

**IEC****IECEE**  
CB  
SCHEME

Ref. Certif. No.

JPTUV-005435

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST  
CERTIFICATES FOR ELECTRICAL EQUIPMENT  
(IECEE) CB SCHEMESYSTEME CEI D'ACCEPTATION MUTUELLE DE  
CERTIFICATS D'ESSAIS DES EQUIPEMENTS  
ELECTRIQUES (IECEE) METHODE OC**CB TEST CERTIFICATE**  
**CERTIFICAT D'ESSAI OC**Product  
Produit

Personal Computer

Name and address of the applicant  
Nom et adresse du demandeurASUSTek Computer Inc.  
No. 150, Li-Te Rd.  
Peitou, Taipei 112, Taiwan, R.O.C.Name and address of the manufacturer  
Nom et adresse du fabricantASUSTek Computer Inc.  
No. 150, Li-Te Rd.  
Peitou, Taipei 112, Taiwan, R.O.C.Name and address of the factory  
Nom et adresse de l'usineMaintek Computer (Suzhou) Co., Ltd.  
233, Jin Feng Road  
Su Zhou Dist., Jiangsu, P.R. ChinaRating and principal characteristics  
Valeurs nominales et caractéristiques principalesInput rating : AC 100-127/200-240V, 47-63Hz, 5/3A  
Protection class : ITrade mark (if any)  
Marque de fabrique (si elle existe)

ASUS Trademark

Model/type Ref.  
Ref. de type

Pundit , AB-P2600 , Pundit AB-P2600

Additional information (if necessary)  
Information complémentaire (si nécessaire)

For differences between the models, refer to the test report

A sample of the product was tested and found  
to be in conformity with  
Un échantillon de ce produit a été essayé et a été  
considéré conforme à la**PUBLICATION**                      **EDITION**  
IEC 60950:1999  
inclusive CENELEC Common Modifications  
National differences see test reportAs shown in the Test Report Ref. No. which forms part  
of this Certificate  
Comme indiqué dans le Rapport d'essais numéro de  
référence qui constitue une partie de ce Certificat

12004035 001

This CB Test Certificate is issued by the National Certification Body  
Ce Certificat d'essai OC est établi par l'Organisme National de CertificationTÜV Rheinland  
Berlin BrandenburgTÜV Rheinland Japan Ltd.  
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Yokohama 222-0033 Japan  
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Web: www.tuv.com

Date: 10.01.2003

Signature:

  
Dipl.-Ing. W. Herlitschke

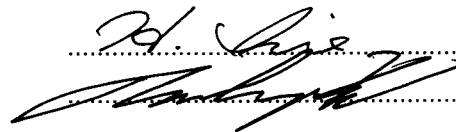
**TEST REPORT****IEC 60950****Safety of information technology equipment**

Report reference No ..... : &lt;12004035 001&gt;

Compiled by (+ signature) ..... : *H. Irie*Approved by (+ signature) ..... : *M. Kera*

Date of issue ..... : Jan. 09, 2003

Contents..... : 73 pages



Testing laboratory ..... : TÜV Rheinland Japan Ltd., Yokohama Laboratory

Address ..... : Festo Bldg. 5F, 1-26-10 Hayabuchi, Tsuzuki-Ku, Yokohama 224-0025, Japan

Testing location ..... : Same as above.

Applicant ..... : Asustek Computer Inc.

Address ..... : No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan, R.O.C.

Standard ..... : IEC 60950:1999  
EN 60950:2000  
CAN/CSA C22.2 No. 60950/UL 60950 third edition, J60950 (H14),  
K60950, UL 60950

Test procedure ..... : CB Scheme

Procedure deviation ..... : Argentina, Austria, Belgium, Brazil, Canada, China, Czech Republic,  
Denmark, Finland, France, Germany, Hungary, Ireland, Israel, Italy,  
Japan, Korea, The Netherlands, Norway, Poland, Portugal, Russian  
Federation, Singapore, Slovakia, Slovenia, South Africa, Spain,  
Sweden, Switzerland, Turkey, United Kingdom, United States

Non-standard test method ..... : N.A.

Test Report Form No. .... : I950\_\_E/99-08

TRF originator ..... : FIMKO

Master TRF ..... : dated 99-08

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Type of test object ..... : Personal Computer

Trademark ..... : Trademark of ASUS

Model and/or type reference ..... : Pundit, AB-P2600, Pundit AB-P2600

Manufacturer..... : Same as applicant.

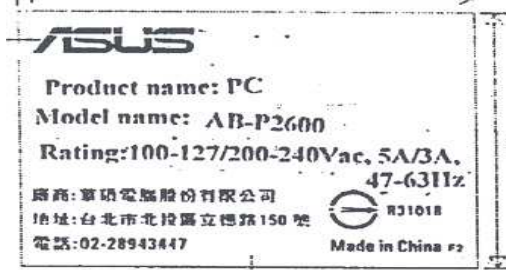
Factory ..... : Maintek Computer (Suzhou) Co., Ltd.  
233, Jin Feng Road, Su Zhou Dist., Jiangsu, P.R. C.

Rating(s) ..... : 100-127/200-240Vac, 47-63Hz, 5/3A



|  |                   |
|--|-------------------|
| <b>Particulars: test item vs. test requirements</b>  |                   |
| Equipment mobility .....   | Movable Equipment |
| Operating condition .....  | Continuous        |
| Tested for IT power systems .....  | Yes               |
| IT testing, phase-phase voltage (V) .....  | 230V for Norway   |
| Class of equipment .....   | Class I           |
| Mass of equipment (kg) .....   | 6.1kg             |
| Protection against ingress of water .....  | IPX0              |
| <b>Test case verdicts</b>  |                   |
| Test case does not apply to the test object.....   | <b>N</b> (.A.)    |
| Test item does meet the requirement.....   | <b>P</b> (ass)    |
| Test item does not meet the requirement .....  | <b>F</b> (ail)    |
| <b>General remarks</b>   |                   |
| <b>"This report is not valid as a CB Test Report unless appended to a CB Test Certificate issued by a NCB, in accordance with IEC 60950-1".</b>      |                   |
| This report shall not be reproduced except in full without the written approval of the testing laboratory.   |                   |
| The test results presented in this report relate only to the item tested.  |                   |
| "(see remark #)" refers to a remark appended to the report.  |                   |
| "(see Annex #)" refers to an annex appended to the report.   |                   |
| Throughout this report a point is used as the decimal separator.   |                   |
| <b>Comments</b>  |                   |
| <i>Brief description of the test sample:</i>   |                   |
| The equipment models Pundit, AB-P2600 and Pundit AB-P2600 are Personal Computer for general office use.  |                   |
| Model AB-P2600 and Pundit AB-P2600 are similar with model Pundit except for model name.  |                   |
| The internal power supply is CB approved products which were evaluated according to EN 60950: 2000, see appended table 1.5.1 for detail information. |                   |
| Specified maximum ambient temperature is 40°C.   |                   |
| The test samples were pre-production sample without serial numbers.  |                   |

Copy of marking plate(s):



| IEC 60950 |   |  |          |
|-----------|---|--|----------|
| Clause    | Requirement – Test  | Result – Remark  | Verdict  |
| 1         | GENERAL   |  | <b>P</b> |
| 1.5       | Components  |  | <b>P</b> |
| 1.5.1     | Comply with IEC 60950 or relevant component standard                                | Components, which were found to affect safety aspects, comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards (see appended table 1.5.1).        | <b>P</b> |
| 1.5.2     | Evaluation and testing of components  | Components, which are certified to IEC and/or national standards, are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment. | <b>P</b> |
|           | Dimensions (mm) of mains plug for direct plug-in :                                  | Not direct plug-in type.   | <b>N</b> |
|           | Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)..... : | dto.   | <b>N</b> |
| 1.5.3     | Thermal controls  | No thermal control.  | <b>N</b> |
| 1.5.4     | Transformers  | No transformer except in approved SPS.   | <b>N</b> |
| 1.5.5     | Interconnecting cables  | No interconnecting cables.   | <b>N</b> |
| 1.5.6     | Capacitors in primary circuits .....  | In approved SPS.   | <b>N</b> |
| 1.5.7     | Double or reinforced insulation bridged by components                               |  | <b>N</b> |
| 1.5.7.1   | Bridging capacitors   |  | <b>N</b> |
| 1.5.7.2   | Bridging resistors  |  | <b>N</b> |
| 1.5.7.3   | Accessible parts  |  | <b>N</b> |
| 1.5.8     | Components in equipment for IT power systems  |  | <b>N</b> |
| 1.6       | Power interface   |  | <b>P</b> |
| 1.6.1     | AC power distribution systems..... :  | TN power system and 230V IT power system for Norway.   | <b>P</b> |

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|-----------|--------------------------------------|--|----------|
| Clause    | Requirement – Test                   | Result – Remark  | Verdict  |
| 1.6.2     | Input current                        | Highest load according to 1.2.2.1 for this equipment is the CD-ROM, FDD and HDD permanently access, the dummy loads of 2.5W in each USB ports.<br><br>(see appended table) | <b>P</b> |
| 1.6.3     | Voltage limit of hand-held equipment | This appliance is not a hand-held equipment.   | <b>N</b> |
| 1.6.4     | Neutral conductor                    | In approved SPS.   | <b>P</b> |

|       |  |   |          |
|-------|--|---|----------|
| 1.7   | Marking and instructions                       |   | <b>P</b> |
| 1.7.1 | Power rating                                   | See below.  | <b>P</b> |
|       | Rated voltage(s) or voltage range(s) (V) ..... | 100-127/200-240Vac  | <b>N</b> |
|       | Symbol for nature of supply for d.c. ....      | Mains from AC source  | <b>N</b> |
|       | Rated frequency or frequency range (Hz) .....  | 47-63Hz   |          |
|       | Rated current (mA or A) .....                  | 5A/3A   | <b>N</b> |
|       | Manufacturer's name/Trademark .....            | Not shown / Trademark of ASUS   | <b>P</b> |
|       | Type/model .....                               | Pundit, AB-P2600,<br>Pundit AB-P2600  | <b>P</b> |
|       | Symbol of Class II .....                       | Class I equipment.  | <b>N</b> |
|       | Other symbols .....                            | Additional symbols or markings do not give rise to misunderstanding.  | <b>P</b> |
|       | Certification marks .....                      | See copy of the marking plate for the other marks.  | <b>N</b> |
| 1.7.2 | Safety instructions                            | The users manual contains information for operation, installation, servicing, transport, storage and technical data. The operation guide is provided to the user.<br><br>Marking for laser class I type CD-ROM, the wording:<br><br>CLASS 1 LASER PRODUCT<br>KLASSE 1 LASER APPARAT | <b>P</b> |
| 1.7.3 | Short duty cycles                              | Equipment is designed for continuous operation.   | <b>N</b> |

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|-----------|--|---|----------|
| Clause    | Requirement – Test                         | Result – Remark   | Verdict  |
| 1.7.4     | Supply voltage adjustment .....            | The voltage range needs to be adjusted by a selector switch. The adjusted voltage is visible on the switch.<br><br>No instruction is required on the equipment. | <b>N</b> |
| 1.7.5     | Power outlets on the equipment .....       |   | <b>N</b> |
| 1.7.6     | Fuse identification .....                  |   | <b>N</b> |
| 1.7.7     | Wiring terminals                           | See below.  | <b>N</b> |
| 1.7.7.1   | Protective earthing and bonding terminals  | Appliance inlet used.   | <b>N</b> |
| 1.7.7.2   | Terminal for a.c. mains supply conductors  | The equipment with appliance inlet, which is intended to use the detachable type power supply cord.   | <b>N</b> |
| 1.7.8     | Controls and indicators                    | See below.  | —        |
| 1.7.8.1   | Identification, location and marking ..... | The marking and indication of the power switch or functional switch is located that indication of function clearly.   | <b>N</b> |
| 1.7.8.2   | Colours .....                              | No safety relevant controls or indicators.  | <b>N</b> |
| 1.7.8.3   | Symbols according to IEC 60417.....        | The switch on front panel with symbol according to IEC 60417, No. 5009 (line half inside circle).   | <b>P</b> |
| 1.7.8.4   | Markings using figures .....               | No indicators for different positions.  | <b>N</b> |
| 1.7.9     | Isolation of multiple power sources .....  | Only one supply from the mains.   | <b>N</b> |
| 1.7.10    | IT power system                            | The instructions will be provided when national approval.   | <b>N</b> |
| 1.7.11    | Thermostats and other regulating devices   | No adjustable thermostat.   | <b>N</b> |
| 1.7.12    | Language .....                             | User's manual and marking label are in English. Versions of other languages will be provided when submitted for national approval.                              | <b>P</b> |

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|-----------|---|--|----------|
| Clause    | Requirement – Test                                | Result – Remark  | Verdict  |
| 1.7.13    | Durability  | The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15s and then again for 15s with the cloth soaked with petroleum spirit.<br><br>After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting of the label edge. | <b>P</b> |
| 1.7.14    | Removable parts                                   | No required markings placed on removable parts.  | <b>N</b> |
| 1.7.15    | Replaceable batteries                             | Lithium battery for real time clock is exchangeable.<br>Warning sentence printed in manual.  | <b>P</b> |
|           | Language .....                                    | English, German, French, Swedish, Danish, Norwegian and Finnish.   | —        |
| 1.7.16    | Operator access with a tool.....                  | No operator access area with tool.   | <b>N</b> |
| 1.7.17    | Equipment for restricted access locations.....    | No restricted access location.   | <b>N</b> |
| 2         | PROTECTION FROM HAZARDS                           |  | <b>P</b> |
| 2.1       | Protection from electric shock and energy hazards |  | <b>P</b> |
| 2.1.1     | Protection in operator access areas               | See below.   | <b>P</b> |



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|-----------|--|---|----------|
| Clause    | Requirement – Test                                   | Result – Remark   | Verdict  |
| 2.1.1.1   | Access to energized parts                            | As the user's manual specifies directions for the operator how to add additional memory cards or add-on cards inside the enclosure, the inside of this personal computer is regarded to be operator access area. With the disassembled personal computer enclosure, the accessible SPS is covered with an earthed metal enclosure.<br><br>The construction of this metal enclosure prevents the accessibility to any parts with only basic insulation to ELV or hazardous voltage with test pin or test finger. | —        |
|           | Test by inspection .....                             | dto   | <b>P</b> |
|           | Test with test finger .....                          | dto   | <b>P</b> |
|           | Test with test pin .....                             | dto   | <b>P</b> |
|           | Test with test probe .....                           |   | <b>N</b> |
| 2.1.1.2   | Battery compartments .....                           | No such battery compartment.  | <b>N</b> |
| 2.1.1.3   | Access to ELV wiring                                 | No ELV wiring in operator accessible area.  | <b>N</b> |
|           | Working voltage (V); distance (mm) trough insulation |   | —        |
| 2.1.1.4   | Access to hazardous voltage circuit wiring           | No hazardous voltage wiring in operator accessible area.  | <b>N</b> |
| 2.1.1.5   | Energy hazards .....                                 | The energy does not exceed 240VA between any two points in accessible parts.  | <b>P</b> |
| 2.1.1.6   | Manual controls                                      | No conductive shafts of operating knobs and handles.  | <b>N</b> |
| 2.1.1.7   | Discharge of capacitor s in the primary circuit      | In approved SPS.  | <b>P</b> |
|           | Time-constant (s); measured voltage (V).....         |   | —        |
| 2.1.2     | Protection in service access areas                   | No maintenance works in operation mode necessary.   | <b>P</b> |

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|-----------|---|--|----------|
| Clause    | Requirement – Test                        | Result – Remark  | Verdict  |
| 2.1.3     | Protection in restricted access locations | The unit is not intended to be used in restricted locations. | <b>N</b> |

|         |  |   |          |
|---------|--|---|----------|
| 2.2     | SELV circuits  |   | <b>P</b> |
| 2.2.1   | General requirements                                     | See below.  | <b>P</b> |
| 2.2.2   | Voltages under normal conditions (V) .....               | Between any SELV circuits 42.4V peak or 60VDC are not exceeded  | <b>P</b> |
| 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. | <b>P</b> |
| 2.2.3.1 | Separation by double or reinforced insulation (method 1) | In approved SPS.  | <b>P</b> |
| 2.2.3.2 | Separation by earthed screen (method 2)                  |   | <b>N</b> |
| 2.2.3.3 | Protection by earthing of the SELV circuit (method 3)    |   | <b>N</b> |
| 2.2.4   | Connection of SELV circuits to other circuits .....      | See 2.2.2 and 2.2.3.<br>No direct connection between SELV and any primary circuits.   | <b>N</b> |

|       |  |  |          |
|-------|--|--|----------|
| 2.3   | TNV circuits<br>No TNV circuits.                         |  | <b>N</b> |
| 2.3.1 | Limits   |  | <b>N</b> |
|       | Type of TNV circuits .....                               |  | —        |
| 2.3.2 | Separation from other circuits and from accessible parts |  | <b>N</b> |
|       | Used insulation .....                                    |  | —        |
| 2.3.3 | Separation from hazardous voltages                       |  | <b>N</b> |
|       | Used insulation .....                                    |  | —        |
| 2.3.4 | Connection of TNV circuits to other circuits             |  | <b>N</b> |
|       | Used insulation .....                                    |  | —        |
| 2.3.5 | Test for operating voltages generated externally         |  | <b>N</b> |

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|-----------|--------------------|-----------------|---------|
| Clause    | Requirement – Test | Result – Remark | Verdict |

|       |  |  |          |
|-------|--|--|----------|
| 2.4   | Limited current circuits                                 |  | <b>N</b> |
| 2.4.1 | General requirements                                     |  | <b>N</b> |
| 2.4.2 | Limit values   |  | <b>N</b> |
|       | Frequency (Hz)..... :                                    |  | —        |
|       | Measured current (mA) ..... :                            |  | —        |
|       | Measured voltage (V) ..... :                             |  | —        |
|       | Measured capacitance (µF) ..... :                        |  | —        |
| 2.4.3 | Connection of limited current circuits to other circuits |  | <b>N</b> |

|     |   |  |          |
|-----|---|--|----------|
| 2.5 | Limited power sources   |  | <b>N</b> |
|     | Inherently limited output   |  | <b>N</b> |
|     | Impedance limited output  |  | <b>N</b> |
|     | Overcurrent protective device limited output  |  | <b>N</b> |
|     | Regulating network limited output under normal operating and single fault condition   |  | <b>N</b> |
|     | Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition |  | <b>N</b> |
|     | Output voltage (V), output current (A), apparent power (VA) ..... :   |  | —        |
|     | Current rating of overcurrent protective device (A)   |  | —        |

|         |   |   |          |
|---------|---|---|----------|
| 2.6     | Provisions for earthing and bonding                                     |   | <b>P</b> |
| 2.6.1   | Protective earthing   | In approved SPS.  | <b>P</b> |
| 2.6.2   | Functional earthing   | Secondary functional earthing is connected to protectively earthed conductive part that separated from primary by basic insulation. | <b>P</b> |
| 2.6.3   | Protective earthing and protective bonding conductors                   | In approved SPS.  | <b>P</b> |
| 2.6.3.1 | Size of protective earthing conductors                                  |   | <b>N</b> |
|         | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... : |   | —        |

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|-----------|--|--|----------|
| Clause    | Requirement – Test   | Result – Remark  | Verdict  |
| 2.6.3.2   | Size of protective bonding conductors  | See 2.6.3.3.   | <b>N</b> |
|           | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG..... :                         |  | —        |
| 2.6.3.3   | Rated current (A), type and nominal thread diameter (mm)..... :                                |  | <b>N</b> |
|           | Resistance ( $\Omega$ ) of earthing conductors and their terminations, test current (A)..... : | See appended table 2.6.3.3.  | <b>P</b> |
| 2.6.3.4   | Colour of insulation..... :  | No green/yellow wire used except in approved SPS.  | <b>P</b> |
| 2.6.4     | Terminals  | See below.   | <b>P</b> |
| 2.6.4.1   | Protective earthing and bonding terminals  | Appliance inlet used.  | <b>N</b> |
|           | Rated current (A), type and nominal thread diameter (mm)..... :                                | Not a permanently connected equipment.   | —        |
| 2.6.4.2   | Separation of the protective earthing conductor from protective bonding conductors             | In approved SPS.   | <b>P</b> |
| 2.6.5     | Integrity of protective earthing   | See below.   | <b>P</b> |
| 2.6.5.1   | Interconnection of equipment   | This unit has its own earthing connection. Any other units connected via the output shall be provided SELV only. The equipment does not comprise class I and class II. | <b>P</b> |
| 2.6.5.2   | Components in protective earthing conductors and protective bonding conductors                 | No switch or overcurrent protective device in protective earthing or bonding conductor.  | <b>P</b> |
| 2.6.5.3   | Disconnection of protective earth  | Appliance inlet provided.  | <b>P</b> |
| 2.6.5.4   | Parts that can be removed by an operator   | Plug or inlet, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.  | <b>P</b> |
| 2.6.5.5   | Parts removed during servicing   | It is not necessary to disconnect earthing except for the removing of the earthed part itself.   | <b>P</b> |
| 2.6.5.6   | Corrosion resistance   | All safety earthing connections in compliance with Annex J.  | <b>P</b> |
| 2.6.5.7   | Screws for protective bonding  | No screw for protective bonding.   | <b>N</b> |
| 2.6.5.8   | Reliance on telecommunication network  |  | <b>P</b> |

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|-----------|--------------------|-----------------|---------|
| Clause    | Requirement – Test | Result – Remark | Verdict |

|       |  |   |          |
|-------|--|---|----------|
| 2.7   | Overcurrent and earth fault protection in primary circuits |   | <b>P</b> |
| 2.7.1 | Basic requirements   | Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Over current protection is provided in approved SPS. | <b>P</b> |
| 2.7.2 | Faults not covered in 5.3                                  | The protection devices are well dimensioned and mounted.  | <b>P</b> |
| 2.7.3 | Short-circuit backup protection                            | Pluggable equipment type A, the building installation is considered as providing short circuit protection.  | <b>P</b> |
| 2.7.4 | Number and location of protective devices .....            | Over current protection provided in approved SPS.   | <b>P</b> |
| 2.7.5 | Protection by several devices                              | In approved SPS.  | <b>N</b> |
| 2.7.6 | Warning to service personnel.....                          |   | <b>N</b> |

|         |  |  |          |
|---------|--|--|----------|
| 2.8     | Safety interlocks<br><i>No safety interlock.</i> |  | <b>N</b> |
| 2.8.1   | General principles                               |  | <b>N</b> |
| 2.8.2   | Protection requirements                          |  | <b>N</b> |
| 2.8.3   | Inadvertent reactivation                         |  | <b>N</b> |
| 2.8.4   | Fail-safe operation                              |  | <b>N</b> |
| 2.8.5   | Interlocks with moving parts                     |  | <b>N</b> |
| 2.8.6   | Overriding an interlock                          |  | <b>N</b> |
| 2.8.7   | Switches and relays in interlock systems         |  | <b>N</b> |
| 2.8.7.1 | Contact gaps (mm) .....                          |  | <b>N</b> |
| 2.8.7.2 | Overload test                                    |  | <b>N</b> |
| 2.8.7.3 | Endurance test                                   |  | <b>N</b> |
| 2.8.7.4 | Electric strength test (V)                       |  | <b>N</b> |
| 2.8.8   | Mechanical actuators                             |  | <b>N</b> |



| IEC 60950 |                                    |   |          |
|-----------|------------------------------------|---|----------|
| Clause    | Requirement – Test                 | Result – Remark   | Verdict  |
| 2.9       | Electrical insulation              |   | <b>P</b> |
| 2.9.1     | Properties of insulating materials | Natural rubber, asbestos or hygroscopic materials are not used.   | <b>P</b> |
| 2.9.2     | Humidity conditioning              | 40°C, 95% R.H., Total time elapsed: 120h  | <b>P</b> |
| 2.9.3     | Requirements for insulation        | Please refer to 5.2, 2.10 and 4.5.1.  | <b>P</b> |
| 2.9.4     | Insulation parameters              | Both parameters were considered.  | <b>P</b> |
| 2.9.5     | Categories of insulation           | The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard. | <b>P</b> |

|          |   |  |          |
|----------|---|--|----------|
| 2.10     | Clearances, creepage distances and distances through insulation |  | <b>P</b> |
| 2.10.1   | General   | See 2.10.3, 2.10.4, 2.10.5.  | <b>P</b> |
| 2.10.2   | Determination of working voltage                                | The rms and the peak voltage of the appliance is mains voltage 230V max. The unit was connected to a 240V TN power system. | <b>P</b> |
| 2.10.3   | Clearances  | See below  | <b>P</b> |
| 2.10.3.1 | General   | Considered.  | <b>P</b> |
| 2.10.3.2 | Clearances in primary circuit                                   | All in approved SPS.   | <b>P</b> |
| 2.10.3.3 | Clearances in secondary circuits                                | See 5.3.4.   | <b>N</b> |
| 2.10.3.4 | Measurement of transient levels                                 | No transient voltage across the clearance lower than due or normal.  | <b>N</b> |
| 2.10.4   | Creepage distances  | All in approved SPS.   | <b>P</b> |
|          | CTI tests .....   | CTI rating for all materials of min. 100.  | —        |
| 2.10.5   | Solid insulation  |  | <b>N</b> |
| 2.10.5.1 | Minimum distance through insulation                             |  | <b>N</b> |
| 2.10.5.2 | Thin sheet material   |  | <b>N</b> |
|          | Number of layers (pcs) .....                                    |  | —        |
|          | Electric strength test  |  | —        |



| IEC 60950 |  |                                   |          |
|-----------|--|-----------------------------------|----------|
| Clause    | Requirement – Test                               | Result – Remark                   | Verdict  |
| 2.10.5.3  | Printed boards .....                             |                                   | <b>N</b> |
| 2.10.5.4  | Wound components .....                           |                                   | <b>N</b> |
| 2.10.6    | Coated printed boards                            |                                   | <b>N</b> |
| 2.10.6.1  | General  |                                   | <b>N</b> |
| 2.10.6.2  | Sample preparation and preliminary inspection..: |                                   | <b>N</b> |
| 2.10.6.3  | Thermal cycling .....                            |                                   | <b>N</b> |
| 2.10.6.4  | Thermal ageing .....                             |                                   | <b>N</b> |
| 2.10.6.5  | Electric strength test                           |                                   | <b>N</b> |
| 2.10.6.6  | Abrasion resistance test.....                    |                                   | <b>N</b> |
|           | Electric strength test                           |                                   | <b>N</b> |
| 2.10.7    | Enclosed and sealed parts .....                  | No hermetically sealed component. | <b>N</b> |
| 2.10.8    | Spacings filled by insulating compound .....     |                                   | <b>N</b> |
|           | Electric strength test                           |                                   | <b>N</b> |
| 2.10.9    | Component external terminations                  |                                   | <b>N</b> |
| 2.10.10   | Insulation with varying dimensions               | Insulation kept homogenous.       | <b>N</b> |

|          |                                       |  |          |
|----------|---------------------------------------|--|----------|
| <b>3</b> | <b>WIRING, CONNECTIONS AND SUPPLY</b> |  | <b>P</b> |
|----------|---------------------------------------|--|----------|

|       |   |   |          |
|-------|---|---|----------|
| 3.1   | General                                   |   | <b>P</b> |
| 3.1.1 | Current rating and overcurrent protection | All internal wires are UL recognized wiring which is PVC insulated, rated VW-1, minimum 80°C. Internal wiring gauge is suitable for current intended to be carried.<br><br>No internal wire for primary power distribution. | <b>P</b> |
| 3.1.2 | Protection against mechanical damage      | Wires do not touch sharp edges, which could damage the insulation.  | <b>P</b> |
| 3.1.3 | Securing of internal wiring               | Internal wires are secured by solder pins so that a loosening of the terminal connection is unlikely.   | <b>P</b> |

| IEC 60950 |  |   |          |
|-----------|--|---|----------|
| Clause    | Requirement – Test                               | Result – Remark   | Verdict  |
| 3.1.4     | Insulation of conductors                         | The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1. | <b>P</b> |
| 3.1.5     | Beads and ceramic insulators                     | Not used.   | <b>N</b> |
| 3.1.6     | Screws for electrical contact pressure           | Electrical screwed two or more complete threads into metal.   | <b>P</b> |
| 3.1.7     | Non-metallic materials in electrical connections | All current carrying connections are metal to metal.  | <b>P</b> |
| 3.1.8     | Self-tapping and spaced thread screws            | No self- tapping or spaced thread screws used.  | <b>P</b> |
| 3.1.9     | Termination of conductors                        | All conductors are reliable secured.  | <b>P</b> |
| 3.1.10    | Sleeving on wiring                               | No sleeving used as supplementary insulation.   | <b>N</b> |

|       |  |   |          |
|-------|--|---|----------|
| 3.2   | Connection to a.c. mains supplies                                    |   | <b>P</b> |
| 3.2.1 | Means of connection  | Appliance inlet.  | <b>P</b> |
| 3.2.2 | Multiple supply connections  |   | <b>N</b> |
| 3.2.3 | Permanently connected equipment                                      | Not a permanently connected equipment.  | <b>N</b> |
|       | Number of conductors, diameter (mm) of cable and conduits .....      | dto   | —        |
| 3.2.4 | Appliance inlets   | The appliance inlet complies with IEC 60320. The power cord can be inserted without difficulties and does not support the unit. | <b>P</b> |
| 3.2.5 | Power supply cords   |   | <b>N</b> |
|       | Type.....  |   | —        |
|       | Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG..... |   | —        |
| 3.2.6 | Cord anchorages and strain relief                                    |   | <b>N</b> |
|       | Mass of equipment (kg), pull (N) .....                               |   | —        |
|       | Longitudinal displacement (mm) .....                                 |   | —        |



| IEC 60950 |                                       |   |          |
|-----------|---------------------------------------|---|----------|
| Clause    | Requirement – Test                    | Result – Remark   | Verdict  |
| 3.2.7     | Protection against mechanical damage  | No parts under this unit likely to damage the power supply cord. No sharp edge. | <b>P</b> |
| 3.2.8     | Cord guards                           | No cord guard.  | <b>N</b> |
|           | D (mm); test mass (g) .....           | dto   | —        |
|           | Radius of curvature of cord (mm)..... | dto   | —        |
| 3.2.9     | Supply wiring space                   |   | <b>N</b> |

|       |   |  |          |
|-------|---|--|----------|
| 3.3   | Wiring terminals for connection of external conductors                            |  | <b>N</b> |
| 3.3.1 | Wiring terminals  |  | <b>N</b> |
| 3.3.2 | Connection of non-detachable power supply cords                                   |  | <b>N</b> |
| 3.3.3 | Screw terminals   |  | <b>N</b> |
| 3.3.4 | Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) ..... |  | <b>N</b> |
| 3.3.5 | Rated current (A), type and nominal thread diameter (mm) .....                    |  | <b>N</b> |
| 3.3.6 | Wiring terminals design   |  | <b>N</b> |
| 3.3.7 | Grouping of wiring terminals  |  | <b>N</b> |
| 3.3.8 | Stranded wire   |  | <b>N</b> |

|       |  |   |          |
|-------|--|---|----------|
| 3.4   | Disconnection from the a.c. mains supply |   | <b>P</b> |
| 3.4.1 | General requirement                      | Disconnect device provided.   | <b>P</b> |
| 3.4.2 | Disconnect devices                       | Appliance inlet.  | <b>P</b> |
| 3.4.3 | Permanently connected equipment          | Not a permanently connected equipment.  | <b>N</b> |
| 3.4.4 | Parts which remain energized             | When plug or inlet is disconnected no remaining parts with hazardous voltage in the equipment | <b>P</b> |
| 3.4.5 | Switches in flexible cords               |   | <b>N</b> |
| 3.4.6 | Single-phase equipment                   | The power cord plug or inlet disconnects both poles simultaneously.                           | <b>P</b> |
| 3.4.7 | Three-phase equipment                    | Single phase.   | <b>N</b> |
| 3.4.8 | Switches as disconnect devices           |   | <b>N</b> |



| IEC 60950 |                             |  |          |
|-----------|-----------------------------|--|----------|
| Clause    | Requirement – Test          | Result – Remark  | Verdict  |
| 3.4.9     | Plugs as disconnect devices |  | <b>N</b> |
| 3.4.10    | Interconnected equipment    | Interconnection to other devices by secondary output cable only. | <b>N</b> |
| 3.4.11    | Multiple power sources      | Only one supply connection provided.                             | <b>N</b> |

|       |  |   |          |
|-------|--|---|----------|
| 3.5   | Interconnection of equipment             |   | <b>P</b> |
| 3.5.1 | General requirements                     | See below.  | <b>P</b> |
| 3.5.2 | Types of interconnection circuits.....:  | Interconnection circuits of SELV through the connectors. No ELV interconnection circuits. | <b>P</b> |
| 3.5.3 | ELV circuits as interconnection circuits | No ELV interconnection  | <b>N</b> |

|   |                       |  |          |
|---|-----------------------|--|----------|
| 4 | PHYSICAL REQUIREMENTS |  | <b>P</b> |
|---|-----------------------|--|----------|

|     |                       |   |          |
|-----|-----------------------|---|----------|
| 4.1 | Stability             |   | <b>P</b> |
|     | Angle of 10°          | This appliance is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal upright position. | <b>P</b> |
|     | Test: force (N) ..... | Equipment is not a floorstanding unit.  | <b>N</b> |

|       |                          |  |          |
|-------|--------------------------|--|----------|
| 4.2   | Mechanical strength      |  | <b>P</b> |
| 4.2.1 | General                  | See below. After tests, unit comply with 2.1.1, 2.6.1, 2.10 and 4.4.1. | <b>P</b> |
| 4.2.2 | Steady force test, 10 N  | 10N applied to components which located outside of chassis.            | <b>P</b> |
| 4.2.3 | Steady force test, 30 N  | 30N applied to internal enclosure. No energy or other hazards.         | <b>P</b> |
| 4.2.4 | Steady force test, 250 N | 250N applied to outer enclosure. No energy or other hazards.           | <b>P</b> |



| IEC 60950 |   |   |          |
|-----------|---|---|----------|
| Clause    | Requirement – Test  | Result – Remark   | Verdict  |
| 4.2.5     | Impact test   | No hazard as result from steel sphere ball impact test.   | <b>P</b> |
| 4.2.6     | Drop test   | No hazard.  | <b>P</b> |
| 4.2.7     | Stress relief   | After 7 hours at 70°C and cooling down to room temperature, no shrinkage, distortion or loosening any enclosure part was noticeable on the equipment.<br><br>The tests were done for all enclosure materials. | <b>P</b> |
| 4.2.8     | Cathode ray tubes   | No CRT.   | —        |
|           | Picture tube separately certified..... :                              |   | <b>N</b> |
|           | Picture tubes > 16 cm intrinsically protected                         |   | <b>N</b> |
|           | Non-intrinsically protected tubes > 16 cm used with protective screen |   | <b>N</b> |
|           | Intrinsically protected tubes: tests on 12 samples                    |   | <b>N</b> |
|           | Samples subject to ageing: 6  |   | <b>N</b> |
|           | Samples subject to implosion test: 6                                  |   | <b>N</b> |
|           | Samples subject to mechanical strength test (steel ball): 6           |   | <b>N</b> |
|           | Non-intrinsically protected tubes tested                              |   | <b>N</b> |
| 4.2.9     | High pressure lamps   | No high pressure lamp.  | <b>N</b> |
| 4.2.10    | Wall or ceiling mounted equipment; force (N) .....                    |   | <b>N</b> |

|       |  |  |          |
|-------|--|--|----------|
| 4.3   | Design and construction                      |  | <b>P</b> |
| 4.3.1 | Edges and corners                            | Edges and corners of the enclosure are rounded.  | <b>P</b> |
| 4.3.2 | Handles and manual controls; force (N) ..... |  | <b>N</b> |
| 4.3.3 | Adjustable controls                          | None that would cause hazard.  | <b>N</b> |
| 4.3.4 | Securing of parts                            | Electrical and mechanical connections can be expected to with standard usual mechanical stress. For the protection solder pins are used. | <b>P</b> |

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|-----------|--|--|----------|
| Clause    | Requirement – Test   | Result – Remark  | Verdict  |
| 4.3.5     | Connection of plugs and sockets                                  | In operator and service area, mismatch of connectors were prevented by incompatible form or location.  | <b>P</b> |
| 4.3.6     | Direct plug-in equipment   | Not direct plug-in type.   | <b>N</b> |
|           | Torque (Nm) .....  |  | —        |
| 4.3.7     | Heating elements in earthed equipment                            | No heating element.  | <b>N</b> |
| 4.3.8     | Batteries  | The RTC battery: <ul style="list-style-type: none"> <li>• There is no reverse polarity installation could be happen due to design of battery compartment.</li> <li>• The battery is protected from reverse charging by internal protective circuit.</li> </ul> | <b>P</b> |
| 4.3.9     | Oil and grease   | No oil or grease.  | <b>N</b> |
| 4.3.10    | Dust, powders, liquids and gases                                 | Equipment in intended use not considered to be exposed to these.   | <b>P</b> |
| 4.3.11    | Containers for liquids or gases                                  | No container for liquid or gas.  | <b>N</b> |
| 4.3.12    | Flammable liquids .....  | No flammable liquid.   | <b>N</b> |
|           | Quantity of liquid (l) .....                                     |  | <b>N</b> |
|           | Flash point (°C) .....   |  | <b>N</b> |
| 4.3.13    | Radiation; type of radiation .....                               | No ionizing radiation or laser or flammable liquids presents. LED power is far below LED Class 1 limit.<br><br>CD-ROM is approved components according to IEC 60825-1.   | <b>P</b> |
|           | Equipment using lasers, see separate test report of IEC 60825-1. | dto.   | <b>N</b> |

|       |   |                  |          |
|-------|---|------------------|----------|
| 4.4   | Protection against hazardous moving parts |                  | <b>N</b> |
| 4.4.1 | General                                   | No moving parts. | <b>N</b> |
| 4.4.2 | Protection in operator access areas       |                  | <b>N</b> |
| 4.4.3 | Protection in restricted access locations |                  | <b>N</b> |
| 4.4.4 | Protection in service access areas        |                  | <b>N</b> |

| IEC 60950 |                    |                 |         |
|-----------|--------------------|-----------------|---------|
| Clause    | Requirement – Test | Result – Remark | Verdict |

|       |                             |                           |          |
|-------|-----------------------------|---------------------------|----------|
| 4.5   | Thermal requirements        |                           | <b>P</b> |
| 4.5.1 | Temperature rises           | See appended table 4.5.1. | <b>P</b> |
| 4.5.2 | Resistance to abnormal heat | In approved SPS.          | <b>N</b> |

|       |                                       |  |          |
|-------|---------------------------------------|--|----------|
| 4.6   | Openings in enclosures                |  | <b>P</b> |
| 4.6.1 | Top and side openings                 | No hazardous parts within 5° projectary area.  | <b>P</b> |
|       | Dimensions (mm) .....                 | (see appended table)   | —        |
| 4.6.2 | Bottoms of fire enclosures            | The bottom openings are under the HDD and the HDD wrapped with metal enclosure as an internal barrier. | <b>P</b> |
|       | Construction of the bottom .....      | (see appended table)   | —        |
| 4.6.3 | Doors or covers in fire enclosures    |  | <b>N</b> |
| 4.6.4 | Openings in transportable equipment   |  | <b>N</b> |
| 4.6.5 | Adhesives for constructional purposes |  | <b>N</b> |

|         |   |   |          |
|---------|---|---|----------|
| 4.7     | Resistance to fire                                |   | <b>P</b> |
| 4.7.1   | Reducing the risk of ignition and spread of flame | Use of materials with the required flammability classes.  | <b>P</b> |
| 4.7.2   | Conditions for a fire enclosure                   | See below.  | <b>P</b> |
| 4.7.2.1 | Parts requiring a fire enclosure                  | With having the following parts:<br><ul style="list-style-type: none"> <li>· components in secondary (not supplied by LPS)</li> <li>· components having unenclosed arcing parts at hazardous voltage or energy level</li> <li>· insulated wiring</li> </ul> the fire enclosure is required. | <b>P</b> |
| 4.7.2.2 | Parts not requiring a fire enclosure              |   | <b>N</b> |
| 4.7.3   | Materials   | See below.  | <b>P</b> |
| 4.7.3.1 | General   | See appended table 1.5.1 for PCB.   | <b>P</b> |

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|-----------|--|--|----------|
| Clause    | Requirement – Test   | Result – Remark  | Verdict  |
| 4.7.3.2   | Materials for fire enclosures                                    | Metal enclosure.   | <b>N</b> |
| 4.7.3.3   | Materials for components and other parts outside fire enclosures | Front bezel and side covers are decorative parts with material HB is acceptable. | <b>P</b> |
| 4.7.3.4   | Materials for components and other parts inside fire enclosures  | Internal components except small parts are V-2 or better.                        | <b>P</b> |
| 4.7.3.5   | Materials for air filter assemblies                              | No air filter assemblies.  | <b>N</b> |
| 4.7.3.6   | Materials used in high-voltage components                        | No high voltage component.   | <b>N</b> |

|   |   |          |
|---|---|----------|
| 5 | ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS | <b>P</b> |
|---|---|----------|

|         |  |  |          |
|---------|--|--|----------|
| 5.1     | Touch current and protective conductor current                 | <b>P</b>   |          |
| 5.1.1   | General  | See sub-clauses 5.1.2 to 5.1.6.  | <b>P</b> |
| 5.1.2   | Equipment under test (EUT)                                     | EUT has only one mains connection.   | <b>P</b> |
| 5.1.3   | Test circuit   | Using figure 5A.   | <b>P</b> |
| 5.1.4   | Application of measuring instrument                            | Using measuring instrument in annex D.   | <b>P</b> |
| 5.1.5   | Test procedure   | The touch current was measured from primary to enclosure and shredding blades. | <b>P</b> |
| 5.1.6   | Test measurements  | See below.   | <b>P</b> |
|         | Test voltage (V) .....   | See appended table 5.1.6.  | —        |
|         | Measured current (mA) .....                                    | See appended table 5.1.6.  | —        |
|         | Max. allowed current (mA) .....                                | See appended table 5.1.6.  | —        |
| 5.1.7   | Equipment with touch current exceeding 3.5 mA .....            | Touch current does not exceed 3.5mA.   | <b>N</b> |
| 5.1.8   | Touch currents to and from telecommunication networks          | See below.   | <b>P</b> |
| 5.1.8.1 | Limitation of the touch current to a telecommunication network | No TNV circuit.  | <b>N</b> |
|         | Test voltage (V) .....   |  | —        |
|         | Measured current (mA) .....                                    |  | —        |
|         | Max. allowed current (mA) .....                                |  | —        |

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|-----------|--|-----------------|----------|
| Clause    | Requirement – Test   | Result – Remark | Verdict  |
| 5.1.8.2   | Summation of touch currents from telecommunication networks..... : |                 | <b>N</b> |

|       |                   |                          |          |
|-------|-------------------|--------------------------|----------|
| 5.2   | Electric strength |                          | <b>P</b> |
| 5.2.1 | General           | (see appended table 5.2) | <b>P</b> |
| 5.2.2 | Test procedure    | (see appended table 5.2) | <b>P</b> |

|         |   |  |          |
|---------|---|--|----------|
| 5.3     | Abnormal operating and fault conditions                         |  | <b>P</b> |
| 5.3.1   | Protection against overload and abnormal operation              | See below.   | <b>P</b> |
| 5.3.2   | Motors  | Approved CPU fans used.<br>Other motors are used in the appliance, which are certified HDD, FDD and CD-ROM.  | <b>P</b> |
| 5.3.3   | Transformers  | In approved SPS.   | <b>N</b> |
| 5.3.4   | Functional insulation..... :                                    |  | <b>N</b> |
| 5.3.5   | Electromechanical components                                    | No electromechanical component other than motor provided.  | <b>N</b> |
| 5.3.6   | Simulation of faults  | Faults in primary and secondary components and operational insulation were already considered during the approval of the SPS.<br>Ventilation blocked and DC fan locked test: Results see appended table.<br>No hazard by operating buttons and controls not in accordance with the instructions. | <b>P</b> |
| 5.3.7   | Unattended equipment  | Equipment is not unattended equipment.   | <b>N</b> |
| 5.3.8   | Compliance criteria for abnormal operating and fault conditions | See below.   | <b>P</b> |
| 5.3.8.1 | During the tests  | No fire propagated beyond the equipment. No molten metal was emitted.  | <b>P</b> |
| 5.3.8.2 | After the tests   | Complied.  | <b>P</b> |

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|-----------|--------------------|-----------------|---------|
| Clause    | Requirement – Test | Result – Remark | Verdict |

|   |   |  |          |
|---|---|--|----------|
| 6 | CONNECTION TO TELECOMMUNICATION NETWORKS<br><i>No TNV Circuits.</i> |  | <b>N</b> |
|---|---|--|----------|

|         |   |  |          |
|---------|---|--|----------|
| 6.1     | Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment |  | <b>N</b> |
| 6.1.1   | Protection from hazardous voltages  |  | <b>N</b> |
| 6.1.2   | Separation of the telecommunication network from earth<br><i>The protection of the telecommunication network does not rely on earthing.</i>     |  | <b>N</b> |
| 6.1.2.1 | Requirements  |  | <b>N</b> |
|         | Test voltage (V) .....  |  | —        |
|         | Current in the test circuit (mA) .....  |  | —        |
| 6.1.2.2 | Exclusions .....  |  | <b>N</b> |

|         |   |  |          |
|---------|---|--|----------|
| 6.2     | Protection of equipment users from overvoltages on telecommunication networks |  | <b>N</b> |
| 6.2.1   | Separation requirements   |  | <b>N</b> |
| 6.2.2   | Electric strength test procedure  |  | <b>N</b> |
| 6.2.2.1 | Impulse test  |  | <b>N</b> |
| 6.2.2.2 | Steady-state test   |  | <b>N</b> |
| 6.2.2.3 | Compliance criteria   |  | <b>N</b> |

|     |   |  |          |
|-----|---|--|----------|
| 6.3 | Protection of telecommunication wiring system from overheating<br><i>Modem card is not intended to supply other units via telecommunication line.</i> |  | <b>N</b> |
|     | Max. output current (A) .....   |  | —        |
|     | Current limiting method .....   |  | —        |

|       |   |  |          |
|-------|---|--|----------|
| A     | ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE  |  | <b>N</b> |
| 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) |  | <b>N</b> |
| A.1.1 | Samples   |  | <b>N</b> |
|       | Wall thickness (mm) .....   |  | —        |
| A.1.2 | Conditioning of samples; temperature (°C) .....   |  | <b>N</b> |
| A.1.3 | Mounting of samples .....   |  | <b>N</b> |



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|-----------|--|-----------------|----------|
| Clause    | Requirement – Test   | Result – Remark | Verdict  |
| A.1.4     | Test flame   |                 | <b>N</b> |
| A.1.5     | Test procedure   |                 | <b>N</b> |
| A.1.6     | Compliance criteria  |                 | <b>N</b> |
|           | 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) |                 | <b>N</b> |
| A.2.1     | Samples  |                 | <b>N</b> |
|           | Wall thickness (mm) .....  |                 | —        |
| A.2.2     | Conditioning of samples; temperature (°C) .....  |                 | <b>N</b> |
| A.2.3     | Mounting of samples.....:  |                 | <b>N</b> |
| A.2.4     | Test flame   |                 | <b>N</b> |
| A.2.5     | Test procedure   |                 | <b>N</b> |
| A.2.6     | Compliance criteria  |                 | <b>N</b> |
|           | Sample 1 burning time (s).....:  |                 | —        |
|           | Sample 2 burning time (s).....:  |                 | —        |
|           | Sample 3 burning time (s).....:  |                 | —        |
| A.2.7     | Alternative test acc. to IEC 60695-2-2, cl. 4, 8   |                 | <b>N</b> |
|           | Sample 1 burning time (s).....:  |                 | —        |
|           | Sample 2 burning time (s).....:  |                 | —        |
|           | Sample 3 burning time (s).....:  |                 | —        |
| A.3       | High current arcing ignition test (see 4.7.3.2)  |                 | <b>N</b> |
| A.3.1     | Samples  |                 | <b>N</b> |
|           | Wall thickness (mm) .....  |                 | —        |
| A.3.2     | Test circuit   |                 | <b>N</b> |
| A.3.3     | Test electrodes  |                 | <b>N</b> |
| A.3.4     | Test procedure   |                 | <b>N</b> |
| A.3.5     | Compliance criteria  |                 | <b>N</b> |
|           | Sample 1 number of arcs to ignition (pcs).....:  |                 | —        |
|           | Sample 2 number of arcs to ignition (pcs).....:  |                 | —        |
|           | Sample 3 number of arcs to ignition (pcs).....:  |                 | —        |

| IEC 60950 |  |                 |          |
|-----------|--|-----------------|----------|
| Clause    | Requirement – Test   | Result – Remark | Verdict  |
|           | Sample 4 number of arcs to ignition (pcs) .....                      |                 | —        |
|           | Sample 5 number of arcs to ignition (pcs) .....                      |                 | —        |
| A.4       | Hot wire ignition test (see 4.7.3.2)                                 |                 | <b>N</b> |
| A.4.1     | Samples  |                 | <b>N</b> |
|           | Wall thickness (mm) .....  |                 | —        |
| A.4.2     | Test circuit   |                 | <b>N</b> |
| A.4.3     | Mounting of samples.....   |                 | <b>N</b> |
| A.4.4     | Test procedure   |                 | <b>N</b> |
| A.4.5     | Compliance criteria  |                 | <b>N</b> |
|           | Sample 1 ignition time (s) .....                                     |                 | —        |
|           | Sample 2 ignition time (s) .....                                     |                 | —        |
|           | Sample 3 ignition time (s) .....                                     |                 | —        |
|           | Sample 4 ignition time (s) .....                                     |                 | —        |
|           | Sample 5 ignition time (s) .....                                     |                 | —        |
| A.5       | Hot flaming oil test (see 4.6.2)                                     |                 | <b>N</b> |
| A.5.1     | Mounting of samples.....   |                 | <b>N</b> |
| A.5.2     | Test procedure   |                 | <b>N</b> |
| A.5.3     | Compliance criterion .....   |                 | <b>N</b> |
| A.6       | Flammability tests for classifying materials V-0, V-1 or V-2         |                 | <b>N</b> |
| A.6.1     | Samples  |                 | <b>N</b> |
|           | Wall thickness (mm) .....  |                 | —        |
| A.6.2     | Conditioning of samples temperature (°C) .....                       |                 | <b>N</b> |
| A.6.3     | Mounting of samples.....   |                 | <b>N</b> |
| A.6.4     | Test procedure   |                 | <b>N</b> |
| A.6.5     | Compliance criteria  |                 | <b>N</b> |
| A.6.6     | Permitted retest   |                 | <b>N</b> |
| A.7       | Flammability test for classifying foamed materials HF-1, HF-2 or HFB |                 | <b>N</b> |
| A.7.1     | Sample   |                 | <b>N</b> |
|           | Wall thickness (mm) .....  |                 | —        |
| A.7.2     | Conditioning of samples; temperature (°C) .....                      |                 | <b>N</b> |
| A.7.3     | Test procedure   |                 | <b>N</b> |
| A.7.4     | Compliance criteria  |                 | <b>N</b> |

| IEC 60950 |   |                 |         |
|-----------|---|-----------------|---------|
| Clause    | Requirement – Test                              | Result – Remark | Verdict |
| A.7.5     | Compliance criteria, HF-2                       |                 | N       |
| A.7.6     | Compliance criteria, HF-1                       |                 | N       |
| A.7.7     | Compliance criteria, HBF                        |                 | N       |
| A.7.8     | Permitted retest, HF-1 or HF-2                  |                 | N       |
| A.7.9     | Permitted retest, HBF                           |                 | N       |
| A.8       | Flammability test for classifying materials HB  |                 | N       |
| A.8.1     | Samples   |                 | N       |
|           | Sample thickness (mm) .....                     |                 | —       |
| A.8.2     | Conditioning of samples; temperature (°C) ..... |                 | N       |
| A.8.3     | Mounting of samples.....                        |                 | N       |
| A.8.4     | Test procedure                                  |                 | N       |
| A.8.5     | Compliance criteria                             |                 | N       |
| A.8.6     | Permitted retest                                |                 | N       |
| A.9       | Flammability test for classifying materials 5V  |                 | N       |
| A.9.1     | Samples   |                 | N       |
|           | Sample thickness (mm) .....                     |                 | —       |
| A.9.2     | Conditioning of samples temperature (°C) .....  |                 | N       |
| A.9.3     | Test flame                                      |                 | N       |
| A.9.4     | Test procedure, test bars                       |                 | N       |
| A.9.5     | Test procedure, test plaques                    |                 | N       |
| A.9.6     | Compliance criteria .....                       |                 | N       |
| A.9.7     | Permitted retest                                |                 | N       |
| A.10      | Stress relief conditioning (see 4.2.7)          |                 | N       |
|           | Temperature (°C).....                           |                 | —       |

|     |  |                          |   |
|-----|--|--------------------------|---|
| B   | ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS |                          | N |
| B.1 | General requirements                           | Approved component used. | N |
|     | Position .....                                 |                          | — |
|     | Manufacturer .....                             |                          | — |
|     | Type .....                                     |                          | — |
|     | Rated values .....                             |                          | — |
| B.2 | Test conditions                                |                          | N |

| IEC 60950 |   |                 |          |
|-----------|---|-----------------|----------|
| Clause    | Requirement – Test  | Result – Remark | Verdict  |
| B.3       | Maximum temperatures  |                 | <b>N</b> |
| B.4       | Running overload test   |                 | <b>N</b> |
| B.5       | Locked-rotor overload test  |                 | <b>N</b> |
|           | Test duration (days) .....  |                 | —        |
|           | Electric strength test: test voltage (V) .....  |                 | —        |
| B.6       | Running overload test for DC motors in secondary circuits   |                 | <b>N</b> |
| B.7       | Locked-rotor overload test for DC motors in secondary circuits                                    |                 | <b>N</b> |
| B.7.1     | Test procedure  |                 | <b>N</b> |
| B.7.2     | Alternative test procedure; test time (h) .....   |                 | <b>N</b> |
| B.7.3     | Electric strength test  |                 | <b>N</b> |
| B.8       | Test for motors with capacitors   |                 | <b>N</b> |
| B.9       | Test for three-phase motors   |                 | <b>N</b> |
| B.10      | Test for series motors  |                 | <b>N</b> |
|           | Operating voltage (V) .....   |                 | —        |
| C         | ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)   |                 | <b>N</b> |
|           | Position .....  |                 | —        |
|           | Manufacturer .....  |                 | —        |
|           | Type .....  |                 | —        |
|           | Rated values .....  |                 | —        |
| C.1       | Overload test   |                 | <b>N</b> |
| C.2       | Insulation  |                 | <b>N</b> |
| D         | ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)                                |                 | <b>N</b> |
| D.1       | Measuring instrument  |                 | <b>N</b> |
| D.2       | Alternative measuring instrument  |                 | <b>N</b> |
| E         | ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13 and 4.5.1)<br><i>Thermocouple method used.</i> |                 | <b>N</b> |

| IEC 60950 |   |                 |          |
|-----------|---|-----------------|----------|
| Clause    | Requirement – Test  | Result – Remark | Verdict  |
| F         | ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES<br><i>Considered.</i> |                 | <b>P</b> |

|     |  |  |          |
|-----|--|--|----------|
| G   | ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES<br><i>The alternative method is not considered.</i> |  | <b>N</b> |
| G.1 | Summary of the procedure for determining minimum clearances  |  | <b>N</b> |
| G.2 | Determination of mains transient voltage (V) ..... :   |  | <b>N</b> |
| G.3 | Determination of telecommunication network transient voltage (V)..... :  |  | <b>N</b> |
| G.4 | Determination of required withstand voltage (V) . :  |  | <b>N</b> |
| G.5 | Measurement of transient levels (V) ..... :  |  | <b>N</b> |
| G.6 | Determination of minimum clearances ..... :  |  | <b>N</b> |

|   |  |  |          |
|---|--|--|----------|
| H | ANNEX H, IONIZING RADIATION (see 4.3.13) |  | <b>N</b> |
|   | Ionizing radiation                       |  | <b>N</b> |
|   | Measured radiation (mR/h) ..... :        |  | —        |
|   | Measured high-voltage (kV) ..... :       |  | —        |
|   | Measured focus voltage (kV) ..... :      |  | —        |
|   | CRT markings ..... :                     |  | —        |

|   |  |  |          |
|---|--|--|----------|
| J | ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6) |  | <b>N</b> |
|   | Metal used ..... :   |  | —        |

|     |   |  |          |
|-----|---|--|----------|
| K   | ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)<br><i>No thermal control.</i> |  | <b>N</b> |
| K.1 | Making and breaking capacity  |  | <b>N</b> |
| K.2 | Thermostat reliability; operating voltage (V) ..... :                         |  | <b>N</b> |
| K.3 | Thermostat endurance test; operating voltage (V) ..... :                      |  | <b>N</b> |
| K.4 | Temperature limiter endurance; operating voltage (V) ..... :                  |  | <b>N</b> |
| K.5 | Thermal cut-out reliability   |  | <b>N</b> |

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|-----------|------------------------|-----------------|----------|
| Clause    | Requirement – Test     | Result – Remark | Verdict  |
| K.6       | Stability of operation |                 | <b>N</b> |

|     |   |                                      |          |
|-----|---|--------------------------------------|----------|
| L   | ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.1) |                                      | <b>P</b> |
| L.1 | Typewriters   | No typewriter.                       | <b>N</b> |
| L.2 | Adding machines and cash registers  | No adding machine or cash registers. | <b>N</b> |
| L.3 | Erasers   | No eraser.                           | <b>N</b> |
| L.4 | Pencil sharpeners   | No pencil sharpener.                 | <b>N</b> |
| L.5 | Duplicators and copy machines   | No duplicator or copy machine.       | <b>N</b> |
| L.6 | Motor-operated files  | No motor-operated file.              | <b>N</b> |
| L.7 | Other business equipment  | See 1.6.2.                           | <b>P</b> |

|         |  |  |          |
|---------|--|--|----------|
| M       | ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)<br><i>No telephone ringing signal.</i> |  | <b>N</b> |
| M.1     | Introduction   |  | <b>N</b> |
| M.2     | Method A   |  | <b>N</b> |
| M.3     | Method B   |  | <b>N</b> |
| M.3.1   | Ringling signal  |  | <b>N</b> |
| M.3.1.1 | Frequency (Hz) .....   |  | <b>N</b> |
| M.3.1.2 | Voltage (V) .....  |  | <b>N</b> |
| M.3.1.3 | Cadence; time (s), voltage (V) .....   |  | <b>N</b> |
| M.3.1.4 | Single fault current (mA).....   |  | <b>N</b> |
| M.3.2   | Tripping device and monitoring voltage.....  |  | <b>N</b> |
| M.3.2.1 | Conditions for use of a tripping device or a monitoring voltage                                    |  | <b>N</b> |
| M.3.2.2 | Tripping device  |  | <b>N</b> |
| M.3.2.3 | Monitoring voltage (V) .....   |  | <b>N</b> |

|   |   |  |          |
|---|---|--|----------|
| U | ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4). |  | <b>N</b> |
|   | Separate test report  |  | <b>N</b> |

| IEC 60950 |  |                 |          |
|-----------|--|-----------------|----------|
| Clause    | Requirement – Test                                 | Result – Remark | Verdict  |
| V         | ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1) |                 | <b>N</b> |
| V.1       | Introduction                                       |                 | <b>N</b> |
| V.2       | TN power systems                                   |                 | <b>N</b> |
| V.3       | TT power systems                                   |                 | <b>N</b> |
| V.4       | IT power systems                                   |                 | <b>N</b> |

| 1.5.1                     | TABLE: list of critical components |   |   |           |   | P |
|---------------------------|------------------------------------|---|---|-----------|---|---|
| Object/part no.           | Manufacturer/<br>trademark         | Type/model                                      | Technical data  | Standard  | Mark(s) of<br>conformity <sup>1</sup> . |   |
| Enclosure                 | --                                 | --  | Metal, min.<br>thickness 1.0<br>mm  | --        | --                                      |   |
| Front Panel               | --                                 | --  | HB  | UL94      | UL                                      |   |
| Base material             | Grand Pacific                      | D-1000  | 94-0  | UL94      | UL                                      |   |
| Switching Power<br>supply | Delta<br>Electronics<br>Inc.       | DSP-200PB-138<br>XX<br>(X=0-9, A-Z or<br>blank) | I/P : AC 100-<br>127/200-240V,<br>47-63Hz,5/3A<br>O/P : +3.3V/14A<br>+5V/21A,<br>+12V/10A<br>-12V/0.8A,<br>+5VSB/2.0A | IEC 60950 | TÜV,CB by TÜV<br>Rheinland.             |   |
|                           | Hipro<br>Electronics<br>Co., Ltd.  | HP-F200xxxx<br>(x=0-9, A-Z or<br>blank)         | I/P: AC 100-<br>127/200-240V,<br>47-63Hz 5/3A<br>O/P: +5V/21A<br>+3.3V/14A,<br>+12V/10A, -12V/<br>0.8A, +5Vsb/2A      | EN 60950  | TÜV, CB by<br>Nemko                     |   |
| HDD ( Optional )          | IBM Japan Ltd.                     | DDYX-Tnnnnn<br>X=S, P, or A<br>n=0-9            | 5V/0.75A<br>12V/1.1A  | IEC 60950 | TÜV                                     |   |
|                           | Fujitsu Ltd.                       | MAJ3xxxMy<br>x=0-9<br>y=a-z or blank            | 5V/1.0A<br>12V/1.2A   | IEC 60950 | TÜV                                     |   |
|                           | Seagate<br>Technology Inc.         | ST336704LC                                      | 12V/1.1A  | IEC 60950 | TÜV                                     |   |
|                           | Seagate<br>Technology Inc.         | ST318451LC                                      | 5V/varies<br>12V/varies   | IEC 60950 | TÜV                                     |   |
|                           | Seagate<br>Technology Inc.         | 9N2*  | 5V/0.95A<br>12V/0.55A   | IEC 60950 | VDE                                     |   |
|                           | Seagate<br>Technology Inc.         | 9P4*  | 5V/0.80A<br>12V/0.83A   | IEC 60950 | VDE                                     |   |
|                           | Fujitsu Ltd.                       | MAM3xxxMy<br>(x=0-9, y=A-Z)                     | 12V/1.4A<br>5V/1.1A   | IEC 60950 | TÜV                                     |   |
|                           | Fujitsu Ltd.                       | MAN3xxxMy<br>(x=0-9, y=A-Z)                     | 12V/1.2A<br>5V/1A   | IEC 60950 | TÜV                                     |   |
|                           | Seagate<br>Technology Inc.         | ST3XXXXYYX                                      | 12V/1.5A<br>5V/1.5A   | IEC 60950 | TÜV                                     |   |





|  |                                 |   |                            |                          |     |
|--|---------------------------------|---|----------------------------|--------------------------|-----|
| CD- ROM (Optional)   | Samsung Electronics Co., Ltd.   | SN-124  | 5V, 1.5A<br>Laser Class 1  | IEC 60950<br>IEC 60825-1 | TUV |
|  | Teac Corporation                | CD-2XXXX<br>(X is alphanumeric characters or blank) | 5V, 1.5A<br>Laser Class 1  | IEC 60950<br>IEC 60825-1 | TUV |
|  | Lite-On                         | LTN-XX5XXXXX<br>(X=A-Z, 0-9 or blank)               | 5V, 1A<br>Laser Class 1    | IEC 60950<br>IEC 60825-1 | TUV |
| FDD ( Optional )   | Sony corp.                      | MPF720-xxx<br>MFD720-xxx                            | 5V, 730mA                  | IEC 60950                | TUV |
|  | Sony Corp                       | MPF820-xx<br>(x=0-9, A-Z or blank)                  | 5Vdc, 750mA                | EN 60950                 | TUV |
| DC Fan for CPU (optional)  | Asia Vital Components Co., Ltd. | F7015B12MN  | 12V, 0.2 max..<br>29.25CFM | EN 60950                 | TUV |
| RTC Battery  | Sony                            | CR2032  | 3V, 220mAh                 | --                       | UL  |
|  | Matsushita battery Industrial   | CR2032  | 3V, 210mAh                 | --                       | UL  |
|  | Matsushita electric Industry    | CR2032  | 3V, 220mAh                 | --                       | UL  |
|  | Toshiba Battery Co., Ltd        | CR2032  | 3V, 220mAh                 | --                       | UL  |
|  | Hitachi Maxell                  | CR2032  | 3V, 210mAh                 | --                       | UL  |
|  | Vic-Dawn Enterprise Co., Ltd    | CR2032KTS   | 3V, 220mAh                 | --                       | UL  |
| PCB  | --                              | --  | V-1 min, 105°C             | UL 94                    | UL  |
|  |                                 |   |                            |                          |     |
| Note: An asterisk indicates a mark which assures the agreed level of surveillance. |                                 |   |                            |                          |     |

| 1.6.2                                   | TABLE: electrical data (in normal conditions) |          |       |       |           | <b>P</b>          |
|---|---|----------|-------|-------|-----------|-------------------|
| fuse #                                  | Irated (A)                                    | U (V)    | P (W) | I (A) | Ifuse (A) | condition/status  |
| For use SPS delta model DSP-200PB-138 C |   |          |       |       |           |                   |
| Fuse                                    | ---   | 90V/50Hz | 120.0 | 1.51  | 1.51      | Normal operation. |
| Fuse                                    | ---   | 90V/60Hz | 120.0 | 1.51  | 1.51      | dto               |

|                                     |     |           |       |      |      |                   |
|-------------------------------------|-----|-----------|-------|------|------|-------------------|
| Fuse                                | 5   | 100V/50Hz | 121.0 | 1.39 | 1.39 | dto               |
| Fuse                                | 5   | 100V/60Hz | 121.0 | 1.39 | 1.39 | dto               |
| Fuse                                | 5   | 127V/50Hz | 118.0 | 1.18 | 1.18 | dto               |
| Fuse                                | 5   | 127V/60Hz | 118.0 | 1.18 | 1.18 | dto               |
| Fuse                                | --- | 135V/50Hz | 120.0 | 1.10 | 1.10 | dto               |
| Fuse                                | --- | 135V/60Hz | 119.0 | 1.10 | 1.10 | dto               |
| Fuse                                | --- | 140V/50Hz | 117.0 | 1.05 | 1.05 | dto               |
| Fuse                                | --- | 140V/60Hz | 117.0 | 1.05 | 1.05 | dto               |
| Fuse                                | --- | 180V/50Hz | 110.0 | 0.80 | 0.80 | dto               |
| Fuse                                | --- | 180V/60Hz | 110.0 | 0.80 | 0.80 | dto               |
| Fuse                                | 3   | 200V/50Hz | 115.7 | 0.76 | 0.76 | dto               |
| Fuse                                | 3   | 200V/60Hz | 115.7 | 0.76 | 0.76 | dto               |
| Fuse                                | 3   | 240V/50Hz | 110.1 | 0.67 | 0.67 | dto               |
| Fuse                                | 3   | 240V/60Hz | 110.1 | 0.67 | 0.67 | dto               |
| Fuse                                | --- | 254V/50Hz | 109.6 | 0.64 | 0.64 | dto               |
| Fuse                                | --- | 254V/60Hz | 108.6 | 0.64 | 0.64 | dto               |
| Fuse                                | --- | 264V/50Hz | 110.1 | 0.66 | 0.66 | dto               |
| Fuse                                | --- | 264V/60Hz | 109.3 | 0.61 | 0.61 | dto               |
| For use SPS Hipro model HP-F2007F3P |     |           |       |      |      |                   |
| Fuse                                | --- | 90V/50Hz  | 110.5 | 1.51 | 1.51 | Normal operation. |
| Fuse                                | --- | 90V/60Hz  | 110.5 | 1.51 | 1.51 | dto               |
| Fuse                                | 5   | 100V/50Hz | 116.1 | 1.39 | 1.39 | dto               |
| Fuse                                | 5   | 100V/60Hz | 116.1 | 1.39 | 1.39 | dto               |
| Fuse                                | 5   | 127V/50Hz | 110.5 | 1.17 | 1.17 | dto               |
| Fuse                                | 5   | 127V/60Hz | 110.5 | 1.17 | 1.17 | dto               |
| Fuse                                | --- | 135V/50Hz | 110.4 | 1.10 | 1.10 | dto               |
| Fuse                                | --- | 135V/60Hz | 110.4 | 1.10 | 1.10 | dto               |
| Fuse                                | --- | 140V/50Hz | 111.3 | 1.05 | 1.05 | dto               |
| Fuse                                | --- | 140V/60Hz | 111.3 | 1.05 | 1.05 | dto               |
| Fuse                                | --- | 180V/50Hz | 106.2 | 0.77 | 0.77 | dto               |
| Fuse                                | --- | 180V/60Hz | 106.2 | 0.77 | 0.77 | dto               |
| Fuse                                | 3   | 200V/50Hz | 106.1 | 0.71 | 0.71 | dto               |
| Fuse                                | 3   | 200V/60Hz | 106.1 | 0.71 | 0.71 | dto               |
| Fuse                                | 3   | 240V/50Hz | 108.0 | 0.62 | 0.62 | dto               |
| Fuse                                | 3   | 240V/60Hz | 108.0 | 0.62 | 0.62 | dto               |

|      |     |           |       |      |      |     |
|------|-----|-----------|-------|------|------|-----|
| Fuse | --- | 254V/50Hz | 106.4 | 0.60 | 0.60 | dto |
| Fuse | --- | 254V/60Hz | 106.4 | 0.60 | 0.60 | dto |
| Fuse | --- | 264V/50Hz | 110.0 | 0.58 | 0.58 | dto |
| Fuse | --- | 264V/60Hz | 110.0 | 0.58 | 0.58 | dto |

| 2.1.1.5                | TABLE: max. V, A, VA test |                       |                       |                   | <b>N</b> |
|------------------------|---------------------------|-----------------------|-----------------------|-------------------|----------|
| Voltage (rated)<br>(V) | Current (rated)<br>(A)    | Voltage (max.)<br>(V) | Current (max.)<br>(A) | VA (max.)<br>(VA) |          |
|                        |                           |                       |                       |                   |          |
|                        |                           |                       |                       |                   |          |

| 2.1.1.7   | TABLE: discharge test    |                        |                               | <b>N</b> |
|-----------|--------------------------|------------------------|-------------------------------|----------|
| Condition | $\tau$ calculated<br>(s) | $\tau$ measured<br>(s) | $t_{u \rightarrow 0V}$<br>(s) | Comments |
|           |                          |                        |                               |          |
|           |                          |                        |                               |          |

| 2.2.2       | TABLE: Hazardous voltage measurement |              |        | <b>N</b>                        |
|-------------|--------------------------------------|--------------|--------|---------------------------------|
| Transformer | Location                             | max. Voltage |        | Voltage Limitation<br>Component |
|             |                                      | V peak       | V d.c. |                                 |
|             |                                      |              |        |                                 |
|             |                                      |              |        |                                 |

| 2.2.3    | TABLE: SEL voltage measurement |          | <b>N</b> |
|----------|--------------------------------|----------|----------|
| Location | Voltage measured (V)           | Comments |          |
|          |                                |          |          |
|          |                                |          |          |

|       |  |  |          |
|-------|--|--|----------|
| 2.4.2 | TABLE: limited current circuit measurement |  | <b>N</b> |
|-------|--|--|----------|



| Location | Voltage (V) | Current (mA) | Freq. (kHz) | Limit (mA) | Comments |
|----------|-------------|--------------|-------------|------------|----------|
|          |             |              |             |            |          |
|          |             |              |             |            |          |
|          |             |              |             |            |          |

Note: Output measured with a non-inductive 2kΩ non-conductive resistor as load.

|   |   |        |          |          |
|---|---|--------|----------|----------|
| 2.5   | TABLE: limited power source measurement |        |          | <b>N</b> |
|   |   | Limits | Measured | Verdict  |
| According to Table 2B/2C (normal condition)       |   |        |          |          |
|   | current (in A)                          |        |          |          |
|   | apparent power (in VA)                  |        |          |          |
| According to Table 2B/2C (single fault condition) |   |        |          |          |
|   | current (in A)                          |        |          |          |
|   | apparent power (in VA)                  |        |          |          |
|   |   |        |          |          |

|   |                             |           |          |
|---|-----------------------------|-----------|----------|
| 2.6.3.3                                 | TABLE: ground continue test |           | <b>P</b> |
| Location                                | Resistant measured (Ω)      | Comments  |          |
| For use SPS delta model DSP-200PB-138 C |                             |           |          |
| inlet ground pin to metal enclosure     | 0.01                        | 25A/1min. |          |
| inlet ground pin to metal enclosure     | 0.01                        | 30A/2min. |          |
| For use SPS Hipro model HP-F2007F3P     |                             |           |          |
| inlet ground pin to metal enclosure     | 0.009                       | 25A/1min. |          |
| inlet ground pin to metal enclosure     | 0.009                       | 30A/2min. |          |

|          |                                    |                  |          |          |
|----------|------------------------------------|------------------|----------|----------|
| 2.10.2   | Table: working voltage measurement |                  |          | <b>N</b> |
| Location | RMS voltage (V)                    | Peak voltage (V) | Comments |          |
|          |                                    |                  |          |          |
|          |                                    |                  |          |          |

|  |
|--|
|  |
|--|

| 2.10.3 and 2.10.4                             | TABLE: clearance and creepage distance measurements |              |                  |         |                   | <b>N</b> |
|---|---|--------------|------------------|---------|-------------------|----------|
| Clearance cl and creepage distance dcr at/of: | Up (V)  | U r.m.s. (V) | Required cl (mm) | cl (mm) | Required dcr (mm) | dcr (mm) |
|   |   |              |                  |         |                   |          |
|   |   |              |                  |         |                   |          |
|   |   |              |                  |         |                   |          |

| 2.10.5.1                              | TABLE: distance through insulation measurements |                  |                  | <b>N</b> |
|---------------------------------------|---|------------------|------------------|----------|
| Distance through insulation di at/of: | U r.m.s. (V)                                    | Test voltage (V) | Required di (mm) | di (mm)  |
|                                       |   |                  |                  |          |
|                                       |   |                  |                  |          |
|                                       |   |                  |                  |          |

|   |                                      |             |            |             |                |    |
|---|--------------------------------------|-------------|------------|-------------|----------------|----|
| 4.5.1                                   | TABLE: temperature rise measurements |             |            |             | <b>P</b>       |    |
|   | test voltage (V) .....               | a) 100V-10% | b) 127V+6% | c) 200V-10% | d) 240V+6%     | —  |
|   | t1 (°C) .....                        | --          |            |             |                | —  |
|   | t2 (°C) .....                        | --          |            |             |                | —  |
| Rise ΔT of part/at:                     |                                      | ΔT (K)      |            |             | Allowed ΔT (K) |    |
| For use SPS Delta model DSP-200PB-138 C |                                      |             |            |             |                |    |
| Test voltage                            |                                      | a)          | b)         | c)          | d)             | -- |
| C1 body (for SPS)                       |                                      | 13.1        | 13.4       | 12.9        | 8.5            | 45 |
| L1 coil (for SPS)                       |                                      | 18.3        | 17.8       | 15.6        | 15.7           | 65 |
| T1 coil (for SPS)                       |                                      | 12.8        | 12.6       | 13.9        | 13.7           | 70 |
| T901 coil (for SPS)                     |                                      | 24.1        | 24.9       | 23.9        | 24.8           | 70 |
| HS1 body (for SPS)                      |                                      | 20.7        | 16.9       | 20.4        | 20.9           | -- |
| PFC coil                                |                                      | 18.2        | 22.9       | 23.1        | 23.3           | 50 |
| Hard disk drive body (for PC)           |                                      | 9.7         | 9.5        | 9.2         | 9.5            | -- |
| CD ROM drive body (for PC)              |                                      | 9.6         | 9.3        | 9.2         | 9.2            | -- |
| RTC body near PCB (for PC)              |                                      | 13.2        | 12.8       | 13.0        | 12.9           | 65 |



|   |                       |                       |                   |                           |                     |
|---|-----------------------|-----------------------|-------------------|---------------------------|---------------------|
| Hestsink body (for PC)  | 13.4                  | 13.1                  | 13.2              | 13.2                      | --                  |
| Enclosure (for PC)  | 4.5                   | 4.3                   | 4.7               | 4.7                       | 30                  |
| Ambient (°C)  | 25.0                  | 25.3                  | 25.3              | 25.1                      | --                  |
| For use SPS Hipro model HP-F2007F3P   |                       |                       |                   |                           |                     |
| C8 body (for SPS)   | 17.8                  | 18.5                  | 17.0              | 17.1                      | 45                  |
| LF1 coil (for SPS)  | 21.1                  | 20.7                  | 19.0              | 18.9                      | 90                  |
| T1 coil (for SPS)   | 21.4                  | 22.4                  | 21.3              | 21.5                      | 70                  |
| T2 coil (for SPS)   | 35.2                  | 37.9                  | 34.9              | 36.6                      | 70                  |
| PFC coil (for SPS)  | 18.4                  | 18.8                  | 17.9              | 17.6                      | 90                  |
| Heatsink body of HS1 (for SPS)  | 28.3                  | 28.8                  | 28.4              | 28.1                      | --                  |
| Hard disk drive body (for PC)   | 17.3                  | 17.8                  | 16.4              | 16.4                      | --                  |
| CD ROM drive body (for PC)  | 15.1                  | 15.6                  | 13.3              | 13.4                      | --                  |
| RTC body near PCB (for PC)  | 17.4                  | 17.6                  | 16.7              | 16.8                      | 65                  |
| Hestsink body (for PC)  | 7.5                   | 7.9                   | 6.5               | 6.7                       | --                  |
| Ambient (°C)  | 27.6                  | 27.0                  | 27.0              | 27.3                      | --                  |
|   |                       |                       |                   |                           |                     |
| Temperature rise $\Delta T$ of winding:   | $R_1$<br>( $\Omega$ ) | $R_2$<br>( $\Omega$ ) | $\Delta T$<br>(K) | allowed<br>$\Delta T$ (K) | insulation<br>class |
|   |                       |                       |                   |                           |                     |
| <p>Comments:</p> <p>The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.1 at voltages as described in 1.6.5.</p> <p>With maximum of 40°C ambient temperature specified the max. temperature rise is calculated as follows:</p> <p>Winding components:</p> <ul style="list-style-type: none"> <li>- class A <math>\rightarrow \Delta T_{max} = 75K - 10K - (40-25)K = 50K</math></li> <li>- class B <math>\rightarrow \Delta T_{max} = 95K - 10K - (40-25)K = 70K</math></li> <li>- class 130 °C <math>\rightarrow \Delta T_{max} = (130-40)K = 90K</math></li> <li>- class 105 °C <math>\rightarrow \Delta T_{max} = (105-40)K = 65K</math></li> </ul> <p>Electrolyte capacitor or components with:</p> <ul style="list-style-type: none"> <li>- max. absolute temp. of 85°C <math>\rightarrow \Delta T_{max} = (85-40) K = 45K</math></li> <li>- max. absolute temp. of 105°C <math>\rightarrow \Delta T_{max} = (105-40) K = 65K</math></li> </ul> <p>Surface of equipment which may be touched:</p> <ul style="list-style-type: none"> <li>- metal <math>\rightarrow \Delta T_{max} = 45K - (40-25) K = 30K</math></li> </ul> |                       |                       |                   |                           |                     |

|       |  |   |
|-------|--|---|
| 4.5.2 | TABLE: ball pressure test of thermoplastic parts | N |
|-------|--|---|

|      | allowed impression diameter (mm) .....: ≤ 2 mm |                          | — |
|------|--|--------------------------|---|
| Part | Test temperature (°C)                          | Impression diameter (mm) |   |
|      |  |                          |   |
|      |  |                          |   |

| 4.6.1, 4.6.2          | Table: enclosure openings                |                                  |  | <b>P</b> |
|-----------------------|--|----------------------------------|--|----------|
| Location              | Size (mm)                                | Comments                         |  |          |
| Bottom                | --                                       | None                             |  |          |
| Side (System DC Fan)  | Round openings: 4.42 mm max. diameter.   | Cover area 75.13 mm X 89.88 mm.  |  |          |
| Top                   | --                                       | None                             |  |          |
| Rear (for SPS DC Fan) | Hexagram openings: 4.92 mm max. diameter | Cover area 109.56 mm X 70.22 mm. |  |          |

| 5.1.6                                   | TABLE: touch current measurement |                     |            |                          | <b>P</b> |
|---|----------------------------------|---------------------|------------|--------------------------|----------|
| Condition                               | L → terminal A (mA)              | N → terminal A (mA) | Limit (mA) | Comments                 |          |
| For use SPS Delta model DSP-200PB-138 C |                                  |                     |            |                          |          |
| Switch on                               | 0.76                             | 0.76                | 3.5        | Metal Enclosure          |          |
| Switch off                              | 0.76                             | 0.76                | 3.5        | User touchable connector |          |
| For use SPS Hipro model HP-F2007F3P     |                                  |                     |            |                          |          |
| Switch on                               | 0.8                              | 0.8                 | 3.5        | Metal Enclosure          |          |
| Switch off                              | 0.8                              | 0.8                 | 3.5        | User touchable connector |          |

| 5.2  | TABLE: electric strength tests and impulse tests |                  |           | <b>P</b> |
|--|--|------------------|-----------|----------|
| Test voltage applied between:              |  | Test voltage (V) | Breakdown |          |
| For use SPS delta model DSP-200PB-138 C    |  |                  |           |          |
| Line/neutral and user accessible area (RI) |  | 4242Vdc          | No        |          |
| Line/neutral and earth (BI)                |  | 2876Vdc          | No        |          |
| For use SPS Hipro model HP-F2007F3P        |  |                  |           |          |
| Line/neutral and user accessible area (RI) |  | 4242Vdc          | No        |          |
| Line/neutral and earth (BI)                |  | 2989Vdc          | No        |          |

|                           |
|---------------------------|
| Supplementary information |
|                           |

| 5.3 | TABLE: fault condition tests  |         |                            |           |          |                  | <b>P</b>                                 |
|-----|---|---------|----------------------------|-----------|----------|------------------|--|
|     | ambient temperature (°C) .....  |         | 25°C, if no else specified |           |          | —                |  |
|     | model/type of power supply .....                                      |         | See appended table 1.5.1   |           |          | —                |  |
|     | manufacturer of power supply .....                                    |         | See appended table 1.5.1   |           |          | —                |  |
|     | rated markings of power supply .....                                  |         | See appended table 1.5.1   |           |          | —                |  |
| No. | Component no.   | Fault   | Test voltage (V)           | Test time | Fuse no. | Fuse current (A) | Result                                   |
| 01  | Fan<br>(CPU Fan)<br>For SPS use<br>Delta model<br>DSP-200PB-<br>138 C | locked  | 240                        | 2min.     | --       | 0.03A            | After 2 min, unit shut down, no hazards  |
| 02  | Fan<br>(SPS fan)<br>For use SPS<br>Delta model<br>DSP-200PB-<br>138 C | locked  | 240                        | 15min.    | --       | 0.03A            | After 15 min, unit shut down, no hazards |
| 03  | Ventilation<br>(SPS)<br>Delta model<br>DSP-200PB-<br>138 C            | blocked | 240                        | 2.0hrs.   | --       | 0.67A            | Unit operated normally, no hazards       |
| 04  | Fan<br>(CPU Fan)<br>For use SPS<br>Hipro model<br>HP-<br>F2007F3P     | locked  | 240                        | 2min.     | --       | 0.03             | After 2 min, unit shut down, no hazards  |
| 05  | Fan<br>(SPS fan)<br>For use SPS<br>Hipro model<br>HP-<br>F2007F3P     | locked  | 240                        | 8min.     | --       | 0.03             | After 8 min, unit shut down, no hazards  |



|                           |   |         |     |         |    |      |                                       |
|---------------------------|---|---------|-----|---------|----|------|---------------------------------------|
| 06                        | Ventilation<br>(SPS) Hipro<br>model HP-<br>F2007F3P | blocked | 240 | 2.0hrs. | -- | 0.20 | Unit operated normally, no<br>hazards |
| Supplementary information |   |         |     |         |    |      |                                       |
|                           |   |         |     |         |    |      |                                       |

|  |   |   |          |
|--|---|---|----------|
| A.6.5  | TABLE: flammable test for classifying materials V-0, V-1 or V-2 |   | <b>N</b> |
| Sample no./ref.  | After flame time (s) $t_1$ or $t_2$                             | After flame + afterglow (s) after 2nd flame application $t_2 + t_3$ |          |
| 1/A  |   |   |          |
| 2/A  |   |   |          |
| 3/A  |   |   |          |
| 4/A  |   |   |          |
| 5/A  |   |   |          |
| 6/B  |   |   |          |
| 7/B  |   |   |          |
| 8/B  |   |   |          |
| 9/B  |   |   |          |
| 10/B   |   |   |          |
| Supplementary information:   |   |   |          |
| Total after flame time (s) for any condition set $t_1 + t_2$ for five (5) specimens: |   |   |          |
|  |   |   |          |

|  |   |  |          |
|--|---|--|----------|
| A.6.6  | TABLE: flammable test for classifying materials V-0, V-1 or V-2 |  | <b>N</b> |
| Sample no.   | After flame time (s) $t_1$ or $t_2$                             | After flame + after glow (s) after 2nd flame application $t_2 + t_3$ |          |
| 11   |   |  |          |
| 12   |   |  |          |
| 13   |   |  |          |
| 14   |   |  |          |
| 15   |   |  |          |
| Supplementary information:   |   |  |          |
| Total after flame time (s) for any condition set $t_1 + t_2$ for five (5) specimens: |   |  |          |
|  |   |  |          |



| A.7.4,<br>A.7.5,<br>A.7.6 and<br>A.7.7 | TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF |               |  | N                                       |
|--|---|---------------|--|---|
| Sample no./ref.                        | Flame time (s)  | Glow time (s) | Flaming/glowing distance from the end (mm) | Comment (for A.7.7 burning rate mm/min) |
| 1/A                                    |   |               |  |   |
| 2/A                                    |   |               |  |   |
| 3/A                                    |   |               |  |   |
| 4/A                                    |   |               |  |   |
| 5/A                                    |   |               |  |   |
| 6/B                                    |   |               |  |   |
| 7/B                                    |   |               |  |   |
| 8/B                                    |   |               |  |   |
| 9/B                                    |   |               |  |   |
| 10/B                                   |   |               |  |   |
| Supplementary information:             |   |               |  |   |
|  |   |               |  |   |

| A.7.8                      | TABLE: flammability test for classifying foam materials HF-1 or HF-2 |               |  | N       |
|----------------------------|--|---------------|--|---------|
| Sample no.                 | Flame time (s)   | Glow time (s) | Flaming/glowing distance from the end (mm) | Comment |
| 11                         |  |               |  |         |
| 12                         |  |               |  |         |
| 13                         |  |               |  |         |
| 14                         |  |               |  |         |
| 15                         |  |               |  |         |
| supplementary information: |  |               |  |         |
|                            |  |               |  |         |

| A.7.9      | TABLE: flammability test for classifying foam materials HBF |               |  | N                                       |
|------------|---|---------------|--|---|
| Sample no. | Flame time (s)  | Glow time (s) | Flaming/glowing distance from the end (mm) | Comment (for A.7.7 burning rate mm/min) |
| 11         |   |               |  |   |

|                            |  |  |  |  |
|----------------------------|--|--|--|--|
| 12                         |  |  |  |  |
| 13                         |  |  |  |  |
| 14                         |  |  |  |  |
| 15                         |  |  |  |  |
| Supplementary information: |  |  |  |  |
|                            |  |  |  |  |

|                            |  |   |          |
|----------------------------|--|---|----------|
| A.8.5                      | TABLE: flammable test for classifying materials HB |   | <b>N</b> |
| Sample no.                 | Flaming/glowing rate (mm/min)                      | Flaming/glowing distance from reference mark (mm) |          |
| 1                          |  |   |          |
| 2                          |  |   |          |
| 3                          |  |   |          |
| Supplementary information: |  |   |          |
|                            |  |   |          |



|                            |  |   |          |
|----------------------------|--|---|----------|
| A.8.6                      | TABLE: flammable test for classifying materials HB |   | <b>N</b> |
| Sample no.                 | Flaming/glowing rate (mm/min)                      | Flaming/glowing distance from reference mark (mm) |          |
| 4                          |  |   |          |
| 5                          |  |   |          |
| 6                          |  |   |          |
| Supplementary information: |  |   |          |
|                            |  |   |          |

|                  |   |                       |                            |                       |
|------------------|---|-----------------------|----------------------------|-----------------------|
| A.9.6            | TABLE: flammability test for classifying materials 5V |                       |                            | <b>N</b>              |
| Sample no./ ref. | Test bars   |                       | Test plaques               |                       |
|                  | Flaming + glowing time (s)                            | Burning distance (mm) | Flaming + glowing time (s) | Burning distance (mm) |
| 1/A              |   |                       |                            |                       |
| 2/A              |   |                       |                            |                       |
| 3/A              |   |                       |                            |                       |
| 4/A              |   |                       |                            |                       |
| 5/A              |   |                       | —                          | —                     |
| 6/B              |   |                       |                            |                       |



|                            |  |  |   |   |
|----------------------------|--|--|---|---|
| 7/B                        |  |  |   |   |
| 8/B                        |  |  |   |   |
| 9/B                        |  |  |   |   |
| 10/B                       |  |  | — | — |
| Supplementary information: |  |  |   |   |
|                            |  |  |   |   |

|                            |   |                       |                            |                       |
|----------------------------|---|-----------------------|----------------------------|-----------------------|
| A.9.7                      | TABLE: flammability test for classifying materials 5V |                       |                            | <b>N</b>              |
| Sample no.                 | Test bars   |                       | Test plaques               |                       |
|                            | Flaming + glowing time (s)                            | Burning distance (mm) | Flaming + glowing time (s) | Burning distance (mm) |
| 11                         |   |                       |                            |                       |
| 12                         |   |                       |                            |                       |
| 13                         |   |                       |                            |                       |
| 14                         |   |                       |                            |                       |
| 15                         |   |                       | —                          | —                     |
| Supplementary information: |   |                       |                            |                       |
|                            |   |                       |                            |                       |

| National Differences  |  |                         |          |
|---|--|-------------------------|----------|
| Clause  | Requirement – Test   | Result – Remark         | Verdict  |
| APPENDIX  | CENELEC common modifications (Group differences), Special national conditions and A-deviations according to CB Bulletin No. 103A, July 2002<br>EN 60950: 2000<br>(BS EN 60950:2000, NEK EN 60950, SS EN 6950 6 <sup>th</sup> ed)<br>(IEC Publication 60950: 1999)  |                         | <b>P</b> |
| <p><b>EXPLANATION FOR ABBREVIATIONS</b></p> <p>C=CENELEC common modification, S=Special national condition, A=A-deviations<br/>CH=Switzerland, DE=Germany, DK=Denmark, ES=Spain, FI=Finland, GB=United Kingdom, IE=Ireland, NO=Norway, SE=Sweden.</p> <p>P=Pass, F=Fail, N=Not applicable. Placed in the column to the right.</p> |  |                         |          |
| 1.2.4.1 S   | (DK) In Denmark, certain types of Class I appliances (see subclause 3.2.1) may be provided with a plug not establishing earthing continuity when inserted into Danish socket-outlets.  | No power cord provided. | <b>N</b> |
| 1.5.1 A   | (SE) Add the following:<br>NOTE: In Sweden, switches containing mercury such as thermostats, relays and level controllers are not allowed.   | No such switch.         | <b>N</b> |
| 1.5.1 A   | (CH) Switzerland (Ordinance on environmentally hazardous substances SR 814.013, Annex 3.2, Mercury)<br>Add the following:<br>NOTE: in Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.  | No such switch.         | <b>N</b> |
| 1.5.8 S   | (NO) In Norway, due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to-phase voltage (230 V).  | Rated accordingly.      | <b>P</b> |
| 1.7.2 A   | (DK) Denmark (Heavy Current Regulations)<br>Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a Visible tag with the following text:<br><br>“Vigtigt!<br>Lederen med grøn/gul isolation<br>må kun tilsluttes en klemme mærket<br> eller  .<br>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other | No power cord provided. | <b>N</b> |

| National Differences |   |   |          |
|----------------------|---|---|----------|
| Clause               | Requirement – Test  | Result – Remark                             | Verdict  |
|                      | conductors, or be provided with the following text:<br>“For tilslutning af de øvrige ledere, se medfølgende installationsvejledning”.   |   |          |
| 1.7.2 S              | (SE) In Sweden, if the separation between the mains and SELV terminal relies upon connection to the safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet.<br><br>The marking shall be in Swedish and as follows:<br>“Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk”.  | Must be evaluated during national approval. | <b>N</b> |
| 1.7.2 S              | (NO) In Norway, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a communication network shall, if safety relies on connection to safety earth, require a marking stating that the equipment must be connected to an earthed mains socket-outlet.   | See IEC 60950 report.                       | <b>N</b> |
| 1.7.5 A              | (DK) Denmark (Heavy Current Regulations) CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.   | No outlets.                                 | <b>N</b> |
| 1.7.5 S              | (DK) In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-DI, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment.   | No outlets.                                 | <b>N</b> |
| 1.7.12 A             | (DE) Germany (Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}] of 23 <sup>rd</sup> October 1992, Article 3, 3 <sup>rd</sup> paragraph, 2 <sup>nd</sup> sentence, together with the “Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes“ [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10 <sup>th</sup> January 1996, article 2, 4 <sup>th</sup> paragraph, item 2)<br><br>Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in | No technical labour equipment.              | <b>P</b> |

| National Differences |  |                 |          |
|----------------------|--|-----------------|----------|
| Clause               | Requirement – Test   | Result – Remark | Verdict  |
|                      | <p>the German language.</p> <p>NOTE: Of this requirement, rules for use even only by service personnel are not exempted.</p>   |                 |          |
| 1.7.15 A             | <p>(CH) Switzerland (Ordinance on environmentally hazardous substances SR 814.013)</p> <p>Annex 4. 10 of SR 814.013 applies for batteries.</p>   | No batteries.   | <b>N</b> |
| 2.2.4 S              | (NO) In Norway, requirements according to this annex, sub-clauses 1.7.2 and 6.1.2.1 apply.   |                 | <b>N</b> |
| 2.3.2 S              | (NO) In Norway, requirements according to this annex, sub-clause 6.1.2.1 apply.  |                 | <b>N</b> |
| 2.3.3 S              | (NO) In Norway, requirements according to this annex, sub-clause 6.1.2.1 apply.  |                 | <b>N</b> |
| 2.3.4 S              | (NO) In Norway, requirements according to this annex, sub-clauses 1.7.2 and 6.1.2.1 apply.   |                 | <b>N</b> |
| 2.7.1 C              | <p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excess current, short circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as a part of the building installation, subject to the following a), b) and c)</p> <p>Except as detailed in b) and c), protective devices necessary to comply with the requirements of subclause 6.3 shall be included as parts of the equipment.</p> <p>For components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i filter and switch, short circuit and earth fault protection may be provided by protective devices in the building installation.</p> <p>It is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT to rely on dedicated overcurrent and short circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instruction.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE</p> | Replaced.       | <b>N</b> |

| National Differences |  |                               |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
|----------------------|--|-------------------------------|--------------|-------------------------------|---------------------|--------------|--------------------|---------------------|--------------|-----------------------|---------------------|--------------|-------------------------------|---------------------|--------------|--------------------|---------------------|--------------|-----------------------|------------------------|----------|
| Clause               | Requirement – Test   | Result – Remark               | Verdict      |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
|                      | EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.  |                               |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| 2.7.2 C              | This subclause has been declared 'Void'.   | Replaced.                     | <b>N</b>     |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| 2.10.3.1 S           | (NO) In Norway, due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.   | Considered.                   | <b>P</b>     |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| 3.2.1 S              | <p>(CH) In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 884-1 and one of the following dimension sheets:</p> <table border="0"> <tr> <td>SEV 6532-2.<br/>1991</td> <td>Plug Type 15</td> <td>3P+N+PE<br/>250/400 V, 10<br/>A</td> </tr> <tr> <td>SEV 6533-2.<br/>1991</td> <td>Plug Type 11</td> <td>L+N<br/>250 V, 10 A</td> </tr> <tr> <td>SEV 6534-2.<br/>1991</td> <td>Plug Type 12</td> <td>L+N+PE<br/>250 V, 10 A</td> </tr> </table> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <table border="0"> <tr> <td>SEV 5932-2.<br/>1998</td> <td>Plug Type 25</td> <td>3L+N+PE<br/>250/400 V, 16<br/>A</td> </tr> <tr> <td>SEV 5933-2.<br/>1998</td> <td>Plug Type 21</td> <td>L+N<br/>250 V, 16 A</td> </tr> <tr> <td>SEV 5934-2.<br/>1998</td> <td>Plug Type 23</td> <td>L+N+PE<br/>250 V, 16 A</td> </tr> </table> | SEV 6532-2.<br>1991           | Plug Type 15 | 3P+N+PE<br>250/400 V, 10<br>A | SEV 6533-2.<br>1991 | Plug Type 11 | L+N<br>250 V, 10 A | SEV 6534-2.<br>1991 | Plug Type 12 | L+N+PE<br>250 V, 10 A | SEV 5932-2.<br>1998 | Plug Type 25 | 3L+N+PE<br>250/400 V, 16<br>A | SEV 5933-2.<br>1998 | Plug Type 21 | L+N<br>250 V, 16 A | SEV 5934-2.<br>1998 | Plug Type 23 | L+N+PE<br>250 V, 16 A | No power cord provide. | <b>N</b> |
| SEV 6532-2.<br>1991  | Plug Type 15   | 3P+N+PE<br>250/400 V, 10<br>A |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| SEV 6533-2.<br>1991  | Plug Type 11   | L+N<br>250 V, 10 A            |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| SEV 6534-2.<br>1991  | Plug Type 12   | L+N+PE<br>250 V, 10 A         |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| SEV 5932-2.<br>1998  | Plug Type 25   | 3L+N+PE<br>250/400 V, 16<br>A |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| SEV 5933-2.<br>1998  | Plug Type 21   | L+N<br>250 V, 16 A            |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| SEV 5934-2.<br>1998  | Plug Type 23   | L+N+PE<br>250 V, 16 A         |              |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |
| 3.2.1 S              | <p>(DK) In Denmark, supply cords of single-phase equipment having a rated current not exceeding 10A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-DI.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the</p>  | No power cords provided.      | <b>N</b>     |                               |                     |              |                    |                     |              |                       |                     |              |                               |                     |              |                    |                     |              |                       |                        |          |



| National Differences |   |                        |          |
|----------------------|---|------------------------|----------|
| Clause               | Requirement – Test  | Result – Remark        | Verdict  |
|                      | <p>wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 10A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations Section 107-2-D1 or EN 60309-2.</p>  |                        |          |
| 3.2.1 S              | <p>(ES) In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts, or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p> | No power cord provide. | <b>N</b> |
| 3.2.1 S              | <p>(GB) In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 – The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE: 'standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>  | No power cord provide. | <b>N</b> |



| National Differences |  |                                 |          |
|----------------------|--|---------------------------------|----------|
| Clause               | Requirement – Test   | Result – Remark                 | Verdict  |
| 3.3.4 S              | (GB) In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:<br><br>- 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area.   | No power cored provide.         | <b>N</b> |
| 4.3.6 S              | (GB) In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 and the plug part Of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125°C.  | Not a direct plug-in equipment. | <b>N</b> |
| 4.3.6 S              | (IE) In Ireland, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.   | Not a direct plug-in equipment. | <b>N</b> |
| 4.3.13 C             | Replace the second compliance paragraph by:<br><br>For equipment using LEDs or lasers, compliance is checked according to EN 60825-1.<br><br>NOTE 1 - if equipment falling within the scope of EN 60950 is inherently a class 1 laser product, i.e., it contains no embedded laser or LD of a higher class number, then a laser warning label or other laser warning statement is not required (see 1.1 of EN 60825-1).<br><br>Renumber the NOTE below the third compliance paragraph 2S NOTE 2. | Replaced.                       | <b>P</b> |
| 6.1.2.1 S            | (SE, NO) In Sweden and Norway, add the following text between the first and the second paragraph:<br><br>If the insulation is solid, including insulation forming part of a component, it shall at least consist of either:<br><br>two layers of thin sheet material, each of which shall pass the electric strength test below, or<br><br>one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.                                 | No TNV                          | <b>N</b> |

| National Differences |  |  |          |
|----------------------|--|--|----------|
| Clause               | Requirement – Test   | Result – Remark  | Verdict  |
|                      | <p>If this insulation forms part of a semiconductor component e.g. an optocoupler, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition:</p> <p>passes the tests and inspection criteria of 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV); and</p> <p>is subjected to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV.</p> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> |  |          |
| 6.1.2.2 S            | (SE, NO, FI) In Sweden, Norway and Finland, the exclusions are applicable to PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B only.  | Not permanently connected equipment or pluggable equipment type B. | <b>N</b> |
| Annex G.2 S          | (NO) In Norway, due to the IT power distribution system used (see annex V, figure V.7), the A.C. MAINS SUPPLY voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault.   | Considered.  | <b>N</b> |
| Annex H C            | <p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see note). Account is taken of the background level.</p> <p>Replace the NOTE as follows:</p> <p>NOTE – These values appear in directive 96/29/Euratom.</p>  | Replaced.  | <b>N</b> |
| Annex H A            | <p>(DE) Germany (Regulation on protection against hazards by X-ray, of 8<sup>th</sup> January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4)</p> <p>A licence is required by those who operate an X-ray emission source.</p> <p>A licence in accordance with clause 1 is not required by those who operate an X-ray</p>   | No CRT.  | <b>N</b> |

| National Differences |   |                 |          |
|----------------------|---|-----------------|----------|
| Clause               | Requirement – Test  | Result – Remark | Verdict  |
|                      | <p>emission source on which the electron acceleration voltage does not exceed 20 kV if</p> <p>the local dose rate at distance of 0,1 m from the surface does not exceed 1 <math>\mu</math>Sv/h and</p> <p>it is adequately indicated on the X-ray emission source that</p> <p>X-rays are generated and</p> <p>the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>A licence in accordance with clause 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <p>the X-ray, emission source has been granted a type approval and</p> <p>it is adequately indicated on the X-ray emission source that</p> <p>X-rays are generated,</p> <p>the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and</p> <p>the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>Furthermore, a licence in accordance with clause 1 is also not required by persons who operate X-ray emission sources on</p> <p>the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6,</p> <p>the values stipulated in accordance with Enclosure III, No. 6.2 are limited by technical measures and specified in the device and</p> <p>it is adequately indicated on the X-ray emission source that the X-rays generate are adequately screened by the intrinsically safe CRT.</p> |                 |          |
| Annex P C            | Replace the text of this annex by:<br>See annex ZA.   | Replaced.       | <b>N</b> |
| Annex Q C            | Add the following notes for the standards indicated:  |                 | <b>N</b> |

| National Differences               |  |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
|------------------------------------|--|--|-----------------|---------------|---|---------------|---------------------------------|------------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------------------|------------------------|----------------------------|------------------------|-----------------|------------------|-----------------|------------------------|------------------|------------------------|---------------------|---------------------------|---|-------------------|-----------------|------------------|-----------------|------------------|------------------------------------|------------------------|---------------------|---------------------------------------|---|--|
| Clause                             | Requirement – Test   |  | Result – Remark | Verdict       |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
|                                    | IEC 60127 series   | NOTE: Harmonized as EN 60127 series (not modified) |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
|                                    | IEC 60529  | NOTE: Harmonized as EN 60529:1991 (not modified)   |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
|                                    | IEC 61032  | NOTE: Harmonized as EN 61032:1998 (not modified)   |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| Annex ZA<br>C                      | <p><b>NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR RELEVANT EUROPEAN PUBLICATIONS</b></p> <p>This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).</p> <p>NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.</p> <table border="0"> <tr> <td>—</td> <td>IEC 60050-151</td> </tr> <tr> <td>—</td> <td>IEC 60050-195</td> </tr> <tr> <td>EN 60065:1993 + corr. Nov. 1993</td> <td>IEC 60065 (mod):1985<sup>1)</sup></td> </tr> <tr> <td>EN 60073:1996</td> <td>IEC 60073:1996</td> </tr> <tr> <td>HD 566 S1:1990</td> <td>IEC 60085:1984</td> </tr> <tr> <td>HD 214 S2:1980</td> <td>IEC 60112:1979</td> </tr> <tr> <td>HD 21<sup>2)</sup> Series</td> <td>IEC 60227 (mod) Series</td> </tr> <tr> <td>HD 22<sup>3)</sup> Series</td> <td>IEC 60245 (mod) Series</td> </tr> <tr> <td>EN 60309 Series</td> <td>IEC 60309 Series</td> </tr> <tr> <td>EN 60320 Series</td> <td>IEC 60320 (mod) Series</td> </tr> <tr> <td>HD 384.3 S2:1995</td> <td>IEC 60364-3 (mod):1993</td> </tr> <tr> <td>HD 384.4.41 S2:1996</td> <td>IEC 60364-4-41 (mod):1992</td> </tr> <tr> <td>—</td> <td>IEC 60384-14:1993</td> </tr> <tr> <td>EN 60417-1:1999</td> <td>IEC 60417-1:1998</td> </tr> <tr> <td>EN 60417-2:1999</td> <td>IEC 60417-2:1998</td> </tr> <tr> <td>HD 625.1 S1:1996 + corr. Nov. 1996</td> <td>IEC 60664-1 (mod):1992</td> </tr> <tr> <td>EN 60695-2-2/1:1996</td> <td>IEC 60695-2-1/1:1994 + corr. May 1995</td> </tr> </table> |  | —               | IEC 60050-151 | — | IEC 60050-195 | EN 60065:1993 + corr. Nov. 1993 | IEC 60065 (mod):1985 <sup>1)</sup> | EN 60073:1996 | IEC 60073:1996 | HD 566 S1:1990 | IEC 60085:1984 | HD 214 S2:1980 | IEC 60112:1979 | HD 21 <sup>2)</sup> Series | IEC 60227 (mod) Series | HD 22 <sup>3)</sup> Series | IEC 60245 (mod) Series | EN 60309 Series | IEC 60309 Series | EN 60320 Series | IEC 60320 (mod) Series | HD 384.3 S2:1995 | IEC 60364-3 (mod):1993 | HD 384.4.41 S2:1996 | IEC 60364-4-41 (mod):1992 | — | IEC 60384-14:1993 | EN 60417-1:1999 | IEC 60417-1:1998 | EN 60417-2:1999 | IEC 60417-2:1998 | HD 625.1 S1:1996 + corr. Nov. 1996 | IEC 60664-1 (mod):1992 | EN 60695-2-2/1:1996 | IEC 60695-2-1/1:1994 + corr. May 1995 | — |  |
| —                                  | IEC 60050-151  |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| —                                  | IEC 60050-195  |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60065:1993 + corr. Nov. 1993    | IEC 60065 (mod):1985 <sup>1)</sup>   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60073:1996                      | IEC 60073:1996   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 566 S1:1990                     | IEC 60085:1984   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 214 S2:1980                     | IEC 60112:1979   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 21 <sup>2)</sup> Series         | IEC 60227 (mod) Series   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 22 <sup>3)</sup> Series         | IEC 60245 (mod) Series   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60309 Series                    | IEC 60309 Series   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60320 Series                    | IEC 60320 (mod) Series   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 384.3 S2:1995                   | IEC 60364-3 (mod):1993   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 384.4.41 S2:1996                | IEC 60364-4-41 (mod):1992  |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| —                                  | IEC 60384-14:1993  |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60417-1:1999                    | IEC 60417-1:1998   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60417-2:1999                    | IEC 60417-2:1998   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| HD 625.1 S1:1996 + corr. Nov. 1996 | IEC 60664-1 (mod):1992   |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |
| EN 60695-2-2/1:1996                | IEC 60695-2-1/1:1994 + corr. May 1995  |  |                 |               |   |               |                                 |                                    |               |                |                |                |                |                |                            |                        |                            |                        |                 |                  |                 |                        |                  |                        |                     |                           |   |                   |                 |                  |                 |                  |                                    |                        |                     |                                       |   |  |

| National Differences |   |                                |         |
|----------------------|---|--------------------------------|---------|
| Clause               | Requirement – Test  | Result – Remark                | Verdict |
|                      | EN 60695-2-2:1994   | IEC 60695-2-2:1991             |         |
|                      | —   | IEC 60695-10-2:1995            |         |
|                      | EN 60730-1:1995   | IEC 60730-1:1993 (mod)         |         |
|                      | EN 60825-1:1994 + corr. Febr. 1995 + A11:1996   | IEC 60825-1:1993               |         |
|                      | EN 60851-3:1996   | IEC 60851-3:1996               |         |
|                      | EN 60851-5:1996   | IEC 60851-5:1996               |         |
|                      | EN 60851-6:1996   | IEC 60851-6:1996               |         |
|                      | —   | IEC 60885-1:1987               |         |
|                      | EN 60990:1999   | IEC 60990:1999                 |         |
|                      | —   | IEC 61058-1:1996               |         |
|                      | —   | ISO 261:1998                   |         |
|                      | —   | ISO 262:1998                   |         |
|                      | —   | ISO 3864:1984                  |         |
|                      | —   | ISO 4046:1978                  |         |
|                      | —   | ISO 7000:1989                  |         |
|                      | —   | ITU-T Recommendation K.17:1988 |         |
|                      | —   | ITU-T Recommendation K.21:1996 |         |
|                      | 1) EN 60065:1993 is superseded by EN 60065:1998 + corrigendum June 1999, which is based on IEC 60065:1998, mod. |                                |         |
|                      | 2) The HD 21 series is related to, but not directly equivalent with the IEC 60227 series                        |                                |         |
|                      | 3) The HD 22 series is related to, but not directly equivalent with the IEC 60245 series                        |                                |         |

| National Differences  |  |                          |          |
|---|--|--------------------------|----------|
| Clause  | Requirement – Test   | Result – Remark          | Verdict  |
| APPENDIX  | Canadian National Differences according to CB Bulletin No. 103A, July 2002 (CAN/CSA C22.2 No. 60950/UL60950, Third edition)<br><br>(IEC Publication 60950:1999)  |                          | <b>P</b> |
| EXPLANATION FOR ABBREVIATIONS<br>P=Pass, F=Fail, N=Not applicable. Placed in the column to the right. |  |                          |          |
| <b>Special National Conditions</b>  |  |                          |          |
| 1.1.1   | All equipment design and installations are required to be in accordance with the Canadian Electrical Code (CEC), Part 1, CAN/CSA C22.1, and with National Electrical Code (NEC), ANSI/NFPA 70, and, unless marked or otherwise identified, the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.   | Considered.              | <b>P</b> |
| 1.5.5   | For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the CEN/NEC.<br><br>For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies which are not types specified in the CEN/NEC are required to have special construction features and identification markings.  | No power cords provided. | <b>N</b> |
| 1.7.1   | Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.<br><br>A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 “Normal Operating Conditions.” Likewise, a voltage rating shall not be lower than the specified “Normal Operating Conditions,” unless it is part of a range that extends into the “Normal Operating Conditions.” | Single-phase equipment.  | <b>N</b> |
| 2.5   | Where a fuse is used to provide Class 2, Limited Power Source, or TNV current limiting, it shall not be operator-accessible unless it is not interchangeable.  | Fuse not used for LPS.   | <b>N</b> |



| National Differences |   |                          |          |
|----------------------|---|--------------------------|----------|
| Clause               | Requirement – Test  | Result – Remark          | Verdict  |
| 2.7.1                | Suitable CEC/NEC branch circuit protection is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch circuit protection is not suitable.<br><br>Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection. | No outlet.               | <b>N</b> |
| 3.2                  | Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the CEC/NEC.  | Appliance inlet used.    | <b>N</b> |
| 3.2.1                | Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.   | No power cords provided. | <b>N</b> |
| 3.2.3                | Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.  | Appliance inlet used.    | <b>N</b> |
| 3.2.5                | Power supply cords are required to be no longer than 4.5 m in length.<br><br>Flexible power supply cords are required to be compatible with Table 11 & 12 of the CEC, and Article 400 of the NEC.   | No power cords provided. | <b>N</b> |
| 3.2.9                | Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.   | Appliance inlet used.    | <b>N</b> |
| 3.3                  | Wiring terminals and associated spacings for field wiring connections shall comply with CAN/CSA C22.2 No. 0.  | Appliance inlet used.    | <b>N</b> |
| 3.3.3                | Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).   | Dto                      | <b>N</b> |
| 3.3.4                | Terminals for permanent wiring, including protective earthing terminals are required to be suitable for Canadian/U.S. wire gauge sizes, rated 125 percent of the equipment rating, and specially marked when specified (1.7.7).   | Dto                      | <b>N</b> |
| 3.4.2                | Motor control devices are required for cord-connected equipment with a motor if the equipment is rated more than 12 A, or if the motor has a normal voltage rating greater than 120 V or is rated more than 1/3 hp (locked rotor current over 43 A).  | No such device.          | <b>N</b> |

| National Differences |  |  |          |
|----------------------|--|--|----------|
| Clause               | Requirement – Test   | Result – Remark  | Verdict  |
| 3.4.8                | Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.   | No such device.  | <b>N</b> |
| 3.4.10               | For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.   | No such battery.   | <b>N</b> |
| 4.3.12               | The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.   | No fluids.   | <b>N</b> |
| 4.3.13               | Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and/or Canadian Radiation Emitting Devices Act, REDR C1370, as applicable.   | Approved components used.                                    | <b>P</b> |
| 4.7.1                | For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.   | Not applied for.   | <b>N</b> |
| 4.7.3.1              | For computer room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> or a single dimension greater than 1.8 m, are required to have a flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.   | Not applied for.   | <b>N</b> |
| Annex H              | Equipment that produces ionizing radiation is required to comply with Code of Federal Regulations, 21 CFR 1020 and/or Canadian Radiation Emitting Devices Act, REDR C1370, as applicable.  | No ionizing radiation.                                       | <b>N</b> |
| Other Differences    |  |  |          |
| 1.5.2                | Components of equipment must be suitable for the application, and must comply with the requirements of the equipment standard and the applicable national (Canadian and/or U.S.) component or material standards, as far as they may apply.<br><br>The acceptance will be based on the following:<br>A component Certified by a Canadian or U.S. National Certification Body (NCB) to a Canadian | Components are UL or CSA approved, see component list 1.5.1. | <b>P</b> |

| National Differences |   |                                       |          |
|----------------------|---|---------------------------------------|----------|
| Clause               | Requirement – Test  | Result – Remark                       | Verdict  |
|                      | <p>or U.S. component standard will be checked for correct application and use in accordance with its specified rating. Where necessary, it will also be subject to the applicable tests of the equipment standard.</p> <p>A component which has a CB Test Certificate for compliance with a relevant IEC component standard will be checked for correct application and use in accordance with its specified ratings. Where necessary, it will also be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment.</p> <p>A component, which has no approval as in A) or B) above or which is used not in accordance with its specified ratings, will be subject to the applicable tests of the equipment standard, and to the applicable tests of the Canadian and/or U.S. component or material standard, under the conditions occurring in the equipment.</p> <p>Some components may require annual re-testing, which may be carried out by the manufacturer, CSA International or another laboratory.</p> |                                       |          |
| 2.3.1                | For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mAd.c. under normal operating conditions.  | No TNV circuits.                      | <b>N</b> |
| 2.6.3.3              | When subject to impedance testing, protective earthing and bonding are required to be tested to the additional test conditions that originate in CAN/CSA C22.2 No. 0.4.   | Considered.                           | <b>P</b> |
| 4.2.8.1              | Enclosures around CRTs having a diagonal dimension of 160 mm or more are required to reduce the risk of injury due to the implosion of the CRT.   | No CRT.                               | <b>N</b> |
| 4.3.2                | Equipment with handles is required to comply with special loading tests.  | No handles.                           | <b>N</b> |
| 5.1.8.1.1            | Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.   | To be evaluated in national approval. | <b>N</b> |

| National Differences |  |  |          |
|----------------------|--|--|----------|
| Clause               | Requirement – Test   | Result – Remark                                  | Verdict  |
| 6.2.1                | Enamel coating on winding wire not considered electrical separation unless subject to special investigation.   | No used.   | <b>N</b> |
| 6.4                  | Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC. | This should be evaluated when national approval. | <b>N</b> |
| 6.5                  | Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.         | No earphone.                                     | <b>N</b> |
| M.2                  | Continuous ringing signals up to 16 mA only are permitted if the equipment is subject to special installation and performance restrictions.  | No telephone ringing signals generated.          | <b>N</b> |
| Annex NAB            | Equipment connected to centralized d.c. power systems is required to comply with special earthing, wiring, marking and insulation requirements in accordance with Annex NAB and 3.6.1.           |  | <b>N</b> |

| National Differences  |  |                 |          |
|---|--|-----------------|----------|
| Clause  | Requirement – Test   | Result – Remark | Verdict  |
| APPENDIX  | Japanese National Differences according to CB Bulletin No. 103A, July 2002 (J60950(H14))<br>(IEC Publication 60950:1999)   |                 | <b>P</b> |
| EXPLANATION FOR ABBREVIATIONS<br>P=Pass, F=Fail, N=Not applicable. Placed in the column to the right. |  |                 |          |
| 1.2   | Addition:<br>Add the following terms.<br>Equipment, Class 0I                      1.2.4.101<br>Material, VTM                                1.2.12.101   | Added.          | <b>N</b> |
| 1.2.4.101   | Addition:<br>CLASS 0I EQUIPMENT: Equipment where protection against electric shock is achieved by:<br>using BASIC INSULATION, and<br>providing a means of connecting to the protective earthing conductor in the building wiring those conductive parts that are otherwise capable of assuming HAZARDOUS VOLTAGES if the BASIC INSULATION fails, and<br>using a supply cord without earthing conductor and a plug without earthing wire although the equipment has externally an earth terminal or a lead wire for earthing.<br>Equipment provided with a cord set having a two-pin type plug with a lead wire for earthing is also regarded as Class 0I.<br>NOTE – Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation as well as an operating part as SELV circuit. | Added.          | <b>N</b> |
| 1.2.12.1  | Replacement:<br>FLAMMABILITY CLASSIFICATION OF MATERIALS: The recognition of the burning behaviour of materials and their ability to extinguish if ignited. Materials are classified as in 1.2.12.2 to 1.2.12.9, and 1.2.12.101 when tested in accordance with annex A.<br>NOTE 1 - When applying the requirements in this standard, HF-1 CLASS FOAMED MATERIALS are regarded as better than those of CLASS HF-2, and HF-2 better than HBF.  | Replaced.       | <b>N</b> |

| National Differences |  |                 |          |
|----------------------|--|-----------------|----------|
| Clause               | Requirement – Test   | Result – Remark | Verdict  |
|                      | <p>NOTE 2 - Similarly, other MATERIALS, including rigid (engineering structural) foam of CLASSES 5V or V-0 are regarded as better than those of CLASS V-1, V-1 better than V-2, and V-2 better than HB.</p> <p>NOTE 3 - Similarly, for thin MATERIALS, VTM-0 Class materials are regarded as better than those of VTM-1 Class, and VTM-1 better than VTM-2.</p>  |                 |          |
| 1.2.12.101           | <p>Addition:</p> <p>VTM CLASS MATERIAL: Thin MATERIALS fulfil the specified conditions during the test of clause A.101 applied for materials that the test and evaluation of clauses A.6 to A.10 is difficult to enforce. Materials are classified to three classifications as VTM-0, VTM-1 and VTM-2 according to the conditions after the removal of the test flame.</p>   | Added.          | <b>N</b> |
| 1.7.101              | <p>Addition:</p> <p>Marking for CLASS 0I EQUIPMENT</p> <p>For CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the mains plug or the main body:</p> <p>“Provide an earthing connection”</p> <p>Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated on the visible place of the main body or written in the operating instructions:</p> <p>“Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.”</p> | Added.          | <b>N</b> |
| 2.1.1.1              | <p>Replacement:</p> <p>Replace “IEC 60083” to “IEC 60083 or JIS C 8303” in 2.1.1.1 b).</p>   | Replaced.       | <b>N</b> |
| 2.6.3.1              | <p>Addition:</p> <p>Add the following after 1st paragraph.</p> <p>This also applies to the conductor of lead wire for protective earthing of CLASS 0I EQUIPMENT.</p>   | Added.          | <b>N</b> |

| National Differences |  |                 |          |
|----------------------|--|-----------------|----------|
| Clause               | Requirement – Test   | Result – Remark | Verdict  |
| 2.6.4.1              | <p>Replacement:</p> <p>Replace 2nd sentence in 1st paragraph.</p> <p>For CLASS I EQUIPMENT with a DETACHABLE POWER SUPPLY CORD, the earthing terminal in the appliance inlet is regarded as the main protective earthing terminal.</p>   | Replaced.       | <b>N</b> |
| 2.6.5.4              | <p>Replacement:</p> <p>Replace 1st sentence.</p> <p>Protective earthing connections of CLASS I EQUIPMENT shall make earlier and break later than the supply connections in each of the following:</p>  | Replaced.       | <b>N</b> |
| 2.6.101              | <p>Addition:</p> <p>Earthing of CLASS 0I EQUIPMENT</p> <p>Plugs with a lead wire for earthing shall not be used for equipment having a rated voltage exceeding 150 V.</p> <p>For plugs with a lead wire for earthing, the lead wire shall not be earthed by a clip.</p> <p>CLASS 0I EQUIPMENT shall be provided with an earthing terminal or lead wire for earthing in the external where easily visible.</p>  | Added.          | <b>N</b> |
| 3.2.5                | Delete 1) in Table 3B.   | Deleted.        | <b>N</b> |
| 4.2.8                | <p>Addition:</p> <p>Add the following informative remark after the last sentence.</p> <p>Remark - IEC 61965 is also applicable instead of IEC 60065.</p>   | Added.          | <b>N</b> |
| 4.5.1                | <p>Addition:</p> <p>Add the following to suffix 5) as specified in “Conditions applicable to Table 4A, Parts 1 and 2”.</p> <p>With regard to Table 4A, insulating materials complying with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B) are also acceptable.</p> <p>Add a suffix 7) in “Conditions applicable to Table 4A, Parts 1 and 2”.</p> <p>In the right column of Table 4A, Part 1, add suffix</p> | Added.          | <b>N</b> |

| National Differences |  |   |  |                                      |          |
|----------------------|--|---|--|--------------------------------------|----------|
| Clause               | Requirement – Test   |   |  | Result – Remark                      | Verdict  |
|                      | 7) to “50” (K), corresponding to “- without T – marking” in the left column so as to become “50 7)”.<br><br>Add 7) to Table 4A, Part 2 as follows.<br><br>7) This value shall apply only to wiring or cords complying with relevant IEC standards. Others shall comply with Japanese requirements (refer to Japanese differences for the current IEC 60335-1 (3rd Edition) in CB Bulletin 101B). |   |  |                                      |          |
| 4.7.3.2              | Addition:<br><br>Add the following in 7th paragraph.<br><br>for thin materials, e.g., flexible printed boards, etc., used inside equipment, be of FLAMMABILITY CLASS VTM-2 or better.  |   |  | Added.                               | <b>N</b> |
| 5.1.6                | Replacement:<br><br>Replace Table 5A.  |   |  |                                      | <b>P</b> |
|                      | Type of equipment  | Terminal A of measuring instrument connected to:                | Maximum TOUCH CURRENT<br>mA r.m.s. <sup>1)</sup> | Maximum PROTECTIVE CONDUCTOR CURRENT |          |
|                      | ALL equipment  | Accessible parts and circuits not connected to protective earth | 0,25   | –                                    |          |
|                      | HAND-HELD  | Equipment main protective earthing terminal (if any)            | 0,75   | –                                    |          |
|                      | MOVABLE (other than HAND_HELD, but including TRANSPORTABLE EQUIPMENT   |   | 3,5  | –                                    |          |
|                      | STATIONARY, PLUGGABLE TYPE A   |   | 3,5  | –                                    |          |
|                      | ALL other STATIONARY EQUIPMENT<br><br>not subject to the conditions of 5.1.7   | CLASS I EQUIPMENT   | 3,5  | –                                    |          |
|                      | subject to the conditions of 5.1.7   |   | –  | 5 % of input current                 |          |



| National Differences |   |  |                 |         |          |
|----------------------|---|--|-----------------|---------|----------|
| Clause               | Requirement – Test  |  | Result – Remark | Verdict |          |
|                      | HAND-HELD   | Equipment main protective earthing terminal (if any) | 0,5             | –       |          |
|                      |   | CLASS 0I EQUIPMENT                                   |                 |         |          |
|                      | Others  |  | 1,0             | –       |          |
|                      | <sup>1)</sup> If peak values of TOUCH-CURRENT are measured, the maximum values obtained by multiplying the r.m.s. values by 1,414.  |  |                 |         |          |
| 5.3.8.2              | Replacement:<br>Replace 3rd item as follows.<br>BASIC INSULATION between the PRIMARY CIRCUIT and accessible conductive parts of CLASS I or 0I EQUIPMENT;  |  | Replaced.       |         | <b>N</b> |
| Annex A              | Addition:<br>Add the subclause A.101 with the title “Flammability tests for classifying materials VTM” and the following:<br>Thin sheet materials shall comply with ISO 9773.   |  | Added.          |         | <b>N</b> |
| Annex G              | Addition:<br>Add the following to the Note for Table G.1.<br>2. In Japan, MAINS TRANSIENT VOLTAGE for equipment with a Nominal AC MAINS SUPPLY VOLTAGE of 100 V is to be decided based on the column where Nominal AC MAINS SUPPLY VOLTAGE in Table G.1 is 150 V. |  | Added.          |         | <b>N</b> |
| Annex P              | Addition:<br>Add “IEC 61965:2000, Mechanical Safety for Cathode Ray Tubes”.   |  | Added.          |         | <b>N</b> |
| Annex U              | Replacement:<br>Replace 2nd paragraph.<br>This annex covers to round winding wires having diameters between 0.05 mm and 5.00 mm.  |  | Replaced.       |         | <b>N</b> |

| National Differences             |  |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |
|----------------------------------|--|----------------------------------|---------------------------------|-------------|-----|-------------|-----|-------------|-----|-------------|------|-------------|--|--|----------|
| Clause                           | Requirement – Test   | Result – Remark                  | Verdict                         |             |     |             |     |             |     |             |      |             |  |  |          |
| U.2.1                            | <p>Replacement:</p> <p>Electric strength</p> <p>The test sample is prepared according to IEC 60851-5:1997, 4.4.1 (for a twisted pair). The sample is then subjected to the test of 5.2.2 of this standard, with a test voltage not less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows:</p> <p>for BASIC INSULATION or SUPPLEMENTARY INSULATION, 3000 V, or;</p> <p>for REINFORCED INSULATION, 6000 V.</p>   | Replaced.                        | <b>N</b>                        |             |     |             |     |             |     |             |      |             |  |  |          |
| U.2.2                            | <p>Replacement:</p> <p>Flexibility and adherence</p> <p>Test 8 of IEC 60851-3:1996, 5.1.1, using the mandrel diameters of table U.1. The test sample is then examined in accordance with IEC 60851-3:1996, 5.1.1.4, followed by the test of 5.2.2 of this standard except applying the test voltage between the wire and the mandrel. A test voltage shall not be less than twice the appropriate voltage in table 5B (see 5.2.2) of this standard. However, the minimum values shall be as follows:</p> <p>for BASIC INSULATION or SUPPLEMENTARY INSULATION, 1500 V, or;</p> <p>for REINFORCED INSULATION, 3000 V.</p>  | Replaced.                        | <b>N</b>                        |             |     |             |     |             |     |             |      |             |  |  |          |
| Table U.1                        | <p>Replacement:</p> <p>Mandrel diameter</p> <table border="1"> <thead> <tr> <th>Nominal Conductor diameter<br/>mm</th> <th>Mandrel diameter<br/>mm ± 0,2 mm</th> </tr> </thead> <tbody> <tr> <td>0,05 – 0,34</td> <td>4,0</td> </tr> <tr> <td>0,35 – 0,49</td> <td>6,0</td> </tr> <tr> <td>0,50 – 0,74</td> <td>8,0</td> </tr> <tr> <td>0,75 – 2,49</td> <td>10,0</td> </tr> <tr> <td>2,50 – 5,00</td> <td>4 times of the diameter of conductor <sup>1)</sup></td> </tr> </tbody> </table> <p><sup>1)</sup> in compliance with IEC 60317-43.</p> <p>The tension to be applied to the wire during winding on the mandrel is calculated from the wire diameter to be equivalent to 118 MPa ± 10 % (118 N/mm<sup>2</sup> ± 10 %).</p> | Nominal Conductor diameter<br>mm | Mandrel diameter<br>mm ± 0,2 mm | 0,05 – 0,34 | 4,0 | 0,35 – 0,49 | 6,0 | 0,50 – 0,74 | 8,0 | 0,75 – 2,49 | 10,0 | 2,50 – 5,00 | 4 times of the diameter of conductor <sup>1)</sup> |  | <b>N</b> |
| Nominal Conductor diameter<br>mm | Mandrel diameter<br>mm ± 0,2 mm  |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |
| 0,05 – 0,34                      | 4,0  |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |
| 0,35 – 0,49                      | 6,0  |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |
| 0,50 – 0,74                      | 8,0  |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |
| 0,75 – 2,49                      | 10,0   |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |
| 2,50 – 5,00                      | 4 times of the diameter of conductor <sup>1)</sup>   |                                  |                                 |             |     |             |     |             |     |             |      |             |  |  |          |

| National Differences  |  |  |          |
|---|--|--|----------|
| Clause  | Requirement – Test   | Result – Remark                                  | Verdict  |
| APPENDIX  | Korean National Differences according to CB Bulletin, No. 103A, July 2002<br>(K60950)<br><br>(IEC Publication 60950:1999)        |  | <b>P</b> |
| EXPLANATION FOR ABBREVIATIONS<br>P=Pass, F=Fail, N=Not applicable. Placed in the column to the right. |  |  |          |
| 1.5.101   | Addition:<br>Plugs for the connection of the apparatus to the supply mains shall comply with the Korean requirements (KSC 8305). | No power cords provided.                         | <b>N</b> |
| 7   | Addition:<br>EMC<br>The apparatus shall comply with the relevant CISPR standards.  | Shall be evaluated within the national approval. | <b>N</b> |

| National Differences  |   |                          |          |
|---|---|--------------------------|----------|
| Clause  | Requirement – Test  | Result – Remark          | Verdict  |
| APPENDIX  | US National Differences according to CB Bulletin No. 103A, July 2002<br>(UL 60950)<br><br>(IEC Publication 60950:1999)  |                          | <b>P</b> |
| EXPLANATION FOR ABBREVIATIONS<br>P=Pass, F=Fail, N=Not applicable. Placed in the column to the right. |   |                          |          |
| Special National Conditions   |   |                          |          |
| 1.1.1   | All equipment is to be designed to allow installations in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and, unless marked or otherwise identified, the Standard for the protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.   | Considered.              | <b>P</b> |
| 1.5.5   | For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC.<br><br>For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies which are not types specified in the NEC are required to have special construction features and identification markings.   | No power cords provided. | <b>N</b> |
| 1.7.1   | Equipment for use on supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.<br><br>A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and if it is part of a range that extends into the Table 2 “Normal Operating Conditions.” Likewise, a voltage rating shall not be lower than the specified “Normal Operating Conditions,” unless it is part of a range that extends into the “Normal Operating Conditions.” | Single-phase equipment.  | <b>N</b> |
| 2.5   | Where a fuse is used to provide Class 2, LPS (or TNV) current limiting, it shall not be operator-accessible unless it is not interchangeable.   | Fuse not used for LPS.   | <b>N</b> |

| National Differences |   |                          |          |
|----------------------|---|--------------------------|----------|
| Clause               | Requirement – Test  | Result – Remark          | Verdict  |
| 2.7.1                | Suitable NEC branch circuit protection is required for all standard supply outlets, receptacles and medium-base or smaller lampholders if the supply branch circuit protection is not suitable.<br><br>Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require transformer overcurrent protection. | No outlet.               | <b>N</b> |
| 3.2                  | Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains shall be in accordance with the NEC.  | Appliance inlet used.    | <b>N</b> |
| 3.2.1                | Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.   | No power cords provided. | <b>N</b> |
| 3.2.3                | Permanent connection of equipment to the mains by a power supply cord is not permitted.   | Appliance inlet used.    | <b>N</b> |
| 3.2.5                | Power supply cords are required to be no longer than 4.5 m in length.<br><br>Flexible power supply cords are required to be compatible with Article 400 of the NEC.   | No power cords provided. | <b>N</b> |
| 3.2.8                | Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.   | Appliance inlet used.    | <b>N</b> |
| 3.3                  | Wiring terminals and associated spacings for field wiring connections shall comply with CSA C22.2 No. 0.  | Dto                      | <b>N</b> |
| 3.3.3                | Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).   | Dto                      | <b>N</b> |
| 3.3.4                | Terminals for permanent wiring, including protective earthing terminals are required to be suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and specially marked when specified (1.7.7).   | Dto                      | <b>N</b> |
| 3.4.2                | Motor control devices are required for cord-connected equipment with a motor if the motor<br><br>(a) has a nominal voltage rating greater than 120 V,<br><br>(b) is rated more than 12 A, or<br><br>(c) is rated more than 1/3 hp (locked rotor current over 43 A)  | No such device.          | <b>N</b> |

| National Differences |   |  |          |
|----------------------|---|--|----------|
| Clause               | Requirement – Test  | Result – Remark  | Verdict  |
| 3.4.8                | Vertically-mounted disconnect switches and circuit breakers are required to have the "on" position indicated by the handle in the up position.  | No such device.  | <b>N</b> |
| 3.4.10               | For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes are required to have a battery disconnect means that may be connected to the computer room remote power-off circuit.  |  | <b>N</b> |
| 4.3.12               | The maximum quantity of flammable liquid stored in equipment is required to comply with NFPA 30.  |  | <b>N</b> |
| 4.3.13               | Equipment with lasers is required to meet Code of Federal Regulations 21 CFR 1040 and Canadian Radiation Emitting Devices Act, REDR C1370.  | CD-ROM, DVD/CE-RW are approved components.                   | <b>P</b> |
| 4.7.1                | For computer room applications, automated information storage systems with combustible media greater than 27 cubic feet are required to have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.  | Not applied for.   | <b>N</b> |
| 4.7.3.1              | For computer room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> or a single dimension greater than 1.8 m, are required to have flame spread rating of 50 or less. For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.  | Not applied for.   | <b>N</b> |
| Annex H              | Equipment that produces ionizing radiation is required to comply with Code of Federal Regulations, 21 CFR 1020 and Canadian Radiation Emitting Devices Act, REDR C1370.   |  | <b>N</b> |
| Other Differences    |   |  |          |
| 1.5.1                | Some components and materials associated with the risk of fire, electric shock, or personal injury are required to have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. These components include:<br><br>attachment plugs, cathode ray tubes, circuit breakers, communication circuit accessories, cord sets and power supply cords, direct plug-in equipment, enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, | Components are UL or CSA approved, see component list 1.5.1. | <b>P</b> |

| National Differences |  |  |          |
|----------------------|--|--|----------|
| Clause               | Requirement – Test   | Result – Remark                                  | Verdict  |
|                      | ground-fault current<br>interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, surge suppressors, switches (including interlock switches), thermal cutoffs, thermostats, transformer winding wire, tubing, wire connectors, and wire and cables. |  |          |
| 2.3.1                | For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mAd.c. under normal operating conditions.   |  | <b>N</b> |
| 2.6.3.3              | When subject to impedance testing, protective earthing and bonding is required to be tested subject per the specified test conditions that originate in CSA C22.2 No. 0.4.   |  | <b>N</b> |
| 4.2.8.1              | Enclosures around CRTs with a face area (diagonal dimension) of 160mm or more are required to reduce the risk of injury due to the implosion of the CRT.   |  | <b>N</b> |
| 4.3.2                | Equipment with handles is required to comply with special loading tests.   |  | <b>N</b> |
| 5.1.8.1.1            | Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.  | To be evaluated in national approval.            | <b>N</b> |
| 6.2.1                | Enamel coating on winding wire not considered electrical separation unless subjected to special investigation.   | No used.   | <b>N</b> |
| 6.4                  | Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.   | This should be evaluated when national approval. | <b>N</b> |
| 6.5                  | Equipment connected to a telecommunications network and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure tests.   | No earphone.                                     | <b>N</b> |

| National Differences |  |   |          |
|----------------------|--|---|----------|
| Clause               | Requirement – Test   | Result – Remark                         | Verdict  |
| M.2                  | Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.  | No telephone ringing signals generated. | <b>N</b> |
| Annex NAB            | Equipment connected to centralized d.c. power systems is required to comply with special earthing, wiring, marking and insulation requirements in accordance with Annex NAB and 3.6.1. |   | <b>N</b> |



| National Differences  |  |   |          |
|---|--|---|----------|
| Clause  | Requirement – Test   | Result – Remark   | Verdict  |
| APPENDIX  | Singaporean National Differences<br>(SS 337:2001)<br><br>(IEC Publication 60950:1999)  |   | <b>P</b> |
| EXPLANATION FOR ABBREVIATIONS<br>P=Pass, F=Fail, N=Not applicable. Placed in the column to the right. |  |   |          |
| General   | IT Power Systems are not allowed in the Republic of Singapore and all clauses related to IT Power Systems are not applicable.  | Connection to IT power system only considered for Norway. | <b>P</b> |
| 2.9.2   | After the first paragraph, <i>insert</i> the following:<br><br>Under tropical conditions, the duration of the humidity conditioning is 5 days (120 h) at a temperature (t) of 40 °C ± 2 °C with relative humidity of 90% to 95%<br><br><i>Explanation:</i> Conditions described in IEC Publications 60068-2-3:1969 – ‘Test Ca: Damp Heat, Steady State’ (temperature: 40 °C ± 2 °C, relative humidity: 90% to 95%) apply to insulation to be used under tropical conditions. The additional requirement on humidity conditioning is drawn from Clause 10.2 of IEC 60065:1998 | See test report.  | <b>P</b> |
| 2.10.6.5  | <i>Delete</i> ‘(48 h)’<br><br><i>Explanation:</i> To be consistent with 2.9.2.   | Deleted.  | <b>P</b> |
| 3.2.8   | <i>Replace</i> ‘23 °C ± 2 °C’ by ‘27 °C ± 2 °C’<br><br><i>Explanation:</i> The recommended temperature for tropical countries is drawn from ISO 554: 1976 – ‘Standard atmospheres for conditioning and/or testing – Specifications’.   | Replaced.   | <b>P</b> |
| <b>Editorial amendment:</b>   |  |   |          |

| National Differences   |   |                        |                                  |           |             |  |   |           |          |  |   |         |          |
|------------------------|---|------------------------|----------------------------------|-----------|-------------|--|---|-----------|----------|--|---|---------|----------|
| Clause                 | Requirement – Test  | Result – Remark        | Verdict                          |           |             |  |   |           |          |  |   |         |          |
| 1.2.8.6                | <p>After NOTE 2, <i>insert</i> the following:</p> <p>NOTE 3 – This definition for SELV CIRCUIT differs from the term 'SELV system' as given in SS CP 5.</p> <p>Attention is also drawn to the following :</p> <p>For a.c. power distribution systems, only TN-S and TT systems are allowed in the Republic of Singapore.</p> <p>Where the phrase 'this standard' appears, it should be read as 'Singapore Standard SS 337'.</p> <p>The comma has been used throughout as a decimal marker in IEC 60950, whereas in Singapore standards it is a practice to use a full-point on the baseline as the decimal marker.</p> <p>The IEC standard referred to shall be replaced by Singapore Standards as follows:</p> <table border="0"> <tr> <td>International Standard</td> <td>Corresponding Singapore Standard</td> </tr> <tr> <td>IEC 60065</td> <td>SS 143:2000</td> </tr> <tr> <td></td> <td>Audio, video and similar electronic apparatus – Safety requirements</td> </tr> <tr> <td>IEC 60227</td> <td>SS 358:-</td> </tr> <tr> <td></td> <td>Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V.</td> </tr> </table> | International Standard | Corresponding Singapore Standard | IEC 60065 | SS 143:2000 |  | Audio, video and similar electronic apparatus – Safety requirements | IEC 60227 | SS 358:- |  | Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V. | Deleted | <b>P</b> |
| International Standard | Corresponding Singapore Standard  |                        |                                  |           |             |  |   |           |          |  |   |         |          |
| IEC 60065              | SS 143:2000   |                        |                                  |           |             |  |   |           |          |  |   |         |          |
|                        | Audio, video and similar electronic apparatus – Safety requirements   |                        |                                  |           |             |  |   |           |          |  |   |         |          |
| IEC 60227              | SS 358:-  |                        |                                  |           |             |  |   |           |          |  |   |         |          |
|                        | Polyvinyl chloride insulated cables of rated voltages up to and including 450/750V.   |                        |                                  |           |             |  |   |           |          |  |   |         |          |
| NOTE                   | Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.   |                        | —                                |           |             |  |   |           |          |  |   |         |          |
|                        | Compliance with a Singapore Standard does not exempt users from legal obligations.  |                        | —                                |           |             |  |   |           |          |  |   |         |          |