



Make It Yours.

Cooler Master X SILENT EDGE PLATINUM 1100 230V



Lab ID CM11002485

Certification ID 252485

Test Result Report ID: 24PS2485A

Certificate Issue Date: Jun 25, 2024

115V

230V

Scheme: ETA-EMI PSU



115V

230V



Scheme: LAMBDA PSU



Outside Validation Scope

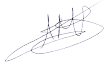
General Information

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	Cooler Master
Model	X SILENT EDGE PLATINUM 1100 230V
OEM/ODM	Cooler Master
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
$\square\square\square$ (Vrms)	200-240
$\square\square\square$ (Arms)	6.1

□□□□ (Hz)	50-60
□□□□ (W)	1100
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	Passive
□□□□	✓
Cybenetics Testing Information	
Lab ID	CM11002485
Date of receipt	May 29, 2024
Testing Date	Jun 21, 2024
Report Issued Date	Jun 25, 2024
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 24 pin (645mm)	1	1	18-22AWG	□
4+4 pin EPS 12V □□ (645mm)	1	1	16AWG	□
8 pin EPS 12V □□ (645mm)	1	1	16AWG	□
6+2pin PCIe□□ (550mm)	4	4	16-18AWG	□
12+4 pin PCIe (650mm) (600W)	1	1	16-28AWG	□
SATA□□ (500mm+140mm+140mm+140mm)	3	12	18AWG	□
4-pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	□

4-pin PWM Fan Connector (400mm)	1	1	28AWG	□
USB M/B Connector (790mm)	1	1	24AWG	□
AC Power Cord (1360mm) - C13 coupler	1	1	17AWG	-

Protection Features(Manufacturer)

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

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	91.6	3	0.3
	□	120		1099.2	15	3.6
□□□□ (W)		1100				

Parts Description

General Data	
Manufacturer (OEM)	Cooler Master
Platform	MPS-D001-AFAP
PCB Type	Double-Sided (Four-layer board)
Primary Side	
Transient Filter	2x Y caps, 1x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor SCK20100 (10 Ohm @25°C) & Relay
Rectifier MOSFETs	4x Infineon IPT60R022S7 (600V, 23A @ 140°C, Rds(on): 0.0.22Ohm)
APFC MOSFETs	2x Infineon IMW65R072M1H (650V, 18A @ 100°C, Rds(on): 0.094Ohm)
APFC Driver	Infineon 2EDN7524F
APFC Boost Diode	1x Infineon IDW10G65C5 (650V, 10A @ 130°C)

Bulk Cap(s)	2x TDK B43641 (450V, 560uF each or 1120uF combined, 2000h @ 105°C)
Main Switchers	4x Infineon IPW60R070CFD7 (650V, 31A @ 25°C, Rds(on): 0.07Ohm)
Driver ICs	2x Infineon 2ED21814S06J (650V, 31A @ 25°C, Rds(on): 0.07Ohm)
APFC Controller	Infineon ICE3PCS01G
Resonant Controller	Infineon ICE2HS01G
Primary Side MCU	NXP MC9S08SH8CWJ
Topology	Primary side: Bridgeless PFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	12x Infineon ISC010N04NM6 (40V, 201A @ 100°C, Rds(on): 1.0mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon ISC011N03L5S (30V, 100A @ 100°C, Rds(on): 1.1mOhm) PWM Controller(s): 1x
Filtering Capacitors	Electrolytic: 2x Rubycon (6-10,000 @ 105°C,ZLH), Polymer: 42x Nippon Chemi-Con, 7x
Supervisor IC	Weltrend WT7502
Secondary Side MCU	Silicon Labs C8051F380-GQ
5VSB	
TVS Diode	1x SMBJ150A
Low Side Rectifier	DK DK5V45R05M (45V, Rds(on): 5mOh)
Standby PWM Controller	Infineon ICE5QR1680BG

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 230V

Accredited	
□□□□ (>1450 load combinations)	92.611%
Average Noise Output (>1450 Load Combinations)	6.00dBA

PF _{min} (>1450 Load Combinations)	0.964	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
η _{min}	0.1643W	
Non-Accredited		
12V Ripple (Full Load)	29.97mV	
5V Ripple (Full Load)	15.59mV	
3.3V Ripple (Full Load)	13.97mV	
5VSB Ripple (Full Load)	9.58mV	
12V Load Regulation	0.51%	
5V Load Regulation	0.96%	
3.3V Load Regulation	2.05%	
5VSB Load Regulation	2.82%	
Inrush Current	38.190A	
12V Transient Response (200%)	11.12V	
5V Transient Response (200%)	4.900V	
3.3V Transient Response (200%)	3.265V	
5VSB Transient Response (200%)	4.866V	
η _{min} & PG _{min}	26.40ms	
AC Loss to PWR_OK Hold Up Time	19.30ms	
PWR_OK Inactive to DC Loss Delay	7.10ms	
PSU Timings: T1 (20% / 100%)	84.0ms	83.0ms
PSU Timings: T3 (20% / 100%)	125.0ms	126.0ms
12V OCP (27.3°C / 42.1°C)	111.40A (121.62%), 11.937V	110.20A (120.31%), 11.949V
5V OCP (27.3°C / 42.1°C)	25.0A (125.00%), 5.004V	24.0A (120.00%), 5.018V
3.3V OCP (27.3°C / 42.1°C)	25.1A (125.50%), 3.354V	24.0A (120.00%), 3.361V
5VSB OCP (27.3°C / 42.1°C)	4.4A (146.67%), 4.965V	4.1A (136.67%), 4.973V
OPP (26.99°C / 41.85°C)	120.52%	120.25%

η_{min} & PG_{min}

Hold-Up Time (ms)	26.4
AC Loss to PWR_OK Hold Up Time (ms)	19.3

PWR_OK Inactive to DC Loss Delay (ms)	7.1
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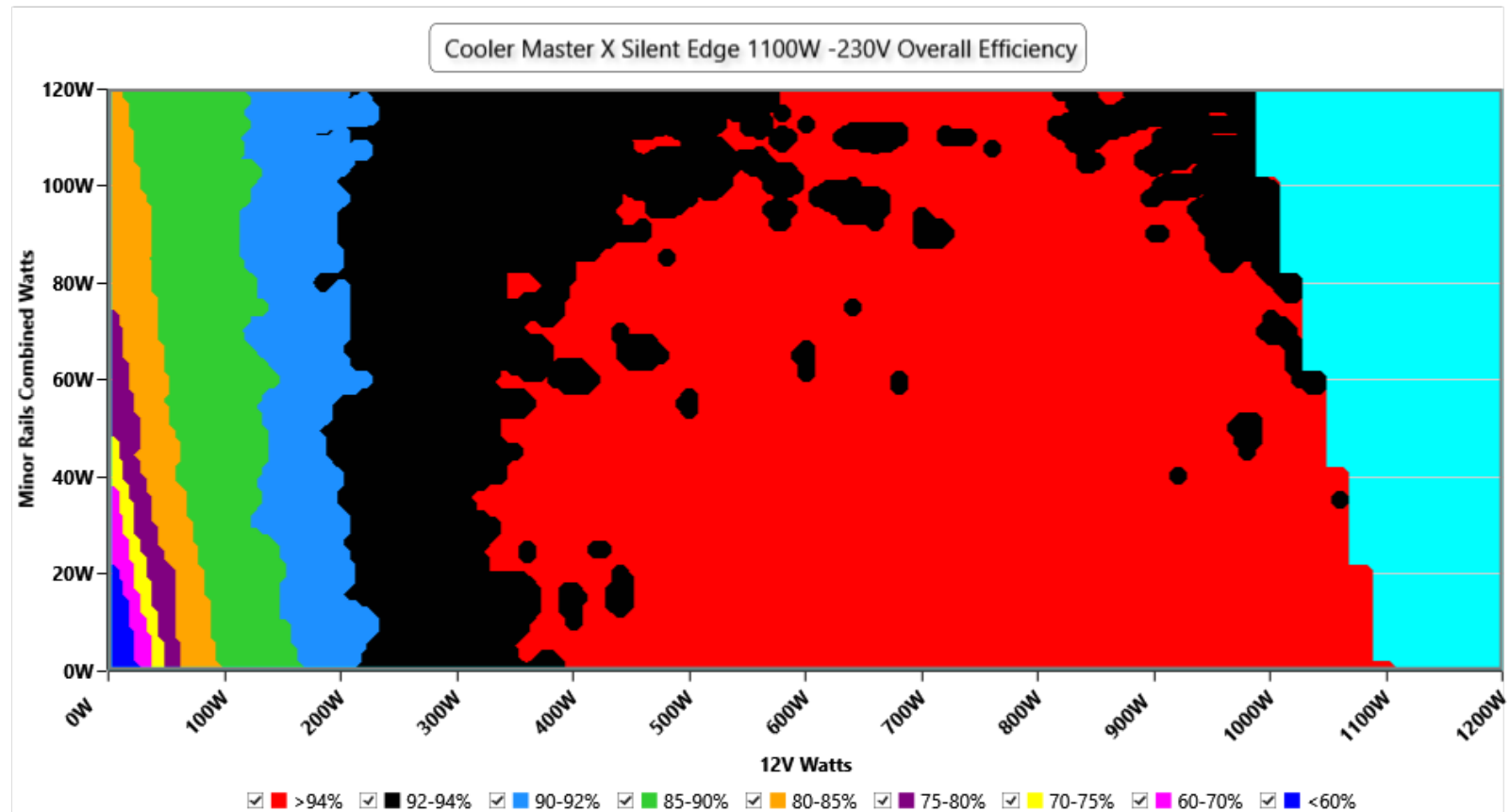


Tables 230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.02 V	230.93 V	227.70 V	231.10 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	0.27 %	2.00 %	PASS
Real Power:	0.164 W	0.123 W	N/A	0.211 W	N/A	N/A
Apparent Power:	46.789 W	46.075 W	N/A	47.582 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A



230V



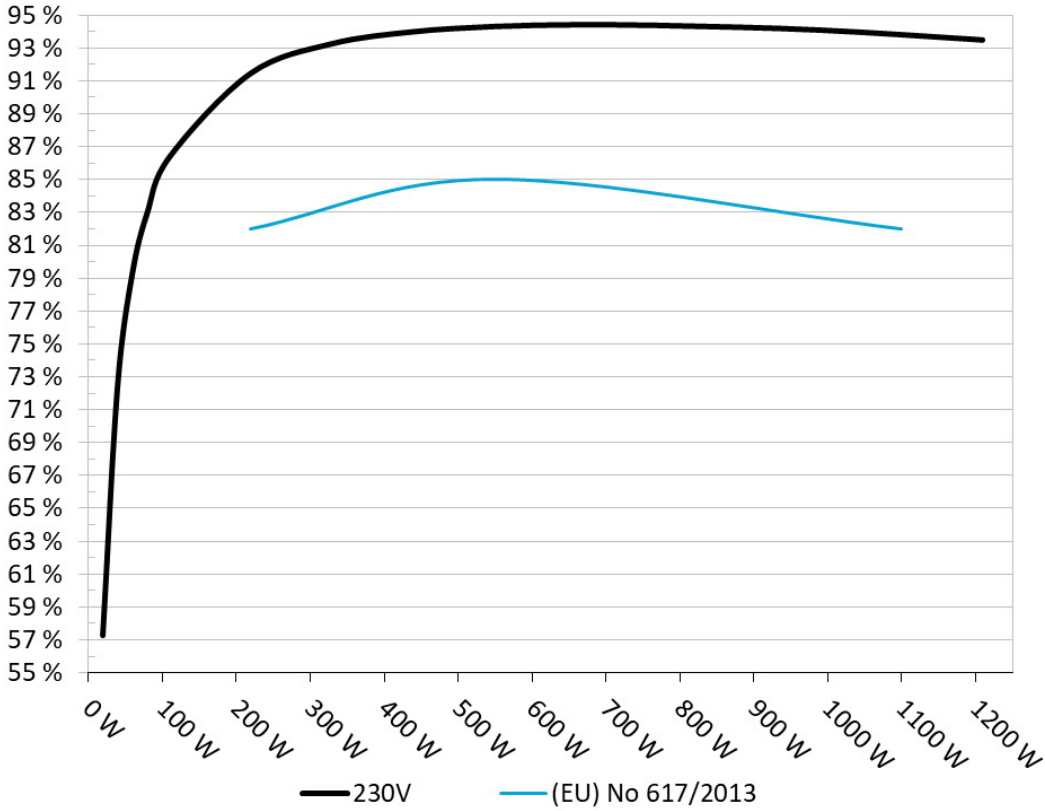
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

Indicative Performance



Efficiency: Cooler Master X Silent EDGE 1100 230V

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

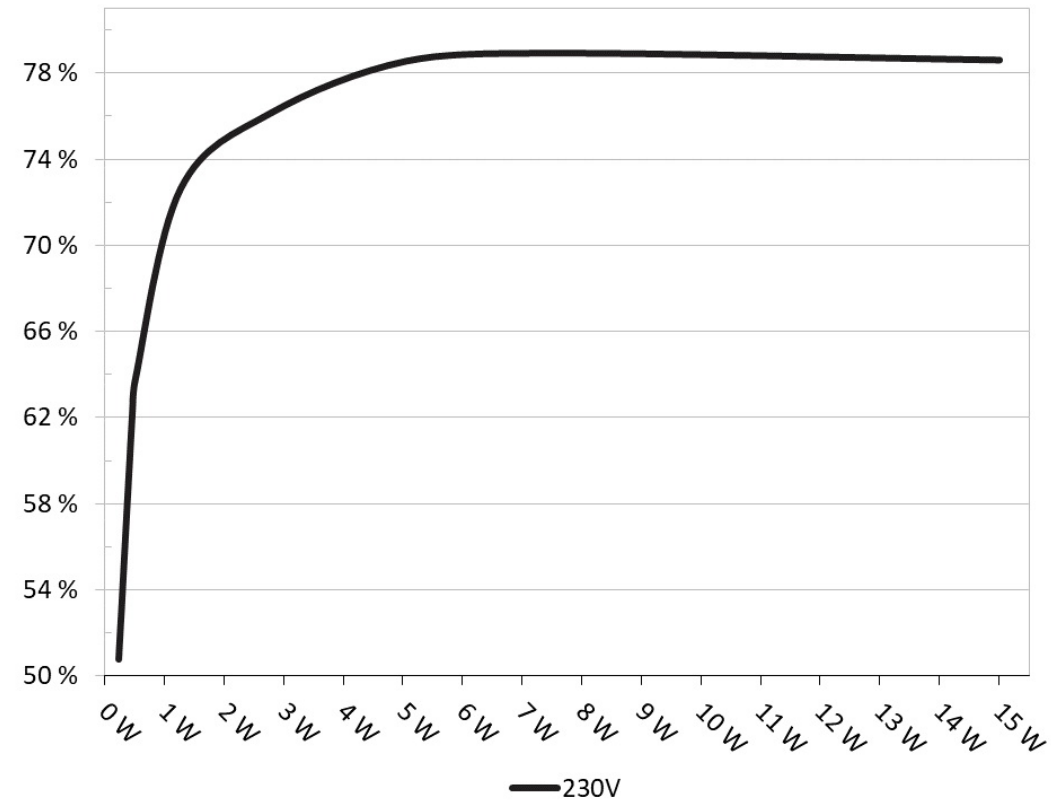


The PSU`s efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb

5VSB Efficiency: Cooler Master X Silent EDGE 1100 230V

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) 230V

#	5VSB	DC/AC ()		PF/AC
1	0.045A	0.228W	50.779%	0.01
	5.069V	0.449W		230.36V

2	0.09A	0.456W	62.194%	0.017
	5.068V	0.733W		230.35V
3	0.55A	2.782W	76.134%	0.081
	5.057V	3.654W		230.37V
4	1A	5.048W	78.536%	0.137
	5.047V	6.428W		230.37V
5	1.5A	7.554W	78.906%	0.192
	5.035V	9.574W		230.37V
6	3A	14.998W	78.586%	0.312
	4.999V	19.085W		230.37V

Protection Features

OCP (Cold @ 27.3°C)	12V: 111.40A (121.62%), 11.937V 5V: 25.0A (125.00%), 5.004V 3.3V: 25.1A (125.50%), 3.354V 5VSB: 4.4A (146.67%), 4.965V
OCP (Hot) @ 42.1°C)	12V: 110.20A (120.31%), 11.949V 5V: 24.0A (120.00%), 5.018V 3.3V: 24.0A (120.00%), 3.361V 5VSB: 4.1A (136.67%), 4.973V
OCP (Cold @ 27.0°C)	1325.72W (120.52%)
OCP (Hot @ 41.9°C)	1322.72W (120.25%)
OTP	✓ (140°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	✓
SIP	Surge: MOV Inrush: NTC & Bypass Relay

Supplementary Tests (For Reference)

10-110% 230V

	12V	5V	3.3V	5VSB	DC/AC ()		(/)	PF/AC
10%	7.367A	1.985A	1.951A	0.992A	110.014	86.352%	44.56°C	0.841
	12.001V	5.04V	3.382V	5.043V	127.399		40.35°C	230.36V
20%	15.762A	2.98A	2.933A	1.193A	219.977	91.448%	44.53°C	0.934
	11.995V	5.034V	3.375V	5.031V	240.56		40.54°C	230.34V
30%	24.521A	3.48A	3.429A	1.395A	330.031	93.249%	45.84°C	0.966
	11.989V	5.03V	3.369V	5.02V	353.914		41.18°C	230.32V
40%	33.258A	3.981A	3.926A	1.598A	439.721	93.979%	46.72°C	0.978
	11.982V	5.025V	3.362V	5.008V	467.883		41.82°C	230.3V
50%	41.695A	4.982A	4.918A	1.802A	549.848	94.299%	47.48°C	0.984
	11.976V	5.02V	3.355V	4.996V	583.105		42.22°C	230.29V
60%	50.146A	5.984A	5.914A	2.001A	659.985	94.403%	48.6°C	0.988
	11.969V	5.015V	3.348V	4.984V	699.122		42.56°C	230.28V
70%	58.603A	6.988A	6.914A	2.213A	770.157	94.364%	50.03°C	0.991
	11.962V	5.01V	3.341V	4.971V	816.174		43.21°C	230.27V
80%	67.070A	7.993A	7.917A	2.318A	879.74	94.254%	51.52°C	0.992
	11.956V	5.005V	3.334V	4.961V	933.429		43.71°C	230.25V
90%	75.952A	8.499A	8.413A	2.424A	989.952	94.083%	53.34°C	0.994
	11.948V	5.001V	3.328V	4.951V	1052.251		44.34°C	230.24V
100%	84.558A	9.006A	8.941A	3.044A	1099.578	93.804%	56.47°C	0.995
	11.943V	4.997V	3.321V	4.928V	1172.157		45.88°C	230.22V
110%	93.121A	10.016A	10.047A	3.05A	1209.855	93.482%	58.66°C	0.995
	11.936V	4.992V	3.314V	4.919V	1294.201		46.74°C	230.21V
CL1	0.117A	14.348A	14.16A	0A	121.308	85.177%	51.42°C	0.861
	12.000V	5.032V	3.368V	5.06V	142.433		40.06°C	230.37V
CL2	0.117A	19.858A	0A	0A	101.4	83.6%	55.11°C	0.833
	12.006V	5.036V	3.387V	5.068V	121.303		40.3°C	230.38V

CL3	0.116A	0A	19.586A	0A	67.393	77.156%	54.08°C	0.775
	12.003V	5.049V	3.369V	5.063V	87.341		39.96°C	230.38V
CL4	92.048A	0A	0A	0A	1100.137	94.246%	57.19°C	0.995
	11.952V	5.017V	3.338V	5.01V	1167.231		45.02°C	230.24V

The results above are not used in the certification process

20-80 230V

	12V	5V	3.3V	5VSB	DC/AC ()		(/)	PF/AC
20W	1.238A	0.496A	0.487A	0.197A	20.004	57.277%	42.65°C	0.551
	12.004V	5.045V	3.389V	5.067V	34.968		36.77°C	230.37V
40W	2.724A	0.694A	0.682A	0.296A	40.003	72.441%	41.37°C	0.673
	12.003V	5.045V	3.389V	5.064V	55.217		37.32°C	230.37V
60W	4.210A	0.892A	0.877A	0.395A	60.002	79.302%	42.46°C	0.746
	12.003V	5.044V	3.387V	5.061V	75.663		38.11°C	230.37V
80W	5.693A	1.091A	1.072A	0.495A	79.965	82.943%	43.19°C	0.789
	12.002V	5.044V	3.386V	5.057V	96.403		39.07°C	230.37V

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.77mV	9.08mV	6.10mV	5.20mV	Pass
20% Load	7.53mV	9.74mV	6.10mV	5.20mV	Pass
30% Load	8.44mV	10.35mV	6.56mV	5.45mV	Pass
40% Load	9.77mV	10.35mV	6.71mV	5.55mV	Pass
50% Load	11.48mV	10.25mV	6.92mV	5.71mV	Pass
60% Load	13.42mV	10.86mV	7.17mV	6.06mV	Pass
70% Load	15.91mV	12.14mV	7.83mV	6.32mV	Pass
80% Load	17.80mV	13.62mV	12.41mV	6.93mV	Pass
90% Load	19.42mV	13.77mV	13.17mV	6.72mV	Pass
100% Load	29.97mV	15.59mV	13.97mV	9.58mV	Pass

