



SLOVENSKI STANDARD

SIST EN 60705:2001

01-februar-2001

Household microwave ovens - Methods for measuring performance

Household microwave ovens - Methods for measuring performance

Mikrowellengeräte für den Hausgebrauch und ähnliche Zwecke - Verfahren zur Messung der Gebrauchstauglichkeit

Fours micro-ondes à usage domestique - Méthodes de mesure de l'aptitude à la fonction

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Ta slovenski standard je istoveten z: **EN 60705:1999**

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ICS:

97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60705

April 1999

ICS 97.040.20

Supersedes EN 60705:1995

English version

**Household microwave ovens
Methods for measuring performance
(IEC 60705:1999)**

Fours à micro-ondes à usage
domestique
Méthodes de mesure de l'aptitude
à la fonction
(CEI 60705:1999)

Verfahren zur Messung der
Gebrauchstauglichkeit von
Mikrowellengeräten für den
Hausgebrauch und ähnliche Zwecke
(IEC 60705:1999)

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This European Standard was approved by CENELEC on 1999-04-01. 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

Foreword

The text of document 59H/97/FDIS, future edition 3 of IEC 60705, prepared by SC 59H, Microwave ovens, of IEC TC 59, Performance of household electrical appliances, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60705 on 1999-04-01.

This European Standard supersedes EN 60705:1995.

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) 2000-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-04-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annex ZA is normative and annexes A, B and C are informative.
Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60705:1999 was approved by CENELEC as a European Standard without any modification.

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In the official version, for annex C, Bibliography, the following notes have to be added for the standards indicated:

IEC 60335-2-25 NOTE: Harmonized as EN 60335-2-25:1996 (modified).

IEC 60335-2-90 NOTE: Harmonized as EN 60335-2-90:1997 (not modified).

IEC 60350 NOTE: Harmonized as EN 60350:1999 (not modified).

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>
CISPR 11 (mod)	1997	Industrial, scientific and medical (ISM) radio-frequency equipment Radio disturbance characteristics Limits and methods of measurement	EN 55011	1998

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NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
60705

Troisième édition
Third edition
1999-04

**Fours micro-ondes à usage domestique –
Méthodes de mesure de l'aptitude à la fonction**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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CONTENTS

	Page
FOREWORD	5
Clause	
1 Scope	7
2 Normative reference	7
3 Definitions	7
4 Classification	9
5 List of measurements	9
6 General conditions for measurements	11
7 Dimensions and volume	13
8 Determination of microwave power output	15
9 Efficiency	15
10 Technical tests for performance	17
11 Heating performance	19
12 Cooking performance	21
13 Defrosting performance	31
Annex A (informative) Optional heating tests – batter	53
Annex B (informative) Regional defrosting tests	57
Annex C (informative) Bibliography	63

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOUSEHOLD MICROWAVE OVENS –
METHODS FOR MEASURING PERFORMANCE**
FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60705 has been prepared by subcommittee 59H: Microwave ovens, of IEC technical committee 59: Performance of household electrical appliances.

This third edition of IEC 60705 cancels and replaces the second edition, issued in 1988, and its amendments 1 (1993) and 2 (1993); it constitutes a technical revision.

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

FDIS	Report on voting
59H/97/FDIS	59H/98/RVD

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

Annexes A, B and C are for information only.

In this standard, the following print types are used:

- *test specifications: in italic type*
- notes: in small roman type
- other texts: in roman type.

Words in **bold** in the text are defined in clause 3.

The following differences exist in some countries:

Clause 7: Metric dimensional measures are not in common use (USA).

HOUSEHOLD MICROWAVE OVENS – METHODS FOR MEASURING PERFORMANCE

1 Scope

This International Standard applies to **microwave ovens** for household use. It also applies to **combination microwave ovens**.

This standard defines the main performance characteristics of household microwave ovens which are of interest to the user and specifies methods for measuring these characteristics.

NOTE 1 – This standard does not deal with:

- ovens which cannot accept a load having a diameter of ≥ 200 mm;
- safety requirements (see IEC 60335-2-25 [1]* and IEC 60335-2-90 [2]).

NOTE 2 – This standard does not apply to ovens incorporating conventional heating means only (see IEC 60350) [3].

2 Normative references

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

CISPR 11:1997, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*

3 Definitions

For the purpose of this International Standard, the following definitions apply.

3.1

microwave oven

appliance using electromagnetic energy in the ISM frequency band of 2 450 MHz, for heating food and beverages in the cavity.

NOTE 1 – The microwave oven may incorporate a browning element.

NOTE 2 – ISM frequency bands are the electromagnetic frequencies established by the ITU and reproduced in CISPR 11.

3.2

combination microwave oven

microwave oven in which the microwave energy is combined with thermal energy

* Figures in square brackets refer to the bibliography given in annex C.

3.3

microwave transparent

property of a material having negligible absorption and reflection of microwaves

NOTE – The relative permittivity of a microwave transparent material is less than 7 and the relative loss factor is less than 0,015.

3.4

rated voltage

voltage assigned to the appliance by the manufacturer

4 Classification

Appliances are classified according to their type and characteristics.

4.1 According to type

- **microwave ovens;**
- **combination microwave ovens.**

The type of oven shall be stated in the report.

4.2 According to characteristics

- usable cavity dimensions;
- with or without a turntable.

The characteristics of the oven shall be stated in the report.

5 List of measurements

Performance is measured by the tests listed in table 1.

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Table 1 – List of measurements

Item of measurement	Clause or subclause	Reproducibility	Microwave ovens ¹⁾	Combination microwave ovens
External dimensions	7.1	Yes	*	*
Usable cavity dimensions	7.2	Yes	*	*
Usable cavity volume	7.3	Yes	*	*
Microwave power output	8	Yes	*	
Efficiency	9	Yes	*	
Square tank	10.1	Yes	*	
Multiple cup	10.2	Yes	*	
Heating beverages	11.1	Yes	*	
Heating simulated food	11.2	Yes	*	
Egg custard	12.3.1	No	*	
Sponge cake	12.3.2	No	*	
Meatloaf	12.3.3	No	*	
Potato gratin	12.3.4	No		*
Cake	12.3.5	No		*
Chicken	12.3.6	No		*
Meat defrosting	13.3	No	*	
Batter	Annex A	No	*	
* Test is applicable.				
1) Except for the tests of 10.1, these tests are also applicable to combination microwave ovens when operated in the microwave only mode.				

6 General conditions for measurements

Unless otherwise specified, the measurements are made under the following conditions.

6.1 Supply voltage

The appliance is supplied at **rated voltage** ± 1 %. If the appliance has a rated voltage range, the tests are carried out at the nominal voltage of the country where the appliance is intended to be used. This voltage is stated in the report.

NOTE – The supply voltage should be essentially sinusoidal. Results of the tests may otherwise be affected.

6.2 Test room

The tests are carried out in a substantially draught-free room in which the ambient temperature is maintained at $20\text{ °C} \pm 5\text{ °C}$.

6.3 Water

Potable water is used for the tests.