

## 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:

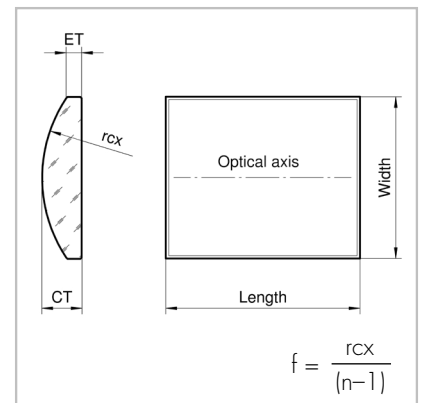
- Plano-convex lenses:  $rcx$ : 1 mm to  $\infty$
- Plano-concave lenses:  $rcc$ :  $-3$  mm to  $\infty$



### Rectangular Plano-convex Cylindrical Lenses

The main application of rectangular plano-convex cylindrical lenses is the creation of focal lines or for beam expansion in one direction.

Our standard defines the curvature over the width. For deviations please define.



### Nomenclature

<b>RCX</b>	<b>40.0</b>	<b>-25.4</b>	<b>-25.4</b>	<b>C</b>
Product code (Rectangular Plano Convex Cylindrical Lens)	Length in mm	Width in mm	Convex 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 $rcx < 0.5$ m ± 1% for $0.5 \text{ m} < rcx < 2$ 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°

## Fused Silica Rectangular Plano Convex Cylindrical Lenses

Part No.	Nominal f [mm]	Length [mm]	Width [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]
RCX25.4-25.4-25.4UV	53	25.4	25.4	50.0	52.4	53.4	56.6	25.4	5.0
RCX12.7-12.7-38.1UV	80	12.7	12.7	75.0	78.5	80.1	84.8	38.1	4.0
RCX25.4-25.4-38.1UV	80	25.4	25.4	75.0	78.5	80.1	84.8	38.1	5.0
RCX40-25.4-50.9UV	107	40.0	25.4	100.1	104.8	106.9	113.2	50.9	5.0
RCX40-25.4-76.3UV	160	40.0	25.4	150.0	157.1	160.3	169.7	76.3	5.0
RCX40-25.4-101.7UV	214	40.0	25.4	200.0	209.4	213.6	226.2	101.7	5.0
RCX25.4-25.4-127.1UV	267	25.4	25.4	250.0	261.8	267.1	282.8	127.1	5.0
RCX40-25.4-152.6UV	321	40.0	25.4	300.1	314.2	320.5	339.4	152.6	5.0
RCX40-25.4-203.4UV	427	40.0	25.4	400.0	418.8	427.2	452.4	203.4	5.0
RCX40-25.4-254.3UV	534	40.0	25.4	500.0	523.6	534.2	565.6	254.3	5.0
RCX40-40-508.6UV	1068	40.0	40.0	1000.0	1047.2	1068.2	1131.0	508.6	5.9

Most items are available from stock. Other sizes are available upon request.

## BK7 Rectangular Plano Convex Cylindrical Lenses

Part No.	Nominal f [mm]	Length [mm]	Width [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]
RCX12.7-12.7-12.9C	25	12.7	12.7	24.6	24.8	25.0	25.4	12.9	4.0
RCX12.7-12.7-25.8C	50	12.7	12.7	49.3	49.6	50.0	50.8	25.8	4.0
RCX12.7-12.7-38.6C	75	12.7	12.7	74.0	74.3	75.0	76.2	38.6	4.0
RCX25.4-25.4-51.5C	100	25.4	25.4	98.6	99.1	100.0	101.7	51.5	5.0
RCX50.8-50.8-51.5C	100	50.8	50.8	98.6	99.1	100.0	101.7	51.5	5.9
RCX40-25.4-50.9C	99	40.0	25.4	97.5	98.0	98.8	100.5	50.9	5.0
RCX25.4-25.4-77.4C	150	25.4	25.4	148.2	149.0	150.2	152.8	77.4	5.0
RCX50.8-50.8-77.4C	150	50.8	50.8	148.2	149.0	150.2	152.8	77.4	5.9
RCX12.7-12.7-103.1C	200	12.7	12.7	197.4	198.5	200.2	203.5	103.1	4.0
RCX25.4-25.4-103.1C	200	25.4	25.4	197.4	198.5	200.2	203.5	103.1	5.0
RCX25.4-25.4-128.8C	250	25.4	25.4	246.6	247.9	250.1	254.2	128.8	5.0
RCX50.8-50.8-154.5C	300	50.8	50.8	295.8	297.4	300.0	305.0	154.5	5.9
RCX12.7-12.7-257.5C	500	12.7	12.7	493.1	495.7	499.9	508.3	257.5	4.0
RCX25.4-25.4-257.5C	500	25.4	25.4	493.1	495.7	499.9	508.3	257.5	5.0
RCX25.4-25.4-515.1C	1000	25.4	25.4	986.3	991.6	1000.0	1016.7	515.1	5.0

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**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**

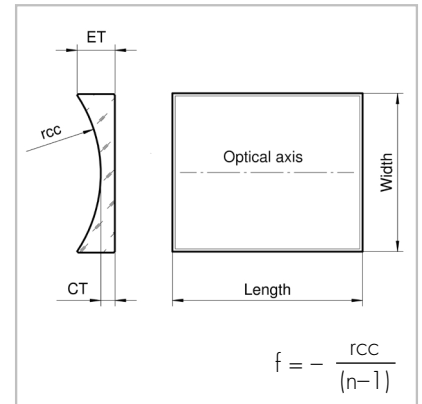
Laser Components USA, Inc.  
Tel: +1 603 821 - 7040  
Fax: +1 603 821 - 7041  
info@laser-components.com  
www.laser-components.com

## Rectangular Plano-concave Cylindrical Lenses

The main application of rectangular plano-concave cylindrical lenses is the expansion of beams in one direction.

In turn, when used as mirrors, lines can be created with these lenses.

Our standard defines the curvature over the width. For deviations please define.



## Nomenclature

<b>RCC</b>	<b>40.0</b>	<b>-25.4</b>	<b>-25.4</b>	<b>C</b>
Product code (Rectangular Plano Concave Cylindrical Lens)	Length in mm	Width in mm	Concave radius of curvature in mm	Material code UV: fused silica C: BK7

## 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°

Other sizes are available upon request.

## BK7 Rectangular Plano Concave Cylindrical Lenses

Part No.	Nominal f [mm]	Length [mm]	Width [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]
RCC40-25.4-19.1C	-37	40.0	25.4	-36.6	-36.8	-37.1	-37.7	19.1	5.0
RCC12.7-12.7-25.0C	-50	12.7	12.7	-47.9	-48.1	-48.5	-49.3	25.0	4.0
RCC40-25.4-37.0C	-75	40.0	25.4	-70.8	-71.2	-71.8	-73.0	37.0	3.0
RCC40-25.4-50.9C	-100	40.0	25.4	-97.5	-98.0	-98.8	-100.5	50.9	5.0
RCC40-25.4-103.0C	-200	40.0	25.4	-197.2	-198.3	-200.0	-203.3	103.0	3.0
RCC40-25.4-127.1C	-250	40.0	25.4	-243.4	-244.7	-246.8	-250.9	127.1	5.0
RCC40-25.4-152.6C	-300	40.0	25.4	-292.2	-293.8	-296.3	-301.2	152.6	5.0
RCC40-25.4-203.4C	-400	40.0	25.4	-389.5	-391.6	-394.9	-401.5	203.4	5.0
RCC40-25.4-508.6C	-1000	40.0	25.4	-973.9	-979.1	-987.4	-1003.9	508.6	5.0

Other sizes are available upon request.

## Fused Silica Rectangular Plano Concave Cylindrical Lenses

Part No.	Nominal f [mm]	Length [mm]	Width [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]
RCC12.7-6.4-6.5UV	-14	12.7	6.4	-12.8	-13.4	-13.7	-14.5	6.5	4.0
RCC40-25.4-19.1UV	-40	40.0	25.4	-37.6	-39.3	-40.1	-42.5	19.1	5.0
RCC40-25.4-25.4UV	-50	40.0	25.4	-49.9	-52.3	-53.4	-56.5	25.4	5.0
RCC12.7-12.7-50.0UV	-100	12.7	12.7	-98.3	-103.0	-105.0	-111.2	50.0	4.0
RCC12.7-12.7-75.0UV	-160	12.7	12.7	-147.5	-154.4	-157.5	-166.8	75.0	4.0
RCC50.8-50.8-100.0UV	-200	50.8	50.8	-196.6	-205.9	-210.1	-222.4	100.0	5.9
RCC50.8-50.8-150.0UV	-315	50.8	50.8	-295.0	-308.9	-315.1	-333.6	150.0	5.9
RCC25.4-25.4-300.0UV	-600	25.4	25.4	-589.9	-617.7	-630.2	-667.2	300.0	5.0
RCC12.7-12.7-500.0UV	-1000	12.7	12.7	-983.2	-1029.6	-1050.3	-1112.0	500.0	4.0
RCC40-25.4-508.6UV	-1000	40.0	25.4	-1000.1	-1047.3	-1068.3	-1131.2	508.6	5.0
RCC25.4-25.4-1000UV	-2000	25.4	25.4	-1966.4	-2059.1	-2100.5	-2224.1	1000.0	5.0

Other sizes are available upon request.