



PIN Diode Detector Module

The integrated PIN diode detector system is designed for optics and beam alignment applications in X-ray diffraction instruments with in-house (rotating anode and sealed tube) and synchrotron sources. The amplifier module has a built in voltage display for visual intensity monitoring and a direct TTL pulse output which can be read by any counter/time card in a computer.

Features

- Integrated preamplifier inside detector housing improves signal to noise ratio and stability
- Precision instrumentation amplifier provides calibrated gain factors within 1%
- Adjustable background compensation allows elimination of zero-offset in flux scaling
- Precise Si thickness control leads to near uniform response from unit to unit
- Linearity better than 1% over entire range of response with background subtraction

Applications

The large dynamic range ($>10^5$) and robust PIN diode allows it to be used in direct X-ray beam at flux levels exceeding 10^9 photons/second, making it useful for :

- aligning mirrors
- monochromators
- collimators
- slits
- area detectors
- samples positioning

The detector system consists of a PIN diode module and an electronics module. The detector has a 10mmx10mm active area and is enclosed in an anodized aluminium housing. The detector housing has mounting holes for attachment to standard English and metric posts. The detector electronic contains connections for signal input and output, panel voltmeter, gain selection, and a power switch. The detector module has a 2-meter long shielded multi-conductor cable with a miniature 4-PIN push-pull connector at the end. Always place the electronics module close to the detector.

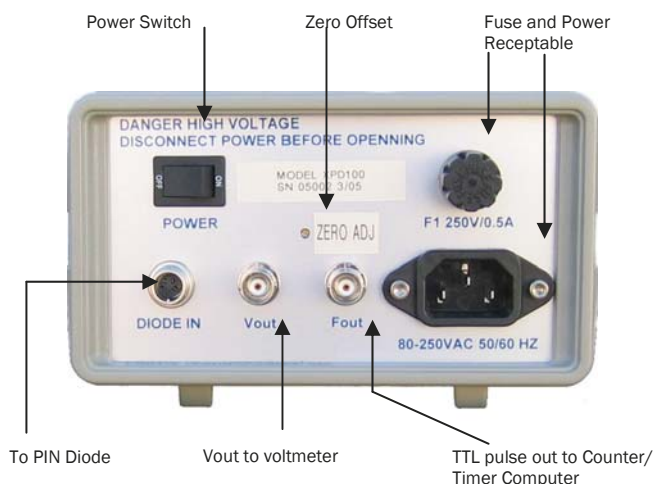
Subject to technical changes without notice

FEATURES

■ Detector active area	mm	10x10
■ Pre-amplifier	gain	1, 10, 100, 1 000
■ Voltage output (V_{out})	V	0 - 14 (F_{out} only valid for $V_{out}= 0 - 5V$)
■ Frequency output (F_{out})	kHz	0 - 500
■ Linearity		Better than 5%
■ Measurable flux (8 keV)	keV	$10^5 - 10^9$ photons/second (can be extended with attenuator)
■ Usable energy range	keV	4 - 20
■ Dark current signal	V	$<0,05$ at gain = 1 000

MECHANICAL DIMENSIONS

■ Dimensions - Electronics module	cm	15 x 9 x 22
■ Dimensions - Pin diode module	cm	4,5 x 3,3 x 1,5 cm
■ Weight	kg	1,2



DMC-050113-X-ray PIN diode detector system-02