



Montech Titan PLA 750W White



Lab ID MT75002430

Certification ID 252430

Test Result Report ID: 24PS2430A

Certificate Issue Date: Apr 30, 2024

115V

230V

Scheme: ETA-EMI PSU

115V

230V

Scheme: LAMBDA PSU

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	Montech
Model	Titan PLA 750W White
OEM/ODM	Seasonic
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
$\square\square\square$ (Vrms)	100-240
$\square\square\square$ (Arms)	10-5

□□□□ (Hz)	50-60
□□□□ (W)	750
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	MT75002430
Date of receipt	Apr 9, 2024
Testing Date	Apr 29, 2024
Report Issued Date	Apr 30, 2024
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (615mm)	1	1	16-18AWG	□
4+4 pin EPS 12V □□ (710mm)	2	2	16AWG	□
6+2pin PCIe□□ (760mm)	3	3	16-18AWG	□
12+4 pin PCIe (760mm) (600W)	1	1	16-28AWG	□
SATA□□ 3.3 (515mm+160mm)	1	2	18AWG	□
SATA□□ (510mm+160mm+160mm+160mm)	2	8	18AWG	□
4-pin Molex (510mm+160mm+160mm+160mm)	1	4	18AWG	No



□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	62	3	0.3
	□	100		744	15	3.6
□□□□ (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Seasonic
PCB Type	Double-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF72 5D-20 (5 Ohm) & Relay
Bridge Rectifier(s)	2x Liteon GBU15JL (600V, 15A @ 115°C)
APFC MOSFETs	2x Infineon IPA60R160P6 (650V, 15A @ 100°C, Rds(on): 0.160Ohm)
APFC Boost Diode	1x Cree C6D10065 (650V, 10A @ 155°C)
Bulk Cap(s)	2x Nippon Chemi-con (420V, 330uF each or 660uF combined, 2,000h @ 105°C, KMR)
Main Switchers	4x Infineon IPA6R230P6 (650V, 10.7A @ 100°C, Rds(on): 0.230Ohm)
APFC Controller	Champion CM6500UNX
Resonant Controller	Champion CU6901VPA
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x Nexperia PSMN1R0-40YLD (40V, 280A @ 25°C, Rds(on): 1.1mOhm)
5V & 3.3V	DC-DC Converters: 4x Nexperia PSMN4R0-30YLD (30V, 95A @ 25°C, Rds(on): 4mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 1x Nichicon (2-5,000h @ 105°C, HD), 4x Nippon Chemi-Con (5-6,000h @ 105°C, KZH), 4x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 3x Nippon Chemi-Con (2-5,000h @ 105°C, KZE), 5x Rubycon (3-6,000h @ 105°C, YXG), Polymer: 25x FPCAP, 7x

Supervisor IC	Weltrend WT7527RA (OCP, OVP, UVP, SCP, PG)
Fan Controller	Nuvoton M031
Fan Model	Hong Hua HA13525H12F-Z (135mm, 12V, 0.5A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	1x
Standby PWM Controller	Excelliance MOS EM85690

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)	90.260%
Average Noise Output (>1450 Load Combinations)	17.90dBA
PF□□□ (>1450 Load Combinations)	0.977
Efficiency With 10W (≤500W) or 2% (>500W) Load	75.400%
□□□□□	0.0556W
Non-Accredited	
12V Ripple (Full Load)	33.43mV
5V Ripple (Full Load)	12.40mV
3.3V Ripple (Full Load)	14.42mV
5VSB Ripple (Full Load)	27.11mV
12V Load Regulation	0.77%

5V Load Regulation	0.50%
3.3V Load Regulation	0.21%
5VSB Load Regulation	2.12%
Inrush Current	34.520A

230V

Accredited		
□□□□ (>1450 load combinations)		92.112%
Average Noise Output (>1450 Load Combinations)		17.62dBA
PF□□□ (>1450 Load Combinations)		0.938
Efficiency With 10W (≤500W) or 2% (>500W) Load		73.684%
□□□□□		0.1378W
Non-Accredited		
12V Ripple (Full Load)		35.43mV
5V Ripple (Full Load)		11.73mV
3.3V Ripple (Full Load)		14.19mV
5VSB Ripple (Full Load)		27.40mV
12V Load Regulation		0.88%
5V Load Regulation		0.50%
3.3V Load Regulation		0.18%
5VSB Load Regulation		2.08%
Inrush Current		68.460A
12V Transient Response (200%)		11.79V
5V Transient Response (200%)		4.968V
3.3V Transient Response (200%)		3.252V
5VSB Transient Response (200%)		4.990V
□□□□ & PG□□		21.20ms
AC Loss to PWR_OK Hold Up Time		16.90ms
PWR_OK Inactive to DC Loss Delay		4.30ms
PSU Timings: T1 (20% / 100%)	74.0ms	73.0ms
PSU Timings: T3 (20% / 100%)	124.0ms	128.0ms
12V OCP (27.4°C / 44.2°C)	86.60A (139.68%), 12.211V	83.00A (133.87%), 12.241V

5V OCP (27.4°C / 44.2°C)	26.6A (133.00%), 5.031V	26.4A (132.00%), 5.029V
3.3V OCP (27.4°C / 44.2°C)	28.6A (143.00%), 3.319V	28.5A (142.50%), 3.32V
5VSB OCP (27.4°C / 44.2°C)	6.5A (216.67%), 4.979V	6.4A (213.33%), 4.979V
OPP (27.27°C / 42.62°C)	141.75%	134.61%

|||| & PG||

Hold-Up Time (ms)	21.2
AC Loss to PWR_OK Hold Up Time (ms)	16.9
PWR_OK Inactive to DC Loss Delay (ms)	4.3



Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.93 V	114.89 V	113.85 V	114.96 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	1.416	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.14 %	0.12 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.056 W	0.015 W	N/A	0.078 W	N/A	N/A
Apparent Power:	10.248 W	10.229 W	N/A	10.272 W	N/A	N/A
Power Factor:	0.006	N/A	N/A	N/A	N/A	N/A

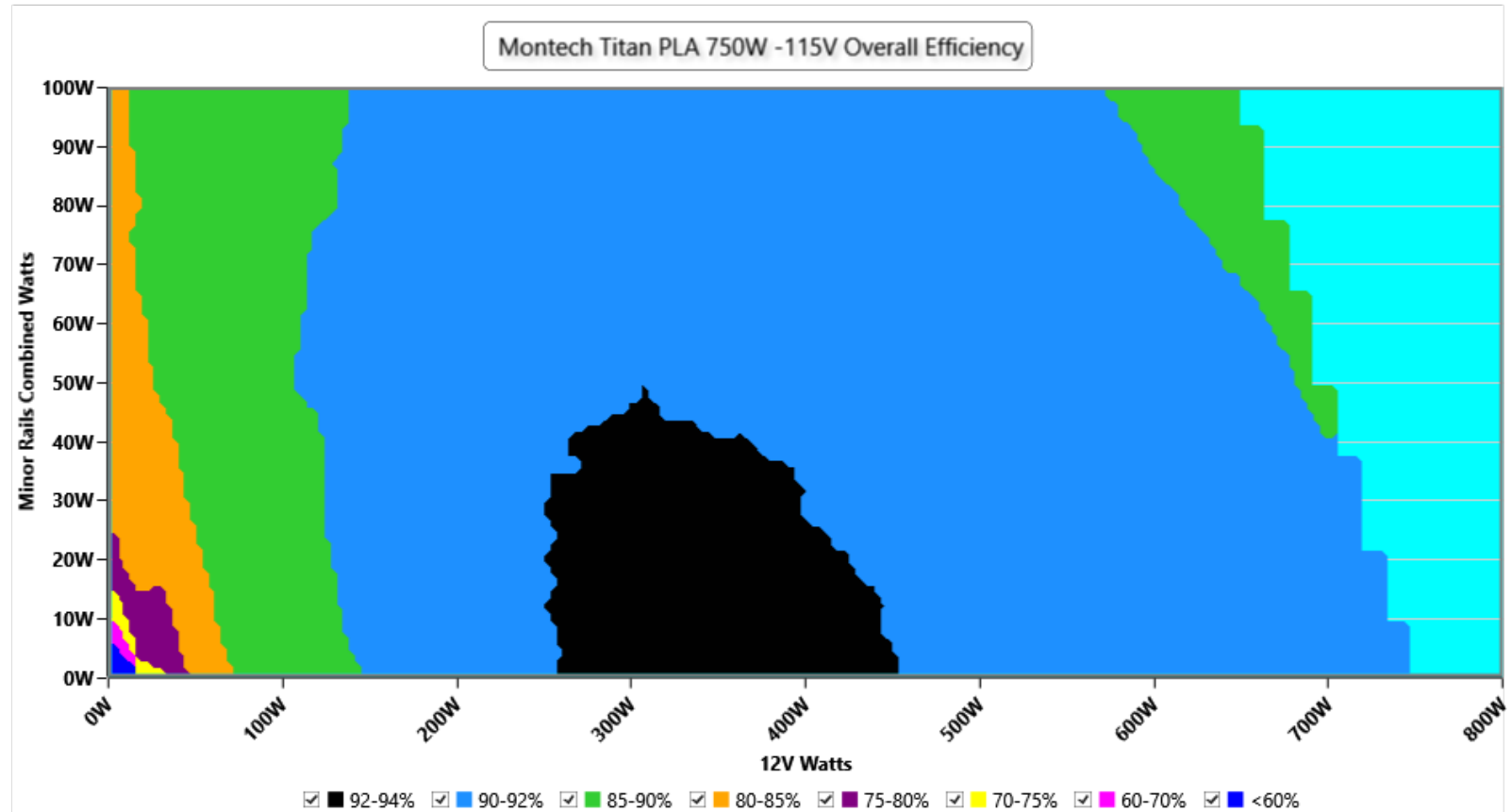
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.88 V	229.84 V	227.70 V	229.94 V	232.30 V	PASS

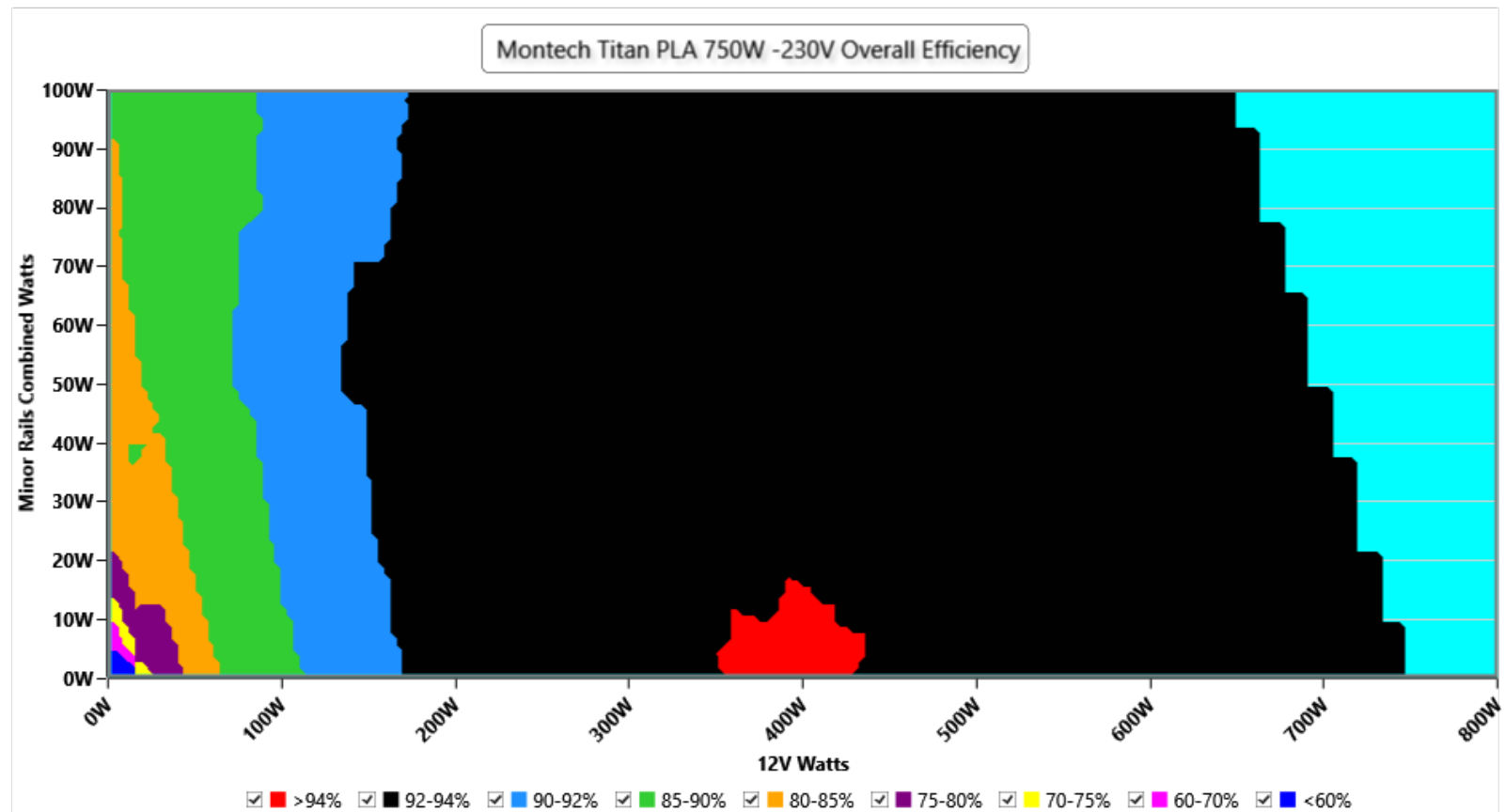
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.17 %	2.00 %	PASS
Real Power:	0.138 W	0.108 W	N/A	0.175 W	N/A	N/A
Apparent Power:	34.514 W	34.483 W	N/A	34.548 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A



115V



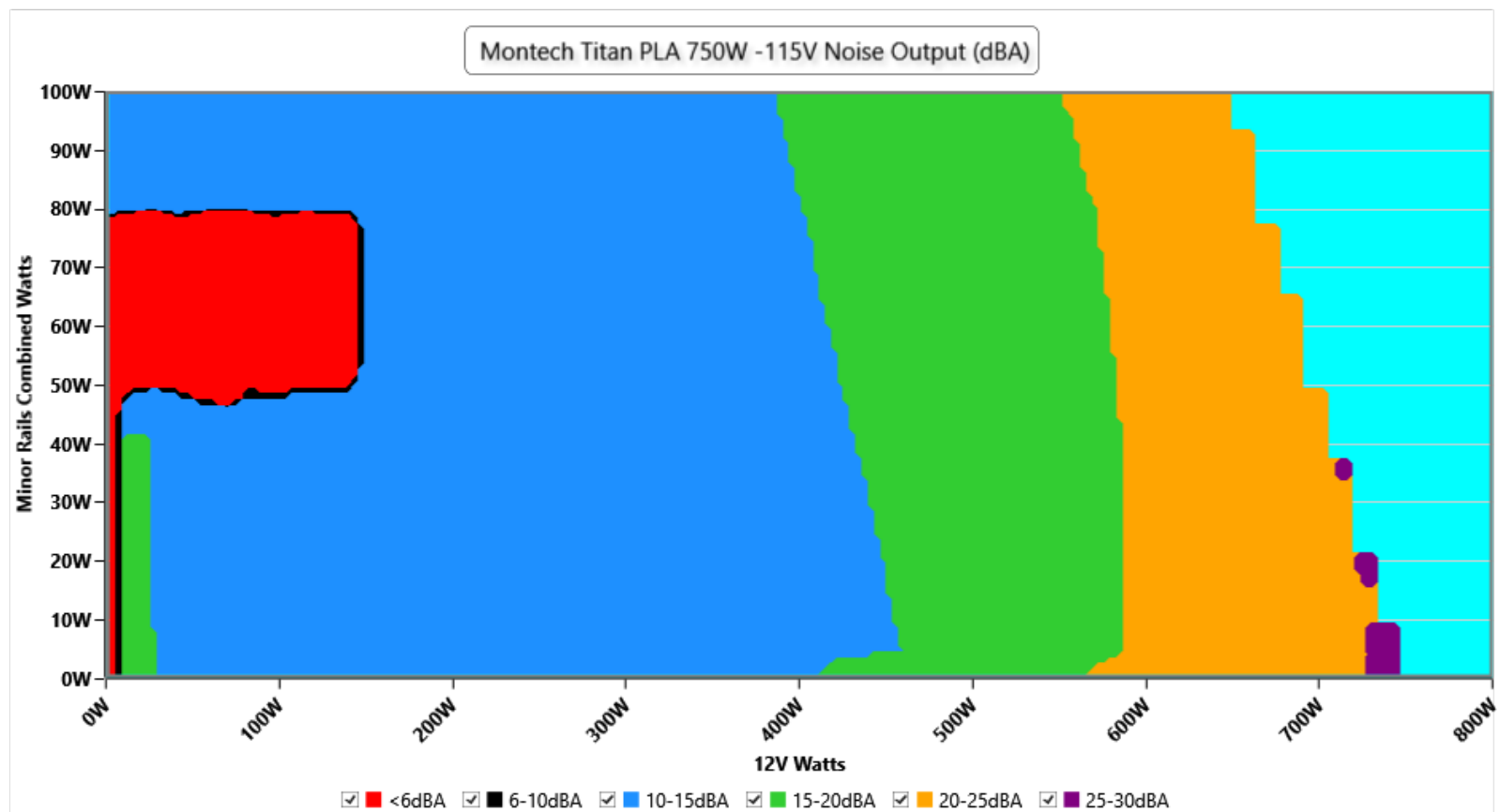
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



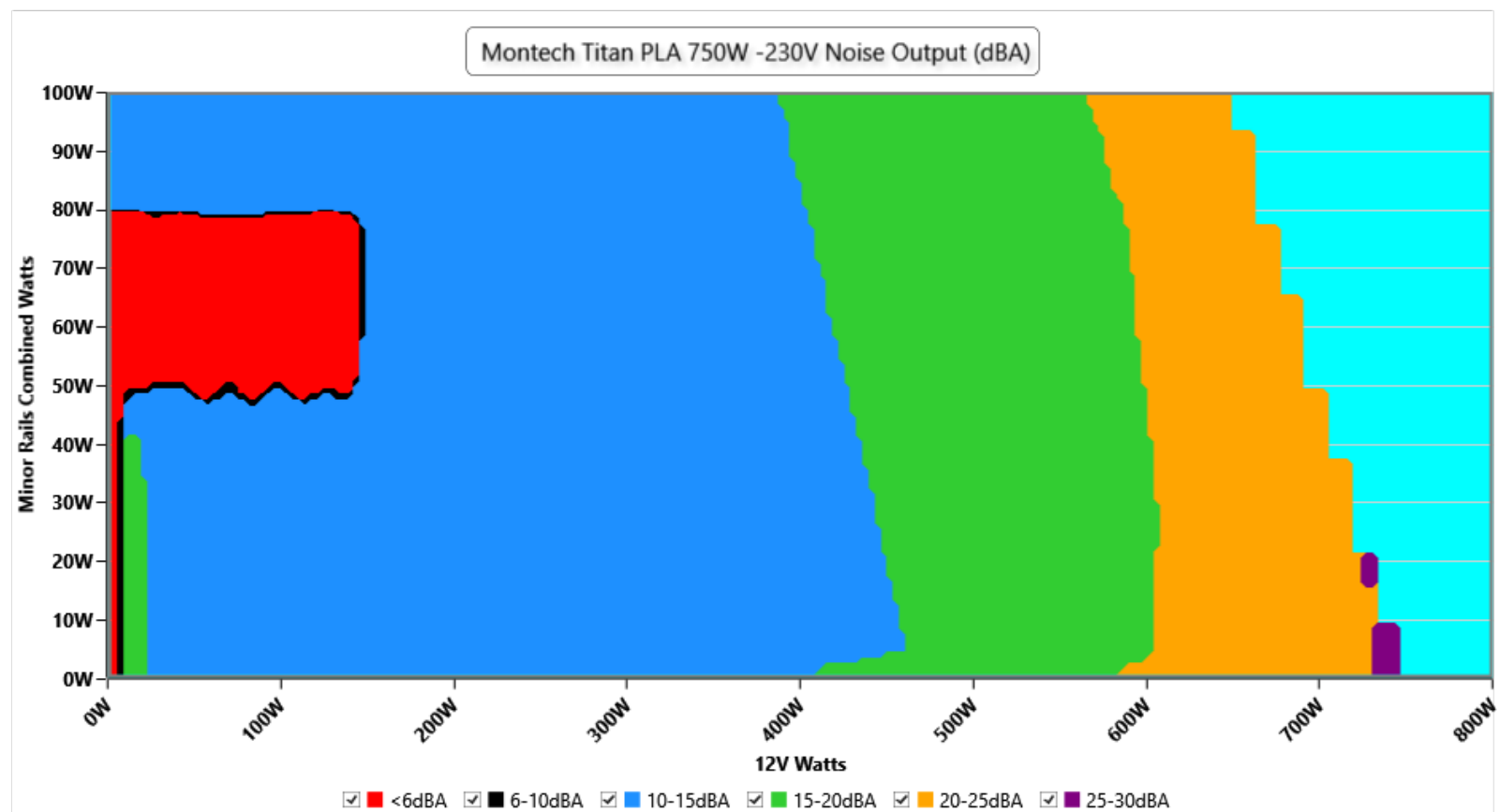
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V

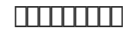


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails



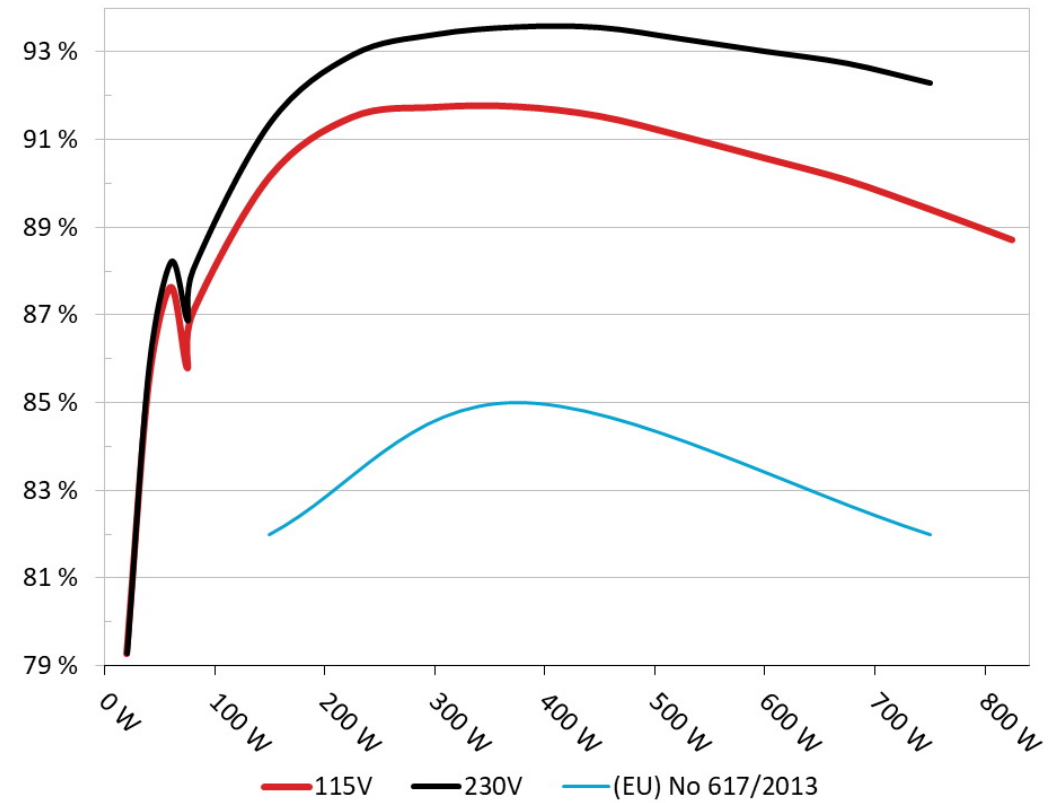
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance



Efficiency: Montech Titan PLA 750W White

Ambient: 37°C - 47°C (98.6°F - 116.6°F)

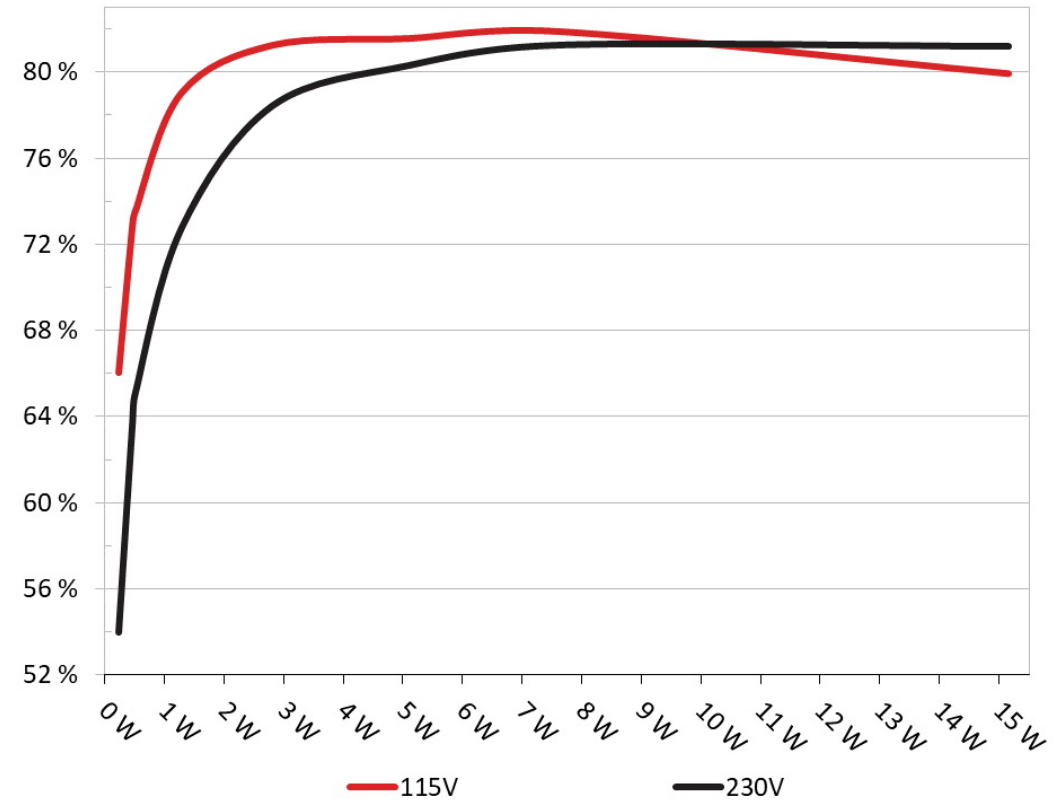


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb

5VSB Efficiency: Montech Titan PLA 750W White

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



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	0.23W	66.045%	0.034
	5.114V	0.348W		114.91V
2	0.09A	0.46W	72.874%	0.061
	5.113V	0.631W		114.91V
3	0.55A	2.807W	81.241%	0.26
	5.104V	3.455W		114.91V
4	1A	5.095W	81.557%	0.348
	5.094V	6.247W		114.91V
5	1.5A	7.627W	81.877%	0.404
	5.084V	9.318W		114.9V
6	3A	15.155W	79.925%	0.479
	5.052V	18.962W		114.91V

230V

#	5VSB	DC/AC (%)		PF/AC
1	0.045A	0.23W	53.985%	0.012
	5.116V	0.428W		229.88V
2	0.09A	0.46W	63.698%	0.021
	5.113V	0.724W		229.88V
3	0.55A	2.807W	78.413%	0.099
	5.103V	3.579W		229.88V
4	1A	5.094W	80.286%	0.164
	5.095V	6.347W		229.88V
5	1.5A	7.627W	81.235%	0.213
	5.084V	9.39W		229.88V
6	3A	15.16W	81.177%	0.322
	5.054V	18.677W		229.88V

Protection Features

OCP (Normal @ 27.4°C)	12V: 86.60A (139.68%), 12.211V 5V: 26.6A (133.00%), 5.031V 3.3V: 28.6A (143.00%), 3.319V 5VSB: 6.5A (216.67%), 4.979V
OCP (Hot @ 44.2°C)	12V: 83.00A (133.87%), 12.241V 5V: 26.4A (132.00%), 5.029V 3.3V: 28.5A (142.50%), 3.32V 5VSB: 6.4A (213.33%), 4.979V
OPP (Normal @ 27.3°C)	1063.10W (141.75%)
OPP (Hot @ 42.6°C)	1009.57W (134.61%)
OTP	✓ (110°C @ Primary Heatsink)
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%	4.361A	1.984A	1.976A	0.982A	75	85.798%	0	<6.0	44.55°C	0.946
	12.245V	5.04V	3.34V	5.093V	87.417				40.35°C	114.88V

20%	9.719A	2.978A	2.964A	1.18A	149.936	90.158%	0	<6.0	45.27°C	0.969
	12.248V	5.037V	3.34V	5.084V	166.304				40.75°C	114.87V
30%	15.424A	3.475A	3.459A	1.379A	224.935	91.521%	0	<6.0	46.36°C	0.978
	12.246V	5.036V	3.339V	5.076V	245.775				41.29°C	114.83V
40%	21.166A	3.974A	3.955A	1.579A	300.023	91.748%	721	14.8	41.73°C	0.981
	12.228V	5.034V	3.338V	5.066V	327.01				47.25°C	114.81V
50%	26.504A	4.969A	4.945A	1.78A	374.445	91.762%	718	14.7	42.35°C	0.982
	12.222V	5.031V	3.337V	5.057V	408.06				48.41°C	114.79V
60%	31.876A	5.966A	5.935A	1.981A	449.364	91.544%	759	16.3	42.78°C	0.983
	12.221V	5.029V	3.337V	5.048V	490.871				49.31°C	114.75V
70%	37.246A	6.964A	6.925A	2.183A	524.287	91.089%	873	20.7	43.39°C	0.985
	12.221V	5.026V	3.336V	5.039V	575.574				50.44°C	114.73V
80%	42.680A	7.961A	7.914A	2.286A	599.509	90.588%	973	24.4	43.6°C	0.986
	12.222V	5.024V	3.336V	5.031V	661.797				51.81°C	114.71V
90%	48.440A	8.461A	8.396A	2.389A	674.545	90.081%	1059	27.4	44.69°C	0.988
	12.222V	5.022V	3.335V	5.024V	748.816				53.79°C	114.68V
100%	54.006A	8.962A	8.908A	2.996A	749.763	89.421%	1492	37.5	45.68°C	0.989
	12.222V	5.02V	3.334V	5.006V	838.467				55.81°C	114.65V
110%	59.452A	9.963A	9.989A	3A	824.783	88.72%	1839	43.7	47.12°C	0.99
	12.219V	5.018V	3.334V	5.001V	929.649				58.02°C	114.62V
CL1	0.114A	11.982A	11.875A	0A	101.292	84.476%	720	14.7	42.41°C	0.958
	12.265V	5.023V	3.344V	5.107V	119.908				48.29°C	114.87V
CL2	0.113A	19.893A	0A	0A	101.344	83.268%	877	21.0	40.9°C	0.958
	12.263V	5.025V	3.328V	5.109V	121.708				48.68°C	114.87V
CL3	0.113A	0A	19.638A	0A	67.396	77.952%	856	20.2	41.25°C	0.946
	12.255V	5.033V	3.361V	5.109V	86.458				50.91°C	114.88V
CL4	61.385A	0A	0A	0A	749.544	90.166%	1317	34.1	45.47°C	0.989
	12.210V	5.036V	3.333V	5.073V	831.301				55.93°C	114.65V

The results above are not used in the certification process

230V

項目	12V	5V	3.3V	5VSB	DC/AC (項目)	項目	項目 (RPM)	項目 (dB[A])	項目 (項目 /項目)	PF/AC 項目
10%	4.362A	1.984A	1.976A	0.982A	75	86.881%	0	<6.0	44.68°C	0.793
	12.241V	5.04V	3.34V	5.093V	86.324				40.46°C	229.88V
20%	9.722A	2.978A	2.964A	1.18A	149.934	91.393%	0	<6.0	45.67°C	0.895
	12.244V	5.038V	3.34V	5.084V	164.056				40.98°C	229.86V
30%	15.429A	3.475A	3.459A	1.379A	224.935	92.943%	0	<6.0	46.58°C	0.931
	12.242V	5.036V	3.339V	5.075V	242.012				41.42°C	229.85V
40%	21.171A	3.973A	3.955A	1.579A	300.022	93.407%	722	14.8	41.77°C	0.95
	12.225V	5.034V	3.338V	5.066V	321.196				47.3°C	229.84V
50%	26.508A	4.969A	4.945A	1.78A	374.446	93.58%	719	14.7	42.35°C	0.96
	12.220V	5.031V	3.337V	5.057V	400.131				48.38°C	229.83V
60%	31.884A	5.966A	5.935A	1.981A	449.365	93.567%	742	15.4	42.77°C	0.966
	12.218V	5.029V	3.336V	5.048V	480.26				49.45°C	229.81V
70%	37.249A	6.964A	6.925A	2.183A	524.292	93.304%	859	20.2	43.46°C	0.971
	12.220V	5.026V	3.336V	5.038V	561.921				50.61°C	229.8V
80%	42.680A	7.961A	7.915A	2.286A	599.494	93.024%	974	24.4	43.6°C	0.974
	12.221V	5.024V	3.336V	5.031V	644.448				51.72°C	229.79V
90%	48.438A	8.461A	8.396A	2.389A	674.517	92.748%	1051	27.2	44.62°C	0.976
	12.222V	5.022V	3.335V	5.024V	727.268				53.88°C	229.78V
100%	54.004A	8.962A	8.908A	2.996A	749.746	92.3%	1450	36.7	45.75°C	0.978
	12.222V	5.021V	3.334V	5.006V	812.284				55.71°C	229.76V
110%	59.449A	9.962A	9.989A	3A	824.764	91.863%	1813	43.1	46.86°C	0.979
	12.220V	5.018V	3.334V	5.001V	897.814				57.77°C	229.75V
CL1	0.113A	11.981A	11.874A	0A	101.291	85.69%	722	14.8	42.87°C	0.851
	12.265V	5.024V	3.344V	5.107V	118.204				48.4°C	229.87V
CL2	0.113A	19.892A	0A	0A	101.345	84.413%	879	21.0	41.88°C	0.853
	12.264V	5.025V	3.329V	5.109V	120.057				49.49°C	229.87V
CL3	0.113A	0A	19.637A	0A	67.395	78.888%	858	20.2	41.65°C	0.791
	12.259V	5.032V	3.362V	5.109V	85.43				51.16°C	229.88V

CL4	61.375A	0A	0A	0A	749.532	93%	1369	34.5	45.91°C	0.978
	12.212V	5.036V	3.333V	5.073V	805.947				56.27°C	229.77V

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	1.222A	0.495A	0.494A	0.196A	19.998	79.269%	0	<6.0	39.68°C	0.815
	12.155V	5.045V	3.341V	5.112V	25.231				36.54°C	114.91V
40W	2.688A	0.694A	0.692A	0.294A	39.998	85.46%	0	<6.0	40.46°C	0.909
	12.161V	5.044V	3.34V	5.109V	46.804				37.12°C	114.9V
60W	4.152A	0.892A	0.889A	0.392A	59.998	87.639%	0	<6.0	41.8°C	0.933
	12.171V	5.043V	3.34V	5.106V	68.461				38.32°C	114.89V
80W	5.581A	1.091A	1.087A	0.49A	79.942	87.048%	0	<6.0	43.8°C	0.947
	12.240V	5.042V	3.34V	5.103V	91.837				39.97°C	114.88V

The results above are not used in the certification process

230V

	12V	5V	3.3V	5VSB	DC/AC ()		(RPM)	(dB[A])	(/)	PF/AC
20W	1.224A	0.495A	0.494A	0.196A	19.995	79.298%	0	<6.0	39.83°C	0.458
	12.137V	5.046V	3.339V	5.11V	25.214				36.77°C	229.89V
40W	2.690A	0.694A	0.692A	0.294A	39.998	85.841%	0	<6.0	40.84°C	0.639
	12.148V	5.044V	3.339V	5.108V	46.594				37.6°C	229.88V
60W	4.155A	0.892A	0.889A	0.392A	59.997	88.225%	0	<6.0	41.96°C	0.737
	12.161V	5.043V	3.34V	5.105V	68.006				38.2°C	229.88V
80W	5.584A	1.091A	1.087A	0.49A	79.941	88.041%	0	<6.0	43.02°C	0.803
	12.233V	5.043V	3.34V	5.102V	90.797				39.18°C	229.87V

The results above are not used in the certification process



115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.56mV	11.90mV	10.79mV	13.86mV	Pass
20% Load	10.59mV	9.81mV	10.54mV	13.81mV	Pass
30% Load	36.41mV	10.37mV	10.95mV	12.99mV	Pass
40% Load	31.50mV	10.17mV	11.25mV	24.40mV	Pass
50% Load	22.85mV	10.07mV	10.85mV	23.02mV	Pass
60% Load	22.14mV	10.12mV	11.56mV	23.63mV	Pass
70% Load	21.06mV	11.44mV	10.49mV	24.14mV	Pass
80% Load	20.75mV	11.09mV	13.50mV	23.58mV	Pass
90% Load	22.14mV	11.39mV	13.50mV	24.96mV	Pass
100% Load	33.43mV	12.40mV	14.42mV	27.11mV	Pass
110% Load	33.59mV	12.23mV	16.18mV	27.33mV	Pass
Crossload1	11.74mV	12.14mV	13.66mV	26.71mV	Pass
Crossload2	12.84mV	16.04mV	14.68mV	26.45mV	Pass
Crossload3	10.90mV	10.93mV	16.83mV	26.85mV	Pass
Crossload4	33.13mV	11.08mV	15.07mV	27.33mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.85mV	10.58mV	10.23mV	14.01mV	Pass
20% Load	11.10mV	10.52mV	10.33mV	14.22mV	Pass
30% Load	41.58mV	10.01mV	10.08mV	13.71mV	Pass
40% Load	33.95mV	9.91mV	11.26mV	23.53mV	Pass
50% Load	24.90mV	10.63mV	11.25mV	23.38mV	Pass
60% Load	22.75mV	10.88mV	11.56mV	23.58mV	Pass

