

PM60-12 12V60AH

PM SERIES-VRLA BATTERY



Specification

Nominal Voltage	12V	
Nominal Capacity(10HR)	60.0AH	
Dimension	Length	348±3mm (13.70 inches)
	Width	167±2mm (6.57 inches)
	Container Height	178±2mm (7.01 inches)
	Total Height (with Terminal)	178±2mm (7.01 inches)
Approx Weight	Approx 17.6 kg	
Terminal	T6 / T10	
Container Material	ABS	
Rated Capacity	63.0AH/3.15A	(20hr, 1.80V/cell, 25°C/77°F)
	60.0AH/6.00A	(10hr, 1.80V/cell, 25°C/77°F)
	51.0AH/10.2A	(5hr, 1.75V/cell, 25°C/77°F)
	45.0AH/9.00A	(3hr, 1.75V/cell, 25°C/77°F)
	34.2AH/34.2A	(1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	780A (5s)	
Internal Resistance	Approx 7.3 mΩ	
Operating Temp.Range	Discharge : -15~50°C (5~122°F)	
	Charge : 0~40°C (32~104°F)	
	Storage : -15~40°C (5~104°F)	
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Cycle Use	Initial Charging Current less than 19.5 A. Voltage	
	14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C	
Standby Use	No limit on Initial Charging Current Voltage	
	13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C	
Capacity affected by Temperature	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	PALMA PM series batterys may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	

Applications

- ◆ All purpose
- ◆ Uninterruptable Power Supply (UPS)
- ◆ Electric Power System (EPS)
- ◆ Emergency backup power supply
- ◆ Emergency light
- ◆ Railway signal
- ◆ Aircraft signal
- ◆ Alarm and security system
- ◆ Electronic apparatus and equipment
- ◆ Communication power supply
- ◆ DC power supply
- ◆ Auto controlsystem

Constant Current Discharge (Amperes) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	111.2	87.5	74.4	62.2	49.4	37.4	30.6	19.5	15.4	12.6	10.2	8.85	7.18	6.14	3.35
1.80V/cell	149.3	111.8	89.9	73.5	58.3	43.5	34.3	21.3	16.6	13.5	10.9	9.49	7.62	6.50	3.38
1.75V/cell	168.4	122.8	98.2	79.1	60.6	45.2	35.9	22.1	16.9	13.8	11.2	9.75	7.75	6.57	3.41
1.70V/cell	185.4	133.8	104.8	83.1	63.0	47.0	37.0	23.0	17.4	14.1	11.5	9.95	7.86	6.63	3.48
1.65V/cell	204.5	144.4	111.4	88.3	66.5	48.1	38.3	23.6	18.1	14.6	11.8	10.2	7.98	6.77	3.52
1.60V/cell	225.5	156.8	119.2	94.1	70.2	50.2	39.7	24.4	18.7	15.1	12.2	10.4	8.06	6.84	3.54

Constant Power Discharge (Watts) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	203.4	161.6	138.8	117.3	94.2	71.9	59.1	37.9	30.1	24.6	19.9	17.4	14.2	12.1	6.63
1.80V/cell	270.1	204.0	165.4	136.6	109.5	83.0	65.9	41.1	32.2	26.2	21.3	18.6	15.0	12.8	6.69
1.75V/cell	298.1	220.6	178.5	145.5	112.7	85.3	68.6	42.5	32.7	26.7	21.8	19.0	15.2	13.0	6.74
1.70V/cell	319.1	235.0	187.9	151.8	116.7	88.4	70.5	44.1	33.5	27.3	22.3	19.4	15.4	13.1	6.87
1.65V/cell	346.9	251.2	198.3	160.1	122.1	89.8	72.4	45.0	34.8	28.2	22.8	19.8	15.6	13.3	6.95
1.60V/cell	373.8	266.5	208.5	168.6	128.0	93.1	74.5	46.3	35.7	28.9	23.5	20.1	15.7	13.4	6.98

Note The above data are average values, and can be obtained with 3 charge/discharge cycles. These are not minimum values.

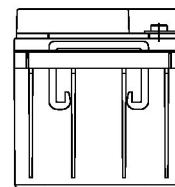
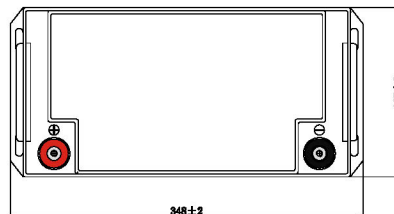
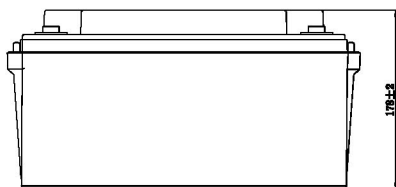
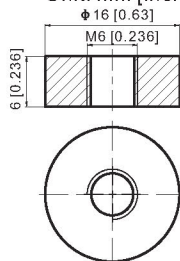
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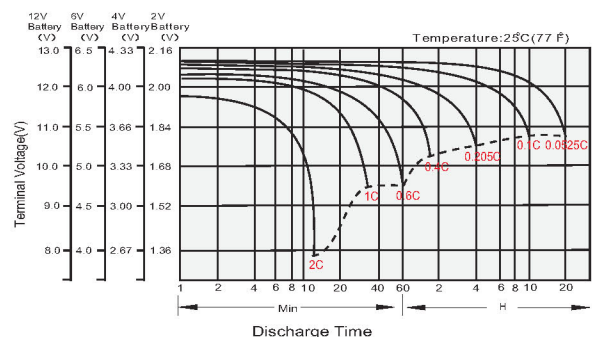
Dimensions

T6 Terminal

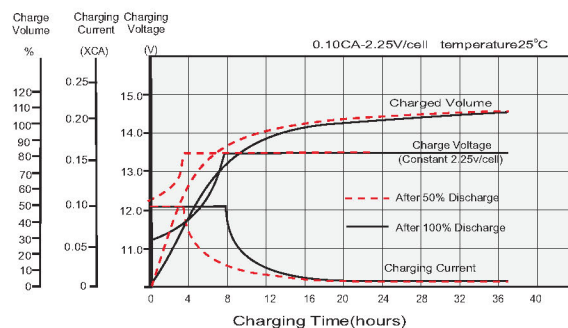
Unit: mm [inches]



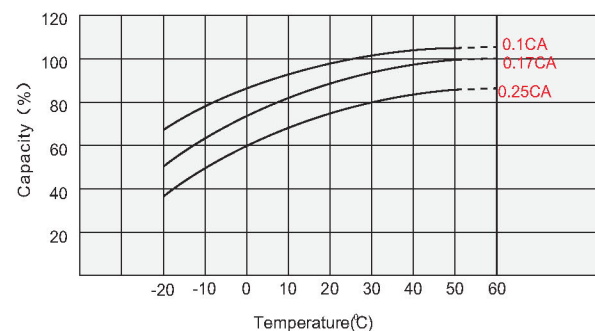
Discharge Characteristics



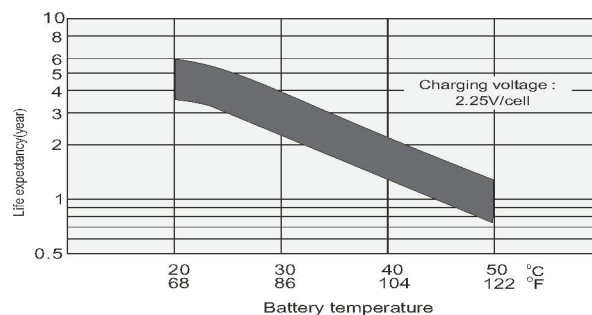
Float Charging Characteristics



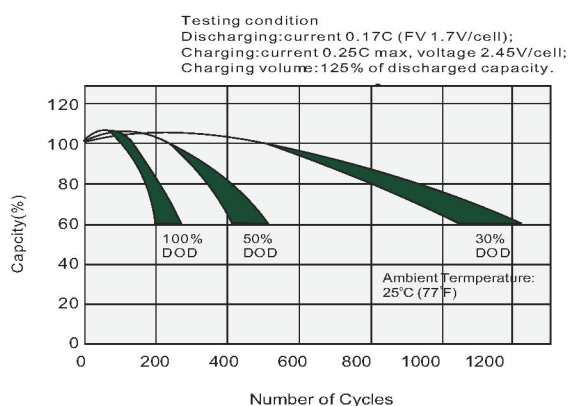
Temperature Effects in Relation to Battery Capacity



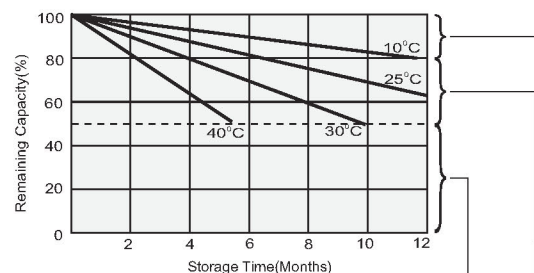
Effect of Temperature on Long Term Float Life



Cycle Life in Relation to Depth of Discharge



Self Discharge Characteristics



Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.

Supplementary charge required before use. Optimal charging way as below:
1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
3. Charged for 8~10 hours at limited current 0.05CA.

No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)