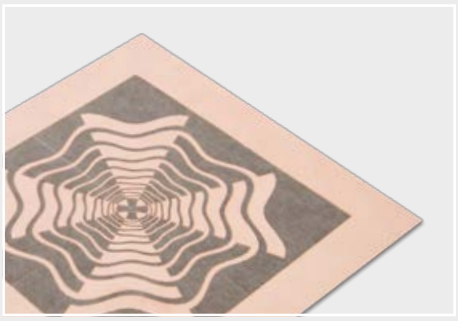
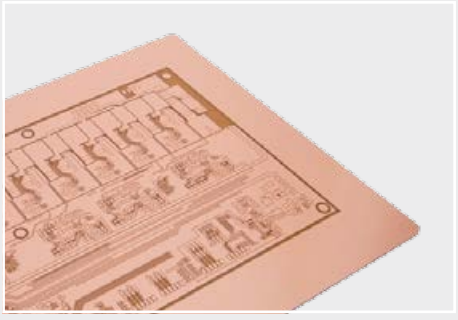
# Laser-based PCB Prototyping
## LPKF ProtoLaser S4

- Benchmark for circuit board processing
- Laser wavelength of 532 nm (green)
- Simple, fast, precise
- Any layout, without etching chemicals
- Intuitive CircuitPro system software


**LPKF ProtoLaser S4:**
**Specialist for PCB Prototyping**





LPKF Laser & Electronics
distributor 23 years of Turkey
tamara electronics design

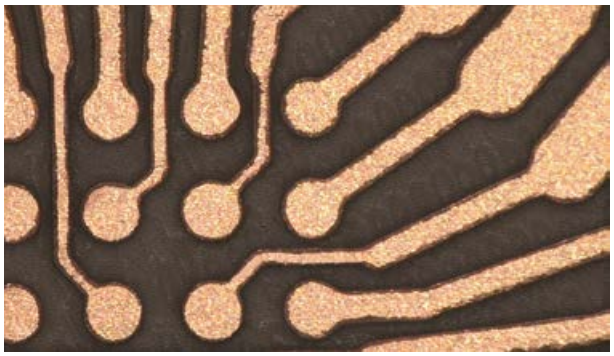
# PCB Prototyping by Laser – LPKF ProtoLaser S4 with a New Laser Source and Fast Vision System



In PCB prototyping, laser technology offers a number of advantages over conventional processes: speed, precision, flexibility, and cost-effectiveness. The LPKF ProtoLaser S4 is specially designed for structuring laminated circuit boards.

## Cost-effectiveness Built In

The ProtoLaser S4 is a valuable tool in the electronics lab. In next to no time, the compact laser system generates fine precision structures for sophisticated PCBs – as individual pieces or small batches, without masks or tools. Using a special process, the ProtoLaser S4 quickly removes large swaths of copper from laminated substrates like FR4. The ProtoLaser S4 even delivers outstanding results on special materials for RF applications.



The LPKF ProtoLaser S4 impresses with its precision structures on laminated materials

## Large Process Window

The laser wavelength used opens up new application fields. The green laser (532 nm wavelength) lowers the likelihood of burning the carrier substrate. The ProtoLaser S4 also processes galvanic, through-plated boards with inhomogeneities up to 6 µm thick. In addition, the ProtoLaser S4 can economically cut and drill through flexible substrates with a thickness of 0.8 mm. Larger substrate thicknesses require more time.

## Vision System

The integrated high-resolution camera quickly and accurately recognizes register marks or conductor structures on the board.

## Package Software

The CAM software for the LPKF CircuitPro is intuitive to operate and comes pre-installed on the built-in computer. It optimizes CAD data for the laser process and provides full access to the process parameters. Users can draw on an extensive parameter library with support for numerous common and exotic project materials.

## Modern Design for the Lab

The newly designed LPKF ProtoLaser S4 offers skillful solutions for operation and maintenance. The system, which is on rollers, fits through any lab door and has no requirements in the lab other than compressed air.

### Technical Data: LPKF ProtoLaser S4

| | |
|---|---|
| **Max. material size and layout area (X x Y x Z)** | 229 mm x 305 mm x 10 mm (9” x 12” x 0.4” ) |
| **Laser wavelength** | 532 nm |
| **Laser pulse frequency** | 25 kHz – 300 kHz |
| **Structuring speed** | 650 mm/s (25”/s) on 18 µm / ½ oz Cu on FR4 |
| **Laser spot diameter in focus position** | 23 µm (0.9 mil) |
| **Minimum line/space** | 75 µm/25 µm (2.9 mil/1 mil), on laminated subtrate (18 µm Cu) |
| **Accuracy*** | ± 1.98 µm (± 0.08 mil) |
| **Dimensions (W x H x D)** | 910 mm x 1650 mm x 795 mm (35.8” x 65” x 31.3”); height with open door 1765 mm (69.5”) |
| **Weight** | 340 kg |
| **Electrical consumption** | 110 V – 230 V; 1.4 kW |
| **Required compressed air supply** | Min. 6 bar (87 psi), min. 230 l/min (8.12 cfm) |
| **Required accessories** | Exhaust unit, compressor, PC |

* Mechanical resolution scanfield

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