Victoreen Model 190N

Portable Neutron Survey Meter

Model 190N shown with Model 190 Readout and Model RP-N Detector Assembly

Wider (lower & higher) rate range
Improved operator interface
Useful for area monitoring and surveys
Adjustable shoulder strap and padded grip
True Rem readings
Available in SI units

INTRODUCTION

Victoreen's Model 190N Portable Neutron Survey Meter is designed to measure mRem in accordance with the classical Anderson and Braun design. The neutron probe can be attached to either a Model 190 Survey Meter or a Model 190F Frisker for continuous area monitoring. It is truly portable and is ergonomically designed for ease of carrying with a shoulder strap.

This product has all the salient features of an intelligent digital survey meter including data logging. Using the Model 190-IA Infrared Communicator, manual data logging or automatic preset time data logging is accessible for data handling. The instantaneous rate and continual integration of dose and time can be logged. Refer to the model 190 Survey Meter data sheet for a complete listing of all salient

features.

APPLICATION

The Model 190N can be used for neutron surveys and area monitoring. The unit is self-contained and does not need to be connected to any other system or product to operate.

FEATURES

• The Model 190 display:
- Direct reading digital display
- Simulated analog scale with auto ranging
- Rate display mode
- Integrate display mode: Dose accumulation and time accumulation

• Programmable in English or SI units
• Data logging with the Model 190- 1A Infrared Communicator to a personal computer
• Portable:
- Adjustable shoulder strap
- Rugged handle with padded grip
- Smaller overall dimensions than previous designs

• Flexible detector assembly, Model 190 can be removed for remote readings
• Neutron Probe, Model RP-N, can be interfaced to the Model 190F Frisker, with AC power for continuous monitoring

Model 190N shown with Model 190 Readout and Model RP-N Detector Assembly

Specifications are subject to change without notice.

190N-DS Rev. 1 23 NOV 00

Regulatory Compliance

Certified to meet European EMC directive 89/336/EEC and FCC Part 15 Class B

This includes EN55022 Class B, EN50082-1. Meets safety standards EN60950 and CSA 22.2 No. 950

SPECIFICATIONS

Readout Programmable features of a standard Model 190 Survey Meter. Refer to the Model 190 specification data sheet for complete details

Alarm Audio and visual setpoint can be programmed into the Model 190N via the Model 190-1A Infrared Communicator

Logging of Data

The 190-1A Infrared Communicator interfaced to a personal computer can be used to set up data logging

Detector Assembly, Model RP-N

The detector assembly is a polyethylene cylinder,

9.5 inches long by 8.5 inches in diameter, containing a BF 3 proportional counter and neutron energy compensating materials. It is based upon the standard reliable Anderson and Braun design for neutron energy response. The handle is padded for ease of gripping. An adjustable shoulder strap is provided

BF 3 Operating Characteristics

The BF 3 proportional counter operates at 1150 Volts. Active length is 2 inches (5.08 cm). Fill gas is enriched BF 3 , 96% Boron 10. Gas pressure is 20 cm Hg. Resolving time is 1 microsecond, plateau slope is 2% per 100 Volts and tube life expectancy is greater than 10 10 counts

Typical Energy Dependence

Typical Neutron Sensitivity

Nominal 2000 counts per mRem

Range

Rate 0 µRem/h to 75 Rem/h
0 µSv/R to 0.75 Sv/h
0 CPM to 2.5 x 10 6 CPM
0 CPS to 41,660 CPS

Integrate

0 µRem to 1000 Rem
0 µSv to 10 Sv
0 to 10 9 counts

Gamma Sensitivity/Rejection

No response in 137 Cs gamma radiation in fields up to 500 R/h

Accuracy 10% of theoretical ICRP dose rate

Dimensions

12.50 in Ø x 10.25 in (d) (31.75 x 26 cm)

Flexibility The Model 190 is detachable from the detector assembly for remote readings. The Model 190 can be held or can be mounted on either side of the cylinder for convenient carrying

Miscellaneous

Detector assembly cable length: 4.5 ft (1.37 m)
An optional 30 ft (9.14 m) cable is available

Weight 21 lb (9.52 kg) (total Model 190 + detector assembly)

Directionality

Less than 20% in three orthogonal directions

Temperature Range

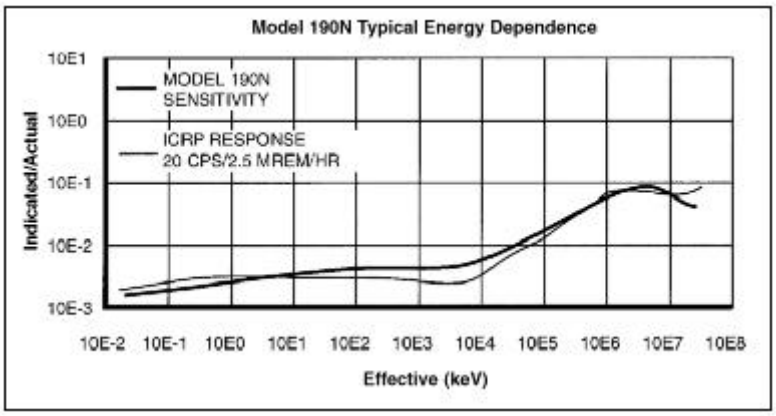
The Model 190's operating range is - 10° to + 40°C. The detector assembly operating range is - 80° to + 80°C

Power Four 9-volt alkaline batteries supplied, 100 hours operation

Calibration

The Model 190N is calibrated against a NIST traceable "Tissue Equivalent Proportional

Counter” and uses Radium/Beryllium neutrons
at a distance of 100 cm
Indicated/ Actual
Model 190N Typical Energy Dependence



Effective (keV)