

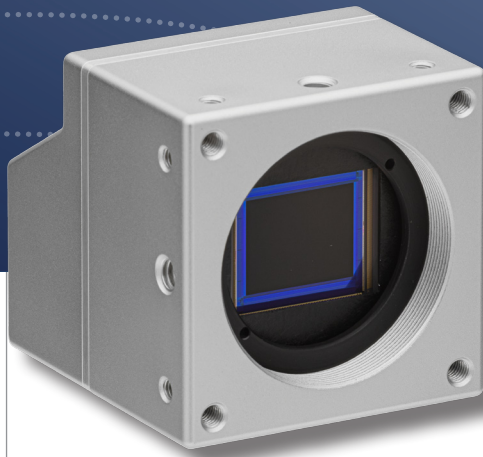
Optronis

Make time visible

CYCLONE SERIES

Cyclone-21-230

High-Speed Machine Vision Camera



CXP-12

- ✓ HIGH SPEED MACHINE VISION
- ✓ AUTOMATED OPTICAL INSPECTION (AOI)
- ✓ SEMICONDUCTOR QUALITY CONTROL

- GSPRINT4521
- 230 fps with 5120 x 4096 pixels
- Global shutter mode
- High full well capacity >30 ke-
- CoaXPress V2.1 interface with 4 x 12.5 Gbit/s
- Power and trigger via CoaXPress

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Cyclone-21-230 High-Speed Machine Vision Camera

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FEATURES

With 21 MPixel resolution the Cyclone-21-230 still provides high frame rate of 230 fps. The camera is part of Optronis Cyclone series for demanding machine vision applications.

- 5 120 x 4 096 pixel resolution
- low noise pixel

Firmware features

- Analogue gain and offset adjustment
- Defect pixel correction (customer activatable)
- Framenumber and Microsecond counter on image

PERFORMANCE (EXAMPLES, 8 BIT, SEE ALSO FRAME RATE CALCULATOR)

Resolution (HxV)	Frame rate	Resolution (HxV)	Frame rate
5 120 x 4 096	230 fps	5 120 x 2 048	456 fps
3 840 x 2 176	442 fps	5 120 x 1 024	897 fps
1 920 x 1 088	871 fps	5 120 x 512	1 735 fps
1 024 x 1 024	924 fps	5 120 x 32	14 055 fps
640 x 480	1 898 fps	4 928 x 32	14 436 fps

MODELS

Cyclone-21-230-M	monochrome camera
Cyclone-21-230-C	color camera
Scope of delivery	camera, brief introduction

ACCESSORIES

CY-CM	C-Mount lens adapter
CY-FM	F-Mount lens adapter
CY-M42	M42 Mount lens adapter
CPH6-PTC	Pig tail cable for synch
CPH6-USB	Programming Cable
CY-HIS	Heat Sink
CY-FAN	Cooling Fan



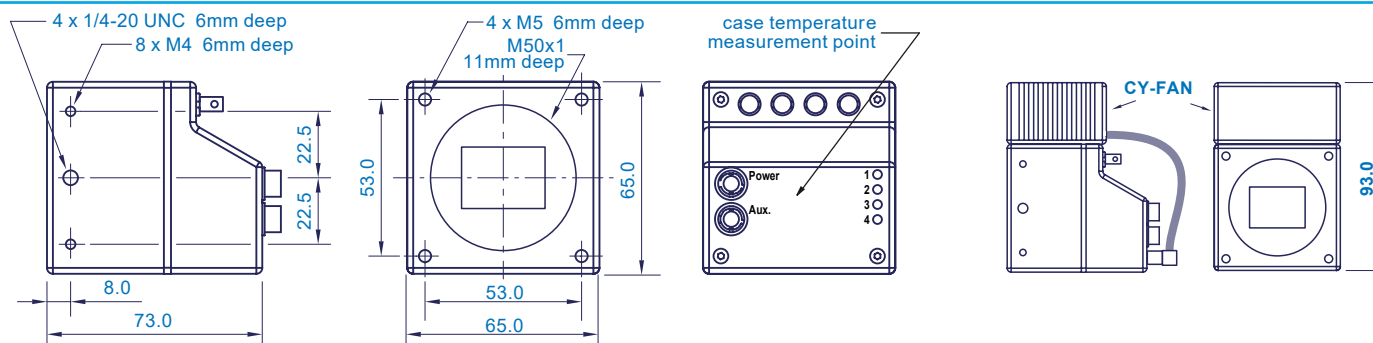
SPECIFICATIONS

Sensor type	GSPRINT4521, Grade 1
Resolution	5 120 x 4 096 pixel
Frame rate (full resolution)	1 .. 230 fps
Exposure time	4 µs .. 1 / frame rate
Active area / Diagonal	23.04 mm x 18.43 mm / 29.5 mm
Pixel distance	4.5 µm x 4.5 µm
A/D conversion	8/10 Bit
Device Tap Geometry	1X-2YE
Quantum efficiency (sensor)	50 % @ 520 nm
Synchronization	internal, external, CoaXPress
Synchronization signals	Synch IN and Synch OUT, TTL level, electrically isolated
Interface	CoaXPress 2.1 Micro-BNC (HD-BNC) connectors
Interface Configurations	4 x CXP12, 2 x CXP12 4 x CXP6, 2 x CXP6
Power	external supply <18.0 W, PoCXP

Temperature Ranges	
- operation, amb., with CY-HIS	0 .. +25°C / 32 .. 77°F
- operation, amb., with CY-FAN	0 .. +45°C / 32 .. 113°F
- operation, case temperature	0 .. +65°C / 32 .. 149°F
Weight	400 g w/o mount, w/o CY-FAN2
Dimensions	65 mm x 65 mm x 73 mm (3D model data available)

EMVA1288 data (v4.0 typ.)	8 bit	10 bit
Dynamic range	54 dB	59 dB
Saturation capacity	31 000 e ⁻	31 000 e ⁻
Temporal dark noise	48 e ⁻	36 e ⁻
System gain	130 e ⁻ /DN	32 e ⁻ /DN
Signal-to-Noise Ratio	45 dB	45 dB
Dark Signal Non-Uniformity	23 e ⁻	18 e ⁻
Photo Response Non-Uniformity	1.5 %	1.5 %
Non-Linearity Error (V3.0)	0.5 %	0.5 %

TECHNICAL DRAWINGS



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