SLOVENSKI STANDARD
SIST EN 61157:2008/A1:2014

01-februar-2014

Standardni načini poročanja o akustičnem izhodu medicinske ultrazvočne diagnostične opreme - Dopolnilo A1 (IEC 61157:2007/A1:2013)

Standard means for the reporting of the acoustic output of medical diagnostic ultrasonic equipment

Normverfahren für die Angabe der akustischen Ausgangsgrößen von medizinischen Ultraschalldiagnostikgeräten

Moyens normalisés pour la déclaration des émissions acoustiques des appareils de diagnostic médical à ultrasons

Ta slovenski standard je istoveten z: **EN 61157:2007/A1:2013**

ICS:

11.040.50	Radiografska oprema	Radiographic equipment
11.040.55	Diagnostična oprema	Diagnostic equipment
17.140.50	Elektroakustika	Electroacoustics

SIST EN 61157:2008/A1:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61157/A1

March 2013

ICS 11.040.50; 17.140.50

English version

Standard means for the reporting of the acoustic output of medical diagnostic ultrasonic equipment
(IEC 61157:2007/A1:2013)

Critères normalisés de déclaration des émissions acoustiques des appareils de diagnostic médical à ultrasons (CEI 61157:2007/A1:2013)

Normverfahren für die Angabe der akustischen Ausgangsgrößen von medizinischen Ultraschalldiagnostikgeräten (IEC 61157:2007/A1:2013)

This amendment A1 modifies the European Standard EN 61157:2007; it was approved by CENELEC on 2013-03-04. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC 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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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 87/517/FDIS, future amendment 1 to edition 2 of IEC 61157, prepared by IEC/TC 87 "Ultrasonics" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61157:2007/A1:2013.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-12-04
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-03-04

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

Endorsement notice

The text of the International Standard IEC 61157:2007/A1:2013 was approved by CENELEC as a European Standard without any modification.

In the Bibliography of EN 61157:2007, **replace** the existing text with the following:

IEC 61689	NOTE	Harmonised as EN 61689.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

Replacements *and* ***addition*** *to Annex ZA of EN 61157:2007.*

Publication	Year	Title	EN/HD	Year
Replace *the dated references to IEC 60050-801:1994, ISO 16269-6:2005 and ISO/IEC Guide 98:1994 by the following undated references:*				
IEC 60050-801	-	International Electrotechnical Vocabulary (IEV) - Chapter 801: Acoustics and electroacoustics	-	-
ISO 16269-6	-	Statistical interpretation of data - Part 6: Determination of statistical tolerance intervals	-	-
ISO/IEC Guide 98-3	-	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-
Replace *the existing reference to IEC 62127-1 with the following:*				
IEC 62127-1 + corr. August + A1	2007 2008 2013	Ultrasonics - Hydrophones - Part 1: Measurement and characterization of medical ultrasonic fields up to 40 MHz	EN 62127-1 + A1	2007 2013
Add *the following new reference:*				
IEC 60050-802	-	International Electrotechnical Vocabulary - Part 802: Ultrasonics	-	-

IEC 61157

Edition 2.0 2013-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

Standard means for the reporting of the acoustic output of medical diagnostic ultrasonic equipment

Critères normalisés de déclaration des émissions acoustiques des appareils de diagnostic médical à ultrasons

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

PRICE CODE
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ICS 11.040.50, 17.140.50

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FOREWORD

This amendment has been prepared by IEC technical committee 87: Ultrasonics.

The text of this amendment is based on the following documents:

FDIS	Report on voting
87/517/FDIS	87/523/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

2 Normative references

Replace the dated references to IEC 60050-801:1994, ISO 16269-6:2005 and ISO/IEC Guide 98:1994 by the following undated references:

IEC 60050-801, *International Electrotechnical Vocabulary – Chapter 801: Acoustics and electroacoustics*

ISO 16269-6, *Statistical interpretation of data – Part 6: Determination of statistical tolerance intervals*

ISO/IEC Guide 98-3, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

Replace the existing reference to IEC 62127-1 with the following:

IEC 62127-1:2007, *Ultrasonics – Hydrophones – Part 1: Measurement and characterization of medical ultrasonic fields up to 40 MHz*
Amendment 1:2013

Add the following new reference:

IEC 60050-802, *International Electrotechnical Vocabulary – Chapter 802: Ultrasonics*

3 Terms, definitions and symbols

Replace in definitions 3.14, 3.20, 3.31 *and* 3.32 *"*expressed in watts per metre squared*" by "*expressed in watts per square metre*"*

Replace in definitions 3.6 *and* 3.18 "expressed in metres squared" by "expressed in square metres"

3.2
acoustic pulse waveform

Remove the numbering from Note 1 and replace existing Note 2 by the following:

[SOURCE: IEC 62127-1:2007, definition 3.1]

3.4.1
zero-crossing acoustic-working frequency
f_{awf}
Replace the existing text of the definition by the following:

number, *n*, of consecutive half-cycles (irrespective of polarity) divided by twice the time between the commencement of the first half-cycle and the end of the *n*-th half-cycle

NOTE 1 None of the *n* consecutive half-cycles should show evidence of phase change.

NOTE 2 The measurement should be performed at terminals in the receiver, that are as close as possible to the receiving transducer (**hydrophone**) and, in all cases, before rectification.

NOTE 3 This frequency is determined according to the procedure specified in IEC/TR 60854.

NOTE 4 This frequency is intended for continuous-wave systems only.

[SOURCE: IEC 62127-1:2007/Amendment 1:—, definition 3.3.1]

3.4.2
arithmetic-mean acoustic-working frequency
f_{awf}
Add the following new note and source reference to the existing definition:

NOTE 3 If f_2 is not found within the range < $3f_1$, f_2 is to be understood as the lowest frequency above this range at which the spectrum magnitude is -3 dB from the peak magnitude.

[SOURCE: IEC 62127-1, definition 3.3.2]

3.5
bandwidth

Add, after the note, the following:

[SOURCE: IEC 62127-1:2007, definition 3.6]

3.6
beam area

Replace the symbol by: "$\boldsymbol{A}_{b,6}$, $\boldsymbol{A}_{b,20}$"

Replace the existing text of Note 1 by the following:

NOTE 1 If the position of the plane is not specified, it is the plane passing through the point corresponding to the maximum value of the **pulse-pressure-squared integral** in the whole acoustic field.

*Replace, in Note 3, the word "*levels*" by "*fractions*".*