



## DR34 Compensated

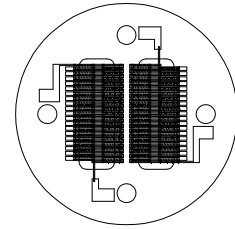
Thin Film Based Thermopile Detector

**Features:** A one-channel compensated thin-film thermopile in a TO-5 package. The active area and compensating element area are 3.16mm x 0.4mm each. Internal aperture minimizes channel-to-channel crosstalk and thus increasing sensitivity.

**Options:** See [Standard Windows and Filters](#) for list of optical filter options. See [Thermopile Configuration Table](#) for more options.

**Applications:** Industrial and medical monitoring including infant incubators.

**Benefit:** Compensated rectangular shaped active area in a TO-5 package with moderate output.



Detector circuit overlay



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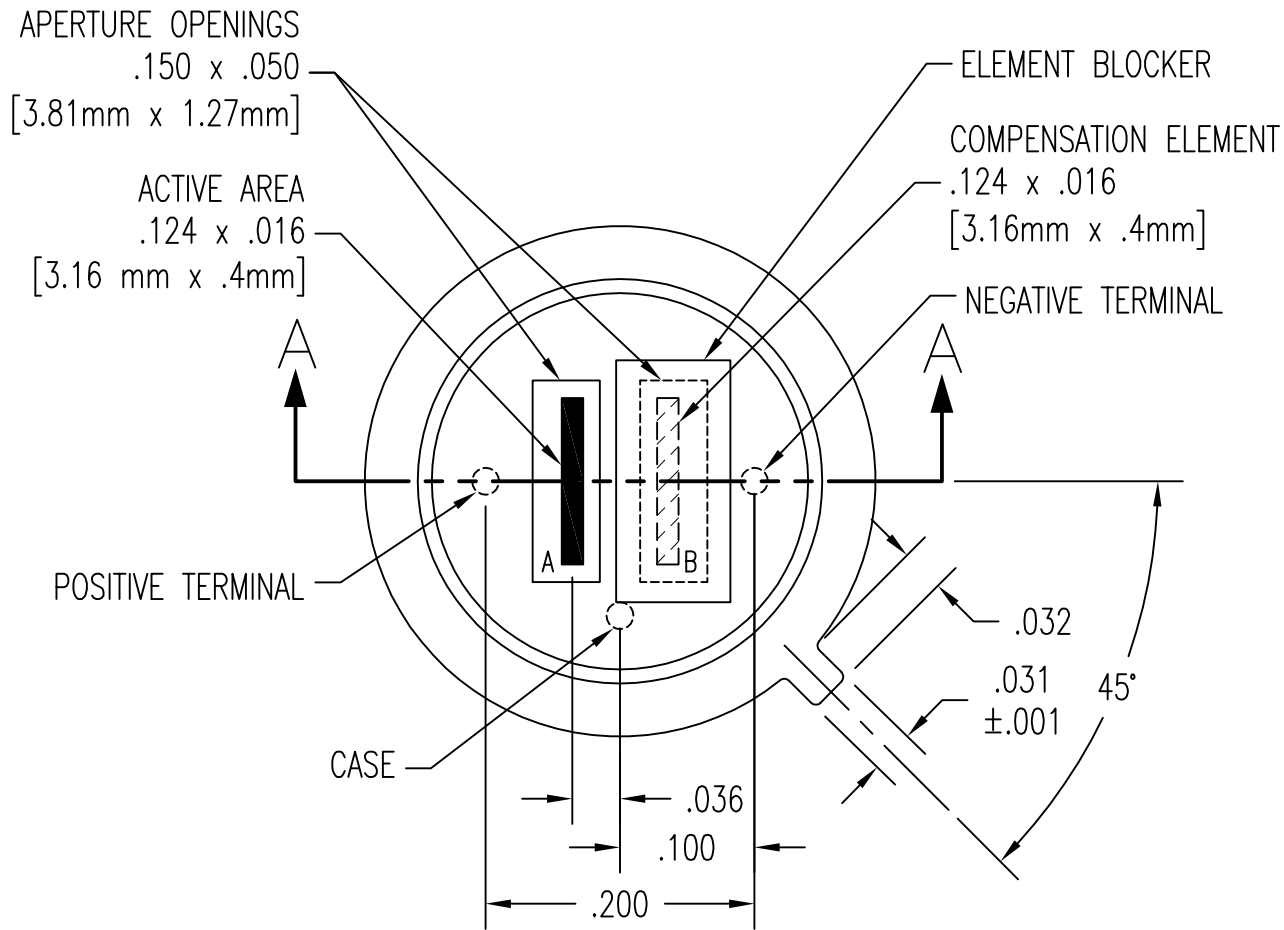
### Technical Specifications

Specifications apply at 23°C with KBr Window and Argon encapsulating gas

Parameter	Min	Typical	Max	Symbol	Units	Comments
Active Area size	3.16 x .4			AA	mm	Hot junction size, per element.
Element Area	1.264			A	mm <sup>2</sup>	
Number of Junctions	40					Per element.
Number of Channels	1 Compensated					Per detector package.
Output Voltage	90	115	130	V <sub>s</sub>	μV	DC, H=330μW/cm <sup>2</sup> (3)
Signal-to-Noise Ratio	4,545	7,099	11,404	SNR	√Hz	DC, SNR=V <sub>s</sub> /V <sub>n</sub>
Responsivity	21.6	27.6	31.2	ℜ	V/W	DC, ℜ=V <sub>s</sub> /HA (2)
Resistance	8	16	24	R	kΩ	Detector element
Temperature Coefficient of ℜ		-36			%/°C	Best linear fit, 0° to 85°C (1)
Temperature Coefficient of R		-2			%/°C	Best fit, 0° to 85°C (1)
Noise Voltage	11.4	16.2	19.8	V <sub>n</sub>	nV/√Hz	V <sub>n</sub> <sup>2</sup> =4kTR
Noise Equivalent Power	.37	.59	.92	NEP	nW/√Hz	DC, NEP= V <sub>n</sub> HA/V <sub>s</sub> (2)
Detectivity	1.2	1.9	3.1	D*	10 <sup>8</sup> cm√Hz/W	DC, D*=V <sub>s</sub> /V <sub>n</sub> H√A (2)
Time Constant		38		τ	ms	Chopped, -3dB point (1)
Field of View	NA			FOV	Degrees	Not Applicable
Package Type	TO-5 with 3 Pins					Standard package hole size: Ø.180"
Operating Temperature	-50		100	T <sub>a</sub>	°C	

**General Specifications:** Flat spectral response from 100nm to > 100μm. Linear signal output from 10<sup>-6</sup> to 0.1W/cm<sup>2</sup>. Maximum incident radiance 0.1W/cm<sup>2</sup>, damage threshold ≥ .5W/cm<sup>2</sup>

**Notes:** (1) Parameter is not 100% tested. 90% of all units meet these specifications. (2) A is detector area in cm<sup>2</sup>. (3) Test Conditions: 500K Blackbody source; Detector active surface 10cm from 0.6513cm Diameter Blackbody Aperture.

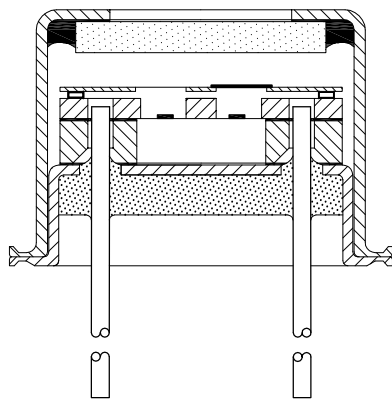
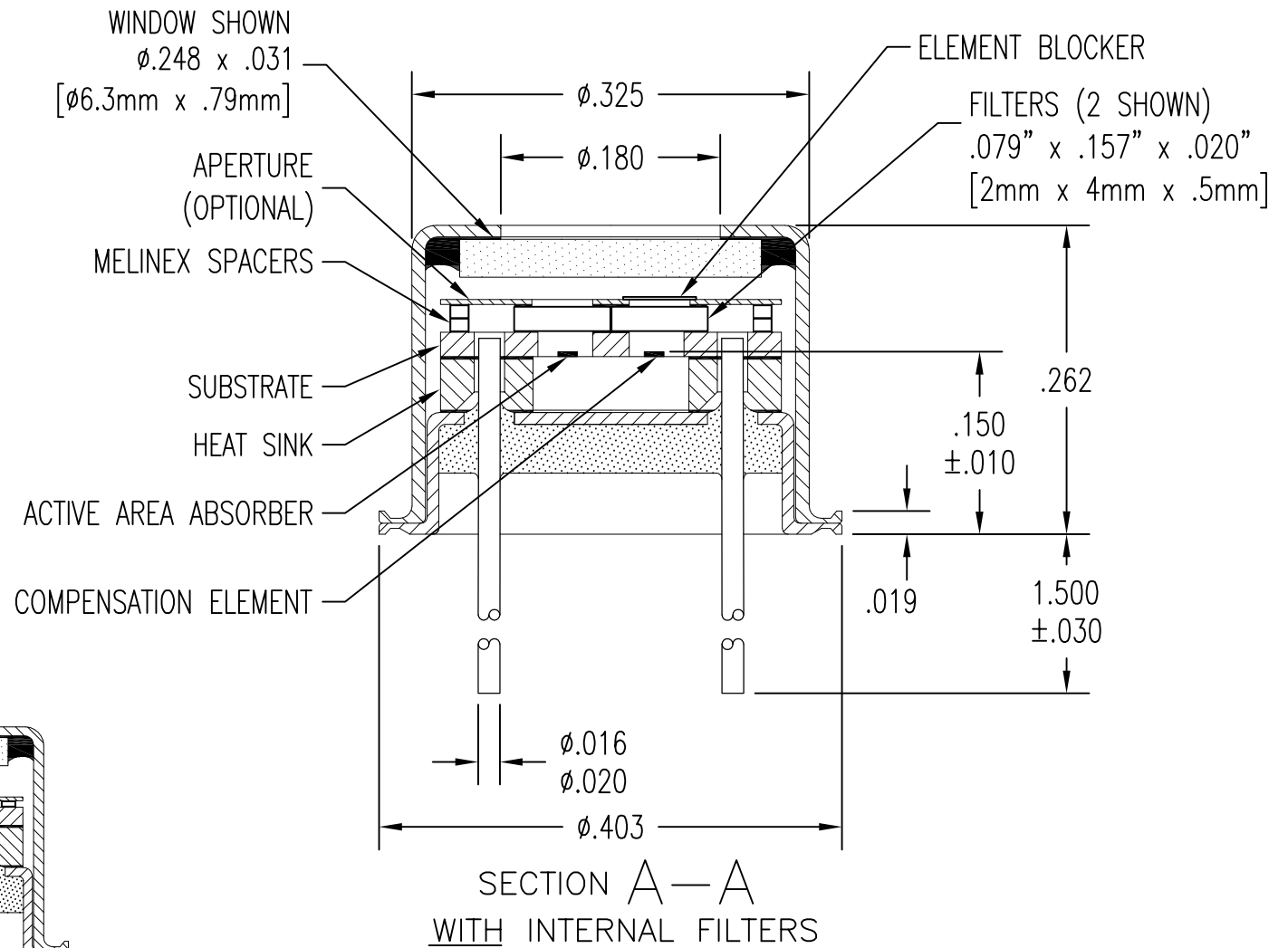


TOP VIEW  
WITHOUT COVER,  
OR FILTERS

	DESCRIPTION	P/N
A		
B		

NOTE: SOME FEATURES NOT SHOWN FOR CLARITY

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.		DEXTER RESEARCH CENTER, Inc.			
TOLERANCES ARE:		7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
FRACTIONS ±	DECIMALS .XX ± .XXX ± .005	ANGLES ±			
APPROVALS	DATE				
DRAWN: DLJ	9/18/12				
CHECKED:		SIZE: <b>A</b>	SCALE: 7" = 1"	DWG. NO. 1055.1	REV. C
ENGINEERED:		DRC PART NO.		MATERIAL:	PAGE: 1 OF 2
APPROVED:				FINISH:	



SECTION A—A  
WITHOUT INTERNAL FILTERS

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:		DEXTER RESEARCH CENTER, Inc. 7300 Huron River Dr., Dexter, MI 48130, ph. 734-426-3921 fax 734-426-5090			
FRACTIONS $\pm$	DECIMALS .XX $\pm$ .XXX $\pm .005$	ANGLES $\pm$	ASSEMBLY, DR34 INTERNALLY COMPENSATED, W/ H.S., CROSS SECTION		
APPROVALS	DATE	SIZE: <b>A</b>	SCALE: 7" = 1"	DWG. NO. 1055.2	REV. D
DRAWN: DLJ	9/18/12			PAGE: 2 OF 2	
CHECKED:		DRC PART NO.	MATERIAL:	FINISH:	
ENGINEERED:					
APPROVED:					