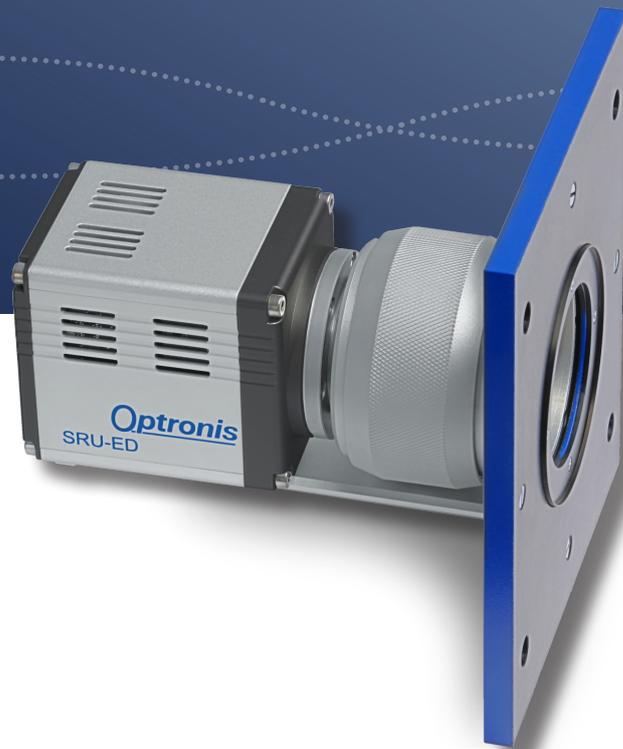


STREAK READOUT UNIT

SRU-ED

High Performance Camera



- Very low readout noise of $1.4 e^-$
- High speed 150 fps
- AD conversion 16 bit
- Resolution 1400 x 1052 pixel
- For SC-10 systems

Streak Readout Unit SRU-ED

Optronis

Make time visible

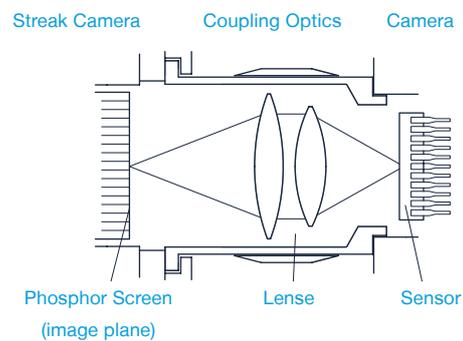
The SRU-ED is a very sensitive and fast readout unit designed to be used with the OPTOSCOPE SC-10 streak camera. A high resolution 16 bit AD conversion is combined with an efficiency coupling optics to capture even weak light emissions. Streak camera systems operating in trigger mode or synchroscan mode take advantage of this. Due to the high readout rate the camera can be used for streak applications in single-shot mode with laser pulse rates at up to 150 Hz.

ACQUISITION MODES

The SRU-ED can be used in continuous mode for easy system setup or in external trigger mode for perfect synchronisation to lasers operating at moderate pulse rates. Rolling shutter mode provides lowest readout noise whereas global shutter mode simplifies single-shot readout still with high sensitivity. The integration time of the camera can be adjusted within a large range to optimize image capture. Together with the OptoAnalyse acquisition software image accumulation extends this time to virtually infinity.

COUPLING OPTICS

The camera is coupled to the streak camera screen by using high aperture coupling lenses. This allows sensitive image capture and data acquisition in photon counting mode. A manual focal adjustment is provided.



PHOTON COUNTING

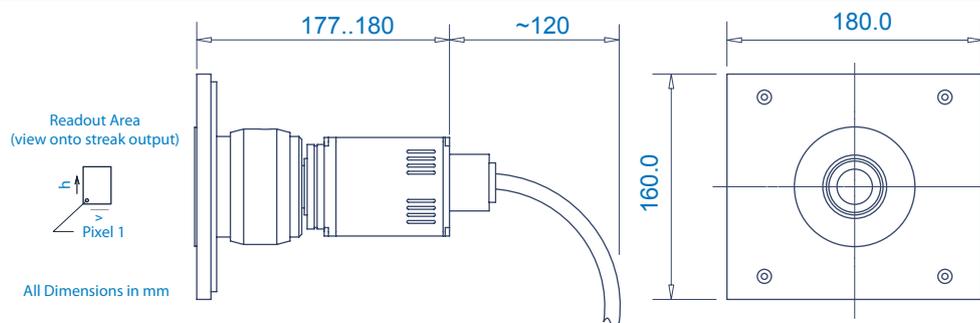
Its high sensitivity makes the camera an ideal tool for photon counting applications. Tiny scintillations related to a single photon are detected with signal intensity well above noise level. Scintillation position is defined by calculating the center of gravity. Combined with high frame rate the photon counting mode can be used even at higher intensities without limitations due to saturation effects.

This mode provides increased spatial and temporal system resolution. Additionally, the noise of the readout camera and partly the intensifier noise is removed.

SPECIFICATIONS

Resolution	1400 (h) × 1052 (v) Pixel
AD conversion	16 bit
Operation modes	Rolling Shutter / Global Shutter
Frame Rate (full resolution, PC dependent)	0.03 .. 150 fps (rolling shutter mode) 0.03 .. 75 fps (global shutter mode)
Readout noise (typ.)	1.4 e ⁻ (rolling shutter mode) 2.0 e ⁻ (global shutter mode)
Sensitivity (typ.)	1 photon/count (670 nm, coll. light)
Integration time	1 ms .. 100 ms
Trigger operation	Continuous / External Trigger
Readout area (typ.)	20.0 mm (h) × 15 mm (v)
Pixel size (typ.)	14.3 μm × 14.3 μm (ref. phosphor)
Resolution (typ.)	25 μm (ref. phosphor)
Power supply	100 V .. 240 V / 12 V by separate AC/DC converter
Temperature (operation)	0°C .. +35°C
Humidity	20% .. 80% rel. humidity, non condensing
Dimensions	180 mm × 160 mm × 180 mm
Weight (typ.)	2.0 kg
Delivery	Frame grabber PCIe x4, power supply, trigger cable, cables to PC 3 m
PC operating system requir.	Win 7 64 bit or Win 10 64 bit

TECHNICAL DRAWING



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