



SLOVENSKI STANDARD

SIST EN 61223-2-4:1998

01-september-1998

Evaluation and routine testing in medical imaging departments - Part 2-4: Constancy tests - Hard copy cameras (IEC 61223-2-4:1994)

Evaluation and routine testing in medical imaging departments -- Part 2-4: Constancy tests - Hard copy cameras

Bewertung und routinemäßige Prüfung in Abteilungen für medizinische Bildgebung -- Teil 2-4: Konstanzprüfungen - Bilddokumentationssysteme

Essais d'évaluation et de routine dans les services d'imagerie médicale -- Partie 2-4: Essais de constance - Reprographes

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>

Ta slovenski standard je istoveten z: **EN 61223-2-4:1994**

ICS:

11.040.50	Radiografska oprema	Radiographic equipment
-----------	---------------------	------------------------

SIST EN 61223-2-4:1998

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61223-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>

EUROPEAN STANDARD

EN 61223-2-4

NORME EUROPEENNE

EUROPÄISCHE NORM

June 1994

UDC 615.84:771.31:620.1

Descriptors: Electromedical equipment, hard copy camera, medical imaging,
constancy test, evaluation testing, routine testing

ENGLISH VERSION

Evaluation and routine testing in medical imaging
departments

Part 2-4: Constancy tests - Hard copy cameras
(IEC 1223-2-4:1994)

Essais d'évaluation et de
routine dans les services
d'imagerie médicale
Partie 2-4: Essais de constance
Reprographes

(CEI 1223-2-4:1994)

Bewertung und
routinemäßige
Prüfung in Abteilungen für
medizinische Bildgebung
Teil 2-4: Konstanzprüfungen
Bildokumentationssysteme
(IEC 1223-2-4:1994)

iTeh STANDARD PREVIEW

This European Standard was approved by CENELEC on 1994-03-08.

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.

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC 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 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

FOREWORD

The text of document 62B(CO)105, as prepared by Sub-Committee 62B: Diagnostic imaging equipment, of IEC Technical Committee 62: Electrical equipment in medical practice, was submitted to the IEC-CENELEC parallel vote in May 1993.

The reference document was approved by CENELEC as EN 61223-2-4 on 8 March 1994.

The following dates were fixed:

- latest date of publication of
an identical national standard (dop) 1995-03-01
- latest date of withdrawal of
conflicting national standards (dow) 2000-03-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given only for information.
In this standard, annexes A and ZA are normative and annexes B, C, D and E are informative.

(standards.iteh.ai)

ENDORSEMENT NOTICE

SIST EN 61223-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-54c166c48078/sist-en-61223-2-4-1998>

The text of the International Standard IEC 61223-2-4:1994 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

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

IEC Publication	Date	Title	EN/HD	Date
-----	----	-----	-----	----
788	1984	Medical radiology - Terminology	HD 501 S1	1988
1223-1	1993	Evaluation and routine testing in medical imaging departments Part 1: General aspects	-	-
1223-2-1	1993	Part 2-1: Constancy tests - Film processors	-	-
1223-2-2	1993	Part 2-2: Constancy tests - Radiographic cassettes and film changers - Film-screen contact and relative sensitivity of the screen-cassette assembly	-	-
1223-2-3	1993	Part 2-3: Constancy tests - Darkroom safelight conditions	-	-
1223-2-5	1994	Part 2-5: Constancy tests - Image display devices	EN 61223-2-5	1994
1223-2-12	-	Part 2-12: Constancy tests - Film illuminators (under consideration)		

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61223-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
1223-2-4**

Première édition
First edition
1994-03

**Essais d'évaluation et de routine
dans les services d'imagerie médicale –**

Partie 2-4:

Essais de constance –

Reprographes

(standards.iteh.ai)

**Evaluation and routine testing
in medical imaging departments –**

Part 2-4:

Constancy tests –

Hard copy cameras

© CEI 1994 Droits de reproduction réservés — Copyright — all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

U

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

	Page
FOREWORD	7
INTRODUCTION	11
Clause	
1 Scope and object	13
1.1 Scope	13
1.2 Object	13
2 Normative references	15
3 Terminology	15
3.1 Degree of requirements	15
3.2 Use of terms	17
3.3 Definitions	17
4 General aspects of CONSTANCY TESTS	17
4.1 General conditions affecting test procedures	19
4.2 Establishment of BASELINE VALUES 1223-2-4:1998	19
4.3 Frequency of CONSTANCY TESTS	19
4.4 Identification of equipment, instrumentation and test conditions	19
4.5 Measured functional parameters	19
5 Test methods	21
5.1 Summary	21
5.2 Test equipment	21
5.3 Test procedure	25
5.4 Data evaluation	29
5.5 Criteria to be applied	31
5.6 Test report	31
5.7 Action to be taken	31
5.8 Frequency of testing	33
6 Statement of compliance	33
Figures	
1 Schematic representation of a test pattern used to check the constancy with respect to grey-scale reproduction	35

Figures	Page
2 Schematic representation of a test pattern used to check the constancy with respect to geometry and line structure	37
3 Schematic representation of a crosshatched pattern used to carry out measurements with respect to geometry	39
4 Schematic representation of a test pattern used to check the constancy with respect to resolution	41
Annexes	
A Terminology – Index of terms	43
B Example of a form for the standardized test report	45
C Guidance on action to be taken	49
D Rationale	51
E Bibliography – Reference test pattern	55

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 61223-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>

INTERNATIONAL ELECTROTECHNICAL COMMISSION

EVALUATION AND ROUTINE TESTING IN MEDICAL IMAGING DEPARTMENTS –

Part 2-4: Constancy tests – Hard copy cameras

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-341964847-666-61223-2-4:1998>

International Standard IEC 1223-2-4 has been prepared by sub-committee 62B: Diagnostic imaging equipment, of IEC technical committee 62: Electrical equipment in medical practice.

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

DIS	Report on voting
62B(CO)105	62B(CO)118

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

Annex A forms an integral part of this standard.

Annexes B, C, D and E are for information only.

This standard forms part 2-4 of IEC 1223, which will include the following parts:

- Part 1: General aspects
- Part 2-1: Constancy tests – Film processors
- Part 2-2: Constancy tests – Radiographic cassettes and film changers – Film-screen contact and relative sensitivity of the screen-cassette assembly
- Part 2-3: Constancy tests – Darkroom safelight conditions
- Part 2-4: Constancy tests – Hard copy cameras
- Part 2-5: Constancy tests – Image display devices
- Part 2-6: Constancy tests – X-ray equipment for computed tomography
- Part 2-7: Constancy tests – X-ray equipment for classical dental radiography
- Part 2-8: Constancy tests – Protective shieldings, barriers and devices
- Part 2-9: Constancy tests – X-ray equipment for indirect radioscopy and indirect radiography
- Part 2-10: Constancy tests – X-ray equipment for mammography
- Part 2-11: Constancy tests – X-ray equipment for general direct radiography
- Part 2-12: Constancy tests – Film illuminators

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61223-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>

INTRODUCTION

Some provisions or statements in the body of this part of IEC 1223 require additional information. Such information is presented in annex D, Rationale. An asterisk in the left margin of a clause or subclause indicates the presence of such additional information.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61223-2-4:1998

<https://standards.iteh.ai/catalog/standards/sist/43b00195-91a6-47a3-a870-34e186e4bb7c/sist-en-61223-2-4-1998>