

Avdio, video in podobni elektronski aparati – Varnostne zahteve (IEC 60065:2001/A1:2005, spremenjen)

Audio, video and similar electronic apparatus - Safety requirements (IEC 60065:2001/A1:2005, modified)

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English version

**Audio, video and similar electronic apparatus –
Safety requirements**
(IEC 60065:2001/A1:2005, modified)

Appareils audio, vidéo et appareils
électroniques analogues –
Exigences de sécurité
(CEI 60065:2001/A1:2005, modifié)

Audio-, Video- und ähnliche
elektronische Geräte –
Sicherheitsanforderungen
(IEC 60065:2001/A1:2005, modifiziert)

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This amendment A1 modifies the European Standard EN 60065:2002; it was approved by CENELEC on 2005-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 108/136/FDIS, future amendment 1 to IEC 60065:2001, prepared by IEC TC 108, Safety of electronic equipment within the field of audio/video, information technology and communication technology, was submitted to the IEC-CENELEC parallel vote.

A draft amendment to EN 60065:2002, prepared by the Technical Committee CENELEC TC 108, Safety of electronic equipment within the fields of audio/video, information technology and communication technology, was submitted to the formal vote.

The two documents together were ratified by CENELEC as amendment A1 to EN 60065:2002 on 2005-12-01.

Annex L of this amendment A1 to EN 60065:2002 supersedes EN 60491:1995.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2006-12-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2008-12-01

Subclauses, tables and figures which are additional to those in IEC 60065 are prefixed “Z”.

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Endorsement notice

The text of amendment 1:2005 to the International Standard IEC 60065:2001 was approved by CENELEC as an amendment to the European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

5.1 i) in EN 60065:2002

Replace the note by:

NOTE For RATED POWER CONSUMPTION measurements of TVs reference is made to EN 62087. Measurements are done in the ON (play) operating mode.

5.4.1

Add the following indent:

za) A warning that excessive sound pressure from earphones and headphones can cause hearing loss.

6.1 in EN 60065:2002

Replace the subclause by:

6.1 Ionizing radiation

Equipment that might produce ionizing radiation is checked by measuring the amount of radiation.

The amount of radiation is determined by means of a radiation monitor of the ionizing chamber type with an effective area of 1 000 mm² or by measuring equipment of other types giving equivalent results.

Measurements are made with the equipment on test operating at the most unfavourable supply voltage (see 4.2) and with operator controls and service controls adjusted so as to give maximum radiation whilst maintaining the equipment operative for normal use.

Internal preset controls not intended to be adjusted during the lifetime of the equipment are not considered to be service controls.

At any point 100 mm from the surface of the operator access area, the dose-rate shall not exceed 1 µSv/h (0,1 mR/h) (see Note). Account shall be taken of the background level.

NOTE These values appear in Directive 96/29/Euratom.

Bibliography in EN 60065:2002

Replace the paragraph related to prEN 50332-2 by:

EN 50332-2:2003, *Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Matching of sets with headphones if either or both are offered separately*

Bibliography in IEC 60065:2001/A1:2005

Add the following notes for the standards indicated:

| | | |
|----------------|------|--|
| IEC 60598-2-9 | NOTE | Harmonized as EN 60598-2-9:1989 + A1:1994 (not modified). |
| IEC 60598-2-17 | NOTE | Harmonized as EN 60598-2-17:1989 + A2:1991 (not modified). |

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Replace the entire Annex ZA by the following:

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| <u>Publication</u> | <u>Date</u> | <u>Title</u> | <u>EN/HD</u> | <u>Date</u> |
|--------------------------------|--------------|--|---------------------|-------------|
| - | - | Audio, video and similar electronic apparatus – Routine electrical safety testing in production | EN 50333 | 2001 |
| IEC 60027 | series | Letter symbols to be used in electrical technology | HD 60027 | series |
| IEC 60038 | 2002 | IEC standard voltages | | - |
| IEC 60068-2-6 + corr. March | 1995 1995 | Environmental testing Part 2: Tests - Test Fc: Vibration (sinusoidal) | EN 60068-2-6 | 1995 |
| IEC 60068-2-32 | 1975 | Environmental testing Part 2: Tests - Test Ed: Free fall | EN 60068-2-32 1) | 1993 |
| IEC 60068-2-75 | 1997 | Environmental testing Part 2: Tests - Test Eh: Hammer tests | EN 60068-2-75 | 1997 |
| IEC 60068-2-78 | 2001 | Environmental testing Part 2: Tests – Test Cab: Damp heat, steady state | EN 60068-2-78 | 2001 |
| IEC 60085 | 2004 | Thermal evaluation and classification of electrical insulation | EN 60085 | 2004 |
| IEC 60086-4 | 2000 | Primary batteries Part 4: Safety of lithium batteries | EN 60086-4 | 2000 |
| IEC 60112 | 2003 | Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions | EN 60112 | 2003 |
| IEC 60127 | series | Miniature fuses | EN 60127 | series |
| IEC 60167 | 1964 | Methods of test for the determination of the insulation resistance of solid insulating materials | HD 568 S1 | 1990 |

1) EN 60068-2-32 includes A2:1990 to IEC 60068-2-32.

| <u>Publication</u> | <u>Date</u> | <u>Title</u> | <u>EN/HD</u> | <u>Date</u> |
|-------------------------------|----------------------|--|-------------------------------|----------------------|
| IEC 60216 | series | Electrical insulating materials - Properties of thermal endurance | HD 611 EN 60216 | series series |
| IEC 60227 (mod) ²⁾ | series | Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V | - | - |
| IEC 60245 (mod) ³⁾ | series | Rubber insulated cables – Rated voltages up to and including 450/750 | - | - |
| IEC 60249-2 | series | Base materials for printed circuits Part 2: Specifications | EN 60249-2 | series |
| IEC 60268-1 | 1985 | Sound system equipment Part 1: General | HD 483.1 S2 ⁴⁾ | 1989 |
| IEC 60317 | series | Specifications for particular types of winding wires | EN 60317 | series |
| IEC 60320 | series | Appliance couplers for household and similar general purposes | EN 60320 | series |
| IEC 60335-1 (mod) A1 | 2001 2004 | Safety of household and similar electrical appliances Part 1: General requirements | EN 60335-1 A1 + A11 | 2002 2004 2004 |
| IEC 60384-1 (mod) | 1999 | Fixed capacitors for use in electronic equipment Part 1: Generic specification | EN 60384-1 | 2001 |
| IEC 60384-14 A1 | 1993 1995 | Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains | EN 132400 ⁵⁾ | 1994 |
| IEC 60417 | data-base | Graphical symbols for use on equipment | - | - |
| IEC 60454 | series | Specifications for pressure-sensitive adhesive tapes for electrical purposes | EN 60454 | series |
| IEC 60529 A1 | 1989 1999 | Degrees of protection provided by enclosures (IP Code) | EN 60529 + corr. May A1 | 1991 1993 2000 |
| IEC 60664-1 + A1 + A2 | 1992 2000 2002 | Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests | EN 60664-1 | 2003 |

²⁾ The HD 21 series, which is related to, but not directly equivalent with the IEC 60227 series, applies instead.

³⁾ The HD 22 series, which is related to, but not directly equivalent with the IEC 60245 series, applies instead.

⁴⁾ HD 483.1 S2 includes A1:1988 to IEC 60268-1.

⁵⁾ EN 132400 is related to, but not directly equivalent to IEC 60384-14.

| <u>Publication</u> | <u>Date</u> | <u>Title</u> | <u>EN/HD</u> | <u>Date</u> |
|---|------------------------------|--|--|--------------------------------------|
| IEC 60664-3 | 2003 | Insulation coordination for equipment within low-voltage systems Part 3: Use of coatings to achieve insulation coordination of printed board assemblies | EN 60664-3 | 2003 |
| IEC 60691 | 2002 | Thermal links – Requirements and application guide | EN 60691 | 2003 |
| IEC 60695-2-2 | 1991 | Fire hazard testing Part 2: Test methods Section 2: Needle-flame test | EN 60695-2-2 | 1994 |
| IEC 60695-11-10 A1 | 1999 2003 | Fire hazard testing Part 11-10: Test flames - 50 W horizontal and vertical flame test methods | EN 60695-11-10 A1 | 1999 2003 |
| IEC 60707 | 1999 | Flammability of solid non-metallic materials when exposed to flame sources – List of test methods | EN 60707 | 1999 |
| IEC 60730 (mod) | series | Automatic electrical controls for household and similar use | EN 60730 | series |
| IEC 60825-1 + corr. December A1 A2 | 1993 1994 1997 2001 | Safety of laser products Part 1: Equipment classification requirements and user's guide | EN 60825-1 + corr. February A1 A2 + A2/corr. April | 1994 1995 2002 2001 2004 |
| IEC 60851 | series | Winding wires – Test methods | EN 60851 | series |
| IEC 60884 | series | Plugs and socket-outlets for household and similar purposes | - | - |
| IEC 60885-1 | 1987 | Electrical test methods for electric cables Part 1: Electrical tests for cables, cords and wires for voltages up to and including 450/750 V | - | - |
| IEC 60906 | series | IEC system of plugs and socket-outlets for household and similar purposes | - | - |
| IEC 60950 (mod) + corr. January | 1999 2000 | Safety of information technology equipment | EN 60950 + corr. February | 2000 2002 |
| IEC 60990 | 1999 | Methods of measurement of touch-current and protective conductor current | EN 60990 | 1999 |
| IEC 60998-2-2 (mod) | 2002 | Connecting devices for low-voltage circuits for household and similar purposes Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units | EN 60998-2-2 | 2004 |

| <u>Publication</u> | <u>Date</u> | <u>Title</u> | <u>EN/HD</u> | <u>Date</u> |
|---------------------------|--------------|--|--|------------------------------|
| IEC 60999-1 | 1999 | Connecting devices – Safety requirements for screw-type and screwless-type clamping units Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included) | EN 60999-1 | 2000 |
| IEC 61032 | 1997 | Protection of persons and equipment by enclosures - Probes for verification | EN 61032 | 1998 |
| IEC 61051-2 | 1991 | Varistors for use in electronic equipment Part 2: Sectional specification for surge suppression varistors | - | - |
| IEC 61058-1 + A1 (mod) | 2000 2001 | Switches for appliances Part 1: General requirements | EN 61058-1 | 2002 |
| IEC/TR2 61149 | 1995 | Guide for safe handling and operation of mobile radio equipment | - | - |
| IEC 61260 | 1995 | Electroacoustics – Octave-band and fractional-octave-band filters | EN 61260 | 1995 |
| IEC 61293 | 1994 | Marking of electrical equipment with ratings related to electrical supply – Safety requirements | EN 61293 | 1994 |
| IEC 61558-1 (mod) A1 | 1997 1998 | Safety of power transformers, power supply units and similar Part 1: General requirements and tests | EN 61558-1 A1 + A11 + corr. April | 1997 1998 2003 2003 |
| IEC 61558-2-17 | 1997 | Safety of power transformers, power supply units and similar Part 2-17: Particular requirements for transformers for switch mode power supplies | EN 61558-2-17 | 1997 |
| IEC 61965 | 2003 | Mechanical safety of cathode ray tubes | EN 61965 | 2003 |
| IEC 62087 | 2002 | Methods of measurement for the power consumption of audio, video and related equipment | EN 62087 | 2003 |
| IEC 62151 | 2000 | Safety of equipment electrically connected to a telecommunication network | - | - |
| IEC Guide 104 | 1997 | The preparation of safety publications and the use of basic safety publications and group safety publications | - | - |
| ISO 261 | 1973 | ISO general purpose metric screw threads - General plan | - | - |

| <u>Publication</u> | <u>Date</u> | <u>Title</u> | <u>EN/HD</u> | <u>Date</u> |
|--------------------------|-------------|---|--------------------------|-------------|
| ISO 262 | 1973 | ISO general purpose metric screw threads - Selected sizes for screws, bolts and nuts | - | - |
| ISO 306 | 1994 | Plastics - Thermoplastic materials - Determination of Vicat softening temperature (VST) | EN ISO 306 ⁶⁾ | 1996 |
| ISO 7000 | 1989 | Graphical symbols for use on equipment - Index and synopsis | - | - |
| ITU-T Recommendation K17 | 1988 | Tests on power-fed repeaters using solid-state devices in order to check the arrangements for protection from external interference | - | - |
| ITU-T Recommendation K21 | 1996 | Resistibility of telecommunication equipment installed in customer's premises to overvoltages and overcurrents | - | - |

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⁶⁾ EN ISO 306 is superseded by EN ISO 306:2004, which is based on ISO 306:2004.

Annex ZB (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Add the following special national conditions:

| Clause | Special national condition |
|----------------|--|
| Annex B | <p>All subclauses given below are subclauses of IEC 62151 (ref. corrigenda 1 and 2 to IEC 62151).</p> <p>Subclause 4.1.1 (corrigendum 2):</p> <p>Add after the first paragraph:</p> <p>NOTE In Finland, Norway and Sweden, CLASS I equipment which is intended for connection to the building installation via a non-industrial plug or a non-industrial appliance coupler, or both and in addition is intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and ACCESSIBLE parts, has a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan" SIST EN 60065:2003/A1:2006</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt" SIST EN 60065:2003/A1:2006</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p> <p>Subclause 4.1.4 (corrigendum 1)</p> <p>Add at the end of the subclause:</p> <p>NOTE In Norway, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p>Subclause 4.2.1.2 (corrigendum 1)</p> <p>Add at the end of the subclause:</p> <p>NOTE 3 In Norway, for requirements see 5.3.1, note 1.</p> <p>Subclause 4.2.1.3 (corrigendum 2)</p> <p>Add at the end of the subclause:</p> <p>NOTE In Norway, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p>Subclause 4.2.1.4 (corrigendum 1)</p> <p>Number the existing note as NOTE 1 and add at the end of the subclause the following NOTE 2:</p> <p>NOTE 2 In Norway, for requirements see 4.1.1, note and 5.3.1, note 1.</p> <p>Subclause 5.3.1 (corrigendum 1)</p> <p>Add after the first test specifications paragraph:</p> <p>NOTE 1 In Finland, Norway and Sweden, there are additional requirements for the insulation.</p> <p>Renumber the existing note as NOTE 2.</p> |