

# THz Beam Splitters

Tydex offers THz beam splitters of two types:

- single-pass beam splitter. It is used in optical schemes where radiation passes through beam splitter one time;
- multi-pass beam splitter for interferometer scheme where beam passes through splitter several times.

The material of THz beam splitter is HRFZ-Si. These beam splitters provide transmittance/reflectance ratio ~ 54/46 (%) in a wide wavelength range without any coating. Reflection and transmission curves are shown below.

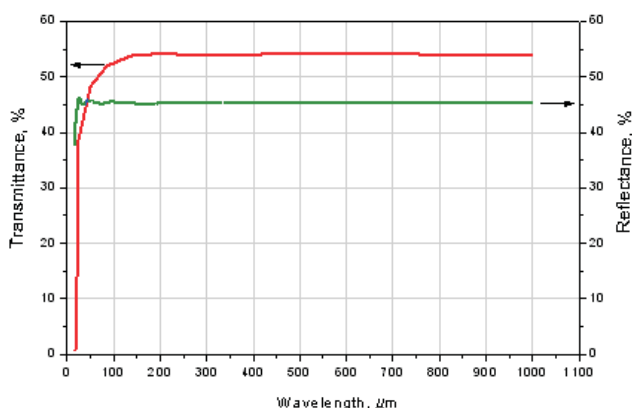
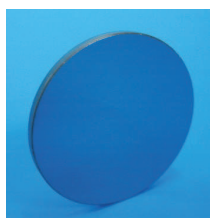


Fig. HRFZ-Si transmission (sample thickness - 5 mm) and reflection.

## 1. Single-pass THz Beam Splitter

The specification for the single-pass beam splitter is the same as for an HRFZ-Si window. In fact a plano-plano HRFZ-Si window could be used as a single-pass beam splitter.



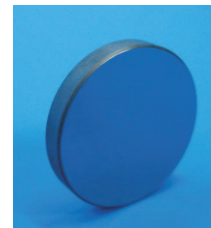
Common specification:

Material	<b>HRFZ-Si</b>
Type	plano-plano
Available sizes, mm	to 150
Diameter or cross-cut tolerance, mm	+0.0 / -0.1
Thickness tolerance, mm	+/-0.1
Clear aperture, %	>=90
Parallelism, arc. min	3
Surface quality (two-sided polishing), scr/dig	60/40
Surface accuracy, mm	+/-0.01 deviation from ideal plane

The finished parts of different dimensions are available from stock and supplied within a week. Custom sizes are manufactured upon request.

## 2. Multi-pass THz Beam Splitter

The multi-pass beam splitter (for interferometers) as opposed to the single-pass beam splitter should be produced with a very high accuracy.



Common specification:

Material	<b>HRFZ-Si</b>
Type	plano-plano
Available sizes, mm	to 150
Diameter or cross-cut tolerance, mm	+0.0 / -0.1
Thickness tolerance, mm	+/-0.01
Clear aperture, %	>=90
Parallelism, arc. sec	5
Surface quality (two-sided polishing), scr/dig	60/40
Surface accuracy, λ@633 nm	1

The following multi-pass THz beam splitters are available from stock:

No.	Diameter	Thickness
	mm	mm
1	40x30	3.5
2	50.8	3.5

Please check the Optics stock at our website.

Custom sizes are manufactured upon request. For price quotation and delivery please fax or e-mail us.



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