

Project Description

Project Details

AXIS-QV: High-Performance Compact Visible-IR Streak Camera

Categories:
Optical Streak Cameras

AXIS-QV is a high-performance entry-level streak camera that can sweep **150 points** (8 mm slit) with a time resolution of **5 ps** (FWHM).

It is a portable instrument that features a new PHOTONIS intensified streak tube.



Portable system with:

- ✓ New PHOTONIS intensified streak tube
- ✓ Available with S20, S25 and S1 photocathode
- ✓ 12-bit CCD coupled by fiber optics
- ✓ EMI-rugged electronics
- ✓ Full calibration on a femtosecond laser

Applications:

- ✓ Physical chemistry
- ✓ Transient Absorption Spectroscopy
- ✓ Photoluminescence Studies
- ✓ Material Science
- ✓ Raman spectroscopy
- ✓ Plasma diagnostics
- ✓ Laser Metrology

AXIS-QV SPECIFICATIONS

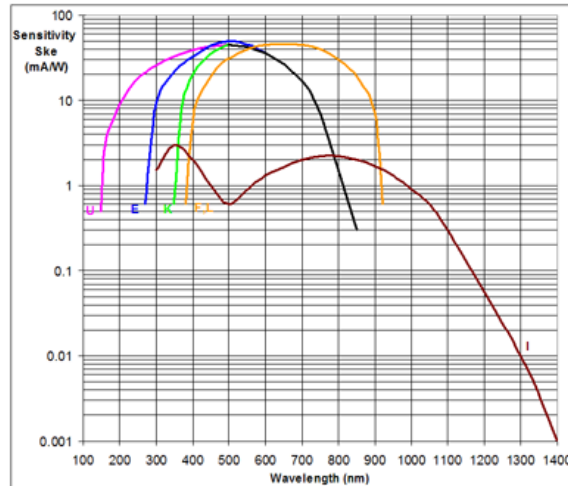
STREAK TUBE

This streak camera uses a new generation of streak tubes based on the 75-year night vision heritage of PHOTONIS.

The tube is built according to high quality standards and features:

- Picosecond time resolution
- High spatial resolution
- Integrated input slit (no need for a mechanical slit)
- High-gain internal microchannel intensifier
- Ruggedized for harsh environment

It can be built with different cathodes and matched with a spectrometer grating for optimal throughput:



SPATIAL

Photocathode length (X): 8 mm

RESOLUTION

Spatial Resolution (dx): 50µm with 50% contrast at the center of the screen

Number of spatial resolution units in screen (X/dx):

150 points

TIME

Available Ranges (ΔT): 1 ns to 1 ms

RESOLUTION

Number of time-resolution units in screen (Nt): 275

Single-shot time resolution (δt): $\delta t = \Delta T / N_t$ * Limited to 5 ps

TRIGGER

Trigger pulse

Requirements

Maximum repetition rate

Jitter

Standard Sweep Unit

Electrical

5-10 V in 50Ω

< 100 Hz

< 15 ps RMS

MHz Sweep Unit

Electrical

5-10 V in 50Ω

2 MHz

< 15 ps RMS

READOUT

Readout type: CCD Digital camera

CCD chip size: 1024×1392 pixels; 7 mm x 9 mm

Digitizer: 12 bit

Coupling to streak tube: 1.8:1 Fiber optic taper

OPERATION MODES



Normal sweep

The sweep crosses the whole screen and ends outside.



Timing mode

The sweep always remains in the screen. It is used to synchronize the streak camera to the experiment.



Focus mode

The slit image is positioned at the center of the screen.

The sweep trigger is disabled. This mode is used to align the experimental setup and to adjust the incident light level.

SOFTWARE

AXIS-QV is operated from a USB link to a PC running Windows .

The instrument comes with a CD containing all required software to:

- Control whole system and acquire images
- Control the laser system (optional)
- Plot lineouts along time axis or space axis
- save image in different formats

GENERAL

Electrical input: Universal AC, 110-240V, 50-60 Hz

Certification: CE

Tests and Calibration: Before shipping, each system is tested on a femtosecond laser at the Advanced Laser Light Source.

Installation and Training: A qualified engineer is sent to your laboratory to install the system and train users.

OPTIONS

Photocathode

S20, S25, and S1 cathodes are available

Blanking circuits

With the blanking option, streak tube is blocked during the time

the signals sweeps back to its start position. This feature is required when the optical signal lasts longer than the sweep range.

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