



# ADVANCED DIRECT IMAGING by ALTIX

HIGH POWER UV LEDs



**ALDS-Power4™**  
High Power LEDs  
High Resolution DMD



*Direct Imaging with us!*

# ADVANCED DIRECT IMAGING by ALTIX

Enhanced 4 LEDs Photo Heads for Higher Productivity and Printing Quality

ALDS-Power4™  
Advanced High Power 4 LEDs  
with High Resolution DMD System

Fully Intuitive Human Machine Interface

From Conventional Dry Films to Ink and Solder Resists



Real Time Panel Dynamic  
Scaling and Partitioning

Low Power Consumption

Compact footprint :  
All in one built-in system

Minimum Service  
Maintenance Required

High Accuracy Registration System

Best in Class Side to Side  
Registration

Panels Held by Vacuum Table  
and/or Clamping System

Rigid and Flex PCB Smooth Handling

# ADIX Specifications

<b>Panel</b>	Panel size	From 228 x 254mm (9"x10") up to 610 x 762mm (24"x30")
	Panel thickness	0.04 to 6mm   1.6 to 236mils
	Warp and twist	0.04 to 0.8mm   1.6 to 31mils • panel thickness: 1% of the diagonal 0.8 to 6mm   31 to 236mils • panel thickness: 0.5% of the diagonal
	Weight	6kg max (13.22lbs)
<b>Imaging</b>	Resolution ADIX SA	25/25µm   1/1mil (L/S) <sup>(1)</sup> 25µm   1mil (Dam) <sup>(1)</sup>
	Resolution ADIX SA-SM	50/50µm   2/2mils (L/S) <sup>(1)</sup> 50µm   2mils (Dam) <sup>(1)</sup>
	Edge Roughness	± 1.5µm   ± 0.05mil)
	Depth of Focus ADIX SA	± 100µm   ± 4mils
	Depth of Focus ADIX SA-SM	± 200µm   ± 8mils
	Autofocus	± 8mm   ± 315mils
	Image to panel registration Side to side registration	± 8µm   ± 0.31mil ± 12µm   ± 0.47mil
<b>Throughput</b>	Exposure time ADIX SA	14s with 30mJ/cm <sup>2</sup> resist for 457 x 610mm (18"x 24") image size (6 heads) <sup>(2)</sup>
	Exposure time ADIX SA-SM	65s with 300mJ/cm <sup>2</sup> resist for 457 x 610mm (18"x 24") image size (5 heads) <sup>(2)</sup>
<b>Process</b>	Imaging resist materials	Conventional & DI/LDI specific dry films • Ink & Solder resists
	Resist sensitivity	From 10 to 1,000mJ/cm <sup>2</sup> and above
	Exposure spectrum	4 wavelengths per Photo Head: 365/380/395/405nm
	Applications	PCB • FPCB / Flex • Photo Chemical Milling • Touch Panel • Photovoltaics
	Production types	Inner Layers • Outer Layers • Soldermask (PSR)
<b>Graphic User Interface</b>	ALTIX Direct Imaging Suite™	22" touch screen, Intuitive software, Object oriented, SPC capabilities, Multilanguage
	Data input	Extended Gerber, ODB++ (others upon request)
<b>General utilities &amp; Foot print</b>	Power supply	220/400/480V • 50/60Hz • 4kW
	Air supply	6 to 7 bars (1.5m <sup>3</sup> /min)
	Water supply	Water pressure 3~5 bars Flow rate: 23l/min @ 12°C or 33l/min @ 14°C
	Machine weight	4,600kg (10,141lbs)
	Dimensions	W: 1,750mm (69") L : 2,870mm (113") H : 1,870mm (74")

(1) depending on photoresist, surface preparation & DES process • (2) estimated time given as reference but can fluctuate according to the process adjustments

**Direct Imaging with us!**



# ADIX's Semi-Automatic & Fully-Automatic Direct Imaging Product Range

## Semi-Automatic



### ADIX SA

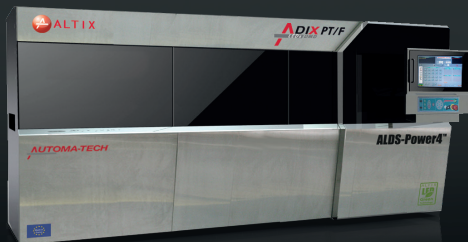
Semi-Automatic Direct Imaging Solution for QTA, High mix low and medium volume production  
Dedicated for all resists: Dry Film & Soldermask



### ADIX SA-SM

Semi-Automatic Direct Imaging, fully optimised for Soldermask process  
Standard resists compatible

## Integrated Automation



### ADIX PT / F

Integrated Automation for Fully-Automatic Direct Imaging process  
Pass Through side by side or Flip double side production  
High mix & medium volume  
Dedicated for all resists: Dry Film & Soldermask

## External Automation

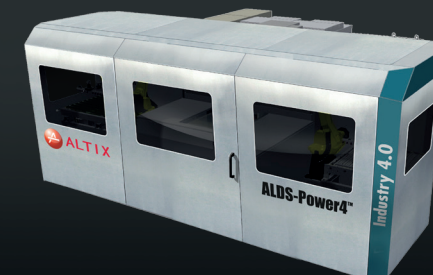
### Standard Compact

The system is designed to automatically load and unload panels into an ADIX Direct Imaging system for either horizontal or angular cassettes  
This compact automation is upgradable on site



### Customized Solutions

ADIX units can be incorporated with various Customized "Smart Automation" solutions in order to allow full automatic operation  
Customized solutions fit all specific Customer needs and are adequate for small lot sizes, high mix and high volume production



## ALDS-Power4™

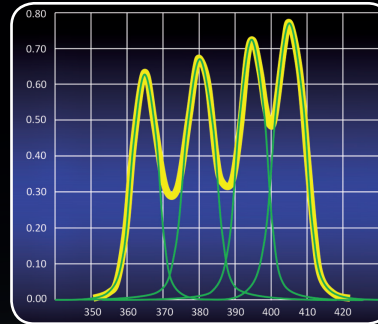
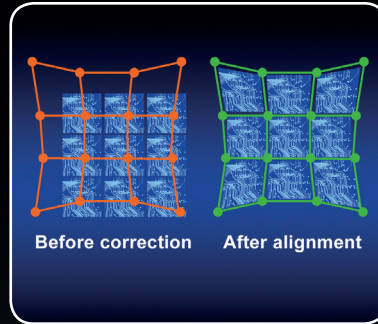
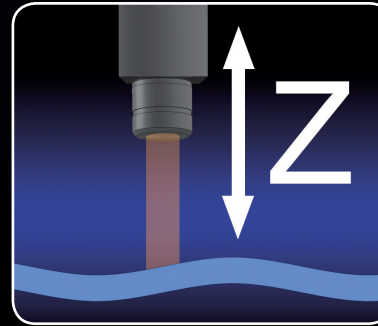
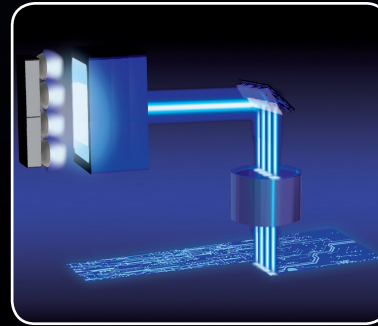
Advanced high power LEDs with high resolution DMD System. The heart of the system is a creative combination of 4 high-density LEDs light sources through a unique optical device coupled to a high frequency (up to 20kHz) DMD coordinated with a graphic signal and projection lens.

This combination enables our ADIX solution to perform high-resolution line and space down to  $20\mu\text{m}$  and to print with a better edge roughness ( $\pm 1.5\mu\text{m}$ ).

## Real time Scaling & Partitioning

Highly accurate real time scaling and distortion compensation technology responds to the PCB material variations. Each panel can be scaled to measure its distortion.

For each panel, different scale factors can be applied with dynamic imaging modes: linear (Trapezoidal scaling, Orthogonal scaling) and non-linear (Polygonal scaling).



## High dynamic Autofocus Function

Highly precise and dynamic autofocus system is integrated inside each imaging head. The heads get real time feedbacks in order to take into account the warping and surface thickness variations of the board at  $\pm 8\text{mm}$ .

This state of the art tool plus the depth of focus of the head, which allows imaging in a consistently suitable state, drastically reduce the occurrence rate of imaging errors.

## Multi-wavelengths UV-LED

The combination of different UV light wavelengths enables to polymerize a large range of dry film, ink and solder resists. With 4 LED wavelengths (365/380/395/405nm) and by adjusting the output ratio, it is possible to obtain the most efficient and fast printing for each type of dry resists or soldermask.

UV-LED consumes less energy, generates less heat, and lasts much longer than typical laser diode or blue laser based on light sources.

## Number of Light Engines depending on your capacity. Upgradable on Site

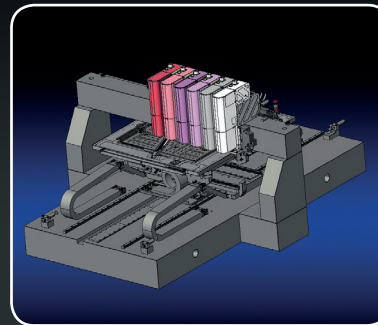
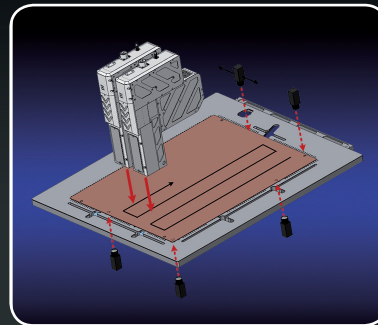
Our modular and flexible imaging technology ALDS-Power4™ can be adapted to your throughput requirements. Also, the number of photo heads can be chosen accordingly when defining your new Direct Imaging equipment.

This number of photo heads can be enlarged from 1 to 6 anytime in the future to match with your expanding needs. This incremental investment enables to have a fully optimized system, which means a quicker Return Of Investment.

## High Accuracy Registration

A multiple CCD cameras vision system enables featuring image to panel registration down to  $\pm 8\mu\text{m}$  for high-end HDI designs. Our solution can align the panel via a through hole or various alignment marks.

Our side-to-side registration for inner layers enables high accuracy alignment down to  $\pm 12\mu\text{m}$  thanks to our exceptional registration system with adjustable points fitting the panel size.

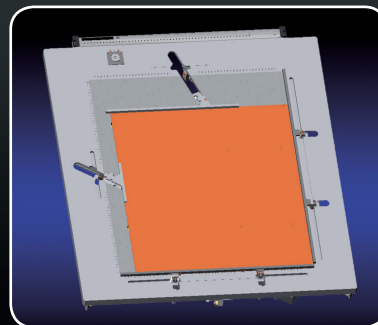


## Smart Vacuum & Clamping Technology™

A unique Vacuum & Clamping mechanism offers an automatic selectable vacuum system. Vacuum and clamping are automatically monitored according to the panel size.

This clamping system can safely hold warped PCBs and handle panel thickness from  $40\mu\text{m}$  to  $6\text{mm}$ .

In addition with the autofocus function, it allows a perfect imaging compared to other systems having only a vacuum table without clamping mechanism.



## Human Machine Interface (HMI)

Fully intuitive interface enables a friendly-user utilization for the operators. A state of the art touch screen graphical user interface enables an easy operating such as: quick job setups, parameters monitoring, full diagnosis, or process optimization.

Our powerful software "ALTIX Direct Imaging Suite™" offers more with multilingual capabilities and our statistical module "Altix Statistical Process Control Module".



# ALTIX, over 25 years of innovations and performances!



## Manufacturing, Sales & Service:

**Europe:** Altix France – HQ

Email: central@altix.fr

**Taiwan:** Altix Asia

Email: central@altixasia.com

## Direct Sales & Service:

**Asia:** Altix China

Shanghai, Kunshan,

Zhuhai Offices

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## North America:

Altix NA, Inc.

West Coast, Middle West

and East Coast

Email: central@altix.us



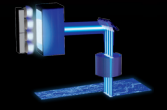
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Quality Assurance Program

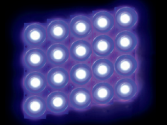


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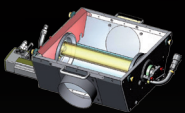
ALDS-Power4™

2017



LedLight™

2012



OptiLight™

2009



Diffuse™

1997

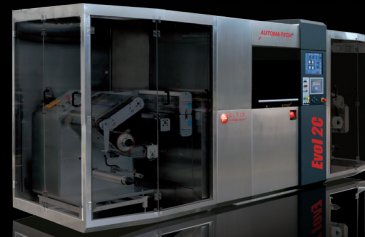


ColliLight™

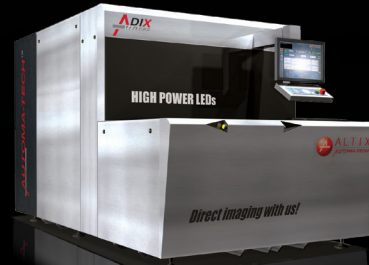
1992



1993 Evolution 1



2013 Evol 2C Roll to Roll



2015 ADIX



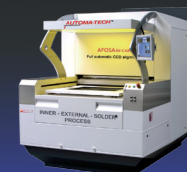
2010 ACURA DSS



2007 ACURA



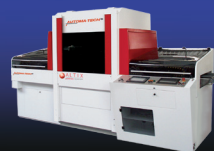
2005 ARROW



2002 AFOSA



1998 Evol 2b Roll to Roll



1996 Evolution 2b