IEC 60436

Edition 5.0 2025-06

Corrected version
2026-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric dishwashers for household use - Methods for measuring the performance

Lave-vaisselle électriques à usage domestique - Méthodes de mesure de l'aptitude à la fonction

ICS 97.040.40

ISBN 978-2-8327-0490-5

IEC 60436:2025-06(en-fr)

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

Electric dishwashers for household use - Methods for measuring the 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.

2) The formal decisions or agreements of 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 IEC National Committees.

3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.

4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.

5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.

6) All users should ensure that they have the latest edition of this publication.

7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.

8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 60436 has been prepared by subcommittee 59A: Electric dishwashers, of IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2015, and Amendment 1:2020. This edition constitutes a technical revision.

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

a) Implementation of a new reference machine, which better reflects modern dishwasher energy and water saving technologies. Its ability to function as a reference machine for the cleaning assessment was assessed in a Round Robin Test.

b) Implementation of the new reference detergent type E, which better reflects market detergents formulations. It includes upgraded enzymes and a lower content of silicates to reduce the alkalinity which simplifies the world wide transportation by avoiding dangerous goods labelling and therefore improves the usage all over the world.

c) Implementation of an alignment factor for the cleaning performance assessment as proposed in a scientific study done by an university to align test results of the previous version to the new version of this document with the new reference system described above.

d) Introduction of replacements and alternatives for the pan and knives as the production of the current ones was stopped.

e) Improvement of the room temperature control by a temperature measurement inside the dishwasher directly prior to the start of the test programme.

f) Update of the weight of different load items and the specified ranges to anneal the requirements in the document to the actual weight of the items.

g) Introduction of an updated method to assess low power modes providing a step-by-step measurement description and including new modes, e.g. network standby which are of increased importance for dishwasher offering additional services via internet connection. Additionally, reactions to different interactions with the appliance can be assessed in a better way and learnings of Round Robin Test are included.

h) Inclusion of additional method for dishwasher testing which allows the assessment of variations of dishwasher units from one model.

i) New requirements for the loading and handling instructions for tests institutes.

j) Implementation of testing methodology for multi-compartment dishwashers.

k) Improvement of ballast soil preparation process in Annex V.

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

Draft	Report on voting
59A/273/FDIS	59A/276/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.

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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

– reconfirmed,

– withdrawn, or

– revised.

The content of the corrigendum 1 (2026-04) has been included in this copy.

INTRODUCTION

The history of this fifth edition of IEC 60436 is provided as follows:

– Discussion began in fourth quarter of 2021 during one of the web conferences of Maintenance Team 2.

– A first working draft was developed and discussed during the Qingdao China meeting in September 2023.

– It was decided by SC 59A to proceed directly to CDV, skipping CD stage, due to urgency of implementation of the new detergent (3.1.23) E. This urgency is caused by production termination of enzymes used for detergent (3.1.23) D composition.

– Implementation of new reference system, the new reference detergent (3.1.23) and the new reference machine (3.1.6), is done based on data coming from Round Robin Test conducted in 2022-2023.

Further readings:

ISO/IEC Guide 98-3:2008/Suppl 2:2011 [1], *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995) – Supplement 2: Extension to any number of output quantities*

ISO/IEC Guide 98-4:2012 [2], *Uncertainty of measurement – Part 4: Role of measurement uncertainty in conformity assessment*

DIN 5035-6:2006 [3], *Beleuchtung mit künstlichem Licht – Teil 6: Messung und Bewertung* ("Lighting *with artificial light – Part 6: Measurements and evaluation*")

ISO 3310-1:2016 [4], *Test sieves – Technical requirements and testing – Part 1: Test sieves of metal wire cloth*

EN 12665:2011 [5], *Light and lighting – Basic terms and criteria for specifying lighting requirements*

IEC 60704-3:2019 [6], *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 3: Procedure for determining and verifying declared noise emission values*

ISO/IEC Guide 98-1:2024 [7], *Guide to the expression of uncertainty in measurement — Part 1: Introduction*

ISO/IEC Guide 98-3:2008 [8], *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

ISO/IEC Guide 98-3:2008/Suppl 1:2008 [9], *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995) – Supplement 1: Propagation of distributions using a Monte Carlo method*

1 Scope

This document applies to electric dishwashers (3.1.1) for household and similar use that are supplied with hot and/or cold water.

The object of this document is to state and define the principal performance characteristics of electric dishwashers (3.1.1) for household and similar use and to describe the standard methods of measuring these characteristics.

This document is concerned neither with safety nor with minimum performance requirements.

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 60704–2–3, *Household and similar electrical appliances – Test code for the determination of airborne acoustical noise – Part 2-3: Particular requirements for dishwashers*

IEC 60705, *Household microwave ovens – Methods for measuring performance*

IEC 60734:2012, *Household electrical appliances - Performance - Water for testing*

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

IEC 63474, *Electrical and electronic household and office equipment - Measurement of networked standby power consumption of edge equipment*

ISO 607, *Surface active agents and detergents – Methods of sample division*

ISO 80000-1:2022, *Quantities and units — Part 1: General*

DIN 51757, *Testing of mineral oils and related materials - Determination of density*

EN 1262, *Surface active agents - Determination of pH value of solutions or dispersions*

Bibliography

[1] ISO/IEC Guide 98-3:2008/Suppl 2:2011, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995) — Supplement 2: Extension to any number of output quantities*

[2] ISO/IEC Guide 98-4:2012, *Uncertainty of measurement — Part 4: Role of measurement uncertainty in conformity assessment*

[3] DIN 5035-6:2006, Beleuchtung mit künstlichem Licht-Teil 6: Messung und Bewertung ("Lighting with artificial light – Part 6: Measurements and evaluation")

[4] ISO 3310-1:2016, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

[5] EN 12665:2011, *Light and lighting - Basic terms and criteria for specifying lighting requirements*

[6] IEC 60704-3:2019, *Household and similar electrical appliances - Test code for the determination of airborne acoustical noise - Part 3: Procedure for determining and verifying declared noise emission values*

[7] ISO/IEC Guide 98-1:2024, *Guide to the expression of uncertainty in measurement — Part 1: Introduction*

[8] ISO/IEC Guide 98-3:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

[9] ISO/IEC Guide 98-3:2008/Suppl 1:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995) — Supplement 1: Propagation of distributions using a Monte Carlo method*

[10] IEC TS 63350, *Household electric appliances - Specification of the properties of a digital system for measuring the performance*

_____