

Datasheet

Fiber to fiber beam combination system - iFLEX-Adder

The iFLEX-Adder™ is fiber coupled beam combiner allowing the wavelength range of your existing laser system or bench to be easily extended. The system is fully compatible with most visible lasers including the established Qioptiq range of fibers and fiber-coupled lasers. Up to 5 individual lasers in the range 400 to 640nm can be combined and coupled into a singlemode, polarisation maintaining fiber delivery system, which can then be integrated directly into your instrument or experiment.

By making use of the kinematic design of the fiber coupler, the system ensures true 'Plug & Play' operation and offers an easy upgrade route for the experimentalist or engineer. Singlemode, polarization-preserving fiber forms an integral part of the complete package and provides users with all of the benefits of fiber coupling, including a highly stable, circular, non-astigmatic Gaussian output beams; all of the combined beams are guaranteed to be co-linear after fiber coupling. Sub-micron repeatability and sub-microradian stability of Qioptiq's award winning Flexible Laser Technology mean systems can be aligned once and remain aligned, thus providing a reliable solution for instrument design.

Qioptiq fiber systems can be customized for exacting OEM specifications. The output can be configured to produce pure Gaussian profiles, extremely low wavefront aberrations, as well as engineered spatial profiles and shapes. OEM versions for combining custom visible and infrared wavelengths are also possible.

Some of the product features include:

- Compatible with wavelengths at 405, 445, 488, 515, 532, 561 and 640nm
- Dual or multiple channels enabling upgrade routes for future upgrading.
- True 'Plug & Play' capable ensuring true versatility of your laser suite
- Truly co-linear beams from kineFLEX™ output
- Compatible with kineFLEX and kineFLEX-HPV™ models
- Low dynamic pointing error



Technical Specifications

Wavelength options							Units
A	B	C	D	E	F	-	
405	445	488	515 or 532	561	633 or 640	nm	
Operating performance							
Polarization ratio			≤ -17		dB		
Typical throughput efficiency ¹			$\geq 40\%$				
Fiber parameters							
Fiber length			1 to 3		m		
Fiber protective jacket			Stainless Steel, 5mm OD		-		
Collimated output beam							
Beam diameter			0.7		mm		
M Squared			typ 1.1		-		
Pointing stability			≤ 1		$\mu\text{rad}/^\circ\text{C}$		
Beam divergence			Diffraction Limited		-		
Mechanical dimensions			$\varnothing 12 \times 50$		mm		
Beam position			$\leq \pm 0.15$		mm		
Beam angle			$\leq \pm 0.5$		mrad		
Connectorized output beam							
Polarization maintaining fiber			FCP (polarization keyed) FCP8, APC (polarization keyed and 8 degree polished)		-		
Environmental conditions							
Storage temperature			10 to 50		$^\circ\text{C}$		
Operating pressure			Atmospheric		-		
Operating temperature			10 to 40		$^\circ\text{C}$		
Operating humidity			Non-condensing		-		

¹ Throughput is dependant upon final system configuration

Note: OEM versions available please call

Order code

iFLEX-Adder -

A, B, C, D, E, F
(Please select minimum of 2 and maximum of 5)

Input Channel

Order code: kineFLEX -

Fiber length (m) _____

Operating Wavelength (nm) _____

Output Channel

Order code: kineFLEX -

Output termination 0.7 FCP, FCP8, APC _____

* Throughput is dependant upon final system configuration

Fiber Optics



kineFLEX™

Robust laser beam delivery system for precision measurement applications

- Fiber coupling for DPSS, diode and gas lasers
- Highly repeatable and stable operation
- Greater than 65% coupling efficiency



kineFLEX-HPV™ / kineFLEX-UV™

Robust high power laser beam delivery system for precision measurement applications

- Input power up to 500mW for 488nm or higher
- Input power up to 20mW for 375nm
- OEM multiple wavelength versions available



kineFLEX-DUO™

Robust laser beam delivery system for two laser sources at visible wavelengths

- Efficient and simple beam combination
- Visible wavelengths
- Rugged platform for industrial applications



laserPLATE™

Rapid and convenient mechanical mounting and packaging system for laser to fiber alignment

- Compatible and integrated laser to fiber coupling
- Combined laser chassis and heatsink
- Easy to integrate and align

Lasers



iFLEX2000™

Extremely reliable and robust fiber coupled laser designed for volume manufacturing

- UV, Visible and NIR Wavelengths
- Integrated drive and temperature control electronics
- Modular singlemode fiber delivery system



iFLEX-Mustang™

Fiber coupled solid state laser with on-board acousto-optic modulation

- DPSS lasers, 488, 532 and 561nm
- High long term stability and low noise
- 25mW of output power



iFLEX-Q3™

Compact laser diode system for precision optical instrumentation

- Exceptional brightness, stability and long-term reliability
- Highly polarized beam
- Versatile, small form laser head and remote electronics module

Multi-laser Engines



iFLEX-Viper™

The world's first integrated Multi-laser Engine

- Combines 5 wavelengths in one instrument
- Delivers wavelengths via a singlemode fiber optic cable
- On-board acousto-optic modulation up to 3MHz

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