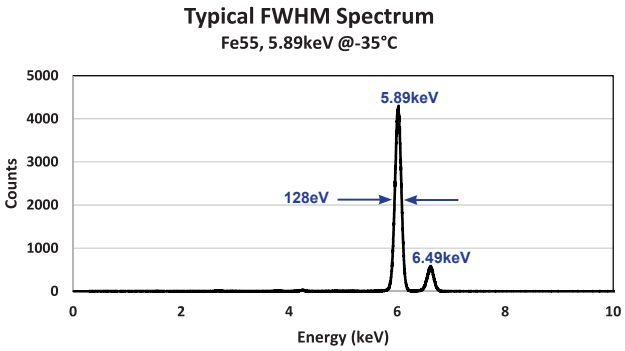
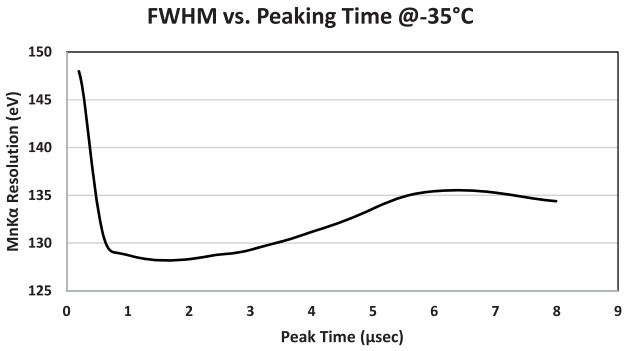
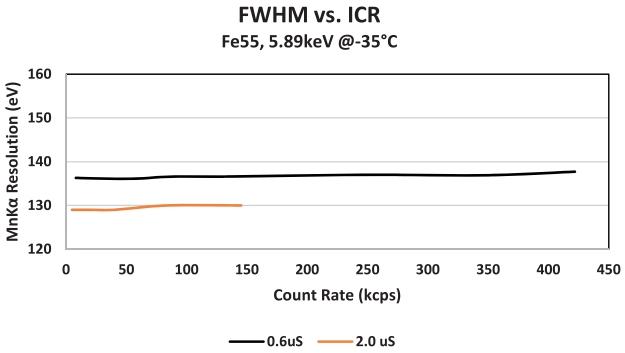
Collimated silicon drift x-ray detector 20 mm²

20 mm² Collimated SDD

Moxtek's 20mm² silicon drift detector (SDD) is the newest x-ray detector in our product line. With an 8 µm beryllium window and vacuum encapsulation it's ready to use for your XRF x-ray detector application.







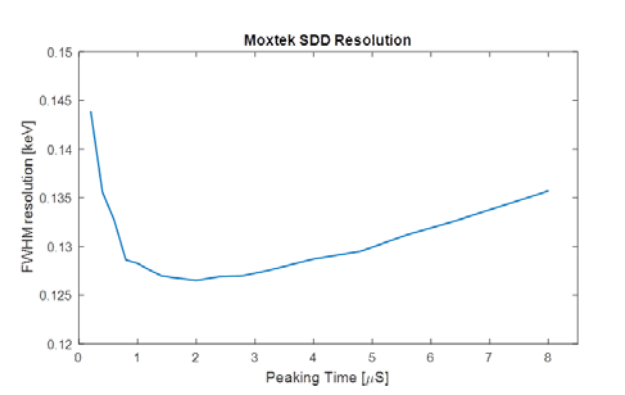
Applications

- 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 labs

Standard package
20mm² collimated SDD Includes:

- Vacuum sealed detector module
- DuraBeryllium® window
- CMOS ASIC
- Silicon Drift Detector
- Preamplifier with a 10 pin FFC type input/output connector

Detector specifications	
Diode collimated active area	20 mm²
Diode thickness	500 µm
Detector window	8µm thick DuraBeryllium®
Collimator material	Multilayer W/ Ni/ Cr/ Al
Energy resolution	≤ 135 eV FWHM @ 1 µs-5 µs PT
Peak to background	10,000/1 @ 1keV (typical)
Test conditions	DX200 DPP, -35 °C, Fe55, 5.89 keV
Weight	131 grams (with heat sink)



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MOXTEK

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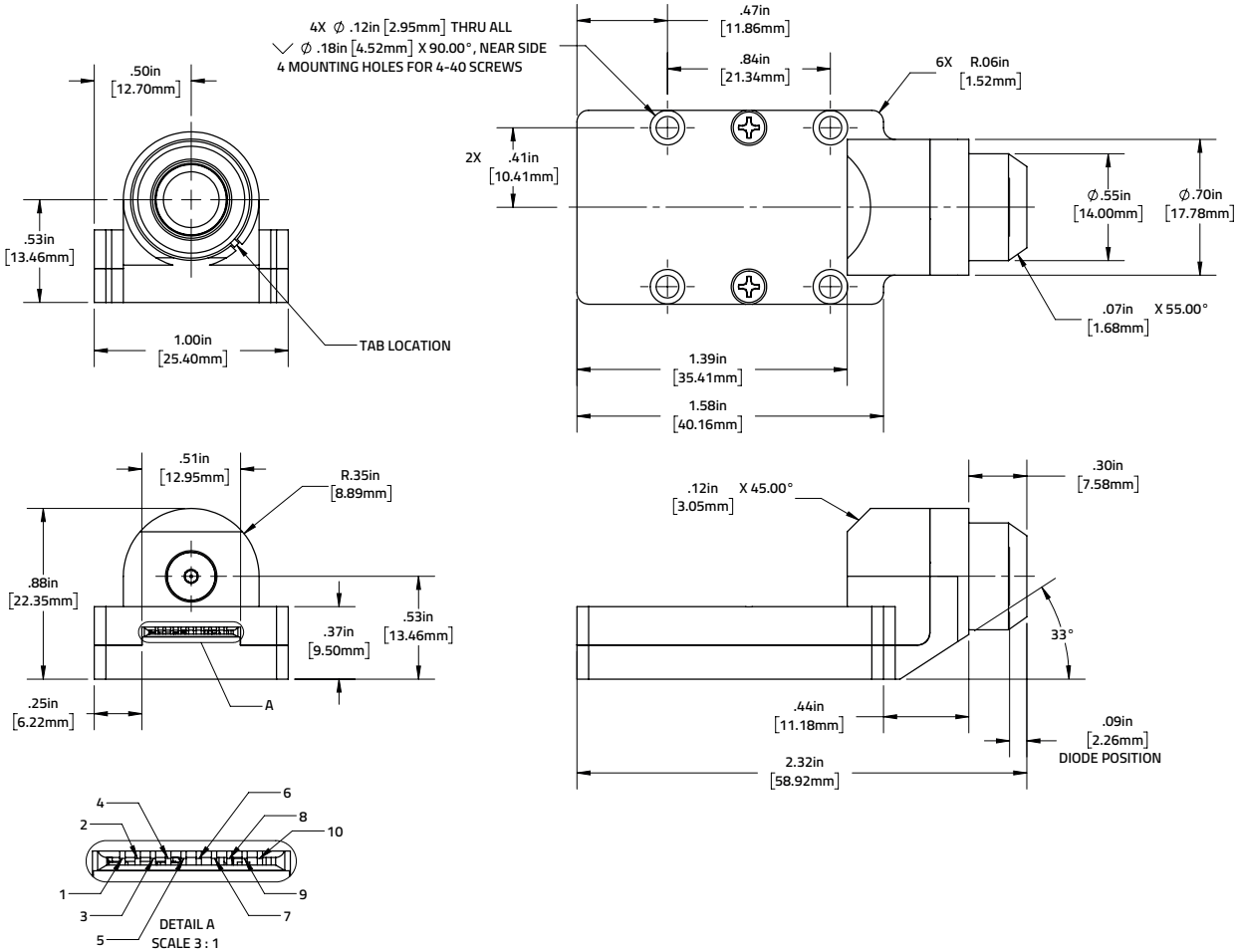
Operating Parameters		
Parameter	**Typical Value**	**Operating Limits or Conditions**
Low Voltage Bias (Positive)	+5 V	+4.9 V to +5.3 V
Low Voltage Bias (Negative)	-5 V	-5.3 V to -4.9 V
High Voltage Bias (Negative)	-170 V	-173 V to -167 V
Ramp Threshold (Positive)	+1.5 V	
Ramp Threshold (Negative)	-1.0 V	
Preamp Gain	3.5mV/keV	
TEC Supply	1.45 V / 225 mA @ -35 °C	+3.0 VDC Max
TEC ΔT	75K	@ 20°C heat sink temperature
Temperature Read	10 kΩ Thermistor	

Preamp Pinout			
Pin ID	**Name**	**Description**	**Set**
1	TEC -	Temperature Control	GND
2	TEC +	Temperature Control	+3.0 VDC Max
3	+ 5V In	Low Voltage Bias (Positive)	+5V
4	- 5V In	Low Voltage Bias (Negative)	-5V
5	GND	Signal Ground	GND
6	Ramp	Output Signal	N/A
7	Therm	Temperature Read (10 KΩ Thermistor)	N/A
8	GND	Signal Ground	GND
9	NC	Not Connected	N/A
10	- HV In	High Voltage Bias (Negative)	-170 VDC

Mechanical Drawing



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