

Lead-free Reflow Oven  
LPKF ProtoFlow® S



# LPKF ProtoFlow S

Desk-top reflow oven for PCB prototyping

- Lead-free reflow process
- Temperature up to 320 °C
- Multi-zone temperature/time profiles
- Inert gas option
- Large working area
- Temperature recording



## Lead-free reflow process

The LPKF ProtoFlow S is a full convection oven for lead-free reflow soldering, ideal for PCB prototyping, technology research and pre-production runs. The compact and versatile oven with lead free capability has significant advantages over previous models and allows temperatures up to 320 °C. Even heat distribution, easy programming and many pre-defined temperature profiles guarantee excellent soldering results.

## Multi-zone temperature profiles

ProtoFlow S offers precisely controlled temperature/time profiles and motorized drawer automatic cool-down. The special Multi-zone function enables the reflow time to be divided into three separate phases with temperature ramp definitions for each phase. Three internal sensors, together with 3 separately controlled heater groups, allow even and precisely controlled heat distribution over the PCB's entire surface.

## Motorized drawer

The ProtoFlow S is equipped with a motorized drawer which opens automatically to begin the cool-down phase after the reflow process has been completed. Therefore, the operator does not need to be present during the reflow process to open the drawer.

## User friendly menu navigation

The arrow-key keyboard with the LCD allows extremely easy programming. All profile parameters such as temperature, process duration, and reflow ramp-up can be individually programmed and stored as a custom profile.

## Large working area

With the ProtoFlow S it is possible to solder large PCBs up to 230 x 305 mm (9" x 12"). Integrated interior lighting reveals the status of the soldering process and allows on-the-fly job modification where needed to optimize the reflow process.

## USB connection

The ProtoFlow S can be connected with USB to a PC for faster and more convenient profiling, data management and process logging.

## Temperature recording

As an option, the ProtoFlow S can be fitted with a Profile recorder module for measuring real-time temperatures of different areas or components on the PCB by using thermocouple probes. Temperature profiles from up to four user-positioned sensors can be displayed in a temperature/time chart during the process, and can be stored for reference or further analysis.

## Inert gas option

ProtoFlow S is also available with an inert gas option (model ProtoFlow S/N2). This model has an external inert gas connector, flow adjustment and an indicator. During the process nitrogen is started and suspended automatically.

## Applications

In addition to reflow soldering, curing of adhesives can also be carried out. Parameters for LPKF ProConduct hardening and LPKF ProMask drying are preset. Maximum process temperatures up to 320 °C and firmware update possibility through USB port give ProtoFlow S a wide application range.





### Technical data: LPKF ProtoFlow S

<b>Maximum circuit board size</b>	230 x 305 mm (9" x 12")
<b>Max. preheating temperature, time</b>	220 °C, 999 s
<b>Max. reflow temperature, time</b>	320 °C, 600 s
<b>Max. long thermal treatment temp., time</b>	220 °C, 64 h
<b>Temperature stabilization time</b>	< 5 min
<b>PCB cooling</b>	Double, speed adjustable bottom-mounted fan
<b>Power supply</b>	single phase 220-240 V, 50-60 Hz, 16 A
<b>Max. power consumption</b>	3200 W
<b>Dimensions ( W x H x D)</b>	647 x 315 x 450 mm
<b>Weight</b>	22 kg
<b>Ambient conditions</b>	Temperature: 15 - 30°C Humidity: 30 - 80 %

### Inert gas options: ProtoFlow S/N2

**Inert gas connection:** 6 mm quick inlet  
**Inert gas pressure:** max. 7 bar  
**Inert gas consumption:** max. 500 L/h

### Options and Consumables:

**Profile recorder**  
**Adjustable sliding PCB support** (1 pcs)  
**Set of 4 pcs flexible K-Type thermocouples** (length approx. 500 mm)  
**Set of 1000 pcs Polyimide temperature resistant self-adhesive dots**

**LPKF**  
**Laser & Elektronika d.o.o.**

Polica 33 4202 Naklo

SLOVENIA

Phone: +386 592 08 800

Fax: +386 592 08 820

**e-mail:** [info@lpkf.si](mailto:info@lpkf.si)

**web:** [www.lpkf.si](http://www.lpkf.si)

**LPKF**  
**Laser & Elektronika AG**

Osteriede 7 30827 Garbsen

GERMANY

Phone: +49 5131 7095 0

Fax: +49 5131 7095 90

**e-mail:** [info@lpkf.de](mailto:info@lpkf.de)

**web:** [www.lpkf.com](http://www.lpkf.com)