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contact u

News

About the company

Staff

Contacts

Overseas Representitives

New Products

Pictures

Products

Tutorials

Interesting Ideas

FLIM

Publications

Documents

Glossary

Mission Statement

Terms & condition

Links
Staff Vacancies

Finding Us

Webmaster

Conventional X-ray Streak cameras

XRSC ‡

- The Kentech Re-entrant X-Ray Streak Camera has been designed for versatile and reliable use in the research environment. The innovative aspects of the camera are the remote sweep electronics and the robust mechanical design. The main camera body is housed in a re-entrant vessel which is only 145mm (approximately 5.8 inches) in diameter and which protrudes approximately 250mm into the vacuum chamber. The cathode is easily changed by withdrawing the camera from the re-entrant housing. This may be done without disturbing any critical diagnostic alignment.
- There are three versions of the camera, a high (2.0) magnification, a low (1.2) magnification version and a high time resolution version. The cameras use different electrostatic lenses and have different cathode sizes but are completely interchangeable mechanically. The sweep electronics of the two slower cameras is the same. Also the faster camera is based upon the Low magnification camera but has the deflection plate assembly modified and has a much faster ramp generator. The sweep electronics are remote from the camera body and are connected to the streak tube by 50Ω cables. This has allowed the mechanics to be made very compact. The circuitry is completely solid state. An alternative sweep circuit with much slower rates is also available for the two slower cameras.
- The high voltage focusing supply has three connectors and has an overload detector which detects a breakdown condition in the electron-optics. The camera is designed to be user adaptable and the mechanics are easily demounted. No glass is used in the camera body, with the exception of the fibre optic window.
- The camera would normally be used with an image intensifier. Kentech can supply an intensifier based on a 40mm wafer tube.
- Several variations are available on the two slower basic cameras. One version of the camera offers extremely short trigger delay which would be used for the recording of events from which an early trigger signal is not available. We can also make versions which use microchannel plates as cathodes for increased sensitivity at the cost of temporal response. Cameras with reflection cathodes can be made. CCD readout systems are available to fit these cameras. Please ask for further details if any of these are of interest. We are happy to consider other special requirements.
- We can also supply streak cameras with full remote control via a serial link to a computer. Such systems are ideal for use on large facilities such as accelerators.



Low Mag. x-ray Streak camera with intensifier and video readout system