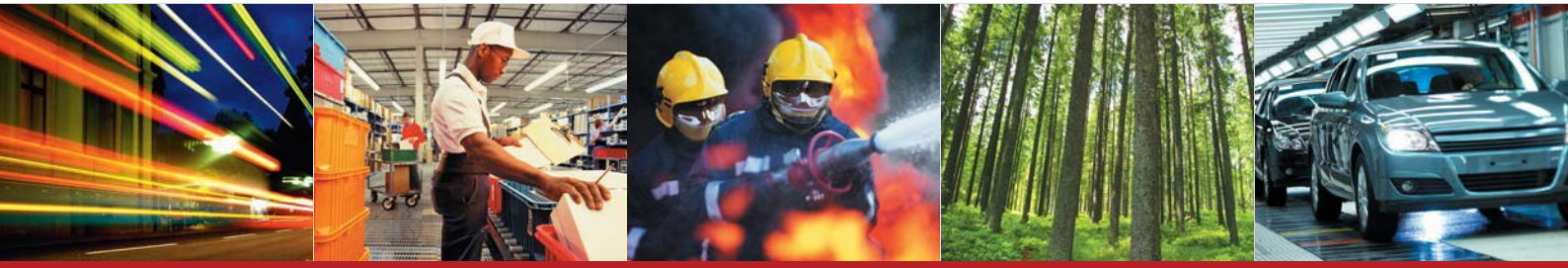

BSI Standards Publication

Electromagnetic compatibility (EMC)

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

bsi.

IMPORTANT — PLEASE NOTE

This is a tracked changes copy and uses the following colour coding:

Test example 1 — indicates added text (in green)

~~Test example 2~~ — indicates removed text (in red)

 — indicates added graphic figure or table

 — indicates removed graphic figure or table

About tracked changes

This document is a combined PDF containing a "tracked changes" version of BS EN 61000-3-2, which compares BS EN IEC 61000-3-2:2019 with BS EN 61000-3-2:2014.

The original version of BS EN IEC 61000-3-2:2019, appended at the end of this document, should be considered the version of record for this publication.

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Amendments/corrigenda issued since publication

Date	Text affected

Electromagnetic compatibility (EMC)

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

Version comparison

This version comparison compares where new and revised clauses are located between BS EN IEC 61000-3-2:2019 and BS EN 61000-3-2:2014.

BS EN IEC 61000-3-2:2019 to BS EN 61000-3-2:2014

BS EN IEC 61000-3-2:2019		BS EN 61000-3-2:2014	
	Foreword		Foreword
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1	Scope	1	Scope
2	Normative references	2	Normative references
3	Terms and definitions	3	Terms and definitions
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5.1	General	NEW	
5.2	Description of lighting equipment	NEW	
6	General requirements	6	General requirements
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6.2	Control methods	6.1	Control methods
6.3	Harmonic current measurement	6.2	Harmonic current measurement
6.4	Equipment in a rack or case	6.3	Equipment in a rack or case
7	Harmonic current limits	7	Harmonic current limits
7.1	General	NEW	

7.3 Limits for Class B equipment	7.2 Limits for Class B equipment
7.4 Limits for Class C equipment	7.3 Limits for Class C equipment
7.5 Limits for Class D equipment	7.4 Limits for Class D equipment
Annex A (normative) Measurement circuit and supply source	Annex A (normative) Measurement circuit and supply source
DELETED	Annex B (normative) Requirements for measurement equipment
Annex B (normative) Type test conditions	Annex C (normative) Type test conditions
Bibliography	Bibliography

National foreword

This British Standard is the UK implementation of EN IEC 61000-3-2:~~2014~~2019. It is identical to IEC 61000-3-2:~~2014~~2018. It supersedes BS EN 61000-3-2:~~2006+A2:2009~~2014, which will be withdrawn on ~~30 June 2017~~1 March 2022.

The UK participation in its preparation was entrusted ~~by~~to Technical Committee GEL/210/11, EMC ~~Policy committee, to Subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena Standardization~~ Standards Committee.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Published by BSI Standards Limited ~~2014~~2019

ISBN 978 0 580 ~~75597 2~~88013 1

ICS 33.100.10

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on ~~30 September 2014~~31 March 2019.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD **EN IEC 61000-3-2**

EUROPÄISCHE NORM

~~August 2014~~ March 2019

ICS 33.100.10

Supersedes EN 61000-3-2:~~2006~~2014

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:~~2014~~2018)

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

(~~CEI~~IEC 61000-3-2:~~2014~~2018)

Elektromagnetische Verträglichkeit (EMV) - Teil 3-2: Grenzwerte - Grenzwerte für Oberschwingungsströme (Geräte-Eingangsstrom ≤ 16 A je Leiter)

(IEC 61000-3-2:~~2014~~2018)

This European Standard was approved by CENELEC on ~~2014-06-30~~2018-03-02. 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.

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

CENELEC

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

CEN-CENELEC Management Centre: ~~Avenue Marnix 17~~Rue de la Science 23, B-~~1000~~1040 Brussels

~~Foreword~~European foreword

The text of document 77A/~~846~~986/FDIS, future edition ~~4~~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:~~2014~~2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) ~~2015-03-30~~ 2019-09-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) ~~2017-06-30~~ 2022-03-01

This document supersedes EN 61000-3-2:~~2006~~2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC ~~[and/or CEN]~~ shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association~~, and supports essential requirements of EU Directive(s)~~.

~~For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.~~

Endorsement notice

The text of the International Standard IEC 61000-3-2:~~2014~~2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

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.

(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in ~~whole~~the text in such a way that some or ~~in part, are normatively referenced in~~all of their content constitutes requirements of this document~~ and are indispensable for its application~~. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 ~~When~~Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
~~IEC 60050-131~~	~~-~~	~~International Electrotechnical Vocabulary (IEV) - Part 131: Circuit theory~~	~~-~~	~~-~~
IEC 60050-161	-	International - Electrotechnical Vocabulary.- ~~(IEV)~~ Chapter 161: Electromagnetic compatibility	-	-
~~IEC 60107-1~~	~~-~~	~~Methods of measurement on receivers for television broadcast transmissions -- Part 1: General considerations - Measurements at radio and video frequencies~~	~~EN 60107-1~~	~~-~~
IEC 60155	-	Glow-starters for fluorescent lamps	EN 60155	-
~~IEC 60268-1~~	~~1985~~	~~Sound system equipment -- Part 1: General~~	~~HD 483.1 S2~~	~~1989~~
IEC 60268-3	-	Sound system equipment -- Part 3: Amplifiers ~~(GMT)~~	EN 60268-3	-
~~IEC 60335-2-2~~	~~-~~	~~Household and similar electrical appliances - Safety -- Part 2-2: Particular requirements for vacuum cleaners and water-suction cleaning appliances~~	~~EN 60335-2-2~~	~~-~~
~~IEC 60335-2-14~~	~~-~~	~~Household and similar electrical appliances - EN 60335-2-14 Safety -- Part 2-14: Particular requirements for kitchen machines~~	~~EN 60335-2-14~~	~~-~~
IEC 60335-2-24	2010	Household and similar electrical appliances - ~~EN 60335-2-24~~ Safety - Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice makers	EN 60335-2-24	2010
~~IEC 60335-2-79~~	~~-~~	~~Household and similar electrical appliances - EN 60335-2-79 Safety -- Part 2-79: Particular requirements for high pressure cleaners and steam cleaners~~	~~EN 60335-2-79~~	~~-~~
~~IEC 60974-1~~	~~-~~	~~Arc welding equipment -- Part 1: Welding EN 60974-1 power sources~~	~~EN 60974-1~~	
~~IEC 61000-2-2~~		~~Electromagnetic compatibility (EMC) -- Part EN 61000-2-2 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems~~	~~EN 61000-2-2~~	~~-~~

		~~Part EN 61000-3-12 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase~~		
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	EN 61000-4-7	~~-~~2002
~~IEC/TS 61000-3-4~~	~~-~~	~~Electromagnetic compatibility (EMC) – Part 3-4: Limits - Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A~~	~~-~~	~~-~~
+ A1	2008		+ A1	2009
~~ITU-R BT.471-1~~	~~-~~	~~Nomenclature and description of colour bar signals~~	~~-~~	~~-~~

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~~(informative)~~

~~Coverage of Essential Requirements of EU 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 protection requirements of Annex I Article 1(a) of the EU Directive 2004/108/EC and protection requirements of Article 3.1(b) (emissions only) of the EU Directive 1999/5/EC.~~

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

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

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

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS)and Guides (here after referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

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;

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 activeinput 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.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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

Description levels

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 ~~sections which are to be~~several parts, published either as international standards or as technical specifications or ~~as~~ technical reports.~~These standards and reports will be published in chronological order and numbered accordingly (for~~, 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).

~~This part is an international standard which gives emission limits for harmonic currents from equipment having an input current up to and including 16 A per phase.~~

~~This part is a Product Family Standard.~~

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 ~~may~~can be produced by equipment tested under specified conditions.

~~Harmonic components are measured according to Annexes A and B.~~

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

Arc welding equipment which is not professional equipment, with a rated input current up to and including 16 A per phase, is included in this ~~standard~~document. Arc welding equipment intended for professional use, as specified in IEC 60974-1, is excluded from this ~~standard~~document and ~~may~~can be subject to installation restrictions as indicated in ~~IEC/TR 61000-3-4 or~~ IEC 61000-3-12.

The tests according to this ~~standard~~document are type tests. ~~Test conditions for particular equipment are given in Annex C.~~

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

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

2 Normative references

The following documents are referred to in ~~whole~~the text in such a way that some or ~~in part, are normatively referenced in~~all of their content constitutes requirements of this document ~~and are indispensable for its application~~. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

~~IEC 60050-131, *International Electrotechnical Vocabulary (IEV) – Part 131: Electric and magnetic circuits*~~

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

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

IEC 60155, *Glow-starters for fluorescent lamps*

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

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