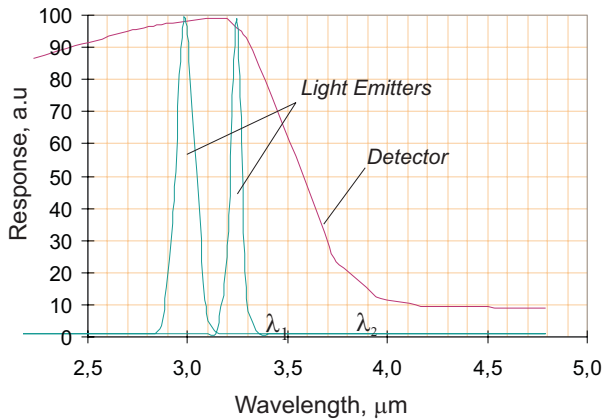
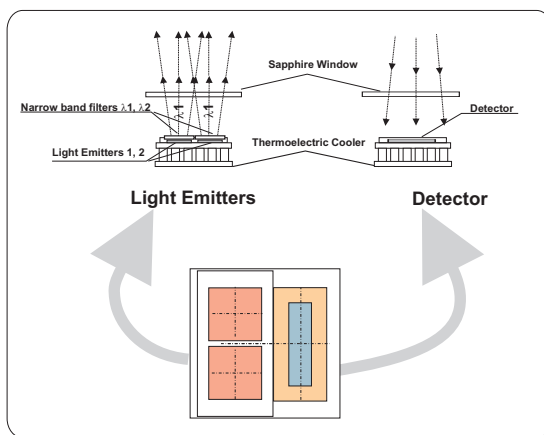


NEW

OPRi2-3230 TE cooled Integrated Optopair



Spectral Responses of Photodetector and Light Emitters with narrow-band filters



The integrated device consists of two solid state light emitters (light sources) and one photodetector.

Each Light Emitter has built-in narrow band interference filters: one (first emitter) filter is adjusted to absorption line of tested material (base channel), the another (second emitter) one - is far from the absorption band (reference channel).

Detector is the broad-band PbSe photoresistor.

The light emitters and the detector are mounted at the same plane at cold side of miniature thermoelectric (TE) cooler and integrated in the single housing.

TE cooler is used for cool down and precise temperature stabilization of the detector and emitters.

The semiconductor Light Emitters are optimized for operation of the Photodetector.

Development and Production in cooperation with partnership company ICO Ltd

Optical and Electrical Characteristics

| Detector | | | Ligh Emitters | | |
|-----------------------------------|------------------------------------|--------------------|---|------|------|
| Sensitive Element size | mm | 1.5x5.5 | Emitting area size | mm | 2x2 |
| Spectral Range | μm | 1...3.8 | Distance between elements | mm | 1.0 |
| Wavelength max λ_{max} | μm | 3.2 | Angle of view | deg. | 70 |
| Time Constant, t | μsec | <100 | Channels | | |
| Detectivity, D^* | | | Wavelength λ_1 | μm | 3.23 |
| Measuring Channel, λ_1 | $sm \times Hz^{1/2} \times W^{-1}$ | $>1.2 \times 10^8$ | Wavelength λ_2 | μm | 3.0 |
| Reference Channel, λ_2 | $sm \times Hz^{1/2} \times W^{-1}$ | $>1.2 \times 10^8$ | Band Width $\Delta\lambda_{0.5}$ | μm | 0.08 |
| Sensitivity, S_U | | | Time Constant, t | μsec | <2 |
| At Measuring Channel, λ_1 | V/W | >200 | Output Power at λ_1 and λ_2 | | |
| At Reference Channel, λ_2 | V/W | >200 | CW ⁽¹⁾ | μW | 50 |
| Dark Resistance | kOhm | 6...30 | Pulsed ⁽²⁾ | μW | 500 |

1) $I_{op} = 100$ mA, $U = 2$ V

2) $I_{op} = 2$ A, $U = 2$ V, $Q = 200$, $t_p = 100$ μs

3) All parameters are referred to 263 K

