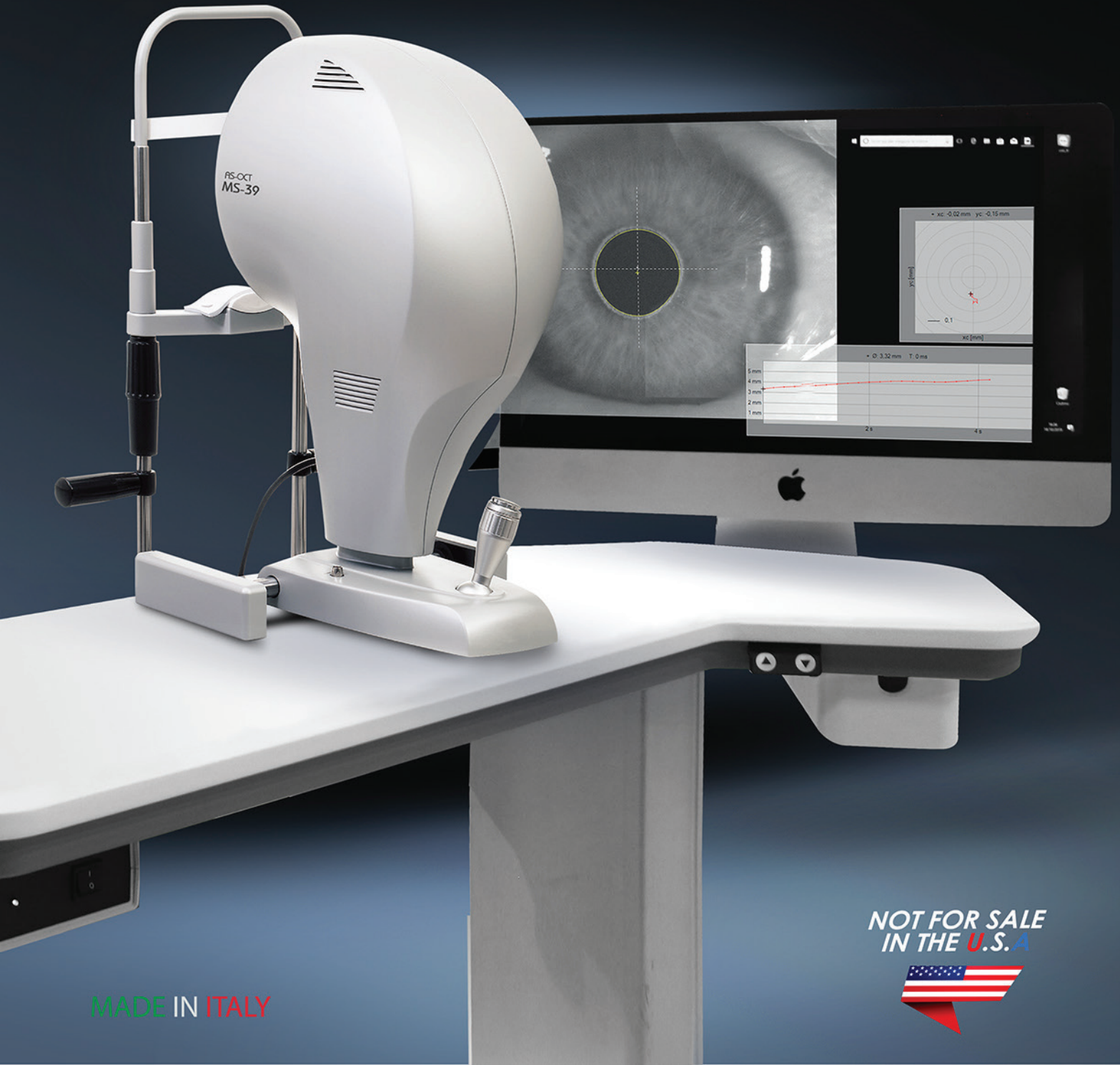




CS[®] MS-39

Anterior Segment OCT



MADE IN ITALY

NOT FOR SALE
IN THE U.S.A





Anterior Segment OCT MS-39



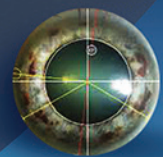
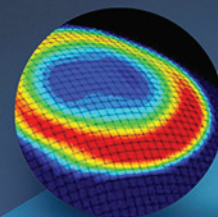
The MS-39 is the most advanced corneal map device using a SD-OCT and Placido disk corneal topography to obtain measurements of the anterior segment of the eye.

- MS-39 provides topographic maps:
 - Tangential curvature (anterior and posterior)
 - Sagittal curvature (anterior and posterior)
 - Elevation (anterior and posterior)
 - Refractive power (equivalent, anterior and posterior)
 - Corneal thickness
 - Epithelial thickness
 - Anterior chamber depth



- In addition to anterior segment clinical diagnostics, MS-39 can be used in corneal surgery for refractive surgery planning.

- MS-39 is known to produce the highest resolution and clarity of the cross-sectional images, with a 16 mm diameter, along with the many details of the cornea structure and layers.



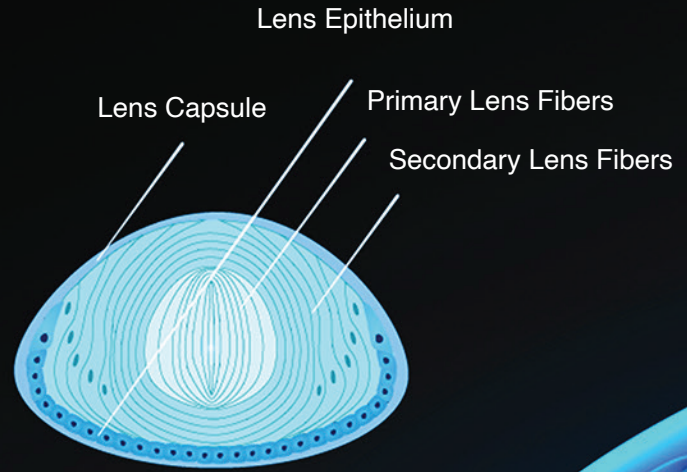


OCT - Behind the Eyes



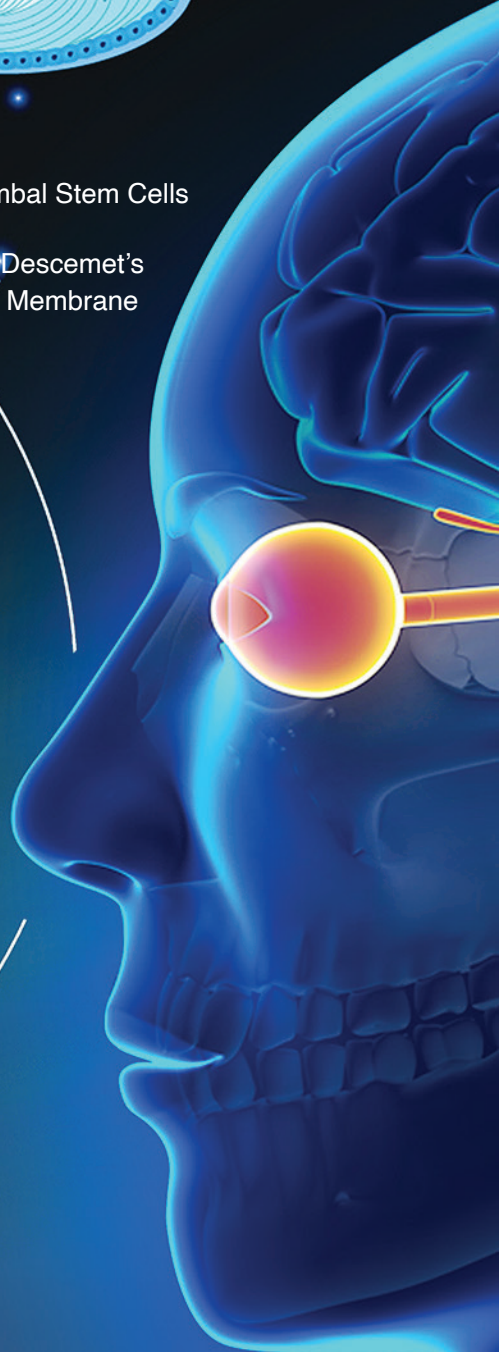
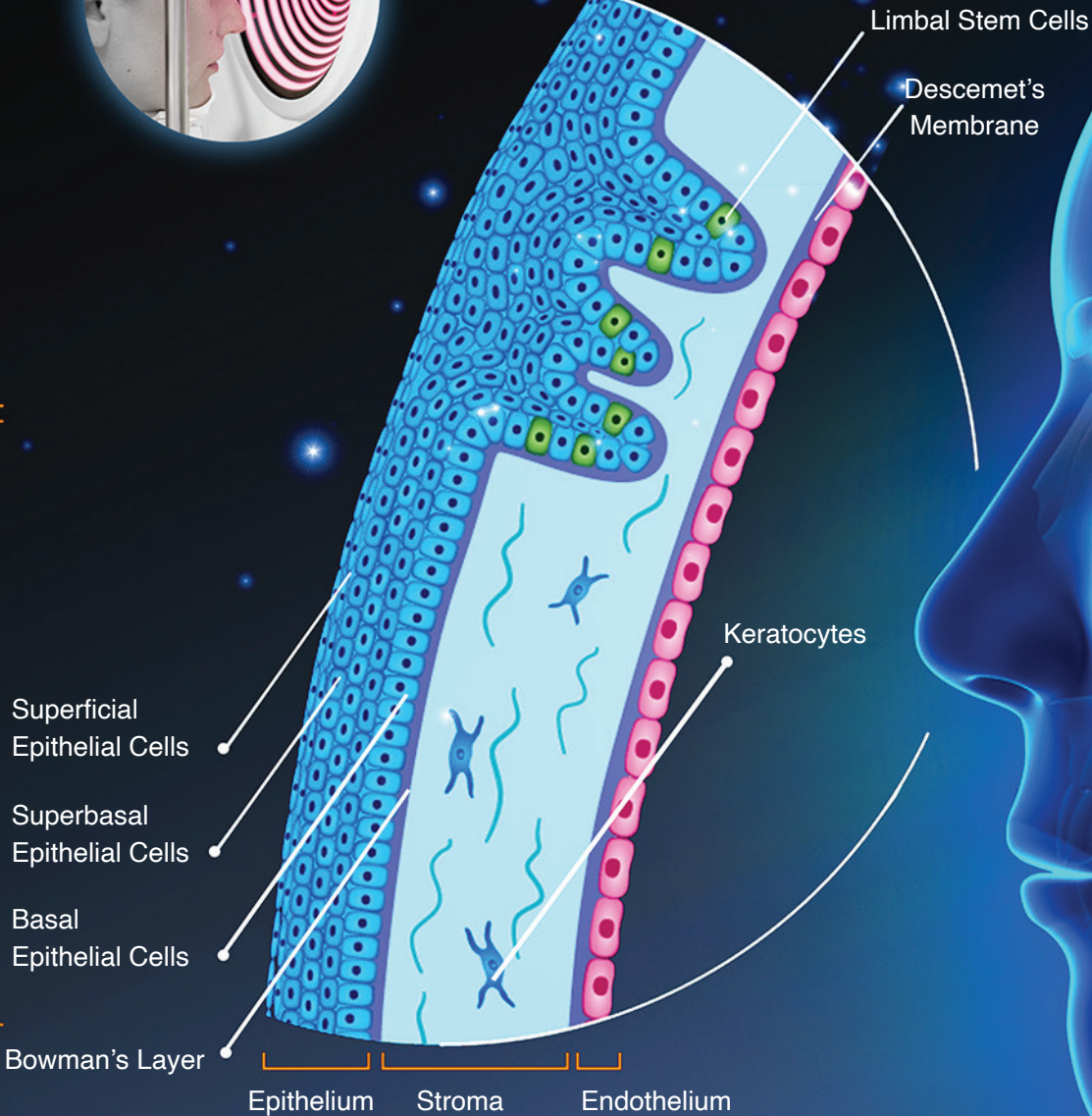
MS-39 can measure and detect on the Placido image so that height, slope, and curvature data can be calculated using the arc-step method with conic curves. Profiles of the anterior cornea, posterior cornea, anterior lens, and iris are derived from the SD-OCT scans.

Data for the anterior surface from the Placido image and SD-OCT scans are merged using a proprietary method. All other measurements for internal structures (posterior cornea, anterior lens, and iris) are derived solely from SD-OCT data.



LIMBUS

CORNEA





USB CONNECTION

The USB connection between the device and the PC enables a fast and easy transfer of the images.



AUTOMATIC MEASUREMENTS

MS-39 combines a Placido disk corneal topography, with high resolution OCT based anterior segment tomography.



HIGH PRECISION JOYSTICK

MS-39 captures footage with the advanced manual acquisition and electronically guided control joystick, which guarantees high precision and repeatability of all measurements.





Phoenix Software

Included

The MS-39 works perfectly with the advanced PHOENIX software. This program enables comfortable working, by connecting all of your diagnostic instruments with a powerful patient database, giving you an extraordinarily effective work station.



MADE IN ITALY

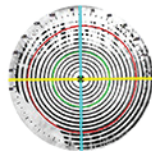


EPITHELIAL MAP

Epithelial thickness mapping can help us identify early keratoconus while screening patients for corneal refractive surgery. Epithelial thickness mapping provides additional supporting evidence in the diagnosis, which allows us to offer alternative treatment options.

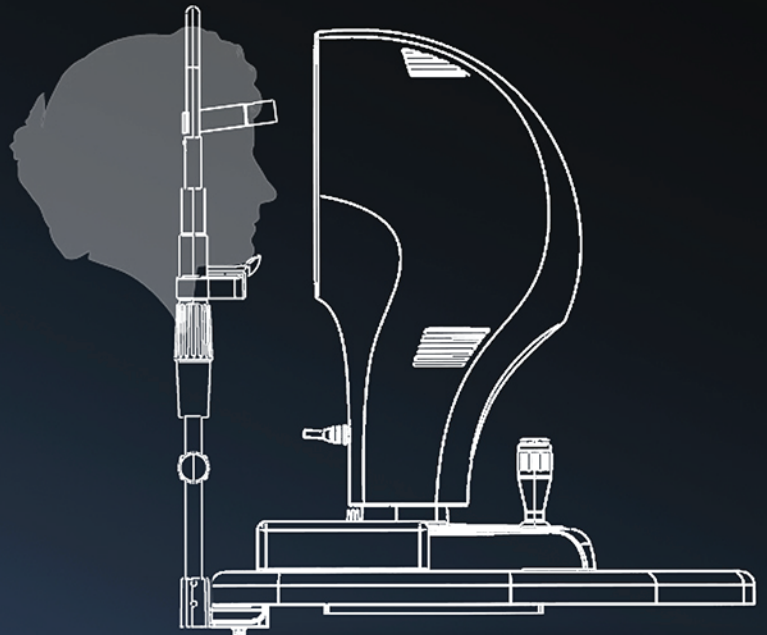
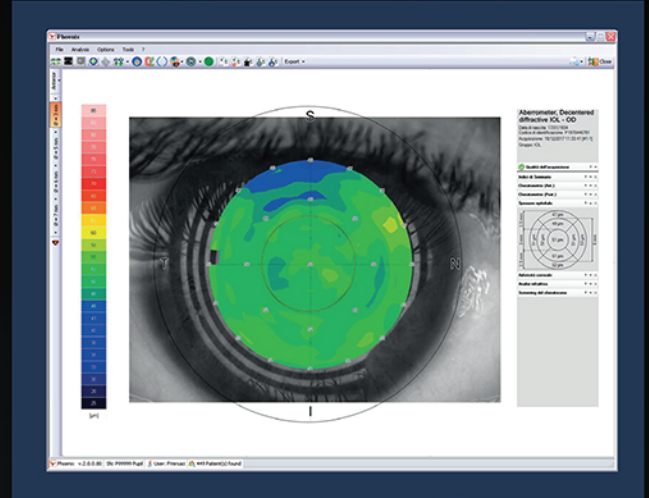


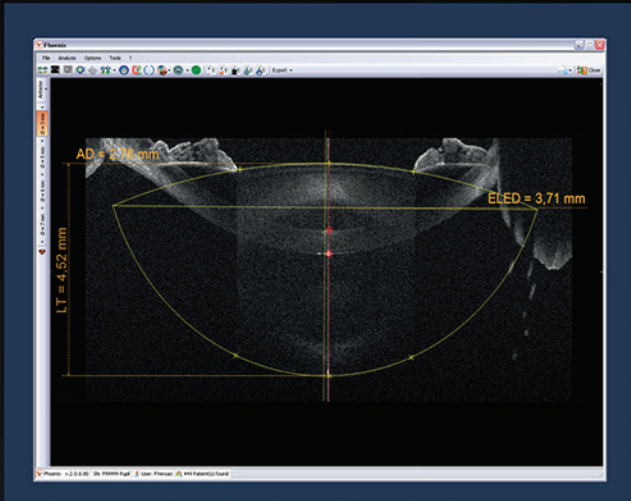
Thickness Map



Placido Imaging

The MS-39 Anterior Segment OCT includes the innovative and advanced measurement of the epithelial layer. The epithelial masking effect is known for its morphology which is very useful assess abnormalities of the corneal surface.



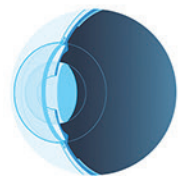


CRYSTALLINE BIOMETRY

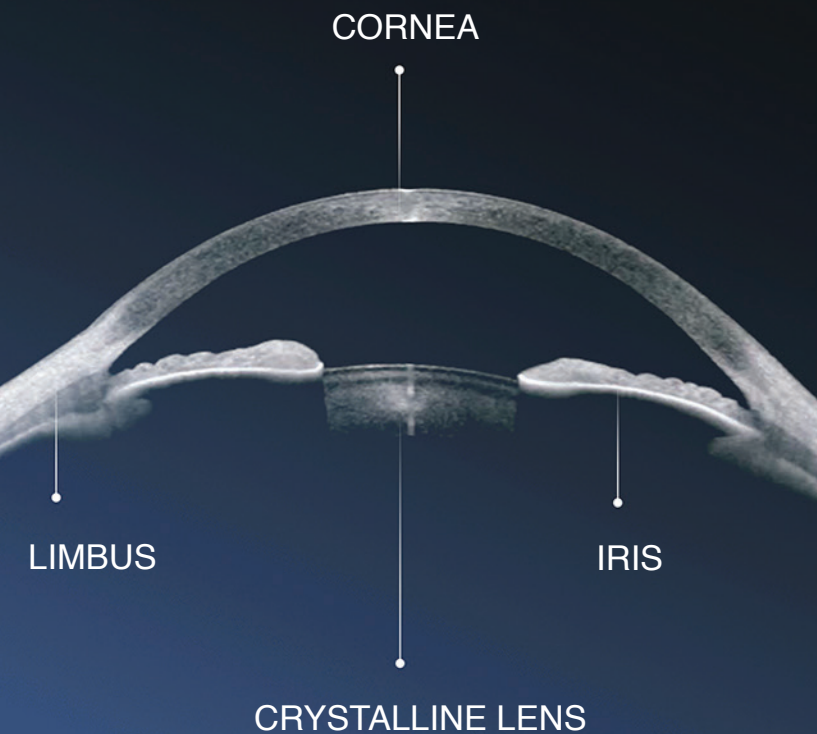
Lenticular crystalline biometry on non cataractous lenses has been studied by means of Scheimpflug photography and digital image analysis.



Anterior Lens Surface



Crystalline Lens



In order to more accurately determine and refine the intra-ocular lens calculation, the device provides a capture mode to measure the crystalline lens thickness, its distance from the cornea and its equator.

The crystalline lens of the eye is the only human organ which undergoes a steady increase in size due to growth throughout the life of the individual.

ADVANCED ANALYSIS OF THE TEAR FILM

Placido disk technology allows for the advanced analysis of the tear film, such as NI-BUT (Non Invasive Break-up Time).



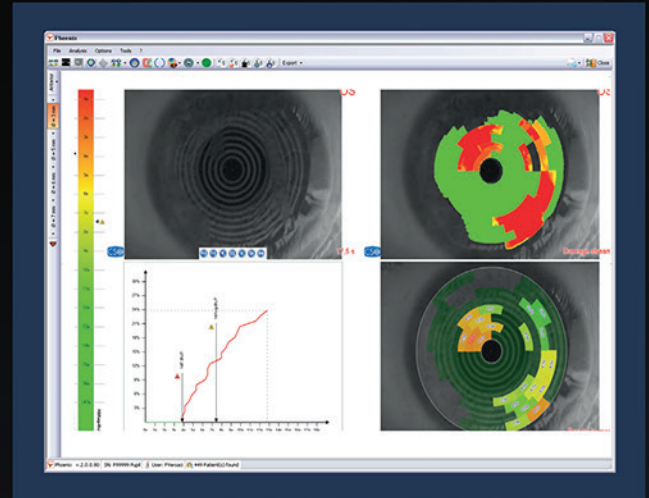
Placido Disk



Meniscus Evaluation

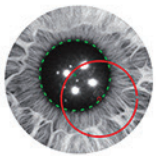
VIDEOKERATOSCOPY MODULE

- Tear film examination with white light
- Tear film examination with fluorescein
- Break-up time measurement.
- Examination of tear layers.
- Examination of rigid LAC clearance with fluorescein



PUPILLOGRAPHY

Sirius has built-in pupillometry measurement software. Knowing the center and the diameter of the pupil, is essential for many clinical procedures which seek to optimize vision quality.



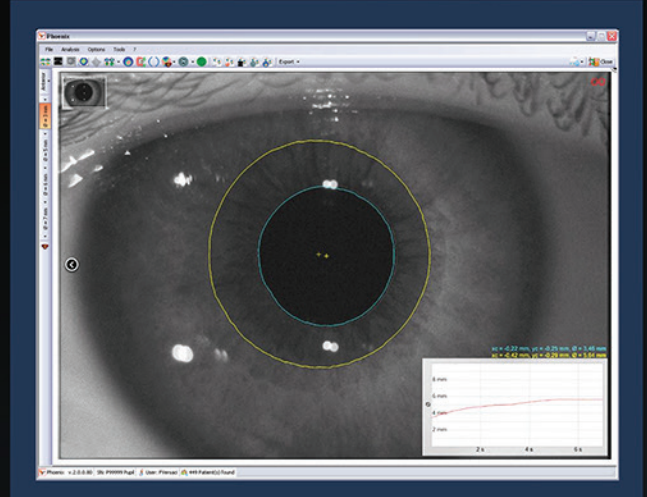
3D Scheimpflug



Contour Detection

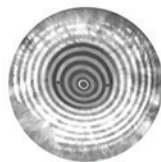
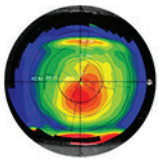
PUPILLOMETRY MODULE

- Pupillometry with scotopic light to determine pupil maximum extension and optic zone diameters for treatment settings.
- Pupillometry with mesopic light (4 lux)
- Pupillometry with photopic light (50 lux)
- Dynamic pupillometry, starting with over 400 lux and switching off the light source so that the pupil can dilate to its maximum extension
- Evaluation of pupil decentralization from the corneal vertex and calculation of the pupil centre during dilation.



KERATOCONUS SCREENING

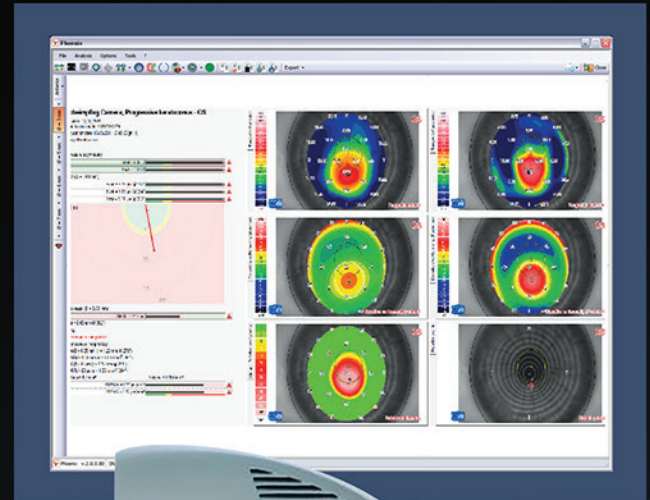
Keratoconus screening provides the clinician with important information about the patients cornea. This can help prevent complications associated with ectasia before corneal surgery is undertaken.

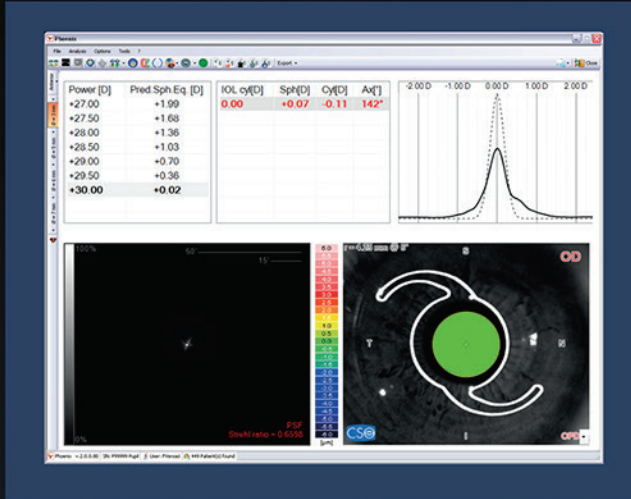


Klyce / Maeda Indices

Rabinowitz Values

Keratoconus is a non-inflammatory, progressive thinning process of the cornea. It is a relatively common disorder of unknown etiology that can involve each layer of the cornea and often leads to high myopia and astigmatism.



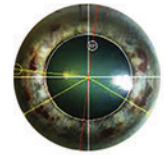


IOL CALCULATION MODULE

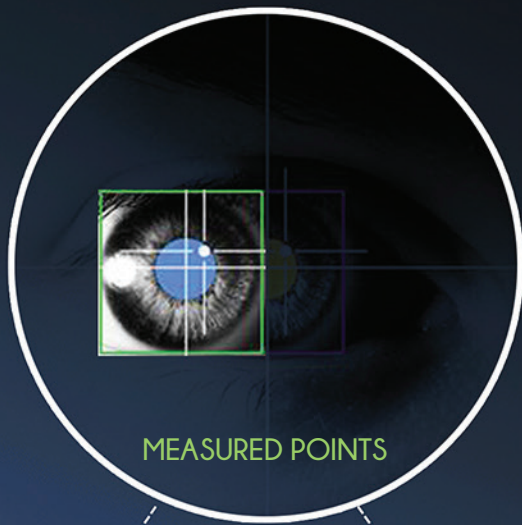
This module is based on Ray-Tracing techniques, regardless of the state of the cornea (untreated or previously treated for refractive purposes), provides the calculation of the spherical and toric power of the intraocular lens.



Post Refractive

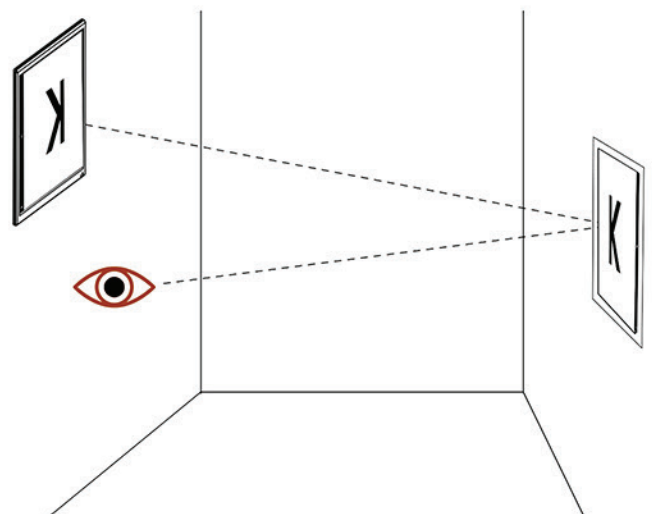


Toric Results



31,232
(anterior surface)

25,600
(posterior surface)



INTRASTROMAL RINGS

On the basis of the pachymetry map and corneal alti - metric data, SIRIUS allows for intrastromal rings system planning, with variable options for the correction of refractive defects and some forms of keratoconus.



Intracorneal Ring



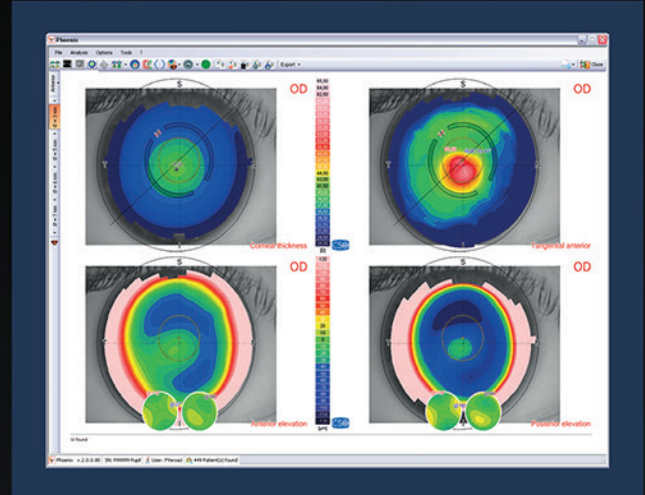
Surgical Incision

PROS:

- For patients with progressive keratoconus,
- Reversible
- Patients may achieve a better fit and hence a more comfortable fit with their contact lenses

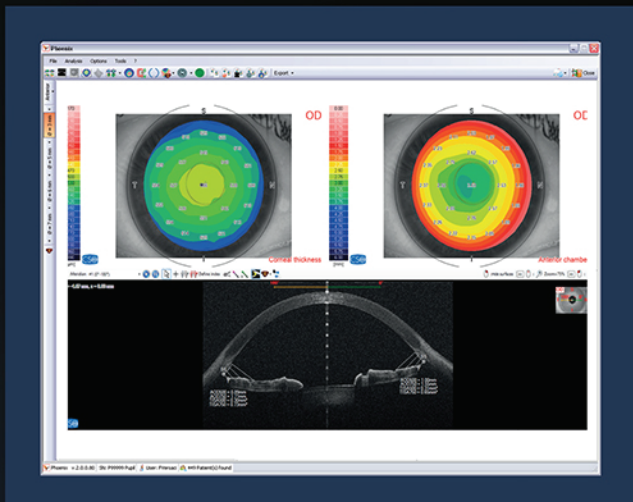
CONS:

- Postoperative discomfort/pain for 1-4 days
- Vision may not improve or change
- Fluctuating vision for weeks to months after the procedure



RESHAPED CORNEA





GLAUCOMA SCREENING

The MS-39 device allows the glaucoma screening and gives the measurement of irido-corneal angles AOD, TISA and corneal pachymetry.



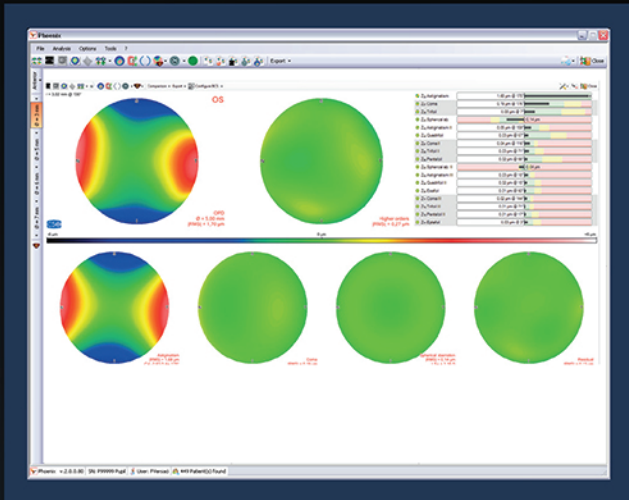
Healthy



Glaucoma

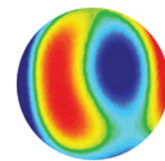
These values are the most common IOP correction formulas, useful to diagnose the eyes optic nerve and intraocular pressures to detect any diseases which can be due to the conformation of the anterior chamber.



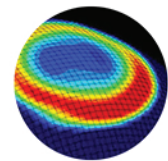


CORNEAL ABERROMETRY

Aberrometric analysis offers a complete overview of the corneal aberrations. It is possible to select the contribution of the anterior, posterior or total cornea for different pupil diameters. The OPD/WFE maps and the visual simulations (PSF & MTF) can help the clinician in understanding or explaining the patient's visual problems.



Wavefront Imaging



OPD Maps

Assisted manual acquisition advanced ring editing system available maps:

1. Sagittal curvature map
2. Angular curvature map
3. Altimetry
4. Refractive power
5. Gaussian curvature map

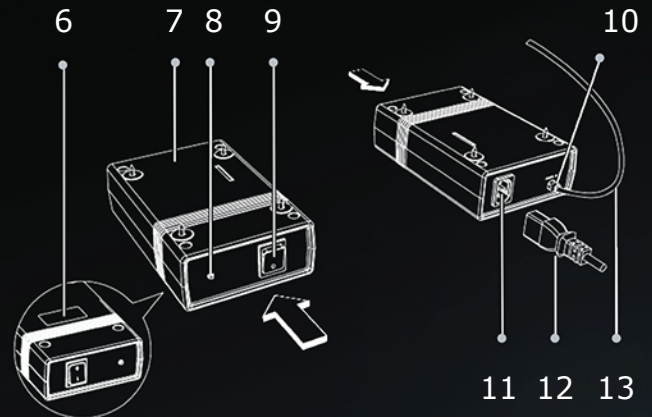
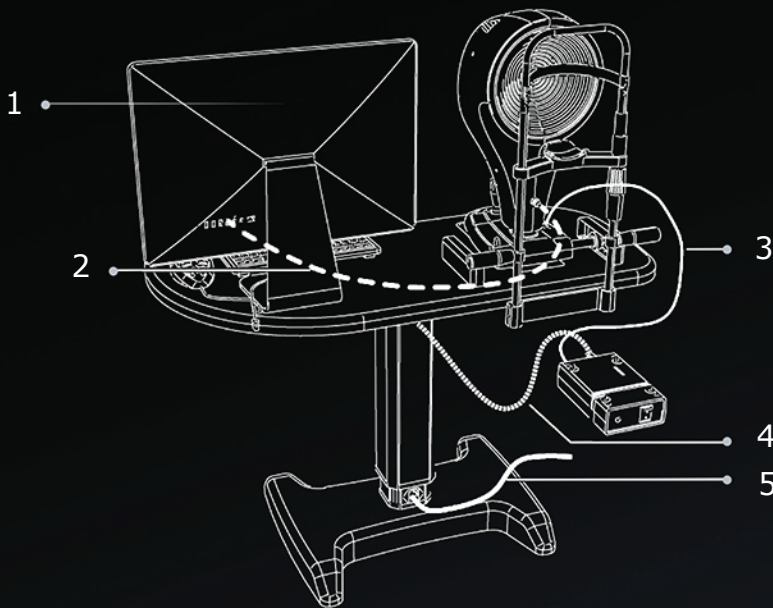


- | | | |
|---------------------------------|-------------------------------|-----------------------------------|
| 1. Chin Rest Module | 7. Table Drawer | 13. Chin Rest Knob Adjuster |
| 2. Head Rest | 8. Chin Rest Support | 14. Joystic (Capturing Trigger) |
| 3. Shooting Channel | 9. Electrical Table Adjuster | 15. Power Supply Connector |
| 4. Chin Rest Cup | 10. Device Locking Knob | 16. Device Supply Cable |
| 5. Personal Computer (Optional) | 11. Instrument / Placido Disk | 17. Slide Guard Guards |
| 6. Patient's Handle | 12. Paper for Chin Rest | 18. LIFT 02 - Tabletop (Optional) |



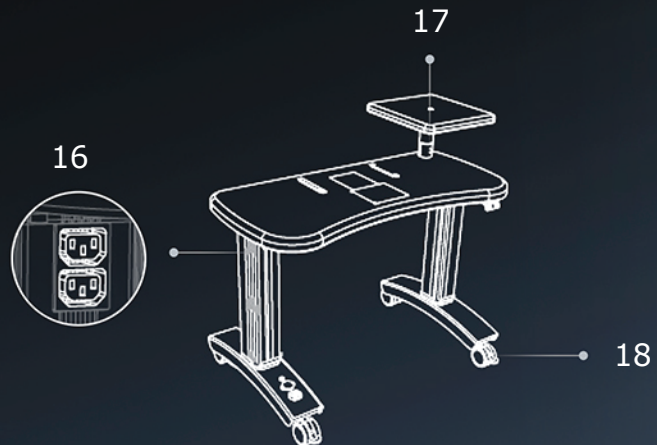
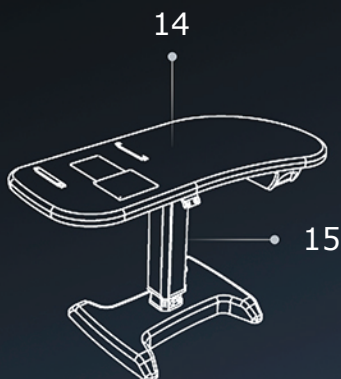
1. Monitor (Optional)
2. USB Connection (Device + PC)
3. Power Cable Connection (Power Supplier + Device)
4. Power Cable Connection (Electrical Table + Power Supplier)
5. Power Cable Connection (Electrical Table + Power Supply)
6. Data Plate
7. Power Supplier
8. Supply Control Light
9. ON / OFF Switch
10. Power Supply Out Connector
11. Power Supply Mains Connector
12. Power Supply Cable
13. Power Supply Cable (Out)
14. One Column Table (Optional)
15. Power Supply Connector
16. Power Sockets
17. Two Column Table (Optional)
18. Table Placement

Not Included (Optional)



Not Included (Optional)

Not Included (Optional)





Technical Data

Data Transfer	USB 3.0
Power Supply	External power source 24 VCC In: 100-240Vac 50/60Hz - 2A - Out: 24Vdc - 100W
Power net cable	IEC C14 plug
Dimensions (HxWxD)	505 x 315 x 251mm
Weight	10.4Kg
Chin rest movement	70mm ± 1mm
Minimum height of the chin cup from the table	23cm
Base Movement (xyz)	105 x 110 x 30mm
Working distance	74mm

Light Sources

Placido disk illumination	Led @635nm
OCT source	Led @845nm
Pupillographic illumination	Led @635nm

Topography

Placido disk rings	22
Measured points	31232 (anterior surface) 25600 (posterior surface)
Topographic covering	10mm
Dioptric measurement range	1D to 100D
Measurement accuracy	Class A according to UNI EN ISO 19980-2012

Section

Image field	16mm x 8mm
Axial resolution	3.6 µm (in tissue)
Transversal resolution	35 µm (in air)
Image(s) resolution	Keratotomy (640x480) + 25 radial scans on a 16mm transversal field (1024 A-scan) - Section: on 16mm (1600 A-scan) on 8mm (800 A-scan)
Operating system	Windows 10 (64 bit)

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