

ZEISS SmartLife Lenses

Designed for dynamic
visual behavior.

ZEISS

Seeing beyond

A complete lens portfolio for busy eyes in a digitally immersive world.

- Designed with the most advanced visual behavior data.
- Customized for individual wearers' unique parameters including their age specific attributes.

www.zeiss.com/pro/smartlife

**Our best,
even better**

Simply the best ZEISS lens portfolio for all ages...

The ZEISS SmartLife lens portfolio.

ZEISS has created a continuum of products with one design philosophy which is to answer the needs of today's lifestyle and visual behavior. These new products are optimized for age-related visual needs as well as options for individualization.

ZEISS SmartLife Young Single Vision lenses NEW

to support the changing visual needs of growing children.

ZEISS SmartLife Single Vision lenses for sharp, clear and comfortable vision for non-presbyopes.

ZEISS SmartLife Digital lenses designed to reduce perceived eye strain for comfortable vision, near and far for pre-presbyopes.

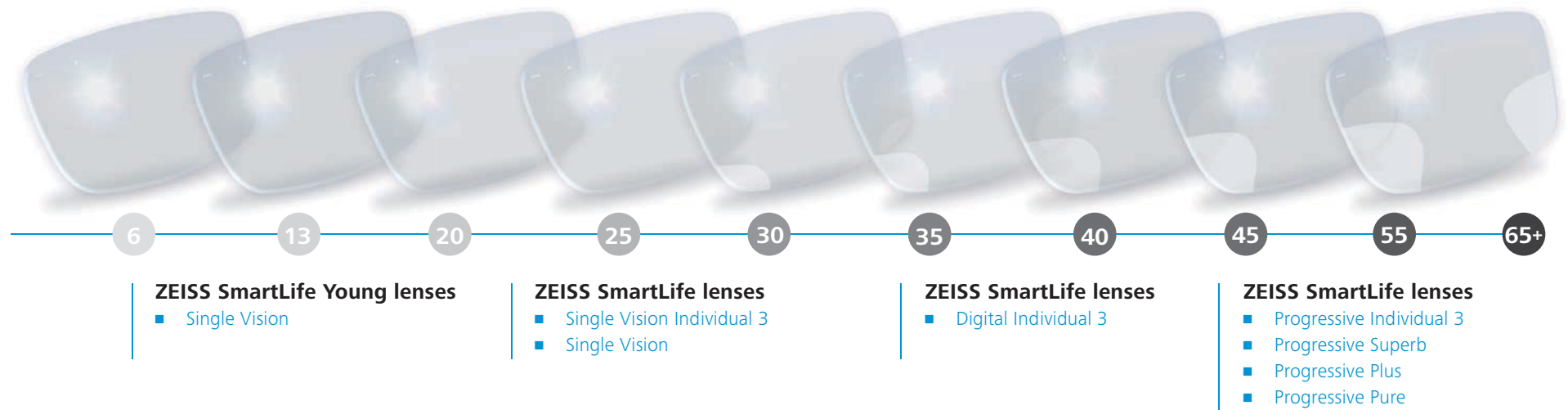
ZEISS SmartLife Progressive lenses NEW

for smooth vision from near to far and fast adaptation for presbyopes. Including optimization options for the wearer's personal visual behavior giving the wearer full freedom of vision at any distance and in any direction.

84% of wearers experience all-day comfortable vision.¹

81% adapt to their lenses within 1 day.¹

98% would recommend these lenses to their friends and family.²



...and busy eyes in a digitally immersive world.

People are more connected today than they have ever been.

How we interact has changed, putting new demands on our eyes. From online classes to celebrating and meeting virtually, immersive digital solutions are important for us to stay connected.

In our fast-paced world we face a variety of challenges. Multiscreen usage combined with an always-on-the-move lifestyle can lead to uncomfortable vision.

Everyone needs clear, comfortable vision to confidently navigate through the world, especially while using many devices at the same time. Clear central vision as well as smooth peripheral vision are important to easily switch and adapt between different viewing distances and directions.



Past

Connected devices started to become a commodity in our daily lives. This meant:

- More information on smaller and higher resolution displays.
- Closer reading distance on digital devices.



Recent past

Being constantly connected and more mobile further affected our visual behavior:

- Significant increase in downward shifted gaze while using devices.
- Changes in posture and stress on central and peripheral vision due to new eye movement patterns from constant device use while on the move.



Today

Intense daily use of digital devices, and multiple devices at the same time, had made dynamic visual behavior an even more important factor for patients of all ages.

A closer look at the insights:

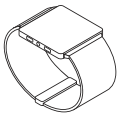
How lifestyle and visual behavior have changed.

1 | Connected and immersive.

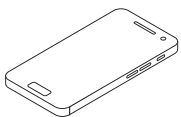
Smartphones continue to increase mobility and flexibility for people of all ages. Our visual behavior and visual habits are determined by our lifestyle: we constantly stare at smartphone, laptop or tablet screens and at the same time we need to be aware of the world around us.



55+ is the age group with the **largest current smartphone penetration growth rate.**⁴



More than **1/2** of the world's population now carries a **portable digital device.**³

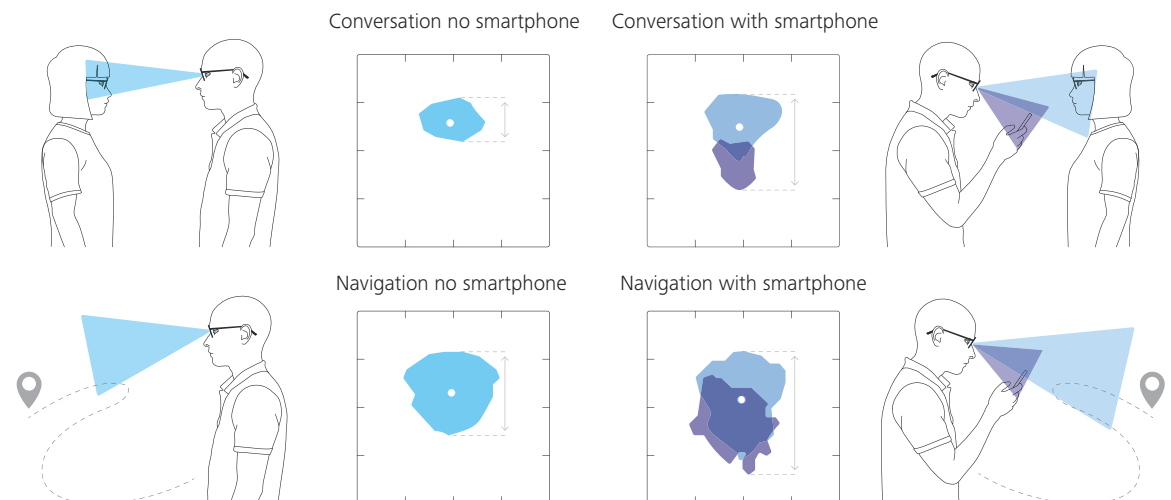


60% of children under the age of 5 years have already starting to **engage with smartphones.**⁵

2 | Dynamic visual behavior.

Using digital devices has changed the way we use our eyes compared to only a decade or two ago. ZEISS has a holistic understanding of today's visual behavior, supported by significant findings of scientific gaze tracking studies even during disruptive times.^{6,7}

- Fields of vision almost double depending on task.
- High dynamics of vision in distances and transition.
- More eye motion and less head movement than expected.
- The need of age-dependent visual demands based on vision activities and head motion ratio.



As we age, our visual needs change too.

3 | Age-related visual needs.

Eyeglass wearers of all ages share the same connected lifestyle, have the same visual behavior and consequently and have to deal with the resulting visual strain. In addition, our visual needs also continue to change as we grow older.

The anatomical and physiological changes of our eyes can lead to different visual challenges over time.

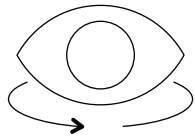
These visual challenges can be attributed to the following key factors:

- A decrease in the amplitude of accommodation.
- A change in pupil diameters – increasing for growing children and decreasing when we age as adults.
- Kids and teenagers differ in age-specific facial anatomy and morphology resulting in changing parameters of wear which needs to be considered in the lens design.



Latest technology: ZEISS SmartView 2.0 technology with age intelligence.

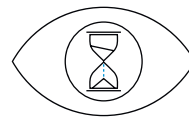
An in-depth understanding of visual behavior and visual habits based on the latest consumer insights and scientific research has been translated into our latest innovation in lens optimization. ZEISS SmartView 2.0 technology consist of three cornerstones, including age intelligence which features further optimization parameters with Luminance Design® 2.0 technology, Dynamic AgeFit® and Intelligence Augmented Design™ technology:



1 | Smart dynamic optics

Our latest design optimization includes state-of-the-art 3D object-space-models and new design fingerprints adapted for today's dynamic visual behavior. Both lead to a smoother transition between all viewing zones, resulting in comfortable vision and ease of viewing at all distances and in all directions.

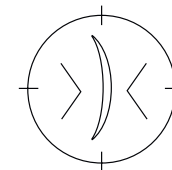
The 3-D object-space-model is a new way of lens calculation that considers the exact position of thousands of points within a 3D space according to its distance, direction and inclination, in relation to the spectacle lens. This model is also adapted for growing children in ZEISS Single Vision SmartLife Young lenses.



2 | Age intelligence

This technology considers the evolution of vision needs at every stage of the lens and allows for the addition of age-related optimization parameters.

- **ZEISS Luminance Design 2.0 technology**
Takes average light conditions and the age-related pupil diameter of the wearer into account.
- **ZEISS Dynamic AgeFit technology** – a key component of ZEISS SmartLife Young Single Vision lenses as they are fitted for a growing child's age-related facial anatomy.
- **ZEISS Intelligence Augmented Design (IAD) technology** – ZEISS SmartLife Individual 3 lenses employ this technology to optimize the lens to the wearer's personal visual behavior and requirements.



3 | Clear optics and thin optics

ZEISS delivers lens aesthetics with the best balance between optics and thin, light lenses with our promise of precision throughout the design and production process.

- High precision in an advanced lens-eye-system**
- State-of-the art standard position of wear parameters.
 - Location of CoR of the eye – updated to use both horizontal and vertical centers of rotation.

Technologies in focal types.



	ZEISS SmartLife Young lenses	ZEISS SmartLife lenses						
	Single Vision	Single Vision	Single Vision Individual 3	Digital Individual 3	Progressive Pure	Progressive Plus	Progressive Superb	Progressive Individual 3
UPDATE: ZEISS SmartView® 2.0 technology Optimized for all day visual comfort for a connected and on-the-move lifestyle.	■	■	■	■	■	■	■	■
UPDATE: ZEISS Luminance Design® 2.0 technology Takes average light conditions and age-related pupil diameter into account.	■	■	■	■	■	■	■	■
NEW: ZEISS Dynamic AgeFit® technology Fitted to the age-related facial anatomy of growing children.	■							
ZEISS Digital Inside® technology Optimized near zone for better reading on digital devices.				■	■	■	■	■
ZEISS FrameFit+® technology The lens corridor is optimized to allow any choice of frame.				■		■	■	■
ZEISS Adaptation Control technology Optimized for faster adaptation to new lenses.				■		■	■	■
ZEISS FaceFit® technology Fitted to the wearer's facial anatomy.			■	■			■	■
ZEISS IndividualFit™ technology Optimized to specific daily activities.								■
NEW: ZEISS Intelligence Augmented Design™ (IAD) technology Optimized to the wearer's personal visual behavior and requirements.			■	■				■

ZEISS SmartLife Young Single Vision lenses

6+ years



ZEISS SmartLife Young Single Vision lenses are ideal for the changing requirements of children as they grow – from child to teenager. They are perfectly matched to young people's connected and active lifestyle and anatomy, giving children the best possible optical performance compared to conventional ZEISS Single Vision lenses.

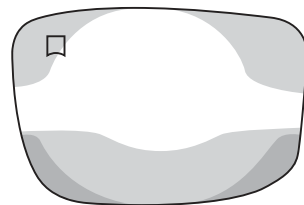
Our calculations show:

- Up to 60% wider fields of clear view for smartphone and handheld device distances compared to conventional ZEISS Single Vision.

Product availability

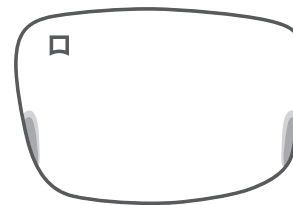
ZEISS SmartLife Young Single Vision lenses are available in all lens materials and come standard with ZEISS UVProtect. They can also be ordered in ZEISS BlueGuard® for both UV and blue light protection. ZEISS DuraVision® AR coatings are also available for improved scratch resistance, cleanability and reduced glare.

Schematic illustration of zone size comparison for a child aged 6 with +4D



Conventional ZEISS Single Vision

Age-related anatomy and morphology of kids and teenagers are not considered in the lens design.



ZEISS SmartLife Young Single Vision lenses

Anatomy and morphology specific to kids and teenagers are considered in the lens design.



ZEISS SmartLife Single Vision lenses



20+ years



Standard single vision lenses are not optimized for near vision tasks. Now, with the new design fingerprints and the state-of-the-art 3D object space model, the ZEISS SmartLife Single Vision lens design is calculated for sharp vision at all distances, especially when lowering the gaze while focusing on near objects.

Our calculations and studies show:

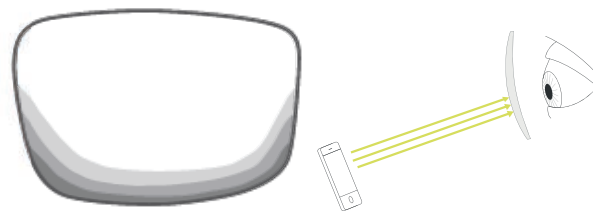
- Improved optical performance with up to 88% larger clear fields of view compared to ZEISS single vision spherical and aspheric lenses.
- 94% of wearers perceived wider fields of comfortable vision for intermediate and near tasks.⁸

Product availability

ZEISS SmartLife Single Vision lenses are available in all materials and come standard with ZEISS UVProtect. They can also be ordered in ZEISS BlueGuard for both UV and blue light protection.

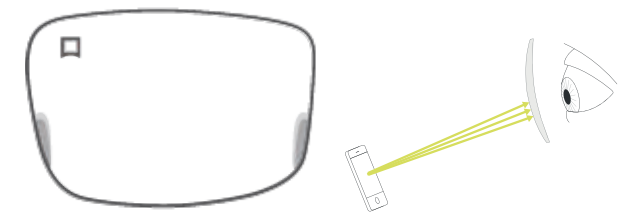
ZEISS SmartLife Single Vision lenses can be combined with all ZEISS DuraVision coatings, sun tints and all ZEISS PhotoFusion X colors and DuraVision flash and mirror coatings.

Two versions are available: ZEISS SmartLife Single Vision lenses and Single Vision Individual 3 lenses.



Today's single vision lenses

Today's single vision lenses are mostly optimized for one distance only – mainly for far vision.



ZEISS SmartLife Single Vision lenses

ZEISS Single Vision SmartLife lenses are optimized for sharp vision at all distances.

ZEISS SmartLife Digital lenses

30+ years



ZEISS SmartLife Digital Individual 3 lenses provide an overall lower blur level compared to the original ZEISS Digital Lenses. Lenses with low addition power are designed to allow for easy adaption for single vision or non-lens wearers. The design is also geared towards ZEISS SmartLife Progressive lenses for easier transition into progressive lenses at a later stage.

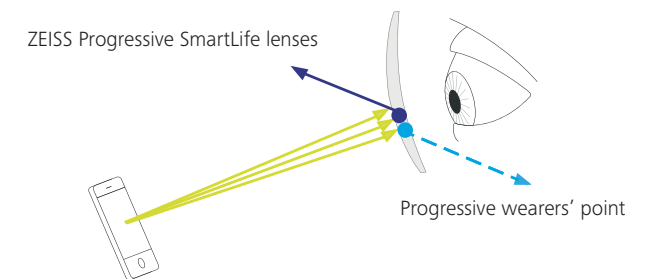
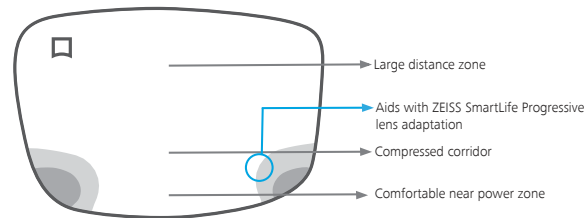
Our studies show:

- 81% of wearers perceived wide fields of comfortable vision for intermediate and near tasks.⁸
- 73% of wearers perceived less eye strain at the end of the day.⁸
- Up to 8% wider fields of clear view in line with the visual demand of the patient compared to the previous ZEISS SmartLife Digital lenses.¹⁰

Product availability

ZEISS SmartLife Digital Individual 3 lenses are available in all materials and comes standard with ZEISS UVProtect. They can also be ordered in ZEISS BlueGuard for both UV and blue light protection.

They can also be combined with all ZEISS DuraVision coatings, sun tints and all ZEISS PhotoFusion X colors, and DuraVision flash and mirror coatings.



ZEISS SmartLife Progressive lenses

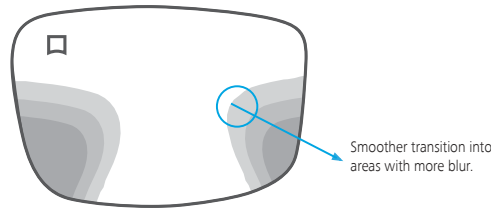


40+ years

ZEISS Progressive SmartLife lenses are designed for frequent changes of head and eye position driven by the way in which people interact with their handheld devices while on the move.

Our studies show:

- 4 out of 5 wearers experience smooth vision from near to far across all viewing zones.⁸
- 80% of wearers perceived wide fields of comfortable vision for intermediate and near tasks.⁹
- 8 out of 10 wearers confirmed that the new lenses gave them comfortable vision within minutes.¹¹



Smoother transition into areas with more blur compared to previous the previous generation of ZEISS Progressive lenses.*

**As compared to ZEISS Precision Progressive lenses*

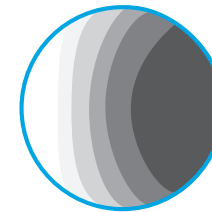
Product availability

ZEISS SmartLife Progressive lenses are available in all materials and come standard with ZEISS UVProtect. They can also be ordered in ZEISS BlueGuard for both UV and blue light protection.

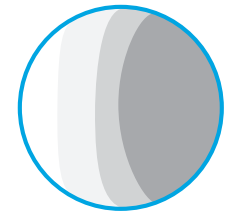
They can be combined with all ZEISS DuraVision coatings, sun tints and all ZEISS PhotoFusion X as well as DuraVision flash and mirror coatings.

ZEISS SmartLife Progressive lenses are available in four tiers: Progressive Pure, Progressive Plus, Progressive Superb and Progressive Individual 3 – the best available ZEISS lens.

Standard Progressive lens



ZEISS SmartLife Progressive lens



Decreased blur level for intermediate to near distances compared to the previous generation of ZEISS Progressive lenses.*

ZEISS SmartLife Individual 3 lenses feature ZEISS Intelligence Augmented Design™ technology.

ZEISS SmartLife Individual 3 is the next generation of tailor-made lenses. The evolutionary design makes use of intelligence augmentation to take unique visual requirements, behavior and parameters into account in the highest level of detail. These lenses are so precisely customized – **they are simply the best ZEISS lenses ever.**

Our calculations and studies show:

- 85% of wearer confirmed that they they have full freedom of vision in any distance & direction.⁹
- Up to 29% better optical performance than previous SmartLife Individual lenses.
- 8 out of 10 wearers confirmed they had comfortable vision within minutes of wearing.⁹
- Up to 79% more suited to the visual needs and behavior of wearers compared to previous Smartlife Individual lenses.

ZEISS SmartLife Individual 3 lenses consider oculo-motoric behavior together with the wearer's individual parameters including anatomy, physiology as well as habituation, resulting in an ultra-refined lens.

The lenses make use of new **ZEISS Intelligence Augmented Design technology** to match an individual wearer's data to a set of **12.5 million data points of visual behavior** in specific age groups.

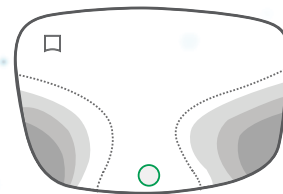
This allows ZEISS to predict how an individual will use their eyes in their daily life and to **create their best matched lens design.**

Product availability

ZEISS SmartLife Individual 3 lenses are available for all wearers in SmartLife Single Vision, SmartLife Digital and SmartLife Progressive lenses regardless of material, and can be combined with all ZEISS DuraVision coatings, tints, and ZEISS PhotoFusion X.

Today

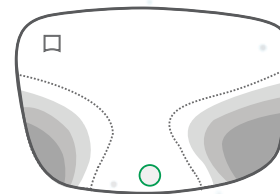
One Design - All Ages



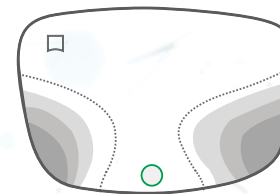
Best balanced zone sizes for all age groups.

New

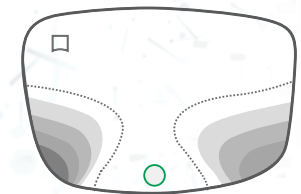
Best Match Design **Age 47**



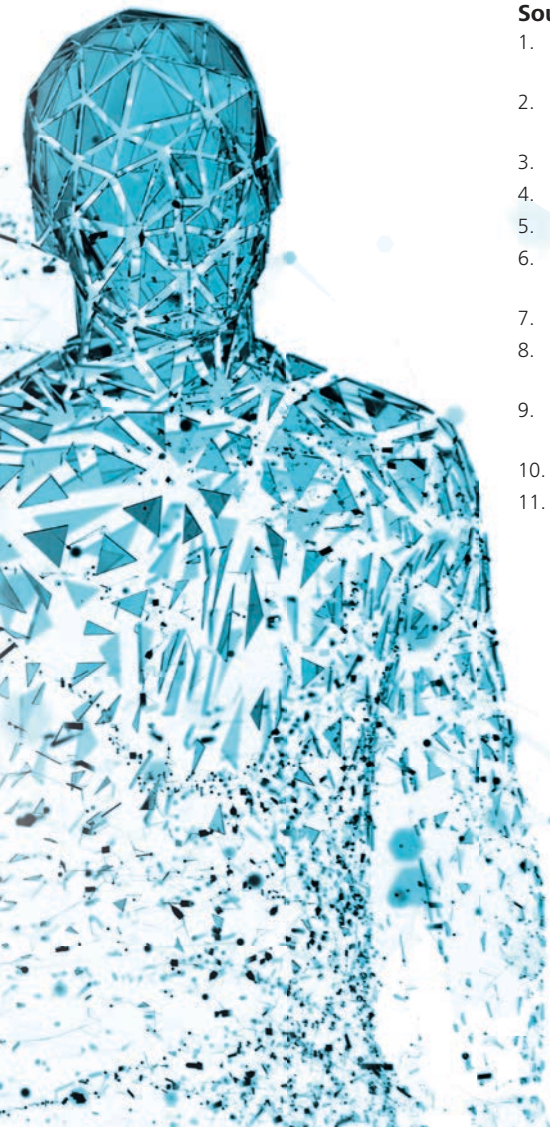
Best Match Design **Age 55**



Best Match Design **Age 73**



Personalized zone sizes build on age-related differences in today's visual behavior.



Sources

1. External consumer acceptance test on the ZEISS SmartLife lens portfolio, n=182 study participants. Aston Optometry School, Aston University, UK, 2019. (unpublished, data on file.)
2. Market consumer acceptance test on the ZEISS SmartLife Individual 3 lens portfolio, n=128 study participants in DE, CN, 2022, Carl Zeiss Vision International GmbH. (unpublished, data on file.)
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4. We Are Social & Hootsuite. (2019). Digital 2019 Essential insights into how people around the world use the internet, mobile devices, social media and e-commerce.
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6. Dynamic gaze study - Changes in gaze behavior through digital devices. ZEISS Vision Science Lab, Institute for Ophthalmic Research, University of Tuebingen, 2019. (unpublished, data on file.)
7. Internal Global Vision Study, Carl Zeiss Vision International GmbH, DE, 2020-2021. (unpublished, data on file.)
8. External consumer acceptance test on the ZEISS SmartLife lens portfolio, n=169 study participants (SV=48, DIG=39, PAL=82). Aston Optometry School, Aston University, UK 2019. (unpublished, data on file.)
9. Market consumer acceptance test on ZEISS SmartLife Individual 3 lens portfolio with n=174 study participants in DE, IT, CN by Carl Zeiss Vision International GmbH, DE 2022. (unpublished, data on file.)
10. Data on file, Qualitative analyses by Technology & Innovation, Carl Zeiss Vision International GmbH, DE, 2022.
11. Percentage of participants who rated 'fully agree' or 'agree'. Market consumer acceptance test on ZEISS SmartLife Individual 3 lens portfolio with n=174 study participants in DE, IT, CN by Carl Zeiss Vision International GmbH, DE 2022. (unpublished, data on file.)

8 out of **10**

wearers say it is the best lens they ever had.⁹

Designed for dynamic visual behavior.

ZEISS SmartLife Lenses





ZEISS

Seeing beyond

**Our
best lens,
even
better!**

ZEISS – The trusted leader in precision optics for over 175 years.

Where **PASSION** drives **INNOVATION**.

As a pioneer in the field of optics, ZEISS continues to enable human ambitions in many fields including:

- Eyeglass lenses
- Binoculars & scopes
- Microscopes
- Medical equipment
- Movie & Camera lenses
- Semiconductor manufacturing



ZEISS SmartLife Lenses. Contact your **ZEISS** representative or visit www.zeiss.com/pro/smartlife to learn more.

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Seeing beyond