

# MULTILAYER DOUBLE SIDE ROLLER COATING SYSTEM

## Type Systronic Probimage 380RC

### 1. General description

The Multilayer-Coating System **Probimage 380RC** is a development in the field of liquid resist applications.

The **Probimage 380RC** Roller Coater is a smart design and is equipped with a cycle frequency drive, full system integration with the systems clean room cabinet, coater, dryer and software.

This innovation guarantees the best possible solution for double side coating of liquid resist at the highest yields. The dryer section includes a stainless steel heating muffle that works with IR heaters and a laminar air-flow. This system is production proven at many major PCB manufacturers.

#### The drying process is divided into 3 steps:

- Flash off:** This zone avoids any “skinning” of the resist by carefully controlling the laminar air flow in the first zone. Skinning prevents normal evolution of solvents and can lead to open if not controlled.
- Tack Dry:** This section is the longest and it removes more than 90% of the VOC content of the material.
- Final Dry:** The remaining 10% of the solvent is removed in this section to prepare for cool-down zone and subsequent stacking/processing.

### Frame Data

min. PCB-size:	300 mm x 300 mm
max. PCB-size:	650 mm x 750 mm
Ration Width / Length:	< 1.6 to 1 in transport direction
Space between panel:	100 mm
Temperature:	125 °C + 5 °C
PCB-Thickness:	0,05 – 3,00 mm
Edge Area:	6 mm, on each side
Clean Room Class:	1000 in the Process Depends on upon incoming air quality.

### 2. Technical description

**The High Performance Roller-Coater** is included in the **Probimage 380RC**:

- Suitable for **DiaEtch** resist.
- Application of resist by specially ground, rubber covered rollers. Nominal groove: 46 TPI.
- Range of application: 6-15 micron dry coat
- Electronic line-motion control system for lifting and lowering the top applying roller

- Material circulation system with automatic viscosity control
- Cooling of lacquer included.

High Performance Continuous-Flow Dryer for innerlayer for printed circuit wire boards in compact design, consisting of the following main modules:

- Machine body
- Transport system
- Process zone
- Cooling zone

The **Machine Body** is made of anodized aluminium section supporting the process zone and the top cover. The cover is heat-insulated, soundproofed and is hinged for opening.

The conveyor is adjusted in width on one side. The adjustment is done centrally via a cardan shaft and gear. The system is driven by a infinitely variable adjustable threephase current gear motor providing smooth performance at 3,0 – 5,0 m/min speeds.

The whole transport system can be rolled back for free access to the roller coater during maintenance. At the outlet of the oven there is an electrically locked, powerdriven, elevator transport track.

The double walled, insulated Process Zone is made entirely of stainless steel and containing 6 heating zones for maximum temperature uniformity and process window.

The exhaust of the process zone takes place through the built-in, adjustable dampers, whereby the air is fed behind the process muffle and through the roller coater cleanroom cabin and exhausted before the process muffle. The process muffle has its own exhaust system of controlled convection air. Fans and filters are built-in. This guarantees clean room operation in compliance with class 1000.

**The Cooling Zone** is equipped with a compact cooling module with air condition module.

The entire system is designed for use of class A2 solvents and higher.

#### **Technical Data:**

Max/Min. working width:	650 mm 300 mm
Max/Min. working length:	750 mm 300 mm
Max/Min. layer thickness:	3.00 mm 0.05 mm
Run-in height	900 mm +/- 25 mm
Heating zone	3800 mm
Cooling zone	1500 mm

Total Length: (Incl. Roller Coater)	8918 mm
Total Height	3100 mm (coater section)
Total Width	1880 mm (coater section)
Rating approx.	136 kW
Conveyor Speed:	3 – 5 m / min
Weight of Machine approx. incl. Rollercoater:	4000 kg
max. Temperature:	125°C
Painting:	RAL 9001

### **Connection Data:**

Supply Air Quality:	Class 10.000
Air Inlet - Dryer:	Ø 250 mm, approx. 800 - 1000 m <sup>3</sup> /h Class 1000, Room Temperature
Exhaust Air - Dryer:	Ø 250 mm, approx. 2000 m <sup>3</sup> /h approx. class 10000, max. 100°C
Air Inlet - Air Exhaust Rollercoater:	Ø 250 mm, 800 m <sup>3</sup> /h Class 1000, Room temperature
Compressed Air:	6 – 10 bar, 1/2" connection 40 liters. per transport movement
Cooling water:	not required

**Electricity: 400 V, 60 Hz, 3 Ph, 93KW**

### **Built-In Filter:**

Air-Inlet Dryer: 1 pc. High efficiency submicron particulate filter  
Class EU 13 (HEPA)  
Air-Inlet Roller coater: 1 pc. High efficiency submicron particulate filter  
Class EU 13 (HEPA)

### **PC-Control:**

The control system is integrated within the machine base frame and operates on the PLC PC-principle.

All of the requisite safety facilities, such as safety thermostats, residual-currentoperated circuit-breaker, belt run monitoring, etc. are integrated. Installation and wiring conforms to VDE and CE.

The PC and Windows\*\* display makes the system very easy to operate and it can be easily understood.

All set points and actual temperatures, operating statuses, conveying speeds, stored

programs and management data are clearly displayed on screen and may be altered on the keyboard without difficulty.

Any number of programs may be stored to hard drive. A visual alarm signal is given in the event of the system falling below or exceeding freely selectable tolerance limits.

Current production data's and protocols, may also be stored in text form on any production batch. The computer program is also equipped with software protection involving code word input at several operating levels.

System status is shown on a three-coloured all-round light fitted to the system.

Green = production mode, state OK

Yellow = standby, not ready, limit value

Red = malfunction

\*\* Windows - registered trademark of Microsoft, Inc., USA

### **Room requirements**

- Need to be temperature controlled
- Air temperature: 21°C +/- 1K
- Humidity: 50% +/- 5%

### **Weight**

- 4000 kg

### **Summary - Benefits of "Probimage 380RC"**

- Automatic system
- Universal Grip-System for thin panels
- Laminar Airflow via Hepa-filter ensures maximum cleanliness
- Monitoring of all essential coating process parameters
- All process parameters are stored in a recipe file
- Continuous ink circulation via filter to reduce dust and particle.
- Include documentation with parts list.
- After sales and maintenance guaranteed by manufacturer including spare parts.
- Compatible for DiaEtch or other Coating materials