



XPIN[®]-BT

Applications

Portable/ Benchtop XRF

- RoHS/WEEE
- Light element analysis
- Metallurgy
- Alloy sorting
- Scientific research
- Nuclear monitoring
- Quality control
- Brand protection
- Coating analysis
- Plastic additive analysis
- Soil analysis
- OSHA compliance
- Contamination sampling
- Archeology
- Art authentication
- Forensic
- Mobile crime labs

Standard Package Includes:

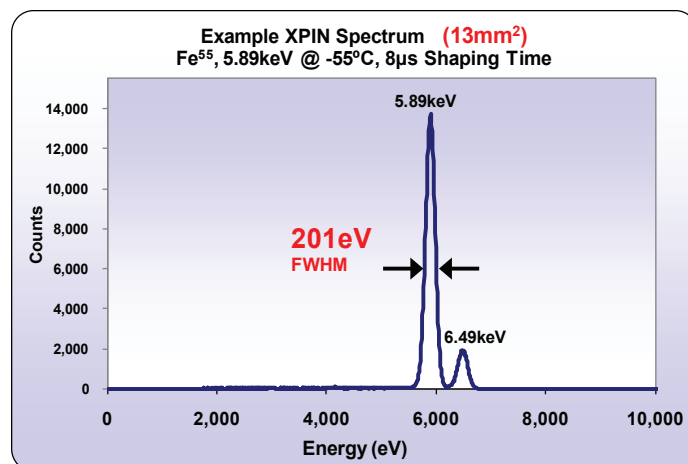
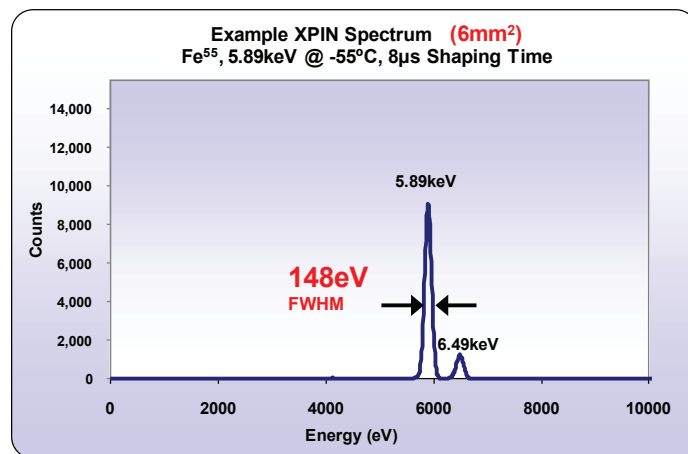
XPIN-BT Detector

- Vacuum sealed detector module
 - DuraBeryllium[®] window
 - Ultra-low noise Moxtek JFET
 - Preamplifier with input/ output connectors
 - Thick SiPIN diode
- Metal preamplifier housing
- Integrated temperature controller



The XPIN[®] detector is Moxtek's best performing Si-PIN detector. XPIN detectors use a silicon PIN diode, multi-layer collimator, and thin DuraBeryllium[®] window, achieving great resolution and x-ray sensitivity. The XPIN preamp provides a low-noise signal output to an analog or digital pulse shaping amplifier. *The XPIN-BT package is ideal for benchtop and portable applications requiring simple mounting, automatic temperature control, and metal shielding.*

Features	Benefits
Si-PIN diode	Low cost
Small, compact design	Close coupling between detector and source, portable
Two-stage thermoelectric cooler	Fast cooling without liquid nitrogen
Stable resolution	Minimal calibration maintenance
Thin DuraBeryllium [®] windows	Light-element identification, corrosion resistant
Wide ambient temperature range	Industrial applications
Multi-layer collimator	Minimal stray peaks
Internal temperature control	No external temperature control required



XPIN-BT

Detector Specifications

Diode Active Area: 6mm² or 13mm²

Diode Thickness: 625μm or 400μm

Detector Window: 25μm thick DuraBeryllium®

Collimator Material: Multilayer W/ Ni/ Cr/ Al

Energy Resolution: 6mm²: ≤ 190eV FWHM
13mm²: ≤ 230eV FWHM

Peak to background: 6mm²: 3600/ 1 @1keV (typical)
13mm²: 3000/ 1 @1keV (typical)

Test Conditions: 8μs shaping time, MXDPP-200, -35°C,
Fe⁵⁵, 5.9 keV, 7000 CPS

Weight: 140 grams (1.50" snout length)

Standard Warranty: One year.

Preamp Specifications

Inputs

Detector Power: +9V ± 5% @ 55mA, -9V ± 5% @ 35mA

Temperature Control Power: +5VDC

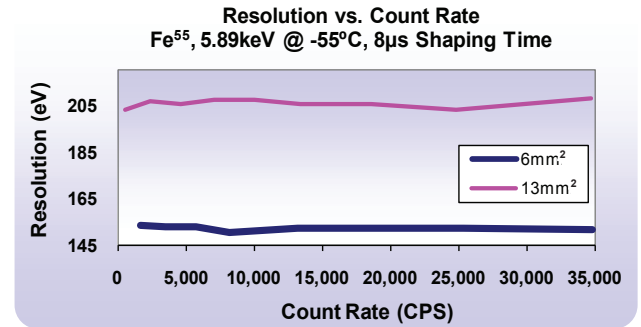
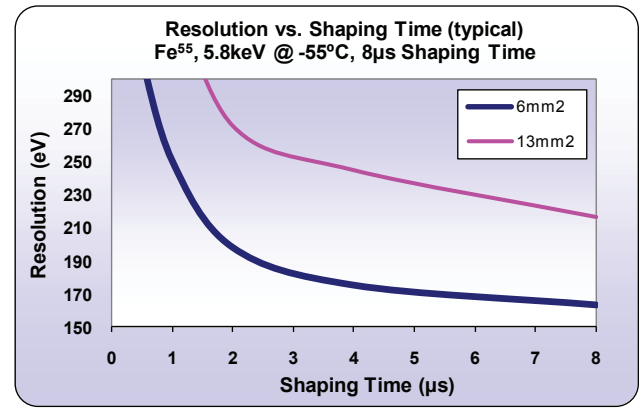
High Voltage Diode Bias: +130 to +200VDC

Outputs

Detector Output Signal: Negative sawtooth ramp with voltage swing +2V to -2V, (pulse reset < 20μsec)

Charge Conversion Gain: 4mV/ keV typical

Temperature Control: Ready signal (open collector)

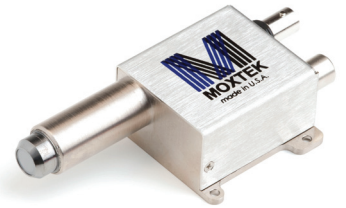


ORDER CODE: XPIN - BT - XXX - 025 - 150- TC

Specify Diode Active Area:

- 006 6mm² Diode

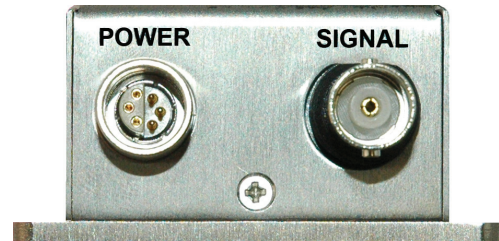
- 013 13mm² Diode



XPIN-BT Preamp Pinout

Power Connector (Lemo)		
Pin ID	Description	Set
1	Ready Signal	Open collector
2	High Voltage	+170 VDC
3	Detector Power	-9 VDC
4	Detector Power	+9 VDC
5	Temperature GND	GND
6	Temp Control Power	+5 VDC
Shield	Detector Ground	GND

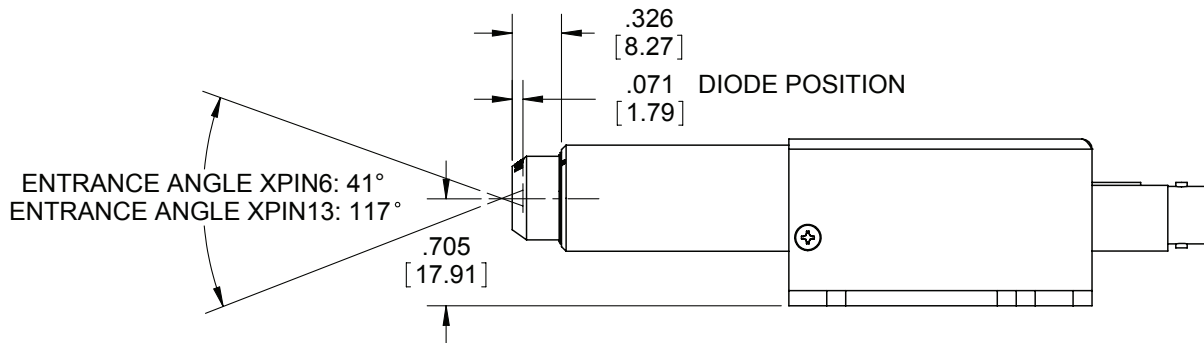
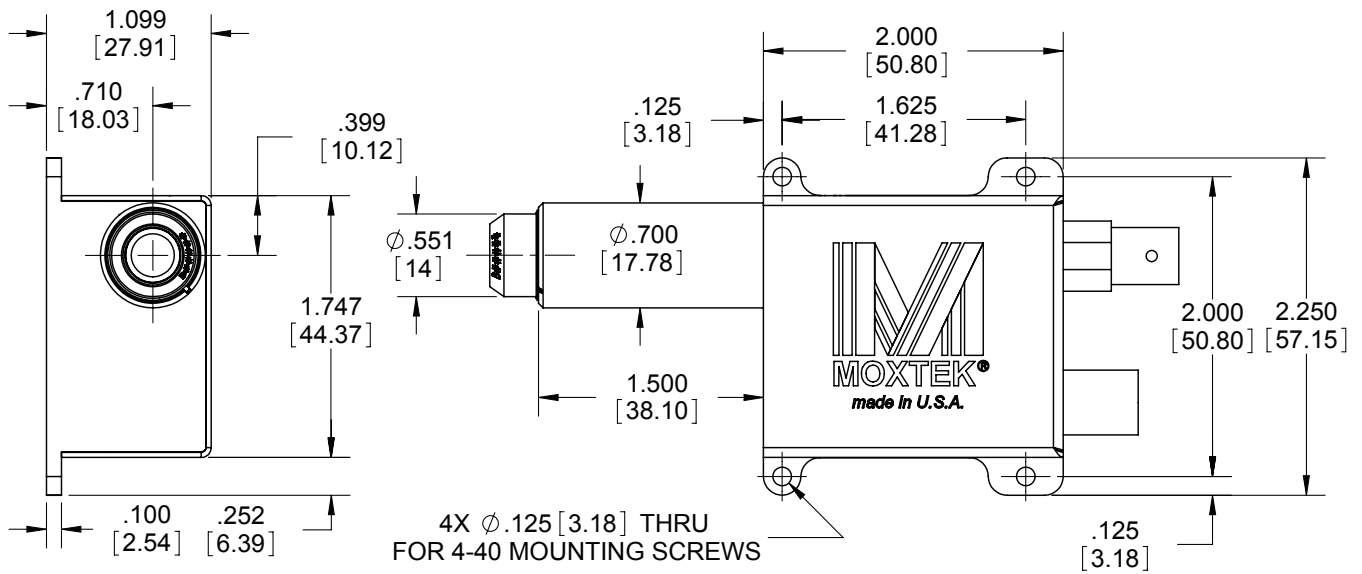
Signal Connector (BNC)	
Contact	Description
Pin	Detector Signal
Shield	Signal GND



XPIN-BT Connectors
(Actual size)



XPIN-BT Mechanical Drawing



PRIMARY DIMENSIONS ARE IN INCHES.
 SECONDARY DIMENSIONS ARE IN mm.

XPIN-BT
 (Angle bracket sold separately)



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DET-DATA-1001, Rev B
 Subject to technical change without notice