

Catalog of Golden Vue Optics 2018

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Lenses

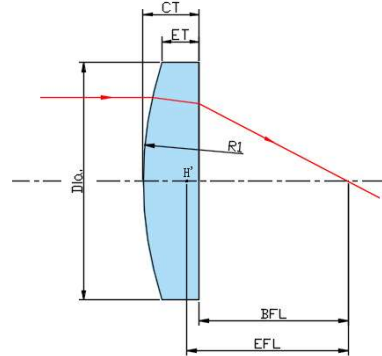
Optical Lenses are optical components designed to focus or diverge light. Optical Lenses, which may consist of a single, or multiple elements, are used in a wide variety of applications from microscopy to laser processing. Many industries utilize Optical Lenses, including life sciences, imaging, industrial, or defense. As light passes through a lens, it is affected by the lens' profile or substrate. A Plano-Convex (PCX) or Double-Convex (DCX) lens causes light to focus to a point, while a Plano-Concave (PCV) or Double-Concave (DCV) lens causes the light traveling through the lens to diverge. Achromatic Lenses are ideal for applications requiring color correction, while Aspheric Lenses are designed to correct spherical aberration.

Please refer to appendix A for coating options.

Catalog No.	Lenses
GL11	BK7 Plano-Convex Lenses
GL12	BK7 Double-Convex Lenses
GL13	BK7 Plano-Concave Lenses
GL14	BK7 Double-Concave Lenses
GL15	BK7 Plano-Convex Cylindrical Lenses
GL16	BK7 Plano-Concave Cylindrical Lenses
GL17	BK7 Barrel (Drum) Lenses
GL18	BK7 Ball Lenses
GL21	UV Grade Fused Silica Plano-Convex Lenses
GL22	UV Grade Fused Silica Double-Convex Lenses
GL23	UV Grade Fused Silica Plano-Concave Lenses
GL24	UV Grade Fused Silica Double-Concave Lenses
GL25	UV Grade Fused Silica Plano-Convex Cylindrical Lenses
GL27	UV Grade Fused Silica Barrel (Drum) Lenses
GL28	UV Grade Fused Silica Ball Lenses
GL31	Positive Achromatic-Doublets Lenses
GL32	Negative Achromatic-Doublets Lenses

GL11---BK7 Plano Convex Lenses

Material: BK7
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 60/40
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): λ/4 @632.8nm
 Centration: 3 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: None



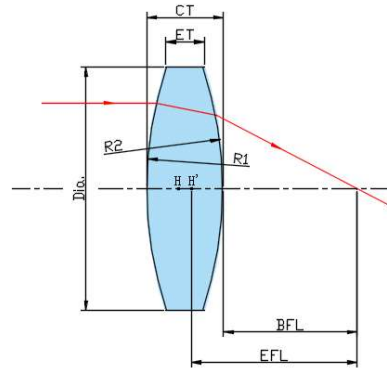
Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL11-003-004	3.0	4.5	3.388	2.33	1.70	1.15
GL11-003-010	3.0	10.0	8.883	5.17	1.70	1.48
GL11-004-005	4.0	5.0	3.747	2.58	1.90	0.95
GL11-004-006	4.0	6.3	5.179	3.25	1.70	1.01
GL11-004-010	4.0	10.0	8.883	5.17	1.70	1.30
GL11-006-010	6.3	10.0	8.297	5.17	2.60	1.53
GL11-006-012	6.3	12.5	10.980	6.46	2.30	1.48
GL11-006-016	6.3	16.0	14.615	8.26	2.10	1.48
GL11-006-020	6.3	20.0	18.744	10.36	2.00	1.51
GL11-006-025	6.3	25.0	23.748	12.91	1.90	1.51
GL11-006-040	6.3	40.0	38.870	20.65	1.70	1.46
GL11-006-063	6.3	63.0	61.818	32.50	1.70	1.55
GL11-010-012	10.0	12.5	9.929	6.46	3.90	1.53
GL11-010-016	10.0	16.0	13.890	8.26	3.20	1.52
GL11-010-020	10.0	20.0	18.217	10.36	2.80	1.51
GL11-010-025	10.0	25.0	23.353	12.91	2.50	1.49
GL11-010-032	10.0	31.5	29.992	16.27	2.30	1.51
GL11-010-040	10.0	40.0	38.606	20.65	2.10	1.49
GL11-010-050	10.0	50.0	48.723	25.84	2.00	1.51
GL11-010-063	10.0	63.0	61.686	32.50	1.90	1.51
GL11-010-100	10.0	100.0	98.885	51.64	1.70	1.46
GL11-015-060	15.0	60.0	58.507	31.02	2.30	1.38
GL11-016-020	16.0	20.0	16.898	10.36	4.80	1.02
GL11-016-025	16.0	25.0	22.364	12.91	4.00	1.22
GL11-016-032	16.0	31.5	29.134	16.27	3.60	1.50
GL11-016-040	16.0	40.0	37.946	20.65	3.10	1.49
GL11-016-050	16.0	50.0	48.195	25.84	2.80	1.53
GL11-016-063	16.0	63.0	61.291	32.50	2.50	1.50
GL11-016-080	16.0	80.0	78.465	41.30	2.30	1.52
GL11-016-100	16.0	100.0	98.621	51.64	2.10	1.48

GL11---BK7 Plano Convex Lenses

Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL11-016-160	16.0	160.0	158.750	82.62	1.90	1.51
GL11-025-025	25.0	25.4	18.031	13.11	11.16	2.00
GL11-025-032	25.0	31.5	26.328	16.27	7.86	2.00
GL11-025-040	25.0	40.0	35.893	20.65	6.21	2.00
GL11-025-050	25.0	50.0	46.096	25.84	4.70	1.47
GL11-025-063	25.0	63.0	59.472	32.50	4.00	1.50
GL11-025-080	25.0	80.0	77.385	41.30	3.94	2.00
GL11-025-100	25.0	100.0	97.674	51.64	3.54	2.00
GL11-025-125	25.0	125.0	122.882	64.55	3.22	2.00
GL11-025-160	25.0	160.0	158.055	82.62	2.95	2.00
GL11-025-200	25.0	200.0	198.190	103.28	2.76	2.00
GL11-025-250	25.0	250.0	248.570	129.24	2.61	2.00
GL11-025-315	25.0	315.0	313.678	162.79	2.00	1.50
GL11-025-400	25.0	400.0	397.564	206.10	2.38	2.00
GL11-025-500	25.0	500.0	498.472	258.18	2.30	2.00
GL11-025-800	25.0	800.0	798.880	413.44	1.70	1.50
GL11-025-1000	25.0	1000.0	998.830	516.50	2.15	2.00
GL11-040-050	40.0	50.0	42.142	25.84	11.98	2.50
GL11-040-063	40.0	63.0	56.752	32.50	9.38	2.50
GL11-040-080	40.0	80.0	74.927	41.30	7.67	2.50
GL11-040-100	40.0	100.0	95.699	51.64	6.53	2.50
GL11-040-160	40.0	160.0	156.730	82.62	4.96	2.50
GL11-040-200	40.0	200.0	197.070	103.28	4.45	2.50
GL11-040-250	40.0	250.0	247.610	129.24	4.06	2.50
GL11-040-500	40.0	500.0	497.830	258.18	3.28	2.50
GL11-045-100	45.0	100	96.404	51.90	6.10	0.97
GL11-045-120	45.0	120	116.000	62.20	6.10	1.89
GL11-050-063	50.0	63.0	53.223	32.50	14.73	3.00
GL11-050-080	50.0	80.0	72.446	41.30	11.43	3.00
GL11-050-100	50.0	100.0	93.771	51.64	9.45	3.00
GL11-050-160	50.0	160.0	155.469	82.62	6.87	3.00
GL11-050-250	50.0	250.0	246.700	129.24	5.44	3.00
GL11-050-500	50.0	500.0	497.212	258.18	4.21	3.00
GL11-063-100	63.0	100.0	90.958	51.64	13.72	3.00
GL11-063-125	63.0	125.0	117.616	64.55	11.21	3.00
GL11-063-160	63.0	160.0	153.908	82.62	9.24	3.00
GL11-063-250	63.0	250.0	245.740	129.24	6.90	3.00
GL11-063-500	63.0	500.0	496.740	258.18	3.93	3.00
GL11-063-1000	63.0	1000.0	997.640	516.50	3.96	3.00
GL11-100-160	100.0	160.0	146.253	82.62	20.85	4.00
GL11-100-250	100.0	250.0	241.370	129.24	14.05	4.00
GL11-100-500	100.0	500.0	494.129	258.18	8.89	4.00

GL12---BK7 Double Convex Lenses

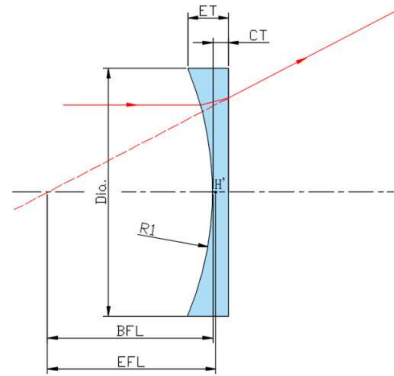
Material: BK7
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 60/40
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): λ/4 @632.8nm
 Centration: 3 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ = R ₂ (mm)	CT (mm)	ET (mm)
GL12-002-002	2.0	2.0	1.359	1.73	1.63	1.00
GL12-002-003	2.0	2.5	1.962	2.30	1.46	1.00
GL12-003-003	3.0	3.0	2.291	2.73	1.90	1.00
GL12-003-006	3.0	6.3	5.833	6.27	1.36	1.00
GL12-003-009	3.0	10.0	9.588	10.12	1.22	1.00
GL12-004-004	4.0	4.0	3.214	3.73	2.16	1.00
GL12-005-005	5.0	5.0	3.901	4.62	2.97	1.50
GL12-006-006	6.3	6.3	5.065	5.86	3.34	1.50
GL12-006-010	6.3	10.0	9.130	9.92	2.53	1.50
GL12-006-030	6.3	30.0	29.394	30.80	1.82	1.50
GL12-010-010	10.0	10.0	8.240	9.42	4.87	2.00
GL12-012-012	12.5	12.5	10.514	11.89	5.55	2.00
GL12-012-025	12.5	25.0	24.138	25.40	2.60	1.04
GL12-013-018	13.0	18.2	16.660	18.00	4.40	1.97
GL12-016-016	16.0	16.0	13.668	15.31	6.51	2.00
GL12-025-025	25.0	25.0	21.846	24.19	8.96	2.00
GL12-025-040	25.0	40.0	38.158	40.40	5.50	2.99
GL12-040-040	40.0	40.0	35.236	38.85	13.59	2.50
GL12-050-050	50.0	50.0	44.097	48.59	16.85	3.00
GL12-063-063	63.0	63.0	55.880	61.39	20.40	3.00
GL12-100-100	100.0	100.0	89.981	98.50	31.52	4.00

GL13---BK7 Plano Concave Lenses

Material: BK7
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 60/40
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): λ/4 @632.8nm
 Centration: 3 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: None



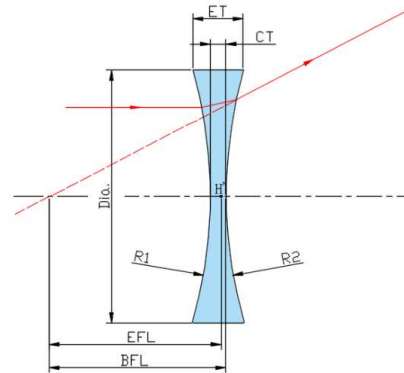
Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL13-004-005	4.0	-5.0	-5.990	-2.58	1.50	2.45
GL13-004-006	4.0	-6.3	-7.290	-3.25	1.50	2.19
GL13-004-010	4.0	-10.0	-10.990	-5.17	1.50	1.90
GL13-006-008	6.3	-8.0	-8.987	-4.13	1.50	2.96
GL13-006-010	6.3	-10.0	-11.000	-5.17	1.50	2.57
GL13-006-012	6.3	-12.5	-13.500	-6.46	1.50	2.32
GL13-006-016	6.3	-16.0	-16.990	-8.26	1.50	2.12
GL13-006-020	6.3	-20.0	-20.990	-10.33	1.50	1.99
GL13-006-025	6.3	-25.0	-25.990	-12.91	1.50	1.89
GL13-006-040	6.3	-40.0	-40.980	-20.65	1.50	1.71
GL13-006-063	6.3	-63.0	-63.930	-32.50	1.50	1.65
GL13-010-012	10.0	-12.5	-13.500	-6.46	1.50	3.87
GL13-010-016	10.0	-16.0	-16.990	-8.26	1.50	3.19
GL13-010-020	10.0	-20.0	-20.990	-10.32	1.50	2.79
GL13-010-025	10.0	-25.0	-25.990	-12.91	1.50	2.51
GL13-010-032	10.0	-31.5	-32.500	-16.27	1.50	2.29
GL13-010-040	10.0	-40.0	-40.980	-20.65	1.50	2.11
GL13-010-050	10.0	-50.0	-51.030	-25.84	1.50	1.99
GL13-010-063	10.0	-63.0	-63.930	-32.50	1.50	1.89
GL13-010-100	10.0	-100.0	-101.000	-51.64	1.50	1.74
GL13-016-020	16.0	-20.0	-20.990	-10.33	1.50	5.29
GL13-016-025	16.0	-25.0	-25.990	-12.91	1.50	4.22
GL13-016-032	16.0	-31.5	-32.500	-16.27	1.50	3.60
GL13-016-040	16.0	-40.0	-40.980	-20.65	1.50	3.11
GL13-016-050	16.0	-50.0	-51.660	-25.84	1.50	2.77
GL13-016-063	16.0	-63.0	-63.980	-32.50	1.50	2.50
GL13-016-080	16.0	-80.0	-80.970	-41.30	1.50	2.28
GL13-016-100	16.0	-100.0	-101.000	-51.64	1.50	2.12
GL13-016-160	16.0	-160.0	-161.000	-82.62	1.50	1.89
GL13-020-050	20.0	-50.0	-51.384	-25.84	2.10	4.11
GL13-025-025	25.0	-25.4	-26.710	-13.11	2.00	11.16

GL13---BK7 Plano Concave Lenses

Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL13-025-032	25.0	-31.5	-32.830	-16.27	2.00	7.86
GL13-025-040	25.0	-40.0	-40.980	-20.65	2.00	6.21
GL13-025-050	25.0	-50.0	-51.360	-25.84	2.00	5.22
GL13-025-063	25.0	-63.0	-64.260	-32.50	2.00	4.50
GL13-025-080	25.0	-80.0	-81.300	-41.30	2.00	3.94
GL13-025-100	25.0	-100.0	-101.300	-51.64	2.00	3.54
GL13-025-125	25.0	-125.0	-126.300	-64.55	2.00	3.22
GL13-025-160	25.0	-160.0	-161.300	-82.62	2.00	2.95
GL13-025-200	25.0	-200.0	-201.300	-103.28	2.00	2.75
GL13-025-250	25.0	-250.0	-251.400	-129.13	2.00	2.61
GL13-025-400	25.0	-400.0	-400.500	-206.10	2.00	2.38
GL13-025-500	25.0	-500.0	-501.300	-258.18	2.00	2.30
GL13-025-1000	25.0	-1000.0	-1001.00	-516.50	2.00	2.15
GL13-040-050	40.0	-50.0	-51.690	-25.84	2.50	11.98
GL13-040-063	40.0	-63.0	-64.580	-32.50	2.50	9.38
GL13-040-080	40.0	-80.0	-81.630	-41.30	2.50	7.57
GL13-040-100	40.0	-100.0	-101.700	-51.64	2.50	6.53
GL13-040-125	40.0	-125.0	-126.700	-64.55	2.50	5.68
GL13-040-160	40.0	-160.0	-161.700	-82.62	2.50	4.96
GL13-040-200	40.0	-200.0	-201.600	-103.28	2.50	4.46
GL13-040-250	40.0	-250.0	-251.900	-129.24	2.50	4.06
GL13-040-500	40.0	-500.0	-501.600	-258.18	2.50	3.28
GL13-045-150	45.0	-150.0	-152.520	-77.80	3.00	6.32
GL13-050-063	50.0	-63.0	-64.920	-32.50	3.00	14.73
GL13-050-080	50.0	-80.0	-81.960	-41.30	3.00	11.43
GL13-050-100	50.0	-100.0	-102.000	-51.64	3.00	9.45
GL13-050-160	50.0	-160.0	-162.000	-82.62	3.00	6.87
GL13-050-250	50.0	-250.0	-252.300	-129.24	3.00	5.11
GL13-050-500	50.0	-500.0	-502.000	-258.18	3.00	4.21

GL14---BK7 Double Concave Lenses

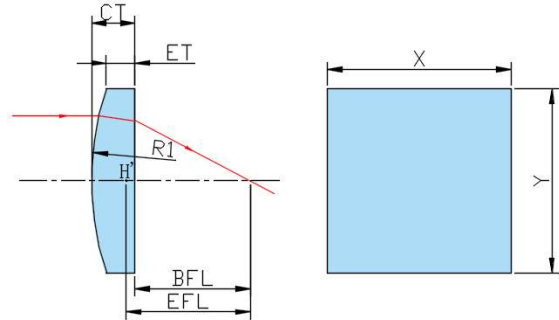
Material: BK7
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 60/40
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): $\lambda/4$ @632.8nm
 Centration: 3 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	$R_1 = -R_2$ (mm)	CT (mm)	ET (mm)
GL14-002-002	2.0	-2.0	-2.307	-2.22	1.00	1.48
GL14-002-003	2.0	-2.5	-2.810	-2.74	1.00	1.38
GL14-003-003	3.0	-3.0	-3.313	-3.26	1.00	1.73
GL14-003-006	3.0	-6.3	-6.621	-6.67	1.00	1.34
GL14-003-010	3.0	-10.0	-10.320	-10.50	1.00	1.22
GL14-004-004	4.0	-4.0	-4.317	-4.30	1.00	1.99
GL14-006-006	6.3	-6.3	-6.776	-6.75	1.50	3.06
GL14-010-010	10.0	-10.0	-10.480	-10.58	1.50	4.01
GL14-012-012	12.5	-12.5	-12.480	-12.64	1.50	4.81
GL14-016-016	16.0	-16.0	-16.490	-16.78	1.50	5.56
GL14-025-025	25.0	-25.0	-25.660	-26.16	2.00	8.36
GL14-040-040	40.0	-40.0	-40.820	-41.74	2.50	12.71
GL14-050-050	50.0	-50.0	-50.990	-52.15	3.00	15.77

GL15---BK7 Plano Convex Cylindrical Lenses

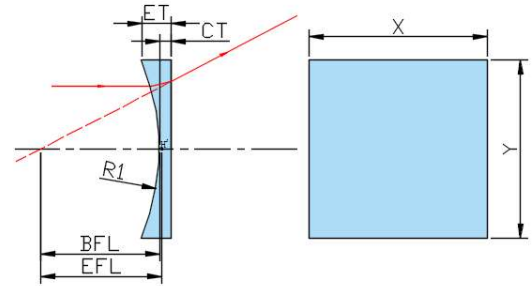
Material: BK7
 Design Wavelength: 587.6nm
 Dimension Tolerance: $\pm 0.2\text{mm}$
 Center Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 60/40
 Centration: 5 ~ 15 arc min.
 Focal Length Tolerance: $\pm 2\%$
 Bevel: 0.2mm x 45°
 Coating: None



Catalog No.	X x Y (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL15-005-020	5 x 5	20.0	18.465	10.33	2.31	2.00
GL15-010-012	10 x 10	12.7	9.862	6.56	4.31	2.00
GL15-010-020	10 x 10	20.0	17.835	10.33	3.29	2.00
GL15-010-025	10 x 10	25.0	23.016	12.92	3.01	2.00
GL15-020-012	20 x 10	12.7	9.862	6.56	4.31	2.00
GL15-020-020	20 x 10	20.0	17.835	10.33	3.29	2.00
GL15-020-025	20 x 10	25.0	23.020	12.91	3.01	2.00
GL15-020-050	20 x 20	50.0	47.352	25.82	4.02	2.00
GL15-020-075	20 x 20	75.0	72.822	38.73	3.31	2.00
GL15-020-100	20 x 20	100.0	97.381	51.64	3.98	3.00
GL15-020-150	20 x 20	150.0	147.602	77.46	3.65	3.00
GL15-020-200	20 x 20	200.0	197.710	103.28	3.49	3.00
GL15-020-250	20 x 20	250.0	247.760	129.09	3.39	3.00
GL15-020-300	20 x 20	300.0	297.810	154.91	3.32	3.00
GL15-020-500	20 x 20	500.0	497.887	258.18	3.19	3.00
GL15-020-1000	20 x 20	1000.0	998.207	516.50	3.10	3.00
GL15-040-050	40 x 20	50.0	47.352	25.82	4.02	2.00
GL15-040-075	40 x 20	75.0	72.822	38.73	3.31	2.00
GL15-040-100	40 x 20	100.0	97.381	51.64	3.98	3.00
GL15-040-150	40 x 20	150.0	147.602	77.46	3.65	3.00
GL15-040-200	40 x 20	200.0	197.691	103.28	3.49	3.00
GL15-040-250	40 x 20	250.0	247.760	129.09	3.39	3.00
GL15-040-300	40 x 20	300.0	297.809	154.91	3.32	3.00
GL15-040-500	40 x 20	500.0	497.887	258.18	3.19	3.00
GL15-040-1000	40 x 20	1000.0	998.207	516.50	3.10	3.00

GL16---BK7 Plano-Concave Cylindrical Lenses

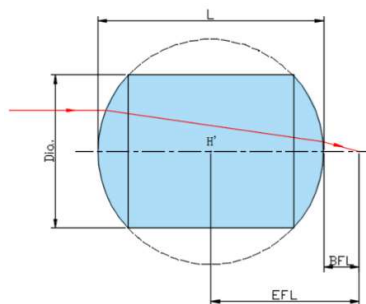
Material: BK7
 Design Wavelength: 587.6nm
 Dimension Tolerance: $\pm 0.2\text{mm}$
 Center Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 60/40
 Centration: $5 \sim 15 \text{ arc min.}$
 Focal Length Tolerance: $\pm 2\%$
 Bevel: $0.2\text{mm} \times 45^\circ$
 Coating: None



Catalog No.	X x Y (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL16-010-012	10 x 10	-12.7	-14.023	-6.56	2.0	4.31
GL16-010-025	10 x 10	-25.0	-26.320	-12.91	2.0	3.01
GL16-020-012	20 x 10	-12.7	-14.023	-6.56	2.0	4.31
GL16-020-025	20 x 10	-25.0	-26.320	-12.91	2.0	3.01
GL16-020-050	20 x 20	-50.0	-51.322	-25.82	2.0	4.02
GL16-020-075	20 x 20	-75.0	-76.323	-38.73	3.0	3.31
GL16-020-100	20 x 20	-100.0	-101.325	-51.64	3.0	3.98
GL16-020-150	20 x 20	-150.0	-151.987	-77.46	3.0	3.65
GL16-020-200	20 x 20	-200.0	-201.971	-103.28	3.0	3.49
GL16-020-250	20 x 20	-250.0	-251.974	-129.09	3.0	3.39
GL16-020-300	20 x 20	-299.7	-301.726	-154.91	3.0	3.32
GL16-020-500	20 x 20	-500.0	-501.969	-258.18	3.0	3.19
GL16-020-1000	20 x 20	-1000.0	-1002.230	-516.50	3.0	3.10
GL16-040-050	40 x 20	-50.0	-51.981	-25.82	2.0	5.02
GL16-040-075	40 x 20	-75.0	-76.983	-38.73	3.0	4.31
GL16-040-100	40 x 20	-100.0	-101.325	-51.64	3.0	3.98
GL16-040-150	40 x 20	-150.0	-151.987	-77.46	3.0	3.65
GL16-040-200	40 x 20	-200.0	-201.971	-103.28	3.0	3.49
GL16-040-250	40 x 20	-250.0	-251.974	-129.09	3.0	3.39
GL16-040-500	40 x 20	-500.0	-501.969	-258.18	3.0	3.19
GL16-040-1000	40 x 20	-1000.0	-1002.230	-516.50	3.0	3.10

GL17---BK7 Barrel(Drum) Lenses

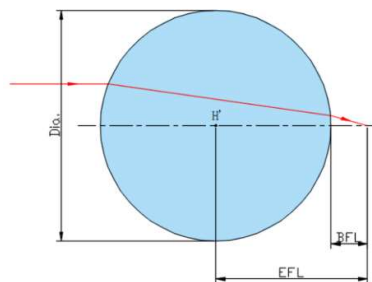
Material: BK7
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.05mm
 Length Tolerance: ±0.005mm
 Surface Quality: 40/20
 Coating: None



Catalog No.	Dia. (mm)	L (mm)	EFL (mm)	BFL (mm)
GL17-020-025	2.0	2.5	1.8339	0.5839
GL17-020-030	2.0	3.0	2.2007	0.7007
GL17-030-040	3.0	4.0	2.9342	0.9342
GL17-040-050	4.0	5.0	3.6678	1.1678
GL17-070-080	7.0	8.0	5.8685	1.8685

GL18---BK7 Ball Lenses

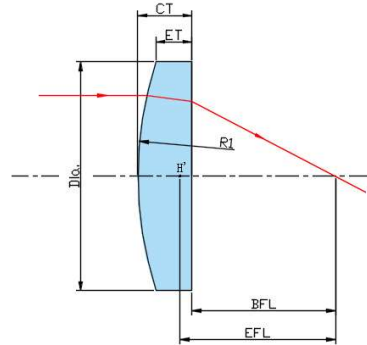
Material: BK7
 Design Wavelength: 587.6nm
 Diameter Tolerance: ±0.005mm
 Sphericity: ±0.005mm
 Surface Quality: 40/20
 Coating: None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)
GL18-001	1.00	0.7336	0.2336
GL18-002	2.00	1.4671	0.4671
GL18-003	3.00	2.2007	0.7007
GL18-004	4.00	2.9342	0.9342
GL18-005	5.00	3.6678	1.1678
GL18-006	6.00	4.4014	1.4014
GL18-007	7.00	5.1349	1.6349
GL18-008	8.00	5.8685	1.8685
GL18-009	9.00	6.6020	2.1020
GL18-010	10.00	7.3356	2.3356

GL21---UV Grade Fused Silica Plano Convex Lenses

Material: UV Grade Fused Silica
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 40/20
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): λ/4 @632.8nm
 Centration: 3 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: None



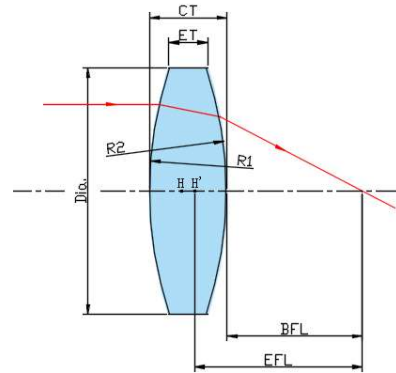
Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL21-004-005	4.0	5.0	3.486	2.29	2.20	1.0
GL21-004-006	4.0	6.3	4.854	2.89	2.11	1.3
GL21-004-010	4.0	10.0	8.657	4.58	1.96	1.5
GL21-004-015	4.0	15.0	13.767	6.88	1.80	1.5
GL21-004-020	4.0	20.0	18.820	9.17	1.72	1.5
GL21-006-010	6.3	10.0	8.112	4.58	2.75	1.5
GL21-006-012	6.3	12.5	10.824	5.73	2.44	1.5
GL21-006-015	6.3	15.0	13.447	6.88	2.26	1.5
GL21-006-020	6.3	20.0	18.589	9.17	2.06	1.5
GL21-006-025	6.3	25.0	23.668	11.46	1.94	1.5
GL21-006-040	6.3	40.0	38.780	18.34	1.77	1.5
GL21-006-050	6.3	50.0	48.855	22.92	1.72	1.5
GL21-010-012	10.0	12.5	9.462	5.73	4.43	1.5
GL21-010-015	10.0	15.0	12.493	6.88	3.66	1.5
GL21-010-020	10.0	20.0	17.943	9.17	3.00	1.5
GL21-010-025	10.0	25.0	23.183	11.46	2.65	1.5
GL21-010-040	10.0	40.0	38.146	18.34	2.70	2.0
GL21-010-050	10.0	50.0	48.242	22.92	2.56	2.0
GL21-012-020	12.7	20.0	16.874	9.17	4.56	2.0
GL21-012-025	12.7	25.0	22.312	11.46	3.92	2.0
GL21-012-030	12.7	30.0	27.558	13.75	3.56	2.0
GL21-012-040	12.7	40.0	37.844	18.34	3.14	2.0
GL21-012-050	12.7	50.0	48.009	22.92	2.90	2.0
GL21-012-100	12.7	100.0	98.327	45.85	2.44	2.0
GL21-016-063	16.0	63.0	61.100	28.84	2.63	1.5
GL21-025-050	25.4	50.0	45.994	22.92	5.84	2.0
GL21-025-075	25.4	75.0	71.954	34.39	4.44	2.0
GL21-025-100	25.4	100.0	97.394	45.85	3.80	2.0
GL21-025-150	25.4	150.0	147.819	68.79	3.19	2.0
GL21-025-175	25.4	175.0	172.932	80.23	3.02	2.0
GL21-025-200	25.4	200.0	198.027	91.70	2.89	2.0

GL21---UV Grade Fused Silica Plano Convex Lenses

Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL21-025-250	25.4	250.0	248.142	114.62	2.71	2.0
GL21-025-400	25.4	400.0	398.323	183.39	2.44	2.0
GL21-025-600	25.4	600.0	597.969	275.10	3.00	2.7
GL21-025-1000	25.4	1000.0	996.896	458.00	3.00	2.8

GL22--- UV Grade Fused Silica Double Convex Lenses

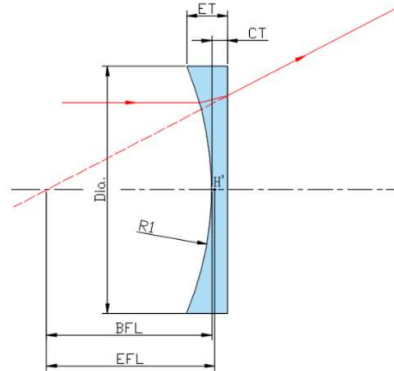
Material:	UV Grade Fused Silica
Design Wavelength:	587.6nm
Diameter Tolerance:	+0.0/-0.1mm
Center Thickness Tolerance:	±0.2mm
Surface Quality:	40/20
Power(P-V):	1.5λ @632.8nm
Irregularity(P-V):	λ/4 @632.8nm
Centration:	3 arc min.
Focal Length Tolerance:	±2%
Bevel:	0.2mm x 45°
Coating:	None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ = R ₂ (mm)	CT (mm)	ET (mm)
GL22-004-004	4.0	4.0	2.806	3.12	2.96	1.5
GL22-006-006	6.3	6.3	4.886	5.13	3.67	1.5
GL22-010-010	10.0	10.0	8.184	8.34	4.83	1.5
GL22-012-012	12.7	12.7	10.31	10.54	6.26	2.0
GL22-012-015	12.7	15.0	13.039	12.86	5.36	2.0
GL22-016-016	16.0	16.0	13.502	13.523	6.70	1.5
GL22-025-025	25.4	25.4	21.597	21.55	10.28	2.0
GL22-025-100	25.4	100.0	98.689	91.09	3.78	2.0
GL22-025-300	25.4	300.0	298.944	274.60	3.09	2.5
GL22-025-500	25.4	500.0	498.836	457.93	3.35	3.0

GL23--- UV Grade Fused Silica Plano Concave Lenses

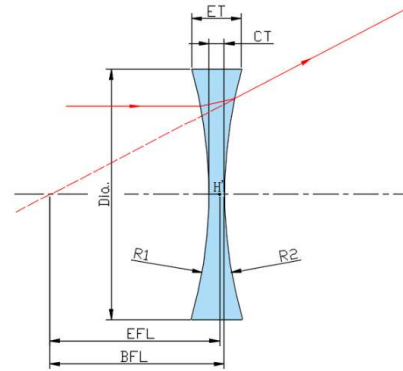
Material: UV Grade Fused Silica
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 40/20
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): λ/4 @632.8nm
 Centration: 3 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL23-004-015	4.0	-15.0	--16.172	-6.88	1.71	2.00
GL23-004-020	4.0	-20.0	-21.221	-9.17	1.78	2.00
GL23-006-010	6.3	-10.0	-10.686	-4.58	1.00	2.25
GL23-006-012	6.3	-12.5	-13.528	-5.73	1.50	2.44
GL23-006-015	6.3	-15.0	-16.028	-6.88	1.50	2.26
GL23-006-020	6.3	-20.0	-21.029	-9.17	1.50	2.06
GL23-006-025	6.3	-25.0	-26.028	-11.46	1.50	1.94
GL23-006-040	6.3	-40.0	-41.371	-18.34	2.00	2.27
GL23-006-050	6.3	-50.0	-51.371	-22.92	2.00	2.22
GL23-010-012	10.0	-12.5	-13.528	-5.73	1.50	4.43
GL23-010-015	10.0	-15.0	-16.028	-6.88	1.50	3.65
GL23-010-020	10.0	-20.0	-21.029	-9.17	1.50	2.98
GL23-010-025	10.0	-25.0	-26.028	-11.46	1.50	2.64
GL23-010-040	10.0	-40.0	-41.028	-18.34	1.50	2.19
GL23-010-050	10.0	-50.0	-51.028	-22.92	1.50	2.05
GL23-012-020	12.7	-20.0	-21.029	-9.17	1.50	4.05
GL23-012-025	12.7	-25.0	-26.028	-11.46	1.50	3.42
GL23-012-030	12.7	-30.0	-31.028	-13.75	1.50	3.05
GL23-012-040	12.7	-40.0	-41.028	-18.34	1.50	2.63
GL23-012-050	12.7	-50.0	-51.028	-22.92	1.50	2.40
GL23-012-100	12.7	-100.0	-101.028	-45.85	1.70	2.14
GL23-025-035	25.4	-35.0	-36.372	-16.05	2.00	8.24
GL23-025-040	25.0	-40.0	-41.027	-18.34	1.50	6.42
GL23-025-050	25.4	-50.0	-51.371	-22.92	2.00	5.84
GL23-025-075	25.4	-75.0	-76.371	-34.39	2.00	4.43
GL23-025-100	25.4	-100.0	-101.371	-45.85	2.00	3.79
GL23-025-150	25.4	-150.0	-151.371	-68.77	2.00	3.18
GL23-025-175	25.4	-175.0	-176.371	-80.23	2.00	3.01
GL23-025-200	25.4	-200.0	-201.380	-91.70	2.00	2.88
GL23-025-250	25.4	-250.0	-251.371	-114.62	2.00	2.77

GL24--- UV Grade Fused Silica Double Concave Lenses

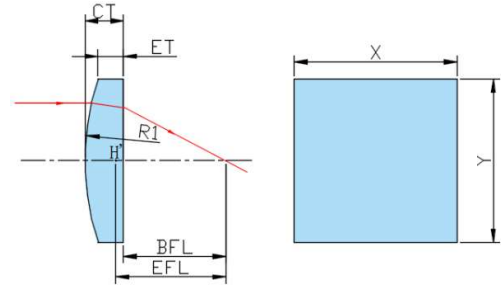
Material:	UV Grade Fused Silica
Design Wavelength:	587.6nm
Diameter Tolerance:	+0.0/-0.1mm
Center Thickness Tolerance:	±0.2mm
Surface Quality:	40/20
Power(P-V):	1.5λ @632.8nm
Irregularity(P-V):	λ/4 @632.8nm
Centration:	3 arc min.
Focal Length Tolerance:	±2%
Bevel:	0.2mm x 45°
Coating:	None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ = R ₂ (mm)	CT (mm)	ET (mm)
GL24-006-006	6.3	-6.3	-6.956	-6.08	2.0	3.76
GL24-010-010	10.0	-10.0	-10.670	-9.48	2.0	4.85
GL24-012-012	12.7	-12.7	-13.366	-11.95	2.0	5.65
GL24-012-015	12.7	-15.0	-15.805	-14.12	2.4	5.42
GL24-025-025	25.4	-25.4	-26.076	-23.60	2.0	9.42
GL24-025-030	25.4	-30.0	-30.678	-27.82	2.0	8.14

GL25--- UV Fused Silica Plano Convex Cylindrical Lenses

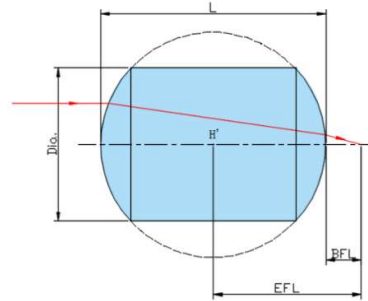
Material:	UV Grade Fused Silica
Design Wavelength:	587.6nm
Dimension Tolerance:	±0.2mm
Center Thickness Tolerance:	±0.2mm
Surface Quality:	40/20
Centration:	3 ~ 15 arc min.
Focal Length Tolerance:	±2%
Bevel:	0.2mm x 45°
Coating:	None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	R ₁ (mm)	CT (mm)	ET (mm)
GL25-010-050	10 x 10	50	48.241	22.92	2.55	2.0
GL25-010-100	10 x 10	100	98.444	45.85	2.27	2.0
GL25-010-150	10 x 10	150	148.516	68.78	2.18	2.0
GL25-010-200	10 x 10	200	198.533	91.70	2.14	2.0
GL25-010-250	10 x 10	250	248.542	114.62	2.11	2.0
GL25-010-300	10 x 10	300	298.567	137.55	2.09	2.0

GL27--- UV Grade Fused Silica Barrel(Drum) Lenses

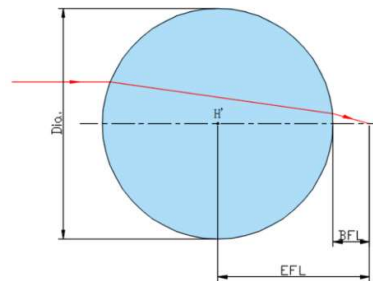
Material: UV Grade Fused Silica
 Design Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.05mm
 Length Tolerance: ±0.005mm
 Surface Quality: 40/20
 Coating: None



Catalog No.	Dia. (mm)	L (mm)	EFL (mm)	BFL (mm)
GL27-020-025	2.0	2.5	1.9896	0.7396
GL27-020-030	2.0	3.0	2.3876	0.8876
GL27-030-040	3.0	4.0	3.1834	1.1834
GL27-040-050	4.0	5.0	3.9793	1.4793
GL27-070-080	7.0	8.0	6.3668	2.3668

GL28---UV Grade Fused Silica Ball Lenses

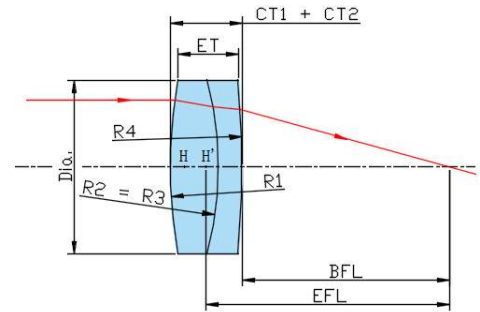
Material: UV Grade Fused Silica
 Design Wavelength: 587.6nm
 Diameter Tolerance: ±0.005mm
 Sphericity: ±0.005mm
 Surface Quality: 40/20
 Coating: None



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)
GL28-001	1.00	0.7959	0.2959
GL28-002	2.00	1.5917	0.5917
GL28-003	3.00	2.3876	0.8876
GL28-004	4.00	3.1834	1.1834
GL28-005	5.00	3.9793	1.4793
GL28-006	6.00	4.7751	1.7751
GL28-007	7.00	5.5710	2.0710
GL28-008	8.00	6.3668	2.3668
GL28-009	9.00	7.1627	2.6627
GL28-010	10.00	7.9585	2.9585

GL31---Positive Achromatic Lenses

Focal Length Specification Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ±0.2mm
 Surface Quality: 60/40
 Power (P-V): 1.5λ @632.8nm
 Irregularity (P-V): λ/4 @632.8nm
 Centration: 3 ~ 5 arc min.
 Focal Length Tolerance: ±2%
 Bevel: 0.2mm x 45°
 Coating: Single layer MgF2 @ 550nm



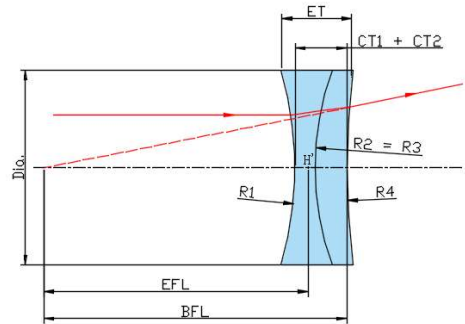
Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	CT (mm)	ET (mm)	Lens A	Lens B
GL31-003-004	3.15	4.0	2.472	2.9	2.26	BAF10	SF6
GL31-004-005	4.0	5.0	3.113	3.6	2.77	BAF10	SF6
GL31-004-006	4.0	6.3	4.789	3.59	2.78	BaK2	SF15
GL31-006-008	6.3	8.0	4.995	5.7	4.42	BAF10	SF6
GL31-006-010	6.3	10.0	7.578	5.69	4.41	BaK2	SF15
GL31-006-012	6.3	12.5	10.481	4.44	3.47	BaK2	SF15
GL31-006-016	6.3	16.0	14.172	4.00	3.26	BaK2	SF15
GL31-006-025	6.3	25.0	23.400	3.63	3.15	BK7	SF12
GL31-006-040	6.3	40.0	38.565	3.31	3.01	BK7	SF12
GL31-008-016	8.0	16.0	13.776	5.10	3.89	BaK2	SF15
GL31-010-016	10.0	16.0	12.604	6.3	4.79	BAF10	SF6
GL31-010-020	10.0	20.0	17.223	6.37	4.86	BaK2	SF15
GL31-010-025	10.0	25.0	22.909	4.54	3.37	BaK2	SF15
GL31-010-040	10.0	40.0	38.061	4.29	3.54	BK7	SF12
GL31-010-063	10.0	63.0	61.263	4.02	3.55	BK7	SF12
GL31-012-032	12.5	31.5	28.863	5.74	4.28	BaK2	SF15
GL31-015-050	15.0	50.0	47.862	4.70	3.40	BAK2	SF15
GL31-016-025	16.0	25.0	19.888	9.4	6.94	BAF10	SF6
GL31-016-032	16.0	31.5	27.821	7.71	5.28	BaK2	SF15
GL31-016-040	16.0	40.0	36.651	7.29	5.41	BaK2	SF15
GL31-016-050	16.0	50.0	47.370	5.60	4.12	BaK2	SF15
GL31-016-063	16.0	63.0	60.467	5.26	4.04	BK7	SF12
GL31-016-100	16.0	100.0	97.531	5.32	4.55	BK7	SF12
GL31-020-063	20.0	63.0	59.690	7.05	5.21	BaK2	SF15
GL31-020-080	20.0	80.0	77.403	5.58	4.14	BaK2	SF15
GL31-025-040	25.0	40.0	34.42	10.5	6.85	BAF10	SF6
GL31-025-050	25.0	50.0	45.108	10.30	6.61	BaK2	SF15
GL31-025-063	25.0	63.0	58.645	9.21	6.32	BaK2	SF15
GL31-025-080	25.0	80.0	76.296	7.70	5.44	BaK2	SF15
GL31-025-100	25.0	100.0	96.752	6.98	5.18	BaK2	SF15
GL31-025-125	25.0	125.0	122.294	5.74	4.31	BaK2	SF15

GL31---Positive Achromatic Lenses

Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	CT (mm)	ET (mm)	Lens A	Lens B
GL31-025-160	25.0	160.0	157.529	4.90	3.74	BK7	SF12
GL31-025-200	25.0	200.0	197.143	5.66	4.73	BK7	SF12
GL31-025-250	25.0	250.0	247.771	4.22	3.48	BK7	SF12
GL31-025-315	25.0	315.0	312.327	5.01	4.42	BK7	SF12
GL31-025-400	25.0	400.0	397.310	4.80	4.34	BK7	SF12
GL31-025-500	25.0	500.0	497.050	4.64	4.27	BK7	SF12
GL31-032-160	31.5	160.0	156.540	7.34	5.56	BaK2	SF15
GL31-032-200	31.5	200.0	196.903	6.11	4.63	BK7	SF12
GL31-035-200	35.0	200.0	200.680	10.60	8.81	BK7	F2
GL31-040-063	40.0	63.0	53.689	16.5	10.51	BAF10	SF6
GL31-040-100	40.0	100.0	94.191	11.84	7.19	BaK2	SF15
GL31-040-160	40.0	160.0	155.512	9.24	6.37	BaK2	SF15
GL31-040-250	40.0	250.0	246.129	7.64	5.73	BK7	SF12
GL31-040-400	40.0	411.8	409.021	5.92	4.73	BK7	SF12
GL31-050-100	50.0	100.0	91.968	15.89	8.57	BaK2	SF15
GL31-050-160	50.0	160.0	151.924	12.37	7.86	BaK2	SF15
GL31-050-250	50.0	250.0	245.227	9.56	6.70	BaK2	SF15
GL31-050-400	50.0	400.0	395.551	8.56	6.70	BK7	SF2
GL31-050-630	50.0	630.0	626.463	6.30	5.12	BK7	SF12
GL31-060-145	60.0	145.0	135.518	18.60	12.36	SK2	SF10
GL31-060-200	60.0	200.0	192.202	15.47	10.28	BAK2	SF15
GL31-060-300	60.0	300.0	295.377	8.50	4.93	BK7	SF2

GL32--- Negative Achromatic Lenses

Focal Length Specification Wavelength: 587.6nm
 Diameter Tolerance: +0.0/-0.1mm
 Center Thickness Tolerance: ± 0.2 mm
 Surface Quality: 60/40
 Power(P-V): 1.5λ @632.8nm
 Irregularity(P-V): $\lambda/4$ @632.8nm
 Centration: 3 ~ 5 arc min.
 Focal Length Tolerance: $\pm 2\%$
 Bevel: 0.2mm x 45°
 Coating: Single layer MgF2 @ 550nm



Catalog No.	Dia. (mm)	EFL (mm)	BFL (mm)	CT (mm)	ET (mm)	Lens A	Lens B
GL32-012-025	12.5	-25.0	-27.5	5.67	7.42	BK7	F2
GL32-012-040	12.5	-40.0	-42.5	5.34	6.45	BK7	F2
GL32-025-050	25.0	-50.0	-53.3	7.22	10.75	BK7	F2
GL32-025-100	25.0	-100.0	-102.6	6.60	8.39	BK7	F2

Prisms

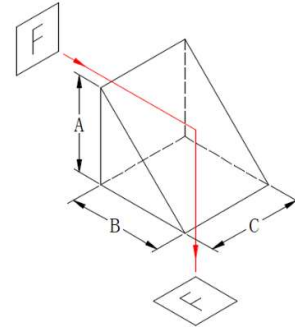
Optical prisms are used to redirect light at a designated angle. Optical prisms are ideal for ray deviation, or for adjusting the orientation of an image. An optical prism's design determines how light interacts with it. When light enters an optical prism, it either reflects off an individual surface or several surfaces before exiting, or is refracted as it travels through the substrate. For example, when light enters a right angle prism, it reflects off a single surface, causing the light to redirect at 90°. When light enters a wedge prism, though, a change in substrate thickness causes the light to deviate through refraction.

Please refer to appendix B for coating options.

Catalog No.	Prisms
GP11	BK7 Standard Right Angle Prisms
GP12	BK7 High Precision Right Angle Prisms
GP13	BK7 Laser Grade Right Angle Prisms
GP14	BK7 Dove Prisms
GP15	BK7 Roof Prisms
GP16	BK7 Corner Cube Retroreflector
GP17	BK7 Penta Prisms
GP21	UV Grade Fused Silica Standard Right Angle Prisms
GP22	UV Grade Fused Silica High Precision Right Angle Prisms
GP23	UV Grade Fused Silica Laser Grade Right Angle Prisms

GP11---BK7 Standard Right Angle Prisms

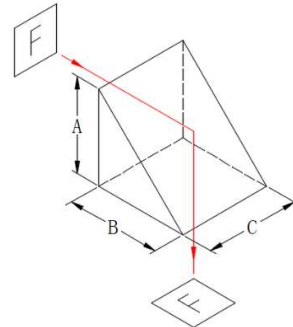
Material:	BK7
Dimension Tolerance:	±0.2mm
Surface Quality:	60/40
Surface Flatness:	$\lambda/2$ @632.8nm
Angle Tolerance:	3 arc min.
Pyramid Error:	10 arc min.
Bevel:	0.25mm x 45°
Coating:	None



Catalog No.	Dimension (mm)
GP11-001	A = B = C = 1.0
GP11-002	A = B = C = 2.0
GP11-005	A = B = C = 5.0
GP11-006	A = B = C = 6.3
GP11-010	A = B = C = 10.0
GP11-012	A = B = C = 12.5
GP11-015	A = B = C = 15.0
GP11-020	A = B = C = 20.0
GP11-025	A = B = C = 25.0
GP11-030	A = B = C = 30.0
GP11-040	A = B = C = 40.0
GP11-050	A = B = C = 50.0

GP12---BK7 High Precision Right Angle Prisms

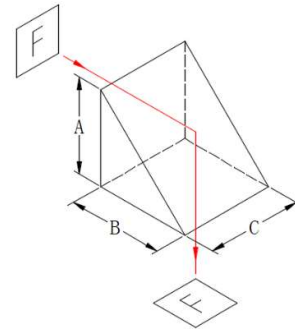
Material:	BK7
Dimension Tolerance:	±0.1mm
Surface Quality:	40/20
Surface Flatness:	λ/4 @632.8nm
Angle Tolerance:	30 arc sec.
Pyramid Error:	10 arc min.
Bevel:	0.25mm x 45°
Coating:	None



Catalog No.	Dimension (mm)
GP12-001	A = B = C = 1.0
GP12-002	A = B = C = 2.0
GP12-005	A = B = C = 5.0
GP12-006	A = B = C = 6.3
GP12-010	A = B = C = 10.0
GP12-012	A = B = C = 12.5
GP12-015	A = B = C = 15.0
GP12-020	A = B = C = 20.0
GP12-025	A = B = C = 25.0
GP12-030	A = B = C = 30.0
GP12-040	A = B = C = 40.0
GP12-050	A = B = C = 50.0

GP13---BK7 Laser Grade Right Angle Prisms

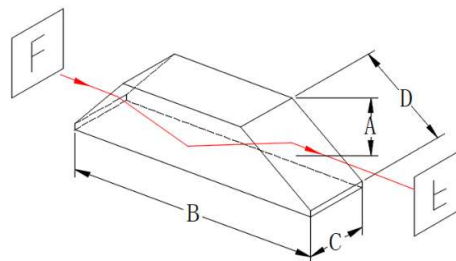
Material:	BK7
Dimension Tolerance:	±0.1mm
Surface Quality:	20/10
Surface Flatness:	$\lambda/10$ @632.8nm
Angle Tolerance:	30 arc sec.
Pyramid Error:	5 arc min.
Bevel:	0.25mm x 45°
Coating:	None



Catalog No.	Dimension (mm)
GP13-005	A = B = C = 5.0
GP13-010	A = B = C = 10.0
GP13-012	A = B = C = 12.5
GP13-015	A = B = C = 15.0
GP13-020	A = B = C = 20.0
GP13-025	A = B = C = 25.0

GP14---BK7 Dove Prisms

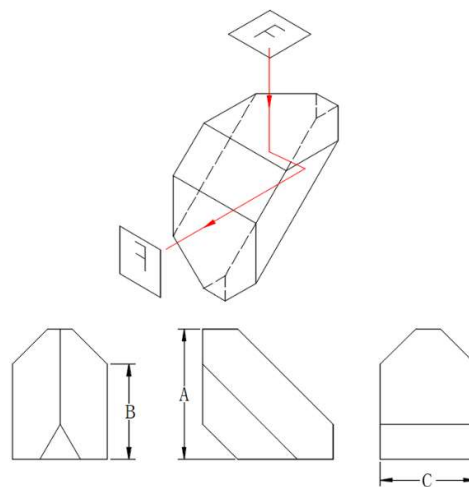
Material: BK7
 Dimension Tolerance (A,B and C): ± 0.2 mm
 Surface Quality: 60/40
 Surface Flatness: $\lambda/2$ @632.8nm
 Angle Tolerance: 3 arc min.
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Height A = C (mm)	B (mm)
GP14-005	5.0	21.1
GP14-010	10.0	42.3
GP14-015	15.0	63.4
GP14-020	20.0	80.0

GP15---BK7 Roof Prisms

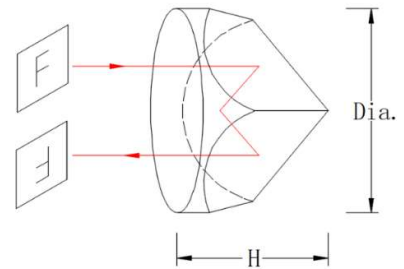
Material: BK7
 Dimension Tolerance: ± 0.2 mm
 Surface Quality: 60/40
 Surface Flatness: $\lambda/2$ @632.8nm
 Roof Angle tolerance: 3 arc sec.
 Other Angle Tolerance: 3 arc min.
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Dimension (mm)			Clear Aperture (mm)
GP15-027	A = 27.4	B = 20.0	C = 20.0	Φ 19.0
GP15-041	A = 41.1	B = 30.0	C = 30.0	Φ 29.0

GP16---BK7 Corner Cube Retroreflectors

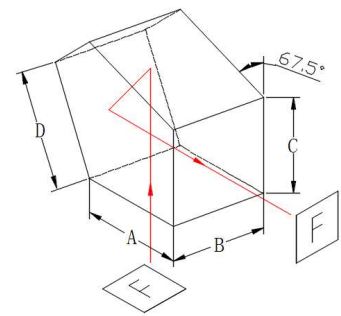
Material: BK7
 Diameter Tolerance: +0/-0.2mm
 Height Tolerance: ±0.2mm
 Beam Deviation: Refer to the table
 Surface Quality: 60/40
 Surface Flatness: $\lambda/4$ @632.8nm on entrance surface
 $\lambda/10$ @632.8nm on reflective surfaces
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Beam Deviation (Arc Seconds)	Dia. (mm)	H (mm)
GP16-015	3	15.0	11.3
GP16-025	3	25.4	19.0
GP16-038	3	38.0	28.5
GP16-050	3	50.8	37.5
GP16-065	10	65	39.1
GP16-072	10	72.5	52.3

GP17---BK7 Penta Prisms

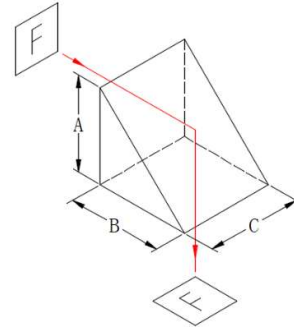
Material: BK7
 Dimension Tolerance: +0/-0.2mm
 Surface Quality: 60/40
 Surface Flatness: $\lambda/2$ @632.8nm
 Beam Deviation: 30 arc sec.
 Bevel: 0.25mm x 45°
 Coating: Entrance/Exit Faces: Single layer MgF2 @ 550nm
 Reflecting Surfaces: Aluminized with Black Paint



Catalog No.	A = B = C (mm)	D (mm)
GP17-005	5.0	5.45
GP17-010	10.0	10.82
GP17-020	20.0	21.65
GP17-030	30.0	32.47
GP17-040	40.0	43.30

GP21---Fused Silica Standard Right Angle Prisms

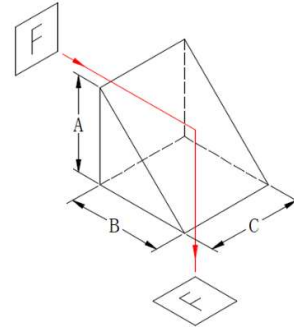
Material:	UV Grade Fused Silica
Dimension Tolerance:	±0.2mm
Surface Quality:	60/40
Surface Flatness:	$\lambda/2$ @632.8nm
Angle Tolerance:	3 arc min.
Pyramid Error:	10 arc min.
Bevel:	0.25mm x 45°
Coating:	None



Catalog No.	Dimension (mm)
GP21-005	A = B = C = 5.0
GP21-006	A = B = C = 6.3
GP21-010	A = B = C = 10.0
GP21-012	A = B = C = 12.5
GP21-015	A = B = C = 15.0
GP21-020	A = B = C = 20.0
GP21-025	A = B = C = 25.0

GP22---Fused Silica High Precision Right Angle Prisms

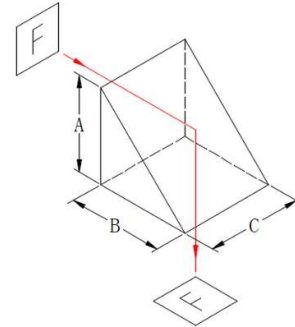
Material:	UV Grade Fused Silica
Dimension Tolerance:	±0.1mm
Surface Quality:	40/20
Surface Flatness:	λ/4 @632.8nm
Angle Tolerance:	30 arc sec.
Pyramid Error:	5 arc min.
Bevel:	0.25mm x 45°
Coating:	None



Catalog No.	Dimension (mm)
GP22-005	A = B = C = 5.0
GP22-006	A = B = C = 6.3
GP22-010	A = B = C = 10.0
GP22-012	A = B = C = 12.5
GP22-015	A = B = C = 15.0
GP22-020	A = B = C = 20.0
GP22-025	A = B = C = 25.0

GP23---Fused Silica Laser Grade Right Angle Prisms

Material:	UV Grade Fused Silica
Dimension Tolerance:	±0.1mm
Surface Quality:	20/10
Surface Flatness:	$\lambda/10$ @632.8nm
Angle Tolerance:	30 arc sec.
Pyramid Error:	5 arc min.
Bevel:	0.25mm x 45°
Coating:	None



Catalog No.	Dimension (mm)
GP23-005	A = B = C = 5.0
GP23-006	A = B = C = 6.3
GP23-010	A = B = C = 10.0
GP23-012	A = B = C = 12.5
GP23-015	A = B = C = 15.0
GP23-020	A = B = C = 20.0
GP23-025	A = B = C = 25.0

Mirror Substrates

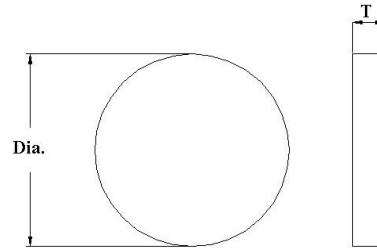
Optical Mirrors are designed to reflect light for a variety of applications, including beam steering, interferometry, imaging, or illumination. Optical Mirrors are used in a wide range of industries, such as life sciences, astronomy, metrology, semiconductor, or solar.

Please refer to appendix C for coating options.

Catalog No.	Mirror Substrates
GM11	BK7 Standard Mirror Substrates
GM12	BK7 High Precision MirrorSubstrates
GM21	Fused Silica Standard Mirror Substrates
GM22	Fused Silica High Precision Mirror Substrates

GM11---BK7 Standard Mirror Substrates

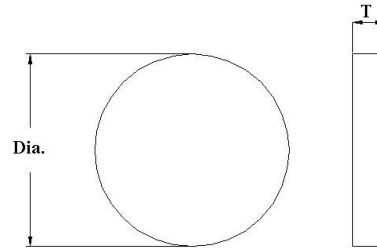
Material: BK7
 Dimension Tolerance: +0/-0.1mm
 Thickness Tolerance: ± 0.2mm
 Surface Quality: 40/20
 Surface Flatness: $\lambda/5$ @632.8nm
 Parallelism: 3 arc min.
 Rear Surface: Fine grund
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GM11-010	10.0	2.0
GM11-012	12.5	2.0
GM11-020	20.0	2.0
GM11-025	25.0	2.0
GM11-038	38.0	4.0
GM11-050	50.0	4.0

GM12---BK7 High Precision Mirror Substrates

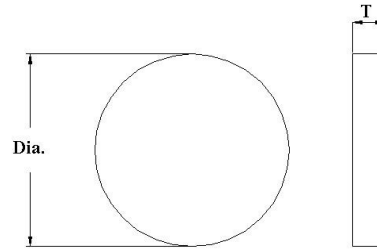
Material: BK7
 Dimension Tolerance: $\pm 0.1\text{mm}$
 Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 10/5
 Surface Flatness: $\lambda/10$ @632.8nm
 Parallelism: 3 arc min.
 Rear Surface: Fine grund
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GM12-010	10.0	2.0
GM12-012	12.5	6.0
GM12-020	20.0	6.0
GM12-025	25.0	6.0
GM12-038	38.0	10.0
GM12-050	50.0	10.0

GM21---Fused Silica Standard Mirror Substrates

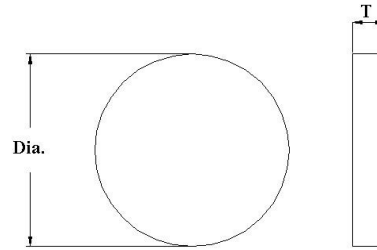
Material: Fused Silica
 Dimension Tolerance: +0/-0.1mm
 Thickness Tolerance: ± 0.2mm
 Surface Quality: 40/20
 Surface Flatness: $\lambda/5$ @632.8nm
 Parallelism: 3 arc min.
 Rear Surface: Fine grund
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GM21-010	10.0	2.0
GM21-012	12.5	2.0
GM21-020	20.0	2.0
GM21-025	25.0	2.0
GM21-038	38.0	6.0
GM21-050	50.0	6.5

GM22---Fused Silica High Precision Mirror Substrates

Material: Fused Silica
 Dimension Tolerance: $\pm 0.1\text{mm}$
 Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 10/5
 Surface Flatness: $\lambda/10$ @632.8nm
 Parallelism: 3 arc min.
 Rear Surface: Fine grund
 Bevel: $0.25\text{mm} \times 45^\circ$
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GM22-010	10.0	2.0
GM22-012	12.5	6.0
GM22-020	20.0	6.0
GM22-025	25.0	6.0
GM22-038	38.0	10.0
GM22-050	50.0	10.0

Windows

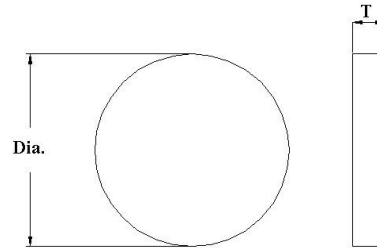
Optical Windows are flat, plane-parallel plates that are often used as protective barriers for electronic sensors or detectors from outside environments. Optical Windows should be selected based on the material transmission or mechanical properties of the substrate. Optical Windows do not cause change in the magnification of a system.

We also offer a variety of windows on materials: Germanium (Ge), Silicon (Si), Zinc Selenide (ZnSe) and CaF₂. Please refer to appendix D for coating options.

Catalog No.	Windows
GW11	BK7 Standard Windows
GW12	BK7 High Precision Windows
GW21	UV Grade Fused Silica Standard Windows
GW22	UV Grade Fused Silica High Precision Windows
GW31	Sapphire Standard Windows
GW32	Sapphire High Precision Windows

GW11---BK7 Standard Windows

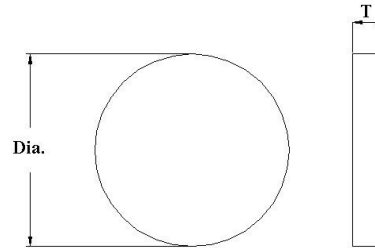
Material: BK7
 Dimension Tolerance: +0/-0.1mm
 Thickness Tolerance: ± 0.2mm
 Surface Quality: 40/20
 Surface Flatness: $\lambda/2$ @632.8nm
 Parallelism: 1 arc min.
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GW11-005	5.0	2.0
GW11-010	10.0	2.0
GW11-012	12.5	2.0
GW11-020	20.0	2.0
GW11-025 -01	25.0	2.0
GW11-025 -02	25.4	2.0
GW11-038	38.0	4.0
GW11-050	50.0	4.0

GW12--- BK7 High Precision Windows

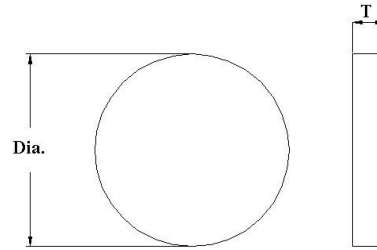
Material: BK7
 Dimension Tolerance: +0/-0.1mm
 Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 20/10
 Surface Flatness: $\lambda/10$ @632.8nm
 Parallelism: 10 arc sec.
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GW12-005	5.0	2.0
GW12-010	10.0	2.0
GW12-012	12.5	6.0
GW12-020	20.0	6.0
GW12-025	25.0	6.0
GW12-038	38.0	10.0
GW12-050	50.0	10.0

GW21---UV Grade Fused Silica Standard Windows

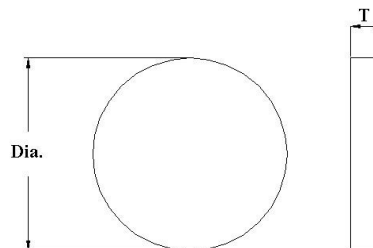
Material: UV Grade Fused Silica
 Dimension Tolerance: $\pm 0.1\text{mm}$
 Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 20/10
 Surface Flatness: $\lambda/2$ @632.8nm
 Parallelism: 1 arc min.
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GW21-005	5.0	2.0
GW21-010	10.0	2.0
GW21-012	12.5	2.0
GW21-020	20.0	2.0
GW21-025-01	25.0	2.0
GW21-025-02	25.4	2.0
GW21-038	38.0	4.0
GW21-050	50.0	4.0

GW22---UV Grade Fused Silica High Precision Windows

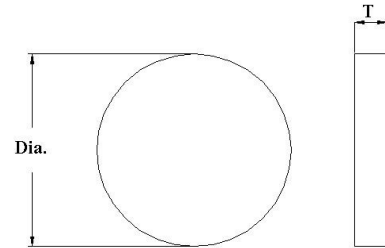
Material: UV Grade Fused Silica
 Dimension Tolerance: $\pm 0.1\text{mm}$
 Thickness Tolerance: $\pm 0.2\text{mm}$
 Surface Quality: 20/10
 Surface Flatness: $\lambda/10$ @632.8nm
 Parallelism: 10 arc sec.
 Bevel: 0.25mm x 45°
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GW22-005	5.0	2.0
GW22-010	10.0	2.0
GW22-012	12.5	6.0
GW22-020	20.0	6.0
GW22-025	25.0	6.0
GW22-038	38.0	10.0
GW22-050	50.0	10.0

GW31---Sapphire Standard Windows

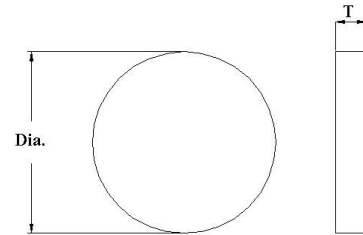
Material: Optical Grade Sapphire
 Dimension Tolerance: $\pm 0.1\text{mm}$
 Thickness Tolerance: $\pm 0.1\text{mm}$
 Surface Quality: 80/50
 Surface Flatness: $\lambda \sim 2\lambda$ @632.8nm per 25.4mm
 Parallelism: 3 arc min.
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GW31-003	3.0	0.5
GW31-005	5.0	0.5
GW31-006	6.3	0.5
GW31-012	12.5	1.0
GW31-020	20.0	1.0
GW31-025	25.0	1.0

GW32---Sapphire High Precision Windows

Material: Optical Grade Sapphire
 Dimension Tolerance: $\pm 0.1\text{mm}$
 Thickness Tolerance: $\pm 0.1\text{mm}$
 Surface Quality: 40/20
 Surface Flatness: $\lambda/4$ @632.8nm per 25.4mm
 Parallelism: 30 arc sec.
 Coating: None



Catalog No.	Diameter(mm)	Thickness(mm)
GW32-003	3.0	1.0
GW32-005	5.0	1.0
GW32-006	6.3	1.0
GW32-012	12.5	2.0
GW32-020	20.0	2.0
GW32-025	25.0	2.0

Filters

Optical Filters are used to selectively transmit or reject a wavelength or range of wavelengths. Optical Filters are used in applications such as fluorescence microscopy, spectroscopy, clinical chemistry, or machine vision inspection. Optical Filters are ideal for life science, imaging, industrial, or defense industries.

Bandpass Interference Filters are designed to transmit a portion of the spectrum, while rejecting all other wavelengths. Notch Filters reject a portion of the spectrum, while transmitting all other wavelengths. Edge or Dichroic Filters transmit wavelengths that are either greater than the cut-on or shorter than the cut-off wavelengths. Color Substrate Filters utilize the material's inherent adsorption and transmission properties, while ND Filters evenly reduce transmission across a portion of the spectrum.

Catalog No.	Filters
GNIF	Narrow Band Interference Filters
GMNF	Metal Coating Neutral Density Filters

Narrow Band Interference Filters

Diameter Tolerance: +0/- 0.1mm
 Thickness Tolerance: ± 0.2 mm
 Surface Quality: 80/50
 CWL Tolerance: ± 2 nm
 FWHM Tolerance: ± 2 nm
 Blocking: OD4 @X Ray ~ 1200 nm
 Operating Temp Range: - 40°C \sim + 60°C



Catalog No.	Dia. (mm)	Thickness (mm)	CWL (nm)	FWHM (nm)	T _{peak} (%)	CA (mm)
GNIF-012-214	12.7	3.3	214	10	>10%	7.8
GNIF-012-254	12.7	3.3	254	10	>15%	7.8
GNIF-012-280	12.7	3.3	280	10	>15%	7.8
GNIF-012-340	12.7	8.2	340	10	>40%	7.8
GNIF-012-405	12.7	4.5	405	10	>40%	7.8
GNIF-012-450	12.7	4.5	450	10	>50%	7.8
GNIF-012-510	12.7	4.5	510	10	>50%	7.8
GNIF-012-546	12.7	4.5	546	10	>50%	7.8
GNIF-012-578	12.7	4.5	578	10	>50%	7.8
GNIF-012-630	12.7	4.5	630	10	>50%	7.8
GNIF-016-214	16.0	3.3	214	10	>10%	11.1
GNIF-016-254	16.0	3.3	254	10	>15%	11.1
GNIF-016-280	16.0	3.3	280	10	>15%	11.1
GNIF-016-340	16.0	8.2	340	10	>40%	11.1
GNIF-016-405	16.0	4.5	405	10	>40%	11.1
GNIF-016-450	16.0	4.5	450	10	>50%	11.1
GNIF-016-510	16.0	4.5	510	10	>50%	11.1
GNIF-016-546	16.0	4.5	546	10	>50%	11.1
GNIF-016-578	16.0	4.5	578	10	>50%	11.1
GNIF-016-630	16.0	4.5	630	10	>50%	11.1
GNIF-025-214	25.4	3.3	214	10	>10%	20.5
GNIF-025-254	25.4	3.3	254	10	>15%	20.5
GNIF-025-280	25.4	3.3	280	10	>15%	20.5
GNIF-025-340	25.4	8.2	340	10	>40%	20.5
GNIF-025-405	25.4	4.5	405	10	>40%	20.5
GNIF-025-450	25.4	4.5	450	10	>50%	20.5
GNIF-025-510	25.4	4.5	510	10	>50%	20.5
GNIF-025-546	25.4	4.5	546	10	>50%	20.5
GNIF-025-578	25.4	4.5	578	10	>50%	20.5
GNIF-025-630	25.4	4.5	630	10	>50%	20.5

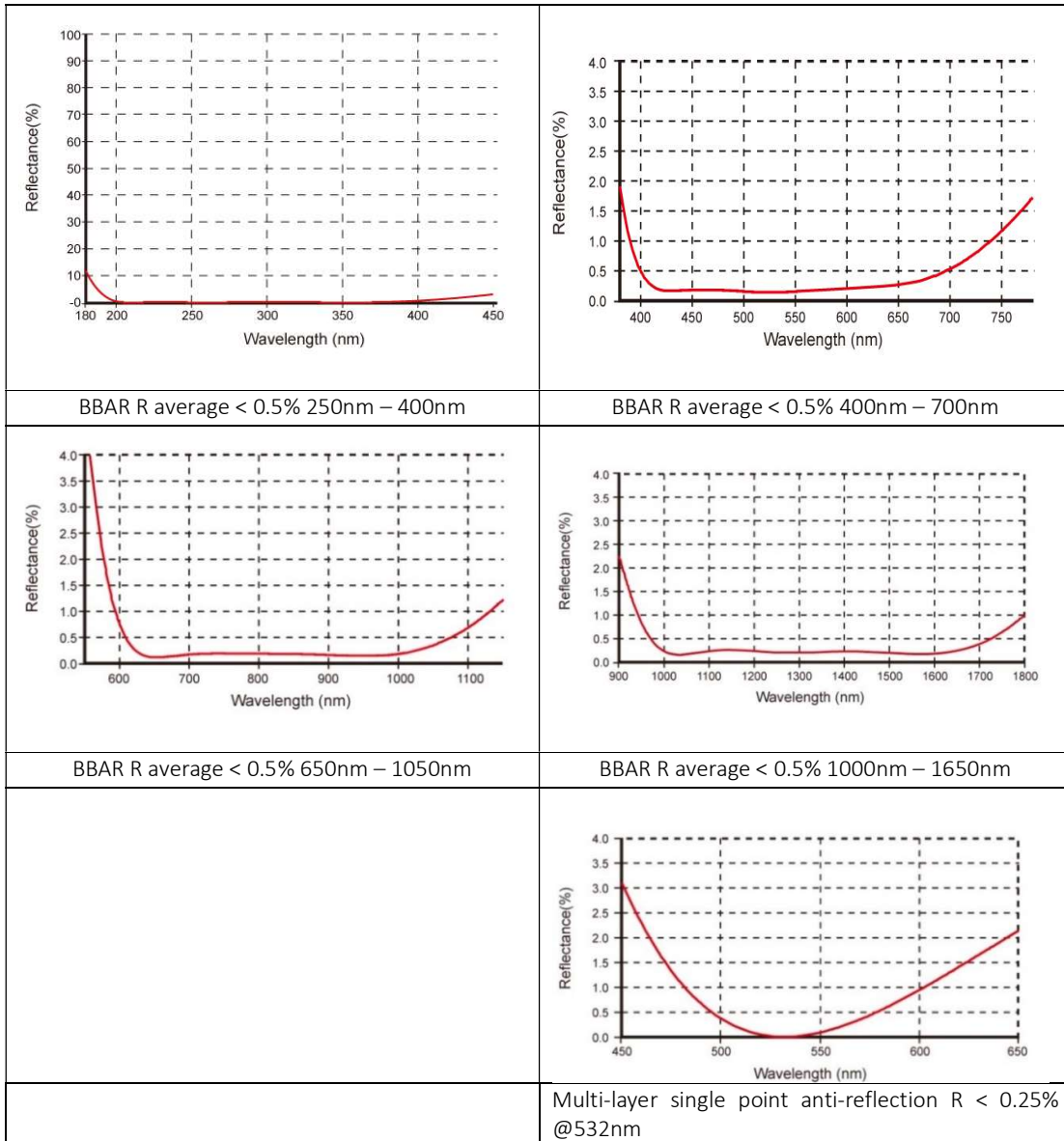
Metal Coating Neutral Density Filters

Diameter Tolerance: +0/- 0.1mm
 Thickness Tolerance: ± 0.2 mm
 Surface Quality: 80/50
 Transmission Specification Wavelength: 550nm



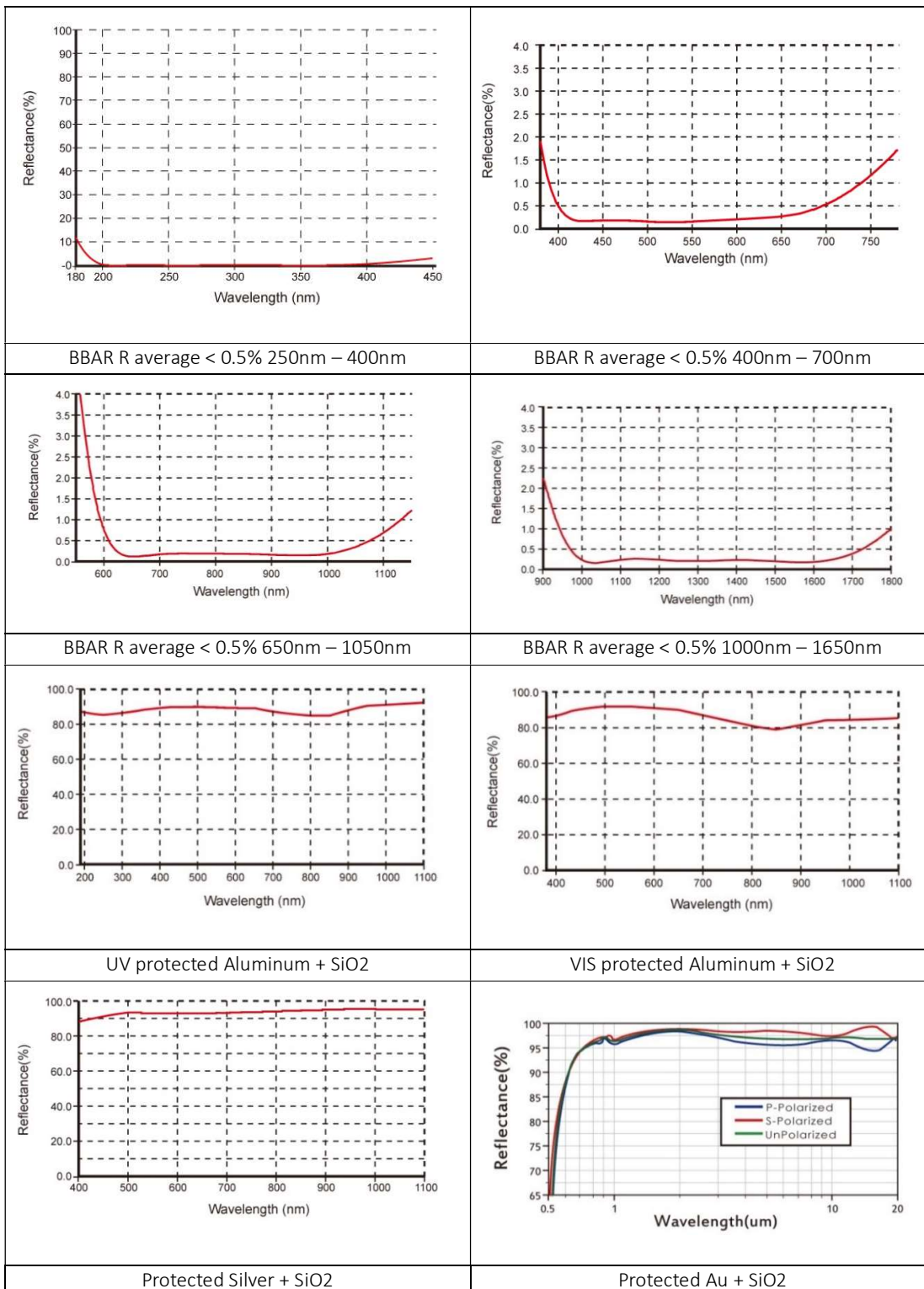
Catalog No.	Dia. (mm)	Thickness (mm)	CWL (nm)	OD	T (%)
GMNF-025-001	25.0	2.0	500	0.1	79
GMNF-025-002	25.0	2.0	500	0.2	63
GMNF-025-004	25.0	2.0	500	0.4	40
GMNF-025-005	25.0	2.0	500	0.5	32
GMNF-025-008	25.0	2.0	500	0.8	16
GMNF-025-010	25.0	2.0	500	1.0	10
GMNF-025-015	25.0	2.0	500	1.5	3.2
GMNF-025-020	25.0	2.0	500	2.0	1.0
GMNF-050-001	50 x 50	2.0	500	0.1	79
GMNF-050-002	50 x 50	2.0	500	0.2	63
GMNF-050-004	50 x 50	2.0	500	0.4	40
GMNF-050-005	50 x 50	2.0	500	0.5	32
GMNF-050-008	50 x 50	2.0	500	0.8	16
GMNF-050-010	50 x 50	2.0	500	1.0	10
GMNF-050-015	50 x 50	2.0	500	1.5	3.2
GMNF-050-020	50 x 50	2.0	500	2.0	1.0

Appendix A, Coating options for lenses



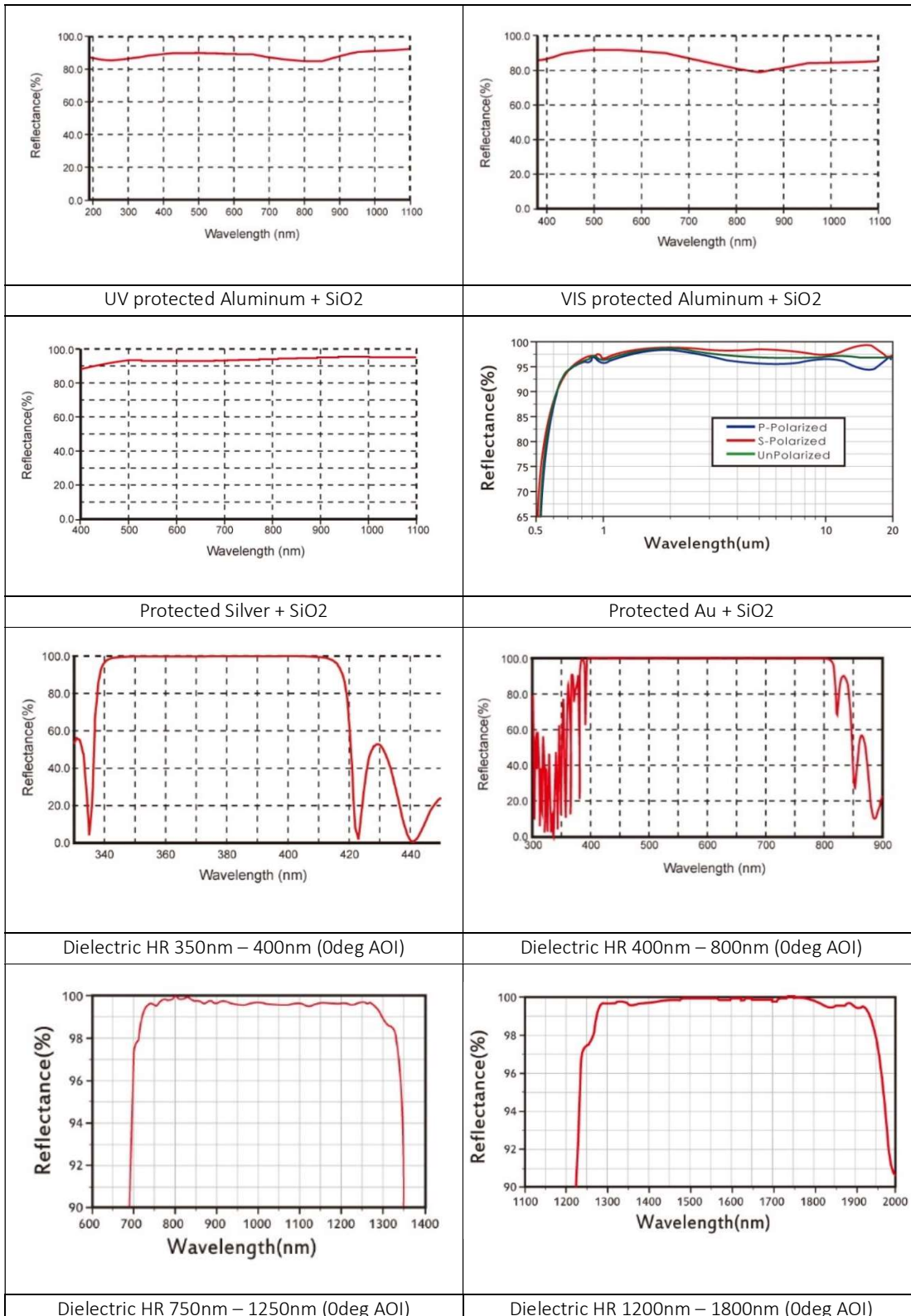
Any custom design coatings are welcome! Please feel free to contact us.

Appendix B, Coating options for prisms



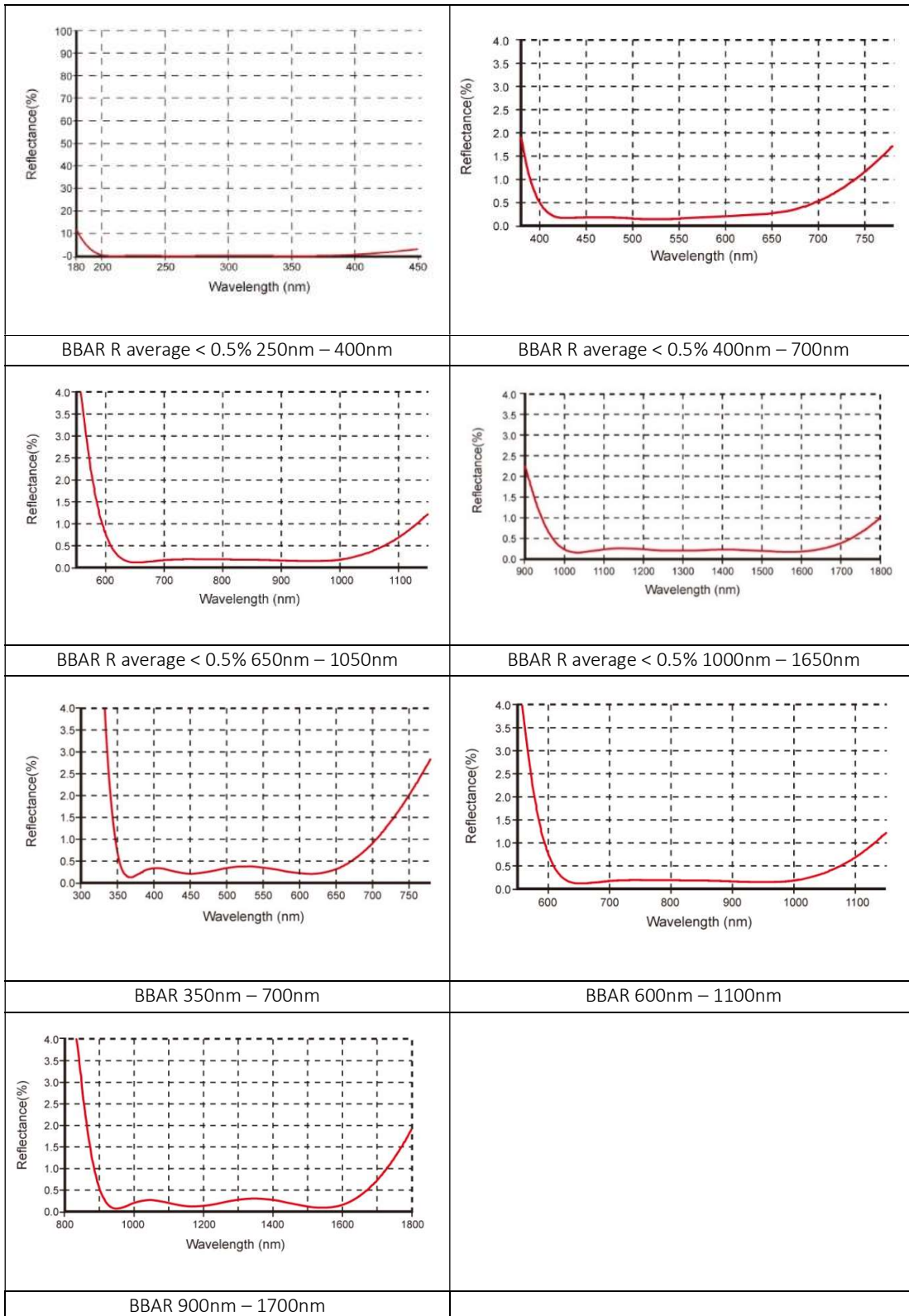
Any custom design coatings are welcome! Please feel free to contact us.

Appendix C, Coating options for mirror substrates



Any custom design coatings are welcome! Please feel free to contact us.

Appendix D, Coating options for windows



Any custom design coatings are welcome! Please feel free to contact us.