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

3A-P-THz

3A-FS

3A-P-FS-12

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.

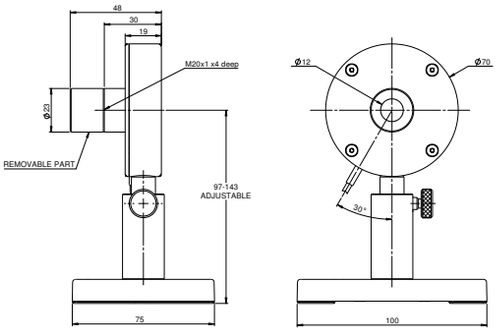
Note: (d) Back reflections from meter can sometimes cause interference effects with source. Unit should be tilted ~10° in this case

Note: (e) For P type and shorter wavelengths derate maximum energy density as follows:

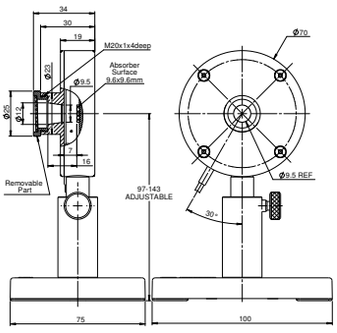
Wavelength	Derate to value
1064nm	Not derated
532nm	Not derated
355nm	40% of stated value
266nm	5% of stated value
193nm	10% of stated value

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