IEC 60436

Edition 4.0 2015-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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

IEC 60436:2015-10(en-fr)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 97.040.40

ISBN 978-2-8322-2970-5

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

This fourth edition cancels and replaces the third edition published in 2004, its Amendment 1 published in 2009 and its Amendment 2 published in 2012.

This edition constitutes a technical revision and includes the following significant technical changes with respect to the previous edition:

a) Addition of a specification of the reference dishwasher G1222, addition of the microwave oven 752C, inclusion of standby/low power modes and updated cutlery and tableware items.
b) Combined cleaning and drying: combining the cleaning and drying performance evaluations into one test, along with the energy and water consumption evaluation, prevents an opportunity for circumvention if tests were performed separately. A dishwasher can detect whether soil is present (cleaning evaluation) or not (drying

evaluation) and adjust the cycle to favour performance; combining the tests addresses this.

c) New dish load items: new dish load items were incorporated which reflect consumer use. New items are: stainless pots, coffee mugs, melamine plastic items, and glass bowl. The new load items provide different shapes which challenge a dishwasher water spray patterns and provide additional surfaces for soil removal assessment.

d) Detergent: a new detergent “D” is specified which mirrors current tablet formulations available on the market. Detergent type D is phosphate free, with percarbonate instead of perborate bleach and more active enzymes.

e) Repeatability and reproducibility improvements.

f) Addition of annexes for the evaluation of soil sensing programmes, rinsing performance, dishwasher filtration and of an annex on the inlet water temperature influence on energy consumption.

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

FDIS	Report on voting
59A/202/FDIS	59A/203/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.

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

The following print type is used in this standard:

– words in **bold** are defined in Clause 3.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

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

– Discussion began during the Sydney Australia meeting in September 2008.

– A first working draft was developed and discussed during the Seattle USA meeting in October 2010.

– A questionnaire (59A/149/Q) regarding proposed changes was published January 2011. Responses (59A/153/RQ) were reviewed during a meeting in Bonn Germany April 2011 and published May 2011.

– A Document for Comment (59A/155/DC) was published May 2011. Review of responses (59A/164/INF) began during the Melbourne Australia meeting in October 2011.

– A Committee Draft (59A/168/CD) was published May 2012. Review of responses (59A/170/CC) began during the Oslo Norway meeting in October 2012.

– A second Committee Draft (59A/175/CD) was published May 2013. Review of responses (59A/177/CC) began during the New Delhi India meeting in October 2013.

– Committee Documents for Vote (59A/183/CDV and 59A/184/CDV) were published June 2014. 59A/183/CDV (fragment 1) contained the complete edition 4, except for some Annex U content; 59A/184/CDV (fragment 2) contained additional Annex U content. Review of responses (59A/190b/RVC and 59A/191b/RVC for fragments 1 and 2) began during the Tokyo Japan meeting in October 2014.

– The FDIS document was prepared for publication built upon this history of work.

A Round Robin Test (RRT) has been planned and will be carried out using edition 4. Results from the RRT will be available after the edition 4 is published. Edition 4 updates, if needed, will be incorporated into edition 4 Amendment 1.

ELECTRIC DISHWASHERS FOR HOUSEHOLD USE – METHODS FOR MEASURING THE PERFORMANCE

1 Scope

This International Standard applies to electric **dishwashers** for household and similar use that are supplied with hot and/or cold water.

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

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

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, *Household electrical appliances – Performance – Water for testing*

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

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

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

3 Terms, definitions and symbols

3.1 Terms and definitions

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

3.1.1
dishwasher
machine that cleans, rinses and dries **tableware** by chemical, mechanical, thermal, and electric means

Note 1 to entry: A **dishwasher** can have a specific drying **operation** at the end of the **programme**.

Note 2 to entry: Different **dishwasher** types are designated by manufacturers e.g. **free-standing**, **built-in** or **integrated**.

3.1.2
free-standing dishwasher
dishwasher which is intended to be installed without an enclosing structure