

# Spectre® MINI [NIR Enhanced]

Powered by the Hamamatsu Photonics C14384MA-01



We See the Invisible®



**Save Money.  
Reduce Waste. Go Faster.**

Compact plug-and-play spectroscopy module made in the USA for embedded industrial integration.



## Features

### See **Faster**

- ◇ Minimize data processing time and errors with **onboard optical calibrations** powered by 5 proprietary algorithms, (see back for details).
- ◇ Start today with AGR's® **evaluation app** and sample embedded JSON **scripts**.

### See **Farther**

- ◇ Pipe analysis-ready data **hundreds of feet** using PoE or within the same housing with **board-to-board** connectors and USB-C.
- ◇ Deploy like a camera for **non-contact** scans to eliminate cross-contamination.

### See **Fearless**

- ◇ Scale from **prototype to production** with a universal OEM baseboard reliably made in **America's Optics Capital**: Rochester, NY.
- ◇ **Zero moving parts** and the **latest-generation** sensor design ensure lasting quality.

## APPLICATIONS

### See the **Invisible** to Control Your Quality

- ◇ Food & Agriculture
- ◇ Environmental Monitoring
- ◇ Paints & Textiles
- ◇ Pharmaceuticals
- ◇ Lighting & Displays

## Specifications

Sensor		Hamamatsu Photonics C14384MA-01 spectrometer
AGR® Part Number	Rugged Housed	9005-U
	Board-Level	9004-U
Electrical Interfaces	Rugged Housed	USB-C Ethernet (PoE)
	Board-Level	USB-C Ethernet (PoE) UART board-to-board I2C board-to-board Power board-to-board Input & Output Triggers
Optical Interfaces		Free-Space SMA Fiber: With housing adapter Lenses and Diffusers by request
Spectral Range		640 nm - 1050 nm
Numerical Aperture		0.22
Free-Space Full Field of View		25°
Nominal Spectral Resolution		2.14 nm
FWHM Spectral Resolving Power		11 nm - 13 nm
Bit Depth		Linearized 16-bit (65,536 counts)
Integration Time (Exposure)		10µs to 10s
Maximum Output Frame Rate		500 FPS
Optical & Temperature Correction		Embedded Onboard
Operating Temperature		+5° to +50° C (+41° to +122° F)
Mechanical Dimensions		Drawings available upon request
Ingress Protection		Untested
Interface Protocol		JavaScript Object Notation (JSON)
Operating Modes		Automatic & Manual
Compatible Off-the-Shelf Accessories (See webstore for details)		Calibrated Armored Optical Fiber Housed SMA Fiber Adapter Calibrated Glass Diffuser



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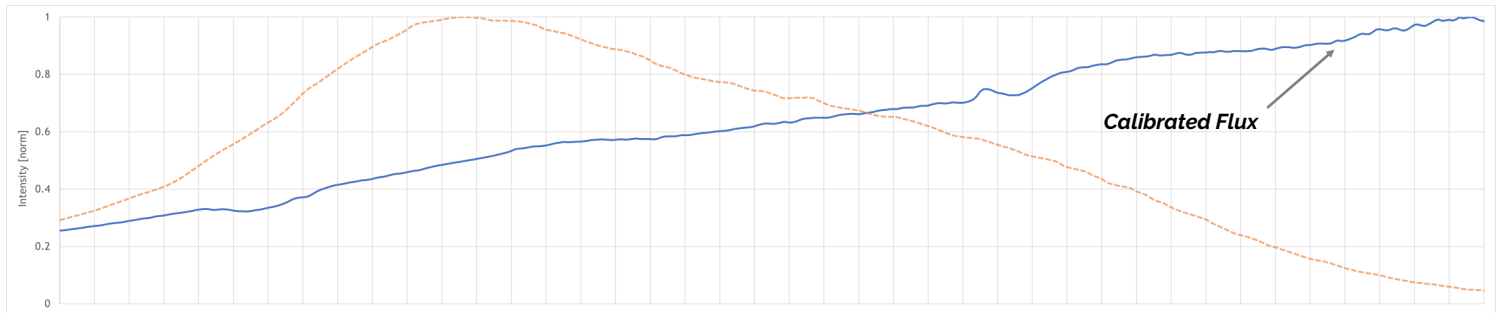
Powered by the Hamamatsu Photonics C14384MA-01



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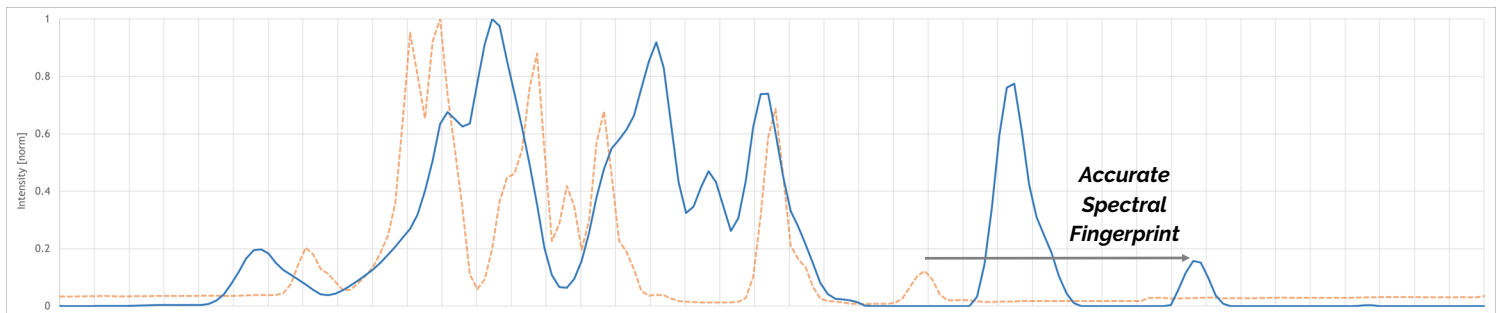
## Are You Ready for the AI Revolution?

Ready or not, it's already here. That's why you need the **AGR® Advantage** to handle big data with ease. Every Spectre® is factory-embedded with the 5 proprietary onboard calibrations demonstrated below to **minimize data post-processing time** while **maximizing signal and accuracy** for high-performing analytics. **You take the scan, we do the rest.**



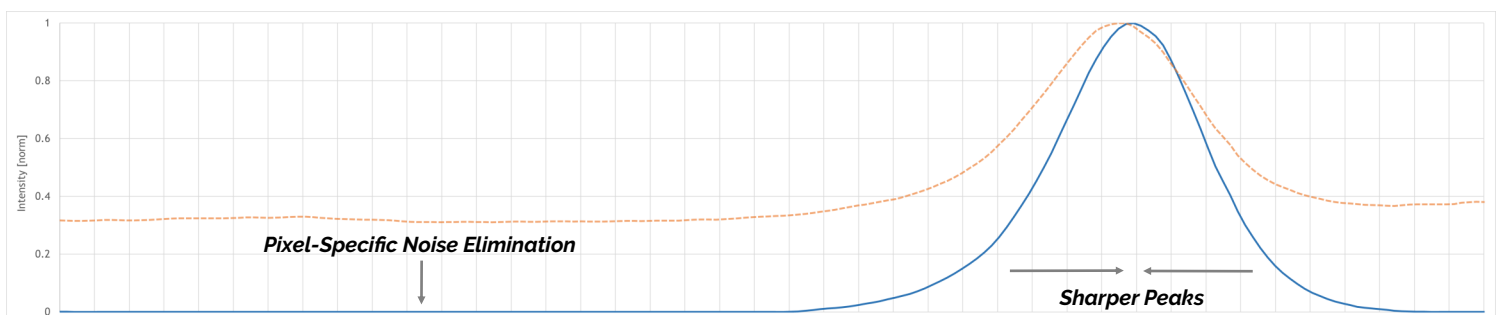
### Y-Axis [Quantum Efficiency and Auto-Exposure]

Calibrated reading (blue) directly overlaps tungsten-halogen data from NIST calibrated reference spectrometer, in contrast to raw reading (orange).



### X-Axis [Optical Alignment and Temperature Shift]

Calibrated reading (blue) correctly identifies primary Mercury-Argon atomic emission peaks, in contrast to wavelength-shifted raw reading (orange).



### Multi-Dimensional [Predictive Patterned Dark Noise]

Calibrated reading (blue) mitigates dark noise and its spectrally-dependent pattern *without* requiring the installed unit to be covered for dark readings.

Buy Now



Custom Analytics

We see the *invisible*®, and you can too by contacting AGR® for tailored AI models.

System Integration

Continue development with AGR's® network of approved design integration partners.



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