

**FUZION**

## FUZIONSC PLATFORM

### SEMICONDUCTOR PERFORMANCE AT SM SPEEDS

Universal Instruments' FuzionSC™ Platform is an all-in-one solution for advanced packaging applications ranging from direct die attach and flip chip to multi-die heterogeneous integration. FuzionSC combines semiconductor precision with the speed and robustness of Universal's Fuzion Platform. It accommodates direct pick from wafer, as well as processing of components from tape or tray.

FuzionSC maximizes throughput per floor-space, bringing high productivity to advanced packaging assembly. Features include:

- 1 and 2-beam variants
- Throughput up to 30,750 cph per module
- Silicon/SMT, high-accuracy/high-speed assembly
- High accuracy: ( $\pm 4\mu\text{m}$  with AMS option,  $< 3\mu\text{m}$  repeatability)
- Full range of die and component types and sizes
- Versatile substrate handling
- Broadest range of feeding platforms
- Low-force capability

VIDEO

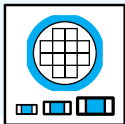


### BENEFITS & VALUE



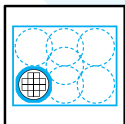
#### HIGH THROUGHPUT

Up to **10K cph** for advanced packaging applications, **30K cph** for standard applications



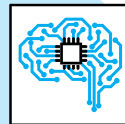
#### PROCESS DIE & COMPONENTS

Die up to **40mm**, **0.05–4mm** thick; SMT from **08004–100mm** square and up to **25mm** tall



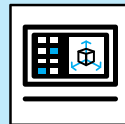
#### PLACE ON ANY SUBSTRATE

Panels from **20mm** square to **813mm x 610mm**; Thickness from **50 $\mu\text{m}$**  to **25mm**



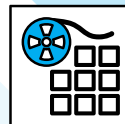
#### COMPREHENSIVE PROCESS DEVELOPMENT

Advanced Process Lab (APL): Leading-edge process and materials expertise, process optimization, failure analysis



#### FAST NPI PROCESS

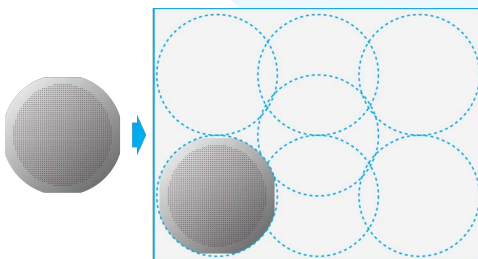
Sequential process for complete board build; Full editing capability in pre-production NPI mode and dynamic on-the-fly editing in full production mode



#### SUPPORT FOR A VARIETY OF INPUT TYPES

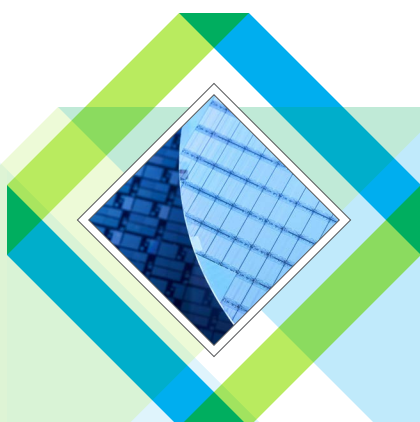
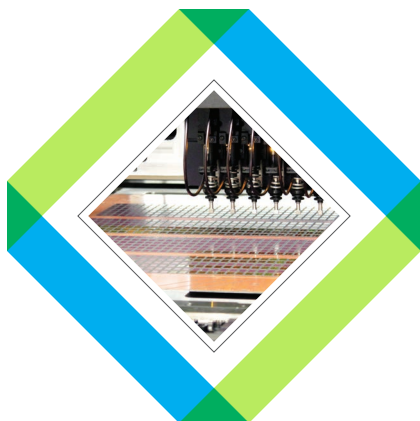
Portfolio of reliable feeding solutions accommodate a range of components and packaging: wafer, tape, tray, tube, track, and bowl

### LARGE SUBSTRATE



Populate the largest panels to process higher die counts

- Traditional platforms follow wafer form factor, limiting assembly size
- Populate panels without sacrificing speed or accuracy
- **Achieve a 7X processing increase**



## FUZIONSC PORTFOLIO



### FuzionSC1-11

Lower-cost solution with additional flexibility.



### FuzionSC2-14

Ultimate solution for higher throughput requirements.

**Stand-alone machine solution – All-in-one efficiency:** Single-beam for high flexibility, dual-beam for higher throughput; Wafer, tray, tape, tube, bulk feeding.



FuzionSC1-11



FuzionSC2-14

**Mass reflow – Full-process, high-mix/NPI:** Complete-process solution supporting multiple feeding formats and flux or solder paste dipping.



FuzionSC1-11

**Mass reflow – Scaled assembly, medium-mix, medium-volume:** Complete-process solution with dedicated chip placer and flexible high-accuracy placer supporting HVHM tray packaging.



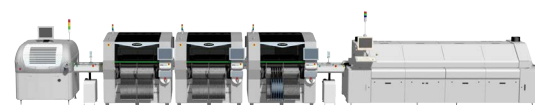
Fuzion1-30 FuzionSC1-11

**Mass reflow – Medium to high-volume:** Complete-process solution with chip placer and high-accuracy placer; higher volume, same footprint.



Fuzion2-60 FuzionSC2-14

**Mass reflow – Versatile high-volume:** High-throughput full-process solution with large feeder capacity for streamlined changeovers.



Fuzion2-60 Fuzion2-60 FuzionSC2-14

## FuzionSC Specifications

Platform Model	FuzionSC1-11	FuzionSC2-14
Positioning System	Single-beam linear motor	Dual-beam linear motor
Placement Heads	7-spindle FZ7™ & 4-spindle FZ4™	(2) 7-spindle FZ7™
Cameras	(2) Upward-looking cameras	(2) Upward-looking cameras
Throughput	8,400 cph (IPC)	14,200 cph (IPC)
Accuracy (@>1.00 Cpk)	±10µm; ±4µm with AMS option	±10µm; ±4µm with AMS option
Max PCB Dimensions	508mm x 813mm	508mm x 813mm
Max Feeder Inputs	120 (2 ULC)	120 (2 ULC)
Feeder Input Types	Wafer (up to 300mm), tray, tape, tube, and bulk	Wafer (up to 300mm), tray, tape, tube, and bulk
Component Range (mm)	(008004) .25 x .125 (Min) 100 square and up to 25 tall (Max)	(008004) .125 x .125 (Min) 100 square and up to 25 tall (Max)

