

VL FS-50/30 Industrial Airborne Multispectral Camera Payload

An industrial-grade airborne multispectral camera designed for high-end flight platforms

- High-Fidelity Spectral Acquisition (30 Channels / 400-1000nm)
- Flagship Spatial Resolution (2K / Global Shutter)
- Plug-and-Play, Seamless Ecosystem Integration
- End-to-End Research-Grade Workflow



One Platform Many Possibilities

Contact Us sales@venuslabtech.com

Get a Quote



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Overview

Product Overview

The Venuslab FS-50/30 is a next-generation, lightweight multispectral imaging module purpose-built for high-end UAV system integration. Within an incredibly compact form factor, this payload innovatively merges a high-resolution holographic grating with an ultra-clear 1/1.1-inch image sensor. It not only provides pristine 2K-level spatial images but also outputs 30 continuous, precise spectral channels in the 400-1000nm band with a 20nm step.

Thanks to its native X-Port interface, low power consumption, and excellent anti-vibration structure, the FS-50/30 effortlessly handles large-scale, high-frequency aerial mapping missions. Whether assessing field crop health in harsh outdoor environments or conducting water quality inversions in complex river/lake ecosystems, it provides system integrators and field researchers with reliable, lab-quality optical data.

Key Features

- 30 VNIR Spectral Bands: Continuous coverage from 400nm to 1000nm with a precise 20nm step.
 - High Spectral Resolution: 3.5nm Full Width at Half Maximum (FWHM) for highly accurate material identification.
 - 1/1.1" CMOS with Global Shutter: 1920 spatial pixels (2K) ensuring distortion-free aerial mapping at high speeds.
 - Standard X-Port Compatibility: Ready for direct power and data integration with mainstream commercial UAVs (e.g., DJI Enterprise).
 - Massive Onboard Storage: Integrated 512GB SSD guarantees uninterrupted, large-area data collection.
- Professional Data Format: Outputs 12-bit .SPE files, natively compatible with industry-standard analysis software like ENVI.

Typical Applications

- Precision Agriculture & Forestry: Crop health (NDVI) and moisture monitoring, early warning of pests and diseases, forest vegetation coverage calculation, and rare tree species classification.
- Ecology & Water Environment Research: River/lake eutrophication assessment (chlorophyll/suspended matter inversion), black and odorous water body screening, and soil heavy metal/organic matter pollution analysis.
- Emergency Relief & Target Recognition: High-contrast recognition of camouflaged targets in complex terrains, geological disaster assessment, and rapid mineral resource exploration.

Specifications

Technical Specifications

Parameter	Specification Details
Spectral Range	400 - 1000 nm (VNIR)
Number of Spectral Channels	30 (Outputting one wavelength every 20nm)
Spectral Resolution (FWHM)	3.5 nm
Spatial Resolution / Effective Pixels	1920 pixels
Image Sensor	1/1.1-inch CMOS
Shutter Type	Global Shutter
Sampling Rate	128 lines/sec
Quantization Depth	12 bit
Field of View (FOV)	25.36°
Ground Sample Distance (GSD)	2.8 cm @ 120m flight altitude
Swath Width	54 m @ 120m flight altitude
Optical Window	High-transmittance optical glass window
Mounting & Power Interface	Standard X-Port (Fully compatible with DJI M300/M350, etc.)
Data Storage	Built-in 512G SSD
Image Format	12bit .SPE (Seamlessly compatible with 3rd-party software like ENVI)
Typical Power Consumption	Approx. 45W
Dimensions	155mm × 95mm × 119mm
Weight	840g

Service & Support

We are dedicated to delivering exceptional optoelectronic solutions to every client. From precision manufacturing and secure delivery to full-lifecycle technical support, we are here to ensure a seamless and reliable experience at every step.

1. Warranty Policy

Quality First, Worry-Free Operation

Warranty Period: We offer a **two-year** warranty service for all of our core optoelectronic products, effective from the date of shipment.

Coverage: We provide free repair or replacement services for malfunctions caused by material defects or workmanship errors under normal operating conditions.

Rapid Response: Upon receiving a warranty claim, we guarantee to initiate the assessment process within **24 hours** to minimize your equipment downtime.

2. Technical Support

Expert Team, Full-Process Guidance

Technical Consultation: Our team of senior optical engineers provides **24/7 online support** to assist with installation, commissioning, optical path alignment, and parameter optimization.

Scheduled Maintenance: We offer full-lifecycle maintenance recommendations, including firmware upgrades, optical component cleaning guidelines, and precision calibration services.

Training Services: We provide customized remote or on-site operational and safety training to ensure your team can operate the equipment efficiently and safely.

3. Logistics & Delivery

Precision Packaging, Global Reach

Professional Packaging: Given the fragile nature of optical instruments, we utilize industrial-grade shockproof, anti-static, and moisture-proof vacuum packaging to ensure zero damage during transit.

Logistics Partners: We partner with top-tier global logistics providers (**DHL / FedEx / UPS / SF Express**) to offer reliable shipping with real-time tracking.

Shipping Insurance: All shipments are fully insured to eliminate logistics risks.

4. Compliance & Certification


Strict Standards, Total Compliance

Quality Certification: Our manufacturing process is **ISO 9001 certified**, and our products comply with international standards such as **CE** and **RoHS**.

Export Compliance: "Committed to environmental responsibility, all our products comply with **RoHS 2.0** and **REACH** standards, ensuring safety and global compliance."

Explore Series

Model	Spectral Resolution / FWHM	Number of Spectral Channels	Main Unit Dimensions	Main Unit Weight	Spatial Resolution
VL-HS-30	3.5nm	30	155 x 95 x 119 mm	840 g	1920
VL-HS-60	3.5nm	60	155 x 95 x 119 mm	840 g	1920
VL-HS-90	3.5nm	90	155 x 95 x 119 mm	840 g	1920
VL-HS-120	2.5nm	120	155 x 95 x 119 mm	840 g	1920
VL-HS-150	2.5nm	150	155 x 95 x 119 mm	840 g	1920
VL-HS-180	2.5nm	180	155 x 95 x 119 mm	840 g	1920

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

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