# Advanced Packaging Upgrades & Retrofits

Universal Instruments

*Build better with genuine Universal Instruments performance and reliability enhancements*

LIST PRICE RANGE ($K): Low (L) < 5, Medium (M) 5–10, High (H) 10+

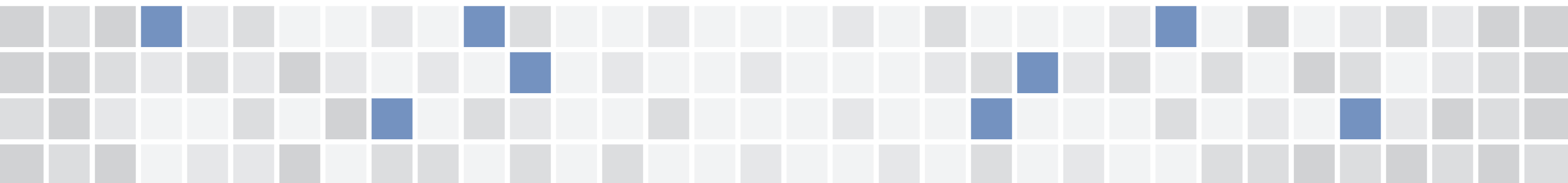
LEAD TIME (WEEKS ARO): Standard (S) 4–6, Extended (E) 6–12, Custom (C) 12+

(#s) indicate which row the item is located in within the reference document

| General Upgrades & Retrofits | Description | Prerequisites/Notes |
|---|---|---|
| Linear Thin Film Applicator (LTFA) (2) | Extend your Fuzion/Genesis platform capabilities into advanced packaging applications such as Package-on-Package. A more robust design enhances the leveling set up and provides stronger flux-plate mounting. | Software assessment required for SM platforms; Fixed feeder bank. (H, E) |
| LTFA Tooling Upgrades (3) | Improved tooling provides additional durability, flux plate options for larger dipping area, and multi-dip zone plates for process development | Application assessment required (M, E) |
| Instant Recovery Kits | Reduce downtime with critical spare parts which allow you to quickly recover after a machine issue | A variety of kits are available (M, S) |
| Ionizer (9) | Reduce potential component damage by minimizing ESD conditions in production; can be located at board-in/out or inside the cover package. | (H, E) |
| HEPA Filter (10) | Extend your product reach by enabling a clean room production environment | (H, C) |
| Equipment Utilization Audit (14) | Maximize machine utilization by identifying areas of improvement with an on-site service performed by an expert Field Engineer | (M–H, S) |
| Top-Side Alignment Process (TAP) Kit (18) | Implement Universal's TAP process for high-accuracy placement of LEDs and other components based on top-side features. TAP is particularly effective for the Automotive, Solar and Semiconductor markets. The kit includes: Precisor™ Top Feature Inspection Station, specialized software and additional machine tooling. | Fuzion3.7x+ Software; Software assessment required; Application-specific tooling may be required. (H, E) |

| Software Upgrades & Retrofits | Description | Prerequisites/Notes |
|---|---|---|
| Fuzion 3.x Software Upgrade (11) | Upgrade your platform to the latest software revision level to leverage a host of features, including an expanded component range to 08004, nozzle tip centering, IQ360™ Factory Software compatibility, and compatibility with other SM platforms | Requires software assessment and RFQ (H, S) |

| Head Upgrades & Retrofits | Description | Prerequisites/Notes |
|---|---|---|
| Low-Force Nozzles for FZ7 Head (6) | Leverage low-force functionality for applications requiring down to 40 grams of placement force with a variety of low-force nozzles | Fuzion 3.7+ Software (L, E) |
| Semiconductor Nozzles for FZ7 Head (15) | Place a full range of die sizes and types. Custom semiconductor nozzles are available in a variety of materials. | (L, S) |



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| Feeder Upgrades & Retrofits | Description | Prerequisites/Notes |
| --- | --- | --- |
| Extended Warranty | Protect your investment with an additional warranty package. A variety of warranty packages are available covering parts, labor and/or both. | ROI analysis; Machine in active, standard or reduced support phase. (M, S) |
| Solder Ball Feeder (4) | Expand application capabilities and improve efficiency by feeding solder balls from bulk | Requires specialized tooling and application review (H, E) |
| Vacuum Tray Feeder (VTF) | Maximize efficiency and reduce replenishment times by feeding single-part number components from trays for higher-volume applications. Supports up to 40 trays. | Vacuum trays only (H, E) |
| JEDEC Tray Feeder (JTF) (12a) | Maximize efficiency and reduce replenishment times by feeding single-part number components from trays or higher-volume applications. Supports up to 40 trays. | JEDEC trays only (H, E) |
| Flexion™ Wafer Feeder (13) | Present wafer-level devices to Universal's FuzionSC Platform without incurring costly die packaging expense. Flexion supports wafer sizes from 4" to 12". It also supports wafer mapping, built-in traceability, and features an advanced die ejection option. CE Certified. Two per machine. | Software license and applications review required; Fixed feeder bank required. (H, E) |
| 4mm x 1mm ion Feeder (16) | Dual-lane feeder presents components from 4 x 1 tape. Supports both paper and embossed tape. | (L, E) |
| Axium Label Feeder (17) | Reduce cost and improve quality by eliminating manual assembly. Pick and place labels, masks, insulators, shields, and other adhesive-backed media. | (H, E) |

| Vision Upgrades & Retrofits | Description | Prerequisites/Notes |
| --- | --- | --- |
| Pattern Error Correction (PEC) Camera Upgrade (1) | Improve recognition capabilities with improved optics and higher resolution by replacing the .40 mpp PEC with a .27 mpp | Fuzion 3.x+ Software (H, S) |
| Upward-Looking Camera .2 mpp (7) | Improve recognition capabilities with a higher resolution camera for placement of fine pitch components with bump features down to 20 microns | Fuzion 3.x+ Software (H, S) |
| Upward-Looking Camera .5 mpp (8) | Improve recognition capabilities with a higher resolution camera for placement of fine pitch components with bump features down to 50 microns | Fuzion 3.x+ Software (H, S) |


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