

## Wavelength Settings for the Ophir 10K-W-BB-45 (P/N 7Z07102) and Ophir 15K-W-BB-45 (P/N 7Z07133) Using the Optional Ophir Scatter Shield (P/N 7Z08295)

### Wavelength Settings

The 10K-W/15K-W sensors are calibrated at wavelength 1.064 $\mu$ m, but since it is relatively flat spectrally throughout the near infrared, they can be use anywhere in the spectral range 0.8 – 2 $\mu$ m with minor variation in reading (see table below).

Wavelength $\mu$ 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 10K-W/15K-W is backscattered in a diffuse manner. The Ophir 10K-W/15K-W Scatter Shield (P/N 7Z08295) is available to reduce this effect. When it is installed on the front flange of the 10K-W/15K-W, it will reduce the backscatter to about 0.9%.

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 0.9% higher than without the shield. We have introduced a laser setting called NIRS to compensate for this. At maximum power, the shield will heat up to approximately 70degC.

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



Ophir 10K-W/15K-W Scatter Shield P/N 7Z08295



Scatter Shield with Protective Cover

### Assembly of the Scatter Shield

- a. Remove protective cover. (If another cover is needed it can be ordered as P/N 7Z08345).
- b. Make sure the mating surface of the shield and the front flange are clean and free of foreign particles.
- c. Using the screws provided, tightly fasten the shield to the front flange.
- d. Set the Wavelength setting of the 10K-W/15K-W to NIRS for measurement. If your 10K-W/15K-W does not have a NIRS setting, please be in touch with your Ophir representative to have it installed.

Note: For prolonged usage with untreated water (tap water, non DI water), the 10K-W industrial version is recommended. Contact Ophir for details.

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