

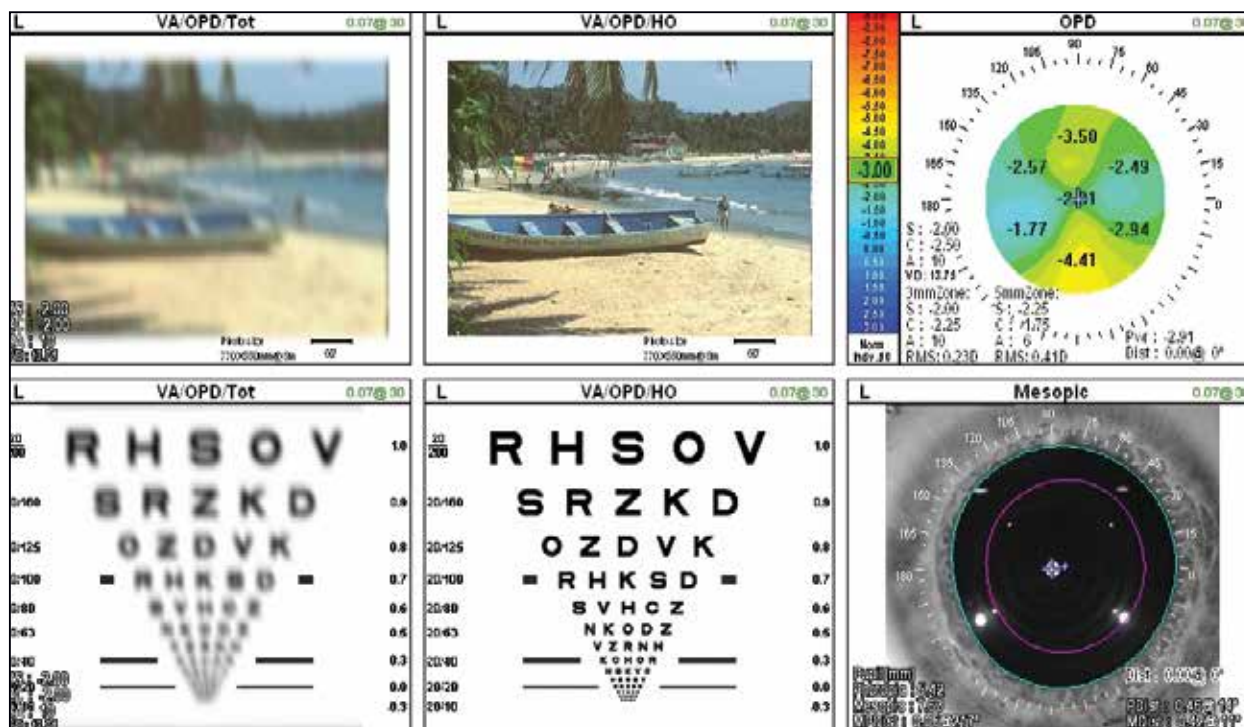
# OPD-SCAN III



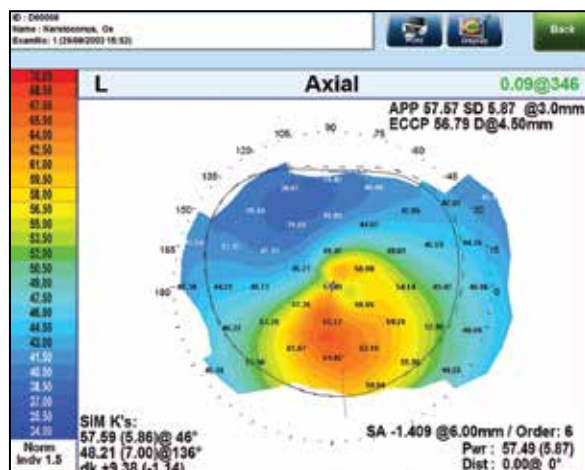
# INTELLIGENT TECHNOLOGIES

Over 20 diagnostic measurements are acquired in 10 seconds. Easy alignment and automatic capture of data ensures accurate readings. Wavefront data is gathered from available zones up to a 9.5mm area, adding the capability to provide for calculation of mesopic refractions. Blue light, 33 ring, placido disc topography is gathered in one second.

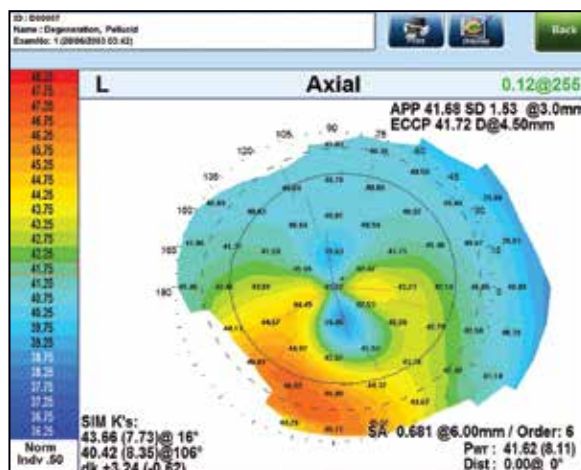
## ACCURATE DIAGNOSTICS



Options available include beach scene and ETDRS chart. Great for patient education.



Ectasia, as in Keratoconus



Typical pellucid marginal degeneration pattern

## OPTIONS TO VIEW THE DATA INCLUDE:

- » Axial
- » Gradient
- » Instantaneous
- » Numeric K display
- » Numeric power display
- » PSF (Point Spread Function)
- » Zernike Graph (including Corneal)
- » Contact lens summary
- » VA-ETDRS simulations
- » Internal OPD
- » Eye Image
- » Comparison maps
- » Difference maps

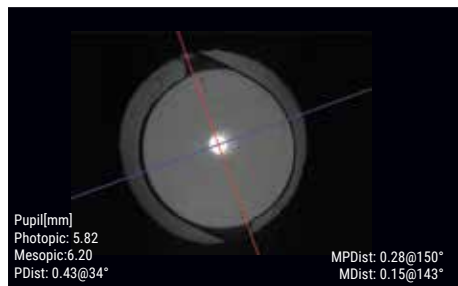
# UNIQUE FEATURES

Cataract and refractive surgeries have now been taken to another dimension. Detailed patient summaries are available in just a matter of seconds. Pre-op toric axis alignment can be mapped to iris or other physical landmark positions. Retro illumination images can be used post-op to verify IOL axis alignment.

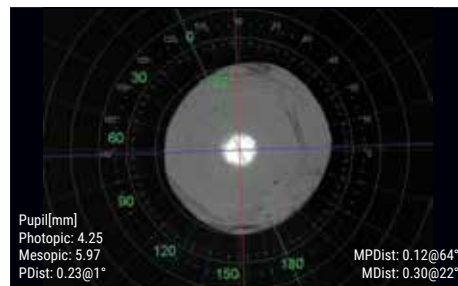
## RETRO ILLUMINATION IMAGES - DOCUMENTS THE OPTICAL CONDITION



Cortical cataract documented in file



One day post-op Toric



Toric IOL post YAG off axis 22°



Post-op ReStor® IOL

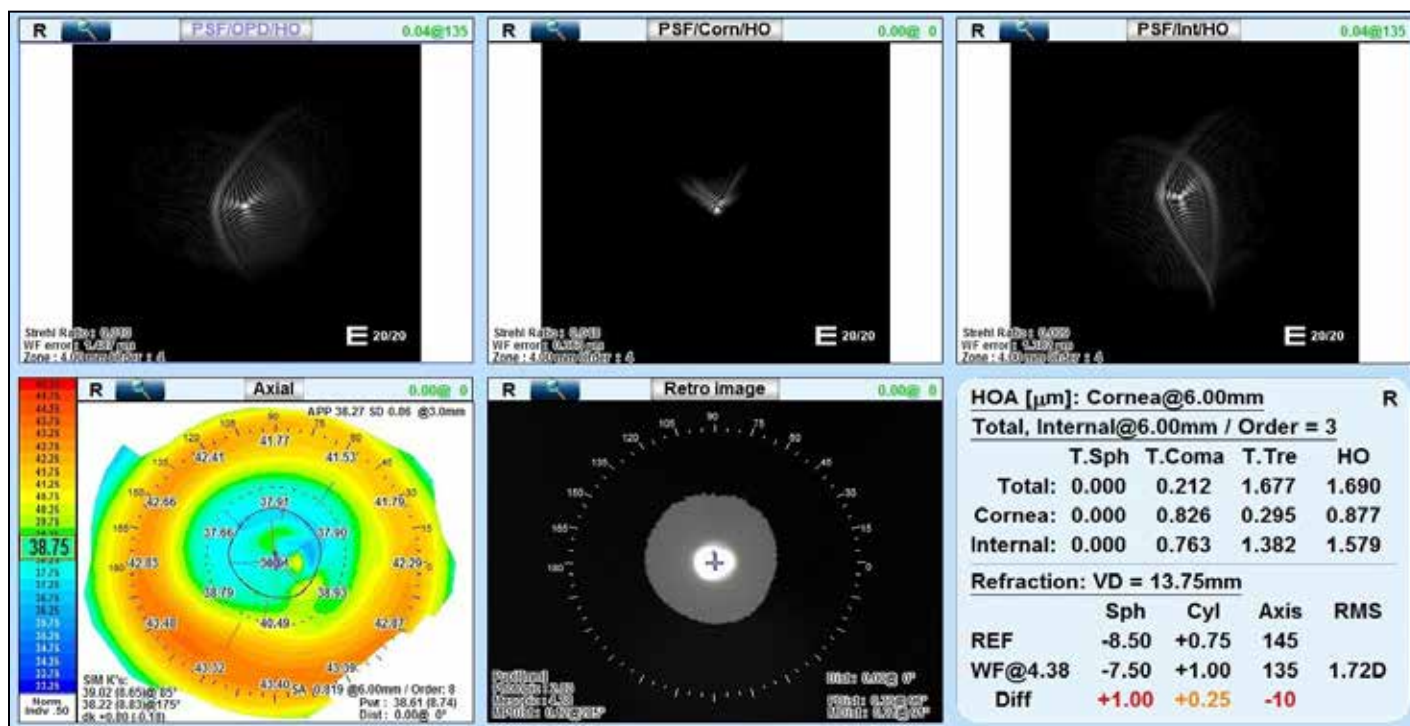


Post-op YAG debris



Vacuoles-easy to show patient

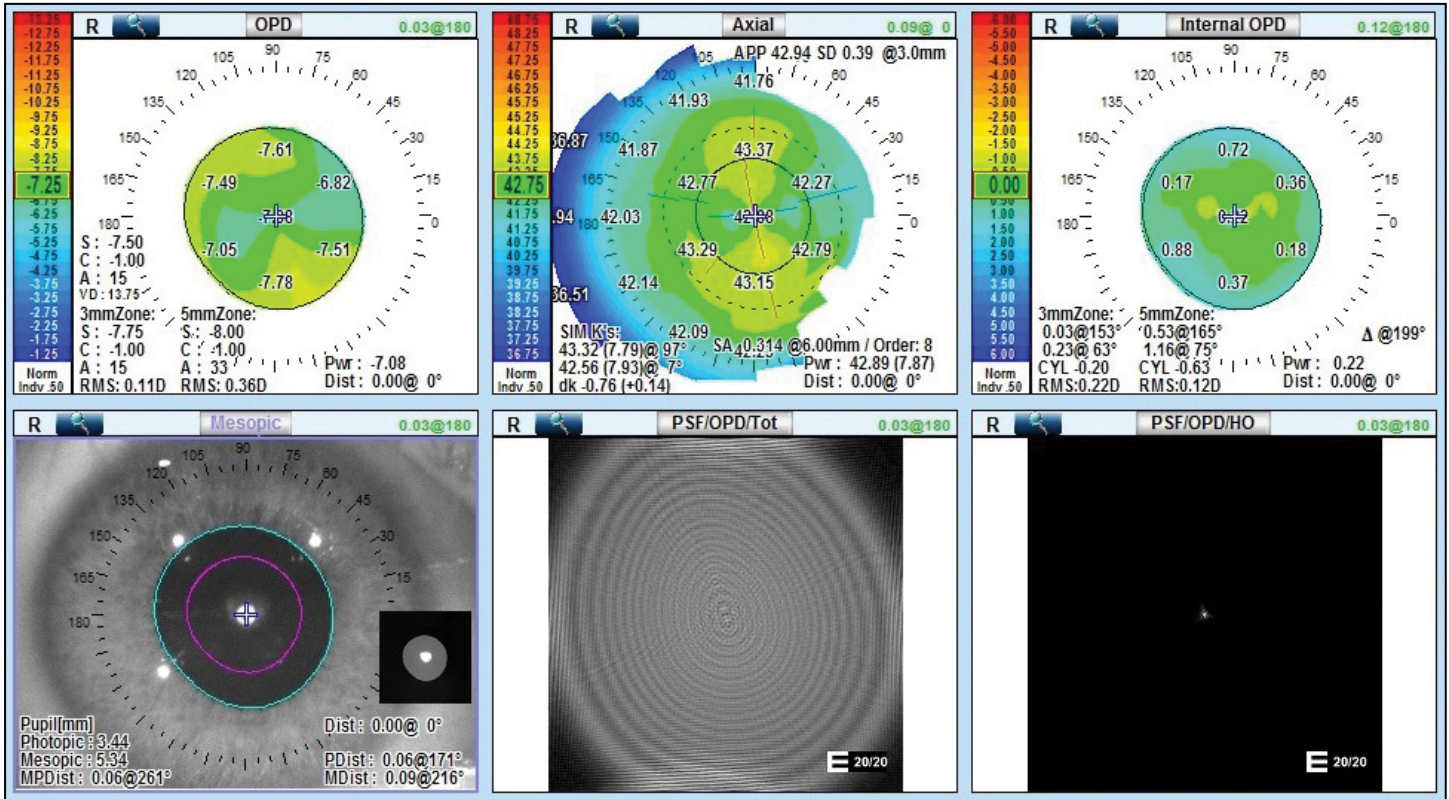
## DYSFUNCTIONAL LENS SYNDROME (DLS)



The above map is a measurement of a prior myopic LASIK patient with Dysfunctional Lens Syndrome (DLS). The Point Spread Function (PSF) maps show that the cornea is contributing to the problem but the majority of the patient's issue is lenticular change. The patient thought she needed another LASIK treatment, when in actuality, the lens changed. A refractive lens exchange is recommended.

# DAY AND NIGHT WAVEFRONT REFRACTIONS

Pupillometry measurements are utilized to allow for the calculation of separate wavefront refractions at 4mm and 6mm pupil sizes (or mesopic if smaller than 6mm). This provides information on the stability of the refractive error as pupil size changes, and the individual starting points for separate day and night refractions, if indicated. Your patients can receive a state-of-the-art printout of their 'before' and 'after correction' chart or understand why they are not able to achieve 20/20. Welcome to the next generation of refractive eye care.



## DATA DISPLAYS INCLUDE:

- » Axial Map
- » OPD Map
- » Internal OPD Map
- » Eye Image With Pupils
- » Wavefront
- » Zernike Graph
- » Point Spread Function
- » Visual Acuity Simulation
- » Retro Illumination

## HOA [um]: @6.00mm/Order = 8

|                  | T.Sph        | T.Coma       | T.Tre        | HO           |
|------------------|--------------|--------------|--------------|--------------|
| <b>Total:</b>    | <b>0.297</b> | <b>0.083</b> | <b>0.313</b> | <b>0.460</b> |
| <b>Cornea:</b>   | <b>0.398</b> | <b>0.146</b> | <b>0.480</b> | <b>0.804</b> |
| <b>Internal:</b> | <b>0.123</b> | <b>0.156</b> | <b>0.496</b> | <b>0.721</b> |

## Refraction: VD = 13.75mm

|                 | Sph          | Cyl          | Axis      | RMS          |
|-----------------|--------------|--------------|-----------|--------------|
| <b>WF@4.00:</b> | <b>-7.75</b> | <b>+1.00</b> | <b>94</b> | <b>0.19D</b> |
| <b>WF@6.00:</b> | <b>-8.50</b> | <b>+1.25</b> | <b>98</b> | <b>0.46D</b> |
| <b>Diff</b>     | <b>-0.75</b> | <b>+0.25</b> | <b>4</b>  |              |

## CAPTURED IN 10 SECONDS:

1. Corneal SA for Aspheric IOL Selection
2. Lenticular – Residual Astigmatism
3. Angle Kappa, Angle Alpha
4. Pre/Post Toric IOL Measurements
5. Pathologies (Keratoconus, Pellucid)
6. Mesopic/Photopic Pupil Size
7. Retro Illumination Image
8. Zernike Graphs: Total, Cornea, Internal
9. Corneal Refractive Power Map
10. IOL Tilt Eye Image or Decentration

## A SEAMLESS EXAM PROCESS

Integrating the OPD-Scan III with a Marco Automated Refraction System provides far greater insight into each patient's complete optical pathway. The Wavefront optimized refraction provides:

- » Significantly shorter exam times
- » Patient verification of old vs. new Rx – instantly
- » Educational tools that graphically display all aberrations
- » More time with you in face-to-face consults
- » Time to spend in optical selection and fittings
- » Fewer remakes in their lens Rx
- » Solutions to day/night vision frustrations
- » A completely enhanced, high-tech patient experience

# MULTI-MODALITY FUNCTIONS

The OPD-Scan III is the latest diagnostic/refractive instrument that serves the practice as an autorefractor, keratometer, pupillometer, corneal topographer and wavefront aberrometer.

## FUNCTIONAL HIGHLIGHTS

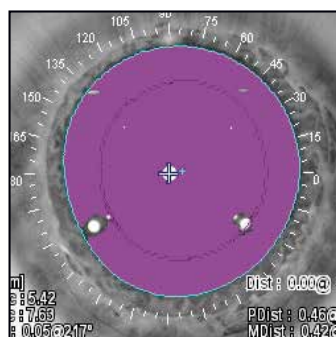
- » 10 second eye measurement
- » Auto alignment, tracking, and capture
- » Electronically adjustable chinrest
- » Touch screen keyboard
- » Verification after each measurement
- » Easily integrates with EPIC and TRS-6100



**Specific maps have been developed to order lenses directly from these specialty contact lens partners:**

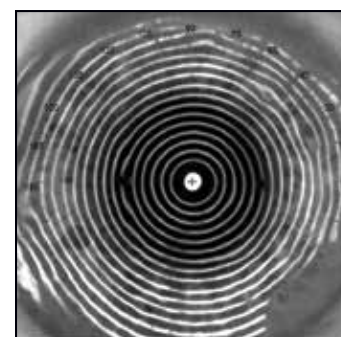


## ABERROMETRY



Max 9.5 mm  
2,520 Data Points  
7 Zone Measurement

## TOPOGRAPHY



Blue Light Placido Based  
Rings 33 Vertical, 39 Horizontal  
11,880 Data Points



## IOL APPLICATIONS

- » Average Pupil Power (APP) for Post Myopic LASIK calculations
- » Angle Kappa, Angle Alpha
- » Corneal Aberrations including Corneal Coma and Spherical Aberration
- » Pupillometry—photopic and mesopic pupils
- » Corneal Topography
- » Placido Rings for detection of any Ocular Surface Disease (OSD)
- » Zernike Graph of Total, Corneal and Internal Aberrations
- » White to White corneal diameter measurements
- » Retro Illumination—Displays post-op Toric lens markings, opacities, etc.
- » ECCP—Effective Central Corneal Power for IOL power calculation
- » Toric IOL Summary to mark axis pre-op
- » Eye image can allow for marking the cornea based on landmarks
- » Cataract Summary displays the pertinent data together
- » Point Spread Function graphs and VA simulation charts

# SPECIFICATIONS

| TECHNICAL DATA     | VALUE                                             |
|--------------------|---------------------------------------------------|
| DISPLAY            | 10.4-inch color LCD touch screen                  |
| AUTO TRACKING      | X-Y-Z directions                                  |
| PRINTER            | Built-in thermal type line printer for data print |
| INTERFACE          | RS-232C, LAN: 1 port each, USB: 4 ports           |
| OPERATING SYSTEM   | Windows 10 Embedded                               |
| DIMENSIONS (HxWxD) | 533x284x525 mm                                    |
| WEIGHT             | 23kg                                              |

| WAVEFRONT ABERROMETER   |                                                    |
|-------------------------|----------------------------------------------------|
| MEASUREMENT PRINCIPLE   | Automated objective refraction (dynamic skiascopy) |
| SPHERICAL POWER RANGE   | -20.00 to +22.00 D                                 |
| CYLINDRICAL POWER RANGE | 0 to $\pm 12.00$ D                                 |
| AXIS RANGE              | 0 to 180°                                          |
| MEASUREMENT AREA        | $\varnothing 2.0$ to 9.5 mm (7 zone measurement)   |
| DATA POINT              | 2,520 points (7 x 360)                             |
| MAP TYPE                | OPD, Internal OPD, PSF, MTF graph, Visual Acuity   |

| TOPOGRAPHER       |                                               |
|-------------------|-----------------------------------------------|
| MEASUREMENT RINGS | 33 vertical, 39 horizontal                    |
| MEASUREMENT AREA  | $\varnothing 0.5$ to 11.0 mm (R = 7.9 mm)     |
| DATA POINT        | 11,880 points and more                        |
| MAP TYPE          | Axial, Instantaneous, "Refractive", Elevation |

| AUTO REFRACTOMETER       |                                                                            |
|--------------------------|----------------------------------------------------------------------------|
| MEASUREMENT RANGE        | Sphere -20.00 to +22.00 D<br>Cylinder 0 to $\pm 12.00$ D<br>Axis 0 to 180° |
| MINIMUM MEASURABLE PUPIL | $\varnothing 2.6$ mm                                                       |

| AUTO KERATOMETER  |                                                                                                                                         |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| MEASUREMENT RANGE | Curvature radius 5.00 to 10.00 mm<br>Refractive power 33.75 to 67.50 D (n = 1.3375)<br>Astigmatism 0 to $\pm 12.00$ D<br>Axis 0 to 180° |
| MEASUREMENT AREA  | $\varnothing 3.3$ mm (R = 7.7 mm)                                                                                                       |

| PUPILLOMETER/PUPILLOGRAPHER |                   |
|-----------------------------|-------------------|
| MEASUREMENT DIAMETER        | 1.0 to 10.0 mm    |
| IMAGE TYPE                  | Photopic, Mesopic |



## MARCO.COM

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marcolombart.com / 800.874.5274 / 11825 Central Parkway, Jacksonville, Florida 32224



BR-OPD\_III-V2