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SWIR HYPERSPECTRAL CAMERA

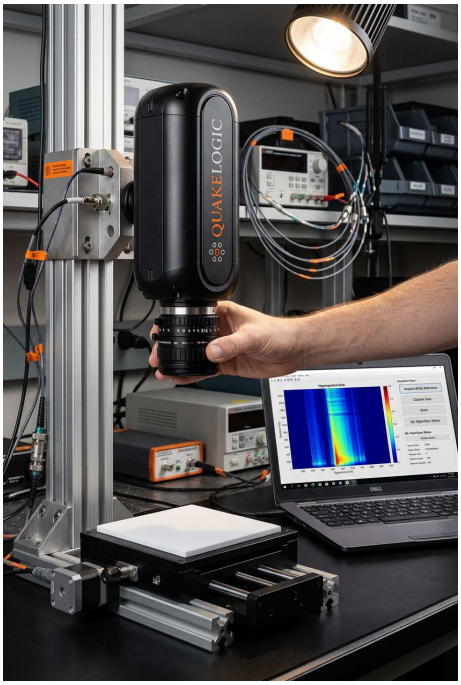


QL-HyperSpec SWIR

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SWIR Hyperspectral Camera





SWIR PUSHBROOM HYPERSPECTRAL REFLECTANCE IMAGING

The QL-HyperSpec SWIR is a pushbroom hyperspectral camera for laboratory reflectance imaging and spectral analysis across the 900–1700 nm range. Built for research and materials laboratories, its proposed configuration uses 4× spectral and 2× spatial binning to deliver 256 spectral bands, 640 spatial pixels, and at least 120 fps in 12-bit output while retaining full spectral coverage. Factory wavelength calibration and a USB 3.0 interface integrate it directly with the QL-HyperBench Reflectance System.

- Full 900–1700 nm SWIR coverage with 6 nm FWHM resolution captures the spectral detail required for materials and reflectance analysis.
- Proposed 4× spectral, 2× spatial binning sustains at least 120 fps in 12-bit output without sacrificing spectral range.
- Factory wavelength calibration plus radiometric and dark-current correction deliver measurement-grade spectra straight out of the box.
- USB 3.0 connectivity and bundled acquisition software integrate the camera directly into the QL-HyperBench Reflectance System.

STANDARD FEATURES »

- 25 mm Lens Included
- Factory Wavelength Calibration
- Radiometric Correction
- Dark-Current Correction
- Acquisition Software
- USB 3.0 Cabling
- Power Connections
- Operating Documentation
- Virtual Training
- Remote Technical Support
- Three-Year Warranty

Key Features

- Pushbroom line-scan architecture builds hyperspectral cubes across the full 900–1700 nm SWIR band for reflectance imaging and spectral analysis.
- Native 1,024-band, 1,280-pixel sensor delivers headroom; the proposed binning configuration trades it for sustained high-frame-rate acquisition.
- 6 nm FWHM spectral resolution with approximately 3.12 nm sampling resolves fine spectral features needed for material discrimination.
- At least 120 fps at 12-bit output in the proposed configuration supports fast, high-throughput line-scan reflectance measurement.
- Factory wavelength calibration across the full spectral range ensures consistent, traceable band assignment without user setup.
- Supplied software tools support radiometric correction, converting raw counts into calibrated reflectance values.
- Dark-frame acquisition and subtraction remove sensor dark-current bias for cleaner, more accurate spectral data.
- USB 3.0 interface provides a single-cable, high-bandwidth connection for straightforward laboratory integration.
- Compatible 25 mm focal-length lens is included and matched to the system for ready deployment on the QL-HyperBench platform.

PRODUCT FEATURES

Imaging Architecture
Pushbroom / line-scan hyperspectral imaging · 900–1700 nm SWIR spectral range · Native 1,024 spectral bands, 1,280 spatial pixels

Proposed Operating Configuration
4× spectral binning, 2× spatial binning · 256 output spectral bands, 640 spatial pixels · 6 nm FWHM, ~3.12 nm sampling, ≥120 fps at 12-bit

Calibration & Correction
Factory wavelength calibration, full range · Radiometric correction via supplied software · Dark-frame acquisition and subtraction

Interface & Optics
USB 3.0 communication interface · Compatible 25 mm focal-length lens included

Platform
Integrates with QL-HyperBench Reflectance System · Bundled data acquisition and analysis software

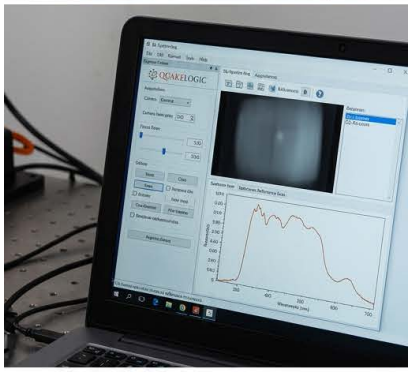
For more information about the features, specifications, and available configurations of the QL-HyperSpec SWIR, please contact QuakeLogic.

TECHNICAL SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Imaging Architecture	Pushbroom / line-scan hyperspectral
Spectral Range	900–1700 nm (SWIR)
Native Spectral Bands	1,024
Native Spatial Pixels	1,280
Proposed Binning	4× spectral, 2× spatial
Output Spectral Bands	256 (proposed config)
Output Spatial Pixels	640 (proposed config)
Spectral Resolution	6 nm FWHM (proposed config)
Spectral Sampling Interval	~3.12 nm (proposed config)
Digital Output	12-bit (proposed config)
Acquisition Rate	≥120 fps (proposed config)
Spectral Coverage	Full 900–1700 nm (proposed config)

SPECIFICATION	DESCRIPTION
Communication Interface	USB 3.0
Lens	Compatible 25 mm focal length, included
Wavelength Calibration	Factory, full spectral range
Radiometric Correction	Supported via supplied software
Dark-Current Correction	Dark-frame acquisition and subtraction
Software	Acquisition and analysis, included
Platform Compatibility	QL-HyperBench Reflectance System
Accessories	Cables, power connections, operating accessories
Documentation	Operating and data processing instructions
Training & Support	Virtual training, remote technical support
Warranty	Three years







QL-HYPERSPEC ACQUISITION & ANALYSIS SOFTWARE

The included software package handles the full SWIR imaging workflow on the QL-HyperBench Reflectance System: configuring the pushbroom acquisition, building hyperspectral cubes, and applying the calibration and correction steps that turn raw sensor counts into measurement-grade reflectance spectra across the 900–1700 nm range.

DATA ACQUISITION

Controls the camera over USB 3.0 to capture pushbroom line-scan data in the proposed 4× spectral, 2× spatial binning configuration, assembling 256-band, 640-pixel hyperspectral cubes at 12-bit output and at least 120 frames per second.

CALIBRATION & CORRECTION

Applies factory wavelength calibration across the full spectral range and supports radiometric correction, converting raw counts to calibrated reflectance with consistent, traceable band assignment throughout the 900–1700 nm SWIR region.

DARK-FRAME PROCESSING

Acquires dark frames and subtracts sensor dark-current bias from measured data, removing a key source of baseline error and producing cleaner spectra for downstream reflectance analysis and material characterization.

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QL-HyperSpec SWIR

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About QuakeLogic:

QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, high-quality solutions to customers worldwide.

Our Commitment

We are committed to quality, innovation, and customer satisfaction — building lasting partnerships through reliable solutions and dependable support.

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