



## KUBE Cone Optics TR232

### Integrated optics for PIR detectors

Integrated optics for PIR detectors are available in various models.

KUBE PIR Cone Optics TR232 is extremely compact (1.5 x 1.5 x 3 cm) and much smaller than any conventional design.

Nevertheless, KUBE integrated optics provide 90° field of view and up to 15 meters of detection range. It will work with any conventional PIR circuit and performs like much larger fresnel lenses. It is used with the 6192 Sensor.



### Advantages

Beyond the compact size, KUBE cone optics have distinctive advantages:

- The front opening is so small that PIR detectors are unobtrusive and cannot be identified as such.
- The front window is mechanically stable and vandal proof. It cannot be damaged with a finger.
- The cone receives all directions through the same opening. Consequently, most environmental effects such as from light and wind are compensated. This results in much lower false alarm rates caused by direct sunshine or warm air when mounted above a heating radiator.
- KUBE Cone Optics TR232 meets IEC 669-2-1 and corresponding CE safety requirements.

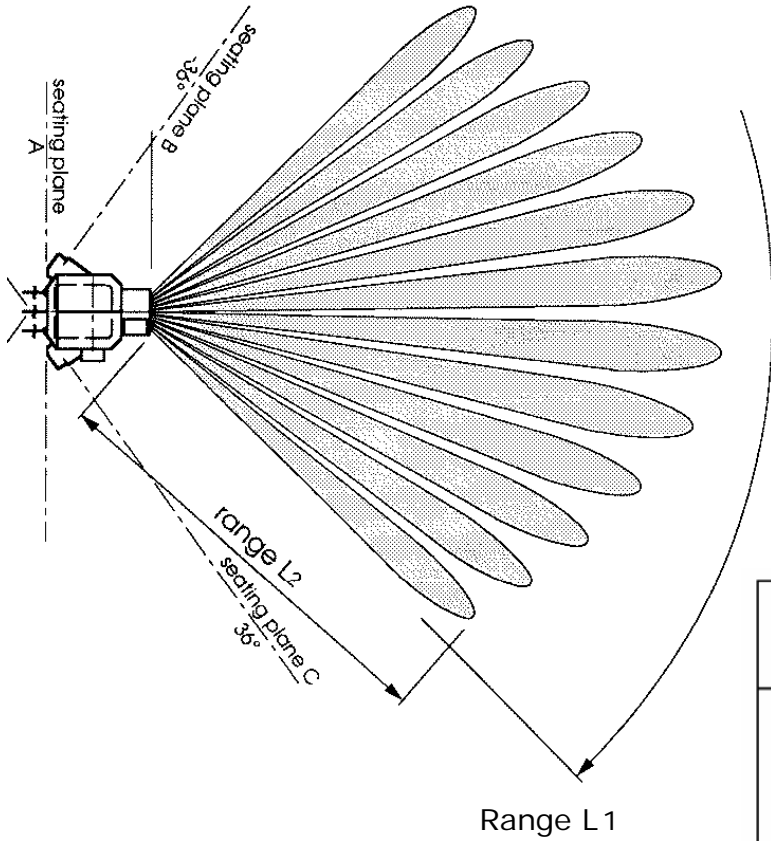
### Properties

|                                |  |
|--------------------------------|--|
| Model Nr.                      | TR232 (for use with type 6192 Pyro Sensor) |
| Suitable for Range min.:       | 0.2 Meter                                  |
| Range max.:                    | 15 Meters                                  |
| Typical mounting position:     | Wall                                       |
| Alternative mounting position: | Ceiling, various                           |
| Horizontal angle:              | 90°, 180° with 2 sensors                   |
| Vertical angle:                | +/- 15°                                    |
| Lens size:                     | 11.5 x 4 mm                                |
| Focal length:                  | n/a  |
| Front window needed:           | Yes, TR231 or PIR film                     |
| 1st advantage:                 | Compact                                    |
| 2nd advantage:                 | Vandal proof                               |
| Ideal to comply with:          | IEC 669-2-1 & CE safety requirements       |



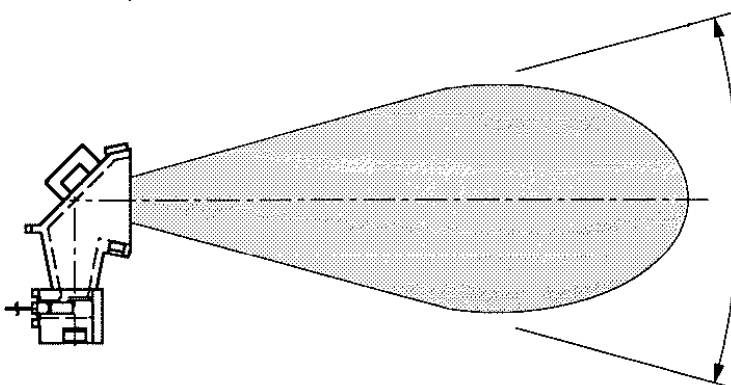
### Cone optics TR232: Field of view

Top View (Horizontal Angle 90°)

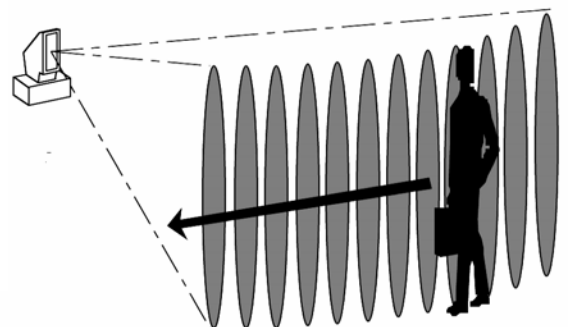


| Sensitivity | Range          |                |
|-------------|----------------|----------------|
|             | L <sub>1</sub> | L <sub>2</sub> |
| maximum     | 15 m           | 10 m           |
| high        | 12 m           | 8 m            |
| medium      | 9 m            | 6 m            |
| low         | 6 m            | 4 m            |
| very low    | 3 m            | 2 m            |

Side View (Vertical Angle 30°)

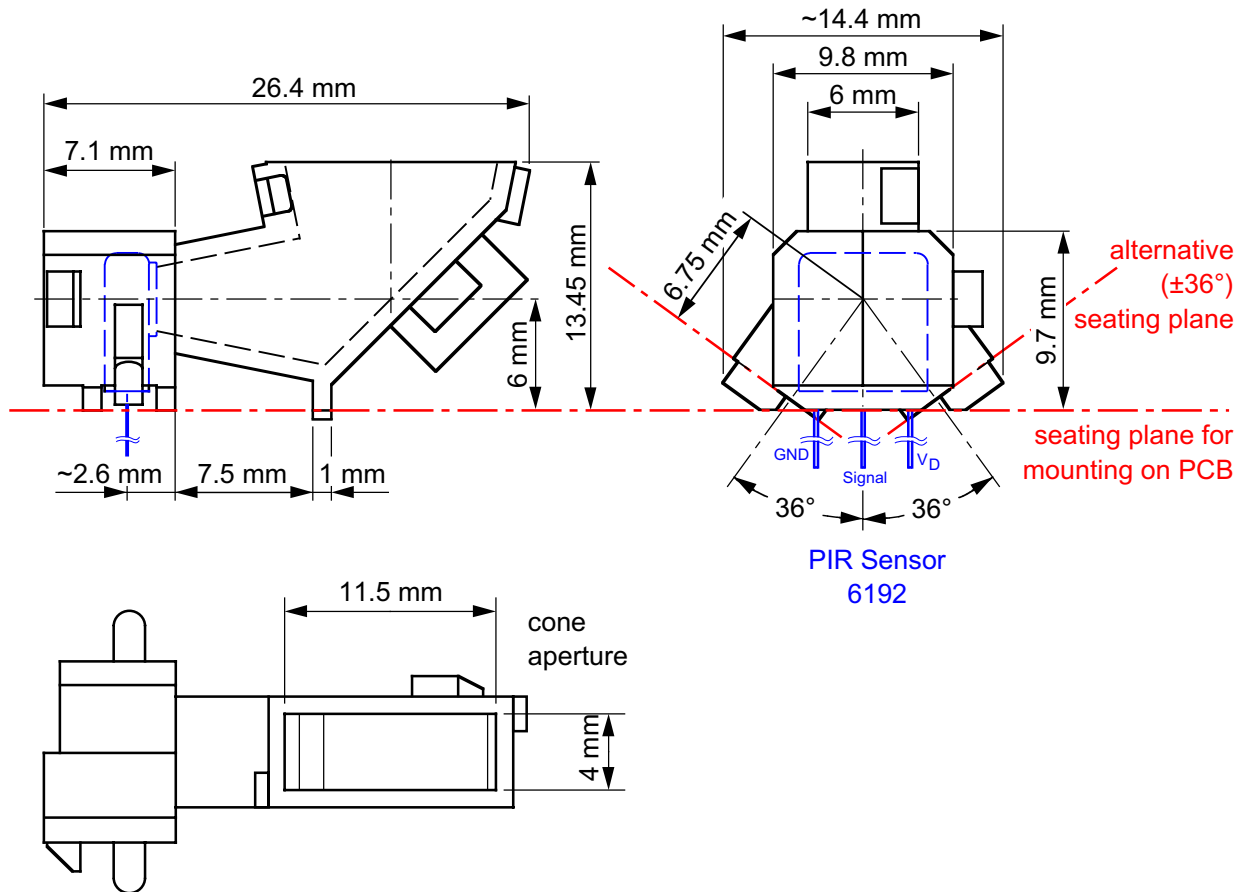


Cone opening must be vertical





Drawings:



The coated surfaces are electrically conducting

Cone optics are patented in the US and Europe under: EP 821804, US 5006712, CH 690383