MIRION TECHNOLOGIES

CSP Family

SG-1R Gamma Probe

Features

- Gamma sensitive measurement
- 1” x 1” NaI(Tl)
- Belongs to CSP family
- Calibration via PC
- Dynamic energy discriminator button

Description

The SG-1R probe for gamma measurement is designed to be used with any CSP survey meter. Its good sensitivity makes it ideal to detect gamma emitters starting from background level.

SG-1R is part of CANBERRA’s 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 talking 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 is using a serial protocol to communicate with the host which can be an instrument or a PC.

Calibration and QA measurements can be performed directly with the probe, without even using any 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, SG-1R is ready to be used as a plug and play probe to start a QA measurement in CPS, R, R/h with US units survey meter; or c/s, Sv_{eq}, Sv_{eq}/h with IS units survey meter. SG-1R connects to CSP survey meter via a 1.5 or 20 meter CSP cable.

A push-button located on the probe housing triggers a high energy threshold. When depressed and held, an LED is activated and the probe measures only gamma above the preset threshold. It is a powerful feature to detect the presence of a specific isotope like ^{60}Co. Energy threshold is set with CSPS and a PC.

SG-1R 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.

SG-1R can be upgraded (probe’s firmware) via CSPS, a USB cable and a PC.

SG-1R Gamma Probe

Specifications

NUCLEAR

- UNIT TO DISPLAY – Depending on survey meter (c/s, Sv_{eq}, Sv_{eq}/h or CPS, R, R/h).
- EMITTERS – Gamma and X.
- DETECTOR – NaI(Tl) scintillator 1" x 1".
- MEASUREMENT RANGE – 0 to 200 µSv/h (0 to 20 mR/h); 0 to 55 kc/s (0 to 3300 kcpm).
- ENERGY RANGE – 40 keV to 1.5 MeV.
- GAMMA SENSITIVITY FOR ^{137}Cs – 291 c/s per µGy/h (174.6 kcpm per mR/h).
- DEAD TIME – 50 µs.
- BACKGROUND – Ambient ≤100 nSv/h (10 µR/h): 25 c/s – 1500 CPM.

ERGONOMIC

- DISPLAY – Provided by survey meter.
- ALARM SETPOINTS – 10 values for each unit to display. Saved in probe memory. They can be edited with CSPS and PC.

  Default alarm threshold is chosen in a list by use of survey meter keypad.

ELECTRICAL

- POWER – Supplied by survey meter or PC (low voltage only); +5 V.
- BATTERY LIFE – Does not reduce survey meter's battery life.
- CONSUMPTION – 15 mA maximum.

MECHANICAL

- HOUSING – Painted Aluminum.
- DIMENSIONS – Length (with connector) x diameter: 233 x 55 mm maximum (9.2 x 2.2 in.).
- WEIGHT – 520 g (18 oz) without cable.

ENVIRONMENT

- TEMPERATURE – -10 °C to +50 °C (+14 to +122 °F).
- RELATIVE HUMIDITY – 40% to 85% at 35 °C.
- CLEANING – Housing easy to decontaminate.

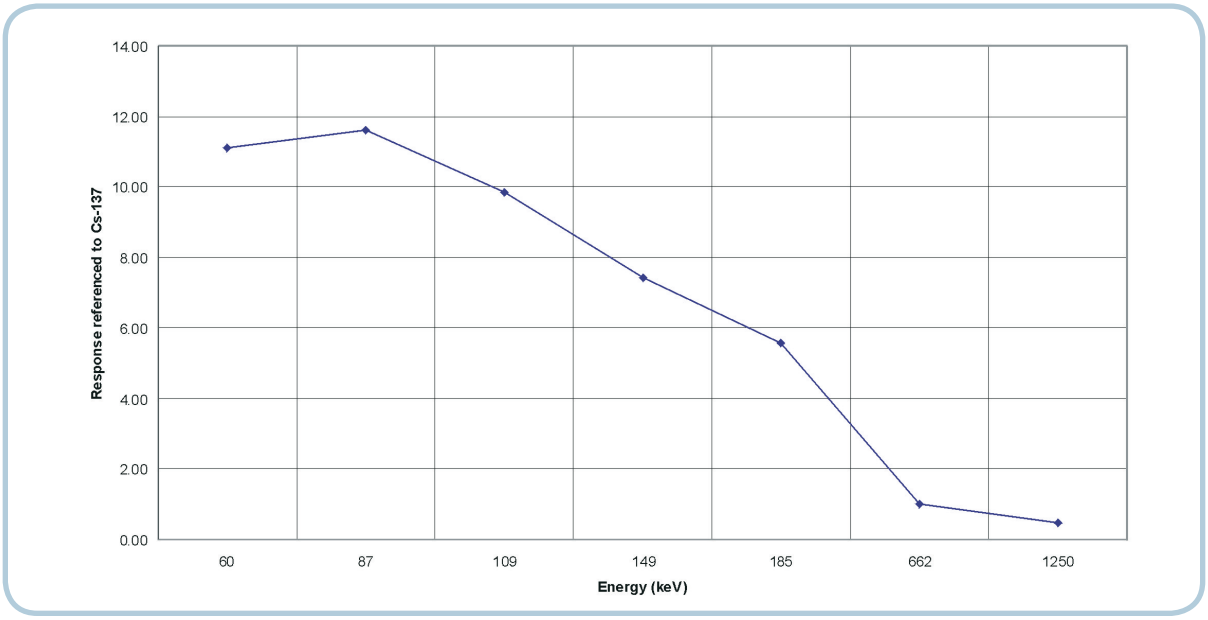
NORM

- CEM – Conform.
- CE – Meets CE requirements.

ORDERING REFERENCES

- SG-1R – EM75860.
- CSP Cable (1.5 m length) – EM77336.
- CSP Cable (20 m length) – EM80653.
- Carrying Case for Radiagem Emergency Response Kit – EM76287.
- CSP-PC USB Cable – EM78466.
- Calibration/Setup Software (CSPS) – CSPS-F: EM78468, CSPS-R: EM80642, CSPS-E: EM80643.

ISO 9001 SYSTEM CERTIFIED



Response of SG-1R Probes versus the Energy.

CANBERRA

C36940 – 01/09