

## BTL12-28L (12V/28Ah)

BTL series is a general-purpose battery with 10-12 years design life in float service according to Eurobat. With updated AGM valve regulated technology and high purity raw materials, the BTL series battery maintains high consistency for better performance and reliable standby service life. It is suitable for UPS, DC-power systems, emergency light and security system applications.



| Specifications                    |                         |                                                                                                                                                       |
|-----------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nominal Voltage                   |                         | 12V                                                                                                                                                   |
| Nominal Capacity                  |                         | 28.0Ah                                                                                                                                                |
| Dimensions                        | Length                  | 166 ±2mm                                                                                                                                              |
|                                   | Width                   | 175 ±2mm                                                                                                                                              |
|                                   | Height                  | 125 ±2mm                                                                                                                                              |
|                                   | Height of the terminals | 125 ±2mm                                                                                                                                              |
| Approx. Weight                    |                         | 8.6kg                                                                                                                                                 |
| Terminals                         |                         | M5 screw terminals, contact surface Ø 12mm                                                                                                            |
| Container Material                |                         | Acrylnitril-Butadien-Styrol (ABS)                                                                                                                     |
| Permitted installation position   |                         | Max. 90 ° to upright normal position (see picture above right)                                                                                        |
| Rated Capacity                    | 28.00AH / 1.4A          | 20h discharge, 1.75 V / cell, 25°C                                                                                                                    |
|                                   | 26.30AH / 2.63A         | 10h discharge, 1.75 V / cell, 25°C                                                                                                                    |
|                                   | 23.85AH / 4.77A         | 5h discharge, 1.75 V / cell, 25°C                                                                                                                     |
|                                   | 21.87AH / 7.29A         | 3h discharge, 1.75 V / cell, 25°C                                                                                                                     |
|                                   | 18.40AH / 18.4A         | 1h discharge, 1.60 V / cell, 25°C                                                                                                                     |
|                                   |                         |                                                                                                                                                       |
| Max. Discharge Current            |                         | 420A (5s)                                                                                                                                             |
| Internal Resistance               |                         | Approx. 12mΩ                                                                                                                                          |
| Operating temperature range       | Discharge               | -15 ~ 40°C                                                                                                                                            |
|                                   | Charge                  | 0 ~ 40°C                                                                                                                                              |
|                                   | Storage (charged)       | -15 ~ 40°C                                                                                                                                            |
| Recommended operating temperature |                         | Approx. 20°C                                                                                                                                          |
| Max. charging current             |                         | 8.4A                                                                                                                                                  |
| Charging voltage                  | Boost charge            | Voltage 14.4 V ~ 15.0V @ 25°C<br>Temperature coefficient -30mV/°C                                                                                     |
|                                   | Float charging          | Voltage 13.5V ~ 13.8V @ 25°C<br>Temperature coefficient -20 mV/°C                                                                                     |
| Capacity affected by temperature  | 40°C                    | 103%                                                                                                                                                  |
|                                   | 25°C                    | 100%                                                                                                                                                  |
|                                   | 0°C                     | 86%                                                                                                                                                   |
| Self-discharge                    |                         | EFFEKTA BTL series batteries should be recharged at least every 6 months when stored at 25°C. At higher temperatures, the time interval is shortened. |

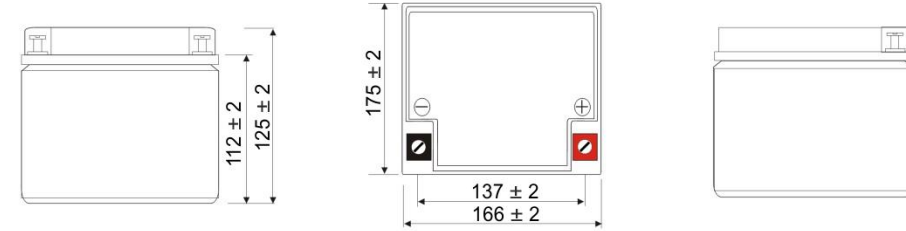
| Discharge at constant current (ampere) at 25°C |       |       |       |       |       |      |      |      |      |      |      |      |      |
|------------------------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| F.V/time                                       | 10min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 20h  |
| 1.85V/cell                                     | 53.2  | 42.7  | 36.2  | 26.9  | 20.6  | 16.9 | 9.68 | 7.07 | 5.58 | 4.64 | 3.97 | 3.12 | 1.37 |
| 1.80V/cell                                     | 55.9  | 44.4  | 37.3  | 27.6  | 21.0  | 17.2 | 9.83 | 7.18 | 5.66 | 4.71 | 4.02 | 3.16 | 1.39 |
| 1.75V/cell                                     | 58.6  | 46.0  | 38.4  | 28.2  | 21.5  | 17.5 | 9.98 | 7.29 | 5.74 | 4.77 | 4.07 | 3.20 | 1.40 |
| 1.70V/cell                                     | 61.4  | 47.6  | 39.6  | 28.9  | 21.9  | 17.8 | 10.1 | 7.39 | 5.81 | 4.83 | 4.13 | 3.24 | 1.41 |
| 1.65V/cell                                     | 63.0  | 48.6  | 40.2  | 29.3  | 22.1  | 18.0 | 10.2 | 7.46 | 5.86 | 4.87 | 4.16 | 3.26 | 1.42 |
| 1.60V/cell                                     | 66.8  | 50.8  | 41.8  | 30.2  | 22.7  | 18.4 | 10.4 | 7.60 | 5.97 | 4.95 | 4.23 | 3.31 | 1.44 |

| Discharge at constant power (watts / cell) at 25°C |       |       |       |       |       |      |      |      |      |      |      |      |      |
|----------------------------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| F.V/time                                           | 10min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 20h  |
| 1.85V/cell                                         | 101.8 | 82.0  | 69.6  | 52.0  | 40.0  | 32.8 | 19.0 | 13.9 | 11.0 | 9.17 | 7.86 | 6.19 | 2.74 |
| 1.80V/cell                                         | 106.3 | 84.8  | 71.5  | 53.1  | 40.7  | 33.3 | 19.2 | 14.1 | 11.1 | 9.28 | 7.95 | 6.26 | 2.77 |
| 1.75V/cell                                         | 110.9 | 87.4  | 73.2  | 54.1  | 41.3  | 33.8 | 19.4 | 14.3 | 11.3 | 9.39 | 8.04 | 6.33 | 2.80 |
| 1.70V/cell                                         | 115.4 | 90.0  | 75.1  | 55.1  | 42.0  | 34.3 | 19.7 | 14.4 | 11.4 | 9.49 | 8.13 | 6.40 | 2.83 |
| 1.65V/cell                                         | 118.1 | 91.7  | 76.2  | 55.7  | 42.3  | 34.5 | 19.9 | 14.5 | 11.5 | 9.55 | 8.19 | 6.44 | 2.85 |
| 1.60V/cell                                         | 124.3 | 95.1  | 78.6  | 57.1  | 43.2  | 35.2 | 20.2 | 14.8 | 11.7 | 9.70 | 8.31 | 6.54 | 2.89 |

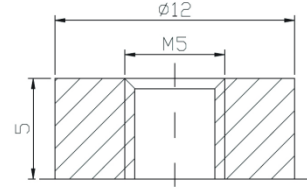
## Dimensions

Unit: mm

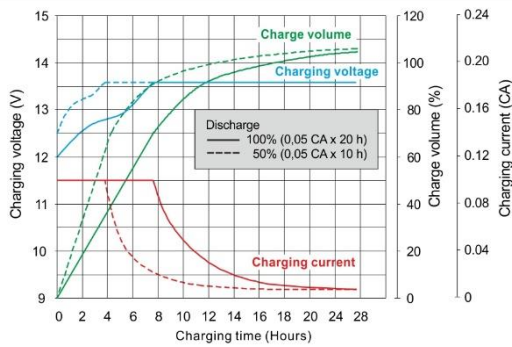
Dimensions: 166 (L) × 175 (W) × 125 (H)



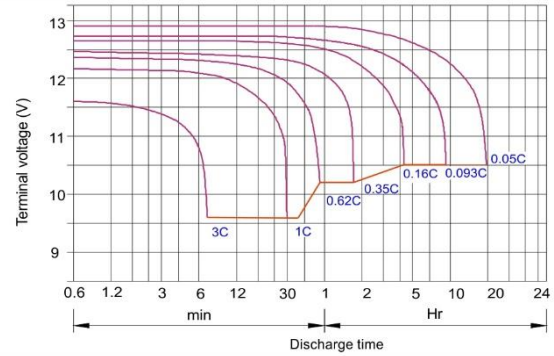
## Terminal



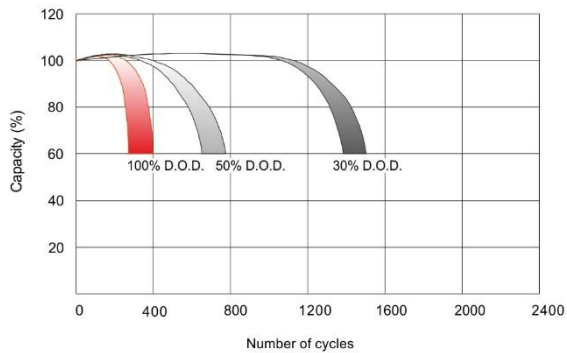
## Float charging characteristics



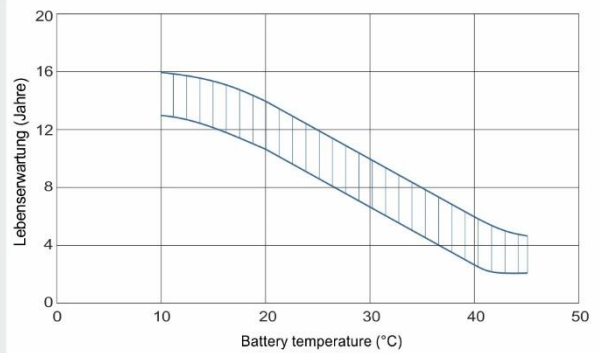
## Discharge characteristics



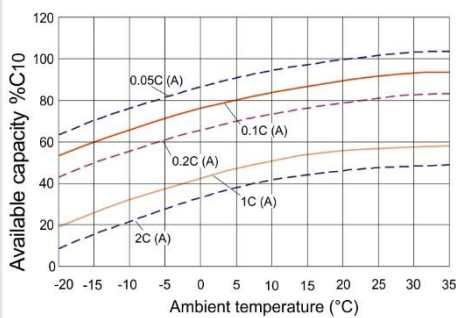
## Charging cycle number in relation to discharge depth



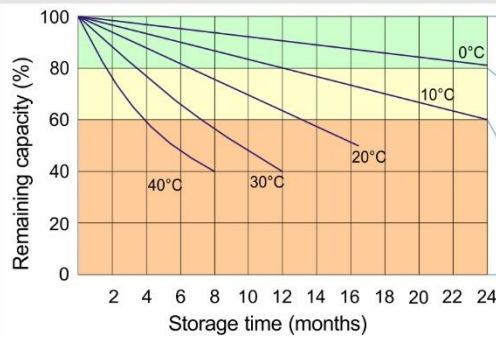
## Temperature effect on life expectancy



## Effect of temperature on the capacity



## Storage / self-discharge characteristics



A charging process is not mandatory. If 100% capacity is required, the batterie should be charged.

Charging is mandatory before use. This covers the minimum capacity and should be done as soon as possible.

Even through a charging process, the minimum capacity will not be reached. The batterie should never be stored until this condition is reached.

Guidelines and recommendations for storage and intervals of refresher charges.