



BSI Standards Publication

Household electric cooking appliances

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

National foreword

This British Standard is the UK implementation of EN IEC 60350-1:2023+A1:2025. It is identical to IEC 60350-1:2023, incorporating amendment 1:2025. It supersedes BS EN IEC 60350-1:2023, which will be withdrawn on 31 May 2028.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee CPL/59, Performance of household electrical appliances.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Date	Text affected
31 July 2023	Correction to supersession details in national foreword
30 June 2025	Implementation of IEC amendment 1:2025 with CENELEC endorsement A1:2025

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)

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- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-04-24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

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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 ¹	NOTE	Approved as EN 61817 ²
ISO 2813	NOTE	Approved as EN ISO 2813

¹ Withdrawn

² Withdrawn

European foreword to Amendment 1

The text of document 59K/410/FDIS, future edition 3 of IEC 60350-1/AMD1, 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/A1:2025.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2026-05-31 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2028-05-31 document have to be withdrawn

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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.

<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	-	Household electrical appliances - Measurement of standby power	EN 50564 ¹	-
IEC/TS 63350	2022	Household electric appliances - Specification of the properties of a digital system for measuring the performance	-	-
IEC 63474	-	Electrical and electronic household and office equipment - Measurement of networked standby power consumption of edge equipment	EN IEC 63474	-
ISO 80000-1	2009	Quantities and units - Part 1: General	-	-
IEC 60705	2024	Household microwave ovens - Methods for measuring performance	EN IEC 60705	2024

¹ Revised by prEN IEC 62301:2025.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD ELECTRIC COOKING APPLIANCES –

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

AMENDMENT 1

FOREWORD

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Amendment 1 to IEC 60350-1:2023 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.

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

Draft	Report on voting
59K/410/FDIS	59K/412/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 Amendment is English.

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. The main document types developed by IEC are described in greater detail at 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 in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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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; A1 *Text deleted.* A1
- **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 60705:2024, *Household microwave ovens – Methods for measuring performance*

IEC 62301, *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, *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*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

active mode

mode in which the appliance is connected to a mains power source, has been activated, and is performing any of the intended functions

EXAMPLE Producing heat transfer by thermal heat, electromagnetic energy or condensation

Note 1 to entry: Examples of recognised associated functions include displaying recipes, running an egg timer, software download, running a cooling fan and the like.

3.2

combi steam oven

appliance or compartment of a **cooking range** in which food is cooked by a combination of **oven** and **steam oven**

Note 1 to entry: Appliances with only a steam assist function also exist. For these **ovens**, the **steam function** can only be tested if this function is described in the instruction manual or if the appliance provides a setting for **steam function**.

Note 2 to entry: The term "steam" does not refer to the evaporated water from the food.

3.3

cooking range

appliance having a **hob** and at least one **oven** and which can incorporate a **grill**

3.4

delay start

condition where the user has selected a specified delay to the beginning of any **active mode**

Note 1 to entry: This mode is only applicable if the appliance provides a delay start function for the user.

3.5 eco function

heat transmission by natural air circulation, forced air circulation or radiation for certain applications using efficient technical solutions

EXAMPLE Technical solutions:

- residual heat usage;
- low-power heating;
- or a combination of both.

3.6 grill

appliance or part of an appliance in which food is cooked by radiant heating

3.7 heating function

heat transmission by natural or forced air circulation, or radiation for baking and roasting

EXAMPLE

- Forced air circulation function which heats food mainly by circulating the air with the aid of a fan;
- conventional **heating function** which heats food mainly by natural convection of the air;
- or a combination of both functions.

Note 1 to entry: Heat transmission by steam or by microwave power, also in combination with any **heating function**, is excluded.

3.8 hob cooktop

appliance or part of an appliance which incorporates one or more **cooking zones** and/or **cooking areas** including a **control** unit

Note 1 to entry: The **control** unit can be included in the **hob** itself or integrated in a **cooking range**.

3.9 hot steam function

heat transmission to the food by generated steam in combination with radiation or convection, or a combination of both, at ambient pressure (approximately 100 kPa) and with a temperature > 100 °C

3.10 multiple cavity appliance

appliance that has more than one separate cavity in which food is cooked and which can be controlled independently, but cannot be installed separately

3.11 network

communication infrastructure with a topology of links, an architecture, including the physical components, organizational principles, communication procedures and formats (protocols)

3.12 off mode

condition in which the appliance is connected to the mains and is not providing any **active mode** or **standby mode** and where the mode can persist for an indefinite time

Note 1 to entry: The following shall also be considered as **off mode**:

- a) conditions providing only an indication of **off mode**;
- b) conditions providing only functionalities intended to ensure electromagnetic compatibility.

3.13

oven

appliance or compartment of a **cooking range** in which food is cooked by radiation, by natural convection, by forced-air circulation or by a combination of these heating methods

3.14

oven thermostat

device or sensor that detects the temperature inside the cavity in order to control the set temperature

3.15

oven with catalytic cleaning

oven in which cooking deposits are removed by breaking them down on a special coating

3.16

small cavity oven

oven with the following dimensions:

- both internal width and internal depth are < 250 mm, or
- either one of internal width and internal depth is < 120 mm. or
- internal height is < 120 mm

Note 1 to entry: The defined maximum size of small cavity **ovens** in this document is adapted to the size of the test load used in Clause 8.

3.17

standby mode

condition where the appliance is connected to the mains and provides only one or more of the following functions, which can persist for an indefinite duration:

- a) reactivation function;
- b) reactivation function and only an indication of enabled reactivation function;
- c) information or status display. 

3.18

standby mode in condition of networked standby

condition where the appliance is connected to the mains and provides only the reactivation function through a connection to a **network**, which can persist for an indefinite duration

Note 1 to entry: This mode is only applicable to appliances that provide a connection function to a **network**.

3.19

pyrolytic self-cleaning oven

oven in which cooking deposits are removed by heating the **oven** to a sufficiently high temperature

3.20

steam oven

appliance or compartment of a **cooking range** in which food is cooked mainly by steam condensation at ambient pressure

Note 1 to entry: Appliances are fitted with their own steam generator.

Note 2 to entry: The term "steam" does not refer to the evaporated water from the food.

3.21

steam function

heat transmission to the food mainly by condensation of steam at ambient pressure (approximately 100 kPa) and with a temperature ≤ 100 °C

3.22

warming compartment

separate compartment in which dishes are placed in order to preheat them prior to serving, or in which food is maintained at serving temperature

A1 3.23

combination microwave oven

appliance which can be operated by **microwave function**, **combination microwave function** and **heating function**

Note 1 to entry: For definitions of a microwave function and combination microwave function, IEC 60705 is relevant.

[SOURCE: IEC 60705:2024, 3.2, modified – The Note to entry has been replaced.] **A1**

4 List of measurements

4.1 Dimensions and mass

The following measurements are carried out:

- overall dimensions (see 6.1);
- internal dimensions (see 6.2);
- dimensions of shelves and steaming accessories (see 6.4);
- dimensions of grill grids (see 6.5);
- dimensions of **warming compartments** (see 6.6);
- mass of the appliance (see 6.7).

4.2 Oven and combi steam oven

The following measurements are carried out:

- preheating the empty **oven** (see 7.3);
- accuracy of the control (see 7.4);
- energy consumption and time for heating a load (see Clause 8);
- heat distribution (see 9.2);
- ability to supply heat (see 9.3);

- A1** – power consumption of low power modes (see Clause 14). **A1**

4.3 Steam oven and combi steam oven

The following measurements are carried out:

- ability to supply steam (see 10.1);
- distribution of steam (see 10.2);
- determination of the capacity (see 10.3);

- A1** – power consumption of low power modes (see Clause 14). **A1**

4.4 Grill

The following measurements are carried out:

- grilling area (see Clause 11);

4.5 Warming compartments

The following measurements are carried out:

– temperature control and energy consumption (see Clause 12);

A1 – power consumption of low power modes (see Clause 14). **A1**

4.6 Cleaning

The following measurements are carried out:

- cleaning of pyrolytic self-cleaning **ovens** (see 13.1);
- cleaning of **ovens** with catalytic cleaning (see 13.2).

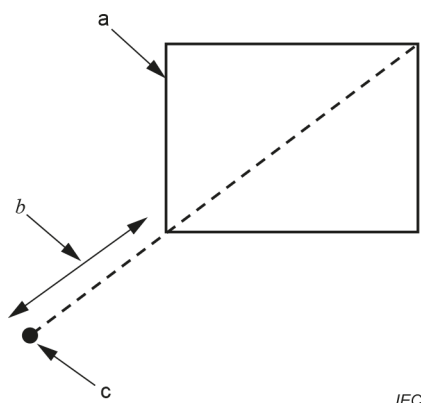
5 General conditions for the measurement

5.1 Test room

The tests are carried out in a substantially draught-free room in which the ambient temperature is maintained at $(23 \pm 2) ^\circ\text{C}$.

For the tests specified in 9.2.1, 9.3.1, 9.3.2, Clause 10 and Clause 11, maintaining the ambient temperature at $(25 \pm 5) ^\circ\text{C}$ is sufficient.

This ambient temperature is measured at a point that is at the same height as the centre of the calculated volume of the **oven** cavity under test and at a distance of 0,5 m diagonally from one of the front edges of the appliance (see Figure 1).



Key

- a **oven** (top view)
- b 0,5 m
- c thermocouple

Figure 1 – Position of the thermocouple for measuring ambient temperature

The measurement of the ambient temperature shall not be influenced by the appliance itself or by any other appliance.

5.2 Electricity supply

The appliance is supplied at rated voltage $\pm 1 \%$.

- the supply voltage shall be maintained at the main terminal at the rated voltage $\pm 1 \%$, while the heating elements are switched on;
- the supply frequency shall be at the rated frequency $\pm 1 \%$ throughout the test. If a frequency range is indicated, then the test frequency shall be the nominal frequency of the country in which the appliance is intended to be used.

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.

NOTE In the case of a fixed cable, the plug (or the end of the cable) is the reference point to maintain the voltage.

5.3 Instrumentation

Instruments used and measurements made for this document shall comply with the specifications in Table 1 and Table 2.

Table 1 – Instruments

Parameter	Unit	Minimum resolution	Maximum permissible error	Details / Additional requirements
Mass	g			
≤ 3 000 g		0,1 g	± 0,1 g	
> 3 000 g		0,5 g	± 3 g	
Temperature (thermocouples)				
• ambient temperature	°C	0,1 °C	± 0,5 K	Thermocouple with welded point
• temperature in the cavity in a range of 0 °C to 100 °C	°C	0,1 °C	± 0,5 K	Thermocouple with welded point (suitable to measurements inside of ovens with wet- steam functions)
• temperature in the cavity in a range of 100 °C to 300 °C	°C	0,1 °C	± 2,5 K	Thermocouple with welded point.
• centre temperature of the brick	°C	0,1 °C	± 1,5 K	1 mm steel tube thermocouple, class 1 in accordance with IEC 60584-1.
Dimensions	mm	1 mm	1 mm	≤ 1 mm or 0,5 % whatever is the greater
Time	s	1 s	± 1 s per hour	

Table 2 – Measurements

Parameter	Unit	Maximum permissible error	Additional requirements
Voltage	V	± 0,5 %	Measured value.
Energy consumption measurement	Wh	± 1,5 % or ± 10 Wh	Whichever is greater
A1 Temperature measurement	°C	± 1,0 K	Excluding the thermocouples Sampling rate ≥ 1 s A1
For Clause 14, the power measurement requirements shall be in accordance with IEC 62301		-	In accordance with IEC 62301

5.4 Positioning the appliance

Built-in appliances are installed in accordance with the instructions for installation. Other appliances are placed with their back against a wall, unless otherwise specified in the instructions.

Floor-standing appliances are positioned between kitchen cabinets. Table-top appliances are positioned away from side walls.

For installation of the appliance, the surface shall be horizontal.

When the appliance is connected to the mains for the first time, it shall be operated once on any setting for at least 1 h before the energy consumption is measured in order to avoid changes in the appliance's performance or consumption values when tested 'out-of-the-box' compared to some time later at the same settings.

If the appliance is disconnected from the mains, it shall be ensured that required basic settings, like the time, are set and finalized before starting the measurement.

5.5 Preheating

The appliance is initially at room temperature. However, if preheating is specified, the appliance is preheated in accordance with the instructions for use. If no instructions are given, the appliance is considered to be preheated after the thermostat has switched off the first time.

5.6 Setting of controls

The control is set to give the temperature specified for the test. However, if the temperature cannot be attained due to the construction of the control, the nearest setting related to the specified temperature is chosen.

All tests, except the measurements for low-power modes (see Clause 14), shall be carried out:

- with the default factory settings;
- ensuring that no **network** is connected to the appliance for the duration of the measurement.

Using any modes and controls, resulting in measurements that are unrepresentative of the appliance's true characteristics that can occur during baking and roasting under comparable conditions are not allowed.

EXAMPLE A camera used to detect that the appliance is under test is not allowed.

5.7 Rounding

If numbers shall be rounded, they shall be rounded in accordance with ISO 80000-1:2009, Clause B.3, rule B.

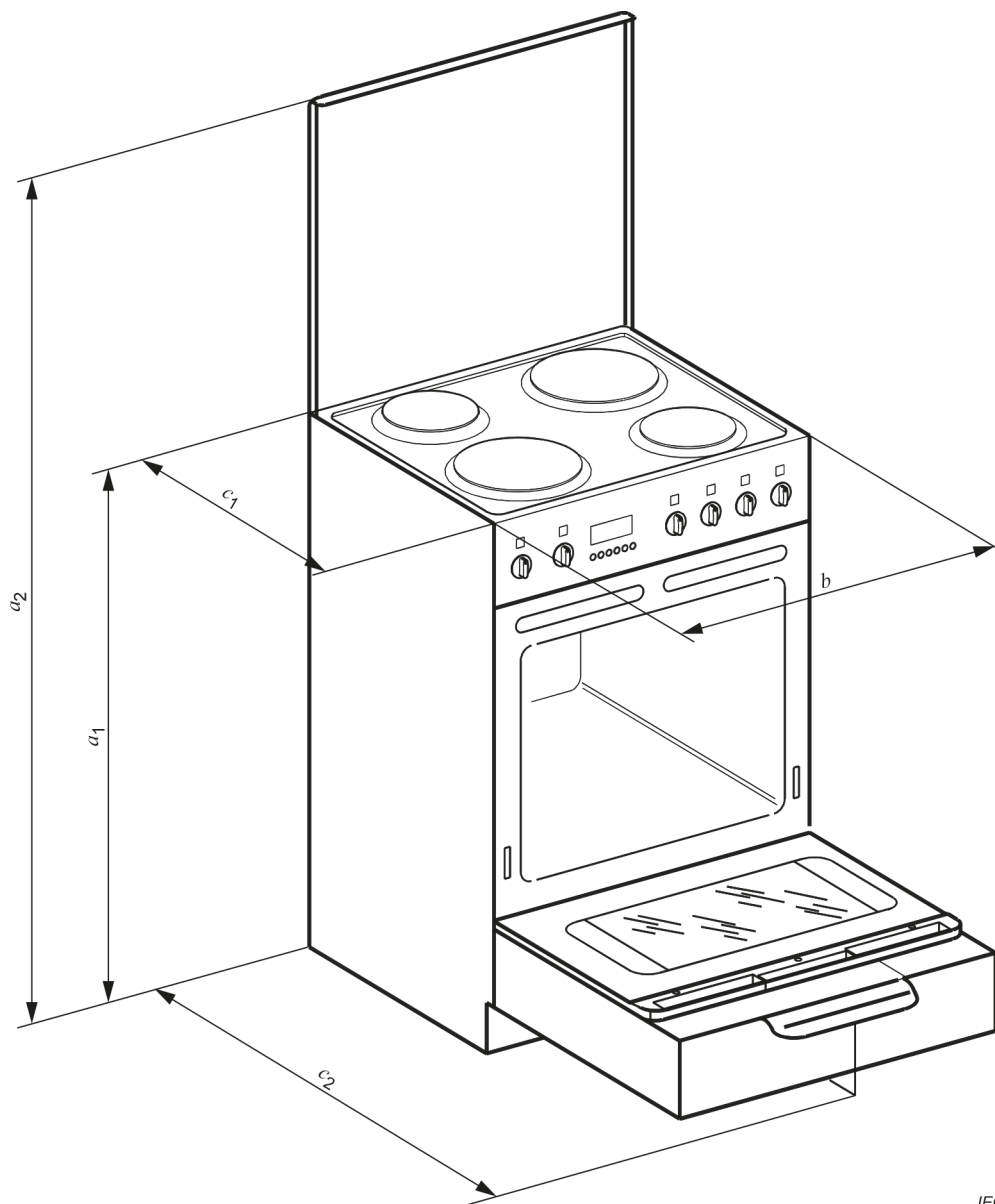
6 Dimensions and mass

6.1 Overall dimensions

The overall dimensions of the appliance are measured and stated in millimetres as follows:

Cooking ranges and other appliances placed on a surface are measured as shown in Figure 2.

Built-in **ovens** are measured as shown in Figure 3.



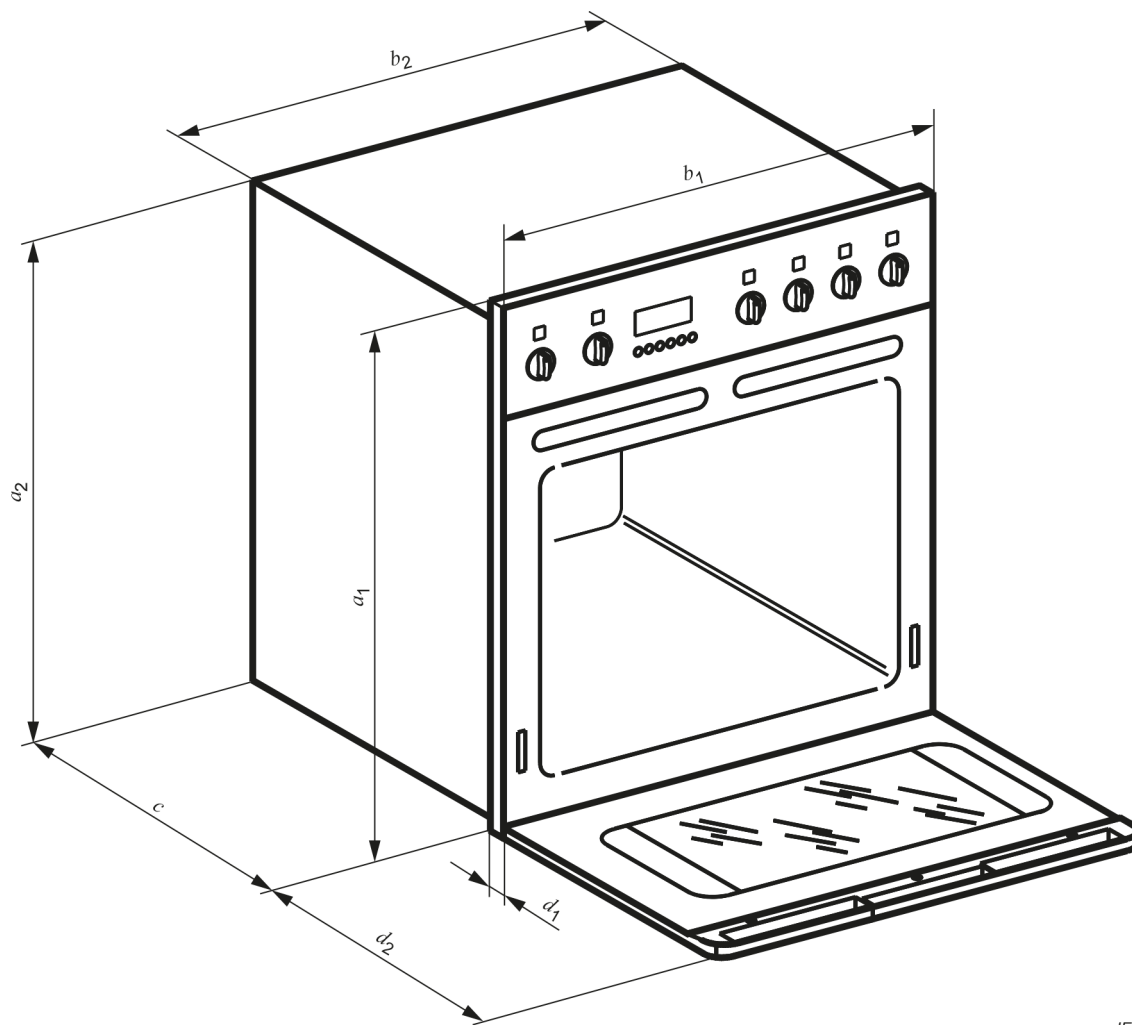
IEC

If adjustable feet are provided, the height is measured with the feet in both extreme positions.

Key

- a_1 height from the supporting surface to the **hob** surface
- b overall width of the appliance
- a_2 maximum height from the supporting surface to the uppermost part of the appliance, with any lid in the open position
- c_1 depth of the appliance, ignoring any knobs, etc.
- c_2 maximum depth of the appliance, with any doors and drawers fully open

Figure 2 – Dimensions of appliances



IEC

Key

- a_1 front height of the appliance
- b_1 front width of the appliance
- c maximum depth of the appliance within the kitchen furniture
- a_2 maximum height of the appliance within the kitchen furniture
- b_2 maximum width of the appliance within the kitchen furniture
- d_1 depth of the appliance outside the kitchen furniture, ignoring any knobs, etc.
- d_2 depth of the appliance outside the kitchen furniture, with any doors and drawers fully open

Figure 3 – Dimensions of built-in appliances

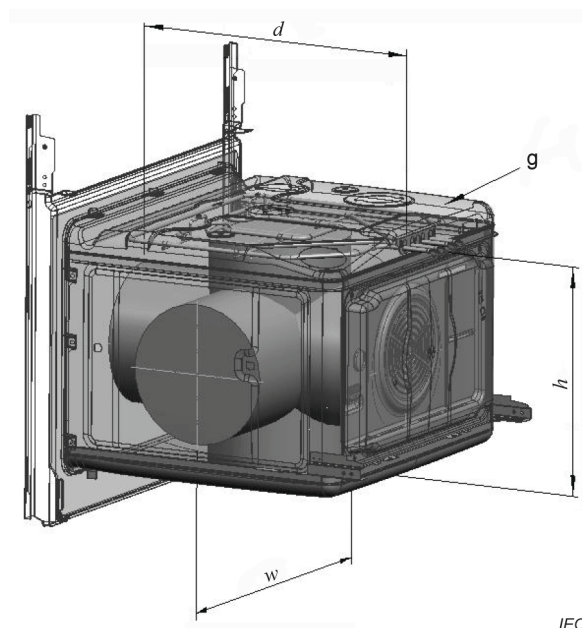
6.2 Internal dimensions and calculated volume

6.2.1 General

The measurement of the calculated volume is to be carried out at ambient temperature.

The height, width and depth of the calculated volume in the cavity shall be measured in accordance with 6.2.2 to 6.2.4. The measurements are shown in Figure 4.

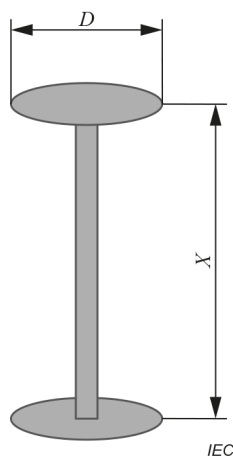
For verification purposes, the gauge shown in Figure 5, shall be used to determine all three dimensions. The gauge shall be used without appreciable force. Dimensions are stated in millimetres.



Key

- d depth
- g heating element
- h height
- w width

Figure 4 – Internal dimensions



Key

- $D = 200 \text{ mm or } 120 \text{ mm}$
- $X = \text{dimension to be measured}$

Figure 5 – Gauge for measuring these dimensions

6.2.2 Internal height

The height is the maximum length of a cylinder with a diameter of 200 mm reaching vertically from the centre of the cavity floor to the lowest point on the ceiling. No accessories, such as a grill grid, are inserted.

A lamp, a heating element or similar object in the area of the cylinder can constitute the lowest point of the ceiling. Protruding parts such as lamp covers, heating elements and fixing hooks shall not be removed or folded away.

If either the width or the depth of the cavity is less than 250 mm, the diameter of the cylinder to be measured shall be reduced to 120 mm.

NOTE The centre of the cavity bottom is defined by the middle of the internal depth and the middle of the internal width.

6.2.3 Internal width

The internal width is the maximum length of a cylinder with a diameter of 200 mm reaching horizontally from the left-hand side wall to the right-hand side wall of the cavity.

Side racks shall be removed if they can be removed without a tool. If parts are fixed to or by the side racks, they shall be removed as well.

NOTE 1 A coin or a spoon is not considered as a tool.

If either the height or the depth of the cavity is less than 250 mm, the diameter of the cylinder to be measured shall be reduced to 120 mm.

NOTE 2 The centre of the side wall of the cavity is defined by the middle of the depth and the middle of the height.

6.2.4 Internal depth

The depth is the maximum length of a cylinder with a diameter of 200 mm reaching horizontally from the centre of the rear wall to the inner face of the closed door.

Protruding parts such as the baffle or components of the door shall not be removed.

If either the width or the height of the cavity is less than 250 mm, the diameter of the cylinder to be measured shall be reduced to 120 mm.

For measuring the depth, the gauge is placed on a support in such a way that the axis lies horizontally in the centre of the cavity, the axis being extended slightly over the expected depth. The door is closed carefully so that the gauge is compressed to give the internal depth.

NOTE The centre of the rear wall of the cavity is defined by the middle of the height and the middle of the width.

6.2.5 Calculated volume

The calculated volume is determined from these three dimensions and is stated in litres, rounded to the nearest litre.

6.3 Overall internal dimensions and overall volume

6.3.1 General

Where the surfaces forming the boundaries of the cavity incorporate protrusions or depressions, the planes used for measurement shall be those comprising the largest percentages of the total areas of the surfaces. Holes in surfaces shall be disregarded when calculating areas for this determination.

The following volumes or spaces shall be disregarded:

- those occupied by removable items specified by the manufacturer as not essential for the operation of the appliance, such as shelves, racks or temperature probes;
- those occupied by heating elements;
- those occupied by minor irregularities in the cooking compartment walls, including covers over temperature sensors and lamps;
- those occupied by the convection baffle;

- corner radii smaller than 50 mm at the intersections of the interior surfaces of the cooking cavity.

Dimensions are stated in millimetres.

6.3.2 Overall height (H)

The maximum vertical distance, in mm, between the plane of the cooking cavity bottom and the plane of the cavity ceiling.

6.3.3 Overall width (W)

The maximum horizontal distance, in mm, between the planes of the cavity side walls.

6.3.4 Overall depth (D)

The maximum horizontal distance, in mm, from the plane of the inside surface of the door when closed to the plane of the rear cavity wall.

6.3.5 Overall volume of rectangular cavities

The overall volume is the total internal volume of the cavity in which cooking takes place, expressed as the product of H , W and D determined as above, divided by 10^6 and rounded to the nearest litre.

6.3.6 Overall volume of non-rectangular cavities

Non-rectangular cavities shall have the volume of any non-conforming section such as a curved door or cavity wall determined by direct measurement and the application of conventional geometrical calculations. The remainder of the cavity shall be treated as a rectangular cavity and the individual volumes added together. The volume is expressed to the nearest litre.

6.4 Dimensions of shelves and steaming accessories

The usable width and usable depth of the shelf are measured. The dimensions are determined 5 mm above the surface of the shelf.

The surface area is calculated and stated in square centimetres, rounded to the nearest 10 cm².

NOTE The shelf can be a baking tray or a steaming accessory.

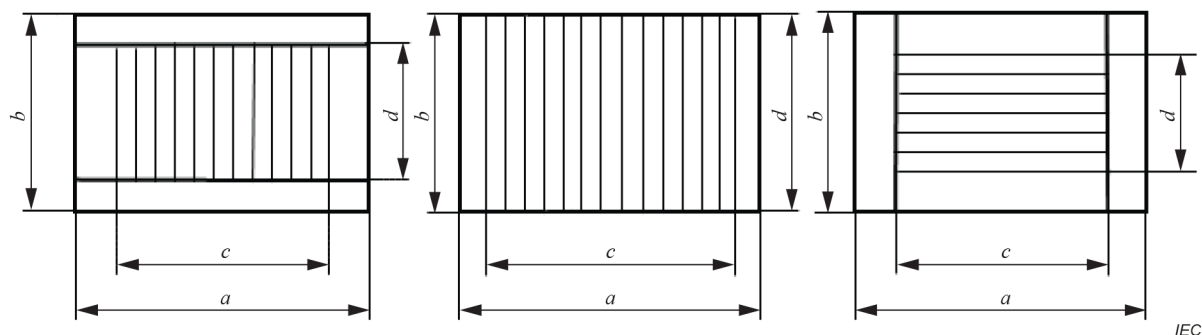
6.5 Dimensions of grill grids

6.5.1 Entire area

The entire area of the grill grid is determined by measuring the maximum width and the maximum depth of the outer rods. This entire area of the grill grid is calculated and stated in square centimetres, rounded to 10 cm².

6.5.2 Usable area

The usable width and usable depth of the grill grid are measured, by considering only the inner grid, which is suitable for placing food. The usable area of the grill grid is calculated and stated in square centimetres, rounded to 10 cm². See Figure 6.



Key

- a* is the maximum width of the grill grid
- b* is the maximum depth of the grill grid
- c* is the usable width of the grill grid
- d* is the usable depth of the grill grid

Figure 6 – Examples for determining the entire area and usable area of a grill grid

6.6 Dimensions of warming compartments

The height, width and depth of the calculated volume within the **warming compartment** are measured and indicated in millimetres.

NOTE When a heating element is located inside the **warming compartment**, the dimensions are measured up to its most protruding part.

6.7 Mass of the appliance

The mass of the appliance is determined and expressed in kilogrammes, rounded to the nearest kilogramme. To determine the mass, only the accessory described in the test in Clause 8 shall be considered.

7 Preheating and accuracy

7.1 Purpose

The purpose of the tests in Clause 7 is to assess the performance of the **oven** and **combi steam oven** in relation to preheating and functioning of the control.

7.2 Test setup

The air temperature in the empty **oven** and **combi steam oven** is measured with a thermocouple that conforms to the criteria specified in 5.3 fixed to the grid that is delivered with the appliance. It is placed in the **oven** and **combi steam oven** in a way that the welding point of the thermocouple is located at the centre of the calculated volume of the **oven** and **combi steam oven** with a distance of at least 30 mm from the grid.

If no grid can be purchased from the manufacturer of the appliance, the thermocouple shall be positioned in the centre in a suitable way.

Thermocouples are led through the door gap in a way that the door is completely closed without applying additional force.

The door shall be completely closed.

7.3 Preheating the empty oven

The purpose of this test is to measure the energy consumption and time it takes to preheat an empty **oven** or **combi steam oven** from room temperature by a given temperature rise.

Prior to the measurement, the whole appliance (this includes the material and the insulation) shall be at ambient temperature of $(23 \pm 2) ^\circ\text{C}$. In **multiple cavity appliances**, each **oven** cavity shall be measured separately. Only the cavity measured shall be switched on.

A **heating function**, **eco function** or **hot steam function** shall be selected. The temperature control is set to the maximum position. The appliance is heated until the rise reaches 165 K.

The temperature rise is the difference of the **oven** temperatures measured at the beginning and at the end of the test.

The time t_{ph} (t_{ph} means preheating) in minutes and seconds and the energy consumption E_{ph} in kWh shall be measured.

The time for preheating of the empty **oven**, t_{ph} , shall be reported and rounded to the nearest half minute.

The energy consumption for preheating the empty **oven**, E_{ph} , shall be reported in kWh and rounded to two decimal spaces.

If the **oven** has an additional preheating setting, the test shall be repeated with this setting.

NOTE The energy consumption of components, such as lamps and fans that are automatically switched on with the appliance, is included in the measurement.

7.4 Accuracy of the control

7.4.1 Purpose

The purpose of this test is to determine the accuracy of the temperature control and to calculate the corrected temperature setting used for tests for Clause 9.

7.4.2 Measurements

Prior to the measurements, the whole appliance shall be at ambient temperature of $(23 \pm 2) ^\circ\text{C}$.

The temperature control element is set to the position marked $150 ^\circ\text{C}$ and the appliance is heated for $t_{\text{check}, 150} = 60 \text{ min}$. Then the temperature control element is set to the position marked $200 ^\circ\text{C}$ and the appliance is heated for further $t_{\text{check}, 200} = 60 \text{ min}$. Then the temperature control element is set to the position marked $250 ^\circ\text{C}$ and the appliance is heated for a further $t_{\text{check}, 250} = 60 \text{ min}$.

Markings of the control element for grilling are ignored. If $250 ^\circ\text{C}$ is not marked, the next higher marked setting is taken into account. If the highest marked setting is below $250 ^\circ\text{C}$, the highest possible marked setting shall be chosen. If the control element is not marked in degrees Celsius, the control element is set at appropriate markings taking into account the instructions for use.

Measurements shall be performed without fast preheating function.

The **oven** temperature is recorded continuously in line with 7.2.