



Diode Lasers

QBH Fiber Optic Cable

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 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: Diode Lasers Datasheet

SPECIFICATIONS	QBH	RQB
Maximum Power CW (kW)	10	1.5 (3.0 with external cooler)
Wavelength (nm)	780 to 1100 (diode lasers)	
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)	0.9	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.

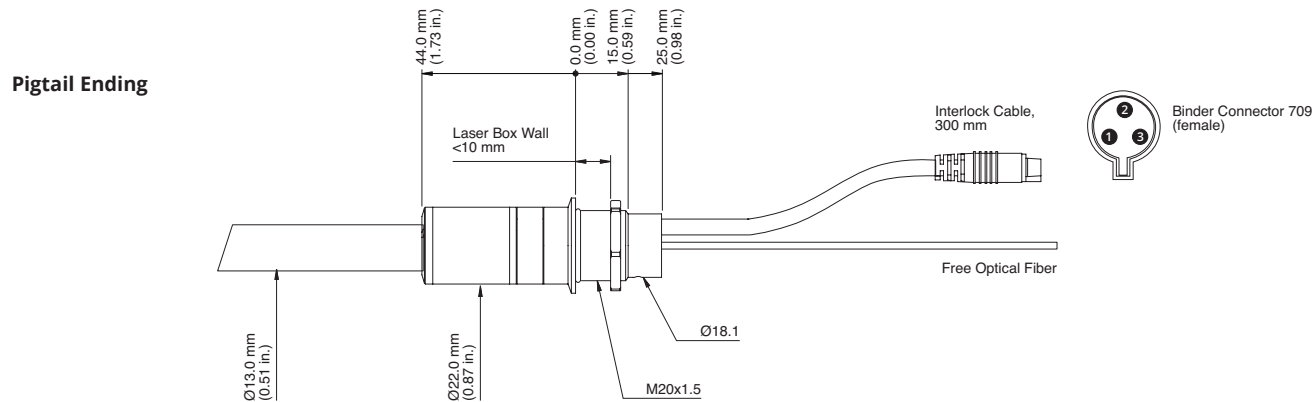
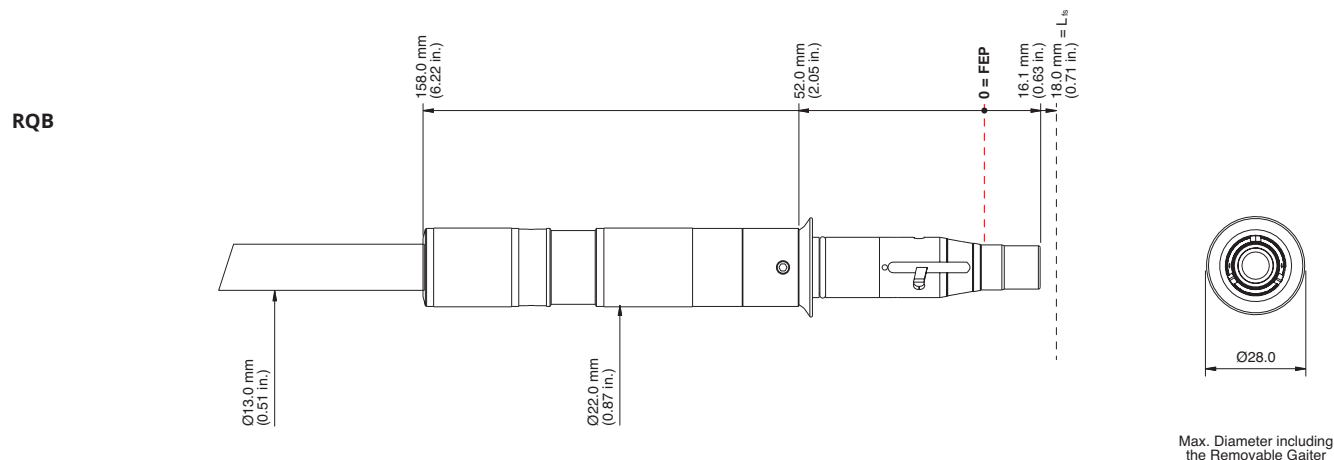
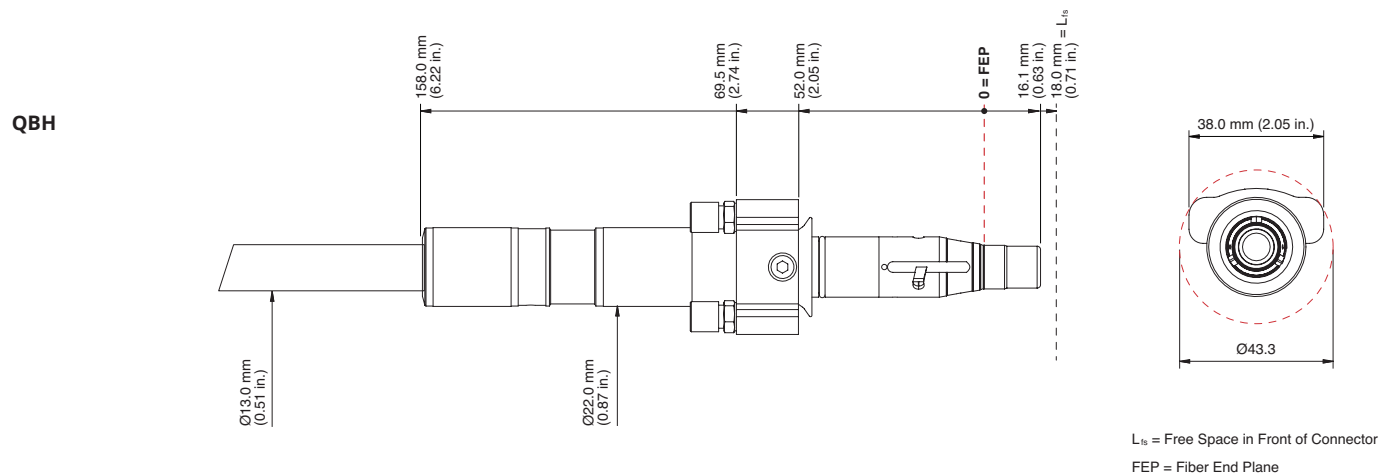
² Within specified fiber NA.

³ ≤100 m cable length.

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

MECHANICAL SPECIFICATIONS

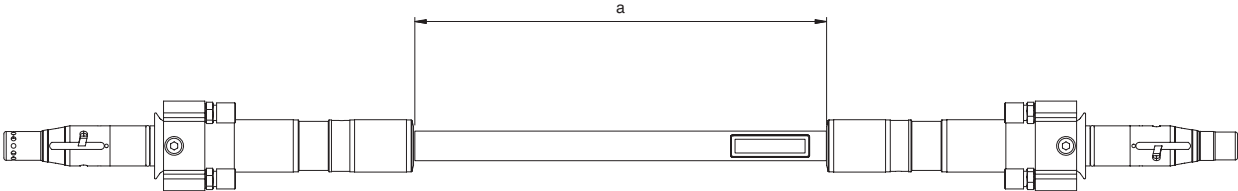
Connector Dimensions



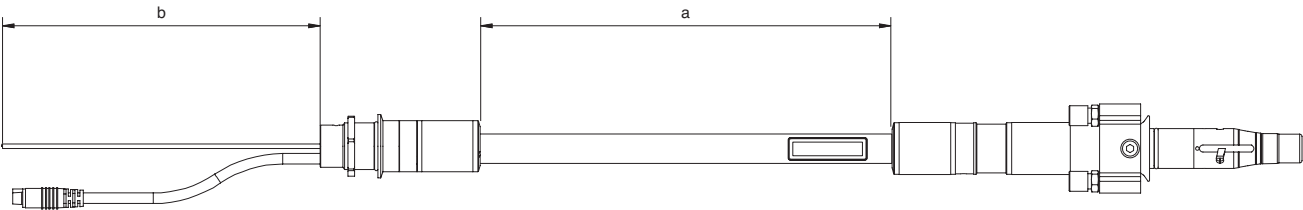
MECHANICAL SPECIFICATIONS

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	25m	30m	50m
50 μm	101814X01	101814X02	101814X03	101814X04	101814X05	101814X06	101814X10
100 μm	101816X01	101816X02	101816X03	101816X04	101816X05	101816X06	101816X10
150 μm	101817X01	101817X02	101817X03	101817X04	101817X05	101817X06	101817X10
200 μm	101819X01	101819X02	101819X03	101819X04	101819X05	101819X06	101819X10
300 μm	101821X01	101821X02	101821X03	101821X04	101821X05	101821X06	101821X10
400 μm	101822X01	101822X02	101822X03	101822X04	101822X05	101822X06	101822X10
600 μm	101823X01	101823X02	101823X03	101823X04	101823X05	101823X06	101823X10
800 μm	101824X01	101824X02	101824X03	101824X04	101824X05	101824X06	101824X10
1000 μm	101825X01	101825X02	101825X03	101825X04	101825X05	101825X06	101825X10

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	25m	30m	50m
100x100 μm	104116X01	104116X02	104116X03	104116X04	104116X05	104116X06	104116X10
200x200 μm	104117X01	104117X02	104117X03	104117X04	104117X05	104117X06	104117X10
400x400 μm	104118X01	104118X02	104118X03	104118X04	104118X05	104118X06	104118X10
600x600 μm	104119X01	104119X02	104119X03	104119X04	104119X05	104119X06	104119X10
800x800 μm	104120X01	104120X02	104120X03	104120X04	104120X05	104120X06	104120X10
1000x1000 μm	104121X01	104121X02	104121X03	104121X04	104121X05	104121X06	104121X10

Customized lengths and dimensions are available upon request.

RQB FIBER OPTIC CABLES

Circular Fiber Core, Two Connectors

	5m	10m	15m	20m	25m	30m	50m
50 μm	3-9268X01	3-9268X02	3-9268X03	3-9268X04	3-9268X05	3-9268X06	3-9268X10
100 μm	3-9269X01	3-9269X02	3-9269X03	3-9269X04	3-9269X05	3-9269X06	3-9269X10
150 μm	3-9270X01	3-9270X02	3-9270X03	3-9270X04	3-9270X05	3-9270X06	3-9270X10
200 μm	3-9271X01	3-9271X02	3-9271X03	3-9271X04	3-9271X05	3-9271X06	3-9271X10
300 μm	3-9272X01	3-9272X02	3-9272X03	3-9272X04	3-9272X05	3-9272X06	3-9272X10
400 μm	3-9273X01	3-9273X02	3-9273X03	3-9273X04	3-9273X05	3-9273X06	3-9273X10
600 μm	3-9274X01	3-9274X02	3-9274X03	3-9274X04	3-9274X05	3-9274X06	3-9274X10
800 μm	3-9275X01	3-9275X02	3-9275X03	3-9275X04	3-9275X05	3-9275X06	3-9275X10
1000 μm	3-9276X01	3-9276X02	3-9276X03	3-9276X04	3-9276X05	3-9276X06	3-9276X10

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	25m	30m	50m
100x100 μm	3-9526X01	3-9526X02	3-9526X03	3-9526X04	3-9526X05	3-9526X06	3-9526X10
200x200 μm	3-9527X01	3-9527X02	3-9527X03	3-9527X04	3-9527X05	3-9527X06	3-9527X10
400x400 μm	3-9528X01	3-9528X02	3-9528X03	3-9528X04	3-9528X05	3-9528X06	3-9528X10
600x600 μm	3-9529X01	3-9529X02	3-9529X03	3-9529X04	3-9529X05	3-9529X06	3-9529X10
800x800 μm	3-9530X01	3-9530X02	3-9530X03	3-9530X04	3-9530X05	3-9530X06	3-9530X10
1000x1000 μm	3-9531X01	3-9531X02	3-9531X03	3-9531X04	3-9531X05	3-9531X06	3-9531X10

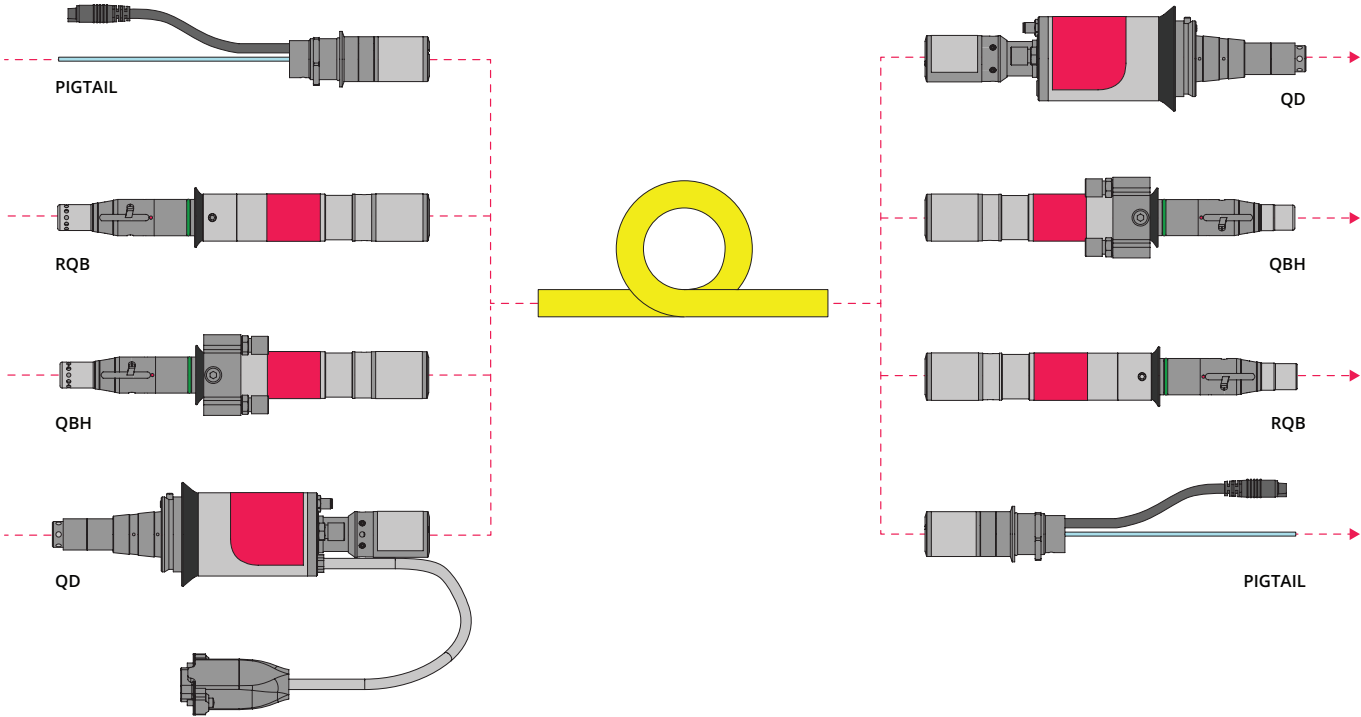
Customized lengths and dimensions are available upon request.

Fiber Optic Cable Accessories

Accessory	Part Number
QB Protection Cap, Input Side, Diode Laser	1412502
QB Protection Cap, Output Side, Diode Laser	1412503
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-034-20-0M0920 Copyright ©2020 Coherent, Inc.