

## Scatter versus Wavelength

For polygonal mirrors, Cambridge Technology specifies surface roughness values of 75 Angstroms rms for diamond turned mirrors and 10 Angstroms rms for conventionally polished mirrors. This correlates to a total integrated scatter value of 2.2 percent for diamond turned mirrors and 0.04 percent for conventionally polished mirrors at 633nm.

Total integrated scatter is inversely proportional to the square of the wavelength. The table that appears below provides the scatter values for a number of common wavelengths.

WAVELENGTH	DIAMOND TURNED SCATTER	POLISHED SCATTER
488nM	3.7 %	0.07 %
633nM	2.2 %	0.04 %
820nM	1.3 %	0.02 %
1.06 MICRONS	0.8 %	0.01 %
10.6 MICRONS	0.08 %	0.00014 %