TE-Cooled CCD Chip Fiber Optic Spectrometer for Non-Destructive Film Thickness Measurement Spectrual Range 200nm 1100nm

Our Product Introduction

Basic Information

- Place of Origin: CHINA
- Brand Name: JINSP
- Certification: ISO9001
- Model Number: SR100Q
- Minimum Order Quantity: 1
- Price: Negotiable
- Packaging Details: International Shipping Pakcage
- Delivery Time: 90-120 working days
- Payment Terms: T/T, Western Union
- Supply Ability: 100PCS/90-120 days

Product Specification

- Spectrual Range: 200nm - 1100nm
- Effective Pixels: 1024*122
- Qutuam Efficiency: QE92%peak@650nm, 83%@232nm
- SNR: 1000:1
- Highlight: **Non Destructive Fiber Optic Spectrometer**, **1100nm Fiber Optic Spectrometer**, **TE Cooled Fiber Optic Spectrometer**

More Images

Product Description

92% High Quantum Spectrometer for Film Thickness Measurement

The widespread use of thin films in high-tech industries necessitates advanced thickness assessment methods. Photoelectric technology answers this need with its non-invasive, high-efficiency protocols. By merging spectral analysis with machine learning, manufacturers achieve unprecedented control over film properties, catalyzing product innovation.

The JINSP SR100Q spectrometer is integrated with the Hamamatsu S7031, a scientific-grade TE-cooled area array CCD chip. With a pixel size of up to 24*24μm and excellent quantum efficiency of up to 92%, it ensures high response in the ultraviolet band and effectively improves the sensitivity and SNR of weak signals. Furthermore, it can realize excellent spectrum signals, and stable and reliable performance based on the advanced high-resolution light path and low-noise, high-speed FPGA signal processing chip.

Product Parameters:

Detector	Chip Type	Back-illuminated TE-cooled Hamamatsu S7031
	Effective Pixel	1024*122
	Pixel Size	24*24μm
	Sensing Area	24.576*2.928mm
Optical Parameters	Optical Design	F/4 cross-type
	Numerical Aperture	0.13
	Focal Length	100mm
	Entrance Slit Width	10μm,25μm,50μm,100μm,200μm (customizable)
	Fiber Interface	SMA905,free space
Electrical Parameters	Integration Time	8ms-3600s
	Data Output Interface	USB3.0,RS232,RS485,20pin connector
	ADC Bit Depth	16-bit
	Power Supply	5V
	Operating Current	<3.5A
Physical Parameters	Operating Temperature	10 ~40
	Storage Temperature	-20 ~60
	Operating Humidity	<90%RH (no condensation)
	Dimensions	180mm*120mm*50mm
	Weight	1.2kg

List of Product Models:

Model	Spectral Range(nm)	Resolution(nm)	Slit(μm)
SR100Q-G21	200~950	6.8	200
		2.2	50
SR100Q-G22	350~1100	1.5	25
		1.0	10
SR100Q-G23	200~775	1.6	50
		1.0	25
SR100Q-G24	350~925	0.7	10
SR100Q-G25	532~690(4400cm-1*)*	13cm-1	50
SR100Q-G26	638~800(3200cm-1)*	10cm-1	25
SR100Q-G27	785~1050(3200cm-1)*	11cm-1	50

Note: The*are primarily designed for Raman applications, with the corresponding Raman.

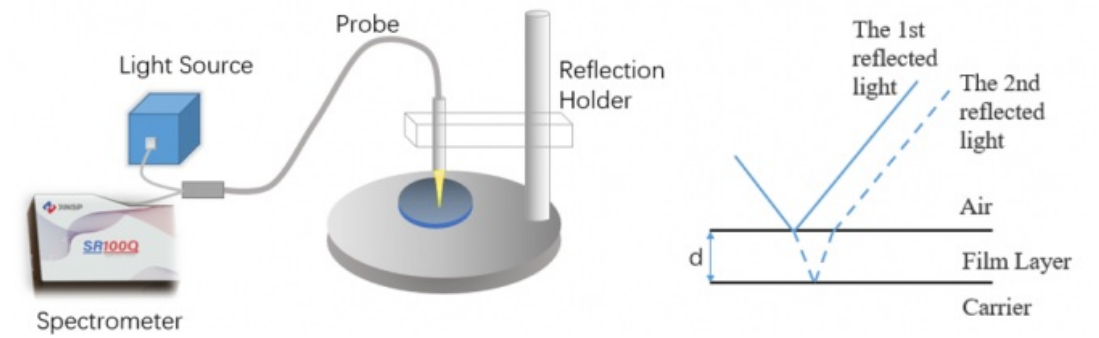
Technical Characteristics:

High quantum efficiency, 92%peak@650nm, 83%@232nm
High SNR: Ultra-low dark noise under long integration time, SNR is as high as 1000:1
Noise-free clear processing of weak signal in long exposure, strong adaption to environment
Low-noise and high-speed circuit: USB3.0

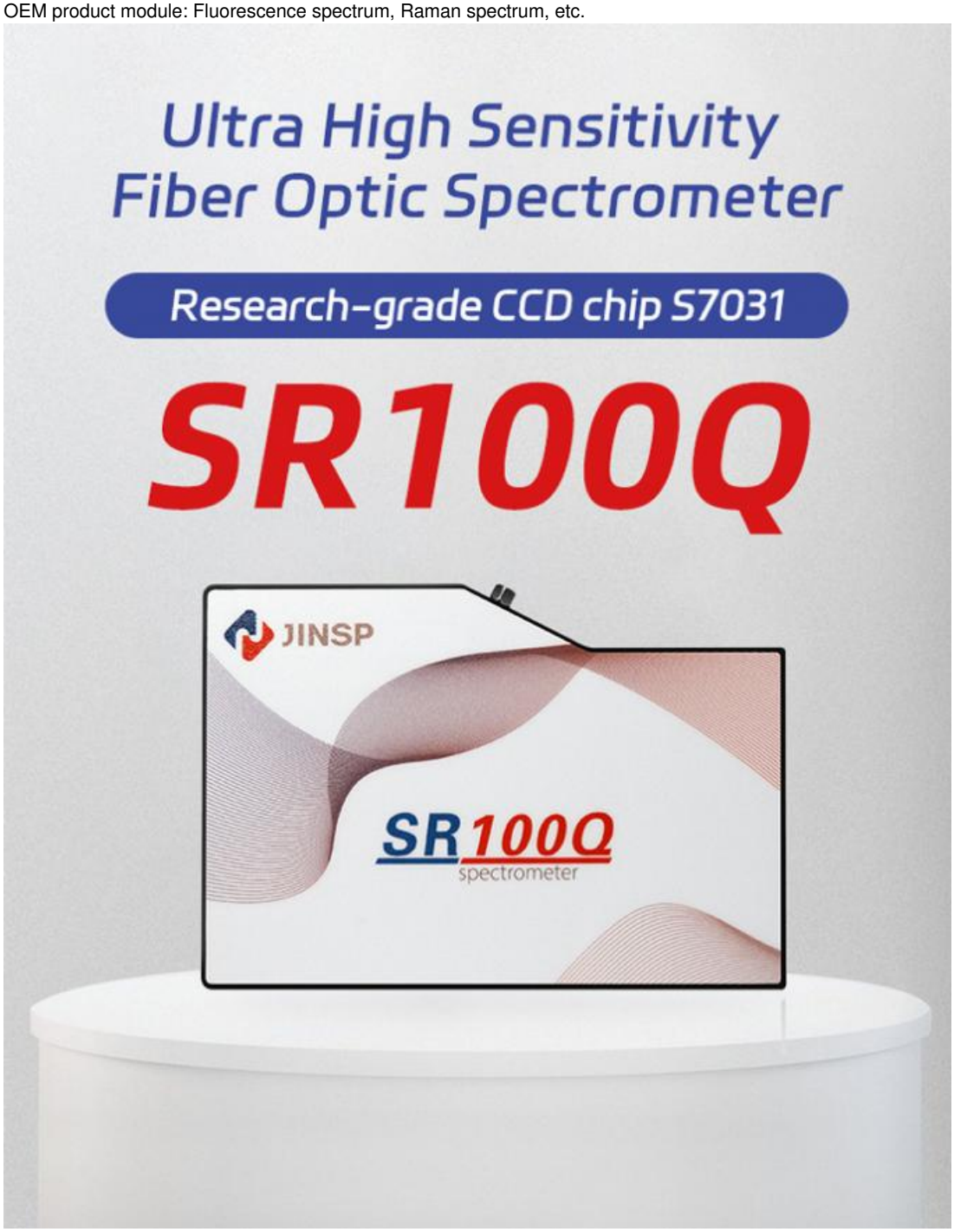
Measurement Method:

Light transmitted via an optical fiber reflects at the film's upper and lower surfaces, creating two phase-shifted beams. Their interference spectrum, recorded by the spectrometer, allows thickness (d) calculation using the extremum method with θ, n, and peak/trough data. Thicker films increase fringe frequency, while longer wavelengths decrease it. Optimal measurement

requires proper spectral range and resolution selection.



Typical Applications:
Detect absorption, transmittance and reflection Spectrum
Light source and laser wavelength characterization
OEM product module: Fluorescence spectrum, Raman spectrum, etc.



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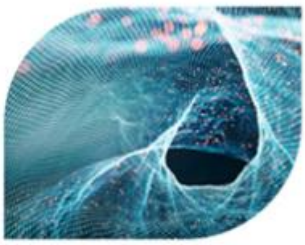

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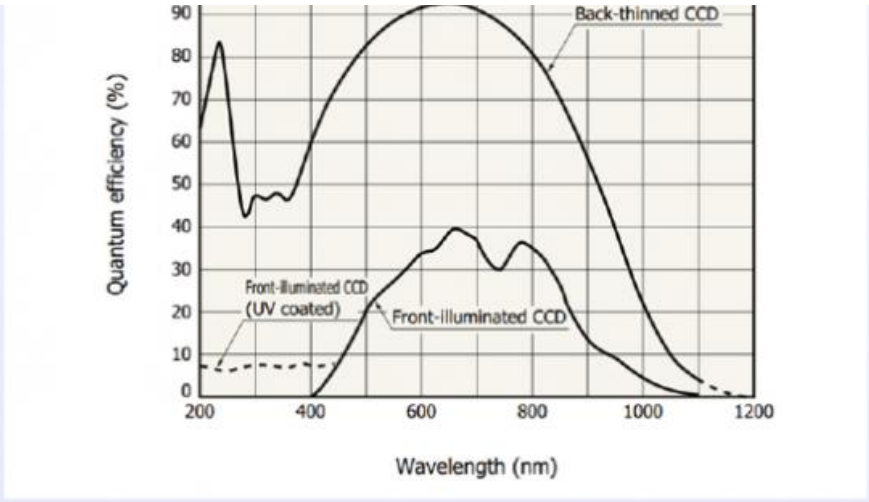
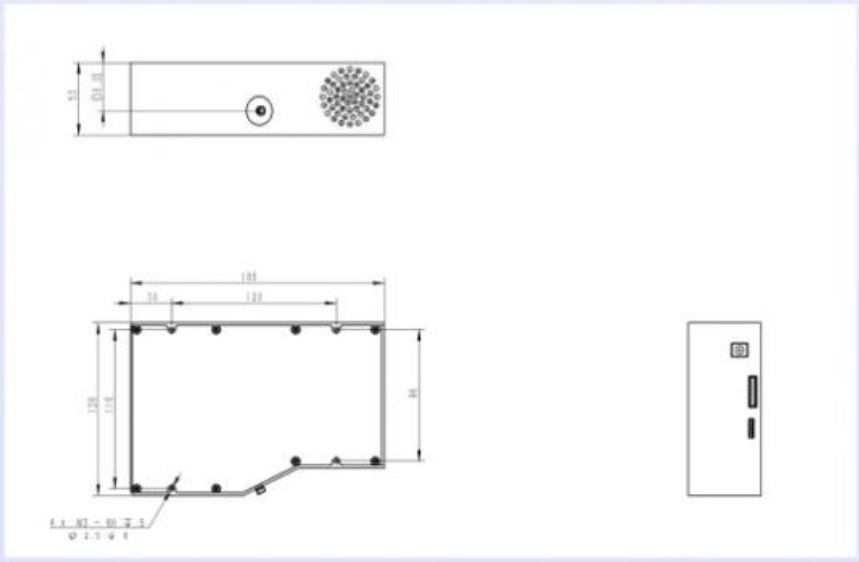


CCD Quantum Efficiency Curve



Installation dimension drawing

Company Introduction:

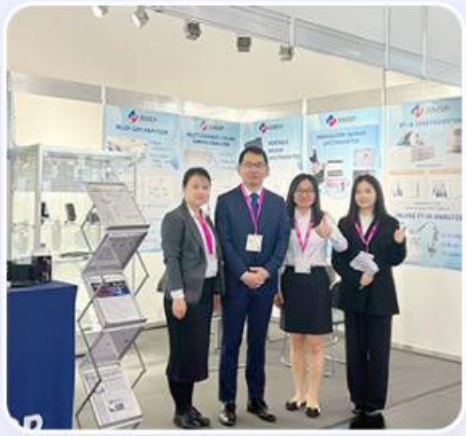
JINSP Company Limited, abbreviated as "JINSP", is a professional supplier with over 17 years of experience in spectral detection technology products, including Raman, FT-IR, LIBS technologies, etc. After 17 years of technology accumulation, the company's core key technologies have reached the international leading position at the level, and the cumulative number of patent applications exceeded 200.

In addition to its main headquarters located in the bustling city of Beijing, JINSP has established a fully owned subsidiary manufacturing facility situated in the province of Jiangsu, China.

JINSP Company received ISO9001:2015, ISO14001:2015, and ISO45001:2018 certifications. JINSP can provide required certifications, such as certification by the Ministry of Public Security or National Institute of Metrology, Environmental Level Certification, IP Level Certification, CE Certification, Transport Identification Report, EU ECAC certification, German ICT Security Testing, etc.

Company Profile

Exhibition



Certifications

FAQ

Q1:This is the first time I use, is it easy to operate?

A1:We will send you manual and guide vedio in English,it can teach you how to operate the spectrometer. Also our technicians will offer professional tecnical opearation meetings.

Q2: Can your offer a operation traning?
A2: Your technicians can come to our factory for a training. Jinsp engineers can go to your place for local support (installation, training, debugging, maintenance).

Q3: What's your website?
A3:You can visit:www.jinsptech.com

Q4: What about your quality assurance?
A4: We have a quality inspection team. All goods will go through quality inspection before shipment. We can send you pictures for inspection.

JINSP Company Ltd.

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