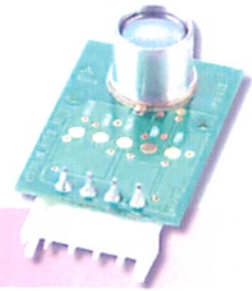


CoolEye™ - Digital Array Modules With Integral Optics



TPiL 08T 2246 L3.9, TPiL 16T 3446 L3.9 – Thermopile Line
TPiA 16T 4146 L3.9 – Thermopile Array

Applications

- Presence Detection
- Non-contact Temperature Measurement
- Temperature-dependent Switch for Alarm or Thermostatic applications.
- Household Appliances such as Microwave Ovens

Features and Benefits

- Digital SMBus interface
- Factory Calibration
- Temperature Signal
- Ambient temperature output signal
- Programmable emissivity
- Noise reduction filter

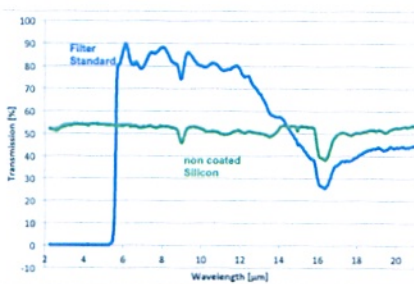
Product Description

With the CoolEye™ Family, Excelitas offers thermopile arrays in multiple configurations. All arrays are module types, with a pcb that provides the communication interface and a 6-pin connector. For Line Arrays, we offer 8-Elements and 16-Elements, with 3.9 mm focus integral lens. The spatial design provides for 4x4 elements. All parts of the CoolEye™ Family employ the patented, ISOthermal concept and offer uniquely high-performance under thermal shock conditions.

The Thermopile Line or Array Modules consist of a 1x8, 1x16 or 4x4-element thermopile chip connected to an integrated multiplexing and signal conditioning circuit, E2PROM and microcontroller with integrated A/D converter for signal processing and interfacing. The sensor is equipped with an internal reference temperature sensor for correct target temperature determination.

The temperature accuracy achieved by digital signal processing, in combination with the numeric ambient temperature compensation algorithm, outperforms any discrete solution. The ISOthermal Sensor Module provides a digital output signal by SM Bus which represents real temperature data for each pixel. Customer-specific modifications are possible.

Filter



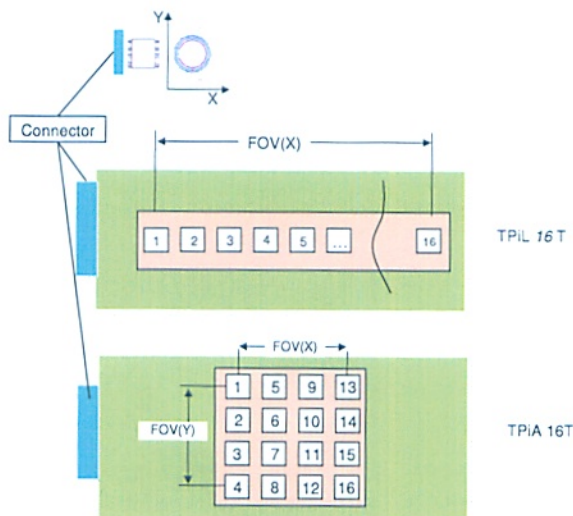
For the various object temperature ranges we offer following pre-calibrated Modules:

0...60°C: TPiL 08T 2246 L3.9 OAA060

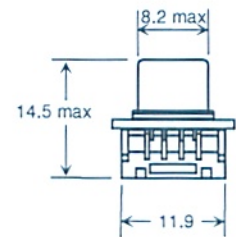
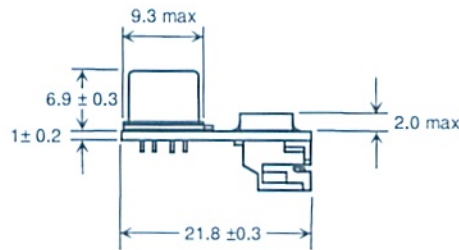
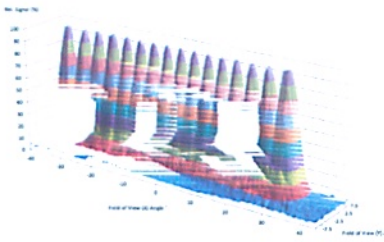
0...60°C: TPiL 16T 3446 L3.9 OAA060

0...60°C: TPiA 16T 4146 L3.9 OAA060

A temperature reference output is included. Upon request, the Modules can be supplied as an "OBA" version, which is calibrated but without internal temperature compensation. In this case, the customer will do the temperature compensation externally, with the use of the supplied reference output.

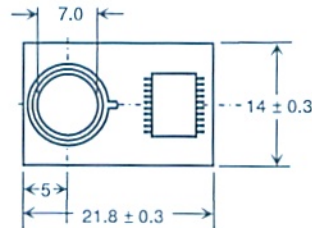
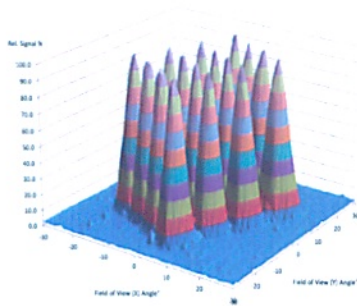


Field of View TPiL 08



JST S 4B-PH SM4TB

Field of View TPiL 16T



TPiL 08T 2246 L3.9, TPiL 16T 3446 L3.9, TPiA 16T 4146 L3.9

Parameter	Symbol	TPiL 08 T	TPiL 16T	TPiA 16 T	Unit	Remark
Storage Temperature Range		-40 +100	-40 +100	-40 +100	°C	
Operating Temperature Range		-25 +100	-25 +100	-25 +100	°C	
Supply Voltage	V _{DD}	4.5 5.5	4.5 5.5	4.5 5.5	V	
Supply Current	I _{DD}	5	5	5	mA	
Field of View X / L3.9	FOV _X	50	62	30	°	typ. refer to FOV definitions
Field of View Y / L3.9	FOV _Y	NA	NA	20	°	refer to FOV definitions
Digital Interface Type		SMBus	SMBus	SMBus		
Object Temperature Accuracy		±1.5			°C	for calibration conditions
Temperature Sensing Range		0....60	100....250	0....60	°C	
Signal Refresh Time	t _{pxrefr}	250	400	400	ms	all pixels and ambient temperature