

Data Sheet LSH-D12-T7.13

Hyperhemispherical Silicon Lens



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1 General

The hyperhemispherical silicon lens ([LSH-D12-T7.13](#)) with a diameter of 12 mm has been developed for the control of THz radiation from a GaAs PCA chip¹ and generates a divergent THz beam.

The transmitted THz beam has to be collimated with an additional lens. Therefore we recommend our TPX lens [LTA-D25.4-T8-F32.5](#).

2 Specification

Diameter	12.00 ± 0.05 mm
Thickness center [T _c]	7.13 ± 0.05 mm
Form	Hyperhemispherical
Material	Silicon
Refractive index	3.41
Transmittance	> 53 % (@ 0.1 - 3.0 THz)

3 Application Note

An Anti-Reflex coating is available on request.



Figure 1: [LSH-D12-T7.13](#) with Anti-Reflex-Coating

¹ Gallium Arsenide Photo Conductive Antenna Chip

Collection angle [α]	73.0°
Divergence angle [β]	17.0°
Virtual focal length [VFL]	26.5 mm
Thickness PCA chip [T _P]	0.625 mm

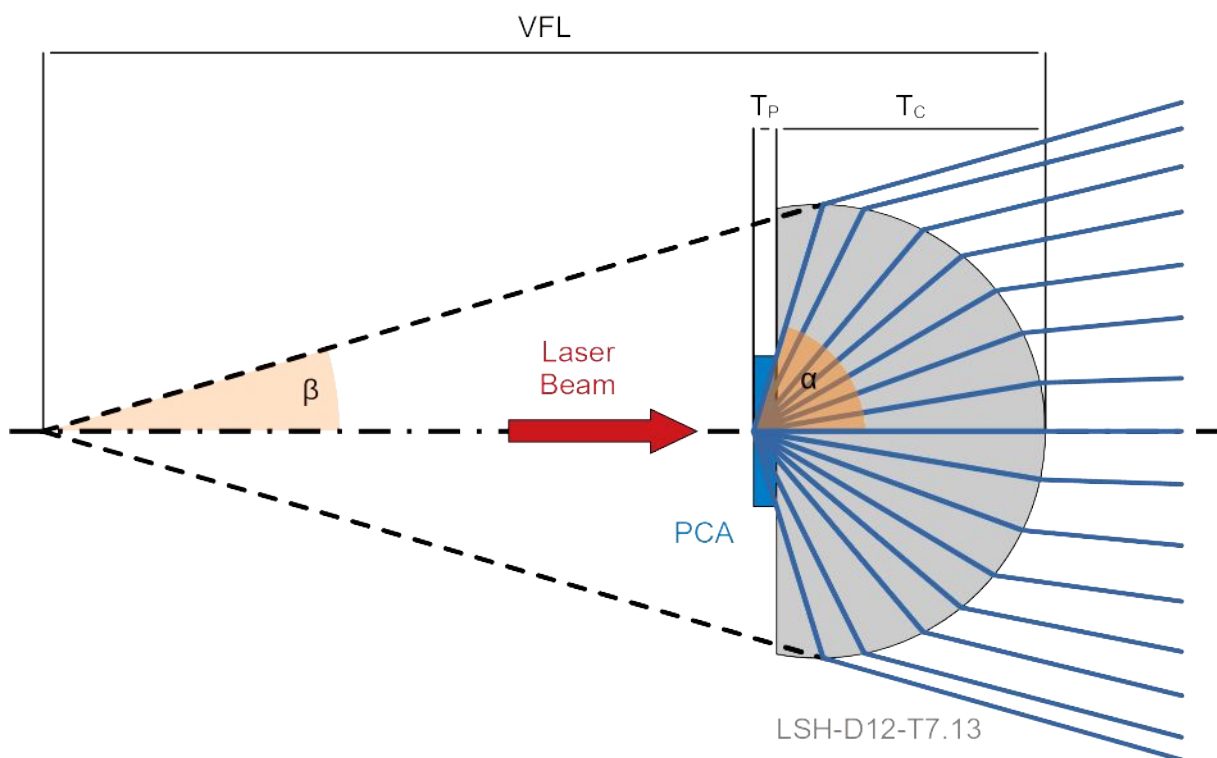


Figure 2: LSH-D12-T7.13

Formulas

$$T_P + T_C = r \times \left(\frac{n+1}{n}\right)$$

$$VFL = r \times (n+1)$$

$$\alpha = \arctan(n)$$

$$\beta = \arcsin\left(\frac{1}{n}\right)$$

For further control of the THz radiation (e.g. collimating) we do offer a wide range of additional TPX lenses. Please check our [website](#) for more details.

4 Contact Details

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