

ADAT3 XF PIXELECT BONDER - HIGH-SPEED HIGH-ACCURACY MINI-LED BONDER WITH FLIP-CHIP FUNCTION

Ready for next-generation LED direct view displays

Reduce your total cost of ownership. Gain quality inspections and the flexibility to scale - without compromising on accuracy, quality, or speed. The ADAT3 XF PiXelect Bonder is four times faster than anything on the market - handling LED as small as 3x5 mil. The flip-chip bin-mixing technology eliminates the sorting step and manual wafer change. Multiple systems can be connected - enabling you to build competitive, high-definition, and cost-effective displays using mini-LED technology.



Key features

Performance

- Bonding 70,000 units per hour
- Handles the smallest LED sizes on the market
- Flip and non-flip configuration at same speed
- Standard deviation XY position better than 3 μ m
- Handles sorted as well as EPI wafer input (sorting and bonding integrated in one step)
- 100% high-resolution optical inspections on die, attach, and post-bond steps without compromising on machine speed
- 8 inches Film Frame Carrier (FFC) ring with fully automatic wafer change
- Can be configured for manual load as well as conveyor belt interface with a series of systems (Red/Green/Blue (RGB) line)
- Can handle R, G, B colours in single machine with placement gap down to 20 μ m

Specifications

Speed

- 70,000 units per hour flip-chip bonding

Die Range

- Length, width: 75 x 125 μ m to 2.5 x 2.5 mm
- Aspect Ratio: 1:1 - 1:3
- Thickness: 50 - 400 μ m

Substrate range

- Minimum: 75 x 75 x 0.1 mm
- Maximum: 250 x 250 x 0.2 mm

Placement Accuracy

- Die position: x, y: 1 σ < 3 μ m
- Die rotation: ϕ : 1 σ < 1°
- Pick and place force: 0.2...1.5 \pm 0.1 N

Pick up tooling

- Vespel collet
- Rubber tip
- Four-sided collet
- Push-up needle

Substrate Handling

- Manual
- Optional conveyor belt interface with a series of machines (RGB line)

QA Vision Inspections

- Pre-pick inspection (wafer): Die alignment. Frontside chipping. Wafer map alignment
- Pre-pick inspection (PKG carrier): PKG alignment
- Frontside chipping. Carrier map alignment
- Post-pick (transfer): Die present. Die alignment
- Pre-bond inspection on substrate: Bond pad alignment
- Post-bond inspection incl. substrate recognition: Die placement

Wafer handling

- Handling R, G, B wafers: EPI or Sorted
- 8 inches Film Frame Carrier (FFC) ring
- Automatic wafer change
- Wafer expansion
- Automatic barcode reader

Automation

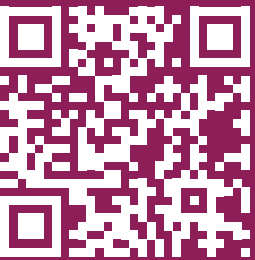
- Full die traceability (full strip mapping)
- Auto recipe download (MES interface)
- Monitoring of critical process parameters during production. Automatic stop function when parameter out of control
- Servo, bond-force and vacuum auto-diagnostics functionality to check health status of the machine

Machine dimensions

- Length, width, height: 2050 x 1280 x 2100 mm³
- Net weight: 1850 kg



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