SVENSK STANDARD

SS-EN IEC 63437, utg 1:2026

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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

Som svensk standard gäller europastandarden EN IEC 63437:2026. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 63437:2026.

Nationellt förord

Europastandarden EN IEC 63437:2026

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 63437, First edition, 2025 - Off grid and unreliable grid refrigerating appliances for domestic and light commercial use – Characteristics and test methods – Performance requirements and energy consumption**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 97.030.00

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 63437

January 2026

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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)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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

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SEK Svensk Elstandard SS-EN IEC 63437, utg 1:2026

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.

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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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CONTENTS

FOREWORD 5
INTRODUCTION 7
1 Scope 8
2 Normative references 9
3 Terms and definitions 9
3.1 General 10
3.2 Unreliable grid supply 11
3.3 Off grid supply 12
3.4 Technical 13
3.5 Compartments 13
3.6 Performance characteristics 15
4 Categorization of refrigerating appliances in scope 16
5 Compartment storage temperature specifications 17
5.1 General 17
5.2 Calculation of T_{c_min}, T_{c_max} and T_{cm} for refrigerating appliances with a vertical door 18
5.3 Calculation of T_{c_min} , T_{c_max} and T_{cm} for refrigerating appliances with a horizontal door or lid 19
6 Instruments, accuracy and precision of measurements 20
6.1 General 20
6.2 Electrical energy consumption 20
6.3 Humidity 20
6.4 Length 20
6.5 Mass 20
6.6 Temperature 21
6.7 Time 21
6.8 Voltage and frequency 21
6.9 Maximum current 21
6.10 DC power supply 21
7 General test conditions 21
7.1 General 21
7.2 Ambient temperatures 22
7.2.1 Sensors 22
7.2.2 Temperature stability 22
7.2.3 Climate classes 22
7.3 Ambient relative humidity 23
7.4 Test room configuration 23
7.4.1 Platform 23
7.4.2 Rear wall or partition 23
7.4.3 Side partitions 23
7.4.4 Sensor location 24
7.4.5 Test room general configuration 24
7.5 Electricity supply 25
7.5.1 General 25
7.5.2 AC supply unreliable grid 26
7.5.3 DC supply off grid 29

7.5.4 AC/DC supply for hybrid refrigerating appliances 32
8 Preparation of an appliance for testing and general procedures 32
8.1 General 32
8.2 Running in of new appliances 32
8.3 Installation of the appliance in the test room 32
8.3.1 General 32
8.3.2 Rear clearance 32
8.4 Setting up 32
8.4.1 General 32
8.5 Variable temperature compartment 33
8.6 Pre-test condition 33
8.6.1 General 33
8.6.2 Refrigerating appliances without an electrical battery to supply the compressor 33
8.6.3 Off grid battery supported solar refrigerating appliances 36
9 Location of compartment temperature sensors 38
9.1 General 38
9.2 Overview 38
9.3 Compartment with a vertical door 38
9.4 Compartment with a horizontal door or lid 39
10 Volume 41
10.1 General 41
10.2 Test procedure 42
10.2.1 Volume measurements 42
10.2.2 Determination of volume 42
10.2.3 Volume of evaporator space 42
11 Maximum current test 43
11.1 General 43
11.2 Test procedure 43
12 Pull down test 44
12.1 General 44
12.2 Test procedure 44
12.3 Data to record and report 45
13 Water cooling test 45
13.1 General 45
13.2 Load 45
13.3 Test procedure 47
13.4 Data to record and report 48
14 Water freezing test 48
14.1 General 48
14.2 Load 48
14.3 Test procedure 50
14.4 Data to record and report 50
15 Energy consumption test 50
15.1 General 50
15.2 Test procedure 51
15.3 Data to record and report 51

16 High ambient storage and energy consumption test (only valid for ST and T appliances) 52
16.1 General 52
16.2 Test procedure 52
16.3 Data to record and report 52
17 Low ambient storage test 52
17.1 General 52
17.2 Test procedure 52
17.3 Data to record and report 53
18 Holdover test 53
18.1 General 53
18.2 Test procedure: 53
18.3 Data to record and report 54
19 Solar class test 54
19.1 General 54
19.2 Test procedure 54
19.3 Data to record and report 55
20 Under and over voltage test 55
20.1 General 55
20.2 Test procedure 55
20.3 Data to record and report for the under and for the over voltage test 56
21 Voltage withstand test 56
21.1 General 56
21.2 Test procedure 57
21.3 Data to record and report 57
22 Polarity check test 57
22.1 General 57
22.2 Test procedure 57
22.3 Data to record and report 57
23 Summary of compartment load, electrical battery state and thermal store conditions 57
24 Marking 58
24.1 Rating plate information 58
24.2 Identification of frozen compartments 59
24.3 Load limit lines 59
Annex A (informative) Background information and arguments for the standard 61
A.1 Background 61
A.2 Rationale 62
Annex B (informative) Test points solar classes 63
Annex C (informative) Recommendations for future standard updates 66
Bibliography 67

Figure 1 – Example calculation of T_{c_min} and T_{c_max} for refrigerating appliances with a vertical door 19
Figure 2 – Example calculation of T_{c_min} and T_{c_max} for refrigerating appliances with a horizontal door or lid 20
Figure 3 – Verification of parameters to be kept constant 22

Figure 4 – Partitions to restrict air circulation and ambient temperatures sensor positions 25
Figure 5 – AC supply signals 28
Figure 6 – Daily solar class supply signals 30
Figure 7 – Daily functional supply signal 31
Figure 8 – Pre-test condition A – Example 1: applying an intermittent supply class 4 supply signal 34
Figure 9 – Pre-test condition A– Example 2: applying an intermittent supply class 5 supply signal 34
Figure 10 – Pre-test condition B for holdover test – Example 1 35
Figure 11 – Pre-test condition B for holdover test – Example 2 35
Figure 12 – Pre-test condition C – Example 1: applying an intermittent supply class 4 supply signal 36
Figure 13 – Pre-test condition C – Example 2: applying an intermittent supply class 5 supply signal 37
Figure 14 – Pre-test condition D for holdover test – Example 1 37
Figure 15 – Pre-test condition D for holdover test – Example 2 38
Figure 16 – Location of temperature sensors vertical door refrigerating appliances 39
Figure 17 – Location of temperature sensors horizontal door or lid refrigerating appliances 41
Figure 18 – Basic view of top mounted freezer appliance 43
Figure 19 – Load and position of the water and M-containers on each shelf for appliances with a vertical door and on the dummy shelf for horizontal appliances with a dummy shelf (water cooling test) 46
Figure 20 – Load and position of the M-containers on the shelve (water freezing test) 49
Figure 21 – Star identification symbols for frozen compartments 59
Figure 22 – Marking of load limit 60

Table 1 – Unreliable grid refrigerating appliance categories and their configuration codes 17
Table 2 – Off grid refrigerating appliance categories and their configuration codes 17
Table 3 – Compartment temperature specification 18
Table 4 – Climate classes 22
Table 5 – Ambient test conditions 23
Table 6 – AC unreliable grid supply signals 27
Table 7 – Intermittent AC voltage supply class 27
Table 8 – AC voltage distorted supply class 28
Table 9 – AC voltage withstand supply class 29
Table 10 – DC off grid supply signals 29
Table 11 – Current of the functional supply 30
Table 12 – Functional supply signal 31
Table 13 – Intermittent DC voltage supply class 32
Table 14 – Testing days energy consumption test 51
Table 15 – Testing days solar class test 55
Table 16 – Compartment load, electrical battery condition and thermal store state at the start of each test 58
Table B.1 – Coordinates of the irradiance graphs for the various solar classes 64

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.