



SOC710

HYPERSPECTRAL CAMERA

APPLICATIONS

Microscopy

Agriculture

Plant and Vegetation

Oceanography

Biology

Machine Vision

Art & Antiquities

Security & Defense

The SOC710 Series™ brings a new level of application flexibility and ease-of-use to high performance hyperspectral imaging.

Traditional line scanning (often referred to as “push broom”) hyperspectral imaging 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 Series 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 required proprietary external stages of other hyperspectral systems.

KEY FEATURES

- Eliminates need for translation or sample stage.
- Precision scanning mechanism of the SOC710 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.
- Offers traditional line scanning mode in addition to the internal scanning design. Switch between acquisition modes with a simple software toggle.



Surface Optics Corporation
11555 Rancho Bernardo Rd.,
San Diego, CA 92127

Email: contact@surfaceoptics.com
Phone: +1 (858) 675-7404

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SPECIFICATIONS

	710-E	710-sCMOS	710-SWIR
Spectral Range	400 - 1000 nm	400 - 1000 nm	900 - 1700 nm
Spectral Resolution (nominal / recorded)	2.31	2.34375	2.86/5.71
Spectral Channels*	260	256	280 / 140
Sensor Material / Type	Silicon / CCD	Silicon/sCMOS	InGaAs
Spatial Pixels (max / nominal)*	1392 / 696	2048/1024	640 x 512
Dynamic Range	66 dB / 12-Bit ADC	Up to 87db / 16-bit ADC	74.5 dB / 12-Bit ADC
Bit Depth / ADC	12 / 16	16 / 16	14 / 16
Noise Equivalent Spectral Radiance (NESR)*	1.258E-03 W/m**2-sr-nm @ 550nm	2.8765E-03 W/m**2-sr-nm @ 550nm	1.258E-03 W/m**2-sr-nm @ 550nm*
Aperture (F#)	2.8	2.8	2.0
F-Stop Radiometric Calibration	f4	f4	f4
Lens	C-Mount / NIR Corrected	C-Mount / NIR Corrected	C-Mount / SWIR Corrected
Spatial Resolution (Avg. RMS Spot Radius)	< 40 microns	< 40 microns	< 15 microns
Stray Light	< 0.5%	<0.5%	< 0.5%
Data Cube Collection Rate (max/nominal)	100 / 30 frames/lines per second* 6.96 / 23.2 sec/cube**	40 frames/lines per second* 51.2/25.6 sec/cube	80 frames/lines per second 8 sec/cube
Pixel Pitch	6.45 microns	6.5 microns	25 microns
Interface	USB 2.0	USB 3.0	USB 2.0
Weight	3.85 Kg (8.5 lbs)	3.85 Kg (8.5 lbs)	5.44 Kg (12 lbs)
Dimensions (HWL)	12.7 x 20.3 x 28 cm	12.7 x 20.3 x 28 cm	13 x 20 x 27 cm
Power	12-VDC / 100-240 VAC (50-60 Hz)	12-VDC / 100-240 VAC (50-60Hz)	12-VDC / 100-240 VAC (50-60 Hz)

* per binning option

** 696 x 520 x 128 cube dimensions