

2011 Global Technology Awards Category: Inspection Equipment – AOI

MV-7 Series 2D/3D In-Line AOI Machines - 15 Mega Pixel ISIS Vision System combined with MIRTEC's Exclusive 3D Multi-Frequency Quad Moiré Technology

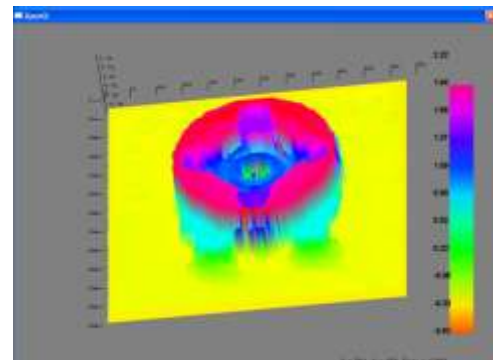
❖ **Innovation:** We at MIRTEC are very excited to present what is unquestionably the Inspection Industry's most Technologically Advanced AOI System in consideration for the 2011 Global Technology Award. MIRTEC's all new MV-7 Series 2D/3D AOI Systems may be configured with a state-of-the-art 15 Mega Pixel top-down camera system which we affectionately refer to as ISIS. This is a proprietary camera system designed and manufactured by MIRTEC for use with our complete product range of inspection equipment. ISIS is an acronym for ***Infinitely Scalable Imaging Sensor***. As the name implies the ISIS Vision System may be scaled or modified to address the specific inspection requirements of virtually any production environment without sacrificing speed or performance. By changing the magnification of the Precision Telecentric Lens the resolution of optics system may be scaled from 20 microns/pixel with an incredibly large FOV of (77.7mm x 77.7mm) desired for extremely high speed manufacturing; down to 10 microns/pixel with an FOV of approximately (38.8mm x 38.8mm) which is suitable for high end micro-electronics manufacturing. MIRTEC's revolutionary 3D Multi Frequency Quad Moiré Technology, provides true 3D inspection of SMT devices on finished PCB assemblies using a total of four (4) Moiré Inspection Probes. This proprietary system yields precise height measurement used to detect lifted component and lifted lead defects as well as solder volume post reflow. Fully configured the new MIRTEC MV-7 machines will also feature four 10 Mega Pixel Side-View Cameras in addition to the 15 Mega Pixel Top-Down Camera. There is little doubt that this new technology will, undoubtedly, set the standard by which all other inspection equipment will be measured.



15 MP 2D ISIS Vision System



3D Multi-Frequency Quad Moiré Technology



❖ **Speed / Throughput Improvements:** MIRTEC's ISIS Vision System brings unprecedented speed and performance to the Electronics Inspection Industry. In order to quantify the throughput advantage of this system, we must first consider that the majority of high resolution camera systems currently offered by AOI vendors use 5 Mega Pixel Technology. Throughput comparisons between 5 Mega Pixel Technology and 15 Mega Pixel Technology have resulted in an increased throughput of nearly 400%! This is a tremendous improvement in production efficiency which, you can imagine, will certainly be leveraged by global customers in volume-driven sectors.



- ❖ **Quality Contribution:** MIRTEC's new MV-7 Series 2D/3D Inspection Systems allow users to achieve unprecedented standards in quality manufacturing by combining:
 - 1) MIRTEC's exclusive 15 Mega Pixel ISIS Vision System which provides incomparable 2D inspection speed and accuracy.
 - 2) MIRTEC's revolutionary 3D Multi-Frequency Quad Moiré Technology which provides true 3D inspection of SMT devices on finished PCB assemblies. This proprietary system yields precise height measurement used to detect lifted component and lifted lead defects as well as solder volume post reflow.

- ❖ **Cost Benefits:** Current market conditions are such that electronics manufacturers are competing to capture as much business as possible in an environment which yields ever decreasing profit margins. There is little expectation that these market conditions will change in the foreseeable future. The reality of the situation is that electronics manufacturers must invest in automated solder paste inspection and automated optical inspection equipment in order maximize efficiency and acquire quantitative information that may be used to streamline the manufacturing process and reduce manufacturing defects. By increasing first pass production yields, manufacturers are able to decrease costs, save time, and reduce the need for non-value added rework and repair. MIRTEC's new MV-7 Series 2D/3D AOI Machines provide manufacturers with a clear view into the manufacturing process, helping them achieve higher operating efficiencies and improved quality at the lowest possible cost. Additionally, MIRTEC's ISIS Vision System has been proven to increase throughput by up to 400% thereby maximizing production efficiency and return on investment.

- ❖ **Environmental Consideration:** With an industry focus on environmentally friendly manufacturing, now more than ever there is an increasing demand to drive down material waste. MIRTEC AOI equipment is well recognized by electronic manufacturing management as a cost-effective process solution which allows them to streamline the manufacturing process. The new MV-7 Series 2D/3D machines provide an extensive range of real-world process solutions to electronics manufacturers allowing them to minimize material waste as they continue to strive toward zero defect production.

- ❖ **Ease of Use / Implementation:** The MV-7 Series software is simple yet powerful. A comprehensive Package Type Library provides simple "Drag and Drop" component programming. The Automatic Teaching Tool (ATT) software provides automatic teaching of component locations using CAD centroid data. Typical programming time is under one (1) hour per assembly.

- ❖ **Maintainability / Reparability:** The new MV-7 Series 2D/3D product line was designed for easy accessibility to all hardware and electronic subsystems. Furthermore, these machines use "off the shelf" hardware for many of the electronic subsystems including the PC, Vision Frame Grabber and Motion Control System. These systems are built to withstand 24/7 production. With typical MTBF of over 4,000 hours of operation, these AOI systems are heralded as the most robust AOI systems on the market!