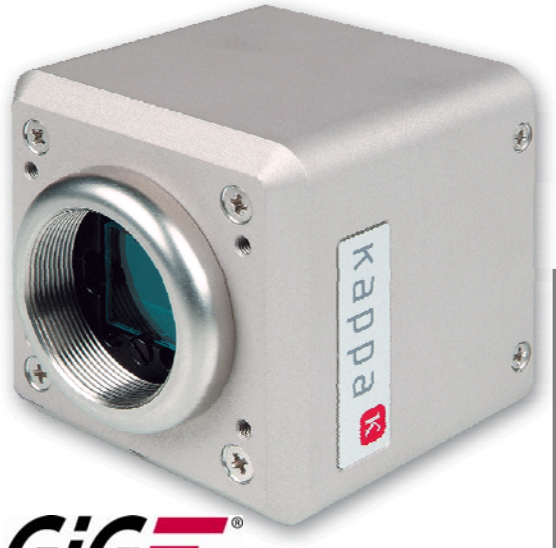
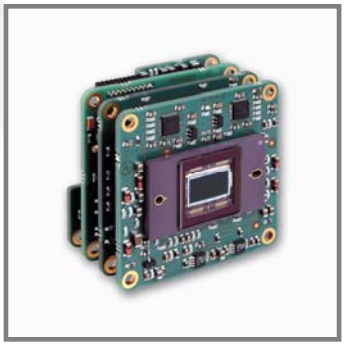
kappa

Digital GigE Vision Camera
Zelos – 02150 GV

NEW





GiGE VISION

Kappa introduces a new vision camera based on our modular high-performance platform with 14-bit digitization. The first model, the Zelos-02150 has a GigE Vision interface and offers a resolution of 1920 x 1080 and a frame rate of up to 30 fps. It fulfills all typical Kappa quality characteristics regarding hardiness and longevity.

The camera features several technical highlights. One of them is the 2/3" Kodak HD sensor KAI-02150, which supports HD standard 1080p and excels with an excellent dynamic range and the best image performance. A further plus is the high-performance GigE Vision interface.

The brilliant visualization of the smallest details with the lowest-contrast is the result of the numerous real-time signal processing functions. Among the functions are adjustments of different exposure modes, read-out modes (e.g., binning, partial scan), frame rates, gain settings, measuring window functions, contrast and edge enhancement functions (e.g., histogram stretching and equalizations), reticle and circular line generators and loadable look-up tables. The Kappa-made color processing offers adjustments for the RGB Bayer filter interpolation, and color saturation.

The modular camera platform can serve different sensors and signal interfaces and thus can fulfill the requirements for machine vision applications as well as other areas of application.

- HD sensor, 1920 x 1080 pixel
- Color | monochrome
- Progressive scan
- 14-bit digitization
- Up to 30 fps
- GigE Vision
- High transfer rate (1 Gbit/s)
- Up to 100 m (300 feet) CAT5e cabling
- Numerous real-time signal processing functions
- Kappa-made first-class color processing
- Binning |partial scan
- Reset | restart, frame on demand, external sync
- Image memory
- Screw-in GigE cable
- SDK Zelos
- Control software KCC Zelos

GiGE VISION

- High transfer rate (1 Gbit/s)
- low-priced interface on the PC
- Inexpensive cabling with thin CAT5e cables up to 100 m (300 feet)
- Standardized user-friendly communication protocol

realize visions .

Zelos - 02150 GV

Technical Data

Sensor-specific data				
CCD sensor	2/3" interline transfer CCD progressive scan with micro lenses (Kodak KAI 02150)			
Pixel size (H x V)	5.5 µm x 5.5 µm			
Light-sensitive area (H x V)	10.56 mm x 5.94 mm (16:9)			
Number of pixels (H x V)	1920 x 1080 active, 2004 x 1144 total			
Spectral sensitivity (without IR –filter)	350 nm – 1050 nm			
Full well capacity	20 000 e^-			
A/D-conversion factor	1.2 e^- / increment			
Filter	RGB Bayer Filter / IR-filter			
Dynamic range	64 dB (measured in dark image, at 33 ms exposure time at 0 dB gain)			
Interface-specific data				
Interface	Gigabit Ethernet			
Coding	Color YUV 4:2:2, RGB 24, Mono 14 (RAW data), Mono 14, Mono 12, Mono 8			
Camera output format	full frame:	1920 x 1080 pixel, 25 fps (color); 30 fps (monochrome),		
	binning: image size (pixel): frame rate:	2 fold 960 x 540 approx. 60 fps	4 fold 480 x 270 approx.120 fps	8 fold 240 x 135 approx. 240 fps
	partial scan:	image size freely adjustable		
Exposure	manual: automatic (AE):	1 µs up to 120 s 1 µs up to 33 ms at 1920 x 1080 pixel		
Signal Processing				
System	14 bit digital			
Gain	manual/automatic (AGC): 0 up to 18 dB			
Enhancement	edge enhancement adjustable, histogram stretching, histogram equalization			
Image memory functions	recursive filter; background image subtraction, vertical and horizontal image mirror, negative image			
Color processing	light source, color setting (RGB), automatic white balance, color saturation			
Gamma	0.3 up to 2.2, loadable			
Diagnostics	e.g. image size, refresh rate, test pattern			
Line generator	2 reticles: position, color and style adjustable, circular line			
Measuring window	position and dimensions adjustable			
Look-up table	loadable			
Synchronization	internal/external, reset/restart (delay <10 µs), frame on demand			
Trigger	hardware trigger: variable adjustable, fixed trigger delay < 10 µs; frame on demand software trigger: via software development kit (SDK Zelos)			
Image memory	32 MB buffer memory			
System Integration				
System requirements	separate data sheet			
Software	separate data sheet (SDK Zelos - Software Development Kit and KCC Zelos - Control Software)			
Interface Protocol	GigE Vision			
General				
Interfaces	RJ 45 (Gigabit Ethernet), 10-pin system connector (power supply, control and trigger signals)			
Lens mount	C-mount, focal plane adjustable, CS-mount on request			
Filter	IR-filter, removable			
Temperature	operating temperature -20°C to +65°C, storage temperature -30°C to +70°C			
Power supply	9 - 36 V DC, ~4 W			
Dimensions / Weight	50 x 50 x 58 mm (1,97" x 1,97" x 1,97") / approx. 200 g (7,05 oz.)			
Cable length	Ethernet (minimum CAT5e) up to 100 m			
Order-no.	Color: Monochrome:	Zelos-02150C GV Zelos-02150M GV	961-2150 951-2150	
Standard equipment	Camera, CD (KCC Zelos, SDK Zelos)			

The control software KCC Zelos does not allow access to all camera functions. We are constantly checking the accuracy of the technical data. We are prepared to provide more detailed information on request. Technical data are subject to change without notice!

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