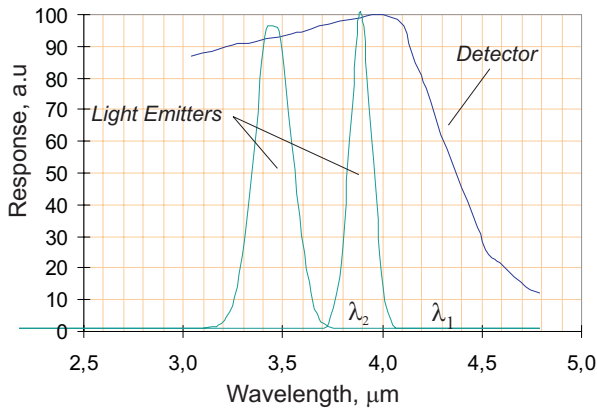
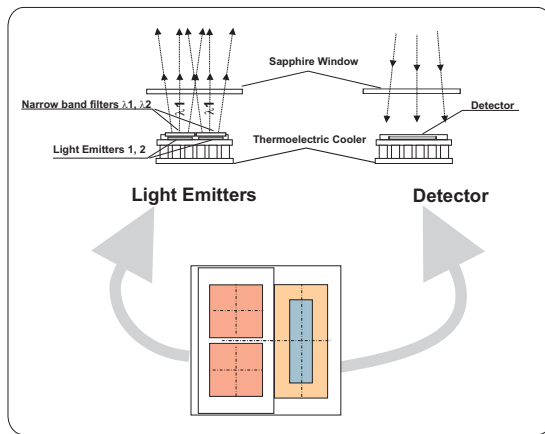


**NEW**

## OPRi2-3439 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 fine 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

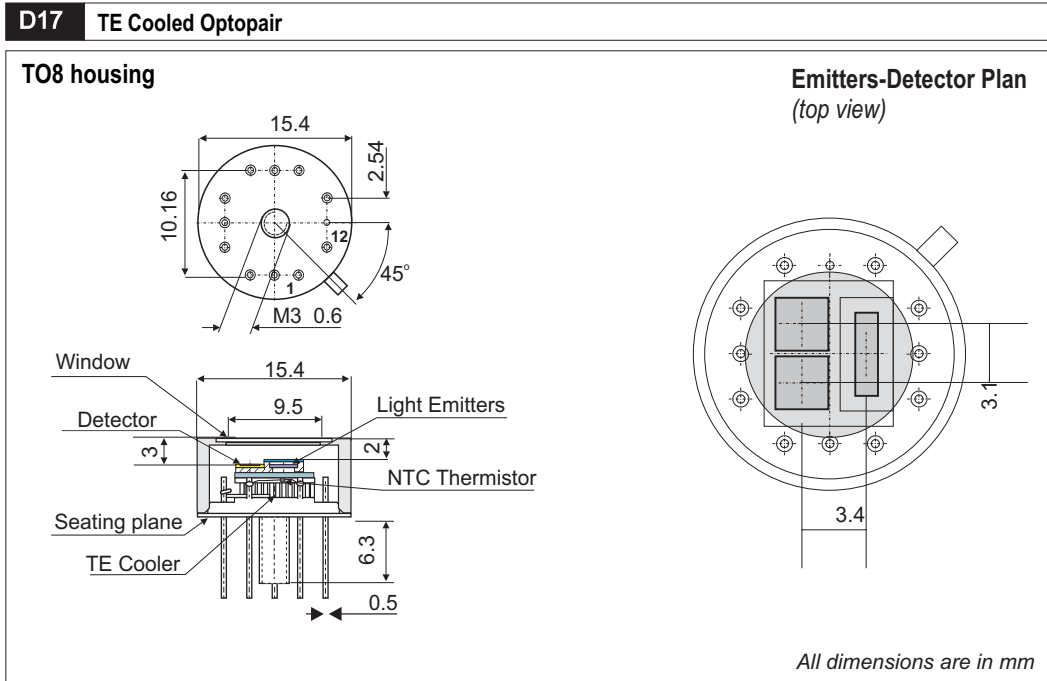
Detector			Ligh Emitters		
Sensitive Element size	mm	1.5x5.5	Emitting area size	mm	2x2
Spectral Range	μm	2...4.5	Distance between elements	mm	1.0
Wavelength max $\lambda_{max}$	μm	4.0	Angle of view	deg	70
Time Constant, t	μsec	<100	Channels		
Detectivity, D*			Wavelength $\lambda_1$	μm	3.4
Measuring Channel, $\lambda_1$	$sm \times Hz^{1/2} \times W^{-1}$	$>3.5 \times 10^8$	Wavelength $\lambda_2$	μm	3.9
Reference Channel, $\lambda_2$	$sm \times Hz^{1/2} \times W^{-1}$	$>3.5 \times 10^8$	Band Width $\Delta\lambda_{0.5}$	μm	0.25
Sensitivity, S <sub>U</sub>			Time Constant, t	μsec	<2
At Measuring Channel, $\lambda_1$	V/W	>300	Output Power at $\lambda_1$ and $\lambda_2$		
At Reference Channel, $\lambda_2$	V/W	>300	CW <sup>(1)</sup>	μW	50
Dark Resistance	kOhm	6...30	Pulsed <sup>(2)</sup>	μW	500

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

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

3) All parameters are referred to 263 K

## Dimensional Outlines *(All dimensions are in mm)*



Pin	Function	Top View
1	Detector	
2	Not connected	
3	Detector	
4	TE cooler, cathode	
5	Shield	
6	TE cooler, anode	
7	LED 1, cathode	
8	LED 1,2 , anode	
9	LED 2, cathode	
10	Thermistor	
11	Ground	
12	Thermistor	

## Absolute Maximum Ratings

Detector	Light Emitter		Both		Thermosensor
	Bias Voltage	Direct Current, max	Pulsed Current, max	Typical TE Cooler Power near max. Cooling	
V	mA	A	Current, A	Voltage, V	
5	300	4	1,3	2,2	2.2 kOhm & -3.4%/deg
			0,4*	4*	

\* - option for portable applications

*Information furnished by RMT Ltd is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.*