

The ERSA IR/PL 650A complete:

The complete system is broken down into four modules: the **IR 650A** Selective Reflow module (described above), the **RPC** Reflow Process Camera module, the **PL 650A** Precision Placement module, and the **IRSoft** software module.

The **RPC** module uses a new high power (up to 300x enlargement) motor zoom camera, a controllable LED ring lighting system, and an extremely robust, movable stand. The reflow process can be visualized from multiple angles on even the smallest of components.



The **PL 650A** is the second generation precision placement system designed for the largest range of components (from 1 x 1 mm to 60 x 60 mm in size), more automation, and greater repeatability. A high-resolution camera with motor zoom permits highly precise alignment of component connections to lands with up to 300x enlargement. The excellent image quality is supported by a high-contrast, separately controlled 2 color LED lighting system from four sides. The Auto Pick & Place mode guarantees repeatable and precise (+/- 0.0010mm accuracy) results.

The **IRSoft** is the Control and Documentation software for the IR/PL 650. This user friendly software takes into consideration both the interface simplicity required by a less skilled operator, as well as the advanced profiling and documentation wishes of a highly trained user. This professional database incorporated software offers a high level of flexibility and operator customization capability.

Technical data:

IR 650 A

max. PCB size: 18x22 inch/460 x 560 mm
 max. component size: 2.5x5 inch/60 x 120 mm
 IR top radiator: 4 x 350 W, (four zones)
 total size: 2.5x5 inch/60 x 120 mm
 IR bottom radiator: 1 x 1600 W
 + 4 x 400 W, (five zones)
 total size: 14x18.5 inch/350 x 470 mm
 wavelength: 2 - 5 µm
 power supply: 230 V ~, 50 Hz
 (US version in progress)
 power consumption: max. 3.600 W
 travel z-axis: 2.8 inch/70 mm
 working distance: 2.5 inch/60 mm
 temperature channels: 1 x non contacting IRS
 4 x K-type thermo couples
 display: Integrated LED display
 interface: Universal Serial Bus (USB)
 airflow top cooling (axial): 182 m³/h
 airflow bottom cooling (laminar): 120 m³/h
 dimensions: 600 x 700 x 505 mm (d x w x h)
 24 x 27.5 x 20 inch (d x w x h)
 weight: ~ 60 kg

PL 650 A

max. component size: 2.5x2.5 inch/60 x 60 mm
 travel z-axis: 7.3 inch/185 mm
 working distance: 2.5 inch/60 mm
 resolution z-axis: +/- 0,01 mm
 resolution rotation: +/- 0,02 °
 resolution X-Y movement: +/- 0,01 mm
 placement force: 1,0 - 3,0 N (vacuum switching point)
 power supply: 100 - 240 V ~, 50 - 60 Hz
 power consumption: 50 W
 illumination: LED red, four sides (component)
 LED white, four sides (PCB)
 camera: CCD color camera
 camera zoom: 300 x (25 x optical, 12 x digital)
 interface: system bus
 dimensions: 600 x 200 x 680 mm (d x w x h)
 24 x 8 x 27 inch (d x w x h)
 weight: 20 kg

RPC-camera

illumination: LED-ring light, white
 camera: CCD color camera
 camera zoom: 300 x (25 x optical, 12 x digital)
 interface: system bus
 power supply: 12 V DC and 24 V DC
 power consumption: 8 W
 dimensions: 150 x 60 x 60 mm (d x w x h)
 weight: 0,8 kg



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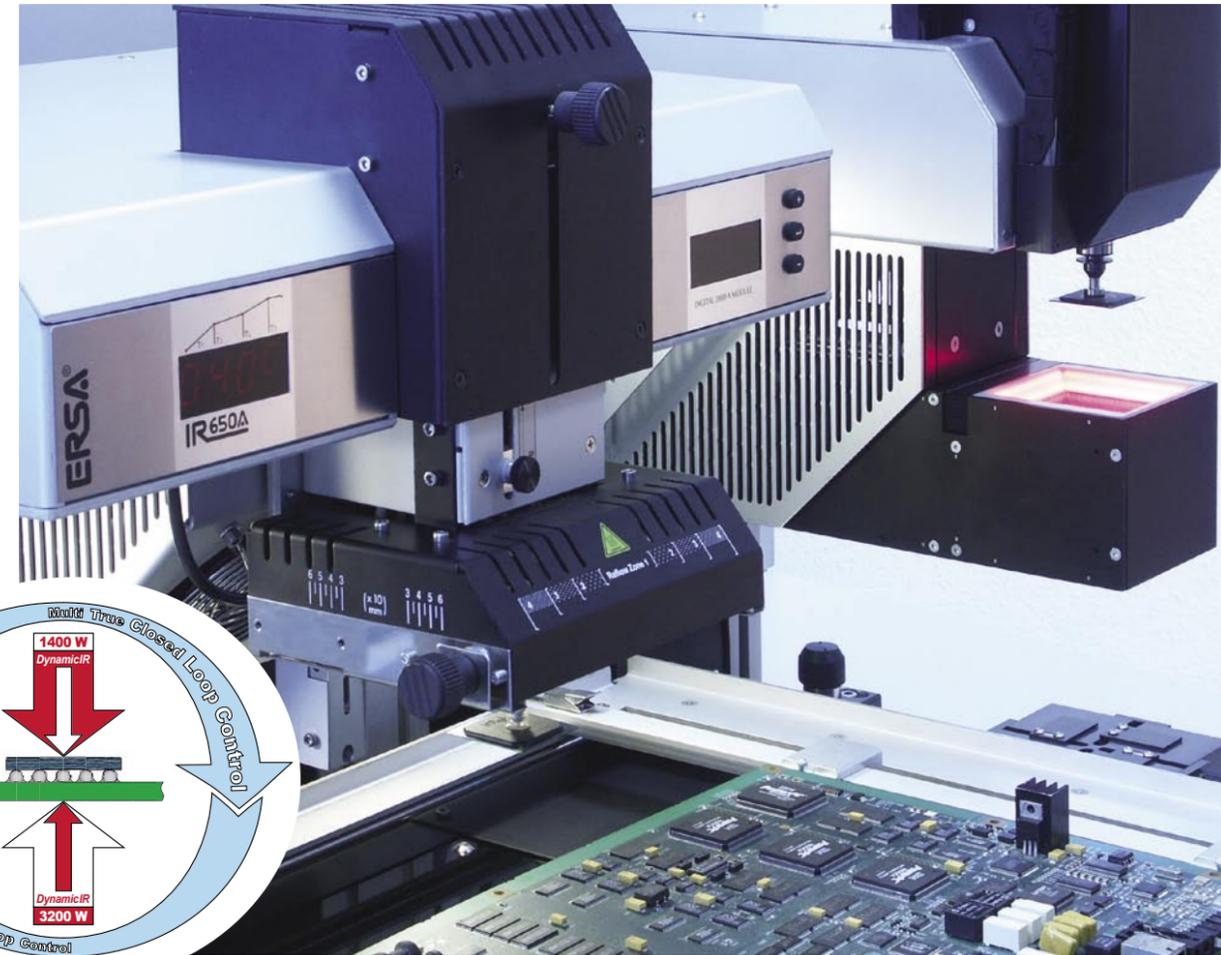
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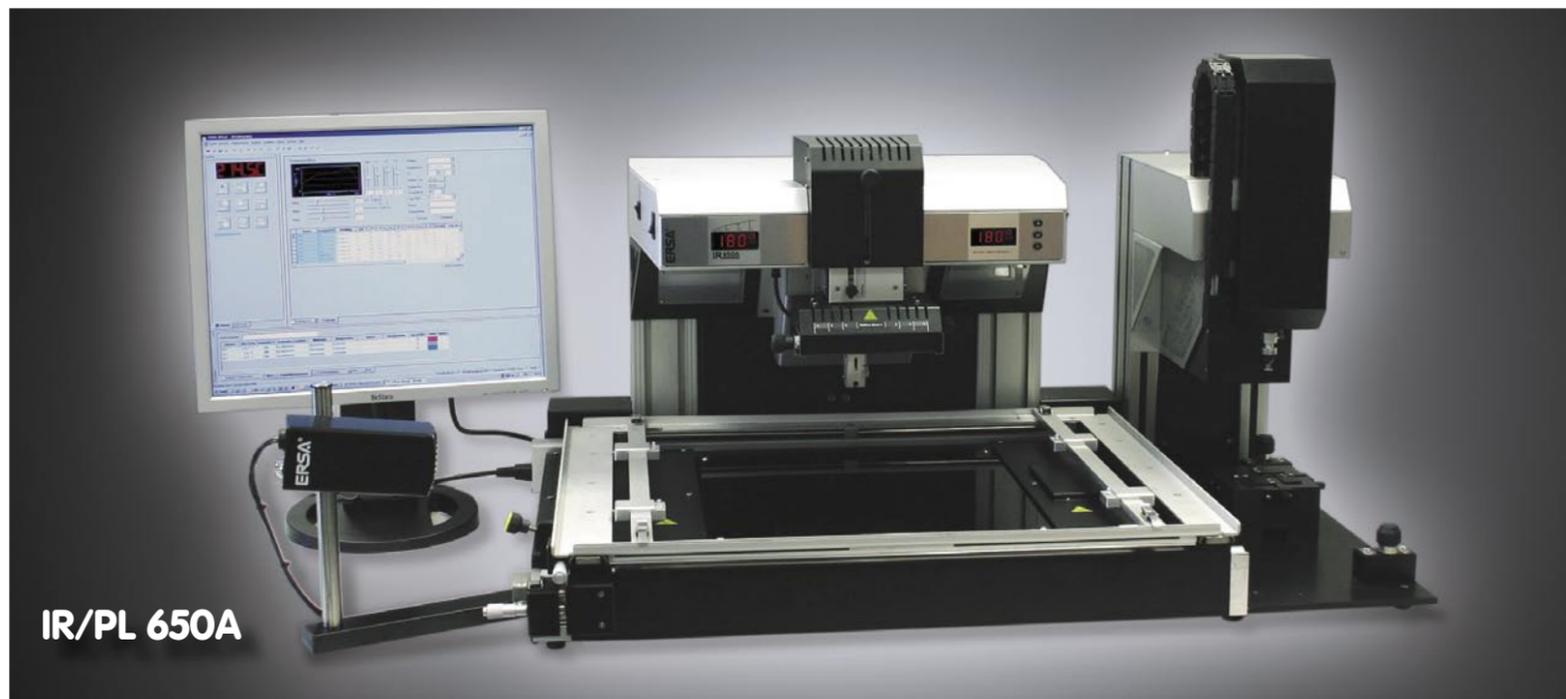


ERSA's Revolutionary DynamicIR: Setting the New Rework Standard

ERSA GmbH

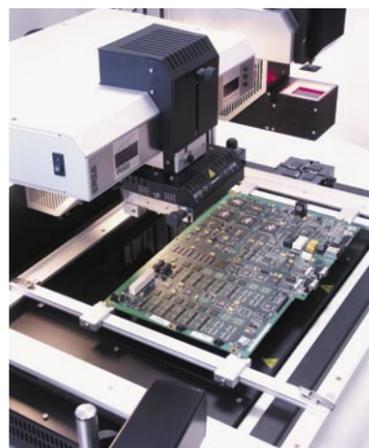
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ERSA IR 650 A Rework System: Revolutionary BGA/SMT Reflow Technology



IR/PL 650A

Motorized Reflow head with auto component removal



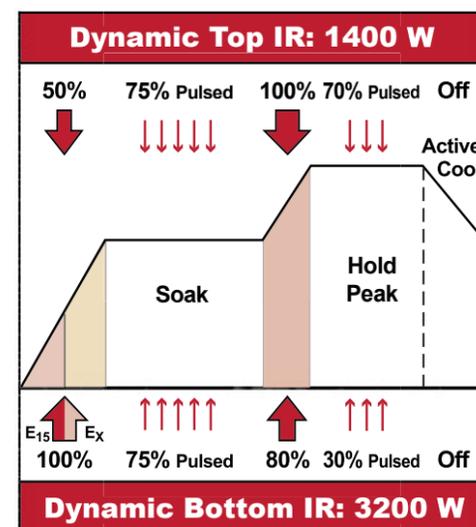
Large format PCB Rework
(18x20 inch / 460x560mm)

The new ERSA IR / PL 650 A is the latest addition to ERSA's world renowned and tremendously successful IR Rework platform. This third generation IR rework system tops its award winning and patented predecessors by offering three new technological innovations (patent pending): **DynamicIR**, **Multi True Closed Loop Control** and **IntelligentIRS**. Benefiting from an installed base worldwide of more than 5,000 IR rework systems, ERSA's newest system was specifically designed to handle the most difficult rework applications on heavy mass PCBs and large-format SMT assemblies (18 x 20 inch / 460 mm x 560 mm) in a lead-free environment. Ease of use, rapid rework cycle times, widest variety of rework applications, and lowest operational costs – these are the well-known user advantages of ERSA's IR rework systems that can now be afforded to the most demanding of customers.

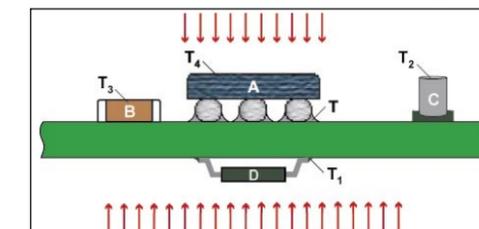
The DynamicIR Principle:

True temperature control on the board and component is the ultimate goal in rework. ERSA approaches the problematic of Selective Reflow for rework in a completely new and unique manner

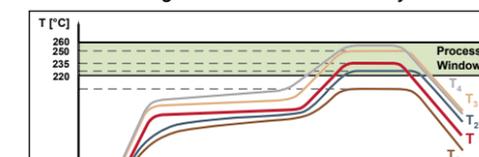
with its IR650. The safe and proven medium wavelength IR heating technology allows for uniform heat distribution from the top and bottom side across the PCB and component. The **DynamicIR** technology allows for the fully automatic dynamic control of the top (1,400 W / 60 mm x 120 mm) and bottom (3,200 W / 350 mm x 450 mm)



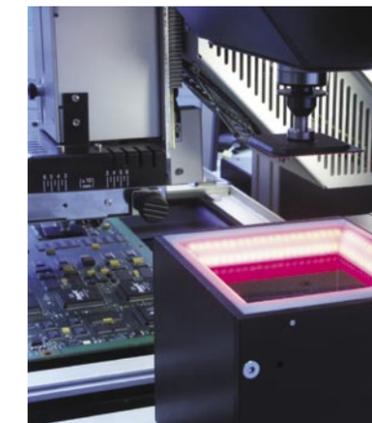
is acquired, using the patented IRS non-contact Infrared sensor, and is used as the primary control mechanism for the heating system. The new **IntelligentIRS** allows for a more precise temperature measurement by choosing from a component table or by component specific IRS calibration. Either the IRS or a TC sensor of choice can be chosen to drive the **DynamicIR** heating tech-



MTCL Control guarantees Process Safety!



Auto Pick & Place with the PL650 module



IR heaters depending on the actual temperature of the component and where it is in the temperature profile. The total available power to the selective reflow system is spread across 4 separately switchable heating zones on the top and 5 zones on the bottom. Depending on board size, the thermal mass of the substrate, and component size, the **DynamicIR** technology guarantees that the required heat energy is delivered at the precise time and location in order to ensure that the component and board exactly follow the prescribed temperature profile. Combined with the enhanced capability to run an extended or flat peak, this revolutionary technology affords the lowest temperature deltas across the component, and greatly reduces PCB warpage.

The Multi True Closed Loop Control Principle:

True temperature control on the board and component is a strategic advantage afforded by ERSA's IR rework systems. **True Closed Loop Control** means that the actual component temperature

nology, thus guaranteeing a perfect profile every time. **Multi True Closed Loop Control** builds on and enhances this principle by using up to 4 additional TC sensors. By assigning threshold values to these additional sensors, they are used to prevent the fully automatic **DynamicIR** heating system from undesired overheating of adjacent or bottom side components. A First Pass Yield for rework is thereby guaranteed!

The ERSA Lead-Free Safe Heat Result:

True temperature control on the board and component is the key to a safe lead free (LF) process. The higher working temperature and the smaller process windows will make the lead free rework process a much greater challenge. The risk of overheating adjacent or bottom side components during rework is greatly increased. The **DynamicIR** and **Multi True Closed Loop Control** principles afford the highest level of rework safety by literally making it impossible to overheat over an assigned threshold value. Thus, it is impossible to work outside a specified LF process window!

