NUVOGO™ 780/780XL
The New Way of Imaging
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Nuvogo™ 780 and the large format Nuvogo™ 780XL are members of the Orbotech Nuvogo™ family of industry-leading Direct Imaging (DI) solutions. Utilizing a high power laser and unique MultiWave Laser Technology™, the Nuvogo™ 780/780XL provides maximum flexibility on a wide range of materials and applications. The Nuvogo™ 780/780XL package of features is optimized for MLB and HDI PCB makers, reducing Total Cost of Ownership (TCO) and ensuring lowest cost-per-print. Incorporating Orbotech’s field-proven Large Scan Optics (LSO) Technology™, the Nuvogo™ 780/780XL maintains high Depth-of-Focus that is unmatched in the industry.

Benefits

**Leading Mass Production Digital Imaging**
- In-line solution and fully-integrated automation for seamless production
- High Power Laser – for highest throughput
- Optimized imaging time with dual table transport mechanism
- Clean, handling-free production environment

**MultiWave Laser Technology™ for Maximum Resist Flexibility**
- Ensures flexibility to address a wide range of resist materials, with the highest throughput
- MultiWave Laser brings unmatched quality and uniformity of line structure

**Highest Imaging Quality with LSO Technology™**
- High Depth-of-Focus of ±300µm and greater, for unmatched quality on varying surface topographies
- Unique optics design for optimal line structure
- Optimal scaling modes for superior registration accuracy down to ±12µm

**Lower Total Cost of Ownership (TCO)**
- Hardware and features designed to focus on the specific demands of MLB and HDI PCB makers, greatly reducing cost-per-print
- Increased overall efficiency for significant long-term savings
- Suited for a wide variety of resists, offering the option to use lower-cost materials
Nuvogo™ 780/780XL for State-of-the-Art Mass Production Digital Imaging

As part of the Nuvogo™ family, the Nuvogo™ 780/780XL utilizes Orbotech’s high power MultiWave Laser Technology™. Equipped with the industry’s most advanced optics and electronics, Nuvogo™ 780/780XL is designed to achieve fine structures at unmatched speeds. Its dual table transport mechanism achieves maximum use of system time for panel imaging. Furthermore, the system’s fast setup capabilities and automatic acquisition of targets facilitate smooth job changes. Nuvogo™ 780/780XL also operates in a clean, hands-free environment, to ensure that there is no handling damage.

Orbotech High Power MultiWave Laser Technology™ for Maximum Resist Flexibility

Nuvogo™ 780/780XL is powered by Orbotech’s high power MultiWave Laser Technology™ which delivers unparalleled line structure quality on a wide variety of resists matching MLB and HDI resist type requirements.

Highest Imaging Quality with Orbotech LSO Technology™

Nuvogo™ 780/780XL incorporates Orbotech’s field-proven Large Scan Optics (LSO) Technology™ to deliver unmatched Depth-of-Focus (of ±300µm and greater) for superior results on panels with varied topographies. Single scan for Rigid-Flex allows uniform imaging of the entire panel.

Lower Total Cost of Ownership (TCO)

The Nuvogo™ family of DI solutions ensures reduced total cost of ownership while meeting the industry’s increasing demands for high-end mass production. With lower service cost per print, the system offers manufacturers a significantly lower TCO to quickly achieve maximum ROI. Specifically, Nuvogo™ 780/780XL supports a variety of MLB and HDI resist types enabling manufacturers to select lower cost resists to further reduce operational costs. Furthermore, this optimized machine and its package of features, ensures the best possible cost-per-print.

Innovative Scaling Modes

- Auto Scaling / Fixed Scaling / Group Scaling / Wise Scaling

Registration Accuracy

- Registration accuracy down to ±12µm

Ease-of-Use

- Operator-friendly, 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 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 barcode / 2-D barcode (Data Matrix Code)
### Specifications

<table>
<thead>
<tr>
<th></th>
<th>Nuvogo™ 780</th>
<th>Nuvogo™ 780XL</th>
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<tbody>
<tr>
<td><strong>Throughput</strong> @35 mJ/cm²</td>
<td>300 prints/h Imaging Size 24”x18”</td>
<td>290 prints/h Imaging Size 25”x18”</td>
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<tr>
<td><strong>Min. Feature Size</strong>*</td>
<td>24µm</td>
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<tr>
<td><strong>Imaging Energy Range</strong></td>
<td>25 - 2,200 mJ/cm²</td>
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<tr>
<td><strong>Address Resolution</strong></td>
<td>2.0µm</td>
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<tr>
<td><strong>Registration Accuracy FtG</strong>**</td>
<td>±12µm</td>
<td></td>
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<tr>
<td><strong>Side-to-Side Registration FtB</strong>**</td>
<td>24µm</td>
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<tr>
<td><strong>Max. Substrate Size</strong></td>
<td>635mm x 660mm</td>
<td>660mm x 812mm</td>
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<tr>
<td><strong>Max. Exposure Area</strong></td>
<td>609.6mm x 660mm</td>
<td>635mm x 812mm</td>
</tr>
<tr>
<td><strong>Substrate Thickness</strong></td>
<td>0.025mm - 8mm</td>
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<tr>
<td><strong>Depth-of-Focus</strong>*</td>
<td>±300µm and greater</td>
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#### Applications

- MLB (Multi-Layer Boards)
- HDI applications
- Inner layers and outer layers [including high energy resists]
- Sequential build-up layers
- Solder mask

#### System Options

- Hole-free inner layer registration
- Stamping [serialization, scale factor, date / time]
- Advanced stamping and serialization options
- 2D barcode stamp
- Wise Scaling
- Group Scaling and stamping
- Additional vacuum customization plate

**Automation options:**
- DLU - DI Loading Unit
- Flipper
- Loader & unloader

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* Depends on photoresist properties
** All values are 3σ, full format
- Specifications are subject to change without notice.