



EoSens[®] CL

High-Speed CMOS Camera



1288
EMVA Standard Compliant



EoSens[®] CL Key Features:

- 506 fps at 1.3 megapixel resolution
- More than 120,000 fps with multiple and arbitrary ROIs
- Up to 90 dB dynamic range for high-contrast images
- Multiple Pixel Exposure supported
- Maximum performance on Camera Link[®] interface
- Base and Full Camera Link[®] configuration
- 63 x 63 x 38 mm small

Engineered for Image Quality

The EoSens[®] CL brings an incredible combination of speed, resolution and dynamic range. Featuring a 1" CMOS sensor, it captures images with 1,280 x 1,024 pixel resolution at 506 frames per second. Higher frame rates are achieved by defining up to four regions of interest.

Using Camera Link[®] technology, the EoSens[®] CL is available in Base and Full configuration. This robust high-speed interface includes camera control and I/O over one or two cables.

Compact Design

The EoSens[®] CL measures only 63 x 63 x 38 mm, making it easy to integrate and deploy on the factory floor. Designed for operation in high shock and vibration environments, it has a robust metal housing.

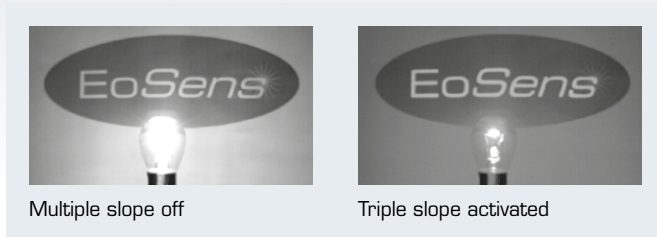
APPLICATION EXAMPLES

- Laser triangulation
- PIV measurements
- Roboter positioning
- Material testing
- Ballistics and explosives
- 3D inspection
- Flaw detection
- Tensile testing



Powerful Features

Through two selectable steps, the camera's dynamic range can be enhanced to 90 dB. Even in cases of extreme contrasts between dark and light the EoSens® CL captures critical details.



Another important feature of the EoSens® CL is its automatic exposure mode. Additionally, pixel exposure can be accumulated up to seven times, resulting in alternative image results. The optimally exposed image may then be selected for further processing.

Frame rates

Resolution	Camera Link® Full	Camera Link® Base
1,280 x 1,024 px	506 fps	110 fps
640 x 480 px	1,860 fps	400 fps
400 x 300 px	4,060 fps	870 fps
1,280 x 64 px	7,630 fps	1,600 fps
60 x 60 px	33,390 fps	6,090 fps
	max. 120,420 fps	max. 15,290 fps

Smart Features

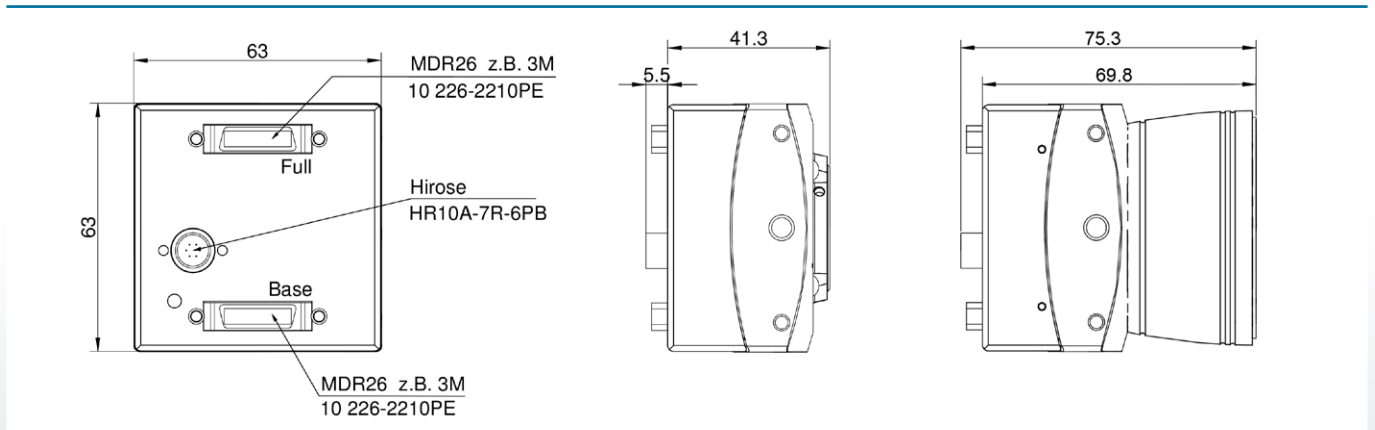
- Triple Slope
- FPN Correction
- Multiple ROI
- Arbitrary ROI
- High Dynamic Range
- Auto Exposure
- Multiple Pixel Exposure
- PoCL

Technical Data

(More detailed specifications are available on request)

EoSens® CL (monochrome / color)	
Resolution	1.3 Mpix
Active pixels	1,280 x 1,024 px
Interface	Camera Link® Full Camera Link® Base
Frame rate (8 bit)	506 fps 110 fps
Sensor	LUPA1300-2
Sensor type	CMOS global shutter
Sensor format	1"
Active sensor area (H x V)	17.92 x 14.34 mm
Pixel size	14 x 14 µm
Sensitivity (mono)	10.2 V/lux*s @ 550nm
Color depth	10 / 8 bit
Dynamic range	57 dB / up to 90 dB
Shutter time (steps)	2 µs
Shutter time range	2 µs – 1 s
Mount options	C-Mount / F-Mount
Dimensions (W x H x L w/o mount)	63 x 63 x 38 mm
Weight (C-Mount)	300 g
Power consumption	5 W
Power supply	8 – 24 V DC
Camera body temperature	+5 °C ... +50 °C
Shock / Vibration proof	70 g / 7 grms
Conformity	CE / RoHS / Camera Link®
EMVA 1288 reports	✓

Camera Body Dimensions



MIKROTRON GmbH

MIKROTRON GmbH provides a full range of high-speed imaging solutions for challenging applications in industry, engineering, science and sports. The company's extreme slow-motion recording enables customers to optimize manufacturing processes, improve product design, revolutionize quality management and analyze motion.

Germany
 Landshuter Str. 20-22
 D-85716 Unterschleissheim
 Phone: +49(0)89-726342-00
 E-Mail: info@mikrotron.de
 Web: www.mikrotron.de

North America
 14032 Hermosillo Way
 US-Poway, CA 92064
 Phone: +1-858-774-1176
 E-Mail: steve.ferrell@mikrotron.de
 Web: www.mikrotron.de





EoSens[®] 3CL

High-Speed CMOS Camera



1288
EMVA Standard Compliant



EoSens[®] 3CL Key Features:

- 285 fps at 3 megapixel resolution
- More than 180,000 fps at reduced resolution
- Maximum performance on Full Camera Link[®] interface
- 63 x 63 x 52 mm small
- High contrast images with 80 dB dynamic range

Engineered for Speed

Powered by a 1" CMOS sensor, the EoSens[®] 3CL captures high-quality images at 1,690 x 1,710 pixel resolution and 285 frames per second. Frame rates as high as 181,000 frames per second are possible at reduced resolution.

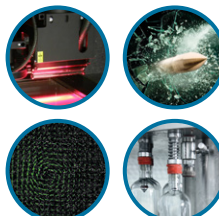
The camera is available in Full Camera Link[®] configuration. This high-speed serial interface transmits up to 850 Mbytes per second and includes camera control and I/O over two cables.

Compact Design

Without lens mount the EoSens[®] 3CL measures only 63 x 63 x 52 mm, making it easy to integrate and deploy on the factory floor. Designed for operation in high shock and vibration environments, it has a robust metal housing.

APPLICATION EXAMPLES

- White light interferometry
- Laser triangulation
- PIV measurements
- Roboter positioning
- Ballistics and explosives
- 3D inspection
- Bottling inspection
- Microscopy



Standardized Interface

The camera takes advantage of Camera Link® technology. This widely adopted standard has a number of benefits:

- High speed, high pixel depth and large image sizes
- Easy to configure camera attributes
- Triggering and timing capability
- Power and data over one cable
- Uniform cabling
- Easy handling

Frame rates

Resolution	Frame rate
1,690 x 1,710 px	285 fps
1,280 x 1,024 px	600 fps
1,024 x 768 px	950 fps
640 x 480 px	2,320 fps
1,280 x 64 px	9,380 fps
120 x 60 px	38,500 fps
	max. 181,000 fps

Smart Features

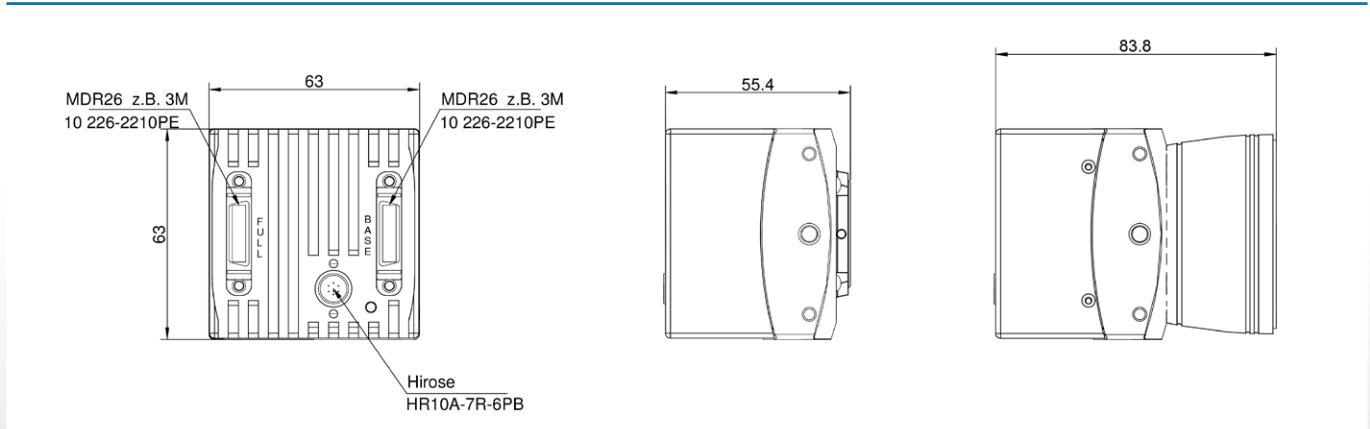
- High Dynamic Range
- Double Slope
- FPN Correction
- PoCL

Technical Data

(More detailed specifications are available on request)

EoSens® 3CL (monochrome / color)	
Resolution	3 Mpix
Active pixels	1,690 x 1,710 px
Interface	Camera Link® Full
Frame rate (8 bit)	285 fps
Sensor	LUPA3000
Sensor type	CMOS global shutter
Sensor format	1"
Active sensor area (H x V)	13.57 x 13.68 mm
Pixel size	8 x 8 µm
Sensitivity (mono)	3.81 V/lux*s @ 550nm
Color depth	8 bit
Dynamic range	80 dB
Shutter time (steps)	1 µs
Shutter time range	1 µs – 1 s
GPIO	STRB
Mount options	C-Mount / F-Mount
Dimensions (W x H x L w/o mount)	63 x 63 x 52 mm
Weight (C-Mount)	300 g
Power consumption	7 W
Power supply	8 – 24 V DC
Camera body temperature	+5 °C ... +50 °C
Shock / Vibration proof	70 g / 7 grms
Conformity	CE / RoHS / Camera Link®
EMVA 1288 reports	✓

Camera Body Dimensions



MIKROTRON GmbH

MIKROTRON GmbH provides a full range of high-speed imaging solutions for challenging applications in industry, engineering, science and sports. The company's extreme slow-motion recording enables customers to optimize manufacturing processes, improve product design, revolutionize quality management and analyze motion.

Germany

Landshuter Str. 20-22
D-85716 Unterschleissheim
Phone: +49(0)89-726342-00
E-Mail: info@mikrotron.de
Web: www.mikrotron.de

North America

14032 Hermosillo Way
US-Poway, CA 92064
Phone: +1-858-774-1176
E-Mail: steve.ferrell@mikrotron.de
Web: www.mikrotron.de

