

Sellable part number	K0-002196	KEV526 DETECTOR PACKAGE
ELECTRONICS ASSEMBLY	C1-002190	ASSEMBLY, ELECTRONICS, 5MM, KEV526
POWER CABLE	C3-002214	ASSY, CABLE, POWER, KEV526
SOFTWARE API LINUX	D1-002198	CODE, SW, KEV525, API, LINUX
SOFTWARE API WINDOWS	D1-002199	CODE, SW, KEV525, API, WINDOWS
SOFTWARE DEMO APPLICATION LINUX	D2-002201	CODE, SW, KEV526, APP, LINUX
SOFTWARE DEMO APPLICATION WINDOWS	D2-002202	CODE, SW, KEV526, APP, WINDOWS
Number of pixels	484	
Detector thickness	5.0 mm	
Pixel pattern	22x22	
Pixel pitch	2.0mm	
Beam entrance	1.25mm DELRIN	
ASIC type	Kromek KHR	
Data buffer	16 bit per pixel per energy window	
Global gains	20, 40, 80, 240 mV/FC	
Maximum Number of Energy Bins	64	
Peaking time	1.0 μs	
Firmware provisions	Field upgradable	
Internal/External Trigger	Yes/No	
Input voltage	12 to 16 VDC with <10mV ripple	
Input operating current	550mA ± 10 % at 16 V	
Input power	~ 8.8 W at 16 V	
Input power connector	ZGG.0B.302.CLL	
Input power connector mate	FGG.0B.302.CLAD52	
IO interface	100BASE-T Ethernet	
IO connector	RJ45	
High Voltage control	Integrated, software controlled	
Housing	Fully enclosed aluminum rectangular box	
Housing finish	Chemical conversion coating per MIL-DTL-5541F, Class 3, Type 2. The outer housing finish is not electrically insulating and must therefore be mounted such that no electrical contact is made between the housing and any other component/chassis in the host system.	
Housing sealing/ingress protection	IEC standard 60529 IP40	
Weight	1kg	
Mounting	Via 4 3mm through holes in baseplate backed by M2.5x0.45 Nylon nuts	
Cooling	In-housing fan	
Safety and Regulatory	No certs provided	
Operating temperature	20-35°C, ambient	
Operating humidity	20-40%, non-condensing	
Storage temperature	0-60°C	
Storage relative humidity	0-95%, non-condensing	



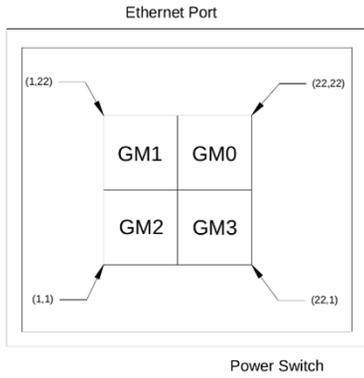


Figure 1 - Detector array geometry. Detector and pixel orientation.

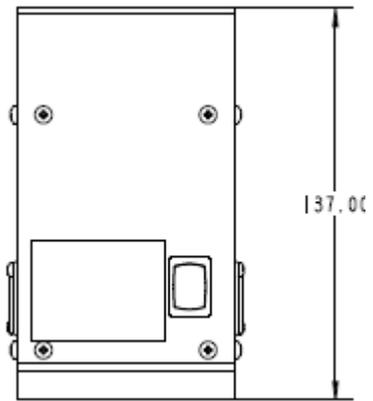


Figure 3 - Collimator to baseplate distance

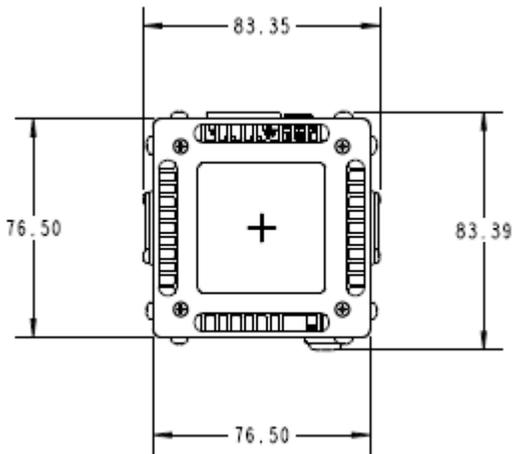


Figure 2 - Top view showing radiation entrance window.

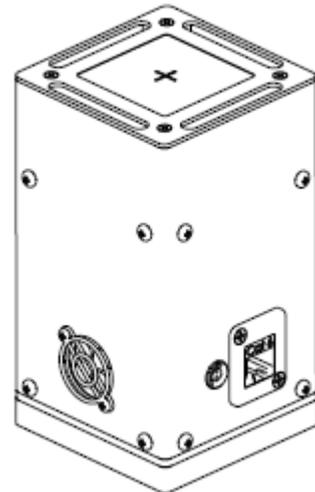


Figure 4 - ISO view showing fan port and IO (RJ45) connector

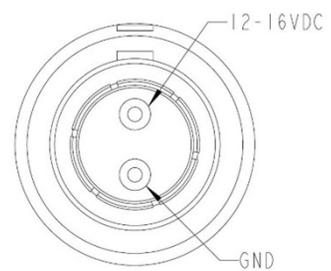


Figure 5 - Power connector enlargement

keV-526 Performance Specifications

All performances are specified at the following parameter settings:

1. Detector cathode bias: -550 V.
2. Global gain: 240 mV/fC.
3. Peaking time: 1000 ns.
4. Source: 241Am – 59.5 keV peak
5. Delay Time: 26 μ s
6. Anode Energy Threshold: 250
7. Accumulation window: 30 ms
8. Bin Thresholds: 1000, 1020, 1040, 1060, 1080, 1100, 1120, 1140, 1160, 1180, 1200, 1220, 1240, 1260, 1280, 1300, 1320, 1340, 1360, 1380, 1400, 1420, 1440, 1460, 1480, 1500, 1520, 1540, 1560, 1580, 1600, 1620, 1640, 1660, 1680, 1700, 1720, 1740, 1760, 1780, 1800, 1820, 1840, 1860, 1880, 1900, 1920, 1940, 1960, 1980, 2000, 2020, 2040, 2060, 2080, 2100, 2120, 2140, 2160, 2180, 2200, 2220, 4095

Pixel Level Specifications

Nominal Energy Range	~ 30 – 250 keV
Pixel to Pixel Uniformity	< 50 % or > 150 % of the median counts of all pixels which have more than 500 counts in them
Calculated Incoming Count Rate	Between about 400 to 620 cps/pixel

Sensor Level Specifications

Sensor Dead Time	< 250 ns. Calculated by fitting measured counts summed over all conforming pixels in one sensor to a non-paralyzable model.
Count Rate	> 90 % of pixels have a count rate of 1000 cps/mm ² , summed across all energy bins

Sensor Level Specifications

Energy Resolution	< 10 % at 60 keV for > 90 % of pixels
Total Number of Non-conforming Pixels	\leq 5 % on each crystal. No more than three (3) adjacent. A non-conforming pixel is defined as failing count uniformity, or energy resolution.

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