All-in-one inspection solution with innovative development for comprehensive quality inspection of plastics

Inline inspection system with pioneering technology: application-specific camera and lighting technology for immaculate materials

Plastics, packaging, and film production – promising markets that harbor great potential. Their application areas, such as the food industry and the pharmaceutical sector, require the highest quality standards throughout the global markets. The resulting requirements for quality control have helped establish ISRA’s inspection systems in the sector. Numerous new features are improving the already first-class product – the new embedded camera, developed in-house by ISRA, with optimized detection rate and the even simpler and more reliable handling.

Intelligent automated inspection enables the highest level of quality today. Small, poor-contrast errors and scratches, as well as inhomogeneities in the material, are detected with maximum speed and reliability, thus maximizing the efficiency of the quality control process. The innovative lighting concept makes all defect types visible and detects point defects, inclusions, and other defects in any position.

ISRA’s new camera sensor technology now improves the reliable detection of color defects as well, enabling low-contrast defects to be detected and classified more reliably. The high quality of the surface inspection also avoids the detection of false positive defects and enables quality decisions to be made based on reliable facts.
Another decisive factor in the final product grade is the quality of the film coatings: The shine and cloudiness of films provide information on numerous factors that are crucial to quality. Based on methods for measuring haze and gloss developed in-house, ISRA’s patented COP (Control of Optical Properties) procedure can be successfully applied to monitor different material properties, such as gloss, cloudiness, or evenness of the coating, throughout the production process and across the entire width of the web. Special ISRA LED rows are used as a point light source and alternately illuminate different areas of the material web. The inspection process takes the differing intensities of the light entering the camera into account, while ISRA’s intelligent image processing software converts the variations caused by the changes to the material properties into values for haze or gloss.

In addition to detecting and classifying defects, the inspection system from ISRA also offers numerous new Beyond Inspection modules that complement the system perfectly and maximize its performance. A particular highlight is the new offline recipe optimization, which enables process optimization alongside the ongoing inspection. The recipes are edited, optimized, and tested offline by the operator before being applied to the production process, saving materials and reducing downtimes. In addition, all systems across multiple sites can be managed from a central location, so that performance and quality decisions can be made consistently across all production lines and sites. ISRA’s new Real Time Video Analyzer inspects the material produced at an early stage, shortens the commissioning time and reduces the amount of rejects.
With the all-in-one system, manufacturers can increase the quality of their products with maximum efficiency. 100% inline error detection and monitoring of the optical properties also reduce the reject rate. Product data supports decision making at different levels and makes the production processes completely transparent. With its many functions, the system optimizes the production process and quality. More than 4,000 reference installations are a testament to the high customer satisfaction that derives from the highest product quality.
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