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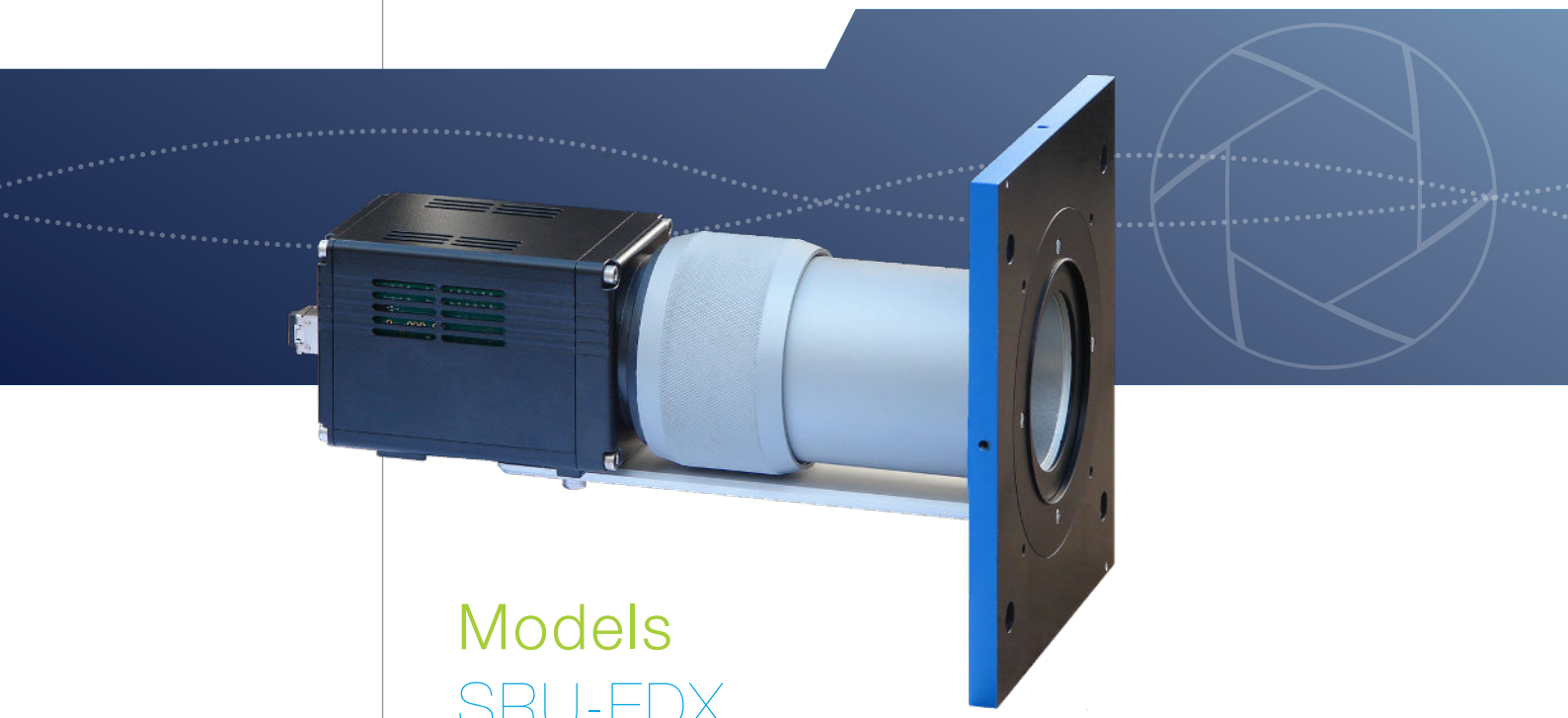
STREAK READOUT UNIT

SRU-E*X

High Performance sCMOS Cameras



Models

SRU-EDX

SRU-EGX

SRU-EUX

- For SC-20 systems
- Resolution 2192 x 1752 pixel
- Very low readout noise
- AD conversion 16 bit

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SRU-E*X High Performance sCMOS Cameras

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The SRU-EDX, SRU-EGX and SRU-EUX are desigend to capture the large phosphor screen of SC-20 streak cameras. These readout units integrate very sensitive and air cooled sCMOS cameas with fast readout and high resolution 16 bit AD conversion. In combination with an efficient coupling optics they allow to capture weak light emissions. All models can be used in continuous or in external trigger mode for flexible operation and perfect synchronisation to laser pulses.

MODES

The models are mainly different due to their different interfaces. Global shutter and global reset modes allow single-shot readout whereas rolling shutter mode provides lowest readout noise.

SPECIFICATIONS

AD conversion	16 bit
Sensitivity (typ.)	1 photon/count (670 nm, coll. light)
Trigger modes	Continuous / External Trigger
Pixel size (typ.)	13.7 µm × 13.7 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.)	~3 kg
PC operating system requir.	Win 10/11 64 bit

PHOTON COUNTING

Single photons convertet to photo-electrons generate a tiny scintillation on the streak camera output. This scintillation can be detected with significant high signal to noise ratio. Subsequent image processing calculates center of position of each scintillation and increments to signal on the corresponding pixel position.

COUPLING OPTICS

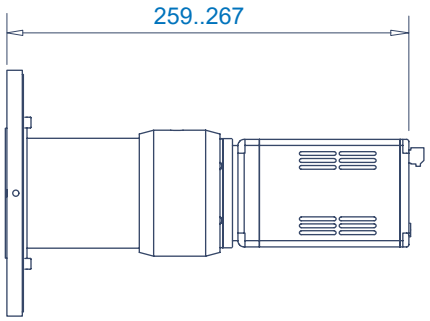
The camera is coupled to the streak camera screen by using high aperture coupling lenses. This allows sensitive image capture. A manual focal adjustment is provided.

MODELS

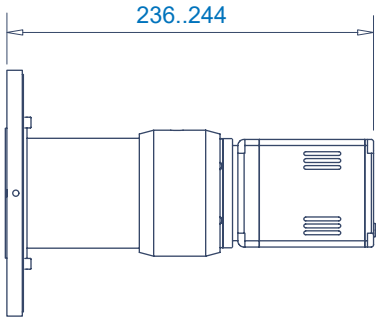
	SRU-EDX	SRU-EGX	SRU-EUX
Interface	Camera Link HS (CLHS)	USB 3.0	USB 3.0
Operation modes	Rolling Shutter / Global Shutter	Rolling Shutter / Global Shutter	Rolling Shutter / Global Reset
Resolution	2192 (h) × 1752 (v) Pixel	2192 (h) × 1752 (v) Pixel	2048 (h) × 1752 (v) Pixel
Readout area (typ.)	30.0 mm (h) × 24.0 mm (v)	30.0 mm (h) × 24.0 mm (v)	28.0 mm (h) × 24.0 mm (v)
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 .. 100 fps (rolling shutter) 0.03 .. 50 fps (global shutter)	0.03 .. 30 fps (rolling shutter) 0.03 .. 28 fps (global shutter)	0.03 .. 60 fps (rolling shutter) 0.03 .. 50 fps (global reset)
Readout noise (typ.)	1.1_{med} / 1.5_{rms} e^- (rolling shutter) 2.2_{med} / 2.5_{rms} e^- (global shutter)	1.0_{med} / 1.4_{rms} e^- (rolling shutter) 3.1_{med} / 3.2_{rms} e^- (global shuter)	0.8_{med} / 1.3_{rms} e^-
Dimensions	180 × 160 × 263 mm	180 × 160 × 240 mm	180 × 160 × 240 mm

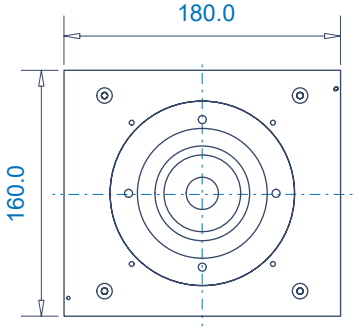
TECHNICAL DRAWING

SRU-EDX



SRU-EGX, SRU-EUX





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