

Model RSO-650-200 / RSO-650-300

Reflow Solder Oven with Vacuum up to 650 °C



**no flux - void free
solder results**

Perfect solder results - no flux - no voids

- Solder area: 200x170mm (= Model RSO-650-200) or 300x300mm (= Model RSO-650-300)
- maximum temperature up to 650 °C
- vacuum capable
- for inert process gases: Nitrogen, Forming gas, Oxygen, Argon
- Formic acid module (option)
- Table Top model in 19" rack version
- RS-232 to PC connection for easy programming
- water cooling required

Model RSO

- flux less and void free soldering
- programmable temperature profiles
- record of process data (.csv / .xls)
- Windows based software (Uni Soft)
- 20 program locations at 100 steps each
- process in gas or vacuum
- small required place

The Reflow Solder Oven RSO-650 is an excellent tool for various solder processes and other applications. Some applications are: as laboratory solder system for all kind of developers implementing and researching new processes, e.g. flux less soldering, flip-chip process, adhesive bonding, hermetic sealing under controlled atmospheres, solder bump reflowing, encapsulation of housings, soldering of power devices, heat treatment of semiconductor wafers, prototype research, quality control, environmental research purposes and for small pre-series or series. The heated surface is either 170mm x 200mm (model RSO-650-200) or 300mm x 300mm (RSO-650-300).

Two gas lines with manual adjustable flow meters are standard, a third gas line is optional available (also Mass Flow Controllers). As further option for void free solder results we offer the formic acid insert (additional 19" insert). The formic acid makes the surface clean by enriching the carrying gas (e.g. Nitrogen) a little formic acid vapor for short time at low temperatures.

By connecting an external pump makes the system vacuum capable up to 10^{-3} mbar (torr).

Key features are precise controlled fast ramp-up and ramp-down rates which are better **75 °C/second** or ramp up and better **200 °C/minute for ramp down** (depends on model and start temperature).

The process is programmed either by the external controller which is provided with the UniSoft Software. The process is controlled either directly at the controller (a display shows the actual status) or by using the RS-232 to PC interface. This allows storing of unlimited programs where all temperature profiles with segments can be saved. An additional feature is the choice between precisely programming the ramp-rate or the ramp-to-target value. This tool is a low cost solution for various applications and customers. A further advantage is the small size of table top system.

RSO Technical Data

	RSO-650-200	RSO-650-300
Solder area	170x200 mm	300x300 mm
Chamber height	40 mm	50 mm
Vacuum capability chamber	up to 10⁻⁵ mbar (torr)	up to 10⁻⁵ mbar (torr)
Temperature range	up to 650 °C	up to 650 °C
Heating	18 IR Lamps (18 kW)	12 IR Lamps (18 kW)
Temperature	up to 650 °C	up to 650 °C
Ramp up rate	better 75 °C/sec	better 10 °C/sec
Ramp down rate	T=600°C up to 400°C max. 200K/min. T=400°C up to 100°C max. 30K/min.	T=600°C up to 400°C max. 50K/min. T=400°C up to 100°C max. 5K/min.
Interface	RS-232 incl. UniSoft(ware)	RS-232 incl. UniSoft(ware)
Controller	19" insert with 2 flow meter	19" insert with 2 flow meter
Program	20 programs with 100 steps	20 programs with 100 steps
Cooling	Water cooling required	Water cooling required
Inlet Pressure	2 to 6 bar	2 to 6 bar
Dimension oven	555x375x520 mm (WxHxD) (21.8"x14.7"x20.5")	555x460x520 mm (WxHxD) (21.8"x18.1"x20.5")
Weight	45 kg	60 kg
Programms	20 programs storable (unlimited programs storable with PC)	20 programs storable (unlimited programs storable with PC)
Voltage	CEE 3x32A, 230V, 3phase	CEE 3x32A, 230V, 3phase
Options and accessories		
RSO-FA	Formic Acid module	Formic Acid module
RSO-FM	additional gas line with flow meter	additional gas line with flow meter
RSO-HV	High vacuum pump system	High vacuum pump system
RSO-MFC	Mass Flow Controller	Mass Flow Controller
RSO-MPC (recommend when working with formic acid)	Chemical resistant membrane (diaphragm pump)	Chemical resistant membrane (diaphragm pump)
RSO-MP		
RSO-PC	Membrane pump for vacuum <10 mbar	Membrane pump for vacuum <10 mbar
RSO-TC	additional process chamber	additional process chamber
RSO-VM	additional thermocouple	additional thermocouple
RSO-WC	Vacuum measurement closed loop water cooling system	Vacuum measurement closed loop water cooling system