

Scintillation Detectors with Demountable PMT

The demountable designs are scintillator-photomultiplier tube (PMT) combinations that allow the removal of the photomultiplier tube or tubes without disturbing the scintillator hermetic package. The scintillator is mounted with appropriate reflector material in a low-mass metal container that has a K+ glass or quartz optical window for each PMT. The magnetic light shield of each PMT is mechanically fastened to the flange or other mounting hardware on the scintillator container.

This configuration is well-suited for applications requiring the use of a crystal larger than 4" diameter.

Features/Advantages -

- PMTs can be removed in the field for replacement or servicing
- Detector performance can be guaranteed for energy and/or timing resolutions
- Large scintillator volumes can be accommodated

Options -

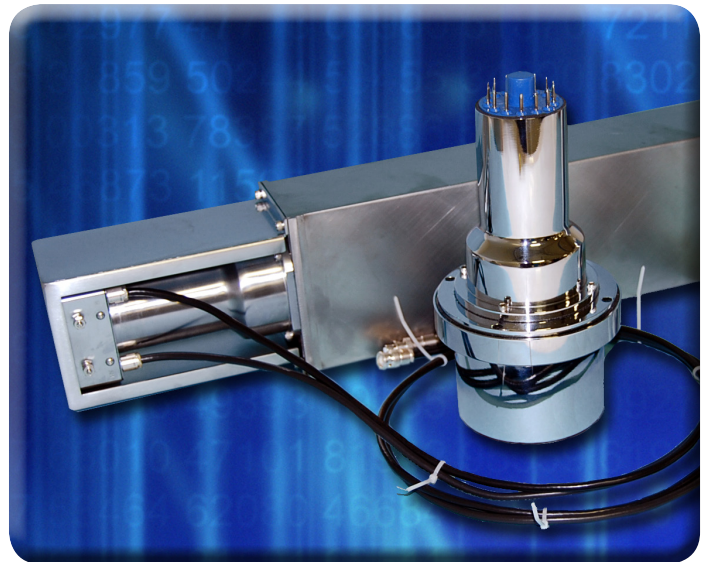
- End well or through well geometries
- Scintillator containers of low-back ground stainless steel or copper
- PMTs selected for low background, premium resolution, fixed HV use, or gain matching
- Special flanges, mounting fixtures or other modifications
- Integrated, low-background voltage divider and preamplifier bases
- Square, hexagonal or other cross-sections
- Premium resolution assemblies

Other Configurations -

- Ruggedized and high-temperature detectors

Design Notes -

- Large detectors may require multiple PMTs.
- For a multiple PMT assembly, the PMTs are matched for gain and balanced. This makes it possible to sum the output of all PMTs and obtain one uniform signal with optimum energy resolution. Records for each detector in our database allow us to supply replacement PMTs.
- Scintillator areas not viewed by PMTs are covered with a reflector for optimum light collection.

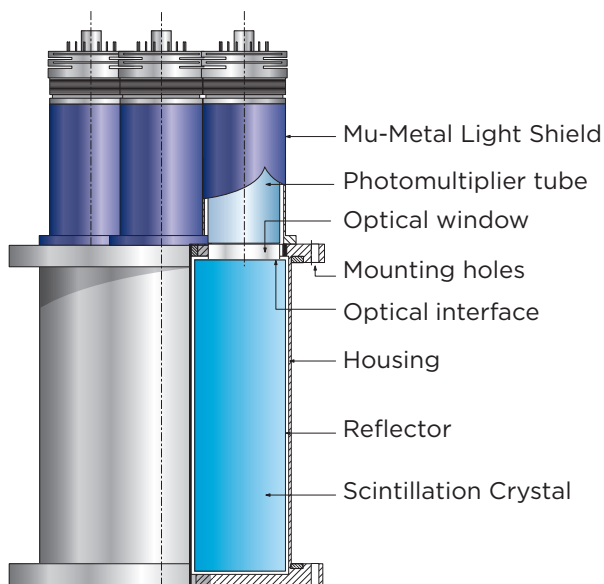
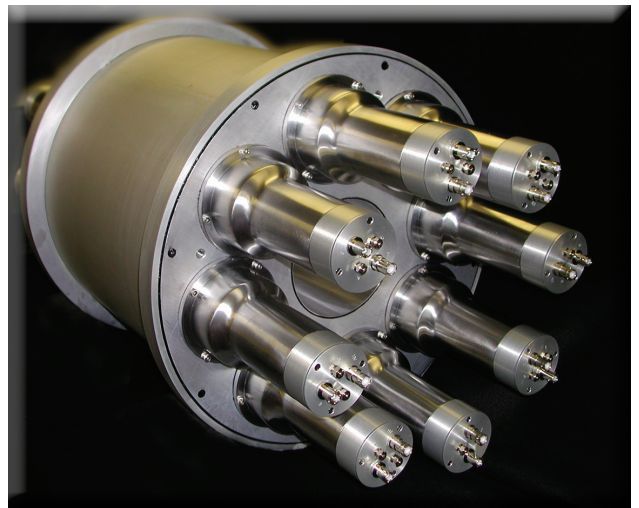


Scintillation Detectors with Demountable PMT

Popular Configurations -

The solid detector with a single PMT is a general purpose detector and is used in material assay, activation analysis and other higher energy counting applications.

Side well and end well configured detectors are highly efficient for measuring activity of small-sized sources and in higher energy emitting isotope measurements.



Typical construction:

- 14 Pin Phenolic Base JEDEC B-14-38
- Mu-Metal Light Shield .020" [0.508] thick
- Light Sensor
- Scintillation Crystal
- Aluminum Housing .020" [0.508] thick
- Well Liner .010" [0.254] thick if applicable

Detectors can be built with a wide range of well sizes.

The drawing dimensions are nominal and subject to change. Call the factory for current values.

Note: configuration is historically known as:

Bicron Multiline example model 5H5/5

Crismatec Scintiflex example model 127Y127

Harshaw Matched Window example model M127MB20/5A

Contact Us



Saint-Gobain Crystals

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Manufacturer reserves the right to alter specifications.

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