

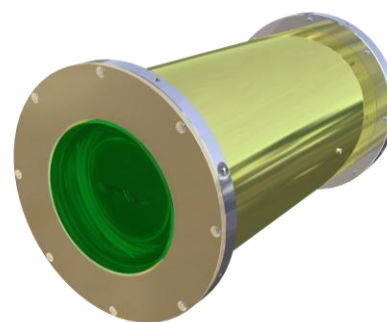
Streak Tubes

Features

- Timing resolution to 400 fs
- 8 mm, 20 mm & 35 mm photocathode size available
- Synchroscan and framing options available
- UV, Solar Blind, Visible and NIR responses
- Can be supplied with a mu-metal shield for high magnetic field environments

Applications

- Streak cameras
- Framing cameras
- LIDAR
- FLIM
- Fusion research
- Optical oscilloscope



General Description

Streak tubes are used for the study of ultra fast optical phenomena and specifically measure the variation in light intensity as a function of time. Installed in some of the world's best streak cameras the Photek streak tubes are proven in performance and reliability. Photek offers four streak tubes for different applications; Photochron 2, Photochron 5, ST-X and ST-Y. With a range of cathode options for use in the UV, visible and NIR spectrums the Photek streak tubes are ideal for streak and high repetition rate framing cameras.

Product Overview

| Product | Photochron 2 | Photochron 5 | ST-X | ST-Y |
|------------------------------|-----------------------------------|-----------------------|------------------|-------------------------------|
| Equivalent | EEV P8307 EEV P855 Ultranac | | Photonis P930 | Photonis P510 ITT F4157 |
| Cathode Size (mm) | 8 x 9 maximum | 8 mm slit | 20 x 3 | 35 x 5 |
| Synchroscan | 88 MHz | > 200 MHz | - | - |
| Time Resolution (typical) | ~ 3 ps | 2 ps | 36 ps | 50 ps |
| Time Resolution (maximum) | - | 400 fs (1) | 2 ps (1) | 2 ps (1) |
| Spatial Resolution (typical) | 30 lp/mm | 50 lp/mm | 40 lp/mm | 50 lp/mm |
| Magnification | ~ 2 | 2 - 3 | 0.7 - 1.5 | 0.7 - 1.5 |
| Framing Option | Double mesh gating | Double mesh gating | - | - |

(1) - Time resolution stated is applicable when using the streak tube with increased operating voltages. Under this mode spatial resolution will decrease.

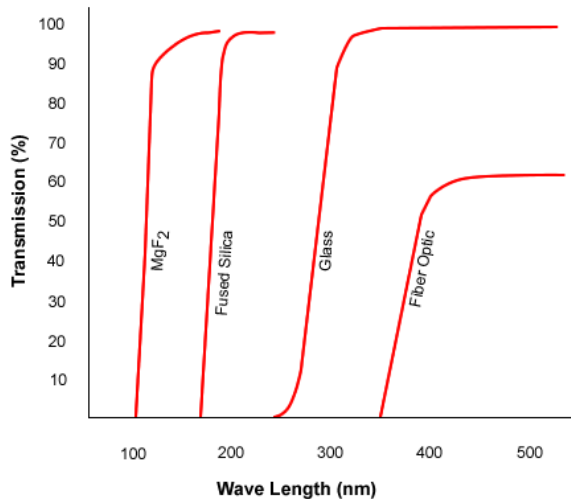
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| Issue | DR |
| Date | 12 September 2011 |

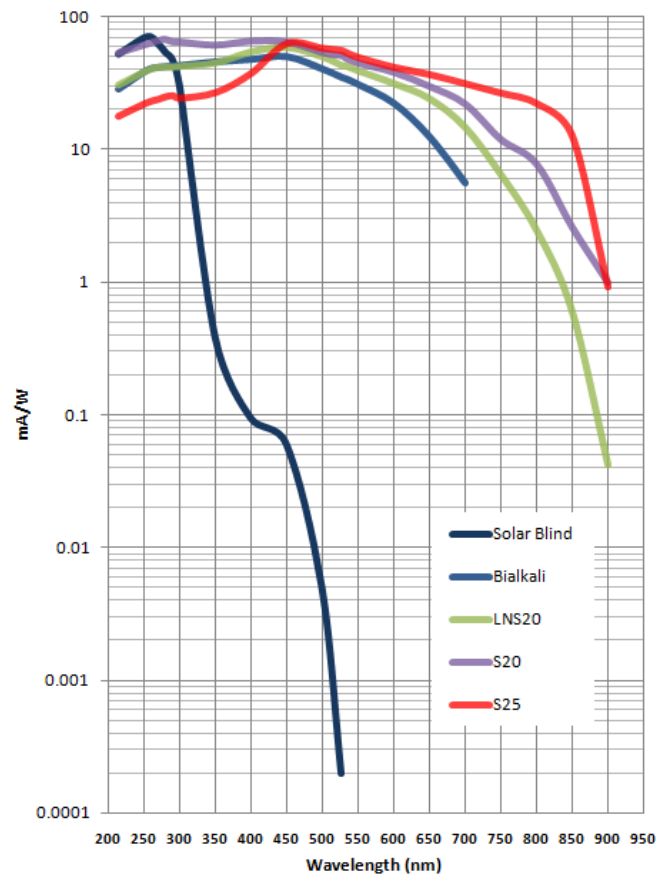
Input Window

Photek streak tubes are available with a choice of input window materials. These include MgF_2 , fused silica and fibre optic



Spectral Response

Photek offer a full range of Gen II photocathodes, these include CsI, Solar Blind, Bialkali, Low Noise S20, S20 and S25.



The above curves represent the broad spectral response that you would expect to achieve with Photek's range of Gen II photocathodes. Please note that input window material and will affect overall sensitivity.

Phosphor Screen

Photek can offer two types of phosphor screen substrates; glass or fibre optic. Our standard phosphors include P20, P43, P46, P47 & FS depending on the brightness and decay time required. Other phosphors are available on request.

| Type (wavelength nm) | Anode efficiency % (Optical Watts / Electrical Watt) | Photons / Electron @ 5 kV | Decay Characteristic |
|----------------------------|---|---------------------------------|-------------------------|
| | | | |

| | | | |
|-----------------------|-----|-----|---|
| P20 (540) | 12 | 320 | Fast initial decay with long decay at low level. 1 ms to 1% |
| P43 (548) | 8.7 | 240 | 1.2 ms/decade, true exponential |
| P46 (530) | 1.8 | 55 | 300 ns |
| P47 (410) | 3 | 64 | 80 ns |
| FS (513, 668, 768) | 4.2 | 96 | 12 μ s to 10 % |

Deflection Sensitivity

The deflection sensitivity is dependent on streak tube type and operational voltages. Please contact Photek for further information.

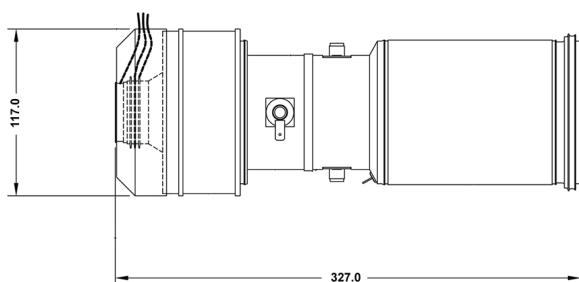
Environmental

Operational Limits: -40 °C to +45 °C

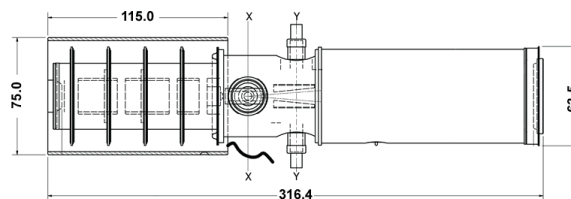
Storage: -40 °C to +60 °C

Mechanical

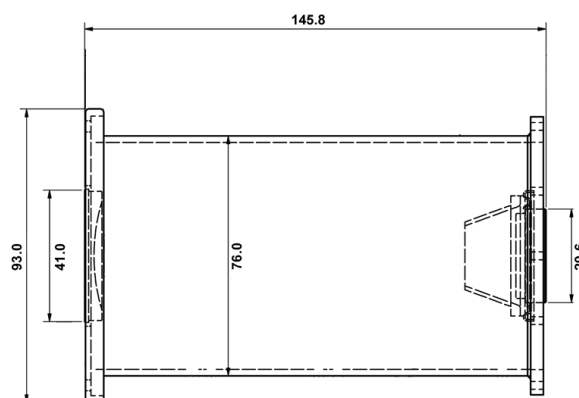
Photochron 2



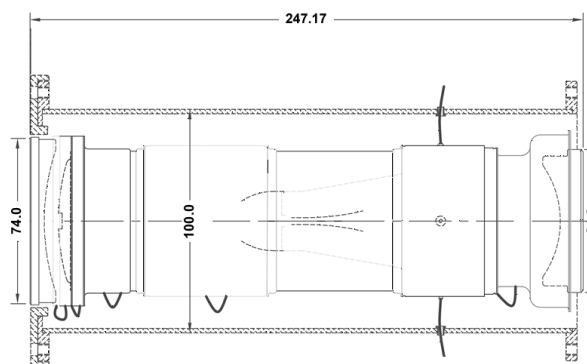
Photochron 5



ST-X



ST-Y



Dimensions are indicative and may vary depending on the optics and housing required.

Photek Ltd reserves the right to update and improve this specification without prior notice

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