

1.1.2.7 High Power Thermal Sensors

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



Model	10K-W-BB-45			
Use	High power up to 11kW			
Absorber Type	Beam deflector + broadband absorber			
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 ^(b, e)	~3.5% without Scatter Shield, ~1% with Scatter Shield			
Maximum Average Power Density kW/cm ²	See note ^(c) and table ⁽¹⁾ below			
Response Time with Meter (0-95%) typ. s	2.7			
Calibration Uncertainty $\pm\%$	1.9			
Power Accuracy $\pm\%$	5 ^(a)			
Linearity with Power $\pm\%$	2			
Cooling	water ^(d)			
Minimum Water Flow Rate	8 liter/min at full power ^(d)			
Water Connectors ^(e)	Quick connector for 3/8" OD nylon tubing			
Cable Length	5 meters			
Optional Scatter Shield Accessory ^(e)	10K-W / 15K-W Scatter Shield (P/N 7Z08295)			
Weight kg	4.5			
Compliance	CE, UKCA, China RoHS			
Version	V4			
Part number	7Z07102			
IPM-10KW Ruggedized Industrial Version	7Z07106 see page 92			
Note: (a)	Calibrated at 1.07 μm and 10.6 μm . For other wavelengths in the range 0.8 – 2 μm add up to $\pm 2\%$ to the calibration error.			
Note: (b)	When scatter shield is installed, use the NIRS setting to compensate for slightly higher reading. When not installed, use the NIR setting.			
Note: (c)	For circular beam centered within 1/4 of beam diameter. IMPROPERLY CENTERED BEAM CAN CAUSE DAMAGE TO SENSOR. Maximum tilt angle ± 5 degrees. For rectangular beam please consult Ophir representative.			
Note: (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 solutions for prolonged usage with untreated water (tap water, non DI water), please contact Ophir.			
Note: (e)	Heavy duty stand is available as optional extra. For further information and other options see Accessories for High Power Sensors on pages 97-101.			
Table: (1)	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
	15 - 20mm	7kW/cm ²	20J/cm ²	40J/cm ²
	20 - 40mm	5kW/cm ²	15J/cm ²	30J/cm ²
	40 - 45mm	4kW/cm ²	12J/cm ²	25J/cm ²

10K-W-BB-45

