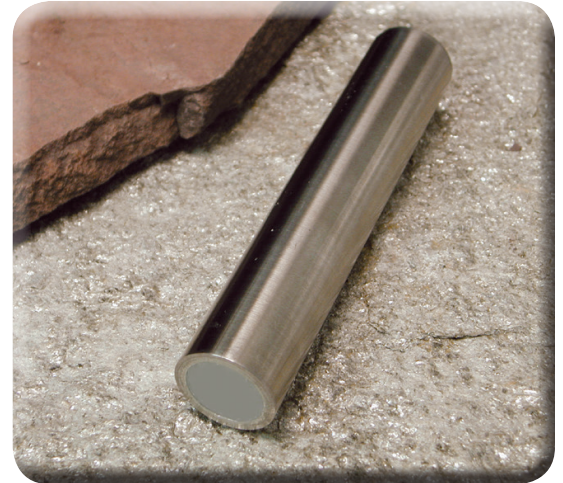


Titanium Geophysical Detectors For Improved Scintillation Performance

Saint-Gobain Crystals, the leading supplier of scintillation radiation detectors to the oil industry, is producing a new generation of gamma detectors.

These new detectors incorporate the latest in crystal and packaging technology, and will lead well logging products into the future. This new technology provides increased scintillation performance with the same rugged specifications Saint-Gobain has provided for years in its Bicron® geophysical designs.

These new features are available for wireline, MWD and multi-phase flow applications and can be provided with integrated phototubes and electronics, if desired. Custom designs and specifications are available upon request.



- **Thinner wall allows for larger crystal, more counts, and greater low energy sensitivity.**
- **Larger crystals provide increased count rates.**
- **15-30% increase in light output when compared to standard designs.**
- **Fully qualified for wireline and MWD operation.**
- **Guaranteed for performance and hermetic seal integrity.**

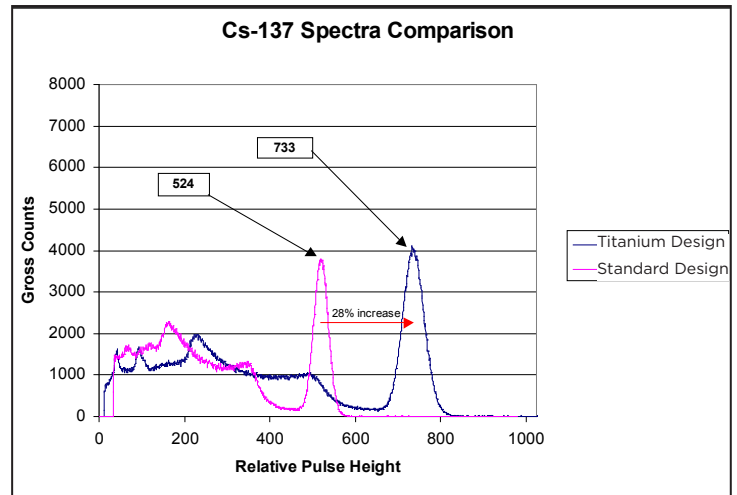
Geophysical Detectors For Improved Scintillation Performance

Features / Benefits -

- Stronger titanium housing material yields thinner walls for higher crystal volume.
 - * Higher Count Rate
 - * Increased Efficiency
 - * Greater Sensitivity
- Stronger sapphire window is much thinner for increased light transmittance.
- High strength sapphire-to-metal seals for ruggedness.
- Integration with photomultiplier tubes available.

Specifications -

- **Pulse Height Resolution** (FWHM) at 662keV:
Typical NaI(Tl) crystal as measured on a standard laboratory 2" phototube
 - 8.5% at 25°C
 - 12.5% at 150°C
- **Temperature** (Survival)
 - 20°C to +175°C
 - 3°C per minute gradient
- **Maximum Vibration** (MWD applications)
Random 20grms, 30-1000Hz per the following power spectral density profile:
 - 30-80Hz @6db/octave
 - 80-1000Hz @0db/octaveAcceptance Criteria: Counts per second not to exceed BASE+ 2σ during specified vibration.
(σ =SQRT(Bkg.))
- **Maximum Shock** (MWD applications)
1000g @ 1ms - half sine
- Available crystal sizes
Diameter: ½" through 3"
Length: sizes up to 18"



Custom Temperature, Shock, and Vibration Specifications available upon request.



Manufacturer reserves the right to alter specifications.

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