finetech

micro assembly

# FINEPLACER® femto 2

**Automated Prototype2Production Bonder**


FINEPLACER® femto 2

The new FINEPLACER® femto 2 is a fully automated sub micron die bonder for advanced packaging applications. A complete machine enclosure ensures highly stable and fully controlled processes with the focus on maximum yield.

Numerous innovations such as the cutting- edge Vision Alignment System FPX*vision*™ allow for a highly flexible application spectrum. IPM Command, a new generation of FINEPLACER® operating software, has been designed to ensure a fast, ergonomic and clearly structured process development.

With a modular system architecture, the FINEPLACER® femto 2 can be configured at any time to support a virtually unlimited range of applications and processes. This makes the system a perfect tool and reliable companion as applications migrate from product development to production.

## Highlights*

- Placement accuracy 0.5 µm @ 3 sigma
- Fully- automated operation
- Manual operating routines available
- Controlled process environment with cleanroom quality
- Operator protection from emissions (lasers, UV sources, gasses)
- Full process access and quick process setup
- **FPX*vision*™**: maximum resolution across large field of view
- Ergonomic operating concept with touch screen interface
- Modular design allows individual configurations

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* depending on configuration/ application, (1) standard value, other values on request, (2) optional modules
Technical information are subject to change without prior notice.

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## Features

- Pattern recognition for automated placement and bonding processes
- High optical resolution across a large object field
- Integrated Process Management (IPM)
- IPM Command: library based operating software of the next generation
- Live process observation
- Virtually unlimited variety of advanced bonding technologies

## Benefits

- User independent process operation ensures stability, accuracy and optimal yield
- Outstanding placement accuracy with large components and substrates
- Synchronized control of all process related parameters: force, temperature, time, power, process environment, light and vision
- Fast, modular process development with graphical user interface
- Immediate visual feedback reduces process development time
- Use one system from product development to production

## 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 @ 3 sigma |
| Field of view: | 3.8 mm x 2.7 mm |
| Native camera resolution: | 1µm / pix |
| Extended field of view: | 83 mm x 2,7 mm |
| Component size (min): | 0.05 mm x 0.05 mm |
| Component size (max): | 100 mm x 100 mm |
| Component thickness[1]: | 0.01 - 10 mm |
| Substrate size: | on customer request |
| Substrate thickness (max)[1]: | 35 mm |
| Theta fine travel / resolution: | ± 9° / 3.5 µrad |
| Z- travel / accuracy: | 10 mm / 0.2 µm |
| Y- travel / accuracy: | 150 mm / 0.1 µm |
| X- travel / accuracy | 450 mm / 0.1 µm |
| Heating temperature[2]: | 450 °C |
| Bonding force range*: | 0.05 N - 500 N |

## Modules & Options

- Automatic Tool Changer
- Bonding Force Module
- Chip Heating Module
- Die Flip Module
- Dispenser Module
- Flip Chip Test Module
- Formic Acid Module
- Laser- assisted Bonding Module
- Process Gas Module
- Substrate Heating Module
- Substrate Handling Module
- Ultrasonic Module
- UV Curing Module

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