

NPR48-ES Rectifier Module



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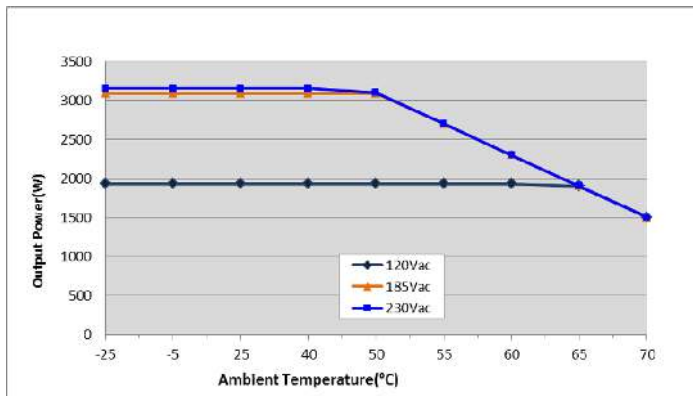
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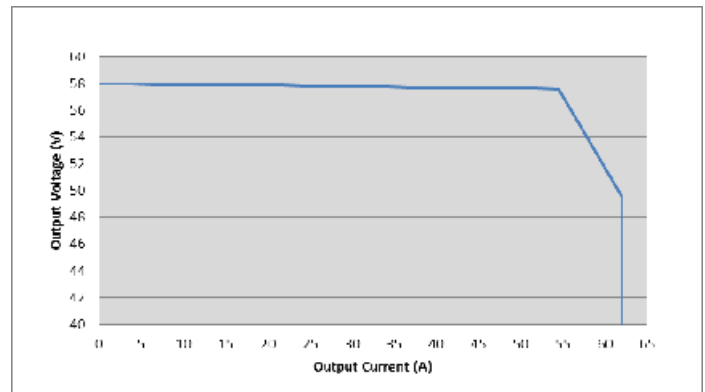
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AC Input

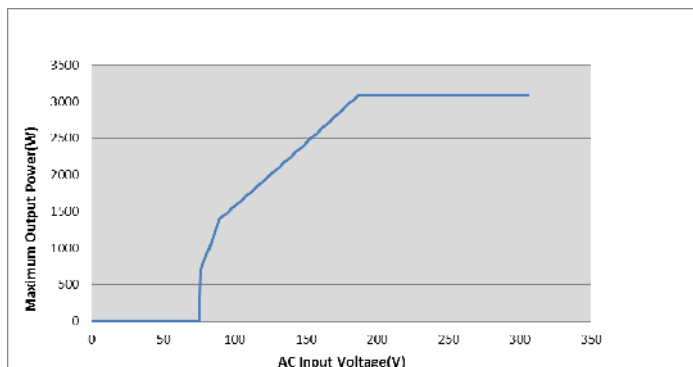
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|----------------------------------|---|
| Nominal AC Input: | 100V, 120V, 208 - 240V |
| Rated Operating Range: | 100 to 275V rms (see product performance curves). |
| Extended Operating Range: | 90 to 300V rms |
| Frequency Range: | 45 to 66Hz |
| Maximum Input Current: | 18A rms |
| Efficiency: | 96.2% peak >95% (17 to 100% load, Vin=230Vac, Vout=54.5Vdc) |
| Power Factor: | >0.99 (50 to 100% load) |
| Total Harmonic Distortion (THD): | <5% (50 to 100% load, rated 230V ac voltage) |
| Swell Tolerance: | Rectifier shuts down above 305V <i>Returns to normal operation when input is within operating range.</i> |
| Input Over-current Protection: | Fuses (phase and neutral) HRC |
| AC Fuse Ratings: | 25A / 250V |



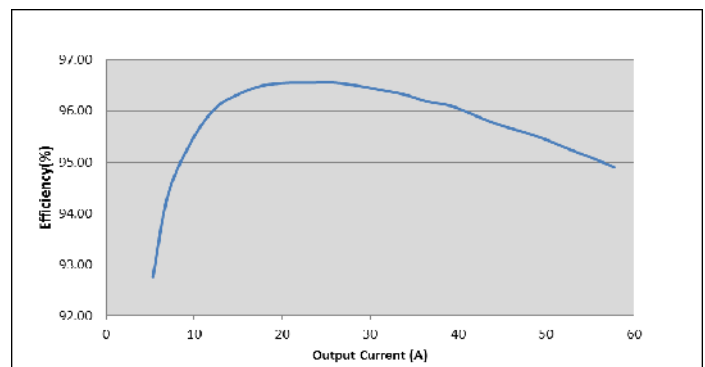
Output Power derating with Temperature and AC Input Voltage (Vout = 54.5V)



Output Voltage with Output Current (AC Input >185V, Vout = 50.0V)



Maximum Output Power with AC Input Voltage (Ambient Temperature ≤ 50°C)



Rectifier Efficiency with Output Current (Ambient Temperature 25°C, Vin = 230V, Vout = 54.5V)

DC Output

| | |
|---|---|
| Nominal Voltage: | 48V |
| Adjustable Voltage Range: | 43.2 to 57.5V <i>Constant power output characteristic 50 – 57.5V. Load required below 45V</i> |
| Rated Output Power: | 3000W @ 185 – 275V ac (230V nominal) 1725W @ 110 – 120V ac (120V nominal) |
| Preset Accuracy | ±0.1V |
| Regulation: | ±0.1V <i>Constant voltage mode, AVC enabled from system controller.</i> |
| Default (Fail-safe) voltages Loss of System Communication: Preset voltage: | Output voltage resets to system preset voltage 54.5 ±0.1V (manufacturer preset) |
| Hold-up Time: | 10ms <i>At 80% output power and 230V ac the DC output voltage change is 54.5V to 43.2V.</i> |
| Start-up (soft start) Start up delay: Output ramp slope: (rectifier rated output, % Amps per second) | Adjustable 0 to 600 seconds (factory preset: 2 seconds) Adjustable 1 to 100% per second (factory present 20% per second) |
| Protection Current Limit: Over Temperature Turndown: Over Voltage Shutdown: Short-circuit: | 61.8A Automatic power turndown. See temperature derating graphs. <10ms delay Full short-circuit protection. Output current limited to less than 130% of rated output current. <i>Rectifier will continue normal operation after short-circuit is removed. Non-urgent (Current Limit) alarm generated.</i> |
| Noise Ripple (<100Hz) Audio Frequency (300 Hz – 3.4 kHz): Wide band (5Hz – 1MHz): Peak to peak (0 – 20 MHz): Discrete frequency (3.4kHz – 150kHz): | <20mV rms (unweighted) <2mV (psophometric) <20mV rms (unweighted) <200mV p-p (unweighted) <5mV rms (1kHz wide selective frequency) <i>Conditions: 25°C, 54.5V output</i> |

Environmental Requirements

| | |
|--|--|
| Ambient Temperature Rated Operating Range: Extended Operating Range: | -10°C to +50°C [14°F to 122°F] -40°C to +70°C [-40°F to 158°F] <i>Output characteristics derate above 50°C and below -10°C [14°F]. Refer to derating graphs.</i> |
| Humidity Nominal: Range: | 50% RH < 95% RH (non condensing) |
| Altitude: | < 3000m [9800'] |

Mechanical

| | |
|---------------------|---|
| Dimensions H, W, D: | 3U (130mm, 5.1"), 63mm (2.5"), 266mm (10.5") overall |
| Weight: | 2.3kg [5.1 lb] |
| Connector: | PCB Edge |
| Cooling: | Temperature controlled, variable speed high reliability fan |
| Front panel LEDs: | |
| Power on: | Green |
| Minor alarm: | Amber |
| Major alarm: | Red |

Compliances

| | |
|-----------------------------------|------------------------|
| Safety: | EN60950-1, IEC 60950-1 |
| EMC – immunity | |
| Electrostatic discharge: | EN 61000-4-2 |
| Radiated radio frequency: | EN 61000-4-3 |
| Electrical fast transients: | EN 61000-4-4 |
| Surge: | EN 61000-4-5 |
| Conducted radio frequency: | EN 61000-4-6 |
| Dips, interruptions & variations: | EN 61000-4-11 |
| EMC – emissions | |
| Conducted emissions (AC): | EN 55022 (Class B) |
| Conducted emissions (DC): | EN 55022 (Class A) |
| Radiated emissions: | EN 55022 (Class B) |
| Harmonics: | EN 61000-3-2 |
| Fluctuations and flicker: | EN 61000-3-3 |

Certifications

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|--------|---------|
| Europe | CE-mark |
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