

1.1.2.7 High Power Thermal Sensors

1.1.2.7.3 High Power Water Cooled Thermal Sensors

100W to 30kW

Features

- High powers
- Water cooled
- Up to 30kW
- Ø74mm aperture

30K-W-BB-74



Model	30K-W-BB-74
Use	High power up to 30kW
Measurement Type	Beam deflector + broadband absorber
Spectral Range μm	0.8 - 2
Aperture mm	Ø74mm
Power Range for Calibrated Reading	100W – 30kW
Power Noise Level	1W
Backscattered Power	~4.3% without Scatter Shield, ~1.3% with Scatter Shield ^(b, c)
Maximum Average Power Density kW/cm ²	10kW/cm ² anywhere in the beam
Beam Centering Requirements IMPROPERLY CENTERED BEAM CAN CAUSE DAMAGE TO SENSOR	For circular beam centered within ¼ of beam diameter. Maximum tilt angle ± 5 degrees. For rectangular beam please consult Ophir representative
Response Time 0-95% typ	7s
Calibration Uncertainty $\pm\%$	1.9
Power Accuracy $\pm\%$	5 ^(a)
Linearity with Power $\pm\%$	2
Variation with Beam Size $\pm\%$	1 from 20 to 40 mm 1.5 from 15 to 20 mm and 40 to 45 mm
Cooling Requirements	25 liter/min at full power, proportionally less at lower power. Min flow rate 6 liter/min. Water temperature range 15-30°C. Water temperature rate of change $< 1^\circ\text{C}/\text{min}$ ^(d)
Water Pressure Drop across Beam Absorber	Pressure drop across sensor ~0.2MPa. Pressure drop across 8 meters of ½" tubing with 9.5mm ID is ~0.3MPa
Water Connections	Quick connector for ½" OD nylon tubing ^(c)
Outputs	10 meter cable terminated in DB15 smart connector
Optional Accessories ^(c)	30K-W Scatter Shield (P/N 7Z08293) 30K-W Rubber Feet Assembly (P/N 7Z08217)
Dimensions	See drawing on next page
Weight kg	19
Compliance	CE, UKCA, China RoHS
Version	V4
Part number	7Z07136

Note: (a) Calibrated at 1.07 μm . For other wavelengths in the ranges of 0.8 - 0.95 μm & 1.1 – 2 μm add up to $\pm 2\%$ to the calibration error

Note: (b) When scatter shield is installed, use the 107S laser setting to compensate for the slightly higher reading. When not installed, use the 107 setting

Note: (c) For further information and options see **Accessories for High Power Sensors** on pages 105-108

Note: (d) For solutions for prolonged usage with untreated water (tap water, non DI water), please contact Ophir

* For drawings please see page 93

