

Mek Unveils New AOI Technology Line-up



[Mek](#), also known as Marantz Electronics, has announced the release of an entirely new generation of AOI technology to be deployed across a line-up of 4 new Desktop and 3 new In-line inspection machines.

Mek's [PowerSpector](#) Series features an entirely new generation of mechanical, camera, sensor, and software technologies that measurably propel the performance of Mek AOI beyond the norm and create new standards for speed, accuracy and inspection strategy.

Mek AOI systems have several Inspection head options, each using Cameras with large pixel size giving better colour fidelity and improved signal to noise ratio and custom telecentric optics with true colour image processing. Head selection is based on application requirement, position in the process and inspection depth and resolution required. Applications include component only pre-reflow inspection through to multi-camera, multi light source meniscus profiling.

For example, The PowerSpector FDAz inspection head is designed for post reflow applications with fine technology and objects invisible to systems with top viewing cameras such as J leaded components and QFN's .

FDAz is the most versatile, as it reliably inspects SMT and THT component bodies for presence/absence, type, polarity, offset, text, colours etc. and components solder fillets for excessive, insufficient, no solder, shorts, lifted leads etc. Suitable for use in pre reflow, post reflow, post wave and post selective, it can also be used for 2D solder paste inspection and first article inspection.

With the PowerSpectors high resolution top camera with telecentric lens and new unique multiplexed 8x CameraLink side camera technology with Tilt-Shift lenses in 45/45 degree configuration, defects become visible as never before. For the top camera there is choice between 10 μ and 18.75 μ per pixel lenses depending on the smallest component placed on the assembled PCB's.

The 3 light sources with different colours and from different angles create a detailed profile of solder menisci while the main light results in real colour representation of components. With the DOAL (Diffused On Axis Light) that projects exactly 90^o on the target components, solder quality can always be inspected even when tall components are present.

The presence of the motorised, Vertical - height adjustable optical head compensates for PCB warpage and adapts to any PCB thickness, something that is crucial when side cameras are used. Reliable reading of text and general inspection of tall components become a fact and even text and polarity on sides of components can be easily read. Moreover, sandwich assemblies where there are different PCB heights can be inspected without need of multiple inspections and use of special vertically adjusted jigs.

New PowerSpector mechanics include a specially engineered robust chassis and powerful servo motors on specially coated, virtually sound and wear proof drives. The clean user interface, short programming time, and combined condition based and segmented pattern matching AOI algorithms result in high throughput with excellent defect capture and low false calls on components and solder fillets. Special THT inspection algorithms allow for 100% inspection of through-hole component leads. These systems deliver advanced AOI yield enhancement performance with either manual or fully automated PCB handling. Off-line programming and a complete suite of defect analysis and process control software increasingly make PowerSpector systems the solution by many of the world's largest electronics manufacturers.

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About MEK Europe BV

A former division of Marantz well known for its high quality Audio/Video products, MEK Japan (Marantz Electronics Kabushiki Kaisha), developed its first AOI system in 1994. Developed to inspect PCB assemblies for correct component placement and soldering, the company's original AOI system was designed for use in Marantz factories. Proving to be a highly successful, cost-effective alternative to traditional human inspection, MEK developed its first generation commercial system in 1996. With a steadily growing installed base, MEK Japan and its European headquarters, MEK Europe BV, have sold over 5000 units worldwide to date. Now well established as a leading force in AOI technologies, the company recently launched a 5D post-print SPI system which combines 3D and 2D image processing methodologies to deliver unprecedented defect detection.

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