Orbotech Diamond™ 10/10XL

Solder Mask at its Best

Orbotech Diamond 10/10XL

Orbotech Diamond 10/10XL is an advanced high-capacity digital imaging (DI) solution for a wide variety of solder mask (SM) applications, including HDI, MLB and FPCB. Powered by KLA's proprietary SolderFast™ technology, the field-proven Orbotech Diamond 10/10XL delivers high-quality imaging and high throughput for the most complex designs. Raising the DI bar for solder mask applications, Orbotech Diamond 10/10XL is a high-end mass production solution that enhances imaging accuracy while decreasing total cost of ownership (TCO).

Benefits

High-Quality Imaging and High Throughput

- Patented, high power illumination source

- 3-wavelength spectrum for high-quality sidewalls, minimal undercuts and excellent surface quality

- One-pass technology to cover full panel area at one scan with uniform imaging of the entire panel area

- On-the-fly target recognition and acquisition capabilities

- High depth-of-focus (DOF) for challenging topographies

- Adaptable for a wide variety of customer processes, eliminating the need to qualify new materials

High Capacity

- Fast and easy SM imaging set-up for new jobs

- Dual-table transport mechanism for optimal imaging time and efficiency

- Optional clamping solution

- Industry 4.0 and automation-ready solution
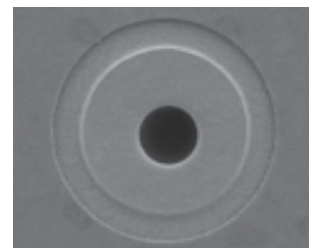
Outstanding Imaging Accuracy

- Registration accuracy as fine as ±10μm

- Advanced scaling modes and algorithms for challenging panel distortions
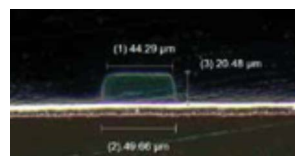
Low Total Cost of Ownership

- High production system efficiency

- Long-life LEDs

- Low power consumption
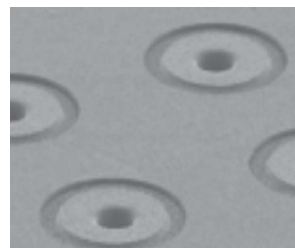
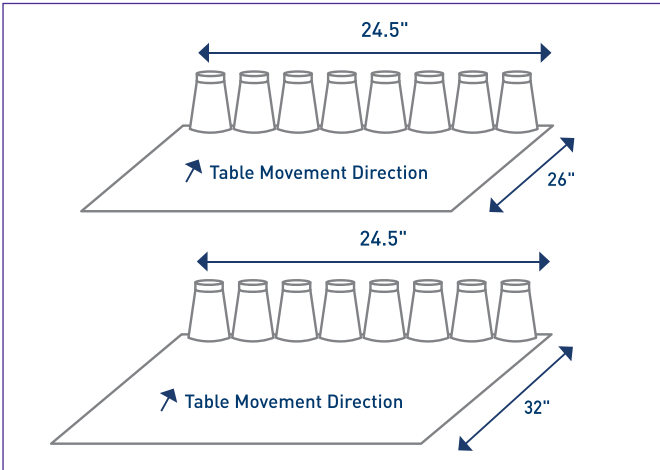High-quality SM imaging, no residue on vias

High registration accuracy

50μm solder dam, 20μm SM thickness on Cu
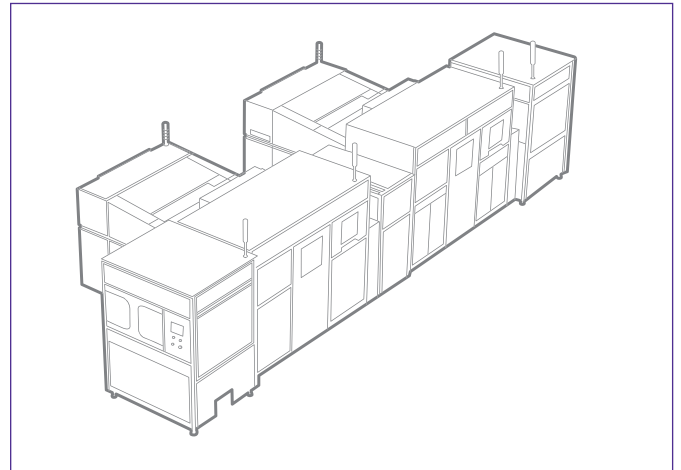
100μm solder dam, 40μm SM thickness on prepreg

Technologies   SolderFast™ Technology

High-Quality Imaging and High Throughput

24.5"
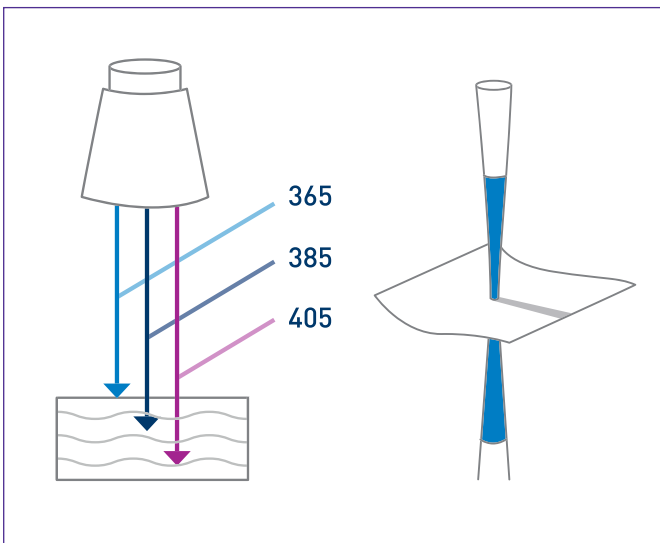Table Movement Direction
26"

24.5"
Table Movement Direction
32"

One-pass printing for high throughput, high uniformity and no stitching

High-Capacity Mass Production Solution

Automation-ready solution

365
385
405

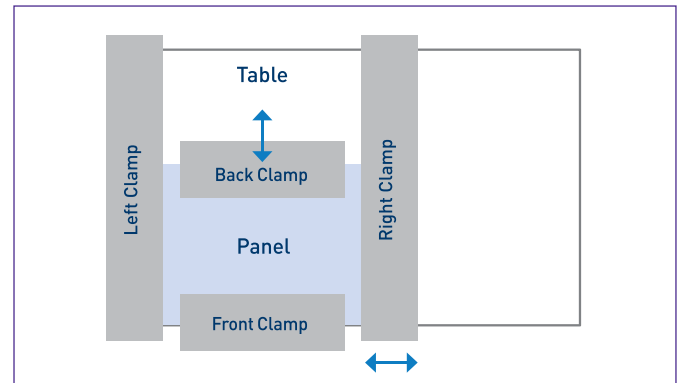**3WL spectrum for high-quality side walls, minimal undercut and excellent surface quality**

High depth-of-focus (DOF) for challenging topographies

Table
Left Clamp
Back Clamp
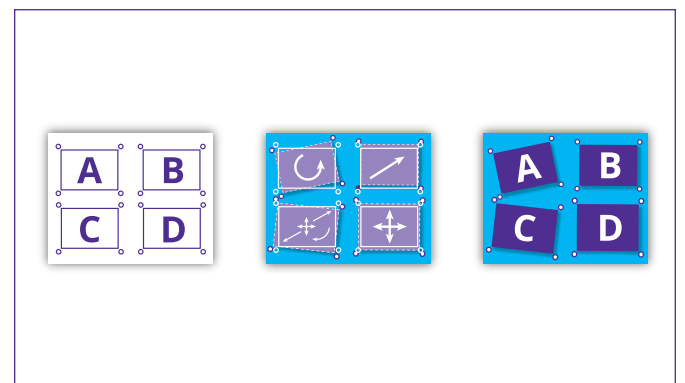Right Clamp
Panel
Front Clamp

Clamping

Outstanding Imaging Accuracy

Advanced scaling modes and algorithms for challenging panel distortions include auto scaling, partial scaling and non-linear scaling

On-the-fly target recognition and acquisition

A B
C D

A B
C D

A B
C D
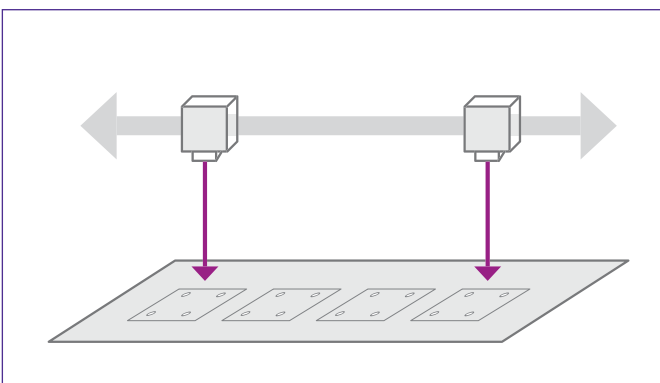
CAM data   **Panel**   **Imaging**

KLA+

Specifications

	Orbotech Diamond 10	Orbotech Diamond 10XL
Minimum SRO*	75µm	
Minimum Dam Size*	50µm	
Registration Accuracy**	±10µm	
Maximum Panel Area (X/Y)	25" x 26" (635mm x 660mm)	25" x 32" (635mm x 812mm)
Maximum Panel Area (X/Y) with Clamping	24.5" x 23" (622mm x 584mm)	24.5" x 30" (622mm x 762mm)
Maximum Exposure Area (X/Y)	24.5" x 26" (622mm x 660mm)	24.5" x 32" (622mm x 812mm)
Maximum Exposure Area (X/Y) with Clamping	24" x 22.5" (609mm x 571mm)	24" x 29.5" (609mm x 749mm)
Exposure Energy Range	50-2,200mJ/cm^2	
Dimensions	Height: 1,960mm Depth: 3,226mm Width: 1,900mm	Height: 1,960mm Depth: 3,315mm Width: 1,900mm
Weight	5,000Kg	
Clamping	Optional	
Application	Solder mask exposure	

* Dependent on solder resist type and process
** All values are 3σ
The above specifications are subject to change without notification.