

# Xtralens Fitting Guide™

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## Design of Xtralens™

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Xtralens™ is a large RGP lens designed to be as comfortable as soft lenses. As the optics are controlled to reduce spherical aberration, it gives the patient superb vision. It is also suitable for presbyopic patients when incorporating an additional reading portion or portions.

The lens is typically 10.20mm to 10.80mm in diameter but ranges from 9.00mm to 11.50mm. The back surface is derived from a series of polynomial curves with the addition of a ski type edge. The front surface, again, is derived from a series of polynomial curves with an aspheric optical zone controlling aberration.

The comfort of the Xtralens™ is associated with the large diameter and back surface geometry. The upper lid remains over the top of the lens and so does not interact with the edge when blinking; with smaller diameter lenses this is common and may cause discomfort. The forces bearing on the lens are also spread across a larger area thus reducing 3 and 9 o'clock staining.

The lens employs a unique system of differential edge types that are used to aid the correct positioning and movement of the lens. This, in turn, maximises the tear pump effect of the lens and therefore ensures that optimum tear exchange is achieved.

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## Fitting Xtralens™

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UltraVision has developed a computer based fitting system for Xtralens™ in both single vision and bifocal forms. After the patient has been assessed for the suitability of contact lens wear, the following measurements should be taken accurately:

### Essential measurements

- Spectacle refraction (Spec Rx)
- Back vertex distance (BVD)

- Corneal keratometry readings (K Readings)
- Horizontal visible iris diameter (HVID)
- Vertical Palpebral Aperture (VPA) - Eye lid opening distance
- Eye lid position
- Eye lid pressure

### Additional measurements required for bifocal and trifocal version

- Additional reading power
- Distance zone optical diameter

### Non essential measurements

- Peripheral keratometry readings (Peripheral K Readings)

The above measurements should then be passed to our Customer Service team. It is essential that all necessary measurements are taken.

UltraVision will then process the above parameters using a program, developed in conjunction with clinical information relating to more than 200 patients, to produce the lens specification.

Alternatively, Xtralens™ may be fitted using a fitting set. To select the initial fitting lens, the following should be taken into consideration:

### Base curve selection (BOZR):

For low corneal astigmatism (<0.75)  
BCOR = flattest K reading - 0.05mm to 0.10mm  
For higher corneal astigmatism  
BCOR = mean K reading + 0.10mm to 0.15mm

### Diameter selection (TD):

TD = HVID - 0.60mm to 0.90mm

### Edge Type:

Edge type is calculated using a number of different parameters. However, a good starting point will be the edge types which are available in the fitting set (MMO and PPO). Please refer to the further explanation of edge types detailed within this fitting guide.

### Material selection:

UltraVision carries most RGP materials that are available. However we would suggest that the Xtralens™ be manufactured from our Optimum Extra DK 100 material, which exhibits good wetting and stability characteristics. For patients prone to dry-eye and wetting problems, we suggest the Optimum Comfort material.

### Additional Fitting Notes for Bifocal Versions

As the position of Xtralens™ can be controlled using the different edge types, a reading optical zone can be incorporated into the front optic diameter of the lens. This lens then becomes a centre distance alternating bifocal lens.

The lens should be fitted as a normal single vision Xtralens™. However, the additional information necessary to fit this lens is as follows:

#### Additional reading power (Add):

Add = Near power addition + 0.25DS

#### Distance diameter (DD):

DD = Pupil diameter (PO) under normal illumination + 1.0mm

It may be necessary to reduce the overall diameter of the lens by 1 step (0.30mm) to ensure that the lens is translating correctly. No change in BOZR is required.

It is also possible to incorporate a trifocal intermediate power, usually +0.75DS, within the optic area. This gives good intermediate vision which, for example, aids high-presbyopic patients using VDU's.

### Ideal fit of Xtralens™

The following points are important to assess the ideal fit of Xtralens™:

- Good patient acceptability. The patient should be able to feel comfortable with the lenses after only a short period of time (much earlier than with a standard RGP).
- Good fluorescein pattern. This should show the lens to be parallel to flat against the cornea, although in some cases a slightly steep fitting lens may be acceptable.
- Good lid attachment. The upper lid should pick up and retain the lens on blinking.

### Explanation of Edge Types

Xtralens™ is described using the standard contact lens parameters and one additional parameter; edge type.

The edge type indicates the amount of either positive or negative lid attachment used to control the position of the lens on eye. Essentially there are 16 distinct values, dependent on power of the lens and amount of lid attachment needed, detailed in **Table 1**.

The first letter of the edge type code indicates whether the power of the lens is either minus (M) or plus (P). The second letter indicates whether the lid attachment is minus (M) or positive (P). The last number indicates the amount of either minus or positive lid attachment.

If a lens is dropping too much, then either a positive edge type is needed or the minus edge type needs to be reduced. Conversely, if the lens is riding too high, then either a minus edge type is needed or the positive edge type needs to be reduced.

**Table 1**

	Low lid attachment	Medium lid attachment	High lid attachment	V High lid attachment
Minus Power/minus LA	MMO	MM1	MM2	MM3
Plus Power/positive LA	PPO	PP1	PP2	PP3
Plus Power/minus LA	PMO	PM1	PM2	PM3
Minus Power/positive LA	MPO	MP1	MP2	MP3

The following examples all use the same Xtralens™ geometry (BOZD, BVP and TD) on the same eye but with only the edge type being altered to achieve different lens positions:

In this case, the optimum position is achieved with the MMO (Minus power/low minus lid attachment)

This picture shows the effect of moving from the optimum MMO (low lid attachment) to **MP2** (high positive lid attachment). The lens is riding too high. Lid attachment is too positive. In this case the patient will find the lens comfortable but because of the position of the lens, air bubbles may appear under the lower portion of the lens.



**MP2**

This picture shows the Xtralens™ in a good fitting position. The patient will find this lens very comfortable to wear and as the lens will move during blinking and general eye movement, there will be plenty of tear exchange behind the lens. The edge type for this lens is **MMO** (minus lens/low minus lid attachment).



**MMO**

This picture shows the effect of moving to **MM2** (high minus lid attachment). The Xtralens™ in this picture is now in a low riding position. The upper lid will pick the lens up, but it will then drop onto the bottom lid. The patient will almost certainly find this lens fit uncomfortable. The edge type for this lens needs a reduction in minus lid attachment (i.e. to MMO) for optimum position.



**MM2**

## Clinical Support

If you have any technical queries or fitting problems, please call our Clinical Services Advisors on 0800 585115. UltraVision recommend all system lenses are ordered with a full 90-day exchange and fitting warranty (optional).