



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)	8	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)	-20 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.

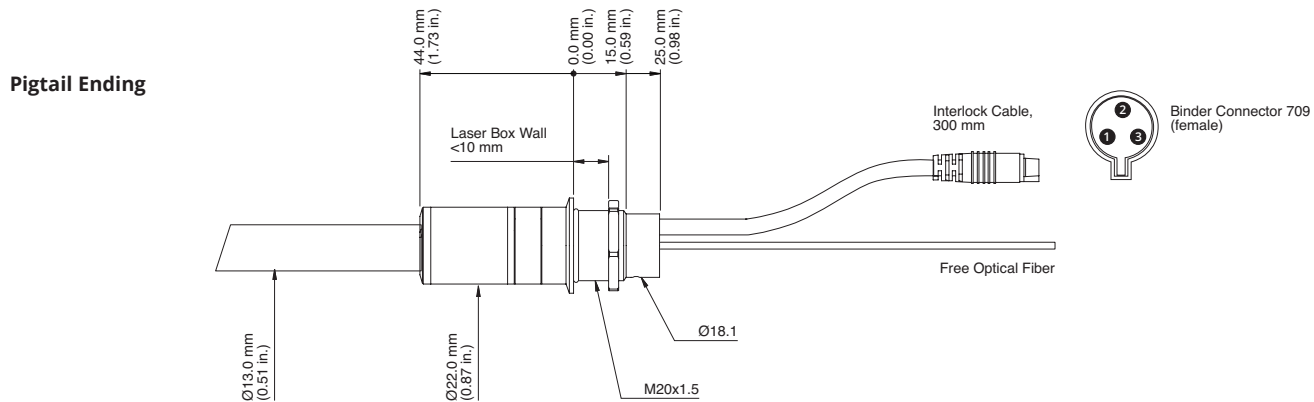
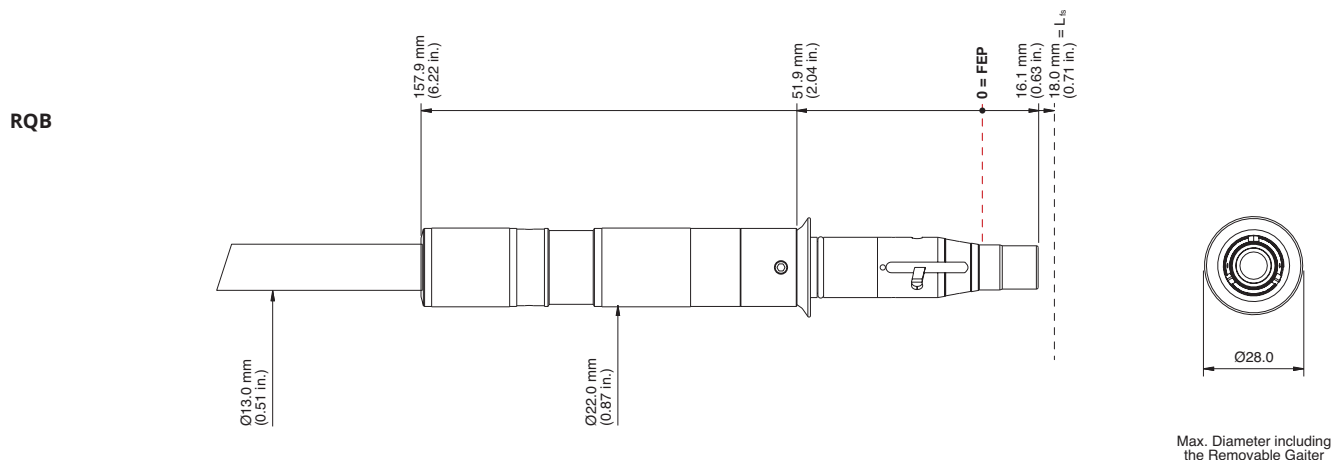
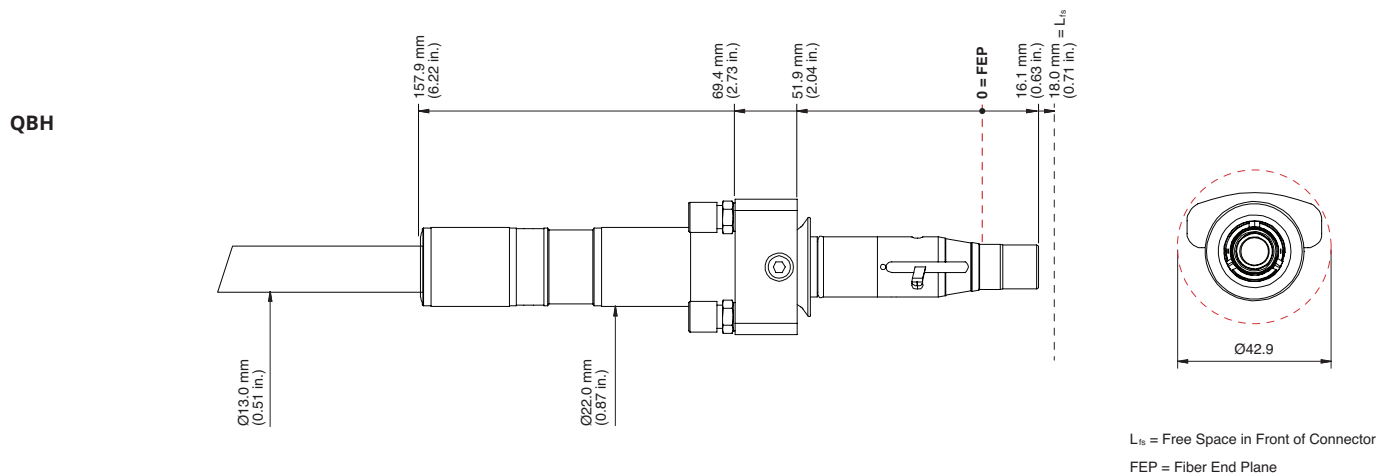
² Within specified fiber NA.

³ ≤100 m cable length.

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

MECHANICAL SPECIFICATIONS

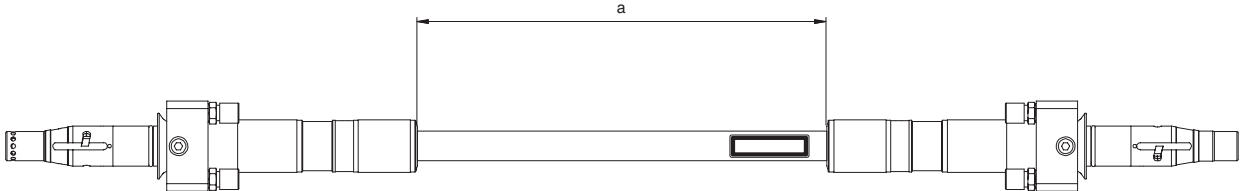
Connector Dimensions



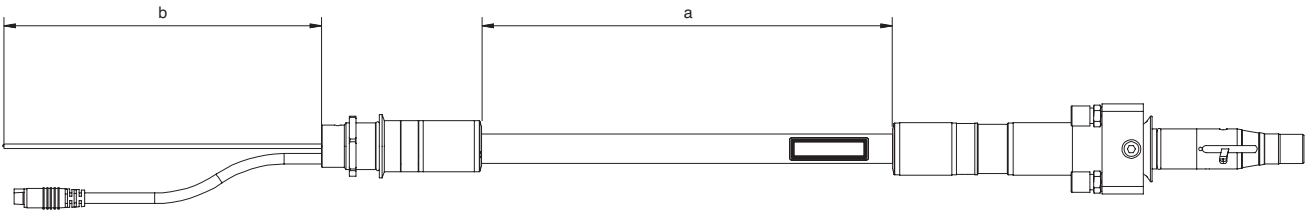
MECHANICAL SPECIFICATIONS

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	2223338	2223339	2223340	2223341	2223342	2223343	2223344
100 μm	2223345	2223346	2223347	2223348	2223349	2223350	2223351
150 μm	2223352	2223353	2223354	2223355	2223356	2223357	2223358
200 μm	2223359	2223360	2223361	2223362	2223363	2223364	2223365
300 μm	2223366	2223367	2223368	2223369	2223370	2223371	2223372
400 μm	2223373	2223374	2223375	2223376	2223377	2223378	2223379
600 μm	2223380	2223381	2223382	2223383	2223384	2223385	2223386
800 μm	2223387	2223388	2223389	2223390	2223391	2223392	2223393
1000 μm	2223394	2223395	2223396	2223397	2223398	2223399	2223400

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	25m	30m	50m
100x100 μm	2223461	2223462	2223463	2223464	2223465	2223466	2223467
200x200 μm	2223468	2223469	2223470	2223471	2223472	2223473	2223474
400x400 μm	2223475	2223476	2223477	2223478	2223479	2223480	2223481
600x600 μm	2223482	2223483	2223484	2223485	2223486	2223487	2223488
800x800 μm	2223489	2223490	2223491	2223492	2223493	2223494	2223495
1000x1000 μm	2223496	2223497	2223498	2223499	2223500	2223501	2223502

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

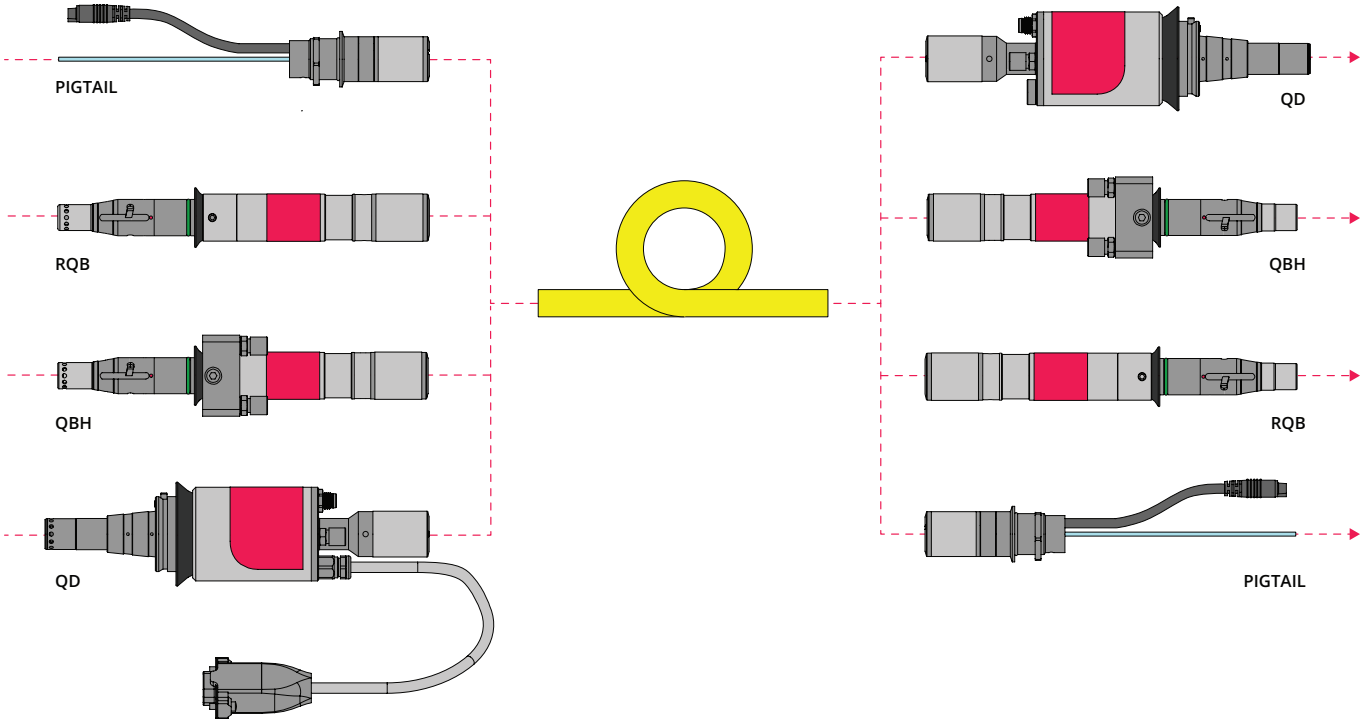
Customized lengths and dimensions are available upon request.

Fiber Optic Cable Accessories

Accessory	Part Number
QB Protection Window, Input Side, Diode Laser	1412502
QB Protection Window, 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.



Coherent, Inc.,
5100 Patrick Henry Drive Santa Clara, CA 95054
p. (800) 527-3786 | (408) 764-4983
f. (408) 764-4646

tech.sales@coherent.com www.coherent.com

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-034-20-0M0921Rev.A Copyright ©2021 Coherent, Inc.