H400

Gamma-Ray Imaging Spectrometer

Features

- ✓ Fast, portable, and easy to use imaging spectrometer
- ✓ Rapidly identifies and locates primary source terms
- ✓ Real-time spectroscopy, ID, and imaging
- ✓ Omnidirectional sensing and imaging
- ✓ Better than 1.1% FWHM energy resolution at 662 keV
- ✓ 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 only 2 minutes
- ✓ Discrimination between background and sources of interest in less than 20 seconds
- ✓ Light weight and highly portable
- ✓ Integrated range finder
- ✓ Air/water tight for easy decontamination
- ✓ Dose-range gauge
- ✓ Automatic report generation
- ✓ Annual recalibration and software updates included

The H3D® H400 is the high-efficiency sibling of the H100. Perform measurements in a third of the time.

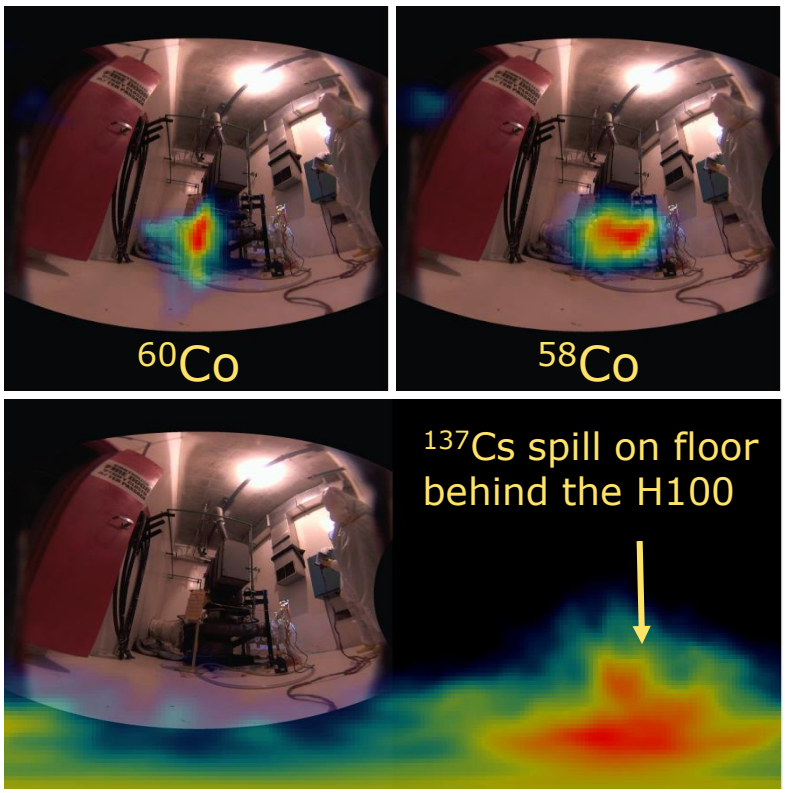
The H400 is optimized for identification and localization of gamma-ray sources at nuclear power plants:

- ❑ Easy to use
- ❑ Highly portable
- ❑ Cost effective

Use the H400 for:

- ❑ Routine monitoring and maintenance
- ❑ Decommissioning operations
- ❑ Emergencies, incidents, and outages

Spectroscopic performance competitive with cryogenically cooled detectors and omnidirectional isotope-specific imaging… at under 8 lbs.



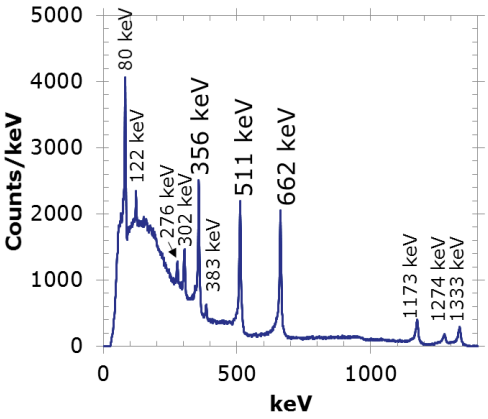
10-minute isotope-specific images of an RHR pump room in a U.S. nuclear facility, using the H100

"All of our technology that we have—that I've worked with for 30 years—doesn't touch what this shows us."

- RPM, U.S. Nuclear Power Plant, describing the H100

Low-Energy-Imaging Option (H420)

- Enable imaging to low energies using integrated coded aperture.
- Automated mask/anti-mask capability for improved signal to noise and cleaner images.
- Recommended Energy Range: 50 keV to 450 keV (optionally up to 3 MeV with lower efficiency)
- Radiation Field of View: 86° × 86°
- Angular Resolution: ~5° FWHM
- Additional weight: 0.8 lbs (0.3 kg)



H400 Specifications

Dimensions:	9.6 in x 3.5 in x 7.25 in (24 cm x 9 cm x 18 cm)
…with Add-On Exoskeleton:	14.8 in x 4.7 in x 8.3 in (37.5 cm x 12 cm x 21 cm)
Weight:	7.8 lbs (3.5 kg)
	11.0 lbs (5.0 kg) with add-on exoskeleton
Battery Life:	>6 hours at 23° C (73° F)
	>3 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)
Storage Temperature:	-20° C to 60° C (-4° F to 140° F)
Ingress Protection:	IP65 (IP67 with fan replacement)
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 and fuse
Range Finder:	Integrated Class 2 laser; 635 nm; <1 mW
Energy Resolution:	≤1.1% FWHM at 662 keV
Optical Field of View:	>162° horizontal, >122° vertical
Optical Registration:	±2° to radiation image
Radiation Field of View:	4π (360°) omnidirectional
Angular Precision:	±1° source localization for all 4π (real time)
Angular Resolution:	~30° FWHM for all 4π (real time)
	~20° FWHM for all 4π (post processing)
Sensitivity:	Detects ^{137}Cs producing ~3 µR/hr in <16 s (spectroscopy)
	Localize point source of ^{137}Cs producing ~3 µR/hr in <90 s
Energy Range:	50 keV to 3 MeV (spectroscopy)
	250 keV to 3 MeV (imaging)
Crystal Volume:	>19 cm^3 CZT (CdZnTe)
Count-Rate Limit:	0.5 rem/hr (5 mSv/hr) bare-^{137}Cs equivalent
Isotope Library:	Select from 3573 ENDF isotopes & user defined; unlimited
Startup Time:	2 min at 23° C (73° F)
Display:	7” 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 (16 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-On:	Exoskeleton for drop protection

90-s measurements; Shield Verification; Using the H100

H3D®, Inc. • 812 Avis Drive • Ann Arbor, MI 48108 • USA
Tel +1 734-661-6416 • sales@h3dgamma.com • www.h3dgamma.com