ADVANCED DIRECT IMAGING
by ALTIX

ALDS-Power4+™
High Power LEDs
High Resolution DMD

Direct Imaging with us!
Enhanced 4 LEDs Photo Heads for Higher Productivity and Printing Quality

From Conventional Dry Films to Ink and Solder Resists

Low Power Consumption

Minimum Service Maintenance Required

Best in Class Side to Side Registration

Panels Held Down by Vacuum Table and/or Clamping System

Rigid and Flex PCB Smooth Handling

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

Fully Intuitive Human Machine Interface

Real Time Panel Dynamic Scaling and Partitioning

Compact Footprint: All in One Built-In System

High Accuracy Registration System

ADVANCED DIRECT IMAGING by ALTIX

ALTS-Power4+™

Advanced High Power 4 LEDs with High Resolution DMD System

Compact Footprint: All in One Built-In System

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ALTS-Power4+™

Advanced High Power 4 LEDs with High Resolution DMD System

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High Accuracy Registration System
# ADIX Specifications

## Panel
- **Panel size**: From 228 x 254mm up to 610 x 762mm | From 9“ x 10” up to 24“ x 30”
- **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
- **Weight**: 0.8 to 6mm | 31 to 236mils • panel thickness: 0.5% of the diagonal
  - Panel thickness: 1% of the diagonal
  - Panel thickness: 0.5% of the diagonal

## Imaging
- **Resolution - L/S**: 10/10µm | 0.4/0.4mil (1)
- **Resolution - DAM**: NA
- **Edge Roughness**: ± 0.5µm
- **Depth of Focus**: 100µm
- **Autofocus**: ± 8mm | ± 315mils
- **Image to panel registration**: ± 8µm | ± 0.31mil
- **Side to side registration**: ± 12µm | ± 0.47mil

## Throughput
- **Exposure time**: 14s with 30mJ/cm² resist for 457 x 610mm (18“ x 24”)

## Process
- **Imaging resist materials**: Conventional dry films or specific for DI • Ink & solder resists
- **Resist sensitivity**: From 10 to 1,250mJ/cm² and above
- **Exposure spectrum**: 4 wavelengths per Photo Head: 365/380/395/405nm
- **Applications**: PCB • FPCB / Flex • Photo Chemical Milling • IC Substrate • Touch Panel
- **Production types**: Inner Layers • Outer Layers • Soldermask (PSR)

## Graphic User Interface
- **ALTIX Direct Imaging Suite™**: 22” touch screen, intuitive software, object oriented, SPC capabilities, multilanguage
- **Data input**: Extended Gerber, ODB++ (others upon request)

## General utilities & Foot print
- **Power supply**: 220/400/480V • 50/60Hz • 4kW
- **Air supply**: 6 bars | 1.5m³/min
- **Water supply**: Water pressure 3–5 bars • Flow rate: 23l/min @ 12°C or 33l/min @ 14°C
- **Machine weight**: 3,500kg (7,716lbs)
- **Dimensions**: L : 2,870mm (113”) W: 1,750mm (69”) H : 1,870mm (74”)

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(1) depending on photoresist, surface preparation & DES process • (2) estimated time given as reference but can fluctuate according to the process adjustments
ADIX Semi-Automatic & Fully-Automatic Direct Imaging Product Range

**Adix SA**
**Semi-Automatic**
**Panel to Panel DI Exposure**
Semi-Automatic Direct Imaging solution for QTA, high-mix low and medium volume production dedicated for all processes: Inner Layers, Outer Layers and Soldermask (PSR)

**Adix PT / F**
**Pass-Through / Flip**
**In-Line Automation**
**Fully Automatic Double Side**
Integrated automation for fully-automatic Direct Imaging process in-line or island of automation.
Pass-through double-sided production with “in the air” flip.
This compact automation is dedicated for all resists: dry film & solder resists and upgradable on site

**Adix CS / F**
**Compact Standardized / Flip**
**Compact - Island of Automation**
**Fully Automatic Double Side**
The system is designed to automatically load and unload panels into an ADIX Direct Imaging system from either angular or slot cassettes.
An automatic flip & cleaning functions are integrated. The system is able to handle multiple batches and different panel sizes.
This compact automation is dedicated for all resists: dry film & solder resists and upgradable on site

**Adix Customized Solutions**
ADIX units can be incorporated with various Customized “Smart Automation” solutions in order to match with all specific Customer’s needs.
This solution is adequate for small lot sizes, high-mix and high-volume production

**Adix RtR**
**Roll to Roll DI Exposure**
**Fully-Automatic**
ADIX Roll to Roll is a fully automatic Direct Imaging designed as a single sided Roll to Roll exposure system for fine line resolution, tight registration and high throughput capabilities.
It can handle all types of web for Flex Printed Circuit Boards, Photo Chemical Milling, Touch Panel, Thin Film Photovoltaic, etc...

ADIX Semi-Automatic & Fully-Automatic Direct Imaging Product Range
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 10μm.

Real time Scaling & Partitioning

Highly accurate real time scaling and distortion compensation technology responds to the PCB material variations. Each digital image can be scaled to match with the panel 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 Accuracy Registration

A multiple CCD cameras vision system enables featuring image to panel registration down to ±8μm 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 ±12μm thanks to our exceptional registration system with adjustable points fitting the panel size.

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 (2 to 6 for RtR) 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.

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 40μm to 6mm.

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”.

Highly 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 ±8mm.

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.
ALTIX, over 30 years of innovations and performances!

Timeline Product Launch

Light Engines

1992: ColliLight™
1997: OptiLight™
2009: Diffuse™
2012: LedLight™
2015: ALDS
2016: ALDS-Power4™
2017: LedLight™MACH3
2018: ALDS-Power4+™

2013: Afsos Led
2014: AcuReel
2015: Adix SA
2016: Acura Premium
2017: Afsos LedLight Mach3
2018: Adix CS / F
Adix RiR

2002: Afosa ie
2005: Arrow
2007: Acura
2011: Acura LedLight
2012: Acura DSS
2013: Afsos Led
2014: AcuReel
2015: Adix SA
2016: Acura Premium
2017: Afsos LedLight Mach3
2018: Adix CS / F
Adix RiR

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