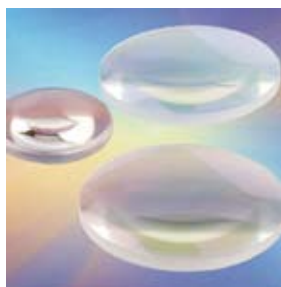


**Asphären** finden immer neue Anwendungsgebiete in optischen Systemen und als Fokussieroptik. Insbesondere bei hoch geöffneten Systemen ermöglicht die Asphärisierung bessere Auflösungen.

Sill Optics erweitert seine Produktionskapazitäten für Asphären und Hochpräzisionslinsen mit einer weiteren MRF Anlage. Die MRF Technologie ermöglicht konkave Radien oder Asphären von plan bis zu -25 mm zu bearbeiten und konvexe Radien von plan bis 10 mm. Sphärische Radien sind mit einer Genauigkeit von  $< 0,03 \mu\text{m}$  ( $= \lambda/20$ ) produzierbar, Asphären mit  $< 0,1 \mu\text{m}$ .



The use of **aspheric** lenses in optical projection systems and laser optics is on the increase. Aspheric lenses enable especially for optical systems with a high *f*-number an enhancement of resolution.

Sill Optics increases production capacity of aspheric and high precision lenses with a new MRF plant. This MRF technology enables concave radii and aspheric surfaces from plane to -25 mm and convex radii from plane to 10 mm. The production tolerances of spherical radii are smaller than  $0.03 \mu\text{m}$  ( $= \lambda/20$ ) for aspheric shapes smaller than  $0.1 \mu\text{m}$ .

Das Standardprogramm umfasst Asphären mit 1", 1,5" und 2" Durchmesser und Brennweiten von 30 mm bis 200 mm. Kundenspezifische Anfragen sind willkommen.

The standard product range includes aspheric lenses with a diameter of 1", 1.5" and 2" and focal length from 30 mm to 200 mm. Customized inquiries are welcome.

### 1030 nm - 1090 nm - ASPHÄREN GEFASST / ASPHERIC LENSES MOUNTED - QUARZ / FUSED SILICA

Artikelnummer part number		Brennweite focal length	Außen-Ø housing-Ø	freier-Ø clear-Ø	Länge length	Arbeitsabstand working distance
1064 nm standard	1030 nm - 1090 nm low absorption	[mm]	[mm]	[mm]	[mm]	[mm]
S6ASS7480/126	S6ASS7480/328	80.0	41.0	35.0	24.0	70.9
S6ASS7410/126	S6ASS7410/328	100.0	41.0	35.0	24.0	91.2
S6ASS7412/126	S6ASS7412/328	120.0	41.0	35.0	24.0	111.5
S6ASS7415/126	S6ASS7415/328	150.0	41.0	35.0	24.0	141.5
S6ASS7420/126	S6ASS7420/328	200.0	41.0	35.0	24.0	192.1

### 515 nm - 545 nm - ASPHÄREN GEFASST / ASPHERIC LENSES MOUNTED - QUARZ / FUSED SILICA

Artikelnummer part number		Brennweite focal length	Außen-Ø housing-Ø	freier Ø clear Ø	Länge length	Arbeitsabstand working distance
532 nm standard	515 nm - 545 nm low absorption	[mm]	[mm]	[mm]	[mm]	[mm]
S6ASS7480/121	S6ASS7480/292	80.0	41.0	35.0	24.0	68.9
S6ASS7410/121	S6ASS7410/292	100.0	41.0	35.0	24.0	88.7
S6ASS7412/121	S6ASS7412/292	120.0	41.0	35.0	24.0	108.5
S6ASS7415/121	S6ASS7415/292	150.0	41.0	35.0	24.0	138.0
S6ASS7420/121	S6ASS7420/292	200.0	41.0	35.0	24.0	187.6



### 1030 nm - 1090 nm - ASPHÄREN UNGEFASST / ASPHERIC LENSES UNMOUNTED - QUARZ / FUSED SILICA

Artikelnummer <i>part number</i>	Brennweite <i>focal length</i> [mm]	Außen-Ø <i>housing-Ø</i> [mm]	Mittendicke <i>center thickness</i> [mm]	Arbeitsabstand <i>working distance</i> [mm]
S1ADX0220/328	20.0	25.0	13.1	13.3
S1ADX0230/328	30.0	30.0	16.0	20.9
S1ADX0240/328	40.0	30.0	15.0	31.3
S1ADX0250/328	50.0	30.0	13.7	42.1
S1ADX0260/328	60.0	30.0	11.3	53.4
S1ADX0381/328	80.0	30.0	12.0	73.1
S1ADX0380/328	80.0	38.1	12.0	73.1
S1ADX0580/328	80.0	52.0	17.8	70.5
S1ADX0311/328	100.0	30.0	10.9	93.7
S1ADX0310/328	100.0	38.1	10.9	93.7
S1ADX0510/328	100.0	52.0	17.5	91.0
S1ADX0313/328	120.0	30.0	10.2	114.0
S1ADX0312/328	120.0	38.1	10.2	114.0
S1ADX0512/328	120.0	52.0	18.0	109.5
S1ADX0316/328	150.0	30.0	9.5	144.5
S1ADX0315/328	150.0	38.1	9.5	144.5
S1ADX0515/328	150.0	52.0	11.0	143.5
S1ADX0320/328	200.0	38.1	8.9	194.7
S1ADX0520/328	200.0	52.0	8.7	194.8

### 515 nm - 545 nm - ASPHÄREN UNGEFASST / ASPHERIC LENSES UNMOUNTED - QUARZ / FUSED SILICA

Artikelnummer <i>part number</i>	Brennweite <i>focal length</i> [mm]	Außen Ø <i>housing-Ø</i> [mm]	Mittendicke <i>center thickness</i> [mm]	Arbeitsabstand <i>working distance</i> [mm]
S1ADX0220/292	20.0	25.0	13.1	13.0
S1ADX0230/292	30.0	30.0	16.0	20.0
S1ADX0240/292	40.0	30.0	15.0	30.5
S1ADX0250/292	50.0	30.0	13.7	41.0
S1ADX0260/292	60.0	30.0	11.3	52.0
S1ADX0381/292	80.0	30.0	12.0	71.1
S1ADX0380/292	80.0	38.1	12.0	71.1
S1ADX0580/292	80.0	52.0	17.8	68.6
S1ADX0311/292	100.0	30.0	10.9	91.2
S1ADX0310/292	100.0	38.1	10.9	91.2
S1ADX0510/292	100.0	52.0	17.5	88.6
S1ADX0313/292	120.0	30.0	10.2	111.5
S1ADX0512/292	120.0	52.0	18.0	106.7
S1ADX0312/292	120.0	38.1	10.2	111.5
S1ADX0316/292	150.0	30.0	9.5	141.5
S1ADX0515/292	150.0	52.0	11.0	139.9
S1ADX0315/292	150.0	38.1	9.5	141.5
S1ADX0320/292	200.0	38.1	8.9	190.2
S1ADX0520/292	200.0	52.0	8.7	190.0

### 1030 nm - 1090 nm - QUARZ / FUSED SILICA

Artikelnummer part number		Brennweite focal length [mm]	Außen-Ø housing-Ø [mm]	freier-Ø clear-Ø [mm]	Länge length [mm]	Arbeitsabstand working distance [mm]	Anzahl Linsen number of lenses
1064 nm standard	1030 nm - 1090 nm low absorption						
S6ASS2550/126	S6ASS2550/328	49.7	30.0	23.0	20.0	48.7	2
S6ASS2060/126	S6ASS2060/328	63.8	40.0	34.0	32.0	49.7	3
S6ASS2560/126	S6ASS2560/328	60.1	30.0	23.0	22.5	57.0	2
S6ASS5080/126	S6ASS5080/328	79.6	54.0	48.0	36.0	58.8	3
S6ASS1093/126	S6ASS1093/328	100.6	48.0	40.0	22.0	86.1	2
S6ASS6101/126	S6ASS6101/328	100.6	56.0	50.0	22.5	86.2	2
S6ASS6120/126	S6ASS6120/328	120.1	54.0	48.0	59.0	112.2	2
S6ASS5120/126	S6ASS5120/328	120.3	48.0	40.0	20.0	113.7	2
S6ASS5150/126	S6ASS5150/328	148.9	50.0	45.0	43.0	152.7	2
S6ASS5151/126	S6ASS5151/328	148.9	54.0	48.0	43.0	152.7	2
S6ASS5152/126	S6ASS5152/328	153.4	75.0	68.0	34.0	129.3	2
S6ASS5170/126	S6ASS5170/328	170.3	50.0	45.0	43.0	169.7	2
S6ASS5201/126	S6ASS5201/328	200.1	75.0	68.0	23.0	185.9	2
S6ASS6200/126	S6ASS6200/328	201.4	54.0	48.0	15.0	193.7	2
S6ASS2250/126	S6ASS2250/328	249.8	54.0	48.0	20.0	247.4	2

### 515 nm - 545 nm - QUARZ / FUSED SILICA

Artikelnummer part number		Brennweite focal length [mm]	Außen-Ø housing-Ø [mm]	freier-Ø clear-Ø [mm]	Länge length [mm]	Arbeitsabstand working distance [mm]	Anzahl Linsen number of lenses
532 nm standard	515 nm - 545 nm low absorption						
S6ASS2020/121	S6ASS2020/292	24.4	25.0	12.5	13.5	19.3	3
S6ASS2550/121	S6ASS2550/292	49.7	30.0	25.0	20.0	45.8	2
S6ASS2060/121	S6ASS2060/292	60.0	40.0	34.0	32.0	47.9	3
S6ASS2560/121	S6ASS2560/292	60.1	30.0	23.0	24.5	52.3	2
S6ASS5300/121	S6ASS5300/292	99.8	41.0	20.0	16.0	86.7	3
S6ASS6150/121	S6ASS6150/292	146.3	56.0	50.0	22.5	135.0	2
S6ASS5370/121	S6ASS5370/292	174.5	41.0	35.0	24.0	173.3	2
S6ASS6200/121	S6ASS6200/292	196.6	54.0	48.0	15.0	188.9	2

### 355 nm - QUARZ / FUSED SILICA

Artikelnummer part number	Brennweite focal length [mm]	Außen-Ø housing-Ø [mm]	freier-Ø clear-Ø [mm]	Länge length [mm]	Arbeitsabstand working distance [mm]	Anzahl Linsen number of lenses
S6ASS2020/075	25.0	25.0	12.0	17.0	17.5	3
S6ASS2550/075	48.2	30.0	23.0	20.0	45.3	2
S6ASS2060/075	60.0	40.0	34.0	30.0	46.5	3
S6ASS5185/075	86.4	40.0	30.0	15.0	77.7	2
S6ASS5120/075	114.4	48.0	40.0	20.0	104.5	2

### 266 nm - QUARZ / FUSED SILICA

Artikelnummer part number	Brennweite focal length [mm]	Außen-Ø housing-Ø [mm]	freier-Ø clear-Ø [mm]	Länge length [mm]	Arbeitsabstand working distance [mm]	Anzahl Linsen number of lenses
S6ASS2020/199	24.0	25.0	12.0	17.0	17.0	3
S6ASS2550/199	46.3	40.0	23.0	20.0	43.1	2
S6ASS2060/199	57.3	40.0	34.0	30.0	43.9	3
S6ASS5185/199	82.4	40.0	30.0	20.0	73.8	2
S6ASS5120/199	109.0	48.0	40.0	20.0	99.2	2

## GEFASSTE SYSTEME UND EINZELOPTIKEN

Achromate oder mehrlinsige Systeme können zur Faserkollimation oder in Abbildungssystemen eingesetzt werden.

In statischen Systemen oder bei fliegender Optik finden Plankonvexlinsen und Zweilinsler zur Strahlfokussierung ihren Einsatz. Wir bieten auch gefasste Zweilinsler und gefasste mehrlinsige Luftspaltsysteme an.



## MOUNTED ASSEMBLIES AND SINGLETs

Achromats or multi-element systems can be used for collimating fibre delivered laser beams or for imaging systems.

Plano-convex singlets and doublets can be used as focussing lenses in static or flying optics systems for focusing a laser beam. We offer also mounted doublets and mounted air spaced multi element systems.

## 1064 nm - OPTISCHES GLAS / OPTICAL GLASS

Artikelnummer part number	Brennweite focal length [mm]	Außen-Ø housing-Ø [mm]	freier-Ø clear-Ø [mm]	Länge length [mm]	Arbeitsabstand working distance [mm]	Anzahl Linsen number of lenses
S6ASS2020/126	25.2	25.0	12.5	13.5	19.7	3
S6ASS1030/126	30.0	20.0	14.0	11.0	26.5	2
S6ASS1035/126	35.0	20.0	16.0	11.0	32.0	2
S6ASS0065/126	40.1	28.0	26.0	22.5	31.6	3
S6ASS0063/126	40.3	23.0	20.0	14.0	29.8	2
S6ASS0030/126	50.0	35.0	23.5	34.0	27.5	3
S6ASS0159/126	56.0	41.0	35.0	26.5	42.7	3
S6ASS0060/126	59.9	54.0	48.0	36.0	42.5	3
S6ASS0074/126	60.0	23.0	20.0	14.0	54.5	2
S6ASS0064/126	60.0	28.0	26.0	22.5	54.7	2
S6ASS0168/126	65.8	41.0	33.0	24.0	57.4	2
S6ASS0311/126	70.8	28.0	26.0	22.5	64.9	2
S6ASS0177/126	76.7	41.0	35.0	24.0	64.2	3
S6ASS6001/126	79.6	54.0	48.0	36.0	67.3	3
S6ASS0067/126	80.6	48.0	41.0	22.0	70.1	2
S6ASS0083/126	82.6	23.0	20.0	14.0	80.3	1
S6ASS0078/126	85.3	28.0	26.0	22.5	80.0	2
S6ASS0115/126	90.0	41.0	35.0	32.0	90.1	3
S6ASS0029/126	99.7	35.0	23.5	20.0	91.8	2
S6ASS0093/126	100.2	41.0	31.0	22.0	88.3	2
S6ASS0082/126	120.2	23.0	20.0	14.0	118.3	1
S6ASS0087/126	120.2	28.0	26.0	22.5	117.0	1
S6ASS0098/126	121.6	41.0	35.0	24.0	110.7	3
S6ASS1098/126	121.6	48.0	42.0	28.0	111.3	3
S6ASS0169/126	125.1	52.0	43.0	29.0	113.1	3
S6ASS0097/126	134.8	52.0	45.0	22.0	125.0	3
S6ASS0081/126	160.5	23.0	20.0	14.0	158.8	1
S6ASS0086/126	160.5	28.0	26.0	22.5	158.6	1
S6ASS0066/126	162.6	41.0	35.0	22.0	153.7	2
S6ASS0085/126	237.9	28.0	26.0	22.5	236.2	1

## 532 nm - OPTISCHES GLAS / OPTICAL GLASS

Artikelnummer part number	Brennweite focal length [mm]	Außen-Ø housing-Ø [mm]	freier-Ø clear-Ø [mm]	Länge length [mm]	Arbeitsabstand working distance [mm]	Anzahl Linsen number of lenses
S6ASS1030/121	29.8	20.0	14.0	11.0	24.9	2
S6ASS0177/121	76.5	41.0	35.0	24.0	64.1	3
S6ASS6001/121	80.0	41.0	36.0	36.0	63.8	3
S6ASS5340/121	88.9	41.0	30.0	26.0	64.3	2
S6ASS0115/121	89.4	41.0	35.0	32.0	88.8	3
S6ASS5320/121	114.5	41.0	30.0	26.0	105.3	2

## 1064 nm - GEKITTET / CEMENTED - OPTISCHES GLAS / OPTICAL GLASS

Artikelnummer part number	Brennweite focal length [mm]	Linsen-Ø lens-Ø [mm]	Mittendicke center thickness [mm]
S1LAO0103/126	25.0	12.5	5.5
S1LAO0079/126	50.0	20.0	6.9
S1LAO0063/126	50.0	25.0	9.1
S1LAO0167/126	50.0	31.5	14.3
S1LAO0075/126	60.0	18.0	6.0
S1LAO6022/126	60.0	22.4	10.0
S1LAO0071/126	60.0	25.4	9.5
S1LAO0025/126	60.0	30.0	12.5
S1LAO0705/126	75.0	25.0	7.0
S1LAO0054/126	80.0	18.0	5.2
S1LAO0080/126	80.0	25.4	8.2
S1LAO0028/126	80.0	31.5	11.2
S1LAO0067/126	80.0	50.0	20.2
S1LAO0115/126	90.0	30.0	11.0
S1LAO0072/126	100.0	25.4	7.2
S1LAO0026/126	100.0	30.0	17.5
S1LAO0066/126	100.0	50.0	17.5
S1LAO0073/126	120.0	25.4	7.2
S1LAO0029/126	120.0	31.5	9.4
S1LAO0065/126	120.0	50.0	15.5
S1LAO0070/126	160.0	31.5	8.6
S1LAO0061/126	160.0	50.0	13.5
S1LAO0069/126	190.0	50.0	13.6
S1LAO0099/083	190.0	75.0	25.0
S1LAO0200/126	200.0	19.0	5.0
S1LAO0098/126	200.0	50.0	12.6
S1LAO1098/126	200.0	61.0	17.2
S1LAO0068/126	300.0	50.0	12.0
S1LAO0101/126	310.0	80.0	18.5

## 532 nm - GEKITTET / CEMENTED - OPTISCHES GLAS / OPTICAL GLASS

Artikelnummer part number	Brennweite focal length [mm]	Linsen-Ø lens-Ø [mm]	Mittendicke center thickness [mm]
S1LAO0063/121	49.9	25.0	9.0
S1LAO0115/121	89.9	30.0	11.0
S1LAO0266/121	101.7	36.0	17.5
S1LAO0066/121	101.7	50.0	17.5
S1LAO0381/121	150.5	36.0	15.5
S1LAO0298/121	199.6	36.0	12.6
S1LAO0098/121	199.6	50.0	12.6

## SCHUTZGLÄSER ÜBERSICHT / PROTECTIVE WINDOWS OVERVIEW

Artikelnummer part number	Durchmesser diameter [mm]	Mittendicke center thickness [mm]	Mögliche Vergütung für Wellenlänge [nm] / coating versions for wavelength [nm]										Material material			
			266	355	355	405	532 + 1064	532	515 - 545	808 - 980	1064	1030 - 1090	Quarz	N-BK7		
			/199	/075		/173	/081	/121	/292	/094	/126	/328	fused silica	N-BK7		
S4LPG0057/xxx	37.0	1.5												✓		✓
S4LPG4056/xxx	42.0	2.0	✓	✓					✓	✓					✓	
S4LPG0001/xxx	45.0	2.0							✓			✓				✓
S4LPG0105/xxx	51.5	1.6							✓			✓				✓
S4LPG0106/xxx	51.5	2.0							✓			✓				✓
S4LPG0004/xxx	65.0	1.6							✓			✓				✓
S4LPG3100/xxx	73.0	1.5	✓	✓		✓			✓	✓					✓	
S4LPG0005/xxx	75.0	1.6							✓			✓				✓
S4LPG0003/xxx	82.0	3.0										✓				✓
S4LPG0082/xxx	82.0	10.0										✓			✓	
S4LPG0815/xxx	86.0	2.0		✓											✓	
S4LPG1080/xxx	93.0	3.0										✓	✓			✓
S4LPG1081/xxx	93.0	3.0							✓							✓
S4LPG0090/xxx	96.0	3.0					✓					✓				✓
S4LPG0250/xxx	96.0	4.0							✓							✓
S4LPG2250/xxx	96.0	4.0		✓		✓			✓	✓			✓		✓	✓
S4LPG6100/xxx	105.0	3.0										✓				✓
S4LPG4160/xxx	115.0	3.0	✓	✓	✓	✓			✓	✓					✓	
S4LPG0300/xxx	123.0	4.0					✓		✓			✓				✓
S4LPG2175/xxx	140.0	4.0										✓		✓		✓
S4LPG0220/xxx	220.0	5.0							✓			✓				✓

### SCHUTZGLASVORSÄTZE

### MOUNTED PROTECTIVE WINDOWS

Einige unserer Scanoptiken haben standardmäßig keine Schutzgläser. Für diese Systeme empfehlen wir den Zukauf unserer Schutzglasvorsätze.

*Some of our scan optics do not have protective windows as a standard. For these types, we recommend mounted protective windows.*

Artikelnummer part number	passend zu for	Befestigungs-Ø mounting-Ø [mm]	freier-Ø clear-Ø [mm]	Außen-Ø outside-Ø [mm]	Länge length [mm]
S4SET0420/126	S4LFT0420/126	136.0	120.0	142.0	22.5
S4SET0420/094	S4LFT0420/094	136.0	120.0	142.0	22.5
S4SET0508/126	S4LFT0508/126	127.0	120.0	142.0	22.5
S4SET0508/121	S4LFT0508/121	127.0	120.0	142.0	22.5
S4SET0635/126	S4LFT0635/126	133.0	120.0	142.0	22.5
S4SET0635/094	S4LFT0635/094	133.0	120.0	142.0	22.5
S4SET1094/121	S4LFT0094/121	M79x0.75	73.0	85.0	11.5
S4SET5256/075	S4LFT5256/075	138.0	128.0	144.0	22.5

### TELEOBJEKTIV ZUR ONLINE ÜBERPRÜFUNG

Diese Objektive sind speziell dafür geeignet, durch die Scanoptik hindurch, den Prozess oder das Werkstück mit einer Kamera aufzunehmen. Das Bildfeld ergibt sich durch das Verhältnis der Brennweite von Scanoptik und Kameraoptik. Integrierte Beleuchtung durch das Objektiv ist ebenfalls empfehlenswert, da dadurch das Beobachtungsfenster exakt beleuchtet wird.



### TELELENS FOR ONLINE INSPECTION

*These lenses are designed for observing the process by a camera system through the scan lens. The field of view is defined by the relation of the focal length of the scan and the camera lens. An integrated illumination system through the camera lens is recommended, which concentrates the light exactly onto the required field of view.*

Standard Version <i>standard version</i>		Koaxial Version <i>coaxial version</i>		Brennweite <i>focal length</i>	F/#	max. Feldwinkel <i>max. field angle</i>	max. Bilddiagonale <i>max. image diameter</i>	max. Verzeichnung <i>max. distortion</i>	max. Außen-Ø <i>max. outside-Ø</i>	Anschlussgewinde <i>thread</i>
Artikelnummer <i>part number</i>	Länge <i>length</i> [mm]	Artikelnummer <i>part number</i>	Länge <i>length</i> [mm]							
S5LPJ0305	104.5	S5LPL0305	109.9	149.3	7.5	3.0	8.0	0.1	48.0	C-mount
S5LPJ0303	128.4	S5LPL0303	128.4	300.0	10.0	1.5	8.0	0.1	48.0	C-mount