APANTEC NB1X / NH1X

Neutron Detector Smart Probe

BF_3 or He-3 Proportional Counter | **'Smart' Detector Operation**

The Apantec NB1/NH1 Neutron Probe is based on the design by I. O. Anderson and J. Braun and provides dose response corresponding to the human body. It directly measures the biological dose rate of neutrons in energy from thermal (0.025 eV) to 15 MeV.

The Neutron Probe contains a proportional counter, which produces pulses resulting from neutron interactions occurring within it. The proportional counter is essentially a thermal neutron detector, but the probe is designed to respond to thermal, epithermal and fast neutrons.

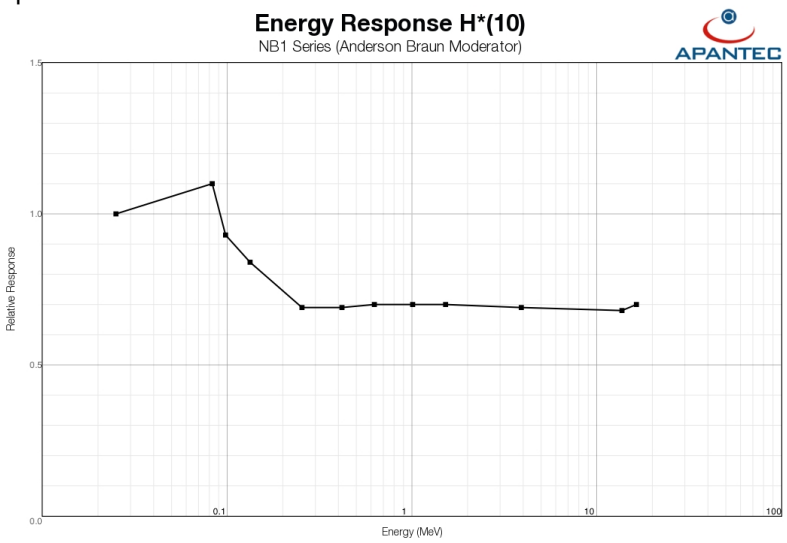
The probe includes a high hydrogen content polyethylene moderator, which moderates and attenuates neutrons so that the net incident flux at the proportional counter is a thermal and low epithermal flux representative of the tissue equivalent dose rate due the neutron field. In addition, the proportional counter is enclosed with a tissue equivalent boron impregnated sleeve, which provides the interaction between the neutrons and the counter.

The detector provides a pulse output to an associated RM1 series display unit for display and control. The RM1 series display unit provides serial RS485 and Ethernet communications for networking to a central computer using Apantec's DORIS software. The neutron detector is available in two configurations. The NB1X uses a BF_3 proportional counter, while the NH1X is provided with a He-3 proportional counter.

Detector Type

NB1X	BF_3 counter with Boron impregnated sleeve and polyethylene moderator
NH1X	He-3 counter with Boron impregnated sleeve and polyethylene moderator

Measurement Range	0.1 µSv/h to 100 mSv/h
Energy Range	0.025 eV to 15 MeV
Energy Response	± 20%, 0.025 keV to 15 MeV
Accuracy	±15% over entire range
Linearity	±5%
Response Time	4 s
Environmental	-31 °F to 140 °F 0-95% RH, non-condensing
Operating Voltage	+12 VDC
Dimensions	12 in. L x 8 in. Dia
Weight	20 lb nominal



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