FEMTEC

VERSATILE
FEMTOSECOND LASER WORKSTATION

WE FOCUS ON PERFECTION™

UNLIMITED SURGICAL POWER

20/10 PERFECT VISION®
Unique femtosecond laser technology for ophthalmology

20/10 PERFECT VISION®, a worldwide leader in wavefront technology, brought you the first FDA-approved wavefront diagnostic device – the WaveScan®. Now we present you a highly innovative surgical laser system offering a variety of novel applications.

Other than conventional laser systems for corneal surgery, the FEMTEC femtosecond pulse laser technology of 20/10 PERFECT VISION uses infrared light with spot sizes as small as a few micron and laser pulse durations which are several orders of magnitude shorter than those of an Excimer laser.

The FEMTEC system efficiently allows you to perform extremely precise surgery within the cornea with a high degree of surgical freedom.

- Intracorneal ablation
- Small volumes of ablated tissue (micron size)
- Non-mechanical incisions
- Rapidly pulsed and robust solid state laser source, low maintenance
- Highly reproducible results

Key features and benefits of the FEMTEC Femtosecond Laser Workstation:

- No applanation necessary due to patented spherical Patient Interface approach – cornea retains a near-natural curvature and unwanted IOP increases are reduced
- Computer controlled suction with footswitch activation and auto-off safety feature
- Broadest range of innovative treatment procedures
- Easy control of parameter settings via user friendly software
- „Tracker-friendly” circular pattern algorithms
- High precision cuts in x,y and z-axis
- Computer controlled sensors for online pressure information
- Patient bed with safety-loop is included
- Integrated uninterruptible power supply

FEMTEC working principle

The result of a single FEMTEC femtosecond laser pulse is a microscopic bubble. A myriad of these pulses can create macroscopic effects, e.g. a laser generated LASIK flap or other cuts.

The real time software precisely arranges the laser pulses in unique patterns, selected in the FEMTEC software according to desired treatment procedures. To generate a LASIK flap, the laser spot is moved inside the cornea in a spiral pattern, creating a bladeless cut following stromal lamellae at the pre-programmed depth. Once the flap bed is formed, the beam is moved in arc-shaped patterns along the circumference of the flap, while the focal depth is gradually reduced. A perfectly defined edge of the flap is created, leaving a hinge at its user-defined position.

Due to the unique spherical design of the FEMTEC Patient Interface, a flattening of the cornea is not required during FEMTEC procedures. The cornea is only slightly adapted to the patient interface's curvature, not applanated.
First applanation-free Patient Interface approach (patented)

A: Unique spherical Patient Interface of the FEMTEC workstation, which does not applanate the cornea. The laser’s cuts are also curved, following the stromal lamella. FEMTEC uses tracker-friendly circular patterns. Patient Interface suction is computerized and permanently controlled.

B: Other femtosecond lasers do applanate the cornea with a flat contact glass, compressing the cornea and inducing higher intraocular pressure. Central bubble layers can interfere with Excimer tracker systems. Suction is typically applied manually without system monitoring and control.

The FEMTEC Workstation features an exciting array of innovative procedure modules, making it a highly flexible tool for serving a broad variety of patients. FEMTEC procedures are highly customizable via the easy to use graphical user interface:

Flap cuts
- Preparing the LASIK flap with peace of mind
- Easy flap repositioning due to steep side-cut geometry
- Extreme precision within ±10 µm
- Software selectable diameter, depth, hinge position, hinge angle and rim-cut angle

Penetrating Keratoplasty (PKP)
- Customized penetrating cuts with up to 1200 µm depth
- FEMTEC’s unique spherical Patient Interface keeps corneal deformation to a minimum
- Perfect fit of donor graft, performed with same procedure

Lamellar Keratoplasty (LKP)
- Deep lamellar cuts with custom parameters
- Perfect fit of donor graft, performed with same procedure

Arcuate cuts for Astigmatic Keratotomy (AK)
- Quick and predictable arcuate cuts for a gentle laser AK procedure
- Full control over depth of cut (up to 600 µm), diameter and arc length
- Easy to use, immediate results

Tunnel cuts for Intracorneal Ring Segments (ICRS)
- Easy tunnel cut preparation for intracorneal ring segments
- Deep tunnel preparation (up to 600 µm depth), i.e. for keratoconus patients
- Easy software adjustable diameter, tunnel width, incision cut length, incision cut axis and depth variation
### Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Footprint</strong></td>
<td>Width: 850 mm (33.46 inches)</td>
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<tr>
<td></td>
<td>Length*: 1270 mm (50 inches)</td>
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<tr>
<td></td>
<td>Height: 1300 mm (51.2 inches)</td>
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<tr>
<td><strong>Electrical Requirements</strong></td>
<td>220-230 V, 50/60 Hz, fusing 16A</td>
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<tr>
<td></td>
<td>System Integrated Uninterruptible Power Supply (UPS)</td>
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<tr>
<td><strong>Room Temp.</strong></td>
<td>&gt; 18-24°C</td>
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<tr>
<td><strong>Rel. Humidity</strong></td>
<td>&gt; 30-50 %</td>
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<tr>
<td><strong>Pulse Duration</strong></td>
<td>&gt; 500 - 800 fs, typically</td>
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<tr>
<td><strong>Microscope</strong></td>
<td>Integrated microscope with motorized magnification selection for full visual control even during procedures</td>
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<tr>
<td><strong>Software</strong></td>
<td>Proprietary FEMTEC real time software offering a variety of procedure modules</td>
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<tr>
<td><strong>Safety</strong></td>
<td>Computer controlled suction for Patient Interface with auto-off safety feature</td>
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<tr>
<td><strong>System Components</strong></td>
<td>Main unit</td>
</tr>
<tr>
<td></td>
<td>Motorized patient bed (included)</td>
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<tr>
<td></td>
<td>Control panel with dynamic control stick</td>
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<tr>
<td></td>
<td>Sterile Patient Interface (single-use)</td>
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* w/o application unit

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Design and specifications are subject to change without prior notice.

Please inquire about availability of system and/or specific features in your respective country.

FDA 510(k) clearance for use in the creation of a corneal flap in patients undergoing LASIK surgery or other treatment requiring initial lamellar resection of the cornea.

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