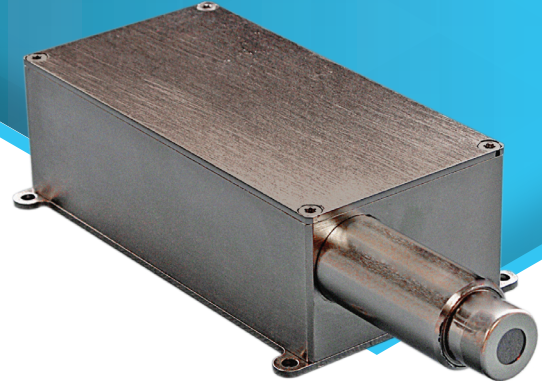




**X-RAY APPLICATIONS**

# SXD15M-150-500

*X-PIPS™ Detector (SDD)*



**FEATURES**

Detector System Includes:

- Silicon Drift Detector (SDD)
- Be Window
- Preamplifier
- HV Bias Supply
- Peltier Cooler
- Temperature Controller

**PERFORMANCE**

- Active Area – 15 mm<sup>2</sup>
- Thickness – 0.5 mm
- Resolution <145 eV (FWHM)\*
- Energy Range – 1 to 30 keV

**APPLICATIONS**

- X-ray Spectroscopy
- X-ray Fluorescence
- X-ray Diffraction
- Mössbauer Spectroscopy
- Densitometry
- Many More

**DESCRIPTION**

The X-PIPS Detector is a spectroscopy sub-system sensitive to X-rays and low-energy gamma rays. It comprises a hermetically sealed silicon drift detector (SDD) element with a low noise FET assembly and Peltier cooler, a reset type preamplifier, a HV bias supply, and a temperature controller. The detector element and FET are cooled and regulated to a stable temperature, ensuring stable operation in changing environmental conditions. The Beryllium entrance window is standard 0.5 mil.

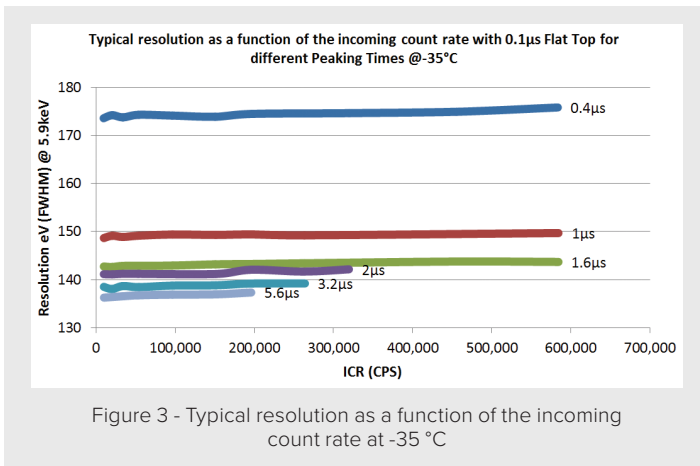
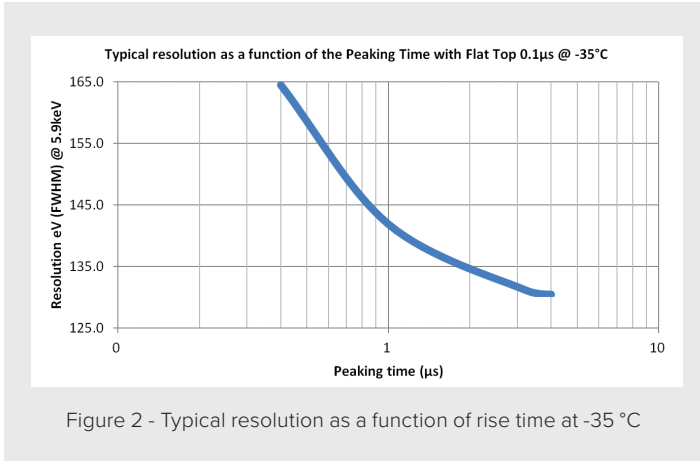
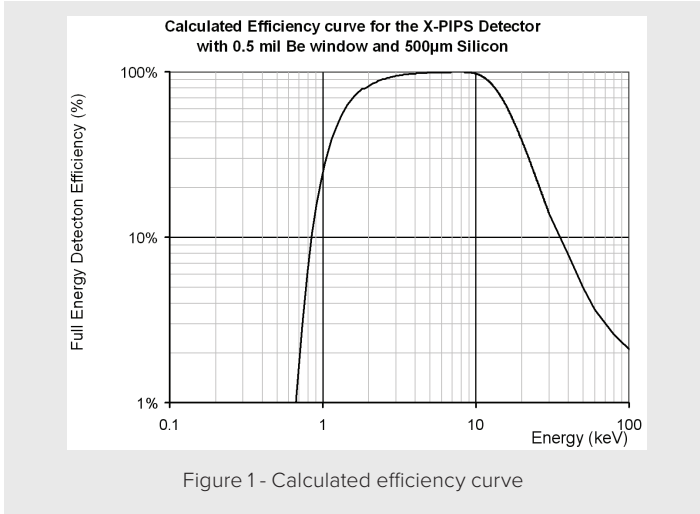
The preamplifier has a digitally controlled reset mechanism providing fast reset time and excellent count rate performance.

The energy resolution is guaranteed within an ambient temperature range of +10 °C to + 30 °C with the default factory settings.

The X-PIPS Detector has an internal multilayer collimator for improved peak to background.

Model	Collimated Active Area (mm <sup>2</sup> )	Collimator	PTB		Energy Resolution FWHM (eV)*	
			Typical	Max	Typical	Max
					@ Optimum Rise Time	
SXD15M-150-500	15	Multilayer	15000	>12000	>135 eV	<145 eV

\*Energy resolution is given at 5.9 keV (Mn-Ka), with an ambient temperature ranging from +10 °C to +30 °C, on a digital spectroscopy system with trapezoid shaping filter. Cooled to typical operating temperature of -35 °C.



# SXD15M-150-500 | X-PIPS DETECTOR (SDD)

## SPECIFICATIONS

### PERFORMANCE

#### Gain Stability:

- <25 ppm/°C over a range of +10 °C to +30 °C
- <50 ppm over 24 h at constant temperature with 1 h stabilization

#### Charge Sensitivity:

- Gain is 3 mV/keV
- Gain tolerance is ±25%

#### Power Requirements:

- Power Input: DC Jack L712RA
- +12 V dc: max 250 mA, typical 120 mA

#### Outputs and Indicators:

- Energy Output: Provides staircase output function with step amplitude proportional to the absorbed photon energy. The output swing range is from -2.5 V to +2.5 V open circuit. The reset is a transistor reset. Output impedance is 50 Ω, series connected, dc coupled. SMA female connector.
- Temperature Indicator: Red LED in the rear panel of the X-PIPS Detector housing illuminates when the detector does NOT reach the set-point temperature and therefore is not stabilized.

#### Physical:

- Case Size: 100 x 50 x 33 mm (L x W x H) excluding finger and fixation brackets. Front end is mounted on a 16-pin TO8 header. 0.5 mil Be window. Finger diameter is 17.8 mm, finger axis is located 10.5 mm from side and 12 mm from bottom of case. Finger length including detector front-end is approximately 49 mm.
- Net Weight: 0.24 kg (0.5 lb)

#### Environmental:

- Operating Temperature: 0 to 50 °C (32 to 122 °F)
- Operating Humidity: 0 to 80%, non-condensing

## ORDERING INFORMATION

- SXD15M-150-500

#### Accessories:

- S502 Genie™ 2000 Basic Spectroscopy Software for Single Input Applications
- DSA-LX® Desktop Spectrum Analyzer
- Lynx® Digital Signal Analyzer
- Multiport II™ Multichannel Analyzer
- Model 2016 Amplifier-TCA

