Optoelectronics and Silicon Photonics,
High Accuracy Flip-Chip Bonder 0.5 µm

The ACCuRA Opto is a flip-chip bonder that allows ± 0.5 µm accuracy. It is dedicated to low force and reflow processes. Motorized axes guarantee a high repeatability of your process. The ACCuRA Opto combines high precision, flexibility and accessibility. It is the perfect equipment for optoelectronics and silicon photonics applications.

Applications
- Laser diode, laser bar
- VCSEL, photo diode
- LED
- Prisms, lenses, mirrors
- Micro assembly
- Flip-chip bonding, die bonding
- Chip-to-chip, chip-to-substrate bonding

Highlights
- Accuracy* ± 0.5 µm
- Low bonding force
- Confining gas
- Easy to use and very flexible
- Quick set-up of new applications
- Small footprint and compact design

*depending on configuration and application.
Specifications

**Machine**
- Footprint: 955 x 1110 mm
- Height: 800 mm
- Weight: ~450 kg

**Component size**
- Chip (Upper die): 0.2 x 0.2 - 22 x 22 mm
- Substrate (Lower die): 0.2 x 0.2 - 100 x 100 mm
- Total thickness: 0.03 to 8 mm

**Bonding arm**
- Accuracy*: ± 0.5 µm
- Z resolution: 0.01 µm
- Force: 0.2 up to 10 N

**Alignment stage**
- XY stage: Resolution 0.015 µm
- Theta travel: ± 5°, resolution 1 µrad

**Bonding heads**
- Room temperature: Sq. 22 mm
- Heating: Sq. 22 mm, 400°C
- UV: 80 mW / cm² @ 365 nm

**Substrate chuck**
- Room temperature: Sq. 50 or 100 mm
- Heating: Sq. 22, 50 or 100 mm, 400°C

**Optics**
- Digital camera resolution: 2 sight cameras 0.37 µm/pixel
- Field of view: 900 x 700 µm
- Automatic alignment: Optional

**Options**
- Dispenser: Ionisers bars
- UV Curing system: Flux or dipping station
- Face up station: Frame with elastomeric insulator
- Process recording: Automatic alignment

User benefits
- Open platform associated to an intuitive interface results in a quick set-up for new applications
- Closed loop systems providing a high repeatability in operations
- High precision, accurate control of low forces and user-friendly interface for multiple applications and processes

Main bonding processes
- Flip-chip bonding
- Die bonding
- Pick & Place
- Thermocompression
- Reflow
- UV curing
- Gold/Tin, Indium, Copper/Tin

Data, design and specifications depend on individual process conditions and can vary according to equipment configurations. Not all specifications may be valid simultaneously. Illustrations, photos and specifications in this datasheet are not legally binding. Specifications are subject to change without prior notice.

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