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# XHRL12410W ▶ 12V 410W

XHRL 12410W is specially designed for high efficient discharge and long life application. Its characteristics are high energy density , small footprint and high discharge efficiency. It can be used for more than 260 cycles at 100% discharge in cycle service, up to 10 years in standby service.



## Specification

|                                            |                                                                                                                                                                    |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cells per unit                             | 6                                                                                                                                                                  |
| Voltage per unit                           | 12                                                                                                                                                                 |
| Capacity                                   | 410W @15 min-rate to 1.67V per cell @25 °C (77°F)                                                                                                                  |
| Weight                                     | Approx. 31 kg(68.34 lbs)                                                                                                                                           |
| Maximum Discharge Current                  | 800A(5sec)                                                                                                                                                         |
| Internal Resistance Approx.                | Approx. 4.0mΩ                                                                                                                                                      |
| Operating Temperature Range                | Discharge: -20°C~50°C (-4°F~122°F)<br>Charge: -20°C~50°C (-4°F~122°F)<br>Storage: -15°C~40°C (5 °F~104°F)                                                          |
| Nominal Operating Temperature Range        | 25°C ±3°C (77°F ±5°F)                                                                                                                                              |
| Float Charging Voltage                     | 13.5 to 13.8 VDC/unit Average at 25°C (77°F)                                                                                                                       |
| Recommended Maximum Charging Current Limit | 41 A                                                                                                                                                               |
| Equalization and Cycle Service             | 14.4 to 15.0 VDC/unit Average at 25°C (77°F)                                                                                                                       |
| Self Discharge                             | CSB Batteries can be stored for more than 6 months at 25°C(77°F). Please charge batteries before using. For higher temperatures the time interval will be shorter. |
| Terminal                                   | I2-Thread lead alloy recessed terminal to accept M6/M8 bolt                                                                                                        |
| Container Material                         | Polypropylene(UL 94-HB) & Flammability resistance of (UL 94-V0) can be available upon request.                                                                     |

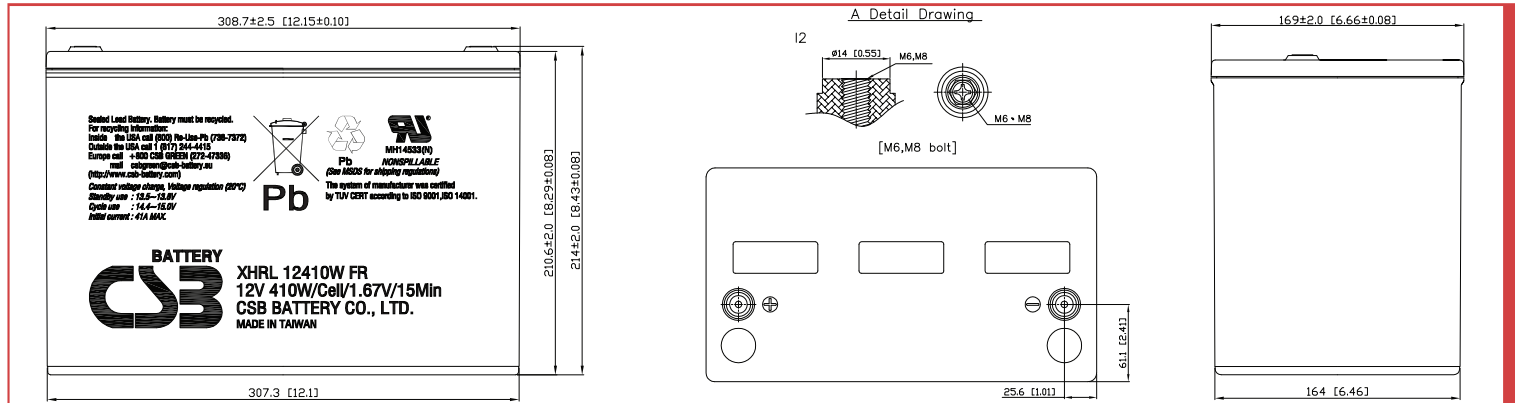


CSB-manufactured **VRLA** (Absorbent Glass Mat type) batteries are UL-recognized components under UL1989.

CSB is also certified by ISO 9001 and ISO 14001.

## Dimensions :

| Overall Height (H) | Container height (h) | Length (L)             | Width (W)           |
|--------------------|----------------------|------------------------|---------------------|
| 214±2 (8.43±0.08)  | 210.6±2 (8.29±0.08)  | 308.7±2.5 (12.15±0.10) | 169±2.0 (6.66±0.08) |



## Constant Current Discharge Characteristics Unit:A (25°C ,77°F)

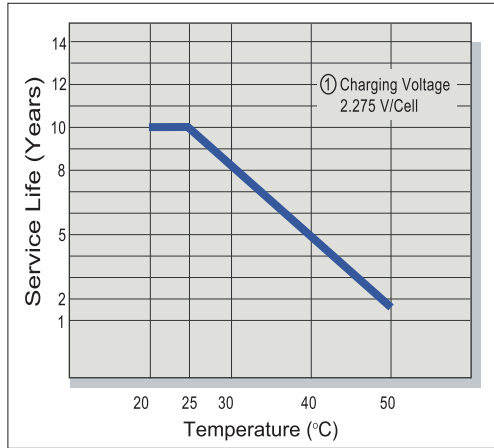
| F.V/Time | 2MIN | 4MIN | 6MIN | 8MIN | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
|----------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| 1.60V    | 546  | 447  | 372  | 319  | 279   | 212   | 169   | 121   | 68.8  | 48.6  |
| 1.67V    | 472  | 411  | 350  | 300  | 266   | 206   | 166   | 119   | 68.4  | 48.4  |
| 1.70V    | 435  | 378  | 339  | 294  | 258   | 202   | 162   | 118   | 67.9  | 48.1  |
| 1.75V    | 405  | 348  | 312  | 273  | 245   | 192   | 156   | 115   | 66.6  | 47.3  |
| 1.80V    | 373  | 331  | 285  | 249  | 226   | 177   | 146   | 108   | 64.9  | 46.2  |
| 1.85V    | 328  | 277  | 243  | 224  | 203   | 162   | 135   | 101   | 60.4  | 41.7  |

## Constant Power Discharge Characteristics Unit:W (25°C ,77°F)

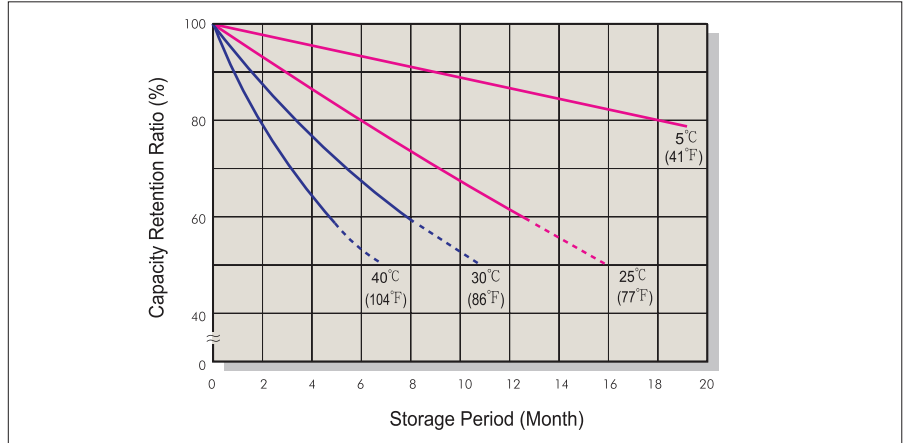
| F.V/Time | 2MIN  | 4MIN  | 6MIN  | 8MIN  | 10MIN | 15MIN | 20MIN | 30MIN | 60MIN | 90MIN |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V    | 5,179 | 4,538 | 4,022 | 3,512 | 3,143 | 2,505 | 1,977 | 1,440 | 811   | 580   |
| 1.67V    | 4,702 | 4,177 | 3,806 | 3,369 | 3,016 | 2,462 | 1,950 | 1,412 | 809   | 575   |
| 1.70V    | 4,388 | 4,008 | 3,651 | 3,225 | 2,884 | 2,370 | 1,897 | 1,383 | 800   | 571   |
| 1.75V    | 4,095 | 3,792 | 3,503 | 3,052 | 2,735 | 2,264 | 1,820 | 1,355 | 787   | 560   |
| 1.80V    | 3,848 | 3,443 | 3,166 | 2,822 | 2,553 | 2,117 | 1,726 | 1,288 | 771   | 549   |
| 1.85V    | 3,135 | 2,930 | 2,776 | 2,544 | 2,298 | 1,922 | 1,597 | 1,202 | 716   | 519   |

Ratings presented herein are subject to revision without notice. Please refer to [www.csb-battery.com](http://www.csb-battery.com) to confirm the latest version.

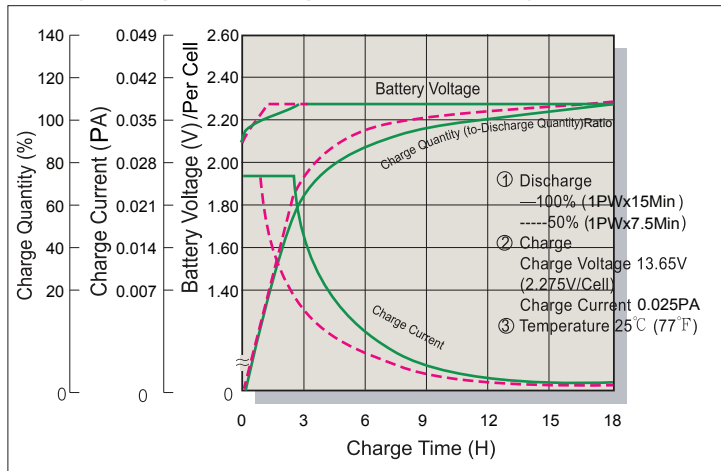
### Trickle (or Float) Service Life



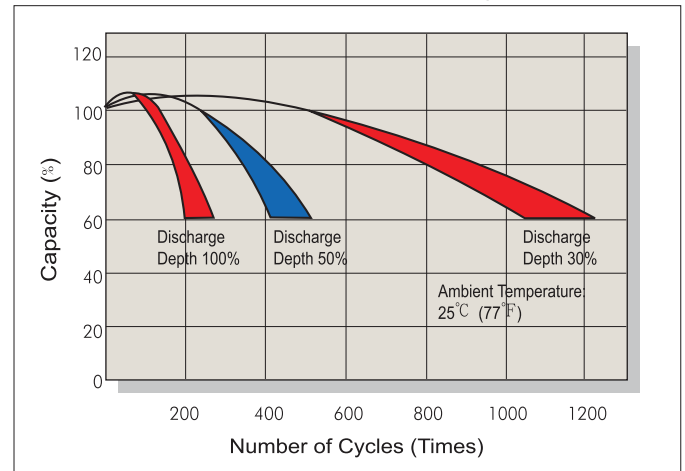
### Capacity Retention Characteristic



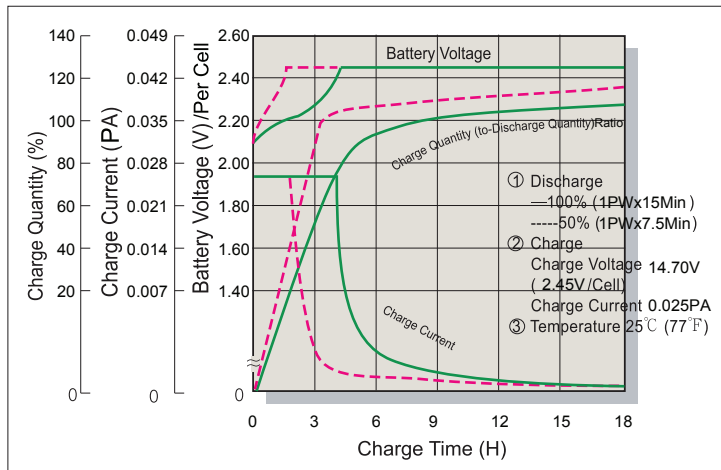
### Battery Voltage and Charge Time for Standby Use



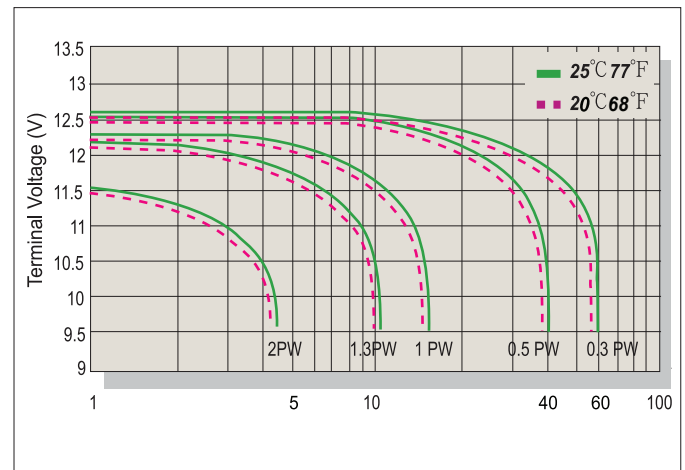
### Cycle Service Life



### Battery Voltage and Charge Time for Cycle Use



### Terminal Voltage (V) and Discharge Time



### Charging Procedures

| Application | Charge Voltage(V/Cell) |           |                 | Max.Charge Current |
|-------------|------------------------|-----------|-----------------|--------------------|
|             | Temperature            | Set Point | Allowable Range |                    |
| Cycle Use   | 25°C(77°F)             | 2.45      | 2.40~2.50       | 0.1PA              |
| Standby     | 25°C(77°F)             | 2.275     | 2.25~2.30       |                    |

### Discharge Current VS. Discharge Voltage

| Final Discharge Voltage V/Cell | 1.75     | 1.70           | 1.60           | 1.30     |
|--------------------------------|----------|----------------|----------------|----------|
| Discharge Power(W)             | 0.1P>(W) | 0.1P≤(W)<0.25P | 0.25P≤(W)<1.0P | (W)≥1.0P |

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