MediWorks

Complete examination, Comprehensive evaluation, Precise Diagnosis

# Dry eye diagnostic system

MediWorks LINGLONG

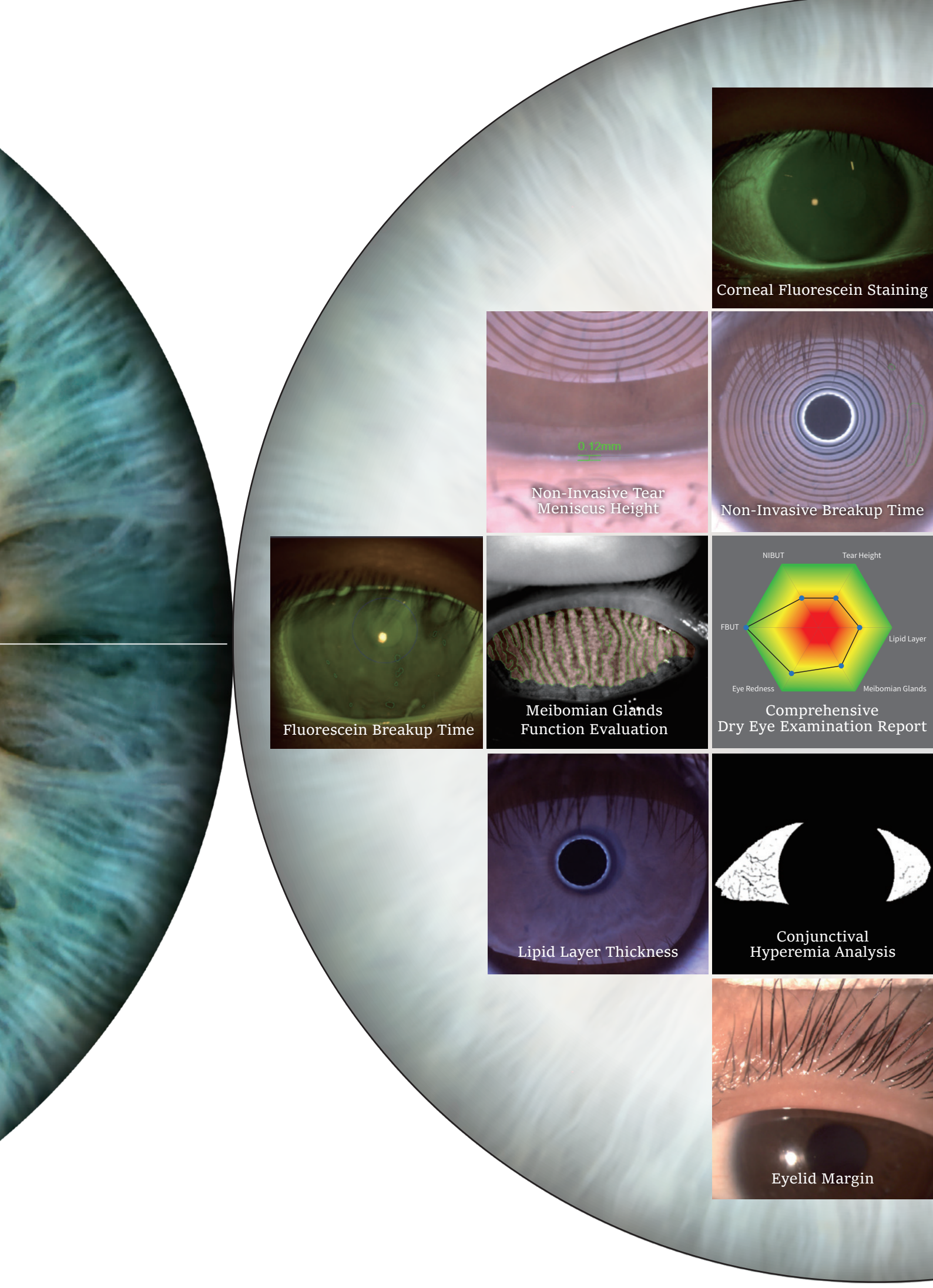
# Platform for Comprehensive Ocular Surface Examination

## Dry eye diagnosis/Anterior segment photography/Lens fitting/ Patient management/Telemedicine

Guided examination: providing a comprehensive report covering 9 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 1/2.5-inch sensor and 1.55 μm pixel, real-time playing and storage.
Smart patient management system, DICOM supported.


Corneal Fluorescein Staining
0.12mm
Non-Invasive Tear Meniscus Height
Non-Invasive Breakup Time
Fluorescein Breakup Time
Meibomian Glands Function Evaluation
NIBUT
Tear Height
FBUT
Lipid Layer
Eye Redness
Meibomian Glands
Comprehensive Dry Eye Examination Report
Lipid Layer Thickness
Conjunctival Hyperemia Analysis
Eyelid Margin

Easy Pathogenic Diagnosis provides guidance for customized treatment.

# Dry eye diagnostic system

## Automatic Analyzing Meibomian Glands

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

## 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 2700·N lp/mm(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 8 mm 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, 12 Mega Pixels video output, high examination efficiency is allowed.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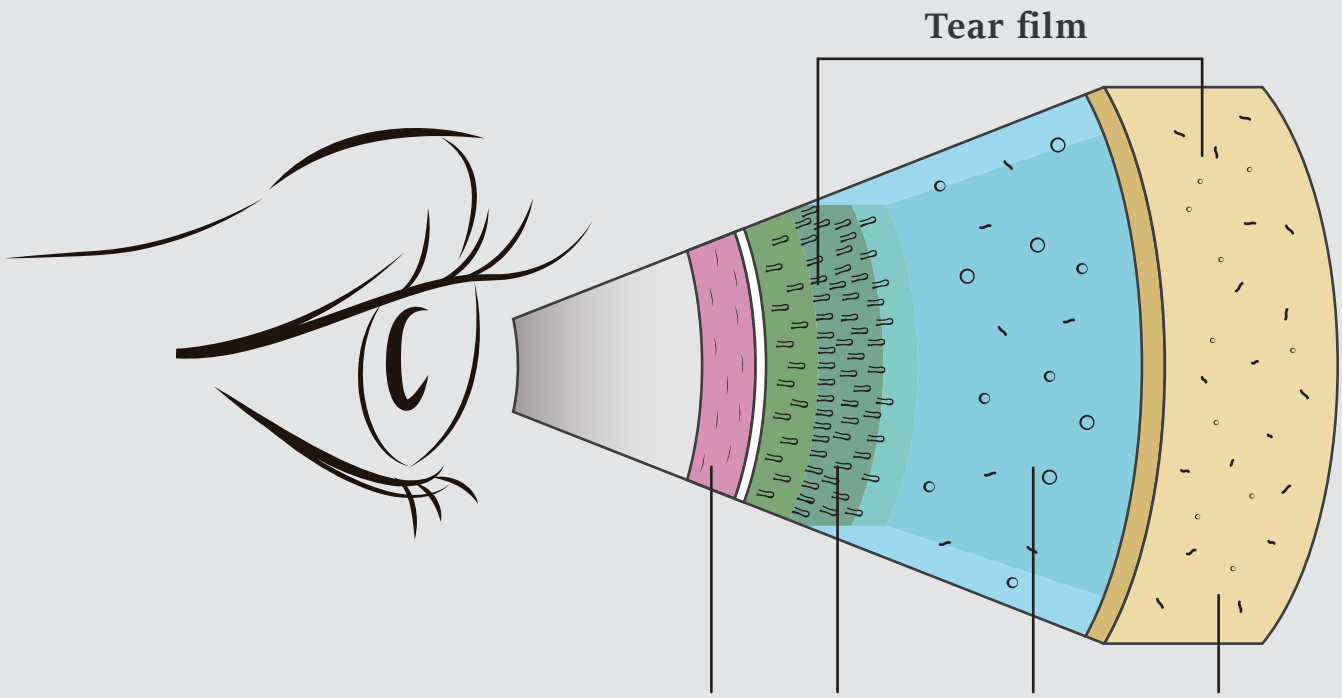
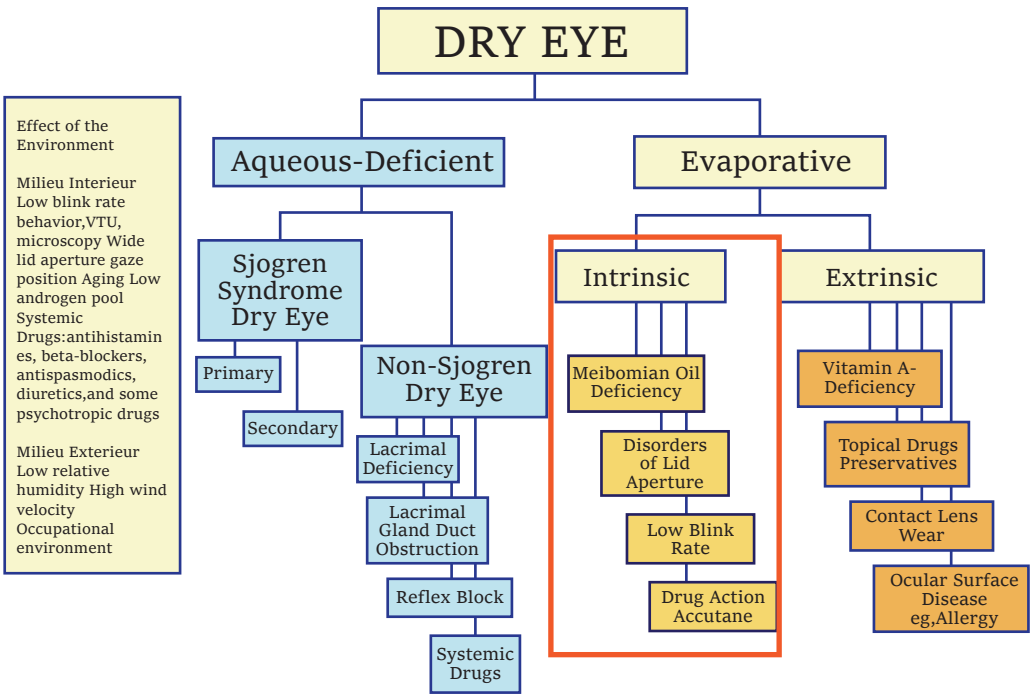
Due to various causes of Dry Eye Disease, traditional examination is difficult to find out the cause and quantify for the diagnosis. MediWorks Dry Eye Diagnostic System can provide standardized examination and quantified causes evaluation for Dry Eye Disease.



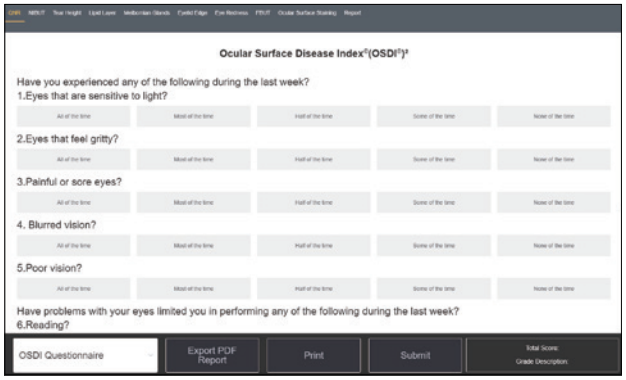

## Dry eye classification from the 2007 DEWS Report

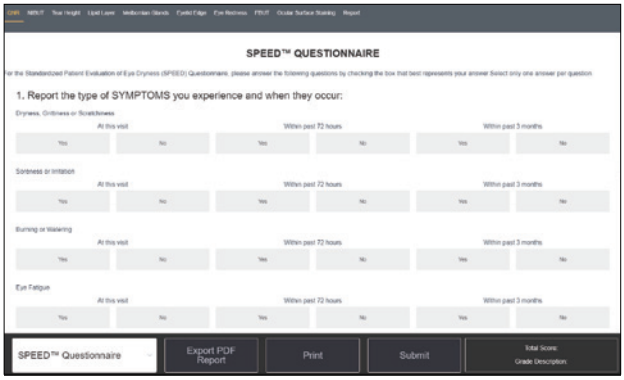


Functions

# Dry Eye Questionnaire

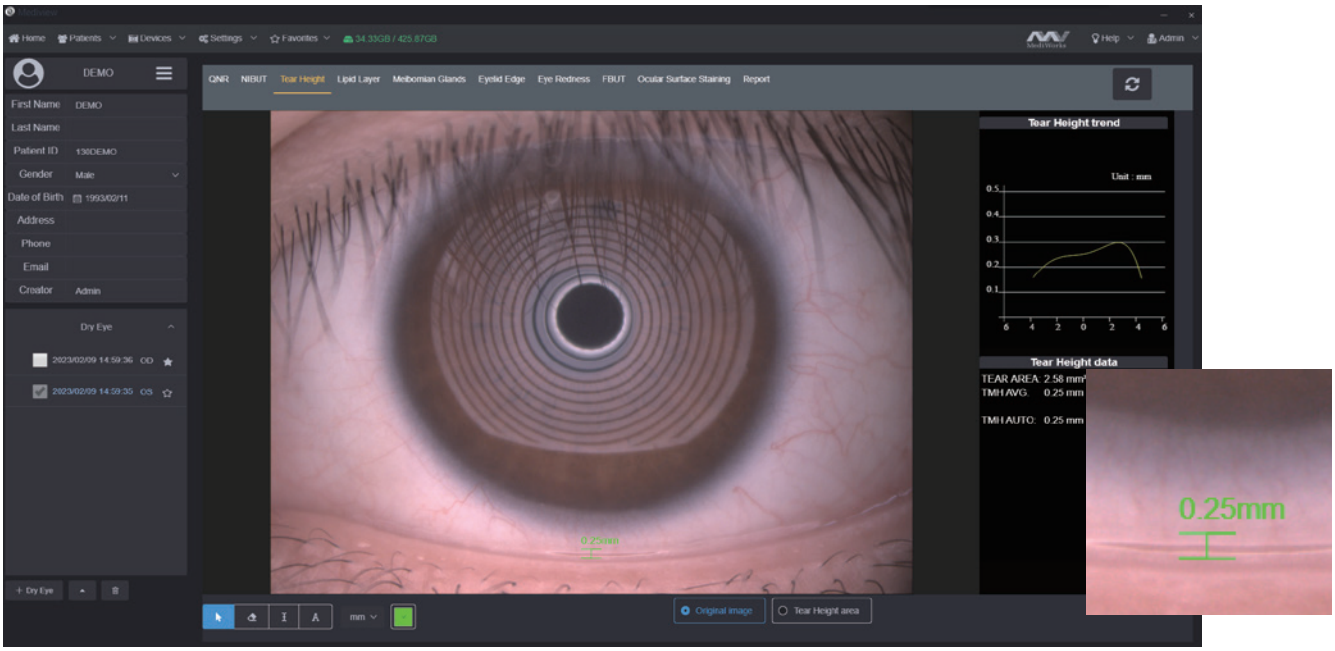
## Ocular Surface Disease Index (OSDI)/McMonnies/SPEED/DEQ 5



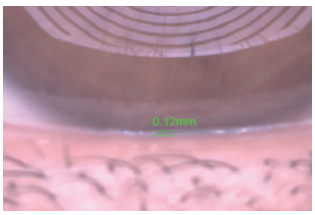

The built-in dry eye questionnaire is designed according to the risk factors and clinical characteristics of dry eye, providing a simple preliminary assessment for dry eye, improving diagnosis and treatment efficiency and facilitating patient follow-up.

# Non-Invasive Tear Meniscus Height

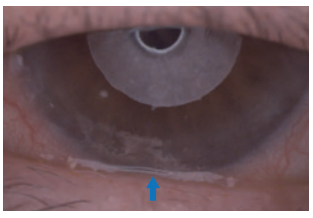



Normal: ≥ 0.2 mm

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.

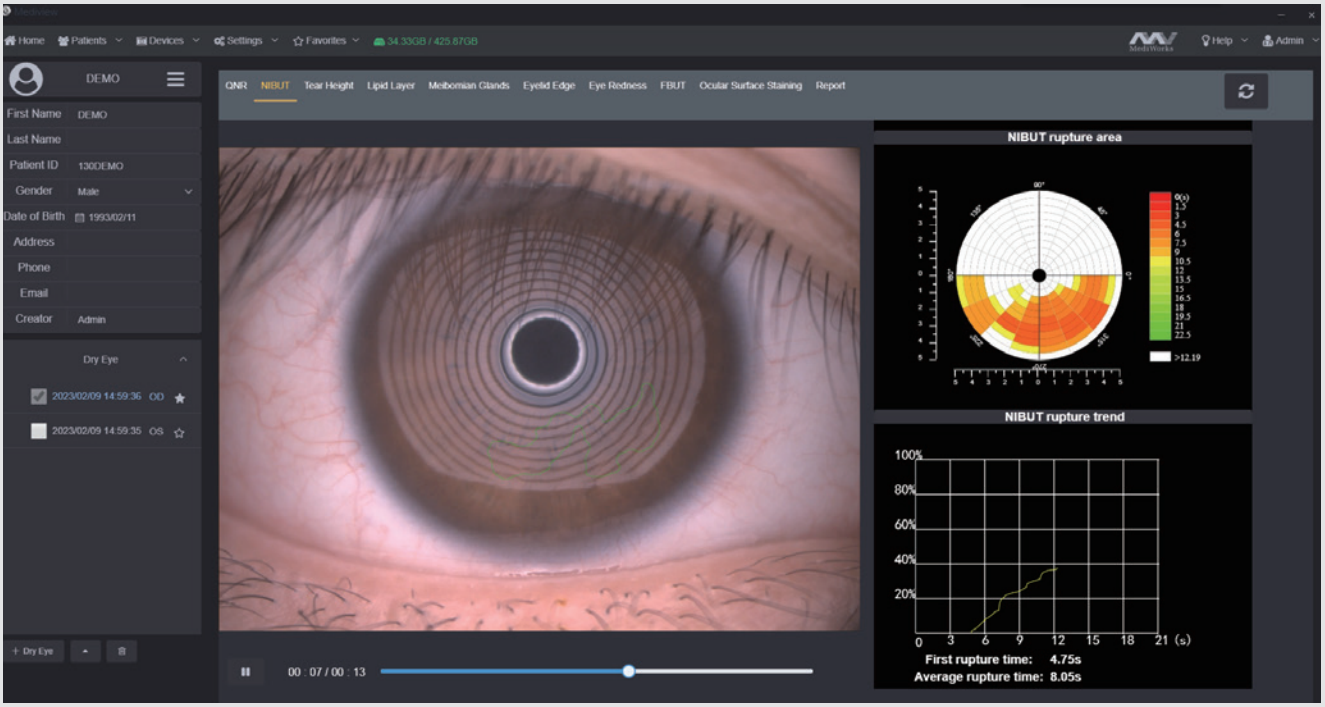



Insufficient tear secretion



Abnormal dynamics and conjunctival chalasis

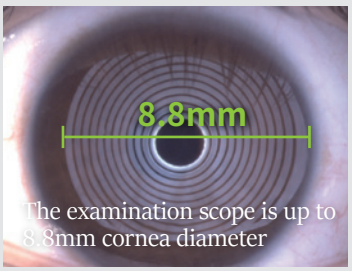
# Non-Invasive Breakup Time



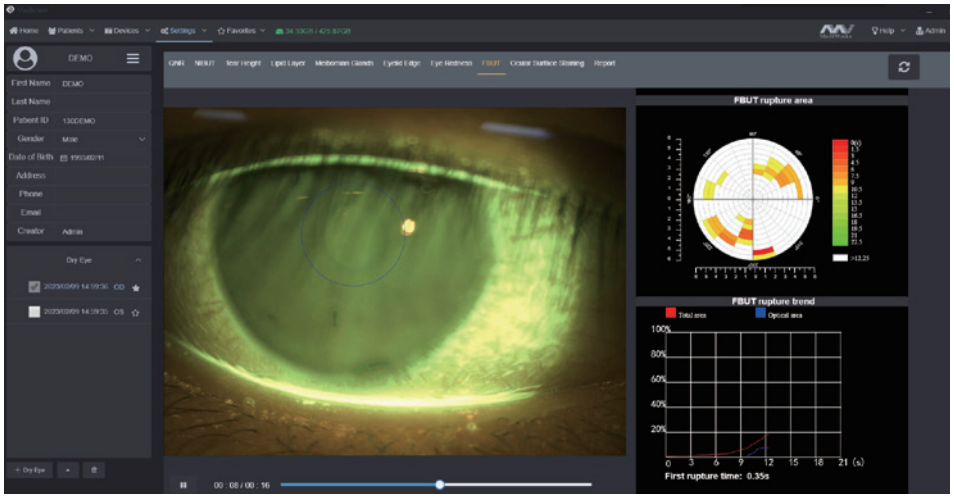

After taking one video, it brings out automatis result of NIBUT and Tear Meniscus Height.

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 breakup 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 breakup time, average breakup time, breakup distribution, break up area percentage curve and time distribution.



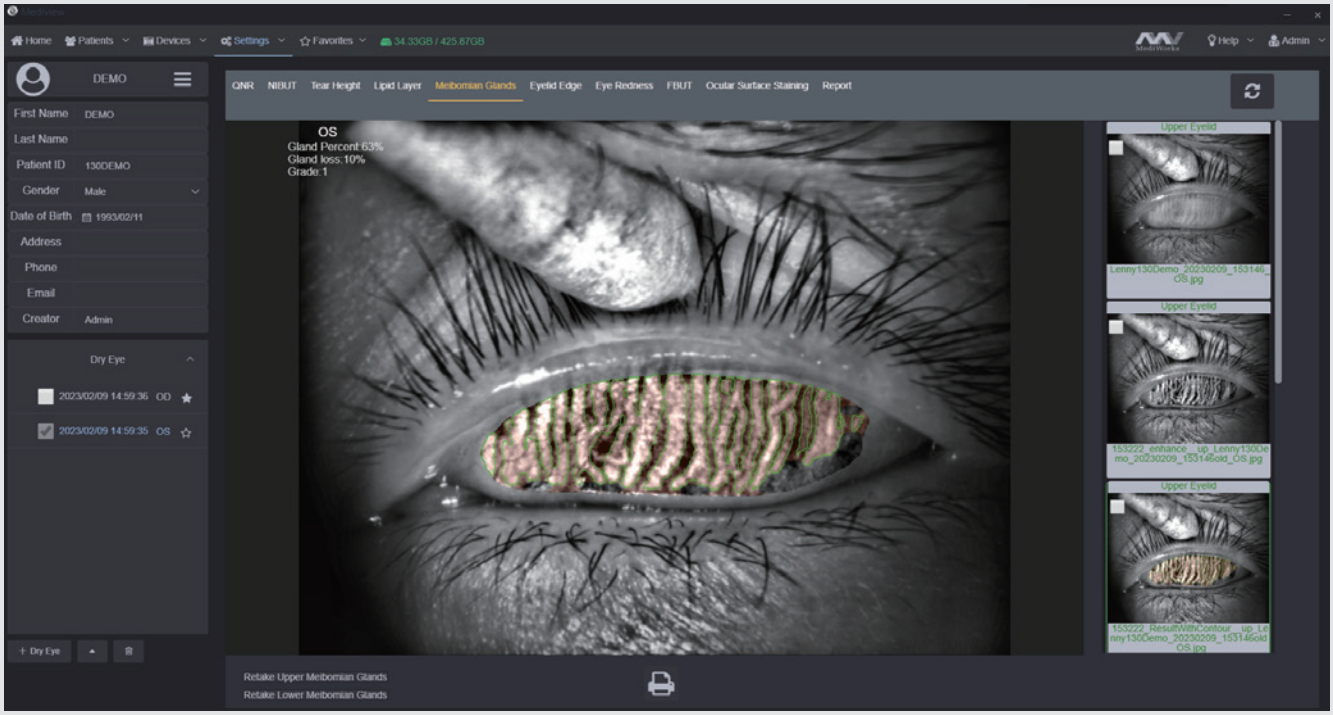

# Fluorescein Breakup Time




Normal: >10 s;
Mild: 6 ~ 10 s;
Moderate: 2 ~ 5 s;
Severe: < 2 s or no complete tear film.

Functions

# Meibomian Glands Function Evaluation



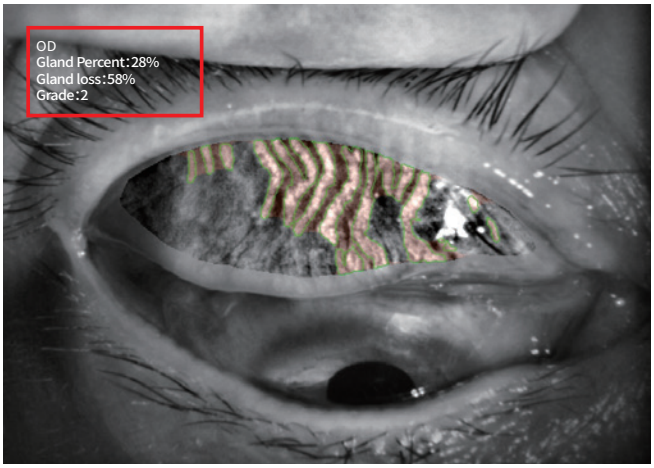

**Get original/enhanced/result images by one click**

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

**AI identification system** automatically anlalyzes meibomian glands loss caused by meibomian glands dysfunction with precise and quantified diagnosis results.

**Built-in infrared lighting system** helps doctors obtain larger image scope of the meibomian glands.

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




Meibomian glands loss

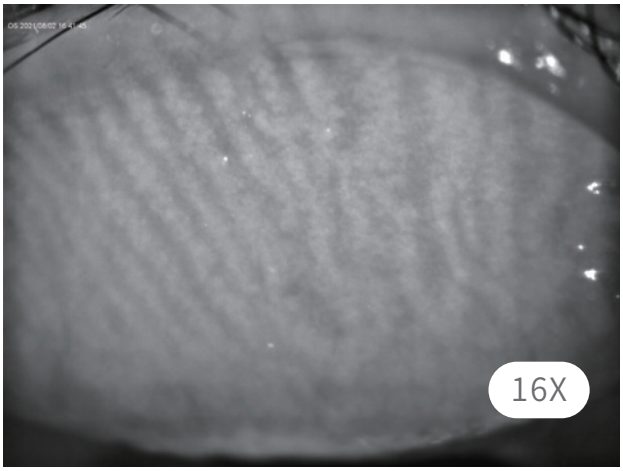
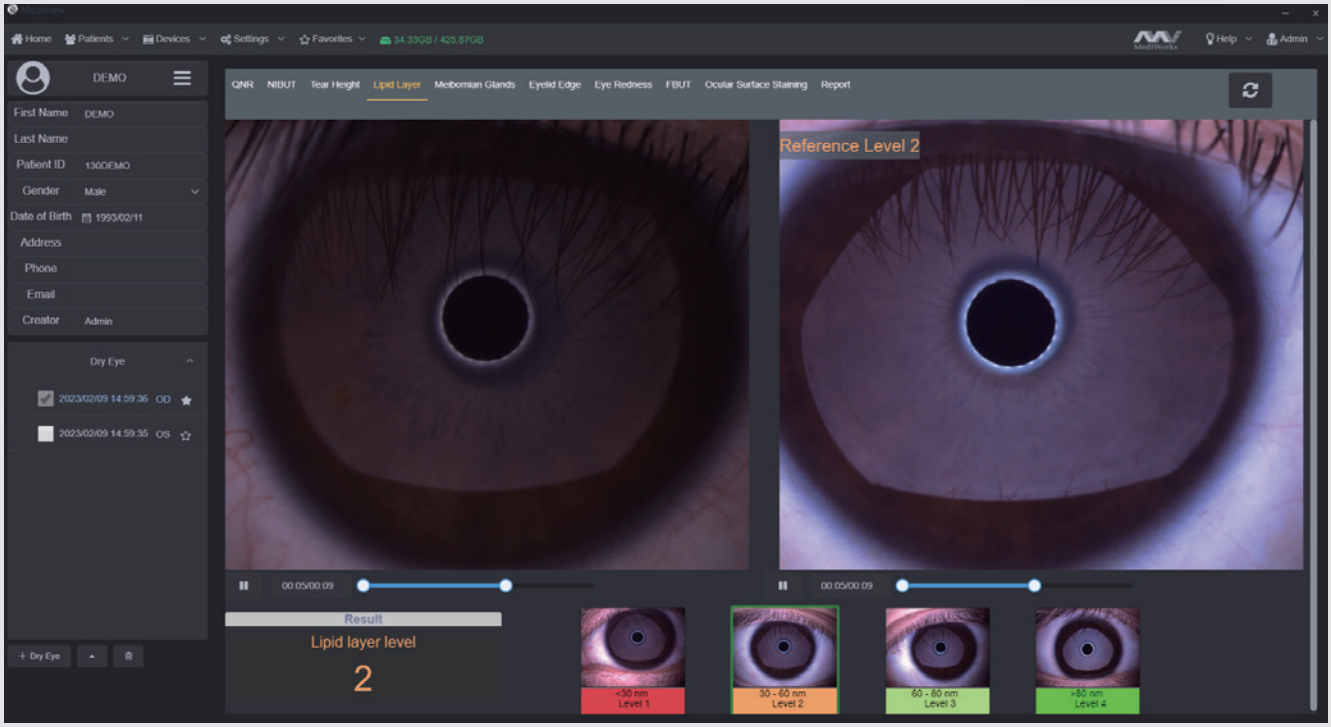



Image of Meibomian Glands under high-magnification

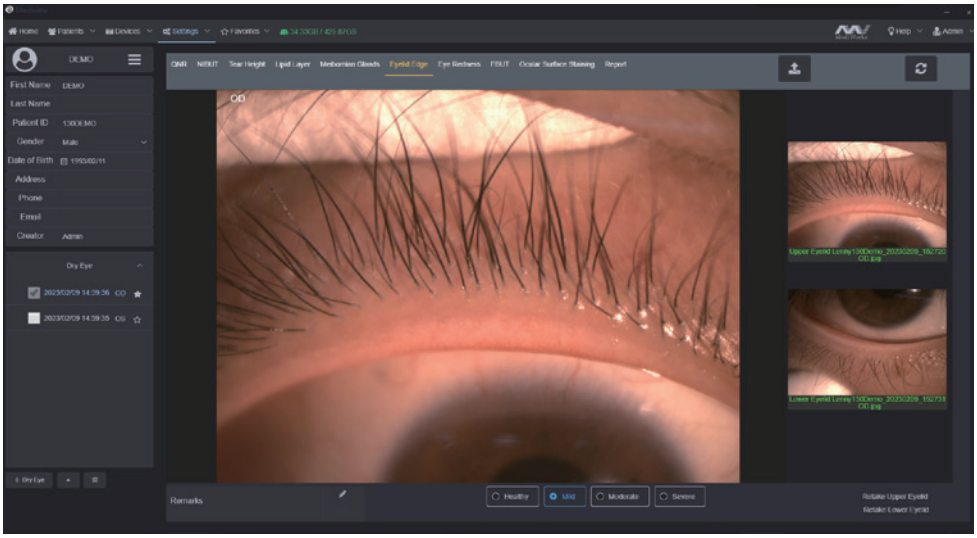
# Lipid Layer Thickness




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.

(Unit:nm)
Grade 1: <30
Grade 2: 30 ~ 60
Grade 3: 60 ~ 80
Grade 4: >80

# Eyelid Margin

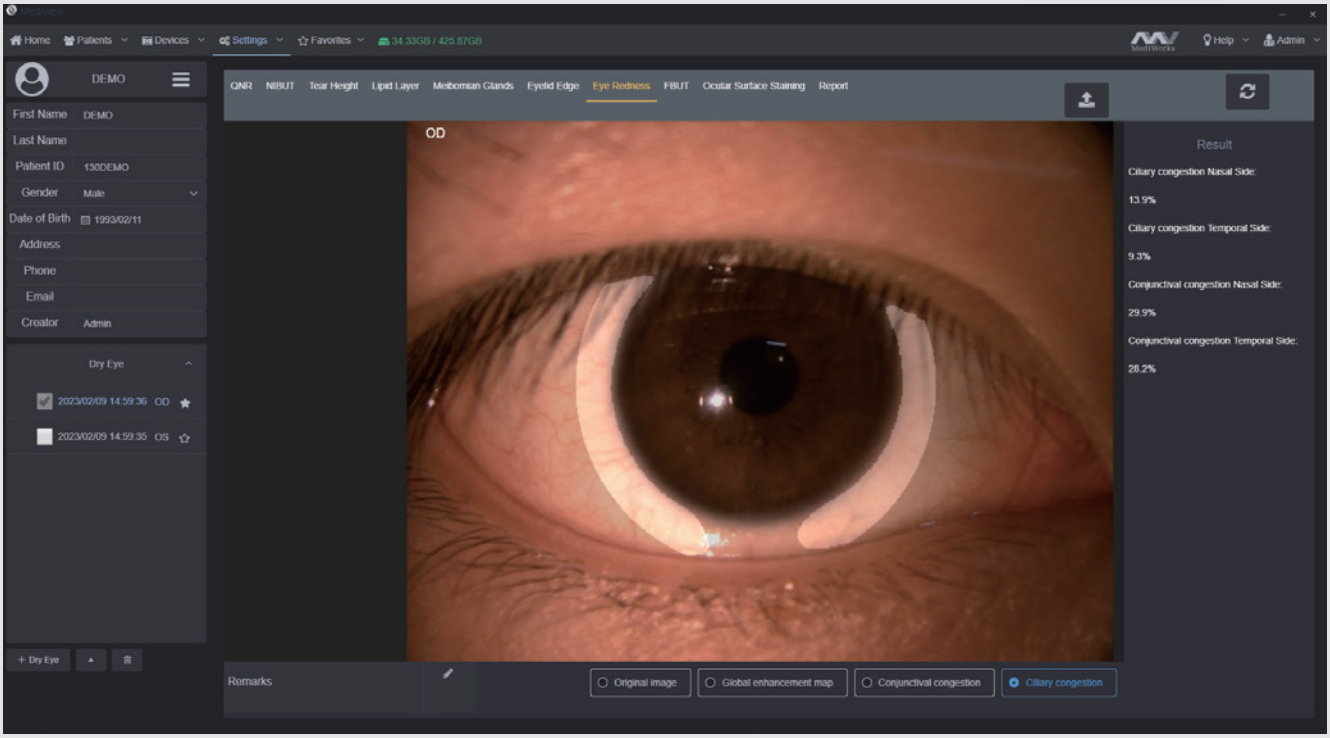



1. Normal including (Ophthalmic embolism bright, transparent)
2. Mild including (gland cap crown - glandular prominent)
3. Moderate including (glandular fat plug - disappearance of the marginal mucosa, hyperkeratosis)
4. Severe including (uneven margins, disappearance of the meibomian glands - posterior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


MediWorks 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.

Functions

# Analysis of Conjunctival Hyperemia

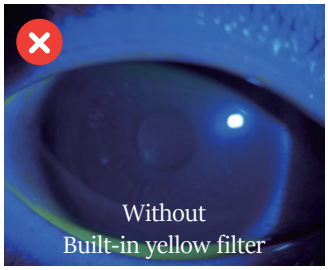



Normal: ≤ 2 Abnormal: > 2

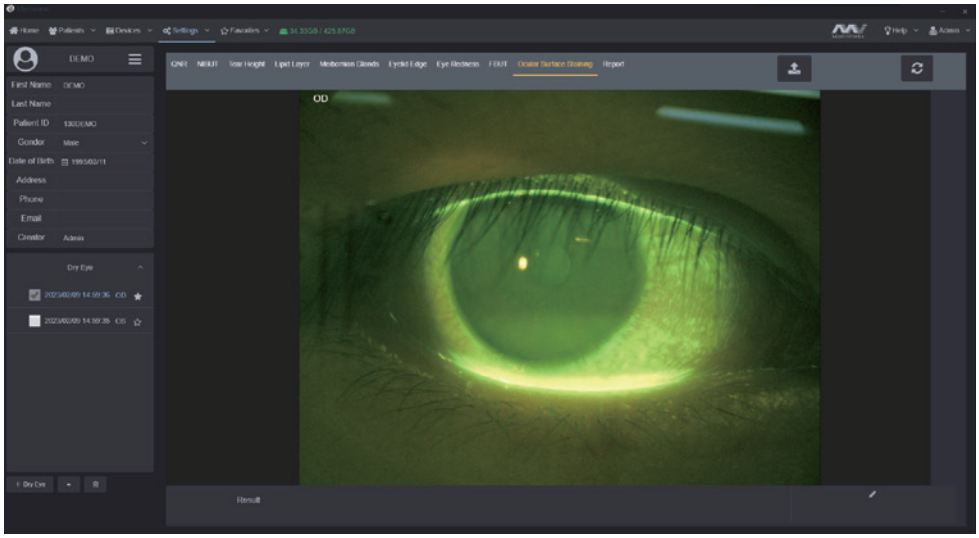
The unique AI identification system can identify and calculate percentages of conjunctival congestion and ciliary congestions and evaluate severity of eye congestion.

AI image

# Corneal Fluorescein Staining



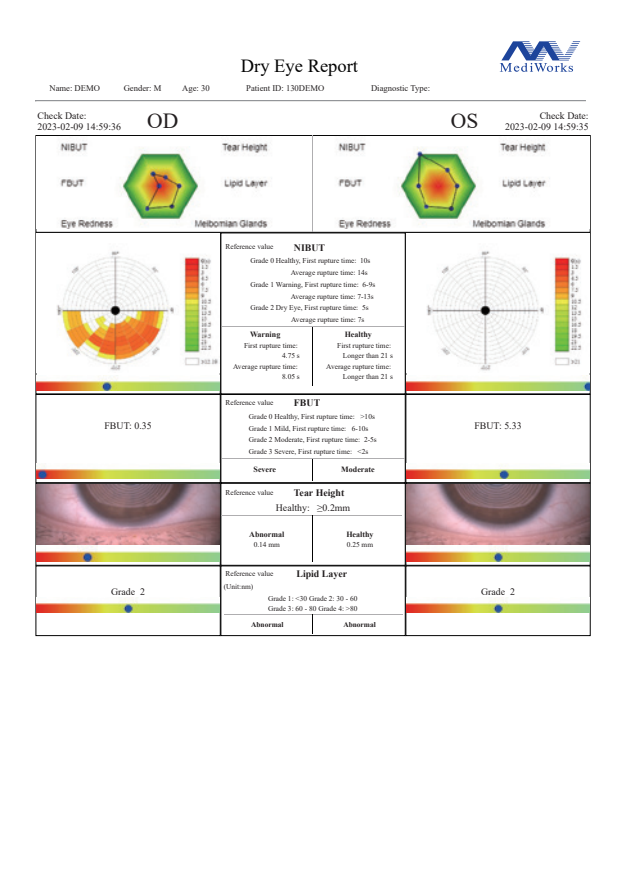


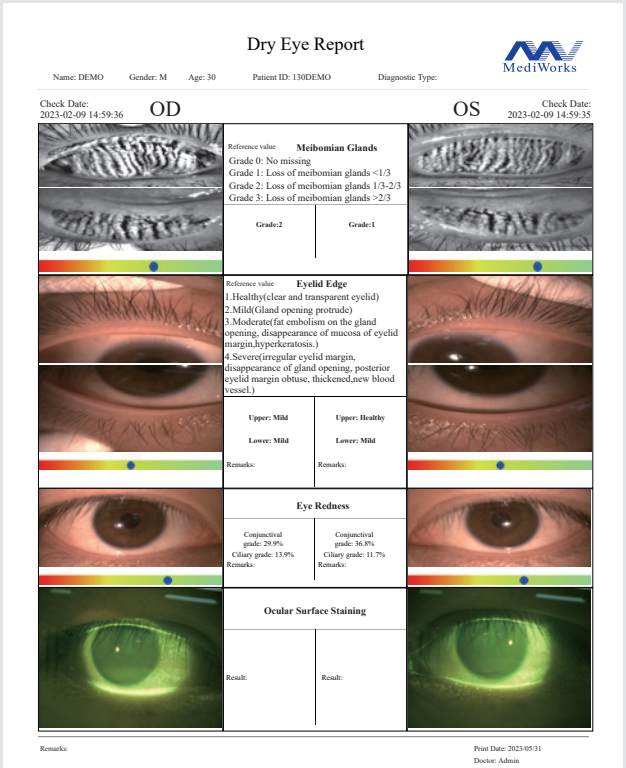



Effectively increases positive rate of early corneal epithelial staining.
Built-in yellow filter along with cobalt-blue filter makes the corneal fluorescein staining images more clearly.

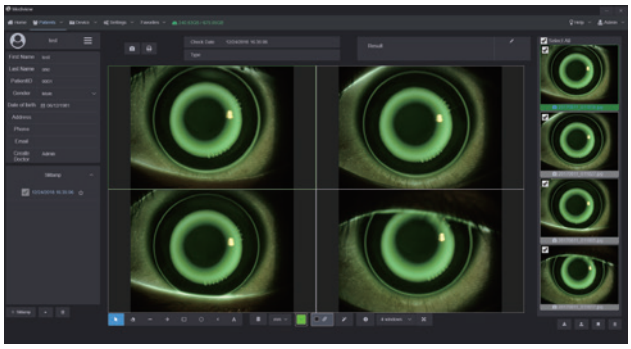
Convenient Medical Consultation on Dry Eye Syndrome

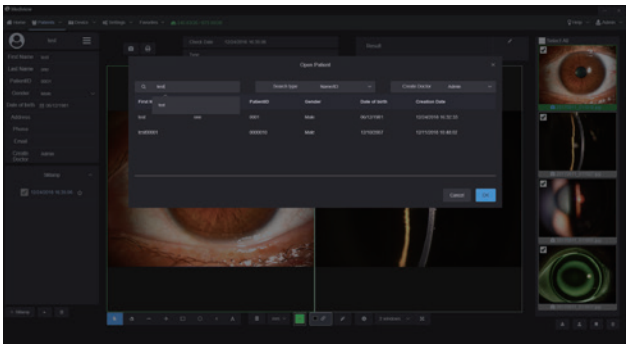
# Dry Eye Comprehensive Evaluation Report




# 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:
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# 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

| | |
|---|---|
| Input Voltage | ~100V ~ 240V |
| Input Frequency | 50 Hz / 60 Hz |
| Rated current | 1.2 A |
| Output Voltage | LED 3 V， Fixation 15 V |

## Packaging

| | |
|---|---|
| Dimension | 740 mm x 450 mm x 530 mm(L/W/H) |
| Gross weight | 23 kg |
| Net weight | 17 kg |

## 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 8GB 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

CE NMPA FDA MDSAP ISO

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**Details** Make the **Difference**