

Üldvalgustusseadmed. Elektromagnetilise ühilduvuse häiringukindluse nõuded

Equipment for general lighting purposes - EMC immunity requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61547:2009 sisaldab Euroopa standardi EN 61547:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.10.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

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English version

**Equipment for general lighting purposes -
EMC immunity requirements
(IEC 61547:2009)**

Equipements pour l'éclairage
à usage général -
Exigences concernant l'immunité CEM
(CEI 61547:2009)

Einrichtungen für allgemeine
Beleuchtungszwecke -
EMV-Störfestigkeitsanforderungen
(IEC 61547:2009)

This European Standard was approved by CENELEC on 2009-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 European Standard 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, Bulgaria, 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: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 34/127/FDIS, future edition 2 of IEC 61547, prepared by IEC TC 34, Lamps and related equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61547 on 2009-07-01.

This European Standard supersedes EN 61547:1995 + A1:2000.

The main reason for this revision is to update the dates of the references to the basic standards which also required some editorial changes in the tables. Other changes are:

- 1 Scope: clearly excludes multimedia equipment with lamps (e.g. TV);
- 3.2 Enclosure port: removal of the "earth port" in Figure 1 as in the generic EMC standards; the note below Figure 1 in EN 61547:1995 relates to a requirement and moved to the main text under 5.1 General;
- 5.6 Injected currents: update of the names of the example CDN's;
- 5.7 Surges: test only at the peak of the mains voltage by deleting the requirement to test at zero crossings;
- 5.8 Voltage dips and interruptions: clarifying that the voltage level changes at the zero crossing;
- 6.3.2 Independent auxiliaries: Table 14 has been simplified because most independent auxiliaries have identical performance criteria;
- 6.3.3 Luminaires: Table 15 has been simplified because most luminaires have identical performance criteria; correcting the error in the injected current column by changing the B into A for luminaires with electronic ballast for discharge lamps; additionally, the requirements for emergency luminaires operating in high risk task areas are updated to meet the levels specified in EN 60598-2-22;
- 7 Conditions during testing: the "under consideration" for the operating conditions for starting devices has been deleted; the supply voltage and frequency during the test are clearly stated; shortening the immunity test for equipment incorporating a regulating control by testing at one light output level (50 % \pm 10 %) instead of testing at three light output levels which are difficult to adjust and do not provide extra protection.

This standard is to be read in conjunction with the relevant basic and/or product standard(s).

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2010-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2012-07-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive EMC (2004/108/EC). See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61547:2009 was approved by CENELEC as a European Standard without any modification.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-161	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-845	- ¹⁾	International Electrotechnical Vocabulary (IEV) - Chapter 845: Lighting	-	-
IEC 60598-1 (mod)	2008	Luminaires - Part 1: General requirements and tests	EN 60598-1 A11	2008 2009
IEC 60598-2-22 (mod)	- ¹⁾	Luminaires - Part 2-22: Particular requirements - Luminaires for emergency lighting	EN 60598-2-22 + corr. October	1998 ²⁾ 2007
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3 A1	2006 2007	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3 A1 IS1	2006 2008 2009
IEC 61000-4-4	2004	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2004
IEC 61000-4-5	2005	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006
IEC 61000-4-6	2008	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2009
IEC 61000-4-8 A1	1993 2000	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8 A1	1993 2001

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-11	2004	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004
IEC 61000-6-1	2005	Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments	EN 61000-6-1	2007

Annex ZZ (informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Annex I of the EC Directive 2004/108/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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EQUIPMENT FOR GENERAL LIGHTING PURPOSES – EMC IMMUNITY REQUIREMENTS

1 Scope

This International Standard for electromagnetic immunity requirements applies to lighting equipment which is within the scope of IEC technical committee 34, such as lamps, auxiliaries and luminaires, intended either for connecting to a low voltage electricity supply or for battery operation.

Excluded from the scope of this standard is equipment for which the immunity requirements are formulated in other IEC or CISPR standards such as:

- lighting equipment for use in transport vehicles;
- entertainment lighting control equipment for professional purposes;
- lighting devices built into other equipment such as:
 - scale illumination or indicators;
 - photocopiers;
 - slide and overhead projectors;
 - multimedia equipment.

However, in multi-function equipment where the lighting part operates independently from other parts, the electromagnetic immunity requirements of this standard apply to the lighting part.

The requirements of this standard are based on the requirements for domestic, commercial and light-industrial environments as given in IEC 61000-6-1, but modified to lighting engineering practice.

It can be expected that lighting equipment complying with the requirements of this standard will operate satisfactorily in other environments. In some special cases, measures have to be taken to provide higher immunity. It is impracticable to deal with all these possibilities. Such requirements may be established by contractual agreement between supplier and purchaser.

2 Normative references

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.

IEC 60050-161, *International Electrotechnical Vocabulary – Chapter 161: Electromagnetic Compatibility*

IEC 60050-845, *International Electrotechnical Vocabulary – Chapter 845: Lighting*

IEC 60598-1:2008, *Luminaires – Part 1: General requirements and tests*

IEC 60598-2-22, *Luminaires – Part 2-22: Particular requirements – Luminaires for emergency lighting*

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio frequency, electromagnetic field immunity test*¹
Amendment 1 (2007)

IEC 61000-4-4:2004, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity tests*

IEC 61000-4-5:2005, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2008, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8:1993, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 8: Power frequency magnetic field immunity test*²
Amendment 1 (2000)

IEC 61000-4-11:2004, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61000-6-1:2005, *Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments*

3 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 60050(161) and IEC 60050(845) apply, together with the following.

3.1

port

particular electrical interface of the specified equipment with the external electromagnetic environment

3.2

enclosure port

the physical boundary of the equipment through which electromagnetic fields may radiate or penetrate (see Figure 1)

¹ There exists a consolidated edition 3.1 (2008) that comprises IEC 61000-4-3 and its Amendment 1.

² There exists a consolidated edition 1.1 (2001) that comprises IEC 61000-4-8 and its Amendment 1.