

QBH FIBER OPTIC CABLE

1030 nm to 1090 nm 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

- 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 μ m

APPLICATIONS

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

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	≤10	
Core Diameter ≤200 μm	≤20	
Power Loss Capability ² (kW)	2.0 (10 s) 1.0 (10 min.) 0.5 (continuously)	0.1 (10 s) 0.05 (1 min.) 0.01 (continuously)
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 pages 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.

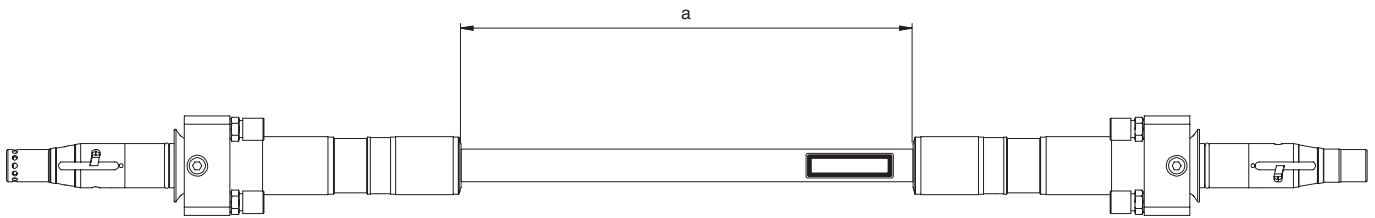
3 ≤100 m cable length.

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

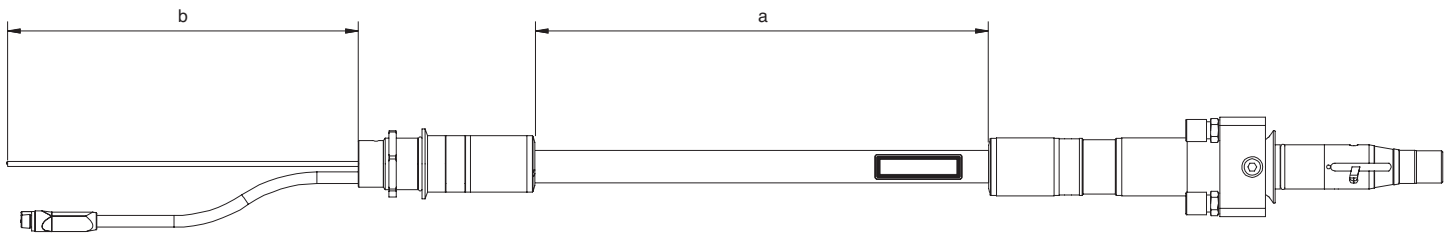
Mechanical Specifications

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 $b > 1.0\text{m}$

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	2289065	2289066	2289067	2289068	2289069	2289070	2289071
100 μm	2289072	2289073	2289074	2289075	2289076	2289077	2289078
150 μm	2289079	2289080	2289081	2289082	2289083	2289084	2289085
200 μm	2289086	2289087	2289088	2289089	2289090	2289091	2289092
300 μm	2289093	2289094	2289095	2289096	2289097	2289098	2289099
400 μm	2289100	2289101	2289102	2289103	2289104	2289105	2289106
600 μm	2289107	2289108	2289109	2289110	2289111	2289112	2289113
800 μm	2289114	2289115	2289116	2289117	2289118	2289119	2289120
1000 μm	2289121	2289122	2289123	2289124	2289125	2289126	2289127

Circular Fiber Core, One Output Connector (Pigtail)

	2m	3m	5m	10m	15m	20m	25m
20/395 μm	2289277	2289278	2289279	2289280	2289281	2289282	2289283
50/360 μm	2289284	2289285	2289286	2289287	2289288	2289289	2289290
100/360 μm	2289291	2289292	2289293	2289294	2289295	2289296	2289297

Note: Free fiber length $b > 1.0\text{m}$.

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
100x100 μm	2289192	2289193	2289194	2289195	2289196	2289197	2289198
200x200 μm	2289199	2289200	2289201	2289202	2289203	2289204	2289205
400x400 μm	2289206	2289207	2289208	2289209	2289210	2289211	2289212
600x600 μm	2289213	2289214	2289215	2289216	2289217	2289218	2289219
800x800 μm	2289220	2289221	2289222	2289223	2289224	2289225	2289226
1000x1000 μm	2289227	2289228	2289229	2289230	2289231	2289232	2289233

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.

