

## 1.1.2.10 Accessories for High Power Water Cooled Sensors

### 1.1.2.10.1 Fiber Adapter for Ophir High Power Sensors

Adapters for high power fiber connectors are available for Ophir sensors L1500W and 5000W for use in industrial environments.

The fiber adapters allow mounting of QBH fiber terminators to Ophir sensors. When using an adapter, the fiber output is centered on the sensor surface and is isolated from surrounding dust and contaminants. Choice of the correct adapter model depends on the power and divergence angle of the laser being measured, see specs below.

QBH-L-Fiber Adapter Mounted on 5000W sensor



Description	QBH fiber adapter for high power sensors models	
Use	Adapter for direct measurement of QBH fiber output	
Sensors Supported	L1500W-LP2-50, L1500W-BB-50, 5000W-LP2-50 and 5000W-BB-50 <sup>(a)</sup>	
Added Error	1% for BB type coatings	
Housing Temperature at Max Power	55°C <sup>(b)</sup>	
Cooling	Water, maximum temperature 30°C	
Fiber Adapter Water Flow Requirements	2 liter/min, minimum <sup>(c)</sup>	
Water Connectors	(2x) Quick Connect Fitting For Ø3/8 Plastic Hose <sup>(d)</sup>	
Model	QBH-L-Fiber Adapter	QBH-S-Fiber Adapter
Maximum Beam Divergence Half Angle <sup>(e)</sup>	120 mrad (180 mrad)	180 mrad (270 mrad)
Minimum Beam Divergence Half Angle	See note <sup>(f)</sup>	See note <sup>(f)</sup>
Dimensions	See drawing below	See drawing below
Part number	7Z08348	7Z08349

Note: (a) Please note that older versions of the above sensors do not have the requisite 4 threads on Ø70mm circle on their front flange and cannot be used with the QBH adapter.

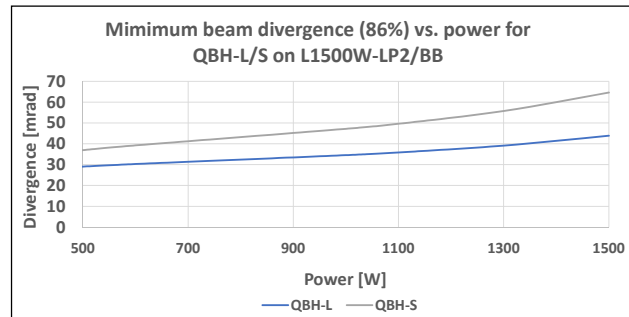
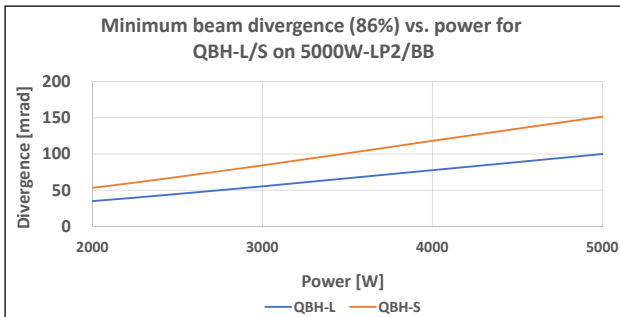
Note: (b) When using BB type coatings temperature may reach 80°C at midpoint of adapter.

Note: (c) The water flow requirements of the fiber adapter are much lower than that of the water-cooled sensor (see the sensor data sheet for details). Therefore, the fiber adapter can be connected in series with the sensor water supply but then the water flow rate of both will have to meet the sensor minimum water flow rates.

Note: (d) For Metric water connectors see page 100.

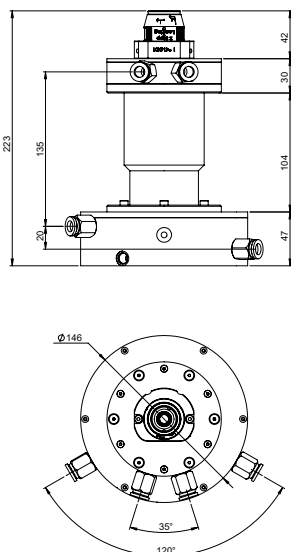
Note: (e) Divergence angle given defines radius of beam containing 86% of power, the divergence of 98% of the power is given in brackets.

Note: (f) Graphs of beam divergence:

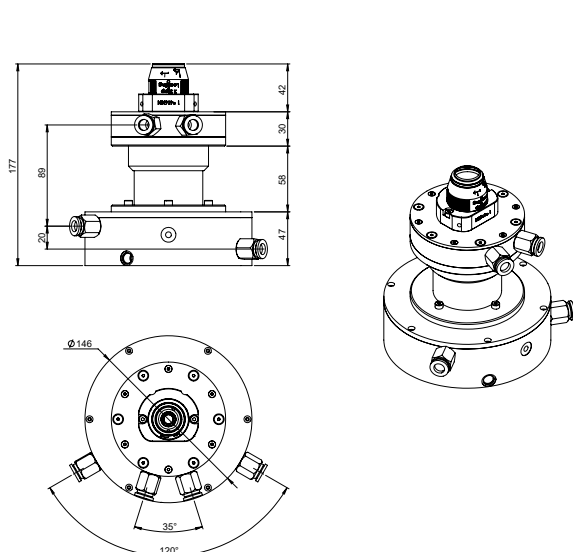


High Power QBH-Fiber Adapter Mounted on a 5000W-LP2-50 Sensor

QBH-L-Fiber Adapter



QBH-S-Fiber Adapter



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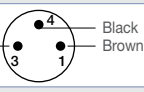
### 1.1.2.10.2 Protective Housing for 5000W, 10K-W and 15K-W Series Sensors

For use with 5000W, 10K-W and 15K-W sensors in industrial environments where sensors may be contaminated by debris from material working process.

The protective housing and shutter prevent contamination of the sensor, particularly the absorbing surface, by this debris. The housing has a solenoid actuated shutter that can be opened when needed for measuring and be closed otherwise. The protective housing is fastened to the front flange of the sensor <sup>(a)</sup>.

Protective Housing for 5000W / 10K-W / 15K-W Mounted on Sensor (shutter open)  
Rear view (cables and water connector)

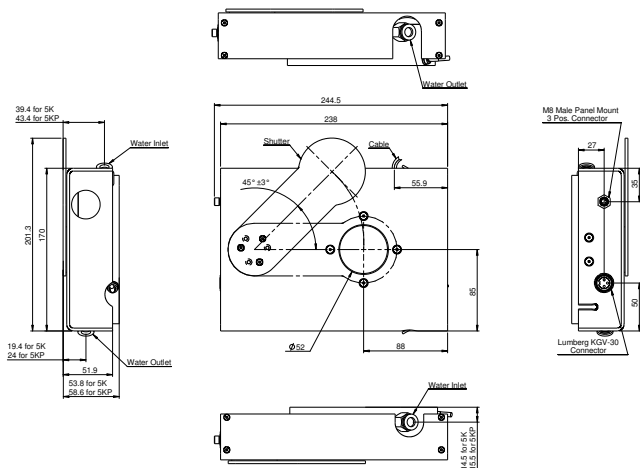


<b>Model</b>	5000W / 10K-W / 15K-W Protective Housing	
<b>Use</b>	Protection from debris of material working process	
<b>Sensors Supported</b>	For 5000W, 10K-W and 15K-W. Needs threaded front flange <sup>(a)</sup>	
<b>Aperture</b>	Exposes full aperture of sensors	
<b>Solenoid Actuating Power</b>	24VDC 1A, Shutter is normally Closed	
<b>Electrical Connection</b>	Lumberg SV30 male connector with 2m cable (P/N 7Z10377) as supplied. Black wire (pin3) is ground, Red wire (pin1) is +24VDC, no wire connected (pin 2)	
<b>Interlock</b>	Interlock switch is open if shutter is closed. This can be used to protect the shutter from accidental exposure to the laser	
<b>Electrical Connection for Interlock</b>	M8-3 Pin male connector (pin 1,4 connected to switch contacts). 1.5m cable (P/N 7E01513A) included, brown and black wires are the switch contacts. Pin 3 - no wire connected	Cable Plug (Female) Not connected 
<b>Dimensions</b>	See drawing below	
<b>Housing Material</b>	Sheet aluminum	
<b>Version</b>	V1	
<b>Part number</b>	7Z08344	

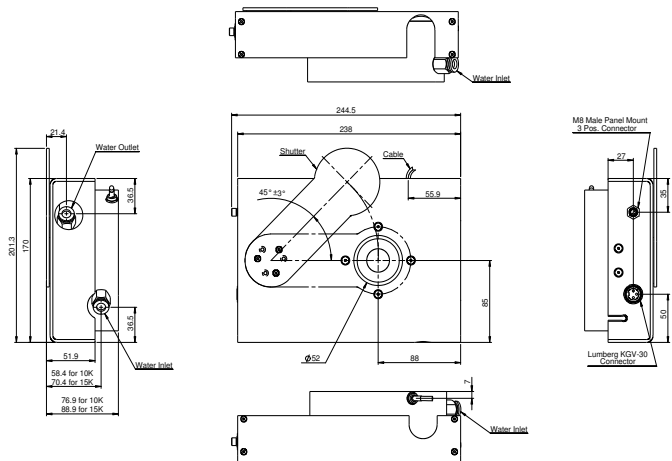
Note: (a) When fitting the housing to previous versions of the above sensors not having the requisite threads on their front flange, it will be necessary to exchange the front flange of the sensor with a new one having the requisite mounting threads. For details, consult Ophir representative.

#### Protective Housing for 5000W, 10K-W and 15K-W

##### As mounted on 5000W



##### As mounted on 10K-W / 15K-W



## 1.1.2.10 Accessories for High Power Water Cooled Sensors

### 1.1.2.10.3 Scatter Shield

Scatter Shield for mounting on front flange of 10K-W / 15K-W, 16K-W and 30K-W to reduce backscattered power.

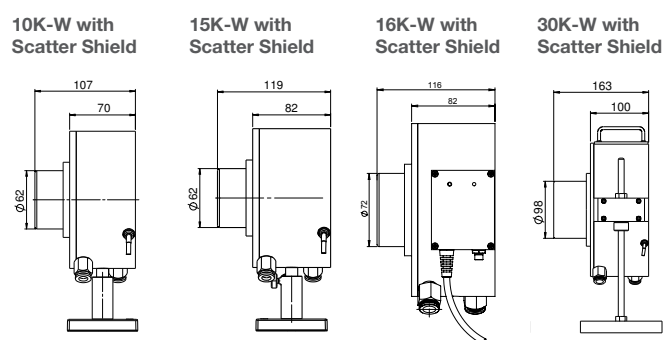
3 to 4% of the light impinging on the 10K-W, 15K-W, 16K-W and 30K-W is backscattered in a diffuse manner. This can cause heating of surrounding surfaces. Scatter Shields are available to greatly reduce this affect. When installed on the front flange of the sensors, they will reduce the backscatter by about 70%.

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 reabsorbed.

Since some of the light is reabsorbed, the power reading is 1-1.5% higher than without the shield, so an additional laser setting is given for use when the shield is mounted to adjust for this difference.

The scatter shield comes with a protective cover with target pattern for alignment that also can be purchased separately, (see page 100).

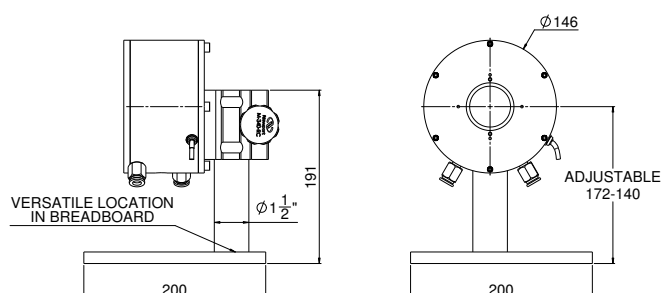


Model	10K-W / 15K-W Scatter Shield	16K-W Scatter Shield	30K-W Scatter Shield
Wavelength range of use	0.8 – 2µm	0.8 – 2µm	0.8 – 2µm
Laser setting with and without shield	with NIRS, without NIR	with NIRS, without NIR	with 107S, without 107
Backscatter with and without shield	with 1%, without 3.5%	with 1%, without 3.2%	with 1.4%, without 4.3%
Part number	7Z08295	7Z08355	7Z08293

### 1.1.2.10.4 Heavy Duty Stand for 10K-W and 15K-W

For sustained use in an upright position, it may be advisable to purchase the heavy duty stand for the 10K-W and 15K-W due to their large size and weight. The heavy duty stand bolts onto existing threads on the rear of the 10K-W and 15K-W.

Model	Heavy Duty Stand for 10K-W and 15K-W
Part number	7Z08330



## 1.1.2.10 Accessories for High Power Water Cooled Sensors

### 1.1.2.10.5 Metric Water Connectors for Water Cooled Sensors

The standard water connection supplied with Ophir water cooled sensors are quick connect fittings for 3/8" and 1/2" plastic tubing. Metric water connectors are available as follows:

Connector (set of 2 ea.)	For use with	Part Number
1/4" NPT to 12mm O.D. tubing	16K-W & 30K-W	7Z08352
1/8" NPT to 10mm O.D. tubing	All other water cooled sensors & QBH Adapters	7Z08353



### 1.1.2.10.6 Protective Covers with Target Pattern for High Power Sensors and for Scatter Shields

All the protective covers are made of black anodized aluminum, and have a cross pattern for alignment. Sensors: The 5000W, 10K-W, 15K-W sensors are supplied with the 10K-W Protective Cover. This protective cover also fits the 1000W and L1500W sensors, but is not supplied with these sensors. The protective cover can be ordered separately for these sensors. The 16K-W sensor is supplied with the 16K-W Protective Cover. The 30K-W sensor is supplied with the 30K-W Protective Cover.

Scatter Shields: 10K-W / 15K-W Scatter Shield (P/N 7Z08295), 16K-W scatter shield (P/N 7Z08355) and 30K-W Scatter Shield (P/N 7Z08293) are supplied with their respective protective covers (P/N 7Z08345 for 10K-W / 15K-W and P/N 7Z08346 for 30K-W).

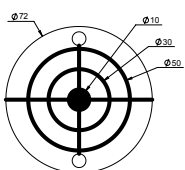
For more information on scatter shields see page 99.

All protective covers can also be ordered separately (see table below).

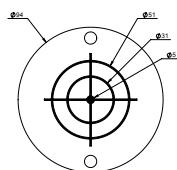


Protective Cover	For use with	Part Number
10K-W Protective Cover	15K-W, 10K-W, 5000W, L1500W, 1000W without scatter shield	1G01332
10K-W / 15K-W Scatter Shield Cover	10K-W and 15K-W with Scatter Shield	7Z08345
16K-W Protective Cover	16K-W without Scatter Shield	1G02813
30K-W Protective Cover	30K-W without Scatter Shield	1G02406
30K-W Scatter Shield Cover	30K-W with Scatter Shield	7Z08346

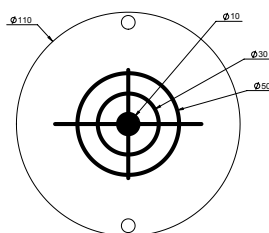
10K-W Protective Cover



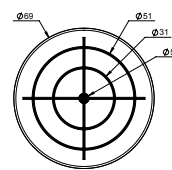
16K-W Protective Cover



30K-W Protective Cover



10K-W / 15K-W Scatter Shield Cover



30K-W Scatter Shield Cover

