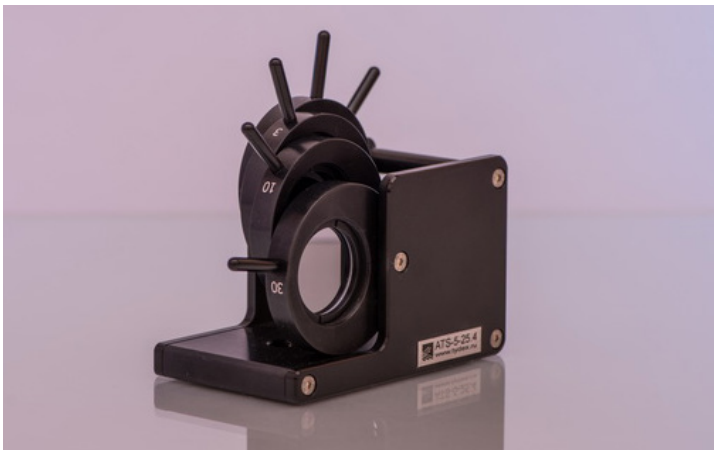
THz Attenuators



Tydex offers set of THz attenuators for attenuation of high-power THz radiation. The variable wheel attenuator consists of 5 wheels. Four wheels contain metalized wedged silicon wafers with different attenuation levels and one wheel is empty. If necessary the empty wheel can be filled with custom element (e.g. filter). Four attenuators have the transmission 30%, 10%, 3%, and 1%. These attenuator elements can be used as a single attenuator or in combination that allows achieving different levels of attenuation. Transmission curves (noise is smoothed) of attenuator elements are shown below. Measurements were made up to 1000 μm. However, operating wavelength range is much wider. It follows from physical mechanism of attenuator operation.

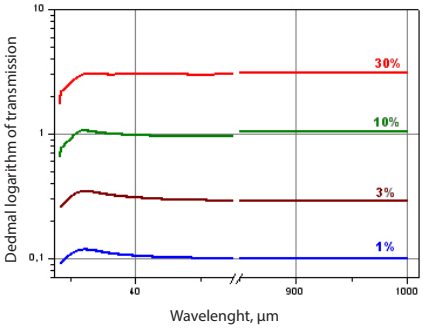


Fig.1 Transmission of THz attenuator elements

Transmission values of different combinations of attenuators are listed below:

Combination of attenuator elements	Nominal value of transmission, %
30+10	3
30+3	0.9
30+1	0.3
10+3	0.3
10+1	0.1
3+1	0.03
30+10+3	0.09
30+10+3	0.03
10+3+1	0.003
30+3+1	0.009
30+10+3+1	0.0009

Common specification:

Operating wavelength range, μm	40 ÷>1000
Quantity of wheels in the mount, pcs.	5
Quantity of attenuation grades, pcs.	4
Transmission tolerance of attenuator element, % of nominal value	+/- 10
Damage threshold, W/cm^2	several hundreds

The following THz attenuators are available from stock:

No.	Clear aperture, mm
1	25.4
2	50.8

Attenuator elements can be supplied in wheel mount or without it. Alternate sizes (up to 54.5 mm) and custom design can be manufactured upon request. For price quotation and delivery please fax or e-mail us.

The finished parts of different dimensions are available from the stock and supplied within a week. Please check the Optics stock at our website.

16 Domostroitelnaya str.
194292 St. Petersburg, Russia
www.tydex.ru

Phone: 7-812-3318702
Fax: 7-812-3092958
E-mail: optics@tydex.ru

TYDEX®