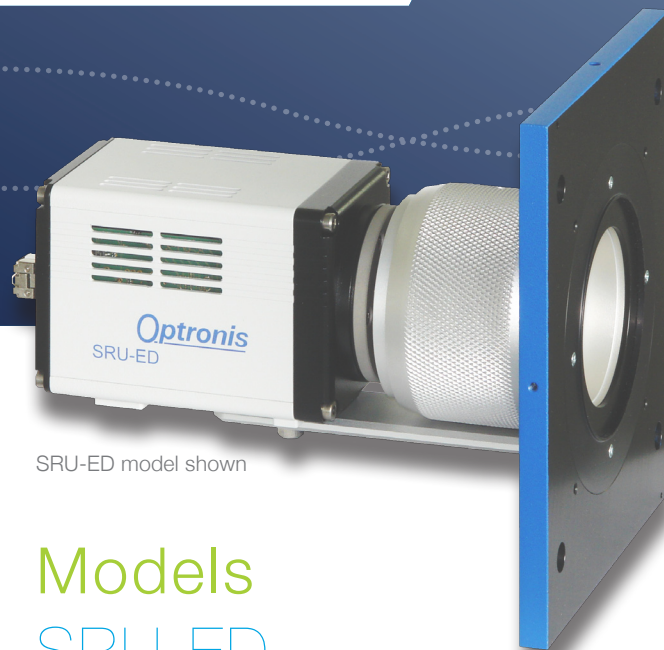


STREAK READOUT UNIT

# SRU-E\*

## High Performance sCMOS Cameras



SRU-ED model shown

## Models

SRU-ED

SRU-EG

SRU-EU

- Very low readout noise
- High speed up to 150 fps
- AD conversion 16 bit
- Resolution 1400 x 1052 pixel
- For SC-10 systems

The SRU-ED, SRU-EG 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.

## MODES

The cameras can be used in continuous or in external trigger mode for flexible operation and perfect synchronisation to laser pulses. Rolling shutter mode provides lowest readout noise whereas global shutter and global reset modes allow single-shot readout.

## 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.

## SPECIFICATIONS

Resolution	1400 (h) × 1052 (v) Pixel
AD conversion	16 bit
Sensitivity (typ.)	1 photon/count (670 nm, coll. light)
Trigger modes	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.
Weight (typ.)	2.3 kg
PC operating system requir.	Win 10 64 bit

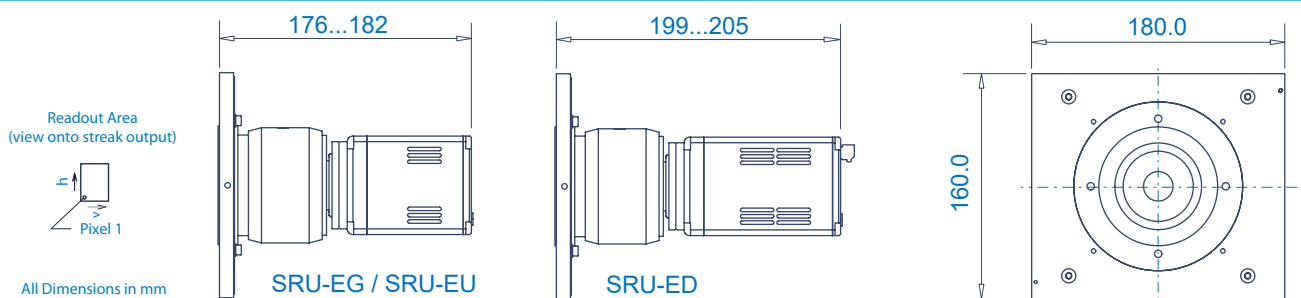
## COUPLING OPTICS

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.

## MODELS

	SRU-ED	SRU-EG	SRU-EU
Operation modes	Rolling Shutter / Global Shutter	Rolling Shutter / Global Shutter	Rolling Shutter / Global Reset
Exposure Time	1 ms .. 2 s (rolling shutter) 1 ms .. 100 ms (global shutter)	1 ms .. 2 s (rolling shutter) 1 ms .. 100 ms (global shutter)	1 ms .. 2 s
Frame Rate (full resolution, PC dependent)	0.03 .. 150 fps (rolling shutter) 0.03 .. 75 fps (global shutter)	0.03 .. 50 fps (rolling shutter) 0.03 .. 50 fps (global shutter)	0.03 .. 60 fps (rolling shutter) 0.03 .. 50 fps (global reset)
Readout noise (typ.)	1.1 <sub>med</sub> / 1.5 <sub>rms</sub> e <sup>-</sup> (rolling shutter) 2.2 <sub>med</sub> / 2.5 <sub>rms</sub> e <sup>-</sup> (global shutter)	1.0 <sub>med</sub> / 1.4 <sub>rms</sub> e <sup>-</sup> (rolling shutter) 3.1 <sub>med</sub> / 3.2 <sub>rms</sub> e <sup>-</sup> (global shutter)	0.8 <sub>med</sub> / 1.3 <sub>rms</sub> e <sup>-</sup>
Interface	Camera Link HS (CLHS)	USB 3.0	USB 3.0
Dimensions	180 × 160 × 199..205 mm	180 × 160 × 176..182 mm	180 × 160 × 176..182 mm
Delivery	Camera, CLHS frame grabber to PCIe x4, power supply, trigger cable 5 m, FO cable to PC 10 m	Camera, USB 3.0 frame grabber to PCIe x1, power supply, trigger cable 5 m, USB cable 3 m	Camera, USB 3.0 frame grabber to PCIe x1, power supply, trigger cable 5 m, USB cable 3 m

## TECHNICAL DRAWING



## CONTACT INFORMATION

Optronis GmbH  
Ludwigstraße 2  
77694 Kehl  
Germany

Phone: +49 7851 91 26 - 0  
Fax: +49 7851 91 26 - 10  
info@optronis.com  
www.optronis.com