

glasstech[®]
WHERE INNOVATION CONTINUES

AutoGlassInspector/AGI™

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The future of automotive glass inspection. An investment with rapid payback.

| System Overview |

The Glasstech AutoGlassInspector/AGI system is a cost-effective solution for quantifying transmitted optical distortion in automotive glass. Glasstech's AGI provides the optical quality measurements required by many automotive manufacturers around the world. The system consists of a Windows®-based, computer-controlled, digital image acquisition system utilizing advanced computer programming to optically analyze automotive transmitted optics.

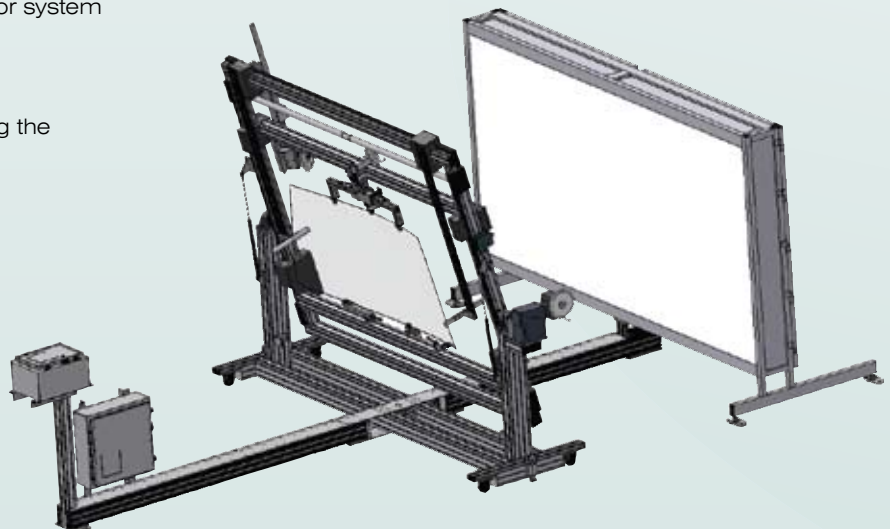
| Process Description |

The AGI system measures transmitted distortion in a single digital image. All components remain stationary in order to eliminate any outside interference of the image.

Once the glass is placed in the stand, which is set at installation angle, the image is recorded and the computer begins to analyze the data. The glass can be removed from the stand once the image is recorded and before the analysis is completed.

| System Components |

- High performance Windows computer system with wide-screen LCD monitor
- High resolution machine vision camera, remotely powered and computer-controlled
- Precision adjustable glass stand with auto-centering glass support mechanisms (Lab System)
- Installation angle electronic sensor system
- Backlit pattern array screen
- System backbone for maintaining the alignment of all components
- Interconnecting cables
- System operating desk
- Operations manual



System Capability

Maximum glass size:	1220mm x 1828mm (48" x 72")
Maximum distortion:	+/- 450 millidiopters (mdpt)
Analysis time:	< 10 seconds
Installation angle:	0 – 80 degrees from vertical
Yaw angle:	0 – 45 degrees
2-D distortion views:	Horizontal, vertical
1-D distortion views:	Vertical and horizontal line scans for each 2-D view
Automatic masking:	Paint band, defroster wires, antenna wires
Manual masking:	Easy masking of irrelevant anomalies
Manual zone definition:	Defined by simple-to-use drawing tools
Zone definition:	According to ECE R43 and VWTL957
Region definition:	Rectangle or circle of any size
Zone and region readings:	Minimum, maximum, average range and standard deviation of distortion within zone or region with 2-D view display of operator's choice of parameter
Data analysis capability:	Distortion data to MS Excel spreadsheet

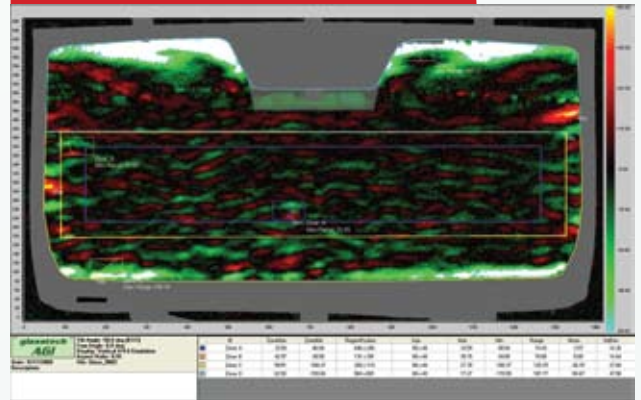
System Requirements

System footprint (Lab System):	3.2m x 4.0m (10.5' x 13')
Electrical power:	110/220 VAC
Printer:	PostScript/network color printer

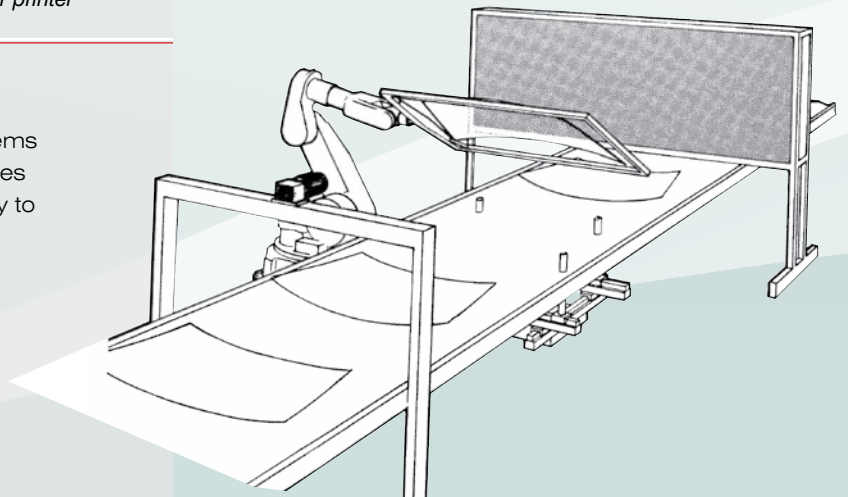
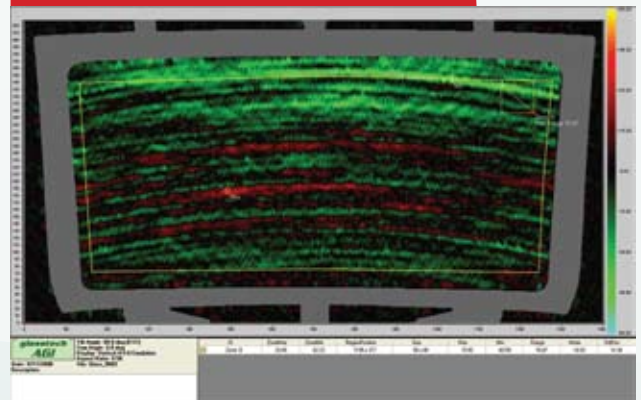
Production Line Integration

Glasstech offers a family of AutoGlassInspector systems for optical inspection of automotive glass. This includes production line configurations that range from turnkey to a customized system to meet specific requirements.

Vertical Distortion in Windshield



Vertical Distortion in Backlite



Competitive Advantages

The Glasstech AutoGlassInspector/AGI™ system is the product of inventive minds, creative thinking and innovative problem solving. As a leader in the advancement of glass bending and tempering technology, the AGI system:

- Does not require the glass to be translated during data acquisition
- Has a more intuitive interface than competitive systems
- Offers simplified operation over alternative suppliers
- Is designed for evaluation against optical standards
- Is developed to be a cost-effective system that provides the end user with the ability to analyze product objectively

Glasstech supports its systems with:

- A one-year warranty
- Retrofits
- Tooling
- Replacement parts
- Ceramic rollers
- Service audits
- Refresher operator training
- Custom service/support packages
- 24-hour phone, fax and E-mail service inquiries

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