

WLOPTICAL CO., LTD

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Products of WLOPTICAL

Company's Info

As an optical technology Vendor, Wloptical has enough knowledge & experience to supply various kinds of optical products, including optical elements, assembly, cameras, fiber optics, grating, research organization prototype, military special parts, and industry laser application optics. We mainly produce and manufacture optics components. The leading products are series of spherical lenses, cylindrical lenses, and high precision windows, prisms, aspherical lenses, and gratings.

We have successfully manufactured different optics components with different states. The sales network is widely spread over the world. Because of the high quality and the reputation, our products are well received from home and abroad.

Best Form Laser Lenses

WLOPTICAL manufactures and maintains in stock its series of Best Form Laser Lenses. These are designed for minimum spherical aberration, and when not exceeding optimum beam diameter (see table below), will produce focal spots within diffraction-limit theory. These lenses can be used interchangeably for focusing, expanding or collimating.

Surface Quality

Polish exceeds 10^{-5} and sphericity better than $1/10$ -wave over the aperture at the design wavelength. All lenses are polished to the highest spherical figure and fineness consistent with optimum performance in all respects: minimum blur-circle, minimum wavefront distortion, minimum scattering loss, and maximum transmittance of energy.

Antireflection Coatings

All lenses are available with narrow-band or broadband antireflection coatings peaked for the major wavelength of operation, at which transmittance will exceed 99%. When ordering, add wavelength (in nm) as final dash number in Catalog Part Number. For example, LL-25-63-633, etc.

Best Form Laser Lenses are designed with minimum aberration ratio of the radii of both surfaces.

LASER SPHRERICAL LENSES, 193 nm

WLOPTICAL manufactures 193 nm Laser Lenses in two excimer-grades, CaF2 and fused silica. WLOPTICAL feels that optical performance of either type should be equivalent. However, in spite of significant improvements in materials since the arrival of the ArF laser, limited performance data leave questions unanswered. Therefore, the choice of CaF2 or fused silica is open to interpretation. Please discuss with WLOPTICAL.

Material: Excimer Grade CaF2

Design Wavelength 193 nm

Index at 193 nm 1.5045

CaF2 transmits 130nm-9.6µm

Material: Excimer Grade Fused Silica

Design Wavelength 193 nm

Index at 193 nm 1.5604

Fused Silica transmits 180nm-2.3µm

Antireflection Coating

Wavelength	Bandwidth	Avg. Reflectance	Power Rating
193 nm	± 5 nm	< 0.5%	400 MW/cm ²

*Power rating based upon 20ns pulses, 20Hz

Catalog Number	Material	Diameter	Focal Length at 300 nm	Optimum Beam Diameter	Theoretical Focal Spot	R1 mm	R2 mm	CT mm	Price \$USD/PCS
U-13-17-193	FS	½" dia	17.4 mm	2.1 mm	2.0 µm	12.70	-38.89	3.5	10.50
U-13-17N-193	FS	½" dia	-17.4 mm	2.1 mm	-----	-12.70	44.62	2.5	10.50
V-13-20-193	CaF2	½" dia	20.2 mm	2.4 mm	2.0 µm	12.20	-55.80	3.5	12.50
V-13-20N-193	CaF2	½" dia	-20.0 mm	2.4 mm	-----	-12.55	55.80	2.5	12.50
U-13-22-193	FS	½" dia	21.8 mm	2.5 mm	2.2 µm	14.00	-79.99	3.5	10.50
U-13-22N-193	FS	½" dia	-21.8 mm	2.5 mm	-----	-14.6	79.99	2.5	10.50
V-13-25-193	CaF2	½" dia	25.1 mm	2.8 mm	2.2 µm	14.00	-121.45	3.5	12.50
V-13-25N-193	CaF2	½" dia	-25.1 mm	2.8 mm	-----	-14.60	100.03	2.5	12.50
U-13-35-193	FS	½" dia	34.8 mm	4.4 mm	2.4 µm	22.80	-121.45	3.5	10.50
U-13-35N-193	FS	½" dia	-41.7 mm	4.4 mm	-----	-22.80	141.32	2.5	10.50

V-13-40-193	CaF2	½" dia	39.9 mm	4.0 mm	2.7 μm	23.56	-132.5	3.5	12.50
V-13-40N-193	CaF2	½" dia	-40.3 mm	4.0 mm	-----	-24.07	130.57	2.5	12.50
U-25-55-193	FS	1" dia.	54.8 mm	6.2 mm	2.7 μm	36.24	-192.73	5.5	21.00
V-25-63-193	CaF2	1" dia.	62.5 mm	5.6 mm	2.9 μm	37.85	-184.35	6.0	23.00
U-25-70-193	FS	1" dia.	69.6 mm	7.3 mm	3.0 μm	45.59	-265.14	5.5	21.00
V-25-80-193	CaF2	1" dia.	79.8 mm	6.6 mm	3.0 μm	47.65	-249.54	5.0	23.00
U-25-87-193	FS	1" dia.	87.0 mm	8.7 mm	3.1 μm	57.23	-326.28	5.0	21.00
V-25-100-193	CaF2	1" dia.	100.4 mm	7.9 mm	3.3 μm	58.07	-385.44	4.5	23.00
U-25-122-193	FS	1" dia.	122.4 mm	11.1 mm	3.3 μm	79.99	-471.01	5.0	21.00
V-25-140-193	CaF2	1" dia.	140.3 mm	10.1 mm	3.5 μm	81.50	-529.26	4.5	23.00
U-25-165-193	FS	1" dia.	165.3 mm	14.0 mm	3.6 μm	111.60	-529.26	5.0	21.00
V-25-190-193	CaF2	1" dia.	189.4 mm	12.7 mm	3.8 μm	109.13	-760.00	4.0	23.00
U-25-261-193	FS	1" dia.	261.0 mm	19.7 mm	4.0 μm	169.63	-1061.04	4.5	21.00
25-300-193	CaF2	1" dia.	300.5 mm	17.9 mm	4.3 μm	176.66	-1061.04	4.0	23.00
Mechanical Specifications: Diameter: +0,-0.1 mm; Thickness: ± 0.1 mm; Bevels: 0.3 mm x 45°; Radius: ± 2%									
Other diameters and focal lengths available on custom basis. Please inquire.									

UV LASER SPHERICAL LENSES,**LASER LENSES for UV EXCIMER LASERS, 248 nm to 355 nm**

Material: UV Grade Fused Silica

Design Wavelength: 300nm

Index @ 300nm

UV FS Trans.: 180nm - 2.3 μ m

For AR coating when ordering, you can contact with us.

Catalog Number	Material	Diameter	Focal Length at 300 nm	Optimum Beam Diameter	Theoretical Focal Spot	R1 mm	R2 mm	CT mm	Price \$USD/PCS
U-13-20-300	UVFS	½" dia	20.1 mm	2.6 mm	2.5 μ m	12.70	-38.89	3.5	12.00
U-13-20N-300	UVFS	½" dia	-20.1 mm	2.6 mm	-----	-22.70	44.62	2.5	12.00
U-13-25-300	UVFS	½" dia	24.7 mm	3.1 mm	2.6 μ m	14.00	-79.99	3.5	12.00
U-13-25N-300	UVFS	½" dia	-25.1 mm	3.1 mm	-----	-14.60	79.99	2.5	12.00
U-13-40--300	UVFS	½" dia	40.0 mm	4.4 mm	3.5 μ m	22.80	-121.45	3.5	12.00
U-13-40N-300	UVFS	½" dia	-40.0 mm	4.4 mm	-----	-22.80	141.32	2.5	12.00
U-25-63-300	UVFS	1" dia.	63.0 mm	6.2 mm	3.9 μ m	36.24	-192.73	5.5	22.00
U-25-63N-300	UVFS	1" dia.	-62.2 mm	6.2 mm	-----	-36.24	192.73	3.0	22.00
U-25-80-300	UVFS	1" dia.	80.2 mm	7.3 mm	4.2 μ m	45.59	-265.14	5.5	22.00
U-25-80N-300	UVFS	1" dia.	-79.5 mm	7.3 mm	-----	-45.59	265.14	3.0	22.00
U-25-100-300	UVFS	1" dia.	100.2 mm	8.7 mm	4.3 μ m	57.23	-326.28	5.0	22.00
U-25-100N-300	UVFS	1" dia.	-99.6 mm	8.7 mm	-----	-57.23	326.28	2.5	22.00
U-25-125-300	UVFS	1" dia.	124.6 mm	10.2 mm	4.7 μ m	73.10	-353.46	5.0	22.00
U-25-125N-300	UVFS	1" dia.	-123.8 mm	10.2 mm	-----	-73.10	356.46	3.0	22.00
U-25-140-300	UVFS	1" dia.	140.5 mm	11.1 mm	4.8 μ m	79.99	-471.01	5.0	22.00

U-25-140N-300	UVFS	1" dia.	-139.9 mm	11.1 mm	-----	-79.99	471.01	3.0	22.00
U-25-160-300	UVFS	1" dia.	161.2 mm	12.3 mm	5.0 μm	90.13	-605.94	5.0	22.00
U-25-190-300	UVFS	1" dia.	189.3 mm	14.0 mm	5.2 μm	111.60	-529.26	5.0	22.00
U-25-240-300	UVFS	1" dia.	241.7 mm	16.6 mm	5.5 μm	136.75	-848.13	5.0	22.00
U-25-300-300	UVFS	1" dia.	300.1 mm	19.7 mm	5.8 μm	169.63	-1061.04	4.5	22.00
U-25-300N-300	UVFS	1" dia.	-299.3 mm	19.7 mm	-----	-169.63	1061.04	4.5	22.00
U-25-380-300	UVFS	1" dia.	381.5 mm	23.5 mm	6.2 μm	225.49	-1061.04	4.5	22.00
U-25-475-300	UVFS	1" dia.	482.7 mm	23.5 mm	7.7 μm	235.56	Plano	4.5	22.00
U-25-610-300	UVFS	1" dia.	620.6 mm	23.5 mm	9.9 μm	302.85	Plano	4.5	22.00
U-25-760-300	UVFS	1" dia.	789.8 mm	23.5 mm	12.3 μm	385.44	Plano	4.5	22.00
U-25-1000-300	UVFS	1" dia.	965.2 mm	23.5 mm	16.2 μm	471.01	Plano	4.0	22.00
U-25-2000-300	UVFS	1" dia.	2174.3 mm	23.5 mm	32.4 μm	1061.04	Plano	4.0	22.00
U-51-150-300	UVFS	2" dia.	150.5 mm	11.9 mm	4.8 μm	84.82	-529.26	8.5	35.00
U-51-190-300	UVFS	2" dia.	189.5 mm	14.0 mm	5.2 μm	111.60	-529.26	7.0	35.00
U-51-240-300	UVFS	2" dia.	238.1 mm	16.6 mm	5.5 μm	136.75	-760.00	6.5	35.00
U-51-300-300	UVFS	2" dia.	300.2 mm	19.7 mm	5.8 μm	169.63	-1061.04	6.5	35.00
U-51-380-300	UVFS	2" dia.	381.2 mm	23.5 mm	6.2 μm	225.22	-1061.04	5.5	35.00
U-51-475-300	UVFS	2" dia.	475.1 mm	27.8 mm	6.5 μm	260.90	-2068.17	5.5	35.00
U-51-610-300	UVFS	2" dia.	611.6 mm	33.6 mm	6.9 μm	357.41	-1800	5.5	35.00
U-51-760-300	UVFS	2" dia.	762.7 mm	39.5 mm	7.3 μm	438.93	-2440	5.0	35.00
U-51-1000-300	UVFS	2" dia.	992.3 mm	48.5 mm	7.9 μm	484.25	Plano	5.0	35.00
Mechanical Specifications: Diameter: +0,-0.1 mm; Thickness: \pm 0.1 mm; Bevels: 0.3 mm x 45°; Radius: \pm 2%									
Other diameters and focal lengths available on custom basis. Please inquire.									

CaF2 LASER WINDOWS

Mono crystal CaF2
Surface quality: better than 40-20
Fringes: less than 2
Irregular fringes: 1
Parallelism: better than 30 sec
Uncoated
FOB Price

Catalog Number	Material	Diameter	Center thickness	50pcs(\$/ea)	300pcs(\$/ea)
U-CFW-6	CaF2	6mm	2mm	\$2.5	\$2.2
U-CFW-10.1	CaF2	10mm	1.0mm	\$4.5	\$3.2
U-CFW-12.1	CaF2	12.7mm	1.0mm	\$5.0	\$3.5
U-CFW-12.2	CaF2	12.7mm	2.0mm	\$5.5	\$4.0
U-CFW-12.5	CaF2	12.7mm	5.0mm	\$15.0	\$13.0
U-CFW-25.1	CaF2	25.4mm	1.0mm	\$33.0	\$30.0
U-CFW-25.2	CaF2	25.4mm	2.0mm	\$32.0	\$30.0
U-CFW-25.3	CaF2	25.4mm	3.0mm	\$32.0	\$30.0
U-CFW-25.5	CaF2	25.4mm	5.0mm	\$30.0	\$28.0
U-CFW-38.2	CaF2	38.1mm	2.0mm	\$20.0	\$18.0
U-CFW-38.6	CaF2	38.1mm	6.0mm	\$38.0	\$35.0
U-CFW-50.3	CaF2	50.8mm	3.0mm	\$62.0	\$60.0

U-CFW-50.4	CaF2	50.8mm	4.0mm	\$62.0	\$60.0
U-CFW-50.5	CaF2	50.8mm	5.0mm	\$63.0	\$61.0
U-CFW-50.6	CaF2	50.8mm	6.0mm	\$63.0	\$61.0
U-CFW-76.6	CaF2	76.2mm	6.3mm	\$400.00	\$390.00
U-CFW-76.10	CaF2	76.2mm	10.0mm	\$440.00	\$400.00
Other diameters and focal lengths available on custom basis. Please inquire.					

ACHROMAT LENSES

Achromat lenses consist of two or more lenses, which must be fixed in relation to one another by either mounting or cement. They are a very common type of viewer lens. Achromat lenses are designed to specifically function within the infrared, visible, or ultra-violet wavelength ranges, optimized for three wavelengths, 486.1, 587.6 and 656.3nm. Achromat lenses are not symmetric devices.

Positive lenses

No.	Catalog	Dia	F	LENS 1					LENS 2					cemented	
				material	R1	R2	Te'	Te	material	R2	R3	Tc	Te	Tc	Te
1	LAC273-A	5mm	7.5mm	K9	5.1	-3.1	3.0	1.08	ZF2	-3.10	-7.1	1.00	1.81	4.00	2.89
2	LAC273-D	5mm	7.5mm	K9	5.1	-3.5	3.0	1.29	ZF7	-3.50	-6.329	1.00	1.54	4.00	2.83
3	LAC273-C	5mm	7.5mm	K9	5.1	-3.5	3.0	1.29	ZF7	-3.50	-6.329	1.00	1.54	4.00	2.83
4	LAC016-A	5mm	10mm	K9	6.329	-4.328	2.5	1.19	ZF2	-4.328	-11.35	1.00	1.52	3.50	2.71
5	LAC016-B	5mm	10mm	K9	6.0	-5.1	2.5	1.3	ZF7	-5.1	-10.61	1.00	1.36	3.50	2.66
6	LAC016-C	5mm	10mm	K9	6.0	-5.1	2.5	1.3	ZF7	-5.1	-10.61	1.00	1.36	3.50	2.66
7	LAC960-A	5mm	15mm	K9	9.247	-6.481	2.0	1.15	ZF2	-6.4	-18.408	1.00	1.33	3.00	2.48
8	LAC960-B	5mm	15mm	K9	8.77	-7.36	2.0	1.20	ZF7	-7.36	-16.596	1.00	1.25	3.00	2.45
9	LAC960-C	5mm	15mm	K9	8.77	-7.36	2.0	1.20	ZF7	-7.136	-16.596	1.00	1.25	3.00	2.45
10	LAC858-A	6mm	10mm	K9	6.329	-4.328	3.0	1.04	ZF2	-4.328	-11.35	1.00	1.80	4.00	2.84
11	LAC858-B	6mm	10mm	K9	6.00	-5.1	3.0	1.22	ZF7	-5.10	-10.568	1.00	1.54	4.00	2.76
12	LAC858-C	6mm	10mm	K9	6.00	-5.1	3.0	1.22	ZF7	-5.10	-10.568	1.00	1.54	4.00	2.76
13	LAC849-A	6.35mm	12.7mm	K9	8.00	-5.754	2.50	0.89	ZF2	-5.7540	-15.1360	1.20	1.82	3.70	2.71
14	LAC849-B	6.35mm	12.7mm	K9	7.180	-6.4810	2.50	1.57	ZF7	-6.4810	-14.8720	1.20	1.69	3.70	3.26
15	LAC849-C	6.35mm	12.7mm	K9	7.180	-6.4810	2.50	1.57	ZF7	-6.4810	-14.8720	1.20	1.69	3.70	3.26
16	LAC149-A	6.35mm	15mm	K9	9.350	-6.750	2.50	1.15	ZF2	-6.750	-18.4080	1.20	1.72	3.70	2.87
17	LACJ49-B	6.35mm	15mm	K9	8.770	-7.570	2.50	1.21	ZF7	-7.570	-16.810	1.20	1.60	3.70	2.81

18	LAC149-C	6.35mm	15mm	K9	8.770	-7.570	2.50	1.21	ZF7	-7.570	-16.810	1.20	1.60	3.70	2.81
19	LAC972-A	8mm	10mm	K9	6.087	-5.10	4.50	1.07	ZF2	-5.10	-12.460	1.20	2.48	5.70	3.55
20	LAC972-B	8mm	10mm	K9	6.200	-5.10	4.50	1.10	ZF7	-5.10	-9.7610	1.20	2.28	5.70	3.38
21	LAC972-C	8mm	10mm	K9	6.200	-5.10	4.50	1.10	ZF7	-5.10	-9.7610	1.20	2.28	5.70	3.38
22	LAC110-A	8mm	16mm	K9	9.957	-7.410	2.80	0.79	ZF2	-7.410	-19.9530	1.20	1.97	4.00	2.76
23	LAC110-B	8mm	16mm	K9	9.072	-8.220	2.80	0.83	ZF7	-8.220	-18.9630	1.20	1.81	4.00	2.64
24	LAC110-C	8mm	16mm	K9	9.072	-8.220	2.80	0.83	ZF7	-8.220	-18.9630	1.20	1.81	4.00	2.64
25	LAC399-A	8mm	20mm	K9	12.46	-8.9540	2.80	1.20	ZF2	-8.9540	-24.7200	1.20	1.82	4.00	3.02
26	LAC399-B	8mm	20mm	K9	11.69	-10.0690	2.80	1.27	ZF7	-10.0690	-22.4900	1.20	1.67	4.00	2.94
27	LAC399-C	8mm	20mm	K9	11.69	-10.0690	2.80	1.27	ZF7	-10.0690	-22.4900	1.20	1.67	4.00	2.94
28	LAC843-A	12.7mm	19mm	K9	11.90	-9.0720	6.00	1.57	ZF2	-9.0720	-23.00	1.500	3.20	7.50	4.77
29	LAC843-B	12.7mm	19mm	K9	11.11	-9.90	6.00	1.70	ZF7	-9.90	-21.15	1.500	2.83	7.50	4.53
30	LAC843-C	12.7mm	19mm	K9	11.11	-9.90	6.00	1.70	ZF7	-9.90	-21.15	1.500	2.83	7.50	4.53
31	LAC291-A	12.7mm	25mm	K9	15.3050	-11.5650	5.00	1.72	ZF2	-11.5650	-32.180	1.500	2.77	6.50	4.49
32	LAC291-B	12.7mm	25mm	K9	14.388	-12.71	5.00	1.82	ZF7	-12.71	-28.630	1.500	2.49	6.50	4.31
33	LAC291-C	12.7mm	25mm	K9	14.388	-12.71	5.00	1.82	ZF7	-12.71	-28.630	1.500	2.49	6.50	4.31
34	LAC536-A	12.7mm	30mm	K9	18.4080	-13.7370	4.00	1.30	ZF2	-13.7370	-38.756	1.500	2.53	5.50	3.83
35	LAC536-B	12.7mm	30mm	K9	17.52	-15.3050	4.00	1.43	ZF7	-15.3050	-34.430	1.500	2.29	5.50	3.72
36	LAC536-C	12.7mm	30mm	K9	17.52	-15.3050	4.00	1.43	ZF7	-15.3050	-34.430	1.500	2.29	5.50	3.72
37	LAC621-A	12.7mm	50mm	K9	30.6203	-22.22	2.80	1.21	ZF2	-22.22	-64.880	1.500	2.12	4.30	3.33
38	LAC621-B	12.7mm	50mm	K9	26.0856	-26.900	2.80	1.26	ZF7	-26.900	-72.00	1.500	1.98	4.30	3.24
39	LAC621-C	12.7mm	50mm	K9	26.0856	-26.900	2.80	1.26	ZF7	-26.900	-72.00	1.500	1.98	4-30	3.24
40	LAC977-A	12.7mm	75mm	K9	45.60	-33.3270	2.50	1.45	ZF2	-33.3270	-99.3030	1.500	1.91	4.00	3.36
41	LAC977-B	12.7mm	75mm	K9	42.3320	-37.3300	2.50	1.48	ZF7	-37.3300	-90.000	1.500	1.82	4.00	3.30
42	LAC977-C	12.7mm	75mm	K9	42.3320	-37.3300	2.50	1.48	ZF7	-37.3300	-90.000	1.500	1.82	4.00	3.30

Negative lenses

NO.	Catalog	Dia (mm)	F (mm)	LENS 1					LENS 2					cemented	
				material	R1	R2	TC	Te	material	R2	R3	Tc	Te	Tc	Te
1	LBC335-A	6	-9	K9	-6.329	5.10	0.90	2.63	ZF2	5.10	12.067	1.50	0.90	2.40	3.53
2	LBC335-B	6	-9	K9	-5.90	5.60	0.90	2.59	ZF7	5.60	11.11	1.50	1.04	2.40	3.63
3	LBC335-C	6	-9	K9	-5.90	5.60	0.90	2.59	ZF7	5.60	11.11	1.50	1.04	2.40	3.63
4	LBC329-A	8	-12	K9	-8.466	6.75	1.20	3.52	ZF2	6.75	15.89	2.00	1.20	3.20	4.72
5	LBC329-B	8	-12	K9	-7.79	7.41	1.20	3.48	ZF7	7.41	14.80	2.00	1.38	3.20	4.86
6	LBC329-C	8	-12	K9	-7.79	7.41	1.20	3.41	ZF7	7.41	14.80	2.00	1.38	3.20	4.86
7	LBC781-A	10	-15	K9	-10.568	8.466	1.50	4.39	ZF2	8.466	19.953	2.50	1.50	4.00	5.89
8	LBC781-B	10	-15	K9	-9.761	9.46	1.50	4.31	ZF7	9.46	18.707	2.50	1.75	4.00	6.06
9	LBC781-C	10	-15	K9	-9.761	9.46	1.50	4.31	ZF7	9.46	18.707	2.50	1.75	4.00	6.06
10	LBC320-A	12.70	-20	K9	-15.205	10.52	1.50	5.02	ZF2	10.52	23.00	3.00	1.76	4.50	6.78
11	LBC320-B	12.70	-20	K9	-14.2645	11.508	1.50	4.90	ZF7	11.508	21.15	3.00	2.07	4.50	6.97
12	LBC320-C	12.70	-20	K9	-14.2645	11.508	1.50	4.90	ZF7	11.508	21.15	3.00	2.07	4.50	6.97
13	LBC484-A	12.70	-25	K9	-16.827	12.50	1.50	4.48	ZF2	12.50	32.18	3.00	1.90	4.50	6.38
14	LBC484-B	12.70	-25	K9	-16.11	13.964	1.50	4.33	ZF7	13.964	28.63	3.00	2.19	4.50	6.52
15	LBC484-C	12.70	-21	K9	-16.11	13.964	1.50	4.33	ZF7	13.964	28.63	3.00	2.19	4.50	6.52
16	LBC970-A	12.70	-30	K9	-19.498	14.14	1.50	4.07	ZF2	14.14	38.756	2.50	1.52	4.00	5.59
17	LBC970-B	12.70	-30	K9	-18.707	16.24	1.50	3.90	ZF7	16.24	34.59	2.50	1.79	4.00	5.69
18	LBC970-C	12.70	-30	K9	-18.707	16.24	1.50	3.90	ZF7	16.24	34.59	2.50	1.79	4.00	5.69
19	LBC989-A	12.70	-50	K9	-31.52	22.49	1.50	3.06	ZF2	22.49	64.88	2.50	1.90	4.00	4.96
20	LBC989-B	12.70	-50	K9	-26.743	27.21	1.50	3.02	ZF7	27.21	72.00	2.50	2.03	4.00	5.05
21	LBC989-C	12.70	-50	K9	-26.743	27.21	1.50	3.02	ZF7	27.21	72.00	2.50	2.03	4.00	5.05
22	LBC315-A	25.4	-40	K9	-28.355	21.88	2.50	9.57	ZF2	21.88	50.70	5.50	3.05	8.00	12.62

23	LBC315-B	25.4	-40	K9	-26.06	23.50	2.50	9.S3	ZF7	23.50	47.097	5.50	3.52	8.00	13.05
24	LBC315-C	25.4	-40	K9	-26.06	23.50	2.50	9.S3	ZF7	23.50	47.097	5.50	3.52	8.00	13.05
25	LBC119-A	25.4	-50	K9	-34.014	25.108	2.50	8.4I	ZF2	25.108	63.21	5.00	2.84	7.50	11.25
26	LBC119-B	25.4	-50	K9	-31.80	28.05	2.50	8.19	ZF7	28.05	57.97	5.00	3.37	7.50	11.56
27	LBC119-C	25.4	-50	K9	-31.80	28.05	2.50	8.19	ZF7	28.05	57.97	5.00	3.37	7.50	11.56
28	LBC435-A	25.4	-75	K9	-45.7I	36.00	2.50	6.61	ZF2	36.00	108.38	5.00	3.43	7.50	10.04
29	LBC435-B	25.4	-75	K9	-45.00	40.34	2.50	6.38	ZF7	40.34	90.00	5.00	3.85	7.50	10.23
30	LBC435-C	25.4	-75	K9	-45.00	40.34	2.50	6.38	ZF7	40.34	90.00	5.00	3.85	7.50	10.23
31	LBC062-A	25.4	-100	K9	-61.80	45.00	2.50	5.65	ZF2	45.00	133.97	5.00	3.77	7.50	9.42
32	LBC062-B	25.4	-100	K9	-57.654	51.76	2.50	5.50	ZF7	51.76	122.18	5.00	4.08	7.50	9.58
33	LBC062-C	25.4	-100	K9	-57.654	51.76	2.50	5.50	ZF7	51.76	122.18	5.00	4.08	7.50	9.58

CYLINDRICAL LENSES

WLOPTICAL consider that there are two types's cylindrical lenses in common: CaF2 and Bk7.

Material: Excimer Grade CaF2	Material: Bk7
Design Wavelength 193 nm	Design Wavelength 632.8 nm
Index at 193 nm 1.5045	Index at 632.8 nm 1.515
CaF2 transmits 130nm-9.6μm	Fused Silica transmits 400nm-2.5μm

Catalog Number	Material	Length mm	Width mm	Focal mm	Radii	CT mm	ET mm	Price \$USD
U-12-50	CaF2	15.0	12.7	50	25.225	2.82	2.0	100.00
B-12-50	Bk7	15.0	12.7	50	25.75	2.27	2.0	10.00
U-12-100	CaF2	15.0	12.7	100	50.45	3.4	3.0	100.00
B-12-100	Bk7	15.0	12.7	100	51.5	3.4	3.0	10.00
U-12-150	CaF2	15.0	12.7	150	75.675	3.265	3.0	100.00
B-12-150	Bk7	15.0	12.7	150	77.25	3.25	3.0	10.00
U-12-200	CaF2	15.0	12.7	200	100.90	3.2	3.0	100.00
B-12-200	Bk7	15.0	12.7	200	103.0	3.2	3.0	10.00
U-18-50	CaF2	20.0	18.0	50	25.225	3.66	2.0	120.00
B-18-50	Bk7	20.0	18.0	50	25.75	3.65	2.0	12.00
U-18-100	CaF2	20.0	18.0	100	50.45	3.81	3.0	120.00
B-18-100	Bk7	20.0	18.0	100	51.5	3.8	3.0	12.00
U-18-150	CaF2	20.0	18.0	150	75.675	3.53	3.0	120.00
B-18-150	Bk7	20.0	18.0	150	77.25	3.53	3.0	12.00
U-18-200	CaF2	20.0	18.0	200	100.90	3.4	3.0	120.00
B-18-200	Bk7	20.0	18.0	200	103.0	3.4	3.0	12.00
U-25-50	CaF2	25.0	25.4	50	25.225	5.3	2.0	120.00

B-25-50	Bk7	25.0	25.4	50	25.75	5.25	2.0	12.00
U-25-100	CaF2	25.0	25.4	100	50.45	4.57	3.0	150.00
B-25-100	Bk7	25.0	25.4	100	51.5	4.54	3.0	15.00
U-25-150	CaF2	25.0	25.4	150	75.675	4.0	3.0	150.00
B-25-150	Bk7	25.0	25.4	150	77.25	4.0	3.0	15.00
U-25-200	CaF2	25.0	25.4	200	100.90	3.85	3.0	150.00
B-25-200	Bk7	25.0	25.4	200	103.0	3.8	3.0	15.00
U-38-50	CaF2	30.0	38.1	50	25.225	10.7	2.0	180.00
B-38-50	Bk7	30.0	38.1	50	25.75	10.4	2.0	18.00
U-38-100	CaF2	30.0	38.1	100	50.45	6.73	3.0	180.00
B-38-100	Bk7	30.0	38.1	100	51.5	6.65	3.0	18.00
U-38-150	CaF2	30.0	38.1	150	75.675	5.43	3.0	180.00
B-38-150	Bk7	30.0	38.1	150	77.25	5.4	3.0	18.00
U-38-200	CaF2	30.0	38.1	200	100.90	4.8	3.0	180.00
B-38-200	Bk7	30.0	38.1	200	103.0	4.8	3.0	18.00
U-51-100	CaF2	60.0	50.8	100	50.45	9.86	3.0	300.00
B-51-100	Bk7	60.0	50.8	100	51.5	9.7	3.0	40.00
U-51-150	CaF2	60.0	50.8	150	75.675	7.4	3.0	300.00
B-51-150	Bk7	60.0	50.8	150	77.25	7.25	3.0	40.00
U-51-200	CaF2	60.0	50.8	200	100.90	6.25	3.0	300.00
B-51-200	Bk7	60.0	50.8	200	103.0	6.2	3.0	40.00
U-51-250	CaF2	60.0	50.8	250	126.125	5.59	3.0	300.00
B-51-250	Bk7	60.0	50.8	250	128.75	5.53	3.0	40.00

Other diameters and focal lengths available on custom basis. Please inquire.

OPTICAL PRISM

Optical prisms are blocks of optical material with flat, polished sides that are arranged at precisely controlled angles to one another. They are used in optical systems to deflect or redirect beams of light. They can invert or rotate images, disperse light into component wavelengths, and separate states of polarization. There are several basic types of optical prisms.

WLOPTICAL can provide optical prisms; there are right angle prisms, Wedge prisms, Dove prisms, Rhomboid prisms, Penta prisms, Cube Beam splitter prisms and so on. You can visit WLOPTICAL website: <http://www.wloptical.com> and get more detailed information.

OPTICAL COATING

An optical coating is one or more thin layers of material deposited on an optical component such as a lens or mirror, which alters the way in which the optic reflects and transmits light. One type of optical coating is an antireflection coating, which reduces unwanted reflections from surfaces, and is commonly used on spectacle and photographic lenses. Another type is the high-reflector coating which can be used to produce mirrors which reflect greater than 99.99% of the light which falls on them. More complex optical coatings exhibit high reflection over some range of wavelengths, and anti-reflection over another range, allowing the production of dichroic thin-film optical filters.

WLOPTICAL can provide optical coatings; there are anti-reflective coating (UV, Visible, IR, FLIR, DLC), high-reflector coating(Single, BBHR, laser), metal coating (Al, AG, AU, NI, CR, TI),filter(IR-cut, Lower pass, long pass, band pass, dichroic), beam splitter, polarization, none-polarization and so on.

HOLDER & ASSEMBLY & OPTICAL DESIGN

Lens holders are used to stabilize and maintain the position of all of the optical components in a lens assembly. The primary purpose of a lens holder is to provide stability and keep optical elements firmly in place. Lens holders can also be used with filters, polarizer, pinholes, and many geometrically adaptable elements.

WLOPTICAL offers the following design and assembly services, which can be tailored to fit your project's needs:

- Concept development and consulting on new optics and MEMS solutions
- Design, analysis and optimization of microoptics, opto-mechanical and MEMS assemblies
- Precision optical assembly and alignment of microoptical and opto-mechanical system

- Optical design incorporating diffractive and traditional optics assembled into an end solution

OPTICAL GRATING

Gratings are optical elements that used in spectral analysis fields such as: ultraviolet-visible spectrophotometer with high precision and atomic absorption spectrophotometer. There are many types of optical gratings: Ruled gratings, Holographic gratings, Diffraction gratings, Reflection gratings and so on. The gratings are used to some aspects, such as spectroscopy, metrology, astronomy, integration optics, information disposal and so on, high dispersive rate, high resolving power.

Technical index

Score Area $\leq 70*70$ mm, range of wavelength 0.2~15um

Grooves (per mm) 50~2400 Efficiencies: UV~visible >70% IR <95%

As following, WLOPTICAL will list a series of optical gratings,

Grooves(per mm)	Wavelength(um)	Dimension(mm)	Score Area(mm)	Note
20	10.0	80*100*20	70*90	
20	10.0	70*110*20	63*105	
25	0.63	55*55*10	50*50	
50	1.0~1.5	70*70*12	60*64	
50	2.5~25	70*70*12	64*64	Double blaze
50	2.5~25	70*70*15	64*64	Double blaze
50	12.8	45*45*10	40*40	
50	15~25	70*70*15	60*63	
60	10.6	110*70*20	100*65	
75	1.6	50*60*15	45*45	
75	2.0	55*55*10	48*48	
100	0.43	60*60*15	55*55	

100	2.5	70*70*15	60*60	
100	0.63	55*55*15	50*50	+/- I level symmetry
100	2.5~15	70*70*15	64*64	Double blaze
100	16.0	148*80*20	130*70	
138	0.70	55*55*12	50*50	
131	1.5~2.5	190*180*25	180*155	- I level used
150	0.31~0.43	55*55*15	50*50	
150	0.50	70*70*15	64*64	
150	0.60	120*100*20	105*85	
150	10.0	140*80*20	130*70	
150	10.6	55*55*15	50*50	
200	0.54~0.7	70*70*15	64*64	
200	1.55	55*55*15	38*41	
Grooves(per mm)	Wavelength(um)	Dimension(mm)	Score Area(mm)	Note
200	1.80	70*110*20	63*100	
200	5.0	60*60*10	55*55	
210	0.64	90*110*20	87*90	
250	0.80	70*70*12	64*64	
300	0.43	55*55*15	50*45	
300	0.50	60*60*15	55*55	
300	0.60	70*40*15	65*35	
300	0.60	110*110*20	100*100	
400	1.50	90*70*15	64*64	
400	0.50	55*55*15	50*50	
400		70*70*15	25*25	
450	0.43	55*55*15	48*40	
600	1.60	70*70*15	64*64	

600	1.50	70*70*15	64*64	
600	0.50	70*60*15	64*55	
600	0.50	70*70*15	64*64	
Grooves(per mm)	Wavelength(um)	Dimension(mm)	Score Area(mm)	Note
600	0.70	70*70*15	64*64	
600	1.0	75*60*15	40*65	
600	0.36	55*55*15	50*50	
600	3.0	100*30*30	95*25	
600	0.64	70*70*12	70*70	II level
600	0.54	90*90*20	85*85	
600	0.63	55*55*15	44*17	+/- I level symmetry
1200	0.64	70*60*15	60*50	
1200	0.50	55*55*15	50*50	
Grooves(per mm)	Wavelength(um)	Dimension(mm)	Score Area(mm)	Note
1200	0.31	70*70*12	64*64	
1200	0.25	70*70*12	64*64	Holographic grating
1200	0.43	90*70*15	62*53	
1800	0.50	86*36*15	70*30	
1800	0.72	86*36*15	70*30	
1800	0.54	80*36*15	70*30	
1800	0.25	70*70*15	64*64	Holographic grating
2400	0.25	45*45*12	40*40	
79	0.50	260*135*45	250*125	Small ladder
150	1.9~2.1	85*76*16	85*76	
75	1.25~2.5	58*58*10	58*58	
1200	0.50	58*58*10	58*58	

1200	Holographic	58*58*10	58*58	
3600	0.20	30*30*8	30*30	
1200	0.25~0.8	32*32*10	30*30	Concave Holographic grating
1200	0.25~0.8	50*40*10	48*48	Concave Holographic grating
100	Visible light(transmission)	60*45*2	55*40	+/- light intensity symmetry
300	Visible light(transmission)	60*45*2	55*40	+/- light intensity symmetry
600	Visible light(transmission)	60*45*2	55*40	+/- light intensity symmetry
3600	0.22	60*60*10	58*58	
4320	0.22	60*60*10	58*58	

Quality Control:

Quality standard: USA Navy Military Standard, ISO Standard

Control process: See attachment (PDF)

QUALITY INSPECTION

NO:

产品型号 product type		客户编号 Customer NO		Order No 订单号			
检验方式 Inspection		批量 Quantity		检查数 Inspected quantity			
不合格数 fault item		合格数 pass rate		合格率 fault (%)			
A. Q. L. MIL —STD—105D							
检验水准 Inspection standard	品 质 水 准 Quality standard						
	分类 class	MAJ	ACC/REJ	MIN	ACC/REJ		
I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/>	A. Q.L						
检验水准 Inspect standard	图纸规格 drawing describing	检查数 inspect quantity	实测数据		不良数 fault rate	合格率 pass rate %	判定 Conclusion
			最大值 max. value	最小值 min. value			
<input type="checkbox"/> 光洁度 dig/scratch							
<input type="checkbox"/> 直径 Φ (Dia)							
<input type="checkbox"/> 中心厚 CT							
<input type="checkbox"/> 焦距 EFL							
<input type="checkbox"/> 球面半径 R1							
<input type="checkbox"/> 球面半径 R2							
<input type="checkbox"/> 倒角 bevel							
<input type="checkbox"/> 偏心度 centre error							
<input type="checkbox"/> 镀膜 Coating							

□磨边 edge							
合计 total							
检验者 inspector			日期 date		复核 checker		日期 date
备注 Note:							

检验结果(Conclusion): 合格 (pass) 不合格 (fault)

批准人 (approval): _____

Payment:

We insist on the Prepayment 50% for the bulk requirement in the first transaction for the standard optics, because we have to prepare to the template, and material, then we will give back the prepayment by making them as the part of total amount if they are right, or send back if they are wrong. But when we build the long-term cooperation, we will follow the net 30days.

Machine & Equipment:

Some main machines, but I don't clear what you say that.		
Name	Manufacturer	Quantity
Two axes lens ground machines	Nanjing Instrument factory	7
	Changchun Instrument factory	4
Four axes lens ground machines	Nanjing Instrument factory	10
Six axes lens ground machines	Nanjing Instrument factory	16
Five axes lens ground machines	Nanjing Instrument factory	4
Located axes piped	Xuzhou	4
Cylindrical machines	Changchun	20
Fast polish machines	Nanjing Instrument factory	15
Frost Machines	Nanjing Instrument factory	10
Milling machines	Nanjing Instrument factory	2
Edge cut machines	Nanjing Instrument factory	3
Vacuum coating	Beijing Instrument factory	4
	Chengdu Tianxing Instrument	1
Single color grating instrument	Beijing Instrument factory	1

Picture of Machines



Two axes of ground machine



Four axes of ground machine



Centering-edging machine



Spheromatic machine



Interferometer machine



Zygo machine



Coating machine



Spectrophotometer



Coating tools

CONTACT US

Supplier Information

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Tel: 0086-431-8528 0326

Fax: 0086-431-8925 1822

E-mail: wloptical@wloptical.com/luke@wloptical.com

Website: <http://www.wloptical.com>

Main scope: Polishing & coating.

Main materials: CaF₂, MgF₂, BaF₂, ZnSe, ZnS, Ge, Fused Silica, Al₂O₃, Silicon and so on.