SR 20
Spectrometer

Features

- Miniature Design
- Broad Application Coverage
- Rapid Data Acquisition
- Simplified Integration
- Advanced Color Analysis
- Exceptional Stability
- Cost-Optimized Solution

Application

- Color Science:
- Light Measurement:
- Environmental Monitoring:
- Integrated Systems:

Description

Powerful spectral analysis in a compact form factor with the SR 20. Designed for easy integration into portable devices and equipment with limited space, this miniature spectrometer combines exceptional optical and electrical performance with NWspec Technology's proprietary chromaticity dynamic library algorithm.

Resolution

Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
200-500nm	0.22	1.00	1.10	1.20	1.40	1.60	2.10	3.20	4.20
200-850nm	0.45	2.00	2.20	2.30	2.70	3.20	4.20	6.40	8.40
350-1100nm	0.61	3.20	3.40	3.60	4.00	4.30	5.60	8.30	11.2

Note: Optical resolution is based on FWHM at 435.8 nm.

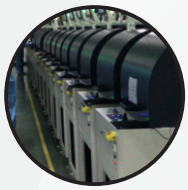
Specification

Spectral Range	200-1100nm
Spectral Resolution	Maximum 0.22 nm
Optical Resolution	Maximum 1.00nm FWHM
Higher-Order Diffraction	Add a high-order diffraction suppression filter
Stray Light	<0.1%
Detector	
Detector Model	Hamamatsu CMOS linear array sensor
Spectral Detection Range:	200~1100nm
Pixel	2048 pixels
Pixel Size	14*200um
High Sensitivity	1300V(Ix*s)
Fastest Speed	10M
Optical Specification	
Optical Path	F/4 symmetrical cross Czerney-Turner optical path
Focal Length	40mm; 60mm
Incident Slit	Standard 70um (optional)
Optical Fiber	SMA905 0.22NA
Electronical Specification	
Signal-to-Noise Ratio	750:1
Linearity	>99.8%
Integration Time	0.1ms~1s
Dynamic Range	500000
AD	No distortion 16-bit
Test Speed	2.8ms + integration time
Communication Interface	USB 2.0, RS232, RS485
Power Consumption	10-pin expansion interface; with external trigger function
Cooling	300mA@5VDC
Other Characteristics	
Support System	Windows, Android, Linux, Wince
Dimensions	80mm*63mm*34mm
Weight	320g
Fixed	3-direction standard installation holes

SR 30
Spectrometer

Features

- High sensitivity
- High-speed chromatogram output: up to
- 10 MHZ
- Ultraviolet response: 200 - 1000 nm
- High-speed sampling: up to 0.8 ms per frame
- Low stray light
- One low drift characteristic
- One automatic zeroing function
- High cost-effectiveness
- Simplified Integration



Application

- Wafer inspection
- Optical spectroscopy inspection
- Online high-speed spectroscopy
- inspection - Film transmittance inspection
  Industrial integration inspection

Description

SR 30 Designed and developed specifically for industrial application customers. Its notable features include high-speed spectral output, high-speed sampling, and high-speed transmission. This model spectrometer has a stable structure and low drift characteristics, which support large-scale industrial customized OEM applications. It supports cross-platform secondary development packages (SDK), and customers can complete rapid development and application by using the provided function libraries.

Resolution

Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
200-500nm	0.32	0.80	1.00	1.10	1.20	1.40	2.10	3.00	4.00
350-950nm	0.66	1.20	2.00	2.20	2.40	2.80	3.80	5.80	7.70
600-1100nm	0.64	1.20	3.00	2.20	2.40	2.80	3.80	5.80	7.70

Specification

Spectral Range	200-1100nm
Spectral Resolution	Maximum 0.32 nm
Optical Resolution	Maximum 0.8nm FWHM
Higher-Order Diffraction	Add a high-order diffraction suppression filter
Stray Light	<0.1%
Detector	
Detector Model	Hamamatsu CMOS linear array sensor
Spectral Detection Range	200~1100nm
Pixel	1024 pixels
Pixel Size	25*500um
High Sensitivity	2600V(Ix*s)
Fastest Speed	10M
Optical Table	
Optical Path	F/4, symmetrical cross Czerney-Turner optical path
Focal Length	70mm; 90mm
Incident Slit	Standard 70um (optional)
Optical Fiber	SMA905 0.22NA
Electronic Property	
Signal-to-Noise Ratio	500:01:00
Linearity	>99.8%
Integration Time	0.1ms~1s
Dynamic Range	150000
AD	No distortion 16-bit
Test Speed	1.8ms + integration time
Communication Interface	USB 2.0; RS232; RS485
Power Consumption	16-pin expansion interface; with external trigger function
Cooling	300mA@5VDC
Other Characteristics	
Support System	Windows, Android, Linux, Wince
Dimensions	128mm*72mm*40mm
Weight	500g
Fixed	3-direction standard installation holes

SR 40
Spectrometer

Features

- Broad spectral range: 200 - 1100nm
- High sensitivity in ultraviolet
- Low drift: 0.1 pixel/℃
- Low noise: <50RMS (ADmax=65535)
- with low stray light
- Automatic zero adjustment
- High cost-effectiveness
- Multiple communication methods
- External trigger function

Application

- Water quality analysis
- Smoke gas detection
- Biomedical
- Teaching and research
- Food, medicine and chemical industry
- Reflection/Transmission test
- Lens inspection
- Automobile exhaust detection

Description

The series of miniature fiber optic spectrometers feature a compact and small appearance, are plug-and-play, easy to operate, and support high-speed data transmission via USB 2.0. Combined with various optical platform components, light sources, and sampling fibers, they can be used to build test solutions for thousands of applications involving absorption, reflection, transmission, etc.

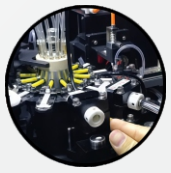
Resolution

Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
200-500nm	0.17	0.80	1.00	1.10	1.20	1.40	2.10	3.00	4.00
200-850nm	0.33	1.20	2.00	2.20	2.40	2.80	3.80	5.80	7.70
200-1100nm	0.45	1.70	2.20	2.70	3.20	3.60	5.00	7.20	9.70

Specification

Spectral Range	200-1100nm
Spectral Resolution	Maximum 0.17nm
Optical Resolution	Maximum 0.80nm FWHM
Higher-Order Diffraction	Add high-order diffraction suppression filter (optional)
Stray Light	<0.1%
Detector	
Detector Model	Hamamatsu CMOS Linear Array Sensor
Spectral Detection Range	200~1100nm
Pixel	2048 pixels
Pixel Size	14*200um
High Sensitivity	1300V(Ix*s)
Fastest Speed	10M
Optical Table	
Optical Path	F/4, symmetrical cross Czerney-Turner optical path
Focal Length	70mm; 90mm
Incident Slit	Standard 60um (optional)
Optical Fiber	SMA905 0.22NA
Electronic Property	
Signal-to-Noise Ratio	430:1
Linearity	>99%
Integration Time	0.4ms~1000ms
Dynamic Range	1000:1
AD	No distortion 16-bit
Test Speed	2.8ms + integration time
Communication Interface	USB 2.0;RS232;RS485
Power Consumption	6-pin external expansion interface; with external trigger
Cooling	300mA@5VDC
Other Characteristics	
Support System	Windows, Android, Linux, Wince
Dimensions	128mm*72mm*40mm
Weight	500g
Fixed	3-direction standard installation holes

SR 50
Spectrometer



Features

- High Chromaticity Stability
- High-Speed Operation
- Industry-Standard Colorimetric Accuracy
- Extensive Light & Color Dynamic Library
- Low Stray Light
- Low-Temperature Drift
- High Value/Cost Ratio

Application

- LED Spectral Analysis
- Wafer Quality Control
- Environmental & Chemical Combustion Analysis
- Light Source Color Parameter Measurement
- Color Measurement & Quality Control
- Fiber Optic Transmittance Testing
- Educational & Research Applications

Description

Your Reliable Spectrometer for Industrial Applications. The SR 50 series miniature fiber optic spectrometer is engineered for demanding industrial environments. Its rugged design and stress-free components ensure long-term stability. Ideal for OEM integration and process control, it delivers accurate and consistent measurements, including CIE color parameters.

Resolution

Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
350-950nm	0.33	1.20	2.00	2.20	2.40	2.80	3.80	5.80	7.70
350-1000nm	0.45	1.70	2.20	2.70	3.20	3.60	5.00	7.20	9.70

Specification

Spectral Range	350 - 1100 nm (Model Dependent)
Wavelength Resolution	Up to 0.33 nm
Optical Resolution	Up to 1.20 nm FWHM (Model Dependent)
Order-Sorting Filter	Optional< 0.1%
Stray Light	< 0.1%
Detector	
Detector Type	Hamamatsu CMOS linear array200~1100nm
Spectral Coverage	350 - 1100 nm
Number of Pixels	Number of Pixels
Pixel Size	14 µm (H) x 200 µm
Sensitivity	1300 V / (lx*s)
Optical Platform	
Optical Design	f/4, Symmetrical Czerny-Turner
Focal Length	70; 90 mm
Entrance Slit	Standard 70 µm (optional sizes available)
Fiber Optic Connector	SMA905 0.22NA
Electrical Specification	
Signal-to-Noise Ratio	380:1
Linearity	>99.8%
Integration Time	0.1 ms - 1 s
Dynamic Range	250000
A/D Converter	16-bit, lossless
Acquisition Speed	2.8 ms + integration time
Communication Interface	USB 2.0; RS232; Rs485
Expansion Port	16-PIN external trigger port
General	
Operating System Support	Windows, Android, Linux, WinCE
Power Consumption	300 mA @ 5V DC
Dimensions	128 mm x 72 mm x 40 mm
Weight	500 g
Mounting	Standard 3-point mounting holes

SR 58
Spectrometer

Features

- Semiconductor testing
- Film thickness measurement light
- Light intensity detection performance
- Online component detection in biomedicine communication
- Fruit sugar content detection
- Teaching and research integration capabilities

Application

- Low drift
- Low stray light
- Higher cost performance
- Network interface communication
- Long-distance data transmission
- Multiple integration capabilities

Description

The series of micro spectrometers is a network port version of spectrometer developed specifically for industrial on-site testing and applications requiring long-distance communication transmission. It supports three communication methods: Ethernet, USB, and serial port. When using Ethernet communication, multiple devices can be integrated through a switch, with a maximum of 100 devices being able to be used simultaneously online, making it highly suitable for multi-channel testing requirements.

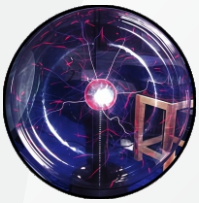
Resolution

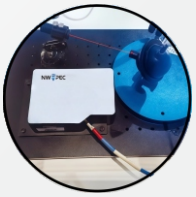
Wavelength Range	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
200-500nm	0.80	1.00	1.10	1.20	1.40	2.10	3.00	4.00
350-950nm	1.20	2.00	2.20	2.40	2.80	3.80	5.80	7.70
350-1100nm	1.70	2.20	2.70	3.20	3.60	5.00	7.20	9.70

Specification

Spectral Detection Range	200-1100nm
Pixel	2048 pixels
Pixel Size	14*200um
High Sensitivity	1300V(Ix*s
Fastest Speed	10M
Optical Table	
Optical Path	F/4, symmetrical crossed Czermy-Turner optical path
Focal Length	70mm, 90mm
Incident Slit	Standard 70um (optional)
Optical Fiber	SMA905 0.22NA
Electrical Specification	
Signal-to-Noise Ratio	430:1
Linearity	>99%
Integration Time	0.4ms~1000ms
Dynamic Range	1500 : 1
AD	No distortion 16-bit
Test Speed	2.8ms + integration time for USB 3.3ms+ integration time for Erthernet
Communication Interface	USB 2.0, RS232, Rs485
Power Consumption	16-pin external expansion interface; with external trigger function
Cooling	300mA@5VDC
Other Characteristics	
Support System	Windows, Android, Linux, Wince
Dimensions	127.4mm*98mm*40mm
Weight	800g
Fixed	3-direction standard installation holes

SR 60
Spectrometer





Features

- Ultra-High Resolution
- Flexible Configuration
- High-Speed Data Acquisition
- Synchronous Control
- Low Stray Light
- Low Temperature Drift

Application

- Laser Peak Detection
- Gas Absorption Detection
- Raman Spectroscopy Applications
- Environmental Monitoring
- Material Composition Analysis
- Metrology Instrument Applications
- Metal Composition Analysis
- Biological Research
- Gemstone Identification
- LIBS (Laser-Induced Breakdown Spectroscopy),
- Plasma Emission Detection

Description

SR 60: The High-Resolution Spectrometer You Can Scale

The NWS6000 series offers unmatched flexibility: combine multiple units to cover your precise wavelength range, all while maintaining high spectral resolution. Its long optical path, high-groove density grating, and synchronized multi-channel operation deliver the performance of a large benchtop system in a compact, customizable form factor.

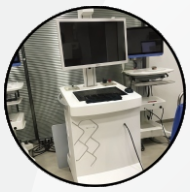
Resolution

Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
200-330nm	0.06	0.03	0.45	0.50	0.60	0.70	1.08	1.50	2.20
200-500nm	0.19	0.70	1.00	1.20	1.40	1.90	2.70	3.85	5.50
380-800nm	0.25	0.90	1.10	1.20	1.85	2.00	3.50	5.50	7.20
800-900nm	0.07	0.40	0.45	0.50	0.75	0.90	1.30	1.50	2.50

Specification

Wavelength Range	Wavelength Range
Wavelength Resolution	Up to 0.03 nm
Optical Resolution	Up to 0.10 nm FWHM (Depending on model)
Higher-Order Diffraction Filter	Adds higher-order diffraction filter (Optional)
Stray Light	<0.1%
Detector	
Detector Type	Hamamatsu CMOS linear array sensor
Detector Wavelength Range	200~1100nm
Pixel Count	2048 pixels
Pixel Size	14 µm x 200 µm
High Sensitivity	1300 V/(lx*s)
Max Speed	10 Mhz
Optical Table	
Optical Path	F/4, Symmetrical Crossed Czerny-Turner
Focal Length	100 mm / 110 mm
Input Slit	Regular 30 µm (Optional)
Optical Fiber	SMA905 0.22NA
Electronic Property	
Signal-to-Noise Ratio	1000:1
Linearity	>99.8%
Integration Time	0.1ms~1s
Dynamic Range	1000000
AD	Lossless 16-bit
Testing Speed	2.8 ms + Integration Time
Communication Interface	USB 2.0; RS232; RS485
Expansion Interface	16-PIN external expansion interface; with external trigger function
Power Consumption	300mA@5VDC
Physical Specification	
Supported Systems	Windows, Android, Linux, Wince
Dimensions (L x W x H)	157 mm x 110 mm x 50 mm
Weight	1150 g
Fixing/Mounting	3-Direction Standard Mounting Holes

SR 63
Spectrometer



Features

- High Signal-to-Noise Ratio
- Two-Stage Cooling
- Back-Thinned CCD Detector
- High Precision Spectroscopic Performance
- Enhanced UV Response
- Low Stray Light
- Superior Low-Temperature Stability

Application

- Raman Spectroscopy
- Life Science Instrumentation
- General Scientific Research
- Environmental Monitoring
- Materials Characterization
- Laboratory Standard Instrumentation
- Microscopy Spectroscopy
- Angle-Resolved Spectroscopy

Description

SR 63 Series Miniature Fiber Optic Spectrometer: High Sensitivity, Compact Design
The NWS6300 series represents a new generation of high-sensitivity, compact fiber optic spectrometers. Featuring a back-thinned, cooled detector, the NWS6300 is ideally suited for demanding applications such as fluorescence and Raman spectroscopy.
Advanced circuit design allows the detector to be cooled to 20°C below ambient temperature, effectively suppressing dark current noise and maximizing signal-to-noise ratio. The NWS6300 offers an exceptional balance of price and performance, making it an ideal choice for integration into high-end instrumentation.

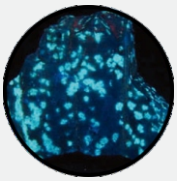
Resolution

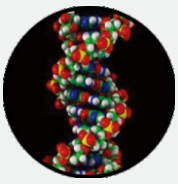
Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
200-500nm	0.20	0.70	0.90	1.00	1.10	1.20	1.90	2.80	3.70
380-800nm	0.26	0.90	1.20	1.50	1.70	2.00	3.00	4.00	6.00
350-1100nm	0.40	1.40	1.60	1.80	2.10	2.50	3.50	5.00	7.00

Specification

Wavelength Range	200~1100 nm (depending on model)
Wavelength Resolution	Up to 0.03 nm
Optical Resolution	Up to 0.10 nm FWHM (depending on model)
Higher-Order Diffraction Filter	Optional higher-order diffraction suppression filter
Stray Light	< 0.1%
Detector	
Detector Type	Hamamatsu CCD area array sensor
Detector Wavelength Range	200~1100 nm
Pixel Count	2048 pixels
Pixel Size	14×14×64μm
High Sensitivity	7μV/e
Max Speed	1M
Optical Platform	
Optical Path	F/4, Symmetrical Crossed Czerny–Turner
Focal Length	100mm;110 mm
Input Slit	Standard 70 μm (optional)
Optical Fiber	SMA905 0.22NA
Electrical Specification	
Signal-to-Noise Ratio	600:1
Linearity	>99.8%
Integration Time	12 ms – 90 s
Dynamic Range	90000
A/D Converter	Lossless 16-bit
Testing Speed	12 ms + integration time
Communication Interface	USB 2.0
Expansion Interface	16-PIN external expansion;supports external trigger
General	
Supported Systems	Windows
Dimensions (L × W × H)	182 mm × 110 mm × 50 mm
Weight	1600 g
Mounting	3-direction standard mounting holes

SR 65
Spectrometer





Features

- High Signal-to-Noise Ratio (SNR)
- Deep-Cooled CCD Detector
- Back-Illuminated CCD
- Enhanced UV Response
- Low Stray Light Optical Design
- Compact and Robust Design
- Versatile Software Suite

Application

- Fluorescence Spectroscopy
- Raman Spectroscopy
- Microscopy Spectroscopy
- Astronomy
- Environmental Monitoring
- Materials Science
- General Spectroscopy

Description

SR 65 Spectrometer: Precision Spectroscopy for Demanding Applications
The NWS6500 series represents a new standard in miniature fiber-optic spectrometers, combining exceptional sensitivity and stability for a wide range of demanding analytical and research applications. Featuring a low stray light optical bench, low-noise electronics, and a high quantum efficiency back-illuminated CCD detector, the NWS6500 delivers superior performance across the UV-Vis-NIR spectrum.
Its deep-cooled CCD, capable of thermoelectric cooling up to 40°C below ambient, significantly reduces dark current and thermal noise, enabling extended integration times and improved detection limits. This makes the NWS6500 ideal for low-light level applications and environments with fluctuating temperatures.

Resolution

Wavelength Range	Wavelength Resolution (nm)	30 µm slit	40 µm slit	50 µm slit	60 µm slit	70 µm slit	100µm slit	150µm slit	200µm slit
200-850nm	0.83	1.6	1.90	2.30	2.70	3.00	4.00	6.00	8.00
380-800nm	0.50	0.90	1.20	1.50	1.70	2.00	3.00	4.00	6.00
450-1100nm	0.83	1.60	1.90	2.30	2.70	3.00	4.00	6.00	8.00

Specification

Spectral Range	200-1100nm
Optical Resolution	Up to 0.50 nm FWHM
Wavelength Resolution	Up to 0.30 nm
Stray Light	<0.1%
Detector	
Order-Sorting Filter	Optional
Detector Type	Back-thinned CCD array (Hamamatsu)
Spectral Coverage	200 - 1100 nm
Number of Pixels	1024
Pixel Size	24x24x58 µm
Sensitivity	2.2 µV/e-
Max. Speed	1 minutes
Optical Specification	
Optical Design	F/4 symmetrical cross Czerney-Turner
Focal Length	100, 110 mm
Entrance Slit	Standard 70 µm (optional sizes available)
Fiber Optic Connector	SMA905,0.22NA
Electronical Specification	
Signal-to-Noise Ratio	1000:1
Linearity	>99.8%
Integration Time	3.6ms~15s
Dynamic Range	2000000
A/D Converter	16-bit, lossless
Acquisition Speed	12 ms + integration time
Communication Interface	USB 2.0
Expansion Port	16-pin external trigger por
Operating System Support	Windows
Power Consumption	450 mA @ 5V DC
Cooling	4 A @ 5 V DC
Dimensions	182 x 110 x 50 mm
Weight	1600 g
Mounting	Standard 3-point mounting holes

SR 68
Spectrometer

Features

- Multiple near-infrared bands are available.
- Two-stage cooling
- InGaAs detector
- Low noise
- High signal-to-noise ratio
- Low temperature drift characteristics

Application

- Water analysis
- Fruit detection
- Crop detection
- Iaser wavelength detection
- Online component analysis
- Chemical concentration online detection
- Raman spectroscopy
- Life science instruments
- Scientific experiments
- Environmental detection
- Infrared light source detection

Description

Achieve unparalleled NIR analysis with the SR 68 series of miniature fiber-optic spectrometers. Equipped with a two-stage cooled InGaAs detector, these spectrometers deliver high-speed, accurate results in the 900-2500nm range. Ideal for demanding industrial online monitoring and precise agricultural analysis.

Resolution

Wavelength Range	Wavelength Resolution (nm)	30 μm slit	40 μm slit	50 μm slit	60 μm slit	70 μm slit	100μm slit	150μm slit	200μm slit
1000-1700nm	2.81	6.50	7.00	8.00	9.00	10.00	11.00	12.50	14.00
1430-1750nm	1.41	3.20	3.50	4.00	4.50	5.00	5.50	6.30	7.00
1000-2500nm	6.37	15.00	16.00	17.00	18.00	19.00	22.00	24.50	27.00

Specification

Spectral Range	1000~2500nm
Spectral Resolution	Maximum 1.25 nmWHM
Optical Resolution	Maximum 3.20nm FWHM
Higher-Order Diffraction	Add high-order diffraction filter (optional)
Stray Light	<0.1%
Detector	
Detector Model	InGaAs detector (optional)
Spectral Detection Range	1000 - 2500nm (optional)
Pixel	256, 512pixels
Pixel Size	100*100um
High Sensitivity	10.5uV/e-
Fastest Speed	500K
Optical Specification	
Optical Path	F/4, symmetrical crossed Czermy-Turner optical path
Focal Length	100mm; 110mm
Incident Slit	Standard 200um (optional)
Optical Fiber	Near-infrared SMA9050.22NA
Electronical Specification	
Signal-to-Noise Ratio	1200:1
Linearity	>99.8%
Integration Time	0.1ms~1400ms
Dynamic Range	900000
A/D Converter	No distortion 16-bit
Testy Speed	12 ms + integration time
Communication Interface	USB 2.0
Expansion Interface	16-pin external expansion interface; with external trigger function
Power Consumption	450 mA @ 5V DC
Cooling	4A@5V DC
Support System	Windows
Dimensions	182 x 110 x 50 mm
Weight	1500g
Fixed	3-direction standard installation holes