

Lead-Carbon Battery

LLC-1000



power the future



• Main Applications

- Renewable energy (wind & solar) storage system
- Peak shifting of electrical power system
- Frequency regulation and Load following service
- Smart-grid & micro-grid sites
- Off-grid & bad-grid sites

• Benefits

- Extra long life design, design life is 10-15 years
- Superior PSoC and deep cycling performance
- Excellent quick charge performance, reduce charging time by 30%
- High potential fuel savings when used with hybrid genset applications

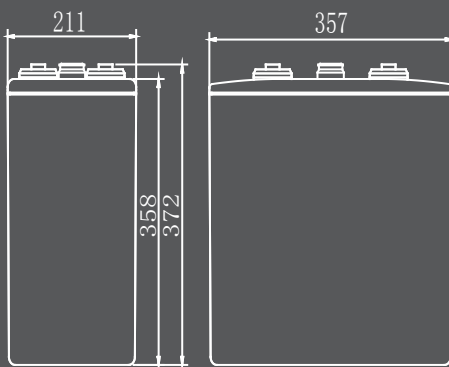
• Technical Features

- Comply with GB/T 22473、BS EN61427-1: 2013、IEC61427-2: 2015、UL、CE standards,etc
- Adopt lead carbon technology, reduce the cathode sulphation, ideal for PSoC cycle application and can deliver 4~5 times better cyclic life compared with normal VRLA
- Better charge acceptability and faster recharge performance
- Exquisite design for premium quality, high reliability and stability

• Technical Parameters

Normal Voltage	2V
Capacity	1000 Ah @10hr to 1.80V per cell @ 25°C(77°F)
Weight	71.4 kg (157.4 lbs)
Dimensions	Length: 357 mm (14.06 in) Width: 211 mm (8.31 in) Height: 358 mm (14.09 in) Total height: 372 mm (14.65 in)
Internal Resistance (full charged)	0.22mΩ (According to IEC 60896-21)
Short- circuit current	9400A (According to IEC 60896-21)
Self Discharge @ 25°C(77°F)	Less than 4 % after 30 days storage
Operating Temperature Range	Discharge: -40°C ~ 50°C(-40°F ~ 122°F) Charge: -20°C ~ 45°C(-4°F ~ 113°F) Storage: -20°C ~ 40°C(-4°F ~ 104°F)
Recommended Operating Temperature	15°C ~ 25°C(59°F ~ 77°F)
Recommended Charging Current	150A
Charging Voltage @25°C(77°F)	2.30~2.35 V/cell
Terminal	M8
Capacity Affected by Temperature(C ₁₀)	105 % @ 40°C 90 % @ 0°C 40 % @ -20°C
Design life @25°C(77°F)	10-15 years

• Dimensions:



• Compliant standards:

- ★ GB/T 22473-2008
- ★ BS EN 61427-1: 2013
- ★ IEC 61427-2: 2015
- ★ IEC 60896-21/22

• Attain certificate:

- ☑ IEC 61427
- ☑ IEC 60896
- ☑ UL
- ☑ CE

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Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

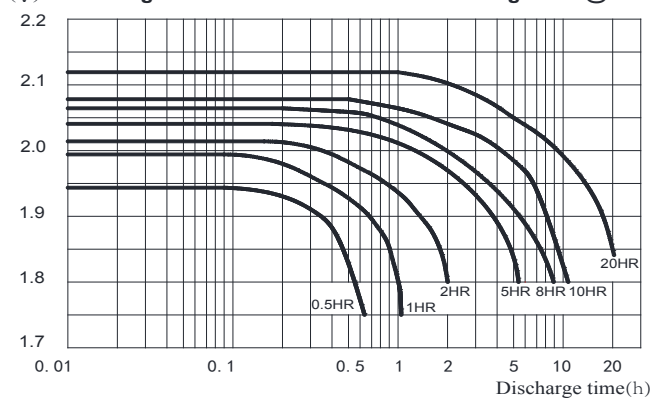
F.V/Time	15min	30min	1hr	3hr	5hr	8hr	10hr	20hr	100hr
1.75V	1326.0	842.4	563.6	260.7	181.4	128.0	107.0	57.5	12.50
1.80V	1086.2	789.8	526.5	252.8	177.3	125.0	105.0	56.5	12.30
1.85V	955.5	704.0	475.8	239.1	171.2	120.0	101.0	54.5	11.90
1.90V	813.2	604.5	421.2	223.4	164.7	109.0	92.0	53.3	11.60

Constant Power Discharge Characteristics Unit: W (25°C, 77°F)

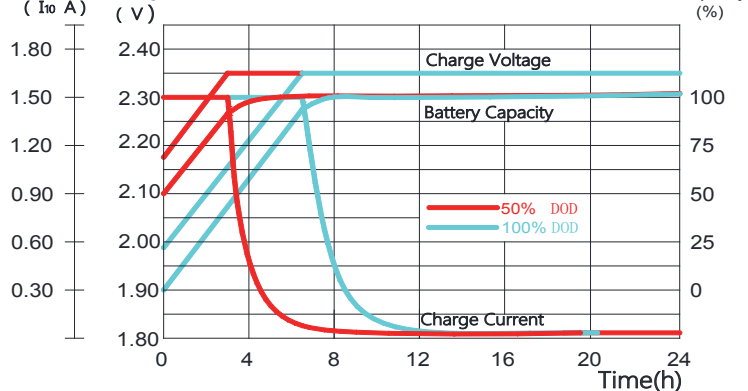
F.V/Time	15min	30min	1hr	3hr	5hr	8hr	10hr	20hr	48hr
1.75V	2108	1679	1135	533	355	276	233	120.26	26.10
1.80V	2009	1619	1110	515	345	270	228	118.08	25.71
1.85V	1829	1439	1008	488	333	255	216	113.44	24.82
1.90V	1589	1215	870	453	323	239	204	109.86	23.93

Performance curve :

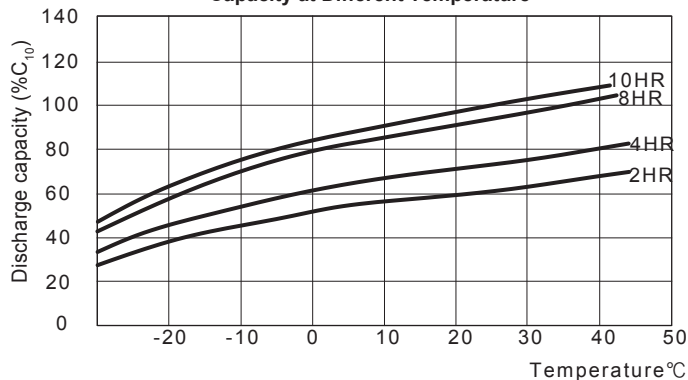
Upo (V) Discharge Performance at Different Discharge Rate@25°C



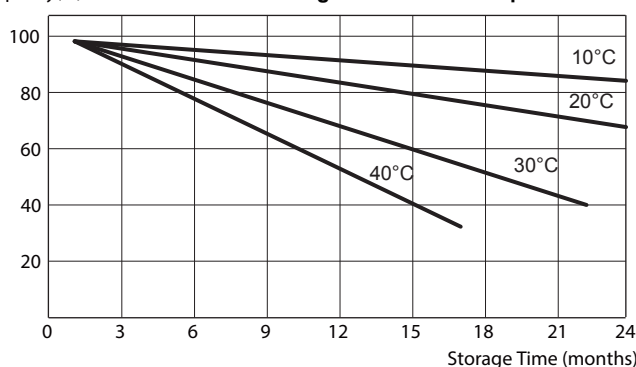
Current (I₀ A) Voltage (V) Capacity (%) Constant Voltage Charge Characteristics@25°C



Capacity at Different Temperature



Capacity (%) Curve of Self-discharge at Different Temperature



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