

APPLICATION EXAMPLE

Apex 3-CMOS R-G-B color area scan cameras for display inspection

The increasing demand for high-resolution flat panel displays, coupled with larger sizes, requires manufacturing quality inspection systems equipped with high-resolution cameras delivering images with fine details and high color fidelity. JAI's Apex prism-based 3-CMOS color area scan cameras address this challenge effectively and are well-suited for various stages of the manufacturing process including:

Color uniformity inspection:

The Apex cameras feature advanced in-camera prism technology that cleanly separates the red, green, and blue light channels. This precise wavelength separation minimizes color crosstalk and ensures highly accurate, true-to-life color reproduction. As a result, Apex cameras are especially well-suited for flat panel display inspection systems, where accurate measurement of color, brightness, and uniformity across the entire screen is critical for ensuring consistent display quality.

Inspection of screen pixel quality:

Quality inspection in flat panel display manufacturing involves rapidly and accurately identifying defect pixels (such as dead, stuck, or hot pixels) across the entire screen area.

Alignment and assembly:

Displays comprises multiple layers, each requiring quality checks for proper alignment and attachment. Apex cameras are well-suited for this application.

The Apex area scan cameras:

JAI's Apex cameras offer exceptionally accurate color image data with best-in-class waveband separation with minimal color crosstalk. They are ideal for flat panel display inspection systems and can be an important contribution for improved automated optical quality verification at critical stages along the flat panel production line.



AP-5100T models:

- 3 x 5.1 megapixels. (2472 x 2064 pixels).
- 3 x IMX548 Pregius S (backside illuminated).
- Up to 75 FPS full resolution.
- 2.74 μm x 2.74 μm pixels.
- CoaXPress v2.0, 5GigE Vision and Camera Link.

AP-3200T models:

- 3 x 3.2 megapixels. (2064 x 1544 pixels).
- 3 x IMX265 and 3 x IMX252 Pregius.
- Up to 106 FPS in full resolution.
- 3.45 μm x 3.45 μm pixels.
- 10GigE Vision, USB3 Vision and Camera Link.

AP-1600T models:

- 3 x 1.6 megapixels. (1456 x 1088 pixels).
- 3 x IMX273 Pregius.
- Up to 126 FPS in full resolution.
- 3.45 μm x 3.45 μm pixels.
- Interfaces: GigE vision, USB3 Vision and Camera Link.

More information:

For more information on the Apex 3-CMOS prism-based camera models please visit:

<https://www.jai.com/products/product-lines/apex-series-3-sensor-area-scan>

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