

# Orbotech Diamond™ 10T/10TXL

Solder Mask at its Best



## Orbotech Diamond™ 10T/10TXL

Orbotech Diamond 10T/10TXL is an advanced high-capacity digital imaging (DI) solution exclusively designed to meet the unique demands and challenges of thick solder mask applications. The field-proven Orbotech Diamond 10T/10TXL is a dedicated system for thick solder mask that delivers high throughput and high-quality imaging, while addressing strict undercut requirements. Powered by KLA's proprietary SolderFast™ technology, Orbotech Diamond 10T/10TXL raises the DI bar for thick solder mask applications, enhancing imaging accuracy and quality, 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
- Specially designed illumination source to address the unique undercut demands of thick SM applications

### High Capacity

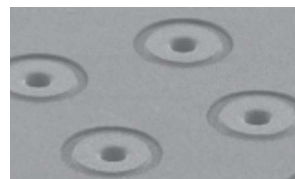
- Fast and easy SM imaging set-up for new jobs
- Dual-table transport mechanism for optimal imaging time and efficiency
- Optional clamping solution
- Industry 4.0 and automation-ready solution

### Outstanding Imaging Accuracy

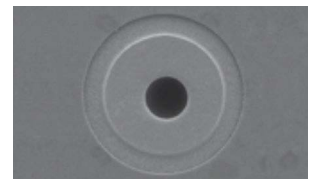
- Registration accuracy as fine as  $\pm 10\mu\text{m}$
- Advanced scaling modes and algorithms for challenging panel distortions

### Low Total Cost of Ownership

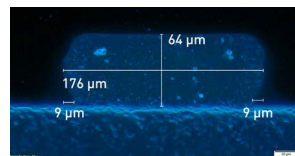
- High production system efficiency
- Long-life LEDs
- Low power consumption



High-quality SM imaging,  
no residue on vias



High registration accuracy



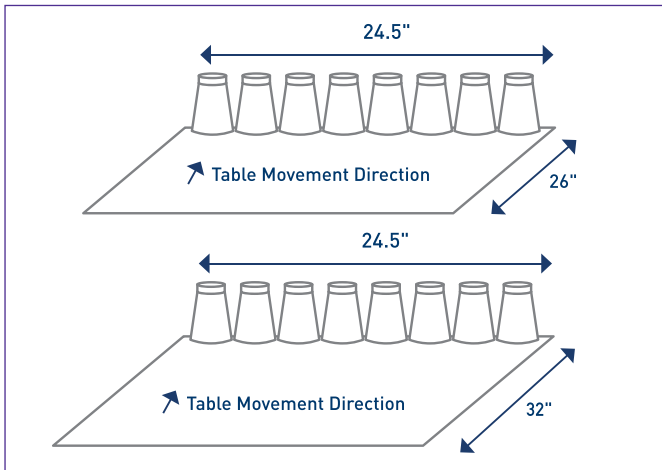
>60μm SM thickness  
on prepreg



100μm solder dam, 40μm SM  
thickness on prepreg

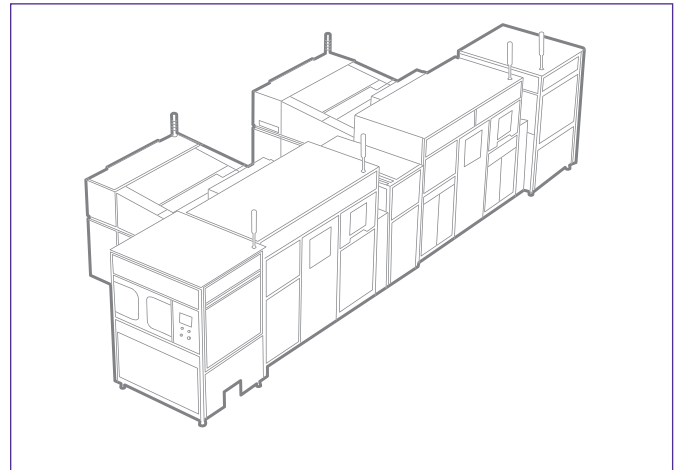


## High-Quality Imaging and High Throughput

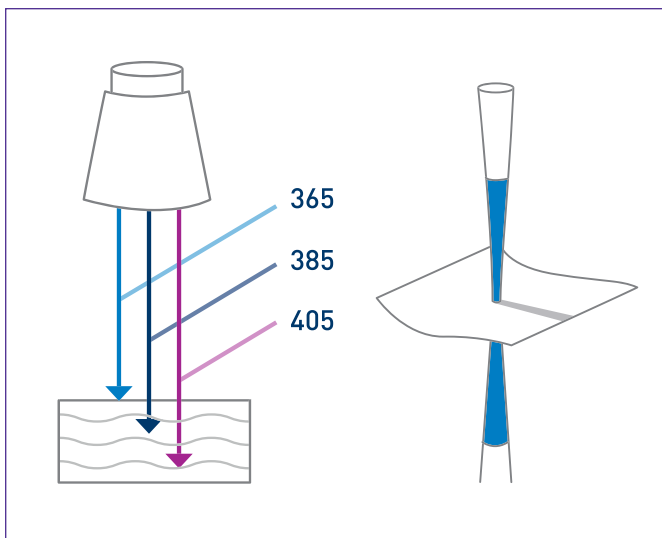


One pass printing for high throughput, high uniformity and no stitching

## High-Capacity Mass Production Solution

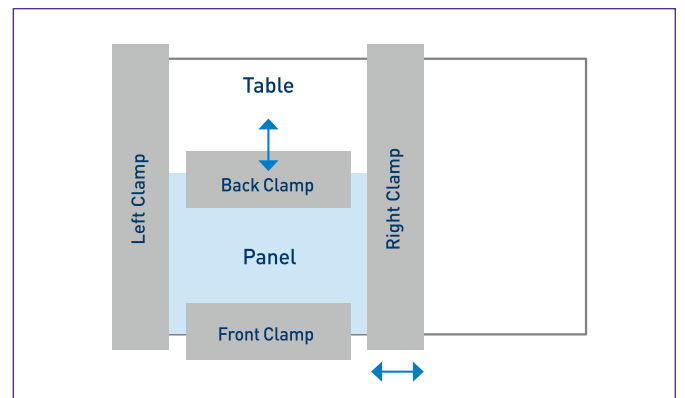


Automation ready solution



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

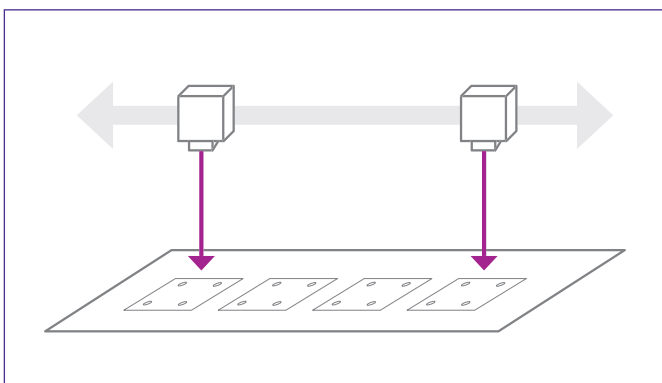
High depth-of-focus (DOF) for challenging topographies



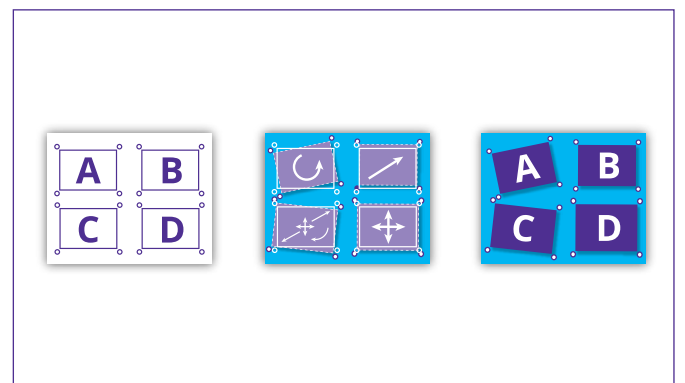
Clamping

## 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



CAM data

Panel

Imaging

## Specifications

	Orbotech Diamond 10T	Orbotech Diamond 10TXL
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 <sup>2</sup>	
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.

### KLA SUPPORT

Maintaining system productivity is an integral part of KLA's yield optimization solution. Efforts in this area include system maintenance, global supply chain management, cost reduction and obsolescence mitigation, system relocation, performance and productivity enhancements, and certified tool resale.

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