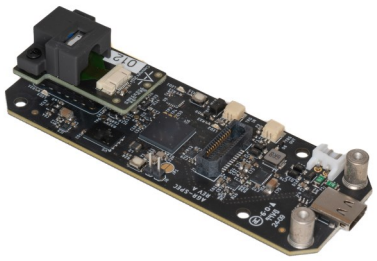
Spectre® MINI [NIR Enhanced]

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 edge AI and industrial integration

Features

See *Faster*

- Minimize data processing time and errors with **high frame rates** and **onboard calibrations** powered by 5 proprietary algorithms.
- Start today with AGR's® **evaluation apps** and sample embedded **Python scripts**.

See *Farther*

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

See *Fearless*

- Scale from **prototype to production** with a customizable OEM module reliably made in **America's Optics Capital**: Rochester, NY.
- **Solid state** sensors and rugged environmental ratings ensure **performance-critical integrity**.

APPLICATIONS

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

- Agriculture, Forestry, Food & Beverage
- Medical & Pharmaceutical
- Water Quality & Environmental Monitoring
- Manufacturing & Recycling
- Lighting & Calibration

Contact us for inspiration from 100+ case studies.

Specifications

Sensor		Hamamatsu Photonics C14384MA-01 Micro Spectrometer
AGR® Part Number	Board-Level	9004 (USB), 9004-E (PoE)
	Enclosed	9005 (USB), 9005-E (PoE)
Electrical Interfaces	Enclosed	USB 2.0 Type C PoE M12 X-Coded Ethernet
	Board-Level	USB 2.0 Type C PoE M12 X-Coded or RJ45 Ethernet UART Board-to-Board [3.3V] I2C Board-to-Board [3.3V] Power Board-to-Board [5.0V I/O] Input & Output Triggers [Up to 24V]
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
Integration Time (Exposure)		10µs to 10s
Maximum Frame Rate		840 FPS Calibrated | 2,000 FPS Raw
Optical & Temperature Calibrations		Embedded Onboard
Operating Temperature		+5˚ to +50˚ C [+41˚ to +122˚ F]
Mechanical Dimensions		Drawings Available upon Request
Ingress Protection		Untested
Interface Protocol		EMI-Resistant Standard JSON
Operating Modes		Automatic & Manual
Compatible Off-the-Shelf Accessories		Flex Cable to Detach Sensor Card Housed SMA Fiber Adapter Calibrated Armored Optical Fiber Calibrated Glass Diffuser

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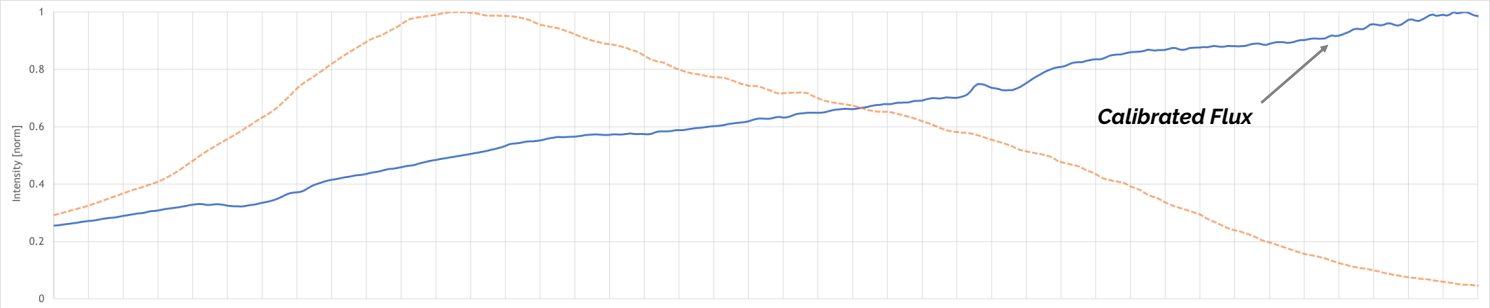
Are You Ready for the AI Revolution?

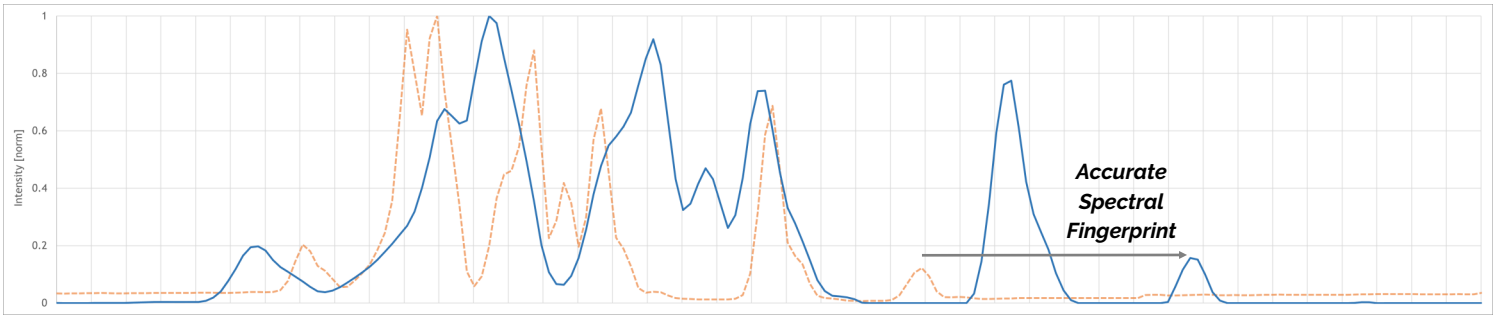
Ready or not, it's already here. That's why you need the **AGR® Advantage** to outperform standard imaging in **accuracy and training time**. Every Spectre® is factory-embedded with the 5 proprietary onboard calibrations demonstrated below to **minimize post-processing** time while **maximizing signal and accuracy** for high-performing spectral analytics.

You take the scan, we do the rest.



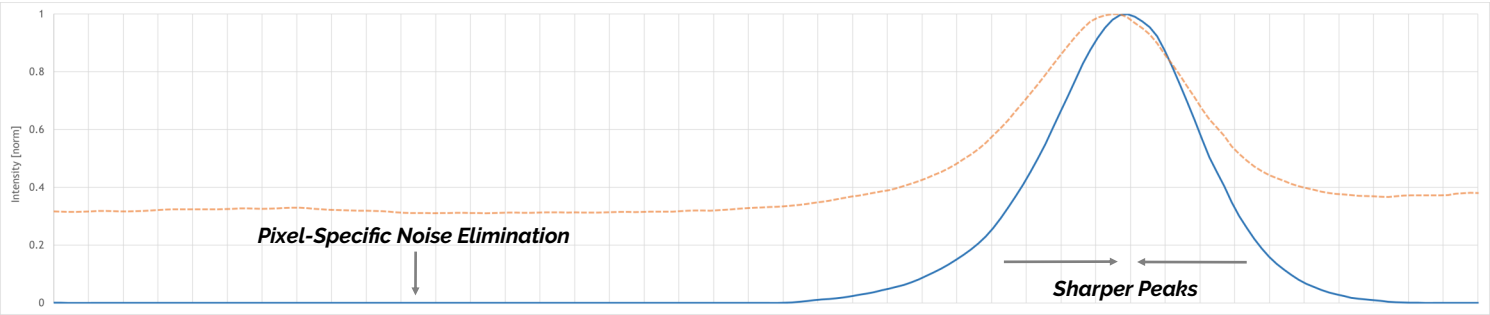
Y-Axis [Quantum Efficiency and Auto-Exposure]

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

System Integration | Customize for original design manufacturing (ODM) with AGR® & integration partners.

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