

Powered by



# GPL 12400 ▶ 12V 40Ah

GPL 12400 is a general purpose battery up to 10 years in standby service or more than 260 cycles at 100% discharge in cycle service . As with all CSB batteries, all are rechargeable , highly efficient , leak proof and maintenance free.



## ► Specification

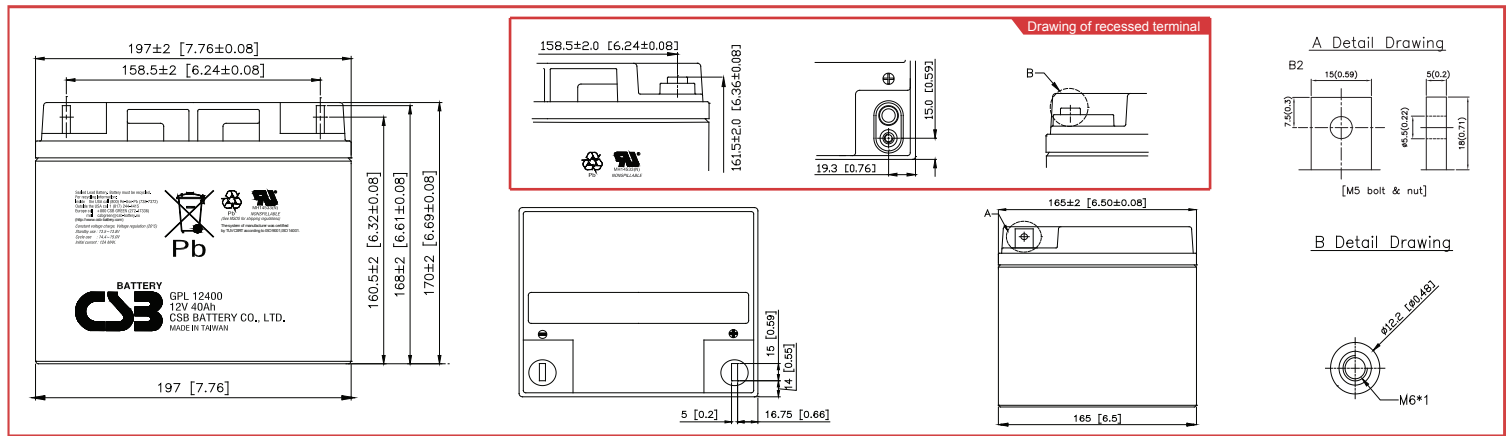
|   |  |
|---|--|
| <b>Cells Per Unit</b>                             | 6  |
| <b>Voltage Per Unit</b>                           | 12   |
| <b>Capacity</b>                                   | 40 Ah @ 20hr-rate to 1.75V per cell @25°C (77°F)   |
| <b>Weight</b>                                     | Approx. 14.5 kg(32.0 lbs)  |
| <b>Maximum Discharge Current</b>                  | 400A(5sec)   |
| <b>Internal Resistance</b>                        | Approx. 7 mΩ   |
| <b>Operating Temperature Range</b>                | Discharge: -15°C~50°C ( 5°F~122°F)<br>Charge: -15°C~40°C ( 5°F~104°F)<br>Storage: -15°C~40°C ( 5°F~104°F)  |
| <b>Nominal Operating Temperature Range</b>        | 25°C±3°C (77°F±5°F)  |
| <b>Float Charging Voltage</b>                     | 13.5 to 13.8 VDC/unit Average at 25°C (77°F)   |
| <b>Recommended Maximum Charging Current Limit</b> | 12 A   |
| <b>Equalization and Cycle Service</b>             | 14.4 to 15.0 VDC/unit Average at 25°C (77°F)   |
| <b>Self Discharge</b>                             | 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. |
| <b>Terminal</b>                                   | L terminal:B2 (M5 bolt) or Recessed type (M6 bolt)   |
| <b>Container Material</b>                         | ABS(UL 94-HB) & Flammability resistance of (UL 94-V0) can be available upon request.   |



CSB-manufactured **VRLA** (Absorbent **G**lass **M**at 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)        |
|-----------------|--------------------|----------------------|-------------------|------------------|
| Unit: mm (inch) | 170±2 (6.69±0.08)  | 168.5±2 (6.63±0.08)  | 197±2 (7.76±0.08) | 165±2 (6.5±0.08) |



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

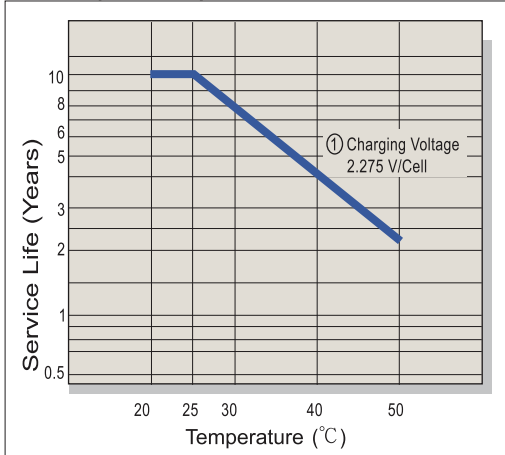
| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 60MIN | 90MIN | 2HR  | 3HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.60V    | 162  | 103.5 | 78.2  | 47.7  | 28.1  | 20.4  | 16.3 | 11.6 | 7.36 | 4.83 | 3.93 | 2.03 |
| 1.67V    | 145  | 96.5  | 74.5  | 46.7  | 27.9  | 20.3  | 16.2 | 11.5 | 7.34 | 4.77 | 3.85 | 1.94 |
| 1.70V    | 137  | 92.8  | 72.4  | 46.1  | 27.8  | 20.2  | 16.1 | 11.4 | 7.32 | 4.75 | 3.82 | 1.91 |
| 1.75V    | 124  | 87.4  | 69.5  | 45.0  | 27.6  | 20.1  | 16.0 | 11.3 | 7.29 | 4.69 | 3.76 | 1.84 |
| 1.80V    | 111  | 81.3  | 65.9  | 43.8  | 27.4  | 19.9  | 15.9 | 11.2 | 7.25 | 4.62 | 3.70 | 1.77 |
| 1.85V    | 98.1 | 75.1  | 62.4  | 42.5  | 27.0  | 19.8  | 15.8 | 11.1 | 7.22 | 4.56 | 3.64 | 1.70 |

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

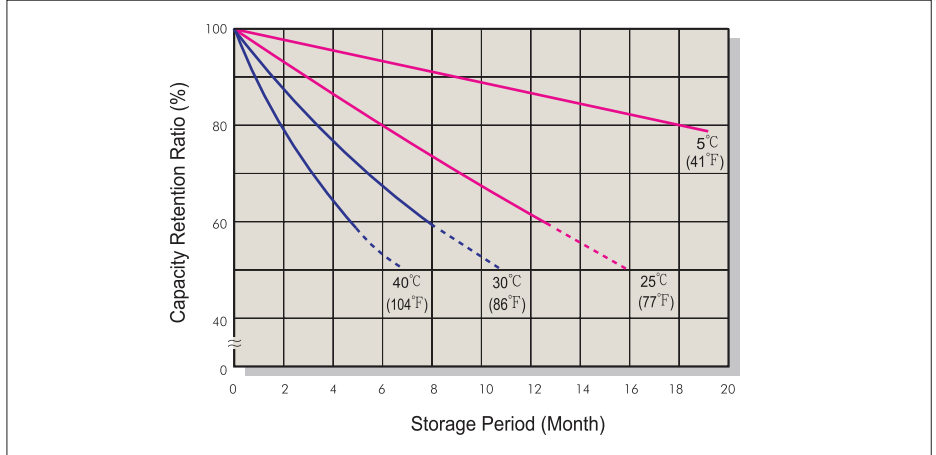
| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 60MIN | 90MIN | 2HR | 3HR | 5HR  | 8HR  | 10HR | 20HR |
|----------|------|-------|-------|-------|-------|-------|-----|-----|------|------|------|------|
| 1.60V    | 1941 | 1242  | 938   | 572   | 338   | 245   | 195 | 139 | 88.4 | 58.0 | 47.2 | 24.4 |
| 1.67V    | 1735 | 1158  | 895   | 558   | 335   | 243   | 194 | 138 | 88.1 | 57.3 | 46.4 | 23.3 |
| 1.70V    | 1647 | 1117  | 869   | 552   | 334   | 242   | 193 | 137 | 87.9 | 57.0 | 46.0 | 22.9 |
| 1.75V    | 1490 | 1049  | 830   | 539   | 331   | 241   | 192 | 136 | 87.5 | 56.3 | 45.2 | 22.1 |
| 1.80V    | 1334 | 975   | 791   | 525   | 328   | 239   | 191 | 135 | 87.2 | 55.6 | 44.4 | 21.3 |
| 1.85V    | 1178 | 902   | 749   | 510   | 324   | 238   | 190 | 134 | 86.7 | 54.8 | 43.7 | 20.6 |

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.

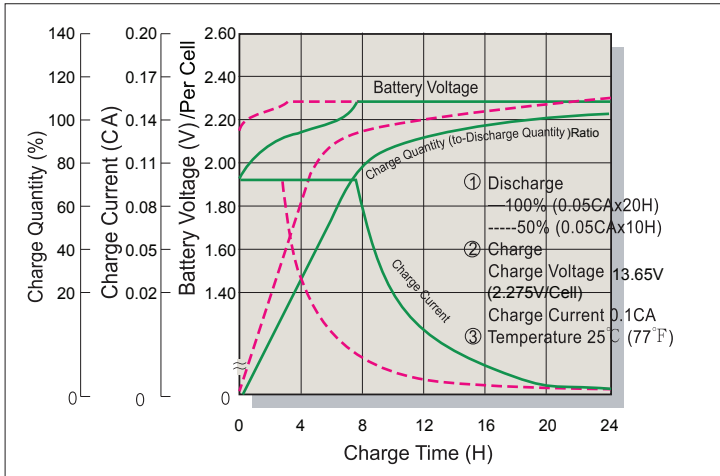
### Trickle (or Float) Service Life



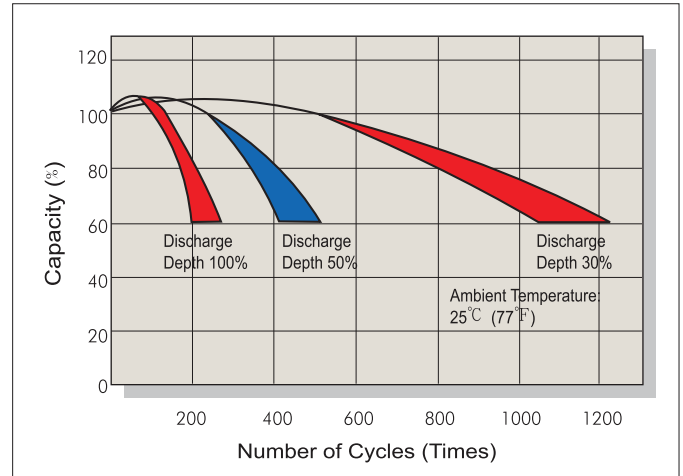
### Capacity Retention Characteristic



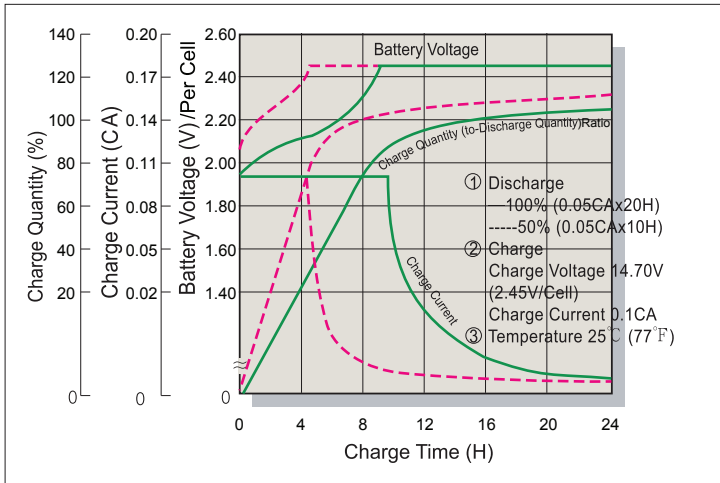
### Battery Voltage and Charge Time for Standby Use



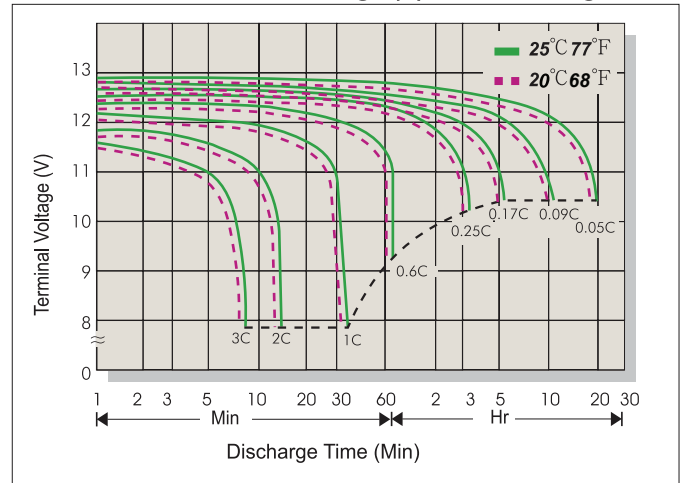
### Cycle Service Life



### 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       | 0.3C               |
| 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 Current(A)           | 0.2C>(A) | 0.2C<(A)<0.5C | 0.5C<(A)<1.0C | (A)>1.0C |

Sales Office URL: [WWW.CSB-BATTERY.COM](http://WWW.CSB-BATTERY.COM)

**GLOBAL HQ**  
**CSB BATTERY CO., LTD. (TAIWAN)**  
 Tel : +886-2-2880-5600  
 Fax : +886-2-2888-3300  
 mail : service@csb-battery.com.tw

**BEIJING OFFICE. (CHINA)**  
**CSB BATTERY TECHNOLOGIES (BEIJING) CO., LTD.**  
 Tel : +86-10-5820-5336/5338  
 Fax : +86-10-58203053  
 mail : chinasl@csb-battery.com

**AMERICA HQ**  
**CSB BATTERY TECHNOLOGIES INC. (U.S.A)**  
 Tel : +1-817-244-7777/1-(800)3-CSB-USA(272872)  
 Fax : +1-817-244-4445  
 mail : csb@csb-battery.com

**SHANGHAI OFFICE. (CHINA)**  
**CSB BATTERY LOGISTIC (SHANGHAI) CO., LTD.**  
 Tel : +86-21-5046-1622/5046-0833  
 Fax : +86-21-5064-1046  
 mail : chinasl@csb-battery.com

**EUROPE HQ**  
**CSB Battery Europe BV.**  
 Tel : +31(0)-180-418-140  
 Fax : +31(0)-180-418-327  
 mail : eurosales@csb-battery.eu

**SHENZHEN OFFICE. (CHINA)**  
**CSB BATTERY LOGISTIC (SHANGHAI) CO., LTD.**  
 Tel : +86-755-8831-6488/6396/6356  
 Fax : +86-755-8831-6548  
 mail : she@csb-battery.com.cn