

## PDR IR-E3 EVOLUTION SERIES

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

Trusted by Experts



## Multi-purpose flexible rework focused on precision and simplicity



[Click above for video link](#)

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

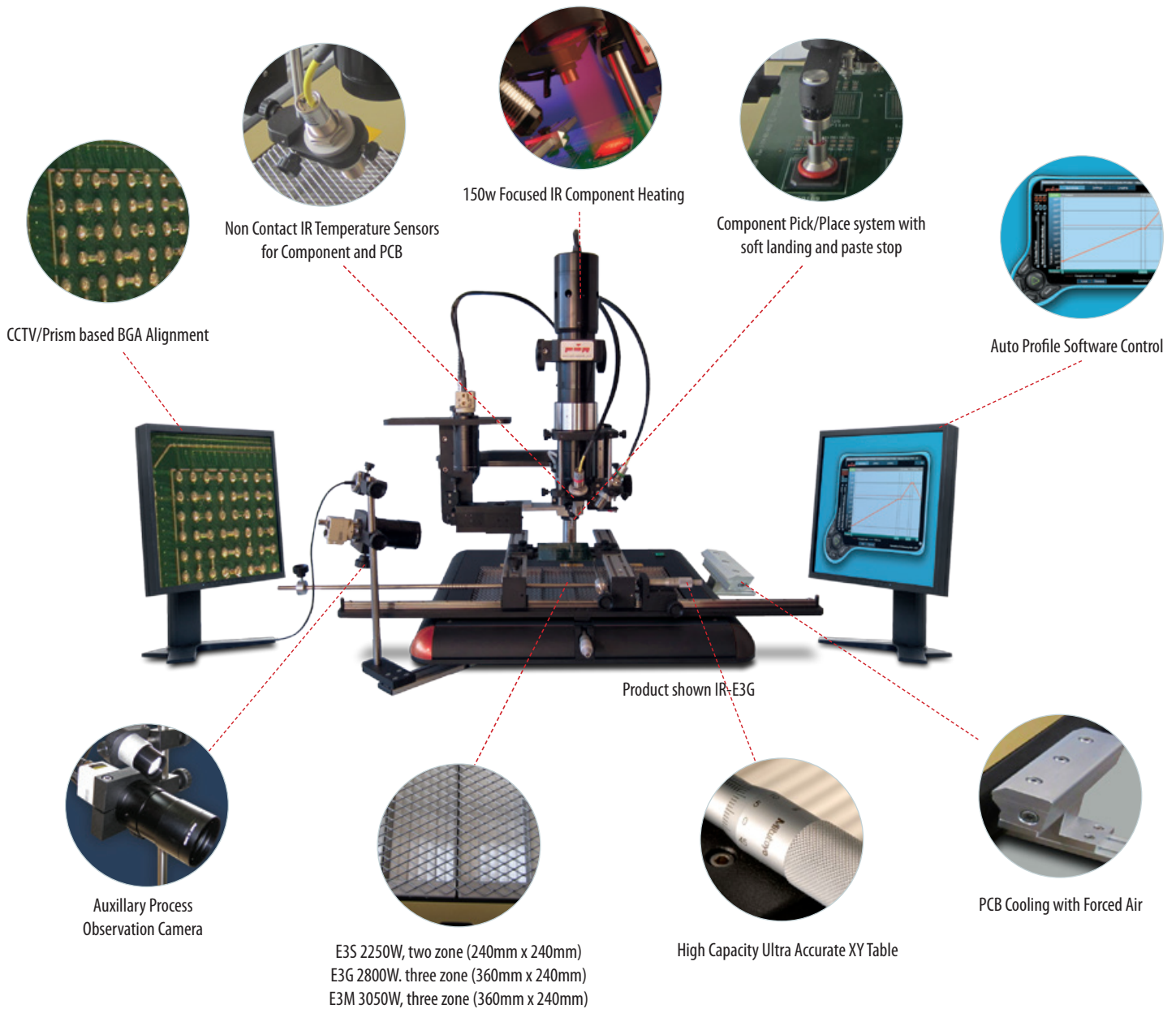
Introduced in response to our customer demands, we took the E3G and further enhanced it for Micro-rework applications. In addition to general purpose applications, the IR-E3M's thermal, mechanical and optical features are all precisely focused to easily deal with micro components and micro PCBs. In addition 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.





## Advanced Features

- **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)  
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

	PDR Station	IR-C3	IR-D3	IR-E3	IR-E6
• = Standard Feature    ○ = Optional Feature	Typical Application	Entry-Level SMT/BGA Rework Station - small/medium PCBs	Professional BGA Rework Station - small/medium PCBs	Ultimate Performance, BGA Rework Station for Small-Medium PCBs	Ultimate Performance, BGA Rework Station for Very Large PCBs
<b>Advanced Focused IR Component Heating</b>		IR-C3	IR-D3	IR-E3	IR-E6
Focused IR Lens System		•	•	•	•
F150 - Ø 4-18mm - Lens Attachment		○	○	○	○
F200 - Ø10-28mm - Lens Attachment		○	○	○	○
F400 - Ø12-35mm - Lens Attachment		○	○	○	○
F700 - Ø25-70mm - Lens Attachment		•	•	•	•
<b>Quartz IR PCB Preheating</b>		IR-C3	IR-D3	IR-E3	IR-E6
750W, single zone (120mm x 120mm heating area)		○	○	○	
2000W, single zone (240mm x 240mm heating area)		•			
2000W, two zone (240mm x 240mm heating area)			•		
2250W, two zone (240mm x 240mm heating area)				•	
2800W, three zone (360mm x 240mm heating area)				○	
3050W, three zone (360mm x 240mm heating area)				○	
3200W, two zone (500mm x 270mm heating area)					•
<b>Component Pick and Placement</b>		IR-C3	IR-D3	IR-E3	IR-E6
Handheld vacuum placement system		•			
Standard vacuum placement system (Z-axis and Rotation)		○			
Compressed air based high vacuum pickup system		○	○	○	○
Professional vacuum placement system (Z-axis, Rotation and Soft Landing)			•		
Advanced Professional vacuum placement system (Y/Z-axis, Rotation and Soft Landing)				•	•
<b>Component Nest/Flux Application Facility</b>		IR-C3	IR-D3	IR-E3	IR-E6
Handheld flux dip tray or component print frame		○	•		
Jaw mounted nest with flux dip tray or component print frame			○		
Integrated nest with flux dip tray or component print frame				•	•
<b>PCB Handling (PCB Capacity)</b>		IR-C3	IR-D3	IR-E3	IR-E6
Portable Benchtop Mounted PCB Workholder (12" x 10"/300mm x 250mm)		•			
Professional PCB table with micro X/Y (12" x 12"/300mm x 300mm)			•		
Advanced Professional PCB table with macro-micro X/Y (18" x 12"/450mm x 300mm)			○	•	
XL Advanced Professional PCB table with macro-micro X/Y (24" x 18"/620mm x 460mm)					•
<b>Component Temperature Sensing</b>		IR-C3	IR-D3	IR-E3	IR-E6
Standard non-contact IR temperature sensor (Pyrometer) - Ø7mm+ Spot		•	•	•	•
<b>PCB Temperature Sensing</b>		IR-C3	IR-D3	IR-E3	IR-E6
K-type wire thermocouple		•	•	•	•
Standard non-contact IR temperature sensor (Pyrometer) - Ø7mm+ Spot			○	○	•
<b>Advanced Thermal Process Control</b>		IR-C3	IR-D3	IR-E3	IR-E6
Digital controller based thermal control		•	○		
Software based auto profile thermal control		○	•	•	•
<b>Camera Based Vision Systems</b>		IR-C3	IR-D3	IR-E3	IR-E6
Camera/Prism Based BGA/CSP/QFN Alignment System			•	•	•
Auxillary Process Observation Camera			○	○	○
<b>Forced Air PCB Cooling</b>		IR-C3	IR-D3	IR-E3	IR-E6
Highly effective, integral PCB cooling with air knife system				○	○

# 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.

- **PDR Lens Attachments**

FF150 (Ø4 - 18mm spot size)  
 F200 (Ø10 - 28mm spot size)  
 F400 (Ø12 - 35mm spot size)  
 F700 (Ø25 - 70mm spot size)

- **Quartz IR PCB preheating**

Flexi-array Dark IR PCB preheater system  
 High power, medium wave quartz IR  
 E3S - 2250W, two zone (240mm x 240mm heating area) with  
 750W Micro-PCB Thermo Boost  
 E3G - 2800W, three zone (360mm x 240mm heating area)  
 E3M - 3050W, three zone (360mm x 240mm heating area) with  
 750W Micro-PCB Thermo Boost

- **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

- **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

## 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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PDR's products are available worldwide via our international distributors, all offering professional sales and support.

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