

[Understanding Vision](#) Oct 16, 2017

10 Years of individualised lenses with freeform technology from ZEISS

Something everyone thought impossible in the past: progressive lenses that are as individual as their wearers are now the measure of all things.

May 12, 2000 was a milestone in the history of spectacle lenses: the first progressive lenses that could be fitted for each individual wearer were born – Gradal® Individual from ZEISS. This technology for individualised production of progressive lenses has remained revolutionary to this very day and is providing increasing numbers of people with better vision thanks to larger ranges of vision and enhanced wearer tolerance. Over the past ten years Carl Zeiss Vision has continued to refine this technology and expand its product offering.

We would now like to wish "Happy Birthday" to a very special lens! A lens that is calculated and produced to incorporate not only the lens power, but also the distance between the wearer's pupils, the position of the frame in front of the eyes and the wearer's own preferred reading distance. This made it possible to manufacture progressive lenses on a totally customised basis to provide better, > ["tailor-made"](#) vision.

With Gradal® Individual, Carl Zeiss Vision has developed a progressive lens that features revolutionary, new properties. On the basis of the prescription and fitting data measured by the eye care professional every Gradal® Individual progressive lens is individually computed for each individual wearer. This data is incorporated in mathematical computations at Carl Zeiss Vision, on the basis of which every lens is individually produced for each wearer.

Why all this effort?

The more exactly the position of the lens in front of the wearer's eye is defined, the better it can be taken into account from the outset, i.e. in the calculation performed before production. The usable

ranges of vision become larger, therefore also further improving wearer tolerance. In this way, the lenses are optimised to provide optimal visual conditions for the wearer. For example, the distance between the wearer's pupils, or PD as this is also known, is an important parameter for the lens production data. Like the prescription power for distance vision, this has a decisive influence but also on near vision. This is of key importance for a progressive lens that is designed to correct both distance and near vision, but was not given enough attention before the introduction of individualised lenses.

What is freeform technology?

Freeform technology made possible what was previously considered to be impossible: the implementation of a truly individualised design. But what exactly is freeform technology?

All > [progressive lenses](#) feature a reading power in the lower part of the lens. The upper part of the lens is used for distance vision, and the transition between the two zones – also known as the progression corridor – provides clear vision in the middle distance range. Due to the laws of physics, blurring occurs at the edges of this zone that may vary in its intensity depending on the quality of the progressive lens design and the degree of individualised fitting. The more individualised the calculation and production of a progressive lens, the smaller the peripheral areas of blurring become. This results in an improvement in vision and wearer tolerance.

A progressive surface is what is known as a freeform surface. At Carl Zeiss Vision small components of the surface are defined which are locally variable and lead to a smooth progressive surface. These surface components are adapted to the wearer's prescription with the aid of mathematical calculations and are then produced. This means that the design of the lens can be individually tailored to the personal needs of the wearer.

Milestones in freeform technology at ZEISS

1981 Introduction of freeform technology.

2000 Introduction of Gradal® Individual: Individualised lenses can now be produced using freeform technology.

2006 Introduction of successor to Gradal® Individual: A new parameter is added – FrameFit®. FrameFit® allows you to configure your glasses to meet your personal taste and requirements: rectangular, round, small, large or angled, take your pick.

Since 1 January 2010 The entire range of progressive lenses from Carl Zeiss Vision is available with freeform technology.

Since April 2010 Individualised progressive lenses are now available in a broad spectrum of sunglass lenses, also for highly fashionable wrap or sports models.

Since October 2010 Introduction of ZEISS Progressive Individual2 with EyeFit technology – Made-to-measure for your eyes.

Since 2015 ZEISS introduces a new progressive lens portfolio made for today's vision needs, the first progressive lens portfolio with Digital Inside technology.

My Vision Profile

Determine your personal visual habits now and find your individualised lens solution.

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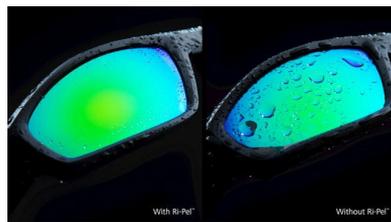
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