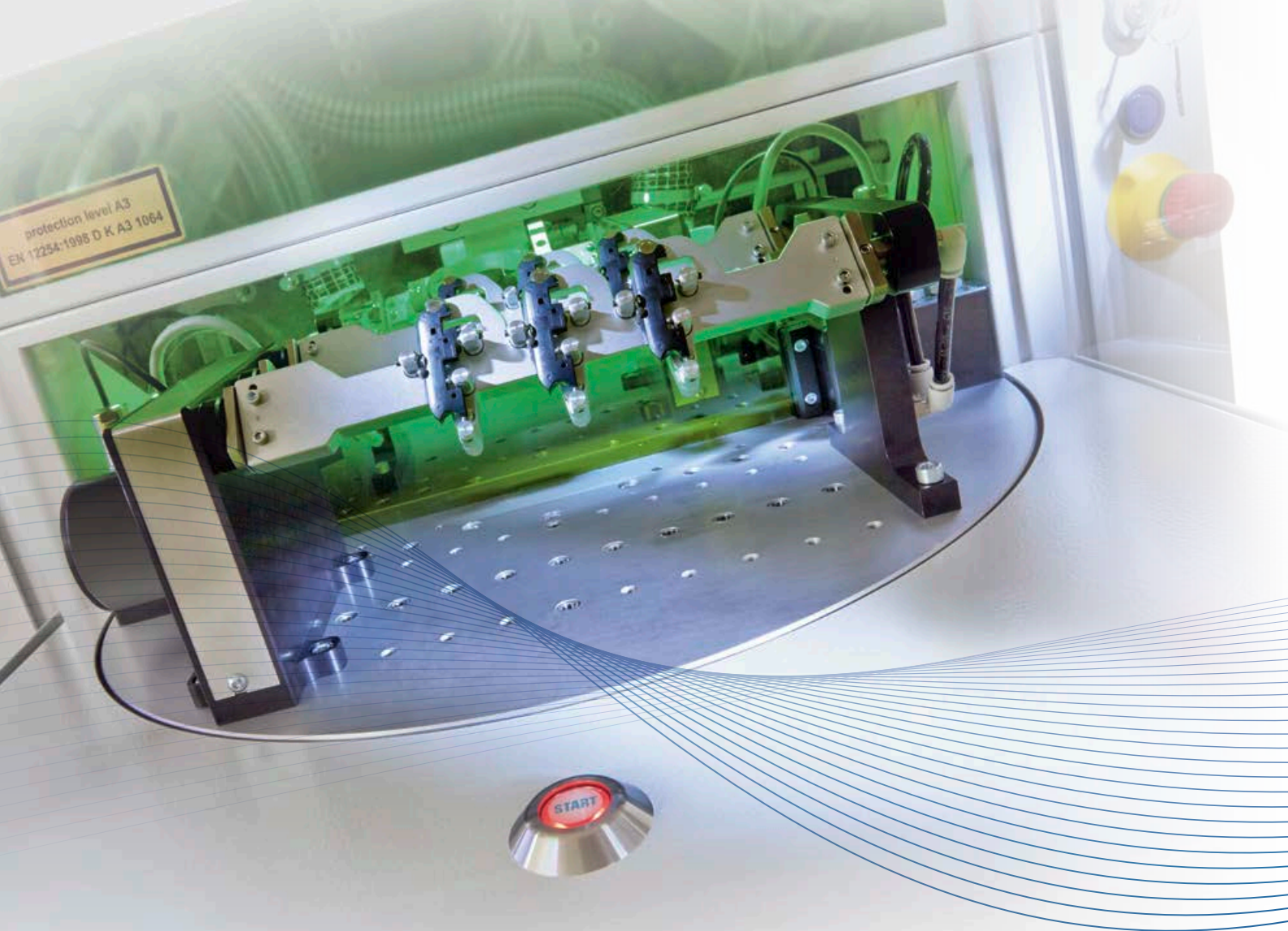


With Rotary Indexing Table and Vision System
LDS Production with the LPKF Fusion3D 1200





Performance Increased ...

With its latest Fusion3D model family member, LPKF extends its program of high-performance laser systems for LDS processing. Equipped with state-of-the-art components and a high-quality rotary indexing table, small, medium and large series of 3D molded interconnect devices (MID) can be produced in a particularly economical fashion.

Gaining in Flexibility

The LPKF Fusion3D 1200 was especially developed for laser direct structuring of injection-molded 3D MIDs. The laser structures only the area which will become the conductor tracks onto the plastic components. Subsequently, the tracks are metallized and thus become conductive.

Non-Productive Times Shortened

The integrated rotary indexing table reduces non-productive times: While a component is being processed, another one can already be loaded or unloaded. Each table side can handle a separate project.

Thanks to the height limit control of the work area, it can be ensured that work is always done in focus, thus preventing manufacturing errors.

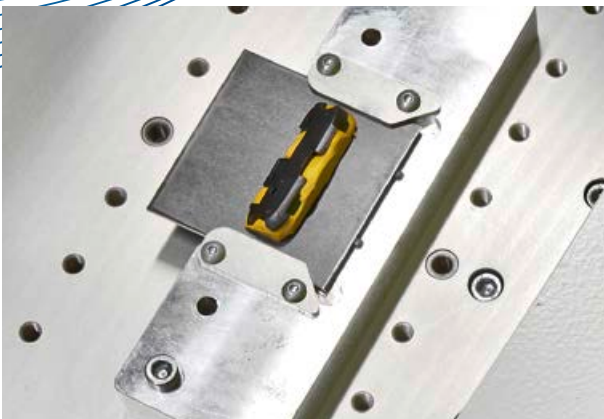
Safety and Modular Structure

Both table sides feature four separate I/O ports and can be supplied with vacuum and compressed air. A light barrier provides an active access protection. The modular laser concept allows the Fusion3D platform to be equipped with several processing units (PU). A maximum of three PUs can work simultaneously and thereby guarantee short cycle times.

- Short non-productive times
- Up to three processing units
- Simple setup through vision system
- Economic production from small series to mass production



Finger tips for a robot hand
(Source: Citec, Bielefeld University)



Simple production of small series



Simultaneous processing of different projects possible

Growing with the Tasks

The LPKF Fusion3D 1200 laser system has been developed as a flexible solution for a broad range of requirements for the laser direct structuring. High-quality components and a maintenance-friendly design provide a maximum machine availability.

With different laser processing units, an optional vision system and optional turning devices on the rotary indexing table, the system can be adapted to the end customers layout and performance requirements.

Support in Process Optimization

And not just the technology is outstanding: Drawing from their extensive experience with the LDS process, the LPKF application engineers provide support in process setup and optimization.

Powerful Software

Following LPKF's switch to a new, uniform machine software basis starting in 2012, the LPKF Fusion3D product family, too, benefits from CircuitPro3D. It provides intuitive, uniform operation, fast calculation routines and sophisticated functions to optimize the structuring processes.

Worldwide Support for Laser Direct Structuring

Wherever they are in the world, users of LPKF systems can be supported from our application centers in Germany, the USA, Japan, Korea and China. At these centers, users have access to LPKF's extensive experience in laser material processing and the laser direct structuring process. User training for technical employees and special consulting services complete the offer from the world market leader in laser systems for structuring three-dimensional molded interconnect devices. LPKF will gladly provide application reports and further information on request.

Technical Data: LPKF Fusion3D 1200	
Laser safety class	1
Structuring area (X x Y x Z)	200 mm x 200 mm x 80 mm (7.8" x 7.8" x 3.1") or 100 mm x 100 mm x 40 mm (3.9" x 3.9" x 1.5")
Number of processing units (PU)	1 – 3
Accuracy*	± 25 µm (± 1 mil)
Max. structuring speed	4 000 mm/s (157" per second)
Input data formats	IGES, STEP
Software	LPKF CircuitPro 3D
Laser wavelength	1 064 nm
Laser pulse frequency	10 kHz – 200 kHz
Machine dimensions (W x H x D)	956 mm x 1 880 mm x 1 642 mm (37.6" x 74" x 64.5")
Machine weight	Approx. 675 kg (1 488 lbs)
Operating conditions	
Electric supply	400 V, 3L+N+PE, 16 A, 50/60 Hz, ~2,2 kVA
Cooling	Air-cooled
Ambient temperature	22° C ± 2.5° C (71.6° F ± 4° F)
Humidity	Max. 60 %
Exhaust unit	Required; available as an option
Machinable materials (selection)	Nickel, copper, stainless steel, LDS plastics, powder coatings and LDS paint, gold and silver paste, ceramic, tin

* Calibrated scanfield

** Including 3 Processing Units (PU), excluding exhaust unit

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