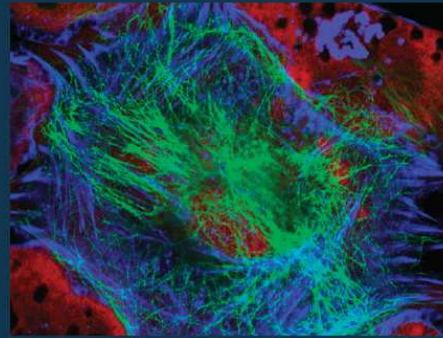


This is the only Snapshot hyperspectral imager covering from 400 to 1000nm. Using High proprietary technology, this novel imager features high sensitivity and is most suitable for low light level applications, such as fluorescence, High sensitivity for low light measurement.

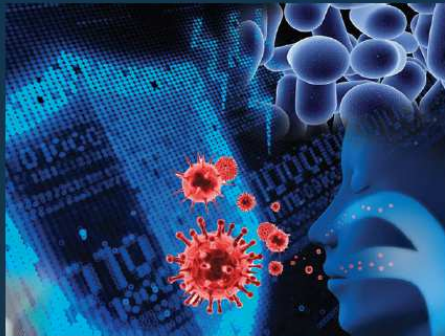
## Applications



Machine Vision



Fluorescence Imaging



Medical Diagnosis



Biomedical

# Key Specifications

Operation Mode	Snapshot
Spectral Range	400 – 1000 nm
Number of Spectral Bands	Approx. 140 useful bands
Spectral Resolution	8-60 nm FWHM (resolution is function of $\lambda$ )
Frame Rate	500 fps, generating approximately one Hyperspectral cube per second
Sensor Type:	CMOS
Spatial Pixels	2D array, 648 x 488 pixels
Lens Interface	C-mount
Lens options	8, 16, 35, and 50 mm, or any C-mount; default 8mm (40° FOV)
Wavelength Calibration	factory calibrated
Temperature Range	10 – 50°C
Size	6.1 x 4.8 x 3.3 cm (without lens)
Weight	180 grams (without lens)
Power Supply	powered by the 5V DC power line of the USB 3.0
PC Requirements	500GB SSD, 8 GB RAM, Intel Core i5 or higher, USB 3.0 ports, Windows 10
Software	Custom GUI application
Dynamic Range (Data Resolution)	output data in 16-bit format
Data Format	Binary, compatible with Scyven, ENVI, MATLAB, Python, ImageJ, or other numerical or scientific image processing software

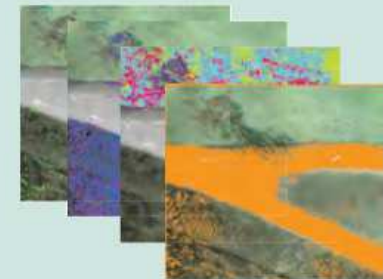
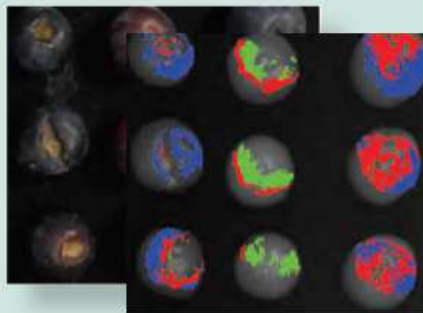
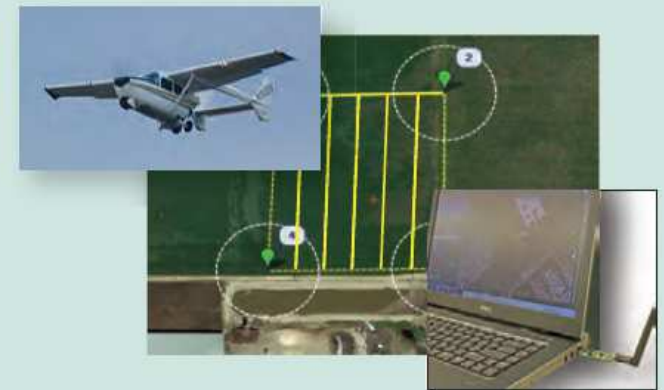
## A New Class of Hyperspectral Imagers

Model	OCI™-M	OCI™-F	OCI™-1000	OCI™-1000V	OCI™-1000B150	OCI™-FSWIR	OCI™-2000HH	OCI™-2000	OCI™-2000V	OCI™-D2000
Operation Mode	<b>Push-broom</b>						<b>Snapshot</b>			
Spectral Range	400-1000 nm	400-1000 nm	~ 600-1000 nm	~ 470-620 nm	475-900 nm	900-1700nm	~ 600-1000 nm	~ 600-1000 nm	~ 470-620 nm	475-875 nm or 475-975 nm with 100 nm gap starting at 600
Number of Spectral Bands	8	60(LR), 120, 220(HR)	~ 100	Up to 16	Up to 150	60, 80(HR)	~ 20-25	~ 20-25	~ 16	~ 35-40
Spectral Bandwidth	5-7 nm FWHM	5-7 nm FWHM	< 5 nm FWHM	< 5 nm FWHM	~ 5 nm FWHM	10-20 nm FWHM	12-15 nm FWHM	12-15 nm FWHM		
Spatial Pixels	Up to 1000 X scan-length	800 px X scan-length	Up to 2048 x scan-length	Up to 2048 X scan-length	2000 X scan-length	250 px X s can-length	Up to 200 x 400	Up to 400 x 200	Up to 500 x 250	Up to 500 x 270
Standard Lens	35 mm (18° FOV)	16 mm (21° FOV)	35 mm (18° FOV)	35 mm (18° FOV)	35 mm (18° FOV)	16 mm (28° FOV), SWIR Optimized	35 mm (18° FOV)	35 mm (18° FOV)		50 mm (13° FOV)
Exposure Time	20 μs – 1 s	20 μs – 1 s	20 μs – 1 s	20 μs – 1 s	20 μs – 1 s	20 μs – 1 s	20 μs – 1 s	20 μs – 1 s		
Wavelength Calibration	Factory calibrated (calibration fixed permanently)						Factory calibrated (calibration fixed permanently)			
Objective Lens Interface	C-mount						C-mount	C-mount		F-mount
Frame Rate	Up to 120 frames/sec	Up to 50 frames/sec	Up to 120 frames/sec	Up to 120 frames/sec	Up to 120 frames/sec	Up to 50 frames/sec	Up to 8 frames/sec	Up to 120 frames/sec	Up to 120 frames/sec	Up to 50 frames/sec
Data Format	ENVI-BSQ for hyper-cube, BMP band image, ROI spectra, and RAW (pixel data)						ENVI-BSQ for hyper-cube, BMP band images, ROI spectra, and RAW (pixel data)			
Operating Temperature	-20°C to +60°C	0°C to 50°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	0°C to 50°C	-20°C to +60°C			
Power Consumption	< 2 W (USB 3.0 power)	< 3 W (USB 3.0 power)	< 4 W (USB 3.0 power)	< 4 W (powered by USB 3.0)	< 4 W (USB 3.0 power)	< 5 W (USB 2.0 and USB 3.0 power)	Battery operated (rechargeable Lithium Ion) < 4 W (USB 3.0 power)			
Weight	~ 220 g (including standard lens)	~ 570 g (including standard lens)	~ 220 g (including standard lens)	~ 220 g (including standard lens)	~ 220 g (including standard lens)	~ 820 g (including standard lens)	~ 450 g (including standard lens)	~ 220 g (including standard lens)	~ 220 g (including standard lens)	~ 340 g (including standard lens)
Size	8 cm x 6 cm x 6 cm (including standard lens)	14 cm x 7 cm x 7 cm (including standard lens)	8 cm x 6 cm x 6 cm (including standard lens)	8 cm x 6 cm x 6 cm (including standard lens)	8 cm x 6 cm x 6 cm (including standard lens)	17 cm x 10 cm x 6 cm (including standard lens)	7.7cm x 14.2cm x 3.6 cm (including standard lens)	8 cm x 6 cm x 6 cm (including standard lens)	8 cm x 6 cm x 6 cm (including standard lens)	10 cm x 10 cm x 3 cm (including standard lens)
Computer Interface	USB 3.0						Embedded PC	USB 3.0		
Trigger	External trigger signal, WIFI remote control, or time delayed start						External trigger signal, WIFI remote control, or time delayed start			
Site requirements	0 to 45 °C; 0 to 95% RH						0 to 45 °C; 0 to 95% RH			
	Single-board computer (optional)						Embedded PC	Single-board computer (optional)		
Weight	450 g						n/a	450 g		
Size	10 cm x 10 cm x 3 cm						n/a	11.5 cm x 11.5 cm x 3 cm		
Operating System	Windows 7 PRO						Android™ operating system with touch screen	Windows 7 PRO		
Storage	400 GB Solid-state						64GB RAM	400 GB Solid-state		
Remote Control	Via WIFI (when in range)						n/a	Via WIFI (when in range)		

# Applications

Featuring extreme compactness with uncompromised performance, and fully automatic operation, these novel hyperspectral imagers allow effortless adoption in many applications from precision agriculture, online material sorting, food inspection, and geospatial imaging to in vivo biomedical imaging.

- Both Pushbroom and snapshot imagers are offered
- Pushbroom works with random-speed scan
- No GPS/IMU needed for imaging reconstruction
- Video-rate hyperspectral cube acquisition by snapshot imagers
- Forever factory calibrated
- Imager <180 g
- Available in multiple turn-key packages and handheld, benchtop, UAV airborne form factors

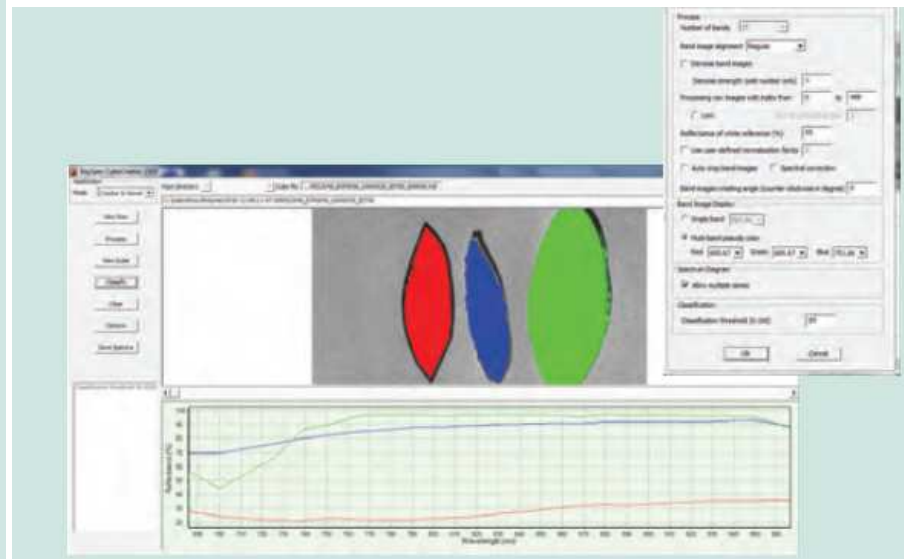
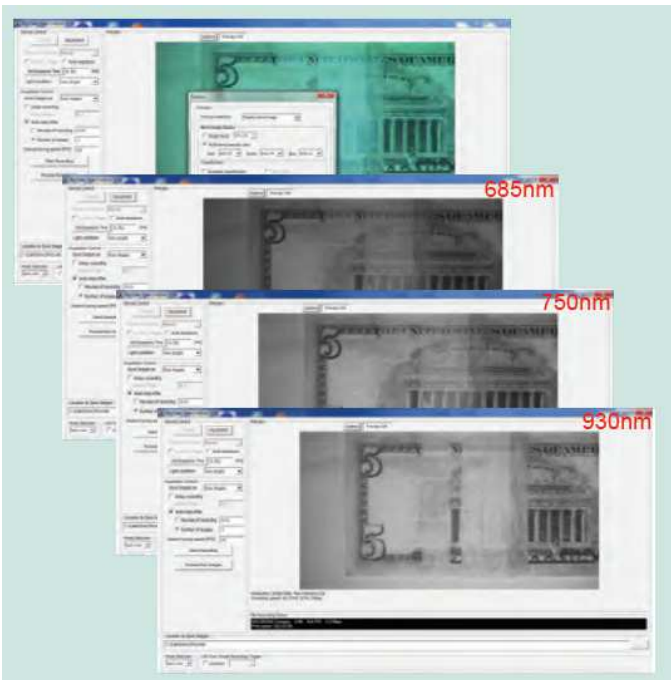


Enabling fast and easy application development

Turn-key airborne remote sensing and precision agriculture

## Software

Each imager comes with proprietary imaging software for acquiring hyperspectral raw image, generating hyperspectral data cube and images, and stitching multiple images, respectively. Equipped with a fast on-board minicomputer, the imager acquires full VIS-NIR hyperspectral data with fast data transfer rate (up to 120 fps) as well as fully



- OCI-F-120 is a push-broom type of hyperspectral camera. The Push-broom/line scan captures data one line at a time so either the sample or the imager itself need to be moving during data capture. These models feature high spatial and spectral resolution.
- The OCI-G is a snapshot type hyperspectral camera. Snapshot models capture data within one image, much like the camera on your phone. With snapshot models, the hyperspectral data cube is captured with point-and-shoot operation continuously.

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