Data sheet TPX-D25.4-f150

Plano-convex TPX lens with diameter 25.4 mm and focal length 150 mm for THz application

Unmounted lens TPX-D25.4-f150-0  Mounted in a tube TPX-D25.4-f150-t12.7

Description
The TPX-D25.4-f150 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: 150 mm (distance flat surface – focus)
- outer lens diameter: 25.4 mm
- free aperture diameter: 22.4 mm
- maximum lens thickness: 6.0 mm
- edge lens thickness: 5.1 mm
- aperture angle \( \alpha \): 4.2°
- numerical aperture NA: 0.072

Airy disc diameter

<table>
<thead>
<tr>
<th>( \nu )</th>
<th>300 GHz</th>
<th>1 THz</th>
<th>3 THz</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta ) mm</td>
<td>8.5</td>
<td>2.6</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Lens tube
- outer diameter: 30.5 mm
- length: 12.7 mm (½”) or 25.4 mm (1”)

www.batop.de
Order information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Photo</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPX-D25.4-f150-0</td>
<td>Unmounted TPX lens with diameter $D = 25.4$ mm and focal length $f = 150$ mm</td>
<td></td>
</tr>
<tr>
<td>TPX-D25.4-f150-t12.7</td>
<td>Mounted TPX lens with diameter $D = 25.4$ mm and focal length $f = 150$ mm, tube length 12.7 mm</td>
<td></td>
</tr>
<tr>
<td>TPX-D25.4-f150-t25.4</td>
<td>Mounted TPX lens with diameter $D = 25.4$ mm and focal length $f = 150$ mm, tube length 25.4 mm</td>
<td></td>
</tr>
</tbody>
</table>