iTrace™

COMBINATION RAY TRACING
ABERROMETER/TOPOGRAPHER

Distributed in Canada by

CLARION®
MEDICAL TECHNOLOGIES



TRACEY™
TECHNOLOGIES
defining vision analysis

WHAT IS THE ITRACE?

This unique, **all-in-one device displays the full visual function of a patient's eye with a simple scan.** While the iTrace can certainly be used as a standalone wavefront aberrometer, autorefractor, keratometer, pupillometer, or corneal topographer, leveraging the combined picture of these individual measurements in your office can improve surgical outcomes and patient satisfaction.

The iTrace's patented **ray-tracing** technology makes it the only piece of ophthalmic equipment on the market that can truly s**eparate the visual function of a patient's cornea from their internal optics**. Physicians using the iTrace have a better understanding of how the structures affect a patient's vision, and they can use this additional information to **make more precise decisions about treatment.** The iTrace performs a complete analysis and generates a literal picture of a patient's visual function in milliseconds.



WHY RAY TRACING IS ESSENTIAL FOR WAVEFRONT ANALYSIS

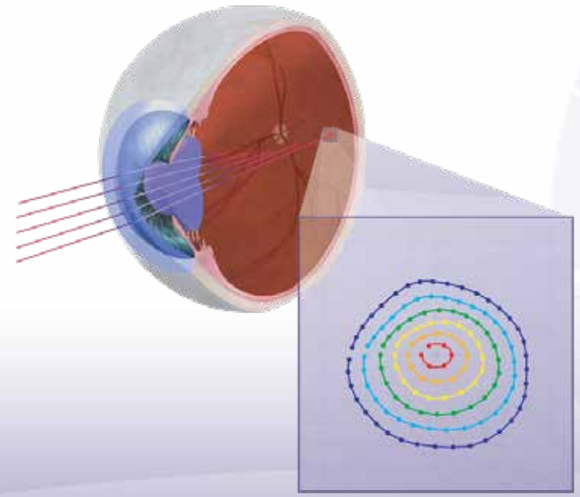
The iTrace is the **only device that uses ray tracing for wavefront analysis**. It sequentially projects 256 parallel light rays through the entrance of the pupil and detects where each beam of light lands on the retina and how much light energy is transferred. Reviewing this retinal spot pattern point-by-point provides insight into a patient's overall visual function.

Other devices that rely on a Hartmann-Shack sensor or dynamic skiascopy for wavefront imaging, analyze light as it is reflected back from the retina. Although this works for simple optical systems, these o**ther devices are prone to data confusion when measuring highly aberrated eyes**, pseudophakia, cataracts, through contact lenses, or over spectacles.

However, the iTrace and its proprietary ray tracing technology can directly replicate a patient's vision under any circumstance.

TOPOGRAPHY + ABERROMETRY

By integrating wavefront aberrometry with Placido corneal topography, **the iTrace can objectively map the internal optics** of the eye by subtracting corneal from total aberrations. In **under a minute**, the iTrace generates a complete profile of a patient's topography, wavefront, autorefraction, keratometry, day to night vision, pupillometry, white to white and more.



BETTER INFORMATION, BETTER DECISIONS WITH THE DYSFUNCTIONAL LENS INDEX

Using algorithms and data derived from the quick, 60-second iTrace scan, the iTrace's Dysfunctional Lens Index (DLI) helps doctors understand their patients' vision in a whole new way and makes t**he iTrace an essential tool for any practice.**

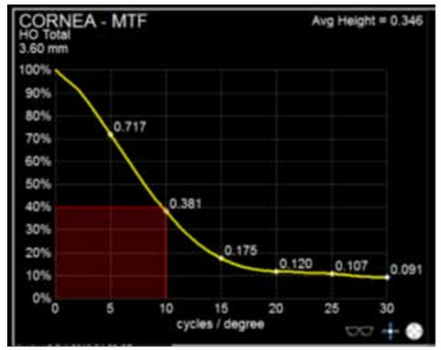
The **DLI is a numerical representation of the visual quality of a patient's crystalline lens.** This alone provides an unmatched level of insight into a person's vision, but when taken in conjunction with the DLI display, it effectively closes the information gap between doctors and patients.

THE DLI DISPLAY

- Creates a visual display of the difference between the performance of the lens and the cornea, enabling you to **make better decisions about surgery or treatment.**
- By showing the subjective vision simulation, it **helps the patient understand** what's going on in their eye and understand **the options they have for vision correction.**
- Uniquely assists the doctor with **showing patients the value in upgrading to premium IOLs, generating more revenue, and increasing patient satisfaction.**



PREMIUM LENS PLANNING: CAREFUL CORNEAL ANALYSIS



Modulation Transfer Function (MTF) is used to describe how well an image is transferred through an optical system and how sensitive that system is to contrast. While it might seem complicated, **the iTrace makes it simple** by presenting the MTF graph as a part of the scan analysis.

A multifocal IOL will reduce contrast sensitivity in an optical system, so your goal should be to use them only when the cornea provides good con trast sensitivity. Using the corneal MTF plot available with the iTrace, you can **quickly determine if the cornea's quality is good enough to support a premium lens.** The MTF graph with the easy-to-see "danger zone" box can visually indicate if the corneal contrast sensitivity is in question.

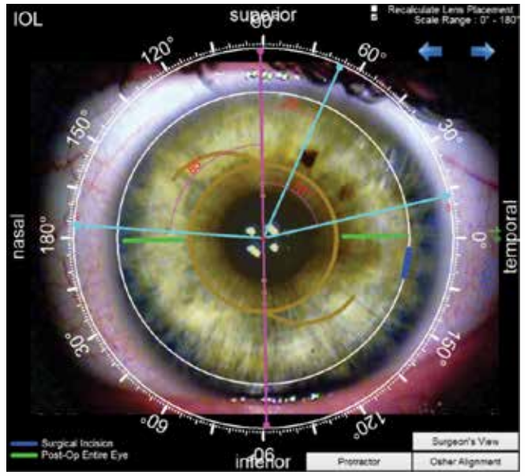
PREMIUM LENS PLANNING: UNDERSTANDING OPTICAL ALIGNMENT

Optical alignment is a critical variable when determining if a multifocal lens or toric IOL will properly align with the patient's visual axis. The limbal center is the approximate pre-op center of the capsular bag, and the implant will tend to center here. **A high Angle Alpha measurement from the iTrace could help you rule out a multi-focal or toric** that might misalign with the visual axis, thus **helping to prevent an unhappy post-op patient.**



The iTrace color codes the Angles when the measurements reach certain thresholds to help prompt you during your treatment planning.

PREMIUM LENS PLANNING: TORIC PRECISION



With the iTrace's integrated toric calculator and marking tools, you can **improve the precision of your toric power selection and placement.**

The integrated toric calculator presents you with multiple toric power options and predicted results so that you can select the best toric power for the outcome you intend. Once you select the lens, you can adjust the planned incision location "on the fly" to see how it might fine-tune the residual astigmatism. Then, precisely determine the location of the placement axis in relation to actual landmarks.

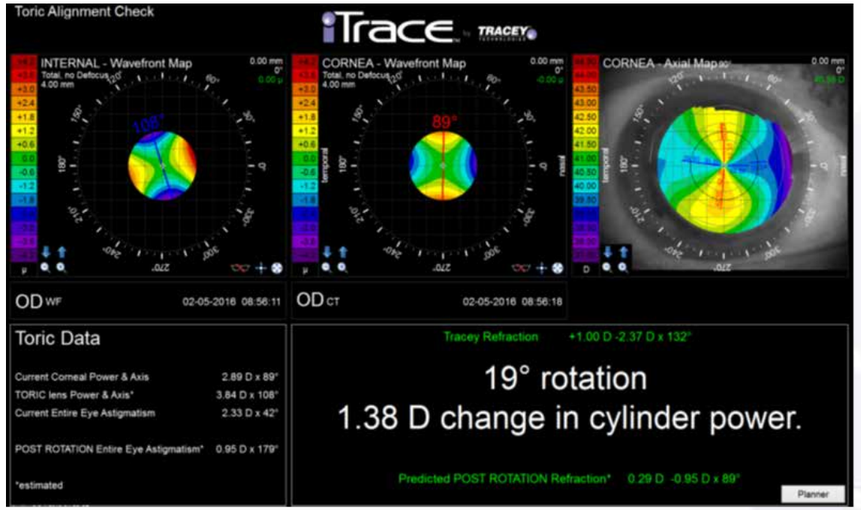


PRECISELY CONFIRM SURGICAL RESULTS WITH TORIC CHECK

Since ray tracing is the only way to capture an accurate aberration profile through an IOL, the iTrace is **the most effective tool for analyzing and addressing any post-surgical vision surprise.** The Toric Check feature is a natural extension of these post-surgical capabilities. Using the iTrace's visual analysis, you can look at the **power and placement of a toric lens** and objectively evaluate whether vision improvement can be achieved, all with just **a 30-second scan!**

WITH THE TORIC CHECK DISPLAY:

- Quickly **view the internal astigmatism power and axis** and how far off alignment from the corneal steep axis the lens ended up.
- See the exact degree of rotation needed to give the patient the best possible vision.
- **Save time** with post-operative exams with no dilation required.
- Ensure that patients **get the best achievable results.**



System Specifications

Measurement Range	+/-10 D sphere +/-10 D cylinder
Wavefront Pupil Coverage	Full coverage of entrance pupil from 0.01 mm to 8.00 mm
Pupillometry	2.50 mm to 8.00 mm diameter
Wavefront Data Points	256 individual zones, each measured with 1024 data points, all measured in under <250 ms
Exam Capture Method	Automatic or manual, with adjustable scan size from 1.00 mm to 8.00 mm
Wavefront Centration	Visual axis (based on Purkinje Reflex) or pupil center
Essential Corneal T opography Data Points @ 6mm	6,480 (r=7.95)
Corneal Topography Coverage	Up to 9.00 mm (depending on curvature)
Total Exam Time	Approximately 15 seconds per eye
Accessories/Options	Laptop or Desktop Computer, Motorized Table, Accommodation Kit, Travel Case

Manufactured By:

TRACEY™ TECHNOLOGIES
defining vision analysis

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