

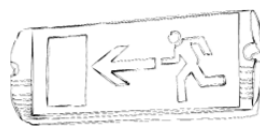
**Product features**

- Maintenance free battery, no need for watering
- Specific environmentally friendly formation process
- Spill & leak proof construction
- Analytical grade electrolyte
- Safety valves
- Container and lid made from ABS (UL 94 V-0 version available on request)
- Low self-discharge
- Non dangerous good according to FAA and IATA classification
- Complies with the following standards: IEC 60896-21/22, EUROBAT
- Tested by Det Norske Veritas / Germanischer Lloyd



**Specification**

|                       |   |
|-----------------------|---|
| Nominal voltage       | 12 V  |
| Nominal capacity      | 33 Ah   |
| Design life           | 12 years  |
| Operating temperature | -20°C to 50°C (-4°F to 122°F)   |
| Grid alloy            | Lead-calcium-tin  |
| Electrode design      | Flat grid, pasted   |
| Separator             | <b>Absorbent Glass Mat (AGM)</b>  |
| Active material       | High purity lead and lead dioxide   |
| Container and lid     | ABS UL 94 HB (V-0 version on request)   |
| Charge voltage        | Float charging: 2.275 Vpc @ 20°C (68°F)<br>Cyclic use: see instruction for use                  |
|                       | Maximum ripple: 0.05 C (A)  |
| Electrolyte           | Purified high grade sulfuric acid   |
| Safety valve          | EPDM rubber, opening pressure 10.5 to 14 kPa (1.5 to 2 psi), closing pressure ca. 7 kPa (1 psi) |
| Terminal              | Insert M6   |



CTM GmbH encourages environmental awareness. Please observe all existing guidelines for recycling/disposal of lead.

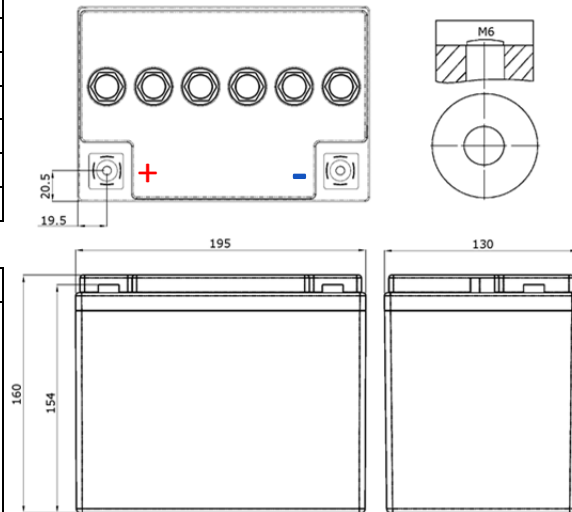
## Physical Data

Dimension (±2 mm/± 0.08 inch)

|                       |          |             |
|-----------------------|----------|-------------|
| Length                | 195 mm   | 7.68 inches |
| Width                 | 130 mm   | 5.12 inches |
| Height                | 160 mm   | 6.3 inches  |
| Height incl. terminal | -        | -           |
| Weight                | 10.7 kg  | 23.65 lbs.  |
| Terminal              | Standard | Insert M6   |
|                       | Option   | -           |

## Electrical Data

|  |                     |                                    |
|--|---------------------|------------------------------------|
| Nominal voltage                                |                     | 12 V                               |
| Capacity 20°C (68°F)<br>to 1.7 Vpc             | 20 h                | 38.8 Ah                            |
|  | 10 h                | 35.5 Ah                            |
|  | 5 h                 | 32.8 Ah                            |
|  | 1 h                 | 25.0 Ah                            |
|  | 15 min              | 17.7 Ah                            |
|  | Internal resistance | 5.7 mΩ                             |
|  | Impedance           | 500 S                              |
| Temperature correction factors (C20)           | 40°C (104°F)        | 102%                               |
|  | 20°C (68°F)         | 100%                               |
|  | 0°C (32°F)          | 85%                                |
|  | -15°C (5°F)         | 65%                                |
| Self-discharge at 20°C (68°F) - capacity after | 1 month storage     | 98%                                |
|  | 3 months storage    | 94%                                |
|  | 6 months storage    | 86%                                |
| Short circuit current                          | A @ 20°C (68°F)     | 1100                               |
| Charging voltage                               | Float charging      | 2.27-2.30 Vpc<br>25-15°C (77-59°F) |
|  | cyclic              | See operating instruction          |



## Constant current discharge – A @ 20°C (68°F)

| Uf Vpc | 5 min | 10 min | 15 min | 20 min | 30 min | 60 min | 2 h  | 5 h | 8 h | 10 h | 20 h |
|--------|-------|--------|--------|--------|--------|--------|------|-----|-----|------|------|
| 1.85   | 132   | 81.6   | 61.1   | 49.1   | 36.6   | 21.5   | 12.0 | 5.6 | 3.7 | 3.0  | 1.6  |
| 1.80   | 141   | 87.2   | 65.2   | 52.4   | 39.1   | 23.0   | 12.9 | 6.0 | 3.9 | 3.2  | 1.7  |
| 1.75   | 150   | 92.7   | 69.4   | 55.8   | 41.5   | 24.5   | 13.7 | 6.4 | 4.2 | 3.4  | 1.9  |
| 1.70   | 153   | 94.8   | 70.9   | 57.0   | 42.5   | 25.0   | 14.0 | 6.5 | 4.3 | 3.5  | 1.9  |
| 1.65   | 155   | 96.0   | 71.8   | 57.7   | 43.0   | 25.3   | 14.2 | -   | -   | -    | -    |
| 1.60   | 156   | 96.9   | 72.5   | 58.3   | 43.4   | 25.6   | 14.3 | -   | -   | -    | -    |

## Constant power discharge – Watt per cell @ 20°C (68°F)

| Uf Vpc | 5 min | 10 min | 15 min | 20 min | 30 min | 60 min | 2 h  | 5 h  | 8 h | 10 h | 20 h |
|--------|-------|--------|--------|--------|--------|--------|------|------|-----|------|------|
| 1.85   | 233   | 153    | 117    | 97.1   | 71.2   | 41.4   | 23.2 | 11.0 | 7.2 | 5.8  | 3.0  |
| 1.80   | 249   | 164    | 125    | 104    | 76.1   | 44.2   | 24.8 | 11.8 | 7.7 | 6.2  | 3.2  |
| 1.75   | 265   | 174    | 133    | 110    | 81.0   | 47.0   | 26.4 | 12.5 | 8.2 | 6.6  | 3.4  |
| 1.70   | 271   | 178    | 136    | 113    | 82.7   | 48.0   | 27.0 | 12.8 | 8.4 | 6.8  | 3.5  |
| 1.65   | 274   | 180    | 138    | 114    | 83.8   | 48.6   | 27.3 | -    | -   | -    | -    |
| 1.60   | 277   | 182    | 139    | 115    | 84.6   | 49.1   | 27.6 | -    | -   | -    | -    |

## Capacity – Ah @ 20°C (68°F)

| Uf Vpc | 2 h  | 3 h  | 5 h  | 8 h  | 10 h | 20 h |
|--------|------|------|------|------|------|------|
| 1.85   | 24.1 | 25.9 | 28.2 | 29.9 | 30.6 | 33.4 |
| 1.80   | 25.7 | 27.6 | 30.1 | 31.9 | 32.7 | 35.6 |
| 1.75   | 27.4 | 29.4 | 32.1 | 33.9 | 34.8 | 37.9 |
| 1.70   | 28.0 | 30.0 | 32.8 | 34.7 | 35.5 | 38.8 |
| 1.65   | 28.3 | 30.4 | -    | -    | -    | -    |
| 1.60   | 28.6 | 30.7 | -    | -    | -    | -    |

