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of geometry  
in customization

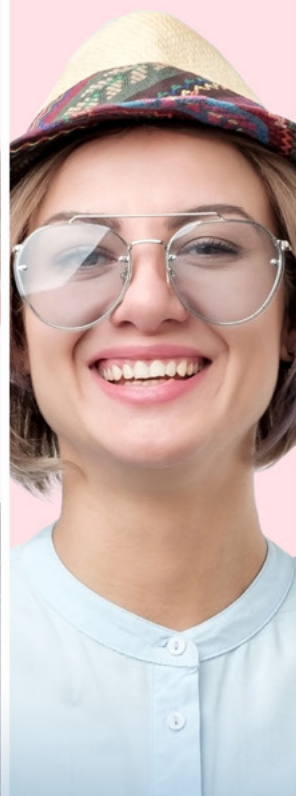
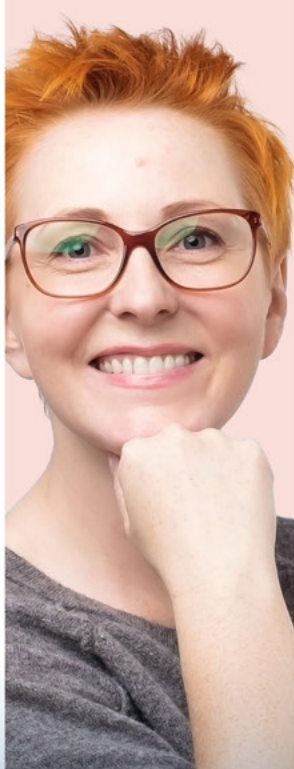
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CUSTOM SINGLE  
VISION LENSES

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## Because each eye is different

Until now, a simplified approach has been considered in the optical sector in the application of single vision lenses, made exclusively with refractive evaluation and limited ocular measurements, without considering additional individual parameters, taken into consideration only in progressive lenses.

This approach has resulted that in 80% of cases, lenses are made without accurately respond to the ocular characteristics of each individual wearer.

Every single people is different, which means that to ensure clear vision, we need to be able to calculate lenses based on precise individual parameters.

## What is the difference between custom eyeglass lenses and “mass produced” lenses?

A pair of glasses must guarantee a comfortable vision.

Using “standard” lenses will certainly place the visual point of both eyes will be put inside frame to ensure correct centering of the lenses, but the final position of the lenses respect the wearer’s eyes, determined by the chosen frame, will not be taken into account during the calculation.

Therefore some indispensable parameters must be evaluated:

- What is the half interpupillary distance OD – OS,
- The pantoscopic inclination of the frame, depends not only on the frame, but also on the shape of the wearer’s face.
- What is the vertex–corneal distance, that is the distance between the rear surface of the lens and the front of the cornea?
- What is the wrap angle of the frame?
- What is the distance of the eyes from the reading area or the computer screen?
- What is the centering height or better the position of pupil respect the bottom edge of frame
- What are the dimensions of the frame, the height and width of the lenses?

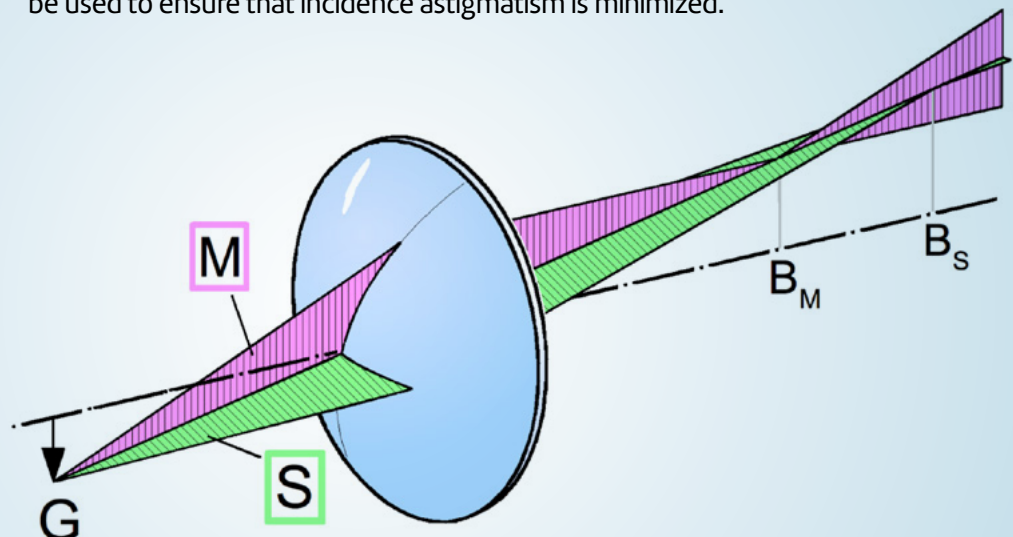
## Astigmatism of the oblique beams

When a beam of light rays arrives on a spherical lens with an oblique direction to the optical axis, the lens behaves like a spherical–cylindrical combination.

A point gives rise to two focal lines perpendicular to each other separated by a typical “Sturm” interval.

This type of aberration is of great importance in the case of ophthalmic lenses as the rotation of the eye behind the lens means that beams of rays oblique to the axis of the lens are frequently used for vision.

For eliminate this drawback, lenses with adequate optical compensation must be used to ensure that incidence astigmatism is minimized.

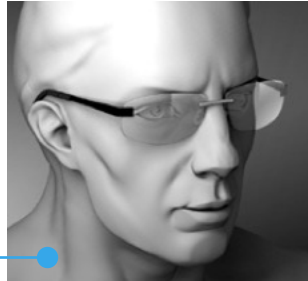


## The individual parameters to take into account

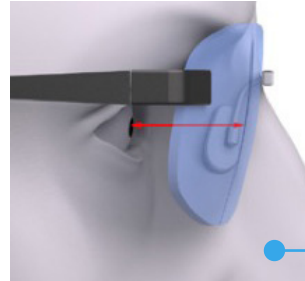
To make lenses that guarantee the highest quality of vision, the wearer's personal parameters must be evaluated and if some of these are outside the standard values, they must be indicated to the company in order to be able to recalculate the suitable geometry adequately.

In particular, the pantoscopic inclination and the wrap angle of the frame are very important values to be evaluated as if not correct they involve the insertion of astigmatism of the oblique beams that affect the peripheral vision quality of a single vision lens

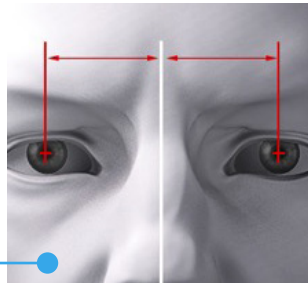
Frame trim on the face



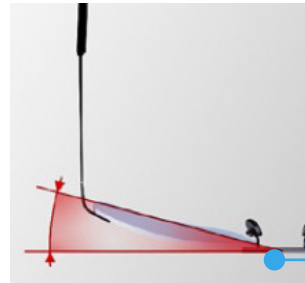
Corneal vertex distance



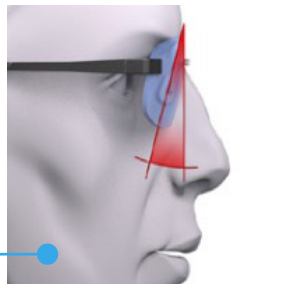
Semi interpupillary distance



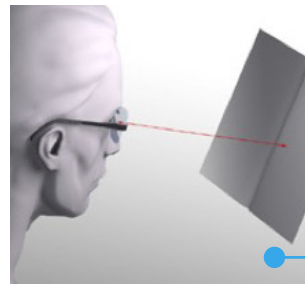
Wrap angle



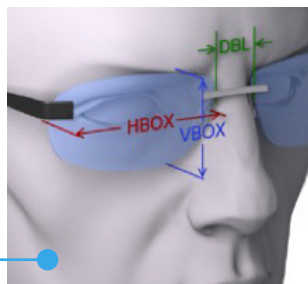
Pantoscopic inclination



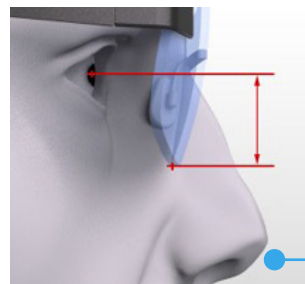
Reading distance



Frame boxing



Centering height



### Which are the standard values

If no indications are given, in the calculation algorithms are introduced standard values according to the statistical data collected over the years, but is unlikely all these values will correspond to those of a single subject for a chosen frame:

It is advisable to order the lenses communicating the individual parameters, if not indicated the following standard values will be considered:

- **DI 64 mm. (32 – 32)**
- **DAC 14 mm**
- **IP 8°**
- **AVV 5°**
- **Reading distance 40 cm**
- **Frame boxing**

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## Individual Single Vision and “Functional” Single Vision lenses

In addition to progressive lenses, also Single Vision and “Functional” Single Vision lenses are produced in the “HV” versions with individual parameters:

**RELAX HV** – Single vision free-form with accommodative assistance and individual geometry

**EXTESA HV** – Single vision free-form with aspherical and atoric individual geometry

**OFFICE HV** – Degressive single-vision for office and indoor environments with individual geometry

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