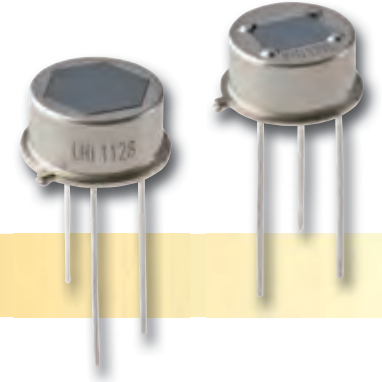


Pyroelectric Four-Element Detectors For Ceiling-Mount



LHi 1128, PYQ 1398, PYQ 1348 – Single-Output Quad Pyro

Target Applications

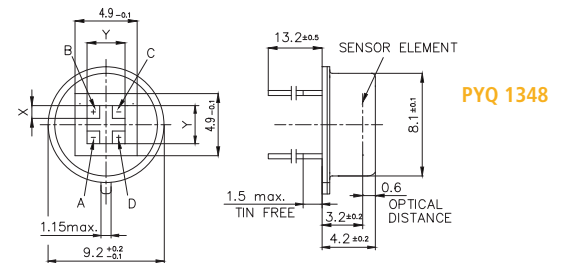
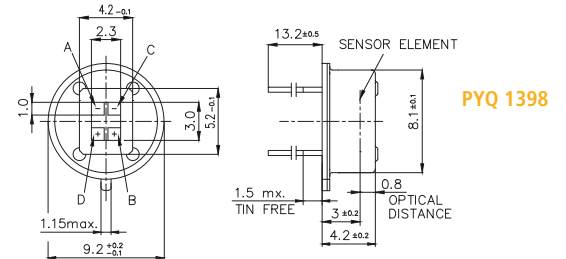
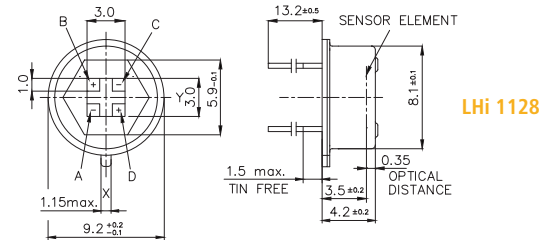
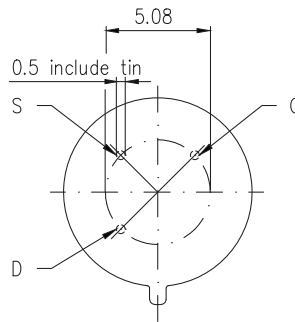
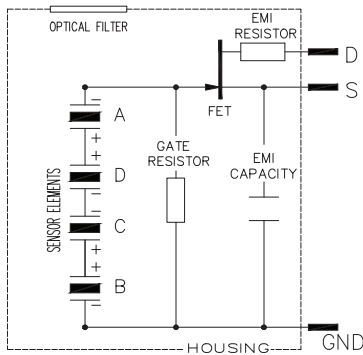
- Ceiling-Mount Alarms
- Ceiling-Mount Light Switch

Features and Benefits

- TO-5 metal housing
- Different window sizes
- Single Channel output

Product Description

This series of four element "Quad" Detectors provides all four elements connected to one common output. This configuration enables specific applications in ceiling-mount location when applied with suitable lens or mirror optics designs. Different window options are provided: Large window or standard rectangular window size. Various element polarities available upon request. For better EMI protection, the built-in capacitor option is available. For small fresnellens applications a smaller element configuration is provided.



LHi 1128, PYQ 1398 and PYQ 1348

Parameter	Symbol	LHi 1128	PYQ 1398	PYQ 1348	Small Element Option	Unit	Remarks
Responsivity, min.	R_{min}	5,4	5,4	5,4	8,4	kV/W	$f = 1 \text{ Hz}$
Responsivity, typ.	R	6,5	6,5	6,5	10,1	kV/W	$f = 1 \text{ Hz}$
Match, max.	M_{max}	10	15	15	15	%	
Noise, max.	N_{max}	100	100	100	125	μV_{pp}	0,4...10Hz/20°C
Noise, typ.	N	30	40	40	50	μV_{pp}	0,4...10Hz/20°C
spec. Detectivity	D^*	8	14	14	17	$10^7 \text{ cm}^2 \cdot \sqrt{\text{Hz}}/\text{W}$	1Hz/ 1Hz BW
Field of View, horizontal	FoV	156°	103°	124°	129°		unobstructed
Field of View, vertical		125°	97°	124°	129°		unobstructed
Source Voltage		0,2...1,55	0,2...1,55	0,2...1,55	0,2...1,55	V	47 kΩ, 20°C, VDD=10V
Operating Voltage		2,0...10	2,0...10	2,0...10	2,0...10	V	47 kΩ, 20°C
EMI performance	**	**	**	**	**		
Element size/spacing		1 x 1/1	1 x 1/1	1 x 1/1	0,8 x 0,8/0,8	mm/mm ²	

Miniaturized, Dual-Element Pyrodetectors For Motion Sensing



PYD 5731 – DigiPyro® in TO-46 Housing

Applications

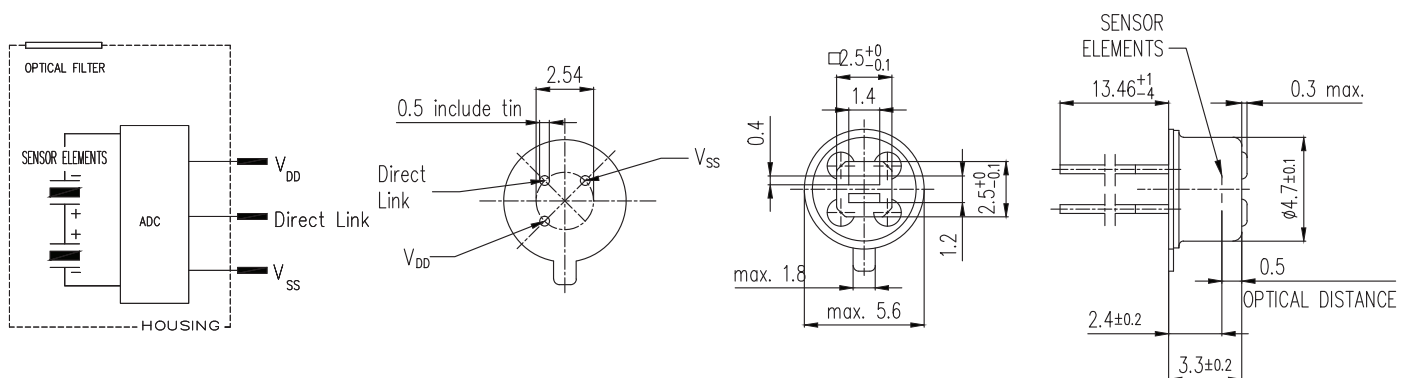
- Automatic Light Switch
- Wall Switches

Features and Benefits

- TO-46 metal housing
- Temperature reference output included
- DigiPyro® with Direct Link Interface

Product Description

This Pyrodetector features a miniaturized Dual Element Pyro in TO-46 housing. Furthermore, with the PYD 5731 Excelitas extends the emerging DigiPyro® family to miniaturized detector designs. The PYD 5731 offers the same Direct Link interface as the regular PYD 1798 DigiPyro, for output of Dual Element Pyro and additional temperature reference output. The small housing in connection with a reduced element size and spacing will enable customers to reduce the size of their optics and design smaller motion detection units.



PYD 5731

Main Parameter	Symbol	PYD 5731	Unit	Remarks
Responsivity, min.	R_{min}	8,5	kV/W	$f = 1 \text{ Hz}$
Responsivity, typ.	R_{typ}	11	kV/W	$f = 1 \text{ Hz}$
Match, max.	M_{max}	10	%	
Noise, max.	n_{max}	180	μV_{pp}	0,4...10Hz/ 20°C
Noise, typ.	n_{typ}	70	μV_{pp}	0,4...10Hz/ 20°C
Field of View, horizontal	FoV	99°		unobstr.
Field of View, vertical		88°		unobstr.
Operating Voltage	V_{DD}	2,7...3,6	V	
Supply Current	I_{DD} / I_{DDmax}	10 / 15	μA	$V_{DD} = 3,3\text{V}$
Digital Data				
Sample Time	t_{SMPL}	2	ms	min.
ADC Resolution		14	Bits	max. Count = 2^{14}
Output Data Format		2 x 14	Bits	
ADC Sensitivity		6...7,1	$\mu\text{V}/\text{count}$	
ADC Output Offset		6500...9800	counts	
ADC Output Offset	typ.	8192	counts	
Temperature Reference				
Gain (Temperature)	typ.	80	Counts/K	-20°C to +80°C
Linearity		-5...+5	%	-20°C to +80°C
Filter				
Digital Filter Cut off		10	Hz	refer to Application Note