

SW-4000TL-10GE

High speed CMOS trilinear camera

GiGE
VISION



PRELIMINARY

- 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

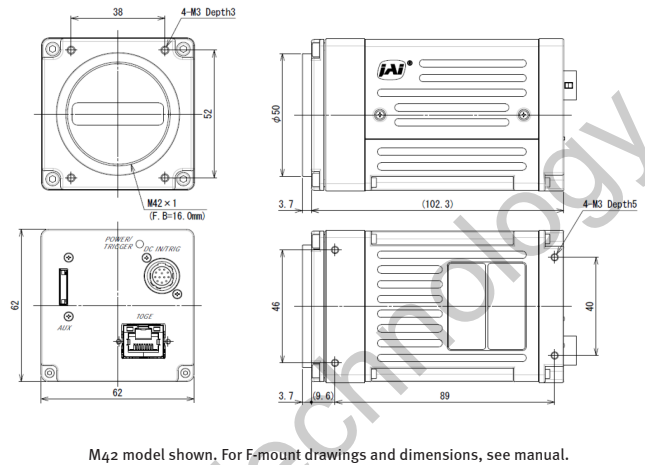
Specifications	SW-4000TL-10GE
Scanning system	Trilinear CMOS line scan
Active pixels	3 x 4096 pixels (R, G, B) in trilinear configuration
Line rate	Up to 65,963 kHz (variable)
Sensor width	30.72 mm
Pixel size	7.5 μm x 7.5 μm
Ethernet speeds	10GBASE-T, 5GBASE-T, 2.5GBASE-T, 1000BASE-T Full backwards compatibility
Video output	RGB8, RGB10V1Packed, RGB10p32, YUV422_8_UYVY, YUV422_8
Object illuminance (min.)	220 lx @ 7800 K (Gain 18 dB, 525 μs exp., 50% video, RGB8)
Responsivity	127 DN/nJ/cm ² (G ch 10-bit @ 550 nm)
S/N ratio	57 dB on green, 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 15.15 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)
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 +12V to +24V DC $\pm$ 10%
Power consumption	TBD W typical @ +12V
Dimensions (H x W x L)	(excluding rear connector protrusion)
M42 mount	62 mm x 62 mm x 106 mm
F-mount	62 mm x 62 mm x 136.5 mm
Weight	M42 mount TBD g F-mount TBD 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

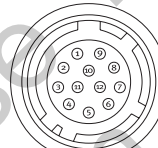
¹M42 x 1 with 16 mm flange back distance

Dimensions (M42)



Connector pin-out

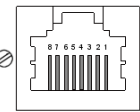
DC In / Trigger



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 +24 V
12	Ground

GigE Vision Interface

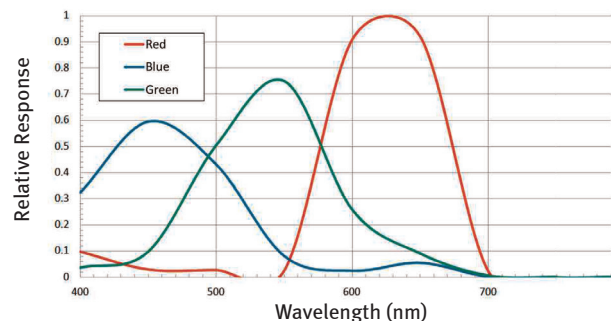


RJ-45 with locking screws

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

SW-4000TL-10GE Sensitivity



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