
Komercialni električni pomivalni stroji - Metode za merjenje učinkovitost delovanja

Commercial Electric dishwashing machines - Test methods for measuring the performance

Elektrische Geschirrspüler für den gewerblichen Gebrauch – Messverfahren für Gebrauchseigenschaften

Lave-vaisselle électriques à usage collectif - Méthodes d'essai et de mesure de l'aptitude à la fonction

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59A/283/CDV

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TITLE:

Commercial Electric dishwashing machines - Test methods for measuring the performance

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Commercial Electric dishwashing machines - Test methods for measuring the performance

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IEC 63136 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.

EN 50593:2017 has served as a basis for the elaboration of this standard.

This second edition cancels and replaces the first 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) ...;
- b) ...

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

CDV	Report on voting
59A/xxx/CDV	59A/xxx/RVC

Full information on the voting for the approval of this International Standard 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 [change language if necessary].

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.

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

- reconfirmed,
- withdrawn, or
- revised.

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INTRODUCTION

This first edition has been developed to provide a globally applicable and agreed method to test the performance of electric dishwashers for commercial use.

The following items were listed in the bibliography but not cited in the text. Please find a suitable place to cite them to justify their inclusion in the bibliography:

IEC 60335-1, *Household and similar electrical appliances – Safety – Part 1: General requirements* [IEC 60335-1 \[1\]](#)

IEC 60335-2-58, *Household and similar electrical appliances – Safety – Part 2-58: Particular requirements for commercial electric dishwashing machines* [IEC 60335-2-58 \[2\]](#)

IEC 62053-21, *Electricity metering equipment (a.c.) – Particular requirements – Part 21: Static meters for active energy (classes 1 and 2)* [IEC 62053-21 \[3\]](#)

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1 Scope

This document applies to manually loaded under-counter one-tank and one-tank hood-type electrically heated dishwashing machines for washing plates, dishes, glassware, cutlery and similar articles.

These machines are used in commercial kitchens, such as restaurants, canteens, hospitals and in businesses such as bakeries, butchers' shops, etc.

This document does not apply to conveyor dishwashing machines with transport systems and utensil washing machines.

This document does not apply to undercounter water-change dishwashers.

This document does not apply to appliances designed exclusively for industrial purposes.

This document states and defines the principal performance characteristics of electric dishwashers for commercial use and describes the standard methods of measuring these characteristics.

The characteristics are measured by washing plates.

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.

ISO 15510, *Stainless steels – Chemical composition*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

commercial dishwasher

electric dishwasher that is specially designed for use in commercial environments and that cleans and rinses dishes, glasses, cutlery, and, in some cases, cooking utensils by chemical, mechanical, thermal and electrical treatment

Note 1 to entry: [Commercial dishwashers \(3.1\)](#) evaluated with a specific [drying \(3.23\)](#) operation at the end of the [programme \(3.6\)](#) should be declared as such in the test report.

3.2

under-counter one-tank dishwasher

manually loaded, programmable, undercounter front loader machine with typically one detergent-circulating zone and a [fresh-water rinsing \(3.22\)](#) process

Note 1 to entry: The [washware \(3.14\)](#) is cleaned using a [detergent solution \(3.17\)](#) that is regenerated. The technical equipment is geared to the performance that is required in the specific application.

3.3

hood-type dishwasher

manually loaded, programmable, hood-type, pass-through machine with typically one detergent-circulating zone and a [fresh-water rinsing \(3.22\)](#) process

3.4

conveyor dishwashing machine

appliance in which the various processes, e.g. washing, rinsing, are carried out, the load being moved through the various operations automatically

Note 1 to entry: Examples are flight or [rack \(3.12\)](#) type dishwashing machines

3.5

operation

event that occurs during the dishwasher's [programme \(3.6\)](#), such as [cleaning \(3.24\)](#), rinsing or [drying \(3.23\)](#)

3.6

programme

series of [operations \(3.5\)](#) that are pre-defined within the dishwasher and that are declared by the manufacturer as suitable for [cleaning \(3.24\)](#) certain [washware \(3.14\)](#)

3.7

cycle

complete [cleaning process \(3.26\)](#), as defined by the [programme \(3.6\)](#) selected and including any [operations \(3.5\)](#) that occur after the completion of the [programme \(3.6\)](#)

Note 1 to entry: Examples of [operations \(3.5\)](#) that can occur after the completion of the [programme \(3.6\)](#) are refilling of the boiler, heating, [operation \(3.5\)](#) of pumps and fans.

3.8

programme time

time that is measured from the initiation of the [programme \(3.6\)](#) (excluding any user-programmed delay) until an end of [programme \(3.6\)](#) indicator is showing the end of the [programme \(3.6\)](#)

Note 1 to entry: If there is no end of [programme \(3.6\)](#) indicator, the [programme time \(3.8\)](#) is equal to the [cycle time \(3.9\)](#).

3.9

cycle time

time that is measured from the initiation of the [programme \(3.6\)](#) (excluding any user-programmed delay) until all activity ceases (i.e. the end of the cycle)

3.10

automatic dispenser

device activated automatically that injects or dispenses [detergent \(3.16\)](#) or rinse agent one or more times into the dishwasher at predetermined points in the dishwasher [cycle \(3.7\)](#)

3.11

ready-to-use mode

mode after which the dishwasher has been filled with water, the water has been heated (ready for operation) and the machine is ready to start the [cycle \(3.7\)](#) as indicated in the instructions for use

3.12

rack

removable support for holding [washware \(3.14\)](#) in the dishwasher