

Lens Index Comparison Chart



Material	Index	Specific Gravity (g/cm ³)	Abbe Value	Tensile Strength (kgf)
CR-39	1.5	1.32	58	15.6
Trilogy	1.53	1.11	45	61.2
First Choice	1.58	1.25	48	63.2
Polycarbonate	1.59	1.21	29	44.9
MR20	1.6	1.30	41	80.5
MR10	1.67	1.37	31	67.3
MR174	1.74	1.47	32	31.6

The **refractive index** of a lens material indicates how much the material will refract or bend light as it enters the material from air, by comparing the speed of light in a given material to the speed of light in air. The higher the index number of a given material, the more the light will refract as it enters the material. If a material has a greater ability to refract light, less of a curve is required to obtain a specific power, resulting in a thinner lens.

Specific gravity describes the density of a lens material by comparing its density to the density of water. The higher the specific gravity of a lens material, the higher the density, and consequently, the heavier a lens of that material will be for a given power and size.

Abbe value measures chromatic aberration, which is the tendency of a material to separate white light into its respective colours as varying wavelengths are focused at differing points passing through a lens. The higher the Abbe value, the lower the amount of chromatic aberration.

Tensile strength is resistance to lengthwise stress. It is measured in force per unit of cross-sectional area by the greatest load pulling in the direction of length that a given material can bear without tearing apart. The greater the tensile strength of a lens material, the more it will resist cracking and the better it will be for drill mount frames.