

# MEL 80 Excimer laser

High performance meets versatility



# Just what your clinic's looking for

## Invest in the very latest refractive excimer technology

The MEL 80 is a top quality Carl Zeiss Meditec product, designed to make the correction of vision defects even safer, more patient-friendly and individual. All the parameters of this ultramodern work platform are oriented towards increasing efficiency, achieving optimum treatment results and the rapid recovery of vision. Key factors here are the extremely high ablation rate, the high-performance eyetracker system, individual treatment planning with the optional CRS Master™, and the Eye Registration torsion compensation system.

## MEL 80 – the excimer laser with the widest field of application

With immediate effect you now have the option of performing binocular treatment planning with micro-monovision for presbyopic patients. The corresponding ablation profile aims to increase the depth of focus so that there is an overlapping area after binocular treatment, so-called 'laser blended vision'

## The best outlook for you and your patients

Added to this are concrete benefits for your daily work such as the overall ergonomic design concept and the economical operation of the system. Reap the advantages of an investment which is forward-looking, practical and profitable!

Aspherical profiles	✓
Wavefront-guided treatment	✓
Topography-guided treatment	✓
Laser blended vision <b>New!</b>	✓
Fast 1 kHz eyetracker	✓
Eye registration	✓
Data link to VisuMax femtosecond laser	✓





**Ambition and a vision for technological progress are the forces that drive us to meet the highest expectations:**

**Precision** for best results

**Performance** for smooth treatment procedures

**Patient Care** for delighted patients

**Productivity** for efficient practice management

## Safe use

### **The faster the treatment, the lower the stress**

The MEL 80 helps you significantly reduce the duration of treatment for your patients. This has the following benefits:

- The stromal bed is only open for a short period; this reduces dehydration and speeds up the regeneration process
- The thermally-optimized distribution of the laser firing pattern protects the stroma – despite the high ablation speed
- Patient stress is relieved; they only need to concentrate for a few seconds on the fixation light
- You can increase your efficiency levels and the number of patients you see



*Smoke extractor*

### **Everything's under control!**

An active eyetracker with excellent feedback times and an ultrarapid IR camera provides exact positioning during the laser treatment. Thanks to automatic pupil recognition you can adjust the desired centering point within seconds. This also includes the limbus. If the center of the pupil shifts with relation to the limbus during ablation – through asymmetrical contraction, for instance – the eyetracker compensates for this.

By the way – no pupil-dilating medication (with its attendant waiting times) is necessary prior to this treatment.



## Highly user-friendly

### It couldn't be simpler to operate

At Carl Zeiss, we strive to make advanced technology applications as simple and ergonomic as possible for our customers. When using the MEL 80 take advantage of an extensive list of standardized treatment procedures for optimum results.

The software has been specially developed for this workstation and its graphic interface is clearly structured and takes you step by step through treatment. Click the mouse to enter data or to import CRS Master™ files.

A large number of other helpful features facilitate and support your work with the MEL 80: the ergonomically designed workstation, the individually positionable monitor and the integrated video camera. There are also practical options such as a pivoting slit lamp. The MEL 80 is also designed to accommodate future system developments through various interfaces.



## Perfect workflow with a new swing

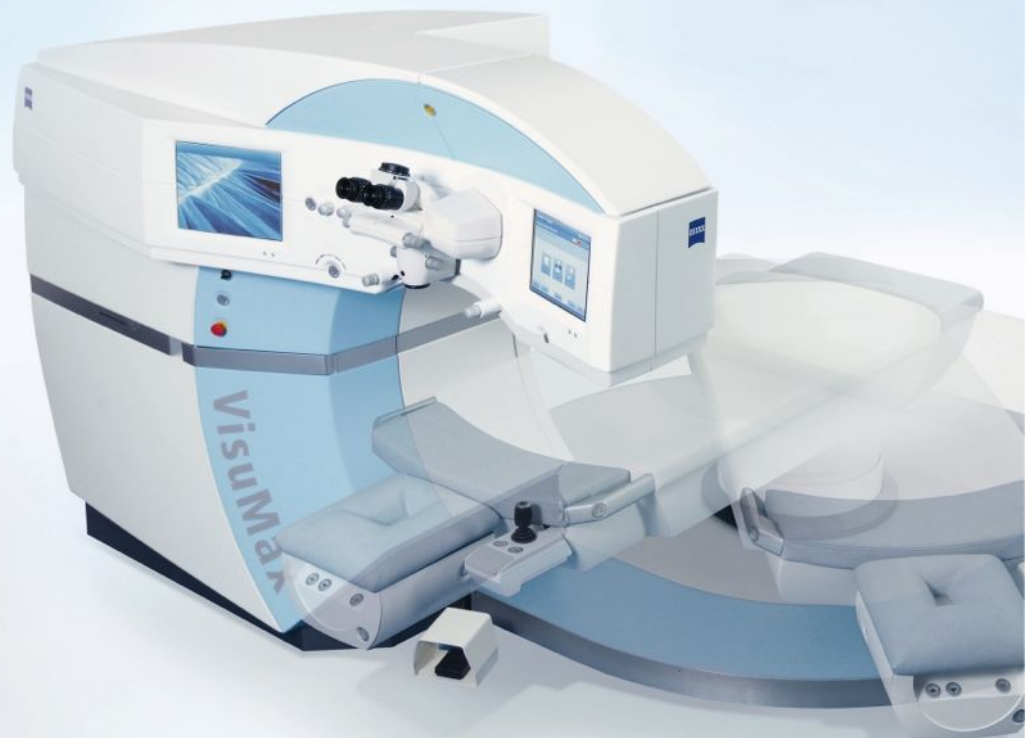
Efficient and individual at the same time! With the CRS Master™, the MEL 80 excimer laser and the VisuMax femtosecond laser, Carl Zeiss has assembled three top-of-the-line products as a seamlessly coordinated systems solution for refractive laser surgery, including preoperative examinations, individualized treatment planning and precise flaps, followed by highly accurate refractive corrections and follow-up examinations – all designed to ensure convenient workflow, efficient patient management and best treatment results.

### Equipped to outperform

Through the combined use of the pivoting patient supporting system between the VisuMax femtosecond system and the MEL 80 excimer laser, patient transfers between surgical steps are no longer necessary. The patient experiences the surgery as an integrated process. Unnecessary waiting periods are minimized and treatment efficiency increased.

### Systems that communicate with each other

For efficient practice management you benefit from optimally coordinated product portfolio, diagnostics and planning station, CRS Master, MEL 80 excimer laser and VisuMax femtosecond laser. We thus offer you an integrated solution from a single source; a solution that offers you the potential to subsequently expand your networking capabilities with continuously enhanced data flow efficiency and individualized patient treatments.



### **CRS Master**

#### **For a truly individual treatment**

A top-notch treatment planning tool, the CRS Master integrates wavefront examination and corneal topography data for the MEL 80, thereby allowing you to create truly individual treatment programs. The inclusion of additional patient-relevant data offers complete individualized optical profiles of your patients for tailored laser applications.

### **VisuMax**

#### **Improved precision for corneal incisions**

The new VisuMax femtosecond system allows you to operate with great accuracy and, what's more, less invasively. Thanks to the system's highly advanced laser technology and innovative optical design, corneal incisions with improved precision are easily performed.

As such, the VisuMax offers a very gentle treatment option for corneal surgical procedures – for you and your patients.



*CRS Master*



*VisuMax*

## Precision for presbyopic patients: Laser Blended Vision

### The next stage of Eye Care Excellence

A growing group of patients is reaching presbyopic age. The CRS Master™'s Laser Blended Vision option optimally prepares you for this trend. The software assists you in planning binocular treatments for the MEL 80 and optimizing them for presbyopic patients. In this way, individualized treatment planning has reached the next stage of Eye Care Excellence.

### Proven improved quality of vision\*

The principle: the great depth of focus of the ablation profile and micro-monovision are combined so as to produce an overlap in the field of focus of both eyes for medium distances. Micro-monovision improves the reading ability in the non-dominant eye.

Scientific studies have shown that this procedure also achieves a high degree of tolerance compared with classical monovision.

As you can see in diagram 3, it was also shown that average binocular distance visual acuity is better than the visual acuity in the 'distance eye'. This suggests a constructive overlapping of both images in the brain.

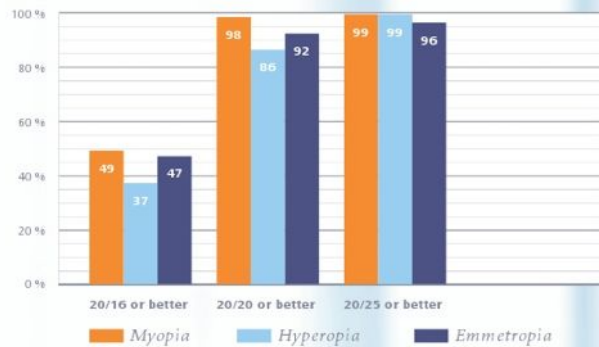
#### Your advantages

- Option can be combined with eye registration
- K-value optimized ablation
- Simple binocular treatment planning

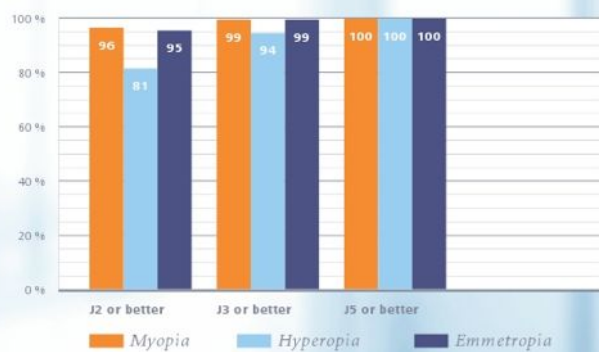
\* Source: Presentation by Prof. Dan Reinstein at the Presbyopia Congress (ISOP) in Barcelona, September 2009

*LASIK for Hyperopic Astigmatism and Presbyopia Using micro-monovision With the Carl Zeiss Meditec MEL80 Platform*  
Dan Z. Reinstein, MD, MA (Cantab), FRCSC, FRCOphth;  
Darren G. Couch, BScOptom; Timothy J. Archer, MA (Oxon), DipCompSci (Cantab)  
*Journal of Refractive Surgery Volume 25 January 2009; 37-58.*

1 UDVA after all treatments – distance eyes



2 Binocular UNVA after all treatments



3 UDVA after all treatments – binocular neural summation





# MEL 80 - the excimer laser with the broadest performance scope

## The benefits

- Maximum safety: the only flying-spot excimer laser where the eyetracker's feedback frequency is higher than the laser's pulse frequency
- Gentle treatment: extremely rapid recovery of vision
- Broadest portfolio in the market
- Fastest available excimer-/femtosecond laser combination
- Rapid workflow at the push of a button
- No need for flushing gas systems and extra gas canisters
- Simple fluence test
- Intuitive software
- Seamless data transfer to VisuMax
- Easy installation
- Short start-up time
- Ergonomically designed workstation
- CCA+ smoke extraction system
- Swivel-type patient supporting system

## What your colleagues say

» Laser Blended Vision is very easy to use, all the surgeons occurring in the center use it without any difficulty. The enthusiasm of the operated patients is revealing of its efficiency. «

*Dr. Yves Guldenfels,  
Expert Vision Center, Strasbourg*

» Laser Blended Vision (LBV) is a logical approach to treating presbyopic individuals. Patients have remarked on the comfortable vision. Importantly, subjective assessment of visual quality demonstrates minimal perceived problems for all ranges of vision. The Laser Blended Vision module has been an important addition to my practice and I now find myself recommending laser corrections for patients who would previously have been guided to have refractive lens exchange. «

*Dr. Patrick Versace,  
The Eye Institute, Sydney*

» Laser Blended Vision, so that age is not any more an obstacle. «

*Dr. Charvier, Dr. Donate,  
Centre Laser Vision Roosevelt, Lyon*

## Technical data

### Laser data

Type	ArF excimer laser
Wavelength	193 nm
Frequency	10 / 250 Hz depending on treatment mode
Aiming beam diode	650 nm (laser class 1)

### Device data

Weight of basic device	approximately 260 kg, total
Dimensions (laser, L x W x H)	155 x 80 x 149 cm
Footprint including patient supporting system (L x W x H)	314 x 180 x 149 cm
Power supply	100 V AC; 50 / 60 Hz; 17.5 A 120 V AC; 50 / 60 Hz; 14.6 A 208 / 220 / 230 / 240 V AC; 50 / 60 Hz; 7.9 A
Approval	CE mark as per Medical Device Directive 93/42/EEC
Gas supply	1 integrated ArF-Premix cylinder 10 l
Power consumption	max. 1600 W

### Equipment

Surgical microscope	OPMI pico with integrated video camera
Eye tracking	Active eyetracking, IR, 1000 fps, limbus
CCA+ (smoke extraction system)	Integrated in device

### Spot scanning parameters

Beam dimensions	0.7 mm FWHM, Gaussian beam profile
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### PTK treatment

Area ablation	Programmed PTK shaping
Spot ablation	PTK spot

### Options

Pivoting slit lamp	
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Publication No: 000000-1838-386  
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