

80 PLUS Verification and Testing Report

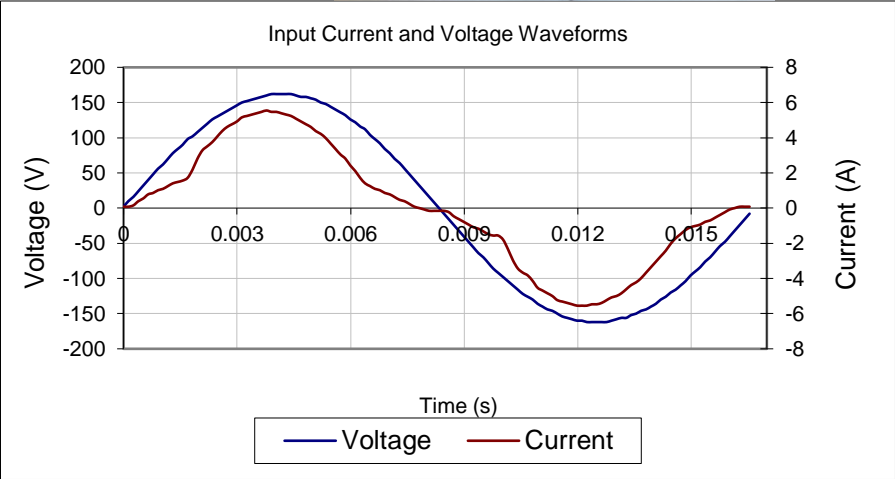
TYPICAL EFFICIENCY (50% Load):	87.75%
AVERAGE EFFICIENCY :	86.22%
80 PLUS COMPLIANT:	YES



ID Number	4834
Manufacturer	FSP Technology Inc.
Model Number	HA650
Serial Number	S6360030022
Year	2017
Type	ATX12V
Test Date	1/18/17

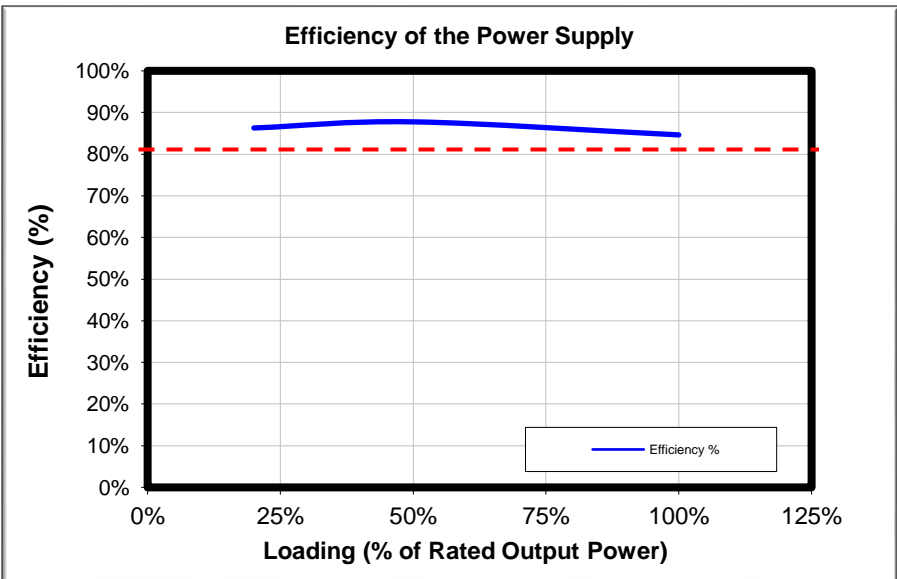
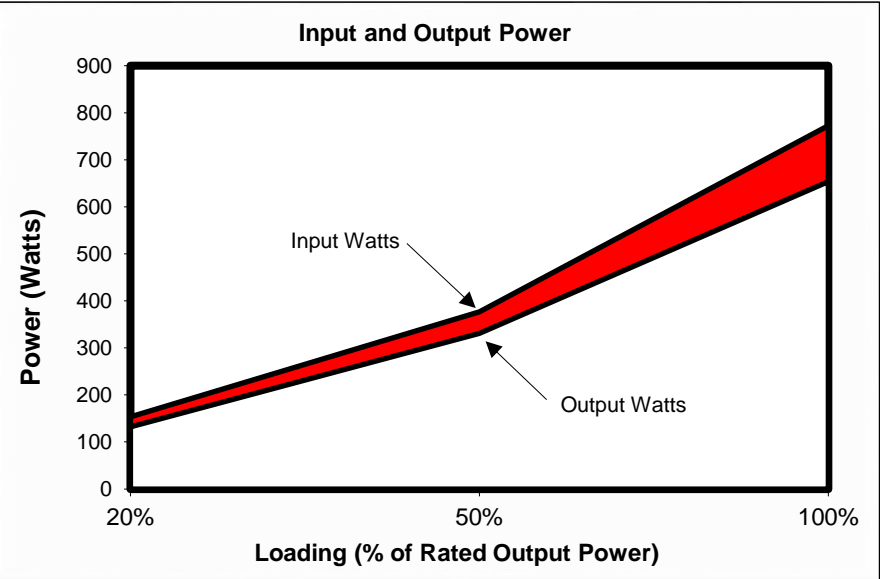
Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	10-5	Amps
Input Frequency	50-60	Hz
Rated Output Power	650	Watts

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



Input AC Current Waveform (ITHD = 23.79%, 50% Load)

I _{RMS} A	PF	I _{THD} (%)	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		
0.74	0.96	13.15%	10%	84.76	12.22/4.6	12.12/0.03	3.36/1.02	5.18/1.02	5.09/0.21	66.30	78.22%
1.36	0.98	15.03%	20%	153.38	12.2/9.2	12.12/0.05	3.35/2.04	5.16/2.03	5.08/0.42	132.34	86.28%
3.39	0.97	23.79%	50%	376.70	12.15/23.1	12.12/0.13	3.33/5.12	5.13/5.07	5.03/1.06	330.57	87.75%
6.91	0.97	21.47%	100%	772.50	12.07/46	12.18/0.25	3.29/10.23	5.07/10.12	4.94/2.12	653.64	84.61%



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/>

