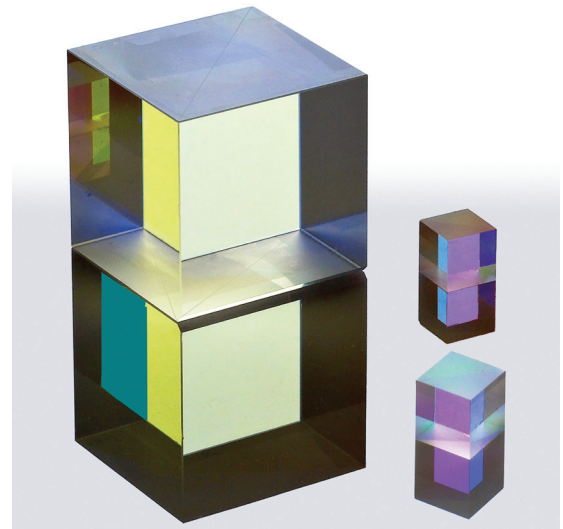


High Performance, Non-Polarizing Beamsplitters for Telecommunications

These cube beamsplitters are specifically intended for demanding DWDM applications in telecommunications. Optimized for use in Gires-Tournois interferometer based interleavers and dispersion compensators, REO non-polarizing beamsplitters deliver broadband, polarization insensitive operation and exceptional path length matching for the reflected and transmitted beams. This consistently delivers the transmission and channel isolation characteristics required by demanding long-haul and metro network applications.

Traditional non-polarizing beamsplitters are limited by either a narrow operating band or high internal absorption, however, REO avoids these drawbacks by employing all dielectric, ion beam sputtered (IBS) coatings, together with a high index of refraction contrast material set. The result are telecom C-band (1525 – 1570 nm) and L-band (1565 – 1620 nm) beamsplitters that deliver a transmission and reflection ratio of $50\% \pm 1.5\%$ over their entire operating range, with the s and p polarization components matched to within 2%. Furthermore, a series of high precision, proprietary fabrication techniques, together with our unique Activated Covalent Bonding (ACB™), adhesive-free bonding process, enable REO to consistently produce cubes with an optical path difference between the two output beams of under $3 \mu\text{m}$, together with subarcminute beam deviation accuracy and low wavefront distortion (surface flatness $\lambda/20$ @ 633 nm). These beamsplitters are available in the 3 mm to 12.5 mm size range, and are fabricated from fused silica substrates.



Typical Specifications

Material	Fused Silica
Wavelength Ranges	C-band (1525 – 1570 nm) or L-band (1565 – 1620 nm)
Transmitted wavefront distortion (@ 632 nm)	$\lambda/20$
Transmission	$50\% \pm 1.5\%$ independent of polarization
Reflection	$50\% \pm 1.5\%$ independent of polarization
Polarization	s and p components matched to within 1.5%
Pyramidal error	<1 arc minute
Temperature range	-196 °C to 400 °C
Humidity range	0 to 100%
Size range	3 mm to 12.5 mm
Surface Quality	20-10
Clear Aperture	90%