INTERNATIONAL STANDARD

IEC 60436

Third edition
2004-02

Electric dishwashers for household use – Methods for measuring the performance

Reference number
IEC 60436:2004(E)

Publication numbering

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International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE XA

For price, see current catalogue

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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.
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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 third edition cancels and replaces the second edition published in 1981 and constitutes a technical revision. Major changes introduced in the second edition include

- changes made to the soils used in the standard;
- the use of an oven and microwave oven to dry the soils;
- the alternate 15 to 18 hour air dry method to dry the soils;
- the addition of a reference dishwasher;
- the recognition of alternate supply voltages and frequencies;
- the recognition of a cold or hot water supply to the dishwasher;
- the detergent and rinse aid compositions have been uprated to reflect current technology;
- the addition of the Aham load;
- the evaluation of the filter systems;

- the modification of the scoring system from 2 to 5 grades;
- the definition of program and cycle time;
- the temperature correction for energy testing;
- harmonization of ambient conditions.

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

FDIS	Report on voting
59A/114A/FDIS	59A/116/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.

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be either:

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- withdrawn;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

INTRODUCTION

In 1996, IEC subcommittee 59A charged its Working Group 2 with the revision of the second edition of IEC 60436 to make it suitable for the international needs and to make it suitable for the current levels of dishwasher performance and technology.

The second edition was published in 1981 and has not been significantly updated.

SC59A instructed the WG2 to take the Cenelec draft standard EN 50242 as the basis for the third edition.

An important reason for the third edition was the need to take into account the needs of all countries such as varying voltages and frequencies, different water supply temperatures and water hardness and availability of specified soils in in the various countries.

To meet the goal the following significant technical changes were made.

- The repeatability and reproducibility of the test results have been improved by the introduction of the same model reference dishwasher specified for all locations.
- The soils have been changed to reflect the modern dishwasher's capability.
- The preparation of the soils has been improved to enhance repeatability and reproducibility by the introduction of new drying methods.
- The standard also recognizes various supply voltages and frequencies,cold or hot water supply, an alternate Aham load, the evaluation of dishwasher filter systems.
- The standard has updated the formulation of the detergent and rinse agents to reflect the producs on the market today.
- The standard has increased the sensitivity of the grading scale from two to five points to improve repeatability and reproducibility.
- Ambient conditions have been brought closer to harmonization.
- More detailed instructions have been provided for the installation of the various designs of dishwashers.
- Correction formulae have been provided for the correction of energy consumption measurements for varying water supply temperature.

ELECTRIC DISHWASHERS FOR HOUSEHOLD USE – METHODS FOR MEASURING THE PERFORMANCE

1 Scope

This international standard applies to electric dishwashers for household 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 use and to describe the standard methods of measuring these characteristics.

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

2 Normative references

The following referenced documents are indispensable for the application 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 60350, *Electric cooking ranges, hobs, ovens and grills for household use – Methods for measuring performance*

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 60704-3, *Test code for the determination of airborne acoustical noise emitted by household and similar electrical appliances – Part 3: Procedure for determining and verifying declared noise emission values*

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

IEC 60734, *Household electrical appliances – Performance – Hard water for testing*

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

AHAM DW-1:2003: *Performance testing methods for household electric dishwashers*

3 Terms and definitions

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

3.1
dishwasher
machine which cleans, rinses, and dries dishware, glassware, cutlery, and, in some cases, cooking utensils by chemical, mechanical, thermal, and electric means. A dishwasher may or may not have a specific drying operation at the end of the program