02 Optical Components

Optical Components

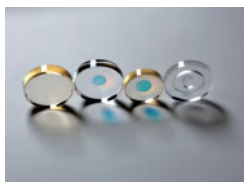
Optical Components are fundamental optical elements to construct optical devices and systems, functioning to converge/diverge, filter, reflect, and alter the polarization states of light. By understanding and harnessing the properties of light waves, optical components can control the propagation, direction, polarization, and intensity of light with precision and accuracy. Optical components find versatile utilities in various applications, such as imaging, microscopes, testing, industrial manufacturing, medical, life science, communications, etc. Specific material substrates and thin film coatings are often selected with a deliberate contrivance to enhance the performance of optical components.

Hangzhou Shalom EO supplies a vast selection of off-the-shelf and custom optical components. This catalog features our Optical Lenses, Optical Windows, Optical Mirrors, Optical Prisms, Laser-grade Optics, Superpolished Optics, Sapphire Optics, and Optics for IPL Devices with a wide operation wavelength range from UV, VIS, to IR. Hundreds of off-the-shelf optical components are available in our online shop in addition to a large access of custom optical components.

The design, fabrication, and characterization of optical components require expertise in optics, materials science, and precision engineering. Hangzhou Shalom EO Implement stringent quality control of the ingredient materials (e.g. by sourcing our materials from elite manufacturers like Corning, SCHOTT, etc.) to overcome challenges of robustness, chemical resistance, and thermal endurance in extreme working conditions. With advanced production facilities, cutting-edge production technologies (like ultrafast-enhanced coating, super-polishing, Kyropoulos Sapphire growth method), and forefront designing intelligence, Shalom EO's engineers and production line are competent at and committed to endowing our optical components with the optimized optical excellence to enable the flexible manipulation of light. All the products will go through in-process inspections during the production course and further tests before despatch to ensure the parameters of optical components meet or exceed the published specifications, prioritizing our consumers' interests.

Optical Lenses

Optical Windows



Superpolished Optics

Optical Mirrors

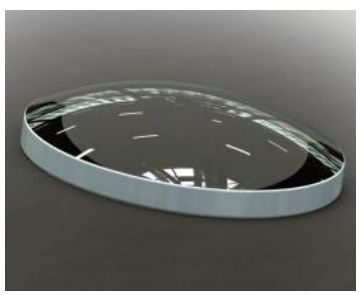
Optical Prisms

Optical Lenses

Optical Lenses are optical components that are transparent to certain light spectrums, and oriented for either collecting or diverging light. The functions of optical lenses encompass laser processing, image magnification, fiber collimation, etc. and the applications of optical lenses are extensive, ranging from life science, and medical diagnoses, to defense and industrial production.

Hangzhou Shalom EO offers Stocked and Custom Optical Lenses, including Plano-convex, Plano-concave, Double Convex/Concave Lenses, Meniscus Lenses, Achromatic Doublet Lenses, Ball/Half Ball Lenses, Cylinderical Lenses, Rod Lenses, Axicons, and Aspheric Lenses. The substrate materials include N-BK7, UV Fused Silica, Flint Glass, and Sapphire, while for Infrared wavelengths Germanium (Ge), Zinc Selenide (ZnSe) and Silicon (Si), etc. are also available. All categories of lenses could be deposited with anti-reflection coatings according to your requirements. Hangzhou Shalom EO is a leading supplier of optical lenses. With over ten years of experience, we have developed our high-tech production line and in-house ISO9001-compliant inspection labs to ensure the quality of our products before dispatch.

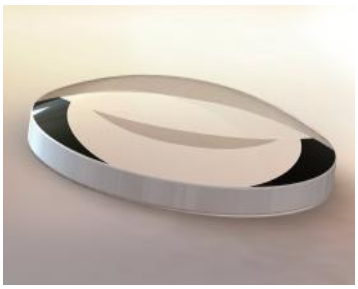
Plano-Convex Lenses

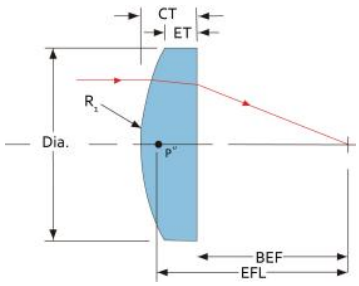


Plano-convex (PCX) lens is an optical lens with one plane face and one convex face, and a positive focal length, utilized for collecting, focusing collimated lights, collimating lights from a point source, or reducing the focal length of a lens group. Compared to Biconvex lenses, Plano-convex lenses have two unidentical sides and therefore work best for an infinite absolute conjugate ratio (objective distance: image distance). However, plano-convex lenses still reduce spherical aberrations to a quite low extent when the absolute conjugate ratio is greater than 5:1. For conjugate ratio below 5:1, consider using plano-convex lenses in pairs or a biconvex lens.

Hangzhou Shalom EO offers Stocked and Custom Plano-convex Lenses. While you can browse and shop Off-the-Shelf N-BK7 Plano Convex Lenses, Off-the-Shelf UVFS Plano Convex Lenses, Off-the-Shelf CaF2 Plano Convex Lenses, we also provide custom plano convex lenses made from a wide assortment of optical materials including sapphire, Flint Glass/BaF2/Ge/Si, etc. that are competent for various incorporation into emitters, detectors, imaging instruments, lasers, fiber optics, etc. Our N-BK7 plano-convex lens features a diameter of 6-75mm, and a focal length of 10-1000mm, while other dimensions and focal lengths could be customized. These lenses feature lambda/4 irregularities and 40/20 scratch/dig. The UV Fused Silica plano-convex lenses highlight a high-precision version of lambda/10 irregularities and 10/5 S/D, or a normal version of lambda/4 irregularities and 40/20 S/D, the glass materials are sourced from Corning (Corning 7980-0F, Corning 7980-1D). Our CaF2 plano-convex lenses (standard) have diameters ranging from 12.7mm to 25.4mm and focal lengths ranging from 20mm to 1000mm, encompassing short focal lengths, mid-focal lengths, and long focal lengths. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch to secure your interest. Our inspection procedure includes an in-process checking stage of the optical properties of lenses and a final test of coatings, dimension precisions, and the visual observation of scratch/dig, apertures, inclusions, etc.

λ/4-λ N-BK7 Plano-convex Lenses





- Wavelength range: 350-2200nm
- Diameter range: 0.5mm to 300mm
- Standardized focal lengths and diameters convenient for OEM
- Ideal for various applications in the visible to NIR region
- Coating options: standard uncoated and BBAR coatings, custom broadband AR coatings, V-coatings
- A wide range of focal lengths: Standard 10-1000mm, or custom
- Versatile Applications: detectors, imaging instruments, lasers, fiber optics, etc.

N-BK7 glass is a RoHS-compliant borosilicate material prevalent for uses in the visible and NIR spectrum (especially when it comes to manufacturing precision visible components). N-BK7 features high optical homogeneities, great resistance to scratches and abrasions, low cost, and low inclusion content, it is an ideal substitute for UV Fused Silica when high UV transmission is not required, and a preferred alternative for CaF2 at the 1.65-2.3 micro-operating wavelength region with the concern of lower manufacturing costs.

Hangzhou Shalom EO offers Stocked and Custom N-BK7 Plano-convex Lenses with a diameter range of 0.5-300mm, that allows for flexible incorporation into emitters, detectors, imaging instruments, lasers, fiber optics, etc. Our N-BK7 plano-convex lenses have a wide optional diameter range of 6-75mm, and a focal length range of 10-1000mm, while other dimensions and focal lengths could be customized. These lenses feature λ/4-λ irregularities and 40/20 scratch/dig. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch to secure your interest. Our inspection procedure includes an in-process checking stage of the optical properties of lenses and a final test of coatings, dimension precisions, and the visual observation of scratch/dig, apertures, inclusions, etc.

Specifications:

Material	N-BK7
Design Wavelength	587.6nm
Coating	Uncoated/BBAR
Surface Quality (S/D)	40/20
Irregularity@632.8nm	λ/4-λ
Centering Error	≤2 arc min
Clear Aperture	90%
Protective Chamfer	0.2mmx45°
Diameter Tolerance	+0/-0.1mm
Thickness Tolerance	+/-0.1mm

Product List of λ/4-λ N-BK7 Plano-convex Lenses

Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1101-065	N-BK7	6.0mm	2.5mm	1.5mm	10.0mm	Uncoated	$11.00
1101-115	N-BK7	6.0mm	2.5mm	1.5mm	10.0mm	350-650nm AR Coating	$17.00
1101-116	N-BK7	6.0mm	2.5mm	1.5mm	10.0mm	650-1050nm AR Coating	$17.00
1101-117	N-BK7	6.0mm	2.5mm	1.5mm	10.0mm	1050-1580nm AR Coating	$19.00
1101-066	N-BK7	6.0mm	2.3mm	1.5mm	12.0mm	Uncoated	$11.00
1101-118	N-BK7	6.0mm	2.3mm	1.5mm	12.0mm	350-650nm AR Coating	$17.00
1101-119	N-BK7	6.0mm	2.3mm	1.5mm	12.0mm	650-1050nm AR Coating	$17.00
1101-120	N-BK7	6.0mm	2.3mm	1.5mm	12.0mm	1050-1580nm AR Coating	$19.00
1101-067	N-BK7	6.0mm	2.1mm	1.5mm	15.0mm	Uncoated	$11.00
1101-121	N-BK7	6.0mm	2.1mm	1.5mm	15.0mm	350-650nm AR Coating	$17.00

Product List of λ/4-λ N-BK7 Plano-convex Lenses

Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1101-122	N-BK7	6.0mm	2.1mm	1.5mm	15.0mm	650-1050nm AR Coating	$17.00
1101-123	N-BK7	6.0mm	2.1mm	1.5mm	15.0mm	1050-1580nm AR Coating	$19.00
1101-068	N-BK7	6.0mm	1.8mm	1.5mm	30.0mm	Uncoated	$11.00
1101-124	N-BK7	6.0mm	1.8mm	1.5mm	30.0mm	350-650nm AR Coating	$17.00
1101-125	N-BK7	6.0mm	1.8mm	1.5mm	30.0mm	650-1050nm AR Coating	$17.00
1101-126	N-BK7	6.0mm	1.8mm	1.5mm	30.0mm	1050-1580nm AR Coating	$19.00
1101-069	N-BK7	9.0mm	3.4mm	1.5mm	12.0mm	Uncoated	$11.00
1101-127	N-BK7	9.0mm	3.4mm	1.5mm	12.0mm	350-650nm AR Coating	$17.00
1101-128	N-BK7	9.0mm	3.4mm	1.5mm	12.0mm	650-1050nm AR Coating	$17.00
1101-129	N-BK7	9.0mm	3.4mm	1.5mm	12.0mm	1050-1580nm AR Coating	$19.00
1101-070	N-BK7	9.0mm	2.5mm	1.5mm	20.0mm	Uncoated	$11.00
1101-130	N-BK7	9.0mm	2.5mm	1.5mm	20.0mm	350-650nm AR Coating	$17.00
1101-131	N-BK7	9.0mm	2.5mm	1.5mm	20.0mm	650-1050nm AR Coating	$17.00
1101-132	N-BK7	9.0mm	2.5mm	1.5mm	20.0mm	1050-1580nm AR Coating	$19.00
1101-071	N-BK7	12.7mm	5.1mm	1.8mm	15.0mm	Uncoated	$11.00
1101-133	N-BK7	12.7mm	5.1mm	1.8mm	15.0mm	350-650nm AR Coating	$17.00
1101-134	N-BK7	12.7mm	5.1mm	1.8mm	15.0mm	650-1050nm AR Coating	$17.00
1101-135	N-BK7	12.7mm	5.1mm	1.8mm	15.0mm	1050-1580nm AR Coating	$19.00
1101-001	N-BK7	12.7mm	4.5mm	2.3mm	20.0mm	Uncoated	$13.50
1101-002	N-BK7	12.7mm	4.5mm	2.3mm	20.0mm	400-700nm AR	$21.00
1101-003	N-BK7	12.7mm	4.5mm	2.3mm	20.0mm	700-1100nm AR	$21.00
1101-004	N-BK7	12.7mm	4.5mm	2.3mm	20.0mm	1100-1650nm AR	$21.00
1101-072	N-BK7	12.7mm	3.5mm	1.8mm	25.0mm	Uncoated	$11.00
1101-136	N-BK7	12.7mm	3.5mm	1.8mm	25.0mm	350-650nm AR Coating	$17.00
1101-137	N-BK7	12.7mm	3.5mm	1.8mm	25.0mm	650-1050nm AR Coating	$17.00
1101-138	N-BK7	12.7mm	3.5mm	1.8mm	25.0mm	1050-1580nm AR Coating	$19.00
1101-005	N-BK7	12.7mm	3.5mm	2.1mm	30.0mm	Uncoated	$13.50
1101-006	N-BK7	12.7mm	3.5mm	2.1mm	30.0mm	400-700nm AR	$21.00
1101-007	N-BK7	12.7mm	3.5mm	2.1mm	30.0mm	700-1100nm AR	$21.00
1101-008	N-BK7	12.7mm	3.5mm	2.1mm	30.0mm	1100-1650nm AR	$21.00
1101-009	N-BK7	12.7mm	3.0mm	2.0mm	40.0mm	Uncoated	$13.50
1101-010	N-BK7	12.7mm	3.0mm	2.0mm	40.0mm	400-700nm AR	$21.00
1101-011	N-BK7	12.7mm	3.0mm	2.0mm	40.0mm	700-1100nm AR	$21.00
1101-012	N-BK7	12.7mm	3.0mm	2.0mm	40.0mm	1100-1650nm AR	$21.00
1101-013	N-BK7	12.7mm	3.0mm	2.2mm	50.0mm	Uncoated	$13.50
1101-014	N-BK7	12.7mm	3.0mm	2.2mm	50.0mm	400-700nm AR	$21.00
1101-015	N-BK7	12.7mm	3.0mm	2.2mm	50.0mm	700-1100nm AR	$21.00
1101-016	N-BK7	12.7mm	3.0mm	2.2mm	50.0mm	1100-1650nm AR	$21.00
1101-017	N-BK7	12.7mm	3.0mm	2.6mm	100.0mm	Uncoated	$13.50
1101-018	N-BK7	12.7mm	3.0mm	2.6mm	100.0mm	400-700nm AR	$21.00
1101-019	N-BK7	12.7mm	3.0mm	2.6mm	100.0mm	700-1100nm AR	$21.00
1101-020	N-BK7	12.7mm	3.0mm	2.6mm	100.0mm	1100-1650nm AR	$21.00
1101-073	N-BK7	18.0mm	7.1mm	1.8mm	20.0mm	Uncoated	$11.00
1101-139	N-BK7	18.0mm	7.1mm	1.8mm	20.0mm	350-650nm AR Coating	$17.00
1101-140	N-BK7	18.0mm	7.1mm	1.8mm	20.0mm	650-1050nm AR Coating	$17.00
1101-141	N-BK7	18.0mm	7.1mm	1.8mm	20.0mm	1050-1580nm AR Coating	$19.00
1101-074	N-BK7	18.0mm	5.5mm	1.8mm	25.0mm	Uncoated	$11.00
1101-142	N-BK7	18.0mm	5.5mm	1.8mm	25.0mm	350-650nm AR Coating	$17.00
1101-143	N-BK7	18.0mm	5.5mm	1.8mm	25.0mm	650-1050nm AR Coating	$17.00
1101-144	N-BK7	18.0mm	5.5mm	1.8mm	25.0mm	1050-1580nm AR Coating	$19.00
1101-075	N-BK7	18.0mm	4.7mm	1.8mm	30.0mm	Uncoated	$11.00
1101-145	N-BK7	18.0mm	4.7mm	1.8mm	30.0mm	350-650nm AR Coating	$17.00
1101-146	N-BK7	18.0mm	4.7mm	1.8mm	30.0mm	650-1050nm AR Coating	$17.00
1101-147	N-BK7	18.0mm	4.7mm	1.8mm	30.0mm	1050-1580nm AR Coating	$19.00
1101-076	N-BK7	18.0mm	3.4mm	1.8mm	50.0mm	Uncoated	$11.00
1101-148	N-BK7	18.0mm	3.4mm	1.8mm	50.0mm	350-650nm AR Coating	$17.00
1101-149	N-BK7	18.0mm	3.4mm	1.8mm	50.0mm	650-1050nm AR Coating	$17.00
1101-150	N-BK7	18.0mm	3.4mm	1.8mm	50.0mm	1050-1580nm AR Coating	$19.00
1101-077	N-BK7	25.0mm	11.7mm	2.0mm	25.4mm	Uncoated	$12.00
1101-151	N-BK7	25.0mm	11.7mm	2.0mm	25.4mm	350-650nm AR Coating	$18.50
1101-152	N-BK7	25.0mm	11.7mm	2.0mm	25.4mm	650-1050nm AR Coating	$18.50
1101-153	N-BK7	25.0mm	11.7mm	2.0mm	25.4mm	1050-1580nm AR Coating	$19.00
1101-078	N-BK7	25.0mm	5.3mm	2.1mm	50.0mm	Uncoated	$12.00
1101-154	N-BK7	25.0mm	5.3mm	2.1mm	50.0mm	350-650nm AR Coating	$18.50

Product List of λ/4-λ N-BK7 Plano-convex Lenses

Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1101-155	N-BK7	25.0mm	5.3mm	2.1mm	50.0mm	650-1050nm AR Coating	$18.50
1101-156	N-BK7	25.0mm	5.3mm	2.1mm	50.0mm	1050-1580nm AR Coating	$19.00
1101-079	N-BK7	25.0mm	4.1mm	2.0mm	75.0mm	Uncoated	$12.00
1101-157	N-BK7	25.0mm	4.1mm	2.0mm	75.0mm	350-650nm AR Coating	$18.50
1101-158	N-BK7	25.0mm	4.1mm	2.0mm	75.0mm	650-1050nm AR Coating	$18.50
1101-159	N-BK7	25.0mm	4.1mm	2.0mm	75.0mm	1050-1580nm AR Coating	$19.00
1101-080	N-BK7	25.0mm	3.6mm	2.1mm	100.0mm	Uncoated	$13.00
1101-160	N-BK7	25.0mm	3.6mm	2.1mm	100.0mm	350-650nm AR Coating	$19.50
1101-161	N-BK7	25.0mm	3.6mm	2.1mm	100.0mm	650-1050nm AR Coating	$19.50
1101-162	N-BK7	25.0mm	3.6mm	2.1mm	100.0mm	1050-1580nm AR Coating	$20.00
1101-081	N-BK7	25.0mm	2.8mm	2.0mm	200.0mm	Uncoated	$13.50
1101-163	N-BK7	25.0mm	2.8mm	2.0mm	200.0mm	350-650nm AR Coating	$20.00
1101-164	N-BK7	25.0mm	2.8mm	2.0mm	200.0mm	650-1050nm AR Coating	$20.00
1101-165	N-BK7	25.0mm	2.8mm	2.0mm	200.0mm	1050-1580nm AR Coating	$20.50
1101-082	N-BK7	25.4mm	11.7mm	1.8mm	25.4mm	Uncoated	$13.00
1101-166	N-BK7	25.4mm	11.7mm	1.8mm	25.4mm	350-650nm AR Coating	$19.50
1101-167	N-BK7	25.4mm	11.7mm	1.8mm	25.4mm	650-1050nm AR Coating	$19.50
1101-168	N-BK7	25.4mm	11.7mm	1.8mm	25.4mm	1050-1580nm AR Coating	$20.00
1101-083	N-BK7	25.4mm	8.6mm	2.0mm	30.0mm	Uncoated	$12.00
1101-169	N-BK7	25.4mm	8.6mm	2.0mm	30.0mm	350-650nm AR Coating	$18.50
1101-170	N-BK7	25.4mm	8.6mm	2.0mm	30.0mm	650-1050nm AR Coating	$18.50
1101-171	N-BK7	25.4mm	8.6mm	2.0mm	30.0mm	1050-1580nm AR Coating	$19.00
1101-084	N-BK7	25.4mm	7.2mm	2.0mm	35.0mm	Uncoated	$12.00
1101-172	N-BK7	25.4mm	7.2mm	2.0mm	35.0mm	350-650nm AR Coating	$18.50
1101-173	N-BK7	25.4mm	7.2mm	2.0mm	35.0mm	650-1050nm AR Coating	$18.50
1101-174	N-BK7	25.4mm	7.2mm	2.0mm	35.0mm	1050-1580nm AR Coating	$19.00
1101-085	N-BK7	25.4mm	6.4mm	2.0mm	40.0mm	Uncoated	$12.00
1101-175	N-BK7	25.4mm	6.4mm	2.0mm	40.0mm	350-650nm AR Coating	$18.50
1101-176	N-BK7	25.4mm	6.4mm	2.0mm	40.0mm	650-1050nm AR Coating	$18.50
1101-177	N-BK7	25.4mm	6.4mm	2.0mm	40.0mm	1050-1580nm AR Coating	$19.00
1101-021	N-BK7	25.4mm	5.0mm	1.7mm	50.0mm	Uncoated	$13.00
1101-022	N-BK7	25.4mm	5.0mm	1.7mm	50.0mm	400-700nm AR	$19.00
1101-023	N-BK7	25.4mm	5.0mm	1.7mm	50.0mm	700-1100nm AR	$19.00
1101-024	N-BK7	25.4mm	5.0mm	1.7mm	50.0mm	1100-1650nm AR	$21.00
1101-025	N-BK7	25.4mm	4.0mm	1.9mm	75.0mm	Uncoated	$13.00
1101-026	N-BK7	25.4mm	4.0mm	1.9mm	75.0mm	400-700nm AR	$19.00
1101-027	N-BK7	25.4mm	4.0mm	1.9mm	75.0mm	700-1100nm AR	$19.00
1101-028	N-BK7	25.4mm	4.0mm	1.9mm	75.0mm	1100-1650nm AR	$21.00
1101-029	N-BK7	25.4mm	3.5mm	1.9mm	100.0mm	Uncoated	$13.00
1101-030	N-BK7	25.4mm	3.5mm	1.9mm	100.0mm	400-700nm AR	$19.00
1101-031	N-BK7	25.4mm	3.5mm	1.9mm	100.0mm	700-1100nm AR	$19.00
1101-032	N-BK7	25.4mm	3.5mm	1.9mm	100.0mm	1100-1650nm AR	$21.00
1101-033	N-BK7	25.4mm	3.2mm	1.9mm	125.0mm	Uncoated	$13.00
1101-034	N-BK7	25.4mm	3.2mm	1.9mm	125.0mm	400-700nm AR	$19.00
1101-035	N-BK7	25.4mm	3.2mm	1.9mm	125.0mm	700-1100nm AR	$19.00
1101-036	N-BK7	25.4mm	3.2mm	1.9mm	125.0mm	1100-1650nm AR	$21.00
1101-037	N-BK7	25.4mm	3.0mm	2.0mm	150.0mm	Uncoated	$13.00
1101-038	N-BK7	25.4mm	3.0mm	2.0mm	150.0mm	400-700nm AR	$19.00
1101-039	N-BK7	25.4mm	3.0mm	2.0mm	150.0mm	700-1100nm AR	$19.00
1101-040	N-BK7	25.4mm	3.0mm	2.0mm	150.0mm	1100-1650nm AR	$21.00
1101-086	N-BK7	25.4mm	2.9mm	2.0mm	175.0mm	Uncoated	$13.50
1101-178	N-BK7	25.4mm	2.9mm	2.0mm	175.0mm	350-650nm AR Coating	$20.00
1101-179	N-BK7	25.4mm	2.9mm	2.0mm	175.0mm	650-1050nm AR Coating	$20.00
1101-180	N-BK7	25.4mm	2.9mm	2.0mm	175.0mm	1050-1580nm AR Coating	$20.50
1101-041	N-BK7	25.4mm	3.0mm	2.2mm	200.0mm	Uncoated	$15.00
1101-042	N-BK7	25.4mm	3.0mm	2.2mm	200.0mm	400-700nm AR	$21.00
1101-043	N-BK7	25.4mm	3.0mm	2.2mm	200.0mm	700-1100nm AR	$21.00
1101-044	N-BK7	25.4mm	3.0mm	2.2mm	200.0mm	1100-1650nm AR	$21.00
1101-087	N-BK7	25.4mm	2.6mm	2.0mm	250.0mm	Uncoated	$15.00
1101-181	N-BK7	25.4mm	2.6mm	2.0mm	250.0mm	350-650nm AR Coating	$21.00
1101-182	N-BK7	25.4mm	2.6mm	2.0mm	250.0mm	650-1050nm AR Coating	$21.00
1101-183	N-BK7	25.4mm	2.6mm	2.0mm	250.0mm	1050-1580nm AR Coating	$21.00
1101-045	N-BK7	25.4mm	3.0mm	2.5mm	300.0mm	Uncoated	$15.00
1101-046	N-BK7	25.4mm	3.0mm	2.5mm	300.0mm	400-700nm AR	$21.00

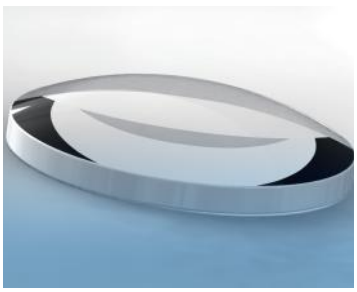
Product List of λ/4-λ N-BK7 Plano-convex Lenses

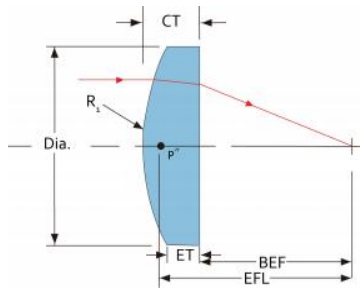
Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1101-047	N-BK7	25.4mm	3.0mm	2.5mm	300.0mm	700-1100nm AR	$21.00
1101-048	N-BK7	25.4mm	3.0mm	2.5mm	300.0mm	1100-1650nm AR	$21.00
1101-049	N-BK7	25.4mm	3.0mm	2.6mm	400.0mm	Uncoated	$15.00
1101-050	N-BK7	25.4mm	3.0mm	2.6mm	400.0mm	400-700nm AR	$21.00
1101-051	N-BK7	25.4mm	3.0mm	2.6mm	400.0mm	700-1100nm AR	$21.00
1101-052	N-BK7	25.4mm	3.0mm	2.6mm	400.0mm	1100-1650nm AR	$21.00
1101-053	N-BK7	25.4mm	3.0mm	2.7mm	500.0mm	Uncoated	$15.00
1101-054	N-BK7	25.4mm	3.0mm	2.7mm	500.0mm	400-700nm AR	$21.00
1101-055	N-BK7	25.4mm	3.0mm	2.7mm	500.0mm	700-1100nm AR	$21.00
1101-056	N-BK7	25.4mm	3.0mm	2.7mm	500.0mm	1100-1650nm AR	$21.00
1101-057	N-BK7	25.4mm	3.0mm	2.8mm	750.0mm	Uncoated	$15.00
1101-058	N-BK7	25.4mm	3.0mm	2.8mm	750.0mm	400-700nm AR	$21.00
1101-059	N-BK7	25.4mm	3.0mm	2.8mm	750.0mm	700-1100nm AR	$21.00
1101-060	N-BK7	25.4mm	3.0mm	2.8mm	750.0mm	1100-1650nm AR	$21.00
1101-061	N-BK7	25.4mm	3.0mm	2.8mm	1000.0mm	Uncoated	$15.00
1101-062	N-BK7	25.4mm	3.0mm	2.8mm	1000.0mm	400-700nm AR	$21.00
1101-063	N-BK7	25.4mm	3.0mm	2.8mm	1000.0mm	700-1100nm AR	$21.00
1101-064	N-BK7	25.4mm	3.0mm	2.8mm	1000.0mm	1100-1650nm AR	$21.00
1101-088	N-BK7	30.0mm	9.0mm	2.5mm	40.0mm	Uncoated	$12.00
1101-184	N-BK7	30.0mm	9.0mm	2.5mm	40.0mm	350-650nm AR Coating	$18.50
1101-185	N-BK7	30.0mm	9.0mm	2.5mm	40.0mm	650-1050nm AR Coating	$18.50
1101-186	N-BK7	30.0mm	9.0mm	2.5mm	40.0mm	1050-1580nm AR Coating	$19.00
1101-089	N-BK7	30.0mm	7.3mm	2.5mm	50.0mm	Uncoated	$12.00
1101-187	N-BK7	30.0mm	7.3mm	2.5mm	50.0mm	350-650nm AR Coating	$18.50
1101-188	N-BK7	30.0mm	7.3mm	2.5mm	50.0mm	650-1050nm AR Coating	$18.50
1101-189	N-BK7	30.0mm	7.3mm	2.5mm	50.0mm	1050-1580nm AR Coating	$19.00
1101-090	N-BK7	30.0mm	5.5mm	2.5mm	75.0mm	Uncoated	$12.00
1101-190	N-BK7	30.0mm	5.5mm	2.5mm	75.0mm	350-650nm AR Coating	$18.50
1101-191	N-BK7	30.0mm	5.5mm	2.5mm	75.0mm	650-1050nm AR Coating	$18.50
1101-192	N-BK7	30.0mm	5.5mm	2.5mm	75.0mm	1050-1580nm AR Coating	$19.00
1101-091	N-BK7	30.0mm	4.7mm	2.5mm	100.0mm	Uncoated	$13.00
1101-193	N-BK7	30.0mm	4.7mm	2.5mm	100.0mm	350-650nm AR Coating	$19.50
1101-194	N-BK7	30.0mm	4.7mm	2.5mm	100.0mm	650-1050nm AR Coating	$19.50
1101-195	N-BK7	30.0mm	4.7mm	2.5mm	100.0mm	1050-1580nm AR Coating	$20.00
1101-092	N-BK7	30.0mm	4.3mm	2.5mm	120.0mm	Uncoated	$13.00
1101-196	N-BK7	30.0mm	4.3mm	2.5mm	120.0mm	350-650nm AR Coating	$19.50
1101-197	N-BK7	30.0mm	4.3mm	2.5mm	120.0mm	650-1050nm AR Coating	$19.50
1101-198	N-BK7	30.0mm	4.3mm	2.5mm	120.0mm	1050-1580nm AR Coating	$20.00
1101-093	N-BK7	30.0mm	3.1mm	1.6mm	150.0mm	Uncoated	$13.50
1101-199	N-BK7	30.0mm	3.1mm	1.6mm	150.0mm	350-650nm AR Coating	$20.00
1101-200	N-BK7	30.0mm	3.1mm	1.6mm	150.0mm	650-1050nm AR Coating	$20.00
1101-201	N-BK7	30.0mm	3.1mm	1.6mm	150.0mm	1050-1580nm AR Coating	$20.50
1101-094	N-BK7	30.0mm	2.8mm	1.7mm	200.0mm	Uncoated	$14.00
1101-202	N-BK7	30.0mm	2.8mm	1.7mm	200.0mm	350-650nm AR Coating	$20.00
1101-203	N-BK7	30.0mm	2.8mm	1.7mm	200.0mm	650-1050nm AR Coating	$20.00
1101-204	N-BK7	30.0mm	2.8mm	1.7mm	200.0mm	1050-1580nm AR Coating	$20.50
1101-095	N-BK7	30.0mm	2.6mm	1.7mm	250.0mm	Uncoated	$14.00
1101-205	N-BK7	30.0mm	2.6mm	1.7mm	250.0mm	350-650nm AR Coating	$20.50
1101-206	N-BK7	30.0mm	2.6mm	1.7mm	250.0mm	650-1050nm AR Coating	$20.50
1101-207	N-BK7	30.0mm	2.6mm	1.7mm	250.0mm	1050-1580nm AR Coating	$21.00
1101-096	N-BK7	30.0mm	2.5mm	1.8mm	300.0mm	Uncoated	$14.00
1101-208	N-BK7	30.0mm	2.5mm	1.8mm	300.0mm	350-650nm AR Coating	$20.50
1101-209	N-BK7	30.0mm	2.5mm	1.8mm	300.0mm	650-1050nm AR Coating	$20.50
1101-210	N-BK7	30.0mm	2.5mm	1.8mm	300.0mm	1050-1580nm AR Coating	$21.00
1101-097	N-BK7	30.0mm	2.3mm	1.8mm	500.0mm	Uncoated	$14.50
1101-211	N-BK7	30.0mm	2.3mm	1.8mm	500.0mm	350-650nm AR Coating	$21.00
1101-212	N-BK7	30.0mm	2.3mm	1.8mm	500.0mm	650-1050nm AR Coating	$21.00
1101-213	N-BK7	30.0mm	2.3mm	1.8mm	500.0mm	1050-1580nm AR Coating	$21.50
1101-098	N-BK7	50.8mm	16.3mm	3.0mm	60.0mm	Uncoated	$23.00
1101-214	N-BK7	50.8mm	16.3mm	3.0mm	60.0mm	350-650nm AR Coating	$33.50
1101-215	N-BK7	50.8mm	16.3mm	3.0mm	60.0mm	650-1050nm AR Coating	$33.50
1101-216	N-BK7	50.8mm	16.3mm	3.0mm	60.0mm	1050-1580nm AR Coating	$34.00
1101-099	N-BK7	50.8mm	12.5mm	3.0mm	75.0mm	Uncoated	$22.00
1101-217	N-BK7	50.8mm	12.5mm	3.0mm	75.0mm	350-650nm AR Coating	$32.50

Product List of λ/4-λ N-BK7 Plano-convex Lenses

Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1101-218	N-BK7	50.8mm	12.5mm	3.0mm	75.0mm	650-1050nm AR Coating	$32.50
1101-219	N-BK7	50.8mm	12.5mm	3.0mm	75.0mm	1050-1580nm AR Coating	$33.00
1101-100	N-BK7	50.8mm	9.7mm	3.0mm	100.0mm	Uncoated	$23.00
1101-220	N-BK7	50.8mm	9.7mm	3.0mm	100.0mm	350-650nm AR Coating	$33.50
1101-221	N-BK7	50.8mm	9.7mm	3.0mm	100.0mm	650-1050nm AR Coating	$33.50
1101-222	N-BK7	50.8mm	9.7mm	3.0mm	100.0mm	1050-1580nm AR Coating	$34.00
1101-101	N-BK7	50.8mm	8.2mm	3.0mm	125.0mm	Uncoated	$23.00
1101-223	N-BK7	50.8mm	8.2mm	3.0mm	125.0mm	350-650nm AR Coating	$33.50
1101-224	N-BK7	50.8mm	8.2mm	3.0mm	125.0mm	650-1050nm AR Coating	$33.50
1101-225	N-BK7	50.8mm	8.2mm	3.0mm	125.0mm	1050-1580nm AR Coating	$34.00
1101-102	N-BK7	50.8mm	7.3mm	3.0mm	150.0mm	Uncoated	$23.00
1101-226	N-BK7	50.8mm	7.3mm	3.0mm	150.0mm	350-650nm AR Coating	$33.50
1101-227	N-BK7	50.8mm	7.3mm	3.0mm	150.0mm	650-1050nm AR Coating	$33.50
1101-228	N-BK7	50.8mm	7.3mm	3.0mm	150.0mm	1050-1580nm AR Coating	$34.00
1101-103	N-BK7	50.8mm	6.7mm	3.0mm	175.0mm	Uncoated	$23.00
1101-229	N-BK7	50.8mm	6.7mm	3.0mm	175.0mm	350-650nm AR Coating	$33.50
1101-230	N-BK7	50.8mm	6.7mm	3.0mm	175.0mm	650-1050nm AR Coating	$33.50
1101-231	N-BK7	50.8mm	6.7mm	3.0mm	175.0mm	1050-1580nm AR Coating	$34.00
1101-104	N-BK7	50.8mm	6.2mm	3.0mm	200.0mm	Uncoated	$23.50
1101-232	N-BK7	50.8mm	6.2mm	3.0mm	200.0mm	350-650nm AR Coating	$34.00
1101-233	N-BK7	50.8mm	6.2mm	3.0mm	200.0mm	650-1050nm AR Coating	$34.00
1101-234	N-BK7	50.8mm	6.2mm	3.0mm	200.0mm	1050-1580nm AR Coating	$34.50
1101-105	N-BK7	50.8mm	5.5mm	3.0mm	250.0mm	Uncoated	$24.00
1101-235	N-BK7	50.8mm	5.5mm	3.0mm	250.0mm	350-650nm AR Coating	$34.50
1101-236	N-BK7	50.8mm	5.5mm	3.0mm	250.0mm	650-1050nm AR Coating	$34.50
1101-237	N-BK7	50.8mm	5.5mm	3.0mm	250.0mm	1050-1580nm AR Coating	$35.00
1101-106	N-BK7	50.8mm	5.1mm	3.0mm	300.0mm	Uncoated	$24.00
1101-238	N-BK7	50.8mm	5.1mm	3.0mm	300.0mm	350-650nm AR Coating	$34.50
1101-239	N-BK7	50.8mm	5.1mm	3.0mm	300.0mm	650-1050nm AR Coating	$34.50
1101-240	N-BK7	50.8mm	5.1mm	3.0mm	300.0mm	1050-1580nm AR Coating	$35.00
1101-107	N-BK7	50.8mm	4.6mm	3.0mm	400.0mm	Uncoated	$24.50
1101-241	N-BK7	50.8mm	4.6mm	3.0mm	400.0mm	350-650nm AR Coating	$35.00
1101-242	N-BK7	50.8mm	4.6mm	3.0mm	400.0mm	650-1050nm AR Coating	$35.00
1101-243	N-BK7	50.8mm	4.6mm	3.0mm	400.0mm	1050-1580nm AR Coating	$35.50
1101-108	N-BK7	50.8mm	4.3mm	3.0mm	500.0mm	Uncoated	$25.00
1101-244	N-BK7	50.8mm	4.3mm	3.0mm	500.0mm	350-650nm AR Coating	$35.50
1101-245	N-BK7	50.8mm	4.3mm	3.0mm	500.0mm	650-1050nm AR Coating	$35.50
1101-246	N-BK7	50.8mm	4.3mm	3.0mm	500.0mm	1050-1580nm AR Coating	$36.00
1101-109	N-BK7	50.8mm	3.8mm	3.0mm	750.0mm	Uncoated	$25.50
1101-247	N-BK7	50.8mm	3.8mm	3.0mm	750.0mm	350-650nm AR Coating	$36.00
1101-248	N-BK7	50.8mm	3.8mm	3.0mm	750.0mm	650-1050nm AR Coating	$36.00
1101-249	N-BK7	50.8mm	3.8mm	3.0mm	750.0mm	1050-1580nm AR Coating	$36.50
1101-110	N-BK7	50.8mm	3.6mm	3.0mm	1000.0mm	Uncoated	$26.00
1101-250	N-BK7	50.8mm	3.6mm	3.0mm	1000.0mm	350-650nm AR Coating	$36.50
1101-251	N-BK7	50.8mm	3.6mm	3.0mm	1000.0mm	650-1050nm AR Coating	$36.50
1101-252	N-BK7	50.8mm	3.6mm	3.0mm	1000.0mm	1050-1580nm AR Coating	$37.00
1101-111	N-BK7	75.0mm	24.2mm	3.0mm	85.0mm	Uncoated	$70.00
1101-253	N-BK7	75.0mm	24.2mm	3.0mm	85.0mm	350-650nm AR Coating	$96.00
1101-254	N-BK7	75.0mm	24.2mm	3.0mm	85.0mm	650-1050nm AR Coating	$96.00
1101-255	N-BK7	75.0mm	24.2mm	3.0mm	85.0mm	1050-1580nm AR Coating	$99.00
1101-112	N-BK7	75.0mm	19.2mm	3.0mm	100.0mm	Uncoated	Inquire
1101-256	N-BK7	75.0mm	19.2mm	3.0mm	100.0mm	350-650nm AR Coating	Inquire
1101-257	N-BK7	75.0mm	19.2mm	3.0mm	100.0mm	650-1050nm AR Coating	Inquire
1101-258	N-BK7	75.0mm	19.2mm	3.0mm	100.0mm	1050-1580nm AR Coating	Inquire
1101-113	N-BK7	75.0mm	12.7mm	3.0mm	150.0mm	Uncoated	Inquire
1101-259	N-BK7	75.0mm	12.7mm	3.0mm	150.0mm	350-650nm AR Coating	Inquire
1101-260	N-BK7	75.0mm	12.7mm	3.0mm	150.0mm	650-1050nm AR Coating	Inquire
1101-261	N-BK7	75.0mm	12.7mm	3.0mm	150.0mm	1050-1580nm AR Coating	Inquire
1101-114	N-BK7	75.0mm	10.1mm	3.0mm	200.0mm	Uncoated	Inquire
1101-262	N-BK7	75.0mm	10.1mm	3.0mm	200.0mm	350-650nm AR Coating	Inquire
1101-263	N-BK7	75.0mm	10.1mm	3.0mm	200.0mm	650-1050nm AR Coating	Inquire
1101-264	N-BK7	75.0mm	10.1mm	3.0mm	200.0mm	1050-1580nm AR Coating	Inquire

λ/10 UV Fused Silica Plano-convex Lenses





- Made of Corning UV Grade Fused Silica Glass (Corning HPFS), Wavelength range: 200-2200nm
- Standardized focal lengths and diameters convenient for OEM
- High precision: λ/10 Irregularities and 10/5 S/D surface qualities
- Ideal for UV-NIR wavelengths and durable under high temperature
- Coating options: uncoated, V-coating, or Broadband Anti-reflection (BBAR) coatings.
- Applications: detectors, imaging systems, lasers, fiber lasers, etc.

UV Fused Silica is the amorphous form of Silicon Dioxide. The material features superior transmission in the UV region and could be utilized for wavelengths ranging from Ultraviolet (UV) to Near-infrared (NIR) spectrum. Other than UV transmission, UV-grade fused silica glass also excels in terms of low thermal expansion, high optical homogeneities, chemical inertness, mechanical strength, and the absence of fluorescence under UV radiation. Compared with NBK7, the material is more reliable for high-temperature environments and higher transmission to the ultraviolet spectrum.

Hangzhou Shalom EO offers stocked and custom Plano Convex Lenses made of high-quality UV Fused Silica sourced from Corning, or JGS1 with excellent mechanical rigidness, and chemical inertia (The lenses in the stock list are made of Corning 7980-0F, 7980-1D). These lenses could be applied for wavelengths ranging from 200-2200nm, and are high-precision lenses with irregularity of λ/10, and surface qualities of 10/5 S/D. The UV-fused silica plano-convex lenses find prominent utilities in detectors, imaging instruments, lasers, fiber lasers, etc. The focal lengths of the stocked UV Fused Silica plano-convex lenses range from 20-1000mm, while other focal lengths could be customized. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch, to ensure tight tolerance and secure your interest. Besides, the standard options with irregularities of λ/4-λ are also available.

Specifications:

Lens Form	Plano-convex Lens	Material	Custom: Corning HPFS glass series, JGS1 Stock:Corning 7980-0F, 7980-1D
Surface Quality (Scratch/Dig)	10/5	Irregularity(@632.8nm)	λ/10
Centering Error	≤2 arc min	Clear Aperture	90%
Protective Chamfer	0.2mmx45°	Diameters(mm)	12.7mm, 25.4mm, or custom

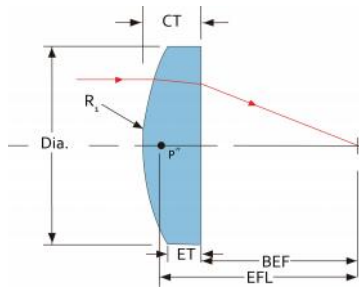
Product List of λ/10 UV Fused Silica Plano-convex Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1102-001	C7980-0F	12.7	4.0	1.4	20mm	Uncoated	$29.0
1102-002	C7980-0F	12.7	4.0	1.4	20mm	400-700nm AR	$44.0
1102-003	C7980-0F	12.7	4.0	1.4	20mm	700-1100nm AR	$44.0
1102-004	C7980-0F	12.7	4.0	1.4	20mm	1100-1650nm AR	$44.0
1102-006	C7980-0F	12.7	4.0	1.4	20mm	532nm AR	$44.0
1102-005	C7980-0F	12.7	4.0	1.4	20mm	1064nm AR	$44.0
1102-007	C7980 0F	12.7	3.7	2.1	30mm	Uncoated	$29.0
1102-009	C7980 0F	12.7	3.7	2.1	30mm	700-1100nm AR	$44.0
1102-010	C7980 0F	12.7	3.7	2.1	30mm	1100-1650nm AR	$44.0
1102-012	C7980 0F	12.7	3.7	2.1	30mm	532nm AR	$44.0
1102-011	C7980 0F	12.7	3.7	2.1	30mm	1064nm AR	$44.0
1102-013	C7980-0F	12.7	2.5	1.4	40mm	Uncoated	$29.0
1102-014	C7980-0F	12.7	2.5	1.4	40mm	400-700nm AR	$44.0
1102-015	C7980-0F	12.7	2.5	1.4	40mm	700-1100nm AR	$44.0
1102-016	C7980-0F	12.7	2.5	1.4	40mm	1100-1650nm AR	$44.0
1102-018	C7980-0F	12.7	2.5	1.4	40mm	532nm AR	$44.0
1102-017	C7980-0F	12.7	2.5	1.4	40mm	1064nm AR	$44.0
1102-019	C7980-0F	12.7	3.0	2.1	50mm	Uncoated	$29.0
1102-020	C7980-0F	12.7	3.0	2.1	50mm	400-700nm AR	$44.0
1102-021	C7980-0F	12.7	3.0	2.1	50mm	700-1100nm AR	$44.0
1102-022	C7980-0F	12.7	3.0	2.1	50mm	1100-1650nm AR	$44.0
1102-023	C7980-0F	12.7	3.0	2.1	50mm	1064nm AR	$44.0
1102-024	C7980-0F	12.7	3.0	2.1	50mm	532nm AR	$44.0
1102-031	C7980-0F	25.4	6.0	2.2	50mm	Uncoated	$44.0
1102-032	C7980-0F	25.4	6.0	2.2	50mm	400-700nm AR	$67.0
1102-033	C7980-0F	25.4	6.0	2.2	50mm	700-1100nm AR	$67.0
1102-034	C7980-0F	25.4	6.0	2.2	50mm	1100-1650nm AR	$67.0
1102-137	C7980-0F	25.4	6.0	2.2	50mm	343nm AR	$67.0
1102-138	C7980-0F	25.4	6.6	2.2	50mm	355nm AR	$67.0
1102-036	C7980-0F	25.4	6.0	2.2	50mm	532nm AR	$67.0
1102-139	C7980-0F	25.4	6.0	2.2	50mm	1030nm AR	$67.0
1102-035	C7980-0F	25.4	6.0	2.2	50mm	1064nm AR	$67.0
1102-037	C7980-0F	25.4	4.5	2.1	75mm	Uncoated	$29.0
1102-038	C7980-0F	25.4	4.5	2.1	75mm	400-700nm AR	$44.0
1102-039	C7980-0F	25.4	4.5	2.1	75mm	700-1100nm AR	$44.0
1102-040	C7980-0F	25.4	4.5	2.1	75mm	1100-1650nm AR	$44.0

Product List of λ/10 UV Fused Silica Plano-convex Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1102-041	C7980-0F	25.4	4.5	2.1	75mm	1064nm AR	$44.0
1102-042	C7980-0F	25.4	4.5	2.1	75mm	532nm AR	$44.0
1102-025	C7980-0F	12.7	3.0	2.6	100mm	Uncoated	$44.0
1102-026	C7980-0F	12.7	3.0	2.6	100mm	400-700nm AR	$67.0
1102-027	C7980-0F	12.7	3.0	2.6	100mm	700-1100nm AR	$67.0
1102-028	C7980-0F	12.7	3.0	2.6	100mm	1100-1650nm AR	$67.0
1102-029	C7980-0F	12.7	3.0	2.6	100mm	1064nm AR	$67.0
1102-030	C7980-0F	12.7	3.0	2.6	100mm	532nm AR	$67.0
1102-073	C7980-1D	25.4	4.0	2.2	100mm	Uncoated	$67.0
1102-074	C7980-1D	25.4	4.0	2.2	100mm	400-700nm AR	$67.0
1102-075	C7980-1D	25.4	4.0	2.2	100mm	700-1100nm AR	$67.0
1102-076	C7980-1D	25.4	4.0	2.2	100mm	1100-1650nm AR	$67.0
1102-140	C7980-0F	25.4	4.0	2.2	100mm	343nm AR	$67.0
1102-141	C7980-0F	25.4	4.0	2.2	100mm	355nm AR	$67.0
1102-078	C7980-1D	25.4	4.0	2.2	100mm	532nm AR	$44.0
1102-142	C7980-0F	25.4	4.0	2.2	100mm	1030nm AR	$67.0
1102-077	C7980-1D	25.4	4.0	2.2	100mm	1064nm AR	$67.0
1102-043	C7980-0F	25.4	4.0	2.6	125mm	Uncoated	$44.0
1102-044	C7980-0F	25.4	4.0	2.6	125mm	400-700nm AR	$67.0
1102-045	C7980-0F	25.4	4.0	2.6	125mm	700-1100nm AR	$67.0
1102-046	C7980-0F	25.4	4.0	2.6	125mm	1100-1650nm AR	$67.0
1102-047	C7980-0F	25.4	4.0	2.6	125mm	1064nm AR	$67.0
1102-048	C7980-0F	25.4	4.0	2.6	125mm	532nm AR	$67.0
1102-049	C7980-0F	25.4	4.0	2.8	150mm	Uncoated	$44.0
1102-050	C7980-0F	25.4	4.0	2.8	150mm	400-700nm AR	$67.0
1102-051	C7980-0F	25.4	4.0	2.8	150mm	700-1100nm AR	$67.0
1102-052	C7980-0F	25.4	4.0	2.8	150mm	1100-1650nm AR	$67.0
1102-143	C7980-0F	25.4	4.0	2.8	150mm	343nm AR	$67.0
1102-144	C7980-0F	25.4	4.0	2.8	150mm	355nm AR	$67.0
1102-054	C7980-0F	25.4	4.0	2.8	150mm	532nm AR	$67.0
1102-145	C7980-0F	25.4	4.0	2.8	150mm	1030nm AR	$67.0
1102-053	C7980-0F	25.4	4.0	2.8	150mm	1064nm AR	$67.0
1102-079	C7980-1D	25.4	4.0	3.1	200mm	Uncoated	$67.0
1102-080	C7980-1D	25.4	4.0	3.1	200mm	400-700nm AR	$67.0
1102-081	C7980-1D	25.4	4.0	3.1	200mm	700-1100nm AR	$67.0
1102-082	C7980-1D	25.4	4.0	3.1	200mm	1100-1650nm AR	$67.0
1102-146	C7980-0F	25.4	4.0	3.1	200mm	343nm AR	$67.0
1102-147	C7980-0F	25.4	4.0	3.1	200mm	355nm AR	$67.0
1102-084	C7980-1D	25.4	4.0	3.1	200mm	532nm AR	$44.0
1102-148	C7980-0F	25.4	4.0	3.1	200mm	1030nm AR	$67.0
1102-083	C7980-1D	25.4	4.0	3.1	200mm	1064nm AR	$67.0
1102-086	C7980-1D	25.4	4.0	3.4	300mm	400-700nm AR	$67.0
1102-087	C7980-1D	25.4	4.0	3.4	300mm	700-1100nm AR	$67.0
1102-088	C7980-1D	25.4	4.0	3.4	300mm	1100-1650nm AR	$67.0
1102-149	C7980-0F	25.4	4.0	3.4	300mm	343nm AR	$67.0
1102-150	C7980-0F	25.4	4	3.4	300mm	355nm AR	$67.0
1102-090	C7980-1D	25.4	4.0	3.4	300mm	532nm AR	$67.0
1102-151	C7980-0F	25.4	4.0	3.4	300mm	1030nm AR	$67.0
1102-089	C7980-1D	25.4	4.0	3.4	300mm	1064nm AR	$67.0
1102-091	C7980-1D	25.4	4.0	3.6	400mm	Uncoated	$44.0
1102-092	C7980-1D	25.4	4.0	3.6	400mm	400-700nm AR	$67.0
1102-093	C7980-1D	25.4	4.0	3.6	400mm	700-1100nm AR	$67.0
1102-094	C7980-1D	25.4	4.0	3.6	400mm	1100-1650nm AR	$67.0
1102-152	C7980-0F	25.4	4.0	3.6	400mm	343nm AR	$67.0
1102-153	C7980-0F	25.4	4.0	3.6	400nm	355nm AR	$67.0
1102-096	C7980-1D	25.4	4.0	3.6	400mm	532nm AR	$67.0
1102-154	C7980-0F	25.4	4.0	3.6	400mm	1030nm AR	$67.0
1102-095	C7980-1D	25.4	4.0	3.6	400mm	1064nm AR	$67.0
1102-055	C7980-0F	25.4	4.0	3.6	500mm	Uncoated	$44.0
1102-056	C7980-0F	25.4	4.0	3.6	500mm	400-700nm AR	$67.0
1102-057	C7980-0F	25.4	4.0	3.6	500mm	700-1100nm AR	$67.0
1102-058	C7980-0F	25.4	4.0	3.6	500mm	1100-1650nm AR	$67.0
1102-155	C7980-0F	25.4	4.0	3.6	500mm	343nm AR	$67.0
1102-156	C7980-0F	25.4	4.0	3.6	500mm	355nm AR	$67.0
1102-060	C7980-0F	25.4	4.0	3.6	500mm	532nm AR	$67.0
1102-157	C7980-0F	25.4	4.0	3.6	500mm	1030nm AR	$67.0
1102-059	C7980-0F	25.4	4.0	3.6	500mm	1064nm AR	$67.0
1102-097	C7980-1D	25.4	4.0	3.7	600mm	Uncoated	$44.0
1102-098	C7980-1D	25.4	4.0	3.7	600mm	400-700nm AR	$67.0
1102-099	C7980-1D	25.4	4.0	3.7	600mm	700-1100nm AR	$67.0
1102-100	C7980-1D	25.4	4.0	3.7	600mm	1100-1650nm AR	$67.0
1102-158	C7980-0F	25.4	4.0	3.7	600mm	343nm AR	$67.0
1102-159	C7980-0F	25.4	4.0	3.7	600mm	355nm AR	$67.0
1102-102	C7980-1D	25.4	4.0	3.7	600mm	532nm AR	$67.0
1102-160	C7980-0F	25.4	4.0	3.7	600mm	1030nm AR	$67.0
1102-101	C7980-1D	25.4	4.0	3.7	600mm	1064nm AR	$67.0
1102-061	C7980-0F	25.4	4.0	3.8	750mm	Uncoated	$44.0
1102-062	C7980-0F	25.4	4.0	3.8	750mm	400-700nm AR	$67.0
1102-063	C7980-0F	25.4	4.0	3.8	750mm	700-1100nm AR	$67.0
1102-064	C7980-0F	25.4	4.0	3.8	750mm	1100-1650nm AR	$67.0
1102-065	C7980-0F	25.4	4.0	3.8	750mm	1064nm AR	$67.0
1102-066	C7980-0F	25.4	4.0	3.8	750mm	532nm AR	$67.0
1102-161	C7980-0F	25.4	/	/	800mm	3434nm AR	$67.0
1102-162	C7980-0F	25.4	/	/	800mm	355nm AR	$67.0
1102-163	C7980-0F	25.4	/	/	800mm	532nm AR	$67.0
1102-164	C7980-0F	25.4	/	/	800mm	1030nm AR	$67.0
1102-165	C7980-0F	25.4	/	/	800mm	1064nm AR	$67.0
1102-067	C7980-0F	25.4	4.0	3.8	1000mm	Uncoated	$67.0
1102-068	C7980-0F	25.4	4.0	3.8	1000mm	400-700nm AR	$67.0
1102-069	C7980-0F	25.4	4.0	3.8	1000mm	700-1100nm AR	$67.0
1102-070	C7980-0F	25.4	4.0	3.8	1000mm	1100-1650nm AR	$67.0
1102-166	C7980-0F	25.4	4.0	3.8	1000mm	343nm AR	$67.0
1102-167	C7980-0F	25.4	4.0	3.8	1000mm	355nm AR	$67.0
1102-072	C7980-0F	25.4	4.0	3.8	1000mm	532nm AR	$44.0
1102-168	C7980-0F	25.4	4.0	3.8	1000mm	1030nm AR	$67.0
1102-071	C7980-0F	25.4	4.0	3.8	1000mm	1064nm AR	$67.0

λ/4-λ UV Fused Silica Plano-convex Lenses



- Made of UV Fused Silica (JGS1)
- Diameter 5-75mm, EFL 10-500mm, or custom.
- This page highlights the standard λ/4-λ, 40/20 S/D UVFS pcx lenses, while high precision UVFS pcx lenses with λ/10 Irregularities and 10/5 S/D surface qualities are also available
- Ideal for UV-NIR wavelengths and durable under high temperature
- Coating options: uncoated, or custom V-coating, or Broadband Anti-reflection(BBAR) coatings.
- Applications: detectors, imaging systems, lasers, fiber lasers, etc.

UV Fused Silica, identical to JGS1, is the amorphous form of SiO2. The material features superior transmission in the UV region and could be utilized for wavelengths ranging from Ultraviolet (UV) to Near-infrared (NIR) spectrum. Other than UV transmission, UV-grade fused silica glass also excels in terms of low thermal expansion, high optical homogeneities, chemical inertness, mechanical strength, and the absence of fluorescence under UV radiation. Compared with N-BK7, the material is more reliable for high-temperature environments and higher transmission to the ultraviolet spectrum.

Hangzhou Shalom EO offers stocked and custom Plano Convex Lenses made of UV Fused Silica (JGS1) with excellent UV transmission, mechanical strength, and chemical resistance. This section highlights the standard grade off-the-shelf λ/4-λ Irregularities, 40/20 S/D UV Fused Silica Plano-convex lenses, while high precision UVFS pcx lenses with λ/10 Irregularities and 10/5 S/D surface qualities made from Corning 7980 glass are also available.

Our UV-fused silica plano-convex lenses are optimized for incorporations into a broad range of optical systems like detectors, imaging instruments, lasers, fiber lasers, etc. Focal lengths of these λ/4-λ UV Fused Silica plano-convex lenses range from 10-1000mm and are accessible for high precision UVFS pcx), while other focal lengths could be customized. The standard diameters are 6-75.0mm, tailored diameters are also possible. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch, to ensure tight tolerance and secure your interest. The UVFS pcx lenses on this page are typically offered in uncoated versions, whilst custom v-coatings and BBAR coatings could also be arranged upon request.

Specifications:

Lens Form	Plano-convex Lens	Material	UV Fused Silica (JGS1)
Working Wavelength Range	200-2200nm	Coating	Uncoated, V-coating, BBAR coating
Surface Quality (S/D)	40/20	Irregularity@632.8nm	λ/4-λ
Clear Aperture	>90%	Centering Error	≤3 arc min
Protective Chamfer	0.2mmx45°	Diameters	6-75mm,or custom

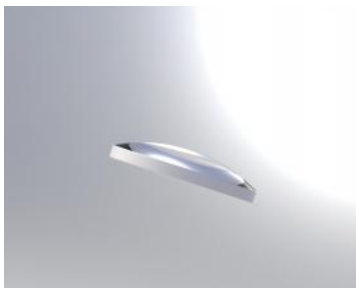
Product List of λ/4-λ UV Fused Silica Plano-convex Lenses

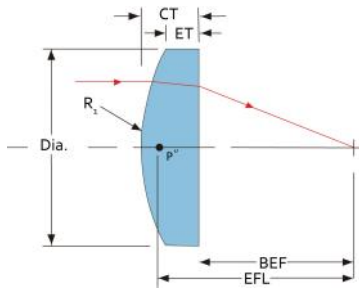
Material	Diameter	CT	ET	Focal length	Coating	Unit Price
UV Fused Silica	6.0mm	2.6mm	1.5mm	10mm	Uncoated	$20.50
UV Fused Silica	6.0mm	2.2mm	1.5mm	15mm	Uncoated	$20.50
UV Fused Silica	6.0mm	2.0mm	1.5mm	20mm	Uncoated	$17.50
UV Fused Silica	6.0mm	1.8mm	1.5mm	30mm	Uncoated	$17.50
UV Fused Silica	12.7mm	3.3mm	1.8mm	30mm	Uncoated	$17.50

Product List of λ/4-λ UV Fused Silica Plano-convex Lenses

Material	Diameter	CT	ET	Focal length	Coating	Unit Price
UV Fused Silica	12.7mm	2.9mm	1.8mm	40mm	Uncoated	$17.50
UV Fused Silica	12.7mm	2.7mm	1.8mm	50mm	Uncoated	$17.50
UV Fused Silica	12.7mm	2.4mm	1.8mm	75mm	Uncoated	$17.50
UV Fused Silica	12.7mm	2.2mm	1.8mm	100mm	Uncoated	$17.50
UV Fused Silica	25.4mm	8.2mm	2.0mm	35mm	Uncoated	$42.00
UV Fused Silica	25.4mm	7.1mm	2.0mm	40mm	Uncoated	$42.00
UV Fused Silica	25.4mm	4.4mm	2.0mm	75mm	Uncoated	$42.00
UV Fused Silica	25.4mm	3.8mm	2.0mm	100mm	Uncoated	$42.00
UV Fused Silica	25.4mm	3.4mm	2.0mm	125mm	Uncoated	$42.00
UV Fused Silica	25.4mm	3.2mm	2.0mm	150mm	Uncoated	$42.00
UV Fused Silica	25.4mm	3.0mm	2.0mm	175mm	Uncoated	$42.00
UV Fused Silica	25.4mm	2.7mm	2.0mm	250mm	Uncoated	$42.00
UV Fused Silica	25.4mm	2.6mm	2.0mm	300mm	Uncoated	$45.00
UV Fused Silica	25.4mm	2.2mm	2.0mm	750mm	Uncoated	$45.00
UV Fused Silica	25.4mm	2.2mm	2.0mm	1000mm	Uncoated	$45.00
UV Fused Silica	50.8mm	19.8mm	3.0mm	60mm	Uncoated	$125.00
UV Fused Silica	50.8mm	14.2mm	3.0mm	75mm	Uncoated	$87.00
UV Fused Silica	50.8mm	10.7mm	3.0mm	100mm	Uncoated	$87.00
UV Fused Silica	50.8mm	7.8mm	3.0mm	150mm	Uncoated	$87.00
UV Fused Silica	50.8mm	6.6mm	3.0mm	200mm	Uncoated	$87.00
UV Fused Silica	50.8mm	5.8mm	3.0mm	250mm	Uncoated	$87.00
UV Fused Silica	50.8mm	5.4mm	3.0mm	300mm	Uncoated	$90.00
UV Fused Silica	50.8mm	4.4mm	3.0mm	500mm	Uncoated	$90.00
UV Fused Silica	50.8mm	3.9mm	3.0mm	750mm	Uncoated	$90.00
UV Fused Silica	50.8mm	3.7mm	3.0mm	1000mm	Uncoated	$90.00
UV Fused Silica	75.0mm	26.9mm	3.0mm	90mm	Uncoated	Inquire
UV Fused Silica	75.0mm	14.1mm	3.0mm	150mm	Uncoated	Inquire
UV Fused Silica	75.0mm	11.0mm	3.0mm	200mm	Uncoated	Inquire
UV Fused Silica	75.0mm	6.1mm	3.0mm	500mm	Uncoated	Inquire

CaF2 Plano-Convex Lenses





- One spherical side and one planar side are optimized for light collimation and focus at absolute conjugate ratios > 5:1
- Substrates made from high-purity CaF2 crystals with exception ally wide transmission from UV to IR (180-8000nm)
- High laser damage threshold and thermal shock resistance suitable for excimer lasers
- Standard CaF2 plano-convex lenses are available in uncoated versions, while custom coatings like BBAR, high-performance V-coatings, and MgF2 coatings are also available
- Applications: Infrared Optics, Ultraviolet Optical Components, Laser Processing such as Excimer Lasers, etc.

Calcium Fluoride (CaF2) is an excellent optical material with its natural high transmission from UV to MWIR wavelengths (180-8000nm) with favorably low levels of fluorescence, therefore it is widely utilized in infrared, and ultraviolet optical systems. The prominent LIDT (Laser-Induced Damage Threshold) of CaF2 renders it a capable candidate for high-energy detectors and excimer lasers. Besides, Calcium Fluoride is also more mechanically durable and chemically stable than other fluoride counterparts, the hardness of CaF2 is twice the magnitude of that of BaF2, with the addition that CaF2 is not prone to deliquesce and can endure thermal shock.

This page highlights Shalom EO's Stocked and Custom CaF2 Plano Convex Lenses, whilst you can browse and shop Off-the-Shelf N-BK7 Plano Convex Lenses, Off-the-Shelf UVFS Plano Convex Lenses, and custom Plano-convex lenses made from a wide assortment of optical materials including sapphire, ruby, Flint Glass/BaF2/Ge/Si, etc. Shalom EO is a proficient and capable supplier and manufacturer of optical lens components. The calcium fluoride we use to fabricate optical lenses exhibits high purities to ensure minimized OH contents, which are harmful to IR transmission. Shalom EO also leverages a stringent inspection procedure to ensure that the actual parameters of the lenses comply with our published specifications.

Our CaF2 Plano-convex lenses (standard) have diameters ranging from 12.7mm to 25.4mm and focal lengths ranging from 20mm to 1000mm, encompassing short focal lengths, mid-focal lengths, and long focal lengths. These stock CaF2 plano-convex lenses are currently available in uncoated versions, but custom coatings including Broadband AR Coatings (BBAR) with superior broadband performance, V coatings with minimized reflection over a narrow waveband, and MgF2 with high price-competitiveness are all procurable through inquiries. The stocked CaF2 flat-convex lenses have a conventional surface smoothness of 80/50 S/D and >80% clear aperture. However, Shalom EO is also capable of manufacturing Calcium Fluoride plano-convex lens components with higher precision if you have stricter requirements for the final performance.

Specifications:

Lens Form	Plano-convex Lens	Material	CaF2
Diameters(mm)	12.7-25.4mm (Standard), or Custom	Working Wavelength Range	180-8000nm
Coating	Standard Uncoated, or Custom BBAR/V-coating/MgF2	Surface Quality (S/D)	80/50
Irregularity@632.8nm	λ/4-λ	Centering Error	<2 arc min
Clear Aperture	>80%	Protective Chamfer	0.2mmx45°

Product List of CaF2 Plano-Convex Lenses

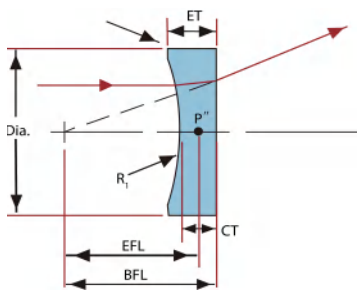
Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1109-001	CaF2	12.7mm	4.3mm	1.5mm	20mm	Uncoated	$54.50
1109-002	CaF2	12.7mm	2.5mm	1.5mm	50mm	Uncoated	$54.50
1109-003	CaF2	12.7mm	2.1mm	1.5mm	80mm	Uncoated	$54.50
1109-004	CaF2	25.4mm	7.5mm	2.0mm	40mm	Uncoated	$72.50
1109-005	CaF2	25.4mm	6.1mm	2.0mm	50mm	Uncoated	$72.50
1109-006	CaF2	25.4mm	4.6mm	2.0mm	75mm	Uncoated	$72.50
1109-007	CaF2	25.4mm	3.9mm	2.0mm	100mm	Uncoated	$72.50
1109-008	CaF2	25.4mm	3.3mm	2.0mm	150mm	Uncoated	$72.50
1109-009	CaF2	25.4mm	2.9mm	2.0mm	200mm	Uncoated	$72.50
1109-010	CaF2	25.4mm	2.7mm	2.0mm	250mm	Uncoated	$72.50
1109-011	CaF2	25.4mm	2.4mm	2.0mm	500mm	Uncoated	$72.50
1109-012	CaF2	25.4mm	2.2mm	2.0mm	750mm	Uncoated	$72.50
1109-013	CaF2	25.4mm	2.2mm	2.0mm	1000mm	Uncoated	$72.50

Plano-concave Lenses

Plano-concave Lens is a bulk optical singlet with a flat side and a convex side, which contribute to a negative focal length and a negative spherical aberration. Plano concave lens diverges collimated light beams from a virtual focus and could be used to spread a collimated light beam, increase the focal length of an optical instrument, etc. Plano-concave lenses are often incorporated into Galilean beam expanders, also as components to balance out the spherical aberration, improving image qualities. When the absolute conjugate ratio is greater than 5:1(that is, the absolute value of objective distance: image distance), a Plano-concave lens is an excellent option to decrease spherical aberration, coma, and distortion.

Hangzhou Shalom EO offers stocked and custom Plano-concave Lenses, where you can browse and shop Off-the-Shelf N-BK7 Plano Concave Lenses, Off-the-Shelf UVFS Plano Concave Lenses, Off-the-Shelf CaF2 Plano Concave Lenses and custom Plano concave lenses made from a wide assortment of optical materials including sapphire, ruby, Flint Glass/BaF2/Ge/Si, etc. Shalom EO is a proficient and capable supplier and manufacturer of optical lens components. Shalom EO also leverages a stringent inspection procedure to ensure that the actual parameters of the lenses abide by our published specifications. Our inspection procedure includes an in-process checking stage of the optical properties of lenses and a final test of coatings, dimension precisions, and the visual observation of scratch/dig, apertures, inclusions, etc. We provide stocked and custom N-BK7 Plano-concave Lenses with a diameter range of 0.5-300mm, that ensure simple incorporation into various instruments like laser scanners, remote sensing, and imaging instruments, fiber lasers, interferometers, etc. The focal lengths of the stocked N-BK7 Plano-concave lenses differ from -25mm to -100mm, while other focal lengths could be customized. These N-BK7 lenses feature λ/4-λ irregularities and 40/20 scratch/dig. Plano Concave Lenses made from Corning High Purity UV Fused Silica Glass (Corning HPFS Glass), or JGS1 with excellent mechanical, and chemical rigidness are available in high-precision versions with irregularities of λ/10, and surface qualities of 10/5 S/D and normal versions with irregularities of λ/4-λ, and surface qualities of 40/20 S/D. Our CaF2 Plano concave lenses (standard) have diameters of 12.7mm to 25.4mm and focal lengths ranging from -18mm to -500mm. These stock CaF2 plano-convex lenses are currently available in uncoated versions, but custom coatings including Broadband AR Coatings (BBAR) with superior broadband performance, V coatings with minimized reflection over a narrow waveband, and MgF2 with high price-competitiveness are all procurable through inquiries.

λ/4-λ N-BK7 Plano-concave Lenses



- λ/4-λ N-BK7 Plano-concave Lenses
- Transmission wavelength range: 350-2200 nm
- Diameter range: 0.5mm to 300mm
- Standardized focal lengths and diameters are convenient for OEM
- Ideal for various applications in the visible to NIR region
- Coating options: uncoated, V-coating, or broadband anti-reflection (BBAR) coating
- Applications: laser scanners, remote sensing, imaging instruments, fiber lasers, and interferometers

N-BK7 glass is a RoHS-compliant borosilicate material prevalent for uses in the visible and NIR spectrum (in particular when it comes to manufacturing precision visible components). N-BK7 features high optical homogeneities, great resistance to scratches and abrasions, low cost, and low inclusion content, it is an ideal substitute for UV Fused Silica when high UV transmission is not required, and a preferred alternative for CaF2 at the 1.65-2.3 micro-operating wavelength region with the concern of lower manufacturing costs.

Hangzhou Shalom EO offers Stocked and Custom N-BK7 Plano-concave Lenses with a diameter range of 0.5-300mm, that allow for flexible incorporation into laser scanners, remote sensing, and imaging instruments, fiber lasers, interferometers, etc. The focal lengths of the stocked N-BK7 Plano-concave lenses differ from -25mm to -100mm, while other focal lengths could be customized. These lenses feature lambda/4 irregularities and 40/20 scratch/dig. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch, to ensure tight tolerance and secure your interest.

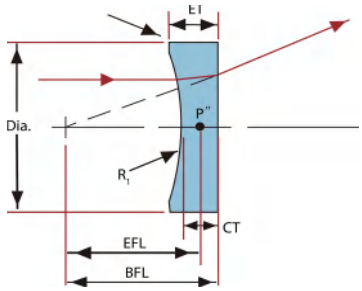
Specifications:

Lens Form	Plano-concaveLens	Material	N-BK7
Working Wavelength Range	350-2200nm	Coating	Uncoated, V-coating, BBAR coating
Surface Quality (S/D)	40/20	Irregularity@632.8nm	λ/4-λ
Centering Error	≤2 arc min	Clear Aperture	90%
Protective Chamfer	0.2mmx45°	Diameters	0.5-300mm

Product List of λ/4-λ N-BK7 Plano-concave Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1103-001	N-BK7	12.7mm	1.8mm	3.5mm	-25mm	Uncoated	$12.00
1103-002	N-BK7	12.7mm	1.8mm	3.5mm	-25mm	400-700nm AR Coating	$20.00
1103-003	N-BK7	12.7mm	1.8mm	3.5mm	-25mm	700-1100nm AR Coating	$20.00
1103-004	N-BK7	12.7mm	1.8mm	3.5mm	-25mm	1100-1650nm AR Coating	$20.00
1103-005	N-BK7	12.7mm	2.1mm	3.5mm	-30mm	Uncoated	$12.00
1103-006	N-BK7	12.7mm	2.1mm	3.5mm	-30mm	400-700nm AR Coating	$20.00
1103-007	N-BK7	12.7mm	2.1mm	3.5mm	-30mm	700-1100nm AR Coating	$20.00
1103-008	N-BK7	12.7mm	2.1mm	3.5mm	-30mm	1100-1650nm AR Coating	$20.00
1103-009	N-BK7	12.7mm	2.7mm	3.5mm	-50mm	Uncoated	$12.00
1103-010	N-BK7	12.7mm	2.7mm	3.5mm	-50mm	400-700nm AR Coating	$20.00
1103-011	N-BK7	12.7mm	2.7mm	3.5mm	-50mm	700-1100nm AR Coating	$20.00
1103-012	N-BK7	12.7mm	2.7mm	3.5mm	-50mm	1100-1650nm AR Coating	$20.00
1103-013	N-BK7	25.4mm	2.7mm	6mm	-50mm	Uncoated	$14.00
1103-014	N-BK7	25.4mm	2.7mm	6mm	-50mm	400-700nm AR Coating	$20.00
1103-015	N-BK7	25.4mm	2.7mm	6mm	-50mm	700-1100nm AR Coating	$20.00
1103-016	N-BK7	25.4mm	2.7mm	6mm	-50mm	1100-1650nm AR Coating	$20.00
1103-017	N-BK7	25.4mm	2.7mm	5mm	-70mm	Uncoated	$14.00
1103-018	N-BK7	25.4mm	2.7mm	5mm	-70mm	400-700nm AR Coating	$20.00
1103-019	N-BK7	25.4mm	2.7mm	5mm	-70mm	700-1100nm AR Coating	$20.00
1103-020	N-BK7	25.4mm	2.7mm	5mm	-70mm	1100-1650nm AR Coating	$20.00
1103-025	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	Uncoated	$12.00
1103-026	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	350-650nm AR Coating	$18.00
1103-027	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	650-1050nm AR Coating	$18.00
1103-028	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	1050-1580nm AR Coating	$19.00
1103-021	N-BK7	25.4mm	3mm	4.6mm	-100mm	Uncoated	$14.00
1103-022	N-BK7	25.4mm	3mm	4.6mm	-100mm	400-700nm AR Coating	$20.00
1103-023	N-BK7	25.4mm	3mm	4.6mm	-100mm	700-1100nm AR Coating	$20.00
1103-024	N-BK7	25.4mm	3mm	4.6mm	-100mm	1100-1650nm AR Coating	$20.00

λ/10 UV Fused Silica Plano-concave Lenses



- Focal Lengths from -25mm to -300mm
- High precision: λ/10 Irregularities and 10/5 S/D surface qualities
- Ideal for various applications in the UV to NIR region
- Standardized focal lengths and diameters (12.7mm or 25.4mm) convenient for OEM
- Coating options: uncoated, V-coating, or broadband anti-reflection (BBAR) coating
- Applications: laser scanners, remote sensing, imaging instruments, fiber lasers, and interferometers

UV Fused Silica is the amorphous form of Silicon Dioxide. The material features superior transmission in the UV region and could be utilized for wavelengths ranging from Ultraviolet (UV) to Near-infrared (NIR) spectrum. Other than UV transmission, UV-grade fused silica glass also excels in terms of low thermal expansion, great chemical inertia, high optical homogeneities, and the absence of fluorescence under UV radiation. Compared with NBK7, the material is more reliable for high-temperature environments and has better transparency to ultraviolet lights. Our inspection procedure includes an in-process checking stage of the optical properties of lenses and a final test of coatings, dimension precisions, and the visual observation of scratch/dig, apertures, inclusions, etc.

Hangzhou Shalom EO offers stocked and custom Plano Concave Lenses made from Corning High Purity UV Fused Silica Glass (Corning HPFS Glass), or JGS1 with excellent mechanical, and chemical resilience (The lenses in the stock list are made from Corning 7980-0F, 7980-1D). These lenses could be applied for wavelengths ranging from 200-2200 nm, and are high-precision lenses with irregularities of λ/10, and surface qualities of 10/5 S/D. The UV-fused silica Plano concave lenses are optimized for various usages in laser scanners, remote sensing, imaging instruments, fiber lasers, interferometers, etc. The focal lengths of the stocked UV Fused Silica plano-convex lenses differ from -25mm to -300mm, while other focal lengths could be customized. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch, to ensure tight tolerance and secure your interest. If you are looking for lower costs, Shalom also provides λ/4-λ irregularities and 40/20 S/D UVFS PCV Lenses.

Specifications:

Lens Form	Plano-convex Lens	Material	Custom: Corning HPFS glass series, JGS1 Stock:Corning 7980-0F, 7980-1D
Surface Quality (Scratch/Dig)	10/5	Irregularity(@632.8nm)	λ/10
Centering Error	≤2 arc min	Clear Aperture	90%
Protective Chamfer	0.2mmx45°	Diameters(mm)	12.7mm, 25.4mm, or custom

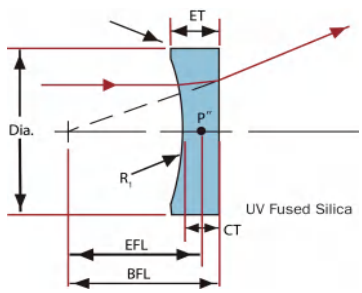
Product List of λ/10 UV Fused Silica Plano-concave Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1104-001	C7980-0F	12.7mm	1.6mm	3.5mm	-25mm	Uncoated	$29.00
1104-002	C7980-0F	12.7mm	1.6mm	3.5mm	-25mm	400-700nm AR	$44.00
1104-003	C7980-0F	12.7mm	1.6mm	3.5mm	-25mm	700-1100nm AR	$44.00
1104-004	C7980-0F	12.7mm	1.6mm	3.5mm	-25mm	1100-1650nm AR	$44.00
1104-005	C7980-0F	12.7mm	1.6mm	3.5mm	-25mm	1064nm AR	$44.00
1104-006	C7980-0F	12.7mm	1.6mm	3.5mm	-25mm	532nm AR	$44.00
1104-007	C7980-0F	12.7mm	1.9mm	3.5mm	-30mm	Uncoated	$29.00
1104-008	C7980-0F	12.7mm	1.9mm	3.5mm	-30mm	400-700nm AR	$44.00

Product List of λ/10 UV Fused Silica Plano-concave Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1104-009	C7980-0F	12.7mm	1.9mm	3.5mm	-30mm	700-1100nm AR	$44.00
1104-010	C7980-0F	12.7mm	1.9mm	3.5mm	-30mm	1100-1650nm AR	$44.00
1104-011	C7980-0F	12.7mm	1.9mm	3.5mm	-30mm	1064nm AR	$44.00
1104-012	C7980-0F	12.7mm	1.9mm	3.5mm	-30mm	532nm AR	$44.00
1104-013	C7980-0F	12.7mm	2.6mm	3.5mm	-50mm	Uncoated	$29.00
1104-014	C7980-0F	12.7mm	2.6mm	3.5mm	-50mm	400-700nm AR	$44.00
1104-015	C7980-0F	12.7mm	2.6mm	3.5mm	-50mm	700-1100nm AR	$44.00
1104-016	C7980-0F	12.7mm	2.6mm	3.5mm	-50mm	1100-1650nm AR	$44.00
1104-017	C7980-0F	12.7mm	2.6mm	3.5mm	-50mm	1064nm AR	$44.00
1104-018	C7980-0F	12.7mm	2.6mm	3.5mm	-50mm	532nm AR	$44.00
1104-019	C7980-0F	25.4mm	2.2mm	6mm	-50mm	Uncoated	$44.00
1104-020	C7980-0F	25.4mm	2.2mm	6mm	-50mm	400-700nm AR	$67.00
1104-021	C7980-0F	25.4mm	2.2mm	6mm	-50mm	700-1100nm AR	$67.00
1104-022	C7980-0F	25.4mm	2.2mm	6mm	-50mm	1100-1650nm AR	$67.00
1104-023	C7980-0F	25.4mm	2.2mm	6mm	-50mm	1064nm AR	$67.00
1104-024	C7980-0F	25.4mm	2.2mm	6mm	-50mm	532nm AR	$67.00
1104-025	C7980-0F	25.4mm	2.4mm	5mm	-70mm	Uncoated	$44.00
1104-026	C7980-0F	25.4mm	2.4mm	5mm	-70mm	400-700nm AR	$67.00
1104-027	C7980-0F	25.4mm	2.4mm	5mm	-70mm	700-1100nm AR	$67.00
1104-028	C7980-0F	25.4mm	2.4mm	5mm	-70mm	1100-1650nm AR	$67.00
1104-029	C7980-0F	25.4mm	2.4mm	5mm	-70mm	1064nm AR	$67.00
1104-030	C7980-0F	25.4mm	2.4mm	5mm	-70mm	532nm AR	$67.00
1104-031	C7980-0F	25.4mm	2.8mm	4.6mm	-100mm	Uncoated	$44.00
1104-032	C7980-0F	25.4mm	2.8mm	4.6mm	-100mm	400-700nm AR	$67.00
1104-033	C7980-0F	25.4mm	2.8mm	4.6mm	-100mm	700-1100nm AR	$67.00
1104-034	C7980-0F	25.4mm	2.8mm	4.6mm	-100mm	1100-1650nm AR	$67.00
1104-035	C7980-0F	25.4mm	2.8mm	4.6mm	-100mm	1064nm AR	$67.00
1104-036	C7980-0F	25.4mm	2.8mm	4.6mm	-100mm	532nm AR	$67.00
1104-037	C7980-1D	25.4mm	3.5mm	4.7mm	-150mm	Uncoated	$44.00
1104-038	C7980-1D	25.4mm	3.5mm	4.7mm	-150mm	400-700nm AR	$67.00
1104-039	C7980-1D	25.4mm	3.5mm	4.7mm	-150mm	700-1100nm AR	$67.00
1104-040	C7980-1D	25.4mm	3.5mm	4.7mm	-150mm	1100-1650nm AR	$67.00
1104-041	C7980-1D	25.4mm	3.5mm	4.7mm	-150mm	1064nm AR	$67.00
1104-042	C7980-1D	25.4mm	3.5mm	4.7mm	-150mm	532nm AR	$67.00
1104-043	C7980-1D	25.4mm	3.5mm	4.4mm	-200mm	Uncoated	$44.00
1104-044	C7980-1D	25.4mm	3.5mm	4.4mm	-200mm	400-700nm AR	$67.00
1104-045	C7980-1D	25.4mm	3.5mm	4.4mm	-200mm	700-1100nm AR	$67.00
1104-046	C7980-1D	25.4mm	3.5mm	4.4mm	-200mm	1100-1650nm AR	$67.00
1104-047	C7980-1D	25.4mm	3.5mm	4.4mm	-200mm	1064nm AR	$67.00
1104-048	C7980-1D	25.4mm	3.5mm	4.4mm	-200mm	532nm AR	$67.00
1104-049	C7980-1D	25.4mm	3.5mm	4.1mm	-300mm	Uncoated	$44.00
1104-050	C7980-1D	25.4mm	3.5mm	4.1mm	-300mm	400-700nm AR	$67.00
1104-051	C7980-1D	25.4mm	3.5mm	4.1mm	-300mm	700-1100nm AR	$67.00
1104-052	C7980-1D	25.4mm	3.5mm	4.1mm	-300mm	1100-1650nm AR	$67.00
1104-053	C7980-1D	25.4mm	3.5mm	4.1mm	-300mm	1064nm AR	$67.00
1104-054	C7980-1D	25.4mm	3.5mm	4.1mm	-300mm	532nm AR	$67.00

λ/4-λ UV Fused Silica Plano-concave Lenses



- Focal Lengths from -10mm to -150mm
- Economic cost: λ/4-λ Irregularities and 40/20 S/D surface quality
- Ideal for various applications in the UV to NIR region
- Standardized focal lengths and diameters (6.0-50.8mm) convenient for OEM
- Coating options: uncoated, V-coating, or broadband anti-reflection (BBAR) coating
- Applications: laser scanners, remote sensing, imaging instruments, fiber lasers, and interferometers

UV Fused Silica and its equivalent JGS1 are the amorphous forms of SiO2 (Silicon Dioxide). UV Fused Silica features superior transmission in the UV region and could be utilized for wavelengths ranging from Ultraviolet (UV) to Near-infrared (NIR) spectrum. Other than UV transmission, UV-grade fused silica glass also excels in terms of low thermal expansion, decent mechanical strength, high chemical inertness, and the absence of fluorescence under UV radiation. Compared with NBK7, the material is more endurable to higher temperatures.

If you are looking for a compromise of cost and performance then the products highlighted on this section from Shalom EO with λ/4-λ irregularities, 40/20 S/D JGS1 PCV Lenses are recommended. These lenses could be applied for wavelengths ranging from 200-2200 nm, our plano concave lenses are optimized for applications like laser scanners, remote sensing, imaging instruments, fiber lasers, interferometers, etc. The focal lengths of the stocked UV Fused Silica PCV lenses span from -10mm to -150mm, while other focal lengths could be customized, and the diameters range from 6.0mm to 50.8mm. Each piece of the lens will undergo strict inspection in Shalom EO's in-house labs before dispatch, to ensure tight tolerance and secure your interest. Hangzhou Shalom EO also offers high precision lambda/10 irregularities 10/5 Scratch/Dig stocked and custom Plano Concave Lenses made from Corning High Purity UV Fused Silicaλ Glass (Corning HPFS Glass) in another series.

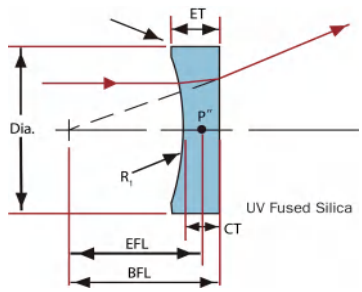
Specifications:

Lens Form	Plano-concave Lens	Material	JGS1 or Custom
Surface Quality (Scratch/Dig)	40/20	Irregularity(@632.8nm)	λ/4-λ
Centering Error	≤3 arc min	Clear Aperture	90%
Protective Chamfer	0.2mmx45°	Diameters(mm)	6.0-50.8mm, or custom

Product List of λ/4-λ UV Fused Silica Plano-concave Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1104-055	UV Fused Silica	6.0mm	2.0mm	3.1mm	-10mm	Uncoated	$17.50
1104-056	UV Fused Silica	8.0mm	2.0mm	3.7mm	-12mm	Uncoated	$17.50
1104-057	UV Fused Silica	12.7mm	2.0mm	4.5mm	-20mm	Uncoated	$17.50
1104-058	UV Fused Silica	12.7mm	3.0mm	4.9mm	-25mm	Uncoated	$17.50
1104-059	UV Fused Silica	12.7mm	3.0mm	4.5mm	-30mm	Uncoated	$17.50
1104-060	UV Fused Silica	12.7mm	3.5mm	4.4mm	-50mm	Uncoated	$17.50
1104-061	UV Fused Silica	12.7mm	3.5mm	4.1mm	-75mm	Uncoated	$17.50
1104-062	UV Fused Silica	12.7mm	3.5mm	3.9mm	-100mm	Uncoated	$17.50
1104-063	UV Fused Silica	12.7mm	4.0mm	4.2mm	-200mm	Uncoated	$17.50
1104-064	UV Fused Silica	25.4mm	3.0mm	11.4mm	-30mm	Uncoated	$42.00
1104-065	UV Fused Silica	25.4mm	3.0mm	6.8mm	-50mm	Uncoated	$42.00
1104-066	UV Fused Silica	25.4mm	3.5mm	5.9mm	-75mm	Uncoated	$42.00
1104-067	UV Fused Silica	25.4mm	3.5mm	5.3mm	-100mm	Uncoated	$42.00
1104-068	UV Fused Silica	50.8mm	3.5mm	14.6mm	-75mm	Uncoated	$87.00
1104-069	UV Fused Silica	50.8mm	4.0mm	11.6mm	-100mm	Uncoated	$87.00
1104-070	UV Fused Silica	50.8mm	4.0mm	8.8mm	-150mm	Uncoated	$87.00

CaF2 Plano-Concave Lenses



- Flat-concave structure optimized for light collimation and diverging at absolute conjugate ratios > 5:1
- Substrates made from high-purity CaF2 crystals with exception ally wide transmission from UV to IR (180-8000 nm)
- High laser damage threshold and thermal shock resistance suitable for excimer lasers
- Standard CaF2 Plano concave lenses are available in uncoated versions, while custom coatings like BBAR, high-performance V-coatings, and MgF2 coatings
- Applications: Infrared Lenses, Ultraviolet Optical Components, Laser Processing such as Excimer Lasers, etc.

Calcium Fluoride (CaF2) is an excellent optical material with its natural high transmission from UV to MWIR wavelengths (180-8000nm) with favorably low levels of fluorescence, therefore it is widely utilized in infrared, and ultraviolet optical systems. CaF2 exhibits prominent LIDT (Laser-Induced Damage Threshold), small refractive index, and low birefringence, the combination of which empowers CaF2 Plano concave lenses with the competence for excimer lasers and infrared lens groups. Besides, Calcium Fluoride is also more mechanically durable and chemically stable than other fluoride counterparts, the hardness of CaF2 is twice the magnitude of that of BaF2, with the addition that CaF2 is not prone to deliquesce and can endure thermal shock.

This page highlights Shalom EO's Stocked and Custom CaF2 Plano Concave Lenses, whilst you can browse and shop Off-the-Shelf N-BK7 Plano Concave Lenses, Off-the-Shelf UVFS Plano Concave Lenses and custom Plano concave lenses made from a wide assortment of optical materials including sapphire, ruby, Flint Glass/BaF2/Ge/Si, etc. Shalom EO is a proficient and capable supplier and manufacturer of optical lens components. The calcium fluoride we use to fabricate optical lenses exhibits high purities to ensure minimized OH contents, which are harmful to IR transmission. Shalom EO also leverages a stringent inspection procedure to ensure that the actual parameters of the lenses comply with our published specifications.

Specifications:

Lens Form	Plano-concave Lens	Material	CaF2
Diameters(mm)	12.7-25.4mm (Standard), or Custom	Working Wavelength Range	180-8000nm
Coating	Standard Uncoated, or Custom BBAR/V-coating/MgF2	Surface Quality (S/D)	80/50
Irregularity@632.8nm	λ/4-λ	Centering Error	<3 arc min
Clear Aperture	>80%	Protective Chamfer	0.2mmx45°

Product List of CaF2 Plano-Concave Lenses

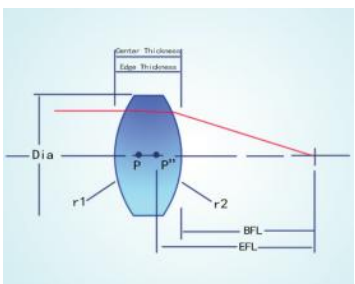
Code	Material	Dia	CT	ET	Focal Length	Coating	Price
1110-001	CaF2	12.7mm	2.0mm	5.3mm	-18	Uncoated	$54.50
1110-002	CaF3	12.7mm	2.0mm	4.6mm	-25	Uncoated	$54.50
1110-003	CaF4	25.4mm	2.5mm	7.5mm	-40	Uncoated	$72.50
1110-004	CaF5	25.4mm	2.5mm	5.1mm	-75	Uncoated	$72.50
1110-005	CaF6	25.4mm	3.0mm	4.9mm	-100	Uncoated	$72.50
1110-006	CaF7	25.4mm	3.5mm	4.4mm	-200	Uncoated	$72.50
1110-007	CaF8	25.4mm	4.0mm	4.4mm	-500	Uncoated	$72.50

Biconvex Lenses

A Biconvex Lens, also known as a Double Convex Lens, is an optical lens with two identical spherical sides that have the same curvature radii. The major uses of Biconvex lenses include laser beam modulation, light focus, and imaging. Biconvex lenses have positive focal lengths and converge collimated light to a point. When the absolute finite conjugate ratio (the absolute conjugate ratio is the ratio between object distance and image distance in absolute value) is equivalent to or near 1:1, biconvex lenses are recommended, and the phrase "near 1:1" here means biconvex lenses are the best option for conjugate ratios between 1:5 and 5:1. If not, plano-convex lenses are preferable since their asymmetric shapes help to reduce spherical aberrations. The focal lengths of the biconvex lenses could be calculated using the formula: f= (R1*R2)/((n-1) *(R2-R1)).

Shalom EO offers stocked N-BK7 Biconvex Lenses, Stocked UV Fused Silica Biconvex Lenses, and Custom Biconvex Lenses. Regarding the N-BK7 Biconvex Lenses, within our stock list, a wide range of focal lengths of 10-1000mm and diameters of 6.0-50.8mm are available. Besides the uncoated versions, we also provide standard N-BK7 double convex lenses with three kinds of broadband AR coatings: 350-650nm, 650-1050 nm, and 1050-1580 nm to increase the transmission and elevate the efficiencies of utilization. Regarding the UV Fused Silica Biconvex Lenses, a wide range of focal lengths of 10-1000mm and diameters of 5.0-50.8mm are available. The UV Fused Silica double convex lenses in our stock list are uncoated, to further enhance the transmission of the UV Fused Silica double convex lenses, designed coatings could be tailored according to customers' requirements. Custom biconvex lenses made from BaF2, CaF2, MgF2, Ge, ZnSe, Sapphire, and other optical materials are also accessible upon your request.

UV Fused Silica Biconvex Lenses



- The double-convex shape is most suitable for finite conjugate ratios between 1:5 and 5:1
- A large collection of stocked biconvex lenses with focal lengths up to 1000 nm
- Made of UV Fused Silica (superior transmission from UV to NIR)
- Standardized focal lengths and diameters convenient for OEM
- Various coating options: uncoated, 350-650 nm/650-1050 nm/1050-1580 nm BBAR, or custom
- Applications: lasers, microscopes, projectors. cameras and other imaging instruments

UV Fused Silica, equivalently known as JGS1, is an optical glass material with exception transmittance to the UV wavelengths, meanwhile also being widely transparent to visible and NIR wavelengths (transmission range 200-2200 nm). UV Grade Fused Silica is one of the best ultraviolet-transmitting media. The thermal properties of UVFS are prominent, too, including high-temperature endurance and low thermal expansion. Other benefits of UV-fused silica lenses encompass few bubbles/striae, high homogeneities, chemical inertness, mechanical hardness, and advantages of birefringent properties. Therefore, the UVFS lens is a superior option for building a stable optical device under harsh working conditions.

This page features Shalom EO's Stocked UV-Fused Silica Biconvex Lenses. Within our stock list, a wide range of focal lengths of 10-1000mm and diameters of 5.0-50.8mm are available. Besides, stocked N-BK7 Biconvex Lenses and custom biconvex lenses made from BaF2, CaF2, MgF2, Ge, ZnSe, Sapphire, and other optical materials are also procurable upon your request.

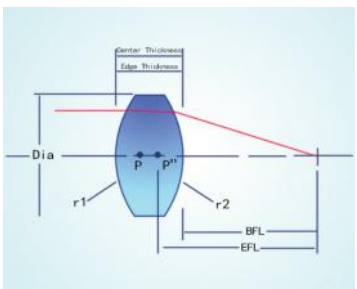
Specifications:

Lens Form	Biconvex Lens	Material	UV Fused Silica
Diameters(mm)	5.0-50.8mm, or Custom	Working Wavelength Range	200-2200nm
Coating	Uncoated/Custom Coatings	Surface Quality (S/D)	40/20
Irregularity@632.8nm	λ/4-λ	Centering Error	≤2 arc min
Clear Aperture	>90%	Protective Chamfer	<0.2mmx45°

Product List of UV Fused Silica Biconvex Lenses

Code	Material	Diameter	CT	ET	Focal Length	Coating	Price
1107-045	UV Fused Silica	5mm	2.2mm	1.5mm	10mm	Uncoated	$17.50
1107-046	UV Fused Silica	6mm	2.6mm	1.5mm	10mm	Uncoated	$17.50
1107-047	UV Fused Silica	6mm	2.2mm	1.5mm	15mm	Uncoated	$17.50
1107-048	UV Fused Silica	6mm	2mm	1.5mm	20mm	Uncoated	$17.50
1107-049	UV Fused Silica	6mm	1.8mm	1.5mm	30mm	Uncoated	$17.50
1107-050	UV Fused Silica	12.7mm	4.2mm	1.8mm	20mm	Uncoated	$17.50
1107-051	UV Fused Silica	12.7mm	3.3mm	1.8mm	30mm	Uncoated	$17.50
1107-052	UV Fused Silica	12.7mm	2.9mm	1.8mm	40mm	Uncoated	$17.50
1107-053	UV Fused Silica	12.7mm	2.7mm	1.8mm	50mm	Uncoated	$17.50
1107-054	UV Fused Silica	12.7mm	2.4mm	1.8mm	75mm	Uncoated	$17.50
1107-055	UV Fused Silica	12.7mm	2.2mm	1.8mm	100mm	Uncoated	$17.50
1107-056	UV Fused Silica	25.4mm	7.4mm	2mm	35mm	Uncoated	$42.00
1107-057	UV Fused Silica	25.4mm	6.7mm	2mm	40mm	Uncoated	$42.00
1107-058	UV Fused Silica	25.4mm	5.7mm	2mm	50mm	Uncoated	$42.00
1107-059	UV Fused Silica	25.4mm	4.4mm	2mm	75mm	Uncoated	$42.00
1107-060	UV Fused Silica	25.4mm	3.8mm	2mm	100mm	Uncoated	$42.00
1107-061	UV Fused Silica	25.4mm	3.4mm	2mm	125mm	Uncoated	$42.00
1107-062	UV Fused Silica	25.4mm	3.2mm	2mm	150mm	Uncoated	$42.00
1107-063	UV Fused Silica	25.4mm	3mm	2mm	175mm	Uncoated	$42.00
1107-064	UV Fused Silica	25.4mm	2.9mm	2mm	200mm	Uncoated	$42.00
1107-065	UV Fused Silica	25.4mm	2.7mm	2mm	250mm	Uncoated	$42.00
1107-066	UV Fused Silica	25.4mm	2.6mm	2mm	300mm	Uncoated	$43.50
1107-067	UV Fused Silica	25.4mm	2.4mm	2mm	500mm	Uncoated	$43.50
1107-068	UV Fused Silica	25.4mm	2.2mm	2mm	750mm	Uncoated	$43.50
1107-069	UV Fused Silica	25.4mm	2.2mm	2mm	1000mm	Uncoated	$43.50
1107-070	UV Fused Silica	50.8mm	15.6mm	2.5mm	60mm	Uncoated	$87.00
1107-071	UV Fused Silica	50.8mm	12.5mm	2.5mm	75mm	Uncoated	$87.00
1107-072	UV Fused Silica	50.8mm	10.3mm	3mm	100mm	Uncoated	$87.00
1107-073	UV Fused Silica	50.8mm	7.8mm	3mm	150mm	Uncoated	$87.00
1107-074	UV Fused Silica	50.8mm	6.5mm	3mm	200mm	Uncoated	$87.00
1107-075	UV Fused Silica	50.8mm	5.8mm	3mm	250mm	Uncoated	$87.00
1107-076	UV Fused Silica	50.8mm	5.4mm	3mm	300mm	Uncoated	$88.50
1107-077	UV Fused Silica	50.8mm	4.4mm	3mm	500mm	Uncoated	$88.50
1107-078	UV Fused Silica	50.8mm	3.9mm	3mm	750mm	Uncoated	$88.50
1107-079	UV Fused Silica	50.8mm	3.7mm	3mm	1000mm	Uncoated	$88.50

N-BK7 Biconvex Lenses



- The double-convex shape is most suitable for finite conjugate ratios between 1:5 and 5:1.
- A large collection of stocked biconvex lenses with focal lengths up to 1000nm
- Made from N-BK7 (excellent transmission from visible to the NIR region)
- Standardized focal lengths and diameters convenient for OEM
- Various coating options: uncoated, 350-650 nm/650-1050 nm/1050-1580 nm BBAR, or custom
- Applications: lasers, microscopes, projectors. cameras and other imaging instruments

N-BK7 is a kind of optical glass often used for manufacturing optical components, including lenses. N-BK7 glass is known for its low cost, high optical transmission across the visible spectrum and into the near-infrared region (350-2200nm), low dispersion, high hardness and resistance to scratches and abrasions, and the ability to withstand changes in temperature without significant expansion or contraction. It belongs to the Schott glass catalog, and is one of the most common optical glass materials.

This page features Shalom EO's Stocked N-BK7 Biconvex Lenses. Within our stock list, a wide range of focal lengths of 10-1000mm and diameters of 6.0-50.8mm are available.

Specifications:

Lens Form	Biconvex Lens	Material	N-BK7
Diameters(mm)	Standard 6.0-50.8mm, or Custom	Working Wavelength Range	350-2200nm
Coating	Uncoated/BBAR 350-650nm, 650-1050nm, 1050-1580nm, or Custom	Surface Quality (S/D)	40/20
Irregularity@632.8nm	λ/4-λ	Centering Error	≤2 arc min
Clear Aperture	>90%	Protective Chamfer	<0.2mmx45°

Product List of N-BK7 Biconvex Lenses

Code	Material	Diameter	CT	ET	Focal Length	Coating	Price
1107-001	N-BK7	6mm	2.4mm	1.5mm	10mm	Uncoated	$12.00
1107-001A	N-BK7	6mm	2.4mm	1.5mm	10mm	350-650nm AR Coating	$18.50
1107-001B	N-BK7	6mm	2.4mm	1.5mm	10mm	650-1050nm AR Coating	$18.50
1107-00C	N-BK7	6mm	2.4mm	1.5mm	10mm	1050-1580nm AR Coating	$22.00
1107-002	N-BK7	6mm	2.3mm	1.5mm	12mm	Uncoated	$12.00
1107-002A	N-BK7	6mm	2.3mm	1.5mm	12mm	350-650nm AR Coating	$18.50
1107-002B	N-BK7	6mm	2.3mm	1.5mm	12mm	650-1050nm AR Coating	$18.50
1107-002C	N-BK7	6mm	2.3mm	1.5mm	12mm	1050-1580nm AR Coating	$22.00
1107-003	N-BK7	6mm	2.1mm	1.5mm	15mm	Uncoated	$12.00
1107-003A	N-BK7	6mm	2.1mm	1.5mm	15mm	350-650nm AR Coating	$18.50
1107-003B	N-BK7	6mm	2.1mm	1.5mm	15mm	650-1050nm AR Coating	$18.50
1107-003C	N-BK7	6mm	2.1mm	1.5mm	15mm	1050-1580nm AR Coating	$22.00
1107-004	N-BK7	6mm	1.8mm	1.5mm	30mm	Uncoated	$11.50
1107-004A	N-BK7	6mm	1.8mm	1.5mm	30mm	350-650nm AR Coating	$17.50
1107-004B	N-BK7	6mm	1.8mm	1.5mm	30mm	650-1050nm AR Coating	$17.50
1107-004C	N-BK7	6mm	1.8mm	1.5mm	30mm	1050-1580nm AR Coating	$18.00
1107-005	N-BK7	9mm	3.6mm	1.8mm	12mm	Uncoated	$12.00
1107-005A	N-BK7	9mm	3.6mm	1.8mm	12mm	350-650nm AR Coating	$18.50
1107-005B	N-BK7	9mm	3.6mm	1.8mm	12mm	650-1050nm AR Coating	$18.50
1107-005C	N-BK7	9mm	3.6mm	1.8mm	12mm	1050-1580nm AR Coating	$22.00

Product List of N-BK7 Biconvex Lenses

Code	Material	Diameter	CT	ET	Focal Length	Coating	Price
1107-006	N-BK7	9mm	2.8mm	1.8mm	20mm	Uncoated	$11.50
1107-006A	N-BK7	9mm	2.8mm	1.8mm	20mm	350-650nm AR Coating	$17.50
1107-006B	N-BK7	9mm	2.8mm	1.8mm	20mm	650-1050nm AR Coating	$17.50
1107-006C	N-BK7	9mm	2.8mm	1.8mm	20mm	1050-1580nm AR Coating	$18.00
1107-007	N-BK7	12.7mm	4.7mm	1.8mm	15mm	Uncoated	$12.00
1107-007A	N-BK7	12.7mm	4.7mm	1.8mm	15mm	350-650nm AR Coating	$18.50
1107-007B	N-BK7	12.7mm	4.7mm	1.8mm	15mm	650-1050nm AR Coating	$18.50
1107-007C	N-BK7	12.7mm	4.7mm	1.8mm	15mm	1050-1580nm AR Coating	$22.00
1107-008	N-BK7	12.7mm	3.9mm	1.8mm	20mm	Uncoated	$11.50
1107-008A	N-BK7	12.7mm	3.9mm	1.8mm	20mm	350-650nm AR Coating	$17.50
1107-008B	N-BK7	12.7mm	3.9mm	1.8mm	20mm	650-1050nm AR Coating	$17.50
1107-008C	N-BK7	12.7mm	3.9mm	1.8mm	20mm	1050-1580nm AR Coating	$18.00
1107-009	N-BK7	12.7mm	3.4mm	1.8mm	25mm	Uncoated	$11.50
1107-009A	N-BK7	12.7mm	3.4mm	1.8mm	25mm	350-650nm AR Coating	$17.50
1107-009B	N-BK7	12.7mm	3.4mm	1.8mm	25mm	650-1050nm AR Coating	$17.50
1107-009C	N-BK7	12.7mm	3.4mm	1.8mm	25mm	1050-1580nm AR Coating	$18.00
1107-010	N-BK7	12.7mm	3.1mm	1.8mm	30mm	Uncoated	$11.50
1107-010A	N-BK7	12.7mm	3.1mm	1.8mm	30mm	350-650nm AR Coating	$17.50
1107-010B	N-BK7	12.7mm	3.1mm	1.8mm	30mm	650-1050nm AR Coating	$17.50
1107-010C	N-BK7	12.7mm	3.1mm	1.8mm	30mm	1050-1580nm AR Coating	$18.00
1107-011	N-BK7	12.7mm	2.8mm	1.8mm	40mm	Uncoated	$11.50
1107-011A	N-BK7	12.7mm	2.8mm	1.8mm	40mm	350-650nm AR Coating	$17.50
1107-011B	N-BK7	12.7mm	2.8mm	1.8mm	40mm	650-1050nm AR Coating	$17.50
1107-011C	N-BK7	12.7mm	2.8mm	1.8mm	40mm	1050-1580nm AR Coating	$18.00
1107-012	N-BK7	12.7mm	2.6mm	1.8mm	50mm	Uncoated	$11.50
1107-012A	N-BK7	12.7mm	2.6mm	1.8mm	50mm	350-650nm AR Coating	$17.50
1107-012B	N-BK7	12.7mm	2.6mm	1.8mm	50mm	650-1050nm AR Coating	$17.50
1107-012C	N-BK7	12.7mm	2.6mm	1.8mm	50mm	1050-1580nm AR Coating	$18.00
1107-013	N-BK7	12.7mm	2.2mm	1.8mm	100mm	Uncoated	$11.50
1107-013A	N-BK7	12.7mm	2.2mm	1.8mm	100mm	350-650nm AR Coating	$17.50
1107-013B	N-BK7	12.7mm	2.2mm	1.8mm	100mm	650-1050nm AR Coating	$17.50
1107-013C	N-BK7	12.7mm	2.2mm	1.8mm	100mm	1050-1580nm AR Coating	$18.00
1107-014	N-BK7	25.4mm	9mm	1.9mm	25.4mm	Uncoated	$12.00
1107-014A	N-BK7	25.4mm	9mm	1.9mm	25.4mm	350-650nm AR Coating	$18.00
1107-014B	N-BK7	25.4mm	9mm	1.9mm	25.4mm	650-1050nm AR Coating	$18.00
1107-014C	N-BK7	25.4mm	9mm	1.9mm	25.4mm	1050-1580nm AR Coating	$19.00
1107-015	N-BK7	25.4mm	7.7mm	2mm	30mm	Uncoated	$12.00
1107-015A	N-BK7	25.4mm	7.7mm	2mm	30mm	350-650nm AR Coating	$18.00
1107-015B	N-BK7	25.4mm	7.7mm	2mm	30mm	650-1050nm AR Coating	$18.00
1107-015C	N-BK7	25.4mm	7.7mm	2mm	30mm	1050-1580nm AR Coating	$19.00
1107-016	N-BK7	25.4mm	6.8mm	2mm	35mm	Uncoated	$12.00
1107-016A	N-BK7	25.4mm	6.8mm	2mm	35mm	350-650nm AR Coating	$18.00
1107-016B	N-BK7	25.4mm	6.8mm	2mm	35mm	650-1050nm AR Coating	$18.00
1107-016C	N-BK7	25.4mm	6.8mm	2mm	35mm	1050-1580nm AR Coating	$19.00
1107-017	N-BK7	25.4mm	6.1mm	2mm	40mm	Uncoated	$12.00
1107-017A	N-BK7	25.4mm	6.1mm	2mm	40mm	350-650nm AR Coating	$18.00
1107-017B	N-BK7	25.4mm	6.1mm	2mm	40mm	650-1050nm AR Coating	$18.00
1107-017C	N-BK7	25.4mm	6.1mm	2mm	40mm	1050-1580nm AR Coating	$19.00
1107-018	N-BK7	25.4mm	5.2mm	2mm	50mm	Uncoated	$12.00
1107-018A	N-BK7	25.4mm	5.2mm	2mm	50mm	350-650nm AR Coating	$18.00
1107-018B	N-BK7	25.4mm	5.2mm	2mm	50mm	650-1050nm AR Coating	$18.00
1107-018C	N-BK7	25.4mm	5.2mm	2mm	50mm	1050-1580nm AR Coating	$19.00
1107-019	N-BK7	25.4mm	4.7mm	2mm	60mm	Uncoated	$12.00
1107-019A	N-BK7	25.4mm	4.7mm	2mm	60mm	350-650nm AR Coating	$18.00
1107-019B	N-BK7	25.4mm	4.7mm	2mm	60mm	650-1050nm AR Coating	$18.00
1107-019C	N-BK7	25.4mm	4.7mm	2mm	60mm	1050-1580nm AR Coating	$19.00
1107-020	N-BK7	25.4mm	4.1mm	2mm	75mm	Uncoated	$12.00
1107-020A	N-BK7	25.4mm	4.1mm	2mm	75mm	350-650nm AR Coating	$18.00
1107-020B	N-BK7	25.4mm	4.1mm	2mm	75mm	650-1050nm AR Coating	$18.00
1107-020C	N-BK7	25.4mm	4.1mm	2mm	75mm	1050-1580nm AR Coating	$19.00
1107-021	N-BK7	25.4mm	3.6mm	2mm	100mm	Uncoated	$12.00
1107-021A	N-BK7	25.4mm	3.6mm	2mm	100mm	350-650nm AR Coating	$18.00
1107-021B	N-BK7	25.4mm	3.6mm	2mm	100mm	650-1050nm AR Coating	$18.00
1107-021C	N-BK7	25.4mm	3.6mm	2mm	100mm	1050-1580nm AR Coating	$19.00
1107-022	N-BK7	25.4mm	3.3mm	2mm	125mm	Uncoated	$12.00
1107-022A	N-BK7	25.4mm	3.3mm	2mm	125mm	350-650nm AR Coating	$18.00
1107-022B	N-BK7	25.4mm	3.3mm	2mm	125mm	650-1050nm AR Coating	$18.00
1107-022C	N-BK7	25.4mm	3.3mm	2mm	125mm	1050-1580nm AR Coating	$19.00
1107-023	N-BK7	25.4mm	3.1mm	2mm	150mm	Uncoated	$12.00
1107-023A	N-BK7	25.4mm	3.1mm	2mm	150mm	350-650nm AR Coating	$18.00
1107-023B	N-BK7	25.4mm	3.1mm	2mm	150mm	650-1050nm AR Coating	$18.00
1107-023C	N-BK7	25.4mm	3.1mm	2mm	150mm	1050-1580nm AR Coating	$19.00
1107-024	N-BK7	25.4mm	2.9mm	2mm	175mm	Uncoated	$12.00
1107-024A	N-BK7	25.4mm	2.9mm	2mm	175mm	350-650nm AR Coating	$18.00
1107-024B	N-BK7	25.4mm	2.9mm	2mm	175mm	650-1050nm AR Coating	$18.00
1107-024C	N-BK7	25.4mm	2.9mm	2mm	175mm	1050-1580nm AR Coating	$19.00
1107-025	N-BK7	25.4mm	2.8mm	2mm	200mm	Uncoated	$12.00
1107-025A	N-BK7	25.4mm	2.8mm	2mm	200mm	350-650nm AR Coating	$18.00

Product List of N-BK7 Biconvex Lenses

Code	Material	Diameter	CT	ET	Focal length	Coating	Unit Price
1107-025B	N-BK7	25.4mm	2.0mm	2.8mm	200mm	650-1050nm AR Coating	$18.0
1107-025C	N-BK7	25.4mm	2.0mm	2.8mm	200mm	1050-1580nm AR Coating	$19.0
1107-026	N-BK7	25.4mm	2.0mm	2.6mm	250mm	Uncoated	$12.0
1107-026A	N-BK7	25.4mm	2.0mm	2.6mm	250mm	350-650nm AR Coating	$18.0
1107-026B	N-BK7	25.4mm	2.0mm	2.6mm	250mm	650-1050nm AR Coating	$18.0
1107-026C	N-BK7	25.4mm	2.0mm	2.6mm	250mm	1050-1580nm AR Coating	$19.0
1107-027	N-BK7	25.4mm	2.0mm	2.5mm	300mm	Uncoated	$13.5
1107-027A	N-BK7	25.4mm	2.0mm	2.5mm	300mm	350-650nm AR Coating	$20.0
1107-027B	N-BK7	25.4mm	2.0mm	2.5mm	300mm	650-1050nm AR Coating	$20.0
1107-027C	N-BK7	25.4mm	2.0mm	2.5mm	300mm	1050-1580nm AR Coating	$22.0
1107-028	N-BK7	25.4mm	2.0mm	2.4mm	400mm	Uncoated	$13.5
1107-028A	N-BK7	25.4mm	2.0mm	2.4mm	400mm	350-650nm AR Coating	$20.0
1107-028C	N-BK7	25.4mm	2.0mm	2.4mm	400mm	1050-1580nm AR Coating	$22.0
1107-028B	N-BK7	25.4mm	2.0mm	2.4mm	400mm	650-1050nm AR Coating	$20.0
1107-029	N-BK7	25.4mm	2.0mm	2.3mm	500mm	Uncoated	$13.5
1107-029A	N-BK7	25.4mm	2.0mm	2.3mm	500mm	350-650nm AR Coating	$18.5
1107-029B	N-BK7	25.4mm	2.0mm	2.3mm	500mm	650-1050nm AR Coating	$19.0
1107-029C	N-BK7	25.4mm	2.0mm	2.3mm	500mm	1050-1580nm AR Coating	$22.5
1107-030	N-BK7	25.4mm	2.0mm	2.2mm	750mm	Uncoated	$13.5
1107-030A	N-BK7	25.4mm	2.0mm	2.2mm	750mm	350-650nm AR Coating	$19.0
1107-030B	N-BK7	25.4mm	2.0mm	2.2mm	750mm	650-1050nm AR Coating	$19.0
1107-030C	N-BK7	25.4mm	2.0mm	2.2mm	750mm	1050-1580nm AR Coating	$22.5
1107-031	N-BK7	25.4mm	2.0mm	2.2mm	1000mm	Uncoated	$13.5
1107-031A	N-BK7	25.4mm	2.0mm	2.2mm	1000mm	350-650nm AR Coating	$19.0
1107-031B	N-BK7	25.4mm	2.0mm	2.2mm	1000mm	650-1050nm AR Coating	$19.0
1107-031C	N-BK7	25.4mm	2.0mm	2.2mm	1000mm	1050-1580nm AR Coating	$22.5
1107-032	N-BK7	50.8mm	3.0mm	14.4mm	60mm	Uncoated	$22.0
1107-032B	N-BK7	50.8mm	3.0mm	14.4mm	60mm	650-1050nm AR Coating	$32.5
1107-032C	N-BK7	50.8mm	3.0mm	14.4mm	60mm	1050-1580nm AR Coating	$33.5
1107-033	N-BK7	50.8mm	3.0mm	11.8mm	75mm	Uncoated	$22.0
1107-033A	N-BK7	50.8mm	3.0mm	11.8mm	75mm	350-650nm AR Coating	$32.5
1107-033B	N-BK7	50.8mm	3.0mm	11.8mm	75mm	650-1050nm AR Coating	$32.5
1107-033C	N-BK7	50.8mm	3.0mm	11.8mm	75mm	1050-1580nm AR Coating	$33.5
1107-034	N-BK7	50.8mm	3.0mm	9.5mm	100mm	Uncoated	$22.0
1107-034A	N-BK7	50.8mm	3.0mm	9.5mm	100mm	350-650nm AR Coating	$32.5
1107-034B	N-BK7	50.8mm	3.0mm	9.5mm	100mm	650-1050nm AR Coating	$32.5
1107-034C	N-BK7	50.8mm	3.0mm	9.5mm	100mm	1050-1580nm AR Coating	$33.5
1107-035	N-BK7	50.8mm	3.0mm	8.1mm	125mm	Uncoated	$22.0
1107-035A	N-BK7	50.8mm	3.0mm	8.1mm	125mm	350-650nm AR Coating	$32.5
1107-035B	N-BK7	50.8mm	3.0mm	8.1mm	125mm	650-1050nm AR Coating	$32.5
1107-035C	N-BK7	50.8mm	3.0mm	8.1mm	125mm	1050-1580nm AR Coating	$33.5
1107-036	N-BK7	50.8mm	3.0mm	7.2mm	150mm	Uncoated	$22.0
1107-036A	N-BK7	50.8mm	3.0mm	7.2mm	150mm	350-650nm AR Coating	$32.5
1107-036B	N-BK7	50.8mm	3.0mm	7.2mm	150mm	650-1050nm AR Coating	$32.5
1107-036C	N-BK7	50.8mm	3.0mm	7.2mm	150mm	1050-1580nm AR Coating	$33.5
1107-037	N-BK7	50.8mm	3.0mm	6.6mm	175mm	Uncoated	$22.0
1107-037A	N-BK7	50.8mm	3.0mm	6.6mm	175mm	350-650nm AR Coating	$32.5
1107-037B	N-BK7	50.8mm	3.0mm	6.6mm	175mm	650-1050nm AR Coating	$32.5
1107-037C	N-BK7	50.8mm	3.0mm	6.6mm	175mm	1050-1580nm AR Coating	$33.5
1107-038	N-BK7	50.8mm	3.0mm	6.2mm	200mm	Uncoated	$22.0
1107-038A	N-BK7	50.8mm	3.0mm	6.2mm	200mm	350-650nm AR Coating	$32.5
1107-038B	N-BK7	50.8mm	3.0mm	6.2mm	200mm	650-1050nm AR Coating	$32.5
1107-038C	N-BK7	50.8mm	3.0mm	6.2mm	200mm	1050-1580nm AR Coating	$33.5
1107-039	N-BK7	50.8mm	3.0mm	5.5mm	250mm	Uncoated	$22.0
1107-039A	N-BK7	50.8mm	3.0mm	5.5mm	250mm	350-650nm AR Coating	$32.5
1107-039B	N-BK7	50.8mm	3.0mm	5.5mm	250mm	650-1050nm AR Coating	$32.5
1107-039C	N-BK7	50.8mm	3.0mm	5.5mm	250mm	1050-1580nm AR Coating	$33.5
1107-040	N-BK7	50.8mm	3.0mm	5.1mm	300mm	Uncoated	$23.5
1107-040A	N-BK7	50.8mm	3.0mm	5.1mm	300mm	350-650nm AR Coating	$34.0
1107-040B	N-BK7	50.8mm	3.0mm	5.1mm	300mm	650-1050nm AR Coating	$34.0
1107-040C	N-BK7	50.8mm	3.0mm	5.1mm	300mm	1050-1580nm AR Coating	$34.5
1107-041	N-BK7	50.8mm	3.0mm	4.6mm	400mm	Uncoated	$23.5
1107-041A	N-BK7	50.8mm	3.0mm	4.6mm	400mm	350-650nm AR Coating	$34.0
1107-041B	N-BK7	50.8mm	3.0mm	4.6mm	400mm	650-1050nm AR Coating	$34.0
1107-041C	N-BK7	50.8mm	3.0mm	4.6mm	400mm	1050-1580nm AR Coating	$34.5
1107-042	N-BK7	50.8mm	3.0mm	4.3mm	500mm	Uncoated	$23.5
1107-042A	N-BK7	50.8mm	3.0mm	4.3mm	500mm	350-650nm AR Coating	$34.0
1107-042B	N-BK7	50.8mm	3.0mm	4.3mm	500mm	650-1050nm AR Coating	$34.0
1107-042C	N-BK7	50.8mm	3.0mm	4.3mm	500mm	1050-1580nm AR Coating	$34.5
1107-043	N-BK7	50.8mm	3.0mm	3.8mm	750mm	Uncoated	$23.5
1107-043A	N-BK7	50.8mm	3.0mm	3.8mm	750mm	350-650nm AR Coating	$34.0
1107-043B	N-BK7	50.8mm	3.0mm	3.8mm	750mm	650-1050nm AR Coating	$34.0
1107-043C	N-BK7	50.8mm	3.0mm	3.8mm	750mm	1050-1580nm AR Coating	$34.5
1107-044	N-BK7	50.8mm	3.0mm	3.6mm	1000mm	Uncoated	$23.5
1107-044A	N-BK7	50.8mm	3.0mm	3.6mm	1000mm	350-650nm AR Coating	$34.0
1107-044B	N-BK7	50.8mm	3.0mm	3.6mm	1000mm	650-1050nm AR Coating	$34.0
1107-044C	N-BK7	50.8mm	3.0mm	3.6mm	1000mm	1050-1580nm AR Coating	$34.5

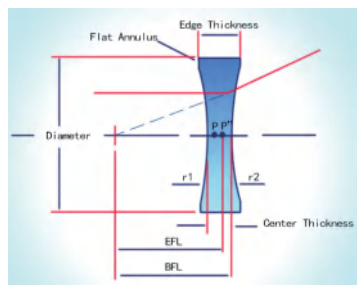
Biconcave Lenses

A biconcave lens or double concave lens is an optical lens with two identical inward-bent spherical surfaces with equal radii of curvature. A double concave lens has a negative focal length and diverges a collimated light beam to the virtual focal point (that is the point at which the extension lines of the diverging light path intersect at the object side of the concave lens). The usages of Biconcave lenses are diverse, encompassing divergence of collimated or focused light beams, beam diameter modulation (e.g., Galilean beam expanders), the correction of spherical aberration of optical assemblies, and increasing the focal lengths of a lens group, etc. Due to its symmetric structure, a double concave lens works best when the conjugate ratio (object distance: image distance) is close or equal to 1:1. In such situations, the distortion, spherical/chromatic aberration, and coma could be offset as a result of the equilibrium of the lenses. Whilst, when the intended magnification ratio is <1/5 or >5, a Plano concave lens will be a better alternative.

Hangzhou Shalom EO offers Off-the-shelf N-BK7 Biconcave Lenses, Off-the-shelf UV Fused Silica Biconcave Lenses, and Custom Biconcave Lenses made of BaF2, CaF2, MgF2, Ge, ZnSe, Sapphire, and other optical materials.

The stock N-BK7 Bi-concave Lenses have four standard coating options: uncoated, 350-650nm, 650-1100 nm, and 1050-1580nm broadband anti-reflection (BBAR) coatings. Shalom EO's stock UV Fused Silica Bi-concave Lenses only have uncoated versions so far. Custom V-coatings that exhibit optimized transmission and low-cost MgF2 AR coatings with various transmission wavelengths could be furnished onto UVFS biconcave lenses upon request.

N-BK7 Biconcave Lenses



- Double concave structure recommended for absolute conjugate ratio close to 1:1
- Made from N-BK7 (excellent transmission from visible to the NIR region)
- Standardized focal lengths and diameters convenient for OEM
- Various standard and custom coating options, focal lengths (standard -6 to -100mm)
- Applications: Galilean laser beam expander, optical character readers, viewers, and projectors
- Custom Biconcave Lenses made from different materials are available

N-BK7 is a kind of optical glass often used for manufacturing optical components, including lenses. N-BK7 glass is known for its low cost, high optical transmission across the visible spectrum and into the near-infrared region (350-2200nm), low dispersion, high hardness and resistance to scratches and abrasions, and the ability to withstand changes in temperature without significant expansion or contraction. It belongs to the Schott glass catalog, and is one of the most common optical glass materials.

Shalom EO's stock N-BK7 Bi-concave Lenses have four standard coating options: uncoated, 350-650nm, 650-1100 nm, and 1050-1580nm broadband anti-reflection (BBAR) coatings. Custom V-coatings that exhibit optimized transmission and low-cost MgF2 AR coatings with various transmission wavelengths could be furnished onto the N-BK7 and UVFS biconcave lenses upon request. Besides the stocked N-BK7 and UV Fused Silica Biconcave lenses, Shalom EO also provides off-the-shelf UV Fused Silica biconcave lenses and custom biconcave lenses made from BaF2, CaF2, MgF2, Ge, ZnSe, Sapphire, and other optical materials.

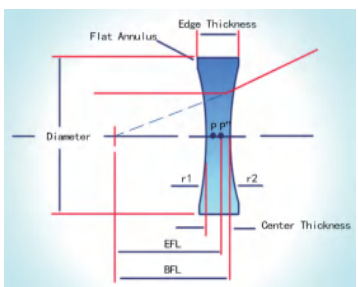
Specifications:

Type	Biconcave Lenses	Material	N-BK7(H-K9L)
Clear Aperture	>90%	Diameter Tolerance	+0.00/-0.1mm
Thickness Tolerance	±0.1mm	Surface Irregularity	λ/4-λ@633nm
Centering Error	3 arcmin	Focal Length Tolerance	+/-1%
Chamfer	0.2mm x 45 degree		

Product List of N-BK7 Biconcave Lenses

Code	Material	Diameter	CT	ET	Focal Length	Coating	Price
1108-006	N-BK7	12.7mm	2.5mm	4.1mm	-25mm	Uncoated	$11.50
1108-006A	N-BK7	12.7mm	2.5mm	4.1mm	-25mm	350-650nm AR Coating	$17.50
1108-006B	N-BK7	12.7mm	2.5mm	4.1mm	-25mm	650-1050nm AR Coating	$17.50
1108-006C	N-BK7	12.7mm	2.5mm	4.1mm	-25mm	1050-1580nm AR Coating	$18.00
1108-008	N-BK7	12.7mm	3mm	4.3mm	-30mm	Uncoated	$11.50
1108-008A	N-BK7	12.7mm	3mm	4.3mm	-30mm	350-650nm AR Coating	$17.50
1108-008B	N-BK7	12.7mm	3mm	4.3mm	-30mm	650-1050nm AR Coating	$17.50
1108-008C	N-BK7	12.7mm	3mm	4.3mm	-30mm	1050-1580nm AR Coating	$18.00
1108-010	N-BK7	12.7mm	3.5mm	4.3mm	-50mm	Uncoated	$11.50
1108-010A	N-BK7	12.7mm	3.5mm	4.3mm	-50mm	350-650nm AR Coating	$17.50
1108-010B	N-BK7	12.7mm	3.5mm	4.3mm	-50mm	650-1050nm AR Coating	$17.50
1108-010C	N-BK7	12.7mm	3.5mm	4.3mm	-50mm	1050-1580nm AR Coating	$18.00
1108-013	N-BK7	25.4mm	3mm	6.1mm	-50mm	Uncoated	$12.00
1108-013A	N-BK7	25.4mm	3mm	6.1mm	-50mm	350-650nm AR Coating	$18.00
1108-013B	N-BK7	25.4mm	3mm	6.1mm	-50mm	650-1050nm AR Coating	$18.00
1108-013C	N-BK7	25.4mm	3mm	6.1mm	-50mm	1050-1580nm AR Coating	$19.00
1108-015	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	Uncoated	$12.00
1108-015A	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	350-650nm AR Coating	$18.00
1108-015B	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	650-1050nm AR Coating	$18.00
1108-015C	N-BK7	25.4mm	3.5mm	5.6mm	-75mm	1050-1580nm AR Coating	$19.00
1108-017	N-BK7	25.4mm	4mm	5.6mm	-100mm	Uncoated	$12.00
1108-017A	N-BK7	25.4mm	4mm	5.6mm	-100mm	350-650nm AR Coating	$18.00
1108-017B	N-BK7	25.4mm	4mm	5.6mm	-100mm	650-1050nm AR Coating	$18.00
1108-017C	N-BK7	25.4mm	4mm	5.6mm	-100mm	1050-1580nm AR Coating	$19.00

UV Fused Silica Biconcave Lenses



- Double concave structure recommended for absolute conjugate ratio close to 1:1
- Made of UV Fused Silica (superior transmission from UV to NIR)
- Standardized focal lengths and diameters convenient for OEM
- Various standard and custom coating options, focal lengths (standard -6 to -100mm)
- Applications: Galilean laser beam expander, optical character readers, viewers, and projectors
- Custom Biconcave Lenses made from different materials are available

UV Fused Silica, equivalently known as JGS1, is an optical glass material with exception transmittance to the UV wavelengths, meanwhile also being widely transparent to visible and NIR wavelengths (transmission range 200-2200 nm). UV Grade Fused Silica is one of the best ultraviolet-transmitting media. The thermal properties of UVFS are prominent, too, including high-temperature endurance and low thermal expansion. Other benefits of UV-fused silica lenses encompass few bubbles/striae, high homogeneities, chemical inertness, mechanical hardness, and advantages of birefringent properties. Therefore, the UVFS lens is a superior option for building a stable optical device under harsh working conditions.

Shalom EO's stock UV Fused Silica Bi-concave Lenses only have uncoated versions so far. While custom V-coatings that exhibit optimized transmission and low-cost MgF2 AR coatings with various transmission wavelengths could be furnished onto UVFS biconcave lenses upon request. Besides the stocked N-BK7 and UV Fused Silica Biconcave lenses, Shalom EO also provides Standard N-BK7 biconcave lenses and custom biconcave lenses made from BaF2, CaF2, MgF2, Ge, ZnSe, Sapphire, and other optical materials.

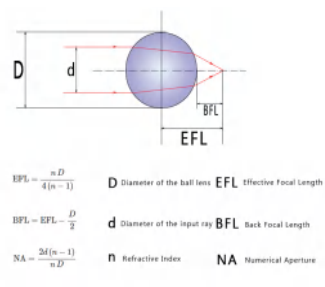
Specifications:

Type	Biconcave Lenses	Material	UV Fused Silica(JGS1)
Clear Aperture	>90%	Diameter Tolerance	+0.00/-0.1mm
Thickness Tolerance	±0.1mm	Surface Irregularity	λ/4-λ@633nm
Centering Error	3 arcmin	Focal Length Tolerance	+/-1%
Chamfer	0.2mm x 45 degree		

Product List of UV Fused Silica Biconcave Lenses

Code	Material	Diameter	CT	ET	Focal Length	Coating	Price
1108-001	UV Fused Silica	6.0mm	2.5mm	4.1mm	-6mm	Uncoated	$19.00
1108-002	UV Fused Silica	6.0mm	3.0mm	3.8mm	-12mm	Uncoated	$19.00
1108-003	UV Fused Silica	9.0mm	2.5mm	5.0mm	-9mm	Uncoated	$19.00
1108-004	UV Fused Silica	9.0mm	3.0mm	4.2mm	-18mm	Uncoated	$17.50
1108-005	UV Fused Silica	12.7mm	3.0mm	6.0mm	-15mm	Uncoated	$19.00
1108-007	UV Fused Silica	12.7mm	3.0mm	4.8mm	-25mm	Uncoated	$17.50
1108-009	UV Fused Silica	12.7mm	3.0mm	4.5mm	-30mm	Uncoated	$17.50
1108-011	UV Fused Silica	12.7mm	3.0mm	3.9mm	-50mm	Uncoated	$17.50
1108-012	UV Fused Silica	25.4mm	3.0mm	10.5mm	-25mm	Uncoated	$42.00
1108-014	UV Fused Silica	25.4mm	3.5mm	7.0mm	-50mm	Uncoated	$42.00
1108-016	UV Fused Silica	25.4mm	3.5mm	5.8mm	-75mm	Uncoated	$42.00
1108-018	UV Fused Silica	25.4mm	3.5mm	5.3mm	-100mm	Uncoated	$42.00

Ball Lenses



- Broad diameter range: 0.3mm to 100mm
- Substrate Materials: Sapphire, N-BK7, UV Fused Silica, Ruby, Ge, ZnSe, and other High-Refractive-Index Glass
- Coating Options: None or AR Coatings
- Applications: fiber coupling, objective lenses for endoscopes, bar code scanning, and sensors, pre-forms of Aspheric Lenses

Ball Lenses are a special form of biconvex lenses that inherit the geometry of a ball (which implies spherical surfaces all around the perimeter of the lens), manufactured from a single material with the optical transmission sited in the wavelength region of interest. The predominant function of ball lenses is light collimation/coupling for optical fibers (e.g., laser-to-fiber coupling, fiber-to-fiber coupling), with other versatile possibilities to be incorporated in miniature optics (e.g., Barcode Scanning, Sensors, or objective lenses, etc.). Ball Lenses could also be considered as pre-forms of aspheric lenses. One advantage of a ball lens is its short Back Focal Length (BFL), a trait that cuts down the distance from the optic to the fiber and is exceptionally useful when the installation space is rather tight, and compact dimension could simultaneously reduce the production cost. In addition, a ball lens is rotationally symmetric, which enhances the ease of aligning and positioning.

Hangzhou Shalom EO provides off-the-shelf Ball Lenses made from N-BK7, UV Fused Silica, and Sapphire with diameters from 1-10mm, and custom Ball Lenses of various substrate materials including Ruby, Ge, ZnSe, and other Optical Glass Materials with high refractive indices. Our Ball Lenses feature compact dimension capability, effectively liberating space limitation and high precision/low spherical aberration. For custom ball lenses, a broad diameter ranging from 0.3mm to 100mm is available.

Material Selection Guidance:

N-BK7 Ball Lenses:

N-BK7 is a high-quality borosilicate crown glass requisite for the fabrication of optics. It is one of the most prevalent optical glasses, and with its transmission range from visible to near-IR, low level of inclusions, and mechanical strength, is an excellent option whenever the extra benefits of UVFS (e.g. high transmission in the UV region) are not needed. N-BK7 also features high machineability, therefore N-BK7 ball lenses are also convenient pre-forms of Aspheric Lenses.

Working Wavelength Range: 350nm to 2200nm

Refractive Index: 1.51680 @ 587.5618 nm

Thermal Expansion: 7.1 x 10-6/K

UV Grade Fused Silica Ball Lenses :

UV Grade Fused Silica is amorphous state silicon dioxide made from fusing SiCl4 stones with high purity oxyhydrogen flame. The most outstanding attribute of UV Fused Silica is its high transmission rate in the ultraviolet region. The low coefficients of thermal expansion contribute to the high thermal stability. In addition, the material also features high chemical resistance and minimal fluorescence under UV illumination.

Working Wavelength Range: 200nm to 2200nm

Refractive Index: 1.458

Thermal Expansion: 0.57 x 10-6/℃

Sapphire Ball Lenses:

Optical grade Single Crystal Sapphire (Al2O3) Ball and Half Ball Lenses, with unrivaled surface hardness, great heat resistance, and durability to chemical corrosions, is particularly suitable for operating environments that are subject to high heat/power/pressure. The broad transmission range of Sapphire from 0.15-5.5μm is also impressive. The large Refractive Index of Sapphire suggests decreased spherical aberration.

Working Wavelength Range: 170nm-5500nm

Refractive Index: 1.77

Compressive Strength (psi): 300,000

Thermal expansion: 5.6x10-6/K (parallel), 5.0x10-6/k (perpendicular)

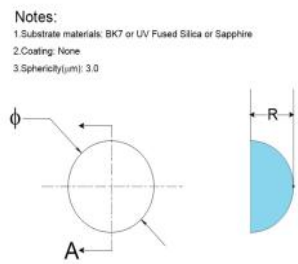
Specifications:

Materials	Sapphire, N-BK7, UVFS, Ruby, Ge, ZnSe, High-Refractive-Index Glass	Lens Type	Ball Lens
Diameters	0.3mm-100mm	Sphericity	Standard 2μm
Working Wavelength Range	UV to IR	Irregularity (@663nm)	λ/4
Surface Quality	40/20 S/D	Coating	None or Custom AR Coatings

Product List of Ball Lenses

Code	Types	Material	Diameter	EFL	Coating	Unit Price
1105-001	Ball	N-BK7	1.0mm	0.73mm	None	$5.5
1105-002	Ball	UV Fused Silica	1.0mm	0.80mm	None	$8.5
1105-003	Ball	Sapphire	1.0mm	0.57mm	None	$10.0
1105-004	Ball	N-BK7	2.0mm	1.47mm	None	$5.5
1105-005	Ball	UV Fused Silica	2.0mm	1.59mm	None	$8.5
1105-006	Ball	Sapphire	2.0mm	1.15mm	None	$10.0
1105-031	Ball	CDGM H-LAK8A	2.5mm	/	None	$5.5
1105-007	Ball	N-BK7	3.0mm	2.20mm	None	$5.5
1105-008	Ball	UV Fused Silica	3.0mm	2.39mm	None	$8.5
1105-009	Ball	Sapphire	3.0mm	1.72mm	None	$10.0
1105-010	Ball	N-BK7	4.0mm	2.93mm	None	$5.5
1105-011	Ball	UV Fused Silica	4.0mm	3.18mm	None	Inquiry
1105-012	Ball	Sapphire	4.0mm	2.30mm	None	$12.0
1105-013	Ball	N-BK7	5.0mm	3.67mm	None	$5.5
1105-014	Ball	UV Fused Silica	5.0mm	3.98mm	None	$10.0
1105-015	Ball	Sapphire	5.0mm	2.87mm	None	$12.0
1105-016	Ball	N-BK7	6.0mm	4.40mm	None	$7.5
1105-017	Ball	UV Fused Silica	6.0mm	4.78mm	None	$10.0
1105-018	Ball	Sapphire	6.0mm	3.45mm	None	$15.0
1105-019	Ball	N-BK7	7.0mm	5.14mm	None	$7.5
1105-020	Ball	UV Fused Silica	7.0mm	5.57mm	None	$10.0
1105-021	Ball	Sapphire	7.0mm	4.02mm	None	Inquiry
1105-022	Ball	N-BK7	8.0mm	5.87mm	None	$7.5
1105-023	Ball	UV Fused Silica	8.0mm	6.37mm	None	$12.0
1105-024	Ball	Sapphire	8.0mm	4.60mm	None	$18.5
1105-025	Ball	N-BK7	9.0mm	6.61mm	None	$7.5
1105-026	Ball	UV Fused Silica	9.0mm	7.16mm	None	$12.0
1105-027	Ball	Sapphire	9.0mm	5.17mm	None	$20.0
1105-028	Ball	N-BK7	10.0mm	7.34mm	None	$7.5
1105-029	Ball	UV Fused Silica	10.0mm	7.96mm	None	$12.0
1105-030	Ball	Sapphire	10.0mm	5.75mm	None	$23.0

Half-Ball Lenses



- Broad diameter range: 0.3mm to 100mm
- Substrate Materials: Sapphire, N-BK7, UV Fused Silica, Ruby, Ge, ZnSe, ZnS, and other High-Refractive-Index Glass
- AR coatings optional
- Applications: fiber coupling, objective lenses for endoscopes, bar code scanning, and sensors, pre-forms of Aspheric Lenses

Ball Lenses are a special form of biconvex lenses that inherit the geometry of a ball (which implies spherical surfaces all around the perimeter of the lens), manufactured from a single material with the optical transmission sited in the wavelength region of interest. The predominant function of ball lenses is light collimation/coupling for optical fibers (e.g., laser-to-fiber coupling, fiber-to-fiber coupling), with other versatile possibilities to be incorporated in miniature optics (e.g., Barcode Scanning, Sensors, or objective lenses, etc.). Ball Lenses could also be considered as pre-forms of aspheric lenses. One advantage of a ball lens is its short Back Focal Length (BFL), a trait that cuts down the distance from the optic to the fiber and is exceptionally useful when the installation space is rather tight, and compact dimension could simultaneously reduce the production cost. In addition, a ball lens is rotationally symmetric, which enhances the ease of aligning and positioning.

Half-Ball Lenses are variants of ball lenses, obtained through simply cutting the ball lenses in half. Due to the ease of mounting brought by the one flat surface, half-ball lenses are ideal for applications where more compact designs are required.

Hangzhou Shalom EO provides both stocked and custom Half Ball Lenses made from N-BK7, UV Fused Silica, Sapphire, Ruby, Ge, ZnSe, ZnS, and other optical glass materials with high refractive indices, with a broad diameter range from 0.3mm to 100mm and optional AR coatings.

Material Selection Guidance:

N-BK7 Ball Lenses:

N-BK7 is a high-quality borosilicate crown glass requisite for the fabrication of optics. It is one of the most prevalent optical glasses, and with its transmission range from visible to near-IR, low level of inclusions, and mechanical strength, is an excellent option whenever the extra benefits of UVFS (e.g. high transmission in the UV region) are not needed. N-BK7 also features high machineability, therefore N-BK7 ball lenses are also convenient pre-forms of Aspheric Lenses.

· Working Wavelength Range: 350nm to 2200nm
· Refractive Index: 1.51680 @ 587.5618 nm
· Thermal Expansion: 7.1 x 10-6/K

UV Grade Fused Silica Ball Lenses :

UV Grade Fused Silica is amorphous state silicon dioxide made from fusing SiCl4 stones with high purity oxyhydrogen flame. The most outstanding attribute of UV Fused Silica is its high transmission rate in the ultraviolet region. The low coefficients of thermal expansion contribute to the high thermal stability. In addition, the material also features high chemical resistance and minimal fluorescence under UV illumination.

· Working Wavelength Range: 200nm to 2200nm
· Refractive Index: 1.458
· Thermal Expansion: 0.57 x 10-6/℃

Sapphire Ball Lenses:

Optical grade Single Crystal Sapphire (Al2O3) Ball and Half Ball Lenses, with unrivaled surface hardness, great heat resistance, and durability to chemical corrosions, are in particular suitable for operating environments that are subject to high heat/power/pressure. The broad transmission range of Sapphire from 0.15-5.5μm is also impressive. The large Refractive Index of Sapphire suggests decreased spherical aberration.

· Working Wavelength Range: 170nm-5500nm
· Refractive Index: 1.77
· Compressive Strength (psi): 300,000
· Thermal expansion: 5.6x10-6/K (parallel), 5.0x10-6/k (perpendicular)

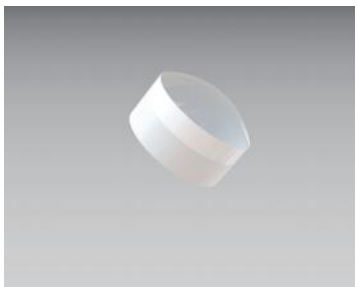
Specifications:

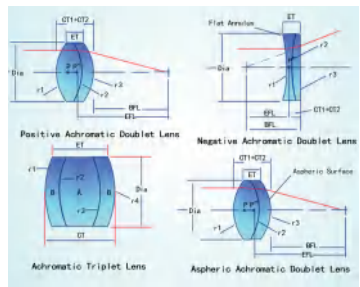
Materials	Sapphire, N-BK7, UVFS, Ruby, Ge, ZnSe, High-Refractive-Index Glass	Lens Type	Half Ball Lens
Diameters	0.3mm-100mm	Sphericity	Standard 2.0μm
Working Wavelength Range	UV to IR	Irregularity (@633nm)	λ/4
Surface Quality	40/20 S/D	Coating	None or Custom AR Coatings

Product List of Half-Ball Lenses

Code	Types	Material	Diameter	EFL	Coating	Unit Price
1106-001	Half-Ball	N-BK7	1.0mm	-	None	$8.0
1106-002	Half-Ball	UV Fused Silica	1.0mm	-	None	Inquiry
1106-003	Half-Ball	Sapphire	1.0mm	-	None	Inquiry
1106-004	Half-Ball	N-BK7	2.0mm	-	None	$8.0
1106-005	Half-Ball	UV Fused Silica	2.0mm	-	None	$8.5
1106-006	Half-Ball	Sapphire	2.0mm	-	None	$10.0
1106-007	Half-Ball	N-BK7	3.0mm	-	None	$8.0
1106-008	Half-Ball	UV Fused Silica	3.0mm	-	None	$8.5
1106-009	Half-Ball	Sapphire	3.0mm	-	None	Inquiry
1106-010	Half-Ball	N-BK7	4.0mm	-	None	$8.0
1106-011	Half-Ball	UV Fused Silica	4.0mm	-	None	$8.5
1106-012	Half-Ball	Sapphire	4.0mm	-	None	$12.0
1106-013	Half-Ball	N-BK7	5.0mm	-	None	$8.0
1106-014	Half-Ball	UV Fused Silica	5.0mm	-	None	$11.0
1106-015	Half-Ball	Sapphire	5.0mm	-	None	$12.0
1106-016	Half-Ball	N-BK7	6.0mm	-	None	$8.0
1106-017	Half-Ball	UV Fused Silica	6.0mm	-	None	$12.0
1106-018	Half-Ball	Sapphire	6.0mm	-	None	Inquiry
1106-019	Half-Ball	N-BK7	7.0mm	-	None	$8.0
1106-020	Half-Ball	UV Fused Silica	7.0mm	-	None	$12.0
1106-021	Half-Ball	Sapphire	7.0mm	-	None	Inquiry
1106-022	Half-Ball	N-BK7	8.0mm	-	None	$8.0
1106-023	Half-Ball	UV Fused Silica	8.0mm	-	None	$12.0
1106-024	Half-Ball	Sapphire	8.0mm	-	None	Inquiry
1106-025	Half-Ball	N-BK7	9.0mm	-	None	Inquiry
1106-026	Half-Ball	UV Fused Silica	9.0mm	-	None	$12.0
1106-027	Half-Ball	Sapphire	9.0mm	-	None	$21.0
1106-028	Half-Ball	N-BK7	10.0mm	-	None	$8.0
1106-029	Half-Ball	UV Fused Silica	10.0mm	-	None	$12.0
1106-030	Half-Ball	Sapphire	10.0mm	-	None	$23.0

Achromatic Doublet Lens





- Both off-the-shelf and custom positive achromatic doublet lenses and negative achromatic doublet lenses are available
- Abundant selection: standard focal lengths 7.5mm to 1000mm (positive achromatic doublet lens); -100mm to -20mm (negative achromatic doublet lens)
- Standard sizes 5-50.8mm, custom sizes 1.0mm to 300mm
- Stabilized focal lengths over designed wavelengths and more concentrated spots, better off-axis performance
- Crown glass and flint glass sourced from SCHOTT
- Coating options: 350-650nm, 650-1050nm, 1050-1580nm AR coatings, or other custom coatings

An Achromatic Doublet Lens is an optical lens component consisting of one lens made from crown glass of positive, minor refractive index and one lens made from flint glass of negative, greater refractive index cemented together. The purpose of an achromatic doublet lens is to mitigate the influence of achromatic dispersion, or chromatic aberration, an inevitable optical phenomenon, in which lights of different colors will be refracted onto different points rather than the theoretical focal point. The design of the achromatic doublet lens utilizes the compensation of the refractive characteristics of crown glass and flint glass through the matching of the converging convex lens and diverging concave lens. Compared to a simple bulk lens, an achromatic doublet enables the generation of light spots of smaller sizes and eminent image qualities without the necessity of cutting down the numerical aperture.

Shalom EO's achromatic doublet lenses are excellent for multiple-bandwidth or multi-spectrum applications. Under the premise of not shrinking the optical diaphragm of the lens group, our achromatic doublet lenses ensure more concentrated light spots and clearer images. Regarding our stocked achromatic doublet lens, Shalom EO holds about 200 kinds of Positive Achromatic Doublet Lenses and 15 kinds of Negative Achromatic Doublet Lenses in stock, the diameters in general are standardized inches compliant for installation. The crown glass and flint glass substrate materials which compose our achromatic lens parts are all sourced from SCHOTT (e.g. BAFN10/SFL6, LAKN22/SFL6, BK7/SF2, BK7/SF5, etc.), securing the qualities of lenses through building a reliable channel to procure ingredients. At the current time, we offer three kinds of standard broadband anti-reflection coating, spanning from the visible to the infrared spectrum: 350-650nm, 650-1050 nm, and 1050-1580nm AR coating. Other custom coatings with designated wavelength ranges can also be tailored to your requirements.

Shalom EO also provide a series of custom achromatic lens including positive achromatic doublet, negative achromatic doublet, achromatic triplet lens, and aspheric achromatic lens. Our achromatic lenses are made from Flint glass (e.g CDGM H-ZFLA, SHOTT N-SF5, etc.) and Crown Glass (e.g. CDGM H-ZBAF52, SCHOTT N-BK7, etc.), and we accept the designation of certain glass codes from our clients. Custom coating options include uncoated substrates, BBAR coatings, V-coating, and low-cost MgF2 AR coatings. The accessible diameters span from 1.0mm to 300mm. For high-precision visible uses, we recommend our aspheric achromatic lens, manufactured using the single point diamond turning (SPDT) technique that combines the advantage of ultra-low spherical aberration exploiting its aspherical front profile.

Specifications:

Type	Achromatic Doublet Lens	Material	SCHOTT Crown Glass and Flint Glass (e.g. BAFN10/SFL6, LAKN22/SFL6, BK7/SF2, BK7/SF5)
Clear Aperture	>90%	Focal Length Tolerance	±1%
Coating	A: 350-650nm AR Coating; B: 650-1050nm AR Coating; C: 1050-1580nm AR Coating	Diameter Tolerance	+0.0/-0.1mm
Thickness Tolerance	±0.2mm	Centration	<3 arcmin
Irregularity	λ/4-λ@632.8nm	Surface Quality	60/40 S/D
Design Wavelength	A: 486.1nm, 587.6nm, 656.3nm B: 706.5nm, 855nm, 1015nm C: 1016nm, 1330nm, 1550nm		

Product List of Achromatic Doublet Lens

Code	Material (SCHOTT)	Diameter	CT	ET	Focal Length	Coating	BFL	Price
1113-001	BAK4 SF5	25.40mm	6.0mm	7.7mm	-100mm	350-650nm AR Coating	-103.6mm	Inquire
1113-002	BAFN10 SFL6	25.40mm	5.4mm	6.9mm	-100mm	350-650nm AR Coating	-103.9mm	Inquire

Product List of Achromatic Doublet Lens

Code	Material (SCHOTT)	Diameter	CT	ET	Focal Length	Coating	BFL	Price
1113-003	BAK4 SF5	25.40mm	6.3mm	8.6mm	-75mm	350-650nm AR Coating	-78.8mm	Inquire
1113-004	BAFN10 SFL6	25.40mm	5.8mm	7.9mm	-75mm	350-650nm AR Coating	-78.9mm	Inquire
1113-005	BAK4 SF5	12.70mm	3.7mm	4.6mm	-50mm	650-1050nm AR Coating	-52.3mm	Inquire
1113-006	BAFN10 SFL6	12.70mm	3.5mm	4.3mm	-50mm	650-1050nm AR Coating	-52.5mm	Inquire
1113-007	BAFN10 SF11	25.40mm	7.0mm	10.6mm	-40mm	350-650nm AR Coating	-43.6mm	Inquire
1113-008	BAFN10 SFL6	25.40mm	6.0mm	9.8mm	-40mm	350-650nm AR Coating	-43.4mm	Inquire
1113-009	BAFN10 SFL6	12.70mm	4.0mm	5.4mm	-25mm	350-650nm AR Coating	-27.0mm	Inquire
1113-010	BAFN10 SFL6	12.70mm	4.0mm	5.4mm	-25mm	650-1050nm AR Coating	-27.0mm	Inquire
1113-011	BAFN10 SFL6	12.70mm	4.3mm	5.9mm	-25mm	350-650nm AR Coating	-27.7mm	Inquire
1113-012	BAFN10 SFL6	12.70mm	4.3mm	5.9mm	-25mm	650-1050nm AR Coating	-27.7mm	Inquire
1113-013	BAFN10 SFL6	12.70mm	4.5mm	6.3mm	-20mm	350-650nm AR Coating	-22.3mm	Inquire
1113-014	BAFN10 SFL6	12.70mm	4.5mm	6.4mm	-20mm	350-650nm AR Coating	-22.5mm	Inquire
1113-015	BAFN10 SFL6	5.00mm	4.6mm	3.8mm	7.5mm	650-1050nm AR Coating	4.8mm	Inquire
1113-016	LAKN22 SFL6	5.00mm	4.0mm	3.1mm	7.5mm	650-1050nm AR Coating	5.2mm	Inquire
1113-017	BAK4 SF5	6.00mm	4.0mm	3.0mm	10mm	350-650nm AR Coating	7.9mm	Inquire
1113-018	BAK4 SF5	6.00mm	4.0mm	3.0mm	10mm	650-1050nm AR Coating	7.9mm	Inquire
1113-019	LAKN22 SFL6	6.00mm	4.0mm	2.3mm	10mm	350-650nm AR Coating	8.1mm	Inquire
1113-020	LAKN22 SFL6	6.00mm	4.0mm	2.3mm	10mm	650-1050nm AR Coating	8.1mm	Inquire
1113-021	LAKN22 SFL6	6.00mm	4.8mm	3.9mm	10mm	350-650nm AR Coating	8.5mm	Inquire
1113-022	LAKN22 SFL6	6.00mm	4.8mm	3.9mm	10mm	650-1050nm AR Coating	8.5mm	Inquire
1113-023	BAFN10 SFL6	8.00mm	6.5mm	4.9mm	10mm	650-1050nm AR Coating	6.7mm	Inquire
1113-024	LAK10 SFL6	8.00mm	5.8mm	4.4mm	10mm	650-1050nm AR Coating	7.0mm	Inquire
1113-025	BAFN10 SFL6	8.00mm	5.5mm	3.9mm	10mm	650-1050nm AR Coating	7.1mm	Inquire
1113-026	BAK4 SF5	6.35mm	4.0mm	3.1mm	12.7mm	650-1050nm AR Coating	10.3mm	Inquire
1113-027	BAK4 SF5	6.35mm	4.0mm	3.1mm	12.7mm	1050-1580nm AR Coating	10.3mm	Inquire
1113-028	LAKN22 SFL6	6.35mm	3.9mm	3.1mm	12.7mm	650-1050nm AR Coating	10.7mm	Inquire
1113-029	LAKN22 SFL6	6.35mm	3.9mm	3.1mm	12.7mm	1050-1580nm AR Coating	10.7mm	Inquire
1113-030	LAKN22 SFL6	6.35mm	4.1mm	3.3mm	12.7mm	650-1050nm AR Coating	11.4mm	Inquire
1113-031	LAKN22 SFL6	6.35mm	4.1mm	3.3mm	12.7mm	1050-1580nm AR Coating	11.4mm	Inquire
1113-032	BK7 SF2	5.00mm	4.8mm	4.3mm	15mm	350-650nm AR Coating	13.6mm	Inquire
1113-033	BK7 SF2	5.00mm	4.8mm	4.3mm	15mm	650-1050nm AR Coating	13.6mm	Inquire
1113-034	BK7 SF2	5.00mm	4.8mm	4.3mm	15mm	1050-1580nm AR Coating	13.6mm	Inquire
1113-035	LAKN22 SFL6	5.00mm	4.0mm	3.6mm	15mm	350-650nm AR Coating	13.0mm	Inquire
1113-036	LAKN22 SFL6	5.00mm	4.0mm	3.6mm	15mm	650-1050nm AR Coating	13.0mm	Inquire
1113-037	LAKN22 SFL6	5.00mm	4.0mm	3.6mm	15mm	1050-1580nm AR Coating	13.0mm	Inquire
1113-038	BAFN10 SFL6	5.00mm	3.3mm	2.9mm	15mm	350-650nm AR Coating	11.6mm	Inquire
1113-039	BAFN10 SFL6	5.00mm	3.3mm	2.9mm	15mm	650-1050nm AR Coating	11.6mm	Inquire
1113-040	BAFN10 SFL6	5.00mm	3.3mm	2.9mm	15mm	1050-1580nm AR Coating	11.6mm	Inquire
1113-041	BK7 SF2	6.35mm	4.0mm	3.2mm	15mm	650-1050nm AR Coating	13.0mm	Inquire
1113-042	BK7 SF2	6.35mm	4.0mm	3.2mm	15mm	1050-1580nm AR Coating	13.0mm	Inquire
1113-043	LAKN22 SFL6	6.35mm	3.9mm	3.2mm	15mm	650-1050nm AR Coating	13.1mm	Inquire
1113-044	LAKN22 SFL6	6.35mm	3.9mm	3.2mm	15mm	1050-1580nm AR Coating	13.1mm	Inquire
1113-045	LAKN22 SFL6	6.35mm	3.6mm	2.9mm	15mm	650-1050nm AR Coating	14.4mm	Inquire
1113-046	LAKN22 SFL6	6.35mm	3.6mm	2.9mm	15mm	1050-1580nm AR Coating	14.4mm	Inquire
1113-047	BK7 SF2	8.00mm	4.0mm	3.0mm	20mm	350-650nm AR Coating	17.8mm	Inquire
1113-048	BK7 SF2	8.00mm	4.0mm	3.0mm	20mm	650-1050nm AR Coating	17.8mm	Inquire
1113-049	LAKN22 SFL6	8.00mm	3.6mm	2.8mm	20mm	350-650nm AR Coating	18.2mm	Inquire
1113-050	LAKN22 SFL6	8.00mm	3.6mm	2.8mm	20mm	650-1050nm AR Coating	18.2mm	Inquire
1113-051	LAKN22 SFL6	8.00mm	4.6mm	3.7mm	20mm	350-650nm AR Coating	15.7mm	Inquire
1113-052	LAKN22 SFL6	8.00mm	4.6mm	3.7mm	20mm	650-1050nm AR Coating	15.7mm	Inquire
1113-053	BAFN10 SF10	12.70mm	7.0mm	5.6mm	25mm	650-1050nm AR Coating	21.5mm	Inquire
1113-054	LAKN22 SFL6	12.70mm	7.0mm	5.4mm	25mm	650-1050nm AR Coating	21.1mm	Inquire
1113-055	LAKN22 SFL6	12.70mm	6.2mm	4.5mm	25mm	650-1050nm AR Coating	20.3mm	Inquire
1113-056	BAFN10 SFL6	25.40mm	14.0mm	8.8mm	30mm	650-1050nm AR Coating	22.9mm	Inquire
1113-057	BAFN10 SFL6	25.40mm	14.0mm	8.8mm	30mm	1050-1580nm AR Coating	22.9mm	Inquire
1113-058	BAFN10 SFL6	25.40mm	13.5mm	8.2mm	30mm	650-1050nm AR Coating	23.0mm	Inquire
1113-059	BAFN10 SFL6	25.40mm	13.5mm	8.2mm	30mm	1050-1580nm AR Coating	23.0mm	Inquire
1113-060	BAFN10 SFL6	25.40mm	14.8mm	9.4mm	30mm	650-1050nm AR Coating	22.2mm	Inquire
1113-061	BAFN10 SFL6	25.40mm	14.8mm	9.4mm	30mm	1050-1580nm AR Coating	22.2mm	Inquire
1113-062	BAFN10 SFL6	25.40mm	14.0mm	9.6mm	35mm	650-1050nm AR Coating	27.3mm	Inquire

Product List of Achromatic Doublet Lens

Code	Material (SCHOTT)	Diameter	CT	ET	Focal Length	Coating	BFL	Price
1113-063	BAFN10 SFL6	25.40mm	12.0mm	7.5mm	35mm	650-1050nm AR Coating	28.4mm	Inquire
1113-064	BAFN10 SFL6	25.40mm	13.3mm	8.7mm	35mm	650-1050nm AR Coating	27.4mm	Inquire
1113-065	BK7 SF5	25.40mm	12.5mm	7.4mm	40mm	650-1050nm AR Coating	33.4mm	Inquire
1113-066	BAFN10 SFL6	25.40mm	12.5mm	8.6mm	40mm	650-1050nm AR Coating	32.8mm	Inquire
1113-067	LAKN22 SFL6	25.40mm	11.8mm	7.7mm	40mm	650-1050nm AR Coating	32.8mm	Inquire
1113-068	BAFN10 SFL6	25.40mm	9.0mm	5.7mm	45mm	1050-1580nm AR Coating	40.2mm	Inquire
1113-069	LAKN22 SFL6	25.40mm	9.4mm	5.9mm	45mm	1050-1580nm AR Coating	39.6mm	Inquire
1113-070	LAKN22 SFL6	25.40mm	11.4mm	7.7mm	45mm	1050-1580nm AR Coating	36.7mm	Inquire
1113-071	BK7 SF2	12.70mm	5.0mm	4.0mm	50mm	350-650nm AR Coating	47.2mm	Inquire
1113-072	BK7 SF2	12.70mm	5.0mm	4.0mm	50mm	650-1050nm AR Coating	47.2mm	Inquire
1113-073	BAFN10 SFL6	12.70mm	5.0mm	4.2mm	50mm	350-650nm AR Coating	46.2mm	Inquire
1113-074	BAFN10 SFL6	12.70mm	5.0mm	4.2mm	50mm	650-1050nm AR Coating	46.2mm	Inquire
1113-075	BAFN10 SFL6	12.70mm	5.5mm	4.6mm	50mm	350-650nm AR Coating	43.5mm	Inquire
1113-076	BAFN10 SFL6	12.70mm	5.5mm	4.6mm	50mm	650-1050nm AR Coating	43.5mm	Inquire
1113-077	BAFN10 SF10	25.40mm	11.5mm	8.7mm	50mm	350-650nm AR Coating	43.4mm	Inquire
1113-078	BAFN10 SF10	25.40mm	11.5mm	8.7mm	50mm	650-1050nm AR Coating	43.4mm	Inquire
1113-079	LAKN22 SFL6	25.40mm	9.3mm	6.2mm	50mm	350-650nm AR Coating	45.0mm	Inquire
1113-080	LAKN22 SFL6	25.40mm	9.3mm	6.2mm	50mm	650-1050nm AR Coating	45.0mm	Inquire
1113-081	LAKN22 SFL6	25.40mm	10.8mm	7.4mm	50mm	350-650nm AR Coating	41.2mm	Inquire
1113-082	LAKN22 SFL6	25.40mm	10.8mm	7.4mm	50mm	650-1050nm AR Coating	41.2mm	Inquire
1113-083	BAFN10 SFL6	30.00mm	10.5mm	6.3mm	50mm	1050-1580nm AR Coating	44.3mm	Inquire
1113-084	BAFN10 SFL6	30.00mm	11.5mm	7.2mm	50mm	1050-1580nm AR Coating	42.9mm	Inquire
1113-085	BAFN10 SFL6	30.00mm	12.0mm	7.7mm	50mm	1050-1580nm AR Coating	44.7mm	Inquire
1113-086	BAF11 SF10	25.40mm	10.5mm	8.2mm	60mm	650-1050nm AR Coating	54.3mm	Inquire
1113-087	LAKN22 SFL6	25.40mm	7.7mm	5.1mm	60mm	650-1050nm AR Coating	55.8mm	Inquire
1113-088	LAKN22 SFL6	25.40mm	10.1mm	7.2mm	60mm	650-1050nm AR Coating	50.5mm	Inquire
1113-089	BK7 SF2	12.70mm	4.0mm	3.4mm	75mm	350-650nm AR Coating	72.9mm	Inquire
1113-090	BK7 SF2	12.70mm	4.0mm	3.4mm	75mm	650-1050nm AR Coating	72.9mm	Inquire
1113-091	BAFN10 SFL6	12.70mm	4.0mm	3.5mm	75mm	350-650nm AR Coating	72.0mm	Inquire
1113-092	BAFN10 SFL6	12.70mm	4.0mm	3.5mm	75mm	650-1050nm AR Coating	72.0mm	Inquire
1113-093	BAFN10 SFL6	12.70mm	4.5mm	3.9mm	75mm	350-650nm AR Coating	69.7mm	Inquire
1113-094	BAFN10 SFL6	12.70mm	4.5mm	3.9mm	75mm	650-1050nm AR Coating	69.7mm	Inquire
1113-095	BK7 SF5	25.40mm	9.5mm	6.9mm	75mm	350-650nm AR Coating	70.3mm	Inquire
1113-096	BK7 SF5	25.40mm	9.5mm	6.9mm	75mm	650-1050nm AR Coating	70.3mm	Inquire
1113-097	BAFN10 SFL6	25.40mm	6.6mm	4.5mm	75mm	350-650nm AR Coating	69.9mm	Inquire
1113-098	BAFN10 SFL6	25.40mm	6.6mm	4.5mm	75mm	650-1050nm AR Coating	69.9mm	Inquire
1113-099	BAFN10 SFL6	25.40mm	9.4mm	7.1mm	75mm	350-650nm AR Coating	64.9mm	Inquire
1113-100	BAFN10 SFL6	25.40mm	9.4mm	7.1mm	75mm	650-1050nm AR Coating	64.9mm	Inquire
1113-101	BAFN10 SFL6	30.00mm	10.5mm	7.9mm	80mm	350-650nm AR Coating	74.3mm	Inquire
1113-102	LAKN22 SFL6	30.00mm	8.5mm	5.8mm	80mm	350-650nm AR Coating	75.3mm	Inquire
1113-103	BAFN10 SFL6	30.00mm	11.5mm	8.5mm	80mm	350-650nm AR Coating	68.4mm	Inquire
1113-104	BAFN10 SFL6	50.80mm	18.0mm	10.5mm	80mm	1050-1580nm AR Coating	69.9mm	Inquire
1113-105	BAFN10 SFL6	50.80mm	18.0mm	10.3mm	80mm	1050-1580nm AR Coating	69.5mm	Inquire
1113-106	BAFN10 SFL6	50.80mm	20.5mm	12.6mm	80mm	1050-1580nm AR Coating	66.9mm	Inquire
1113-107	BK7 SF5	25.40mm	6.5mm	4.7mm	100mm	350-650nm AR Coating	97.1mm	Inquire
1113-108	BK7 SF5	25.40mm	6.5mm	4.7mm	100mm	650-1050nm AR Coating	97.1mm	Inquire
1113-109	LAKN22 SFL6	25.40mm	5.5mm	4.0mm	100mm	350-650nm AR Coating	97.1mm	Inquire
1113-110	LAKN22 SFL6	25.40mm	5.5mm	4.0mm	100mm	650-1050nm AR Coating	97.1mm	Inquire
1113-111	BAFN10 SFL6	25.40mm	8.3mm	6.6mm	100mm	350-650nm AR Coating	90.3mm	Inquire
1113-112	BAFN10 SFL6	25.40mm	8.3mm	6.6mm	100mm	650-1050nm AR Coating	90.3mm	Inquire
1113-113	BAFN10 SFL6	30.00mm	7.0mm	5.0mm	100mm	1050-1580nm AR Coating	96.4mm	Inquire
1113-114	BAFN10 SFL6	30.00mm	8.0mm	5.9mm	100mm	1050-1580nm AR Coating	94.0mm	Inquire
1113-115	BAFN10 SFL6	30.00mm	10.7mm	8.3mm	100mm	1050-1580nm AR Coating	88.0mm	Inquire
1113-116	BK7 SF5	25.40mm	7.9mm	6.6mm	150mm	350-650nm AR Coating	146.1mm	Inquire
1113-117	BK7 SF5	25.40mm	7.9mm	6.6mm	150mm	650-1050nm AR Coating	146.1mm	Inquire
1113-118	LAKN22 SFL6	25.40mm	7.5mm	6.5mm	150mm	350-650nm AR Coating	144.6mm	Inquire
1113-119	LAKN22 SFL6	25.40mm	7.5mm	6.5mm	150mm	650-1050nm AR Coating	144.6mm	Inquire
1113-120	BAFN10 SFL6	25.40mm	7.5mm	6.3mm	150mm	350-650nm AR Coating	140.6mm	Inquire
1113-121	BAFN10 SFL6	25.40mm	7.5mm	6.3mm	150mm	650-1050nm AR Coating	140.6mm	Inquire
1113-122	SSKN5 LAFN7	25.40mm	6.5mm	5.7mm	200mm	650-1050nm AR Coating	194.0mm	Inquire

Product List of Achromatic Doublet Lens

Code	Material (SCHOTT)	Diameter	CT	ET	Focal Length	Coating	BFL	Price
1113-123	LAKN22 SF10	25.40mm	8.0mm	7.3mm	200mm	650-1050nm AR Coating	194.8mm	Inquire
1113-124	LAKN22 SFL6	25.40mm	7.0mm	6.1mm	200mm	650-1050nm AR Coating	193.1mm	Inquire
1113-125	BK7 SF2	50.80mm	10.5mm	6.7mm	200mm	650-1050nm AR Coating	193.7mm	Inquire
1113-126	LAKN22 SFL6	50.80mm	13.2mm	10.1mm	200mm	650-1050nm AR Coating	193.2mm	Inquire
1113-127	LAKN22 SFL6	50.80mm	15.0mm	11.4mm	200mm	650-1050nm AR Coating	182.7mm	Inquire
1113-128	BK7 SF2	25.40mm	6.0mm	5.2mm	250mm	350-650nm AR Coating	246.7mm	Inquire
1113-129	BK7 SF2	25.40mm	6.0mm	5.2mm	250mm	650-1050nm AR Coating	246.7mm	Inquire
1113-130	SF5 SFL6	25.40mm	5.5mm	4.7mm	250mm	350-650nm AR Coating	237.5mm	Inquire
1113-131	SF5 SFL6	25.40mm	5.5mm	4.7mm	250mm	650-1050nm AR Coating	237.5mm	Inquire
1113-132	SF2 SFL6	25.40mm	7.0mm	6.0mm	250mm	350-650nm AR Coating	235.3mm	Inquire
1113-133	SF2 SFL6	25.40mm	7.0mm	6.0mm	250mm	650-1050nm AR Coating	235.3mm	Inquire
1113-134	BK7 SF2	25.40mm	6.0mm	5.4mm	300mm	350-650nm AR Coating	297.0mm	Inquire
1113-135	BK7 SF2	25.40mm	6.0mm	5.4mm	300mm	650-1050nm AR Coating	297.0mm	Inquire
1113-136	SF5 SFL6	25.40mm	6.0mm	5.3mm	300mm	350-650nm AR Coating	290.0mm	Inquire
1113-137	SF5 SFL6	25.40mm	6.0mm	5.3mm	300mm	650-1050nm AR Coating	290.0mm	Inquire
1113-138	SF2 SFL6	25.40mm	7.0mm	6.2mm	300mm	350-650nm AR Coating	285.9mm	Inquire
1113-139	SF2 SFL6	25.40mm	7.0mm	6.2mm	300mm	650-1050nm AR Coating	285.9mm	Inquire
1113-140	BK7 SF2	50.80mm	8.0mm	5.4mm	300mm	350-650nm AR Coating	295.4mm	Inquire
1113-141	BK7 SF2	50.80mm	8.0mm	5.4mm	300mm	1050-1580nm AR Coating	295.4mm	Inquire
1113-142	LAKN22 SFL6	50.80mm	9.2mm	7.2mm	300mm	350-650nm AR Coating	295.1mm	Inquire
1113-143	LAKN22 SFL6	50.80mm	9.2mm	7.2mm	300mm	1050-1580nm AR Coating	295.1mm	Inquire
1113-144	BAFN10 SFL6	50.80mm	11.5mm	9.1mm	300mm	350-650nm AR Coating	287.4mm	Inquire
1113-145	BAFN10 SFL6	50.80mm	11.5mm	9.1mm	300mm	1050-1580nm AR Coating	287.4mm	Inquire
1113-146	BK7 SF2	25.40mm	6.0mm	5.5mm	400mm	350-650nm AR Coating	396.0mm	Inquire
1113-147	BK7 SF2	25.40mm	6.0mm	5.5mm	400mm	650-1050nm AR Coating	396.0mm	Inquire
1113-148	BK7 SF2	25.40mm	6.0mm	5.5mm	400mm	1050-1580nm AR Coating	396.0mm	Inquire
1113-149	SF5 SFL6	25.40mm	5.3mm	4.8mm	400mm	350-650nm AR Coating	391.1mm	Inquire
1113-150	SF5 SFL6	25.40mm	5.3mm	4.8mm	400mm	650-1050nm AR Coating	391.1mm	Inquire
1113-151	SF5 SFL6	25.40mm	5.3mm	4.8mm	400mm	1050-1580nm AR Coating	391.1mm	Inquire
1113-152	SF2 SFL6	25.40mm	6.7mm	6.1mm	400mm	350-650nm AR Coating	386.8mm	Inquire
1113-153	SF2 SFL6	25.40mm	6.7mm	6.1mm	400mm	650-1050nm AR Coating	386.8mm	Inquire
1113-154	SF2 SFL6	25.40mm	6.7mm	6.1mm	400mm	1050-1580nm AR Coating	386.8mm	Inquire
1113-155	BK7 SF2	50.80mm	7.0mm	5.1mm	400mm	350-650nm AR Coating	396.1mm	Inquire
1113-156	BK7 SF2	50.80mm	7.0mm	5.1mm	400mm	650-1050nm AR Coating	396.1mm	Inquire
1113-157	LAKN22 SFL6	50.80mm	7.1mm	5.6mm	400mm	350-650nm AR Coating	393.6mm	Inquire
1113-158	LAKN22 SFL6	50.80mm	7.1mm	5.6mm	400mm	650-1050nm AR Coating	393.6mm	Inquire
1113-159	BAFN10 SFL6	50.80mm	9.5mm	7.8mm	400mm	350-650nm AR Coating	391.1mm	Inquire
1113-160	BAFN10 SFL6	50.80mm	9.5mm	7.8mm	400mm	650-1050nm AR Coating	391.1mm	Inquire
1113-161	BK7 SF2	25.40mm	6.0mm	5.6mm	500mm	350-650nm AR Coating	499.9mm	Inquire
1113-162	BK7 SF2	25.40mm	6.0mm	5.6mm	500mm	650-1050nm AR Coating	499.9mm	Inquire
1113-163	SF10 SFL6	25.40mm	6.0mm	5.6mm	500mm	350-650nm AR Coating	480.8mm	Inquire
1113-164	SF10 SFL6	25.40mm	6.0mm	5.6mm	500mm	650-1050nm AR Coating	480.8mm	Inquire
1113-165	SF2 SFL6	25.40mm	5.5mm	5.0mm	500mm	350-650nm AR Coating	486.9mm	Inquire
1113-166	SF2 SFL6	25.40mm	5.5mm	5.0mm	500mm	650-1050nm AR Coating	486.9mm	Inquire
1113-167	BK7 SF2	50.80mm	7.0mm	5.5mm	500mm	350-650nm AR Coating	495.8mm	Inquire
1113-168	BK7 SF2	50.80mm	7.0mm	5.5mm	500mm	1050-1580nm AR Coating	495.8mm	Inquire
1113-169	LAKN22 SFL6	50.80mm	7.1mm	5.9mm	500mm	350-650nm AR Coating	497.0mm	Inquire
1113-170	LAKN22 SFL6	50.80mm	7.1mm	5.9mm	500mm	1050-1580nm AR Coating	497.0mm	Inquire
1113-171	SF5 SFL6	50.80mm	11.8mm	9.9mm	500mm	350-650nm AR Coating	474.4mm	Inquire
1113-172	SF5 SFL6	50.80mm	11.8mm	9.9mm	500mm	1050-1580nm AR Coating	474.4mm	Inquire
1113-173	BK7 SF2	50.80mm	6.5mm	5.5mm	750mm	350-650nm AR Coating	746.5mm	Inquire
1113-174	BK7 SF2	50.80mm	6.5mm	5.5mm	750mm	1050-1580nm AR Coating	746.5mm	Inquire
1113-175	BAFN10 SF10	50.80mm	6.7mm	6.0mm	750mm	350-650nm AR Coating	744.8mm	Inquire
1113-176	BAFN10 SF10	50.80mm	6.7mm	6.0mm	750mm	1050-1580nm AR Coating	744.8mm	Inquire
1113-177	SF10 SFL6	50.80mm	11.8mm	10.7mm	750mm	350-650nm AR Coating	711.0mm	Inquire
1113-178	SF10 SFL6	50.80mm	11.8mm	10.7mm	750mm	1050-1580nm AR Coating	711.0mm	Inquire
1113-179	BK7 SF2	50.80mm	6.0mm	5.2mm	1000mm	1050-1580nm AR Coating	994.6mm	Inquire
1113-180	BAFN10 SF10	50.80mm	7.0mm	6.4mm	1000mm	1050-1580nm AR Coating	993.4mm	Inquire

Meniscus Lenses

- Broad diameter range: 1.0mm to 300mm
- Substrate materials: Fused Silica, N-BK7, Chalcogenide glass, BaF2, CaF2, MgF2, Germanium, ZnSe, GaAs, Sapphire, etc.
- Standardized focal lengths and diameters convenient for OEM
- Coating options: uncoated, MgF2 single layer AR coating, laser line V-coating and BBAR coating

A Meniscus Lens, or a Convex-concave Lens is an optical lens consisting of one concave and one convex side, and the two sides have different radii of curvature according which the meniscus lenses could be categorized into two kinds: positive meniscus lenses and negative meniscus lenses.

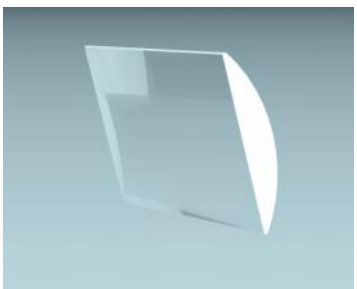
A Positive Meniscus Lens is more curved on the convex side than on the concave side, and its edge thickness is greater than its central thickness, contributing to a positive focal length. In contrast, a Negative Meniscus Lens is more curved on the concave side than on the convex side, and its central thickness is greater than its edge thickness, contributing to a negative focal length. Positive Meniscus Lenses converge light is utilized to reduce the focal length when used in conjunction with other lenses and increase the numerical aperture (NA) of existing optical modules without introducing significant spherical aberration. These functions are quite useful for image instruments to increase the resolution, and for focusing lasers to shrink the spot diameter when the incident beam width is rather large, providing diffraction-limited performance and better precision for laser processing. A negative meniscus lens diverges light and functions in just the opposite manner as a positive meniscus lens, to increase the focal length, reduce the NA of the optical assemblies, and expand beams.

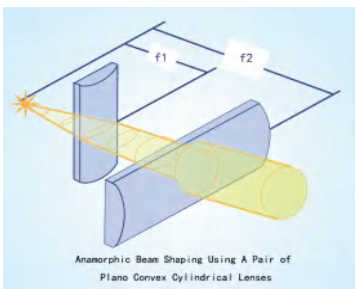
Hangzhou Shalom EO offers Custom Positive and Negative Meniscus Lenses made from a wide assortment of materials, including Fused Silica, N-BK7, Chalcogenide Glass, Germanium, GaAs, ZnSe, Baf2/CaF2/MgF2, Sapphire, etc. Diameters from 1.0mm to 300mm are available. Custom coating options include uncoated substrates, Broadband Anti-reflection (BBAR) coatings that cut to a significant extent the reflection (average reflection below 0.5%) over a certain wavelength range, and V-coating which provides higher transmission (average reflection below 0.25%) at a narrower range, and low-cost MgF2 AR coatings (average reflection below 1.5%). The different transmission wavelength ranges of the coatings could be selected according to your requirements. While other specifications could all be tailored for you.

Specifications:

Lens Form	Positive/Negative meniscus Lens	Material	BK7, Fused Silica, CaF2, BaF2, MgF2, ZnSe, GaAs, Ge, Sapphire, Etc.
Diameter Range	1mm -300mm	Diameter Tolerance	+0.0/-0.1mm
Clear Aperture	>90%	Thickness Tolerance	±0.1mm
Focal Length Tolerance	±2%	Surface Quality	40/20 S/D
Irregularity	λ/4 @ 633 nm (λ/8 optional)	Centering	2 arc min

Plano-Convex Cylindrical Lens





- Substrate materials: Fine Annealed N-BK7
- Ideal for one-dimensional condensation of images, laser line generation, and diode laser beam shaping
- Various focal lengths (4mm to 1000mm) and a large selection of dimensions
- Standard coating options: 350-650nm, 650-1050 nm, 1050-1580 nm, or uncoated, custom bandwidths
- Custom Plano Concave Cylindrical Lenses made from Fused Silica, CaF2, BaF2, MgF2, ZnSe, etc. are also available
- Applications: Laser scanners, diode lasers, optical metrologies, spectroscopes, etc.

A Plano Convex Cylindrical Lens is, in essence, a transparent cylinder with one flat surface and one extruding curved surface, which contributes to a positive focal length. The fundamental function of the plano-convex cylindrical lens is to condense a matrix of laser beams, when the matrix of laser beams needs to be focused inside a detector, the PCX cylindrical lens compresses the matrix into a single line. This trait also helps plano-convex cylindrical lenses to modulate the aspect ratio of the image. Just like its plate plano-convex lens cousin, a plano-convex cylindrical lens performs best at infinite absolute conjugate ratios, and becomes disadvantageous when the conjugate ratios are below 5:1. What discriminates a plate PCX and a cylindrical PCX are that the former diverges lights in two dimensions, the later expands light beam in one.

The prior nature of Plano-convex cylindrical lenses, which is making a two-dimensional light beam becomes a linear laser line, can be leveraged in diverse applications like the coupling of a slit input of laser diodes, changing the aspect ratio of an image, laser scanners, dye lasers, spectroscopies, and receivers of energies in linear detectors. A plano-convex lens can either modulate the aspect ratio of an image or create a line image from the point light beam source. A PCX cylindrical lens is also often hired to collect collimated light beams to generate a thin line.

Another crucial application of the Plano-convex cylindrical lens is anamorphic beam shaping, which just refers to correcting the elliptical-shaped laser beam generated from a laser diode into a circular-shaped one. The elliptical laser beam is the product of a rectangular Fresnel aperture and is undesirable because this implies a larger beam area which wastes more power, fewer homogeneities, and a terrible Gaussian Beam Profile. A pair of Plano-convex cylindrical lenses could be used to circularize the elliptical beams. During the test, a pair of plano-convex cylindrical lenses are positioned so that lenses are orthogonal as shown in the figure. From the result, we can conclude that using a pair of plano-convex cylindrical lenses to circularize the elliptical beam is a high-transmission, balance-shape, astigmatism-attenuated approach.

N-BK7 or its equivalent known as H-K9L is a ROHS-compliant borosilicate crown glass with superior optical excellence and the glass is fine annealed and polished to tight tolerances to meet the demanding tolerances. The most attractive advantages of N-BK7 are its high optical homogeneities and high transmission to VIS and NIR spectra. Besides, the hardness, chemical and thermal resilience of N-BK7 are also remarkable, it contains low levels of inclusions and bubbles, therefore N-BK7 is excellent for making high-precision optical lenses.

Hangzhou Shalom EO offers stocked N-BK7 Plano-Convex Cylindrical Lenses. The various focal lengths range from 4mm to 1000mm, while the dimensions also come in large selections to accommodate your requirements. Standard coating options include 350-650nm, 650-1050 nm, and 1050-1580nm anti-reflection coatings to elevate the transmission of the lens substrate, while uncoated and custom coating bandwidths could all be tailored through inquiries. With unceasing devotion and engineering intelligence, Shalom EO has earned credits among researchers and clients around the globe. Before shipment, the cylindrical lenses will undergo a stringent in-house inspection in our clean room using Zygo interferometers and other equipment to secure your interest.

Besides the off-the-shelf PCV cylindrical lens made from N-BK7, we also provide custom Plano-convex cylindrical lenses made from a wide portfolio of other materials including Fused Silica, CaF2, BaF2, MgF2, ZnSe, etc. With BBAR coatings, V-coatings, and cheaper MgF2 AR coatings.

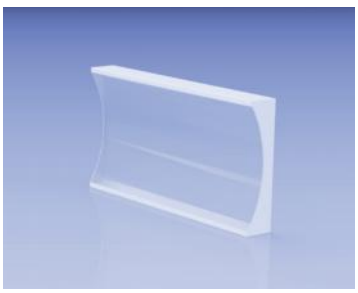
Specifications:

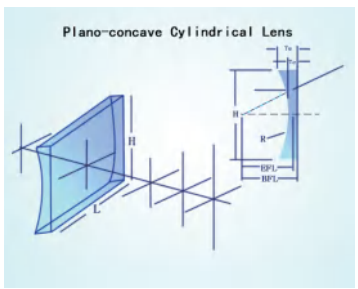
Type	Plano-Convex Cylindrical Lenses	Material	N-BK7
Clear Aperture	>90%	Size Tolerance	+0/-0.1mm
Thickness Tolerance	±0.2mm	Surface Irregularity	λ/4-λ@633nm
Surface Quality	60/20 S/D	Paraxial Focal Length	±2% @587.6nm
Chamfer	0.2mm x 45 degree	Centering Error	<3 arcmin

Product List of Plano-Convex Cylindrical Lens

Code	Material	Size	CT	ET	Focal Length	Coating	Curvature Radius	BFL	Price
1111-001	N-BK7	8mm(L)x4mm(H)	3.56mm	2mm	4	650-1050nm AR Coating	2.07mm	1.65mm	$24.50
1111-002	N-BK7	6mm(L)x4mm(H)	2.76mm	2mm	5.8	Uncoated	3.00mm	3.98mm	$17.50
1111-003	N-BK7	6mm(L)x4mm(H)	2.76mm	2mm	5.8	350-650nm AR Coating	3.00mm	3.98mm	$24.50
1111-004	N-BK7	8mm(L)x4mm(H)	2.76mm	2mm	5.8	Uncoated	3.00mm	3.98mm	$17.50
1111-005	N-BK7	8mm(L)x6mm(H)	3.95mm	2mm	6.35	Uncoated	3.28mm	3.75mm	$17.50
1111-006	N-BK7	9mm(L)x7mm(H)	4.09mm	2mm	7.7	Uncoated	3.98mm	5.00mm	$17.50
1111-007	N-BK7	14mm(L)x7mm(H)	4.09mm	2mm	7.7	Uncoated	3.98mm	5.00mm	$17.50
1111-008	N-BK7	20mm(L)x10mm(H)	5.88mm	2mm	10	650-1050nm AR Coating	5.17mm	6.12mm	$33.50
1111-009	N-BK7	20mm(L)x10mm(H)	4.31mm	2mm	12.7	Uncoated	6.56mm	9.86mm	$24.50
1111-010	N-BK7	26mm(L)x13mm(H)	7.67mm	2mm	12.7	1050-1580nm AR Coating	6.56mm	7.64mm	$40.50
1111-011	N-BK7	15mm(L)x13mm(H)	6.27mm	2mm	13.7	1050-1580nm AR Coating	7.08mm	9.57mm	$35.00
1111-012	N-BK7	20mm(L)x10mm(H)	3.82mm	2mm	15	650-1050nm AR Coating	7.75mm	12.48mm	$33.50
1111-013	N-BK7	17mm(L)x15mm(H)	5.22mm	2mm	20	650-1050nm AR Coating	10.34mm	16.56mm	$33.50
1111-014	N-BK7	30mm(L)x15mm(H)	5.22mm	2mm	20	650-1050nm AR Coating	20.34mm	16.56mm	$38.50
1111-015	N-BK7	25mm(L)x12.5mm(H)	3.85mm	2mm	22.2	Uncoated	11.47mm	19.66mm	$28.00
1111-016	N-BK7	12mm(L)x10mm(H)	3mm	2mm	25	Uncoated	12.92mm	23.02mm	$17.50
1111-017	N-BK7	12mm(L)x10mm(H)	3mm	2mm	25	350-650nm AR Coating	12.92mm	23.02mm	$24.50
1111-018	N-BK7	12mm(L)x10mm(H)	3mm	2mm	25	650-1050nm AR Coating	12.92mm	23.02mm	$24.50
1111-019	N-BK7	20mm(L)x10mm(H)	3mm	2mm	25	Uncoated	12.92mm	23.02mm	$24.50
1111-020	N-BK7	20mm(L)x10mm(H)	3mm	2mm	25	350-650nm AR Coating	12.92mm	23.02mm	$33.50
1111-021	N-BK7	20mm(L)x10mm(H)	3mm	2mm	25	650-1050nm AR Coating	12.92mm	23.02mm	$33.50
1111-022	N-BK7	22mm(L)x20mm(H)	6.74mm	2mm	25	650-1050nm AR Coating	12.92mm	20.56mm	$38.50
1111-023	N-BK7	28mm(L)x25.4mm(H)	11.82mm	2mm	25.4	350-650nm AR Coating	13.13mm	17.61mm	$38.50
1111-024	N-BK7	51mm(L)x25.4mm(H)	6.64mm	2mm	38.1	Uncoated	19.69mm	33.72mm	$42.00
1111-025	N-BK7	12mm(L)x10mm(H)	2.61mm	2mm	40	Uncoated	20.67mm	38.28mm	$17.50
1111-026	N-BK7	12mm(L)x10mm(H)	2.61mm	2mm	40	350-650nm AR Coating	20.67mm	38.28mm	$24.50
1111-027	N-BK7	12mm(L)x10mm(H)	2.61mm	2mm	40	1050-1580nm AR Coating	20.67mm	38.28mm	$25.50
1111-028	N-BK7	20mm(L)x10mm(H)	2.61mm	2mm	40	Uncoated	20.67mm	38.28mm	$24.50
1111-029	N-BK7	20mm(L)x10mm(H)	2.61mm	2mm	40	350-650nm AR Coating	20.67mm	38.28mm	$33.50
1111-030	N-BK7	22mm(L)x20mm(H)	4.57mm	2mm	40	650-1050nm AR Coating	20.67mm	36.99mm	$38.50
1111-031	N-BK7	40mm(L)x20mm(H)	4.57mm	2mm	40	650-1050nm AR Coating	20.67mm	36.99mm	$57.50
1111-032	N-BK7	22mm(L)x20mm(H)	4.01mm	2mm	50	Uncoated	25.84mm	47.36mm	$28.00
1111-033	N-BK7	22mm(L)x20mm(H)	4.01mm	2mm	50	650-1050nm AR Coating	25.84mm	47.36mm	$38.50
1111-034	N-BK7	40mm(L)x20mm(H)	4.01mm	2mm	50	Uncoated	25.84mm	47.36mm	$42.00
1111-035	N-BK7	53mm(L)x50.8mm(H)	21.62mm	2mm	50.8	Uncoated	26.25mm	36.55mm	Inquire
1111-036	N-BK7	32mm(L)x30mm(H)	5.87mm	2mm	60	Uncoated	31.01mm	56.13mm	$28.00
1111-037	N-BK7	32mm(L)x30mm(H)	5.87mm	2mm	60	350-650nm AR Coating	31.01mm	56.13mm	$38.50
1111-038	N-BK7	60mm(L)x30mm(H)	5.87mm	2mm	60	1050-1580nm AR Coating	31.01mm	56.13mm	$61.00
1111-039	N-BK7	62mm(L)x60mm(H)	25.18mm	2mm	60	Uncoated	31.01mm	43.40mm	Inquire
1111-040	N-BK7	62mm(L)x60mm(H)	25.18mm	2mm	60	650-1050nm AR Coating	31.01mm	43.40mm	Inquire
1111-041	N-BK7	95mm(L)x60mm(H)	25.18mm	2mm	60	Uncoated	31.01mm	43.40mm	Inquire
1111-042	N-BK7	32mm(L)x30mm(H)	5.25mm	2mm	70	Uncoated	36.18mm	66.54mm	$28.00
1111-043	N-BK7	32mm(L)x30mm(H)	5.25mm	2mm	70	350-650nm AR Coating	36.18mm	66.54mm	$38.50
1111-044	N-BK7	32mm(L)x30mm(H)	5.25mm	2mm	70	1050-1580nm AR Coating	36.18mm	66.54mm	$40.50
1111-045	N-BK7	95mm(L)x50.8mm(H)	11.48mm	2mm	75	Uncoated	38.76mm	67.43mm	Inquire
1111-046	N-BK7	95mm(L)x50.8mm(H)	11.48mm	2mm	75	350-650nm AR Coating	38.76mm	67.43mm	Inquire
1111-047	N-BK7	51mm(L)x25.4mm(H)	5.12mm	3mm	75.6	Uncoated	39.07mm	72.22mm	$42.00
1111-048	N-BK7	51mm(L)x25.4mm(H)	5.12mm	3mm	75.6	650-1050nm AR Coating	39.07mm	72.22mm	$57.50
1111-049	N-BK7	95mm(L)x50.8mm(H)	12.38mm	3mm	75.6	350-650nm AR Coating	39.07mm	67.44mm	Inquire
1111-050	N-BK7	22mm(L)x20mm(H)	4.22mm	3mm	80	Uncoated	41.34mm	77.22mm	$28.00
1111-051	N-BK7	40mm(L)x20mm(H)	4.22mm	3mm	80	Uncoated	41.34mm	77.22mm	$42.00
1111-052	N-BK7	32mm(L)x30mm(H)	5.22mm	3mm	100	Uncoated	51.68mm	96.56mm	$28.00
1111-053	N-BK7	32mm(L)x30mm(H)	5.22mm	3mm	100	1050-1580nm AR Coating	51.68mm	96.56mm	$40.50
1111-054	N-BK7	60mm(L)x30mm(H)	5.22mm	3mm	100	Uncoated	51.68mm	96.56mm	$42.00
1111-055	N-BK7	60mm(L)x30mm(H)	5.22mm	3mm	100	650-1050nm AR Coating	51.68mm	96.56mm	$57.50
1111-056	N-BK7	60mm(L)x30mm(H)	5.22mm	3mm	100	1050-1580nm AR Coating	51.68mm	96.56mm	$61.00
1111-057	N-BK7	60mm(L)x30mm(H)	4.69mm	3mm	130	Uncoated	67.18mm	126.91mm	$42.00
1111-058	N-BK7	22mm(L)x20mm(H)	3.64mm	3mm	150	350-650nm AR Coating	77.52mm	147.60mm	$38.50
1111-059	N-BK7	40mm(L)x20mm(H)	3.64mm	3mm	150	Uncoated	77.52mm	147.60mm	$42.00
1111-060	N-BK7	40mm(L)x20mm(H)	3.64mm	3mm	150	650-1050nm AR Coating	77.52mm	147.60mm	$57.50
1111-061	N-BK7	90mm(L)x100mm(H)	21.28mm	3mm	150	Uncoated	77.52mm	135.97mm	Inquire
1111-062	N-BK7	90mm(L)x100mm(H)	21.28mm	3mm	150	1050-1580nm AR Coating	77.52mm	135.97mm	Inquire
1111-063	N-BK7	32mm(L)x30mm(H)	4.09mm	3mm	200	Uncoated	103.36mm	197.30mm	$28.00
1111-064	N-BK7	90mm(L)x100mm(H)	15.89mm	3mm	200	350-650nm AR Coating	103.36mm	189.52mm	Inquire
1111-065	N-BK7	22mm(L)x20mm(H)	3.38mm	3mm	250	Uncoated	129.20mm	247.77mm	$28.00
1111-066	N-BK7	22mm(L)x20mm(H)	3.38mm	3mm	250	1050-1580nm AR Coating	129.20mm	247.77mm	$40.50
1111-067	N-BK7	40mm(L)x20mm(H)	3.38mm	3mm	250	Uncoated	129.20mm	247.77mm	$42.00
1111-068	N-BK7	32mm(L)x30mm(H)	3.72mm	3mm	300	Uncoated	155.04mm	297.55mm	$28.00
1111-069	N-BK7	32mm(L)x30mm(H)	3.72mm	3mm	300	350-650nm AR Coating	155.04mm	297.55mm	$38.50
1111-070	N-BK7	32mm(L)x30mm(H)	3.72mm	3mm	300	650-1050nm AR Coating	155.04mm	297.55mm	$38.50
1111-071	N-BK7	32mm(L)x30mm(H)	3.72mm	3mm	300	1050-1580nm AR Coating	155.04mm	297.55mm	$40.50
1111-072	N-BK7	60mm(L)x30mm(H)	3.72mm	3mm	300	Uncoated	155.04mm	297.55mm	$42.00
1111-073	N-BK7	60mm(L)x30mm(H)	3.72mm	3mm	300	650-1050nm AR Coating	155.04mm	297.55mm	$57.50
1111-074	N-BK7	62mm(L)x60mm(H)	5.93mm	3mm	300	Uncoated	155.04mm	296.09mm	Inquire
1111-075	N-BK7	32mm(L)x30mm(H)	3.54mm	3mm	400	Uncoated	206.72mm	397.67mm	$28.00
1111-076	N-BK7	32mm(L)x30mm(H)	3.54mm	3mm	400	350-650nm AR Coating	206.72mm	397.67mm	$38.50
1111-077	N-BK7	32mm(L)x30mm(H)	3.54mm	3mm	400	650-1050nm AR Coating	206.72mm	397.67mm	$38.50
1111-078	N-BK7	32mm(L)x30mm(H)	3.54mm	3mm	500	350-650nm AR Coating	258.40mm	497.74mm	$38.50
1111-079	N-BK7	60mm(L)x30mm(H)	3.43mm	3mm	500	350-650nm AR Coating	258.40mm	497.74mm	$57.50
1111-080	N-BK7	60mm(L)x30mm(H)	3.43mm	3mm	500	650-1050nm AR Coating	258.40mm	497.74mm	$57.50
1111-081	N-BK7	32mm(L)x30mm(H)	3.31mm	3mm	700	Uncoated	361.76mm	697.82mm	$28.00
1111-082	N-BK7	32mm(L)x30mm(H)	3.31mm	3mm	700	350-650nm AR Coating	361.76mm	697.82mm	$38.50
1111-083	N-BK7	60mm(L)x30mm(H)	3.31mm	3mm	700	Uncoated	361.76mm	697.82mm	$42.00
1111-084	N-BK7	32mm(L)x30mm(H)	3.21mm	3mm	1000	350-650nm AR Coating	516.80mm	997.88mm	$38.50
1111-085	N-BK7	60mm(L)x30mm(H)	3.21mm	3mm	1000	Uncoated	516.80mm	997.88mm	$42.00
1111-086	N-BK7	60mm(L)x30mm(H)	3.21mm	3mm	1000	350-650nm AR Coating	516.80mm	997.88mm	$57.50
1111-087	N-BK7	60mm(L)x30mm(H)	3.21mm	3mm	1000	1050-1580nm AR Coating	516.80mm	997.88mm	$61.00

Plano-Concave Cylindrical Lens





- Substrate materials: Fine Annealed N-BK7
- Ideal for one-dimensional magnification of images, laser line generation, and diode laser beam shaping
- Various focal lengths (-3.9mm to -700mm) and a large selection of dimensions
- Standard coating options: uncoated, 350-650nm, 650-1050nm, 1050-1580nm, or custom bandwidths
- Custom Plano Concave Cylindrical Lenses made from Fused Silica, CaF2, BaF2, MgF2, ZnSe, etc. are also available
- Applications: Laser scanners, diode lasers, optical metrologies, spectroscopes, etc.

A Plano Concave Cylindrical Lens is a special kind of plano-concave optical lens component in columnar shape, with one plane side and one concave side. As a plano-concave lens, a plano-concave cylindrical lens has an inward bent curve, contributing to a negative effective focal length (EFL), and both of them perform best at infinite absolute conjugate ratios, and becomes not advantageous when below 5:1. The distinguishment is that the former diverges lights in two dimensions, the later expands light beam along a one-dimensional single axis.

One of the critical functions of a Plano-concave cylindrical lens is transforming two-dimensional light beams into one-dimensional lines. A classic example would be projecting a collimated laser beam onto the concave side of the cylindrical lens, then on the image side the beam will be stretched and magnified into a thin line. Plano-concave cylindrical lenses are the best options for coupling into a slit input, and one-dimensional image stretching. These Plano-concave cylindrical lenses are taking more and more sections in the markets like laser scanners, spectroscopies, dye lasers, acousto-optics, optical processors, and other similar applications.

Another application of Plano-concave cylindrical lenses is to correct for astigmatism and the elliptical shape of the laser beam. Collimate and circularize the output of a laser diode. The flaw of the elliptical output beam shape is intimate in Edge-emitting laser diodes, this is a designed weakness, which is undesirable to the users. Elliptical beams, instead of ideal circular beams, have greater spot sizes, which means lower power efficiencies. Experiments prove, that using a pair of orthogonal Plano-concave cylindrical lens result in a circularized and balance-structured beam with high beam qualities with transmitted power. In addition, the cylindrical lens pair compensated for much of the beam's astigmatism.

N-BK7 or its equivalent known as H-K9L is a ROHS-compliant borosilicate crown glass with superior optical excellence and the glass is fine annealed and polished to tight tolerances to meet the demanding tolerances. The most attractive advantages of N-BK7 are its high optical homogeneities and high transmission to VIS and NIR spectra. Besides, the hardness, chemical and thermal resilience of N-BK7 are also remarkable, it contains low levels of inclusions and bubbles, therefore N-BK7 is excellent for making high-precision optical lenses.

Hangzhou Shalom EO offer stocked N-BK7 Plano-Concave Cylindrical Lenses. The various focal lengths range from -3.9mm to -700mm, while the dimensions also come in diversities to accommodate your requirements. Standard coating options include Uncoated, 350-650nm, 650-1050 nm, and 1050-1580nm anti-reflection coatings to elevate the transmission of the lens substrate, while custom coating bandwidths could be tailored through inquiries. Before shipment, the cylindrical lenses will undergo a stringent in-house inspection in our clean room using Zygo interferometers and other equipment to secure your interest.

Besides the off-the-shelf PCV cylindrical lens made from N-BK7, we also provide custom plano concave cylindrical lens made from a portfolio of other materials including Fused Silica, CaF2, BaF2, MgF2, ZnSe, etc. with BBAR coatings, V-coatings, and cheaper MgF2 AR coatings.

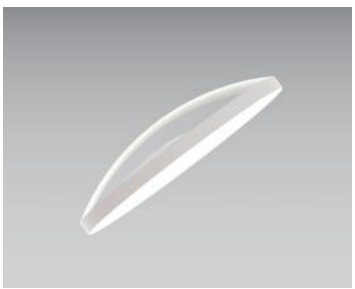
Specifications:

Type	Plano-Concave Cylindrical Lenses	Material	N-BK7
Clear Aperture	>90%	Size Tolerance	+0/-0.1mm
Thickness Tolerance	±0.2mm	Surface Irregularity	λ/4-λ@632.8nm
Surface Quality	60/40 S/D	Focal Length Tolerance	±1%
Chamfer	<0.2mm x 45 degree	Centering Error	<3 arcmin

Product List of Plano-Concave Cylindrical Lens

Code	Material	Size	CT	ET	Focal Length	Coating	Curvature Radius	BFL	Price
1112-001	N-BK7	8mm(L)x4mm(H)	2.0mm	2.7mm	-3.9mm	650-1050nm AR Coating	-2.02mm	-5.22mm	$24.50
1112-002	N-BK7	6mm(L)x4mm(H)	2.0mm	2.6mm	-4.0mm	Uncoated	-2.07mm	-5.32mm	$17.50
1112-003	N-BK7	8mm(L)x4mm(H)	2.0mm	2.6mm	-4.0mm	Uncoated	-2.07mm	-5.32mm	$17.50
1112-004	N-BK7	8mm(L)x4mm(H)	2.0mm	2.6mm	-4.0mm	650-1050nm AR Coating	-2.07mm	-5.32mm	$24.50
1112-005	N-BK7	6mm(L)x4mm(H)	2.0mm	2.4mm	-5.8mm	350-650nm AR Coating	-3.00mm	-7.12mm	$24.50
1112-006	N-BK7	12mm(L)x6mm(H)	2.0mm	3.2mm	-6.4mm	Uncoated	-3.31mm	-7.72mm	$17.50
1112-007	N-BK7	14mm(L)x7mm(H)	2.0mm	3.4mm	-7.7mm	Uncoated	-3.98mm	-9.02mm	$17.50
1112-008	N-BK7	12mm(L)x10mm(H)	2.0mm	4.8mm	-9.7mm	650-1050nm AR Coating	-5.01mm	-11.02mm	$24.50
1112-009	N-BK7	20mm(L)x10mm(H)	2.0mm	4.8mm	-9.7mm	1050-1580nm AR Coating	-5.01mm	-11.02mm	$35.00
1112-010	N-BK7	12mm(L)x10mm(H)	2.0mm	3.8mm	-12.7mm	Uncoated	-6.56mm	-14.02mm	$17.50
1112-011	N-BK7	12mm(L)x10mm(H)	2.0mm	3.8mm	-12.7mm	350-650nm AR Coating	-6.56mm	-14.02mm	$24.50
1112-012	N-BK7	12mm(L)x10mm(H)	2.0mm	3.8mm	-12.7mm	650-1050nm AR Coating	-6.56mm	-14.02mm	$24.50
1112-013	N-BK7	15mm(L)x13mm(H)	2.0mm	5.3mm	-13.7mm	1050-1580nm AR Coating	-7.08mm	-15.02mm	$35.00
1112-014	N-BK7	26mm(L)x13mm(H)	2.0mm	5.3mm	-13.7mm	Uncoated	-7.08mm	-15.02mm	$28.00
1112-015	N-BK7	12mm(L)x10mm(H)	2.0mm	3.4mm	-15.0mm	650-1050nm AR Coating	-7.75mm	-16.32mm	$24.50
1112-016	N-BK7	20mm(L)x10mm(H)	2.0mm	3.4mm	-15.0mm	Uncoated	-7.75mm	-16.32mm	$24.50
1112-017	N-BK7	21mm(L)x19mm(H)	2.0mm	7.9mm	-19.0mm	Uncoated	-9.82mm	-20.32mm	$28.00
1112-018	N-BK7	21mm(L)x19mm(H)	2.0mm	7.9mm	-19.0mm	350-650nm AR Coating	-9.82mm	-20.32mm	$38.50
1112-019	N-BK7	17mm(L)x15mm(H)	2.0mm	4.7mm	-20.0mm	650-1050nm AR Coating	-10.34mm	-21.32mm	$33.50
1112-020	N-BK7	17mm(L)x15mm(H)	2.0mm	4.7mm	-20.0mm	1050-1580nm AR Coating	-10.34mm	-21.32mm	$35.00
1112-021	N-BK7	30mm(L)x15mm(H)	2.0mm	4.7mm	-20.0mm	Uncoated	-10.34mm	-21.32mm	$28.00
1112-022	N-BK7	30mm(L)x15mm(H)	2.0mm	4.7mm	-20.0mm	350-650nm AR Coating	-10.34mm	-21.32mm	$38.50
1112-023	N-BK7	30mm(L)x15mm(H)	2.0mm	4.7mm	-20.0mm	650-1050nm AR Coating	-10.34mm	-21.32mm	$38.50
1112-024	N-BK7	30mm(L)x15mm(H)	2.0mm	4.7mm	-20.0mm	1050-1580nm AR Coating	-10.34mm	-21.32mm	$40.50
1112-025	N-BK7	15mm(L)x12.5mm(H)	2.0mm	3.5mm	-22.2mm	Uncoated	-11.47mm	-23.52mm	$24.50
1112-026	N-BK7	25mm(L)x12.5mm(H)	2.0mm	3.5mm	-22.2mm	Uncoated	-11.47mm	-23.52mm	$28.00
1112-027	N-BK7	12mm(L)x10mm(H)	2.0mm	2.8mm	-25.0mm	Uncoated	-12.92mm	-26.32mm	$17.50
1112-028	N-BK7	12mm(L)x10mm(H)	2.0mm	2.8mm	-25.0mm	650-1050nm AR Coating	-12.92mm	-26.32mm	$24.50
1112-029	N-BK7	12mm(L)x10mm(H)	2.0mm	2.8mm	-25.0mm	1050-1580nm AR Coating	-12.92mm	-26.32mm	$25.50
1112-030	N-BK7	20mm(L)x10mm(H)	2.0mm	2.8mm	-25.0mm	Uncoated	-12.92mm	-26.32mm	$24.50
1112-031	N-BK7	20mm(L)x10mm(H)	2.0mm	2.8mm	-25.0mm	1050-1580nm AR Coating	-12.92mm	-26.32mm	$35.00
1112-032	N-BK7	52mm(L)x26mm(H)	2.0mm	6.5mm	-38.1mm	Uncoated	-19.69mm	-39.42mm	$42.00
1112-033	N-BK7	12mm(L)x10mm(H)	2.0mm	2.5mm	-40.0mm	Uncoated	-20.67mm	-41.32mm	$17.50
1112-034	N-BK7	12mm(L)x10mm(H)	2.0mm	2.5mm	-40.0mm	350-650nm AR Coating	-20.67mm	-41.32mm	$24.50
1112-035	N-BK7	12mm(L)x10mm(H)	2.0mm	2.5mm	-40.0mm	650-1050nm AR Coating	-20.67mm	-41.32mm	$24.50
1112-036	N-BK7	22mm(L)x20mm(H)	2.0mm	3.8mm	-50.0mm	Uncoated	-25.84mm	-51.32mm	$28.00
1112-037	N-BK7	22mm(L)x20mm(H)	2.0mm	3.8mm	-50.0mm	1050-1580nm AR Coating	-25.84mm	-51.32mm	$40.50
1112-038	N-BK7	40mm(L)x20mm(H)	2.0mm	3.8mm	-50.0mm	Uncoated	-25.84mm	-51.32mm	$42.00
1112-039	N-BK7	40mm(L)x20mm(H)	2.0mm	3.8mm	-50.0mm	1050-1580nm AR Coating	-25.84mm	-51.32mm	$61.00
1112-040	N-BK7	32mm(L)x30mm(H)	2.0mm	6.5mm	-50.0mm	Uncoated	-25.84mm	-51.32mm	$28.00
1112-041	N-BK7	53mm(L)x50.8mm(H)	2.0mm	19.9mm	-50.8mm	Uncoated	-26.25mm	-52.12mm	Inquire
1112-042	N-BK7	32mm(L)x30mm(H)	2.0mm	5.6mm	-60.0mm	650-1050nm AR Coating	-31.01mm	-61.32mm	$38.50
1112-043	N-BK7	60mm(L)x30mm(H)	2.0mm	5.6mm	-60.0mm	Uncoated	-31.01mm	-61.32mm	$42.00
1112-044	N-BK7	62mm(L)x60mm(H)	2.0mm	23.5mm	-60.0mm	1050-1580nm AR Coating	-31.01mm	-61.32mm	Inquire
1112-045	N-BK7	53mm(L)x50.8mm(H)	2.0mm	13.6mm	-62.9mm	Uncoated	-32.51mm	-64.22mm	Inquire
1112-046	N-BK7	95mm(L)x50.8mm(H)	2.0mm	13.6mm	-62.9mm	Uncoated	-32.51mm	-64.22mm	Inquire
1112-047	N-BK7	32mm(L)x30mm(H)	2.0mm	5.0mm	-70.0mm	Uncoated	-36.18mm	-71.32mm	$28.00
1112-048	N-BK7	32mm(L)x30mm(H)	2.0mm	5.0mm	-70.0mm	350-650nm AR Coating	-36.18mm	-71.32mm	$38.50
1112-049	N-BK7	60mm(L)x30mm(H)	2.0mm	5.0mm	-70.0mm	Uncoated	-36.18mm	-71.32mm	$42.00
1112-050	N-BK7	53mm(L)x50.8mm(H)	2.0mm	11.1mm	-75.0mm	Uncoated	-38.76mm	-76.32mm	Inquire
1112-051	N-BK7	90mm(L)x50.8mm(H)	2.0mm	11.1mm	-75.0mm	Uncoated	-38.76mm	-76.32mm	Inquire
1112-052	N-BK7	40mm(L)x20mm(H)	3.0mm	4.1mm	-80.0mm	Uncoated	-41.34mm	-81.98mm	$42.00
1112-053	N-BK7	32mm(L)x30mm(H)	3.0mm	5.1mm	-100.0mm	1050-1580nm AR Coating	-51.68mm	-101.98mm	$40.50
1112-054	N-BK7	32mm(L)x30mm(H)	3.0mm	4.6mm	-130.0mm	Uncoated	-67.18mm	-131.98mm	$28.00
1112-055	N-BK7	32mm(L)x30mm(H)	3.0mm	4.4mm	-150.0mm	Uncoated	-77.52mm	-151.98mm	$28.00
1112-056	N-BK7	60mm(L)x30mm(H)	3.0mm	4.4mm	-150.0mm	Uncoated	-77.52mm	-151.98mm	$42.00
1112-057	N-BK7	32mm(L)x30mm(H)	3.0mm	4.0mm	-200.0mm	Uncoated	-103.36mm	-201.98mm	$28.00
1112-058	N-BK7	32mm(L)x30mm(H)	3.0mm	4.0mm	-200.0mm	650-1050nm AR Coating	-103.36mm	-201.98mm	$38.50
1112-059	N-BK7	60mm(L)x30mm(H)	3.0mm	3.8mm	-250.0mm	Uncoated	-129.20mm	-251.98mm	$42.00
1112-060	N-BK7	32mm(L)x30mm(H)	3.0mm	3.3mm	-700.0mm	Uncoated	-361.76mm	-701.98mm	$28.00

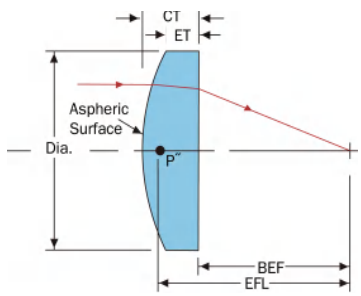
Aspheric Lenses



An Aspheric Lens is an optical lens with a special profile, the word "aspheric" here means not being a portion of a sphere. The difference between a normal spherical lens and an aspheric lens is that an aspheric lens has a more complex optical front which varies in radii of curvature from center to edge along the optical axis, such as ellipse, parabola, hyperbola, and quadric. The advantage of an aspheric lens is that its special front shape allows it to mitigate or attenuate the various optical aberrations such as spherical aberrations, chromatic aberration, astigmatism, etc., and elevates the overall qualities of images. The most notable virtue of aspherical lenses is the correction of spherical aberration, which is the innate failure of spherical lenses to converge parallel light into the theoretical focal point, causing a blurring of the light spots. Eliminating the effects of spherical aberration, an aspheric lens presents crisp spots and better image qualities. In addition, an aspheric lens allows a larger numerical aperture (low f-number) and therefore increases the light throughput, achieving higher power efficiencies. Incorporation of aspheric lenses into lens modules also could help to reduce the element number because the former gives them more aberration correction than multiple surfaces of the latter. A Fewer number of aspheric lenses could substitute a handful of spherical lenses. With the exemption of excessive optics for correction of spherical aberrations, the utilization of aspheric lenses enables simplified, compact designs and lowered production costs. The applications of aspheric lenses are manifold, including barcode scanners, laser diode collimation, illuminations, OEM, or Research and Development integration.

Hangzhou Shalom EO offers various types of aspheric lenses including Plano-convex/concave Aspheric Lenses, Biconvex/Biconcave Aspheric Lenses, Meniscus Aspheric Lenses, Ball/half ball aspheric lenses, etc. We are capable of providing Aspheric Lenses of Commercial Grade, Standard Grade High precision Laser Grade. For high-volume production of aspheric lenses, we utilize precision glass molding techniques to obtain efficient productiveness in short timescales. For mid-to-low-scale production, we use the CNC (Computerized Numerical Control)-polishing technique. Compared with the glass molded counterparts, CNC polished lenses are available in larger sizes, provide better surface smoothness, and maintain the M squared values of the input beam better. We also introduced the MRF (Magneto-Rheological Finishing) technique into our production line, where the high-precision polishing technique contributes to true diffraction-limited spot sizes and the lowest wavefront error of the lenses. Our Aspheric Lenses are sold in two categories: Collimation Aspheric Lenses and Condenser Aspheric Lenses. Aspheric collimation lenses are an excellent option for collimating light emerging from fibers or laser diodes. The aspheric condenser lenses exhibit exceptional light-converging capability, creating focal points of intense energy, the lenses are a superb choice to be integrated into laser cutting machines.

Precision Polished Aspheric Lenses (Custom)



- Substrate materials: Optical Glass (e.g. N-BK7, Fused Silica), Ge, ZnSe, Si
- Minimized spherical aberrations
- Various manufacturing techniques: CNC precision polishing, MRF polishing, or single point diamond turning
- Standardized focal lengths and diameters convenient for OEM
- Coating options: uncoated, MgF2 single layer AR coating, laser line V-coating and BBAR coating
- Diameter range : 5mm to 390mm

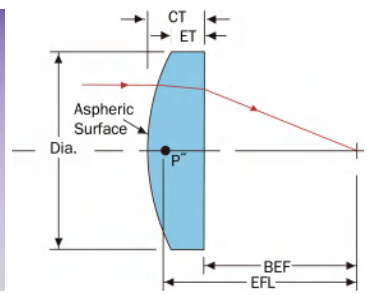
Shalom EO's Precision Polished Custom Aspheric Lenses are made of various materials including optical glass materials (e.g. N-BK7, Fused Silica), Germanium, Zinc Selenide, Silicon, etc. These aspheric lenses are manufactured using Computer Numerical Control (CNC) precision polishing and grinding, which allows larger lens dimensions, tighter geometric control, and beam qualities. The MRF technique is also employed to achieve diffraction-limited performance and minimize wavefront distortion of the lasers. When it comes to non-glass aspheric lenses, more stringent precision control could be achieved using single-point diamond turning (SPDT) techniques.

Our aspheric lenses are sold with a transmission range extending from UV to NIR, and diameters are available between 5mm and 390mm. The preforms of our aspheric lenses could be plano-convex/plano-concave lenses, ball/half lenses, meniscus lenses, biconvex/biconcave lenses, achromatic lenses, etc. Custom coating options for Shalom's aspheric lenses include uncoated substrates, Broadband Anti-reflection (BBAR) coatings that effectively reduce reflection (average reflection below 0.5%) over a certain wavelength range, and laser line V-coating which provides higher transmission (average reflection below 0.25%) at a narrower range around a certain wavelength, and MgF2 AR coatings (average reflection below 1.5%) with competitive low price.

Specifications:

Material	BK7, fused silica, optical glass, Ge, ZnSe, Silicon	Surface Quality	10/5 S/D to 40/20 S/D (uncoated)
Clear Aperture	>90%	Diameter Range	5-390mm
Diameter Tolerance	+0.0/-0.03mm	Protective Chamfers	0.3mm max@45°
Thickness Tolerance	±0.02mm	EFL Tolerance	≤0.1%
Asphere Figure Error P-V	<0.65 μm	Surface Form Deviation RMS	≤0.5 μm
Centration	<30"		

Glass Molded Aspheric Lenses (Custom)



- Substrate materials: Optical Glass (e.g., N-BK7, Fused Silica)
- Minimized spherical aberrations
- Manufactured using glass molding technique
- Coating options: uncoated, MgF2 single layer AR coating, laser line V-coating, and BBAR coating
- Diameter range: 5mm to 300mm

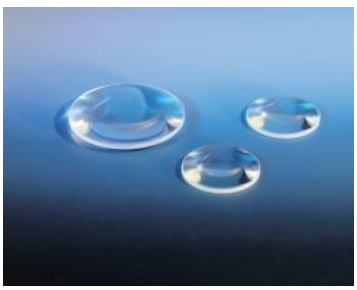
Shalom EO offers Custom Glass Molded Aspheric Lenses made of various optical glass materials (e.g., N-BK7, Fused Silica). The glass molding technique involves a heating procedure of optical glass cores until the cores become malleable enough to be pressed into the aspherical mold. The glass molded aspheres are often available in smaller sizes than the precision polished aspheric lenses, and this technique excels in terms of high productiveness and low incremental cost once the mold is accomplished. The forms of our aspheric lenses could be plano-convex/Plano-concave lenses, ball/half lenses, meniscus lenses, biconvex/biconcave lenses, achromatic lenses, etc.

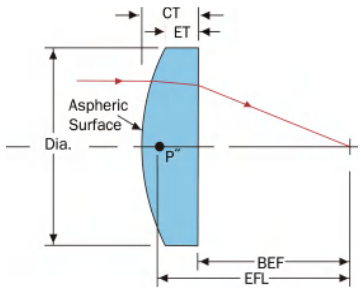
The diameters are available between 5mm and 300mm. Custom coating options for Shalom's aspheric lenses include uncoated substrates, Broadband Anti-reflection (BBAR) coatings that effectively reduce reflection (average reflection below 0.5%) over a certain wavelength range, and laser line V-coating which provides higher transmission (average reflection below 0.25%) at a narrower range around a certain wavelength, and MgF2 AR coatings (average reflection below 1.5%) with competitive low price.

Specifications:

Material	optical glass	Surface Quality	10/5 S/D to 40/20 S/D (uncoated)
Clear Aperture	>90%	Diameter Range	5-280mm
Diameter Tolerance	+0.0/-0.05mm	Protective Chamfers	0.3mm max@45°
Center Thickness Tolerance	≤0.05mm	EFL Tolerance	≤0.1%
Asphere Figure Error P-V	±1 μm	Surface Form Deviation RMS	≤0.5 μm

Aspheric Condenser Lenses (Precision Polished)





- CNC and MRF polishing techniques
- Excellent for collection of light, illumination, projection, etc.
- Compatible with 6000W-30000W continuous laser systems
- Various Lens Types: Plano-convex/concave, biconvex/concave, meniscus, etc.
- Standard coating options include: 400-500nm, 600-700nm, 1065-1085nm, 1070-1080nm, 1060-1090nm AR Coatings.
- Both stocked and custom versions are available

An Aspheric Condenser Lens is a lens with a non-spherical optical front and a positive short focal length excellent for condensing or collecting incident light. The major characteristics of an aspheric condenser are its prowess to correct spherical aberration and its superb strength to collect light. In applications that require large acceptance angles, aspheric lenses are more suitable than spherical lenses as the latter exhibits spherical aberrations and other problems, whilst aspheric lenses provide larger apertures, higher NA, and lower f/# ratios, supporting a wide range of efficient illumination applications (such as light collection, condensing, projection, and detection). Furthermore, the incorporation of aspheric condenser lenses into an optical system allows the simplification of the system, as a single aspheric lens could be an excellent alternative to several spherical converging lenses.

Hangzhou Shalom EO offers Stocked and Custom Aspheric Condenser Lenses made of UV Fused Silica, the aspheric condenser is compatible with 6000W-30000W continuous laser systems. The aspheric lenses are CNC Precision Polished to obtain precise control of the qualities of the lens surface. MRF technique is also harnessed to deliver lenses that commit diffraction-limited performances and introduce minimum wavefront distortions. Through a rational combination of material selection, manufacturing, coating, and inspection, we can fabricate products of reproducible qualities that meet our published standards.

Regarding our standard aspheric condensers, the aspheric condenser lenses are available in three standard diameters: 37mm, 38.1mm, or 50.8mm, with focal lengths ranging from 150mm to 350mm. Coating options are manifold, including 400-500nm, 600-700nm, 1065-1085nm, 1070-1080nm, and 1060-1090nm AR Coatings. Other custom specifications could be tailored upon request. Besides, we also provide Precision Polished Custom Aspheric Lenses made of various materials including Germanium, Zinc Selenide, Silicon, etc., these custom precision polished aspheric lenses can be CNC/MRF processed or polished using single point diamond turning (SPDT).

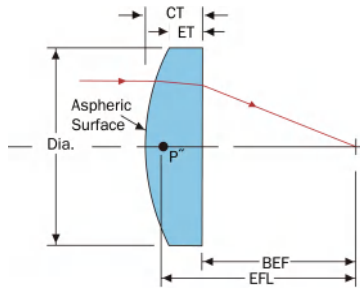
Specifications:

Material	Fused Silica	Surface Quality (S/D)	10/5, 20/10
Clear Aperture	>90%	Centration	<30"
Protective Chamfers	0.3mm max@45°		

Product List of Aspheric Condenser Lens (Precision Polished)

Code	Types	Material	Diameter	EFL	CT	Coating
1115-001	Meniscus Aspheric Condenser Lens	Fused Silica	Φ37mm	200mm	4mm	1060-1090nm AR Coating
1115-002	Biconvex Aspheric Condenser Lens	Fused Silica	Φ37mm	200mm	6mm	1060-1090nm AR Coating
1115-003	Plano-convex Aspheric Condenser Lens	Fused Silica	Φ38.1mm	200mm	6.0271mm	1070-1080nm AR Coating
1115-005	Plano-convex Aspheric Condenser Lens	Fused Silica	Φ38.1mm	300mm	5.3482mm	1070-1080nm AR Coating
1115-006	Plano-convex Aspheric Condenser Lens	Fused Silica	Φ38.1mm	300mm	5.1549mm	1070-1080nm AR Coating
1115-007	Plano-convex Aspheric Condenser Lens	Fused Silica	Φ50.8mm	300mm	5mm	1065-1085nm AR Coating

Aspheric Condenser Lenses (Precision Polished)



- Precision glass CNC or sometimes MRF polished
- Compatible with 6000W-30000W continuous laser systems
- Ideal for aligning or calibrating optical devices
- Available both in stocked and custom versions
- Standard coating options: 600-700nm, 400-500nm, 550-650nm, 850-1100nm,1070-1080nm, 1065-1085nm, 1060-1090nm AR coatings

An Optical Collimator is a device that narrows an optical beam, making the divergent light parallel by compressing the spreading angle. Optical collimators can be used to calibrate other optical devices, to make sure all elements are aligned on the optical axis, to set elements at proper focus, or to align two or more devices. Compared with normal spherical collimators, Aspheric Collimators excel in terms of minimized spherical aberrations, which also contributes to the simplification of the whole lens group.

Hangzhou Shalom EO offers Stocked and Custom Aspheric Collimators, enabling you to adjust the field of view, collection efficiencies, and spatial resolution. Our aspheric collimators are precision CNC polished, sometimes MRF polished, in our state-of-the-art workshop, superior optical standards are obtained through cautious material selection, meticulous cutting, careful grinding and polishing, and stringent inspection. By controlling each production stage, we can realize the reduplication and steadiness of the quality of our products. Our aspheric collimators are compatible with 6000W-30000W continuous laser systems, the lens could take various forms such as plano-convex, meniscus, biconvex, etc. The standard coating options include 1070-1080 nm AR coatings, 1065-1085 nm AR coatings, 1060-1090 nm AR coatings, 600-700 nm AR coatings, 400-500 nm AR coatings, 550-650 nm AR coatings, and 850-1100 nm AR coatings.

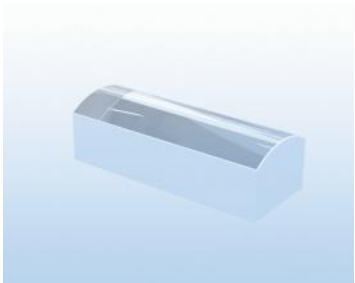
Specifications:

Material	Fused Silica	Surface Quality (S/D)	10/5, 20/10
Clear Aperture	>90%	Centration	<30"
Protective Chamfers	0.2mm@45°, 0.25mm@45°		

Product List of Aspheric Collimator (Precision Polished)

Code	Types	Material	Diameter	EFL	CT	Coating
1116-001	Biconvex Aspheric Collimator Lens	Fused Silica	Φ37mm	100mm	8mm	1060-1090nm AR Coating
1116-002	Plano-convex Aspheric Collimator Lens	Fused Silica	Φ38.1mm	100mm	8.1156mm	1070-1080nm AR Coating
1116-003	, Biconvex Aspheric Collimator Lens	Fused Silica	Φ38.1	100mm	6mm	1060-1090nm AR Coating
1116-004	Plano-convex Aspheric Collimator Lens	Fused Silica	Φ38.1	125mm	7.2681mm	1070-1080nm AR Coating
1116-005	Meniscus Aspheric Collimator Lens	Fused Silica	Φ38.1mm	200mm	6mm	1060-1090nm AR Coating
1116-006	Plano-convex Aspheric Collimator Lens	Fused Silica	Φ50.8mm	120mm	11mm	1065-1085nm AR Coating

Fast Axis Collimators



- Large numerical apertures and minimized absorption loss (transmission >99%)
- Ideal for collimating lights from diode lasers into fibers
- Made of UV Fused Silica
- Available both in standard (Dia 38.1mm, 50.8mm, 790-990nm AR coatings) or custom versions
- Great when used in conjunction with our slow axis collimators

Fast Axis Collimators (FAC-Lenses) are cylindrical lenses each with an aspheric optical front and a flat backside aimed for collimating spreading light beams from a Diode Laser along the fast axis. The FAC lenses compress the diverging laser lights from a laser diode into paralleled lights and adjust the beam profile. A fast-axis collimator is the most important component in the high-power diode.

Hangzhou Shalom offers Stocked and Custom Aspheric Fast Axis Collimators. Our fast axis collimators highlight large numerical apertures (NA), and AR coatings with minimized absorption for high-power applications making it possible to collimate all portions of diode output with excellent beam qualities. The greatest altitudes of beam-shaping effectiveness for diode lasers are assured through high transmission and good collimation properties.

The Stocked Aspheric Fast Axis collimators are made of UV Fused Silica, the product is compatible with the 6000-30000W continuous laser. Our standard Aspheric Fast Axis Collimators are available in diameters of 38.1mm and 50.8mm, coating options include 790-990nm standard ar coatings or custom coatings. Within the working wavelength range, our fast axis collimator supports an eminent optical transmission greater than 99%. Various glass substrate materials are accessible for selection. In addition, our Slow Axis Collimators could be used in conjunction with the FAC lenses with tailored specifications.

Specifications:

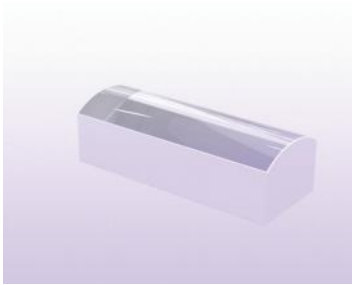
Materials	Optical Glass	Coating Wavelength Range	790-990nm
Coating	BBAR Coating (790-990nm)	Coating Specification	Ravg<1.0%@790-990nm
Design Wavelength	808nm	Height Tolerance	±0.05mm
Length Tolerance	±0.05mm	Dimension	Custom
Surface Flatness	λ/4	Width Tolerance	±0.01mm
Transmission	>99%	Numerical Aperture	0.8
Collimation Power	>80% within 1.15xDIV; >85% within 1.30xDIV		

Modules or Types:

Shalom EO provides the following standard modules of fast-axis collimators. Besides, we also accept custom orders.

Type	FAC300	FAC360	FAC600
Effective focal length EFL (μm)	300±70@940nm	360±70@940nm	600±70@940nm
Back Focal Length (μm)	70±30@940nm	70±30@940nm	140±30@940nm
Residential Divergence@X% Power Enclosure	±2.50@85%	±2.00@85%	±1.50@85%
Numerical Aperture (Design)	0.8	0.8	0.8
Wavelength (nm)	780-1000/430-470	780-1000	780-1000
Broadband AR-Coating Reflection avg. (AOI) [%]	Ra <= 0.4 (0°- 35°)	Ra <= 0.4 (0°- 35°)	Ra <= 0.4 (0°- 35°)
Coating Durability	MIL-C-675	MIL-C-675	MIL-C-675
Dimensions (Height x Thickness x Length) [mm]	0.5(±0.05)x0.43(±0.03)x4.0(±0.05)	0.6(±0.05)x0.53(±0.03)x4.0(±0.05)	1.0(±0.05)x0.82(±0.03)x4.0(±0.05)
S1 Clear Aperture (Height x Length) [mm]	0.3x3.5	0.3x3.5	0.3x3.5
S1 Surface Imperfections (acc. MIL-PRF-1380B)	20-10	20-10	20-10
S2 Clear Aperture (Height x Length) [mm]	0.4X3.5	0.5X3.5	0.9X3.5
S2 Surface Imperfections (acc. MIL-PRF-1380B)	20-10	20-10	20-10
Edge Chipping (mm)	0.1	0.1	

Slow Axis Collimators



- Substrate Materials: Custom Glass Materials
- Low Scatter and Efficient Collimation
- Mechanical Durability
- AR Coatings furnished
- Ideal for: High Power Laser Bars and Stacks, Fiber-Coupled Direct Diode, Solid State Laser Pumping, etc

Slow Axis Collimators (SAC-Lenses) axis collimators are optical components used in lasers, often in diode lasers, to shape and control the output beam. Slow-axis collimators are designed to reduce the divergence angle along the slow axis of asymmetric beam emission from diode lasers, leading to a more symmetrical output beam profile. The aspheric design of the SAC lenses results in low spherical aberrations and therefore efficient collimation of the slow-axis dimensions.

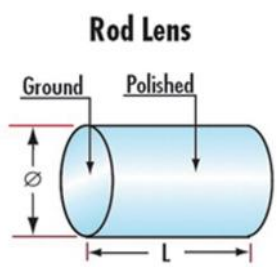
Hangzhou Shalom EO offers Custom Slow Axis Collimators (SAC-lenses) with high-precision fabrication which contributes to low scattering and crosstalk and AR coatings. We implement a strict inspection procedure in our clean house, where we strive to minimize the deviation between the published standards and the actual qualities. The products are compatible with various laser bars and laser stacks and capable of handling high power densities. Flexible custom designs could be tailored upon request. Combined usage with our Fast-Axis-Collimators is recommendable.

Specifications:

Materials	Optical Glass	Coating Wavelength Range	790-990nm
Coating	BBAR Coating (790-990nm)	Coating Specification	Ravg<1.0%@790-990nm
Design Wavelength	808nm	Height Tolerance	±0.05mm
Length Tolerance	±0.05mm	Dimension	Custom
Surface Flatness	λ/4	Pitch	500μm
Transmission	>99%	Clear Aperture	Custom

Application Notes: Apart from the 790-990nm AR coating, we can also provide custom other custom coating options, attached mounts, and sustaining structures can be offered as well.

Rod Lenses



- Substrate materials: BK7, fused silica or other optical glass
- Focuses collimated light into a line
- Minimum diameter: 0.6mm
- Roundness error: down to 0.005mm
- Diameter tolerance: down to 0.01mm

Rod Lenses are optical lenses in the form of a round rod and focus collimated beams into one dimension. Light is transferred against the circumference of the lens, therefore the circumferences of the rod lenses are precision polished, whilst the two flat ends are irrelevant to optical processing, but could

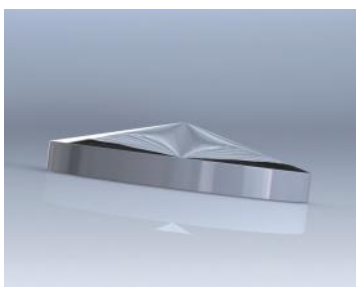
be ground also. The uses of rod lenses include collimation of divergent light, linear focusing, and image inversion lenses between the objective and the ocular lenses in a rigid endoscope (A medical instrument to observe inside human bodies). A rod lens could also be utilized as a light pipe (An optical component that transfers light between the flat ends using total reflection.)

Hangzhou Shalom EO offers a series of custom Rod Lenses made from various optical materials such as, but not limited to UV-fused silica, N-BK7. The transmission of our rod lenses extends from UV, Visible, to NIR. Our rod lenses feature industrial-grade polished surface quality (60/40 S/D), that are competent at being applied as endoscope lenses, light pipes, and laser processing lenses. Custom coating options for rod lenses include uncoated substrates, Broadband Anti-reflection (BBAR) coatings that effectively reduce reflection (average reflection below 0.5%) over a certain wavelength range, and laser line V-coating which provides higher transmission (average reflection below 0.25%) at a narrower range around a certain wavelength, and MgF2 AR coatings (average reflection below 1.5%) with competitive low price.

Specifications:

Type	Rod Lenses	Material	UV fused silica, BK7 or other optical glass
Diameter Tolerance	down to +/-0.01mm	Roundness Error	Down to 0.005mm
Length Tolerance	±0.1mm	Surface Quality	60/40 S/D

Axicon (Conical Lens)



- Creating an approximation of a diffraction-free Bessel beam or converting laser light into an annular shape
- Made of high-quality UV Fused Silica
- High-precision polished
- Superior performance for high-power lasers
- Base angles available from 0.5°to 40°
- Standard diameters 1/2' and 1', custom diameters φ12.7mm-φ 300mm

An Axicon or a Conical Lens is an optical lens with a conical side and flat side, it is defined by its base angles and its apex angle.

The working principle of an axicon is that it uses interference to create a focal line along the optical axis. Axicons could be utilized to generate an approximation of a diffraction-free Bessel beam, which is a beam consisting of a series of concentric rings having equal power through transforming collimated Gaussian beam in the near field. Although a Bessel beam does not exist in real life because it would require infinite energy to create, axicons offer a good analog by maintaining the non-diffractive Bessel beam properties over a distance much longer than a similar Gaussian beam. Bessel beams can be applied in atom or molecule guiding, optical trapping, and medical treatments. A plano-convex axicon could also be used to convert laser light into an annular shape by taking the projection in the far field, and the ring's thickness will be 1/2 of the incident laser beam's diameter. This trait grants axicons aptness for laser hole drilling, microscopes, and medical applications. Note that when converting a collimated light beam into a ring, the plano surface of the axicon should face the input light source.

Hangzhou Shalom EO offers Custom Axicons (Conical Lenses). The axicons are in plano-convex shape, made of high-quality Fused Silica, and are high-precision polished, featuring superior performance excellent for high-power lasers. The base angles of the axicons range from 0.5°to 40°. The stocked axicons are uncoated, but we also provide coating options comprising: 400-700nm, Ravg＜0.5% AOI 0°； 650-1100nm, Ravg＜0.5% AOI 0°; 1050-1700nm, Ravg＜0.5% AOI 0°. Besides the standard 12.7mm and 25.4mm diameters, custom diameters within the range of φ12.7mm-φ300mm are accessible.

Specifications:

Lens Form	Axicon Lens	Material	UV Fused Silica
Diameter Tolerance	+0.0/-0.1mm	Thickness Tolerance	±0.1mm
Angular Tolerance	0.1°	Surface Quality (S/D)	40/20
Surface Flatness (S2)	λ/4@633nm	Surface 1 Deviation(RMS,S1)	<0.15μm
Surface Roughness (RMS, S1)	<6 angstrom		

Product List of Axicon (Conical Lens)

Code	Types	Material	Diameter	CT	Coating	Physical Angle
1114-001	Plano Convex Axicon	Fused Silica	12.7mm	5.05mm	Uncoated	0.5°
1114-002	Plano Convex Axicon	Fused Silica	25.4mm	5.11mm	Uncoated	0.5°
1114-003	Plano Convex Axicon	Fused Silica	12.7mm	5.1mm	Uncoated	1°
1114-004	Plano Convex Axicon	Fused Silica	25.4mm	5.22mm	Uncoated	1°
1114-005	Plano Convex Axicon	Fused Silica	12.7mm	5.21mm	Uncoated	2°
1114-006	Plano Convex Axicon	Fused Silica	25.4mm	5.43mm	Uncoated	2°
1114-007	Plano Convex Axicon	Fused Silica	12.7mm	5.52mm	Uncoated	5°
1114-008	Plano Convex Axicon	Fused Silica	25.4mm	6.09mm	Uncoated	5°
1114-009	Plano Convex Axicon	Fused Silica	25.4mm	7.24mm	Uncoated	10°
1114-010	Plano Convex Axicon	Fused Silica	25.4mm	9.62mm	Uncoated	20°
1114-011	Plano Convex Axicon	Fused Silica	25.4mm	15.66mm	Uncoated	40°

Sapphire Lenses

Sapphire is a high-performance artificial birefringent crystal material with hexagonal lattice structures, fabricated using fine Al2O3 as ingredients. The optical transmission spectrum of sapphire encompasses Ultraviolet, Visible, and Infrared, spanning from 150nm to 5500nm. The most eminent feature of sapphire is its incomparable hardness. As the world's second hardest material with a Mohs index of 9, sapphire is of extreme resistance to abrasions and scratches to withstand extreme conditions and secure long-term durabilities.

Sapphire Optics, therefore, holds a natural advantage with superior ruggedness when compared with optics made from other materials, in fact, sapphire optics can seldom be scraped using materials other than diamonds and themselves. Besides, Sapphire optics is also capable of working under high-pressure, insoluble in water and most acids and alkalis, and its operating temperature limit is up to 1900℃ with its outstanding thermal conduction properties

Hangzhou Shalom EO supplies a series of Sapphire Optical Lenses with custom and off-the-shelf specifications including sapphire lenses, sapphire ball lenses and half ball lenses, and sapphire domes.

With cutting-edge techniques and an efficient production line, Shalom EO is capable of manufacturing both industrial-grade AlO3 optics and high-precision sapphire optics assigned to specific industrial demands with more rigorous requirements and making flexible responses to large-scale orders. Our sales and engineering group with profound technical backgrounds are competent and willing to propose and design the products that best suit your interest at optimized prices with high cost-effectiveness.

Sapphire Ball Lenses and Half-ball Lenses

- Diameters up to 300mm
- Large wavelength range: 0.15~5μm
- Extreme hardness for harsh environment
- Chemical and erosion resistant front surface
- Stocked and Custom Sapphire Ball lenses and Half-Ball lenses Available

Ball lenses belong to a special form of biconvex lenses which have the geometry of a ball (sphere). Ball lenses are manufactured from a single optical material with good transmittance in the wavelength region of interest. The conventional applications of ball lenses include focusing light in the field of fibers(e.g. laser to fiber coupling, fiber to fiber coupling), emitters, and detectors, in major to collimate light depending on the geometries of the input light source. Also, ball lenses could be ball pre-forms of aspheric lenses where ball lenses are deformed on purpose to prevent spherical aberrations.

Half-Ball lenses are variants of ball lenses, obtained through cutting the ball lenses in half. Due to the ease of mounting derived from the one flat surface, half-ball lenses are more convenient for applications where space limitations exist and more compact designs are required, such as fiber communication, endoscopes, microscopes, optical pick-up devices, and laser measurement facilities.

There are three essential parameters of ball lenses and half-ball lenses. One is the effective focal length (EFL), which is the distance between a plane through the

center of the lens and the beam waist (focus) of a collimated input beam. Another is back focal length (BFL), defined as the distance of the focal point from the lens surface, therefore half the diameter smaller than the EFL. The last is numerical aperture (NA), for collimated incident light, the numerical aperture (NA) of the ball lens is dependent on the size of the ball lens (D), its index of refraction (n), and the diameter of the input source (d). Numerical aperture is proportionate to the resolution of the lens, the larger the NA, the more the light is collected by the lens.

Besides the customized versions, Hangzhou Shalom EO also provides stocked ball lenses and half-ball lenses made from Sapphire. The specifications of the custom ball and half-ball lenses could be varied upon your request. Besides, sapphire lenses of other custom shapes including plano-convex, Plano-concave, meniscus, and double-concave/convex are also available in Shalom EO.

Here are some important features of Sapphire:

Sapphire:

Optical-grade Sapphires chosen to produce optical components are Alpha Single Crystal Sapphires, chemical formula Al2O3, with a wide transmission range from 0.225-5.5μm. Sapphire has a hexagonal structure. The lattice constant is a=b=4.758A, c=12.991A, and the refractive index is 1.762-1.770. Its strong covalent bonds contribute to the enduring and solid nature of sapphire. Its Mohs hardness is 9, ranking right after diamond, and its anti-compression strength is between 1.9-24 GPa. Young's Modulus of sapphire is 380Gpa, which is about twice the magnitude of irons. The melting temperature of sapphire is high,2045 °C, which enables sapphire to be engaged in manifolds of applications requiring high thermal loads.

Sapphire lenses are ideal for demanding applications because of their eminent performance, consisting of superior surface hardness (9 on the Mohs scale, the third hardest mineral, after diamond at 10 and moissanite at 9.5, which means high resistance to scratch and abrasion), high thermal conductivities, outstanding dielectric properties and resistance to common chemical acids and alkalis. In addition, sapphire features a high index of refraction and excellent broadband transmission characteristics.

Specifications:

Materials	Optical grade sapphire crystals	Diameter Range	~300mm
Diameter Tolerance	+0.0/-0.2mm	Thickness Tolerance	+/-0.2mm
Surface Quality	60/40 S/D	Fringes (N)	3
Irregularity (delta N)	1	Centration	3'
Chamfer	0.1-0.3mmx45 degree		

Physical and Optical Properties:

Transmission Range	0.17 to 5.5 μm	Refractive Index	No 1.75449; Ne 1.74663 at 1.06 μm (1)
Reflection Loss	14% at 1.06 μm	Absorption Coefficient	0.3 x 10-3 cm-1 at 2.4 μm(2)
Reststrahlen Peak	13.5 μm	dn/dT	13.1 x 10-6 at 0.546 μm(3)
dn/dμ = 0	1.5 μm	Density	3.97 g/cc
Melting Point	2040°C	Thermal Conductivity	27.21 W m-1 K-1 at 300K
Thermal Expansion	5.6 (para) & 5.0 (perp)x 10-6/K*	Hardness	Knoop 2000 with 2000gindenter
Specific Heat Capacity	763 J Kg-1 K-1 at 293K(4)	Dielectric Constant	11.5 (para) 9.4 (perp)、at 1MHz
Youngs Modulus (E)	335 GPa	Shear Modulus (G)	148.1 GPa
Bulk Modulus (K)	240 GPa	Elastic Coefficients	C11=496 C12=164 C13=115 C33=498 C44=148
Apparent Elastic Limit	300 MPa (45,000 psi)	Poisson Ratio	0.25
Solubility	98 x 10-6 g/100g water	Molecular Weight	101.96
Class/Structure	Trigonal (hex), R3c		

Product List of Sapphire Ball Lenses and Half-ball Lenses

Code	Types	Material	Diameter	EFL	Coating	Unit Price
1105-003	Ball	Sapphire	1.0mm	0.57mm	None	$10.0
1106-003	Half-Ball	Sapphire	1.0mm	-	None	Inquiry
1105-006	Ball	Sapphire	2.0mm	1.15mm	None	$10.0
1106-006	Half-Ball	Sapphire	2.0mm	-	None	$10.0
1105-009	Ball	Sapphire	3.0mm	1.72mm	None	$10.0
1106-009	Half-Ball	Sapphire	3.0mm	-	None	Inquiry
1105-012	Ball	Sapphire	4.0mm	2.30mm	None	$12.0
1106-012	Half-Ball	Sapphire	4.0mm	-	None	$12.0
1105-015	Ball	Sapphire	5.0mm	2.87mm	None	$12.0
1106-015	Half-Ball	Sapphire	5.0mm	-	None	$12.0
1105-018	Ball	Sapphire	6.0mm	3.45mm	None	$15.0
1106-018	Half-Ball	Sapphire	6.0mm	-	None	Inquiry
1105-021	Ball	Sapphire	7.0mm	4.02mm	None	Inquiry
1106-021	Half-Ball	Sapphire	7.0mm	-	None	Inquiry
1105-024	Ball	Sapphire	8.0mm	4.60mm	None	$18.5
1106-024	Half-Ball	Sapphire	8.0mm	-	None	Inquiry
1105-027	Ball	Sapphire	9.0mm	5.17mm	None	$20.0
1106-027	Half-Ball	Sapphire	9.0mm	-	None	$21.0
1105-030	Ball	Sapphire	10.0mm	5.75mm	None	$23.0
1106-030	Half-Ball	Sapphire	10.0mm	-	None	$23.0

Sapphire Lenses

- Unparalleled mechanical hardness and chemical stability
- Superb thermal and stress endurance
- Wide Transmission Range: 0.25-5.5μm
- Ideal for application from UV to MWIR
- Various lenses: Ball/Half Ball, Plano-convex/concave, meniscus, etc.
- AR coating available

Lenses are optical components utilized for focusing or diverging light. Sapphire Lenses are ideal for demanding applications (such as lasers) and harsh environments because of their extreme surface hardness, high thermal conduction, high dielectric constants, and resistance to common chemical acids and alkalis. Sapphire (Al_2O_3) is the second hardest crystal next to diamond, and because of their structural strength, sapphire crystal lenses can be made much thinner than other common materials. Sapphire has decent transmission rates from 0.15 to 5.5μm, which covers the ultraviolet (UV) to mid-wave infrared (MWIR) wavelength range.

Hangzhou Shalom EO offers Custom Sapphire Lenses upon the customer's request, and lenses with anti-reflection and other thin film coatings are available. The precision, focal length, lens shape (ball/half ball, plano-convex/concave, double-concave, meniscus, etc.), and other specifications of the sapphire lens could be tailored. The kinds of sapphire we offer include Random, C-cut (also known as Z-cut), or other custom orientations. Our sapphire lenses are excellent for incorporation into various multi-spectral and Infrared optical and laser facilities.

Specifications:

Lens Shape	Plano-convex, Plano-concave, Bi-convex/concave, Meniscus lenses, Ball/Half-Ball, etc.	Materials	Optical grade single crystal sapphire
Aperture	>90%	Diameter Tolerance	+0.0/-0.2mm
Thickness Tolerance	+/-0.2mm	Centering Error	3 arc minutes
Surface Quality	Option: 60/40, 40/20 or 20/10 S/D	Parallelism	1 arc minute
Coating	According to customer's requirement		

Basic Properties:

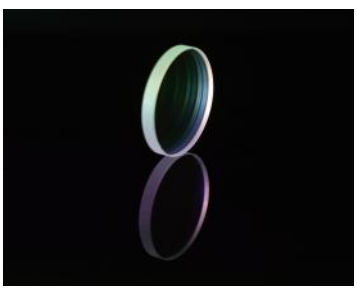
Physical and Optical Properties			
Transmission Range	0.17 to 5.5 μm	Refractive Index	No 1.75449; Ne 1.74663 @ 1.06 μm (1)
Reflection Loss	14% at 1.06 μm	Absorption Coefficient	0.3 x 10-3cm-1 @ 2.4 μm (2)
Reststrahlen Peak	13.5 μm	dn/dT	13.1 x 10-6 @ 0.546 μm (3)
dn/dμ = 0	1.5 μm	Density	3.97 g/cc
Melting Point	2040°C	Thermal Conductivity	27.21 W m-1 K-1 @ 300K
Thermal Expansion	5.6 (para) & 5.0 (perp) x 10-6 /K *	Hardness	Knoop 2000 with 2000g indenter
Specific Heat Capacity	763 J Kg-1 K-1 @ 293K (4)	Dielectric Constant	11.5 (para) 9.4 (perp) @ 1MHz
Youngs Modulus (E)	335 GPa	Shear Modulus (G)	148.1 GPa
Bulk Modulus (K)	240 GPa	Elastic Coefficients	C11=496 C12=164 C13=115 C33=498 C44=148
Apparent Elastic Limit	300 MPa (45,000 psi)	Poisson Ratio	0.25
Solubility	98 x 10-6 g/100g water	Molecular Weight	101.96
Class/Structure	Trigonal (hex), R3c		

Optical Mirrors

Optical mirrors are optical components designed to reflect light. According to the different intentions of designs, the shape of the mirror also varies. Optical mirrors could be flat or curved (convex or concave). Optical mirrors are indispensable components in a diverse range of industries and research fields, such as medicine, semiconductor, astronomy, life science, and metrology.

Hangzhou Shalom EO offers a range of optical mirrors, including dielectric coated mirrors, enhanced Al coated mirrors, protective silver/gold coated mirrors, low Group Delay Dispersion (GDD) mirrors, and ultrafast-enhanced silver mirrors, for applications in the UV, Visible, and IR spectral ranges. Stocked and custom optical mirrors are available. One of our know-how is the manufacturing of high-precision optical mirrors, with cutting-edge processing technologies, the mirrors feature superior surface flatness and high damage threshold, being capable of handling high-power laser applications. Super Polished Mirror and Mirror Substrates with <1 Angstrom roughness are also available.

UV Fused Silica Laser Line Mirrors



- Made of Corning UV-grade Fused Silica
- Stocked and custom mirrors are available
- High Flatness λ/10, High SQ: 10/5 S/D
- Wide angle of Incidence(AOI): 0-45°
- Multiple Broadband options: HR400-750nm, HR750-1100 nm, HR1280-1600 nm or custom

Shalom EO's UV Fused Silica Broadband Mirrors feature high reflectance over four broadband wavelength regions from visible to NIR spectrum. The average reflection rate is maintained above 98% at 0-45° incident angles. Both standard and custom versions are available.

The mirror substrates are made from UV Fused Silica sourced from Corning. The glass material is fabricated using SiO2 with few inclusions. UV Fused Silica is known for its superior optical properties, in addition to high scratch resistance and low thermal expansion.

Mirror substrates are then coated with a broadband dielectric coating. The technique of dielectric coating refers to periodically stacking multiple thin layers made of dielectric materials with different dielectric constants. When the incident wavelength satisfies certain conditions, these thin layers will function as a special Bragg optical grating, reflecting the incident light. Compared with metallic coatings, higher reflectance could be obtained using dielectric coating and therefore are more recommendable for applications requiring ultra-high reflectance. Another advantage is that dielectric mirrors are more durable and resistant to scratching and wiping than metallic mirrors.

Shalom EO is a leading supplier of optical mirrors. With over ten years of experience, we have developed our high-tech production line and in-house ISO9001-compliant inspection labs to ensure the quality of our products before dispatch. Apart from industrial-grade mirrors, we also offer super-polished mirror substrates.

Specifications:

Material	Corning UV-grade Fused Silica	Diameter	12.7mm，25.4mm，50.8mm
Thickness	3mm,6mm,12mm	Surface Quality	10/5 S/D
Flatness	λ/10	Coating	400-750nm,750-1100nm,1280-1600nm
AOI	0-45°	Application	HeCd, Ar+, Nd: YAG, HeNe,Yb: KGW/KYW lasers

Product List of UV Fused Silica Laser Line Mirrors

Code	Wavelength	Diameter	Thickness	Flatness	Coating	AOI	Application	Unit Price
122-001	442nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	HeCd	$30.5
122-002	442nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	HeCd	$50.0
122-003	442nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	HeCd	$118.0
122-004	488-515nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	Ar+	$30.5
122-005	488-515nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	Ar+	$50.0
122-006	488-515nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	Ar+	$118.0
122-007	515nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	Yb:KGW/KYW 2H	$30.5
122-008	515nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	Yb:KGW/KYW 2H	$50.0
122-009	515nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	Yb:KGW/KYW 2H	$118.0
122-010	532nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	Nd:YAG 2H	$30.5
122-011	532nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	Nd:YAG 2H	$50.0
122-013	589nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	Dye	$30.5
122-014	589nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	Dye	$50.0
122-015	589nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	Dye	$118.0
122-016	633nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	HeNe	$30.5
122-017	633nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	HeNe	$50.0
122-018	633nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	HeNe	$118.0
122-019	670nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	LD	$30.5
122-020	670nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	LD	$50.0
122-021	670nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	LD	$118.0
122-022	694nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	Ruby	$30.5
122-023	694nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	Ruby	$50.0
122-024	694nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	Ruby	$118.0
122-025	780nm	12.7mm	3.0mm	λ/10	750-1100nm	0-45°	LD	$33.5
122-026	780nm	25.4mm	6.0mm	λ/10	750-1100nm	0-45°	LD	$53.0
122-027	780nm	50.8mm	12.0mm	λ/10	750-1100nm	0-45°	LD	$124.5
122-028	760-840nm	12.7mm	3.0mm	λ/10	760-840nm Low GDD	0-45°	Ti:Sa 1H	$45.5
122-029	760-840nm	25.4mm	6.0mm	λ/10	760-840nm Low GDD	0-45°	Ti:Sa 1H	$60.5
122-030	760-840nm	50.8mm	12.0mm	λ/10	760-840nm Low GDD	0-45°	Ti:Sa 1H	$136.5
122-031	852nm	12.7mm	3.0mm	λ/10	750-1100nm	0-45°	LD	$33.5
122-032	852nm	25.4mm	6.0mm	λ/10	750-1100nm	0-45°	LD	$53.0
122-033	852nm	50.8mm	12.0mm	λ/10	750-1100nm	0-45°	LD	$124.5
122-034	980nm	12.7mm	3.0mm	λ/10	750-1100nm	0-45°	LD	$33.5
122-035	980nm	25.4mm	6.0mm	λ/10	750-1100nm	0-45°	LD	$53.0
122-036	980nm	50.8mm	12.0mm	λ/10	750-1100nm	0-45°	LD	$124.5
122-037	1000-1060nm	12.7mm	3.0mm	λ/10	1000-1060nm Low GDD	0-45°	Yb:KGW/KYW 1H	$45.5
122-038	1000-1060nm	25.4mm	6.0mm	λ/10	1000-1060nm Low GDD	0-45°	Yb:KGW/KYW 1H	$60.5
122-039	1000-1060nm	50.8mm	12.0mm	λ/10	1000-1060nm Low GDD	0-45°	Yb:KGW/KYW 1H	$136.5
122-040	1064nm	12.7mm	3.0mm	λ/10	750-1100nm	0-45°	Nd:YAG 1H	$33.5
122-041	1064nm	25.4mm	6.0mm	λ/10	750-1100nm	0-45°	Nd:YAG 1H	$53.0
122-042	1064nm	50.8mm	12.0mm	λ/10	750-1100nm	0-45°	Nd:YAG 1H	$124.5
122-043	1310nm	12.7mm	3.0mm	λ/10	1280-1600nm	0-45°	YAG	$38.0
122-044	1310nm	25.4mm	6.0mm	λ/10	1280-1600nm	0-45°	YAG	$57.5
122-045	1310nm	50.8mm	12.0mm	λ/10	1280-1600nm	0-45°	YAG	$130.5
122-046	1550nm	12.7mm	3.0mm	λ/10	1280-1600nm	0-45°	LD	$38.0
122-047	1550nm	25.4mm	6.0mm	λ/10	1280-1600nm	0-45°	LD	$57.5
122-048	1550nm	50.8mm	12.0mm	λ/10	1280-1600nm	0-45°	LD	$130.5

UV Fused Silica Dielectric Broadband Mirrors

- Made of Corning UV grade Fused Silica
- Stocked and custom mirrors available
- High Flatness λ/10, High SQ: 10/5 S/D
- Wide angle of Incidence(AOI): 0-45°
- Multiple Broadband options: HR400-750nm, HR750-1100nm, HR1280-1600nm or custom

Shalom EO's UV Fused Silica Broadband Mirrors feature high reflectance over four broadband wavelength regions from visible to NIR spectrum. The average reflection rate is maintained above 98% at 0-45° incident angles. Both standard and custom versions are available.

The mirror substrates are made from UV Fused Silica sourced from Corning. The glass material is fabricated using SiO2 with few inclusions. UV Fused Silica is known for its superior optical properties, in addition to high scratch resistance and low thermal expansion.

Mirror substrates are then coated with a broadband dielectric coating. The technique of dielectric coating refers to stacking in period of multiple thin films made of dielectric materials with different dielectric constants. When the incident wavelength satisfies certain conditions, these thin films will function as a special Bragg optical grating, reflecting the incident light. Compared with metallic coatings, higher reflectance could be obtained using dielectric coating and therefore are more recommendable for applications requiring ultra-high reflectance. Another advantage is that dielectric mirrors are more durable and resistant to scratching and wiping than metallic mirrors.

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specification

Material	CorningUV-gradeFusedSilica	Diameter	12.7mm，25.4mm，50.8mm
Thickness	3mm,6mm,12mm	SurfaceQuality	10/5S/D
Flatness	λ/10	Coating	400-750nm,750-1100nm,1280-1600nm
AOI	0-45°	Customization	available

Product List of UV Fused Silica Dielectric Broadband Mirrors

Code	Diameter	Thickness	Surface Quality	Flatness	Coating	AOI	Unit Price
121-001	12.7mm	3.0mm	10/5 S/D	λ/10	400-750nm	0-45°	$30.5
121-002	12.7mm	3.0mm	10/5 S/D	λ/10	750-1100nm	0-45°	$33.5
121-003	12.7mm	3.0mm	10/5 S/D	λ/10	1280-1600nm	0-45°	$38.0
121-004	25.4mm	6.0mm	10/5 S/D	λ/10	400-750nm	0-45°	$50.0
121-005	25.4mm	6.0mm	10/5 S/D	λ/10	750-1100nm	0-45°	$53.0
121-006	25.4mm	6.0mm	10/5 S/D	λ/10	1280-1600nm	0-45°	$57.5
121-007	50.8mm	12.0mm	10/5 S/D	λ/10	400-750nm	0-45°	$118.0
121-008	50.8mm	12.0mm	10/5 S/D	λ/10	750-1100nm	0-45°	$124.5
121-009	50.8mm	12.0mm	10/5 S/D	λ/10	1280-1600nm	0-45°	$130.5

N-BK7 Metallic Mirrors

- Off-the-shelf mirrors available
- Coating options: Enhanced Al, Protective Ag and Protective Au
- Flatness λ/10 and λ/4 options available

Shalom EO's N-BK7 Metallic Mirrors consist of N-BK7 substrates and Enhanced Al/Protective Ag /Protective Au metallic coatings. Both stocked and custom versions are available.

N-BK7 is one of the most common materials for optical components available in large amounts, featuring low bubble/inclusion content, and decent mechanical/chemical endurance. Compared with UV Fused Silica mirrors, N-BK7 mirrors are less expensive.

Metallic coated mirrors feature a wide reflective spectral range, low cost, and are non-sensitive to the incidence angle and polarization state. Compared with dielectric coated mirrors, however, metal mirrors have lower reflectance and laser damage threshold, therefore metallic coated mirrors are the economical option for applications requiring a wide rejection range and less strict reflectance standards.

Three metal materials are utilized to coat the mirror substrates: Aluminum (Al) is the most prevalent metal for manufacturing reflection coating, it features high reflectance from UV to NIR spectrum, and is price-competitive. Silver (Ag) 's high-reflection zone locates at visible-to-NIR, and its reflection rate is higher than aluminum, however, sliver under exposure to air suffers from oxidation, which leads to blackening and degradation in performance and strength. Gold (Au) exhibits high reflectance from NIR to Far Infrared regions and is more consistent than the other two metals. The drawback is higher cost and the soft characteristic.

Shalom EO is a leading supplier of optical mirrors. With over ten years of experience, we have developed our high-tech production line and in-house ISO9001-compliant inspection labs to ensure the quality of our products before despatch. Apart from industrial-grade mirrors, we also offer super polished mirror substrates.

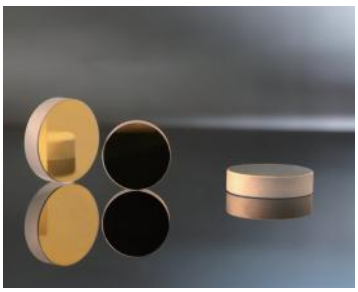
specification

Material	N-BK7	Diameter	12.7mm，25.4mm，50.8mm
Thickness	3mm,6mm,12mm	Surface Quality	10/5 S/D
Flatness	λ/10, λ/4	Coating	Enhanced Al, Protective Ag, and Protective Au

Product List of N-BK7 Metallic Mirrors

Code	Diameter	Thickness	Surface Quality	Flatness	Coating	Unit Price
123-001	12.7mm	3.0mm	20/10 S/D	λ/10	Enhanced Al	$17.0
123-002	12.7mm	3.0mm	40/20 S/D	λ/4	Enhanced Al	$14.0
123-003	12.7mm	3.0mm	20/10 S/D	λ/10	Protective Ag	$17.0
123-004	12.7mm	3.0mm	40/20 S/D	λ/4	Protective Ag	$14.0
123-005	12.7mm	3.0mm	20/10 S/D	λ/10	Protective Au	$23.0
123-006	12.7mm	3.0mm	40/20 S/D	λ/4	Protective Au	$18.0
123-007	25.4mm	6.0mm	20/10 S/D	λ/10	Enhanced Al	$25.0
123-008	25.4mm	6.0mm	40/20 S/D	λ/4	Enhanced Al	$22.0
123-009	25.4mm	6.0mm	20/10 S/D	λ/10	Protective Ag	$32.0
123-010	25.4mm	6.0mm	40/20 S/D	λ/4	Protective Ag	$24.0
123-011	25.4mm	6.0mm	20/10 S/D	λ/10	Protective Au	$38.0
123-012	25.4mm	6.0mm	40/20 S/D	λ/4	Protective Au	$30.0
123-013	50.8mm	12.0mm	20/10 S/D	λ/10	Enhanced Al	$64.0
123-014	50.8mm	12.0mm	40/20 S/D	λ/4	Enhanced Al	$48.0
123-015	50.8mm	12.0mm	20/10 S/D	λ/10	Protective Ag	$64.0
123-016	50.8mm	12.0mm	40/20 S/D	λ/4	Protective Ag	$48.0
123-017	50.8mm	12.0mm	20/10 S/D	λ/10	Protective Au	$94.0
123-018	50.8mm	12.0mm	40/20 S/D	λ/4	Protective Au	$75.0

UV Fused Silica Metallic Mirrors



- Off-the-shelf mirrors available
- Made of Corning UV grade Fused Silica
- Coating options: Enhanced Al, Protective Ag and Protective Au
- Flatness option： λ/10 and λ/4

Shalom EO's UV Fused Silica Metallic Mirrors consist of UV Fused Silica substrates, and Enhanced Al/Protective Ag /Protective Au metallic coatings. Both stocked and custom versions are available.
The UV Fused Silica used for manufacturing our mirror substrates is sourced from Corning. UV Fused Silica is an amorphous glass material fabricated using SiO2 with few inclusions. UV Fused Silica is known for its superior optical properties, in addition to great mechanical strength and low thermal expansion.

Metallic coated mirrors feature a wide reflective spectral range, low cost, and are non-sensitive to the incidence angle and polarization state. Compared with dielectric coated mirrors, however, metal mirrors have lower reflectance and laser damage threshold, therefore metallic coated mirrors are the economical option for applications requiring a wide rejection range and less strict reflectance standards.

Three metal materials are utilized to coat the mirror substrates: Aluminum (Al) is the most prevalent metal for manufacturing reflection coating, it features high reflectance from UV to NIR spectrum, and is price-competitive. Silver (Ag) 's high-reflection zone locates at visible-to-NIR, and its reflection rate is higher than aluminum, however, sliver under exposure to air suffers from oxidation, which leads to blackening and degradation in performance and strength. Gold (Au) exhibits high reflectance from NIR to Far Infrared regions and is more consistent than the other two metals. The drawback is higher cost and the soft characteristic.

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specification

Material	Corning UV-grade Fused Silica	Diameter	12.7mm，25.4mm，50.8mm
Thickness	3mm,6mm,12mm	Coating	Enhanced Al, Protective Ag, and Protective Au
Flatness	λ/10, λ/4	Customization	available

Product List of UV Fused Silica Metallic Mirrors

Code	Diameter	Thickness	Surface Quality	Flatness	Coating	Unit Price
124-001	12.7mm	3.0mm	20/10 S/D	λ/10	Enhanced Al	$22.5
124-002	12.7mm	3.0mm	40/20 S/D	λ/4	Enhanced Al	$18.0
124-003	12.7mm	3.0mm	20/10 S/D	λ/10	Protective Ag	$22.5
124-004	12.7mm	3.0mm	40/20 S/D	λ/4	Protective Ag	$18.0
124-005	12.7mm	3.0mm	20/10 S/D	λ/10	Protective Au	$29.0
124-006	12.7mm	3.0mm	40/20 S/D	λ/4	Protective Au	$22.5
124-007	25.4mm	6.0mm	20/10 S/D	λ/10	Enhanced Al	$32.0
124-008	25.4mm	6.0mm	40/20 S/D	λ/4	Enhanced Al	$29.0
124-009	25.4mm	6.0mm	20/10 S/D	λ/10	Protective Ag	$38.0
124-010	25.4mm	6.0mm	40/20 S/D	λ/4	Protective Ag	$29.0
124-011	25.4mm	6.0mm	20/10 S/D	λ/10	Protective Au	$43.0
124-012	25.4mm	6.0mm	40/20 S/D	λ/4	Protective Au	$35.0
124-013	50.8mm	12.0mm	20/10 S/D	λ/10	Enhanced Al	$78.5
124-014	50.8mm	12.0mm	40/20 S/D	λ/4	Enhanced Al	$60.5
124-015	50.8mm	12.0mm	20/10 S/D	λ/10	Protective Ag	$78.5
124-016	50.8mm	12.0mm	40/20 S/D	λ/4	Protective Ag	$60.5
124-017	50.8mm	12.0mm	20/10 S/D	λ/10	Protective Au	$100.0
124-018	50.8mm	12.0mm	40/20 S/D	λ/4	Protective Au	$83.5

Femtoline Low GDD Mirrors

- Stocked and custom mirrors are available
- Made of Corning UV-grade Fused Silica or other custom materials
- Low GDD and high damage threshold
- High Flatness λ/10, High SQ:10/5 S/D
- Reflection Band： 400nm, 532nm, 800nm, 808nm, 760-840nm,1030nm, 1000-1060nm, 1064nm or custom

Shalom EO's Femtoline Low GDD Mirrors are designed to provide high reflectance without additional temporal dispersion around a narrow bandwidth of central wavelength for femtoline lasers. The cutting-edge low GDD (Group Delay Dispersion) coating techniques of the mirrors help to minimize phase distortion and maintain the beam profile of the femtosecond pulses during light propagation. The substrates are made from UV Fused Silica, an excellent low-inclusion glass material with superior optical properties, mechanical strength, and low thermal expansion.
Compared with enhanced-ultrafast silver mirrors, low GDD mirrors utilize dielectric coatings which havea lower GDD, higher reflection coefficient, and higher damage threshold (300mJ @800nm,100fs), thus exhibiting exceptional performance for high-power femtosecond laser applications. However, low GDD mirrors are engineered to operate within a narrower wavelength range than ultrafast-enhanced silver mirrors.

Hangzhou Shalom EO offers stocked Femtoline Low GDD mirrors with high reflection in the following wavebands or wavelengths: 400nm, 532nm, 800nm, 808nm, 760-840nm, 1030nm, 1000-1060nm, 1064nm, at incident angles of 0 degrees and 45 degrees. Corning UV fused silica 7980 0F are selected as the substrate materials to ensure reliable optical properties of the mirrors. Custom GDD mirrors with other reflection wavebands are also accessible upon request.

Shalom EO is a leading supplier of optical mirrors. With over ten years of experience, we have developed our high-tech production line and in-house ISO9001-compliant inspection labs to ensure the quality of our products before dispatch. Apart from industrial-grade mirrors, we also offer super-polished mirror substrates.

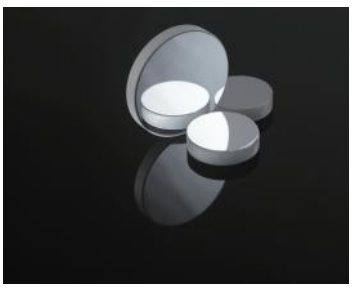
specification

Material	Corning UV-grade Fused Silica	Reflection Band	760-840nm,1000-1060nm, or custom
Diameter	12.7mm，25.4mm，50.8mm	Thickness	3mm,6mm,12mm
R,(S+P)/2	99.50%	AOI	0°, 45°
Surface Quality	10/5 S/D	Customization	available

Product List of Femtoline Low GDD Mirrors

Code	Wavelength	Diameter	Thickness	R,(S+P)/2	AOI	Unit Price
125-013	400nm	25.4mm	6.35mm	/	0°	60.5
125-014	400nm	25.4mm	6.35mm	/	45°	60.5
125-015	532nm	25.4mm	6.35mm	/	0°	60.5
125-016	532nm	25.4mm	6.35mm	/	45°	60.5
125-017	800nm	25.4mm	6.35mm	/	0°	60.5
125-018	800nm	25.4mm	6.35mm	/	45°	60.5
125-019	808nm	25.4mm	6.35mm	/	0°	60.5
125-020	808nm	25.4mm	6.35mm	/	45°	60.5
125-001	760-840nm	12.7mm	3.0mm	0.995	0°	45.5
125-002	760-840nm	25.4mm	6.0mm	0.995	0°	60.5
125-003	760-840nm	50.8mm	12.0mm	0.995	0°	136.5
125-004	760-840nm	12.7mm	3.0mm	0.995	45°	45.5
125-005	760-840nm	25.4mm	6.0mm	0.995	45°	60.5
125-006	760-840nm	50.8mm	12.0mm	0.995	45°	136.5
125-021	1030nm	25.4mm	6.35mm	/	0°	60.5
125-022	1030nm	25.4mm	6.35mm	/	45°	60.5
125-007	1000-1060nm	12.7mm	3.0mm	0.995	0°	45.5
125-008	1000-1060nm	25.4mm	6.0mm	0.995	0°	60.5
125-009	1000-1060nm	50.8mm	12.0mm	0.995	0°	136.5
125-010	1000-1060nm	12.7mm	3.0mm	0.995	45°	45.5
125-011	1000-1060nm	25.4mm	6.0mm	0.995	45°	60.5
125-012	1000-1060nm	50.8mm	12.0mm	0.995	45°	136.5
125-023	1064	25.4mm	6.35mm	/	0°	60.5
125-024	1064	25.4mm	6.35mm	/	45°	60.5

Ultrafast-Enhanced Silver Mirrors



- Stocked and Custom Mirrors Available
- Made of Corning UV grade Fused Silica
- High Reflectance at 600-1000nm
- Low GDD
- High flatness and Excellent Surface Quality

Ultrafast Enhanced Silver Mirrors incorporate silver coating enhanced with dielectric coating contributing to an increased reflectance between 600-1000nm and low GDD. The 600-1000nm reflection bandwidth is ideal for Ti: Sapphire lasers. The substrates are made from UV Fused Silica, an excellent low-inclusion glass material with superior optical properties, mechanical strength, and low thermal expansion. Compared with our Low GDD Femtoline Mirrors, the ultrafast enhanced silver mirrors can accommodate a wider reflective wavelength range but have a higher GDD and minor LIDT.

Hangzhou Shalom EO offers stocked and custom ultrafast-enhanced silver mirrors with low GDD, high flatness, and precision. Ultrafast-Enhanced Silver Mirrors are a cost-effective alternative to guarantee that ultrashort optical pulses sustain their peak power and are free from the effects of widening that are present in conventional metallic or dielectric mirrors.

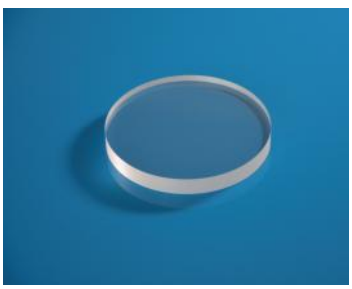
specification

Material	C7980-0F	Diameter	12.7mm，25.4mm，50.8mm
Surface Quality	20/10 S/D	Coating	Enhanced silver
reflection bandwidth	600-1000nm	Customization	available

Product List of Ultrafast-Enhanced Silver Mirrors

Code	Material	Diameter	Thickness	Surface Quality	Flatness	Coating	Unit Price
126-001	C7980-0F	12.7mm	3mm	20/10 S/D	λ/10	Enhanced silver	$30.5
126-002	C7980-0F	25.4mm	6mm	20/10 S/D	λ/10	Enhanced silver	$50.0
126-003	C7980-0F	50.8mm	12mm	20/10 S/D	λ/10	Enhanced silver	$121.5

UV Fused Silica Mirror Blanks



- Made of UV Fused Silica
- Low thermal expansion
- High mechanical strength
- Stocked and Custom Products
- Excellent as windows or mirror substrates

Optical windows are used to transmit light and protect work areas or sensitive components from the outside environment. Optical windows use substrates, coatings, or a combination of the two to transmit specific wavelengths or ranges of wavelengths. Uncoated UV Fused Silica windows could also be used as substrates or blanks of mirrors.

For manufacturing optical windows, UV Fused Silica has the advantage of high transmission in the UV to NIR wavelength range. When selected to manufacture mirror substrates, the optical properties are of little importance, since the substrate material has no impact on the mirror's optical properties, the virtues of UV Fused Silica include low inclusion of impure substance, low thermal expansion, and high mechanical strength.

Hangzhou Shalom EO is a custom and off-the-shelf supplier, we provide uncoated versions of UV fused silica windows, which are befitting to be used as substrates or blanks for mirrors. The stocked UV fused silica windows or mirror blanks are made from Corning 7980 series fused silica glass, including Lambda/4 flatness modules and lambda/10 modules, Lambda/4 flatness are low cost and suitable for most kinds of optical applications, and the Lambda/10 flatness modules are suitable for laser system and other high demanding applications.

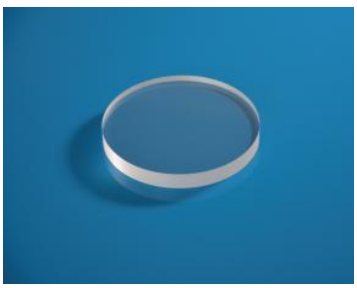
Specifications:

Material	Corning UV-grade Fused Silica	Diameter	12.7mm，25.4mm，50.8mm
Thickness	2mm,3mm,4mm,6mm,12mm	Surface Quality	10/5 S/D
Flatness	λ/10, λ/4	Parallelism	10 arcsec

Product List of UV Fused Silica Mirror Blanks

Code	Material	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
134-001	C7980-0F	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$27.0
133-001	UV Fused Silica	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$20.0
134-005	C7980-0F	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$27.0
133-005	UV Fused Silica	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$20.0
133-009	UV Fused Silica	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
134-009	C7980-0F	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
133-013	UV Fused Silica	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
134-013	C7980-0F	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
133-017	UV Fused Silica	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
134-017	C7980-0F	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
133-021	UV Fused Silica	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
134-021	C7980-0F	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
133-025	UV Fused Silica	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$60.0
134-025	C7980-0F	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$98.0
133-029	UV Fused Silica	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$75.0
122-017	633nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	HeNe	$50.0
122-018	633nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	HeNe	$118.0
122-019	670nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	LD	$30.5
122-020	670nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	LD	$50.0
122-021	670nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	LD	$118.0
122-022	694nm	12.7mm	3.0mm	λ/10	400-750nm	0-45°	Ruby	$30.5
122-023	694nm	25.4mm	6.0mm	λ/10	400-750nm	0-45°	Ruby	$50.0
122-024	694nm	50.8mm	12.0mm	λ/10	400-750nm	0-45°	Ruby	$118.0
122-025	780nm	12.7mm	3.0mm	λ/10	750-1100nm	0-45°	LD	$33.5
122-026	780nm	25.4mm	6.0mm	λ/10	750-1100nm	0-45°	LD	$53.0
122-027	780nm	50.8mm	12.0mm	λ/10	750-1100nm	0-45°	LD	$124.5
122-028	760-840nm	12.7mm	3.0mm	λ/10	760-840nm Low GDD	0-45°	Ti:Sa 1H	$45.5
122-029	760-840nm	25.4mm	6.0mm	λ/10	760-840nm Low GDD	0-45°	Ti:Sa 1H	$60.5

N-BK7 Mirror Blanks



- Made of N-BK7
- High scratch-resistance
- Stable chemical properties
- Stocked and Custom Products
- Excellent as windows or mirror substrates

Optical windows are used to transmit light and protect work areas or sensitive components from the outside environment. Optical windows use substrates, coatings, or a combination of the two to transmit specific wavelengths or ranges of wavelengths. Uncoated N-BK7 windows could also be used as substrates or blanks of mirrors.

N-BK7 features excellent transmission from visible to NIR spectrum, low inclusion of bubbles and impure substances, and ease of manufacturing and machining. Therefore it is an excellent choice for transmission optical components. As mirror substrates, N-BK7 is also advantageous in terms of fine mechanical properties resistance to scratches, and stable chemical properties.

Shalom EO's stocked N-BK7 windows or mirror blanks including the Lambda/4 flatness modules and lambda/10 modules, while Lambda/4 flatness is low cost and suitable for most kinds of optical applications, and the Lambda/10 flatness modules are suitable for laser system and other high demanding applications.

Specifications:

Material	N-BK7	Diameter	12.7mm，25.4mm，50.8mm
Thickness	2mm,3mm,4mm,6mm,12mm	Surface Quality	10/5 S/D
Flatness	λ/10, λ/4	Parallelism	10 arcsec

Product List of N-BK7 Mirror Blanks

Code	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
132-001	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$15.0
131-001	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$9.0
132-005	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$15.0
131-005	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$9.0
132-009	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
131-009	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
132-013	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
131-013	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
132-017	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
131-017	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
132-021	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
131-021	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
132-025	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$55.0
131-025	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$45.5
131-029	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$48.5

Optical Windows

An Optical Window is a transparent optical element that allows light to pass through while protecting enclosed areas from environmental elements such as dust, moisture, or pressure. These windows are often used in various optical instruments, sensors, cameras, and lasers. The fundamental purpose of an optical window is to provide a barrier between the external environment and sensitive optical components inside an optical system, while still allowing light to pass through with minimal distortion or attenuation. In addition to protecting optical components, optical windows might also serve other functions such as reducing reflections, improving contrast, or providing a sealed enclosure.

Hangzhou Shalom EO is an expert supplier of custom and off-the-shelf optical windows, this catalog features Shalom EO's UV/VIS/IR optical windows, high-precision laser windows and ultra-thin high flatness optical windows for femtosecond lasers. A vast selection of optical windows are accessible. Apart from the standardized sizes, we are capable of achieving a minimum size down to 0.5mm and a minimum thickness down to 0.03mm.

λ/4 UV Fused Silica Windows

- Off-the-shelf optical windows
- Made of Corning UV fused silica
- Surface quality 10/5 S/D and parallelism 10″
- Coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm or custom

Shalom EO offers off-the-shelf and custom λ/4 UV Fused Silica Windows, crafted from Corning's UV fused silica, with multiple coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm, or customized coatings. Regarding the off-the-shelf products, sizes are standardized which benefits OEM. We implement a meticulous precision polishing procedure to achieve a surface quality of 10/5 S/D, contributing to exceptional transmission in the UV spectrum. Our λ/4 UV Fused Silica windows ensure accurate optical path management and readiness for immediate integration, empowering reliable support across various scientific and industrial pursuits.

Specifications:

Material	Corning UV-grade Fused Silica	Coating	Uncoated, 400-700nm/700-1100nm/1100-1650nm AR
Thickness	2mm,3mm,4mm,6mm,12mm	Surface Quality	10/5 S/D
Parallelism	10 arcsec	Diameter	12.7mm，25.4mm，50.8mm

Product List of λ/4 UV Fused Silica Windows

Code	Material	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
133-001	UV Fused Silica	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$20.0
133-002	UV Fused Silica	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$27.0
133-003	UV Fused Silica	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$27.0
133-004	UV Fused Silica	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$27.0
133-005	UV Fused Silica	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$20.0

Product List of λ/4 UV Fused Silica Windows

Code	Material	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
133-009	UV Fused Silica	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
133-010	UV Fused Silica	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$39.0
133-011	UV Fused Silica	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$39.0
133-012	UV Fused Silica	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$39.0
133-013	UV Fused Silica	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
133-014	UV Fused Silica	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$39.0
133-015	UV Fused Silica	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$39.0
133-016	UV Fused Silica	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$39.0
133-017	UV Fused Silica	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
133-018	UV Fused Silica	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$39.0
133-019	UV Fused Silica	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$39.0
133-020	UV Fused Silica	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$39.0
133-021	UV Fused Silica	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$30.0
133-022	UV Fused Silica	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$39.0
133-023	UV Fused Silica	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$39.0
133-024	UV Fused Silica	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$39.0
133-025	UV Fused Silica	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$60.0
133-026	UV Fused Silica	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$90.0
133-027	UV Fused Silica	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$90.0
133-028	UV Fused Silica	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$90.0
133-029	UV Fused Silica	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$75.0
133-030	UV Fused Silica	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$106.0
133-031	UV Fused Silica	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$106.0
133-032	UV Fused Silica	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$106.0

λ/4 N-BK7 Windows

- Stocked optical windows available
- Surface quality 10/5 S/D and parallelism 10"
- Coating options: uncoated, 400-700 nm, 700-1100 nm, 1100-1650 nm or custom
- Maximum diameter: 300mm

Shalom EO offers stock and custom λ/4 N-BK7 Windows with multiple coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm, or customizable coatings. Regarding the off-the-shelf products, sizes are standardized which benefits OEM, whilst a maximum diameter of 300mm is procurable in custom versions. These N-BK7 windows, featuring an exceptional surface quality of 10/5 S/D accredited to our tight-geometric control measures, optical excellence and robustness are competent at various tasks.

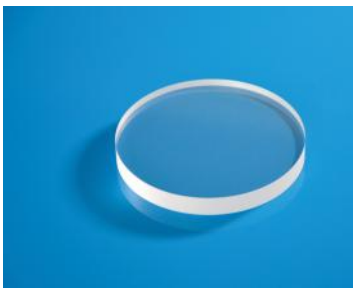
Specifications:

Diameter	12.7mm，25.4mm，50.8mm	Thickness	2mm,3mm,4mm,6mm,12mm
Surface Quality	10/5 S/D	Flatness	λ/4
Parallelism	10 arcsec	Coating	Uncoated, 400-700nm/700-1100nm/1100-1650nm AR

Product List of λ/4 N-BK7 Windows

Code	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
131-001	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$9.0
131-002	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$13.5
131-003	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$13.5
131-004	12.7mm	2.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$13.5
131-005	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$9.0
131-006	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$13.5
131-007	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$13.5
131-008	12.7mm	3.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$13.5
131-009	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
131-010	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$26.0
131-011	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$26.0
131-012	25.4mm	2.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$26.0
131-013	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
131-014	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$26.0
131-015	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$26.0
131-016	25.4mm	3.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$26.0
131-017	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
131-018	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$26.0
131-019	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$26.0
131-020	25.4mm	4.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$26.0
131-021	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$18.0
131-022	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$26.0
131-023	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$26.0
131-024	25.4mm	6.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$26.0
131-025	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$45.5
131-026	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$53.0
131-027	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$53.0
131-028	50.8mm	4.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$53.0
131-029	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	Uncoated	$48.5
131-030	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	400-700nm AR	$60.0
131-031	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	700-1100nm AR	$60.0
131-032	50.8mm	12.0mm	10/5 S/D	λ/4	10 arcsec	1100-1650nm AR	$60.0

λ/10 N-BK7 Windows



- Stocked optical windows available
- High flatness λ/10
- Surface quality 10/5 S/D
- Coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm or custom

Shalom EO offers stock and custom high-precision λ/10 N-BK7 Windows with multiple coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm, or custom coatings. Laser-line windows are designed in particular to transmit the laser wavelengths while minimizing losses due to absorption or scattering, deflecting harmful laser beams. Our optical windows are produced using SCHOTT's N-bk7 glass, which is a ROHs-compliant borosilicate glass material renowned for its optical excellence and good comprehensive properties. The exceptional precision (λ/10 flatness and 10/5 S/D surface quality) and the excellent optical, thermal, and mechanical properties of the N-bk7 substrates render our λ/10 n-bk7 windows competent when being utilized as laser-line windows. Besides, Our λ/10 n-bk7 windows also find versatile utilities in other application fields when designated as plain optical windows.

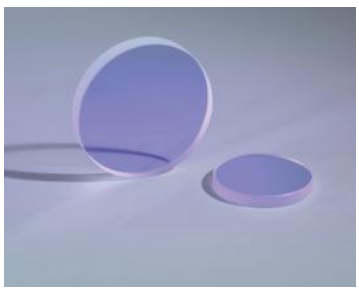
Specifications:

Material	N-BK7	Surface Quality	10/5 S/D
Parallelism	10 arcsec	Flatness	λ/10
Diameter	12.7mm，25.4mm，50.8mm	Coating	Uncoated, 400-700nm/700-1100nm/1100-1650nm AR

Product List of λ/10 N-BK7 Windows

Code	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
132-001	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$15.0
132-002	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$23.0
132-003	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$23.0
132-004	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$23.0
132-005	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$15.0
132-006	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$23.0
132-007	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$23.0
132-008	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$23.0
132-009	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
132-010	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$38.0
132-011	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$38.0
132-012	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$38.0
132-013	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
132-014	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$38.0
132-015	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$38.0
132-016	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$38.0
132-017	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
132-018	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$38.0
132-019	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$38.0
132-020	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$38.0
132-021	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
132-022	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$38.0
132-023	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$38.0
132-024	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$38.0
132-025	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$55.0
132-026	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$98.0
132-027	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$98.0
132-028	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$98.0

λ/10 UV Fused Silica Windows



- Off-the-shelf optical windows
- Made of Corning UV fused silica
- 10/5 S/D Surface Quality
- High flatness (λ/10) and excellent parallelism
- Coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm or custom

Hangzhou Shalom EO offers stock and custom λ/10 UV fused silica Windows with multiple coating options: uncoated, 400-700nm, 700-1100nm, 1100-1650nm, or customized coatings. Laser-line windows are designed in particular to transmit the laser wavelengths while minimizing losses. Our UVFS windows are crafted from Corning's UV Fused Silica, a prevalent optical material that stands out for its exceptional transmittance in the UV spectrum, low thermal expansion, and superior holistic characteristics. The λ/10 UV fused silica Windows boasting high flatness and precise manufacturing are an excellent option as laser-line windows to obtain optimized transmission. Whilst the intrinsic merits of the UVFS substrates and coatings ensure durabilities and minimum scattering. Besides, Our UV-fused silica Windows also find versatile utilities in other application fields when designated as plain optical windows.

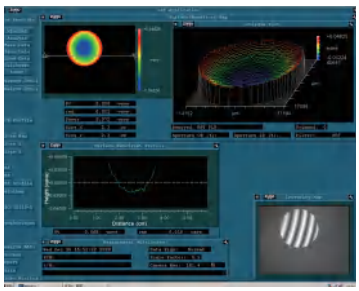
Specifications:

Material	Corning UV-grade Fused Silica	Diameter	12.7mm，25.4mm，50.8mm
Thickness	1-12mm	Surface Quality	10/5 S/D
Flatness	λ/10	Parallelism	10 arcsec
Coating	Uncoated, 400-700nm/700-1100nm/1100-1650nm AR	Customization	available

Product List of λ/10 UV Fused Silica Windows

Code	Material	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
134-001	C7980-0F	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$27.0
134-002	C7980-0F	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$35.0
134-003	C7980-0F	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$35.0
134-004	C7980-0F	12.7mm	2.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$35.0
134-005	C7980-0F	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$27.0
134-006	C7980-0F	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$35.0
134-007	C7980-0F	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$35.0
134-008	C7980-0F	12.7mm	3.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$35.0
135-009A	C7980-0F	25.4mm	1.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
135-009	C7980-0F	25.4mm	1.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR Coating	$75.0
135-009B	C7980-0F	25.4mm	1.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR Coating	$53.0
135-009C	C7980-0F	25.4mm	1.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	53.0
134-009	C7980-0F	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
134-010	C7980-0F	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$53.0
134-011	C7980-0F	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$53.0
134-012	C7980-0F	25.4mm	2.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$53.0
134-013	C7980-0F	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
134-014	C7980-0F	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$53.0
134-015	C7980-0F	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$53.0
134-016	C7980-0F	25.4mm	3.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$53.0
134-017	C7980-0F	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
134-018	C7980-0F	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$53.0
134-019	C7980-0F	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$53.0
134-020	C7980-0F	25.4mm	4.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$53.0
134-021	C7980-0F	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$42.0
134-022	C7980-0F	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$53.0
134-023	C7980-0F	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$53.0
134-024	C7980-0F	25.4mm	6.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$53.0
134-025	C7980-0F	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$98.0
134-026	C7980-0F	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	400-700nm AR	$129.0
134-027	C7980-0F	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	700-1100nm AR	$129.0
134-028	C7980-0F	50.8mm	12.0mm	10/5 S/D	λ/10	10 arcsec	1100-1650nm AR	$129.0

High Precision Thin N-BK7, UV Fused Silica Windows



- Off-the-shelf and custom modules available
- Made of BK7, UVFS, or Quartz Crystals
- Minute thickness and high surface flatness
- Surface quality 10/5 S/D and parallelism 10"
- Minimum thickness: 0.03mm, minimum size: 0.5mm
- Uncoated mirror substrates and custom AR coating options available

Hangzhou Shalom EO has developed a double surface polishing method for the production of High Precision Thin Optical Windows or Substrates, where the surfaces of the windows or substrates are polished in one go, achieving accurate control of surface flatness while elevating the surface quality to 10/5 S/D. The high-precision thin windows manufactured in our factory are of outstanding functionalities that could meet the criteria for ultra-thin (0.1mm, 0.2mm) windows or substrates with high surface flatness (Lambda/10 or Lambda/4 @633nm), oriented for applications for precision optical systems such as Femtosecond lasers, whose market share is surging in recent years.

The double surface polishing method is a processing technique, where both of the two surfaces of optics complete their polishing procedure in one go. The optics are not put on pitch plates during the procedure, so that is no stress-releasing problem caused by bonding and detachment between the optics being polished and the carrier plate, which eliminates the variation of surface flatness of the window substrate to a significant extent.

High Precision Thin windows made from BK7, UV Fused Silica, and Quartz Crystals are available in Shalom EO, the windows feature superior surface quality of 10/5 Scratch/Dig, parallelism of 10 arcsec, with minimum thickness down to 0.03mm, diameter down to 0.5mm. N-BK7 is beneficial wavelengths from the Visible to IR spectrum (350-2000nm), and UV Fused Silica is recommendable for UV wavelengths due to low absorption in the UV range. Both of them are renowned optical glass materials with substantial mechanical strength and thermal stability and can endure operations under various conditions. Besides, windows made from Quartz Crystal are also provided.

The standard specifications of Thin BK7, UVFS, and Quartz Crystals Windows offered in Shalom EO include 12.7mmx0.2mm with λ/2 flatness, 12.7mmx1.0mm with λ/10 flatness, 25.4mmx0.2mm with λ/2 flatness and 25.4mmx1.0mm with λ/10 flatness, in addition to other custom dimensions. The windows could be configured with mounts for ease of handling, both uncoated window substrates and custom AR coatings are available.

Specifications:

Material	N-BK7, UVFS, Quartz	Coating	Uncoated, Custom AR Coating
Parallelism	10 arcsec	Flatness	λ/2, λ/10
Thickness	0.03mm minimum	Diameter	12.7mm, 25.4mm, or Custom (minimum 0.5mm)
Surface Quality	10/5 S/D		

Product List of High Precision Thin N-BK7, UV Fused Silica Windows

Code	Material	Diameter	Thickness	Surface Quality	Flatness	Parallelism	Coating	Unit Price
135-001	N-BK7	12.7mm	0.2mm	10/5 S/D	λ/2	10 arcsec	Uncoated	$30.0
135-002	N-BK7	12.7mm	1.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$30.0
135-003	N-BK7	25.4mm	0.2mm	10/5 S/D	λ/2	10 arcsec	Uncoated	$45.0
135-004	N-BK7	25.4mm	1.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$45.0
135-005	C7980-0F	12.7mm	0.2mm	10/5 S/D	λ/2	10 arcsec	Uncoated	$38.0
135-006	C7980-0F	12.7mm	1.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$38.0
135-007	C7980-0F	25.4mm	0.2mm	10/5 S/D	λ/2	10 arcsec	Uncoated	$60.0
135-008	C7980-0F	25.4mm	1.0mm	10/5 S/D	λ/10	10 arcsec	Uncoated	$60.0

Sapphire Windows

- Exceptional mechanical hardness and chemical resistance
- High thermal durabilities and broad wavelength range from 200-5500nm
- Ideal for harsh conditions and high-power applications (e.g lasers, plasma chambers, pharmaceuticals, etc.)
- Blank substrates, AR-coated pieces, and precision windows are available
- Various dimensions, shapes, orientations, and precision standards
- Sapphire window kinds: Optical-grade Sapphire Windows, Protective Sapphire Laser Windows, Metalized Sapphire Windows, etc.

Sapphire Windows, featuring reliable mechanical/thermal/chemical robustness, large dielectric constants, and broad optical transmission from 150-5500 nm, are excellent as both optical windows and protective windows in application contexts of more stringent requirements and extreme conditions.

Shalom EO offers various kinds of stocked and custom Sapphire Windows. Shalom EO's sapphire windows are manufactured using KY-grown single crystal sapphire, endowing the material sapphires with high homogeneities, low inclusions, few striae, and large-dimension capabilities.

Regarding the stocked sapphire windows, the windows are uncoated, of circular or square shapes, with a wide selection of available diameters (or side lengths) up to 150mm and C-cut orientation. Most of the sapphire windows in our inventories are manufactured with 60/40 S/D surface qualities and 2 λ flatness, however, advanced versions with 40/20 S/D and λ/4 flatness are also procurable as stocks.

Regarding the custom sapphire windows, Large aperture sapphire windows with diameters up to 300mm are accessible, and surface qualities of 60/40, 40/20, 20/10 Scratch/Dig are optional. We are also capable of providing high-precision ultra-thin sapphire windows with a large diameter-to-thickness ratio. Blank sapphire substrates and windows coated single film MgF2 coatings and other AR coatings could also be furnished to increase transmission. Z-cut sapphire windows with the c-axis parallel to the optical axis to avoid birefringence in critical optical uses, and random-cut sapphire windows are both available. With state-of-the-art technologies, you can experience optical excellence with diverse range of sapphire window products: Optical Sapphire Windows (flat circular, flat rectangular, sapphire wedge windows, sapphire step windows), Protective Sapphire Laser Windows, sapphire windows for sight glass and packages of machine interiors, metalized sapphire windows with nickel, chrome, and gold films on the window edges.

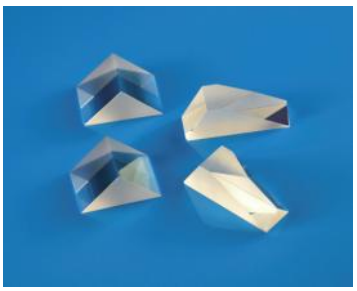
Specifications:

Window Shape	Flat circular, flat square (Standard); or custom	Materials	Optical grade single crystal sapphire
Diameter/Side Length	Standard 2.5-150mm, Custom~300mm	Orientation	C-cut(Standard)/Random-cut/Custom
Aperture	>90%	Diameter Tolerance	+0.0/-0.1mm
Thickness Tolerance	+/-0.05mm(Standard), or custom	Flatness	2λ@633nm, λ/4@633nm
Surface Quality	Standard 60/40 S/D, 40/20 S/D, or Custom	Parallelism	30 arcsec
Coating Options	Uncoated, or Custom		

Product List of Sapphire Windows

Code	Types	Dimension	Orientation	Surface Quality	Flatness	Coating	Unit Price
153-001	Circular	Dia2.5x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$6.00
153-002	Circular	Dia3.2x1mm	C-cut	60/40 S/D	2λ	Uncoated	$6.50
153-003	Circular	Dia5.0x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$7.00
153-004	Circular	Dia5.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$7.00
153-005	Circular	Dia6.35x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$7.00
153-006	Circular	Dia6.35x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$7.50
153-007	Circular	Dia6.35x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$7.50
153-008	Circular	Dia7.5x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$8.50
153-009	Circular	Dia9.5x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$9.00
153-010	Circular	Dia10.0x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$9.50
153-011	Circular	Dia10.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$9.80
153-012	Circular	Dia12.5x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$10.00
153-013	Square	12.5x12.5x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$11.00
153-014	Circular	Dia12.7x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$8.00
153-015	Circular	Dia12.7x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$8.50
153-016	Circular	Dia12.7x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$9.00
153-017	Circular	Dia12.7x2.0mm	C-cut	40/20 S/D	λ/4	Uncoated	Inquire
153-018	Circular	Dia12.7x3.18mm	C-cut	60/40 S/D	2λ	Uncoated	$12.00
153-019	Circular	Dia13.0x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$10.00
153-020	Circular	Dia15.0x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$10.50
153-021	Circular	Dia15.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$11.00
153-022	Circular	Dia15.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$11.00
153-023	Circular	Dia17.25x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$12.50
153-024	Circular	Dia20.0x0.5mm	C-cut	60/40 S/D	2λ	Unocated	$14.50
153-025	Circular	Dia20.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$15.00
153-026	Circular	Dia20.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$16.00
153-027	Circular	Dia22.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$18.50
153-028	Cicurlar	Dia23.75x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$19.00
153-029	Circular	Dia25.0x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$19.50
153-030	Circular	Dia25.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$20.00
153-031	Circular	Dia25.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$20.5
153-032	Circular	Dia25.4x0.5mm	C-cut	60/40 S/D	2λ	Uncoated	$20.00
153-033	Circular	Dia25.4x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$20.50
153-034	Square	25.4x25.4x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$26.00
153-035	Circular	Dia25.4x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$21.00
153-036	Circular	Dia25.4x2.0mm	C-cut	40/20 S/D	λ/4	Uncoated	Inquire
153-037	Circular	Dia30.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$30.00
153-038	Circualr	Dia31.75x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$31.00
153-039	Circualr	Dia35.0x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$30.00
153-040	Circualr	Dia38.1x1.0mm	C-cut	60/40 S/D	2λ	Uncoated	$30.00
153-041	Circular	Dia40.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$39.00
153-042	Circular	Dia50.8x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$85.00
153-043	Circular	Dia50.8x2.0mm	C-cut	40/20 S/D	λ/4	Uncoated	Inquire
153-044	Circular	Dia50.8x3.15mm	C-cut	60/40 S/D	2λ	Uncoated	$86.00
153-045	Circular	Dia63.5x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$100.00
153-046	Circualr	Dia75.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$120
153-047	Circualr	Dia100.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$150.00
153-048	Circualr	Dia125.0x2.0mm	C-cut	60/40 S/D	2λ	Uncoated	$250.00
153-049	Circular	Dia150.0x3.0mm	C-cut	60/40 S/D	2λ	Uncoated	$300.00

Optical Prisms



Optical Prisms are elements made from transparent materials with flat, polished faces that are processed into various geometric shapes to reflect, refract light, or manipulate the light path of the incident light. For instance, The most renowned prisms are the triangular prisms, which split a white light source into its constituent spectral colors based on the principle of chromatic dispersion. Prisms can also be harnessed to commit diverse optical functions, including light deviation, rotation/inversion of the image, beam steering/aligning, etc.

Among the merits of optical prisms, the one worth noting most is a simple prism can be viewed as a good substation for multiple mirrors, reducing the potential for alignment errors, and promoting precision while making the optical set more compact.

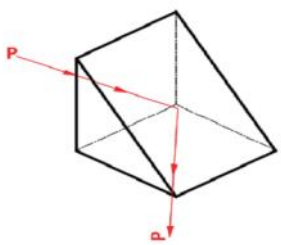
In general, Optical prisms can be divided into two categories, dispersive and reflective.

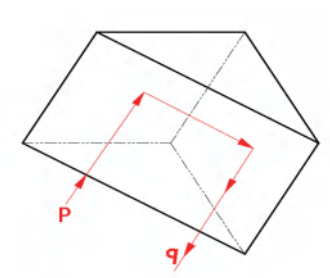
A dispersive prism breaks an incident white light into chromatic components since the lights of different colors have different refractive indexes. Common dispersive prisms include a triangular prism, such as an equilateral prism.

Reflective prisms are utilized to reflect light, flip, invert, rotate, deviate, or displace the light beam leveraging total internal reflection. Common reflective prisms include Right Angle Prisms, Wedge Prisms, Roof Prisms, Dove Prisms, Corner-cube Retroreflectors, Porro Prisms, etc.

Hangzhou Shalom EO offers various kinds of stock and custom Optical Prisms, including Right Angle Prisms, Corner Cube Retroreflectors, Wedge Prisms, Brewster Angle Prisms, Equilateral Prisms, in addition to Penta Prisms, Dove Prisms, Roof Prisms, and Porro Prisms. Coating options include uncoated, MgF2 AR coating, Broadband AR coating, and laser line wavelength V-coating are all available. Shalom EO is a high-profile supplier of optical prisms, throughout the manufacturing procedure of the optical prisms, Shalom EO implements in-process adjustments and inspections, and proficient opticians that are competent for the labor-intensive and challenging work are hired to secure optimum qualities of the optical prisms.

Right Angle Prisms





- Substrate materials: N-BK7 or UV Fused Silica, N-SF11, CaF2, Ge, ZnSe
- For light path deviation of 90° or 180°
- Coating Options: Uncoated, BBAR-coating and V-coating options on the prism's hypotenuse or legs (the bandwidths custom-specified)
- High-precision prisms with λ/10 @632.8nm flatness
- Applications: periscopes or telescopes, binocular configurations, etc.
- Dimensions: legs 3-60mm, hypotenuse 4.24-84.85mm, or Custom

A Right-Angle Prism is a triangular block of glass with a 90-degree vertex angle and two orthogonal sides. Right-angle prisms are often used to redirect light at 90° or 180°. The deviation of the light path is done utilizing the principle of total internal reflection (TIR) at the interface of glass to air. As one selects a different

entrance side to project light onto the right-angle prism, the degree to which the light path departs will also change.

Right-angle prisms exhibit certain advantages when compared with other optical counterparts with similar functions. it's a great deal simpler to mount and bend from the outside than inclined mirrors in the concern of mechanical design, as well as in situations with high acoustic or inertial loads. Furthermore, the right-angle prisms can be utilized as a retroreflector, redirecting beams back in the direction that came from, as long as the acceptance angle constraints for TIR from the roof faces are not exceeded.

Regarding Shalom EO's Off-the-shelf Right-Angle Prisms, two substrate materials are available: N-BK7 or UV Fused Silica. The Dimensions are diversified, the lengths of the legs range from 3-60mm, while the length of the hypotenuse ranges from 4.24-84.85mm. Besides, these stocked right-angle prisms feature high precision with the surface flatness bridled tight to λ/10 @632.8nm. At the current time, the standard prisms in our storage are uncoated.

Hangzhou Shalom EO offers a series of Custom Right-angle Prisms made of N-BK7, UV Fused Silica, N-SF11, Calcium Fluoride (CaF2), Germanium (Ge), or Zinc Selenide (ZnSe), etc. We provide various anti-reflection coatings at the right angle prism's hypotenuse faces or perpendicular sides. Broadband AR coatings or Laserline V coatings with specified bandwidth at the right angle prisms ' hypotenuse faces or at prisms' legs to enhance transmission in the Ultraviolet, Visible, or Infrared spectrum are available. Besides, other specifications such as flatness, surface quality, etc. could all be tailored according to the customer's requirements, we are capable of providing prisms of high precision to prisms of commercial grades.

Shalom EO is an industrial-leading team with professional knowledge in the domain of optics and lasers, through stringent control of qualities and tolerances, and high-precision polishing techniques, Shalom EO's right angle prisms present minimized wavefront distortion, scattering, and other undesirable diffraction effects.

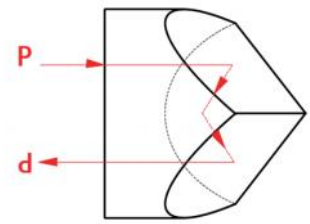
Specifications:

Material	N-BK7 or UV Fused Silica (Standard)	Dimension Tolerance	±0.1mm
Surface Quality	40/20 S/D	Clear Aperture	>90%
Surface Flatness	λ/10@632.8nm	Angular Tolerance	±3 arc minutes
Bevelling	0.2x45°	Coating	Uncoated or Custom

Product List of Right Angle Prism

Code	Material	Side Length	Thickness	Flatness	Coating	Unit Price
1401-001	N-BK7	3mmx3mmx4.24mm	3mm	λ/10@632.8nm	Uncoated	Inquire
1401-002	UV Fused Silica	3mmx3mmx4.24mm	3mm	λ/10@632.8nm	Uncoated	Inquire
1401-003	N-BK7	5mmx5mmx7.07mm	5mm	λ/10@632.8nm	Uncoated	Inquire
1401-004	UV Fused Silica	5mmx5mmx7.07mm	5mm	λ/10@632.8nm	Uncoated	Inquire
1401-005	N-BK7	10mmx10mmx14.14mm	10mm	λ/10@632.8nm	Uncoated	Inquire
1401-006	UV Fused Silica	10mmx10mmx14.14mm	10mm	λ/10@632.8nm	Uncoated	Inquire
1401-007	N-BK7	12.5mmx12.5mmx17.68mm	12.5mm	λ/10@632.8nm	Uncoated	Inquire
1401-008	UV Fused Silica	12.5mmx12.5mmx17.68mm	12.5mm	λ/10@632.8mm	Uncoated	Inquire
1401-009	N-BK7	15mmx15mmx21.21mm	15mm	λ/10@632.8nm	Uncoated	Inquire
1401-010	UV Fused Silica	15mmx15mmx21.21mm	15mm	λ/10@632.8nm	Uncoated	Inquire
1401-011	N-BK7	20mmx20mmx28.28mm	20mm	λ/10@632.8nm	Uncoated	Inquire
1401-012	UV Fused Silica	20mmx20mmx28.28mm	20mm	λ/10@632.8nm	Uncoated	Inquire
1401-013	N-BK7	25mmx25mmx35.36mm	25mm	λ/10@632.8nm	Uncoated	Inquire
1401-014	UV Fused Silica	25mmx25mmx35.36mm	25mm	λ/10@632.8nm	Uncoated	Inquire
1401-015	N-BK7	30mmx30mmx42.43mm	30mm	λ/10@632.8nm	Uncoated	Inquire
1401-016	UV Fused Silica	30mmx30mmx42.43mm	30mm	λ/10@632.8nm	Uncoated	Inquire
1401-017	N-BK7	40mmx40mmx56.57mm	40mm	λ/10@632.8nm	Uncoated	Inquire
1401-018	UV Fused Silica	40mmx40mmx56.57mm	40mm	λ/10@632.8nm	Uncoated	Inquire
1401-019	N-BK7	50mmx50mmx70.71mm	50mm	λ/10@632.8nm	Uncoated	Inquire
1401-020	N-BK7	60mmx60mmx84.85mm	60mm	λ/10@632.8nm	Uncoated	Inquire
1401-021	UV Fused Silica	60mmx60mmx84.85mm	60mm	λ/10@632.8nm	Uncoated	Inquire

Corner Cube Retroreflector



- Reflect light back 180° toward its source with independence to the incident angle
- Utilize total internal reflections (TIR) or specular reflections
- Both off-the-shelf N-BK7, UVFS retroreflectors and custom versions are available
- Insensibilities to incident angle making them a better option than a mirror when precise angular alignments are needed
- Various shapes of retroreflectors are accessible such as truncated corner cubes, lateral transfer cube retroreflectors, hollow retroreflectors, etc
- Copious selections of substrate materials and coatings

A Corner Cube Retroreflector is an optical component that causes the emerging light to exit in the direction parallel to its entrance direction regardless of the incident angle (i.e. deviate the incident light at 180 degrees without dependence on the incident angle).

Although the name "corner cube retroreflector" contains the word "cube", it does not resemble the shape of a cube. In fact, a corner cube prism composes three faces at the top orthogonal to each other to form a corner of a cube, and a bottom entrance face, which is flat circular, and perpendicular to the cube's diagonal. The working principle of the corner cube is either that light undergoes three times of total internal reflection (TIR) on the orthogonal faces, redirecting towards its original direction, or through specular reflections, depending on whether the reflective faces are coated. Compared with optical mirrors, which can only accomplish the same task when the incident angle is 90°, corner cube retroreflectors are advantages in applications where precise angular alignments are difficult. And the parallelisms at which light is returned relate to the angular accuracies of the perpendicular roofs of the cube retroreflector, the higher the precision of the prism, the better the parallelism of the light path.

With over 10 years of experience and passionate pursuit, Shalom EO has developed a capable production workshop that could offer various kinds of custom and off-the-shelf corner cube retroreflectors, including:

1. standard corner cuber retroreflectors of routine choices.
2. truncated corner cube reflectors of lightweight and compact dimensions.
3. lateral transfer corner cube retroreflectors with one trihedral reflecting face at one terminal of the prism and two trihedral reflecting faces forming a roof edge at the other end are designed for applications obliging a lateral beam displacement.
4. Customized hollow corner retroreflectors that perform great in low-pressure conditions and mitigate the aberrations derived from the dispersion of glass, and temperature fluctuations.

About the substrate material, Shalom EO presents a wide selection such as N-BK7, UV Fused Silica, and other optical glass materials. At the current time, N-BK7 and UVFS corner cube retroreflectors are in storage, if you are interested in other substrate materials, please inquire us. Both high-reflection coatings, anti-reflection coatings, and diverse metal coatings like silver coating, gold coatings, and coatings in the visible, UV, and NIR spectrum could all be furnished at the roof or the entrance face according to your requirements.

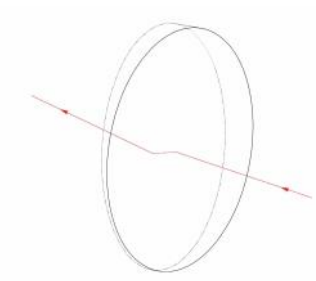
Specifications:

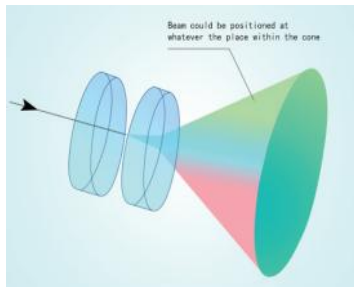
Material	N-BK7, UVFS (standard), or other optical glass	Dimension Tolerance	±0.1mm (standard), or custom
Surface Quality	40/20 S/D (standard), or custom	Clear Aperture	>90% or custom
Flatness	<λ/4@632.8nm (standard), or custom	Angular Tolerance	±3 arc min or custom
Bevelling	<0.2x45° or custom	Coating	uncoated, or custom

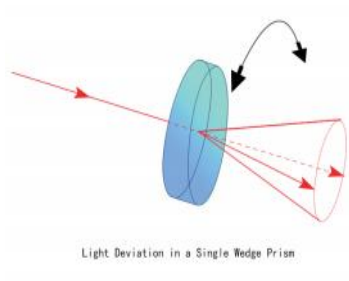
Product List of Corner Cube Retroreflector

Code	Material	Side Length	Thickness	Flatness	Coating	Unit Price
1401-001	N-BK7	3mmx3mmx4.24mm	3mm	λ/10@632.8nm	Uncoated	Inquire
1401-002	UV Fused Silica	3mmx3mmx4.24mm	3mm	λ/10@632.8nm	Uncoated	Inquire
1401-003	N-BK7	5mmx5mmx7.07mm	5mm	λ/10@632.8nm	Uncoated	Inquire

Wedge Prisms







- Ideal for laser beam steering, laser scanning, anamorphic beam shaping
- Coating options: uncoated, 350-700 nm AR Coating, 650-1050 nm AR Coating, 1050-1700 nm AR Coating and custom coatings
- Can be applied both as an individual piece or as a Risley prism pair
- Substrate materials: N-BK7 (standard), UV fused silica, CaF2, MgF2 and ZnSe (Custom)
- High precision polishing available

A Wedge Prism is an optical component with a shallow angle between its input and output faces. Wedge prisms are excellent for laser beam steering applications, as the oblique side and flat side permit the wedge prism to deflect light towards the thicker portion of the prism with specific deflection angles. The larger the wedge angle, the greater the angle of deviation when light emerges from the prism. Furthermore, rotating the wedge prism about the optical axis is a great approach to obtaining circular laser beam scanning output. To make insertion into rotatable mounting more convenient, wedge prisms are often fabricated into circular shapes.

Wedge prisms could either be used as a single element or in pairs (in this case, the wedge prism pair could also be called a Risley Prism Pair). As mentioned above, a single wedge prism could be utilized to deviate a laser beam at a set angle or realize the tracing of a circular light path on the vertical plane. Wedge prisms in pairs can be used for anamorphic beam shaping. Besides, by spinning the two wedge prisms in conjunction at relative rotation speeds, one can realize laser scanning output with spontaneous beam profile.

Hangzhou Shalom EO offers Off-the-shelf Wedge Prisms made from N-BK7 with deviation angles ranging from 2° to 10°. The stock diameters of wedge prisms are all 25.4mm, being standardized for ease of mounting.

We also provide Custom Wedge Prisms made from various materials including N-BK7. UV Fused Silica, CaF2, MgF2, ZnSe, etc. offering 1-10° light deviation. Shalom EO is consistent in investing in developing cutting-edge technologies aimed at fostering a potent production line. We are capable of presenting high-precision wedge prisms with <λ/10 flatness, <30 arc sec angular tolerance, and +0/-0.1mm dimension tolerance.

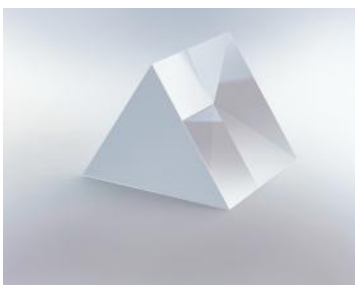
Specifications:

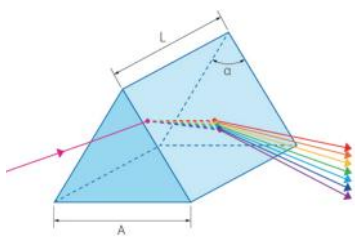
Material	N-BK7	Diameter	25.4mm +0.0/-0.3mm
Dimension Tolerance	±0.15mm	Surface Quality	40/20 S/D
Design Wavelength	633nm	Clear Aperture	>80% of Diameter
Surface Flatness	<λ/10@633nm	Angular Tolerance	±30 arc sec
Thin Edge Thickness	3.0mm	Coating Options	Uncoated; 350-700nm AR Coating; 650-1050nm AR Coating; 1050-1700nm AR Coating

Product List of Wedge Prism

Code	Material	Diameter	Power	Beam Deviation	Wedge Angle	Thickness	Coating	Unit Price
1404-001	N-BK7	25.4mm	3.5 Diopters	2°	3°53'	Wedge Thickness: 4.72mm	Uncoated	Inquire
1404-002	N-BK7	25.4mm	3.5 Diopters	2°	3°53'	Wedge Thickness: 4.72mm	350-700nm AR Coating	Inquire
1404-003	N-BK7	25.4mm	3.5 Diopters	2°	3°53'	Wegde Thickness: 4.72mm	650-1050nm AR Coating	Inquire
1404-004	N-BK7	25.4mm	3.5 Diopters	2°	3°53'	Wegde Thickness: 4.72mm	1050-1700nm AR Coating	Inquire
1404-005	N-BK7	25.4mm	7 Diopters	4°	7°41'	Wedge Thickness: 6.43mm	Uncoated	Inquire
1404-006	N-BK7	25.4mm	7 Diopters	4°	7°41'	Wedge Thickness: 6.43mm	350-700nm AR Coating	Inquire
1404-007	NB-BK7	25.4mm	7 Diopters	4°	7°41'	Wedge Thickness: 6.43mm	650-1050nm AR Coating	Inquire
1404-008	N-BK7	25.4mm	7 Diopters	4°	7°41'	Wedge Thickness: 6.43mm	1050-1700nm AR Coating	Inquire
1404-009	N-BK7	25.4mm	10.5 Diopters	6°	11°22'	Wegde Thickness: 8.11mm	Uncoated	Inquire
1404-010	N-BK7	25.4mm	10.5 Diopters	6°	11°22'	Wegde Thickness: 8.11mm	350-700nm AR Coating	Inquire
1404-011	N-BK7	25.4mm	10.5 Diopters	6°	11°22'	Wegde Thickness: 8.11mm	650-1050nm AR Coating	Inquire
1404-012	N-BK7	25.4mm	10.5 Diopters	6°	11°22'	Wegde Thickness: 8.11mm	1050-1700nm AR Coating	Inquire
1404-013	N-BK7	25.4mm	/	8°	14°52'	Wegde Thickness: 9.74mm	Uncoated	Inquire
1404-014	N-BK7	25.4mm	/	8°	14°52'	Wegde Thickness: 9.74mm	350-700nm AR Coating	Inquire
1404-015	N-BK7	25.4mm	/	8°	14°52'	Wegde Thickness: 9.74mm	650-1050nm AR Coating	Inquire
1404-016	N-BK7	25.4mm	/	8°	14°52'	Wegde Thickness: 9.74mm	1050-1700nm AR Coating	Inquire
1404-017	N-BK7	25.4mm	17.4 Diopters	10°	18°9'	Wedge Thickness: 11.33mm	Uncoated	Inquire
1404-018	N-BK7	25.4mm	17.4 Diopters	10°	18°9'	Wedge Thickness: 11.33mm	350-700nm AR Coating	Inquire
1404-019	N-BK7	25.4mm	17.4 Diopters	10°	18°9'	Wedge Thickness: 11.33mm	650-1050nm AR Coating	Inquire
1404-020	N-BK7	25.4mm	17.4 Diopters	10°	18°9'	Wedge Thickness: 11.33mm	1050-1700nm AR Coating	Inquire

Brewster Angle Prisms





- Low loss for P-polarized beam
- Selecting a single wavelength from a multi-wavelength laser
- Tuning allowed through tilting of prism
- Various substrate materials: BK7, Fused Silica, MgF2, CaF2, N-SF10, etc.

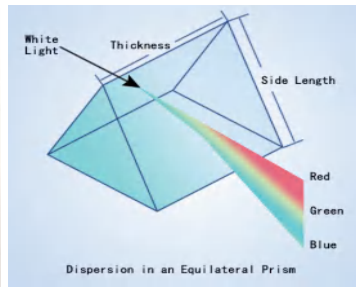
Brewster Prism has an apex angle such that a p-polarized light incident at Brewster's angle will pass through the prism in a direction parallel to the base of the prism with minimum deviation. When light strikes a transparent medium at the Brewster angle, the reflected rays and refracted light components become perpendicular to each other, resulting in the reflected light being all polarized parallel to the interface. Brewster Prisms are often used in situations where surface reflection losses cannot be tolerated. Brewster Prisms can also function to select a single wavelength from a multi-wavelength laser. Tuning is allowed through tilting the prisms.

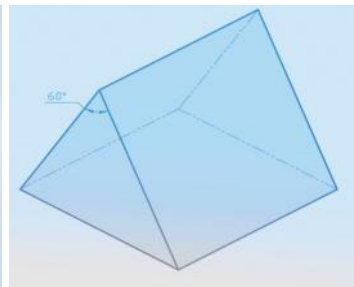
Shalom EO supplies Custom Brewster Angle Prisms. Utilizing accurate geometric control, we exploit the full effect of the Brewster angle, ensuring optimal polarization manipulation and minimal optical losses.

Specifications:

Material	N-BK7, Fused Silica, MgF2, N-SF10...	Range of Size	/
Dimension Tolerance	+0.0/-0.2mm	Surface Quality	40/20 S/D
Clear Aperture	>90%	Flatness	<λ/4@632.8nm
Angle Tolerance	<5 arc minutes	Polished Surface	Two side surfaces polished, base is fine ground
Chamfer	Protective<0.5mmx45°	Coating	uncoated, custom

Equilateral Prisms





- Material options: F2, CaF2, UV Fused Silica (standard);N-BK7, UV Fused Silica, SF11, N-SF11, CaF2, MaF2, ZnSe, F2, N-F2 (Custom)
- High precision: ±0.15mm dimension tolerance, λ/10 flatness, ±3 arc min angular tolerance accessible
- Coating Options: uncoated (standard), or custom coatings
- Low abe number optimized for dispersion
- Maximum clear aperture and minute reflection-loss of p-polarization when operated at minimum deviation angle

Equilateral Prisms are triangular optical prisms each that has three identical side lengths and three 60°apex angles. Equilateral prisms are often utilized for dispersive purposes (i.e. separating a white light source into a spectrum of multiple colors). Depending on the substrate materials, equilateral dispersive prisms could be selected to break up different spectral regions. To some extent, equilateral prism functions just like a diffraction grating, only that the prisms present better brightness, greater endurance to power, and fewer problems associated with higher orders.

Regarding our stocked Equilateral Prisms, the substrates are made of SCHOTT F2, CaF2, and UV Fused Silica. With vanguard production techniques and rigorous inspection standards, our team is capable of manufacturing stock equilateral prisms of high precision, with a dimension tolerance of ±0.15mm, surface flatness of λ/10@632.8nm, and an angular tolerance of ±3 arc min. Under normal circumstances the off-the-shelf equilateral dispersive prisms are uncoated, but custom coatings could also be tailored.

We also offer Custom Equilateral Prisms made from a wide assortment of optical materials and high-refractive-index materials including N-BK7, UV Fused Silica, SF11, N-SF11, CaF2, MaF2, ZnSe, F2, N-F2, etc. with transmission range of these materials spans from ultra-violet, visible, to infrared. Anti-reflection coatings with specified bandwidths are available to reduce the loss at the prism-to-air interface for high-refraction materials, with the additional strength to protect the equilateral dispersive prism from chemical corrosions and other contaminants. The angular tolerance is the same as the stocked equilateral prisms (±3 arc minutes), the surface qualities of our custom equilateral prisms could be 60/40, 40/20, 20/10, 10/5 S/D, and the flatness <λ/4, <λ/8, <λ/10@632.8nm, you could select according to your interests. we are confident in delivering both high-precision prisms with tight geometric bridles and standard-grade prisms for requirements that are less challenging.

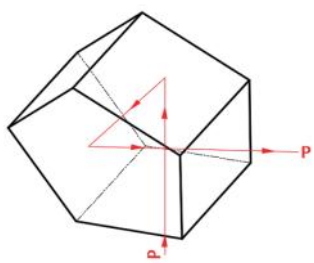
Specifications:

Material	F2, CaF2,UV Fused Silica	Clear Aperture	>90%
Dimension Tolerance	±0.15mm at best	Surface Quality	40/20 S/D or 60/40 S/D
Angular Tolerance	3 arc min at best	Flatness	λ/10@632.8nm at best
Coating	Uncoated, or Custom	Bevelling	<0.2mmx45°

Product List of Equilateral Prism

Code	Material	Aperture	Side Length	Thickness	Surface Quality	Angular Tolerance	Flatness	Coating	Unit Price
1406-001	F2	>90%	10mmx10mmx10mm	10mm	60/40 S/D	±3 arc min	λ/10@633nm	Uncoated	Inquire
1406-002	F2	>90%	15mmx15mmx15mm	15mm	60/40 S/D	±3 arc min	λ/10@633nm	Uncoated	Inquire
1406-003	CaF2	>70%	15mmx15mmx15mm	15mm	40/20 S/D	±10 arc min	λ/2@633nm	Uncoated	Inquire
1406-004	F2	>90%	20mmx20mmx20mm	20mm	60/40 S/D	±3 arc min	λ/10@633nm	Uncoated	Inquire
1406-005	F2	>90%	25mmx25mmx25mm	25mm	60/40 S/D	±3 arc min	λ/10@633nm	Uncoated	Inquire
1406-006	UV Fused Silica	>90%	25mmx25mmx25mm	25mm	60/40 S/D	±3 arc min	λ/10@633nm	Uncoated	Inquire
1406-007	CaF2	>90%	25mmx25mmx25mm	25mm	60/40 S/D	±3 arc min	λ/10@633nm	Uncoated	Inquire
1406-008	CaF2	70%	25mmx25mmx25mm	25mm	40/20 S/D	±10 arc min	λ/2@633nm	Uncoated	Inquire

Penta Prisms



- Deviate incident beam at the angle of 90°
- Coating options: Protective Aluminum, Single layer MgF2, Multi-layer AR coating or custom options
- For observation systems and measuring applications

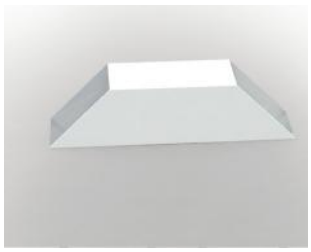
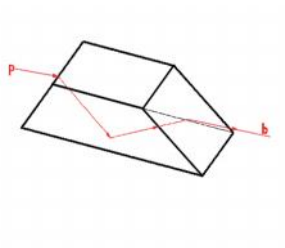
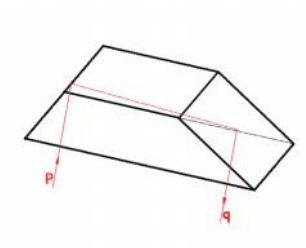
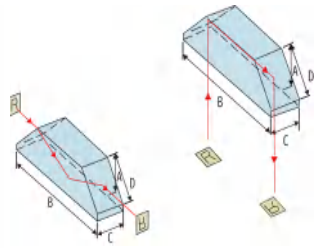
Penta prism is an optical glass block comprising five flat surfaces, and the entrance and exit faces form a right angle. It is often used to deviate a light beam by 90 degrees without inverting or reversing the image. The 90-degree deviation angle is a fixed value independent of the entrance angles, which renders penta prisms advantageous in operation context requiring an exact 90° deviation without the need for precise orientation of the prism.

Hangzhou Shalom EO offers Custom Penta Prisms with a wide operating wavelength range from UV to IR spectrum. We provide multiple coating options that cater to various needs.

Specifications:

Material	N-BK7, UV Fused Silica	Range of Size	/
Dimension Tolerance	±0.2mm	Surface Quality	60/40 S/D
Clear Aperture	>90%	Flatness	<λ/4@632.8nm
Angle Tolerance	<30arc seconds	Chamfer	Protective<0.5mmx45°
Coating	Protected Aluminum reflective coating Single Layer MgF2, AR coating or custom		

Dove Prisms

- Designed for rotation and inversion of image or retroreflecting lights
- Used in astronomical and interferometrical applications
- Coating options: uncoated, AR coated on diagonal faces, or aluminum coatings on diagonal faces

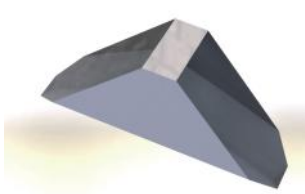
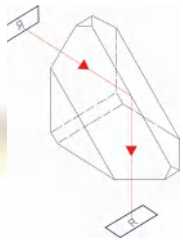
A Dove prism is a kind of reflective prism, shaped from a truncated right-angle prism, the fundamental functions of a dove prism are inverting, and rotating images or it can also be used as a retroreflector contingent on the rotation angle of the prism the propagation path of light.

Hangzhou Shalom EO offers custom dove prisms made of N-BK7 optical glass, which is ROHs-compliant material in SCHOTT's catalog, with optical excellence and good comprehensive properties. Coating options include uncoated, anti-reflection coatings on diagonal faces, aluminized diagonal faces are also optional. Our dove prism serve as capable componnets in astronomical and interferometrical applications.

Specifications:

Material	N-BK7	Dimension Tolerance	±0.2mm
Surface Quality	60/40 S/D	Clear Aperture	>90%
Flatness	<λ/4@632.8nm	Angle Tolerance	<3 arc minutes
Chamfer	Protective<0.5mmx45°	Coating	Uncoated, Custom

Roof Prisms

- 90° deviation of image of beam
- Optional silver coating on the roof surface
- Applications: Spotting scopes, Binoculars, Prism Diagonals, Optical instruments

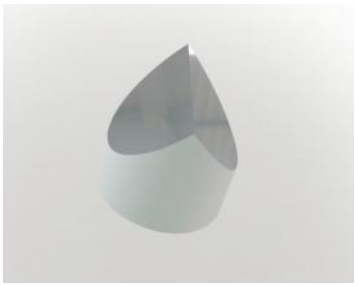
Roof prisms also called right-angle roof prisms or Amici roof prism are reflective optical prisms that contain a section where two faces meet at a 90° angle. The hypotenuse of the roof prism exploits total internal reflection (TIR) to reflect the image through the prism. Roof prisms redirect a light beam by 90° and at the same time invert the light beam. In passing through the prism, the image is both deflected right-to-left and top-to-bottom, this trait make them ideal for applications in binoculars, spotting scopes, and optical instruments.

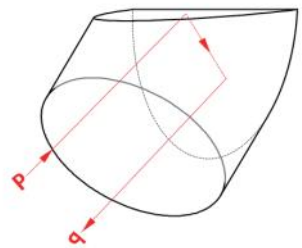
Hangzhou Shalom EO offers roof prisms made from BK7, UV fused silica, and other optical glass, optional silver coating on the roof surface is also available.

Specifications:

Material	N-BK7, UV Fused Silica, other optical glass	Angular Tolerance	±3 arcmin
Surface Quality	40/20 S/D	Clear Aperture	>90%
Flatness	<λ/10@632.8nm	Roof Angle Tolerance	Up to 3 arc seconds
90° Angle Tolerance	±2 arcmin or ±5 arcsec	Coatings	Uncoated, Custom

Porro Prisms





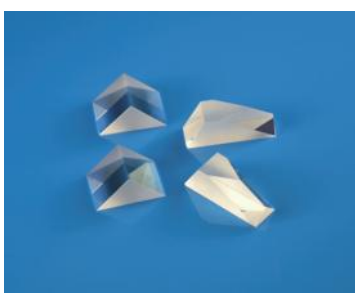
- Made of BAK4, BK7, UV fused silica
- Remarkable for applications in periscopes, binoculars, and monoculars
- Combination of two Porro prisms as Porro prism pairs
- Designed to manipulate of the orientation of the image

The Porro Prism is a kind of reflection prism, that is designed to manipulate the orientation of the image. A single Porro prism resembles the shape of a right geometric prism with right-angled triangular end faces. Light entering the large rectangular face of a single Porro prism is rotated 180°, exiting in the opposite direction offset from its entrance point. A prevalent scheme to use Porro prisms is to use them as double porro prism pairs, comprising two porro prisms with their long sides faces assembled, but with a second prism rotated 90° relative to the first. The net effect of such a prism pair is a beam parallel to its original direction but displaced from its initial location, with the image rotated 180°. This kind of prism pair is often used in the field of optical telescopes, and binoculars to re-orient an inverted image (image erection).
Hangzhou Shalom EO offers Custom Porro prisms made of BAK4, BK7, and UV fused silica, our Porro prisms find widespread usage in periscopes, telescopes, binoculars, and monoculars.

Specifications:

Material	BAK4, UVFS, N-BK7 or equivalent	Dimension Tolerance	±0.2mm
Surface Quality	60/40 S/D	Clear Aperture	>90%
Flatness	<λ/10@632.8nm	Wavelength Distortion	<λ/4@632.8nm
Deviation	180°±10 arc seconds	Roof Angle Tolerance	<5 arc seconds
Chamfer	Sharp roof, other protective chamfered	Coating	None, Available

Sapphire Prisms



- Wide transmission wavelength range: 0.15~5μm
- Extreme hardness for harsh environment
- Chemical and thermal resistance
- Various prism shapes: Right angle prisms, 60° equilateral dispersing prism, and custom

Due to their incomparable mechanical strength (Mohs hardness 9), high thermal conduction, endurance to scratch and abrasions, and resistance to common acids and alkalis, single crystal sapphire (Al2O3) prisms are the top performers in demanding contexts (such as lasers) and extreme condition and climates (e.g., vacuum, high heat, corrosive atmosphere). Because of the superb structural strength of sapphire, Sapphire Prisms can be produced far more compact than those made of other popular materials. Sapphire has good transmittance between 0.15 and 5.5 m, which covers the UV to MWIR wavelength range.

Hangzhou Shalom EO offers customized prisms upon customers' request. The prism shapes include right angle prisms, 60°equilateral dispersing prisms, and other custom shapes (e.g., dove prisms, Penta prisms, roof prisms, rhomboid prisms.)

Specifications:

Shapes	Right angle prisms, 60° equiliateral dispersing prism, customized prisms	Materials	Optical grade single crystal sapphire
Aperture	>90%	Dimension Tolerance	+0.0/-0.2mm
Thickness Tolerance	+/-0.2mm	Surface Quality	40/20 S/D
Flatness	1Lambda@633nm		

Physiccal and Optical Properties:

Transmission Range	0.17 to 5.5 µm	Refractive Index	No 1.75449; Ne 1.74663 @ 1.06 µm
Reflection Loss	14% at 1.06 µm	Absorption Coefficient	0.3 x 10-3 cm-1 @ 2.4 µm
Reststrahlen Peak	13.5 µm	dn/dT	13.1 x 10-6 @ 0.546 µm
dn/dµ = 0	1.5 µm	Density	3.97 g/cc
Melting Point	2040°C	Thermal Conductivity	27.21 W m-1 K-1 @300K
Thermal Expansion	5.6 (para) & 5.0 (perp) x 10-6 /K *	Hardness	Knoop 2000 with 2000g indenter
Specific Heat Capacity	763 J Kg-1 K-1 @ 293K	Dielectric Constant	11.5 (para) 9.4 (perp) @ 1MHz
Youngs Modulus (E)	335 GPa	Shear Modulus (G)	148.1 GPa
Bulk Modulus (K)	240 GPa	Elastic Coefficients	C11=496 C12=164 C13=115 C33=498 C44=148
Apparent Elastic Limit	300 MPa (45,000 psi)	Poisson Ratio	0.25
Solubility	98 x 10-6 g/100g water	Molecular Weight	101.96
Class/Structure	Trigonal (hex), R3c		

Superpolished Optics

In some demanding applications such as Deep Ultra-violet (DUV) lasers, high-power lasers, ring laser gyros, and femtosecond lasers, the optical components incorporated necessitate a minimal scattering effect to minimize the loss and raise efficiencies in lasers, these optical components must be engineered and processed into a premium precision grade with ultra-low surface roughness, these optics are called "superpolished" optics.

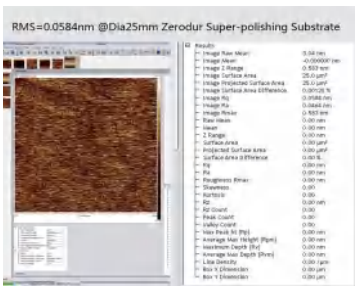
Hangzhou Shalom EO offers superpolished optical components made from substrate materials UV fused silica, BK7, sapphire, ZnSe, YAG, etc. A Unique classical polishing technique is developed in Shalom EO to manufacture the super-polished optics, a striking <1Å roughness can be obtained, with high flatness and surface quality. Superpolished lenses, windows and mirrors, and polished substrates are available.

Mirrors for Ring Laser Gyros

- A unique polishing technique modified on the basis of classical polishing technique
- Surface Roughness down to 1Å
- Low absorption and scattering loss
- Excellent resistance to the plasma environment
- Roughness measured by Atomic Force Microscope (AFM), Flatness measured by Zygo interferometer

A Ring Laser Gyroscope (RLG) consists of a ring laser having two independent counter-propagating resonant modes over the same path, it is an optical gyroscope that utilizes narrowband light waveforms traveling a path, created using mirrors, to measure rotation based on the Sagnac effect.

To be competent for integration into the Ring Laser Gyroscope (RLG), the mirrors and outcoupling coatings must have ultra-low absorption and scattering loss, exceptional resistance to the plasma environment, and long durability.



Hangzhou Shalom EO offers the mirrors or substrates used in the laser gyro with a roughness of less than 1Å, by our classical super polishing line, atom force roughness measuring system, and Zygo interference flatness test instrument, we can provide the laser gyro mirrors in stable and identical quality and volume quantity.

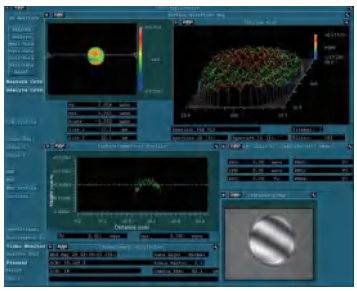
Features:

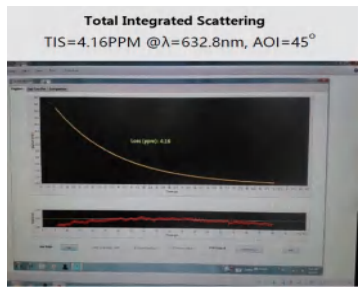
1. Unique classical polishing method

Although the magnetorheological fluid polishing method is thought to be a promising measure to fabricate ultra-low roughness optical surfaces, its high cost and low production rate make it unpractical in industrial applications, therefore most of the super-polished optics are made from the classical polishing method. A unique processing technical modified on the basis of classical polishing is developed in Shalom EO to make the super-polished optics, the pitch plate is used as the polishing tool, and <1Å roughness can be obtained using our polishing craft. The testing shows that our substrates and mirrors work well in the laser gyro system.

2. Roughness measurement

For the primary scattering test, we use the green laser of 25 and 40 mW, the scattering point can be found by watching the reflected laser light from the surfaces of the optics, this is simple and fast as the primary test of surface roughness. For the final test of the roughness or scattering test, the Atom Force Microscope (AFM) from Bruker is used to measure the final roughness of the polished optic.





3. Flatness Measuring
The Zygo Lambda 2000 series Module GPIXP-D6" is utilized to measure the final flatness of the polished surfaces.

4. Coating Testing
The final processing of coating is also critical for the laser gyro mirrors, low absorption and low scattering loss are required, and the Total Integrated Scattering or TIS is measured to evaluate the surface loss of the mirrors.

Specifications:

Substrate Materials	Zerodur Glass, Fused Silca	Diameters (mm)	F12.5, F19.05, F25
Surface Roughness RMS	<0.1nm	Total Integrated Scattering (TIS)	5ppm
Surface Quality	10/5 S/D; 0/0 at central area	Flatness	<Lambda/20 @ 633nm

Super Polished Substrates and Mirrors

- Various substrate materials: BK7, UV fused silica, Zerodur, ZnSe, ZnS, Ge, Si, CaF2, MgF2, and Sapphire.
- A unique polishing technique developed on the basis the classical polishing method
- Surface Roughness down to 1Å
- High Reflection (HR) coating and Anti-reflection (AR) available
- Applications: DUV lasers, high-power lasers, gyroscope

For some demanding applications like DUV (deep ultraviolet) lasers, ultra-high power laser systems, and ring laser gyroscopes, high reflection and low scattering loss of the mirrors are some of the most critical factor, where substrates with roughness values down to micros are required to produce the mirrors competent for the applications.

The super polishing technique is a fabrication technique often utilized to manufacture super-polished mirror substrates for optical applications. Hangzhou Shalom EO has developed an efficient and reliable super-polishing technique through modification of the classical super-polishing method, the optical substrates or mirrors produced using our technique feature roughness of less than 1Å on large production scales and guarantee fast despatch for our customers. Our inspection department incorporates an Atom Force Roughness Measuring System and Zygo Interference Flatness Test Instrument, where we implement strict control of qualities. Various superpolished mirror substrates of different materials including BK7, UV fused silica, Zerodur, ZnSe, ZnS, Ge, Si, CaF2, MgF2, and Sapphire are available, in addition to the mirrors for Ring Gyro Lasers.

Although the magnetorheological (MR) fluid polishing technique (where optical surfaces are polished in a computer-controlled magnetorheological finishing slurry) seems a promising approach to achieve finishes of extremely low roughness in the fabrication of optics, its high cost and inefficient production rate make it unpractical for industrial applications. Therefore, most of the super-polished optics are made from conventional and classical polishing methods. A unique modification to the classical polishing technique is developed in Shalom EO for the production of super-polished mirrors and mirror substrates. In the processing procedure, pitch plates are configured as the mounting tool. Shalom EO is capable of realizing super polished mirror and mirror substrates of <1Å roughness, 0/0 scratch/dig in the central area, and superior reflection through our state-of-the-art polishing technique.

Inspection Results:

1. Atom Force Microscope Inspection

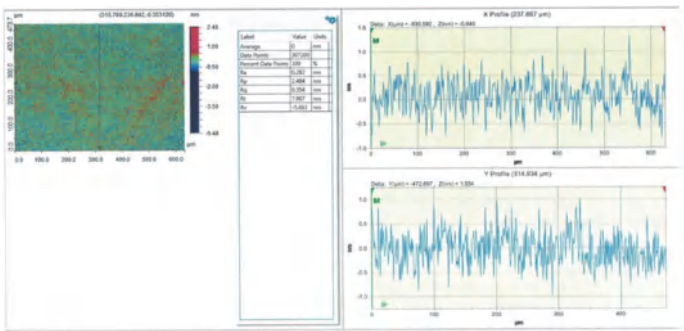


Figure1. Roughness of Superpolished Surface Measured by Atom Force Microscope (AFM)
(Fused Silica Substrate with Diameter 200mm, Ra=0.28nm)

2. Zygo Interferometer Inspection

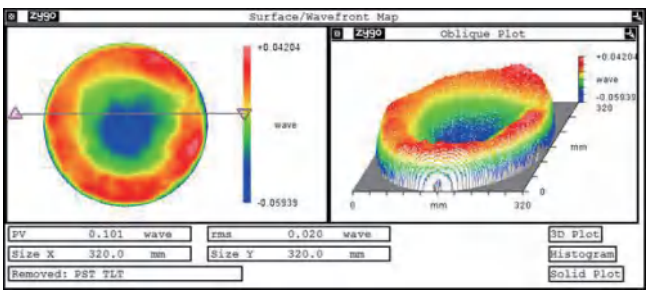


Figure 2. Flatness of Super Polished Surface Measure by Zygo Interferometer
(Fused Silica Substrate of Diameter 300mm, PV=0.101 Wave @633nm)

Specifications:

Material Specifications	ZnSe, ZnS	Ge, Si, CaF2, MgF2	Fused Silica, BK7. Zerodur	Sapphire
Diameter	up to Φ300mm	up to Φ300mm	up to Φ350mm	up to Φ300mm
PV	PV≤0.1λ @ 632.8nm	PV≤0.1λ @ 632.8nm	PV≤0.1λ @ 632.8nm	PV≤0.15λ @ 632.8nm
rms	rms≤0.02λ @ 632.8nm	rms≤0.02λ @ 632.8nm	rms≤0.02λ @ 632.8nm	rms≤0.03λ @ 632.8nm
Roughness	≤0.2nm	≤0.2nm	≤0.1nm	≤0.2nm