

H100

Gamma-Ray Imaging Spectrometer

The H3D[®] H100 is a complete solution for the identification, quantification, and localisation of gamma ray sources at nuclear power plants:

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

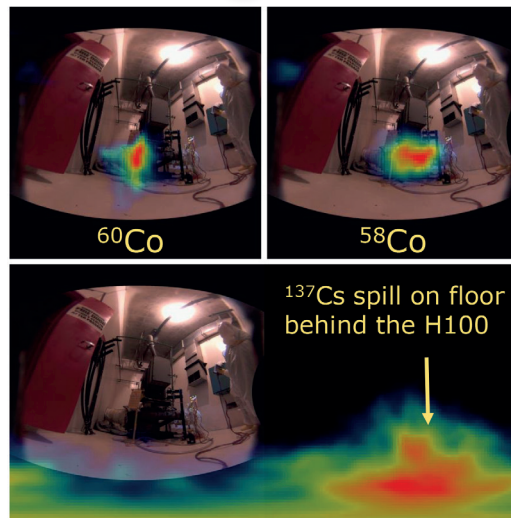
25 years of development and 10+ years of application specific engineering to the exacting standards of nuclear power plant operators to support:

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

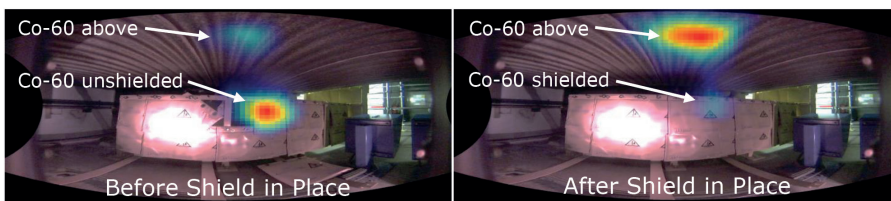
Spectroscopic performance competitive with cryogenically cooled detectors and omnidirectional isotope-specific imaging at under 3.5 kg.

Features

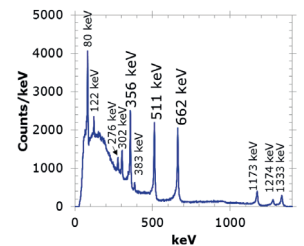
- Fast, portable, and easy to use imaging spectrometer.
- Rapidly identifies and locates sources of interest.
- Real-time spectroscopy, ID, and imaging.
- Omnidirectional sensing and imaging.
- Better than 1.1% FWHM energy resolution at 662 keV.
- Energy range covers isotopes of interest up to 3 MeV.
- Industry-leading imaging sensitivity using pixelated CZT technology.
- Precision overlay of gammaray and optical images.
- Images both point and distributed sources.
- Ready to use in under 90 s.
- Discrimination between background and sources of interest in less than 1 minute.
- 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



90-s measurements; Shield Verification



Specifications

| | | | |
|---|---|-----------------------------|--|
| Dimensions | 24 cm x 9 cm x 18 cm With add on exoskeleton: 37.5 cm x 12 cm x 21 cm | Energy Range | 50 keV to 3 MeV (spectroscopy) 250 keV to 3 MeV (imaging) |
| Weight | 3.3 kg With add on exoskeleton: 4.8 kg | Crystal Volume | 6 cm ³ CZT (CdZnTe) |
| Battery Life | >7 hours at 23° C (73° F) >3 hours at -20° C (-4° F) or 50° C (122° F) | Count Rate Limit | 0.5 rem/hr (5 mSv/hr) bare ¹³⁷ Cs equivalent |
| Power Supply | 100-240 V, 47-63 Hz | Alarms | Audio and visual alarms based on dose rate or accumulated dose Silence independently and preemptively; adjustable threshold (Sv/h) |
| Start up and Operating Temperature | -20° C to 50° C (-4° F to 122° F) | Isotope Library | Select from 3573 ENDF isotopes and user defined; unlimited |
| Storage Temperature | -20° C to 60° C (-4° F to 140° F) | Start Up Time | < 90 s at 23° C (73° F) |
| Ingress Protection | IP65 (IP67 with fan replacement) | Display | 7" 1280 x 800 HD tablet (mountable to back cover) |
| Tripod Mounts | 1/4"-20 with reinforced thread 3/8"-16 (with add-on exoskeleton only) | Tablet Communication | Peer-to-peer Wifi or Bluetooth, or wired connection |
| System Cooling | Proprietary external heat sink and removable fan | Other Communication | Ethernet RJ45 port; TCP/IP |
| User Service | Removable fan cover; replaceable fan and fuse | Views | Spectrum, gamma image, optical image, composite image |
| Range Finder | Integrated Class 2 laser; 635 nm; <1 mW | Data Storage | Removable USB (16 GB) included |
| Energy Resolution | ≤1.1% FWHM at 662 keV (coincident interactions combined) | Warranty | 2 years (includes annual recalibration and software updates) |
| Optical Field of View | >162° horizontal, >122° vertical; full color Option for 100° horizontal, 85° vertical with better optical res. | Includes | Visualiser software for advanced post processing Tablet-mounting bracket Power/accessory cables, stylus, and tablet Transport and storage case |
| Optical Registration | ±2° to radiation image in front 90° x 90° | Optional Add-Ons | Exoskeleton for drop protection External battery 4π (360°) omnidirectional camera |
| Radiation Field of View | 4π (360°) omnidirectional | | |
| 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 <1 m (spectroscopy) Localise point source of ¹³⁷ Cs producing ~3 µR/hr in <95 m | | |

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



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