



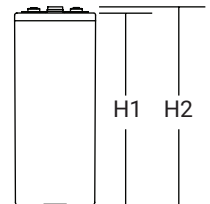
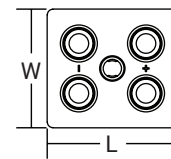
VRZ Series - Tubular Gel Batteries

12 OPzV-ET 1200

2V 1420Ah @ 10hr

Construction							
Nominal Voltage	2V						
Number of Cells	1						
Design Life	20 years						
Nominal Capacity 20°C (68°F)	<table border="0"> <tr> <td>10 hour rate (142A, 1.8V)</td> <td>1420Ah</td> </tr> <tr> <td>5 hour rate (258A, 1.75V)</td> <td>1287Ah</td> </tr> <tr> <td>1 hour rate (844A, 1.6V)</td> <td>844Ah</td> </tr> </table>	10 hour rate (142A, 1.8V)	1420Ah	5 hour rate (258A, 1.75V)	1287Ah	1 hour rate (844A, 1.6V)	844Ah
10 hour rate (142A, 1.8V)	1420Ah						
5 hour rate (258A, 1.75V)	1287Ah						
1 hour rate (844A, 1.6V)	844Ah						
Internal Resistance	Fully Charged Battery 20°C (68°F) 0.26mOhm						
Self-Discharge	2% of capacity declined per month at 20°C (average)						
Operating Temperature Range	-20°C to +55°C						
Maximum Discharge Current 20°C (68°F)	1519A						
Charge Methods: Constant Voltage Charge 20°C (68°F)	<table border="0"> <tr> <td>Cycle use: 2.40V (time limited)</td> <td>Maximum charging current: 710A</td> </tr> <tr> <td>Standby use: 2.25V ± 1%</td> <td>Temperature compensation: -3.5mV/°C /Cell</td> </tr> <tr> <td>Terminal torque: 23Nm</td> <td></td> </tr> </table>	Cycle use: 2.40V (time limited)	Maximum charging current: 710A	Standby use: 2.25V ± 1%	Temperature compensation: -3.5mV/°C /Cell	Terminal torque: 23Nm	
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Terminal torque: 23Nm							

Battery Specifications				
Length (in.)	Width (in.)	Height: H1 (in.)	Total Height: H2 (in.)	Approx. Weight (lb.)
8.46	10.91	25.59	26.18	210.32



Features

- High capacity density
- Robust tubular positive electrode design, compliant with DIN 40742
- Low self discharge rate allows for up to 2 years shelf life
- Operating temperature -20°C to +55°C
- 20 year float life at 20°C (68°F)
- EUROBAT design life: Long Life > 12 years
- Fully recyclable with low CO₂ footprint

Applications

- Telecommunications/ Mobile Phone Stations
- Traffic Systems
- UPS Systems
- Emergency Lighting
- Electrical Switching



Compliant with: IEC60896-21/22



Discharge Constant Current (Amperes at 20°C)

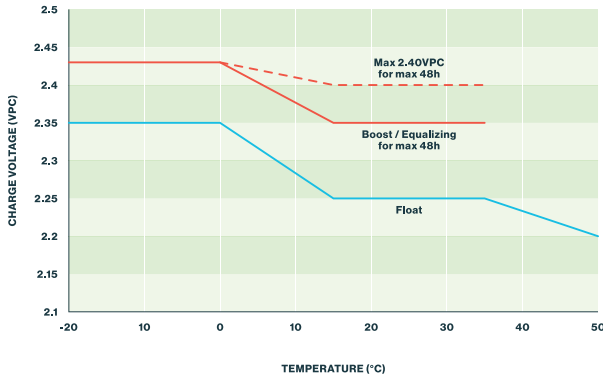
Cells (V)	10 min	15 min	30 min	1h	2h	3h	5h	8h	10h
1.60	1518.2	1481.6	1221.3	843.9	494.4	377.4	261.8	178.4	146.3
1.65	1361.7	1344.1	1124.7	808.8	494.4	377.4	261.8	178.4	146.3
1.70	1234.4	1187.6	1018.0	759.1	488.5	377.4	261.8	178.4	146.3
1.75	1067.7	1016.5	884.9	634.8	457.8	370.0	257.4	175.5	146.3
1.80	925.8	867.6	735.6	595.0	430.3	350.7	247.1	169.0	142.0
1.83	793.6	771.8	698.4	553.9	423.2	336.0	239.7	166.3	135.3
1.85	761.2	702.4	642.4	514.4	382.6	314.7	227.2	156.7	130.6
1.87	641.7	625.5	583.0	473.2	370.8	298.4	214.7	148.6	124.8
1.90	505.5	492.9	463.2	408.3	317.9	273.3	192.1	136.1	114.4

Discharge Constant Power (Watts at 20°C)

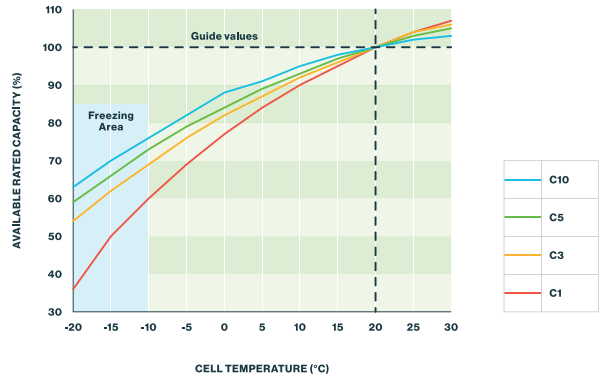
Cells (V)	10 min	15 min	30 min	1h	2h	3h	5h	8h	10h
1.60	2445.0	2386.0	2000.0	1440.0	896.0	696.0	493.0	340.0	278.0
1.65	2257.0	2228.0	1885.0	1393.0	896.0	696.0	493.0	340.0	278.0
1.70	2105.0	2025.0	1750.0	1329.0	886.0	696.0	493.0	340.0	278.0
1.75	1872.0	1783.0	1559.0	1133.0	833.0	683.0	485.0	335.0	278.0
1.80	1667.0	1562.0	1331.0	1085.0	796.0	654.0	467.0	323.0	271.0
1.83	1453.0	1413.0	1283.0	1024.0	790.0	632.0	445.0	319.0	259.0
1.85	1419.0	1310.0	1192.0	961.0	719.0	596.0	435.0	300.0	251.0
1.87	1209.0	1179.0	1093.0	891.0	702.0	569.0	413.0	286.0	242.0
1.90	966.0	942.0	881.0	779.0	611.0	526.0	373.0	265.0	224.0



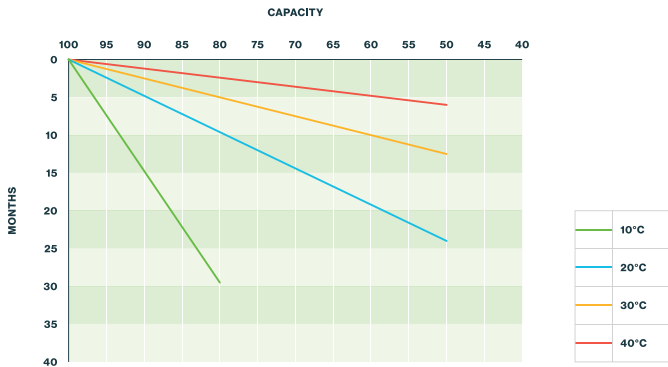
Charging voltage vs. Temperature



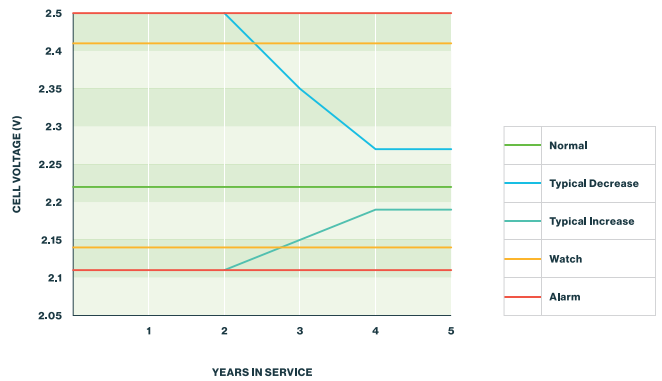
Capacity vs. Temperature



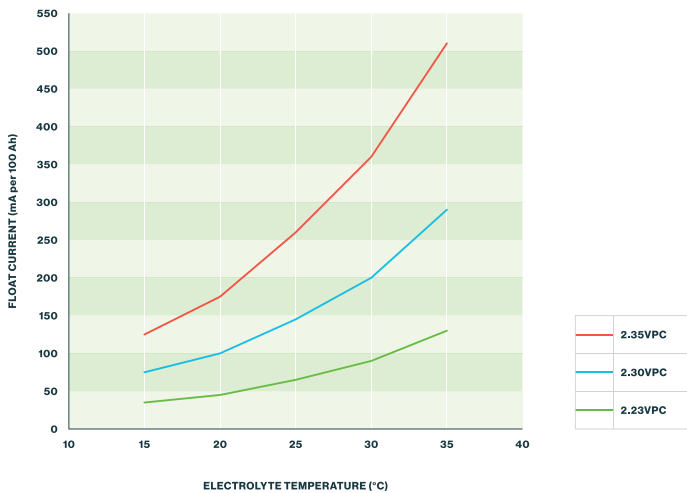
Self discharge at different temperatures



Float voltage deviation vs. Years in service



Float current: Residual charge current



Storage: Determine the state of charge

