

Spectral Camera HS

GILDEN ϕotonics



Cased Spectral Camera HS



OEM Spectral Camera HS

Hyper-spectral camera operating in the VIS and VNIR ranges of 380-800 nm and 400-1000 nm. With its high spatial and spectral resolution, high image rate, and rugged structure Spectral Camera HS is an excellent tool for both industry and science.

The Spectral Camera is an imaging spectrometer system, an integrated combination of our ImSpector imaging spectrograph and an area monochrome camera. It works as a push-broom type line scan camera and provides full, contiguous spectral information for each pixel.

The Spectral Camera HS consists of an ImSpector V8E or V10E for the wavelength range 380-800 nm or 400-1000 nm, respectively, and a sensitive high speed interlaced CCD detector. The transmission diffraction grating and lens optics used in the spectrograph provide a high quality, low distortion image that is designed to fulfill the most demanding specifications.

The Spectral Camera HS provides outstanding performance at affordable cost. Spatial resolution of 1600 pixels, image rate up to 120 line images/s, and adjustable spectral sampling make it a tool which can meet the highest industrial and scientific hyper-spectral imaging requirements.

ACCESSORIES

Gilden Photonics provides various accessories for the Spectral Cameras to broaden their applicability. Several fore objective lenses with different FOVs are available which have been designed to provide the optimal image and spectral quality across the full spectral range of the Spectral Camera.

- The Spectral Camera can also be delivered with collection fiber optics to convert the camera into a multiple point spectrometer. All the points are measured simultaneously without a moving multiplexer.
- The Spectral Camera can be delivered with a Mirror Scanner or rotating stage for scanning static targets and outdoor scenes, or with X-stage sample mover for desktop and microscope applications.

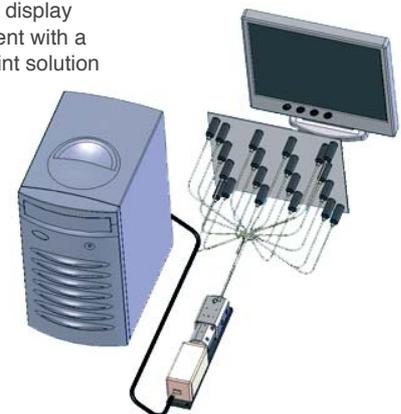
SPECTRASSENS SOFTWARE

The Spectral Camera HS is supported by SpectraSENS software, which allows:

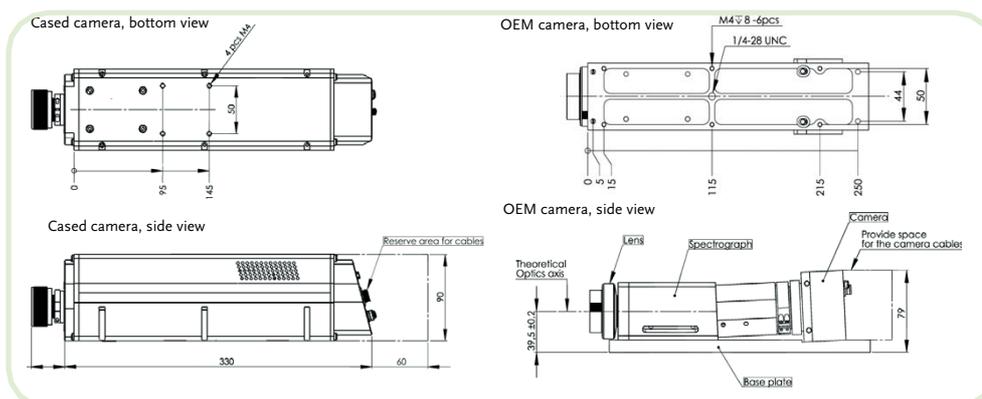
- data acquisition and saving data in the hard disk
- camera parameters settings • basic visualization in real time

Datacubes are saved in ENVI compatible for- mat that allows further processing by several software packages for hyper-spectral data processing.

Flat pannel display measurement with a multiple point solution



Spectral Camera HS mechanical diagram



APPLICATIONS

- Color control and sorting
- Scanning of art works
- Flat panel display measurement
- Printing testing
- Counterfeit detection
- Fruit and vegetable inspection and sorting
- Life science applications
- Plant and vegetation research
- Environmental monitoring
- Hyper-spectral microsc

Spectral Camera HS

SPECTRAL CAMERA HS			
OPTICAL CHARACTERISTICS	V8E	V10E	UNIT
Spectral Range	380 – 800	400 – 1000	nm
Spectral Resolution	2.0	2.8	nm
Spectral Sampling	0.55 – 4.4	0.72 – 5.8	nm / pixel *
Spectral Resolution	RMS spot size < 9		µm
Aberrations	Insignificant astigmatism, keystone or smile		-
Numerical Aperture	F / 2.4		-
Slit Width Options	30 (18, 50, 80, 150)		µm
Effective Slit Length	11.84		mm
Total Efficiency (typical)	> 30% independent on polarization		-
Stray Light	< 0.5% / halogen lamp, 590 nm LPF		-
ELECTRICAL CHARACTERISTICS			
Sensor	Interline CCD		-
Pixels in Full Frame	1600 (spatial) × 1200 (spectral)		-
Active Pixels	1600 (spatial) × 840 (spectral)		-
Pixel Pitch	7.4		µm
Camera Output	Digital 12 bit		-
Interface	Base camera link		-
Camera Control	CameraLink		-
Frame Rate	33 fps (full frame) up to 120 fps (ROI)		-
Exposure Time Range	0.1 – 100		ms
Power Consumption	< 5		W
Input Voltage	12 (OEM) , 24 (cased)		V
ENVIRONMENTAL CHARACTERISTICS	V8E	V10E	UNIT
Storage	- 20... + 50		°C
Operating	+ 5...+ 40 non-condensing		°C
MECHANICAL CHARACTERISTICS	OEM	CASED	UNIT
Size (L × W × H)	260 × 70 × 79	330 × 85 × 90	mm ³
Body	Anodized aluminium with mounting screw holes		-
Lens Mount	Standard C-mount		-
User Adjustments	None		-
Shutter	Optional	Yes, with USB control	-

* Adjustable by spectral binning