Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E186249-A314-CB-1
Date of issue ..... :	2016-04-22
Total number of pages ..... :	26
CB Testing Laboratory ..... :	UL International Limited
Address ..... :	18/F Delta House, 3 On Yiu Street, Shatin, NT, Hong Kong
Applicant's name ..... :	ASTEC INTERNATIONAL LTD
Address ..... :	16TH FLOOR, LU PLAZA 2 WING YIP STREET, KWUN TONG, KOWLOON, HONGKONG
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Switching Power Supply
Trade Mark ..... :	None
Manufacturer ..... :	ASTEC INTERNATIONAL LTD 16TH FLOOR, LU PLAZA 2 WING YIP STREET, KWUN TONG, KOWLOON, HONGKONG
Model/Type reference ..... :	73-959-0001, 73-958-0001
Ratings ..... :	For model 73-959-0001 Input Rating: 3~, 3W+PE, AC380 - 480V, 50/60Hz, 41A or AC 208 - 240V, 50/60Hz, 75A Output Rating: Section A: PFC1 Vbus: DC +400V, 5.35A; Section A: PFC2 Vbus: DC +400V, 5.35A; Section A: PFC3 Vbus: DC +400V, 5.35A; Section A: PFC4 Vbus: DC +400V, 5.35A; Section A: PFC5 Vbus: DC +400V, 5.35A; Section A: PFC6 Vbus: DC +400V, 5.35A; Section B: PFC1 Vbus: DC +400V, 5.35A; Section B: PFC2 Vbus: DC +400V, 5.35A; Section B: PFC3 Vbus: DC +400V, 5.35A; Section B: PFC4 Vbus: DC +400V, 5.35A; Section B: PFC5 Vbus: DC +400V, 5.35A; Section B: PFC6 Vbus: DC +400V, 5.35A; +5Vsb, 1.0A Maximum output power is 25685 Watts For model 73-958-0001 Input Rating: 380-480V, 21A, 3~, 3W+PE, 50/60Hz or 200-240V, 40A, 3~, 3W+PE, 50/60Hz or AC 200-240, 68A, 1~, 50/60Hz Output Rating: PFC1 Vbus: DC +400V, 5.35A; PFC2 Vbus: DC +400V, 5.35A; PFC3 Vbus: DC +400V, 5.35A; PFC4 Vbus: DC +400V, 5.35A; PFC5 Vbus: DC +400V, 5.35A; PFC6 Vbus: DC +400V, 5.35A; +5Vsb, 1.0A Maximum output power is 12845W

Testing procedure and testing location:		
[ ]	**CB Testing Laboratory**	
	Testing location / address .....:	
[ ]	**Associated CB Test Laboratory**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
[x]	**Testing Procedure: TMP/CTF Stage 1**	
	Testing location / address .....:	Astec International Ltd. - Philippine Branch, 3rd & 4th Floor, Techno Plaza One Building, #18 Orchard Road, Eastwood City Cyberpark, Bagumbayan, Quezon City 1110 Philippines.
	Tested by (name + signature) .....:	Tony Yeung / Projet Handler 
	Approved by (name + signature)....:	Brian Wong / Project Reviewer 
[ ]	**Testing Procedure: WMT/CTF Stage 2**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Witnessed by (name + signature) ..:	
	Approved by (name + signature)....:	
[ ]	**Testing Procedure: SMT/CTF Stage 3 or 4**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	
[ ]	**Testing Procedure: RMT**	
	Testing location / address .....:	
	Tested by (name + signature) .....:	
	Approved by (name + signature)....:	
	Supervised by (name + signature) .:	

List of Attachments

National Differences (0 pages)

Enclosures (4 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at Astec International Ltd. - Philippine Branch, 3rd & 4th Floor, Techno Plaza One Building, #18 Orchard Road, Eastwood City Cyberpark, Bagumbayan, Quezon City

1110 Philippines..	
Tests performed (name of test and test clause)	**Testing location / Comments**
End Product Reference Page	
General Guidelines	
Power Supply Reference Page	
Humidity (2.9.1, 2.9.2, 5.2.2)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	
Abnormal Operation (5.3.1 - 5.3.9)	

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AR, AT, AU, BE, BG, BY, CA, CH, CN, CS, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IE, IL, IN, IT, JP, KR, MY, NL, NO, NZ, PL, PT, RO, SA, SE, SG, SI, SK, UA, US, ZA

The product fulfills the requirements of: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	permanent connection
Operating condition ..... :	continuous
Access location ..... :	restricted access location
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I (earthed)
Considered current rating of protective device as part of the building installation (A) ..... :	100A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	up to 5000m
Altitude of test laboratory (m) ..... :	<500m
Mass of equipment (kg) ..... :	>18
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing:	
Date(s) of receipt of test item ..... :	2016-04-18
Date(s) of Performance of tests ..... :	2016-05-30 to 2016-09-30
General remarks: "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.	
Manufacturer's Declaration per Sub Clause 4.2.5 of IECEE 02: The application for obtaining a CB Test Certificate includes more than one factory and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... When differences exist, they shall be identified in the General Product Information section.	Yes
Name and address of Factory(ies):	1) ASTEC POWER PHILIPPINES INC 104 LAGUNA BLVD, LAGUNA TECHNOPARK, STA ROSA, LAGUNA, 4026 PHILIPPINES 2) ASTEC POWER PHILIPPINES INC MAIN ROAD, CORNER ROAD "J", CAVITE EXPORT

PROCESSING ZONE, ROSARIO, CAVITE, 4106 PHILIPPINES

3) ASTEC ELECTRONICS (LUODING) CO LTD
68 BAOCHENG RD E. FUCHENG, LUODING, GUANGDONG, 527200 CHINA

4)ZHONGSHAN GENERAL CARTON BOX FACTORY CO LTD
62 QI GUAN RD W., SHIQI DISTRICT, ZHONGSHAN, GUANDONG, 528400 CHINA

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2017-07-13 to include the following changes/additions:
This test report shall be read in conjunction with original test Report No.:
1. E186249-A314-CB-1, issued date 2016-04-22; Certificate (DK-53706-UL) with date 2016-04-22.
2. E186249-A314-CB-1-Amendment-1, issued date 2017-04-10; Certificate (DK-53706-A1-UL) with date 2017-04-10.
- This Report has been amended due to:
1. employing alternate fuse (F619, F626, F633, F640, F647, F654) Type UBM-A by Conquer Electronics and Type 216 by Littelfuse
2. employing alternate fuse (F506, F556) Type 50CF by Hollyland
3. employing alternate fuse(F505) Type 50CF by Hollyland
4. adding EMI Filter for model 73-959-0001

Product Description

This is a Class I, permanently connected switching Power Supply, intended for Information Technology Equipment provided with input block terminal for AC mains supply connection. The equipment is provided with Basic insulation between Primary and Earth chassis, Reinforced Insulation between Primary and Secondary. Additional Basic Insulation is maintained between Primary and Mid circuits as well as between Secondary and Mid circuits.

Model Differences

Model 73-959-0001 is similar to Model 73-958-0001 except Auxiliary fuse, number of cage slots, assemble position (Model 73-959-0001 assembled vertically and Model 73-958-0001 assembled horizontally)

Additional Information

This test report shall be read in conjunction with original test Report No.:
1. E186249-A314-CB-1, issued date 2016-04-22; Certificate (DK-53706-UL) with date 2016-04-22.
2. E186249-A314-CB-1-Amendment-1, issued date 2017-04-10; Certificate (DK-53706-A1-UL) with date 2017-04-10.
- This Report has been amended due to:
1. employing alternate fuse (F619, F626, F633, F640, F647, F654) Type UBM-A by Conquer Electronics and Type 216 by Littelfuse
2. employing alternate fuse (F506, F556) Type 50CF by Hollyland
3. employing alternate fuse(F505) Type 50CF by Hollyland
4. adding EMI Filter for model 73-959-0001

Revision (4788040680)

1. employing alternate fuse (F619, F626, F633, F640, F647, F654) Type UBM-A by Conquer Electronics and Type 216 by Littelfuse
2. employing alternate fuse (F506, F556) Type 50CF by Hollyland
3. employing alternate fuse(F505) Type 50CF by Hollyland
4. adding EMI Filter for model 73-959-0001

Revision (4787905362)
1. Add alternate model 73-958-0001

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: Maximum ambient temperature around the power supply must not exceed 50°C. ,
- The means of connection to the mains supply is: Permanently connected (field wired)
- The product is intended for use on the following power systems: TN, TT
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).
- The power supply in this equipment was: Investigated to IEC 60950-1. As part of the investigation of this product, the power supply and its test report were reviewed and found to comply with IEC 60950-1.
- The power supply was evaluated for use at an altitude of up to 5000m above sea level and complies with the creepage and clearance requirements at that height with an Altitude factor of 1.48. --
- The Electric Strength test is based upon the Marketing request and design of power supply which is worst than UL 60950-1 standard. --

Engineering Conditions of Acceptability

When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength
- The following secondary output circuits are SELV: 5Vsb Output
- The following secondary output circuits are at hazardous energy levels: DC 400V output
- The following secondary output circuits are at non-hazardous energy levels: 5Vsb
- The power supply terminals and/or connectors are: Not investigated for field wiring
- The maximum investigated branch circuit rating is: 100 A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required
- An investigation of the protective bonding terminals has: Been conducted
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T500 and T501 (Class F) designated 155-10C
- The following end-product enclosures are required: Fire, Electrical, Mechanical
- The equipment is suitable for direct connection to: AC mains supply
- Power supply chassis is to be permanently connected to protective earthing in the end system before the equipment is energized. The earth wire, that has to be connected to earthing point marked with PE symbol on power supply, must have an annular eyelet and has to be adequately locked against

accidental loosening. --

- The power supply was not evaluated for system mounting. When installed in end system, proper evaluation should be considered. --

Abbreviations used in the report:

- normal condition	N.C.	- single fault condition	S.F.C
- operational insulation	OP	- basic insulation	BI
- basic insulation between parts of opposite polarity:	BOP	- supplementary insulation	SI
- double insulation	DI	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: list of critical components**				Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (Edition or year)	mark(s) of conformity[1])
Input Terminal block (TBLK001)	Phoenix Contact GMBH & Co KG	UWV 25	Rated Min. 600V, Min. 112A V-0	UL1977	UL/CUL (E60425)
Auxiliary Fuse (F4001, F4002, F4003) For model 73-959-0001	Interchangeable	Interchangeable	UL Listed fuse rated 10A, 600V	UL 248	UL/CUL, (E10480)
Auxiliary Fuse (F7000, F7001, F7002) For model 73-958-0001	Interchangeable	Interchangeable	UL Listed fuse rated 5A, 600V	UL 248	UL/CUL, (E10480)
PFC Fuse (F1 - F12)	Interchangeable	Interchangeable	UL Listed fuse rated 25A, 600V	UL 248	UL/CUL, (E19180)
Primary Fuse (F619, F626, F633, F640, F647, F654)	Hollyland Co. Ltd	50CF	12.5A, 250V	UL 248	UL/CUL, (E156471)
Alternate	Conquer Electronics	UBM-A	12.5A, 250V	UL 248	UL/CUL, (E82636)
Alternate	Littelfuse Inc	216	12.5A, 250V	UL 248	UL/CUL, (E10480)
Primary Fuse (F506, F556)	Littelfuse Inc	216	6.3A, 250V	UL 248	UL/CUL, (E10480)
Alternate	Hollyland Co. Ltd	50CF	6.3A, 250V	UL 248	UL/CUL, (E156471)
Primary Fuse (F505)	Littelfuse Inc	216	4A, 250V	UL 248	UL/CUL, (E10480)
Alternate	Hollyland Co. Ltd	50CF	4A, 250V	UL 248	UL/CUL, (E156471)
Input Lead Wire	Interchangeable	Interchangeable	Min.6 AWG, Min. 600V, Min. 105 deg C	UL1430	UL, -
L6000 common mode choke assembly For 73-958-0001 only	Astec / Artesyn	801-007787-XXXX	Consists of 1 common mode choke (big core) and 3 differential chokes (small core), 105 deg C	IEC60950-1	Tested as part of the unit, -
L6000 common mode choke assembly For 73-959-0001 only	Astec / Artesyn	801-007431-XXXX	Consists of 1 common mode choke (big core) and 3 differential chokes (small core), 105 deg C	IEC60950-1	Tested as part of the unit, -

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Clause	Requirement + Test	Result - Remark	Verdict

Aux common mode choke (L5000) For model 73-959-0001 (L7000) For 73-958-0001 only	Astec / Artesyn	801-006890-XXXX	130 deg C	IEC60950-1	Tested as part of the unit., --
Aux common mode choke (L5001)	Astec / Artesyn	801-007294-XXXX	130 deg C	IEC60950-1	Tested as part of the unit., --
X-capacitors (C5000, C5001,C5002, C5012, C5016, C5020) For model 73-959-0001 only (C5000, C5001,C5002) For model 73-958-0001 only	Xiamen Faratronic Co. Ltd	MKP62	Max. 0.68uF Min. 250V		UL/CUL (E186600)
Alternate	Hua Jung Components Co. Ltd	MKP	Max. 0.68uF Min. 305V		UL/CUL (E149075)
X-capacitors (C5501, C5502, C5503)	Xiamen Faratronic Co. Ltd	MKP62	Max. 1uF Min. 480V		UL/CUL (E186600)
Alternate	Kemet Electronics Italia SRL	F872	Max. 1uF Min. 480V		UL/CUL (E97797)
Alternate	Epcos Electronic Components (TDK)	B3291	Max. 1uF Min. 480V		UL/CUL (E97797)
For model 73-959-0001 Gas arrester (GDT4000, GDT4001, GDT4002) For model 73-958-0001 Gas arrester (GDT7000, GDT7001, GDT7002)	Littelfuse Inc	CG31.0	Min. 1000V breakdown voltage	UL 1449	UL/CUL, (E320116)
Varistor	Littelfuse Inc	TMOV20RP625	Rated 625V,	UL 1449	UL/CUL,

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(MOV4000, MOV4001, MOV4002) For model 73-959-0001 only (MOV7000, MOV7001, MOV7002) For model 73-958-0001			Min. 85 degC		(E320116)
Alternate	Thinking Electronics Industrial Co. Ltd	TVT20102	Rated 625V, Min. 85 degC	UL 1449	UL/CUL, (E314979)
Varistor (MOV1, MOV2, MOV3, MOV4, MOV5, MOV6)	Littelfuse Inc	TMOV14RP385E	Rated 300V, Min. 85 degC	UL 1449	UL/CUL, (E320116)
Alternate	Thinking Electronics Industrial Co. Ltd	TVT14471	Rated 300V, Min. 85 degC	UL 1449	UL/CUL, (E314979)
X-capacitors (C13, C24, C25, C26, C27, C31, C32, C33, C34, C35, C36, C37, C42, C43, C46, C47, C48, C50)	Xiamen Faratronic Co. Ltd.	MKP62	Max. 1uF Min. 305V	UL1283, IEC60384-14/EN132400	UL/CUL (E186600)
Alternate	Hua Jung Components Co. Ltd	MKP	Max. 1uF Min. 305V	UL1283, IEC60384-14/EN132400	UL/CUL (E149075)
X-capacitors (C4000, C4001, C4002) For model 73-959-0001	Epcos Electronic Components	B3292	Max. 1uF Min. 305V	UL1283, IEC60384-14/EN132400	UL/CUL (E97863)
Alternate	Xiamen	MKP62	Max. 1uF Min. 305V	UL1283, IEC60384-14/EN132400	UL/CUL (E186600)
Alternate	Hua Jung	MKP	Max. 1uF Min. 305V	UL1283, IEC60384-14/EN132400	UL/CUL (E149075)
Y-capacitors (C10, C11, C12, C14, C19, C2, C20, C3, C4, C5, C6, C9)	Vishay Electronic GMBH	VY1	Max. 2200pF Min. 760V Class Y1	UL1283, IEC60384-14/EN132400	UL/CUL (E183844)
Alternate	Kemet Electronics Corp	ERP	Max. 2200pF Min. 760V Class Y1	UL1283, IEC60384-14/EN132400	UL/CUL (E356389)

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Bulk Capacitors (C511, C512, C552, C555)	Interchangeable	Interchangeable	Min. 470uF Mn. 450V	IEC/UL 60950-1	Tested as part of the unit.
Bulk Capacitors (C501, C502, C503, C504, C513, C528, C530, C534, C538, C539, C561, C562, C567, C568, C571, C572, C603, C604, C622, C623, C627, C629, C631, C633)	Interchangeable	Interchangeable	Min. 500uF Mn. 450V	IEC/UL 60950-1	Tested as part of the unit.
Bridge Diode (D1, D2, D3, D6, D7, D8)	Interchangeable	Interchangeable	Min. 35A Min. 800V	IEC/UL 60950-1	Tested as part of the unit.
Mosfet (Q1, Q2, Q4, Q5, Q6, Q7)	Interchangeable	Interchangeable	Min. 46A Min. 600V	IEC/UL 60950-1	Tested as part of the unit.
PFC Choke (L1, L2, L3)	Astec / Artesyn	801-006868-XXXX	130 degC	IEC/UL 60950-1	Tested as part of the unit.
Primary choke (L638)	Astec / Artesyn	801-007306-XXXX	130 degC	IEC/UL 60950-1	Tested as part of the unit.
T500 Auxiliary Transformer	Astec / Artesyn	801-006888-XXXX	Provided with Class F insulation grade (E94225), designated (155-10C).	UL/IEC60950-1	Tested as part of the unit., -
T500 Auxiliary Transformer	Astec / Artesyn	801-006888-XXXX	Class F	IEC/UL 60950-1	Tested as part of the unit.
- Auxiliary Transformer's Bobbin	EI Dupont De Nemours & Co Inc	Rynite FR530	Rated V-0, min.0.4 mm thick, 155 degC	UL94	UL: E41938
- Auxiliary Transformer's TIW	Hoi Luen Electrical MFR Co Ltd	THL-F	Rated 155 degC, Min. AWG#30.	UL2353, Annex U	UL:E257525
- Auxiliary Transformer's TIW - Alternate	Rubadue Wire Co Inc	TXXA01TXXX-X	Rated 155 degC, Min. AWG#30.	UL2353, Annex U	UL:E206198
- Auxiliary Transformer?'s TIW - Alternate	Totoku Electric Co Ltd	TIW-3	Rated 155 degC, Min. AWG#30.	UL2353, Annex U	UL:E166483
- Auxiliary Transformer's TIW - Alternate	Draka Cable Wuppertal GMBH	8Y13	Rated 180 degC, Min. AWG#30.	UL2353, Annex U	UL:E211469

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- Auxiliary Transformer's TIW - Alternate	New England Wire Technologies Corp	WYYTYYYE (ETFE)	Rated 155 degC, Min. AWG#30.	UL2353, Annex U	UL:E205791
- Auxiliary Transformer's TIW - Alternate	Hoi Luen Electrical MFR Co Ltd	THL-F-SB	Rated 155 degC, Min. AWG#30.	UL2353, Annex U	UL:E257525
- Auxiliary Transformer's TIW - Alternate	Totoku Electric Co Ltd	TIW-3XSB	Rated 155 degC, Min. AWG#30.	UL2353, Annex U	UL:E166483
T501 Auxiliary Transformer	Astec / Artesyn	801-006889-XXXX	Provided with Class F insulation grade (E94225), designated (155-10C).	UL94	Tested as part of the unit.
T501 Auxiliary Transformer	Astec / Artesyn	801-006889-XXXX	Class F	UL/IEC60950-1	Tested as part of the unit., -
- Auxiliary Transformer's Bobbin	EI Dupont De Nemours & Co Inc	Rynite FR530	Rated V-0, min.0.4 mm thick, 155 degC	UL94	UL: E41938
- Auxiliary Transformer's TIW	Hoi Luen Electrical MFR Co Ltd	THL-F	Rated 155 degC, Min. AWG#26.	UL2353, Annex U	UL:E257525
- Auxiliary Transformer's TIW - Alternate	Rubadue Wire Co Inc	TXXA01TXXX-X	Rated 155 degC, Min. AWG#26.	UL2353, Annex U	UL:E206198
- Auxiliary Transformer's TIW - Alternate	Totoku Electric Co Ltd	TIW-3	Rated 155 degC, Min. AWG#26.	UL2353, Annex U	UL:E166483
- Auxiliary Transformer's TIW - Alternate	Draka Cable Wuppertal GMBH	8Y13	Rated 180 degC, Min. AWG#26.	UL2353, Annex U	UL:E211469
- Auxiliary Transformer's TIW - Alternate	New England Wire Technologies Corp	WYYTYYYE (ETFE)	Rated 155 degC, Min. AWG#26.	UL2353, Annex U	UL:E205791
- Auxiliary Transformer's TIW - Alternate	Hoi Luen Electrical MFR Co Ltd	THL-F-SB	Rated 155 degC, Min. AWG#26.	UL2353, Annex U	UL:E257525
- Auxiliary Transformer - TIW Alternate	Totoku Electric Co Ltd	TIW-3XSB	Rated 155 deg C, Min. AWG#26.	UL2353, Annex U	UL:E166483
Optocoupler in Primary control board (U302, U313)	Toshiba Corp	TLP385	Double protection optical isolators having an isolation rating up to 5000 Vac, Min. 85 deg	IEC 60747-5-2UL 1577	UL/CUL (E356389), VDE, CQC

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			C		
Alternate	Everlight Electronics Co. Ltd	EL101	Double protection optical isolators having an isolation rating up to 5000 Vac, Min. 85 deg C	IEC 60747-5-2UL 1577	UL/CUL (E214129), FIMKO, VDE, CQC
Alternate	Lite-on Technology Corp	LTV-100X	Double protection optical isolators having an isolation rating up to 5300 Vac, Min. 85 deg C	IEC 60747-5-2UL 1577	UL/CUL (E113898)
Non-Optocoupler in Primary control board (U300)	Texas Instrument	ISO1050DW	Double protection optical isolators having an isolation rating up to 5000 Vac, Min. 85 deg C	IEC 60747-5-2UL 1577	UL/CUL (E181974)
Non-Optocoupler in Carrier board (U706)	Texas Instrument	ISO1050DW	Double protection optical isolators having an isolation rating up to 5000 Vac, Min. 85 deg C	IEC 60747-5-2UL 1577	UL/CUL (E181974)
Optocoupler in Carrier board (U702, U708, U711)	Everlight Electronics Co. Ltd	EL101	Double protection optical isolators having an isolation rating up to 5000 Vac, Min. 85 deg C	IEC 60747-5-2UL 1577	UL/CUL (E214129)
Alternate	Lite-on Technology Corp	LTV	Double protection optical isolators having an isolation rating up to 5300 Vac, Min. 85 deg C	IEC 60747-5-2UL 1577	UL/CUL (E113898)
Fan	Sunonwealth Electric Machine Industry Co. Ltd	PF92381B	Rated 12V, 48W	UL 507	UL/CUL (E77551)
PFC Main cover insulator	Sabic Innovative Plastics Japan L L C	Valox FR1	Rated 94VTM-0, approximate dimensions of	UL94	UL:E207780

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			min. 230.0 by 199.0 mm, min.0.25mm thick.		
Aux Bulk insulator	Sabic Innovative Plastics Japan L L C	Valox FR1	Rated 94VTM-0, approximate dimensions of min. 378.0 by 202.0 mm, min.0.25mm thick.	UL94	UL:E207780
Primary control board insulator	Sabic Innovative Plastics Japan L L C	Valox FR1	Rated 94VTM-0, approximate dimensions of min. 110.5 by 88.8 mm, min.0.25mm thick.	UL94	UL:E207780
Insulator on AC interconnect board	Toray Industries Inc	Lumirror S10	Rated 94VTM-2, approximate dimensions of min. 283.0 by 124.5 mm, min.0.125mm thick.	UL94	UL: E86511
Alternate	Sabic Innovative Plastics Japan L L C	Valox FR1	Rated 94VTM-2, approximate dimensions of min. 283.0 by 124.5 mm, min.0.125mm thick.	UL94	UL:E207780
Insulator on Main cover	Sabic Innovative Plastics Japan L L C	Valox FR1	Rated 94VTM-0, approximate dimensions of min. 390.0 by 378.0 mm, min.0.25mm thick.	UL94	UL:E207780
Insulator on Power signal back plane	Sabic Innovative Plastics Japan L L C	Valox FR1	Rated 94VTM-0, approximate dimensions of min. 21.0 by 388 mm, min.0.25mm thick.	UL94	UL:E207780
PFC Main cover enclosure	Interchangeable	Interchangeable	Steel. Approximate flat pattern	UL94	Tested as part of the unit.

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Clause	Requirement + Test	Result - Remark	Verdict

			dimensions of min 389.57 mm. by 340.27 mm, min. 1.0mm thick.		
PFC Main Base enclosure	Interchangeable	Interchangeable	Steel. Approximate dimensions of min 376.5 mm. by 199.5 mm, min. 1.0mm thick.	UL / IEC 60950-1	Tested as part of the unit.
8 Module cage assembly	Interchangeable	Interchangeable	Steel. Consists of Cage 8 module cover, Cage 8 module base and Cage 8 module partition where flat pattern dimensions are min. 481.43mm by 260.14mm, min. 1.0mm thick	UL / IEC 60950-1	Tested as part of the unit.
Cover panel side enclosure	Interchangeable	Interchangeable	Steel. Approximate dimensions of min 705.8 mm. by 125.4 mm, min. 1.5mm thick.	UL / IEC 60950-1	Tested as part of the unit.
Heatsink (HTSK1 - HTSK6)	Interchangeable	Interchangeable	Aluminum. Approximate actual dimension of min 90 mm. by 22 mm. by 1.0 mm thick.	UL / IEC 60950-1	Tested as part of the unit.
Heatsink (HTSK13 - HTSK18)	Interchangeable	Interchangeable	Aluminum. Approximate actual dimension of min 54.8 mm. by 22 mm. by 1.0 mm thick.	UL / IEC 60950-1	Tested as part of the unit.
Heatsink (HTSK504)	Interchangeable	Interchangeable	Aluminum. Approximate actual dimension of min 60 mm. by 13.8 mm. by 1.0 mm thick.	UL / IEC 60950-1	Tested as part of the unit.

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Printed Wiring Board	Interchangeable	Interchangeable	Rated V-0, 130 deg. C	UL / IEC 60950-1	UL
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					
The CBTL has verified the component information.					

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	**TABLE: Thermal requirements**						Pass
	Supply voltage (V) :	AC 90/ 60Hz	AC 264/ 60Hz	AC 103/ 440Hz*	AC 90/ 60Hz	AC 103/ 440Hz*	---
	Ambient Tmin (??C) :	-	-	-	-	-	---
	Ambient Tmax (??C) :	See below	See below	See below	See below	See below	---

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Clause	Requirement + Test	Result - Remark	Verdict

Maximum measured temperature T of part/at:	T (??C) #1	T (??C) #2	T (??C) #3	T (??C) #4	T (??C) #5	Allowed Tmax (??C)
-	-	-	-	-	-	-
Condition:	AC 3P, 342V, Full load,	AC 3P, 187V, Full load	-	-	-	-
Ambient	50.2	50.4	-	-	-	105
Input connector (inside)	59.1	61.8	-	-	-	110
C5501	58.6	60.6	-	-	-	110
C5502	58.8	61.0	-	-	-	110
C5503	58.4	61.4	-	-	-	130
L6000-1 (differential choke1)	57.8	65.5	-	-	-	130
L6000-2 (differential choke2)	58.4	71.8	-	-	-	130
L6000-3 (differential choke 3)	59.1	72.7	-	-	-	130
L6000 (common mode choke	58.2	68.9	-	-	-	130
L4	66.8	72.5	-	-	-	130
L6	72.5	79.3	-	-	-	130
L8	68.8	76.4	-	-	-	130
L10	92.2	96.2	-	-	-	130
L12	79.0	80.7	-	-	-	130
L14	91.1	91.1	-	-	-	130
L1	85.1	89.0	-	-	-	130
L2	83.6	89.1	-	-	-	130
L3	97.6	98.5	-	-	-	130
L638	54.2	51.4	-	-	-	130
T500 Core-A (Class F)	57.8	50.9	-	-	-	130
T500 Coil-A (Class F)	61.9	57.6	-	-	-	130
T501 Core-A (Class F)	56.2	54.6	-	-	-	130
T501 Coil-A (Class F)	55.8	52.3	-	-	-	130
T500 Core-B (Class F)	56.2	51.1	-	-	-	130
T500 Coil-B (Class F)	68.0	61.1	-	-	-	130
T501 Core-B (Class F)	55.8	52.5	-	-	-	130
T501 Coil-B (Class F)	56.6	55.2	-	-	-	130
L5-B	83.9	92.2	-	-	-	130
L7-B	90.1	96.1	-	-	-	130
L9-B	89.0	86.0	-	-	-	130
L11-B	88.9	86.6	-	-	-	130
L13-B	97.7	101.9	-	-	-	130
L15-B	101.3	100.7	-	-	-	130
L501-B	64.0	68.1	-	-	-	130

Temperature T of winding:	t1 (??C)	R1 (ohm)	t2 (??C)	R2 (ohm)	T (??C)	Allowed Tmax (??C)	Insulation class
supplementary information:							

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		Pass
	Ambient temperature (??C) :	24.0	---
	Power source for EUT: Manufacturer, model/type, output rating :	73-959-0001	---

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
-	-	-	-	-	-	-
C567 (+/-)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F640 (Littelfuse type 216) opened. Damaged: SCR6002(A), SCR6002(B), Q5, Q1 T500(A) = 31.2 degC T501(A) = 34.3 degC T500(B) = 31.4 degC T501(B) = 34.7 degC
C567 (+/-)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F640 (Conquer Electronics type UBM-A) opened. Damaged: SCR6002(A), SCR6002(B), Q5, Q1 T500(A) = 31.4 degC T501(A) = 34.5 degC T500(B) = 32.1 degC T501(B) = 35.1 degC
SCR500 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F556 and F506 (Hollyland type 50CF) opened. Damaged: SCR503, SCR501, SCR502 T500(A) = 32.4 degC T501(A) = 34.9 degC T500(B) = 32.7 degC T501(B) = 35.2 degC
Q502 (D-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F505 (Hollyland type 50CF) opened. Damaged: Q502, U501, R548 T500(A) = 33.9 degC T501(A) = 32.6 degC T500(B) = 31.7 degC T501(B) = 35.9 degC
Q502 (G-D)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F505 (Hollyland type 50CF) opened. Damaged: Q502, D510 T500(A) = 35.1 degC T501(A) = 34.9 degC T500(B) = 33.3 degC T501(B) = 38.2 degC
Q1 (G-D)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216) opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 34.8 degC T501(A) = 31.1 degC T500(B) = 33.6 degC T501(B) = 32.9 degC

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Clause	Requirement + Test	Result - Remark	Verdict

Q1 (D-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 34.3 degC T501(A) = 32.5 degC T500(B) = 35.1 degC T501(B) = 31.3 degC
Q1 (D-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 35.5 degC T501(A) = 32.1 degC T500(B) = 35.8 degC T501(B) = 32.2 degC
D1 (+/-)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 38.6 degC T501(A) = 34.3 degC T500(B) = 39.4 degC T501(B) = 35.6 degC
D1 (+/-)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1, F2, F4 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 36.9 degC T501(A) = 33.3 degC T500(B) = 35.4 degC T501(B) = 33.6 degC
D2 (~ / ~)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1, F2, F3, F4 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 38.4 degC T501(A) = 34.2 degC T500(B) = 38.2 degC T501(B) = 33.7 degC
D2 (~ / ~)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1, F2, F3, F4 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 36.4 degC T501(A) = 33.1 degC T500(B) = 36.2 degC T501(B) = 34.8 degC
D4 (A-K)	S-C	528	30	F4001,	0.5	All modules shutdown immediately

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Clause	Requirement + Test	Result - Remark	Verdict

			mins	F4002,F4003, F1 – F12		except 5Vsb output. F619 (Littelfuse type 216), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 37.1 degC T501(A) = 33.1 degC T500(B) = 38.3 degC T501(B) = 32.2 degC
D4 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 36.9 degC T501(A) = 34.3 degC T500(B) = 35.3 degC T501(B) = 33.2 degC
D37 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F640 and F633 (Littelfuse type 216), F5, F6, F7, F8 opened. Damaged: Q5, Q4, SCR6002(A), SCR6002(B) T500(A) = 37.2 degC T501(A) = 35.4 degC T500(B) = 38.9 degC T501(B) = 34.4 degC
D37 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F640 and F633 (Conquer Electronics type UBM-A), F5, F6, F7, F8 opened. Damaged: Q5, Q4, SCR6002(A), SCR6002(B) T500(A) = 36.2 degC T501(A) = 33.8 degC T500(B) = 37.2 degC T501(B) = 32.5 degC
D13 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 37.3 degC T501(A) = 34.6 degC T500(B) = 38.1 degC T501(B) = 34.0 degC
D13 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1, F2 opened. Damaged: Q1, SCR6002(A), SCR6002(B) T500(A) = 38.1 degC T501(A) = 35.2 degC T500(B) = 39.4 degC T501(B) = 34.9 degC
Q7 (G-D)	S-C	528	30 mins	F4001, F4002,F40	0.2	All modules shutdown immediately except 5Vsb output. F647

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Clause	Requirement + Test	Result - Remark	Verdict

				03, F1 – F12		(Littelfuse type 216), F1, F2 opened. Damaged: Q6, Q7, SCR6002(A), SCR6002(B) T500(A) = 38.6 degC T501(A) = 33.3 degC T500(B) = 39.8 degC T501(B) = 32.1 degC
Q7 (G-D)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F647 (Conquer Electronics type UBM-A), F1, F2 opened. Damaged: Q6, Q7, SCR6002(A), SCR6002(B) T500(A) = 39.0 degC T501(A) = 33.7 degC T500(B) = 37.9 degC T501(B) = 33.3 degC
Q7 (G-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F633 (Littelfuse type 216), F5 opened. Damaged: Q6, Q7, SCR6002(A), SCR6002(B) T500(A) = 37.1 degC T501(A) = 33.0 degC T500(B) = 37.5 degC T501(B) = 35.1 degC
Q7 (G-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F633 (Conquer Electronics type UBM-A), F5 opened. Damaged: Q6, Q7, SCR6002(A), SCR6002(B) T500(A) = 38.7 degC T501(A) = 34.9 degC T500(B) = 38.0 degC T501(B) = 34.4 degC
SCR502 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F506 and F566 (Hollyland type 50CF), F4001 opened. Damaged: SCR502, SCR503 T500(A) = 38.1 degC T501(A) = 34.2 degC T500(B) = 37.8 degC T501(B) = 33.5 degC
SCR6002(A) (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1, F2 opened. Damaged: Q2, SCR6002(A) T500(A) = 39.8 degC T501(A) = 32.9 degC T500(B) = 38.4 degC T501(B) = 33.7 degC
SCR6002(A) (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.2	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1, F2 opened. Damaged: Q2, SCR6002(A) T500(A) = 36.2 degC T501(A) = 31.0 degC T500(B) =

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						37.1 degC T501(B) = 32.8 degC
SCR500 (A-G)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F556 and F506 (Hollyland type 50CF) opened. Damaged: SCR500, SCR501, SCR502 T500(A) = 36.0 degC T501(A) = 37.2 degC T500(B) = 33.0 degC T501(B) = 33.4 degC
Q4 (G-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F633 (Littelfuse type 216), F5, F6 opened. Damaged: Q5, Q4, SCR6002 T500(A) = 33.2 degC T501(A) = 39.1 degC T500(B) = 29.8 degC T501(B) = 34.0 degC
Q4 (G-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F633 (Conquer Electronics type UBM-A), F5, F6 opened. Damaged: Q5, Q4, SCR6002 T500(A) = 32.8 degC T501(A) = 37.5 degC T500(B) = 32.4 degC T501(B) = 35.4 degC
Q6 D-S	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F654 (Littelfuse type 216), F10 opened. Damaged: Q6, SCR6002 T500(A) = 37.3 degC T501(A) = 38.0 degC T500(B) = 34.3 degC T501(B) = 34.8 degC
Q6 (D-S)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F654 (Conquer Electronics type UBM-A), F10 opened. Damaged: Q6, SCR6002 T500(A) = 34.6 degC T501(A) = 38.5 degC T500(B) = 32.2 degC T501(B) = 35.8 degC
SCR502 (A-G)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F556 and F506 (Hollyland type 50CF), F4001 opened. Damaged: SCR502, SCR501 T500(A) = 35.8 degC T501(A) = 36.3 degC T500(B) = 33.7 degC T501(B) = 35.0 degC
SCR6009 (A-G)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1 opened. Damaged: SCR6009, Q2 T500(A) = 36.8 degC T501(A) = 34.6 degC

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						T500(B) = 32.6 degC T501(B) = 34.8 degC
SCR6009 (A-G)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1 opened. Damaged: Q2, SCR6009 T500(A) = 36.5 degC T501(A) = 37.9 degC T500(B) = 34.5 degC T501(B) = 34.8 degC
SCR6009 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1 opened. Damaged: Q2, SCR6009 T500(A) = 37.0 degC T501(A) = 35.4 degC T500(B) = 34.1 degC T501(B) = 33.4 degC
SCR6009 (A-K)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1 opened. Damaged: SCR6002, Q2 T500(A) = 34.2 degC T501(A) = 36.1 degC T500(B) = 33.4 degC T501(B) = 34.9 degC
SCR6002(A) (A-G)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Littelfuse type 216), F1 opened. Damaged: SCR6002, Q5, Q4 T500(A) = 35.7 degC T501(A) = 38.0 degC T500(B) = 32.3 degC T501(B) = 34.7 degC
SCR6002(A) (A-G)	S-C	528	30 mins	F4001, F4002,F4003, F1 – F12	0.5	All modules shutdown immediately except 5Vsb output. F619 (Conquer Electronics type UBM-A), F1 opened. Damaged: Q2, SCR6002 T500(A) = 32.8 degC T501(A) = 37.5 degC T500(B) = 32.4 degC T501(B) = 35.4 degC
supplementary information:						

Enclosures

Type	Supplement Id	Description
Marking Plate	13-01	Rating Label for Model 73-958-0001
Marking Plate	13-02	Rating Label for Model 73-959-0001
Photographs	3-11	Overall view 1
Photographs	3-12	Overall view 2
Photographs	3-13	Input connector with main PE
Photographs	3-14	Internal view
Photographs	3-15	Aux Fuse
Photographs	3-16	PFC Fuse
Photographs	3-17	Bulk Aux board component view
Photographs	3-18	Bulk Aux board solder side view
Photographs	3-19	PFC board component side view
Photographs	3-20	PFC board solder side view
Photographs	3-21	Power Signal back plane component side
Photographs	3-22	Power signal back plane solder side view
Photographs	3-23	ISOCOM assembly component side view
Photographs	3-24	ISOCOM board assembly solder side view
Photographs	3-25	Fan assembly
Photographs	3-26	Module slots and ISOCOM view
Photographs	3-27	AC interconnect board component side view
Photographs	3-28	AC interconnect board solder side view
Photographs	3-29	3P high line board component side view
Photographs	3-30	3P high line board solder side view
Photographs	3-31	3P low line board component side view
Photographs	3-32	3P low line board solder side view
Photographs	3-33	1P config board for 73-958-0001 only
Diagrams	4-01	T500 specification
Diagrams	4-02	T501 specification
Schematics + PWB	5-01	PWB layout of 3P higline Board
Schematics + PWB	5-02	PWB layout of 3P Lowline Board
Schematics + PWB	5-03	PWB layout of AC Interconnect board
Schematics + PWB	5-04	PWB layout of Aux Bulk Board
Schematics + PWB	5-05	PWB layout of Carrier board
Schematics + PWB	5-06	PWB layout of ISOCOM Board

Schematics + PWB	5-07	PWB layout of PFC Board
Schematics + PWB	5-08	PWB layout for Power Signal Backplane
Schematics + PWB	5-09	PWB layout for Primary Control board
Schematics + PWB	5-10	PWB layout for AC Interconnect board for 73-958-0001 only
Schematics + PWB	5-11	PWB layout for Aux Fuse board for 73-958-0001 only
Manuals	6-01	Installation Instructions for Model 73-959-0001
Manuals	6-02	Installation Instructions for 73-958-0001
Miscellaneous	7-02	TMP Equipment List
Miscellaneous	7-04	iHP Rack Input config board setup
Miscellaneous	7-05	TMP equipment list for project 4787905362
Miscellaneous	7-06	TMP equipment list for project 4788040680

Misc ID 7-06

Product Safety Test Laboratory

ATTEVA EMBEDDED TECHNOLOGIES

Test Instrument List
PS-FS17

Model No.: 73-959-0001

	Printed Name	Signature
Technician :	Manuel Ludivero	
Project Engineer :	Percival Dela Pena	
Review Engineer :	Michael Gutierrez	

UL File no: E186249

TEST INSTRUMENT LIST
(Please refer to Equipment Master List Rev. 558 and 561*)

Instrument No	Test No. TT-PP16004								Function/Range Used	Calibration		
										Last Date	Due Date	
M42	01								0-20A, 0-1000VAC, 0-1200VDC	9/17/2015	9/17/2016	
CM2	01								0-600VAC/VDC - 0-1000A	6/3/2015	6/3/2016	#
E96	01	03							16V/80V - 60A/600A	1/25/2016	1/25/2017	
E93	01								16V/80V - 30A/300A	1/14/2016	1/14/2017	
E94	01								16V/80V - 30A/300A	1/14/2016	1/14/2017	
TM15-170	01								0-80V / 0-600A	3/7/2016	3/7/2017	
TM1-201	01								1.5-150V / 0-200A	10/30/2015	10/30/2016	
TM1-202	01								1.5-150V / 0-200A	9/4/2015	9/4/2016	#
E73	01								1.5-150V / 0-200A	6/4/2015	6/4/2016	#
E86	01								0-80V / 0-20A	5/2/2016	5/2/2017	#
E59	01								1.5V-120V/0-200A	6/6/2016	6/6/2017	#
E69	01								1.5V-120V/0-200A	4/25/2016	4/25/2017	#
E33	01								1.5V-120V/0-200A	11/11/2015	11/11/2016	
E101	01								16V/80V - 30A/300A	9/27/2015	9/27/2016	
E71	01	03							0-80V / 0-600A	5/4/2016	5/4/2017	#
E100	01	03							16V/80V - 60A/600A	7/7/2016	7/7/2017	#
E10	01								0-80V / 0-600A	4/1/2016	4/1/2017	
ML2	01								AUTO	1/20/2016	1/20/2017	
MLT1	01								NCR	NA	NA	
MLT2	01								NCR	NA	NA	
MLT3	01	03							NCR	NA	NA	
MLT4	01								NCR	NA	NA	
MLT5	01								NCR	NA	NA	
MLT6	01								NCR	NA	NA	
MLT7	01								NCR	NA	NA	
QAE-634	01								NCR	NA	NA	
STW1	01								AUTO	7/22/2015	7/22/2016	#
H4	01	02	03						0-12KVDC	5/4/2016	5/4/2017	
HC2	02								AUTO	1/28/2016	1/28/2017	
STW4	02	03							AUTO	10/28/2015	10/28/2016	
TM15-176	03								0-150V/0-300V	9/25/2015	9/25/2016	#
										9/23/2016 *	9/23/2017 *	
TM15-177	03								0-150V/0-300V	9/25/2015	9/25/2016	#
										9/26/2016 *	9/26/2017 *	
ATE-320	03								0-150V/0-300V	8/30/2016	8/30/2017	#

The equipment were under calibration method when the test were conducted

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Product Safety Test Laboratory

ATEQVA EMBEDDED TECHNOLOGIES

Test Instrument List
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Continued....

ATE-013	03								3 to 60 V / 0 to 60 A	10/8/2015	10/8/2016
E95	03								16V/80V - 60A/600A	1/25/2016	1/25/2017
TM15-203	03								16V/80V - 60A/600A	4/13/2016	4/13/2017
TM15-204	03								16V/80V - 60A/600A	4/13/2016	4/13/2017
TM15-205	03								16V/80V - 60A/600A	4/13/2016	4/13/2017
TM15-216	03								16V/80V - 60A/600A	10/20/2015	10/20/2016
OSC9	03								AUTO	8/9/2016	8/9/2017 #
ML1	03								AUTO	1/20/2016	1/20/2017

Note: NCR –No Calibration Required

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The equipment were under calibration method when the test were conducted