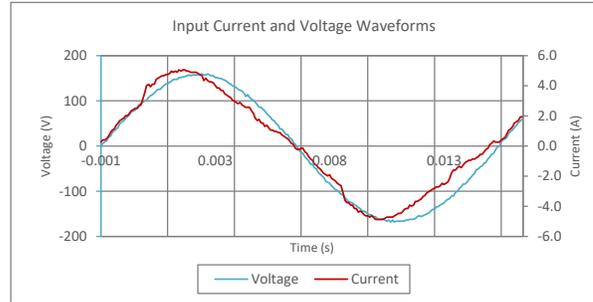


80 PLUS Verification and Testing Report

TYPICAL EFFICIENCY (50% Load):	91.48%
AVERAGE EFFICIENCY :	90.26%
80 PLUS COMPLIANT:	YES



ID Number	5435
Manufacturer	Thermaltake Technology Co., Ltd.
Model Number	TTP-650AH3FCG Toughpower GF1 650W
Serial Number	PSTPD0650FNFAGU1LF000026
Year	2018
Type	ATX12V,EPS12V,PS2
Test Date	11/29/18

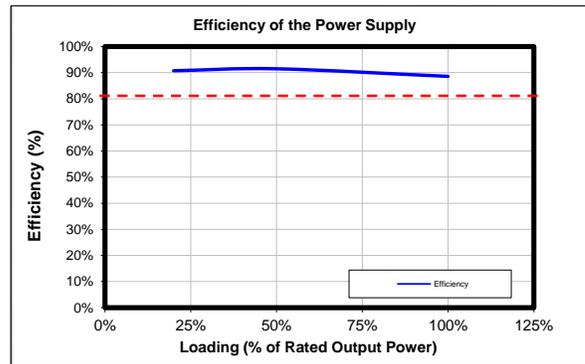
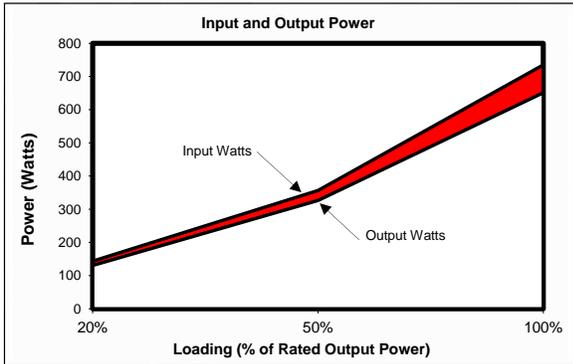


Input AC Current Waveform (ITHD = 12.83%, 50% Load)

Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	10	Amps
Input Frequency	47-63	Hz
Rated Output Power	650	Watts

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

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.)						
0.69	0.95	11.36%	10%	74.69	12.01/4.47	11.93/0.02	3.3/1.19	5.03/1.19	5.06/0.25	65.12	87.19%
1.28	0.98	11.14%	20%	143.76	12.01/8.96	11.93/0.05	3.3/2.38	5.03/2.37	5.05/0.49	130.43	90.73%
3.15	0.98	12.83%	50%	356.70	12/22.43	11.94/0.12	3.3/5.98	5.03/5.91	5.03/1.24	326.32	91.48%
6.49	0.99	11.39%	100%	735.10	11.98/44.82	11.96/0.25	3.3/11.92	5.03/11.79	5/2.47	651.13	88.58%



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/>

