

High resolution vision



Varilux® Physio™ The new wave

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57-02-067

Varilux keeps progressing. You will too.
VARILUX®
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Modern life. Modern eyes.

High-tech devices, mobile phones, digital cameras, high-definition screens bring new solutions and more convenience for consumers' everyday life.

However, these new technologies, digital displays and artificial lightings create very demanding conditions for the human eye.

Several studies show that today, people are looking for visual precision, a true visual sharpness rather than 'just' a comfortable vision.

To meet increasing consumer demands, Varilux® lenses must take up the toughest challenge ever: provide a HIGH RESOLUTION VISION in addition to an accurate prescription.

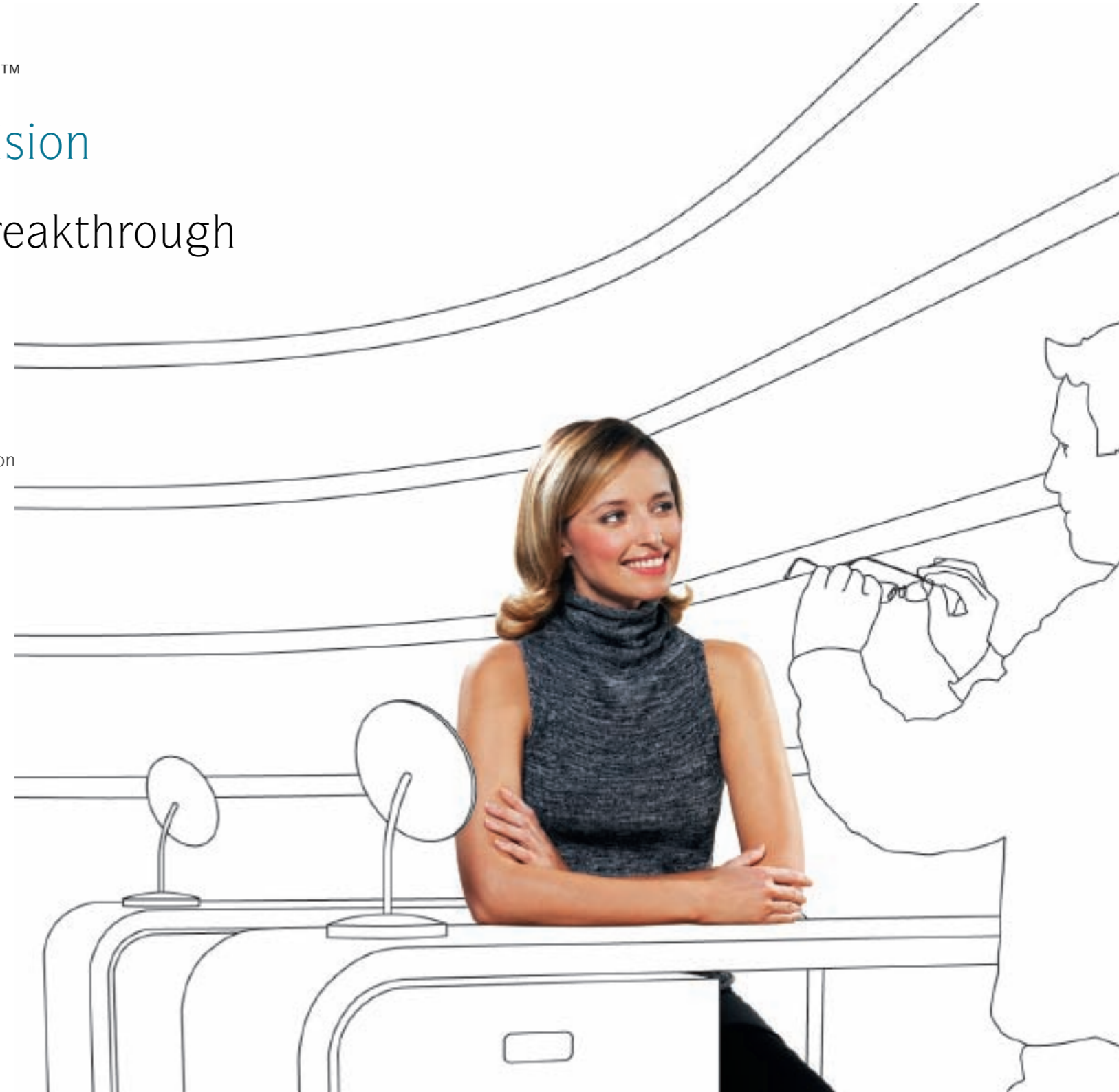


Varilux® Physio™ High resolution vision

A technological breakthrough from Varilux®

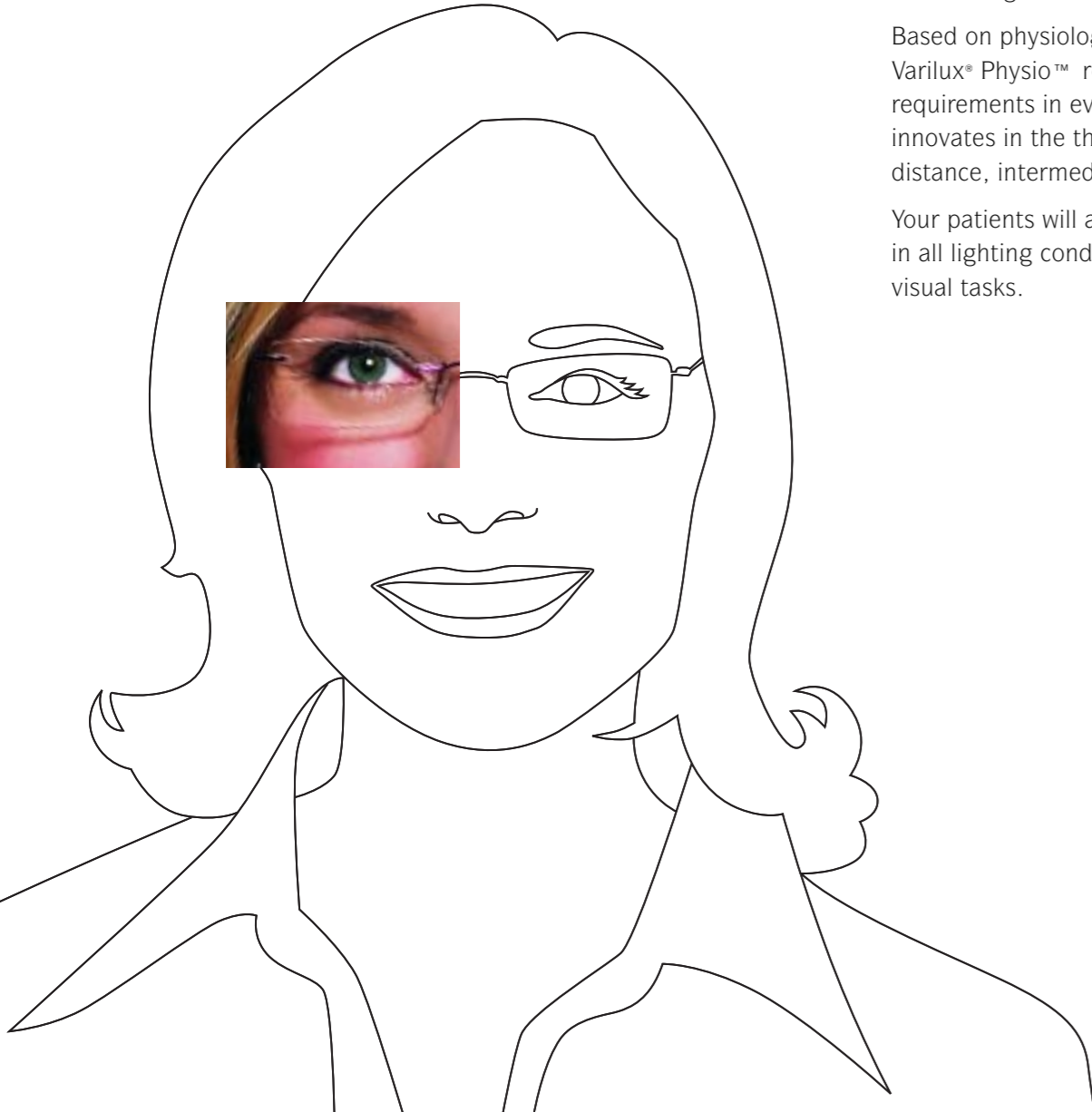
Originating from physiological research, Varilux® Physio™ delivers high resolution vision through two ground breaking innovations:

- **Wavefront Management System™** - a design innovation which uses the latest wavefront technology.
- **Point-by-Point Twinning™** - a process innovation for calculating and manufacturing the lens front and back surfaces.



Varilux® Physio™

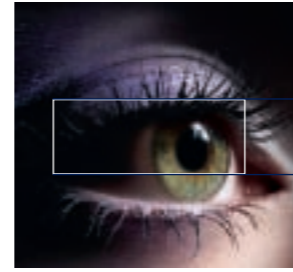
High resolution vision



Knowing how important visual acuity is for today's wearers, Varilux® Physio™ delivers high resolution vision.

Based on physiological studies, Varilux® Physio™ respects specific eye requirements in every gaze direction and innovates in the three zones of the lens: distance, intermediate and near.

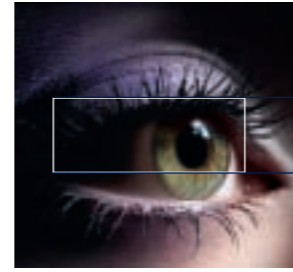
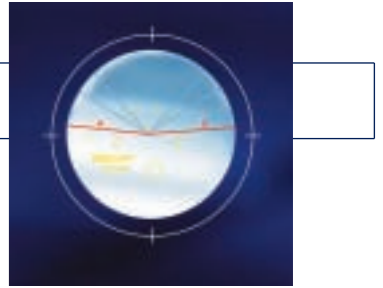
Your patients will appreciate Varilux® Physio™ in all lighting conditions and for all visual tasks.



Distance vision

Physiological studies show that the higher order aberrations (including Coma) reduce visual acuity - this is particularly critical for distance vision when the pupil is larger. Varilux® Physio™ is the first varifocal to minimise not only the aberrations that are usually considered, but also higher order aberrations that reduce visual acuity in distance vision.

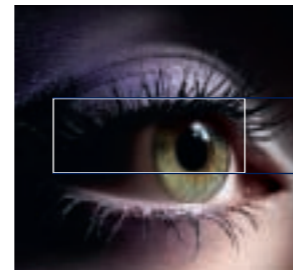
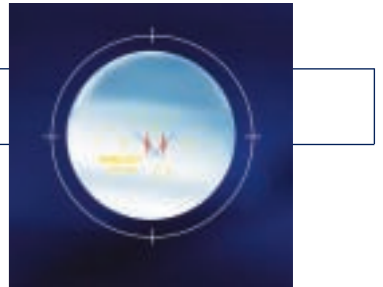
Benefit for patient: **superior visual sharpness**



Intermediate vision

Physiological studies have demonstrated that in the presence of unwanted residual astigmatism the eye prefers to focus on vertical lines. With Varilux® Physio™ for the first time ever, the axis of unwanted astigmatism are directed vertically in order to meet this physiological requirement.

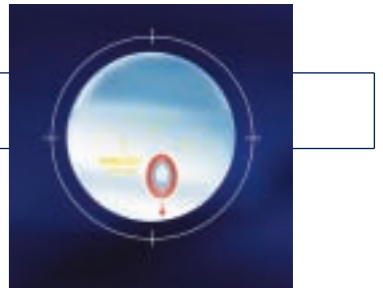
Benefit for patient: **wider fields of vision**



Near vision

Physiological studies show that different near vision tasks require continuous eye and head adjustments throughout the day. With Varilux® Physio™ the near vision zone has been extended vertically in order to minimise these postural adjustments.

Benefit for patient: **greater visual and postural comfort**



First innovation: lens design through the Wavefront Management System™

Through the concept we consider the way light travels and how the entire wave front of the beam of light passing through the pupil contributes to the clarity of vision.

All varifocal lenses, by nature of their design (power variation), deform the LIGHT WAVES as they pass through the lens. This leads to aberrations and acuity loss.

Managing the quality of the WAVEFRONT is therefore crucial for clarity of vision.

It requires both:

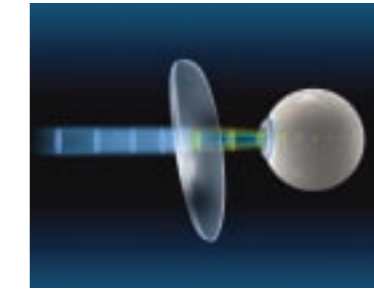
- To analyse the whole beam of light passing through the pupil whatever the direction of gaze.
- To minimise aberrations of the wavefront.

5 Patents



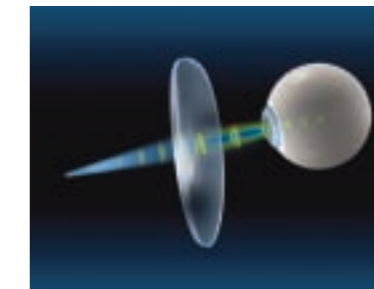
Wavefront Management System™ A revolutionary way to achieve high resolution vision

Thanks to the Wavefront Management System™, for the first time ever in the spectacle lens field, the calculation of each point of the progressive surface is achieved by taking into account the whole beam of light passing through the pupil rather than a single ray.



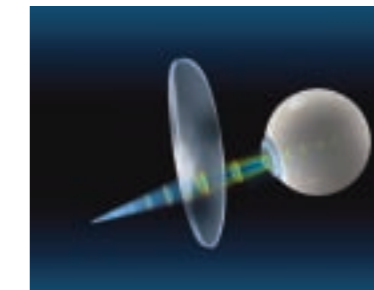
In distance vision

The Wavefront Management System™ allows us to control the wavefront passing through the pupil in order to reduce higher order aberrations. For the first time the Coma has been reduced, thereby providing **superior visual sharpness**.



In intermediate vision

The Wavefront Management System™ allows us to keep the axis of unwanted residual astigmatism vertical in order to match the eye preference. Focusing is made easier and the area of clear vision is thereby **increased by up to 30%** compared to the latest varifocals.



In near vision

The control of the wavefront has allowed us to extend vertically the zone of stabilised near power. **The eye can explore a larger area** of the near zones without postural adjustments.

Second innovation

Lens production through Point-by-Point Twinning™

As both lens surfaces affect the quality of the wavefront, in order to maintain the optimal performance delivered by the lens, a revolutionary new calculation and manufacturing process called 'Point-by-Point twinning™' has been created.



Point-by-Point Twinning™

An innovative calculation software patented by Essilor is used to match the front and back surfaces of the lens taking into account all of the combinations of SPH, CYL, Axis and addition for all the directions of gaze.

3 Patents

Twinning by digital surfacing

The modern way to manufacture

An advanced digital surfacing process is used to produce the front surface of the lens.

This process is also used to manufacture the back surface of the lens in order to optimise visual performance whenever the prescription demands it.



Varilux® Physio™

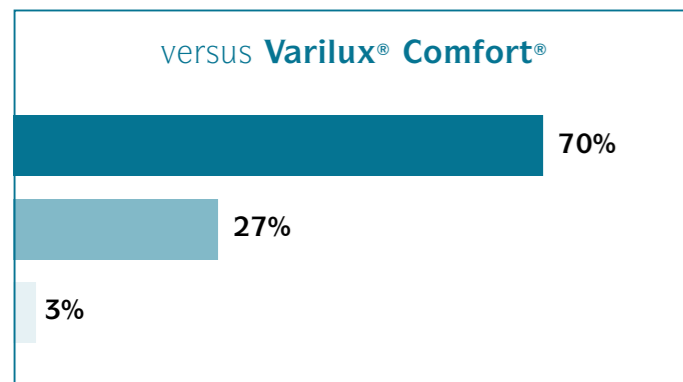
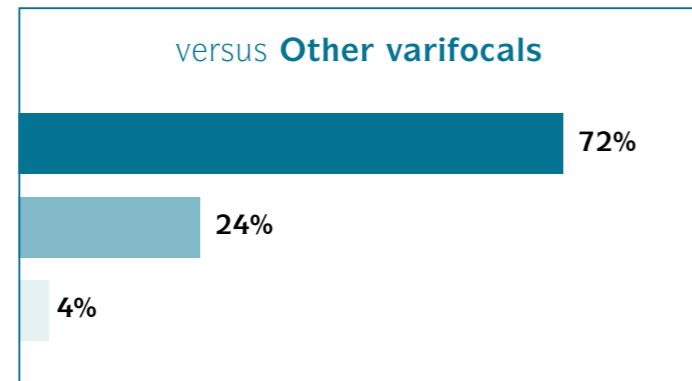
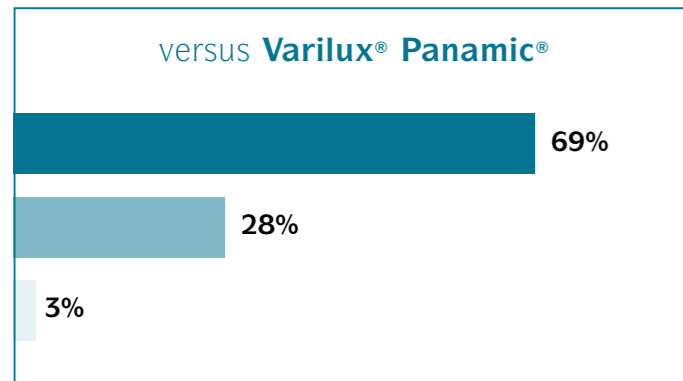
Total satisfaction

High satisfaction for wearers

More than 2,000 wearers took part in tests with Varilux® Physio™ and confirmed its superiority over existing varifocals whatever the visual criteria.

The results of wearer tests show a higher satisfaction ratio with Varilux® Physio™ compared to the latest varifocals.

The results are consistent whatever the prescription, the age of presbyopes and the type of spectacle lenses worn previously.



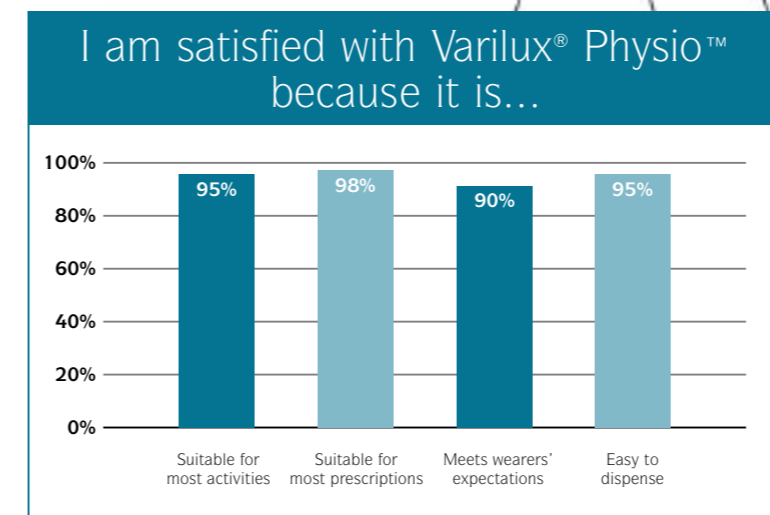
- clearly better/better
- equivalent
- not as good/clearly not as good

*Varilux® Physio™ was tested worldwide in internal R&D studies, external studies with independent Universities and through Market Tests in various countries including the UK.

High confidence for professionals

Testimonials from Market Tests* point out a very positive perception of the lens among practitioners.

In tests 95% of dispensing opticians and optometrists were very satisfied with Varilux® Physio™ and 70% of them noticed the superiority of this lens over the varifocal lenses they had been dispensing until then.



*Market Tests carried out in 5 countries having different dispensing habits (UK, Australia USA, France, Germany) 2000 wearers (random selection), 160 practitioners every day practice conditions.



Varilux® Physio™

Continuity and innovation

As part of the Varilux® family, Varilux® Physio™ utilises the best features of other Varilux® products such as Varilux® Panamic® and Varilux® Comfort®.

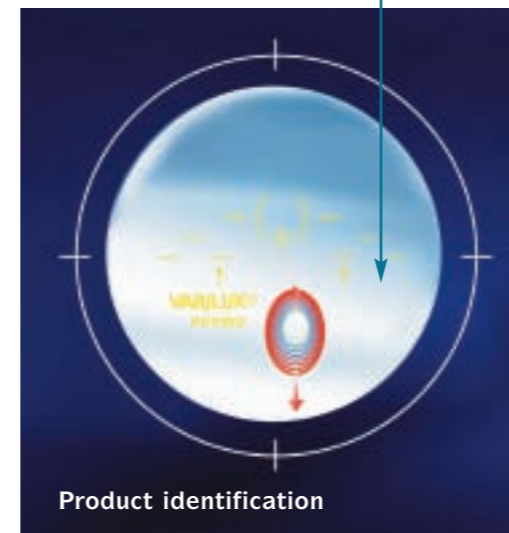
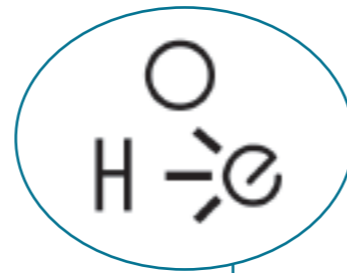
At the same time, it brings its own exclusive innovations.

	Varilux® Panamic™ Varilux® Comfort™	Varilux® Physio®	Additional benefits
Distance Vision Aberration control	<ul style="list-style-type: none"> Power error Oblique astigmatism 	<ul style="list-style-type: none"> Power error Oblique astigmatism Higher order aberrations (coma) 	Superior visual sharpness
Intermediate Vision Astigmatism control	<ul style="list-style-type: none"> Value Location 	<ul style="list-style-type: none"> Value Location Orientation (-cyl) 90° 	Wider field of vision
Near Vision Power control	<ul style="list-style-type: none"> Horizontal 	<ul style="list-style-type: none"> Horizontal Vertical 	Greater visual and postural comfort
Minimum fitting height	<ul style="list-style-type: none"> 18mm 	<ul style="list-style-type: none"> 17mm 	Greater choice of frames

Range and lens description:

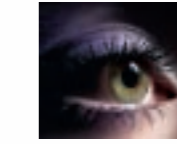
- Stylis® 1.67 and Stylis® 1.67 Transitions® -12.00 **Cyl. 4.00** +9.00
- Airwear® and Airwear® Transitions -10.00 **Cyl 4.00** +6.00
- Orma and Orma Transitions -9.00 **Cyl 6.00** +6.00
- Coming soon: Ormix™ 1.6, Fusio™ 1.74, Clear and Transitions
- Additions from 0.75 to 4.00 and Cyls to **6.00** on Orma*
- Available with a choice of coatings including **Crizal ALIZÉ**

*4.00 on all other materials



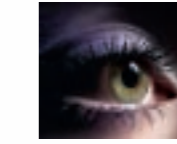
Design Summary 5 Patents

Far Vision



Physiology: Coma impacts image quality
Innovation: Coma control
Benefit: Superior visual sharpness

Intermediate Vision



Physiology: The eye prefers focusing on vertical lines
Innovation: Axis control
Benefit: Wider field of vision

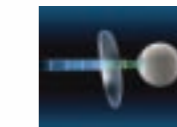
Near Vision



Physiology: The eye explores a large vertical area of the near zone
Innovation: Power control
Benefit: Greater visual and postural comfort

Technology Summary 3 Patents

Based on 2 key technological innovations:



Wavefront Management System™
 A design innovation which uses the latest wavefront technology



Point-by-Point Twinning™
 A process innovation for calculating and manufacturing the lens front and back surfaces

Varilux® Physio™ Range

Material	Uncoated	Supra	Crizal® Alizé	Transitions Grey/Brown	Essilor Full Tints	Essilor Grad Tints	Silver Shadow CT
Orma® 1.5	Yes	Yes	Yes	Yes (Supra & Crizal® Alizé) No tint	Yes - Except 25% LTF	Yes	Yes - with Crizal® Alizé
Airwear® 1.59	No	No	Yes	Yes (Crizal® Alizé) No tint	Yes - Except 25% & 5% LTF	No	Yes
Stylis® 1.67	No	No	Yes	Yes (Crizal® Alizé) No tint	Yes - Except 25% LTF	Yes	Yes

Where to order Varilux® Physio™

Varilux® Physio™ can be ordered directly from Essilor, through a Varilux® Specialist Laboratory or a Wholesale Glazing Partner.

Varilux® Guarantee

As with all Varilux® lenses, Varilux® Physio™ is covered by the Varilux® guarantee scheme.

