

■ 3 x 4096 pixels

■ 66 kHz

Sweep Series



❖ SW-4000TL-10GE

High speed CMOS trilinear camera

GIG[®]
VISION



- ***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

Sweep Series

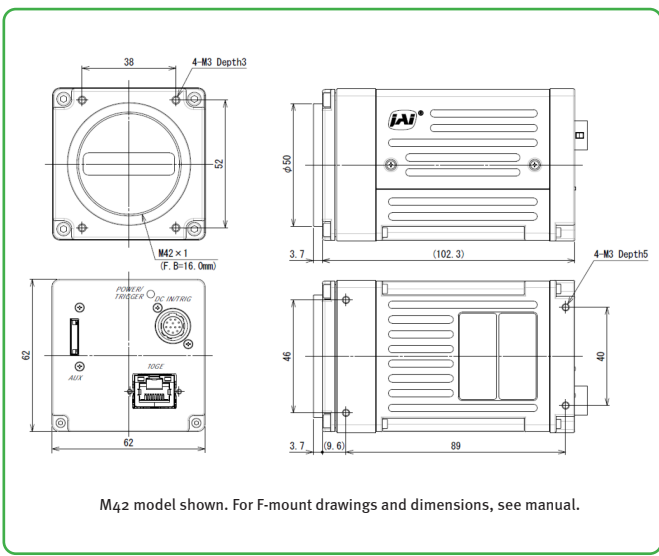
| Specifications | SW-4000TL-10GE |
|---------------------------|---|
| Scanning system | Trilinear CMOS line scan |
| Active pixels | 3 x 4096 pixels (R, G, B) in trilinear configuration |
| Line rate | Up to 66.6 kHz (variable) |
| Sensor width | 30.72 mm |
| Pixel size | 7.5 μm x 7.5 μm |
| Ethernet 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/n/cm ² (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. |
| Trigger width control | 1.8 μs to 1 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 (EN55032:2015, EN55035:2017) FCC Part 15 Class B, RoHS/WEEE, KC |
| Power | 12-pin +10V to +25V DC |
| Power consumption | 9.3 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 340 g |
| | F-mount 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 |

¹M42 x 1 with 16 mm flange back distance

Dimensions (M42)



Connector pin-out

DC In / Trigger

HIROSE HR10A-10R-12PB(71)

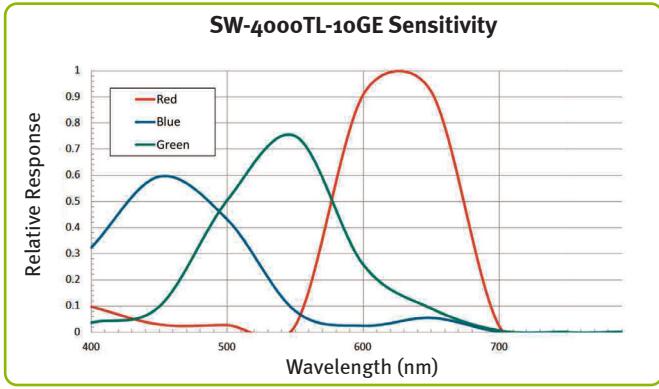
| Pin | Signal |
|-----|---------------------|
| 1 | Ground |
| 2 | DC in +12V to +24V |
| 3 | Ground |
| 4 | Reserved |
| 5 | Opto in 1- |
| 6 | Opto in 1+ |
| 7 | TTL out 4 |
| 8 | NC |
| 9 | TTL out 1 |
| 10 | TTL in 1 |
| 11 | DC in +12V to +24 V |
| 12 | Ground |

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



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