



# STHF-R Ultra High Flux Gamma Probe

## Features

- Measurement of H\*(10) ambient gamma dose equivalent rate up to 1000 Sv/h (100 000 R/h)
- To be connected to Radiagem™, MIP 10 *Digital* or Avior®
- Waterproof: 80 m (262.5 ft) water depth
- Detector: Silicon diode
- 5 kSv maximum integrated dose
- Compact portable design for detector and detector cable on reel

## Description

The STHF-R ultra high flux probe is designed for the measurements of very high gamma dose-equivalent rates up to 1000 Sv/h.

This probe is especially designed for ultra high flux measurement which can be found in pools in nuclear power plants or in recycling facilities. Effectively this probes box is stainless steel based and waterproof up to 80 m (164 ft) underwater. It can be laid underwater in the storage pools Borated water.

An optional ballast weight can be supplied to ease underwater measurements.

The STHF-R probe is composed of two matched units:

- The measurement probe including the silicon diode and the associated analog electronics.
- An interface case which houses the processing electronics that are more sensitive to radiation; this module can be remotely located up to 50 m (164 ft) from the measurement spot.
- An intermediate connection point with 50 m length cable to which the interface case can be connected.

STHF-R can be connected directly to Avior, Radiagem or MIP 10 *Digital*. The STHF-R receives power from the survey meter during operation.

STHF-R includes 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, settings, calibrations, and probe ID. Thus the probe is a fully integrated system talking and transmitting the measurement data to the instrument.

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).



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## Specifications

### NUCLEAR

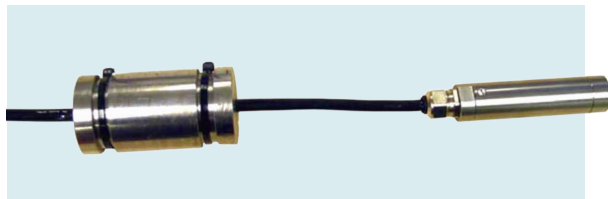
- NUCLEAR UNITS TO DISPLAY – Sv/h and/or Sv depending on your survey meter H\*(10) Equivalent gamma dose rate according to CIPR 60.
- EMITTERS – Gamma.
- DETECTOR – Energy compensated silicon diode.
- ENERGY RANGE – Gamma 50 keV – 2 MeV ( $\pm 30\%$ ).
- SENSITIVITY – 0.017 c/S per  $\mu\text{Sv/h}$  i.e. 60 c/ $\mu\text{Sv}$  ( $^{137}\text{Cs}$ ).
- MEASUREMENT RANGE – 1 mSv/h to 1000 Sv/h (100 mR/h to 100 000 R/h).
- REPOSE TIME
  - <30 s for a 10 factor variation below 100  $\mu\text{Sv/h}$ .
  - <3 s for a 10 factor variation below 1 mSv/h.
  - <1 s for a 10 factor variation over 1 mSv/h.
- BACKGROUND – <10  $\mu\text{Sv/h}$  from 30 °C to 50 °C (86 °F to 122 °F).
- MAXIMUM INTEGRATED DOSE – 5 kSv.

### ERGONOMIC

- DISPLAY – Provided by survey meter.
- ALARM SETPOINTS – 10 values saved in survey meter. The alarm level is chosen along with your survey meter keyboard.

### ELECTRICAL

- POWER – Supplied by survey meter (low voltage only).
- BATTERY LIFE – 40 h with a Radiagem.
- CONSUMPTION – <22 mA.



Ballast for STHF

### MECHANICAL

- PROBE – 93 mm (3.7 in.) long (gasket included); 20 mm (0.8 in.) diameter; 100 g (3.5 oz) mass.
- INTERFACE CASE – 63 x 58 x 38 mm (2.5 x 2.3 x 1.5 in.) (L x W x D); mass: 200 g (7.0 oz).
- CONNECTION PROBE-INTERFACE CASE – 50 m (164 ft) length cable with gaskets.
- CONNECTION INTERFACE CASE – 25 cm (9.8 in.) length cable fitted with a FISCHER SE 104 A066-100/5-1 connector.
- CABLE REEL – The 50 m (164 ft) long cable is wound onto a reel which integrates a supporting device for the interface case.
- Optional ballast weight for attaching to probe end of cable, removable (two halves).

### ENVIRONMENTAL

- TEMPERATURE RANGE – Normal operation: -30 °C to +50 °C (-22 °F to 122 °F).
- STORAGE – -40 °C to +85 °C (-40 °F to 185 °F).
- PROBE IMMERSION – IP 68 protection class: waterproof down to 80 m (262.5 ft) water depth; borated water resistant stainless steel case (10 g/L of boric acid).
- INTERFACE CASE IMMERSION – IP 65 protection class.

### NORM

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

### ORDERING REFERENCES

- STHF-R – EM84483.
- Ballast for STHF – EM84470
- STHF-R PC USB Cable – EM78466.
- Calibration/Setup Software (CSPS™) SI units – EM78468.
- Calibration/Setup Software (CSPS) US units – EM78468.



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