

Advanced excimer laser technology



Seeing beyond



ZEISS MEL 90 – the excimer laser combining proven experience and advanced technology to match your preferences, workflow and expectations.

zeiss.com/mel90

My preferences precisely

The ZEISS MEL® 90 takes your needs and preferred system handling into account.

Applied flexibility – FLEXIQUENCE

The FLEXIQUENCE® switch function¹ lets you choose between 250 Hz and 500 Hz. You can have twice the speed with a simple touch of the finger – enabling you to leverage both proven reliability and new treatment opportunities.

Predictable and gentle – Triple-A

The Triple-A Advanced Ablation Algorithm is an ablation profile for a wide range of spherocylindrical (SCA) corrections that simplifies treatment planning. Triple-A is an aspherically optimized design, with a high degree of precision and predictability, and an intelligent energy correction that helps to preserve corneal tissue. All combined into one single ablation algorithm: Triple-A.

Treatment Speed

When performing LASIK for myopia at 500 Hz, MEL 90 ablates as fast as up to 1.3 seconds per 1 diopter². Intuitive system guidance and speedy treatment planning allow for additional time savings.



¹ Not available in the USA
² LASIK Myopia, OZ 6 mm



My workflow precisely

Designed to make your work more convenient, you can adapt the ZEISS MEL 90 to precisely fit your needs and that of your team – allowing you to focus on your overall workflow.

Advanced system guidance

The intuitive Graphical User Interface supports fast treatment procedures. You can flexibly adjust the touch screen and maintain a good ergonomic sitting posture throughout the operation.

Touch screen or keyboard control

You can make entries either per touch screen or keyboard.

Two workstations

Truly exceptional – a second, optional touch screen on the MEL 90 system. Depending on the OR setup, the assistant touch screen can also be placed on a separate table.

Easy calibration

With the proven fluence test, laser calibration is very quick and easy.

Service friendly

The MEL 90 is a highly reliable system requiring very little service maintenance. The unique beam path evacuation eliminates the need for flushing gas.

Seamless data integration

Patient data transfer is very easy thanks to the seamless interaction between the MEL 90 and other refractive platforms from ZEISS, VISUMAX 800® and ZEISS Refractive Workplace. An HD video port, network printer and PDF export capabilities offer additional workflow support.



MEL 90 teamwork

As a true team player, the MEL 90 simplifies the interaction between the surgeon, assistant staff and system technology. When equipped with a second workstation, it can be configured to optimally complement the treatment routine of the OR team.



MEL 90 flexibility

Flexible touch screen positioning and optional keyboard control let you design your workstation just the way you want it.

My expectations precisely

ZEISS MEL® 90 combines high-quality elements and performance to help you optimally fulfill your patients’ requirements.

Excellent precision

ZEISS MEL 90 can be precisely tailored to the individual needs of the modern refractive surgical practice. Its preinstalled functions also offer surgeons optimal support for achieving excellent treatment results^{1,2,3}.

High patient comfort

Short treatment duration combined with seamless procedural flow helps to increase patient satisfaction. The comfortable patient supporting system ensures stress-free and stable positioning throughout the entire procedure.

Optimal atmospheric conditions

The unique, sensor controlled CCA+ plume removal system supports optimal atmospheric conditions at the patient’s eye throughout the treatment.

Safe eye tracking

The MEL 90 is equipped with an active eye tracker with excellent response time to provide high-level treatment safety and very stable results.



MEL 90 atmosphere

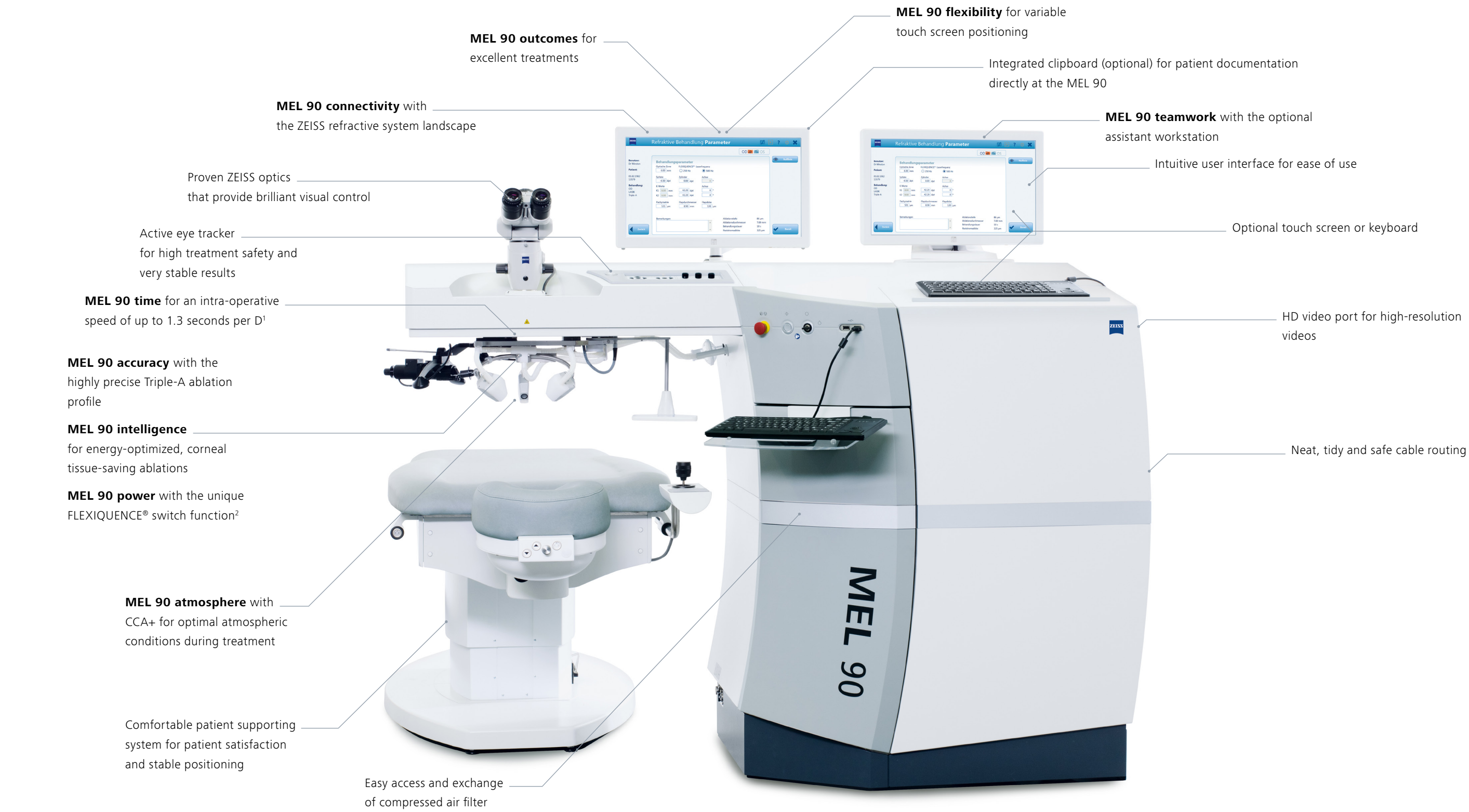
The unique, sensor-controlled CCA+ plume removal system supports optimal atmospheric conditions around the patient’s eye – thereby also significantly improving the predictability of the results.

¹ Reinstein, DZ et al “Outcomes for Myopic LASIK With the MEL 90 Excimer Laser”, Journal of Refractive Surgery, 2015;31(5):316–321

² Reinstein, DZ et al “Outcomes for Hyperopic LASIK With the MEL 90® Excimer Laser”, Journal of Refractive Surgery, 2018;34(12):799–808

³ Reinstein, DZ et al “Outcomes for Mixed Cylinder LASIK With the MEL 90® Excimer Laser”, Journal of Refractive Surgery, 2018;34(10):672–680)

ZEISS MEL 90



¹ LASIK Myopia, 500Hz, OZ 6mm
² not available in the USA

Digitally connected workflow.

Take advantage of streamlined data management.

The ZEISS MEL 90 connects with different products and solutions from ZEISS. Reliable integration can help you achieve faster procedures and more efficiency in a streamlined workflow while also offering support to reduce sources of error.

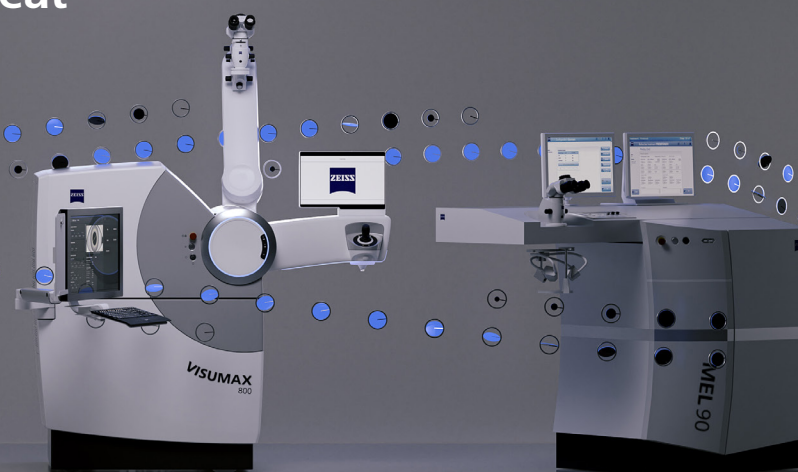
Assess & educate



Plan



Treat



Check



ZEISS Patient Communication Materials

Helping you to interact with patients at each step of the patient journey for better understanding of treatment options and expectation management.

ZEISS Practice Development

Our ZEISS Practice Development consultants will provide you with an unbiased evaluation of the patient experience in your clinic and collaborate with you to define improvements tailored to your specific needs.

ZEISS ATLAS 500

A state-of-the-art, multi-modality solution for the anterior eye segment, ATLAS® 500 from ZEISS offers corneal topography. Additionally, the system enables clinicians to carry out dry eye assessments in a single workstation, delivering increased efficiency in a compact design.

ZEISS Refractive Workplace

Refractive Workplace® with connectivity to FORUM® from ZEISS is the treatment planning software for our refractive lasers. It offers comprehensive remote planning outside the OR with the option to align integrated diagnostic data.

ZEISS VISUMAX 800 and MEL 90

The digital connection of the VISUMAX 800 femtosecond laser and MEL 90 excimer laser to FORUM gives you the freedom for easy remote treatment planning via ZEISS Refractive Workplace. The refractive lasers allow you to perform a broad range of laser vision corrections: Lenticule Extraction with ZEISS SMILE pro, Femto-LASIK, PRK/LASEK¹, and ZEISS PRESBYOND².

ZEISS VISULYZE

The software VISULYZE® from ZEISS provides a clear overview of your clinical results and generates nomograms customized to each user with a simple and intuitive interface. The software collects, stores and statistically analyzes your own clinical data in a standardized way – helping you to examine and verify refractive outcomes.

¹ Not available in the USA and in Japan

² Not available in the USA

ZEISS PRESBYOND

Laser Blended Vision

The ZEISS MEL 90 is a first-rate platform for treating presbyopic patients without cataract. With the optional PRESBYOND® Laser Blended Vision module¹, ZEISS offers an option specifically designed for presbyopic patients, a rapidly growing business segment.

The next level in presbyopia management

PRESBYOND Laser Blended Vision is an individualized treatment approach in which information about pre-operative spherical aberrations, tolerance of

1.5 D anisometropia, and functional age of the eyes is used to calculate the ablation profile. PRESBYOND Laser Blended Vision increases the depth of focus of each individual eye and creates customized fusion of the two images for near and distance vision as well as for intermediate vision – the so-called “Blend Zone.”

This method enables clear sight at all distances – near, far, and intermediate – for myopic, ametropic and hyperopic presbyopes, while maintaining contrast sensitivity and preserving stereoacuity^{2,3}.



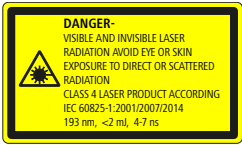
PRESBYOND Laser Blended Vision

Customized. All distances. Immediate.

¹ Not available in the USA
² Reinstein DZ, Ivory E, Chorley A, et al. PRESBYOND Laser Blended Vision LASIK in commercial and military pilots requiring class 1 medical certification. J Refract Surg. 2023;39(1):6-14.
³ Russo A, Reinstein DZ, Filini O, et al. Visual and refractive outcomes following Laser Blended Vision with non-linear aspheric micro-anisometropia (PRESBYOND) in myopic and hyperopic patients. J Refract Surg. 2022;38(5):288-297. Erratum in: J Refract Surg. 2022;38(7):474.

Technical Data

MEL 90 from ZEISS	
Type	ArF excimer laser (laser class 4 according to IEC 60825-1:2014)
Wavelength	193 nm
Laser frequency	FLEXIQUENCE® ¹ 250 Hz/500 Hz
Fixation laser	
Type	Solid-state laser (laser class 1 according to IEC 60825-1:2014)
Wavelength	532 nm
System data	
Weight	295 kg with gas cylinder
Weight of patient support system	232 kg
Dimensions (W x D x H)	1.63 m x 0.73 m x 1.48 m – 1.70 m
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 Regulation (EU) 2017/745
Gas supply	Integrated ArF-Premix cylinder 10 l
Equipment	
Surgical microscope	OPMI® pico with integrated HD video camera
Illumination	Ring illumination: stepless adjustment; sectional light; satellite illumination; optional slit lamp illumination
Active eye tracker	Infrared, pupil and limbus tracking, 1050 frames per second (fps), manual ablation center selection, automatic Pupil Center Shift Correction
CCA+ (plume removal system)	Integrated into the device, automatic adaptation for 250 Hz/500 Hz operation
Optional	Monitor with touch screen, keyboard, printer, ZEISS Refractive Workplace, PRESBYOND® Laser Blended Vision
Spot scanning parameters	
Beam dimensions	0.7 mm FWHM (full width at half maximum), Gaussian beam profile
Phototherapeutic keratectomy ²	
Area ablation	PTK shaping



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ZEISS MEL 90
ZEISS Refractive Workplace
ZEISS PRESBYOND
ZEISS VISUMAX 800
ZEISS SMILE



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