



National Standards Authority of Ireland

IRISH STANDARD

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ICS 01.040.17  
17.200.20  
67.260

**TEMPERATURE RECORDERS FOR THE  
TRANSPORT, STORAGE AND DISTRIBUTION  
OF CHILLED, FROZEN,  
DEEP-FROZEN/QUICK-FROZEN FOOD AND  
ICE CREAM – TESTS, PERFORMANCE,  
SUITABILITY**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12830**

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English version

**Temperature recorders for the transport, storage and distribution  
of chilled, frozen, deep-frozen/quick-frozen food and ice cream -  
Tests, performance, suitability**

Enregistreurs de température pour le transport,  
l'entreposage et la distribution de denrées alimentaires  
réfrigérées, congelées, surgelées et des crèmes glacées -  
Essais, performance, aptitude à l'emploi

Temperaturregistriergeräte für den Transport, die Lagerung  
und die Verteilung von gekühlten, gefrorenen,  
tiefgefrorenen Lebensmitteln und Eiskrem - Prüfungen,  
Leistung, Gebrauchstauglichkeit

This European Standard was approved by CEN on 4 June 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPAISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 141 "Pressure gauges - Thermometers - Means of measuring and/or recording temperature in the cold chain", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2000, and conflicting national standards shall be withdrawn at the latest by January 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This European Standard is a document meeting the objectives of directives :

- 92/1/EEC of January 13, 1992 of the Commission on the monitoring of temperatures in the means of transport, warehousing and storage of quick-frozen foodstuffs intended for human consumption ;
- 93/43/EEC of June 14, 1993 of the Council of the hygiene of foodstuffs and in particular on "temperature control criteria".

## 1 Scope

This European Standard specifies the technical and functional characteristics of air temperature recorders for equipping the means used for the transport, storage and distribution of chilled, frozen and deep-frozen/quick-frozen food and ice cream.

It specifies the test methods which allow the determination of the equipment's conformity to suitability and performance requirements.

It applies to the whole recorder-temperature sensor(s). The temperature sensor(s) may be integrated into the recorder or remote from it [external sensor(s)].

It does not define the location of the recorder and its sensors with respect to types of usage such as transport, storage and distribution.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 13486, *Temperature recorders and thermometers for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice-cream – Periodic verification*

EN 50081-1, *Electromagnetic compatibility - Generic emission standard - Part 1 : Residential, commercial and light industry.*

EN 50082-1, *Electromagnetic compatibility - Generic immunity standard - Part 1 : Residential, commercial and light industry.*

EN 60068-2-27, *Basic environmental testing procedures - Part 2 : Tests - Test Ea and guidance : Shock. (IEC 60068-2-27:1987)*

EN 60529, *Degrees of protection provided by enclosures (IP Code). (IEC 60529:1989)*

EN 61010-1, *Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1 : General requirements. (IEC 61010-1:1990+A1:1992, modified)*

## 3 Definitions

For the purposes of this European Standard, the following definitions apply :

### 3.1

#### **(measurable) quantity**

attribute of a phenomenon, body or substance that may be distinguished qualitatively and determined quantitatively<sup>1)</sup>

EXAMPLE : Temperature.

### 3.2

#### **unit (of measurement)**

particular quantity, defined and adopted by convention, with which other quantities of the same kind are compared in order to express their magnitudes relative to that quantity<sup>1)</sup>

EXAMPLE : The unit of temperature used in this standard is "degree Celsius".

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<sup>1)</sup> Definition taken from VIM2 (see ANNEX B).

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