SLOVENSKI STANDARD
SIST EN 60705:1998

01-januar-1998

Methods for measuring the performance of microwave ovens for household an similar purpose (IEC 705:1988 + A1:1993 + A2:1993)

Methods for measuring the performance of microwave ovens for household an similar purpose (IEC 705:1988 + A1:1993 + A2:1993

Verfahren zur Messung der Gebrauchstäuglichkeit von Mikrowellengeräten für den Hausgebrauch und ähnliche Zwecke

Méthodes de mesure de l'aptitude à la fonction des fours micro-ondes à usages domestiques et analogues

Ta slovenski standard je istoveten z: **EN 60705:1995**

ICS:

97.040.20	Štedilniki, delovni pulti, peči ice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances

SIST EN 60705:1998 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60705

August 1995

ICS 97.040.20

Descriptors: Household electrical appliances, microwave ovens, performance, characteristics, measurements

English version

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(IEC 705:1988 + A1:1993 + A2:1993)

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This European Standard was approved by CENELEC on 1995-07-04. 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

Ref. No. EN 60705:1995 E

Foreword

The text of the International Standard IEC 705:1988 with its amendments 1:1993 and 2:1993, prepared by SC 59H, Microwave ovens, of IEC TC 59, Performance of household electrical appliances, was submitted to the formal vote and was approved by CENELEC as EN 60705 on 1995-07-04 without any modification.

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) 1996-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1996-07-01

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

Endorsement notice

The text of the International Standard IEC 705:1988 with its amendments 1:1993 and 2:1993 was approved by CENELEC as a European Standard without any modification.

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.

Publication	Year	Title	EN/HD	Year
IEC 335-2-25 (mod)	1988	Safety of household and similar electrical appliances Part 2: Particular requirements for micro-wave ovens	EN 60335-2-25[1]	1990
IEC 350 (mod)	1971	Methods for measuring performance of household electric ranges and ovens[2]	HD 376 S2	1984

1) EN 60335-2-25 is superseded by EN 60335-2-25:1995, which is based on IEC 335-2-25:1993, mod.

2) The title of HD 376 S2 is *Methods to be used for measuring energy consumption of electric ovens for household use and for the purpose of informing consumers of it.*

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
705

Deuxième éditio
Second edition
1988

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

Méthodes de mesure de l'aptitude à la fonction des fours micro-ondes à usages domestiques et analogues

Methods for measuring the performance of microwave ovens for household and similar purposes

Publication
705: 1988

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

METHODS FOR MEASURING THE PERFORMANCE OF MICROWAVE OVENS FOR HOUSEHOLD AND SIMILAR PURPOSES

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This standard has been prepared by Sub-Committee 59H: Microwave appliances, of IEC Technical Committee No. 59: Performance of household electrical appliances.

This standard forms the second edition of IEC Publication 705 and replaces the first edition (1981) and its Amendment No. 1 (1982).

The text of this standard is based on the following documents:

Six Months' Rule	Reports on Voting	Two Months' Procedure	Report on Voting
59H(CO)11 59H(CO)12 59H(CO)13	59H(CO)15 59H(CO)19 59H(CO)17	59H(CO)16	59H(CO)18

Full information on the voting for the approval of this standard can be found in the Voting Reports indicated in the above table.

In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in small roman type.

The following IEC publications are quoted in this standard:

Publications Nos. 335-2-25 (1988): Safety of household and similar electrical appliances, Part 2: Particular requirements for microwave ovens.

350 (1971): Methods for measuring performance of household electric ranges and ovens.

METHODS FOR MEASURING THE PERFORMANCE OF MICROWAVE OVENS FOR HOUSEHOLD AND SIMILAR PURPOSES

SECTION ONE — GENERAL

1. Scope

This standard applies to appliances for heating food and beverages, by electromagnetic energy (microwaves) in one or more of the I.S.M. frequency bands between 300 MHz and 30 GHz, for household use. These appliances may also use thermal cooking means as employed in conventional cooking ranges and ovens for household use. They may also incorporate a browning function.

This standard also applies to combination microwave ovens when used in the microwave generating mode only. For such ovens the relevant sections of IEC Publication 350 may also apply.

2. Object

The object of this standard is to state and define the principal performance characteristics of microwave ovens which are of interest to the user and to describe the standard methods for measuring these characteristics.

This standard is concerned neither with safety nor with performance requirements. Safety requirements are detailed in IEC Publication 335-2-25.

SECTION TWO — DEFINITIONS

3. Terms used to designate appliances

Microwave oven denotes an appliance which is intended for heating food and beverages in a cavity by use of microwave energy.

4. Terms used to classify appliances or parts of appliances

4.1 *Cavity* denotes the space enclosed by the inner walls and door and into which food and beverages are placed.

4.2 *Shelf* denotes a horizontal support in the cavity on which the load is placed.

4.3 *Microwave transparency* denotes the property of a material having negligible absorption and reflection of microwaves.

The relative permittivity of a microwave transparent material is less than 7 and the loss factor is less than 0.015.

4.4 *Magnetron* denotes a type of vacuum tube used to generate microwaves.

5. Terms used for characteristics of appliances

5.1 *Usable cavity volume* denotes the space within the cavity that is available for the load.

5.2 *Usable shelf area* denotes the area of the shelf that is available for the load.

6. Terms used in the measuring methods

6.1 *Rated voltage* denotes the voltage assigned to the appliance by the manufacturer.

6.2 *Rated microwave frequency* denotes the centre frequency of the I.S.M. band.

SECTION THREE — GENERAL NOTES ON MEASUREMENTS

7. List of measurements

7.1 *External dimensions (Clause 9)*

7.2 *Usable cavity volume (Clause 10)*

7.3 *Usable shelf area (Clause 11)*

7.4 *Microwave power output (Clause 12)*

7.5 *Electrical power input (Clause 13)*

7.6 *Efficiency (Clause 14)*

7.7 *Technical tests for performance (Clause 15)*

7.8 *Heating performance (Clause 16)*

7.9 *Cooking performance (Clause 17)*

7.10 *Defrosting performance (Clause 18)*

8. General conditions of measurement

8.1 *Supply circuit*

The tests are made with the voltage and nature of supply as stated on the rating plate. The voltage supply is maintained within ±1% when the oven is operated under loaded conditions. An a.c. supply shall be essentially sinusoidal.

8.2 *Ambient temperature*

The ambient temperature is maintained at (20 ± 5) °C, unless otherwise specified.

SECTION FOUR — METHODS OF MEASUREMENT

9. External dimensions

Height a_1 = vertical dimension measured from the lower edge of the oven (floor) to the upper edge of the top, with the door closed. If adjustable levelling feet are provided, they should be moved up and down to determine minimum and maximum possible heights.

Height a_2 = maximum vertical dimension measured from the lower edge (floor) to a horizontal plane at the maximum height of the oven, with the door open.

Width b = horizontal dimension, between the sides, as measured between two parallel vertical planes against the sides of the oven, including all projections.

Depth c_1 = horizontal dimension as measured from a vertical rear plane against the appliance and the most prominent part of the front, knobs and handles not being taken into account and the door being closed.

Depth c_2 = horizontal dimension as measured from a vertical rear plane against the appliance and the most prominent part of the front, with the door open, knobs and handles not being taken into account.

10. Usable cavity volume

The usable cavity volume is calculated as the space within the geometric shape bounded by a shelf in the lowest position, by the walls of the cavity, by the ceiling internal cover or heating element and by the closed door. For ovens having unusual or irregular shaped internal covers and shelves, the minimum dimension is to be used.

For ovens having rotating shelves, the usable volume is calculated by using the radius equal to the shortest distance from the centre of rotation to the nearest wall or inner surface of the door.

11. Usable shelf area

The usable shelf area is calculated from the part of the plane on which the load can be placed.

12. Microwave power output measurement

12.1 *Microwave power output measurement is made with the microwave oven supplied at rated voltage and operated at its maximum microwave power setting with a load of (1 000 ± 5) g of potable water.*

12.2 *The water is contained in a cylindrical borosilicate glass vessel having a maximum material thickness of 3 mm and an outside diameter of approximately 190 mm.*