



LIMATA

Laser direct imaging production solution

for oversized and endless PCB (rigid / flex) volume production

Standard PCB board sizes do not exceed the 24" x 18" dimension. Most of the consumer electronic PCBs are much smaller than this production format and can be manufactured in "copy & paste"-duplicates. But new, mostly industrial applications like aerospace, military, medical or aeronautic require for much larger boards.

There are different benefits of one XXL board in comparison to a solution of combined smaller boards. By the one hand better signal quality or lower signal attenuation for high frequency applications by the other hand reduction of cost of assembly and connection / installation. Also, based on the limitation of length of flexible PCBs, long interconnections between electrical system could only be done via wire connections. The benefits of weight, size, price and higher density of Flex-PCBs couldn't be used for all industrial applications which boards dimension exceeded the standard production format.

Limata was able to remove this barrier from production possibilities now. With LIMATA's new X3000 / P System manufacturers will receive a well-engineered state of the art laser direct imaging systems for efficient production of oversized PCB boards. Precise accuracy is achieved by partial registration and small features can be imaged on a large operation area. Flexible & rigid PCBs with continuous lines longer than 25 m are being produced with an intelligent stepwise imaging and panel transport machine concept.

Oversized PCB applications Features and Benefits

Board sizes of up to 96" x 48"
imageable for inner- and outer layer
& solder mask layer

Up to 24" x endless board size
for flex and rigid boards with roll-to-roll option

Partial registration
to improve registration quality with
linear / nonlinear transformations for
oversize boards

Customized vacuum table
with selectable vacuum areas

Easy loading / unloading
via handling system and air table
movement function

Top/bottom registration
thanks to UV markers for different
panel sizes



Limata GmbH
Adress
Gutenbergstr. 4
85737 Ismaning
Germany
Phone
+49.89.219091-130
Email
info@limata.de

WWW.LIMATA.COM

LDI System Specification

Oversized XXL PCB boards

LDI hardware platform	X3000 series
Operating table:	Customized vacuum table
Mechanical system:	Full granite XY Linear drive gentry
Communication Interface:	Ethernet
Power Supply:	400 VAC / 3+1 Phase
Upgradable:	Up to 4 heads
Max. image size:	2,4 x 1,2 m2 / 96" x 48"
Max. panel thickness:	25µm - 15 mm / 1mil - 0.6"

Imaging Features

Light engine:	Multi wave diode lasers
Depth of focus [opt.]:	+/- 500µm / 20mil

Resolution Accuracy*

Min Lines:	Down to 50µm / 2 mil
Min Space:	Down to 50µm / 2 mil

Registration Features

Reg System:	Up to 4 x HD Cameras
Camera Lighting:	RGB
Registration Accuracy	
Top to bottom layout [typ.]:	up to +/- 10 µm / 0.4 mil

* depending on dry film material and thickness

Endless XXL PCB systems

LDI hardware platform	P series
Operating table:	Customized vacuum table
Mechanical system:	Full granite XY Linear motor system
Communication Interface:	Ethernet
Power Supply:	230 VAC / 1 Phase
Upgradable:	Up to 4 heads
Max. image size:	610 x endless" mm2 / 24" x endless"
Max. panel thickness:	25µm - 15 mm / 1mil - 0.6"

Imaging Features

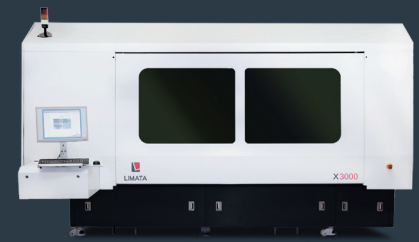
Light engine:	395 nm, 405 nm
Depth of focus [opt.]:	+/- 500µm / 20mil

Resolution Accuracy*

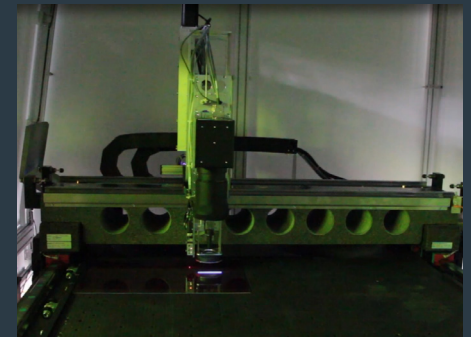
Min Lines:	Down to 100µm / 4mil
Min Space:	Down to 100µm / 4 mil

Registration Features

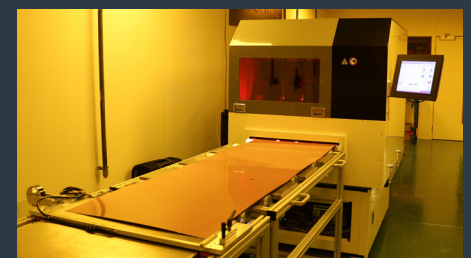
Reg System:	Up to 4 x HD Cameras
Camera Lighting:	RGB
Registration Accuracy	
Top to bottom layout [typ.]:	up to +/- 25µm / 1 mil



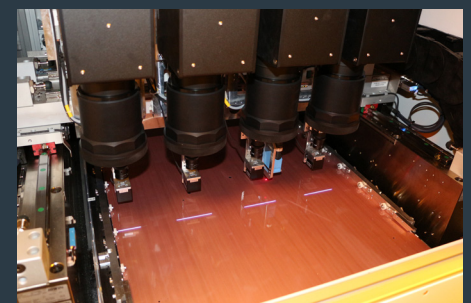
X3000 for flexible XXL board production



X3000 imaging process with up to 4 heads



Endless rigid PCB imaging with Hitchfeed technology



Intelligent data transformation for stepwise endless PCB imaging