



redPOWER QUBE

Fiber to Fiber Coupler

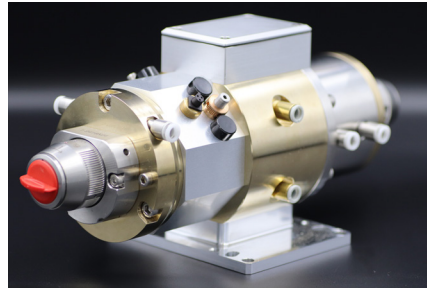
Enhanced flexibility for Fiber Optic Beam Delivery
CW / Modulated Fiber Laser Accessory.



Introduction

The Fiber to Fiber Coupler (FFC) is an exciting new addition to the redPOWER QUBE and PRISM range of Fiber Lasers, allowing customers the flexibility to fit different core diameter delivery fibers depending on their application, or to easily replace damaged delivery fibers.

The FFC design has been optimised for use with our redPOWER Lasers and the PIPA-Q range of beam delivery fibers. In a typical arrangement the input fiber would be permanently fixed (spliced) to the redPOWER Fiber Laser, whilst the output fiber would be selected from the SPI Double Ended Fiber (DEF) range (see SM-S01050 for details).



Key Features

- Up to 8kW Laser power.
- Greater than 98% transmission.
- Optical design for 100um and 300um output fibers.
- Matched to PIPA-Q fibers
 - Inherent rugged back reflection protection.

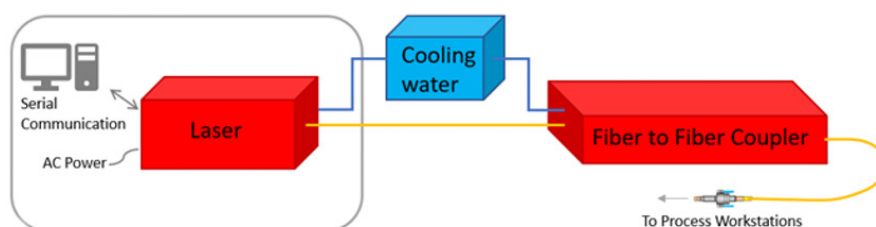
Performance Highlights

- Excellent beam quality preservation.
- Stable alignment of output fiber over time and with vibration.
- No re-alignment needed if the same fiber is removed and refitted.
- No re-alignment needed if changing from 100µm to a 300µm fiber.
- Easy fine tune adjustment for alignment when swapping 100µm PIPA-Q fibers.

Integration

The optical coupler unit (see picture above) is supplied mounted into a metal box providing an extra layer of environmental protection, critically preventing dust contamination on the unit, which would compromise the fiber ends during installation or exchange.

Internal water connection manifolds for the coupler and fibers coolant supply mean only a single inlet and outlet connection to the enclosure is required, simplifying the installation for the user.



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Benefits

- Flexible configuration for optimum processing
 - Choose delivery fiber diameter to match application
- Robotic application use
 - Greater protection
 - Ease of use in case of mechanical damage

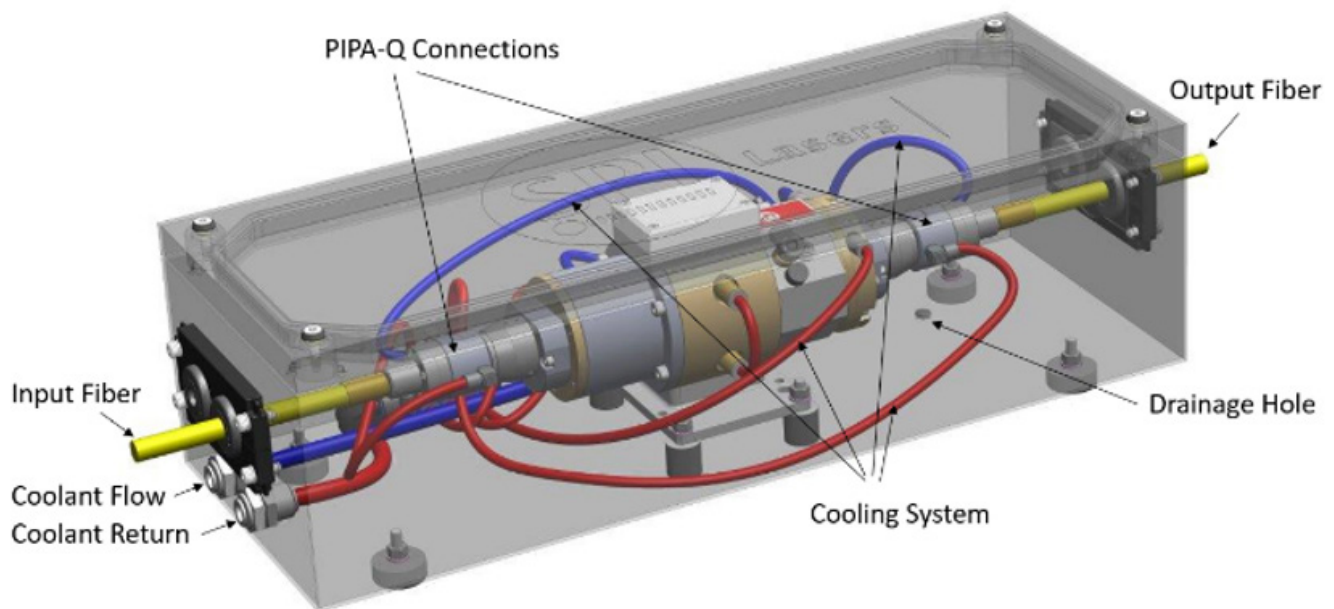
Go to spilasers.com for information on our full suite of Pulsed and CW Fiber Lasers.

Specifications

Model	Fiber to Fiber Coupler	
Optical - Input from redPOWER Fiber Laser		
Input Fiber Core diameter	100µm	
Input Beam Parameter Product (BPP) ¹	3.3mm.mrad	
Optical - From PIPA-Q delivery fiber		
Transmission	>98%	
BPP - 100µm core diameter fiber	4.4 ±0.7 mm.mrad	
BPP - 300µm core diameter fiber	13 ±4.5 mm.mrad	
Full Angle Divergence	86% enclosed energy	99.5% enclosed energy
100µm core diameter fiber	175 ±35mrad	<280mrad
300µm core diameter fiber	175 ±45mrad	<280mrad
Coolant		
Minimum Flow rate	0.18 l/min/kW	
Mechanical Dimensions		
Height	150mm	
Width	550mm	
Depth	200mm	

Notes

1. Beam Parameter Product = beam radius x half angle divergence



Ordering Information

Product Code Format:

SP	-	FFC	-	100	-	Q	-	Q	-	100 300	-	W	-	0	-	0	-	0
		Fiber to Fiber Coupler		Input fiber core diameter (µm)		Input connector type: PIPA-Q		Output connector type: PIPA-Q		Output fiber Core diameter (µm)		Cooling type: Water		Spare		Spare		0 - Enclosure

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