Performance evaluation methods of robots for household and similar use

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62849:2026 sisaldab Euroopa standardi EN IEC 62849:2026 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62849:2026 consists of the English text of the European standard EN IEC 62849:2026.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.01.2026.	Date of Availability of the European standard is 16.01.2026.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Performance evaluation methods of robots for household and similar use (IEC 62849:2025)

Méthodes d'évaluation de l'aptitude à la fonction des robots à usage domestique et analogue (IEC 62849:2025)

Verfahren zur Bewertung der Leistungsfähigkeit von Robotern für den Hausgebrauch und ähnliche Zwecke (IEC 62849:2025)

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 59/857/FDIS, future edition 2 of IEC 62849, prepared by TC 59 "Performance of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62849:2026.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2027-01-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2029-01-31

This document supersedes EN 62849:2016 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62849:2025 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

ISO 2813	NOTE	Approved as EN ISO 2813
ISO 13482:2014	NOTE	Approved as EN ISO 13482:2014 (not modified)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Performance evaluation methods of robots for household and similar use

FOREWORD

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IEC 62849 has been prepared by IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

This second edition cancels and replaces the first edition published in 2016. This edition constitutes a technical revision.

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

a) the title has been changed to "Performance evaluation methods of robots for household and similar use";
b) the scope is more clearly defined and the physical specifications of robots for household and similar use covered by this document are clearly defined;
c) new evaluation methods for 6 performance items have been added, including obstacle avoidance, managing a ramp, lighting effects, transition overcome, threshold overcome, energy consumption of robots;

d) new structure has been introduced, which provides basic common test methods in each category and can be used by other robotics standards, including the following:
   1) mobility,
   2) navigation,
   3) energy use,
   4) effects on environment,
   5) other/miscellaneous.

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

Draft	Report on voting
59/857/FDIS	59/860/RVD

Full information on the voting for its approval 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.

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.

In this standard, the following print types are used:

– terms defined in Clause 3: **bold type**.

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.

INTRODUCTION

As stated in the Foreword, this document has made adjustments and improvements in terms of name, scope, performance items, overall structure, etc. and will cover the generic performance test methods of robots for household and similar use within one document.

The needs in terms of environmental effects (noise, photoelectric pollution, etc.), other/miscellaneous (human-robot interface, facial recognition, voice recognition, information security, reliability, AI, etc.) linked to the increasing performance and demand for robots used outdoors will be taken into account in a future version of this document.

1 Scope

This document provides performance testing and evaluation methods for the common features of robots for household and similar use, their physical specifications satisfying the following:

– height: maximum 1,75 m,
– dimensions: maximum 700 mm wide (to be able to fit through doorways),
– speed: maximum 1,5 m/s,
– floor supported wheeled or wheel-track robots.

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

This document is applicable for indoor floor use robots.

This document is not applicable to the following products:

Wet and dry surface-cleaning robots or combination of such functions.

NOTE If different testing and evaluating methods are given in other standards for specific robots，these methods can be considered for priority use.

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.

IEC TS 61496-4-3, *Safety of machinery - Electro-sensitive protective equipment - Part 4-3: Particular requirements for equipment using vision based protective devices (VBPD) - Additional requirements when using stereo vision techniques (VBPDST)*

IEC TS 62885-1, *Surface cleaning appliances - Part 1: General requirements on test material and test equipment*

IEC/ASTM 62885-7:2020, *Surface cleaning appliances - Part 7: Dry-cleaning robots for household or similar use - Methods for measuring the performance*
IEC/ASTM 62885-7:2020/AMD1:2022

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 13856-3, *Safety of machinery - Pressure-sensitive protective devices - Part 3: General principles for design and testing of pressure-sensitive bumpers, plates, wires and similar devices*