

CAMERA MEASUREMENT AND SCHEIMPFLUG APPLICATIONS WITH HIGH-PRECISION ADJUSTMENT



UK39266 with adjustment screws and C-mount adapter plate

TECHNICAL DATA

Sensor	1", CMOS, color (BAYER pattern) or monochrome
Sensor resolution	2048 × 2048 pixels
Sensor pixel size	5,5 µm × 5,5 µm
Frame rate camera	180 fps at 1280 × 1024 (8 bit) 90 fps at 2048 × 2048 pixels (8 bit) 45 fps at 2048 × 2048 pixels (12 bit)
Exposure time	Global Shutter
ADC resolution	54 µs - 1s
Gain	8 bit / 10 bit / 12 bit
Sensor	1x - 3,2x (analog) 1x - 8x (digital)
Memory internal	32 full frames
Data interface	USB3.0
Power supply	USB bus powered
Power consumption	typically 3,8 W
Operating temperature	+ 0 °C to + 55 °C
Storage temperature	- 20 °C to + 70 °C
Dimensions	61,0 mm × 52,0 mm × 57,9 mm
Weight	approx. 250 g (without lens)
Lens mounting	C-mount, M42 (optional)
Additional functions	<ul style="list-style-type: none"> ▪ Digital output ▪ 2x opto decoupled (free programmable) ▪ Temperature sensor (internal)
Adjustment resolution	<ul style="list-style-type: none"> ▪ 10° rotation of the adjustment screw equals to a sensor tilt angle of 0,0006° (= 0,36') ▪ Z-adjustment (image center) 2 µm with simultaneous 10° rotation of all adjustment screws

The adjustable measurement camera UK39266 is a compact CMOS camera adapted to the tasks in scientific and industrial image processing. It belongs to a family of highly specialized imaging solutions from ABS GmbH, which can be used for a variety of applications due to adaptable features. Typical fields of application for the highly sensitive camera include high-resolution microscopy, research and measurement technology and the usage as a high-quality laboratory, astronomy and documentation camera.

By mounting the sensor on a special three-point adjustment plate inside of the camera body, the sensor position can be precisely adjusted to the optical axis with respect to angular tilt. Likewise, the flange focal distance (z) of the sensor to the optics can be adjusted hereby. The adjustment (tilt (x,y)) is possible with a precision of a few micron during live operation of the camera. As a result, the camera is especially suitable for the usage as a high-quality laboratory camera e. g. as a wavefront sensor (Hartmann-Shack) and for spectroscopy applications. With intentionally oblique camera arrangement, the focal plane can be aligned with the object (Scheimpflug principle).

The optional opto-decoupled digital outputs allow the camera to be used as a master to control/trigger external electronics as well as to drive and power external LED lighting solutions. The lens mount can be customized to C-mount or M42 by using different front panels on the camera body for maximum flexibility. The fast USB3.0 interface of the camera allows the transmission of uncompressed live images at full sensor resolution with a maximum of 90 frames per second.

Typical fields of application:

- Precise microscopy or measurement camera
- Laboratory and optical bench applications
- Spectroscopy, interferometry
- Wave front sensors
- Need for high-precision sensor positioning
- Compensation of Scheimpflug conditions
- Need for sensor tilt (x,y) or z-positioning
- Astronomy
- Star gazing
- Imaging on telescopes



UK39266 with replaceable adapters for C-mount and M42 mount