

# Valve Regulated Lead-Acid Rechargeable Battery



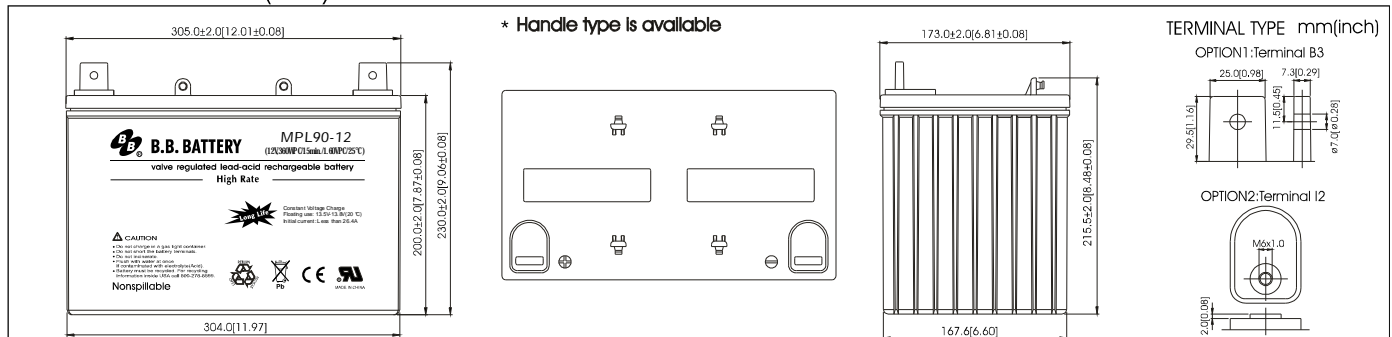
## MPL90-12 (12V, 360W/Cell 15min.)

MPL90-12 is designed with multi-plate technology so that it owns unparalleled high energy density. The unique alloy composition imposes our battery with more than 300 cycles at 100% discharge depth and 6-8 years' float life as well. Highly automated production with advanced heat-sealing and through-partition technique ensures reliable performance which is superior to any other battery manufacturer. Since its case is made of polypropylene, the outdoor and indoor usage of this battery are both suitable.

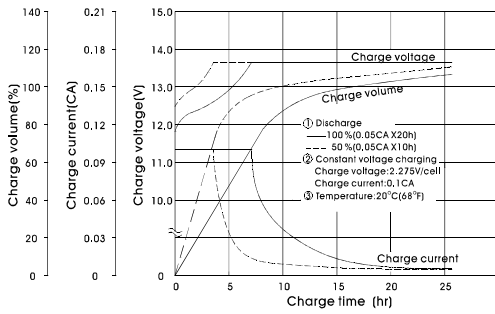
### SPECIFICATIONS

<b>Nominal Voltage(V)</b> .....	12 V
<b>Nominal Capacity(Ah)@25 °C</b>	
10 hour rate F.V.1.75V/cell (8800 mA discharge to 10.5 Volts).....	88 Ah
5 hour rate F.V.1.75V/cell (16700 mA discharge to 10.5 Volts).....	83.5Ah
1 hour rate F.V.1.60V/cell (62200 mA discharge to 9.6 Volts).....	62.2Ah
<b>Nominal Power by 15 mins rate F.V.1.60 V/cell(W/cell)</b> .....	360 W
<b>Terminal Hardware Initial Torque</b> .....	58 kgf-cm (50 in-lbs; 5.6 N-m)
<b>Approximate Weight</b> .....	29.8 Kg(65.7 Lb)
<b>Internal Resistance</b> .....	<4mΩ
<b>Maximum Charging Current</b> .....	26.4A
<b>Maximum Discharge Current for 5 sec.</b> .....	900 A
<b>Short Circuit Current @ 0.1 sec.</b> .....	2300A min.
<b>Cold Cranking Amp @ -18°C</b> .....	780 A
<b>Operation Temperature</b>	
Charge .....	0°C(32°F)~50°C(122°F)
Discharge .....	-20°C(-4°F)~60°C(140°F)
Storage .....	-20°C(-4°F)~50°C(122°F)
<b>Storage Duration</b> .....	6 months(20°C)
<b>Container Material and Flammability</b> .....	PP, UL94 - V0 & HB
<b>Application</b> .....	Telecom, UPS, Marine, Power station, Cable TV, etc.

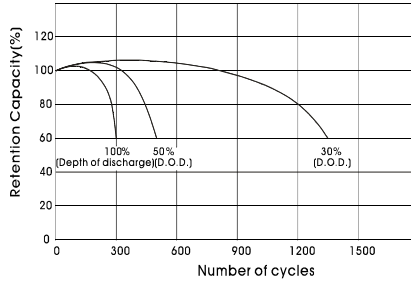
### DIMENSIONS Mm(inch)



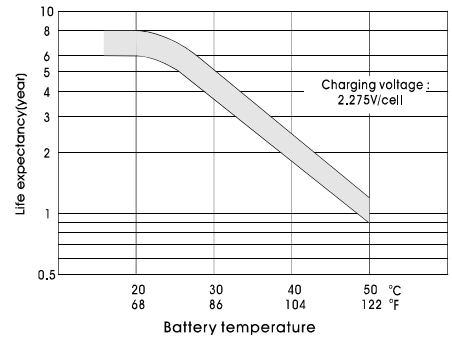
**BATTERY CHARGING CHARACTERISTICS**  
(Typical example of the charge characteristics for the standby use)



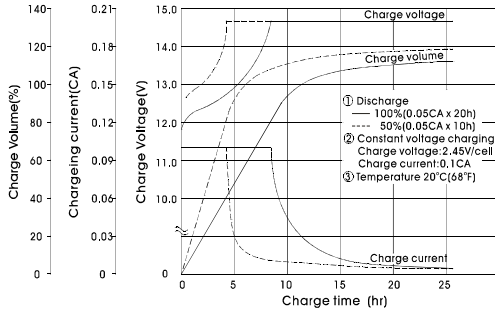
**BATTERY LIFE CHARACTERISTICS OF CYCLIC USE**  
Testing Conditions: Discharge Current: 0.25C Amp(F.V.1.7V/cell)  
Charging Current: 0.1C Amp  
Charging Volume: 120% Of Discharge Capacity  
Ambient Temperature: 20°C(68°F)



**EFFECT OF TEMPERATURE ON LONG TERM FLOAT LIFE**



**BATTERY CHARGING CHARACTERISTICS**  
(Typical example of the charge characteristics for the cycle use)



**CHARGING PROCEDURE**

Application	Charging method	Charging Voltage at 20°C (V/cell)	Temperature compensation coefficient of charging voltage (mV/°C/cell)	Max. charging current (CA)	Charging time 0.1CA, 20°C (h)		Temp (°C)
					100% discharge	50% discharge	
For standby power Source	Constant voltage & Constant current charging (with current restriction)	2.25~2.30	-3	0.3	24	20	0~50 (32~122°F)
For cycle service					16	10	

\*Temperature compensation of charging voltage is not needed, when using the batteries within 5°C to 35°C range.

**CONSTANT POWER DISCHARGE CHARACTERISTICS @ 25°C(77°F)**

Final Voltage	Discharge time									
	5Min	10Min	15Min	20Min	25Min	30Min	40Min	50Min	60Min	90Min
	Battery output power(W)									
10.80V	3117	2291	1903	1591	1379	1211	975	818	709	504
10.50V	3494	2459	2013	1653	1420	1242	995	835	720	512
10.20V	3726	2560	2082	1696	1448	1262	1009	845	728	518
9.90V	3878	2639	2129	1728	1471	1276	1021	854	735	522
9.60V	3993	2690	2160	1751	1489	1288	1031	861	741	525

**CONSTANT CURRENT DISCHARGE CHARACTERISTICS @ 25°C(77°F)**

Final Voltage	Discharge time												
	5Min	10Min	15Min	20Min	25Min	30Min	40Min	50Min	1Hr	1.5Hr	2Hr	5Hr	10Hr
	Battery output current(Ampere)												
11.10V	247	181	152	126	108	94	76	64	57.3	40.4	32.4	15.7	8.1
10.80V	290	201	165	136	116	101	81	68	59.6	42.3	33.9	16.4	8.6
10.50V	318	217	174	142	121	105	83	70	60.5	43.0	34.4	16.7	8.8
10.20V	339	226	180	146	124	107	85	71	61.2	43.5	34.7	16.8	8.9
9.90V	352	233	185	149	126	109	86	72	61.8	43.9	35.0	16.9	8.9
9.60V	363	237	188	151	128	110	87	72	62.2	44.2	35.2	16.9	8.9



**B.B. BATTERY CO., LTD.**

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