SIS - Standardiseringskommissionen i Sverige

SVENSKA ELEKTROTEKNISKA NORMER, SEN
SVENSK STANDARD SS-EN 61 050

Handläggande organ	Fastställd	Utgåva	Sida	Ingår i
SEK, SVENSKA ELEKTRISKA KOMMISSIONEN	1992-10-14	1	1 (1+39)	SEK Översikt 34

Registrering
Reg 431 01 64

Transformatorer med tomgångsspänning som överstiger 1000 V avsedda för direkttändande urladdningsrör (neontransformatorer) – Säkerhet – Allmänna fordringar

Transformers for tubular discharge lamps having a no-load output voltage exceeding 1000 V (generally called neon-transformers) – General and safety requirements

Denna svenska standard överensstämmer med europastandard EN 61 050: 1992, utarbetad inom CENELEC, vilken med CENELEC common modifications ikraftsätter nedan angiven internationell standard, utarbetad inom International Electrotechnical Commission, IEC.

IEC 1050, First edition, 1991

Transformers for tubular discharge lamps having a no-load output voltage exceeding 1000 V (generally called neon-transformers) - General and safety requirements

jämte

Corrigendum, 1992

I den svenska standarden återges europastandarden, bestående av den engelskspråkiga versionen av europastandardens ikraftsättningsdokument och IEC 1050.

UDK 628.97.041.7-2:621.327.43:621.314.21:620.1:614.8

Standarder kan beställas hos SIS som även lämnar allmänna upplysningar om svensk och utländsk standard.
Postadress: SIS, Box 3295, 103 66 Stockholm
Telefon: 08 - 613 52 00. *Telefax*: 08 - 11 70 35

Upplysningar om **sakinnehållet** i standarden lämnas av SEK.
Telefon: 08 - 750 78 20. *Telefax*: 08 - 751 84 70

Prisgrupp S

Tryckt i november 1992

FOREWORD

At the request of the secretary of CENELEC Technical Committee TC 34Z, Luminaires and associated equipment, the International Standard IEC 1050:1991 was submitted to the CENELEC Unique Acceptance Procedure (UAP) in June 1991 for acceptance as a European Standard.

The reference document and its corrigendum March 1992, together with some common modifications agreed by 71 Technical Board, were approved by CENELEC as EN 61050 on 24 March 1992.

EN 61050 supersedes HD 388 S2:1983.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1993-03-01

- latest date of withdrawal of conflicting national standards (dow) 1993-03-01

For products which have complied with HD 388 S2:1983 before 1993-03-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1998-03-01.

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

EUROPEAN STANDARD

NORME EUROPEENNE

EUROPÄISCHE NORM

EN 61050

June 1992

UDC 628.97.041.7-2:621.327.43:621.314.21:620.1:614.8

Supersedes HD 388 S2:1983

Descriptors: Lighting equipment, electric lamp, discharge lamp, tubular lamp, transformer, classification, safety requirement, electrical property, degree of protection, marking

ENGLISH VERSION

Transformers for tubular discharge lamps having a no-load output voltage exceeding 1000 V (generally called neon-transformers) General and safety requirements

(IEC 1050:1991 + Corrigendum March 1992, modified)

Transformateurs pour lampes tubulaires à décharge ayant une tension secondaire à vide supérieure à 1000 V (couramment appelés transformateurs-néon) Prescriptions générales et de sécurité

(CEI 1050:1991 + corrigendum mars 1992, modifiée)

Transformatoren mit einer Leerspannung über 1000 V für Leuchtröhren (allgemein Neontransformatoren genannt) Allgemeine und Sicherheits-Anforderungen

(IEC 1050:1991 + Corrigendum März 1992, modifiziert)

This European Standard was approved by CENELEC on 1992-03-24. 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, 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

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

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

IEC Publication	Date	Title	EN/HD	Date
112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
417	1973	Graphical symbols for use on equipment Index, survey and compilation of the single sheets	HD 243 S1*	1973
529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
598-1 (mod) + A1	1986 1988	Luminaires - Part 1: General requirements and tests	EN 60598-1	1989
695-2-1	1980	Fire hazard testing - Part 2: Test methods - Glow-wire test and guidance	HD 444.2.1 S1	1983
817	1984	Spring-operated impact-test apparatus and its calibration	HD 495 S1	1987
1048	1990	Capacitors for use in tubular fluorescent and other discharge lamp circuits - General and safety requirements (Corrigendum 1992)	-	-

Other publication

ISO 3: 1973 - Preferred numbers - Series of preferred numbers

---

* Superseded by HD 243 S9:1991 which is based on IEC 417:1973 + supplements A:1974 to J:1990

ENDORSEMENT NOTICE

The text of the International Standard IEC 1050:1991 and its corrigendum March 1992 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

[redacted]

TRANSFORMERS FOR TUBULAR DISCHARGE LAMPS HAVING A NO-LOAD OUTPUT VOLTAGE EXCEEDING 1 000 V

(generally called neon-transformers)

General and safety requirements

SECTION 1: GENERAL REQUIREMENTS

1 General

1.1 *Scope*

This International Standard is applicable to independent and built-in single-phase transformers with separate input and output windings, for use on a.c. supply up to 1 000 V at 50 Hz or 60 Hz, to supply and stabilize cold cathode tubular lamps (or assemblies of such lamps) having a no-load rated output voltage exceeding 1 000 V but not exceeding 10 000 V (see notes 1 and 2) and intended for lighting and for electric advertising signs, light signals and similar purposes.

NOTE - Different requirements apply in Japan and North America, which will be the subject of a future annex to this standard.

In order to ensure the safety of these transformers, it is necessary to check their performance. But since no standardization of the characteristics of these lamps exists, reference loads are defined in this standard to ensure reproducible test results.

In locations where special conditions prevail, as in ships, vehicles and the like, and in dangerous locations, for example, where explosions are liable to occur, special constructions may be required.

This standard does not apply to transformers intended for the supply of lamps or tubes such as low-pressure or high-pressure sodium vapour lamps, high-pressure mercury vapour lamps, halogen lamps, xenon lamps, hot cathode tubular fluorescent lamps, special lamps for document copying machines, etc.

This standard does not apply to auto-transformers and electronic convertors.

This standard may, nevertheless, serve as a guide for transformers with applications other than those specified in the scope, for instance transformers for photographic lamps, as long as their characteristics remain within the framework of those specified in the scope and they are not the subject of a particular IEC standard.

Capacitors shall comply with IEC 1048, where applicable.

CONTENTS

2.2 **short-circuit current:** Current between output terminals when joined together at rated input voltage and frequency.

2.3 **independent transformer:** Transformer consisting of one or more separate units which can be mounted separately outside a luminaire, without any additional enclosure. This may consist of a built-in transformer housed in a suitable enclosure which provides all the necessary protection according to its marking.

2.4 **built-in transformer:** Transformer consisting of one or more separate units exclusively designed to be built into a luminaire, a box, an enclosure, or the like.

2.5 **short-circuit proof transformer:** Transformer in which the temperature rise does not exceed the specified limits when the transformer is overloaded or short-circuited, and which remains capable of functioning after the overload is removed.

2.6 **inherently short-circuit proof transformer:** Transformer in which the temperature in the case of overload or short-circuit and in the absence of a protective device does not exceed the specified limits and which continues to function after the overload or short-circuit is removed.

2.7 **tubular cold cathode discharge lamp:** Discharge tube having cathodes which may be coated with an electron emitting material and which during the starting process without external heating, emits electrons by field emission. These lamps have a low-pressure filling of a rare gas (or a mixture of rare gases) and possibly mercury vapour. They can have an inside coating of fluorescent materials.

2.8 **no-load rated output voltage:** Maximum voltage between the terminals of the output winding(s) of the transformer connected to rated supply voltage at rated frequency, with no load on the output circuit. It is the peak value divided by $\sqrt{2}$.

2.9 **normal load equivalent resistance:** Non-inductive resistance connected to the output terminals of the transformer which will allow the rated output current to flow in the output winding(s) when the rated supply voltage at rated frequency is applied to the input winding (see figure 1).

2.10 **effective load:** Discharge lamps connected to the output terminals of the transformer which allow the rated output current to flow in the output winding(s) when the rated supply voltage at rated frequency is applied to the input winding.

2.11 **high power factor transformer:** Transformer having an overall power factor of at least 0,85 at 50 Hz or 0,9 at 60 Hz when connected to effective load at rated input voltage and frequency.

NOTES

1 See definition of 2.9

2 Other limits may be specified in national standards or wiring rules, see annex A.

Tests in this standard are type tests. Guidance on routine testing is given in annex C.

1.2 *Normative references*

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

IEC standards

IEC 112: 1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions.*

IEC 417: 1973, *Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.*

IEC 529: 1989, *Degrees of protection provided by enclosures (IP Code).*

IEC 598-1: 1986, *Luminaires - Part 1: General requirements and tests. Amendment No. 1* (1988).

IEC 695-2-1: 1980, *Fire hazard testing - Part 2: Test methods. Glow-wire test and guidance.*

IEC 817: 1984, *Spring-operated impact-test apparatus and its calibration.*

IEC 1048: 1990, *Capacitors for use in tubular fluorescent and other discharge lamp circuits. General and safety requirements.*

ISO Standard

ISO 3: 1973, Preferred numbers - Series of preferred numbers.

[redacted]

IEC Publication 1050
(First edition - 1991)

Transformers for tubular discharge lamps having a no-load output voltage exceeding 1 000 V (generally called neon-transformers) General and safety requirements

CORRIGENDUM

Page 57

Table A.1

Instead of:

Earthing requirements for the output windings (see 19.2)

read:

Earthing requirements for the output windings (see 18.2)

March 1992