

Product Datasheet

PXRD

Pulsed X-ray Dosemeter

The PXRD is specifically engineered to detect and measure pulsed X-rays emitted by portable X-ray generators such as Golden Engineering's XR150, XR200, and XRS3, as well as other compatible models.

Robust. Reliable. Ready for the field.

Compact and handheld, the PXRD is designed for durability and performance in the toughest environments. Its rugged construction ensures reliable operation in all weather conditions and demanding field applications.

Key Capability – Pulse detection where others fail

Unlike conventional detectors, the PXRD can measure X-ray radiation from pulsed sources with a minimum pulse width of 25 ns. This makes it uniquely suited to applications where pulsed X-ray sources are in use.

Recommended Use Cases

The PXRD should be deployed whenever pulsed X-ray sources are in operation, including (but not limited to):

- Security screening.
- Non-destructive testing (NDT).
- Field-based inspection and diagnostics.
- Emergency response and EOD operations.



Features

- **Extended Dynamic Range**
Dual detectors allow close up in beam measurements as close as 1.5m from generator and low dose measurements for cordon perimeter measuring.
- **Handheld or Tripod Mountable**
The compact device can be easily used single handedly or mounted on a tripod for remote measuring.
- **Robust design**
Can operate in temperatures between 0°C to 40°C and features a chemically resistant keypad, suited for harsh environments and ease of cleaning.
- **Configurable Alarms**
The accumulated dose alarm can be customised to activate any combination of three alarm types: audible, visual, and haptic.
- **Graphical Digital Display**
Featuring an intuitive user interface designed to enable limited training.
- **Lightweight and portable**
Slimline and compact, with a mass of only 420 g.
- **IP54 Rating**
Protected against water and dust ingress.
- **Extended battery life**
Up to 8 hours continuous operation.
- **Rechargeable LiPO Battery**
Supports 15W fast charging via USB-C, allowing a charge from 20% to 80% in as little as 37 minutes.
- **Real-Time Data Logging**
The device records accumulated dose data in real time and allows you to export it to a PC in CSV file format.

Specifications

Accumulated Dose Alarm Modes	Configurable (audible, visual and vibration)
Minimum Detectable X-ray Pulse Width	25 ns
Measurement Quantity	H*(10)
Effective Dose Range	1 µSv up to 999 mSv
Dose Accuracy	±25 %
Energy Range	Approx. 40 to 250 keV
Recommended Minimum Distance from Generator	XR150/XR200: 1.5 m XRS3: 2 m
Polar Response	Vertical and Horizontal ± 45°
Dose Rate Range	Approx. 30 Sv/s - 0.3 Sv/s (Approx. 1.2 µSv - 0.02 µSv per pulse)

Ingress Protection	IP54
Battery Life	Up to 8 hrs (Continuous use)
Battery Type	Rechargeable LiPo (USB-C)
Operating Temperature Range	0°C to 40°C
Max Relative Humidity	Up to 95% at 40°C
Dimensions	164 (L) x 81 (W) x 51 (H) mm
Mass	480 g
Detector Reference Point	Concentric to the detector, 20 mm from the front edge.

Specifications are subject to change without notice.
For the most up-to-date specifications, please visit www.southernscientific.co.uk

Type Test Summary

Figure 1 shows the dose measurement accuracy of the PXRD device when used with a Golden Engineering XR200 compared with the PTB standard measurement. Data from four devices were averaged, and the error bars represent the standard deviation among the devices. All units tested met the targeted ±25% accuracy requirement across all tested distances.

Figure 2, along with Table 1, shows the vertical polar response of the device; this is not expected to be symmetric due to the two detectors used within the device.

Figure 3, along with Table 2, shows the horizontal polar response of the device; this is expected to be symmetric.

All testing was completed at PTB, Braunschweig, Germany.

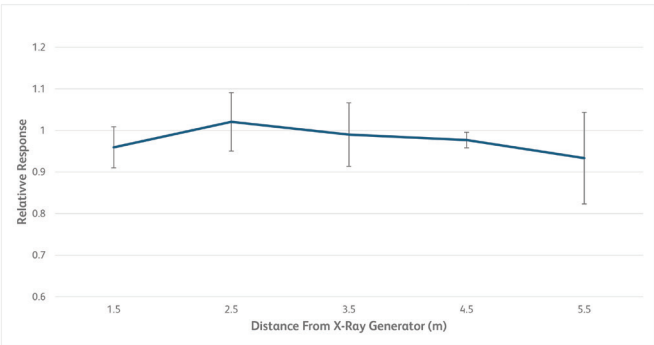


Figure 1: PXRD Dose Measurement Accuracy with XR200

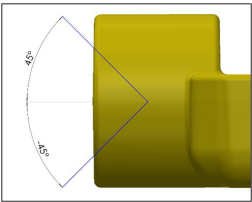


Figure 2: Vertical Polar Diagram

Angle	Relative Response
0°	1.00
45°	0.90
-45°	0.85

Table 1: Vertical Polar Response

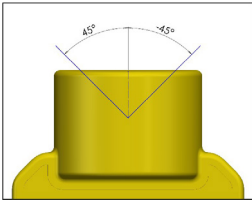


Figure 3: Horizontal Polar Diagram

Angle	Relative Response
0°	1.00
15°	1.03
30°	0.95
45°	0.86

Table 2: Horizontal Polar Response

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