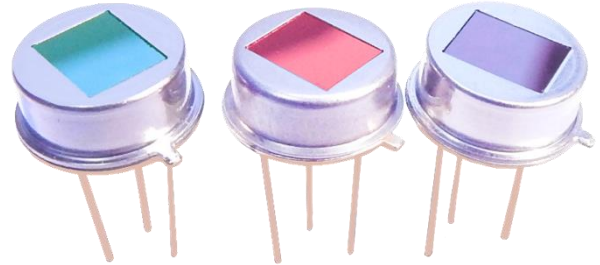


## ezPyro™ TO I<sup>2</sup>C Pyroelectric Infrared Flame Sensor

### Introduction

The ezPyro range of thin film digital pyroelectric sensors for flame detection combines high quality sensors with a high level of configurable electronic integration in an industry standard TO-39 package. High sensitivity combined with fast response times ensure rapid and accurate flame detection. The high dynamic range allows detection of small and large flames, nearby or over larger distances. These sensors integrate a digital, current mode read-out offering high responsivity over the full frequency range of flame flicker (3-30 Hz). Programmable gain and filtering offer maximum flexibility in system design. Industry standard I<sup>2</sup>C communication enables plug-and-play connectivity to microcontrollers and allows easy tuning and calibration. Pyreos sensors are very stable over time ensuring a long and maintenance-free operational lifespan. Various optical filter options are available. These sensors can also be daisy-chained to allow synchronized sampling across devices and offer various low power modes.



#### Sensor Characteristics

Filter aperture	5.2 mm x 4.2 mm
Element size	1.0 mm x 1.0 mm
Sensor Package	TO-39
D* (typ.) <sup>1</sup>	Tbc
NEP (typ.) <sup>1</sup>	Tbc
Time Constant	~10ms (10-20 Hz peak)
Field of View	>100°

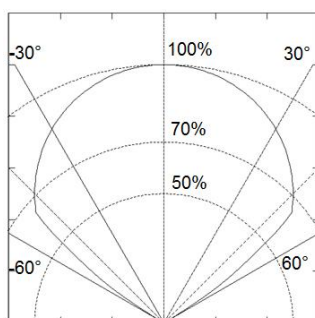
#### Electrical Characteristics

Supply voltage	1.75 to 3.6 V
Supply current (typ.)	1 to 23 $\mu$ A
Digital I/O	I <sup>2</sup> C (FM+ compatible)
ADC	15-23bit $\Delta\Sigma$ ADC @1ksp
Operating Temperature	-40 to +85 °C
Storage Temperature	-40 to +110 °C
Sensor read-out	Current mode
Configurable	Gain / digital filtering / sampling rate / power modes

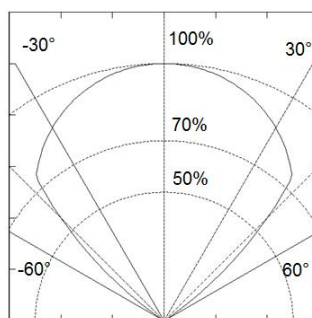
1) Measured without filter @ 500K, 10 Hz, room temperature

### Field of View

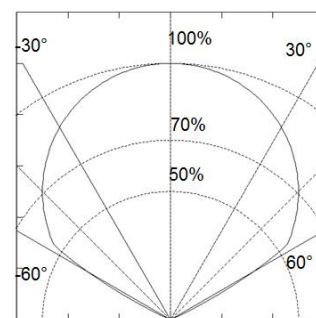
For V across horizontal  
window aperture



For V across vertical  
window aperture



For V across diagonal  
window aperture



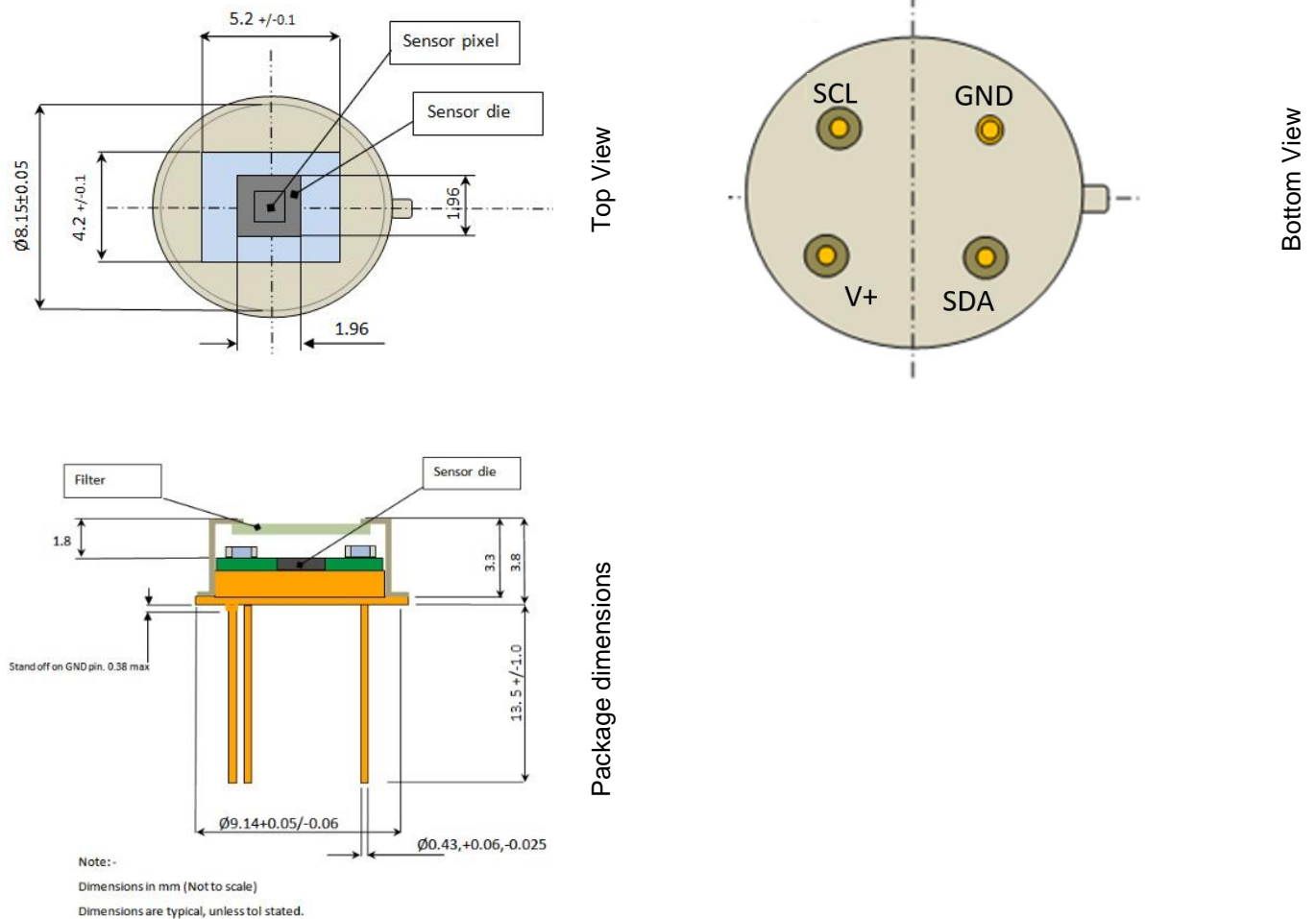
Note: Normalised polar plots show typical FoV along x,y axis and diagonal with 4.48 $\mu$ m/620nm filter applied, with infrared source being a blackbody radiator at 500 K temperature.

## Ordering Information

Please quote ezPyro TO Flame Sensor and your desired filter or specific part number ePR44xx2 as per filter table.

Contact: [sales@pyreos.com](mailto:sales@pyreos.com)

## Mechanical Drawing



## Filter Information

Part number (marking)	ePR44212 (R44212)	ePR44252 (R44252)	ePR44282 (R44282)	ePR44112 (R44112)
Filter name	3.91 $\mu$ m bandpass	4.48 $\mu$ m bandpass	4.55 $\mu$ m bandpass	5.0 $\mu$ m cut on
Cut on wavelength typical ( $\mu$ m)	3.865	4.17	4.34	5.0
Cut off wavelength typical ( $\mu$ m)	3.955	4.79	4.76	-

Filters block up to 8  $\mu$ m.