

**ELEKTROMAGNETILINE ÜHILDUVUS. OSA 3-2:
PIIRVÄÄRTUSED. VOOLUHARMOONILISTE EMISSIOONI
LUBATAVAD PIIRVÄÄRTUSED (SEADMETEL
SISENDVOOLUGA KUNI 16 A FAASI KOHTA)**

**Electromagnetic compatibility (EMC) - Part 3-2: Limits -
Limits for harmonic current emissions (equipment input
current ≤ 16 A per phase) (IEC 61000-3-2:2018 +
IEC 61000-3-2:2018/A1:2020 +
IEC 61000-3-2:2018/AMD2:2024)**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN IEC 61000-3-2:2019+A1+A2:2024 sisaldab Euroopa standardi EN IEC 61000-3-2:2019 ja selle muudatuste A1:2021 ja A2:2024 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 61000-3-2:2019+A1+A2:2024 consists of the English text of the European standard EN IEC 61000-3-2:2019 and its amendments A1:2021 and A2:2024.
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Muudatusega A1 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega A1 A1 . Muudatusega A2 lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega A2 A2 . Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The start and finish of text introduced or altered by amendment A1 is indicated in the text by tags A1 A1 . The start and finish of text introduced or altered by amendment A2 is indicated in the text by tags A2 A2 . The standard is available from the Estonian Centre for Standardisation and Accreditation.

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ICS 33.100.10

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English Version

Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)**(IEC 61000-3-2:2018 + IEC 61000-3-2:2018/A1:2020 + IEC 61000-3-2:2018/AMD2:2024)**

Compatibilité électromagnétique (CEM) - Partie 3-2: Limites
- Limites pour les émissions de courant harmonique
(courant appelé par les appareils ≤ 16 A par phase)
(IEC 61000-3-2:2018 + IEC 61000-3-2:2018/A1:2020 + IEC
61000-3-2:2018/AMD2:2024)

Elektromagnetische Verträglichkeit (EMV) - Teil 3-2:
Grenzwerte - Grenzwerte für Oberschwingungsströme
(Geräte-Eingangsstrom ≤ 16 A je Leiter)
(IEC 61000-3-2:2018 + IEC 61000-3-2:2018/A1:2020 + IEC
61000-3-2:2018/AMD2:2024)

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European foreword

The text of document 77A/986/FDIS, future edition 5 of IEC 61000-3-2, prepared by SC 77A "EMC - Low frequency phenomena" of IEC/TC 77 "Electromagnetic compatibility" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61000-3-2:2019.

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IEC 60107-1:1997	NOTE	Harmonized as EN 60107-1:1997 (not modified).
IEC 60268-1:1985/A1:1988	NOTE	Harmonized as HD 483.1 S2:1989 (not modified).
IEC 60335-2-2	NOTE	Harmonized as EN 60335-2-2.
IEC 60335-2-14	NOTE	Harmonized as EN 60335-2-14.
IEC 60335-2-79	NOTE	Harmonized as EN 60335-2-79.
IEC 60335-2-17	NOTE	Harmonized as EN 60335-2-17.
IEC 60974-1	NOTE	Harmonized as EN 60974-1.
IEC 60974-6	NOTE	Harmonized as EN 60974-6.
IEC 61000-2-2	NOTE	Harmonized as EN 61000-2-2.
IEC 61000-3-12	NOTE	Harmonized as EN 61000-3-12.
IEC 62756-1	NOTE	Harmonized as EN 62756-1.

A1 Amendment A1 European foreword

The text of document 77A/1077/FDIS, future IEC 61000-3-2/A1, prepared by SC 77A "EMC - Low frequency phenomena" of IEC/TC 77 "Electromagnetic compatibility" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61000-3-2:2019/A1:2021.

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IEC 61000-2-2	NOTE	Harmonized as EN 61000-2-2
IEC 61000-3-12	NOTE	Harmonized as EN 61000-3-12

A1

A₂ Amendment A2 European foreword

The text of document 77A/1161/CDV, future IEC 61000-3-2/AMD2, prepared by SC 77A "EMC - Low frequency phenomena" of IEC/TC 77 "Electromagnetic compatibility" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61000-3-2:2019/A2:2024.

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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Electromagnetic compatibility (EMC) –
Part 3-2: Limits – Limits for harmonic current emissions (equipment input
current < 16 A per phase)**

**Compatibilité électromagnétique (CEM) –
Partie 3-2 : Limites – Limites pour les émissions de courant harmonique
(courant appelé par les appareils < 16 A par phase)**



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Electromagnetic compatibility (EMC) –
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CONTENTS

FOREWORD.....	5
A1 AMENDMENT A1 FOREWORD A1	7
A2 Amendment A2 FOREWORD A2	8
INTRODUCTION.....	9
A2 INTRODUCTION to Amendment 2 A2	10
1 Scope.....	11
2 Normative references.....	11
3 Terms and definitions	12
4 General.....	17
5 Classification of equipment	17
5.1 General.....	17
5.2 Description of lighting equipment.....	18
5.3 External power supplies	19
6 General requirements	19
6.1 General.....	19
6.2 Control methods.....	19
6.3 Harmonic current measurement.....	20
6.3.1 Test configuration	20
6.3.2 Measurement procedure.....	21
6.3.3 A2 General requirements and recommendations A2	22
6.3.4 Test observation period.....	23
6.4 Equipment in a rack or case	23
A1 6.5 Multifunction equipment A1	24
7 Harmonic current limits	24
7.1 General.....	24
7.2 Limits for Class A equipment	26
7.3 Limits for Class B equipment	27
7.4 Limits for Class C equipment	27
7.4.1 General	27
7.4.2 Rated power > 25 W.....	27
7.4.3 Rated power ≥ 5 W and ≤ 25 W	28
7.5 Limits for Class D equipment	29
A2 8 Compliance with this document.....	30
8.1 Use of test methods	30
8.2 Decision rules and measurement uncertainty	30
8.2.1 Measurements with an instrument in accordance with IEC 61000-4-7, class I.....	30
8.2.2 Measurements with an instrument in accordance with IEC 61000-4-7, class II A2	31
Annex A (normative) Measurement circuit and supply source	32
A.1 Test circuit.....	32
A.2 Supply source	32
Annex B (normative) A2 Special test conditions A2	35
B.1 General.....	35

B.2	A1 <i>deleted text</i> A1 television receivers (TV)	35
B.2.1	General requirements.....	35
B.2.2	Measurement conditions	35
B.2.3	Test report.....	36
B.3	A1 <i>deleted text</i> A1 audio amplifiers	36
B.3.1	Conditions	36
B.3.2	Input signals and loads	36
B.4	A2 Video-cassette recorders and similar equipment A2	37
B.5	A1 <i>deleted text</i> A1 lighting equipment	37
B.5.1	General conditions	37
B.5.2	A1 Light sources A1	37
B.5.3	Luminaires.....	37
B.5.4	A2 Separate lighting control gear (SLCG) A2	38
B.5.5	DLT control devices	38
B.6	A1 <i>deleted text</i> A1 independent phase control dimmers for lighting equipment.....	38
B.7	A1 <i>deleted text</i> A1 vacuum cleaners.....	39
B.8	A1 <i>deleted text</i> A1 washing machines	39
B.9	A1 <i>deleted text</i> A1 microwave ovens	40
B.10	A1 <i>deleted text</i> A1 information technology equipment (ITE)	40
B.10.1	General conditions	40
B.10.2	A1 IT equipment with external power supplies A1	40
B.11	A1 <i>deleted text</i> A1 cooking appliances	41
B.11.1	Induction hobs and hotplates.....	41
B.11.2	Hobs and hotplates other than induction cooking appliances	41
B.12	A1 <i>deleted text</i> A1 air conditioners.....	41
B.13	A1 <i>deleted text</i> A1 kitchen machines as defined in IEC 60335-2-14.....	42
B.14	A1 <i>deleted text</i> A1 arc welding equipment which is not professional equipment.....	42
B.15	A1 <i>deleted text</i> A1 high pressure cleaners which are not professional equipment.....	42
B.16	A1 <i>deleted text</i> A1 refrigerators and freezers.....	43
B.16.1	General	43
B.16.2	Refrigerators and freezers with VSD	43
B.16.3	Refrigerators and freezers without VSD	44
B.17	External power supplies (EPS)	44
B.17.1	EPS designated for specific models of equipment	44
B.17.2	EPS not designated for specific models of equipment	44
A1	Annex C (normative) POHC calculation	45
C.1	General.....	45
C.2	Calculation of the POHC from the final values of the harmonic currents, averaged over the complete observation time	45
C.3	Calculation of the final POHC from single POHC values for each DFT time window A1	45
A2	Annex D (informative) Symmetry of mains current waveforms A2	46
Annex ZA	(normative) Normative references to international publications with their corresponding European publications	53
Bibliography	55

Figure 1 – Flowchart for determining conformity	26
Figure 2 – Illustration of the relative phase angle and current parameters described in 7.4.3.....	28
Figure A.1 – Measurement circuit for single-phase equipment.....	33
Figure A.2 – Measurement circuit for three-phase equipment.....	34
Figure D.1 – Three cycles symmetry – Example 1.....	46
Figure D.2 – Three cycles symmetry – Example 2.....	47
Figure D.3 – Five cycles symmetry – Example 1.....	47
Figure D.4 – Five cycles symmetry – Example 2.....	48
Figure D.5 – Four cycles symmetry	48
Figure D.6 – One cycle symmetry.....	49
Figure D.7 – Three cycles symmetry – Example 3.....	49
Figure D.8 – Three cycles symmetry – Example 4.....	50
Figure D.9 – Three cycles symmetry – Example 5.....	50
Figure D.10 – Three cycles symmetry – Example 6.....	51
Figure D.11 – Three cycles symmetry – Example 7.....	51
Figure D.12 – Three cycles symmetry – Example 8.....	52
Table 1 – Limits for Class A equipment.....	29
Table 2 – Limits for Class C equipment ^a	29
Table 3 – Limits for Class D equipment	30
A1 Table 4 – Test observation period A1	30
Table B.1 – Conventional load for arc welding equipment tests	42

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

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International Standard IEC 61000-3-2 has been prepared by sub-committee 77A: EMC – Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

It forms part 3-2 of the IEC 61000 series. It has the status of a product family standard.

This fifth edition cancels and replaces the fourth edition published in 2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) an update of the emission limits for lighting equipment with a rated power ≤ 25 W to take into account new types of lighting equipment;
- b) the addition of a threshold of 5 W under which no emission limits apply to all lighting equipment;

- c) the modification of the requirements applying to the dimmers when operating non-incandescent lamps;
- d) the addition of test conditions for digital load side transmission control devices;
- e) the removal of the use of reference lamps and reference ballasts for the tests of lighting equipment;
- f) the simplification and clarification of the terminology used for lighting equipment;
- g) the classification of professional luminaires for stage lighting and studios under Class A;
- h) a clarification about the classification of emergency lighting equipment;
- i) a clarification for lighting equipment including one control module with an active input power ≤ 2 W;
- j) an update of the test conditions for television receivers;
- k) an update of the test conditions for induction hobs, taking also into account the other types of cooking appliances;
- l) for consistency with IEC 61000-3-12, a change of the scope of IEC 61000-3-2 from equipment with an input current ≤ 16 A to equipment with a rated input current ≤ 16 A.

The text of this standard is based on the following documents:

FDIS	Report on voting
77A/986/FDIS	77A/990/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61000 series, published under the general title, *Electromagnetic compatibility (EMC)*, can be found on the IEC website.

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A1 AMENDMENT A1 FOREWORD

This amendment has been prepared by subcommittee 77A: EMC – Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

The text of this amendment is based on the following documents:

FDIS	Report on voting
77A/1077/FDIS	77A/1084/RVD

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Amendment A2 FOREWORD

Amendment 2 to IEC 61000-3-2:2018 has been prepared by subcommittee 77A: EMC – Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

The text of this Amendment is based on the following documents:

Draft	Report on voting
77A/1161/CDV	77A/1181/RVC

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Amendment is English

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications/.

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INTRODUCTION

IEC 61000 is published in separate parts, according to the following structure:

Part 1: General

General considerations (introduction, fundamental principles)
Definitions, terminology

Part 2: Environment

A1 Description of the environment **A1**
Classification of the environment
Compatibility levels

Part 3: Limits

Emission limits
Immunity limits (in so far as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

Measurement techniques
Testing techniques

Part 5: Installation and mitigation guidelines

Installation guidelines
Mitigation methods and devices

Part 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as international standards or as technical specifications or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and a second number identifying the subdivision (example: IEC 61000-6-1).

A2 INTRODUCTION to Amendment 2

Amendment 2 to IEC 61000-3-2 Ed. 5.1 (= IEC 61000-3-2:2018 plus IEC 61000-3-2/AMD1:2021) is based on 77A/1098/Q, 77A/1106/DISH, 77A/1123A/RQ, 77A/1149/CD, 77A/1150/CD, 77A/1151/CD, 77A/1152/CD, the observations to these CD's and discussions in SC77A / WG1 during the meetings October 2021, May 2022 and November 2022.

At CD stage the amendment has been split into 4 different fragments:

Fragment 1	Lighting equipment
Fragment 2	Test conditions
Fragment 3	Repeatability and measurement uncertainty
Fragment 4	Miscellaneous

As the number of comments on the 4 different CDs was not very high, SC77A WG1 during its meeting November 2022 in San Diego decided to combine the 4 fragments already at CDV stage.

This amendment contains the following main changes in comparison with IEC 61000-3-2:2018 and IEC 61000-3-2:2018/AMD1:2020:

- Inclusion of Interpretation Sheet IEC 61000-3-2:2018/AMD1:2020/ISH1:2021
- New terms and definitions reflecting the actual luminaires on the market
- Adapted test conditions for actual luminaires on the market
- Consolidate the test conditions for video-cassette recorders
- Revision of test conditions for washing machines
- Clarification of references in clause B.17
- Adding IEC Guide 115 to the normative references
- Better specification for repeatability
- New specification for measurement uncertainty and decision rule where in comparison with 77A/1161/CDV the notes in 8.2.1 have been updated to refer to the newest version of IEC Guide 115
- Adding IEC TR 61000-1-6 to the bibliography
- New definition for an independent function
- New definitions for symmetrical control, asymmetrical control and phase control
- Clarification that special test conditions in Annex B have precedence over the general test conditions in clause 6.3.1
- Clarification for the calculation of THC, THD or POHC (The disregarding of currents less than 0,6 % of input current or less than 5 mA applies only to individual harmonics.)
- Clarification for the application of class D limits
- Clarification for the requirements on the test voltage in A.2, bullet d)
- Addition of an informative Annex D "Symmetry of mains current waveforms" **A2**

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)

1 Scope

This part of IEC 61000 deals with the limitation of harmonic currents injected into the public supply system.

It specifies limits of harmonic components of the input current which can be produced by equipment tested under specified conditions.

This part of IEC 61000 is applicable to electrical and electronic equipment having a rated input current up to and including 16 A per phase, and intended to be connected to public low-voltage distribution systems.

A1 Arc welding equipment, which is not professional equipment, with a rated input current up to and including 16 A per phase, is included in the scope of this document. All other arc welding equipment is excluded from the scope of this document; however, the harmonics emission can be evaluated using IEC 61000-3-12 and relevant installation restrictions. **A1**

A2 *deleted text* **A2**

A2 For systems with nominal voltages less than 220 V (line-to-neutral), limits have not yet been considered. **A2**

NOTE The words apparatus, appliance, device and equipment are used throughout this document. They have the same meaning for the purposes of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

A1 IEC 60050-161:1990, *International Electrotechnical Vocabulary (IEV) – Part 161: Electromagnetic compatibility* (available at www.electropedia.org)

IEC 60107-1:1997, *Methods of measurement on receivers for television broadcast transmissions – Part 1: General considerations – Measurements at radio and video frequencies*

IEC 60155:1993, *Glow-starters for fluorescent lamps*

IEC 60268-1:1985, *Sound system equipment – Part 1: General*

IEC 60268-1:1985/AMD1:1988

IEC 60268-1:1985/AMD2:1988

IEC 60268-3:2018, *Sound system equipment – Part 3: Amplifiers*

IEC 60335-2-2:2019, *Household and similar electrical appliances – Safety – Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances*

Ⓐ₂ IEC 60335-2-14:2016, *Household and similar electrical appliances – Safety – Part 2-14: Particular requirements for kitchen machines*
IEC 60335-2-14:2016/AMD1:2019

IEC 60335-2-24:2020, *Household and similar electrical appliances – Safety – Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice makers*

IEC 60335-2-79:2021, *Household and similar electrical appliances – Safety – Part 2-79: Particular requirements for high pressure cleaners and steam cleaners*

IEC 60598-2-17:2017, *Luminaires – Part 2-17: Particular requirements – Luminaires for stage lighting, television and film studios (outdoor and indoor)*

IEC 60974-1:2021, *Arc welding equipment – Part 1: Welding power sources* Ⓐ₂

IEC 61000-4-7:2002, *Electromagnetic compatibility (EMC) – Part 4-7: Testing and measurement techniques – General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto*
IEC 61000-4-7:2002/AMD1:2008

IEC 62756-1:2015, *Digital load side transmission lighting control (DLT) – Part 1: Basic requirements* Ⓐ₁

Ⓐ₂ IEC GUIDE 115:2023, *Application of uncertainty of measurement to conformity assessment activities in the electrotechnical sector* Ⓐ₂

3 Terms and definitions

Ⓐ₂ For the purposes of this document, the following terms and definitions apply. Ⓐ₂

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

portable tool

electrical tool which is hand-held during normal operation and used for a short time (a few minutes) only

Note 1 to entry: Hand-held means that no part of the tool, except the power cord, rests on the floor during normal operation.

3.2

Ⓐ₁ lamp

light source provided with at least one cap

Note 1 to entry: For products that have the same physical characteristics as lamps for general lighting but that are built to emit optical radiation mainly in the IR or UV spectrum, the term IR lamp or UV lamp is often used.

[SOURCE: IEC 60050-845:2020, 845-27-008, modified – existing notes 2 and 3 have been removed, the term “electric” has been removed from the term and the definition] Ⓐ₁