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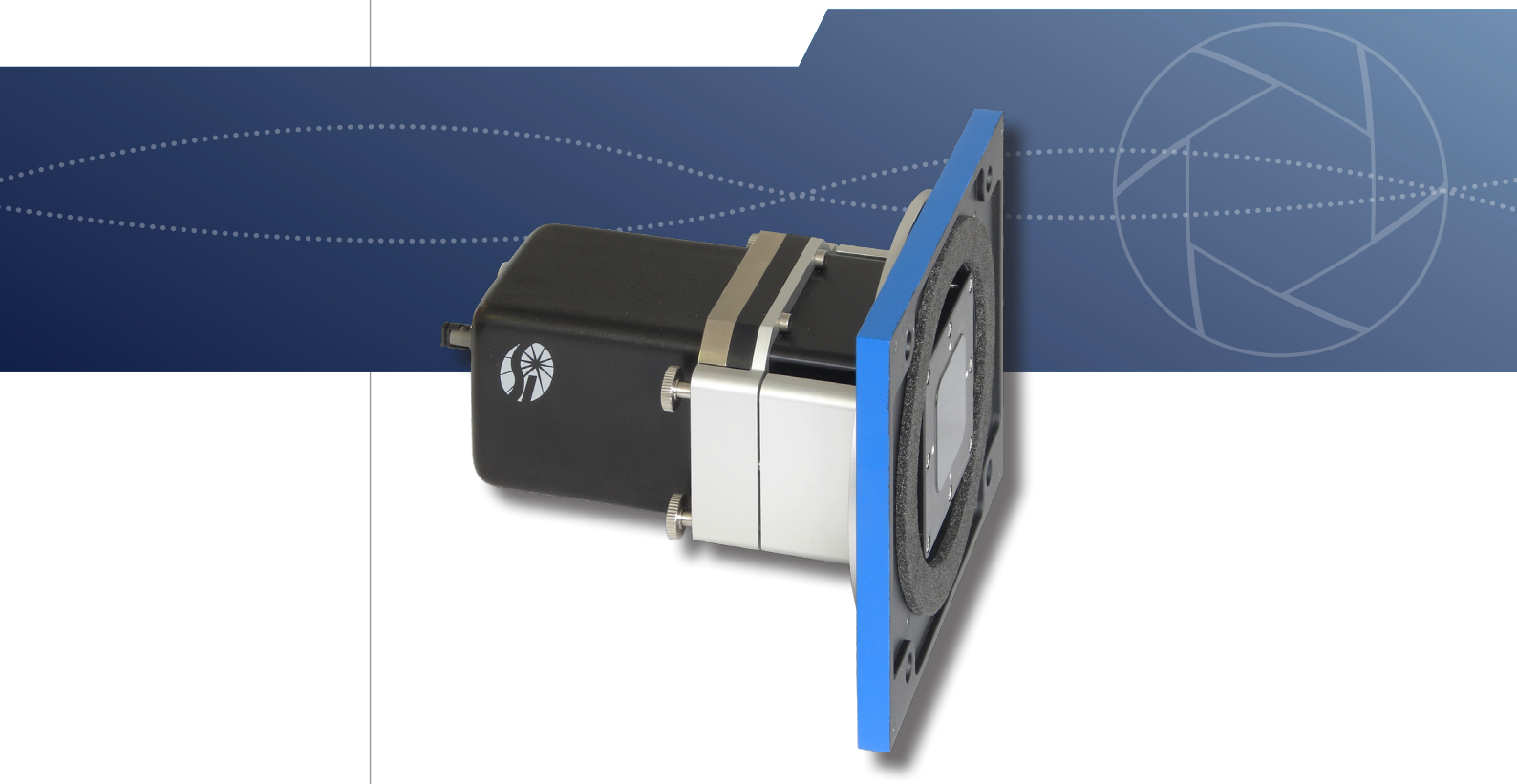
STREAK READOUT UNIT

SI1000-2k

Large Format Fiber-Optics Camera



- Resolution 2 048 x 2 048 pixel
- High efficiency fiber-optic coupling
- Cooled CCD sensor
- Designed to be used for SC-20 systems

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Streak Readout Unit SI1000-2k

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The SI1000-2k is a scientific grade high dynamic and large format CCD cameras. It is used for streak systems with large format screen like SC-20. Due to best coupling efficiency of the fiber optic faceplate, high system sensitivity is achieved even without image intensifier. Camera can be provided with optional reducing fiber optics to capture larger screen area.

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 × 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 Cooler dimensions	280 (l) × 180 (w) × 160 (h) mm³ 225 (w) × 360 (d) × 380 (h) mm³
Weight (typ.)	2.8 kg (camera) / 23 kg (cooling unit)
Delivery	PCIe interface board, supply unit, cooling unit (mini-chiller), power supply, trigger cable

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 singel-shot mode.

SI1000-2K

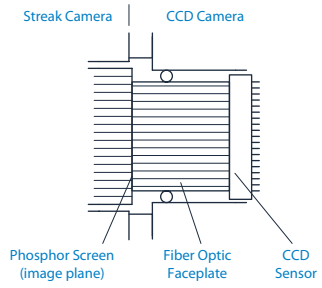
Resolution	2048 x 2048 pixel
Digitalization	16 bit
Pixel size	13.5 µm x 13.5 µm
Readout area	27.6 x 27.6 mm² (SI1000-2k) 35.9 x 35.9 mm² (SI1000-2k/1.3)
CCD	e2v 42-40 full frame, front illuminated, grade 1 others on request
Pixel readout frequency	800 kHz (readout mode dependent)
Image readout time	~6 sec (readout mode dependent)
Readout noise	9.5 e^- (typ.)
Conversion factor	2.6 e^-/DN
CCD temperature (operation)	-30°C .. +30°C

COOLING

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

COUPLING OPTICS

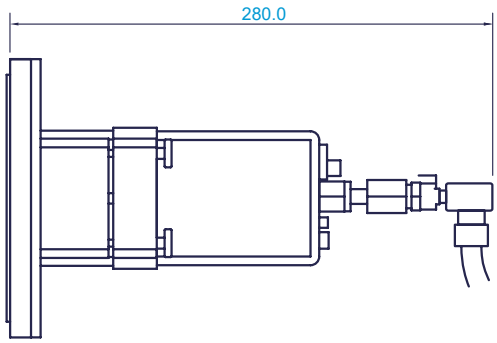
A 1:1 fibre optic faceplate is used to couple the CCD chip to the fiber optic output window of OPTOSCOPE streak cameras. The camera can also be provided with a 1.3:1 taper to readout larger screens.

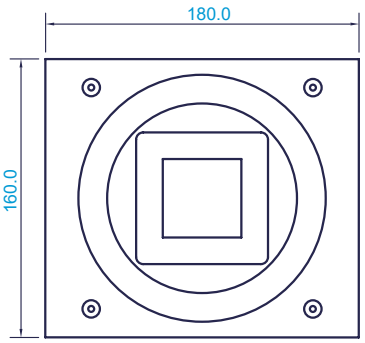


MODELS

SI1000-2k	camera with 1:1 face plate
SI1000-2k/1.3	camera with 1.3:1 taper

TECHNICAL DRAWING





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