IEC TR 61948-4

Edition 2.0 2019-03

REDLINE VERSION

colour inside

Nuclear medicine instrumentation – Routine tests – Part 4: Radionuclide calibrators

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 11.040.50

ISBN 978-2-8322-6727-1

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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NUCLEAR MEDICINE INSTRUMENTATION – ROUTINE TESTS –

Part 4: Radionuclide calibrators

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IEC TR 61948-4, which is a Technical Report, has been prepared by subcommittee 62C: Equipment for radiotherapy, nuclear medicine and radiation dosimetry, of IEC technical committee 62: Electrical equipment in medical practice.

This second edition cancels and replaces the first edition published in 2006. This edition constitutes a technical revision.

This edition includes the following significant technical change with respect to the previous edition: the test method to determine SYSTEM LINEARITY has been updated to reflect the technical developments of RADIONUCLIDE CALIBRATORS.

The text of this Technical Report is based on the following documents:

Draft TR	Report on voting
62C/715/DTR	62C/727/RVDTR

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

Terms used throughout this document that have been defined in Clause 3 appear in SMALL CAPITALS.

A list of all parts in the IEC 61948 series, published under the general title *Nuclear medicine Instrumentation – Routine tests*, can be found on the IEC website.

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INTRODUCTION

This technical report is based on the German Standard DIN 6855-11, *Qualitätsprüfung nuklearmedizinischer Messsysteme – Teil 11: Konstanzprüfung von Aktivimetern*, the English document *Protocol for Establishing and Maintaining the Calibration of Medical Radionuclide Calibrators and their Quality Control*, the Austrian document ÖNORM S 5270, *Aktivimeter – Richtlinien für die Konstanzprüfung am Verwendungsort / Radionuclide calibrators – Guidelines for the constancy testing in the field / Calibrateurs de radionucléides – Directives pour l'essai de constance à l'endroit d'utilisation*, of 1 April 1998, and the Spanish document *Protocolo Nacional del Control de Calidad en la Instrumentación en Medicina Nuclear.*

NUCLEAR MEDICINE INSTRUMENTATION – ROUTINE TESTS –

Part 4: Radionuclide calibrators

1 Scope ~~and object~~

This part of IEC 61948 covers the ROUTINE TESTING of RADIONUCLIDE CALIBRATORS used in nuclear medicine. Such devices utilise ionisation chambers of the well type ~~(directly coupled to an appropriate electronic circuitry (IEC 61145))~~ and a direct readout in units of ACTIVITY. Requirements and specific methods to determine performance parameters are described in IEC 61303 ~~and IEC 61145~~. These methods are primarily designed for ACCEPTANCE TESTING.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 TR 60788:2004, *Medical electrical equipment – Glossary of defined terms*

~~IEC 61145:1992, *Calibration and usage of ionization chamber systems for assay of radionuclides*~~

IEC 61303:1994, *Medical electrical equipment – Radionuclide calibrators – Particular methods for describing performance*

~~IEC 61948-1:2001, *Nuclear medicine instrumentation – Routine tests – Part 1: Radiation counting systems*~~

IEC TR 61948-4

Edition 2.0 2019-03

TECHNICAL REPORT

Nuclear medicine instrumentation – Routine tests – Part 4: Radionuclide calibrators

IEC TR 61948-4:2019-03(en)

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A bilingual version of this publication may be issued at a later date.

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