

ANNEX A



IR3100 Infrared BGA Rework Station

Production BGA Installation & Rework Made Easy!

The IR 3100 can easily install and remove BGA, QFN, μ BGA/CSP, Flip Chip and other SMD's. Featuring a 500W infrared (IR) top heater and a 1000W IR bottom preheater, the IR 3100 does not require nozzles. A specially-developed IR pyrometer provides non-contact, real-time, closed-loop temperature control throughout the reflow process. A Sodr-Cam Re-flow Camera comes standard, allowing you to watch the entire reflow process in real time. The IR 3100's newly designed Windows-based software makes profiling incredibly simple for even the most advanced applications, providing intuitive set-up, multi-stage profiling, on-the-fly profile adjustment, flux-dipping, unlimited profile storage and much more.

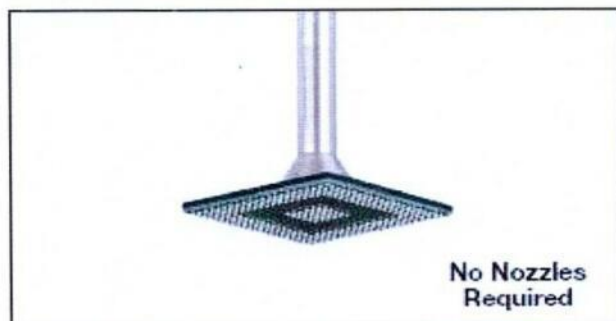
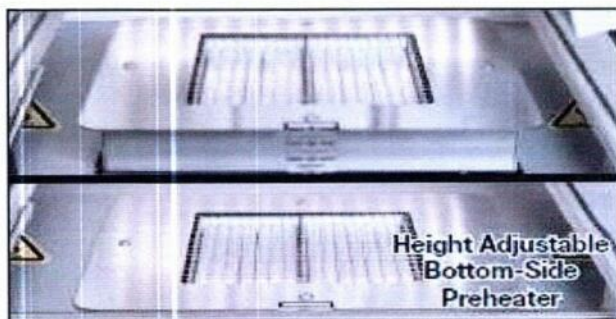


Non-Contact IR Pyrometer

A closed-loop, non-contact IR pyrometer monitors and controls the ramp-rate and temperature of the component in real time, by controlling the top and bottom heaters' output throughout the reflow process.

IR3100 Advanced Features

- **Non-Contact IR Pyrometer:** A closed-loop, non-contact IR pyrometer monitors and controls the ramp-rate and temperature of the component in real time, by controlling the top and bottom heaters' output throughout the heating process.
- **Ultra-High Precision Placement Capability:** Motorized reflow head is driven by advanced stepper motor system providing smooth, high precision, repeatable movement with no drift, allowing for soft landing of components and 28 μ m (.0011") placement accuracy.
- **High Sensitivity Vacuum Pick:** New Vacuum Pick design is more robust, utilizes an optical sensor, is counterweight balanced, and employs precision high-temperature linear ball bearings for maximum accuracy and sensitivity in placement and pick-up.
- **Sodr-Cam Reflow Camera:** Provided Sodr-Cam allows the operator to verify the entire reflow process, including the exact moment of solder melt.
- **Height Adjustable Bottom-Side Preheater:** High powered (1000W) IR preheater height is adjustable from standard position up to 38mm (1.5") closer to the PCB for the most challenging high-thermal-mass boards.
- **High-Definition Optical Alignment System:** Automated Vision Overlay System uses a beam-splitting prism, high intensity LEDs for shadow-free lighting and a new high definition 1080p camera for easy alignment.
- **Quad-Field Imaging for Large/Fine Pitch BGA's:** Allows up to four corners of a large component (and its lands) to be viewed under high magnification, providing perfect alignment of outsized BGAs or fine-pitch QFPs.
- **Integrated Board Support Wand:** Prevents warping or sagging during reflow, is extremely adjustable to clear parts on the bottom of PCB and is easily removed when not in use.
- **Power Distribution Graph:** Provides a graphical analysis of the top heater output within each zone, helping the developer make necessary adjustments to either the bottom heater utilization, or ramp rate, to maximize thermal performance.
- **Sensor Offset:** Allows the developer to easily match the pyrometer temperature reading to the actual solder temperature.



| Part Numbers | 8007-0586 (120 VAC Unit) | 8007-0587 (230 VAC Unit) |
|--|--|---|
| Power Requirements | 120 VAC, 50/60 Hz (1550 Watts maximum). Requires dedicated 15 A supply. | 230 VAC, 50 Hz (1550 Watts maximum). Requires dedicated 10 A supply. |
| Dimensions | 737mm (29") H x 686mm (27") W x 737mm (29") D | |
| Weight (Without Computer) | 45kg (100lbs) | |
| Top-side Heater | Medium/Long wave IR, 500 Watts | |
| Bottom-side Preheater with Adjustable Working Height | Medium/Long wave IR, 1000 Watts; 220mm (8.6") x 155mm (6.1"); Adjustable working height from lowest position up to 38mm (1.5") closer to the PCB | |
| High Sensitivity Vacuum Pick | Pick is counterweight balanced, and utilizes an optical sensor and precision high temperature linear ball bearings, ensuring delicate placement and pick up of parts from PCB. Includes seven (8) Vacuum Picks | |
| Precision Placement Capability | Advanced professional placement system utilizing a stepper motor and position encoding provides smooth, precise movement, with no drift, allowing for repeatable and accurate placement. | |
| Placement Accuracy | Stepper motor with precision positioning of to 28µm (.0011") accuracy | |
| Board Support Capability | Integrated Board Support Wand prevents PCBs from sagging/warping during rework, and is adjustable to clear parts on bottom of PCB | |
| Maximum Target Temperature | Each profile zone has a maximum target temperature of 328 °C (624 °F) | |
| Precision PCB Holder | Advanced table features micrometer X & Y adjustment, extruded board holder arms, spring loaded, with T-slots and movable clamps for both large and irregularly shaped boards with non-uniform edges | |
| Maximum/Minimum PCB Size | Maximum: 305mm x 305mm (12" x 12"); Minimum: N/A arms close down completely | |
| Maximum/Minimum Component Size | Maximum: 65mm (2.5") x 65mm (2.5"); Minimum: 1mm Sq. | |
| IR Pyrometer and Thermocouple Inputs | A specially developed IR sensor provides non-contact, real-time, closed-loop temperature control throughout the reflow process. In addition, four (4) thermocouple inputs provide additional real-time monitoring (includes 2 K-type thermocouples) | |
| High Definition Optical Alignment System | Vision Overlay System (VOS) with High Definition (1080p) color camera, integrated frame grabber, dichroic beam-splitting prism, independently controlled LED illumination for component and PCB. Up to 240x zoom capability, with Stable Zoom and image stabilization. VOS does not require routine calibration. (Optical Alignment Kit included) | |
| Motorized Optics Housing (Sodr-Cam) | Allows the developer to watch the entire reflow process in real time to verify solder melt. The camera arm rotates to provide a 180-degree view at a fixed distance, for minimal focus adjustment and ease of use. Automatically controlled, retractable optics housing protects Vision Overlay System from dirt and contamination | |
| Quad-Field Imaging | For large component alignment (including fine-pitch QFPs), allows up to four opposite corners of a large component (and its pads) to be viewed under higher magnification | |
| Single Axis Operation | All operations, including component pick-up, alignment, placement, reflow & active cooling are completed in a single axis, eliminating risk of component movement after placement and reflow. | |
| Auxiliary Cooling Fan | Standard, for secondary cooling of the PCB | |
| Software | Intuitive, user-friendly, Windows-compatible software guides operators through profile development and execution; No cost upgrades on IR3100/4100 software | |
| Computer System | Windows 10 PC, with wireless mouse and keyboard | |
| Video Monitor | 607mm (24") wide screen flat panel monitor (includes Monitor Arm Mounting Kit) | |
| Video Inputs | USB 3.0 | |
| Component Nests | Two (2) removable and adjustable Component Nests provided for perfect centering of components, in preparation for vacuum pick-up/placement. Optional component holding system for parts under 5mm Sq. | |
| Flux Dip Plate | Included; allows for automated flux dipping | |
| Stencils/Solder Paste | Over 145 stencil kits are optionally available (requires Universal Bracket Kit) and are integrated into the installation process | |
| PV-65 Pick-Vac Vacuum Wand | Included; provides a manual vacuum pick-up capability for handling SMDs, incorporates new 15 minute auto-off feature | |
| Warranty | One Year Limited Warranty | |