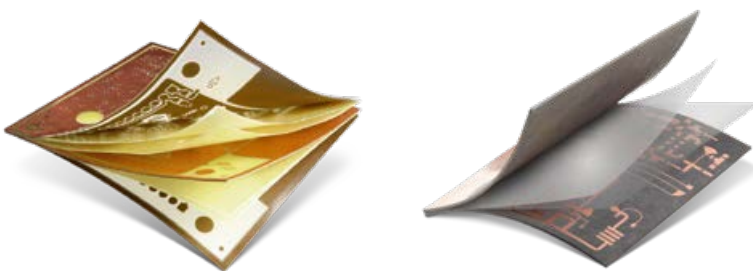




8-Layer Multilayer in Your Own Lab – LPKF MultiPress S4

Highly complex PCBs with dimensional limits typically require circuit traces to be spread across multiple layers. Ground layer is a must for high switching signal speeds. In addition to high-density digital boards, both flexible and RF boards are increasingly turning to multilayer designs. When you need a prototype quickly, in-house equipment is a great advantage. The newly designed MultiPress S4 now includes a higher maximum temperature (320° C/608° F), higher pressure, and an integrated vacuum chamber to open an entirely new range of multilayer flex PCB development, and high-temperature RF/MW substrate lamination. The LPKF MultiPress S4 works seamlessly with the LPKF Contac S4 through-hole plating system as well as all ProtoLaser and ProtoMat models supported with LPKF CircuitPro.



LPKF
Laser & Electronics

The Press for Multilayer Prototyping

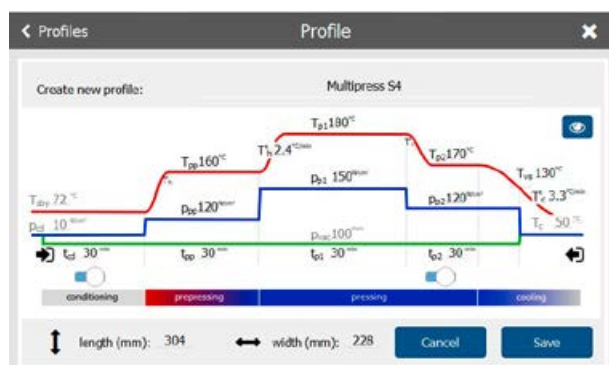
A newly implemented and intuitive graphical user interface offers an easy start to producing multilayer prototypes for the novice and unleashes new possibilities for working with next generation materials. The lamination process is programmable with 3–5 different phases of ramp-controlled temperature and pressure, while utilizing the negative pressure of the vacuum chamber and decreased cooling time.

Single phase power requirements, built-in vacuum and hydraulic pump, network connectivity, and predefined process steps for common materials make the stand-alone LPKF MultiPress S4 the most efficient system for laminating multilayer PCBs in your own lab. Any fumes or odors can be directly extracted via exhaust connection to a ventilation system (if needed).

User friendly and intuitive

Navigating the LPKF MultiPress S4 on a large touch screen is strait forward and very user-friendly. Profiles, where all the process parameters are set, can be found behind one of four large buttons. Selecting the desired profile brings you to the process window where all necessary information is visible. After pressing the start button, the operator is guided by on screen instructions. Real-time process parameters are displayed in both a graph and numeric values. The end of the lamination process is indicated visually and acoustically and, when set, can also send an e-mail notification to the operator.

Profiles can be copied and modified, imported, or exported, and most importantly, values can be modified right on the graph by double-tapping the current value to be edited. New parameters are entered via keypad window and immediately displayed on the profile. The preview button, next to the graph, displays the newly calculated profile based on parameter settings and

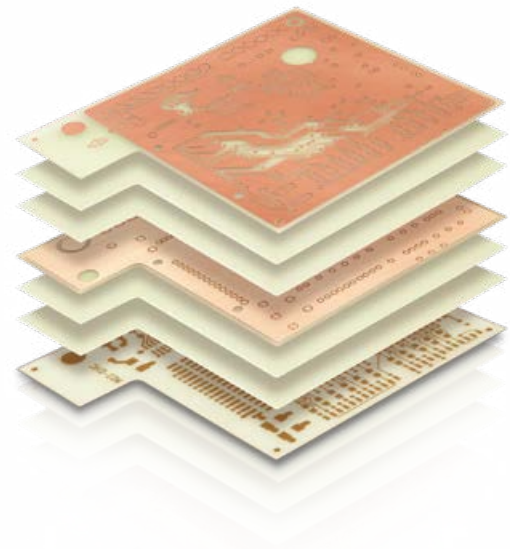


physical limitations of the press, thus any differences to expectations can be immediately changed. A PDF User manual is available on the system for detailed explanation of the lamination process and user safety.

Touchscreen

A large 9" IPS capacitive touchscreen display with 1920 x 1200 pixels shows the smallest of details at virtually any angle, and enables user-friendly operation of the MultiPress S4 even when wearing protective gloves.

- In-house production of multilayer prototypes with rigid, rigid flex, flexible and RF materials
- Advanced intuitive graphical user interface with touch screen controls and guidance
- Up to five freely programmable temperature/pressure process steps
- Vacuum chamber and fume exhaust
- Stand-alone design; easily moveable on wheels



Profiling

In addition to the standard 3-step lamination procedure of prepressing, primary pressing and cool-down phases, the MultiPress S4 has added two more additional phases for advanced multilayer applications: An optional preconditioning phase can be implemented which will dehydrate the substrate and prepreg layers in the vacuum chamber before beginning the prepressing phase. The second additional phase is an optional secondary pressing step which occurs after primary pressing, and is often used for advanced materials which may require two independent pressing steps at different temperatures and pressures. Each of these 5 lamination phases can be independently programmed with unique temperatures, times and pressures. A new Preview function has also been added to ensure that custom pressing profiles are within the capabilities of the press. For example: if a pressing phase is programmed for a length of time that is too short for the press to reach the target temperature, the software will indicate this with a single press of the Preview button.

Sensors

Real time values of the press temperature, lamination pressure and the negative air pressure in the vacuum chamber are visible on display as numerical values, diagrams, and time-domain graph.

Plug & Play with Built-in Hydraulic Pump

Microprocessor controlled hydraulic system with built-in hydraulic pump guarantees the desired pressing force without the need to connect a separate unit. No additional outside connections are needed – just plug and play.

Built-in Vacuum Pump

Pressing inside of a vacuum chamber drastically reduces or even eliminates any air pockets in a multilayer stack-up which could damage the circuit board during the reflow process.

Condensing Water Separator

Utilizing an initial conditioning phase with vacuum applied will efficiently dry out any remaining humidity in materials. Condensate is automatically drained out of system.

Automatic Door Opening

Motorized and software-controlled door opening provides additional user safety and convenience when handling multilayer stacks.

Forced Cooling

Controlled ramp-down cooling can follow the material supplier's recommendations, and also shorten the cooling stage process.

Exhaust

Any fumes or odors, which may occur from melting prepreg, can be directly removed via a rear side exhaust connection to a ventilation system.

Smoke Detector

For early detection of any unexpected overheating of pressed materials, built in smoke detector would generate warning signal or even issue critical stop. Preset levels can be modified by operator.

Connectivity

Using an ethernet port, the MultiPress S4 can be connected to a local network. This would enable users to set desired process notifications to be delivered straight to his/her e-mail inbox. Profiles can also be imported or exported via USB drive.

Mobility

The LPKF MultiPress S4 is equipped with caster wheels so it can be effortlessly moved around the lab. Casters also enable easy unpacking of the 205 kg press without lifting any weight.

PCB Prototyping with Worldwide Support

Users of LPKF prototyping laser systems can rely on global application centers in Germany, the USA, Japan, Korea and China for assistance. Application centers provide access to LPKF's many years of experience in laser material processing and offers expert consultancy on technical questions, new processes, and applications. Along with etching lasers and milling machines, LPKF offers a wide range of systems and processes that make functional, near-production PCBs from copper clad PCB substrates.

LPKF MultiPress S4

Max. layout size	200 mm x 275 mm (7.8" x 10.8")
Max. laminating area	229 mm x 305 mm (9" x 12")
Min. laminating area	100 mm x 100 mm (4" x 4")
Max. laminating pressure	340 N/cm ² (493 PSI) at 229 mm x 305 mm (9" x 12")
Max. temperature	320 °C (608 °F)
Vacuum adjustment	Off, 0.1 – 0.9 bar (1.5 – 13 PSI)
Max. number of layers	8 (depending on material and layout)
Max. thickness of stack	4 mm (0.16")
Number of profiles	Unlimited, 5 preset
Dimensions (W x H x D)	500 mm x 980 mm x 500 mm (19.7" x 38.6" x 19.7")
Weight	205 kg (452 lbs)
Power supply	207 – 230 AC, 3 kW

Presented by:



www.lpkf.com/multipress-s4



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