

Spectre® MINI [SWIR 3]

Powered by the Hamamatsu Photonics C14273



NIST



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 C14273 MEMS-FPI Spectrometer | |
| AGR® Part Number | Board-Level | 9012 (USB), 9012-E (PoE) |
| | Enclosed | 9013 (USB), 9013-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 | 1750 nm - 2150 nm | |
| Numerical Aperture | 0.09 | |
| Free-Space Full Field of View | 10° | |
| Nominal Spectral Resolution | 1 nm (Specific Mode) 7.5 nm (Full-Spectrum Mode) | |
| FWHM Spectral Resolving Power | 22 nm | |
| Bit Depth | Linearized 16-bit | |
| Integration Time (Exposure) | 10µs to 10s | |
| Maximum Frame Rate | 840 FPS (Specific Mode) 15 FPS (Full-Spectrum Mode) | |
| Optical & Temperature Calibrations | Embedded Onboard | |
| Operating Temperature | -40° to +85° C [-40° to +185° 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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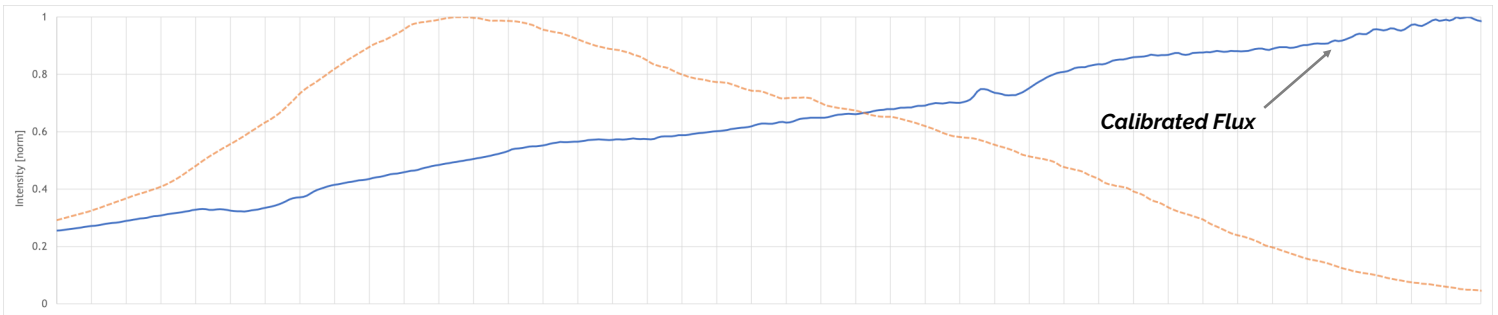


We See the Invisible®

Are You Ready for the AI Revolution?

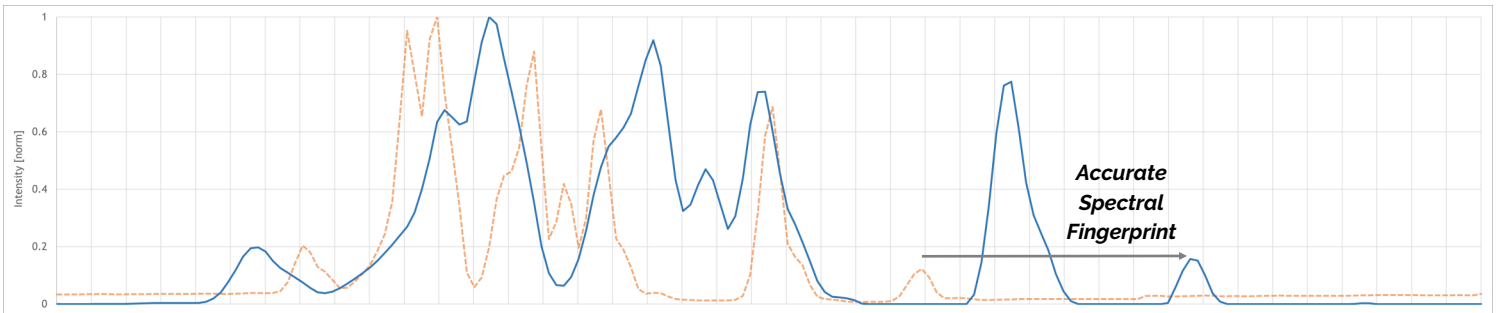
Ready or not, it's already here. That's why you need the **AGR® Advantage** to outperform standard imaging in **accuracy and training time**. Every Spectre® is factory-embedded with the 5 proprietary onboard calibrations demonstrated below to **minimize post-processing** time while **maximizing signal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

You take the scan, we do the rest.



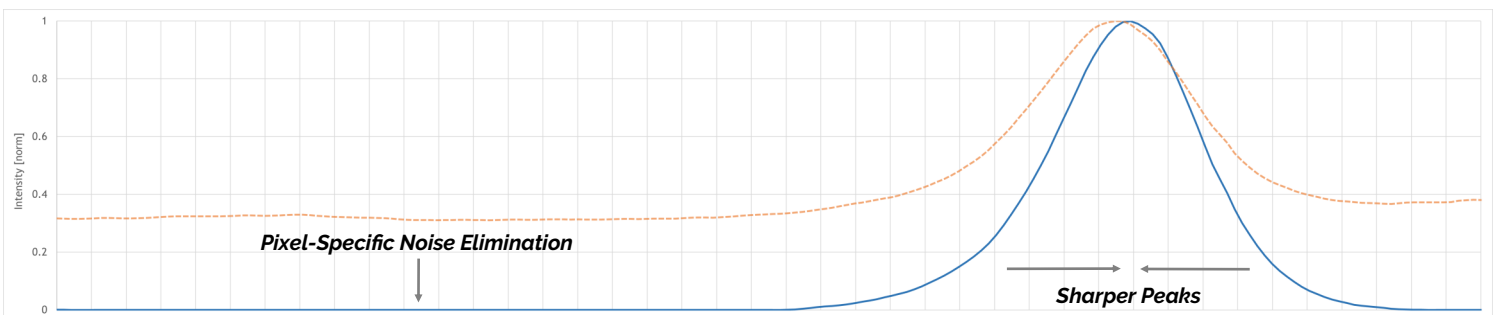
Y-Axis [Quantum Efficiency and Auto-Exposure]

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]

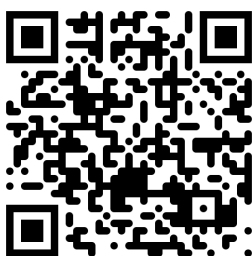
Calibrated reading (blue) correctly identifies primary Mercury-Argon atomic emission peaks, in contrast to wavelength-shifted raw reading (orange).



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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