



Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 14037-2:2003

Ceiling mounted radiant panels supplied with water at temperature below 120 °C - Part 2: Test method for thermal output

Panneaux rayonnants de plafond
alimentés en eau à une température
inférieure à 120 °C - Partie 2: Méthode
d'essai pour la détermination de la

Deckenstrahlplatten für Wasser mit einer
Temperatur unter 120 °C - Teil 2:
Prüfverfahren für die Wärmeleistung

04/2003



National Foreword

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EUROPEAN STANDARD ^{ILNAS-EN 14037-2:2003} **EN 14037-2**
NORME EUROPÉENNE
EUROPÄISCHE NORM

April 2003

ICS 91.140.10

English version

**Ceiling mounted radiant panels supplied with water at
temperature below 120 °C - Part 2: Test method for thermal
output**

Panneaux rayonnants de plafond alimentés en eau à une
température inférieure à 120 °C - Partie 2: Méthode d'essai
pour la détermination de la puissance thermique

Deckenstrahlplatten für Wasser mit einer Temperatur unter
120 °C - Teil 2: Prüfverfahren für die Wärmeleistung

This European Standard was approved by CEN on 20 February 2003.

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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 Management Centre 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document EN 14037-2:2003 has been prepared by Technical Committee CEN /TC 130, "Space heating appliances without integral heat sources", the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by October 2003 and conflicting national standards shall be withdrawn at the latest by October 2003.

Annexes A, C and D are normative. Annex B is informative.

This document includes a Bibliography.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This European Standard results from the recognition that the ceiling mounted radiant panels falling into the field of application hereinafter stated are traded on the basis of their thermal output. To evaluate and compare different ceiling mounted radiant panels it is therefore necessary to refer to a single stipulated value.

This European Standard of ceiling mounted radiant panels consists of the following parts:

- Part 1: Technical specifications and requirements
- Part 2: Test method for thermal output
- Part 3: Rating method and evaluation of radiant thermal output

1 Scope

This European Standard describes the test method and the test installation for determining the thermal output of ceiling mounted radiant panels.

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 (including amendments).

EN 442-2:1996, *Radiators and convectors – Part 2: Test methods and rating*.

EN 14037-1:2003, *Ceiling mounted radiant panels supplied with water at temperatures below 120 °C - Part 1: Technical specifications and requirements*.

EN 14037-3:2003, *Ceiling mounted radiant panels supplied with water at temperatures below 120 °C - Part 3: Rating method and evaluation of radiant thermal output*.

EN ISO/IEC 17025:2000, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:1999)*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 14037-1:2003 apply.

4 Testing of thermal output

The test is carried out in a testing system, which consists of a closed booth with controlled temperatures of the inside surfaces plus a set of two master panels built according to clause 6.

The method for measuring the thermal output consists of the measurement of mass flow and enthalpy difference between inlet and outlet (by weighing method). All other measurement methods shall guarantee in minimum the precision obtained by weighing method.

All laboratories that make tests according this standard have to make comparable measurements with the other laboratories (according to clause 6 of this standard).

5 Test booth

The booth for testing ceiling mounted radiant panels shall be constructed in a way that all six surrounding surfaces can be cooled.

Figure 1 shows the schematic lay-out of a test booth with a six-wall cooling. The walls are defined as follows:

Wall 1: the wall parallel to the inlet header

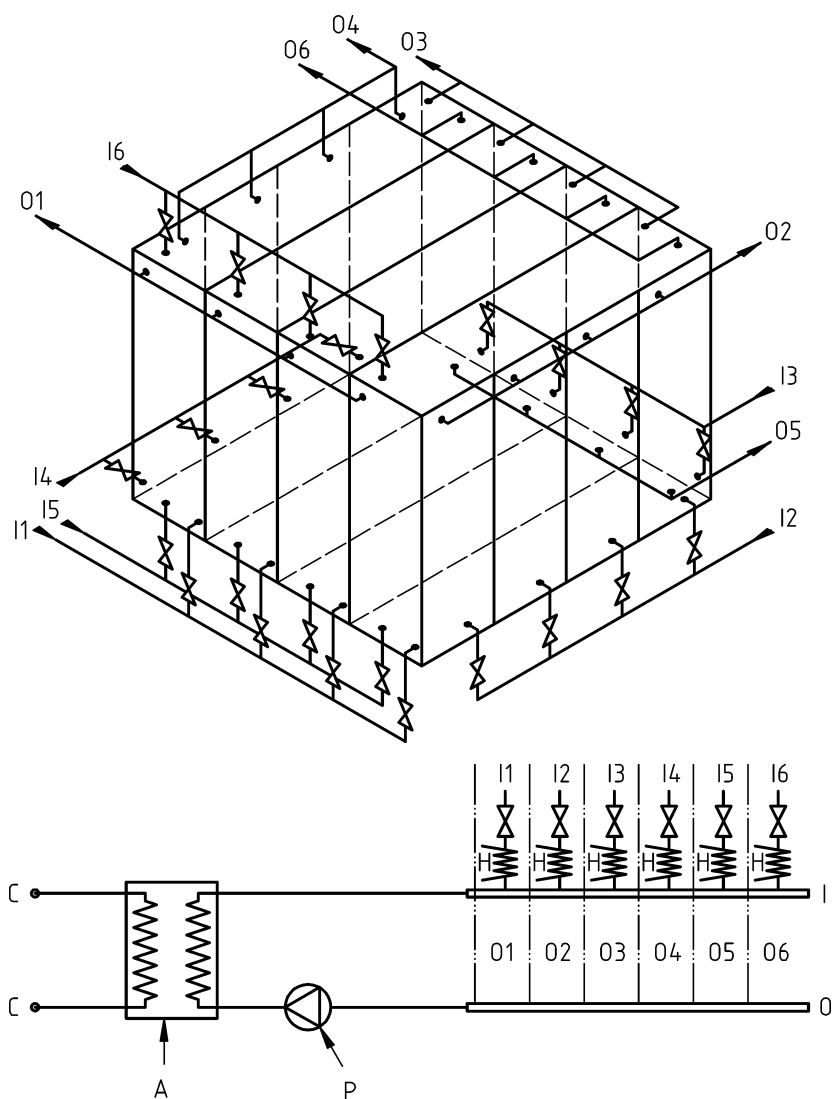
Wall 2: the wall to the right of wall 1

Wall 3: the wall opposite of wall 1

Wall 4: the wall to the left of wall 1

Wall 5: the floor

Wall 6: the ceiling



Key

- C Cooling circuit connection
- I Inlet cooling water
- O Outlet cooling water
- A Cooling water accumulator
- P Circulating pump
- H After heater
- 1....6 Designation of the surrounding inside surfaces

Figure 1 — Example of the hydraulic system of a test booth

5.1 Dimensions of the test booth

The test booth has to have the following inside dimensions:

Length: $(4 \pm 0,02)$ m

Width: $(4 \pm 0,02)$ m

Height: $(3 \pm 0,02)$ m