

**Compressors and condensing units for refrigeration -
Performance testing and test methods -
Part 1: Refrigerant compressors**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN 13771-1:2016 sisaldab Euroopa standardi EN 13771-1:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 13771-1:2016 consists of the English text of the European standard EN 13771-1:2016.
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English Version

Compressors and condensing units for refrigeration - Performance testing and test methods - Part 1: Refrigerant compressors

Compresseurs pour fluides frigorigènes et unités de
condensation pour la réfrigération - Essais de
performances et méthodes d'essai - Partie 1:
Compresseurs pour fluides frigorigènes

Kältemittel-Verdichter und Verflüssigungssätze für die
Kälteanwendung - Leistungsprüfung und
Prüfverfahren - Teil 1: Kältemittel-Verdichter

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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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European foreword

This document (EN 13771-1:2016) has been prepared by Technical Committee CEN/TC 113 "Heat pumps and air conditioning units", the secretariat of which is held by AENOR.

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of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.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

This document supersedes EN 13771-1:2003.

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

- a) addition of the new Clause 4 "Uncertainty of measurement and test conditions";
- b) deletion of the list of measuring devices;
- c) addition of two-stage and economized compressors;
- d) addition of transcritical application;
- e) addition of test requirements for inverter driven compressors;
- f) addition of cyclic capacity control;
- g) addition of the part load conditions according to mandate M/488.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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.

1 Scope

This European Standard specifies performance test methods for refrigerant compressors. These methods provide sufficiently accurate results for the determination of the refrigerating capacity, power absorbed, refrigerant mass flow, isentropic efficiency and the coefficient of performance.

This European Standard applies only to performance tests where the equipment for testing is available.

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 378-2, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

3 Terms, definitions and symbols

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

3.1 Terms and definitions

3.1.1

refrigerating capacity

Q

product of the mass flow of refrigerant at the compressor inlet port and the difference between the specific enthalpy of the refrigerant at the compressor inlet port and the specific enthalpy of fluid entering the evaporator expansion device

3.1.2

subcooling

difference between the bubble point temperature of the refrigerant corresponding to the compressor discharge pressure and the temperature of the liquid refrigerant below the bubble point

3.1.3

suction gas superheat

difference between the dew point temperature of the refrigerant corresponding to the compressor suction pressure and the suction gas temperature of the refrigerant at the compressor inlet

3.1.4

power absorbed

P

power demand to drive the compressor

Note 1 to entry: The determination of the power absorbed is specified under Clause 7.

3.1.5

coefficient of performance

COP_R

ratio of the refrigerating capacity to the power absorbed

Note 1 to entry: Both the above are at the specified test condition.