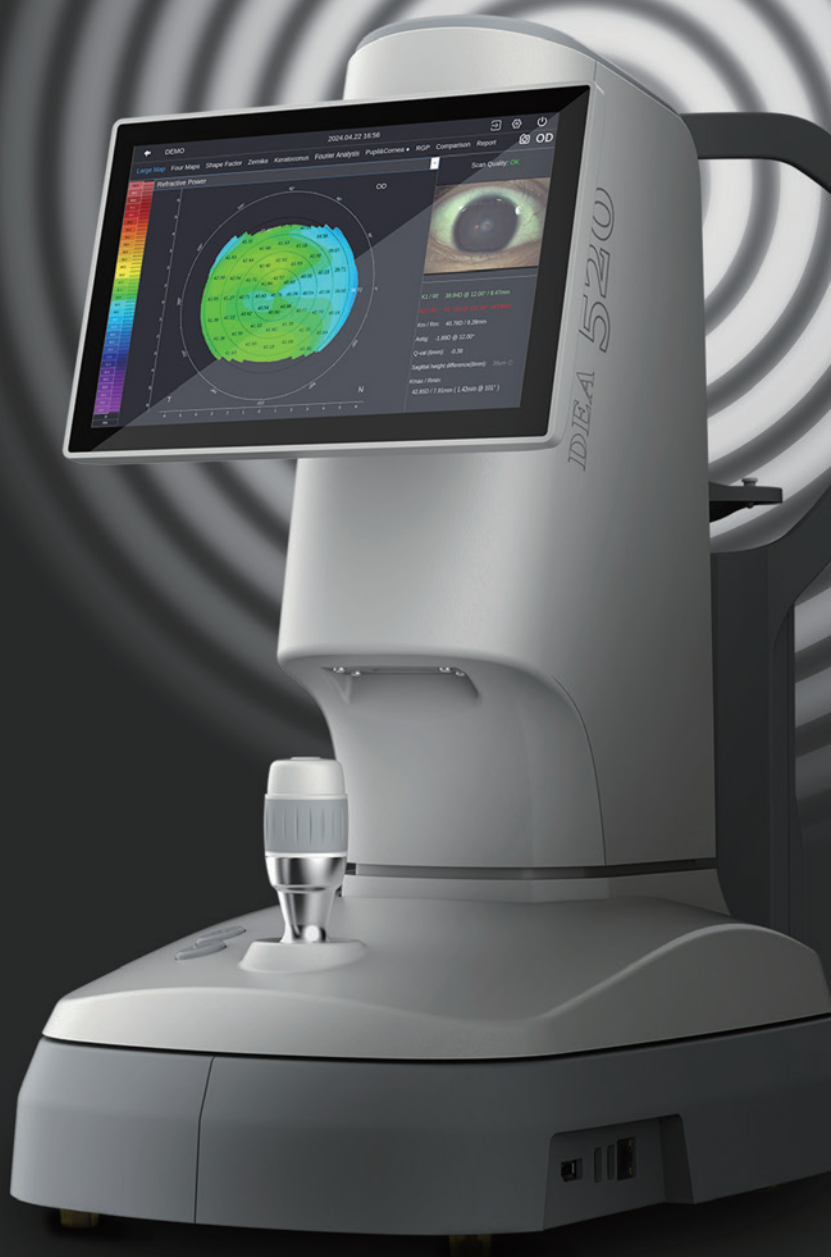


# DEA 520

## 2 in 1

Ocular Diagnostic Master

Corneal Topographer



DEA  
520

# 1 Ring 3 Illuminations 14 Functions

DEA 520 is a multi-purpose corneal topographer that integrated dry eye and corneal topography analysis.

## Placido Ring



**Thousands of measure points** – ensure more data available and accurate analysis

**Smaller cone design** – bigger projection area

**3 Illuminations** – white illumination, infrared illumination, cobalt blue illumination

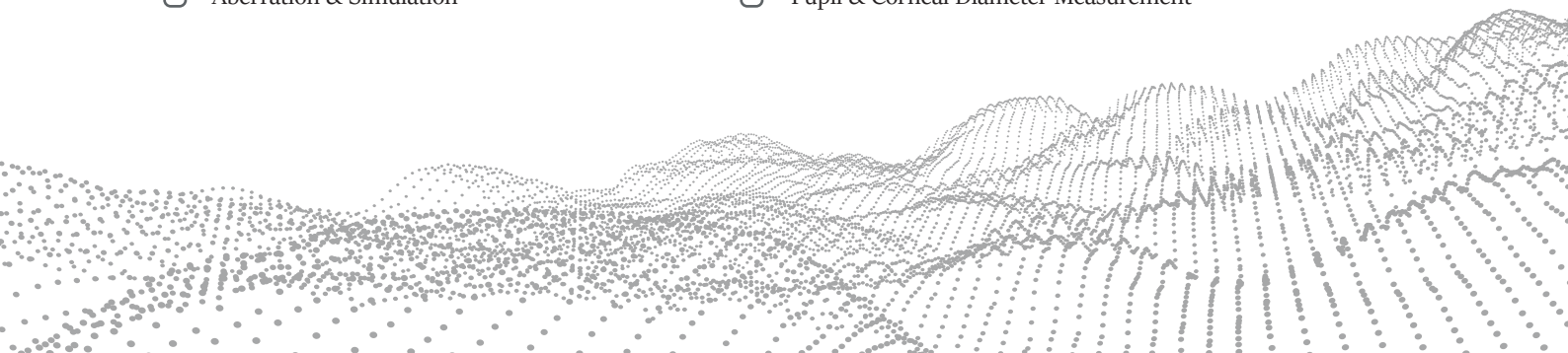
## 14 Functions

### Dry Eye Diagnosis

- ☐ Dry Eye Questionnaire
- ☐ Meibomian Glands Function Evaluation
- ☐ Conjunctival Redness Analysis
- ☐ Lipid Layer Thickness
- ☐ Blink Quality
- ☐ Non-Invasive Tear Film Breakup Time
- ☐ Cornea Sodium Fluorescein Staining
- ☐ Non-Invasive Tear Meniscus Height
- ☐ Eyelid Margin
- ☐ Fluorescein Tear Film Breakup Time

### Topography

- ☐ Topography Analysis
- ☐ Aberration & Simulation
- ☐ Lens Fitting
- ☐ Pupil & Corneal Diameter Measurement





### **Built-in computer**

Integration design enables maximum treatment room utilization  
Dry eye diagnosis and topography analysis integrated

### **Doctor-Patient Communication**

Visualized diagnosis report, easy to understand  
External display connection enables real-time observation

### **Ergonomic Design**

50° adjustable display, easier operation.

Auto eyes recognition, switch illumination and magnification intelligently under various function modes.

Compact cone, specially designed for various orbits.

### **Clinical Application**

- Dry Eye Analysis
- Corneal Morphology Diagnosis
- Aberration & Simulation
- Lens Fitting





# Dry Eye Diagnosis

Make dry eye visualized

## 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.



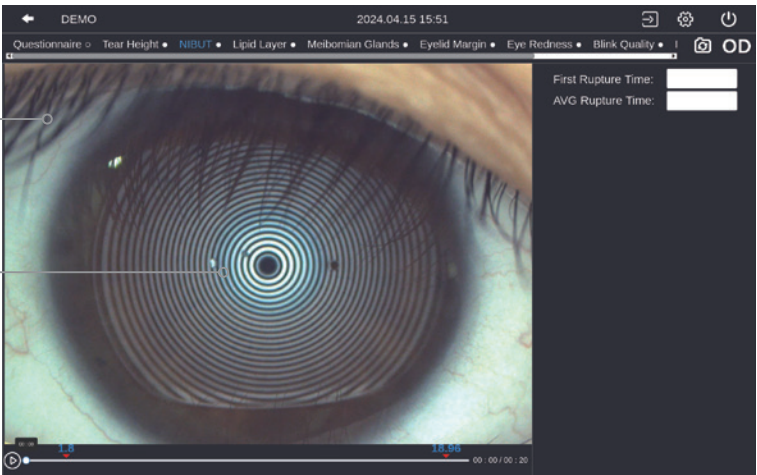
## Non-Invasive Breakup Time

### Interface

Comprehensive dry eye examinations.

### NIBUT

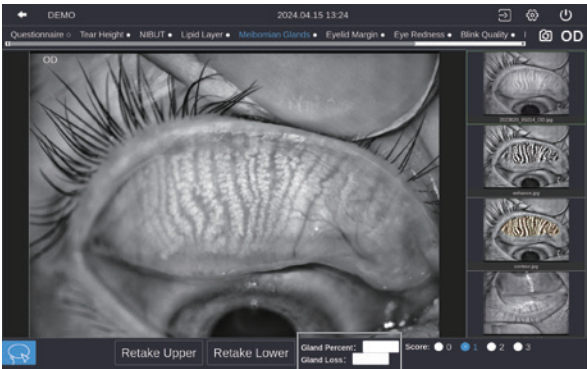
More than 9.6 mm diameter Placido ring projection. Auto identify breakup area and analyze NIBUT intelligently.



## Meibomian Glands Function Evaluation



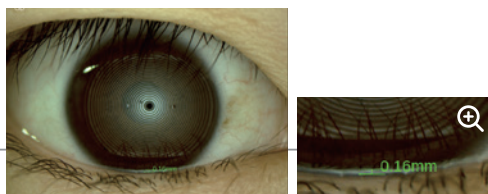
Auto identify and auto enhance of meibomian glands area



Automatically analyze meibomian glands loss caused by meibomian glands dysfunction with precise and quantified diagnosis results

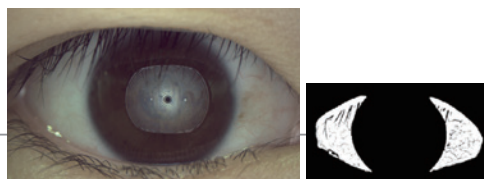


### Non-Invasive Tear Meniscus Height

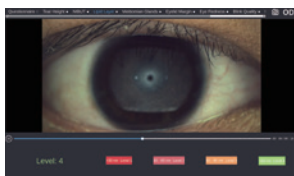


Automatic identification system depicts tear meniscus area and measures the tear height intelligently.

### Conjunctival Redness Analysis



Identify and calculate percentages of conjunctival congestion and ciliary congestions and evaluate severity of eye congestion.



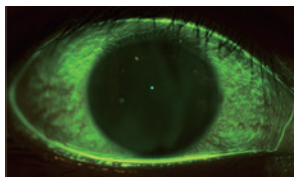
### Lipid Layer Thickness

Observe dynamic lipid layer and distribution by video recording compared with standard templates. It's helpful for judging MGD.



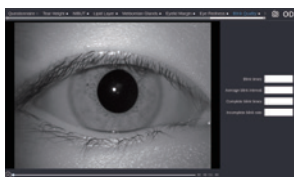
### Eyelid Margin

The high resolution image supports zoom in to meet examination requirements of overall shape of eyelid margin and its slight change.



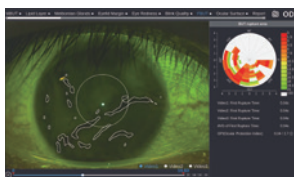
### Corneal Fluorescein Staining

Specially designed built-in yellow filter, working with cobalt-blue illumination improves contrast of corneal fluorescein staining images. Effectively increases positive rate of early corneal epithelial staining.



### Blink Quality

The high-definition video is captured by the infrared light source and automatically analyzes blink frequency, blink interval, incomplete blink, and incomplete blink ratio.

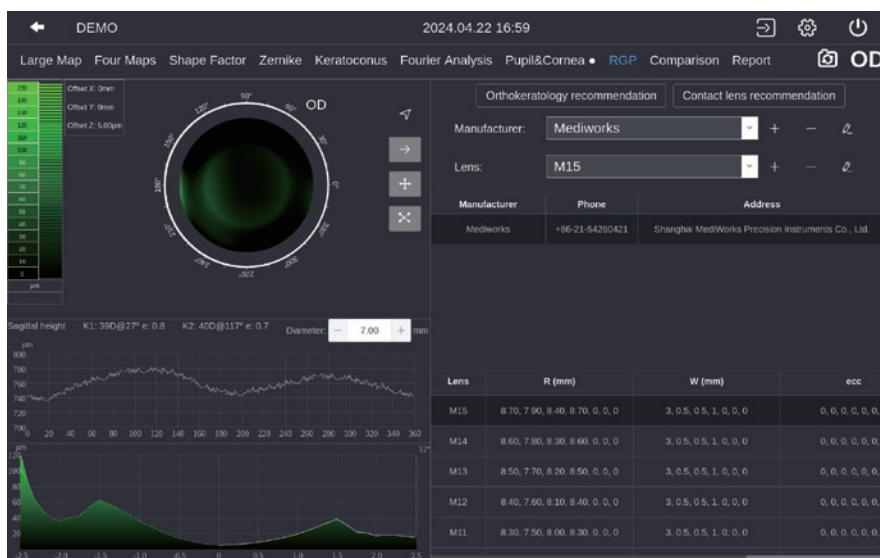


### Fluorescein Tear Breakup Time

AI automatically detects changes in tear film morphology and calculates tear film breakup time to assess tear film stability.

# Corneal Topography

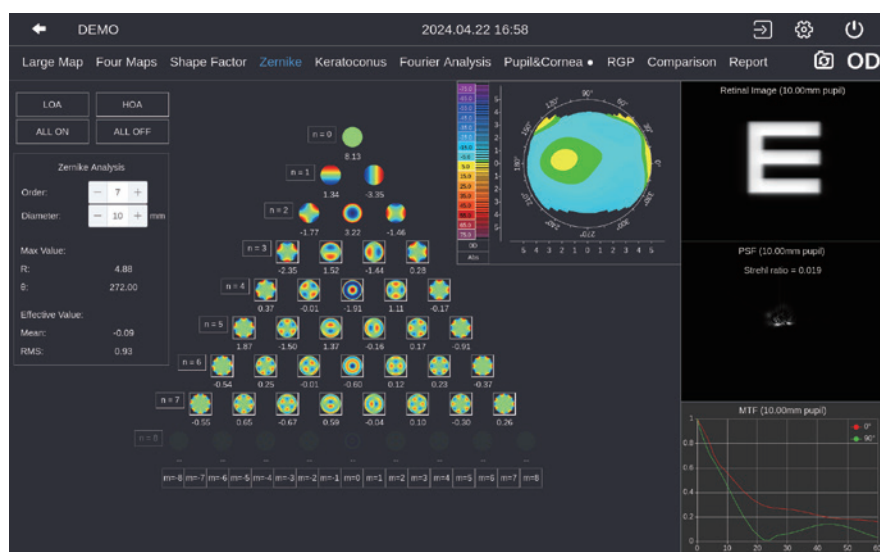
## Sketch the contours of corneal



## Lens Fitting

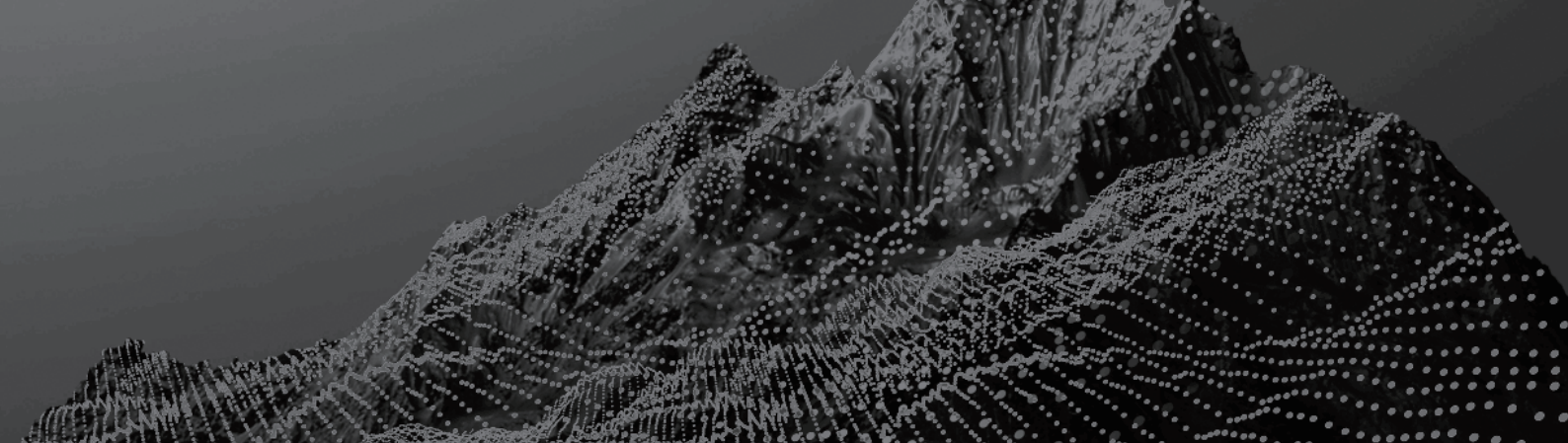
A simulated fluorescein image will be created based on patient's cornea. The system will recommend several suitable lens for choose, which accelerates work flow and excludes unfit lens to save the trouble for patient to do real several fluorescein staining.

Research and develop with team SOS from EYE & ENT Hospital of Fudan University. Recommend the most precise lens based on the patient documentation.



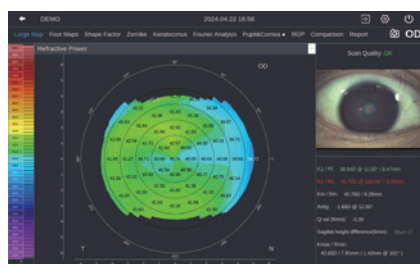
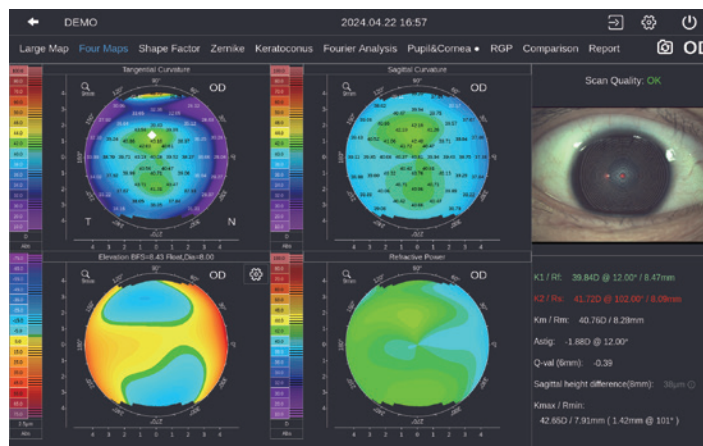
## Aberration & Simulation

Zernike wavefront aberration analysis makes plan of cataract and refractive surgeries visualized and ensures patient's postoperative vision quality.

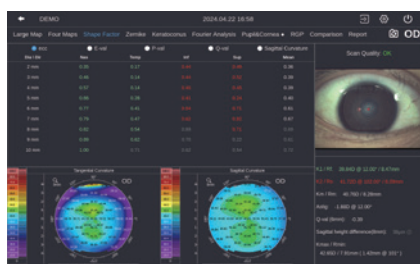


## 4 Maps

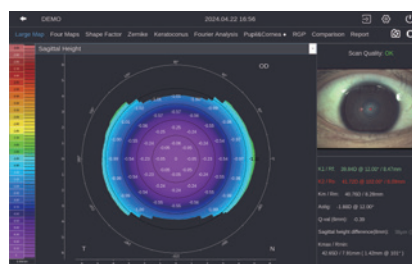
4 maps provide Sagittal Curvature, Tangential Curvature, Elevation Map, Refractive Power, and K1/K2/Km/Astig/Ecc value.



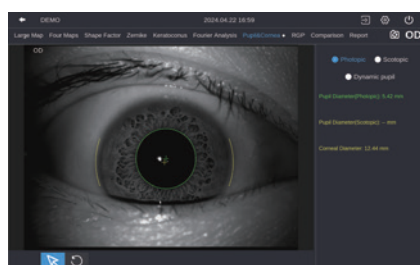
Topography



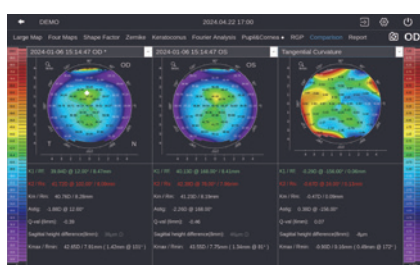
Shape Factor



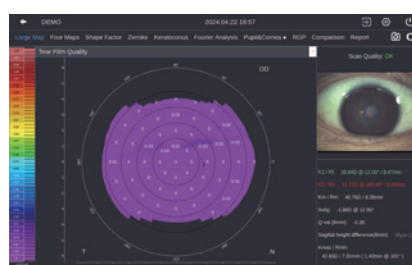
Sagittal Height



Pupil & Corneal Diameter Measurement



Cases Comparison



Tear Film Quality



# Specifications

## Hardware

Dimension	49 cm × 31 cm × 54 cm
Weight	16.1 kg
Built-in CPU	intel
Hard Disk	1 TB
Image Resolution	2048 × 1536
Display	10.1" touchscreen
Illumination	White, Infrared, Cobalt-blue
Internet Connection	Wifi & Wired network
Printer Connection	WIFI, USB
Power Supply	100 ~ 240 VAC, 50 / 60 HZ
Extension Display Interface	Display Port
OS/OD Recognition	Automatic
Chin Rest Control	Electrical
Left and Right	0 ~ 90mm work range
Front and Back	0 ~ 60 mm work range
Up and Down	0 ~ 30 mm work range
Language	Chinese / English / Japanese / German / Italian
DICOM	Supported

## Topography

Numbers of Rings	50 Rings
Diameter of Project Area	8.8 mm ( 42.18 D ) 11 mm ( 42.18 D )
Radius of Curvature	32.14 dpt ~ 61.36 dpt ( 5.5 mm ~ 10.5 mm ) Accuracy : ± 0.1 dpt ( ± 0.02 mm )
Astigmatism Axis	0 ~ 180°
White To White	1 ~ 20 mm
Pupil Diameter	1 ~ 13 mm
Topography Function	Sagittal Curvature Tangential Curvature Elevation Map Refractive Power Sagittal Height Tear Film Quality
4 Maps	Four Maps display
Shape Factor	Ecc, E, p, Q
Zernike	Corneal wavefront aberration, PSF map, MTF curve and Simulated image in different pupil diameters
Examination Result Comparison	Support 2 results comparison and difference calculation

## Dry Eye Analysis

NIBUT	Automatic analysis, tear film rupture area and trend, first break-up time and average break-up time
Tear Meniscus Height	0.01 ~ 2 mm
Meibomian Glands	Meibomian glands loss rate and grade
Lipid Layer	Template match
Eye Redness	Conjunctival congestion percentage
Eyelid Margin	Support digital images zoom in
Ocular Surface	Built-in yellow filter Blink Quality Fluorescein Tear Breakup Time



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