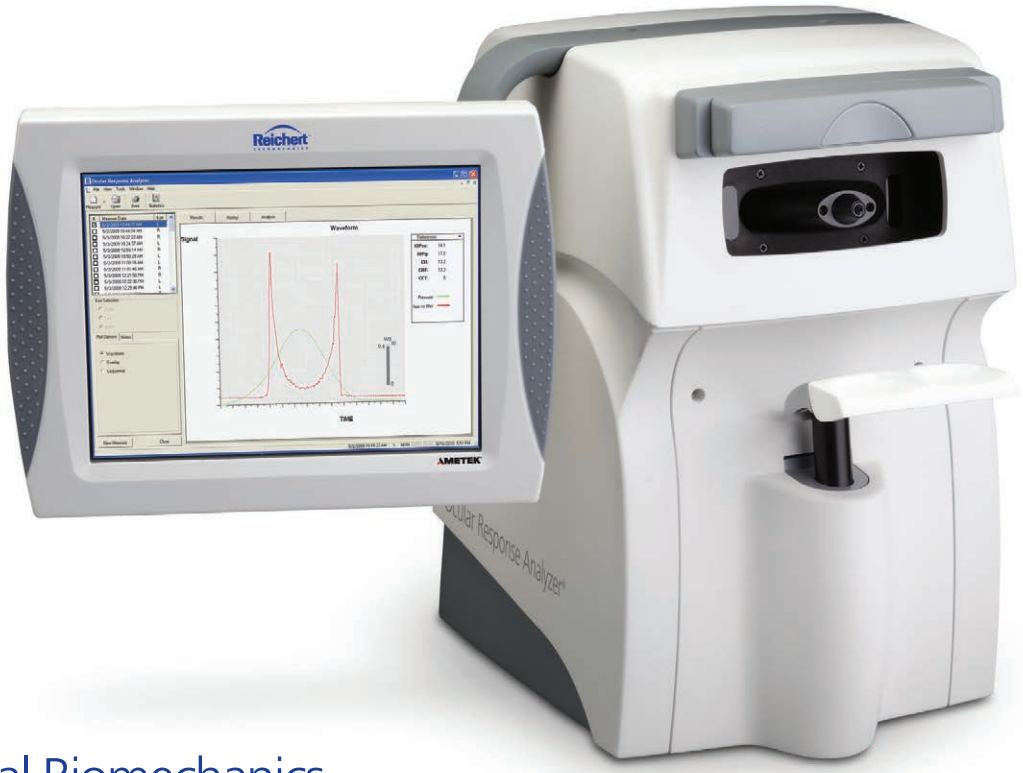
Ocular Response Analyzer®

Personalized glaucoma risk assessment.

The only tonometer in the world that measures Corneal Hysteresis.

AMETEK®
ULTRA PRECISION TECHNOLOGIES

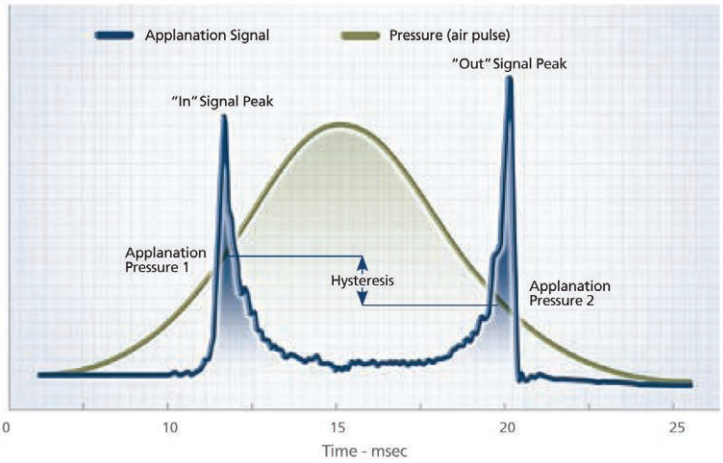
Reichert®
TECHNOLOGIES
Advancing Eye Care. Preserving Sight.™



Reichert® *is* Corneal Biomechanics.

Reichert Technologies® pioneered the measurement of corneal biomechanical properties with the development of "Corneal Hysteresis" and Corneal Compensated IOP (IOPcc). Since the introduction of the **Ocular Response Analyzer®** in 2005, Reichert has continued to define the ocular biomechanics revolution. We are now pleased to announce the **next generation Ocular Response Analyzer.**

hys·ter·e·sis (his´te re¯´sis), n., [NL, fr. Gk hystére¯sis shortcoming, fr. hysterein to be late, fall short, fr. hysteros later] - a retardation of effect when forces acting upon a body are changed (as if from viscosity or internal friction); a property of physical systems that do not instantly follow the forces applied to them, but react slowly, or do not return completely to their original state



What is Corneal Hysteresis?

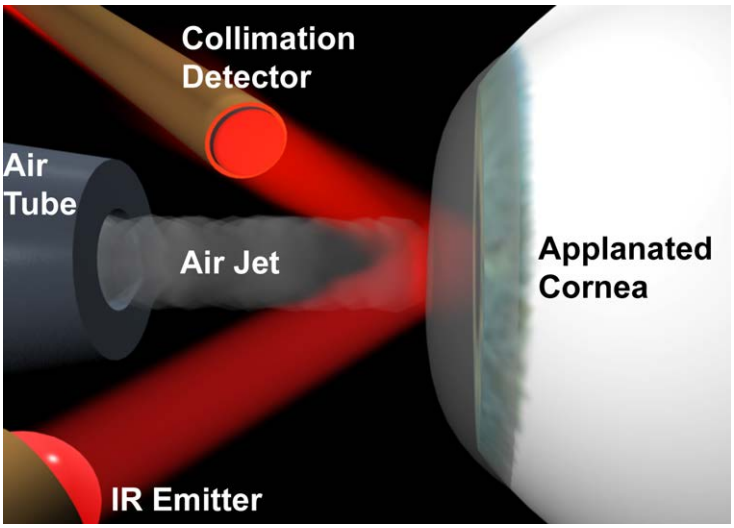
Corneal Hysteresis (CH) is the difference in the inward and outward pressure values obtained during the dynamic bi-directional applanation process employed by the Ocular Response Analyzer, as a result of viscous damping in the cornea. It is a characterization of the cornea's energy absorption capacity, which is a function of the biomechanical properties of the cornea.

Ocular Response Analyzer is the only instrument in the world capable of measuring corneal biomechanical properties and Corneal Compensated IOP.

How it Works.

The Ocular Response Analyzer utilizes a dynamic bi-directional applanation process to measure biomechanical properties of the cornea and the intraocular pressure of the eye. A precisely metered collimated air-pulse causes the cornea to move inwards, past applanation, and into a slight concavity. Milliseconds after applanation, as the air pulse force decreases, the cornea begins to return to its normal configuration. In the process, it once again passes through an applanated state.

An electro-optical system monitors the curvature of the cornea throughout the deformation process taking 400 data samples during the 20-millisecond measurement. Two independent pressure values are derived from the inward and outward applanation events. Viscous damping in the cornea results in an offset between the inward and outward pressure values. The difference between these two pressure values is Corneal Hysteresis (CH).



Understand the Cornea, Understand the Pressure: Clinical Applications of the Ocular Response Analyzer

Glaucoma

The Ocular Hypertension Treatment Study (OHTS), and similar studies, have brought to light the relevance of corneal thickness in glaucoma. Numerous studies utilizing the Ocular Response Analyzer have confirmed the importance of the cornea in glaucoma decision making, demonstrating that the CH measurement is of even greater significance than CCT.

Studies have proven that low CH is *independently* associated with glaucoma progression. As such, the CH measurement gives clinicians a new tool to help identify risk of glaucoma progression and to determine which patients may need to be treated more aggressively. The CH measurement has also been shown to be predictive of IOP response to medical therapy, making the CH measurement valuable in setting treatment goals and expectations.

Intraocular Pressure (IOP)

It is widely accepted that the measurement errors in Goldmann tonometry are due to the influence of corneal properties. However it has been determined that mathematical correction of IOP, by means of CCT adjustment algorithms, is invalid and this approach is not useful in individual patients. Quite simply, the thickness of the cornea is not a surrogate for its mechanical bending characteristics.

Ocular Response Analyzer's Corneal-Compensated Intraocular Pressure (IOPcc) takes biomechanical properties into consideration. IOPcc has been shown to be less dependent on corneal properties than other methods of tonometry and more associated with glaucoma status. The instrument's unique ability to simultaneously provide a Goldmann-correlated IOP measurement (IOPG) and IOPcc provides clinicians with a better understanding of patient tonometry values.

Cornea

The Ocular Response Analyzer enables clinicians to assess the cornea based on biomechanical tissue properties, rather than geometry only. It has been demonstrated that Corneal Hysteresis (CH) and Corneal Resistance Factor (CRF) measurements are significantly lower in keratoconus patients. Furthermore, CH and CRF are significantly reduced following refractive surgery as a result of complex biomechanical changes. CH and CRF provide a more complete characterization of corneal properties than CCT and topography alone, making these metrics useful in the pre-operative assessment of refractive surgery candidates. ❑

Ocular Response Analyzer® Corneal Biomechanics & Accurate IOP

Ocular Response Analyzer: At a Glance

- Objective measurements – no operator influence
- Comprehensive patient management database
- Improved measurement repeatability
- Softer, quieter air-puff
- 2x faster automated alignment and measurement
- Attractive, compact, all-in-one hardware platform
- Flexible product configuration for optimal space utilization in any office setting
- Innovative left / right mounting, 180-degree rotating, tilting screen
- Easy to use, integrated 12 inch touch display
- Wired keyboard and mouse included
- Optional motorized chinrest

Specifications

Catalog Number:	**16070** Ocular Response Analyzer **16071** Ocular Response Analyzer w/ chinrest
Tonometer Measurement Range:	0 - 60 mmHg
Tonometer Display Resolution:	± 0.10 mmHg
Note: Accuracy complies with ISO 8612 Tonometer Standard	
Device Computer:	Internal CPU 160GB hard drive Integrated 12.1 inch touch display Windows® 7 32-bit, embedded
Device Dimensions:	17.0 inches (43.2 cm) height 9.5 inches (24.1 cm) width 13.5 inches (34.3 cm) depth
Weight, Unpacked:	30 lbs. (13.6 Kg)
Voltage:	100 - 240 V AC 50/60 Hz
Current:	1.5 A
Watts:	40 - 75 VA
Fuses:	Slo-Blo(T), 2.5 A, 250 V, glass type, 5x20mm

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