

## L11/21 Series Single Channel Current Mode Pyroelectric Detectors

### Description

Our L11/21 series of pyroelectric detectors are a collection of single channel  $\text{LiTaO}_3$  devices operating in current mode with an integrated Op-Amp.

TFC (Temperature Fluxuation Compensation) is incorporated into all of our L21- series detectors via. the use of a optically blind element.

### Features

- Thermal based detector, any radiation absorbed produces a signal
- Wide Spectral Coverage from the UV to LWIR
- Modular design principle
- Assembled in an ISO:9001 facility
- Microphonics reduction as standard

### Applications

- Non-dispersive infrared gas analysis
- Flame and fire detection
- Non-contact temperature measurement
- Flame control
- Moisture monitoring

### Versions

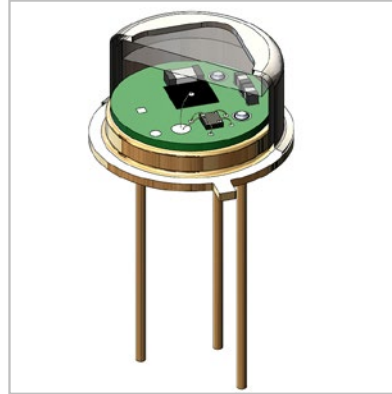
- Integrated Op-Amp (Split and Single Supply)
- Low and high speed devices available
- 9 Standard window options
- 17 standard filter options (including small and large apertures)



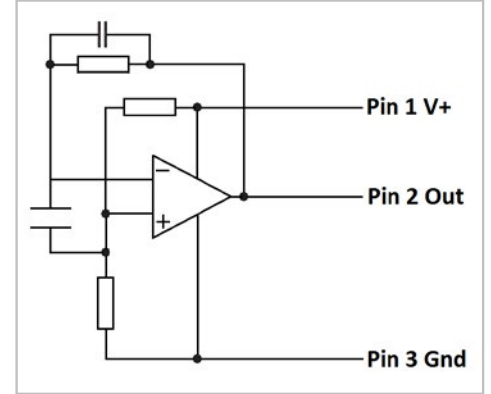
L1100X2020

- Single Channel Pyroelectric Detector
- Current Mode
- Single Supply
- Without TFC

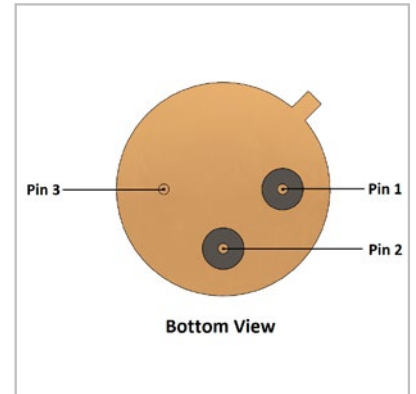
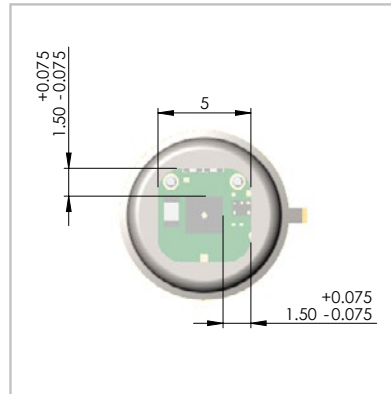
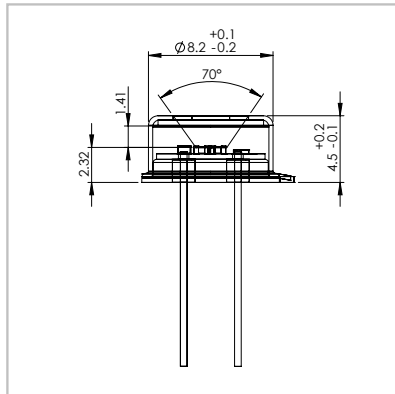
Isometric Drawing (with cutaway)



Circuit Diagram



Technical Drawing



Element Size	Aperture Size*	Package	Absorber	
2 mm x 2 mm	5.0 mm Sq. 3.5 mm Sq.	TO-39 3-pin	Organic Black	
Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]	
27 GOhm	Op-Amp 3	TBD	2.7-10 V (3 V recommended)	
Responsivity [V/W]	D* (Jones) @ 10 Hz	Noise Density [ $\mu\text{V}/\sqrt{\text{Hz}}$ ]	NEP [W/ $\sqrt{\text{Hz}}$ ]	Polarity
Min: 30,000 Typ: 40,000	Min: $3 \times 10^8$ Typ: $4 \times 10^8$	Max: 25	Max: $6 \times 10^{-10}$	Negative

**!** Similar Model: LME-352, PY-ITV-SINGLE

\* Please refer "Filters and Windows" datasheet for all available options (aperture size depends on filter/window option chosen)

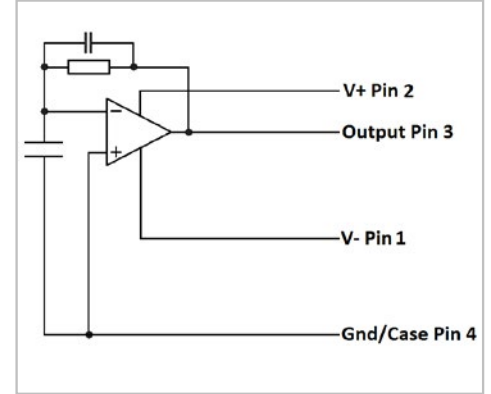
L1120X2020

- Single Channel Pyroelectric Detector
- Current Mode
- Without TFC
- High Speed

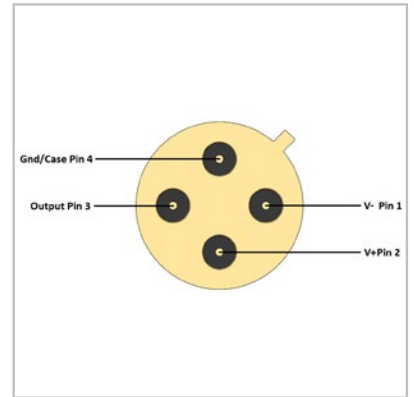
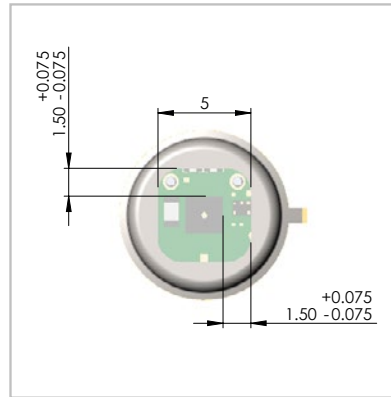
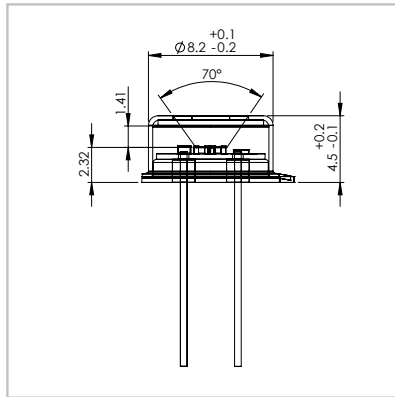
Isometric Drawing (with cutaway)



Circuit Diagram



Technical Drawing



Element Size	Aperture Size*	Package	Absorber	
2 mm x 2 mm	5.0 mm Sq. 3.5 mm Sq.	TO-39 4-pin	Organic Black	
Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]	
11 MOhm	Op-Amp 4	TBD	max. 26 (V+ = +6 V; V- = -6 V recommended)	
Responsivity [V/W]	D* (Jones) @ 10 Hz	Noise Density [ $\mu\text{V}/\sqrt{\text{Hz}}$ ]	NEP [W/ $\sqrt{\text{Hz}}$ ]	Polarity
Min: 20 Typ: 25	Min: $7 \times 10^6$ Typ: $1 \times 10^7$	Max: 0.5	Max: $2.5 \times 10^{-8}$	Negative

**!** Similar Model: LIE-382

\* Please refer "Filters and Windows" datasheet for all available options (aperture size depends on filter/window option chosen)

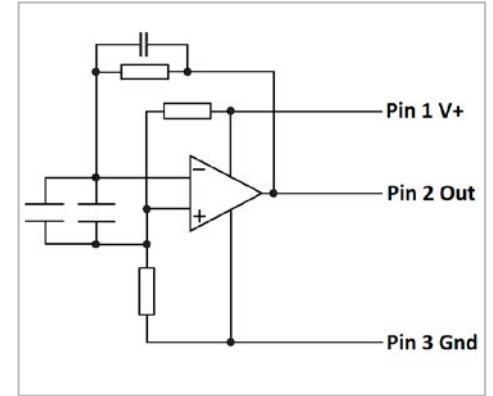
L2100X2020

- Single Channel Pyroelectric Detector
- Current Mode
- Single Supply
- With TFC

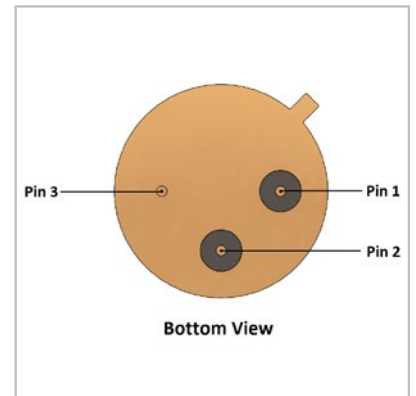
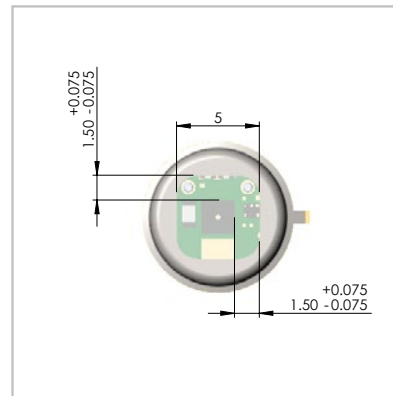
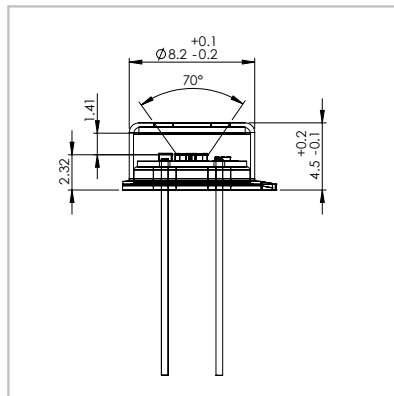
Isometric Drawing (with cutaway)



Circuit Diagram



Technical Drawing



Element Size	Aperture Size*	Package	Absorber	
2 mm x 2 mm	5.0 mm Sq. 3.5 mm Sq.	TO-39 3-pin	Organic Black	
Feedback Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]	
100 GOhm	Op-Amp 3	TBD	2.7-10 V (3 V recommended)	
Responsivity [V/W]	D* (Jones) @ 10 Hz	Noise Density [ $\mu\text{V}/\sqrt{\text{Hz}}$ ]	NEP [W/ $\sqrt{\text{Hz}}$ ]	Polarity
Min: 100,000 Typ: 150,000	Min: $4.5 \times 10^8$ Typ: $6 \times 10^8$	Max: 60	Max: $4.5 \times 10^{-10}$	Negative

**!** Similar Model: LME-336

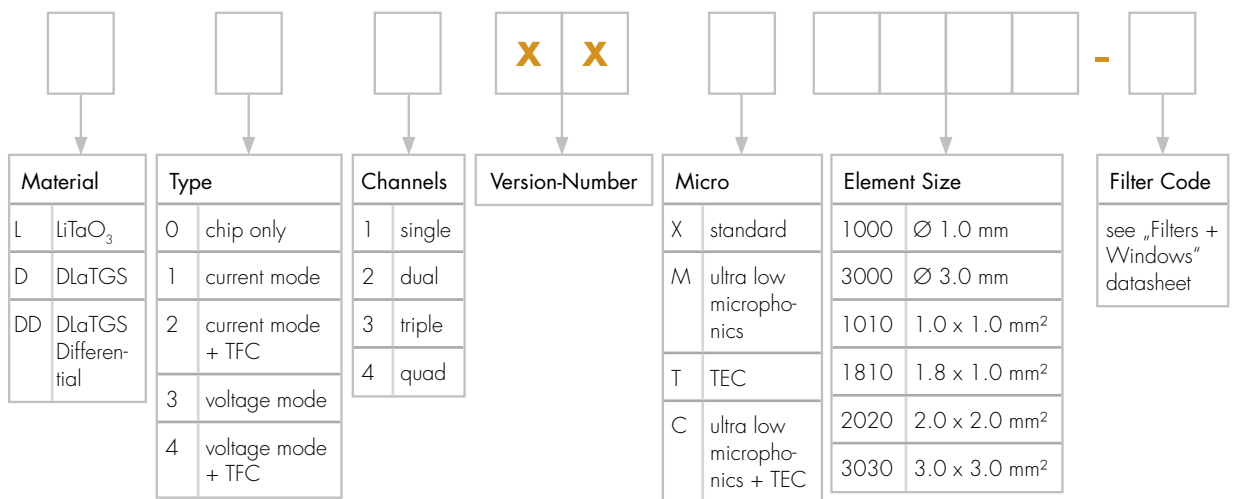
\* Please refer "Filters and Windows" datasheet for all available options (aperture size depends on filter/window option chosen)

### Absolute Maximum Ratings

	Min	Max
Storage Temperature [°C]	- 25	+ 85
Operating Temperature [°C]	- 20	+ 55
Soldering Temperature, 5 sec [°C]	+ 280	+ 300
ESD Damage Threshold, Human Body Model Class ....* [V]		TBD

\* ANSI/ESD STN5. 1-2007

### Part Number Designation



### Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

### Ordering Information

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at [www.lasercomponents.com](http://www.lasercomponents.com)