ICS 97.030 SLOVENSKÁ TECHNICKÁ NORMA Apríl 2026

STN	**Chladiace spotrebiče na domáce a ľahké komerčné použitie prevádzkované bez pripojenia k sieti a v sieti s nízkou spoľahlivosťou Vlastnosti a skúšobné metódy Požiadavky na výkonnosť a spotrebu energie**	**STN EN IEC 63437** 36 1071

Off grid and unreliable grid refrigerating appliances for domestic and light commercial use - Characteristics and test methods - Performance requirements and energy consumption

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/26

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EUROPÄISCHE NORM

EN IEC 63437

January 2026

ICS 97.030

English Version

Off grid and unreliable grid refrigerating appliances for domestic and light commercial use - Characteristics and test methods - Performance requirements and energy consumption (IEC 63437:2025)

Appareils de réfrigération hors réseau et sur réseau peu fiable pour un usage domestique et commercial léger - Caractéristiques et méthodes d'essai - Exigences d'aptitude à la fonction et consommation d'énergie (IEC 63437:2025)

Netzunabhängig und mit unzureichendem Netz betriebene Kühlgeräte für den Hausgebrauch und für den einfachen gewerblichen Gebrauch - Eigenschaften und Prüfverfahren - Leistungsanforderungen und Energieverbrauch (IEC 63437:2025)

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

Ref. No. EN IEC 63437:2026 E

European foreword

The text of document 59M/193/FDIS, future edition 1 of IEC 63437, prepared by SC 59M "Performance of electrical household and similar cooling and freezing appliances" of IEC/TC 59 "Performance of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63437:2026.

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• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2029-01-31

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 63437:2025 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:

IEC 60335-2-24	NOTE	Approved as EN IEC 60335-2-24
IEC 62124	NOTE	Approved as EN 62124
IEC 62552-1	NOTE	Approved as EN 62552-1
IEC 62552-2	NOTE	Approved as EN 62552-2
ISO 22044:2021	NOTE	Approved as EN ISO 22044:2022 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
ISO 7000	2019	Graphical symbols for use on equipment - Registered symbols	-	-

IEC 63437

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INTERNATIONAL STANDARD

Off grid and unreliable grid refrigerating appliances for domestic and light commercial use - Characteristics and test methods - Performance requirements and energy consumption

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Off grid and unreliable grid refrigerating appliances for domestic and light commercial use - Characteristics and test methods - Performance requirements and energy consumption

FOREWORD

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IEC 63437 has been prepared by subcommittee 59M: Performance of electrical household and similar cooling and freezing appliances, of IEC technical committee 59: Performance of household and similar electrical appliances. It is an International Standard.

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

Draft	Report on voting
59M/193/FDIS	59M/195/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.

The following print types are used:

– requirements: in roman type;
– notes: in small roman type;
– words in **bold** are defined in Clause 3.

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

Background information and arguments for this document are provided in Annex A. Annex C provides recommendations for future updates of this document.

1 Scope

This document specifies the essential characteristics of **off grid** and **unreliable grid refrigerating appliances** for domestic and similar use or **light commercial use**, cooled by internal natural or forced air convection. It defines input voltage supply signals for appliances designed for **unreliable grid** and **off grid** conditions.

An **unreliable grid** condition can be the result of disturbances on the electricity supply, such as **power outages**, or issues with power quality, such as voltage spikes and surges, that could cause performance challenges to refrigerating appliances. An **off grid** supply, in this context, for example is generated by a **solar panel** or a stand-alone solar home system that is not connected to the power grid. This document simulates the power characteristics in **off grid** and **unreliable grid** conditions but does not specify requirements or test procedures to assess performance of generators, **solar panels**, solar home system or any other system generating a supply signal.

The supply signals defined in this document can also be used for evaluation of the performance of other **refrigerating appliances** such as medical or laboratory appliances, professional storage **refrigerators** or **freezers**, refrigerated display cabinets, beverage coolers or ice cream **freezers**.

This document specifies the test methods for measuring the functional performance characteristics and requirements. This document does not apply to **refrigerating appliances** designed for a good quality and stable electricity grid and **refrigerating appliances** utilising fuelled absorption cooling technology.

This document is applicable to any **refrigerating appliance** for domestic or **light commercial use** that has a **rated** performance to properly operate **off grid** or under **unreliable grid** operating conditions resisting power interruptions and supply variations. **Off grid** and **unreliable grid refrigerating appliances** are appliances intended to for use with standalone or intermittent or distorted electrical mains. Electrical mains supply is assumed to be alternating current (AC) for **unreliable grid** or direct current (DC) for **off grid**. This document is also applicable to **hybrid refrigerating appliances.**

The test procedures primary focus on the performance of the overall **refrigerating appliances** and not on the specific performance of **auxiliary** components such as electrical batteries, **inverters** or **rectifiers** or any device intended to improve the power quality but external to the appliance itself. In case a **refrigerating appliance** is supplied with control unit, an **electrical battery**, a **voltage protector**, an **inverter** or a **rectifier** in the original product packaging, these components are considered as a component of the **refrigerating appliance** and are connected during testing.

The tests defined in this document aim to assess the fundamental design and functional operation of the **refrigerating appliance** as well as its resilience to given power quality issues.

Unreliable grid (UG) **refrigerating appliance** categories which are within the scope of this document are as follows:

a) $UG_{intermittent}$: AC voltage supplied **refrigerating appliances** designed for proper operation during intermittent **power outages**, containing an internal **thermal store** and/or **electrical battery**;

b) $UG_{distorted}$: AC voltage **refrigerating appliances** designed for operation when connected to a **distorted grid** supply (for example **voltage sags** or **voltage surges**);

c) $UG_{intermittent+distorted}$: AC voltage **refrigerating appliances** designed for operation with **intermittent grid**/**power outages** and **distorted grid** supply (combination of a) and b).

Off grid (OG) **refrigerating appliance** categories which are within the scope of this document are as follows:

– OG_{SDD}: DC voltage supplied **solar direct drive refrigerating appliance**s, designed for direct connection to a photovoltaic **solar panel**, containing an internal **thermal store** with an optional **electrical battery** to supply auxiliaries such as a controller, lighting or fans. The compressor of the appliance is directly supplied by the **solar panel**;

– $OG_{battery\ supported}$: DC voltage supplied, **electrical battery supported solar refrigerating appliance** designed for direct connection to a photovoltaic **solar panel**, incorporating an **electrical battery** to supply the compressor when there is insufficient solar power. These appliances can also have internal **thermal store**. The **electrical battery** is charged by the **solar panel** only. The battery will be part of the appliance or will be supplied in the same packaging of the appliance;

– $OG_{intermittent}$: DC voltage supplied **refrigerating appliance** designed for proper operation during **power outages**, containing an internal **thermal store** or **electrical battery**, or both;

– $OG_{continuous}$: Continuous DC voltage supplied **refrigerating appliance**s, without any internal **thermal store** and **electrical battery**.

This document also defines **solar classes**, consisting of different irradiance patterns and **unreliable grid protection codes**, describing various **power outages** and voltage disturbances of the electricity grid. These classes can also be applied for products outside the scope of this standard.

Refrigerating appliances that are out of scope in this document include AC **refrigerating appliances** designed for reliable, good quality continuous supply. These refrigerating appliances are covered by IEC 62552-1 [7][1], IEC 62552-2 [8] and IEC 62552-3 [9] for domestic **refrigerating appliances**.

This document does not define requirements for production sampling or conformity assessment or certification.

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 7000:2019, *Graphical symbols for use on equipment - Registered symbols*

[1] Numbers in square brackets refer to the Bibliography.