Scansys TA517

3D Anterior Segment Analyzer

Intelligent analysis of eye subtleties for advanced ophthalmic diagnosis

NEW FUNCTION

Scansys TA517

3D Anterior Segment Analyzer

Provides a comprehensive intelligent diagnosis and analysis solution for the ocular anterior segment

★ Adopting an **ultra-high-definition Scheimpflug camera**, it can generate **28/60** high-definition anterior segment Scheimpflug images within **1/2 seconds**.

★ A total of **107,520/230,400 data analysis points** are collected, which can provide comprehensive data support for the clinical diagnosis of the ocular anterior segment.

★ It already has a global database of **several thousand cases**, and the number is still growing dynamically along with the increase in the collected sample size.

★ The optimally designed functional modules can perfectly meet the clinical needs of **multiple scenarios in ophthalmology**.

NEW **Scleral Lens Module**

IOL Calculation

Keratoconus Analysis

IOL Optimization

Crystalline Lens Density Analysis

Contact Lens Simulated Fitting

ICL Recommendation & Postoperative Evaluation

Automatic Calculation of Contact Lens Fitting Parameters

ICRS Implantation Recommendation

Aberration & Visual Quality Analysis

Anterior Chamber Angle Analysis

Fourier Analysis

IOP Correction Formula

Astigmatic Keratotomy Tool

SCANSYS

Maps

Cornea Thickness Map

Tangential Curvature Map (Corneal Anterior Surface)

Tangential Curvature Map (Corneal Posterior Surface)

Sagittal Curvature Map (Corneal Anterior Surface)

Tangential Curvature Map (Corneal Posterior Surface)

Elevation Map (Corneal Anterior Surface)

Elevation Map (Corneal Posterior Surface)

True Net Power Map

Keratometric Power Deviation Map

Anterior Chamber Depth Map

Refractive Power Map (Corneal Anterior Surface)

Total Cornea Power Map (Gaussian)

Total Cornea Power Map (Ray Tracing)

Cornea Sagittal Height Map (Corneal Anterior Surface)

Cornea Sagittal Height Map (Corneal Posterior Surface)

Corneosclera Sagittal Height Map

Corneosclera Elevation Map

Functional Modules

Refractive Surgery

Refractive 4 Maps

Selectable 4 Maps

Pachymetric Module

Refractive Power Distribution

Keratoconus Analysis **POPULAR**

Binocular Contrast of Refractive 4 Maps

ICL Recommendation & Postoperative Evaluation

Aberration & Visual Quality Analysis

Fourier Analysis

Refractive Cataract Surgery

Crystalline Lens Density Analysis

IOL Calculation

IOL Optimization **POPULAR**

Aberration & Visual Quality Analysis

Astigmatic Keratotomy Tool

Contact Lens Fitting

Scleral Lens Module **NEW**

Corneal Shape Factor

Contact Lens Simulated Fitting

Automatic Calculation of Contact Lens Fitting Parameters

Glaucoma Screening & Others

Anterior Chamber Angle Analysis

IOP Correction Formula

ICRS Implantation Recommendation

Comparison of 2 Examinations

Clinical Application in Contact Lens Fitting

Scleral Lens Module NEW FUNCTION

Scansys can capture 60 high-definition Scheimpflug images of corneosclera in a single scan, covering a 16mm-diameter of corneoscleral area. It can display the corneoscleral sagittal height in a 360° panoramic view without any multiple scans and image stitching, and provide 13 key parameters so as to offer comprehensive and accurate data support for scleral lens fitting.
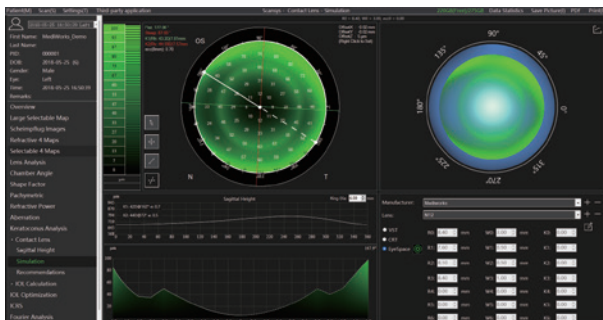

Contact Lens Simulated Fitting

Scansys allows eye-care professionals to customize the contact lens database. Combined with the corneal parameters of patients, it can simulate the contact lens fitting effect (3D/2D) under the corneal fluorescence staining with slit lamp. Moreover, an ideal fluorescence fitting simulation effect can be obtained through parameter adjustment. This is helpful for beginners to grow rapidly, improve the fitting efficiency of orthokeratology lenses, and avoid the trouble and discomfort caused to patients by changing trial lenses multiple times.

## Automatic Calculation of Contact Lens Fitting Parameters

Scansys has a built-in automatic calculation for contact lens fitting , which can help eye-care professionals quickly obtain the fitting parameters of orthokeratology lenses, soft contact lenses or RGP lenses based on the patients' corneal parameters.
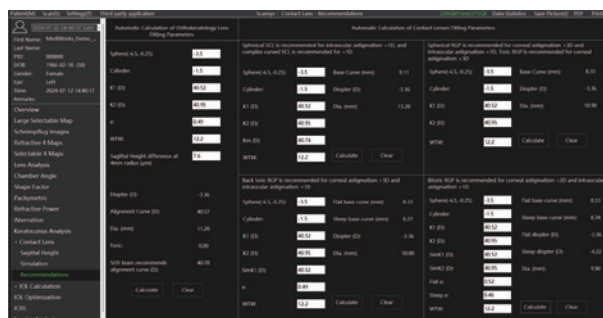
Clinical Application in Rapid Keratoconus Diagnosis

Keratoconus Analysis POPULAR FUNCTION
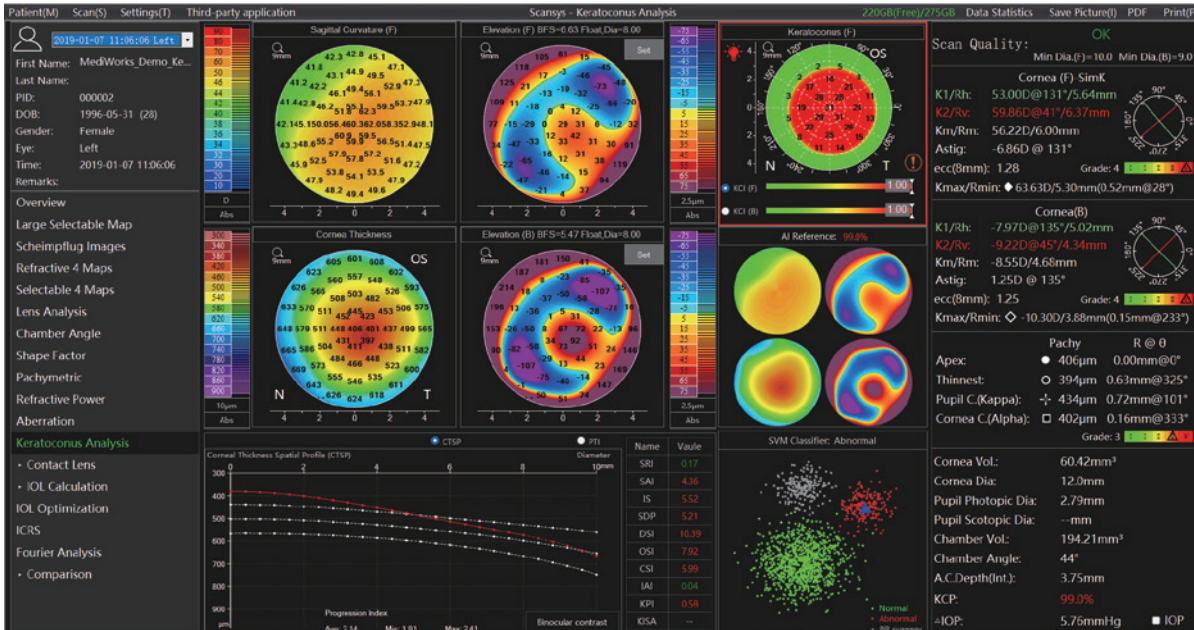
The various keratoconus related parameters provided by Scansys, such as the Refractive 4 Maps, Keratoconus Index (KCI) of the anterior and posterior corneal surfaces, AI Reference, SVM Classifier, Keratoconus Probability (KCP) and Keratoconus Grading (Grade 0-IV), etc., can intelligently assist eye-care professionals in diagnosing keratoconus more quickly.

Binocular Contrast of Refractive 4 Maps
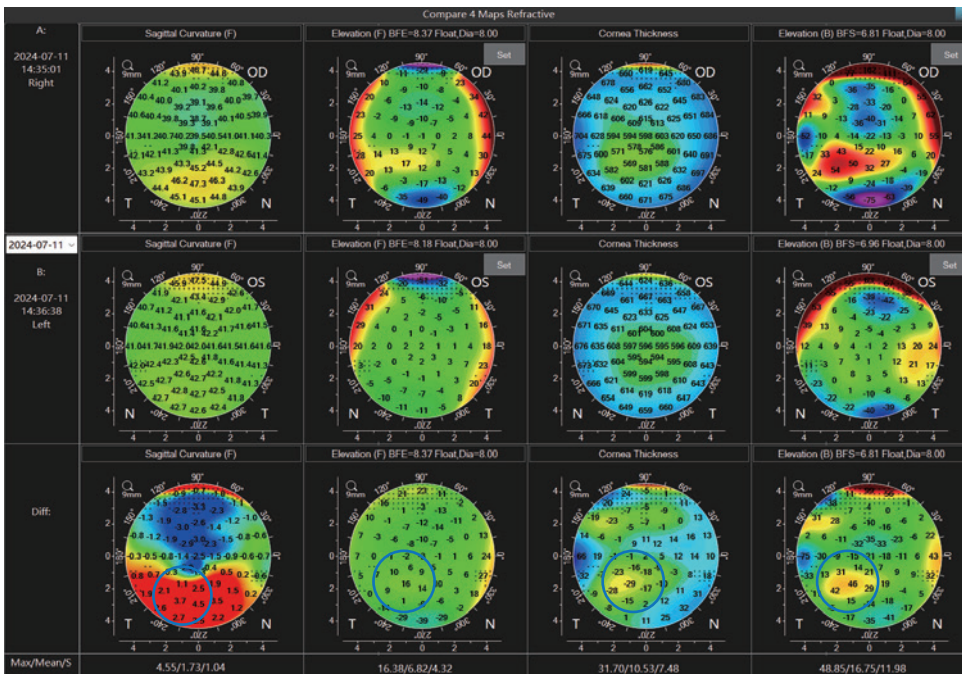
The corneal morphology of normal people's binocular eyes shows a certain degree of symmetry, while patients with keratoconus often have the disease onset in one eye first. Eye-care professionals can use the binocular contrast function of Scansys to compare the morphology and values of the Refractive 4 Maps of the patient's binocular corneas, thereby improving the keratoconus screening efficiency in the early stage, such as forme fruste keratoconus. It is also possible to determine whether keratoconus progresses by comparing the differences of the same eye of the patient at different time points.

Clinical Application in Refractive Cataract Surgery

Crystalline Lens Density Analysis

By calculating the gray value in both the cross-sectional and longitudinal sections of the crystalline lens, Scansys can assist eye-care professionals in the diagnosis of cataract and provide certain guidance for the design of cataract surgeries and the intraoperative operations.
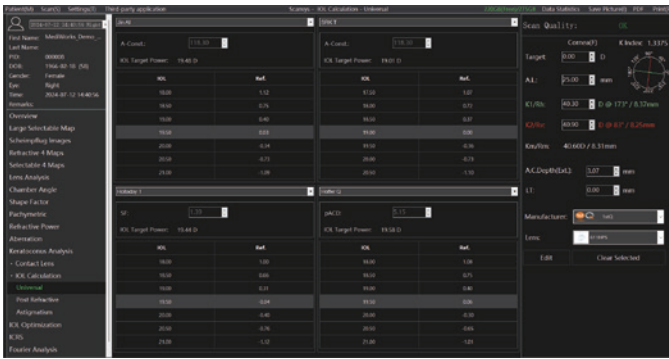

IOL Calculation

Scansys has built-in multiple intraocular lens calculation formulas such as Jin AI, SRK-T, Holladay 1, Hoffer Q, etc. and the IOL parameters provided by manufacturers. It can quickly provide the corresponding IOL power for common cataract patients or cataract patients after refractive laser surgeries. For those who need to implant Toric IOLs, Scansys will also give suggestions on the implantation direction of Toric IOLs.

## IOL Optimization   POPULAR FUNCTION
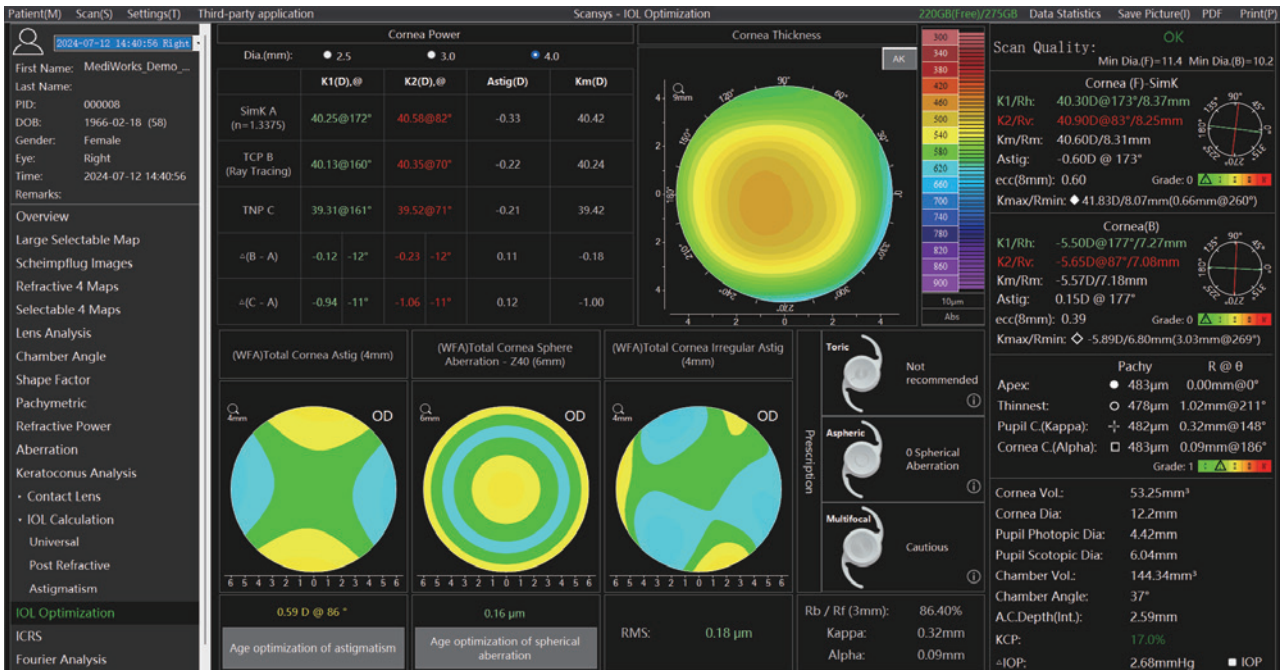
Scansys provides key parameters such as three types of corneal refractive power (Simk, Total Corneal Power and True Net Power), Total Corneal Astigmatism, Total Corneal Spherical Aberration, Total Corneal Higher-Order Aberration, the ratio of the curvature radius of the posterior corneal surface to that of the anterior corneal surface, Kappa Angle and Alpha Angle. Combined with the built-in calculators for age optimization of astigmatism and age optimization of spherical aberration, it can truly accomplish the optimization of advanced IOLs and help patients achieve the best visual quality after refractive cataract surgery.
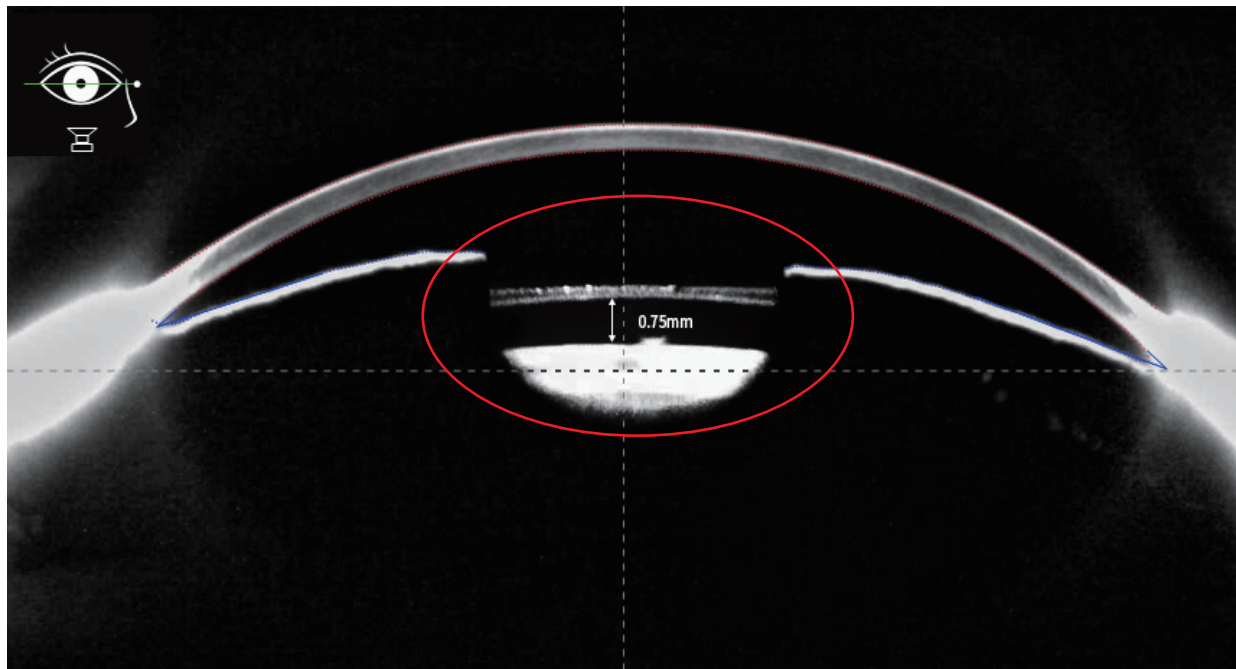
Clinical Application in ICL Surgery

ICL Size Recommendation and Vault Prediction
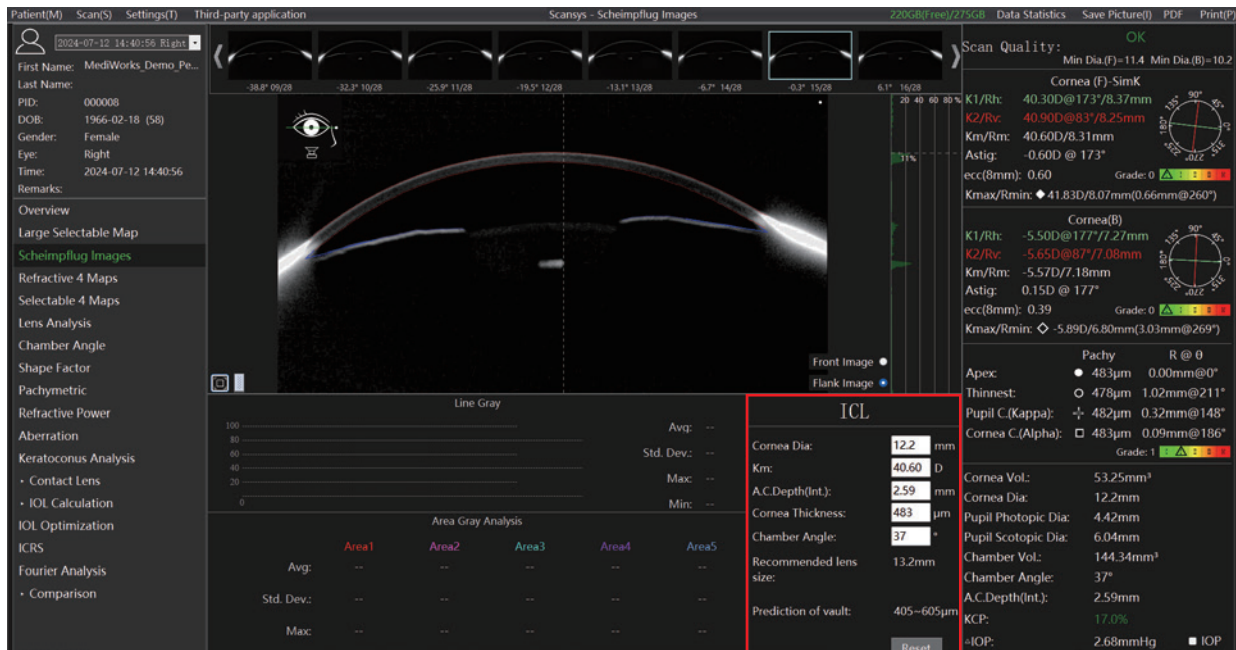
Scansys can, based on the analysis of data such as the corneal diameter, corneal curvature, corneal thickness, anterior chamber depth and anterior chamber angle of the patient, intelligently recommend the size of the ICL lenses and predict the range of postoperative vault.
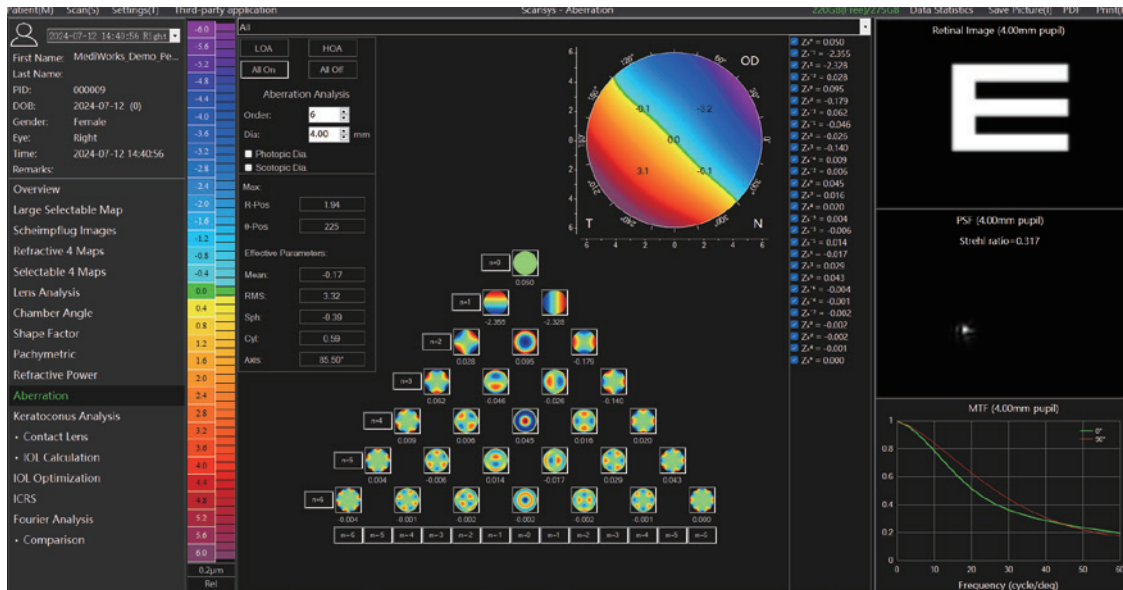
Postoperative ICL Vault Measurement

Scansys supports capturing high-definition Scheimpflug images at any angle after the ICL surgery to precisely measure the postoperative vault, thereby more objectively evaluating the effect and safety of the surgery.

Clinical Application in Visual Quality Analysis

Wavefront Aberration Analysis

Scansys provides up to 8-order Zernike wavefront aberration data of the corneal anterior and posterior surfaces and the entire cornea with a maximum diameter of 12mm. Meanwhile, it can also simulate the visual quality image in a more intuitive way through Retinal Imaging, Point Spread Function (PSF) and Modulation Transfer Function (MTF), etc., providing a crucial basis for the preoperative plan design and postoperative visual quality evaluation of refractive cataract surgery and customized corneal refractive surgery.

Fourier Analysis
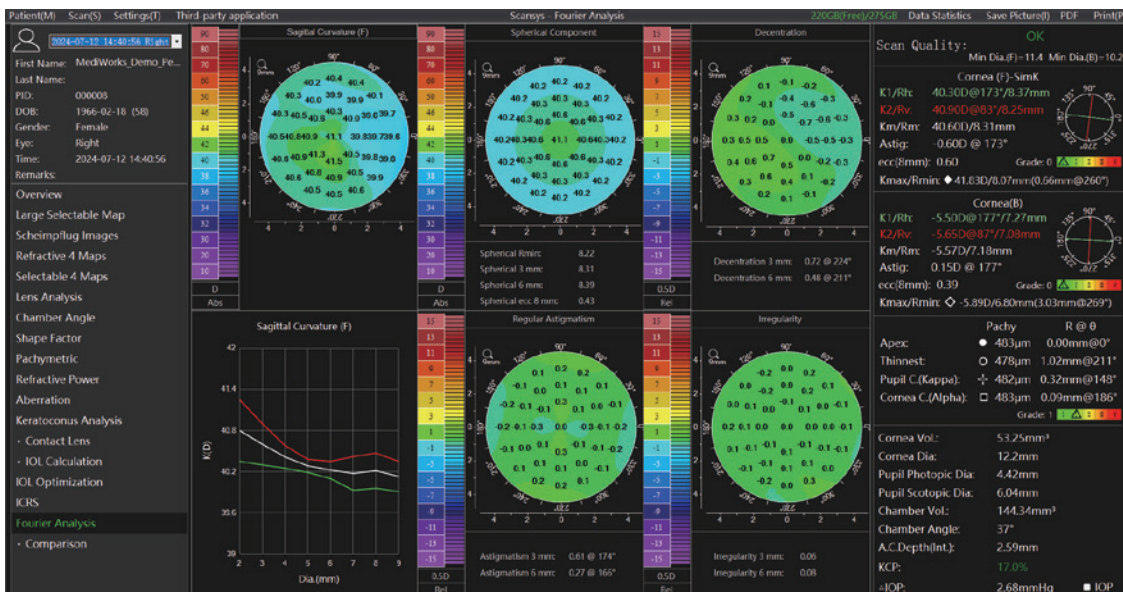
Scansys can decompose the complex corneal topography data of patients into quantitatively analyzable components such as Spherical Component, Decentration Component, Regular Astigmatism Component and Irregularity Component through Fourier Analysis, which can provide more scientific guidance basis for eye-care professionals to design refractive cataract surgery and personalized corneal refractive surgery plans.

Clinical Application in ICRS Surgery

ICRS Implantation Recommendation
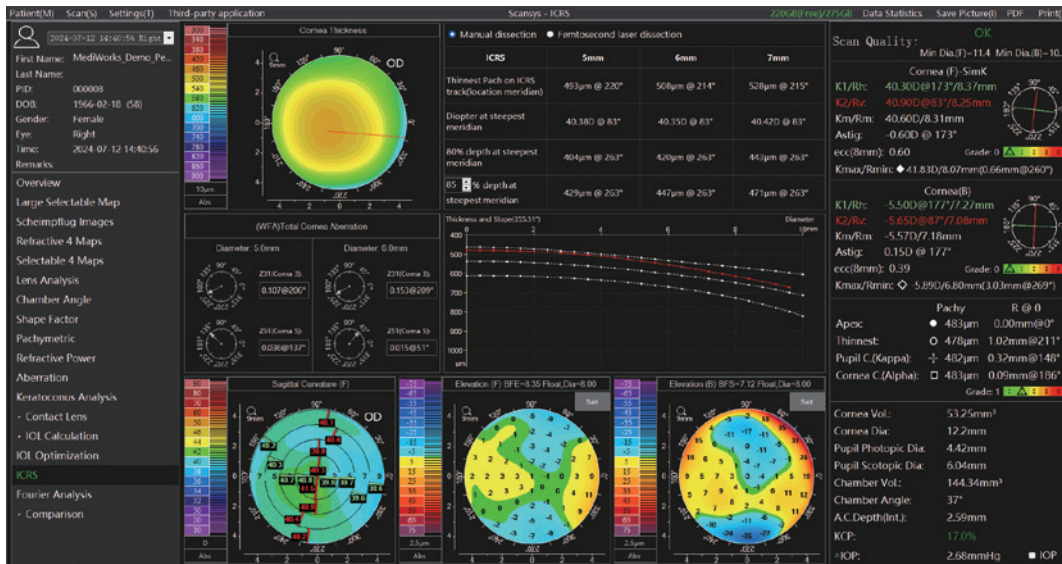
Scansys is capable of providing a comprehensive set of parameters necessary for creating corneal stromal ring tunnels both through manual dissection (utilizing a corneal stromal ring tunnel dissector) and femtosecond laser dissection based on the corneal morphology of patients, in order to improve the predictability of Intrastromal Corneal Ring Segments (ICRS) implantation and reduce surgical complications.

Clinical Application in Glaucoma Screening

Anterior Chamber Angle Analysis
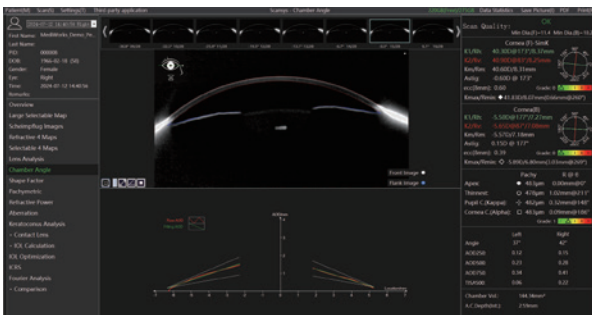
By calculating the gray levels of the anterior chamber and the anterior chamber angle of patients, Scansys can obtain parameters such as Angle Opening Distance (AOD) and Trabecular-Iris Space Area (TISA) and thereby present the distribution trend curve of the original AOD and the linearly fitted distribution trend on both sides of the corneal apex, as well as parameters such as Anterior Chamber Angle, Anterior Chamber Volume, and Anterior Chamber Depth. This is of certain enlightenment significance for the early screening of glaucoma and can also track the effect of laser peripheral iridectomy.
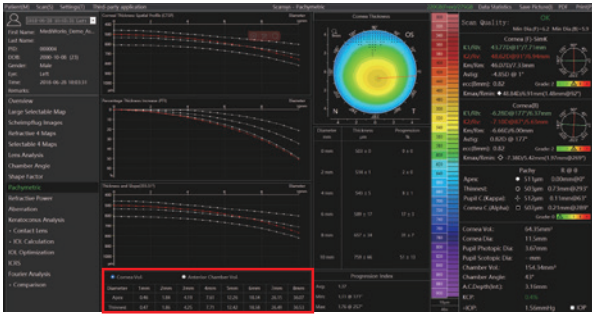
IOP correction Formula
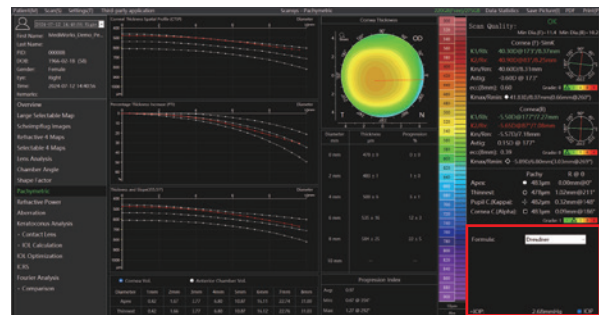
Scansys has 5 built-in IOP correction formulas based on corneal thickness, which help eye-care professionals well understand the real IOP of patients and have certain reference value for the diagnosis of glaucoma.
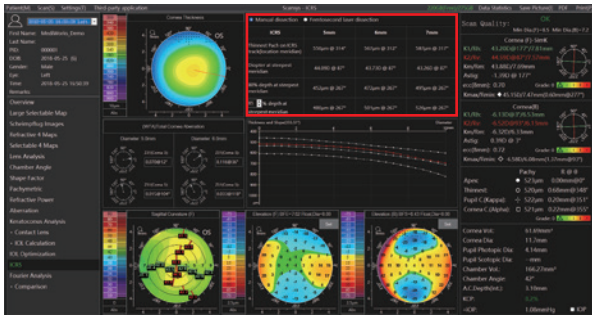
User Function Customization

Parameters such as corneal volume and anterior chamber volume with the corneal apex and the thinnest point as the origin have been developed according to the scientific research needs of the KOL.
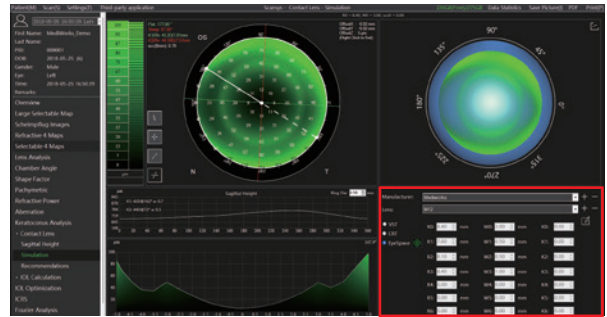
The interface for setting contact lens parameters has been developed to fulfill the user's need for specific contact lens fitting.

The intelligent recommendation module for ICRS implantation has been developed to meet the user's surgical need.
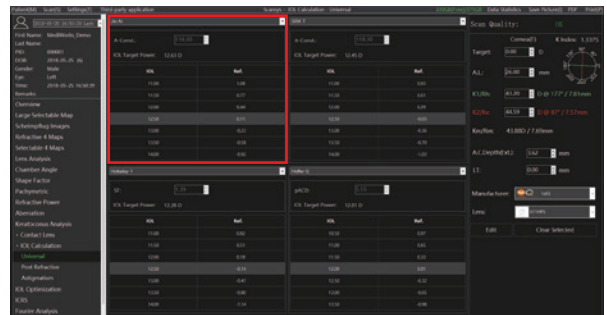
The IOL calculation formula of Jin AI was jointly developed with the cataract expert.

The calculation softwares for the age optimization of IOLs developed by cataract expert have been built in.

The automatic calculator for orthokeratology lens, SCL and RGP was jointly developed with an extremely experienced contact lens research group.

MediWorks Marks Crucial Milestone:

Over *800* Scansys TA517 Devices Installed Globally

Specifications

Camera	Digital infrared camera + Scheimpflug digital CCD camera
Light source	LED slit
Scan mode	2D/3D (28 pic / 60 pic / CS 60 pic)
Scanning speed	28 images within 1 second / 60 images within 2 seconds
Data analysis points	107,520 / 230,400
Operating distance	80 mm
Corneal topography diameter	9 mm / 12 mm
Corneoscleral topography diameter	16 mm
Keratometry	12 ~ 72 D
Corneal thickness	300 ~ 900 μm
White to white	6 ~ 14 mm
Pupil diameter	1 ~ 10 mm
Anterior chamber depth	0.8 ~ 6 mm
Anterior chamber volume	15 ~ 300 mm^3
Anterior chamber angle	16 ~ 60°
Kappa / Alpha angle	R(0 ~ 3 mm), θ(0 ~ 360°)

Work Range

Front and back	115 mm
Left and right	100 mm
Up and down	30 mm

Power Supply

Input voltage	~100 V ~ 240 V
Input frequency	50 Hz / 60 Hz

Weight and Size

Device dimension	505 mm x 345 mm x 460 mm (L/W/H)
Device weight	12 kg
Package dimension	700 mm x 600 mm x 830 mm (L/W/H)
Package weigh	25 kg

System Specifications

PC configuration	i5 ~ 10500T 8GB memory 256GB SSD + 1TB storage
Display	1920 × 1080 23.8 inch
PC system	Windows 10
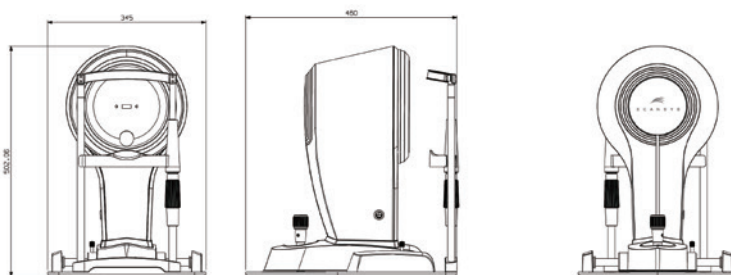
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