MV1-R1280-50-CL

The Photonfocus MV1-R1280-CL camera series is based on the Photonfocus R1280 ultra-low noise CMOS image sensor. This camera is targeted for ultra-low light applications

Features

- Photonfocus R1280 CMOS image sensor
- Optimized for ultra-low light applications
- 1280 x 1024 pixel resolution
- Very low noise of less than 1e⁻
- Up to 30fps @ full resolution

- Rolling shutter
- Monochrome
- Extended sensor and camera features
- Up to 16bit greyscale resolution
- CameraLink® interface
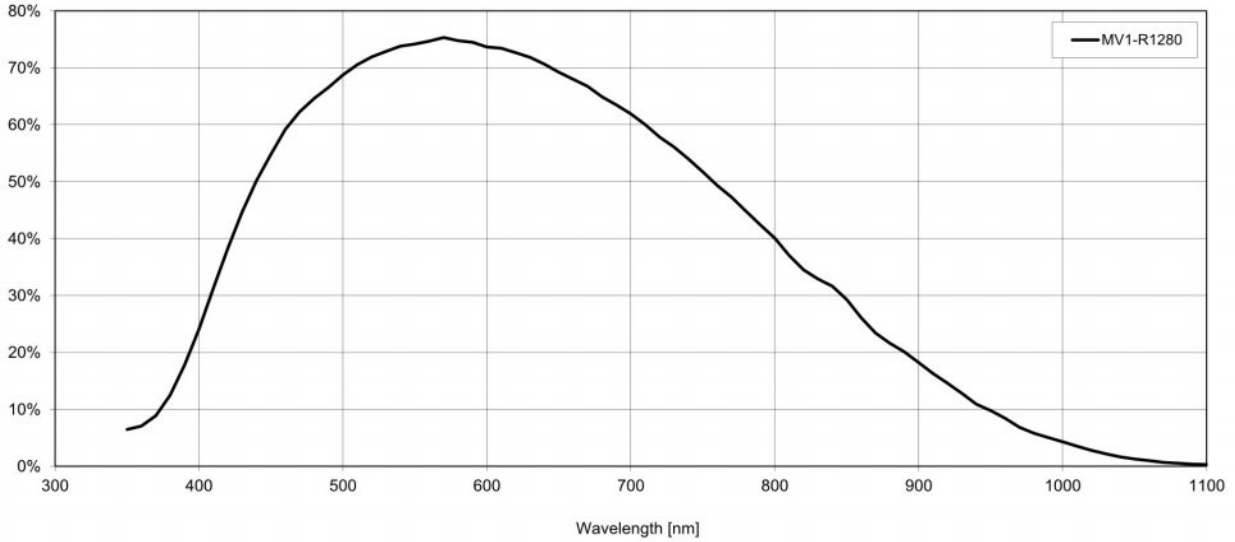
Quantum Efficiency Image Sensor


Image Sensor Specifications

|		
Manufacturer / Type	Photonfocus / R1280	
Technology	CMOS	
Optical format	2/3"	
Optical diagonal	11.7mm	
Resolution	1280 x 1024	
Pixel size	7.1µm x 7.1µm	
Active optical area	9.1mm x 7.3mm	
Dark current	$10e^-$/s	
Read out noise	$1e^-$	
Full well capacity / SNR	$13ke^-$ / 114: 1	
Spectral range	Monochrome:	< 380 to 940nm (to 10% of peak responsivity)
Responsivity	Monochrome:	2130×10^3 DN / (J/m²) @ 570nm / 8bit
Quantum Efficiency	Monochrome:	> 75%
Optical fill factor	75%	
Dynamic range	82dB	
Characteristic curve	Linear	
Shutter mode	Rolling shutter	

Camera Specifications

Interface	CameraLink
Frame rate	33fps
Pixel clock	50MHz
Camera taps	1
Greyscale resolution	8Bit / 10Bit / 12Bit / 14Bit / 16Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8bit
Exposure time range	58us - 335ms
Analog gain	n/a
Digital gain	0.1 to 15.99 (FineGain), up to 2048x
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger
Features	Optimized for ultra-low light applications, Very low noise of less than 1e⁻, Up to 16bit greyscale resolution, Configurable region of interest (ROI), Image correction, 2 look-up tables (12-to-8Bit) on user-defined image region (Region-LUT), Constant frame rate independent of exposure time, Crosshairs overlay on the image, Temperature monitoring of camera, Camera informations readable over SDK, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Status line in picture
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	< 2.8W
Lens mount	C-Mount (CS-Mount optional)
I/O Inputs	1x Opto-isolated
I/O Outputs	1x Opto-isolated
Dimensions	55 x 55 x 47mm³
Mass	235g
Connector I/O (Power)	Binder 7-pole (mating plug 99-0421-00-07)
Connector Interface	CameraLink Base (MDR)
Conformity	CE / RoHS / WEEE
IP Code	IP20

Connectors

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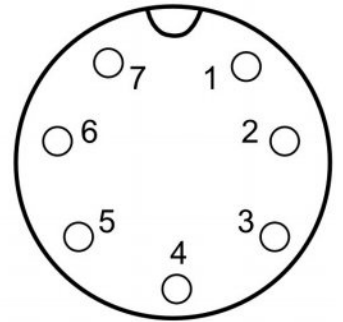
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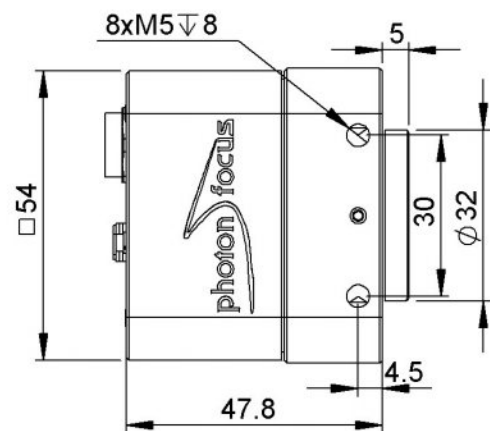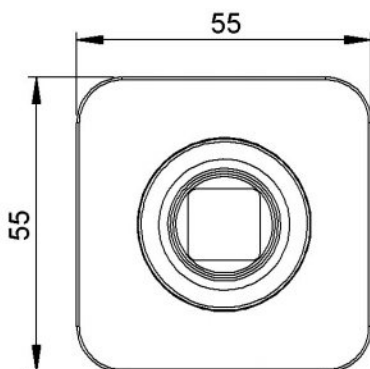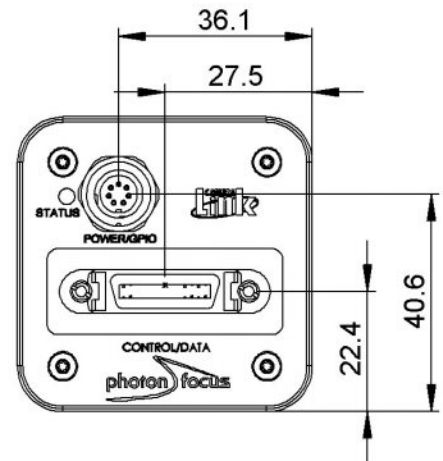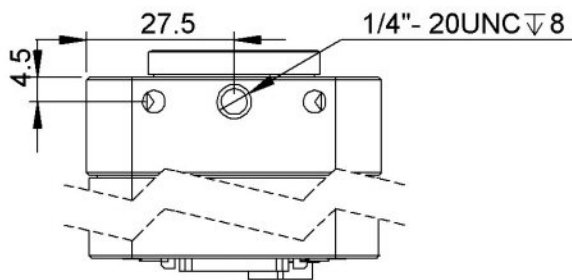
Explanation

DN	DigitalNumber (equals to LSB)
e$^-$	Electrons

Order Information

MV1- R1280-50-CL-16	BW model

Photonfocus AG
Bahnhofplatz 10
CH-8853 Lachen SZ
Switzerland

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

MV1-R1280-50-G2

The Photonfocus MV1-R1280-G2 camera series is based on the Photonfocus R1280 ultra-low noise CMOS image sensor. This camera is targeted for ultra-low light applications

Features

- Photonfocus R1280 CMOS image sensor
- Optimized for ultra-low light applications
- 1280 x 1024 pixel resolution
- Very low noise of less than 1e$^-$
- Up to 30fps @ full resolution

- Rolling shutter
- Monochrome
- Extended sensor and camera features
- Up to 16bit greyscale resolution
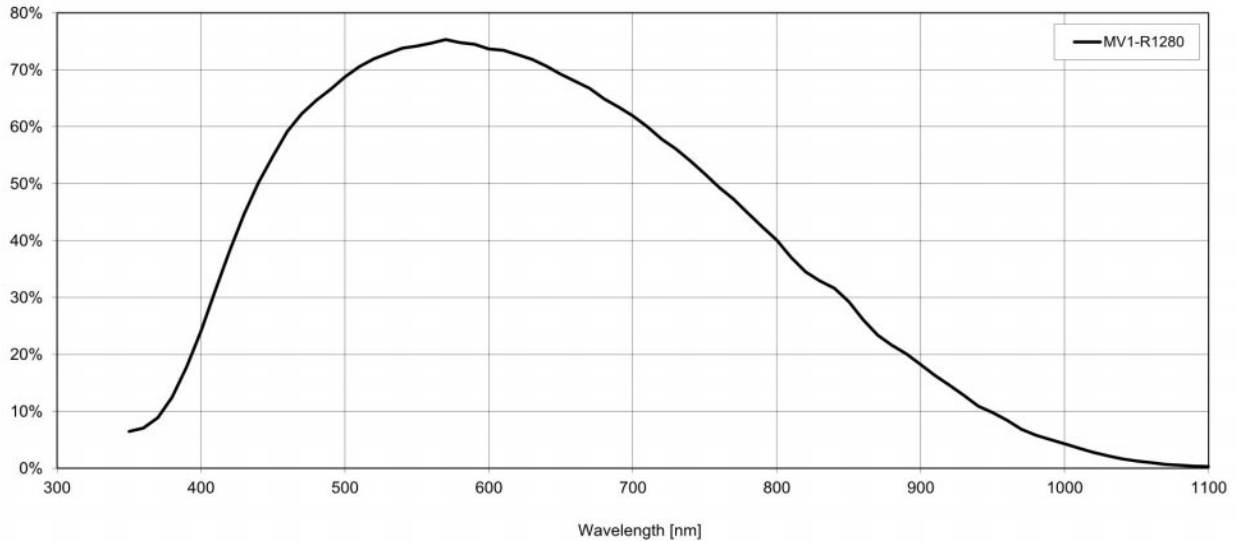- GigEVision interface

Quantum Efficiency Image Sensor


Image Sensor Specifications

|		
Manufacturer / Type	Photonfocus / R1280	
Technology	CMOS	
Optical format	2/3"	
Optical diagonal	11.7mm	
Resolution	1280 x 1024	
Pixel size	7.1µm x 7.1µm	
Active optical area	9.1mm x 7.3mm	
Dark current	$10e^-$/s	
Read out noise	$1e^-$	
Full well capacity / SNR	$13ke^-$ / 114: 1	
Spectral range	Monochrome:	< 380 to 940nm (to 10% of peak responsivity)
Responsivity	Monochrome:	2130×10^3 DN / (J/m²) @ 570nm / 8bit
Quantum Efficiency	Monochrome:	> 75%
Optical fill factor	75%	
Dynamic range	82dB	
Characteristic curve	Linear	
Shutter mode	Rolling shutter	

Camera Specifications

Interface	GigE
Frame rate	33fps
Pixel clock	50MHz
Camera taps	1
Greyscale resolution	8Bit / 10Bit / 12Bit / 16Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8bit
Exposure time range	58us - 335ms
Analog gain	n/a
Digital gain	0.1 to 15.99 (FineGain), up to 2048x
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger
Features	Optimized for ultra-low light applications, Very low noise of less than $1e^-$, Up to 16bit greyscale resolution, Configurable region of interest (ROI), Image correction, 2 look-up tables (12-to-8Bit) on user-defined image region (Region-LUT), Constant frame rate independent of exposure time, Crosshairs overlay on the image, Temperature monitoring of camera, Camera informations readable over SDK, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Status line in picture
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	< 4.4W
Lens mount	C-Mount (CS-Mount optional)
I/O Inputs	2x Opto-isolated 2x RS-422 Opto-isolated
I/O Outputs	2x Opto-isolated
Dimensions	55 x 55 x 57mm³
Mass	285g
Connector I/O (Power)	Hirose 12-pole (mating plug HR10A-10P-12S)
Connector Interface	RJ-45
Conformity	CE / RoHS / WEEE
IP Code	IP20

Connectors

Pin	I/O Type	Name	Description
1	PWR	CAMERA_GND	Camera GND 0V
2	PWR	CAMERA_PWR	Camera Power 12V... 24V
3	O	ISO_OUT0	Default Strobe out, internally Pulled up to ISO_PWR with 4k7 Resistor
4	I	ISO_INC0_N	INC0 differential input (G2: RS-422, H2: HTL), negative polarity
5	I	ISO_INC0_P	INC0 differential input (G2: RS-422, H2: HTL), positive polarity
6	PWR	ISO_PWR	Power supply 5V... 24V for output signals
7	I	ISO_IN0	IN0 input signal
8	O	ISO_OUT1 (MISC)	Q1 output from PLC, no Pull up to ISO_PWR; can be used as additional output (by adding Pull up) or as controllable switch (max. 100mA, no capacitive or inductive load)
9	I	ISO_IN1(Trigger IN)	Default Trigger IN
10	I	ISO_INC1_N	INC1 differential input (G2: RS-422, H2: HTL), negative polarity
11	I	ISO_INC1_P	INC1 differential input (G2: RS-422, H2: HTL), positive polarity
12	PWR	ISO_GND	I/O GND 0V
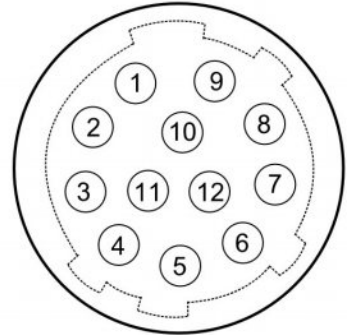
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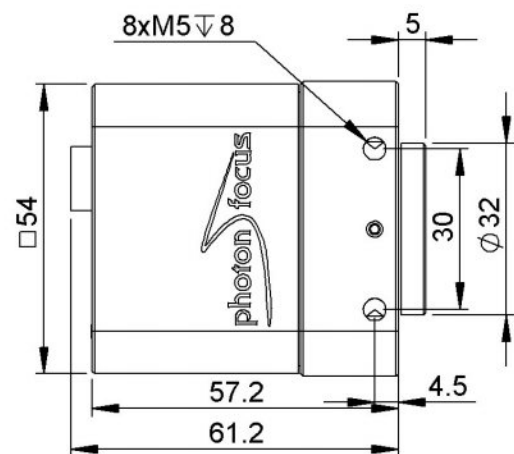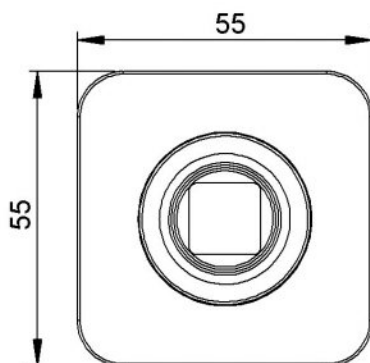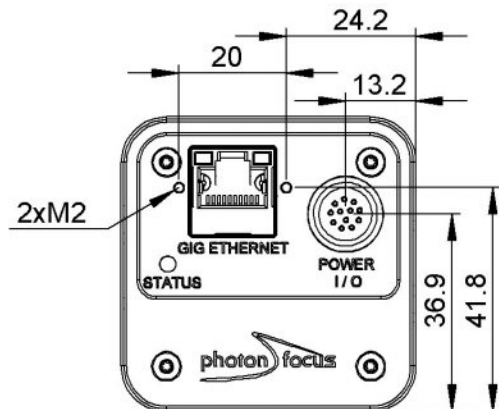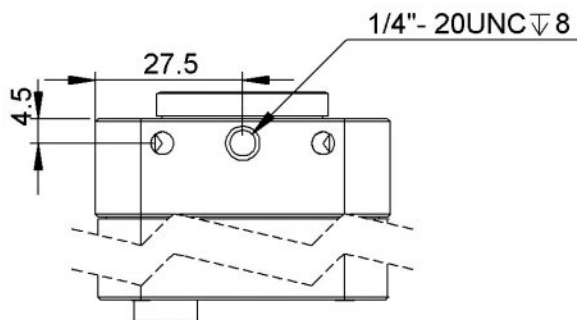
Explanation

DN	DigitalNumber (equals to LSB)
e⁻	Electrons

Order Information

MV1-R1280-50-G2-16	BW model

Compatibility

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CH-8853 Lachen SZ
Switzerland

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