



### 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

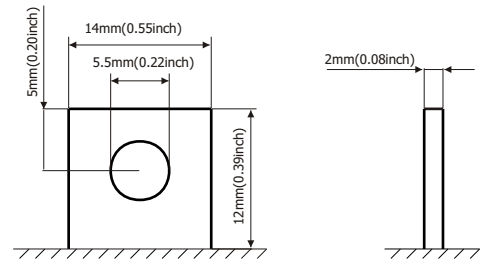


### General Features

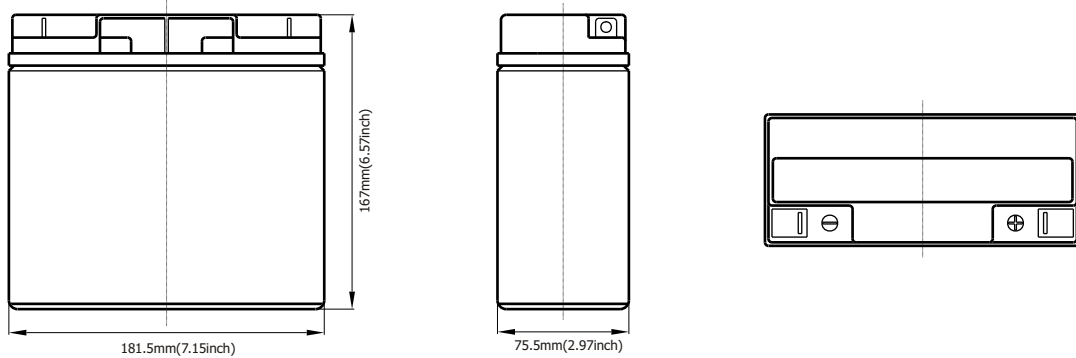
- Sealed and maintenance free operation.
- Non-Spillable construction design.
- ABS containers and covers(UL94HB, UL94V-0) optional.
- Safety valve installation for explosion proof.
- High quality and high reliability.
- Exceptional deep discharge recovery performance.
- Low self discharge characteristic.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

### Construction

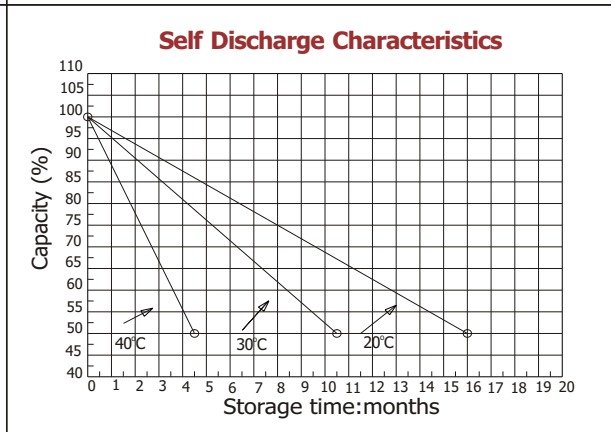
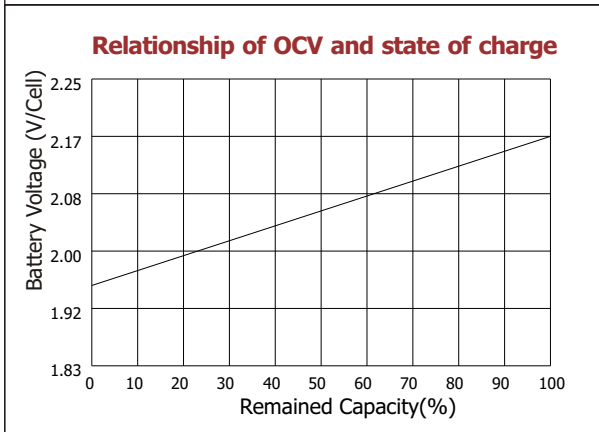
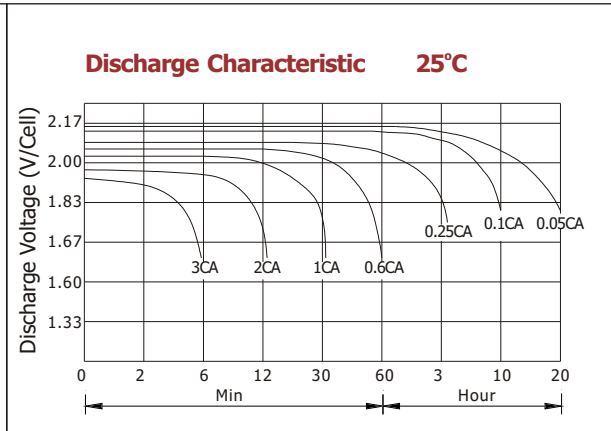
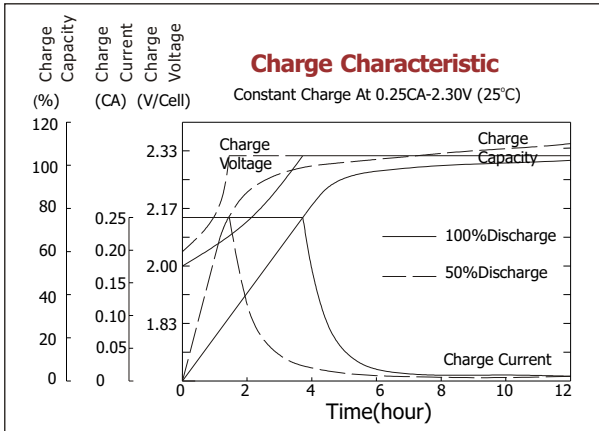
- Component .....Raw material
- Positive .....Lead dioxide
- Negative .....Lead
- Container .....ABS
- Cover .....ABS
- Sealant .....Epoxy Resin
- Safety valve ....EPDR
- Terminal .....Copper
- Separator .....Fibre glass
- Electrolyte .....Sulfuric acid



Terminal Dimensions



|                                  |   |                   |                       |                  |
|----------------------------------|---|-------------------|-----------------------|------------------|
| Battery Model                    | HR12-95W (95W to 1.67V, 15min)              |                   |                       |                  |
| Designed Floating Life           | 8 Years                                     |                   |                       |                  |
| Capacity(25°C)                   | 20HR(1.2A,1.75V)                            | 10HR(2.25A,1.75V) | 5HR(4.14A,1.75V)      | 1HR(15.5A,1.75V) |
|                                  | 24AH  | 22.5AH            | 20.7AH                | 15.5AH           |
| Dimensions                       | Length                                      | Width             | Height                | Total Height     |
|                                  | 181.5mm(7.15inch)                           | 75.5mm(2.97inch)  | 167mm(6.57inch)       | 167mm(6.57inch)  |
| Approx. Weight                   | 7 Kg (15.44 lbs)                            |                   |                       |                  |
| Internal Resistance              | Full charged at 25°C: 0.0088 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: 6.9A     |                   | 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    | 112   | 69.9  | 52.7  | 32.1  | 17.1 | 7.49 | 4.58 | 2.49 | 1.35 |
| 1.67V    | 105.4 | 66.3  | 50.7  | 30.7  | 16.8 | 7.20 | 4.48 | 2.47 | 1.30 |
| 1.70V    | 96.6  | 63.9  | 49.5  | 27.9  | 16.3 | 6.72 | 4.38 | 2.46 | 1.28 |
| 1.75V    | 94.6  | 61.9  | 47.9  | 26.5  | 15.6 | 6.50 | 4.29 | 2.45 | 1.25 |
| 1.80V    | 84.7  | 59.1  | 43.5  | 24.6  | 14.6 | 6.24 | 4.03 | 2.40 | 1.21 |
| 1.85V    | 74.7  | 56.3  | 39.1  | 22.6  | 13.6 | 6.02 | 3.78 | 2.37 | 1.18 |

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

| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR  | 3HR  | 5HR  | 10HR | 20HR |
|----------|------|-------|-------|-------|------|------|------|------|------|
| 1.60V    | 197  | 126   | 96.2  | 57.9  | 30.8 | 13.3 | 7.73 | 5.12 | 2.69 |
| 1.67V    | 190  | 123   | 95.0  | 56.7  | 30.6 | 12.9 | 7.70 | 5.09 | 2.59 |
| 1.70V    | 179  | 122   | 94.2  | 53.1  | 30.0 | 12.3 | 7.60 | 5.06 | 2.56 |
| 1.75V    | 180  | 121   | 93.4  | 51.5  | 29.5 | 12.0 | 7.53 | 4.99 | 2.50 |
| 1.80V    | 165  | 120   | 86.6  | 49.1  | 27.8 | 11.6 | 7.30 | 4.93 | 2.43 |
| 1.85V    | 149  | 113   | 78.6  | 46.0  | 26.1 | 11.3 | 7.07 | 4.86 | 2.34 |

