Product Datatsheet

H400

Gamma-Ray Imaging Spectrometer

The H3D® H400 is the high efficiency sibling of the H100.

Perform measurements in a third of the time.

The H400 is optimised for identification and localisation 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 4 kg.

High-Resolution Option (H400+)

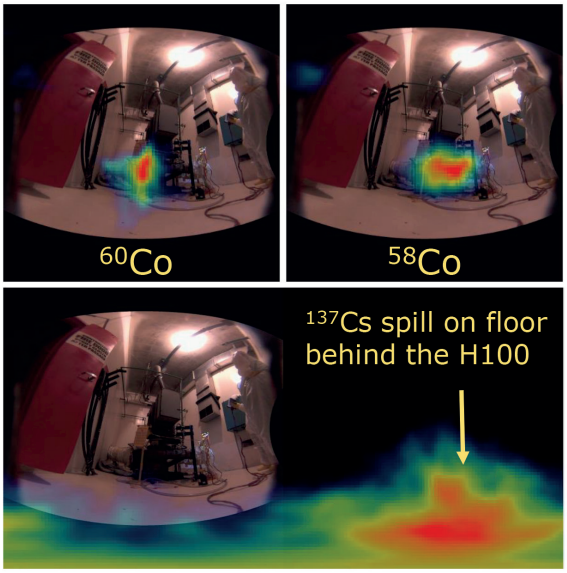
Improved energy resolution of ≤0.8% FWHM at 662 keV (coincident interactions combined)

Low-Energy Imaging Option (H420)

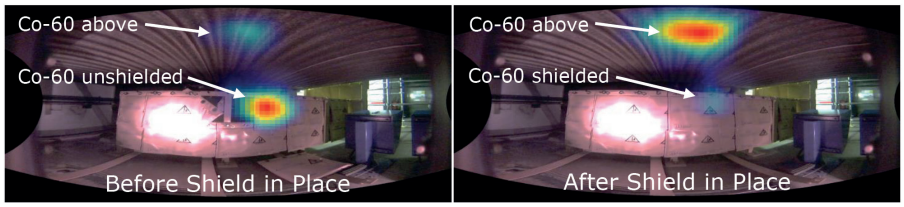
Enable imaging to low energies using integrated coded aperture. See H420 Specifications Sheet for more information.

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.
- Option for 0.8% 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 under 90 seconds.
- 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.



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



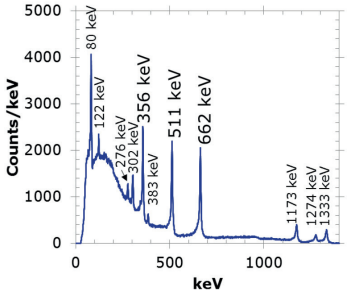
90-s measurements; Shield Verification; Using the H100

Specifications

Dimensions	24 cm x 9.5 cm x 18 cm With add on exoskeleton: 37.5 cm x 12 cm x 21 cm
Weight	3.5 kg With add on exoskeleton: 5.0 kg
Battery Life	>7 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
Start up and Operating Temperature	0° 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 (coincident interactions combined)
Optical Field of View	>162° horizontal, >122° vertical; full color Option for 100° horizontal, 85° vertical with better optical res.
Optical Registration	±2° to radiation image in front 90° × 90°
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) ~20° FWHM for all 4π (post processing)
Sensitivity	Detects ^{137}Cs producing ~3 µR/hr in <16 s (spectroscopy) Localise 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
Alarms	Audio and visual alarms based on dose rate or accumulated dose Silence independently and preemptively; adjustable threshold (Sv/h)
Isotope Library	Select from 3573 ENDF isotopes and user defined; unlimited
Start Up Time	< 90 s at 23° C (73° F)
Display	7" 1280 x 800 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	Visualiser 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 4π (360°) omnidirectional camera

Specifications are subject to change without notice. For the most up-to-date specifications, please visit www.hd3gamma.com



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