

**P L A S U S**

German high-quality plasma spectroscopy  
and software solutions



# VACUUMOPTICS

OPTICAL COMPONENTS FOR IN-VACUUM AND EX-VACUUM

- Optical fibers and collimator optics**
- Collimator optics with coating protection**
- Optical vacuum feedthroughs**
- Slim and miniature size optics**

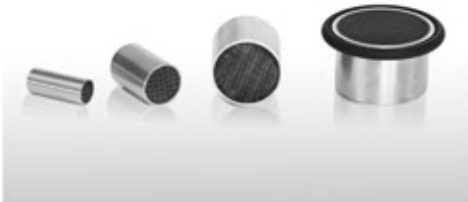
Optical components are the interface between the application process and the detection system: the optics should transfer as much light intensity as possible and it should be flexible and resistant to industrial environments.



Slim and miniature size optics with coating protection device and optical fibers



Ex-vacuum collimator optics with optical fiber.



Coating protection devices in different diameters for KF40 and other optical view ports



Optical vacuum feedthroughs in KF and CF flanges.



Assembled in-vacuum fiber optics set.



Multiple optical vacuum feedthroughs in single flange.

We are offering quartz fiber optics in slim size and miniature size for in-vacuum and ex-vacuum use made of stainless steel or aluminum. Especially designed collimator optics with straight and right-angled line of sight allow light detection even in process chambers with obstructed view. All in-vacuum collimator optics are equipped with a protection device to protect the optical surfaces against coating. Easy system integration of the in-vacuum optics is realized by optical vacuum feedthroughs in standard KF and CF flanges. All fiber connections are common SMA connectors.

For detailed information on VACUUM OPTICS please refer to the data sheet

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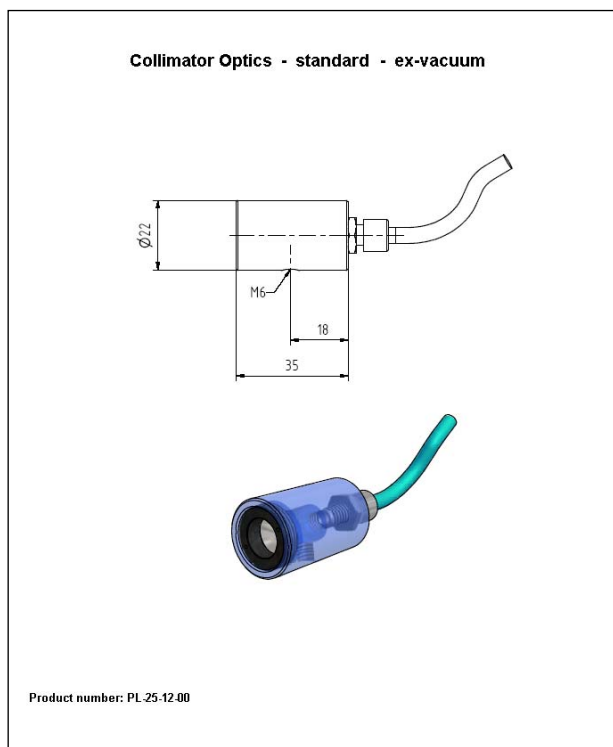
# VACUUM OPTICS

## Data Sheet

1. Standard optics – ex-vacuum
2. Slim optics – in-vacuum
3. Miniature optics – in-vacuum
4. Coating protection devices – in-vacuum
5. Optical vacuum feedthroughs
6. Optical fibers – in- and ex-vacuum

## I. Standard optics – ex-vacuum

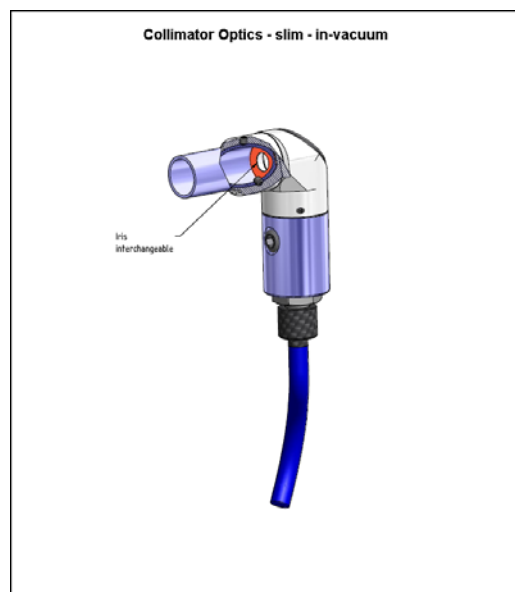
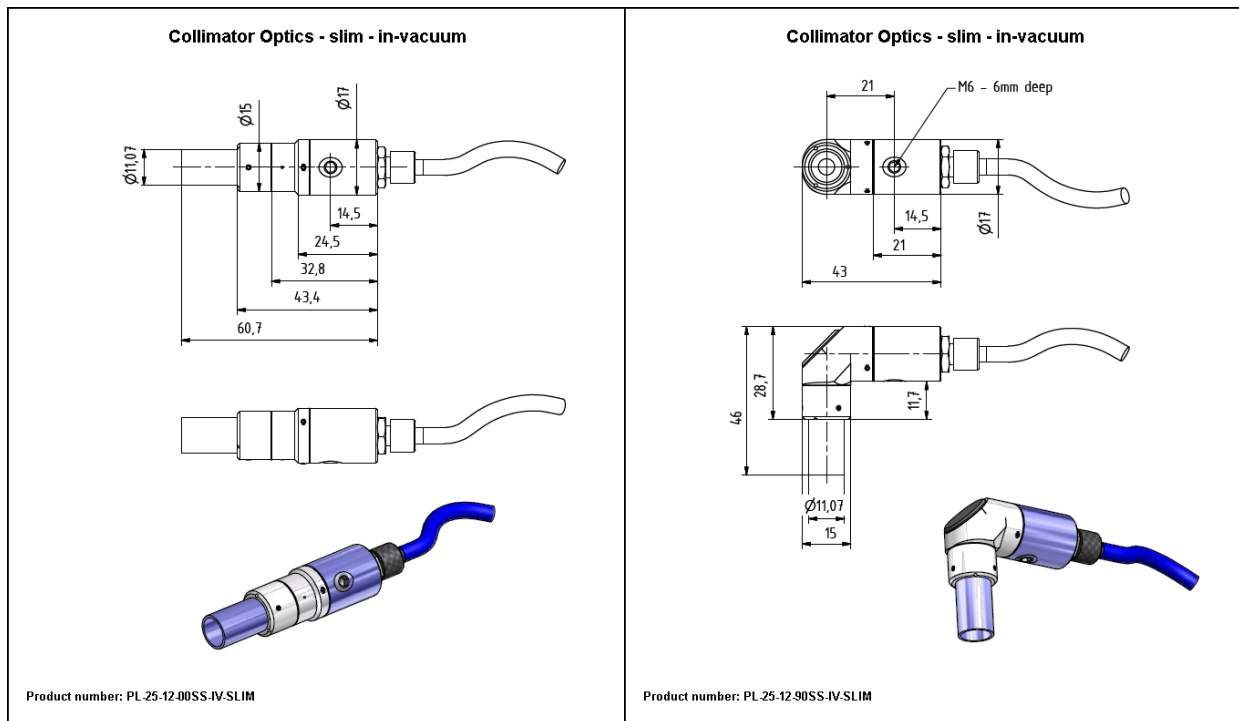
	0° angle
Product number	PL-25-12-00
Dimensions [mm]	22.0 dia. x 35.0
Aperture [mm]	dia. 9.5
Maximum temperature [°C]	90
Coating protection	No
Connector	SMA
Weight [g]	25
Material	POM
Spectral range [nm]	200 - 1100
Acceptance angle	approx. 3°



## 2. Slim optics – in-vacuum

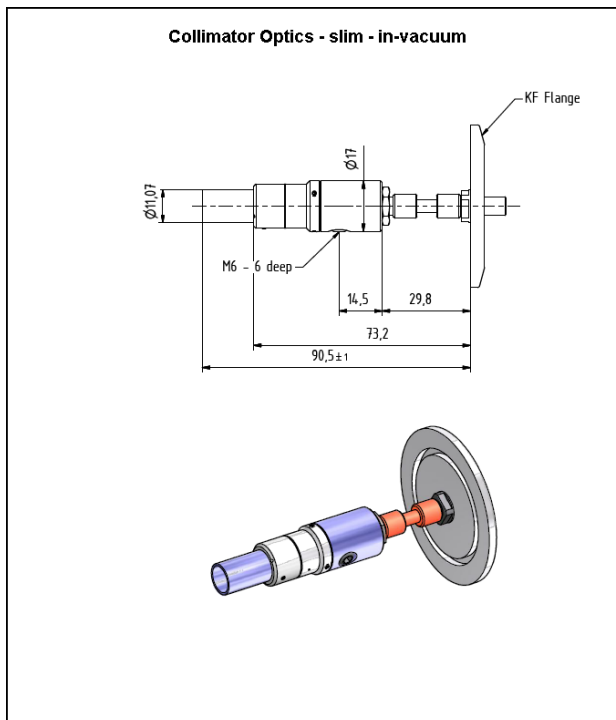
### Collimator optics

	0° angle	90° angle
Product number	PL-25-12-00SS-IV-SLIM	PL-25-12-90SS-IV-SLIM
Dimensions [mm]	17.0 dia. x 60.7	17.0 x 46 x 43.0
Aperture [mm]	dia. 9.5	dia. 9.5
Coating protection	Yes	Yes
Maximum temperature [°C]	600	600
Connector	SMA	
Weight [g]	100	200
Material	Stainless steel	
Spectral range [nm]	200 - 1100	
Acceptance angle	approx. 3°	



**Collimator optics – fixed assembly at feedthrough**

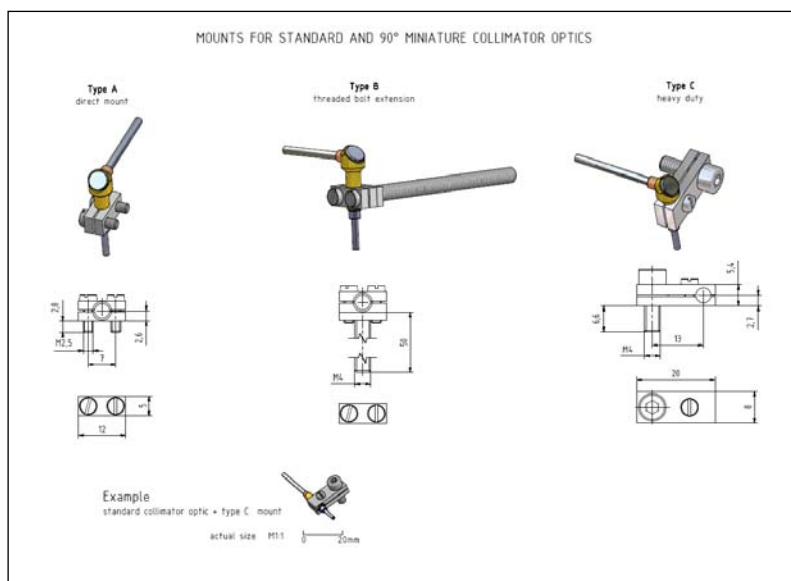
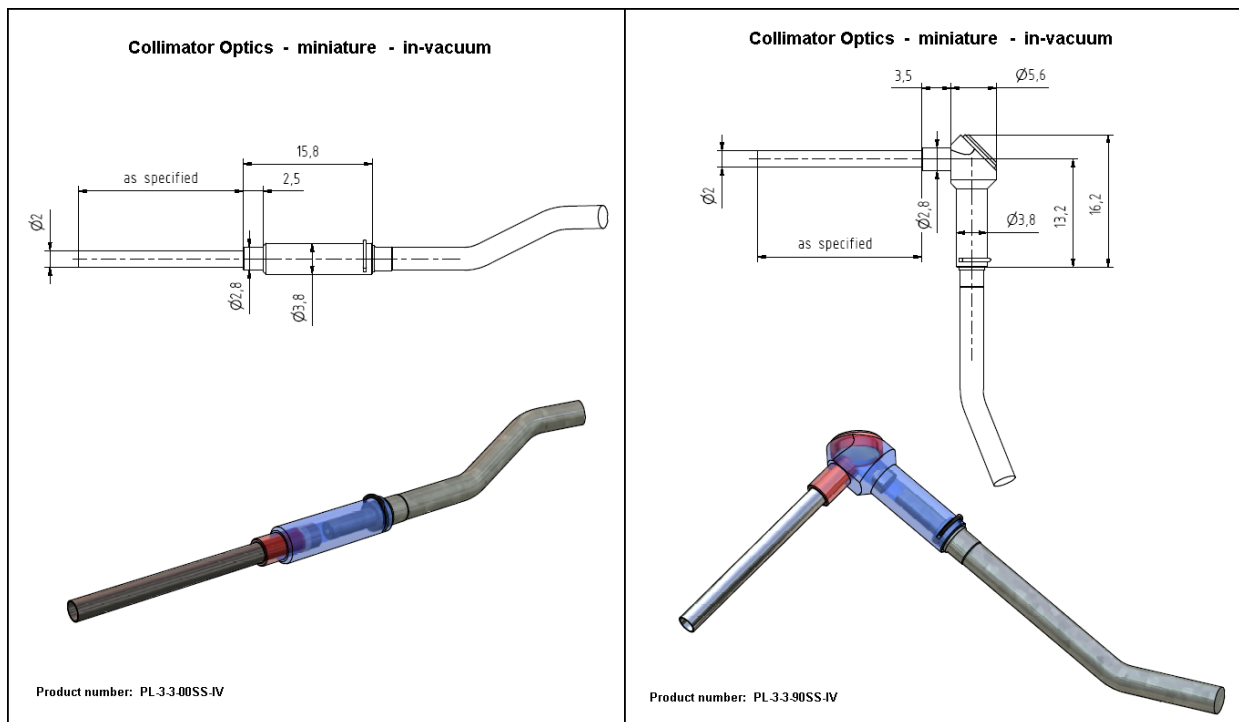
	<b>Slim</b>
Product numbers	PL-25-12-00SS-IV-SLIM PL-600-MM32-UJV-VIS-IV PL-OFT-KFxx-I
Dimensions [mm]	see drawing
Aperture [mm]	dia. 9.5
Maximum temperature [°C]	180
Coating protection	Yes
Connector	SMA
Weight [g]	200
Material	Stainless steel
Spectral range [nm]	200 - 1100
Acceptance angle	approx. 3°



### 3. Miniature optics – in-vacuum

#### Collimator optics

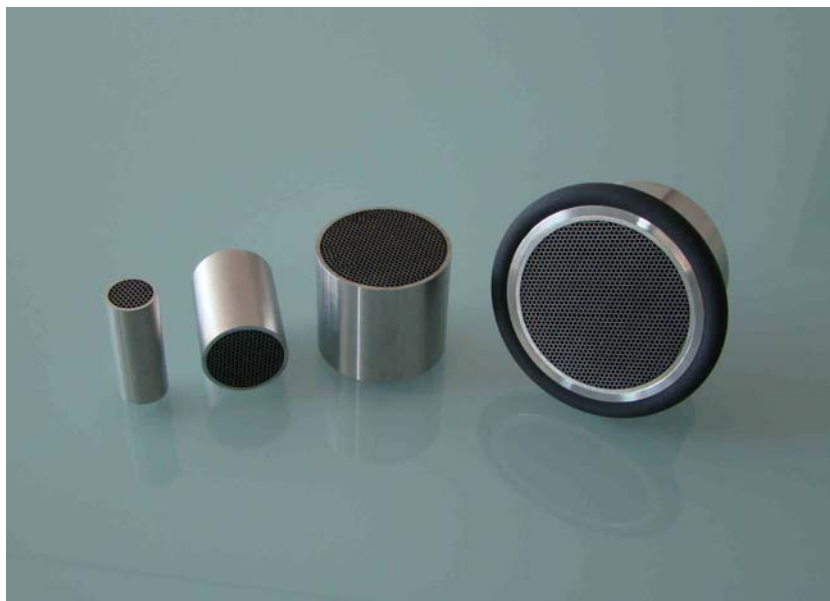
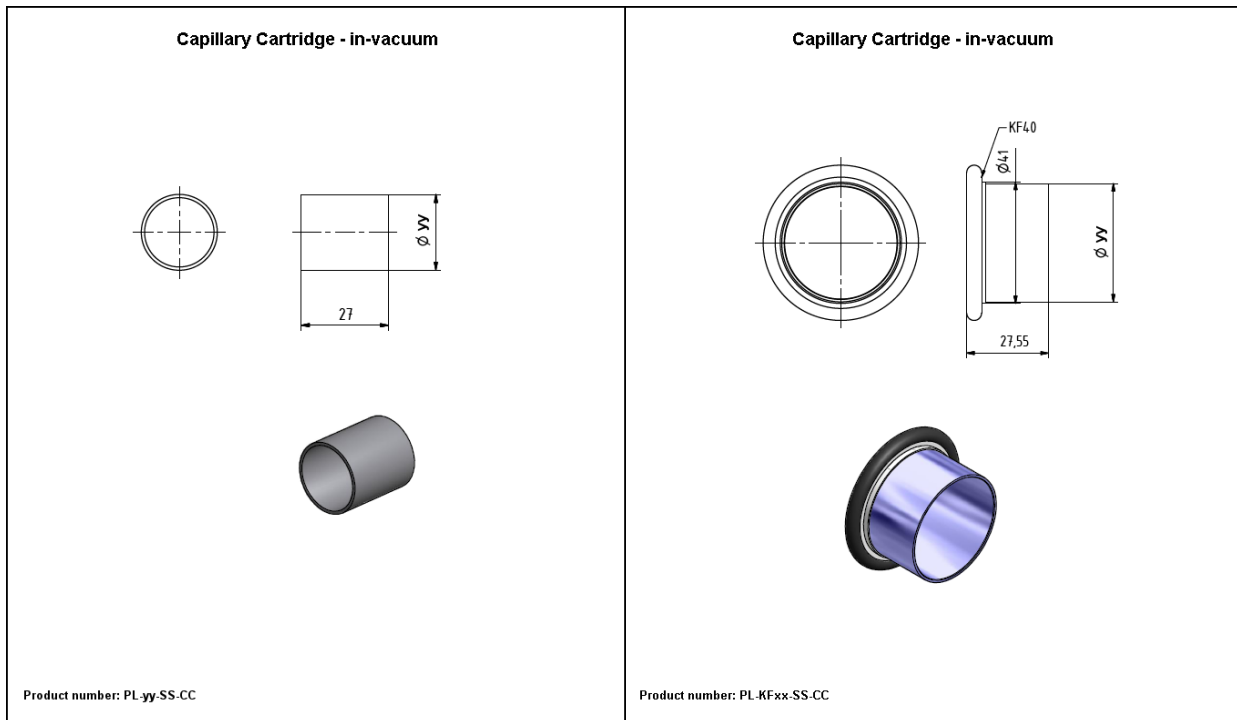
	0° angle	90° angle
Product number	PL-3-3-00SS-IV	PL-3-3-90SS-IV
Dimensions [mm]	3.8 dia. x 25.0	5.6 x 20.0 x 16.2 mm
Aperture [mm]	dia. 1.8	dia. 1.8
Coating protection	Yes	Yes
Maximum temperature [°C]	180	180
Connector	Miniature	Miniature
Weight [g]	4	6
Material	Stainless steel	
Spectral range [nm]	200 - 1200	
Acceptance angle	approx. 3-5°	



#### 4. Coating protection devices – in-vacuum

##### Capillary cartridges / honey combs

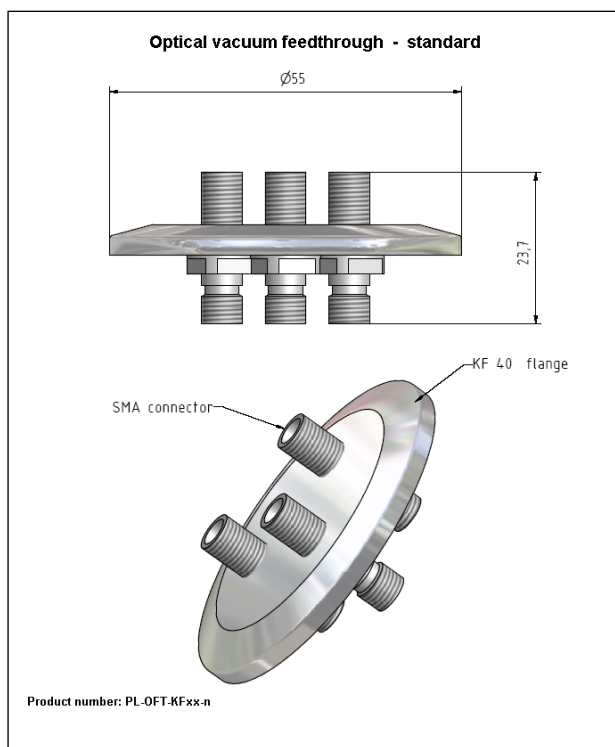
	without centering ring	with centering ring
Product number	PL-yy-SS-CC	PL-KFxx-SS-CC (xx = 16, 25, 40)
Dimensions [mm]	yy dia. x 27 mm, yy = 11.07, 19, 23.5, 30, 40 mm	yy dia. x 27.55 mm yy = 11.07, 23.5, 40
Maximum temperature [°C]	600	200
Material	Stainless steel	





## 5. Optical vacuum feedthroughs

	ISO KF flange	ISO CF flange
Product number	PL-OFT-KFxx-n	PL-OFT-CFxx-n
Number of feedthroughs	n = 1 - 4	
Connectors	SMA / SMA	
Maximum temperature [°C]	180	
Material	Stainless steel	
Flange size/fitting	KFxx/CFxx = 16, 20, 25, 32, 40, 50	



## 6. Optical fibers – in- and ex-vacuum

	Standard fibers		Miniature fibers
	ex-vacuum	in-vacuum	in-vacuum
Product number	PL-yyy-x-UV-VIS-NC	PL-yyy-x-UV-VIS-IV	PL-600-x-UV-VIS-IVM-I
Outer diameter [mm]	5		3.2
Electrically insulated	Yes	No	No
Connectors	SMA / SMA		SMA / Miniature
Maximum temperature [°C]	180		
Material	Stainless steel		
Fiber bundle diameter [µm]	yyy = 600 µm / 1000 µm		600 µm
Spectral range [nm]	200 - 1100		
Fiber length [m]	x = length in meter as specified		