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de l'accréditation, de la sécurité et qualité
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ILNAS-EN 14037-2:2016

Free hanging heating and cooling surfaces for water with a temperature below 120°C - Part 2: Pre-fabricated ceiling mounted radiant panels for

Panneaux rayonnants de chauffage et de
rafraîchissement alimentés avec une eau
à une température inférieure à 120 °C -
Partie 2 : Méthode d'essai pour la

An der Decke frei abgehängte Heiz- und
Kühlflächen für Wasser mit einer
Temperatur unter 120 °C - Teil 2:
Vorgefertigte Deckenstrahlplatten zur

09/2016



National Foreword

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English Version

**Free hanging heating and cooling surfaces for water with a
temperature below 120°C - Part 2: Pre-fabricated ceiling
mounted radiant panels for space heating - Test method
for thermal output**

Panneaux rayonnants de chauffage et de
rafraîchissement alimentés avec une eau à une
température inférieure à 120 °C - Partie 2 : Méthode
d'essai pour la détermination de la puissance
thermique des panneaux rayonnants de plafond
préfabriqués destinés au chauffage des locaux

An der Decke frei abgehängte Heiz- und Kühlflächen
für Wasser mit einer Temperatur unter 120 °C - Teil 2:
Vorgefertigte Deckenstrahlplatten zur Raumheizung -
Prüfverfahren für die Wärmeleistung

This European Standard was approved by CEN on 19 March 2016.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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European foreword

This document (EN 14037-2:2016) 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 document supersedes EN 14037-2:2003.

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of an identical text or by endorsement, at the latest by March 2017, and conflicting national standards shall be withdrawn at the latest by March 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

The main changes are:

- the title has been changed,
- the introduction has been changed,
- the scope has been changed,
- a new Master panel 2 has been added,
- Clause 9 “Test Report” has been reworked.

The European Standard EN 14037, *Free hanging heating and cooling surfaces for water with a temperature below 120°C*, consists of the following parts:

- *Part 1: Pre-fabricated ceiling mounted radiant panels for space heating - Technical specifications and requirements;*
- *Part 2: Pre-fabricated ceiling mounted radiant panels for space heating - Test method for thermal output;*
- *Part 3: Pre-fabricated ceiling mounted radiant panels for space heating - Rating method and evaluation of radiant thermal output;*
- *Part 4: Pre-fabricated ceiling mounted radiant panels for space heating - Test method for cooling capacity;*
- *Part 5: Open or closed heated ceiling surfaces - Test method for thermal output.*

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard results from the recognition, that heated and chilled ceiling radiant panels falling into the field of application hereinafter stated are traded on the basis of their thermal output. For evaluating and comparing different heated and chilled ceiling surfaces it is therefore necessary to refer to a heating stipulated value.

As installations with ceiling mounted radiant panels can also be used in practice for space cooling, it is necessary to have a test method for evaluating the cooling capacity. Installations with different free hanging heating and cooling surfaces need, for the use of space heating a test method for evaluating the heating output. The test method differs from the method for ceiling mounted radiant panels.

1 Scope

This European Standard describes the test method and the test installation for determining the thermal output of pre-fabricated ceiling mounted radiant panels according to the specifications of EN 14037-1:2016, 3.3.1.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14037-1:2016, *Prefabricated ceiling mounted radiant panels for space heating - Technical specifications and requirements*

EN 14037-3:2016, *Prefabricated ceiling mounted radiant panels for space heating - Rating method and evaluation of radiant thermal output*

EN ISO/IEC 17025:2005, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14037-1:2016 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). 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

5.1 General

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

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;