FSP Technology Hydro Ti Pro 1000W

Serial Number S2161030025

Lab ID FS10002101

Certification ID 252101

Test Result Report ID: 22PS2101A

Certificate Issue Date: Dec 19, 2022

Scheme: ETA-EMI PSU

115V



230V

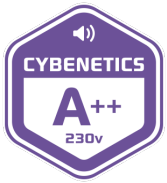


Scheme: LAMBDA PSU

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	FSP Technology
Model	Hydro Ti Pro 1000W
OEM/ODM	FSP
Serial Number	S2161030025
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6

Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Fluid Dynamic Bearing Fan (MGA13512XF-A25)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	FS10002101
Date of receipt	Dec 9, 2022
Testing Date	Dec 19, 2022
Report Issued Date	Dec 19, 2022
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 (600mm)	1	1	16-22AWG	Yes
4+4 pin EPS12V (700mm)	2	2	16AWG	No
6+2 pin PCIe (650mm)	3	3	16AWG	No
6+2 pin PCIe (650mm+150mm)	2	4	16-18AWG	No
12+4 pin PCIe (700mm) (600W)	1	1	16-24AWG	No
SATA (500mm+150mm+150mm+150mm)	2	8	18AWG	No
SATA (500mm+150mm) / 4 pin Molex (+150mm+100mm)	1	2 / 2	18AWG	No

SATA (500mm+150mm) / 4 pin Molex (+150mm) / FDD (+150mm)	1	2 / 1 / 1	18-22AWG	No	

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.33	3	0.3
	Watts	120		1000	15	3.6
Total Max. Power (W)		1000				

Parts Description

General Data	
Manufacturer (OEM)	FSP
PCB Type	Double Sided
Primary Side	
Transient Filter	2x Y caps, 2x SMD Y caps, 3x X caps, 1x CM choke, 1x DM choke, 1x MOV
Inrush Protection	1x NTC Thermistor SCK205R0 (5 Ohm) & Relay
Standby Rectifier Diodes	4x On Semiconductor S1M (1000V, 1A @ 100°C)
Bridge Rectifier MOSFETs	4x STMicroelectronics STB57N65M5 (650V, 26.5A @ 100°C, Rds(on): 0.063Ohm)
APFC MOSFETs	2x Infineon IPA60R099C7 (600V, 8A @ 100°C, Rds(on): 0.099Ohm)
APFC Boost Diode	2x Infineon IDH08G65C6 (650V, 8A @ 145°C)
Bulk Cap(s)	1x Nippon Chemi-Con (450V, 680uF, 2,000h @ 105°C, KMZ) & 1x Nippon Chemi-Con (450V, 330uF, 2,000h @ 105°C, KMR)
Main Switchers	4x Alpha & Omega AOTF160A60L (600V, 15A @ 100°C, Rds(on): 0.016Ohm)
Driver ICs	2x Novosense NSi6602
APFC Controller	Infineon ICE2PCS02G
Resonant Controller	Champion CM6901T2X
Topology	Primary side: Brigdeless, APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	6x Toshiba TPHR8504PL (40V, 150A, Rds(on): 0.85mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0901NS (30V, 94A @ 100°C, Rds(on): 1.9mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 5x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 4x Rubycon (6-10,000h @ 105°C, ZLH), 1x Rubycon (1-5,000h @ 105°C, ZL) Polymer: 21x United Chemi-Con, 19x NIC, 4x FPCAP

Supervisor IC	Weltrend WT7527RA (OVP, UVP, OCP, SCP, PG)
Fan Controller	APW9010
Fan Model	Protechnic Electric MGA13512XF-A25 (135mm, 12V, 0.38A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	1x Nexperia PSMN2R0-30YLD FET (30V, 100A, Rds(on): 2Ohm), 1x P15L50N5 SBR (50V, 15A) &1x CET CEB04N7G FET (700V, 4A, Rds(on): 3.3Ohm)
Standby PWM Controller	GR8837CCG

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 v3.0 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	92.235%
Average Noise Output (>1450 Load Combinations)	12.65dBA
Average PF (>1450 Load Combinations)	0.993
Efficiency With 10W (≤500W) or 2% (>500W) Load	74.077%
Standby Power Consumption	0.0756W
Non-Accredited	
12V Ripple (Full Load)	19.74mV
5V Ripple (Full Load)	9.47mV
3.3V Ripple (Full Load)	11.90mV
5VSB Ripple (Full Load)	16.62mV
12V Load Regulation	0.50%

5V Load Regulation	1.34%
3.3V Load Regulation	1.84%
5VSB Load Regulation	4.13%
Inrush Current	33.780A

230V

Accredited		
Average Efficiency (>1450 load combinations)		93.950%
Average Noise Output (>1450 Load Combinations)		14.69dBA
Average PF (>1450 Load Combinations)		0.968
Efficiency With 10W (≤500W) or 2% (>500W) Load		75.276%
Standby Power Consumption		0.1218W
Non-Accredited		
12V Ripple (Full Load)		16.82mV
5V Ripple (Full Load)		9.39mV
3.3V Ripple (Full Load)		12.81mV
5VSB Ripple (Full Load)		16.40mV
12V Load Regulation		0.58%
5V Load Regulation		1.46%
3.3V Load Regulation		1.94%
5VSB Load Regulation		4.25%
Inrush Current		66.610A
12V Transient Response (200%)		11.72V
5V Transient Response (200%)		5.098V
3.3V Transient Response (200%)		3.272V
5VSB Transient Response (200%)		5.028V
Hold-Up Time & PWR_OK Signal		27.10ms
AC Loss to PWR_OK Hold Up Time		23.30ms
PWR_OK Inactive to DC Loss Delay		3.80ms
PSU Timings: T1 (20% / 100%)	51.0ms	51.0ms
PSU Timings: T3 (20% / 100%)	129.0ms	130.0ms
OPP (28.78°C / 40.63°C)	129.89%	129.89%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	27.1
AC Loss to PWR_OK Hold Up Time (ms)	23.3
PWR_OK Inactive to DC Loss Delay (ms)	3.8

Vampire Power

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.86 V	114.81 V	113.85 V	114.89 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	60.00 Hz	59.40 Hz	60.02 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.416	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.17 %	0.13 %	N/A	0.24 %	2.00 %	PASS
Real Power:	0.076 W	0.038 W	N/A	0.108 W	N/A	N/A
Apparent Power:	9.472 W	8.985 W	N/A	9.793 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

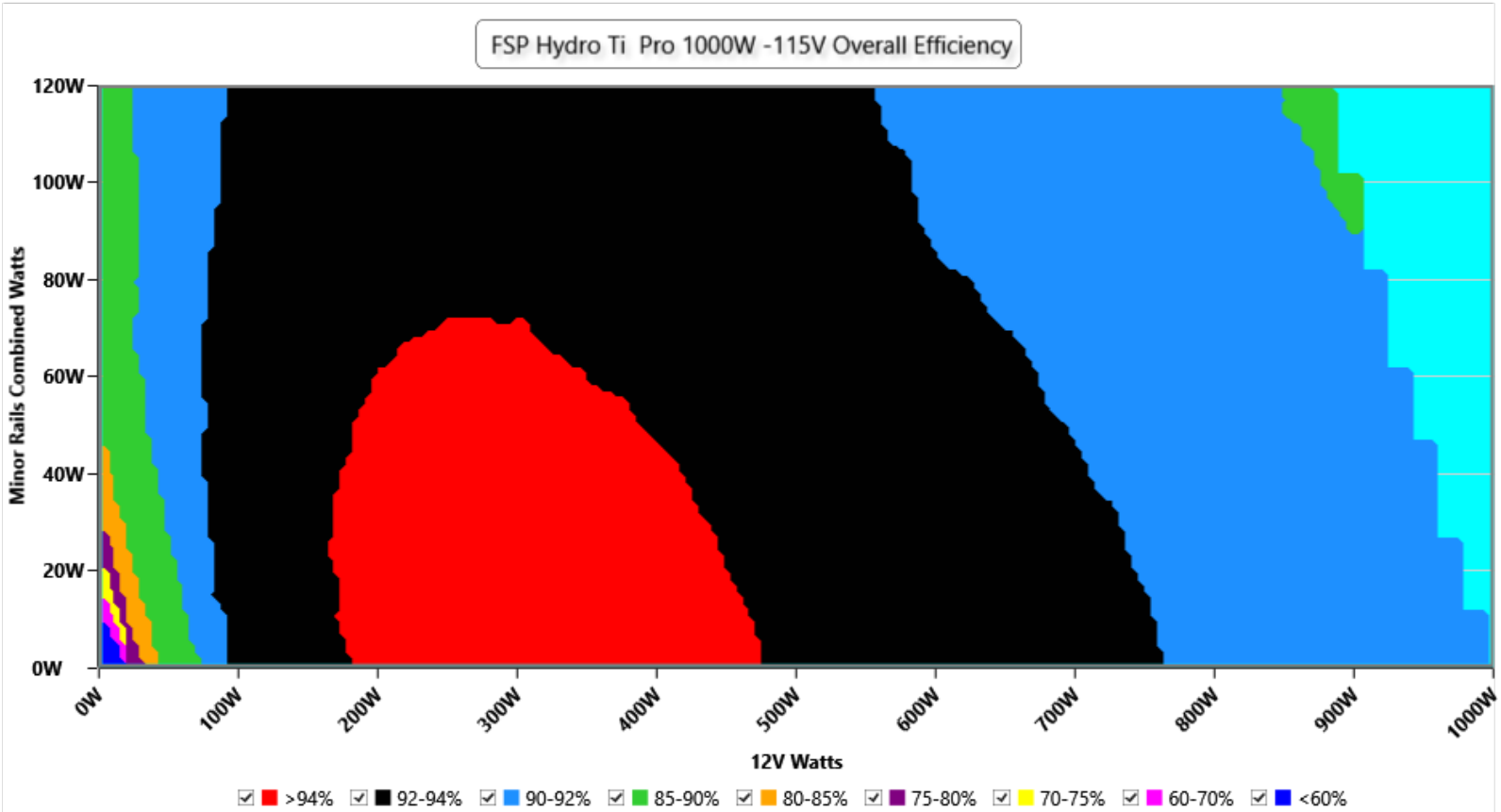
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.88 V	229.84 V	227.70 V	229.93 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.01 Hz	50.50 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	0.20 %	2.00 %	PASS
Real Power:	0.122 W	0.045 W	N/A	0.202 W	N/A	N/A
Apparent Power:	31.424 W	31.022 W	N/A	31.770 W	N/A	N/A

Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

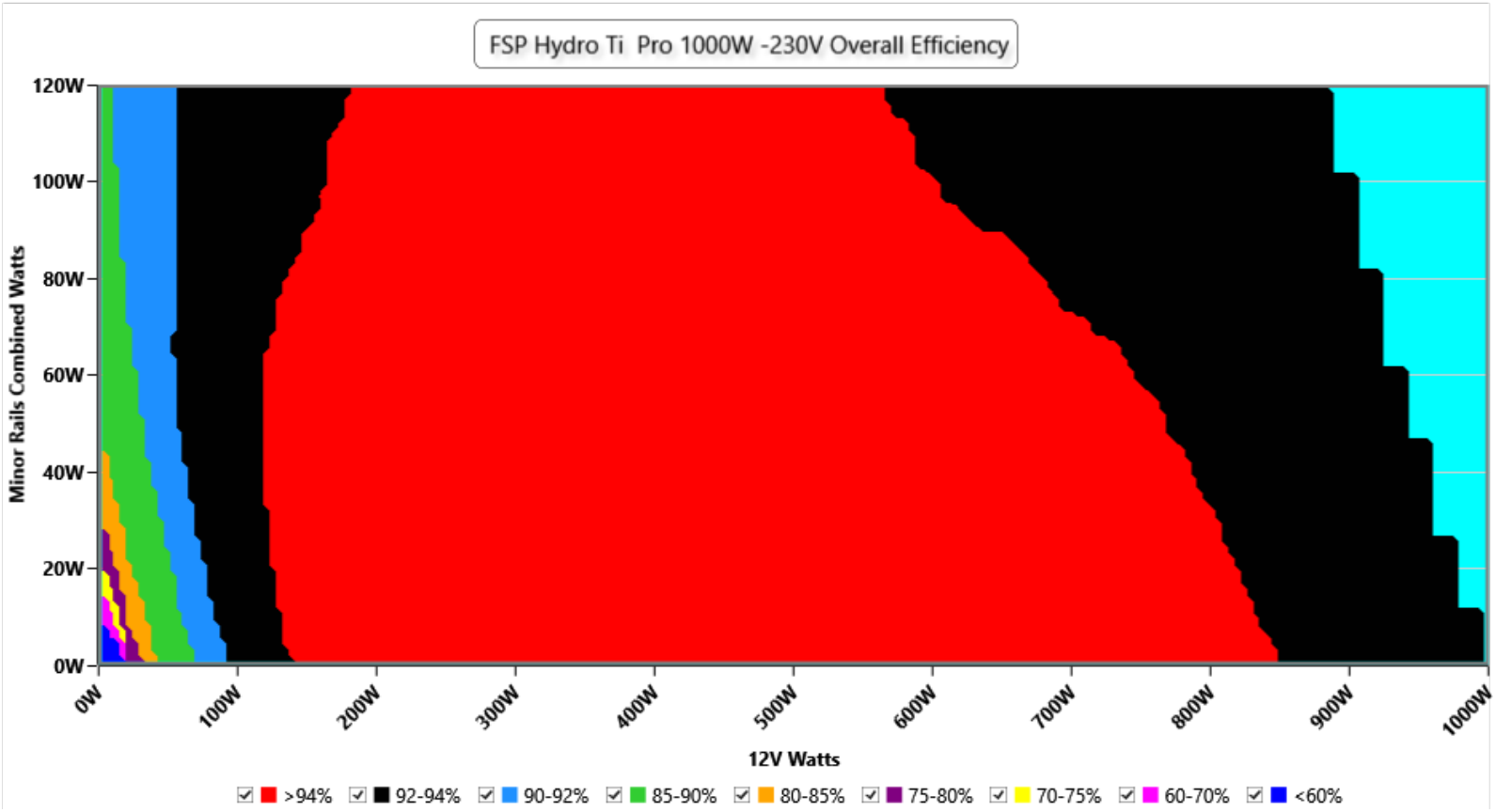
115V



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

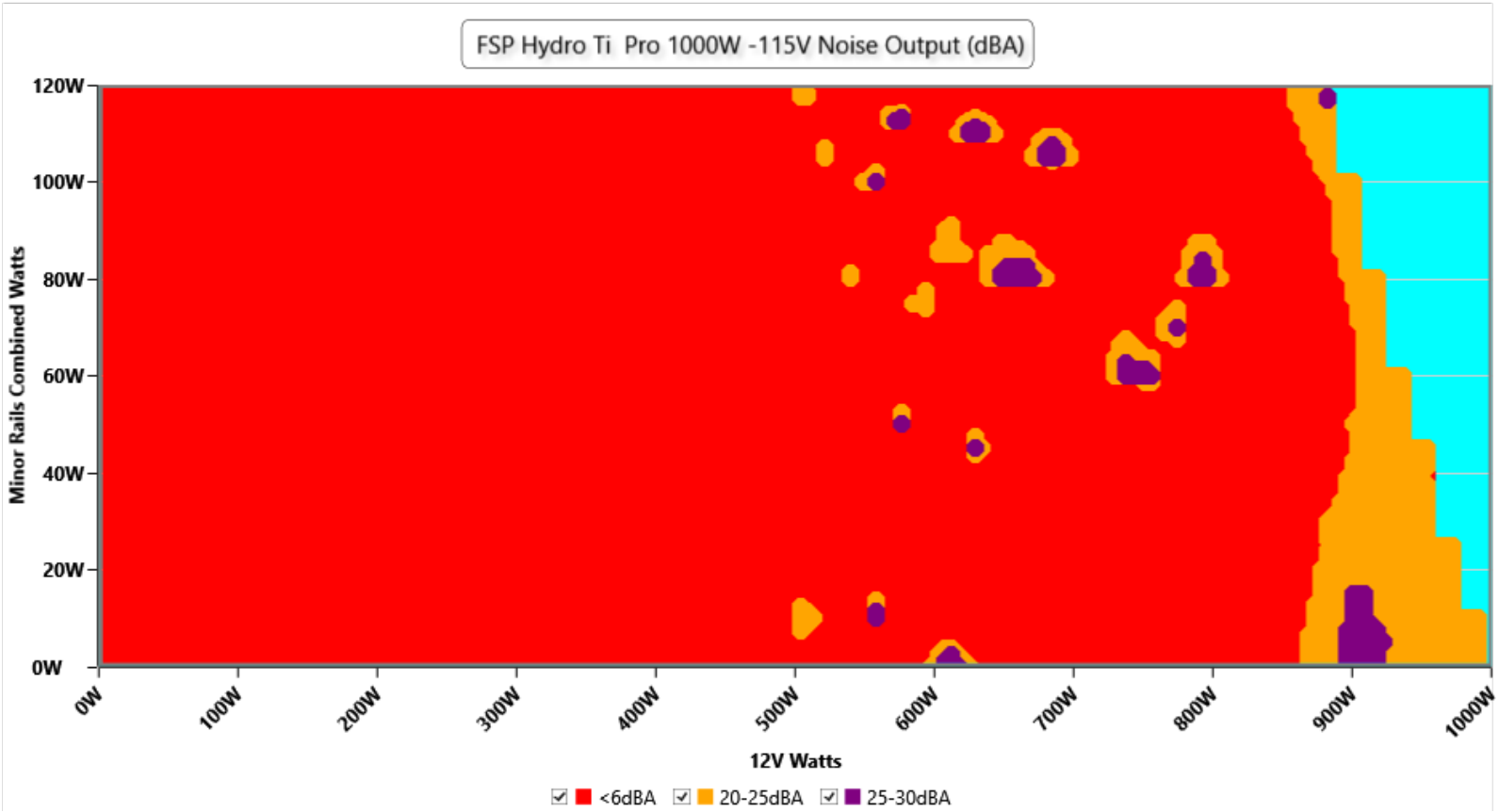


INFO

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Noise Graph

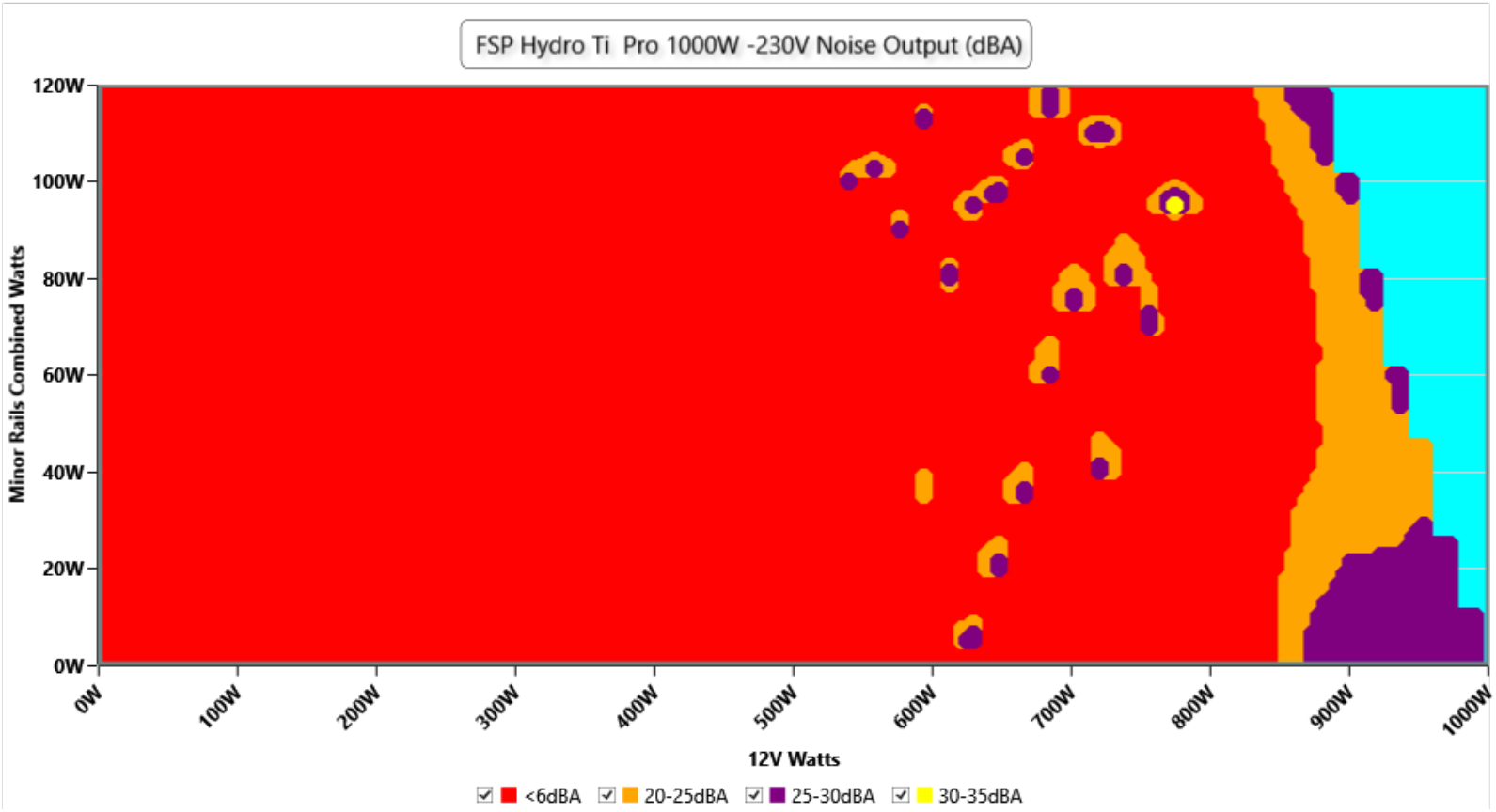
115V



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) · 44.4 °C	0 RPM · <6.0 dB(A) · 44.4 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.5 °C	0 RPM · <6.0 dB(A) · 45.5 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 48.3 °C	0 RPM · <6.0 dB(A) · 48.3 °C	fan off in both
100%	1464 RPM · 41.4 dB(A) · 45.2 °C	1464 RPM · 41.4 dB(A) · 45.2 °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) · 44.4 °C	0 RPM · <6.0 dB(A) · 44.4 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.2 °C	0 RPM · <6.0 dB(A) · 45.2 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 48.6 °C	0 RPM · <6.0 dB(A) · 48.6 °C	fan off in both
100%	1354 RPM · 39.2 dB(A) · 45.1 °C	1354 RPM · 39.2 dB(A) · 45.1 °C	**+0.0 dB(A)**

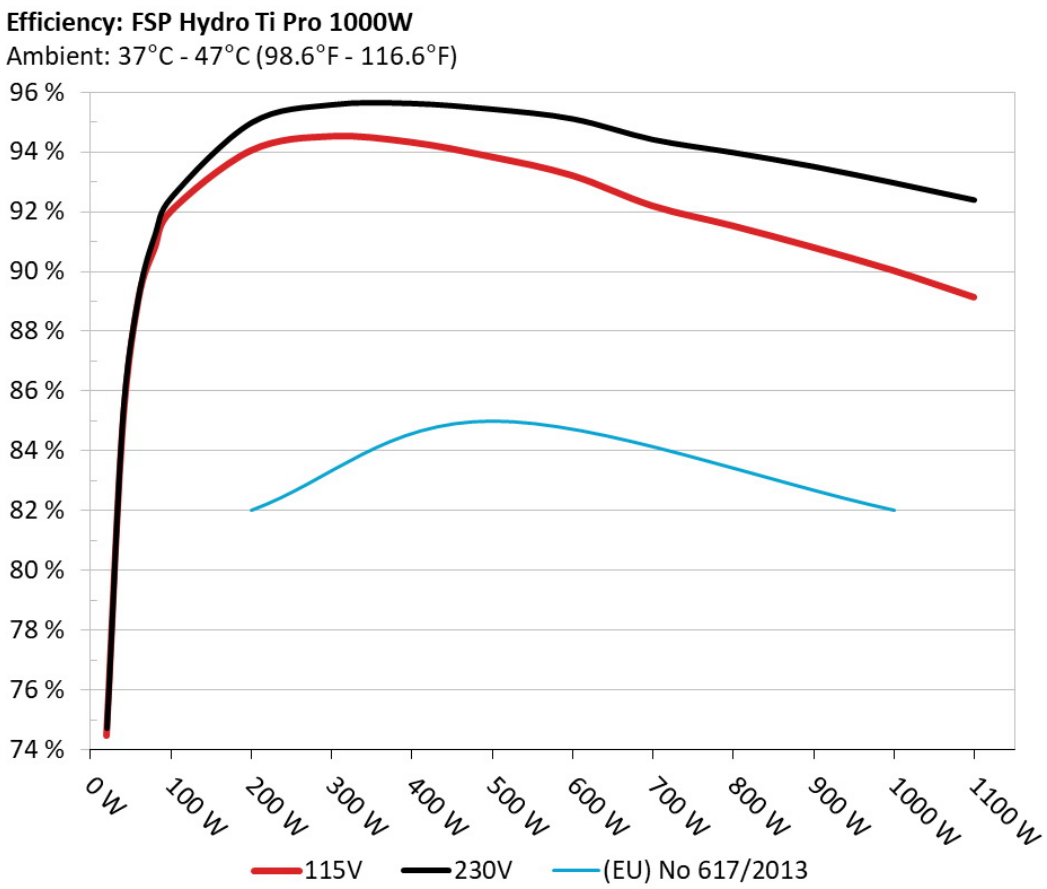
INFO

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

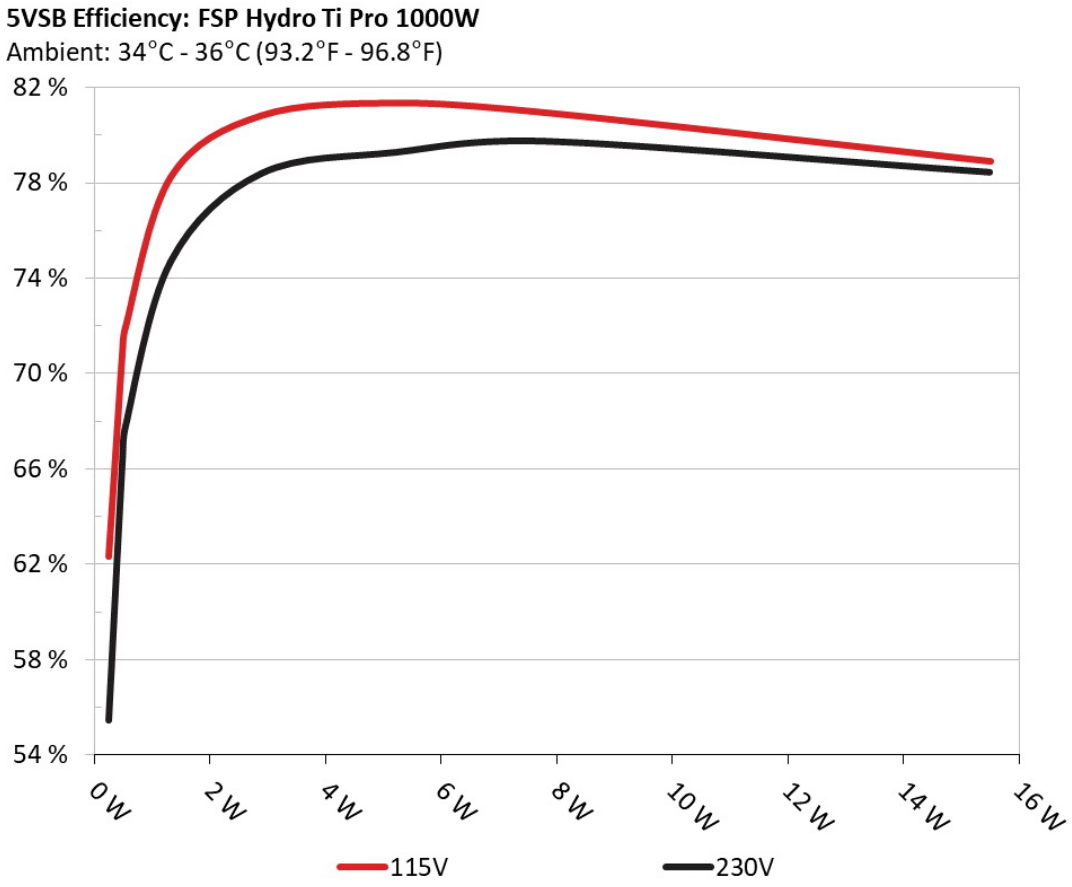
Efficiency under high ambient temperature



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	0.236W	62.809%	0.04
	5.248V	0.378W		114.85V
2	0.09A	0.472W	71.385%	0.069
	5.247V	0.661W		114.84V
3	0.55A	2.879W	81.334%	0.28
	5.236V	3.54W		114.85V
4	1A	5.224W	81.863%	0.378
	5.225V	6.381W		114.84V
5	1.5A	7.817W	81.451%	0.432
	5.212V	9.596W		114.84V
6	2.999A	15.507W	79.412%	0.495
	5.171V	19.528W		114.85V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.236W	55.95%	0.013
	5.248V	0.423W		229.89V
2	0.09A	0.472W	66.83%	0.022
	5.247V	0.706W		229.89V
3	0.55A	2.879W	78.876%	0.11
	5.235V	3.647W		229.89V
4	1A	5.222W	79.766%	0.182
	5.223V	6.548W		229.89V
5	1.5A	7.814W	80.224%	0.244
	5.21V	9.74W		229.89V
6	2.999A	15.497W	78.928%	0.355
	5.167V	19.635W		229.89V

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%	6.450A	1.923A	1.96A	0.97A	99.984	92.009%	0	<6.0	44.43°C	0.982
	12.153V	5.199V	3.366V	5.151V	108.668				40.01°C	114.83V
20%	13.915A	2.89A	2.947A	1.169A	199.912	94.038%	0	<6.0	45.51°C	0.991
	12.146V	5.19V	3.359V	5.134V	212.585				40.6°C	114.8V
30%	21.738A	3.376A	3.444A	1.368A	299.939	94.513%	0	<6.0	46.79°C	0.995
	12.139V	5.183V	3.353V	5.118V	317.354				41.53°C	114.78V
40%	29.513A	3.864A	3.943A	1.568A	399.281	94.314%	0	<6.0	47.61°C	0.996
	12.133V	5.176V	3.347V	5.102V	423.352				41.87°C	114.76V
50%	36.983A	4.836A	4.938A	1.77A	499.014	93.827%	0	<6.0	48.29°C	0.997
	12.127V	5.169V	3.341V	5.085V	531.836				42.19°C	114.72V
60%	44.525A	5.811A	5.937A	1.973A	599.546	93.205%	0	<6.0	49.49°C	0.997
	12.122V	5.163V	3.335V	5.069V	643.253				42.9°C	114.7V
70%	52.018A	6.791A	6.942A	2.177A	699.27	92.19%	689	<6.0	43.64°C	0.997
	12.114V	5.154V	3.328V	5.05V	758.499				50.71°C	114.68V
80%	59.574A	7.773A	7.945A	2.281A	799.253	91.523%	746	19.7	43.9°C	0.997
	12.109V	5.147V	3.321V	5.038V	873.288				51.95°C	114.65V
90%	67.472A	8.266A	8.443A	2.387A	899.009	90.806%	1122	34.0	44.2°C	0.996
	12.103V	5.139V	3.314V	5.025V	990.03				53.23°C	114.63V
100%	75.180A	8.766A	8.974A	3.008A	999.013	90.029%	1464	41.4	45.19°C	0.996
	12.096V	5.132V	3.308V	4.985V	1109.659				55.22°C	114.59V
110%	82.834A	9.758A	10.084A	3.013A	1099.649	89.136%	1803	46.8	47.35°C	0.995
	12.089V	5.123V	3.3V	4.976V	1233.669				58.26°C	114.56V
CL1	0.113A	13.938A	14.241A	0A	121.247	88.879%	0	<6.0	48.99°C	0.985
	12.153V	5.179V	3.348V	5.197V	136.42				43.69°C	114.81V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.113A	19.265A	0A	0A	101.367	88.022%	0	<6.0	49.86°C	0.983
	12.158V	5.191V	3.356V	5.216V	115.161				42.76°C	114.82V
CL3	0.113A	0A	19.635A	0A	67.353	83.552%	0	<6.0	51.83°C	0.971
	12.156V	5.197V	3.36V	5.196V	80.611				42.65°C	114.83V
CL4	82.601A	0A	0A	0.001A	999.671	90.506%	1226	36.5	44.64°C	0.996
	12.102V	5.152V	3.322V	5.151V	1104.544				55.5°C	114.59V

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%	6.448A	1.924A	1.961A	0.971A	99.991	92.48%	0	<6.0	44.42°C	0.882
	12.156V	5.198V	3.365V	5.15V	108.124				40.1°C	229.89V
20%	13.914A	2.891A	2.948A	1.169A	199.934	94.986%	0	<6.0	45.23°C	0.957
	12.149V	5.19V	3.359V	5.133V	210.488				40.54°C	229.87V
30%	21.735A	3.377A	3.445A	1.368A	299.973	95.586%	0	<6.0	46.86°C	0.975
	12.143V	5.183V	3.353V	5.116V	313.823				41.57°C	229.86V
40%	29.516A	3.864A	3.944A	1.569A	399.408	95.627%	0	<6.0	47.55°C	0.982
	12.136V	5.177V	3.347V	5.1V	417.674				41.92°C	229.85V
50%	36.984A	4.837A	4.94A	1.77A	499.133	95.438%	0	<6.0	48.59°C	0.983
	12.130V	5.17V	3.34V	5.084V	522.993				42.5°C	229.84V
60%	44.523A	5.811A	5.938A	1.973A	599.633	95.114%	0	<6.0	49.57°C	0.984
	12.125V	5.164V	3.334V	5.068V	630.432				42.91°C	229.83V
70%	52.007A	6.788A	6.941A	2.176A	699.327	94.422%	664	<6.0	43.3°C	0.986
	12.118V	5.157V	3.328V	5.052V	740.645				50.35°C	229.81V
80%	59.579A	7.773A	7.946A	2.282A	799.294	93.987%	666	<6.0	43.41°C	0.987
	12.109V	5.147V	3.32V	5.038V	850.425				51.59°C	229.8V
90%	67.475A	8.267A	8.444A	2.387A	899.032	93.523%	984	30.3	44.16°C	0.987
	12.102V	5.139V	3.314V	5.025V	961.293				53.25°C	229.79V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	75.183A	8.767A	8.975A	3.009A	999.029	92.976%	1354	39.2	45.11°C	0.986
	12.096V	5.131V	3.307V	4.984V	1074.505				55.14°C	229.78V
110%	82.836A	9.758A	10.085A	3.013A	1099.636	92.398%	1747	46.6	46.52°C	0.986
	12.088V	5.122V	3.3V	4.976V	1190.12				57.45°C	229.76V
CL1	0.113A	13.942A	14.244A	0A	121.248	89.672%	0	<6.0	47.19°C	0.916
	12.151V	5.177V	3.348V	5.196V	135.199				41.66°C	229.88V
CL2	0.113A	19.271A	0A	0A	101.367	88.687%	0	<6.0	49.89°C	0.892
	12.158V	5.189V	3.355V	5.215V	114.296				42.83°C	229.89V
CL3	0.113A	0A	19.638A	0A	67.353	84.168%	0	<6.0	53.76°C	0.823
	12.156V	5.196V	3.36V	5.195V	80.025				44.73°C	229.89V
CL4	82.586A	0A	0A	0.001A	999.634	93.435%	1184	35.5	45.17°C	0.986
	12.104V	5.154V	3.323V	5.153V	1069.875				55.98°C	229.77V

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	1.220A	0.481A	0.49A	0.193A	19.987	74.485%	0	<6.0	40.17°C	0.857
	12.156V	5.201V	3.369V	5.191V	26.833				37.1°C	114.84V
40W	2.688A	0.673A	0.686A	0.289A	39.986	84.794%	0	<6.0	41.29°C	0.935
	12.155V	5.199V	3.367V	5.185V	47.156				38.01°C	114.84V
60W	4.156A	0.866A	0.882A	0.386A	59.985	89.116%	0	<6.0	42.49°C	0.963
	12.153V	5.198V	3.366V	5.179V	67.31				38.72°C	114.84V
80W	5.621A	1.058A	1.079A	0.483A	79.936	90.787%	0	<6.0	43.44°C	0.976
	12.152V	5.197V	3.365V	5.173V	88.046				39.43°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	1.220A	0.48A	0.489A	0.192A	19.992	74.731%	0	<6.0	40.21°C	0.492
	12.166V	5.206V	3.371V	5.196V	26.751				37.1°C	229.9V
40W	2.687A	0.673A	0.685A	0.289A	39.987	85.199%	0	<6.0	40.83°C	0.665
	12.163V	5.204V	3.369V	5.189V	46.934				37.51°C	229.89V
60W	4.154A	0.865A	0.882A	0.386A	59.985	89.255%	0	<6.0	41.54°C	0.777
	12.161V	5.202V	3.368V	5.182V	67.207				38.01°C	229.89V
80W	5.618A	1.058A	1.078A	0.483A	79.941	91.254%	0	<6.0	42.95°C	0.842
	12.159V	5.2V	3.367V	5.176V	87.602				39.1°C	229.89V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.90mV	4.47mV	15.22mV	10.68mV	Pass
20% Load	7.72mV	4.93mV	14.31mV	10.47mV	Pass
30% Load	9.55mV	5.03mV	16.79mV	11.08mV	Pass
40% Load	11.77mV	5.44mV	16.48mV	12.40mV	Pass
50% Load	12.84mV	5.95mV	7.79mV	12.19mV	Pass
60% Load	14.41mV	5.99mV	8.80mV	12.70mV	Pass
70% Load	11.01mV	6.96mV	18.91mV	13.56mV	Pass
80% Load	11.80mV	6.76mV	17.59mV	13.41mV	Pass
90% Load	12.91mV	7.07mV	10.82mV	14.17mV	Pass
100% Load	19.74mV	9.47mV	11.90mV	16.62mV	Pass
110% Load	21.34mV	9.35mV	14.51mV	16.16mV	Pass
Crossload1	9.62mV	6.50mV	7.71mV	11.78mV	Pass
Crossload2	5.95mV	6.56mV	6.67mV	11.33mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	5.06mV	7.17mV	15.72mV	10.78mV	Pass
Crossload4	19.33mV	8.32mV	11.45mV	16.39mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.98mV	4.62mV	4.85mV	10.88mV	Pass
20% Load	14.18mV	5.39mV	14.05mV	14.47mV	Pass
30% Load	9.90mV	5.39mV	5.91mV	12.20mV	Pass
40% Load	15.85mV	5.13mV	12.74mV	14.82mV	Pass
50% Load	13.62mV	5.69mV	16.38mV	12.75mV	Pass
60% Load	15.54mV	6.45mV	15.88mV	15.23mV	Pass
70% Load	13.16mV	6.91mV	14.81mV	14.62mV	Pass
80% Load	16.32mV	6.76mV	16.13mV	15.74mV	Pass
90% Load	11.14mV	7.07mV	11.27mV	13.41mV	Pass
100% Load	16.82mV	9.39mV	12.81mV	16.40mV	Pass
110% Load	18.17mV	9.42mV	14.10mV	16.89mV	Pass
Crossload1	9.44mV	7.06mV	7.85mV	12.59mV	Pass
Crossload2	5.29mV	6.60mV	6.47mV	11.74mV	Pass
Crossload3	4.86mV	5.54mV	7.18mV	10.83mV	Pass
Crossload4	16.83mV	8.76mV	11.98mV	15.52mV	Pass

The results above are not used in the certification process

FSP Technology Hydro Ti Pro 1000W



Top side



Power specifications label

All data and graphs included in this test report can be used by any individual on the following conditions:

› It should be mentioned that the test results are provided by Cybenetics

› The link to the original test results document should be provided in any case

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

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