

Product Datasheet

T410

Ruggedised Integrable Detector Module

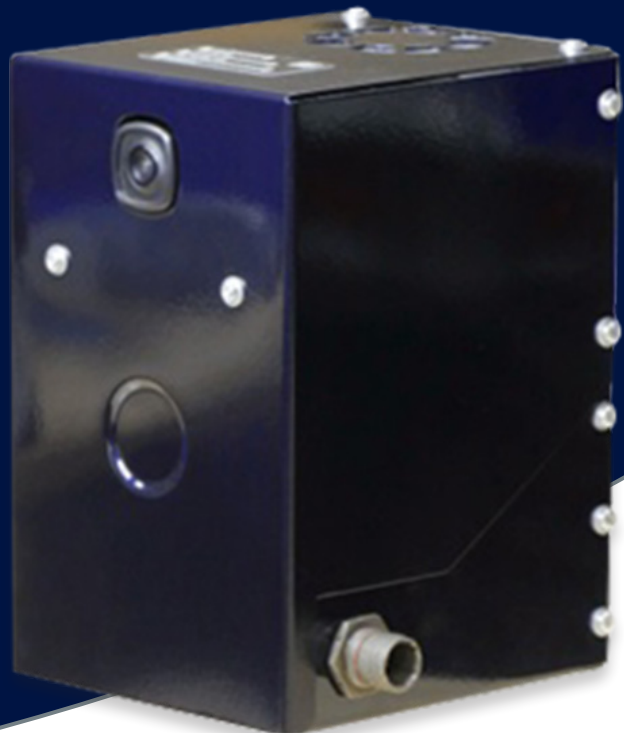
Integrate H3D's ruggedised detector module for your application. This box contains everything you need for high-resolution spectroscopy and isotope-specific imaging.

Perfect for integration with:

- Vehicles.
- Drones.
- Robots.
- Monitoring stations.
- Other sensor suites.

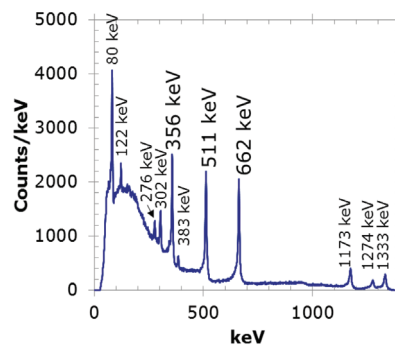
Containing the most advanced room-temperature semiconductor technology to achieve spectroscopic performance competitive with cryogenically-cooled detectors, the detector module has:

- Compact size and lightweight.
- Fast startup.
- Weather-resistant and durable design.



Features

- Fast and portable imaging spectrometer.
- Ready to use in only 90 s.
- Rapidly identifies gamma-ray sources.
- Real-time spectroscopy, imaging, and ID.
- Discrimination between background and sources of interest in less than 20 s.
- Precision overlay of gammaray and optical images.
- Images both point and distributed sources.
- Option for $\leq 0.8\%$ FWHM energy resolution at 662 keV and interaction-by-interaction resolution of $\leq 0.65\%$ FWHM.
- Energy range covers isotopes of interest up to 3 MeV.



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Specifications

T410	
Dimensions (L x W x H)	15.7 cm x 15.3 cm x 21.8 cm
Weight	3.9 kg
Ingress Protection	IP67
Power Supply	24 VDC, 75 W peak
Operating Temperature	-40° C to 50° C (-40° F to 122° F)
Operating Humidity	0 - 100%
System Cooling	Integrated fan
Energy Resolution	≤1.1% FWHM at 662 keV ≤0.9% FWHM at 662 keV (coincident interactions separated)
Energy Range	50 keV to 3 MeV (spectroscopic) 250 keV to 3 MeV (Compton imaging) 50 keV to 250 keV (coded-aperture imaging)
Optical Field of View	90° horizontal, 68° vertical; full colour
Radiation Field of View	4π (360°) omnidirectional (Compton imaging) 86° × 86° (coded-aperture imaging)
Angular Precision	±1° source localisation for all 4π (real time)
Angular Resolution	~30° FWHM for all 4π (real time; >250 keV) ~20° FWHM for all 4π (post processing; >250 keV) ~5° FWHM in coded-aperture field of view (<250 keV)
Crystal Resolution	>19 cm ³ CZT (CdZnTe)
Sensitivity	Detects 10-μCi ¹³⁷ Cs at 1 m (~3 μR/hr) in < 22 s (in natural background) Localise point source of ¹³⁷ Cs producing ~3 μR/hr in < 90 s
Count Rate Limit	1 rem/hr (10 mSv/hr), front bare ¹³⁷ Cs equivalent
Startup Time	90 s at 23° C (73° F)
Isotope Library	Select from 3573 ENDF isotopes and user defined; unlimited
Communication	Ethernet
Warranty	2 years (includes annual recalibration and software updates)

High-Resolution Option (T410+)

Energy Resolution	Improved energy resolution of ≤0.8% FWHM at 662 keV (coincident interactions combined) and ≤0.65% FWHM at 662 keV (coincident interactions separated)
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Spectroscopy-Only Option (T400S)

Remove radiation-imaging and optical camera.
Also available as T400S+ with higher resolution.

Shielded Option (T410P)

Add shield material to all but forward side to reduce background.
Add 1.0 kg. Also available as T400SP, T400SP+, and T410P+

Specifications are subject to change without notice.
For the most up-to-date specifications, please visit www.h3dgamma.com

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