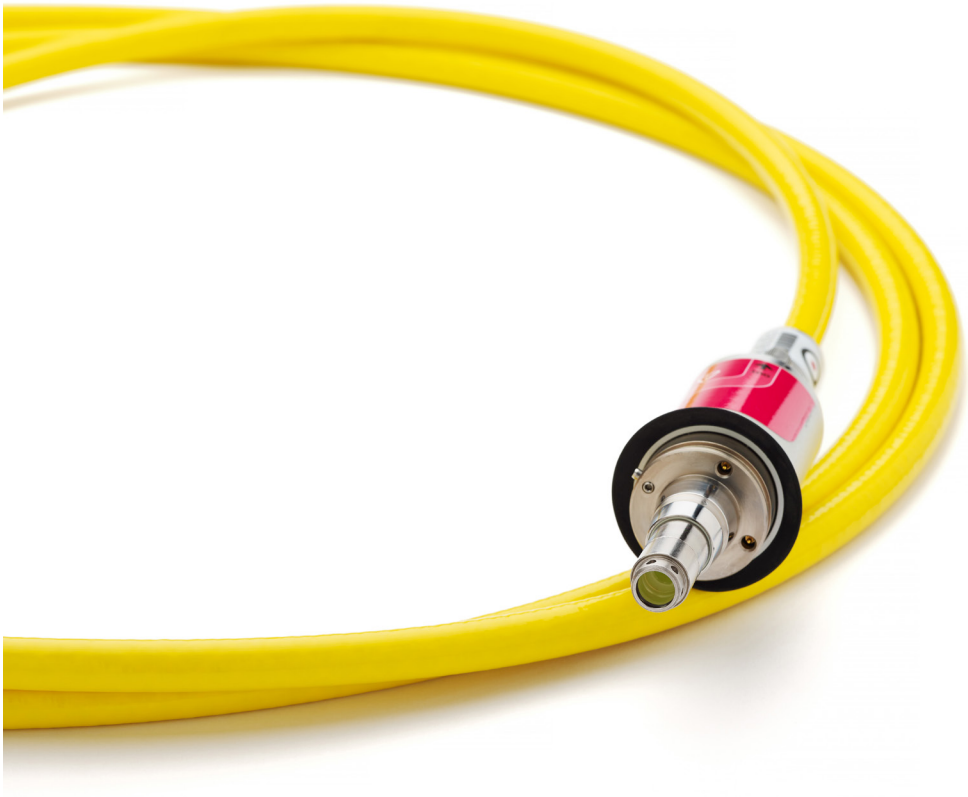
QD FIBER OPTIC CABLE

1030 nm to 1090 nm High-Power Beam Delivery

The QD fiber optic cable fulfills the European Automotive Industry standard interface. The innovative connector design includes a built-in photodiode that can detect coupling losses on the input side and back reflection from the work piece on the output side.

The QD 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

- Up to 20 kW (CW)
- Mode-stripper
- AR-coated end cap
- Scattered light detection
- 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

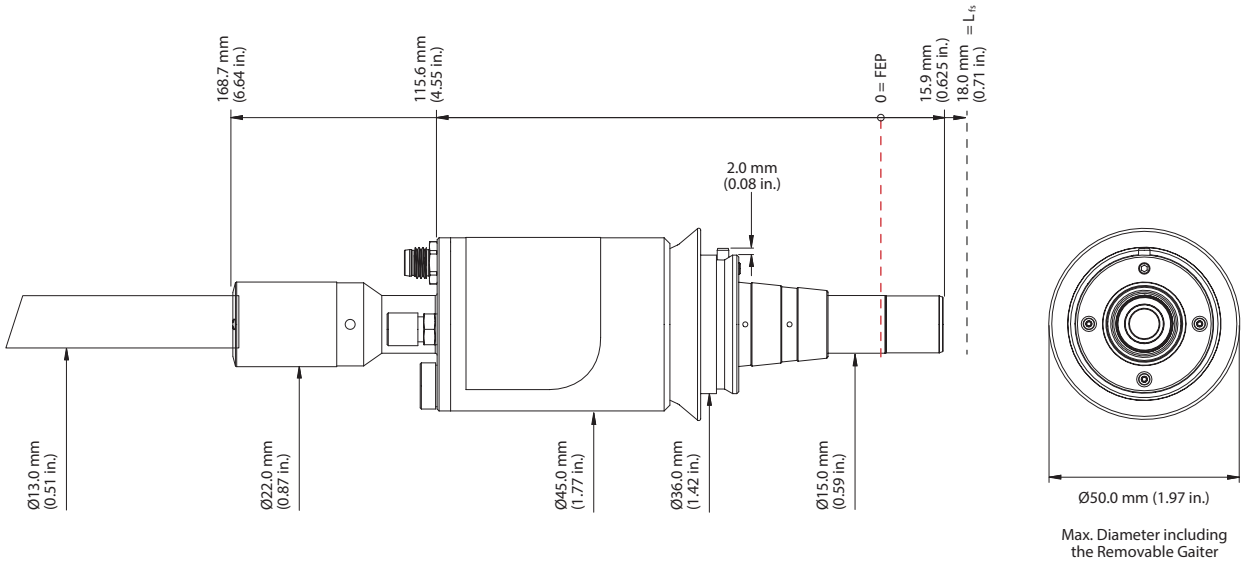
Specifications	QD
Maximum Power CW (kW)	20
Wavelength (nm)	1030 to 1090
Numerical Aperture $NA_{fiberacc}$	0.05 to 0.20
Fiber Core Dimensions (µm)	≤1000
Fiber Concentricity (µm)	≤10
Z-position Tolerance (µm)	±50
Pointing/Angular Deviation[1] (mrad) Core Diameter >200 µm Core Diameter ≤200 µm	 ≤10 ≤20
Power Loss Capability[2] (kW) 10 seconds 10 minutes Continuously	 2.0 1.0 0.5
Transmission Losses[3] (%)	<3
Fiber Cable Properties	
Cable Lengths (m)	≤200
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)	1.1
Safety Interlock	
Interlock Circuit Resistance	3.3 kOhm ±5% +2 Ohm/m cable length
Thermoswitch	Yes, 70°C ±5°C, reset temp >30°C
Dimensions & Weight	
Dimensions	See pages 3 to 4
Weight (kg) Fiber Connector Per Meter Fiber Cable	 0.6 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.

Mechanical Specifications

Connector Dimensions

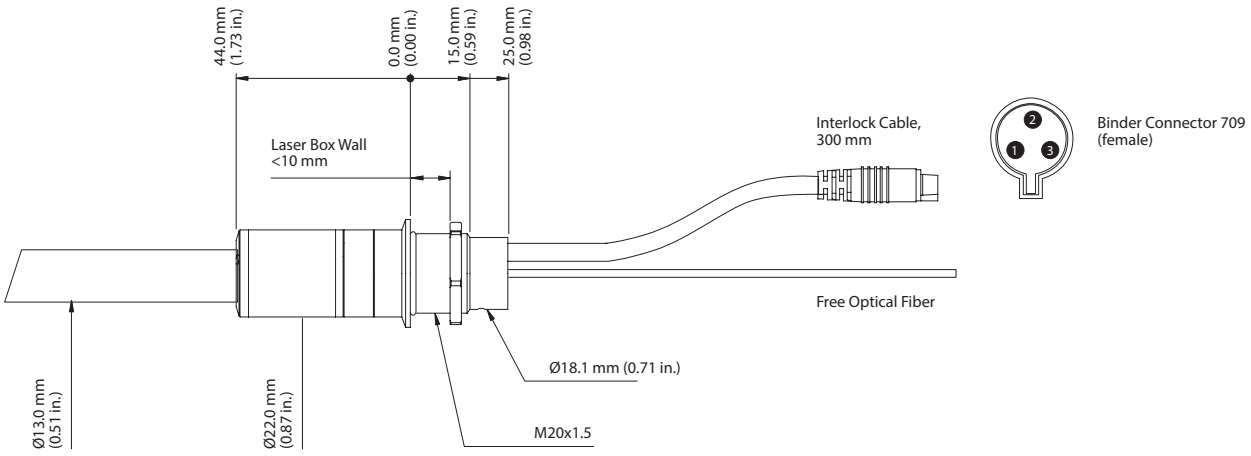
QD



Pigtail Ending

L_{fs} = Free Space in Front of Connector

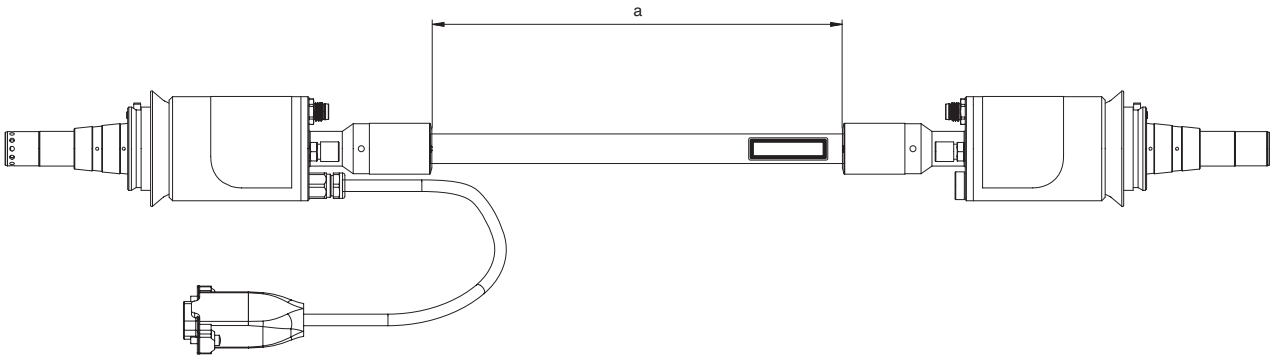
FEP = Fiber End Plane



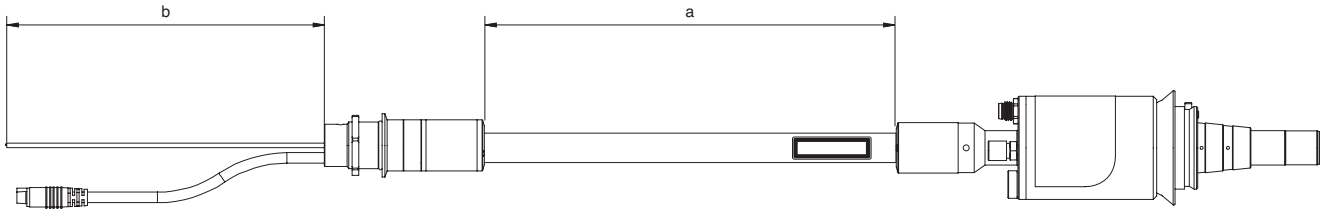
Mechanical Specifications

Length Definitions

Two Connectors



One Connector (Pigtail)



a = Fiber Cable Length

b = Free Optical Fiber Length

Part Numbers

Circular Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
50 µm	2214310	2214311	2214312	2214313	2214314	2214315	2214316
100 µm	2214319	2214320	2214321	2214322	2214323	2214324	2214325
150 µm	2214328	2214329	2214330	2214331	2214332	2214333	2214334
200 µm	2214337	2214338	2214339	2214340	2214341	2214342	2214343
300 µm	2214346	2214347	2214348	2214349	2214350	2214351	2214352
400 µm	2214355	2214356	2214357	2214358	2214359	2214360	2214361
600 µm	2214365	2214366	2214367	2214368	2214369	2214370	2214371
800 µm	2290826	2290827	2290828	2290829	2290830	2290831	2290832
1000 µm	2290833	2290834	2290835	2290836	2290837	2290838	2290839

Circular Fiber Core, One Output Connector (Pigtail)

	2m	3m	5m	10m	15m	20m	25m
20/395 µm	2214282	2214283	2214284	2214285	2214286	2214287	2214288
50/360 µm	2214291	2214292	2214293	2214294	2214295	2214296	2214297
100/360 µm	2214300	2214301	2214302	2214303	2214304	2214305	2214306

Note: Free fiber length b>1.0m

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
100x100 µm	2214393	2214394	2214395	2214396	2214397	2214398	2214399
200x200 µm	2214402	2214403	2214404	2214405	2214406	2214407	2214408
400x400 µm	2214411	2214412	2214413	2214414	2214415	2214416	2214417
600x600 µm	2290854	2290855	2290856	2290857	2290858	2290859	2290860
800x800 µm	2214429	2214430	2214431	2214432	2214433	2214434	2214435
1000x1000 µm	2214439	2214440	2214441	2214442	2214443	2214444	2214445

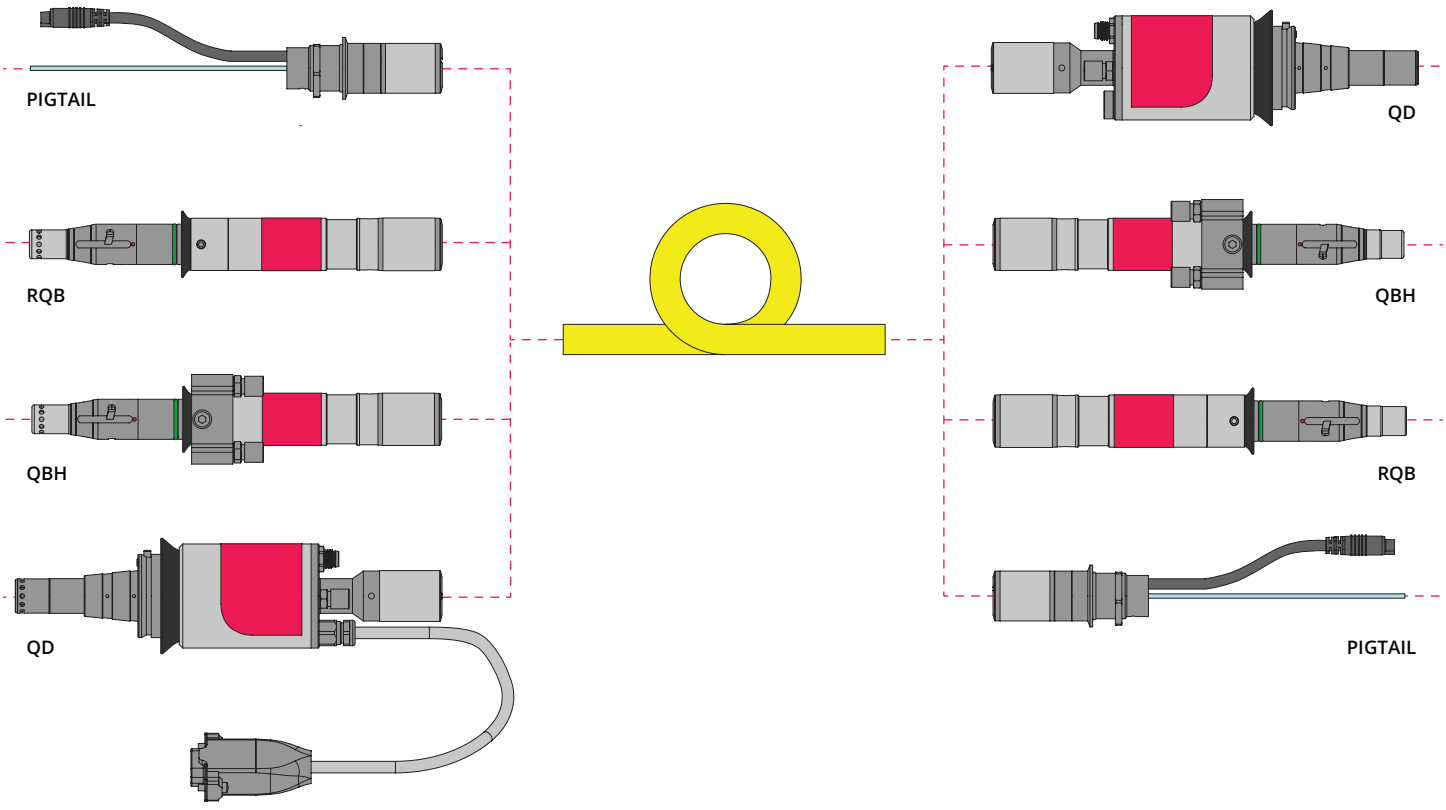
Customized lengths and dimensions are available upon request.

Fiber Optic Cable Accessories

Accessory	Part Number
QD Protection Window, Input Side, 1030 to 1090 nm	2217239
QD Protection Window, Output Side, 1030 to 1090 nm	2216860

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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