

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Radionuclide imaging devices – Characteristics and test conditions –  
Part 2: Single photon emission computed tomographs**

**Dispositifs d'imagerie par radionucléides – Caractéristiques et conditions  
d'essai –  
Partie 2: Systèmes de tomographie d'émission à photon unique**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**RADIONUCLIDE IMAGING DEVICES –  
CHARACTERISTICS AND TEST CONDITIONS –****Part 2: Single photon emission computed tomographs**

## 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 co-operation 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.
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International Standard IEC 61675-2 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 bilingual version (2014-12) corresponds to the English version, published in 1998-01.

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

FDIS	Report on voting
62C/206/FDIS	62C/215/RVD

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

The French version of this standard has not been voted upon.

In this standard, the following print types are used:

- TERMS DEFINED IN CLAUSE 2 OF THIS STANDARD OR LISTED IN ANNEX A: SMALL CAPITALS.

The requirements are followed by specifications for the relevant tests.

Annex A is for information only.

# RADIONUCLIDE IMAGING DEVICES – CHARACTERISTICS AND TEST CONDITIONS –

## Part 2: Single photon emission computed tomographs

### 1 General

#### 1.1 Scope and object

This part of IEC 61675 specifies terminology and test methods for describing the characteristics of Anger type rotational GAMMA CAMERA SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHS (SPECT), equipped with parallel hole collimators. As these systems are based on Anger type GAMMA CAMERAS this part of IEC 61675 shall be used in conjunction with IEC 60789. These systems consist of a gantry system, single or multiple DETECTOR HEADS and a computer system together with acquisition, recording, and display devices.

The test methods specified in this part of IEC 61675 have been selected to reflect as much as possible the clinical use of Anger type rotational GAMMA CAMERA SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHS (SPECT). It is intended that the test methods be carried out by manufacturers thereby enabling them to describe the characteristics of SPECT systems on a common basis.

No test has been specified to characterize the uniformity of reconstructed images because all methods known so far will mostly reflect the noise of the image.

#### 1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61675. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 61675 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60788:1984, *Medical radiology – Terminology*

IEC 60789:1992, *Characteristics and test conditions of radionuclide imaging devices; Anger type gamma cameras*

IEC 61675-1, — *Radionuclide imaging devices – Characteristics and test conditions – Part 1: Positron emission tomographs*

### 2 Terminology and definitions

For the purpose of this part of IEC 61675 the definitions given in IEC 60788, IEC 60789 and IEC 61675-1 (see annex A), and the following definitions apply.

Defined terms are printed in small capital letters.