

## 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](http://www.photonfocus.com). Lenses are not included.



DS1-D1024-40	DS1-D1024-80	DS1-D1024-160
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**Image Sensor**

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 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 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**

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"> <li>• Free running (non triggered) • Interface trigger</li> </ul>		
Features	<ul style="list-style-type: none"> <li>• Predefined Region of Interest (ROI) • On camera shading correction</li> <li>• Image information • Trigger input</li> </ul>		
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 <sup>3</sup> (CL) 55 x 55 x 43 mm <sup>3</sup> (USB 2.0)	55 x 55 x 40 mm <sup>3</sup>	
Mass	200 g	210 g	
Conformity	CE / RoHS / WEEE		
Special	Adjustable backfocus		

**Software**

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