

# Cold Laser Processing

## LPKF ProtoLaser R

- Picosecond laser for the research lab
- Cold ablation of different thin-film layers
- Intuitive CAM software
- Field-proven housing concept



# Short Laser Pulses – Gentle Material Processing

## LPKF ProtoLaser R with Ultrafast Laser Source

A key parameter in micro-material processing by laser is the pulse duration. The LPKF ProtoLaser R is capable of accurately structuring thin-film applications and delicate substrates – the “R” stands for “research.”

### Laser Ablation with Virtually No Heat Input

In laser technology, the shorter the pulse, the lower the heat input into the surrounding material. A picosecond laser breaks down an important barrier. It practically eliminates heat transfer; the targeted material evaporates immediately.

### Proven Housing

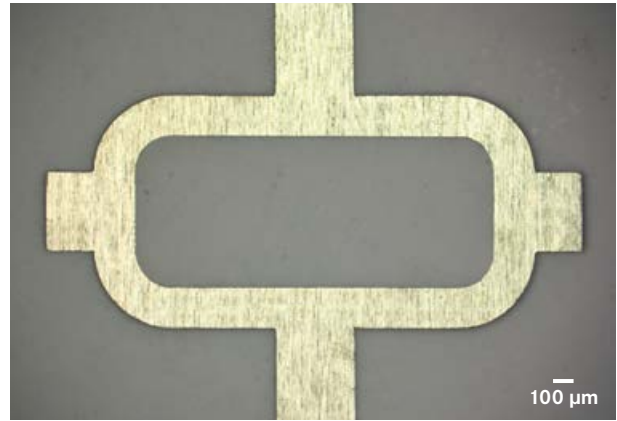
The new ProtoLaser R is packaged in the familiar third-generation ProtoLaser system housing. It is structurally decoupled from the effects of the environment and can be rolled through any lab door.

### Micro-Material Processing Specialist

Unlike pure cutting applications, micro material processing does not require high powers. Instead, stable laser parameters in the lower output range are crucial. The LPKF ProtoLaser R features a laser source with a laser power of up to 4 W. This allows even complex thin film systems, temperature-sensitive substrates, and OLED coatings on glass to be ablated or structured with a high degree of control. The laser system requires no masks or films to accomplish these tasks.

### Established System Software

The LPKF ProtoLaser R comes with tried and true system software. Support of all common CAD formats is enabled through the combination of LPKF CircuitPro and LPKF CircuitMaster.



The USP laser can flexibly and precisely cut geometries out of thin metal foils. Thanks to the powerful CAM software, multiple trails can be made within a short period of time.

### Technical Data: LPKF ProtoLaser R

<b>Max. material size and layout area (X x Y x Z)</b>	229 mm x 305 mm x 10 mm ( 9" x 12 " x 0.4" )
<b>Laser wavelength</b>	1030 nm
<b>Laser pulse frequency</b>	Max. 200 kHz
<b>Laser pulse duration</b>	1 ps
<b>Laser power</b>	Max. 4 W
<b>Laser spot diameter in focus position</b>	15 μm (0.6 mil)
<b>Table move speed (X x Y x Z)</b>	100 mm/s x 100 mm/s x 10 mm/s (4"/s x 4"/s x 0.4"/s)
<b>Dimensions (W x H x D)</b>	875 mm x 1430 mm x 820 mm (34.5" x 56.3" x 32.3")
<b>Weight</b>	300 kg (661.4 lbs)
<b>Electrical consumption</b>	90 – 240 V; 1.5 kW
<b>Required accessories</b>	Exhaust unit, compressor, PC

