

STN	Výmenníky tepla. Kondenzátory na skvapalňovanie chladiva chladené ventilátorom. Skúšobné metódy na stanovenie výkonu.	STN EN 327 69 6327
------------	--	--------------------------------------

Heat exchangers - Forced convection air cooled refrigerant condensers - Test procedures for establishing performance

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/15

Obsahuje: EN 327:2014

Oznámením tejto normy sa ruší
STN EN 327 (69 6327) z októbra 2001

120001

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

English Version

Heat exchangers - Forced convection air cooled refrigerant condensers - Test procedures for establishing performance

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

Wärmeübertrager - Ventilatorbelüftete Verflüssiger - 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.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents	Page
Foreword.....	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Symbols	9
5 Standard capacity	11
5.1 Basis for standard capacity data	11
5.2 Standard capacity conditions	11
5.3 Conditions for the nominal air flow rate	12
5.4 Conditions for nominal fan power	12
6 Manufacturer's data	12
7 Measurements	13
7.1 Uncertainty of measurements	13
7.2 Measurement criteria	14
7.2.1 Pipe side temperature measurement	14
7.2.2 Condenser and gas cooler inlet temperature	15
7.2.3 Subcooled refrigerant temperature	15
7.2.4 Water temperatures (Balancing air cooler - Air side calorimeter)	15
7.2.5 Gas cooler outlet temperature	15
7.2.6 Air temperatures	15
7.2.7 Pressure measuring points	16
7.2.8 Refrigerant flow rate	16
7.2.9 Water flow rate	16
7.2.10 Oil content	16
7.2.11 Non-azeotropic refrigerant	16
8 Testing methods and equipment	16
8.1 Testing methods for capacity	16
8.1.1 General	16
8.1.2 High pressure calorimeter (primary method)	17
8.1.3 Low pressure calorimeter (primary method)	17
8.1.4 Air side calorimeter (primary method)	17
8.1.5 Refrigerant flow method (confirming method)	18
8.1.6 Air flow method	18
8.2 Air flow measurement	18
8.3 Equipment for capacity measurement	18
8.3.1 General	18
8.3.2 High pressure calorimeter	19
8.3.3 Low pressure calorimeter	20
8.3.4 Air side calorimeter	20
8.3.5 Refrigerant flow method	21
8.3.6 Liquid receiver	21
9 Test procedures	21
9.1 General	21
9.2 Heat loss measurement - calibration	22
9.2.1 General	22
9.2.2 High pressure calorimeter - direct heat inducement into refrigerant	22
9.2.3 Low and high pressure calorimeters - heat inducement into secondary fluid	23

9.2.4	Air calorimeter room	23
9.3	Capacity measurement	23
9.3.1	Steady-state	23
9.3.2	Test duration	24
9.3.3	Conducting the test	25
9.3.4	Data to be recorded	25
9.4	Measuring the fan performance	26
10	Capacity calculation	26
10.1	General	26
10.2	Heat loss factor: calibration test.....	26
10.2.1	High pressure calorimeter - direct heat inducement into the refrigerant.....	26
10.2.2	High and low pressure calorimeter - indirect heat inducement into the refrigerant	26
10.2.3	Air side calorimeter	27
10.3	Capacity measurement test.....	27
10.3.1	High and low pressure calorimeter - flow rate measurement methods.....	27
10.3.2	High pressure calorimeter method - direct capacity measurement.....	27
10.3.3	Air side calorimeter	27
10.3.4	Confirming method	28
11	Conversion to Standard Conditions	28
11.1	General	28
11.1.1	Introduction.....	28
11.1.2	Correction for atmospheric pressure	28
11.1.3	Standard capacity.....	28
11.2	Nominal air flow	28
11.3	Nominal fan power	28
12	Test report.....	29
	Annex A (normative) Flow meter method	30
	Annex B (informative) Low pressure calorimeter	32
	Annex C (informative) Air-Side calorimeter	33
	Annex D (informative) Procedure to measure the oil content	34
	Bibliography.....	35

Foreword

This document (EN 327:2014) 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 327:2000 and EN 327:2000/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 CO₂.

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 applies to non-ducted forced convection air cooled refrigerant condensers/gas coolers with dry air side surface within which the refrigerant changes phases or is cooled. Its purpose is to establish uniform methods of performance assessment. It does not deal with evaluation of conformity.

This European Standard does not apply to air cooled condensers/gas coolers, designed primarily for installation within the machinery compartment of packaged products or in factory-assembled condensing/gas cooling units.

This European Standard does not apply to condensers with an integral subcooling part.

This European Standard specifies methods to test and ascertain the following:

- product identification;
- standard capacity;
- nominal air flow rate;
- nominal fan power.

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

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

koniec náhľadu – text ďalej pokračuje v platenej verzii STN