

UV-P50 series

Laser direct imaging

The **UV-P LDI Series** is an automated direct imaging system designed for sophisticated high-speed imaging in prototyping production. The **UV-P comes with an automated single drawer system** and allows the customer to connect the machine with an automation system.

The **small footprint of the UV-P Series** saves floor-space in the yellow room and allows an easy integration into the production.

The **UV-P LDI offers a unique operational safety** due to its intelligent backup system. A breakdown of the exposure process caused by the light source is no longer possible.

Best in class registration of the panel is guaranteed by using 64-point sub-registration (each pattern is warped within software to suit individual geometry).

Both, standard dry films and solder resists are structured rapidly thanks to the new **Multi-wavelength laser technology**. Cost-efficient high energy UV diode-lasers with lifetimes (MTBF) of over 25,000 h are supporting low total costs of ownership.

Features and Benefits

- **+25.000 hours' laser lifetime** *ensures lowest maintenance costs*
- **HD Version available for highest resolution** *imaging up to 1 mil thanks to adjustable laser spot size*
- **Highest optical depth of focus +/- 500µm** *thanks to laser technology guarantees constant resolution without limitation*
- **Redundancy leads to safety** *Every laser-module is redundant which enables 24h express service to end-customer*
- **RGB Camera** *possible to improve fiducial detection even with covered solder mask*
- **Smallest footprint** *with high performance saves room / costs at clean-room environment*

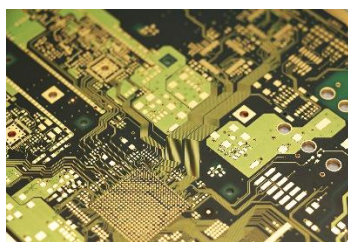
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Applications:

- **Automotive & Industrial**
Standard PCBs
- **Clean Energy**
IMS / Aluminum PCBs
- **Consumer Electronics**
Solder mask & dry film



System Features	
Market:	Small, medium PCB shops, R&D depart.
Operating table:	Single table
Vacuum table:	Included
Mechanical system:	XY Linear motor
Base:	Full granite
Weight:	ca. 1.000 kg
Dimensions:	0,87m x 1,6m x 1,75m / 35" x 63" x 76"
Footprint:	1,4 m ²
Communication interface:	Ethernet
Power supply:	230 VAC 50Hz / 1 Phase
Upgradeable:	from P51 to P54
Max. image size:	610 x 457 mm ² / 24" x 18"
Max. panel thickness:	25µm - 15 mm / 1mil - 0.6"
Imaging Features	
Light engine:	Diode laser
Laser wavelength:	395nm, 405nm
Lifetime laser [typ.:]	> 25.000 h
Lasers per head:	4
Number of heads (exposure units):	1 head
Depth of focus:	+/- 500µm / 20mil
Resolution Accuracy**:	
Min. Lines:	75 µm / 3 mil
Min. Space:	75 µm / 3 mil
Min. Lines (HD-Option):	25 µm / 1 mil
Min. Space (HD-Option):	25 µm / 1 mil
Max. edge roughness:	+/- 10% min. res.
Max line width tolerance:	+/- 10% min. res.
Registration Features:	
Reg. System:	1 x HD Camera
Camera Lighting:	RGB
Registration accuracy:	
Drill to layout [typ.:]*	< +/- 25 µm / 1 mil
Top to bottom layout [typ.:]	up to +/- 15 µm / 0.4 mil

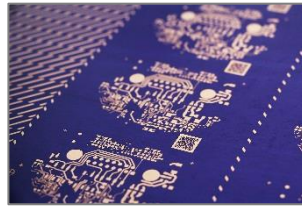
* depending on drill process accuracy

** depending on dry film material and thickness

System options:

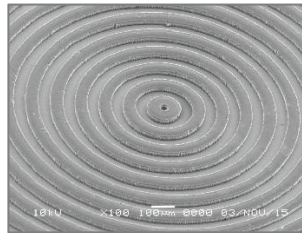
Traceability

Individual QR-Codes / Barcodes or serial numbers can be imaged on the fly



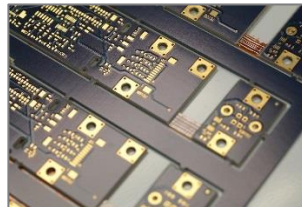
Multi-Point Registration

Detection of up to 64-fiducials for max. registration quality



Pin-Less UV-marking System

Detection of inner layers without any holes



HD-Option

Variable laser-spot alignment before each image allows adjustment of the quality for each layout



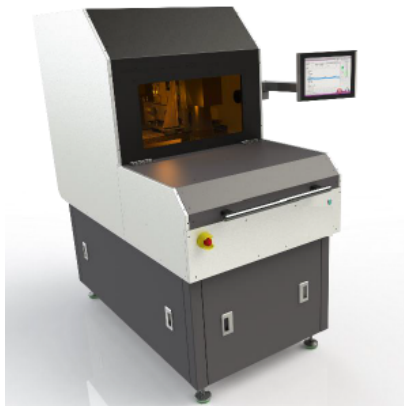
Diode laser with 25.000 hours (MTBF) life time for low maintenance costs



Galvanometer-Scanner can easily handle high energy values, such as required for solder mask imaging

System configurations:

UV-P System Family



Collimating optic for high depth of focus (DoF) and process stability

LDI System family	UV-P51	UV-P52	UV-P54
Laser heads	1	1	1
Diode lasers / spots per head	1	2	4
<u>Total laser / spots per head</u>	<u>1</u>	<u>2</u>	<u>4</u>

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