

AQUARIUZ

Wet Ablation



The Future is Wet Ablation



We Deliver
Vision to the World

ziemer 
OPHTHALMOLOGY

Reshaping the Future of Ablation

AQUARIUZ was born from Ziemer's passion for relentless innovation. A future-proof, next-generation solid-state Wet Ablation platform, designed for those who demand nothing less than excellence.

Meet AQUARIUZ

Deliver the New Story of Wet Ablation®

Ziemer DNA

For more than 25 years, Ziemer has shaped ophthalmology with innovations born of precision engineering and uncompromising quality. As pioneers, we never stop challenging what's possible – AQUARIUZ is the result. What once seemed impossible is now reality.

Redefining Photoablation

With AQUARIUZ, we're opening a new chapter in refractive surgery. It is a new generation of solid-state ablation laser, introducing Wet Ablation® Technology. By design, AQUARIUZ enables effective ablation in cornea's natural wet state.

Ziemer's vision has always been to forge its own path, developing innovative, smart, and precision-driven lasers from our home in Switzerland. AQUARIUZ is a testament to that vision.

AQUARIUZ brings a wealth of benefits, most notably preserving the physiological state of the eye during treatment, which delivers an odorless, noise-free, spa-like experience.

We at Ziemer, believe AQUARIUZ will redefine the future of refractive surgery and shift the paradigm forward.

Frank Ziemer



Founder and CEO of Ziemer Group



Wet Ablation® Technology

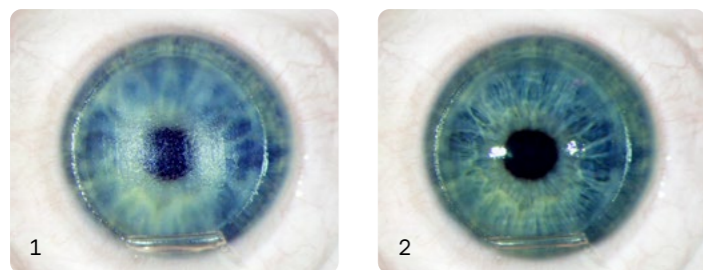
New Era of Ablation

The cornea consists of approximately 80% water, tightly regulated within its stromal structure. Traditional excimer lasers use UV wavelengths that are absorbed by water, which makes hydration management during surgery critical: drying the surface, limiting how long the flap stays open, and constantly monitoring hydration levels.

AQUARIUZ changes that. As the next-generation solid-state ablation laser, its unique wavelength is designed to operate in the cornea's natural, hydrated state. During AQUARIUZ ablation, a thin, micrometer water film forms on the corneal surface.¹ This contrasts with excimer laser ablation, where surface dehydration of the stroma occurs.

As a result, the cornea can be ablated without removing liquid and without forced drying, helping reduce hydration-driven variability and easing workflow during treatment.

Designed to deliver improved predictability, smoother ablation profiles and enhanced treatment reliability across varying corneal hydration levels, AQUARIUZ delivers a new story.



1. Immediately after lifting the flap
2. Cornea during ablation for AQUA LASIK

Source: Adapted from images provided by Dr. B. Pajic, Augenklinik ORASIS

1. Reference: B. Pajic, B. Pajic-Eggspuehler, Z. Cvejic, C. Rathjen and V. Ruff, First Clinical Results of a New Generation of Ablative Solid-State Lasers, J. Clin. Med. 2023, 12(2), 731



Surgeon Benefits

Engineered for Operating Ease



Hydration Preservation: Greater Peace of Mind

Operate confidently without the pressure of racing the clock once the flap is lifted or wiping away excess moisture. AQUARIUZ's solid-state wavelength is absorbed by stromal collagen but not by water, enabling ablation in the cornea's physiological state throughout treatment.



Low Hydration Sensitivity: Consistent Refractive Accuracy

Hydration levels may influence refractive accuracy and can vary between patients and within the cornea itself. AQUA treatments, powered by Wet Ablation® Technology, aim to reduce hydration-driven variability and support predictable results across different hydration states.



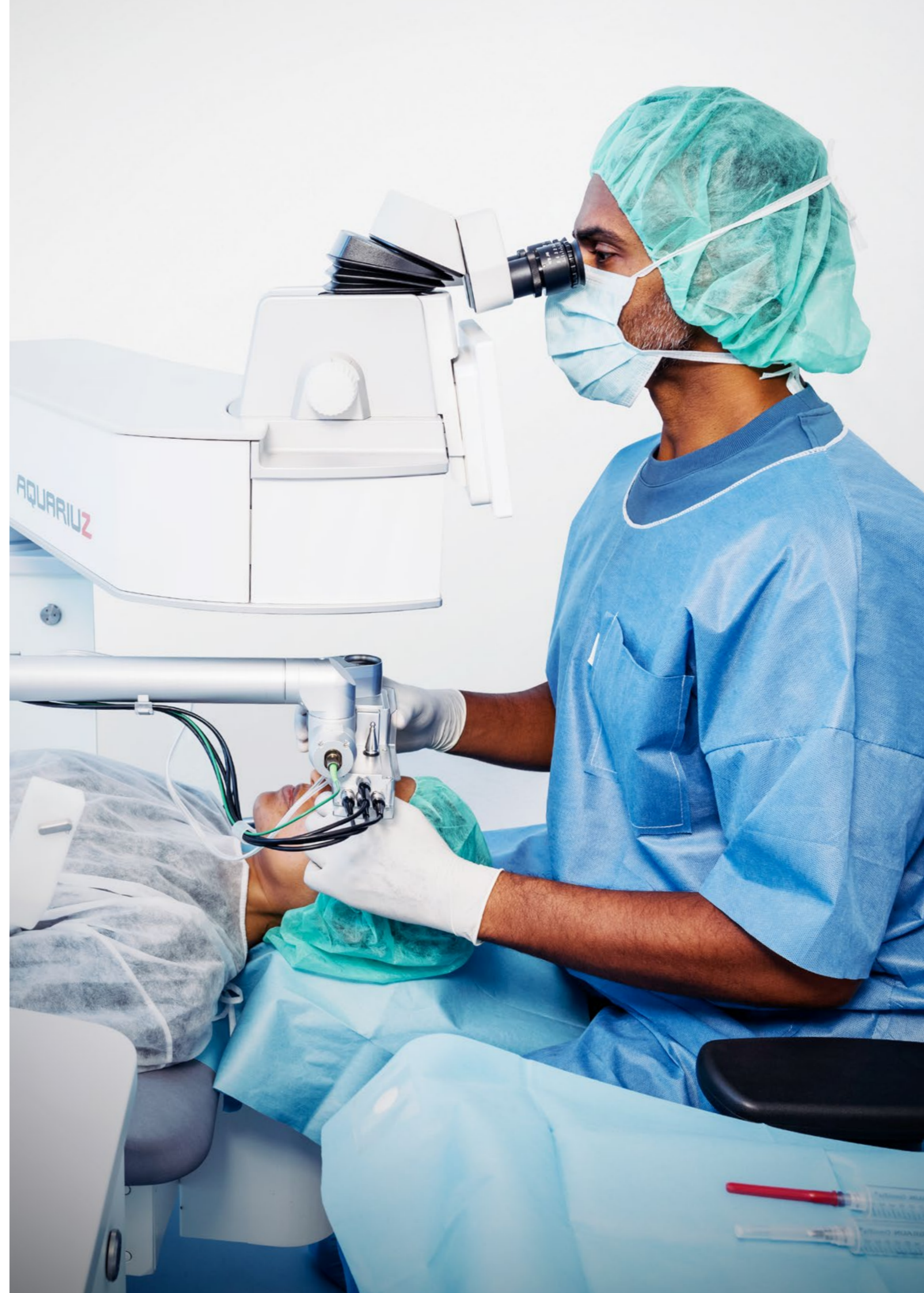
Gasless Operation: Simplified Upkeep

As a solid-state ablation laser, AQUARIUZ eliminates the gas requirements of traditional excimer systems. It helps reduce the logistics and maintenance associated with excimer lasers, including the purchasing, storage, maintenance, and monitoring of gas cylinders for you and your team.



Intuitive User Interface: Seamless Workflow

AQUARIUZ features a clean, touchscreen interface with streamlined controls – no clutter, no overload. Designed for a smooth workflow, the intuitive user interface shortens the learning curve, supports efficient onboarding, and helps you work with confidence and ease from the very first cases.



Patient Benefits

Spa-like Refractive Treatments



Comfort for the Eyes

AQUARIUZ ablates without forced drying of the cornea, helping maintain its physiological condition during treatment. This may improve patient comfort and support consistent refractive outcomes regardless of corneal hydration level.



Odorless Ablation

The usual “burning” odor, often associated with excimer treatments is minimized. AQUARIUZ’s advanced technology efficiently removes particles and odors, creating an easy-to-focus and comfortable environment for patients and surgeons.

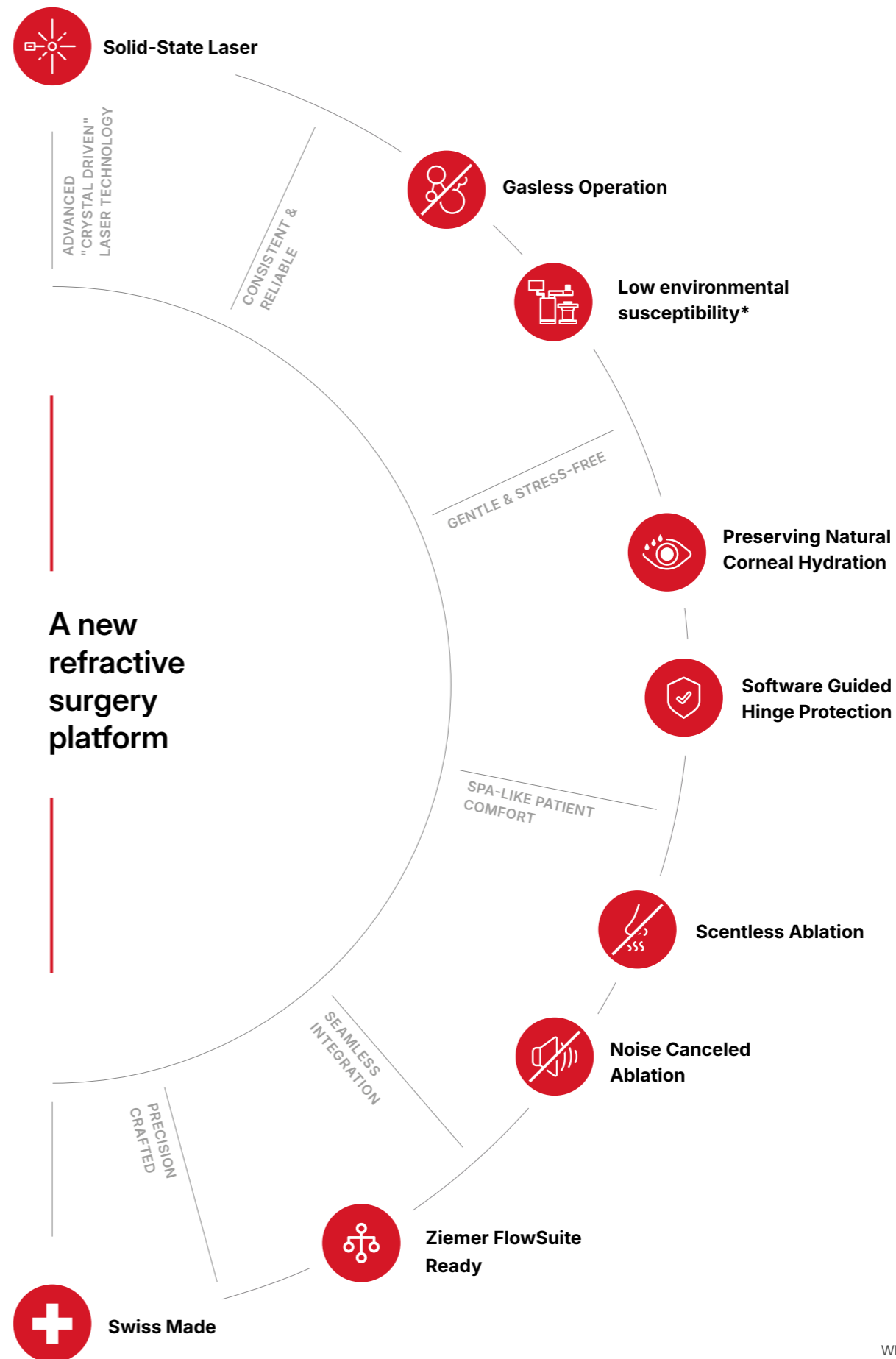


Softened Sound Profile

What’s missing in an operating room with AQUARIUZ is the high-pitched, piercing sound produced by traditional excimer lasers. Thanks to its crystal-excited laser source, AQUARIUZ delivers a relatively quiet sound profile, enhancing the patient experience and reducing noise-related stress for the surgical team.



A New Platform Greater Possibilities



*Disclaimer:
When within the range
of ambient conditions
recommended by ZiMER.

Elevate Your Practice

Spa-like AQUA Treatments

Premium refractive treatments for your patients

For the past decade, refractive ablation has seen very few true innovations. With no new stories to inspire people seeking vision correction, treatment prices have steadily declined. Yet the quality of surgical outcomes and the level of care provided by clinics has remained unwavering.

Into this gap, we bring a new narrative. AQUARIUZ positions your practice at the forefront of innovation, offering patients a premium, spa-like refractive experience supported by the latest advancements in ablation laser technology.

With the new AQUA Treatments, you can unlock fresh commercial potential for your practice, elevate your patient offering, and stand out in a competitive market by giving patients a story worth choosing.



AQUA LASIK refers to Laser-Assisted In-Situ Keratomileusis and Femto-LASIK procedures performed with Ziemer's AQUARIUZ wet ablation laser.



AQUA PRK refers to Photorefractive Keratectomy performed with Ziemer's AQUARIUZ wet ablation laser.

Side-by-Side

Excimer Vs. AQUARIUZ



Feature	ArF-Excimer Laser (193 nm)	AQUARIUZ (Solid-State 205-215 nm)
Ablation Process	Photoablation	Photoablation (under hydrated surface conditions) 
Surface Condition During Ablation	Progressive surface dehydration	Stable micrometer-thin water film 
Ablation Rate Hydration Sensitivity	High	Reduced 
Ablation Efficiency Over Time	Time-dependent	More consistent 
Beam Source	Gas laser	Solid-state laser 
Environmental Sensitivity	Affected by humidity and temperature	Less susceptible 
Safety	Requires hazardous gas	No hazardous materials 

Color Eye-tracking Camera
Provides precise iris matching and enables static cyclotorsion compensation when connected with FlowSuite

Leica Coaxial Microscope
Variable zoom with integrated coaxial illumination; true to size visualization

Surgeon Monitor
Chairside display providing direct access to essential system functions

Advanced Plume Removal System
Efficiently and quietly captures tissue plume and particle debris during ablation, enabling nearly scentless ablation

Compatible Design
Thanks to its innovative design, the Ziemer FEMTO lasers can be seamlessly positioned beneath the AQUARIUZ laser arm

Auto Bed Positioning
Pre-programmable bed positioning for surgeon-specific flap-creation preferences with robust weight capacity

Flap Hinge Protection
Industry-first software guided hinge protection

Intuitive Touchscreen Workflow
User friendly User Interface; compatible with external keyboard control

Natural View Color Eye Tracker
1,000 Hz 6D eye tracking with ultra-low latency

Mobile Monitor Arm
Brings monitor within comfortable reach of the surgeon; reduces staff dependency

Solid-state Laser Source
100% Swiss Made; gas-free operation

Compact Footprint
Easy integration into any clinical setting; saves valuable space



The AQUARIUZ opens unimagined possibilities in corneal refractive surgery. The ablation process is less susceptible to environmental influences, less dependent on tissue hydration and gentler on tissue interaction.

Prof. Dr. Bojan Pajic
Augenlinik Orasis



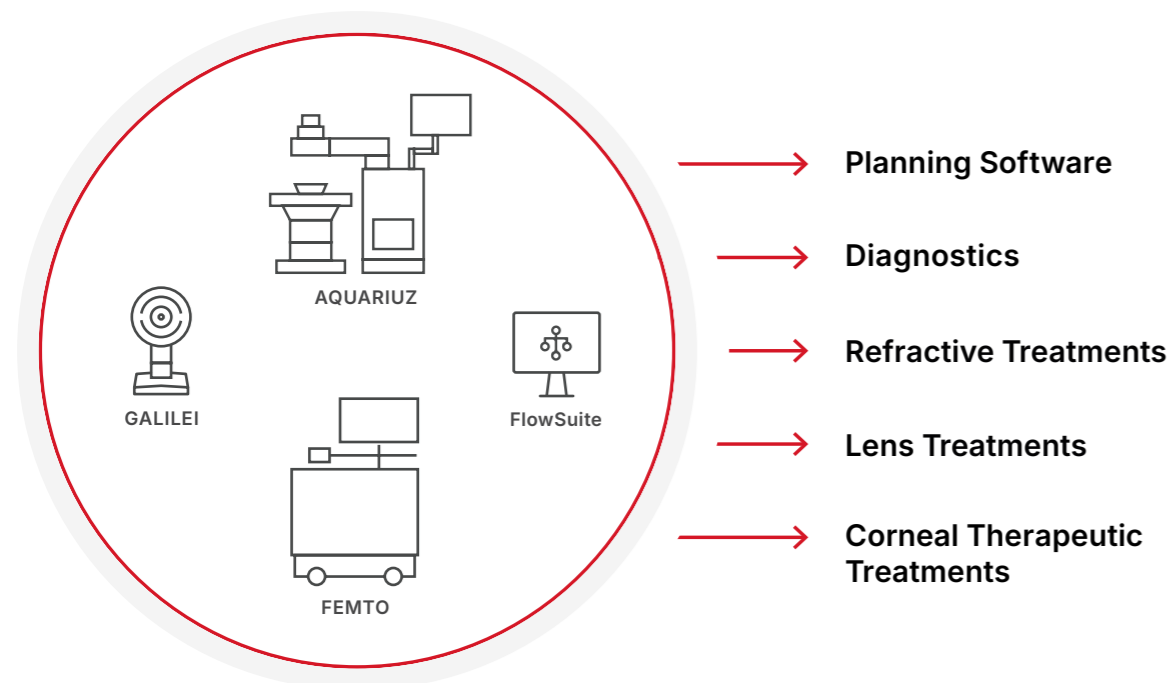
The most striking thing is during the ablation process that you see this development of the liquid layer on the cornea and this in comparison to an excimer laser, is just fantastic. It's like wellness for the cornea.

PD. Dr. Philipp B. Bänninger
Kantonsspital Winterthur

We Have It All

Discover Ziemer's Full Product Suite

From the FEMTO Z8 models, our most advanced femtosecond lasers for corneal and cataract surgery, to the GALILEI ColorZ series of comprehensive diagnostic systems, and FlowSuite, the connectivity platform that unifies all Ziemer devices, we continue to set new benchmarks in precision, innovation, and patient care. With the introduction of AQUARIUZ, Ziemer now provides a comprehensive range of ophthalmic applications.



AQUARIUZ & FEMTO Z8 Models

The perfect pair for refractive surgery.

Like partners in precision, the Ziemer Z8 models and AQUARIUZ work hand in hand. The Z8 models, the most compact and mobile FEMTO system available, easily slide into position before the AQUARIUZ takes over.

Together, they make the job complete.



APPLICATIONS

Flap-Based Treatment Methods	Femto-LASIK
	LASIK
Surface Ablation Treatment	PRK
	LASEK
Therapeutic Treatment Methods	PTK

SYSTEM COMPONENTS

Laser System	Laser Type	Solid State Frequency Multiplied Laser
	Wavelength	205 - 215 nm
	Pulse Repetition (Rate Frequency)	500Hz (<550 Hz)
Eye Tracker		1000Hz
Controls & Interfaces	Monitors	24" screen + 9" screen, touch
	Interfaces	USB / HDMI / Ethernet Interface / Foot switch / Patient bed interface / Door interlock / Key switch

DIMENSIONS AND OPERATING CONDITIONS

Base Station Footprint - Working Position / Laser Arm	165.5cm (L) x 113.6 cm (W) x 151.2 cm (H)
System Weight	Laser: 310.5 kg; Bed: 270.5kg
Input Voltage & Maximum Power	100-240 VAC, 50/60 Hz, 2500 VA
Operating Conditions	17° to 24° C, 20 to 50% RH, not condensed

CE Certification
The AQUARIUZ ablation laser has achieved CE mark clearance.



Swiss Made
Designed and manufactured in Switzerland, the AQUARIUZ combines the latest in ablation laser technology with Ziemer's renowned engineering excellence.

We Deliver Vision to the World

Contact us today to learn more about how AQUARIUZ can elevate your practice with AQUA treatments today and into the future.



ziernergroup.com/aquariuz



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Disclaimer:

The AQUARIUZ is CE marked but not yet FDA cleared for use in the United States. For some countries, availability may be restricted due to regulatory requirements. Please contact Ziemer for details.

Ziemer Ophthalmic Systems AG uses artificial intelligence (AI) to optimize text and media content.

