Thermaltake Toughpower SFX 850W (ATX v3.1)

PSSTP0850FNFAPE10DCH00485

Lab ID TT85002580

Certification ID 252580

Test Result Report ID: 24PS2580A

Certificate Issue Date: Sep 25, 2024

Scheme: ETA-EMI PSU

115V



230V



Scheme: LAMBDA PSU

115V



230V





Outside Validation Scope



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 850W (ATX v3.1)
OEM/ODM	CE-Link
Serial Number	PSSTP0850FNFAPE10DCH00485
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	15-8

□□□□ (Hz)	50-60
□□□□ (W)	850
Operating Temperature (Continuous Full Load) (°C)	
□□	SFX
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	92mm Fluid Dynamic Bearing Fan (EFS-09C12H)
□□□□□	✓
Cybenetics Testing Information	
Lab ID	TT85002580
Date of receipt	Sep 10, 2024
Testing Date	Sep 24, 2024
Report Issued Date	Sep 25, 2024
□□□□□	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	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	**Gauge**	In Cable Capacitors
ATX □□ 24 pin (300mm)	1	1	16-22AWG	□
4+4 pin EPS 12V □□ (400mm)	2	2	16AWG	□
6+2pin PCIe□□ (400mm+150mm)	1	2	16-18AWG	□
12+4 pin PCIe (400mm) (600W)	1	1	16-26AWG	□
SATA□□ (290mm+150mm+150mm+150mm)	2	8	18AWG	□
4-pin Molex (300mm+150mm+150mm+150mm) / FDD (+150mm)	1	4 / 1	18AWG	□

AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

Protection Features(Manufacturer)

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

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	18	18	70.83	2.5	0.3
	□	120		850	12.5	3.6
□□□□□ (W)		850				

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 GBU2506L (600V, 25A @ 100°C)
APFC MOSFETs	2x Lonten LSD65R070GT (650V, 30A @ 100°C, Rds(on): 0.070Ohm)
APFC Boost Diode	1x Global Power G4S06510AT (650V, 10A @ 151°C)

Bulk Cap(s)	2x Rubycon (400V, 390uF or combined 780uF, 2,000h @ 105°C,MXE)
Main Switchers	4x Lonten LSD65R099GF (650V, 25.3A @ 100°C, Rds(on): 0.99Ohm) & 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	8x 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) 1x Rubycon (4-10,000h @105°C, YXJ) 1x 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

□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	89.628%
Average Noise Output (>1450 Load Combinations)	25.79dBA
PF□□□ (>1450 Load Combinations)	0.978
Efficiency With 10W (≤500W) or 2% (>500W) Load	70.105%
□□□□□□	0.0932W
Non-Accredited	
12V Ripple (Full Load)	25.84mV
5V Ripple (Full Load)	14.84mV
3.3V Ripple (Full Load)	11.66mV
5VSB Ripple (Full Load)	13.26mV
12V Load Regulation	0.19%
5V Load Regulation	1.82%
3.3V Load Regulation	3.15%
5VSB Load Regulation	2.39%
Inrush Current	31.840A

230V

Accredited	
□□□□ (>1450 load combinations)	91.622%
Average Noise Output (>1450 Load Combinations)	24.40dBA
PF□□□ (>1450 Load Combinations)	0.917
Efficiency With 10W (≤500W) or 2% (>500W) Load	69.711%
□□□□□□	0.1713W
Non-Accredited	
12V Ripple (Full Load)	25.93mV
5V Ripple (Full Load)	14.15mV
3.3V Ripple (Full Load)	11.98mV

5VSB Ripple (Full Load)		12.78mV
12V Load Regulation		0.22%
5V Load Regulation		1.86%
3.3V Load Regulation		3.18%
5VSB Load Regulation		2.45%
Inrush Current		65.220A
12V Transient Response (200%)		11.35V
5V Transient Response (200%)		4.906V
3.3V Transient Response (200%)		3.192V
5VSB Transient Response (200%)		4.897V
□□□□ & PG□□		17.40ms
AC Loss to PWR_OK Hold Up Time		14.40ms
PWR_OK Inactive to DC Loss Delay		3.00ms
PSU Timings: T1 (20% / 100%)	120.0ms	120.0ms
PSU Timings: T3 (20% / 100%)	126.0ms	126.0ms
12V OCP (28.9°C / 42.7°C)	93.60A (132.15%), 12.021V	83.20A (117.46%), 12.023V
5V OCP (28.9°C / 42.7°C)	21A (116.67%), 4.832V*	20.5A (113.89%), 4.878V*
3.3V OCP (28.9°C / 42.7°C)		
5VSB OCP (28.9°C / 42.7°C)	21.3A (118.33%), 3.175V*	21.1A (117.22%), 3.187V*
OPP (29.07°C / 40.92°C)	130.93%	116.80%

□□□□ & PG□□

Hold-Up Time (ms)	17.4
AC Loss to PWR_OK Hold Up Time (ms)	14.4
PWR_OK Inactive to DC Loss Delay (ms)	3

Tables

115V

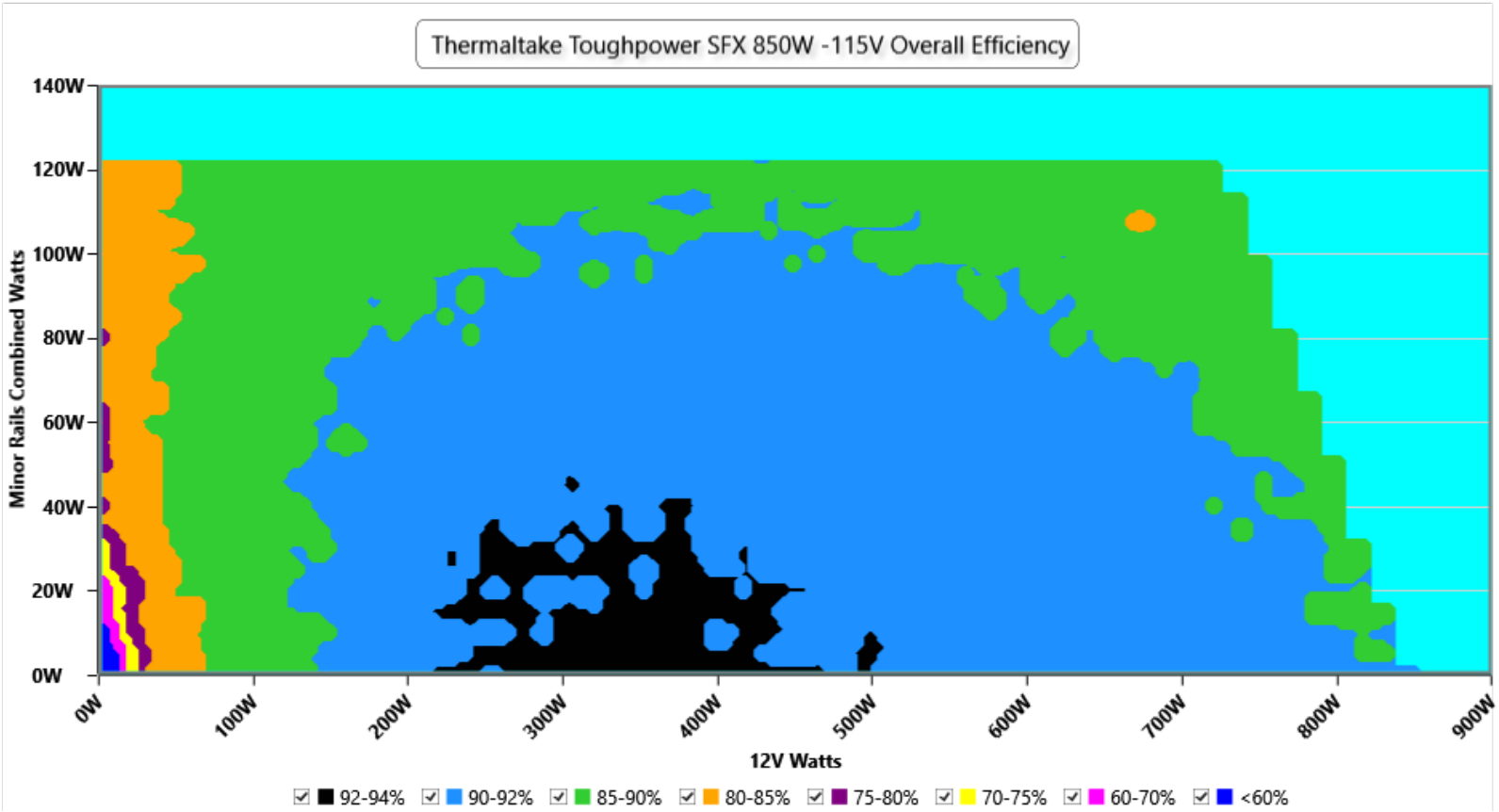
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.17 V	115.14 V	113.85 V	115.18 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.92 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.093 W	0.085 W	N/A	0.112 W	N/A	N/A
Apparent Power:	11.929 W	11.925 W	N/A	11.932 W	N/A	N/A
Power Factor:	0.008	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.44 V	230.40 V	227.70 V	230.45 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.14 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.171 W	0.151 W	N/A	0.234 W	N/A	N/A
Apparent Power:	39.878 W	39.867 W	N/A	39.895 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

□□□□□□

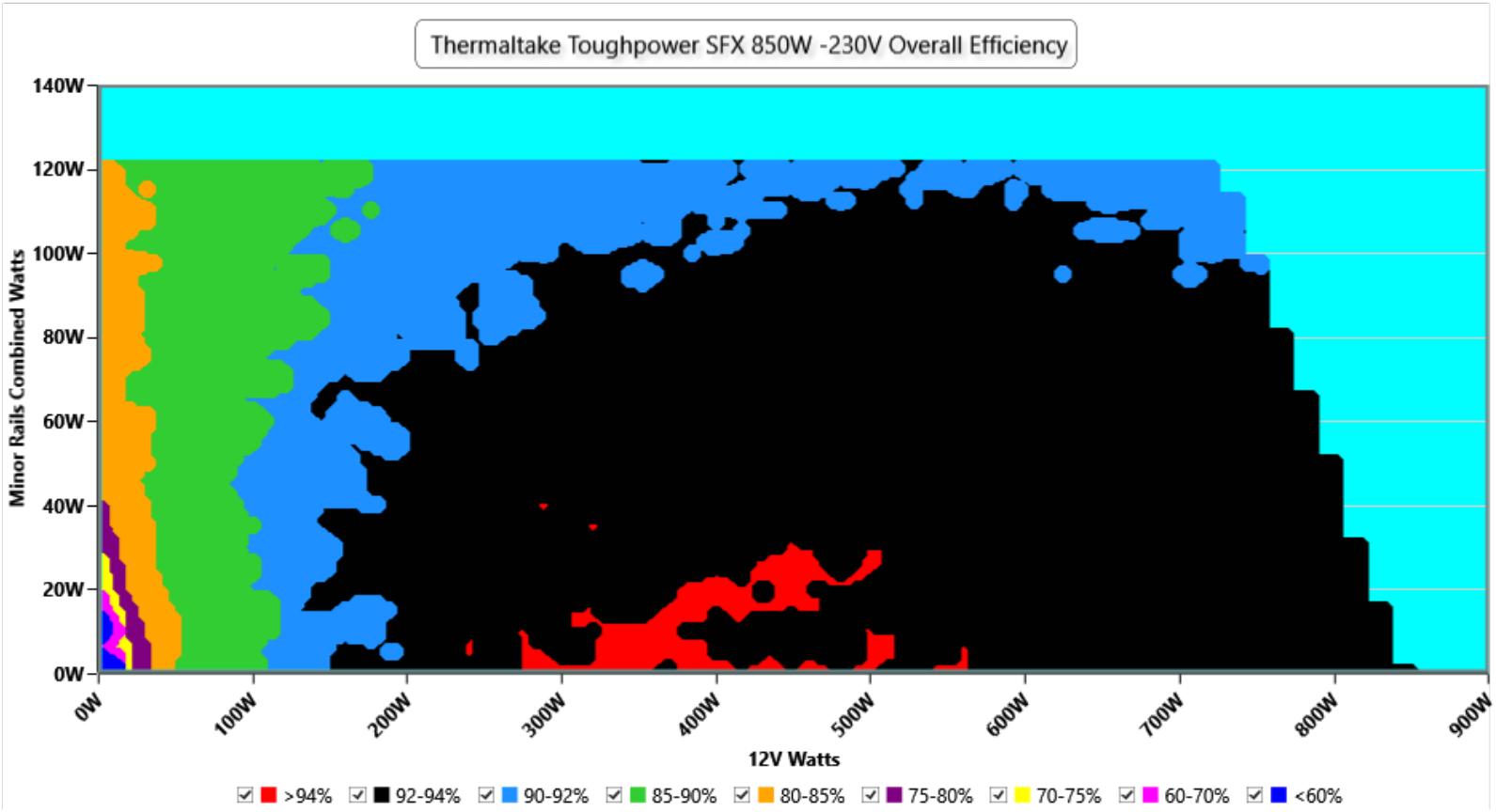
115V



□□

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



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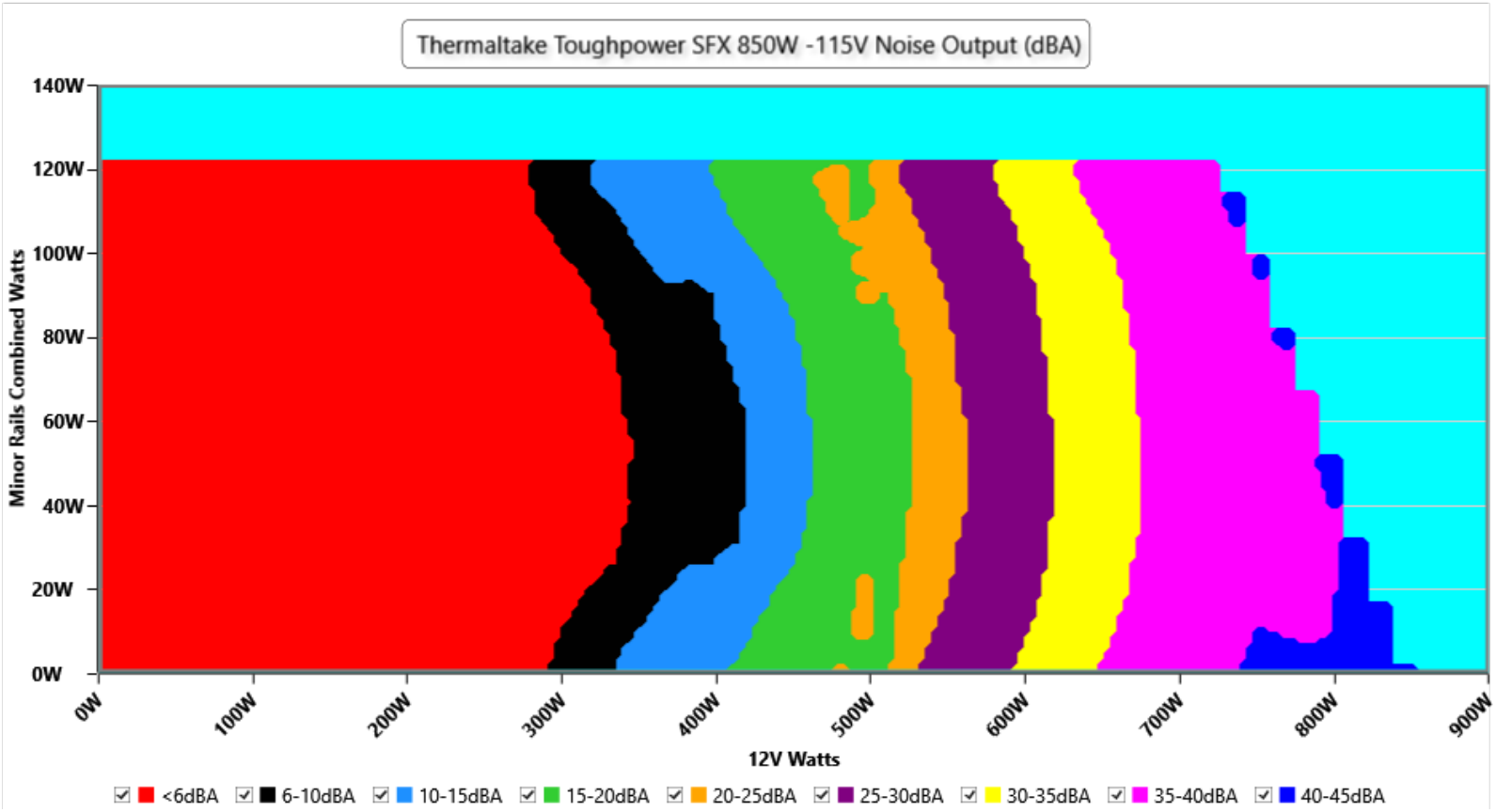
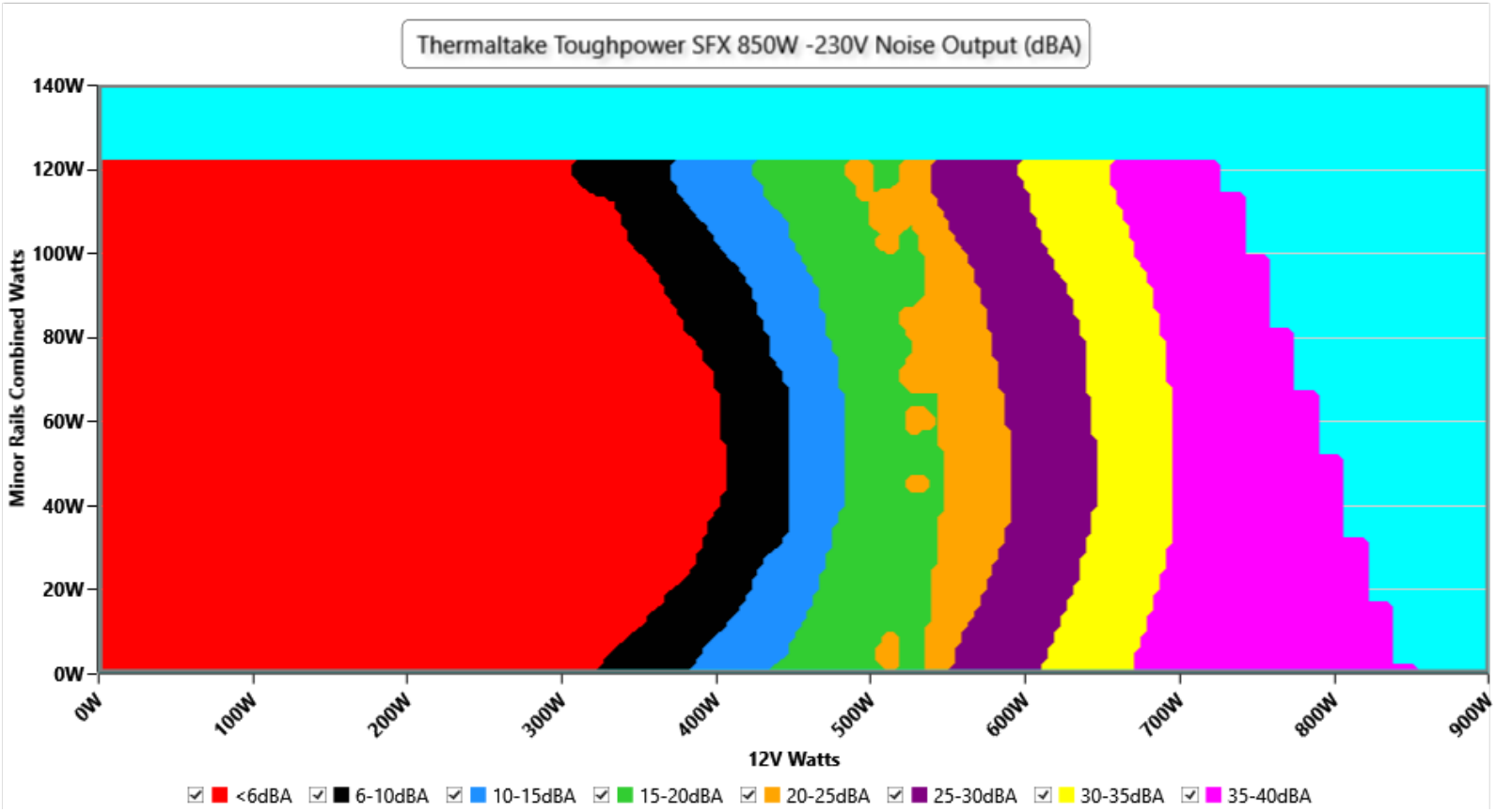
115V



□□

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



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) · 34.6 °C	0 RPM · <6.0 dB(A) · 42.3 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 36.3 °C	0 RPM · <6.0 dB(A) · 43.7 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 40.2 °C	1605 RPM · 29.3 dB(A) · 42.3 °C	fan starts (<6.0 → 29.3)
100%	2191 RPM · 37.6 dB(A) · 30.2 °C	3042 RPM · 48.1 dB(A) · 46.0 °C	**+10.5 dB(A)**

230V

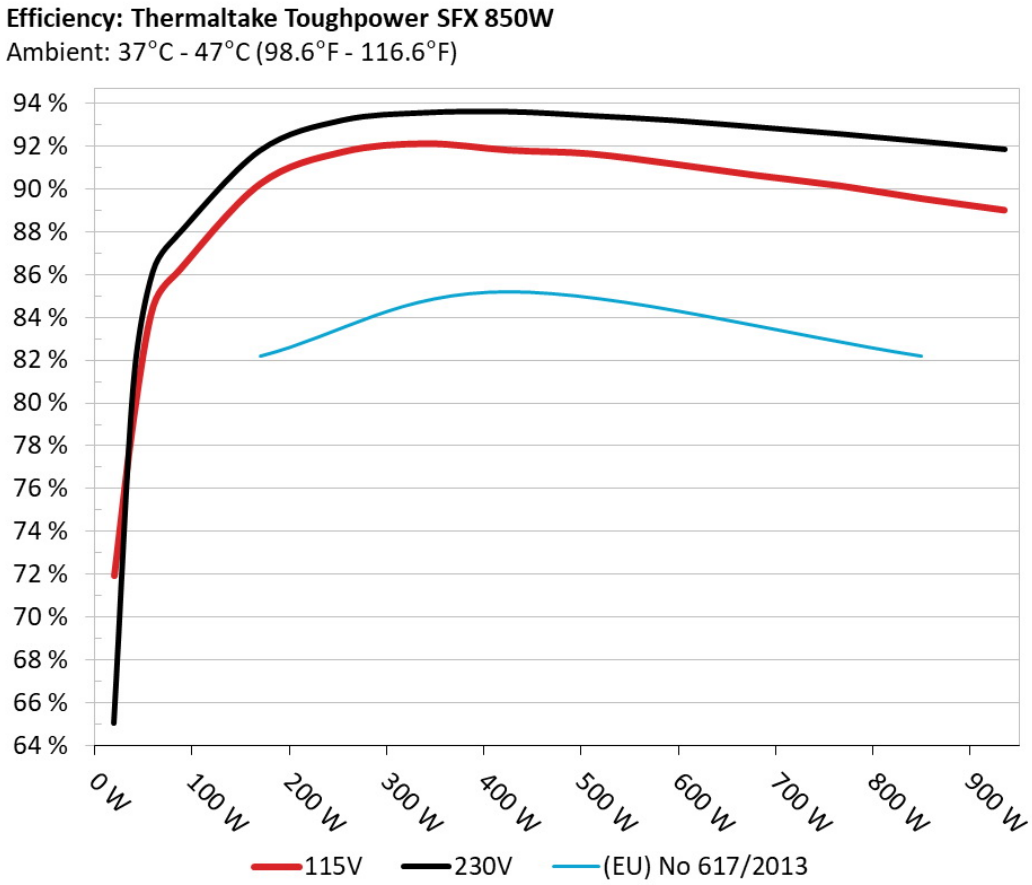
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 43.8 °C	0 RPM · <6.0 dB(A) · 46.9 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 44.1 °C	0 RPM · <6.0 dB(A) · 47.3 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 49.3 °C	1252 RPM · 20.8 dB(A) · 42.1 °C	fan starts (<6.0 → 20.8)
100%	2297 RPM · 39.1 dB(A) · 30.5 °C	3030 RPM · 47.7 dB(A) · 45.6 °C	**+8.6 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, with the fan stopped; with the fan stopped, the intake sensor can read higher than the chamber air.

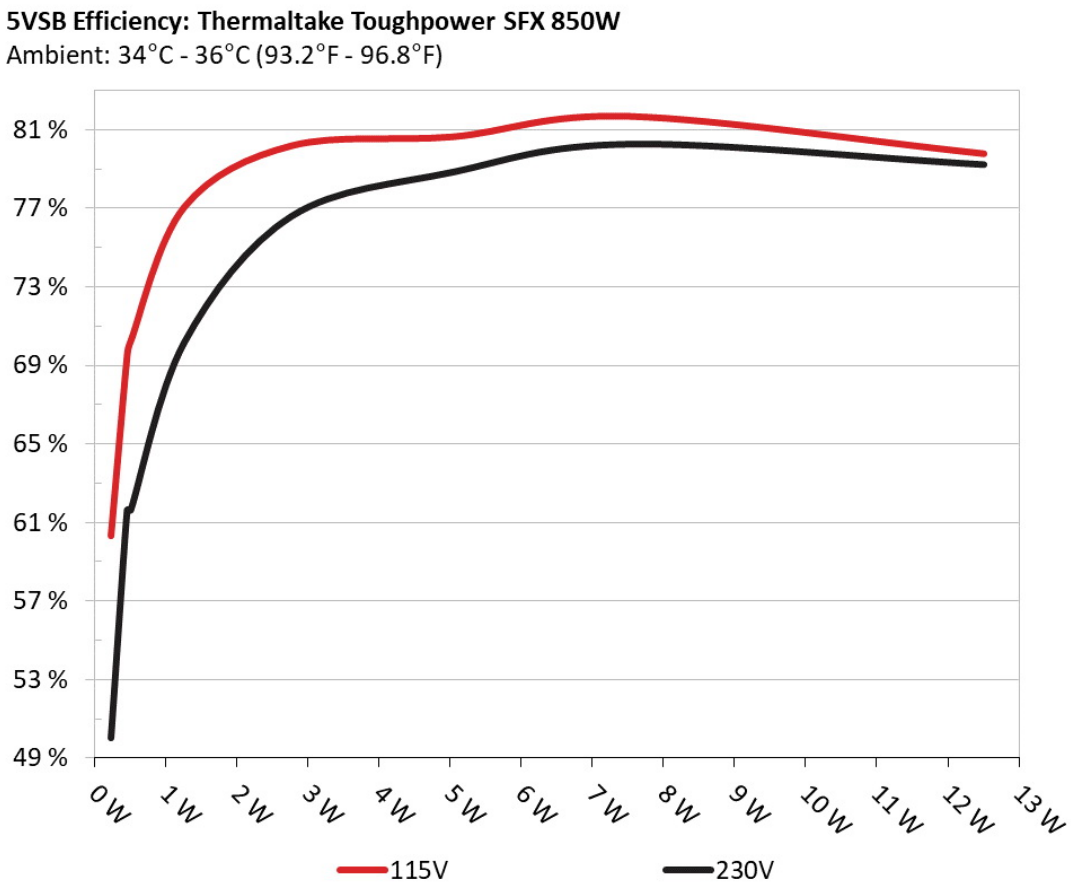
Informational. Not part of the ETA or LAMBDA rating.

Indicative Performance



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□□□□



□□

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

□□□□ □□ 5Vsb □□ (ErP Lot3/6 & CEC)

115V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	**0.045A**	0.227W	60.342%	0.03
	5.044V	0.376W		115.18V
2	**0.09A**	0.454W	69.482%	0.052
	5.044V	0.653W		115.17V
3	**0.55A**	2.77W	80.173%	0.227
	5.035V	3.455W		115.16V
4	**1A**	5.029W	80.624%	0.326
	5.027V	6.238W		115.16V
5	**1.5A**	7.53W	81.663%	0.38
	5.018V	9.222W		115.17V
6	**2.501A**	12.506W	79.768%	0.441
	5.001V	15.678W		115.17V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	**0.045A**	0.227W	50.011%	0.011
	5.044V	0.454W		230.4V
2	**0.09A**	0.454W	62.273%	0.018
	5.043V	0.733W		230.39V
3	**0.55A**	2.77W	76.587%	0.084
	5.034V	3.618W		230.41V
4	**1A**	5.028W	78.822%	0.141
	5.027V	6.38W		230.4V
5	**1.5A**	7.529W	80.25%	0.193
	5.018V	9.381W		230.4V
6	**2.501A**	12.505W	79.209%	0.274
	5.001V	15.787W		230.39V

Protection Features

OCP (Normal @ 28.9°C)	12V: 93.60A (132.15%), 12.021V 5V: 21A (116.67%), 4.832V* *Voltage Drop (4.369@21.2A) 3.3V: 21.3A (118.33%), 3.175V* *Voltage Drop (2.652@21.6A) 5VSB: 4.1A (164.00%), 4.951V
OCP (Hot @ 42.7°C)	12V: 83.20A (117.46%), 12.023V 5V: 20.5A (113.89%), 4.878V* *Voltage Drop (4.387@20.7A) 3.3V: 21.1A (117.22%), 3.187V* *Voltage Drop (2.638@21.5A) 5VSB: 4A (160.00%), 4.952V
OPP (Normal @ 29.1°C)	1112.90W (130.93%)
OPP (Hot @ 40.9°C)	992.84W (116.80%)
OTP	✓ (108°C @ Secondary Side)
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)

10-110%□□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	**5.273A**	**1.993A**	**1.982A**	**1A**	85.012	85.923%	0	<6.0	42.34°C	0.864
	12.023V	5.019V	3.33V	5.002V	99.01				40.11°C	115.17V
20%	**11.562A**	**2.995A**	**2.983A**	**1.202A**	169.997	90.045%	0	<6.0	43.67°C	0.962
	12.030V	5.01V	3.319V	4.991V	188.857				40.75°C	115.15V
30%	**18.204A**	**3.5A**	**3.489A**	**1.406A**	255.02	91.539%	0	<6.0	44.79°C	0.98
	12.028V	5.002V	3.311V	4.981V	278.588				41.32°C	115.13V
40%	**24.855A**	**4.007A**	**3.999A**	**1.61A**	340.132	91.925%	922	12.1	41.71°C	0.988
	12.026V	4.994V	3.302V	4.97V	370.039				58.44°C	115.12V
50%	**31.162A**	**5.019A**	**5.015A**	**1.816A**	425.219	91.62%	1605	29.3	42.3°C	0.992
	12.024V	4.983V	3.291V	4.957V	464.105				54.51°C	115.08V
60%	**37.426A**	**6.033A**	**6.036A**	**2.001A**	509.576	91.45%	1620	29.4	42.64°C	0.995
	12.020V	4.974V	3.281V	4.947V	557.136				55.98°C	115.06V
70%	**43.762A**	**7.053A**	**7.066A**	**2.23A**	594.993	90.97%	2042	37.1	43.13°C	0.996
	12.017V	4.965V	3.27V	4.934V	654.027				57.18°C	115.04V
80%	**50.104A**	**8.075A**	**8.101A**	**2.336A**	679.817	90.445%	2411	40.9	43.64°C	0.997
	12.013V	4.954V	3.259V	4.924V	751.66				58.26°C	115.02V
90%	**56.848A**	**8.594A**	**8.616A**	**2.442A**	765.23	89.962%	2720	43.8	44.39°C	0.998
	12.010V	4.946V	3.25V	4.915V	850.575				60.27°C	114.99V
100%	**63.526A**	**9.115A**	**9.166A**	**2.549A**	849.959	89.36%	3042	48.1	45.97°C	0.998
	12.007V	4.938V	3.24V	4.905V	951.234				63.33°C	114.97V
110%	**69.945A**	**10.147A**	**10.313A**	**2.553A**	935.328	88.819%	3047	48.3	46.02°C	0.998
	12.003V	4.928V	3.229V	4.897V	1053.119				63.89°C	114.95V
CL1	**0.117A**	**14.546A**	**14.552A**	**0A**	121.307	80.538%	1222	19.9	40.98°C	0.954
	12.026V	4.964V	3.278V	5.006V	150.636				51.31°C	115.14V

CL2	**0.116A**	**18.366A**	**0A**	**0A**	91.403	79.114%	330	<6.0	40.01°C	0.972
	12.030V	4.901V	3.329V	5.018V	115.612				42.17°C	115.14V
CL3	**0.116A**	**0A**	**18.147A**	**0A**	60.796	74.587%	242	<6.0	40.14°C	0.849
	12.025V	5.017V	3.273V	5.014V	81.535				35.39°C	115.16V
CL4	**70.734A**	**0A**	**0A**	**0A**	849.761	90.294%	3007	47.4	45.49°C	0.998
	12.014V	4.98V	3.281V	4.963V	941.1				61.95°C	114.98V

The results above are not used in the certification process

230V

□□	**12V**	**5V**	**3.3V**	**5VSB**	**DC/AC (□)**	□□	□□□□ **(RPM)**	□□□□□□□ **(dB[A])**	□□ **(□□ /□□)**	**PF/AC □□**
10%	**5.271A**	**1.992A**	**1.981A**	**1A**	85.005	87.644%	0	<6.0	46.86°C	0.688
	12.027V	5.02V	3.331V	5.002V	97.031				40.09°C	230.4V
20%	**11.558A**	**2.995A**	**2.982A**	**1.203A**	169.973	91.609%	0	<6.0	47.33°C	0.873
	12.032V	5.011V	3.32V	4.991V	185.627				40.7°C	230.39V
30%	**18.199A**	**3.499A**	**3.488A**	**1.406A**	254.989	93.028%	0	<6.0	51.02°C	0.911
	12.030V	5.003V	3.312V	4.98V	274.115				41.03°C	230.39V
40%	**24.852A**	**4.006A**	**3.997A**	**1.611A**	340.085	93.382%	841	9.7	41.69°C	0.931
	12.027V	4.994V	3.303V	4.968V	364.153				53.86°C	230.39V
50%	**31.155A**	**5.017A**	**5.013A**	**1.816A**	425.08	93.43%	1252	20.8	42.1°C	0.946
	12.023V	4.984V	3.292V	4.956V	454.953				52.17°C	230.38V
60%	**37.423A**	**6.033A**	**6.036A**	**2.001A**	509.5	93.242%	1571	28.5	42.61°C	0.955
	12.019V	4.974V	3.281V	4.945V	546.404				51.5°C	230.37V
70%	**43.759A**	**7.053A**	**7.065A**	**2.23A**	594.916	93.018%	1993	37.1	43.06°C	0.96
	12.016V	4.964V	3.27V	4.933V	639.593				51.28°C	230.36V
80%	**50.103A**	**8.076A**	**8.1A**	**2.337A**	679.735	92.713%	2413	40.9	43.89°C	0.966
	12.012V	4.954V	3.259V	4.922V	733.19				51.74°C	230.35V
90%	**56.848A**	**8.594A**	**8.616A**	**2.443A**	765.163	92.394%	2781	44.7	44.21°C	0.971
	12.009V	4.946V	3.249V	4.912V	828.148				52.21°C	230.34V
100%	**63.526A**	**9.115A**	**9.166A**	**2.55A**	849.868	92.039%	3030	47.7	45.57°C	0.976
	12.006V	4.937V	3.24V	4.902V	923.478				53.79°C	230.33V

110%	**69.947A**	**10.149A**	**10.311A**	**2.554A**	935.244	91.671%	3033	47.8	46.11°C	0.98
	12.002V	4.927V	3.229V	4.894V	1020.3				54.17°C	230.32V
CL1	**0.116A**	**14.546A**	**14.548A**	**0A**	121.298	82.078%	1119	17.1	40.25°C	0.835
	12.027V	4.964V	3.278V	5.005V	147.811				48.02°C	230.39V
CL2	**0.116A**	**18.26A**	**0A**	**0A**	91.394	80.905%	0	<6.0	43.83°C	0.787
	12.030V	4.929V	3.33V	5.018V	112.953				40.24°C	230.38V
CL3	**0.116A**	**0A**	**18.13A**	**0A**	60.789	76.321%	0	<6.0	45.77°C	0.646
	12.026V	5.016V	3.276V	5.013V	79.837				41.23°C	230.39V
CL4	**70.740A**	**0A**	**0A**	**0A**	849.703	92.98%	2964	46.5	45.07°C	0.975
	12.012V	4.979V	3.28V	4.961V	913.66				52.74°C	230.33V

The results above are not used in the certification process

20-80□□□□□

115V

□□	**12V**	**5V**	**3.3V**	**5VSB**	**DC/AC (□)**	□□	□□□□ **(RPM)**	□□□□□□□ **(dB[A])**	□□ **(□□ /□□)**	**PF/AC □□**
20W	**1.236A**	**0.497A**	**0.494A**	**0.199A**	20.008	71.746%	0	<6.0	38.48°C	0.695
	12.023V	5.028V	3.342V	5.022V	27.967				36.32°C	115.16V
40W	**2.720A**	**0.696A**	**0.692A**	**0.299A**	40.007	79.149%	0	<6.0	39.17°C	0.798
	12.023V	5.027V	3.34V	5.019V	50.602				37.82°C	115.17V
60W	**4.203A**	**0.896A**	**0.89A**	**0.399A**	60.007	84.336%	0	<6.0	40.31°C	0.837
	12.023V	5.025V	3.337V	5.016V	71.217				38.64°C	115.17V
80W	**5.684A**	**1.096A**	**1.089A**	**0.499A**	79.98	86.109%	0	<6.0	41.1°C	0.86
	12.023V	5.023V	3.335V	5.012V	92.901				39.17°C	115.17V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	**1.235A**	**0.497A**	**0.493A**	**0.199A**	20.006	64.859%	0	<6.0	42.24°C	0.391
	12.030V	5.029V	3.343V	5.022V	27.097				36.46°C	230.4V
40W	**2.718A**	**0.696A**	**0.691A**	**0.299A**	40.003	80.671%	0	<6.0	43.98°C	0.532
	12.029V	5.028V	3.341V	5.019V	49.586				39.84°C	230.4V
60W	**4.201A**	**0.896A**	**0.89A**	**0.399A**	60.001	85.944%	0	<6.0	44.11°C	0.616
	12.029V	5.026V	3.338V	5.015V	69.796				38.31°C	230.4V
80W	**5.682A**	**1.095A**	**1.088A**	**0.499A**	79.966	87.695%	0	<6.0	45.4°C	0.676
	12.028V	5.024V	3.336V	5.012V	91.239				39.3°C	230.4V

The results above are not used in the certification process

□□□□

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.1 mV	9.4 mV	6.3 mV	14.6 mV	Pass
20% Load	16.9 mV	9.5 mV	6.3 mV	15.5 mV	Pass
30% Load	12.6 mV	9.3 mV	7.0 mV	14.4 mV	Pass
40% Load	13.0 mV	10.4 mV	6.6 mV	12.9 mV	Pass
50% Load	14.4 mV	10.2 mV	7.1 mV	14.8 mV	Pass
60% Load	15.6 mV	11.6 mV	7.8 mV	13.3 mV	Pass
70% Load	16.1 mV	12.5 mV	9.3 mV	13.1 mV	Pass
80% Load	17.6 mV	15.3 mV	11.1 mV	12.8 mV	Pass
90% Load	23.5 mV	20.7 mV	13.7 mV	19.7 mV	Pass
100% Load	25.8 mV	14.8 mV	11.7 mV	13.3 mV	Pass
110% Load	27.6 mV	15.1 mV	13.0 mV	13.3 mV	Pass
Crossload 1	22.3 mV	17.6 mV	12.7 mV	10.5 mV	Pass
Crossload 2	11.0 mV	11.2 mV	8.7 mV	8.0 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload 3	9.0 mV	10.5 mV	9.6 mV	8.5 mV	Pass
Crossload 4	26.5 mV	12.7 mV	10.8 mV	10.3 mV	Pass

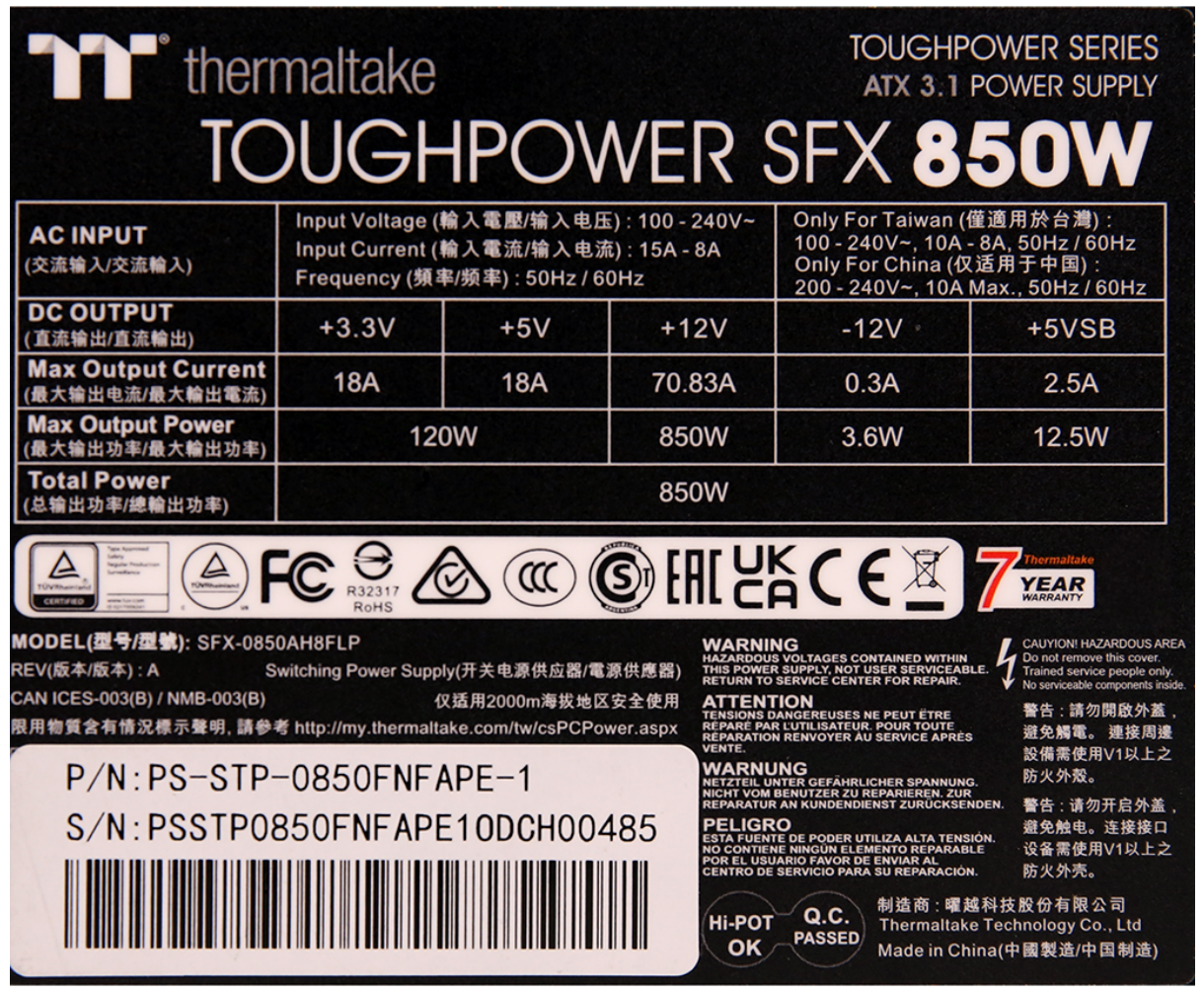
The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.1 mV	9.5 mV	6.3 mV	14.6 mV	Pass
20% Load	19.2 mV	9.5 mV	6.3 mV	16.4 mV	Pass
30% Load	13.9 mV	10.0 mV	6.6 mV	15.5 mV	Pass
40% Load	13.9 mV	9.4 mV	6.6 mV	13.3 mV	Pass
50% Load	14.7 mV	10.8 mV	6.9 mV	14.4 mV	Pass
60% Load	14.8 mV	10.4 mV	8.4 mV	13.6 mV	Pass
70% Load	15.5 mV	11.8 mV	8.4 mV	13.5 mV	Pass
80% Load	16.7 mV	14.0 mV	11.0 mV	13.3 mV	Pass
90% Load	18.3 mV	13.7 mV	11.3 mV	12.4 mV	Pass
100% Load	25.9 mV	14.2 mV	12.0 mV	12.8 mV	Pass
110% Load	28.3 mV	15.2 mV	12.2 mV	13.1 mV	Pass
Crossload 1	24.8 mV	17.0 mV	12.0 mV	9.4 mV	Pass
Crossload 2	10.8 mV	11.4 mV	8.9 mV	8.2 mV	Pass
Crossload 3	8.9 mV	10.7 mV	9.6 mV	8.0 mV	Pass
Crossload 4	25.2 mV	11.6 mV	10.9 mV	9.9 mV	Pass

The results above are not used in the certification process





Thermaltake Toughpower SFX 850W (ATX v3.1)

Top side

Power specifications label

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