



# SBL28-12i (12V28Ah)



## Applications

- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Emergency light
- Railway signal
- Alarm and security system
- Communication power supply
- DC power supply

## Certificates

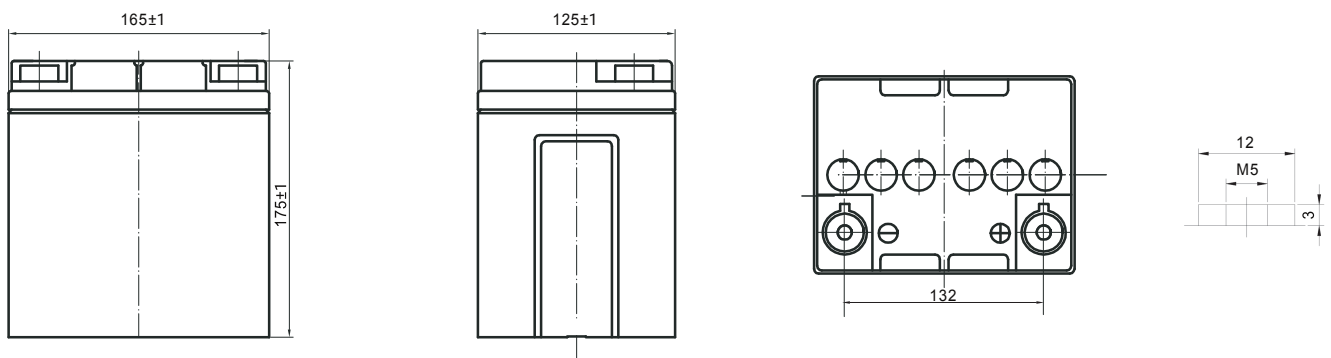
Conform to  
IEC60896-21&22

## Specifications

|                                               |                                |                                   |                                                                                                                                                             |
|-----------------------------------------------|--------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Nominal Voltage</b>                        | 12V                            | <b>Operating Temp. Range</b>      | Discharge: -20~50°C                                                                                                                                         |
| <b>Nominal Capacity</b>                       | 28Ah (C <sub>20</sub> , 10.5V) |                                   | Charge: -10~50°C                                                                                                                                            |
| <b>Approx. Weight</b>                         | 8.6kg                          |                                   | Storage: -20~50°C                                                                                                                                           |
| <b>Terminal</b>                               | M5                             | <b>Float Charge</b>               | 2.285V/cell ± 0,5 % @ 20°C                                                                                                                                  |
| <b>Container Material</b>                     | ABS UL94 HB                    |                                   | Charging Current: 0.1-0.2C                                                                                                                                  |
| <b>Rated Capacity (20°C)</b>                  | 28Ah/1.40A, 20hr, 10.5V        |                                   | Temperature coefficient: -3mV/cell/°C                                                                                                                       |
|                                               | 26Ah/2.6A, 10hr, 10.5V         | <b>Capacity affected by Temp.</b> | 40°C 103%                                                                                                                                                   |
|                                               | 24.64Ah/3.08A, 8hr, 10.5V      |                                   | 25°C 100%                                                                                                                                                   |
|                                               | 23.8Ah/4.76A, 5hr, 10.5V       |                                   | 0°C 86%                                                                                                                                                     |
|                                               | 21Ah/7.0Ah, 3hr, 10.5V         | <b>Self Discharge</b>             | SSB batteries may be stored for up to 6 months at 20°C and then a freshening charge is required. For higher temperatures the time interval will be shorter. |
| <b>Max. Discharge Current</b>                 | 420A (5s)                      | <b>Life Expectancy</b>            | 10-12 years according to EUROBAT                                                                                                                            |
| <b>Internal Resistance / Impedance (1kHz)</b> | Approx. 11mΩ                   |                                   |                                                                                                                                                             |
| <b>Nominal Oper. Temp. R.</b>                 | 20±3°C                         |                                   |                                                                                                                                                             |

## Dimensions

- **M5 Terminal** Unit: mm | Dimensions: 165 Length X 125 Width X 175 Height (175 Height incl. Terminal)



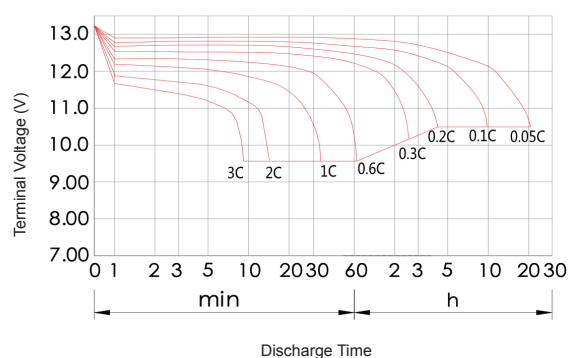
## Constant Current Discharge (Amperes) at 20°C

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h   | 3h   | 4h   | 5h   | 8h   | 10h  | 20h  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 9.60V    | 95.9 | 64.8  | 51.3  | 28.6  | 17.6  | 9.95 | 7.14 | 5.71 | 4.86 | 3.14 | 2.64 | 1.42 |
| 9.90V    | 93.1 | 62.9  | 50.1  | 28.0  | 17.3  | 9.89 | 7.10 | 5.68 | 4.83 | 3.12 | 2.63 | 1.42 |
| 10.2V    | 89.2 | 60.3  | 48.2  | 27.2  | 16.8  | 9.80 | 7.05 | 5.64 | 4.79 | 3.10 | 2.62 | 1.41 |
| 10.5V    | 85.4 | 57.7  | 46.6  | 26.5  | 16.5  | 9.65 | 7.00 | 5.60 | 4.76 | 3.08 | 2.60 | 1.40 |
| 10.8V    | 80.5 | 54.4  | 44.1  | 25.6  | 16.0  | 9.41 | 6.79 | 5.43 | 4.62 | 2.99 | 2.55 | 1.37 |

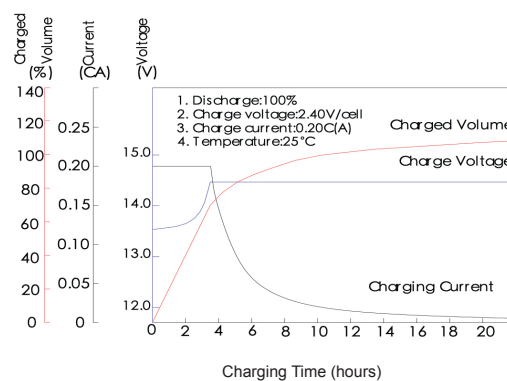
## Constant Power Discharge (Watts/cell) at 20°C

| F.V/TIME   | 5min   | 10min  | 15min | 20min | 30min | 45min | 1h    | 2h    | 3h    | 4h    | 5h   | 8h   | 10h  | 20h  |
|------------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1.60V/cell | 179.17 | 121.83 | 97.50 | 78.33 | 54.67 | 44.67 | 33.83 | 19.33 | 14.13 | 11.33 | 9.67 | 6.28 | 5.28 | 2.85 |
| 1.65V/cell | 173.67 | 118.17 | 95.17 | 76.50 | 53.50 | 43.83 | 33.33 | 19.33 | 14.05 | 11.27 | 9.60 | 6.25 | 5.27 | 2.83 |
| 1.70V/cell | 166.67 | 113.33 | 91.67 | 74.17 | 52.00 | 42.67 | 32.50 | 19.17 | 13.95 | 11.20 | 9.53 | 6.20 | 5.23 | 2.82 |
| 1.75V/cell | 159.50 | 108.50 | 88.50 | 71.83 | 50.67 | 41.67 | 31.83 | 18.83 | 13.87 | 11.12 | 9.47 | 6.17 | 5.20 | 2.80 |
| 1.80V/cell | 150.50 | 102.33 | 83.83 | 68.67 | 48.83 | 40.17 | 30.83 | 18.33 | 13.45 | 10.78 | 9.18 | 5.98 | 5.10 | 2.75 |

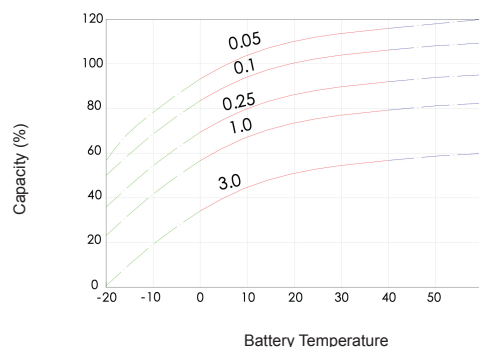
## Discharge Characteristics



## Float Charging Characteristics



## Temperature Effects in Relation to Battery Capacity



## Effect of Temperature on Long Term Float Life

