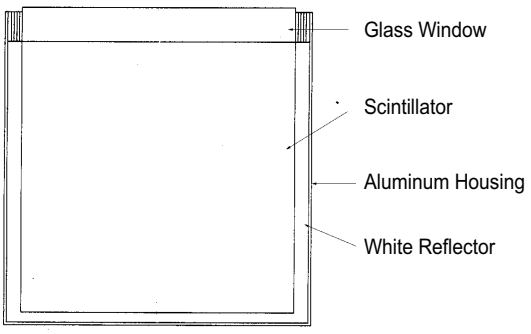
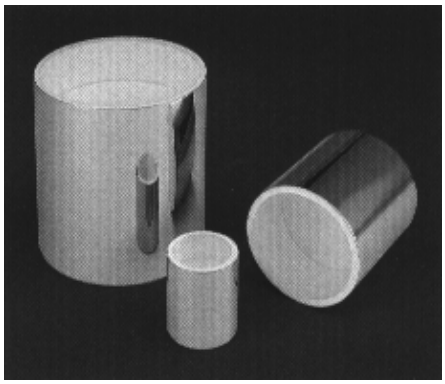
deltaline

Basic Packaged Scintillators

advantages

- Reliable, basic, hermetically sealed detector assembly
- Thin aluminum housing (up to .020" thick) with durable, chemically stabilized coating
- Special Bicron K+ window enhances light accessibility
- Stable reflector systems





A Bicron *Deltaline* assembly is basically a piece of scintillator mounted in a low-mass metal container. Reflector material is packed between the scintillator and the container walls, and a K+ glass (or quartz) optical window is incorporated into one end. A wide variety of shapes and sizes can be produced. These detectors require user-supplied, externally-coupled photomultiplier tubes.

Deltalines are appropriate for certain experimental or manufacturing situations where different scintillator-PMT combinations may be required on a regular basis.

options

- Low background stainless steel or copper containers
- Thin aluminum or beryllium radiation entrance windows
- Special flanges, O-rings, mounting fixtures or other modifications
- Rectangular and other shapes

other configurations

- Ruggedized and high-temperature assemblies
- Assemblies using thin scintillators for low-energy gamma and X-ray detection

design notes

- Detectors made with non-hygroscopic scintillators can be assembled without the optical window, e.g., BGO, BaF_2, CsI(Tl).
- Detectors are hermetically sealed when hygroscopic scintillators, e.g., NaI(Tl) are used.
- You can temporarily mount a PMT by using optical coupling compound and black tape to make a light seal. Permanent mounting requires special construction for coupling the PMT and attaching a magnetic/light shield.

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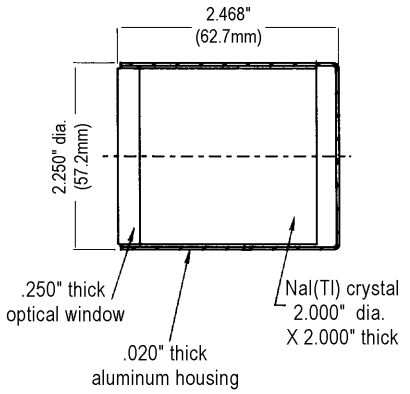
popular configurations

solid

Commonly used for simple spectroscopy; general purpose for energies greater than 15 keV.

Model 2R2 shown



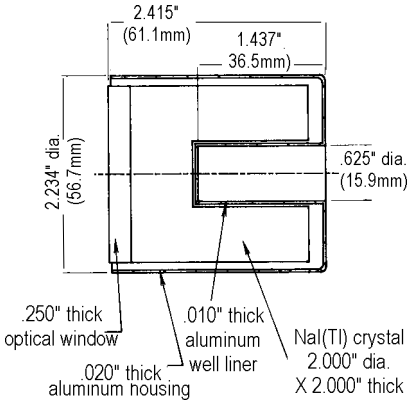
Typical Solid Crystal Deltaline Models

Model	Crystal Size	Model	Crystal Size
1R1	1" x 1"	*x-ray models*	
1R2	1" x 2"	1XR.040B	1" x 1mm
1.5R1.5	1.5" x 1.5"	1.5XR.040B	1.5" x 1mm
1.75R2	1.5 x 1"	2XR.040B	2" x 1mm
2R1	2" x 1"		
2R2	2" x 2"	B = beryllium window	
3R3	3" x 3"		

end well

This configuration is the most efficient (typically greater than 80%) because the NaI surrounds the sample; for radioisotope assay applications.

Model 2RW2 shown (.0625" x 1.437" end well)



Typical End Well Crystal Deltaline Models

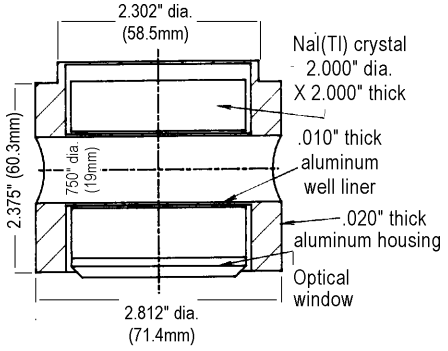
Model	Crystal Size	Well Size
2RW2	2" x 2"	see table
3RW3	3" x 3"	see table

Well Sizes	
2RW2	3RW3/3
0.625" x 1.437"	0.656" x 1.625"
0.656" x 1.546"	0.787" x 1.968"
0.787" x 1.535"	1.0" x 2.0"
0.750" x 1.391"	1.375" x 1.968"
0.866" x 1.378"	

through-side well

An ideal configuration when space is limited; the second most efficient configuration; used in radioisotope assay and fuel rod scanning applications.

Model 2RSW2 shown (.750" ID well)



Manufacturer reserves the right to alter specifications.

3004(01-97)

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