

Features

- ✓ Fast, portable, and easy to use imaging spectrometer
- ✓ Integrated rank-19 coded-aperture mask
- ✓ Automated mask/anti-mask capability for improved signal to noise and cleaner images
- ✓ Rapidly identifies and locates sources of interest
- ✓ Real-time spectroscopy, ID, and imaging
- ✓ Omnidirectional sensing 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
- ✓ Industry-leading imaging sensitivity using pixelated CZT technology
- ✓ Precision overlay of gamma-ray and optical images
- ✓ Images both point and distributed sources
- ✓ Ready to use in under 60 s
- ✓ Discrimination between background and sources of interest in less than 20 s
- ✓ Light weight and highly portable
- ✓ Integrated rangefinder
- ✓ Air/watertight for easy decontamination
- ✓ Dose-range gauge
- ✓ Automatic report generation
- ✓ Annual recalibration and software updates included

The H3D[®] H420 adds low-energy imaging to the H400. Localize x rays and low-energy gamma rays.

The H420 is optimized for identification and localization of all gamma-ray sources:

- Easy to use
- Highly portable
- Cost effective

Use the H420 for:

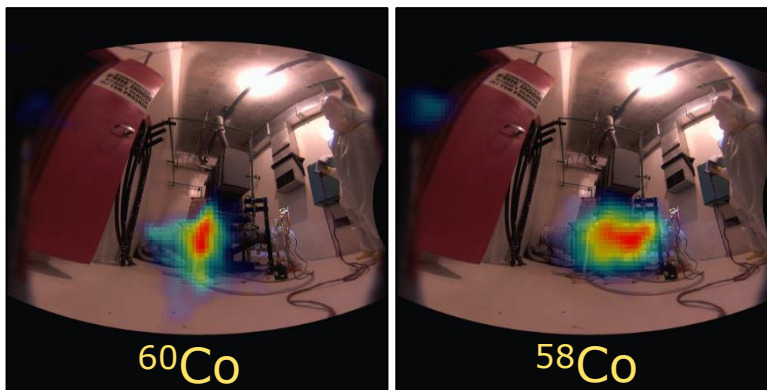
- CBRNE interdiction
- Source characterization
- Emergencies and incidents
- Decommissioning



Spectroscopic performance competitive with cryogenically cooled detectors and source localization... at under 9 lbs.



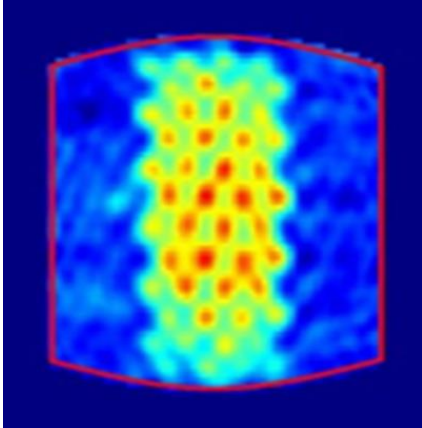
Images of ^{99m}Tc (140 keV) in a backpack and ¹³⁷Cs (662 keV) in a water tank using the H Series



10-minute isotope-specific images of an RHR pump room in a U.S. nuclear facility, using the H Series

High-Resolution Option (H420+)

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)

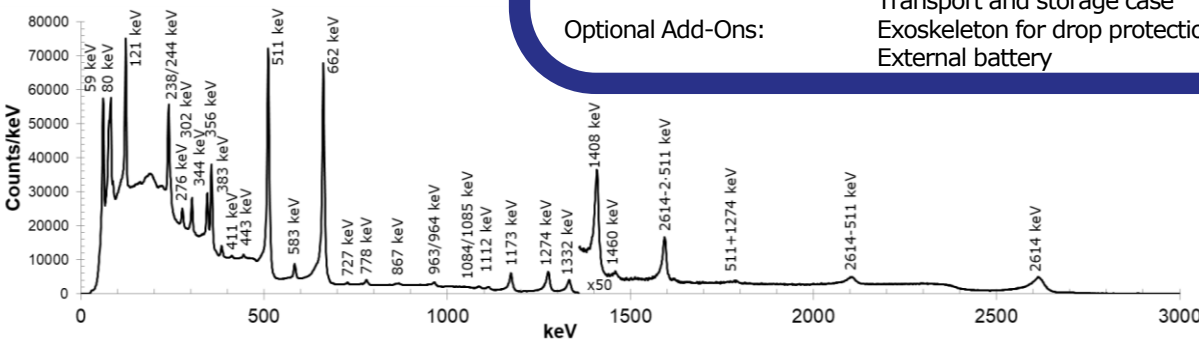


48 ^{57}Co (122 keV) point sources in an alternating grid



H420 Specifications

Dimensions:	9.6 in x 3.75 in x 6.9 in (24 cm x 9.5 cm x 18 cm)
Weight:	8.0 lbs (3.6 kg)
Battery Life:	>6 hours at 23° C (73° F) >2 hours at -20° C (-4° F) or 50° C (122° F)
Power Supply:	100-240 V, 47-63 Hz
Startup & Operating Temp.:	-20° C to 50° C (-4° F to 122° F) Coded-aperture imaging not available below -10° C (14° F)
Storage Temperature:	-20° C to 60° C (-4° F to 140° F)
Ingress Protection:	IP67 (excluding external media)
Tripod Mounts:	1/4"-20 with reinforced thread 3/8"-16 (with add-on exoskeleton only)
System Cooling:	Proprietary external heat sink and removable fan
User Service:	Removable fan cover; replaceable fan
Rangefinder:	Integrated Class 2 laser; 635 nm; <1 mW
Energy Resolution:	$\leq 1.1\%$ FWHM at 662 keV (coincident interactions combined) $\leq 0.9\%$ FWHM at 662 keV (coincident interactions separated)
Optical Field of View:	>154° horizontal, >142° vertical; full color Option for 100° horizontal, 85° vertical with better optical res.
Optical Registration:	$\pm 2^\circ$ to radiation image in front 90° x 90°
Radiation Field of View:	4 π (360°) omnidirectional (Compton imaging) 86° x 86° (coded-aperture imaging)
Angular Precision:	$\pm 1^\circ$ source localization for all 4 π (real time)
Angular Resolution:	$\sim 30^\circ$ FWHM for all 4 π (real time; >250 keV) $\sim 20^\circ$ FWHM for all 4 π (post processing; >250 keV) $\sim 5^\circ$ FWHM in coded-aperture field of view (<450 keV)
Sensitivity:	Detects ^{137}Cs producing $\sim 3 \mu\text{R/hr}$ in <16 s (spectroscopy) Localize point source of ^{137}Cs producing $\sim 3 \mu\text{R/hr}$ in <90 s Localize point source of ^{57}Co producing $\sim 1 \mu\text{R/hr}$ in <10 s
Energy Range:	50 keV to 3 MeV (spectroscopy) 50 keV to 1500 keV (coded-aperture imaging; optionally up to 3 MeV with lower efficiency) 250 keV to 3 MeV (Compton imaging)
Crystal Volume:	>19 cm ³ CZT (CdZnTe)
Count-Rate Limit:	1 rem/hr (10 mSv/hr) bare- ^{137}Cs equivalent
Alarms:	Audio & visual alarms based on dose rate or accumulated dose Silence independently & preemptively; adjustable threshold (Sv/h)
Isotope Library:	Select from 3573 ENDF isotopes & user defined; unlimited
Startup Time:	< 60 s at 23° C (73° F)
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 Tablet-mounting bracket Power/accessory cables, stylus, and tablet Transport and storage case
Optional Add-Ons:	Exoskeleton for drop protection External battery



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