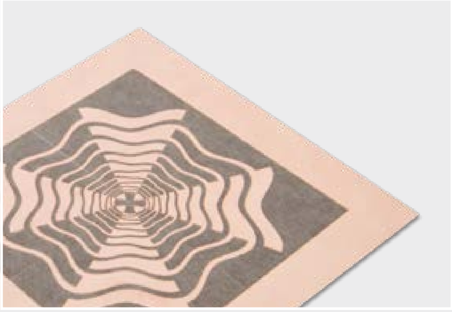
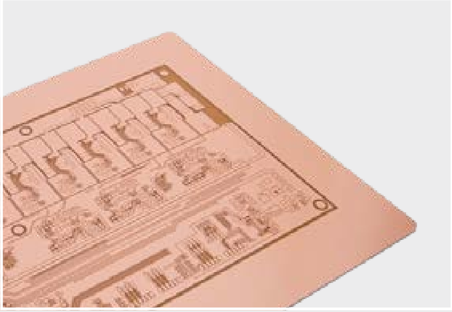
Laser Processing of PCBs

LPKF ProtoLaser S4

- Surface processing, suitable for the circuit, precise full section cuts and drill holes
- Compact and safe: lab-ready
- Optimized for circuit board materials from the electroplating process
- Prototyping and on-demand processing of custom small batches

LPKF ProtoLaser S4:
Specialist for PCB Prototyping





LPKF
Laser & Electronics

Laser Processing of PCBs

With the LPKF ProtoLaser S4, only a couple of minutes are needed from the layout to a structured circuit board – with exact geometries and drill holes for through-hole plating or cutouts.

ProtoLaser S4 uses a laser source (532 nm, green) that, despite its high cutting capacity for copper, places hardly any stress on the substrate. Therefore, this lab laser can also safely process copper surfaces with inhomogeneities of up to 6 µm and is also suitable for the production of galvanic through-hole plating circuit boards as well as multilayer components. Fast processing, a wide choice of materials, safe process results in the lab!

ProtoLaser S4 is a solution for efficient prototyping of complex digital and analogue circuits, RF and microwave circuit boards with a size of up to 305 mm x 229 mm (12” x 9”). It is ideal for the production of single- or double-sided circuit boards, antennas, filters, and numerous applications featuring precise, steep flanks. In addition, it provides exact geometries on technical ceramic materials.

This laser system features the Advanced version of the LPKF CircuitPro software, which boasts various handy extras in addition to the necessary features.

LPKF ProtoLaser S4

Max. layout area (X/Y/Z)	305 mm x 229 mm x 7 mm (12” x 9” x 0.28”)
Max. material size (X/Y/Z)	315 mm x 239 mm x 10 mm (12.4” x 9.4” x 0.39”)
Laser wavelength	532 nm
Max. laser power	12 W
Laser pulse frequency	25 – 300 kHz
Diameter of focused laser beam	20 ± 2 µm (0.78 ± 0.08 mil)
Structuring speed	12 cm^2/min (1.9 in^2/min)[a] on laminated substrates 18 µm (0.5 oz) Cu
Minimum line/space	75 µm / 25 µm (2.9 mil / 0.9 mil)[a] on FR4 18 µm (0.5 oz) Cu
Positioning accuracy in the scan field	± 10 µm (± 0.39 mil)
Repeatability in the scan field	± 2.2 µm (± 0.09 mil)
Dimensions (W x H x D)	910 mm x 1650 mm x 795 mm (35.8” x 64.9” x 31.3”)[b]
Weight	350 kg (772 lbs)
Power supply	110 – 230 V, 50 – 60 Hz, 1.5 kW
Compressed air supply	Min. 6 bar; 185 l/min (min. 87 PSI; 185 l/min)
Cooling	Air-cooled (internal cooling cycle)
Ambient temperature; humidity	22 °C ± 2 °C (71.6 °F ± 4 °F); < 60 %
Software	LPKF CircuitPro Advanced
Options	Dust extraction unit, compressor, starter set

[a] Depending on material and laser beam parameters

[b] Height with open hood: 1765 mm (69.5”)

Presented by:

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www.lpkf.com/protolaser-s4