

VeriDose® Solid-State Diode Detectors

Nuclear Associates Model 30-471

- Designed to provide superior response, reliability, and performance
- Long-lifetime diodes. Tested to 2×10^6 cGy in a high-energy electron beam, the most damaging radiation
- Very low dose rate and temperature dependence
- Hemispherical shape improves isotropic response and reduces angular and field-size dependencies



Features

- Waterproof design with appropriate buildup for all clinical photon and electron energies
- Flat bottom permits secure, easy placement on the patient
- Color-coded for ease of identification
- Dose rate independent
- Responds to photons and electrons
- Responds to dose rates of 1.0 to 1000 cGy/min
- Can be used on continuous (^{60}Co) x-ray beams, pulsed (linear-accelerator) x-ray beams, and electron beams
- Optimized for use with all Nuclear Associates' Patient Dose Monitors and high-quality medical-grade ionization chamber electrometers
- All diodes are supplied with a non-crimp repairable cable with a coax BNC connector

CE Tested. Meets applicable standards.

For more information, receive our full product catalog, or order online, contact **Radiation Management Services** business of **Fluke Biomedical**: 440.248.9300 or www.flukebiomedical.com/rms.

Specifications are subject to change without notice.

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30-471-ds rev 3 01 mar 05

Introduction

Using the VeriDose Patient Dose Monitor Quality Control (PDMQC) System or the VeriDose V Patient Dose Monitor in conjunction with VeriDose Solid-State Diode Detectors, you can verify the given dose quickly and accurately during treatment, thus avoiding potential misadministration of radiation.

Applications

VeriDose Solid-State Diode Detectors are solid-state silicon-based radiation detectors that utilize a p-n junction. These rugged diodes are encased within a biocompatible polystyrene material. A low noise coaxial cable is used to connect the diode to an electrometer. When attached to an electrometer, these diodes provide enhanced sensitivity and instantaneous response time.

Specifications

Photon and electron diode detectors

Nominal sensitivity 1.5 nC/cGy

Sensitivity volume 0.25 mm³

Output polarity Positive/Negative

Linearity < 0.1% for dose ranges from 0.01 to 10 Gy; < 0.1% for dose rates 3 to 5 Gy/min

Reproducibility 0.2%

Angular

dependence < 2%

± 60° for lower energy diodes

(Models 30-471 & 30-472); < 2%

± 10°; < 5% ± 60°

(for higher energy photon diodes and electron diodes)

Sensitivity loss at

10 kGy < 15%

Cable length

10 ft (3 m)

Dimensions 8 mm Ø

Weight 42 gm

Optional accessories

Diode Extension Cable, 30 ft (9 m)

(Model 88-490)

Diode Extension Cable, 10 ft (3 m)

(Model 88-490-1000)

Available model(s)

Model	Range	Polarity/Color	Buildup type	Buildup (a/cm ²)	Electrometer
30-471	1-4 MV	Positive/Blue	Cu	0.152	31-120
30-471-8000	1-4 MV	Negative/Blue			37-705
30-472	5-11 MV	Positive/Yellow	Cu	1.559	31-120
30-472-8000	5-11 MV	Negative/Yellow			31-105
30-473	12-17 MV	Positive/Red	W	2.606	37-720
30-473-8000	12-17 MV	Negative/Red			37-705
30-474	18-25 MV	Positive/Green	W	3.574	37-720
30-474-8000	18-25 MV	Negative/Green			37-705
30-475	5-25 MeV	Positive/Grey		0.284	37-720
30-475-8000	5-25 MeV	Negative/Grey			37-705