SOC710-SWIR

SWIR Hyperspectral Imaging System

The SOC710-SWIR Hyperspectral Imaging System is a precision instrument utilizing a high-speed, low-noise InGaAs detector, high quality shortwave infrared spectrometer, a novel integrated scanning system and capture and analysis software.

The SOC710-SWIR system's spectral response covers 0.9 – 1.7 microns and can be used under normal lighting conditions.

Unique Internal Scanning Mechanism for Unrivaled Versatility and Portability

Traditional line scanning hyperspectral imaging systems (or "push broom" systems) require a translation stage to move target samples in front of the camera, which necessitates multiple stages or additional hardware to perform varied lab and field experimental setups. With the SOC710-SWIR the sensor moves behind the lens and the scanning speed or translation rate is intimately tied into the exposure parameters of the system. Internal translation eliminates the need for user calculation of speed vs. exposure settings and the need for proprietary external stages.

Built-in scanning makes the 710-SWIR extremely versatile. By eliminating the restrictions of external translation stages the SOC710-SWIR can, as a single package, operate from any standard tripod, C-Mount microscope, remote sensing tower, or simply be placed on a bench in the lab.

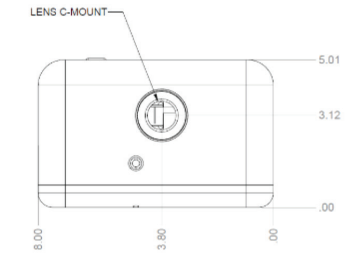
The SOC710-SWIR's small footprint and lack of external stage hardware makes it very portable and the best choice for applications benefited by in-situ field data collection. The jitter-free, precision translation mechanism of the SOC710-SWIR's internal scanner ensures that multiple cubes measured of the same target are in perfect registration.

APPLICATIONS

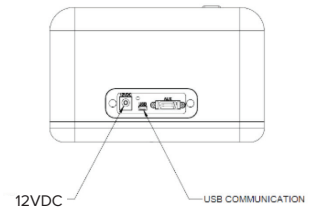
- Microscopy
- Agriculture
- Plant and Vegetation
- Oceanography
- Biology
- Machine Vision
- Mineral Mapping
- Ground Truth
- Art & Antiquities
- Security & Defense
- Thin Films

FEATURE HIGHLIGHTS

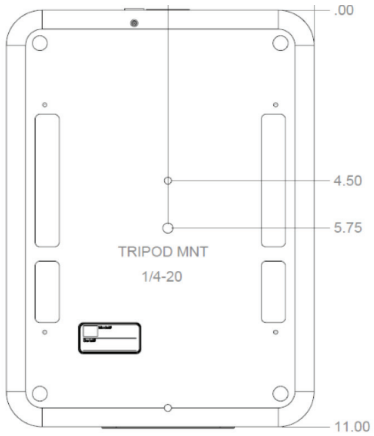
- **Eliminates need for translation or sample stage.**
- **Can be operated in traditional line scanning or internal scanning modes. Switch between acquisition modes with a simple software toggle.**
- **Precision scanning mechanism of the 710-SWIR allows for high dynamic range experiments with two scans of the same scene at different gain settings.**
- **Preview camera provides live video for scene framing and focusing**
- **Data recorded in open format binary compatible with third-party analysis software such as ENVI or MATLAB**



FRONT VIEW



BACK VIEW



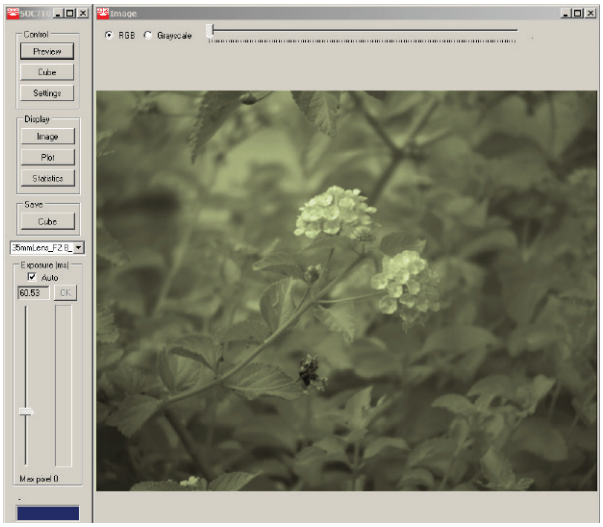
BOTTOM VIEW

SOC710-SWIR SYSTEM SPECIFICATIONS

Spectral Range (nm)	900 - 1700
Spectral Resolution (nm)	2.86/5.71
Spectral Channels (available / nominal)	280/140
Spatial Pixels	640 x 512
Dynamic Range	74.5 dB / 12-Bit ADC
Bit Depth / ADC	14/16
Noise Equivalent Spectral Radiance (NESR)	1.258E-03 W/m**2-sr-nm @ 550nm*
Aperature (F#)	2.0
Lens	C-Mount / SWIR Corrected
Spatial Resolution (Avg. RMS Spot Radius)	< 15 microns
Stray Light	< 0.5%
Data Cube Collection Rate	80 frames/lines per second 8 seconds/cube
System Interface	USB 2.0
Sensor Material / Type	InGaAs
Pixel Pitch	25 Microns
Weight	5.44 Kg (12 lbs)
Dimensions (HWL)	13 x 20 x 27 cm
Power	12-VDC / 100-240 VAC (50-60 Hz)

PREVIEW CAMERA

The 710-SWIR includes SOC's HyperScanner™ data acquisition and SRAnalysis™ software. The live video preview camera allows easy framing and focus of the scene before collecting a data cube in Hyper-Scanner.



Preview mode shows the scene prior to performing an actual scan.

Minimum System Requirements

Windows 7, 8 and 10
USB 2.0 Port
1 Gigabyte of Memory
Intel Atom™ class processor

ORDERING INFORMATION

SOC710-SWIR Hyperspectral Imaging System (# 0710-0004)

Internal Scanning SWIR (900-1700nm) Hyperspectral Imaging System with USB Interface. Includes: Hyperscanner and SR-Analysis Software, International Power Supply, USB Cable, Hardshell Case and lens calibration service. Lens sold separately.

Accessories

Product Code	Description	Product Code	Description
0710-0221	Kowa 25mm Focal Length, 1" sensor C-mount	0710-0160	Calibration Panel
0710-0237	Kowa 12.5mm Focal Length, 1" sensor C-mount	0710-0161	Calibration Panel (NIST)
0710-0110	Rechargeable battery	0710-1023	SOC710-SWIR Annual Maintenance & Calibration
0710-0120	Tripod	0710-2004	SOC710-SWIR 1 Year Extended Warranty

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