

FEMTO VISUM

FULL RANGE OF FEMTOSECOND LASER
CORNEAL SURGERY APPLICATIONS
FOR DAILY CLINICAL PRACTICE



APPLICATIONS

Designed in cooperation with practicing refractive surgeons, Femto Visum is an innovative, efficient and reliable laser system which is well qualified for the most demanding applications in modern corneal surgery.

FEMTOLASIK

Create a perfect flap with a customized side-cut angle.

KERATOPLASTY

Anterior, posterior or penetrating. Make a graft with any side-cut shape such as mushroom, top-hat and zigzag.

POCKET

Implant a 360-degree ring for the treatment of keratoconus. Or implant corneal inlay for the treatment of presbyopia.

LENTEX

Lenticule extraction, a minimally invasive all-femto treatment of myopia, hyperopia and astigmatism.

TUNNEL

Radial keratotomy and corneal relaxing incisions for the treatment of myopia and astigmatism.

INCISIONS

Treat keratoconus with implanting of intracorneal ring segments.

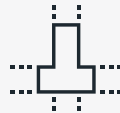


ATRAUMATIC QUARTZ PATIENT INTERFACE

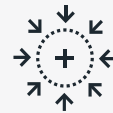
- Interface made of quartz ensures higher precision and better flap thickness uniformity than plastic interfaces
- Flat shape of interface ensures uniform laser density distribution and stable cut thickness along the flap
- Multiple sizes available
- Secure eye hold
- Vacuum eye fixation for less than 25 seconds



LOW VACUUM -
NO SCLERAL
HEMATOMAS



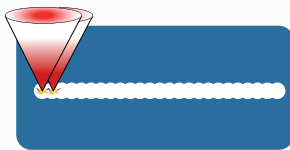
OPTIMIZED SHAPE -
REDUCED INTRAOCULAR
PRESSURE



EASY,
VACUUM-HOLD
INTERFACE DOCKING

FLAPS WITHOUT TISSUE BRIDGES

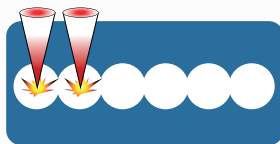
With its high repetition rate, low energy femtosecond laser source and innovative beam scanning features, Femto Visum delivers perfect, easy detachable flaps.



FEMTO VISUM

NANOJOULES AT MEHAHERTZ

- Low pulse energy and small focal spot size - small cavitation bubbles and reduced cut thickness.
- Distance between laser spots is smaller than bubble size - no chance for tissue bridges.
- Smooth cut surface with minimal roughness.
- No risk of flap perforation or complete separation.
- Less than 90 um flap for sub-bowman's femtolasik.



OTHER

MICROJOULES AT KILOHERTZ

- Higher laser pulse energy - big bubbles and higher destructed tissue volume, thick cut, high gas formation.
- Distance between laser spots is bigger than bubble size, leaving a space for tissue bridges.
- Higher roughness leads to long postoperative recovery.



MULTI OVERLAY

Laser beam scan lines are overlapped to ensure the tissue bridges elimination



EASY LIFT

Laser spot density on the sides of the cut area is increased to ensure the easy flap separation



SMOOTH LINES

Spot density is decreased at the area of the scan lines overlapping to ensure the uniform fluence

FEMTO LASER FL 300

OWN DESIGN AND PRODUCTION



200-400 fs
pulse duration
shortest on the market



1 MHz
repetition rate optimized to
ensure spot overlapping



RELIABILITY, SAFETY,
STABILITY



HIGH EFFICIENCY,
LOWER GAS
FORMATION,
NO CORNEA HEATING



LOW COST OF
OWNERSHIP

COMPACT, MOBILE AND FRIENDLY



- 75 x 80 cm footprint - smallest on the market.
- Easy transportation with no need for realignment, e.g for emergency swapping between operating rooms.
- Laser crosshair for easy eye docking
- Ergonomic design and software enable operations without an engineer.
- Two sterilizable keypads for left- and right-handers.

Integration with any excimer laser using rotating patient table.



INTUITIVE SOFTWARE

- Full touchscreen control - no mouse, trackball, etc.
- Access to operation parameters console even on “eye is hold” status.
- Software control of flap and pupil centering.
- Comfortable font size and color scheme.



TECHNICAL SPECIFICATION

SUPPORTED APPLICATIONS

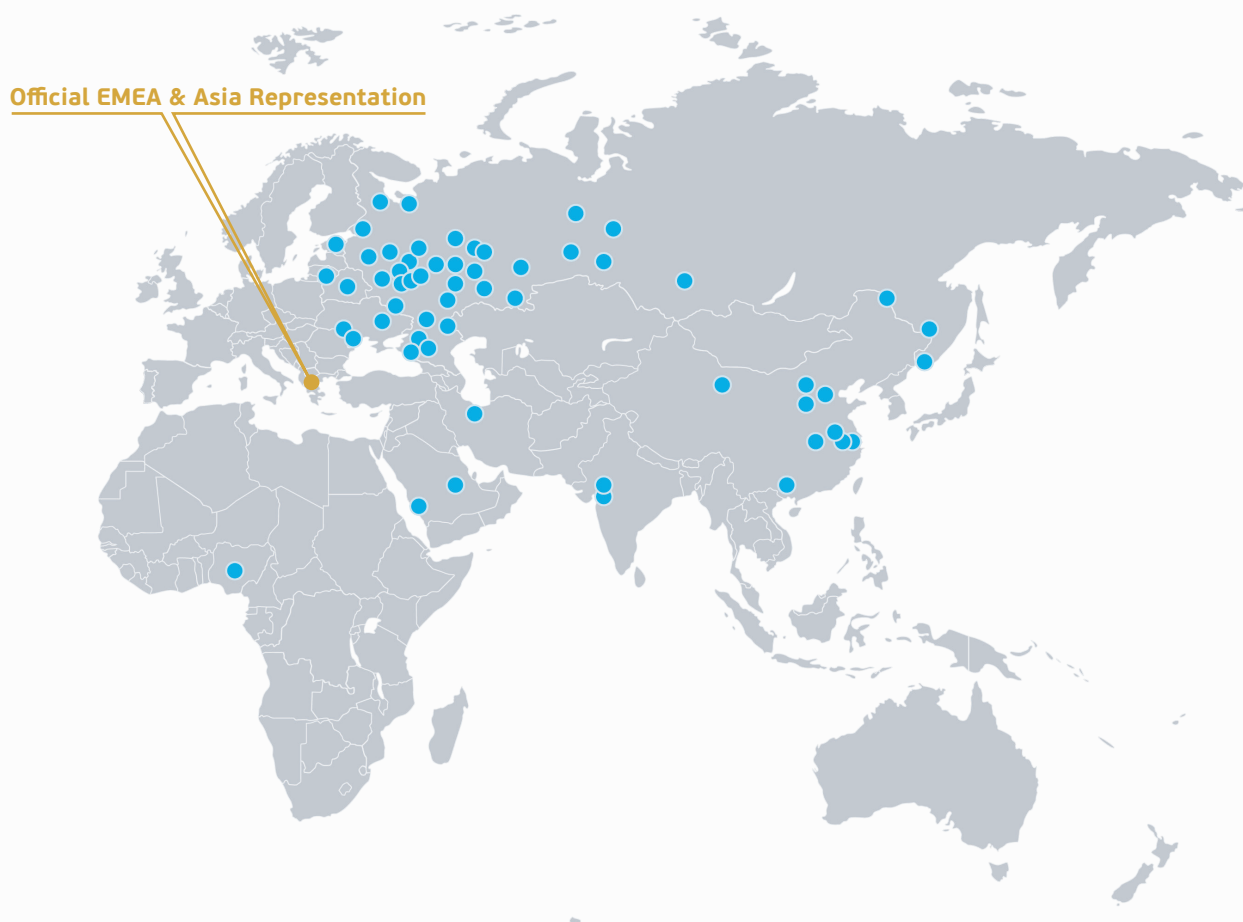
- FemtoLASIK
- Lentex - lenticule extraction
- Anterior, posterior and penetrating keratoplasty
- Tunnel for corneal segments
- Pocket for 360-degree ring and presbyopia inlay
- Corneal relaxing incisions and radial keratotomy

LASER PENETRATION DEPTH	0 – 1200 um with 1 um step
DISTANCE BETWEEN LASER SPOTS	2,5 um
FOCUSED SPOT SIZE	< 2 um
LASER REPETITION RATE	1 MHz
LASER PULSE DURATION	200-400 fs
LASER PULSE ENERGY	250-750 nJ
9,5 MM LASIK FLAP FORMATION TIME	19 s
LASIK FLAP DIAMETER	Up to 10 mm with 0,1 mm step
COLD START TIME	25 min
FOOTPRINT	75 x 80 cm (30 x 31 in)
COMPATIBILITY WITH EXCIMER LASER	Yes, any laser using rotating table
OPERATING TEMPERATURE	18-30° C
OPERATING HUMIDITY	Up to 90%

OPTOSYSTEMS

Founded in 2000 with personal participation of nobel-awarded laser pioneer prof. Alexander Prokhorov and one of the refractive surgery's founding fathers prof. Svyatoslav Fyodorov.

More than 150 refractive and therapeutic surgery systems installed worldwide.



OPTOSYSTEMS
FEMTO VISUM

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OPHTHALMIC EQUIPMENT