

# SAPHYDOSE - n

## Electronic Personal Dosimeter for neutron

- Saphydose-n is the first Electronic Personal dosimeter able to measure neutron dose equivalent from thermal to fast neutron (0,025 eV up to 15 MeV) in a mixed gamma-neutron radiation field. It will be useable in any nuclear facility without prior knowledge of the average neutron spectrum or the neutron gamma ratio. Saphydose-n meets ICRP 60 and IEC (6)1323 requirements.



### Technical characteristics

#### Operation:

- Starting, dose or dose rate mode, reset of the equivalent dose, display of personal ID and stop via 2 buttons (individual version) or via a Saphymo reader
- Adjustment of the alarm thresholds and identification number via Saphymo readers and softwares (see data sheet)

**Measured quantity:** Hp (10) for neutrons

**Energy range:** 0.025 eV to 15 MeV

**Dose equivalent measurement range:** 10  $\mu$ Sv to 10 Sv in a neutron field between 10  $\mu$ Sv/h and 1 Sv/h

**Maximum error on the energy response:**  $\pm 50\%$  on the whole range of energy

**Maximum error on angular response:** (with AmBe source)  $\pm 30\%$  between  $+75^\circ$  and  $-75^\circ$

**Photon Hp(10) sensitivity:**  $< 10\%$

**Display:** Dose equivalent on 4 digit LCD

**Dimensions:** 130 x 70 x 25 mm

**Weight:**  $< 270$  g

**Power supply:** Rechargeable lithium batteries

**Autonomy:**  $> 20$  hours

**Alarms (neutron dose and dose rate):** Visual - audible  $> 80$  dB at 30 cm

- 4 cm<sup>2</sup> Silicon detector
- Only available neutron dosimeter compliant with IEC (6)1323 standard
- IRSN partnership (French Institute for Nuclear safety and Protection)
- Audible alarm on the neutron dose equivalent and neutron dose rate equivalent
- Neutron dose recording for analysis after the mission
- Display of neutron dose equivalent
- Individual or system version
- Rechargeable lithium batteries

