JENOPTIK

MORE LIGHT

EVIDIR® alpha - infrared camera core

Precisely visualize and analyze temperature distributions

EVIDIR alpha

Outstanding thermal imaging quality and optimized size, weight and power characterize the family of EVIDIR alpha dedicated for system integration. Based on modern 12 µm uncooled micro-bolometer-technology, EVIDIR alpha camera modules deliver sharp and detailed thermal images with a thermal sensitivity of better than 20 mK NETD and a spatial resolution of up to 640 x 480 pixels. With optional radiometric calibration, the thermographic camera modules delivering most accurate absolute temperature data.

- Precise thermal imaging: contactless measurement, visualization and mapping of temperature distributions
- Easy integration into numerous applications thanks to modular approach (modules, infrared cores, customized OEM solutions)
- Perfectly suited for portable and mobile applications
- Very low latency
- High image quality even in low-contrast scenes

EVIDIR® alpha — infrared camera core

Detector Type	Uncooled microbolometer with 12 µm pixel pitch			
Spectral range	LWIR 8 µm … 14 µm			
Frame rate options	60 Hz, ≤ 9 Hz (fewer export regulations)			
Image Data (up to 2 data streams simultaneous)	Corrected RAW 16 bit; processed Mono 8/16 bit or YCbCr 4:2:2 or YCbCr 4:4:4 or RGB 24 bit			
Thermal sensitivity	≤ 20 mK			
Video interface	Parallel CMOS, Serial CameraLink, MIPI CSI-2			
Control interface	Serial UART, command line based			
Supply Voltage	3.3 V DC			
Power consumption (CMOS)	Camera with detector 320x240: ≤ 0.85 W, Camera with detector 640x480: ≤ 1.05 W			
Housing temperature	–40 °C … +70 °C			
Max. detector temperature	+85 °C			
Camera with shutter	30 x 30 x <20 mm³ (width x height x length, without lens)			
Camera without shutter	25 x 25 x <20 mm³ (width x height x length, without lens)			
Weight	≤ 30 g (without lens)			
IP protection	Back side without protection; Front side (Lens) sealing to IP 67			
Standard lens options (further lenses on request) Coating: Anti Reflection or DLC	OEM Core 320	H_{FoV} x V_{FoV}: 16.2° x 12.1° 30.0° x 23.0° 60.0° x 44.0°	Focal length: 13.6 mm 7.2 mm 3.9 mm	F-Number: f/1.0 f/1.0 f/1.1
	OEM Core 640	H_{FoV} x V_{FoV}: 17.6° x 13.2° 32.0° x 24.0° 75.0° x 55.0°	Focal length: 25.0 mm 13.6 mm 6.2 mm	F-Number: f/1.0 f/1.0 f/1.0

EVIDIR® alpha — camera core as Viewer

Spatial resolution	OEM Core 320 Viewer: 320 x 240 pixels, OEM Core 640 Viewer: 640 x 480 pixels
Visualization Range	-40 °C ... +70 °C
Non-Uniformity Correction	Shutter based NUC with mechanical shutter; longtime stable shutterless algorithms (without shutter)

EVIDIR® alpha camera core as Radiometer

Spatial resolution	OEM Core 640 Radiometer: 640 x 480 pixels
Measurement range	Measurement range 1 @ $T_{housing}$ = +10 °C … +50 °C: -40 °C … +120 °C Measurement range 2 @ $T_{housing}$ = +10 °C … +50 °C: 0 °C … +600 °C
Measurement Accuracy	Measurement range 1: ± 2 K for T_{object} = -10 °C ... +120 °C @ $T_{housing}$ = +10 °C ... +50 °C Measurement range 2: ± 5 K or ± 2% (the higher one) for T_{object} = +120°C ... +600°C @ $T_{housing}$ = +10 °C ... +50 °C
Radiometer functions	Three output options: 1. Processed Viewer image (8/16 bit B/W or 16/24 bit false color) with add. temperature information (8 isotherms and 3 operator defined regions of interest ROI), 2. Camera generates temperature data of each pixel (16 bit), 3. Two data streams simultaneous - Viewer image combined with additional output of temperature data of each pixel*
Non-Uniformity Correction	Shutter based NUC with mechanical shutter

*Mode and the number of bits depend on backend

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