Sill OPTICS

IMAGING OPTICS

CUSTOMIZED - PORTFOLIO - SPECIAL LENSES

2023

CUSTOMIZED IMAGING LENSES

BENEFIT FROM OUR EXPERTISE

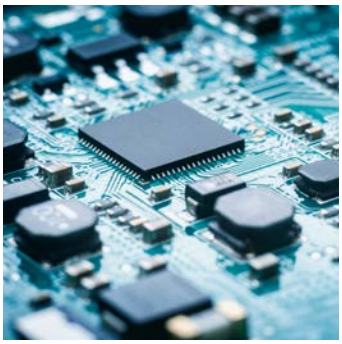
Sill Optics has been a trusted partner for customized imaging lens solutions for years. Our specialties lie in many different areas of application and various design types. Sill Optics also has many years of experience with various projects for customized optical designs and individual mechanical layouts.

The close cooperation between different internal departments, our large range of manufacturing capabilities and our high quality production are the reasons why we are able to build your prototype in the shortest time possible.

In recent years, we have successfully completed nearly 80% of imaging lens orders as development projects based on individual inquiries and participation in public research projects. Most of these developments took part in the field of high-precision measurement applications for mechanical engineering as well as biomedical applications and material processing.

PRECISION MEASUREMENT IN MACHINE CONSTRUCTION

BIOMEDICAL IMAGING



SEMICONDUCTOR TESTING

LENSES FOR SPECIAL IMAGING TECHNIQUES

FOOD AND PHARMACEUTICAL TESTING

Your benefits from a Sill Optics development

- development of specification sheet close to design and production possibilities
- direct contact to optical designer and project manager
- short distances between design, development and production
- prototypes at short notice
- high quality of series production
- quality assurance according to individual needs

CUSTOMIZED IMAGING LENSES

BENEFIT FROM OUR EXPERTISE

SILL OPTICS

TELECENTRIC LENSES

LARGE FIELD ENTOCENTRIC LENSES

MICROSCOPE LENSES

TELE LENSES

DMD PROJECTION LENSES

WIDE ANGLE LENSES

MACRO AND RELAY LENSES

SCHEIMPFLUG LENSES FOR TILTED OBJECT PLANE

LENSES WITH INTEGRATED FOCUS TUNABLE LIQUID LENS

LENSES WITH INTEGRATED COAXIAL ILLUMINATION

LENSES FOR MULTI- AND HYPERSPECTRAL IMAGING

PORTFOLIO IMAGING LENSES

BENEFIT FROM OUR 40 YEARS OF EXPERIENCE

For nearly 40 years, Sill Optics manufactures **high-end telecentric imaging lenses**. These lenses are specially designed for measurement applications for industrial machine vision applications to avoid magnification change and measurement deviation through depth of field or defocus.

Increasing data rate and increasing sensor size shows the trend to a larger sensor diagonal and a smaller pixel size. Therefore, our portfolio focusses on lenses for small pixel size for sensors up to 1.5" (sensor diagonal 24.0 mm).

	PART NUMBER	MAGNIFICATION	RECOMMENDED SENSOR DIAGONAL [mm]	WORKING DISTANCE [mm]	WAVELENGTH BAND MONO (RED, GREEN, BLUE) WHITE (COLOR/BAYER) NIR (800-900 nm)	RECOMMENDED PIXEL SIZE [µm]	THREAD	PART NUMBER FOR VERSION WITH INTEGR. COAXIAL ILLUMINATION
	LENSES FOR 1/3" AND 1/2" SENSORS							
	S5LPJ1823	0.044	6.0	300.0	R,G,B,NIR	2.20	C	S5LPL1823/LED
	S5LPJ1514	0.054	6.0	284.0	R,G,B	2.20	C	S5LPL1514/LED
	S5LPJ1824	0.056	8.0	300.0	R,G,B	2.20	C	S5LPL1824/LED
	S5LPJ1522	0.068	8.0	284.0	R,G,B	2.20	C	S5LPL1522/LED
NEW	S5LPJ1722	0.068	8.0	284.0	R,G,B,W,NIR	2.00	C	-
	S5LPJ6014	0.079	6.0	180.0	R,G,B	2.00	C	S5LPL6014/LED
	S5LPJ1523	0.082	8.0	284.0	R,G,B	3.45	C	S5LPL1523/LED
	S5LPJ6022	0.100	8.0	180.0	R,G,B	2.20	C	S5LPL6022/LED
NEW	S5LPJ6122	0.100	8.0	180.0	R,G,B,W,NIR	2.00	C	-
	S5LPJ1224	0.110	6.0	190.0	R,G,B,W,NIR	2.20	C	S5LPL1224/LED
	S5LPJ1201	0.132	6.0	190.0	R,G,B,W	2.20	C	S5LPL1201/LED
	S5LPJ1223	0.158	8.0	190.0	R,G,B,NIR	2.00	C	S5LPL1223/LED
	S5LPJ4425	1.000	8.0	107.5	R,G,B	3.45	C	-
	LENSES FOR 1/1.8" AND 2/3" SENSORS							
	S5LPJ1832	0.065	8.9	300.0	R,G,B,NIR	2.00	C	S5LPL1832/LED
	S5LPJ1533	0.098	11.0	284.0	R,G,B	2.00	C	S5LPL1533/LED
NEW	S5LPJ1733	0.098	11.0	284.0	R,G,B,W,NIR	2.00	C	-
	S5LPJ6024	0.121	8.9	180.0	R,G,B	2.20	C	S5LPL6024/LED
	S5LPJ6033	0.145	11.0	180.0	R,G,B	2.50	C	S5LPL6033/LED
NEW	S5LPJ6133	0.145	11.0	180.0	R,G,B,W,NIR	2.50	C	-
	S5LPJ5015	0.160	8.9	88.0	R,G,B	2.80	C	S5LPL5015/LED
	S5LPJ1299	0.200	11.0	92.0	R,G,B,NIR	2.80	C	S5LPL1299/LED
	S5LPJ2298	0.244	11.0	92.0	R,G,B,W	4.60	C	S5LPL2298/LED
	S5LPJ1252	0.265	11.0	190.0	R,G,B,W	2.50	C	S5LPL1252/LED
	S5LPJ2893	0.292	11.0	92.0	R,G,B,W,NIR	2.50	C	S5LPL2893/LED

In case of deviations from the portfolio and delivery times, please contact our Customer Care Team.

PORTFOLIO IMAGING LENSES

BENEFIT FROM OUR 40 YEARS OF EXPERIENCE

	PART NUMBER	MAGNIFICATION	RECOMMENDED SENSOR DIAGONAL [mm]	WORKING DISTANCE [mm] (TR= TUNING RANGE)	WAVELENGTH BAND MONO (RED, GREEN, BLUE) WHITE (COLOR/ BAYER) NIR (800-900 nm)	RECOMMENDED PIXEL SIZE [µm]	THREAD	PART NUMBER FOR VERSION WITH INTEGR. COAXIAL ILLUMINATION
	LENSES FOR 1“ AND 1.1” SENSORS							
	S5LPJ1852	0.112	16.0	300.0	R,G,B	2.20	C	S5LPL1852/LED
	S5LPJ1860	0.134	17.6	300.0	R,G,B	3.45	C	S5LPL1860/LED
	S5LPJ1551	0.165	16.0	284.0	R,G,B	3.45	C	S5LPL1551/LED
NEW	S5LPJ1750	0.165	17.6	284.0	R,G,B,W,NIR	3.45	C	-
	S5LPJ1565	0.195	16.0	284.0	R,G,B	4.20	C	S5LPL1565/LED
	S5LPJ6050	0.246	16.0	180.0	R,G,B	3.45	C	S5LPL6050/LED
NEW	S5LPJ6150	0.246	17.6	180.0	R,G,B,W,NIR	3.45	C	-
	S5LPJ6060	0.292	16.0	180.0	R,G,B	3.45	C	S5LPL6060/LED
	S5LPJ1260	0.313	16.0	190.0	R,G,B	4.60	C	S5LPL1260/LED
	S5LPJ2499	0.492	17.6	92.0	R,G,B,W,NIR	3.45	C	S5LPL2499/LED
	S5LPJ2898	0.581	17.6	92.0	R,G,B,W,NIR	4.60	C	S5LPL2898/LED
	S5LPJ4061/216	0.600	16.0	121.0	R,G,B,W	3.45	C	-
	S5LPJ3208	0.770	16.0	119.5	R,G,B,W	3.45	C	-
	LENSES FOR 1.2“ AND 1.5” SENSORS							
NEW	S5LPJ1862	0.130	19.2	300.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ1762	0.200	19.2	284.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ1762/M42	0.200	24.0	284.0	R,G,B,W,NIR	2.74	M42	-
NEW	S5LPJ6162	0.300	19.2	180.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ6162/M42	0.300	24.0	180.0	R,G,B,W,NIR	2.74	M42	-
NEW	S5LPJ6406	0.600	22.0	155.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ6407	0.700	22.0	140.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ6408	0.800	22.0	131.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ7201	1.000	21.4	81.0	R,G,B,W,NIR	2.74	C	-
NEW	S5LPJ7201/M42	1.000	32.6	81.0	R,G,B,W,NIR	2.74	M42	-
NEW	S5LPJ6415	1.500	21.4	80.2	R,G,B,W	2.40	C	-
	S5LPJ6420	2.000	21.4	68.1	R,G,B,W	2.74	C	-
	S5LPJ6425	2.500	19.2	61.4	R,G,B,W	3.10	C	-
	S5LPJ6430	3.000	19.2	57.0	R,G,B,W	3.45	C	-
	LENSES WITH FOCUS TUNABLE OPTOTUNE LENS FOR 1“ AND 1.1” SENSORS							
	S5VPJ1565	0.193	16.0	284.0 TR≈140	R,G,B	2.74	C	-
NEW	S5VPJ6060	0.289	16.0	180.0 TR≈65	R,G,B	2.74	C	S5VPL6060/LED
	S5VPJ1260	0.311	16.0	190.0 TR≈55	R,G,B	3.10	C	-
	S5VPJ2898	0.578	16.0	92.0 TR≈17	R,G,B	3.10	C	S5VPL2898/LED
	S5VPJ6420	2.000	17.6	68.2 TR≈6	R,G,B,W	2.74	C	-

In case of deviations from the portfolio and delivery times, please contact our Customer Care Team.

PORTFOLIO LED CONDENSERS

BENEFIT FROM OUR 40 YEARS OF EXPERIENCE

Within our telecentric imaging lens portfolio, we developed appropriate LED condensers. These condensers are used as collimated backlights for high precision measurements in machine vision. Our main expertise are optical subassemblies which provide high homogeneity and parallelism of emitted light.

In addition to our portfolio condensers, we offer other sizes (up to illumination diameter Ø150) and modifications or custom developments upon request.

PART NUMBER	CLEAR APERTURE/ ILLUMINATION DIAMETER [mm]	FOCAL LENGTH [mm]	LED	WAVELENGTH [nm]	MAX. CURRENT [mA]	CONNECTOR
IR CONDENSER						
S6IRI4530	30.0	30.0	SFH4770S	850	1000	M8 / 4-pin
S6IRI4540	55.0	76.0	SFH4770S	850	1000	M8 / 4-pin
S6IRI4550	73.0	100.0	SFH4770S	850	1000	M8 / 4-pin
RED CONDENSER						
S6IRI4531	30.0	30.0	GR QSSPA1.13	623	1000	M8 / 4-pin
S6IRI4541	55.0	76.0	GR QSSPA1.13	623	1000	M8 / 4-pin
S6IRI4551	73.0	100.0	GR QSSPA1.13	623	1000	M8 / 4-pin
BLUE CONDENSER						
S6IRI4532	30.0	30.0	GB QSSPA1.13	470	1000	M8 / 4-pin
S6IRI4542	55.0	76.0	GB QSSPA1.13	470	1000	M8 / 4-pin
S6IRI4552	73.0	100.0	GB QSSPA1.13	470	1000	M8 / 4-pin
GREEN CONDENSER						
S6IRI4533	30.0	30.0	GT QSSPA1.13	528	1000	M8 / 4-pin
S6IRI4543	55.0	76.0	GT QSSPA1.13	528	1000	M8 / 4-pin
S6IRI4553	73.0	100.0	GT QSSPA1.13	528	1000	M8 / 4-pin

ACCESSORY FOR TELECENTRIC IMAGING LENSES AND LED CONDENSERS

PART NUMBER	DESCRIPTION
LENS MOUNT SET	
S5SET0020	Clamping Ø60/Ø75 for many telecentric lenses
S5SET0022	Clamping Ø47 for all LED condensers
BEAMS SPLITTER CUBES FOR INTEGRATED COAXIAL ILLUMINATION	
S0SET9125/000	Polarized beam splitter (standard condition)
S0SET9125/017	Non-polarized beam splitter
RETARDATION PLATES FOR INTEGRATED COAXIAL ILLUMINATION	
S5SET1150	half wave plate for 630nm, slide-in unit
S5SET8325/040	half wave plate for 630nm, add-on unit
USB DRIVER FOR FOCUS TUNABLE OPTOTUNE LENSES	
S5ZUB1640	Optotune USB Driver EL-E-4i
S5ZUB1641	Hirose 6-pin connection cable for USB Driver EL-E-4i

Other accessory upon request.
In case of deviations from the portfolio and delivery times, please contact our Customer Care Team.

SPECIAL IMAGING LENSES

BENEFIT FROM OUR CAPABILITIES

Besides our portfolio telecentric lenses, we also offer a variety of **telecentric and entocentric designs upon request.**
These special lenses are not manufactured regularly. We kindly ask you to send us your inquiry to check availability, lead time and price according your required quantity.

To enable a short lead-time for your test setup, we are going to build up a demo lens stock.

PART NUMBER	MAGNIFICATION	RECOMMENDED SENSOR DIAGONAL [mm]	WORKING DISTANCE [mm]	WAVELENGTH BAND MONO (RED, GREEN, BLUE) WHITE (COLOR/BAYER) NIR (800-900nm) SWIR (900-1700nm)	RECOMMENDED PIXEL SIZE [µm]	THREAD
LENSES FOR APS FORMAT SENSORS						
S5LPJ2606/M42	0.71	32.6	143.0	R,G,B	2.74	M42
S5LPJ7201/M42	1.00	32.6	81.0	R,G,B,W,NIR	2.74	M42
S5LPJ0492/M42	2.00	35.0	96.5	R,G,B,W	4.60	M42
LENSES FOR FULL FORMAT AND LARGER SENSORS						
S5LPJ3025/M58	0.25	43.3	310.0	R,G,B,W	3.45	M58
S5LPJ3005/M72	0.33	60.0	310.0	R,G,B	3.45	M72
S5LPJ1556/M58	0.46	43.3	332.3	R,G,B,W,NIR	3.30	M58
S5LPJ7207/M72	0.66	43.3	180.0	R,G,B	5.50	M72
S5LPJ7209/M72	0.80	43.3	180.0	R,G,B	4.00	M72
S5LPJ7255/M72	1.00	56.0	120.0	R,G,B	4.60	M72
S5LPJ7211/M90	1.00	70.0	180.0	R,G,B	5.00	M90
S5LPJ7212/M90	1.25	70.0	141.0	R,G,B	4.20	M90
S5LPJ7215/M90	1.51	70.0	111.0	R,G,B	6.00	M90
HIGH-MAGNIFICATION TELECENTRIC LENSES						
S5LPJ2533	3.00	16.0	100.4	R	3.45	C
S5LPJ2555	5.00	16.0	100.5	R	4.50	C
TELECENTRIC SWIR LENSES						
S5LPJ6835	0.33	16.0	147.0	SWIR	10.00	C
S5LPJ6837	0.50	24.0	147.0	SWIR	10.00	M42
ENTOCENTRIC SWIR LENSES						
S5LPJ6805/216	f'=50.0	16.0	400 - inf	SWIR	10.00	C
S5LPJ6807/M42	f'=75.0	25.6	500 - inf	SWIR	10.00	M42
ENTOCENTRIC TELE LENSES FOR LASER PROCESS IMAGING						
S5LPJ0305	f'=150.3	8.0	infinity	R	5.60	C
S5LPJ0303	f'=305.3	11.0	infinity	R	5.00	C
ENTOCENTRIC TELE LENSES FOR LASER PROCESS IMAGING WITH INTEGRATED LIQUID LENS						
S5VPJ0305	f'=150.0	11.0	infinity	R	5.60	C
S5VPJ0303	f'=304.3	11.0	infinity	R	5.00	C

In case of deviations from the portfolio and delivery times, please contact our Customer Care Team.

our VISION is to be

an innovation leader that develops pioneering application solutions that are drawing global attention in the high-end field of photonics.

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