

## Micro Focus Optics series 5M

for transforming a collimated beam into a micro focus spot



### FEATURES

Micro focus optics used for focussing the collimated radiation of a fiber collimator.

- Attachment optics for fiber collimators type [60FC](#) with outer diameter Ø 12mm
- Choice of aspheres, achromats or singlet lenses
- Various optics for UV - IR
- Amagnetic housing made from Titanium on request

## DESCRIPTION

Micro Focus Optics are used in order to generate small laser spots from the collimated radiation of a fiber collimator.

For spots < 10 times the mode field MFD of the fiber, a good quality spot can no longer be achieved by [simply refocusing](#) the collimation optics. Instead, a combination of collimation and focusing optics is needed. The size of the spot and its [Rayleigh](#) range is [determined](#) by the fiber properties and by the focal lengths of the fiber collimator and of the micro focus optics. For single-mode fibers the Gaussian intensity distribution and beam shape are maintained.

For the fiber collimators series 60FC with an outer diameter Ø 12 mm Schäfter+Kirchhoff offer Micro Focus Optics with focal lengths in the range f 2.7 mm - 325 mm.

There is a large variety of [aspheres](#), [duplet](#) or [singlet](#) optics with AR coatings from the UV to the IR wavelengths range.

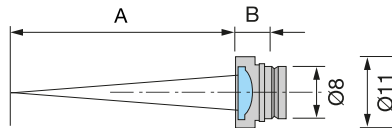
### Adjustment:

In order to change the working distance of the Micro Focus Optics the lens position of the adjacent collimator has to be readjusted.

**Housing material:**

As standard the housing of the Micro Focus Optics is made of nickel silver.

For amagnetic fiber collimators Schäfter+Kirchhoff offers Micro Focus Optics with housings made of titanium.



## ORDER OPTIONS

Wavelength Range	AR Coating	Correction	Focal Length [mm]																			
			2.7	3.1	4	4.5	6.2	7.5	8	11	12	15	18	20	25	30	40	50	60	88	150	325
350 - 460 nm	52	Monochromatic		x																		
400 - 600 nm	01	Monochromatic	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		<u>x</u>	<u>x</u>									
600 - 1050 nm	02	Monochromatic	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		<u>x</u>	<u>x</u>									
650 - 1150 nm	07	Monochromatic				<u>x</u>	x		<u>x</u>													
1050 - 1550 nm	03	Monochromatic	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		<u>x</u>	<u>x</u>									
1300 - 1750 nm	45	Monochromatic	<u>x</u>			<u>x</u>	<u>x</u>	<u>x</u>		<u>x</u>		<u>x</u>	<u>x</u>									
1750 - 2150 nm	09	Monochromatic				x	x															
390 - 670 nm	33	Monochromatic							x		<u>x</u>		<u>x</u>	<u>x</u>								
630 - 980 nm	10	Monochromatic							x		<u>x</u>		<u>x</u>	<u>x</u>								
980 - 1550 nm	08	Monochromatic							x		<u>x</u>		<u>x</u>	<u>x</u>								
630 - 980 nm	10	Achromatic									<u>x</u>											
400 - 1000 nm	24	Achromatic										<u>x</u>			<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		
420 - 700 nm	26	Achromatic										<u>x</u>			<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>	<u>x</u>		
750 - 1550 nm	37	Achromatic									<u>x</u>	<u>x</u>			<u>x</u>	<u>x</u>	<u>x</u>					
390 - 670 nm	33	-																<u>x</u>		<u>x</u>	<u>x</u>	<u>x</u>
630 - 980 nm	05	-																<u>x</u>		<u>x</u>	<u>x</u>	<u>x</u>
980 - 1550 nm	08	-																<u>x</u>		<u>x</u>	<u>x</u>	<u>x</u>

## TECHNOTES

- [Producing spots \(3\)](#)  
[When can you produce a spot by simply refocusing the fiber collimator and when is a micro focus optics necessary?](#)

[Refocusing the collimator to produce a focus spot](#)  
[Beam divergence of a collimated beam exiting a single-mode fiber](#)

- [Producing spots by using a fiber collimator and a micro focus optics](#)  
[Calculation of spot diameter for single-mode fibers](#)
- [Rayleigh range](#)  
[What is the depth of focus of my spot?](#)

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<https://sukhamburg.com/products/fiberoptics/fibercoupler/accessories/attachmentoptics/microfocus/5m.html> from 5/14/2024

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