



1030 nm to 1090 nm

QBH Fiber Optic Cable

High-Power Beam Delivery

The QBH fiber optic cable is the no.1 fiber interface for industrial high-power fiber lasers. It's a well proven standard compatible with most available tools worldwide. The QBH fiber connector is water-cooled to optimize the performance, including its superior power loss capability. For lower power systems and applications an air-cooled version is available (RQB). 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 & BENEFITS

- Up to 10 kW (CW)
- Mode-stripper
- AR-coated end cap
- Superior power loss handling
- Round or square fiber core
- Plug-and-play within 10 μm

APPLICATIONS

- Welding
- Cutting
- Surface Treatment
- Cladding
- 3D Additive Manufacturing



QBH Fiber Optic Cable: 1030 nm to 1090 nm Datasheet

SPECIFICATIONS	QBH	RQB
Maximum Power CW (kW)	10	1.5 (3.0 with external cooler)
Wavelength (nm)	1030 to 1090	
Numerical Aperture NA _{fiberacc}	0.05 to 0.20	
Fiber Core Dimensions (μm)	≤1000	
Fiber Concentricity (μm)	≤10	
Z-position Tolerance (μm)	±50	
Pointing/Angular Deviation ¹ (mrad)		
Core Diameter >200 μm	≤10	
Core Diameter ≤200 μm	≤20	
Power Loss Capability ² (kW)		
10 seconds	2.0	0.1
10 minutes	1.0	0.05
Continuously	0.5	0.01
Transmission Losses ³ (%)	<3	
FIBER CABLE PROPERTIES		
Cable Lengths (m)	≤200	
Maximum Torsion (°/m)	90	
COOLING		
Cooling Method	Water	Air (passive), optional: external water-cooler
Flow Rate (l/min)	2.0	N/A
Maximum Input Pressure (bar)	4	N/A
Pressure Drop (bar at 2.0 l/min)	1.0	N/A
SAFETY INTERLOCK		
Interlock Circuit Resistance ⁴	3.3 kOhm ±5% + 2 Ohm/m cable length	
Thermoswitch	No	Yes, 70°C ±5°C, reset temp >30°C
DIMENSIONS & WEIGHT		
Dimensions	See page 3 to 4	See page 3 to 4
Weight (kg)		
Fiber Connector	0.3	0.1
Per Meter Fiber Cable	0.2	0.2
ENVIRONMENTAL CONDITIONS		
Humidity (% RH)	<80	
Operating Temperature (°C)	5 to 50 (non-condensing)	
Storage Temperature (°C)	-10 to 70	
COMPLIANCE INFORMATION		
RoHS	Directives 2011/65/EU and 2015/863/EU	
REACH	Directive EC no 1907/2006	

¹ Pigtail fibers: Cladding diameter up to and equal 500 μm: ≤20 mrad.

² Within specified fiber NA.

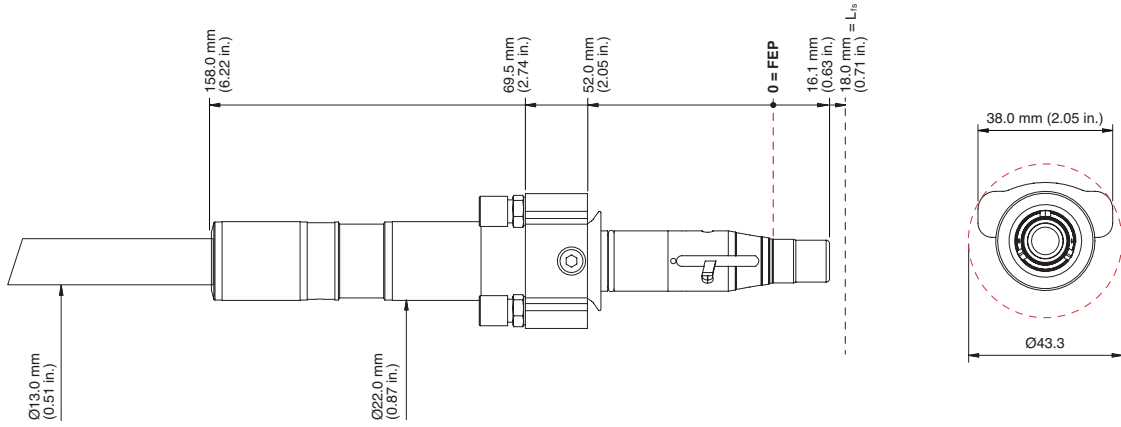
³ ≤100 m cable length.

⁴ Input pigtail fibers: 2 Ohm/m cable length.

MECHANICAL SPECIFICATIONS

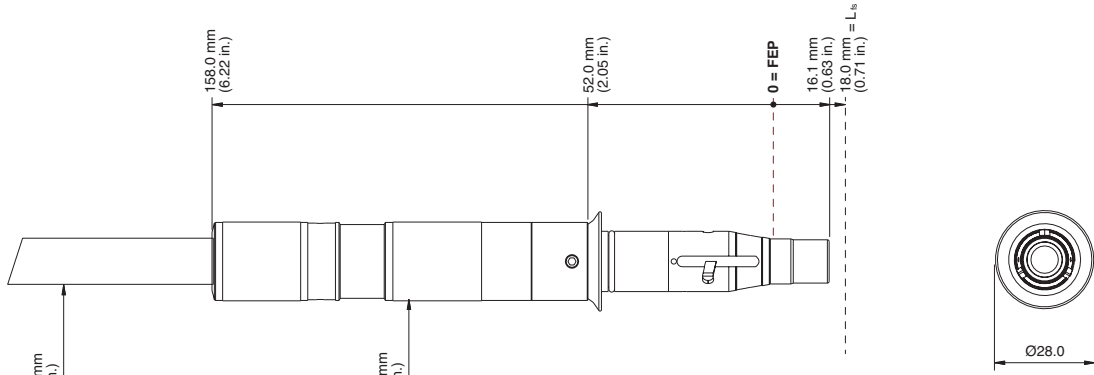
Connector Dimensions

QBH



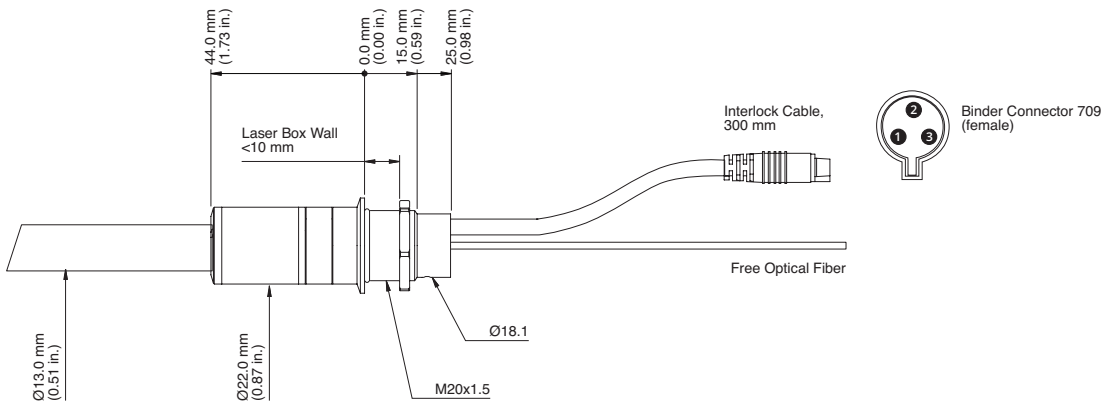
L_{fs} = Free Space in Front of Connector
 FEP = Fiber End Plane

RQB



Max. Diameter including the Removable Gaiter

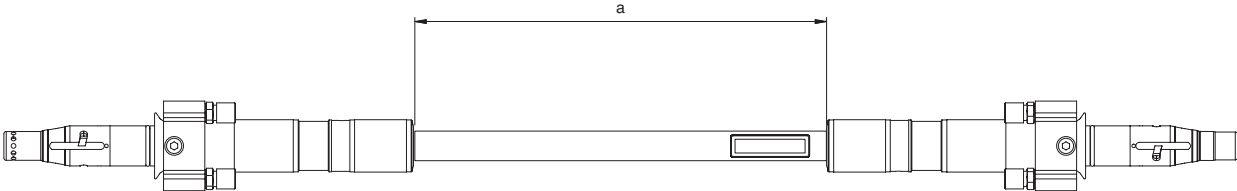
Pigtail Ending



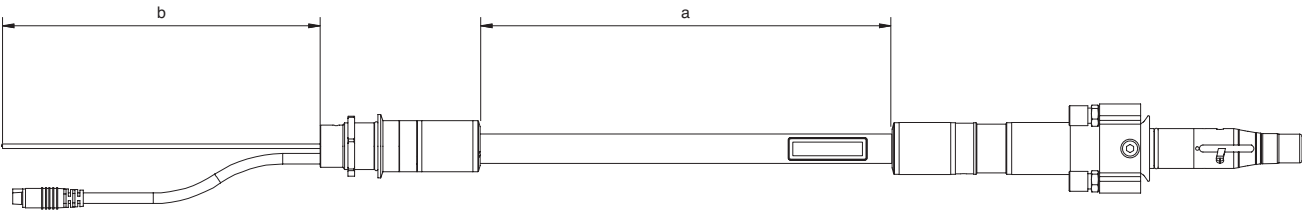
MECHANICAL SPECIFICATIONS

Length Definitions

Two Connectors



One Connector (Pigtail)



a = Fiber Cable Length
b = Free Optical Fiber Length

QBH FIBER OPTIC CABLES

Circular Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
50 μm	4-9520X01	4-9520X02	4-9520X03	4-9520X04	4-9520X06	4-9520X07	4-9520X10
100 μm	4-9521X01	4-9521X02	4-9521X03	4-9521X04	4-9521X06	4-9521X07	4-9521X10
150 μm	4-9522X01	4-9522X02	4-9522X03	4-9522X04	4-9522X06	4-9522X07	4-9522X10
200 μm	4-9523X01	4-9523X02	4-9523X03	4-9523X04	4-9523X06	4-9523X07	4-9523X10
300 μm	4-9524X01	4-9524X02	4-9524X03	4-9524X04	4-9524X06	4-9524X07	4-9524X10
400 μm	4-9525X01	4-9525X02	4-9525X03	4-9525X04	4-9525X06	4-9525X07	4-9525X10
600 μm	4-9526X01	4-9526X02	4-9526X03	4-9526X04	4-9526X06	4-9526X07	4-9526X10
800 μm	4-9527X01	4-9527X02	4-9527X03	4-9527X04	4-9527X06	4-9527X07	4-9527X10
1000 μm	4-9528X01	4-9528X02	4-9528X03	4-9528X04	4-9528X06	4-9528X07	4-9528X10

Circular Fiber Core, One Output Connector (Pigtail)

	2m	3m	5m	10m	15m	20m	25m
20/395 μm	4-9559X02	4-9559X03	4-9559X05	4-9559X10	4-9559X15	4-9559X20	4-9559X25
25/395 μm	4-9560X02	4-9560X03	4-9560X05	4-9560X10	4-9560X15	4-9560X20	4-9560X25
50/360 μm	4-9562X02	4-9562X03	4-9562X05	4-9562X10	4-9562X15	4-9562X20	4-9562X25
100/360 μm	4-9563X02	4-9563X03	4-9563X05	4-9563X10	4-9563X15	4-9563X20	4-9563X25

Note: Free fiber length b>1.0m

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
100x100 μm	4-9720X01	4-9720X02	4-9720X03	4-9720X04	4-9720X06	4-9720X07	4-9720X10
200x200 μm	4-9721X01	4-9721X02	4-9721X03	4-9721X04	4-9721X06	4-9721X07	4-9721X10
400x400 μm	4-9722X01	4-9722X02	4-9722X03	4-9722X04	4-9722X06	4-9722X07	4-9722X10
600x600 μm	4-9723X01	4-9723X02	4-9723X03	4-9723X04	4-9723X06	4-9723X07	4-9723X10
800x800 μm	4-9724X01	4-9724X02	4-9724X03	4-9724X04	4-9724X06	4-9724X07	4-9724X10
1000x1000 μm	4-9725X01	4-9725X02	4-9725X03	4-9725X04	4-9725X06	4-9725X07	4-9725X10

Customized lengths and dimensions are available upon request.

RQB FIBER OPTIC CABLES

Circular Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
50 μm	3-9259X01	3-9259X02	3-9259X03	3-9259X04	3-9259X06	3-9259X07	3-9259X10
100 μm	3-9260X01	3-9260X02	3-9260X03	3-9260X04	3-9260X06	3-9260X07	3-9260X10
150 μm	3-9261X01	3-9261X02	3-9261X03	3-9261X04	3-9261X06	3-9261X07	3-9261X10
200 μm	3-9262X01	3-9262X02	3-9262X03	3-9262X04	3-9262X06	3-9262X07	3-9262X10
300 μm	3-9263X01	3-9263X02	3-9263X03	3-9263X04	3-9263X06	3-9263X07	3-9263X10
400 μm	3-9264X01	3-9264X02	3-9264X03	3-9264X04	3-9264X06	3-9264X07	3-9264X10
600 μm	3-9265X01	3-9265X02	3-9265X03	3-9265X04	3-9265X06	3-9265X07	3-9265X10
800 μm	3-9266X01	3-9266X02	3-9266X03	3-9266X04	3-9266X06	3-9266X07	3-9266X10
1000 μm	3-9267X01	3-9267X02	3-9267X03	3-9267X04	3-9267X06	3-9267X07	3-9267X10

Circular Fiber Core, One Output Connector (Pigtail)

	2m	3m	5m	10m	15m	20m	25m
20/395 μm	3-9510X02	3-9510X03	3-9510X05	3-9510X10	3-9510X15	3-9510X20	3-9510X25
50/360 μm	3-9511X02	3-9511X03	3-9511X05	3-9511X10	3-9511X15	3-9511X20	3-9511X25
100/360 μm	3-9512X02	3-9512X03	3-9512X05	3-9512X10	3-9512X15	3-9512X20	3-9512X25

Note: Free fiber length b>1.0m

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
100x100 μm	3-9520X01	3-9520X02	3-9520X03	3-9520X04	3-9520X06	3-9520X07	3-9520X10
200x200 μm	3-9521X01	3-9521X02	3-9521X03	3-9521X04	3-9521X06	3-9521X07	3-9521X10
400x400 μm	3-9522X01	3-9522X02	3-9522X03	3-9522X04	3-9522X06	3-9522X07	3-9522X10
600x600 μm	3-9523X01	3-9523X02	3-9523X03	3-9523X04	3-9523X06	3-9523X07	3-9523X10
800x800 μm	3-9524X01	3-9524X02	3-9524X03	3-9524X04	3-9524X06	3-9524X07	3-9524X10
1000x1000 μm	3-9525X01	3-9525X02	3-9525X03	3-9525X04	3-9525X06	3-9525X07	3-9525X10

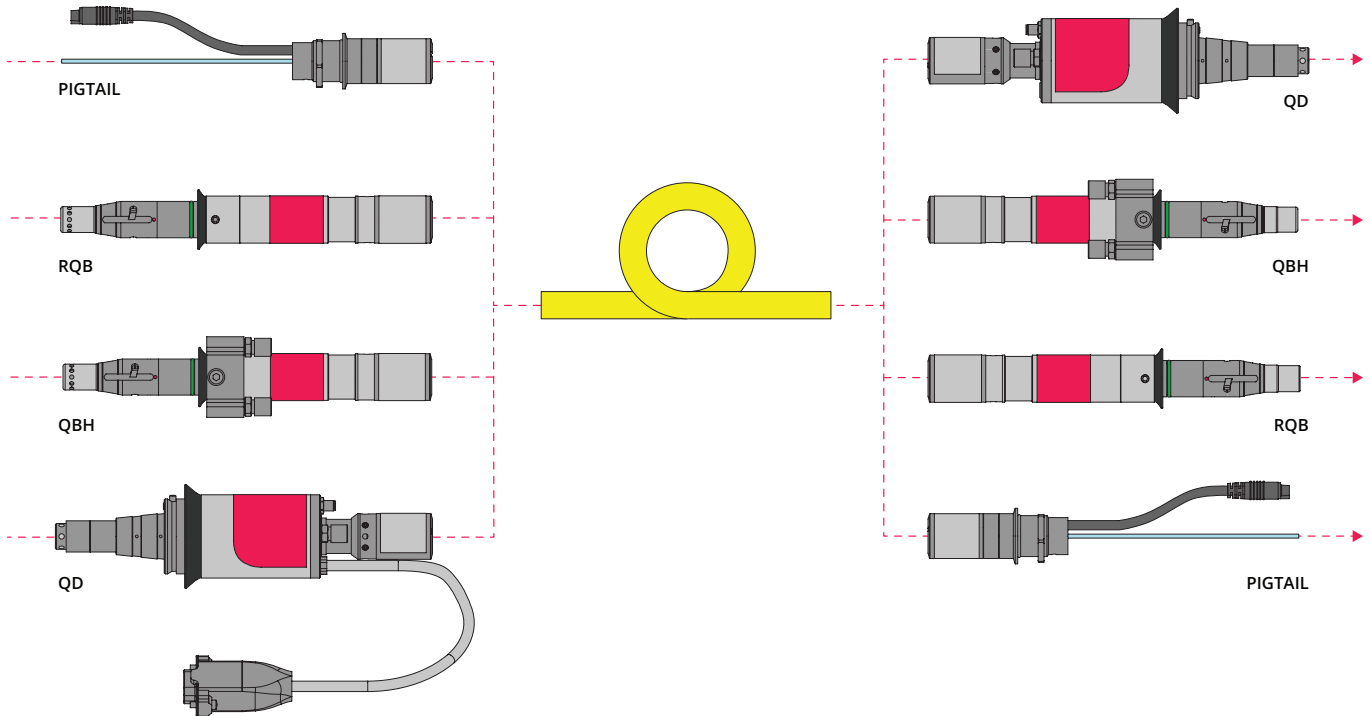
Customized lengths and dimensions are available upon request.

Fiber Optic Cable Accessories

Accessory	Part Number
QB Protection Cap, Input Side, 1030 to 1090 nm	1412500
QB Protection Cap, Output Side, 1030 to 1090 nm	1412501
RQB External Cooler	101880X01

HYBRID FIBERS

The flexible Coherent fiber cable design makes it possible for us to not only offer fiber cables with same type of connectors on both sides but also hybrid fibers where customer select input and output connectors. For many end-users, this is a simple and cost-efficient way to connect laser and process head even in cases where they don't share the same fiber interface. For pigtail fibers, it is possible to have the pigtail termination for splicing at either input or output side of the fiber cable.



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all QBH Fiber Optic Cables. For full details of this warranty coverage, please refer to the Service section at www.coherent.com or contact your local Sales or Service Representative. MC-033-20-0M0920 Copyright ©2020 Coherent, Inc.