

## 1.1.2.2 High Sensitivity Thermal Sensors

### 8μW to 3W

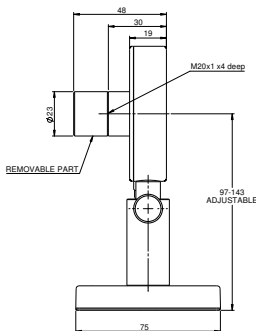
#### Features

- Very low noise and drift to measure very low powers and energies
- Broadband and P absorbers for CW and short pulses
- Up to 3W
- Version for Terahertz

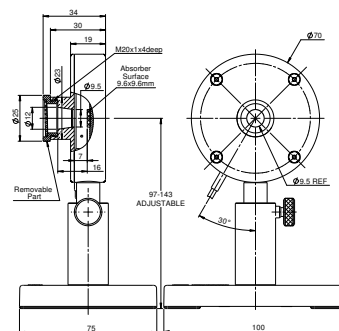


Model	3A-P-THz	3A-FS	3A-P-FS-12
<b>Use</b>	<b>Calibrated for Terahertz radiation</b>	<b>With removable window</b>	<b>For divergent beams, window blocks infrared</b>
Absorber Type	P type	Broadband + F.S. window	P type + F.S. window
Spectral Range μm	0.1THz - 30THz <sup>(c)</sup>	0.19 - 20 <sup>(b)</sup>	0.22 - 2.1
Aperture mm	Ø12mm	Ø9.5mm	Ø12mm
Maximum Beam Divergence	NA	NA	±40 degrees
<b>Power Mode</b>			
Power Range <sup>(f)</sup>	15μW - 3W	8μW - 3W	15μW - 3W
Power Scales	3W to 300μW	3W to 300μW	3W to 300μW
Power Noise Level	4μW <sup>(d)</sup>	2μW	6μW
Thermal Drift (30min) <sup>(a)</sup>	5 - 30μW	2 - 10μW	20 - 40μW
Maximum Average Power Density kW/cm <sup>2</sup>	0.05	1	0.05
Response Time with Meter (0-95%) typ. s	2.5	1.8	2.5
Power Accuracy +/-%	8 <sup>(c)</sup>	3	3
Linearity with Power +/-%	1	1	1
<b>Energy Mode</b>			
Energy Range	20μJ - 2J	15μJ - 2J	20μJ - 2J
Energy Scales	2J to 200μJ	2J to 200μJ	2J to 200μJ
Minimum Energy	20μJ	15μJ	20μJ
Maximum Energy Density J/cm <sup>2</sup> <sup>(e)</sup>			
<100ns	1	0.3	1
0.5ms	1	1	1
2ms	1	2	1
10ms	1	4	1
Cooling	convection	convection	convection
Weight kg	0.2	0.2	0.15
Fiber Adapters Available (see page 83)	ST, FC, SMA, SC	ST, FC, SMA, SC	NA
Version			
<b>Part number</b>	<b>7Z02742</b>	<b>7Z02628</b>	<b>7Z02687</b>
Note: (a)	Depending on room airflow and temperature variations		
Note: (b)	Remove window for measurement beyond 2.2μm		
Note: (c)	2 sigma standard lab traceable calibration for 0.6THz - 10THz. For 0.3 - 0.5THz add 4% to error. Outside this region the sensor will measure but is not calibrated.		
Note: (d)	Back reflections from meter can sometimes cause interference effects with source. Unit should be tilted ~10° in this case		
Note: (e)	Wavelength	Derate to value	
	1064nm	Not derated	
	532nm	Not derated	
	355nm	40% of stated value	
	266nm	5% of stated value	
	193nm	10% of stated value	
Note: (f)	Lowest measurable powers are achieved by thermally quiet room conditions, using removable snout, averaging and offset subtraction		

3A-P-THz



3A-FS



3A-P-FS-12

