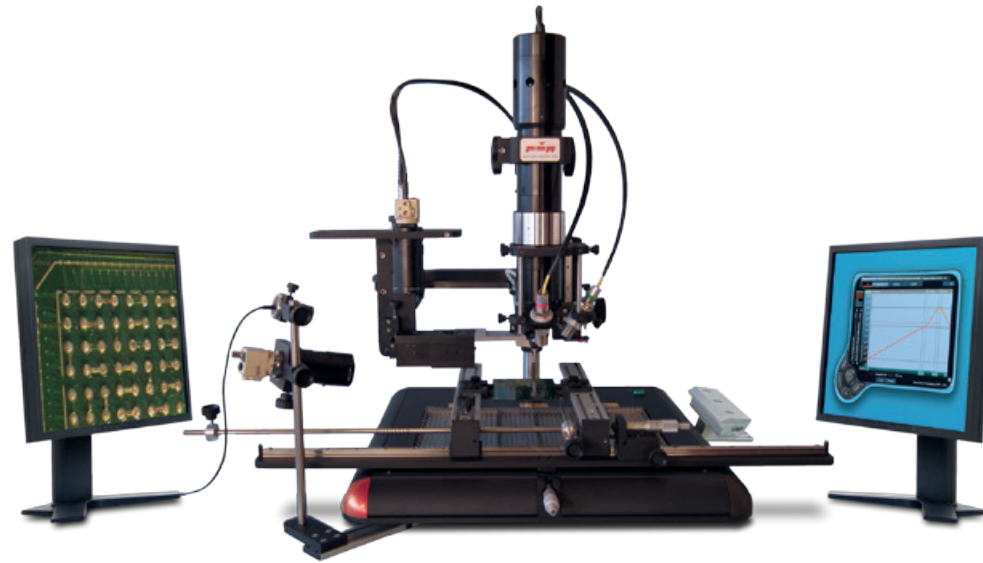




Focused IR SMT/BGA Rework Systems



PDR IR-E3 Evolution Series SMD/BGA Rework Stations

PDR Focused IR Rework Stations for Ultimate Performance
for SMD/BGA/uBGA/QFN/LED Rework

Available in 3 models - E3S (Standard), E3G (Gold) and E3M (Micro)

Multi-purpose flexible rework focused on precision and simplicity

PDR's IR-E3 series of SMD/BGA IR rework systems are engineered to cope with the challenges of repairing today's PCB assemblies. The systems use PDR's patented Focused IR technology, the world's only technology that uses Dual-band Visible IR Heating. **The light that heats.**

The stations are nozzle free, gas free, clean, simple and easy to use. Each model is designed for precise control to produce 100% yield of your SMD/BGA rework without complications. The keys are accurate closed-loop thermal feedback and intuitive easy to use software. The IR-E3 series provides extremely high levels of profiling and process control necessary for the effective rework of the most advanced packages, including SMDs, BGAs, CSPs, QFNs, LEDs, Flip-chips, 0201-01005s and all lead-free applications.

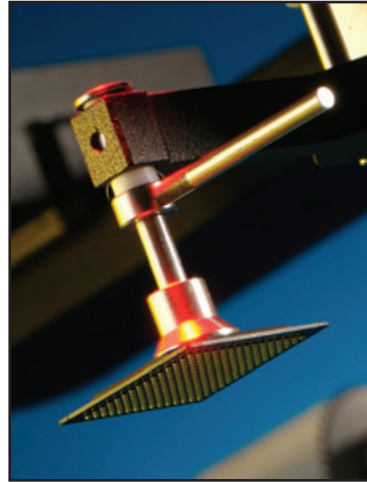
The PDR IR-E3 systems are available in 3 models - **IR-E3S**, **IR-E3G** and **IR-E3M** - each configured perfectly for their respective roles, modular and upgradeable.

PDR IR-E3S

Developed from PDR's pioneering IR rework stations from the 1990-2000s, the IR-E3S, is the standard of the E3 Series. Featuring: Focused IR Component heating, 2250w 2-zone IR PCB preheating, precision mechanics, precision optical alignment and advanced thermal control. The E3S system is flexible, upgradeable and ideal for general purpose SMD/BGA rework on small-medium sized PCBs.

PDR IR-E3G

Enhanced, the IR-E3G **adds superior thermal control and twin cameras for precision alignment and process observation.** Non-contact pyrometers focus on the component and the PCB, for thermal feedback to auto-profiling ThermoActive V7 software. With camera input, the software also permits still and video capture. Mechanical advancements feature precision soft touch component pick up and placement. This system also features large IR 2800W 3-zone IR PCB preheating.



PDR IR-E3G PDR's number one selling system

The **PDR IR-E3G** has been our top selling station for many years, a clear preferred choice of our customers worldwide. A versatile complete system that is ideal for a very wide range of SMD/BGA/uBGA/CSP/LED applications on small-large sized PCBs.

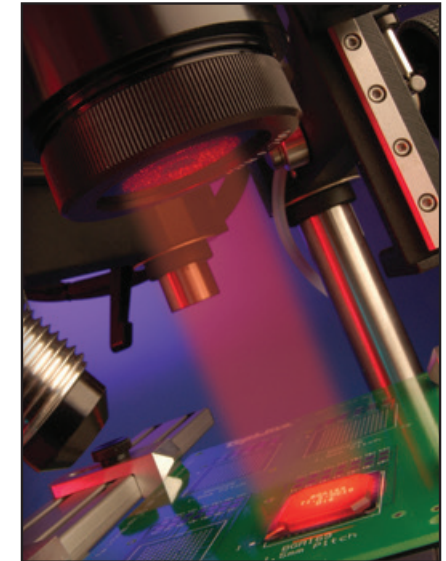
PDR IR-E3M

Introduced in response to our customer demands, we took the E3G and further enhanced it for Micro-rework applications. In addition to general purpose applications, the IR-E3M's thermal, mechanical and optical features are all precisely focused to easily deal with micro components and micro PCBs. In addition to the 3050w micro-PCB preheater, a 750w electronic Thermo Boost is included along with non-contact thermal control. High-magnification vision assisted component alignment, pick-up and ultra-fine placement complete the micro-process handling. This system is absolutely ideal for micro component-PCB rework without complications.

SMD/BGA rework without the complications

Put simply, without any complications, our systems can pick and place micro components or large BGAs and reflow small or large boards with precision and control. The PDR IR process is simple, safe and gentle. Precise control prevents burning or damage to materials. We can visually show the process, record it and repeat it precisely every time. Anyone can learn to use these systems and they are affordable.

Each of the E3 Series rework systems use the same principals of PDR's Focused IR technology, first introduced in 1987. Over 4,500 systems are now in use world-wide. Each PDR customer made a clear well informed decision to buy PDR IR technology. Please contact us to learn why they chose PDR.



Dual-band Visible IR Heating. The light that heats.

Advanced features:

- **Advanced Focused IR component heating**

Dual-band Visible IR Heating system
150W, lens based Focused IR heating with adjustable image system Ø4-70mm

- **Quartz IR PCB preheating**

E3S - 2250W, two zone (240mm x 240mm heating area) with 750W Micro-PCB Thermo Boost
E3G - 2800W, three zone (360mm x 240mm heating area) with 750W Micro-PCB Thermo Boost
E3M - 3050W, three zone (360mm x 240mm heating area) with 750W Micro-PCB Thermo Boost

- **Precision Component Pick and Placement**

Advanced Professional vacuum placement system
Soft-touch component landing

- **Component Nest/Flux Application Facility**

Integrated nest with flux dip tray or component print frame and optional Optical assist

- **Precision PCB Handling**

Advanced Professional PCB table with macro-micro X/Y

- **Component Temperature Sensing**

Standard non-contact IR temperature sensor

- **PCB Temperature Sensing**

K-type wire thermocouple
Optional non-contact IR temperature sensor

- **Advanced Thermal Process Control**

Software based auto profile thermal control

- **Camera/Prism Based BGA/CSP/QFN Alignment System**

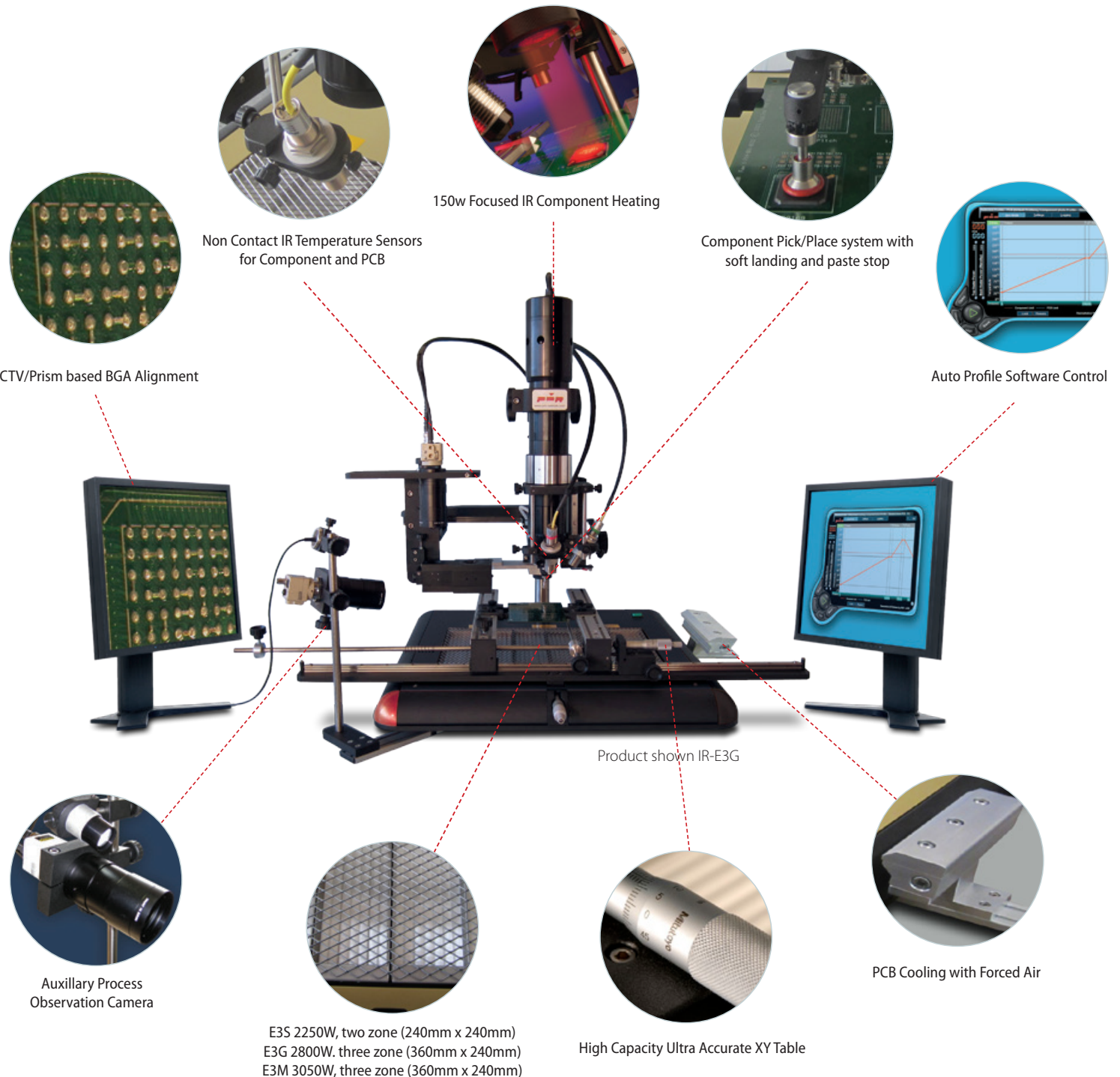
Split beam prism system for simultaneous PCB/component viewing
High mag camera-lens optics

- **Auxiliary Process Camera (Optional)**

Auxiliary process observation camera
Ultra-high mag camera-lens optics

- **Forced Air PCB Cooling (Optional)**

Highly effective, integral PCB cooling with air knife system



CCTV/Prism based BGA Alignment

150w Focused IR Component Heating

Non Contact IR Temperature Sensors for Component and PCB

Component Pick/Place system with soft landing and paste stop

Auto Profile Software Control

Product shown IR-E3G

Auxillary Process Observation Camera

PCB Cooling with Forced Air

E3S 2250W, two zone (240mm x 240mm)
E3G 2800W, three zone (360mm x 240mm)
E3M 3050W, three zone (360mm x 240mm)

High Capacity Ultra Accurate XY Table



PDR IR-E3 Series
BGA Rework Station

	System
PDR System Features	Model
Advanced Focused IR Component Heating	
Focused IR Lens System - Dual-band Visible IR	
F150 - Ø 6-18mm - Lens Attachment	
F200 - Ø10-28mm - Lens Attachment	
F400 - Ø12-35mm - Lens Attachment	
F700 - Ø20-70mm - Lens Attachment	
Quartz IR PCB Preheating	
2250W, 2 zone (240mm x 240mm heating area) with 750W Micro-PCB Electronic Thermo Booster	
2800W, 3 zone (360mm x 240mm heating area)	
3050W, 3 zone (360mm x 240mm heating area) with 750W Micro-PCB Electronic Thermo Booster	
Component Pick and Placement	
Advanced Professional vacuum placement system (Y/Z-axis, Rotation and Soft Landing)	
Advanced Venturi vacuum placement system (Y/Z-axis, Rotation and Ultra-fine Landing)	
Component Nest/Flux Application Facility	
Hi-Mag Vision nest for small part handling with flux/paste dip tray/component printing	
Component nest with flux/paste dip tray or component print frame feature	
PCB Handling (PCB Capacity)	
Advanced Professional PCB table with macro-micro X/Y (18" x 12"/450mm x 300mm)	
Optional Universal Micro-PCB Pallet to emulate larger PCB Surface area (USA option)	
Component Temperature Sensing	
Standard non-contact IR temperature sensor (Pyrometer) - Ø7mm+ Spot	
PCB Temperature Sensing	
K-type wire thermocouple	
Non-contact IR temperature sensor (Pyrometer) - Ø7mm+ Spot	
Advanced Thermal Process Control	
Software based auto profile thermal control with multi-profile library	
Camera Based Vision Systems	
Camera/Prism Based BGA/CSP/QFN Alignment System	
Auxiliary Process Observation Camera - Ultra-high Mag/Zoom Imaging System	
Forced Air PCB Cooling	
Simple USB/free standing cooling fan (USA option)	
Highly effective, software activated, integral PCB cooling with air knife system	

● = Standard Feature ○ = Optional Feature

PDR IR-E3		
E3S	E3G	E3M
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Details and specifications of advanced features available

- Advanced Focused IR component heating**
 Dual-band Visible IR Heating system
 150W, lens based Focused IR heating with adjustable image system
 PDR lens attachments with IR image from 4 to 70mm diameter
 Reworks SMD, BGA, uBGA, QFN, LED, uLED, 0201 etc.
- PCB Temperature Sensing**
 Manually attached K-type thermocouple probe
 Optional non-contact IR sensor with real time temperature sensing
- Auto Profile Process Control Software**
 PDR ThermoActive software suite
 Digital controller with multi-functional features
 Advanced, Windows 7+ ThermoActive software suite
 Two channel, real time, closed loop component and PCB temperature control
 'Auto-profile' temperature profiling, data logging and reporting
 Multi K-type thermocouple (x4) capacity for temp/time testing
- Camera/Prism Based BGA/CSP/QFN Alignment System**
 Split beam prism system for simultaneous PCB/component viewing
 Integral LED lighting system with illumination level control
 Full colour compact camera and flat screen colour monitor
 High quality zoom lens with up to x50 magnification
 Precise X/Y axis mounting system
- Auxiliary Process Camera (Optional)**
 Auxiliary process observation camera
 Integral LED lighting system with illumination level control
 Full colour compact camera with rotation movement
 High quality zoom lens with up to x50 magnification
- Forced Air PCB Cooling**
 Highly effective, Software controlled, integral PCB cooling with air knife system
 Switched compressed air flow, directed under the PCB
- Advanced Professional Vacuum Placement System**
 With precise 'pick and place' action, Y/Z axis movement and rotation via, Magna-Track Precision Pick-Up Assembly with Micro-Touch soft landing/ component lift
 Fine approach, Z-axis stop, with LED indicators for paste placement
 Comprehensive range of micro pick-up tips for different devices
 E3M - Venturi Powered Vacuum Assist for EZ Ground Plane Detach (70-140PSI Shop Air)
- Component Nest for Precision Pick-up and Flux Application**
 Solder Paste/Dipping Tray facility with process Camera Verification
 Micro Part Pick-Up nest with Optical Assist
- Advanced Professional Macro-Micro X/Y PCB Table**
 Precision micrometer (micro) X/Y and micro rotation control
 +/- 5 microns (.0004") movement in X/Y directions
 Macro movement in X/Y directions
 From 0.25"x 0.25" up to 12" x 18" (300mm x 450mm) PCB capacity with lockable X/Y axis
 E3M - Optional Universal PCB Pallet to emulate larger PCB Surface area (USA Option)
- Component Temperature Sensing - Non-contact, IR Sensor**
 Manually adjustable, K-type non-contact IR sensor, Ø7-10mm spotsize
 Real time monitoring of component temperature throughout process

Bench Top Requirements

Top heat power	150W IR
Back heater power	2250-3050W IR
Voltage/frequency	208-240 volts 50/60Hz, up to 3.2KW
Typical components	SMD, BGA, uBGA, QFN, LED, uLED, 0201 etc.
Bench area	1400mm (w) x 600mm (d)
Weight	65 Kg

The above features are mostly optional and also, PDR reserves the right to improve or change specifications without giving notice.

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