

SW-4000M-PMCL

Technical Datasheet



See the possibilities

Custom



Apex Series



Spark Series area scan cameras are the perfect choice for machine vision applications demanding high quality images with the highest possible throughput. They feature the latest CMOS imagers delivering high resolution images at speeds as much as 10 times faster than traditional CCD cameras.

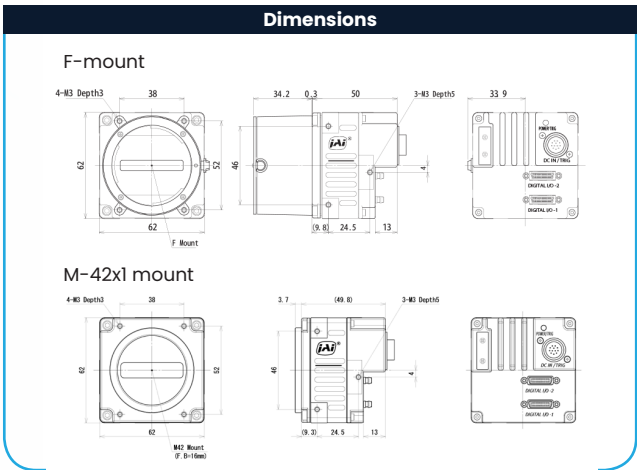
For example, 45-megapixel (MP) models can deliver over 50 fps output while some 5-MP models run at 250 fps or more. Using the region-of-interest (ROI) feature, even higher frame rates can be achieved.

Specification Highlights

SENSOR:	Custom	SHUTTER:	Global Shutter
FORMAT:	30.72 mm	FRAME RATE:	200 kHz
PIXEL SIZE:	7.5 x 7.5 μ m	INTERFACE:	Mini Camera Link (PoCL)
LENS MOUNT:	F-Mount	RESOLUTION MP:	N/A MP
SPECTRUM:	Monochrome (Visible)	RESOLUTION WxH:	4096 x 1 px

Specifications			
Scanning system	CMOS line scan sensor		
Sensors type	JAI custom made sensor (APS-C)		
Sensor resolution (effective pixels)	SW-4000M: 4096 pixels horizontal SW-8000M: 8192 pixels horizontal		
Scan rate (max)	SW-4000M: 199.5 kHz (Full Camera Link 8-bit config.) SW-8000M: 99.9 kHz (Full Camera Link 8-bit config.)		
Sensor scanning width	SW-4000M: 30.72 mm (Mode-A, Small well) 30.72 mm (Mode-B, Large well) SW-8000M: 30.72 mm		
Cell size	SW-4000M: 7.5 um (H) x 7.5 um (V) (Mode-A, Small well) 7.5 um (H) x 10.5 um (V) (Mode-B, Large well) SW-8000M: 3.75 um (H) x 5.78 um (V)		
Responsivity	SW-4000M: 58 DN/(nJ/cm ²) (Mode-A, Small well) (@10bits, gain=1x, λ = 650nm) 53 DN/(nJ/cm ²) (Mode-B, Large well) (@10bits, gain=1x, λ = 650nm) SW-8000M: 23 DN/(nJ/cm ²) (@10bits, gain=1x, λ = 650nm)		
S/N ratio	60 dB @10bit (Typical)		
Pixel clock	31.70 / 42.41 / 63.39 / 84.82 MHz adjustable		
Video signal output	8-bit or 10-bit via Mini Camera Link connector		
Inputs/Outputs	GPIO in/out via 12-pin connector		
Trigger mode	Line start		
Exposure mode (Exposure time)	Off: Line period minus 3.6 μs (SW-4000M) Line period minus 3.8 μs (SW-8000M) Timed: 1.8 μs to 15.148 ms Trigger Width: 3 μs -		
Shading correction	Flat shading		
Gain	Manual/Auto Digital: 0dB ~ +24dB (SW-4000), 0dB ~ +36dB (SW-8000)		
Gamma	9 Step 1.0 ~ 0.45		
LUT	256 point		
Interface	Power over Mini Camera Link NB: Running Power over Camera Link requires 2 cables		
Operating temperature	-5°C to +45°C		
Storage temperature	-25°C to +60°C		
Humidity	20 ~ 80% non-condensing		
Vibration	10G (20 Hz to 200 Hz XYZ direction)		
Shock	80G		
Regulations	CE (EN 61000-6-2, EN 61000-6-3), FCC part 15 class B		
Power and power consumption	PoCL or I2pin (12V to 24V DC + 10%). 435 mA / 5.22W typical (full frame @ 12V) NB: Running Power over Camera Link requires 2 lines		
Lens mount	Mount type:	F-Mount Bayonet	M-42x1 mount Metric screw thred
	Diameter:	44 mm	42 mm
	Flange Back Distance:	46.5 mm	16 mm
Dimensions (H x W x L)	62 x 62 x 84 mm (F-mount, excluding connectors) 62 x 62 x 53.5 (M42-mount, excluding connectors)		
Weight	320 g		

Ordering Information	
SW-4000M-PMCL-F	CMOS Monochrome Line Scan Camera with F-mount (4096 pixels)
SW-4000M-PMCL-M42A	CMOS Monochrome Line Scan Camera with M42-mount* (4096 pixels)
SW-8000M-PMCL-F	CMOS Monochrome Line Scan Camera with F-mount (8192 pixels)
SW-8000M-PMCL-M42A	CMOS Monochrome Line Scan Camera with M42-mount* (8192 pixels)

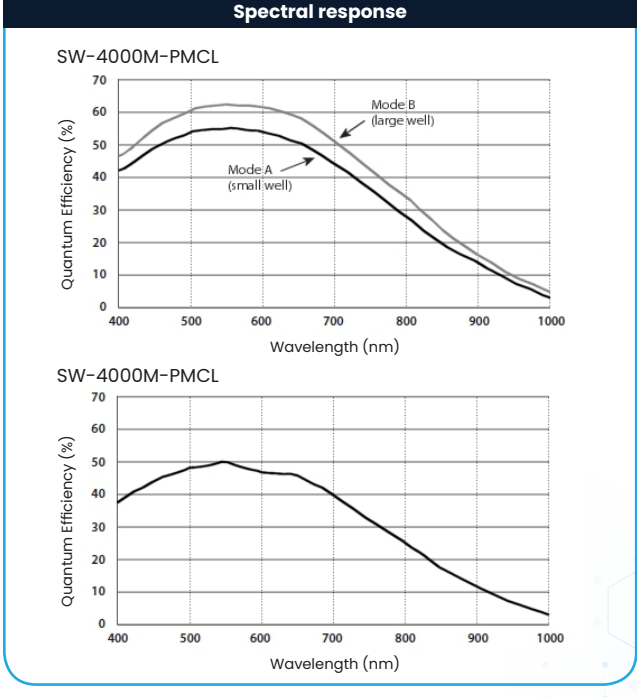


Connector pin-out

Connector Pin-out

Mini-CL interface

Pin no.	Attribute	Signal	Remarks	Pin no.	In/Out	Name	Note
1	-	GND	-	1,26	-	Power	DC In
2	Power In	DC In	DC 12V tc 24V+/-10%	2(-),15(+)	O	TxOUT0	Data output
3	-	GND	-	3(-),16(+)	O	TxOUT1	Data output
4	-	RESERVED	-	4(-),17(+)	O	TxOUT2	Data output
5	-	RESERVED	-	5(-),18(+)	O	TxClk	CL Clock
6	I	RxD in	-	6(-),19(+)	O	TxOUT3	Data output
7	O	TxD out	-	7(+),20(-)	I	SerTC (RxD)	LVD5 serial control (CCI only)
8	-	GND	-	8(-),21(+)	O	SerTFG (TxD)	LVD5 serial control (CCI only)
9	O	TTL OutI	-	9(-),22(+)	I	CC1 (Trigger)	Trigger input (CCI only)
10	I	TTL InI	-	10(-),23(+)	-	CC1 (Reserved)	(CCI only)
11	Power In	DC In	DC 12V tc 24V+/-10%	11,24	-	NC	-
12	-	GND	-	12,25	-	NC	-
				13,14	-	Shield	GND



*Note: M42-mount is M42x1 with 16 mm flange back

Product Highlights

- Monochrome CMOS Line Scan Camera
- Resolution: 4096 pixels in a line (SW-4000M-PMCL)
8192 pixels in a line (SW-8000M-PMCL)
- Scan rate: 200,000 lines per second - 199.5 kHz (SW-4000M-PMCL)
100,000 lines per second - 99.9 kHz (SW-8000M-PMCL)
- Sensor scanning width: 30.72 mm
- Video signal output: 8-bit or 10-bit via Mini Camera Link
- Interface: Power over Mini Camera Link
- JAI SDK and GenICam compliant
- F-mount and M-42x1 mount

Additional Product Images



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