

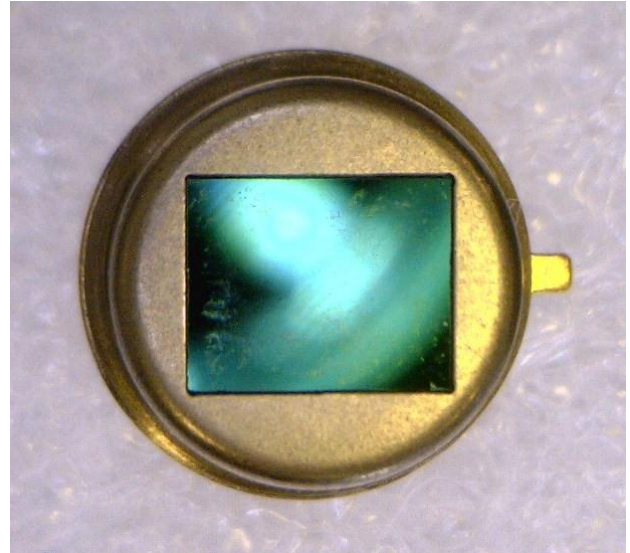
PYREOS

SINGLE CHANNEL

PYROELECTRIC FLAME DETECTOR

Introduction

The Pyreos thin film pyroelectric flame detectors offer exceptionally high responsivity, a wide field of view of typically 100 degrees(*subject to filter band pass specification) and class leading rapid recovery from thermal & electrical shocks(<1 second downtime). This detector has excellent signal to noise at the signature 8-10Hz flicker range of a flame, and can provide accurate discrimination of flame sources in triple IR flame detection systems. The internal cmos op amp provides enhanced stability and reliability. It has an industry standard pin-out and voltage mode output signal.



Sensor Information

Filter aperture	5.2 mm x 4.2 mm
Element size	1000 μm x 1000 μm
Field of View	Typical 100° ²
Op amp with 10G Ohm feedback resistor	
Time Constant	~12 ms
Responsivity ¹	150,000 V/W
D* ¹	3.5 x 10⁸ cm√Hz/W
Noise ¹	Mean 70 uV/√Hz

¹ 10Hz normalized without window & optics

² Based on filter used in part no PY0573

Max. Voltage	8.0V
Min. Voltage	2.7V
Output Voltage	Normalised around mid rail
Microphonics	S _{vib} ~2 μV/ sqrt Hz at 10Hz

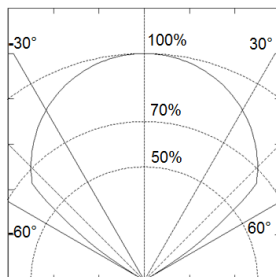
Package	TO39
Filter	5 standard flame types & custom builds

Operating Temperature -20 to +70 C

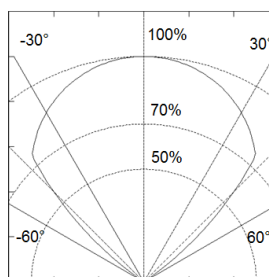
Storage Temperature -40 to +110 C

Field of View

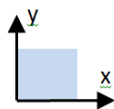
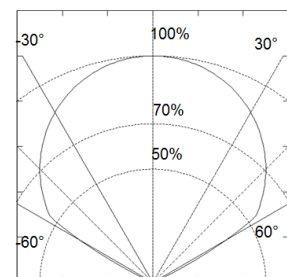
FoV across horizontal window aperture



FoV across vertical window aperture



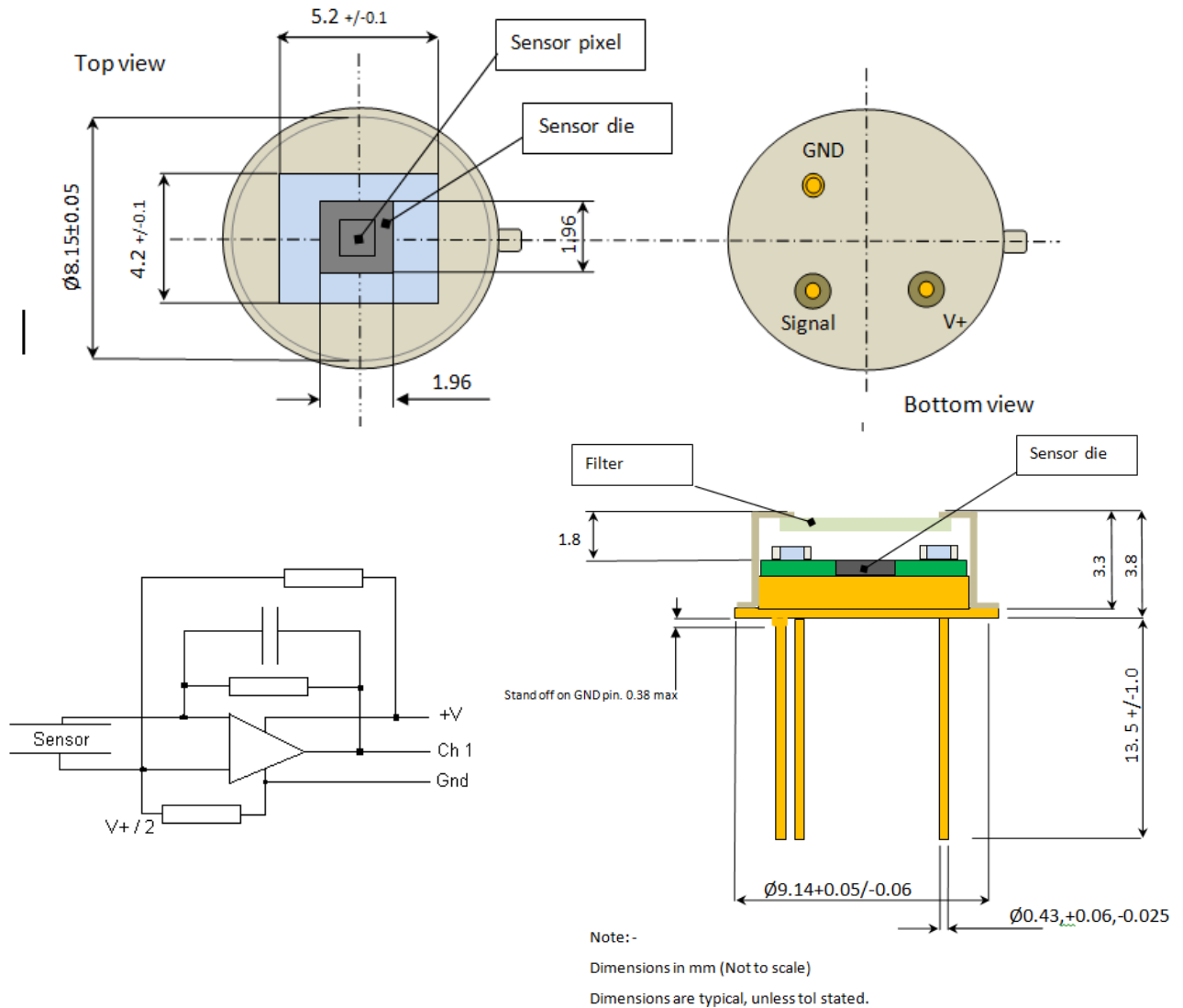
FoV across diagonal window aperture



Note: -
Normalised polar plots show max FoV achievable along x,y axis and diagonal without any filter applied.
Data from optical model.

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Package Information & Circuit Diagram:



Filters Available

Pyreos can recommend a range of industry standard flame detection filters or source filters to a customer's requirement.

Part number	PY0573	PY0574	PY0575	PY0576	PY0577
Filter Name	4.35 μ m band pass	4.64 μ m band pass	3.91 μ m band pass	5.5 μ m cut on	0.7-1.1 μ m NIR band pass
Cut on wavelength (μ m)	4.05	4.55	3.86	5.5	0.7
Cut off Wavelength (μ m)	4.65	4.73	3.96	-	1.1
Responsivity (V/W) (500K, 10Hz)	19,000	7,700	5,300	100,000	6,500

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