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Responsible committee: CPL/59 Performance of household electrical appliances

Interested committees:

Title: Draft BS EN 62849 Performance evaluation methods of robots for household and similar use.

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- iii) requires additional national guidance or information

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Full document details: 21/30434182 DC

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

PROJECT NUMBER: IEC 62849 ED2	
DATE OF CIRCULATION: 2021-07-16	CLOSING DATE FOR COMMENTS: 2021-10-08
SUPERSEDES DOCUMENTS: 59/760/RR	

IEC TC 59 : PERFORMANCE OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES	
SECRETARIAT: Germany	SECRETARY: Ms Luise Christmann
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CD to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☒ ENVIRONMENT ☒ QUALITY ASSURANCE ☐ SAFETY	

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Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:
Performance evaluation methods of robots for household and similar use

NOTE FROM TC/SC OFFICERS:

CONTENTS

FOREWORD.....	6
INTRODUCTION.....	8
1 Scope	9
2 Normative references.....	9
3 Terms and definitions.....	9
4 General conditions for testing	11
4.1 Conditions prior to testing.....	11
4.2 Operating and environmental conditions.....	11
4.2.1 General	11
4.2.2 Operating conditions.....	11
4.2.3 Atmospheric conditions.....	11
4.2.4 Lighting conditions.....	11
4.3 Test equipment and materials.....	11
4.4 Number of samples	12
4.5 Preparation of battery.....	12
4.6 Operation of the household robot	12
4.7 Measurement resolution and accuracy.....	12
4.8 Tolerance of dimensions	13
5 Units.....	14
6 Mobility	14
6.1 Threshold overcome	14
6.1.1 General	14
6.1.2 Test equipment.....	14
6.1.3 Test method	15
6.2 Transition overcome	16
6.2.1 General	16
6.2.2 Test equipment.....	16
6.2.3 Test method	16
6.3 Managing a single step	17
6.3.1 General	17
6.3.2 Test bed	17
6.3.3 Test method (autonomous modes).....	18
6.3.4 Test method (manual modes)	18
6.4 Managing a ramp	18
6.4.1 General	18
6.4.2 Test equipment.....	18
6.4.3 Test method	19
6.5 Cable traversing behaviour.....	20
6.5.1 General	20
6.5.2 Test bed	20
6.5.3 Test method	22
7 Navigation	23
7.1 Pose measurements.....	23
7.1.1 General	23
7.1.2 Test bed	23
7.1.3 Test method	24

7.2	Capability of homing function	25
7.2.1	General	25
7.2.2	Test bed	25
7.2.3	Test method	25
7.3	Obstacle avoidance	26
7.3.1	General	26
7.3.2	Test bed	26
7.3.3	Test method	27
7.4	Lighting effects.....	28
7.4.1	General	28
7.4.2	Test equipment and materials	29
7.4.3	Test method	29
8	Energy use	29
8.1	Energy consumption of a household robot.....	29
8.1.1	General	29
8.1.2	Test conditions	29
8.1.3	Test Method	30
8.2	Operation time per single charge.....	32
8.2.1	General	32
8.2.2	Test bed	32
8.2.3	Test method	33
9	Instructions for use	33
Annex A (informative)	Standard room for robot for household and similar use.....	34
Annex B (informative)	Usage profile for robot for household and similar use	35
Annex C (informative)	Simulated work cycle	36
Annex D (informative)	Matrix of multiple operation modes.....	37
Annex E (informative)	Example transition overcome test beds	38

FIGURES

Figure 1 -Basic test bed configuration for mobility testing	14
Figure 2 -Starting positions and orientations	15
Figure 3 -Managing a single step configuration	17
Figure 4 -Starting position for managing a single step test	18
Figure 5 -Side View (15°configuration)	19
Figure 6 -Top view (15°configuration)	19
Figure 7 -Zoom on transitions (15°configuration)	19
Figure 8 -Wire fastening configuration	21
Figure 9 -Floor circle marks schematic diagram	21
Figure 10 -Floor circle marks schematic diagram with robot	22
Figure 11 -Top view of cable traversing behaviour Configuration	22
Figure 12 -Side view of cable traversing behaviour Configuration	23
Figure 13 -Pose measurements configuration	24
Figure 14 -Capability of homing function configuration	25
Figure 15 -Obstacle avoidance configuration	27
Figure 16 -Starting position for obstacle avoidance test	27
Figure 17 -Operation time per single charge configuration	33
Figure 18 -Details of obstacles around table	Error! Bookmark not defined.
Figure 19 -Illustration of metal transition installation	Error! Bookmark not defined.
Figure 20 -Illustration of wood transition Installation	Error! Bookmark not defined.
Figure 21 -Detail view of checker board and transitions	Error! Bookmark not defined.
Figure 22 -Illustration of four-panel door	Error! Bookmark not defined.
Figure 23 -Transition formed by stacking sheets on Area B	38
Figure 24 -Transition formed by adjusting the height of Platform B	38

TABLES

Table 1 -Tolerance of linear dimension (from ISO 2768-1)	13
Table 2 -Tolerance of external radius and chamfer heights (from ISO 2768-1)	13
Table 3 -Typical thresholds and its characteristic.....	15
Table 4 -Test results of the mananging a ramp	20
Table 5 -Overview of duration and the values that should be reported in this test	31
Table 6 -Dimensions of furniture and obstacles.....	Error! Bookmark not defined.
Table 7 -Combination regarding multiple operation modes	37

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PERFORMANCE EVALUATION METHODS OF ROBOTS FOR HOUSEHOLD AND SIMILAR USE

FOREWORD

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International Standard IEC62849 has been prepared by IEC technical committee 59: Performance of household and similar electrical appliances.

This IEC62849 edition 2.0 cancels and replaces the IEC62849 edition 1.0 published in Aug.2016, This edition constitutes a technical revision.

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

- a) The name of IEC 62849 ed.2.0 cancels and replaces the name of IEC62849 edition 1.0, which is performance evaluation methods of robots for household and similar use;
- b) The scope of IEC 62849 ed.2.0 is more clearly defined and the physical specifications of robots for household and similar use covered by this standard are clearly defined;
- c) The IEC 62849 Ed.2.0 adds new evaluation methods for 6 performance items, including Obstacle avoidance、Managing a ramp、Lighting effects、Transition overcome、Threshold overcome、Energy consumption of robots;
- d) IEC 62849 Ed.2.0 provide a new structure which provides basic common test methods in each category and can be used by other robotics standards, including the following

- Mobility
- Navigation
- Energy use
- Effects on environment
- Other/miscellaneous

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

Draft	Report on voting
59/XXX/FDIS	59/XXX/RVD

Full information on the voting for its approval 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 committee has decided that the contents of this 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.

The National Committees are requested to note that for this publication the stability date is 202X.

THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED AT THE PUBLICATION STAGE.

INTRODUCTION

This standard is an updated version of IEC 62849 edition 1.0:2016. As stated in the Foreword, this standard has made great adjustments and improvements in terms of name, scope, performance items, overall structure of the standard, etc. This standard will cover the generic performance test methods of robots for household and similar use within one document. This current version is applicable for indoor floor supported wheeled or wheel-track robots.

As the needs for effects on environment (noise, photoelectric pollution, etc.), other /miscellaneous (Human-Robot interface, face recognition, speech recognition, information security, reliability, AI etc.) related performance growing and demand for robots used in outdoor, these will be considered into the standard of future version of this standard by working group.

IEC 62849 Ed.2.0 is aimed to cancel and replace the first edition of IEC 62849 Ed.1.0 published in Aug. 2016.

PERFORMANCE EVALUATION METHODS OF ROBOTS FOR HOUSEHOLD AND SIMILAR USE

1 Scope

This International Standard provides performance testing and evaluation methods for the common features of robots for household and similar use, their physical specifications are satisfied the following:

- Height: maximum 2m
- Weight: maximum 100kg
- Dimensions: maximum 700mm wide (to be able to fit in doorways)
- Speed: maximum 3km/h
- Mostly ground supported wheeled robots

This standard is neither concerned with safety nor with 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 60335-1 ED6:2020, *Household and similar electrical appliances-safety- Part 1: General requirements*

IEC 62885-2, *Surface cleaning appliances – Part 2: Dry vacuum cleaners for household and similar use – Methods for measuring the performance*

IEC 62885-7, 2020 *Surface cleaning appliances - Part 7: Dry-cleaning robots for household or similar use - Methods of measuring performance*

ISO 554, *Standard atmospheres for conditioning and/or testing – Specifications*

ISO 2768-1:1989, *General tolerances - Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

ISO 8373, *Robots and robotic devices-vocabulary*

ISO 679:2009, *Cement – Test methods – Determination of strength*

ISO 2813, *Paints and varnishes -- Determination of gloss value at 20 degrees, 60 degrees and 85 degrees*

3 Terms and definitions

For the purpose of this International Standard, the following definitions apply:

3.1

Household robot

Actuated mechanism with a degree of autonomy for household and similar use, to perform its intended tasks.

NOTE operating includes travel and/or robot body movement.

3.2

Household mobile robot

Household robot able to travel by itself

[Source: Adapted from ISO 13482, 3.5]

3.3

Capability of homing function

The capability of **mobile household robot** return to the charge station(s) for charging or after completion of the work task or called by user.

3.4

Pose

The combination of position and orientation.

3.5

Automatic mode

Operating mode in which the robot accomplishes its assigned mission without direct human intervention

3.6

Manual mode

Operating mode in which the robot can be operated by, for example, pushbutton or joystick and that excludes operation in automatic mode

3.7

Fully charged

Point during charging when according to the manufacturer's instructions, by indicator or time period, the product does not need to be charged any more

3.8

Completely discharged

Point in use when the manufacturer's instructions state the product is fully discharged or the robot cannot restart the operation

3.9

Docking station

Unit that may provide one or more of the following functions for the household mobile robot:

- manual or automatic battery charging facilities,
- AC and/or DC power supply,
- communication connections,
- navigation information
- data processing facility or other robot support functions

Note 1: A docking station is also known as a base unit.