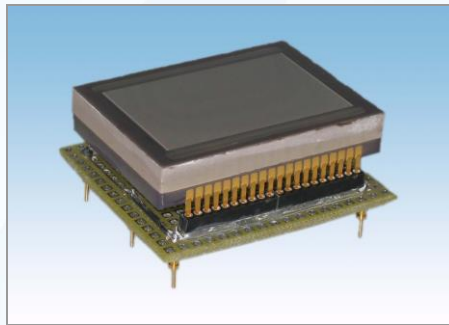


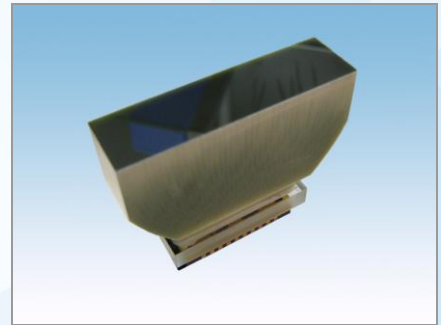
# *Fiber Optical Couplings*



Taper couplings



Fiber plate on megapixel sensor



Coupling on line sensor

## *Fiber Optical Couplings for Customised Imaging Systems*

### APPLICATIONS

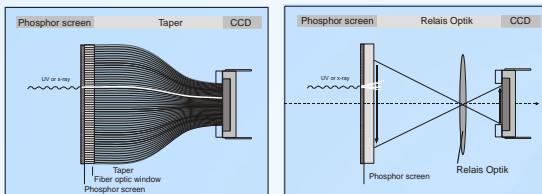
- Electron microscopy cameras
- Low-light cameras
- High speed cameras
- UV cameras
- X-Ray cameras
- Night vision cameras
- MCP detector cameras
- Special-purpose detectors

### FEATURES

- ❖ High efficiency up to 70% (1:1)
- ❖ Fiberoptical plates or tapers
- ❖ Coupling on CMOS or CCD sensors
- ❖ Coupling on area sensors
- ❖ Coupling on line sensors
- ❖ Phosphor coatings available

## Why to Use a Fiber Optic Coupling ?

As a manufacturer of image intensifiers and low-light CCD cameras, ProxiVision has a profound experience in coupling fiber optics to image sensors. Fiber coupling allows upgrading a CCD or CMOS sensor with an image intensifier to increase its sensitivity or enables ultra-short gating or extends its spectral range into the UV range. Fiber optical coupling is a powerful alternative to lens coupling due to its efficient light propagation together with very compact size of the setup.



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

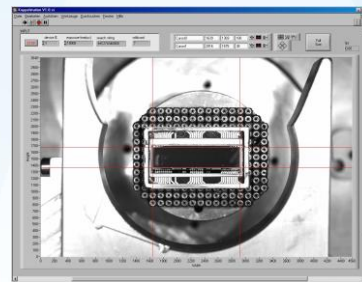
As luminescent screens give off light distributed over an angle of 180° (halfspace, Lambert distribution) a relay optic transmits only a relatively small fraction of the complete emitted light. This means that for example a size 1:1 lens optics with relative aperture 1:1.0 has a transmission of about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

## Customers

Fiber optical couplings are used by customers in different fields of applications who want to set up their own peculiar product or detector, e.g. for a setup of an extra-ordinary detector system for synchrotron radiation or for integration in inspection and tomography machines.

## ProxiVision's Services for Fiber Optical Couplings

- Provision of fiber optics or fiber taper (optionally)
- Provision of CCD or CMOS sensor (optionally)
- Removing of cover glass from sensor
- Sophisticated cleaning of the active area of the sensor
- Preparation of fiber optics (grinding)
- Coupling and gluing
- Documentation and testing procedure (optionally, on customised setup)
- Repair of third-party couplings



ProxiVision has experience in the necessary handling, cleaning, positioning and gluing procedures. As an additional powerful tool ProxiVision now has at its disposal a special sophisticated station for positioning and coupling which

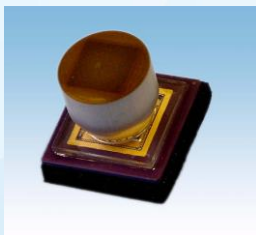
allows to handle even challenging couplings.

## Couplings & Coatings

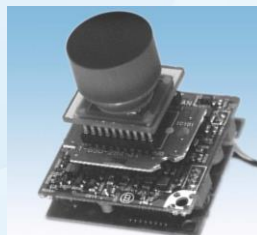
ProxiVision also has capabilities to enhance the fiber optics with a phosphor coating which is used as a scintillator, e.g. for UV, X-Ray, electrons or other types of radiation. This is described in a separate datasheet.

Both fiber optical couplings and coatings are customised products – please give us your requirements!

## Samples Couplings:



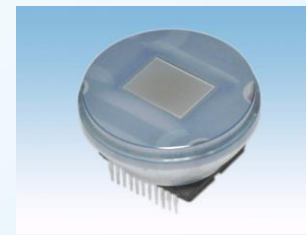
25:1 Taper on 1 Mpix Sensor



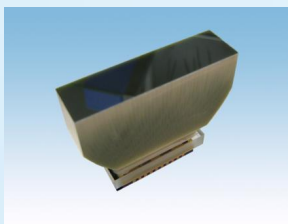
Taper on CCD with Camera Board



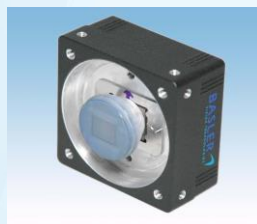
75 mm Taper and 25 mm Taper



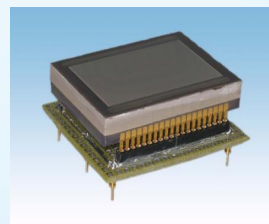
Taper Coupling



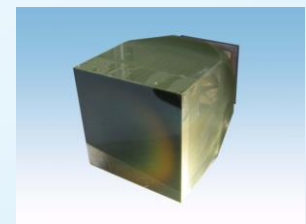
Line Sensor with Taper



Customer Camera with Taper



Fiber plate on 11 Mpix Sensor



150 mm Fiber optic Megapixel CCD