

80 PLUS Verification and Testing Report

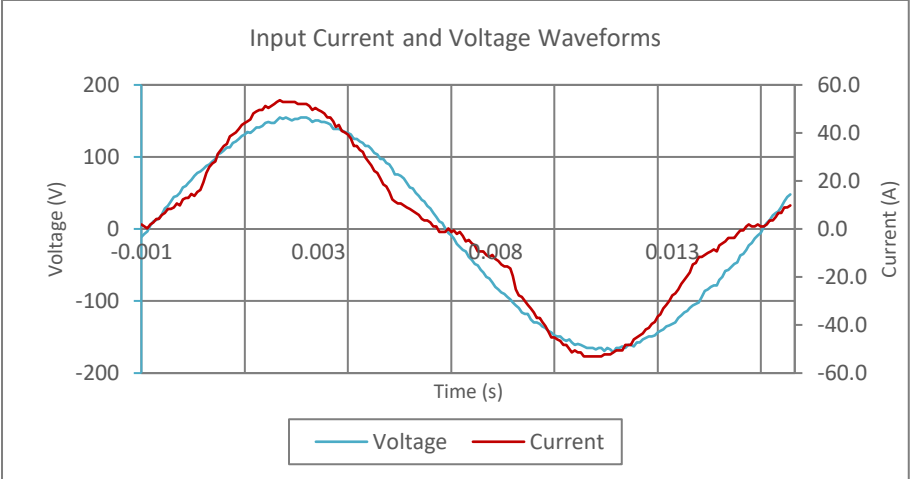
TYPICAL EFFICIENCY (50% Load):	88.16%
AVERAGE EFFICIENCY :	86.38%
80 PLUS COMPLIANT:	YES



ID Number	5495
Manufacturer	FSP Technology Inc.
Model Number	HA2-650
Serial Number	N/A
Year	2019
Type	ATX12V
Test Date	2/13/19

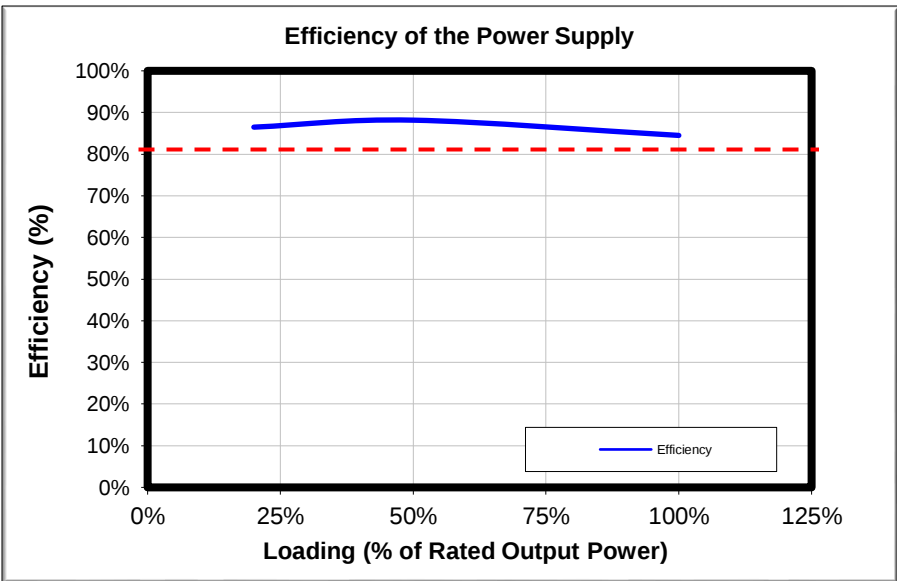
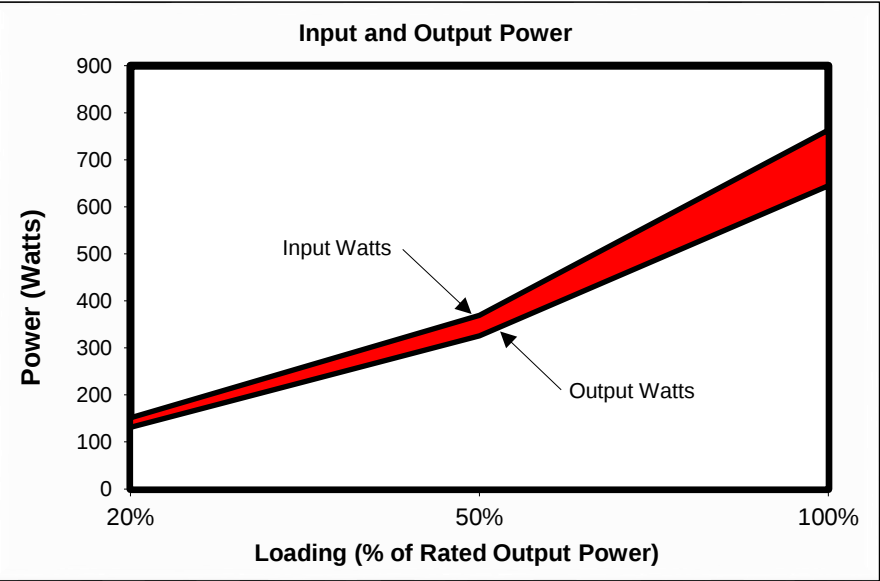
Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	9-4	Amps
Input Frequency	50-60	Hz
Rated Output Power	650	Watts

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



Input AC Current Waveform (ITHD = 19.09%, 50% Load)

I _{RMS}	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		
0.72	0.98	12.88%	10%	80.97	12.08/4.62	11.93/0.03	3.33/1.02	5.01/1.02	5.14/0.21	65.68	81.11%
1.33	0.99	10.30%	20%	151.71	12.06/9.24	11.94/0.05	3.32/2.04	5.01/2.03	5.12/0.42	131.20	86.48%
3.28	0.98	19.09%	50%	369.60	11.99/23.07	11.92/0.13	3.3/5.12	4.98/5.07	5.07/1.06	325.84	88.16%
6.75	0.98	17.43%	100%	763.10	11.91/45.99	11.98/0.25	3.26/10.23	4.94/10.12	4.99/2.12	644.78	84.50%



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/>

