High Performance Polarizer

- **Very low transmission loss (< 1 dB)**
- **High parallel isolation (> 45 dB)**
- **Working bandwidth from DC to 1 THz**
- **Rotating frame with angular scale**
- **Ultra-low loss flexible and low dielectric constant substrate material**

Description

The Polarizer consists of two layers of patterned Cr-Cu-Au micro grid array of strips. The micro grid arrays are patterned via photolithography process on each side of a very thin (100 μm) and ultra-low loss substrate for THz frequencies with low dielectric constant. The electric field is transmitted if polarized perpendicularly and reflected if polarized parallel to the grid array. Anteral High Performance Polarizer achieves a high parallel isolation below 45 dB from DC up to 0.6 THz and below 30 dB up to 1 THz, with very low transmission loss.

Applications

The Polarizer can be used from DC up to 1 THz systems for enhancement of the polarization sensitivity, beam splitting and generation of circular polarization.

Circular polarization is generated for 45 degrees incidence by means of selecting the appropriate dielectric thickness and backing the polarizer with a metal plate. Several thicknesses of the dielectric material can be selected for creating circular polarization between 50 GHz and 1 THz.

Additional Notes

Polarizers are provided in regular diameters of 50 mm and 25 mm. They are mounted in rotating frames with angular scale of step equal to 1 degree and with ISO M4x0.7 connection.

Different sizes (up to 70 mm) and geometries (square and circular) can be provided according to customer requirements. Ad-hoc frames for special purposes are also offered.

Polarizers are mounted with protection layers made of high-performance polymethacrylimide foam without degradation of the quality.

The performance of all polarizers is checked before delivery.

Extended performance datasheet is available if customer requires. Ask for more information.

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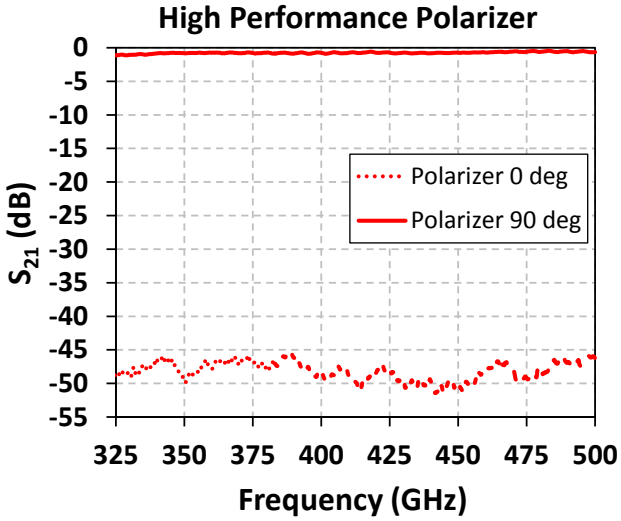
High Performance Polarizer

Measured Polarizer Performance



Transmission loss < 1dB

Parallel isolation > 45 dB

Mechanical Specifications

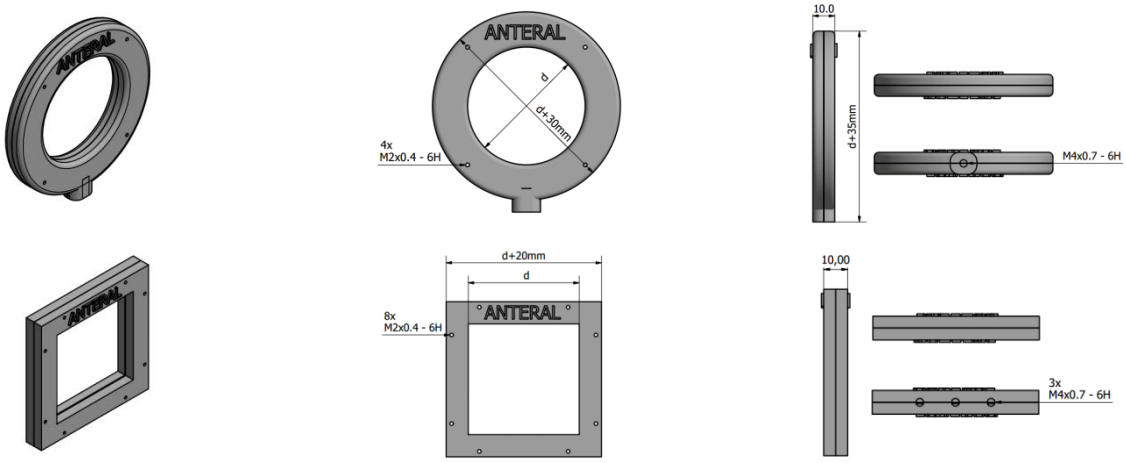
Polarizers

Type	d (mm)	Gap width (um)	Strip width (um)	Strip thickness (um)	Layers	Substrate thickness (um)	Frequency band (GHz)
High Performance Polarizer	Up to 70 mm	10	25	2	2	100	0 - 1000

Ad-Hoc Holders

Type	d (mm)	Mount Width (mm)	Mount Height (mm)	Connection type
Circular	Up to 70.0 mm	10.0	d + 35mm	ISO M4x0.7*
Square		10.0	d + 35mm	ISO M4x0.7*

*If required another connections are possible



More custom and commercial frames are available if required.