

Vertiv™ NetSure™ IPE Series

Outdoor DC Power System, R48-2000C2-2, R48-2000C2-4



Benefits

- Rapidly deploy your 5G network with outdoor rectifiers that easily mount directly to a pole or wall using quick connectors for battery, loads and alarms
- Power your critical infrastructure in hard to reach spaces with IP65-rated high-density modules that operate up to +75 °C
- Keep network operating costs to a minimum by using highly available DC power that operates at 96% efficiency and requires no energy for cooling
- Eliminate voltage drops and running massive cables to remote radio heads (RRHs) by placing these compact rectifiers directly on top of the tower
- Quietly support your network with silent, convection-cooled DC power

Lightweight and maintenance-free, Vertiv™ NetSure™ IPE outdoor power systems with lithium-ion batteries power your 5G network in the harshest environments.

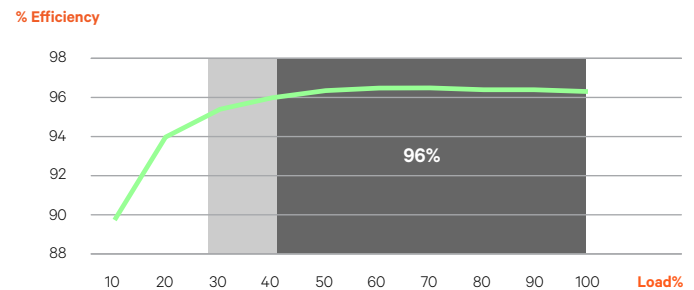
Description

The Vertiv™ NetSure™ IPE series high-efficiency R48-2000C2 rectifier is designed to support 5G radio applications with low power requirements, such as small cells and remote radio heads (RRHs). Fanless cooling eliminates maintenance and results in silent operation. Ideal for rapid deployment in urban, rural, or protected public areas.

The rectifier meets IP65 rating for use in harsh outdoor environments. Flexible installation options include pole or wall mounting in flag or flat position. Quick connectors ensure the time to install both rectifiers and batteries is kept to a minimum.

The 96% high-efficiency rectifier is available with a capable controller that offers Bluetooth communication for quick setup, or as a stand-alone power supply without a dedicated control unit. All rectifiers are equipped with relay alarm outputs and compatible with dedicated lithium-ion battery back-up banks.

The space-saving NetSure IPE Series is ideal for use in network edge applications including 5G small cells, RAN and Distributed Antenna Systems (DAS). Rapid deployment outdoors is easy since the unit is hardened and does not require a separate housing for protection against the elements.



R48-2000C2 Efficiency Curve at 230 VAC Nominal

NetSure™ IPE Outdoor Rectifier with 20 Ah Battery



Wall mount, flag position



Wall mount, flat position



Pole mount, flag position



Pole mount, flat position

Technical Specifications

System Features	R48-2000C2-2	R48-2000C2-4
Voltage	85 VAC to 300 VAC (see figure 1), 100-120 VAC and 200-240 VAC (nominal)	85 VAC to 300 VAC (see figure 1), 100-120 VAC and 200-240 VAC (nominal)
Frequency	45 to 65 Hz	45 to 65 Hz
Power Factor	>0.90 for 25% to 50% load, >0.98 for 50% to 100%	>0.90 for 25% to 50% load, >0.98 for 50% to 100%
Output		
Voltage	42 to 58 VDC	55.2V (default setting)
Maximum Power	2000 W (see figure 1)	2000 W (see figure 1)
Maximum Current	41.6 A @ -48 VDC (see figure 2)	41.6 A @ -48 VDC (see figure 2)
Peak Efficiency	>93% at ≥ 100 VAC input, >96.3% at ≥ 230 VAC input	>93% at ≥ 100 VAC input, >96.3% at ≥ 230 VAC input
Load outputs	1x2kW and 2x1kW fuse protected outputs	1x2kW and 2x1kW fuse protected outputs
Environmental		
Operating Temperature	-40 to 75°C / -40 to +167°F (see figure 3)	-40 to 75°C / -40 to +167°F (see figure 3)
Storage Temperature	-40 to +70°C / -40 to +158°F	-40 to +70°C / -40 to +158°F
Relative Humidity	5 to 100%	5 to 100%
Altitude	-61 to 3048 (m): up to 3000 m at full power / -200 to 10000 (feet): up to 9842 feet at full power	-61 to 3048 (m): up to 3000 m at full power / -200 to 10000 (feet): up to 9842 feet at full power
Control and Monitoring		
User Interface	Bluetooth communication and App for setting. Bluetooth can be disabled by hardware switch after installation and setup	-
Battery Monitoring	Via RS485 for NetSure™ IPE dedicated batteries	-
Alarms	Distribution fuse failure / SPD failure / mains failure / rectifier failure	Distribution fuse failure / SPD failure / mains failure / rectifier failure
Status Indicators	3 LEDs	3 LEDs
Standards Compliance		
Safety	62368-1, 60950-22 (EN, IEC)	62368-1, 60950-22 (EN, IEC)
EMC	EN55022, ETSI EN300 386, FCC CFR 47 Part 15 (Class B)	EN55022, ETSI EN300 386, FCC CFR 47 Part 15 (Class B)
Environment	60529 (IEC), REACH, RoHS, WEEE, EQ Zone 4	60529 (IEC), REACH, RoHS, WEEE, EQ Zone 4
Mechanics		
Ingress Protection Rating	IP65	IP65
Service Panel for Fuse Access	Yes	Yes
Cable Connections	Quick connectors	Quick connectors
Mounting Options	Pole or wall, flag or flat position	Pole or wall, flag or flat position
Dimensions (H x W x D)	400x 300 x 62 mm / 15.7 x 11.8 x 2.4 inches	400x 300 x 62 mm / 15.7 x 11.8 x 2.4 inches
Weight	9 kg / 19.8 lbs	9 kg / 19.8 lbs
Ordering Information		
Part Number	Description	
1R482000C2-2	NetSure™ IPE, -48 VDC, 2000 W, with controller, quick connections. Standard mounting kit included.	
1R482000C2-4	NetSure IPE, -48 VDC, 2000 W, quick connections. Standard mounting kit included.	
Lithium Batteries	See separate data sheets.	

Figures

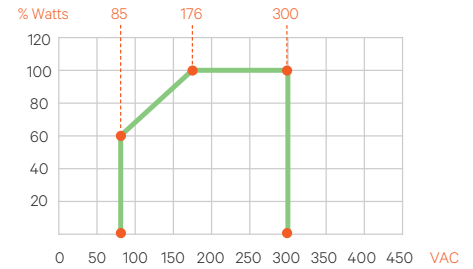


Figure 1: Output Power vs. Input Voltage and $V_o > 48$ VDC at $T_{amb} < 55^\circ\text{C}$

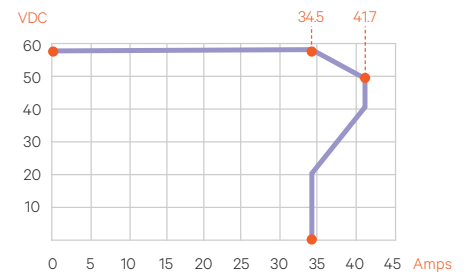


Figure 2: Output Voltage vs. Output Current at Maximum Output Power 2000 W

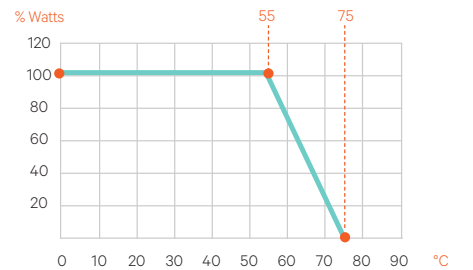


Figure 3: Output Power vs. Temperature at 290 VAC $\geq V_{in} \geq 200$ VAC