THERMALRIGHT

Thermalright TR-TGFX550

Serial Number 2023010907587043

Lab ID TR55002494

Certification ID 252494

Test Result Report ID: 24PS2494A

Certificate Issue Date: Jul 4, 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	Thermalright
Model	TR-TGFX550
OEM/ODM	SANR
Serial Number	2023010907587043
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240

Rated Current (Arms)	10
Rated Frequency (Hz)	50-60
Rated Power (W)	550
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 (D92PH-12B)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	TR55002494
Date of receipt	May 1, 2024
Testing Date	Jul 2, 2024
Report Issued Date	Jul 4, 2024
DUT Notes	It drops category at 230V because of the low PF and the increased standby power.
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 20+4 pin (300mm)	1	1	18-22AWG	No
4+4 pin EPS12V (400mm)	2	2	18AWG	No
6+2 pin PCIe (400mm+120mm)	1	2	18AWG	No
SATA (120mm+120mm+120mm)	2	6	18AWG	No

4-pin Molex (120mm+120mm+120mm)	1	3	18AWG	No
AC Power Cord (1100mm) - 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	20	20	45.8	3	0
	Watts	100		549.6	15	0
Total Max. Power (W)		550				

Parts Description

General Data	
Manufacturer (OEM)	SANR
PCB Type	Double-Sided
Primary Side	
Transient Filter	4x Y caps, 1x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF725D13 (5 Ohm @25°C) & Relay
Bridge Rectifier(s)	1x Yangjie GBU1506 (600V, 15A @ 100°C)
APFC MOSFETs	2x Maplesemi SLF60R190S2 (600V, 12A @ 100°C, Rds(on): 0.19Ohm)
APFC Boost Diode	1x CR Micro CRXF06D065G2 (650V, 6A @ 150°C)

Bulk Cap(s)	1x TK (420V, 330uF, 2000h @ 105°C, LFW)
Main Switchers	2x
APFC Controller	Champion CM6500UNX & CM03AX
Resonant Controller	Champion CM6901X
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x HUAYI Microelectronics G009N04 (40V, 142A @ 100°C, Rds(on): 0.96Ohm)
5V & 3.3V	DC-DC Converters: 4x Potens DC3056CX (30V, 100A @ 25°C, Rds(on): 3.5mOhm) PWM Controller(s): 1x ANPECAPW7159C
Filtering Capacitors	Electrolytic: 3x TK (2-3000 @ 105°C, UFWE), Polymer: 26x, 1x NJCON
Supervisor IC	GRENERGY GR8329E (OVP, UVP, OCP,)
Fan Model	Yate Loon D92PH-12B (92mm, 12V, 0.6A, Fluid Dynamic Bearing Fan)
5VSB	
Low Side Rectifier	1x PS1060L SBR (42 V, 10 A)
Standby PWM Controller	Shenzhen Developer Microelectronics DP2358

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	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.453%
Average Noise Output (>1450 Load Combinations)	31.45dBA
Average PF (>1450 Load Combinations)	0.976
Efficiency With 10W (≤500W) or 2% (>500W) Load	61.453%
Standby Power Consumption	0.1367W
Non-Accredited	
12V Ripple (Full Load)	75.99mV
5V Ripple (Full Load)	35.96mV
3.3V Ripple (Full Load)	23.33mV
5VSB Ripple (Full Load)	38.04mV
12V Load Regulation	0.51%
5V Load Regulation	0.32%
3.3V Load Regulation	0.45%
5VSB Load Regulation	2.80%
Inrush Current	88.540A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.301%
Average Noise Output (>1450 Load Combinations)	31.19dBA
Average PF (>1450 Load Combinations)	0.932
Efficiency With 10W (≤500W) or 2% (>500W) Load	60.886%
Standby Power Consumption	0.1968W
Non-Accredited	
12V Ripple (Full Load)	78.73mV
5V Ripple (Full Load)	37.20mV
3.3V Ripple (Full Load)	24.76mV

5VSB Ripple (Full Load)		37.94mV
12V Load Regulation		0.55%
5V Load Regulation		0.32%
3.3V Load Regulation		0.45%
5VSB Load Regulation		2.77%
Inrush Current		115.100A
12V Transient Response (150%)		11.80V
5V Transient Response (150%)		5.029V
3.3V Transient Response (150%)		3.312V
5VSB Transient Response (150%)		4.941V
Hold-Up Time & PWR_OK Signal		17.80ms
AC Loss to PWR_OK Hold Up Time		14.60ms
PWR_OK Inactive to DC Loss Delay		3.20ms
PSU Timings: T1 (20% / 100%)	86.0ms	88.0ms
PSU Timings: T3 (20% / 100%)	125.0ms	126.0ms
12V OCP (24.4°C / 41.2°C)	62.00A (135.37%), 12.020V	62.00A (135.37%), 12.038V
5V OCP (24.4°C / 41.2°C)	29.2A (146.00%), 5.045V	29.2A (146.00%), 5.045V
3.3V OCP (24.4°C / 41.2°C)	30.5A (152.50%), 3.334V	30.9A (154.50%), 3.332V
5VSB OCP (24.4°C / 41.2°C)	3.8A (126.67%), 4.946V	3.8A (126.67%), 4.939V
OPP (28.93°C / 40.11°C)	133.93%	133.92%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	17.8
AC Loss to PWR_OK Hold Up Time (ms)	14.6
PWR_OK Inactive to DC Loss Delay (ms)	3.2

Stromverbrauch im Ruhezustand

Tables

115V

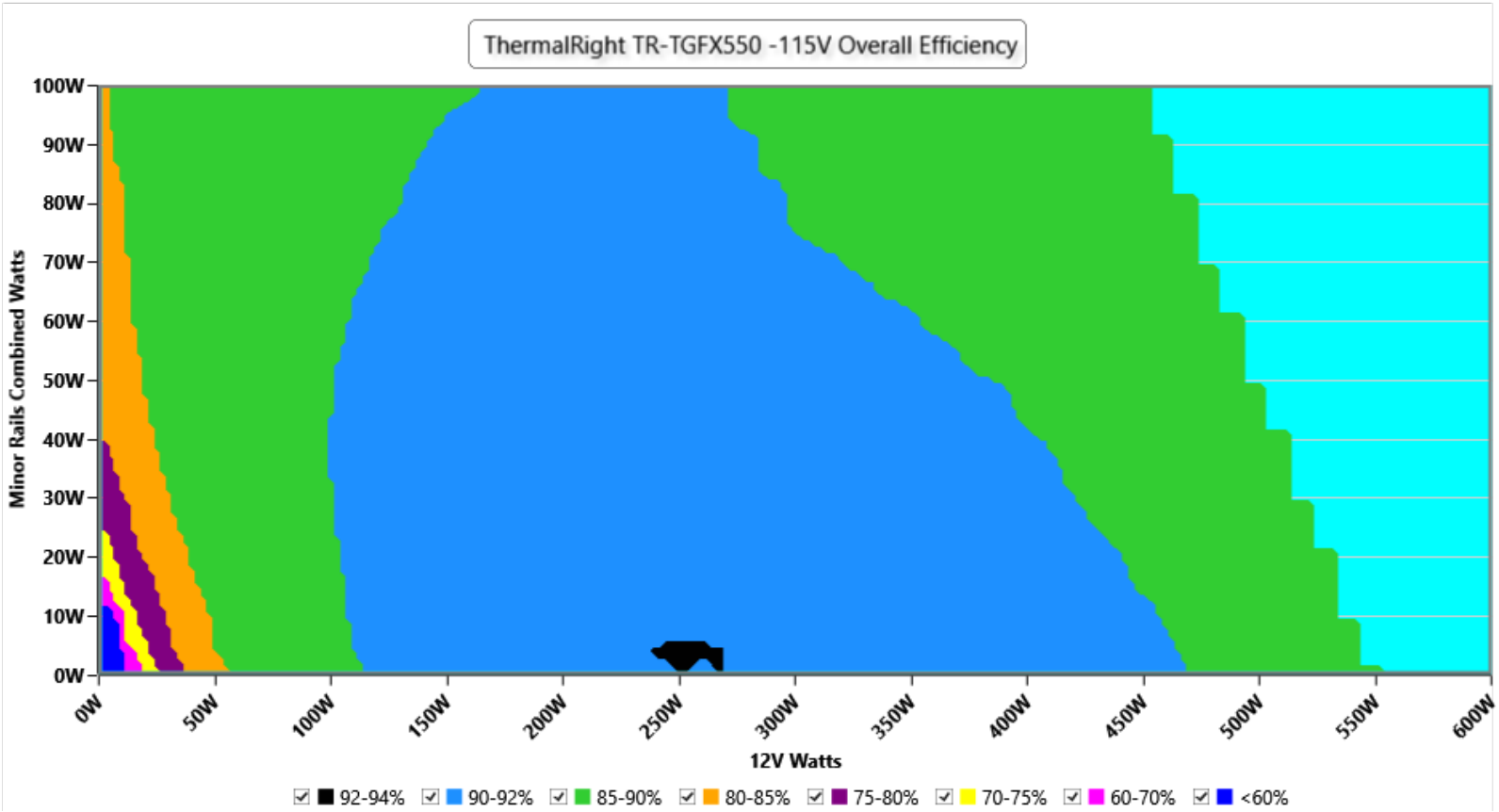
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.08 V	115.04 V	113.85 V	115.12 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.137 W	0.127 W	N/A	0.147 W	N/A	N/A
Apparent Power:	7.987 W	7.855 W	N/A	8.123 W	N/A	N/A
Power Factor:	0.018	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	230.91 V	227.70 V	231.09 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 %	0.15 %	N/A	0.28 %	2.00 %	PASS
Real Power:	0.197 W	0.176 W	N/A	0.237 W	N/A	N/A
Apparent Power:	26.819 W	26.550 W	N/A	27.114 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

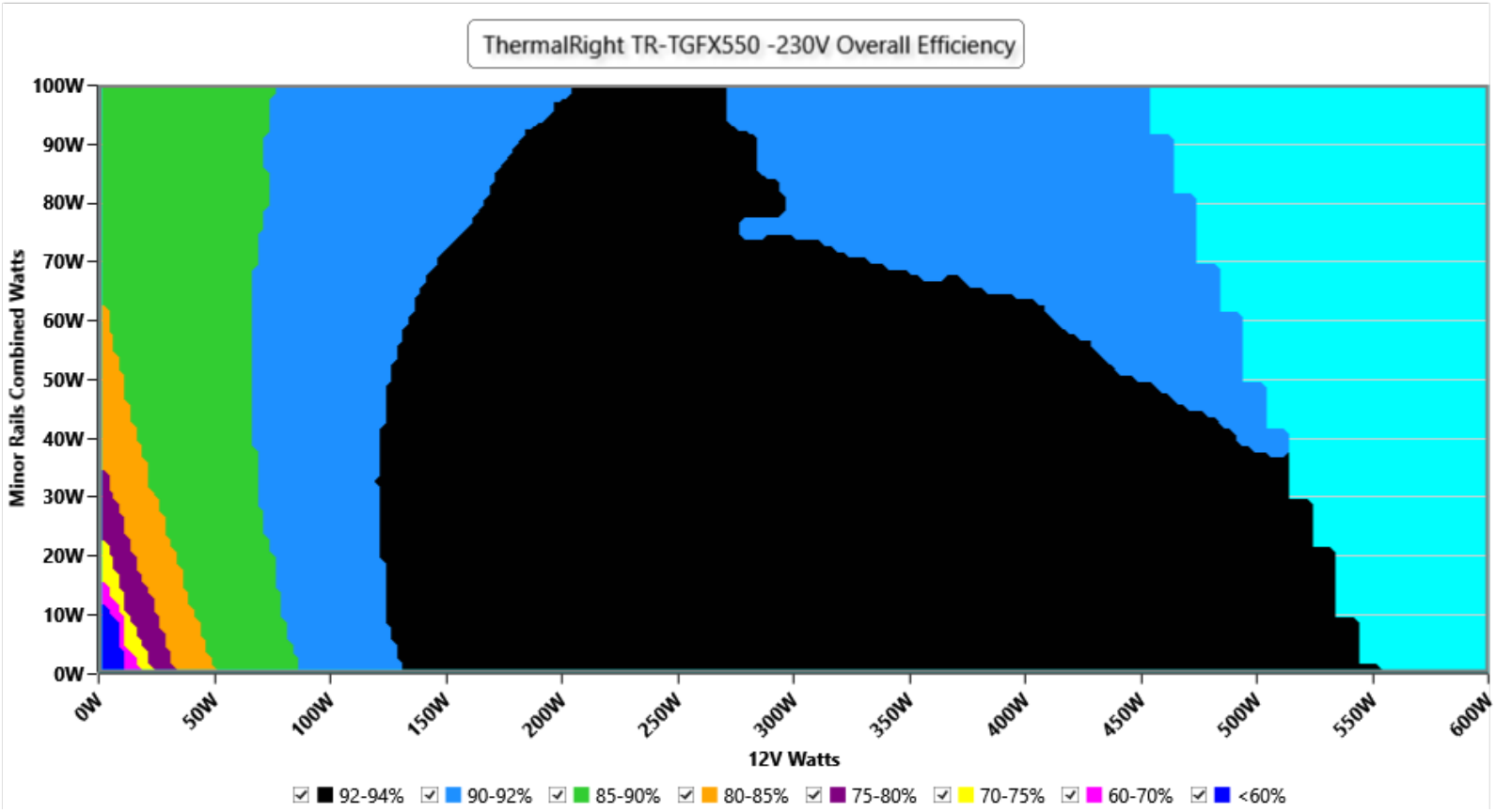
115V



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

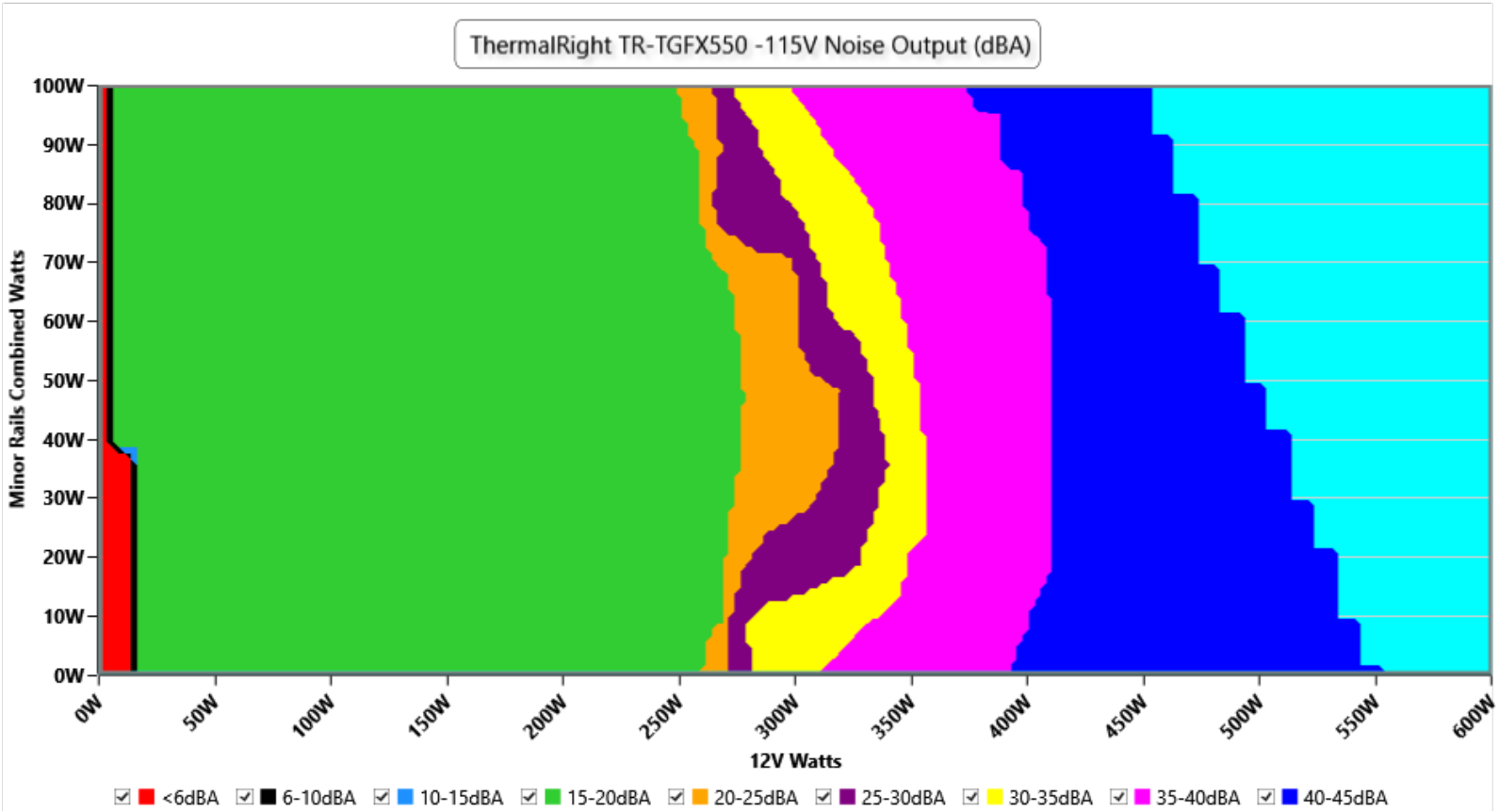


INFO

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Noise Graph

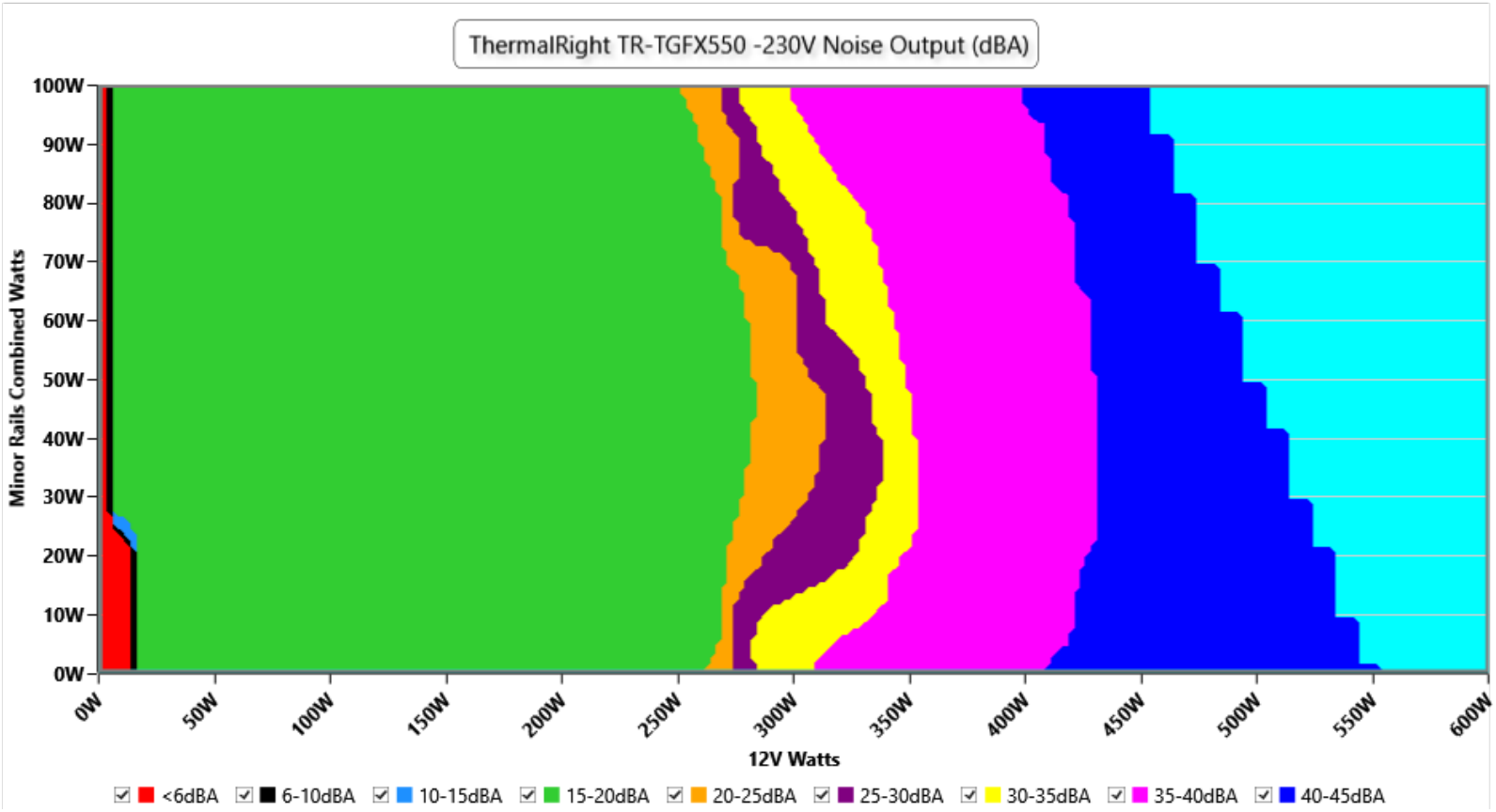
115V



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) · 29.2 °C	1421 RPM · 16.9 dB(A) · 40.3 °C	fan starts (<6.0 → 16.9)
20%	0 RPM · <6.0 dB(A) · 31.7 °C	1426 RPM · 17.0 dB(A) · 40.8 °C	fan starts (<6.0 → 17.0)
50%	1411 RPM · 16.8 dB(A) · 30.3 °C	2308 RPM · 32.1 dB(A) · 42.4 °C	**+15.3 dB(A)**
100%	3105 RPM · 40.6 dB(A) · 30.7 °C	3104 RPM · 40.6 dB(A) · 45.5 °C	**+0.0 dB(A)**

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 33.2 °C	1425 RPM · 17.0 dB(A) · 40.3 °C	fan starts (<6.0 → 17.0)
20%	1409 RPM · 16.7 dB(A) · 30.1 °C	1428 RPM · 17.1 dB(A) · 40.8 °C	**+0.4 dB(A)**
50%	1413 RPM · 16.8 dB(A) · 30.9 °C	2272 RPM · 31.3 dB(A) · 42.4 °C	**+14.5 dB(A)**
100%	3100 RPM · 40.6 dB(A) · 31.6 °C	3112 RPM · 40.7 dB(A) · 45.0 °C	**+0.1 dB(A)**

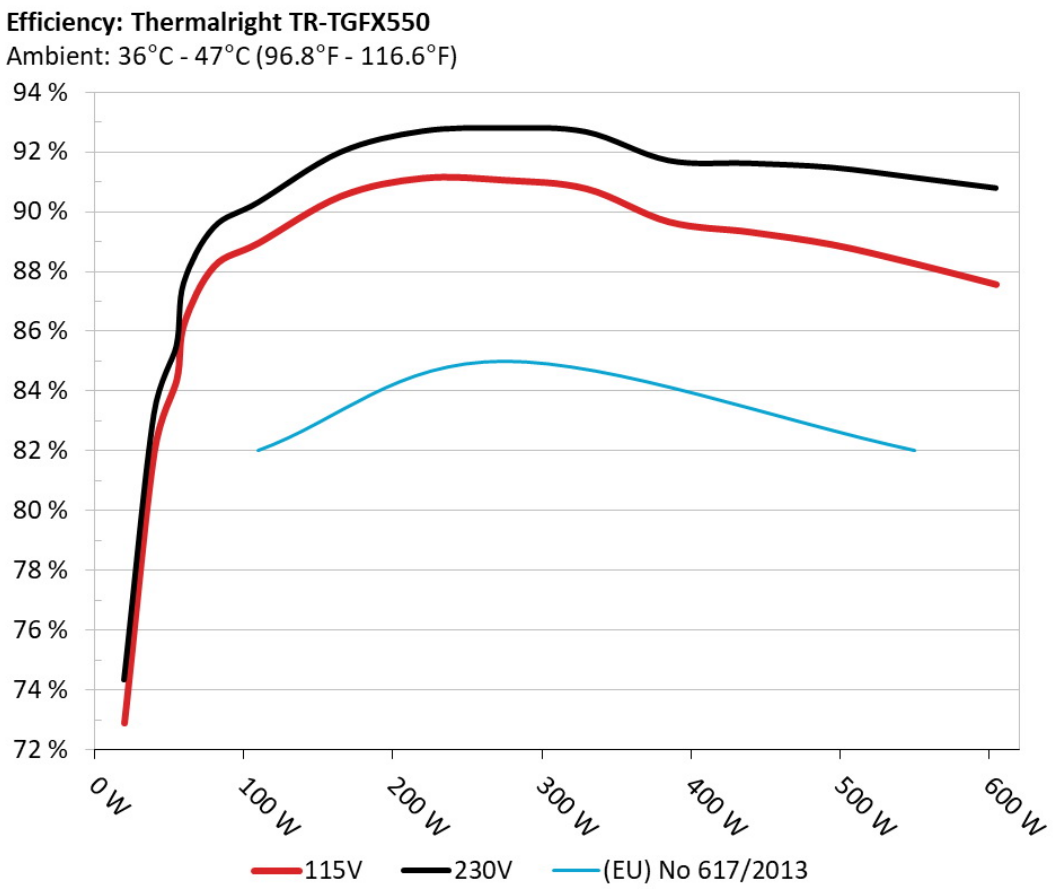
INFO

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

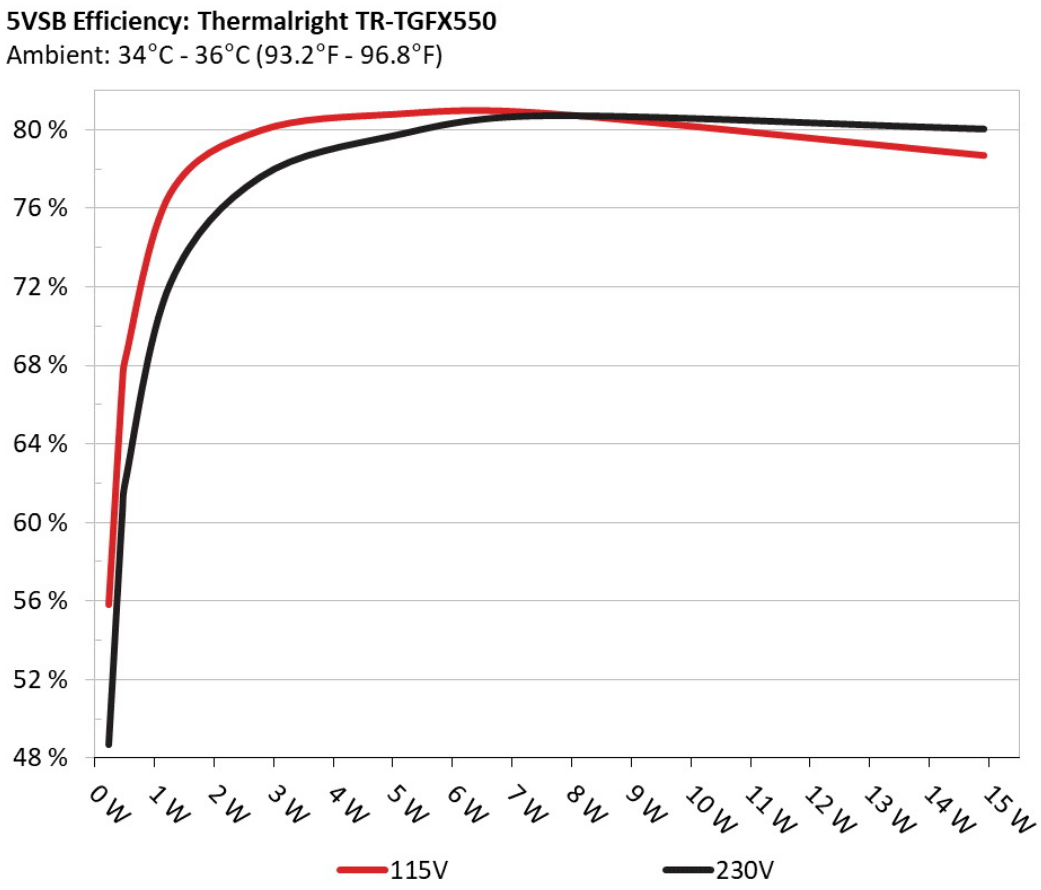
Efficiency under high ambient temperature



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**	0.227W	55.817%	0.05
	5.044V	0.407W		114.86V
2	**0.09A**	0.454W	67.046%	0.082
	5.043V	0.677W		114.85V
3	**0.55A**	2.767W	79.943%	0.301
	5.031V	3.461W		114.84V
4	**1A**	5.02W	80.777%	0.392
	5.02V	6.214W		114.84V
5	**1.5A**	7.511W	80.833%	0.433
	5.007V	9.292W		114.84V
6	**3A**	14.905W	78.679%	0.494
	4.968V	18.945W		114.83V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.227W	48.679%	0.017
	5.045V	0.467W		229.84V
2	**0.09A**	0.454W	60.445%	0.028
	5.043V	0.751W		229.83V
3	**0.55A**	2.767W	77.61%	0.123
	5.031V	3.565W		229.84V
4	**1A**	5.02W	79.735%	0.197
	5.02V	6.295W		229.83V
5	**1.5A**	7.511W	80.743%	0.258
	5.007V	9.303W		229.84V
6	**3A**	14.905W	80.068%	0.355
	4.968V	18.615W		229.84V

Protection Features

OCP (Cold @ 24.4°C)	12V: 62A (135.37%), 12.02V 5V: 29.2A (146%), 5.045V 3.3V: 30.5A (152.5%), 3.334V 5VSB: 3.8A (126.67%), 4.946V
OCP (Hot) @ 41.2°C)	12V: 62A (135.37%), 12.038V 5V: 29.2A (146%), 5.045V 3.3V: 30.9A (154.5%), 3.332V 5VSB: 3.8A (126.67%), 4.939V
OPP (Cold @ 28.9°C)	736.6W (133.93%)
OPP (Hot @ 40.1°C)	736.59W (133.92%)
OTP	✓ (155°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)

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%	**2.762A**	**1.973A**	**1.963A**	**0.998A**	54.996	84.356%	1421	16.9	40.3°C	0.949
	12.093V	5.069V	3.361V	5.012V	65.195				41.47°C	114.83V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20%	**6.541A**	**2.96A**	**2.946A**	**1.2A**	109.922	88.944%	1426	17	40.78°C	0.967
	12.081V	5.067V	3.36V	5.001V	123.586				42.17°C	114.81V
30%	**10.676A**	**3.454A**	**3.439A**	**1.403A**	164.913	90.507%	1451	17.5	41.08°C	0.967
	12.070V	5.066V	3.359V	4.99V	182.209				42.96°C	114.8V
40%	**14.821A**	**3.949A**	**3.931A**	**1.607A**	219.989	91.114%	1695	22.5	41.64°C	0.972
	12.064V	5.065V	3.358V	4.979V	241.444				43.89°C	114.77V
50%	**18.619A**	**4.938A**	**4.916A**	**1.812A**	274.983	91.047%	2308	32.1	42.43°C	0.978
	12.057V	5.063V	3.356V	4.967V	302.02				44.66°C	114.76V
60%	**22.421A**	**5.928A**	**5.903A**	**2A**	329.881	90.76%	2729	36.5	42.92°C	0.981
	12.050V	5.061V	3.354V	4.956V	363.466				45.03°C	114.74V
70%	**26.218A**	**6.918A**	**6.891A**	**2.225A**	384.965	89.654%	3103	40.6	43.14°C	0.984
	12.047V	5.059V	3.353V	4.944V	429.392				45.38°C	114.72V
80%	**30.019A**	**7.908A**	**7.877A**	**2.331A**	439.384	89.313%	3103	40.6	43.89°C	0.986
	12.042V	5.057V	3.351V	4.934V	491.957				47.62°C	114.71V
90%	**34.212A**	**8.404A**	**8.357A**	**2.437A**	494.41	88.894%	3104	40.6	44.84°C	0.987
	12.040V	5.057V	3.35V	4.925V	556.184				49.03°C	114.69V
100%	**38.208A**	**8.9A**	**8.867A**	**3.061A**	549.622	88.259%	3104	40.6	45.45°C	0.988
	12.037V	5.056V	3.349V	4.901V	622.744				50.41°C	114.65V
110%	**42.071A**	**9.893A**	**9.947A**	**3.065A**	604.628	87.558%	3104	40.6	46.6°C	0.989
	12.035V	5.054V	3.347V	4.894V	690.551				52.89°C	114.64V
CL1	**0.114A**	**11.91A**	**11.855A**	**0A**	101.282	83.626%	2908	38.7	42.94°C	0.968
	12.086V	5.054V	3.349V	5.026V	121.112				45.99°C	114.81V
CL2	**0.114A**	**19.782A**	**0A**	**0A**	101.317	83.011%	2337	32.2	41.24°C	0.968
	12.086V	5.052V	3.357V	5.029V	122.053				43.68°C	114.8V
CL3	**0.114A**	**0A**	**19.718A**	**0A**	67.379	78.943%	1775	23.8	41°C	0.957
	12.090V	5.065V	3.347V	5.029V	85.354				42.93°C	114.82V
CL4	**45.633A**	**0A**	**0A**	**0.001A**	549.513	89.309%	3116	40.7	44.48°C	0.988
	12.042V	5.069V	3.361V	4.993V	615.296				48.23°C	114.65V

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%	**2.762A**	**1.972A**	**1.963A**	**0.998A**	54.995	85.47%	1425	17	40.33°C	0.787
	12.094V	5.069V	3.362V	5.012V	64.343				41.26°C	229.83V
20%	**6.541A**	**2.96A**	**2.946A**	**1.2A**	109.922	90.301%	1428	17.1	40.79°C	0.884
	12.081V	5.067V	3.36V	5.001V	121.729				42.04°C	229.82V
30%	**10.676A**	**3.454A**	**3.438A**	**1.403A**	164.912	91.975%	1462	17.8	41.49°C	0.918
	12.070V	5.066V	3.359V	4.99V	179.301				42.21°C	229.81V
40%	**14.821A**	**3.948A**	**3.931A**	**1.607A**	219.989	92.683%	1741	23.4	41.84°C	0.936
	12.064V	5.065V	3.358V	4.979V	237.356				43.77°C	229.8V
50%	**18.619A**	**4.937A**	**4.916A**	**1.812A**	274.983	92.79%	2272	31.3	42.38°C	0.947
	12.056V	5.064V	3.356V	4.967V	296.349				44.07°C	229.8V
60%	**22.423A**	**5.927A**	**5.902A**	**2A**	329.882	92.66%	2672	35.9	42.65°C	0.954
	12.049V	5.062V	3.355V	4.956V	356.015				44.19°C	229.78V
70%	**26.220A**	**6.918A**	**6.89A**	**2.225A**	384.969	91.702%	3107	40.6	43.3°C	0.962
	12.047V	5.06V	3.353V	4.943V	419.816				45.08°C	229.77V
80%	**30.023A**	**7.906A**	**7.877A**	**2.331A**	439.388	91.607%	3103	40.6	43.72°C	0.965
	12.041V	5.058V	3.351V	4.934V	479.647				45.71°C	229.77V
90%	**34.222A**	**8.403A**	**8.357A**	**2.437A**	494.408	91.47%	3102	40.6	44.74°C	0.968
	12.036V	5.057V	3.35V	4.925V	540.512				46.55°C	229.75V
100%	**38.221A**	**8.899A**	**8.867A**	**3.06A**	549.619	91.132%	3112	40.7	45°C	0.97
	12.033V	5.056V	3.349V	4.902V	603.107				48.27°C	229.75V
110%	**42.086A**	**9.892A**	**9.947A**	**3.065A**	604.627	90.781%	3110	40.6	46.31°C	0.973
	12.031V	5.054V	3.347V	4.895V	666.028				49.64°C	229.74V
CL1	**0.114A**	**11.909A**	**11.854A**	**0A**	101.283	84.812%	2788	37	42.08°C	0.883
	12.086V	5.055V	3.349V	5.026V	119.42				44.53°C	229.82V
CL2	**0.114A**	**19.781A**	**0A**	**0A**	101.329	84.577%	2149	29.6	40.52°C	0.883
	12.085V	5.052V	3.357V	5.029V	119.808				42.87°C	229.82V
CL3	**0.114A**	**0A**	**19.718A**	**0A**	67.38	80.032%	1715	22.8	40.95°C	0.836
	12.089V	5.065V	3.347V	5.029V	84.19				42.9°C	229.83V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL4	**45.653A**	**0A**	**0A**	**0.001A**	549.474	92.211%	3123	40.8	47.36°C	0.97
	12.036V	5.07V	3.361V	4.994V	595.886				48.44°C	229.76V

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	**1.227A**	**0.493A**	**0.49A**	**0.199A**	19.993	72.889%	0	<6.0	39.5°C	0.877
	12.098V	5.072V	3.364V	5.038V	27.429				36.17°C	114.86V
40W	**2.702A**	**0.69A**	**0.687A**	**0.298A**	39.994	81.964%	0	<6.0	38.82°C	0.927
	12.098V	5.072V	3.364V	5.033V	48.796				37.34°C	114.85V
60W	**4.178A**	**0.887A**	**0.883A**	**0.398A**	59.995	86.249%	1419	16.9	38.74°C	0.949
	12.094V	5.07V	3.363V	5.029V	69.559				39.36°C	114.84V
80W	**5.650A**	**1.085A**	**1.079A**	**0.498A**	79.933	88.157%	1418	16.8	39.09°C	0.961
	12.090V	5.07V	3.362V	5.024V	90.672				40°C	114.83V

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	**1.226A**	**0.493A**	**0.49A**	**0.199A**	19.992	74.328%	0	<6.0	38.01°C	0.564
	12.099V	5.072V	3.364V	5.038V	26.895				36.37°C	229.83V
40W	**2.702A**	**0.69A**	**0.687A**	**0.298A**	39.994	83.209%	1411	16.8	37.23°C	0.721
	12.097V	5.072V	3.364V	5.033V	48.066				38.23°C	229.83V
60W	**4.178A**	**0.887A**	**0.883A**	**0.398A**	59.994	87.607%	1421	16.9	38.69°C	0.8
	12.093V	5.071V	3.363V	5.029V	68.482				39.77°C	229.83V
80W	**5.650A**	**1.084A**	**1.079A**	**0.498A**	79.932	89.455%	1420	16.9	39.01°C	0.845
	12.089V	5.07V	3.363V	5.024V	89.351				40.06°C	229.83V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	26.65mV	18.88mV	16.57mV	11.59mV	Pass
20% Load	40.40mV	20.12mV	18.16mV	13.65mV	Pass
30% Load	50.54mV	20.48mV	17.29mV	15.34mV	Pass
40% Load	44.45mV	21.30mV	18.32mV	17.04mV	Pass
50% Load	39.38mV	22.22mV	17.90mV	19.81mV	Pass
60% Load	38.72mV	25.15mV	19.19mV	21.04mV	Pass
70% Load	46.80mV	27.41mV	19.55mV	26.63mV	Pass
80% Load	49.46mV	29.76mV	22.42mV	28.37mV	Pass
90% Load	48.13mV	33.15mV	22.32mV	29.66mV	Pass
100% Load	75.99mV	35.96mV	23.33mV	38.04mV	Pass
110% Load	76.16mV	38.42mV	24.71mV	40.45mV	Pass
Crossload1	60.20mV	22.52mV	20.06mV	21.66mV	Pass
Crossload2	46.08mV	26.69mV	15.80mV	20.78mV	Pass
Crossload3	38.15mV	22.53mV	23.40mV	19.39mV	Pass
Crossload4	70.64mV	34.40mV	23.32mV	37.25mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	37.44mV	20.84mV	17.18mV	12.93mV	Pass
20% Load	43.73mV	20.32mV	16.67mV	14.01mV	Pass
30% Load	55.65mV	21.30mV	18.16mV	16.27mV	Pass
40% Load	47.93mV	21.14mV	17.60mV	17.55mV	Pass
50% Load	43.02mV	23.04mV	18.62mV	19.91mV	Pass
60% Load	39.90mV	25.97mV	18.32mV	21.29mV	Pass

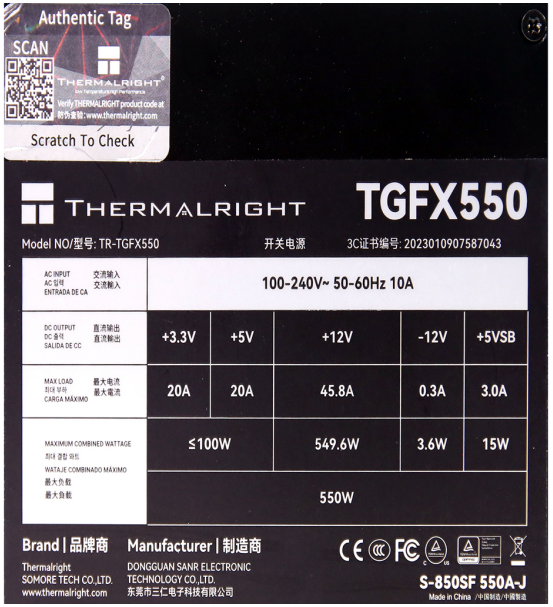
Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	45.67mV	27.10mV	19.96mV	25.71mV	Pass
80% Load	48.64mV	30.07mV	20.42mV	28.32mV	Pass
90% Load	48.74mV	32.90mV	20.68mV	30.43mV	Pass
100% Load	78.73mV	37.20mV	24.76mV	37.94mV	Pass
110% Load	76.81mV	39.01mV	25.52mV	40.30mV	Pass
Crossload1	62.94mV	23.86mV	20.01mV	21.02mV	Pass
Crossload2	43.58mV	27.87mV	15.85mV	20.42mV	Pass
Crossload3	40.81mV	25.30mV	22.83mV	20.11mV	Pass
Crossload4	74.26mV	36.11mV	23.24mV	38.11mV	Pass

The results above are not used in the certification process

Thermalright TR-TGFX550



Top side



Power specifications label

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