



# SOR-R / T

Ambient/LLR and Tactical  
Electronic Dosimeter



Nuclear  
Power



Homeland  
Security  
& Defense



Industrial and  
Manufacturing



Healthcare



Labs and  
Education

## OVERVIEW

An important special feature of the SOR line is its ability to meet the needs of various applications with one product. Given its multi-detector architecture the measurement range covered is broad, and includes high level gamma and neutron dose rates as well as low level radiations (L.L.R).

These dosimeters are qualified in accordance with current military and civil standards. The SOR line has even exceeded some of the standards currently in use in order to account for harsh operational environments.

The SOR dosimeter has been selected by most NATO countries.

## KEY FEATURES

The SOR dosimeter line is built upon two basic versions:

- **The SOR/T for tactical (gamma and neutron) and residual/ambient gamma measurements**
- **the SOR/R for residual/ambient gamma measurements**
- Assignable electronic dosimeters
- Waterproof, light and small
- Rugged for battlefield use
- Hand free communication, pass-by exchange
- Data communication through clothing layers

## FUNCTIONAL CHARACTERISTICS

- Redundant architecture with passive measurement components \*\*
- Selectable units: cGy; cGy/h; mSv; mSv/h; mrem; mrem/h
- 4 configurable dose and dose rate alarm levels
- Typical one year lifetime with standard battery
- User selectable display modes
- Backlight display (option)
- Periodic exhaustive self-testing including the detector
- Historical record of measurements and events (750 steps; 10 s; 1 min ;10 min; 1 h; 24 h)
- Data storage in EEPROM (qualified > 10 years without battery)
- Battery low (16 h) pre-alarm and alarm if the battery is removed
- Neck lanyard or clip
- Real time teledosimetry transmission (up to 1000 m - 3281 ft range) for SOR/R
- Training mode included\*\*\*

## PHYSICAL CHARACTERISTICS

- Hp(10) dose equivalent measurements
- Flash gamma dose measurement\*\*: 5 cGy to 10 Gy
- Flash neutron dose management\*\*
- Relative error of flash measurement\*\*:  $\pm 30\%$  over measurement range
- Ambient gamma dose measurement range:  $1\mu\text{Gy}$  to 10 Gy
- Gamma dose rate measurement range: from  $0.1\mu\text{Gy/h}$  to 10 Gy/h
- Gamma dose rate display: from 1 or 10  $\mu\text{Gy/h}$  to 10 Gy/h
- Saturation indication (above 10 Gy/h)
- Relative error of ambient measurement:  $<\pm 20\%$  over the dose measurement range
- Energy response:  $<\pm 20\%$  in the range 60 keV to 2 MeV  
 $<\pm 50\%$  in the range 2 MeV to 6 MeV
- Accredited factory calibration to IEC 17025
- Accuracy  $<\pm 10\%$  ( $^{137}\text{Cs}$ ,  $\sim 25\text{ mSv/h}$  including  $\pm 5\%$  of extended uncertainty  $K=2$ )

## MECHANICAL CHARACTERISTICS

- Dimensions: 80.4 x 48 x 9 mm (flat housing)  
(3.16 x 1.85 x 0.35 in)
- Weight: 55 g (1.94 oz)

\* LLR : Low Level Radiation

\*\*a specific configuration software is required for the XOM reader

## ENVIRONMENTAL CHARACTERISTICS

- $-20^\circ$  to  $+50^\circ\text{C}$  ( $-4^\circ\text{F}$  +  $122^\circ\text{F}$ ) (normal operating range, standard battery 3V LiMnO<sub>2</sub> CR2450)
- $-40^\circ$  to  $+50^\circ\text{C}$  ( $-40^\circ\text{F}$  +  $122^\circ\text{F}$ ) (option with battery module 3.6V LiSoCl<sub>2</sub>)
- TREE protection (SOR/R and SOR/T)
- Resistant to EMP, EMC, radars
- Resistant to water immersion (IP67: 1 m / 39.3 in) , drops, shocks, vibrations, low pressure,
  - Initial conditions, NBC environmental conditions
- Complies with the following standards:
  - Meets MIL-STD-810 and MIL-STD-461 requirements
  - Qualified by most of the NATO military laboratories
  - Complies with IEC 1283, ANSI 42-20 and NATO D104



SOR/RF inside the arm-band pouch (accessory)



SOR/RF worn round the neck



SOR/RF version to be clipped on a pocket

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