1.1.2.7 High Power Thermal Sensors

1.1.2.7.2 High Power Water Cooled Thermal Sensors

20W to 5000W

Features

- Powers up to 5000W
- Water cooled
- Ø50mm aperture
- 5000WP for non-contaminating water flow

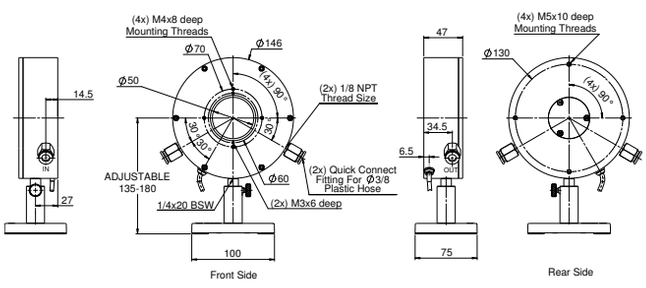
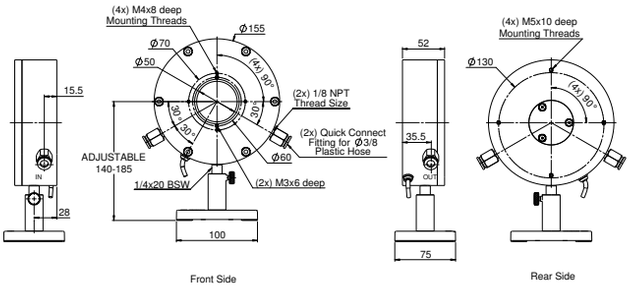
5000W-BB-50

5000W-LP2-50

5000WP-LP2-50

Model	5000W-BB-50	5000W-LP2-50 / 5000WP-LP2-50
Use	**General purpose and CO_2 laser**	**High power densities and long pulses lasers / Controlled materials in contact with water flow** [c]
Absorber Type	Broadband	LP2
Spectral Range µm	0.19 - 20	0.35 – 2.2
Absorption	~88%	>94% from 0.35 to 1.1µm
Aperture mm	Ø50mm	Ø50mm
Power Mode		
Power Range	20W - 5000W	20W - 5000W
Power Scales	5000W / 500W	5000W / 500W
Power Noise Level	1W	1W
Maximum Average Power Density kW/cm²	3 at 3kW 1.7 at 5kW	5 at 3kW 2.5 at 5kW
Response Time with Meter (0-95%) typ. s	3	3
Calibration Uncertainty ±%	1.9	1.9
Power Accuracy ±%	4 [a]	4 [a]
Linearity with Power ±%	2	2
Energy Mode		
Energy Range	NA	NA
Energy Scales	NA	NA
Minimum Energy mJ	NA	NA
Maximum Energy Density J/cm²		
<100ns	0.3	0.1
1µs	0.4	0.9
0.5ms	5	50
2ms	10	130
10ms	30	400
Cooling	water	water
Fiber Adapters	QBH-Fiber Adapter (see page 97)	For 5000W-LP2-50: QBH-Fiber Adapter (see page 97)
Accessories for High Power Sensors	See pages 97-101	See pages 97-101
Minimum and Recommended water flow at full power [b]	5 liter/min 8 liter/min	5 liter/min 8 liter/min
Cable Length	1.5 meters	1.5 meters
Weight kg	2.8	2.8 / 3
Compliance	CE, UKCA, China RoHS	CE, UKCA, China RoHS
Version	V1	
Part number	**7Z02754**	**7Z02773 / 7Z02788**
Notes: (a)	Calibrated for ~0.8µm, 1.064µm and 10.6µm	For spectral range 0.35 to 1.1µm
Notes: (b)	Water temperature range 18-30°C. Water temperature rate of change <1°C/min. Pressure drop across sensor 0.06MPa. The recommended flow rate can be lowered proportionately at lower than full power but should not be below the minimum. When used at full power with substantially below the recommended flow rate, the damage threshold may be as much as 20% lower. The response time will be optimum with the recommended flow rate.	
Notes: (c)	The 5000WP-LP2-50 has nylon rear housing and nothing but nylon and copper in contact with the water flow. This prevents contamination of the water flow with aluminum and prevents the possibility of corrosion.	

5000W-BB-50 / 5000W-LP2-50



5000WP-LP2-50