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GO-5000M-PMCL

Technical Datasheet

See the possibilities

Lince5M

Apex Series

JAI's Go Series delivers an exceptional blend of small size, high versatility, and excellent performance, all at an entry-level price, making the cameras a perfect starting point for a wide range of machine vision applications.

CMOS technology, low-noise pixels, global shutters, sequencer functions, and other advanced features help ensure image quality and operational flexibility beyond entry-level expectations.

Specification Highlights

SENSOR:	Lince5M	**SHUTTER:**	Global Shutter
FORMAT:	1"	**FRAME RATE:**	107 fps
PIXEL SIZE:	5.0 x 5.0 µm	**INTERFACE:**	Mini Camera Link (PoCL)
LENS MOUNT:	C-Mount	**RESOLUTION MP:**	5 MP
SPECTRUM:	Monochrome (Visible + UV)	**RESOLUTION WxH:**	2560 x 2048 px

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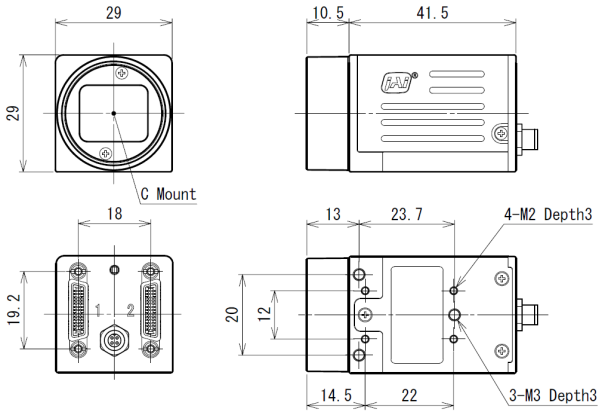
Specifications	GO-5000M-PMCL
Sensor	1" CMOS global shutter (Lince 5M)
Pixel clock	36/28.8/24 MHz
Frame rate, full frame	Frame rate, full frame
Active area	12.8 mm (h) x 10.24 mm (v), 16.39 mm diagonal
Cell size	5.0 µm (h) x 5.0 µm (v)
Active pixels	2560 (h) x 2048 (v)
Read-out modes	
Full ROI	2560 (h) x 2048 (v) up to 105 fps Any start line, any height in 1 line steps, with X offset and width in 8 pixel steps
Binning	1x2, 2x1, 2x2, 2x4, 4x2, 4x4
EMVA 1288 Parameters Absolute sensitivity Maximum SNR	10-bit output format 20.17 p (λ = 525 nm) 41.30 dB
Traditional SNR*	>55 dB (0 dB gain, non-linear)
Video signal output	8/10/12-bit monochrome
Gain (digital)	Manual/automatic 0 dB to +24 dB
Gain (analog)	1x, 2x, 4x
Gamma	0.45, 0.6, 1.0 or 32-point LUT
Synchronization	Internal
Trigger input	TTL, CL, Pulse Generator, Software, NAND0, NAND1
Trigger modes	EPS, Trigger Width, Timed RCT (with ALC)
Electronic shutter Timed exposure Auto shutter	10 µs to 8 sec in 1 µs steps 1/107 to 1/10,000 sec.
Auto Level Control (ALC)	Shutter range from 1/107 to 1/10,000, gain range from 0 dB to +24 dB Tracking speeds and max values adjustable.
Pre-processing functions	Flat field correction, blemish compensation (512 pixels)
High Dynamic Range mode (HDR)	4 user-selectable knee slopes – 70/80/90/100 dB
Operating temperature	-5°C to +45°C
Storage temperature	-25°C to +60°C
Humidity	20 - 80% non-condensing
Vibration	10 G (20Hz to 200Hz XYZ, 20 mins.)
Shock	80 G
Regulations	CE (EN61000-6-2, EN61000-6-3), FCC Part 15 class B, RoHS/WEEE
Power 4-pin PoCL	+12V to +24V DC ± 10%. 2.88 W typical @ +12 V +10V to +13 V DC. 3.0 W typical @ +12 V
Lens mount	C-mount
Dimensions (H x W x L)	29 mm x 29 mm x 41.5 mm (excl. lens mount)
Weight	46 g (48 g for EP model)
Ordering Information	
GO-5000M-PMCL GO-5000M-PMCL-EP	Monochrome camera with Mini Camera Link Same as above, with 4-pin external power connector

Also available with:
GigE Vision (PoE) – 22 fps max. @ 8-bit
USB3 Vision – 62 fps max. @ 8-bit

*Traditional SNR is based on random noise in a single frame, where EMVA SNR measurements consider more comprehensive noise sources and variance over time. For a more complete description, see the manual.

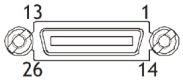
Dimensions



Outside size tolerance ± 0.3 mm

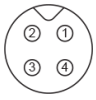
Connector pin-out

Mini-CL Interface
Interface 1



Pin		Signal	Function
1	26	Power	+10V to +13V DC in
13	14	GND	Power return
2	15	−/+ TxOUT 0	
3	16	−/+ TxOUT 1	
4	17	−/+ TxOUT 2	CL Video Channel 1
5	18	−/+ TxClk	
6	19	−/+ TxOUT 3	
7	20	+/− RXD	Serial in
8	21	−/+ TXD	Serial out
9	22	CC1−/CC1+	Ext. trigger
10	23	CC2+/CC2−	Reserved
11	24	CC3−/CC3+	Not used
12	25	CC4+/CC4−	Not used

DC In / Trigger
(GO-5000M-PMCL-EP model)

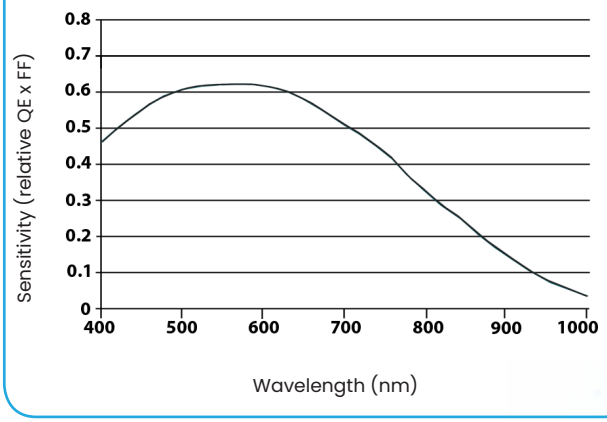


09-3111-81-04 (Binder)

Pin	Signal
1	+12V to +24V DC Input
2	TTL In (Line 4)
3	TTL Out (Line 1)
4	GND

For Medium and Full implementations a second Mini-CL interface is provided. Video Channel 2 is on pin pairs (2,15), (3,16), (4,17), (5,18), and (6,19). Video Channel 3 is on pin pairs (8,21), (9,22), (10,23), (11,24), and (12,25). Consult manual for specific bit depths and pin assignments.

Spectral response



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Product Highlights

- Large format 5 MP CMOS imager (global shutter)
- Up to 107 fps at full resolution
- 5.0 µm square pixels
- Small size (29 x 29 x 41.5 mm, excluding lens mount)
- 8/10/12-bit monochrome output
- 60 dB linear dynamic range with built-in HDR modes up to 100 dB
- Analog and digital gain control for less quantized noise in low-light situations
- Exposure control from 10 µs (1/100,000) to 8 seconds in 1 µs steps
- 2X and 4X binning for increased sensitivity
- Single and multi-ROI modes for flexible windowing and use of 2/3" or smaller optics
- Automatic Level Control (ALC) for dynamic lighting conditions
- Accepts power over Mini Camera Link connectors
- Also available with 4-pin connector for external power supplies (GO-5000M-PMCL-EP)
- C-mount lens mount

Additional Product Images

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