

### Features

- ✓ Highly efficient imaging spectrometer
- ✓ Fast, portable, and easy to use
- ✓ Rapidly identifies and locates weak gamma-ray sources
- ✓ Real-time spectroscopy, ID, and imaging
- ✓ 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
- ✓ Ready to use in under 60 s
- ✓ Unsurpassed efficiency with  $>77 \text{ cm}^3$  pixelated CZT
- ✓ Precision overlay of gamma-ray and optical images
- ✓ Images both point and distributed sources
- ✓ Integrated rangefinder
- ✓ Air/watertight for easy decontamination
- ✓ Wireless, Ethernet, or USB communication
- ✓ Cleanable for decontamination
- ✓ All non-volatile memory accessible and removable outside detector compartment
- ✓ Integrated tablet mount
- ✓ Options for gamma-ray imaging from 50 keV to 3 MeV
- ✓ Automatic report generation
- ✓ Annual recalibration and software updates included

The H1600 is H3D's highest efficiency, portable detector system. Detect, identify, and image even weak sources quickly and accurately with this user-friendly design.

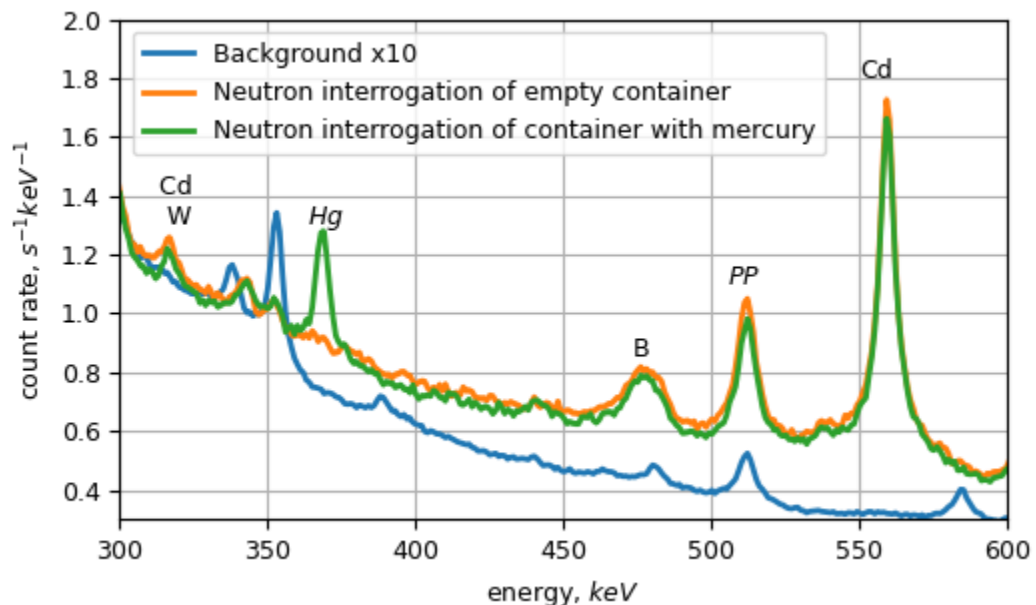
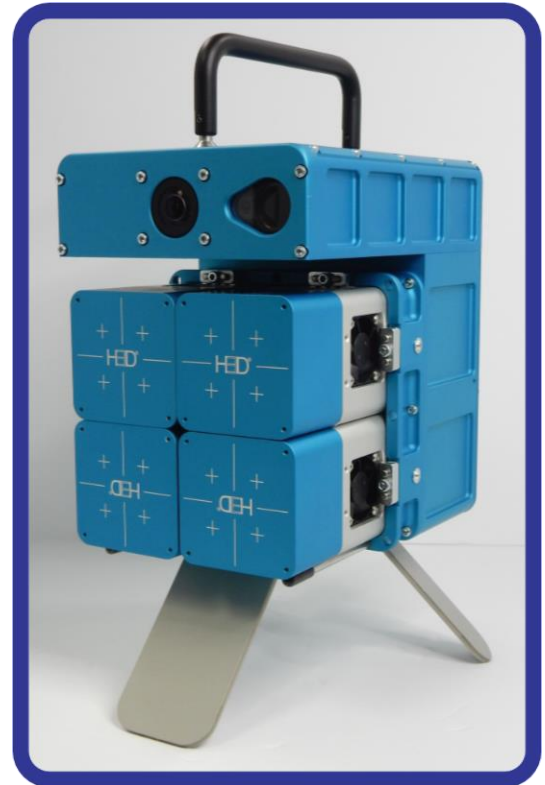
The H1600 is ideal for applications in:

- Decommissioning
- Active interrogation
- Characterization
- Monitoring

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

- Compact and light-weight size
- Fast startup
- Excellent energy resolution
- Low power

Contact H3D to use the H1600 for your application.



Any options can be combined, except as noted.

### Extra-High-Efficiency Option (H1600-15)

Increase crystal volume to  $>116 \text{ cm}^3$ . Also available as a higher-resolution H1600<sup>+</sup>-15 with no resolution guarantee.

### High-Resolution Option (H1600<sup>+</sup>)

Improve energy resolution to  $\leq 0.8\%$  FWHM at 662 keV (coincident interactions combined) and  $\leq 0.65\%$  FWHM at 662 keV (coincident interactions separated).

### Quantification Option (H1600Q)

Photopeak efficiency variation  $<1\%$  across temperature range.

### Low-Energy-Imaging Option (H1610)

Enable imaging from 50 keV to 250 keV by adding coded aperture.  
Field of View:  $86^\circ \times 86^\circ$   
Angular Resolution:  $\sim 5^\circ$  FWHM



# H1600 Expected Base Specifications

Dimensions:	5.0 in x 8.0 in x 7.0 in (12.7 cm x 20.3 cm x 17.8 cm)
Weight:	11.7 lbs (5.3 kg)
Ingress Protection:	IP67 (excluding external media)
Tripod Mount Add-on:	1/4"-20 and 3/8"-16
Battery Life:	$>6$ hours at $23^\circ \text{ C}$ ( $73^\circ \text{ F}$ )
Power Input:	100-240V, 47-63 Hz
System Cooling:	Cleanable heat sink and removable fans
Startup & Operating Temp.:	$-20^\circ \text{ C}$ to $50^\circ \text{ C}$ ( $-4^\circ \text{ F}$ to $122^\circ \text{ F}$ )
Startup Time:	$<60$ s at $23^\circ \text{ C}$ ( $73^\circ \text{ F}$ )
Energy Range:	50 keV to 3 MeV (spectroscopy) 250 keV to 3 MeV (Compton imaging)
Energy Resolution at $25^\circ \text{ C}$ ( $77^\circ \text{ F}$ ):	$\leq 1.1\%$ FWHM at 662 keV (coincident interactions combined) $\leq 0.9\%$ FWHM at 662 keV (coincident interactions separated)
Radiation Field of View:	$4\pi$ ( $360^\circ$ ) omnidirectional (Compton imaging)
Angular Precision:	$\pm 1^\circ$ source localization for all $4\pi$ (real time)
Angular Resolution:	$\sim 30^\circ$ FWHM for all $4\pi$ (real time; $>250$ keV) $\sim 20^\circ$ FWHM for all $4\pi$ (post processing; $>250$ keV)
Sensitivity:	Detects $10\text{-}\mu\text{Ci}$ $^{137}\text{Cs}$ at 1 m ( $\sim 3 \mu\text{R/hr}$ ) in $< 7$ s (in natural background)
Crystal Volume:	$>77 \text{ cm}^3$ CZT (CdZnTe)
Count-Rate Limit:	1 rem/hr (10 mSv/hr) bare- $^{137}\text{Cs}$ equivalent
Rangefinder:	Integrated Class 2 laser; 635 nm; $<1$ mW
Optical Field of View:	$>154^\circ$ horizontal, $>142^\circ$ vertical; full color Option for $100^\circ$ horizontal, $85^\circ$ vertical with better optical res.
Optical Registration:	$\pm 2^\circ$ to radiation image in front $90^\circ \times 90^\circ$
Isotope Library:	Select from 3573 ENDF isotopes & user defined; unlimited
Display:	8" 1280x800 HD tablet (mountable to back cover)
Tablet Communication:	Peer-to-peer WiFi or Bluetooth, or wired connection
Other Communication:	Ethernet RJ45 port; TCP/IP
Views:	Spectrum, gamma image, optical image, composite image
Data Storage:	Removable USB (64 GB) included
Warranty:	2 years (includes annual recalibration and software updates)
Includes:	Visualizer software for advanced post processing Power/accessory cables, stylus, and tablet Transport and storage case

