IEC 60675-3

Edition 1.0 2020-12

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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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

IEC 60675-3:2020-12(en-fr)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 97.100.10

ISBN 978-2-8322-9088-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 3: Additional provisions for the measurement of radiation efficiency

FOREWORD

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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.

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.

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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 heater**s, **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

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**