# Ersa ECOCELL

kurtz ersa

## In- and offline selective soldering system - high throughput with high flexibility

### ECOCELL - ideal solution for modern production islands

Ersa, the global technology leader in selective soldering equipment, introduces its newest addition to their product line, a unit, which answers to the needs of modern manufacturing methods. The ECOCELL system operates according to the Toyota principle, with the flow of the printed circuit boards being in the counter-clockwise direction. This U-flow arrangement is ideal for installation as production islands, but, if considered beneficial, it can also be integrated and operate in a more traditional layout.

In the ECOCELL, high throughput and high flexibility are no longer contradictory terms. With two integrated preheaters, up to 4 boards can be processed simultaneously, and dual solder bath systems offer the possibility to efficiently process multi-up panels. Another feature is - for both the miniwave as well as the multiwave baths - the possibility to use different alloys in the two baths. This function, together with the possibility to perform maintenance or setup on a multiwave bath, while the other bath is operating, reduces downtime to an absolute minimum.

As in all Ersa selective soldering systems, the ECOCELL incorporates the proven precision spray fluxing system. With the integrated spray jet control, the flux deposition on the board, in either single point or track, is effected with high repeatability and high quality.

The short-wave IR preheaters, mounted below the boards, can optionally be upgraded with top-side convection preheaters. Thus combined, they assure a thorough and homogeneous temperature distribution through even the most heavy and complex boards. A further optional convection preheater over the miniwave bath will maintain the board temperature during the solder cycle at the required level.

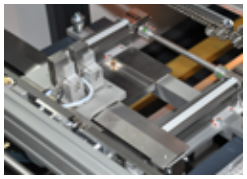
In the solder modules, the “peel-off” effect developed by Ersa for their process of soldering at 0°, virtually eliminates bridging and assures a very low ppm level of defects. In both the miniwave as well as the multiwave bath, induction pumps are used to deliver the solder. For this reason, both processes are very low in maintenance.

The intuitively operated system software guarantees effective programming, and it records all production parameters relevant to traceability as per the ZVEI standard. The CAD-Assistant allows for extremely quick and simple offline programming.

| Features Ersa ECOCELL | |
|---|---|
| Pin-and-chain conveyor for pallet less conveyance | ■ |
| Integrated shuttle | ■ |
| Manual conveyor width adjustment | ■ |
| Program controlled conveyor width adjustment | □ |
| Precision spray fluxer | ■ |
| Spray jet control | ■ |
| Bottom-side preheating via short wave, dynamic IR emitters | ■ |
| Top-side convection heating | □ |
| Lead-free Single Point solder module | ■ |
| Alternatively up to two multi-wave baths | □ |
| Second solder pot to process two different solder alloys | □ |
| Second solder pot to process multi-up panels | □ |
| Inline interface (e.g. SMEMA, etc.) | □ |
| Camera/screen for solder process monitoring | □ |
| Barcode scanner (barcode/matrix code) | □ |
| CAD data download of board layouts | □ |
| Operation via touch panel | □ |
| Traceability (according to ZVEI standards) | ■ |
| Integration in Manufacturing Execution Systems (MES) | □ |

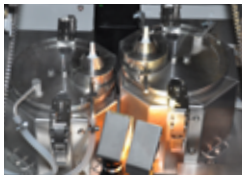
standard ■ / option □

*In- and offline selective soldering system in a U-flow arrangement for modern manufacturing layouts*

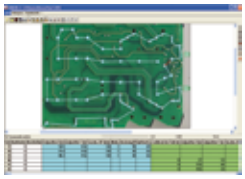


*High-precision spray fluxer with integrated spray jet control*

*Both short-wave IR emitters can optionally be upgraded with top-side convection heaters*



*Opteration of two miniwave soldering pots or two multiwave soldering pots alternatively*



*Simple offline programming via DXF files or scanned PCBs with the ersa CAD Assistant provides for peak efficiency and machine uptime*

*Option: automation as individual customer solution*

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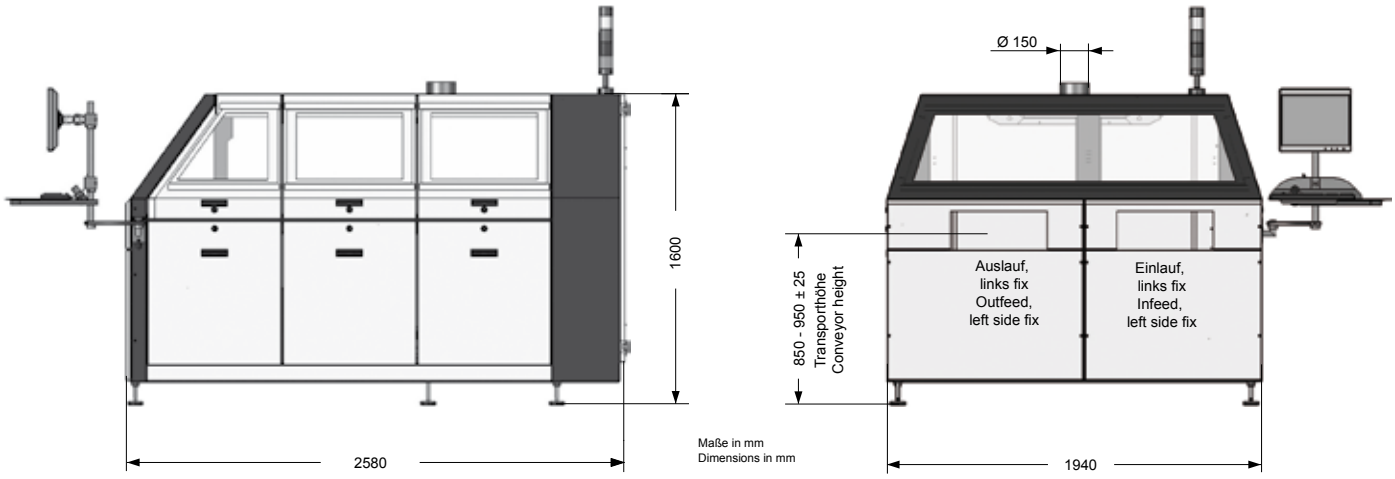
## In- and offline selective soldering system - high throughput with high flexibility




| Dimensions (basic machine): | |
|---|---|
| Length: | 2,580 mm [102"] |
| Width: | 1,940 mm [76"] |
| Height: | 1,600 mm [63"] |
| Weight: | approx. 1,100 kg [2,425 lbs] |
| | |
| **Paint** | RAL 7035 / 7016 |

| Conveyor system: | |
|---|---|
| Pin-and-chain conveyor for PCB transport | |
| Conveyor angle: | 0° fix |
| PCB width (Single Track): | 63.5 - 356 mm [2.5 - 14"] |
| PCB length: | 127 - 356 mm [5 – 14"] |
| PCB top-side clearance (basic machine): | max. 120 mm [4.7"] (measured from PCB bottom side, except PCB edges 5 mm [0.2"]) |
| PCB bottom-side clearance: | max. 60 mm [2"] (subject to soldering joint position) |
| Clearance from PCB edge: | 5 mm [0.2"] |
| Conveyor height from floor: | 850/950 mm, ±25 mm [33"/37", ±1"] |
| Conveyor speed: | 2 - 10 m/min [7 - 33'/min] |
| Pallet/PCB weight: | max. 8 kg [18 lbs] |

| Flux module: | |
|---|---|
| Precision spray fluxer | |
| Positioning system | 2 axes (X/Y), servo motor driven |
| Flux tank: | 2 l |
| Positioning speed: | 2 - 400 mm/s [0.04 - 16"/s] |
| Positioning accuracy: | ±0.25 mm [±0.01"] |
| Spray width: | 2 - 8 mm [0.08 - 0.3"] (130 µm/270 µm nozzle) |

| Preheat module (option): | |
|---|---|
| Dynamic bottom-side infrared emitters: | max. 10.4 kW |
| Temperature range: | 0 - 200 °C [0 - 392 °F] |

| Solder module: | |
|---|---|
| Stainless steel solder pot, integrated in a 3-axes positioning system (X/Y/Z), servo motor driven | |
| Solder nozzle: | Single-Point high-precision nozzle |
| Smallest solder nozzle diameter: | OD 4.5 mm [0.2"] (further nozzles on request |
| Wave height: | max. 5 mm [0.2"] |
| PCB clearance: | min. 3 mm [0.1"] |
| Solder volume: | approx. 13 kg [29 lbs] (Sn63Pb); approx. 12 kg [26 lbs] (lead-free alloy) |
| Solder temperature: | max. 320 °C [608 °F] |
| Heating time: | 75 min (to 280°C) [to 536 °F] |
| Positioning speeds: | X/Y: 2 - 200 mm/s [0.08 - 8"/s]; Z: 2 - 100 mm/sec [0.08 - 4"/s] |
| Soldering speed: | 2 – 100 mm/s [0.08 - 4"/s] |
| Positioning accuracy: | ±0.25 mm [± 0.01"] |

| Nitrogen technology: | |
|---|---|
| Nitrogen supply: | to be supplied locally |
| Nitrogen injection: | $N_2$ cover over the solder bath |
| Required pressure: | 3 bar [43.5 PSI] |
| Nitrogen consumption: | approx. 1.5 m³/h [53 ft³/h] per solder pot |
| Particle cleanliness: | 5.0 |

| Pneumatic system: | |
|---|---|
| Compressed air supply: | to be supplied locally |
| Required pressure: | 6 bar [87 PSI] |
| Consumption: | < 5 m³/h [< 177 ft³/h] |

| Control: |
|---|
| Computer-based microprocessor |
| Process visualization |
| Input of all process parameters |
| 7 day time clock |
| Machine status control |
| Password function |
| Production-, process- and traceability data recording |

| Electrical data: | |
|---|---|
| Power: | 5-wire system, 3 x 230/400 V, N, PE |
| Power tolerance range: | +6 %, -10 % |
| Frequency: | 50/60 Hz |
| Power consumption: | 18 kW (basic machine) |
| Amperage: | 34 A (basic machine) |

| Machine exhaust (basic machine): | |
|---|---|
| Exhaust stack: | 1 pc., OD 150 mm [6"] |
| Exhaust volume per stack: | 150 m³/h [196 yd³/h] |

| Ambient conditions / noise level: | |
|---|---|
| Ambient temperature: | 15 - 35 °C [59 - 95 °F] |
| Permanent noise level: | < 60 dB (A) |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