

Cylindrical Lenses

Cylindrical lenses are used to create lines or for beam expansion in one direction. Their optical properties and aberrations correspond to those of spherical optics.

LASER COMPONENTS offers plano-concave and plano-convex cylindrical lenses in rectangular, square, and round form. Rectangular and square cylindrical lenses possess a clearly defined optical axis. Round cylindrical lenses are a bit more difficult to adjust, but can be integrated into standard lens mounts.

The product range of manufactured lenses comprises the following radii:

- Plano-convex lenses: rcx : 1 mm to ∞
- Plano-concave lenses: rcc : -3 mm to ∞

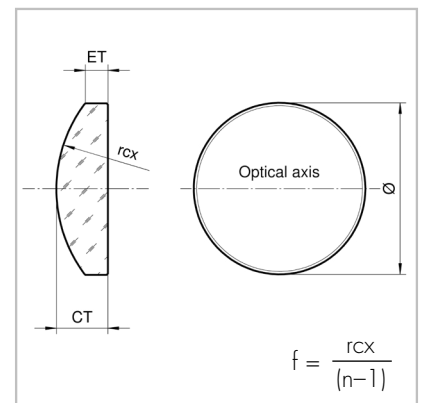
In the table, you will find focal length values for commonly used wavelengths.



Circular Plano-convex Cylindrical Lenses

Similar to rectangular plano-convex cylindrical lenses, round plano-convex cylindrical lenses are used in the creation of lines.

However, unlike rectangular substrates, these lenses have the advantage that they can be used with standard lens mounts.



Nomenclature

CLCX

Product Code
(Circular Plano Convex
Cylindrical Lens)

-25.4

Diameter
in mm

/25.4

Convex Radius of Curvature
in mm

C

Material Code
UV: Fused Silica
C: BK7

Typical Specifications

Material	BK7, fused silica
Diameter tolerance	+ 0.00 mm; - 0.20 mm
Thickness tolerance	± 0.20 mm
Radii tolerance	± 0.5 % for $rcx < 0.5$ m ± 1% for 0.5 m < $rcx < 2$ m For radii larger than 2 m please check with our sales department.
Clear aperture	85 % of diameter
Surface figure Curved surface	3/-(0.5/-) according to ISO 10110 $\lambda/4$ according to MIL-O-1380A
Plane surface	3/0.2(0.2/-) according to ISO 10110 $\lambda/10$ according to MIL-O-1380A
Surface quality	5/4 x 0.025 for 1.0" substrates according to ISO 10110 10-5 according to MIL-O-1380A
Centering error	4/3' according to ISO 10110
Protective chamfer	0.2 – 0.4 mm x 45°

BK7 Circular Plano Convex Cylindrical Lenses

Part No.	Nominal f [mm]	Diameter Ø [mm]	f [mm] (488 nm) n = 1.5222	f [mm] (532 nm) n = 1.51947	f [mm] (633 nm) n = 1.5150	f [mm] (1064 nm) n = 1.50664	Curvature rcx [mm]	Center Thickness CT [mm]
CLCX-12.7/25.8C	50	12.7	49.3	49.6	50.0	50.8	25.8	4.0
CLCX-25.4/25.8C	50	25.4	49.3	49.6	50.0	50.8	25.8	5.0
CLCX-25.4/51.5C	100	25.4	98.6	99.1	100.0	101.7	51.5	5.0
CLCX-50.8/51.5C	100	50.8	98.6	99.1	100.0	101.7	51.5	5.9
CLCX-25.4/103.1C	200	25.4	197.4	198.5	200.2	203.5	103.1	5.0
CLCX-12.7/128.8C	250	12.7	246.6	247.9	250.1	254.2	128.8	4.0
CLCX-50.8/154.5C	300	50.8	295.8	297.4	300.0	305.0	154.5	5.9
CLCX-12.7/515.1C	1000	12.7	986.3	991.6	1000.0	1016.7	515.1	4.0
CLCX-25.4/515.1C	1000	25.4	986.3	991.6	1000.0	1016.7	515.1	5.0

Other sizes are available upon request.

Fused Silica Circular Plano Convex Cylindrical Lenses

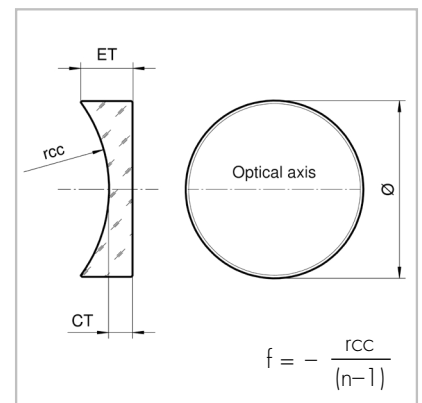
Part No.	Nominal f [mm]	Diameter Ø [mm]	f [mm] (248 nm) n = 1.50855	f [mm] (308 nm) n = 1.4856	f [mm] (355 nm) n = 1.47607	f [mm] (1064 nm) n = 1.44963	Curvature rcx [mm]	Center Thickness CT [mm]
CLCX-25.4/25.4UV	50	25.4	50.0	52.3	53.4	56.5	25.4	5.0
CLCX-12.7/38.1UV	75	12.7	75.0	78.5	80.1	84.8	38.1	4.0
CLCX-12.7/50.9UV	100	12.7	100.0	104.7	106.8	113.1	50.9	4.0
CLCX-25.4/50.9UV	100	25.4	100.0	104.7	106.8	113.1	50.9	5.0
CLCX-50.8/50.9UV	100	50.8	100.0	104.7	106.8	113.1	50.9	5.9
CLCX-12.7/76.3UV	150	12.7	150.0	157.1	160.2	169.7	76.3	4.0
CLCX-25.4/76.3UV	150	25.4	150.0	157.1	160.2	169.7	76.3	5.0
CLCX-50.8/76.3UV	150	50.8	150.0	157.1	160.2	169.7	76.3	5.9
CLCX-50.8/101.7UV	200	50.8	200.0	209.4	213.6	226.2	101.7	5.9
CLCX-12.7/127.1UV	250	12.7	249.9	261.7	267.0	282.7	127.1	4.0
CLCX-12.7/152.6UV	300	12.7	300.1	314.2	320.5	339.4	152.6	4.0
CLCX-25.4/254.3UV	500	25.4	500.0	523.6	534.2	565.6	254.3	5.0
CLCX-50.8/508.5UV	1000	50.8	999.9	1047.1	1068.1	1130.9	508.5	5.9

Other sizes are available upon request.

Circular Plano-concave Cylindrical Lenses

Similar to rectangular plano-concave cylindrical lenses, round plano-concave cylindrical lenses are used in beam expansion.

However, unlike rectangular substrates, these lenses have the advantage that they can be used with standard lens mounts.



Nomenclature

CLCC	-25.4	/25.4	C
Product Code (Circular Plano Concave Cylindrical Lens)	Diameter in mm	Concave Radius of Curvature in mm	Material Code UV: Fused Silica C: BK7

Typical Specifications

Material	BK7, fused silica
Diameter tolerance	+ 0.00 mm; - 0.20 mm
Thickness tolerance	± 0.20 mm
Radii tolerance	± 0.5 % for rcc < 0.5 m ± 1% for 0.5 m < rcc < 2 m For radii larger than 2 m please check with our sales department.
Clear aperture	85 % of diameter
Surface figure Curved surface	3/-(0.5/-) according to ISO 10110 λ/4 according to MIL-O-1380A
Plane surface	3/0.2(0.2/-) according to ISO 10110 λ/10 according to MIL-O-1380A
Surface quality	5/4 x 0.025 for 1.0" substrates according to ISO 10110 10-5 according to MIL-O-1380A
Centering error	4/3' according to ISO 10110
Protective chamfer	0.2 – 0.4 mm x 45°

BK7 Circular Plano Concave Cylindrical Lenses

Part No.	Nominal f [mm]	Diameter Ø [mm]	f [mm] (488 nm) n = 1.5222	f [mm] (532 nm) n = 1.51947	f [mm] (633 nm) n = 1.5150	f [mm] (1064 nm) n = 1.50664	Curvature rcc [mm]	Center Thickness CT [mm]
CLCC-25.4/25.0C	-50	25.4	-47.9	-48.1	-48.5	-49.3	25.0	2.9
CLCC-12.7/50.0C	-100	12.7	-95.7	-96.3	-97.1	-98.7	50.0	4.0
CLCC-12.7/200.0C	-400	12.7	-383.0	-385.0	-388.3	-394.8	200.0	4.0
CLCC-25.4/400.0C	-800	25.4	-765.9	-770.0	-776.6	-789.5	400.0	5.0
CLCC-25.4/500.0C	-1000	25.4	-957.4	-962.5	-970.7	-986.9	500.0	5.0

Other sizes are available upon request.

Fused Silica Circular Plano Concave Cylindrical Lenses

Part No.	Nominal f [mm]	Diameter Ø [mm]	f [mm] (248 nm) n = 1.50855	f [mm] (308 nm) n = 1.4856	f [mm] (355 nm) n = 1.47607	f [mm] (1064 nm) n = 1.44963	Curvature rcc [mm]	Center Thickness CT [mm]
CLCC-25.4/50.0UV	-100	25.4	-98.3	-103.0	-105.0	-111.2	50.0	4.0
CLCC-12.7/75.0UV	-150	12.7	-147.5	-154.4	-157.5	-166.8	75.0	4.0
CLCC-12.7/100.0UV	-200	12.7	-196.6	-205.9	-210.1	-222.4	100.0	4.0
CLCC-25.4/100.0UV	-200	25.4	-196.6	-205.9	-210.1	-222.4	100.0	5.0
CLCC-12.7/150.0UV	-300	12.7	-295.0	-308.9	-315.1	-333.6	150.0	4.0
CLCC-25.4/150.0UV	-300	25.4	-295.0	-308.9	-315.1	-333.6	150.0	5.0
CLCC-12.7/200.0UV	-400	12.7	-393.3	-411.8	-420.1	-444.8	200.0	4.0
CLCC-25.4/200.0UV	-400	25.4	-393.3	-411.8	-420.1	-444.8	200.0	5.0
CLCC-12.7/250.0UV	-500	12.7	-491.6	-514.8	-525.1	-556.0	250.0	4.0
CLCC-12.7/300.0UV	-600	12.7	-589.9	-617.7	-630.2	-667.2	300.0	4.0
CLCC-25.4/500.0UV	-1000	25.5	-983.2	-1029.6	-1050.3	-1112.0	500.0	5.0
CLCC-12.7-1000.0UV	-2000	12.7	-1966.4	-2059.1	-2100.5	-2224.1	1000.0	4.0

Other sizes are available upon request.

Germany & Other Countries

Laser Components Germany GmbH
Tel: +49 8142 2864 - 0
Fax: +49 8142 2864 - 11
info@lasercomponents.com
www.lasercomponents.com

France

Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom

Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries

Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA

Laser Components USA, Inc.
Tel: +1 603 821 - 7040
Fax: +1 603 821 - 7041
info@laser-components.com
www.laser-components.com