

## L31/41 Series Single Channel Voltage Mode Pyroelectric Detectors

### Description

Our L31/41 series of pyroelectric detectors are a collection of single channel  $\text{LiTaO}_3$  devices operating in voltage mode with an integrated JFET.

TFC (Temperature Fluxuation Compensation) is incorporated into all of our L41- series detectors via. the use of a optically blind element.

### Features

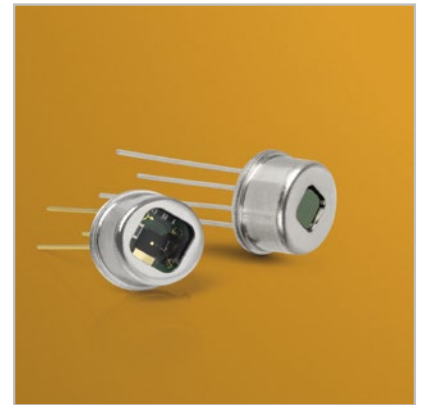
- Thermal based detector, any radiation absorbed produces a signal
- Wide Spectral Coverage from the UV to LWIR
- Modular design principle
- Assembled in an ISO:9001 facility
- Microphonics reduction as standard

### Applications

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

### Versions

- Low and high speed devices available
- 9 Standard window options
- 17 standard filter options (including small and large apertures)



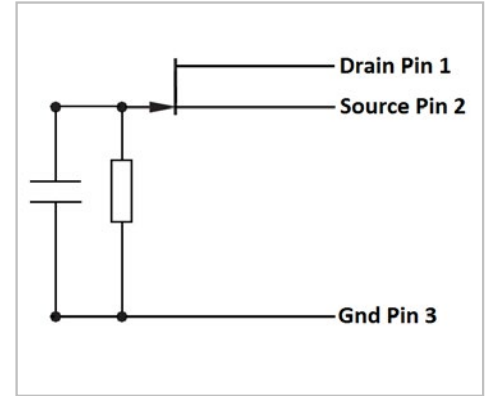
L3100X2020

- Single Channel Pyroelectric Detector
- Voltage Mode
- Without TFC

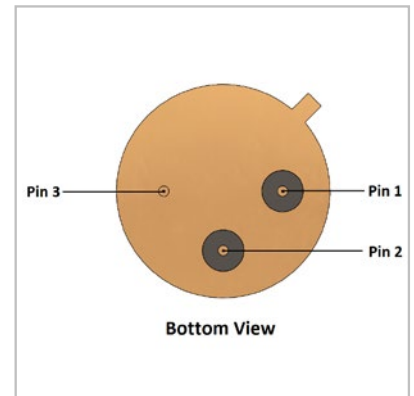
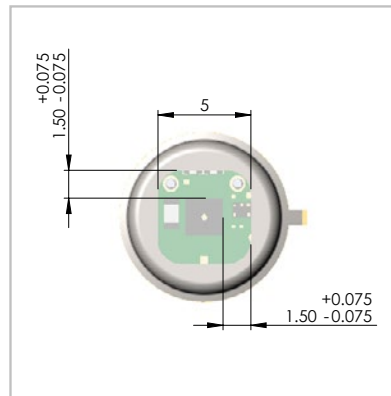
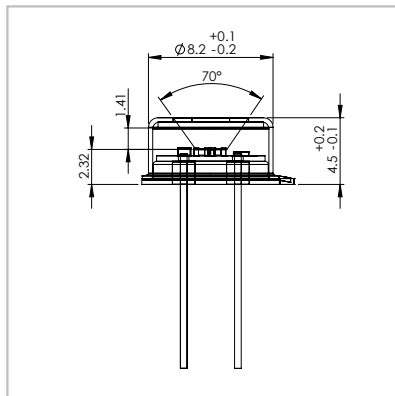
Isometric Drawing (with cutaway)



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	
Load Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]	
100 GOhm	JFET 3	TBD	Max. +30 V (9 V recommended)	
Responsivity [V/W]	D* (Jones) @ 10 Hz	Noise Density [ $\mu\text{V}/\sqrt{\text{Hz}}$ ]	NEP [W/ $\sqrt{\text{Hz}}$ ]	Polarity
Min: 340 Typ: 400	Min: $6 \times 10^8$ Typ: $9 \times 10^8$	Max: 0.15	Max: $3.4 \times 10^{-10}$	Positive

**!** Similar Model: LIE-302

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

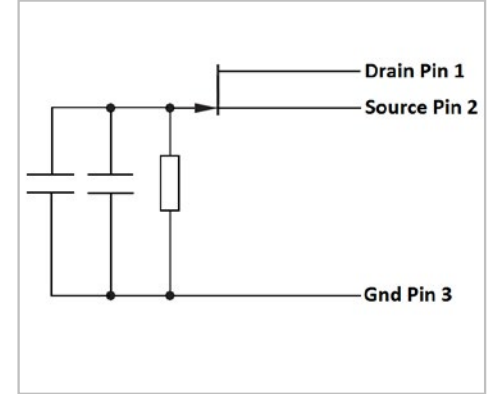
L4100X2020

- Single Channel Pyroelectric Detector
- Voltage Mode
- With TFC

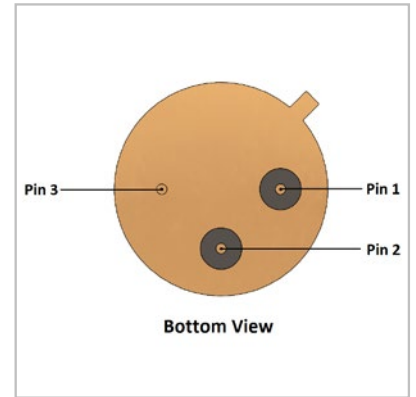
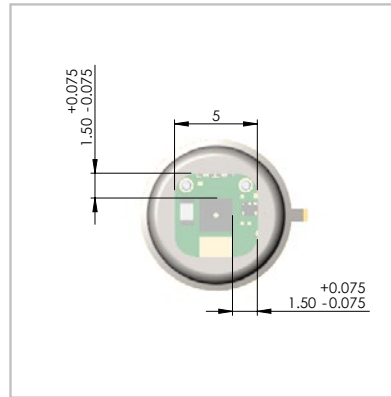
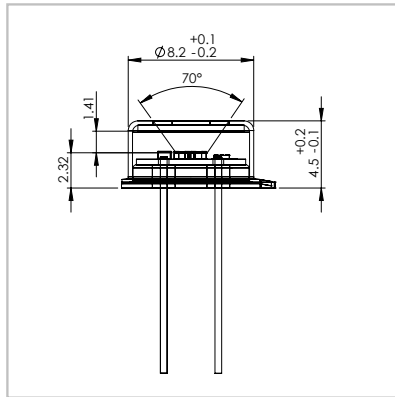
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Circuit Diagram



Technical Drawing



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Load Resistor	Amplifier	-3dB Freq [Hz]	Supply Voltage [V]	
100 GOhm	JFET 3	TBD	Max. +30 V (9 V recommended)	
Responsivity [V/W]	D* (Jones) @ 10 Hz	Noise Density [µV/sqrt(Hz)]	NEP [W/√Hz]	Polarity
Min: 160 Typ: 200	Min: 4.0x10 <sup>8</sup> Typ: 5.0x10 <sup>8</sup>	Max: 0.13	Max: 6x10 <sup>-10</sup>	Positive

**!** Similar Model: LME-316

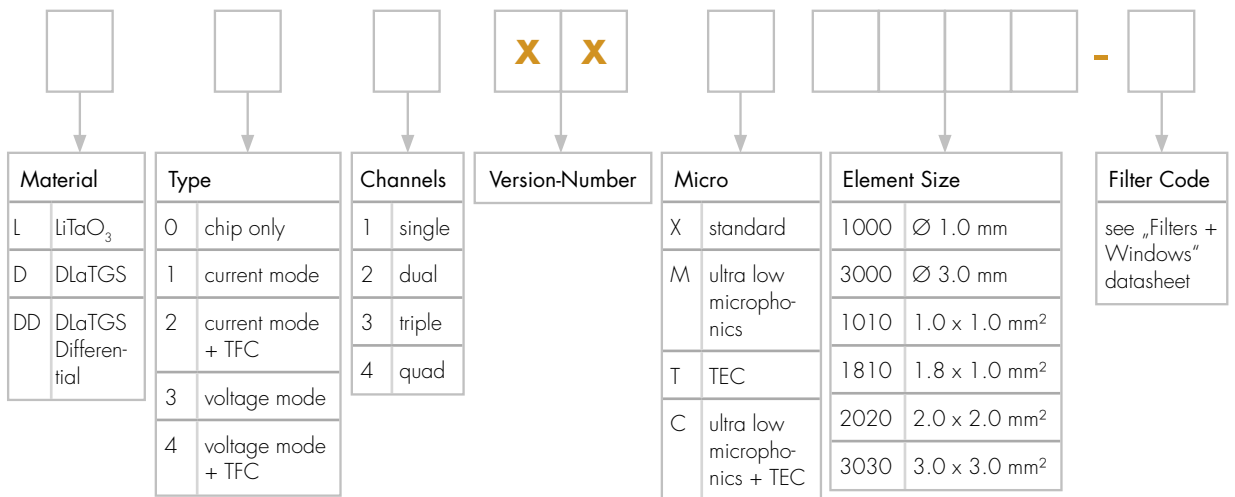
\* Please refer "Filters and Windows" datasheet for all available options (aperture size depends on filter/window option chosen)

### 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)