CROSSBOWS optical

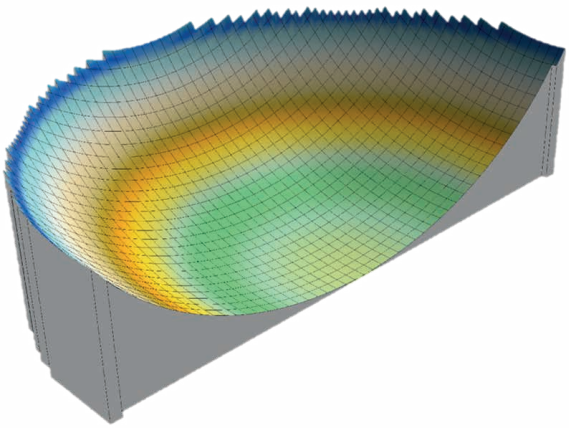
Edge Blending

What is it?

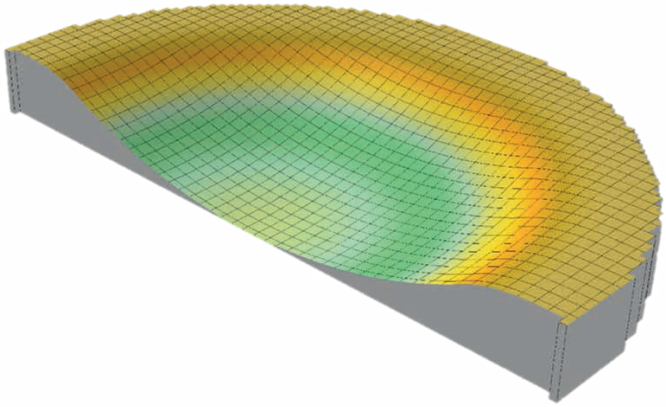
Edge Blending allows an improvement in the cosmetic appearance of higher powered lenses by altering their outer edges and making them lighter and thinner.

Where Is It Used?

Edge Blending can be used for all freeform designs created using CrossbowsRx™, both plus and minus prescriptions.



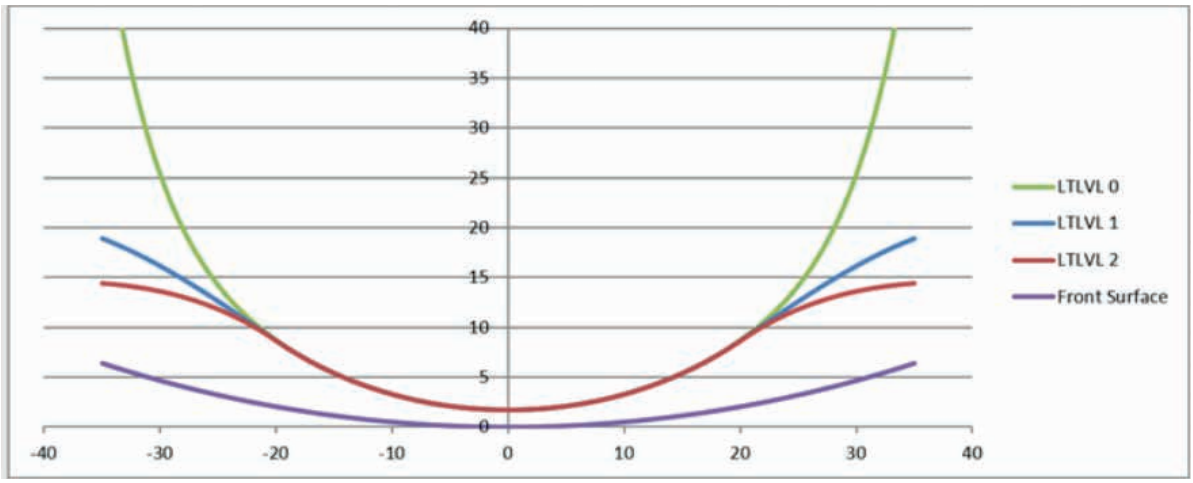
Without Edge Blending



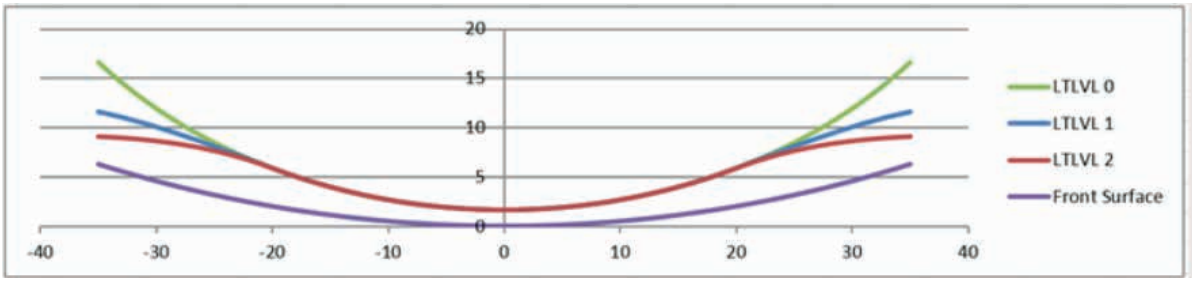
With Edge Blending

Prescription and Front Surface

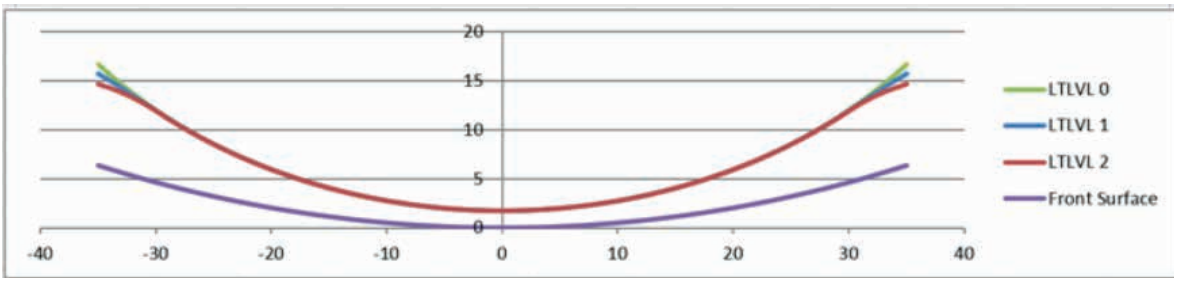
The benefits of Edge Blending will depend upon the prescription used and the front surface chosen. Here are examples of different lenses showing the benefits of Edge Blending.



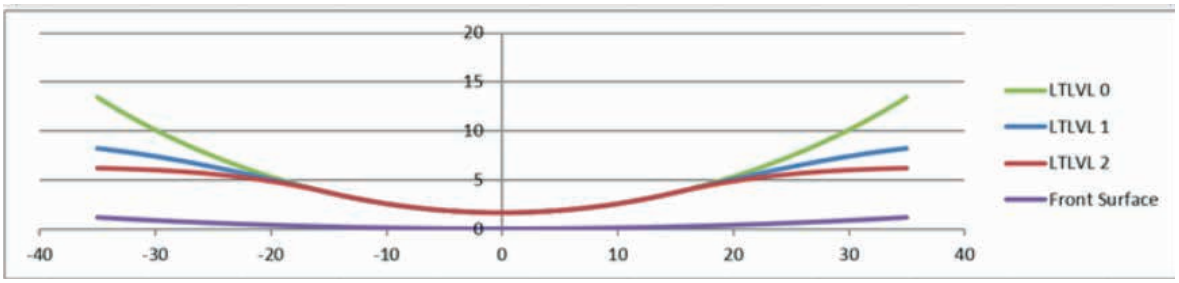
Front Curve: 5.00 Sphere: -10.00 Lenticular Diameter: 40



Front Curve: 5.00 Sphere: -5.00 Lenticular Diameter: 40



Front Curve: 5.00 Sphere: -5.00 Lenticular Diameter: 60



Front Curve: 1.00 Sphere: -8.00 Lenticular Diameter: 30

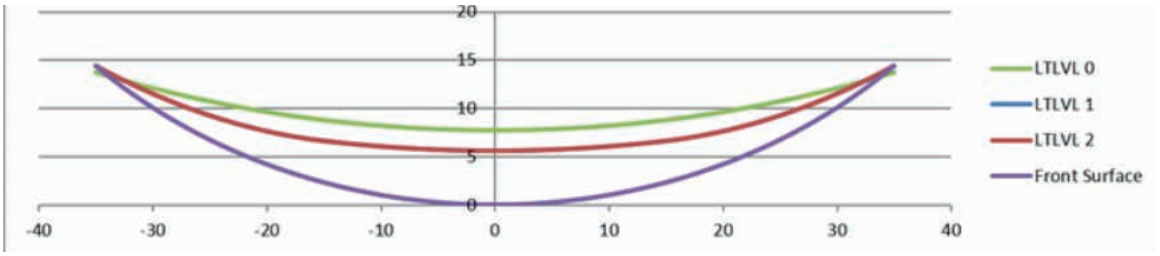
CrossbowsRx allows the laboratory to choose a region that will remain unaltered to maintain good optical properties. Beyond this this region, the surface curvature of the lens changes to reduce the thickness of the lens.

Minus Power Lenses

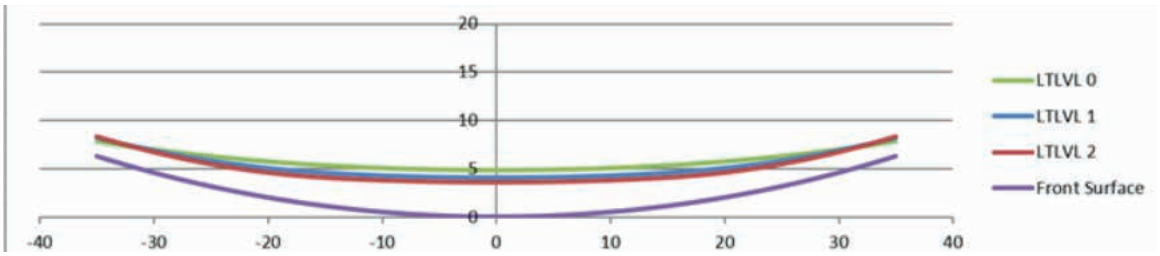
All minus power lenses can benefit from a reduction in edge thickness, and Edge Blending is of particular advantage when used in sports frames that have a high wrap angle.

Plus Power Lenses

For plus power lenses, the advantage of Edge Blending is a reduced centre thickness and therefore also a reduction in the weight of the lenses. On high power plus lenses there can be a significant reduction of thickness. The examples below show a reduction of up to 2mm in centre thickness.



Front Curve: 10.00 Sphere: +6.00 Lenticular Diameter: 30

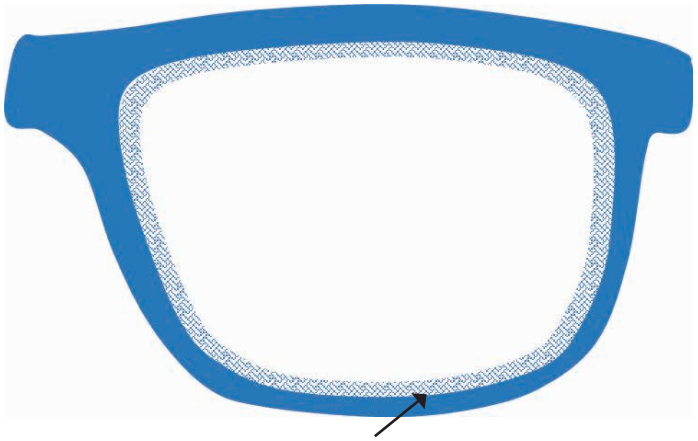


Front Curve: 5.00 Sphere: +3.00 Lenticular Diameter: 30

Frame Shape Edge Blending

CrossbowsRx™ also has the ability to perform edge blending on the complex frame shape. This ensures a greater width of optical zone, while still reducing the edge thickness of lenses.

The blending is performed around the perimeter of the lens, and means that the size of the optical zone is automatically calculated for every individual job.
The width of the blended zone can be left as the default value, or altered to allow for a greater or lesser blended region.



Blended Region

LDS Tags

Crossbows uses the following chiral LDS tags to apply edge blending:
_LTLVL[;] - defines the level of edge blending to use. This can be set to: 0 (off), 1 (medium), or 2 (high) e.g. _LTLVL=1;1.
_LTDIA[;] - defines the diameter (mm) at which edge blending begins. If not entered CrossbowsRx™ will calculate an ideal value for this. E.g. _LTDIA=40;40
_LTFRAME[;] - defines whether the edge blending should be to the crib (0) or to the frame shape (1), e.g. _LTFRAME=0;0.