

## Glass-SFR *inspex*

Car glass inspection for high ADAS  
image qualities

For camera-based automobile Advanced Driver Assistant Systems (ADAS) high image quality levels are essential for autonomous driving levels 3 and higher. This makes improvements in optical quality control of windshields necessary for automotive manufacturers around the world. The **Glass-SFR *inspex*** system quantifies pointwise the spatial frequency response (SFR) of the windshield in the ADAS camera area.

**Established measurement of the pure optical distortions (optical power) in milli diopter (mdpt) are not effective for hyper focal distance.**

Scanning options by stages or a robot arm are available.



### Image quality

The inspected glass is placed in front of a high resolution autofocus camera system and the images of an illuminated target are recorded. The SFR (or **Modulation Transfer Function MTF**) of the images are evaluated following the ISO standard 12233. This analysis quantifies the optical influence of the windshield to the ADAS image quality.

### Custom optics

The absolute contrast reduction always depends on the combination of a given ADAS optics and the used windshield. Therefore the **Glass-SFR *inspex*** has the option via lens adapter to use the same specific lenses which should be applied to the ADAS camera in the car.



*High resolution camera with autofocus and custom lens*

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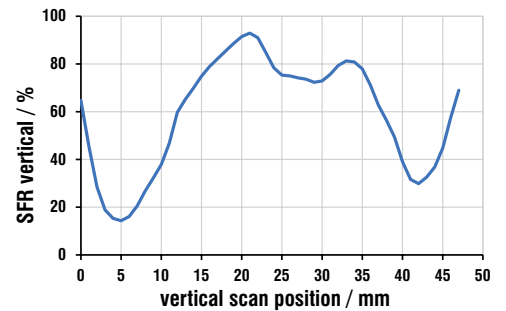
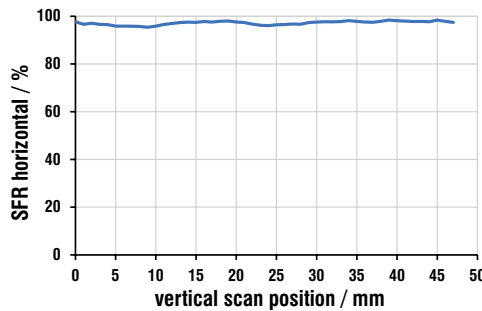
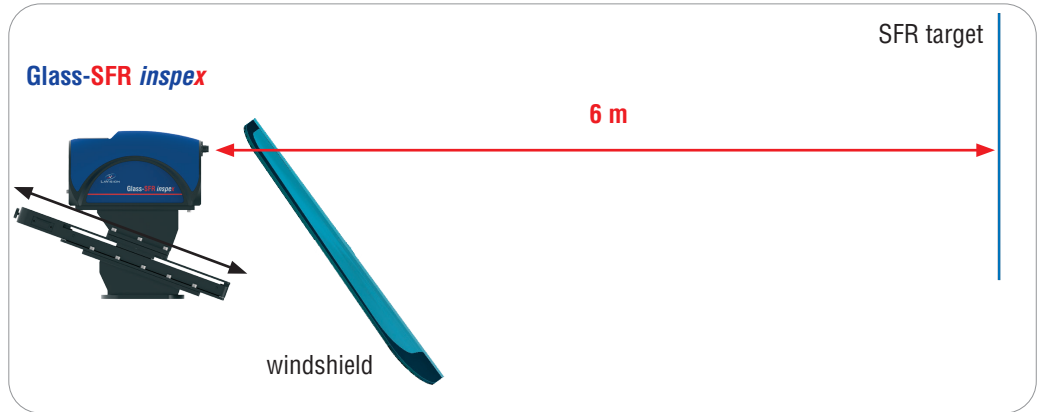
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Setup



Example: SFR for a vertical windshield scan

<b>Method</b>	pointwise SFR analysis (scannable)
<b>Measuring range</b>	0% - 100%
<b>Measuring precision</b>	<±2%
<b>Result</b>	horizontal and vertical SFR for all scan positions

System benefits

- ▶ glass quality control of influences to ADAS imaging systems
- ▶ real test conditions for custom optics
- ▶ for research or production lines

LaVision:  
Focus on imaging

LaVision's imaging systems are based on innovative measurement technologies realized with advanced imaging hardware and intelligent state-of-the-art image processing software.

LaVision takes part in the ongoing transformation process of automotive mobility.

Data provided by LaVision are believed to be true. However, no responsibility is assumed for possible inaccuracies or omissions. All data are subject to change without notice.

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