

ICS 27.120.01

CCS F 88



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

GB/T 43189-2023

**Nuclear instrumentation - Nomenclature (identification) of
scintillators and scintillation detectors and standard
dimensions of scintillators**

核仪器仪表 闪烁体和闪烁探测器的命名（标识）以及闪烁体的标准尺寸
(English Translation)

Issued on: November 27, 2023

Implemented on: July 1, 2024

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is modified to adopt IEC 60412:2014 "Nomenclature (identification) of scintillators and scintillation detectors in nuclear instruments and scintillators" Standard size":

Compared with IEC 60412:2014, this document has made the following structural adjustments:

---Added two chapters "Normative Reference Documents" and "Terms and Definitions":

The technical differences between this document and IEC 60412:2014 and their reasons are as follows:

--- Added requirements for the ordering of identification symbols (see 4.1) to improve the operability of identification;

---Deleted the requirements for inches (see 4.4, 4:5 and 4:10) to comply with my country's Measurement Law:

The following editorial changes have been made to this document:

---Changed the expression of the scope to comply with the provisions of GB/T 1.1-2020;

---Correct "see 2.11" in A:1 and A:2 in IEC 60412:2014 to "see 4.12", which is an incorrect reference:

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Introduction

The naming of scintillator and scintillator detectors is very complicated, including detector type, scintillator material, scintillator geometry and size, detector Housing and window materials, type and size of photomultiplier tube or photodiode, supporting electronics and other characteristics: In recent years, various flash Manufacturers of scintillator detectors usually put the product trademark and manufacturer's name (abbreviation) before the name, and provide different content and the order of different feature names makes it difficult for customers to understand the meaning of these symbols: Introducing a unified naming (identification) method for scintillator and scintillator detectors the law can improve this situation: For this reason, it is recommended to follow the principle of using each parameter name from the primary parameter to the secondary parameter in strict order:

but: This principle will unify the naming (identification) of scintillator and scintillation detectors, promote users' understanding of this type of products, and thus make the correct choice:

product:

This document aims to give a naming method that can reflect most of the characteristics of scintillation detectors, so as to improve the replaceability of non-encapsulated scintillators and facilitate their use with Packaged scintillator measurement results are compared with each other:

Nuclear instrumentation scintillators and scintillation detectors Nomenclature (logo) and standard dimensions of scintillator

1 Scope

This document provides guidance on the nomenclature (identification) of scintillator and scintillation detectors as well as standard dimensions of scintillator:

This document applies to solid organic or inorganic scintillator used in detectors for scintillator counting and scintillator spectroscopy measurements:

This document does not apply to liquid scintillator detectors:

2 Normative reference documents

This document has no normative references:

3 Terms and definitions

There are no terms or definitions to be defined in this document:

4 Nomenclature of scintillators and scintillation detectors

4.1

General

The naming (identification) of scintillator and scintillation detectors consists of the sequence of normative items predefined in 4:2~4:13: Normative projects refer to detection Specific characteristics of the device material and/or structure:

The logo generally includes the symbols shown in 4:2~4:13: The order of the symbols is according to the scintillator category, scintillator geometry, and scintillator cross-section size:

Inch, scintillator thickness, scintillator material, entrance window type, output window type, package type, photomultiplier tube (PMT) diameter, photomultiplier tube (PMT) or other characteristics of photodiodes, other characteristics of scintillation detectors, and application classification of scintillation detectors are given in order, with spaces between each item:

Separate by case, missing items are indicated by "-":

Note: The dimensions in this document are in millimeters (mm):

4.2

Categories of scintillator the scintillator category is given by the manufacturer and has the following symbols:

C ---No packaged scintillator (see example 1);

HC ---Packaged scintillator (see example 2);

HCW ---Well packaged scintillator;

HCH ---Hole type packaged scintillator;

IMP --- scintillator integrally packaged with photomultiplier tube (see Example 3~Example 5);

PhX ---Stacked scintillator, where X is the number of scintillator (see example 6);

XCHY---One-dimensional array X channel detector (see example 7), where X is the number of channels in the one-dimensional array and Y is the spacing:

4.3

Scintillator geometry the symbols for scintillator geometry are as follows: