

S2050 Mid-Infrared Spectrometer

Data sheet

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NLIR | Mid-Infrared Sensors

- 2.0 – 5.0 μm bandwidth
- Up to 130 kHz full-spectrum readout rate
- Down to 5 pW/nm sensitivity
- 6 cm^{-1} resolution on 2048 pixels



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: S2050 is the economic version with max. 400 Hz full spectrum, and S2050-SE is the faster version with up to 130 kHz full spectrum. The S2050 comes with a comprehensive GUI interface for easy plug-and-play measurements in various applications that do not require faster-than 400 Hz sampling; the S2050-SE has an API interface for advanced users who are looking for the fastest and most sensitive mid-infrared spectrometer commercially available.

	S2050	S2050-SE	unit
Optical bandwidth	2.0 – 5.0		μm
Resolution ⁽¹⁾	6		cm^{-1}
Exposure time ⁽²⁾	10.8 – 1E6	1.3 – 654	μs
Max. readout rate	400	130E3	Hz
Bit depth	16	12	
Dark noise std ⁽³⁾	20	1	counts
Minimum detection power	10	5	pW/nm
Optical input ⁽⁴⁾	SMA-905 fiber		
Polarization direction	Vertical		
Maximum operating temperature	30		$^{\circ}\text{C}$
Physical dimensions (H×L×W)	100 × 306 × 200		mm^3
Weight	5		kg
Mounting	4x 1" posts		

⁽¹⁾ With a 100 μm input fiber.

⁽²⁾ Longer effective exposure times can be achieved for the S2050-SE model by stacking acquired spectra.

⁽³⁾ At minimum exposure time.

⁽⁴⁾ Customization for free-space input available upon request.

Got any questions or need a quote? Do not hesitate to contact us at info@nlir.com.