

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
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 ^(b)	0.22 - 2.1
Aperture mm	Ø12mm		Ø9.5mm	Ø12mm
Maximum Beam Divergence	NA		NA	±40 degrees
Power Mode				
Power Range ^(f)	15μW - 3W		8μW - 3W	15μW - 3W
Power Scales	3W to 300μW		3W to 300μW	3W to 300μW
Power Noise Level	4μW ^(d)		2μW	6μW
Thermal Drift (30min) ^(a)	5 - 30μW		2 - 10μW	20 - 40μW
Maximum Average Power Density kW/cm²	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	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/cm² ^(e)				
<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 93)	ST, FC, SMA, SC		ST, FC, SMA, SC	NA
Compliance	CE, UKCA, China RoHS		CE, UKCA, China RoHS	CE, UKCA, China RoHS
Version				
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 1064nm 532nm 355nm 266nm 193nm	Derate to value Not derated Not derated 40% of stated value 5% of stated value 10% of stated value		
Note: (f)	Lowest measurable powers are achieved by thermally quiet room conditions, using removable snout, averaging and offset subtraction			

