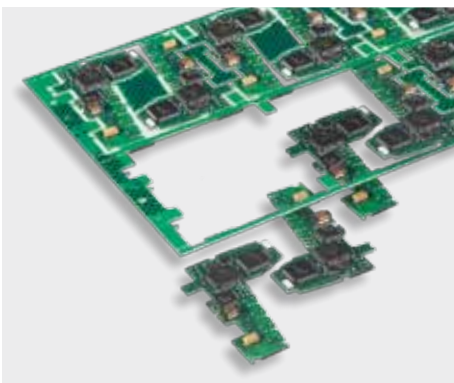
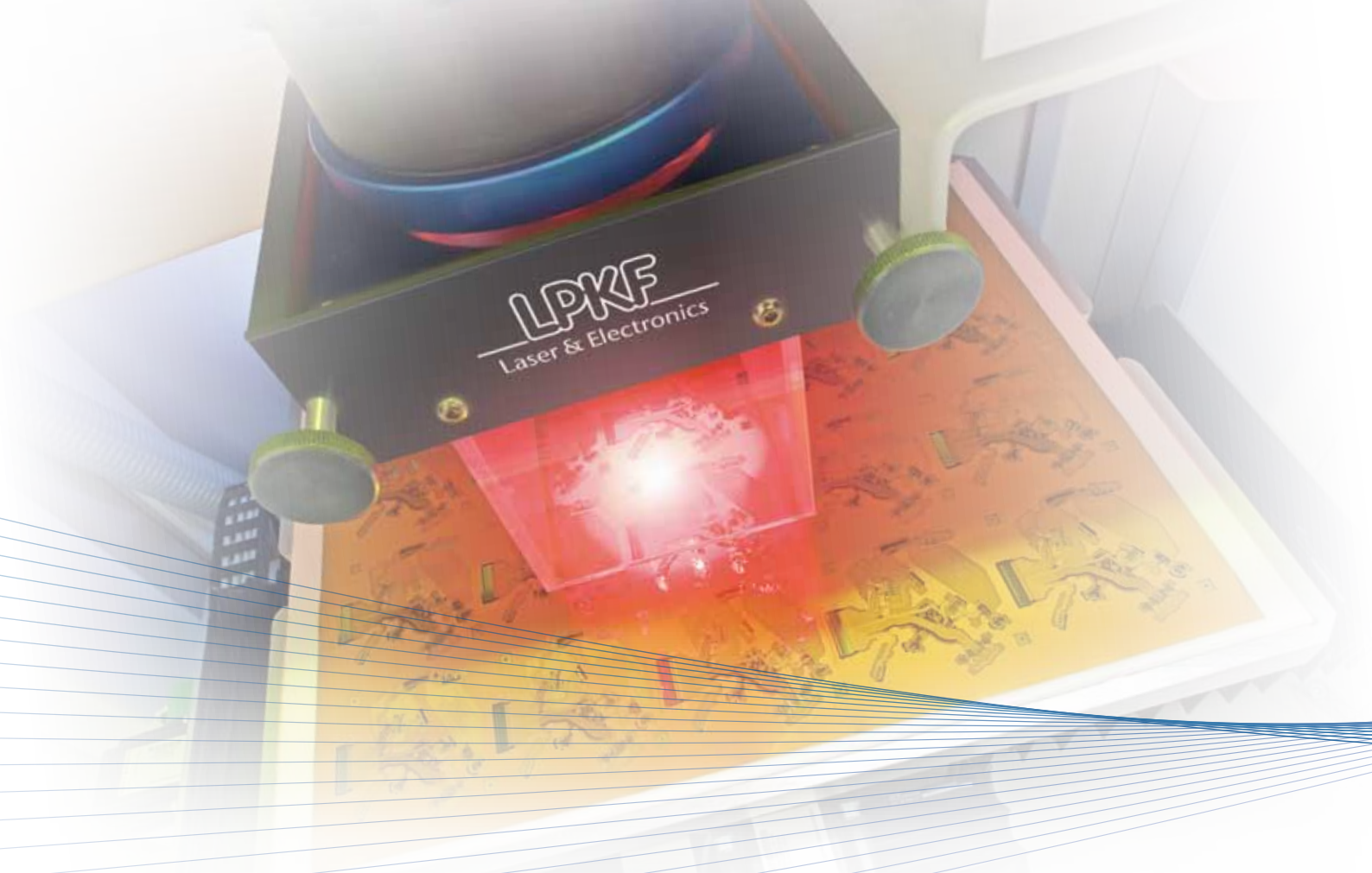


Low Cost – Premium Cuts  
New Options for Depaneling  
LPKF MicroLine 1000 S





## Light at the Cutting Edge ...

It is fascinating to see how fast, clean and accurately a UV laser system can cut even the most complicated patterns in printed circuit boards. With the MicroLine 1000 S, LPKF Laser & Electronics AG launches a very economical laser system for depaneling assembled printed circuit boards.

### **Inexpensive Entry into UV Laser Processing**

The LPKF MicroLine 1000 S is perfect for cutting break-out tabs and complex contours at highest accuracy. The benefits include shorter time to market and much higher quality cuts than conventional methods. The machine's UV laser is an optimal tool for making clean, burr-free cuts in FR4, FR5, CEM, ceramic, polyimide, polyester and other printed circuit board substrates. The laser demonstrates its superiority over conventional cutting systems when handling flexible and very thin substrates in particular.

The built-in exhaust unit removes all the material evaporated by the laser energy, leaving a residue-free surface, all this in the price-range of a conventional cutting machine.

### **Stress-Free Operation for the Material and the Operators**

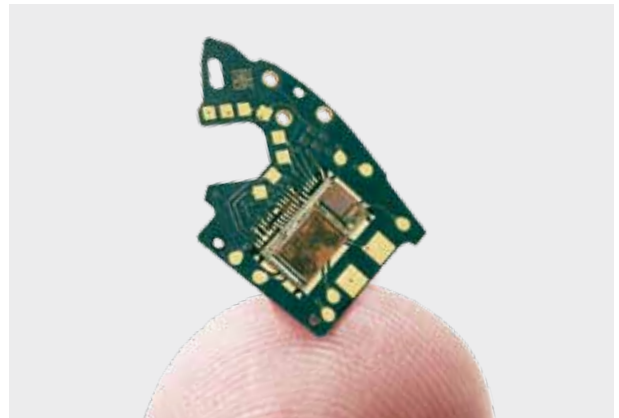
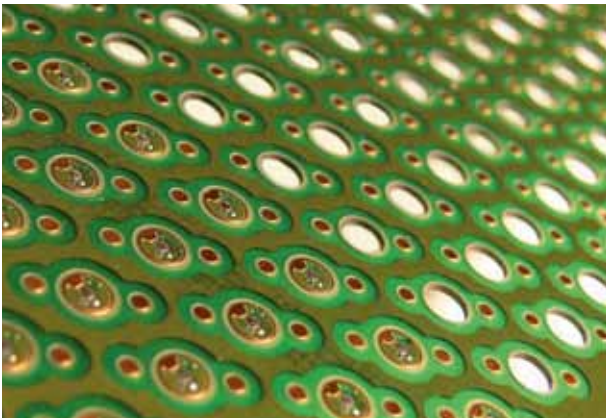
The UV laser cuts substrates even right next to delicate components and tracks without causing any mechanical stress. This allows small subassemblies with much higher assembly densities to be realized, even being populated right up to the edge of the printed circuit board. Another advantage of this stress-free method is the minimization of rejects due to outstanding CpK (process capability ratio) even at tightest tolerances.

The very attractive price and improved product quality are excellent benefits for manufacturers looking to enhance innovations.

Low price, low power consumption, low weight, small footprint – yet excellent efficiency plus outstanding cutting quality.

# LPKF MicroLine 1000 S

- Laser depaneling at the cost of a mechanical router
- Excellent price-performance ratio
- For high production variances
- Highest precision and outstanding CpK



## Enhanced Processing Quality

The LPKF MicroLine 1000 S boasts many advantages: conversion times and time-to-market no longer depend on product-specific tools – just load the new layout data and the machine is ready to go, resulting in new freedoms in manufacturing.

The UV laser cuts printed circuit boards with dimensions up to 305 x 250 millimeters. With a focus width of 20  $\mu\text{m}$ , the beam cuts very narrow channels and copes with even the tightest radii. Laserpower measurement takes place at the laser source and at the PCB surface – for a secure cutting process.

Components can be positioned right up to the cutting edge to save space and material. No clamping and fixation clearance required.

## Simple and Safe

Thanks to the specialized laser source and a compact control panel with touch screen and easy-to-use software, the LPKF MicroLine 1000 S operates at the push of a button. The optimal focus of the laser beam adjusts automatically. The system uses fiducials, board-edges or even individual break-out tabs to identify the position of the printed circuit boards and perfectly placed cuts.

The LPKF MicroLine 1000 S is a compact class 1 laser system. A security glass enclosure pane prevents accidents by absorbing laser reflection.

# Shorter Product Pipelines

Just click on a layout file instead of manufacturing expensive tools – that’s how easy the LPKF MicroLine 1000 S can be employed to process different products. Users enjoy cutting edge competitive advantages thanks to the very high quality and flexible production planning. The MicroLine 1000 S is remarkably compact, easy to operate, with an outstanding price performance ratio – a welcome addition to the electronics production team.

Technical Data: MicroLine 1000 S	
<b>Max. working area (X/Y/Z)</b>	305 mm x 250 mm x 10 mm (12" x 9.8" x 0.4")
<b>Max. recognition area (X/Y)</b>	255 mm x 200 mm (10" x 7.9")
<b>Data input formats</b>	Gerber, X-Gerber, DXF, HPGL, Sieb & Meier, Excellon, ODB ++
<b>Max. structuring speed</b>	Depends on application
<b>Accuracy</b>	± 25 µm*
<b>Diameter of focussed laser beam</b>	20 µm
<b>Laser wavelength</b>	355 nm
<b>System dimensions (W/H/D)</b>	875 mm x 1,430 mm x 750 mm (34.5" x 56.3" x 29.5")
<b>Weight</b>	260 kg (573 lbs)
<b>Operating conditions</b>	
<b>Power supply</b>	110/230 V, 50 – 60 Hz, 1.4 kW
<b>Cooling</b>	Air-cooled (internal cooling cycle)
<b>Ambient temperature</b>	22 °C ± 2 °C (71.6 °F ± 4 °F)
<b>Humidity</b>	60 % (noncondensing)
<b>Required accessories</b>	Exhaust unit
<b>Hardware and software requirements</b>	User-PC and CAM-software included

\* Positioning accuracy

The MicroLine 1000 S systems can be configured as variants, for example as MicroLine 1120 S.

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