

LEAD ACID (DEEP CYCLE) BATTERY

MD40-12

Marvel MD series is specially designed for frequent discharge deep cycle applications. By using the specially designed active material, strong grids and thick plate construction, the series battery offers reliable performance in high load situations and could provide competitive cycle performance. Suitable for electric vehicles and golf carts; industrial equipment, floor machines, forklifts, aerial lifts, and robotics; marine, RV, and no-idle solutions; mobility and medical equipment; and most outdoor application.

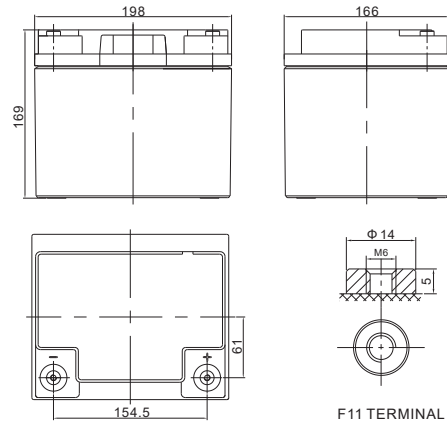


MADE IN VIETNAM / CHINA

SPECIFICATION

Cells Per Unit	6
Voltage Per Unit	12
Capacity	40Ah@20hr-rate to 1.75V per cell @25
Weight	Approx. 12.4 Kg (Tolerance±3%)
Internal Resistance	Approx. 8.0 mΩ
Terminal	F4(M6)/F11(M6)
Max. Discharge Current	400A (5 sec)
Design Life	12 years (floating charge)
Maximum Charging Current	12.0 A
Reference Capacity	C3 30.6AH
	C5 34.4AH
	C10 38.1AH
	C20 40.0AH
Float Charging Voltage	13.6 V~13.8 V @ 25°C Temperature Compensation: -3mV/ /Cell
Cycle Use Voltage	14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/ /Cell
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C±5°C
Self Discharge	Marvel Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25 .Please charged batteries before using.
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

Dimensions



Length	198±2mm (7.80 inches)
Width	166±2mm (6.54 inches)
Height	169±2mm (6.65 inches)
Total Height	169±2mm (6.65 inches)
Terminal	Value
M5	6~7 N*m
M6	8~10 N*m
M8	10~12 N*m

Unit: mm

Constant Current Discharge Characteristics :A(25°C)

F.V/Time	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	97.13	73.83	43.56	24.29	14.47	11.27	8.840	7.519	4.823	4.000	2.073
1.65V	89.47	69.04	41.26	23.47	13.98	10.92	8.576	7.283	4.785	3.962	2.062
1.70V	82.92	64.93	39.12	22.71	13.61	10.46	8.311	7.086	4.709	3.886	2.036
1.75V	76.07	60.81	37.58	22.00	13.09	10.19	8.084	6.889	4.633	3.848	2.000
1.80V	69.23	55.69	36.19	21.02	12.64	10.00	7.896	6.800	4.557	3.810	1.981
1.85V	54.17	46.08	30.69	18.77	11.56	9.308	7.404	6.260	4.291	3.581	1.962

Constant Power Discharge Characteristics : WPC(25°C)

F.V/Time	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	165.4	128.8	79.15	45.61	27.35	21.40	17.04	14.23	9.399	7.845	4.139
1.65V	159.2	125.2	77.30	44.83	26.62	20.87	16.62	13.85	9.324	7.769	4.102
1.70V	148.6	118.5	73.58	43.51	25.95	20.07	16.09	13.50	9.211	7.618	4.065
1.75V	138.3	111.9	71.00	42.31	25.03	19.57	15.72	13.19	9.061	7.543	3.991
1.80V	127.4	103.4	68.71	40.58	24.46	19.46	15.41	13.02	8.910	7.467	3.954
1.85V	101.1	86.88	58.92	36.44	22.52	18.15	14.51	12.04	8.422	7.053	3.917

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values. The battery must be fully charged before the capacity test. The Cm should reach 95% after the first cycle and 100% after the third cycle.

