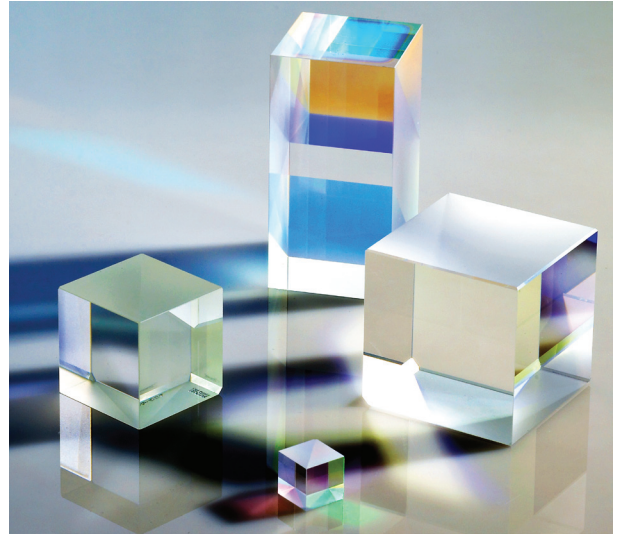


Rugged, High Performance Polarizing Beamsplitter Cubes

These polarizing beamsplitter cubes deliver a unique combination of superior optical performance, high laser damage resistance and outstanding environmental stability and durability. One of the primary ways in which this is achieved is through the use of REO's proprietary Activated Covalent Bonding (ACB™) technology, rather than through adhesive bonding or optical contacting. The elimination of any organics or glues from the beam path yields very high laser damage threshold and avoids internal optical absorption. Furthermore, the ACB technique produces a bond which is essentially as strong as the bulk material, and is far superior to any adhesive, or even optical contacting. This results in exceptional environmental stability, allowing operation over an extremely wide temperature and humidity range, without any shift in spectral response. It also makes these cubes mechanically durable, and insensitive to shock, vibration and high g forces. The result is optics suitable for use anywhere from cryogenic environments to industrial, military, and spaceborne applications.



These cubes are typically available anywhere in the 1 mm to 125 mm size range, and are fabricated from either fused silica substrates, for operation in the 266 nm to 2 μ m spectral band, or from silicon, for use at wavelengths from 2 μ m to 5 μ m. Furthermore, complex geometries beyond the simple cube configuration can also be produced; this enables arrangements such as parallel input or output beams. A scalable manufacturing process makes them cost competitive, particularly in high production volumes. Since all our products are built to meet the exact needs of customers, the following specifications represent typical values for this class of optics, but are by no means the limit of what we can accomplish.

Typical Specifications

Material	Fused Silica	Silicon
Wavelength Range	266 nm to 2 μ m	2 μ m to 5 μ m
Transmitted wavefront distortion (@ 632 nm)	$\lambda/20$	$\lambda/10$
Acceptance angle	$\pm 1^\circ$	$\pm 5^\circ$
Transmitted extinction ratio	10,000:1	
Pyramidal error	1 arc minute	
Temperature range	-196 °C to 400 °C	
Humidity range	0 to 100%	
Size range	1 mm to 125 mm	
Surface Quality	20-10	
Clear Aperture	90%	