MODEL: TR 12.8-110 Li-ion
VOLTAGE: 12.8V
NOMINAL CAPACITY: 110Ah (1,400Wh)
CASE: PC/PBT Resin Blend, IP67 Enclosure, UL94 V-0
BATTERY: Deep-Cycle Lithium Iron Phosphate
COLOR: Maroon
CYCLE LIFE: >5,000 Cycles @ 80% DOD*

12.8 VOLT

PHYSICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>BCI</th>
<th>Model</th>
<th>Terminal Type</th>
<th>Dimensions Inches (mm)</th>
<th>Weight Lbs. * (kg)</th>
<th>Handles</th>
<th>Installation Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 27</td>
<td>TR 12.8 - 110</td>
<td>5/16&quot;-18 x 0.625&quot; Threaded Stud and 1/4&quot;-20 x 0.23&quot; Threaded Hole</td>
<td>Length: 12.07 (307), Width: 6.57 (167), Height: 8.63 (219)</td>
<td>30 (14)</td>
<td>Molded</td>
<td>Horizontal and Vertical</td>
</tr>
</tbody>
</table>

ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Capacity Amp-Hours (Ah)</th>
<th>Energy (kWh)</th>
<th>Short Circuit Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.8V</td>
<td>110</td>
<td>1.4</td>
<td>20-Hr Fused at 500 Amps</td>
</tr>
</tbody>
</table>

CHARGING INSTRUCTIONS

Charger Settings

- Recommended Charging Voltage: 14.4 - 14.8V
- Recommended Float Voltage: 13.8V
- Maximum Charging Current @ Temperature:
  - >73°F (>23°C): 110A
  - 41° to 73°F (5° to 23°C): 56A
  - 32° to 41°F (0° to 5°C): 15A
  - 14° to 32°F (-10° to 0°C): 6A
  - -4° to 14°F (-20° to -10°C): DISCHARGE ONLY

OPERATIONAL DATA

Operating Temperature Range: -4°F to 140°F (-20°C to 60°C) at Temperatures below 73°F (23°C) Charging Current Reduced -40°F to 140°F (-40°C to 60°C)

Storage Temperature Range: -4°F to 140°F (-20°C to 60°C)

OTHER SPECIFICATIONS

Electrical Features

- Maximum Continuous Discharge Current @ 77°F (25°C): 110A
- Maximum Pulse Discharge Current @ 77°F (25°C): 250A for 30 seconds
- Maximum Instantaneous Discharge Current: 500A
- Communication: N/A
- Reserve Capacity @ 25 Amps: 265 Min
- BMS Protections: Cell-Level Voltage, Temperature, Over Voltage, Under Voltage, Over-current
- BMS Functions: Cell Balancing, State of Charge
- Safety Systems: Contactor, Fuse, BMS
- Series Connections: Up to 4S (51.2V)
- Parallel Connections: Up to 20P
- Discharge Voltage Cutoff: 8.0V ± 5%
- Charge Voltage Cutoff: 15.2V ± 5%

Other Features

- Environmental Protection: IP67
- Shipping Classification: UN3480, Class 9, UN38.3 Certified
- Case Flame Rating: Non-Flammable UL94 V-0


System Considerations:

As outlined in the User’s Guide, Trillium batteries will automatically shut down under excessive use conditions in order to prevent damage to the battery and connected equipment. This will generally result in total loss of power to equipment. Systems must be implemented to ensure that sudden loss of power does not result in hazardous system behavior.

Do not mix with Lead Acid Batteries when Recycling.

*To 70% of Initial Capacity.
**Battery Condition**

- 90% - 100% Capacity Remaining
- G27 DISCHARGE CAPACITY
  - 20% - 35% Capacity Remaining
- Battery Temperature (C)
  - 0% - 10% Capacity Remaining
  - IEC 62133
  - Gauge
  - 10% - 20% Capacity Remaining
  - 35% - 50% Capacity Remaining
  - 50% - 90% Capacity Remaining
- Battery is shut off

**Cycle Life**

**Cycle Life vs. Temperature**

**Available Capacity**

**Cycle life**

- **To 70% Initial Capacity**

**Gauge**

**Battery Dimensions**

Dimensions Inches (mm) - shown with MB and Stud

**Terminal Configurations**

- Stud
  - Bolt: 5/16" - 20 x 0.24" Threaded Hole & 5/16" - 18 x 0.625" Threaded Stud

**Safety/Agency Information**

Certified to the Following

- UN/DoT 38.3
- IEC 62133
- ROHS Compliant
- UL 1642 (Cells)

**Battery Level Indicator**

- Solid Light
- Blinking Light

**State of Charge Indicator (Gauge)**

- Solid Green: 90% - 100% Capacity Remaining
- Blinking Green: 50% - 90% Capacity Remaining
- Solid Yellow: 35% - 50% Capacity Remaining
- Blinking Yellow: 20% - 35% Capacity Remaining
- Solid Red: 10% - 20% Capacity Remaining
- Blinking Red: 0% - 10% Capacity Remaining
- Blinking Green and Red: Battery is shut off

**NOTE:** Consult Trillium User's Guide for more information at trojanbattery.com.