

Fiber Collimators Diffraction Limited



Features

- Adjustable focus
- No epoxy in the optical path
- No fluorescence
- Clean Gaussian beams at any distance
- Low wavefront error
- Very high transmission
- FC, FC/APC, SMA or pigtailed
- 350 nm to 2300 nm for standard

Applications

- Lidar
- Free Space Communications
- Interferometry
- Confocal Microscopy
- Optical tweezers
- Cytometry
- Scanning
- Direct write

Our High Performance Fiber Collimators are of a multi-element design that gives a highly collimated, clean Gaussian beam with low wavefront error and no diffraction.

Adjustable focus collimators are very versatile. They can replace several fixed focus collimators. You can optimize the collimator to your non-standard wavelength and lock it down. Besides collimation, these fiber collimators can also focus to a very tight spot or expand to illuminate a large area.

Standard collimators have apertures from 7 mm to 49 mm yielding beams from 2 mm to 33 mm in diameter. They are stocked for quick delivery. The smaller collimators have fine 80 pitch threads for fine focus/collimation adjustment. Larger collimators have focus adjustment with no rotation and a second lock down mechanism for vibrations. Coatings cover wavelength regions from 350 nm to 2300 nm.

For OEM users an adjustable collimator can be used for prototyping and then switched to a fixed unit customized

with any fiber, mounting, coating, material or environmental requirements.

Larger collimators to 100 mm are made on a semi-custom basis. We also have collimators for the UV region and mid IR region.



FC45 mounted
on tripod



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Fiber Collimators

Specifications (for singlemode fiber)

	FC5	FC10	FC20	FC40	FC45
Aperture:	7 mm	11.9 mm	23.8 mm	49 mm	49 mm
Beam size*:	2.1 mm	5.5 mm	11 mm	23 mm	33 mm
Beam divergence:	< 0.5 mrad	< 0.25 mrad	< 0.1 mrad	<0.067 mrad	< 0.05 mrad
Wavefront error, whole aperture rms:	< 1/10 wave	< 1/10 wave	< 1/10 wave	<1/10 wave	< 1/10 wave
Receptacle:	FC or FC/APC	FC or FC/APC	FC or FC/APC	FC or FC/APC	FC or FC/APC
Collimation:	Adjustable 80 tpi	Adjustable 80 tpi	Adjustable	Adjustable with no rotation	Adjustable with no rotation
Locking:	yes	yes	yes	yes	yes
Housing material:	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Weight:	45 g (1.6 oz.)	85 g (3.0 oz.)	286 g (10.1 oz.)	0.83 kg (1.83 lb)	1.12 kg (2.46 lb.)

*measured at $1/e^2$ points with singlemode fiber of NA = 0.13 at 635 nm

Please note that multimode fibers will have different specifications.

Ordering Information

Model #	Description
FC5- λ -FC	12.7 mm (1/2") O.D., FC receptacle
FC5- λ -APC	12.7 mm (1/2") O.D., FC/APC receptacle
FC10- λ -FC	19.05 mm (3/4") O.D., FC receptacle
FC10- λ -APC	19.05 mm (3/4") O.D., FC/APC receptacle
FC20- λ -FC	31.75 mm (1.25") O.D., FC receptacle
FC20- λ -APC	31.75 mm (1.25") O.D., FC/APC receptacle
FC40- λ -FC	Large collimator, FC receptacle
FC40- λ -APC	Large collimator, FC/APC receptacle
FC45- λ -FC	Large collimator, FC receptacle
FC45- λ -APC	Large collimator, FC/APC receptacle
Accessories	
FC5R-1.0	FC5 adapter for 1 in. optical mounts
FC10R-1.0	FC10 adapter for 1 in. optical mounts
FC20R-2.0	FC20 adapter for 2 in. optical mounts
MT1.75SS	FC40 and FC45 mount for tables or tripods
Tripod	Tripod

Use -VIS1 for $\lambda = 350$ nm to 600 nm
 Use -NIR1 for $\lambda = 600$ nm to 1000 nm
 Use -NIR2 for $\lambda = 1000$ nm to 1700 nm
 Use -SWIR for $\lambda = 1500$ nm to 2300 nm

Standard collimators are stock items. Pigtailed versions and SMA connectors are also available. All fused silica versions are available for UV region or harsh environments. Versions for the 2.5-6 micron region are also available.

Collimators can be made vacuum compatible, non magnetic, radiation resistant or made for flight or space applications. Special beam sizes, optical materials, housing materials or wavelength ranges have also been manufactured.

Please call 714-898-6001 or email sales@microlaser.com for you particular application.



Ring adapters to mount collimator onto common optical mounts

Specifications subject to change without notice.



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