
Refrigerated display cabinets —
Part 2:
Classification, requirements and test
conditions

Meubles frigorifiques de vente —

Partie 2: Classification, exigences et méthodes d'essai



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 7, *Testing and rating of commercial refrigerated display cabinets*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 44, *Commercial and Professional Refrigerating Appliances and Systems, Performance and Energy Consumption*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This third edition cancels and replaces the second edition (ISO 23953-2:2015), which has been technically revised.

The main changes are as follows:

- revision of:
 - the scope has been revised as this document not applicable to commercial beverage coolers covered by ISO 22044 and ice cream freezers covered by ISO 22043;
 - mass flow with EEV only, to adapt standard to technological improvement;
 - $E_{CPEC,24h}$ also for brine / indirect cooling;
 - testing repeatability;
 - requirements for refrigerant with glide;
- addition of:
 - extrapolation methods for liquid cooled condensing units, depth, height, length and plug-in alternative components;
 - liquid cooled condensing unit (semi plug-in) type;

- S_{TDA} for new types of cabinets;
- standard rating conditions and configurations;
- marking, load limits, multiple loading line for different M-package temperature.

A list of all parts in the ISO 23953 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Refrigerated display cabinets —

Part 2: Classification, requirements and test conditions

1 Scope

This document specifies requirements for the performance of refrigerated display cabinets used in the sale and display of foodstuffs and construction characteristics impacting performance. It specifies test conditions and methods for checking that the requirements have been satisfied, as well as classification of the cabinets, their marking and the list of their characteristics to be declared by the manufacturer.

This document is not applicable to refrigerated vending machines, commercial beverage coolers covered by ISO 22044, ice cream freezers covered by ISO 22043. It is also not applicable to cabinets intended for storage or cabinets intended for use, for instance, in catering or non-retail refrigerated applications.

This document does not cover health and safety aspects and ergonomic principles.

This document is not intended to specify storage temperature for foodstuff.

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 817:2014, *Refrigerants — Designation and safety classification*

ISO 5149-2:2014, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

ISO 23953-1:2023, *Refrigerated display cabinets — Part 1: Vocabulary*

IEC 60335-1:2020, *Household and similar electrical appliances — Safety — Part 1: General requirements*

IEC 60335-2-89:2019, *Household and similar electrical appliances — Safety — Part 2-89: Particular requirements for commercial refrigerating appliances and ice-makers with an incorporated or remote refrigerant unit or motor-compressor*

3 Terms, definitions, symbols and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 23953-1:2023 and the following apply.

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

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