

**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**

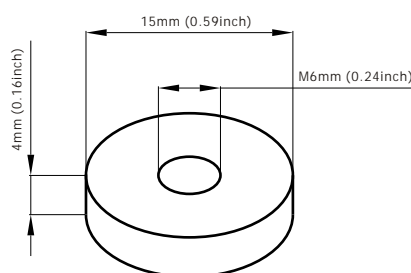
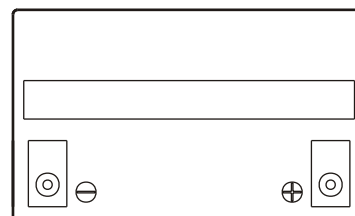
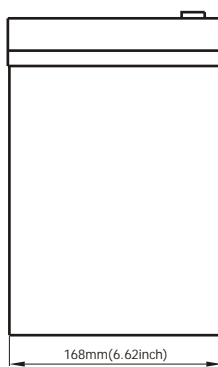
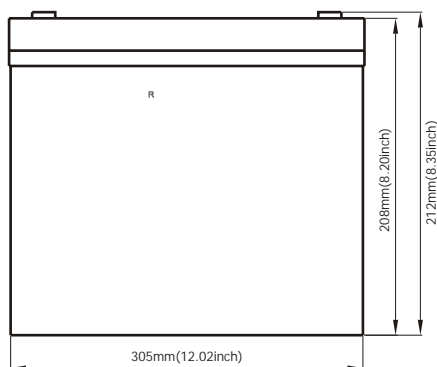
- Alarm System
- Cable Television
- Communication Equipment
- Control Equipment
- Security System
- Medical Equipment
- Toys
- UPS
- Emergency Power System

**General Features**

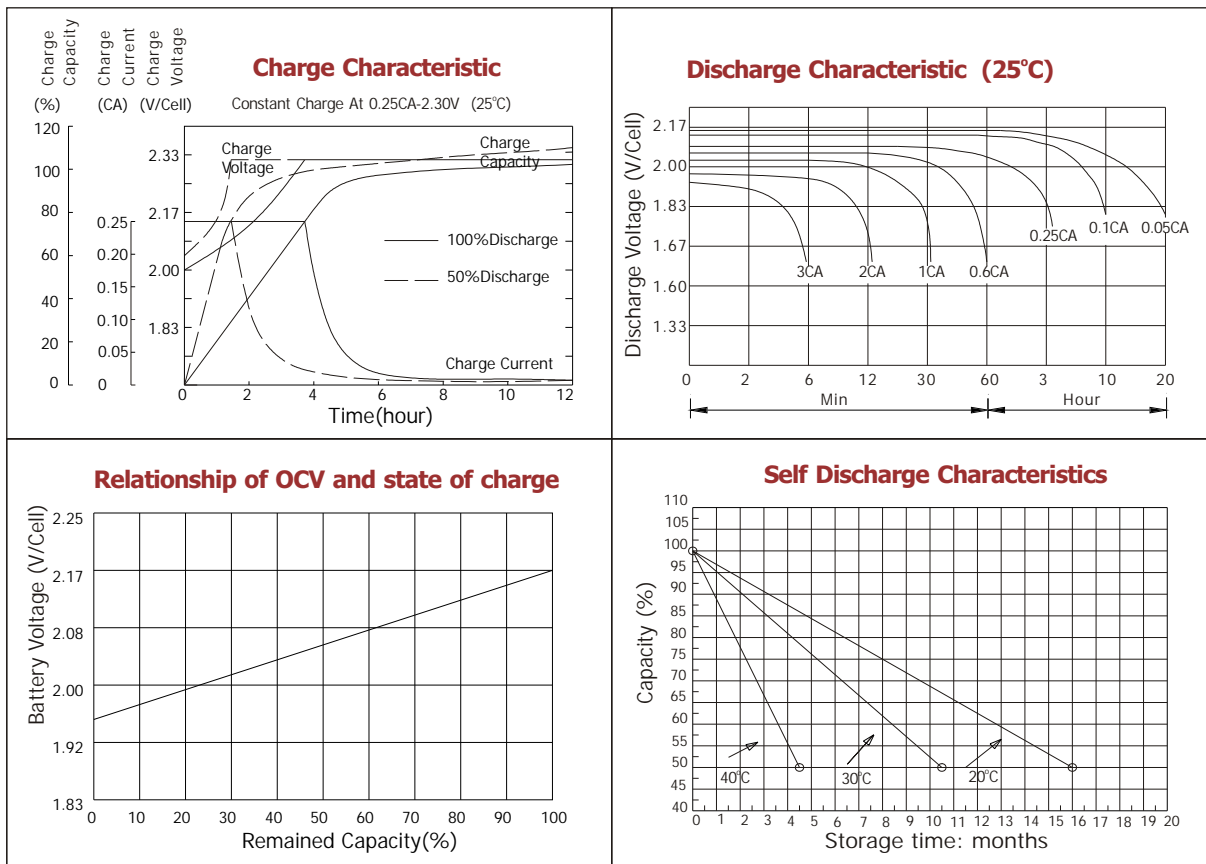
- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers(UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof.
- High quality and high reliability.
- Exceptional deep discharge recovery performance.
- Low self discharge characteristic.
- 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	HR12-310W(310W to 1.67V, 15min)			
Designed Floating Life	8 Years			
Capacity(25°C)	20HR(5.2A,1.75V)	10HR(10.2A,1.75V)	5HR(18A,1.75V)	1HR(64.8A,1.75V)
	104AH	102AH	90AH	64.8AH
Dimensions	Length	Width	Height	Total Height
	305mm(12.00inch)	168mm(6.62inch)	208mm(8.2inch)	212mm(8.35inch)
Approx. Weight	30Kg (66.15 lbs)			
Internal Resistance	Full charged at 25°C: 0.0084 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: 25A		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	366	228	172	105	71.1	31.2	19.1	10.4	5.61
1.67V	344	216	165	100	70.1	30.0	18.7	10.3	5.41
1.70V	315	208	162	91	68.0	28.0	18.3	10.2	5.33
1.75V	309	202	156	87	64.8	27.1	17.9	10.2	5.19
1.80V	276	193	142	80	60.7	26.0	16.8	10.0	5.08
1.85V	244	184	128	73.9	56.5	25.1	15.7	9.9	5.04

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

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	643	412	314	189	128	55.3	32.2	21.3	11.2
1.67V	620	401	310	185	127	53.6	32.1	21.2	11.1
1.70V	584	397	307	173	125	51.2	31.7	21.1	11.0
1.75V	588	396	305	168	123	50.0	31.4	20.8	10.9
1.80V	538	390	283	160	116	48.5	30.4	20.5	10.8
1.85V	488	370	256	150	109	47.1	29.4	20.3	10.6

