**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*

**INTELLIGENCE**

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### 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>20-Hr (5.5A)</td>
<td>20-Hr</td>
<td>Fused at 500 Amps</td>
</tr>
<tr>
<td></td>
<td>110</td>
<td>111</td>
<td>1.4</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

**Storage Temperature Range**: -40°F to 140°F (-40°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%
- **Data Logging**: Total Lifetime Amp Hours, Recent Faults

**Other Features**

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

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**NOTE:** See Trillium User’s Guide for Proper Operation.

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**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.

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**RECYCLE RESPONSIBLY**

Do not mix with Lead Acid Batteries when Recycling.

*To 70% of Initial Capacity.
STATE OF CHARGE INDICATOR (GAUGE)

Trillium Group 24 and Group 27’s built-in smart battery features include a battery status push button and indicator light on the top of the case. After the button is pressed, the indicator light will show one of the following color patterns for five seconds:

<table>
<thead>
<tr>
<th>Light Color Pattern</th>
<th>Battery Condition</th>
<th>Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid Green</td>
<td>90% - 100% Capacity Remaining</td>
<td></td>
</tr>
<tr>
<td>Blinking Green</td>
<td>50% - 90% Capacity Remaining</td>
<td></td>
</tr>
<tr>
<td>Solid Yellow</td>
<td>35% - 50% Capacity Remaining</td>
<td></td>
</tr>
<tr>
<td>Blinking Yellow</td>
<td>20% - 35% Capacity Remaining</td>
<td></td>
</tr>
<tr>
<td>Solid Red</td>
<td>10% - 20% Capacity Remaining</td>
<td></td>
</tr>
<tr>
<td>Blinking Red</td>
<td>0% - 10% Capacity Remaining</td>
<td></td>
</tr>
<tr>
<td>Blinking Green and Red</td>
<td>Battery is shut off</td>
<td></td>
</tr>
</tbody>
</table>