

**Temperatuurimeerikud jahutatud, külmutatud,  
sügavkülmutatud/kiirkülmutatud toidu ja jäätise  
transpordil, ladustamisel ja levitamisel. Katsed,  
toimimine, sobivus**

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12830:2005 sisaldb Euroopa standardi EN 12830:1999 ingliskeelset teksti.	This Estonian standard EVS-EN 12830:2005 consists of the English text of the European standard EN 12830:1999.
Standard on kinnitatud Eesti Standardikeskuse 11.01.2000 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 11.01.2000 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kätesaadavaks tegemise kuupäev on 21.07.1999.	Date of Availability of the European standard text 21.07.1999.
Standard on kätesaadav Eesti standardiorganisatsionist.	The standard is available from Estonian standardisation organisation.

**ICS** 01.040.17, 17.200.20, 67.260

**Võtmesõnad:** katsed, Meerikud, sobivus, sobivustaimid, Toimimine

**Standardite reproduutseerimis- ja levitamisõigus kuulub Eesti Standardikeskusele**

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:  
Aru 10 Tallinn 10317 Eesti; [www.evs.ee](http://www.evs.ee); Telefon: 605 5050; E-post: [info@evs.ee](mailto:info@evs.ee)

# **EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM**

**EN 12830**

July 1999

ICS 01.040.17; 17.200.20; 67.260

## **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 1999-06-04.

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.

The European Standards exist 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

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

**Central Secretariat: rue de Stassart 36, B-1050 Brussels**

## Contents

	Page
<b>Foreword</b> .....	2
<b>1 Scope</b> .....	3
<b>2 Normative references</b> .....	3
<b>3 Definitions</b> .....	3
<b>4 Requirements</b> .....	7
<b>5 Test methods</b> .....	12
<b>6 Conditions of acceptance</b> .....	17
<b>7 Designation</b> .....	17
<b>8 Marking</b> .....	18
<b>9 Periodic verification</b> .....	18
Annex A (informative) <b>Example of data form describing suitability for use of equipment of a specific series (to be filled in by the manufacturer)</b> .....	19
Annex B (informative) <b>Bibliography</b> .....	19

## 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".

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