Product Datasheet

P100

Directional Imaging Spectrometer

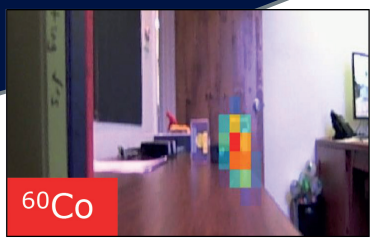
The H3D® P100 is the solution for the identification and quantification of gamma ray sources in the presence of strong gamma ray sources:

- **Easy to use.**
- **Portable.**
- **Cost effective.**

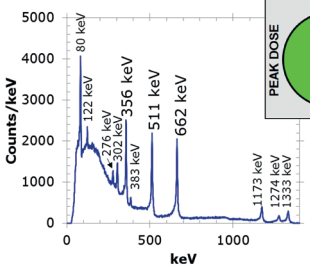
20 years of development and 5+ years of application specific engineering to the exacting standards of nuclear power plant operators to support:

- **Isotopic characterisation.**
- **Quantitative analysis of radiation in pipes and ducts.**
- **Emergencies, incidents, and outages.**

Spectroscopic performance competitive with cryogenically cooled detectors and directional isotope specific gamma ray imaging using a tungsten collimator.

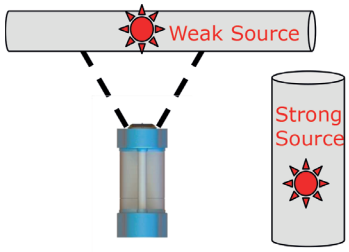


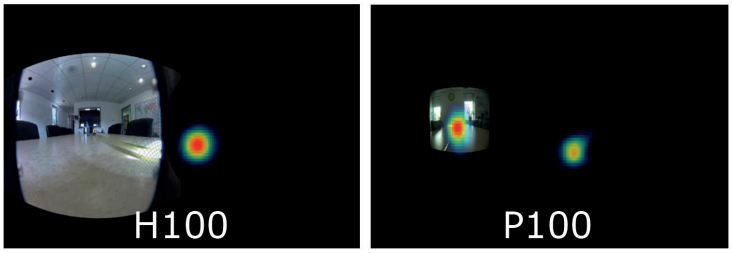
H3D®



Features

- Real time spectroscopy, ID, and imaging.
- Isotopic quantification of gamma ray sources.
- Sensing and imaging over collimated directions, using an embedded tungsten collimator.
- Better than 1.1% FWHM energy resolution at 662 keV and interaction-by-interaction resolution of ≤0.9% FWHM.
- No cryogenic cooling required.
- Omnidirectional sensing and imaging.
- Energy range covers isotopes of interest up to 3 MeV.
- Rangefinder for detector to source distance estimation.
- Wireless or wired tablet operation.
- Ready to use in less than 60 seconds.
- Air/water tight for easy decontamination.
- Images both point and distributed sources.
- Easily exchangeable tungsten plug.
- Operates at high dose rates.
- Tripod mount.
- Annual recalibration and software updates included.





When imaging a weak source in the presence of a strong source, the H100 sees ony the strong source, but the P100 can see the weak source because of the P100's collimator.

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EXPERIENCE & EXPERTISE

Specifications

Dimensions	22.6 cm x 12.4 cm x 16 cm
Weight	11.3 kg
Collimator Thickness	2.54 cm with removable plug
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	-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 with fan replacement
Tripod Mounts	1/4"-20
System Cooling	Proprietary external heat sink and removable fan
Range Finder	Integrated Class 2 laser; 635 nm; <1 mW
Energy Resolution	≤1.1% FWHM at 662 keV (coincident interactions combined) ≤0.9% FWHM at 662 keV (coincident interactions separated)
Optical Field of View	90° horizontal, 90° vertical; full colour
Optical Registration	±2° to radiation image
Radiation Field of View	4π; collimated to 90°
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 min (spectroscopy) Localise point source of ^{137}Cs producing ~3 µR/hr in <5 min
Energy Range	50 keV to 3 MeV (spectroscopy) 250 keV to 3 MeV (imaging)
Crystal Volume	>6 cm^3 CZT (CdZnTe)
Count Rate Limit	1 rem/hr (10 mSv/hr) front bare ^{137}Cs equivalent, without plug 20 rem/hr (200 mSv/hr) front bare ^{137}Cs equivalent, with plug
Isotope Library	Select from 3573 ENDF isotopes and user defined; unlimited
Start Up Time	60 seconds at 23° C (73° F)
User Interface	8" 1280 x 800 HD tablet
Tablet Communication	Peer-to-peer Wifi or Bluetooth, or wired connection
Other Communication	Ethernet RJ45 port; TCP/IP
Data Storage	Removable USB (64 GB) flash drive
Warranty	2 years (includes annual recalibration and software updates)
Includes	Visualiser software with SourceTerm for advanced post processing Power/accessory cables, stylus, tablet, tripod, and collimator Transport and storage case

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

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