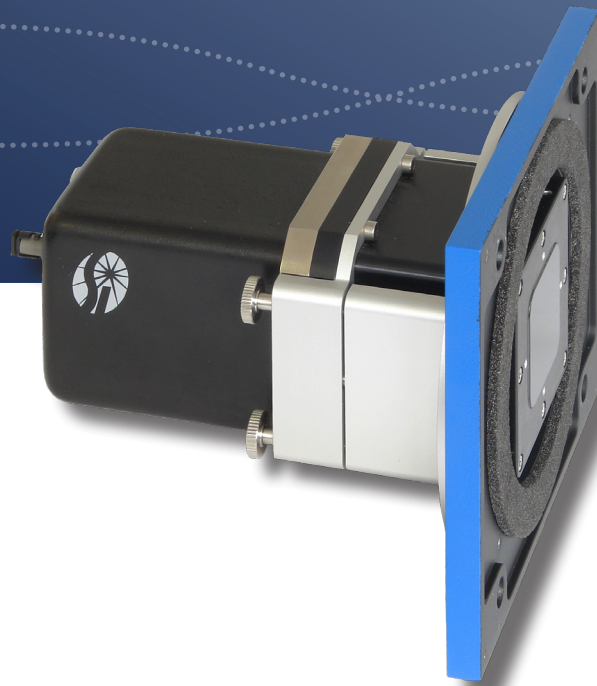


STREAK READOUT UNIT

SI 1000

SI 1000-4k

Large Format Fiber-Optics Camera



- Resolution 2048 x 2048 pixel (SI 1000)
- Resolution 4096 x 4096 pixel (SI 1000-4k)
- High efficiency 1:1 fiber-optic coupling
- Cooled CCD sensor
- Designed to be used for SC-20 and SC-51 systems

# Streak Readout Unit SI 1000

**Optronis**

Make time visible

The SI 1000 and SI 1000-4k are scientific grade high dynamic and large format CCD cameras. They are used for streak systems with large format screen like SC-20 or SC-51. Due to best coupling efficiency of the fiber optic faceplate, high system sensitivity is achieved even without image intensifier.

## COOLING

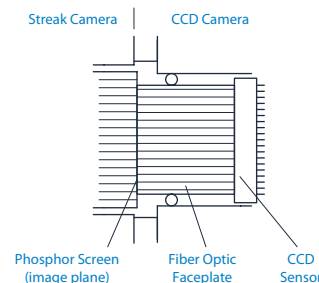
The CCD is thermo electrically (TE, Peltier) cooled with additional liquid cooling of the Peltier element. Liquid cooling with closed loop circulation and external chiller provides effective cooling even at high ambient temperatures.

## ACQUISITION MODES

Integration time of the CCD sensor can be adjusted to adapt for particular streak camera applications. Together with the OptoAnalyse acquisition software image accumulation allows to extend this time to further improve dynamic range beyond the camera performance. The external trigger input is used to synchronize image capture to low and moderate rate sweep cycles in single-shot mode.

## COUPLING OPTICS

A 1:1 fibre optic faceplate is used to couple the CCD chip to the fiber optic output window of OPTOSCOPE streak cameras.



## SPECIFICATIONS

Integration time	1 ms .. 100 s
Trigger operation	Continuous / External Trigger
Trigger input	TTL level, positive edge, SMA
Cable length	10 m fiber optic link 2 x 3 m cooling tubes
Cooling	TE CCD cooling with external closed loop liquid cooling
Power supply	100 V .. 240 V
Temperature (ambient)	+5°C .. +35°C
Humidity	20% .. 70% rel. humidity, non cond.
Camera dimensions	280 (l) x 180 (w) x 160 (h) mm <sup>3</sup>
Cooler dimensions	225 (w) x 360 (d) x 380 (h) mm <sup>3</sup>
Weight (typ.)	2.8 kg (camera) / 23 kg (cooling unit)
Delivery	PCI interface board, supply unit, cooling unit (mini-chiller), power supply, trigger cable

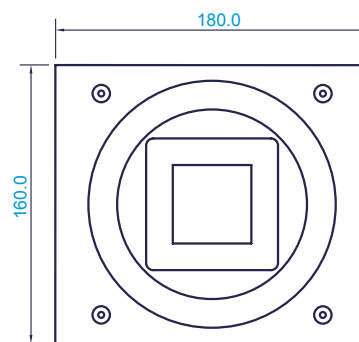
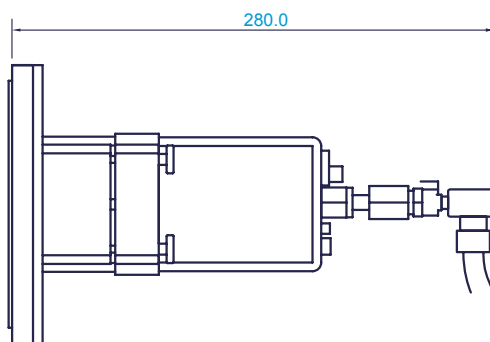
## SI 1000

Resolution	2048 x 2048 pixel
Digitalization	16 bit
Pixel size	13.5 µm x 13.5 µm
Readout area	27.6 mm x 27.6 mm
CCD type available	Full frame, back or front illuminated
Pixel readout frequency	800 kHz (readout mode dependent)
Image readout time	~6 sec (readout mode dependent)
Readout noise	8 e <sup>-</sup> (typ.)
Conversion factor	2.6 e <sup>-</sup> /DN

## SI 1000-4K

Resolution	4096 x 4096 pixel
Digitalization	14 bit
Pixel size	9 µm x 9 µm
Readout area	36.86 mm x 36.86 mm
CCD type available	Full frame, front illuminated
Pixel readout frequency	4 MHz
Image readout time	~4.5 sec
Readout noise	14 e <sup>-</sup> (typ.) / 20 e <sup>-</sup> (typ.)
Conversion factor	5.5 e <sup>-</sup> /DN

## TECHNICAL DRAWING



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