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 15 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

COHERENT®
Superior Reliability & Performance

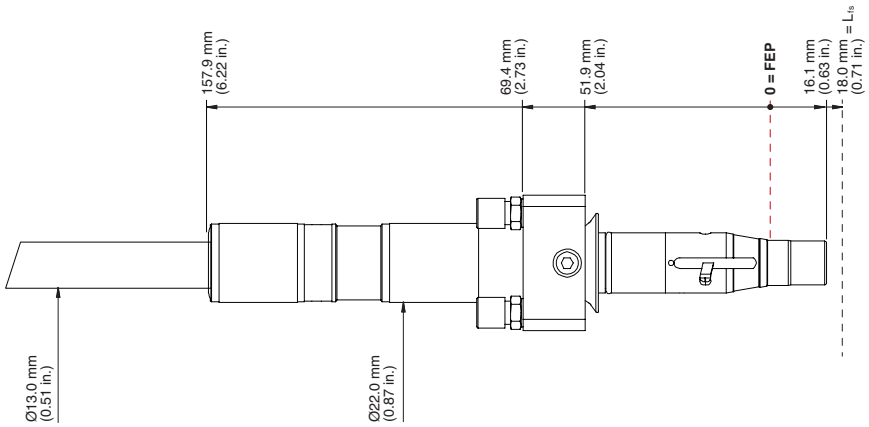
SPECIFICATIONS	QBH	RQB
Maximum Power CW (kW)	15	1.5 (3.0 with external cooler)
Wavelength (nm)	1030 to 1090	
Numerical Aperture $NA_{fiberacc}$	0.05 to 0.20	
Fiber Core Dimensions (µm)	≤1000	
Fiber Concentricity (µm)	≤10	
Z-position Tolerance (µm)	±50	
Pointing/Angular Deviation[1] (mrad) Core Diameter >200 µm Core Diameter ≤200 µm	 ≤10 ≤20	
Power Loss Capability[2] (kW) 10 seconds 10 minutes Continuously	 2.0 1.0 0.5	 0.1 0.05 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 Per Meter Fiber Cable	 0.3 0.2	 0.1 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	

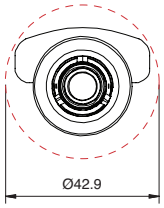
1 Pigtail fibers: Cladding diameter up to and equal 500 µm: ≤20 mrad.
2 Within specified fiber NA.
3 ≤100 m cable length.
4 Input pigtail fibers: 2 Ohm/m cable length.

MECHANICAL SPECIFICATIONS

Connector Dimensions

QBH

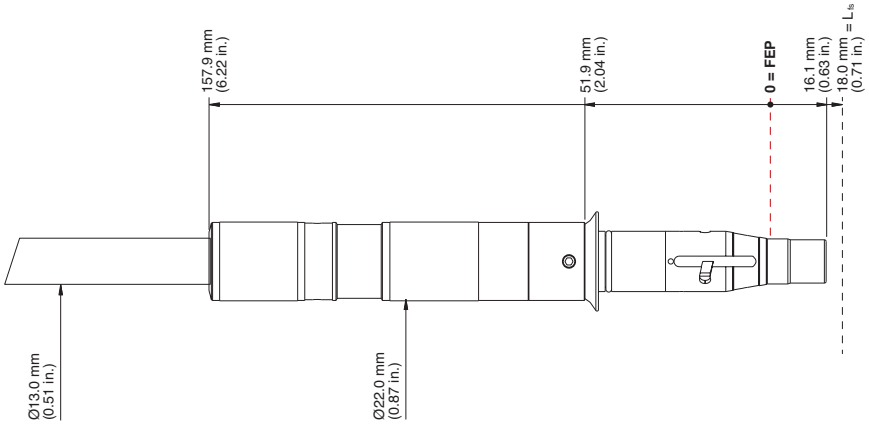


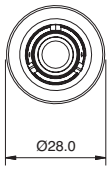


L_{fs} = Free Space in Front of Connector

FEP = Fiber End Plane

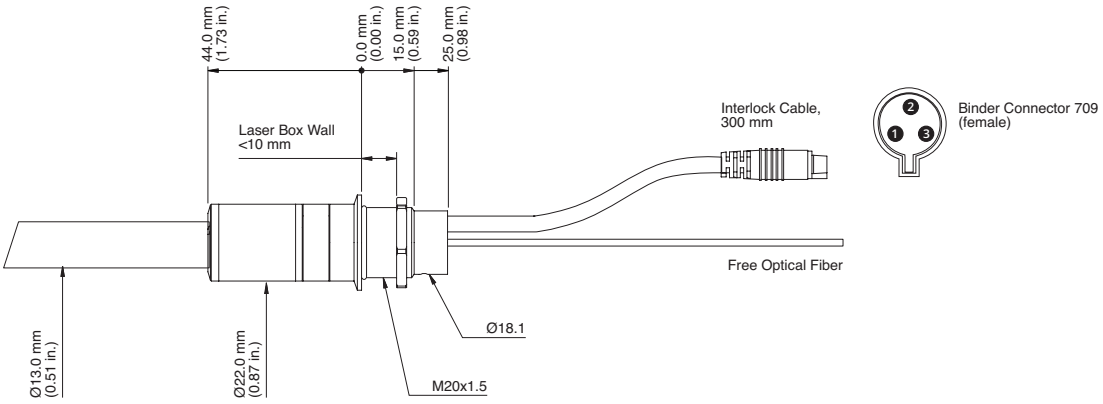
RQB





Max. Diameter including
the Removable Gaiter

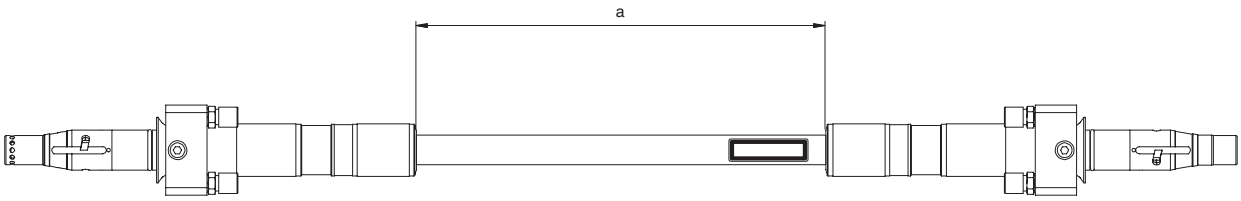
Pigtail Ending



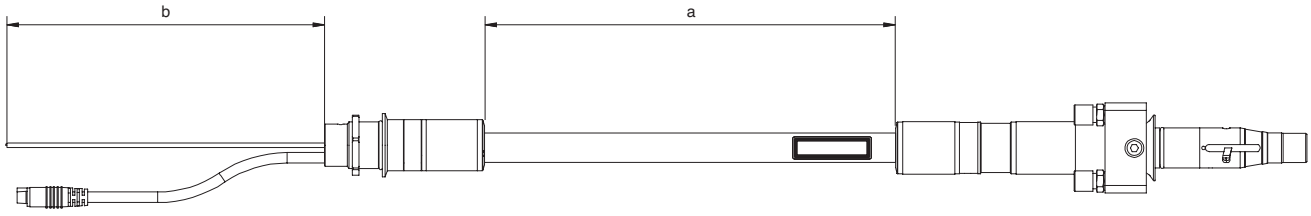
MECHANICAL SPECIFICATIONS

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	2223275	2223276	2223277	2223278	2223279	2223280	2223281
100 µm	2223282	2223283	2223284	2223285	2223286	2223287	2223288
150 µm	2223289	2223290	2223291	2223292	2223293	2223294	2223295
200 µm	2223296	2223297	2223298	2223299	2223300	2223301	2223302
300 µm	2223303	2223304	2223305	2223306	2223307	2223308	2223309
400 µm	2223310	2223311	2223312	2223313	2223314	2223315	2223316
600 µm	2223317	2223318	2223319	2223320	2223321	2223322	2223323
800 µm	2223324	2223325	2223326	2223327	2223328	2223329	2223330
1000 µm	2223331	2223332	2223333	2223334	2223335	2223336	2223337

Circular Fiber Core, One Output Connector (Pigtail)

	2m	3m	5m	10m	15m	20m	25m
20/395 µm	2223240	2223241	2223242	2223243	2223244	2223245	2223246
25/395 µm	2223247	2223248	2223249	2223250	2223251	2223252	2223253
50/360 µm	2223261	2223262	2223263	2223264	2223265	2223266	2223267
100/360 µm	2223268	2223269	2223270	2223271	2223272	2223273	2223274

Note: Free fiber length b>1.0m

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
100x100 µm	2223416	2223417	2223418	2223419	2223420	2223421	2223422
200x200 µm	2223423	2223424	2223425	2223426	2223427	2223428	2223429
400x400 µm	2223430	2223431	2223432	2223433	2223434	2223435	2223436
600x600 µm	2223437	2223438	2223439	2223440	2223441	2223442	2223443
800x800 µm	2223444	2223445	2223446	2223447	2223448	2223449	2223450
1000x1000 µm	2223451	2223452	2223453	2223454	2223455	2223456	2223457

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

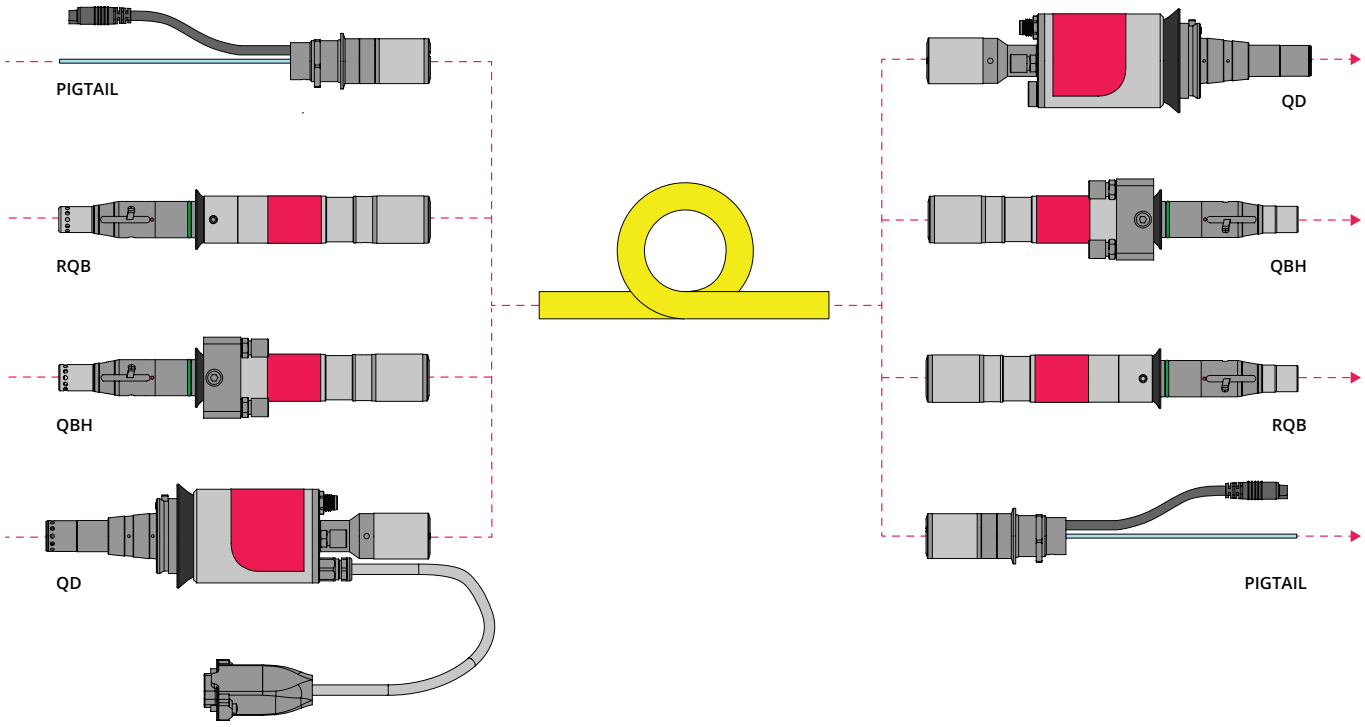
Customized lengths and dimensions are available upon request.

Fiber Optic Cable Accessories

Accessory	Part Number
QB Protection Window, Input Side, 1030 to 1090 nm	1412500
QB Protection Window, 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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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

COHERENT®
Superior Reliability & Performance

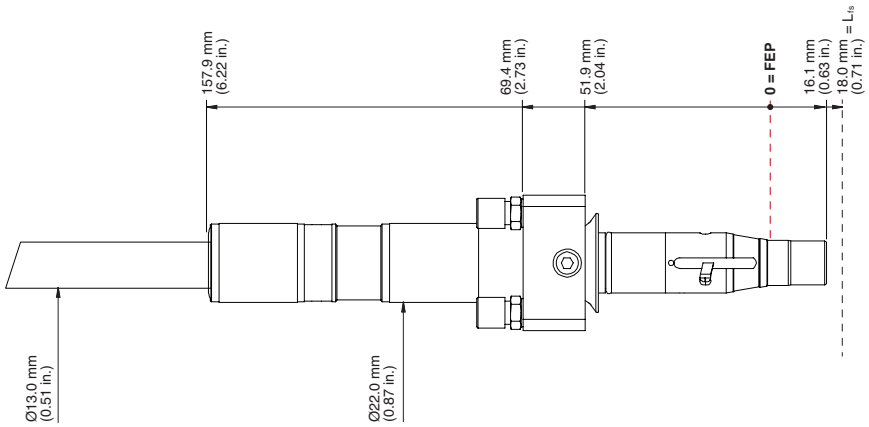
SPECIFICATIONS	QBH	RQB
Maximum Power CW (kW)	10	1.5 (3.0 with external cooler)
Wavelength (nm)	780 to 1100 (diode lasers)	
Numerical Aperture $NA_{fiberacc}$	0.05 to 0.20	
Fiber Core Dimensions (µm)	≤1000	
Fiber Concentricity (µm)	≤10	
Z-position Tolerance (µm)	±50	
Pointing/Angular Deviation[1] (mrad) Core Diameter >200 µm Core Diameter ≤200 µm	 ≤10 ≤20	
Power Loss Capability[2] (kW) 10 seconds 10 minutes Continuously	 2.0 1.0 0.5	 0.1 0.05 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 Per Meter Fiber Cable	 0.3 0.2	 0.1 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	

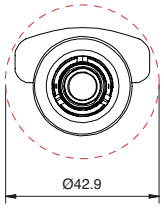
1 Pigtail fibers: Cladding diameter up to and equal 500 µm: ≤20 mrad.
2 Within specified fiber NA.
3 ≤100 m cable length.
4 Input pigtail fibers: 2 Ohm/m cable length.

MECHANICAL SPECIFICATIONS

Connector Dimensions

QBH

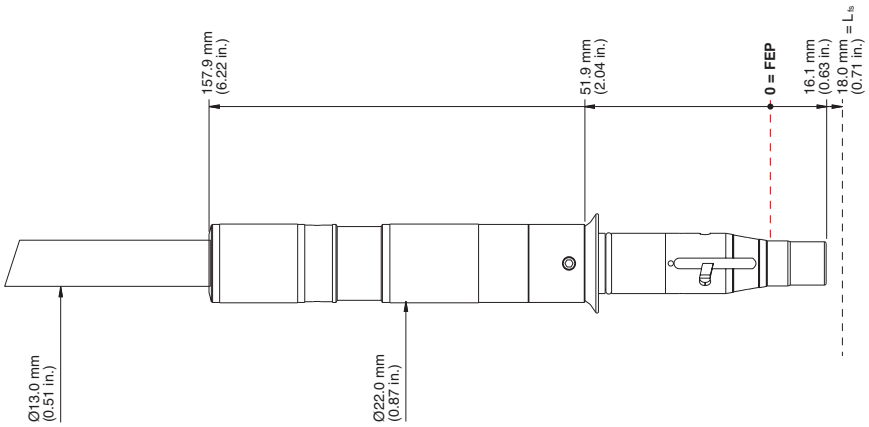


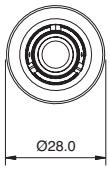


L_{fs} = Free Space in Front of Connector

FEP = Fiber End Plane

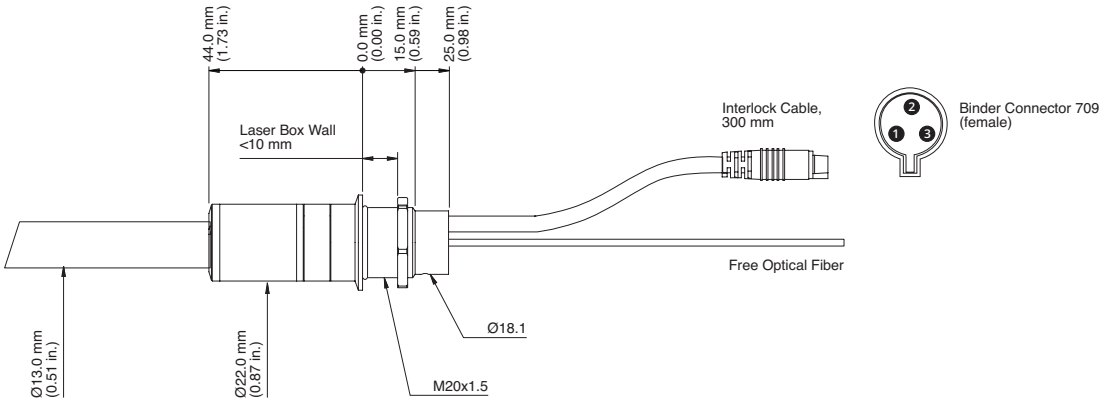
RQB





Max. Diameter including
the Removable Gaiter

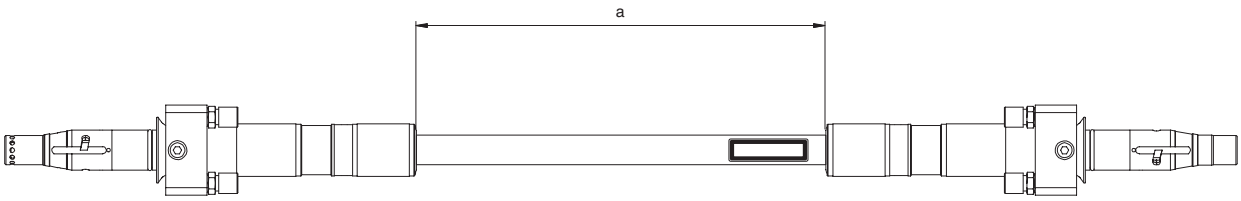
Pigtail Ending



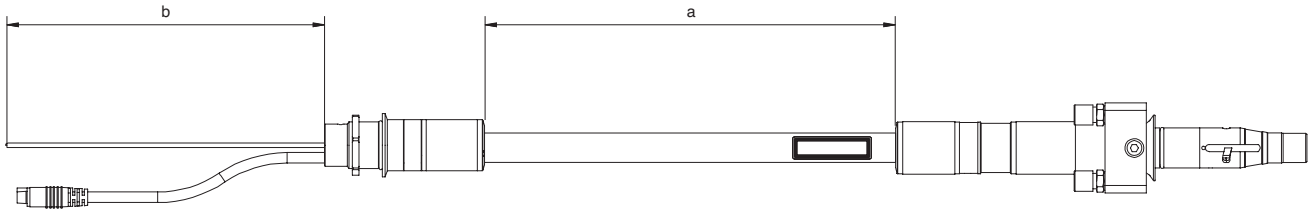
MECHANICAL SPECIFICATIONS

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	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

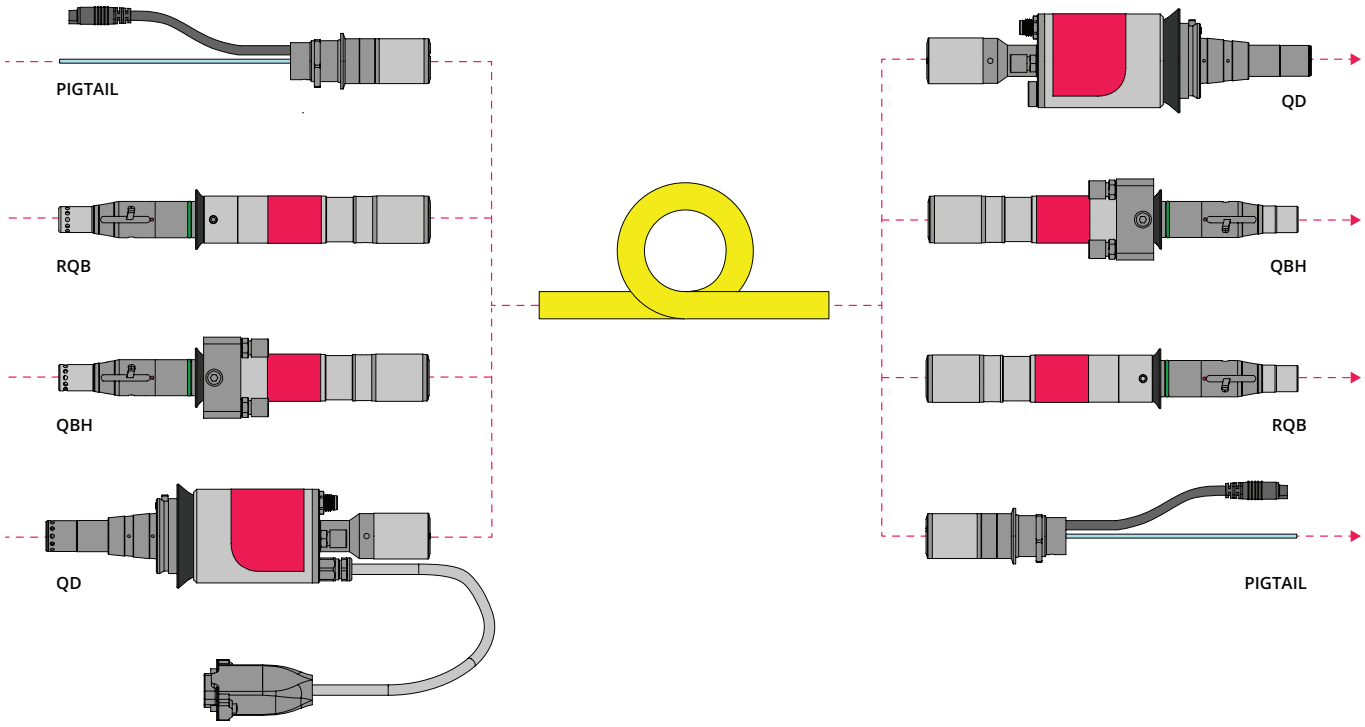
Customized lengths and dimensions are available upon request.

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.



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510 nm to 550 nm

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 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 & BENEFITS

- 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

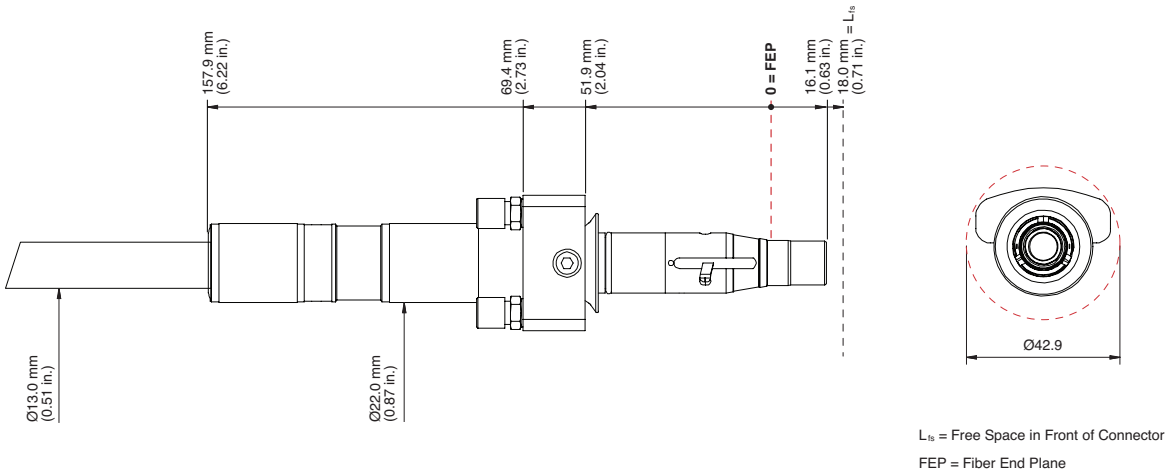
COHERENT®
Superior Reliability & Performance

SPECIFICATIONS	QBH
Maximum Power CW (kW)	To be validated for each laser source
Wavelength (nm)	510 to 550
Numerical Aperture $NA_{fiberacc}$	0.2
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
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
Pressure Drop (bar at 2.0 l/min)	0.9
SAFETY INTERLOCK	
Interlock Circuit Resistance	3.3 kOhm ±5% + 2 Ohm/m cable length
DIMENSIONS & WEIGHT	
Dimensions	See page 3
Weight (kg) Fiber Connector Per Meter Fiber Cable	 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 2015/863/EU
REACH	Directive EC no 1907/2006

MECHANICAL SPECIFICATIONS

Connector Dimensions

QBH

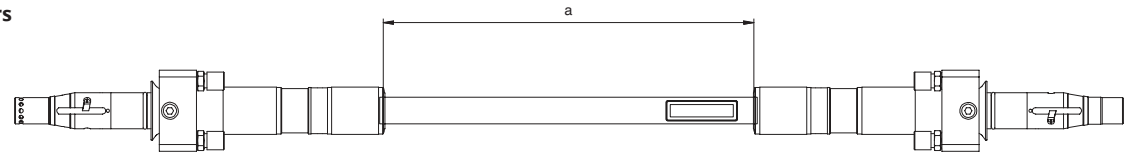


L_{fs} = Free Space in Front of Connector

FEP = Fiber End Plane

Length Definitions

Two Connectors



a = Fiber Cable Length

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