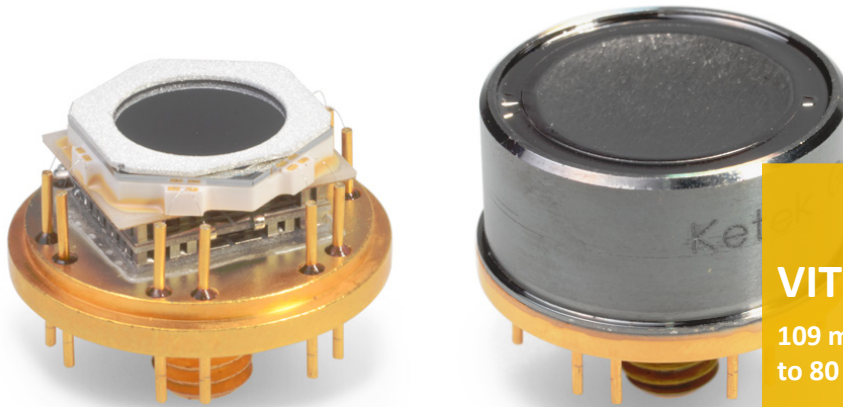


**KETEK**



## VITUS H80

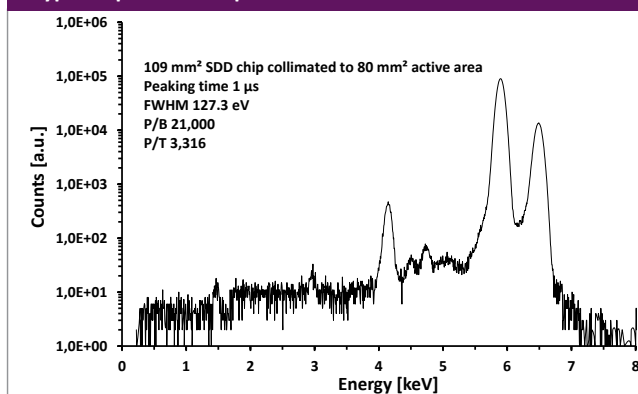
109 mm<sup>2</sup> collimated  
to 80 mm<sup>2</sup>

**H80  
VITUS**

## X-ray Silicon Drift Detector

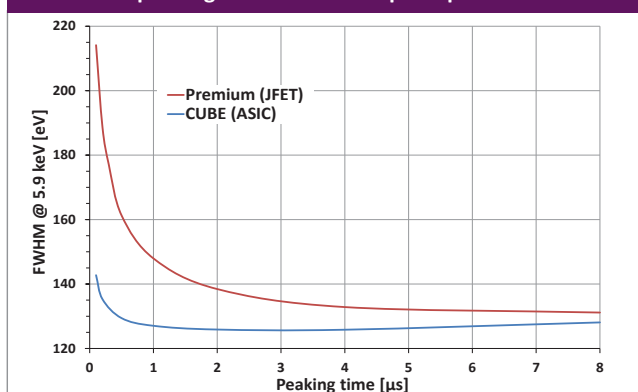
- Available with JFET or ultra-low-capacitance ASIC (CUBE) as first amplification stage
- Excellent energy resolution at very short peaking times down to 0.1 μs (CUBE)
- Very high count rate capability up to 2 Mcps (CUBE)
- Operable at up to +50 °C heat sink temperature with outstanding performance
- Best in class peak to background > 15,000 typ.

Typical spectrum acquired with the new VITUS H80 CUBE

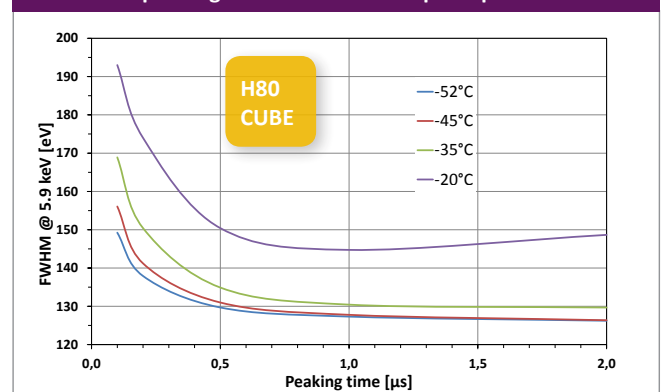


Class	CUBE ★★★★★	Premium ★★★★☆	Standard ★★★☆☆
First stage amplification	ASIC	JFET	JFET
Energy resolution	≤ 136 eV	≤ 136 eV	≤ 160 eV
Peak to background	> 15,000	> 15,000	> 6,000
Peak to tail	> 2,000	> 2,000	> 1,000
Optimal peaking time at max. cooling	1 μs	8 μs	8 μs
Absorption depth Si	450 μm	450 μm	450 μm
Peak shift stability up to 100 kcps	< 1 eV	< 1 eV	< 1 eV
Max. input count rate	2,000 kcps	500 kcps	500 kcps
Window Be DuraCoat Plus	25 μm	25 μm	25 μm
Cooling performance	ΔT > 75 K	ΔT > 75 K	ΔT > 75 K
On-chip collimator	multilayer	multilayer	multilayer
Ordering codes	CUBE: V5C9T0-H80-ML5BEV 136 Premium: V5F9T0-H80-ML5BEV 136 Standard: V5F9T0-H80-ML5BEV 160		

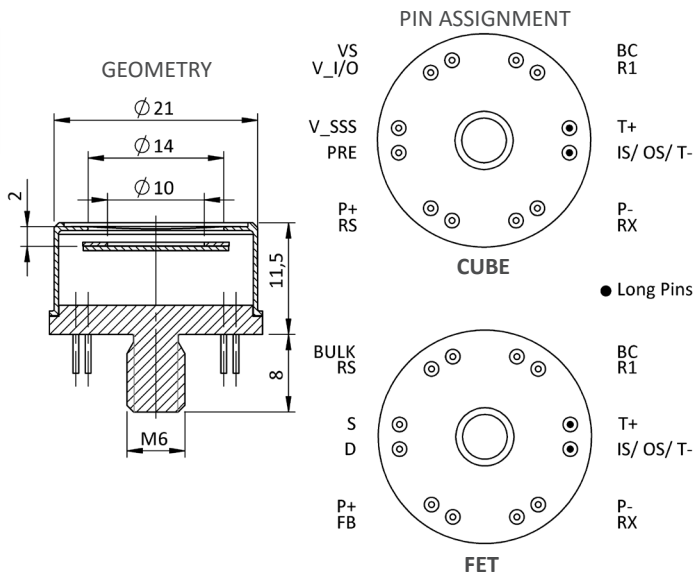
FWHM vs. peaking time at -35 °C chip temperature



FWHM vs. peaking time at different chip temperatures



# H80 VITUS



Typical SDD parameters	Voltages	Currents
Ring 1 (R1)	-20 V $\pm$ 5 V	10 $\mu$ A
Ring X (RX)	-130 V $\pm$ 20 V	10 $\mu$ A
Back	-60 V $\pm$ 5 V	<1 nA
Peltier element (Be window)	4.5 V	1000 mA max.
Temperature monitor*	NTC thermistor 10 k $\Omega$ @ 25 $^{\circ}$ C *(application note with linearization circuit available)	
Output signal	ramped reset type	
Output gain	CUBE: 1.6 mV/keV $\pm$ 20 %	FET: 0.9 mV/keV $\pm$ 30 %

## AXAS-M with VITUS H80



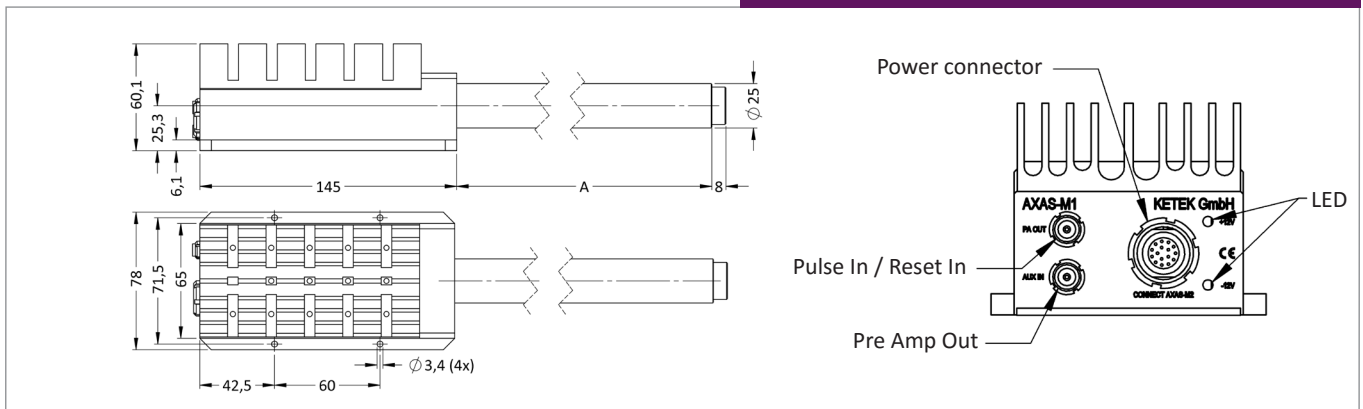
The AXAS-M is a modular, vacuum-compatible and high performance spectroscopic detector system. The AXAS-M1 unit consists of the VITUS H80 SDD and a low-noise preamplifier encapsulated in a thermally optimized housing with a cold finger of customizable length. The AXAS-M2 unit comprises regulated power supplies for the TEC and the SDD, as well as the optional KETEK DPP with a USB interface.

Ordering codes:

**CUBE:** M5C9T0-H80-ML5BEV 136



### AXAS-M1 housing geometry [mm]



### AXAS-M2 housing geometry [mm]

