

The **OCI™-U** (OCI is a phonetic spelling of "All Seeing Eye") hyperspectral cameras are optical engines of the handheld **OCI-1000™** (push-broom) and **OCI-2000™** (snapshot) hyperspectral imagers, advanced with SuperSpeed USB 3.0 interface. They feature dramatic reduction in size (8 cm x 6 cm x 6 cm) and weight (~ 180 g) and increased data transfer rates (up to 120 fps). These hyperspectral cameras acquire VIS-NIR hyperspectral data with continuous spectral and spatial coverage. Push-broom (**OCI™-U-1000**) features "true push-broom": one can simply use a hand to move the imager or sample to scan. Fast imaging and innovations in hardware and algorithms enable the **OCI™-U-1000** finishing a scan in 5 seconds and producing a hyperspectral data cube in 30 seconds. As a snapshot imager (**OCI™-U-2000**), hyperspectral cube data can be captured instantly, and even at video or higher rates. Compactness, simple operation, and intuitive software make the OCI-U very straightforward for applications such as precision agriculture, remote sensing, forensics, and airborne applications.



OCI-U hyperspectral camera with a standard $f=35$ mm lens. The package is easy to be mounted on tripods or gimbals. Total weight < 0.4 lb. (~ 180 g)

KEY FEATURES:

- Extreme compact and light-weight
- Scanning with random speed for "true push-broom" (OCI-U-1000)
- Snapshot (OCI-U-2000), up to 120 cubes/second
- Innovative non-slit design significantly reduces system complexity, featuring with real-time preview
- Effortless system integration

Applications:

- Precision Agriculture
- Food Quality
- Sorting
- Airborne Mini UAV
- Remote Sensing
- Anti-Counterfeiting
- Biomedical Diagnostics
- Forensics
- Pharmaceuticals
- Security
- Counterfeit Detection

About BaySpec, Inc.

BaySpec, Inc., founded in 1999 with 100% manufacturing in the USA (San Jose, California), is a vertically integrated spectral sensing company. The company designs, manufactures and markets advanced spectral instruments, from UV-VIS spectrometers, bench-top and portable NIR and Raman analyzers, Hyperspectral imagers to confocal Raman microscopes, for the biomedical, pharmaceuticals, chemical, food, semiconductor, homeland security, and the optical telecommunications industries.

	Specifications	
Model	OCI™-U-1000	OCI™-U-2000
Operation Mode	Push-broom	Snapshot
Spectral Range ¹	600-1000 nm	600-1000 nm
Number of Spectral Bands	Up to 100	Up to 25
Spectral Resolution	< 5 nm FWHM	12-15 nm FWHM
Spatial Pixels	Up to 2048 X scan-length	Up to 200 X 400
Standard Lens	35 mm F2.8 (18° FOV)	
Exposure Time	0 - 300 ms	
Wavelength Calibration	Factory calibrated (calibration fixed permanently)	
Objective Lens Interface	C-mount	
Frame Rate	Up to 120 frames/sec	
Data Format	ENVI-BSQ for hyper-cube, BMP band image, ROI spectra, and RAW (pixel data),	
Operating Temperature	-20°C to +60°C	
Power Consumption	< 2 W (USB 3.0 power)	
Weight	~ 180 g (including standard lens)	~ 190 g (including standard lens)
Size	8 cm x 6 cm x 6 cm (including standard lens)	8 cm x 6 cm x 6 cm (including standard lens)
Computer Interface	USB 3.0	
Trigger	External trigger signal, WiFi remote control, or time delayed start	
Site requirements	0 to 45 °C; 0 to 95% RH	

¹ Customized range available, please inquire.

Based on OCI-U optical engines, we have pre-configured OCI systems for sample inspection on conveyer belt, and for UAV hyperspectral imaging system. Please inquire for details.

	OCI-U Based Systems	
	OCI™-Conveyer	OCI™-UAV
		
Optical Engine	OCI-U-1000 or 2000	OCI-UAV-1000 or 2000 ²
Conveyer speed	Up to 100 cm/s	N.A.
Power	External	From UAV battery
Computer	External	Embedded Windows/Linux with memory storage up to 1T
Data Interface	USB 3.0	USB 3.0
Weight	Depending on Application	Up to 320 g (including lens and onboard computer)
Size	Depending on Application	Camera with lens: 8 cm x 6 cm x 6 cm Onboard computer: up to 10 cm x 7.5 cm x 3 cm

² Please refer to OCI-UAV datasheet.