Lenses

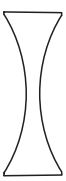
Manufacturing Capability of lenses

Specifications	Manufacturing Capability
Material	Optical glass
Focal length(F)	± 2mm------- ± 3000mm
Diameter(ϕ)	ϕ 2mm--------- ϕ 200mm
Radius(R)	2mm --- --1500mm
Central Thickness(Tc)	0.5mm--------50mm
Edge Thickness(Te)	0.5mm--------50mm
Surface quality	10-5, 20-10, 40-20, 60-40, 80-50, 120-80s/d
Surface flatness	N=1--10(Power), △N=0.2--2.0(Irreg)
Centration	30" 1', 2', 3', 5'


Plano-Convex


Plano-Concave


Double-Convex


Double-Concave


Convex-Concave(+)


Convex-Concave(-)

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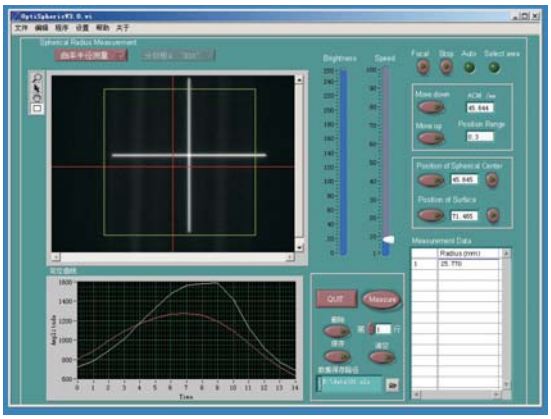
Spherical Lenses Test System

Not only we use traditional techniques to test the lens radius, by comparing the actual surface to a test plate gauge, but also we use advance spherical-lenses testing system with computer assisting.

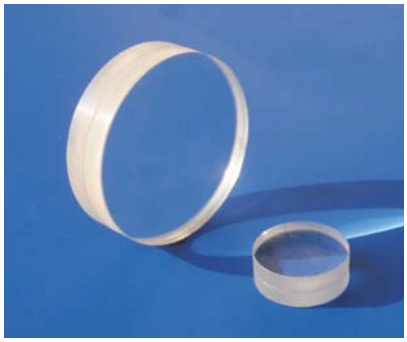
The testing system can precisely measure three items of spherical lenses.

-- **Radius**
-- **Focal Length**
-- **Centration**

Lenses testing system



Lenses testing Software



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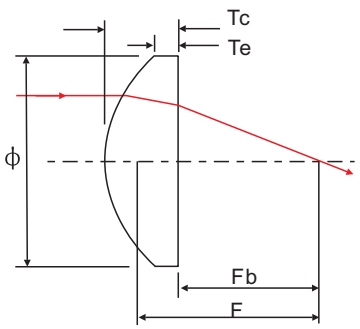
Plano-Convex Lenses

General Specifications

Diameter tolerance:	± 0.1mm
Focal tolerance:	± 2%
Surface quality:	60-40 S/D
Centration:	3 arcmin
Surface flatness:	λ /4@632.8nm
Clear aperture:	>90%
Bevel:	Protective bevel



N-BK7 Plano-Convex Lenses
Design wavelength: 546nm, n=1.5187

Item#	ϕ (mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LP01-6-10	ϕ 6.0	10.0	5.2	2.45	1.5	8.41
LP01-6-15	ϕ 6.0	15.0	7.79	2.10	1.5	13.65
LP01-6-20	ϕ 6.0	20.0	10.37	1.95	1.5	18.70
LP01-6-30	ϕ 6.0	30.0	15.56	1.79	1.5	28.82
LP01-12-20	ϕ 12.7	20.0	10.37	3.97	1.8	17.39
LP01-12-30	ϕ 12.7	30.0	15.56	3.16	1.8	27.92
LP01-12-40	ϕ 12.7	40.0	20.75	2.80	1.8	39.16
LP01-12-50	ϕ 12.7	50.0	25.94	2.59	1.8	48.30
LP01-12-75	ϕ 12.7	75.0	38.90	2.32	1.8	73.47
LP01-12-100	ϕ 12.7	100.0	51.88	2.19	1.8	98.57
LP01-18-30	ϕ 18.0	30.0	15.56	4.67	1.8	26.92
LP01-18-50	ϕ 18.0	50.0	25.94	3.41	1.8	47.76
LP01-18-75	ϕ 18.0	75.0	38.90	2.86	1.8	73.11
LP01-25-50	ϕ 25.4	50.0	25.94	5.32	2.0	46.51
LP01-25-75	ϕ 25.4	75.0	38.90	4.13	2.0	72.27
LP01-25-100	ϕ 25.4	100.0	51.88	3.58	2.0	97.66
LP01-25-150	ϕ 25.4	150.0	77.80	3.04	2.0	147.98
LP01-25-200	ϕ 25.4	200.0	103.75	2.78	2.0	198.18
LP01-25-250	ϕ 25.4	250.0	129.72	2.62	2.0	248.35
LP01-30-50	ϕ 30.0	50.0	25.94	7.28	2.5	45.21
LP01-30-75	ϕ 30.0	75.0	38.90	5.51	2.5	71.36
LP01-30-100	ϕ 30.0	100.0	51.88	4.72	2.5	96.91
LP01-30-200	ϕ 30.0	200.0	103.75	3.6	2.5	197.75
LP01-38-100	ϕ 38.0	100.0	51.83	6.6	3.0	95.70
LP01-38-200	ϕ 38.0	200.0	103.66	4.8	3.0	196.50
LP01-38-300	ϕ 38.0	300.0	155.60	4.2	3.0	297.23
LP01-50-100	ϕ 50.8	100.0	51.88	9.65	3.0	93.67
LP01-50-200	ϕ 50.8	200.0	103.75	6.16	3.0	195.96
LP01-50-300	ϕ 50.8	300.0	155.60	5.09	3.0	296.62
LP01-50-500	ϕ 50.8	500.0	259.40	4.25	3.0	497.28

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UV Fused Silica Plano-Convex Lenses

Design wavelength: 546nm, n=1.46008

Item#	ϕ (mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LP02-6-10	ϕ 6.0	10.0	4.6	2.62	1.5	8.2
LP02-6-15	ϕ 6.0	15.0	6.9	2.19	1.5	13.5
LP02-6-20	ϕ 6.0	20.0	9.2	2.01	1.5	18.6
LP02-6-30	ϕ 6.0	30.0	13.8	1.83	1.5	28.7
LP02-12-20	ϕ 12.7	20.0	9.2	4.35	1.8	17.02
LP02-12-30	ϕ 12.7	30.0	13.8	3.35	1.8	27.7
LP02-12-40	ϕ 12.7	40.0	18.4	2.93	1.8	38.00
LP02-12-50	ϕ 12.7	50.0	23.01	2.69	1.8	48.17
LP02-12-75	ϕ 12.7	75.0	34.51	2.39	1.8	73.37
LP02-12-100	ϕ 12.7	100.0	46.03	2.24	1.8	98.51
LP02-18-30	ϕ 18.0	30.0	13.8	5.14	1.8	26.48
LP02-18-50	ϕ 18.0	50.0	23.01	3.64	1.8	48.51
LP02-18-75	ϕ 18.0	75.0	34.51	3.0	1.8	72.97
LP02-25-50	ϕ 25.4	50.0	23.01	5.82	2.0	46.03
LP02-25-75	ϕ 25.4	75.0	34.51	4.42	2.0	71.98
LP02-25-100	ϕ 25.4	100.0	46.03	3.79	2.0	97.45
LP02-25-150	ϕ 25.4	150.0	69.00	3.20	2.0	147.8
LP02-25-200	ϕ 25.4	200.0	92.04	2.88	2.0	198.1
LP02-25-250	ϕ 25.4	250.0	115.08	2.70	2.0	248.3

Choose Anti-reflective Coatings

- Single layer MgF_2
- Multiple layers AR coating
  R<0.25 % @ Laser line
  R<0.5% @ Broadband Wavelength

How to order Singlet Lenses? Example:

Material: N-BK7
Shape: Plano-convex
Diameter: ϕ 12.7 ± 0.1mm
Focal, Radius: F=+30mm, R=15.56mm
Thickness: Tc=3.0 ± 0.1mm
Surface quality: 60-40 S/D
Flatness: λ /4 @633nm
Centration: 3'

Coating: AR @430--680nm, R<0.5%, AOI=0°

Price on request

Custom Design

Volume Discount

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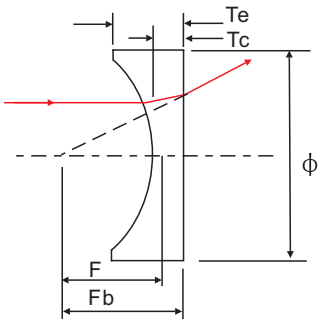
Plano-Concave Lenses

General Specifications

Diameter tolerance	± 0.1mm
Focal tolerance	± 2%
Surface quality	60-40 S/D
Centration	3 arcmin
Surface flatness	λ /4@632.8nm
Clear aperture	>90%
Bevel	Protective bevel



N-BK7 Plano-Concave Lenses

Design wavelength: 546nm, n=1.5187

Item#	ϕ (mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LP11-6-10	ϕ 6.0	-10.0	-5.18	2.0	2.95	-11.30
LP11-6-15	ϕ 6.0	-15.0	-7.79	2.0	2.60	-16.34
LP11-6-20	ϕ 6.0	-20.0	-10.37	2.0	2.44	-21.30
LP11-6-30	ϕ 6.0	-30.0	-15.56	2.0	2.29	-31.32
LP11-12-20	ϕ 12.7	-20.0	-10.37	2.0	4.17	-21.33
LP11-12-30	ϕ 12.7	-30.0	-15.56	2.0	3.40	-31.31
LP11-12-40	ϕ 12.7	-40.0	-20.75	2.0	3.00	-41.32
LP11-12-50	ϕ 12.7	-50.0	-25.94	2.0	2.79	-51.33
LP11-12-75	ϕ 12.7	-75.0	-38.90	2.0	2.52	-76.31
LP11-12-100	ϕ 12.7	-100.0	-51.88	2.0	2.39	-101.33
LP11-18-30	ϕ 18.0	-30.0	-15.56	2.0	4.86	-31.32
LP11-18-50	ϕ 18.0	-50.0	-25.94	2.0	3.61	-51.33
LP11-18-75	ϕ 18.0	-75.0	-38.90	2.0	3.05	-76.30
LP11-25-50	ϕ 25.4	-50.0	-25.94	2.0	5.32	-51.33
LP11-25-75	ϕ 25.4	-75.0	-38.90	2.0	4.13	-76.31
LP11-25-100	ϕ 25.4	-100.0	-51.88	2.0	3.58	-101.33
LP11-25-150	ϕ 25.4	-150.0	-77.80	2.0	3.04	-151.30
LP11-25-200	ϕ 25.4	-200.0	-103.75	2.0	2.78	-201.33
LP11-25-250	ϕ 25.4	-250.0	-129.72	2.0	2.62	-251.39
LP11-30-50	ϕ 30.0	-50.0	-25.94	2.0	6.77	-51.33
LP11-30-75	ϕ 30.0	-75.0	-38.90	2.0	5.08	-76.31
LP11-30-100	ϕ 30.0	-100.0	-51.88	2.0	4.22	-101.34
LP11-30-200	ϕ 30.0	-200.0	-103.75	2.0	3.09	-201.34
LP11-38-100	ϕ 38.0	-100.0	-51.88	2.0	5.60	-101.34
LP11-38-200	ϕ 38.0	-200.0	-103.75	2.0	3.76	-201.34
LP11-38-300	ϕ 38.0	-300.0	-155.60	2.0	3.16	-301.30
LP11-50-100	ϕ 50.8	-100.0	-51.88	2.0	8.64	-101.34
LP11-50-200	ϕ 50.8	-200.0	-103.75	2.0	5.16	-201.34
LP11-50-300	ϕ 50.8	-300.0	-155.60	2.0	4.00	-301.30
LP11-50-500	ϕ 50.8	-500.0	-259.40	2.0	3.25	-501.40

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UV Fused Silica Plano-Concave Lenses

Design wavelength: 546nm, n=1.46008

Item#	ϕ (mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LP12-6-10	ϕ6.0	-10.0	-4.6	2.0	3.1	-11.37
LP12-6-15	ϕ6.0	-15.0	-6.9	2.0	2.69	-16.37
LP12-6-20	ϕ6.0	-20.0	-9.2	2.0	2.50	-21.37
LP12-6-30	ϕ6.0	-30.0	-13.8	2.0	2.33	-31.37
LP12-12-20	ϕ12.7	-20.0	-9.2	2.0	4.54	-21.37
LP12-12-30	ϕ12.7	-30.0	-13.8	2.0	3.55	-31.37
LP12-12-40	ϕ12.7	-40.0	-18.40	2.0	3.13	-41.37
LP12-12-50	ϕ12.7	-50.0	-23.0	2.0	2.89	-51.37
LP12-12-75	ϕ12.7	-75.0	-34.5	2.0	2.59	-76.37
LP12-12-100	ϕ12.7	-100.0	-46.0	2.0	2.44	-101.37
LP12-18-30	ϕ18.0	-30.0	-13.8	2.0	5.34	-31.37
LP12-18-50	ϕ18.0	-50.0	-23.0	2.0	3.83	-51.37
LP12-18-75	ϕ18.0	-75.0	-34.5	2.0	3.20	-76.37
LP12-25-50	ϕ25.4	-50.0	-23.0	2.0	5.82	-51.37
LP12-25-75	ϕ25.4	-75.0	-34.5	2.0	4.42	-76.37
LP12-25-100	ϕ25.4	-100.0	-46.0	2.0	3.79	-101.37
LP12-25-150	ϕ25.4	-150.0	-69.0	2.0	3.18	-151.37
LP12-25-200	ϕ25.4	-200.0	-92.0	2.0	2.88	-201.37
LP12-25-250	ϕ25.4	-250.0	-115.0	2.0	2.70	-251.37

Choose Anti-reflective Coatings

- Single layer MgF_2
- Multiple layers AR coating
  R<0.25 % @ Laser line
  R<0.5% @ Broadband Wavelength

How to order Singlet Lenses? Example:

Material: N-BK7
Shape: Plano-concave
Diameter: ϕ 12.7 ± 0.1mm
Focal, Radius: F=-30mm, R=-15.56mm
Thickness: Tc=2.0 ± 0.1mm
Surface quality: 60-40 S/D
Flatness: λ /4 @633nm
Centration: 3'

Coating: AR @430--680nm, R<0.5%, AOI=0°

Price on request

Custom Design

Volume Discount

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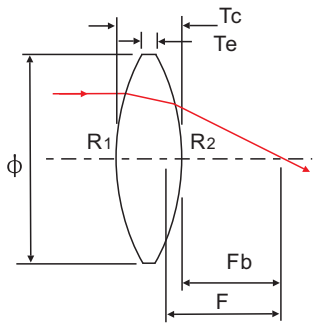
Double-Convex Lenses

General Specifications

Diameter tolerance	± 0.1mm
Focal tolerance	± 2%
Surface quality	60-40 S/D
Centration	3 arcmin
Surface flatness	λ /4@632.8nm
Clear aperture	>90%
Bevel	Protective bevel



N-BK7 Double-Convex Lenses Design wavelength: 546nm, n=1.5187

Item#	ϕ (mm)	F(mm)	R1(R2)	Tc(mm)	Te(mm)	Fb(mm)
LB01-12-25	ϕ 12.7	25.0	25.35	3.62	2.0	23.82
LB01-12-30	ϕ 12.7	30.0	30.55	3.33	2.0	28.89
LB01-12-40	ϕ 12.7	40.0	41.02	2.99	2.0	39.04
LB01-12-50	ϕ 12.7	50.0	51.40	2.79	2.0	49.08
LB01-12-75	ϕ 12.7	75.0	77.45	2.52	2.0	74.24
LB01-12-100	ϕ 12.7	100.0	103.28	2.39	2.0	99.16
LB01-25-50	ϕ 25.4	50.0	50.93	5.22	2.0	48.22
LB01-25-75	ϕ 25.4	75.0	77.09	4.11	2.0	73.63
LB01-25-100	ϕ 25.4	100.0	103.04	3.57	2.0	98.73
LB01-25-200	ϕ 25.4	200.0	207.00	2.78	2.0	199.07
LB01-25-250	ϕ 25.4	250.0	258.90	2.62	2.0	249.17
LB01-25-500	ϕ 25.4	500.0	518.30	2.31	2.0	499.21

UV Fused silica Double-Convex Lenses Design wavelength: 546nm, n=1.46008

Item#	ϕ (mm)	F(mm)	R1(R2)	Tc(mm)	Te(mm)	Fb(mm)
LB02-12-25	ϕ 12.7	25.0	22.39	3.84	2.0	23.66
LB02-12-30	ϕ 12.7	30.0	27.04	3.51	2.0	28.77
LB02-12-40	ϕ 12.7	40.0	36.31	3.12	2.0	38.92
LB02-12-50	ϕ 12.7	50.0	45.62	2.9	2.0	49.06
LB02-12-75	ϕ 12.7	75.0	68.7	2.6	2.0	74.21
LB02-12-100	ϕ 12.7	100.0	91.6	2.5	2.0	99.11
LB02-25-50	ϕ 25.4	50.0	45.08	5.65	2.0	48.01
LB02-25-75	ϕ 25.4	75.0	68.23	4.39	2.0	73.39
LB02-25-100	ϕ 25.4	100.0	91.6	3.77	2.0	98.69
LB02-25-200	ϕ 25.4	200.0	183.65	2.88	2.0	199.09
LB02-25-250	ϕ 25.4	250.0	229.60	2.70	2.0	249.06
LP02-25-500	ϕ 25.4	500.0	458.8	2.35	2.0	498.30

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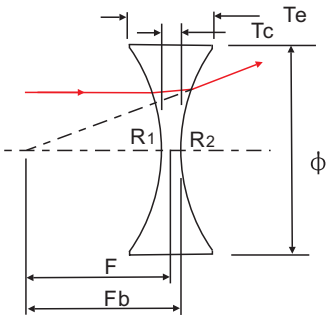
Double-Concave Lenses

General Specifications

Diameter tolerance	± 0.1mm
Focal tolerance	± 2%
Surface quality	60-40 S/D
Centration	3 arcmin
Surface flatness	λ /4@632.8nm
Clear aperture	>90%
Bevel	Protective bevel



N-BK7 Double-Concave Lenses Design wavelength: 546nm, n=1.5187

Item#	ϕ (mm)	F(mm)	R1(R2)	Tc(mm)	Te(mm)	Fb(mm)
LB11-12-20	ϕ 12.7	-20.0	26.30	2.0	3.56	-25.68
LB11-12-30	ϕ 12.7	-30.0	31.48	2.0	3.29	-30.67
LB11-12-40	ϕ 12.7	-40.0	41.88	2.0	2.97	-40.70
LB11-12-50	ϕ 12.7	-50.0	52.24	2.0	2.78	-50.68
LB11-25-50	ϕ 25.4	-50.0	52.17	2.0	5.1	-50.7
LB11-25-75	ϕ 25.4	-75.0	78.09	2.0	4.1	-75.7
LB11-25-100	ϕ 25.4	-100.0	104.00	2.0	3.6	-100.7
LP11-25-150	ϕ 25.4	-150.0	156.0	2.0	3.0	-151.3
LB11-25-200	ϕ 25.4	-200.0	207.66	2.0	2.8	-200.7
LB11-25-250	ϕ 25.4	-250.0	259.49	2.0	2.6	-250.7

UV Fused silica Double-Concave Lenses Design wavelength: 546nm, n=1.46008

Item#	ϕ (mm)	F(mm)	R1(R2)	Tc(mm)	Te(mm)	Fb(mm)
LB12-12-20	ϕ 12.7	-20.0	18.71	2.0	4.22	-20.67
LB12-12-30	ϕ 12.7	-30.0	27.92	2.0	3.50	-30.7
LB12-12-40	ϕ 12.7	-40.0	37.12	2.0	3.10	-40.7
LB12-12-50	ϕ 12.7	-50.0	46.32	2.0	2.87	-50.7
LP12-25-50	ϕ 25.4	-50.0	46.32	2.0	5.55	-50.7
LB12-25-75	ϕ 25.4	-75.0	69.32	2.0	4.34	-75.7
LB12-25-100	ϕ 25.4	-100.0	92.33	2.0	3.75	-100.7
LB12-25-150	ϕ 25.4	-150.0	138.33	2.0	3.17	-150.7
LP12-25-200	ϕ 25.4	-200.0	184.32	2.0	2.87	-200.7
LB12-25-250	ϕ 25.4	-250.0	230.36	2.0	2.70	-250.7

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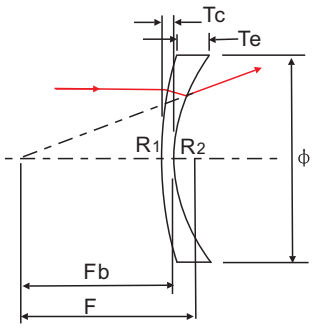
Website: www.cn-optics.com

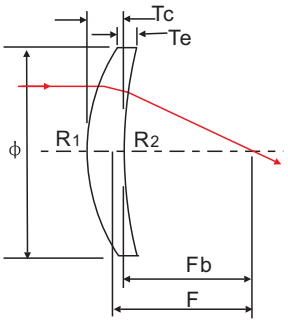
Convex-Concave Lenses

General Specifications

Diameter tolerance:	± 0.1mm
Focal tolerance:	± 2%
Surface quality:	60-40 S/D
Centration:	3 arcmin
Surface flatness:	λ /4@632.8nm
Clear aperture:	>90%
Bevel:	Protective bevel



Convex-Concave(−)



Convex-Concave(+)

N-BK7 Convex-Concave Lenses

Item#	Type	ϕ (mm)	F(mm)	R1(mm)	R2(mm)	Tc(mm)	Te(mm)	Fb(mm)
LM01-25-100	+	ϕ 25.4	100.0	33.72	90.0	4.0	2.5	97.5
LM01-25-125	+	ϕ 25.4	125.0	38.47	90.0	4.0	2.8	121.8
LM01-25-150	+	ϕ 25.4	150.0	42.52	90.0	4.0	3.0	146.3
LM01-25-175	+	ϕ 25.4	175.0	46.05	90.0	4.0	3.1	171.2
LM01-25-200	+	ϕ 25.4	200.0	49.03	90.0	3.5	2.8	197.0
LM01-25-250	+	ϕ 25.4	250.0	83.96	235.0	3.5	2.9	246.5
LM01-25-300	+	ϕ 25.4	300.0	94.08	235.0	3.5	3.0	296.3
LM01-25-500	+	ϕ 25.4	500.0	123.90	235.0	3.5	3.2	495.4
LM01-25-1K	+	ϕ 25.4	1000.0	278.34	600.0	3.5	3.3	993.7
LM11-25-100	−	ϕ 25.4	-100.0	90.0	32.59	3.0	4.5	-99.2
LM11-25-125	−	ϕ 25.4	-125.0	90.0	37.26	3.0	4.2	-123.7
LM11-25-150	−	ϕ 25.4	-150.0	90.0	41.42	3.0	4.0	-149.5
LM11-25-175	−	ϕ 25.4	-175.0	90.0	44.86	3.0	3.8	-174.6
LM11-25-200	−	ϕ 25.4	-200.0	90.0	47.84	3.0	3.7	-199.5
LM11-25-300	−	ϕ 25.4	-300.0	235.0	93.13	3.0	3.5	-298.3
LM11-25-500	−	ϕ 25.4	-500.0	235.0	122.6	3.0	3.3	-496.5
LM11-25-600	−	ϕ 25.4	-600.0	600.0	204.08	3.0	3.2	-596.8

How to order Singlet Lenses? Example:

Material:	N-BK7
Shape:	Convex-concave
Diameter:	ϕ 25.4 ± 0.1mm
Focal, Radius:	F=+100mm, R1=33.72mm, R2=90.0mm
Thickness:	Tc=3.0 ± 0.1mm
Surface quality:	60-40 S/D
Flatness:	λ /4 @633nm
Centration:	3'
Coating:	AR @430--680nm, R<0.5%, AOI=0°

Price on request

Custom Design

Volume Discount

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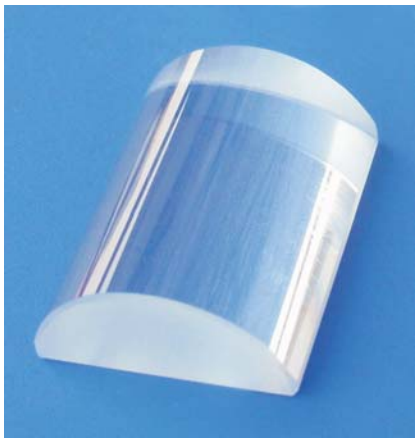
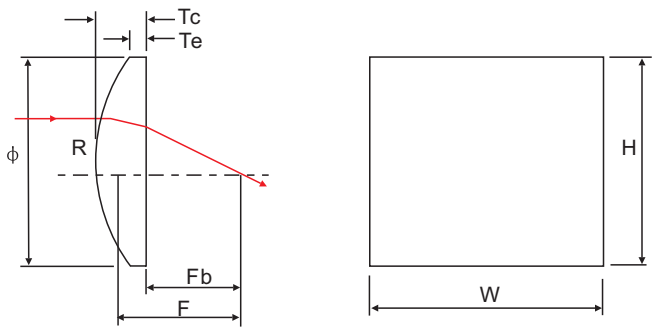
Cylindrical Lenses

Cylindrical Plano-Convex Lenses
(Rectangular)



General Specifications

Diameter tolerance	± 0.1mm
Design wavelength	546.1nm, n=1.5187
Focal tolerance	± 2%
Surface quality	60-40 S/D
Centration	3 arcmin
Surface flatness	λ /4@632.8nm
Clear aperture	>90%
Bevel	Protective bevel



Rectangular type

N-BK7 Cylindrical Plano-Convex Lenses

Item#	WxH(mm)	F(mm)	R(mm)	Te(mm)	Tc(mm)	Fb(mm)
LC01-10x10-12.7	10.0x10.0	12.7	6.54	2.0	4.3	9.8
LC01-10x10-20	10.0x10.0	20.0	10.29	2.0	3.3	17.8
LC01-10x10-25	10.0x10.0	25.0	12.87	2.0	3.0	23.0
LC01-12x10-10	12.0x10.0	10.0	5.2	2.0	5.9	6.17
LC01-12x10-15	12.0x10.0	15.0	7.8	2.0	3.8	12.6
LC01-12x10-20	12.0x10.0	20.0	10.34	2.0	3.3	17.8
LC01-20x10-12.7	20.0x10.0	12.7	6.54	2.0	4.3	9.8
LC01-20x10-20	20.0x10.0	20.0	10.29	2.0	3.3	17.8
LC01-20x10-25	20.0x10.0	25.0	12.87	2.0	3.0	23.0
LC01-20x20-50	20.0x20.0	50.0	25.73	2.0	4.0	47.3
LC01-20x20-75	20.0x20.0	75.0	38.60	2.0	3.3	72.8
LC01-20x20-100	20.0x20.0	100.0	51.47	3.0	4.0	97.3
LC01-20x20-150	20.0x20.0	150.0	77.20	3.0	3.7	147.5

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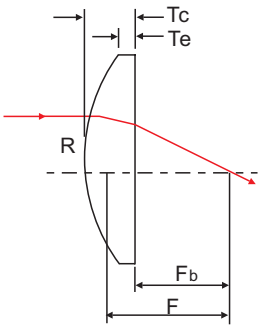
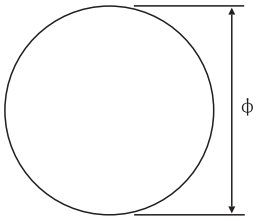
N-BK7 Cylindrical Plano-Convex Lenses(Rectangular)

Item#	WxH(mm)	F(mm)	R(mm)	Te(mm)	Tc(mm)	Fb(mm)
LC01-20x20-200	20.0x20.0	200.0	102.93	3.0	3.5	197.7
LC01-20x20-250	20.0x20.0	250.0	128.67	3.0	3.4	247.7
LC01-20x20-300	20.0x20.0	300.0	154.40	3.0	3.3	297.8
LC01-20x20-500	20.0x20.0	500.0	257.33	3.0	3.2	497.9
LC01-40x20-50	40.0x20.0	50.0	25.73	2.0	4.0	47.3
LC01-40x20-75	40.0x20.0	75.0	38.60	2.0	3.3	72.8
LC01-40x20-100	40.0x20.0	100.0	51.47	3.0	4.0	97.3
LC01-40x20-150	40.0x20.0	150.0	77.20	3.0	3.7	147.5
LC01-40x20-200	40.0x20.0	200.0	102.93	3.0	3.5	197.7
LC01-20x40-250	40.0x20.0	250.0	128.67	3.0	3.4	247.7
LC01-40x20-300	40.0x20.0	300.0	154.40	3.0	3.3	297.8
LC01-40x20-500	40.0x20.0	500.0	257.33	3.0	3.2	497.9

Cylindrical Plano-Convex Lenses (Round)





Circular type

N-BK7 Cylindrical Plano-Convex Lenses(Round)

Item#	ϕ (mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LC01-ϕ5-8	ϕ5.0	8.0	4.13	2.84	2.0	6.14
Lc01-ϕ8-9.2	ϕ8.0	9.2	4.74	4.20	2.0	6.44
LC01-ϕ8-10	ϕ8.0	10.0	5.17	3.9	2.0	7.43
Lc01-ϕ12-12.5	ϕ12.7	12.5	6.43	7.44	2.0	7.57
Lc01-ϕ12-25	ϕ12.7	25.0	12.88	3.67	2.0	22.58
Lc01-ϕ12-50	ϕ12.7	50.0	25.75	2.80	2.0	48.17
Lc01-ϕ25-75	ϕ25.4	75.0	38.64	4.15	2.0	72.28
Lc01-ϕ25-100	ϕ25.4	100.0	51.52	4.59	3.0	96.99
Lc01-ϕ25-150	ϕ25.4	150.0	77.27	4.05	2.0	147.34

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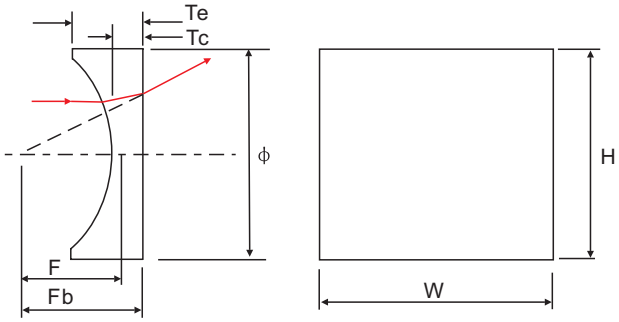
Cylindrical Plano-Concave Lenses (Rectangular)

General Specifications

Diameter tolerance	± 0.1mm
Design wavelength	546.1nm, n=1.5187
Focal tolerance	± 2%
Surface quality	60-40 S/D
Centration	3 arcmin
Surface flatness	λ /4@632.8nm
Clear aperture	>90%
Bevel	Protective bevel



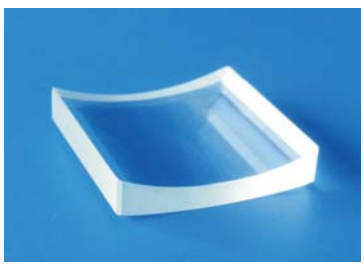
N-BK7 Cylindrical Plano-Concave Lenses

Item#	WxH(mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LC11-10x10-12.7	10.0x10.0	-12.7	-6.54	2.0	4.3	-14.0
LC11-10x10-20	10.0x10.0	-20.0	-10.29	2.0	3.3	-21..1
LC11-10x10-25	10.0x10.0	-25.0	-12.87	2.0	3.0	-26.3
LC11-20x10-12.7	20.0x10.0	-12.7	-6.54	2.0	4.3	-14.0
LC11-20x10-20	20.0x10.0	-20.0	-10.29	2.0	3.3	-21..1
LC11-20x10-25	20.0x10.0	-25.0	-12.87	2.0	3.0	-26.3
LC11-20x20-50	20.0x20.0	-50.0	-25.73	2.0	4.0	-51.3
LC11-20x20-75	20.0x20.0	-75.0	-38.60	2.0	3.3	-76.3
LC11-20x20-100	20.0x20.0	-100.0	-51.47	3.0	4.0	-102.0
LC11-20x20-150	20.0x20.0	-150.0	-77.20	3.0	3.7	-152.0
LC11-20x20-200	20.0x20.0	-200.0	-102.93	3.0	3.5	-202.0
LC11-20x20-250	20.0x20.0	-250.0	-128.67	3.0	3.4	-252.0
LC11-20x20-300	20.0x20.0	-300.0	-154.40	3.0	3.3	-302.9
LC11-20x20-500	20.0x20.0	-500.0	-257.33	3.0	3.2	-502.0
LC11-40x20-50	40.0x20.0	-50.0	-25.73	2.0	4.0	-51.3
LC11-40x20-75	40.0x20.0	-75.0	-38.60	2.0	3.3	-76.3
LC11-40x20-100	40.0x20.0	-100.0	-51.47	3.0	4.0	-102.0
LC11-40x20-150	40.0x20.0	-150.0	-77.20	3.0	3.7	-152.0
LC11-40x20-200	40.0x20.0	-200.0	-102.93	3.0	3.5	-202.0
LC11-40x20-250	40.0x20.0	-250.0	-128.67	3.0	3.4	-252.0
LC11-40x20-300	40.0x20.0	-300.0	-154.40	3.0	3.3	-302.9
LC11-40x20-500	40.0x20.0	-500.0	-257.33	3.0	3.2	-502.0

How to order Cylindrical Lenses? Example:

Material: N-BK7
Shape: Plano-convex cylinder, Rectangular
Diameter: 12.0x10.0 ± 0.1mm
Focal, Radius: F=+20mm, R=10.34mm
Thickness: Tc=3.3 ± 0.1mm
Surface quality: 60-40 S/D
Flatness: λ /4 @633nm
Centration: 3'

Coating: AR @430--680nm, R<0.5%, AOI=0°



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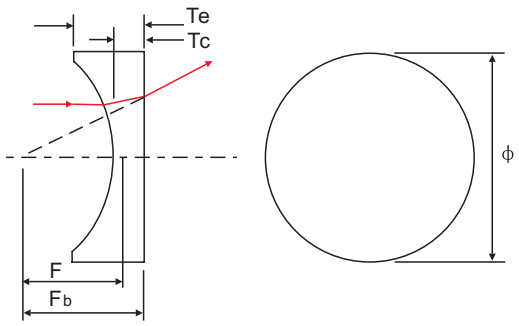
Cylindrical Plano-Concave Lenses(Round)



N-BK7 Cylindrical Plano-Concave Lenses

Item#	ϕ (mm)	F(mm)	R(mm)	Tc(mm)	Te(mm)	Fb(mm)
LC11-ϕ5-8	ϕ5.0	-8.0	-4.13	2.0	2.84	-9.34
Lc11-ϕ8-9.2	ϕ8.0	-9.2	-4.74	2.0	4.20	-10.53
Lc11-ϕ8-10	ϕ8.0	-10.0	-5.16	2.0	3.89	-11.31
Lc11-ϕ12-12.5	ϕ12.7	-12.5	-6.43	2.0	7.44	-13.80
Lc11-ϕ12-25	ϕ12.7	-25.0	-12.89	2.0	3.67	-26.33
Lc11-ϕ12-50	ϕ12.7	-50.0	-25.76	2.0	2.80	-51.33
Lc11-ϕ25-75	ϕ25.4	-75.0	-38.64	2.0	4.15	-76.34
Lc11-ϕ25-100	ϕ25.4	-100.0	-51.52	3.0	4.59	-102.00
Lc11-ϕ25-150	ϕ25.4	-150.0	-77.27	3.0	4.05	-151.99

How to order Cylindrical Lenses? Example:

Material: N-BK7
Shape: Plano-concave cylinder, Round
Diameter: ϕ12.7 ± 0.1mm
Focal, Radius: F=-25mm, R=-12.89mm
Thickness: Tc=3.0 ± 0.1mm
Surface quality: 60-40 S/D
Flatness: λ/4 @633nm
Centration: 3'

Coating: AR @430--680nm, R<0.5%, AOI=0°

Price on request
Custom Design
Volume Discount

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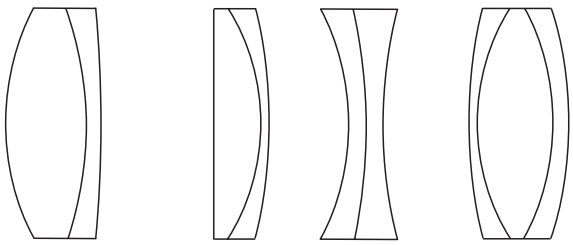
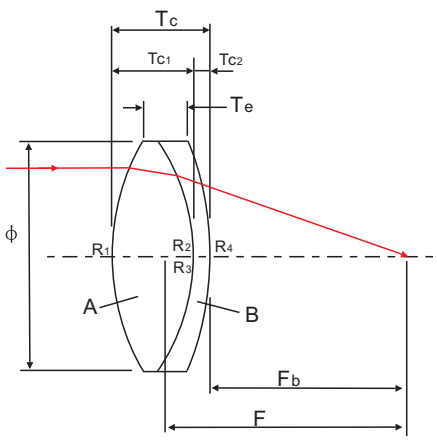
Achromatic Lenses

Achromatic lenses are lenses consisting of two or more elements, which are usually made of crown and flint glass with differing indices of refraction. One element is positive, the other is negative. Distinct wavelengths can be corrected for chromatic aberration.

Achromatic lenses are nearly free from aspherical aberration and coma. Comparing with singlet lenses, achromatic lenses have far superior optical performance.

Customized design
Diameter: ϕ3.0--- ϕ100mm
Cement with glue: NOA61





Specifications

Materials	See table
Diameter tolerance	± 0.1mm
Design wavelength	480.0nm, 546.1nm, 632.8nm
Focal tolerance	± 2%
Surface quality	60-40 S/D
Centration	3 arcmin
Surface flatness	λ /4@632.8nm
Clear aperture	>90%
Bevel	Protective bevel

Choose Anti-reflective Coatings:

- Single layer MgF_2
- Multiple layers AR coating
  R<0.25 % @ Laser line
  R<0.5% @ Broadband Wavelength

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Achromatic Lenses

Item#	ϕ (mm)	F(mm)	Material		R1(mm)	R2(mm) R3	R4(mm)	Tc	Fb(mm)
			A	B					
LA0-6-10	ϕ6.0	10.0	SK9	SF15	6.55	-4.05	-23.23	3.6+0.8	7.54
LA0-6-15	ϕ6.0	15.0	BK7	SF5	8.83	-6.54	-19.77	2.71+1.0	13.06
LA0-6-20	ϕ6.0	20.0	BK7	SF5	12.36	-8.51	-24.38	2.6+1.0	18.29
LA0-6-25	ϕ6.0	25.0	BK7	SF5	15.70	-10.66	-29.99	2.3+1.0	23.45
LA0-6-30	ϕ6.0	30.0	BK7	SF5	18.88	-12.94	-34.68	1.9+1.0	28.69
LA0-8-25	ϕ8.0	25.0	BK7	SF5	15.60	-10.81	-30.48	2.9+1.0	23.12
LA0-8-30	ϕ8.0	30.0	BK7	SF5	18.88	-12.88	-36.22	2.7+1.0	28.27
LA0-12-25	ϕ12.7	25.0	BK7	SF5	15.60	-11.40	-31.05	4.3+1.3	22.25
LA0-12-30	ϕ12.7	30.0	BK7	SF5	18.53	-13.49	-37.84	4.0+1.3	27.36
LA0-12-40	ϕ12.7	40.0	BK7	SF5	25.23	-17.54	-48.75	3.4+1.3	37.77
LA0-12-50	ϕ12.7	50.0	BK7	SF5	31.26	-21.93	-62.37	3.1+1.3	47.99
LA0-12-75	ϕ12.7	75.0	BK7	SF5	46.77	-32.96	-94.62	2.6+1.3	73.23
LA0-18-40	ϕ18.0	40.0	BK7	SF5	24.27	-18.35	-53.09	5.4+1.5	36.51
LA0-18-50	ϕ18.0	50.0	BK7	SF5	31.69	-22.00	-60.57	4.8+1.5	46.98
LA0-18-60	ϕ18.0	60.0	BK7	SF5	37.84	-26.49	-73.79	4.1+1.5	57.30
LA0-18-80	ϕ18.0	80.0	BK7	SF5	49.55	-36.81	-165.58	3.4+1.5	77.41
LA0-25-50	ϕ25.4	50.0	BaF53	SF4	34.59	-24.21	-179.06	7.8+2.0	44.52
LA0-25-60	ϕ25.4	60.0	BK7	SF5	37.33	-27.16	-75.86	7.0+2.0	55.56
LA0-25-80	ϕ25.4	80.0	K7	SF1	49.09	-37.93	-95.94	5.5+2.0	76.46
LA0-25-100	ϕ25.4	100.0	BK3	SF5	60.67	-44.67	-122.18	4.5+2.0	97.05
LA0-25-120	ϕ25.4	120.0	BK7	SF5	73.28	-54.33	-159.96	4.2+2.0	117.10
LA0-30-100	ϕ30.0	100.0	BK3	SF5	59.02	-45.29	-127.64	6.8+2.5	95.26
LA0-30-140	ϕ30.0	140.0	BK3	SF5	84.92	-62.23	170.61	4.9+2.5	136.60

How to order Achromatic Lenses? Example:

	Element-A:		Element -B
Materials:	N-BK7		N-SF5
Diameter:	ϕ 25.4 +0/-0.1		ϕ 25.4 +0/-0.1
Thickness:	Tc_1=4.0		Tc_2=1.0+/-0.1
Radius:	R_1=73.28	$R_2(R_3)$=-54.33	R_4=-159.96
Surface quality:	60-40s/d		
Flatness:	λ /4 @633nm		
Centration:	3'		

Coating: AR @430--680nm, R<0.5%, AOI=0°

Price on request

Custom Design

Volume Discount

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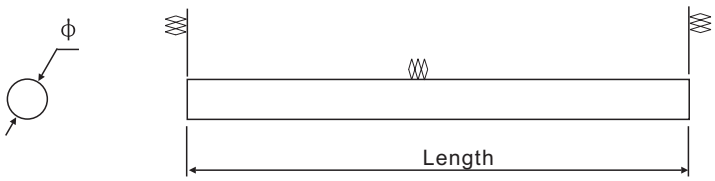
Rods
(Light Pipe)

General Specifications

Material	N-BK7
Diameter tolerance	± 0.1mm
Surface quality	80-50 S/D
Cylindricity	3 arcmin
Surface flatness	λ /2@632.8nm
Clear aperture	>90%

Diameter: available from ϕ 1.0mm to ϕ 25mm

All surfaces (end-faces and cylinder) are polished



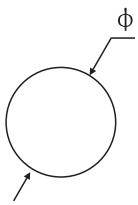
Balls

General Specifications

Material	N-BK7
Diameter tolerance	± 0.1mm
Surface quality	80-50 S/D
Circularity	minimum 1 μ m
Surface flatness	λ /2@632.8nm
Clear aperture	>90%

Diameter: available from ϕ 1.0mm to ϕ 50mm

All surfaces polished



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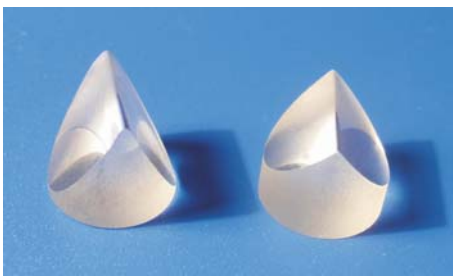
Powell Lenses

Powell lenses is used to generate straight line. With aspherical curvature on its apex, the output line from powell lenses is even distribution of energy. For comparision, Cylindrical lenses generate gaussian beam profiles with hot-spot centre points and fading edges.
The uniformity of output line is also related with incident wavelength, beam size, divergence, and working distance. To get even distribution of energy, The apex curvature need to be slightly modified and optimized for particular laser beam.

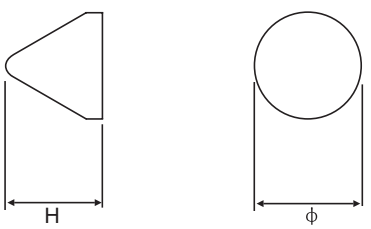
General Specifications

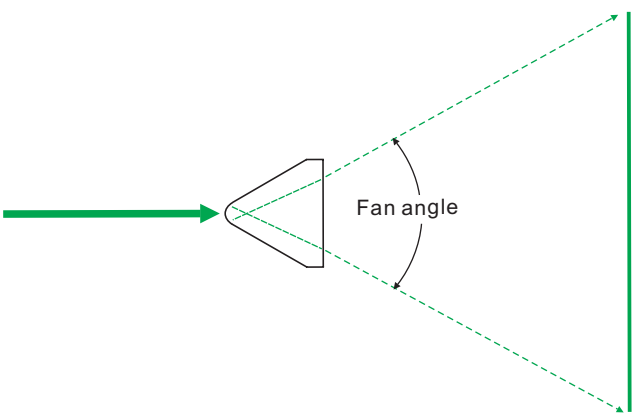
Material	N-BK7
Diameter tolerance	± 0.1mm
Surface quality	80-50 S/D
Cylindricity	3 arcmin
Surface flatness	λ /2@632.8nm
Clear aperture	>90%



Typical Sizes

Item #	Material	Diameter	Height	Fan Angle
PL-20	BK7	ϕ 9.0	7.0-9.0	20°
PL-30	BK7	ϕ 9.0	7.0-9.0	30°
PL-45	BK7	ϕ 9.0	7.0-9.0	45°
PL-60	BK7	ϕ 9.0	7.0-9.0	60°
PL-75	BK7	ϕ 9.0	7.0-9.0	75°
PL-90	SF6	ϕ 9.0	7.0-9.0	90°





Price on request

Custom Design

Volume Discount