

# GP 12400

## 12V 40Ah

GP 12400 is a general purpose battery up to 5 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.



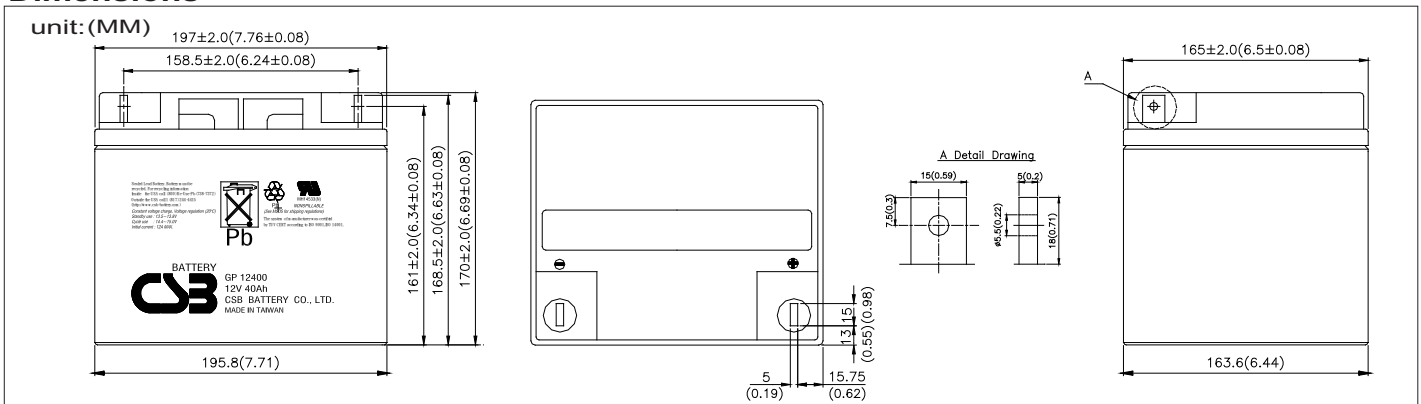
### Specification

|   |  |
|---|--|
| <b>Cells Per Unit</b>                             | 6  |
| <b>Voltage Per Unit</b>                           | 12   |
| <b>Capacity</b>                                   | 40Ah @ 20hr-rate to 1.75V per cell @25 °C (77°F)   |
| <b>Weight</b>                                     | Approx. 12.63 kg(27.84 lbs)  |
| <b>Maximum Discharge Current</b>                  | 400A(5sec)   |
| <b>Internal Resistance</b>                        | Approx. 11 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> | 12A  |
| <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>                                   | B2-L terminal to accept M5 nut & bolt  |
| <b>Container Material</b>                         | ABS(UL 94-HB/File E50263)*Flammability resistance of (UL 94-V0/File E88637) can be available upon request.   |



CSB-manufactured batteries are UL-recognized components under UL924 and UL1989. CSB is also certified by ISO 9001 and ISO 14001.

### Dimensions



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

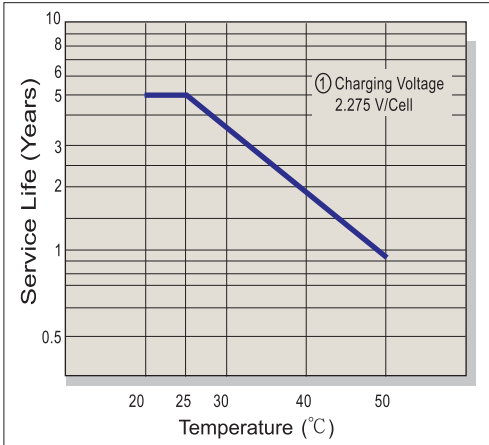
| F.V/Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR  | 2HR  | 3HR  | 4HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 1.60V    | 176  | 113   | 85.0  | 51.8  | 30.6 | 17.7 | 12.6 | 9.83 | 8.01 | 5.25 | 4.28 | 2.21 |
| 1.67V    | 157  | 105   | 81.0  | 50.8  | 30.3 | 17.6 | 12.5 | 9.77 | 7.98 | 5.19 | 4.20 | 2.12 |
| 1.70V    | 149  | 101   | 78.7  | 50.1  | 30.2 | 17.5 | 12.4 | 9.75 | 7.96 | 5.17 | 4.16 | 2.08 |
| 1.75V    | 135  | 95.0  | 75.5  | 49.0  | 30.0 | 17.4 | 12.3 | 9.71 | 7.93 | 5.10 | 4.09 | 2.01 |
| 1.80V    | 121  | 88.3  | 71.7  | 47.6  | 29.8 | 17.3 | 12.2 | 9.67 | 7.89 | 5.03 | 4.03 | 1.93 |
| 1.85V    | 107  | 81.7  | 67.8  | 46.2  | 29.4 | 17.2 | 12.1 | 9.63 | 7.85 | 4.96 | 3.96 | 1.86 |

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

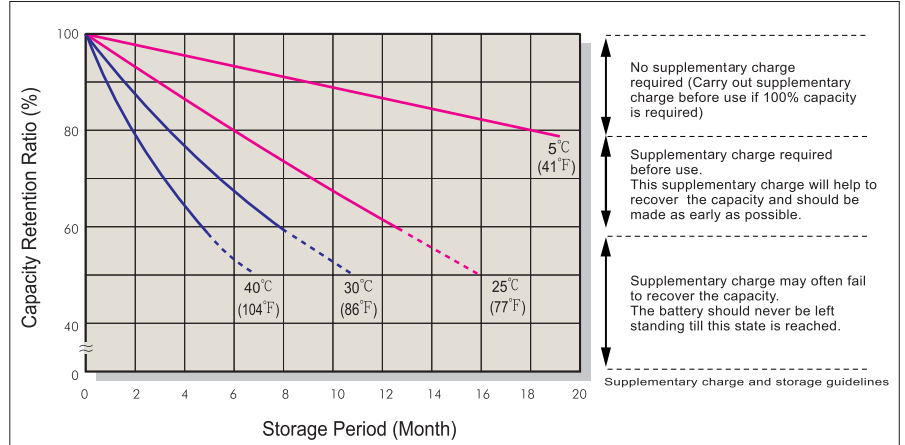
| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR  | 8HR  | 10HR | 20HR |
|----------|-------|-------|-------|-------|-----|-----|-----|-----|------|------|------|------|
| 1.60V    | 2,110 | 1,350 | 1,020 | 622   | 367 | 212 | 151 | 118 | 96.1 | 63.0 | 51.3 | 26.5 |
| 1.67V    | 1,886 | 1,259 | 972   | 606   | 364 | 211 | 150 | 117 | 95.7 | 62.3 | 50.4 | 25.4 |
| 1.70V    | 1,790 | 1,214 | 945   | 600   | 363 | 210 | 149 | 116 | 95.5 | 62.0 | 50.0 | 24.9 |
| 1.75V    | 1,620 | 1,140 | 902   | 585   | 360 | 209 | 148 | 115 | 95.2 | 61.2 | 49.2 | 24.1 |
| 1.80V    | 1,450 | 1,060 | 860   | 571   | 357 | 208 | 147 | 114 | 94.8 | 60.4 | 48.3 | 23.2 |
| 1.85V    | 1,280 | 980   | 814   | 555   | 353 | 207 | 146 | 113 | 94.2 | 59.6 | 47.5 | 22.4 |

• All mentioned values are average values.  
• Tolerance: X<6min(+15%~-15%), 6min ≤ X<10min(+12%~-12%), 10min ≤ X<60min(+8%~-8%), X ≥ 60min(+5%~-5%)

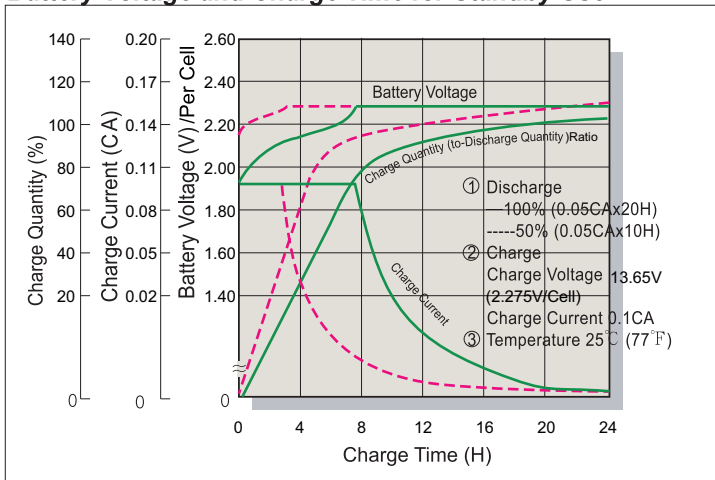
### Trickle (or Float) Service Life



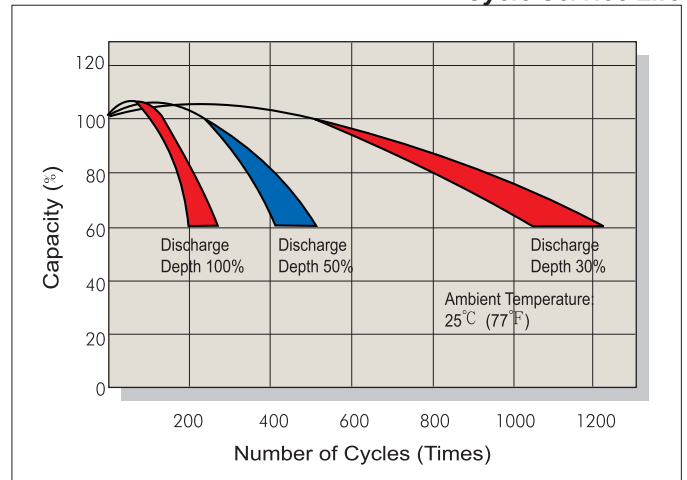
### Capacity Retention Characteristic



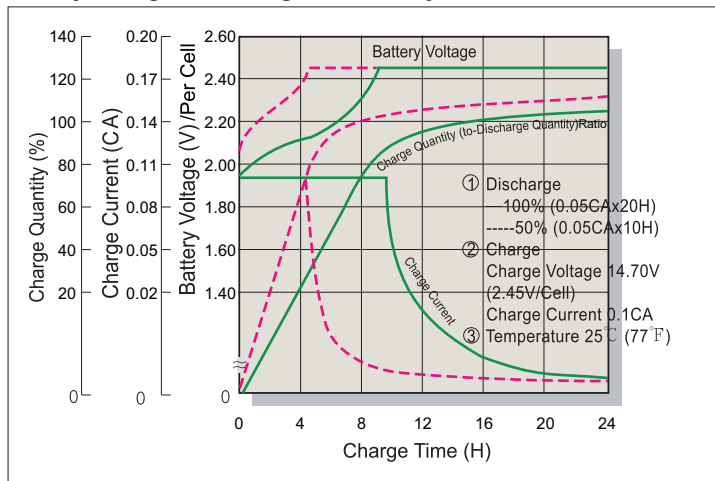
### Battery Voltage and Charge Time for Standby Use



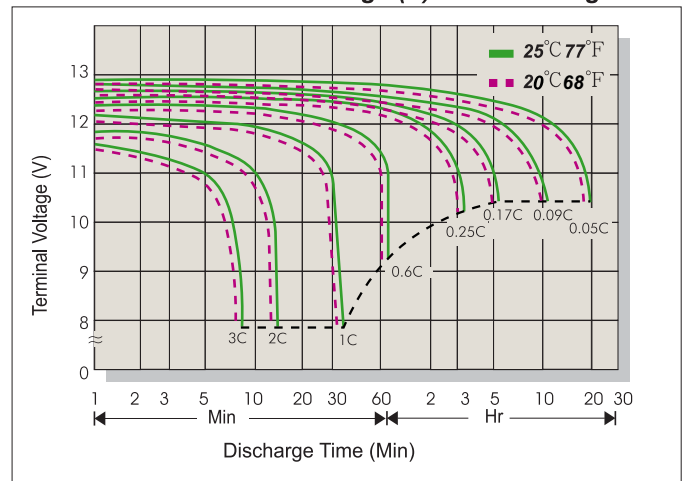
### Cycle Service Life



### 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)

**CSB BATTERY CO., LTD.**  
TAIWAN OFFICE  
Tel: +886-2-2555-5600  
Fax: +886-2-2555-3300  
E-mail: [service@csb-battery.com.tw](mailto:service@csb-battery.com.tw)

**CSB BATTERY TECHNOLOGIES (BEIJING) CO., LTD.**  
BEIJING OFFICE  
Tel: +86-10-59621300/59621301/59621302/59621303  
Fax: +86-10-59621304  
mail: [chinasls@csb-battery.com](mailto:chinasls@csb-battery.com)

**CSB BATTERY TECHNOLOGIES, INC**  
USA OFFICE  
Tel: +1-817-244-7777/1-8003 CSBUSA(272872)  
Fax: +1-817-244-4445  
E-mail: [csb@csb-battery.com](mailto:csb@csb-battery.com)

**CSB BATTERY LOGISTICS (SHANGHAI) CO., LTD.**  
SHANGHAI OFFICE  
Tel: +86-21-5046-1622, 5046-0833  
Fax: +86-21-5064-3314  
E-mail: [chinasls@csb-battery.com](mailto:chinasls@csb-battery.com)

**CSB BATTERY OF NETHERLANDS B.V**  
NETHERLANDS OFFICE  
Tel: +31(0) 180 418 140  
Fax: +31(0) 180 418 327  
E-mail: [eurosales@csb-battery.com](mailto:eurosales@csb-battery.com)

**CSB BATTERY LOGISTIC (SHANGHAI) CO., LTD.**  
SHENZHEN OFFICE  
Tel: +86-755-8831-6488/6396/16356  
Fax: +86-755-8831-6548  
mail: [she@csb-battery.com.cn](mailto:she@csb-battery.com.cn)