

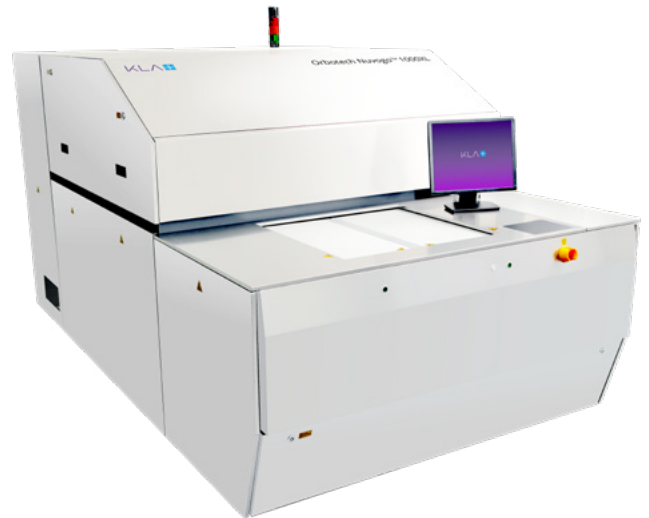
Orbotech Nuvogo™ 1000/1000XL

Mass Production Direct Imaging (DI)



Orbotech Nuvogo 1000/1000XL

Orbotech Nuvogo 1000/1000XL is a mass production Direct Imaging (DI) solution. Utilizing KLA's field-proven Large Scan Optics (LSO)™ technology and the MultiWave Laser™ technology, this solution provides high imaging quality while maintaining maximum flexibility on a wide range of resists and processes. In addition, it is designed for high throughput of up to 7,000 panels per day per line, helping to decrease total cost of ownership (TCO) while maintaining optimal quality at high speeds.



Benefits

Mass Production Digital Imaging

- Up to 7000 panels/day/line (300 panels per hour, per line)
- Fast and easy setup, operator friendly, fast “on-the-fly” target acquisition
- Optimized imaging time with dual table transport mechanism
- Clean and handling-free solution

High Power MultiWave Laser Technology for Maximum Resist Flexibility

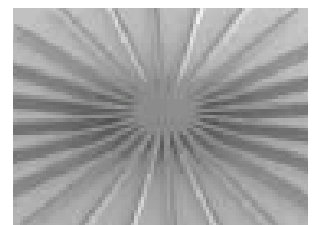
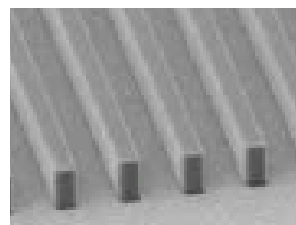
- Optimized for “low sensitivity” resists, including solder mask
- High uniformity and line-structure quality

High Imaging Quality with LSO Technology

- Unique optics design for optimal line structure down to 24µm L/S
- High depth-of-focus (DOF) for unmatched quality on varying surface topographies
- Advanced scaling modes for optimal registration of ±10µm

Lower Total Cost of Ownership (TCO)

- High efficiency for significant long-term savings
- Suitable for a wide variety of resist types, offering the option to use lower-cost materials and solder mask



Fine lines / spaces of 24µm

Technologies



LSO™ Technology



MultiWave Laser™ Technology

Mass Production Digital Imaging

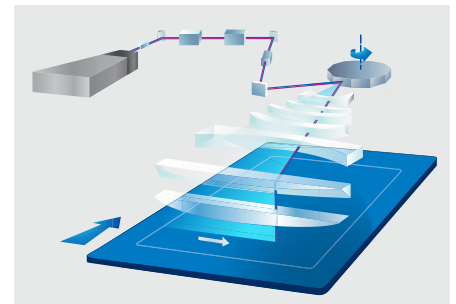
Equipped with advanced optics and electronics, Orbotech Nuvogo series is designed to achieve fine-line structures at high speeds of up to 300 panels/hour per in-line solution (automated set of two systems). This solution operates in a clean, hands-free environment, ensuring no handling damage. Its dual table transport mechanism achieves maximum use of system time for panel imaging. The system's fast set-up capabilities and automatic acquisition of targets facilitate smooth job changes.

High Power MultiWave Laser Technology for Maximum Resist Flexibility

Orbotech Nuvogo 1000/1000XL is powered by KLA's high power MultiWave Laser technology which provides maximum flexibility to match any resist or solder resist and is designed to fit all forms and processes. The adaptable multi-wavelength laser delivers incomparable line structure quality and superior uniformity on a variety of photoresists.

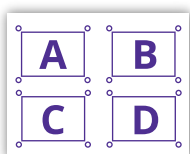
High Imaging Quality with LSO Technology

Orbotech Nuvogo 1000/1000XL incorporates KLA's field-proven Large Scan Optics (LSO) technology to deliver high depth-of-focus. A single scan allows uniform imaging of the entire panel, and produces superior results on panels with varied topographies (thin layers, flex, rigid-flex, and solder mask).

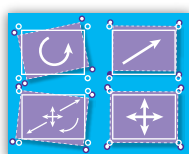


Various Scaling Modes

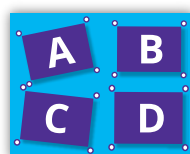
- Wise scaling - best scaling mode for mass production, achieving a balance between tight registration and low panel variation
- Auto scaling/fixed scaling/group scaling/non-linear scaling
- Partial scaling - sub-area registration for thin core layers, with any type of scaling
- Extremely fast target acquisition enables highest throughput



CAM data



Panel



Imaging

Registration Accuracy

Featuring registration accuracy of $\pm 10\mu\text{m}$, annular rings with microvias can be stacked with greater precision.

Ease-of-Use

- Operator-friendly, intuitive graphical user interface
- Seamless connectivity to CAM for fast and easy set-up
- Recognizes many different target types to meet any production demands

Traceability

Enables panel tracking by marking: serial number stamp; sub-panel and PCB; date and time stamp; scaling stamp and machine ID by alphanumeric stamping or 1-D/2-D barcode (Data Matrix Code).

Lower Total Cost of Ownership (TCO)

Orbotech Nuvogo™ DI series enables a reduced total cost of ownership while meeting the industry's increasing demands for high-end mass production. In addition to its reliable light source and efficient power consumption, Orbotech 1000/1000XL offers PCB manufacturers greater flexibility and lower operational costs by using a wide variety of resists. Orbotech Nuvogo 1000/1000XL delivers a high capacity, high quality and highly efficient production process.

Specifications

	Orbotech Nuvogo 1000	Orbotech Nuvogo 1000XL
Maximum Throughput*	300 prints/h Imaging Size 24"x18"	290 prints/h Imaging Size 25"x18"
Minimum Feature Size*	24µm	
Imaging Energy Range	25 - 2,200mj/cm ²	
Address Resolution	2.0µm	
Registration Accuracy (FtG)**	±10µm	
Side-to-Side Registration (FtB)**	20µm	
Maximum Substrate Size	635mm x 660mm 25" X 26"	660mm x 812mm 26" X 32"
Maximum Exposure Area	609.6mm x 660mm 24" X 26"	635mm x 812mm 25" X 32"
Substrate Thickness	0.025mm - 8mm	

* Depends on photoresist properties

** All values are 3σ, full format

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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