

User Notes for Model 20K-W-BB-55 (P/N 7Z07149)

Wavelength Settings

Using the Optional Scatter Shield (P/N 7Z08355)

Wavelength Settings

The 20K-W sensor is calibrated at wavelength 1.070 μ m, but since it is relatively flat spectrally throughout the near infrared, it can be use anywhere in the spectral range 0.8 – 2 μ m with minor variation in reading (see table below).

Wavelength μ m	Relative Response
0.8	0.984
0.85	0.987
0.9	0.991
0.95	0.996
1.07	1.000
1.5	1.006
2	1.009

Scatter Shield

Approximately 3.2% of the light impinging on the 20K-W is backscattered in a diffuse manner. The Ophir 20K-W Scatter Shield (P/N 7Z08355) is available to reduce this effect. When it is installed on the front flange of the 20K-W, it will reduce the backscatter to about 1%.

The shield works in two ways:

1. By absorbing much of the backscattered light.
2. By reflecting some of it back into the sensor where that light is absorbed.

The increased absorption with the shield causes the reading on the sensor to be about 1.5% higher than without the shield. We have introduced a laser setting called NIRS to compensate for this. When using the scatter shield the maximum operating power is 18 kW, at this power the shield will heat up to approximately 80degC.

When using the scatter shield, set the laser setting to NIRS. Otherwise, leave it at NIR



Ophir Scatter Shield

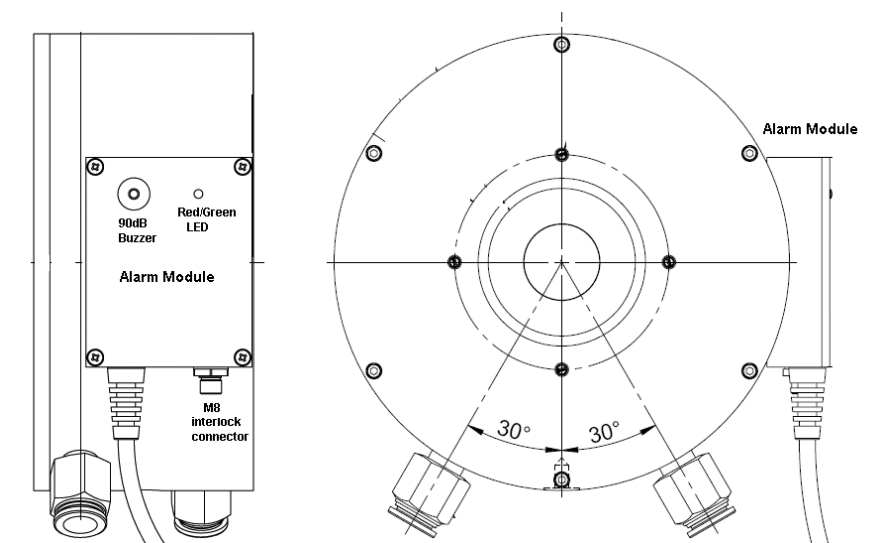


Scatter Shield with Protective Cover

Assembly of the Scatter Shield

- Remove protective cover. (If another cover is needed it can be ordered as P/N 7Z08356).
- Make sure the mating surface of the shield and the front flange are clean and free of foreign particles.
- Using the screws provided, tightly fasten the shield to the front flange.
- Set the Wavelength setting of the 20K-W to NIRS for measurement.

Over Temperature Alarm and Interlock



The 20K-W is equipped with an over temperature alarm and interlock to protect the power sensor from inadequate cooling from water cooling stoppage, insufficient water flow rate or power above rating. The system will react quickly enough to prevent damage to the sensor before shutting down the laser. The temperature is measured at a point on the sensor disc that will react within seconds of a fault.

USER NOTES

The alarm is set to be actuated in 2 stages

Temperature	Status	Default setting °C
Within normal range	LED is green interlock in normal status: Brown - Blue OPEN Brown - Black CLOSED	<170
5% over maximum highest normal	LED is flashing red Buzzer sounds intermittently interlock in normal state: Brown - Blue OPEN Brown - Black CLOSED	170 to 190
20% over maximum highest normal	LED is red Buzzer sounds continuously interlock in danger state: Brown - Blue CLOSED Brown - Black OPEN	>190
Temp back to < 60% of maximum normal range	Interlock resets to normal state	100

The set points of the over temperature alarm can be set to different values from the above if requested.

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