Heat exchangers - Forced convection unit air coolers for refrigeration - Test procedures for establishing the performance

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 328:2014 sisaldab Euroopa standardi EN 328:2014 inglisekeelset teksti.	This Estonian standard EVS-EN 328:2014 consists of the English text of the European standard EN 328:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 27.08.2014.	Date of Availability of the European standard is 27.08.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 23.120, 27.060.30

EUROPEAN STANDARD

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English Version

Heat exchangers - Forced convection unit air coolers for refrigeration - Test procedures for establishing the performance

Echangeurs thermiques - Aérofrigorifères à convection forcée pour la réfrigération - Procédures d'essai pour la détermination de la performance

Wärmeübertrager - Ventilatorluftkühler - Prüfverfahren zur Leistungsfeststellung

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

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

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 328:2014) 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 328:1999 and EN 328:1999/A1:2002.

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 application of CO_2.

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.

1 Scope

This European Standard is applicable to non-ducted unit air coolers for refrigeration operating:

a) with direct dry expansion of a refrigerant;

b) with liquid overfeed by pump circulation of a refrigerant;

c) with a liquid.

This standard specifies uniform methods of performance assessment to test and ascertain the following:

— product identification;

— standard capacity;

— standard liquid pressure drop;

— standard refrigerant pressure drop (for operation with liquid overfeed by pump circulation only);

— nominal air flow rate;

— nominal fan power.

It does not cover evaluation of conformity.

It is not applicable to air coolers for duct mounting or with natural air convection.

This 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)*

EN 60034-1, *Rotating electrical machines - Part 1: Rating and performance (IEC 60034-1)*

3 Terms and definitions

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

3.1
physical definitions
3.1.1
forced convection unit air cooler
refrigeration system component transferring heat from air to a refrigerant or liquid. The air is mechanically circulated over the heat transfer surface by integral fan(s) and fan drive(s)

Note 1 to entry: The heat transfer coil includes refrigerant distributing and collecting headers.

Note 2 to entry: In the following “forced convection unit air cooler” is referred to as “unit cooler”.