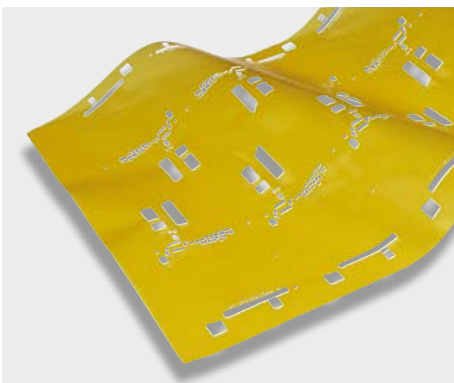
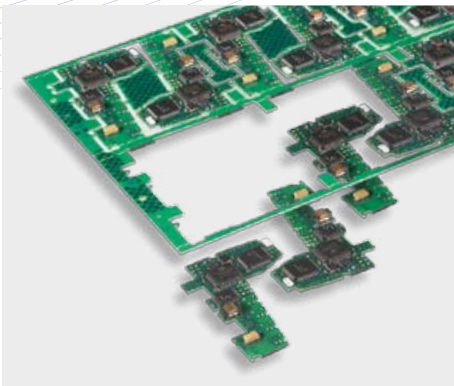
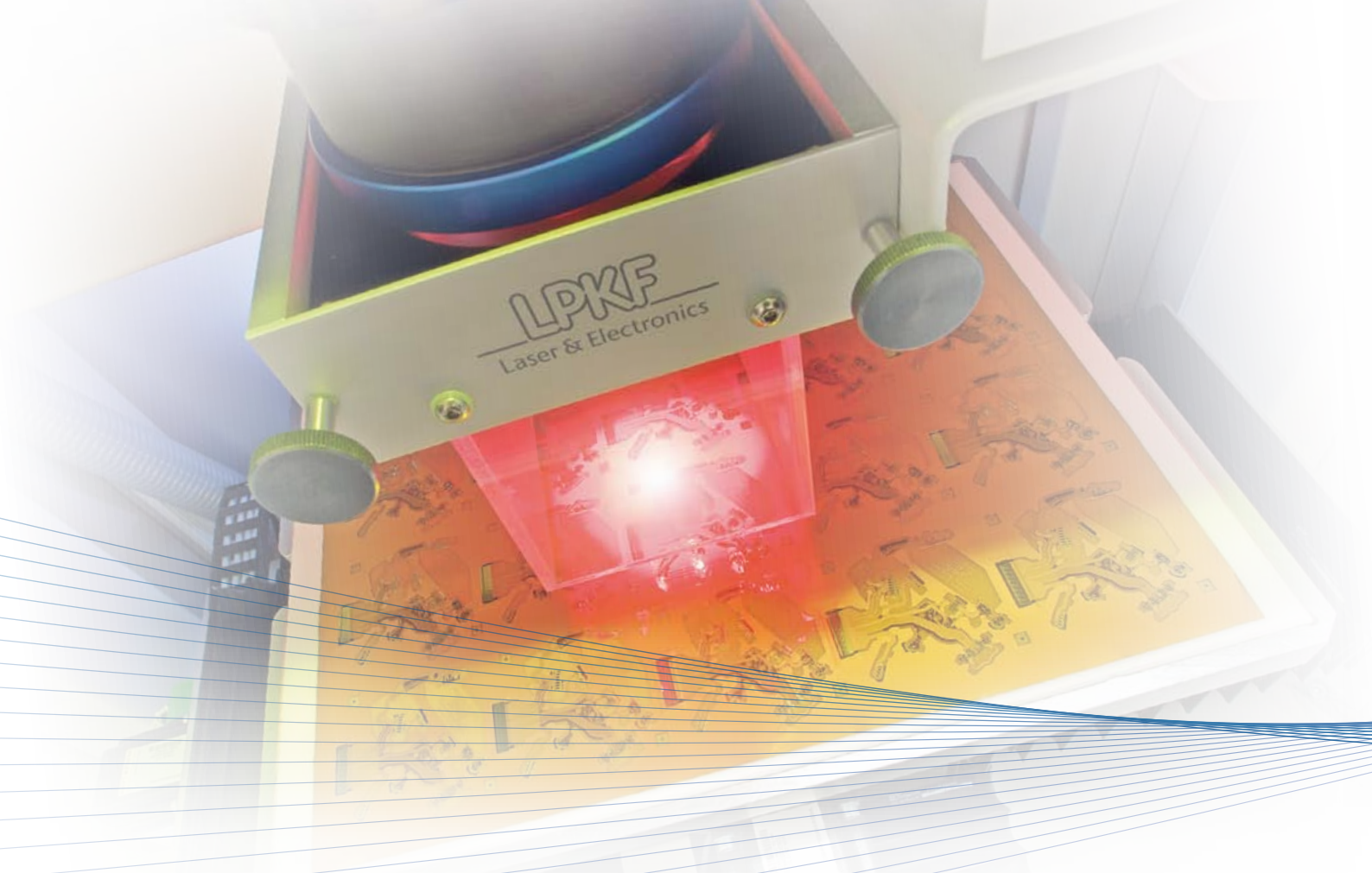


UV Laser for Depaneling
and Cover-Layer Cutting
LPKF MicroLine 1000 E





Light at the Cutting Edge ...

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

Inexpensive Entry into UV Laser Processing

The LPKF MicroLine 1000 E is perfect for cutting break-out tabs, and cutting complex contours. The benefits include shorter time to market and much higher cut-edge quality than conventional methods. The UV laser used in the machine is an optimal tool for making clean, burrless 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 material evaporated by the laser energy is completely removed by the integrated exhaust unit to leave a residue-free surface.

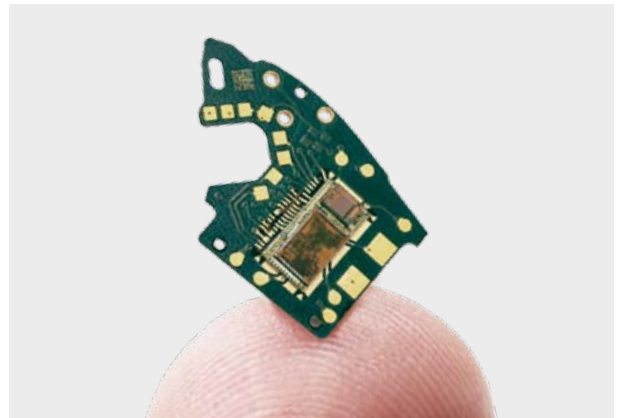
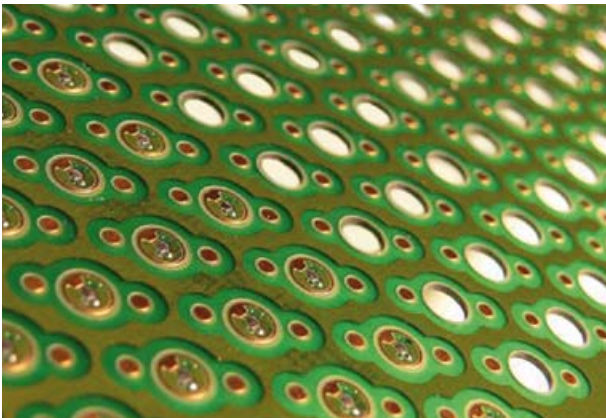
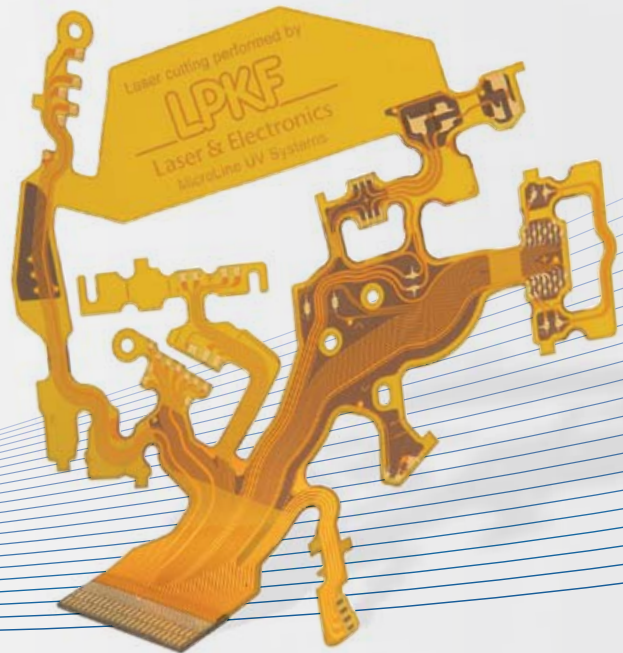
Stressless Operation for the Material and the Operatives

The UV laser cuts substrates even directly next to sensitive components and tracks without causing any mechanical stress. This enables small subassemblies with much higher assembly densities to be realized, with placement even up to the edge of the printed circuit board. Another benefit of this stressless operation is reducing the number of rejects.

The very attractive price and product quality improvements are outstanding benefits for producers looking for innovation advancements – who need look no further to gain the cutting edge advantages of the LPKF MicroLine 1000 E.

LPKF MicroLine 1000 E

- Inexpensive laser system for printed circuit board processing
- For rigid, rigid-flex and flexible substrates
- Ultra flexible
- Particularly economical for mini- and medium-sized series



Enhanced Processing Quality

For thin and flexible substrates in particular, the LPKF MicroLine 1000 E boasts many advantages: conversion times and time-to-market are no longer dependent on product-specific tools and adapters – just load the new layout data and the machine is ready to go.

The UV laser cuts printed circuit boards with dimensions up to 229 x 305 millimeters. With a focus width of 20 μm , the beam cuts very narrow channels and copes with even the tightest radii.

Components can be placed right up to the cutting edge to save space and material. No clamping and fixation areas needed. The integrated vacuum table holds the materials firmly in place, and makes sure that flexible substrates remain flat and smooth.

Simple and Safe

Thanks to the preset process parameters, the LPKF MicroLine 1000 E operates at the press of a button. The optimal focus of the laser beam is adjusted automatically. The system uses fiducials to identify the positioning of the printed circuit boards and perfectly adjust the cutting process.

The LPKF MicroLine 1000 E is a compact Class 1 laser system. Its hood prevents accidents by stopping any dangerous manipulation when the laser is in operation. The hood also has a large window to enable the process to be monitored safely from outside.

Shorter Product Pipelines

Just click on the layout files instead of manufacturing expensive tools – that’s how easy the LPKF MicroLine 1000 E 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 E is remarkably compact, easy to operate, with a very good price performance ratio – a welcome addition to the electronic production team.

Technical Data: MicroLine 1000 E

Working area	229 mm x 305 mm x 10 mm (9" x 12" x 0.4")
Diameter of focussed laser beam	20 µm (0.8 mil)
Data input	Gerber, X-Gerber, DXF, HPGL, Sieb & Meier, Excellon, ODB++
Laser wavelength	355 nm, diode-pumped solid-state laser
Average laser power	4 W
Repetition rate	20 – 100 kHz
System dimensions (W x H x D)	875 mm x 1,430 mm x 750 mm ^a (34.5" x 56.3" x 29.5") ^a
Weight	260 kg (573 pounds)
Operating conditions	
Electricity	110/230 V, 50–60 Hz, 1.4 kW
Cooling	Air-cooled (internal cooling cycle)
Ambient temperature	22 ± 2° C (68° F ± 4° F)
Accessory requirements	Exhaust unit, PC

a Height with opened working door 1,730 mm

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