

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 3050W 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

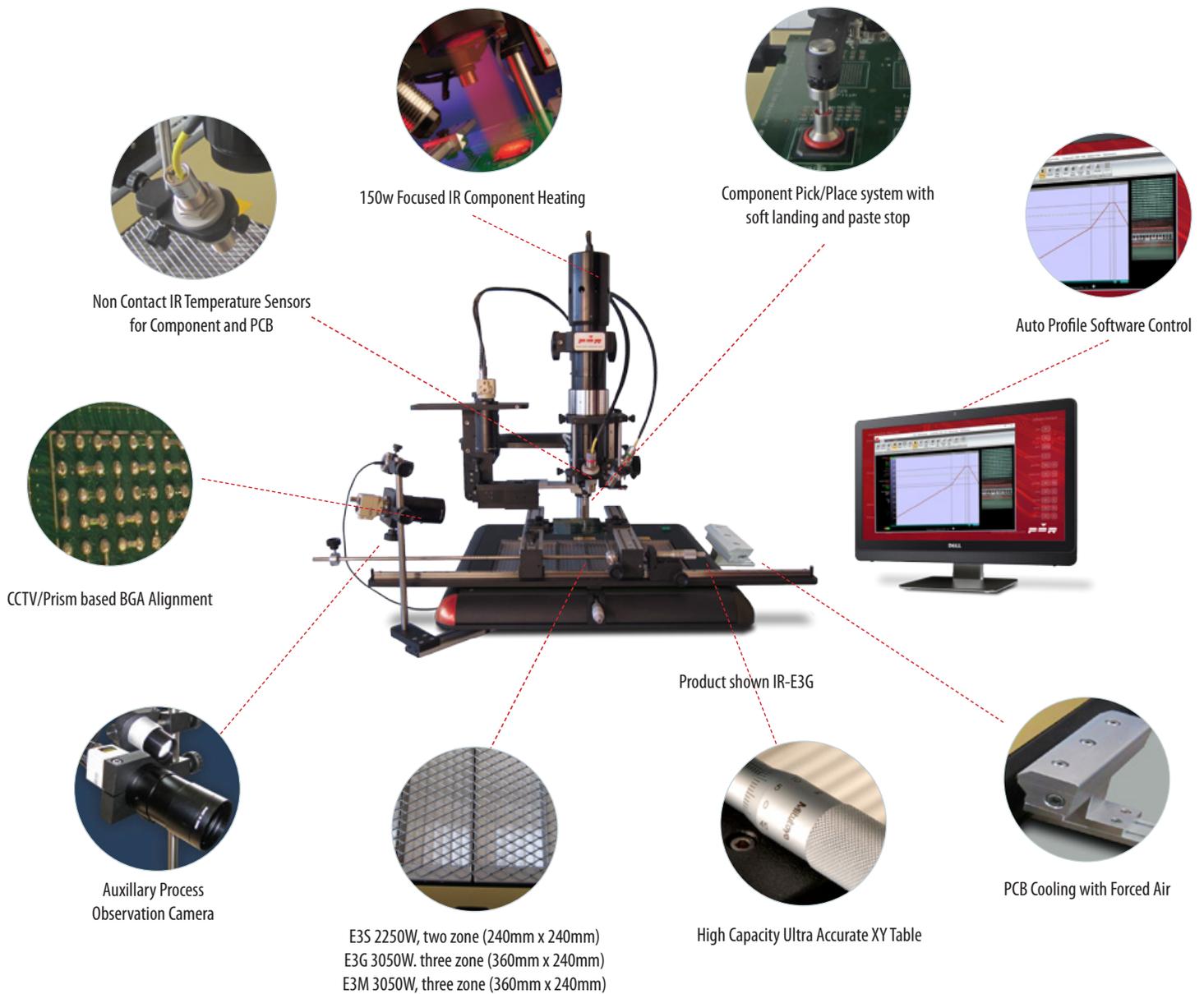
Introduced in response to our customer demands, we took the E3G and further enhanced it for Micro-rework applications. In addition to general purpose applications, the IR-E3M's thermal, mechanical and optical features are all precisely focused to easily deal with micro components and micro PCBs. In addition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

North American specifications may differ

• Quartz IR PCB preheating

E3S - 2250W, two zone (240mm x 240mm heating area)

with 750W Micro-PCB Thermo Boost

E3G - 3050W, 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 System	IR-C3 Series		IR-D3 Series		IR-E3 Series			IR-E6	
● = Standard Feature ○ = Optional Feature									
Advanced Focused IR Component Heating	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
Focused IR Lens System	●	●	●	●	●	●	●	●	●
F150 - Ø6-18mm - Lens Attachment	○	○	○	○	○	●	○	○	○
F200 - Ø10-28mm - Lens Attachment	○	○	○	○	○	●	●	●	●
F400 - Ø12-35mm - Lens Attachment	○	○	○	○	○	○	○	○	○
F700 - Ø20-70mm - Lens Attachment	●	●	●	●	●	○	●	●	●
Quartz IR PCB Preheating	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
750W, single zone (120mm x 120mm heating area)	○	○	○	○	○	○	○		
2000W, single zone (240mm x 240mm heating area)	●	●							
2250W, two zone with 750W Micro PCB Booster (240mm x 240mm heating area)			●	●	●				
2800W, three zone (240mm x 360mm heating area)									
3000W, 3 zone (240mm x 360mm heating area)								●	
3050W, three zone with 750W Micro PCB Booster (240mm x 360mm heating area)					○	●	●		
3200W, three zone (500mm x 270mm heating area)									●
Component Pick and Placement	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
Venturi Based High Power Vacuum Upgrade	○	○	○	○	○	●	○	○	○
Handheld vacuum placement system	●	●							
Standard vacuum placement system (Z-axis and Rotation)	○	○							
Professional vacuum placement system (Z-axis, Rotation and Soft Landing)			●	●					
Advanced Professional vacuum placement system (Y/Z-axis, Rotation and Soft Landing)					●	●	●	●	●
Component Nest/Flux Application Facility	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
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					●		●	●	●
PCB Handling (PCB Capacity)	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
Portable Benchtop 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)					●	●	●		
Advanced Professional PCB table with gantry/macro-micro X/Y (18" x 12"/450mm x 300mm)								●	
2Advanced Professional PCB table with gantry/macro-micro X/Y (24" x 18"/620mm x 460mm)									●
Component Temperature Sensing	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
Standard non-contact IR temperature sensor (Pyrometer) - Ø7mm+ Spot	●	●	●	●	●	●	●	●	●
PCB Temperature Sensing	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
K-type wire thermocouple	●	●	●	●	●	●	●	●	●
Standard non-contact IR temperature sensor (Pyrometer) - Ø7mm+ Spot	○	○	○	○	○	●	●	○	○
Advanced Thermal Process Control	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
Digital controller based thermal control	●								
Software based auto profile thermal control		●	●	●	●	●	●	●	●
Barcode scanner (profile selection)		○	○	○	○	○	○	○	○
Camera Based Vision Systems	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
Camera/Prism Based BGA/CSP/QFN Alignment System			○	●	○	○	○	○	○
Auxillary Process Observation Camera			○	○	○	○	○	○	○
Camera/Prism Based BGA/CSP/QFN Alignment System USB Interface			○	○	●	●	●	●	●
Auxillary Process Observation Camera USB Interface			○	○	○	●	●	○	○
Forced Air PCB Cooling	IR-C3S	IR-C3i	IR-D3i	IR-D3S	IR-E3S	IR-E3M	IR-E3G	IR-E6S	IR-E6XL
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**

F150 (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 - 3050W, 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.

North American specifications may differ



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

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