

# Plankonvex-Linsen und Plankonkav-Linsen

In der Lasertechnik werden häufig die kostengünstigen Plankonvex- und Plankonkav-Linsen eingesetzt. Im Vergleich zu Linsen mit zwei gekrümmten Flächen haben sie bei gleicher Brennweite eine höhere sphärische Aberration. Beim Einsatz in der Lasertechnik kann der Abbildungsfehler aufgrund des geringen Strahldurchmessers bei den meisten Anwendungen vernachlässigt werden, sodass Plankonkav- und Plankonvex-Linsen eine hinreichend gute Qualität aufweisen.

In der Tabelle finden Sie die Brennweiten-Werte für häufig verwendete Wellenlängen.

# Plano-convex Lenses and Plano-concave Lenses

The inexpensive plano-convex and plano-concave lenses are often used in laser applications. Compared to lenses with two curved surfaces, lenses with the same focal length have a higher spherical aberration. When used in laser applications, experience has shown that aberrations can be neglected on account of the small beam diameter. Therefore, the quality of plano-concave and plano-convex lenses is adequate.

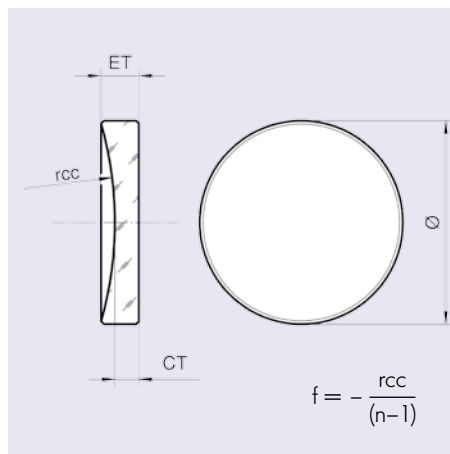
In the table, you will find focal length values for commonly used wavelengths.

## Plankonkav-Linsen

Bei Plankonkav-Linsen handelt es sich um so genannte Negativlinsen. In der Lasertechnik werden sie hauptsächlich zur Strahlaufweitung eingesetzt.

## Plano-concave Lenses

Plano-concave lenses are so-called negative lenses. In laser technology, they are primarily used for beam expansion.



SPECS

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



## Nomenklatur – Nomenclature

<b>PLCC</b>	<b>-25.4</b>	<b>/51.5</b>	<b>C</b>
Product code (Plano <b>Con</b> cave Lens)	Diameter in mm	Concave radius of curvature in mm	Material code UV: fused silica C: BK7

## Plankonkav-Linsen aus Quarzglas – Fused Silica Plano Concave 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]	Edge Thickness ET [mm]
PLCC-10.0/10.3UV	-20	10.0	-20.3	-21.2	-21.6	-22.9	10.3	2.0	3.3
PLCC-12.7/11.2UV	-22	12.7	-22.0	-23.1	-23.5	-24.9	11.2	2.1	4.1
<b>PLCC-10.0/12.9UV</b>	<b>-25</b>	<b>10.0</b>	<b>-25.4</b>	<b>-26.6</b>	<b>-27.1</b>	<b>-28.7</b>	<b>12.9</b>	<b>2.0</b>	<b>3.0</b>
<b>PLCC-25.4/25.8UV</b>	<b>-50</b>	<b>25.4</b>	<b>-50.7</b>	<b>-53.1</b>	<b>-54.2</b>	<b>-57.4</b>	<b>25.8</b>	<b>2.0</b>	<b>5.3</b>
PLCC-25.4/30.6UV	-60	25.4	-60.2	-63.0	-64.3	-68.1	30.6	2.0	4.8
<b>PLCC-25.4/38.6UV</b>	<b>-75</b>	<b>25.4</b>	<b>-75.9</b>	<b>-79.5</b>	<b>-81.1</b>	<b>-85.8</b>	<b>38.6</b>	<b>2.0</b>	<b>4.1</b>
PLCC-25.4/40.6UV	-80	25.4	-79.8	-83.6	-85.3	-90.3	40.6	2.0	4.0
<b>PLCC-25.4/51.5UV</b>	<b>-100</b>	<b>25.4</b>	<b>-101.3</b>	<b>-106.0</b>	<b>-108.2</b>	<b>-114.5</b>	<b>51.5</b>	<b>2.0</b>	<b>3.6</b>
<b>PLCC-25.4/64.4UV</b>	<b>-125</b>	<b>25.4</b>	<b>-126.6</b>	<b>-132.6</b>	<b>-135.3</b>	<b>-143.2</b>	<b>64.4</b>	<b>2.0</b>	<b>3.3</b>
<b>PLCC-25.4/77.3UV</b>	<b>-150</b>	<b>25.4</b>	<b>-152.0</b>	<b>-159.2</b>	<b>-162.4</b>	<b>-171.9</b>	<b>77.3</b>	<b>2.3</b>	<b>3.4</b>
<b>PLCC-25.4/103.0UV</b>	<b>-200</b>	<b>25.4</b>	<b>-202.5</b>	<b>-212.1</b>	<b>-216.4</b>	<b>-229.1</b>	<b>103.0</b>	<b>2.3</b>	<b>3.1</b>
<b>PLCC-25.4/128.8UV</b>	<b>-250</b>	<b>25.4</b>	<b>-253.3</b>	<b>-265.2</b>	<b>-270.5</b>	<b>-286.5</b>	<b>128.8</b>	<b>2.0</b>	<b>2.6</b>
<b>PLCC-25.4/515.1UV</b>	<b>-1000</b>	<b>25.4</b>	<b>-1012.9</b>	<b>-1060.7</b>	<b>-1082.0</b>	<b>-1145.6</b>	<b>515.1</b>	<b>2.0</b>	<b>2.2</b>

**Bold type indicates items available from stock. Other sizes and materials are available upon request.**



Plankonkav-Linsen aus BK7 – BK7 Plano Concave 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 = 1.515	f [mm] (1064 nm) n = 1.50664	Curvature rcc [mm]	Center Thickness CT [mm]	Edge Thickness ET [mm]
PLCC-10.0/10.3C	-20	10.0	-19.7	-19.8	-20.0	-20.3	10.3	2.0	3.3
PLCC-12.7/10.3C	-20	12.7	-19.7	-19.8	-20.0	-20.3	10.3	1.1	3.3
PLCC-10.0/12.9C	-25	10.0	-24.7	-24.8	-25.0	-25.5	12.9	2.0	3.0
<b>PLCC-12.7/12.9C</b>	<b>-25</b>	<b>12.7</b>	<b>-24.7</b>	<b>-24.8</b>	<b>-25.0</b>	<b>-25.5</b>	<b>12.9</b>	<b>1.6</b>	<b>3.3</b>
<b>PLCC-12.7/15.5C</b>	<b>-30</b>	<b>12.7</b>	<b>-29.7</b>	<b>-29.8</b>	<b>-30.1</b>	<b>-30.6</b>	<b>15.5</b>	<b>1.9</b>	<b>3.3</b>
PLCC-25.4/20.6C	-40	25.4	-39.4	-39.7	-40.0	-40.7	20.6	2.0	6.4
PLCC-10.0/25.8C	-50	10.0	-49.4	-49.7	-50.1	-50.9	25.8	2.0	2.5
<b>PLCC-12.7/25.8C</b>	<b>-50</b>	<b>12.7</b>	<b>-49.4</b>	<b>-49.7</b>	<b>-50.1</b>	<b>-50.9</b>	<b>25.8</b>	<b>2.1</b>	<b>3.0</b>
<b>PLCC-25.4/25.8C</b>	<b>-50</b>	<b>25.4</b>	<b>-49.4</b>	<b>-49.7</b>	<b>-50.1</b>	<b>-50.9</b>	<b>25.8</b>	<b>2.0</b>	<b>5.3</b>
PLCC-12.7/30.9C	-60	12.7	-59.2	-59.5	-60.0	-61.0	30.9	2.0	2.7
<b>PLCC-25.4/38.6C</b>	<b>-75</b>	<b>25.4</b>	<b>-73.9</b>	<b>-74.3</b>	<b>-74.9</b>	<b>-76.2</b>	<b>38.6</b>	<b>2.0</b>	<b>4.1</b>
PLCC-10.0/51.5C	-100	10.0	-98.6	-99.1	-100.0	-101.7	51.5	2.0	2.2
<b>PLCC-25.4/51.5C</b>	<b>-100</b>	<b>25.4</b>	<b>-98.6</b>	<b>-99.1</b>	<b>-100.0</b>	<b>-101.7</b>	<b>51.5</b>	<b>2.0</b>	<b>3.6</b>
<b>PLCC-25.4/64.4C</b>	<b>-125</b>	<b>25.4</b>	<b>-123.3</b>	<b>-124.0</b>	<b>-125.0</b>	<b>-127.1</b>	<b>64.4</b>	<b>2.0</b>	<b>3.3</b>
<b>PLCC-25.4/77.3C</b>	<b>-150</b>	<b>25.4</b>	<b>-148.0</b>	<b>-148.8</b>	<b>-150.1</b>	<b>-152.6</b>	<b>77.3</b>	<b>3.0</b>	<b>4.1</b>
<b>PLCC-25.4/103.0C</b>	<b>-200</b>	<b>25.4</b>	<b>-197.2</b>	<b>-198.3</b>	<b>-200.0</b>	<b>-203.3</b>	<b>103.0</b>	<b>2.3</b>	<b>3.1</b>
PLCC-50.8/103.0C	-200	50.8	-197.2	-198.3	-200.0	-203.3	103.0	2.3	5.5
<b>PLCC-25.4/128.8C</b>	<b>-250</b>	<b>25.4</b>	<b>-246.6</b>	<b>-247.9</b>	<b>-250.1</b>	<b>-254.2</b>	<b>128.8</b>	<b>4.0</b>	<b>4.6</b>
PLCC-25.4/154.5C	-300	25.4	-295.8	-297.4	-300.0	-305.0	154.5	3.0	3.5
PLCC-25.4/206.0C	-400	25.4	-394.5	-396.6	-399.9	-406.6	206.0	2.6	3.0
<b>PLCC-25.4/257.5C</b>	<b>-500</b>	<b>25.4</b>	<b>-493.1</b>	<b>-495.7</b>	<b>-499.9</b>	<b>-508.3</b>	<b>257.5</b>	<b>3.7</b>	<b>4.0</b>
PLCC-25.4/309.1C	-600	25.4	-591.9	-595.0	-600.1	-610.1	309.1	2.0	2.3
<b>PLCC-25.4/360.6C</b>	<b>-700</b>	<b>25.4</b>	<b>-690.5</b>	<b>-694.2</b>	<b>-700.1</b>	<b>-711.8</b>	<b>360.6</b>	<b>2.1</b>	<b>2.3</b>
PLCC-25.4/386.3C	-750	25.4	-739.7	-743.6	-750.0	-762.5	386.3	2.0	2.2
<b>PLCC-25.4/412.1C</b>	<b>-800</b>	<b>25.4</b>	<b>-789.1</b>	<b>-793.3</b>	<b>-800.1</b>	<b>-813.4</b>	<b>412.1</b>	<b>2.0</b>	<b>2.2</b>

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