

AUTOGLASS INSPECTOR AGI-R™

Reflective Measuring System

AGI-R System Overview

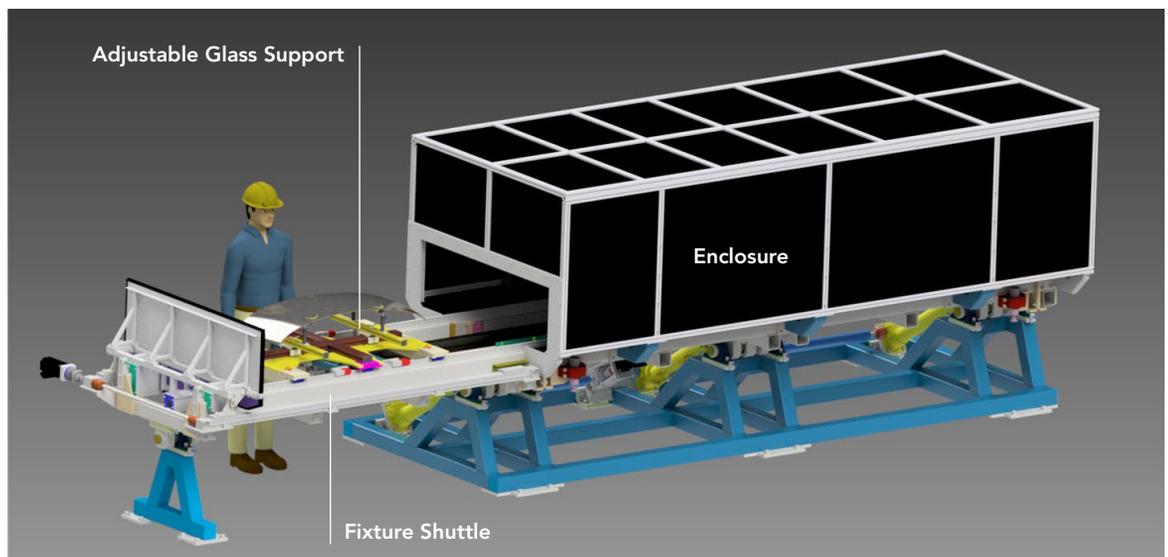
AGI-R is a reflective measuring system that quantitatively measures the reflective optical characteristics of automotive glass. The AGI-R system determines the curvature of the glass' surface and reports actual curvature or change in curvature when compared to the design surface. The output is compliant with Volkswagen's PV8203 standard. The system is designed to operate either downstream of bending equipment in the plant or in a lab environment.

Process Description

The AGI-R system can be loaded/unloaded manually or with a robot. The glass is placed on either the glass support fixture used for non-contact gauging or on an adjustable universal support fixture. The glass and fixture are conveyed into the enclosure, where the measurements are completed. After measuring the glass, the glass and fixture are conveyed out of the enclosure and the glass is removed from the fixture. The fixture is now ready for the next glass. The reflective results are reported graphically in compliance with Volkswagen's PV8203 standard, including a histogram of the results. In addition, AGI-R can simulate and display any grid board reflected off of the glass.

AGI-R System Components

- High performance Windows computer system with one 24" display and two large-screen video displays
- PLC with servo control including integrated control software with one 24" monitor
- Fixture shuttle
- Environmentally controlled enclosure where measurements are performed
- Operating manuals

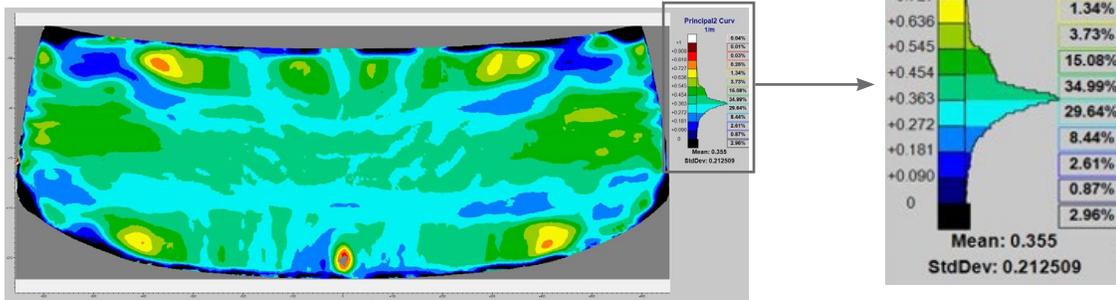


AGI-R Results and Output

The AGI-R system is able to report the following curvatures and curvatures compared to design:

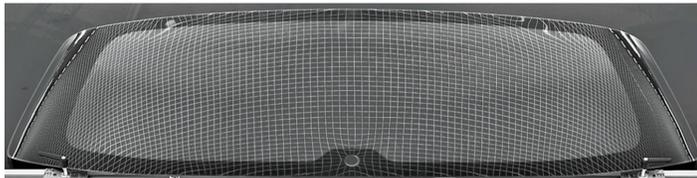
- Principle curvatures
- Gaussian curvature
- Mean curvature
- Horizontal and vertical curvatures

AGI-R Output Screen

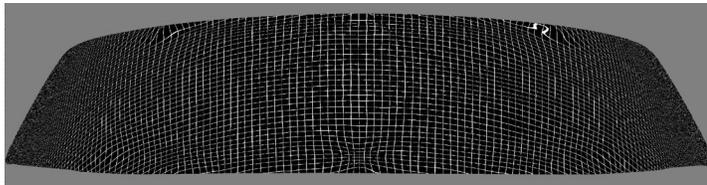


The AGI-R system has the capability to generate a simulated grid board or zebra board image. All parameters are user-defined including the viewing angle of the part. This allows users to see the effect of installation angle changes on the reflective optics by entering a new angle.

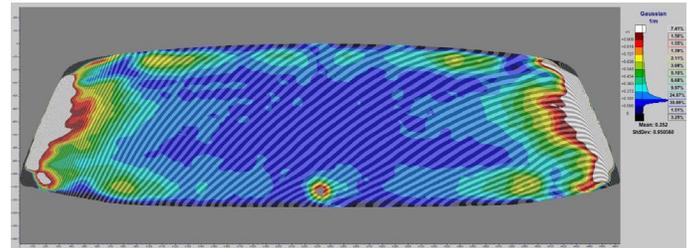
Photograph of Grid Board



Simulated Grid Board



Simulated Zebra Board with Colored Curvature Plot



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