## 1.1.2.7.4 Very High Power Water Cooled Thermal Sensors

## 100W to 11kW

## Features

- Very high powers
- Water cooled
- Up to 11kW
- Up to Ø45mm apertures

Ophir<sup>®</sup>



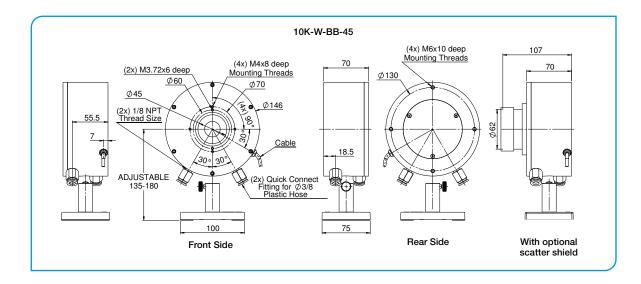


Model	10K-W-BB-45 High power up to 11kW				
Use					
Absorber Type	Beam deflector	+ broadband absor	ber		
Spectral Range µm (a)	0.8 - 2, 10.6				
Aperture mm	Ø45mm				
Power Range	100W – 11kW				
Power Scales	11kW / 6kW / 600W				
Power Noise Level	1W				
Backscattered Power <sup>(b, e)</sup>	~3.5% without Scatter Shield, ~1% with Scatter Shield				
Maximum Average Power Density kW/cm <sup>2</sup>	See note (a) and table (b) below				
Response Time with Meter (0-95%) typ. s	2.7				
Calibration Uncertainty $\pm\%$	1.9				
Power Accuracy ±%	5 (a)				
inearity with Power ±%	2			A CONTRACT OF	
Cooling	water (d)			A COLORADO	
Ainimum Water Flow Rate	8 liter/min at full power @				
Vater Connectors <sup>(e)</sup>	Quick connector for 3/8" OD nylon tubing				
Cable Length	5 meters				
Optional Scatter Shield Accessory (®)	10K-W / 15K-W Scatter Shield (P/N 7Z08295)				
Veight kg	4.5				
Compliance	CE, UKCA, China RoHS				
/ersion	V3				
Part number	7Z02756				
Notes: (a)	Calibrated at 1.07 $\mu$ m and 10.6 $\mu$ m. For other wavelengths in the range 0.8 – 2 $\mu$ m add up to ±2% to the calibration error.				
lotes: (b)	When scatter shield is installed, use the NIRS setting to compensate for slightly higher reading. When not installed, use the NIR setting.				
lotes: (c)	For circular beam centered within ¼ of beam diameter. IMPROPERLY CENTERED BEAM CAN CAUSE DAMAGE TO SENSOR. Maximum tilt angle ±5 degrees. For rectangular beam please consult Ophir representative.				
lotes: (d)	Water temperature range 18-30°C. Water temperature rate of change <1°C/min. Pressure drop across sensor 0.1MPa. The recommended flow rate can be lowered proportionately at lower than full power but should not be below 3 liter/min. The response time will be optimum with the recommended flow rate. For prolonged usage with untreated water (tag water, non DI water), the industrial version is recommended. Contact Ophir for details.				
lotes: (e)	Heavy duty stand is	available as optional extr	ra. For further information	and other options see Acces	ssories for High Power Sensors on pages 80-84.
Table: (1)	Beam diameter	Max power density	Max energy density		
		10131// 0	1ms pulse width	3ms pulse width	10ms pulse width
	<15mm 15 - 20mm	10kW/cm <sup>2</sup> 7kW/cm <sup>2</sup>	30J/cm <sup>2</sup> 20J/cm <sup>2</sup>	60J/cm <sup>2</sup> 40J/cm <sup>2</sup>	150J/cm <sup>2</sup>
	15 - 20mm 20 - 40mm	7kW/cm <sup>2</sup>	20J/cm <sup>2</sup> 15J/cm <sup>2</sup>	40J/cm <sup>2</sup> 30J/cm <sup>2</sup>	70J/cm <sup>2</sup>
	20 - 40000	JKW/GIII	100/011	300/CIII	700/GIII

12J/cm

25J/cm

60J/cm



4kW/cm

40 - 45mm