

**Electrical, thermal and loading characteristics of
rotating anode X-ray tubes for medical diagnosis**

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60613:2010 sisaldab Euroopa standardi EN 60613:2010 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.05.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 16.04.2010.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 60613:2010 consists of the English text of the European standard EN 60613:2010.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.05.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

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ICS 11.040.50

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English version

**Electrical and loading characteristics of X-ray tube assemblies
for medical diagnosis
(IEC 60613:2010)**

Caractéristiques électriques et de charge
des gaines équipées pour diagnostic
médical
(CEI 60613:2010)

Elektrische und Belastungs-Kennwerte
von Röntgenstrahlern für die medizinische
Diagnostik
(IEC 60613:2010)

This European Standard was approved by CENELEC on 2010-04-01. CENELEC 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.

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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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

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Foreword

The text of document 62B/774/FDIS, future edition 3 of IEC 60613, prepared by SC 62B, Diagnostic imaging equipment, of IEC TC 62, Electrical equipment in medical practice, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60613 on 2010-04-01.

This standard supersedes EN 60613:1990. It constitutes a technical revision. EN 60613:2010 has been adapted to apply to the present technology.

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

The following dates were fixed:

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|--|-------|------------|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2011-01-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2013-04-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60613:2010 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60601-1	2005	Medical electrical equipment - Part 1: General requirements for basic safety and essential performance	EN 60601-1	2006
IEC 60601-1-3	2008	Medical electrical equipment - Part 1-3: General requirements for basic safety and essential performance - Collateral Standard: Radiation protection in diagnostic X-ray equipment	EN 60601-1-3	2008
IEC/TR 60788	2004	Medical electrical equipment - Glossary of defined terms	-	-

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ELECTRICAL AND LOADING CHARACTERISTICS OF X-RAY TUBE ASSEMBLIES FOR MEDICAL DIAGNOSIS

1 Scope

This International Standard applies to X-RAY TUBE ASSEMBLIES either with a rotating ANODE X-RAY TUBE or a stationary ANODE X-RAY TUBE, intended for use in medical diagnosis.

For an X-RAY TUBE HEAD, its X-RAY TUBE ASSEMBLY aspects are also within the scope.

This International Standard covers performance-related definitions and conditions of electrical and LOADING characteristics of X-RAY TUBE ASSEMBLIES in relation to their behaviour during and after energization and, where appropriate, methods of presentation and measurement of these characteristics. This International Standard is therefore relevant for the MANUFACTURER and the RESPONSIBLE ORGANIZATION.

NOTE "Measurement" in this standard is always related to practical use. Consequently, "measurement" is meant to consume only a negligible part of the life of the X-RAY TUBE ASSEMBLY.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60601-1:2005, *Medical electrical equipment – Part 1: General requirements for basic safety and essential performance*

IEC 60601-1-3:2008, *Medical electrical equipment – Part 1-3: General requirements for basic safety and essential performance – Collateral Standard: Radiation protection in diagnostic X-ray equipment*

IEC/TR 60788:2004, *Medical electrical equipment – Glossary of defined terms* (available only in English)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC/TR 60788:2004, IEC 60601-1:2005 and IEC 60601-1-3:2008 and the following apply.

3.1

X-RAY TUBE VOLTAGE

potential difference applied to an X-RAY TUBE between the ANODE and the CATHODE. Usually X-RAY TUBE VOLTAGE is expressed by its peak value in kilovolts (kV)

[IEC 60601-1-3:2008, 3.88]

3.2

NOMINAL X-RAY TUBE VOLTAGE

highest permitted X-RAY TUBE VOLTAGE for SPECIFIC operating conditions

[IEC 60601-1-3:2008, 3.42]