



- Very low transmission loss ( $< 0.5$  dB)
- High parallel isolation ( $> 35$  dB)
- Rotating frame with angular scale
- Ultra-low loss flexible and low dielectric constant substrate material

## *Description*

The Polarizers consist of a simple patterned Cr-Cu-Au micro grid array of strips. The micro grid array is patterned via photolithography process on a very thin ( $100\ \mu\text{m}$ ) 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 offers two different designs of General Purpose Polarizers, one for MmW and other of superior performance for THz frequencies.

## *Applications*

The Polarizers can be used in MmW and 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 750 GHz.

## *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.

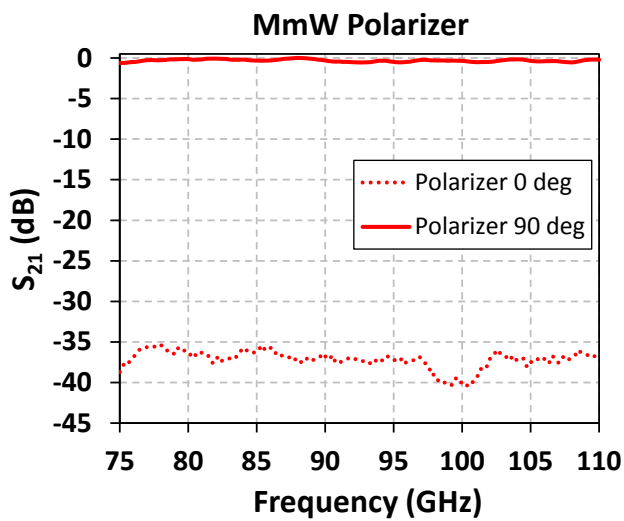
Polarizers are mounted with protection layers made of high-performance polymethacrylimide foam without degradation of the quality.

The performance of all polarizers is checked before delivery.

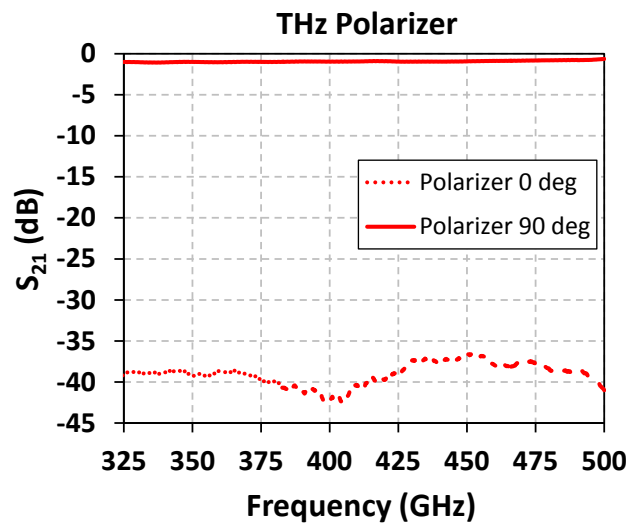
Extended performance datasheet is available if customer requires. Ask for more information.

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## Measured Polarizer Performance



Transmission loss < 0.5 dB  
Parallel isolation > 35 dB

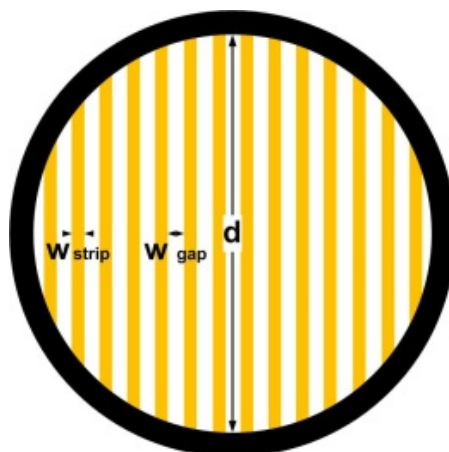


Transmission loss < 1dB  
Parallel isolation > 35 dB

## Mechanical Specifications

### Polarizers

Type	d (mm)	Gap width (um)	Strip width (um)	Strip thickness (um)	Substrate thickness (um)	Frequency band (GHz)
Mmw Polarizer	Up to 70 mm	50	100	2	100	0 - 250
THz Polarizer	Up to 70.0 mm	10	25	2	100	250 - 750

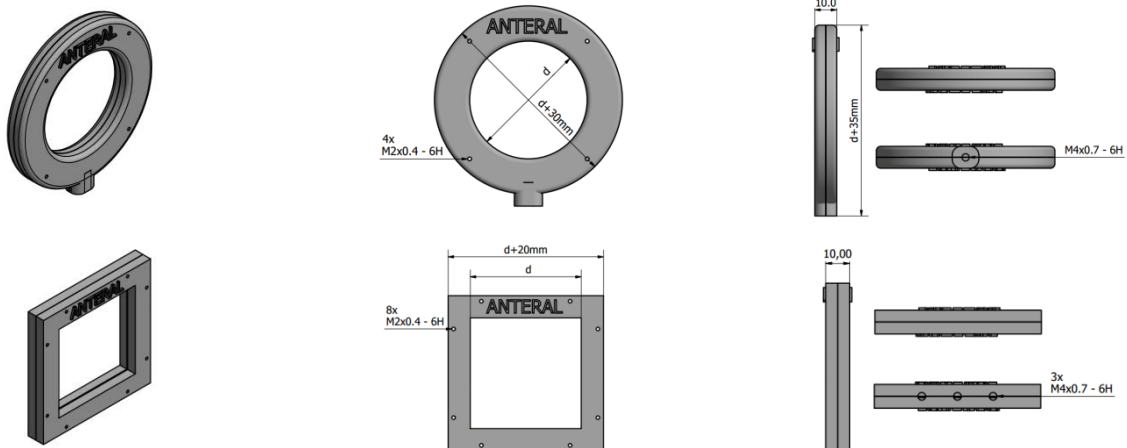


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## Ad-Hoc Holders

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.



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