# Understanding Nocturnal Specification

Understanding Nocturnal lens specifications helps making informed adjustments for orthokeratology.

Example Specification:

R: BC:41.10 6.5 -3.00 RC:6.55X6.21 AC:8.01X8.01 11.00 +1.00 NCT BXO PURPLE

Key Parameters

Base Curve (BC): Defines the tear lens creating the treatment zone. Expressed in dioptres (e.g., 41.10D) and tear lens power (e.g., -3.00D). Typically, this power is -1.00D more than the target myopia. Compression factor increases at higher prescriptions (e.g., a -7.00 tear lens may be needed to correct -5.00D myopia). When you change the power of the lens this tear lens power will change by the same amount. The optic zone diameter will be shown as 6.5 or smaller if specified on High Rx, MC+ or post-laser design.

Alignment Curve (AC): Matches the mid-peripheral cornea. Based on topography, it's usually accurate on first fit. Adjustments (0.1mm increments) may be needed for better fit. Like corneal GPs, fit alterations are clinically significant but may not always affect lens behaviour behind closed lids. As corneas are aspheric this will slightly flatter than the K readings.

Lens Diameter: Typically 11.00mm, working with the alignment curve. If 0.4mm–1.2mm smaller than HVID, no adjustment is needed.

Reverse Curve (RC): Controls apical tear lens thickness (ATLT), initially set at 10µm. Adjustments are necessary for excessive clearance (high spot on topography) or apical touch (corneal staining). The toric lens numbers (e.g., 6.55 x 6.21) link BC to AC and adjust tear thickness by 10µm per 0.15mm change.

Focimeter Power (+1.00): The +1.00 is the power the lens will measure in air using a focimeter. This value represents the plus equivalent of the compression factor and provides distance correction when the lenses are worn while awake.

Additional Details:

Eye: R

Design: NCT

Material: BXO (Boston XO)

Handling Tint: Purple

Serial Number: Engraved on every lens (last 3 digits match packaging).

Nocturnal lenses are custom-made per eye, and their stability mirrors that of soft lenses—only changing with underlying myopia shifts. Subtractive topography should confirm consistent corneal power changes over time.