



CORNING

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 relays 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™

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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

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

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