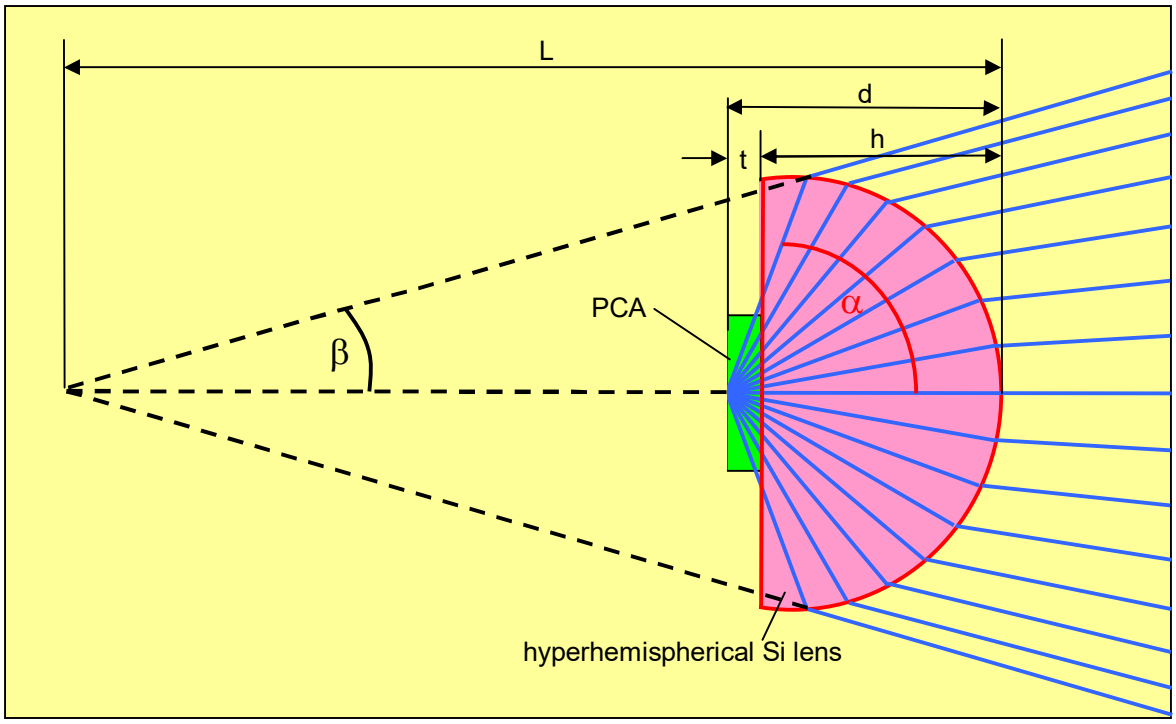
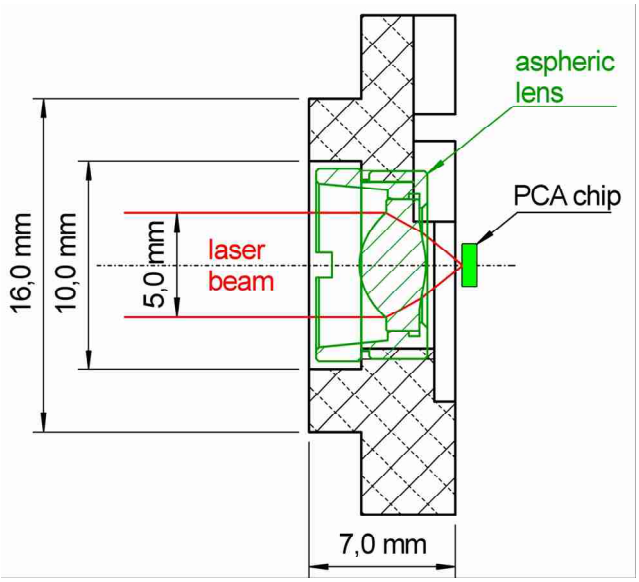
Mounted PCA on hyperhemispherical silicon substrate lens and with optical aspheric lens

Data sheet PCA-l-g-w-λ-h-l

Photoconductive antenna	substrate	semi-insulating GaAs
	chip area	4 mm x 4 mm
	thickness t	600 µm
Hyperhemispherical lens	material	undoped HRFZ-silicon,
	specific resistance ρ	>10 kΩcm
	refractive index n	3.4
	diameter	12 mm
	height h	7.1 mm
	distance d	7.7 mm
Terahertz beam	collection angle α	57°
	divergence angle ß	15°
	virtual focus length L	26.4 mm



Aspheric optical lens for focusing the laser beam into the antenna gap



Aspheric optical lens	
focal length	3.1 mm
free aperture	5 mm

Aluminum mount	25.4 mm diameter, 6 mm thick
Coaxial cable	type RG178 B/U, impedance 50 Ω, capacitance 96 pF/m, 1 m long
Connector type	BNC or SMA

- An adjusted optical aspheric lens focused the optical beam onto the antenna gap of the PCA chip

- The PCA chip is glued on an hyperhemispherical silicon substrate lens
- The silicon lens is glued on an aluminium mount
- The two antenna contacts are wire bonded on a printed circuit board, which provides the connection to a 1m long coaxial cable with BNC connector
- A central hole in the aluminium mount allows the Terahertz radiation to escape from the aspheric silicon lens as a beam with a divergence angle of 15 °

PCA with hyperhemispherical silicon lens, aspheric optical lens and coaxial cable