I.C.P. OSA

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A full assessment of the ocular surface through a combination of tests for dry eye diagnosis, from tear break up time to the tear volume production test.

MGD Analysis meibomian gland desease

Easily and efficiently integrates complex examination, such as meibography into the ophthalmological and optometric practices.

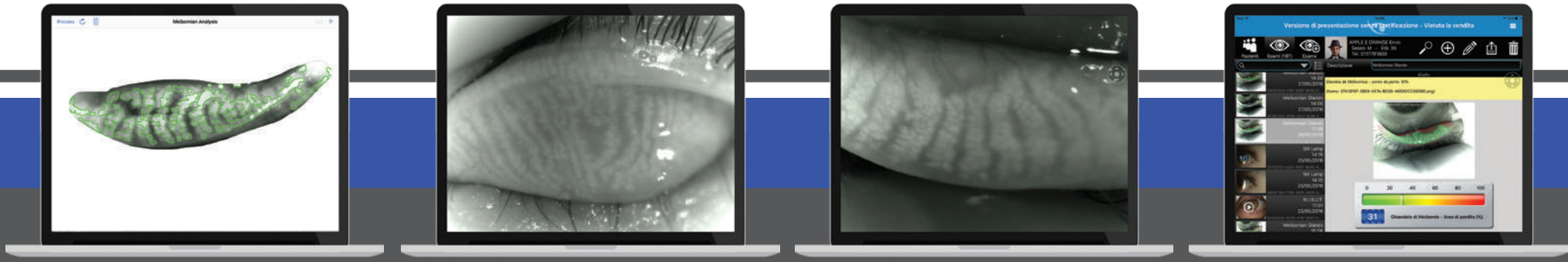
Dry Eye is most commonly caused by the Meibomian Gland Dysfunction (MGD). The Meibo-Scan shows the morphological changes in the glandular tissue.

System analysis of the images obtained through a sensitive infrared camera (NIR) in order to locate in a guided way:

- The position detected from the image, valid both for the superior both for the inferior part of the eye
- Calculating percentage of the extension in area of the present glands, taken by the operator
- Calculating percentage of the area of the missing glands
- Absent and present coloring area
- Classification in 4 different degrees
- Loss between 0 and 25%
- Loss between 25 and 50% in yellow
- Loss between 50 and 75% in orange
- Loss between 75 and 100% in red
- Through the editor system is possible to modify the brightness of the picture for a better evaluation.

Integrated system for the analysis of the ocular surface

The instrument is fit in the slit lamp tonometer's hall, it is designed to make all the related tear film tests, from the quality of the same to the analysis of Meibomian glands, as well as various measurements and classifications according to international grading scales.

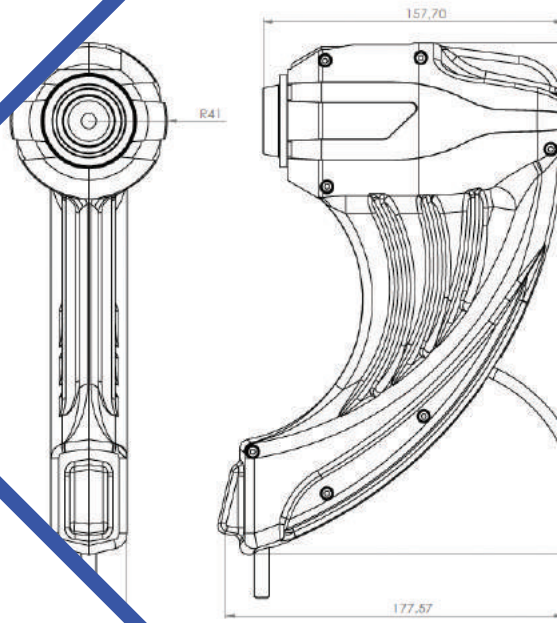


ICP can, in case of a good quality of image, in a guided way detect the length and width of meibomian glands imaged by infrared meibography without requiring any input from the user. The images are then automatically classified.

Problematic evaluation of the dry eye

For dry eye diagnosis are recommended a series of exams:

- Measurement of the blinking frequency and calculation of the inter blink interval
- Measurement of the height of the lower tear meniscus
- Measurement of the tear osmolarity (if available)
- Calculation of the tear film break up time TFBUT) and the index of ocular protection (OPI)
- Classification of the corneal and conjunctival coloration with fluorescein
- Schirmer Test or alternative test (phenol red test)
- Quantification of the morphological characteristics of eyelids
- Squeezing: quantification of the squeezability and of the quality of the lipid component
- Meibography: quantification of atrophy.



Meibography

It serves to build the morphology, diagnosis and drop out of the Meibomian Glands and for the diagnosis of the vital dysfunctions.

Meiboscopy is the visualization of the glands through trans-illumination of the eyelid with infrared light. The software allows to analyze the working and not working areas, and to compare the glands of the patient with the diagnostic evaluation scales.

Meibomian gland dysfunction (MGD) is a chronic, diffuse abnormality of the meibomian glands, commonly characterized by terminal duct obstruction and/or qualitative/quantitative changes in the glandular secretion. It may result in alteration of the tear film, symptoms of eye irritation, clinically apparent inflammation, and ocular surface disease.

TECHNICAL SPECIFICATIONS

IMAGE RESOLUTION	5 mp
ACQUISITION MODE	Multi shot, tube, movie
FOCUS	Autofocus, manual focus
ISO MANAGEMENT	Variable
GRIDS	Placido disc, NIBUT grid
CAMERA	Coloured, sensitive to infrared (NIR)
LIGHT SOURCE	Infrared LED – Blue and white Led

Analysis of the break up time of the lipid layer not invasive without of installation of fluorescein

Analysis stability and calculation of the lipid layer thickness

Analysis meniscus tear with calculation of automated heights and parameters

ICP Tearscope allows to quantify directly and indirectly each single layer

With white LEDs lighting displays in vivo the phenomenon of interference fringes possible to assess the thickness of the lipid component of the tear and run the NiBUT.

With blue LEDs lighting (with the fluorescein) creates a large area and allows you to perform the BUT and look fluorescein of large diameter scleral and mini scleral contact lenses type.

Immediate interpretation and follow up

Through the use of GRADING SCALE dedicated to each value obtained from the exams, the interpretation of the obtained data results easy and immediate making the iPad a real platform dedicated to the analysis of dry eye with detailed temporal graphics that allow to demonstrate in simple steps the need of the treatments and then the effective functioning of these!

Automatic detection module area of Meibomian Glands

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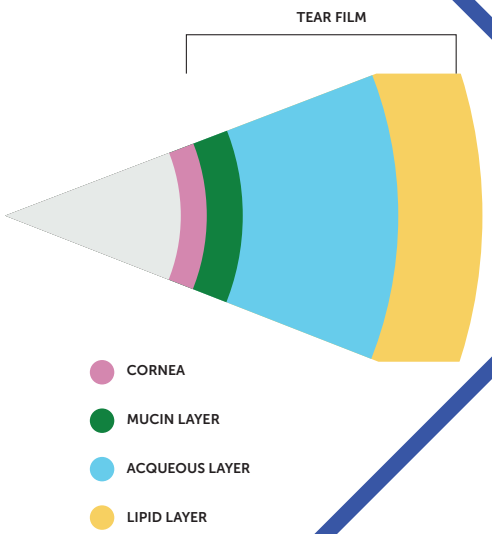
The images are then automatically classified.



The scattered light emitted by the I.C.P. allows to evaluate the interference fringes caused by the "quality" of the tear film and to classify them in different pattern tear.

The observation of the lipid layer allows us to intervene in a targeted way, evaluating the use of a particular artificial tear, an integrator or the presence or not of lacrimal abnormalities.

- Dystrophies with Placido's rings without fluorescein
- Quantitative test that evaluate the quantity of basal and/or reflected secretion
- Qualitative test that evaluate the functionality and the stability of the tear film
- N.I.B.U.T.: the observation is made without the use of fluorescein.

ICP Dry eye analysis

I.C.P. Tearscope the new instrument of individual analysis of lacrimal layers that allow with a quick detailed structural research of the tear composition.

Possibility of researsch on the single layers:

- Lipid
- Aqueous
- Mucin

Thanks to ICP Tearscope is possible to identify the type of DED(Dry Eye Desease) and determine which deficient layers can be treated with a specific treatment.

Mucin layer and water layer analysis

The layer watery is evaluated on the meniscus tear categorizing in different categories and possible issues related this. The measurement in mm allows without invasiveness the direct evaluation of the quantity.

N.I.B.U.T or B.U.T.
(with the use of fluorescein)

Interpretation and explanation to the patient

Graphic pre and post treatment with easy interpretation for the patient

All Dry Eye with scales and classified parameters on basis of standard

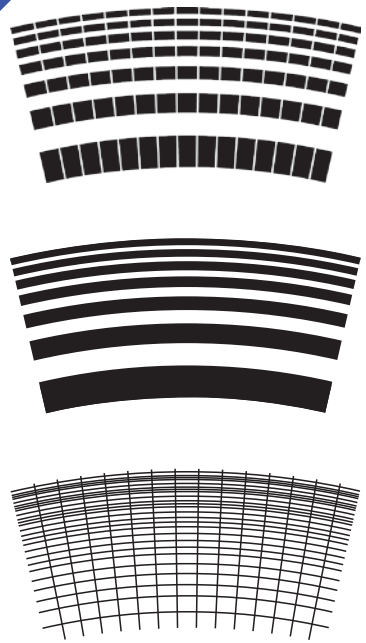
Supplied accessories

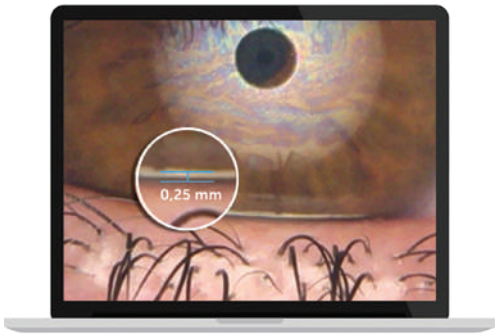
The system is provided with a kit of useful grids to perform various screening, all filters are already present in the system software and includes tests to evaluate and diagnose dry eye problems and can recommend artificial tears.

- Measurement of BLACK LINE (MLMI)
- Evaluation of the integrity of cornea and ascertaining the presence of corneal scars and bruises.

The product is already ready for the connection to Digital Imaging and Communications in Medicine (DICOM)

- Blue and white Led
- A thick grid to observe the quality of the tear film and measure the N.I.B.U.T.
- A fine grid to evaluate the quality and the structure of tear
- A Placido's disc to highlight possible distortions or corneal irregularities
- A yellow and cobalt blue filter via software for applicative evaluation of rigid contact lenses.





Tear meniscus-height

Evaluation of the tear film quantity.

With a various magnification tools, you can measure the tear meniscus height and evaluate its characteristics along the lower lid margin.

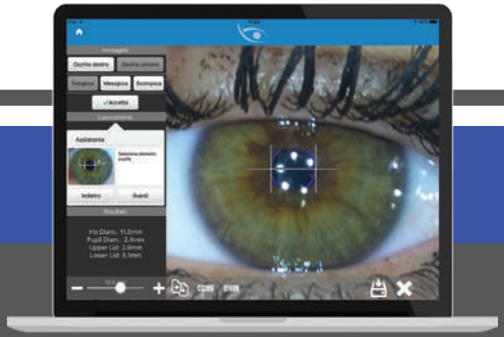
The tear film is the thin layer of liquid (about 8 µ, its thickness is variable on basis the considered portion and it results at maximum at cornea level) composed 98% of water and for the remaining 2% by protein and lipids, that is continuously and uniformly distributed on the ocular surface of the closing of the eyelids and that performs irreplaceable functions for our sight.

Palpebral angle measurement

Measurement of the nasal lower palpebral angle useful in the management of the contact lens.

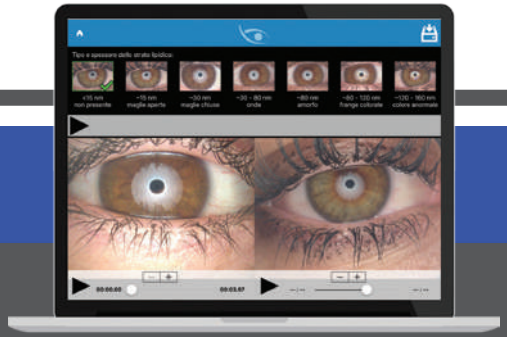
N.I.B.U.T.

Evaluation of tear film break-up time non invasive and fully automati. In the B U T test the presence of fluorescein in the tears may stimulate reflex tearing and may also result in changes to the tear film properties. To overcome these potential limitations, using a non-invasive procedure because the eye is not touched.

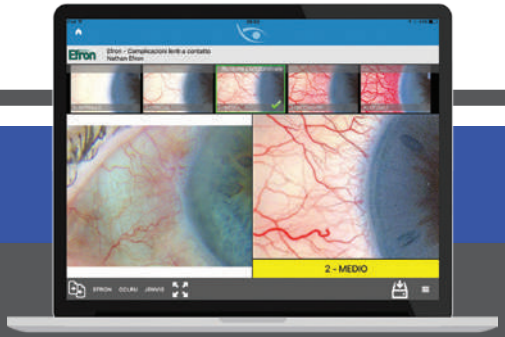


MEASUREMENT

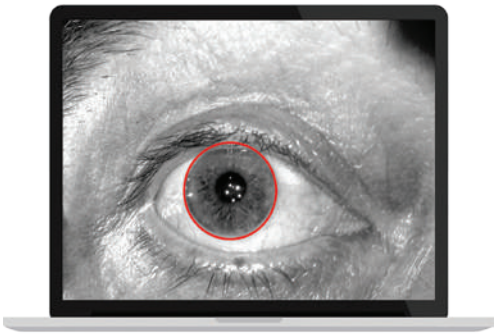
Mesopic, Scotopic, Photopic



Comparison Guillon scale



Benchmarking with Efron, CCLRU and Jenvis boards

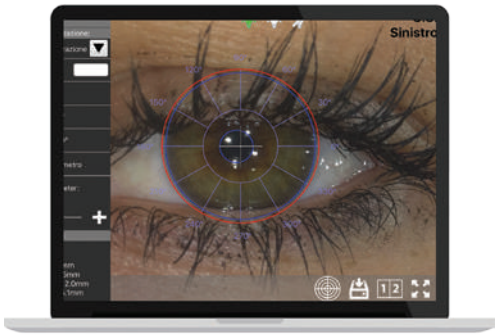


WHITE TO WHITE MEASUREMENT

evaluation of corneal diameter from limbus to limbus (white-to-white distance, WTW).

CORNEAL PLACID PLATE WARPAGE

subjective evaluation by the projection of palcido rings.



Pupillometry

Measurement of the pupil reaction to light with and without glare.

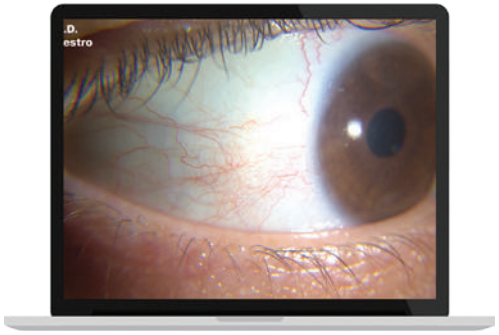
Measurement mode:

- **SCOTOPIC**
- **MESOPIC**
- **PHOTOPIC**

Lipid layer

EVALUATION OF THE LIPID LAYER THICKNESS

The color and structure of the lipid layer is visible and can be recorded. This shows the lipid layer thickness, which correlates with tear film evaporation and dry eye symptoms.

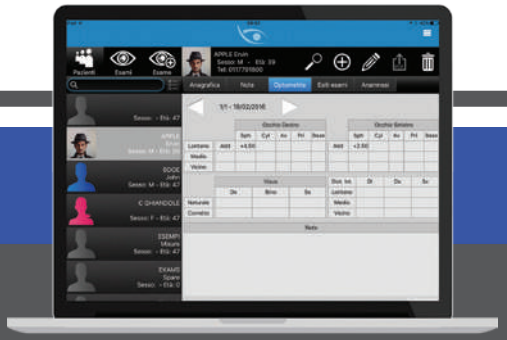


Bulbar redness classification

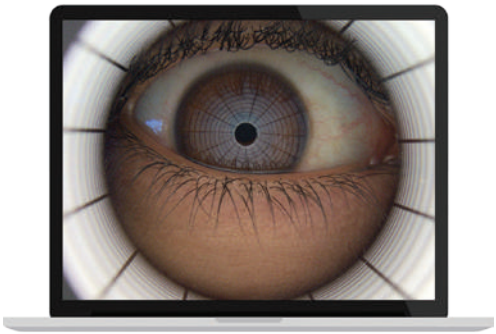
Detected the fluidity of the blood vessels of the conjunctiva, evaluating the degree of redness, it will be possible to compare the classification sheets of the degree of redness of bulbar and limbal.

Comprehensive and easy to use report off all the examinations related to DED

Specific reports per exam

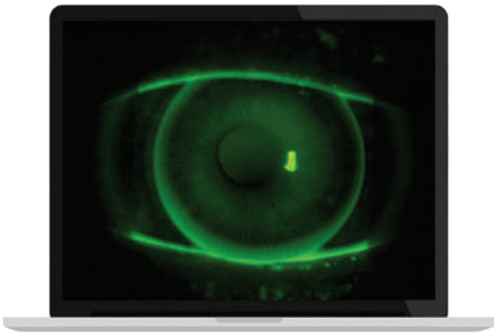


Complete management and fast registration data



CORNEAL TOPOGRAPHER

- Topography made through the placid rings placed in a non-invasive cone
- Rating with 4 different maps
- Possibility to simulate contact lenses
- Simple and assisted acquisition



CONTACT LENSES APPLICATION SIMULATION WITHOUT FLUORESCEIN

Ability to digitally test the CL application from database with simulation with fluorescein.