Scintillation Materials, Detectors and Electronics

Product Data Sheet

DEMOUNTABLE SCINTILLATION ASSEMBLIES

Demountable scintillation assemblies based on NaI (Tl), CsI (Tl) and CsI (Na) are produced in different modifications. Demountable scintillation assembly consists of a scintillation crystal hermetically packed in a metal container with protective glass and demountable PMT with mu-metal magnetic shield in protective metal housing. Scintillator is mechanically connected with PMT by clamping flange. Scintillation crystal is wrapped in reflector material for maximum light detection. The demountable scintillation assemblies can be produced in low-background and ruggedized versions.

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

Demountable scintillation assemblies based on alkali halide scintillators are used for registration and gamma radiation spectrometry in the photons energy range from 50 keV to 3.0 MeV under the influence of a radioactive source as well as for kitting of measurement devices for ionizing radiation of general purpose.

The demountable scintillation assemblies can be provided with PMTs of other types than specified. PMTs supplied by the customer can be used in the assembly. We develop custom-made demountable scintillation assemblies according to customers' specification.

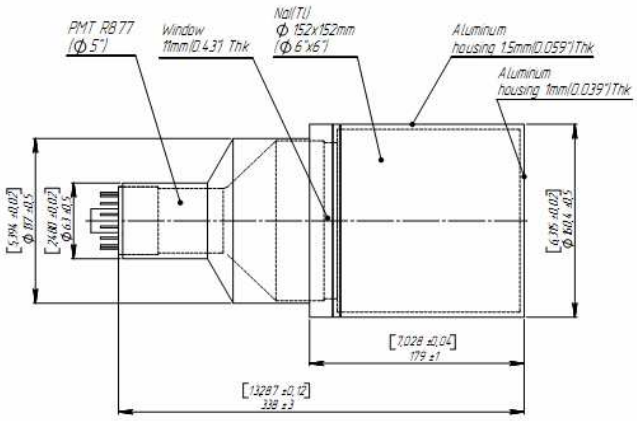
Additional information and features:

- production of any dimensions and design;
- aluminium or stainless steel containers;
- quartz or borosilicate protective glass for optical connection of scintillator and PMT;
- reflecting material with the highest characteristics;
- PMT individual matching and testing 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;
- stability to the mechanical, climatic and temperature loads;
- perfect scintillation parameters of products;
- products reliability confirmed by warranty.

Popular configurations

Standard configurations

Model	Crystal size, mm (inches)
127A127/5" D	127x127 (5x5")
152A152/5" D	152x152 (6x6")
R51x51A102 CN/2" D	51x51x102 (2x2x4")
R76x76A51 CN/3" D	76x76x51 (3x3x2")

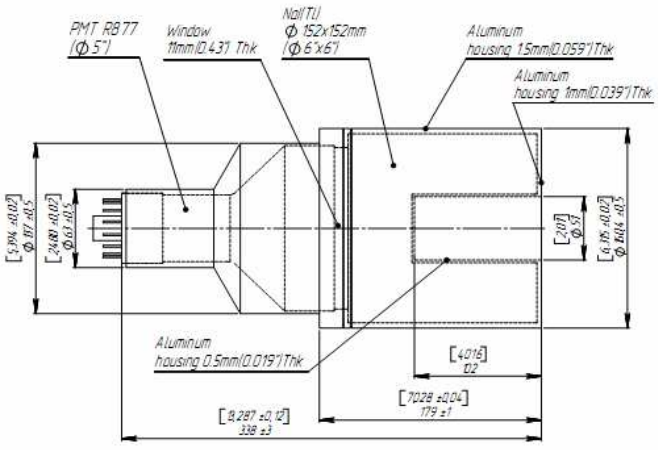


Model 152A152/5" D

A well-type receptacle in NaI (Tl) scintillation assemblies provides maximum absorption of radiation from a sample by approximating 4p geometry. Scintillation assemblies with well-type crystals are used in medicine, biological research, environmental monitoring, etc. We have different modifications of well-type scintillation assemblies in productions.

Axial well configurations

Model	Crystal size, mm (inches)
102A102/5" D,W	102x102 (4x4")
127A127/5" D,W	127x127 (5x5")



Model 152A152/5" D,W

Ruggedized demountable scintillation assemblies

Demountable scintillation assemblies for geophysical (well logging) and special applications can be produced in ruggedized versions. Ruggedized demountable scintillation assemblies with improved mechanical and thermal characteristics are applied for gamma-ray logging in gas and oil industry.

In order to provide increased mechanical and thermal hardness ruggedized demountable scintillation assemblies are batched with NaI (Tl) polycrystals or other scintillation materials, usually CsI (Na), with damping system for qualitative work within assemblies' lifetime.

Low-background demountable scintillation assemblies

For detection and spectrometry of weak ionizing radiation and low activity levels of different radionuclides, low-background demountable scintillation assemblies 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.