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## REDLINE VERSION

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### **Elektriska hushållsapparater för matlagning – Del 1: Spisar, ugnar, ångugnar och grillar – Funktionsprovning**

*Household electric cooking appliances –  
Part 1: Ranges, ovens, steam ovens and grills –  
Methods for measuring performance*

En så kallad ”Redline version” (RLV) innehåller både standarden som fastställts som SS och en ändringsmarkerad IEC-standard. Alla tillägg och borttagningar sedan den tidigare utgåvan av IEC-standardens är markerade med färg. Med en RLV sparar du mycket tid när du ska identifiera och bedöma aktuella ändringar i standarden. SEK Svensk Elstandard kan bara ge ut RLV i de fall den finns tillgänglig från IEC.



IEC 60350-1

Edition 3.0 2023-03  
REDLINE VERSION

# INTERNATIONAL STANDARD



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**Household electric cooking appliances –  
Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring  
performance**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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ICS 97.040.20

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## HOUSEHOLD ELECTRIC COOKING APPLIANCES –

**Part 1: Ranges, ovens, steam ovens and grills –  
Methods for measuring performance**

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**This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60350-1:2016+AMD1:2021 CSV. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**



IEC 60350-1 has been prepared by subcommittee 59K: Performance of household and similar electrical cooking appliances, of IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

This third edition cancels and replaces the second edition published in 2016 and Interpretation Sheet 1:2021. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) new definitions for heating function, eco function and definitions relevant for low power mode considerations are amended in Clause 3;
- b) order of clauses is changed;
- c) revision of 5.3;
- d) update of 6.2 in order to improve the reliability of volume measurement;
- e) removal of 6.7, Level of shelf;
- f) revision of Clause 7 concerning the accuracy of **eco functions** with residual heat use;
- g) revision of Clause 8 in order to improve the reliability of the method for measuring the energy consumption, especially regarding anti-circumvention;
- h) unique energy consumption measurement for all **heating functions** and **eco functions** with an indication of the energy consumption for a temperature increase of 165 K (compared to 155 K currently for forced air circulation function, for example), which results in higher energy consumption values compared to the previous edition;
- i)  $R_y$  replaced by  $L^*$  in Clause 9 and reference to IEC TS 63350;
- j) cooking time for reference measurement introduced for broccoli in Clause 10;
- k) yellow part replaced by hue angle value in Clause 10;
- l) requirements for digital assessment (see former 7.5.3.6.3) are obsolete as specified in IEC TS 63350;
- m) revision of Clause 14 (Consumption measurement of low power modes, previous Clause 12);
- n) former Annex G (informative) is cancelled due to the fact that this method for measuring an associated activity has been not applied;
- o) former Annexes B and F are obsolete, up-to-date shade charts are specified in IEC TS 63350;
- p) former Annex E will be substituted by a supporting document located on the IEC's website.

The document contains supplementary material highlighted by notes indicating the link.

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

Draft	Report on voting
59K/365/FDIS	59K/370/RVD

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

The language used for the development of this International Standard is English.

Words in **bold** in the text are specifically defined in Clause 3.

A list of all parts in the IEC 60350 series, published under the general title *Household electric cooking appliances*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](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 COOKING APPLIANCES –

## Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring performance

### 1 Scope

This part of IEC 60350 specifies methods for measuring the performance of electric **cooking ranges, ovens, steam ovens, and grills** for household use.

NOTE 1 This document is also applicable to portable appliances with similar functionalities that were previously covered by the withdrawn IEC 61817.

The **ovens** covered by this document ~~may~~ can be with or without microwave function.

Manufacturers ~~should~~ are expected to define the primary cooking function of the appliance – microwave function or thermal heat. The primary cooking function ~~should be~~ is measured with an existing method according to energy consumption. If the primary cooking function is declared in the instruction manual as a microwave function, IEC 60705 is applied for energy consumption measurement. If the primary cooking function is declared as a thermal heat, then IEC 60350-1 is applied for energy consumption measurement.

If the primary function is not declared by the manufacturer, the performance of the microwave function and thermal heat ~~should be~~ is measured as far as it is possible.

NOTE 2 For measurement of energy consumption and time for heating a load (see Clause 8), this document is furthermore not applicable to:

- microwave combination function;
- **ovens** with reciprocating trays or turntable;
- **small cavity ovens** (see 3.16);
- **ovens** without adjustable temperature control;
- **heating functions and eco functions** other than defined in this document;
- appliances with only solo **steam function**.

NOTE 3 This document does not apply to

- microwave ovens (IEC 60705).

This document defines the main performance characteristics of these appliances that are of interest to the user and specifies methods for measuring these characteristics.

This document does not specify a classification or ranking for performance.

~~NOTE 3 Some of the tests which are specified in this standard are not considered to be reproducible since the results may vary between laboratories. They are therefore intended for comparative testing purposes only.~~

NOTE 4 This document does not deal with safety requirements (IEC 60335-2-6 and IEC 60335-2-9).

NOTE 5 Appliances covered by this document ~~may~~ can be built-in or for placing on a working surface or the floor.

NOTE 6 There is no measurement method for the energy consumption for grilling and **steam functions** available.

### 2 Normative references

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 60584-2, Thermocouples – Part 2: Tolerances~~

IEC 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

IEC TS 63350:2022, *Household electrical appliances – Specification of the properties of a digital system for measuring the performance*

IEC 63474<sup>1</sup>, *Electrical and electronic household and office equipment – Measurement of networked standby power consumption of edge equipment*

ISO 80000-1:2009, *Quantities and units – Part 1: General*

~~CIE 15, Colorimetry~~

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<sup>1</sup> Under preparation. Stage at the time of publication: IEC CDV 63474:2022.

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## Elektriska hushållsapparater för matlagning – Del 1: Spisar, ugnar, ångugnar och grillar – Funktionsprovning

*Household electric cooking appliances –  
Part 1: Ranges, ovens, steam ovens and grills –  
Methods for measuring performance*

Som svensk standard gäller europastandarden EN IEC 60350-1:2023. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60350-1:2023.

### Nationellt förord

Europastandarden EN IEC 60350-1:2023

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60350-1, Third edition, 2023 - Household electric cooking appliances – Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring performance**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60350-1, utg 2:2017 med eventuella tillägg, ändringar och rättelser gäller ej fr o m 2026-04-24.

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ICS 97.040.20

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Denna standard är fastställd av SEK Svensk Elstandard, som också kan lämna upplysningar om **sakinnehållet** i standarden.  
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Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

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SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

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Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

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Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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English Version

**Household electric cooking appliances - Part 1: Ranges, ovens,  
steam ovens and grills - Methods for measuring performance  
(IEC 60350-1:2023)**

Appareils de cuisson électrodomestiques - Partie 1:  
Cuisinières, fours, fours à vapeur et grills - Méthodes de  
mesure de l'aptitude à la fonction  
(IEC 60350-1:2023)

Elektrische Kochgeräte für den Hausgebrauch - Teil 1:  
Herde, Backöfen, Dampfgarer und Grills - Verfahren zur  
Messung der Gebrauchseigenschaften  
(IEC 60350-1:2023)

This European Standard was approved by CENELEC on 2023-04-24. 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 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**

## **European foreword**

The text of document 59K/365/FDIS, future edition 3 of IEC 60350-1, prepared by SC 59K "Performance of household and similar electrical cooking appliances" 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 60350-1:2023.

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) 2024-01-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-04-24

This document supersedes EN 60350-1:2016 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

## **Endorsement notice**

The text of the International Standard IEC 60350-1:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60335-2-6	NOTE	Approved as EN 60335-2-6
IEC 60335-2-9	NOTE	Approved as EN IEC 60335-2-9
IEC 60350-2	NOTE	Approved as EN 60350-2
IEC 60705	NOTE	Approved as EN 60705
IEC 61591	NOTE	Approved as EN IEC 61591
IEC 61817 <sup>1</sup>	NOTE	Approved as EN 61817 <sup>2</sup>
ISO 2813	NOTE	Approved as EN ISO 2813

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<sup>1</sup> Withdrawn

<sup>2</sup> Withdrawn



## 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.cencenelec.eu](http://www.cencenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60584-1	-	Thermocouples - Part 1: EMF specifications and tolerances	EN 60584-1	-
IEC 62301 (mod)	2011	Household electrical appliances - Measurement of standby power	EN 50564	2011
IEC/TS 63350	2022	Household electric appliances - Specification of the properties of a digital system for measuring the performance	-	-
IEC 63474 <sup>3</sup>	-	Electrical and electronic household and office equipment - Measurement of networked standby power consumption of edge equipment	EN IEC 63474 <sup>4</sup>	-
ISO 80000-1	2009	Quantities and units - Part 1: General	-	-

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<sup>3</sup> Under preparation. Stage at the time of publication: IEC CDV 63474:2022.

<sup>4</sup> Under preparation. Stage at the time of publication: prEN IEC 63474:2022.

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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**Household electric cooking appliances –  
Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring  
performance**

**Appareils de cuisson électrodomestiques –  
Partie 1: Cuisinières, fours, fours à vapeur et grils – Méthodes de mesure de  
l'aptitude à la fonction**

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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## HOUSEHOLD ELECTRIC COOKING APPLIANCES –

### Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring performance

#### 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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IEC 60350-1 has been prepared by subcommittee 59K: Performance of household and similar electrical cooking appliances, of IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

This third edition cancels and replaces the second edition published in 2016 and Interpretation Sheet 1:2021. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) new definitions for heating function, eco function and definitions relevant for low power mode considerations are amended in Clause 3;
- b) order of clauses is changed;
- c) revision of 5.3;
- d) update of 6.2 in order to improve the reliability of volume measurement;
- e) removal of 6.7, Level of shelf;

- f) revision of Clause 7 concerning the accuracy of **eco functions** with residual heat use;
- g) revision of Clause 8 in order to improve the reliability of the method for measuring the energy consumption, especially regarding anti-circumvention;
- h) unique energy consumption measurement for all **heating functions** and **eco functions** with an indication of the energy consumption for a temperature increase of 165 K (compared to 155 K currently for forced air circulation function, for example), which results in higher energy consumption values compared to the previous edition;
- i)  $R_y$  replaced by  $L^*$  in Clause 9 and reference to IEC TS 63350;
- j) cooking time for reference measurement introduced for broccoli in Clause 10;
- k) yellow part replaced by hue angle value in Clause 10;
- l) requirements for digital assessment (see former 7.5.3.6.3) are obsolete as specified in IEC TS 63350;
- m) revision of Clause 14 (Consumption measurement of low power modes, previous Clause 12);
- n) former Annex G (informative) is cancelled due to the fact that this method for measuring an associated activity has been not applied;
- o) former Annexes B and F are obsolete, up-to-date shade charts are specified in IEC TS 63350;
- p) former Annex E will be substituted by a supporting document located on the IEC's website.

The document contains supplementary material highlighted by notes indicating the link.

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

Draft	Report on voting
59K/365/FDIS	59K/370/RVD

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

The language used for the development of this International Standard is English.

Words in **bold** in the text are specifically defined in Clause 3.

A list of all parts in the IEC 60350 series, published under the general title *Household electric cooking appliances*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).



The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](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 COOKING APPLIANCES –

### Part 1: Ranges, ovens, steam ovens and grills – Methods for measuring performance

#### 1 Scope

This part of IEC 60350 specifies methods for measuring the performance of electric **cooking ranges, ovens, steam ovens, and grills** for household use.

NOTE 1 This document is also applicable to portable appliances with similar functionalities that were previously covered by the withdrawn IEC 61817.

The **ovens** covered by this document can be with or without microwave function.

Manufacturers are expected to define the primary cooking function of the appliance – microwave function or thermal heat. The primary cooking function is measured with an existing method according to energy consumption. If the primary cooking function is declared in the instruction manual as a microwave function, IEC 60705 is applied for energy consumption measurement. If the primary cooking function is declared as a thermal heat, then IEC 60350-1 is applied for energy consumption measurement.

If the primary function is not declared by the manufacturer, the performance of the microwave function and thermal heat is measured as far as it is possible.

NOTE 2 For measurement of energy consumption and time for heating a load (see Clause 8), this document is furthermore not applicable to:

- microwave combination function;
- **ovens** with reciprocating trays or turntable;
- **small cavity ovens** (see 3.16);
- **ovens** without adjustable temperature control;
- **heating functions** and **eco functions** other than defined in this document;
- appliances with only solo **steam function**.

NOTE 3 This document does not apply to

- microwave ovens (IEC 60705).

This document defines the main performance characteristics of these appliances that are of interest to the user and specifies methods for measuring these characteristics.

This document does not specify a classification or ranking for performance.

NOTE 4 This document does not deal with safety requirements (IEC 60335-2-6 and IEC 60335-2-9).

NOTE 5 Appliances covered by this document can be built-in or for placing on a working surface or the floor.

NOTE 6 There is no measurement method for the energy consumption for grilling and **steam functions** available.

#### 2 Normative references

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 60584-1, *Thermocouples – Part 1: EMF specifications and tolerances*

IEC 62301:2011, *Household electrical appliances – Measurement of standby power*

IEC TS 63350:2022, *Household electrical appliances – Specification of the properties of a digital system for measuring the performance*

IEC 63474<sup>1</sup>, *Electrical and electronic household and office equipment – Measurement of networked standby power consumption of edge equipment*

ISO 80000-1:2009, *Quantities and units – Part 1: General*

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<sup>1</sup> Under preparation. Stage at the time of publication: IEC CDV 63474:2022.