Integrated Vision Systems: advancing manufacturing excellence with DELTAMAX

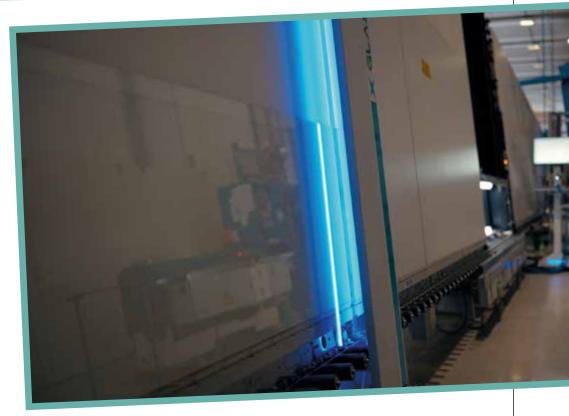


n the competitive world of insulating glass production, quality assurance is not a luxury - it is the foundation of every successful operation. From raw glass sheets to finished insulating units, consistency and reliability determine both product excellence and customer trust. For nearly two decades, Deltamax Automazione has embodied this principle - delivering an integrated suite of inspection systems that combine precision engineering with simplicity of use. Far from being a single device, Deltamax offers a coordinated ecosystem -GlassInspector, Qplus and IGU Scanner- each designed to integrate seamlessly into the production line while maintaining a In insulating glass manufacturing, precision defines success. DELTAMAX's integrated inspection systems -GlassInspector, Qplus and IGU Scanner- deliver unmatched accuracy from raw sheet to finished unit. Combining modular design, intuitive operation and advanced imaging, they set new standards for automated quality control across the entire production line.

common philosophy: modularity, clarity and effortless operation.

GLASSINSPECTOR: SETTING THE STANDARD FOR AUTOMATED VISUAL INSPECTION

The story began back in 2007 when Deltamax introduced its pioneering GlassInspector system - a milestone that redefined how manufacturers approached visual quality control. Over the years, the system has become the industry's benchmark for accurate, fast and non-invasive defect detection on transparent sheets. Often referred to as the scanner,





it identifies visible imperfections such as bubbles, inclusions, stains, scratches, fingerprints and breakages in real time, even on glass with low light transmission. Installation requires no alteration to the existing line, maintenance is limited to simple cleaning, and its intuitive graphical interface makes it accessible to all operators. The system's effectiveness extends to low-E glass, where it detects missing coated areas, abrasions or





any inconsistencies on the treated surface. In every sense, GlassInspector inaugurated a new era of reliability and transparency in automated glass inspection.

QPLUS: PRECISION BEYOND VISIBILITY

Building on this foundation, Deltamax developed Oplus, a next-generation inspection platform that advances beyond visible defects to reveal even the most subtle imperfections. Utilizing advanced imaging algorithms and highresolution analysis, Qplus detects low-contrast anomalies -halos, suction cup marks on laminated glass, and roller marks on tempered sheets- that conventional vision systems often miss. Defects are automatically located, categorized, and visualized using a colour-coded scale (green, yellow, red) that indicates their severity at a glance. Operators can easily modify acceptance thresholds and cus-

tomize classifications to match specific production criteria. With Qplus, Deltamax delivers not only sharper accuracy but a fully-adaptable inspection process - one capable of evolving with each manufacturer's standards of excellence.



At the end of the production line, the IGU Scanner ensures that every insulating glass unit meets the highest visual and structural stand-





ards. Designed to inspect double, triple and even quadruple units, the system identifies inclusions, bubbles, scratches and surface residues of dirt or butyl. Crucially, it also examines the spacer frame alignment, reporting any positional errors or irregularities in application. When integrated with suitable transport systems, the IGU Scanner verifies the placement of Georgian bars, comparing the layout with technical drawings to ensure both aesthetic harmony and dimensional accuracy - a final assurance before delivery to the customer.

ONE VISION, THREE **TECHNOLOGIES**

Together, GlassInspector, Qplus and IGU Scanner form a continuous chain of control that accompanies the glass sheet through every stage - from the first inspection to the finished insulating unit. Their shared strengths -modular architecture, ease of integration and robust adaptability translate into a comprehensive, intelligent quality assurance system. The result: fewer customer complaints, higher process reliability and a consistently optimal finished product.



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