

■ 3 x 4096 pixels

■ 67.7 kHz

Sweep+ Series 



❖ SW-4000T-MCL 3-CMOS prism line scan camera



- **World's fastest 3 x 4096 pixel prism-based line scan camera**
- **Max. line rate of 67.7 kHz**
- **Prism technology for superior color quality and better color differentiation**
- **Dichroic RGB beam splitter with 3 sensors**
- **Optimized for applications with fixed and varying object speeds**
- **Newly developed "state of the art" CMOS sensors**
- **Selectable pixel size - 7.5 x 7.5 μm or 7.5 x 10.5 μm**
- **Supports vertical dual-line binning, 2x horizontal binning, or both**
- **Flat field correction and color shading correction**
- **HSI and XYZ color space conversion**
- **Large variety of trigger options**
- **GenICam-compliant Camera Link interface with 3 x 8 or 3 x 10-bit output**
- **Excellent shock and vibration resistance**

Specifications for SW-4000T-MCL

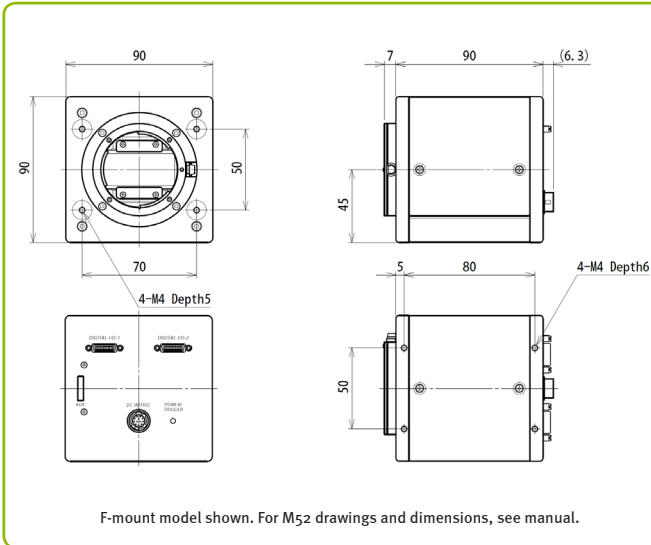
Sweep+ Series

Specifications	SW-4000T-MCL
Scanning system	3 high-speed CMOS line sensors, prism-mounted
Active pixels	3 x 4096 pixels (R, G, B)
Line rate	Up to 67.7 kHz (variable)
Sensor width	30.72 mm
Pixel size	Mode A: 7.5 μm x 7.5 μm Mode B: 7.5 μm x 10.5 μm
Pixel clock (CL)	31.875 / 42.5 / 63.75 / 85 MHz
Video output	Camera Link Base (8 bit - RGB8) Camera Link Medium (8/10 bit - RGB8, RGB10) Camera Link Full (8 bit - RGB8) Camera Link Deca (8 bit - RGB8)
Object illuminance (min.)	220 lx @ 7800 K, Mode A (Gain 18 dB, 525 μs exp., 50% video, RGB8)
Responsivity	123 DN/nj/cm ² (G channel, Mode A, 10-bit @ 550 nm, 0 dB gain)
S/N ratio	>5 dB on green, 10-bit with 0 dB gain
Inputs	Trigger (Camera Link, TTL/75Ω via 12-pin or 10-pin)
Outputs	LVAL, DVAL, EEN, XEEN (TTL)
Gain	Analog Base Gain: 0 dB / 6 dB / 12 dB Digital Master: 0 to +18 dB, R/B: -7.96 to +12 dB Digital Individual: 0 to +24 dB
Gamma	0.45 to 1.0 (9 steps) or 257-point LUT
Image processing	PRNU/DSNU, black level, flat shading and color shading correction
Color space conversion	RGB to HSI, RGB to XYZ (CIE), sRGB, Adobe RGB, or User Custom RGB
Exposure modes	No shutter, shutter select, and trigger width control
Electronic shutter	3 μs to 14.77 μs in 10 ns increments at fastest line rate. Exposure time can be longer at slower line rates.
Pulse width control	3 μs to 2 sec (via Camera Link) 50 ns to 2 sec (via TTL, 12-pin/10-pin connectors)
Control interface	Camera Link RS-232C
Lens mount	M52 mount or Nikon F-mount (46.5 mm flange back for both mounts)
Operating temp. (ambient)	-5°C to +45°C (20 to 80% non-condensing)
Storage temp. (ambient)	-25°C to +60°C (20 to 80% non condensing)
Vibration	10G (20 Hz to 200 Hz, XYZ directions)
Shock	50G
Regulations	CE (EN61000-6-2, EN61000-6-3) FCC Part 15 Class B, RoHS/WEEE
Power	12-pin +12V to +24V DC ± 10%
Power consumption	9.3 W typical @ +12V
Dimensions (H x W x L)	(without connector and lens mount protrusions) 90 mm x 90 mm x 90 mm
Weight	765 g

Ordering Information

SW-4000T-MCL-F	3-CMOS prism line scan camera with F-mount
SW-4000T-MCL-M52	3-CMOS prism line scan camera with M52 mount

Dimensions (F-mount)



Connector pin-out

DC In / Trigger

HIROSE HR10A-10R-12PB(71)

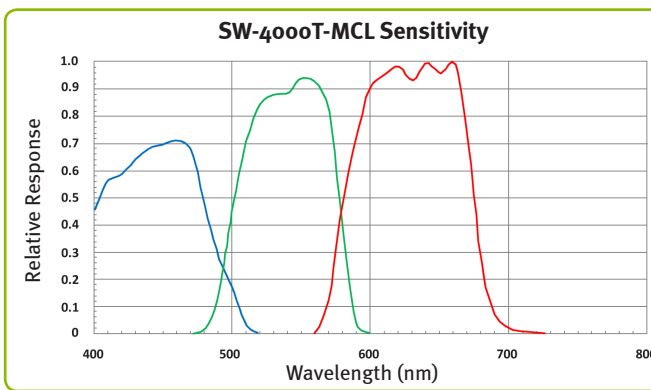
Pin	Signal
1	Ground
2	DC in +12V to +24V
3	Ground
4	Reserved
5	Opto in 1-
6	Opto in 1+
7	TTL out 4
8	NC
9	TTL out 1
10	TTL in 1
11	DC in +12V to +24V
12	Ground

Mini-CL Interface

Pin	Signal	Function	
1	26	Power	
2	15	X0-/X0+	CL Data
3	16	X1-/X1+	CL Data
4	17	X2-/X2+	CL Data
5	18	Xclk-/Xclk+	CL Clk
6	19	X3-/X3+	CL Data
7	20	SerTC+/SerTC-	Serial in
8	21	SerTFG-/SerTFG+	Serial out
9	22	CC1-/CC1+	Trigger*
10	23	CC2+/CC2-	Reserved
11	24	CC3-/CC3+	Not used
12	25	CC4+/CC4-	Not used
13	14	GND	

*Via Camera Link or 12-pin/10-pin connectors
Note: Camera Link Base configuration shown. For other configurations, refer to Camera Link specifications or operation manual.

Spectral response



Europe, Middle East & Africa
Phone +45 4457 8888
Fax +45 4491 8880

Asia Pacific
Phone +81 45 440 0154
Fax +81 45 440 0166

Americas
Phone (Toll-Free) 1 800 445 5444
Phone +1 408 383 0300

Visit our website on www.jai.com

See the possibilities



Company and product names mentioned in this datasheet are trademarks or registered trademarks of their respective owners. JAI A-5 cannot be held responsible for any technical or typographical errors and reserves the right to make changes to products and documentation without prior notice. August 2019