



# MV-D1024E-3D01-160-CL

The CMOS camera MV-D1024E-3D01-160-CL was developed for laser triangulation of highly reflective materials

#### **Features**

- Detection of a laser line with sub-pixel accuracy
- Photonfocus A1024B CMOS image sensor
- 1024 x 1024 pixel resolution
- Exceptional SNR up to 447: 1
- Dynamic range up to 120dB via LinLog®
- Up to 3100fps @ 24x1024 pixels

- Global shutter
- Monochrome
- Extended sensor and camera features
- Reduction of ROI in x- and y-direction increases frame rate
- CameraLink® interface
- Free GUI available (PF 3D Suite)



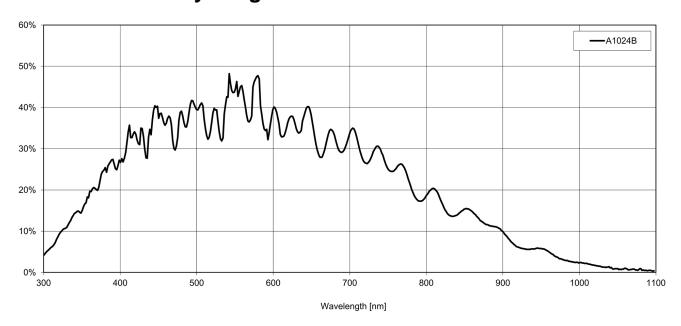






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# **Quantum Efficiency Image Sensor**



## **Image Sensor Specifications**

Manufacturer / Type	Photonfocus / A10	024
Technology	CMOS	
Optical format	1"	
Optical diagonal	15.42mm	
Resolution	1024 x 1024	
Pixel size	10.6µm x 10.6µm	
Active optical area	10.9mm x 10.9mn	n
Dark current	107'000e <sup>-</sup> /s	
Read out noise	220e <sup>-</sup>	
Full well capacity / SNR	200ke <sup>-</sup> / 447: 1	
Spectral range	Monochrome:	< 400 to 900nm (to 10% of peak responsivity)
Responsivity	Monochrome:	120 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 610nm / 8bit
Quantum Efficiency	Monochrome:	> 45%
Optical fill factor	35%	
Dynamic range	60dB in linear mode; 120dB with LinLog®	
Characteristic curve	Linear, LinLog®, Skimming	
Shutter mode	Global shutter	

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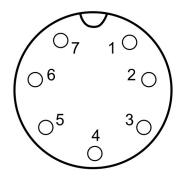
# **Camera Specifications**

Frame rate 3100fps  Pixel clock 80MHz  Camera taps 2  Greyscale resolution 8Bit / 10Bit / 12Bit  Fixed pattern noise (FPN) < 1DN RMS @ 8bit  Exposure time range 10µs - 419ms  Analog gain n/a  Digital gain 0.1 to 15.99 (FineGain)  Trigger Modes Free running (non triggered), external Trigger, SWTrigger  Features Detection of a laser line (peak detector) with sub-pixel accuracy, Configurable region of interest (ROI), Dynamic range up to 120dB via LinLog®, Image correction, Constant frame rate independent of exposure time, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Camera informations readable over SDK, Free GUI available (PF 3D Suite) for an easy system set up and visualisation of 3D scans  Operation temperature / moisture 0°C + 50°C / 20% 80%  Storage temperature / moisture -25°C 60°C / 20% 95%  Power supply +12VDC (-10%) +12VDC (+10%)  Power consumption <3.2W  Lens mount C-Mount (CS-Mount optional)  I/O Outputs 1x Opto-isolated  I/O Outputs 1x Opto-isolated  Dimensions 55 x 55 x 40mm³  Mass 210g  Connector I/O (Power) Binder 7-pole (mating plug 99-0421-00-07)  Connector Interface CameraLink Base (MDR)  Conformity CE / RoHS / WEEE	Interface	Camera Link
Camera taps 2 Greyscale resolution 8Bit / 10Bit / 12Bit Fixed pattern noise (FPN) < 1DN RMS @ 8bit Exposure time range 10µs - 419ms Analog gain n/a Digital gain 0.1 to 15.99 (FineGain) Trigger Modes Free running (non triggered), external Trigger, SWTrigger Features Detection of a laser line (peak detector) with sub-pixel accuracy, Configurable region of interest (ROI), Dynamic range up to 120dB via LinLog®, Image correction, Constant frame rate independent of exposure time, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Camera informations readable over SDK, Free GUI available (PF 3D Suite) for an easy system set up and visualisation of 3D scans  Operation temperature / moisture 0°C + 50°C / 20% 80%  Storage temperature / moisture -25°C 60°C / 20% 95% Power supply +12VDC (-10%) +12VDC (+10%) Power consumption < 3.2W Lens mount C-Mount (CS-Mount optional) I/O Inputs 1x Opto-isolated I/O Outputs 1x Opto-isolated I/O Outputs 1x Opto-isolated Dimensions 55 x 55 x 40mm³ Mass 210g Connector I/O (Power) Binder 7-pole (mating plug 99-0421-00-07) Connector Interface CameraLink Base (MDR) Cef / RoHS / WEEE	Frame rate	3100fps
Greyscale resolution       8Bit / 10Bit / 12Bit         Fixed pattern noise (FPN)       < 1DN RMS @ 8bit	Pixel clock	80MHz
Fixed pattern noise (FPN) < 1DN RMS @ 8bit  Exposure time range 10µs - 419ms  Analog gain n/a  Digital gain 0.1 to 15.99 (FineGain)  Trigger Modes Free running (non triggered), external Trigger, SWTrigger  Features Detection of a laser line (peak detector) with sub-pixel accuracy, Configurable region of interest (ROI), Dynamic range up to 120dB via LinLog®, Image correction, Constant frame rate independent of exposure time, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Camera informations readable over SDK, Free GUI available (PF 3D Suite) for an easy system set up and visualisation of 3D scans  Operation temperature / moisture 0°C + 50°C / 20% 80%  Storage temperature / moisture -25°C 60°C / 20% 95%  Power supply +12VDC (-10%) +12VDC (+10%)  Power consumption < 3.2W  Lens mount C-Mount (CS-Mount optional)  I/O Inputs 1x Opto-isolated  Dimensions 55 x 55 x 40mm³  Mass 210g  Connector I/O (Power) Binder 7-pole (mating plug 99-0421-00-07)  Connector Interface CameraLink Base (MDR)  Cell / ROHS / WEEE	Camera taps	2
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Digital gain  O.1 to 15.99 (FineGain)  Trigger Modes  Free running (non triggered), external Trigger, SWTrigger  Detection of a laser line (peak detector) with sub-pixel accuracy, Configurable region of interest (ROI), Dynamic range up to 120dB via LinLog®, Image correction, Constant frame rate independent of exposure time, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Camera informations readable over SDK, Free GUI available (PF 3D Suite) for an easy system set up and visualisation of 3D scans  Operation temperature / moisture  O°C + 50°C / 20% 80%  Storage temperature / moisture  -25°C 60°C / 20% 95%  Power supply +12VDC (-10%) +12VDC (+10%)	Exposure time range	10μs - 419ms
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· ·	Connector Interface	CameraLink Base (MDR)
IP Code IP20	Conformity	CE / RoHS / WEEE
	IP Code	IP20

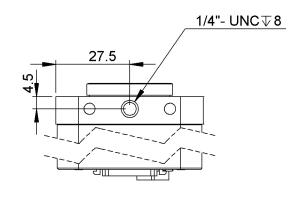
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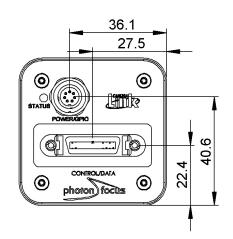
### **Connectors**

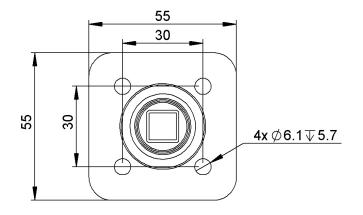
Pin	I/O Type	Name	Description
1	PWR	CAMERA_PWR	Camera Power 12VDC
2	PWR	CAMERA_GND	Camera GND 0V
3	0	RESERVED	Do not connect
4	PWR	STROBE-VDD	+5 +15 VDC
5	0	STROBE	Strobe control (opto-isolated)
6	1	TRIGGER	External trigger (opto-isolated), +5 +15VDC
7	PWR	GROUND	Signal ground (for opto-isolated strobe signal)

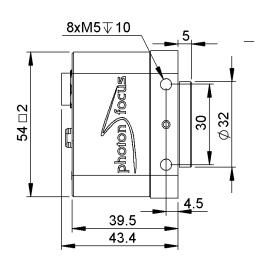


## **Dimensions**









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### MV-D1024E-3D01-160-CL

## **Explanation**

DN	DigitalNumber (equals to LSB)
e <sup>-</sup>	Electrons

#### **Order Information**

MV-D1024E-3D01-160-CL-12 CameraLink Model

### Compatibility









#### **Photonfocus AG**

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