

NPR48-ES Rectifier Module



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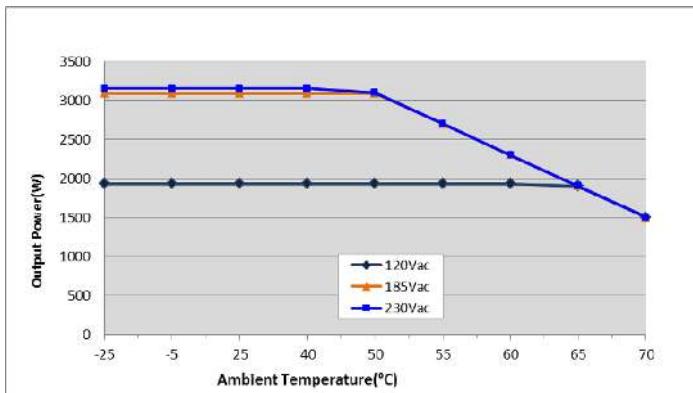
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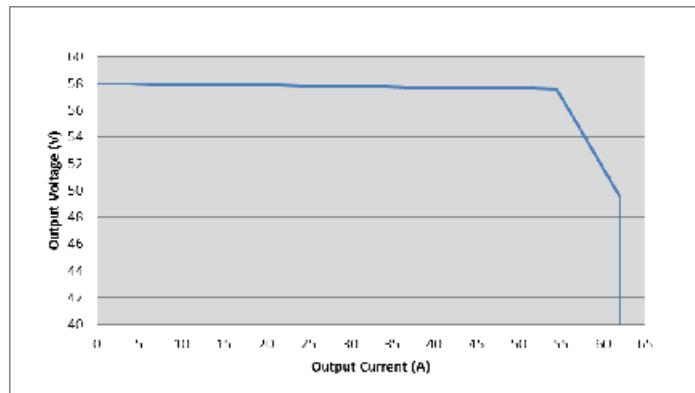
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AC Input

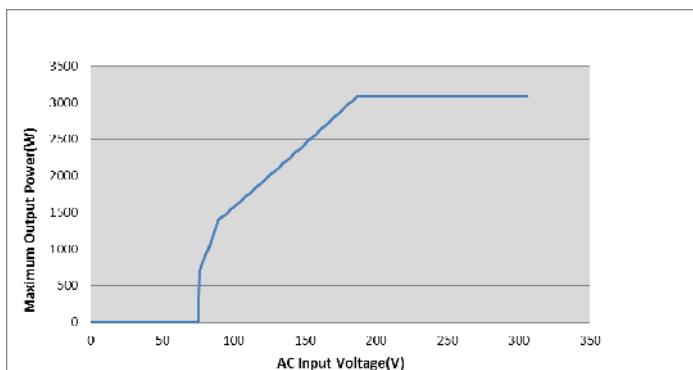
Nominal AC Input:	100V, 120V, 208 - 240V
Rated Operating Range:	100 to 275V rms (see product performance curves).
Extended Operating Range:	90 to 300V rms
Frequency Range:	45 to 66Hz
Maximum Input Current:	18A rms
Efficiency:	96.2% peak >95% (17 to 100% load, Vin=230Vac, Vout=54.5Vdc)
Power Factor:	>0.99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



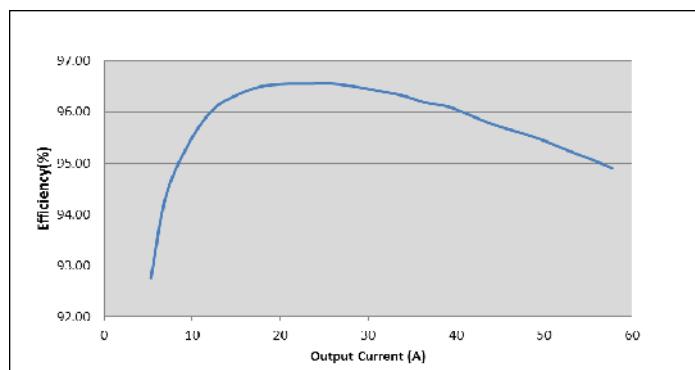
Output Power derating with Temperature and AC Input Voltage (Vout = 54.5V)



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:	Output voltage resets to system preset voltage
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:	Adjustable 0 to 600 seconds (factory preset: 2 seconds)
Output ramp slope:	Adjustable 1 to 100% per second (factory preset 20% per second)
Protection	
Current Limit:	61.8A
Over Temperature Turndown:	Automatic power turndown. See temperature derating graphs.
Over Voltage Shutdown:	
Short-circuit:	<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)	<20mV rms (unweighted)
Audio Frequency (300 Hz – 3.4 kHz):	<2mV (psophometric)
Wide band (5Hz – 1MHz):	<20mV rms (unweighted)
Peak to peak (0 – 20 MHz):	<200mV p-p (unweighted)
Discrete frequency (3.4kHz – 150kHz):	<5mV rms (1kHz wide selective frequency) <i>Conditions: 25°C, 54.5V output</i>

Environmental Requirements

Ambient Temperature	
Rated Operating Range:	-10°C to +50°C [14°F to 122°F]
Extended Operating Range:	-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:	50% RH
Range:	< 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	
Europe	CE-mark

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