HinaLea Wide-Field Hyperspectral Camera

HinaLea's hyperspectral imager is a versatile tool for laboratory and industrial applications. A variety of lenses are available to match your field of view and working distance requirements.



HIGHLIGHTS

- High spatial and spectral resolution
- Fast band-sequential hyperspectral imaging
- VIS-NIR (400 – 1000 nm)
- Up to 600 spectral bands
- 4 nm (FWHM)
- < 1 nm repeatability
- Inter-band switching down to 2.5 ms
- Software configurable spectral bands
- Standard C-mount lens interface

HinaLea Imaging for the Laboratory and the Production Line

HinaLea's configurable system enables users in both research and industry to tailor the instrument to their application enabling a single step capture of images with dynamically-defined spectral bands at high spatial and spectral resolutions.

Numerous applications benefit from hyperspectral imaging:

- Medical diagnostics and monitoring
- Precision agriculture
- Food safety and inspection
- Broad yet specific identification of pathogens or hazardous materials
- Assessment of product quality and identification of defects (i.e. color matching, trueness and uniformity)

Benefits of HinaLea's Hyperspectral Imager

HinaLea's Wide-Field Hyperspectral Camera offers significant benefits over other multi or hyperspectral systems.

Contiguous, high-resolution imaging: Color-filter-array (CFA) or on-chip Fabry-Perot multispectral cameras offer a limited number of spectral channels, with a reduced spatial resolution. This is a direct consequence of their architecture which uses fixed features deposited on the focal-plane imaging array. Grating-based hyperspectral systems require mechanical scanning to form an image and are therefore expensive and require periodic calibrations. The HinaLea system is the only staring hyperspectral system on the market which can scan the whole VIS-NIR spectrum with high spatial and spectral resolutions at an affordable price point.

Wavelength Selectivity: One of the unique attributes of the HinaLea system is its wavelength selectivity. In many spectral imaging applications, data is spectrally sparse, and it is sufficient to acquire only a subset of spectral bands. Since multispectral cameras as well as grating-based hyperspectral scanning cameras have their spectral bands, "hard-wired", much of the acquired data is useless. This results in vast amounts of data which need to be stored, transmitted and processed, significantly increasing the size and costs of systems incorporating these cameras. The HinaLea system can be programmed to scan only a subset of bands, and this subset can be dynamically controlled based on the object to be imaged. Resultant scans can be shorter and generate smaller data sets, saving time and money.

Technical Specifications

HINALEA ADANVATAGES

» **Staring Hyperspectral Imaging**
No mechanical scanning is required, resulting in a lower-cost, reliable system.

» **Off-Sensor Spectral Filtering**
Decoupling the spectral filtering from the image sensor enables high spatial resolution.

» **True Hyperspectral Imaging**
Unlike color-filter arrays, with the HinaLea solution, there is no tradeoff between number of spectral bands and effective spatial resolution.

» **Customizable**
HinaLea will work with strategic partner to optimize camera performance for specific application and will consider OEM models.

Mechanical	
Dimensions (LxWxH)	150 x 150 x 120 mm
Weight (Mass)	0.5 kg (optical head only)
Electrical	
Input Voltage	110 VAC at 60Hz / 220 VAC at 50Hz
Data Interfaces	USB 2.0, 3.0
Environmental	
Operating Temperature	20°C ± 5°C
Humidity	65% non-condensing
Scan Performance	
Field of View	400 cm^2 (subject to lens choice)
Spatial Resolution	2.3 MP
Spectral Range	400 – 1,000 nm
Max Number of Spectral Bands	600
Spectral Resolution	4 nm (FWHM)
Illumination	Active (built-in) or Passive
Working Distance	0.5 – 1 m (subject to lens choice)

HINALEA IMAGING

2200 Powell Street, Suite 1035
Emeryville, California 94608 USA
+1 (808) 878-8247
www.HinaLeaImaging.com

HinaLea™