

# VeriFine™-A



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VeriFine™-A - is the next generation of the VeriFine systems, optimized for packaging, fine-line, advanced HDI, and advanced flex applications. Further enhanced with Amethyst Technology – featuring a unique package of innovative features - VeriFine-A increases yields by eliminating defect escapes during the verification process.

VeriFine-A offers high standards of image quality, throughput and ease-of-use, and is further enhanced with Amethyst Technology™ taking you to the next level in the verification process.

Amethyst Technology includes Orbotech's new patent-pending UV illumination system and image processing software. UV illumination provides an additional clear image of low contrast defects which are easily missed with standard white illumination.

## Amethyst Technology Benefits

- Feedback on repair quality ensuring reliable repairs
- Differentiation of nicks vs. oxidation and copper splashes vs. dust
- Clear Highlights of ultra fine shorts defects
- Minimizes defect escapes by human error – misjudgments, fatigue, long shifts

## VeriFine Benefits

- Delivers unsurpassed image quality
- Ease-of-use for fast verification, manual repair and high productivity
- Can be operated with virtually no additional training
- Easy defect classification for process control



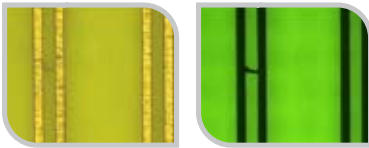
# VeriFine-A:

## Unsurpassed Image Quality

VeriFine-A's optical head is designed with a cutting edge camera and delivers powerful magnification to guarantee an excellent view of even the smallest of defects under 2 micron. VeriFine-A systems are equipped with 3 independently controlled white illumination channels: coaxial, diffusive and grazing light as well as controllable UV illumination, providing superb imaging of a large variety of materials.

## Dual Images View

- **Perfect view of fine shorts preventing defect escapes:**  
With white light illumination, certain types of defects, such as fine short, shallow short and non- reflective foreign material appear as low contrast images that can be overlooked by the operator. With Amethyst Technology's UV clear high contrast image these defects are easily identified.

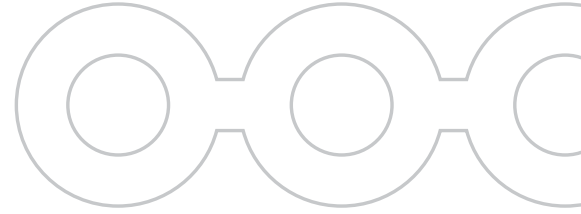


Fine short high contrast image with UV illumination

- **Perfect view of the metal line edges preventing classification of false calls as real defects:**  
Oxidation and nicks may look the same with standard white illumination. While a nick is a real defect, oxidation is not. Activating the UV illumination will provide the operator with a clear differentiation between oxidation and real defects.

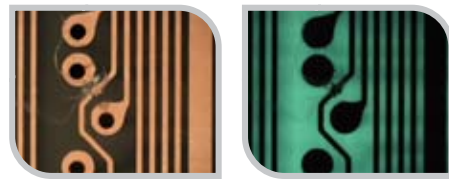


Oxidation false calls as imaged with UV illumination



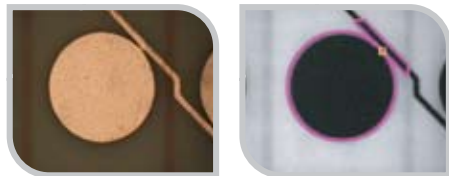
## Repair Mode Ensures Reliable Manual Repair

- **Quality assurance of the repair results:**  
Removal of a short in the repair process often leaves extra copper residues on the laminate. With UV, any leftover copper residues will be seen as a dark area against the green fluorescent laminate.



## Automatic Safe Mode for Higher Yields

In automatic safe mode, if the human operator's action indicates the classification of this defect as a false call, and this does not correlate with the analysis of the Amethyst Technology's evaluation of this defect – the operator will be alerted.



Shallow short between line and pad as alerted by Amethyst Technology