Beam Delivery Components for High-Power Lasers

QBH FIBER OPTIC CABLE

510 nm to 550 nm

The QBH fiber optic cable is the industry-standard interface for high-power industrial fiber lasers. Its proven design ensures compatibility with a wide range of laser processing systems and tools used worldwide.

The water-cooled QBH connector is designed to maximize performance, including its superior power loss capability.

An integrated mode stripper removes residual cladding light, delivering a clean, well-defined output beam. The reinforced, highly durable fiber hose is engineered to withstand demanding industrial environments and is particularly well suited for dynamic robotic 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 µm

APPLICATIONS

- Welding
- Cutting
- 3D Additive Manufacturing

COHERENT

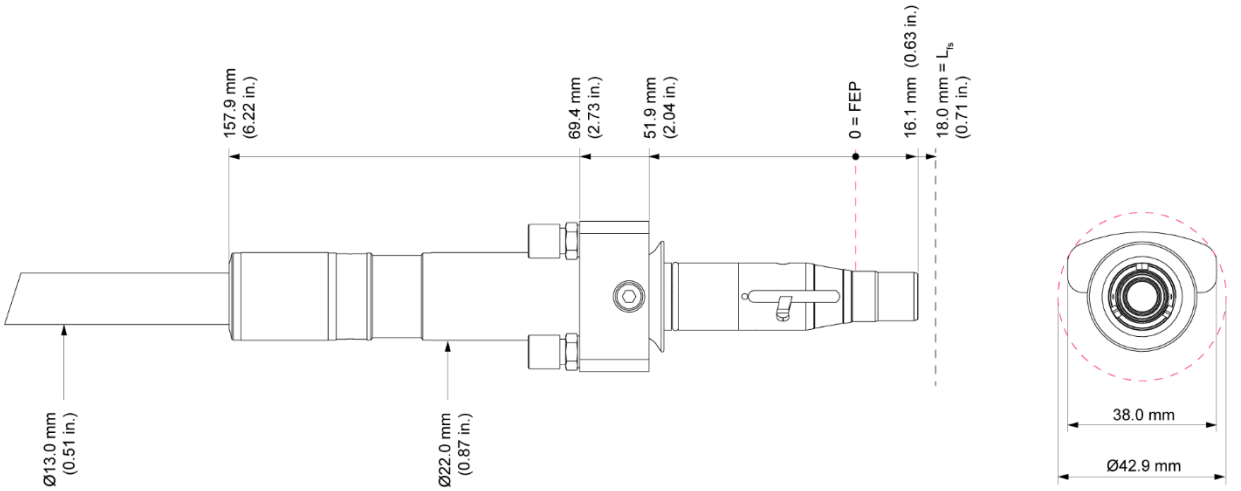
Specifications	QBH
Maximum Power CW (kW)	To be validated for each laser source
Wavelength (nm)	510 to 550
Numerical Aperture $NA_{fiberacc}$	0.20
Fiber Core Dimensions (µm)	50 to 1000
Fiber Concentricity (µm)	≤10
Z-position Tolerance (µm)	±50
Pointing/Angular Deviation (mrad) Core Diameter >200 µm Core Diameter ≤200 µm	 ≤10 ≤20
Power Loss Capability (kW)	To be validated for each laser source and cable length
Transmission Losses (%)	To be validated for each laser source and cable length
Fiber Cable Properties	
Cable Lengths (m)	≤10
Maximum Torsion (°/m)	90
Cooling	
Cooling Method	Water
Flow Rate (l/min)	2.0
Maximum Input Pressure (bar)	8.0
Pressure Drop (bar)[1]	0.9
Safety Interlock	
Interlock Circuit Resistance	3.3 kΩ ±5% +2 Ω/m cable length
Thermoswitch	No
Dimensions & Weight	
Dimensions	See page 3
Weight (kg) Fiber Connector Fiber Cable (per meter)	 0.3 0.2
Environmental Conditions	
Humidity (% RH)	<80
Operating Temperature (°C)	5 to 50 (non-condensing)
Storage Temperature (°C)	-20 to 70
Compliance Information	
RoHS	Directives 2011/65/EU and (EU) 2015/863
REACH	Regulation (EC) No. 1907/2006

1. At flow rate: 2.0 l/min.

Mechanical Specifications

Connector Dimensions

QBH

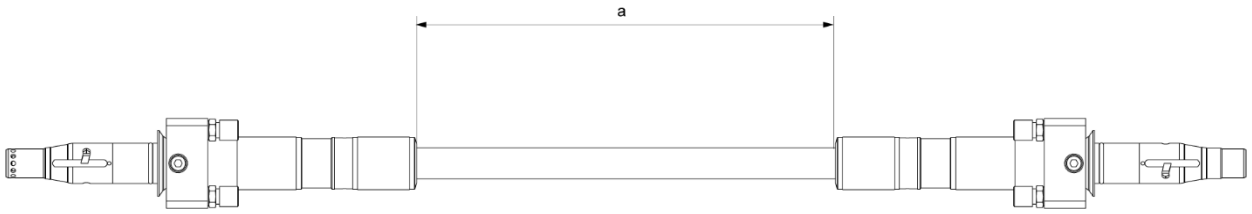


L_{fs} = Free Space
(in front of connector)

FEP = Fiber End Plane

Length Definitions

Two Connectors



a = Fiber Cable Length

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