MV1-D2048-240-CL

The camera series MV1-D2048(I/C)-CL is based on the CMOSIS CMV4000 CMOS image sensor

Features

- CMOSIS CMV4000 CMOS image sensor
- 2048 x 2048 pixel resolution
- Good NIR spectral response
- Suitable for standard and low light applications
- Up to 45fps @ full resolution
- Global shutter
- Available in monochrome, NIR and color
- Extended sensor and camera features
- Boardlevel and OEM solution available
- CameraLink® interface

Quantum Efficiency Image Sensor

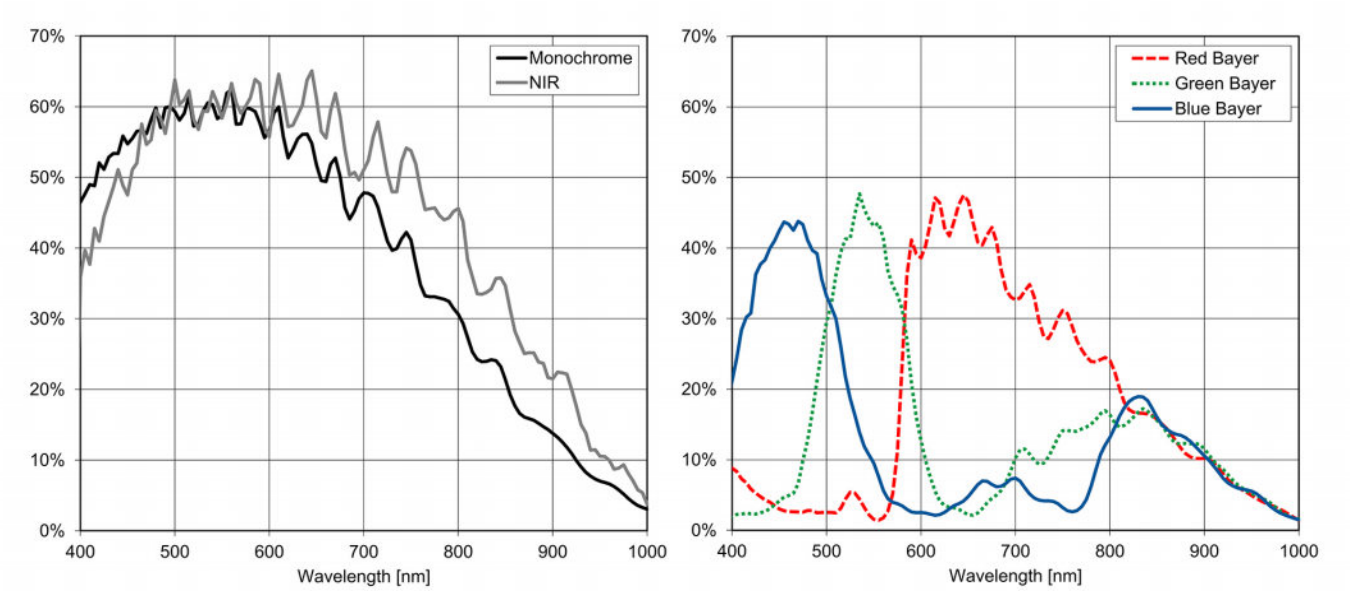


Image Sensor Specifications

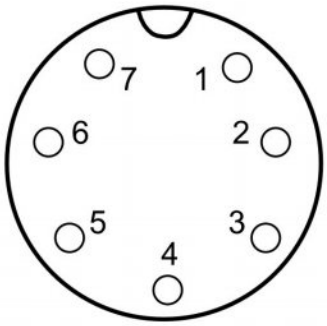
Manufacturer / Type	CMOSIS / CMV4000	
Technology	CMOS	
Optical format	1"	
Optical diagonal	15.92mm	
Resolution	2048 x 2048	
Pixel size	5.5µm x 5.5µm	
Active optical area	11.26mm x 11.26mm	
Dark current	125e^-/s	
Read out noise	13e^-	
Full well capacity / SNR	11ke^- / 105: 1	
Spectral range	Monochrome: NIR: Color:	< 350 to 950nm (to 10% of peak responsivity) < 350 to 1000nm (to 10% of peak responsivity) < 380 to 670nm (to 10% of peak responsivity)
Responsivity	Monochrome: NIR: Color:	1100 x 10^3 DN / (J/m²) @ 520nm / 8bit 900 x 10^3 DN / (J/m²) @ 850nm / 8bit 857 x 10^3 DN / (J/m²) @ 540nm / 8bit
Quantum Efficiency	Monochrome: NIR: Color:	> 60% > 60% > 45%
Optical fill factor	42% without micro lenses	
Dynamic range	60dB	
Characteristic curve	Linear, Piecewise linear	
Shutter mode	Global shutter	

Camera Specifications

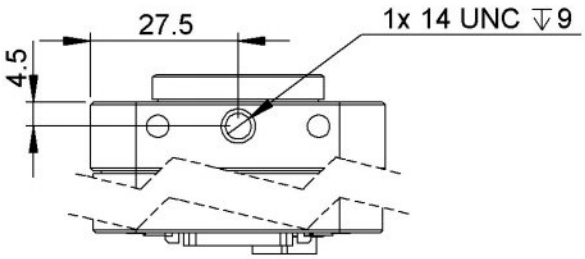
Interface	Camera Link
Frame rate	45fps
Pixel clock	80MHz
Camera taps	3
Greyscale resolution	8Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8Bit
Exposure time range	24µs - 349ms
Analog gain	yes
Digital gain	0.1 to 15.99 (FineGain)
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger
Features	Configurable region of interest (ROI), Up to 8 regions of interest (MROI), Decimation in y-direction, 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	< 4.2W
Lens mount	C-Mount (CS-Mount optional)
I/O Inputs	1x Opto-isolated
I/O Outputs	1x Opto-isolated
Dimensions	55 x 55 x 42mm³
Mass	230g
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

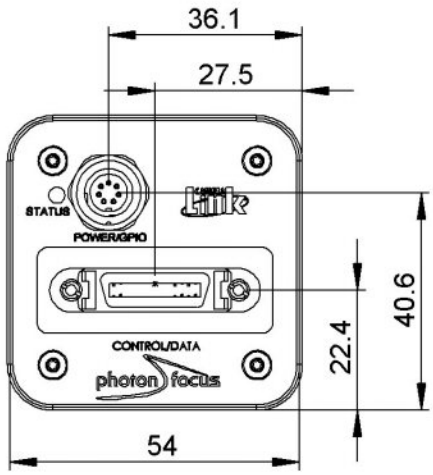
Connectors

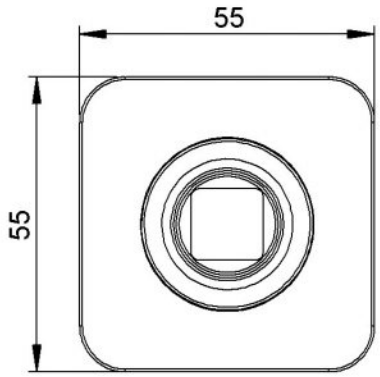
Pin	I/O Type	Name	Description
1	PWR	CAMERA_PWR	Camera Power 12VDC
2	PWR	CAMERA_GND	Camera GND 0V
3	O	RESERVED	Do not connect
4	PWR	STROBE-VDD	+5 ... +15 VDC
5	O	STROBE	Strobe control (opto-isolated)
6	I	TRIGGER	External trigger (opto-isolated), +5 .. +15VDC
7	PWR	GROUND	Signal ground (for opto-isolated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

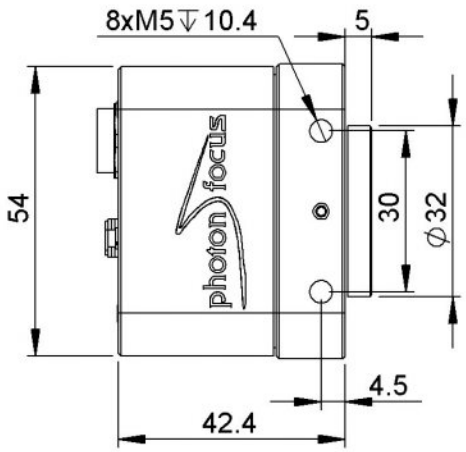


Dimensions









Explanation

DN	DigitalNumber (equals to LSB)
e^-	Electrons

Order Information

MV1-D2048-240-CL-10	BW model
MV1-D2048I-240-CL-10	NIR model
MV1-D2048C-240-CL-10	Color model

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MV1-D2048-160-CL

The camera series MV1-D2048(I/C)-CL is based on the CMOSIS CMV4000 CMOS image sensor

Features

- CMOSIS CMV4000 CMOS image sensor
- 2048 x 2048 pixel resolution
- Good NIR spectral response
- Suitable for standard and low light applications
- Up to 37fps @ full resolution
- Global shutter
- Available in monochrome, NIR and color
- Extended sensor and camera features
- Up to 10bit greyscale resolution
- Boardlevel and OEM solution available
- CameraLink® interface

Quantum Efficiency Image Sensor

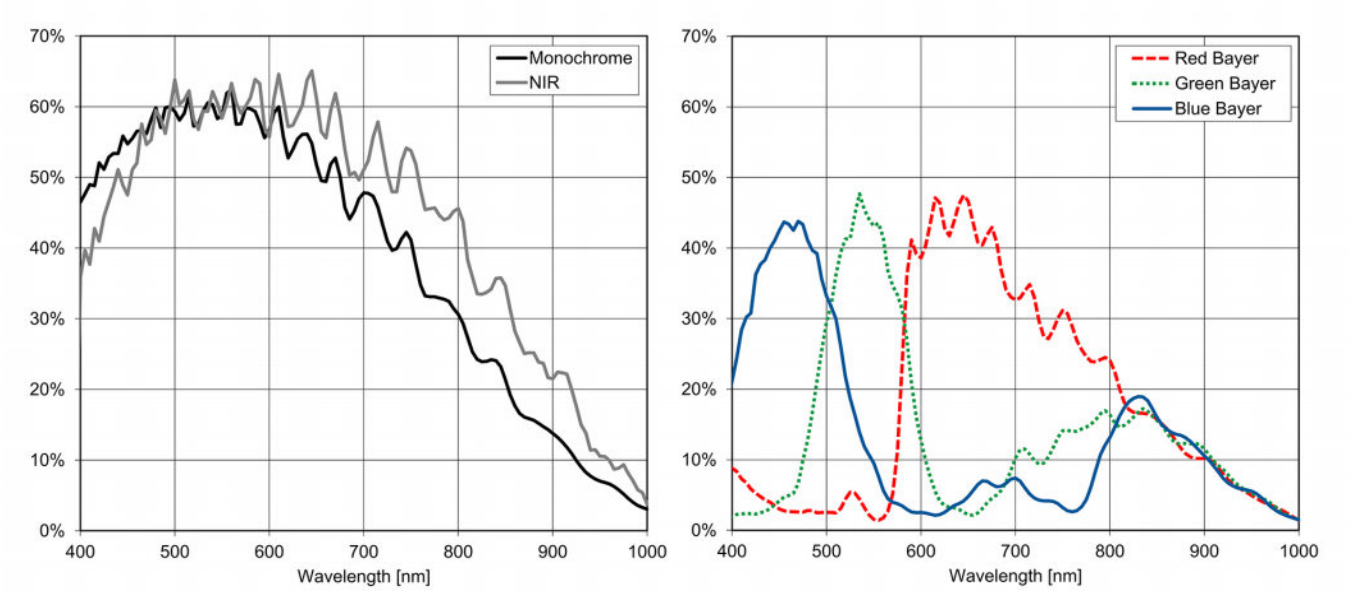


Image Sensor Specifications

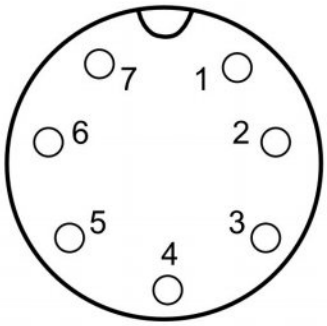
Manufacturer / Type	CMOSIS / CMV4000	
Technology	CMOS	
Optical format	1"	
Optical diagonal	15.92mm	
Resolution	2048 x 2048	
Pixel size	5.5µm x 5.5µm	
Active optical area	11.26mm x 11.26mm	
Dark current	125e^-/s	
Read out noise	13e^-	
Full well capacity / SNR	11ke^- / 105: 1	
Spectral range	Monochrome: NIR: Color:	< 350 to 950nm (to 10% of peak responsivity) < 350 to 1000nm (to 10% of peak responsivity) < 380 to 670nm (to 10% of peak responsivity)
Responsivity	Monochrome: NIR: Color:	1100 x 10^3 DN / (J/m²) @ 520nm / 8bit 900 x 10^3 DN / (J/m²) @ 850nm / 8bit 857 x 10^3 DN / (J/m²) @ 540nm / 8bit
Quantum Efficiency	Monochrome: NIR: Color:	> 60% > 60% > 45%
Optical fill factor	42% without micro lenses	
Dynamic range	60dB	
Characteristic curve	Linear, Piecewise linear	
Shutter mode	Global shutter	

Camera Specifications

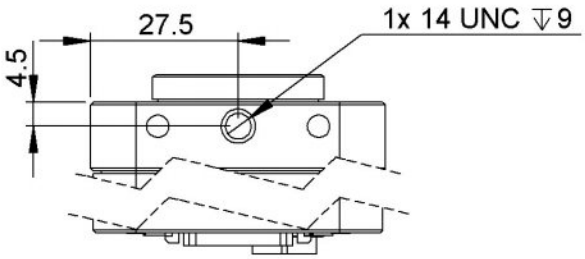
Interface	CameraLink
Frame rate	37fps
Pixel clock	80MHz
Camera taps	2
Greyscale resolution	8Bit / 10Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8Bit
Exposure time range	28µs - 419ms
Analog gain	yes
Digital gain	0.1 to 15.99 (FineGain)
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger
Features	Configurable region of interest (ROI), Up to 8 regions of interest (MROI), Decimation in y-direction, 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	< 4.2W
Lens mount	C-Mount (CS-Mount optional)
I/O Inputs	1x Opto-isolated
I/O Outputs	1x Opto-isolated
Dimensions	55 x 55 x 42mm³
Mass	230g
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

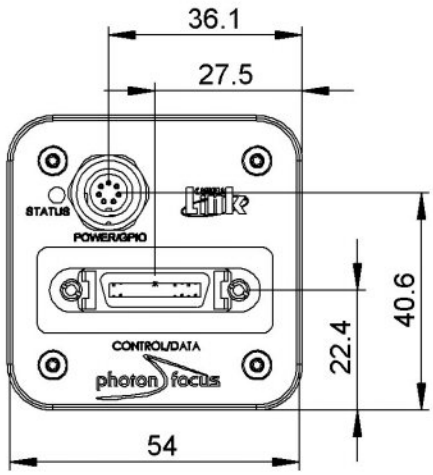
Connectors

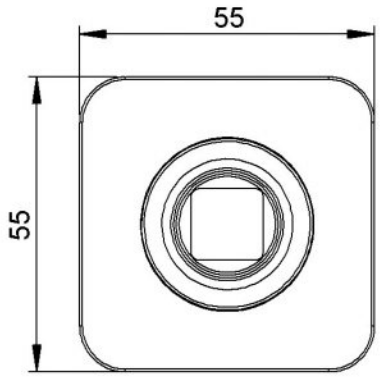
Pin	I/O Type	Name	Description
1	PWR	CAMERA_PWR	Camera Power 12VDC
2	PWR	CAMERA_GND	Camera GND 0V
3	O	RESERVED	Do not connect
4	PWR	STROBE-VDD	+5 ... +15 VDC
5	O	STROBE	Strobe control (opto-isolated)
6	I	TRIGGER	External trigger (opto-isolated), +5 .. +15VDC
7	PWR	GROUND	Signal ground (for opto-isolated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

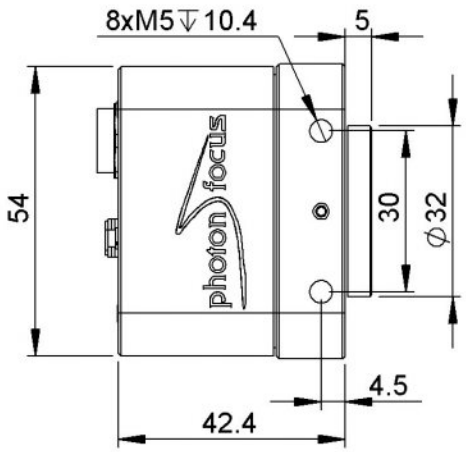


Dimensions









Explanation

DN	DigitalNumber (equals to LSB)
e^-	Electrons

Order Information

MV1-D2048-160-CL-10	BW model
MV1-D2048I-160-CL-10	NIR model
MV1-D2048C-160-CL-10	Color model

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MV1-D2048-96-G2

The camera series MV1-D2048(I/C)-G2 is based on the CMOSIS CMV4000 CMOS image sensor

Features

- CMOSIS CMV4000 CMOS image sensor
- 2048 x 2048 pixel resolution
- Good NIR spectral response
- Suitable for standard and low light applications
- Up to 22fps @ full resolution
- Global shutter
- Available in monochrome, NIR and color
- Extended sensor and camera features
- Up to 10bit greyscale resolution
- Boardlevel and OEM solution available
- GigEVision interface

Quantum Efficiency Image Sensor

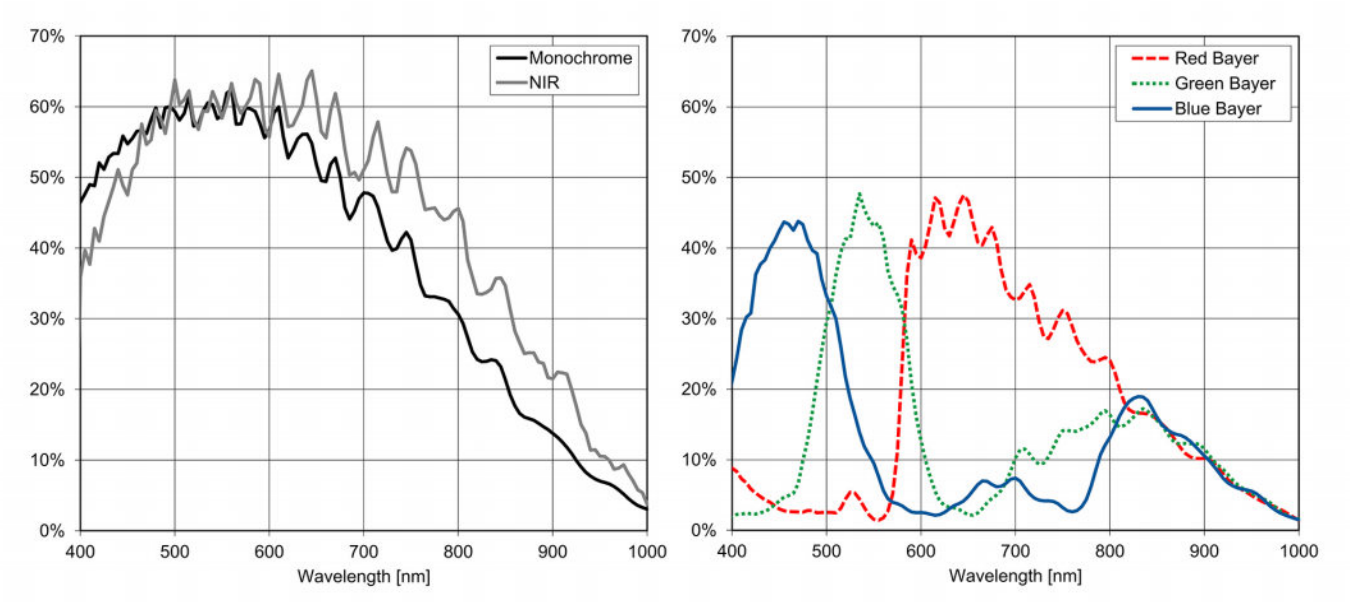


Image Sensor Specifications

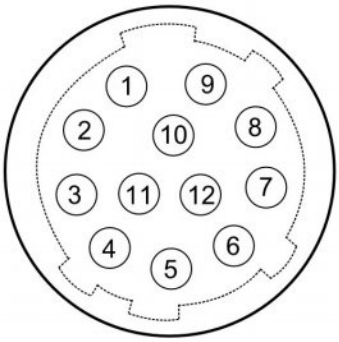
Manufacturer / Type	CMOSIS / CMV4000	
Technology	CMOS	
Optical format	1"	
Optical diagonal	15.92mm	
Resolution	2048 x 2048	
Pixel size	5.5µm x 5.5µm	
Active optical area	11.26mm x 11.26mm	
Dark current	125e^-/s	
Read out noise	13e^-	
Full well capacity / SNR	11ke^- / 105: 1	
Spectral range	Monochrome: NIR: Color:	< 350 to 950nm (to 10% of peak responsivity) < 350 to 1000nm (to 10% of peak responsivity) < 380 to 670nm (to 10% of peak responsivity)
Responsivity	Monochrome: NIR: Color:	1100 x 10^3 DN / (J/m²) @ 520nm / 8bit 900 x 10^3 DN / (J/m²) @ 850nm / 8bit 857 x 10^3 DN / (J/m²) @ 540nm / 8bit
Quantum Efficiency	Monochrome: NIR: Color:	> 60% > 60% > 45%
Optical fill factor	42% without micro lenses	
Dynamic range	60dB	
Characteristic curve	Linear, Piecewise linear	
Shutter mode	Global shutter	

Camera Specifications

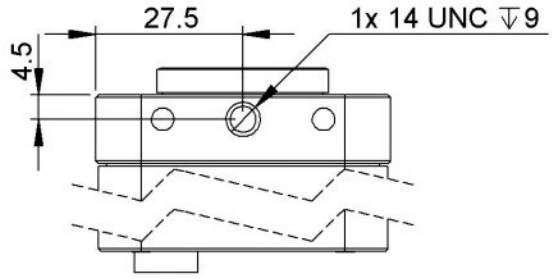
Interface	GigE
Frame rate	22fps
Pixel clock	48MHz
Camera taps	2
Greyscale resolution	8Bit / 10Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8Bit
Exposure time range	24µs - 349ms
Analog gain	yes
Digital gain	0.1 to 15.99 (FineGain)
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger
Features	Configurable region of interest (ROI), Up to 8 regions of interest (MROI), Decimation in y-direction, 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	< 5.1W
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 52mm³
Mass	265g
Connector I/O (Power)	Hirose 12-pole (mating plug HR10A-10P-12S)
Connector Interface	RJ-45
Conformity	CE / RoHS / WEEE
IP Code	IP20

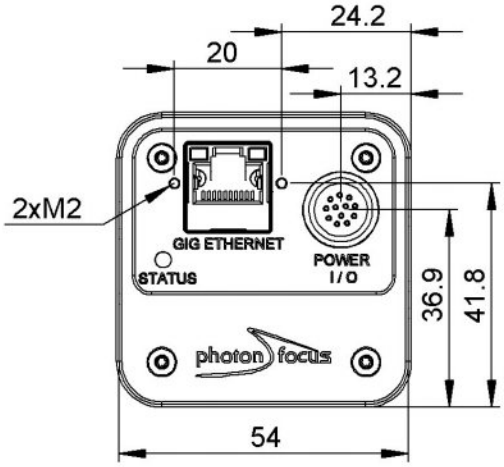
Connectors

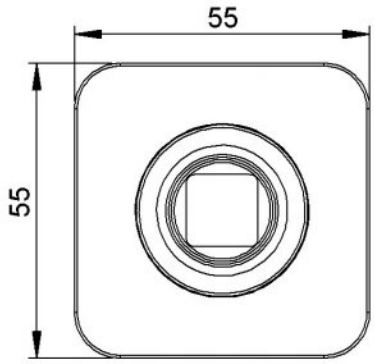
Pin	I/O Type	Name	Description
1	PWR	CAMERA_GND	Camera GND 0V
2	PWR	CAMERA_PWR	Camera Power 12V... 24V
3	O	ISO_OUT0	Default Strobe out, internally Pulled up to ISO_PWR with 4k7 Resistor
4	I	ISO_INC0_N	INC0 differential input (G2: RS-422, H2: HTL), negative polarity
5	I	ISO_INC0_P	INC0 differential input (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

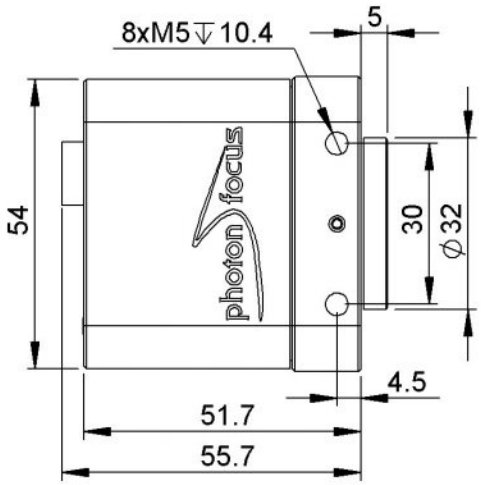


Dimensions









Explanation

DN	DigitalNumber (equals to LSB)
e^-	Electrons

Order Information

MV1-D2048-96-G2-10	BW model
MV1-D2048I-96-G2-10	NIR model
MV1-D2048C-96-G2-10	Color model

Compatibility

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