GO-5000-PMCL
5-megapixel CMOS global shutter
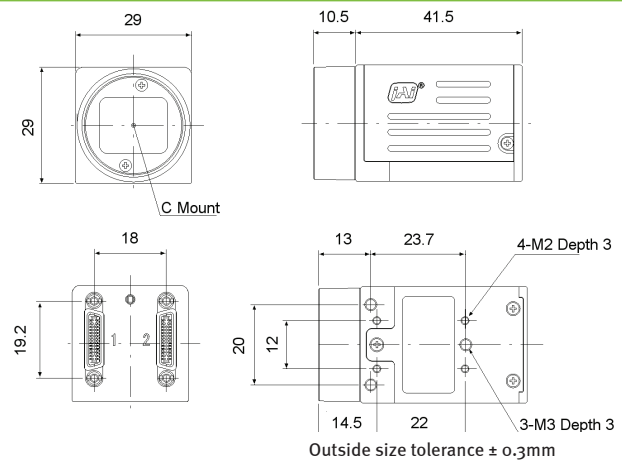
CAMERA Link ®

- *Large format 5 MP CMOS imager (global shutter)*
- *Up to 105 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 output in choice of monochrome or raw Bayer color models*
- *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*
- *C-mount lens mount*

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See the possibilities

Specifications for GO-5000-PMCL

Specifications	GO-5000-PMCL
Sensor	1" CMOS global shutter
Pixel clock	48 MHz
Frame rate, full frame	105 frames/sec. (8-bit, 8-tap, full CL)
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	2560 (h) x 2048 (v) up to 105 fps
ROI (mono)	Any start line, any height in 1 line steps, with X offset and width in 8 pixel steps
ROI (RGB)	Any start line, any height, in 2L steps with X offset and width in 8 pixel steps
Binning	1/2/4 (h) x 1/2/4 (v) (monochrome only)
EMVA 1288 Parameters Absolute sensitivity (mono) Absolute sensitivity (color) Maximum SNR (mono) Maximum SNR (color)	10-bit output format 23.50 p (λ = 525 nm) 36.08 p (λ = 525 nm) 41.48 dB 38.00 dB
Traditional SNR* mono color	›55 dB (0 dB gain, non-linear) ›53 dB (0 dB gain, green, non-linear)
Video signal output mono color	8/10/12-bit monochrome 8/10/12-bit Bayer
Gain (digital)	Manual/automatic 0 dB to +24 dB
Gain (analog)	x1, x2, x4 (mono or individual Bayer channels)
White balance (GO-5000C)	Manual, one-push auto, or continuous (3000K to 9000K)
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 1/105 to 1/10,000 sec.
Auto Level Control (ALC)	Shutter range from 1/105 to 1/10,000, gain range from 0 dB to +24 dB Tracking speeds and max values adjustable.
Pre-processing functions	Flat field correction, color shading correction (SP-5000C), blemish compensation (512 pixels)
High Dynamic Range mode (HDR)	4 user-selectable knee slopes – 70/80/90/100 dB (monochrome only)
Operating temperature	-5ºC to +45ºC
Storage temperature	-25ºC to +60ºC
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	Power over Mini-CL. 3.0W typical (full frame @ 12V)
Lens mount	C-mount
Dimensions (H x W x L)	29 mm x 29 mm x 41.5 mm (excluding lens mount)
Weight	46 g

Ordering Information

GO-5000M-PMCL	Monochrome camera with Mini Camera Link
GO-5000C-PMCL	Color camera with Mini Camera Link

Also to be offered with:
GigE Vision (PoE) – 22 fps max. @ 8-bit
USB3 Vision – 68 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 ± 0.3mm

Connector pin-out

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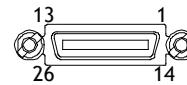
Pin		Signal	Function
1	26	Power	+12V to +24V DC in
13	14	GND	Power return
2	15	-/+ TxOUT 0	
3	16	-/+ TxOUT 1	
4	17	-/+ TxOUT 2	CL Video Channel 1
5	18	-/+ TxClk	
6	19	-/+ TxOUT 3	
7	20	+/- RXD	Serial in
8	21	-/+ TXD	Serial out
9	22	CC1-/CC1+	Ext. trigger
10	23	CC2+/CC2-	Reserved
11	24	CC3-/CC3+	Not used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

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

Monochrome –   G1 –   G2 –   Red –   Blue –
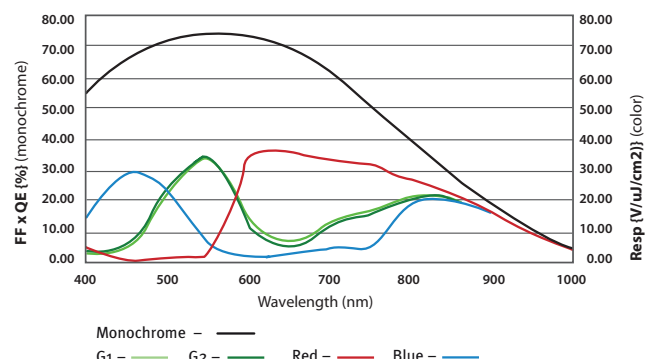
Note: Full sensor response, IR-cut filter not shown.

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See the possibilities