SWIR Hyperspectral Microscopy

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pco.pixelfly™ 1.3 SWIR

SWIR Camera

Nireos GEMINI-X

Hyperspectral Imaging Module

Optem® FUSION SWIR

Microimaging System

excelitas®

About the Demonstration

This setup provides high-resolution imaging and detailed spectral analysis in the shortwave infrared (SWIR) range, revealing material or chemical contrast beyond conventional imaging by combining a SWIR camera, a micro-imaging system, and an interferometric hyperspectral imaging module. This approach allows rapid acquisition of rich spatial-spectral data without filter switching, making it well suited for non-destructive material analysis, inspection, and life-science applications.

pco.pixelfly 1.3 SWIR Camera

This high-performance camera with a highly sensitive InGaAs sensor delivers excellent image quality across the visible, NIR, and SWIR ranges. Its robust construction, low dark current, and high-resolution imaging make it ideal for demanding industrial and scientific applications.

KEY FEATURES

- Sensitivity of up to 90 % in SWIR
- Supports long exposure times
- Seamless system integration
- Small pixels allow use of compact optics

Optem FUSION SWIR Microimaging System

This modular microscopy platform is a configurable lens system optimized for high-precision, high-magnification imaging in the SWIR and visible wavelengths. Its field-proven modular design enables rapid prototyping, allowing simplified configuration for a wide range of SWIR imaging applications.

KEY FEATURES

- Zoom options: Fixed, 7:1, and 12.5:1
- Unmatched modular flexibility
- Plug-and-play system controller
- Wide range of accessories

X-Cite XYLIS™ II LED Illumination System

This broadband LED light source delivers powerful excitation from DAPI to Cy7. While offering the reliability, longevity, and ease of modern LED technology, it matches the brightness of traditional arc lamps. Its flexible design ensures seamless compatibility with virtually any imaging system.

KEY FEATURES

- Broad spectral coverage
- Whisper quiet operation
- Flexible control options
- Low maintenance and mercury free

In cooperation with:

GEMINI-X Hyperspectral Imaging System

As the high-aperture evolution of GEMINI, it is purpose-built for advanced hyperspectral imaging in microscopy. It delivers full-spectrum data at each pixel with exceptional throughput in a compact, lightweight module, making it ideal for demanding photoluminescence and time-resolved studies.

KEY FEATURES

- Operational range from VIS to IR
- User-selectable spectral resolution
- Broad microscope compatibility
- Suitable for transmission, reflectance, and fluorescence measurements

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