SW-8000Q-SFP

4-CMOS prism line scan camera

- *4 x 8192 pixel prism-based line scan camera*
- *Provides 10GBASE-R (fiber optic) output over SFP+ interface*
- *Max. line rate of 36 kHz for RGB8 + NIR dual-stream output*
- *Prism technology for superior color quality and alignment of visible + NIR channels*
- *Newly developed “state of the art” CMOS sensors with 3.75 x 5.78 µm 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*

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Specifications for SW-8000Q-SFP

Sweep+ Series

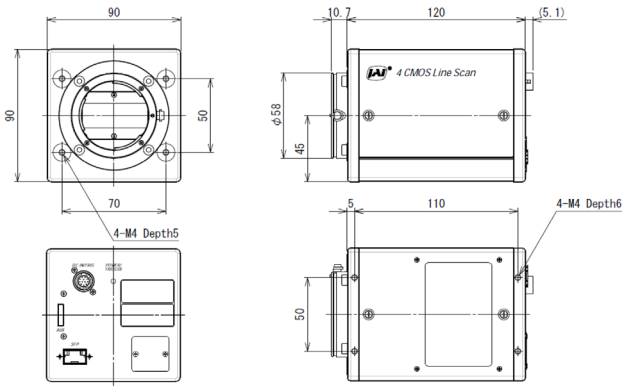
Specifications

Specifications	SW-8000Q-SFP
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 37 kHz possible with YUV compression
Sensor width	30.72 mm
Pixel size	3.75 µm x 5.78 µm
Ethernet speed	10GBASE-SR / 10GBASE-LR / 10GBASE-ER
Video output	Single stream: RGBa8 Two streams: RGB8, RGB10V1Packed, RGB10p32, YUV422_8_UVYV, YUV422_8 (visible) Mono8, Mono10Packed (NIR)
Object illuminance (min.)	214.5 lx @ 7800 K (Gain 18 dB, 525 µs exp., 50% video, f/2.8)
Responsivity	RGB: 41 DN/nJ/cm² @ 550 nm (G channel) NIR: 24 DN/nJ/cm² @ 800 nm (10-bit, 0 dB gain)
S/N ratio	>53 dB on green, 10-bit with 0 dB gain >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 Digital Individual: 0 to +36 dB
White balance	Manual/one-push auto by gain or exposure (4000K - 9000K) 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. 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 (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
Power 12-pin PoE	+10V to +25V DC. 17.4 W typical @ 12V Not supported.
Dimensions (H x W x L)	(without connector and lens mount protrusions) 90 mm x 90 mm x 120 mm
Weight	980 g

Ordering Information

SW-8000Q-SFP-F	4-CMOS prism line scan camera with F-mount
SW-8000Q-SFP-M52	4-CMOS prism line scan camera with M52 mount

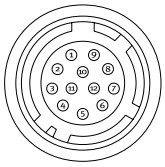
Dimensions (F-mount)



F-mount model shown. For M52 drawings and dimensions, see manual.

Connector pin-out

DC In / Trigger



HIROSE HR10A-10R-12PB(71)

Pin		
	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

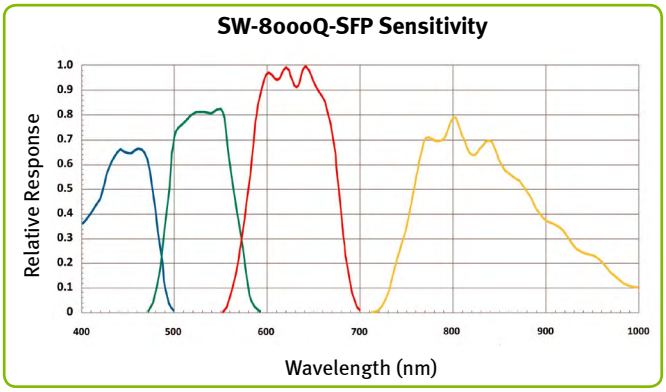
SFP+ Interface

SFP+ transceiver module must support:

- 10GBASE-R
- Power level 1

Maximum fiber optic cable lengths
» 10GBASE-SR: 300m (cable type OM3)
» 10GBASE-SR: 400m (cable type OM4)
» 10GBASE-LR: 10km (cable type OS2)
» 10GBASE-ER: 40km (cable type OS2)

Spectral response



See the possibilities