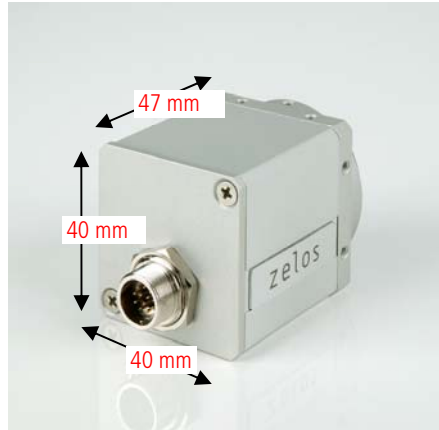


Digital GigE Vision Camera Zelos – 414 GV PoE

GIG
VISION

kappa 
NEW



GigE Vision Camera Zelos-414, a compact VGA camera with IP54 protection!

Kappa expands the GigE Vision Zelos camera series. One of the new models is the Zelos-414, a cost-efficient VGA camera with IP 54 protection. Based on the complex Kappa high-performance camera platform with 14-bit digitization depth this model comes in compact design (40 x 40 x 47 mm/ 1,57" x 1,57" x 1,85"). It is fitted with the Sony IXC414 CCD sensor, monochrome or color, and provides VGA resolution at a frame rate of 60 fps (up to 200 fps with binning and partial scan). The GigE Vision interface (1 Gbit/s) with a stable waterproof connector assures safe data transfer. The camera is powered via Power-over-Ethernet (PoE).

The Zelos-414 features protection class IP54 and is thus protected against dust and splash. The typical Kappa quality characteristics regarding hardness and durability make this camera one of the most rugged models in its class.

The brilliant visualization of the smallest low-contrast details is the result of the extensive real-time signal processing functions based on 14-bit digitization. Some of the functions are: adjustments for exposure modes, read-out modes (e.g. binning, partial scan), frame rate, gain settings, measurement window, contrast and edge enhancement (e.g., histogram equalization), reticle and circle generator, and dynamic look-up table. The Kappa-made color processing offers adjustments for the RGB Bayer interpolation, color space transformation and color saturation.

A trigger input and a strobe output enable the synchronization with external devices. Polarities and delays are adjustable.

The software KCC Zelos and the software development kit SDK Zelos assure fast putting into operation and easy system integration. The Zelos-414 is ideally suited for monitoring tasks or as an optical aid for positioning and aligning tasks in machine tools.

VGA resolution

IP 54 protection

 Color |  Monochrome

Progressive Scan

14-bit digitization


Up to 200 fps

High transfer rate (1 Gbit/s)

GigE Vision | PoE

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, ext. sync.

SDK Zelos

Control software KCC Zelos

One cable connection
Power over Ethernet (PoE)

Option: Real-Time Recording
(KCC Zelos Recording)





Zelos - 414 GV PoE

Technical Data


Sensor-specific data

CCD sensor	1/2" interline transfer CCD progressive scan with micro lenses (Sony ICX 414)
Pixel size (H x V)	9.9 µm x 9.9µm
Light-sensitive area (H x V)	6,5 mm x 4,9 mm
Number of pixels (H x V)	640 x 480 active, 659 x 494 total
Spectral sensitivity (without IR –filter)	400 nm – 1000 nm
Full well capacity	32000 e ⁻
A/D-conversion factor	~ 2 e ⁻ / increment
Filter	RGB Bayer Filter
Dynamic range	65 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: 640 x 480 pixel, 60 fps binning: 2 fold 4 fold  image size (pixel): 320 x 240 160 x 120  frame rate: 110 fps 200 fps partial scan: image size freely adjustable
Exposure	manual: 1 µs up to 120 s automatic (AE): 1 µs up to 15 ms at 640 x 480 pixel



Signal Processing

System	14 bit digital
Gain	manual/automatic (AGC): 0 up to 18 dB
Enhancement	edge enhancement adjustable, histogram stretching, histogram equalizations
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
Synchronization	internal/external, reset/restart (delay <10 µs), frame on demand
Trigger	Hardware Trigger: Variable adjustable, fixe trigger delay < 10 µs; frame on demand Software Trigger: via Software Development Kit (SDK Zelos)

System Integration

System requirements	separate data sheet
Software Zelos Tools	separate data sheet (SDK Zelos - Software Development Kit and KCC Zelos - Control Software)
Interface protocol	GigE Vision

General

Interfaces	12-pin system connector (Gigabit Ethernet, PoE, control and trigger signals)
Lens mount	C-mount, focal plane adjustable, CS-mount on request
Filter	IR-filter
Temperature	Operating temperature -20°C to +65°C, storage temperature -30°C to +70°C
Power Supply	PoE 48 V, external 9 up to 48 V, ~ 3 W
Protection rating	IP 54
Dimensions / Weight	40 x 40 x 47 mm (1,57" x 1,57" x 1,85") / approx. 170 g (6oz.)
Cable length	Ethernet (minimum CAT5e) up to 100 m
Order-no.	 color: Zelos-414C GV PoE 961-2159  monochrome: Zelos-414M GV PoE 951-2159
Standard equipment	Camera, CD Zelos Tools (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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