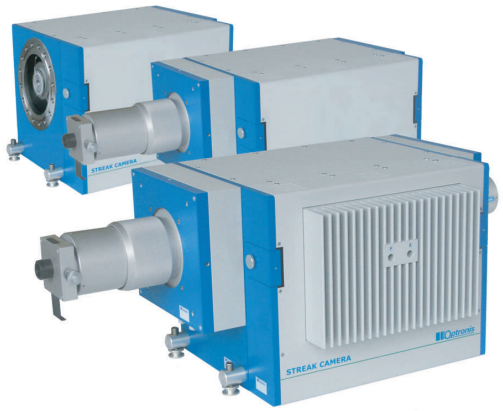
Optronis

STREAK CAMERA FAMILY

Optoscope-SC



Streak Cameras with modular design for analysis of ultrafast optical phenomena

- Photocathode 8 to 35 mm
- Down to 2 ps resolution
- Trigger sweep up to 4 MHz
- Synchroscan up to 250 MHz
- Wide spectral range
- X-Ray version available
- Ethernet interface
- Complete software control

Optoscope-SC

System

The Optoscope-SC streak camera family is designed to provide maximum flexibility for a broad range of applications. Identical control structures and similar mechanical interfaces are used in all units. This concept allows to integrate different application optimised streak tubes. Various sweep units for trigger mode and synchroscan deflection are available. The modular design allows to adapt the system easily. An Ethernet (TCP/IP) interface is integrated to control the system.

Each Optoscope-SC streak camera system consist of a main unit (SC-nn) completed with one or more sweep units, input optics and readout camera with control software. An image intensifier can be added for highest sensitivity. For simple system control a control pad as well as the OptoControl software is provided. Trigger signal converters and trigger signal conditioning units are available with other accessories to adapt the system to particular requirements.

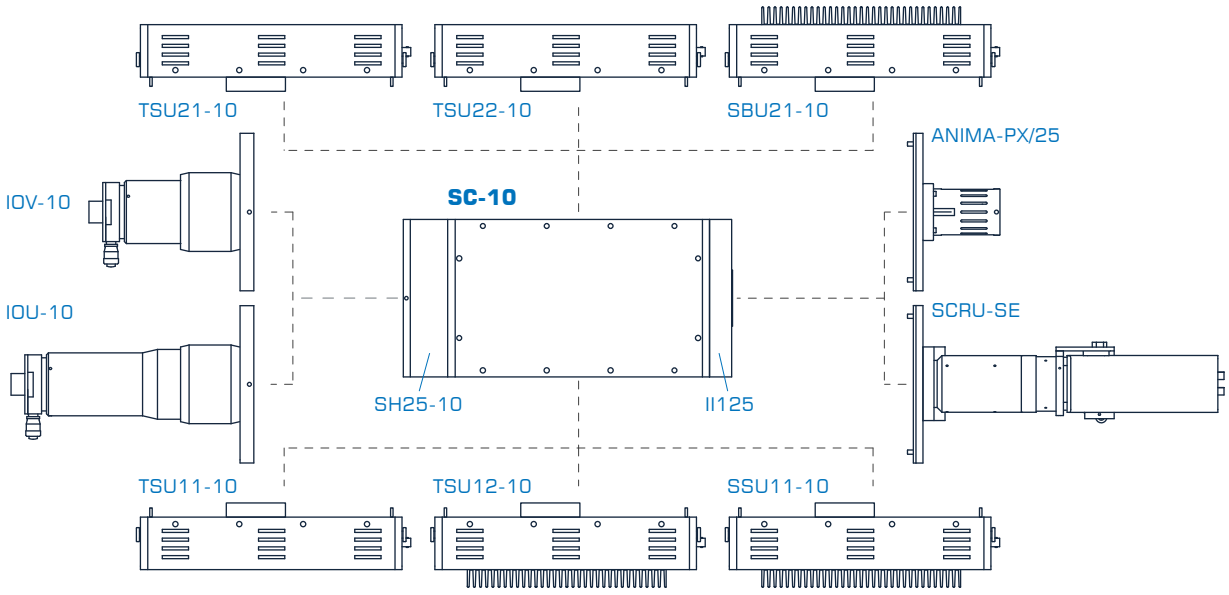
Features

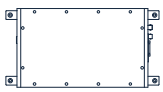
- Modular design
- Exchangeable sweep units
- Local control via control pad
- Easy to use software package
- 100 MHz Ethernet interface
- TCP/IP protocol

SC-10

- Broad range of scientific applications
- Temporal resolution down to 2 ps
- Synchroscan up to 250 MHz
- Dual sweep possible
- High dynamics

The SC-10 is designed for most flexibility and highest temporal resolution. It allows to use input optics for visible light and UV light down to 200 nm. Sweep units for trigger mode or synchroscan mode operation are available. Either a fiber optically coupled CCD camera (ANIMA-PX/25) or a cooled CCD camera (SCRU-SE) can be used.





Main unit

Photocathodes types	S20, S20LN, Bialkali, S1
Photocathode area	8 mm × 2 mm
Temporal resolution	2 ps (at < 15 ps/mm)
Magnification	typ. 2.0

Sweep modes

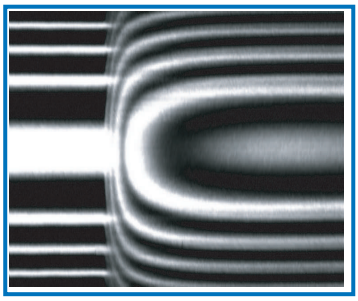
Trigger mode	200 ps - 100 ms
Synchroscan mode	300 ps - 4 ns
Synchroscan freq.	40 MHz - 250 MHz
Dual sweep mode	available

Optoscope-SC

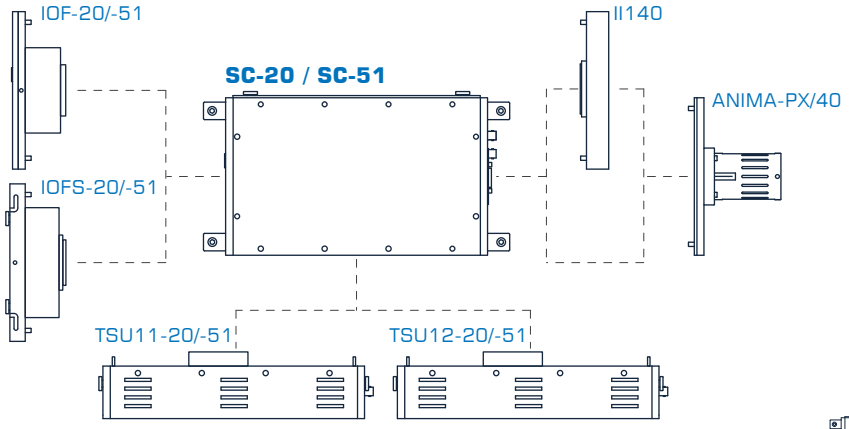
SC-20 / SC-51

- Photocathode length 35 mm
- UV-sensitive version down to 300 nm (SC-20)
- Laser Doppler Interferometry
- Detonics

The SC-20 and SC-51 are large format photocathode streak cameras for detonics and laser Doppler interferometry. The fiber optic input allows direct coupling with fixed slits.

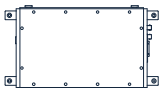


Typical measurement in a laser Doppler interferometry setup



Main Unit SC-20

Photocathodes Types	S20, S25, Bialkali, S20UV
Photocathode Area	35 mm × 4 mm
Temporal Resolution	typ. 200 ps (streak tube)
Magnification	typ. 0.8



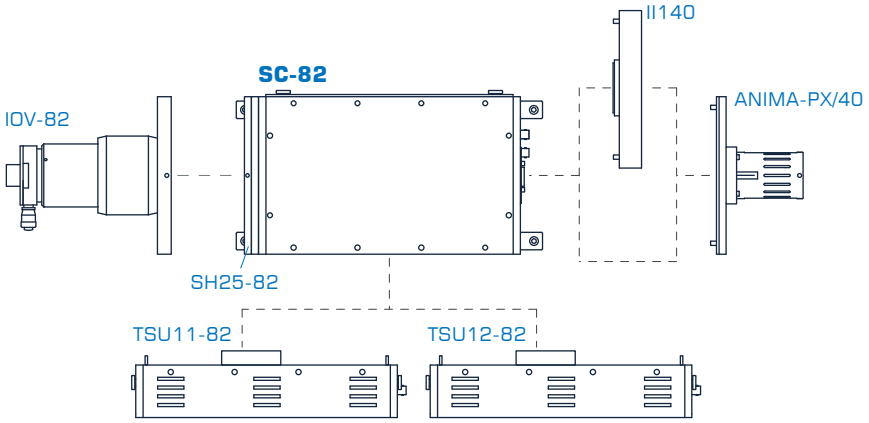
Main Unit SC-51

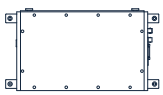
Photocathodes Types	S20, S25
Photocathode Area	35 mm × 4 mm
Temporal Resolution	typ. 150 ps (streak tube)
Magnification	typ. 0.75

SC-82

- High dynamics
- High temporal resolution
- Bilamelar streak tube design
- UV-sensitive version down to 200 nm available

A Bilamenary streak tube is integrated to provide high dynamic range performance and picosecond temporal resolution. The SC-82 can be used for high power laser diagnostics.





Main Unit

Photocathodes types	S20, S25, S1
Temporal resolution	1 ps (typ. streak tube)
Photocathode area	15 mm × 1 mm
Screen area	23 mm × 30 mm

Sweep Modes

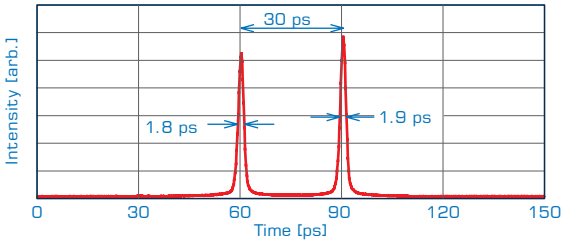
Trigger mode	1.2 ns - 150 µs
Trigger frequency	0 - 20 Hz
Sweep units	Slow and fast types
Dual sweep mode	-

Optoscope-SC

STREAK CAMERA FAMILY

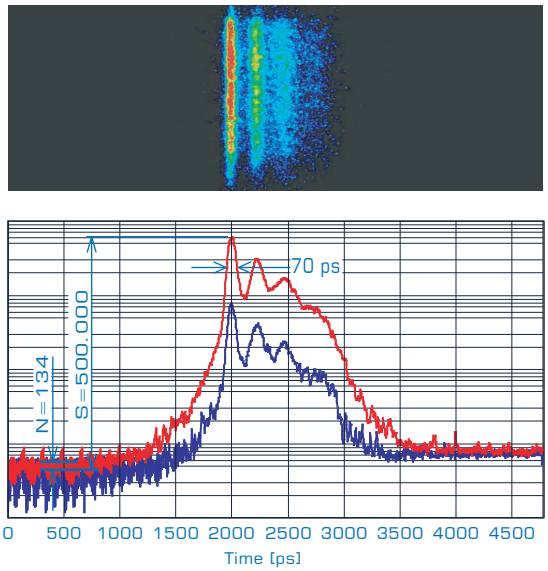
Temporal Resolution

The example below shows a partial trace recorded with SC-10 in synchroscan mode at 15 ps/mm sweep speed.



Dynamic

The dynamic is defined as ratio between the peak intensity and the rms noise level. The single-shot trace of a pulsed laser diode shows a dynamic range of S/N=3700.

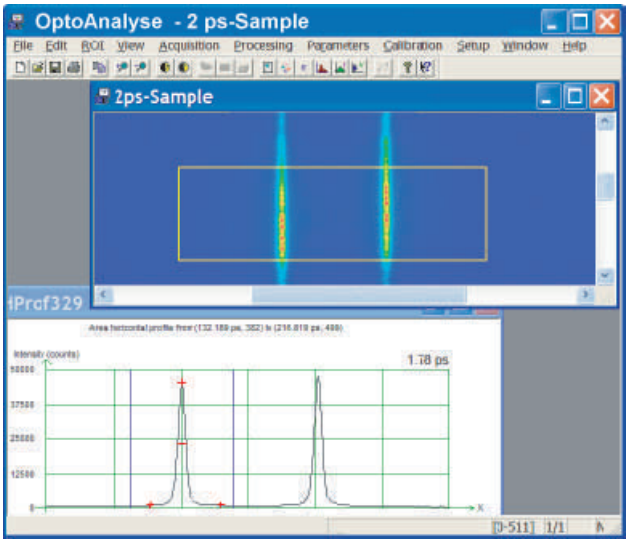


X-Ray Versions

Most main units are available with X-ray photocathodes. Please consult Optronis for details.

OptoControl / OptoAnalyse Software

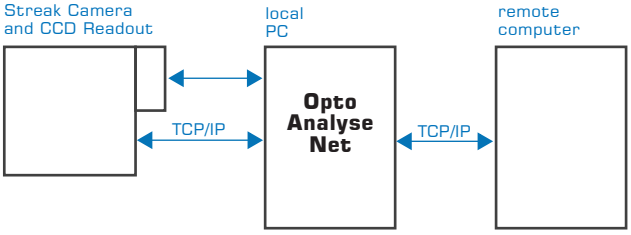
The OptoControl software allows to access all streak camera parameters and to control the camera operation. For additional image analysis the OptoAnalyse software is available. This program allows to use sophisticated image acquisition algorithms. It provides various tools for temporal or spatial analysis. With the photon counting feature combined with drift and jitter correction, long term measurements with high sensitivity and high temporal resolution are possible.



- Convenient real-time display and capture
- Single-shot and continuous acquisition modes
- Profile processing for temporal and spatial analysis
- Real-time photon counting
- Drift and jitter correction

OptoAnalyseNet Software

The OptoAnalyseNet program is an extended version of the OptoAnalyse software. The extension allows to remotely access to all high level software functions. This simplifies the integration of the streak camera system into a control system environment.



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