

# DBU-GEL1240 ► 12V40Ah

GEL series are the universal battery, which adopt the AGM valve Control technology and high purity raw materials. The battery owns the advantage of high consistency, good performance and long cycle Life. The battery is applicable to UPS/EPS, medical equipment and safety system.

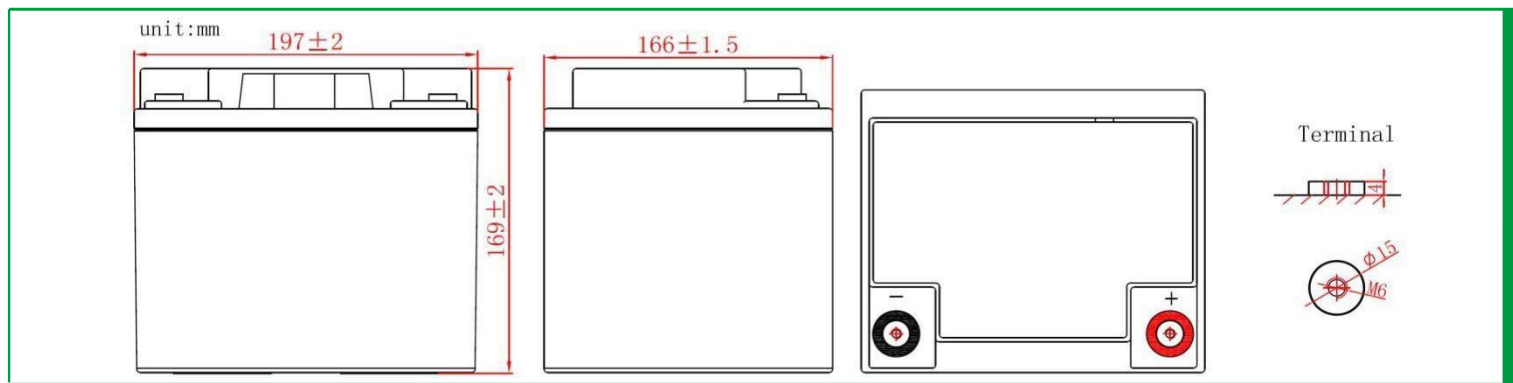
## ► Specification

|                                            |                                                                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal Cell                              | 6                                                                                                                                                               |
| Nominal Voltage                            | 12                                                                                                                                                              |
| Capacity                                   | 42Ah @ 10 hr-rate to 1.8V/cell @ 25°C (77°F)                                                                                                                    |
| Weight                                     | Approx. 12kg±3%                                                                                                                                                 |
| Max. Discharging Current                   | 400A(5sec)                                                                                                                                                      |
| Internal Resistance                        | Approx. 14mΩ                                                                                                                                                    |
| Operating Temperature Range                | 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)                                                          |
| Nominal Operating Temperature Range        | 25°C±3°C(77°F±5°F)                                                                                                                                              |
| Float Charging Voltage                     | 13.5~13.8V VDC/unit Average at 25°C (77°F)                                                                                                                      |
| Recommended Maximum Charging Current Limit | 12A                                                                                                                                                             |
| Equalization and Cycle Service             | 14.4~15.0V VDC/unit Average at 25°C (77°F)                                                                                                                      |
| Self Discharge                             | 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                                   | Thread lead alloy recessed terminal to accept M6 bolt                                                                                                           |
| Container Material                         | ABS (UL 94-HB) & Flammability resistance of (UL 94-V0) can be available upon request.                                                                           |



## ► Dimensions:

| Unit: mm | Overall Height (H) | Container height (h) | Length (L) | Width (W) |
|----------|--------------------|----------------------|------------|-----------|
|          | 169±2              | 169±2                | 197±2      | 166±1.5   |



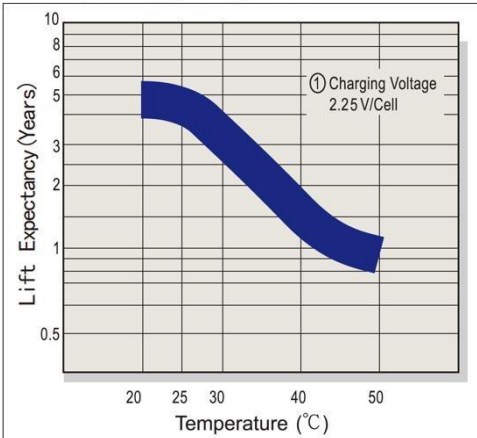
## Constant Current Discharge Characteristics Unit:A (25°C,77°F)

| F.V/Time | 15min | 30min | 1h   | 3h   | 5h   | 8h   | 10h  | 20h  |
|----------|-------|-------|------|------|------|------|------|------|
| 1.60V    | 69.8  | 43.7  | 23.9 | 10.9 | 7.59 | 5.12 | 4.37 | 2.25 |
| 1.65V    | 69.2  | 43.3  | 23.7 | 10.8 | 7.52 | 5.08 | 4.33 | 2.23 |
| 1.7V     | 68.6  | 42.8  | 23.5 | 10.7 | 7.44 | 5.03 | 4.28 | 2.21 |
| 1.75V    | 67.8  | 42.4  | 23.3 | 10.6 | 7.37 | 4.98 | 4.24 | 2.18 |
| 1.8V     | 67.2  | 42.0  | 23.1 | 10.5 | 7.31 | 4.94 | 4.20 | 2.16 |
| 1.85V    | 65.1  | 40.7  | 22.4 | 10.2 | 7.09 | 4.78 | 4.07 | 2.09 |

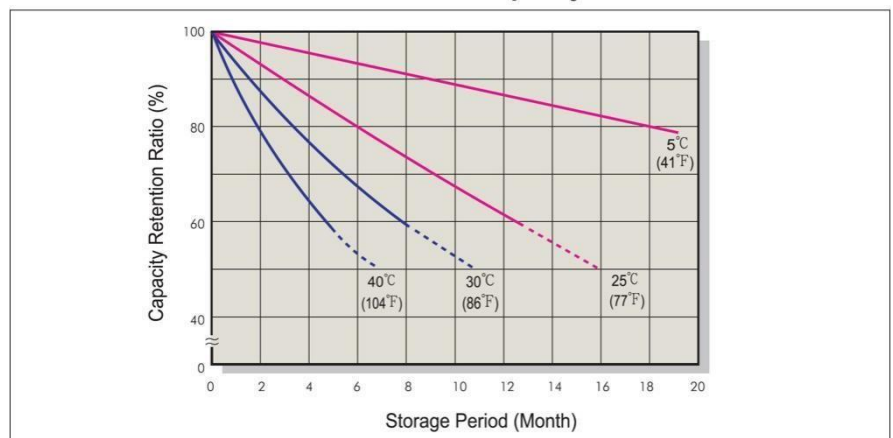
## Constant Power Discharge Unit:W (25°C,77°F)

| F.V/Time | 15min | 30min | 1h   | 3h   | 5h    | 8h    | 10h  | 20h  |
|----------|-------|-------|------|------|-------|-------|------|------|
| 1.60V    | 139.7 | 87.4  | 47.9 | 21.8 | 15.18 | 10.25 | 8.74 | 4.49 |
| 1.65V    | 138.4 | 86.5  | 47.5 | 21.6 | 15.04 | 10.16 | 8.65 | 4.45 |
| 1.7V     | 137.1 | 85.7  | 47.0 | 21.4 | 14.89 | 10.06 | 8.57 | 4.41 |
| 1.75V    | 135.7 | 84.8  | 46.6 | 21.2 | 14.74 | 9.95  | 8.48 | 4.37 |
| 1.8V     | 134.4 | 84.0  | 46.2 | 21.0 | 14.62 | 9.87  | 8.40 | 4.33 |
| 1.85V    | 130.2 | 81.5  | 44.7 | 20.4 | 14.18 | 9.56  | 8.15 | 4.18 |

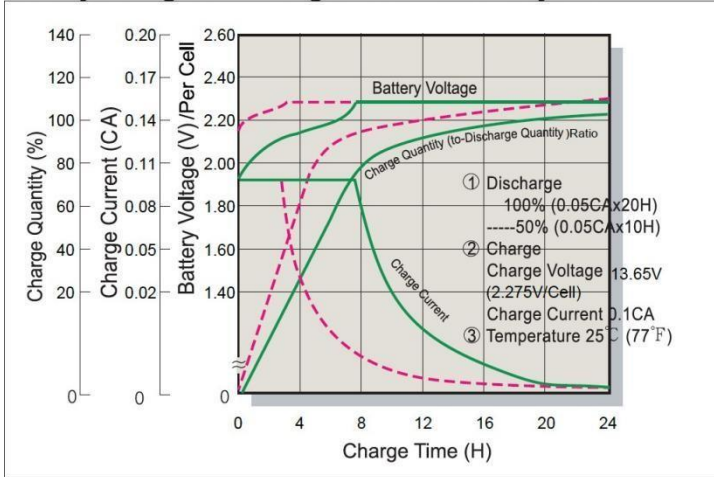
Trickle(or Float)Design Life



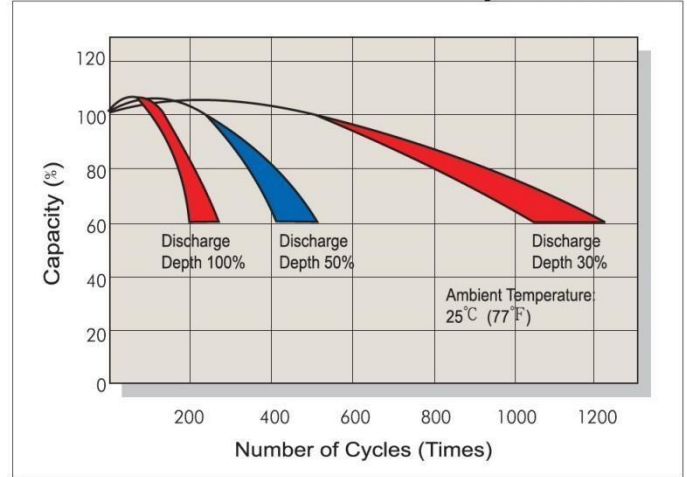
Capacity Retention Characteristic



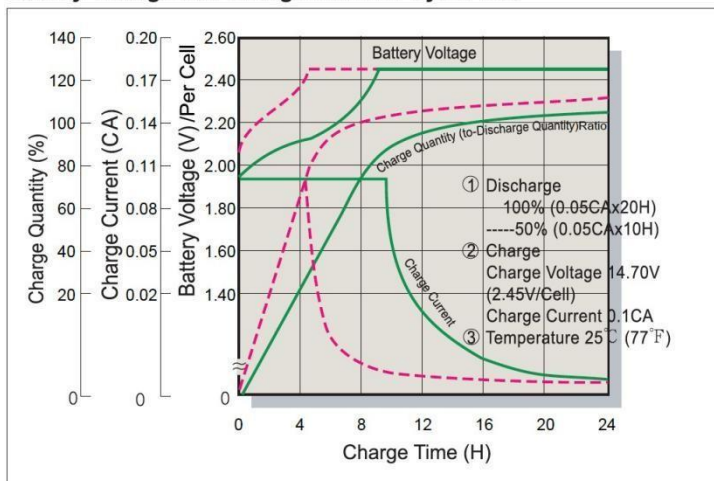
Battery Voltage and Charge Time for Standby Use



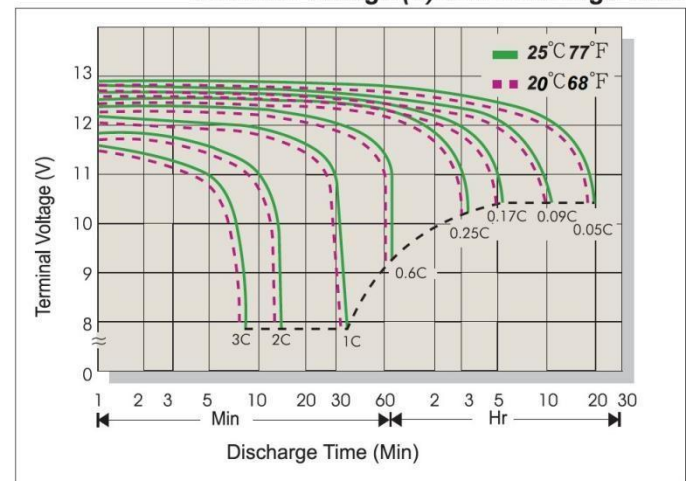
Cycle Service Life



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          | 1.65          | 1.6      |
|--------------------------------|----------|---------------|---------------|----------|
| Discharge Current(A)           | 0.2C>(A) | 0.2C<(A)<0.5C | 0.5C<(A)<1.0C | (A)>1.0C |

Effect of temperature on capacity(20HR)

| Temperature | Dependency of Capacity(20HR) |
|-------------|------------------------------|
| 40°C        | 103%                         |
| 25°C        | 100%                         |
| 0°C         | 85%                          |
| -15°C       | 65%                          |

Self-discharge Characteristics

| Storage time | Preservation rate |
|--------------|-------------------|
| 3 months     | 91%               |
| 6 months     | 82%               |
| 12 months    | 64%               |