LUMETRICS®

Precision Measurement Solutions

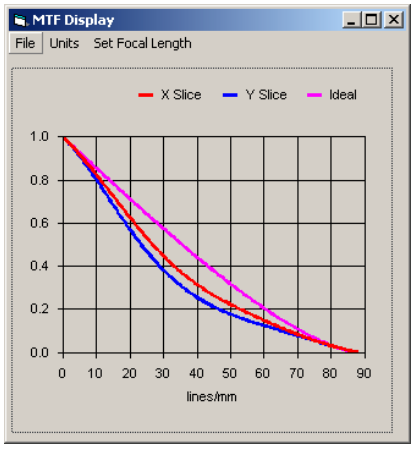
CrystalWave™

LUMETRICS® offers CrystalWave™ dry testing of intraocular lenses. Focal length, wavefront, and MTF measurements are combined in a single instrument using a Shack-Hartmann wavefront sensor.

For normal software operations, a simple user interface guides the alignment of the IOL and the measurements. Researchers can access the CLAS-2D™ software for advanced data analysis, including Zernike polynomials, coma, and spherical aberration.

The CrystalWave also supports production line installations and is insensitive to vibrations. The measurement zone accepts a single IOL or multiple IOLs in a carousel. The optional CrystalServer™ software allows user written programs to control CrystalWave in coordination with robotic equipment.

The combined measurement of power, wavefront, and MTF measurements in one instrument minimizes part handling. Older technologies required separate instruments for power and MTF and required subjective judgments by technicians. Now wavefront technology provides objective measurements that are repeatable for process control.



A unique algorithm removes the usual dependence of measured power on the axial location of the IOL. This algorithm eliminates the need for mechanical restraints on the IOL and eliminates the resulting distortion of soft materials. CrystalWave also includes an inspection camera with back illumination of the IOL for monitoring scratches, tears, irregular edges, debris, and haptics orientation.

Eagle's Landing Business Park | 1565 Jefferson Rd, #420 | Rochester, NY 14623 | Phone: 585.214.2455 | www.lumetrics.com

LUMETRICS®

Precision Measurement Solutions

Specifications:

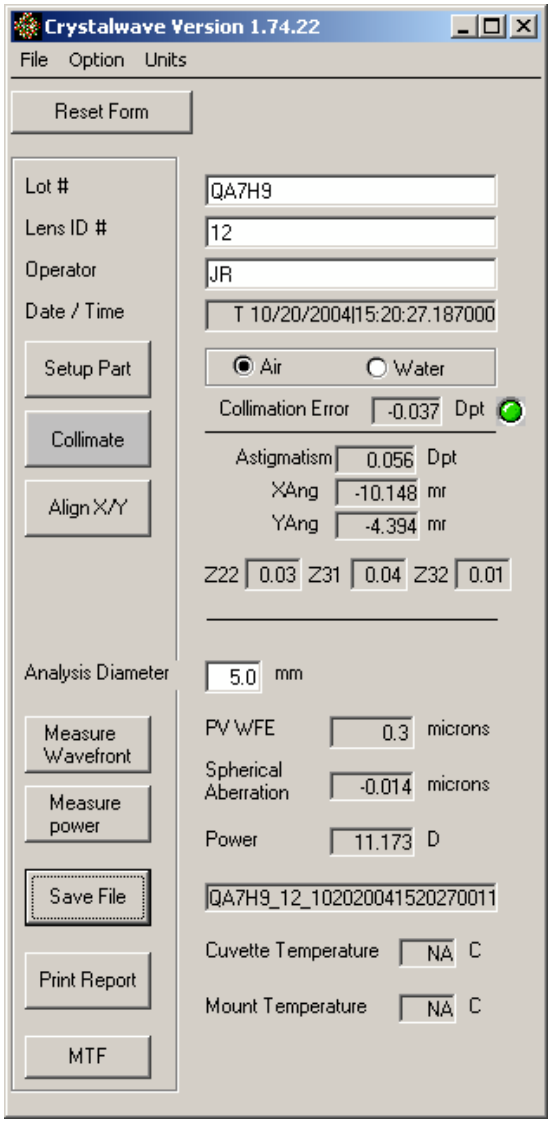
CrystalWave Sensor:
101x101 lenslet array grid
Field of View: 7.4 x 7.4 mm
Spatial Resolution: 0.072 mm
Spherical Range: 7 to 120 Diopters (dry only version)
Cylinder Range: 6 diopters for 6 mm analysis diameter
XY translation stages for adjustment of IOL (no cuvette)

Standard Equipment:
Inspection Camera: Displayed on controller monitor
IOL illumination LED ring
Rotating Dry Mount for IOL having monofilament haptics
Controller with monitor
Configured for vertical operation

Mechanical:
Height, width, length: 35 x 11 x 13 inches
CrystalWave™ may be used vertically only

Accuracy and Repeatability:
Power Accuracy: 0.15 Diopters Sphere and Cylinder (Range 6-40D)
Power Repeatability: 0.05 Diopters
Sphere and Cylinder Spherical Aberration Accuracy: 0.004 microns (Z42) Spherical Aberration Repeatability: 0.002 microns (Z42)

Data Outputs:
Sphere/Cylinder/Axis
Focal Length
Spherical Aberration
MTF of IOL itself (calculated from wavefront)
MTF of IOL installed in ISO model eye (optional) (calculated from wavefront)
Zernike Polynomials
Zonal Wavefront Map
Point Spread Function
Power Map



Sample Screen Shot

Options:
CrystalServer Active-X automation DLL callable from Labview, VisualBasic, etc

Specifications are subject to change without notice.
CLAS-2D, ClearWave, and CrystalWave are trademarks of AMO WaveFront Sciences, LLC