CUSTOMIZABLE SOLUTIONS FOR THE EVOLVING PRACTICE
For Refractive, Advanced Corneal and Lens Surgery
THE FEMTO LDV Z MODELS

At a glance

Versatility that meets your demands

The FEMTO LDV Z models stand out as the femtosecond laser systems with unprecedented versatility. From refractive to cataract surgery, the surgeon can determine, what applications are needed and even enhance the software later on. Regardless of whether LASIK, ring implantation or pocket creation, keratoplasties or lens surgery is performed – The FEMTO LDV Z models offer highest precision and flexibility to fulfill the most demanding tasks in eye surgery.

Comfort and flexibility on a new level

It has never been so easy to integrate your surgical laser into the surgical workflow. All FEMTO LDV Z models are compact (footprint 1 x 0.6 m) and mobile and can be shared between clinics and ORs. The laser is easily brought to the patient and not vice versa. Each surgeon can customize and save individual application templates according to the preferences.

The unique system architecture enables these lasers to be used with all brands of patient beds, microscopes and excimer lasers also fitting patients with difficult physical properties. No patient relocation is required during the procedure ensuring the highest degree of comfort for both the surgeon and the patient as well as a potentially safer procedure.

A picture is worth a thousand words

Visit the Ziemer FEMTO LDV channel on Youtube (www.femtoldv.com/youtube) and see for yourself how the FEMTO LDV Z models are used in surgical practice.

Advanced femtosecond technology for better outcomes

The FEMTO LDV Z models are built with the aim of reducing the stress inflicted on the eye while offering maximal precision and versatility. The low pulse energy in the nJ-range and a high pulse repetition rate translate into smooth stromal beds and incision edges. Lower energy lasers have been shown to minimize cell death along the incision edge, in turn reducing corneal inflammation.

Due to the tissue adapted pulse management system, the energy is put where it is needed. Low energy is used in the cornea to perform cases like LASIK flaps after radial keratectomy while higher energy is used to make difficult cases such as hard cataracts manageable.
Z LASIK

Premium laser vision correction

Z LASIK
Z LASIK has been performed on more than 2.5 million eyes across the globe and continues to provide patients with excellent results.

Key points
• 2D (Z LASIK) and 3D (Z LASIK Z) resections possible
• Fast visual recovery
• Low energy potentially minimizes the impact on corneal stroma
• Reduced post-op inflammation
• OCT guided LASIK: See epithelium, Bowman's membrane or previous flaps

Availability
• Z LASIK: All FEMTO LDV Z Models
• Z LASIK Z: FEMTO LDV Z4, Z6 and Z8
• OCT visualization: FEMTO LDV Z8

Inter device comparison of mean flap thickness across axial scans (1 mm from flap edge: interface +/-1, x mm from center: center +/- x). Intended flap thickness = 110 µm.
RINGS AND POCKETS
Enhance your treatment options

Customizable tunnel resections
The FEMTO LDV Z Models create smooth customized tunnel resections to enhance the treatment options with your femtosecond laser.

Intracorneal rings
- Pre-programmed trajectories for a wide selection of rings
- Individual customization for new ring types
- One or two tunnels possible with up to 360 degrees
- Individual resection depths possible for both tunnels
- OCT visualization for more precise positioning (e.g. two different tunnel depths)

Intrastralomal pockets
- Pre-programmed trajectories for different inlays
- Customization according to your needs
- OCT visualization for more precise positioning (e.g. with pre-existing LASIK-flaps)

Availability
- FEMTO LDV Z4, Z6 and Z8
- OCT visualization: FEMTO LDV Z8

Intracorneal ring segments implanted with a Ziemer laser

Intrastralomal pocket with a KAMRA® inlay
(courtesy of Dr. David Allamby Focus Clinic, United Kingdom)
**KERATOPLASTIES**

Tailor-made corneal transplantations

**Keratoplasties**

Using low energy in each laser pulse in the nanoJoule range, the FEMTO LDV Z Models are the ideal tools for tailor-made keratoplasties ranging from penetrating to ultra-thin lamellar grafts.

**Key points**

- Resection depths of 50 – 850 μm
- Lamellar and penetrating keratoplasties
- Oval and round shapes, customizable angles
- Top-hat and mushroom resections possible
- Proprietary artificial anterior chamber
- OCT visualization for enhanced planning
- Ideal for graft preparation in eye banks

**Clinical benefits**

- Smooth stromal surface
- Ultra thin grafts with minimal cell loss
- Precise and reproducible grafts
- Simplified transplantation process

**Availability**

- FEMTO LDV Z6 and Z8
- OCT visualization: FEMTO LDV Z8

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**DALK, DSEK and UT-DESK**

**Penetrating keratoplasties**

Preparing the donor tissue with the artificial anterior chamber (Courtesy of Prof. Theo Seiler, IROC, Switzerland)
CATARACT APPLICATIONS
The next generation of lens surgery

Z CATARACT

The FEMTO LDV Z8 stands out as the most flexible laser platform that is easy to integrate into your familiar surgical workflow. This compact laser fits with all accompanying surgical equipment and does not require patient relocation during the procedure. The cataract training software helps new users to learn quickly.

Capsulotomy

- Well centered resections for improved IOL placement
- Excellent precision in capsulotomy circularity\(^\text{12}\) and capsular strength
- Smooth capsule edges comparable to conventional cataract surgery\(^\text{13}\)

Lens fragmentation

- Simple and effective fragmentation patterns to soften the lens
- Easy to remove segments and reduction of phaco energy
- Low pulse energy reduces gas bubble formation

Availability

- FEMTO LDV Z8

Image-guided surgery

- High-resolution OCT-imaging
- Automatic detection of iris, cornea, lens and capsule
- Live image for simplified docking and planning

Liquid patient interface

- A liquid interface lowers IOP rise\(^\text{12}\) compared to a curved or applanating interface
- Ergonomic and intuitive 2-step docking

Cataract surgery after the laser pre-treatment
(Courtesy of Prof. Bojan Pajic, Orasis, Switzerland)

High-resolution OCT image for femtosecond laser-assisted lens surgery

Live top-view imaging between different steps of the procedure
CORNEAL INCISIONS
The incisions you are used to – without a blade

Corneal incisions
Customizable laser incisions for bladeless cataract surgery

Clear corneal incisions
• Clear corneal incisions for truly bladeless cataract surgery
• Easy to open, self-sealing incisions
• Incision placement close to the limbus possible
• Customizable main incision and up to two paracenteses
• Any position, diameter and length

Availability
• Applanation interface: FEMTO LDV Z6 and Z8
• Liquid interface: FEMTO LDV Z8

Arcuate incisions
• Astigmatism reduction within the cataract procedure
• Any position, depth and clinically useful optical zone diameter
• Adjustable side cut angles
• OCT-assisted incision placement

Individual planning of the corneal incisions
Near limbal corneal incisions (courtesy of Prof. Rupert Menapace)
VERSATILITY THAT MEETS YOUR DEMANDS

Modular architecture

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Z-CATARACT*

Applanation patient interface

Liquid patient interface

*Z-CATARACT consists of the steps during cataract pre-treatment including lens fragmentation, capsulotomy and corneal incisions. For further information, please contact Ziemer.

References

8. Internal data on file.