

High Power Fiber Collimator (50W to 1KW CW)

(protected by patents: US7920763B1 US7715664B1)

Product Description

Agiltron's 1KW (CW) Fiber Collimators incorporates advanced technologies of direct fusion to a large beam expanding end cap ensuring safe power density, and a mode stripper that prevents burning the buffer/jacket by removing unwanted back-reflection radiation. These technologies significantly increase the collimator reliability.

Agiltron can provide customized beam size for a wide choice of operating wavelength and fiber types.



Performance Specifications

High Power Collimator	Min	Typical	Max	Unit
Operating Wavelength (λ_c)		500-2000		nm
Power Handling			1000	W
Insertion Loss	0.3	0.4	0.6	dB
Return Loss ^[1]		50		dB
Divergence ^[2]		0.4	0.5	mrad
Extinction Ratio ^[3]		25		dB
Beam Roundness	90			%
M^2			1.2	
Beam Diameter		5	8	mm
Operating Temperature	0		+70	°C
Storage Temperature	-40		+85	°C
Package Dimension ^[4]		$\Phi 31 \times 42$		mm

[1] For LMA fiber or double cladding fiber, return loss may be higher.

[2] It typically for beam size of 5 mm . Divergence depends on beam size.

[3] For PM fiber.

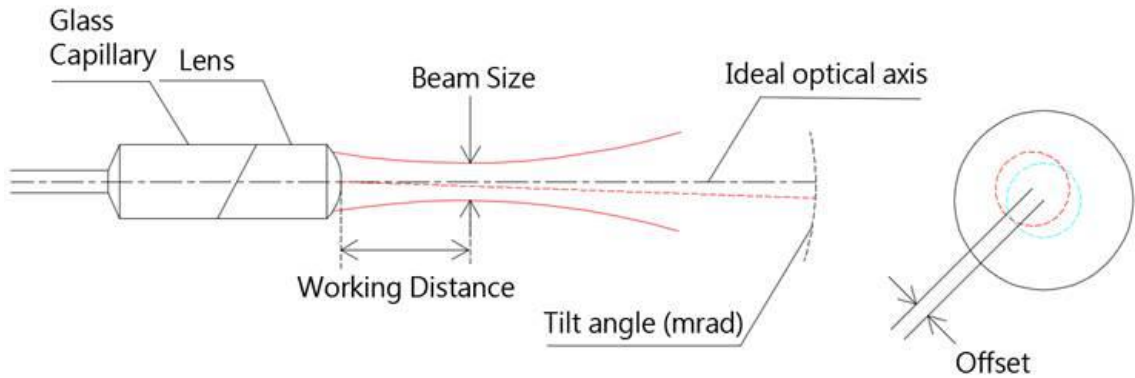
Features

- High Power Handling
- High Isolation
- High Reliability
- Low IL, PDL & TDL
- Cost Effective

Applications

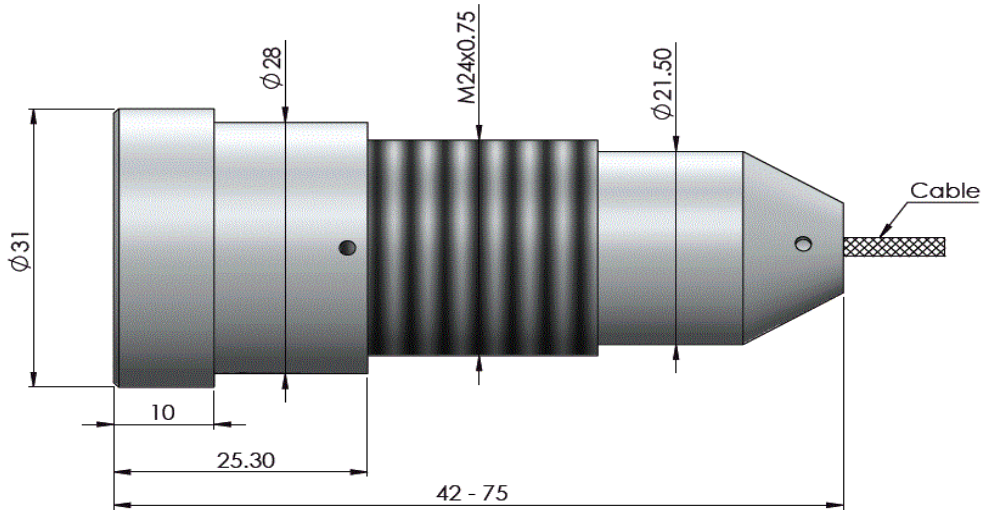
- Laser Pump Source
- Optical Fiber Amplifier
- Laser Manufacturing
- laser Marking

Optical Collimator Ray Trace Example



Practical fiber optical collimators are far from optical perfection. Consequently, they are optimized only within a working distance range during the fabrication. Fiber optical collimator is commonly characterized by its beam waist size, working distance, and off-axis tilting angle. Please make certain your application requirements are the same as the test parameters when you place the order. For multimode transmission, the collimator performance intrinsically depends on the laser mode field distribution profile. For best performance, a similar laser source is required during the fabrication and tests.

Mechanical Footprint Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

Prefix	Wavelength	Power Handling	Beam Size [1]	Working Distance	Fiber Type	Fiber Cover	Fiber Length	Connector
FCHP-	1060 = 1 2000 = 2 1310 = 3 1480 = 4 1550 = 5 1625 = 6 780 = 7 850 = 8 980 = 9 850/1310 = A 1260-1620 = B 1310/1550 = D 350 = E 530 = F Special = 0	10W = 01 20W = 02 30W = 03 50W = 05 100W = 10 200W = 22 300W = 33 400W = 44 500W = 55 1KW = 00	1.0mm = 1 2.0mm = 2 3.0mm = 3 4.0mm = 4 5.0mm = 5 Special = 0	0.1m = 1 0.3m = 2 0.6m = 3 0.9m = 4 1.3m = 5 1.7m = 6 2.2m = 7 2.7m = 8 3.2m = 9 5M = A 8M = B 12M = C 15M = D 18M = E Special = 0	SMF28 = 2 PM 1550 = 3 SM 1950 = 4 SM 2000 = 5 PM 1950 = 6 Hi 1060 = 1 PM 980 = 9 Hi 780 = 7 PM 850 = 8 Special = 0	Bare fiber = 1 900um tube = 2 3mm PVC cable = 4 3mm Armor cable = 6 5mm Armor cable = 7 Special = 0	0.25M = 1 0.5M = 2 1.0 M = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 SMA905 = 9 Special = 0

[1]. Beam size (@1/e²)

NOTE: Customer must provide a working distance. We will optimize and test at the working distance point. The collimator may not meet spec off the working distance.

Warning: An Optical Collimator need to have a working distance stated by the customer at the time of order