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Three-dimensional optical surface detection provides fast and complete inspection of flatness, waviness and reflection optics

Efficient float glass inspection in a matter of seconds: 3D measurement for top-quality large glass

The full-surface 3D quality inspection for float glass now also captures additional quality characteristics that are important for ensuring the highest customer satisfaction and optimal results: Within seconds, precise data on flatness, waviness and reflection optics is available, even for large glass surfaces. 3D shape defects are detected immediately, preventing faulty materials from being processed further. Manufacturers are able to maximize their yield of high-quality products and ensure they are suitable for use in the most challenging applications, such as in architecture, automobile production or in the manufacturing of mirrors.

The rigorous inspection of float glass is crucial for guaranteeing maximum customer satisfaction. However, manual quality inspections in shift operations are generally only performed intermittently, and are also subject to factors such as lapses in concentration and the subjective assessment of the individual operator. Measuring methods, such as a point-to-point analysis, simply take too much time. The introduction of new technologies and areas of applications go hand in hand with higher quality standards for glass products: Increasingly popular products such as Maxiglass and switchable glass in architectural applications are opening up new market potential for glass manufacturers,

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however these products do demand consistently high quality. These quality standards, therefore, require new procedures for glass processing and finishing, as well as correspondingly accurate inspection processes.

3D measurement provides data for comprehensive process optimization

ISRA VISION has developed POWERPLATE-3D (P2-3D) for these specific applications, the first and so far only solution for the automatic and fast full surface 3D measurement of flatness, waviness and reflection optics of glass panes. This non-contact process takes place immediately after the glass cutting and covers the entire surface. The system is based on the patented stereo deflectometry technology, allowing it to deliver objective and reproducible results for typical pane sizes in next to no time, regardless of the position or shape of the glass panes. The POWERPLATE-3D technology displays the measuring result as an elevation map and also as a vertical and horizontal curvature map. The curvature map is a highly sensitive tool that visualizes float lines and local waviness – especially near the ribbon edge – which can play a decisive role in further processing steps such as lamination.

Potential of float glass inspection for innovative industry sectors

Quality issues that occur after lamination, as well as during cutting and grinding can be caused by defects such as uneven panes; waviness can result in pronounced lens effects and transmission problems, which in turn cause safety problems. Transmission optics and reflection optics play a crucial role when it comes to aesthetics – another



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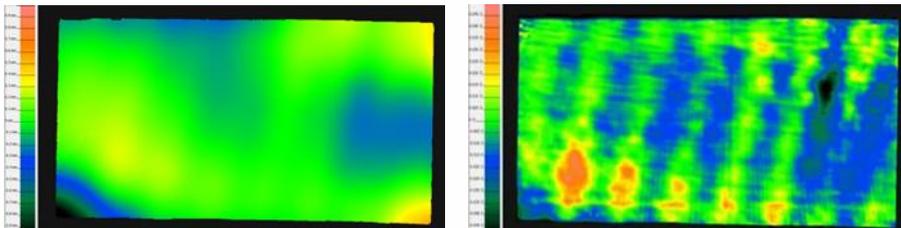
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factor that is steadily gaining more importance in both buildings and cars. As such, the use of large-cut glass panes in architecture and construction offers great potential: Static and logistic factors are among the greatest challenges here and demand high requirements with regard to both safety and quality – and therefore also for the glass inspection. The same applies in the automotive sector, for instance in head-up displays: Windshields, on which information is projected, allow for no margin of error.

ISRA offers a comprehensive portfolio comprising various product lines, which cover the entire range of float glass inspection. One of the new products in this portfolio is the FLOATSCAN-5DXIN, a new version of the worldwide industry standard, which combines five optical channels in one and thereby enables the precise detection of material defects on float glass.

Images



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The three-dimensional full surface optical measurement offers fast and complete inspection of flatness, waviness and reflection optics.

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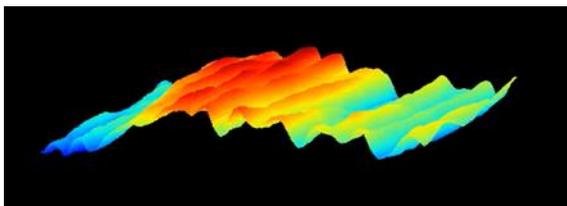


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Within seconds, precise data on flatness, waviness and reflection optics is available – even for large glass surfaces.



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With the P2-3D, glass manufacturers ensure their products are suitable for use in the most challenging applications, such as in architecture, automobile production or in the manufacturing of mirrors.

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