P100S

Collimated Spectrometer

Features

- ✓ Practical high-performance gamma-ray spectrometer
- ✓ Rapidly identifies and quantifies isotopes of interest in one direction over time
- ✓ Embedded tungsten collimator of 1 inch (2.54 cm) thick
- ✓ Option for ≤0.8% FWHM energy resolution at 662 keV and interaction-by-interaction resolution of ≤0.65% FWHM
- ✓ Industry-leading efficiency with >4500 mm^3 pixelated CZT
- ✓ Compact and portable
- ✓ Easily exchangeable tungsten plug
- ✓ Compatible with H3D RMS dashboard trends software
- ✓ Embedded battery
- ✓ No cryogenic cooling required
- ✓ Viewable over Ethernet, Wifi, or other wireless network
- ✓ Wireless or wired tablet operation
- ✓ Stores >6 months of data
- ✓ Start up in less than 60 s
- ✓ Energy range covers isotopes of interest up to 3 MeV
- ✓ Rangefinder for detector-to-source distance estimation
- ✓ Air/water tight for easy decontamination
- ✓ Operates in high dose rates
- ✓ Tripod and other mount points
- ✓ Storage case included
- ✓ Software upgrades included
- ✓ Annual recalibration and software updates included

The H3D® P100S is a shielded version of the S100. It identifies, quantifies, and tracks isotopic trends in an object of interest, even in the presence of stronger gamma-ray sources.

With real-time networked interface and mounting brackets, use it for short- or long-term monitoring of an object of interest.

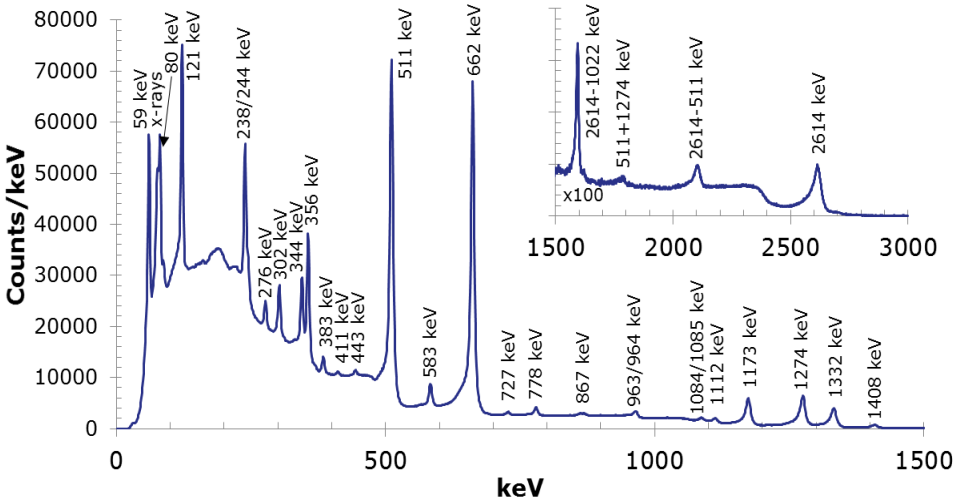
With portable design, removable tungsten plug, and embedded battery and computer, use it for precise quantification measurements even in challenging field environments.

Perfect for:

- ❑ Isotopic characterization and quantification of pipes, valves, and ducts
- ❑ Isotopic trend analysis
- ❑ Outage monitoring
- ❑ Compatibility with SourceTerm software for advanced quantification of user-defined geometries

"H3D's S100 reduced outage costs. Key radionuclide concentrations in the Reactor Coolant System can now be monitored in real time, affecting radiation exposure throughout the outage. This will change how forced oxidation is monitored throughout the industry and provide more data for source-term reduction."

- Brad Boyer, Radiation Protection Manager, Prairie Island Nuclear Generating Station



P100S Specifications

Dimensions:	8.9 in x 4.9 in x 6.3 in (22.6 cm x 12.4 cm x 16 cm)
Weight:	25 lbs (11.3 kg)
Collimator Thickness:	1 in (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
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 with fan replacement
Mounting:	1/4"-20 tripod; other mount points
System Cooling:	Proprietary external heat sink and removable fan
User Service:	Removable fan cover; replaceable fan and fuse
Rangefinder:	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)
Field of View:	90° collimated
Sensitivity:	Detects ^{137}Cs producing ~3 µR/hr in <1 min
Energy Range:	50 keV to 3 MeV
Crystal Volume:	>4.5 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 & user defined; unlimited
Startup Time:	<60 s at 23° C (73° F)
Display:	8" 1280x800 HD tablet or internet browser
Tablet Communication:	Peer-to-peer Wifi or Bluetooth, or wired connection
Other Communication:	Ethernet RJ45 port and TCP/IP; other RF
Views:	Spectrum, isotope trends
Data Storage:	Removable USB (64 GB) included
Warranty:	2 years (includes annual recalibration and software updates)
Includes:	Power/accessory cables, stylus, tripod, and tablet Transport and storage case

High-Resolution Option (P100S$^+$)

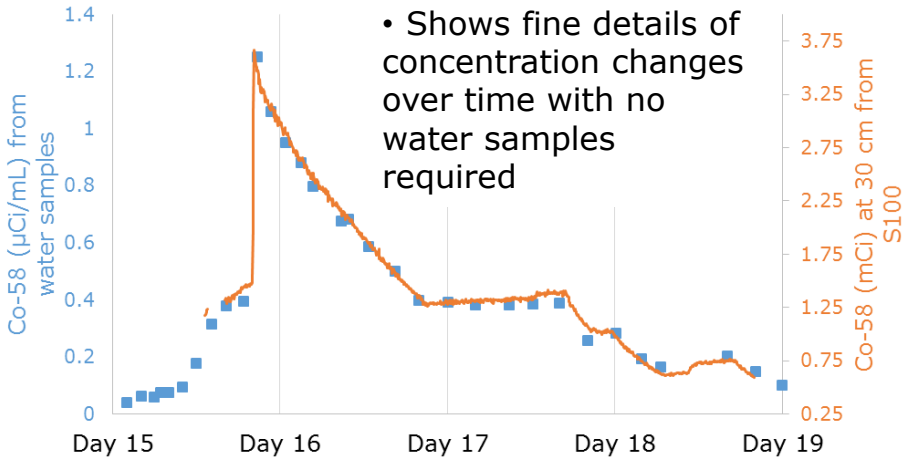
Improve energy resolution to ≤0.8% FWHM at 662 keV (coincident interactions combined) and ≤0.65% FWHM at 662 keV (coincident interactions separated)

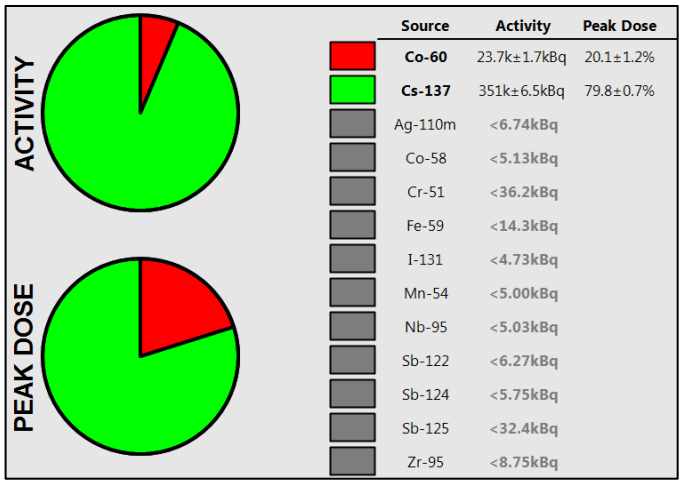
High-Efficiency Option (P100S-15)

Increase crystal volume to >6 cm^3. Also available as a higher-resolution P100S$^+$-15 with no resolution guarantee.

S100 spectrometer measurement at RHR return in U.S. nuclear facility

- Real-time quantification consistent with HPGe lab samples
- Shows fine details of concentration changes over time with no water samples required





Automated identification and quantification

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