

**Near Infread Spectrophotometer SNIR-8 Series** 



**SNIR-8** Series

### **Introduction**

SNIR-826 is self-developed by Stalwart to replace NIR Quest aiming features high performance cost less, 900-2600nm NIR, Near Infrared spectrometer with 512 pixels, InGaAs cooled down to -20°C, resulting in low noise, 2 times higher SNR, better reliability, measuring results do not change with ambient temperatures. Allow for custom or preconfigured wavelength range, resolution by changing grating lines or slit size. Three common standard maximum wavelength are SNIR-817 900-1700 nm, SNIR-821 900-2100 nm , SNIR-826 900-2600 nm.

Crossed C-T optical bench design the higher sensitivity improve measure accuracy and detect tiny change spectrum, the optimized optical resolution level is superior for NIR spectrometer manufacturing.

- SNIR-860 covers 900-2500nm NIR spectrometer developed by Stalwart for customers have less budget NIR requirements.
- It uses cooled InGaAs detector with 512 pixels, Cooled down to -20°C.
- · Compact size fit to a wide system integration in industrial measurement.
- SMA905 fiber input or free-space
- USB powered and 5V DC UART power
- Free SDK package for OEM customers integration

#### **Features**

- Advanced NIR spectrometer craftsmanship
- Widest NIR range: 900-2600 nm
- Extendable range from UV VIS to Mid IR: 200-5000 nm
- Free NIR spectrometer software
- Global leading NIR spectrometer technology from Manufacturer with 20 year
- Custom or preconfigured wavelength range and optical resolution

### **Specification**

Detector		
Model	Cooled Linear InGaAs CCD, Cooled down to	
	-20°C	
Spectral Range	900-1700nm, 900-2100nm, 900-2500 nm	
Effective Pixels	512 pixels	
Pixels Dimension	25µm×250µm	
Full Range	~17.5 Me-	
Dynamic	12700	
Sensitivity	160 nV/e-	
Peak-value	2300nm	
Dark noise	400 uV rms	

# **Specification**

Optical parameters			
Wavelength Range	900-2500nm (Customized)		
Resolution	5-50nm(depend on slit & spectral range)		
Signal-To-Noise	>3000:1		
Working Humidity	< 90%RH		
Optical			
Optical Design	f/4 crossed asymmetrical C-T		
Confocal distance	82.3 mm for incidence / 121.5 mm for output		
Incident Slit	5, 10, 25, 50, 100, or 200 µm(Customized)		
Incident Interface	SMA905 connector, free space		
Electrical			
A/D Conversion Resolution	18 bit (output 16bit)		
Integration Time	7.8ms- 256s		
Data Output	USB 2.0		
Supply Voltage	5V DC±5%		
Current	<3 A		
Storage Temperature	-20°C to +70°C		
Working Temperature	-10°C to +50°C		
Physical			
Dimension	215×130×53 mm^3		
Weight	1.8kg		

# **Specification**

Detector	SNIR-817	SNIR-821	SNIR-826	SNIR-85A		
Spectral range	900-1700nm	900-2100nm	900-2600nm	1510-1590nm		
Spectral resolution	3-4nm	4-5nm	6-8nm	<0.3nm		
25um slit						
Effective pixels	512					
Pixel size	25×500µm					
Detector	High performance TE-cooled InGaAs					
Cooled	TE-cooled down to -20°C					
SNR	10000:1					
Dynamic range	13000:1					
A/D resolution	18 bit 150kHz					
Operating	-20°C-45°C					
temperature						
Connector	SMA905, free space					
Entrance aperture	5,15,25,50,100,200,300µm, available in custom length					
PC interface	USB2.0 High speed/full speed					
Integral time	1ms ~ 256s					

## The definition of SNIR-8-A-B:

#### A: Pixel number:

- 2: 256 pixels
- 5: 512 pixels;
- 10: 1024 pixels;

#### B: Maximum wavelength range:

- 17: 900-1700nm;
- 21: 900-2100nm;
- 25: 900-2500nm.

### **Application**

- Chemical composition of Plastics, Polymers
- Waste water detection
- Water, Protein, Fat contents of grains
- Carbonization characterization analysis during Paper making and pulp processing
- Online monitoring Chinese herb production
- Solar cell detection
- QA/QC inspection of pharmaceutical ingredients
- Soils component analysis
- NIR laser characterization
- Hydrocarbon analysis in oil and gas