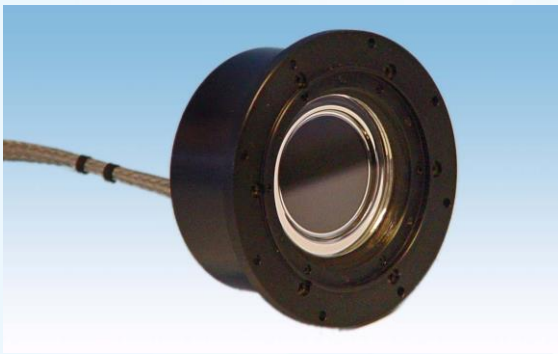
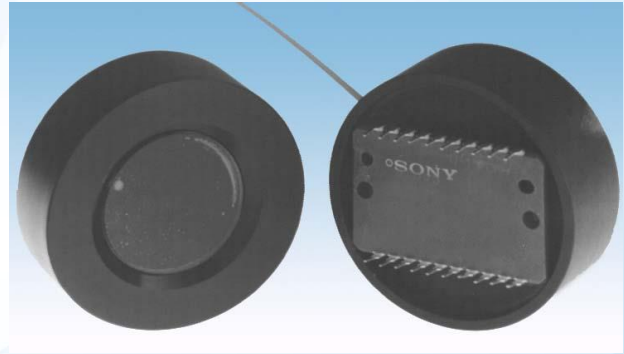


# *UV Advanced Solar Blind Imaging*

Possible configurations:



Single Photon Detection MCP Image Intensifier



High Resolution Diode Intensifier Detector

## *Single Photon UV detection at bright Daylight*

### APPLICATIONS

- ❖ Missile Launch Detection system
- ❖ Corona Detection
- ❖ Fire Detection
- ❖ UV Beam profile analysis

### FEATURES

- ❖ Setup due to customer requirements
- ❖ High Quantum Efficiency
- ❖ Single UV photon detection
- ❖ Coupling with fiber optical plates (1:1) or adaption of field of view by taper coupling
- ❖ Dynamic Range of  $10^6:1$
- ❖ No cooling required

ProxiVision is the leading manufacturer of high resolution proximity focus Image Conversion Diode Intensifiers and single photon UV Detection Image Intensifier which cover the entire spectrum from UV to Near IR.

An Image Intensifier that is called “blind” however seems to be a contradiction in itself. A contradiction, however, that can be resolved quickly: “Solar-Blind” means that this special Image Intensifier is supposed to be as blind as possible to solar radiation - on sea-level obviously, otherwise it would really be blind to almost anything. In detail, it is supposed to be blind for visible and infrared radiation. Implicitly, it should be rather sensitive for radiation with a shorter wavelength, like UV-light. Sunlight that has passed through the atmosphere does not contain this radiation. Consequently, if this type of light is detected, and there is not just a thunderstorm with flashing lightnings or the like, one knows that there is an artificial source. Possible sources range from electric discharges (powerline inspection) to hot exhaust fumes. Missile plumes and jets flying with their afterburner turned on are sources drawing a certain interest for detection.

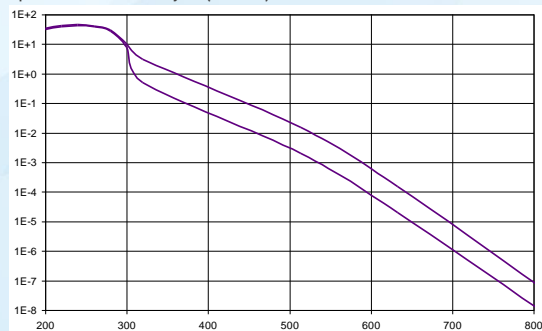
ProxiVision has been involved in development, design and engineering right from the early days on and soon became recognized for the performance of their detectors. While series production started in year 2000, engineering lead to a continuous product-improvement. Products have been developed in close cooperation with a number of system houses. For each system, a special solution had to be engineered to meet the requirements of a very detailed specification. Core parts of these systems typically include a lens, the detector and software. All components have to carefully tuned to meet such divers requirements as detection of defects in high-voltage powerlines and early warning against an approaching missile.

For the growing requirements for image sensors and photodiode arrays in the UV spectrum, ProxiVision offers high resolution UV spectral converters incorporating fiber optic output windows for direct coupling to the pixel surface of a detector. Thus, coupling losses are reduced making it possible to attain a light transmission factor to the detector of up to 70 %.

For UV spectral conversion, ProxiVision has developed the **Advanced Solar Blind Photocathode** featuring very high sensitivity in the UV (quantum efficiency of about 24 %) with an extremely high rejection factor of visible light of up to 9 orders of magnitude.

### Advanced Solar Blind Photocathode

Spectral Sensitivity S (mA/W)



Wavelength λ [nm]

The spectral sensitivity of an intensifier with Advanced Solar Blind photocathode lies completely inside the shown characteristic curve.

For applications where UV including a broad spectral range of the visible spectrum is needed, the **UV Enhanced S 20**, based on the well-known S 20 type, but with considerably increased UV and blue sensitivity, provides quantum efficiencies of about 20 % in the UV range.