

80 PLUS Verification and Testing Report

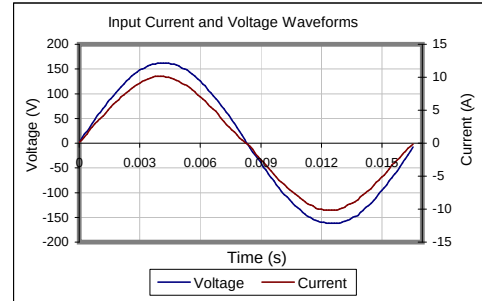
TYPICAL EFFICIENCY (50% Load):	85.28%
AVERAGE EFFICIENCY :	83.38%
80 PLUS COMPLIANT:	YES



Ecos ID #	1860.1
Manufacturer	TSUNAMI(THAILAND) CO., LTD
Model Number	BLACK STORM 650W
Serial Number	N/A
Year	2010
Type	EPS12V
Test Date	1/20/2010

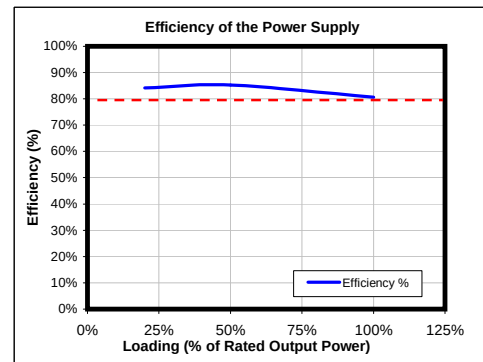
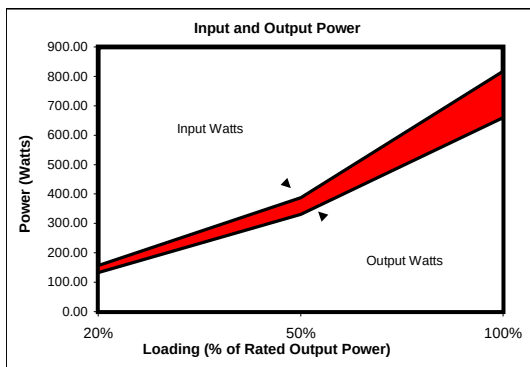
Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	N/A	Amps
Input Frequency	50-60	Hz
Rated Output Power	650	Watts

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



Input AC Current Waveform (ITHD = 4.63%, 50% Load)

I _{RMS} A	PF	I _{THD} (%)	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
1.38	0.99	6.66%	20%	Light	157.20	12.2/7.4		12.2/0.1	3.3/4.6	5/4.3	5.2/0.6	132.34	84.18%
3.38	1.00	4.63%	50%	Typical	387.50	12.2/18.5		12.3/0.4	3.3/11.5	5/10.8	5.2/1.4	330.47	85.28%
7.11	1.00	4.17%	100%	Full	816.80	12.3/36.9		12.4/0.7	3.3/22.9	4.9/21.5	5.1/2.8	658.98	80.68%



These tests were conducted by a third party independent testing firm on behalf of the 80 PLUS[®] Program. 80 PLUS is a certification program to promote highly-efficient power supplies (greater than 80% efficiency in the active mode) in technology applications. <http://www.80plus.org/>

