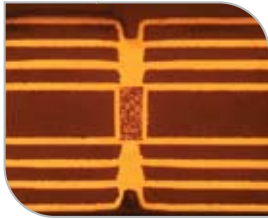


# *Paragon™ - Xpress 9 Laser Direct Imaging Solution*

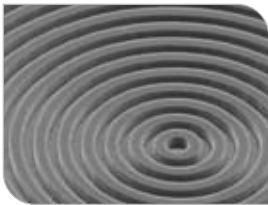
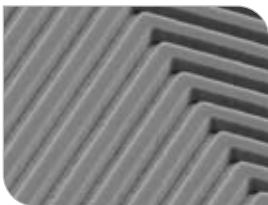


# Paragon™ -Xpress 9

Designed for high speed throughput of up to 5,000 panels per day, Paragon-Xpress 9 is the Laser Direct Imaging (LDI) solution for mass production digital imaging of HDI, Flex and Rigid-Flex applications. Combining Orbotech's field-proven Large Scan Optics (LSO) Technology™ with high registration accuracy, the automated Paragon-Xpress 9 improves yields and productivity to achieve unparalleled imaging results on the most advanced applications – faster and more cost-effectively than ever before.



High accuracy leading to minimal offset between layers



Fine lines down to 25µm/1mil for advanced HDI designs

## Benefits

- Mass production digital imaging
  - ◆ Automated in-line solution:
    - Up to 5,000 panels/day
    - Up to 470Kft<sup>2</sup>/month or 44Km<sup>2</sup>/month
  - ◆ One Paragon-Xpress 9 images 120 panels per hour
- Fully automated solutions, in-line and stand-alone configurations
  - ◆ Handling-free and clean environment
  - ◆ Lighter weight solution occupying smaller footprint
- High cost-savings
  - ◆ Lowest imaging cost per panel
  - ◆ Reduced yellow room floor space with less exposure systems needed
- New era for digital imaging of mass production enabled by the worldwide field-proven LSO Technology™
- Tight registration accuracy of  $\pm 12\mu\text{m}$  for high-end HDI and RF/Flex designs with dynamic imaging modes
- High depth-of-focus of  $\pm 300\mu\text{m}$  for single scan on Rigid-Flex
- High resolution down to 25µm/1mil for advanced HDI and RF/Flex designs
- Wide variety of traceability options on panels
- Intuitive and user-friendly interface for fast and easy set-up



# Paragon-Xpress 9

## Mass Production Digital Imaging

### Mass Production Throughput

Paragon-Xpress 9 delivers top speed throughput of up to 240 panels/hour per in-line solution (set). An innovative two table transport mechanism ensures maximized use of the system's time for actual imaging of panels. While a panel is being imaged on one table, on the other table, the previous panel is being off-loaded, a new one is being loaded and its targets are being acquired for accurate registration.

### Fully Automated Solution

Paragon-Xpress 9 is fully automated with in-line and stand-alone automation configurations perfectly suited to your mass production requirements. It ensures a clean environment with no handling damage for the most advanced production. It is also specially designed with small footprint to save on yellow room floor space.

### High Cost-Savings

- Lowest imaging cost per panel – Paragon-Xpress 9's high throughput and mass production capabilities enable you to greatly reduce your cost-of-ownership, while ensuring the highest image quality.
- Reduce yellow room floor space - With Paragon-Xpress 9, you only need to have one in-line to image up to 5,000 panels per day which provides up to double the effective throughput versus imaging with exposure systems.

### Field-Proven Performance

Just as Orbotech's Paragon family of field proven LDI systems with the largest worldwide installed base, Paragon-Xpress 9 leverages LSO Technology and delivers the same leading capabilities in registration, accuracy, image quality, depth of focus and resolution to ensure you get the most out of your digital imaging process for mass production.

## Paragon-Xpress 9 - Additional Benefits:

### Registration Accuracy:

- Annular ring: with 12 $\mu$ m registration accuracy, microvias can be stacked with greater precision
- Side-to-side registration: on-line UV marker enables maximum accuracy of 24 $\mu$ m for inner layers

### Dynamic Imaging Modes

- Auto-scale (per panel): each individual panel can be scaled according to its distortion
- Fixed scaling (per batch): all panels in the batch uses the same scaling

### Depth-of-Focus

- D.O.F. up to  $\pm 300\mu$ m for overcoming most challenging surface topography changes and/or any distorted PCB topography to ensure high image quality
- Single scan for Rigid-Flex, allows uniform imaging of entire panel

### Resolution

- Lines and spaces down to 25 $\mu$ m/1mil for the most advanced applications

### Traceability

Enables panel tracking and distortion feedback by adding to each panel: serial number stamp for panel, sub-panel and PCB; date and time stamp; scaling stamp and machine ID by alphanumeric stamping, or 1D barcode, or 2D barcode (Data Matrix Code)

### Ease-of-use

- User friendly and intuitive graphical user interface
- Seamless connectivity to CAM ensures fast and easy set-up
- Recognizes a wide array of different target types to meet any demanding production

