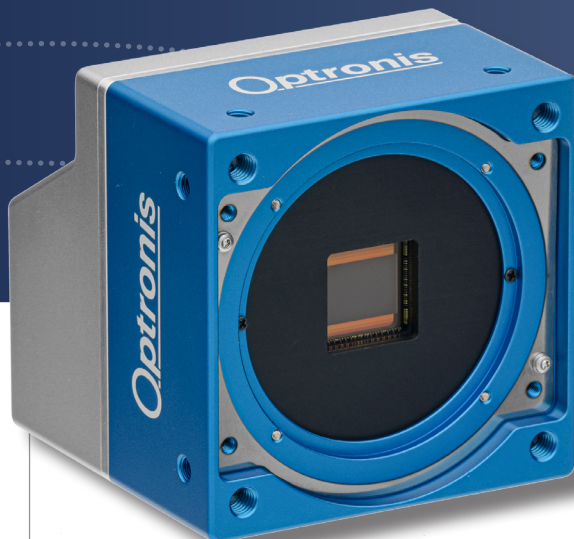


CYCLONEPLUS SERIES

CyclonePlus-5



- ✓ LASER LINE PROFILOMETRY
- ✓ METROLOGY AND HIGH SPEED MACHINE VISION
- ✓ AUTOMATED OPTICAL INSPECTION (AOI)

- 693 fps with 2 560 x 1 916 pixels
- Global shutter with low noise pixel
- CoaXPress V2.0 interface with 4 x 12.5 Gbit/s
- Flat Field Correction (FFC)
- Short Back-Focal design
- Power and trigger via CoaXPress

CyclonePlus-5 High-Speed Machine Vision Camera

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DESCRIPTION

The CyclonePlus-5 is a high resolution and high speed camera for demanding machine vision applications. CyclonePlus cameras are streaming image data at up to 50 Gb/s to a CoaXPress frame grabber for real time processing. The cameras allow flexible cooling solutions and provide short back focal (BF) distances.

- 2 560 x 1 916 pixel resolution
- up to 693 fps at full resolution
- High performance laser line profilometry

PERFORMANCE (EXAMPLES, TYP., 8 BIT)

Resolution (HxV)	Frame rate	Resolution (HxV)	Frame rate
2 560 x 1 916	693 fps	2 560 x 960	1 380 fps
1 920 x 1 080	1 227 fps	2 560 x 480	2 743 fps
512 x 384	3 418 fps	2 560 x 120	10 579 fps
256 x 8	95 057 fps	2 560 x 8	95 057 fps

EMVA1288 data (v4.0 typ.)

8 bit

Dynamic range	53 dB
Saturation capacity	12 000 e ⁻
Temporal dark noise	16 e ⁻
System gain	50 e ⁻ /DN
Signal-to-Noise Ratio	41 dB
Dark Signal Non-Uniformity	70 e ⁻
Photo Response Non-Uniformity	2.0 %
Non-Linearity Error (v3.0)	1.1 %

FEATURES

Exposure Modes	Timed
Trigger Activation	RisingEdge, FallingEdge, AnyEdge
Trigger Sources	External (Synch IN), CoaXPress, software
Trigger Filter and Trigger Hold-Off Time	Yes, for external trigger source
Trigger Delay	Adjustable
Flat Field Correction (FFC)	Block-based with up to 16 reference data in camera, auto calibration Column-based
Defect Pixel Correction	Yes, factory setting or customer configuration
Digital Binning Modes	Average, Sum
Digital Binning horizontal / vertical	x1, x2, x4 / x1, x2, x4
Dual ROI	Yes
Line Skipping (Decimation)	Yes
User Global Adjustments	Offset analog and digital / Gain analog and digital
Programmable User Output	Yes
White Balance	Yes, with auto function ROI control, manual RGB gain
Counter and timer control	Yes
Image Stamp (Counter information in frame)	Yes
Save setup to flash and load on power-on	Yes
Over Temperature Monitoring	Yes
Firmware Update	via USB (CPH6-USB) and CXP
File Access Control	Yes, up to 3 MByte user data
Test Pattern Generation	Yes

SPECIFICATIONS

Sensor type	LUX51, Global Shutter
Resolution	2 560 pixel x 1 916 pixel
Frame rate (full resolution)	20 .. 693 fps
Exposure time	4 μs .. 1 / frame rate
Active area / Diagonal	12.80 mm x 9.58 mm / 15.99 mm
Pixel distance	5.0 μm x 5.0 μm
A/D conversion	8/10 Bit
Quantum efficiency (typ. sensor)	46 % @ 520 nm
Trigger	internal, external, CoaXPress
Trigger signals	Synch IN and Synch OUT, TTL level, electrically isolated
Interface	CoaXPress 2.0 Micro-BNC (HD-BNC) connectors
Interface Configurations	4 x CXP12, 2 x CXP12, 1 x CXP12, 4 x CXP6, 2 x CXP6
Power Consumption	12 W (typ.)
Power Supply	PoCXP, ext.
Temperature Ranges (to limit case temperatur to 65°C)	- operation, amb., no cooling 0 .. +25°C / 32 .. 77°F - operation, amb., with CYP-HIS 0 .. +35°C / 32 .. 95°F - operation, amb., with CYP-FAN 0 .. +45°C / 32 .. 113°F - operation, case temperature 0 .. +65°C / 32 .. 149°F
Weight	340 g w/o mount, w/o cooling
Dimensions	65 mm x 65 mm x 65.5 mm (3D model data available)

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CyclonePlus-5-M	monochrome Camera
CyclonePlus-5-C	color Camera
Scope of delivery	Camera, brief introduction

The camera allows FFC in real-time to correct non-homogeneous image intensity typically caused by non-homogeneous illumination or lens vignetting. Correction data are generated automatically after a reference image is captured. Correction data of up to 16 reference images are saved in the camera.

Passive heat sink or active fan can be installed by customer to adapt camera to operate at required temperatures. Alternatively, camera allows to be fixed onto a customer specific heat sink.

CYP-CM	C-Mount lens adapter
CYP-FM	F-Mount lens adapter
CYP-M42-12	M42 Mount lens adapter, BF 12 mm
CYP-M58-11,58	M58 Mount lens adapter, BF 11.58 mm
CYP-HIS	Heat Sink
CYP-FAN	Cooling Fan
CPH6-PTC	Pig Tail Cable for synch
CPH6-USB	Programming Cable



Optronis GmbH
Ludwigstr. 2, 77694 Kehl
Germany

Phone: +49 7851 91 26 - 0
info@optronis.com
www.optronis.com

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