



# **Exemplar®**

pectrometa

### **Smart CCD Spectrometer**



The Exemplar® was the first smart spectrometer to feature on-board data processing, USB 3.0 communication, and temperature compensation. The Exemplar is also optimized for multi-channel operation featuring ultralow trigger delay and gate jitter. Additionally, the Exemplar features a 2048 element detector and built-in 16-bit digitizer with greater than 2.0 MHz readout speed.

The Exemplar is ideal for most visible and near-infrared applications and is available in the following standard configuration: wavelength range of 350-1050nm, 25µm slit, an LVF filter, a ruled grating (600mm/400nm), and a spectral resolution of 1.5nm. Custom configurations are also available.

### **Applications:**

- UV, Vis, and NIR: Spectroscopy / Spectroradiometry / Spectrophotometry
- **Absorbance / Reflectance / Transmittance**
- **Kinetic reaction monitoring**
- **Transient spectral analysis**
- **Wavelength identification**
- **OEM systems integration**
- **Multi-point sampling**

#### **SMART:**

On-board processing including averaging, smoothing, and dark compensation

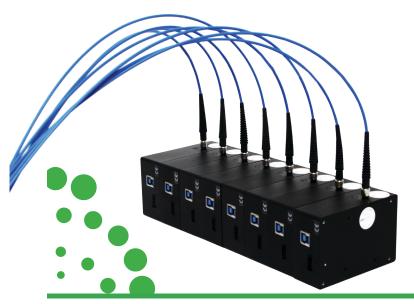
### **SPEED:**

Acquires and transfers more than 900 spectra per second at an integration time of 1050µs

#### **SYNCHRONOUS:**

Supports up to 32 devices with ultra-low trigger delay (35ns) & gate jitter (+/- 5ns)

SIGNAL TO NOISE RATIO:			
On-board averaging 1	~295		
On-board averaging 10	~929		
On-board averaging 100	~2450		



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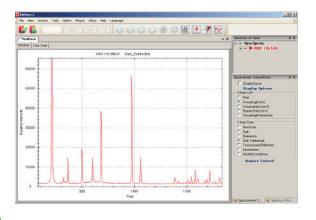


### **Specifications:**

Power Input	USB @ < 0.5 amps
Detector Type	Response enhanced linear CCD array
Wavelength Range	200nm - 1050nm
Detector Pixel Format	2048 x 1 elements @ 14μm x 200μm per element
Spectrograph f/#	3.6
Spectrograph Optical Layout	Crossed Czerny-Turner
Dynamic Range	1300:1 single acquisition
Digitizer Resolution	16-bit or 65,535:1
Data Transfer Speed	> 900 spectra per second in burst mode
Trigger Delay	35ns +/- 5ns
Readout Speed	>2.0 MHz
Integration Time	1ms, adjustable in 1µs increments
Thermal Drift	29 Counts/°C (Max)
Aux Port	External trigger, digital IOs
Operating Temperature	5°C - 35°C
Operational Relative Humidity	85% noncondensing
Weight	~ 0.75 lbs (0.34 kg)
Dimensions	4.02in x 2.64in x 1.34in (102mm x 67mm x 34mm)
Computer Interface	USB 3.0 / 2.0
Operating Systems	Windows: 7, 8 (32-bit & 64-bit)

#### Software:

BWSpec® is a spectral data acquisition software with a wide range of tools that are designed to perform complex measurements and calculations at the click of a button. It allows the user to choose between multiple data formats and offers optimization of scanning parameters, such as integration time. In addition to powerful data acquisition and data processing, other features include automatic dark removal, spectrum smoothing, and manual/auto baseline correction.



### **Additional Features:**

- · Temperature compensation for ultra-low thermal drift
- 1ms minimum integration time
- < 0.5nm spectral resolution</li>
- UV NIR (200nm 1050nm)
- >2.0 MHz readout speed

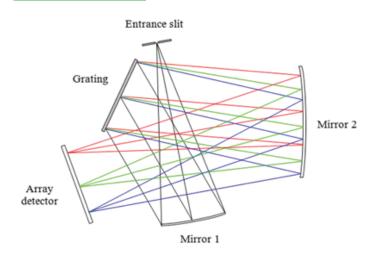
### **Entrance Slit**

Slit Option	Dimensions	Approx. Resolution 350-1050nm		
10μm	10μm wide x 1mm high	~1.0nm		
25µm	25μm wide x 1mm high	~1.5nm		
50μm	50μm wide x 1mm high	~2.2nm		
100µm	100μm wide x 1mm high	~4.0nm		
Custom Slit Widths Available				

## **Diffraction Grating**

Best Efficiency	Spectral Coverage (nm)	Grating	
UV / NIR	350 - 1050	600/400	
Vis	380 - 750	900/500	
NIR	750 - 1000	1200/750	
Custom Configurations Available			

# Spectrograph



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