

ICS 13.280
CCS F 84



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 31836-2015

**Radiation protection instrumentation -- Spectroscopy-based
portal monitors used for the detection and identification of
illicit trafficking of radioactive material**

辐射防护仪器 用于探测和识别非法放射性物质运输的基于谱分析的门式监测系统
(English Translation)

Issued on: July 3, 2015

Implemented on: February 1, 2016

Issued by: Standardization Administration of China

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3.1 Terms and definitions

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules.

This standard uses the translation method identical with IEC 62484:2010 illegal transport of radioactive material "Radiation protection equipment for the detection and identification Lose based on spectral analysis of portal monitoring systems. " Consistency correspondence with international standards in this standard references of the following documents.

--- GB/T 17626.2-2006 Electromagnetic compatibility - Testing and measurement techniques - Electrostatic discharge immunity test (IEC 61000-4-2.

2001, IDT);

--- GB/T 17626.3-2006 Electromagnetic compatibility - Testing and measurement techniques RFEMS test (IEC 61000-4-3:2002, IDT).

For ease of use, this standard made the following editorial changes.

--- Will be in "2 Normative references" have been corresponding national standards with international standards to our standards.

This standard by the National Nuclear Instrument Standardization Technical Committee (SAC/TC30) centralized.

This standard was drafted. Tongfang Weishi Technology Co., Ltd., Department of Engineering Physics.

1 Scope

This standard specifies the operational and performance requirements based on spectral analysis of portal monitoring system, the system for detecting and identifying illegal traffic Radioactive substances. Based on spectral analysis of portal monitoring system in static or dynamic mode may exist in pedestrians, vehicles, containers and Luggage gamma-ray and neutron radiation detection, the ability of gamma radionuclides were identified.

Operational requirements established in this standard include radionuclide gamma radiation detection and identification requirements, as well as the monitoring system when used with the expected electricity Gas, mechanical and environmental conditions requirements.

The purpose of this standard is to establish a set of performance requirements and gives examples of acceptable test methods and provides the general characteristics of the test strips Member, radiation characteristics, electrical safety and environmental characteristics to determine if the monitoring system meets the requirements of this standard.

For special applications not specified in this standard (such as special climatic conditions or special needs probing, etc.) should be carried out additional tests.

To obtain performance metrics meet or exceed the requirements of this standard, the need to properly install the monitoring system, set a reasonable operating parameters for monitoring the system provides protective measures for regular calibration system, the implementation of a systematic and rational response testing and maintenance schedules, check if you want to meet the quality Demand and operating personnel with appropriate training.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 2900.81-2008 Electrotechnical terminology Nuclear Instruments Physical phenomena and basic concepts (IEC 60050-393:2003, IDT) GB/T 2900.82-2008 Electrotechnical terminology nuclear instrumentation equipment, systems, equipment and detectors (IEC 60050-394:2007, IDT) GB 4208-2008 housing protection (IP Code) (IEC 60529:2001, IDT) X and gamma GB/T 12162.1-2000 for calibrating dosimeters and dose rate meters and for determining their response reference radiation first Part I. Radiation characteristics and production methods (ISO 4037-1:1996, IDT) X and gamma GB/T 12162.2-2004 for calibrating dosimeters and dose rate meters and for determining their response reference radiation 2 Parts. the energy range of radiation protection is 80keV ~ 1.3MeV and 4MeV ~ 9MeV reference radiation dosimetry (ISO 4037-2:1997, IDT) GB/T 12162.3-2004 for calibrating dosimeters and dose rate meters and for determining their response of X and

gamma reference radiations 3 . Determination of the calibration response and energy and angular response of dosimeters and workplace personal dosimeter (ISO 4037-3:1999, IDT) GB/T 14055.1-2008 neutron reference radiation - Part 1. Radiation characteristics and production method (ISO 8529-1:2001, IDT) GB/T 14055.2-2012 neutron reference radiation - Part 2. Characterization of the radiation field associated with a substantial amount of radiation protection instrumentation calibration Basis (ISO 8529-2:2000, IDT) IEC 61000-4-2:2008 Electromagnetic compatibility - Part 4-2. Testing and measurement techniques - Electrostatic discharge immunity test (Electromagnetic compatibility (EMC) -Part 4-2. Testing and measurement techniques-Electrostatic discharge immunity test) IEC 61000-4-3:2006 Electromagnetic compatibility - Part 4-3. Testing and measurement techniques RFEMS test