

# FEATHERWEIGHT LITHIUM ION BATTERY

## LI TEL 48-170 C

Maximum performance for float and high cycling service

High Energy Density, limited space, lighter weight

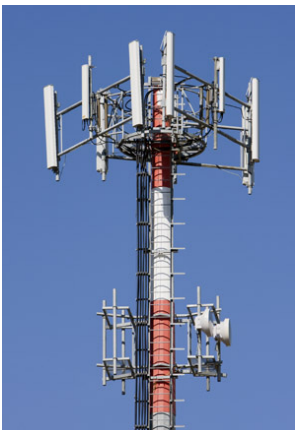
Safe operation, long life, maintenance free



C&D Technologies' advanced LI TEL Li-ion batteries provide safe and reliable, high energy density storage, with long life for a wide variety of backup power applications around the world. C&D has used its long standing industrial standby power experience with years of research and development to meet the demanding requirements of today's new telecommunications installations.



## APPLICATIONS



Telecommunications equipment powered from diesel generators in off-grid or unreliable grid locations

Renewable energy storage systems used to reduce CO<sub>2</sub> emissions

Distributed power applications with size and floor loading constraints

**BTS:** Base transceiver station

**OSP:** Wireline Outside Plants

**CO:** Central Office



## FEATURES AND BENEFITS

The LI TEL48-170C is capable of cycling and float service. The battery is designed for paralleling of multiple battery packs for increased reserve time.

**High cycle life and deep cycle:** For infrastructure powered from high cycle life and deep cycle cost primary energy sources (e.g. diesel generators powered in off-grid or unreliable grid locations and anywhere energy storage systems are used to reduce CO<sub>2</sub> emissions).

**Maximum performance float operation:** For applications where the grid is reliable the LI TEL series battery float performance provides the ideal long life, modular standby power solution.

**Lightweight, high energy density standby power:** The LI TEL series batteries, due to their excellent properties, are the optimal energy storage solution where limited space and or weight are important factors. The LI TEL series are approximately four to ten times lighter and less than half the volume than traditional battery technologies.

**Battery management:** The LI TEL series battery includes an embedded battery management system designed specifically for standby power that provides State of Health and State of Life indication. The management system operation under normal conditions is transparent; it takes action to disconnect or shut-down the battery pack to prevent potentially abusive conditions. The battery pack is designed to be used simply as a battery for easy installation and operation.

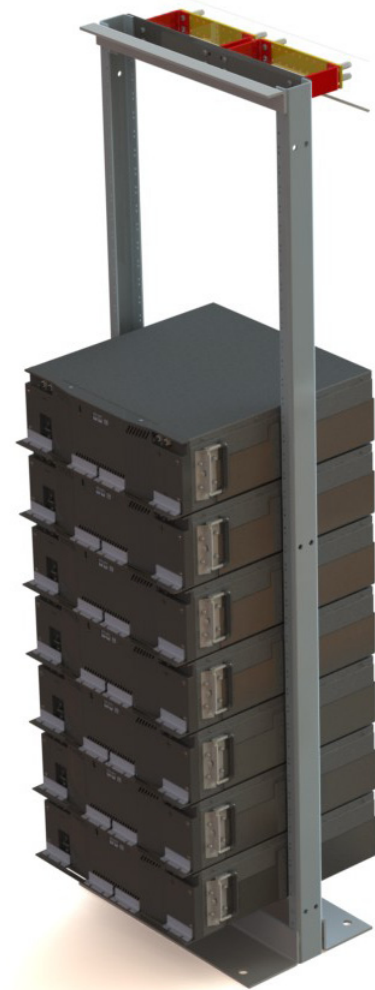
**Environmentally friendly:** Lead-free, recyclable, very high efficiency/reduced energy consumption.

## CONNECTIONS

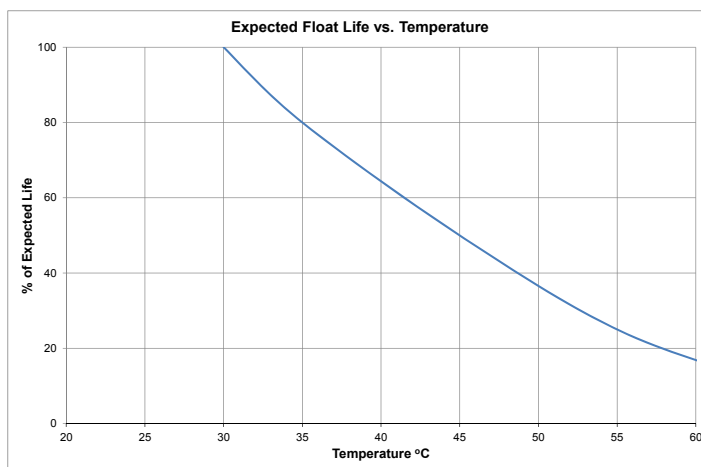
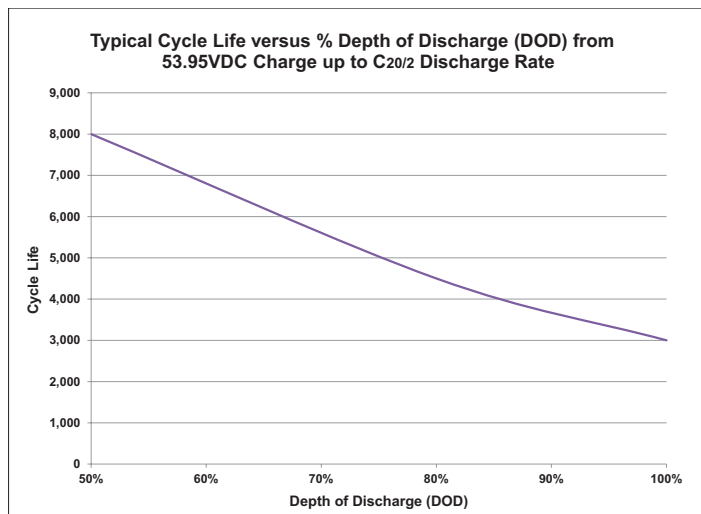
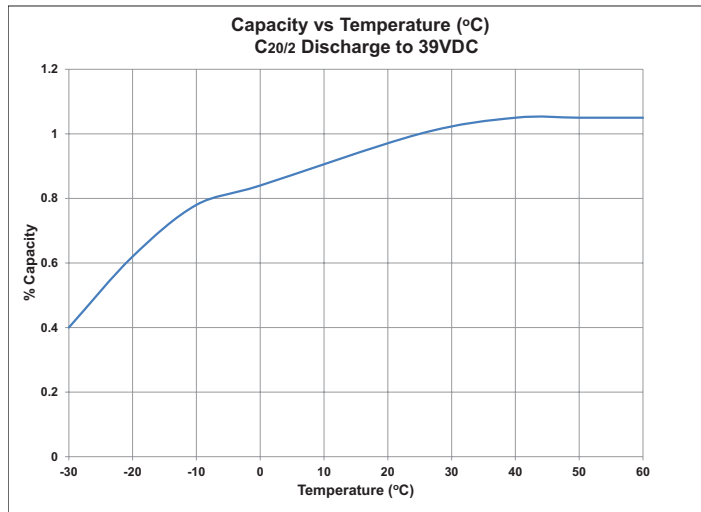




| Characteristic                                        |                                                  |
|-------------------------------------------------------|--------------------------------------------------|
| Voltage                                               | 48 V                                             |
| Capacity Typical                                      | 173 Ah                                           |
| Capacity Rated                                        | 170 Ah                                           |
| Energy Typical                                        | 8.2 kWh                                          |
| Volumetric Energy Density                             | 157 Wh / l                                       |
| Gravimetric Energy Density                            | 112 Wh / kg                                      |
| Electrical Characteristic                             |                                                  |
| Operating Voltage Window                              | 42.0 V to 53.9 V                                 |
| Charge Voltage                                        | 52.0 V to 53.9 V                                 |
| Equalize Charge                                       | Not required                                     |
| Charge Current Maximum                                | 80 A                                             |
| Discharge Current Maximum                             | 80 A                                             |
| Charge Efficiency 35°C (95°F)                         | > 98 %                                           |
| Operating                                             |                                                  |
| Cycle Life 20°C (68°F)                                | 4,300 cycles @ 80% DoD                           |
| Operating Temperature                                 | -30°C to 50°C<br>(-22°F to 122°F)                |
| Store Duration maximum<br>10°C to 25°C (50°F to 77°F) | 12 months automatic refresh<br>charge indication |
| Physical Characteristics                              |                                                  |
| Width (without handles)                               | 538 mm (21.2")                                   |
| Width (with handles)                                  | 564 mm (22.2")                                   |
| Height                                                | 172 mm (6.8"), 4RU                               |
| Depth                                                 | 564 mm (22.2")                                   |
| Weight                                                | 72.6 kg (160 lbs)                                |
| Battery Terminals (+,-)                               | Two post, M8 threaded studs                      |



| Ampere Hour Capacity from 53.9V to 42.0V at 25°C (77°F) |       |       |       |       |       |       |       |       |
|---------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| 2 hr                                                    | 3 hr  | 4 hr  | 5 hr  | 8 hr  | 10 hr | 12 hr | 20 hr | 24 hr |
| 163                                                     | 163.4 | 163.8 | 164.2 | 165.3 | 166   | 167   | 170   | 170   |



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