

CMOS Cameras

MV-D1024E-PP01 SERIES

Pipeline processors for image preprocessing

Pixel[™]
Professor

Features

- 1024 x 1024 pixel resolution
- Global shutter
- Dynamic range up to 120 dB via LinLog[®]
- Up to 37 fps @ full resolution
- Sensor without cover glass
- Faster frame rates with Multiple Regions of Interest (MROI) in x and y directions
- CameraLink[®] interfaces
- Superior Signal-to-Noise Ratio (SNR)
- On-camera shading correction
- Look-up Table (LUT)
- Pipeline processor with up to three parallel data paths
- CE, RoHS & WEEE compliant



Application Examples

Machine vision

- Standard vision applications
- Quality control
- PCB inspection
- Welding and soldering
- Laser triangulation
- Packaging inspection
- Keyhole analysis

Motion analysis

- Slow-motion sequences
- Biomedical applications

Accessories

- Power & signal connector 7 pin (included in the shipment)
- Digipeater CameraLink[®] repeater enables extended cable lengths.
- Further details on our website www.photonfocus.com. Lenses are not included.

MV-D1024E-PP01-40-CL-8

Image Sensor

Image sensor	Photonfocus A1024B (2. generation)
Technology	CMOS active pixel
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 120 dB with LinLog [®]
Colour format	Monochrome
Characteristic curve	Linear, LinLog [®] , Skimming
Shutter mode	Global shutter
Read out mode	Sequential read out or simultaneous read out (read out during exposure)

Camera

Exposure time	10 μs ... 0.41 s / 25 ns steps
Frame rate	37 fps
Pixel clock	40 MHz
Camera taps	1
Greyscale resolution	8 bit (12 bit / 10 bit without Pixel Professor)
Analogue gain	1
Digital gain	1 or 2 or 4
Configuration interface	CL SERIAL (9600 or 57600 baud, user selectable)
Trigger modes	• Free running (non triggered) • Interface trigger I/O • Trigger
Features	• Multiple Regions of interest (MROI) • On-camera shading correction • Decimation in x / y direction for higher frame rates • Look-up Table (LUT) • Image information • Enhanced trigger features • Skimming • LinLog [®] • Trigger input • Strobe output • Image processing with convolvers • Median filter • Pixel arithmetic • Pipeline processors
Interface	CameraLink [®] base configuration
Operating temperature	0 °C ... +60 °C
Power supply	+12 V DC (+/-10 %)
Power consumption	2.6 W
Lens mount	C-Mount (CS-Mount optional)
Dimensions	55 x 55 x 40 mm ³
Mass	220 g
Conformity	CE / RoHS / WEEE
Special	Adjustable backfocus

Software

Camera control	PFRremote™ graphical user interface (GUI) and PFLib (SDK)
Pixel Professor™ configuration	Pixel Professor™ Lab (PP Lab)
OS	win2k; winxp; winvista; other OS (Linux, QNX, etc.) on request

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