

SCHWIND

eye-tech-solutions

SCHWIND ATOS[®] with SmartSight

The latest generation femtosecond laser:
Safe procedure – fascinating technology



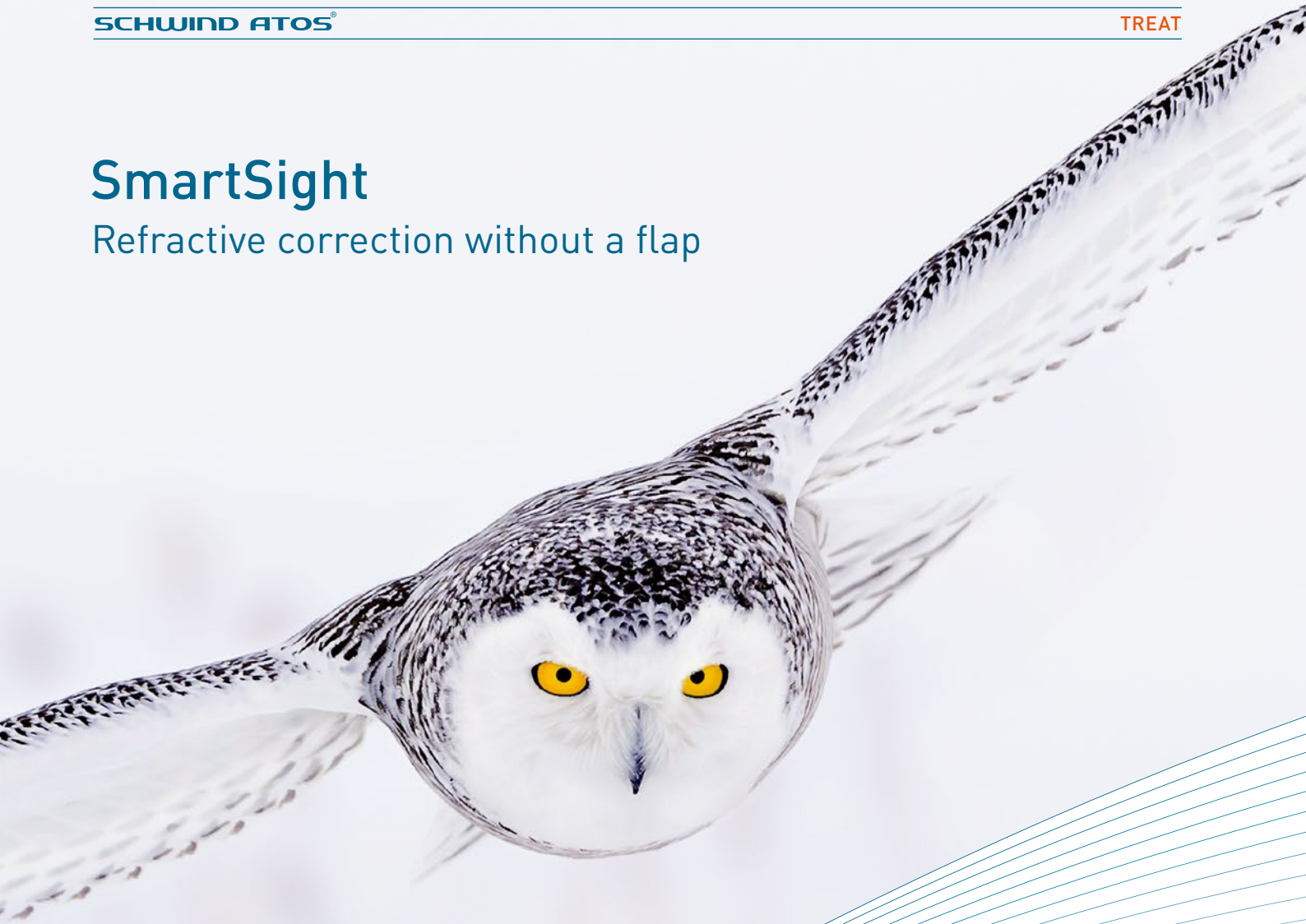
The evolution of possibilities

Intelligent femtosecond laser technology
by SCHWIND

The pioneering SCHWIND ATOS femtosecond laser enables minimally invasive lenticule extraction as well as flap creation in FemtoLASIK. Its unequalled combination of innovative technology and intelligent design provides maximum safety and highest precision in refractive corneal surgery.

SmartSight

Refractive correction without a flap

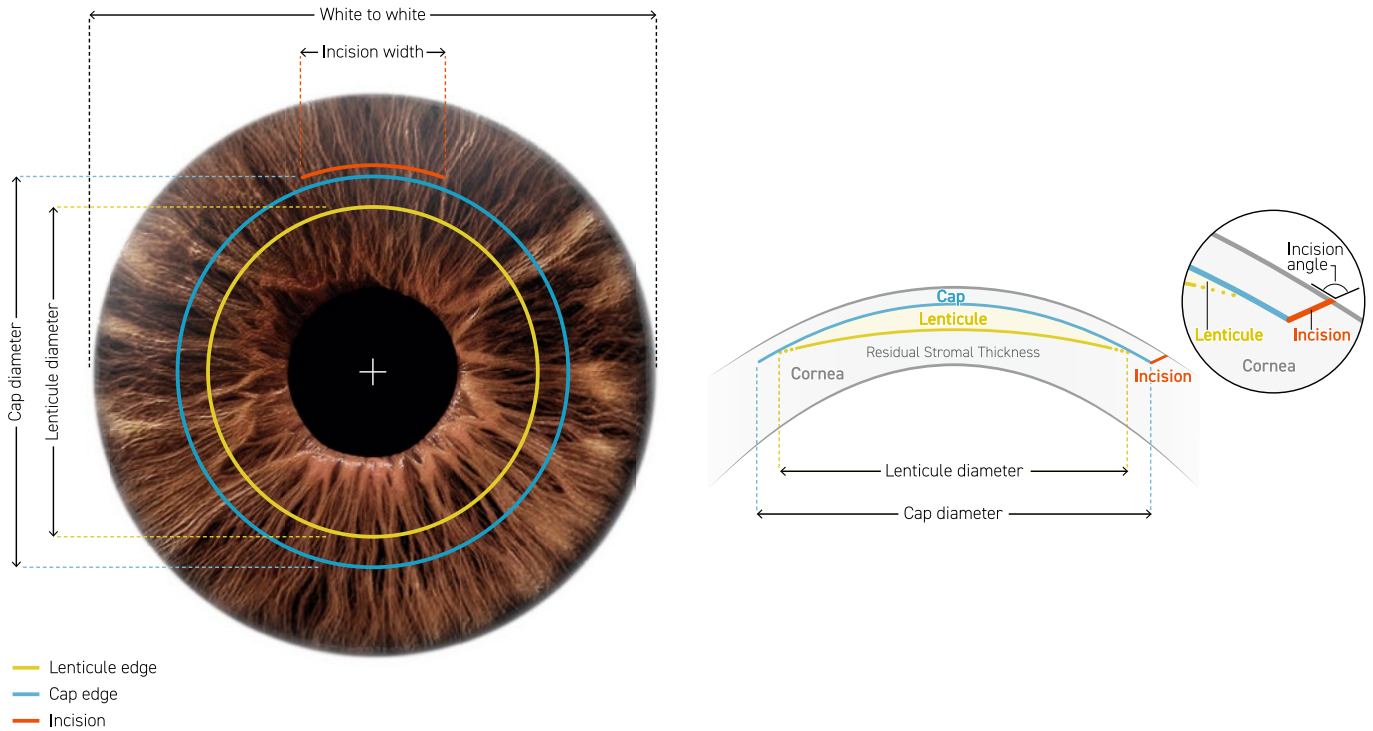


SmartSight is the most advanced femtosecond laser procedure without flap. This innovation in minimally invasive lenticule extraction is a particularly precise and gentle treatment method. It leaves the upper corneal layers largely untouched. The SmartSight procedure can be used to treat myopia as well as higher astigmatism. Thanks to its very smooth cut surfaces, it allows fast vision recovery.

Refractive correction is performed entirely with the SCHWIND ATOS. Featuring intelligent eye tracking with pupil recognition and cyclotorsion compensation, the femtosecond laser technology of the new SCHWIND ATOS provides the highest level of safety and precisely predictable outcomes. The patient can remain in one position for all treatment steps. This results in fast treatment with high comfort and outstanding workflow benefits in every phase.

Micro cut technology

Minimally invasive – maximally gentle



In the SmartSight procedure, the SCHWIND ATOS creates a predefined lenticule in the intrastromal tissue of the cornea, and makes small peripheral incisions in the top corneal layer for lenticular access. This minimally invasive procedure results in significantly fewer nerve transections in the cornea surface, reducing the potential of postoperative incidence of dry eye. After lasering, the

surgeon can easily remove the lenticule through the small access incisions. This very safe laser treatment uses no corneal flap of any kind, and there is no laser ablation like there is with excimer lasers. The lenticule extraction does not induce higher-order aberrations that could reduce visual acuity or contrast. The patient retains his or her accustomed visual impression.

Pioneering safety

The highest safety through sophisticated eye tracking

The SCHWIND ATOS has a sophisticated latest-generation eye tracking system. Its pupil recognition and cyclotorsion compensation provide precise centring of the patient's eye along the visual axis.

The centring options and cyclotorsion compensation make it possible to treat vision deficiencies more effectively, especially higher astigmatism up to 5 D. The precise centring of the patient's eye ensures maximum safety and the best possible vision.



Precision, perfected

Innovative patient interface

The curved patient interface geometry gives an ideal fit with the eye. It has improved suction and is ready for use in just two steps. The innovative design with integral filter function eliminates the need for additional tubes and filters, and ensures optimum contact of the eye with the laser system. The shape follows the corneal limbus, and substantially reduces pressure on the eye during the contacting process. Active suction lasts only a little longer than the incision procedure itself.

The SCHWIND ATOS uses the same patient interface for lenticule extraction with SmartSight and for making high-precision flaps in FemtoLASIK, for maximum flexibility. It all adds up to more safety and comfort for the patient, and more efficient workflow for the surgeon.

More knowledge from experience

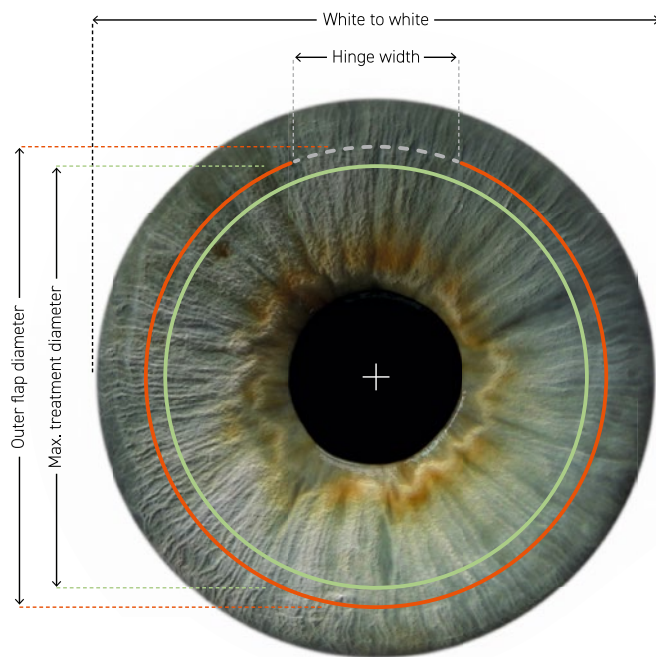
Smooth and tissue-saving

The SCHWIND ATOS is a logical continuation of SCHWIND's comprehensive expertise in technologies for smooth corneal surfaces. With a pulse rate of up to four megahertz, sophisticated pulse characteristics and refined positioning algorithms, this femtosecond laser features very short treatment and incision times. The improved lenticular

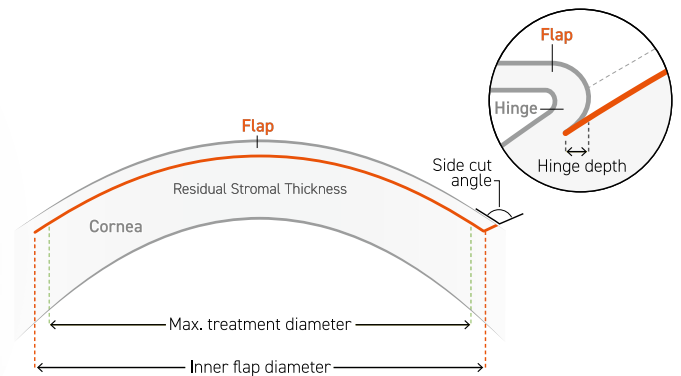
geometry is especially tissue-saving. Furthermore, lenticules and flaps made with the SCHWIND ATOS exhibit high homogeneity and perfect smoothness. As a result, lenticule extraction is very simple, and patient vision recovery is fast. In FemtoLASIK, it makes it easy to lift the flap created with SCHWIND ATOS.

As flexible as the requirements

Flaps for large treatment zones



- Flap edge
- - - Hinge
- Max. treatment diameter



Particularly in treatment of hyperopia and mixed astigmatism, the highly flexible SCHWIND ATOS can be used to create planar flaps of various diameters, including large flaps and large treatment zones.

Agile performance

Compact, intuitive and smart

The SCHWIND ATOS features trim dimensions and a small footprint. This makes the compact femtosecond laser highly flexible for use in refractive surgery. The SCHWIND ATOS is controlled via two high-resolution 24- and 10-inch touch screens (PCT) and intuitive software. Thanks to the clear interface and user-friendly operating design, clinic use is safe and efficient.

The monitor and keyboard are on a swivelling arm that lets the user adjust the position to suit, and then fold them back against the body of the machine for easier repositioning in the clinic. With its fast system check, the SCHWIND ATOS is ready for use in a very short time. It can be used alone or in combination with a SCHWIND AMARIS family excimer laser.



SCHWIND ATOS®

Technical Data

Laser parameters	
Laser class	3b
Wavelength	1030 +/- 50 nm
Repetition rate	Up to 4 MHz
Pulse duration	< 295 fs
Max. laser output power	500 mW
Treatment spectrum	
Spherical Equivalent	-0.5 to -12.5 D
Sphere	-0.5 to -10.0 D
Cylinder	0.0 to 5.0 D
Installation and set-up conditions	
Dimensions (L x W x H)	1685 x 670 x 1597 mm (maximum monitor height) without patient bed
Space requirements	ATOS: min. 3.5 x 2.6 m ATOS with AMARIS product family: min. 3.9 x 4.4 m
Weight	< 275 kg
Electrical connection	100 to 240 VAC, 50/60 Hz, < 950 VA
Operating conditions	
Room temperature	18 to 25 °C
Relative humidity	30 to 70 %
Other	
Eye tracking	Semi-automated centring of patient eye including static cyclotorsion compensation
Accessory	One-size patient interface for single use

Performance in every aspect

Benefits at a glance



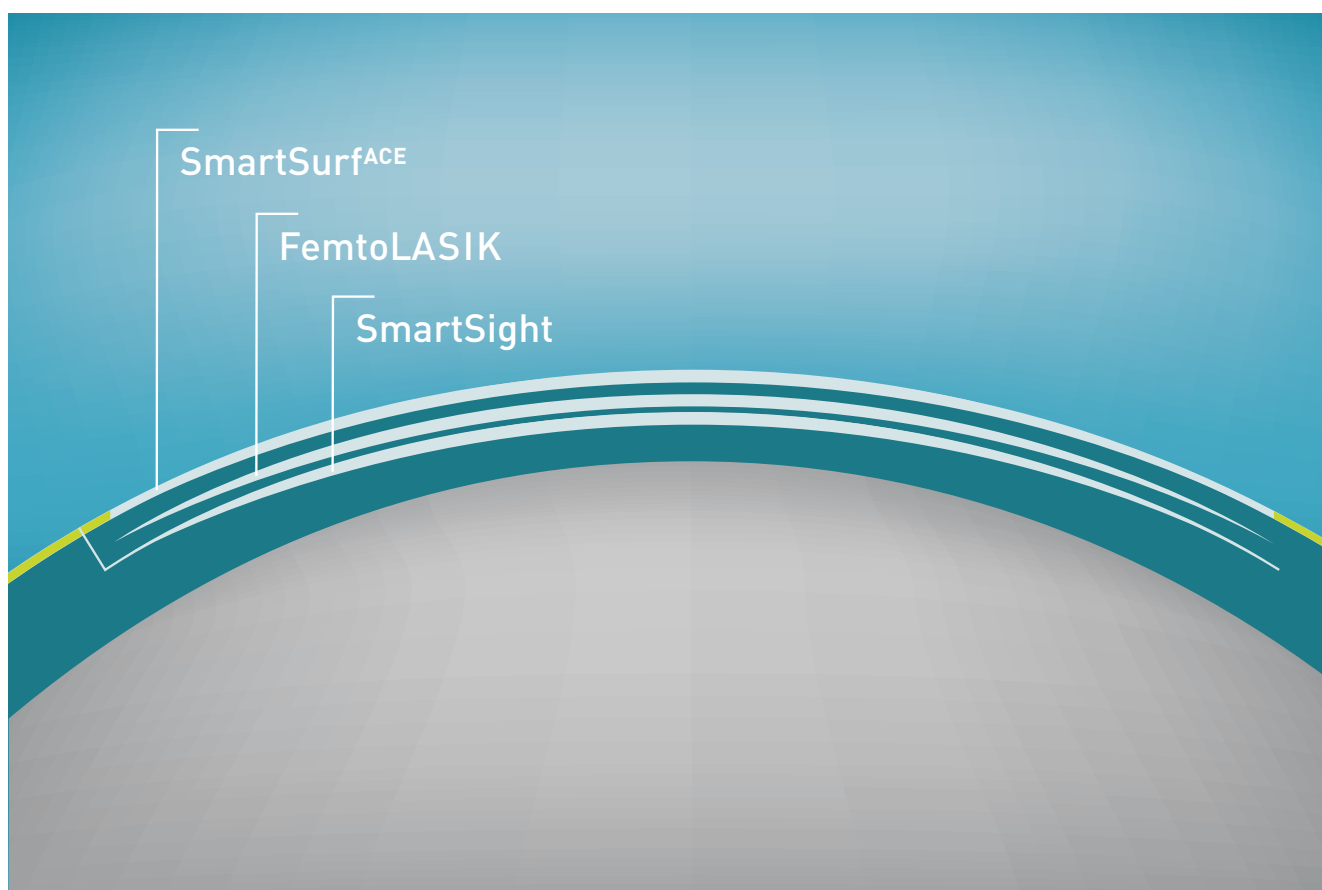
- Maximum safety through intelligent eye tracking and cyclotorsion compensation
- High-precision treatment with perfect centring, even in higher astigmatism
- Comfortable for the eye through curved patient interface
- Fast attainment of good vision through smooth lenticular surfaces
- Tissue-saving through optimized lenticular geometry
- Large flap diameters made possible by innovative contact glass design
- Compact and flexible in use
- User-friendly with clear, intuitive planning and efficient workflow

Experts in innovation

All-laser procedures from the technology leader

SCHWIND eye-tech-solutions is the world technology leader for eye lasers for refractive and therapeutic corneal surgery. With our product portfolio for the treatment of vision deficiencies, we cover the most important all-laser procedures of modern refractive corneal surgery from a single source – touch-free TransPRK and SmartSurf^{ACE}

treatment, intrastromal FemtoLASIK, and the latest generation minimally invasive lenticule extraction procedure, SmartSight. Our goal is to give eye surgeons the best possible tools to work with, so that patients can enjoy better vision and quality of life.



Ablation techniques (schematic)



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