

SW-4000T-MCL

Technical Datasheet

Custom



See the possibilities



Apex Series



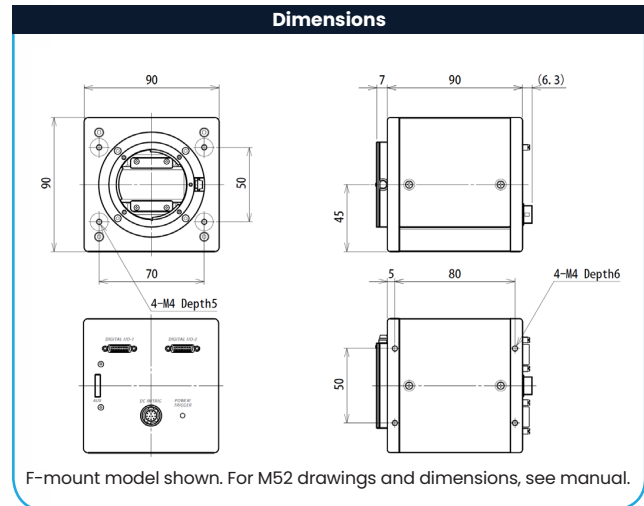
JAI's Sweep Series includes both monochrome and trilinear color line scan cameras with line rates that are among the fastest available for their type and resolution.

The Sweep SW-4000TL trilinear models deliver outstanding color line scan images for applications that don't require the ultimate image precision provided by the Sweep+ Series.

Specification Highlights

SENSOR:	Custom	SHUTTER:	Global Shutter
FORMAT:	30.72 mm	FRAME RATE:	66 kHz
PIXEL SIZE:	7.5 x 7.5 μm / 25.0 x 25.0 μm	INTERFACE:	Mini Camera Link
LENS MOUNT:	F-Mount	RESOLUTION MP:	N/A MP
SPECTRUM:	Color (Visible)	RESOLUTION WxH:	4099 x 1 px

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 μ m x 7.5 μ m Mode B: 7.5 μ m x 10.5 μ m
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 μ s exp, 50% video, RGB8)
Responsivity	123 DN/nJ/cm ² (G channel, Mode A, 10-bit @ 550 nm, 0 dB gain)
S/N ratio	>55 dB on green, 10-bit with 0 dB gain
Inputs	Trigger (Camera Link, TTL/75 Ω 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 μ s to 14.77 μ s in 10 ns increments at fastest line rate. Exposure time can be longer at slower line rates.
Pulse width control	3 μ s 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 \pm 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



Connector pin-out

DC In / Trigger

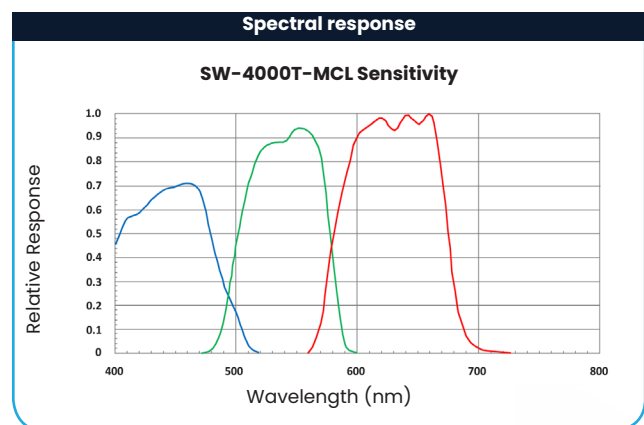
HIROSE HR10A-10R-12PB(71)

Pin	-
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.



Product Highlights

- 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

Additional Product Images



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