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One of China's most successful providers of high-quality float glass turns to ISRA's FLOATSCAN Thin Superior system for quality assurance

Challenging accuracy: 100% inspection for ultra-thin glass – precise, fast, stable

Darmstadt/Herten (GER) / Huagung (CN) – Ultra-thin glass has to meet the highest quality standards due to its sophisticated application fields such as electronics and thin film photovoltaics. The Chinese glass manufacturer CTIEC chose ISRA's FLOATSCAN Thin Superior system to automate the quality control in their ultra-thin glass production. The result: maximum process quality and significantly reduced customer complaints within weeks.

Material thickness of 0.5 mm (generation size 8.5) and even below increases the quality impact of defects on ultra-thin glass tremendously. Incorporated in smartphones and tablets as well as flat-screen TVs and PC-monitors, the glass quality directly influences the performance and functionality of the screens. Furthermore, ultra-thin glass also serves as display cover glass, always being directly in the user's line of sight. In the photovoltaics industry, flawless ultra-thin glass plays a key role in the efficiency of thin film modules. To meet the demanding standards for these products, consistent 100% automatized defect detection of the glass substrate has imperative. Since a safe defect detection and a high accuracy in severity grading is crucial for efficient sorting of the quality without impacting the yield, ISRA has developed the FLOATSCAN-Thin Superior system. It combines 7 optical channels in the advanced Dynamic Moiré technology at a 30 micron resolution.

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Perfect solution for process stability and accuracy

Being a satisfied ISRA customer for years, CTIEC turned to the Germany based market leader in surface inspection for the solution. "Immediate and correct assessment of the glass quality and effective support in adjusting the process for best results is what ISRA's FLOATSCAN-Thin Superior system provides for us. It perfectly matched our high requirements regarding accuracy and system stability," says Yu Jiahong, general manager at Anhui Huaguang Photoelectricity Materials Technology Group Co., Ltd, a fully owned subsidiary of CTIEC. Beyond quality and process monitoring, the company uses the collected inspection data as documentation for tracking its products' quality evaluations. Information about individual products can be provided within seconds. All relevant defects like bubbles, stones, top or bottom tin, knots, and scratches are reliably detected. The system automatically classifies all findings in type, size, and position. The exact identification of defects enables continuous process optimization, and the comprehensive defect data makes root cause analysis fast and easy.

Precise defect detection and fastest deployment

ISRA combines multi-view imaging and the new patented Dynamic Moiré technology with new switchable high-power LED to achieve unmatched sensitivity to optical distortion and defect recognition capability. Moreover, the new Dynamic Moiré technology provides additional features that enable the monitoring of the optical power across the full glass ribbon and the capability to detect critical optical lines like reams, or cords and monitoring of the Zebra angle. The transmission channel offers precise core size measurements, and ISRA's patented cross darkfield illumination detect scratches and core bubbles of minimum size, while a reflection channel measures the defect depth and recognizes top and bottom tin. The simultaneous remote monitoring of inspection results in a control room, allows CTIEC to immediately benefit from the collected information. Within two months, the FLOATSCAN-Thin Superior system was fully operational and generated first positive

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results such as process improvements and easier and more reliable quality monitoring. The system's real-time feedback allows for optimizing the forming process and taking immediate action when repeating defects occur. With the combined advantages of comprehensive defect detection, sustainable process optimization, and quick deployment, ISRA's FLOATSCAN-Thin Superior realizes a fast amortization and an attractive return-on-investment time. CTIEC is already planning to continue the partnership with ISRA by ordering other solutions for thin glass inspection and also systems for other applications.

Images



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ISRA's FS-Thin Superior installed in-line at CTIEC.

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