RoMack inc.

Fiberoptic Collimators and Focusing Modules

APPLICATIONS

- Any application that requires collimated or focused optical energy.
- Sensing
- LIDAR
- Spectroscopy
- General Research

FEATURES

- Collimate or focus the output of a fiberoptic.
- Works with connectorized or ferrule terminated fibers.
- Can be adjusted.
- Rugged barrel design for easy handling and mounting.
- Many numerical apertures can be accommodated.
- Fiber diameters from Single Mode to 1000µm.
- UV, VIS and NIR wavelengths.
- AR coated optics available.

DESCRIPTION

RoMack's collimators and focusing modules are rugged and functional devices that make the modification of a fiberoptic's output easy to accomplish.

These modules are made to accept either industry standard fiberoptic connectors,or standard cylindrical ferrules.While all of RoMack's collimators and imaging modules are set-up at the factory to meet the specifications required,they can be adjusted to provide some flexibility for the end user.

Collimators are specified to yield a particular minimum divergence given a fiber size and numerical aperture.

Focusing modules or imagers are specified to yield a particular spot size at a specified distance from the end of the module.

All output modules are available with BK-7 or Silica optics and these can be AR coated if desired.

Collimators and focusing modules may be used in reverse,as fiberoptic couplers. Also see RoMack's specific coupler products.

Call us for your OEM or custom needs as well.

Fiberoptic Collimators and Focusing Modules

ORDERING/ SPECIFYING INFORMATION

RoMack can fabricate a very wide range of collimators and focusing attachments and naturally the outside dimensions can vary greatly depending upon what the application and physical mounting requirements may be.

Shown below are some of RoMack's standard packages for collimators and focusing attachments. All are shown with SMA connector bushings, but other connectors and ferrules can be provided. Working with one of the standard packages is easiest but not required, so don't hesitate to ask for something different than what is shown.

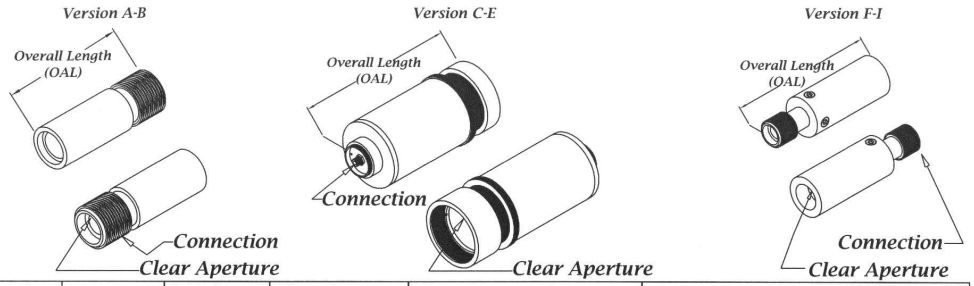
NOTES

Collimators:
The achievable beam diameter and divergence will depend upon the fiber's size and NA (numerical aperture).

Essentially, the following criteria must be met:
Øf X NAf = Øb X NAb where, Øf is the diameter of the fiber core, NAf is the numerical aperture of the fiber, Øb is the diameter of the quasi-collimated beam and NAb is the numerical aperture of the beam (NA = Sin (1/2 angle of divergence). This is just one way to state the physical limits of an optical system based upon the law of Optical Invariance (sometimes called LaGrangian Invariance). This law states the limits of the system independent of the how many optical elements might be employed.

If you have questions, please call.

Focusing Modules:
Required specifications for focusing devices, other than package type, are: Spot Size and Working Distance but these parameters will also depend upon the fiber size and NA.



Version	Ø	OAL (Nom.)	Clear Aperture	*Max Numerical Aperture	Connection
A	Ø0.250"	0.65"	GRIN LENS	GRIN LENS	SMA905, SMA906
B	Ø0.250"	0.75"	Ø0.14"	0.28	SMA905, SMA906
C	Ø0.700"	1.9"	Ø0.43"	0.22	FC
D	Ø1.200"	2.8"	Ø0.94"	0.23	FC, ST, SMA905, SMA906
E	Ø2.200"	4.6"	Ø1.92"	0.23	FC, ST, SMA905, SMA906
F	Ø0.375"	1.1"	Ø0.21"	0.28	SMA905, SMA906
G	Ø0.625"	1.6"	Ø0.43"	0.22	Ø0.25" Ferrule, SMA905, SMA906
H	Ø1.250"	2.6"	Ø0.94"	0.23	Ø0.25" Ferrule, SMA905, SMA906
I	Ø2.250"	4.6"	Ø1.92"	0.23	Ø0.25" Ferrule, SMA905, SMA906

Lens Materials
1. BK7 Glass (375nm-2,200nm)
2. UV Grade Fused Silica (190nm-2,000nm)

Note: Higher numerical apertures can be accomodated.

Imagers
Version:_____
Connection:_____
Lens material: _____
Image size: _____
Working distance: _____
Other requirements: _____
_____

Collimators
Version:_____
Connection:_____
Lens material: _____
Desired beam diameter: _____
Other requirements: _____
_____

Please contact RoMack regarding beam diameter, spot size and working distance, high temperature, chemical, vacuum, or any other environmental concerns.

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