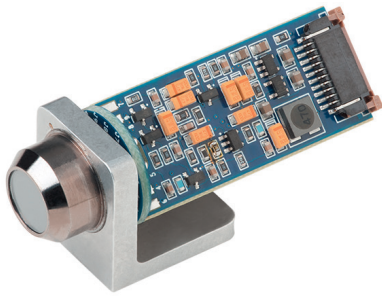


# XPIN®-XT X-ray Detector



XPIN®-XT-AB  
(Angle bracket sold separately)

## Applications

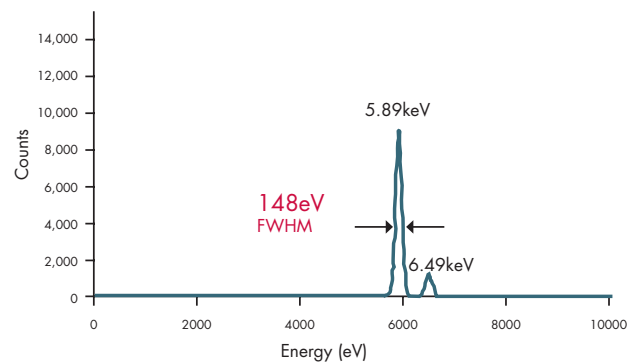
Portable/ Benchtop XRF

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

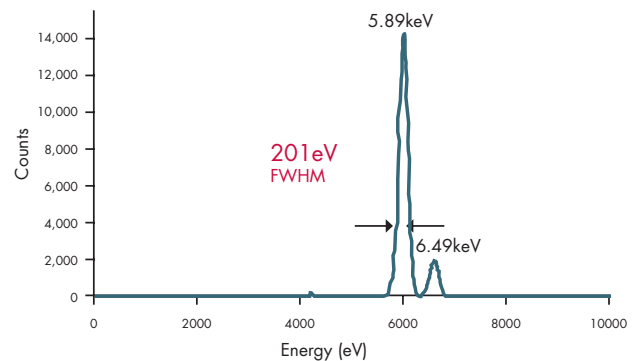
Features	Benefits
Si-PIN diode	Low cost
Small, compact design	Close coupling between detector and source, portable
Two-stage thermoelectric cooler	Fast cooling without liquid nitrogen
Stable resolution	Minimal calibration maintenance
Thin DuraBeryllium® windows	Light-element identification, corrosion resistant
Wide ambient temperature range	Industrial applications
Multi-layer collimator	Minimal stray peaks

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 XPINXT package is ideal for benchtop and portable applications where an integrated temperature controller is not required.

Example XPIN Spectrum (6mm<sup>2</sup>)  
Fe<sup>55</sup>, 5.89keV @ -55°C, 8µs Shaping Time



Example XPIN Spectrum (13mm<sup>2</sup>)  
Fe<sup>55</sup>, 5.89keV @ -55°C, 8µs Shaping Time

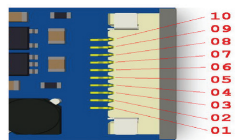


# XPIN®-XT X-ray Detector

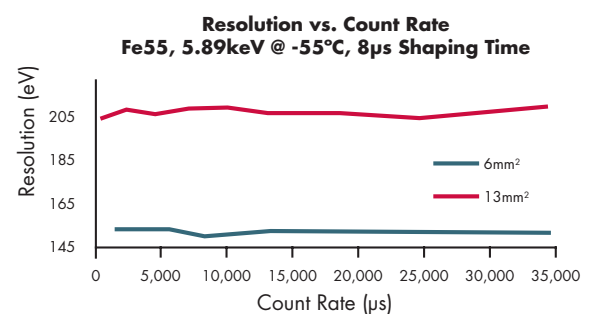
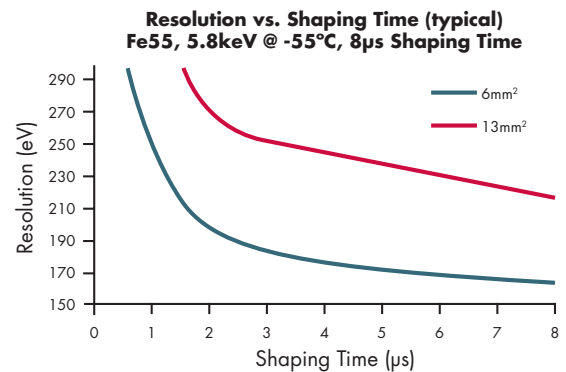
Detector specifications	
Diode Active Area	6mm <sup>2</sup> or 13mm <sup>2</sup>
Diode Thickness	625µm
Detector Window	25µm thick DuraBeryllium®
Collimator Material	Multilayer W/ Ni/ Cr/ Al
Energy Resolution	6mm <sup>2</sup> : ≤ 190eV FWHM 13mm <sup>2</sup> : ≤ 230eV FWHM
Peak to background	6mm <sup>2</sup> : 3600/ 1 @1keV (typical) 13mm <sup>2</sup> : 3000/ 1 @1keV (typical)
Test Conditions	8µs shaping time, MXDPP-200, -35°C, Fe55, 5.9 keV, 7000 CPS
Weight	41 grams (with heat sink) 10 grams (without heat sink)
Standard Warranty	One year

Preamp Specifications	
<b>Inputs</b>	
Detector Power	+5V ±5% @ 16mA, -5V ±1% @ 20mA
Cooler Power	0 to +3.5V max, 0.56A max
High Voltage Diode Bias	+130 to +200VDC
<b>Outputs</b>	
Detector Output Signal	Negative sawtooth ramp with voltage swing +2V to -2V, (pulse reset < 20µsec)
Charge Conversion Gain	1.25mV/ keV typical
Temperature Control	Manually controlled

XPIN-XT Preamp Pinout		
Pin ID	Description	Set
1	TEC GND	GND
2	TEC +	+3.5 VDC Max
3	Detector Power	+5VDC
4	Detector Power	-5VDC
5	Temperature GND	GND
6	Detector Signal	NA
7	Thermistor	NA
8	Detector GND	GND
9	Not Connected	-
10	High Voltage	+170 VDC



XPIN-XT Connector Pinout



**ORDER CODE: XPIN - XT - XXX - 025 - P20- XX**

Diode Active Area:

- 006 6mm<sup>2</sup> Diode
- 013 13mm<sup>2</sup> Diode

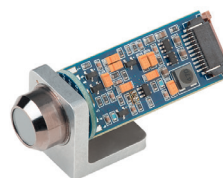
Mounting Option:

- 00 Preamp only
- AB Angle Bracket
- HS Heat Sink

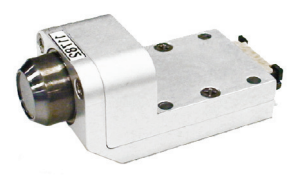


XPIN-XT-00  
Standard Configuration

## XPIN-XT Mount Options



XPIN-XT-AB  
Angle bracket sold separately



XPIN-XT-HS  
Heat Sink sold separately