

# DP-100SL™ Direct Imaging System



## Enabling High-Yield Volume Production of Fine-Feature PCBs

The DP-100SL delivers high quality imaging at an unprecedented direct imaging speed to help you meet today's production yield challenges with tomorrow's technology.

**With UV solid state laser (DPSS)**



# High-Yield Volume Production of Fine-Feature PCBs

For more than fifteen years, Orbotech has been developing visionary, enabling products for the PCB industry. To improve your yields, the DP-100SL brings imaging to a new level with record-breaking throughput and unprecedented line quality.

## DP-100SL brings

### UNPARALLELED DI THROUGHPUT

- Imaging speeds up to 120 sides per hour
- Virtually no set-up time
- Designed for full automation

### HIGHER YIELDS

- Wide process latitude
- Optimal image uniformity
- Accurate dynamic scaling and alignment

### PROCESS COMPATIBILITY

- UV diode pump solid state laser (DPSS)
- Exposure on all UV, dry or liquid resists
- Imaging on inner and outer layers, SBU, flex PCBs and solder mask
- Compatible with Yellow Room environment



### A Direct look at Direct Imaging

Direct Imaging (DI) is the process of exposing a layer of photoresist without using a mask. Digital image data describing a specific pattern is transferred from a CAM workstation to the DI system and imaged directly onto the photoresist-coated substrate. This method eliminates all intermediate steps, such as the creation and usage of phototools that are required in the contact printing process. The end result is a higher quality image and a more efficient process.

# UNPARALLELED DI THROUGHPUT

Capable of exposing up to 120 prints per hour, the DP-100SL sets new standards of throughput for Direct Imaging systems. DP-100SL incorporates a sophisticated optical system that allows you to print an entire panel in one scan, at a quick imaging rate of 18 seconds per layer (for panel sizes of 18" x 24"). Since there is virtually no set-up time, your flow of production continues even when you change job priorities or part numbers. This results in significantly reduced cycle time.

# HIGHER YIELDS

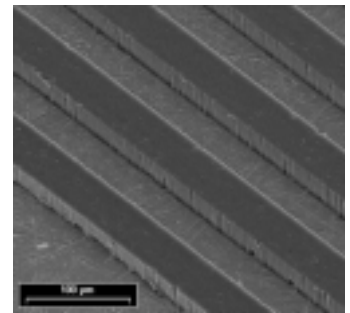
The DP-100SL is capable of overcoming yield problems associated with even the most difficult jobs, including large format and complex applications. It utilizes advanced digital techniques to enable wider process latitudes, dynamic scaling and precise side-to-side registration. The single scan-line technique, used to image the entire panel, provides uniform exposure even on large panel surfaces. Sophisticated filtering mechanisms and fewer process steps eliminate external contaminants and reduce handling defects.

# PROCESS COMPATIBILITY

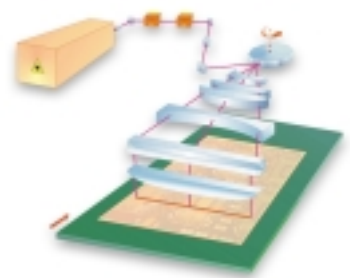
Throughout the development process, we focused on giving you maximum compatibility with your existing production processes. With the system's ability to image on any type of UV-sensitive media, including dry and liquid resists, there is no need for you to modify downstream or upstream processes, such as lamination or etching. The DP-100SL also integrates easily within the space limitations of your existing Yellow Room and maintains technology compatibility throughout your PCB shop floor.

# ADVANCED DIGITAL TOOLS

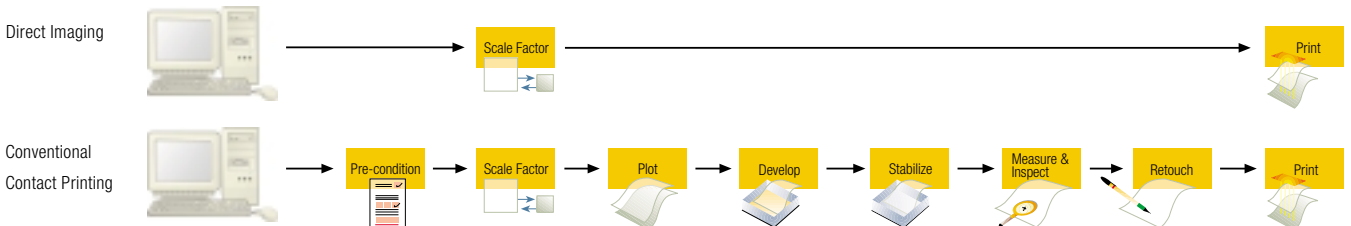
Orbotech introduces new digital tools in the DP-100SL that compensate for panel distortion and generate progress reports online. These tools give you improved process monitoring and immediately detect any unexpected problems. You can also add a personalized digital plot stamp - including serial numbers, bar codes and other signatures - to help you track your production activities.



2 mil line features exposed with the DP-100SL



One continuous scan movement



# DP-100SL™ Direct Imaging System

## S p e c i f i c a t i o n s

<b>Throughput *</b>	up to 120 prints/ hour	
<b>Resolution</b>	6.3 µm	0.25 mil
<b>Exposure Wavelength</b>	UV range	
<b>Max. Substrate Size</b>	660 x 812 mm	26" x 32"
<b>Max. Imaged Area</b>	609 x 812 mm	24" x 32"
<b>Substrate Thickness</b>	0.025 - 5 mm	0.001" - 0.2"
<b>Minimum Line &amp; Spacing</b>	50 µm	2 mil
<b>Edge Roughness **</b>	± 5 µm	± 0.2 mil
<b>Positioning Accuracy (FTG) **</b>	± 12 µm	± 0.45 mil
<b>Side To Side Registration **</b>	24 µm	0.95 mil
<b>Applications</b>	Inner and outer layers, SBU, flex PCBs and solder mask	
<b>Standard Configuration</b>	Dynamic Registration, RIP Server, 1 GB Raster Memory, Laser System, OPF/OPFX Input, Multilingual Operation Console, Vacuum & Registration Kit	
<b>DP-100SL Options</b>	<ul style="list-style-type: none"> <li>• Vacuum Customization Plate</li> <li>• Registration Customization Fixture</li> <li>• Local Scaling</li> <li>• Hole-free inner layer registration</li> <li>• Serialization</li> </ul>	

\* Throughput is defined as the number of 18"x24" prints per hour of continuous operation, utilizing a photoresist with 8mJ/cm<sup>2</sup> sensitivity, based on 2 targets registration.

\*\* All values are 3σ, full format. Typically, values are substantially better.

• The DP-100SL system is a class 1 laser product. Laser specification: UV diode pump solid state laser, 355 nm, 4 Watt max power

• Specifications are subject to change without notice.

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