

# 80 PLUS Verification and Testing Report

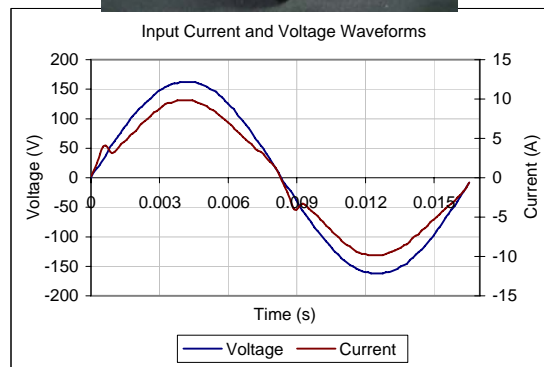
**TYPICAL EFFICIENCY (50% Load):** 86.91%  
**AVERAGE EFFICIENCY :** 85.16%  
**80 PLUS COMPLIANT:** YES



Ecos ID #	946
Manufacturer	ZALMAN
Model Number	ZM660-XT
Serial Number	NA
Year	2008
Type	ATX12V
Test Date	9/26/2008

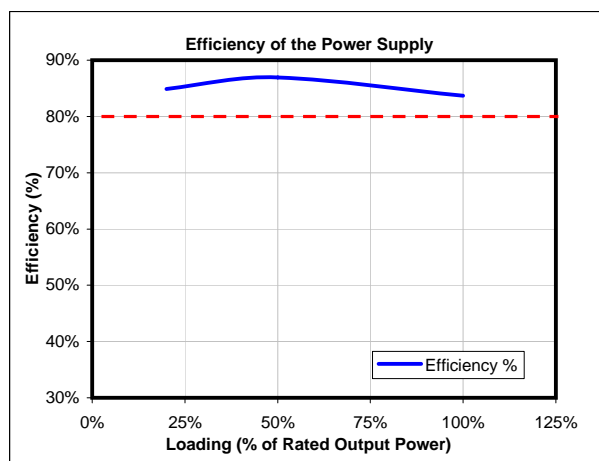
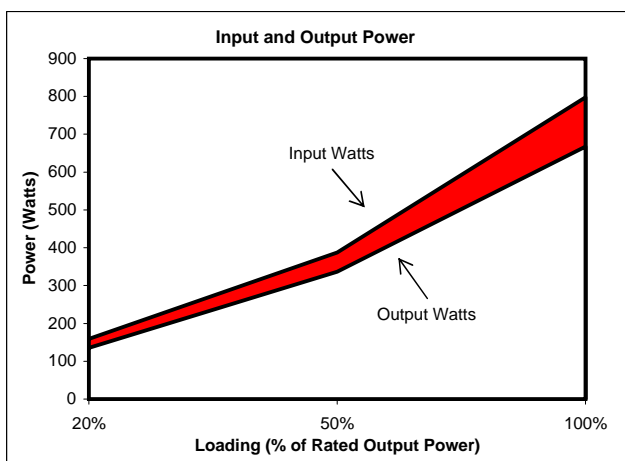
Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	9.5-4	Amps
Input Frequency	50-60	Hz
Rated Output Power	660	Watts

Note: All measurements were taken with input voltage at 115 V nominal and 60 Hz.



Input AC Current Waveform (ITHD = 6.06%, 50% Load)

I <sub>RMS</sub> A	PF	I <sub>THD</sub> (%)	Load (%)	Fraction of Load	Input Watts	DC Terminal Voltage (V)/ DC Load Current (A)					Output Watts	Efficiency %
						12V (cumulative of 12V1, 12V2, etc.)	-12V	3.3V	5V*	5VSB		
1.47	0.94	12.3%	20%	Light	159	12.3/8.6	12/0.1	3.4/3	5.1/3	5.1/0.4	135	84.86%
3.39	0.99	6.1%	50%	Typical	387	12.3/21.6	12/0.3	3.3/7.6	5/7.6	5/1	337	86.91%
6.95	1.00	5.4%	100%	Full	798	12.2/43.1	12.1/0.6	3.3/15.1	5/15.1	5/2	668	83.70%



These tests were conducted as a part of the 80 PLUS program. 80 PLUS is a computer buy-down program to promote high-efficiency power supplies (greater than 80% efficiency in the active mode) in desktop computers and desktop-derived servers.

Tested by Electric Power Research Institute, Knoxville, TN.

