SURFACE OPTICS CORPORATION

710-OmniCore VNIR

HYPERSPECTRAL IMAGING SYSTEM

The 710-OmniCore hyperspectral imaging system stands out with its unique internal scanning design, making it the most versatile hyperspectral imaging system available.

Its flexible setup allows for seamless integration as a lab benchtop system or attachment to a tripod, boom, or tower for field measurements, eliminating the need for specialized scanning hardware.

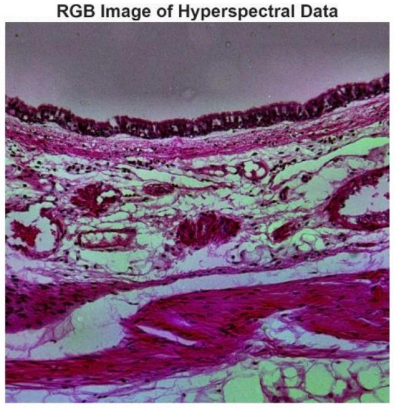
The 710-OmniCore is the ideal hyperspectral imager for any lab's current and future research needs.

- **Industry-Leading Spectral Resolution**
  Achieve a spectral resolution of 1.65 nm at native 1× binning, delivering the data density demanded by the most exacting R&D, academic, and advanced manufacturing applications.
- **Microscope Integration**
  Easily attached to commercial microscopes via the c-mount for hyperspectral microscopy.
- **Purpose Built for High Performance**
  Co-engineered optics, sensor, and spectrograph work as one unified system — delivering the signal and resolution needed for 1x default spectral binning

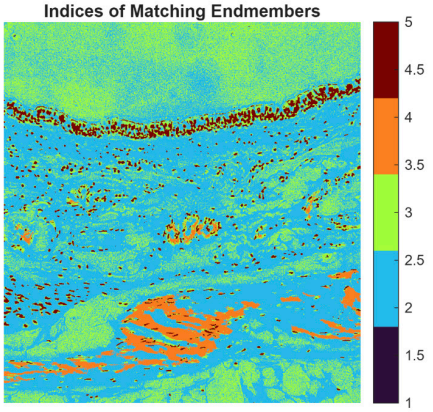
APPLICATIONS

- Precision agriculture
- Geological & mineralogical surveying
- Biomedical tissue imaging
- Environmental monitoring
- Art conservation & archaeology
- Entomology & plant pathology
- Forestry & vegetation mapping
- Cell biology research
- Soil analysis

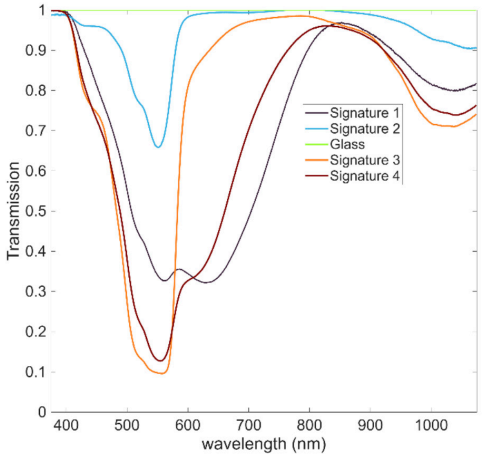
SAMPLE 710-OMNICORE DATA



RGB representation of H&E-stained bone tissue section.



Spectral target mapping of identified spectral endmembers and their location in the image.

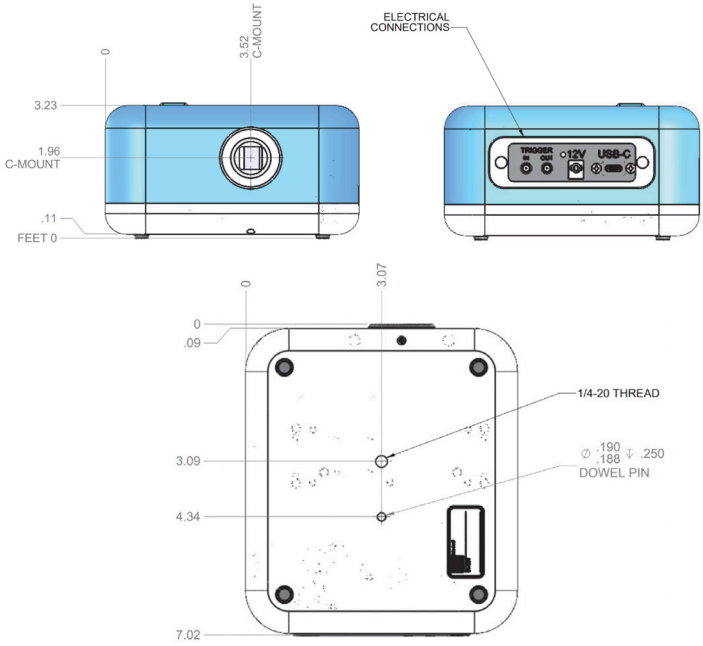


Spectral endmembers. Data here averaged to reduce noise and increase spectral purity.

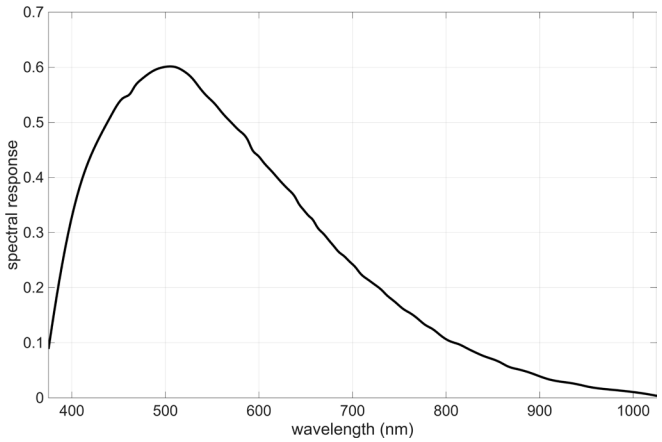
Spectral Range	375 - 1025
Spectral Channels	784
Spectral Resolution (FWHM)	1.65 nm
Spectral sampling / pixel	0.83 nm
Spatial Channels	1500
RMS Spot Size	6.95 µm
Smile	< 0.5 pixels
Keystone	< 0.1 pixels
Slit Length	9 mm
Pixel Size	5.86 µm
Image Sensor Format	1/1.8”
Sensor Type / Materials	CMOS
Max Frame Rate (fps) @ Full Frame @ 640 * 480	167 398.2
Integration Time	0.019 ms - 120 s
Bit Depth	8-Bit or 12-bit
Dynamic Range	72 dB
Noise Floor	1.44 (counts)
Light Transmission	~ 90% 400 - 1000 nm
Pixel Operability	> 99%
Peak SNR @ 1x Binning 2x Binning	157 222
Spectral Binning: Default / Options	1 / 2, 4
Spatial Binning: default / Options	1 / 2, 4
Pixel Well Depth / Full Well Capacity	32000e
Objective Lens Mount	C-Mount
Shutter	Global
Sensor Cooling	Passive
Operating Temperature	0 - 50°C
Optics / Storage Temperature	-25°C - 70°C
Connectors	USB 3.0 Micro-B
Data Format	ENVI
Weight / Weight with Lens	2.04 Kg
Dimensions (LWH)	7.02” x 6.14” x 3.23”
Power Input / Consumption	5V DC / 3.2 - 4.0 W
Computer Requirements	Windows 10 or newer Intel/AMD 64-bit processor (minimum 6 cores) 32 GB RAM 512 GB SSD Minimum one USB 3.0 (SuperSpeed) port

LENS OPTIONS

Focal Length	4.8 mm	8 mm	12 mm	17 mm	23 mm	35 mm
FOV (degrees)	85	58	40	29	22	14
IFOV (mrad)	1.2	0.7	0.5	0.3	0.3	0.2



SPECTRAL RESPONSE



This spectral response curve was generated from grating and sensor spectral response curves. The plot does not guarantee any performance and is instead used for references only. There will be slight spectral response variability from grating to grating.