Product Safety Consultant Inc.
6F, No. 6, Lane609, Sec. 5 Chung-Hsin Rd., San Chung Dist., New Taipei City, Taiwan
Tel: (02)2999-6855 Fax: (02)2999-6849
www.psclab.com.tw

VERIFICATION OF COMPLIANCE

The following mentioned Products have been tested in typical configuration by PSC and were found to comply with the essential requirements of "Council Directive on the Approximation of the Laws of the Member States to Low Voltage Directive (2006/95/EC)"

Equipment:

Type of Product	:	**Network Camera**
Model Number	:	**PD8136**

Produced by:

Applicant's Name	:	**VIVOTEK INC.**
Applicant's Address	:	**6F, No.192, Lien-Cheng Rd., Chung-Ho Dist., New Taipei City, 235, Taiwan, R.O.C.**

Applied Standards:

EN60950-1:2006/A11:2009/A1:2010/A12:2011:
Safety of Information Technology Equipment including electrical business equipment.

Manufacture or his authorized representative within EC shall affix the CE Marking to the products if he ensures the product complies with the relevant harmonized standards and draws up a declaration of conformity. The technical report issued by PSC will support you Affix the CE Marking.

Date : October 4, 2012
Report No : 12CE09L055

Venson Huang/Engineering Manager

TEST REPORT

Standard applied: EN60950-1:2006/A11:2009/A1:2010/A12:2011
Safety of Information Technology Equipment including electrical business equipment

Applicant	VIVOTEK INC.
Address	6F, No.192, Lien-Cheng Rd., Chung-Ho Dist., New Taipei City, 235, Taiwan, R.O.C.
Factory	VIVOTEK INC.
Address	5F, No.168, Lien-Cheng Rd., Chung-Ho Dist., New Taipei City, 235, Taiwan, R.O.C.
Equipment.....	Network Camera
Equipment mobility.....	Movable or stationary equipment (for ceiling mount)
Trademark.....	**VIVOTEK**
Model No.	PD8136
Rating	Input:48Vdc / 0.35A (For POE) (Optional)
	Output: --
Class of equipment	Class III

Complied by: Pony Chen — Approved by: Venson Huang

Date.....: October 4, 2012 Date.....: October 4, 2012

Test Site.....: 6F, No.6, Lane 609, Sec.5 Chung-Hsin Rd., San Chung Dist., New Taipei City, Taiwan, R.O.C.

Operating condition .....:	continuous
Mains supply tolerance (%) .....:	48Vdc, Power Supply from POE Adaptor
Tested for IT power systems .....:	N/A
IT testing, phase-phase voltage (V) :	N/A
Mass of equipment (kg).....:	Approx. 0.175kg max..
Protection against ingress of water .:	Ordinary
Number of pages (Report) .....:	43
Number of pages (Attachments).....:	See Attachments

Attachments:

Appendix I – Label
Appendix II – EuT Photographs
Appendix III – Instrument list

General remarks:

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 testing laboratory.

The test services for PSC are capable of performing services in compliance with the requirements of ISO 17025, EN60950-1:2006+A11:2009+A1:2010+A12:2011 and IEC 60950-1:2005 (2nd Edition); Am 1:2009.

General Comment:

Brief description of the test sample:

1. The subject equipment is a movable or stationary equipment. Consisting of a plastic housing SELV circuits and to be used with an external POE power supply.
2. The equipment is rated by the manufacturer for use in a maximum ambient temperature of 45 Deg C.

Cl.	Requirement - Test	Result - Remark	Verdict
1	GENERAL		P
1.5	Components		P
1.5.1	General	See below.	P
	Comply with IEC 60950 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	Components certified to IEC standards and/or their harmonized standards, are used within their ratings and are checked for correct application.	P
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	Except for the insulation material there are no further requirements to the interconnection cable.	P
1.5.6	Capacitors bridging insulation	Class III equipment	N/A
1.5.7	Resistors bridging insulation	No component bridged reinforced or double insulation.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems	Not connected to IT power systems	N/A
1.5.9	Surge suppressors	No used on primary circuit.	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
1.6	Power interface		P
1.6.1	AC power distribution systems	Class III equipment	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		N/A
1.7	Marking and instructions		P
1.7.1	Power rating and identification markings		P
1.7.1.1	Power rating marking	See below.	P
	Multiple mains supply connections		P
	Rated voltage(s) or voltage range(s) (V)	See page 1	P
	Symbol for nature of supply, for d.c. only	See page 1	P
	Rated frequency or rated frequency range (Hz)		N/A
	Rated current (mA or A)	See page 1	P
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark	See page 1	P
	Model identification or type reference	See page 1	P
	Symbol for Class II equipment only		N/A
	Other markings and symbols	CE	P
1.7.2	Safety instructions and marking	See below:	P
1.7.2.1	General	Instructions are available.	P
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
1.7.4	Supply voltage adjustment		N/A
	Methods and means of adjustment; reference to installation instructions		N/A
1.7.5	Power outlets on the equipment		N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)		N/A
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking	The function of indicators and controls is clearly identified.	P
1.7.8.2	Colours	Colors are used and safety is not involved.	P
1.7.8.3	Symbols according to IEC 60417	See General product information - Markings and Instructions	P
1.7.8.4	Markings using figures		N/A
1.7.9	Isolation of multiple power sources		N/A
1.7.10	Thermostats and other regulating devices		N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 sec. and then rubbed with cloth soaked with HEXANE for 15 sec. After test, the marking is readable.	P
1.7.12	Removable parts	The required marking is not placed on removable parts.	P
1.7.13	Replaceable batteries		N/A
	Language(s)		—
1.7.14	Equipment for restricted access locations		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	See below.	P
2.1.1.1	Access to energized parts	This equipment is intended to be supplied from SELV with energy below 240VA.	P
	Test by inspection	No energy part can be touched by inspection.	P
	Test with test finger (Figure 2A)	No energy part can be touched by finger.	P
	Test with test pin (Figure 2B)	No energy part can be touched by pin.	P
	Test with test probe (Figure 2C)		N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards	No parts at hazardous energy level in operator access area.	P
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Measured voltage (V); time-constant (s)		—
2.1.1.8	Energy hazards – d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply		N/A
	b) Internal battery connected to the d.c. mains supply		N/A
2.1.1.9	Audio amplifiers		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
2.2	SELV circuits		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V)	Equipment is supplied from SELV circuit and no generation of hazardous voltage is possible under normal operating conditions for SELV circuit.	P
2.2.3	Voltages under fault conditions (V)	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds, see abnormal results. (see also appended table 2.2.2)	P
2.2.4	Connection of SELV circuits to other circuits	The EUT only connection to SELV circuit.	P

2.3	TNV circuits		N/A
2.3.1	Limits		N/A
	Type of TNV circuits		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
2.4	Limited current circuits		N/A
2.4.1	General requirements	No limited current circuit provided.	N/A
2.4.2	Limit values		N/A
	Frequency (Hz)		—
	Measured current (mA)		—
	Measured voltage (V)		—
	Measured circuit capacitance (nF or µF)		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources The output of the approved SPS adaptor complied with LPS.		N/A
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)		—
	Current rating of overcurrent protective device (A)		—
	Use of integrated circuit (IC) current limiters		—
2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class III equipment.	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG		—

Cl.	Requirement - Test	Result - Remark	Verdict
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG		—
	Protective current rating (A), cross-sectional area (mm^2), AWG		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)		N/A
2.6.3.5	Colour of insulation		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A

2.7	Overcurrent and earth fault protection in primary circuits		N/A
2.7.1	Basic requirements	Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel		N/A
2.8	Safety interlocks		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm)		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C)		—
2.9.3	Grade of insulation	Only functional insulation type.	P
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used		—

Cl.	Requirement - Test	Result - Remark	Verdict
2.10	Clearances, creepage distances and distances through insulation		P
2.10.1	General	See below.	P
2.10.1.1	Frequency		P
2.10.1.2	Pollution degrees	See Test item particulars	P
2.10.1.3	Reduced values for functional insulation	See 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply		N/A
	b) Earthed d.c. mains supplies		N/A
	c) Unearthed d.c. mains supplies		N/A
	d) Battery operation		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply		N/A
2.10.3.7	Transients from d.c. mains supply		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs)		—
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage		N/A
	a) Basic insulation not under stress		N/A
	b) Basic, supplementary, reinforced insulation		N/A
	c) Compliance with Annex U		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
	Two wires in contact inside wound component; angle between 45° and 90°		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage		N/A
	- Basic insulation not under stress		N/A
	- Supplementary, reinforced insulation		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	The cross-sectional area of the wires is adequate and complied with the tests of 4.5.2 and 4.5.3.	P
3.1.2	Protection against mechanical damage	The wireways (including holes) are smooth and free from sharp edges.	P
3.1.3	Securing of internal wiring	No excessive strain on wire and on terminal connections, loosing of terminal connections and damage of conductor insulation.	P
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections	Sufficient resilience is provided.	P
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors	All conductors are reliable secured.	P
	10 N pull test	The clearances and creepages are not reduced below required in 2.10.	P
3.1.10	Sleeving on wiring		N/A
3.2	Connection to a mains supply		N/A
3.2.1	Means of connection	Class III equipment. No direct connection to mains.	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm)		—

Cl.	Requirement - Test	Result - Remark	Verdict
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type		—
	Rated current (A), cross-sectional area (mm²), AWG		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm)		—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	Class III equipment. No direct connection to mains.	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2)		—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
3.4	Disconnection from the mains supply		N/A
3.4.1	General requirement	Class III equipment. No direct connection to mains.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits	SELV circuit.	P
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment	RJ-45 connector is input port.	N/A

Cl.	Requirement - Test	Result - Remark	Verdict
4	PHYSICAL REQUIREMENTS		P
4.1	Stability		N/A
	Angle of 10°	EUT is mounting type.	N/A
	Test force (N)		N/A
4.2	Mechanical strength		P
4.2.1	General	No safety relevant damages.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N	10N applied to components and parts.	P
4.2.3	Steady force test, 30 N	--	N
4.2.4	Steady force test, 250 N		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N)		N/A
4.2.11	Rotating solid media		N/A
	Test to cover on the door		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
4.3	Design and construction		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N)	No knobs, grips, handles, lever etc.	N/A
4.3.3	Adjustable controls	No adjustable controls.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to with standard usual mechanical stress.	P
4.3.5	Connection by plugs and sockets	In operator and service area, mismatch of connectors were prevented by incompatible form or location.	P
4.3.6	Direct plug-in equipment	The equipment is not direct plug-in type.	N/A
	Torque		—
	Compliance with the relevant mains plug standard		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	The insulation has adequate properties to resist deterioration.	N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids		N/A
	Quantity of liquid (l)		N/A
	Flash point (°C)		N/A
4.3.13	Radiation	See below.	P
4.3.13.1	General	See below.	P

Cl.	Requirement - Test	Result - Remark	Verdict
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	See below:	P
4.3.13.5.1	Lasers (including laser laser diodes)		N/A
	Laser class		—
4.3.13.5.2	Light emitting diodes (LEDs)	The following parts are condisdered complied without tests: Indicating lights.	P
4.3.13.6	Other types		N/A

4.4	Protection against hazardous moving parts		P
4.4.1	General	The rotating part of the build-in DC motor is protected by the enclosure, which considered no accessible to the user.	P
4.4.2	Protection in operator access areas	For the DC motor located adjacent to Lens compartment was not accessible when tested with test finger.	P
	Household and home/office document/media shredders	(see Annex EE)	N/A
4.4.3	Protection in restricted access locations		N/A
4.4.4	Protection in service access areas	Unintentional contact with the moving parts of the DC motor is unlikely during servicing operation.	P
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
	Not considered to cause pain or injury. a)		N/A
	Is considered to cause pain, not injury. b)		N/A
	Considered to cause injury. c)		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning		N/A
4.5	Thermal requirements		P
4.5.1	General	No exceeding temperature.	P
4.5.2	Temperature tests	(See appended table 4.5)	P
	Normal load condition per Annex L	(See Annex L)	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat		N/A
4.6	Openings in enclosures		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm)	(see appended table)	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottom, dimensions (mm)	(see appended table)	—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks)		—

Cl.	Requirement - Test	Result - Remark	Verdict
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame	See below.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	See 4.7.2.2.	N/A
4.7.2.2	Parts not requiring a fire enclosure	This equipment supplied by power adaptor which complied with LPS and all components mounted on PCB rated V-1 or better, therefore no fire enclosure required.	P
4.7.3	Materials		P
4.7.3.1	General	PCB rated accordingly. See appended table 1.5.1 for details.	P
4.7.3.2	Materials for fire enclosures	No fire enclosure required.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures		P
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2, HF-2 or better.	P
4.7.3.5	Materials for air filter assemblies	No air filter provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	N/A

Cl.	Requirement - Test	Result - Remark	Verdict
5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Class III equipment.	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)		—
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—

Cl.	Requirement - Test	Result - Remark	Verdict
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	Electric strength		N/A
5.2.1	General	Class III equipment	N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault conditions		P
5.3.1	Protection against overload and abnormal operation	See below	P
5.3.2	Motors	(see appended Annex B)	N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation	Method c) used, but due to Components are mounted on PCB rated V-1 or better. No basic, supplementary or reinforced insulation inside. no test necessary.	P
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE		N/A
5.3.7	Simulation of faults	See appended table 5.3.	P
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See appended table 5.3.	P
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
6	CONNECTION TO TELECOMMUNICATION NETWORKS		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N/A
6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A)		—
	Current limiting method		—

Cl.	Requirement - Test	Result - Remark	Verdict
7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N/A
7.1	General		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	All materials have suitable flame class, no testing required.	N/A
A.1.1	Samples		—
	Wall thickness (mm)		—
A.1.2	Conditioning of samples; temperature (°C)		N/A
A.1.3	Mounting of samples		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D		—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material		—
	Wall thickness (mm)		—
A.2.2	Conditioning of samples; temperature (°C)		N/A
A.2.3	Mounting of samples		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C		—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—

Cl.	Requirement - Test	Result - Remark	Verdict
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s)		—
	Sample 2 burning time (s)		—
	Sample 3 burning time (s)		—
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		P
B.1	General requirements	See below	N/A
	Position	Refer to table 1.5.1	—
	Manufacturer	Refer to table 1.5.1	—
	Type	Refer to table 1.5.1.	—
	Rated values	Refer to table 1.5.1.	—
B.2	Test conditions	The DC motor tested within the equipment, refer to table 1.5.1 for details.	P
B.3	Maximum temperatures	For secondary DC motor, see B.7.	P
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V)		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		P
B.7.1	General	See below	P
B.7.2	Test procedure	Performed, cheesecloth and tissue paper did not char or flame. See appended table 5.3.	P
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V)		P
B.8	Test for motors with capacitors		P
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N/A
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection		—
C.1	Overload test		N/A
C.2	Insulation		N/A
	Protection from displacement of windings		N/A

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)		N/A
D.1	Measuring instrument		N/A
D.2	Alternative measuring instrument		N/A

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)	N/A

Cl.	Requirement - Test	Result - Remark	Verdict
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)		N/A
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply		N/A
G.2.2	Earthed d.c. mains supplies		N/A
G.2.3	Unearthed d.c. mains supplies		N/A
G.2.4	Battery operation		N/A
G.3	Determination of telecommunication network transient voltage (V)		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks		N/A
G.4.2	Transients from telecommunication networks		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A
H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		N/A
	Metal(s) used		—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V)		N/A
K.3	Thermostat endurance test; operating voltage (V)		N/A
K.4	Temperature limiter endurance; operating voltage (V)		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		—
M.3.1.1	Frequency (Hz)		—
M.3.1.2	Voltage (V)		—

Cl.	Requirement - Test	Result - Remark	Verdict
M.3.1.3	Cadence; time (s), voltage (V)		—
M.3.1.4	Single fault current (mA)		—
M.3.2	Tripping device and monitoring voltage		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V)		N/A
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	ANNEX P, NORMATIVE REFERENCES		—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N/A
	a) Preferred climatic categories		N/A
	b) Maximum continuous voltage		N/A
	c) Pulse current		N/A
R	Annex R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N/A
			—
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N/A
			—
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N/A
Y.1	Test apparatus		N/A
Y.2	Mounting of test samples		N/A
Y.3	Carbon-arc light-exposure apparatus		N/A
Y.4	Xenon-arc light exposure apparatus		N/A
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N/A
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N/A
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
CC	Annex CC, Evaluation of integrated circuit (IC) current limiters		N/A
CC.1	General		N/A
CC.2	Test program 1		N/A
CC.3	Test program 2		N/A
DD	Annex DD, Requirements for the mounting means of rack-mounted equipment		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N		N/A
DD.3	Mechanical strength test, 250N, including end stops		N/A
DD.4	Compliance		N/A

Cl.	Requirement - Test	Result - Remark	Verdict
EE	Annex EE, Household and home/office document/media shredders		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols		N/A
	Information of user instructions, maintenance and/or servicing instructions		N/A
EE.3	Inadvertent reactivation test		N/A
EE.4	Disconnection of power to hazardous moving parts:		N/A
	Use of markings or symbols		N/A
EE.5	Protection against hazardous moving parts		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2)		N/A

1.5.1	TABLE: list of critical components				**P**
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity [1.]
PCB	Various	Various	V-1 minimum, 105℃ minimum.	UL 796	UL
Enclosure	Various	Various	HB minimum.	UL 94	UL
POE Power Adaptor (Optional)	Various	Various	I/P: 100-240V~, 50-60Hz. O/P: DC 48V, 0.35A, Class II. "LPS" type.	IEC/EN 60950-1	CE
Note(s):					

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
48Vdc	0.069	0.35	3.312	--	--	Maximum normal load.
Supplementary information:						

4.5	TABLE: Thermal requirements		P
	Supply voltage (V) :	POE (48Vdc)	—
	Ambient T_{min} (°C) :	--	—
	Ambient T_{max} (°C) :	--	—

Maximum measured temperature T of part/at::	T (°C)	Allowed T_{max} (°C)
Max. ambient temperature Tma (°C): Note: ambient air during test were Tamb =26.7°C	45.0	--
L95 body	58.6	105
T1 coil	64.6	105
T1 core	62.9	105
U4 body	62.3	100
C6 body	58.5	85
PCB near U1	67.6	105
PCB near U29	59.1	105
Motor body near shot	60.1	105
Motor body near bottom	61.7	105
BT1 body	64.1	85
Enclosure inside	54.7	--
Enclosure outside	52.4	95

Supplementary information:

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class

Supplementary information:

1. The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in above.

2. Unit specified with maximum of 45°C ambient temperature and above test data was calculated by original test result of ambient temperature above.

4.6.1, 4.6.2	Table: Enclosure opening measurements	P

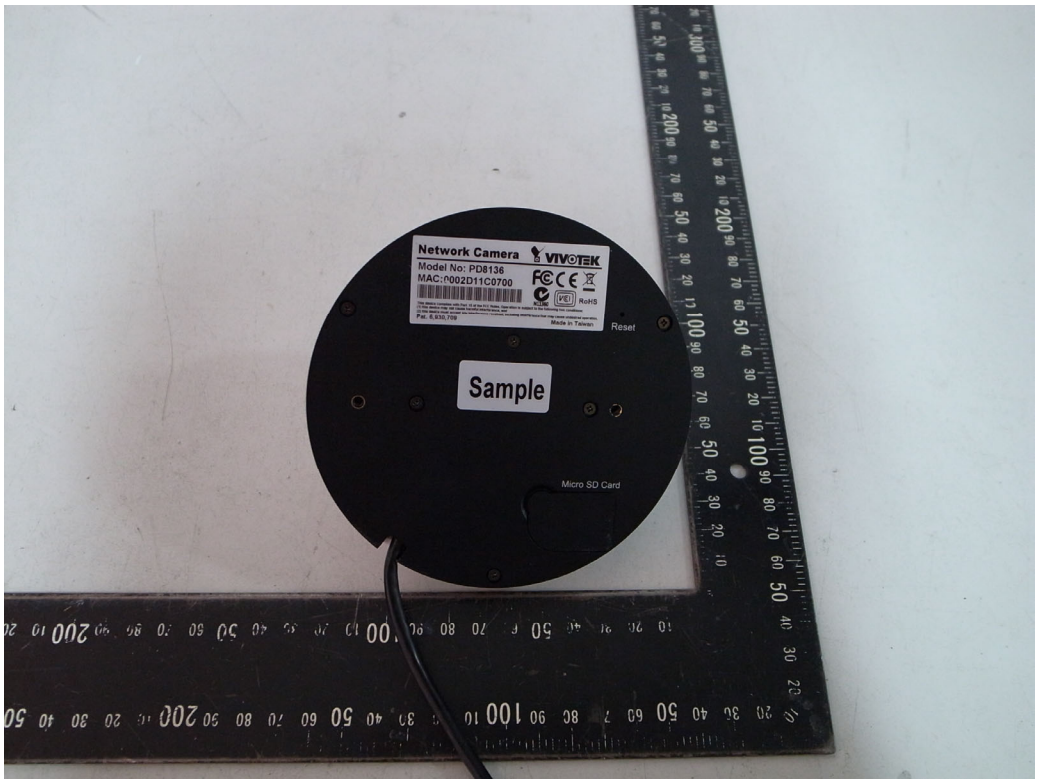
Location	Size (mm)	Comments
Front, Rear, Bottom, Right, Left	--	None.
Supplementary information:		

5.3	TABLE: fault condition tests		**P**
	ambient temperature (℃) :	See below	—
	model/type of Power Supply :	See table 1.5.1	—
	manufacturer of Power Supply :	See table 1.5.1	—
	rated markings of Power Supply:	See table 1.5.1	—

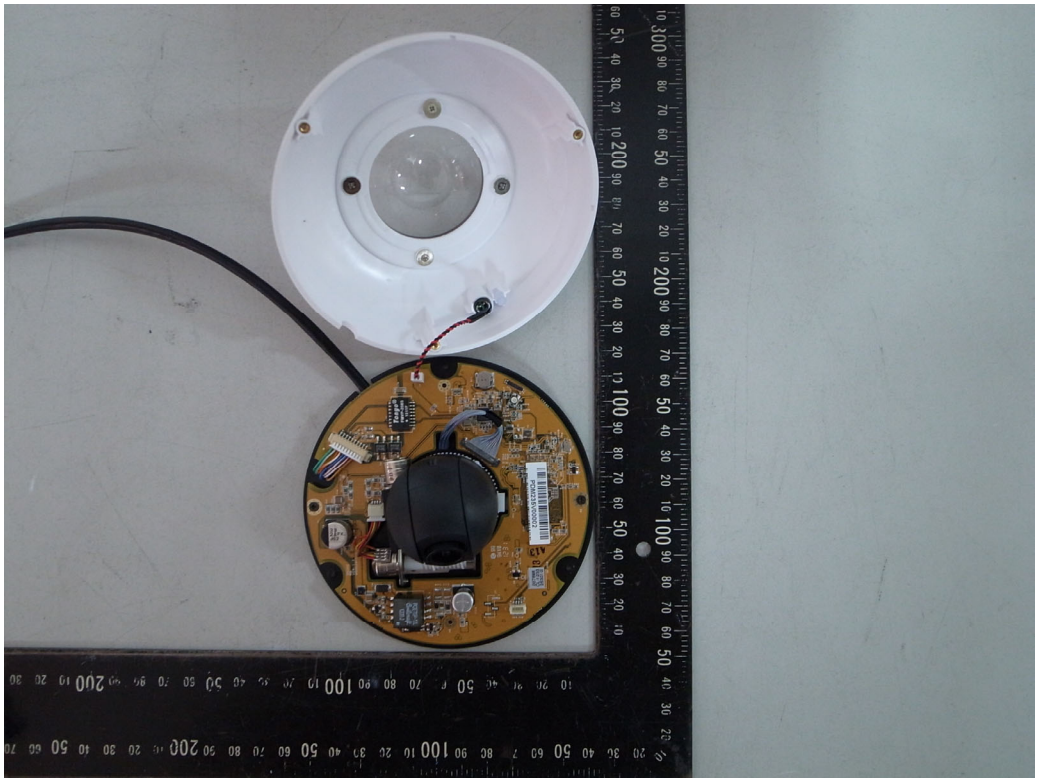
No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result
01	All motor	Locked	48Vdc	7hrs	--	--	Normal operation. The maximum temperature: Motor #01 coil= 47.4°C, Motor #02 coil= 48.9°C, Ambient= 25.1°C. No hazards.
supplementary information							

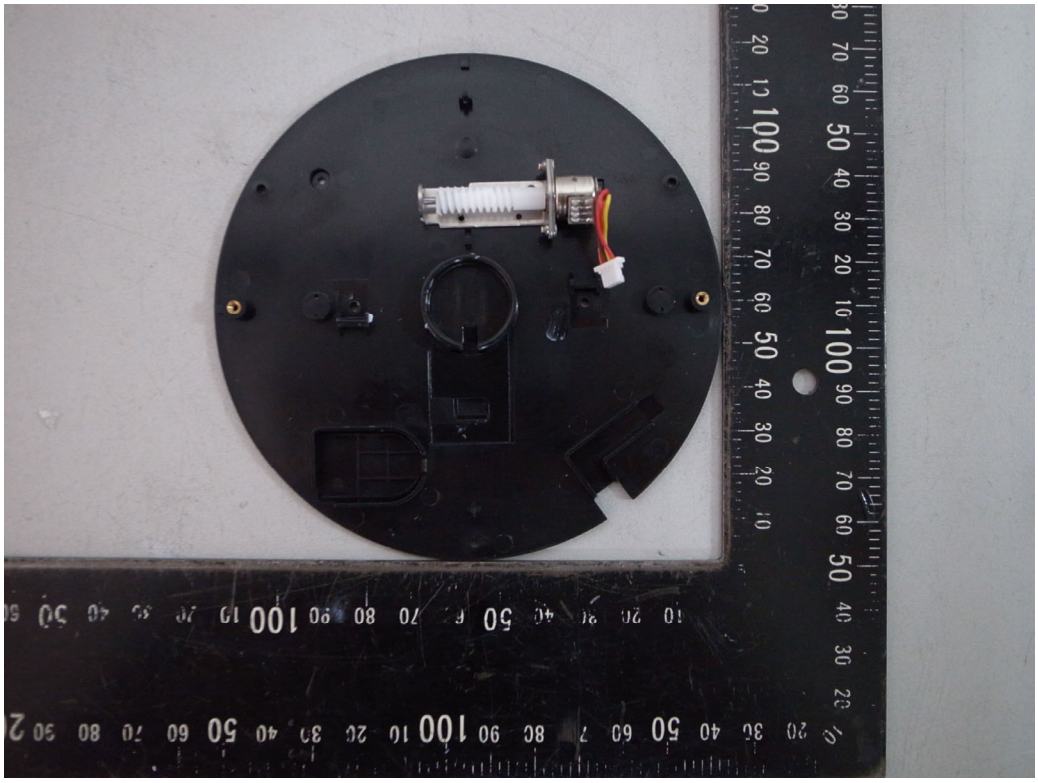
Appendix I - Label

Appendix II - EuT Photographs



Appendix II - EuT Photographs





Appendix II - EuT Photographs

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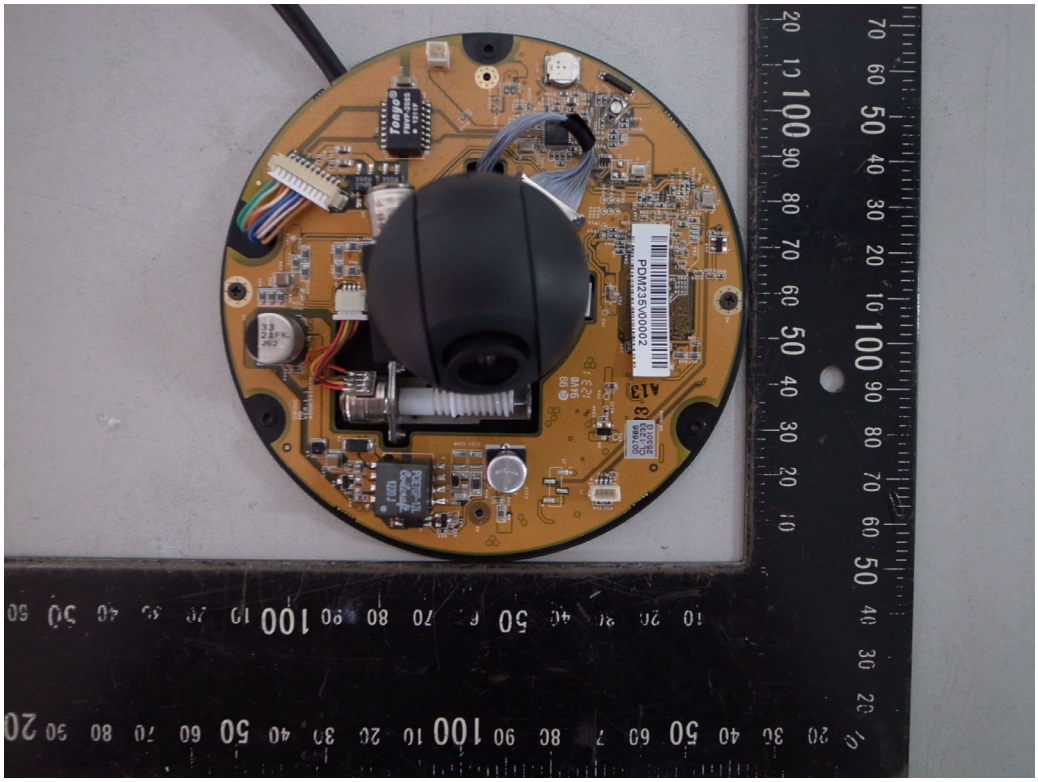
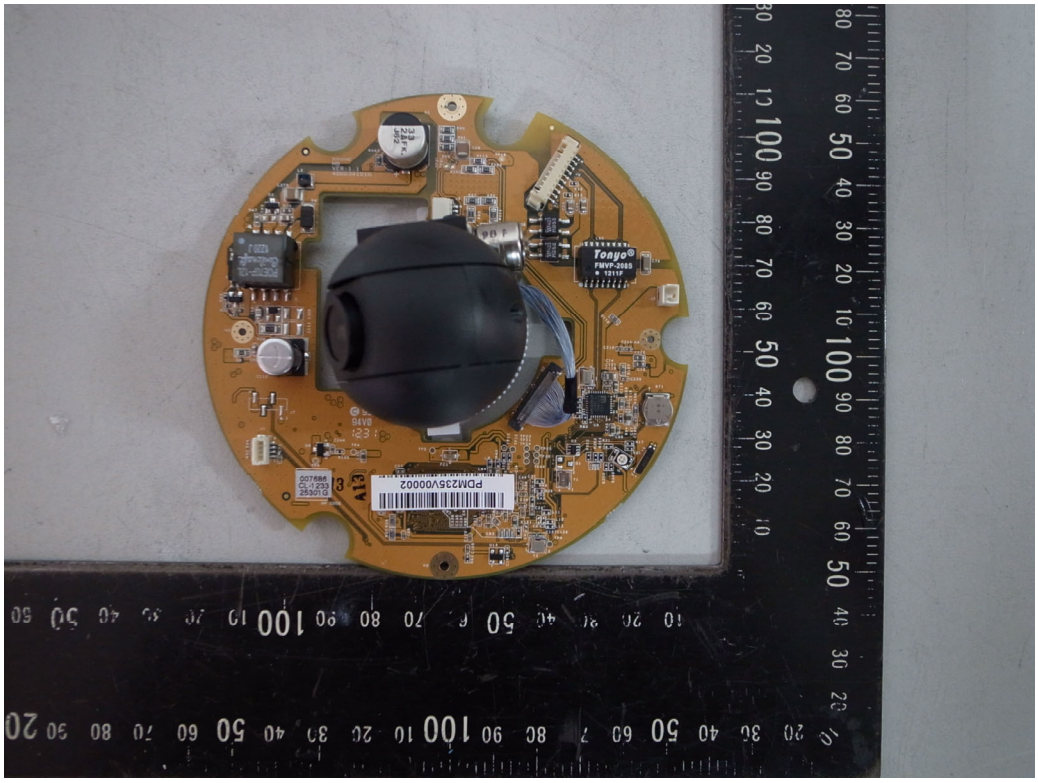
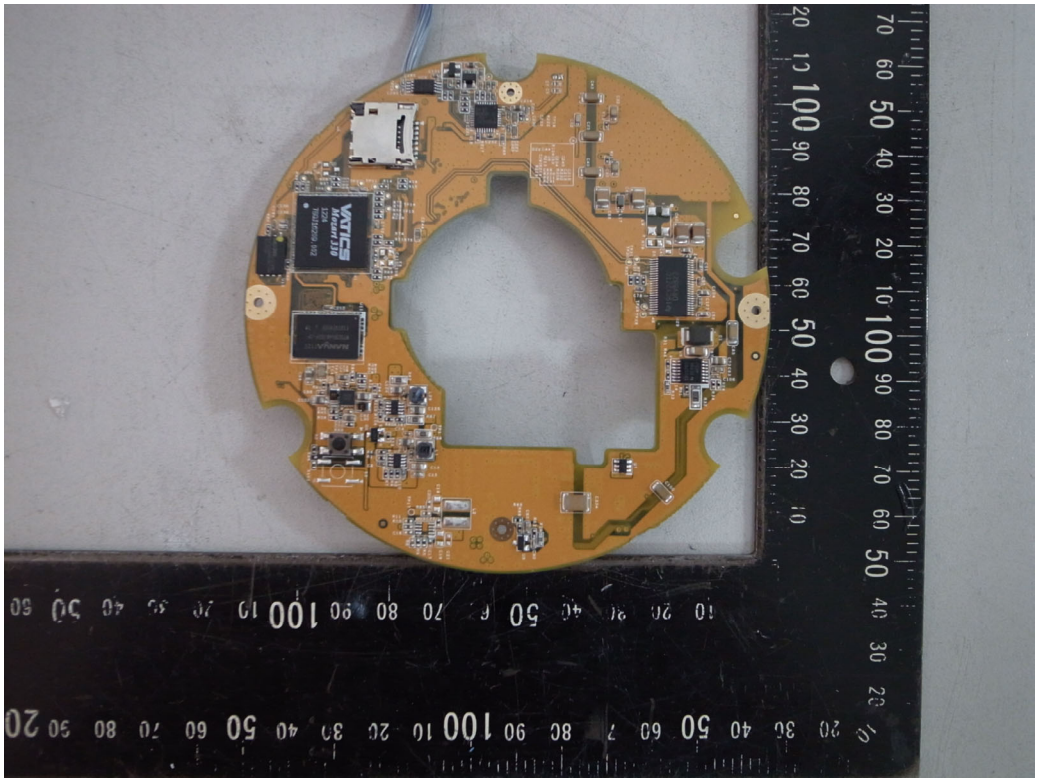




Appendix II - EuT Photographs



Appendix III - Instrument list

PSC

校驗計畫暨儀器清冊

項次 Item	原始編號 No	儀器序號 Serial No.	儀器設備名稱(中文)	儀器設備名稱(英文) Instrument	廠牌 Manufacture	型號 Model	校驗類別	校驗週期	校正日期 Last Calibration Date	下次校正日期 Calibration Due Date	校正機構	追溯報告編號	下次 到期月	規格 Range	解析度
1	SPSC001	931103/3	直流電表	DCA METER	SEW	ST-2000	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OCL-2411204W11A3L	04/2013	30A	0.1~0.2
2	SPSC002	931112/12	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E1L	09/2013	50A	0.1~0.2
3	SPSC003	931113/13	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E2L	09/2013	50A	0.1~0.2
4	SPSC004	9408025/20	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E3L	09/2013	30A	0.1~0.2
5	SPSC005	9408026/21	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E4L	09/2013	50A	0.1~0.2
6	SPSC006	9931107	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E5L	09/2013	30A	0.1~0.2
7	SPSC007	931114	直流電表	DCA METER	SEW	ST-2000	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E6L	09/2013	50A	0.1~0.2
8	SPSC008	368059	數位式功率表	Digital Power Meter	Idrc	GP-310	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OCL-2411203W28B2L	03/2013	ACV 500V, AC 20A, 10kW	----
9	SPSC009	5865141/25	三用電表	MULTIMETER	FLUKE	45	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E7L	09/2013	DCV 1000V, ACV 750V, DC 10A, AC 10A, 10MΩ	5 1/2
10	SPSC010	75470787	三用電表	MULTIMETER	FLUKE	77 III	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OCL-2411204W11A2L	04/2013	DCV 1000V, ACV 600V, DC 10A, AC 10A, 19MΩ	3 1/2
11	SPSC011	12WB02879	溫度記錄器	TEMP. RECORDER" 1"	Yokogawa	DR-240	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OCL-2411204W11A1L	04/2013	30ch	2s/all channels
12	SPSC012	MY41019121	溫度記錄器	TEMP. RECORDER" 2"	Agilent	34970A	外校	1年	07/03/2012	07/03/2013	宇正(0742)	OCL-2411207M02A1L	07/2013	40ch，0~200℃	6 1/2
13	SPSC013	MY44050079	溫度記錄器	TEMP. RECORDER" 3"	Agilent	34970A	外校	1年	05/24/2012	05/24/2013	宇正(0742)	OCL-2411205W23A2L	05/2013	40ch，0~200℃	6 1/2
14	SPSC014	1557	介電強度測試器	HI-POT	ASSOCIATED RESEARCH	4045AI	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OCL-2411204W11A4L	04/2013	ACV/DCV 5kV	100V AC/DC
15	SPSC015	20562	漏電流測試器	LEAKAGE CURRENT	SIMPSON	228	外校	1年	05/10/2012	05/10/2013	宇正(0742)	OCL-2411205W09A1L	05/2013	AC 300V, AC 10A, DC 10mA	----
16	SPSC016	18020	電力分析儀	Watt/Harmonic	Elcontrol Nanovip Plus	----	外校	1年	09/06/2012	09/06/2013	宇正(0742)	OCL-2411209W05E8L	09/2013	ACV 520V, AC 100A, 6kW, 1kHz	----
17	SPSC017	04810LT	微電阻計	Milliohm Meter	Twintex	TM-8088	外校	1年	09/26/2012	09/26/2013	宇正(0742)	OCL-2411209T25D1L	09/2013	20mΩ/200mΩ/2Ω/20Ω/200Ω/2KΩ/20KΩ	0.01mΩ/0.1mΩ/1mΩ/0.01Ω/0.1Ω/0.001KΩ/0.01KΩ
18	SPSC018	EK03100101	可程式恆溫恆濕機	Champer	HOLINK	H-TH-2SP-CH	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OCL-2411112W07A5L	12/2012	-40℃~+150℃ 20%~98% RH.	0.1℃/0.1% RH.
19	SPSC019	16348	推張力計	PULL-PUCH	CHATILLON	DPP-25kg	外校	1年	07/03/2012	07/03/2013	宇正(0742)	OCL-2411207M02A1L	07/2013	25kg	----
20	SPSC020	SPSC020	計時器	Timer	Tri Horses	TH-010	外校	1年	07/11/2012	07/11/2013	工研院(0016)	10107C0230-1-1-03	07/2013	60sec~24hrs	1sec
21	SPSC021	20805	球壓測試器	Ball Pressure Test	ED&D	BPT-01	外校	3年	02/06/2012	02/05/2015	宇正(0742)	OIT-2411202M06A3L	02/2015	20N, R 2.5mm	---
22	SPSC022	20806	測試手指	Test Finger Probe	ED&D	TFP-01	外校	1年	06/05/2012	06/05/2013	宇正(2399)	OCL-2411206M04A1L	06/2013	---	---
23	SPSC023	----	測試針	Test pin	辰輝	----	外校	3年	02/06/2012	02/05/2015	宇正(2399)	OIT-2411202M06A1L	02/2015	---	---
24	SPSC024	3054768	數位式游標卡尺	Caliper	Mitutoyo	500-196	外校	1年	06/04/2012	06/04/2013	宇正(0742)	OCL-2411206M04A1L	06/2013	150mm	0.01mm
25	SPSC025	OCL-901203013	角度規	Angle Finder	Level	----	外校	3年	12/10/2010	12/09/2013	宇正(0742)	OCL-2411012F10A1	12/2013	90°	1°
26	SPSC026	MJY04139	電子秤	Weight Meter	Jen Lung	MTW-150	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OCL-2411112W07A6L	12/2012	150kg	0.01kg
27	SPSC027	---	鐵球	STEEL BALL	---	----	外校	3年	02/17/2012	02/16/2015	宇正(2399)	OIT-2411202M06A2L	02/2015	0.5kg	---
28	SPSC028	9791525	光功率計	Electronic Instruments	Advantest	TQ8210	外校	3年	02/20/2012	02/19/2015	捷耀(0647)	122579	02/2015	100uW	---
29	SPSC029	---	溫濕度計	Thmometer & ygrometer	TES	1366	外校	1年	04/12/2012	04/12/2013	宇正(0742)	OCL-2411204W11A5L	04/2013	1-99%RH, -20~+60℃	0.1%，0.1°
30	SPSC030	931116	交流電表	ACA METER	SEW	ST-2000	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OCL-2411112W07A3L	12/2012	50A	0.1~0.2
31	SPSC031	BT30048	變頻器	FREQUENCY CONVERTER	BOARD-TECH	BFA-100-10	外校	1年	12/07/2011	12/06/2012	宇正(0742)	OCL-2411112W07A4L	12/2012	AC 110/220V, 50/60Hz	0.1
32	SPSC032	46XE0282	溫度記錄器	TEMP. RECORDER" 4"	YOKOGAWA	uR-1000	外校	1年	01/10/2012	01/09/2013	宇正(0742)	OCL-2411201M06A2L	01/2013	6CH, -50℃~+1000℃	0.1°
33	SPSC033	46XE0281	溫度記錄器	TEMP. RECORDER" 5"	YOKOGAWA	uR-1000	外校	1年	01/10/2012	01/09/2013	宇正(0742)	OCL-2411201M06A1L	01/2013	6CH. -50℃~+1000℃	0.1°
34	SPSC034	2597	慣性式振動試驗機	Vibration	Vibration Source	VS-5060L	外校	1年	02/06/2012	02/05/2013	宇正(0742)	OCL-2411202M06A1L	02/2013	10Hz ~ 100 Hz 振幅 0.35mm	0.05mm
35	SPSC035	100217927	溫濕度計	Humidity Temp. Meter	TES	TES-1361C	外校	1年	09/26/2012	09/26/2013	宇正(0742)	OCL-2411209T25D2L	09/2013	10-95%RH, -20~+60℃	0.1%，0.1°
36	SPSC036	122	刻度放大鏡	Comparator	Finescale	---	外校	3年	09/10/2010	09/09/2013	宇正(0742)	OCL-2411009F10B1	09/2013	1.0mm, 1.5mm, 2.0mm, 2.5mm	0.1mm
37	SPSC037	46168928	分厘卡	Micrometer	MITUTOYO	103-137	外校	3年	02/06/2012	02/05/2015	宇正(0742)	OCL-2411202M06A3L	02/2015	0-25mm	0.001mm
38	SPSC038	2005010512	熾熱線裝置	Glow-wire	---	ZRS-2	外校	1年	06/04/2012	06/04/2013	宇正(0742)	OCL-2411206M04A3	06/2013	0℃~960℃	1°
39	SPSC039	NPSC003	示波器	Digital Oscilloscope	LECROY	9354C	外校	1年	07/25/2012	07/25/2013	工研院(0016)	10107C0230-2-1-03	07/2013	垂直 2m-5(V/DIV), 水準10n-5(s/DIV)	水準+/-0.01%
40	SPSC040	MY44012593	溫度記錄器	TEMP. RECORDER" 6"	Agilent	34970A	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OCL-2411203W28B1L	03/2013	40ch，0~200℃	6 1/2
41	SPSC041	SPSC041	捲尺	Equipment	Tajima	3.5M	外校	3年	06/17/2011	06/16/2014	標檢局(0008)	AD00129	06/2014	10-350CM	---
42	SPSC042	1420129	絕緣組抗測試器	Megohm Meter	Extech	8205	外校	1年	02/06/2012	02/05/2013	宇正(0742)	OCL-2411202M06A2L	02/2013	1000Vdc, 4 G Ohm	---
43	SPSC043	1320101	直流耐壓分析儀	Hi-Pot	Extech	7462	外校	1年	05/24/2012	05/24/2013	宇正(0742)	OCL-2411205W23A1L	05/2013	12K Vdc, 5000uA	---
44	SPSC044	---	測試鉤	Test Hook	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OCL-2411106H02A2L	06/2014	---	---
45	SPSC045	0804W16B2	本生燈測試頭	---	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OCL-2411106H02A3L	06/2014	---	---
46	SPSC046	---	測試棒	Test probe	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OCL-2411106H02A4L	06/2014	---	---
47	SPSC047	---	針焰試驗機	Needle Flam Tester	---	---	外校	3年	06/03/2011	06/02/2014	宇正(2399)	OCL-2411106H02A5L	06/2014	---	---
48	SPSC056	---	熱電偶線(J-type)	Thermocouple	Omega	TT-J-36	外校	3年	01/14/2011	01/13/2014	宇正(0742)	OCL-2411101F14A3L	01/2014	---	---
49	SPSC057	11202C300	電子式負載	Electronic Load	Prodigit	3302C	外校	1年	08/10/2012	08/10/2013	宇正(0742)	OCL-2411208H09F1L	08/2013	CH.A +60V/5A, 250W CH.B +60V/5A, 50W	---
50	SPSC058	91F420805	數位式功率表	Power Meter	YOKOGAWA	WT-210	外校	1年	07/25/2012	07/25/2013	宇正(0742)	OCL-2411207T24B1L	07/2013	ACV 230V, AC 10A, 1500W, 50-60Hz	---
51	SPSC059	100300756	照度計	Luxmeter	TES	1330A	外校	3年	04/07/2011	04/06/2014	儀校(1805)	11A020389	04/2014	1, 150, 300 lx	----
52	SPSC060	2907007	訊號產生器	Signal producer	ASTRO	VG-859	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OCL-2411203W28B3	03/2013	30Hz~148MHz	----
53	SPSC061	LO642857	TV訊號產生器	TV Signal producer	PHILIPS	PM5418	外校	1年	03/29/2012	03/29/2013	宇正(0742)	OCL-2411203W28B4	03/2013	5Vp-p, 49Hz~900MHz	----
54	SPSC062	201	粉紅訊號產生器	Pink Noise Generator	Friborg	NG8280	外校	1年	05/21/2012	05/21/2013	宇正(0742)	OCL-2411205F18A1	05/2013	Flat Frequency Response -20dBV	----
55	SPSC063	100403235	風速計	Air meter	TES	1340	外校	3年	06/04/2012	06/04/2015	宇正(0742)	OCL-2411206M04A2	06/2015	0.5m/s; 1.0m/s; 3.0m/s	---