

SmartGNUREM

Neutron Monitor with MCA

Detector

- new spherical REM counter Guided Neutron Unit with boron loaded polyethylene moderator and lead liner to boost the high energy response
- spherical 2" diameter proportional detector with Helium-3 gas filling
- increased sensitivity of 5.76 pulses / nSv resp. 1.6 cps / $\mu\text{Sv/h}$ (1MeV)
- energy response according to ICRP 74, corresponds to ambient dose equivalent
- REM response from thermal till fast neutrons, from 0.025eV up to 1TeV
- measurement of neutron ambient dose and dose rate equivalent $H^*(10)$
- weighs only 10.1kg, less than other commercially available neutron monitors

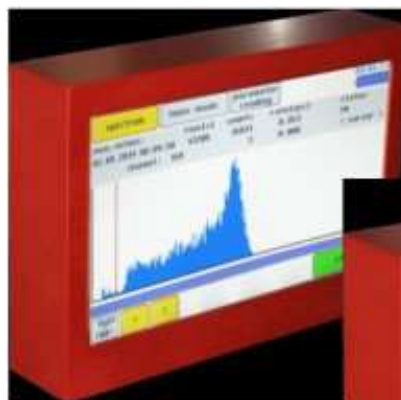
Electronics

- multi-channel analyser SMC 2100 / MCA with 2048 channels, direct on handle of the sphere
- MCA with serial interfaces RS232 and RS485 for PC connection and link-up
- 4.3" colour display with touch functions, resolution 480x272 pixels
- storage of measuring values on Micro SD card
- readout of measuring values and spectra via USB connection
- battery and mains operation



Firmware and Software

- Firmware for SmartDisplay
 - measurement of neutron dose and dose rate $H^*(10)$ and of total dose
 - acquisition of neutron reaction spectrum $\cdot {}^3\text{He} (n,p) T$
 - single measurement, series of measurements or continuous runs
 - time or pulse pre-selection
- Software AM-SMCA01 for Windows operating systems





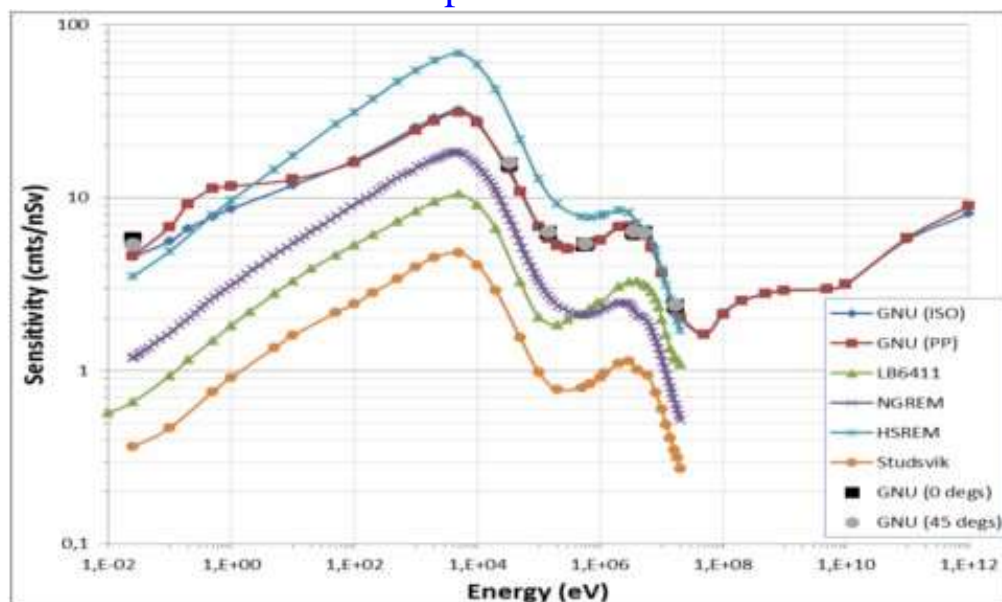
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Technical Data

multi-channel analyser	shaping time channel number pulse rate pulse content	3 μ s and 9 μ s peak times 2048 channels up to 100'000cps up to 2 ²⁴ pulses / channel
detector	neutron sensitivity gamma sensitivity	measurand H*(10) neutrons from (thermal) 0.025eV till 1TeV 5.76 pulses / nSv resp. 1.6 cps / μ Sv/h (1MeV) suppression ratio better than 3000:1 in the range from 3MeV till 7MeV
connections	interfaces power supply	MCA with RS232 & RS485, SmartDisplay with USB 3x R20 batteries or 5Vdc (2.5V till 5V)
construction	total mass	sphere with 240mm diameter 10.1kg

Neutron Monitors in comparison with the SmartREM Series



Source:
Nuclear Instruments
& Methods in Physics
Research

SmartREM - Series	Sensitivity counts/nSv	Energy Range	Sphere Diameter mm	Total Mass kg
SmartREM	2.66	10 MeV	208	6.5
SmartHSREM	7.85	10 MeV	214	6.6
SmartLINUSREM	1,27	10 GeV	240	10.0
SmartGNUREM	5.76	10 GeV	240	10.1

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www.activeradsys.it info@activeradsys.it

Tel: 0544 408071 Fax: 0544 201477