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## Elektromagnetisk kompatibilitet (EMC) – Del 4: Mät- och provningsmetoder – Flickermeter – Konstruktion och utförande

*Electromagnetic compatibility (EMC) –**Part 4: Testing and measurement techniques –**Section 15: Flickermeter – Functional and design specifications*

Som svensk standard gäller europastandarden EN 61000-4-15:1998. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61000-4-15:1998.

### Nationellt förord

Europastandarden EN 61000-4-15:1998

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61000-4-15, First edition, 1997 - Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques - Section 15: Flickermeter - Functional and design specifications**

utarbetad inom International Electrotechnical Commission, IEC.

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ICS 33.100

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EUROPEAN STANDARD

EN 61000-4-15

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1998

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ICS 33.100

Descriptors: Electromagnetic compatibility, tests, type testing: tests, measuring techniques, measuring instruments, flicker meters, design, performance evaluation, specifications

English version

**Electromagnetic compatibility (EMC)**  
**Part 4: Testing and measurement techniques**  
**Section 15: Flickermeter - Functional and design specifications**  
**(IEC 61000-4-15:1997)**

Compatibilité électromagnétique (CEM)  
Partie 4: Techniques d'essai et de mesure  
Section 15: Flickermètre - Spécifications fonctionnelles et de conception  
(CEI 61000-4-15:1997)

Elektromagnetische  
Verträglichkeit (EMV)  
Teil 4: Prüf- und Meßverfahren  
Hauptabschnitt 15: Flickermeter  
Funktionsbeschreibung und  
Auslegungsspezifikation  
(IEC 61000-4-15:1997)

This European Standard was approved by CENELEC on 1998-04-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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**

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### Foreword

The text of document 77A/180/FDIS, future edition 1 of IEC 61000-4-15, prepared by SC 77A, Low-frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61000-4-15 on 1998-04-01.

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) 1999-01-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2001-01-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annexes A and ZA are normative.  
Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 61000-4-15:1997 was approved by CENELEC as a European Standard without any modification.

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**Annex ZA (normative)**

**Normative references to international publications  
with their corresponding European publications**

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).

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 60068-2-1	1990	Environmental testing Part 2: Tests - Tests A: Cold	EN 60068-2-1	1993
IEC 60068-2-2	1974	Part 2: Tests - Test B: Dry heat	EN 60068-2-2 <sup>1)</sup>	1993
IEC 60068-2-3	1969	Part 2: Tests - Test Ca: Damp heat, steady state	HD 323.2.3 S2 <sup>2)</sup>	1987
IEC 60068-2-14	1984	Part 2: Tests - Test N: Change of temperature	HD 323.2.14 S2 <sup>3)</sup>	1987
IEC 61000-3-3	1994	Electromagnetic compatibility (EMC) Part 3: Limits Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to and including 16 A	EN 61000-3-3 + corr. July	1995 1997
IEC 61000-4-2	1995	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
IEC 61000-4-3 (mod)	1995	Part 4: Testing and measurement techniques Section 3: Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	1996
IEC 61000-4-4	1995	Section 4: Electrical fast transient/burst immunity test	EN 61000-4-4	1995
IEC 61000-4-5	1995	Section 5: Surge immunity test	EN 61000-4-5	1995

1) EN 60068-2-2 includes supplement A:1976 to IEC 60068-2-2.

2) HD 323.2.3 S2 includes A1:1984 to IEC 60068-2-3.

3) HD 323.2.14 S2 includes A1:1986 to IEC 60068-2-14.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-6	1996	Section 6: Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996
IEC 61000-4-8	1993	Section 8: Power frequency magnetic field immunity test	EN 61000-4-8	1993
IEC 61000-4-9	1993	Section 9: Pulse magnetic field immunity test	EN 61000-4-9	1993
IEC 61000-4-11	1994	Section 11: Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994
IEC 61000-4-12	1995	Section 12: Oscillatory waves immunity test Basic EMC publication	EN 61000-4-12	1995
IEC 61010-1 (mod)	1990	Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements	EN 61010-1 <sup>4)</sup>	1993
IEC 61326-1	1997	Electrical equipment for measurement, control and laboratory use - EMC requirements Part 1: General requirements	EN 61326-1 + corr. January	1997 1998
IEC 61326-10	<sup>5)</sup>	Part 10: Particular requirements for equipment used in industrial locations	-	-

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4) EN 61010-1 includes A1:1992 to IEC 61010-1.

5) To be published.

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## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 4: Testing and measurement techniques – Section 15: Flickermeter – Functional and design specifications

#### 1 Scope and object

This section of IEC 61000-4 gives a functional and design specification for flicker measuring apparatus intended to indicate the correct flicker perception level for all practical voltage fluctuation waveforms. Information is presented to enable such an instrument to be constructed. A method is given for the evaluation of flicker severity on the basis of the output of flickermeters complying with this standard.

This section is based on specifications prepared by the “Disturbances” working group of the International Union for Electroheat (UIE) and published in 1992. Consequently the flickermeter specifications in this section relate only to measurements of 230 V, 50 Hz inputs; specifications for other voltages and other frequencies are under consideration.

The object of this section is to provide basic information for the design and the instrumentation of an analogue or digital flicker measuring apparatus. It does not give tolerance limit values of flicker severity.

#### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 61000-4. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 61000-4 are encouraged to investigate the possibility of applying the most recent edition of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60068-2-1:1990, *Environmental testing – Part 2: Tests – Tests A: Cold*

IEC 60068-2-2:1974, *Environmental testing – Part 2: Tests – Tests B: Dry heat*

IEC 60068-2-3:1969, *Environmental testing – Part 2: Tests – Test Ca: Damp heat, steady state*

IEC 60068-2-14:1984, *Environmental testing – Part 2: Tests – Test N: Change of temperature*

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current  $\leq 16$  A*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test*

IEC 61000-4-3:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test*

IEC 61000-4-5:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 5: Surge immunity test*

IEC 61000-4-6:1996, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: 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*

IEC 61000-4-9:1993, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 9: Pulse magnetic field immunity test*

IEC 61000-4-11:1994, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61000-4-12:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 12: Oscillatory waves immunity test*

IEC 61010-1:1990, *Safety requirements for electrical equipment for measurement, control, and laboratory use – Part 1: General requirements*

IEC 61326-1:1997, *Electrical equipment for measurement, control and laboratory use – Electromagnetic compatibility (EMC) requirements – Part 1: General requirements*

IEC 61326-10, — *Electrical equipment for measurement, control and laboratory use – Electromagnetic compatibility (EMC) requirements – Part 10: Particular requirements for equipment used in industrial locations \**

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