

EVK HELIOS NIR G2-320

0.9-1.7 μ m HYPERSPECTRAL IMAGING SYSTEM

- REAL-TIME HYPERSPECTRAL IMAGING SYSTEM
- 320 PIXEL SPATIAL RESOLUTION IN NIR WAVELENGTH BAND
- HIGH QUALITY OPTICALLY CORRECTED SPECTRA
- CLASSIFIED DATA STREAM



DESCRIPTION

The EVK HELIOS hyperspectral imaging camera is a powerful classification system, based on non-contact and non-destructive infrared imaging spectroscopy. It is available in 2 system configurations:

- **CORE:** Delivers high quality, optically corrected spectra for processing with 3rd-party tools.
- **CLASS:** Delivers a classified data stream for analyzing and monitoring applications in-line and at-line.

The EVK HELIOS system analyzes chemical properties of objects and makes distinction of material types not visible to color cameras. The internal classification engine delivers qualitative and quantitative information of material streams.

KEY FEATURES

- Operates in Near Infrared (NIR) wavelength range from 0.9 – 1.7 μ m
- Spatial resolution of 312 effective pixels
- 500 Hz acquisition speed at 220 spectral pixels¹
- GigE Vision interface
- Rugged industrial design according to IP54 class

CUSTOMER BENEFITS

- Internal camera calibration. No on-site calibration necessary
- Embedded data classification - no need for external PC
- Real-time imaging system for in-line operation
- Rugged industrial design for use in harsh environments

TYPICAL APPLICATIONS:

- Recycling of plastic or paper
- Sorting of minable ore
- Sorting and analyzing of food
- Foreign body detection
- In-line tablet inspection

TYPICAL APPLICATIONS

The EVK HELIOS smart imaging systems offer solutions for a variety of applications in recycling, mining, food processing as well as chemical and pharmaceutical industries. Due to their high-speed characteristics and rugged industrial design, the EVK HELIOS imaging system can be used in sorting, at-line or in-line quality inspection as well as in research.

¹ Refers to the optimum responsivity range of the sensor (1004 nm – 1690 nm).

EVK DI Kerschhaggl GmbH

Josef-Krainer-Straße 35
8074 Raaba, Austria

P +43 316 461 664
F +43 316 461 664-14

office@evk.biz
www.evk.biz

TECHNICAL DATA

SPECTRAL RANGE	(929 ± 2 – 1702 ± 2) nm
LINE SCAN RATE	446 Hz full frame ¹⁾
SPECTRAL RESOLUTION	9 nm
SPECTRAL SAMPLING	3.1 nm
SPATIAL RESOLUTION	312 pixels
PIXEL SIZE	30 x 30 µm
OPTICAL COUPLING	C-mount lens
SLIT	100 µm
INTERFACES	GigE Vision (GV), Camlink (CL) ²⁾
TRIGGER INPUT	RS-485
DIMENSIONS WITHOUT LENS	220 x 155 x 330 mm
WEIGHT	approx. 9.5 kg
POWER SUPPLY	+24V DC +/-15%
CURRENT CONSUMPTION	max. 4 A, typically 2A
PROTECTION SYSTEM	IP54
OPERATING TEMPERATURE	0 to +40 °C
STORAGE TEMPERATURE	-25 to +75 °C
HUMIDITY	8 to 80 %

1) See table under FRAME RATE INFORMATION

2) GigE Vision supports configuration & data streaming, CamLink (optional) supports classified data streaming only

HELIOS SYSTEM CONFIGURATION

	CORE	CLASS
SIGNAL CONDITIONING	▪	▪
MATERIAL CLASSIFICATION		▪

DATA PROCESSING SOFTWARE

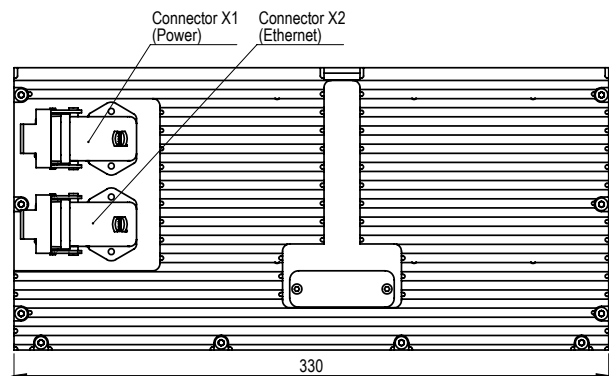
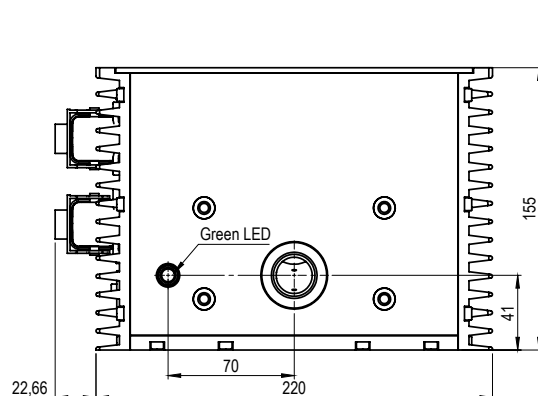
	CORE	CLASS
HELIOS OPTIMIZER Lite	▪	▪
HELIOS OPTIMIZER		▪
SQALAR		▪

HELIOS OPTIMIZER and SQALAR software tools can be ordered separately and are not included in the HELIOS NIR imaging system package.

DATA OUTPUT

	CORE	CLASS
DATA OUTPUT	High quality spectra	4-bit classified data

MECHANICAL DIMENSIONS (mm)



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FRAME-RATE INFORMATION

Achievable frame rate at spatial full frame (312 Pixels) and exemplary spectral ROIs:

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

ORDERING INFORMATION

PRODUCT	EVK ORDER NUMBER
HELIOS NIR G2 Core	AGB-18002
EVK HELIOS NIR G2 Class GV	AGC-18002
EVK HELIOS NIR G2 Class CL	AGC-18007

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