

■ 4 x 8192 pixels

■ 36 kHz

Sweep+ Series 

## ❖ SW-8000Q-10GE

4-CMOS prism line scan camera

**GIG**<sup>®</sup>  
VISION



- **4 x 8192 pixel prism-based 10GBASE-T line scan camera**
- **Max. line rate of 36 kHz for RGB8 + NIR dual-stream output**
- **Prism technology for superior color quality and alignment of visible + NIR channels**
- **Backwards compatible to NBASE-T (5GBASE-T/2.5GBASE-T) and standard GigE (1000BASE-T)**
- **New “State of the art” CMOS sensors with 3.75 x 5.78  $\mu\text{m}$  pixels**
- **Supports vertical dual-line binning, 2x horizontal binning, or both**
- **ROI capability can increase line rate by reducing number of pixels per line**
- **Flat field correction and color shading correction**
- **HSI and XYZ color space conversion**
- **Supports direct connection to rotary encoders plus large variety of trigger options**
- **GigE Vision 2.0 interface with choice of single-stream (RGBa8) or dual-stream output**
- **Color output can be 24/30/32-bit RGB or 8-bit YUV format**
- **Excellent shock and vibration resistance**

# Specifications for SW-8000Q-10GE

# Sweep+ Series

| Specifications            | SW-8000Q-10GE   |
|---------------------------|---|
| Scanning system           | 4 high-speed CMOS line sensors, prism-mounted   |
| Active pixels             | 4 x 8192 pixels (R, G, B, NIR)  |
| Line rate (full width)    | Up to 36 kHz (variable) for 8-bit RGB + NIR<br>37 kHz possible with YUV compression   |
| Sensor width              | 30.72 mm  |
| Pixel size                | 3.75 μm x 5.78 μm   |
| Ethernet speeds           | 10GBASE-T, 5GBASE-T, 2.5GBASE-T, 1000BASE-T<br>Full backwards compatibility   |
| Video output              | Single stream: RGBa8<br>Two streams: RGB8, RGB10V1Packed, RGB10p32,<br>YUV422_8_UVYV, YUV422_8 (visible)<br>Mono8, Mono10Packed (NIR)     |
| Object illuminance (min.) | 214.5 lx @ 7800 K<br>(Gain 30 dB, 525 μs exp., 50% video, f/2.8)  |
| Responsivity              | RGB: 41 DN/nl/cm <sup>2</sup> @ 550 nm (G channel)<br>NIR: 24 DN/nl/cm <sup>2</sup> @ 800 nm<br>(10-bit, 0 dB gain)                       |
| S/N ratio                 | >53 dB on green, 10-bit with 0 dB gain<br>>55 dB on NIR, 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), User Out (4)                               |
| Outputs                   | 2 TTL via 12-pin, 2 TTL via 10-pin  |
| Gain                      | Digital Master: 0 to +30 dB, R/B/NIR: -4 to +12 dB<br>Digital Individual: 0 to +36 dB   |
| White balance             | Manual/one-push auto by gain or exposure<br>(4000K - 9000K)<br>3 Presets (5000K, 6500K, 7500K)  |
| Gamma                     | 0.45 to 1.0 (9 steps) or 257-point LUT  |
| Image processing          | PRNU/DSNU, black level, flat shading and color shading correction, chromatic aberration adjustment, horizontal mirroring, noise filtering |
| Color space conversion    | RGB or RGBa8 to HSI, XYZ (CIE), sRGB, Adobe RGB, or User Custom RGB   |
| Exposure modes            | No shutter, timed, and trigger width control  |
| Electronic shutter        | 3 μs to 27778 μs in 1 μs increments at 36 kHz.<br>Exposure time can be longer at slower line rates.                                       |
| Pulse width control       | 1.8 μs to ~1 sec  |
| Time synchronization      | Support for Precision Time Protocol (IEEE 1588)   |
| Lens mount                | Nikon F-mount or M52 mount<br>(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                 | 3G (20 Hz to 200 Hz, XYZ directions)  |
| Shock                     | 50G   |
| Regulations               | CE (EN61000-6-2, EN61000-6-3), FCC Part 15 Class B, RoHS/WEEE, KC   |
| Power                     | 12-pin PoE +10V to +25V DC. 19.3 W typical @ 12V<br>Not supported.  |
| Dimensions (H x W x L)    | (without connector and lens mount protrusions)<br>90 mm x 90 mm x 120 mm  |
| Weight                    | 980 g   |

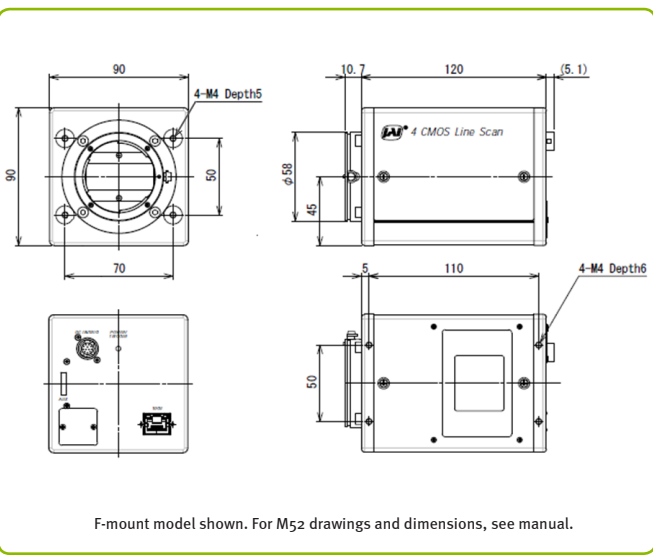
## Ordering Information

|                   |  |
|-------------------|--|
| SW-8000Q-10GE-F   | 4-CMOS prism line scan camera with F-mount   |
| SW-8000Q-10GE-M52 | 4-CMOS prism line scan camera with M52 mount |

|   |                                       |                                   |
|---|---------------------------------------|-----------------------------------|
| Europe, Middle East & Africa<br>Phone +45 4457 8888 | Asia Pacific<br>Phone +81 45 440 0154 | Americas<br>Phone +1 312 763 6570 |
|---|---------------------------------------|-----------------------------------|

Visit our website on [www.jai.com](http://www.jai.com)

## Dimensions (F-mount)



## Connector pin-out

### DC In / Trigger

HIROSE HR10A-10R-12PB(71)

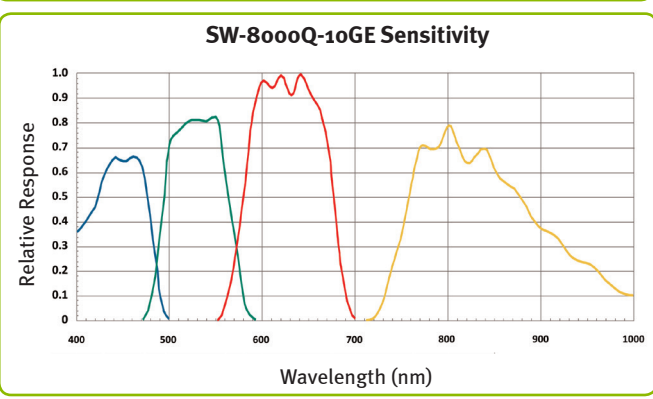
| Pin | Signal             |
|-----|--------------------|
| 1   | Ground             |
| 2   | DC in +10V to +25V |
| 3   | Ground             |
| 4   | Reserved           |
| 5   | Opto in 1-         |
| 6   | Opto in 1+         |
| 7   | TTL out 4          |
| 8   | NC                 |
| 9   | TTL out 1          |
| 10  | TTL in 1           |
| 11  | DC in +10V to +25V |
| 12  | Ground             |

### GigE Vision Interface

RJ-45 with locking screws

| Pin | Signal   |
|-----|----------|
| 1   | TRD+ (o) |
| 2   | TRD- (o) |
| 3   | TRD+ (t) |
| 4   | TRD+ (z) |
| 5   | TRD- (z) |
| 6   | TRD- (t) |
| 7   | TRD+ (s) |
| 8   | TRD- (s) |

## Spectral response



Company and product names mentioned in this datasheet are trademarks or registered trademarks of their respective owners. JAI A-S cannot be held responsible for any technical or typographical errors and reserves the right to make changes to products and documentation without prior notice.



See the possibilities