



VISUAL REFLECTION POLARISCOPE, VRP FOR MEASURING RESIDUAL STRESS



OVERVIEW

The VRP-100 permits accurate, fast and non-destructive stress measurement within the black painted band, **without the need for removing paint** or making special parts.

The polarimeter provides a full-field view of the edge region, allowing the operator to recognize problem areas at a glance. A reflective target allows clear areas of the glass to be measured in addition to the painted areas.

The sensitivity and precision of the system is effectively twice that of transmissive systems.

USAGE

In tempered, heat-strengthened and laminated automotive glass a complex stress field develops near the glass edges as a result of two factors:

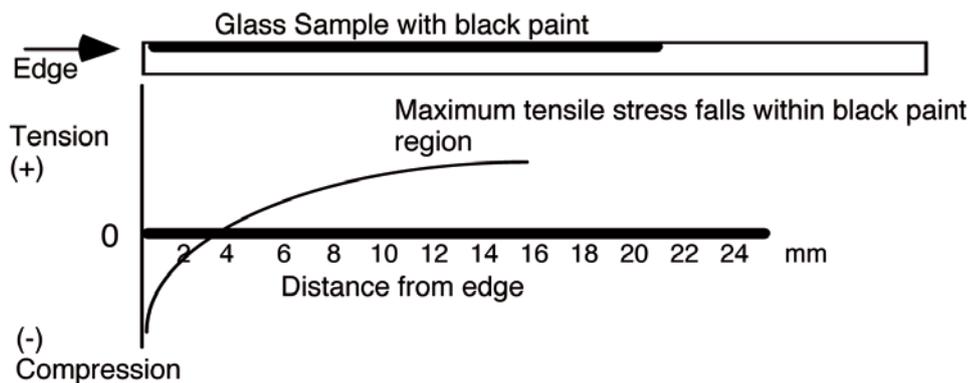
- ◆ *A parabolic surface-to-surface stress distribution exists with compressive stress on the surface and tensile stress in the mid-plane, and*
- ◆ *Edge compression that is nearly equal to the surface compression, balanced by a tensile stress that peaks 12 to 25 mm from the edge.*





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The combination of these two fields reduces surface compression and the surface compressive layer becomes thin. Occasionally, a surface tension (tensile imbalance) develops near the glass edge, which can cause cracking during installation or failure due to minor scratches or impacts.



KEY FEATURES, AND OPTIONS

The complete inspection system includes elements needed for:

- ◆ *Measuring edge stress in laminated glass or windshields in the frit region using a reflection polariscope.*
- ◆ *Measuring near-edge tension in the frit area of windshield glass in reflection mode.*
- ◆ *Supporting the sample and/or instrumentation (option 1).*
- ◆ *Measuring edge stress and near-edge tension in clear glass via transmission (option 2).*
- ◆ *Calibrating the system using a CALGAGE (option 3).*
- ◆ *Measuring surface stress - compression or tension GASP-CS-HS (option 4).*
This is of particular importance to laminated windscreen producers for verification of sufficient surface compression on near edge tensile area.
- ◆ *Measuring edge stress in clear glass using a portable instrument (option 5).*
- ◆ *Telescope with mount (option 6).*

VRP-100 INCLUDES:

- ◆ *Metal halide high-intensity Fiber-Optic Illuminator with power supply and flexible 4-foot cable*
- ◆ *Collimator, equipped with polarizer with adjustable focusing*
- ◆ *Senarmont SA-100 Analyzer with direct nanometer readout scale (0 - 565 nm) and 3 nm resolution, equipped with color-enhancer large field tint plate*
- ◆ *Adjustable-angle space bar*
- ◆ *Heavy-duty tripod mount*
- ◆ *Instruction manual*

