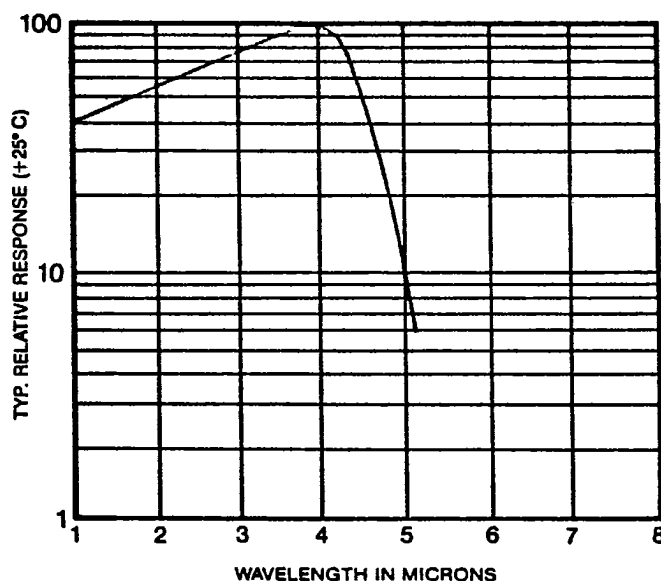


F-41-47

BF SERIES PbSe Flat Plate Detectors



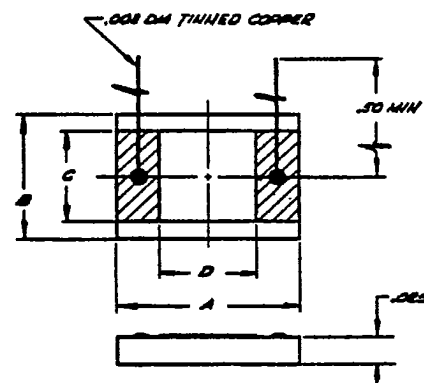
DESCRIPTION:

BF series Lead Selenide (PbSe) detectors are unpackaged, flat plate units.

These detectors offer an economical choice with good sensitivity in the 1 to 5 micron spectral region. The BF series detectors are manufactured under stringent controls to assure stability and long operation in relatively rugged environments.

All CAL-SENSORS' PbSe detectors are fully passivated with a protective overcoat. This passivation coating eliminates instabilities generally associated with PbSe detectors. Humidity resistance is provided without using a cover glass.

CAL-SENSORS' PbSe process provides the ability to produce detectors matching system demands in the 1 to 5 micron spectral region without cooling and with an order of magnitude better performance than most thermal or pyroelectric detectors, yet maintaining low cost and high reliability.



BF SERIES PbSe FLAT PLATE DETECTORS FEATURE:

High sensitivity over the 1 to 5 μm spectral region
 Fully passivated
 Excellent stability and reliability
 Fast response
 Room temperature operation
 Low cost - fast delivery

SPECIFICATIONS

Characteristic	Operating Conditions	Performance			Units
		Minimum	Typical	Maximum	
Ambient temperature			+25	+65	$^{\circ}\text{C}$
Element temperature	All specifications apply at		+25		$^{\circ}\text{C}$
D^* (detectivity)	500°K, 1KHz, 1Hz	1.0×10^8	2.5×10^8		$\text{cmHz}^{1/2}\text{W}^{-1}$
D^* (detectivity)	λpk , 1KHz, 1Hz	1.0×10^9	2.5×10^9		$\text{cmHz}^{1/2}\text{W}^{-1}$
Wavelength of max. response		3.7	3.8 to 4.0		μm
Element resistance (dark)		0.05	0.5	2.0	Meg ohms/ \square
Time constant	(not measured)		1.5	3.0	μsec
Responsivity	λpk , 1KHz				VW^{-1}
Element size 1mm x 1mm		4,000	6,000		
Element size 2mm x 2mm		2,000	3,000		
Element size 3mm x 3mm		1,300	2,000		
Element size 4mm x 4mm		1,000	1,500		
Optimum detector bias	With 1M Ω load resistor				Volts
Element size 1mm x 1mm			50	100	
Element size 2mm x 2mm			100	200	
Element size 3mm x 3mm			150	300	
Element size 4mm x 4mm			200	400	

When ordering standard detectors, specify:

Type	Element:		Substrate Dimensions:			
	C	D	A	B	Thickness	
BF-1	1mm	1mm	3.0mm	1.5mm	0.64mm	
BF-2	2mm	2mm	4.5mm	2.5mm	0.64mm	
BF-3	3mm	3mm	5.0mm	3.8mm	0.64mm	
BF-4	4mm	4mm	6.5mm	4.5mm	0.64mm	

1. Other standard element sizes up to and including 1cm x 1cm are readily available.
2. Rectangular elements of reasonable aspect ratio are also available.
3. Refer to other data sheets for cooled detectors.