

## CMOS Camera

# MV-D1024E-PP01-40-CL-8

1 Megapixel camera with extended image preprocessing options

### Features

- Photonfocus A1024B CMOS image sensor
- 1024 x 1024 pixel resolution
- Real time image preprocessing on camera FPGA
- Dynamic range up to 120 dB via LinLog®
- Up to 37 fps @ full resolution
- Global shutter
- Monochrome
- CameraLink® interface
- 12 bit greyscale resolution



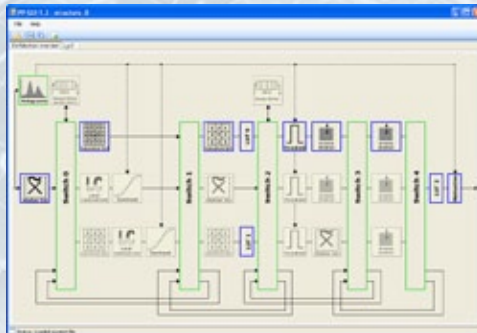
Pixel  
Professor

Lin  
Log

CAMERA  
Link

### Advantages

- Reduction of vision system computer CPU load
- Removed reliance on specialised framegrabber or HW accelerators
- Pixel Professor™ Lab a free GUI for easy graphical programming of the camera FPGA
- Common image preprocessing operators (e.g. Median, Convolver 3x3, ...)



Pixel Professor™ Lab GUI

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### Image sensor

Image sensor	Photonfocus A1024B (2. Generation)
Technology	CMOS active pixel (APS)
Scanning system	Progressive scan
Optical format / diagonal	1" (15.42 mm diagonal)
Resolution	1024 x 1024 pixels
Pixel size	10.6 µm x 10.6 µm
Active optical area	10.9 mm x 10.9 mm (maximum)
Dark current	2 fA/pixel @ 30°C
Full well capacity	~200 ke <sup>-</sup>
Spectral range	< 400 to 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)
Quantum Efficiency	45 % @ 550 nm
Optical fill factor	35 % (geometrical)
Dynamic range	60 dB in linear mode; 120 dB with LinLog®
Colour format	Monochrome
Characteristic curve	Linear, LinLog®, Skimming
Shutter mode	Global shutter
Read out mode	Sequential 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
Fixed pattern noise (FPN)	< 1 DN RMS @ 8 bit / gain = 1 / offset correction ON
Analogue gain	1
Digital gain	1 / 2 / 4
Configuration interface	CL SERIAL (9600 Baud)
Trigger modes	• Free running (non triggered) • Interface trigger • External trigger input
Features	• Region of Interest (ROI) • 16 Multiple ROI (MROI) • Decimation X and Y • Image correction • Look-up table (LUT) • Constant frame rate • Image information • Convolvers • Median Filters • Pixel arithmetic • Pipeline Processors • Extended trigger input and strobe output functionality
Interface	CameraLink® Base
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 (H x W x L)	55 x 55 x 40 mm <sup>3</sup>
Mass	220 g
Conformity	CE / RoHS / WEEE
Specials	Adjustable backfocus; Opto-isolated I/Os

### Software

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

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