

High-quality THz optics

➤ Custom PTFE lenses

PTFE, highly-suitable material for general THz applications

Wide range of focal lengths and dimensions

Custom design with high performances

Minimal insertion losses

Optimized aspheric profile

Cost-effective optics

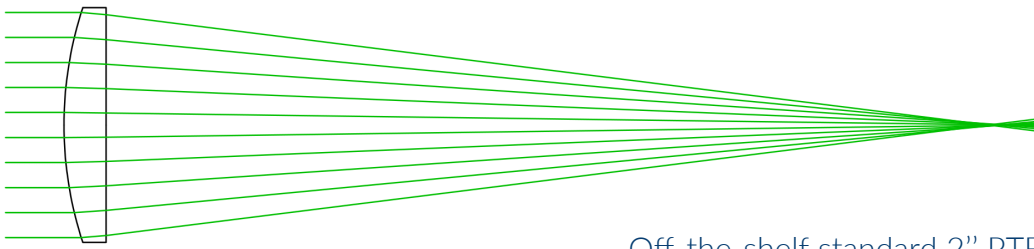


Lytid's high-quality PTFE lenses provide excellent performances across the sub-THz and THz band. Being a white solid material, PTFE has a density of about 2.2 g/cm^3 . The low absorption coefficient of PTFE optics ($<0.8 \text{ cm}^{-1}$ up to 1 THz) in combination with low insertion loss (refractive index of ~ 1.4) make it a prime solution for a variety of THz and sub-mm systems within a wide frequency range, from 75 GHz up to 2 THz.

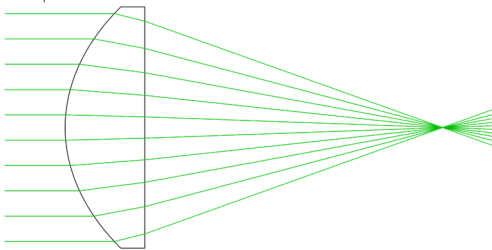
Consequently, PTFE lenses can be suitably employed in THz applications such as beam and wavefront shaping, complex and lightweight optical assemblies, sensing systems, ect. Apart from standard on shelf lenses designs, Lytid also provides production capabilities for custom optical components with a high mechanical precision, i.e., aspheric lenses, polymer flat and wedged windows, large diameters optical components.

PTFE lens range

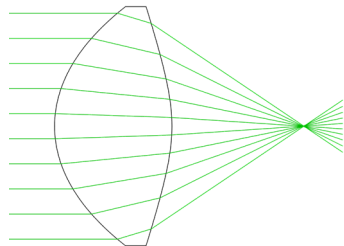
Lytid's PTFE lens range incorporates standard geometries with diameters between 1" to 6", focal lengths from 500 mm down to 40 mm through plano-convex, plano-aspheric or double-aspheric profiles.



Plano-Convex spherical lens



Plano-Convex aspheric lens



Double aspheric lens

Features :

- Suitable for THz application
- Broadband 75GHz- 2THz
- Low Insertion losses
- Aspherical profile
- Wide range focal length

Applications :

- THz imaging
- THz beam shaping
- Optical assemblies

Off-the-shelf standard 2" PTFE lenses

Dia. (mm)	Focall (mm)	Type	Center T (mm)
50.8	40	Double aspheric	25
50.8	50	Double aspheric	21
50.8	75	Plano-aspheric	16.8
50	100	Plano-convex	13.8
50	150	Plano-convex	10.4
50	200	Plano-convex	9
50	250	Plano-convex	8.2
50	300	Plano-convex	7.7

Technical specifications	PTFE optics
Material	PTFE
Refractive index	1.4 at 520 GHz
Absorption coefficient	<0.8 cm ⁻¹ up to 1 THz
Operation frequency range	75 GHz–2THz
Available dimension	
Geometry	Plano-convex
	Plano-aspheric
	Double aspheric
Diameter	1" to 6"
Focal length	40-500 mm
Edge thickness	5 mm
Custom option	✓
Optical quality	
Diameter tolerance	+/- 0.3 mm
Surface roughness	Ra < 0.8 μm