



SLOVENSKI STANDARD
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01-marec-2021

Gospodinjski sobni neposredni grelniki - Metode za merjenje funkcionalnost - 3. del: Dodatna določila za merjenje učinkovitosti sevanja

Household electric direct-acting room heaters - Methods for measuring performance - Part 3: Additional provisions for the measurement of the radiation efficiency

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17.240	Merjenje sevanja	Radiation measurements
97.100.10	Električni grelniki	Electric heaters

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en

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EUROPEAN STANDARD

EN IEC 60675-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2021

ICS 97.100.10

English Version

Household electric direct-acting room heaters - Methods for
measuring performance - Part 3: Additional provisions for the
measurement of the radiation efficiency
(IEC 60675-3:2020)

Appareils électrodomestiques de chauffage des locaux à
action directe - Méthodes de mesure de l'aptitude à la
fonction - Partie 3: Dispositions supplémentaires pour la
mesure du rendement de rayonnement
(IEC 60675-3:2020)

Elektrische Haushalt-Direktheizgeräte - Prüfverfahren zur
Bestimmung der Gebrauchseigenschaft - Teil 3: Zusätzliche
Bestimmungen für die Messung der
Strahlungswirkungsgrades
(IEC 60675-3:2020)

This European Standard was approved by CENELEC on 2021-01-08. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 60675-3:2021 (E)**European foreword**

The text of document 59C/257/FDIS, future edition 1 of IEC 60675-3, prepared by SC 59C "Electrical heating appliances for household and similar purposes" of IEC/TC 59 "Performance of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60675-3:2021.

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) 2021-10-08
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-01-08

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60531 NOTE Harmonized as EN 60531
<https://standards.iteh.ai/en/standards/iec/60531/296da2-3437-4d82-b43e-6da4ae25a311/sist-en-iec-60675-3-2021>

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 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.

Replace the references in Annex ZA of EN 60675:1995 with the following references:

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60675	1994	Household electric direct-acting room heaters - Methods for measuring performance	EN 60675	1995
+ A1	1998		+ A1	1998
+ A2	2018		+ A2	2018
-	-		+ A11	2019
IEC 60675-2	2020	Household electric direct-acting room heaters - Methods for measuring performance - Part 2: Additional provisions for the measurement of the radiation factor	EN IEC 60675-2	2021

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IEC 60675-3

Edition 1.0 2020-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Household electric direct-acting room heaters – Methods for measuring performance –
Part 3: Additional provisions for the measurement of radiation efficiency**

**Appareils électrodomestiques de chauffage des locaux à action directe –
Méthodes de mesure de l'aptitude à la fonction –
Partie 3: Dispositions supplémentaires pour la mesure du rendement de rayonnement**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD ELECTRIC DIRECT-ACTING ROOM HEATERS – METHODS FOR MEASURING PERFORMANCE –

Part 3: Additional provisions for the measurement of radiation efficiency

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 (hereafter 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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- 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 60675-3 has been prepared by subcommittee 59C: Electrical heating appliances for household and similar purposes, of IEC technical committee 59: Performance of household and similar electrical appliances.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
59C/257/FDIS	59C/261/RVD

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

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

This International Standard is to be used in conjunction with IEC 60675:1994, IEC 60675:1994/AMD1:1998 and IEC 60675:1994/AMD2:2018. This document supplements or modifies the corresponding clauses of IEC 60675:1994. Where the text indicates an "addition" to or a "replacement" of the relevant provision of IEC 60675:1994, these changes are made to the relevant text of IEC 60675:1994. Where no change is necessary, the words "This clause of IEC 60675:1994 is applicable" are used. When a particular subclause of IEC 60675:1994 is not mentioned in this part, that subclause applies as far as is reasonable.

Additional specific provisions to those in Part 1, given as individual clauses or subclauses, are numbered starting from 101.

NOTE The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

In this document, the following print types are used:

- **terms listed in Clause 3 of this document and of IEC 60675:1994 and IEC 60675-2:2020: Arial bold.**
- *test specifications: in italic type.*

A list of all parts in the IEC 60675 series, published under the general title *Household electric direct-acting room heaters – Methods for measuring performance*, can be found on the IEC website.

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

HOUSEHOLD ELECTRIC DIRECT-ACTING ROOM HEATERS – METHODS FOR MEASURING PERFORMANCE –

Part 3: Additional provisions for the measurement of radiation efficiency

1 Scope

This clause of IEC 60675:1994 is applicable, with the following modification:

Replace the first paragraph with the following content:

This document applies to electric direct-acting room heaters.

This document defines performance characteristics related to the radiant effect and specifies methods for measuring the **radiation efficiency** for the information of users.

This document is used to measure the **radiation efficiency** of direct-acting room heaters.

2 Normative references

Replace Clause 2 of IEC 60675:1994 with the following content:

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.

IEC 60675:1994, *Household electric direct-acting room heaters – Methods for measuring performance*

IEC 60675:1994/AMD1:1998

IEC 60675:1994/AMD2:2018

IEC 60675-2:2020, *Household electric direct-acting room heaters – Methods for measuring performance – Part 2: Additional provisions for the measurement of the radiation factor*

3 Terms, definitions and symbols

Replace Clause 3 of IEC 60675:1994 with the following content:

For the purposes of this document, the terms and definitions given in IEC 60675:1994, IEC 60675:1994/AMD1:1998, IEC 60675-2:2020 and the following apply.

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>

3.101

radiant factor

ratio of the measured infrared heat output to the measured total energy input, expressed in %

Note 1 to entry: The **radiant factor** can be measured for **panel heaters**, **convector heaters** and **radiant heaters**

3.102

radiation efficiency

ratio of the heat flow into a (testing) chamber by radiation exchange between an active radiant heating surface and the inner surfaces of the chamber to the nominal electric power of a heater inside this **testing chamber**

Note 1 to entry: The **radiant factor** and the **radiation efficiency** are measured on different physical background and not comparable.

3.103

active radiant heating surface

room-facing surfaces of heaters

Note 1 to entry: Areas with average temperatures below 40 °C, like frames, mounting devices, operation panels, and other additions, shall be excluded from being part of the respective **active radiant heating surface**.

3.104

rated power

electrical input Q_M in W, measured in steady-state conditions calculated as the average of the electrical input during the measurement of the **radiation efficiency** over the period necessary for confirming steady-state conditions

Note 1 to entry: Steady-state conditions are reached when the heater's surface temperature does not vary by more than 1 K over 10 min.

3.105

emissivity

ratio of radiant flux of a specific surface as compared to the radiant flux of a standard black body, at the same temperature and in the same environment

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3.106

examinee

heater that is being tested in accordance with this document

3.107

infrared camera

measurement device for recording and pictorial representation of the surface temperatures of heaters

3.108

low temperature infrared heater

heater without visibly glowing parts, with one or more **active radiant heating surfaces**, each with an average temperature between 40 °C and 200 °C, and a **nominal radiation efficiency** of 40 % or higher as determined by this document

Note 1 to entry: "Without visibly glowing parts" denotes that, in case of an installed heater, those parts cannot be detected with the naked eye from a point situated 2 m in front of the heater and 1,2 m above the floor.

3.109

model

heater with the identical construction and appearance as other heaters made by the same manufacturer

3.110

model series

group of **models**