



**Irish Standard**  
**I.S. EN IEC 61591:2023**

**Version 2.00**

## Cooking fume extractors - Methods for measuring performance

## I.S. EN IEC 61591:2023 V2.00

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## **National Foreword**

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EUROPEAN STANDARD

**EN IEC 61591**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2023

ICS 97.040.20

Supersedes EN IEC 61591:2020;  
EN IEC 61591:2020/A11:2020

English Version

## Cooking fume extractors - Methods for measuring performance (IEC 61591:2023)

Extracteurs de fumée de cuisine - Méthodes de mesure de  
l'aptitude à la fonction  
(IEC 61591:2023)

Absauger für Kochdünste - Verfahren zur Messung der  
Gebrauchseigenschaft  
(IEC 61591:2023)

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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/352/CDV, future edition 3 of IEC 61591, 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 61591:2023.

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) 2024-02-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-05-01

This document supersedes EN IEC 61591:2020 and all of its amendments and corrigenda (if any).

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### **Endorsement notice**

The text of the International Standard IEC 61591:2023 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 60335-1 NOTE Approved as EN 60335-1

IEC 60335-2-31 NOTE Approved as EN 60335-2-31

IEC 60704-3 NOTE Approved as EN 60704-3

## 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 60704-2-13	-	Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 2-13: Particular requirements for range hoods and other cooking fume extractors	EN 60704-2-13	-
IEC 60751	-	Industrial platinum resistance thermometers and platinum temperature sensors	EN IEC 60751	-
IEC 62301	2011	Household electrical appliances - Measurement of standby power	EN 50564	2011
IEC 63474	— <sup>1</sup>	Electrical and electronic household and office equipment - Measurement of networked standby power consumption of edge equipment	EN IEC 63474	— <sup>2</sup>
ISO 5167-1	-	Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 1: General principles and requirements	EN ISO 5167-1	-
ISO 5167-2	-	Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 2: Orifice plates	EN ISO 5167-2	-
ISO 5167-3	-	Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 3: Nozzles and Venturi nozzles	EN ISO 6157-3	-

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

<sup>2</sup> Under preparation. Stage at the time of publication: prEN IEC 63474:2022.

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**EN IEC 61591:2023 (E)**

ISO 5167-4	-	Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 4: Venturi tubes	EN ISO 5167-4	-
ISO 5801	2017	Fans - Performance testing using standardized airways	EN ISO 5801	2017
ISO 80000-1	2009	Quantities and units - Part 1: General	-	-





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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Cooking fume extractors – Methods for measuring performance**

**Extracteurs de fumée de cuisine – Méthodes de mesure de l'aptitude à la fonction**



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IEC 61591

Edition 3.0 2023-03

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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**Cooking fume extractors – Methods for measuring performance**

**Extracteurs de fumée de cuisine – Méthodes de mesure de l'aptitude à la fonction**

INTERNATIONAL  
ELECTROTECHNICAL  
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**COOKING FUME EXTRACTORS –  
METHODS FOR MEASURING PERFORMANCE**

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IEC 61591 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 2019. This edition constitutes a technical revision.

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

- a) new definition of **working point**, see 3.19;
- b) new definition for **lowest setting** and **automatic setting**, see 3.17 and 3.18;
- c) revised requirements for installation and positioning, see 6.2;
- d) added a normative reference ISO 5801 for the specification of the pressure compensation chamber, see Clause 10;
- e) separate clauses for determining the volumetric airflow and fluid dynamic efficiency, see Clauses 10 and 11;
- f) new approach for determining the fluid dynamic efficiency ("9-point calculation");

- g) new definitions, new clause and new Annex B regarding the measurement of low-power modes;
- h) new Annex A: assumption for the parameter *b*.

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

Draft	Report on voting
59K/352/CDV	59K/361/RVC

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.

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).

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## COOKING FUME EXTRACTORS – METHODS FOR MEASURING PERFORMANCE

### 1 Scope

This document applies to **cooking fume extractors** incorporating a fan for the **recirculation** or **extraction mode** situated in a household kitchen.

It can also be used for **cooking fume extractors** where the fan is mounted separately from the appliance, but controlled by the appliance when the fan is defined in the technical documentation (e.g. name plate data) and instructions for installation.

This document deals also with **down-draft systems** arranged beside, behind or under the cooking appliance.

This document defines the main performance characteristics of these appliances, which 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 1 This document does not deal with safety requirements that are in accordance with IEC 60335-1 and IEC 60335-2-31.

NOTE 2 **Cooking fume extractors** without fans operated by a central ventilation system are covered in EN 13141-3.

### 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 60704-2-13, *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 2-13: Particular requirements for range hoods and other cooking fume extractors*

IEC 60751, *Industrial platinum resistance thermometers and platinum temperature sensors*

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

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

ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full – Part 1: General principles and requirements*

ISO 5167-2, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full – Part 2: Orifice plates*

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



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