

MV4-D1280-L01-FB

The MV4 CMOS camera series was developed for advanced machine vision applications, motion analysis and demanding applications of optical metrology. The LUXIMA LUX1310 CMOS image sensor is optimized for high speed applications and is combined in this camera with an advanced feature set to reduce the amount to be transferred.

Features

- LUXIMA LUX1310 CMOS image sensor
- 1280 x 1024 pixel resolution
- 934fps
- Global shutter
- 64 MByte internal memory

- Extended sensor and camera features
- 4x Isolated inputs or shaft encoder
- 3x Isolated outputs
- GigEVision interface







www.photonfocus.com 1/5

Quantum Efficiency Image Sensor

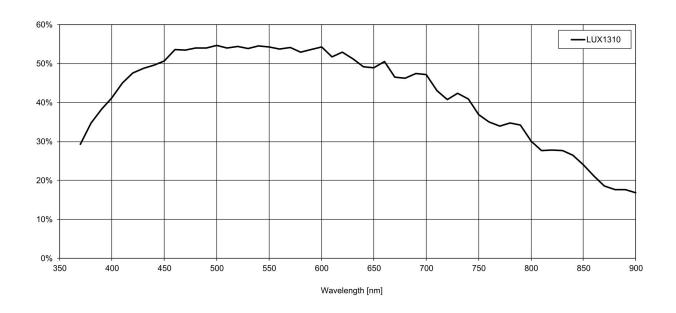


Image Sensor Specifications

Manufacturer / Type	LUXIMA, LUX1310	
Technology	CMOS	
Optical format	2/3"	
Optical diagonal	10.82mm	
Resolution	1280 x 1024	
Pixel size	6.6µm x 6.6µm	
Active optical area	8.45mm x 6.76mm	
Dark current	41100e-/s	
Read out noise	25e-	
Full well capacity / SNR	17ke- / 130:1	
Spectral range	Monochrome: < 350 to 950nm (to 10% of peak responsivity)	
Responsivity	Monochrome: 994 x 10 ³ DN / (J/m ²) @ 560nm / 8bit	
Quantum Efficiency	Monochrome: > 54%	
Optical fill factor	45 % (without micro lenses)	
Dynamic range	57dB	
Characteristic curve	Linear	
Shutter mode	Global shutter	

www.photonfocus.com 2/5

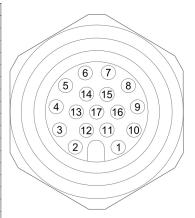
Camera Specifications

Frame rate 934fps Pixel clock 240MHz Camera taps 8 Greyscale resolution 8, 10 and 12 Bit Fixed pattern noise (FPN) < 1DN RMS @ 8Bit Exposure time range 10μs - 186ms Analog gain no Digital gain 0.1 to 15.99 (FineGain) Trigger Modes Free running (non triggered), external Trigger, SWTrigger, Encoder Features Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power supply +12VDC (-10%) +24VDC (+10%) Power supply +12VDC (-10%) +24VDC (+10%) Power supply Ax Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interfa	Interface		
Camera taps 8 Greyscale resolution 8, 10 and 12 Bit Fixed pattern noise (FPN) < 1DN RMS @ 8Bit	Frame rate	934fps	
Greyscale resolution 8, 10 and 12 Bit Fixed pattern noise (FPN) < 1DN RMS @ 8Bit	Pixel clock	240MHz	
Fixed pattern noise (FPN) < 1DN RMS @ 8Bit Exposure time range 10μs - 186ms Analog gain no Digital gain 0.1 to 15.99 (FineGain) Trigger Modes Free running (non triggered), external Trigger, SWTrigger, Encoder Features Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Confor	Camera taps	8	
Exposure time range 10μs - 186ms Analog gain no Digital gain 0.1 to 15.99 (FineGain) Trigger Modes Free running (non triggered), external Trigger, SWTrigger, Encoder Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Greyscale resolution	8, 10 and 12 Bit	
Analog gain Digital gain O.1 to 15.99 (FineGain) Trigger Modes Free running (non triggered), external Trigger, SWTrigger, Encoder Features Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture O°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Fixed pattern noise (FPN)	< 1DN RMS @ 8Bit	
Digital gain O.1 to 15.99 (FineGain) Trigger Modes Free running (non triggered), external Trigger, SWTrigger, Encoder Features Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture O°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / ROHS / WEEE	Exposure time range	10μs - 186ms	
Trigger Modes Free running (non triggered), external Trigger, SWTrigger, Encoder Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture O°C 50°C / 20 80 % Storage temperature / moisture Power supply +12VDC (-10%) +24VDC (+10%) TBD Lens mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface CE / RoHS / WEEE	Analog gain	no	
Linear Mode / multiple slope (High Dynamic Range Mode), Configurable region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Digital gain	0.1 to 15.99 (FineGain)	
region of interest (ROI), up to 8 MROI, Two crosshair overlays for measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Trigger Modes	Free running (non triggered), external Trigger, SWTrigger, Encoder	
measurements and adjustments, Temperature monitoring of camera, Low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture	Features	Linear Mode / multiple slope (High Dynamic Range Mode), Configurable	
trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE		region of interest (ROI), up to 8 MROI, Two crosshair overlays for	
functionality, 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture 0°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE			
TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed) Operation temperature / moisture O°C 50°C / 20 80 % Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption Lens mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface CE / RoHS / WEEE			
Operation temperature / moisture			
Storage temperature / moisture -25°C 60°C / 20 95 % Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface CE / RoHS / WEEE			
Power supply +12VDC (-10%) +24VDC (+10%) Power consumption TBD Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	_ · · · · · · · · · · · · · · · · · · ·		
Power consumption Lens mount C-Mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Ce / RoHS / WEEE			
Lens mount I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE		+12VDC (-10%) +24VDC (+10%)	
I/O Inputs 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Power consumption	TBD	
HTL) I/O Outputs 3x Isolated outputs (2x open drain, 1x TTL highspeed) Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Lens mount	C-Mount	
I/O Outputs3x Isolated outputs (2x open drain, 1x TTL highspeed)Dimensions59 x 59 x 101.8 mm3Mass495gConnector I/O (Power)17-pol. M12Connector InterfaceLC connector for multimode fibre (through included SFP+ cage)ConformityCE / RoHS / WEEE	I/O Inputs		
Dimensions 59 x 59 x 101.8 mm3 Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE		,	
Mass 495g Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	I/O Outputs	, , , , , , , , , , , , , , , , , , , ,	
Connector I/O (Power) 17-pol. M12 Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE	Dimensions	59 x 59 x 101.8 mm3	
Connector Interface LC connector for multimode fibre (through included SFP+ cage) Conformity CE / RoHS / WEEE		495g	
Conformity CE / RoHS / WEEE	Connector I/O (Power)	<u>'</u>	
<u>- , , , , , , , , , , , , , , , , , , ,</u>	Connector Interface	LC connector for multimode fibre (through included SFP+ cage)	
IP Code IP40		CE / RoHS / WEEE	
	IP Code	IP40	

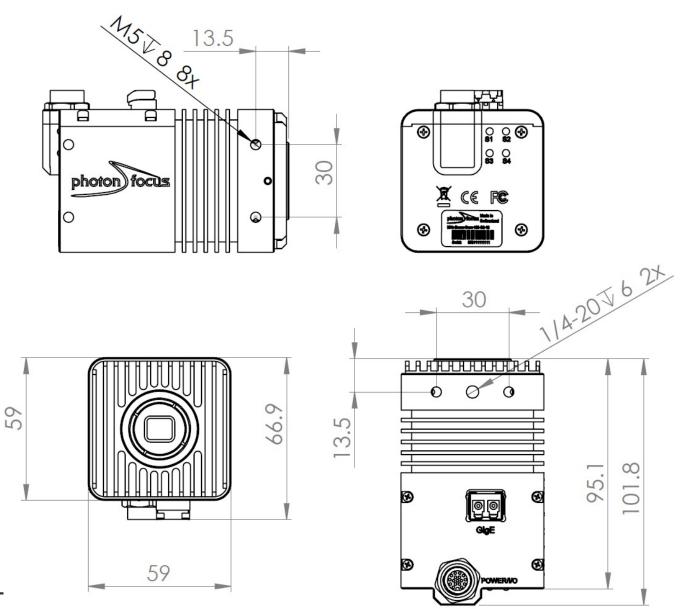
www.photonfocus.com 3/5

Connectors

Pin	I/O Type	Name	Description
1	PWR	CAMERA_GND	Camera GND, 0V
2	PWR	CAMERA_PWR	Camera Power
3	1	ISO_INC0_P / ISO_IN0	Isolated RS422/HTL positive differential or Isolated TTL/HTL single ended input
4	1	ISO_INC0_N / ISO_GND	Isolated RS422/HTL negativ differential input or ground
5	I	ISO_INC1_P / ISO_IN1	Isolated RS422/HTL positive differential or Isolated TTL/HTL single ended input
6	1	ISO_INC1_N / ISO_GND	Isolated RS422/HTL negativ differential input or ground
7	1	ISO_INC2_P / ISO_IN2	Isolated RS422/HTL positive differential or Isolated TTL/HTL single ended input
8	1	ISO_INC2_N / ISO_GND	Isolated RS422/HTL negativ differential input or ground
9	1	ISO_IN3	Isolated TTL input
10	0	ISO_OUT2	Isolated TTL output
11	PWR	CAMERA_GND	Camera GND, 0V
12	PWR	CAMERA_PWR	Camera Power
13	0	ISO_OUT0	Isolated open drain output
14	0	ISO_OUT1	Isolated open drain output
15	Ю	RS485_DATA_P	RS485 interface data positive polarity
16	10	RS485_DATA_N	RS485 interface data negative polarity
17	PWR	ISO_GND	Isolated I/O GND



Dimensions



5

MV4-D1280-L01-FB

Explanation

DN DigitalNumber (equals to LSB)

e Electrons

Order Information

MV4-D1280-L01-FB

10GigE Fibre

Compatibility



Photonfocus AG
Bahnhofplatz 10
CH-8853 Lachen SZ
Switzerland

Phone: +41 55 451 00 00 www.photonfocus.com info@photonfocus.com

www.photonfocus.com 5/5