

The function your laser machine is missing

Scanner and axis-controller connections, process software and sequence control, programmed and tested on your machine by a laser-process engineer.

THE PROBLEM

Extending a laser machine usually means one of three routes: wait for the machine supplier, hire a software contractor without laser knowledge, or hire a laser specialist without software practice. All three lose time in translation, and errors show up only at the machine.

WHAT LPI DELIVERS

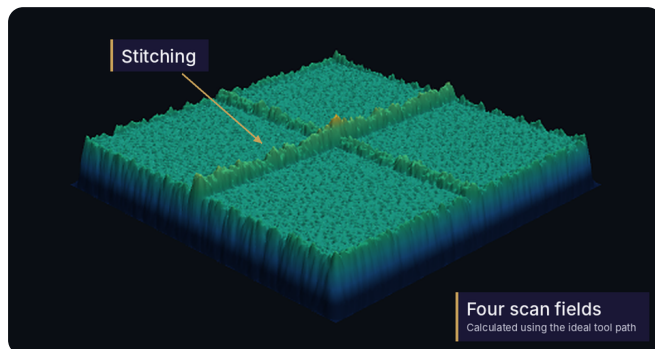
Both in one person. The requirement is taken from the process side, implemented directly on your machine and tested on the real process. No specification bounces between two companies.

YOUR BENEFIT

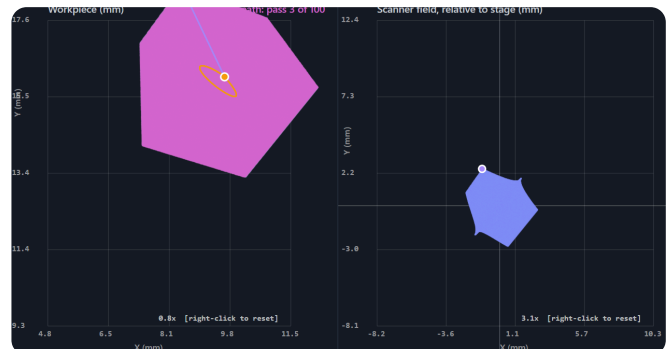
- **One contact** for process and software.
- **Tested on the process:** acceptance on the workpiece, not at the desk.
- **Independent of the machine supplier** for functions it does not offer or does not prioritise.
- **Your code:** delivered into your repository or kept at LPI, as agreed, with automated tests.

WHY LPI

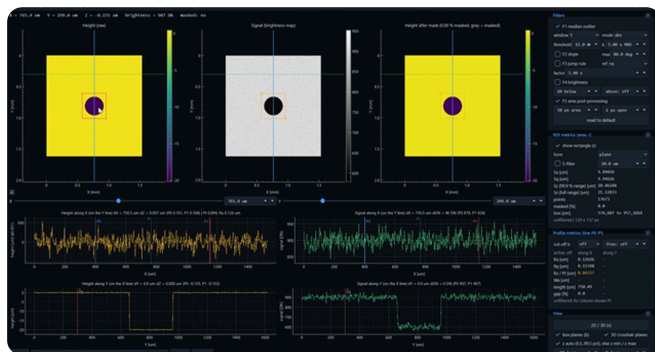
Twenty years of laser micromachining in research, OEM leadership and product management, combined with own software development on the common controllers. The proof is lpi.tool, LPI's own application, which already drives these interfaces.



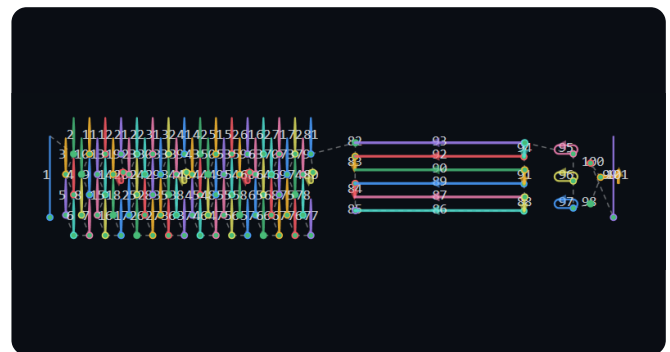
Ablation prediction across 2 x 2 scan fields, seam included.



XL SCAN: stage (left) and scanner (right) share the job.



Measurement import: white-light interferometer data with masking, profiles and roughness.



Optimised cut order for 101 contours: 68 % less travel (494.6 → 157.0 mm).

HOW TO START

One function that slows you down today, as a delimited order with acceptance at the machine. Further functions follow as needed, or lpi.tool becomes the framework.

CONTROLLERS AND INTERFACES LPI HAS PROGRAMMED

Vendor / type	What is in place
AXIS CONTROLLERS	
ACS SPiiPlus	Path planning, coordinated motion, recording; tested continuously on the ACS simulator
Aerotech A3200	Connected; dry run on a production machine; simulation implemented (needs an RT licence and a dedicated PC)
Aerotech Automation1	Implemented; the simulation needs an Automation1 RT licence and a dedicated PC
SCANNERS	
SCANLAB RTC6	Direct path programmed; hardware test pending
SCANahead / SCANmotionControl	Path planning and simulation via the SCANLAB library
XL SCAN (SCANLAB + ACS)	Special scanner/axes split mode provided by SCANLAB and ACS, via the ACS SLEC synchronization node; split by adjustable threshold; simulation
LASER SOURCE	
Light Conversion Carbide	Connection and interlock logic; emulator for simulation without laser
METROLOGY	
Heliotis WLI (.hdat)	Import, masking, roughness to ISO 25178 / ISO 21920
CAM	
DXF, G-code, pattern generator	From pattern to ready-to-run laser job; cut order incl. cutting on the fly; generation of ACSPL+ programs (ACS) and AeroBasic programs (Aerotech)

SERVICES

Service	What you get
Connecting a controller or scanner card	Working interface in your software or in lpi.tool, with test report
Process function	For example cut order, sequence control, measurement import, visualisation; acceptance on the workpiece
Process development with software share	Parameter study, evaluation, report; the tools stay with you
Make-or-buy support	Assessment whether a function is built in-house or bought

WAY OF WORKING

- Code in your repository or at LPI, as agreed; no dependence on LPI-specific formats.
- Every delivery with automated tests and an acceptance sheet in plain language.
- Testing on your machine or on the vendor's simulator (ACS, SCANLAB).

PROJECT EXPERIENCE

- Laser-process consulting for an industrial end user: laser tests, analysis, report.
- Proof of concept for an optical concept, ordered by an industrial end user.
- Validation of the ablation prediction with a Swiss research institute, funded by Innosuisse.
- Dry run of lpi.tool on a production machine with Aerotech A3200.