

S100

Permanent-Mount Spectrometer

Track real time isotopic trends in industrial environments with the H3D® S100. The S100 is perfectly designed for short or long term monitoring.

- Compact.
- Easy communication.
- Cost effective.

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

- Isotopic characterisation of pipes and valves.
- Isotopic trend analysis.
- Outage monitoring.

Spectroscopic performance competitive with cryogenically cooled detectors at under 3 kg.

Features

- Rapidly identifies and quantifies isotopes of interest over time.
- Practical high performance gamma ray spectrometer
- Option for $\leq 0.8\%$ FWHM energy resolution at 662 keV
- Compact and light weight.
- Compatible with H3D dashboard trends software.
- No cryogenic cooling required.
- Wireless connectivity.
- Pull data using wireless tablet or Ethernet network.
- Stores >6 months of data.
- Start up in under 90 s.
- Industry leading efficiency with up to $>19 \text{ cm}^3$ pixelated CZT
- Energy range covers isotopes of interest up to 3 MeV.
- Air/water tight for easy decontamination.
- Operates in high dose rates.
- Dose range gauge.
- Backup power battery.
- Software upgrades included.
- Annual recalibration and software updates included.



High-Efficiency Option (S400)

Add additional CZT volume

Weight: 2.5 kg

Sensitivity: Detects ^{137}Cs producing $\sim 3 \mu\text{R/hr}$ in < 15 seconds.

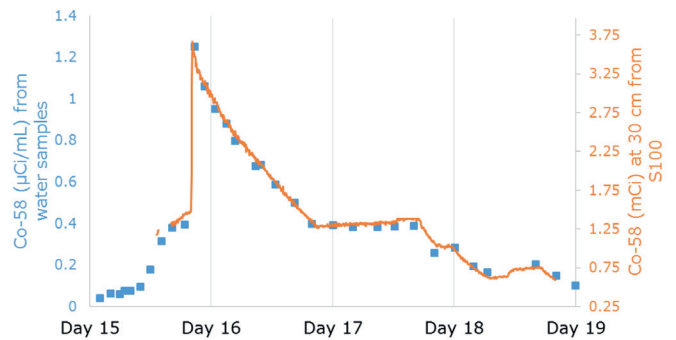
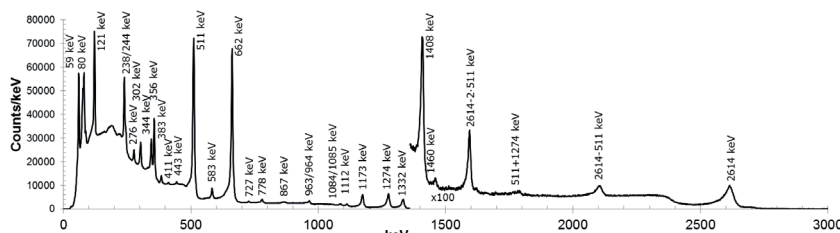
Crystal Volume: $> 19 \text{ cm}^3$ CZT.

High-Resolution Option (S100+, S400+)

Improved energy resolution of $\leq 0.8\%$ FWHM at 662 keV (coincident interactions combined)

High-Dynamic-Range Option (S100x, S400x)

Extend energy range to 9 MeV



Measurement at RHR return in US nuclear facility

Real-time S100 quantification consistent with HPGe lab samples. Shows fine details of concentration changes over time operating remotely with no water samples required.

Specifications

Dimensions	21 cm x 9 cm x 15 cm
Weight	2.4 kg
Battery Life	>2 hours at 23° C (73° F) >1 hour 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 (IP67 with fan replacement)
Mount	Mount holes with custom mounting brackets available
System Cooling	Proprietary external heat sink and removable fan
User Service	Removable fan cover; replaceable fan and fuse
Energy Resolution	≤1.1% FWHM at 662 keV (coincident interactions combined)
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	0.5 rem/hr (5 mSv/hr) front bare ¹³⁷ Cs equivalent
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 or internet browser
Tablet Communication	Peer-to-peer Wifi or Bluetooth, or wired connection
Other Communication	Ethernet RJ45 port; TCP/IP
Views	Spectrum, isotope trends
Data Storage	Removable USB (16 GB) included
Warranty	2 years (includes annual recalibration and software updates)
Includes	Visualiser softwareP for advanced post processing Power/accessory cables, stylus, and tablet Pelican™ Case
Optional Add-On	Long-range RF communication antenna

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



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