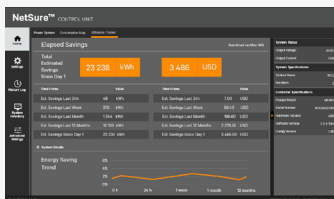


## Key Benefits

### Rectifier -48 VDC, 3500 W

- Save space with highest density (50.2 W/inch<sup>3</sup>) in DC power industry
- Lower operating cost in all load conditions with ultra-high 98% efficient rectifiers
- Benefit from instant energy savings on installed base with backward compatible rectifiers; easily replace R48-3500E3 rectifiers with 98% efficient R48-3500E4
- Minimize investment and optimize power efficiency at any load condition with ECO mode
- Monitor savings on your investment with the Efficiency Tracker tool built into the NCU controller



*Leverage 98% efficient rectifiers in your network to reduce energy loss up to 75% and minimize CO<sub>2</sub> emissions.*

## Description

The 3500W ultra high-efficiency eSure™ rectifier (model R48-3500E4) is designed with next-generation gallium nitride (GaN) technology to optimize energy efficiency and lower operating cost, while delivering the proven reliability you've come to expect from the eSure portfolio. GaN technology enables a combination of superior efficiency and world class density. This eSure rectifier offers a flat efficiency curve to optimize energy savings at any load condition.

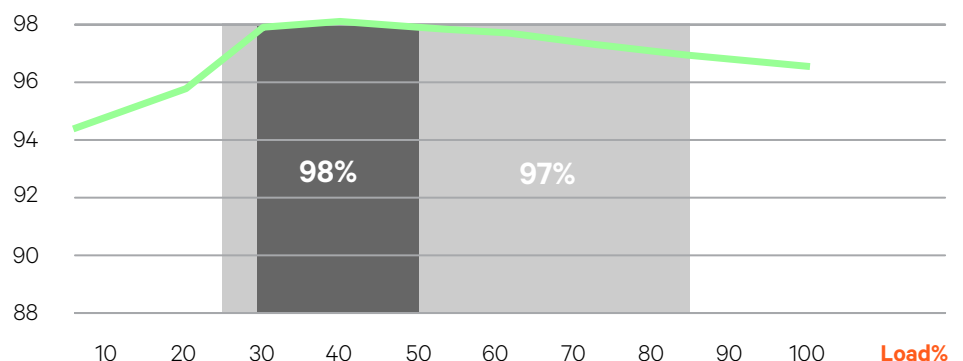
When upgrading your network to 98% efficiency, one important factor to consider is the shape of the efficiency curve. The R48-3500E4 delivers superb efficiency from 20 to 100% load. In order to maximize efficiency and energy savings, the system should operate at a load point that coincides with peak efficiency.

To lower investment and optimize energy savings even further, Vertiv™ offers ECO mode functionality in the NetSure™ control unit. ECO mode enables you to put lower efficiency rectifiers in stand-by mode when load conditions are normal. When more power is needed during peak load, battery recharge or some other reason, the controller activates as many rectifiers as necessary. Mixing standard and high efficiency rectifiers helps balance the cost of upgrade.

Whether you're upgrading a core site with large power needs or multiple access sites that require less power, upgrading your infrastructure to 98% efficiency can make a big impact on the environment and your bottom line.



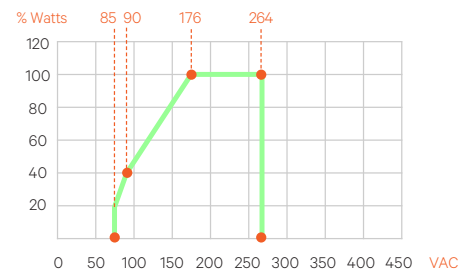
## Efficiency



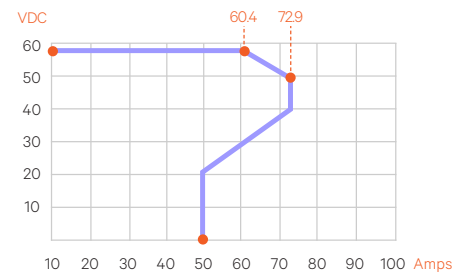
## Technical Specifications

<b>AC Input</b>	
<b>R48-3500E4</b>	
Voltage	85 to 264 VAC (see figure 1) 200 to 250 VAC (nominal)
Frequency	45 Hz to 65 Hz
Maximum Current	21 A
Power Factor	0.99 @ loads over 50%
Total Harmonic Distortion	< 5% @ loads over 50%
<b>DC Output</b>	
Voltage	-42 VDC to -57.6 VDC
Maximum Power	3500 W
Maximum Current	73 A @ -48 VDC; limit set point 0 to 73 A (see figure 2)
Peak Efficiency	98%
Temperature Derating	Full output power up to +45°C at input voltage range of 176-264 VAC when $V_{out} \geq 48$ VDC
<b>Control and Monitoring</b>	
Alarms and Signaling	Alarm and status reported via CAN bus to system controller
Visual Indications	Green LED: Normal Operation Yellow LED: Alarm Red LED: Failure
<b>Environmental</b>	
Operating Temperature	-40 to 75°C, -40 to +167°F (see figure 3)
Storage Temperature	-40 to +75°C, -40 to +167°F
Relative Humidity	0 to 95%
Altitude	2000 m, 6560 ft at full power
<b>Standards Compliance</b>	
Safety	EN 60950-1, IEC 60950, UL 60950, BSMI, CE
EMC	ETSI EN300 386: 2005, Class B. EN55022, Class B
<b>Mechanics</b>	
Dimensions (H x W x D)	41 x 84.5 x 330 mm / 1.6 x 3.3 x 13.0 inches
Weight	1.9 kg / 4.2 lbs

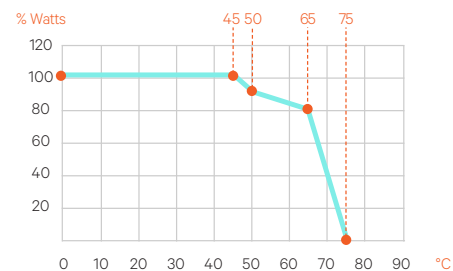
## Figures



**Figure 1:** Output Power vs. Input Voltage and  $V_o > 48$  VDC at Temperature  $< 45^\circ\text{C}$



**Figure 2:** Output Voltage vs. Output Current at Maximum Output Power 3500 W



**Figure 3:** Output Power vs. Temperature at  $176 \leq V_{in} \leq 264$  VAC

## Ordering Information

Part Number	Description
1R483500E4	Ultra high-efficiency eSure™ rectifier, -48 VDC, 3500 W