THz Wire Grid Polarizers

For RF and THz ranges we produce wire grid polarizers intended to polarize radiation in 150 μm to several cm wavelength range. They are made of 11 μm thick parallel tungsten wires mounted in a holder with no substrate.

Applications:

- THz spectroscopy;
- THz microscopy;
- Sensors and detectors;
- Fourier spectroscopy;
- THz and SHF polarimetry.

Features:

- Can withstand high energies of incident radiation;
- Due to no substrate provide high transmissivity of desired polarization;
- Provide high degree of polarization;
- Made of tungsten wires;
- Mounted in holders (protective rings marked with wire direction).

The advantages of wire grid polarizers over polypropylene grid polarizers:

- Better transmission of desired polarization due to no substrate;
- Can withstand high-intensity radiation.

Specification:

Wavelength range, μm	≥ 150
Wire diameter, μm	11
Distance between wires, μm	16
Holder diameter, mm	≤ 152
Working aperture, mm	≤ 136
Transmission of desired polarization K1, %	> 92
Transmission of non-desired polarization K2, %	< 0,1
Extinction coefficient E=10*Log(K1/K2), dB	> 30
Pulse damage threshold, kW/cm^2*	>20

* Spot D 0.5 mm, wavelength 130 μm, power density 36 MW/cm^2 in a pulse duration of 100 ps, pulse repetition rate 5.6 MHz. No visible damage was found under these conditions. The measurements were carried out at the Budker Institute of Nuclear Physics of the Siberian Branch of the Russian Academy of Sciences.

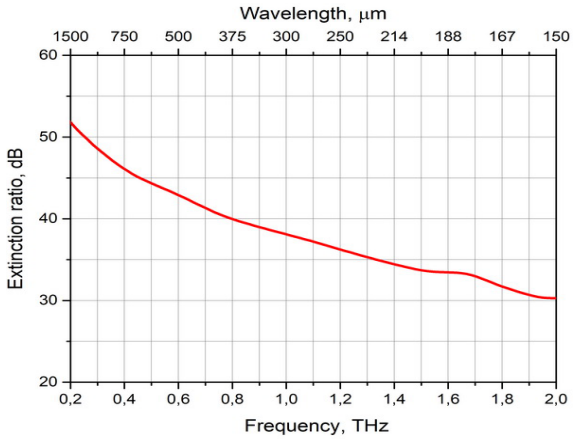

Fig. 1. Extinction coefficient, dB

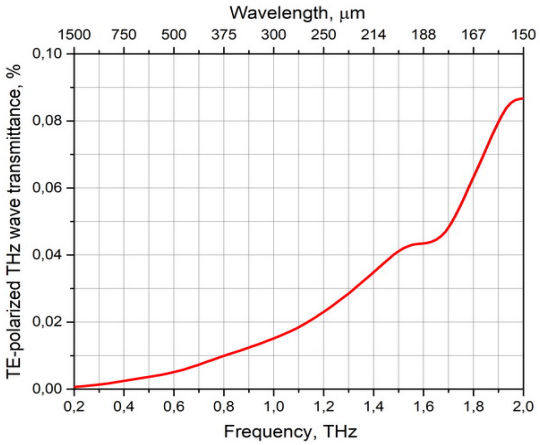

Fig. 2. Transmission of non-desired polarization, %

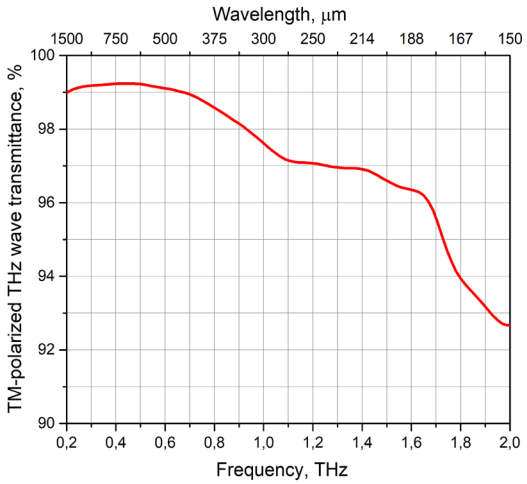

Fig. 3. Transmission of desired polarization, %

As standart, polarizers are supplied in a round (2 - 6 inch diameter) holder. Working aperture is 36 mm for 2-inch and 136 mm for 6-inch polarizer. On customer's request polarizers can be equipped with a rotator.

For price quotation and delivery please send us an e-mail or fill in our web site request form.

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