C&D TECHNOLOGIES

TEL-HT HIGH TEMPERATURE TELECOM BATTERIES

POWER YOU CAN DEPEND ON.

C&D Technologies has been on the leading edge of standby battery development since 1906. Always pushing the limits, C&D strives to provide our customers with the most advanced battery technology on the market.

As standby battery applications become increasingly demanding, the batteries that support these applications must be improved to provide reliable service and long life in diverse environments.

With this in mind, C&D has introduced the TEL High Temperature Series VRLA batteries, featuring MSE Pure Lead Plus Technology. The TEL High Temperature Series takes the best features from the industry-leading msEndurll 2V VRLA, C&D's TEL Long Duration Series' proven reliability, and the unmatched design of C&D's TRUE Front Access series to provide, the most reliable 12V VRLA battery available. In accelerated life testing, the TEL High Temperature series provides 12+ years of life under normal operation, and is able to deliver reliable performance even in high temperature environments.

APPLICATIONS

Uncontrolled Environments

- Wireline
- Wireless
- Outdoor Cabinets
- Broadband
- Microwave Repeaters
- Fiber Optic Regen Sites

Controlled Environment for Extreme Long Life

- Central Offices
- Customer Premise / PBX
- Long Duration UPS
- Substations

TEL-HT | WITH MSE PURE LEAD PLUS TECHNOLOGY

The TEL High Temperature Series are designed to provide standby power to critical applications in the telecommunications industry. They undergo extensive life cycle testing to ensure the longest and most reliable service life possible. It brings together the best features found in C&D's previous telecom models to deliver a group of quality batteries designed to withstand rigorous heat environments.

- MSE Pure Lead Plus Technology
  - Ultra low float current
  - Long life float service design
- Non-Hazardous for Transportation
- Extended service life in elevated temperature applications
  - 7-year warranty
  - 12+ years design life
- Premium Materials and Components
- Reduced Maintenance Terminal Design
- UL1989 Compliant
- UL94-V0 Compliant Case and Cover

HOW WE CREATED THE HIGH TEMPERATURE SERIES

TEL-HT

Much of C&D's success in the telecom market can be attributed to its quality and advanced technologies, providing customers with a reserve power solution they can depend on. With power requirements increasing and space decreasing, a shift towards VRLA products became necessary. C&D embraced this challenge with the TEL Long Duration Series with a proprietary high density active material and robust grid design that provided a documented 10+ years of life in industry-standard footprints. The Long Duration Series was enhanced in 2008 with the introduction of True Front Access designs that gave customers increased energy density and simplified maintenance without sacrificing reliability. For sites with larger power requirements and increased reliability concerns, the pure lead msEndurII is used. The MSE technology used in the msEndurII reduces the float current required to keep these batteries at a full state of charge, resulting in slowed corrosion rates and a 20 year service life. The advanced technologies developed in each of these products have been combined into one long life, high energy density product family, the TEL High Temperature Series.

TEL-HT

2002 TEL LONG DURATION
C&D purchased from Johnson Controls International

2004 MS ENDUR II
C&D released the msEndur featuring MSE technology later improved to the msEndur II

2010 TRUE FRONT ACCESS
C&D designed the only "True" Front Access on the market

2019 TEL-HT
C&D releases pure lead telecom series battery designed for long life in all environments

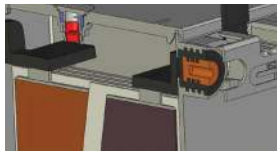
LONG DURATION SERIES

TEL LONG DURATION SERIES

- EUROBAT Long Life Classification
- 10-Year Design Life
- Field proven materials and design up to 15 year life

m-s-endur® II

- Telcordia SR4228 Tested and Certified
- 20-Year Design Life
- Ultra-Low Float Current
- MSE Pure Lead Plus Technology



TRUE FRONT ACCESS

- Patented Front Access Terminal Design
- Direct Weld to Front Posts
- Oversized Terminal for Ease of Maintenance

WHAT IS MSE PURE LEAD PLUS TECHNOLOGY?

The TEL High Temperature Series features MSE Pure Lead Plus Technology, providing long life and exceptional performance in uncontrolled temperatures. C&D uses a proprietary Ball Mill Oxide made with ultra-high purity positive and negative active materials in addition to specialized processing techniques. This high-tech recipe creates a well-balanced cell that operates with reduced float current similar to a flooded cell, slowing grid corrosion and limiting water loss typically associated with traditional VRLA batteries.

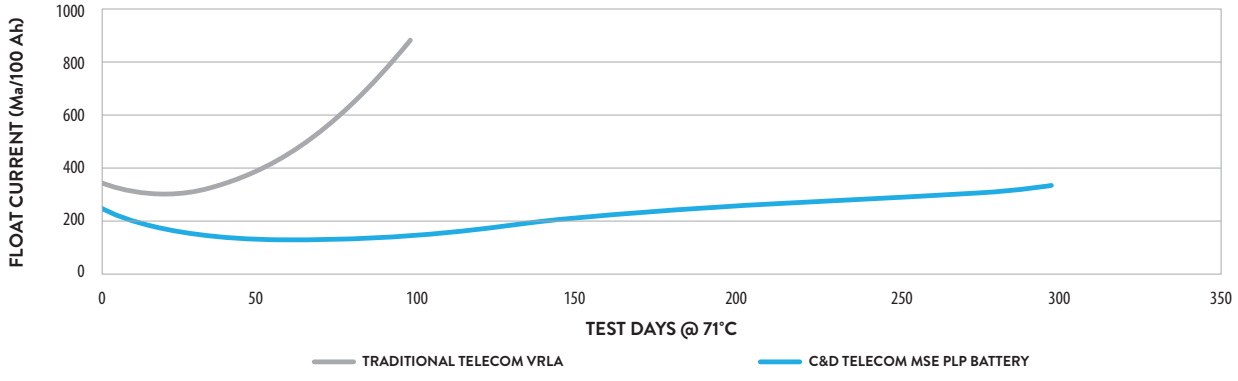
ADVANTAGES

- Reduced Grid Corrosion
- Reduced Float Current
- Slower Aging Mechanisms
- 2X Longer Life in Float Operation
- Longer Storage Life
- Reduced Internal Temperature and Water Loss
- Stable Operation at High Temperatures

The benefit of using high purity materials, including high purity oxides, is a reduction of gassing reactions on float charge. Optimized Grid Lead alloys also limit corrosion, particularly intergranular corrosion of the positive grid.

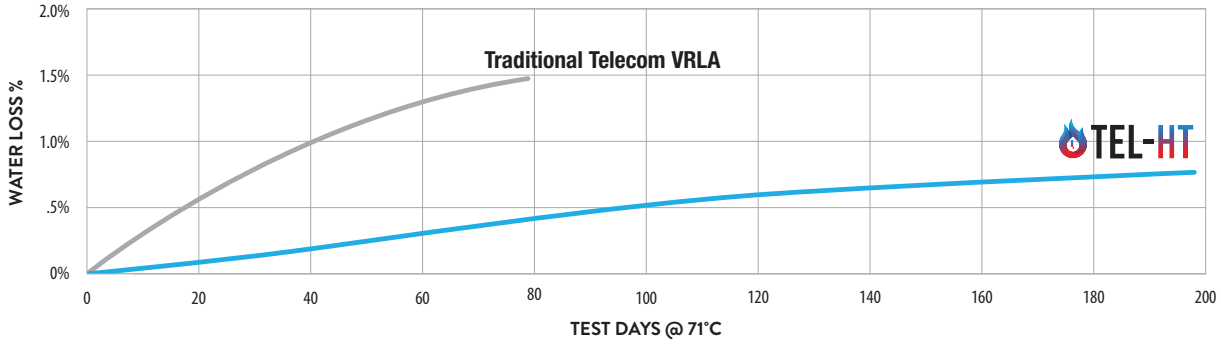
FLOAT CURRENT

C&D developed the MSE Pure Lead Plus Technology to fundamental change the way our batteries operate that leverage this innovation. The effects on the active material are measurable and lower float currents are achieved using a high density, large pore structure in the active materials through proprietary plate manufacturing processes and low corroding positive grid alloys. Low float currents allow batteries to operate at higher temperatures while minimizing risks of thermal runaway. The result is a longer battery life as seen in the graph below.



WATER LOSS

One of the leading causes of VRLA battery failure is water loss. As a VRLA battery ages, it will start to lose water more rapidly, leading to dryout and decreased capacity. The MSE Pure Lead Plus Technology in the TEL High Temperature reduces water loss by up to 50%, a critical component to long life at high temperatures.



STRONG DESIGN

In any application where the battery may face extreme temperature, shock, or vibration conditions, a rugged case is key to maintaining battery performance over time. All TEL-HT batteries are encased in strong polypropylene that protects all the battery's components and ensures that the battery will work year after year in the most demanding environments.

SPECIFICATIONS	
OPERATING TEMPERATURE	Discharge: -40°F to +160°F (-40°C to + 71 °C) Charge: -10°F to +140°F (-23°C to +60°C)
RECOMMENDED CHARGING CURRENT	C20/5Amperes (Maximum) @ 77°F (25°C)
FLOAT CHARGING VOLTAGE	13.65VDC +/-0.15VDC Per 12V Unit
TEMPERATURE COMPENSATION FLOAT CHARGE	3.6mV/Cell°C from (77°F) 25°C (13.434 VDC @35°C)
EQUALIZE CHARGING VOLTAGE	14.40 VDC to 14.80 VDC Per 12V Unit
STORAGE	Battery may be stored up to 2 years at 77°F (25°C)
TERMINAL	Threaded copper alloy insert terminal Front Access Models: M6 bolt
TERMINAL HARDWARE TORQUE	Front Access Models 107 in-lbs (12 n*m) for M6 Hardware
SELF STORAGE	Battery can be stored up to 24 months at 77°F (25°C) before a freshening charge is required.

MODEL NAME	NOMINAL CAPACITY 8 HOURS TO 1.75 VPC @ 25°C	IEC CAPACITY 10 HOURS TO 1.80 VPC @ 20°C	WEIGHT LBS (KG)	MAXIMUM DISCHARGE CURRENT	OHMS IMPEDANCE 60 HZ (Ω)
TEL HIGH TEMPERATURE SERIES MODELS					
TEL12-105FHTG*	101 Ah	98 Ah	72 (32.8)	800A	0.0065
TEL12-115FHT	104 Ah	101Ah	73 (33.0)	800A	0.0056
TEL12-155FHT	147 Ah	148 Ah	104 (47.0)	800A	0.0054
TEL12-170FGHT*	162 Ah	163 Ah	110 (49.5)	800A	0.0048
TEL12-180FHT	181 Ah	174 Ah	115 (53.0)	800A	0.0043
TEL12-200FHT	195 Ah	192 Ah	132 (60.2)	800A	0.0042

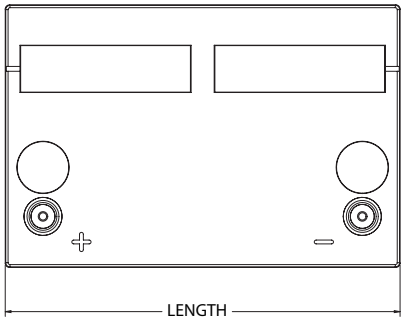
*TFA Gas Collection System

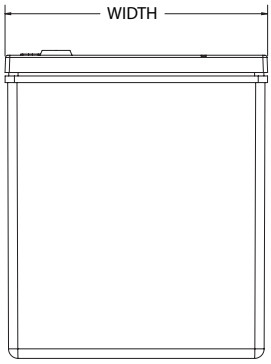
TEL-HT SPECIFICATIONS

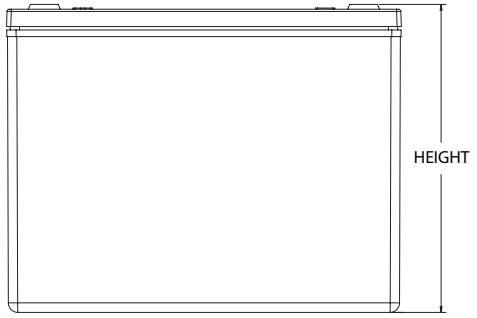
MODEL NAME	VOLTAGE	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ 77˚F (25˚C) OPERATING TIME (Hr.) TO 1.75 VOLTS PER CELL													DIMENSIONS INCHES (mm)		
		1	2	3	4	5	6	7	8	10	12	20	24	72	LENGTH	WIDTH	HEIGHT
TEL HIGH TEMPERATURE SERIES MODELS																	
TEL12-105FHTG*	12 VOLT	70.10	39.80	28.60	22.8	19.10	16.40	14.00	12.50	10.20	8.70	5.50	4.70	1.70	15.70 (498)	4.2 (109)	11.20 (231.40)
TEL12-115FHT	12 VOLT	68.60	39.50	28.60	22.80	19.10	16.40	14.40	13.00	10.60	9.00	5.80	4.90	1.70	20.1 (511)	4.3 (109)	9.10 (231.40)
TEL12-155FHT	12 VOLT	96.70	58.90	42.10	33.10	27.40	23.50	20.70	18.50	15.30	13.10	8.50	7.30	2.60	22.0 (559)	4.9 (126)	11.14 (277)
TEL12-170FGHT*	12 VOLT	109.00	62.10	45.10	35.70	29.80	25.60	22.50	20.30	16.80	14.20	8.90	7.50	2.60	21.5 (547)	4.9 (126)	11.2 (285)
TEL12-180FHT	12 VOLT	125.70	72.40	52.00	41.00	34.20	29.20	25.70	22.90	18.80	15.90	10.00	8.50	3.00	22.0 (559)	4.9 (126)	12.6 (320.04)
TEL12-200FHT	12 VOLT	126.00	79.50	56.20	44.00	36.40	31.10	27.30	24.40	20.10	17.20	11.00	9.40	3.30	22.0 (559)	4.9 (126)	12.6 (320.04)

*TFA Gas Collection System

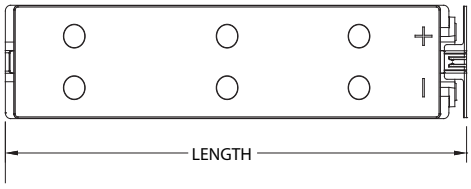
TOP ACCESS

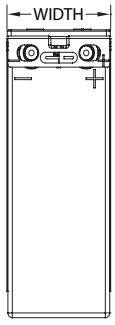


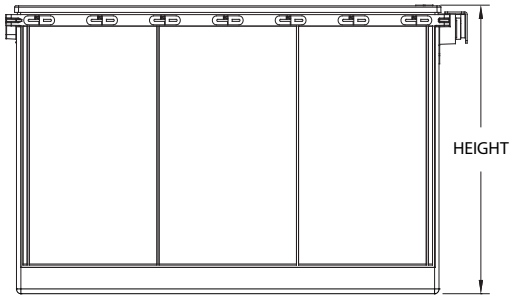




FRONT ACCESS







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