

Heat exchangers - Air cooled liquid coolers ('dry coolers') - Test procedures for establishing the performance

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1048:2014 sisaldab Euroopa standardi EN 1048:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 1048:2014 consists of the English text of the European standard EN 1048:2014.
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ICS 27.060.30, 27.200

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English Version

Heat exchangers - Air cooled liquid coolers ('dry coolers') - Test procedures for establishing the performance

Echangeurs thermiques - Refroidisseurs de liquide à convection forcée ('aéroréfrigérant sec') - Procédures d'essai pour la détermination de la performance

Wärmeübertrager - Luftgekühlte Flüssigkeitskühler ('Trockenkühltürme') - Prüfverfahren zur Leistungsfeststellung

This European Standard was approved by CEN on 22 May 2014.

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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 COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 1048:2014) has been prepared by Technical Committee CEN/TC 110 "Heat exchangers", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by February 2015, and conflicting national standards shall be withdrawn at the latest by February 2015.

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.

This document supersedes EN 1048:1998.

The main changes with respect to the previous edition are listed below:

- a) Clause 3 "Terms and definitions" is modified;
- b) The revised standard takes into account the current state of the art.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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 is one of a series of European Standards dedicated to heat exchangers.

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1 Scope

This European Standard applies to remote forced convection air cooled liquid coolers, within which no change in the liquid phase occurs.

This European Standard does not apply to liquid coolers, designed primarily for installation within the machinery compartment of packaged products.

Its purpose is to establish uniform methods to test and ascertain the following:

- Product identification;
- Capacity;
- Air flow rate;
- Liquid side pressure drop;
- Energy requirements.

This European Standard does not cover technical safety aspects.

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

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply:

3.1

forced convection air cooled liquid cooler: “dry cooler”

self contained system, that cools a single phase liquid by rejecting sensible heat via a heat exchanger to air that is mechanically circulated by integral fan(s)

Note 1 to entry: In the following, “forced convection air cooled liquid cooler” is referred to as “dry cooler”.

3.2

liquid

working fluid circulated through the cooling system, which remains in liquid phase during the absorption and rejection of heat during the test

Note 1 to entry: The liquid can be any fluid which can be defined and that has known physical properties.

3.3

capacity

cooling effect on the liquid passing through the dry cooler

Note 1 to entry: It is defined as the product of the liquid mass flow rate and the difference between the enthalpies at the inlet and outlet connections of the dry cooler.