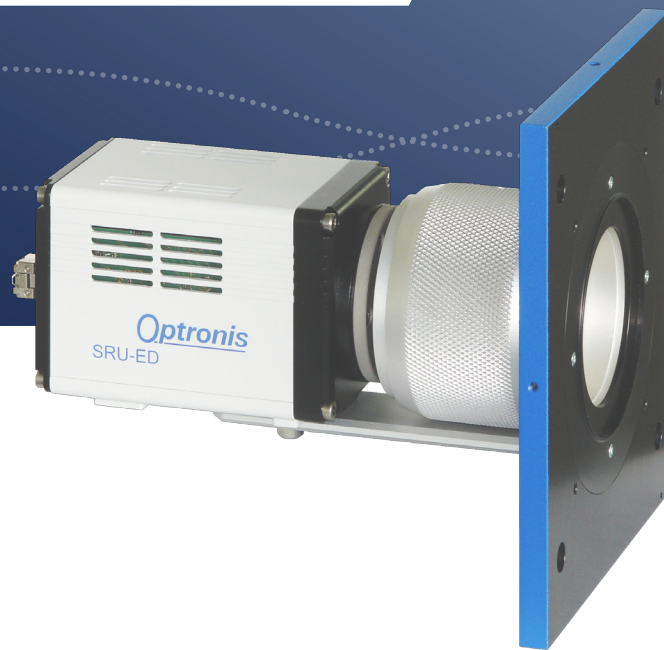


STREAK READOUT UNIT

## SRU-ED / SRU-EU

High Performance Cameras



- Very low readout noise
- High speed 150 fps
- AD conversion 16 bit
- Resolution 1400 x 1052 pixel
- For SC-10 systems
- Interface CLHS (SRU-ED) / USB 3.0 (SRU-EU)

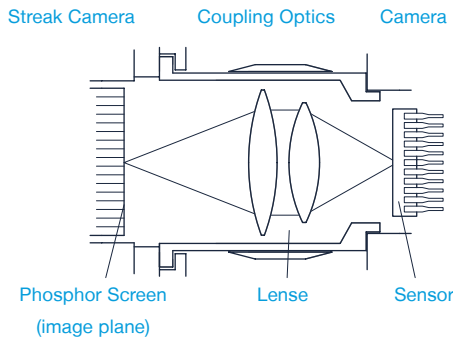
The SRU-ED and SRU-EU are very sensitive and fast readout units designed to be used with the OPTOSCOPE SC-10 streak camera. A high resolution 16 bit AD conversion is combined with an efficiency coupling optics to capture weak light emissions. Streak camera systems operating in trigger mode or synchroscan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

## ACQUISITION MODES

The cameras can be used in continuous mode or in external trigger mode for perfect synchronisation to laser pulses. Rolling shutter mode provides lowest readout noise whereas global shutter mode simplifies single-shot readout. The SRU-EU provides a global reset mode instead of the global shutter mode.

## COUPLING OPTICS

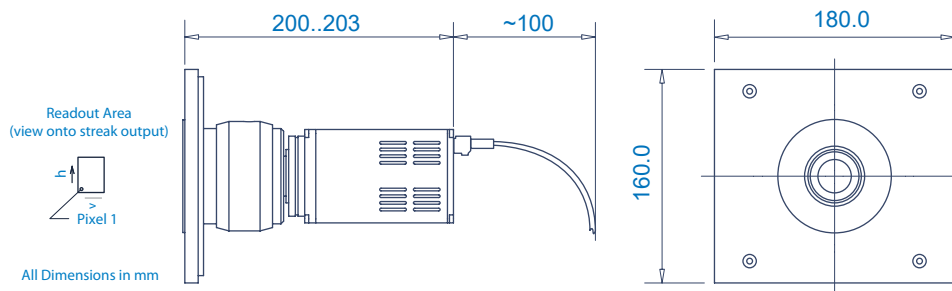
The camera is coupled to the streak camera screen by using high aperture coupling lenses. This allows sensitive image capture and data acquisition in photon counting mode. A manual focal adjustment is provided.



## PHOTON COUNTING

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. Using SRU-ED at high frame rate, photon counting mode operation extends to higher intensities without limitations due to saturation effects. This mode provides increased spatial and temporal system resolution. High sensitivity makes this camera an ideal tool for photon counting applications. Additionally, the noise of the readout camera and partly the intensifier noise is removed.

## TECHNICAL DRAWING



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The information given herein is believed to be reliable, however Optronis makes no warranties as to its accuracy or completeness. Data sheet is subject to modifications at any time. 2/2020

## SPECIFICATIONS

Resolution	1400 (h) × 1052 (v) Pixel
AD conversion	16 bit
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
Temperature (operation)	0°C .. +35°C
Humidity	20% .. 80% rel. humidity, non cond.
Dimensions	180 × 160 × 200..203 mm (SRU-ED) 180 × 160 × 177..180 mm (SRU-EU)
Weight (typ.)	2.3 kg
PC operating system requir.	Win 10 64 bit

## SRU-ED

Operation modes	Rolling Shutter / Global Shutter
Frame Rate (full resolution, PC dependent)	0.03 .. 150 fps (rolling shutter) 0.03 .. 75 fps (global shutter)
Readout noise (typ.)	1.5 <sub>med</sub> / 1.7 <sub>rms</sub> e <sup>-</sup> (rolling shutter) 2.2 <sub>med</sub> / 2.5 <sub>rms</sub> e <sup>-</sup> (global shutter)
Delivery	CLHS frame grabber to PCIe x4, power supply, trigger cable, FO cables to PC 10 m

## SRU-EU

Operation modes	Rolling Shutter / Global Reset
Frame Rate (full resolution, PC dependent)	0.03 .. 60 fps (rolling shutter) 0.03 .. 50 fps (global reset)
Readout noise (typ.)	0.8 <sub>med</sub> / 1.3 <sub>rms</sub> e <sup>-</sup>
Delivery	USB 3.0 frame grabber to PCIe x1, power supply, trigger cable, USB cable 3 m