

# PbS/PbSe NIR/MIR Spectrometer

**SM301**



Pbs/Pbse NIR Spectrometer

## SM301

### PbS/PbSe NIR/MIR Spectrometer

Wide NIR(~1-3um) and Mid-IR(~1.5-5.0um) Spectral Range

Versatile and High Performance  
TE-Cooled PbS/PbSe Array Detector

Best Solution for Real-time Monitoring in  
NIR and Mid-IR



### The Choice for NIR/MIR Spectral Applications

The SM301/SM301-EX is a versatile, high performance PbS/PbSe array spectrometer. Its active components include a TE cooler and a 256-element PbS/PbSe detector element array. Operation of the unit for research applications is easy with the included SM32Pro - Windows based analysis software. The system is ideal for spectroscopic applications in the 1.0 to 3.0 micron (PbS) or 1.5 to 5.0 micron (PbSe) region. The SM301/SM301-EX includes thermoelectric cooling to guarantee long-term operational stability. The SM301/SM301-EX employs a multiplexed PbS/PbSe array as its NIR detection element. The array is cooled and temperature stabilized at around -10°C (down to -20°C at max) which ensures long-term operation stability. Dark signal can thus be automatically measured by the built-in electronics periodically and subtracted automatically. Compared with conventional scanning NIR spectrometers the SM301/SM301-EX provides the multichannel detection advantage, both in reducing the measurement time and enhancing measurement signal-to-noise ratio. The SM301/SM301-EX can operate at a readout rate of 2MHz or faster allowing fast measurement and averaging operation to be performed in a short period of time.

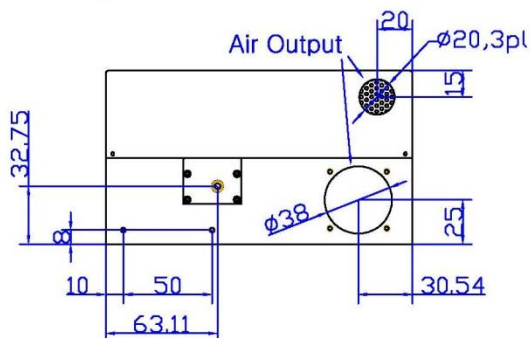
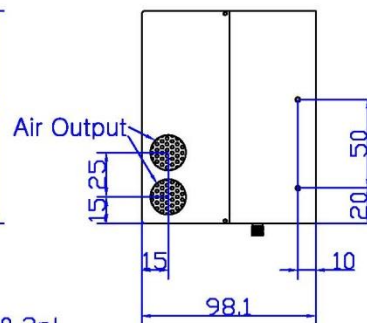
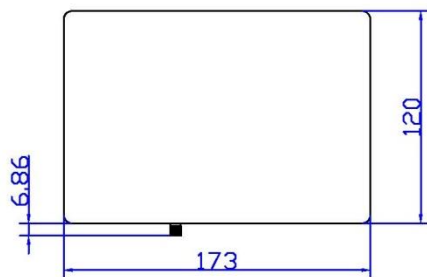
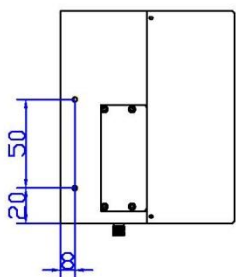
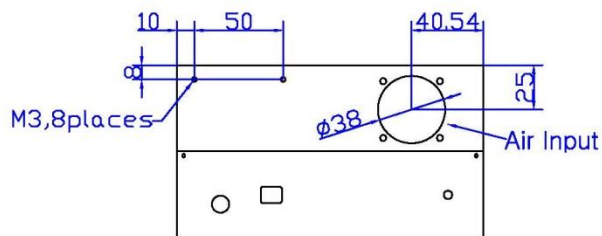
# Specifications :

Physical Dimension	
Dimensions	6.81"X4.72"X3.86" (173mm x 120m x 98.1mm)
Weight	5.5lbs (2.5kg)
Fiber Optic Connector	SMA905 N.A.=0.22 Optical Fiber Input
Detector	
Detector	SM301 : PbS Array
	SM301-EX : PbSe Array
Cooling	One Stage TE (thermo-electric) Cooling(-10°C)
Spectral Response Range	SM301 : ~1.0-3.0um
	SM301-EX : ~1.5-5.0um
Pixels	256
Pixel Size	40um X 450um (Pitch: 50um)
Optical Specification	
Wavelength Range	SM301 : ~1.0-3.0um / ~1.0-2.0um / ~1.5-3.0um
	SM301-EX : ~1.5-5.0um Standard
Optical Resolution	SM301 : ~20nm (1.0-3.0um) / ~10nm (1.0-2.0um) / ~15nm (1.5-3.0um)
	SM301-EX : ~25-30nm (1.5-5.0um)
Dark Noise RMS	~ 20 RMS counts in 16 bit (After Balancing)
Filter	None
Electrical Specification	
ADC resolution	16bit (0-65535)
Interface	USB 1.1/2.0 Compatible
Power Supply Input//Output	100-240Vac(47-63Hz) // 15.0Vdc & 1.6A
Computer	
Operating System	Windows 7/8.1/10 (32/64bit)
Software	SM32Pro (basic) &SMProMX (advanced)
Software Development Kit	Visual C++ DLL /LabVIEW VI SDK



## Case Dimension :

Spectrometer SM301



(Size in mm)

**Ordering Information :** Please indicate product number plus description when ordering

SM301 PbS NIR Spectrometer

SM301-EX PbSe MIR Spectrometer