

## SM642-HRS High Resolution Spectrometer

Low Cost and High Performance Backthinned CCD Spectrometer

Low Dark Current Noise and Stray Light for Spectrophotometer / Spectroradiometer

High Signal to Noise Ratio

High Ultra-Violet Quantum Efficiency

High Speed Data Acquisition

**Dark Option (Auto Shutter)**



### The Choice for Low Signal Level & high resolution Applications

Spectral Products is offering the new SM642-HRS non TE cooled back-thinned 2048 pixel array CCD spectrometer. The SM642-HRS provides high quantum efficiency in UV and high dynamic range. The detector used in the SM642-HRS has 2048 pixels and helps to get better resolution. It is ideal for UV/VIS/NIR spectrometry that requires high signal to noise ratio and/or high dynamic range. The back-thinned CCD has excellent sensitivity in UV and allows deep UV application, even below 200nm.

The large optical bench of the SM642-HRS makes it possible to have a narrow window size and get a higher resolution, which is sometimes impossible with the regular SM642. With sacrificing the covering wavelength range, the SM642-HRS can offer about twice higher resolution than the regular SM642.

Well designed housing allows a wide measurement window like from 200nm to 1050nm (smaller measurement window sizes increase spectral resolution and light sensitivity) with low stray light. Standard interface to the SM642-HRS is a USB 1.1/2.0 compatible interface with 16-bit.

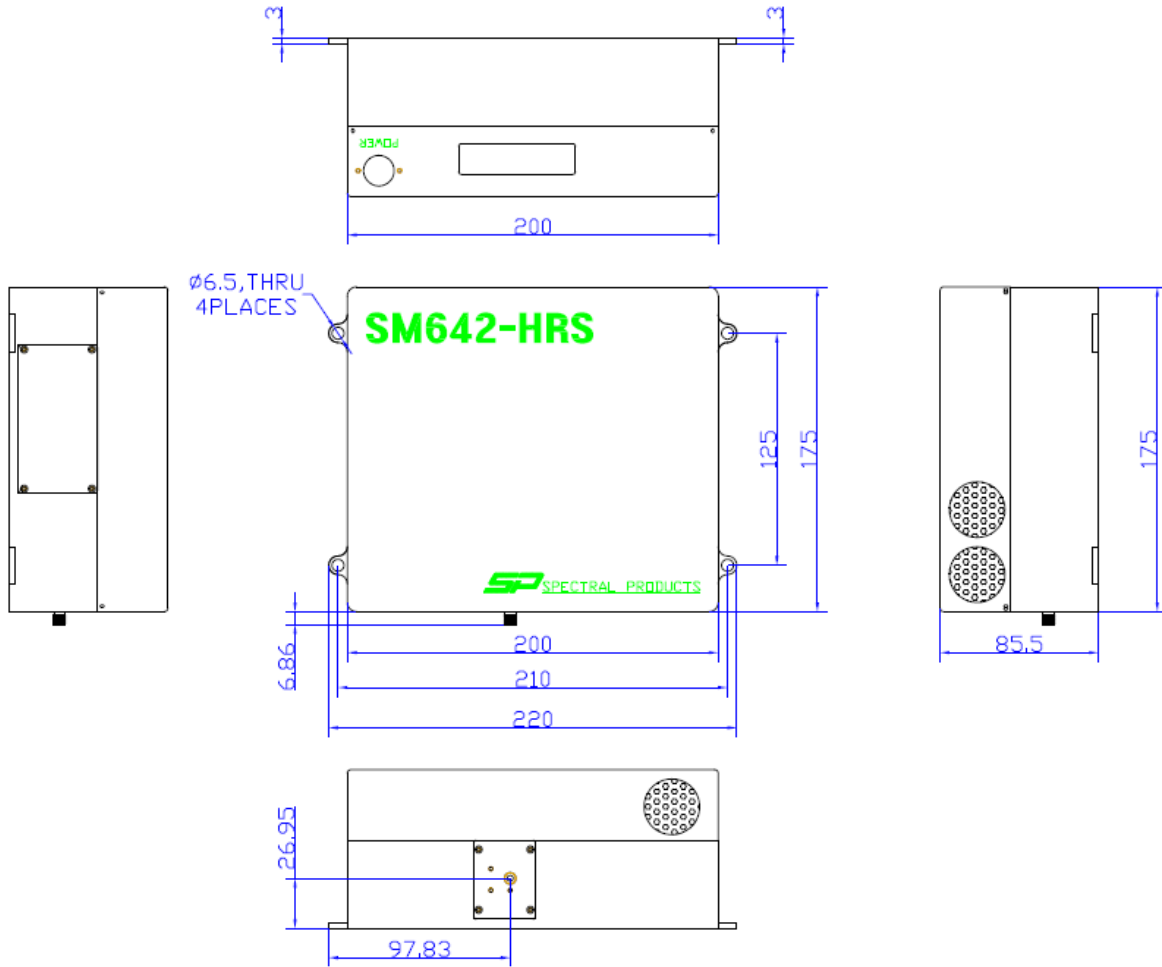
Software support includes a SDK and DLLs for dedicated applications development and our SM32Pro Windows-based spectral acquisition and analysis software.

## Specifications :

Physical Dimension	
Dimensions	8.66" X 6.89" X 3.37" (220mm X 175mm X 86mm)
Weight	6.6lbs (3.0kg)
Fiber Optic Connector	SMA905 N.A.=0.22 Optical Fiber Input
Detector	
Detector	Hamamatsu S10420-1106S (Non TE-Cooled Backthinned FFT CCD)
Cooling	None
Windows Material	Quartz
Spectral Response Range	~200-1050nm
Pixels	2068 X 70 pixels (Total) 2048 X 64 pixels (Effective)
Pixel Size	14 um X 14 um
Active Area	28.672 mm X 0.896 mm
Full Well Capacity	200 ke-
Quantum Efficiency	>75% @ 600nm
Optical Specification	
Wavelength Range	Full Range: ~200-1050nm
	UV/VIS Range: ~200-800nm
	Visible Range: ~300-900nm
	other user customized range
Optical Resolution	~0.1-57nm, dependent on spectral range, slit width, fiber diameter and so on
Dark	Auto Shutter
Dark Noise RMS	< 7 RMS counts in 16bit @ 35msec integration time
Signal to Noise Ratio	450 : 1
Stray Light	<0.05% AVG
Filter	Second Order Blocking Filter Installed
Electrical Specification	
ADC resolution	16bit (0-65535)
Minimum Integration Time	7msec
Interface	USB 1.1/2.0 Compatible
Trigger Mode	Free Run Mode
	Software Trigger Mode
	External Trigger Mode (9-pin connector) (TTL Edge Trigger Input / Digital Output for Monitoring)
Power Input	100-240V(47-63Hz),1.9A
Computer	
Operating System	Windows XP/VISTA/Win7, 8.1, 10 (32/64bit)
Software	SM32Pro software included
Software Development Kit	Visual C++ DLL /LabVIEW VI SDK

Spectrometer **SM642-HRS**

## Case Dimension :



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

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