

Data sheet

EVK HELIOS EC32

Vo3-22-EN



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EVK HELIOS EC32

Hyperspectral Imaging Core Camera for Industrial Applications

- Line-scan camera with optically corrected spectral data output
- 320 pixels spatial sensor resolution
- Operates in the wavelength band from 930 nm to 1700 nm

Description The EVK HELIOS EC32 is a push-broom hyperspectral imaging core camera that identifies different materials based on their chemical composition in a completely contactless and non-destructive way. EVK HELIOS EC32 provides spectral data, allowing customers to use their specific data analysis tools or to combine it with the EVK ALPHA edge computing platform. Together they are a powerful system for inline analysis, monitoring and sorting of industrial product streams in real-time.

- Key features**
- Comprises a 256 x 320 px Sensor / Calibrated output 248 x 312 px
 - Optical distortion corrected, spectrally calibrated, intensity calibrated
 - Excellent SNR of 3.500 at a nominal spatial resolution of 320 pixels
 - Scan rate of 446 Hz at full spectra (248 spectral bands) up to 3.8 kHz using ROI
 - Rugged industrial design
 - Protection rating IP54
 - Temperature range 0°C to 45°C with full optical stability

- Client benefits**
- Hyperspectral imaging camera for real-time, inline operations
 - Plug and play: No external calibration necessary
 - Compact and rugged design

- Typical applications***
- Removal of foreign bodies in food processing industries
 - Material type determination in plastic sorting
 - Measurement of material quality in waste management
 - In-line quantitative analysis of analyte concentrations in production processes

* In combination with EVK ALPHA Products

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Technical Data

Spectral range	(929 ± 2 to 1702 ± 2) nm
Line scan rate	446 Hz at full spectra (see frame-rate information)
Spectral resolution	2.5 nm
Spectral sampling	3.1 nm
Spatial sensor resolution	320 pixels
Spatial output resolution	312 pixels
Pixel size	30 x 30 µm
Optical coupling	C-mount lens
Slit	60 µm
Interfaces	GigE Vision (GV) ¹
Trigger input	RS-485
Dimensions without lens (w x h x d)	141 x 141 x 326 mm
Weight	approx. 7.8 kg
Power supply	18 to 36 V DC
Power consumption	max. 24W, typical 8W
Protection rating	IP54
Operating temperature	0 to +45 °C
Storage temperature	-25 to +75 °C
Humidity	8 to 80 %
Data output	1. High quality calibrated spectral data (12bit GigE-Vision)

¹ GigE Vision supports configuration & data streaming



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Frame-rate information

Achievable frame rate and exemplary spectral ROIs				
Spectral ROI width	Spectral band-width	Spectral range min	Spectral range max	Max. frame rate
248 pixels	773 nm	929 nm to 1702 nm	929 nm to 1702 nm	446 Hz
220 pixels	685 nm	929 nm to 1615 nm	1017 nm to 1702 nm	500 Hz
200 pixels	623 nm	929 nm to 1552 nm	1079 nm to 1702 nm	547 Hz
160 pixels	498 nm	929 nm to 1427 nm	1205 nm to 1702 nm	674 Hz
120 pixels	372 nm	929 nm to 1302 nm	1330 nm to 1702 nm	878 Hz
100 pixels	310 nm	929 nm to 1239 nm	1392 nm to 1702 nm	1034 Hz
80 pixels	247 nm	929 nm to 1176 nm	1455 nm to 1702 nm	1295 Hz
60 pixels	185 nm	929 nm to 1114 nm	1518 nm to 1702 nm	1607 Hz
40 pixels	122 nm	929 nm to 1051 nm	1580 nm to 1702 nm	2221 Hz
30 pixels	91 nm	929 nm to 1020 nm	1611 nm to 1702 nm	2745 Hz
20 pixels	59 nm	929 nm to 989 nm	1643 nm to 1702 nm	3594 Hz
18 pixels	53 nm	929 nm to 982 nm	1649 nm to 1702 nm	3831 Hz

Spectral ROI width is selectable in 2-pixel steps from 18 pixels to 248 pixels, spectral position is selectable in two-pixel steps over the full possible range.

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Order information

EVK HELIOS Hyperspectral Imaging Cameras:

Product	Order Number
EVK HELIOS EC32	AGX-22008

Supported Standard Optics:

Product	Order Number	Focal Length (mm)	Lense Aperture	Camera Mount
NIR Lens 6 mm/1.4	BKO-20063	6	1.8	C-Mount
NIR Lens 8 mm/1.4	BKO-20001	8	1.4	C-Mount
NIR Lens 12 mm/1.4	BKO-20002	12	1.4	C-Mount
NIR Lens 16 mm/1.4	BKO-20003	16	1.4	C-Mount
NIR Lens 25 mm/1.4	BKO-20004	25	1.4	C-Mount
NIR Lens 35 mm/1.4	BKO-20005	35	1.4	C-Mount

EVK Products in combination with EVK HELIOS EC32:

Product	Order Number	Description
EVK ALPHA G100	AGX-22033	Real-Time Processing Platform for Spectral Imaging
EVK SQALAR	LIZ-004x_xxx	Demo / Annual / Perpetual License for Classification Modeling Software

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