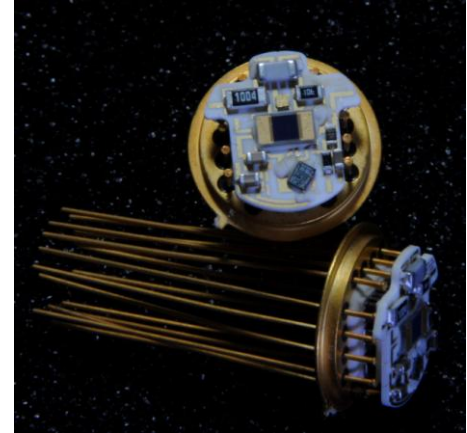


IDA

Compact integrated infrared detector assembly

Key Features:

- High sensitivity detector with integrated electronics including:
 - Single stage TEC and thermistor for temperature control
 - Hermetic sealing for use in harsh environments
 - A compact TO-8 package
- Ideal for portable instruments where small size is critical
- Less susceptible to noise than external circuitry configurations
- External interface required for TEC controller and ADC



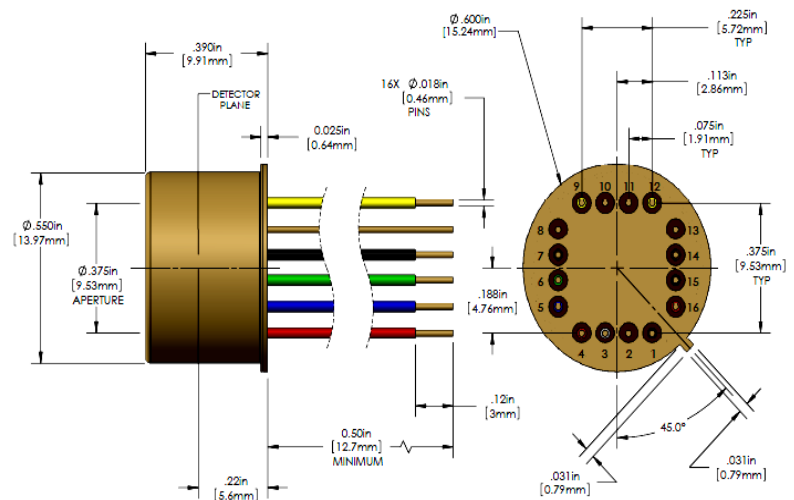
Standing out from other single-element detectors, IDA was designed to minimize size and simplify system implementation, without sacrificing performance. The standard IDA includes a 2x2 mm PbS or PbSe detector and supporting single or bipolar bias supplies. The standard IDA is configured with an AC coupled 10 dB gain amplifier.

Applications:

- Gas analysis, medical and industrial
- Emissions monitoring
- Spectroscopy
- Process control systems
- Thermal imaging
- Flame detection

The compact size significantly reduces the footprint as compared to traditional detector schemes and provides a hermetically sealed assembly for harsh environments. IDA is ideal for manufacturers of portable equipment where size, durability and costs are so important.

The IDA design takes advantage of the shielded, high impedance detector node to minimize noise. With the integrated thermistor and thermoelectric cooler (TEC), IDA can manage temperature fluctuations reliably. These complementary features combine to optimize signal to noise ratio. Thus IDA is prepared to meet the challenges of today's and tomorrow's demanding applications.



Pin Descriptions

PIN NO.	FUNCTION	Function
1	TE COOLER (-)	Thermoelectric Cooler -
2	NC	
3	CASE	Case
4	TE COOLER (+)	Thermoelectric Cooler +
5	Vo	Output signal
6	GND	Output signal ground reference
7	Vb-	Negative bias voltage or ground
8	NC	
9	THERMISTOR	Thermistor
10	NC	
11	NC	
12	THERMISTOR	Thermistor
13	NC	
14	Vb +	Positive bias voltage
15	-Vcc	Opamp negative voltage
16	+Vcc	Opamp positive voltage

General Specifications¹

Specification	Min	Typ	Max
Detector Size		2 mm x 2 mm	
Detector Load resistor		1M Ω	
Gain	1	10	
Input time constant		150mS	
Vb+ - Vb-			50V
Thermistor (25°C)		10K Ω	
Operating Temperature	-20°C		+65°C
Opamp supply voltage		$\pm 15V$	$\pm 20V$
Chopping Frequency	50 Hz	600 Hz	650 Hz

1. Specifications i.e. detectivity, responsivity depend on the chosen material,
See Cal Sensors standard specifications for single stage PbS or PbSe detectors for this information.

