

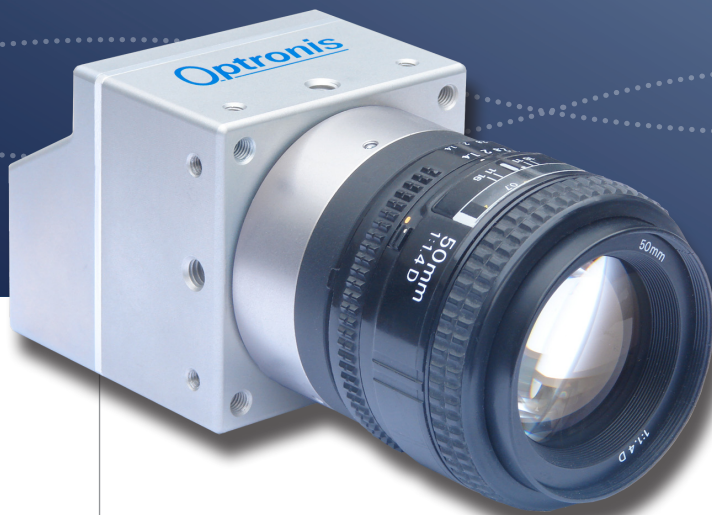
**Optronis**

Make time visible

CAMPERFORM-CYCLONE SERIES

# Cyclone-1HS-3500

High-Speed Machine Vision Camera



**CXP-12**

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

- 3 500 fps with 1 280 x 860 pixels
- Global shutter with low noise pixel
- Micro-BNC (HD-BNC™) connectors
- CoaXPress V2.0 interface with 4 x 12.5 Gbit/s
- Power and trigger via CoaXPress
- Microsecond and frame counter

### FEATURES

The Cyclone-1HS-3500 is a high resolution camera with large low noise pixels. It is part of Optronis CamPerform-Cyclone series for demanding machine vision applications.

- 1 280 x 860 pixel resolution
- low noise pixel
- frame rate increases with vertical window size reduction

Firmware features

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

### PERFORMANCE (EXAMPLES, 8 BIT)

Resolution (HxV)	Frame rate	Resolution (HxV)	Frame rate
1 280 x 860	3 518 fps	1 280 x 8	216 743 fps
640 x 480	6 270 fps	1 280 x 4	302 915 fps
320 x 240	12 385 fps	256 x 4	302 915 fps

### INTERFACE CONFIGURATIONS

Standard	CoaXPRESS V2.0
Channels used	4, 2 or 1 @ CXP12 4 or 2 @ CXP6

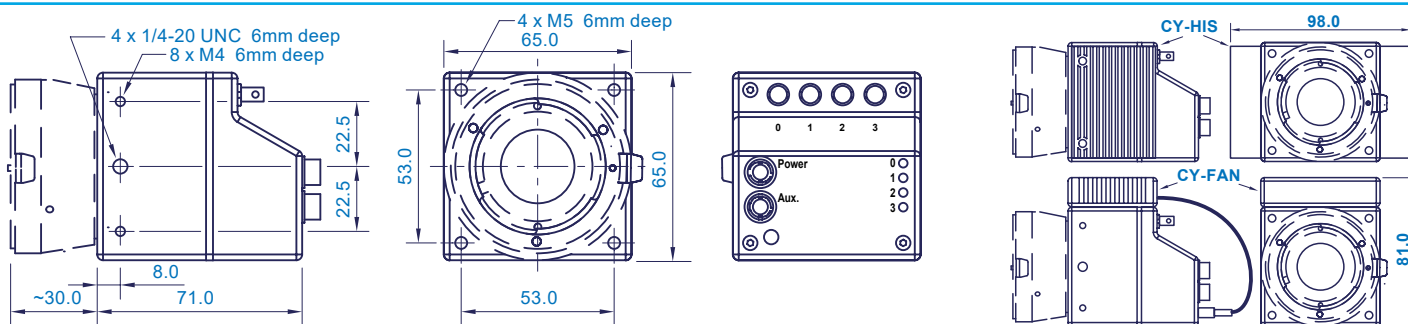
### MODELS

Cyclone-1HS-3500-M	monochrome Camera
Cyclone-1HS-3500-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

### TECHNICAL DRAWINGS



### SPECIFICATIONS

Sensor type	LUX13HS, Global Shutter
Resolution	1 280 pixel x 860 pixel
Frame rate (full resolution)	20 .. 3 518 fps
Exposure time	2 μs .. 1 / frame rate
Active area / Diagonal	17.53 mm x 11.78 mm / 21.12 mm
Pixel distance	13.7 μm x 13.7 μm
A/D conversion	8/10 Bit
Quantum efficiency (sensor)	30 % @ 550 nm
Synchronization	internal, external, CoaXPRESS
Synchronization signals	Synch IN and Synch OUT, TTL level, electrically isolated
Interface (physical)	Micro-BNC (HD-BNC) connectors
Power	12 W, PoCXP, ext.
Temperature Ranges	
- operation, amb., no cooling	0 .. +30°C / 32 .. 86°F
- operation, amb., with CY-HIS	0 .. +40°C / 32 .. 104°F
- operation, amb., with CY-FAN	0 .. +55°C / 32 .. 131°F
- operation, case temperature	0 .. +70°C / 32 .. 158°F
Weight	400 g w/o mount, w/o cooling
Dimensions	65 mm x 65 mm x 71 mm (3D model data available)

### EMVA1288 measurements 8 bit (v3.1 typ. preliminary)

Dynamic range	56 dB
Saturation capacity	20 000 e <sup>-</sup>
Temporal dark noise	36 e <sup>-</sup>
System gain	90 e <sup>-</sup> /DN
Signal-to-Noise Ratio	43 dB
DSNU	130 e <sup>-</sup>
PRNU	2 %
Non-linearity error $ LE_{min} ,  LE_{max} $	0.5 % (TBD % EMVA1288 v3.0)

