

# QBH FIBER OPTIC CABLE

## 430 nm to 480 nm High-Power Beam Delivery

The QBH fiber optic cable is the no.1 fiber interface for industrial high-power lasers. It's a well proven standard compatible with most available tools world-wide. The QBH fiber connector is water-cooled to optimize the performance, including its superior power loss capability. The built-in mode stripper generates a well-defined beam without any cladding power. With the reinforced and extremely durable fiber hose it is well-suited for dynamic robot applications.



### FEATURES

- High OH optical fiber
- Mode-stripper
- AR-coated end cap
- Superior power loss handling
- Round or square fiber core
- Plug-and-play within 10  $\mu\text{m}$

### APPLICATIONS

- Welding
- Cutting
- 3D Additive Manufacturing

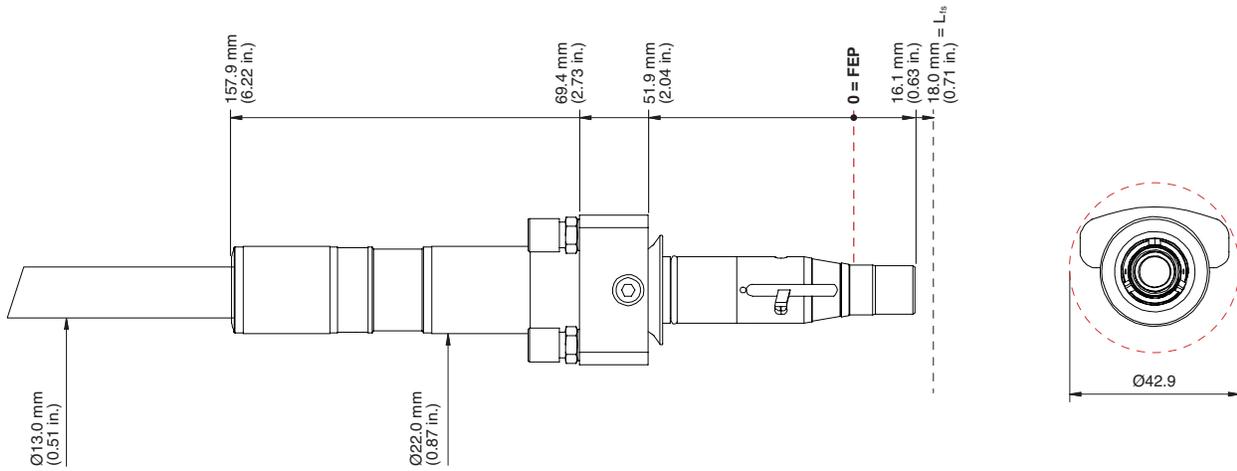
## QBH FIBER OPTIC CABLE

Specifications		QBH
Maximum Power CW (kW)	To be validated for each laser source	
Wavelength (nm)	430 to 480	
Numerical Aperture $NA_{\text{fiberacc}}$	0.2	
Fiber Core Dimensions ( $\mu\text{m}$ )	50 to 1000	
Fiber Concentricity ( $\mu\text{m}$ )	$\leq 10$	
Z-position Tolerance ( $\mu\text{m}$ )	$\pm 50$	
Pointing/Angular Deviation (mrad)		
Core Diameter $>200 \mu\text{m}$	$\leq 10$	
Core Diameter $\leq 200 \mu\text{m}$	$\leq 20$	
Power Loss Capability (kW)	To be validated for each laser source	
Transmission Losses (%)	To be validated for each laser source and cable length	
Fiber Cable Properties		
Cable Lengths (m)	$\leq 10$	
Maximum Torsion ( $^{\circ}/\text{m}$ )	90	
Cooling		
Cooling Method	Water	
Flow Rate (l/min)	2.0	
Maximum Input Pressure (bar)	8	
Pressure Drop (bar at 2.0 l/min)	0.9	
Safety Interlock		
Interlock Circuit Resistance	3.3 kOhm $\pm 5\%$ +2 Ohm/m cable length	
Dimensions & Weight		
Dimensions	See page 3	
Weight (kg)		
Fiber Connector	0.3	
Per Meter Fiber Cable	0.2	
Environmental Conditions		
Humidity (% RH)	$< 80$	
Operating Temperature ( $^{\circ}\text{C}$ )	5 to 50 (non-condensing)	
Storage Temperature ( $^{\circ}\text{C}$ )	-20 to 70	
Compliance Information		
RoHS	Directives 2011/65/EU and 2015/863/EU	
REACH	Directive EC no 1907/2006	

**Mechanical Specifications**

**Connector Dimensions**

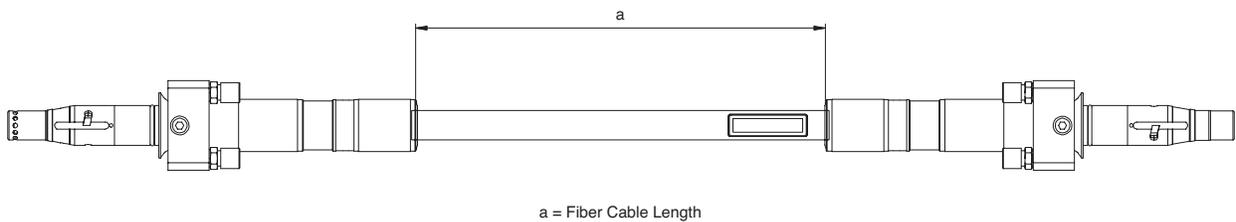
QBH



$L_{16}$  = Free Space in Front of Connector  
 FEP = Fiber End Plane

**Length Definitions**

Two Connectors



**Fiber Optic Cable Accessories**

Accessory	Part Number
QB Protection Window, Output Side, 430 to 480 nm	1412504