Corning® vis-NIR and alpha-vis Hyperspectral Sensors

Corning's microHSI™ sensors provide high throughput, excellent spectral resolution and superior spatial resolution in a revolutionarily compact package, with low SWaP for airborne UAV and/or turret integration.

With 680 spatial pixel swath format, the vis-NIR microHSI™ is ideal for limited payload applications. Three spectral ranges and frame rates up to 86Hz provide up to 180 bands of spectral resolution over the 380 nm-1000 nm near uv/visible/near infrared spectral region.

The alpha-vis microHSI™ hyperspectral sensor is a unique combination of high velocity/altitude ratio capability with high spatial and spectral resolution. It supports a combination of high collection rates, wide area coverage (with its 1280 pixel swath) and >1200 Hz sampling. The alpha-vis microHSI™ provides up to 40 bands with high spectral fidelity over the 400 nm-800 nm visible region. A 350-1000 nm version is also available.

Corning's microHSI™ incorporate a patented solid block offner relay spectrometer, resulting in vis-NIR sensors weighing less than one pound, enabling integration of hyperspectral sensing capability into small airborne and ground platforms, turreted systems for complex multi-sensor or multi-mission applications, and constrained industrial sites.

As with all Corning sensors, the microHSI™ achieves its high spatial, spectral, and sensitivity performance through a completely integrated optical system design, in contrast to sensors assembled from independent components.

Corning can provide individual vis-NIR hyperspectral sensors for customer integration or complete integrated systems incorporating multiple sensors, real time and on-board data exploitation, and user processing station support.

vis-NIR and alpha-vis

NOVASOL MICRO HSI™

Corning® vis-NIR and alpha-vis Hyperspectral Sensors

Hyperspectral Imager Performance Characteristics

	vis-NIR microHSI™	alpha-vis microHSI™
Sensor Type	Line Imager	Line Imager
Spectrograph	Solid Block Offner Relay	Solid Block Offner Relay
Grating	Blazed High-Efficiency Reflective	Blazed High-Efficiency Reflective
FPA Format	1360 x 1040, 6.45 µm pitch µlens array CCD	CMOS FPA, 6.5 µm pixel size
Spatial Swath	680 pixels (2x bin)	1280 pixels (2x bin)
Focal Length , f/#	16 mm, f/2.5; 33 mm, f/2.0	195 mm, f/2.6
Full FOVs	30 or 15	4.9
IFOV	770 µrad or 385 µrad (others available)	67 µrad (others available)
Standard GSD	154 cm or 77 cm at 2000 m AGL	13 cm at 2000 m AGL
Spectral Range (nm)	A) 400-800; B) 400-1000; C) 380-880	A) 400-800; B) 350-1000
Spectral Resolution / bands	3.3 nm, (2x bin): A) 120; B) 180; C) 150 bands	10 nm, (2x bin): A) 40; B) 60 bands
Typical Spectral Readout / bands	10 nm, (6x bin): A) 40; B) 60; C) 50 bands	10 nm, (2x bin): A) 40; B) 60 bands
Keystone	< 2 µm (est.) (over 1360 x 360 pixels)	< 3 µm (est.) (over 1360 x 360 pixels)
Smile	< 1 µm (est.) (over 1360 x 360 pixels)	< 1 µm (est.) (over 1360 x 360 pixels)
Frame Rate	A) 86 Hz; B) 67 Hz; C) 76 Hz	A) 1280 Hz; B) 800 Hz
Max SNR (max res)	265	335
Max SNR (typical res)	460	335
Data Readout	12 bit gig-E	Camera Link
Size	4.8" x 3.6" x 2.5"	8.5" x 4.5" x 3.0"
Weight	< 1 lb (< 0.45 kg)	< 4.6 lb (< 2.1 kg)
Power	< 3.3 W @ 12VDC	< 10 W typical, <20 W max @ 12VDC

Alternative Focal Lengths and IFOVs available

CORNING

For more information, visit our website:
www.corning.com/advanced-optics

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