

CMOS Cameras

DS1-D1024 SERIES

With proprietary Photonfocus CMOS Sensor

Features

- 1024 x 1024 pixel resolution
- Global shutter
- Dynamic range up to 60 dB
- Up to 150 fps @ full resolution
- Sensor without cover glass
- Predefined Region of Interest (ROI)
- CameraLink® and USB 2.0 interfaces
- 10 bit greyscale
- On camera shading correction
- Superior Signal-to-Noise Ratio (SNR)
- CE, RoHS & WEEE compliant



Application Examples

Machine vision

- Standard vision applications
- Quality control
- PCB inspection
- Laser triangulation
- Packaging inspection

Motion analysis

- Slow-motion sequences
- Biomedical applications

Accessories

- Suitable power supply 12 Volt
- Power & signal connector 7 pin, (included in the shipment)
- USB & CL cables
- Digipeater CameraLink® repeater enables extended cable lengths.
- A selection of suitable lenses is available on our website www.photonfocus.com. Lenses are not included.



DS1-D1024-40	DS1-D1024-80	DS1-D1024-160
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Image Sensor	
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Technology	CMOS active pixel (APS)	
Scanning system	Progressive scan	
Optical format / diagonal	1" / 15.42 mm	
Resolution	1024 x 1024 pixels	
Pixel size	10.6 µm x 10.6 µm	
Active optical area	10.9 mm x 10.9 mm	
Random noise	< 0.5 DN RMS @ 8 bit / gain = 1	
Fixed pattern noise (FPN)	< 2.5 DN RMS @ 8 bit / gain = 1	
Dark current	2 fA/pixel @ 30 °C	
Full well capacity	200 ke ⁻	
Spectral range	400 nm ... 900 nm	
Responsivity	120 x 10 ³ DN / (J/m ²) @ 610 nm / 8 bit / gain = 1 (approximately 350 DN / (lux s) @ 610 nm / 8 bit / gain = 1)	
Optical fill factor	35 %	
Dynamic range	Up to 60 dB	
Colour format	Monochrome	
Characteristic curve	Linear	
Shutter mode	Global shutter	
Read out mode	Sequential read out	Sequential or simultaneous read out (readout during exposure)

Camera			
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Exposure time	10 µs ... 0.41 s / 25 ns steps	10 µs ... 0.83 s / 50 ns steps	10 µs ... 0.41 s / 25 ns steps
Frame rate (CL)	37 fps	75 fps	150 fps
Frame rate (USB 2.0)	Up to 37 fps (mode & bitdepth dependent)	-	-
Pixel clock	40 MHz	40 MHz	80 MHz
Camera taps	1	2	2
Greyscale resolution	10 bit / 8 bit		
Analogue gain	1		
Digital gain	2		
Configuration interface	CL SERIAL (9600 baud)		
Trigger modes	<ul style="list-style-type: none"> • Free running (non triggered) • Interface trigger 		
Features	<ul style="list-style-type: none"> • Predefined Region of Interest (ROI) • On camera shading correction • Image information • Trigger input 		
Interface	CameraLink® base configuration or USB 2.0	CameraLink® base-configuration	
Operating temperature	0 °C ... +60 °C		
Power supply	+12 V DC (+/- 10 %)		
Power consumption	1.6 W (CL) / 3.0 W (USB 2.0)	3.0 W	3.2 W
Lens mount	C-Mount (CS-Mount optional)		
Dimensions	55 x 55 x 32 mm ³ (CL) 55 x 55 x 43 mm ³ (USB 2.0)	55 x 55 x 40 mm ³	
Mass	200 g	210 g	
Conformity	CE / RoHS / WEEE		
Special	Adjustable backfocus		

Software	
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Camera Control	PFRremote™ graphical user interface (GUI) and PFLib (SDK); for USB 2.0: MicroDisplay GUI + SDK
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