



# RL23000DG (2V3000Ah)

RL23000DG is GEL Deep cycle battery superiorly designed for frequent cyclic discharge applications under extreme temperature. By using strong grid to insure reliable performance under frequent cyclic discharge use. 400 cycles could be available at 100% DOD. Offering extra-durable cyclic performance, high efficiency of recovery ,that is more suitable for solar, mobility, E-toll, marine , deep discharge UPS etc..



## Specification

Cells Per Unit	1
Voltage Per Unit	2
Capacity	3000Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 193.0 Kg
Max. Discharge Current	30000 A (5 sec)
Internal Resistance	Approx. 0.3 mΩ
Operating Temperature Range	Discharge: -40°C~60°C Charge: -20°C~50°C Storage: -40°C~60°C
Normal Operating Temperature Range	25°C±5°C
Float charging Voltage	2.27 to 2.3 VDC/unit Average at 25°C
Recommended Maximum Charging Current Limit	600A
Equalization and Cycle Service	2.37 to 2.4 VDC/unit Average at 25°C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Terminal F10
Container Material	A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.



MH28539



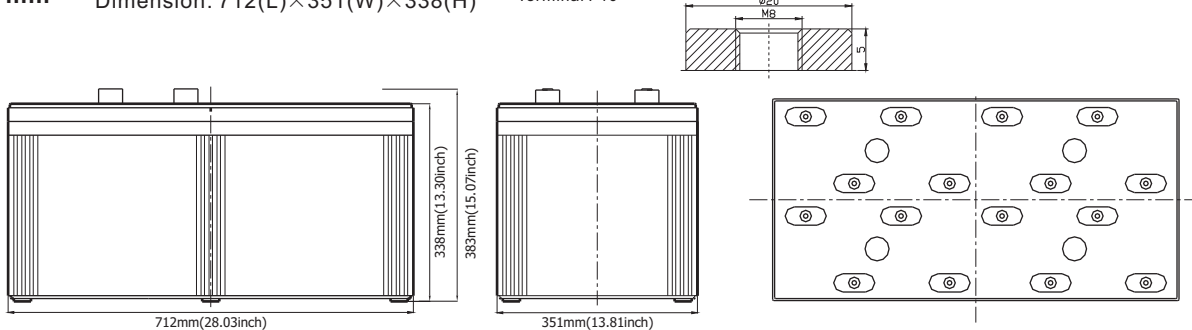
G4M20206-0910-E-16



ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 712(L)×351(W)×338(H) Terminal F10



## Constant Current Discharge Characteristics: A (25°C)

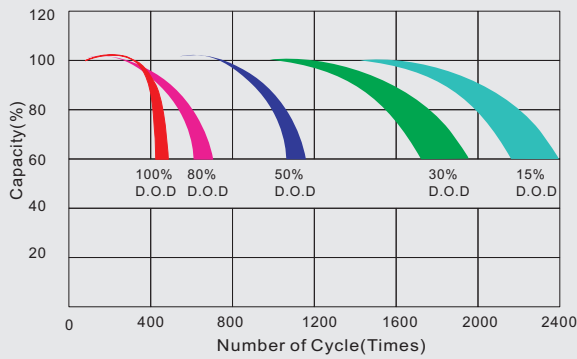
F.V/Time	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
1.60V	3666	2839	1827	1086	808.8	644.8	543.0	456.0	368.1	307.7	158.5
1.65V	3486	2726	1748	1046	774.8	622.1	520.3	445.0	351.6	296.7	152.8
1.70V	3250	2569	1714	1029	757.9	616.5	514.7	434.0	346.1	291.2	150.0
1.75V	2886	2284	1578	972.8	718.3	582.5	492.1	412.1	335.1	285.7	147.1
1.80V	2484	2106	1487	927.6	690.0	576.9	475.1	406.6	329.7	274.7	141.5
1.85V	2101	1896	1374	876.7	656.1	531.6	452.5	384.6	313.2	263.7	135.8

## Constant Power Discharge Characteristics: W (25°C)

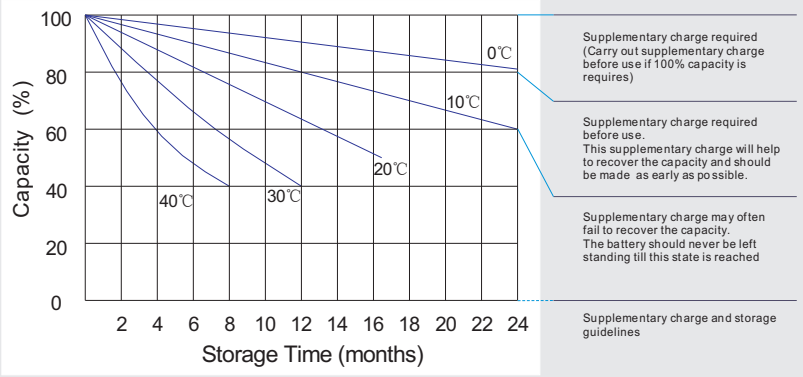
F.V/Time	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	6HR	8HR	10HR	20HR
1.60V	6418	5047	3263	1963	1471	1182	1001	862.6	686.8	582.4	299.9
1.65V	6250	5020	3252	1934	1465	1171	989.8	851.6	681.3	576.9	297.1
1.70V	5904	4670	3150	1906	1420	1154	978.5	835.1	670.3	571.4	294.3
1.75V	5259	4207	2941	1821	1369	1114	938.9	796.7	653.8	554.9	285.8
1.80V	4552	3878	2771	1742	1312	1080	910.6	780.2	631.8	538.4	277.3
1.85V	3881	3496	2556	1640	1250	995.4	871.0	736.2	604.4	522.0	268.8

All mentioned values are average values.

### Life characteristics of cyclic use



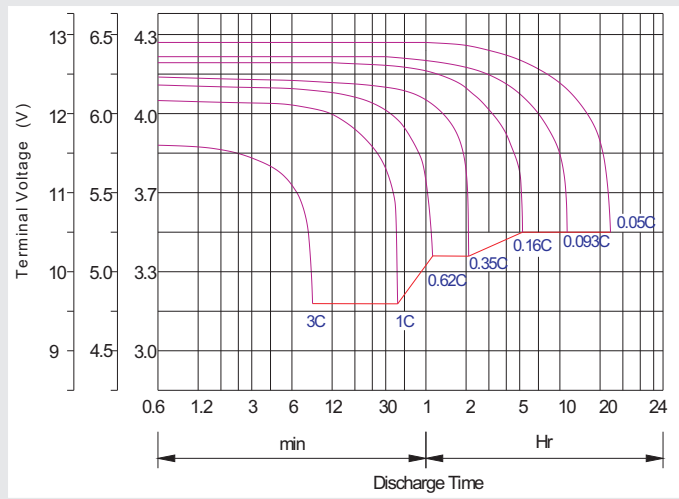
### Storage characteristic



### Charge characteristic curve for cyclic use



### Discharge characteristic curve



### Capacity Factors With Different Temperature

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

### Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

### Maintenance & Cautions

<b>Cycle service</b>
※ Avoid battery over discharge, especially battery series connection use.
※ Charged with recommend voltage, ensure battery can be full recharged.
In general, recharge capacity should be 1.1-1.15 times discharge capacity.
※ Effect of temperature on cycle charge voltage: -4mV/°C/Cell.
※ There are a number of factors that will affect the length of cyclic service.
The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged.
Generally speaking, the most important factors is depth of discharge.

**Charge the batteries at least once every six months, if they are stored at 25°C.**

### Charging Method:

Constant Voltage	-0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h