

Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment - Safety - Part 1: General requirements				
Report Reference No	E238623-A133-CB-1			
Date of issue:	2013-02-05			
Total number of pages:	12			
CB Testing Laboratory	Underwriters Laboratories Taiwan Co., Ltd.			
Address:	260 Da-Yeh Road, 112 Peitou Taipei City, Chinese Taipei			
Applicant's name	INVENTEC CORP 349 JEN-HO RD SEC 2, TACHI, TAOYUAN HSIEN 335, TAIWAN			
Address				
Test specification:				
Standard:	IEC 60950-1:2005 (2nd Edition); Am 1:2009			
Test procedure:	CB Scheme			
Non-standard test method:	N/A			
Test Report Form No.	IEC60950_1C			
Test Report Form originator:	SGS Fimko Ltd			
Master TRF:	2012-08			

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Amendment 1	2013-07-04			
Test item desc	ription	: Accessory, PCI	Express RAID Adapter	
Trade Mark		: LSI		

Manufacturer:	INVENTEC CORP 349 JEN-HO RD SEC 2, TACHI, TAOYUAN HSIEN 335, TAIWAN
Model/Type reference:	25420
Ratings	N/A

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Amendment 1	2013-07-04

]	CB Testing Laboratory		
	Testing location / address:		
[]	Associated CB Test Laboratory		
	Testing location / address::		
	Tested by (name + signature) :		
	Approved by (name + signature) :		
[]	Testing Procedure: TMP		
	Tested by (name + signature) :		
	Approved by (+ signature):		
	Testing location / address:		
[x]	Testing Procedure: WMT		
	Tested by (name + signature) :	Judy Tsou	Judy Took
	Witnessed by (+ signature): :	Teru Chen	Judy Taou Tern Chen Stephen Humy
	Approved by (+ signature)	Stephen Huang	Stephen Humy
	Testing location / address::	Inventec Corp., 349, Jen-Ho I Taoyuan, Taiwan	Road Sec.2, 335 Tachi,
[]	Testing Procedure: SMT		
	Tested by (name + signature) :		
	Approved by (+ signature)		
	Supervised by (+ signature):		
	Testing location / address::		
[]	Testing Procedure: RMT		
	Tested by (name + signature) :		
	Approved by (+ signature)		
	Supervised by (+ signature):		
	Testing location / address::		
	f Attachments		
	al Differences (0 pages)		
	sures (14 pages) nary Of Testing		

Unless otherwise indicated, all tests were conducted at Inventec Corp., 349, Jen-Ho Road Sec.2, 335 Tachi, Taoyuan, Taiwan.

Tests performed (name of test and test clause)

Testing location / Comments

End Product Reference Page

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General Guidelines

Component Failure (5.3.1, 5.3.4, 5.3.7)

Summary of Compliance with National Differences:

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

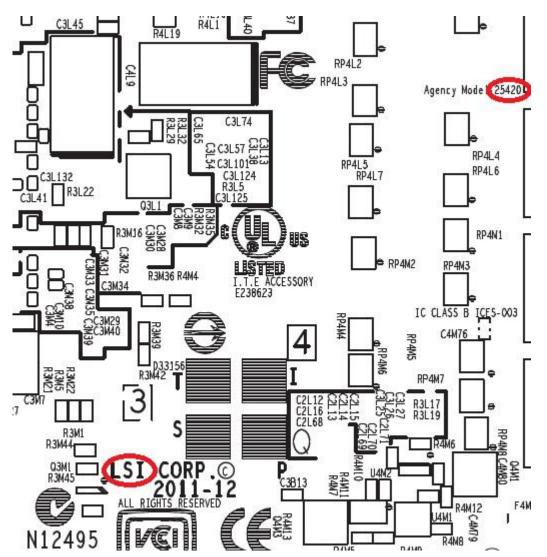
List of countries addressed: AT, BE, BG, BY, CA, CH, CN, CZ, DE, DK, ES, EU, FI, FR, GB, GR, HU, IL, IT, JP, KR, NL, NO, PL, RO, SE, SG, SI, SK, UA, US

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011

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Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



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Test item particulars :	
Equipment mobility	for building-in
Connection to the mains	N/A
Operating condition	continuous
Access location	N/A
Over voltage category (OVC)	N/A
Mains supply tolerance (%) or absolute mains supply values	No direct connection
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	Class III (supplied by SELV)
Considered current rating of protective device as part of the building installation (A)	N/A
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	Up to 2000m
Altitude of test laboratory (m)	Up to 2000m
Mass of equipment (kg)	0.18 kg max.
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	2013-06-20
Date(s) of Performance of tests	2013-06-20
General remarks:	
The test results presented in this report relate only to This report shall not be reproduced, except in full, with	
"(see Enclosure #)" refers to additional information ap "(see appended table)" refers to a table appended to	
Throughout this report a point is used as the decimal	separator.
Manufacturer's Declaration per Sub Clause 6.2.5 c	
The application for obtaining a CB Test Certificate inc declaration from the Manufacturer stating that the sar representative of the products from each factory has	nple(s) submitted for evaluation is (are)
When differences exist, they shall be identified in the	General Product Information section.
CAOHEJIN	EC (PUDONG) TECHNOLOGY CORPORATION G EXPORT PROCESSING ZONE, 789 PUXING RD, I 201114, CHINA

(2) INVENTEC CORP 255 JEN-HO RD, SEC 2, NAN-HSIN LI, TAICHI TAOYUAN 335, TAIWAN

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2013-07-04 to include the following changes/additions:

- -This test report shall be read in conjunction with the original report no.:
- 1. E238623-A133-CB-1, issued 2013-02-05, with CB Certificate, DK-30892-UL, issued 2013-02-06.
- -This test report has been amended due to
- 1. Alternate heatsink.
- 2. Alternate bracket.(openings)
- 3. Remove plastic cover on daughter board.
- 4. Add glue on daughter board.
- Only limited tested were deemed necessary

- Unless otherwise indicated, all tests were conducted at INVENTEC CORP, 349 JEN-HO RD SEC 2, TACHI, TAOYUAN HSIEN, TAIWAN, 335 under WMT program.

Product Description

Electronic components were mounted on PWB and supplied by SELV via the end-use Server's main board.

Model Differences

N/A

Additional Information

SuperCap module (Tecate Industries Inc., type:17-0005-4483) rating: 2F, 13.5V. According to clause 2.1.1.5, E= $0.5 * CU^2 * 10^{-6}$ E= 182.25 J > 20 J

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 55°C
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 (which includes all European national differences, including those specified in this test report).
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- Ultracapacitor Module w/ future effective requirements: The product contains an ultracapacitor module that complies with the Standard for Electrochemical Capacitors, UL810A.

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- Fire enclosure, electrical enclosure and mechanical enclosure shall be provided in the final system. --
- Heating test need be evaluated in the final system. --

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)			

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

5.3.7	Simulation of faults	Component fault: U6, U9, U15: DC Output shutdown after 5 sec. No hazard.	Pass
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	IEC 6	60950-1	
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1 TAB	LE: list of critical	components			Pass
object/part or	manufacturer/	type/model	technical data	standard (Edition	mark(s) of
Description	trademark			or year)	conformity ¹)
01. PWB	interchangeable	interchangeable	Rated V-1 minimum, 105 degree C minimum	UL796	UL,
02. Heat Sink (On U5B4)			Aluminum. (Please see Enclosure 4-06 for details)		,
02a. Heat Sink (On U5B4) (Alternate)			Aluminum. (Please see Enclosure 4-07 for details)		,
03. Internal Plastic Part/Materials	interchangeable	interchangeable	Rated V-2 minimum	UL94, UL746C	UL,
04. Connectors and Receptacles (secondary ELV/SELV circuits)	interchangeable	interchangeable	Metal/plastics, Copper alloy pins housed in bodies of plastic rated V-2 min.	UL1863, UL498, UL1977, UL94, UL746C	UL,
05. Wiring (Secondary ELV/SELV) (Optional)	interchangeable	interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; 60 V min., 60 degree C min.	UL758	UL,
06. Battery Pack (Optional)	Palladium Energy Co Ltd /LSI	BAT1S1P-A	3.7Vdc, 1.59Ah, 5.9Wh or 3.7Vdc,1.5Ah, 5.6W	UL60950-1 UL2054	UL,
07. SuperCap Module (Optional)	Tecate Industries Inc	17-0007-4483	13.5Vdc, 2F	UL810A	UL,
08. Label (Marking on PWB)			Printed by ink		,
09. Insulating Tubing/Sleeving (Optional)	interchangeable	interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; 105 degree C, 300 V.	UL 224	UL,
10. Cover of	interchangeable	interchangeable	V-2 min.,	UL94	UL,

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

daughter board (for SuperCap Module) (Optional)			dimension see Enclosure 4-03 detail.		
11. Glue/Epoxy on daughter board (for Super Cap module) (for daughter board without cover)	interchangeable	interchangeable	V-2 min. covered on conductive parts of U6-pin1, pin2; U15-pin11; C25-pin1; C1- pin1; J1-pin1, pin2; Q3- pin4;Q1- pin5,pin6 (See Enclosure 3-26 for details)	UL94	UL,
Supplementary in ¹) Provided evider		reed level of comp	iance. See OD-CB	2039.	

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

5.3	TABLE: fault co	ndition tests					N/A
	ambient temperat	ture (° C)		See below	—		
	Power source for	EUT: Manufac	turer, model/t	See test sample	e Identification	—	
	output rating			:	for detail		
Component	Apponent No.FaultSupply voltage (V)Test time #Fuse (A)Fuse current (A)ObservationProject A3488				ation		
Componen No. For Project 13CA3488 2 U6 U9 U15		voltage		(A)			
		(V)					
U6	Short, Pin 3,4 – 5,6	240V/50Hz	5 min.			DC Output shut sec. NC、NT, N	
U9	Short, Pin 7 – 8	240V/50Hz	5 min.			DC Output shut sec. NC、NT, N	
	Short, Pin 10 – 11	240V/50Hz	5 min.			DC Output shut sec. NC、NT, N	
supplementa	ary information:						

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Enclosures

<u>Type</u>	Supplement Id	Description
Photographs	3-01	Overall View - 1
Photographs	3-02	Overall View - 2
Photographs	3-03	Overall View - 3
Photographs	3-15	Overall View - 3 (alternate)
Photographs	3-16	Overall View with Battery Pack
Photographs	3-17	Overall View with SuperCap Module
Photographs	3-18	Overall View with SuperCap Module (alternate)
Photographs	3-19	Top View of daughter board for SuperCap Module
Photographs	3-20	Bottom View of daughter board for SuperCap Module
Photographs	3-21	Overall view – 4 (Alternate)
Photographs	3-22	Overall view – FH openings (Alternate)
Photographs	3-23	Overall view – LP openings (Alternate)
Photographs	3-24	Overall View with SuperCap Module (no plastic cover on daughter board)
Photographs	3-25	Top View of daughter board for SuperCap Module (Alternate, without plastic cover)
Photographs	3-26	Glue location (For daughter board without plastic cover)
Diagrams	4-02	Dimension of openings
Diagrams	4-03	Cover of daughter board (for SuperCap Module)
Diagrams	4-04	Dimension of FH openings (Alternate)
Diagrams	4-05	Dimension of LP openings (Alternate)
Diagrams	4-06	Heatsink
Diagrams	4-07	Heatsink (Alternate)
Schematics + PWB		
Manuals		
Miscellaneous	7-08	Manufacturer Declaration for Multiple Factories
Miscellaneous	7-09	List of test equipment
Miscellaneous	7-10	List of test equipment
Licenses		
Marking Plate		

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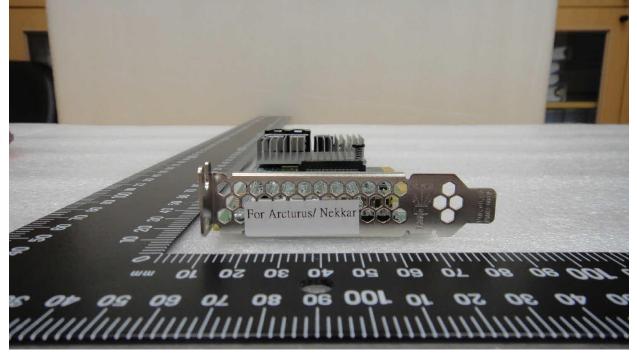
E238623-A133-CB-1

Photographs ID 3-22

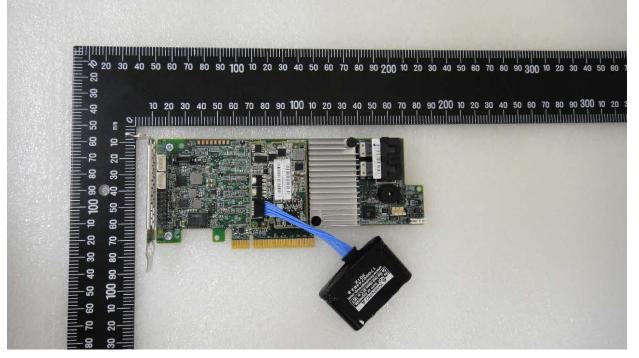


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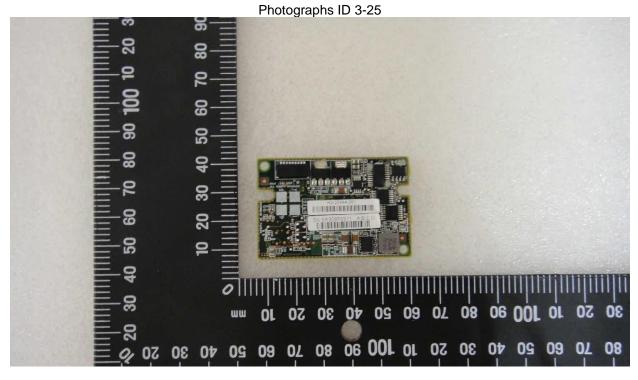
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Photographs ID 3-23
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Photographs ID 3-24

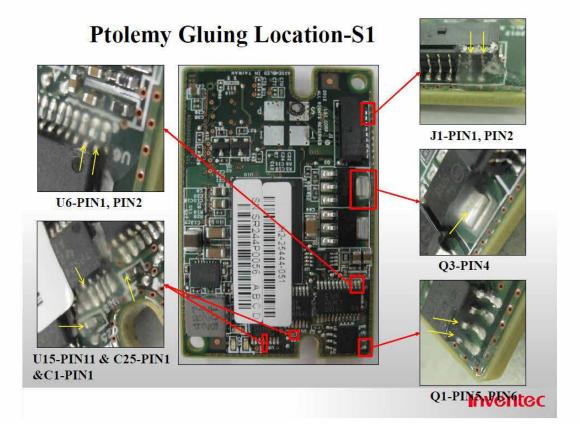






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Photographs ID 3-26

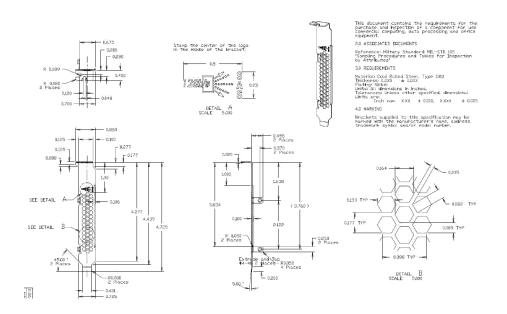


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Diagrams ID 4-04

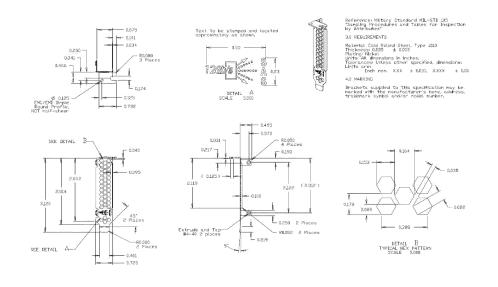


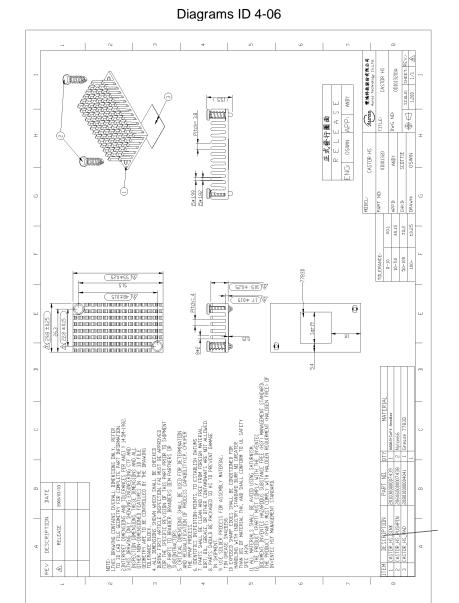
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 2013-02-05

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Diagrams ID 4-05

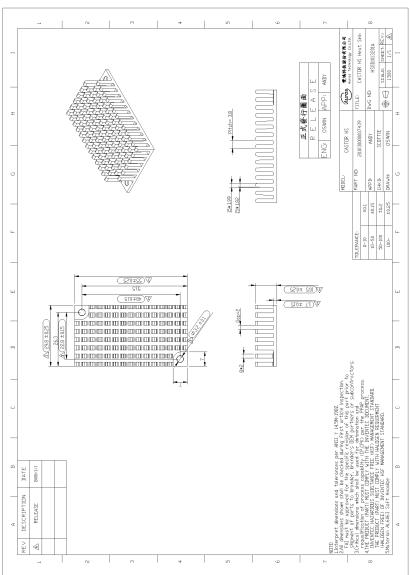




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Diagrams ID 4-06

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			Ī				Ditch=3.35		.		70	0			107	1012	±0.2
1			▲ (55±0.25)	52 P	• ₹(30∓0				ō	213		78±0.15	₹22 ₹ \$ \$ \$ \$ \$	MATEDIAL	AL6063+Soft Anodize	NYLEIN66+SUS304	20-100
				y, refer Formation, Y 14.5M-1982.	84	d PPROVED TO SHIPMENT	DR MINATJDN CPKOPER	itums Material, IDT Alloved, Tamare		jr .ter 10 ul. Safety	SM. VENTEC (HSF) MANAGEMENT STANDARD.	REQUIRMENT (HALOGEN FREE)		r nd lotvi	-1	~ ·	JUU4U4I I //83
	DATE	13/05/23		IMENSIONS ONL PLETE PART IN LCES PER ANSI	EERING CTF AP NSIDNS AND AL N THE 3D FILE Y THE DRAVIN	ALL BE CHECKE FAI MUST BE A S PART PRIDR	IEM PARTNERS ED FDR DETERI APABILITYCP,	I ESTABLISH DA FROM FOREIGN MINANTS ARE N 3. TII PREVENT	Y MATERIAL,	CONDITIONED FI BURR NO GREA ALL CONFORM 1	JSING SATURNI: 7 VITH THE IN 3STANDF FREF	vITH HALDGEN 20.		PART	201030000024454		- <0801000004041
a :	DESCRIPTION	Release		NOTE THE DEALING CONTAINS DVERALL DIFENSIONS DNLY, REFER THIS SIDEATING CONTAINS DVERALL DIFENSIONS DNLY, REFER TO 30 CAD FILLS GEDVERTING AND TOLERANCES PER ANSI Y 1439-1930.	THE DRAVID ONLY SHOUND ENCIREMUNG THE AND INSPECTION DIMENSIONS. THESE DIMENSIONS AND ALL DIMER NUN-DIMENSIONS. THESE DIMENSIONS AND ALL DIMER NUN-DIMENSIONS. THE DRAVING GEOMETRY ARE TO BE CONTROLLED BY THE DRAVING	ILLERANGE BLUCK 4. ALL DIRANSINS SHOWN VHICH SHALL BE CHECKED DIRING FIRST AFFILGE INSPECTION FAI MIST BE APPROVED FOR THE SPECIFIC REVISION OF THIS PART PRIOR TO SHIPMENT	of Parts to Brander, Brander's dem partners or Subcontactors. I Crittori Densions Shall be used for deternination and requalification of Process Capability(cp. CPKOPER	6. IDENTIFIES INSPECTION-POINTS, TO ESTABLISH DATUNS 6. IDENTIFIES INSPECTION-POINTS, TO ESTABLISH DATUNS 7. PARTS SHALL BE CLICH AND FREE FROM FUBERION MATERIAL, 7. IDENT CLIC UNCERSEL ING CLICHE COUNSMINNTS ARE NUT ALLOVED. 8. DATY: SHUILIN FE PARTAFET STI AS'TI POPOVATI TAMAGET 8. DATY: SHUILIN FE PARTAFET STI AS'TI POPOVATI TAMAGET	IN SHIPMENT. 9. USE SOLDER PROCESS FOR ASSEMBLY MATERIAL. TIN GREACE SULATHER	IO EXPOSED SHAPP EDGES SHALL BE CONDITIONED FOR HANDLING WITH INDUSTRY STANDARD BURR NO GREATER THAN 102 OF MATERIAL THK, AND SHALL COVEDRA TO UL SAFETY	-el 1433. All Materials Shall be avoid using saturnish. The peduct gravit wist comply with the Invented	THE PRODUCT (PART) MUST COMPLY WITH HALDGEN REQUIRMENT (HALDGEN FREE) DF INVENTEC HSF MANAGEMENT STANDARD.		DESCRIPTION	FLATWOODS_HS_SINK	CASTOR_HS_PUSHPIN	FLAI WUUUS_HS_GKEASE
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Misc ID 7-10

File No. E238623 Model No. 25420 Project No. 13CA34882 Tested by *Jurly Taou* Witnessed by Date: 2013/6/20

第1頁

PREPARED BY: <u>Judy Tsou</u> REVISED DATE: 2013-06-19

		<u>PRODUCT S</u>	AFETY LAB EQUIPM	<u>ENT LIST</u>	REVISED	DATE: 2013-06-19
	DESCRIPTION	MANUFACTURER / MODEL/SN	SPECIFICATION: POWER RATING	CALIBRATION STATUS		
ITEM				LASTCALDATE	DUE DATE	CONTROLNO.
1	WT210 POWER METER	YOKOGAWA /MODEL760401 / 91K209547	300V, 10A, 50/60HZ	2013-01-22	2014-01-22	153100004894
2	DC POWER SUPPLY	CHROMA 62024P-80-60/ 62024PA00533	0–60 A, 0-70 V	2013-05-21	2014-05-21	153100005596
3	DATA ACQUISITION/ UNIT	YOKOGAWA MX100	0∼400 °C	2013-05-21	2014-05-21	153100004891
4	FORCE GAUGE	CHATILLON /DPP-25KG	25KG	2013-01-25	2014-01-25	30A02000273
5	DC ELECTRONIC LOAD	CHROMA 63600-2 & 63640-80-80*2	0~80V, 0~80A, 400W	2013-01-12	2014-01-12	153100006092
6	Ruler	MAGIC/3M/10FT	3M/10FT	2012-07-24	2013-07-08	ME-222-008
7	FREQUENCY CONVERTER	EXTECH/6530 /1400231	30KVA,0-300VAC, 50/60Hz	2013-04-12	2014-04-11	153100004892
8	MULTIMETER	FLUKE87 DMM	10A,1-100mA,1000VAC 1mA-10ADC,10MΩ	2013-04-22	2014-04-22	303110015068
9	DATA ACQUISITION/ UNIT	YOKOGAWA MX100	0∼400 °C	2013-06-19	2014-06-19	153100000622
10	WT210 POWER METER	YOKOGAWA/MODEL760401 /27c824005 H	300V, 10A, 50/60HZ	2012-10-16	2013-07-26	153100000621
11	FREQUENCY CONVERTER	EXTECH/6530 /1400367	30KVA,0-300VAC, 50/60Hz			153100006066
12	DC POWER SUPPLY	CHROMA 62012P-80-60/ 62012PD01014	0 –60A, 0-70V			151100139971
13	LEAKAGE CURRENT TESTER	Simpson/ MODEL228/ 20100018	100, 200 and 300VAC, 10mA, 50 or 60Hz	2013-01-21	2014-01-21	151100106337
14	WT110 POWER METER	YOKOGAWA/MODEL253401 /2534HA127 B	300V,10A,50/60HZ		2014-01-22	303060000113
15	FREQUENCY CONVERTER	EXTECH/6530 /1400368	30KVA,0-300VAC, 50/60Hz	2012-11-15	2013-11-15	153100006065
16	ELECTRICAL SAFETY COMPLIANCE ANALYZER	EXTECH/MOODEL 7742 /E 1350810	5Kvac @ 40mA, 40A 1000Vac, 1000Vdc			153100005653
17	TIMER	CASIO/HS-5	STOPWATCH 0.01 second~4 hr			EW-236-008
18	CALIPER 200MM	MITUTOYO/Calipers	Digital 500-211 0.01~200 mm 20CM			30A010001261
19	SCALE	JS/JHL-150Y	0~50kg	2013-01-22	2014-01-22	151100115022
20	DC ELECTRONIC LOAD	KIKUSUI/PLZ 150W/281127800	4~60V, 0~15A, 150W	2013-04-22	2014-04-22	304110000464

PRODUCT	SAFETY	I AR FOL	IIPMENT LIST

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Misc ID 7-10

File No. E238623 Model No. 25420 Project No. 13CA34882 Tested by *Turly Tarre* Witnessed by Date: 2013/6/20

ITEM	DESCRIPTION	MANUFACTURER / MODEL/SN	SPECIFICATION: POWER RATING			CALIBRATION STATUS		
			OF EVERYARIUM: POWER BALING	LASTCALDATE	DUE DATE	CONTROLNO,		
21	STEEL BALL		Diameter: 50.79 mm Weight: 535 gm	N/A	N/A	N/A		
22	AND ANGLE	PRO		N/A	N/A	N/A		
	TRANSFOR MER	FOSAN	240/240V, 1K VA	N/A	N/A	N/A		
	CHEESECL OTH		40 g/m2	N/A	N/A	N/A		
	WRAPPING TISSUE		12 g/m2~30 g/m2	N/A	N/A	N/A		
26	TEMPERATU RE & HUMIDITY	S3120		2012-07-08	2013-07-07	304110000464		
27								
28								
29			**					
30								
31								
32								
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This report issued under the responsibility of UL