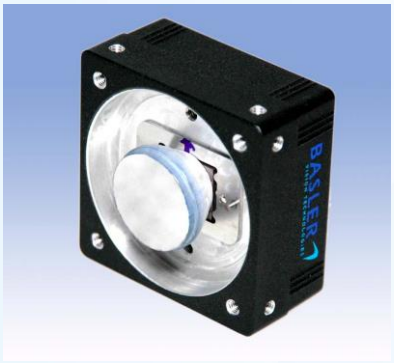
INNOVATION IN
OPTOELECTRONICS

X-RAY and UV Imaging Detectors

Possible configurations:



Phosphor screen on a fibre optic taper coupled camera

Phosphor coated taper on CCD

Fibre optic vacuum window vacuum side of vacuum camera

Phosphor Coated Fibre Optic Imaging Systems

APPLICATIONS

- Detection of electrons, UV, x-rays, particles
- Detection in vacuum or ambient conditions
- Imaging
- Time and laterally resolved intensity measurements
- Beam adjustments
- Beam profile analysis

FEATURES

- Setup due to customer requirements
- Many camera and sensor types (large range of pixel and sensor sizes, resolutions, framerates)
- Coupling with fibre optical plates (1:1) or adaption of field of view by taper coupling
- Coupling efficiency up to 70% (1:1)
- P43, P46, P47, P11 and other scintillators

For more information visit

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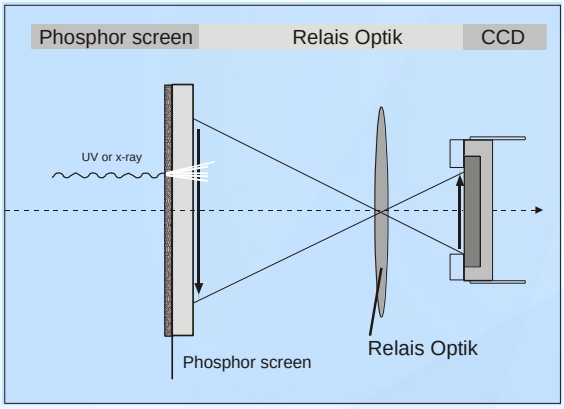
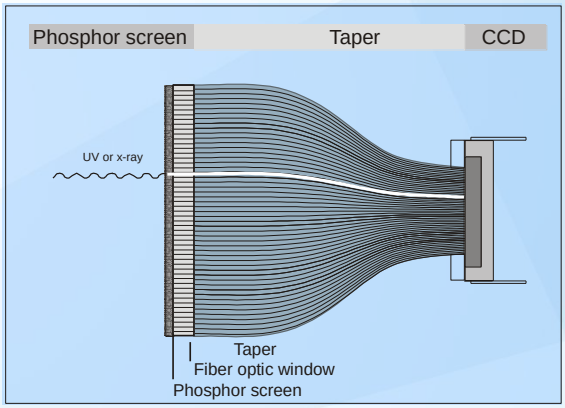
A principle to detect high-energetic electromagnetic radiation (UV, x-rays) and particle radiation is the conversion to visible light in phosphor screens of different type and thickness. The emitted light is transmitted to the sensor of a camera. The use of fibre optical plates and tapers allows for high transmission efficiency and adaption of the field of view to the sensor size. As a manufacturer of image intensifiers and low-light CCD cameras, ProxiVision has a profound experience in coupling fibre optics to CCD/CMOS sensors and also in phosphor coating. ProxiVision delivers the complete imaging detector, consisting of phosphor coating, fibre coupling, camera, housing due to the customer requests. The imaging detectors are based on large variety of commercially available cameras and are upgraded by ProxiVision's know-how of coating, fibre coupling and cameras. ProxiVision also offers services in the field of coating and coupling due to customer's requirements.

A further option for very weak signals is to use an image intensifier between the phosphor screen and the camera. In this manner even laterally-resolved photon counting can be realised. Please contact ProxiVision and give us your requirements.

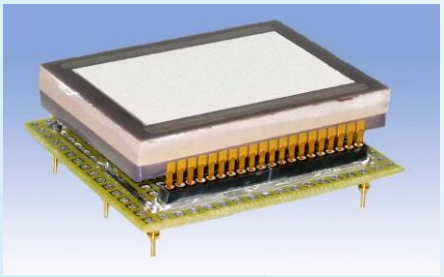




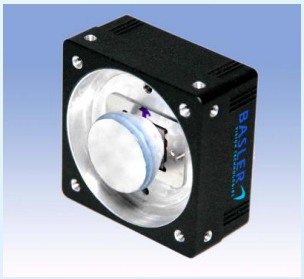
Transmission of the screen-picture to the imaging CCD (CMOS) sensor via a relais optic or via fibre optic taper coupling

Luminescent screens give off light distributed over an angle of 180° (halfspace, Lambert distribution). A relay optic transmits only a relatively small fraction of the complete emitted light. This means that for example a size 1:1 optic of the relative aperture 1:1.0 has a transmission of about 5%. For comparison, a high quality 1:1 fibre optic has a transmission of up to 70%.

Possible configurations



1:1 Fibre optic on large format Imaging Sensor



Fibre optic Taper mounted on a CCD Sensor

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