

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.

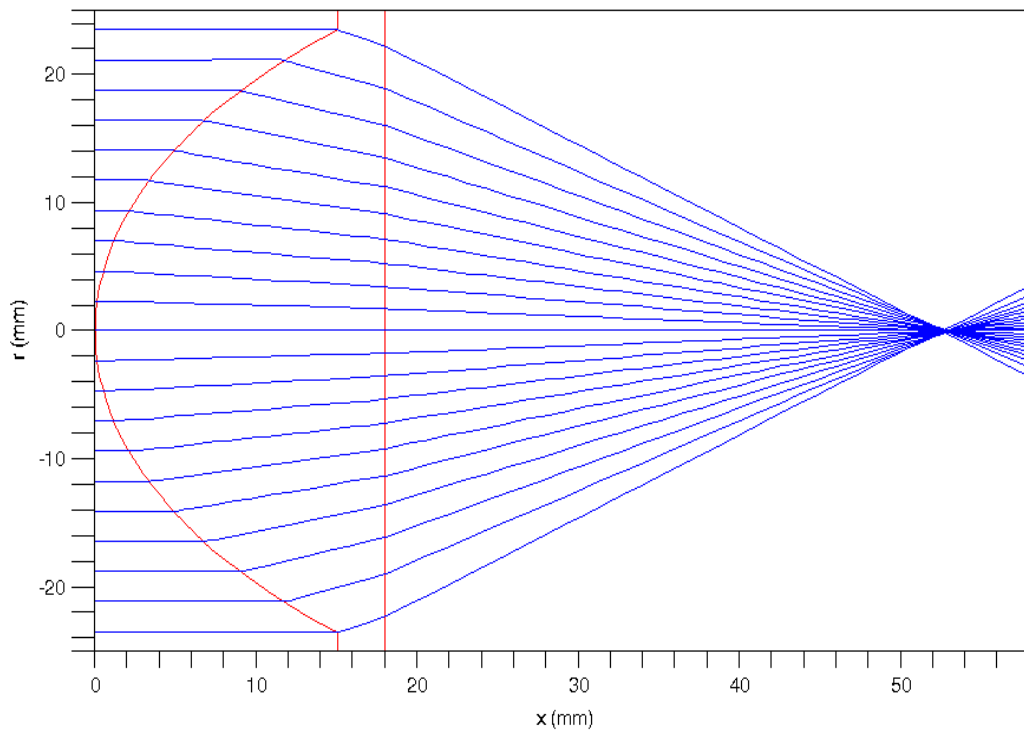
Lens parameters:	material	TPX (Polymethylpentene)
	refractive index n	1.45 @ 1 THz
	absorption coeff. α	0.3 cm^{-1}
	focal length	35 mm (distance flat surface – focus)
	outer lens diameter	50 mm
	free aperture diameter	47 mm
	maximum lens thickness	18 mm
	edge lens thickness	3 mm
	aperture angle α	32.5°
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 ($\frac{1}{2}$ ") 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.

TPX lens 50 mm diameter, 35 mm focal length



Order information

Part number	Description	Photo
TPX-D50-f35-0	Unmounted TPX lens with diameter $D = 50$ mm and focal length $f = 35$ mm	
TPX-D50-f35-t12.7	Mounted TPX lens with diameter $D = 50$ mm and focal length $f = 35$ mm, tube length 12.7 mm	
TPX-D50-f35-t25.4	Mounted TPX lens with diameter $D = 50$ mm and focal length $f = 35$ mm, tube length 25.4 mm	