



1030 nm to 1090 nm

QD Fiber Optic Cable

High-Power Beam Delivery

The QD fiber optic cable fulfills the European Automotive Industry standard interface. The innovative connector design includes built-in sensors for monitoring scattered light, temperature and humidity. The sensors can be monitored continuously via a CAN bus or passively with thresholds breaking the fiber interlock.

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 & BENEFITS

- Up to 20 kW (CW)
- Mode-stripper
- AR-coated end cap
- Built-in sensors
- Superior power loss handling
- Round or square fiber core
- Plug-and-play within 10 μm

APPLICATIONS

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



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	≤10
Core Diameter ≤200 µm	≤20
Power Loss Capability ² (kW)	
10 seconds	2.0
10 minutes	1.0
Continuously	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)	4
Pressure Drop (bar at 2.0 l/min)	1.2
SAFETY INTERLOCK	
Interlock Circuit Resistance ⁴	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	0.7
Per Meter Fiber Cable	0.2
ENVIRONMENTAL CONDITIONS	
Humidity (% RH)	<80
Operating Temperature (°C)	5 to 50 (non-condensing)
Storage Temperature (°C)	-40 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.

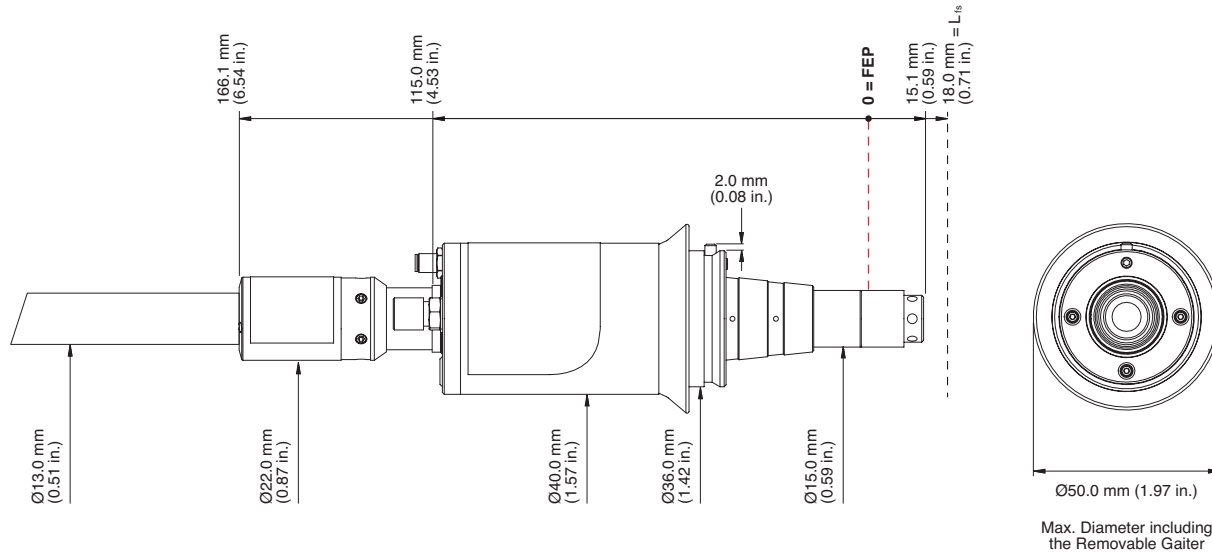
³ ≤100 m cable length.

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

MECHANICAL SPECIFICATIONS

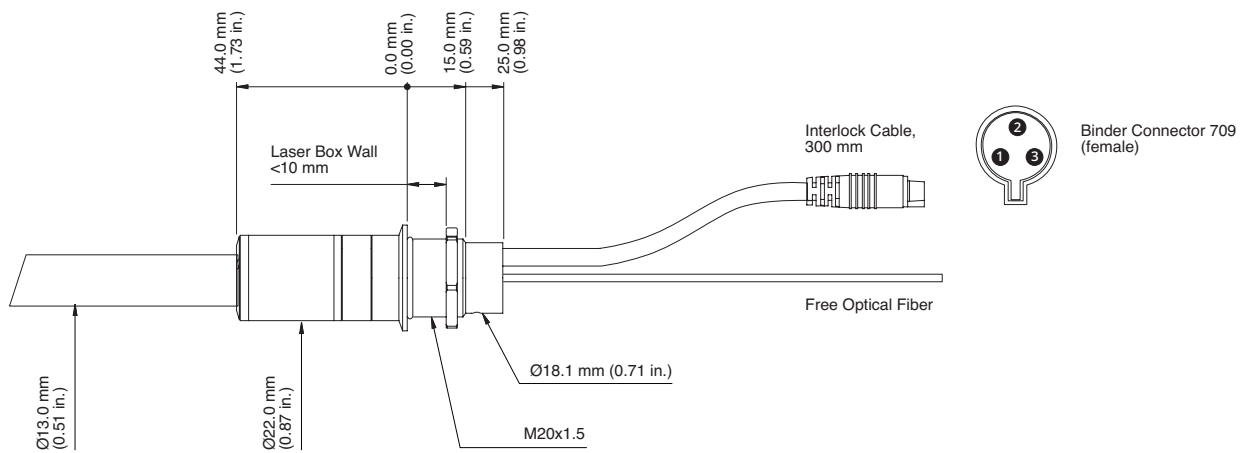
Connector Dimensions

QD



L_{fs} = Free Space in Front of Connector
FEP = Fiber End Plane

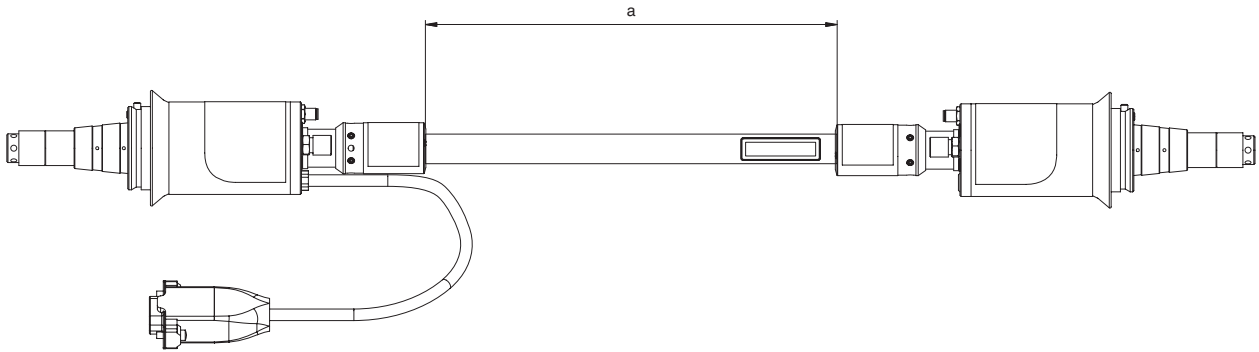
Pigtail Ending



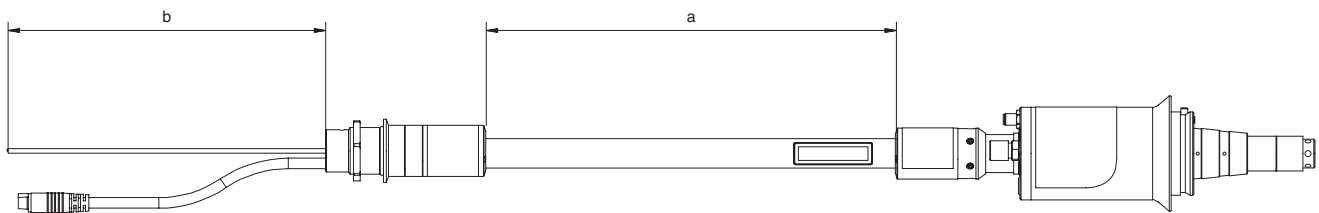
MECHANICAL SPECIFICATIONS

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	108717X01	108717X02	108717X03	108717X04	108717X06	108717X07	108717X10
100 μm	108718X01	108718X02	108718X03	108718X04	108718X06	108718X07	108718X10
150 μm	108719X01	108719X02	108719X03	108719X04	108719X06	108719X07	108719X10
200 μm	108720X01	108720X02	108720X03	108720X04	108720X06	108720X07	108720X10
300 μm	108721X01	108721X02	108721X03	108721X04	108721X06	108721X07	108721X10
400 μm	108722X01	108722X02	108722X03	108722X04	108722X06	108722X07	108722X10
600 μm	108723X01	108723X02	108723X03	108723X04	108723X06	108723X07	108723X10
800 μm	108724X01	108724X02	108724X03	108724X04	108724X06	108724X07	108724X10
1000 μm	108725X01	108725X02	108725X03	108725X04	108725X06	108725X07	108725X10

Circular Fiber Core, One Output Connector (Pigtail)

	2m	3m	5m	10m	15m	20m	25m
20/395 μm	108714X02	108714X03	108714X05	108714X10	108714X15	108714X20	108714X25
50/360 μm	108715X02	108715X03	108715X05	108715X10	108715X15	108715X20	108715X25
100/360 μm	108716X02	108716X03	108716X05	108716X10	108716X15	108716X20	108716X25

Note: Free fiber length b>1.0m.

Square Formed Fiber Core, Two Connectors

	5m	10m	15m	20m	30m	35m	50m
100x100 μm	108737X01	108737X02	108737X03	108737X04	108737X06	108737X07	108737X10
200x200 μm	108738X01	108738X02	108738X03	108738X04	108738X06	108738X07	108738X10
400x400 μm	108739X01	108739X02	108739X03	108739X04	108739X06	108739X07	108739X10
600x600 μm	108740X01	108740X02	108740X03	108740X04	108740X06	108740X07	108740X10
800x800 μm	108741X01	108741X02	108741X03	108741X04	108741X06	108741X07	108741X10
1000x1000 μm	108742X01	108742X02	108742X03	108742X04	108742X06	108742X07	108742X10

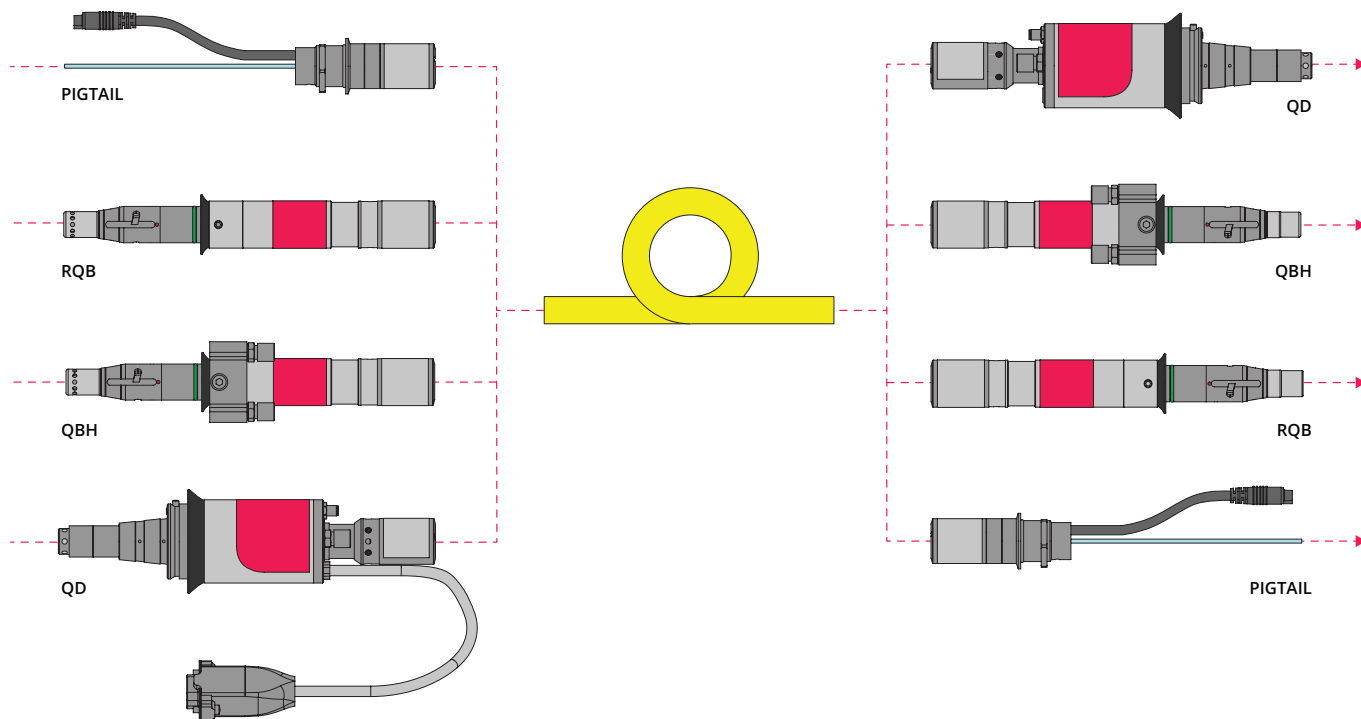
Customized lengths and dimensions are available upon request.

Fiber Optic Cable Accessories

Accessory	Part Number
QD Protection Cap, Input Side, 1030 to 1090 nm	1412505
QD Protection Cap, Output Side, 1030 to 1090 nm	1412506
Power & Communication Cable, M5 to D-sub	2-5063X01
CAN-USB Adapter IXXAT	2-5022X01

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 QD 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-035-20-0M0920 Copyright ©2020 Coherent, Inc.