

45702 and 45582 Beam Splitters.

- **32%R/32%T at 45°**
- **Spectrally neutral from 400 to 800 nm**
- **Fused silica models usable from 250 to 2500 nm**

These beam splitters use a thin film of an inconel metal alloy on the front surface of a crown glass or fused silica substrate, and a broadband anti-reflection coating on the second surface. The reflection/transmission ratio is 32%/32%,  $\pm 2\%$  from 400 to 800 nm, but they can be used over a broader range (see Fig. 1). The crown glass beam splitters are usable from 400 to 2000 nm; the fused silica models transmit from 250 to 2500 nm.

#### TECH NOTE

*The inconel coating contains nickel, chromium, cobalt and iron. Very careful control of the pressure in the vacuum coating chamber produces a thin film which balances the transmission of each element, resulting in a wavelength neutral coating. These films have substantial absorption, approximately 36%, so they are not suitable for high power density applications.*

*The anti-reflection coating is a single layer of magnesium fluoride for the 400 to 700 nm range.*

#### USE A DEDICATED BEAM SPLITTER HOLDER

At 45°, the clear aperture of a beam splitter is substantially reduced. To minimize further reduction, choose a mount designed for holding beam splitters. Our 12705 holds 2.0 inch diameter beam splitters. A thin profile and no interfering controls allow a 1.36 inch (34 mm) clear aperture at 45°. The 14005 is a Beam Splitter Minimount for 1.0 inch diameter beam splitters. At 45°, the clear aperture is 0.6 inches (15 mm). See page 17-13 for a discussion of Beam Splitter Holders.

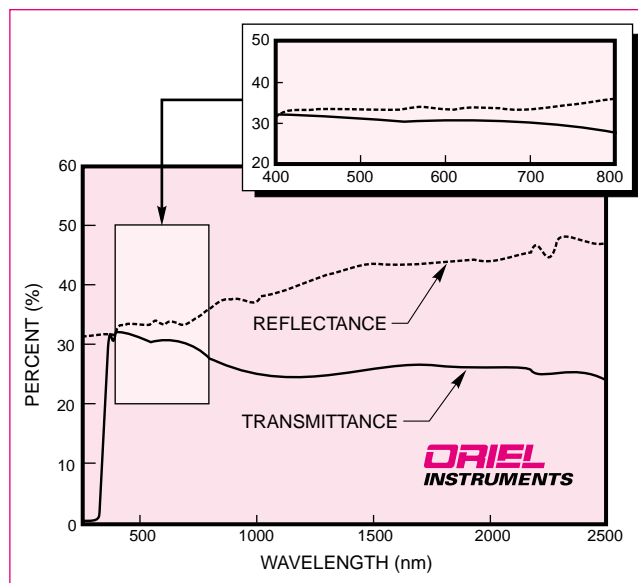


Fig. 1 Reflectance/Transmittance of Inconel Beam Splitters.

#### SPECIFICATIONS

Material:	Optical crown glass or fused silica
Coatings:	
1st surface:	Inconel
2nd surface:	Broadband anti-reflection
Size tolerance:	+0 mm; -0.25 mm
Thickness:	
Crown glass:	6.35 mm, nom.
Fused silica:	3.2 mm (1 inch diameter) 12.7 mm (2 inch diameter)
Edge finish:	Ground and beveled
Surface quality:	80 - 50
Flatness:	
Crown glass:	1 $\lambda$ /inch
Fused silica:	$\lambda/20$
Parallelism:	
Crown glass:	30 arc s (0.15 mrad)
Fused silica:	1 arc s (0.005 mrad)
R/T ratio (400 - 800):	32%/32%, $\pm 2\%$
Absorption:	36%, approx.

#### ORDERING INFORMATION

Size inch (mm)	Glass		Fused Silica	
	Model No.	Price (\$)	Model No.	Price (\$)
1.0 (25.4)	45582	\$ 28.00	44941	\$ 248.00
2.0 (50.8)	45602	\$ 32.00	46145	\$ 361.00
4.0 (101.6)	45622	\$ 72.00		
2.2 x 2.2 (50.8 x 50.8)	45702	\$ 32.00		

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