

**EverExceed<sup>®</sup>**  
*power your applications*



## Standard Range VRLA BATTERY SOLUTIONS

[www.everexceed.com](http://www.everexceed.com)













## SEALED VRLA MONOBLOC AGM BATTERIES Capacities: 18AH to 250AH

The extremely powerful, compact AGM VRLA batteries of EverExceed telecom Standard Range are an ideal energy source for durability in Telecommunications and Electric Utility applications, the EverExceed top terminal Standard Range provides high performance and reliability in long duration discharge applications. Our development team combines the market's demand with design optimization, precision component selection and state-of-the-art manufacturing process to produce the most cost effective battery solution for today's applications.

### Designed in Quality Manufacturing

Quality manufacturing processes for the Standard Range batteries incorporate the industry's most advanced technologies including: an automated sealing detection system, a computer controlled "fill by weight" acid filler, and a temperature controlled water bath formation process. Each and every unit is capacity tested.






### Features and Benefits

-  Thick positive plate design for maximum service float life - 12 year design life @ 20°C(68°F).
-  **UL** Recognized component .
-  Valve regulated lead acid battery (VRLA).
-  High-Compression Absorbed Glass Mat technology (AGM) for greater than 99% recombination efficiency.
-  Operates at a low internal pressure.
-  Heavy duty insert copper terminals for ease of assembly, reduced maintenance and increased safety.
-  Advanced lead tin calcium alloy, reduces grid corrosion and promotes long battery life.
-  **Standard:** Reinforced ABS (UL 94HB) container and cover  
**Optional:** Flame-retardant reinforced ABS container and cover compliant with U.L.94 V-0 with an Oxygen limiting Index of greater than 28%.
-  Over-sized, through the partition inter-cell welds provide low resistance connections, with minimal power loss.
-  Flame arresting, low pressure safety release venting system for individual cells, recognized per U.L. 924.
-  Multicell design for ease of installation and maintenance.
-  Horizontal or vertical operation.





### Applications

Standard range batteries Incorporate EverExceed's advanced VRLA technology designed for long life and high performance in:

#### Telecommunications

-  Distributed Power
-  UPS
-  Cellular
-  Microwave
-  Broadband




#### Electric Utility

-  Switchgear Control Power
-  Communications
- Railroad**
-  Signaling
-  Communications

### Standards and Compliances

- |   |   |
|---|---|
|  UL Compliant                | <b>Tested in accordance with</b>  |
|  NEBS Compliant              |  BS 6290 PART 4          |
|  EUROBAT,                    |  Bellcore, TR-NWT-000766 |
|  10 year plus classification |  ANSI, TI: 330           |

### No transport restrictions

-  Surface transport. Classified as non-hazardous material as related to DOT-CFR Title 49 parts 171-189.
-  Marine transport. Classified as non-hazardous material as per IMDG amendment 27.
-  Air transport. Complies with IATA/ICAO, Special provision A67.



**Applicable Operating temperature range:**

-40°C (-104°F) to +60°C (+140°F)

**Ideal Operating temperature range:**

+20°C (+68°F) to +25°C (+77°F)

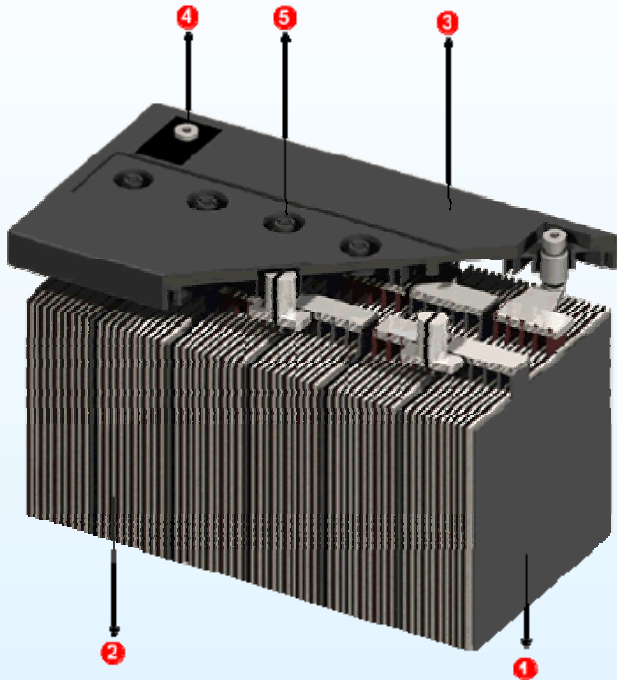
**Storage time from a fully charged condition:**

6 months at 25°C / 77°F. For each 9°C / 15°F rise, reduce the storage time by half.

**CONSTRUCTION** - AGM battery construction is as shown in the diagram below. The positive and negative grids are cast from a calcium / tin lead alloy to reduce grid growth and corrosion. The active material is manufactured from high purity lead (99.9999%) to minimize the negative effects of impurities.

Separator is mat of random woven acid resistant glass fibres, which acts as sponge - soaking up and immobilizing the electrolyte whilst maintaining good acid to plate contact and availability during discharge. "U wrapping" is employed to eliminate the risk of short circuits due to mossing and debris at the bottom of the cell.

The purpose of the separator is to maintain a constant distance between the positive and negative plates, thus removing the possibility of short circuits whilst allowing the active material to fully react with the electrolyte. The random weaving also results in an open structure, which offers minimal resistance to the flow of electrolyte during filling.



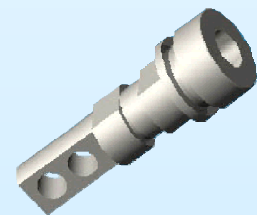
- 1 Plates:** calcium / tin lead alloy, optimized for high corrosion resistance
- 2 Separator:** Highly porous glass micro-fibre separator, optimized for low internal resistance, for maximum Absorption of the electrolyte and for electrical separation
- 3 Standard Housing:** Reinforced ABS (UL 94HB) container and cover  
**Optional Housing:** Flame-retardant reinforced ABS container and cover compliant with U.L.94 V-0 with an Oxygen limiting Index of greater than 28%.
- 4 Terminals:** Silver plated Copper female insert for easy and safe assembly and maintenance free connection with excellent conductivity
- 5 Valves:** Release gas in case of excess pressure and protects the cell against atmosphere

**ELECTROLYTE FILLING** - Special production and stringent QC systems are utilized to ensure the electrolyte saturation is optimized for each cell. Measured high vacuum acid fill, reduces electrical variability between cells. The battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.

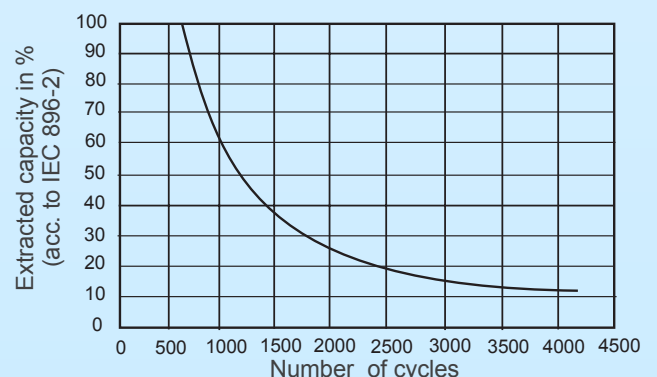
**SAFETY RELEAST VALVE** - The battery will operate above atmospheric pressure under normal operating conditions, however the maximum pressure is governed by the safety one-way release valve. Open is activated by pressures in excess of approx. 2 PSI (14 Kpa), resealing at approx 1.2 PSI (8.4Kpa).

**GAS RECOMBINATION** - The gasses generated during normal operation of the battery are internally recombined. In fact more than 99% of the gas achieves recombination.

**TERMINAL CONSTRUCTION** - The contact quality between the insert terminal and the lead post is of vital importance during short duration / high Amp discharges. Elevated terminal temperatures are the result of poor contact, eventually causing seal degradation and electrolyte leaks. EverExceed's design and assembly technique for terminal casting ensures trouble free operation for the design life of the battery.



**Battery Cycle Life vs. Depth of Discharge (D.O.D.)**

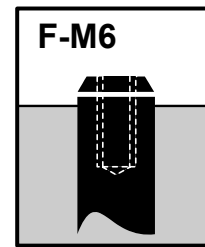
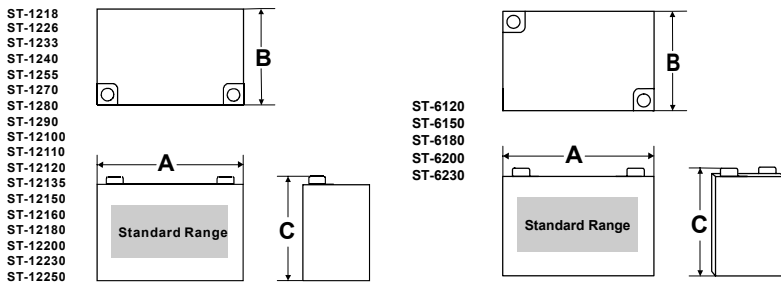


## EverExceed Standard Range Electrical Specifications & Dimensions

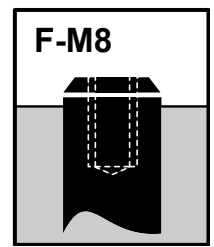
Battery Model	Capacity C/10 1.80VPC @ 25°C	Short Circuit Amps	Internal Resistance Milli-ohms	Terminal Type	Battery Weight (kg/lb)		Outline Dimensions (mm/inch)					
							Length		Width		Height	
ST-1218	18	818	12.9	F-M6	7.80	17.2	195	7.68	130	5.12	165	6.50
ST-1226	26	1182	8.9	F-M6	10.0	22.0	195	7.68	130	5.12	165	6.50
ST-1233	33	1500	7.0	F-M6	10.9	24.0	195	7.68	130	5.12	165	6.50
ST-1240	40	1700	6.0	F-M6	13.8	30.4	197	7.76	165	6.50	172	6.78
ST-1255	55	1900	5.6	F-M6	17.5	38.6	228	8.98	137	5.39	213	8.39
ST-1270	70	2100	5.0	F-M6	21.5	47.4	259	10.2	168	6.62	215	8.50
ST-1280	80	2400	4.5	F-M6	26.5	58.4	259	10.2	168	6.62	215	8.50
ST-1290	90	2650	4.0	F-M6	30.0	66.2	305	12.0	168	6.62	215	8.50
ST-12100	100	2900	3.5	F-M6	31.5	69.4	305	12.0	168	6.62	215	8.50
ST-12110	110	3000	3.4	F-M6	33.0	72.6	332	13.1	174	6.86	220	8.67
ST-12120	120	3300	3.1	F-M6	35.0	77.2	408	16.1	175	6.90	230	9.06
ST-12135	135	3750	2.7	F-M8	39.6	87.5	340	13.4	173	6.81	288	11.3
ST-12150	150	4200	2.5	F-M8	45.0	99.2	480	18.9	170	6.70	240	9.45
ST-12160	160	4700	2.0	F-M8	52.2	115	530	20.9	209	8.23	220	8.67
ST-12180	180	5400	1.8	F-M8	60.5	133	520	20.5	238	9.37	220	8.67
ST-12200	200	5400	1.8	F-M8	65.0	143	520	20.5	238	9.37	220	8.67
ST-12230	230	5900	1.5	F-M8	70.0	155	520	20.5	269	10.6	210	8.27
ST-12250	250	6200	1.2	F-M8	74.0	163	520	20.5	269	10.6	225	8.86
ST-660	67	1800	3.8	F-M6	11.3	25.0	185	7.30	112	4.39	205	8.06
ST-660T	67	1800	3.8	*Special CA	11.3	25.0	185	7.30	112	4.39	205	8.06
ST-6120	120	3200	3.0	F-M6	16.0	35.2	195	7.68	170	6.69	210	8.27
ST-6150	150	4500	2.5	F-M8	25.0	55.1	260	10.2	180	7.09	252	9.92
ST-6180	180	4800	2.0	F-M8	28.0	61.7	306	12.0	168	6.61	225	8.86
ST-6200	200	5000	1.8	F-M8	31.0	68.4	322	12.7	178	7.01	230	9.06
ST-6230	230	5600	1.5	F-M8	33.5	73.9	243	9.57	187	7.36	275	10.8

\*CA: Cable assembly with TEW-105 (#12 AWG) tinned copper wire, AMP connector housing Plug Kit and sockets.

### Terminal and torque

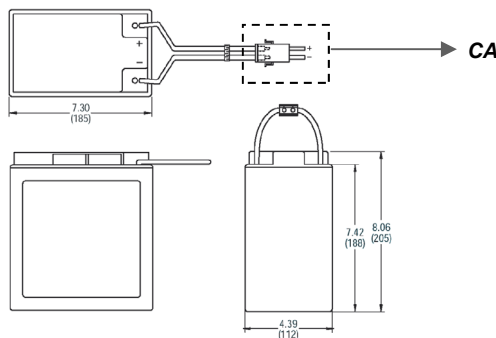


9Nm



11Nm

ST-660 / ST-660T



Battery Model	BCI Group Size
ST-1233	U1
ST-1255	22NF
ST-1270	24
ST-1280	24
ST-1290	27
ST-12100	27
ST-12110	31
ST-12160	4D
ST-12230	8D
ST-6200	4
ST-6230	4

**EverExceed Standard Range Discharge Ampere Hour Data @ 25°C (77°F)**

Battery Model	End VPC	Discharge Data Amps @ 25° C						End VPC	Discharge Data Ampere Hours @ 25° C									
		Discharge Time In Minutes							Discharge Time In Hours									
		5	10	15	30	45	60		1.5	2	3	4	5	8	10	12	20	24
ST-1218	1.8	49.3	36.6	29.0	19.0	13.9	11.6	1.85	12.7	12.9	13.7	14.5	15.1	16.5	17.5	18.0	19.9	19.7
	1.75	56.7	41.0	31.4	19.4	14.6	11.8	1.8	13.5	13.7	14.6	15.2	15.8	17.5	18.0	18.7	20.1	20.3
	1.67	60.5	44.7	33.2	19.6	14.8	12.1	1.75	13.9	14.0	14.9	15.7	16.1	17.7	18.4	18.8	21.3	20.9
ST-1226	1.8	71.1	52.9	41.8	27.5	20.0	16.8	1.85	18.3	18.6	19.9	21.0	21.7	23.8	25.3	26.0	28.7	28.5
	1.75	81.9	59.2	45.4	28.0	21.0	17.1	1.8	19.5	19.9	21.0	22.0	22.8	25.2	26.0	26.9	29.0	29.4
	1.67	87.5	64.5	47.9	28.4	21.4	17.5	1.75	20.0	20.2	21.6	22.7	23.3	25.5	26.6	27.2	30.8	30.3
ST-1233	1.80	90.3	67.1	53.1	34.9	25.4	21.3	1.85	23.2	23.6	25.2	26.6	27.6	30.2	32.1	33.0	36.4	36.2
	1.75	104	75.2	57.6	35.5	26.7	21.7	1.80	24.8	25.2	26.7	27.9	29.0	32.0	33.0	34.2	36.8	37.3
	1.67	111	81.9	60.8	36.0	27.2	22.2	1.75	25.4	25.6	27.4	28.8	29.6	32.4	33.8	34.5	39.1	38.4
ST-1240	1.80	110	82.2	65.2	44.2	32.1	26.3	1.85	27.9	29.1	31.4	32.4	33.3	36.3	37.4	38.3	43.2	43.9
	1.75	129	93.8	70.1	44.7	32.7	26.9	1.80	28.6	30.5	32.7	34.3	35.3	38.5	40.0	40.8	45.2	45.4
	1.67	137	100	74.2	45.2	33.6	27.6	1.75	29.8	31.3	33.8	35.2	36.2	39.5	41.1	42.0	45.7	46.5
ST-1255	1.80	151	113	89.6	60.8	44.1	36.2	1.85	38.3	40.0	43.2	44.6	45.8	49.9	51.4	52.6	59.4	60.3
	1.75	178	129	96.4	61.5	44.9	37.0	1.80	39.3	41.9	44.9	47.1	48.5	52.9	55.0	56.1	62.1	62.4
	1.67	189	138	102	62.2	46.2	38.0	1.75	41.0	43.0	46.5	48.4	49.8	54.3	56.5	57.7	62.9	63.9
ST-1270	1.80	191	142	113	72.4	54.3	44.7	1.85	49.6	50.1	53.7	56.1	58.2	63.4	65.3	66.7	73.8	74.4
	1.75	220	160	122	75.5	56.4	46.8	1.80	51.6	53.3	56.8	59.7	61.5	67.3	70.0	71.2	77.5	78.8
	1.67	237	174	129	78.2	58.3	47.6	1.75	52.2	54.7	58.5	61.1	63.3	68.9	71.8	73.3	79.8	81.0
ST-1280	1.80	220	163	129	82.7	61.9	51.0	1.85	53.7	57.4	61.2	64.3	66.6	72.5	74.7	76.4	84.8	86.2
	1.75	252	183	140	89.0	66.4	54.9	1.80	56.8	60.9	65.0	68.0	70.7	76.9	80.0	81.5	88.7	90.1
	1.67	272	198	151	92.2	68.6	57.5	1.75	58.4	62.4	66.6	69.8	72.4	78.8	82.1	83.7	91.2	92.5
ST-1290	1.80	249	186	146	95.3	69.3	58.5	1.85	60.5	64.6	69.1	72.2	74.8	81.6	84.1	87.0	96.5	94.5
	1.75	286	205	158	97.4	72.7	60.1	1.80	64.0	68.7	73.3	76.7	79.3	86.5	90.0	91.7	100	101
	1.67	309	226	167	101	75.0	61.6	1.75	65.7	70.3	75.0	78.5	81.6	88.8	92.5	94.2	103	104
ST-12100	1.80	274	205	163	104	77.7	63.8	1.85	67.0	71.9	76.7	80.2	83.3	90.7	94.0	97.9	106	108
	1.75	317	230	177	108	80.7	66.7	1.80	71.7	76.1	81.4	85.2	88.4	95.8	100	102	111	113
	1.67	343	251	185	112	83.3	68.4	1.75	72.9	78.0	83.5	87.1	90.1	98.5	103	105	114	116
ST-12110	1.80	302	228	181	118	86.1	72.6	1.85	74.0	79.2	84.7	88.8	91.5	99.8	103	107	118	119
	1.75	349	255	195	120	89.1	73.6	1.80	80.3	84.0	89.9	93.8	97.3	106	110	112	122	123
	1.67	379	277	205	123	91.8	75.5	1.75	85.6	86.0	91.9	96.5	99.5	109	113	115	126	129
ST-12120	1.80	329	247	195	127	94.5	77.5	1.85	80.7	86.6	92.4	97.6	102	111	116	124	130	131
	1.75	384	277	213	131	97.2	80.4	1.80	86.8	91.9	98.0	103	107	116	120	134	135	136
	1.67	412	303	224	136	100	82.5	1.75	89.6	94.1	100	105	110	119	123	136	137	140
ST-12135	1.80	370	277	219	142	106	87.0	1.85	90.7	97.3	104	110	114	126	131	140	145	146
	1.75	431	311	238	146	109	90.4	1.80	97.5	103	110	115	120	131	135	151	152	154
	1.67	463	341	250	154	113	92.6	1.75	101	106	113	119	123	134	139	154	155	157
ST-12150	1.80	411	309	246	158	117	96.4	1.85	101	108	116	122	127	136	140	142	157	159
	1.75	475	346	264	164	121	100	1.80	108	114	122	128	133	143	150	153	166	168
	1.67	514	377	277	167	124	103	1.75	110	117	126	133	136	149	154	158	172	174
ST-12160	1.80	439	329	261	168	126	103	1.85	108	115	124	131	135	145	150	152	167	169
	1.75	507	369	281	176	130	107	1.80	115	122	131	136	141	153	160	163	179	181
	1.67	549	403	296	180	133	110	1.75	116	126	134	141	145	159	164	168	183	185
ST-12180	1.80	492	369	293	187	140	118	1.85	120	129	138	144	150	166	171	175	191	189
	1.75	570	415	317	195	150	119	1.80	129	138	146	153	159	172	180	183	200	202
	1.67	614	449	332	201	152	123	1.75	132	140	150	157	162	178	184	189	205	208
ST-12200	1.80	548	411	325	208	157	132	1.85	135	143	153	161	166	185	190	195	213	210
	1.75	636	463	352	217	165	134	1.80	143	153	163	170	177	191	200	204	222	225
	1.67	684	500	368	224	168	137	1.75	147	157	166	175	180	198	205	210	228	232

Battery Model	End VPC	Discharge Data Amps @ 25° C						End VPC	Discharge Data Ampere Hours @ 25° C									
		Discharge Time In Minutes							Discharge Time In Hours									
		5	10	15	30	45	60		1.5	2	3	4	5	8	10	12	20	24
ST-12230	1.80	632	474	375	239	181	152	1.85	156	166	177	185	192	213	220	225	246	243
	1.75	734	534	407	251	191	155	1.80	166	177	187	196	204	221	230	235	255	259
	1.67	788	577	425	257	195	158	1.75	169	181	192	202	208	228	237	243	264	267
ST-12250	1.80	687	515	408	260	197	165	1.85	170	180	192	201	209	232	239	245	267	264
	1.75	798	580	442	273	208	168	1.80	180	192	203	213	222	240	250	255	277	282
	1.67	857	627	462	279	212	172	1.75	184	197	209	220	226	248	258	264	287	290
ST-660	1.80	179	134	108	68.8	51.3	42.1	1.85	43.9	47.0	50.8	53.2	55.5	59.4	60.7	61.8	68.2	69.3
	1.75	208	151	115	71.6	52.6	43.8	1.80	47.0	49.9	53.2	55.9	57.9	62.7	65.0	67.1	72.5	73.5
ST-660T	1.67	225	165	121	73.1	54.1	44.8	1.75	48.0	51.3	55.1	57.9	59.4	65.0	67.1	69.3	74.6	76.0
ST-6120	1.80	329	247	195	127	94.5	77.5	1.85	80.7	86.6	92.4	97.6	102	111	116	124	130	131
	1.75	384	277	213	131	97.2	80.4	1.80	86.8	91.9	98.0	103	107	116	120	134	135	136
	1.67	412	303	224	136	100	82.5	1.75	89.6	94.1	100	105	110	119	123	136	137	140
ST-6150	1.80	411	309	246	158	117	96.4	1.85	101	108	116	122	127	136	140	142	157	159
	1.75	475	346	264	164	121	100	1.80	108	114	122	128	133	143	150	153	166	168
	1.67	514	377	277	167	124	103	1.75	110	117	126	133	136	149	154	158	172	174
ST-6180	1.80	492	369	293	187	140	118	1.85	120	129	138	144	150	166	171	175	191	189
	1.75	570	415	317	195	150	119	1.80	129	138	146	153	159	172	180	183	200	202
	1.67	614	449	332	201	152	123	1.75	132	140	150	157	162	178	184	189	205	208
ST-6200	1.80	548	411	325	208	157	132	1.85	135	143	153	161	166	185	190	195	213	210
	1.75	636	463	352	217	165	134	1.80	143	153	163	170	177	191	200	204	222	225
	1.67	684	500	368	224	168	137	1.75	147	157	166	175	180	198	205	210	228	232
ST-6230	1.80	632	474	375	239	181	152	1.85	156	166	177	185	192	213	220	225	246	243
	1.75	734	534	407	251	191	155	1.80	166	177	187	196	204	221	230	235	255	259
	1.67	788	577	425	257	195	158	1.75	169	181	192	202	208	228	237	243	264	267

Actual battery performance data may be ±5% of figures shown above

### EverExceed Standard Range Discharge Amperes Data @ 25°C (77°F)

Battery Model	End VPC	Discharge Data Amps @ 25° C						End VPC	Discharge Data Amps @ 25° C									
		Discharge Time In Minutes							Discharge Time In Hours									
		5	10	15	30	45	60		1.5	2	3	4	5	8	10	12	20	24
ST-1218	1.8	49.3	36.6	29.0	19.0	13.9	11.6	1.85	8.45	6.44	4.59	3.62	3.01	2.06	1.75	1.50	0.99	0.82
	1.75	56.7	41.0	31.4	19.4	14.6	11.8	1.8	8.95	6.93	4.85	3.81	3.16	2.18	1.80	1.56	1.00	0.85
	1.67	60.5	44.7	33.2	19.6	14.8	12.1	1.75	9.22	7.04	4.97	3.93	3.23	2.21	1.84	1.57	1.07	0.87
ST-1226	1.8	71.1	52.9	41.8	27.5	20.0	16.8	1.85	12.2	9.30	6.63	5.23	4.35	2.98	2.53	2.17	1.43	1.19
	1.75	81.9	59.2	45.4	28.0	21.0	17.1	1.8	12.9	10.0	7.00	5.51	4.57	3.15	2.60	2.25	1.45	1.23
	1.67	87.5	64.5	47.9	28.4	21.4	17.5	1.75	13.3	10.2	7.19	5.67	4.67	3.19	2.66	2.27	1.54	1.26
ST-1233	1.80	90.3	67.1	53.1	34.9	25.4	21.3	1.85	15.5	11.8	8.41	6.64	5.52	3.78	3.21	2.75	1.82	1.51
	1.75	104	75.2	57.6	35.5	26.7	21.7	1.80	16.4	12.7	8.89	6.99	5.80	4.00	3.30	2.86	1.84	1.56
	1.67	111	81.9	60.8	36.0	27.2	22.2	1.75	16.9	12.9	9.12	7.20	5.93	4.05	3.38	2.88	1.96	1.60
ST-1240	1.80	110	82.2	65.2	44.2	32.1	26.3	1.85	18.5	14.5	10.5	8.07	6.65	4.53	3.74	3.18	2.16	1.83
	1.75	129	93.8	70.1	44.7	32.7	26.9	1.80	19.0	15.3	10.9	8.51	7.06	4.81	4.00	3.39	2.26	1.89
	1.67	137	100	74.2	45.2	33.6	27.6	1.75	19.9	15.6	11.3	8.73	7.24	4.94	4.11	3.50	2.28	1.93
ST-1255	1.80	151	113	89.6	60.8	44.1	36.2	1.85	25.4	20.0	14.4	11.1	9.15	6.23	5.14	4.37	2.97	2.51
	1.75	178	129	96.4	61.5	44.9	37.0	1.80	26.1	21.0	15.0	11.7	9.71	6.61	5.50	4.66	3.11	2.60
	1.67	189	138	102	62.2	46.2	38.0	1.75	27.3	21.4	15.5	12.0	9.96	6.79	5.65	4.81	3.14	2.66
ST-1270	1.80	191	142	113	72.4	54.3	44.7	1.85	33.1	25.1	17.9	14.0	11.6	7.92	6.53	5.56	3.69	3.10
	1.75	220	160	122	75.5	56.4	46.8	1.80	34.3	26.7	18.9	15.0	12.3	8.41	7.00	5.94	3.87	3.28
	1.67	237	174	129	78.2	58.3	47.6	1.75	34.7	27.3	19.5	15.3	12.7	8.62	7.18	6.11	3.99	3.38

Battery Model	End VPC	Discharge Data Amps @ 25° C						End VPC	Discharge Data Amps @ 25° C									
		Discharge Time In Minutes							Discharge Time In Hours									
		5	10	15	30	45	60		1.5	2	3	4	5	8	10	12	20	24
ST-1280	1.80	220	163	129	82.7	61.9	51.0	1.85	35.8	28.8	20.4	16.1	13.4	9.06	7.47	6.36	4.24	3.59
	1.75	252	183	140	89.0	66.4	54.9	1.80	37.9	30.4	21.7	16.9	14.1	9.61	8.00	6.80	4.43	3.74
	1.67	272	198	151	92.2	68.6	57.5	1.75	38.9	31.3	22.3	17.5	14.4	9.85	8.21	6.98	4.56	3.85
ST-1290	1.80	249	186	146	95.3	69.3	58.5	1.85	40.3	32.3	23.0	18.0	15.0	10.2	8.41	7.25	4.83	3.93
	1.75	286	205	158	97.4	72.7	60.1	1.80	42.7	34.3	24.5	19.1	15.9	10.9	9.00	7.65	5.00	4.23
	1.67	309	226	167	101	75.0	61.6	1.75	43.7	35.1	25.0	19.7	16.3	11.1	9.25	7.85	5.14	4.35
ST-12100	1.80	274	205	163	104	77.7	63.8	1.85	44.7	35.9	25.5	20.1	16.6	11.3	9.40	8.17	5.30	4.51
	1.75	317	230	177	108	80.7	66.7	1.80	47.8	38.1	27.1	21.3	17.7	11.9	10.0	8.48	5.54	4.69
	1.67	343	251	185	112	83.3	68.4	1.75	48.5	39.0	27.8	21.8	18.0	12.3	10.3	8.72	5.70	4.84
ST-12110	1.80	302	228	181	118	86.1	72.6	1.85	49.3	39.5	28.2	22.2	18.3	12.4	10.3	8.88	5.89	4.98
	1.75	349	255	195	120	89.1	73.6	1.80	53.5	41.9	30.0	23.4	19.5	13.3	11.0	9.37	6.12	5.15
	1.67	379	277	205	123	91.8	75.5	1.75	57.1	43.0	30.6	24.2	19.9	13.6	11.3	9.63	6.30	5.34
ST-12120	1.80	329	247	195	127	94.5	77.5	1.85	53.9	43.3	30.8	24.4	20.4	14.0	11.6	10.4	6.45	5.44
	1.75	384	277	213	131	97.2	80.4	1.80	57.8	45.9	32.6	25.6	21.3	14.4	12.0	11.1	6.76	5.68
	1.67	412	303	224	136	100	82.5	1.75	59.7	47.1	33.5	26.4	22.0	14.9	12.3	11.3	6.87	5.81
ST-12135	1.80	370	277	219	142	106	87.0	1.85	60.4	48.6	34.6	27.4	22.9	15.7	13.1	11.6	7.24	6.11
	1.75	431	311	238	146	109	90.4	1.80	64.9	51.6	36.7	28.9	23.8	16.2	13.5	12.6	7.59	6.38
	1.67	463	341	250	154	113	92.6	1.75	67.0	52.8	37.6	29.6	24.7	16.7	13.9	12.8	7.72	6.54
ST-12150	1.80	411	309	246	158	117	96.4	1.85	67.1	53.9	38.7	30.4	25.2	17.0	14.0	11.8	7.82	6.61
	1.75	475	346	264	164	121	100	1.80	71.7	57.1	40.8	32.0	26.5	18.0	15.0	12.8	8.34	7.04
	1.67	514	377	277	167	124	103	1.75	72.9	58.8	42.0	32.9	27.2	18.6	15.4	13.2	8.57	7.23
ST-12160	1.80	439	329	261	168	126	103	1.85	71.6	57.5	41.4	32.5	27.0	18.2	15.0	12.7	8.36	7.06
	1.75	507	369	281	176	130	107	1.80	76.7	61.0	43.5	34.2	28.2	19.3	16.0	13.6	8.90	7.52
	1.67	549	403	296	180	133	110	1.75	77.9	62.7	45.0	35.2	29.1	19.9	16.4	14.0	9.14	7.72
ST-12180	1.80	492	369	293	187	140	118	1.85	80.6	64.5	45.9	36.2	29.9	20.8	17.1	14.5	9.6	7.87
	1.75	570	415	317	195	150	119	1.80	86.2	68.6	48.8	38.3	31.8	21.5	18.0	15.3	9.9	8.41
	1.67	614	449	332	201	152	123	1.75	88.0	70.3	49.9	39.3	32.3	22.1	18.4	15.7	10.2	8.66
ST-12200	1.80	548	411	325	208	157	132	1.85	89.8	72.0	51.1	40.3	33.4	23.2	19.0	16.2	10.7	8.76
	1.75	636	463	352	217	165	134	1.80	96.0	76.5	54.5	42.6	35.4	24.0	20.0	17.0	11.1	9.37
	1.67	684	500	368	224	168	137	1.75	98.0	78.2	55.5	43.7	36.1	24.7	20.5	17.5	11.4	9.65
ST-12230	1.80	632	474	375	239	181	152	1.85	104	83.0	59.0	46.4	38.5	26.7	22.0	18.6	12.3	10.1
	1.75	734	534	407	251	191	155	1.80	111	88.3	62.8	49.1	40.9	27.7	23.0	19.6	12.9	10.8
	1.67	788	577	425	257	195	158	1.75	113	90.1	64.1	50.4	41.5	28.3	23.7	20.2	13.2	11.1
ST-12250	1.80	687	515	408	260	197	165	1.85	113	90.2	64.1	50.4	41.8	29.0	23.9	20.2	13.4	11.0
	1.75	798	580	442	273	208	168	1.80	121	96.0	68.3	53.4	44.5	30.1	25.0	21.3	14.0	11.7
	1.67	857	627	462	279	212	172	1.75	123	97.9	69.7	54.8	45.1	30.8	25.8	22.0	14.3	12.1
ST-660	1.80	179	134	108	68.8	51.3	42.1	1.85	29.3	23.5	16.9	13.3	11.0	7.41	6.12	5.17	3.41	2.89
	1.75	208	151	115	71.6	52.6	43.8	1.80	31.3	24.9	17.8	14.0	11.6	7.87	6.55	5.59	3.64	3.08
ST-660T	1.67	225	165	121	73.1	54.1	44.8	1.75	31.9	25.7	18.3	14.4	11.8	8.12	6.73	5.74	3.74	3.15
ST-6120	1.80	329	247	195	127	94.5	77.5	1.85	53.9	43.3	30.8	24.4	20.4	14.0	11.6	10.4	6.45	5.44
	1.75	384	277	213	131	97.2	80.4	1.80	57.8	45.9	32.6	25.6	21.3	14.4	12.0	11.1	6.76	5.68
	1.67	412	303	224	136	100	82.5	1.75	59.7	47.1	33.5	26.4	22.0	14.9	12.3	11.3	6.87	5.81
ST-6150	1.80	411	309	246	158	117	96.4	1.85	67.1	53.9	38.7	30.4	25.2	17.0	14.0	11.8	7.82	6.61
	1.75	475	346	264	164	121	100	1.80	71.7	57.1	40.8	32.0	26.5	18.0	15.0	12.8	8.34	7.04
	1.67	514	377	277	167	124	103	1.75	72.9	58.8	42.0	32.9	27.2	18.6	15.4	13.2	8.57	7.23
ST-6180	1.80	492	369	293	187	140	118	1.85	80.6	64.5	45.9	36.2	29.9	20.8	17.1	14.5	9.60	7.87
	1.75	570	415	317	195	150	119	1.80	86.2	68.6	48.8	38.3	31.8	21.5	18.0	15.3	9.90	8.41
	1.67	614	449	332	201	152	123	1.75	88.0	70.3	49.9	39.3	32.3	22.1	18.4	15.7	10.2	8.66

ST-6200	1.80	548	411	325	208	157	132	1.85	89.8	72.0	51.1	40.3	33.4	23.2	19.0	16.2	10.7	8.76
	1.75	636	463	352	217	165	134	1.80	96.0	76.5	54.5	42.6	35.4	24.0	20.0	17.0	11.1	9.37
	1.67	684	500	368	224	168	137	1.75	98.0	78.2	55.5	43.7	36.1	24.7	20.5	17.5	11.4	9.65
ST-6230	1.80	632	474	375	239	181	152	1.85	104	83.0	59.0	46.4	38.5	26.7	22.0	18.6	12.3	10.1
	1.75	734	534	407	251	191	155	1.80	111	88.3	62.8	49.1	40.9	27.7	23.0	19.6	12.9	10.8
	1.67	788	577	425	257	195	158	1.75	113	90.1	64.1	50.4	41.5	28.3	23.7	20.2	13.2	11.1

Actual battery performance data may be ±5% of figures shown above

### EverExceed Standard Range Discharge Watts Per Cell (WPC) Data @ 25°C

Battery Model	End VPC	Discharge Data WPC @ 25° C							End VPC	Discharge Data Watts Per Cell @ 25° C								
		Discharge Time In Minutes						Discharge Time In Hours										
		5	10	15	30	45	60	1.5		2	3	4	5	8	10	12	20	24
ST-1218	1.8	92.2	68.7	54.3	35.7	26.6	22.5	1.85	15.4	12.4	8.89	7.04	5.89	4.11	3.43	3.01	2.00	1.65
	1.75	103	74.7	57.3	36.1	27.3	22.8	1.8	17.3	13.1	9.44	7.42	6.22	4.25	3.51	3.05	2.06	1.71
	1.67	107	82.4	60.0	36.7	28.7	23.2	1.75	18.1	13.5	9.60	7.64	6.33	4.33	3.58	3.11	2.07	1.73
ST-1226	1.8	133	99.3	78.4	51.5	38.4	32.5	1.85	22.2	18.0	12.8	10.2	8.51	5.93	4.95	4.34	2.88	2.39
	1.75	148	108	82.7	52.1	39.4	32.9	1.8	25.1	18.9	13.6	10.7	8.98	6.15	5.07	4.40	2.97	2.47
	1.67	154	119	86.7	52.9	41.4	33.6	1.75	26.1	19.5	13.9	11.0	9.14	6.25	5.18	4.50	2.99	2.51
ST-1233	1.80	169	126	99.5	65.4	48.7	41.2	1.85	28.2	22.8	16.3	12.9	10.8	7.53	6.28	5.51	3.66	3.03
	1.75	188	137	105	66.1	50.0	41.8	1.80	31.8	24.0	17.3	13.6	11.4	7.80	6.44	5.59	3.77	3.13
	1.67	196	151	110	67.2	52.6	42.6	1.75	33.1	24.7	17.6	14.0	11.6	7.93	6.57	5.71	3.79	3.18
ST-1240	1.80	205	153	125	82.2	62.3	51.9	1.85	35.5	29.3	22.3	16.4	13.5	9.02	7.49	6.35	4.25	3.53
	1.75	230	167	134	84.4	65.0	52.6	1.80	37.4	30.7	23.5	17.2	14.2	9.53	7.93	6.76	4.43	3.75
	1.67	245	181	146	87.3	68.8	52.9	1.75	39.1	31.5	25.0	17.6	14.7	9.67	8.07	6.88	4.52	3.83
ST-1255	1.80	282	211	165	113	85.7	69.1	1.85	47.4	38.3	28.5	22.3	18.6	12.9	11.0	8.73	5.85	4.85
	1.75	290	229	176	116	89.4	69.9	1.80	49.9	40.2	29.9	23.5	19.5	13.6	11.6	9.30	6.09	5.16
	1.67	315	240	187	120	94.6	71.3	1.75	52.1	41.2	30.6	24.3	20.3	13.8	11.9	9.46	6.21	5.27
ST-1270	1.80	330	265	212	136	104	84.9	1.85	60.1	48.5	34.8	27.6	22.9	15.7	13.0	11.1	7.27	6.10
	1.75	360	280	222	138	106	88.4	1.80	63.6	51.1	36.7	29.1	24.2	16.6	13.8	11.8	7.73	6.56
	1.67	390	310	233	143	110	90.4	1.75	66.3	52.4	37.4	29.6	24.6	16.8	14.0	11.9	7.89	6.67
ST-1280	1.80	370	295	242	155	116	97.2	1.85	68.7	55.4	39.9	31.5	26.3	18.0	14.9	12.8	8.35	7.08
	1.75	400	320	255	162	120	100	1.80	72.4	58.5	41.9	33.2	27.6	18.9	15.7	13.5	8.84	7.49
	1.67	435	345	265	169	128	103	1.75	74.1	59.8	42.9	33.8	28.1	19.2	16.2	13.8	9.02	7.64
ST-1290	1.80	461	343	272	180	142	110	1.85	77.5	62.4	45.2	35.5	30.2	20.3	16.7	14.6	9.65	7.93
	1.75	515	374	287	185	145	115	1.80	81.5	65.9	47.3	37.4	31.5	21.3	17.7	15.2	9.96	8.43
	1.67	548	405	302	190	148	120	1.75	84.2	67.5	48.3	38.2	32.2	21.8	18.2	15.5	10.2	8.61
ST-12100	1.80	505	360	303	200	168	135	1.85	90.3	69.6	49.9	39.4	32.8	22.7	19.0	16.2	10.6	8.93
	1.75	545	380	320	213	171	138	1.80	95.0	73.1	52.6	41.5	34.5	23.7	19.8	16.8	11.1	9.36
	1.67	580	421	338	226	185	142	1.75	97.9	74.9	53.6	42.3	35.2	24.2	20.1	17.3	11.3	9.54
ST-12110	1.80	545	414	336	225	185	148	1.85	98.6	76.7	55.1	43.8	36.2	24.9	20.6	17.8	12.1	9.73
	1.75	598	455	355	238	192	155	1.80	107	80.6	57.9	45.7	38.1	26.1	21.8	18.6	12.3	10.3
	1.67	630	486	372	246	202	160	1.75	113	82.6	59.1	46.6	38.9	26.7	22.2	19.0	12.4	10.5
ST-12120	1.80	547	440	362	240	192	158	1.85	106	83.9	60.1	48.0	40.5	27.7	23.2	20.8	13.1	10.6
	1.75	620	468	384	248	198	163	1.80	110	88.0	63.4	50.1	41.6	28.7	23.7	22.3	13.4	11.3
	1.67	663	496	404	259	202	165	1.75	113	90.2	64.6	50.9	42.5	29.1	24.3	22.6	13.6	11.5
ST-12135	1.80	688	516	407	263	204	168	1.85	116	94.2	67.6	53.9	45.4	31.1	26.0	23.4	14.6	11.9
	1.75	675	496	431	273	209	174	1.80	123	98.9	71.1	56.3	46.6	32.1	26.7	24.9	15.1	12.7
	1.67	710	560	453	279	219	183	1.75	128	101	72.6	57.3	47.7	32.7	27.3	25.4	15.4	13.0



Battery Model	End VPC	Discharge Data WPC @ 25° C						End VPC	Discharge Data Watts Per Cell @ 25° C									
		Discharge Time In Minutes							Discharge Time In Hours									
		5	10	15	30	45	60		1.5	2	3	4	5	8	10	12	20	24
ST-12150	1.80	654	544	453	291	225	186	1.85	129	104	75.9	60.2	49.9	34.1	28.4	24.2	16.1	13.5
	1.75	730	568	478	302	229	192	1.80	138	110	78.9	62.3	51.8	35.7	29.6	25.3	16.5	14.0
	1.67	812	597	503	312	237	198	1.75	140	112	80.9	63.8	52.8	36.3	30.2	25.8	16.8	14.3
ST-12160	1.80	769	590	483	311	241	199	1.85	138	111	81.0	64.3	53.2	36.5	30.4	25.8	17.2	14.4
	1.75	834	618	510	323	245	206	1.80	147	118	84.2	66.5	55.3	38.1	31.6	27.1	17.7	15.0
	1.67	898	646	530	333	254	211	1.75	150	120	86.4	68.1	56.5	38.7	32.3	27.5	18.1	15.3
ST-12180	1.80	850	684	541	347	270	221	1.85	155	128	89.7	71.2	59.2	40.9	34.2	29.5	19.4	15.9
	1.75	936	746	571	362	277	229	1.80	166	131	94.3	74.6	62.0	42.6	35.5	30.3	20.0	16.8
	1.67	999	805	601	371	286	234	1.75	171	136	96.3	76.0	63.3	43.4	36.2	30.9	20.3	17.1
ST-12200	1.80	890	735	602	387	300	246	1.85	173	141	100	79.3	66.0	45.5	38.0	32.8	21.5	17.8
	1.75	975	790	637	403	309	254	1.80	185	146	105	83.0	69.1	47.5	39.3	33.8	22.2	18.7
	1.67	1030	825	670	413	318	261	1.75	190	151	107	84.7	70.5	48.3	40.3	34.3	22.6	19.0
ST-12230	1.80	1065	843	694	447	346	282	1.85	199	164	116	91.5	76.1	52.5	43.8	37.9	24.9	20.5
	1.75	1276	916	735	464	356	293	1.80	213	168	121	95.8	79.8	54.7	45.5	38.9	25.5	21.6
	1.67	1310	980	773	476	367	301	1.75	220	174	123	97.7	81.4	55.6	46.4	39.6	26.1	22.0
ST-12250	1.80	1176	950	754	486	376	307	1.85	216	178	126	99.5	82.7	57.1	47.6	41.2	27.1	22.3
	1.75	1350	998	799	504	387	318	1.80	232	183	132	104	86.7	59.5	49.5	42.3	27.7	23.5
	1.67	1469	1097	840	517	399	327	1.75	239	189	134	106	88.5	60.4	50.4	43.0	28.4	23.9
ST-660	1.80	336	250	198	127	98.2	81.2	1.85	56.5	45.6	33.1	26.3	21.7	14.9	12.4	10.6	7.02	5.88
	1.75	375	272	209	132	100	84.0	1.80	60.3	48.0	34.4	27.2	22.6	15.6	12.9	11.1	7.21	6.12
ST-660T	1.67	400	295	220	136	103	86.4	1.75	61.2	48.9	35.3	27.8	23.0	15.9	13.2	11.3	7.35	6.27
ST-6120	1.80	547	440	362	240	192	158	1.85	104	83.9	60.1	48.0	40.5	27.7	23.2	20.8	13.1	10.6
	1.75	620	468	384	248	198	163	1.80	110	88.0	63.4	50.1	41.6	28.7	23.7	22.3	13.4	11.3
	1.67	663	496	404	259	202	165	1.75	113	90.2	64.6	50.9	42.5	29.1	24.3	22.6	13.6	11.5
ST-6150	1.80	654	544	453	291	225	186	1.85	129	104	75.9	60.2	49.9	34.1	28.4	24.2	16.1	13.5
	1.75	730	568	478	302	229	192	1.80	138	110	78.9	62.3	51.8	35.7	29.6	25.3	16.5	14.0
	1.67	812	597	503	312	237	198	1.75	140	112	80.9	63.8	52.8	36.3	30.2	25.8	16.8	14.3
ST-6180	1.80	850	684	541	347	270	221	1.85	155	128	89.7	71.2	59.2	40.9	34.2	29.5	19.4	15.9
	1.75	936	746	571	362	277	229	1.80	166	131	94.3	74.6	62.0	42.6	35.5	30.3	20.0	16.8
	1.67	999	805	601	371	286	234	1.75	171	136	96.3	76.0	63.3	43.4	36.2	30.9	20.3	17.1
ST-6200	1.80	890	735	602	387	300	246	1.85	173	141	100	79.3	66.0	45.5	38.0	32.8	21.5	17.8
	1.75	975	790	637	403	309	254	1.80	185	146	105	83.0	69.1	47.5	39.3	33.8	22.2	18.7
	1.67	1030	825	670	413	318	261	1.75	190	151	107	84.7	70.5	48.3	40.3	34.3	22.6	19.0
ST-6230	1.80	1065	843	694	447	346	282	1.85	199	164	116	91.5	76.1	52.5	43.8	37.9	24.9	20.5
	1.75	1276	916	735	464	356	293	1.80	213	168	121	95.8	79.8	54.7	45.5	38.9	25.5	21.6
	1.67	1310	980	773	476	367	301	1.75	220	174	123	97.7	81.4	55.6	46.4	39.6	26.1	22.0

Actual battery performance data may be ±5% of figures shown above



12 year design life



Grid plate



Monobloc battery



Nominal capacity  
18 - 250Ah



Deep discharge recovery



Maintenance free

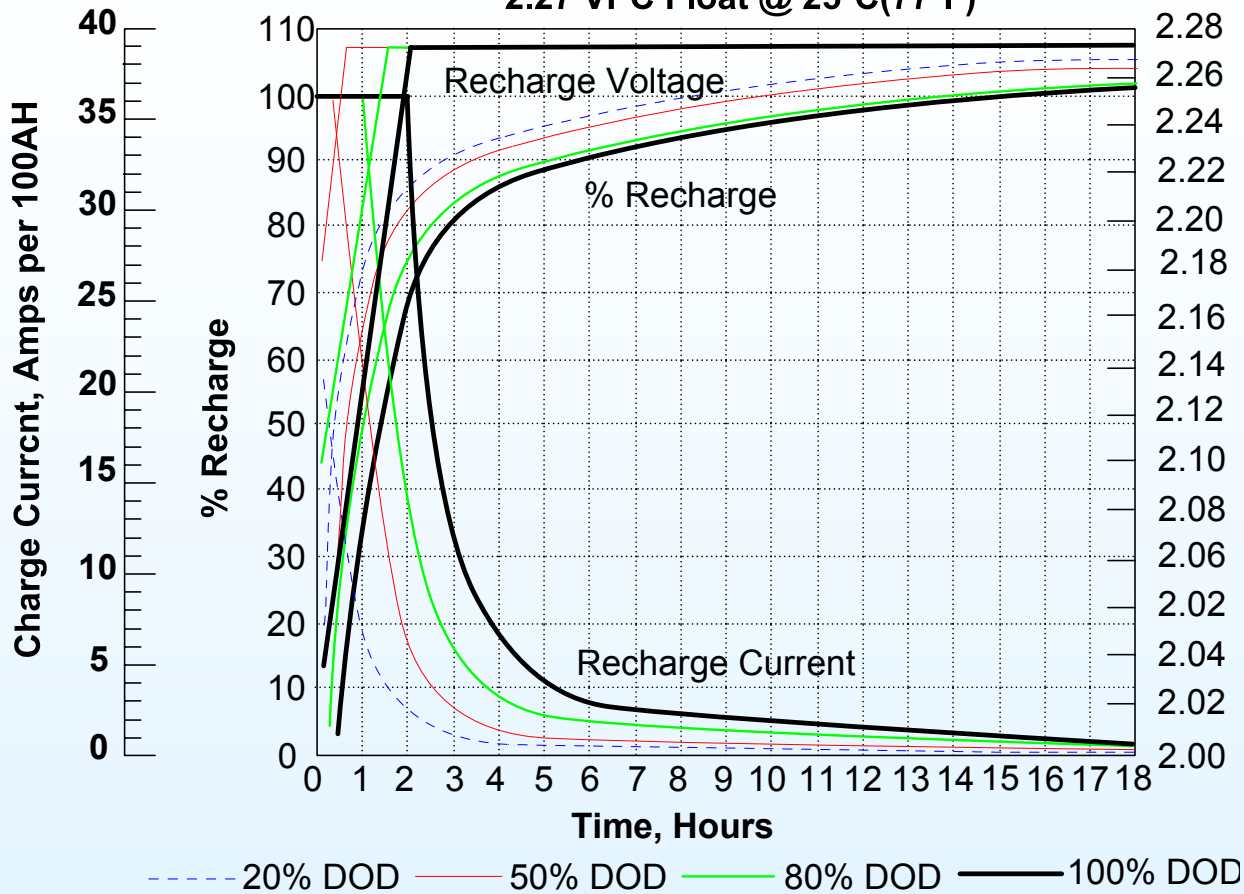


Recyclable

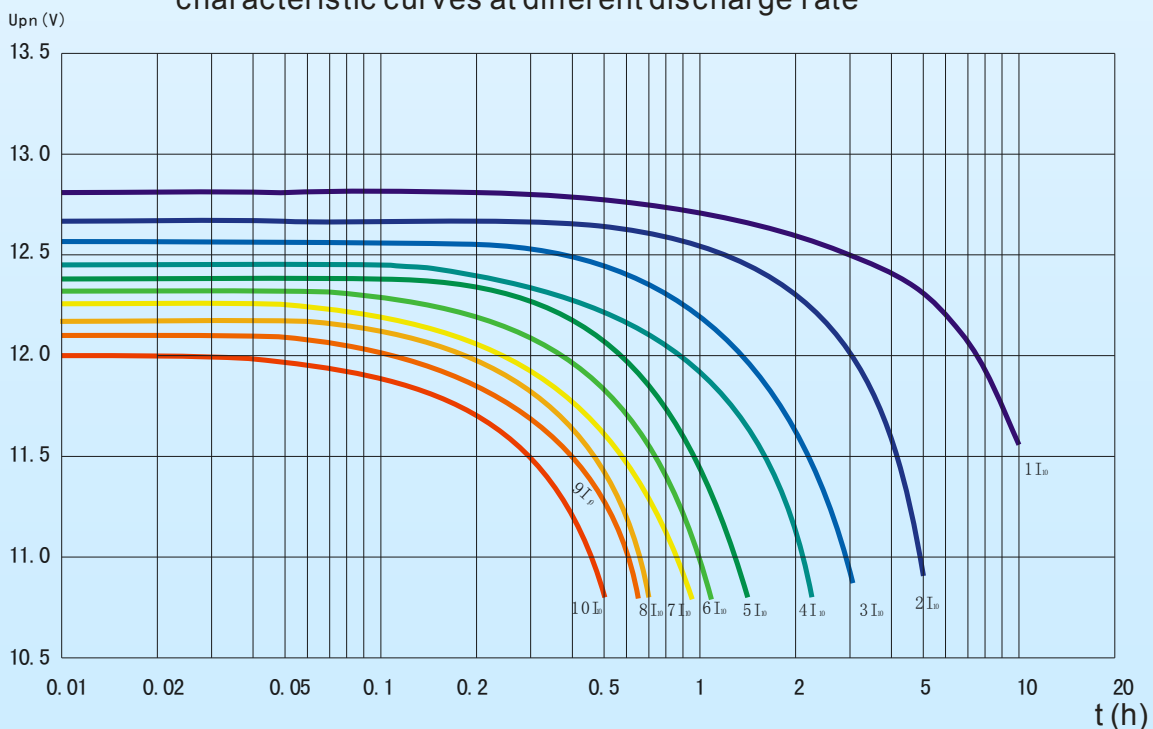


Valve regulated lead - acid

### Recharge Characterization 2.27 VPC Float @ 25°C(77°F)



### characteristic curves at different discharge rate



characteristic curves at different discharge rate (26)

## Float Voltage & charging

Constant Voltage charging is recommended

Recommended float voltage: 2.27VPC @ 25°C(77°F)

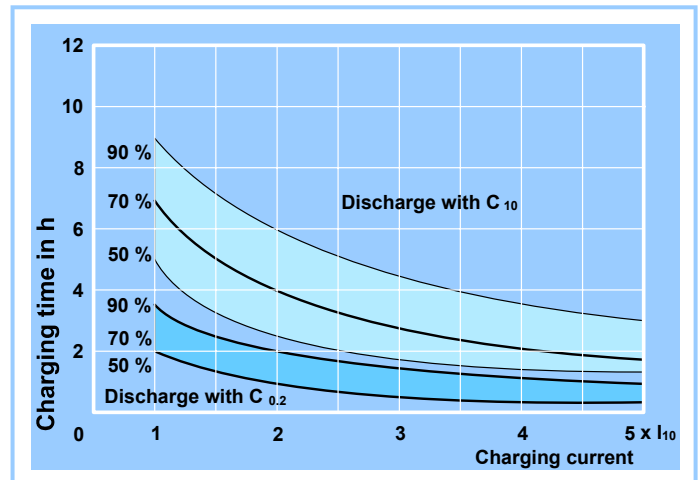
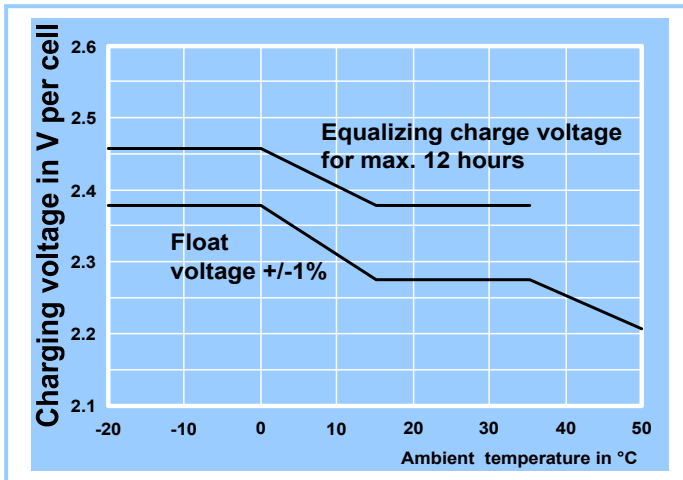
Float Voltage Range: 2.25VPC to 2.30 VPC @ 25°C(77°F)

Equalize voltage: 2.35VPC for 12 Hours

Temperature compensation:

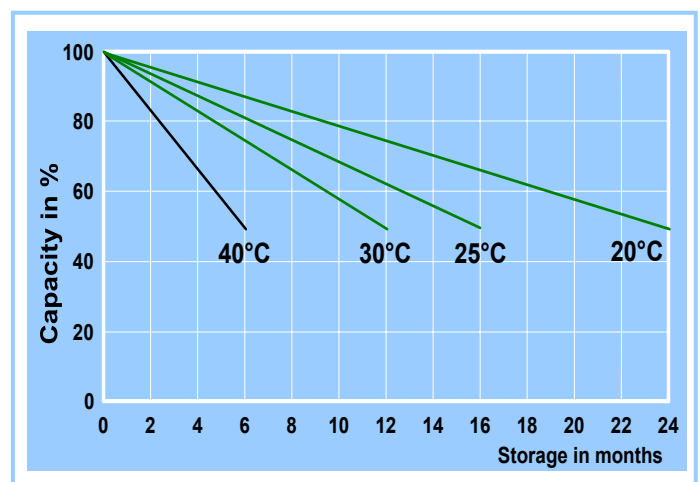
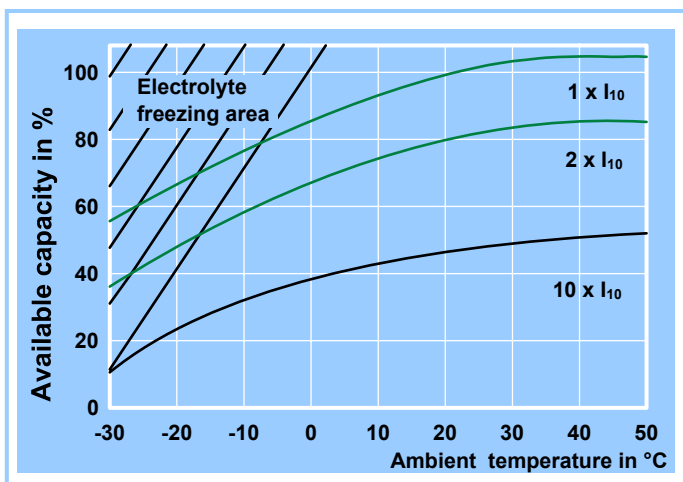
Apply for temperature range of 0°C / 32°F to 40°C / 104°F. Subtract 3 mV / °C / cell or 1.7 mV / °F / cell, above 25°C / 77°F.

Add 3mV / °C / cell or 1.7 mV / °F / cell, below 25°C / 77°F.



For charging 2.27 V/cell is recommended. The charging voltage must be compensated according to the curve for continuously different battery ambient temperature.

Recharging time in dependence of charging current (guide values) for up to 50, 70 and 90% of capacity at 25°C and with a charging voltage of 2.27 V/cell.



Extracted capacity in relation to the temperature.

Self-discharge in relation to the storage temperature.

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