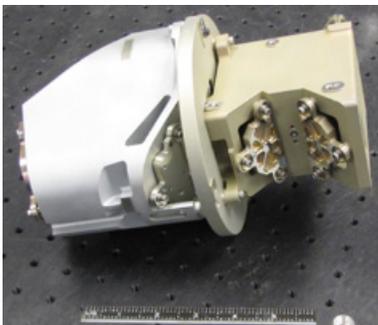


CORNING

microHSI™ 425 Sensor and microHSI™ 425 SHARK

First commercially available single-sensor hyperspectral solution covering the full spectral range from 400-2500nm

Corning Advanced Optics has developed a miniaturized, lightweight hyperspectral sensor package, the microHSI™ 425 Sensor for space, airborne, industrial and scientific applications. The microHSI™ 425 Sensor incorporates a single focal plane array and readout electronics package covering the entire spectral range from 400 to 2500nm, mated with Corning's modular, compact spectrometer and fore-optics package for commercial/industrial applications. The flexible reflective fore-optic design and compact spectrometer, when mated to a Vis-SWIR camera, forms a Hyperspectral Imaging (HSI) sensor that is suited for a widely diverse range of applications including space, small manned and unmanned aerial vehicles, industrial process monitoring and other platforms and OEM applications requiring high quality imagery data covering the visible, near IR and SWIR spectra.



Integrated reflective fore-optic and spectrometer

The spectrograph is coupled to a sterling-cooled HgCdTe focal plane array (FPA) covering the 0.4-2.5 micron spectral range. The camera has 640X512 pixels, with pixel size of 15 μm . The camera's maximum frame rate is 120 Hz. The order sorting filter (OSF) is integrated in close proximity to the FPA, to maintain high performance throughout the wide wavelength range. The sensor has an f/3.3 aperture.

The microHSI™ 425 is the first and only commercially available 400-2500 nm hyperspectral solution that does not require two hyperspectral sensors. This alleviates the need for integrating, precising aligning and calibrating two separate sensors, and eliminates the complications of recording and post-processing imagery products from two sensors instead of one.

Selectable Hyperspectral Airborne Remote-Sensing Kit (SHARK)

The microHSI™ 425 sensor can be integrated with Corning's Selectable Hyperspectral Airborne Remote Sensing Kit (SHARK), to comprise a coherent, turnkey airborne remote sensing system. The system is based on Corning's popular MicroHSI 410 Vis/NIR SHARK, currently in wide use for airborne agricultural monitoring and other remote sensing missions. The flight package, including spectrograph, camera, telescope, navigation system, microcomputer and 1 TB of resident storage weighs less than 11 pounds. Command and control of the microHSI™ 425 SHARK is very similar to the 410 SHARK's web based GUI, requiring no other applications to be installed on the user's computer except for a compatible browser. Any browser that supports Java such as Internet Explorer® or Firefox® can be used. Alternately the SHARK can be controlled by another device, through the Ethernet socket interface, sending commands detailed in the application programming interface (API).

Key Features

The ability to record the entire hyperspectral data cube (512 spectral bands), or to record only the bands needed to produce specific data products and solutions.

Digital elevation models for the area to be imaged can be downloaded before flight to improve post-processing orthorectification and geolocation accuracy.

Flexible image collection planning to capture only the area of coverage needed to optimize use of memory capacity and reduce post-processing time and complexity.



microHSI™ 410 SHARK

MicroHSI™ Sensor

Technical and Performance Characteristics

Pixel size (um)	H (spatial)	15
	V (spectral)	15
Available Pixel Array	Spatial	640
	Spectral	512
Lens Focal Length	mm	50
Frame Rate	Hz	120
Used Pixel Array	Spatial	640
	Spectral	512
Dynamic Range	bits	16
Spectral range (um)	Low	400
	High	2500
Dispersion	nm/pixel	4.1
Slit width	um	15
Spectral resolution (FWHM) based on slit	nm	4.1
f#	f#	3.3
Aperture	mm	15.4
Etendue	sr-um ²	16.44
Size (excluding lens)	X (in)	3.7
	Y (in)	7.1
	Z (in)	10.5
Weight (Sensor)	kg	3.5
	lb	7.7
Power Consumption	watts	30

This product may be subject to ITAR control.

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