

[Understanding Vision](#) Oct 16, 2017

15 Years of Individualized 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 eyeglass lenses: the first progressive lenses that could be fitted for each individual wearer were born – Gradal® Individual from ZEISS. This technology for individualized 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 eighteen years Carl Zeiss Vision has continued to refine this technology and expand its product line.

ZEISS Individual lenses are 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 customized basis to provide better, > "tailor-made" vision".

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

This groundbreaking innovation continues today in the current generation of customized freeform lenses from ZEISS, called Individual 2.

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, thus further improving wearer tolerance as well. In this way, the lenses are optimized to provide the best possible 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 lens production data. While the prescription power has a decisive influence on distance vision, PD is crucial to both distance and 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 individualized lenses.

What is freeform technology?

Freeform technology made possible what was previously considered to be impossible: the implementation of a truly individualized 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 individualized fitting. The more individualized 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 manufactured. This means that the design of the lens can be individually tailored to the personal needs of the wearer.

Milestones in freeform technology at Carl Zeiss Vision

1981 Introduction of freeform technology.

2000 Introduction of Gradal® Individual: Individualized 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.

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

April 2010 Individualized progressive lenses become available in a broad range of sunglass lenses, including highly fashionable wrap or sports models.

October 2010 Introduction of Gradal Individual® EyeFit – Made-to-measure for your eyes.

April 2015 ZEISS introduced Precision Portfolio, a progressive lens portfolio made for today's vision needs, and the first progressive lens portfolio with Digital Inside technology.

Image: © ExQuisine - Fotolia.com

My Vision Profile

Determine your personal visual habits now and

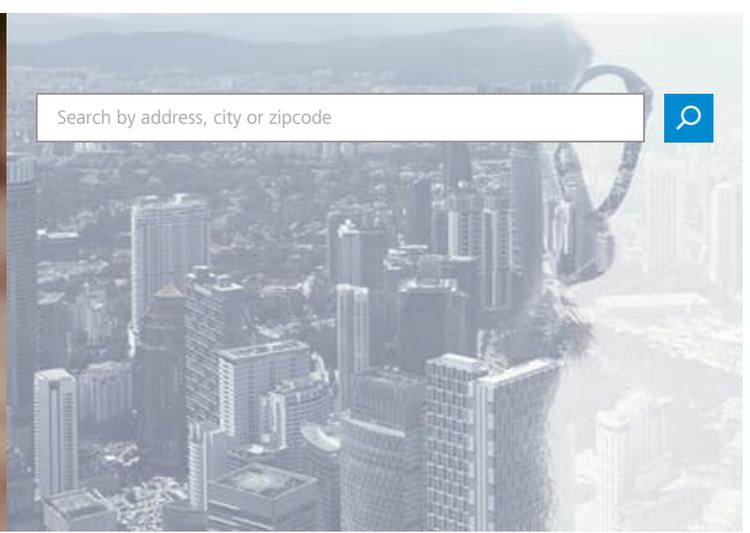
Find an eye doctor near me

find your individualized lens solution.

Check your Vision Profile now!



Search by address, city or zipcode



Related Articles



Recognizing vision problems

Near-sightedness, far-sightedness, astigmatism, etc.: What vision problems are there and how can we correct them?

[Understanding Vision](#) Nov 29, 2017

Tags: Distance Glasses and Reading Glasses, Progressive Lenses



The history of glasses

From their origins as "reading stones" to lifestyle accessories.

[Understanding Vision](#) Nov 22, 2017

Tags: Distance Glasses and Reading Glasses, Progressive Lenses



Better Vision for Seniors

Most people over 40 need a pair of glasses. Progressive lenses can restore them to 20/20 vision.

[Understanding Vision](#) Oct 31, 2017

Tags: Progressive Lenses



No face is perfectly symmetrical, and no two people's eyes are the same distance apart

Only after the glasses frames have been precisely adjusted to the individual wearer can the lenses perform to their full potential.

[Understanding Vision](#) Oct 16, 2017

Tags: Distance Glasses and Reading Glasses, Progressive Lenses

Related Products



Progressive glasses are an all-around talent:

finally enjoy good vision again – no



Lens cleaning solution for eyeglasses

Gentle, easy, effective.

matter the distance.

[Learn more](#)

[Learn more](#)



Explore

[Understanding Vision](#)
[Health + Prevention](#)
[Lifestyle + Fashion](#)
[Driving + Mobility](#)
[Sports + Leisure](#)
[Work Life](#)

Help me choose

[Progressive Lenses](#)
[Sunglasses](#)
[Working Glasses](#)
[Sports Glasses](#)
[Glasses for Children](#)
[Lens Coatings](#)
[Lens Cleaning](#)
[At the Eye Care Professional](#)

Services

[My Vision Profile](#)
[Online Vision Check](#)

For Eye Care Professionals

[Our goal is to make you successful](#)
[Instruments + Technologies](#)
[ZEISS Eyeglass Lenses](#)
[ZEISS Cleaning Solutions](#)