

**HR Series**

HR(High-Rate) Series of valve regulated lead acid (VRLA) batteries have been developed with high efficiency active materials to stimulate inside the battery with higher power output when the battery is discharged to a extent level of discharging. Along with high-density structure design for relatively smaller Inner resistance which will significantly improve the performance for high rate discharging when high power output service is needed.

**Application**

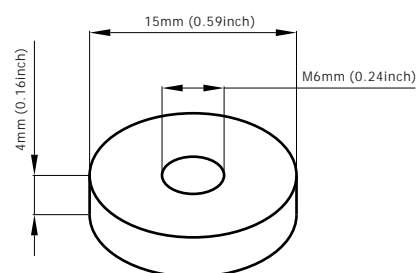
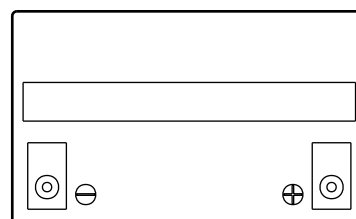
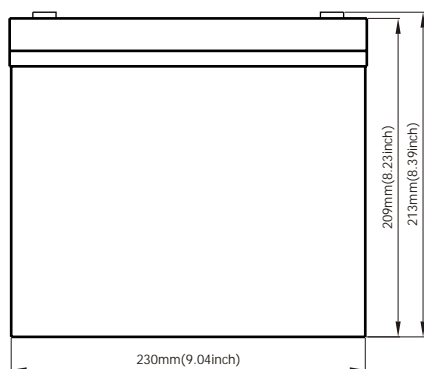
- Alarm System
- Cable Television
- Communication Equipment
- Control Equipment
- Security System
- Medical Equipment
- Toys
- UPS
- Emergency Power System

**General Features**

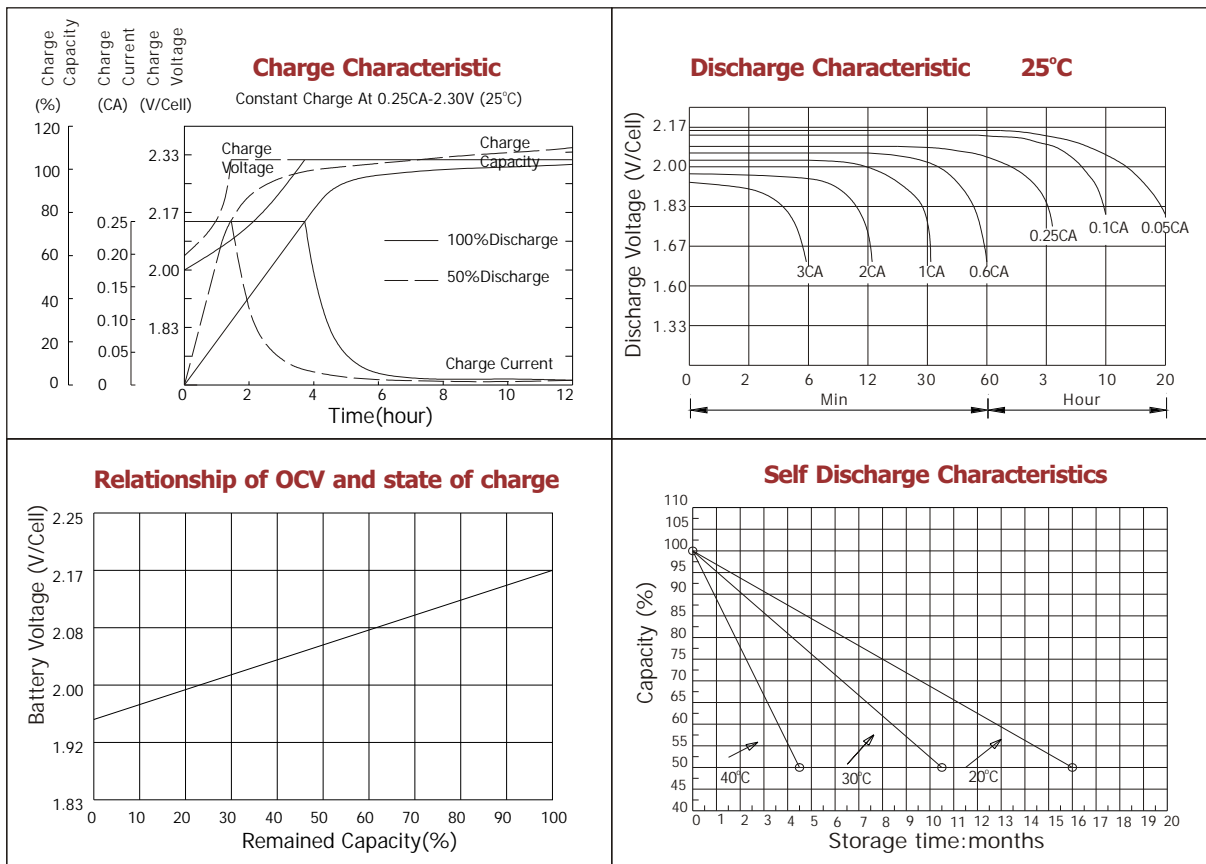
- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers(UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof.
- High quality and high reliability.
- Exceptional deep discharge recovery performance.
- Low self discharge characteristic.
- Flexibility design for multiple install positions.

**Construction**

- Component .....Raw material
- Positive .....Lead dioxide
- Negative .....Lead
- Container .....ABS
- Cover .....ABS
- Sealant .....Epoxy Resin
- Safety valve .....EPDR
- Terminal .....Copper
- Separator .....Fibre glass
- Electrolyte .....Sulfuric acid

**Terminal Dimensions**

Battery Model	HR12-200W (200W to 1.67V, 15min)			
Designed Floating Life	8 Years			
Capacity(25°C)	20HR(2.75A,1.75V)	10HR(5.2A,1.75V)	5HR(8.9A,1.75V)	1HR(33A,1.75V)
	55AH	52AH	44.5AH	33AH
Dimensions	Length	Width	Height	Total Height
	230mm(9.04inch)	138mm(5.44inch)	209mm(8.23inch)	213mm(8.39inch)
Approx. Weight	16.6Kg (36.6 lbs)			
Internal Resistance	Full charged at 25°C: 0.007 Ohm			
Self Discharge	3% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25°C)	Cycle use		Float use	
	14.4-15V(-30mV/ °C), max. Current: 13A		13.6-13.8V(-20mV/ °C)	



#### Constant current discharge ratings-amperes at 25°C

F. V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	236	147	111	67.6	39.1	17.2	10.5	5.71	3.09
1.67V	222	139	107	64.7	38.6	16.5	10.3	5.66	2.98
1.70V	203	134	104	58.8	37.4	15.4	10.0	5.63	2.93
1.75V	199	130	101	55.9	35.6	14.9	9.83	5.61	2.85
1.80V	178	124	91.6	51.8	33.4	14.3	9.24	5.50	2.78
1.85V	157	118	82.4	47.6	31.1	13.8	8.65	5.43	2.74

#### Constant power discharge ratings-watts at 25°C

F. V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	415	266	203	122	70.5	30.4	17.7	11.7	6.16
1.67V	400	259	200	119	70.1	29.5	17.6	11.7	5.94
1.70V	377	256	198	112	68.8	28.2	17.4	11.6	5.87
1.75V	379	255	197	108	67.6	27.5	17.3	11.4	5.72
1.80V	347	252	182	103	63.7	26.7	16.7	11.3	5.67
1.85V	315	239	165	96.8	59.9	25.9	16.2	11.1	5.55

