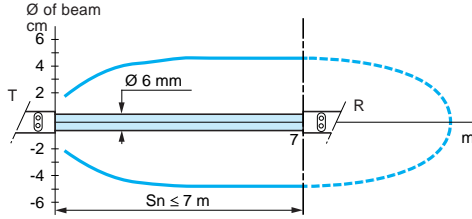
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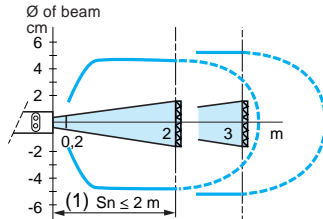
Curves, dimensions, schemes

## Detection curves

Thru-beam system

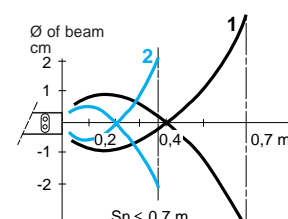


Reflex system



(1) Polarised (2) Infra-red

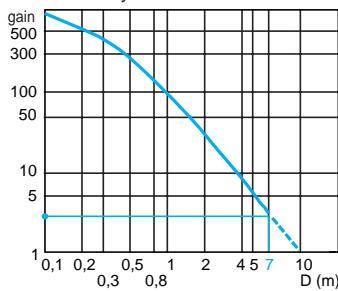
Diffuse system (example Sn = 0.7 m)



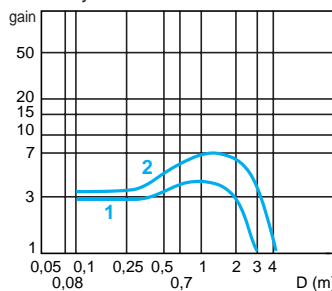
Object 20 x 20 cm  
 1 White 90 %  
 2 Grey 18 %

## Excess gain curves (ambient temperature : + 25 °C)

Thru-beam system

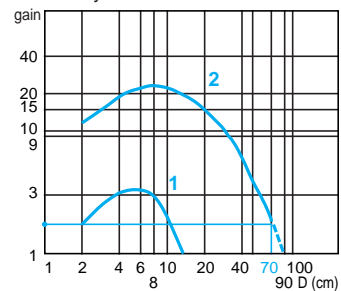


Reflex system



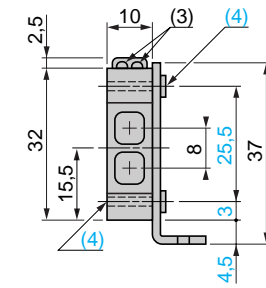
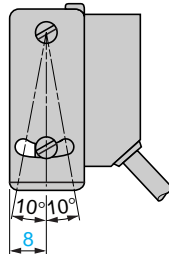
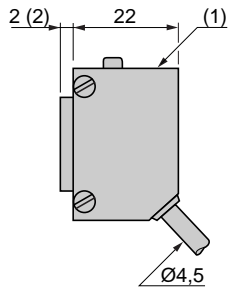
With reflector XUZ-C80  
 1 Polarised 2 Infra-red

Diffuse system

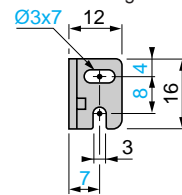


Object 20 x 20 cm, White 90 %  
 1 Sn = 0.1 m, 2 Sn = 0.7 m

## Dimensions



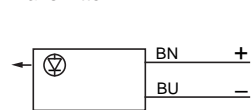
Bracket fixing



- (1) Sensitivity adjustment
- (2) Only applicable to reflex and convergent diffuse systems
- (3) LED
- (4) Elongated hole Ø 3 x 4

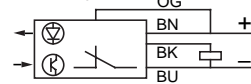
## Wiring schemes (3-wire ...)

Transmitter

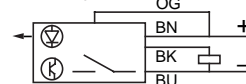


Light switching (no object present)

Thru-beam receiver & reflex  
 PNP output

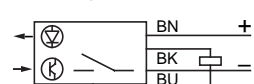


Diffuse  
 PNP output

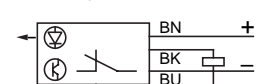


Dark switching (no object present)

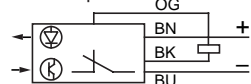
Thru-beam receiver & reflex  
 PNP output



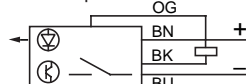
Diffuse  
 PNP output



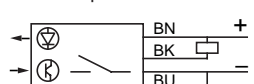
NPN output



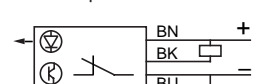
NPN output



NPN output

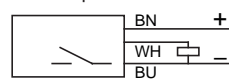


NPN output

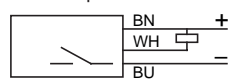


## Test output

PNP output

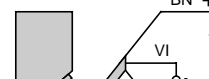


NPN output



Beam break test (violet wire) (not applicable to thru-beam receiver)

Beam made



Beam broken



## Cable connections

Solid state output

- (-) BU (Blue)
- (+) BN (Brown)
- (OUT) BK (Black)
- (Prog.) OG (Orange)
- (R.check) VI (Violet)
- TEST WH (White)

## Test output

Example : reflex system, dark switching programmed

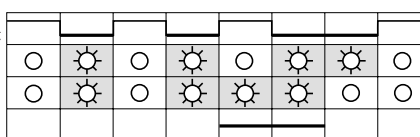
No object

Object present

Yellow LED

Red LED

Test output signal



## Verification of correct operation

Thru-beam and reflex systems

