Data sheet TPX-D50-f35

Plano-convex TPX lens with diameter 50 mm and focal length 35 mm for THz application

Unmounted lens TPX-D50-f35-0

Mounted lens TPX-D50-f35-t12.7

Description
The TPX-D50-f35 is a plano-convex TPX (Polymethylpentene) lens for THz waves. It can be used to focus a collimated THz beam.

Lens parameters:
- material: TPX (Polymethylpentene)
- refractive index \( n \): 1.45 @ 1 THz
- absorption coeff. \( \alpha \): 0.3 cm\(^{-1}\)
- focal length: 35 mm (distance flat surface – focus)
- outer lens diameter: 50 mm
- free aperture diameter: 47 mm
- maximum lens thickness: 18 mm
- edge lens thickness: 3 mm
- aperture angle \( \alpha \): 32.5 °
- numerical aperture NA: 0.54

Airy disc diameter
\( \nu = 300 \text{ GHz} \):
0.95 mm
\( \nu = 1 \text{ THz} \):
0.284 mm
\( \nu = 3 \text{ THz} \):
95 µm

Lens tube
- outer diameter: 55.9 mm
- length: 12.7 mm (¼") or 25.4 mm (1")

The lens may have a hole in the middle with a diameter smaller than one millimetre and small inclusions due to the imperfections of the raw TPX material. But these imperfections have no influence on the performance in the THz frequency range.

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Order information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPX-D50-f35-0</td>
<td>Unmounted TPX lens with diameter D = 50 mm and focal length f = 35 mm</td>
<td></td>
</tr>
<tr>
<td>TPX-D50-f35-t12.7</td>
<td>Mounted TPX lens with diameter D = 50 mm and focal length f = 35 mm, tube length 12.7 mm</td>
<td></td>
</tr>
<tr>
<td>TPX-D50-f35-t25.4</td>
<td>Mounted TPX lens with diameter D = 50 mm and focal length f = 35 mm, tube length 25.4 mm</td>
<td></td>
</tr>
</tbody>
</table>