

S76120 Mid-Infrared Spectrometer

Data sheet

nkir

NLIR | Mid-Infrared Sensors

- 7.6 – 12.0 μm bandwidth
- Up to 130 kHz full-spectrum readout rate
- High SNR
- 10-12 cm^{-1} resolution



The NLIR MIR Spectrometer is based on a novel measurement scheme that upconverts the MIR light to near-visible light. Silicon-based near-visible light detectors are far superior to MIR light detectors in terms of detectivity, speed and noise. The NLIR upconversion technology therefore brings these attractive features, and the advantages that follow, to the MIR regime.

The spectrometer is made in two editions: S76120-50 is the economic version with max. 50 Hz full spectrum, and S76120-130k is the faster version with up to 130 kHz full spectrum. The two editions have the same sensitivity. Both instruments come with a simple GUI interface for easy plug-and-play measurements in various applications and also a full API interface in MATLAB and Python upon request for more advanced use.

	S76120-50	S76120-130k	unit
Optical bandwidth	7.6 – 12.0		μm
Resolution	10 – 12		cm^{-1}
Exposure time ⁽¹⁾	1 – 1000	0.0013 – 0.654	ms
Max. readout rate	50	130E3	Hz
Bit depth	14	12	
Dark noise std ⁽²⁾	6	1	counts
Signal-to-noise ratio @ 1 s ⁽³⁾	6000		
Optical input	Free-space, collimated, 1 inch		
Polarization direction	Vertical		
Maximum operating temperature	30		$^{\circ}\text{C}$
Physical dimensions (H×L×W)	100 × 306 × 200		mm^3
Weight	5		kg

⁽¹⁾ Longer effective exposure times can be achieved for the S76120-130k model by stacking acquired spectra.

⁽²⁾ At minimum exposure time.

⁽³⁾ Measured with 6 ms exposure time with a 800 $^{\circ}\text{C}$ blackbody light source at 30 cm distance.