



# GFMJ-1200 12 OPzV 1200



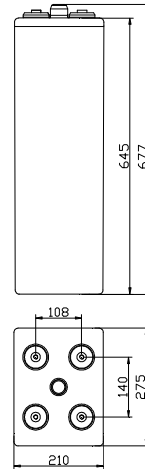
### Application:

- Solar energy, wind energy
- Electric power, nuclear power
- Communication
- Ship, maritime affairs
- UPS, medical facilities and emergency lighting
- Situation with high environmental protection and energy-saving

### Features of performance application

- Designed service life of 20 years
- High cycle service life
- Better temperature resistance performance
- Excellent deep cycle performance
- Superior low current discharge performance
- Stronger constant power discharge capability
- Better charge acceptability
- Better safety performance and reliability
- Modular and personified installation design
- High performance/price ratio and low yearly operating cost
- Eco-friendly, cycle application

Rated voltage	2 V
Capacity@ 25°C(77°F)	1200Ah @ 10hr to 1.80V per cell
Weight	About 94kg (206.8 lb)
Reference internal resistance (charged)	About 0.25mΩ@ 25°C (77°F)
Short-circuit current	About 8200A (0.1S reference value)
Max discharge current	3600A (5sec)
Self-discharge	< 20% 180 days @ 25°C (77°F)
Temperature range	Application: -20°C~50°C(-4°F~122°F) Storage: 0°C~20°C(32°F~68°F) Recommendation: 20°C~25°C(68°F~77°F)
Max charge current	240A
Charge voltage @ 25°C(77°F)	Float charge: 2.23V, average charge: 2.35V Temperature compensation factor: -3 mV/°C
Terminal output	M10 copper terminal (HPb59-1)
Recharge time	See figure 2



### Structure features of Shuangdeng GFMJ series VRLA gel battery:

- Electrolyte: primary material adopts Germany gas silicon dioxide, the material will be the thin collosol state when it's injected initially, and it can fill the whole plate space of battery, and each part of plate can react evenly. The flooded electrolyte design can avoid dry up of battery when it's in high temperature and over charged, the thermal capacity is big and heat-elimination is fine, accordingly, thermal runaway can be avoided. The electrolyte is in the gel state in finished battery without flowing, accordingly, leakage and lamination can be avoided.
- Plate: positive plate adopts tubular type plate which can effectively prevent active substance falling, the positive plate frame is molded with multi-component alloy, the crystal particle of alloy structure is tiny and dense, the corrosion-resisting performance is fine and service life is long. Negative plate adopts pasted plate, the grid adopts radiated structure which enhances utilization ratio of active substance and discharge capability of strong current, and the charge reception capability is strong.
- Battery case: it's made of ABS material, corrosion prevention is fine, strength is high, and appearance is beautiful, it can be sealed with lid reliably which can prevent potential leakage risk.
- Separator: adopt special micro-pore PVC-SiO<sub>2</sub> separator from Europe AMER-SIL Company, the porosity of separator is big and resistance is low. It has bigger electrolyte storage space.
- Terminal sealing: the built-in copper core lead-base terminal post has stronger current carrying capacity and corrosion resistance. The unique double sealing structure of terminal post can effectively avoid leakage, to guarantee reliability of terminal post sealing.
- Safety valve: adopt Germany technology, constant opening and closing valve, high reliability, the accumulator case expansion, damage and electrolyte dry up can be avoided.



### Execution standard:

- IEC60896-21/22 DIN40742
- BS EN 61427-2002
- YD/T 1360-2005
- Q/321284KCC 03-2006

### Authentication and certificate:

- Certificate of Qualification on Perfecting Measurement & Measuring System**
- GB/T19022-2003
- ISO10012:2003、IDT
- Quality Management System Authentication**
- GB/T19001-2000
- NO.03006Q10002R0M-2
- Environmental Management System Authentication**
- ISO 14001:2004
- NO.010607E2024R1M-2
- Occupational Health Management System Authentication**
- GB/T28001-2001
- NO.010607S10147R0M-2
- Product authentication:**
- YD/T1360-2005
- NO.030074640567R1M
- CE authentication**
- EN 61000-6-3:2001+A11:2004
- EN 61000-6-1:2001
- National Industrial Product Production License**
- XK06-044-00012
- Product Quality Test Free Certificate**
- (2006)GM(321630488)
- Export product quality license**

Discharge current at different final voltages and different discharge rates unit: A (25°C, 77°F)

	5min	10min	15min	30min	45min	1hr	1.5hr	2hr	3hr	4hr	5hr	8 hr	10 hr	20hr	100 hr	120hr
1.90V	1026	899	605	588	564	468	372	330	258	216	185	129	107	55.54	14.51	12.31
1.85V	1082	945	706	660	598	516	408	354	274	228	195	134	112	61.09	15.28	12.96
1.80V	1159	1144	974	840	672	624	516	399	300	245	208	144	125	64.14	15.81	13.41
1.75V	1206	1167	1117	936	746	672	568	417	312	252	211	146	128	66.70	16.21	13.74

Discharge power at different final voltages and different discharge rates unit: W (25°C, 77°F)

	5min	10min	15min	30min	45min	1hr	1.5hr	2hr	3hr	4hr	5hr	8 hr	10 hr	20hr	100 hr	120hr
1.90V	1944	1685	812	740	707	674	637	600	493	417	359	261	225	111.1	29.02	24.62
1.85V	2009	1755	938	824	768	711	694	677	553	463	397	284	245	121.0	30.25	25.66
1.80V	2132	2103	1542	1366	1247	1128	976	823	656	537	455	320	274	125.7	30.99	26.28
1.75V	2205	2134	1776	1546	1412	1278	1086	894	694	568	475	326	276	128.7	31.29	26.52



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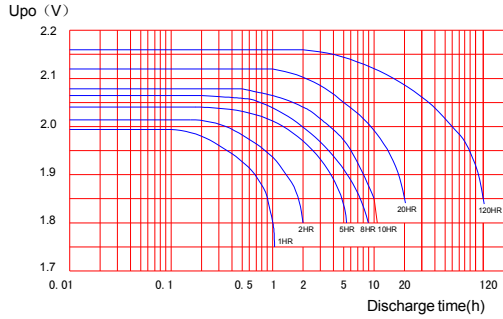


Figure 1 Discharge characteristic curve (20°C)

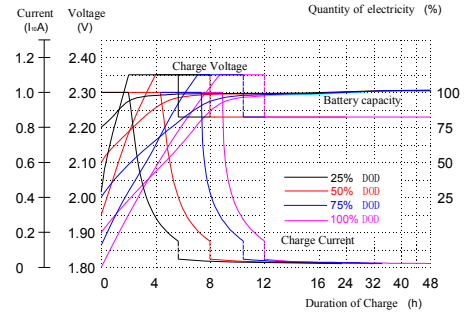


Figure 2 Constant voltage charge characteristic curve

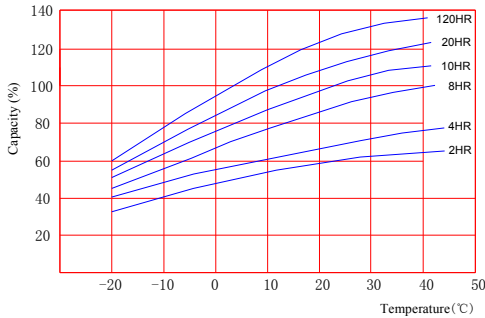


Figure 3 Relation curves between capacity and temperature

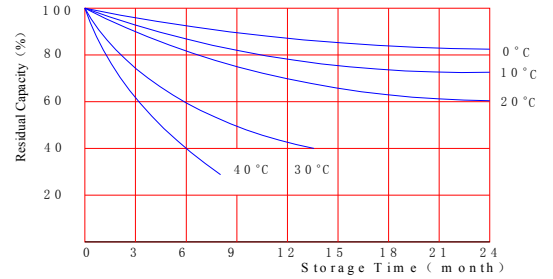


Figure 4 Self-discharge characteristic curve

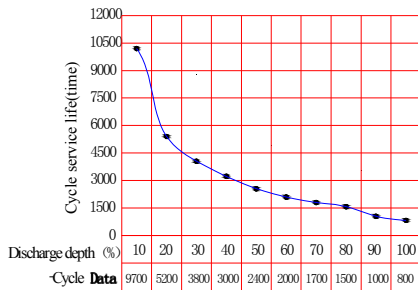


Figure 5 Relation curve between discharge depth and cycle service life

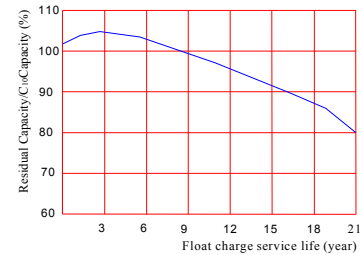


Figure 6 Relation curve between float charge service life and residual capacity

Remark: a) test circumstances: 20-30°C, relative humidity is 50~80percent;  
 b) charge mode: electricity of charge is equal to 105~115percent of discharge  
 c) residual capacity is 80 percent C<sub>10</sub>

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The above data are only taken as reference instead of inspection standard. Additional notification won't be available for parameter change due to improvement and regulation of product. Inspection shall be performed in accordance with standards.

We must make a statement, when the battery service life and safe operating performance is confirmed, the test condition will be stricter; accordingly, the battery shall not be used in these conditions, because it's difficult for battery to reach expected service life.