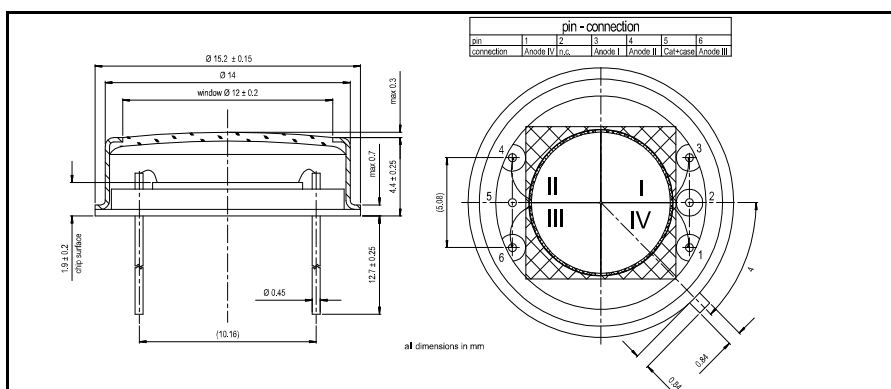
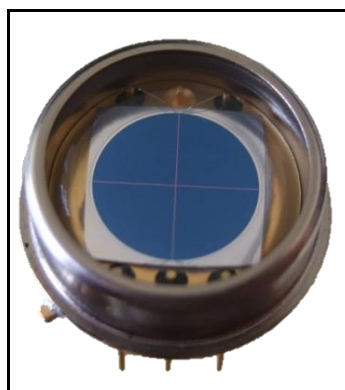




## Features

- 50 mm<sup>2</sup> Quadrant PIN detector
- High sensitivity
- Low dark current

## Description

Low dark current quadrant PIN photodiode with 4 x 12 mm<sup>2</sup> active area. Metal can type hermetic TO8S package with clear glass window.

## Application

- Laser beam position sensor
- Autocollimators
- Optical tweezers
- Ellipsometers

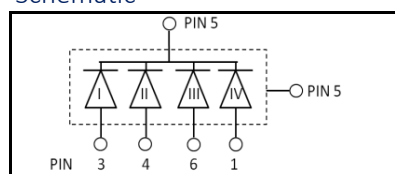
## RoHS

2011/65/EU

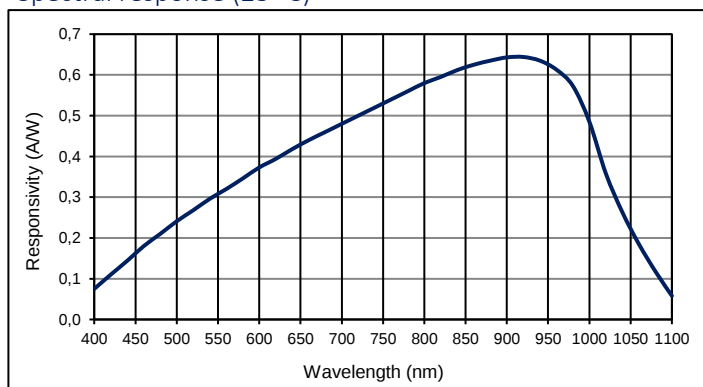
## Absolute maximum ratings

| Symbol            | Parameter           | Min | Max | Unit |
|-------------------|---------------------|-----|-----|------|
| T <sub>STG</sub>  | Storage temp        | -55 | 125 | °C   |
| T <sub>OP</sub>   | Operating temp      | -40 | 100 | °C   |
| V <sub>max</sub>  | Max reverse voltage |     | 20  | V    |
| I <sub>PEAK</sub> | Peak DC current     |     | 10  | mA   |

## Schematic



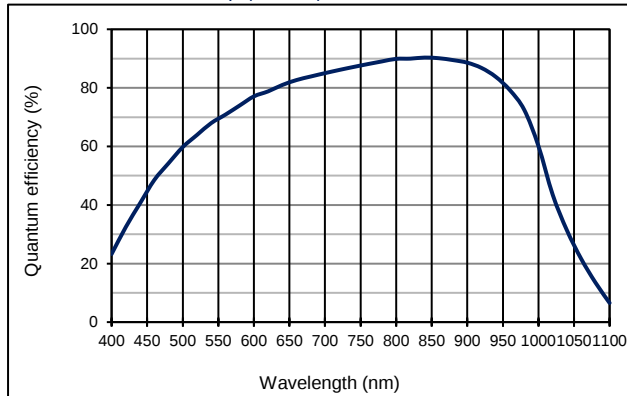
## Spectral response (23 °C)



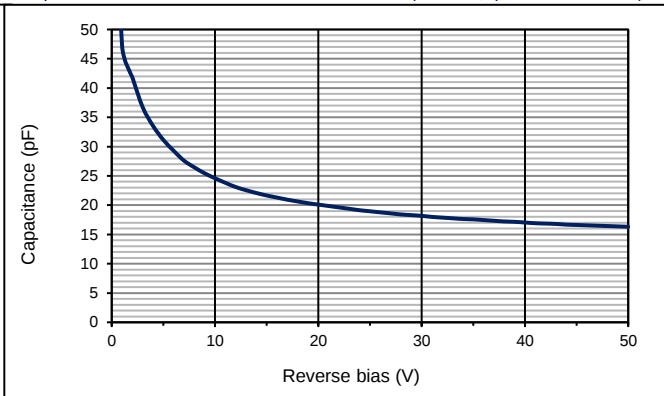
## Electro-optical characteristics @ 23 °C

| Symbol          | Characteristic     | Test Condition                                           | Min                   | Typ    | Max | Unit            |
|-----------------|--------------------|----------------------------------------------------------|-----------------------|--------|-----|-----------------|
|                 | Number of elements |                                                          | 4 quadrants           |        |     |                 |
|                 | Active area        |                                                          | diameter 7980 (total) |        |     | µm              |
|                 | Active area        | per element                                              | 12                    |        |     | mm <sup>2</sup> |
|                 | Gap                | between elements                                         | 42                    |        |     | µm              |
| I <sub>D</sub>  | Dark current       | V <sub>R</sub> = 10 V; per element                       |                       | 2.0    | 5.0 | nA              |
| C               | Capacitance        | V <sub>R</sub> = 0 V; per element                        |                       | 120    |     | pF              |
|                 |                    | V <sub>R</sub> = 10 V; per element                       |                       | 20     |     | pF              |
|                 | Responsivity       | λ = 632 nm                                               |                       | 0.4    |     | A/W             |
|                 |                    | λ = 900 nm                                               |                       | 0.64   |     | A/W             |
| t <sub>R</sub>  | Rise time          | V <sub>R</sub> = 0 V; λ = 850 nm; R <sub>L</sub> = 50 Ω  |                       | 2000   |     | ns              |
|                 |                    | V <sub>R</sub> = 10 V; λ = 850 nm; R <sub>L</sub> = 50 Ω |                       | 40     |     | ns              |
|                 | Shunt Resistance   | V <sub>R</sub> = 5 mV; per element                       |                       | 50     |     | MΩ              |
|                 | N.E.P.             | V <sub>R</sub> = 5 V; λ = 900 nm; per element            |                       | 4 E-14 |     | W/√Hz           |
| V <sub>BR</sub> | Breakdown voltage  | I <sub>R</sub> = 2 µA                                    | 20                    | 50     |     | V               |

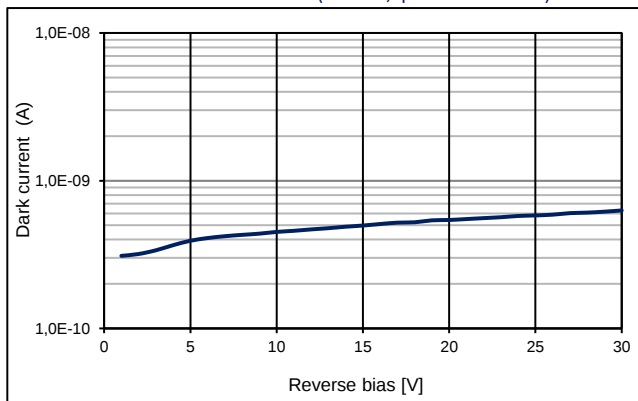
Quantum efficiency (23 °C)



Capacitance as fct of reverse bias (23 °C; per element)



Dark current as fct of bias (23 °C; per element)



## Package dimension:

Small quantities: Foam pad, boxed (12 cm x 16.5 cm)

## Handling precautions:

- Soldering temperature max. 260 °C for 10 s. The device must be protected against solder flux vapour.
- Minimum pin length is 2 mm.
- For ESD protection standard precautionary measures are sufficient.
- For further questions please refer to document "Instructions for handling and processing".

Disclaimer: Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.