

# INTERNATIONAL STANDARD



## AMENDMENT 2

### Electric dishwashers for household use – Methods for measuring the performance



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## FOREWORD

This amendment has been prepared by subcommittee 59A: Electric dishwashers, of IEC technical committee 59: Performance of household and similar electrical appliances.

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

CDV	Report on voting
59A/152/CDV	59A/160/RVC

The decision, given in the report on voting indicated in the above table, was modified at the SC59A meeting held in Melbourne, Australia on 21 October 2011. In point 8 of the minutes of the meeting, document 59A/162/RM, the decision 1/11 was given to move this amendment directly to publication without passing through the FDIS document stage.

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication 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- withdrawn,
- replaced by a revised edition, or
- amended.

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## INTRODUCTION

This second amendment to the third edition of IEC 60436 (2004) covers the five following issues:

- An illustration for the through-circulation thermal cabinet to indicate the position of temperature sensors and a new position for the basket to prevent partial blockage of the inlet air path which will improve the consistency of the oven drying results. Furthermore an improved calibration procedure of the oven temperatures is included. It applies to Annex G of IEC 60436:2004.
- Revised small bowl specification – the current bowl (named “small serving bowl” as well as “fruit bowl”) is out of production and will become unavailable as the existing stock is depleted. This alternate bowl is necessary. This bowl (“dessert bowl”) has been tested and found to be acceptable. Throughout the standard the names “small serving bowl” and the “fruit bowl” have been changed to “dessert bowl”. This applies to Clause 6, Annex A and Annex B of IEC 60436:2004.
- The inclusion of standby power to cover the relevant low power modes for dishwashers as a new Annex O which references IEC 62301 for the measurement method. This Annex O is based on Annex L of draft 59D/343/CDV for washing machines and has been modified to be suitable for dishwashers.
- A more detailed description on how to calibrate and work with the new microwave oven was introduced with IEC 60436, Amendment 1:2009.
- Alternative replacement cutlery items for Annex A are described in A.2 and A.3.

## 2 Normative references

Add the following new reference:

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

## 3 Terms and definitions

Add the following new definitions:

### 3.16 off mode

mode where the product is switched off using appliance controls or switches that are accessible and intended for operation by the user during normal use to attain the lowest power consumption that may persist for an indefinite time while connected to a mains power source, and used in accordance with the manufacturer's instructions

NOTE 1 Where there are no controls, the dishwasher is left to revert to a steady state power consumption of its own accord.

NOTE 2 Where the dishwasher has no power switch intended for the user to activate off mode, then off mode is effectively the same as left on mode.

### 3.17 left on mode

the lowest power consumption mode that may persist for an indefinite time after the completion of the programme and unloading of the machine without any further intervention of the user

NOTE In some products, this mode may be an equivalent power to off mode.

### 3.18

#### delay start mode

the average power consumption of the mode where the user has selected a specified delay to the commencement of the programme. This mode is only applicable to dishwashers that provide a delay start function for the user

NOTE Delay start mode is a short duration (temporary) mode so the duration should always be stated with the power or energy consumption. The frequency of use and the duration selected will depend on a number of factors and may vary considerably across individual users.

#### 6.4.1.2 Conversion

Replace the contents of the subclause by the following:

If the power levels of the microwave oven used are not equal to the rated values (780 W and 150 W) according to Annex G but within the given tolerances the heating times shall be corrected as follows:

BOSCH<sup>1</sup> model HMT752F

Approved microwave oven for tests

$$t_{u,1} = \frac{P_1 \cdot t_1}{P_{u,1}} \quad t_{u,1} = \frac{P_1 \cdot Z}{P_{u,1}} \quad (Z.1)$$

$$t_{u,2} = \frac{P_2 \cdot t_2}{P_{u,2}} \quad t_{u,2} = \frac{P_2 \cdot t_2}{P_{u,2}} \quad (Z.2)$$

where

$P_1$  is 780 W

$P_2$  is 150 W

$t_1$  is 4 min

$t_2$  is 10 min

$Z$  is the recommended time setting in min in the attached data sheet which will be delivered together with the microwave oven as described in G.1

$P_{u,1}$  is the actual max. power level used in W (measured according to IEC 60705)

$t_{u,1}$  is the corresponding heating time to be used in min

$P_{u,2}$  is the actual reduced power level used in W [determined by Equation (Z.3)]

$t_{u,2}$  is the corresponding actual heating time to be used in min.

$$P_{u,2} = \frac{P_{u,1}}{t_p} (t_{on} - t_{up}) \quad (Z.3)$$

where

$t_p$  is the time of the elementary period of the magnetron in the microwave oven at the reduced power level in s;

<sup>1</sup> "Bosch HMT752F" is the trade name of a product supplied by Bosch. This information is provided for the convenience of users of this international standard and does not constitute an endorsement by the IEC of this trademark. Items of the similar specification may be used if they can be shown to lead to equivalent results.