**Product Features:**
- 8KW Power Shelf; 2RU Height
- Fits 19"; 21", 23" Racks; Front-to-Mid-Mounts
- 54VDC, 148A Output (4 x 37A Rectifier Modules)
- (3) 80A Load Breakers; (2) 100A Battery Breakers
- Battery Banks protected with (2) LVDs, (2) 100A Breakers
- Rear-Access Wiring for Dual AC Inputs, (4) DC Outputs, (2) Battery Banks, (4) Dry Relay Alarms
- Control Module for Full Alarms and Monitoring
- Battery Charging; Monitors: Battery Cell, Shelf Temp, Rack Temp
- Communication via Ethernet, SNMP, and RS232 Interfaces
- International Safety Approvals, EMI/EMC, GR

**Input Specifications:**
- VOLTAGE: 90VAC to 254VAC (Full Power above 180VAC; see Derating Curve for <176VAC)
- FREQUENCY: 47-63Hz
- INRUSH CURRENT: ≤ 30A @ 240VAC per AC feed (max, Cold Start)
- OPERATING CURRENT: ≤ 11.85A per module (max, continuous)
- LEAKAGE: < 3.5mA @ 254VAC, per module
- HOLD-UP: ≥ 16 ms (240VAC & Full Load)
- EFFICIENCY: >92% typical
- HARMONICS: EN61000-3-2 Class D Compliant (>0.97 PF)

**Output Specifications:**
- OUTPUT VOLTAGE: -54VDC (typical, software-adjustable)
- OUTPUT CURRENT: 148A, max-continuous; (0A min.)
- ADJUSTMENT RANGE: -46VDC to -58VDC
- BATTERY CURRENT: 200A Rated; Protected by (2) 100A Circuit Breakers
- LINE REGULATION: ±0.5% max, across full input range
- LOAD REGULATION: ±1% max, across full load range
- RIPPLE: ≤ 250mVp-p; 20mV rms (20MHz BW)
- EXCURSION: ±3% max, 10-100% Step Load
- RECOVERY: 100ms max
- OVER CURRENT: 105-120% (Auto-Recovery)
- OVER VOLTAGE PROTECTION: -59VDC (recycle input to reset)
- LOAD CAPACITANCE: 10,000uF (max) per Rectifier Module

**Safety Standards:**
- UL / CUL: 60950-1
- CB: EN60950-1 / IEC60950-1
- CE MARK: Low Voltage Directive
- NEQS: Telcordia GR-63-CORE; Seismic Zone 4
- C-TICK: Certification Mark [AUS & NZ]

**General Specifications:**
- OPERATING TEMP: -40°C to +70°C (+51°C, see Derating Curve)
- OPERATING HUMIDITY: 9% - 90% (non-condensing)
- STORAGE: -55°C to +85°C; 5% to 95% (non-condensing)
- COOLING: Intelligent Fans (each Rectifier)
- ALTITUDE: Up to 2000 meters
- VIBRATION: 10-55Hz, 2G, 3Min Period, / 60 min each (3 axes)
- SHOCK: 20G Peak Acceleration
- RELIABILITY: >100,000 Hours (Per Mil STD 217) 100% Load 25C
- SIZE(W × D × H): With Mounting Brackets for 19in Shelf:
  - 445mm x 461mm x 88.1mm (19.0in x 18.15in x 3.47in)
  - 17.97 kg (39.6 lbs), fully configured shelf

**Electromagnetic Compatibility:**
- EMISSIONS: FCC Part 15, Level A (Conducted)
- ELECTROSTATIC DISCHARGE: EN61000-4-2, 8kV Contact / 15kV Air
- RADIATED SUSCEPTIBILITY: EN61000-4-3, 26MHz-2000MHz, 10V/m, 80%AM
- EFT/BURSTS: EN61000-4-4, 2kV
- SURGE: EN61000-4-5, 2kV Earth, 2kV Line-Line
- CONDUCTED IMMUNITY: EN61000-4-6, 150kHz-80MHz, 10Vrms, 80%AM
- VOLTAGE DIPS: EN61000-4-10, 95% Dip & 10ms, 30% Dip & 500ms
- VOLTAGE INTERRUPTIONS: EN61000-4-11, 95% reduction, 5ms
- FLUCTUATIONS & FLICKER: EN61000-3-3

**Status & Control Specifications:**
- AC INPUT GOOD: Alarm via Communications Interface
- DC OUTPUT GOOD: Alarm via Communications Interface
- BATTERY CONDITIONS: Ethernet
- COMM: SNMP
- RS232
ITE / Embedded Power Supply

**CWRS-4150A**

 Outline Drawing: For Additional Information, refer to CWRS-4150A Operation Manual

Power Shelf
-54.0VDC / 148A Output
De-Rating Curves:

**CWRS-4150A Power Derating vs. Temperature (-54Vout)**

- 51°C: 8500 W
- 61°C: 4158 W
- 62°C: 35°C: 6804 W

**CWRS-4150A Output Current De-Rating vs. AC Input Voltage**

- 148Aout @ 176VACin
  (37A x 4 DRM-440 Modules)
- 77Aout @ 100VACin
  (37A x 4 DRM-440 Modules)