Scintillation Materials, Detectors and Electronics

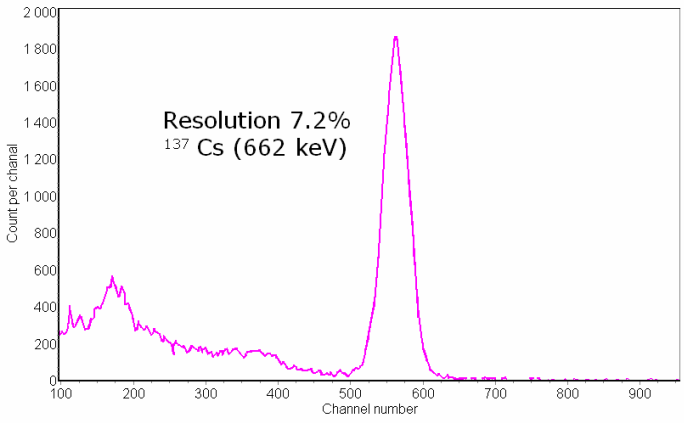
Product Data Sheet

SCINTILLATION ASSEMBLY-MODULES

Special scintillation assemblies based on NaI (Tl), CsI, CsI (Na) and CsI (Tl) of different shapes and dimensions intended for incorporation into multi-component detecting systems have been developed. In particular, rectangular shaped assembly-modules with sizes up to 102x102x406 mm with the crystals mentioned are available.

In all cases, scintillation module consists of a scintillation crystal hermetically housed in a metal container with protective glass and demountable photosensitive device (usually photomultiplier tube (PMT), or a silicone photomultiplier (SiPM) or a position sensitive photomultiplier tube PSPMT) in protective metal housing. Scintillator is wrapped mechanically connected with PMT by clamping flange. Scintillation crystal is in reflector material for maximum light detection. Scintillation assembly-modules can be produced in low-background and ruggedized versions.

Scintillation modules may include voltage divider, preamplifier, high voltage generator and other electronic modules according to the customer's requirements.



^{137}Cs spectrum for a NaI(Tl)
16x16S64/3.5 (4"x4"x16")

Scintillation modules are intended for use in highly-sensitive radiometers for detection and parameter measurements of weak gamma streams in the energy range from 0.1 to 0.4 MeV.

Scintillation modules can be produce in the form of cylinders and hexagonal and rectangular prisms. The rectangular prism shape makes it possible to arrange scintillation assemblies densely in a detecting device to ensure 4p detection geometry.

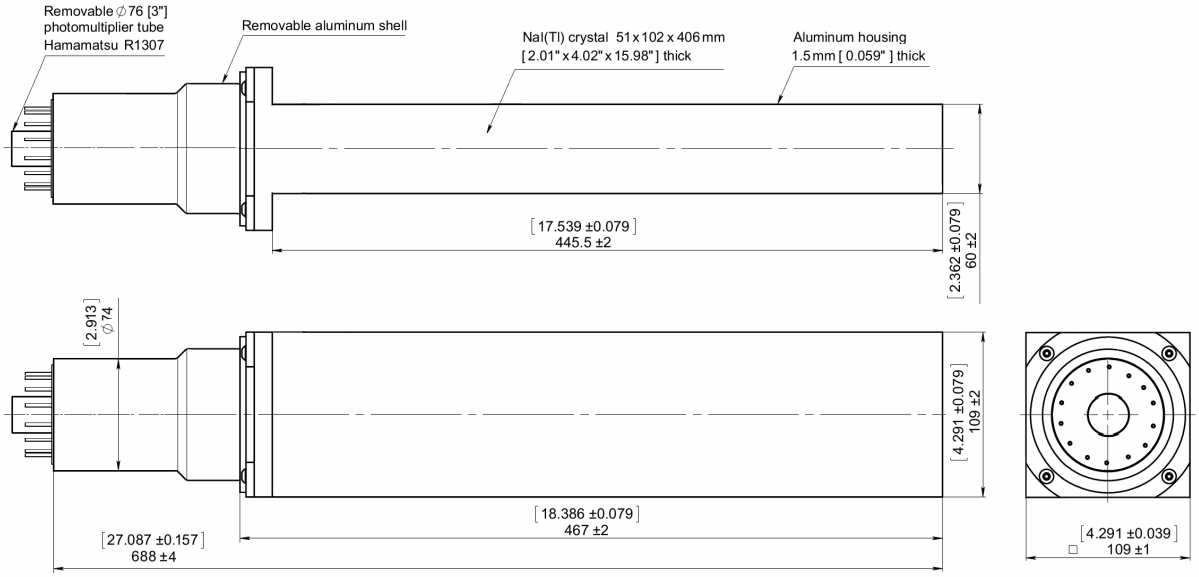
Scintillation modules can be provided with the photosensitive devices of other specified than. Photosensitive devices supplied by the customer can be used in the modules.

Additional information and features:

- production of any dimensions and design
- aluminum, stainless steel or titanium containers
- reflecting material with the highest characteristics
- photosensitive devices (PMT, SiPM or PSPMT) are individually selected and tested for each scintillator
- using mu-metal magnetic shield for protection from external magnetic fields
- integral or plug-in voltage divider, preamplifier, high voltage generator and other electronic modules for optimal operation
- resistance to mechanical, climatic and temperature loads
- perfect scintillation parameters of products
- ruggedized, demountable, low-background, x-ray and well-type versions are available
- products reliability is confirmed by the warranty

Popular configurations

Model	Crystal size, mm [inches]
8x16S64/3	51x102x406 [2”x4”x16”]
12x16S64/3	76x127x406 [3”x5”x16”]
16x16S64/3.5	102x102x406 [4”x4”x16”]



Model 8x16S64/3

Ruggedized scintillation modules

Scintillation modules for geophysical and special applications can be produced in ruggedized versions. Ruggedized scintillation modules have improved mechanical and thermal characteristics.

In order to provide increased mechanical and thermal hardness ruggedized scintillation modules are batched with NaI (Tl) polycrystals or other scintillation materials.

Low-background scintillation modules

For detection and spectrometry of weak ionizing radiation and low activity levels of different radionuclides, low-background scintillation modules are used which are characterized by a very low intrinsic background level. The low background is attained by the use of both crystals having a low intrinsic background level and suitable construction materials.