finetech

micro assembly

FINEPLACER® lambda

Flexible Sub- micron Die Bonder

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The flexible FINEPLACER® lambda is a sub- micron die- bonder for precision die attach and advanced chip packaging.

It offers a modular design and can be easily reconfigured for future applications, making it the premier choice when maximum technological versatility and fast process implementation is key. Typical fields of application include R&D, universities, prototyping and low- volume production.

The system handles a wide range of applications, including laser bar and diode bonding with Indium or Au/ Sn, VCSEL/ photo diode bonding (glueing, curing) and the multi- stage assembly of opto electro mechanical systems (i.e. MEMS/ MOEMS) for communications and medical technology products.

Highlights*

- Sub- micron placement accuracy
- Unique optical resolution
- Handles ultra small components with special tooling
- Closed loop force control
- Small footprint and compact design
- Optics movement with programmable positions

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* depending on configuration/ application, (1) standard value, other values on request, (2) optional modules

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Features

- Automated processes (temperature, force)
- Overlay vision alignment system (VAS) with fixed beam splitter
- Robust construction and modular design
- Integrated Process Management (IPM)
- Real time process observation camera
- Adaptive process library
- Process transfer from system to system
- Virtually unlimited range of advanced bonding technologies

Benefits

- User independent die placement and process operation
- Outstanding placement accuracy and instant operation without adjustments
- Provides high level of reproducibility and application flexibility
- Synchronized control of all process related parameters: force, temperature, time, flow, power, process environment, light and vision
- Immediate visual feedback reduces process development time
- Fast and easy process development
- Process transfer from R&D to production saves time, guarantees reliable results
- ROI savings - one machine for all applications

Technologies

- Thermocompression bonding
- Thermosonic bonding
- Ultrasonic bonding
- Soldering (AuSn / eutectic, Indium, C4)
- Adhesive technologies
- UV curing / thermal curing
- Bump bonding
- Copper pillar bonding
- Mechanical assembly

Applications

- Flip chip bonding (face down)
- Precise die bonding (face up)
- Laser diode, laser diode bar bonding
- Optical engines, VCSEL/ photo diode bonding
- LED bonding
- Micro optics assembly
- MEMS/ MOEMS/ sensor packaging
- 3D packaging
- Wafer level packaging (W2W, C2W)
- Chip on glass, chip on flex

Technical Specifications

Placement accuracy:	± 0.5 µm
Field of view (min)[1]:	0.55 mm x 0.45 mm
Field of view (max)[1]:	6.7 mm x 5.4 mm
Component size (min)[1]:	0.1 mm x 0.1 mm
Component size (max)[1]:	15 mm x 15 mm
Theta fine travel:	± 5°
Z- travel	10 mm
Working area[1]:	190 mm x 52 mm
Bonding force range[2*]:	0.1 N - 400 N
Heating temperature (max)[1,2*]:	400 °C

Modules & Options

- Bonding Force Module (manual)
- Bonding Force Module (automatic)
- Chip Heating Module
- Die Flip Module
- Die Pick- up Module
- Dispenser Module
- Formic Acid Module
- Interchangeable Object Lenses
- Motorized Fine Rotation
- Optics Shifting
- Process Gas Module
- Process Video Module
- Substrate Heating Module
- Ultrasonic Module
- UV Curing Module

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