

# SW-4000TL-PMCL

## Technical Datasheet



See the possibilities

Custom



## 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.

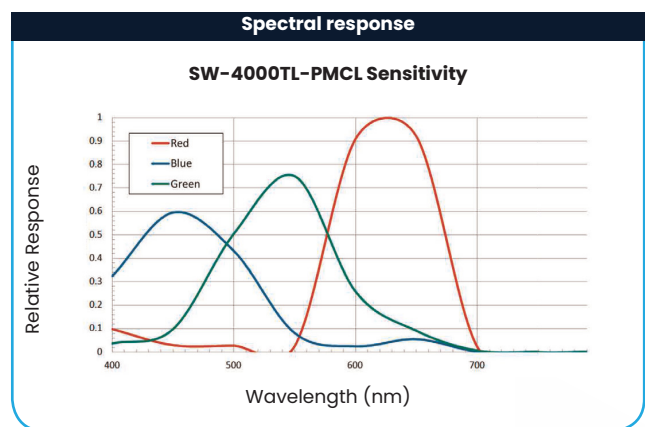
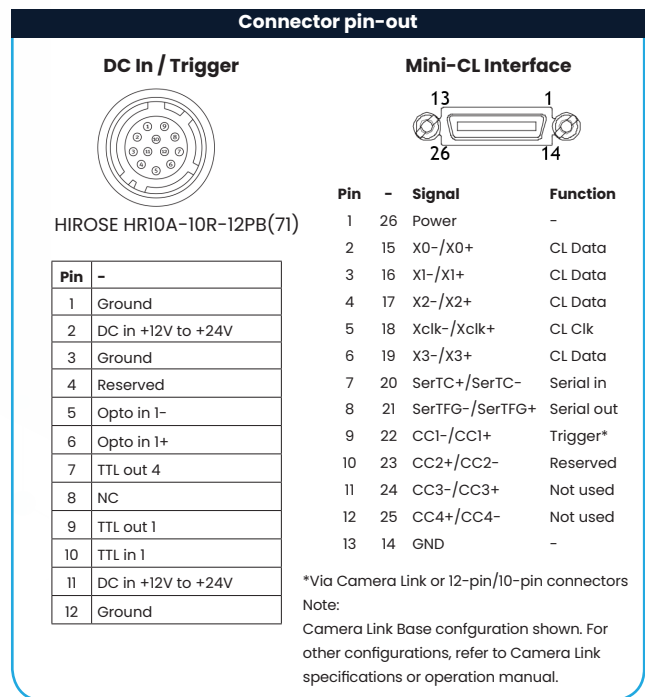
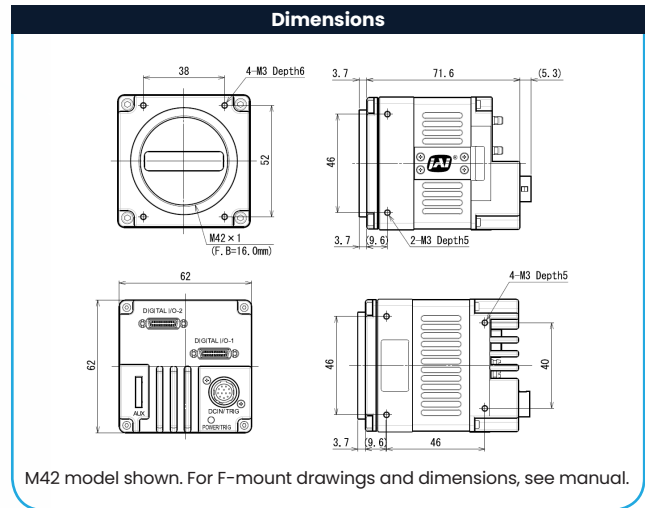
### Specification Highlights

**SENSOR:** Custom  
**FORMAT:** 30.72 mm  
**PIXEL SIZE:** 7.5 x 7.5  $\mu\text{m}$   
**LENS MOUNT:** F-Mount  
**SPECTRUM:** Color (Visible)

**SHUTTER:** Global Shutter  
**FRAME RATE:** 66 kHz  
**INTERFACE:** Mini Camera Link (PoCL)  
**RESOLUTION MP:** N/A MP  
**RESOLUTION WxH:** 4096 x 1 px

Specifications		SW-4000TL-PMCL
Scanning system	Trilinear CMOS line scan	
Active pixels	3 x 4096 pixels (R, G, B) in trilinear configuration	
Line rate	Up to 65.963 kHz (variable)	
Sensor width	30.72 mm	
Pixel size	7.5 μm x 7.5 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 (Gain 18 dB, 525 μs exp., 50% video, RGB8)	
Responsivity	127 DN/nJ/cm <sup>2</sup> (G ch 10-bit @ 550 nm)	
S/N ratio	57 dB on green, dark level, 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, shading, tilted view, spatial compensation, chromatic aberration	
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 15.15 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) 1.8 μs to 2 sec (via 12-pin/10-pin connectors)	
Control interface	Camera Link RS-232C	
Lens mount	M42 <sup>1</sup> mount or Nikon F-mount	
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	80G	
Regulations	CE (EN61000-6-2, EN61000-6-3) FCC Part 15 Class B, RoHS/WEEE	
Power	12-pin PoCL	+12V to +24V DC ± 10% +10V DC to +13V DC
Power consumption	7.8 W typical @ +12V	
Dimensions (H x W x L)	(without connector and lens mount protrusion)	
M42 mount	62 mm x 62 mm x 71.6 mm	
F-mount	62 mm x 62 mm x 71.8 mm	
Weight		
M42 mount	340 g	
F-mount	410 g	
Ordering Information		
SW-4000TL-PMCL-F	CMOS trilinear RGB camera with F-mount	
SW-4000TL-PMCL-M42A	CMOS trilinear RGB camera with M42 <sup>1</sup> mount	

<sup>1</sup>M42 x 1 with 16 mm flange back distance



## Product Highlights

- Newly developed "state of the art" CMOS trilinear sensor
- Provides high speed 3 x 4096 pixel output at up to 66 kHz
- Horizontal and vertical binning functions
- Intelligent sub-pixel spatial compensation and tilted view correction
- HSI and XYZ color space conversion
- Large variety of trigger options
- Supports direct encoder connection to camera
- Excellent shock and vibration resistance
- Compact size and high robustness for industrial environments
- Time stamping of line data
- GenICam and Gen-CP-compliant Camera Link interface
- Supports Camera Link Base, Medium, Full, and Deca modes

## Additional Product Images



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