საქართველოს სტანდარტი

ჰაერის კონდიციონერები, თხევადი გამყინავი პაკეტები, სითბოს ტუმბოები, პროცესის ჩილერები და ჰაერსაშრობი ელექტრონულად ორიენტირებული კომპრესორებით - ხმის სიმძლავრის დონის განსაზღვრა - ნაწილი 1: ჰაერის კონდიციონერები, თხევადი გამყინავი პაკეტები, სითბოს ტუმბოები სივრცის გათბობისა და გაგრილებისათვის, ჰაერსაშრობები და პროცესის ჩილერები

საქართველოს სტანდარტებისა და მეტროლოგიის
ეროვნული სააგენტო
თბილისი

სსტ ენ 12102-1:2017/2018

საინფორმაციო მონაცემები

1 დამტკიცებულია და შემოღებულია სამოქმედოდ საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს 2018 წლის 11 მაისის № 54 და 2018 წლის 7 მარტის № 14 განკარგულებებით

2 მიღებულია თავფურცლის თარგმნის მეთოდით სტანდარტიზაციის ევროპული კომიტეტის სტანდარტი ენ 12102-1:2017 ,, ჰაერის კონდიციონერები, თხევადი გამყინავი პაკეტები, სითბოს ტუმბოები, პროცესის ჩილერები და ჰაერსაშრობი ელექტრონულად ორიენტირებული კომპრესორებით - ხმის სიმძლავრის დონის განსაზღვრა - ნაწილი 1: ჰაერის კონდიციონერები, თხევადი გამყინავი პაკეტები, სითბოს ტუმბოები სივრცის გათბობისა და გაგრილებისათვის, ჰაერსაშრობები და პროცესის ჩილერები”

3 პირველად

4 რეგისტრირებულია საქართველოს სტანდარტებისა და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2018 წლის 11 მაისი №268-1.3-013434

EUROPEAN STANDARD
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EN 12102-1

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ICS 17.140.20; 27.080; 91.140.30

Supersedes EN 12102:2013

English Version

Air conditioners, liquid chilling packages, heat pumps, process chillers and dehumidifiers with electrically driven compressors - Determination of the sound power level - Part 1: Air conditioners, liquid chilling packages, heat pumps for space heating and cooling, dehumidifiers and process chillers

Climatiseurs, groupes refroidisseurs de liquide, pompes à chaleur, refroidisseurs industriels et déshumidificateurs avec compresseur entraîné par moteur électrique - Détermination du niveau de puissance acoustique - Partie 1 : Climatiseurs, groups refroidisseurs de liquide, pompes à chaleur pour le chauffage et la réfrigération, déshumidificateurs et refroidisseurs industriels

Luftkonditionierer, Flüssigkeitskühlsätze, Wärmepumpen, Prozesskühler und Entfeuchter mit elektrisch angetriebenen Verdichtern - Bestimmung des Schallleistungspegels - Teil 1: Luftkonditionierer, Flüssigkeitskühlsätze, Wärmepumpen zur Raumbeheizung und -kühlung, Entfeuchter und Prozesskühler

This European Standard was approved by CEN on 1 October 2017.

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, Serbia, 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: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12102-1:2017) has been prepared by Technical Committee CEN/TC 113 “Heat pumps and air conditioning units”, the secretariat of which is held by UNE.

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 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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

This document supersedes EN 12102:2013.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directives.

For relationship with EU Directives, see informative Annexes ZA, ZB, ZC or ZD, which are integral parts of this document.

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

a) addition of Annex ZB relating to the Commission Regulation EU n°626/2012;

b) addition of Annex ZC relating to the Commission Regulation EU n°813/2013;

c) addition of Annex ZD relating to the Commission Regulation EU n°811/2013.

EN 12102 comprises the following parts under the general title *Air conditioners, liquid chilling packages, [illegible] sound power level:*

— *Part 1: Air conditioners, liquid chilling packages, heat pumps for space heating and cooling, dehumidifiers and process chillers*

— *Part 2: Heat pump water heaters*

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard offers ways to determine the sound power level of air conditioners, liquid chilling packages, heat pumps, and dehumidifiers with electrically driven compressors. Some of them are specifically adapted to provide results with low uncertainties, by using laboratory class acoustic methods and highly controlled operating conditions. Those measurements are suitable for certification, labelling and marking purposes.

In some cases, the target and/or the environment of the measurements do not allow such precision-class methods. This European Standard also offers ways to assess sound power levels with acceptable accuracy even though acoustic methods and/or operating conditions are not laboratory-type, e.g. *in situ* or quality control measurements.

This European Standard gives two classes of measurements and results, according to the test environment:

— Class A measurements correspond to controlled operating conditions (standard or application rating conditions). It is defined by the respect to the tolerances of Table 2 and will be used for the conformity to requirements of:

  — The Commission Regulation (EU) No 206/2012 of 6 March 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for air conditioners;

  — Commission Delegated Regulation (EU) No 811/2013 of 18 February 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of space heaters, combination heaters, packages of space heater, temperature control and solar device and packages of combination heater, temperature control and solar device;

  — The Commission Regulation (EU) No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters;

  — The Commission Delegated Regulation (EU) No 626/2011 of 4 May 2011 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of air conditioners.

— Class B measurements correspond to the case where the range defined by the tolerances of Table 2 cannot be fulfilled.

In both classes, precision or engineering class acoustic methods need to be applied. The choice of the acoustic measurement method is done in accordance with EN ISO 3740 and the EN ISO 9614 series depending on the type of surrounding acoustic fields (diffuse or free field, enclosed or open space), and the available instrumentation. The reference of acoustic standard needs to be reported with explicit mention of its accuracy class, whatever the current operating conditions.

The use of EN ISO 3746 and EN ISO 3747 as survey grade methods are not recommended due to the high level of uncertainties. Their use is only allowed for non-controlled environments when they fulfil the engineering grade requirement.

Three methods for determining the sound power levels are specified in order to avoid unduly restricting existing facilities and experience:

— the first methodology is based on reverberation room measurement (see EN ISO 3741 and the EN ISO 3743 series);

— the second method is based on measurements in an essentially free field over a reflecting plane (see EN ISO 3744 and EN ISO 3745);

— the third method is based on sound intensity measurement (see the EN ISO 9614 series) preferably in a free field environment.

The necessity to maintain the test conditions obviously leads to recommend test methods implemented in acoustically designed (enclosed) spaces, such as EN ISO 3741, the EN ISO 3743 series, EN ISO 3745 and also the EN ISO 9614 series when implemented in an enclosed space.

The open spaces will be used only in specific cases, e.g. when the size or the capacity of the unit under test cannot be managed by standard test rooms. Suitable test methods are EN ISO 3744 and the EN ISO 9614 series.

NOTE Intensity measurement methods are quite robust and are well suited for tests to be done in environments without or with a light acoustic treatment (the better the acoustic treatment, the easier the implementation).