

12-1083



C&D TRUE FRONT ACCESS TEL12-145FW



THE MOMENT OF TRUTH HAS ARRIVED

- TRUE** Performance - Proven out of box capacity ratings at installation
- TRUE** Front Access Terminals - ensuring reliability & connection versatility
- TRUE** High Energy Density - highest true energy density solution in the market
- TRUE** Long Life Design - Telcordia SR-4228 industry leading 13 year service life

PRODUCT LINE EXTENSION TO C&D TEL VALVE REGULATED LEAD ACID (VRLA) BATTERY SERIES

APPLICATIONS

- Wireline
- Wireless
- Customer Premise / PBX
- Broadband
- Microwave Repeater
- Fiber Optic Regen Sites

INDOOR/OUTDOOR INSTALLATIONS

- Cabinet Systems
- Rack Systems

FEATURES & BENEFITS

- Long life alloy and design Telcordia certified exceeding 13 years service life
- Tested and qualified by Telcordia to meet SR-4228 requirements
- True Front Access threaded copper alloy inserts for reduced maintenance and increased safety
- Terminal versatility - ease of diagnostic readings with C&D Ohmic Ring®
- Reduced headspace driving higher energy density, in cabinet or rack applications
- Removable handles for ease of installation
- Innovative front terminal design maximizing energy density with direct connect extrusion fusion weld technology
- Thermally welded case-to-cover bond to ensure a leak-proof seal
- Flame-retardant polypropylene case and cover compliant with UL94 V-O with an Oxygen Limiting Index of greater than 28
- Absorbent Glass Mat (AGM) technology for 99% plus efficient gas recombination
- Flame-arresting, one-way pressure-relief vent for safety and long life
- Complies with UL1778, 924, 1989 and 94 V-0. BS6290PT4, IEC-896-2
- UL-recognized component
- Multicell design for ease of installation and maintenance
- Fits many popular OEM cabinets
- Not restricted for air transport - Complies with IATA/ICAO Special Provision A67
- Not restricted for surface transport - classified as non-hazardous material as related to DOT-CFR Title 49 parts 17 1-189
- Not restricted for water transport - classified as non-hazardous material per Amendment 27

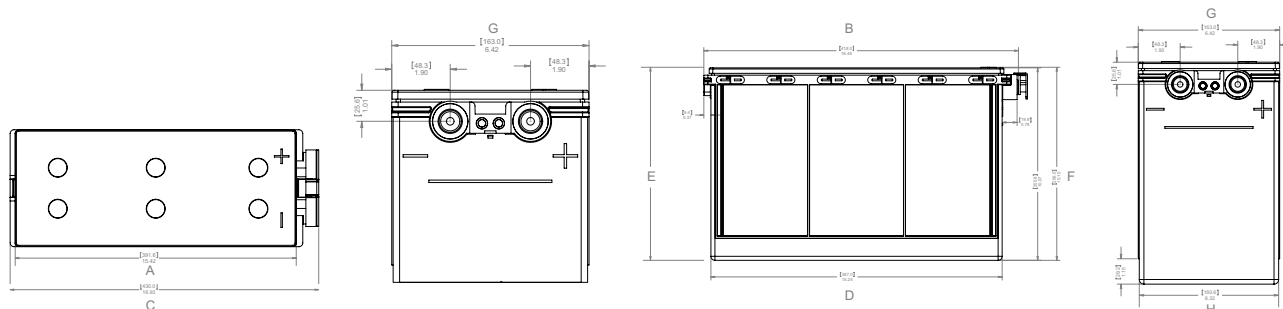
Ampere Hour Capacity to 1.75 Volts per Cell @ 77°F (25°C)
Discharge in Hours

Model	1	2	3	4	5	8	10	12	20	24
TEL12-145FW	93.9	105.2	117.6	122.4	131.5	144.8	148	151.2	158.8	160.8

SPECIFICATIONS

Battery	Voltage Per Unit	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 v/c	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 v/c	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-145FW	12 V	145 Ah	143 Ah	800 Amperes	5800 Amperes	0.0026 Ohms	105 lbs/48 kg

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to +160°F (71°C) Charge: -10°F (-23°C) to +140°F (60°C)
Nominal Operating Temperature Range	+74°F (23°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (31.8A)
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Maximum AC ripple voltage allowed = 1.4% RMS (4% P-P) Maximum AC ripple current allowed = 7.94 amperes RMS (C ₂₀ /20)
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C)
Terminal: Inserted - Inter-unit connector and hardware provided	Threaded copper alloy insert terminal to accept M6 bolt
Terminal Hardware Torque	110 in.-lbs. (12.4 N-m)



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-145FW	15.4	391	16.5	418	16.9	430	15.2	387	9.7	247	10.1	257	6.4	163	6.3	161

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensional information.

CONSTANT CURRENT RATINGS - AMPERES @ 77°F (25°C)

Operating Time (hours)

Volts Per Cell	1	3	5	8	10	12	20	24
1.75	93.6	40.6	26.6	18.1	15	12.8	8.1	6.8
1.80	89.3	39.8	26.3	17.9	14.9	12.6	8	6.8
1.85	82.6	37.9	25.4	17.4	14.5	12.4	7.9	6.7
1.88	76.3	35.8	24.1	16.4	13.7	11.7	7.4	6.3
1.90	71.5	33.9	22.9	15.7	13.1	11.2	7.2	6.1

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

C&D TECHNOLOGIES, INC.

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12-1075



C&D TRUE FRONT ACCESS®

TEL Series Float Service



TEL12-170F



TEL12-170FG
with TFA gas collection system



Typical Wireline Application



Typical Wireless Application

BENEFITS

- Long Life Float Service Design
 - Confirmed via 3rd party Certification
 - Premium alloy and material components
- True Front Access Design
 - True direct connect terminal for reliability
 - C&D Ohmic Ring® for accurate testing
 - Optional True Front Access gas collection system (models contain "G" suffix)
 - Connection versatility
- Maximum Performance
 - Superior output due to direct terminal connection
 - Low internal resistance
- Compliant to major global specifications
 - British Standard BS 6290: Part 4: 1997
 - IEC 60896-21/22
 - Telcordia SR-4228
 - Eurobat Guide Classification: Long Life
 - Bellcore GR-63-CORE & GR-1089-CORE
 - UL94 V-0FR
 - Non-Hazardous, not restricted for any transportation mode (air, water or land)

SPECIFICATIONS

Battery	Voltage Per Unit	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 v/c	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 v/c	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-170F/FG	12 V	169 Ah	164 Ah	800 Amperes	4505 Amperes	0.0033 Ohms	119 lbs/54 kg

SPECIFICATIONS

Ampere Hour Capacity to 1.75 Volts per Cell @77°F (25°C)
Discharge in Hrs.

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-170F/FG	113	129	141	148	155	160	164	169	174	178	186	187

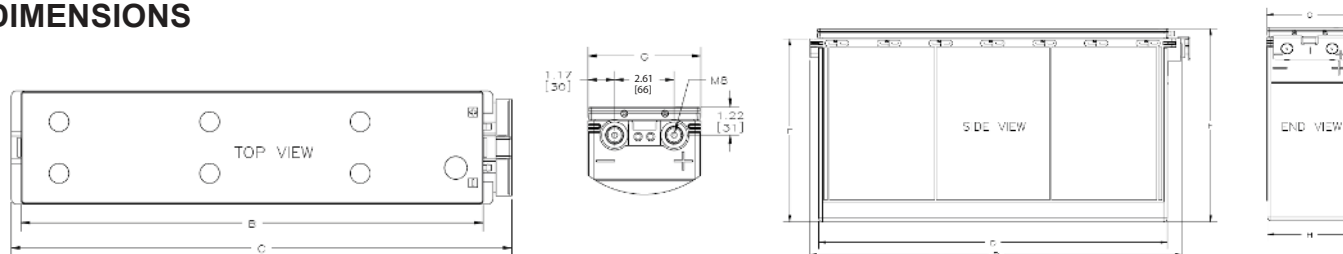
You may also access the product ratings by logging onto the C&D Battery Sizing program at www.cdstandbypower.net

Ampere Hour Capacity to 1.80 Volts per Cell @68°F (20°C)
Discharge in Hrs.

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-170F/FG	104	121	131	138	143	148	153	158	164	166	172	175

You may also access the product ratings by logging onto the C&D Battery Sizing program at www.cdstandbypower.net

DIMENSIONS



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-170F	20.3	516	21.5	546	22.0	559	20.1	512	10.7	272	11.0	277	4.9	126	4.8	123
TEL12-170FG	20.3	516	21.5	546	22.0	559	20.1	512	10.7	272	11.2	283	4.9	126	4.8	123

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensional information.

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to +160°F (71°C) Charge: -10°F (-23°C) to +140°F (60°C)
Nominal Operating Temperature Range	+68°F (20°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (37.2A)
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C ₂₀ /20
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C)
Terminal: Inserted - Inter-unit connector provided	Threaded copper alloy insert terminal to accept M8 bolt
Terminal Hardware Initial Torque:	160 in.-lbs. (18 N-m)
Telcordia Part Numbers	Battery Part Number TEL12-170F/FG CLEI Code Pending CPR Pending

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C&D TRUE FRONT ACCESS®

TEL Series Float Service



TEL12-210F



TEL12-210FG
with TFA gas collection system



Typical Wireline Application



Typical Wireless Application

BENEFITS:

- Long Life Float Service Design
 - Confirmed via 3rd party Certification
 - Premium alloy and material components
- True Front Access Design
 - True direct connect terminal for reliability
 - C&D Ohmic Ring® for accurate testing
 - Optional True Front Access gas collection system (models contain "G" suffix)
 - Connection versatility
- Maximum Performance
 - Superior output due to direct terminal connection
 - Low internal resistance
- Compliant to major global specifications
 - British Standard BS 6290: Part 4: 1997
 - IEC 60896-21/22
 - Telcordia SR-4228
 - Eurobat Guide Classification: Long Life
 - Bellcore GR-63-CORE & GR-1089-CORE
 - UL94 V-0FR
 - Non-Hazardous, not restricted for any transportation mode (air, water or land)

SPECIFICATIONS

Battery	Voltage Per Unit	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 v/c	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 v/c	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-210F/FG	12 V Monobloc	202 Ah	199 Ah	800 Amperes	4500 Amperes	0.0040 Ohms	134 lbs/61 kg

SPECIFICATIONS

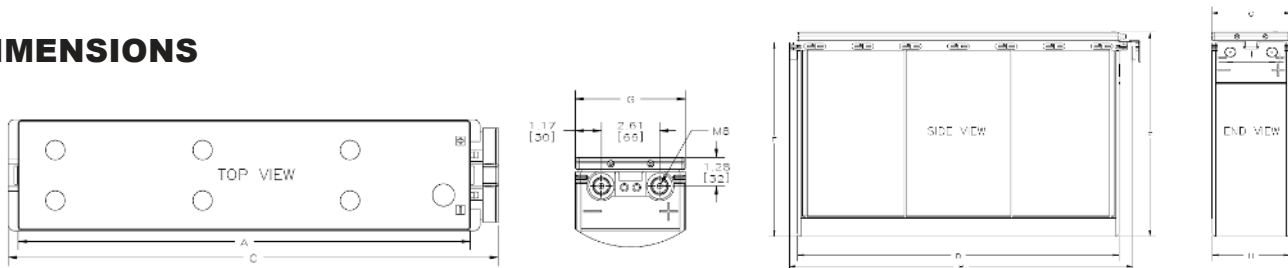
Ampere Hour Capacity to 1.75 Volts per Cell @77°F (25°C)
Discharge in Hours

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-210F/FG	138	165	170	176	190	194	199	202	209	214	230	235

Ampere Hour Capacity to 1.80 Volts per Cell @68°F (20°C)
Discharge in Hours

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-210F/FG	126	153	153	158	175	179	183	186	192	198	212	218

DIMENSIONS



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-210F	20.3	516	21.5	546	22.0	559	20.1	512	12.2	310	12.6	320	4.9	126	4.8	123
TEL12-210FG	20.3	516	21.5	546	22.0	559	20.1	512	12.2	310	12.8	326	4.9	126	4.8	123

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensional information.

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to 160°F (71°C) Charge: -10°F (-23°C) to 140°F (60°C)
Nominal Operating Temperature Range	+68°F (20°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (46 A)
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max AC ripple voltage allowed = 1.4% RMS (4% P-P) Max AC ripple current allowed = 11.5 amperes RMS (C ₂₀ /20)
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C)
Terminal: Inserted - Inter-unit connector and hardware provided	Threaded copper alloy insert terminal to accept M8 bolt
Terminal Hardware Torque:	160 in.-lbs. (18 N-m)
Telcordia Part Numbers	Battery Part Number TEL12-210F/FG CLEI Code Pending CPR Pending

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12-1073

C&D TRUE FRONT ACCESS®

TEL Series Float Service



TEL12-190F



TEL12-190FG
with TFA gas collection system



Typical Wireline Application



Typical Wireless Application

BENEFITS

- Long-life float service design
 - Confirmed via 3rd party certification
 - Premium alloy and material components
- True Front Access Design
 - True direct connect terminal for reliability
 - C&D Ohmic Ring® for accurate testing
 - Optional True Front Access gas collection system
 - Connection versatility
- Maximum Performance
 - Superior output due to direct terminal connection
 - Low internal resistance
- Compliant to major global specifications
 - British Standard BS 6290: Part 4: 1997
 - IEC 60896-21/22
 - Telcordia SR-4228
 - Eurobat Guide Classification: Long-life
 - Bellcore GR-63-CORE & GR-1089-CORE
 - UL94 V-0FR
 - Non-Hazardous, not restricted for any transportation mode (air, water or land)

SPECIFICATIONS

Battery	Nominal Voltage	Ampere Hour Capacity 8 Hour Rate @ 77° F (25°C) to 1.75 Vpc	Ampere Hour Capacity 10 Hour Rate @ 68° F (20°C) to 1.75 Vpc	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL 12-190F/FG	12 V	190 Ah	188 Ah	800 Amperes	4500 Amperes	0.0035 Ohms	126 lbs/57 kg

SPECIFICATIONS

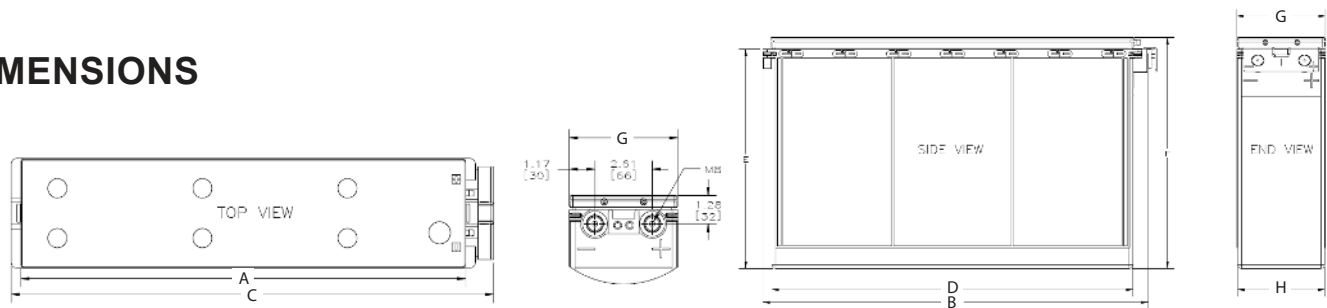
Ampere Hour Capacity to 1.75 Volts per Cell @77°F (25°C)												
Discharge in Hrs.												
Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL 12-190F/FG	130	151	162	170	178	182	187	190	196	198	208	211

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

Ampere Hour Capacity to 1.80 Volts per Cell @68°F (20°C)												
Discharge in Hrs.												
Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL 12-190F/FG	121	142	153	162	168	173	177	180	188	191	204	204

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

DIMENSIONS



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL 12-190F	20.3	516	21.5	546	22.0	559	20.1	512	12.2	310	12.6	320	4.9	126	4.8	123
TEL 12-190Fg	20.3	516	21.5	546	22.0	559	20.1	512	12.2	310	12.8	326	4.9	126	4.8	123

*All dimensions in inches and [millimeters]. All dimensions are for reference only. Contact a C&D Representative for complete dimensional information.

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to 160°F (71°C) Charge: -10°F (-23°C) to 140°F (60°C)
Nominal Operating Temperature Range	+68°F (20°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (41.6A)
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C ₂₀ /20
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit
Terminal: Inserted - Inter-unit connector provided	Threaded copper alloy insert terminal to accept M8 bolt
Terminal Hardware Torque	160 in-lbs (18 N-m)
Temperature Correction Factor	+2.8 mVpc/°F below 77°F (25°C) -2.8 mVpc/°F above 77°F (25°C)

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C&D TRUE FRONT ACCESS®

TEL Series Float Service



TEL12-155F



TEL12-155FG
with TFA gas collection system



Typical Wireline Application



Typical Wireless Application

BENEFITS:

- Long Life Float Service Design
 - Confirmed via 3rd party Certification
 - Premium alloy and material components
- True Front Access Design
 - True direct connect terminal for reliability
 - C&D Ohmic Ring® for accurate testing
 - Optional True Front Access gas collection system (models contain "G" suffix)
 - Connection versatility
- Maximum Performance
 - Superior output due to direct terminal connection
 - Low internal resistance
- Compliant to major global specifications
 - British Standard BS 6290: Part 4: 1997
 - IEC 60896-21/22
 - Telcordia SR-4228
 - Eurobat Guide Classification: Long Life
 - Bellcore GR-63-CORE & GR-1089-CORE
 - UL94 V-0FR
 - Non-Hazardous, not restricted for any transportation mode (air, water or land))

SPECIFICATIONS

Battery	Voltage Per Unit	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 v/c	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 v/c	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-155F/FG	12 V	155 Ah	154 Ah	800 Amperes	4700 Amperes	0.0031 Ohms	104 lbs/47 kg

SPECIFICATIONS

Ampere Hour Capacity to 1.75 Volts per Cell @77°F (25°C)
Discharge in Hrs.

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-155F/FG	107	124	133	139	144	148	152	155	158	162	180	172

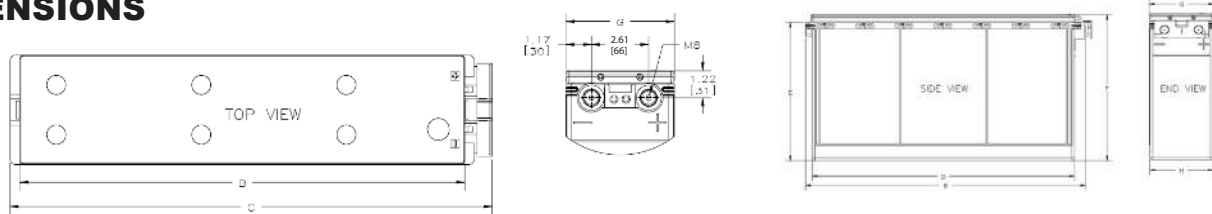
Additional ratings and application information are available in the Battery Selection Program found at www.cdstandbypower.net

Ampere Hour Capacity to 1.80 Volts per Cell @68°F (20°C)
Discharge in Hrs.

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-155F/FG	94	118	126	132	137	141	144	147	154	157	176	166

Additional ratings and application information are available in the Battery Selection Program found at www.cdstandbypower.net

DIMENSIONS



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-155F	20.3	516	21.5	546	22.0	559	20.1	512	10.7	272	11.0	277	4.9	126	4.8	123
TEL12-155FG	20.3	516	21.5	546	22.0	559	20.1	512	10.7	272	11.2	283	4.9	126	4.8	123

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensional information.

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to 160°F (71°C) Charge: -10°F (-23°C) to 140°F (60°C)
Nominal Operating Temperature Range	+68°F (20°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes 36 A
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C ₂₀ /20
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C)
Terminal: Inserted - Inter-unit connector provided	Threaded copper alloy insert terminal to accept M8 bolt
Terminal Hardware Initial Torque:	160 in.-lbs. (18 N-m)
Telcordia Part Numbers	Battery Part Number TEL12-155F/FG CLEI Code Pending CPR Pending

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C&D TRUE FRONT ACCESS®

TEL Series Float Service



TEL12-115FN



TEL12-115FNG

with TFA gas collection system

BENEFITS:

- Long Life Float Service Design
 - Confirmed via 3rd party Certification
 - Premium alloy and material components
- True Front Access Design
 - True Front Access gas collection system (optional)
 - True direct connect terminal for reliability
 - C&D Ohmic Ring® for accurate testing
 - Ideal fit for 19" Relay Racks
- Maximum Performance
 - Superior output due to direct terminal connection
 - Low internal resistance
- Compliant to major global specifications
 - British Standard BS 6290: Part 4: 1997
 - IEC 60896-21/22
 - Telcordia SR-4228
 - Eurobat Guide Classification: Long Life
 - Bellcore GR-63-CORE & GR-1089-CORE
 - UL94 V-0FR and Venting Operation
 - Non-Hazardous, not restricted for any transportation mode (air, water or land)



Typical Wireline Application



Typical Wireless Application

SPECIFICATIONS

Battery	Voltage Per Unit	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 v/c	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 v/c	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-115FN/FNG	12 V	108 Ah	102 Ah	800 Amperes	4000 Amperes	0.0030 Ohms	73 lbs/33 kg

SPECIFICATIONS

Ampere Hour Capacity to 1.75 Volts per Cell @77°F (25°C)
Discharge in Hours

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-115FN/FNG	71	82	89	95	100	103	105	108	110	113	120	122

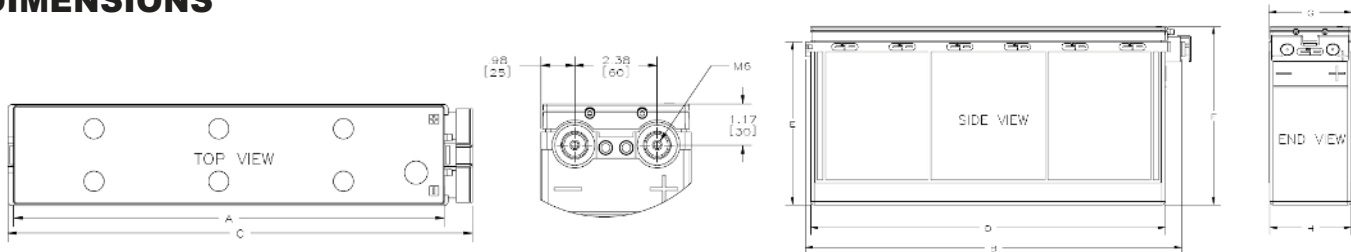
You may also access the product ratings by logging onto the C&D Battery Sizing program at www.cdstandbypower.net or www.cdbatterysizing.com

Ampere Hour Capacity to 1.80 Volts per Cell @68°F (20°C)
Discharge in Hours

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-115FN/FNG	66	76	83	88	92	95	97	99	102	105	112	114

You may also access the product ratings by logging onto the C&D Battery Sizing program at www.cdstandbypower.net or www.cdbatterysizing.com

DIMENSIONS



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-115FN	18.5	469	19.5	496	20.1	511	18.4	468	8.5	216	9.1	232	4.3	110	4.2	107
TEL12-115FNG	18.5	469	19.5	496	20.1	511	18.4	468	8.5	216	9.3	235	4.3	110	4.2	107

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensional information.

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to +160°F (71°C) Charge: -10°F (-23°C) to +140°F (60°C)						
Nominal Operating Temperature Range	+68°F (20°C) to +80°F (27°C)						
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (24.0 A)						
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit						
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max AC ripple voltage allowed = 1.4% RMS (4% P-P) Max AC ripple current allowed = (C ₂₀ /20)						
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.						
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C)						
Terminal: Inserted - Inter-unit connector and hardware provided	Threaded copper alloy insert terminal to accept M6 bolt						
Terminal Hardware Torque	110 in.-lbs. (12.4 N-m)						
Telcordia Part Numbers	<table border="0"> <tr> <td>Battery Part Number</td> <td>CLEI Code</td> <td>CPR</td> </tr> <tr> <td>TEL12-115FN/FNG</td> <td>PBMYAE8KRA</td> <td>215191</td> </tr> </table>	Battery Part Number	CLEI Code	CPR	TEL12-115FN/FNG	PBMYAE8KRA	215191
Battery Part Number	CLEI Code	CPR					
TEL12-115FN/FNG	PBMYAE8KRA	215191					

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C&D TRUE FRONT ACCESS®

TEL Series Float Service



TEL12-105FNS standard
TEL12-105FNSG with optional gas collection (shown)

BENEFITS:

- Long Life Float Service Design
 - Confirmed via 3rd party Certification
 - Premium alloy and material components
- True Front Access Design
 - Optional True Front Access gas collection system (models contain "G" suffix)
 - True direct connect terminal for reliability
 - C&D Ohmic Ring® for accurate testing
 - Connection versatility
- Maximum Performance
 - Superior output due to direct terminal connection
 - Low internal resistance
- Compliant to major global specifications
 - British Standard BS 6290: Part 4: 1997
 - IEC 60896-21/22
 - Telcordia SR-4228
 - Eurobat Guide Classification: Long Life
 - Bellcore GR-63-CORE & GR-1089-CORE
 - UL94 V-0FR and Venting Operation
 - Non-Hazardous, not restricted for any transportation mode (air, water or land)



Typical Wireline Application



Typical Wireless Application

SPECIFICATIONS

Battery	Voltage Per Unit	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 v/c	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 v/c	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-105FNS/FNSG	12 V	104 Ah	99 Ah	800 Amperes	4000 Amperes	0.0030 Ohms	71 lbs/32 kg

SPECIFICATIONS

Ampere Hour Capacity to 1.75 Volts per Cell @77°F (25°C)
Discharge in Hours

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-105FNS/FNSG	73	83	89	94	97	100	102	104	106	108	116	118

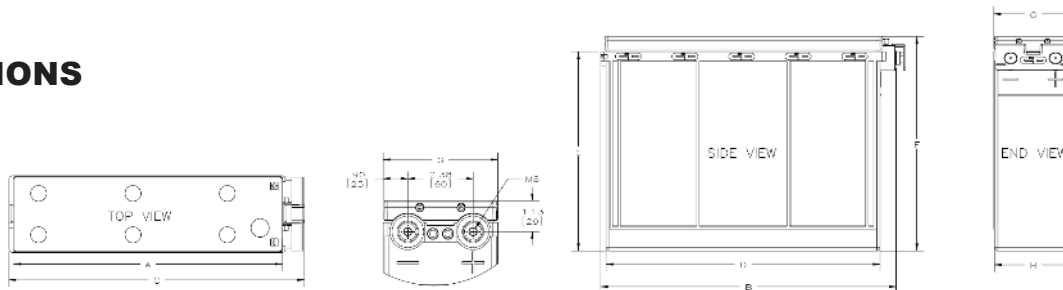
You may also access the product ratings by logging onto the C&D Battery Sizing program at www.cdstandbypower.net

Ampere Hour Capacity to 1.80 Volts per Cell @68°F (20°C)
Discharge in Hours

Model	1	2	3	4	5	6	7	8	10	12	20	24
TEL12-105FNS/FNSG	68	77	82	87	90	93	94	96	99	100	106	107

You may also access the product ratings by logging onto the C&D Battery Sizing program at www.cdstandbypower.net

DIMENSIONS



MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-105FNS	14.5	370	15.6	397	16.1	410	14.4	365	10.4	265	11.2	284	4.1	106	4.0	103
TEL12-105FNSG	14.5	370	15.6	397	16.1	410	14.4	365	10.4	265	11.3	287	4.1	106	4.0	103

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensions information.

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to +160°F (71°C) Charge: -10°F (-23°C) to +140°F (60°C)
Nominal Operating Temperature Range	+68°F (20°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (23A)
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results. Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C ₂₀ /20
Self Discharge	Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required. Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ 77°F (25°C)
Terminal: Inserted - Inter-unit connector provided	Threaded copper alloy insert terminal to accept M8 bolt
Terminal Hardware Torque	160 in.-lbs. (18 N-m)
Telcordia Part Numbers	Battery Part Number TEL12-105FNS/FNSG CLEI Code PBMAYE9KRA CPR 215192

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C&D TRUE FRONT ACCESS®

TEL12-160FW
TEL12-160F
TEL12-180F



THE MOMENT OF TRUTH HAS ARRIVED

- TRUE** Performance - 100% out of box capacity ratings at installation
- TRUE** Front Access Terminals - ensuring reliability & connection versatility
- TRUE** High Energy Density - highest true energy density solution in the market
- TRUE** Long life design - Telcordia SR-4228 industry leading 13 year service life
- TRUE** Seismic System - highest capacity energy storage system seismic NEBS tested
- TRUE** Flexibility - multiple models to fit each customers unique power system demands

PRODUCT LINE EXTENSION TO C&D TEL VALVE REGULATED LEAD ACID (VRLA) BATTERY SERIES

FEATURES & BENEFITS

APPLICATIONS

- Wireline
- Wireless
- Customer Premise / PBX
- Broadband
- Microwave Repeater
- Fiber Optic Regen Sites

INDOOR/OUTDOOR INSTALLATIONS

- Cabinet Systems
- Rack Systems

- Long-life alloy and design Telcordia certified exceeding 13 years service life.
- Tested and qualified by Telcordia to meet SR-4228 requirements.
- True Front Access threaded copper alloy inserts for reduced maintenance and increased safety.
- Terminal versatility - ease of diagnostic readings with C&D Ohmic Ring®
- Reduced headspace driving higher energy density, in cabinet or rack applications
- Removable handles for ease of installation
- Innovative front terminal design maximizing energy density with direct connect extrusion fusion weld technology.
- Thermally welded case-to-cover bond to ensure a leak-proof seal.
- Flame-retardant polypropylene case and cover compliant with UL94 V-0 with an Oxygen Limiting Index of greater than 28.
- Absorbent Glass Mat (AGM) technology for efficient gas recombination 99% plus.
- UL listed flame-arresting, one-way pressure-relief vent for safety and long life.
- Complies with UL1778, 924, 1989 and 94 V-0. BS6290PT4, IEC-896-2.
- UL-recognized component.
- Multicell design for ease of installation and maintenance.
- Not restricted for air transport - Complies with IATA/ICAO Special Provision A67.
- Not restricted for surface transport - classified as non-hazardous material as related to DOT-CFR Title 49 parts 17 1-189.
- Not restricted for water transport - classified as non-hazardous material per Amendment 27.

SPECIFICATIONS

Ampere Hour Capacity to 1.75 Volts per Cell @ 77°F (25°C)

Discharge in Hours																		
Model	1	2	3	4	5	6	7	8	9	10	12	16	20	24	36	48	72	100
TEL12-160FW	111.1	127.4	137.2	143.8	149.0	153.1	156.7	159.7	162.1	164.1	167.6	172.9	176.6	179.6	185.4	189.0	193.2	195.8
TEL12-160F	107.1	124.4	134.2	141.5	146.7	150.8	154.3	157.3	159.5	161.5	164.7	169.4	172.6	174.9	179.2	181.4	183.4	183.8
TEL12-180F	123.1	143.5	155.2	163.2	169.2	174.0	177.9	181.2	184.0	186.4	190.4	196.3	200.3	203.3	208.9	211.9	214.6	215.5

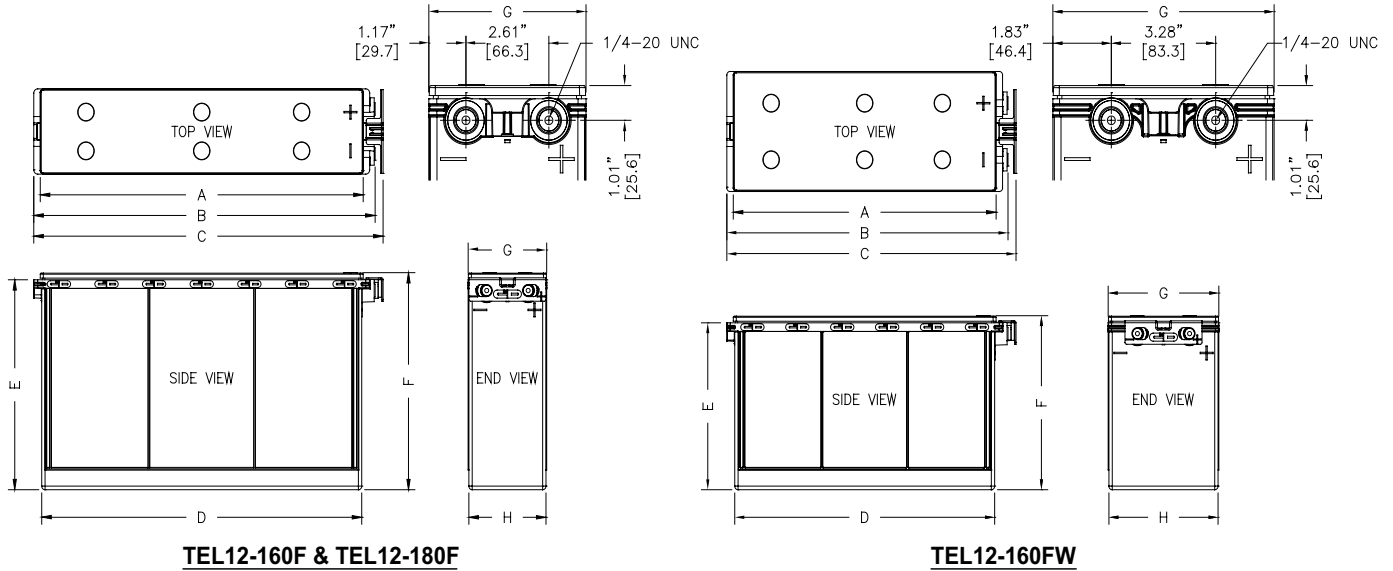
Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

Operating Temperature Range with temperature compensation	Discharge: -40°F (-40°C) to +160°F (+71°C) Charge: -10°F (-23°C) to + 140°F (+60°C)		
Nominal Operating Temperature Range	+68 (+20°C) to +80°F (+27°C)		
Recommended Maximum Charging Current Limit	C ₂₀ /5 Amperes (40.1A for TEL12-180F; 34.5A for TEL12-60F; 35.3A for TEL12-160FW)		
Float Charging Voltage	13.5 to 13.8 VDC average per 12V unit		
Maximum AC Ripple (Charger)	0.5% RMS to 1.5% P-P of float charge voltage recommended for best results		
Self Discharge	Battery can be stored up to 6 months at +77°F (+25°C) before a fresh-ending charge is required. Batteries stored at temperature greater than +77°F (+25°C) will require recharge sooner than batteries stored at lower temperatures. See C&D bulletin 41-7272, Self-Discharge and Inventory Control for details.		
Equalize charge and cycle service voltage	14.40 to 14.80 VDC average per 12V unit @ +77°F (+25°C)		
Terminal: Inserted - Inter-unit connector provided	Threaded copper alloy insert terminal to accept 1/4-20 UNC bolt		
Terminal Hardware Initial Torque	110 in-lbs (12.4N-m)		
Telcordia Part Numbers	Battery Part Number	CLEI Code	CPR
	TEL12-160FW TEL12-160F TEL12-180F	PBMBC10FRA PBMBB10FRA PBMBD10FRA	212312 212304 212314

Battery	Nominal Voltage	Ampere Hour Capacity 8 Hour Rate @ 77°F (25°C) to 1.75 Vpc	Ampere Hour Capacity 10 Hour Rate @ 68°F (20°C) to 1.80 Vpc	Maximum Discharge Current	Short Circuit Current	Ohms Impedance 60 Hz (Ω)	Battery Weight
TEL12-160FW	12 V	160 Ah	153 Ah	800 Amperes	5600 Amperes	0.0027 Ohms	121 lbs / 55 kg
TEL12-160F	12 V	157 Ah	151 Ah	800 Amperes	4700 Amperes	0.0031 Ohms	115 lbs / 53 kg
TEL12-180F	12 V	181 Ah	174 Ah	800 Amperes	4500 Amperes	0.0037 Ohms	131 lbs / 60 kg

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

DIMENSIONS



TEL12-160F & TEL12-180F

TEL12-160FW

MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
TEL12-160FW	16.56	420.6	17.72	450.0	18.22	462.8	16.4	415.9	9.69	246.1	10.10	256.5	6.94	176.33	6.88	174.7
TEL12-160F	20.35	516.9	21.51	546.2	22.01	559.1	20.2	512.2	10.73	272.5	11.14	283.0	4.95	125.73	4.86	123.4
TEL12-180F	20.35	516.9	21.51	546.2	22.01	559.1	20.2	512.2	12.19	309.5	12.60	320.0	4.95	125.73	4.86	123.4

*All dimensions in inches and [millimeters]. All dimensions are for reference only. Contact a C&D Representative for complete dimensions information.
 * Note: Batteries to be mounted with 0.5 IN (12.5mm) spacing minimum and free air ventilation.

CONSTANT CURRENT RATINGS - AMPERES @ 77°F (25°C)

TEL12-160FW End Point volts/cell	Operating Time (hr)																	
	1	2	3	4	5	6	7	8	9	10	12	16	20	24	36	48	72	100
1.75	111.1	63.7	45.7	36.0	29.8	25.5	22.4	20.0	18.0	16.4	14.0	10.8	8.8	7.5	5.2	3.9	2.7	2.0
1.80	107.1	62.0	44.7	35.3	29.3	25.1	22.0	19.7	17.7	16.2	13.8	10.6	8.7	7.4	5.1	3.9	2.6	1.9
1.85	99.2	58.6	42.6	33.7	28.1	24.1	21.2	18.9	17.1	15.6	13.3	10.3	8.4	7.1	4.8	3.7	2.5	1.8
1.90	87.0	52.7	38.8	30.9	25.8	22.2	19.6	17.5	15.8	14.4	12.3	9.5	7.7	6.5	4.4	3.3	2.2	1.6

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

TEL12-160F End Point volts/cell	Operating Time (hr)																	
	1	2	3	4	5	6	7	8	9	10	12	16	20	24	36	48	72	100
1.75	107.1	62.2	44.9	35.4	29.3	25.1	22.0	19.7	17.7	16.1	13.7	10.6	8.6	7.3	5.0	3.8	2.5	1.8
1.80	102.7	60.3	43.7	34.5	28.7	24.6	21.6	19.3	17.4	15.9	13.5	10.4	8.5	7.2	4.9	3.7	2.5	1.8
1.85	95.2	56.9	41.6	33.0	27.5	23.6	20.8	18.5	16.7	15.3	13.0	10.0	8.2	6.9	4.7	3.5	2.4	1.7
1.90	83.7	51.2	37.7	30.1	25.2	21.7	19.1	17.1	15.4	14.1	12.0	9.2	7.5	6.3	4.3	3.2	2.1	1.5

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

TEL12-180F End Point volts/cell	Operating Time (hr)																	
	1	2	3	4	5	6	7	8	9	10	12	16	20	24	36	48	72	100
1.75	123.1	71.7	51.7	40.8	33.8	29.0	25.4	22.6	20.4	18.6	15.9	12.3	10.0	8.5	5.8	4.4	3.0	2.2
1.80	117.3	69.6	50.6	40.0	33.3	28.6	25.0	22.3	20.2	18.4	15.6	12.1	9.8	8.3	5.6	4.3	2.9	2.1
1.85	107.3	65.5	48.0	38.3	31.9	27.4	24.1	21.5	19.4	17.7	15.1	11.6	9.5	8.0	5.4	4.1	2.7	2.0
1.90	107.9	59.1	43.8	35.1	29.4	25.3	22.3	19.9	18.0	16.4	14.0	10.8	8.8	7.4	5.1	3.7	2.5	1.8

Additional ratings and application information is available in the Battery Selection Program at www.cdstandbypower.net

FRONT ACCESS BATTERY RACK SYSTEMS

- TRUE high energy density with TEL12-180F
- Front Access for ease of installation and maintenance
- Pre-wired from the factory
- Integrated grounding hardware and multiple grounding points

- TRUE seismic systems shake table tested
- Tested to GR-63-CORE and GR-1089-CORE
- Cable management system
- Thermal management features ensuring long life

Five Tier Seismic



Five Tier Seismic



Six Tier Seismic



NEBS Level 3 Zone 2

Standard breaker panel
Optional bus panel
+24VDC 1800 Ah
-48VDC 900 Ah

Height = 82.13 inches [2086 mm]
Width = 23.5 inches [597 mm]
Depth = 22.52 inches [572 mm]
Weight = 300 lbs (136 kgs)
(without batteries)

NEBS Level 3 Zone 4

Standard breaker panel
Optional bus panel
+24VDC 1800 Ah
-48VDC 900 Ah

Height = 80.69 inches [2050 mm]
Width = 24.88 inches [632 mm]
Depth = 23.63 inches [600 mm]
Weight = 375 lbs (170 kgs)
(without batteries)

NEBS Level 3 Zone 4

Standard bus panel
Optional side breakers
+24VDC 2160 Ah
-48VDC 1080 Ah

Height = 84 inches [2134 mm]
Width = 24.88 inches [632 mm]
Depth = 25.25 inches [641 mm]
Weight = 410 lbs (186 kgs)
(without batteries)

Five Tier Racks NEBS Zone 2	
System Part Number	Description
110-7050-01	+ 24VDC top common bus
110-7050-02	+ 24VDC top 10x 100A circuit bkr
110-7050-05	- 48VDC top common bus
110-7050-06	- 48VDC 5x 100A circuit bkr

Five Tier Racks NEBS Zone 4	
System Part Number	Description
110-7051-01	+ 24VDC top common bus
110-7051-02	+ 24VDC top 10x 100A circuit bkr
110-7051-05	- 48VDC top common bus
110-7051-06	- 48VDC 5x 100A circuit bkr

Six Tier Racks NEBS Zone 4	
System Part Number	Description
110-7052-01	+ 24VDC top common bus
110-7052-02	+ 48VDC top common bus

Note: Please contact C&D for additional rack options.

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