Precision, Quality, Innovation

Measurement Systems for the Tire Industry

GEO-360

- GEO-360
- Off-Line Profilometer (OFLP)
- Off-Line Profilometer SL (PSL)
- Off-Line Profilometer 3D (3DP)
- On-Line Profilometer (OLP)
- Ply, Belt, and Extrusion Feature Tracker (FT)
- Profile360 for Apex and Bead Measurement (P360)
- Green Tire Uniformity Diagnostic System (GTU)
- Green Tire Uniformity Integrated System (GTUint)
- Bead-to-Bead Profile Measurement System (B2B)
- Bead-to-Bead Tire Scanner (Tire360)
- Circumferential Tread Wear System (CTWIST)

LASER MEASUREMENT SOLUTIONS

GEO-360™

BULGE RETROFIT SYSTEM FOR UNIFORMITY AND BALANCE MACHINES

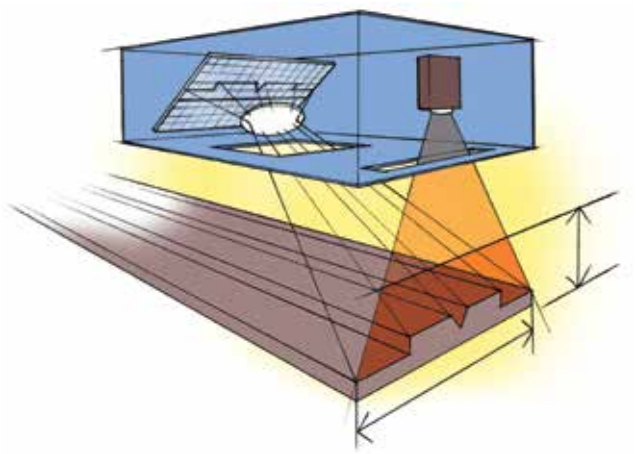
- GEO-360 is a tire geometry measurement system for retrofit to tire uniformity machines and balancers.
- It has a rack and pinion drive system that can easily be customized for travel and height distances.
- Sensors are mounted on pivoting break-away hinges secured with ball detents to minimize collision risk.
- An air blow-off system reduces contamination on the sensor glass.

Measurement Parameters

- RRO and LRO
  - Peak-to-Peak
  - Composite
  - Harmonics 1 to 32 with angles
- Bulge and Depression – magnitude and angle top and bottom
- Wobble
- Section Width
- Tread Local RRO
- Open Cap Splice
- Circumference for each rib

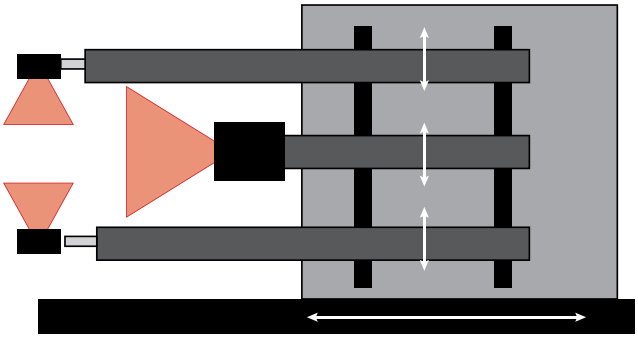
How sensors work

A laser line is projected across the profile and the image is snapped by the detector, then the image data is converted to x+y coordinates.



How systems work

Multiple sensors are mounted on a positioning system to acquire scans of tread and sidewalls.



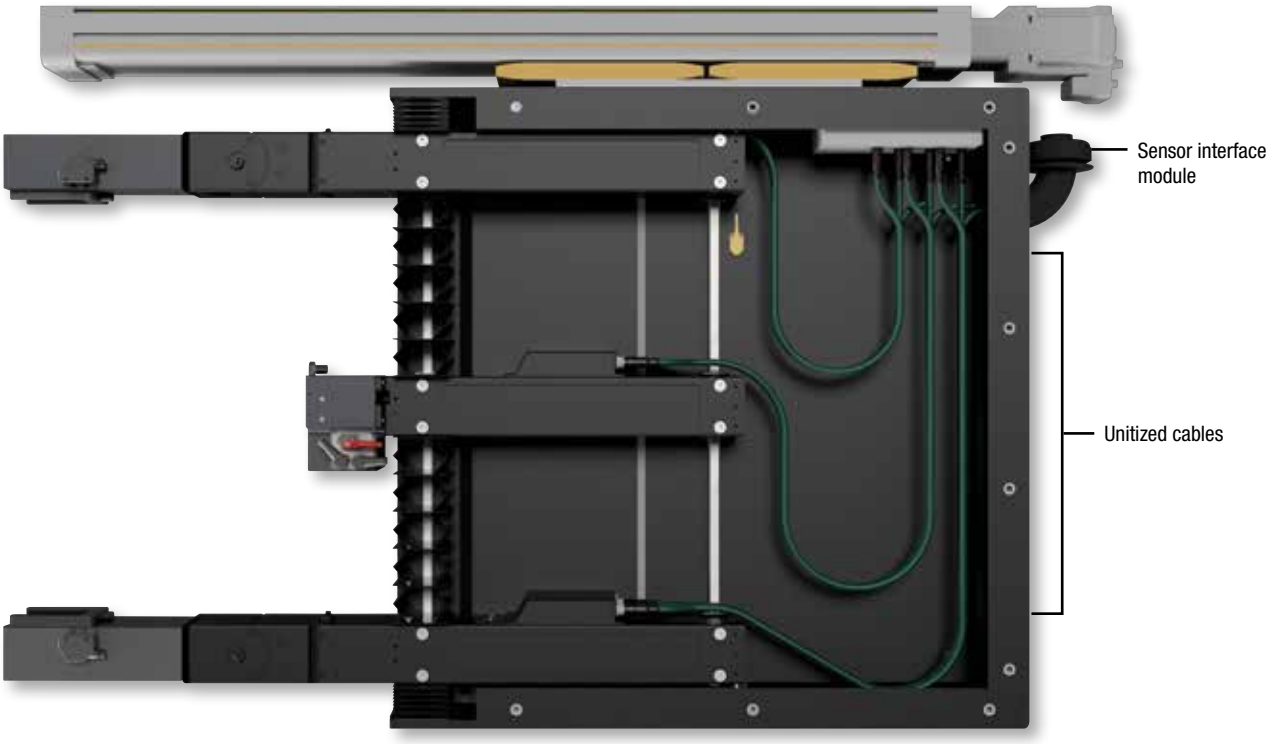
Starrett SL3 Sensors

GEO-360 is equipped with Starrett SL3 sensors. Bytewise introduced this sensor technology in 2001, and has shipped over 3,600 units. It is now in its 3rd generation and leads the industry in accuracy, repeatability and linearity.

GEO-360 is Optimized for Retrofitting

- The Rack and Pinion Drive permits easy customization for vertical and horizontal axis fitment.
- The Sensor Interface Module splits up the spindle encoder feed to each sensor, carries power to the motor and sensor, motor control, and data back to the controller all via a single unitized cable. Wiring is greatly simplified.
- The GEO control system handles all motion control, data collection, data processing, visualization and grading.

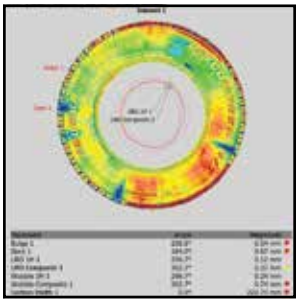
The Sensor Interface Module simplifies wiring to the sensors and drive motors



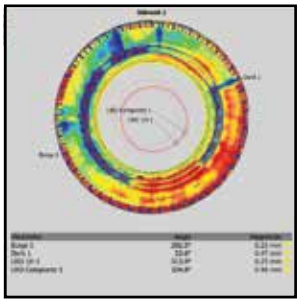
GEO-360 Performance

Accuracy and Repeatability		
Parameter	**Accuracy**	**Repeatability**
Radial runout	0.05	0.025
Lateral runout	0.05	0.025
Bulge and depression	0.05	0.025
Transport Repeatability	0.05	0.025

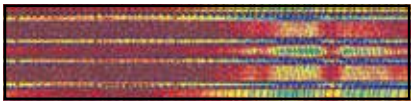
System Specifications	
Cycle time, data collection	1 rev at maximum 120RPM
Profiles per revolution	1200 encoded to 1024
Point per profile	1500 averaged to 500
Temperature limits	0 to 40 degrees C non-condensing
Power	110 AC-4A, 220V AC-2A, 50/60 Hz
Laser safety class	3a (USA) 3R (EU)



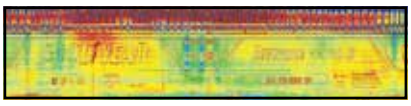
Sidewall results tab



Tread Results Tab



Tread Scan



Sidewall Scan

Measurement Systems for the Tire Industry

Starrett® BYTEWISE

STARRETT-BYTEWISE MEASUREMENT SYSTEMS
Phone: (706) 323-5142
1245 Broadway, Columbus, GA 31901-USA
sales.bytewise@starrett.com | service.bytewise@Starrett.com

CORPORATE HEADQUARTERS
Phone: (978) 249-3551 | Fax: (978) 249-8495
121 Crescent Street-Athol, MA 01331-1915-USA

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