

|          |   |
|----------|---|
| MODEL    | 31-AES                                      |
| VOLTAGE  | 12  |
| CAPACITY | 102Ah @ 20Hr                                |
| MATERIAL | Polypropylene                               |
| BATTERY  | VRLA AGM / Non-Spillable / Maintenance-Free |
| COLOR    | Maroon                                      |
| WATERING | No Watering Required                        |



12 VOLT

PHYSICAL SPECIFICATIONS

| BCI | MODEL NAME | TERMINAL TYPE | DIMENSIONS ° INCHES (mm) |            |            | WEIGHT ° LBS. (kg) | HANDLES        | INSTALLATION ORIENTATION |
|-----|------------|---------------|--------------------------|------------|------------|--------------------|----------------|--------------------------|
|     |            |               | LENGTH                   | WIDTH      | HEIGHT ° F |                    |                |                          |
| 29  | 31-AES     | DT            | 12.80 (325)              | 6.81 (173) | 9.37 (238) | 69 (31)            | Plastic Handle | Horizontal and Vertical  |

ELECTRICAL SPECIFICATIONS

| VOLTAGE | CRANKING PERFORMANCE |              | CAPACITY ° A MINUTES | CAPACITY ° AMP-HOURS (Ah) |       |       |        | ENERGY (kWh) | INTERNAL RESISTANCE (mΩ) | SHORT CIRCUIT CURRENT (amps) |
|---------|----------------------|--------------|----------------------|---------------------------|-------|-------|--------|--------------|--------------------------|------------------------------|
|         | C.C.A. ° @0°F        | C.A. ° @32°F | @ 25 Amps            | 5-Hr                      | 10-Hr | 20-Hr | 100-Hr | 100-Hr       |                          |                              |
| 12      | 657                  | 788          | 180                  | 82                        | -     | 102   | -      | -            | 4.80                     | 2555                         |

CHARGING INSTRUCTIONS

| CHARGER VOLTAGE SETTINGS (AT 77°F/25°C)  |                        |       |       |       |
|--|------------------------|-------|-------|-------|
| SYSTEM VOLTAGE   | 12V                    | 24V   | 36V   | 48V   |
| Maximum Charge Current (A)   | 50% of C <sub>20</sub> |       |       |       |
| Absorption Voltage (2.40 V/cell)   | 14.40                  | 28.80 | 43.20 | 57.60 |
| Float Voltage (2.25 V/cell)  | 13.50                  | 27.00 | 40.50 | 54.00 |
| Do not install or charge batteries in a sealed or non-ventilated compartment. Constant under or overcharging will damage the battery and shorten its life as with any battery. |                        |       |       |       |

CHARGING TEMPERATURE COMPENSATION

| ADD   | SUBTRACT  |
|---|---|
| 0.005 volt per cell for every 1°C below 25°C<br>0.0028 volt per cell for every 1°F below 77°F | 0.005 volt per cell for every 1°C above 25°C<br>0.0028 volt per cell for every 1°F above 77°F |

OPERATIONAL DATA

| OPERATING TEMPERATURE  | SELF DISCHARGE   |
|--|--|
| -40°F to 140°F (-40°C to +60°C). At temperatures below 32°F (0°C) maintain a state of charge greater than 60%. | Less than 3% per month depending on storage temperature conditions |

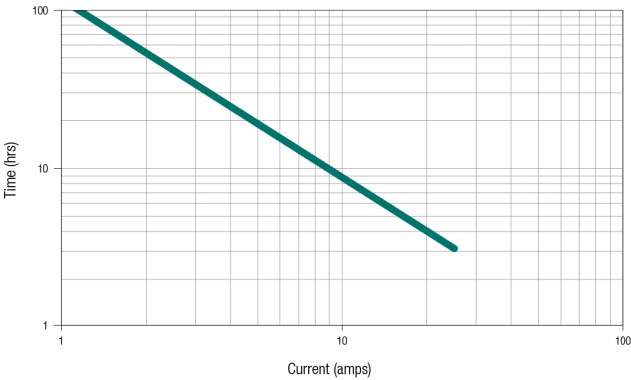
RECYCLE RESPONSIBLY

|   |   |   |
|---|---|---|
|  |  |  |
|---|---|---|

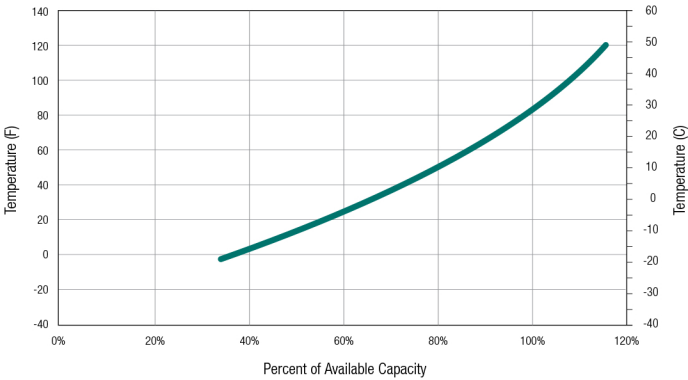
STATE OF CHARGE MEASURE OF OPEN-CIRCUIT VOLTAGE

| PERCENTAGE CHARGE | CELL | 12 VOLT |
|-------------------|------|---------|
| 100               | 2.14 | 12.84   |
| 75                | 2.09 | 12.54   |
| 50                | 2.04 | 12.24   |
| 25                | 1.99 | 11.94   |
| 0                 | 1.94 | 11.64   |

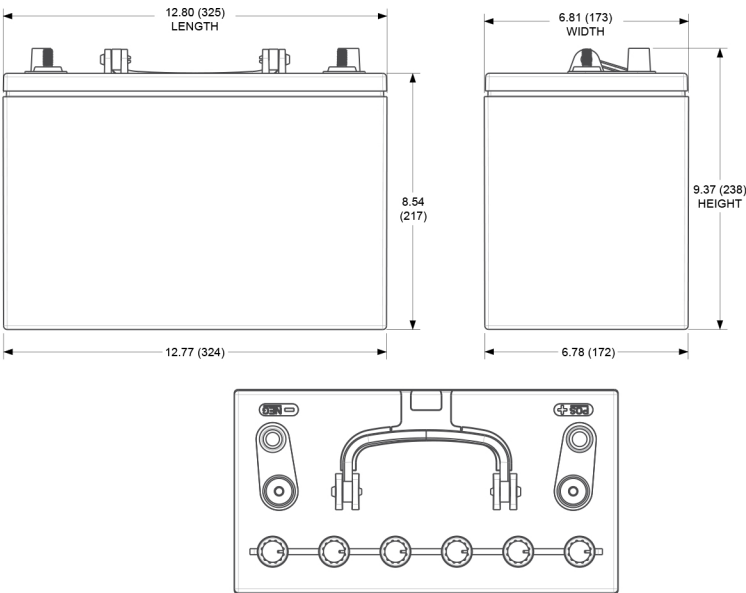
TROJAN 31-AES PERFORMANCE



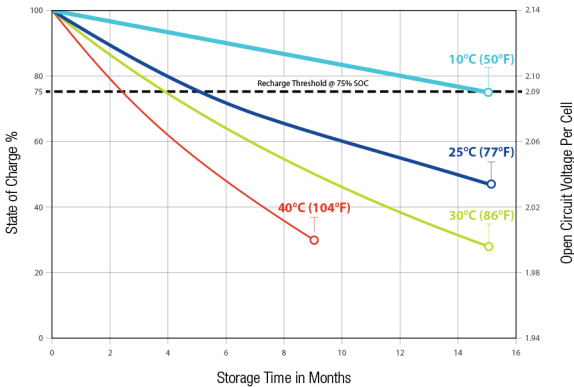
PERCENT CAPACITY VS. TEMPERATURE




BATTERY DIMENSIONS (shown with DT)



SELF DISCHARGE VS. TIME ° H



TERMINAL TYPE ° G

| 6  | DT | AUTOMOTIVE POST & STUD |
|--|----|------------------------|
|                            |    |                        |
| <b>Battery Height with Terminal in Inches (mm)</b><br>9.37 (238)   |    |                        |
| <b>Torque Values in-lb (Nm)</b><br>Connected to Stud: 95 – 105 (11 – 12)<br>Connected to AP: 50 – 70 (6 – 8) |    |                        |
| <b>Bolt Size</b><br>5/16" – 18   |    |                        |

A. The number of minutes a battery can deliver when discharged at a constant rate at 80°F (27°C) and maintain a voltage above 1.75 V/cell. Capacities are based on peak performance.  
B. The amount of amp-hours (Ah) a battery can deliver when discharged at a constant rate at 80°F (27°C) and maintain a voltage above 1.75 V/cell. Capacities are based on peak performance.  
C. Dimensions may vary depending on type of handle or terminal. Batteries should be mounted with 0.5 inches (12.7 mm) spacing minimum.  
D. C.C.A. (Cold Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 0°F (-18°C) at a voltage above 1.2 V/cell.

E. C.A. (Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 32°F (0°C) at a voltage above 1.2 V/cell. This is sometimes referred to as marine cranking amps @ 32°F or M.C.A. @ 32°F.  
F. Height taken from bottom of the battery to the highest point on the battery. Heights may vary depending on type of terminal.  
G. Terminal images are representative only.  
H. Batteries in storage should be charged when they decline to 75% State of Charge (SOC).  
I. Weight may vary.