SW-4000TL-10GE

High speed CMOS trilinear camera

- *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*
- *10GBASE-T interface with selectable YUV, 3 x 8-bit RGB, or 3 x 10-bit RGB output*
- *Backwards compatible to NBASE-T (5GBASE-T/2.5GBASE-T) and standard GigE (1000BASE-T)*

Specifications for SW-4000TL-10GE

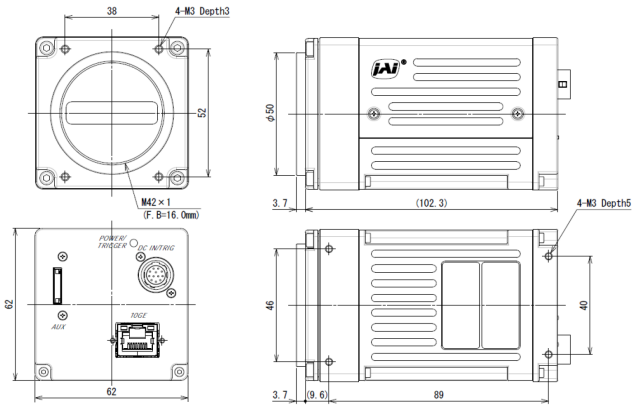
Specifications	SW-4000TL-10GE
Scanning system	Trilinear CMOS line scan
Active pixels	3 x 4096 pixels (R, G, B) in trilinear configuration
Line rate	Up to 66.6 kHz (variable)
Sensor width	30.72 mm
Pixel size	7.5 µm x 7.5 µm
Ethernet speeds	10GBASE-T, 5GBASE-T, 2.5GBASE-T, 1000BASE-T Full backwards compatibility
Video output	RGB8, RGB10V1Packed, RGB10p32, YUV422_8_UVYV, YUV422_8
Object illuminance (min.)	220 lx @ 7800 K (Gain 18 dB, 525 µs exp., 50% video, RGB8)
Responsivity	127 DN/nJ/cm² (G ch 10-bit @ 550 nm)
S/N ratio	57 dB on green, dark level, 10-bit with 0 dB gain
Inputs	Trigger (1 Opto In + 1 TTL via 12-pin, 2 TTL via 10-pin), Pulse Generator (4), NAND Out (2), Action (4)
Outputs	2 TTL via 12-pin, 2 TTL via 10-pin
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 15.015 µs in 1 µs 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)
Time synchronization	Support for Precision Time Protocol (IEEE 1588)
Lens mount	M42 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	+10V to +25V DC
Power consumption	9.3 W typical @ +12V
Dimensions (H x W x L) M42 mount F-mount	(excluding rear connector protrusion) 62 mm x 62 mm x 106 mm 62 mm x 62 mm x 136.5 mm
Weight M42 mount F-mount	340 g 410 g

Ordering Information

SW-4000TL-10GE-F	CMOS trilinear RGB camera with F-mount
SW-4000TL-10GE-M42A	CMOS trilinear RGB camera with M42 mount[1]

[1]M42 x 1 with 16 mm flange back distance

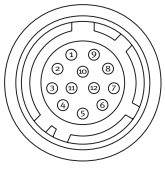
Dimensions (M42)



M42 model shown. For F-mount drawings and dimensions, see manual.

Connector pin-out

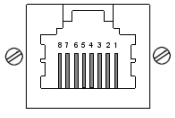
DC In / Trigger



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 +24 V
	12	Ground

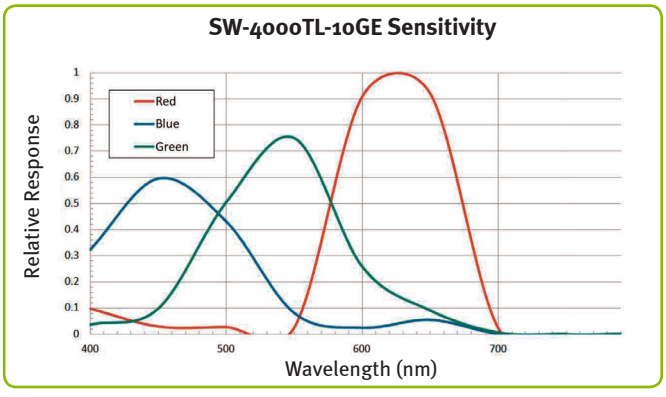
GigE Vision Interface



RJ-45 with locking screws

Pin	Signal
1	TRD+ (0)
2	TRD- (0)
3	TRD+ (1)
4	TRD+ (2)
5	TRD- (2)
6	TRD- (1)
7	TRD+ (3)
8	TRD- (3)

Spectral response



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