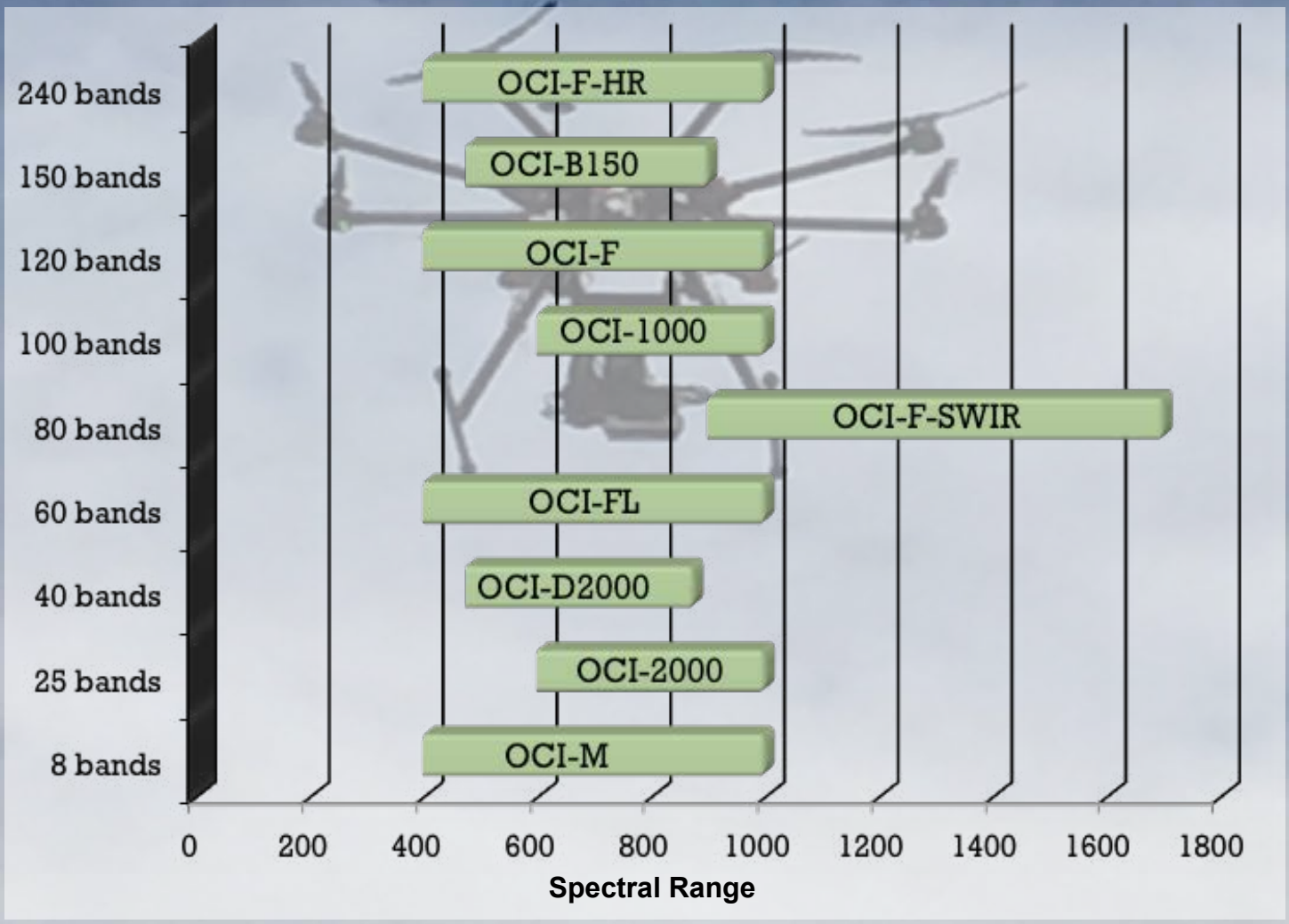
BAYSPEC

Pervasive Spectroscopy

OCI Ultra Compact Hyperspectral Cameras

Product Selection Guide



Fast imaging and innovations in hardware and algorithms enable the OCI™ series to finish a scan in a few seconds and produce a spectral data cube in fewer than 10 seconds. Conventional spectral imagers rely on a single slit image and intensive software efforts for imaging reconstruction to correct for artifacts caused by unstable mechanical motions. The OCI™ series uses a "full frame" technique allowing the imager to move and measure at random speeds up to120 fps. Thus they don't depend on GPS/IMU and LIDAR data as traditional spectral imagers do for image orthorectification - saving much time & money while producing distortion-free band images.

OCI Software Suite: **SpecGrabber** is a hyperspectral raw image acquiring program. Using SpecGrabber, the user is able to control the OCI camera parameters such as exposure time, gain, and frame rate and record the raw images. **CubeCreator** is a post processing software for hyperspectral cube reconstruction. Using CubeCreator, the user is able to process the raw images and create hyperspectral data in standard formats (BMP band images and ENVI-BSQ hyperspectral cube file) that can be opened and further processed by many other commercially available software programs. In CubeCreator the user can view raw data, the results of band images, and the spectra of regions of interest. Also a material spectral classification function is included in CubeCreator. **CubeStitcher** enables the user to stitch many separate hyperspectral cube files into a bigger cube file if there is enough overlapping between the cube files. CubeStitcher makes it possible to create a complete hyperspectral cube file for the whole UAV surveying area.

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Part Number	Description
OCI-M	**Push-broom MultiSpectral Imaging Camera**, 400-1000 nm range, 8 bands spectral resolution, 5-7nm per band, 1000 pixels x scan length spatial resolution. Standard bands = 470,560,670,720,780,840,900 and 970nm.
OCI-FL	**Push-Broom HyperSpectral Imaging Camera**, 400-1000nm range, 60 bands spectral resolution, 10nm FWHM/band, 800 pixels x scan length spatial resolution.
OCI-F	**High Spectral Resolution Push-Broom Imaging Camera**, 400-1000nm range, 120 bands spectral resolution, 5-7nm FWHM/band, 800 pixels x scan length spatial resolution.
OCI-F-HR	**High Spectral Resolution Push-Broom Imaging Camera**, 400-1000nm range, 240 bands spectral resolution, 3 nm FWHM/band, 800 pixels x scan length spatial resolution.
OCI-1000	**High Spectral & Spatial Resolution Push-Broom HyperSpectral Imaging Camera,** 600-1000 nm range, 100 bands @ 5nm/band, 2048 pixels x scan length spatial resolution.
OCI-2000-HH	**Android-Based HANDHELD Hyperspectral SNAPSHOT Imaging Camera,** 600-1000 nm range, 25 bands @ 12-15nm/band, 256 x 256 pixels spatial resolution. Touch-screen control. **Great for Ground Truthing**
OCI-2000	**SNAPSHOT HyperSpectral Imaging Camera,** 600-1000 nm range, 25 bands @ 12-15nm/band, 256 x 256 pixel spatial resolution.
OCI-B150	**VIS/NIR High Spectral & Spatial Resolution Push-Broom Hyperspectral Imaging Camera**, 475-900nm range, 150 bands spectral resolution, ~5nm FWHM/band, 2000 pixels x scan length spatial resolution.
OCI-D2000	**VIS/NIR SNAPSHOT High Spectral & Spatial Resolution Hyperspectral Imaging Camera**, 475-875nm range, 35-40 bands spectral resolution, 12-15nm FWHM/band, 500 x 270 pixel spatial resolution.
OCI-F-SWIR	**SWIR Hyperspectral Push-Broom Imaging Camera,** 900-1700nm range, 80 bands spectral resolution < 10nm FWHM, 250 pixels x scan length spatial resolution.

(Separate data sheets are available upon request.)

OCI SYSTEMS & ACCESSORIES

- *Ready-to-Fly Systems* – Fully integrated quad, hexa, or octocopter based systems.
- *Active Gimbal Mounts* – Integrated control, mountable on all industrial rotor-based UAV's.
- *Spectroradiometer Add-on Assembly* – Real-time irradiance correction of raw data.
- *Conveyor Simulation Assembly* – Translation stage to simulate automated inspection for process quality control applications.
- *GPS Add-on Assembly* – Automatically records waypoints to image frames.
- *Trigger Add-on Assembly* – Long-range camera on/off control via radio controller.
- *Scanning, Pan/Tilt Assembly* – Tripod mountable for stationary applications where push-broom cameras can take the place of snapshots.
- *Mounting Plates/Custom Housings* – Various mounting schemes for Drones, Fixed--Wing and Satellite applications are available.

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