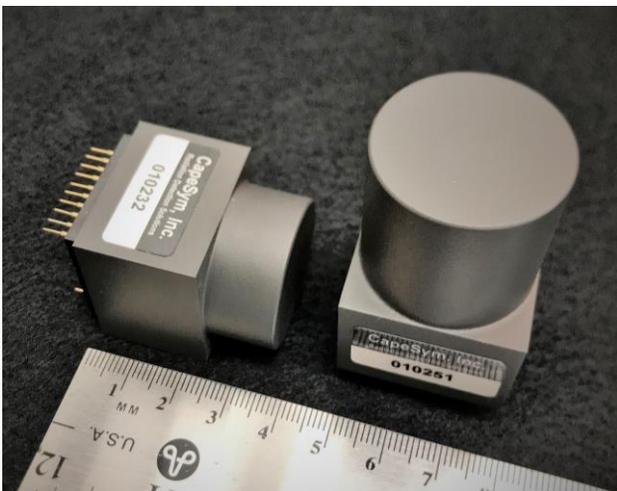




ScintiClear™ Compact PMT Detectors

CapeSym's new ScintiClear compact PMT detector core delivers radiological performance that exceeds ANSI standards. It offers high energy resolution, high sensitivity, extremely low internal activity, compact design, and withstands harsh environmental conditions. Read-out is via rugged metal body Super-Bialkali Photomultiplier Tube (PMT)*. ScintiClear provides accurate spectroscopic information from 0.5 $\mu\text{R/h}$ to 25mR/h dose rate (^{137}Cs). Higher dose rates are measured via the PMT current.**

	SC-SPRD-S	SC-SPRD-L	SC-SPRD-XL	SC-RIID-C
Crystal size, mm ³	Ø25.0 x 12.7 (6.2 cc)	Ø25.0 x 25.0 (12.5 cc)	Ø25.0 x 51.0 (25.0 cc)	Ø25.0 x 25.0 (37.5 cc)
Package dimensions, mm	Ø30.0x30.0 L=40.0	Ø30.0x30.0 L=50.0	Ø30.0x30.0 L=75.0	Ø30.0x30.0 L=100.0
ER % at 662keV	≤3.5			
cps/ $\mu\text{Sv/h}$ at 662keV	160	260	520	780
Temperature range, °C	-25° to +55°			
Thermal shock	ANSI N42.48-2008			
SIGMA FOM $A\epsilon_p/R$ at 1.17 MeV, cm ² /%	0.042	0.086	0.17 (side)	0.25 (side)



ScintiClear™ is a SrI₂(Eu) based scintillation technology manufactured using CapeSym's proprietary crystal growth process. The crystals produced maintain the excellent energy resolution minimizing the negative effects of Eu self-absorption.

*For SiPM based detectors refer to ScintiClear SiPM Detectors flyer.
 **Spectrometer version with all the electronics and software is available.

ScintiClear™ Compact PMT detector solutions at a glance

Scintillator: CapeSym's **ScintiClear™** is a new high-performance $\text{SrI}_2(\text{Eu})$ -based scintillator made in the USA. Our proprietary crystal growth process improves its inherently excellent properties, and limits the effects of Eu self-absorption. Guaranteed energy resolution of large crystals is $\leq 3.5\%$.

Sensitivity: Our **ScintiClear™** compact detector core (scintillator + metal body PMT assembly) is designed for maximum sensitivity at given form factor, ranging from 160 to 780 cps/ $\mu\text{Sv/h}$ at 662 keV.

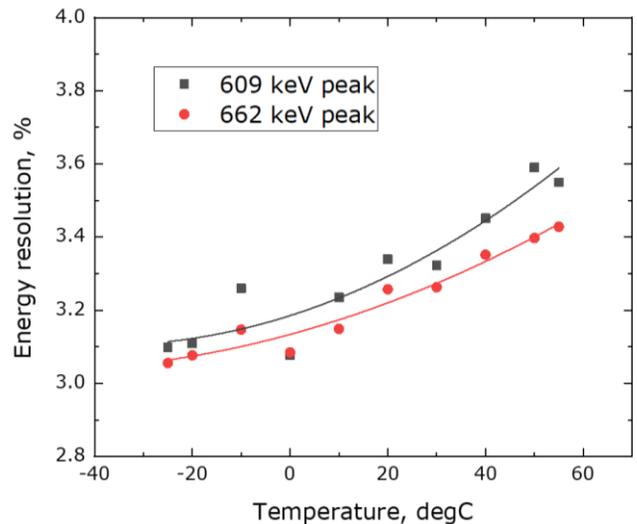
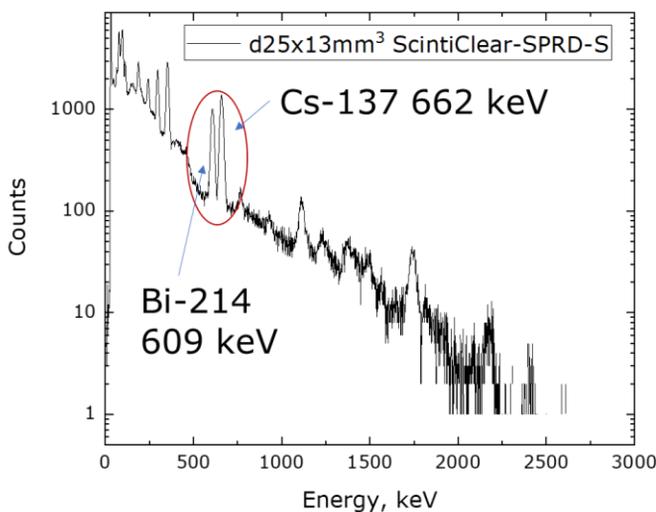
Count rate: With a 12.5 cc **ScintiClear™** crystal, signal integration time does not exceed $10\mu\text{s}$, allowing spectroscopic information up to 100kcps (50 mR/hr dose rate). PMT current may be measured in higher count rate situations.

Energy resolution: Our **ScintiClear™** crystals have achieved 2.9% ER at 662keV and 2.2% ER at 1332 keV. Guaranteed performance with a compact PMT is $\leq 3.5\%$ ER at 662 keV.

Encapsulation: Our encapsulation exceeds ANSI N42.48-2008 environmental performance requirements. Encapsulation with optical, temperature or other sensors is available.

Unambiguous Identification with ScintiClear™

U-ore environmental sample + Cs-137



Critical situations demand immediate and accurate identification of the radiological material present. **ScintiClear™** easily separates the ^{137}Cs and ^{134}Cs lines (662 keV and 605 keV respectively) and eases the task of identifying the 186 keV line (HEU) and 414 keV line (WGPu) even in the presence of interfering radionuclides. **ScintiClear™** also offers high energy resolution in the MeV range, and no internal activity. These attributes, combined with good linearity, high density and Z_{eff} enable clear identification of 1001 keV line (DU) and high energy environmental peaks.