



**BSI Standards Publication**

## **Nuclear medicine instrumentation — Routine tests**

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Part 2: Scintillation cameras and single photon  
emission computed tomography imaging

## National foreword

This Published Document is the UK implementation of IEC TR 61948-2:2019. It supersedes PD IEC/TR 61948-2:2001, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CH/62/3, Equipment for radiotherapy, nuclear medicine and radiation dosimetry.

A list of organizations represented on this committee can be obtained on request to its secretary.

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# IEC TR 61948-2

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## TECHNICAL REPORT

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**Nuclear medicine instrumentation – Routine tests –  
Part 2: Scintillation cameras and single photon emission computed tomography  
imaging**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

ICS 11.040.50

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**NUCLEAR MEDICINE INSTRUMENTATION – ROUTINE TESTS –****Part 2: Scintillation cameras and single photon  
emission computed tomography imaging**

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IEC TR 61948-2, 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 2001. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) adaptation to apply to the present technology;
- b) updating of the test methods to comply with the recent state of the art.

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

Draft TR	Report on voting
62C/714/DTR	62C/733/RVDTR

Full information on the voting for the approval of this document 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.

In this document, the following print types are used:

- requirements, compliance with which can be tested, and definitions: roman type;
- notes, explanations, advice, introductions, general statements, exceptions and references: smaller roman type;
- *test specifications: italic type*;
- TERMS DEFINED IN CLAUSE 3 OF THIS DOCUMENT: SMALL CAPITALS.

The requirements are followed by specifications for the relevant tests.

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.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

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

## NUCLEAR MEDICINE INSTRUMENTATION – ROUTINE TESTS –

### Part 2: Scintillation cameras and single photon emission computed tomography imaging

#### 1 Scope

This part of IEC 61948, which is a Technical Report, is valid for single photon scintillation cameras with parallel hole collimators used in planar scintigraphy and tomography. It is also valid for the SPECT portion of SPECT/CT systems with parallel hole collimators, including the co-registration between the SPECT and CT subsystems. The objective is to specify ROUTINE TESTS for QUALITY CONTROL. Methods for the ACCEPTANCE TEST are described in IEC 61675-2.

#### 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 61675-2:2015, *Radionuclide imaging devices – Characteristics and test conditions – Part 2: Gamma cameras for planar, wholebody, and SPECT imaging*

IEC TR 61948-1:2016, *Nuclear medicine instrumentation – Routine tests – Part 1: Gamma radiation counting systems*

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60788, IEC 61675-2, and IEC TR 61948-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

NOTE Defined terms are printed in small capital letters.

##### 3.1

##### ACCEPTANCE TEST

test carried out after new EQUIPMENT has been installed, or major modifications have been made to existing EQUIPMENT, in order to verify compliance with contractual specifications

Note 1 to entry: During or immediately after ACCEPTANCE TEST, REFERENCE DATA are collected to be used as a standard for comparison with future ROUTINE TESTS.

[SOURCE: IEC TR 60788:2004, rm-70-01, modified – The note to entry has been added.]