Thermaltake Toughpower SFX 750W (ATX v3.1)

Serial Number PSSTP0750FNFAPE10DCH00316

Lab ID TT75002583

Certification ID 252583

Test Result Report ID: 24PS2583A

Certificate Issue Date: Sep 27, 2024

Scheme: ETA-EMI PSU



Scheme: LAMBDA PSU







Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information
(Non-accredited measurements)

Product Identification Details	
Brand	Thermaltake
Model	Toughpower SFX 750W (ATX v3.1)
OEM/ODM	CE-Link
Serial Number	PSSTP0750FNFAPE10DCH00316
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-8

Rated Frequency (Hz)	50-60
Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	92mm Fluid Dynamic Bearing Fan (EFS-09C12H)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	TT75002583
Date of receipt	Sep 10, 2024
Testing Date	Sep 27, 2024
Report Issued Date	Sep 27, 2024
DUT Notes	The 5V and 3.3V rails experienced voltage drops during OCP testing under normal and hot conditions, but they shut down.
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors
(Non-accredited measurements)

Modular Cables				
Description	**Cable Count**	**Connector Count (Total)**	**Gauge**	In Cable Capacitors
ATX connector 24 pin (300mm)	1	1	16-22AWG	No
4+4 pin EPS12V (400mm)	2	2	16AWG	No
6+2 pin PCIe (400mm+150mm)	1	2	16-18AWG	No
12+4 pin PCIe (450mm) (300W)	1	1	18-26AWG	No
SATA (290mm+150mm+150mm+150mm)	2	8	18AWG	No

4-pin Molex (300mm+150mm+150mm+150mm) / FDD (+150mm)	1	4 / 1	18AWG	No
AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

Protection Features

Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✓
Short Circuit Protection	✓
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	18	18	62.5	2.5	0.3
	Watts	120		750	12.5	3.6
Total Max. Power (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	CE-Link
PCB Type	Single-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF72-5D15 (5 ohm @ 25°C) & Relay
Bridge Rectifier(s)	2x HS GBU15V08 (800V, 15A @ 40°C)
APFC MOSFETs	2x Lonten LSD55R140GT (550V, 15A @ 100°C, Rds(on): 0.14Ohm)
APFC Boost Diode	1x Infineon IDH10G65C6 (650V, 10A @ 140°C)

Bulk Cap(s)	1x Rubycon (400V, 390uF, 2,000h @ 105°C, MXE) 1x Rubycon (400V, 330uF, 2,000h @ 105°C, MXE)
Main Switchers	2x Lonten LSD55R140GT (550V, 15A @ 100°C, Rds(on): 0.14Ohm)& 1x Champion CM03X (For no load consumption)
Resonant Controller	Champion CM6901T6X
APFC Controller	ATK AT6103ZSPC & Champion CM03AX
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	6x Lonten LSGN04R013WE (40V, 101A @ 100°C, Rds(on): 1.35mOhm)
5V & 3.3V	DC-DC Converters: 2x Xintan NDP23B0QB (30V, 20A @ 25°C, Rds(on): 3mOhm) PWM Controller(s): No Info
Filtering Capacitors	Electrolytic: 3x Rubycon (5-6,000h @105°C, ZLH) 2x Rubycon (4-10,000h @105°C, YXF) Polymer: 55x ChengX (PC)
Supervisor IC	IN1S3151-SAG
Fan Model	EFS-09C12H (92mm, 12V, 0.40A, Fluid Dynamic Bearing Fan)
5VSB	
Rectifier	1x UTC MGBR10L45 (45V, 10A)
Standby PWM Controller	Esthome EST.2915HP

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.679%
Average Noise Output (>1450 Load Combinations)	21.93dBA
Average PF (>1450 Load Combinations)	0.981
Efficiency With 10W (≤500W) or 2% (>500W) Load	68.923%
Standby Power Consumption	0.0683W
Non-Accredited	
12V Ripple (Full Load)	26.02mV
5V Ripple (Full Load)	13.97mV
3.3V Ripple (Full Load)	11.06mV
5VSB Ripple (Full Load)	12.70mV
12V Load Regulation	0.15%
5V Load Regulation	1.59%
3.3V Load Regulation	2.40%
5VSB Load Regulation	2.15%
Inrush Current	31.300A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.586%
Average Noise Output (>1450 Load Combinations)	19.46dBA
Average PF (>1450 Load Combinations)	0.922
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.1598W
Non-Accredited	
12V Ripple (Full Load)	26.92mV
5V Ripple (Full Load)	13.73mV
3.3V Ripple (Full Load)	10.11mV

5VSB Ripple (Full Load)		12.54mV
12V Load Regulation		0.14%
5V Load Regulation		1.61%
3.3V Load Regulation		2.43%
5VSB Load Regulation		2.13%
Inrush Current		62.640A
12V Transient Response (200%)		11.54V
5V Transient Response (200%)		4.941V
3.3V Transient Response (200%)		3.214V
5VSB Transient Response (200%)		4.928V
Hold-Up Time & PWR_OK Signal		18.40ms
AC Loss to PWR_OK Hold Up Time		15.50ms
PWR_OK Inactive to DC Loss Delay		2.90ms
PSU Timings: T1 (20% / 100%)	121.0ms	121.0ms
PSU Timings: T3 (20% / 100%)	125.0ms	126.0ms
12V OCP (28.8°C / 43.2°C)	93.20A (149.12%), 12.119V	69.80A (111.68%), 12.123V
5V OCP (28.8°C / 43.2°C)	21.9A (121.67%), 4.819V*	21.5A (119.44%), 4.87V*
3.3V OCP (28.8°C / 43.2°C)		
5VSB OCP (28.8°C / 43.2°C)	21.9A (121.67%), 3.184V*	22.1A (122.78%), 3.176V*
OPP (29.53°C / 42.37°C)	145.07%	124.12%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	18.4
AC Loss to PWR_OK Hold Up Time (ms)	15.5
PWR_OK Inactive to DC Loss Delay (ms)	2.9

Stromverbrauch im Ruhezustand

Tables

115V

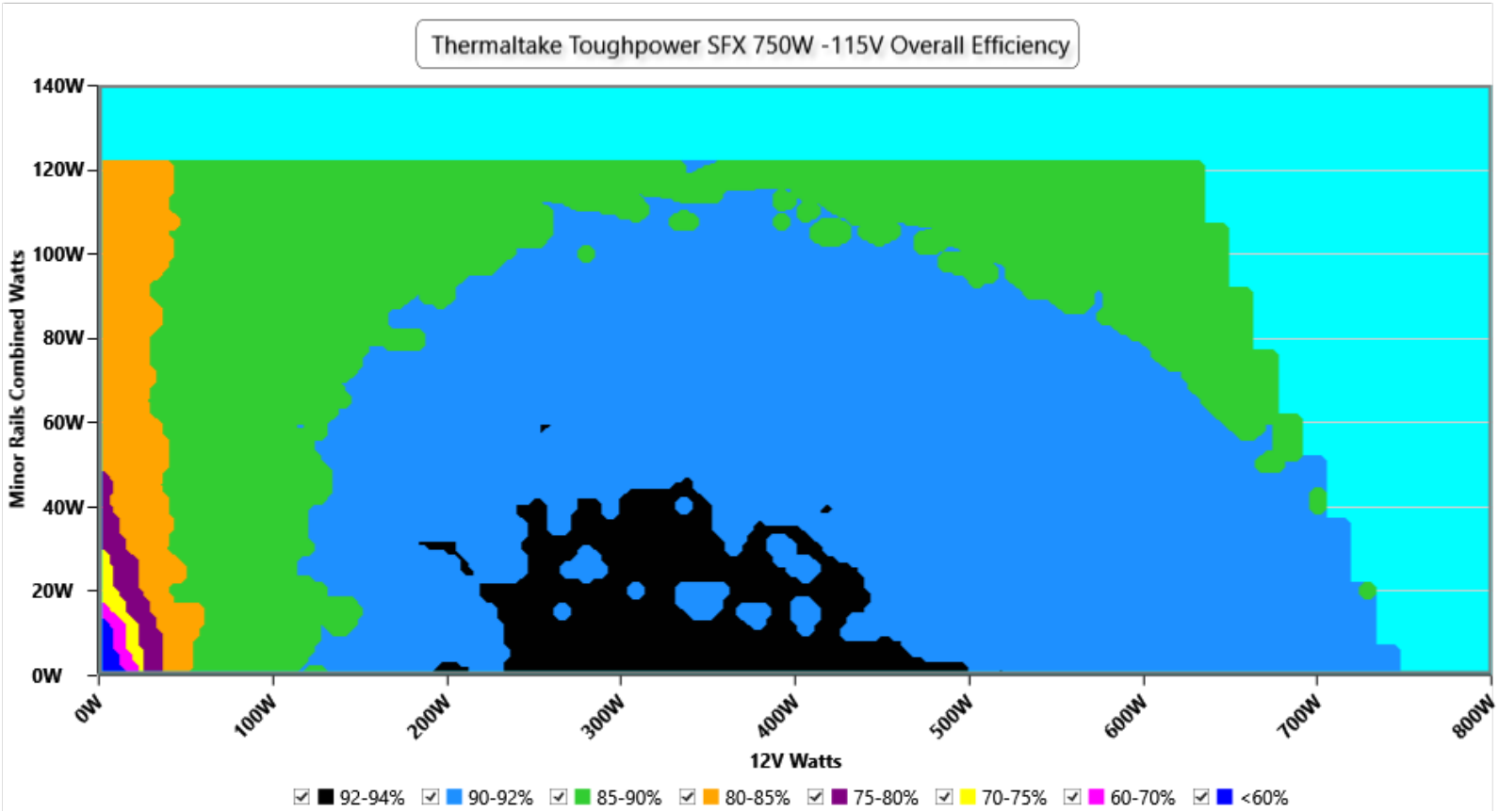
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.08 V	115.04 V	113.85 V	115.12 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.14 %	0.08 %	N/A	0.21 %	2.00 %	PASS
Real Power:	0.068 W	0.009 W	N/A	0.110 W	N/A	N/A
Apparent Power:	14.086 W	13.237 W	N/A	14.990 W	N/A	N/A
Power Factor:	0.006	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.01 V	230.90 V	227.70 V	231.07 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.17 %	0.14 %	N/A	0.26 %	2.00 %	PASS
Real Power:	0.160 W	0.119 W	N/A	0.211 W	N/A	N/A
Apparent Power:	43.407 W	42.518 W	N/A	44.344 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

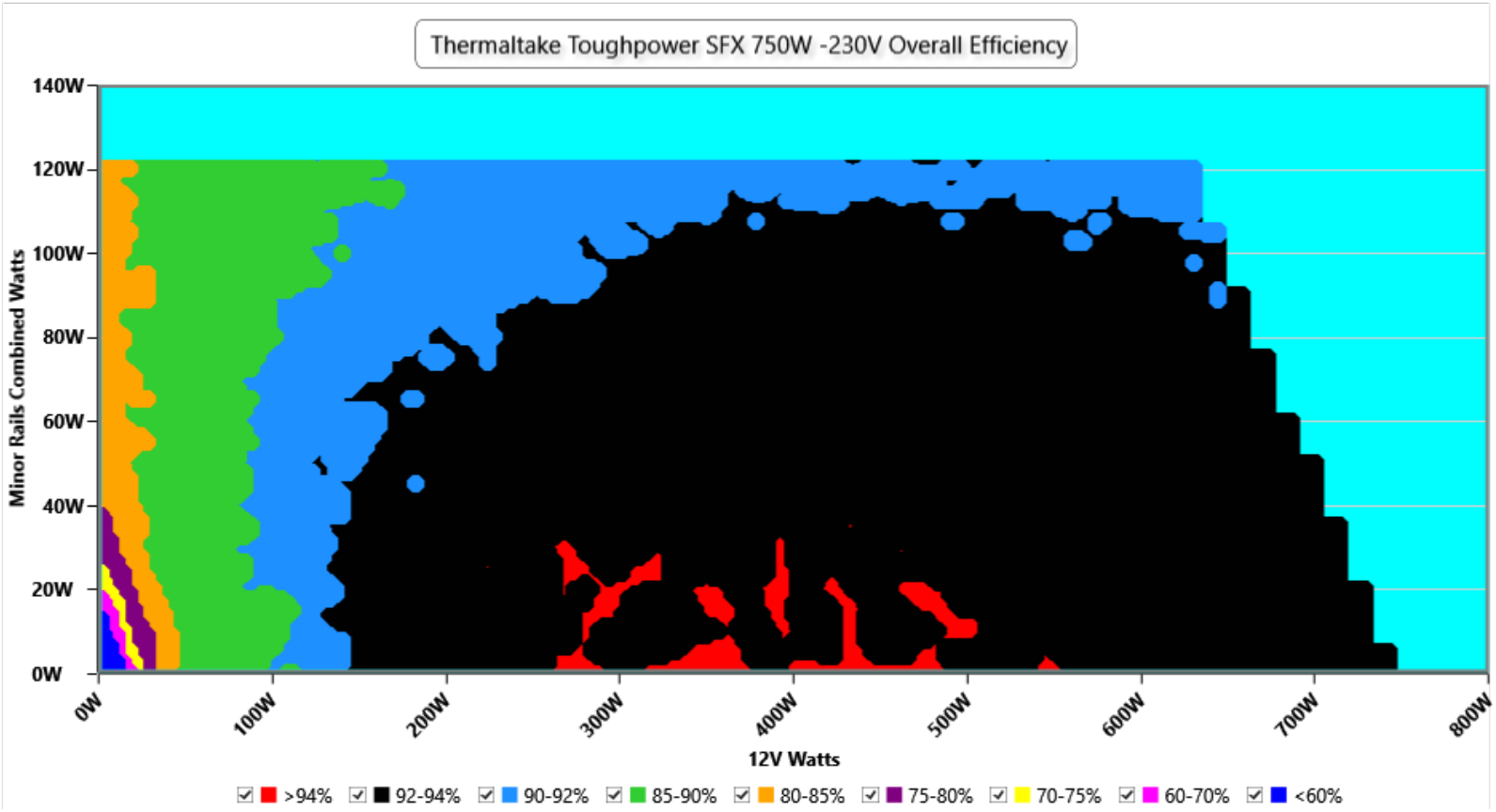
115V



INFO

This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

230V

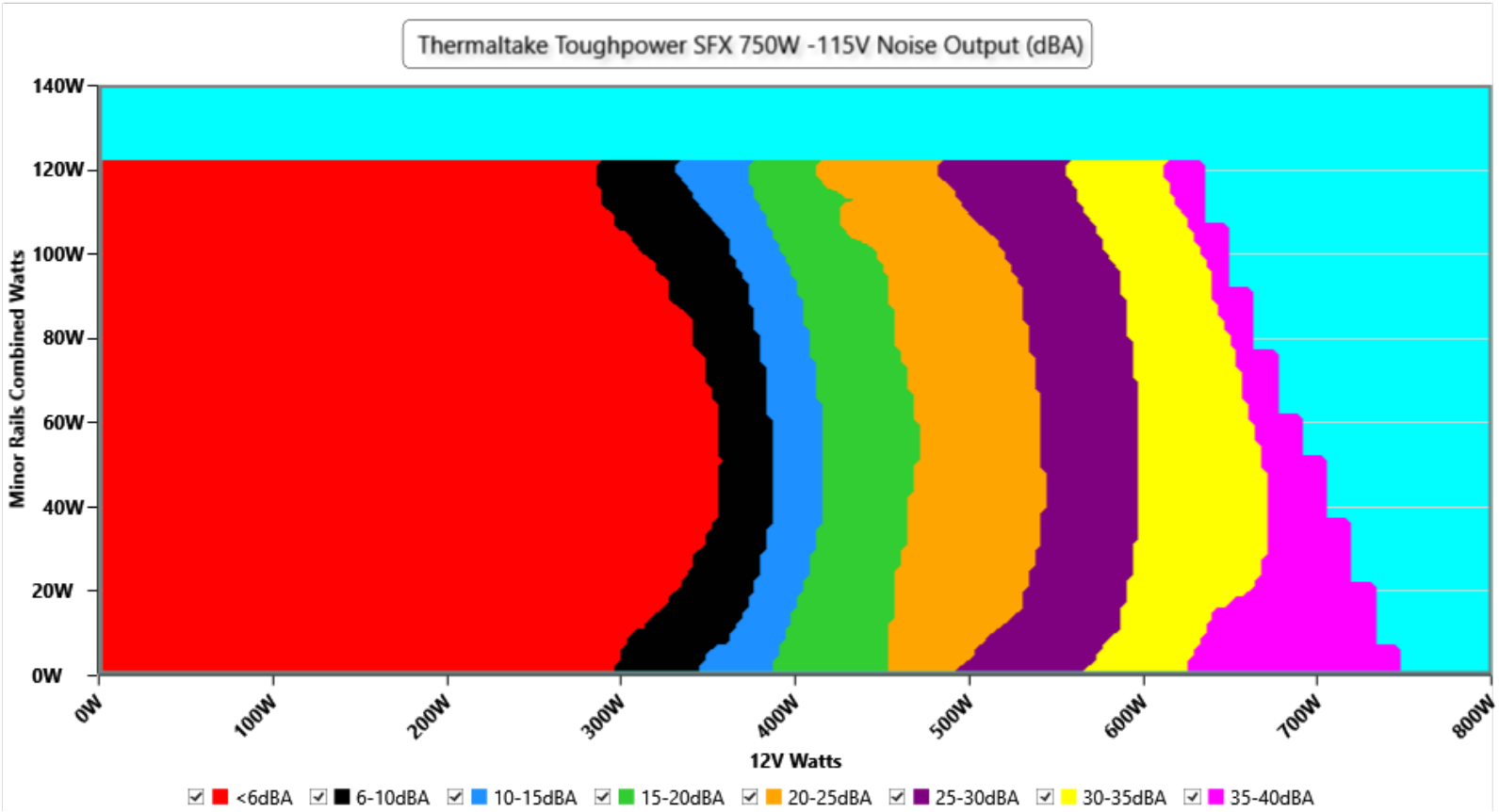


INFO

This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

Noise Graph

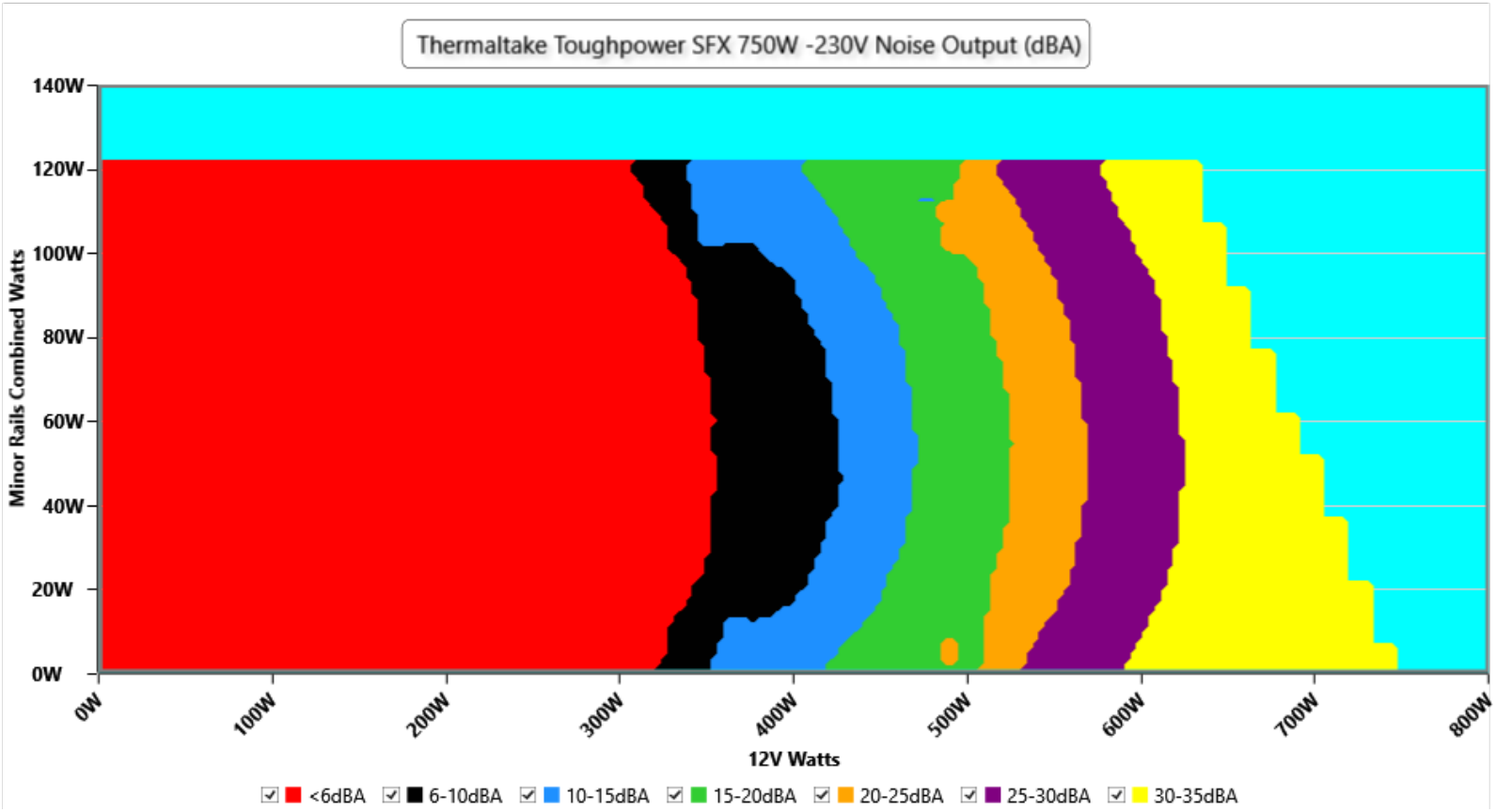
115V



INFO

The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

230V



INFO

The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Noise under high ambient temperature (indicative)

115V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 33.5 °C	0 RPM · <6.0 dB(A) · 53.4 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 34.0 °C	0 RPM · <6.0 dB(A) · 54.7 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 36.9 °C	980 RPM · 13.6 dB(A) · 42.4 °C	fan starts (<6.0 → 13.6)
100%	1831 RPM · 32.8 dB(A) · 32.5 °C	2699 RPM · 43.7 dB(A) · 45.6 °C	**+10.9 dB(A)**

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 32.0 °C	0 RPM · <6.0 dB(A) · 50.4 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 32.5 °C	0 RPM · <6.0 dB(A) · 51.4 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 38.3 °C	911 RPM · 11.7 dB(A) · 42.5 °C	fan starts (<6.0 → 11.7)
100%	1846 RPM · 33.3 dB(A) · 31.4 °C	2649 RPM · 43.4 dB(A) · 45.6 °C	**+10.1 dB(A)**

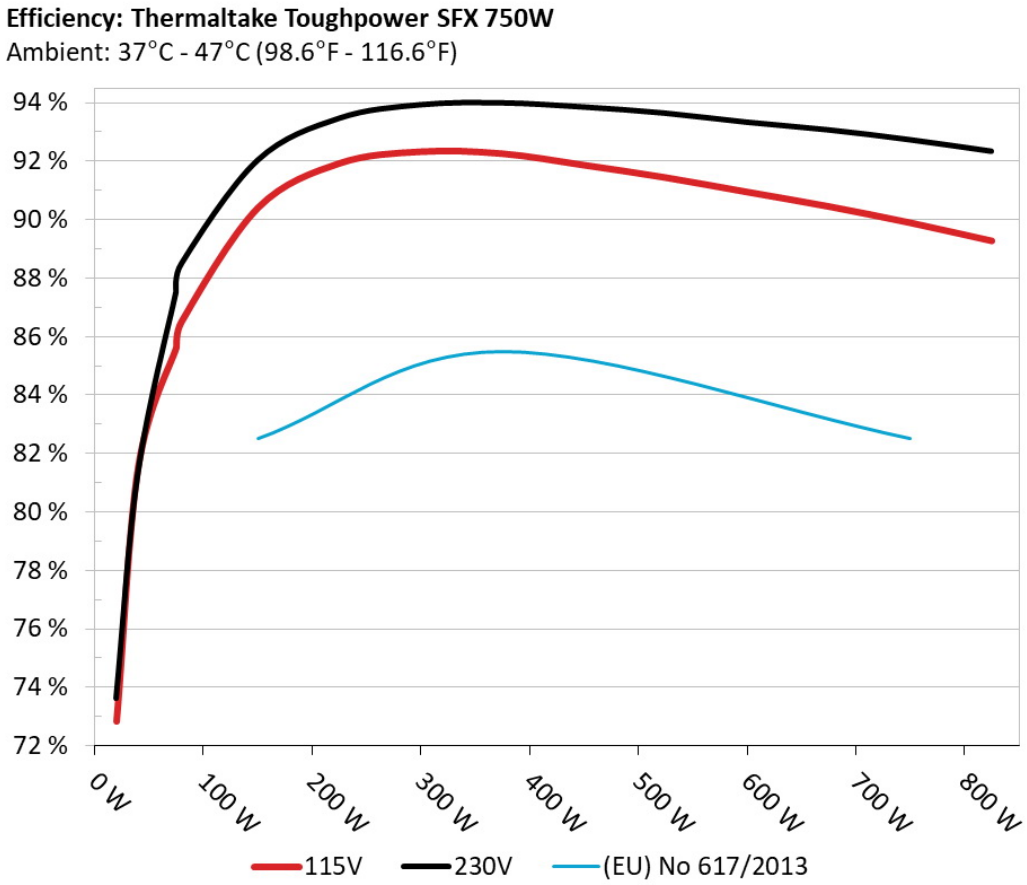
INFO

Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter: the fan is stopped or too quiet to measure (the fan speed column says which); with the fan stopped, the intake sensor can read higher than the chamber air.

Informational. Not part of the ETA or LAMBDA rating.

Indicative Performance

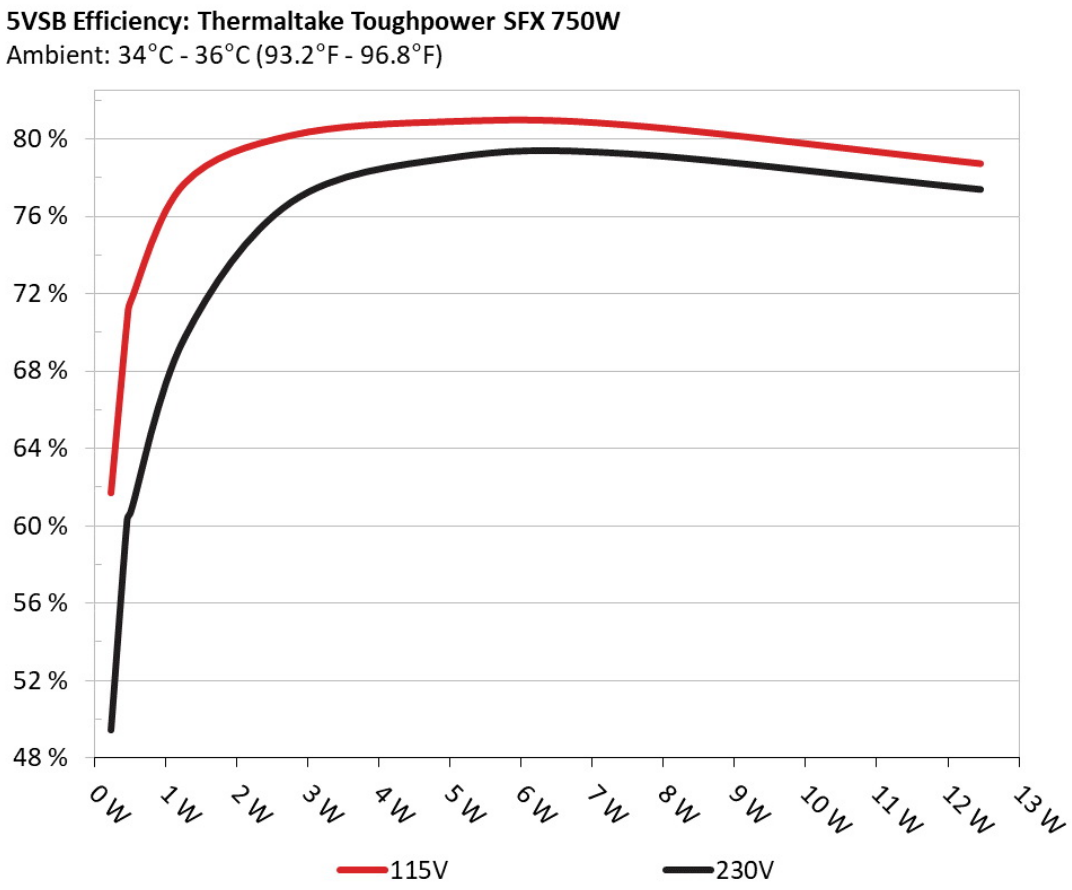
Efficiency under high ambient temperature



INFO

The PSU`s efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5VSB Efficiency



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.226W	61.221%	0.031
	5.03V	0.369W		115.16V
2	**0.09A**	0.453W	70.113%	0.053
	5.029V	0.646W		115.16V
3	**0.55A**	2.762W	79.668%	0.237
	5.02V	3.467W		115.16V
4	**1A**	5.012W	80.384%	0.34
	5.011V	6.235W		115.15V
5	**1.5A**	7.504W	80.199%	0.399
	5.001V	9.357W		115.15V
6	**2.501A**	12.458W	78.21%	0.461
	4.982V	15.929W		115.14V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.226W	48.965%	0.011
	5.029V	0.462W		230.4V
2	**0.09A**	0.453W	59.826%	0.019
	5.029V	0.758W		230.37V
3	**0.55A**	2.762W	76.24%	0.087
	5.02V	3.623W		230.4V
4	**1A**	5.013W	78.533%	0.146
	5.011V	6.383W		230.41V
5	**1.501A**	7.504W	78.735%	0.202
	5.001V	9.531W		230.42V
6	**2.501A**	12.458W	76.896%	0.286
	4.982V	16.202W		230.41V

Protection Features

OCP (Normal @ 28.8°C)	12V: 93.2A (149.12%), 12.119V 5V: 21.9A (121.67%), 4.819V* *Voltage Drop (4.344@22.3A) 3.3V: 21.9A (121.67%), 3.184V* * Voltage Drop (2.621@22.3A) 5VSB: 4.2A (168%), 4.942V
OCP (Hot @ 43.2°C)	12V: 69.8A (111.68%), 12.123V 5V: 21.5A (119.44%), 4.87V* *Voltage Drop (4.281@21.8A) 3.3V: 22.1A (122.78%), 3.176V* * Voltage Drop (2.665@22.4A) 5VSB: 4.2A (168%), 4.941V
OPP (Normal @ 29.5°C)	1087.99W (145.07%)
OPP (Hot @ 42.37°C)	930.89W (124.12%)
OTP	✓ (120°C @ Heat Sink)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
PWR_OK	Proper Operation
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC & Bypass Relay

Supplementary Tests (For Reference)

Typical Load Tests

115V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	**4.407A**	**1.986A**	**1.986A**	**0.999A**	75.006	85.13%	0	<6.0	53.35°C	0.953
	12.118V	5.036V	3.324V	5.005V	88.102				40.14°C	115.15V
20%	**9.821A**	**2.984A**	**2.986A**	**1.202A**	149.964	89.9%	0	<6.0	54.66°C	0.957
	12.124V	5.028V	3.315V	4.995V	166.802				40.66°C	115.13V
30%	**15.585A**	**3.486A**	**3.491A**	**1.405A**	224.97	91.423%	0	<6.0	57.08°C	0.981
	12.122V	5.021V	3.309V	4.985V	246.083				41.3°C	115.12V
40%	**21.357A**	**3.989A**	**3.998A**	**1.608A**	300.064	91.821%	689	<6.0	41.88°C	0.988
	12.120V	5.015V	3.302V	4.975V	326.804				62.93°C	115.1V
50%	**26.753A**	**4.995A**	**5.01A**	**1.813A**	374.678	91.755%	980	13.6	42.43°C	0.993
	12.117V	5.006V	3.294V	4.965V	408.353				60.85°C	115.09V
60%	**32.174A**	**6.004A**	**6.028A**	**2.001A**	449.503	91.363%	1185	19.1	42.68°C	0.994
	12.114V	4.998V	3.285V	4.955V	491.981				60.22°C	115.07V
70%	**37.597A**	**7.017A**	**7.05A**	**2.225A**	524.521	90.937%	1676	29.9	43.46°C	0.995
	12.113V	4.99V	3.277V	4.944V	576.782				58.63°C	115.05V
80%	**43.091A**	**8.031A**	**8.076A**	**2.33A**	599.739	90.443%	2047	37.2	43.84°C	0.994
	12.110V	4.981V	3.269V	4.936V	663.118				59.1°C	115.03V
90%	**48.915A**	**8.544A**	**8.583A**	**2.435A**	674.762	89.948%	2394	40.7	44.86°C	0.996
	12.108V	4.975V	3.262V	4.928V	750.135				60.89°C	115.02V
100%	**54.741A**	**9.059A**	**9.124A**	**2.541A**	749.88	89.388%	2699	43.7	45.58°C	0.998
	12.106V	4.968V	3.255V	4.92V	838.921				62.87°C	114.99V
110%	**60.240A**	**10.084A**	**10.258A**	**2.545A**	824.928	88.769%	2909	46	46.38°C	0.998
	12.104V	4.959V	3.246V	4.913V	929.313				65.6°C	114.97V
CL1	**0.116A**	**14.513A**	**14.535A**	**0A**	121.304	81.474%	1133	17.7	41.26°C	0.953
	12.127V	4.975V	3.282V	5.011V	148.925				50.05°C	115.14V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	**0.115A**	**18.136A**	**0A**	**0A**	91.403	80.544%	363	<6.0	40.92°C	0.977
	12.122V	4.962V	3.321V	5.021V	113.491				51.96°C	115.15V
CL3	**0.115A**	**0A**	**18.119A**	**0A**	60.794	75.131%	119	<6.0	41.18°C	0.949
	12.117V	5.021V	3.278V	5.017V	80.937				40.25°C	115.16V
CL4	**61.915A**	**0A**	**0A**	**0A**	749.791	90.431%	2630	43.5	45.52°C	0.998
	12.110V	5.008V	3.285V	4.981V	829.09				64.94°C	114.99V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	**4.408A**	**1.986A**	**1.986A**	**0.999A**	75.006	87.023%	0	<6.0	50.4°C	0.573
	12.115V	5.036V	3.324V	5.005V	86.202				40.45°C	230.4V
20%	**9.823A**	**2.985A**	**2.987A**	**1.202A**	149.968	91.528%	0	<6.0	51.42°C	0.861
	12.121V	5.027V	3.315V	4.995V	163.845				40.88°C	230.4V
30%	**15.587A**	**3.486A**	**3.491A**	**1.404A**	224.975	92.966%	0	<6.0	53.71°C	0.912
	12.120V	5.021V	3.308V	4.985V	241.999				41.15°C	230.39V
40%	**21.360A**	**3.99A**	**3.998A**	**1.608A**	300.065	93.431%	564	<6.0	41.79°C	0.937
	12.119V	5.014V	3.302V	4.976V	321.151				60.85°C	230.39V
50%	**26.754A**	**4.996A**	**5.011A**	**1.813A**	374.68	93.494%	911	11.7	42.45°C	0.949
	12.117V	5.006V	3.293V	4.965V	400.727				53.55°C	230.38V
60%	**32.176A**	**6.004A**	**6.028A**	**2.001A**	449.507	93.354%	1254	20.8	42.65°C	0.96
	12.114V	4.998V	3.285V	4.956V	481.492				51.19°C	230.37V
70%	**37.600A**	**7.017A**	**7.051A**	**2.225A**	524.522	93.144%	1589	29.1	43.17°C	0.964
	12.112V	4.989V	3.277V	4.945V	563.153				51.31°C	230.37V
80%	**43.091A**	**8.032A**	**8.077A**	**2.33A**	599.737	92.835%	1991	37.1	43.6°C	0.966
	12.110V	4.981V	3.268V	4.936V	646.047				51.35°C	230.36V
90%	**48.918A**	**8.545A**	**8.584A**	**2.435A**	674.778	92.572%	2332	39.7	44.23°C	0.971
	12.107V	4.974V	3.262V	4.928V	728.887				52.16°C	230.36V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	**54.744A**	**9.06A**	**9.125A**	**2.541A**	749.893	92.235%	2649	43.4	45.58°C	0.973
	12.105V	4.968V	3.254V	4.92V	813.031				53.71°C	230.35V
110%	**60.244A**	**10.085A**	**10.259A**	**2.544A**	824.923	91.841%	2903	46	46.25°C	0.975
	12.103V	4.958V	3.246V	4.914V	898.25				55.23°C	230.34V
CL1	**0.116A**	**14.515A**	**14.538A**	**0A**	121.304	82.945%	1045	15.5	40.63°C	0.842
	12.126V	4.974V	3.281V	5.011V	146.221				46.14°C	230.39V
CL2	**0.115A**	**18.142A**	**0A**	**0A**	91.402	81.823%	296	<6.0	41.04°C	0.783
	12.122V	4.961V	3.32V	5.022V	111.689				49.63°C	230.4V
CL3	**0.115A**	**0A**	**18.121A**	**0A**	60.793	76.617%	0	<6.0	41.76°C	0.562
	12.116V	5.024V	3.278V	5.018V	79.355				36.17°C	230.4V
CL4	**61.916A**	**0A**	**0A**	**0A**	749.776	93.253%	2514	41.8	45.53°C	0.972
	12.109V	5.009V	3.285V	4.981V	804.021				54.01°C	230.35V

The results above are not used in the certification process

Light Load Tests

115V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	**1.226A**	**0.495A**	**0.495A**	**0.199A**	20.007	72.322%	0	<6.0	49.02°C	0.622
	12.122V	5.047V	3.333V	5.026V	27.673				36.49°C	115.16V
40W	**2.698A**	**0.694A**	**0.693A**	**0.299A**	40.003	81.046%	0	<6.0	49.7°C	0.693
	12.121V	5.045V	3.331V	5.022V	49.357				37.79°C	115.16V
60W	**4.169A**	**0.893A**	**0.892A**	**0.399A**	60.001	84.549%	0	<6.0	50.47°C	0.727
	12.119V	5.042V	3.329V	5.019V	70.953				38.21°C	115.17V
80W	**5.639A**	**1.091A**	**1.091A**	**0.499A**	79.965	86.019%	0	<6.0	51.64°C	0.956
	12.118V	5.041V	3.328V	5.015V	92.972				39.41°C	115.16V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	**1.227A**	**0.495A**	**0.495A**	**0.199A**	20.011	73.136%	0	<6.0	42.82°C	0.385
	12.113V	5.048V	3.333V	5.025V	27.362				36.23°C	230.42V
40W	**2.699A**	**0.694A**	**0.693A**	**0.299A**	40.006	80.84%	0	<6.0	44.96°C	0.479
	12.113V	5.046V	3.331V	5.022V	49.489				37.18°C	230.42V
60W	**4.172A**	**0.893A**	**0.892A**	**0.399A**	60.004	86.208%	0	<6.0	46.51°C	0.542
	12.113V	5.042V	3.329V	5.018V	69.592				38.51°C	230.41V
80W	**5.642A**	**1.091A**	**1.091A**	**0.499A**	79.969	87.991%	0	<6.0	48.59°C	0.581
	12.113V	5.042V	3.328V	5.015V	90.907				39.46°C	230.41V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.1 mV	8.5 mV	5.4 mV	13.1 mV	Pass
20% Load	17.6 mV	8.8 mV	5.3 mV	14.2 mV	Pass
30% Load	13.0 mV	10.0 mV	6.0 mV	15.4 mV	Pass
40% Load	12.6 mV	10.9 mV	6.2 mV	14.6 mV	Pass
50% Load	13.7 mV	10.4 mV	6.4 mV	13.0 mV	Pass
60% Load	15.1 mV	10.9 mV	6.4 mV	13.6 mV	Pass
70% Load	16.8 mV	12.6 mV	7.4 mV	13.1 mV	Pass
80% Load	17.3 mV	13.4 mV	8.9 mV	12.4 mV	Pass
90% Load	18.8 mV	13.5 mV	9.5 mV	12.2 mV	Pass
100% Load	26.0 mV	14.0 mV	11.1 mV	12.7 mV	Pass
110% Load	28.0 mV	16.4 mV	12.0 mV	13.4 mV	Pass
Crossload 1	24.0 mV	16.7 mV	13.4 mV	9.0 mV	Pass
Crossload 2	9.0 mV	9.3 mV	8.6 mV	8.0 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload 3	8.8 mV	9.5 mV	9.5 mV	8.0 mV	Pass
Crossload 4	27.1 mV	12.5 mV	10.9 mV	9.9 mV	Pass

The results above are not used in the certification process

230V

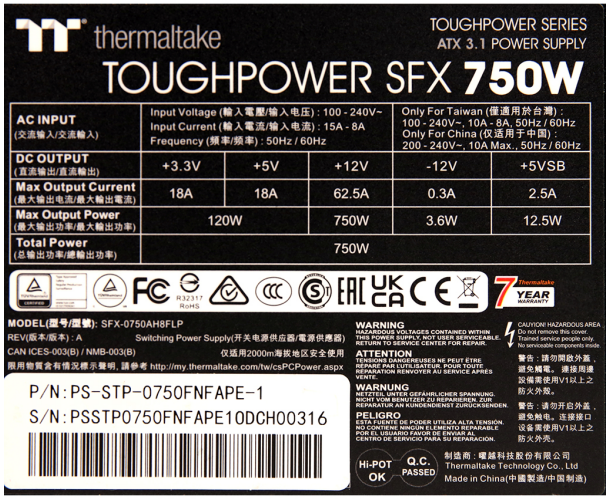
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.0 mV	9.5 mV	5.7 mV	13.4 mV	Pass
20% Load	19.5 mV	8.8 mV	5.3 mV	14.0 mV	Pass
30% Load	14.5 mV	8.7 mV	5.4 mV	15.6 mV	Pass
40% Load	12.7 mV	10.3 mV	5.7 mV	14.5 mV	Pass
50% Load	13.9 mV	10.8 mV	6.2 mV	13.8 mV	Pass
60% Load	15.2 mV	11.2 mV	6.9 mV	13.5 mV	Pass
70% Load	15.8 mV	12.3 mV	7.3 mV	12.5 mV	Pass
80% Load	17.3 mV	13.8 mV	10.1 mV	12.4 mV	Pass
90% Load	17.9 mV	14.2 mV	9.4 mV	12.1 mV	Pass
100% Load	26.9 mV	13.7 mV	10.1 mV	12.5 mV	Pass
110% Load	27.8 mV	15.4 mV	10.9 mV	13.2 mV	Pass
Crossload 1	24.3 mV	16.3 mV	12.3 mV	9.5 mV	Pass
Crossload 2	9.3 mV	8.8 mV	8.8 mV	8.4 mV	Pass
Crossload 3	9.3 mV	9.0 mV	10.1 mV	8.7 mV	Pass
Crossload 4	26.6 mV	12.3 mV	10.5 mV	9.4 mV	Pass

The results above are not used in the certification process

Thermaltake Toughpower SFX 750W (ATX v3.1)



Top side



Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com