# eyevis

Dry eye diagnostic system
Model ESL5HI
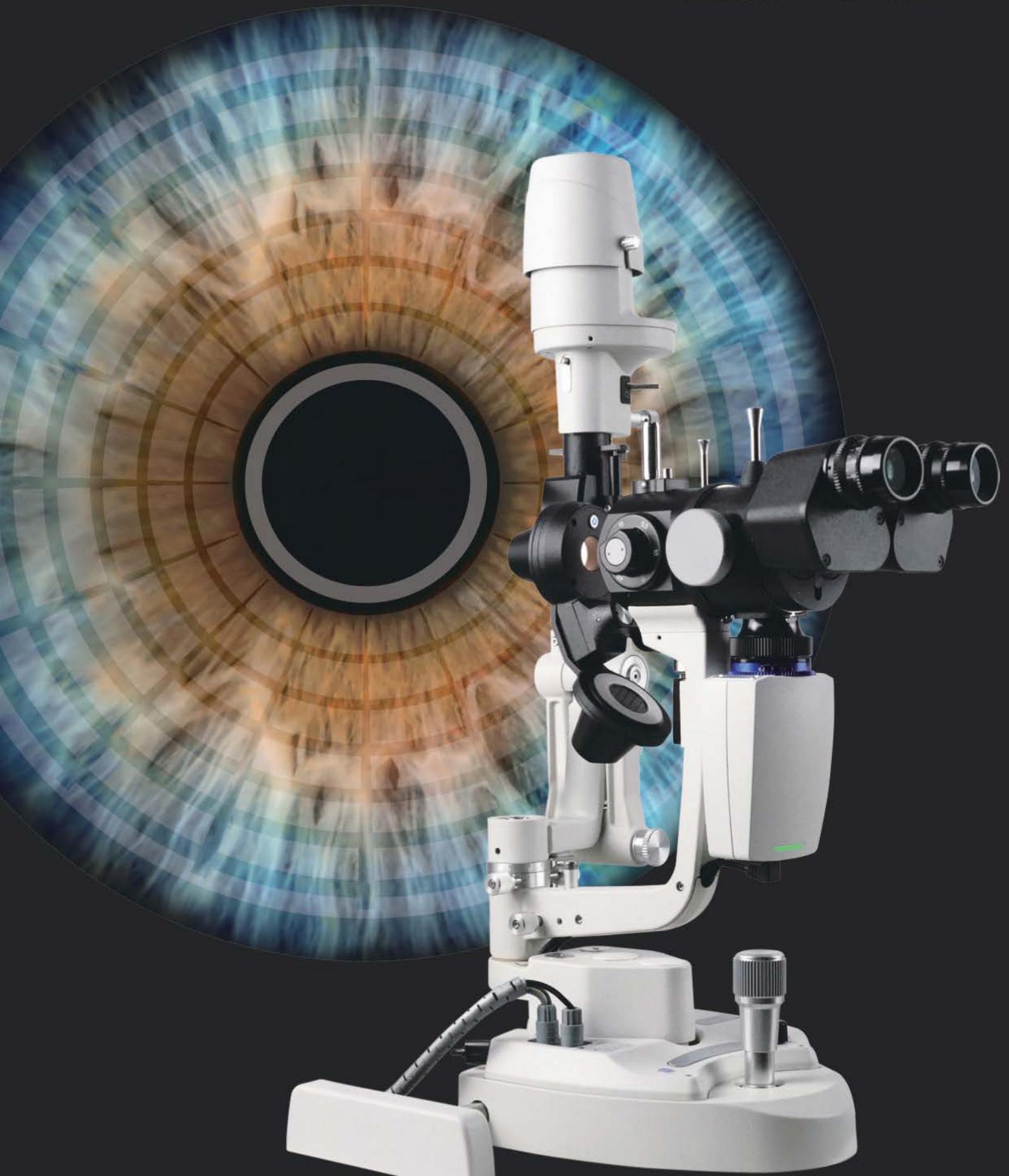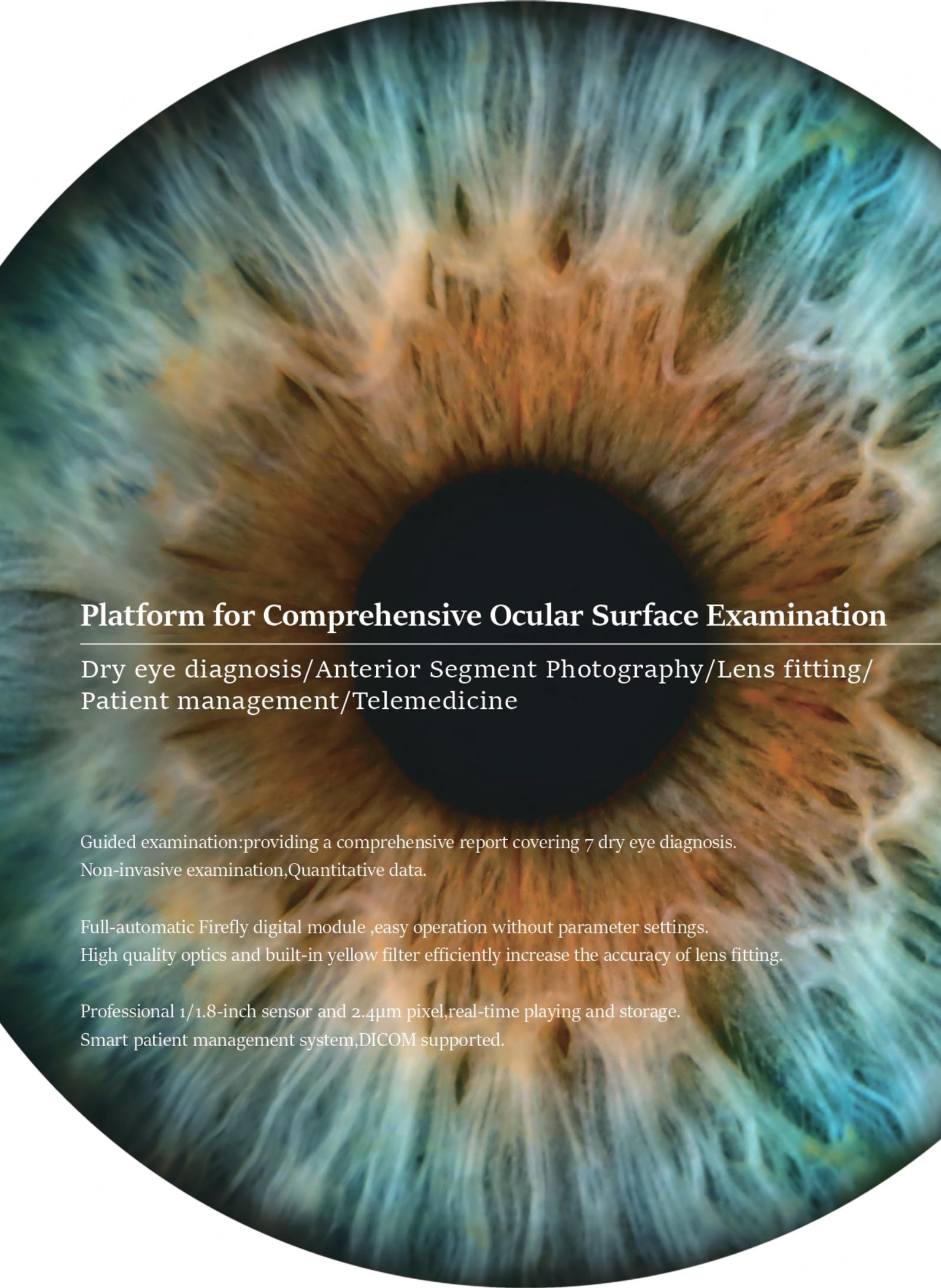
Platform for Comprehensive Ocular Surface Examination

Dry eye diagnosis/Anterior Segment Photography/Lens fitting/
Patient management/Telemedicine

Guided examination:providing a comprehensive report covering 7 dry eye diagnosis.
Non-invasive examination,Quantitative data.

Full-automatic Firefly digital module ,easy operation without parameter settings.
High quality optics and built-in yellow filter efficiently increase the accuracy of lens fitting.

Professional 1/1.8-inch sensor and 2.4μm pixel,real-time playing and storage.
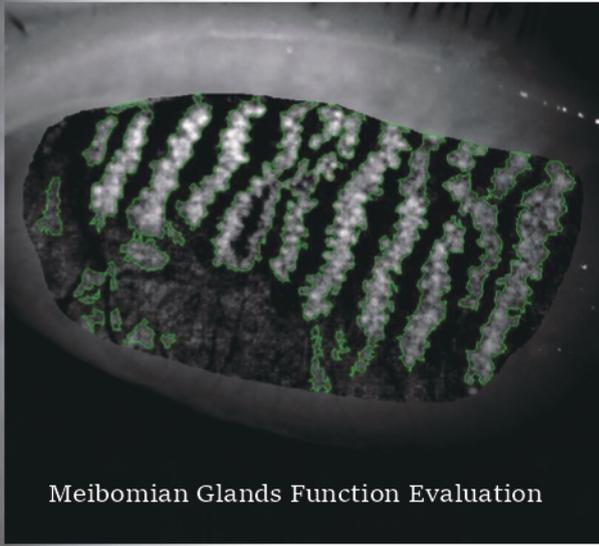Smart patient management system,DICOM supported.
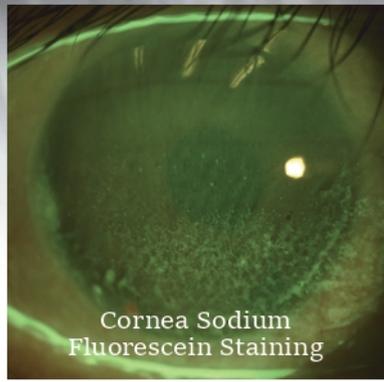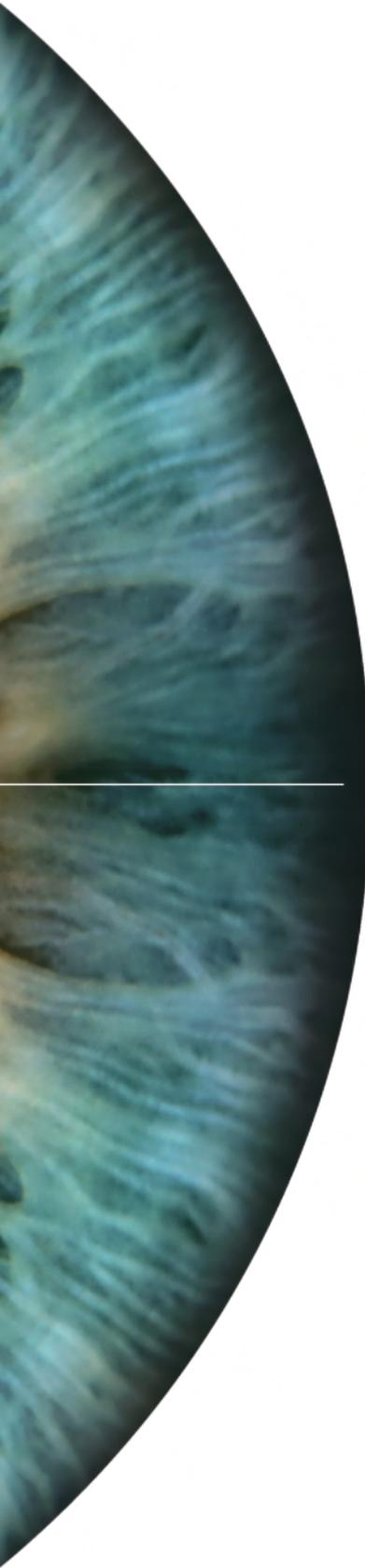
Cornea Sodium
Fluorescein Staining
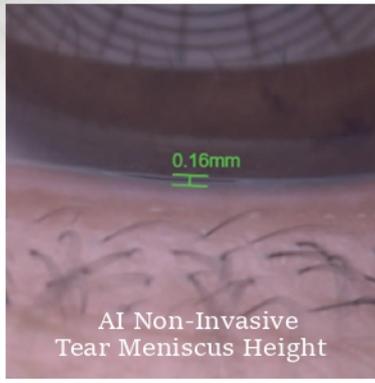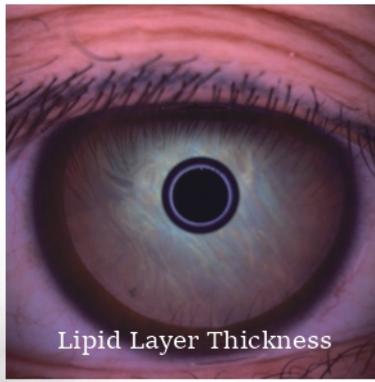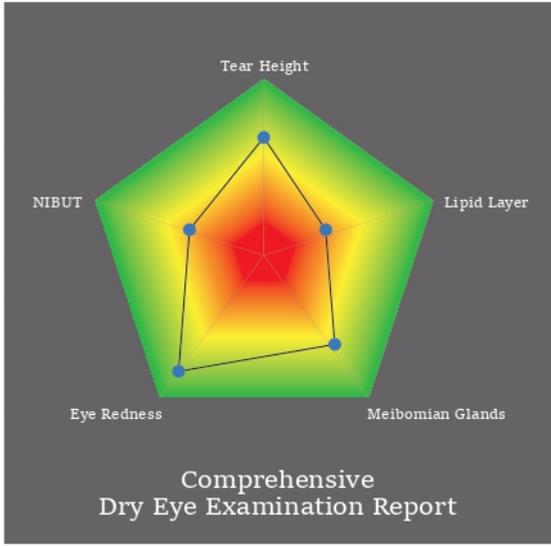

AI Non-Invasive
Tear Meniscus Height

AI Non-Invasive
Tear Film Break Up Time

Meibomian Glands Function Evaluation

Comprehensive
Dry Eye Examination Report

Lipid Layer Thickness
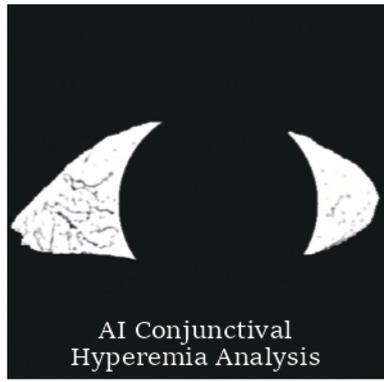
AI Conjunctival
Hyperemia Analysis

Eyelid Margin

Dry eye diagnostic system

Automatic Classification of Meibomian Glands

Unique Built-in infrared lighting system provides a larger scope capture of Meibomian Glands, adjustable depth of field and aperture enables more vivid images. Precise diagnosis of Dry Eye caused by MGD is guaranteed with the help of automatic Meibomian Glands loss classification.

Increase positive rate of early corneal epithelial staining

Built-in yellow filter along with cobalt-blue filter increases the contrast of Sodium Fluorescein Staining image.

HD Optical System

Resolution is up to 200 lp/mm, providing more details of the pathologies.

Full Cornea Dry Eye Analysis

By Placido ring projection system with visible light,the examination scope is up to 8mm cornea diameter. Examination of the tear film outside of pupil center has the same significance for the diagnosis of Dry Eye.

Fully automatic Firefly digital module

Firefly Digital module is specially designed for anterior segment examination, no parameter settings required(automatic exposure,auto white balance,auto focus),with adjustable depth of field and wide dynamic range,5 Mega Pixels video output , high examination efficiency is allowed.
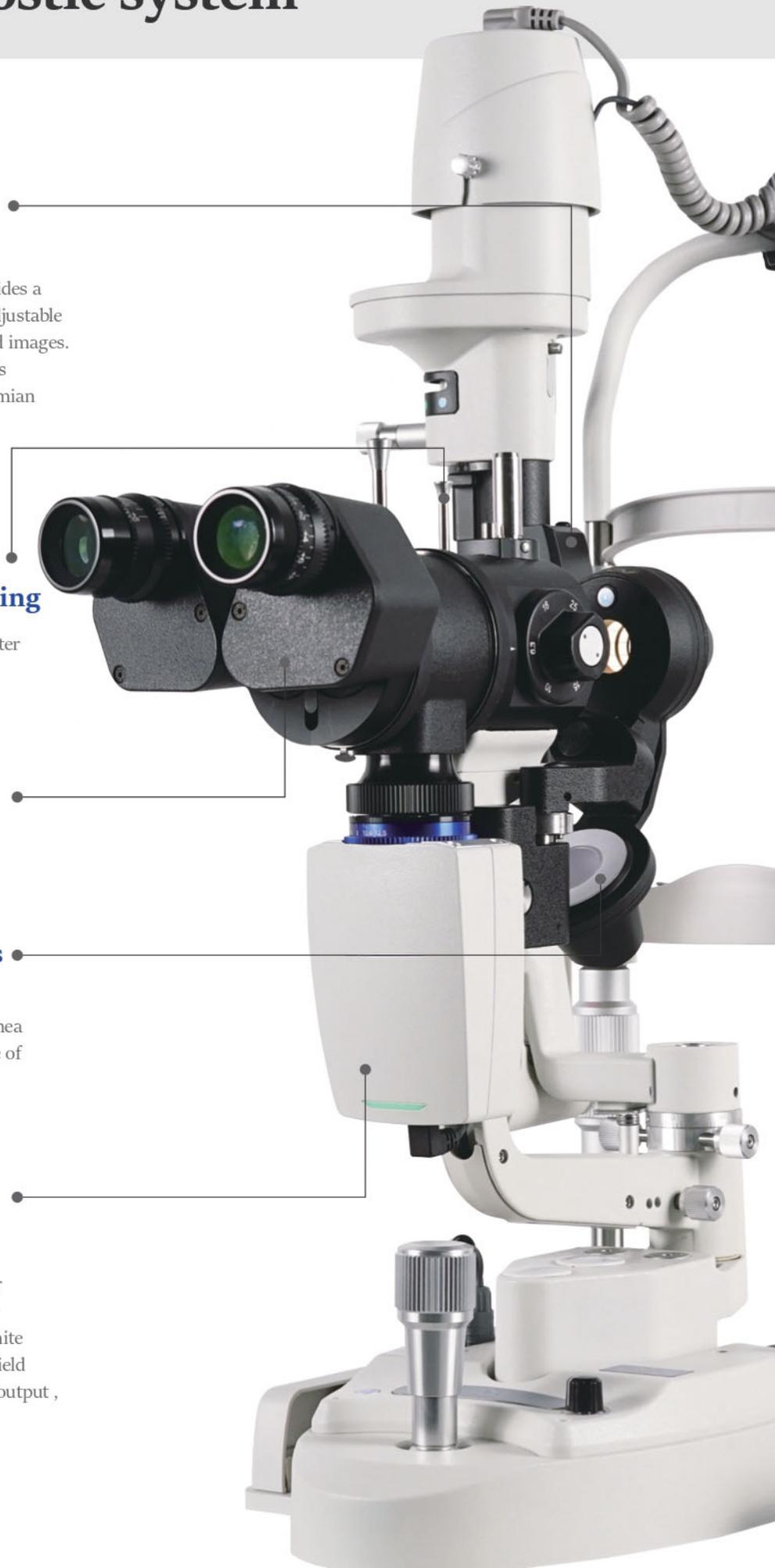
Simple Design + Simple Operation

The smart design largely saves space for clinicians compared other bulky camera systems. we have preset many camera parameters so the user does not need to adjust settings before using the device. The user can operate the machine immediately once the installation has been finished. The device has the following automatic functions for photo shooting and processing when equipped with our software:
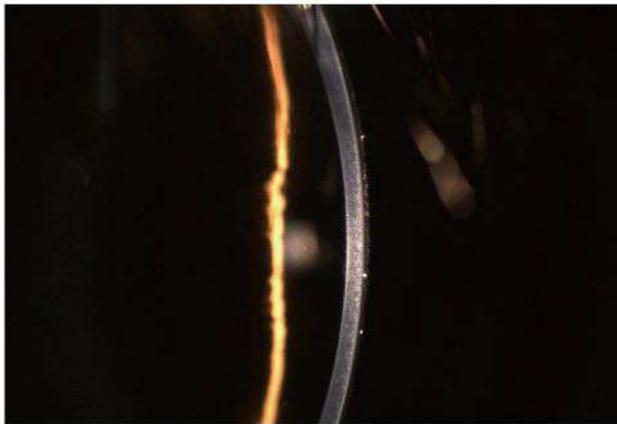
Wide Dynamic Range
Meibomian Glands Examination
Auto Exposure
Auto Gain
Auto White Balance
Auto OS/OD Indicator

High sensitivity. The slit is still clear and sharp under weak light.
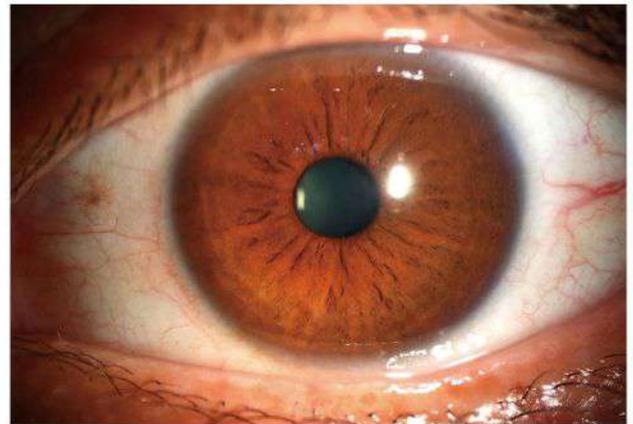
Wide dynamic range. Iris and sclera images are simultaneously clearly presented with more realistic and evenly distributed color

Software Features

Convenient Patient Management

The patient management system enables clinicians to build and edit patient record,search information by inputting keywords.Clinicians can easily record symptoms and manage the data all the time. The software supports DICOM which makes the images captured by Firefly be easily integrated into hospital's medical system.
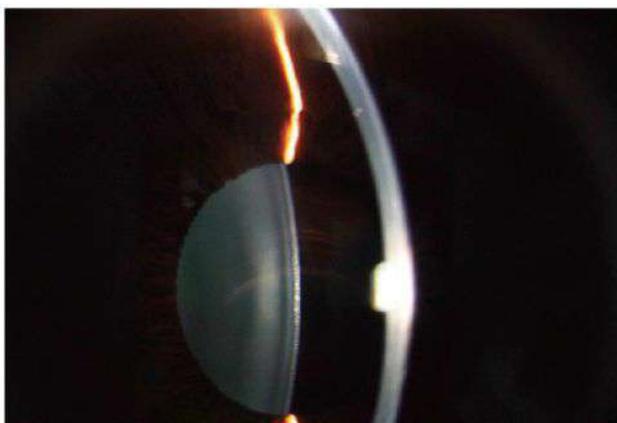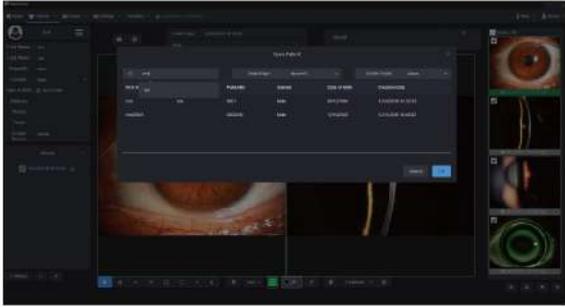
Functional Image Analysis

Clinicians can measure the pathology area with our powerful software tools and change the contrast and brightness of the images. Clinicians can also compare several images at one time to analyze the symptoms and pathology.
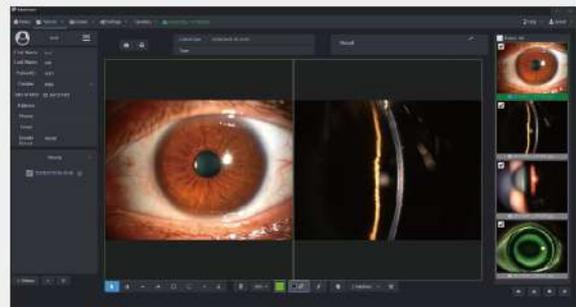
Orthokeratology Lens Fitting Assistance

The optometrists can capture and record high resolution fluorescein images of lens fitting and real-time video without a recording time limit. By comparing the different lens fitting effects, the optometrist can show and educate patients which lens is most suitable for them.

Customized Auto Exposure Value Setting

Clinicians can customize auto exposure values according to the image demand and save as templates for future capturing purpose.
Also, the printing report can be customized according to clinician's needs.

Due to various causes of Dry Eye Disease, traditional examination is difficult to find out the cause and quantify for the diagnosis. Eyevis Dry Eye Diagnostic System can provide standardized examination and quantified causes evaluation for Dry Eye Disease.

Tear film

Cornea	Mucous Layer	Aqueous Layer	Lipid layer
	secreted by goblet cells fights off bacteria and adds stability to the tear film.	secreted by the lacrimal glands keeps the cornea hydrated and supplied with nutrients.	secreted by the meibomian glands prevents tear from evaporating and stop sebaceous lipids to enter the tear film.
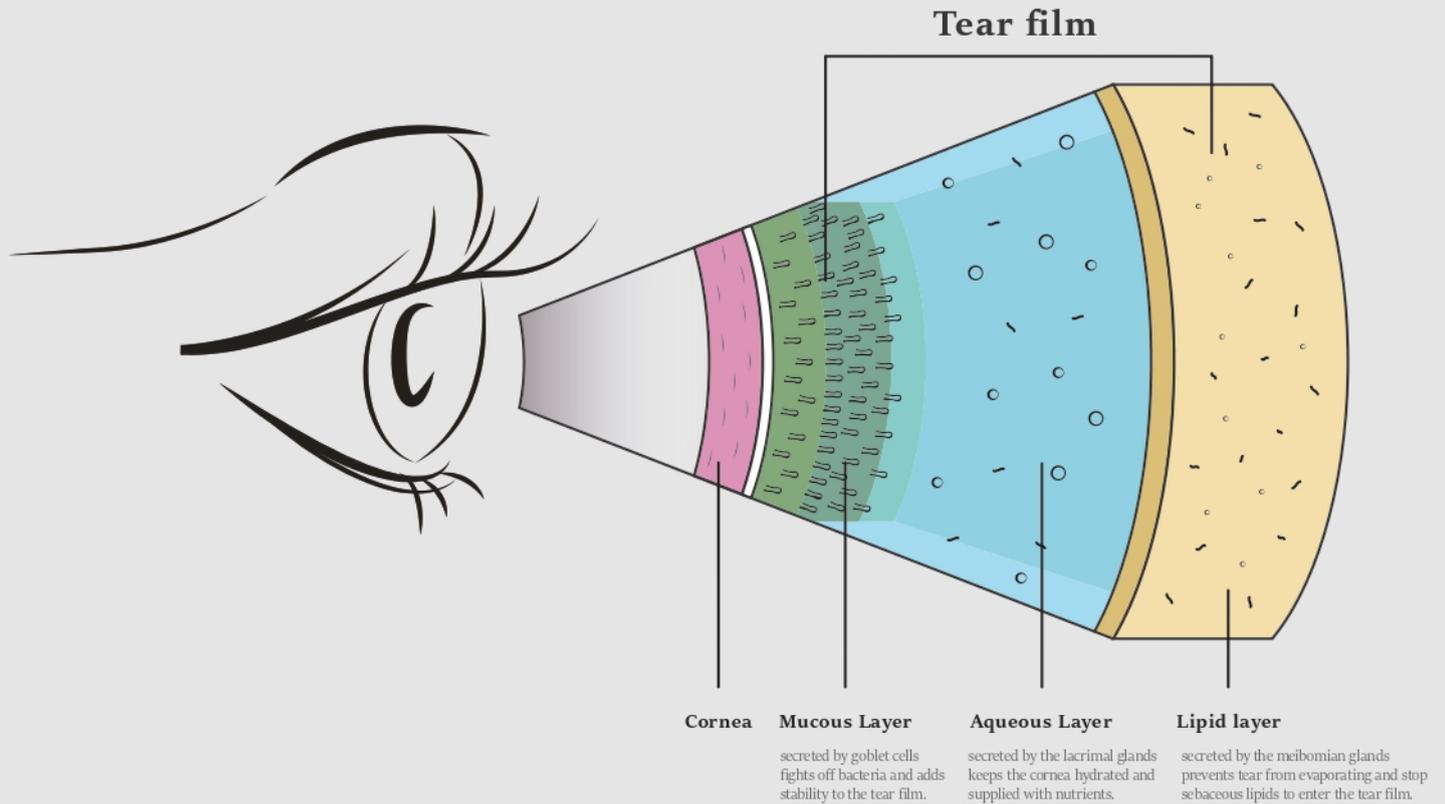
Dry eye classification from the 2007 DEWS Report

DRY EYE

Aqueous-deficient

Evaporative

Effect of the Environment

Milieu Interieur
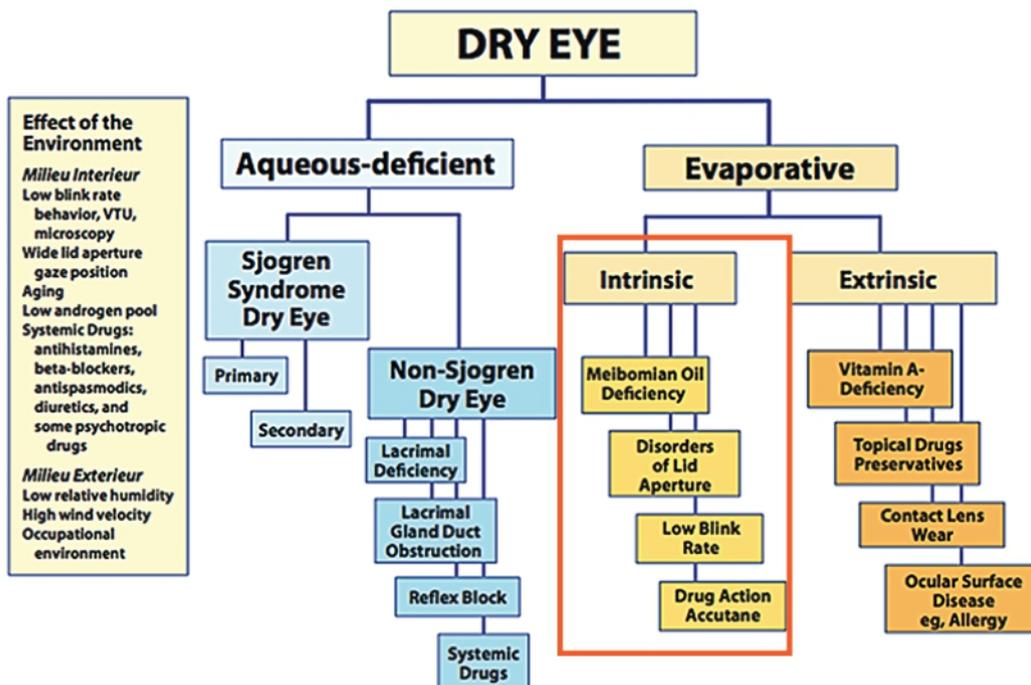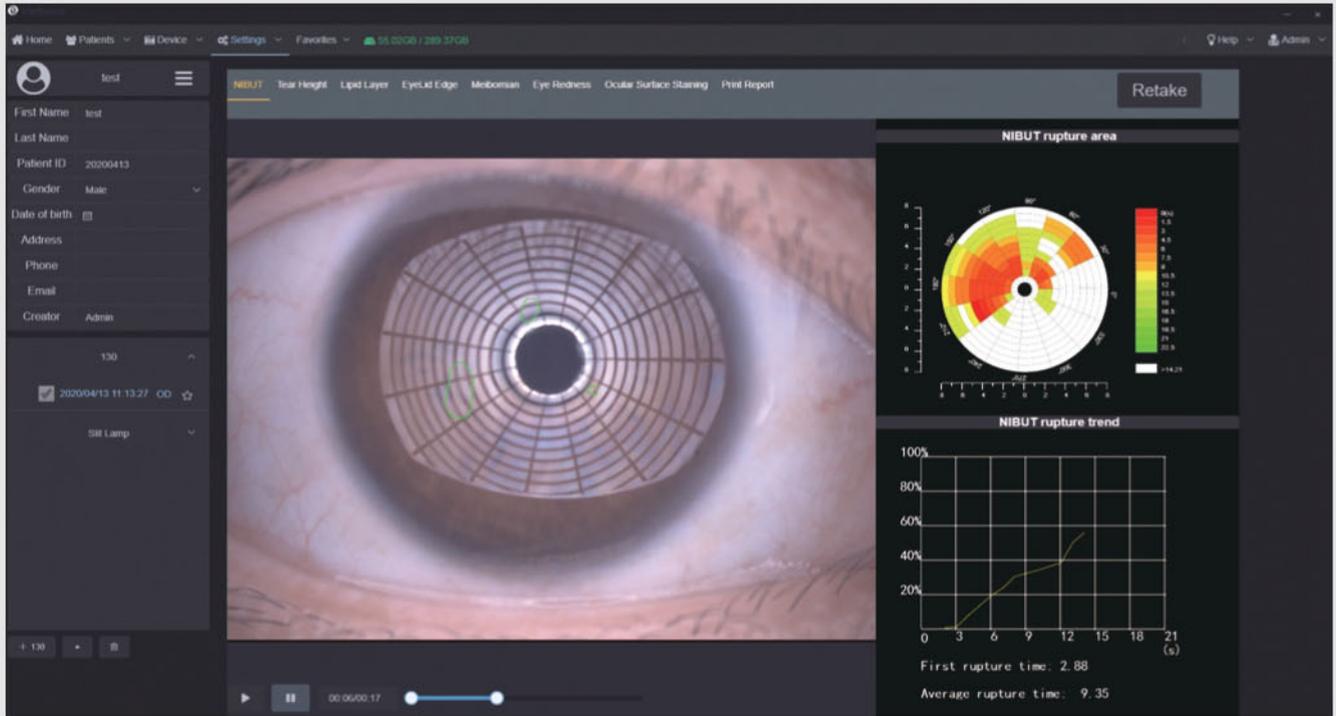Low blink rate
  behavior, VTU,
  microscopy
Wide lid aperture
  gaze position
Aging
Low androgen pool
Systemic Drugs:
  antihistamines,
  beta-blockers,
  antispasmodics,
  diuretics, and
  some psychotropic
  drugs

Milieu Exterieur
Low relative humidity
High wind velocity
Occupational
  environment

Sjogren Syndrome Dry Eye

Primary

Secondary

Non-Sjogren Dry Eye

Lacrimal Deficiency

Lacrimal Gland Duct Obstruction

Reflex Block

Systemic Drugs

Intrinsic

Meibomian Oil Deficiency

Disorders of Lid Aperture

Low Blink Rate

Drug Action Accutane

Extrinsic

Vitamin A-Deficiency

Topical Drugs Preservatives

Contact Lens Wear

Ocular Surface Disease eg, Allergy

AI Non-Invasive Break Up Time

After taking one video, it brings out automatis result of NIBUT and Tear Meniscus Height.

Grade 0 Normal, First Rupture Time: 10 s Average Rupture Time: 14 s
Grade 1 Warning, First Rupture Time: 6-9 s Average Rupture Time: 7-13 s
Grade 2 Dry eye, First Rupture Time: 5 s Average Rupture Time: 7 s

AI identifies the break-up area and analyzes NIBUT automatically. Fully automatic analysis system provides efficient quantified evaluation for the overall stability of tear film.It automatically acquires the first break up time, average break up time, break up distribution,break up area percentage curve and time distribution.

Visible light Placido ring projection

Infrared Placido ring projection
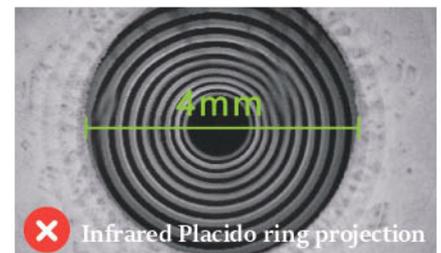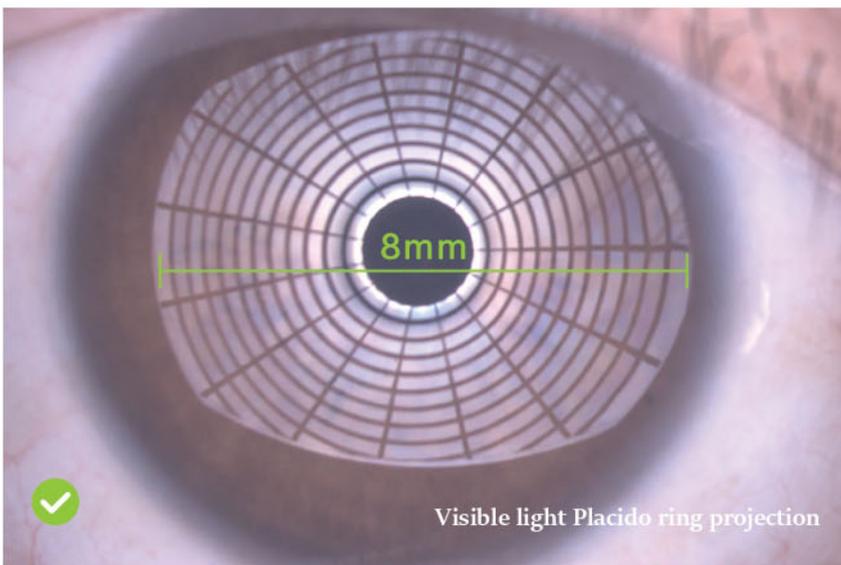
Eyevis adopts Placido ring projection system with visible light to do NIBUT examination,the examination scope is up to 8mm cornea diameter which brings much more comprehensive diagnosis outcome.
The non-invasive examination avoids the irritation brought by the traditional Cornea Sodium Fluorescein Staining.

AI Non-Invasive Tear Meniscus Height
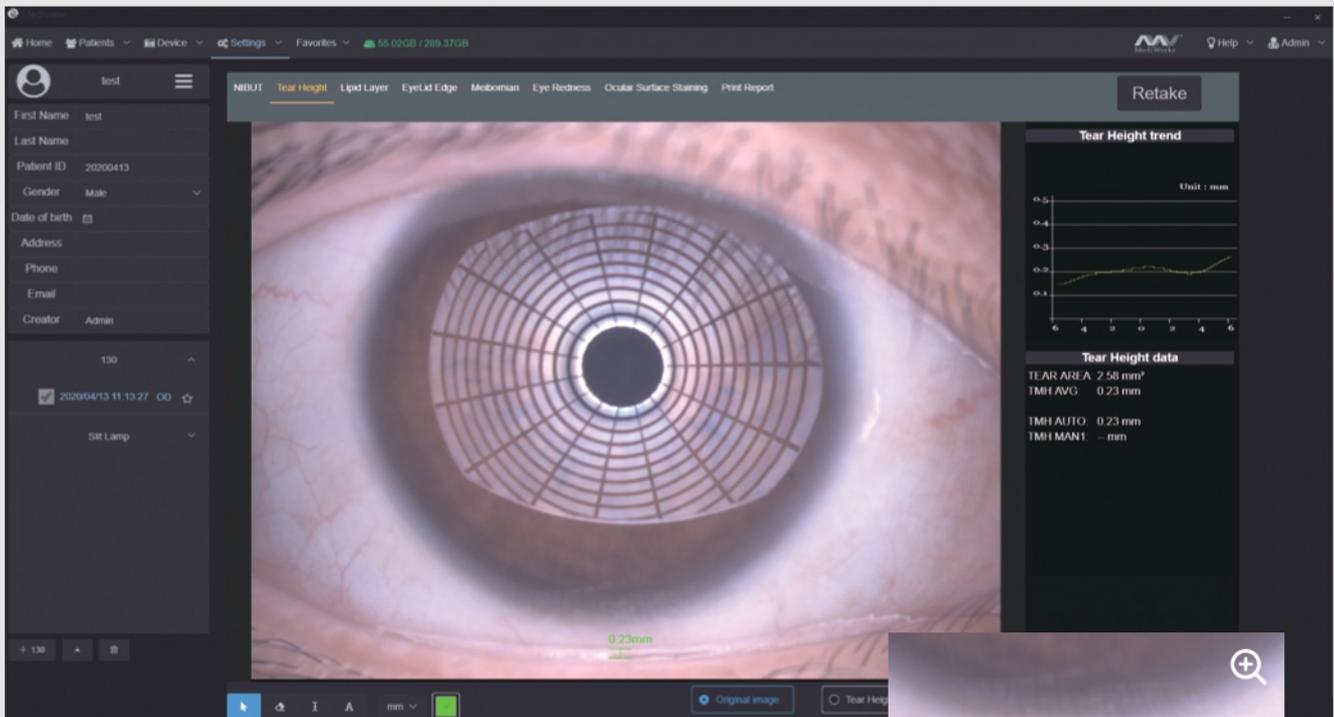
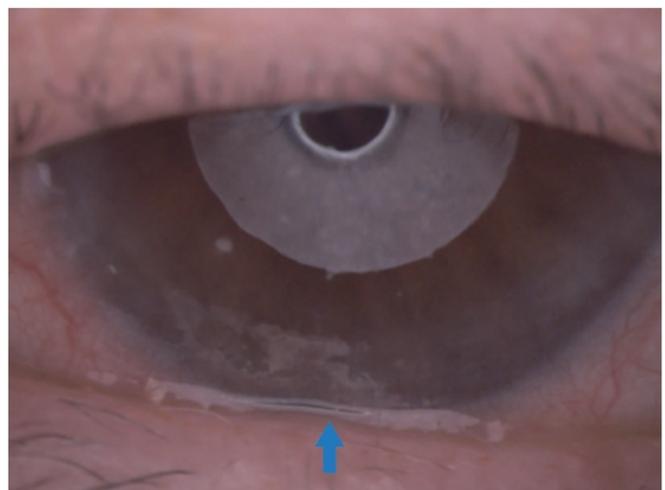Normal: ≥0.2mm

AI identification system depicts Tear Meniscus area and measures the tear height automatically.
Evaluate tear secretion amount and continuity objectively.
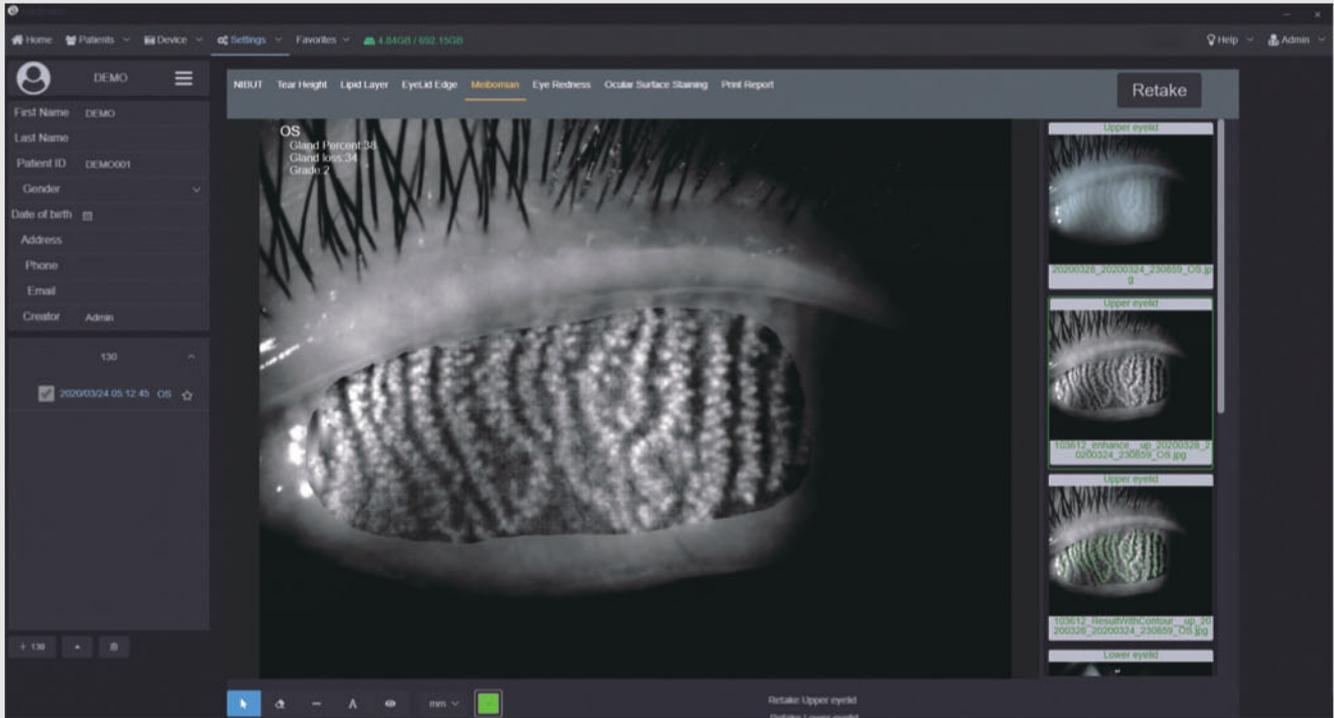More efficient and less irritation compared with the traditional Schirmer's test.

Insufficient tear secretion

Abnormal dynamics and conjunctival chalasis

Evaluation of Meibomian Glands Function

Automatic classification system provides precise and quantified diagnosis of DES caused by meibomian glands dysfunction.

With built-in infrared lighting system,doctors can observe larger image scope of the Meibomian Glands.

Adjustable depth of field makes the glands more prominent and distinguishable against the background.

Grade 0: No Meibomian Glands Loss
Grade 1: Meibomian Glands Loss < 1/3
Grade 2: Meibomian Glands Loss 1/3-2/3
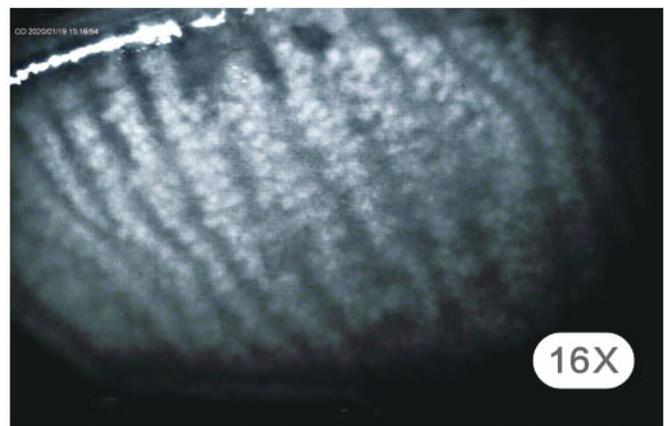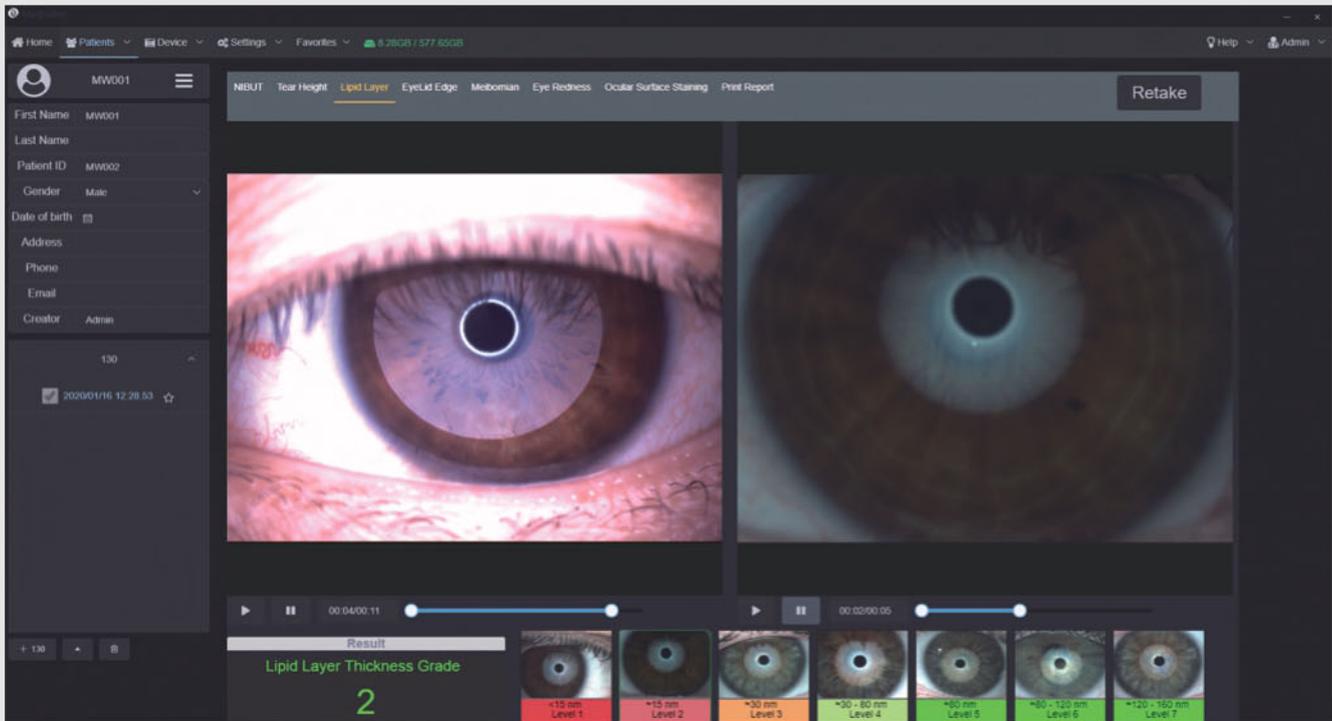Grade 3: Meibomian Glands Loss >2/3

Meibomian glands loss


Image of Meibomian Glands under high-magnification

Lipid Layer Thickness

White ring projection system ensures a larger examination area compared to Placido ring.By comparing with the standard grading template and recording the Lipid Layer thickness, it is helpful for judging MGD.

Grade 1: <15   (Unit:nm)
Grade 2: ≈ 15
Grade 3: ≈ 30
Grade 4: ≈ 30-80
Grade 5: ≈ 80
Grade 6: ≈ 80-120
Grade 7: ≈120-160

Eyelid Margin
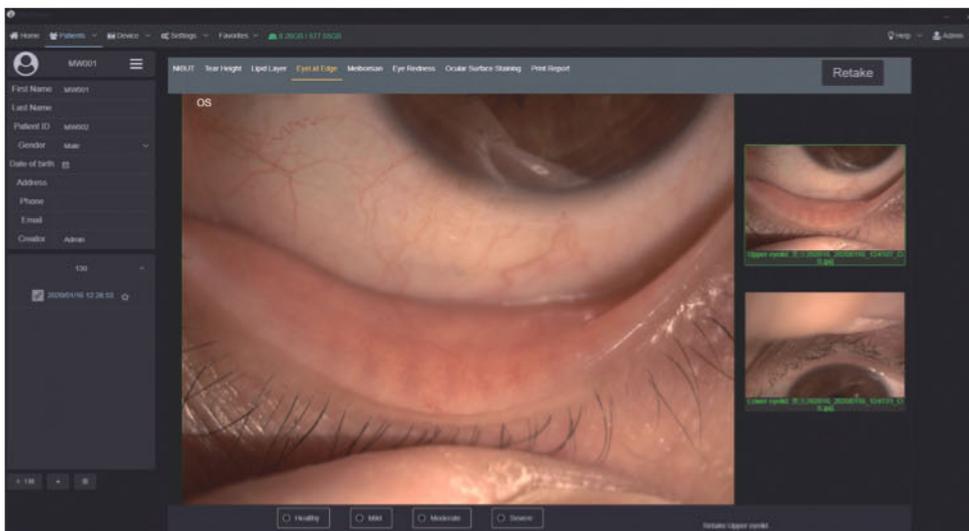
1. Normal including (Ophthalmic embolism bright, transparent)
2. Mild including (gland cap crown - glandular prominent)
3. Moderate including (glandular fat plug - disappearance of the marginal mucosa, hyperkeratosis)
4. Severe including (uneven margins, disappearance of the meibomian glands - posterior margin Blunt round, thickening, new blood)

Meibomian Glands obstruction

Eyevis professional design of optical system is capable of providing HD digital image that remains clear and sharp even zoom in, meets the examination requirements of the overall shape of eyelid margin and its slight change.

AI Analysis of Conjunctival Hyperemia
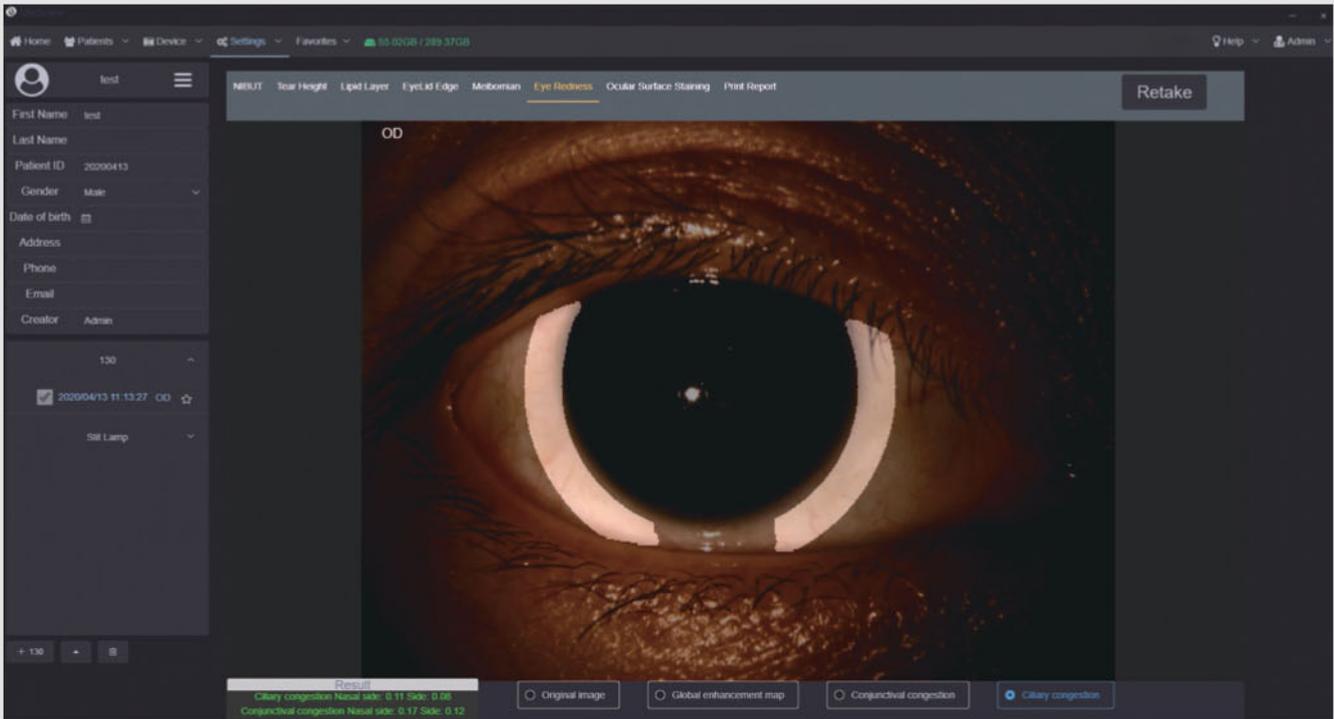
Normal: ≤2   Abnormal: >2

The unique AI identification system can identify and calculate percentages of conjunctival congestion and ciliary congestions and evaluate severity of eye congestion.

AI image

Cornea Sodium Fluorescein Staining

Without Built-in yellow filter

Corneal epithelial staining
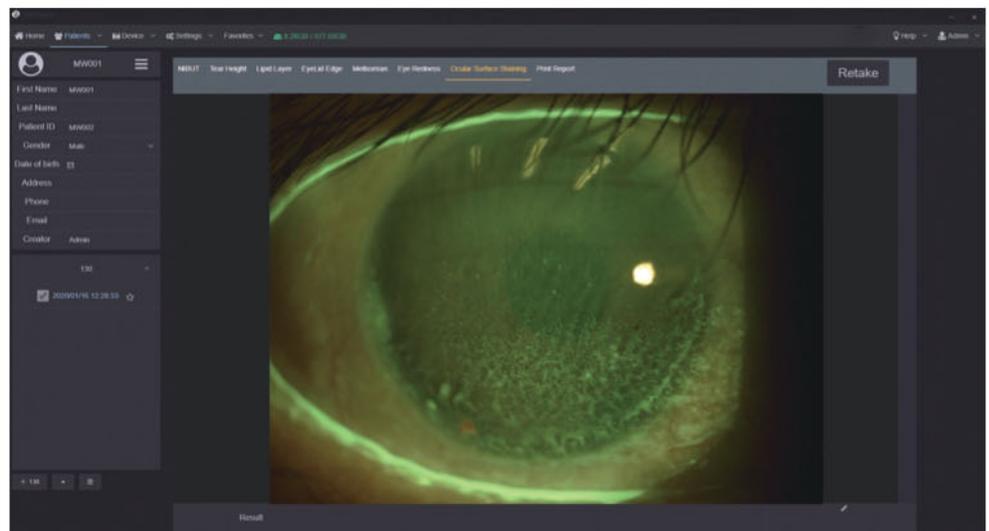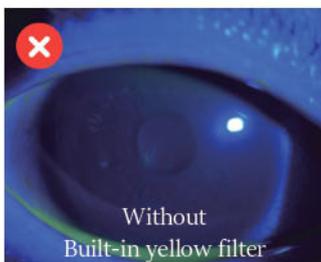
Effectively increases positive rate of early corneal epithelial staining.
Built-in yellow filter along with cobalt-blue filter makes the corneal sodium fluorescein images more clearly.

Dry Eye Comprehensive Evaluation Report
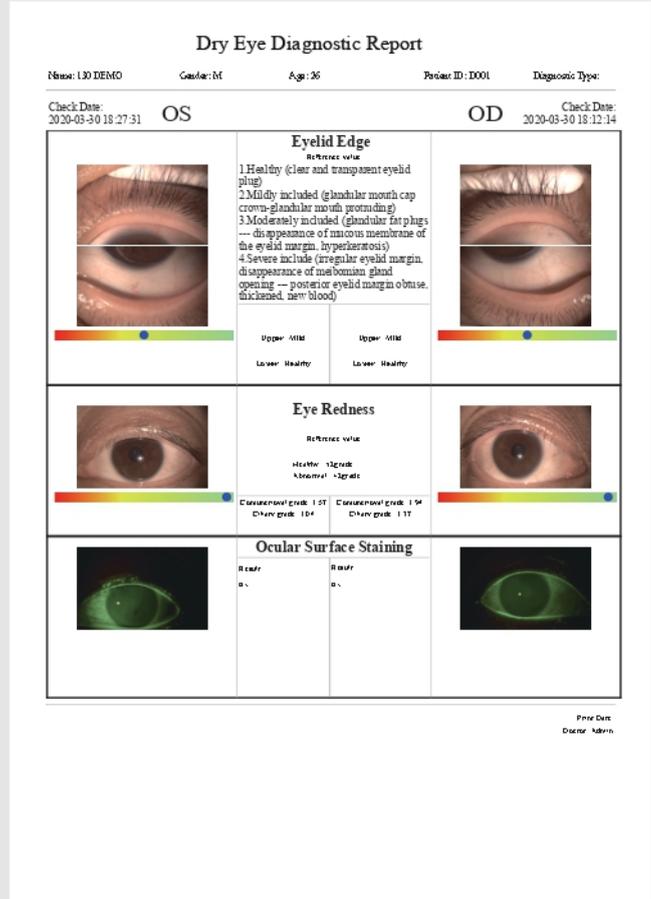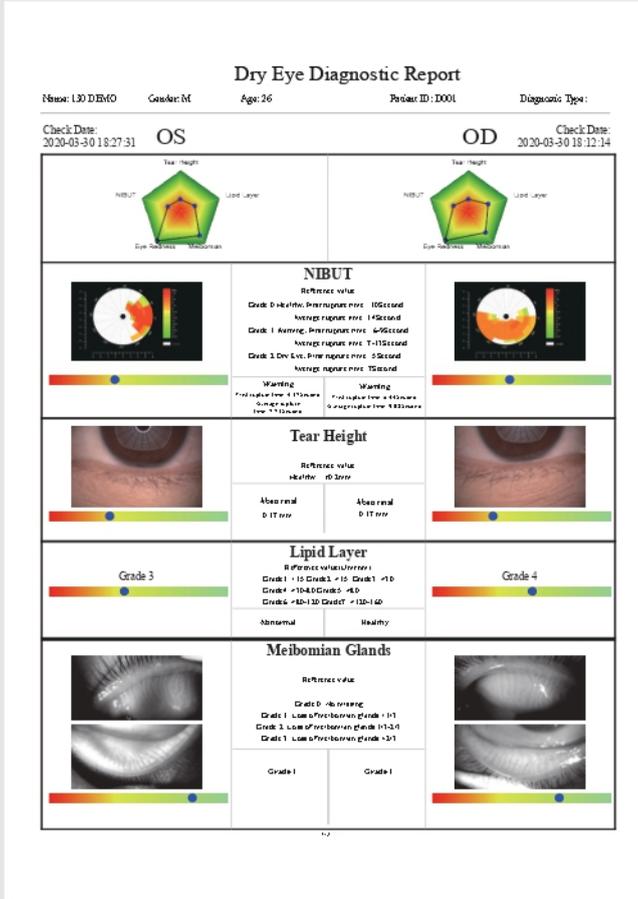
Smart Patient Management system

Comparison of Patient records
Supports repeated comparison among medical records to evaluate treatment and guide customized treatment plan.
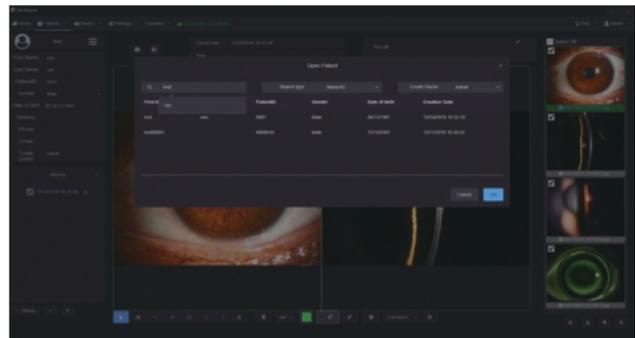
Patient Management system allows doctors to build and edit medical records. Quickly search the patient case by key words.Doctors can note patients' situation via the software. This DICOM-supported system enables Mediview to connect with medical systems in hospitals.

We are looking forward to your professional advice for our products and if you are interested in academic or business cooperation with us.

Please contact:
Email: info@eyevis.biz

Specifications

Microscope

Microscope Type	Galilean Type
Magnification Change	Revolving Drum 5 steps
Total Magnification	6.3 x, 10 x, 16 x, 25 x, 40 x
Optical Resolution	2700·N lp/mm　(200 lp/mm)
Eyepieces	12.5 x
Angle between Eyepieces	10°
Pupillary Adjustment	52 mm ~ 80 mm
Diopter Adjustment	- 8 D ~ + 8 D
Field of View	Ø36.2 mm, Ø22.3 mm, Ø14 mm, Ø8.9 mm, Ø5.7 mm

Slit Illumination

Slit Width	0 ~ 14 mm continuous (slit becomes a circle at 14 mm)
Slit Length	1 ~ 14 mm continuous
Aperture Diameters	Ø14 mm, Ø10 mm, Ø5 mm, Ø3 mm, Ø2 mm, Ø1 mm, Ø0.2 mm
Slit Angle	0° ~ 180°
Slit Inclination	5°, 10°, 15°, 20°
Filters	Heat-absorbing filter, ND filter, Red-free filter, Cobalt blue filter, Built-in yellow filter
Lamp	LED
Luminance	≥ 150 klx

Power Supply

Packaging

Input Voltage	~100V ~ 240V	Dimension	740 mm x 450 mm x 530 mm(L/W/H)
Input Frequency	50 Hz / 60 Hz	Gross weight	23 kg
Rated current	1.2 A	Net weight	17 kg
Output Voltage	LED 3 V, Fixation 15 V		

System Specifications

Digital Module	Automatic exposure / Automatic white balance / Adjustable depth of field and aperture
Image Sensor	1/2.5 - inch sensor / 1.55 µm pixel / 12 M Pixels
Photo Resolution	4056 x 3040
Format	JPEG
Video Resolution	2592 x 1944
Frame of Video	30 fps
Video Formats	MP4 H.264
Exposure Mode	Automatic exposure
Transmission Interface	USB

Computer Specifications

PC Configuration	i5 - 10500T 8G memory 256GB SSD + 1TB storage
Display	1920 × 1080 23.8 inch
PC System	Windows 10

Dry Eye Module

Dry Eye Questionnaire

Ocular Surface Disease Index (OSDI)
McMonnies
SPEED
DEQ 5

Non-Invasive Tear Meniscus Height

AI identification system
Automatic Non-Invasive Tear Meniscus Height
Optical magnification
Electronic amplification

Non-Invasive Tear Breakup Time

AI identify the breakup area
Automatic first breakup time
Automatic average breakup time
Visible light Placido ring projection(23 ring)

Fluorescein Breakup Time

AI identify the breakup area
Automatic first breakup time
Automatic average breakup time
Visible light Placido ring projection(23 ring)

Conjunctival Hyperemia Analysis

AI identification system
Automatic conjunctival congestion percentages
Automatic ciliary congestions percentages

Meibomian Glands Function Evaluation

AI identify Meibomian glands
Automatic Meibomian glands loss classification

Lipid Layer Thickness

Template comparison evaluation
Visible light White ring projection system

Corneal Fluorescein Staining

Eye surface damage report
Built-in yellow filter
Cobalt blue filter

Eyelid Margin

Optical magnification
Electronic amplification

Dry Eye Examination Report

Automatic analysis report

Eyevis Mediworks Pvt. Ltd.

Address: 811-812, Sakar 5, Near Mithakhali Railway Crossing,
Off Ashram Road, Ahmedabad - 380009 Gujarat, India
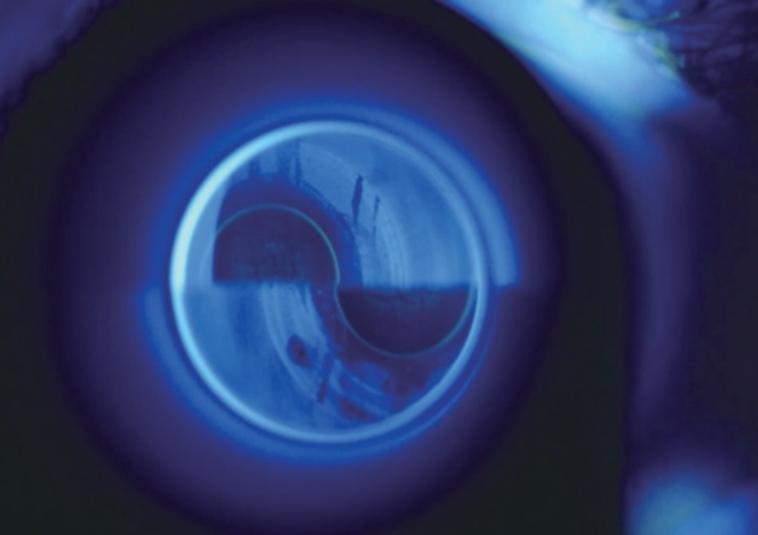Email: info@eyevis.biz　　　Website: www.eyevis.biz
Telephone: +91 79 3522 0044

eyevis

Optional Accessory

Applanation Tonometer
EAP1

Gold Standard, Accurate Measurement

Accurate Measurement

With years of tests and clinical applications, Goldmann has been proved to be the the gold standard for tonometry measurement. Based on the proven evidence, Eyevis EAP1 tonometer applied Goldmann principle in the design and manufacture.
With precision manufacturing process, Eyevis applanation tonometer offers accurate and consistent measurements which give a clear picture of patients' IOP situation to the doctors.

Excellent Mechanics

Full attentions are paid to every detail in the manufacture of Eyevis tonometers. Workers assemble every component carefully and check tight tolerances in weight to make sure the tonometer deliver consistent measurements.

Premium Optics

The prism on the tonometer is the key to accurate measurement. In Eyevis, our skillful workers make these prisms with great care and follow strict quality standards. We offer 3 pcs of prisms in standard package making Eyevis tonometers durable in long term use.

Accessories

Tonometer Adaptor (R type)
(For R type applanation tonometer)

(Available for ESL5H/ESL3H/ESL5HI)

Tonometer Adaptor (870 type)

(For 870 type applanation tonometer)

(Available for ESL5Z/ ESL3Z)

R type

Specification

	EAP1
Range of Measurement	0mmHg~ 80mmHg (0 kPa~10.64kPa)
Moving Range of the Rings	1.53x2=3.06mm
Prism Diameter	7mm
Moving Range of Prism	±1.5mm
Dimension	190mmx80mmx80mm(R Type)
Net Weight	480g (R Type)

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