

Vertiv™ eSure™ Rectifier

R48-12000E, R48-12000LE



Key Features

Rectifier, -48 VDC, 12000 W

- High-efficiency rectifier designed for -48V DC power applications
- Optimized depth – small footprint allows installation in short-depth racks and cabinets
- DSP (Digital Signal Processor) – means fewer components, optimized operation and active load sharing for increased reliability
- Compliant with global standards – delivers quality, performance and reliability no matter what the application or location demands
- High efficiency, reduces power consumption for lower operating costs, see diagram
- Hot pluggable – facilitates future expansions
- Wide input voltage range to operate in the most demanding environments where input voltage changes
- Wide temperature operating range to meet the harshest climatic environment requirements
- Backward compatible with the following Vertiv rectifiers, spec. numbers: 486534000, 486534001, 486532600, 485632601 and 486532602

In addition to reducing power consumption and lowering operating cost, eSure™ high-efficiency rectifiers offer superior performance and uncompromised reliability.

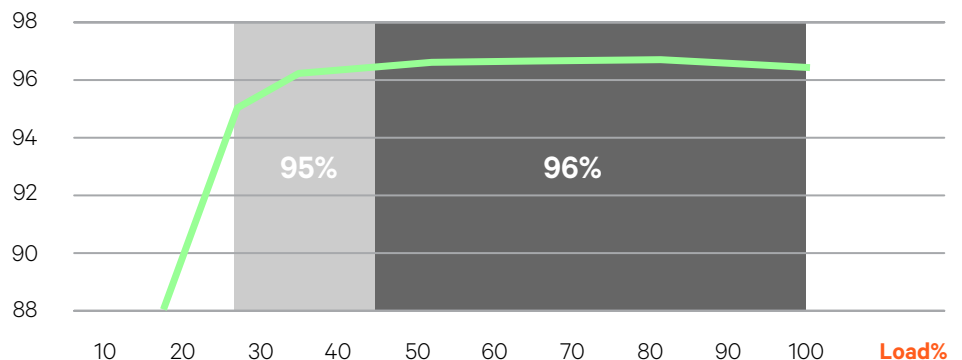
Description

High-efficiency eSure rectifiers R48-12000E and R48-12000LE are designed to convert standard AC supply voltages into stable nominal -48V DC voltage that is adjustable to application needs. These rectifiers are constant power rectifiers designed with the latest patented switchmode technology, using DSP (Digital Signal Processor) functionality for efficient operation.

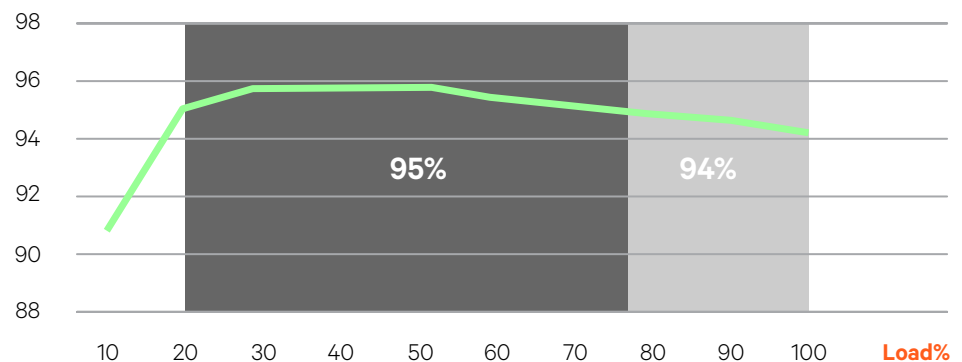
For a higher load capacity, rectifiers can be connected in parallel, and intelligent control can be added with the help of a separate controller.



% Efficiency



R48-12000e Efficiency Curve at 480 VAC Nominal



R48-12000Le Efficiency Curve at 208 VAC Nominal

Technical Specifications

AC Input	R48-12000E	R48-12000LE
Voltage	340 VAC to 528 VAC (see figure 1) 480 VAC (nominal)	176 VAC to 264 VAC (see figure 1) 208 VAC (nominal)
Frequency	45 Hz to 65 Hz	47 Hz to 63 Hz
Maximum Current	17.8 A	34.2 A
Power Factor	0.99	

DC Output	R48-12000E	R48-12000LE
Voltage	48 VDC to 58 VDC	
Maximum Power	11600 W @ Vout >48 VDC	
Maximum Current	220 A @ -48 VDC, limit set point 0 to 220 A (see figure 2)	
Peak Efficiency	96 %	95.7%
Psophometric Noise (system)	≤2 mV typical; ≤38 dBrc typical	

Control and Monitoring

Alarms and Signaling		Alarm and status reported via CAN bus to system controller	
Visual Indications	AC / Identification	Green	Green
	Rectifier Fail / Minor	-	Red / Yellow
	Protection Alarm	Yellow	-
	Fail Alarm	Red	-
	10-segment LED Bar	Green, each segment is 20A (blinks on overload)	

Environmental

Operating Temperature	0°C to +65°C / 32°F to +149°F (see figure 3)
Storage Temperature	40°C to +65°C / 40°F to +149°F
Relative Humidity	0 to 95%
Altitude	2000 m / 6560 ft at full power

Standards Compliance

Safety	UL 60950
EMC	FCC CFR 47 Part 15 class A, Telcordia GR-1089-CORE class A
Environment	REACH, RoHS, WEEE

Mechanics

Dimensions (H x W x D)	607 x 87.3 x 622.6 mm / 23.9 x 3.4 x 24.5 inches
Weight	18.14 kg / 40 lbs

Ordering Information

Part Number	Description
486534003	eSure™ rectifier R48-12000Le, -48VDC, 12,000 W
486532603	eSure™ rectifier R48-12000E, -48VDC, 12,000 W

Figures

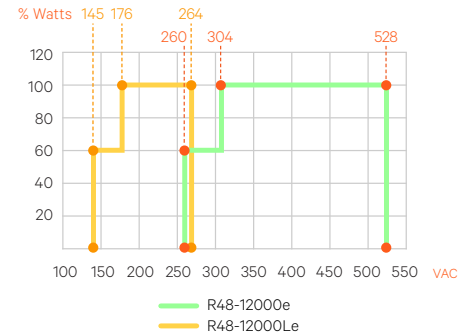


Figure 1: Output Power vs. Input Voltage and $V_o > 48V$ at Temperature $< 40^\circ C$

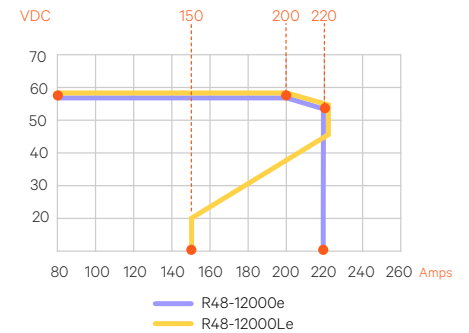


Figure 2: Output Voltage vs. Output Current at Maximum Output Power 12000 W

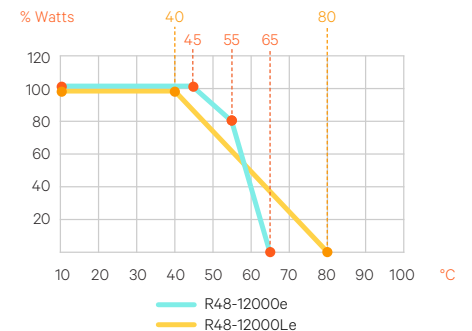


Figure 3: Output Power vs. Temperature at $V_{in} \geq 340 VAC$