

# CMOS-USB3.1 GEN 1-CAMERA

## Product family high-resolution polarisation Camera

UK39376-M

5 MegaPixel / monochrome



### Description

The Polarisation Camera UK39376 is a specialized high-resolution CMOS camera adapted to the tasks in industrial and scientific image processing. It belongs to a family of high-end CMOS polarization cameras from ABS GmbH, which are available with different equipment features for a variety of applications. Typical applications for the high-photosensitive camera include quality assurance regarding for example scratches and coating defects, the detection of mechanical stress in transparent materials and the application as a cost-efficient polarimeter as well as to increase the contrast in scenes with low dynamics. The high frame rate, combined with the excellent resolution, enables the usage in industrial 100% inline testing.

By using a sensor with Pregius™ and Polarsens™-CMOS technology, the best signal-to-noise ratios are achieved even under unfavorable lighting conditions. The thermal stabilization of the image sensor using TEC allows extremely low-noise images in conjunction with high sensitivity and best image quality. By using the USB3.1 standard, the camera does not require an additional power supply. The active cooling with specially adapted housing construction allows the permanent cooled operation without the use of an additional fan.

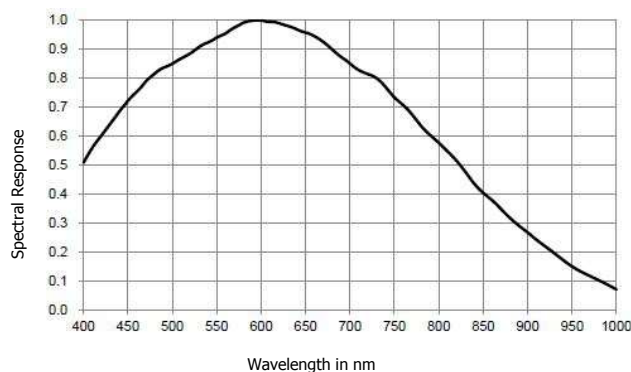
Optionally, the camera can also be supplied with opto-decoupled, digital outputs and inputs, which allow the use of the camera even in harsh industrial environments. The fast USB3.1 interface of the camera allows the transmission of uncompressed live images at full 5 megapixel sensor resolution with a maximum of 71 frames per second. By operating the camera with its own software, for example, image calculations and polarization angle measurements can be performed in real time.

### Fields of application

- Detection of scratches and surface defects (displays)
- Detection of mechanical stresses in glass, plastic
- Suppression of reflections (glass, glass)
- Separation foreground and background (base to object)
- Contrast enhancement at low contrast or strong shadows
- Shape recognition in low-contrast scenes
- Distinction between direct light and reflection
- Cost-efficient alternative to polarimeters

### Spectral response of the sensor

UK39376-M (monochrome)



### Technical specification

Sensor	2/3", CMOS monochrome
Sensor resolution	2464 x 2056 pixels, 11,1 mm diagonal
Sensor pixel size	3,45 µm x 3,45 µm
Frame rate camera using USB3.1	71 fps 8 Bit Full resolution 35 fps 12 Bit Full resolution
Shutter	Global Shutter
Exposure time	1 µs - 300 s (5 min)
ADC resolution	8 bit / 10 bit / 12 bit
Gain	1x - 16x (analog) 16x - 64x (analog + digital)
Read out noise	< 3 e <sup>-</sup>
Full Well Capacity	10,8 ke <sup>-</sup>
Data Interface	USB3.1 Gen 1
Power Supply	USB bus powered – USB Cable Typ C
Power consumption	max. 10,0 W
Operating temperature	+ 0 °C to + 55 °C
Temperature stabilization	18 °C sensor temperature via TEC
Storage temperature	-20 °C to + 70 °C
Dimensions	89,0 x 90,3 x 64 mm <sup>3</sup>
Weight	approx. 1,2 kg
Lens mount	C-Mount
Optional	<ul style="list-style-type: none"><li>▪ adjustable lens mount for compensation of sensor tilt</li><li>▪ digital input</li><li>▪ 2x opto-decoupled (free programmable)</li><li>▪ 1x TTL trigger input (fast)</li><li>▪ digital output</li><li>▪ 2x opto-decoupled (programm. as strobe)</li></ul>

### Assembly dimensions



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