



## 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

Note: (f)

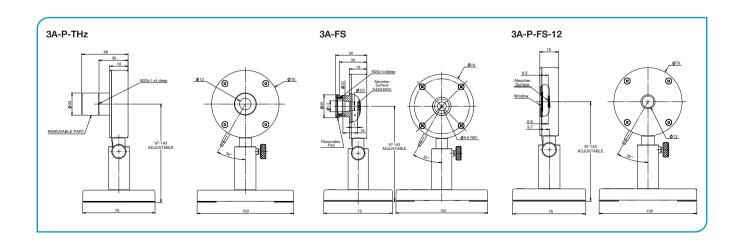
Version for Terahertz







Model	3A-P-THz	3A-FS	3A-P-FS-12
Use	Calibrated for Terahertz radiation	With removable window	For divergent beams, window blocks infrared
Absorber Type	P type	Broadband + F.S. window	P type + F.S. window
Spectral Range µm	0.1THz - 30THz (c)	0.19 - 20 <sup>(b)</sup>	0.22 - 2.1
Aperture mm	Ø12mm	Ø9.5mm	Ø12mm
Maximum Beam Divergence	NA	NA	±40 degrees
Power Mode			
Power Range ®	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) (a)	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
Calibration Uncertainty ±%	1.9	1.9	1.9
Power Accuracy ±%	8 (c)	3	3
Linearity with Power ±%	1	1	1
Energy Mode			
Energy Range	20uJ - 2J	15uJ - 2J	20uJ - 2J
Energy Scales	2J to 200µJ	2J to 200µJ	2J to 200µJ
Minimum Energy	20µJ	15µJ	20µJ
Maximum Energy Density J/cm <sup>2 (e)</sup>			
<100ns	1	0.3	1
0.5ms	1	1	1
2ms	1	2	1
10ms	<u> </u>	4	1
Cooling	Convection	Convection	Convection
Weight kg	0.2	0.2	0.15
Fiber Adapters Available (see page 93)	ST, FC, SMA, SC	ST, FC, SMA, SC	NA
Compliance	CE, UKCA, China RoHS	CE, UKCA, China RoHS	CE, UKCA, China RoHS
Version	oe, ortort, ormaniono	oe, ortort, ortifications	CE, Great, China Herio
Part number	7Z02742	7Z02628	7Z02687
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) For P type and shorter wavelengths derate maximum energy density as follows:	Wavelength         Derate to value           1064nm         Not derated           532nm         Not derated           355nm         40% of stated v           266nm         5% of stated v           193nm         10% of stated v	lue	



Lowest measurable powers are achieved by thermally quiet room conditions, using removable snout, averaging and offset subtraction

