

NPR48-ES Rectifier Module



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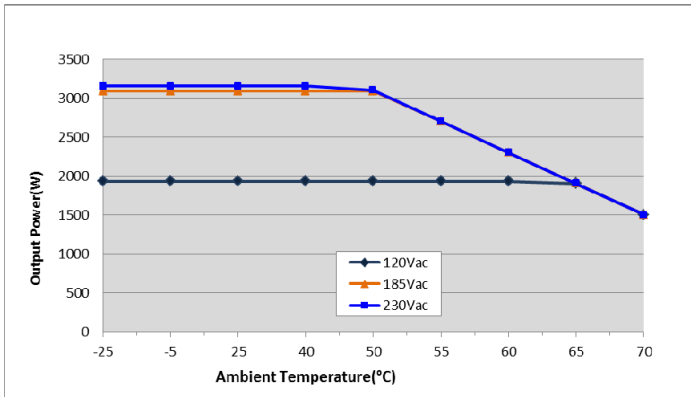
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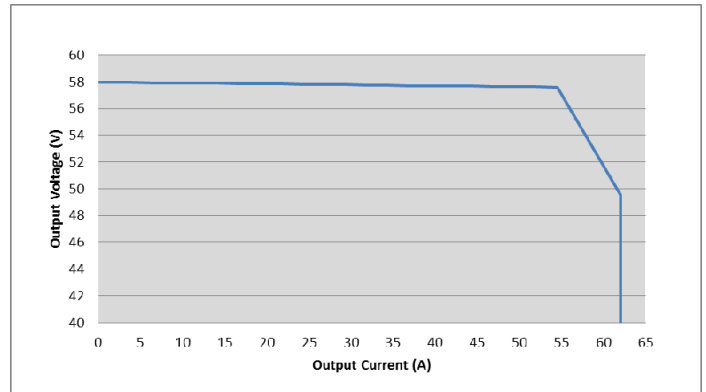
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AC Input

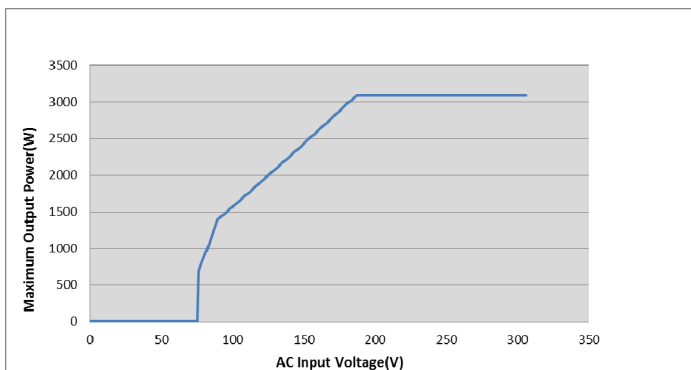
Nominal AC Input:	100V, 120V, 208 - 240V
Rated Operating Range:	100 to 275V rms (see product performance curves).
Extended Operating Range:	90 to 300V rms
Frequency Range:	45 to 66Hz
Maximum Input Current:	18A rms
Efficiency:	96.2% peak >95% (17 to 100% load, Vin=230Vac, Vout=54.5Vdc)
Power Factor:	>0.99 (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



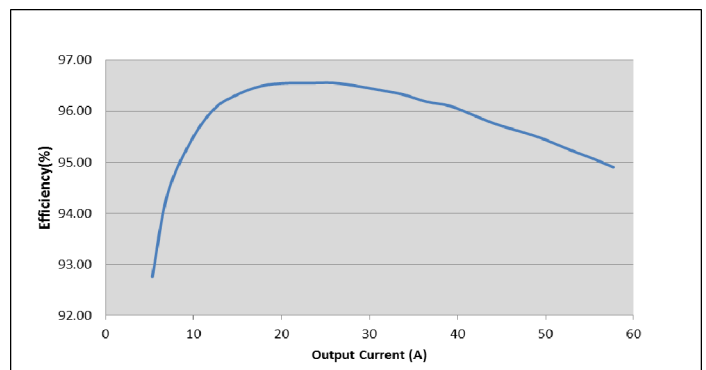
Output Power derating with Temperature and AC Input Voltage (Vout = 54.5V)



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: Minor alarm: Major alarm:	Green Amber Red

Compliances

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

Certifications

Europe	CE-mark
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