

# Wiper™ System

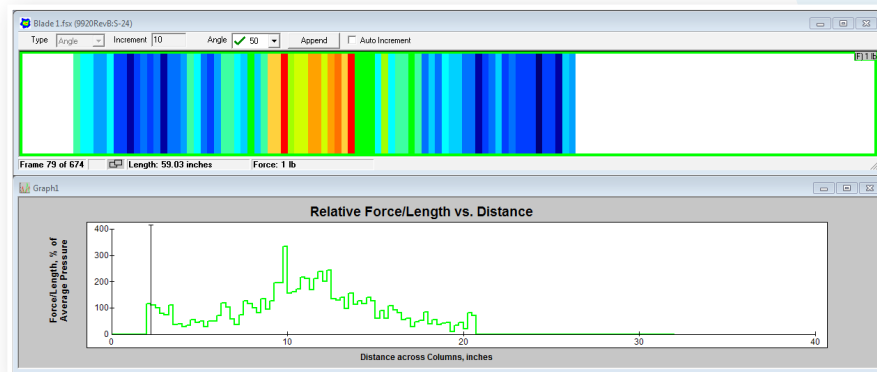
## Wiper to Windshield Force Measurement System



Utilizing a tactile pressure sensor, the Wiper™ system measures wiper blade to windshield interface force profiles under various testing conditions. The Wiper system measures the force distribution along the entire length of the blade at different positions on the windshield, providing important insights to improve design. The system is used as a research and development tool to improve blade and wiper system performance under different conditions such as “lift-off”.

## Software Display

Force output measured - wiper blade at a 30° angle on windshield



Output displayed graphically - Force vs. Distance across sensor rows

## Key Features

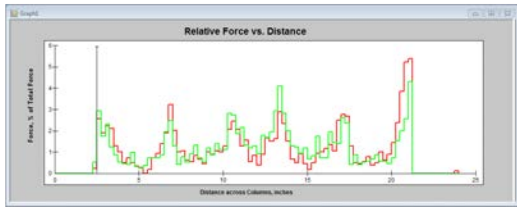
- Map force distribution along wiper blade
- Access real time or recorded data
- Dynamic measurement for “lift-off” testing
- Collects and consolidates static measurements at different angles to capture full wiper cycle
- Graphic and analysis capabilities

## Sensors

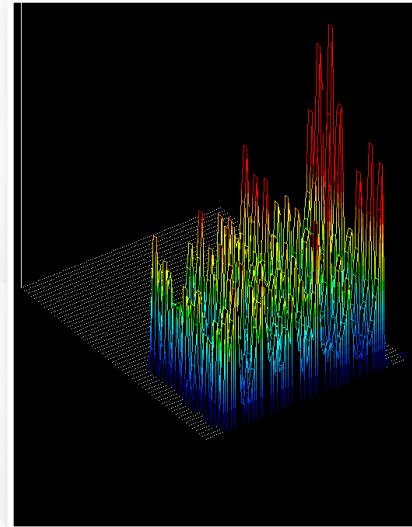
- Minimally intrusive, flexible, thin-film sensors
- Sensors specifically designed for use with wiper blades
- Sensors are durable and reusable
- Thin & incompressible sensors – dimensional stability is key for repeatable measurements

## Key Software Features

- Access real time or recorded data in 2D & 3D
- Correlates pressure data to angular position of wiper blade
- Key metrics; total force, peak pressures, and center of force
- Multiple graph options to plot data
- View and compare multiple test results simultaneously
- Ability to attach a digital image to each frame of a Tekscan movie
- Export data to ASCII or AVI files



Comparison of blade force at two different angles

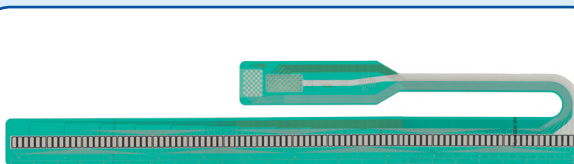


3D view of wiper blade sweep test - wiper measurements taken at multiple angles

## Sensor Options

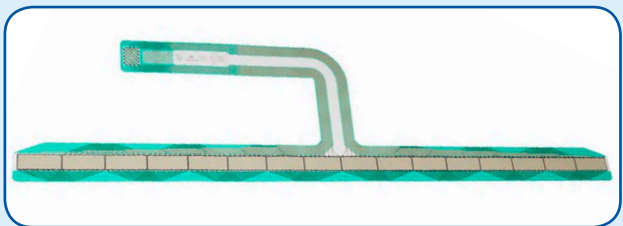
### Sensor Specifications #9901

No. of Sensing Elements	96
Spatial Resolution	4.0 sensels/linear in. (1.57 sensels/linear cm)
Size of Sensing Area	610 mm x 11 mm (24 in. x 0.4 in.)
Technology	Resistive
Calibration	With application of a controlled device
Sampling Rate	8 Hz
Pressure Range	0-10 psi
Sensor Thickness	0.1 mm (0.004 in.)



### Sensor Specifications #9920

No. of Sensing Elements	128
Spatial Resolution	4.0 sensels/linear in. (1.57 sensels/linear cm)
Size of Sensing Area	813 mm x 20.5 mm (32 in. x 0.81 in.)
Technology	Resistive
Calibration	With application of a controlled device
Sampling Rate	8 Hz
Pressure Range	0-10 psi
Sensor Thickness	0.1 mm (0.004 in.)



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