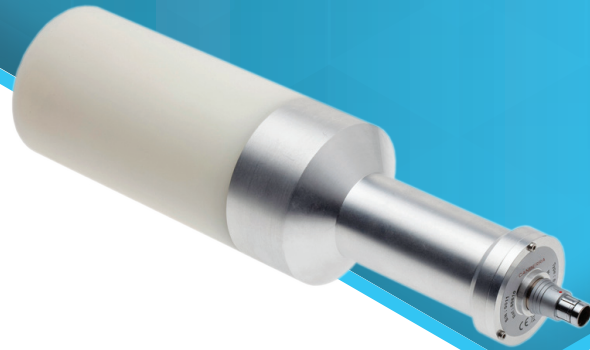




PORTABLE RADIATION MEASUREMENT

SN-S™

Neutron Search Probe



CSP Family

FEATURES

- Meets the ANSI N42.34 and IAEA Border Radiation Monitoring Equipment Specification for RID
- Extremely low impact of vibrations on measurement
- Belongs to CSP™ family: compatible with all CSP meters
- Lightweight package
- Uses time-tested moderated ^3He tube
- Meets safety transportation requirements and regulations (pressure less than 2 atm)
- Up to 45 h operating time
- Easy handling of the unit
- CE compliant

DESCRIPTION

The SN-S device is a neutron probe designed for neutron check and neutron surveys.

Because it is lightweight, SN-S units can be used prior to any neutron dose measurement, thus, preventing the systematic use of a heavy neutron dose instrument.

The SN-S probe is compatible with all CSP family instruments, including the CSP-COM™ module. Therefore, the SN-S probe can also be used as a remote sensor for neutrons, in combination with a CSP-COM module. A wall mount system is provided with the probe to ease this application.

The SN-S probes exceed ANSI N42.34 neutron detection specifications. Effectively, the user can be warned within two seconds of being exposed to an un-moderated ^{252}Cf source emitting about 20 000 n/s, at a distance of 25 cm. The false alarm rate in the presence of a strong gamma source must be no more than once per hour.

The SN-S instrument is part of the Canberra™ SMART Probe (CSP) family. It includes all key components of hardware circuitry (high voltage power supply, amplifier, discriminator, etc.) Also, the intelligence associated with controlling those components is located in the probe – that is control and storage of key parameters, settings, calibrations, probe ID, alarm settings (10 values for each unit to display with default setting), etc. Thus the probe is a fully integrated subsystem taking and transmitting the measurement to the instrument, which is used for display.

With high voltage and digitization of the data occurring in the probe rather than the instrument, measurement quality is no longer dependent on external device quality (cable, host instrument). Moreover, a CSP probe is using a serial protocol to communicate with the host that can be an instrument or a PC.

Calibration and QA measurements can be performed directly with the probe, without even using an instrument, by connecting the probe to a computer with Canberra Smart Probe Software (CSPS™), allowing your instruments to remain deployed in the field.

Once calibrated, the SN-S unit is ready to be used as a 'plug and play' probe to start a QA measurement in c/s.

SN-S | NEUTRON SEARCH PROBE

SN-S probe is able to store up to 1000 data points from a data-logging procedure handled via the host instrument. These data are: Index, date/time, measurement value, selected unit and counting time.

The SN-S unit can be upgraded (probe's firmware) via CSPA software, with the USB – PC cable and a PC.



SPECIFICATIONS

Nuclear

- Display Units: CPS
- Display Range: 0.0 cps to 20 Kcps
- Emitters: Neutron
- Detector: PEHD Moderated ^3He detector
- MDA: ^{252}Cf neutron source of 20 000 n/s at 25 cm is detected in 2 s 950 times out of 1000, with 0.03 cps background
- Measurement Range: 0 cps to 20 Kcps
- Energy Range: 0.025 eV to 4 MeV
- Sensitivity:
 - 1.6 cps per $\mu\text{Sv/h}$ (^{252}Cf). i.e. 2.1 c/s per $\text{n.cm}^{-2}.\text{s}^{-1}$ (^{252}Cf at one meter distance from the source)
 - 2.3 cps per $\mu\text{Sv/h}$ (^{252}Cf). i.e. 2.7 cps per $\text{n.cm}^{-2}.\text{s}^{-1}$ (^{252}Cf at two meters distance from the source)

Background

- Ambient: 0.03 cps
- Gamma Sensitivity: (^{137}Cs): less than 0.5 c/s for a dose rate <100 mSv/h
- Dead Time: 5 μs

Ergonomic

- Display: Provided by survey meter or PC
- Alarm Setpoints: 10 values for each unit to display. Saved in probe memory. They can be changed with CSPA software and a PC

Electrical

- Power: Supplied by survey meter (low voltage only)
- Battery Life: Up to 45h00 with Radiagem™ meter
- Consumption: about 16.6 mA - depends on count rate
- Microphones: Not sensitive to impacts up to 0.2 J

Mechanical

- Probe Housing: Aluminium and PEHD
- Length: 340 mm (13.54 in.)
- Diameter: 85 mm (0.98 in.)
- Weight: 1.33 kg (2.93 lb)

Environment

- Operating Temperature: -10 °C to +50 °C (+14 °F to +122 °F)
- Storage Temperature: -25 °C to +50 °C (-13 °F to 122 °F)
- Relative Humidity: 40% to 95% at +35 °C (95 °F)
- Cleaning: Housing easy to decontaminate
- INGRESS Protection: IP67; waterproof 1 m underwater if not connected to survey meter

Norm

- CEM: Conform
- CE: Meets CE requirements
- Complies with ANSI 42.34 and AIEA recommendations for border monitoring equipment Handheld RIDs

ORDERING INFORMATION

- SN-S Unit: NOM006363 (EM85810)
- CSP Handle (Radiagem unit): NOM006389 (EM87990)
- CSP Handle (Colibri® unit): NOM006385 (EM87501)
- Radiagem 2000 Meter: NOM006279 (EM76687)
- Colibri TTC Meter: NOM006494 (EM96846)
- CSP-PC Cable: NOM006288 (EM78466)

CSPA (Calibration Software):

- CSPA-E (English SI units): NOM006299 (EM80643)
- CSPA-R (English US units): NOM006298 (EM80642)
- CSPA-F (French SI units): NOM006289 (EM78468)

