

# 80 PLUS Verification and Testing Report

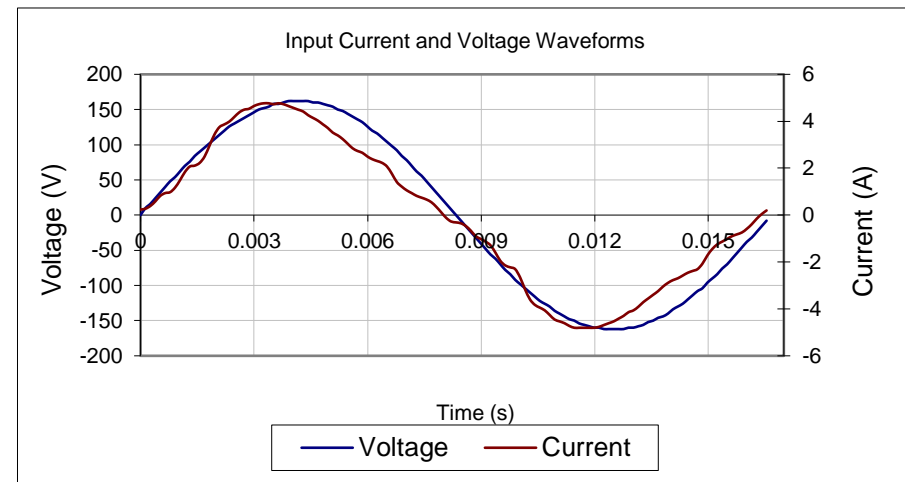
<b>TYPICAL EFFICIENCY (50% Load):</b>	<b>91.40%</b>
<b>AVERAGE EFFICIENCY :</b>	<b>90.09%</b>
<b>80 PLUS COMPLIANT:</b>	<b>YES</b>



<b>ID Number</b>	4764.4
<b>Manufacturer</b>	Micro-Star International Co., Ltd.
<b>Model Number</b>	MPG A650GF
<b>Serial Number</b>	NA
<b>Year</b>	2016
<b>Type</b>	ATX12V
<b>Test Date</b>	11/10/16

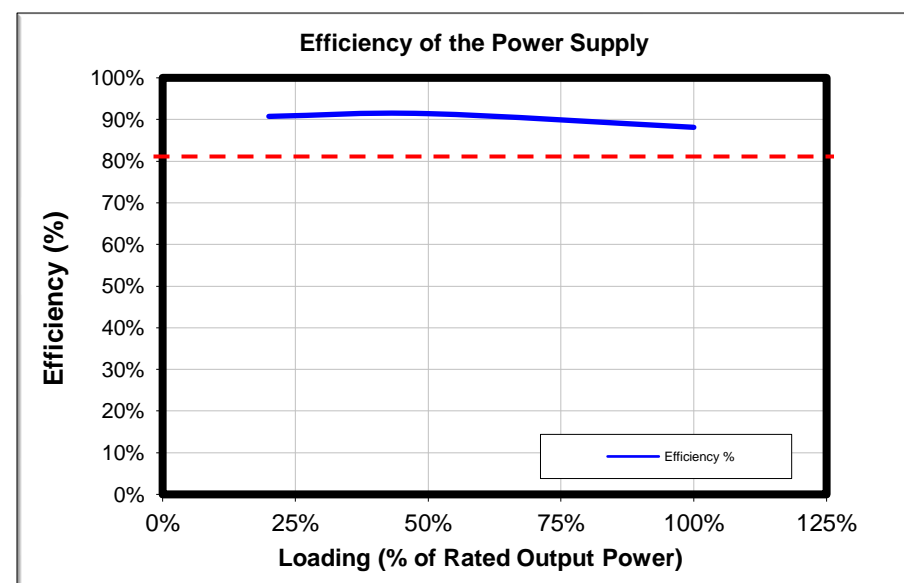
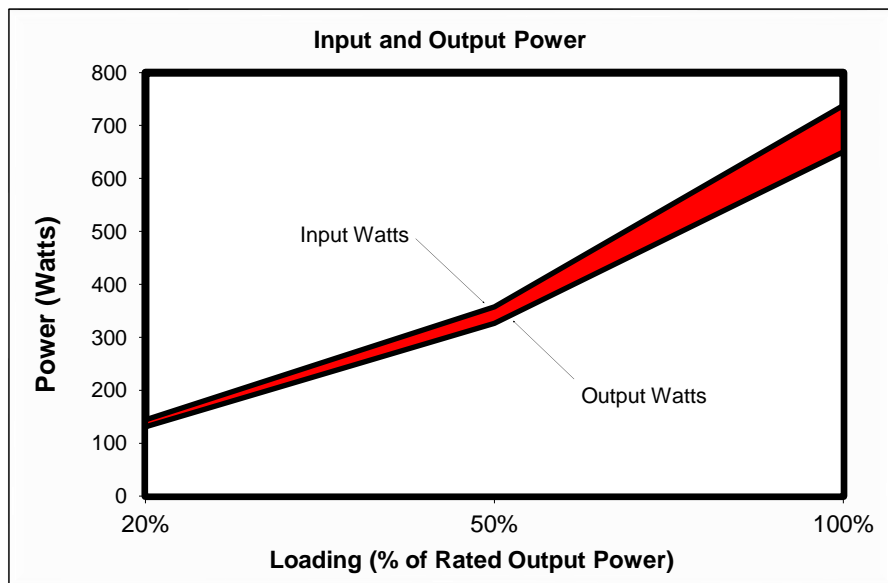
Rated Specifications	Value	Units
Input Voltage	100-240	Volts
Input Current	10.0	Amps
Input Frequency	47-63	Hz
<b>Rated Output Power</b>	<b>650</b>	<b>Watts</b>

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



Input AC Current Waveform (ITHD = 13.42%, 50% Load)

I <sub>RMS</sub> A	PF	I <sub>THD</sub> (%)	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	0.90	14.88%	10%	74.65	12.04/4.59	11.64/0.03	3.35/1.02	5.04/1.02	5.1/0.21	65.22	87.36%
1.30	0.96	14.41%	20%	143.96	12.04/9.2	11.73/0.05	3.35/2.04	5.04/2.03	5.09/0.42	130.63	90.74%
3.16	0.98	13.42%	50%	357.30	12.02/23.04	11.92/0.13	3.35/5.11	5.04/5.07	5.07/1.06	326.59	91.40%
6.51	0.99	11.49%	100%	738.00	11.99/45.98	12.57/0.25	3.34/10.21	5.03/10.14	5.04/2.12	650.32	88.12%



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/>