

# ANSI Z80.1 – 2015 Tolerance Chart

## 1. Tolerance on Distance Refractive Power (Single Vision & Multifocal Lenses)

Sphere Meridian Power (Minus Cylinder Convention)	Tolerance on Sphere Meridian Power (Minus Cylinder Convention)	Cylinder Power Up to -2.00 Diopters	Cylinder Power -2.25 to 4.50 Diopters	Cylinder Power -4.75 and over
From -6.50D to +6.50D	±0.13D	±0.13D	±0.15D	±4%
Stronger Than ±6.50D	±2%	±0.13D	±0.15D	±4%

## 2. Tolerance on Distance Refractive Power (Progressive Addition Lenses)

Sphere Meridian Power (Minus Cylinder Convention)	Tolerance on Sphere Meridian Power (Minus Cylinder Convention)	Cylinder Power Up to -2.00 Diopters	Cylinder Power -2.25 to 3.50 Diopters	Cylinder Power -3.75 and over
From -8.00D to +8.00D	±0.16D	±0.16D	±0.18D	±5%
Stronger Than ±8.00D	±2%	±0.16D	±0.18D	±5%

## 3. Tolerance on the direction of cylinder axis

Nominal value of the cylinder power (D)	.25 Diopters of Cylinder Power	.50 Diopters of Cylinder Power	.75 Diopters of Cylinder Power	1.00 to 1.50 Diopters of Cylinder Power	1.75 and Over Diopters of Cylinder Power
Tolerance of the Axis (Degrees)	14°	7°	5°	3°	2°

## 4. Tolerance on addition power for multifocal and progressive lenses

Nominal Value of Addition Power (D)	≤ 4.00D	> 4.00D
Nominal Value of the Tolerance on the Addition Power	± 0.12D	± 0.18D

## 5. Tolerance on Prism Reference Point Location and Prismatic Power

- The prismatic power measured at the prism reference point shall not exceed 0.33 Δ or the prism reference point shall not be more than 1.0mm away from its specified position in any direction.

## 6. Tolerance on Prismatic Imbalance (mounted)

Single Vision & Multifocal Lenses	Vertical	Vertical	Horizontal	Horizontal
	Plano to ±3.25	> ±3.25	Plano to ±2.75	> ±2.75
Tolerance	≤ 0.33 Δ	≤ 1.00 MM difference in height of PRP	≤0.67Δ	≤ ±2.5 MM From specified distance Interpupillary distance
Progressive Addition Lenses	Vertical	Vertical	Horizontal	Horizontal
	Plano to ±3.25	> ±3.25	Plano to ±2.75	> ±2.75
Tolerance	≤ 0.33 Δ	≤ 1.00 MM difference in height of PRP	≤0.67 Δ	≤ ±1.0 MM From specified distance Interpupillary distance