

1.1.2.6 High Power Thermal Sensors

1.1.2.6.2 High Power Water Cooled Thermal Sensors

20W to 10kW

Features

- Powers up to 10kW
- Water cooled
- $\phi 45\text{mm}$ and $\phi 50\text{mm}$ apertures

5000W-BB-50 / 5000W-LP-50

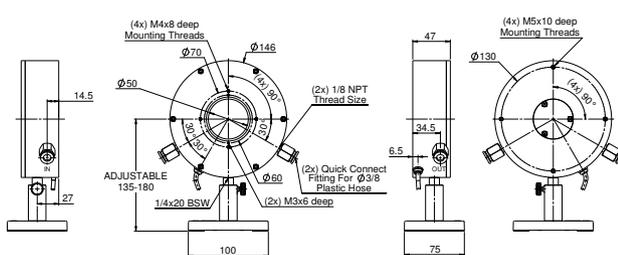


10K-W-BB-45



Model	5000W-BB-50	5000W-LP-50	10K-W-BB-45
Use	General purpose	High power densities and long pulses	Highest powers and power densities
Absorber Type	Broadband	LP	Beam deflector + broadband absorber
Spectral Range μm	0.19 - 20	0.4 - 1.5, 10.6	0.8 - 2, 10.6
Aperture mm	$\phi 50\text{mm}$	$\phi 50\text{mm}$	$\phi 45\text{mm}$
Power Mode			
Power Range	20W - 5000W	20W - 5000W	100W - 10kW
Power Scales	5000W / 500W	5000W / 500W	10kW / 1kW
Power Noise Level	1W	1W	2W
Maximum Average Power Density kW/cm^2	6 at 1000W 3 at 5000W	7 at 1000W 4 at 5000W	See note (c) below
Response Time with Meter (0-95%) typ. s	3	3	2.7
Power Accuracy +/- %	5 (a)	5 (a)	5 (a)
Linearity with Power +/- %	2	2	2
Energy Mode			
Energy Range	NA	NA	NA
Energy Scales	NA	NA	NA
Minimum Energy mJ	NA	NA	NA
Maximum Energy Density J/cm^2			See note (c) below
<100ns	0.3	0.3	
1 μs	0.4	0.3	
0.5ms	5	20	
2ms	10	50	
10ms	30	150	
Cooling	water	water	water
Fiber Adapters	Consult Ophir representative	Consult Ophir representative	Consult Ophir representative
Protective Housing	See page 43	See page 43	See page 43
Minimum Water Flow Rate at Full Power	4.5 liter/min (b)	4.5 liter/min (b)	9 liter/min (b)
Weight kg	2.8	2.8	4.5
Version	V1	V1	V3
Part number	7Z02754	7Z02755	7Z02756
Notes: (a)	Calibrated for $\sim 0.8\mu\text{m}$, $1.064\mu\text{m}$ and $10.6\mu\text{m}$	Calibrated for $1.064\mu\text{m}$ and $10.6\mu\text{m}$	Calibrated at $1.064\mu\text{m}$ and $10.6\mu\text{m}$. For other wavelengths in the range $0.8 - 2\mu\text{m}$ add up to $\pm 2\%$ to the calibration error.
Notes: (b)	Water temperature range $18-30^\circ\text{C}$. Water temperature rate of change $<1^\circ\text{C}/\text{min}$.		
Notes: (c)	Beam diameter	Max power density	Max energy density
			1ms pulse width 3ms pulse width 10ms pulse width
	<15mm	10kW/cm ²	30J/cm ² 60J/cm ² 150J/cm ²
	15 - 20mm	7kW/cm ²	20J/cm ² 40J/cm ² 100J/cm ²
	20 - 40mm	5kW/cm ²	15J/cm ² 30J/cm ² 70J/cm ²
	40 - 45mm	4kW/cm ²	12J/cm ² 25J/cm ² 60J/cm ²

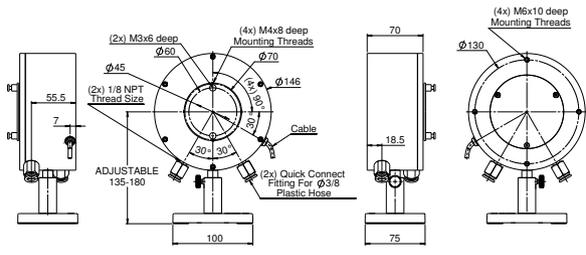
5000W-BB-50 / 5000W-LP-50



Front Side

Rear Side

10K-W-BB-45



Front Side

Rear Side