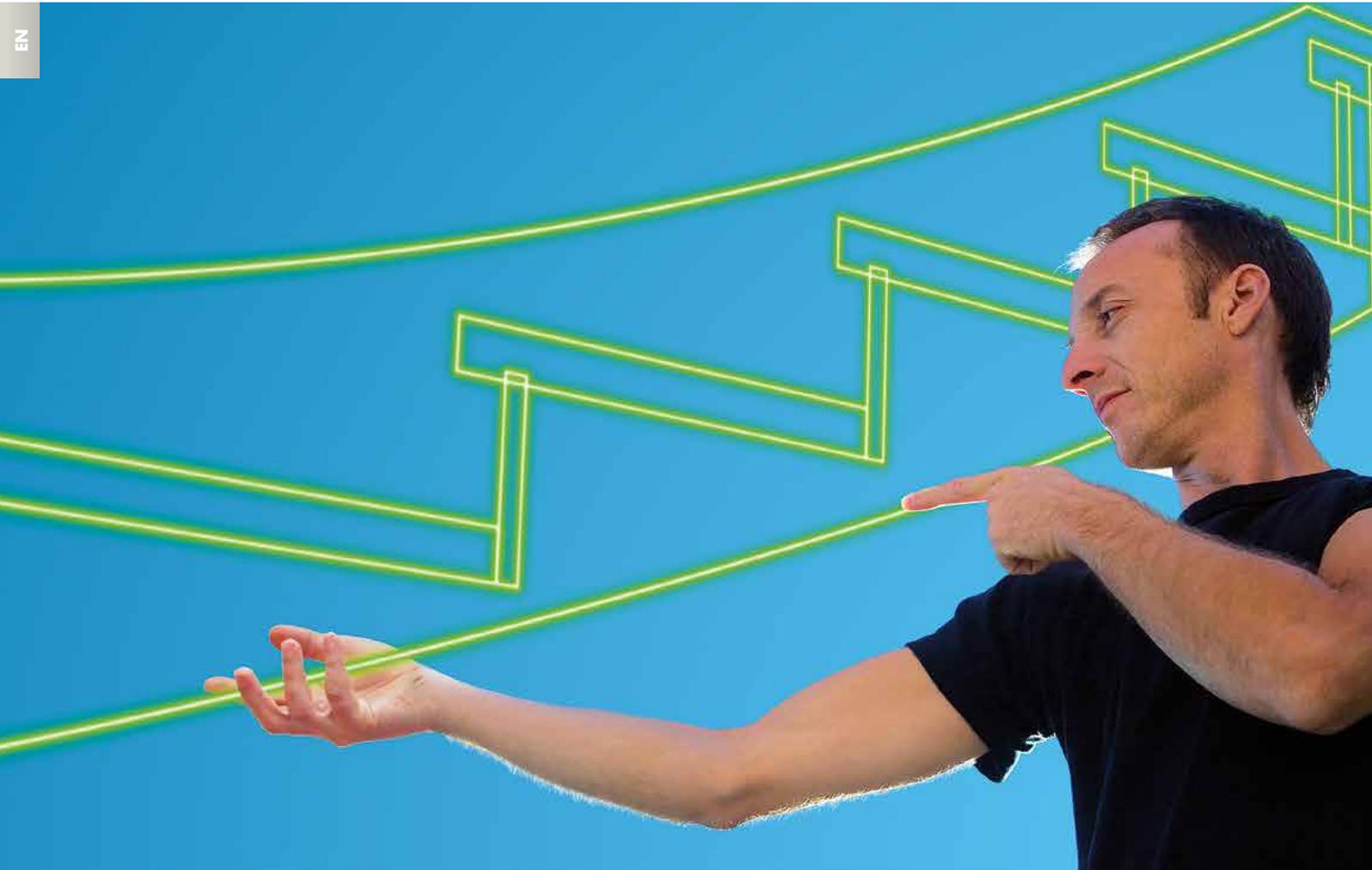


WOOD PRO

LASER PROJECTION SYSTEM

for the wood processing industries



VIRTUAL TEMPLATES FOR ALIGNMENT AND POSITIONING.
FAST, PRECISE, CLEAN.





WOOD PRO – THE DIGITAL LASER TEMPLATE FOR MACHINING AND PROCESSING OF WOOD

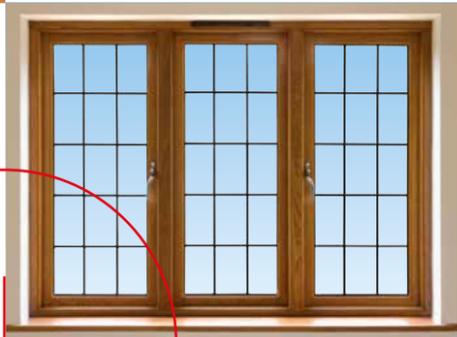


WOOD PRO is a laser system for projection of poly-lines or outlines onto working surfaces, work pieces or machine bases. Laser lines are generated based upon CAD data. The projected shapes are true to scale. With **WOOD PRO** you optimize workflow and quality of your production. Independent of process and product, you may work faster, more flexible and cleaner than with conventional templates or measuring aids.

THE USE OF LASER TEMPLATES IS MANIFOLD.

You can use them to:

- position fixing elements of machines, like clamps or suction cups
- show outlines of glulam parts to place planks within
- align solid wood to match grain and to avoid flaws like knotholes
- mark the position of elements, fittings or working points
- show the assembly of whole prefabricated elements step by step
- project the position of timber and sheets for nailed truss
- use the laser projection system for your task - we will be happy to give advice.



- Alignment
- Framework
- Sawing
- Furniture
- Placement
- Doors
- Milling
- Truss
- Drilling
- Windows
- Nesting
- Gluelam
- Bonding
- Armatures
- Clamping
- Staircases
- Pressing
- Girder
- Gluing

Take advantage of **WOOD PRO** for your production:

3 IN 1
WOOD PRO is a complete system of perfectly harmonised components: user interface, projection system and service.

MORE PRECISE
Place your clamps, objects or prefabs with millimeter accuracy.

FASTER
Save working time: no measuring, no marking, no trying - load data, start projection, take-off.

CLEAR-CUT
See in advance what is going to happen - and where.

SAFER
Identify problems during setup - before it's too late.

MORE COST EFFECTIVE
WOOD PRO laser systems reduce setup time and crop. Many systems pay for themselves within a few months.





WOOD PRO – DESIGNED FOR ALL INDUSTRIAL CHALLENGES

GLULAM TRUSS

Glulam trusses have outstanding material properties and a low net weight. From an architectural point of view therefore, this material offers a wide range of design possibilities. An extremely high degree of precision is required when manufacturing glulam trusses in order to comply with the strict tolerances involved. The timber processing industry is therefore increasingly coming to rely on LAP laser technology to increase the precision and speed of the glulam truss manufacturing processes.



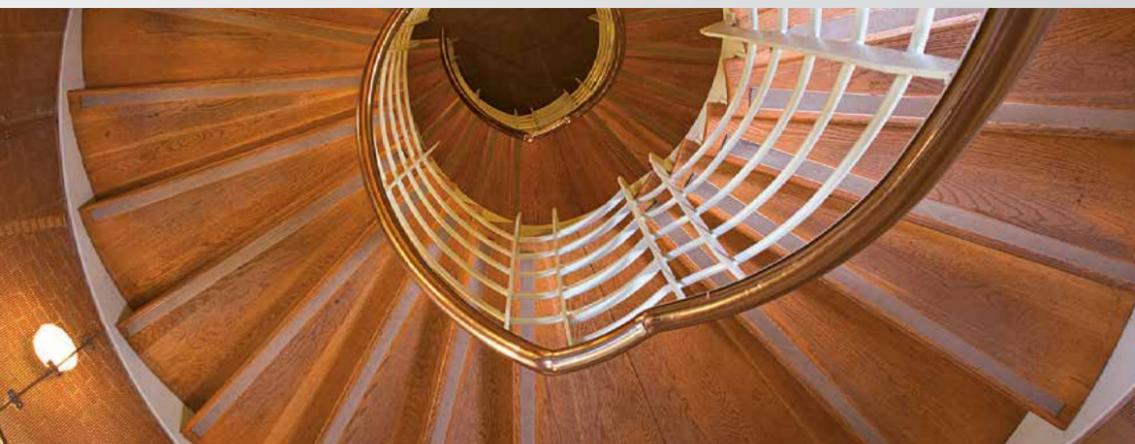
PREFABRICATED HOUSE CONSTRUCTION

Time and quality are the crucial factors in the prefabricated house industry. And that is exactly where the focus of the WOOD PRO laser projection systems lies. A laser line shows precisely the exact location of the rows of nails or screws, the position of the individual timber hangers, cut-outs and installation parts. That makes work much easier and increases the precision. The manufacturers can thus save time while also increasing their quality.



CARAVAN TRAILERS, CAMPERS, SHIPS

LAP WOOD PRO are also used to optimize production of wall and roof elements used in mobile living space. Laser lines show outlines, cut-outs, supports, tubes and wires, armatures, fittings and much more.



STAIR CONSTRUCTION

A premium solid wood stair is an adornment of every room. For a good impression, there should be no flaws in the solid (exotic) wood, and the grain of the steps should match. LAP WOOD PRO shows you the outlines of all elements without covering the surface. For production of stair strings, you may display the position of treads and risers.



DOORS AND WINDOWS

WOOD PRO laser systems simplify the positioning of suction cups and clamps for parts processing on machining centers. Be sure there are no fixing elements in the milling path. And after machining, you may check if all recesses have been worked out at the correct place.



FURNITURE

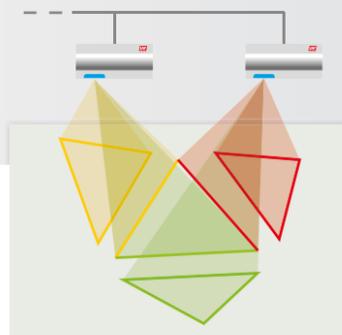
Today, most furnitures with homogeneous surfaces are produced using automated nesting to optimize the use of material. LAP WOOD PRO shows the commission of the cut-out parts after milling. For solid wood, WOOD PRO displays the outline of elements to match grain and to avoid flaws. Do your own „manual nesting“ to save precious wood.



AND NOW IT'S YOUR TURN

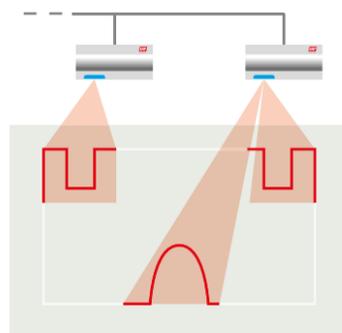
We haven't listed all applications, and we surely still don't know all possible uses for our laser systems. None of the examples rings a bell for you? So ask us. Perhaps you are the first in your business, and you can gain a competitive edge! (Or your competitor did so, and you wonder why you lose ground). Give us a description of your production task. If there is a solution for optimizing your production with our systems, we will find it and offer it to you.





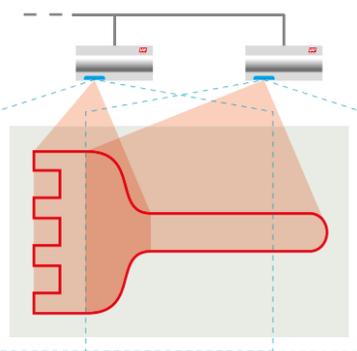
LAP MULTICOLOUR

Outlines may be created and projected in three colours, by one or by several projectors. Change of colour is possible between or within shapes. **BENEFIT: Visual display of clamps, outlines and working areas in different colours**



VIEWPORT

One or several areas of the projection may be highlighted. The selection is done at the client screen by mouseover. **BENEFIT: Better visibility of important areas on request.**



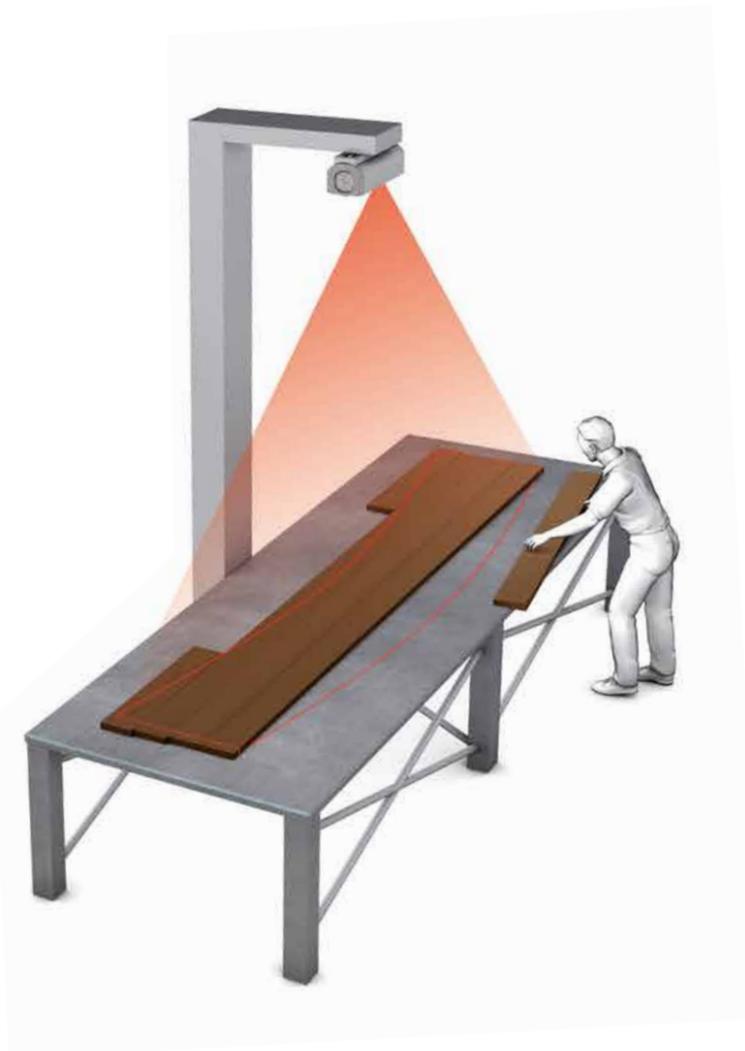
LOAD-BALANCING

Projection data is not distributed by position of the projectors, but by load. Projection areas have to overlap for optimal performance. **BENEFIT: Homogeneous, fastest possible projection.**

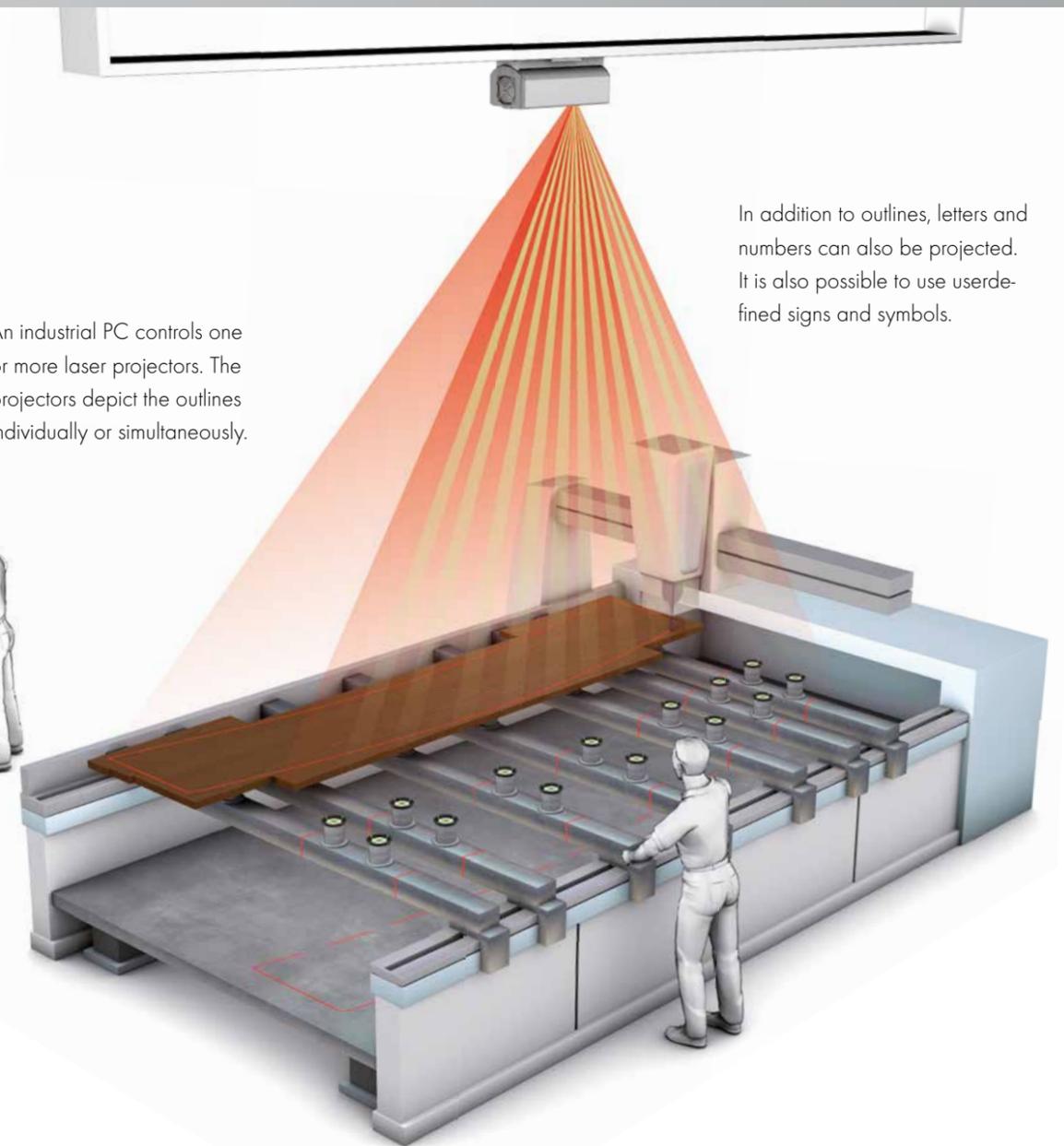
LAP WOOD PRO LASER PROJECTORS

PRODUCTION OF GLULAM TRUSS

The outlines of the element to be produced are projected on the working table. You may place timber boards in the required size, number and arrangement, always keeping an eye on the final shape. For large pieces, you may use WOOD PRO with several projection heads.



An industrial PC controls one or more laser projectors. The projectors depict the outlines individually or simultaneously.



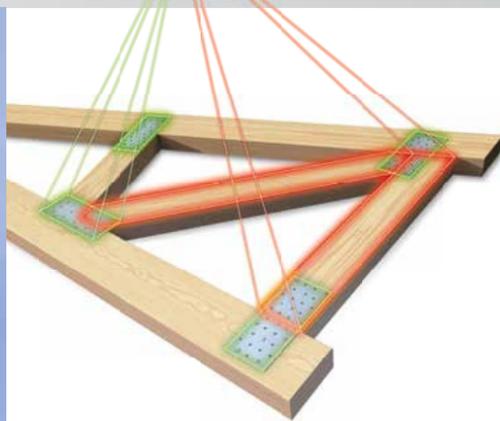
In addition to outlines, letters and numbers can also be projected. It is also possible to use user-defined signs and symbols.

MACHINING CENTER

LAP WOOD PRO laser projectors may be used for different working steps:

- before placing the workpiece to position suction cups
- for alignment of the workpiece
- after positioning the workpiece to detect offsets and to compensate them
- after nesting to show the commission numbers
- after milling to show the position of fittings





NAILED TRUSS

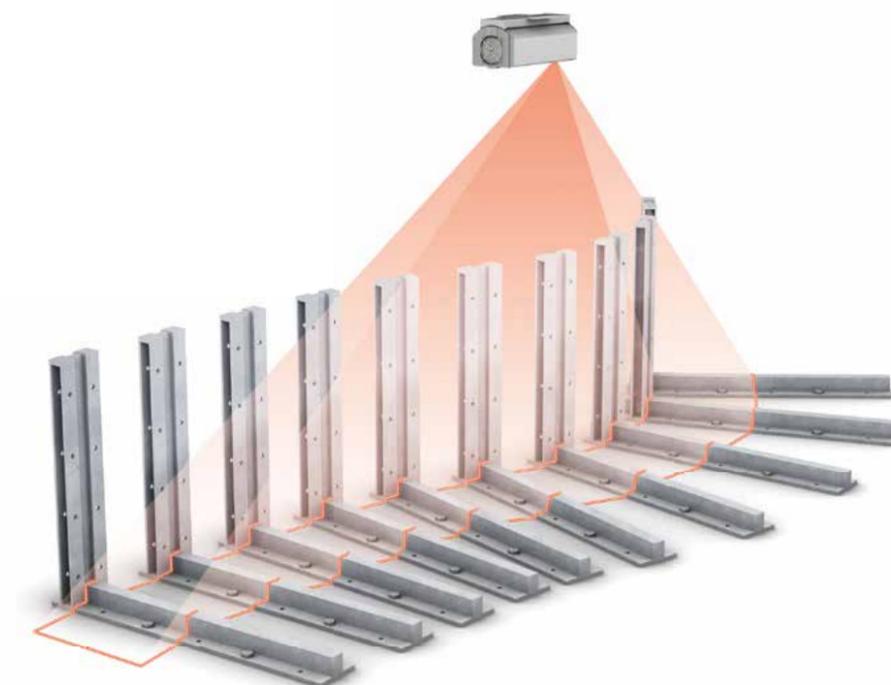
LAP WOOD PRO show the position of timber and sheets in different colours.



CURVED LAMINATED BEAM IN PRESSING BED

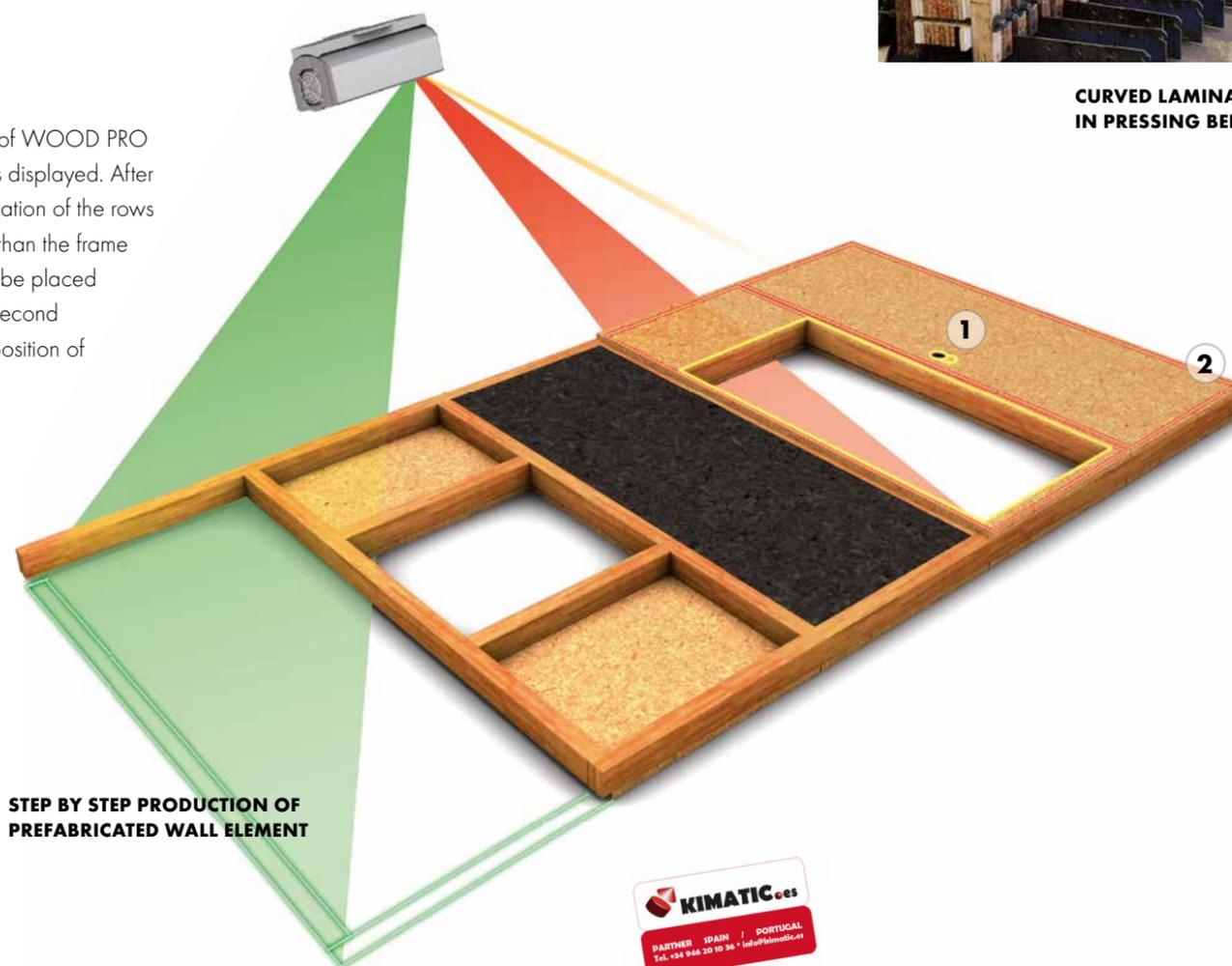
GLUELAM TRUSSES

WOOD PRO laser projectors are used as well for alignment of the press posts as for showing the complete outline of laminated beams. For large beams you may use WOOD PRO with several projection heads.

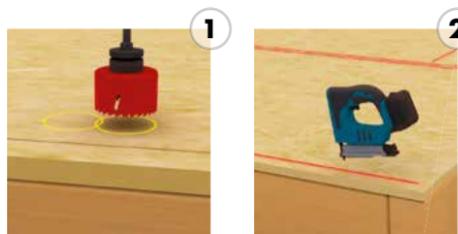


PREFABRICATED ELEMENTS

Prefabs can be built step by step with the assistance of WOOD PRO systems. First, the position of the main timber structure is displayed. After adding the cover plates, laser lines show the exact location of the rows of nails or screws. Cut-outs are projected and sawed, then the frame is turned over. Installation parts or electric cables may be placed before or after adding insulation material. Finally, the second cover is added, and the projection system shows the position of cut-outs, e.g. for switches or power sockets.



STEP BY STEP PRODUCTION OF PREFABRICATED WALL ELEMENT





WOOD PRO. SYSTEMATIC LASER PROJECTION.

Since 1984, LAP provides measurement and projection systems based on laser technology for different applications all over the world. Thousands of LAP laser systems prove themselves every day - most of the time in harsh industrial environments. The experience collected contributes to every LAP product and sets the foundation for the systems unparalleled reliability and precision. Complex installations in high-tech industries are day-to-day business for LAP.



THE USER INTERFACE

WOOD PRO Software has been developed in cooperation with engineers from the woodworking industry, focussing on easy handling and prevention of user errors. On the display, you may see the current working situation as an outline. After starting the projection, the user may switch between outlines or jobs by remote control or directly at the PC keyboard. Working data may be archived or connected to work orders. The software is compatible with standard 2D and 3D CAD formats.

Features:

- Compatible with all standard industry CAD data formats
- Visualisation of projection tasks
- Display of working steps and their status
- Checking of working steps
- Documentation and archiving of projects including working steps, status, checking procedures, timestamp, user ...
- User management
- Management of workgroups with flexible distribution of workspace, projection data and projectors
- Calibration dependent on situation (automatic, semi-automatic, manual)
- Fastest available automatic calibration on stationary worksites today
- Range of control elements can be used depending on complexity of task: Remote control for activities on work piece, touch screen for close-up tasks, keyboard and mouse for more complex functions



LAP Multicolour offers simultaneous projection in three colours. This may be used to visualize groups, show warnings or display information.



LAP Speedswitch describes the ability to change colours and/or outlines in real-time, with no noticeable latency.



PROJECTION SYSTEM

The laser projectors are the heart of each **WOOD PRO** installation. The projector operates with extreme precision and is designed for a long service life in industrial environments. The workstation is calibrated initially using the targets supplied with the system; subsequently, the system is self-calibrating, either semi-automatically or fully automatically, depending on the situation. The projector can be easily controlled by the operator(s) directly from the production area using the remote control.

Performance features:

- Installation with several projectors for large area projection
- Projection in red, green or three-colour red/green/yellow (LAP Multicolour)
- Changes in colour and shape without disruptive dwell times (LAP Speedswitch)
- Compact and light construction despite separate sections for the projector (hermetically sealed) and cooling unit (access to ambient air)
- Swivel mounting with snap-in fastener for rapid, simple installation

SERVICE PACKAGE

LAP stays right by your side before, during and after the installation of a **WOOD PRO** system. International experience acquired over decades in the installation and maintenance of laser systems across virtually all industries makes us a reliable and competent partner. Before you make your decision, we will give you plenty of advice and explain both the possibilities and also the limitations of the technology. We will support you in the planning and installation of the system onsite. After commissioning, we will stay with you during your first steps using the laser projection system until its use has been optimised. Each customer has different requirements regarding maintenance cycles, reaction times and protection from down times. LAP therefore offers each customer an individually tailored package, which can extend far beyond the guarantee and standard working hours. Do you want to have replacement equipment on site? Emergency service available at all times? A 24-hour hotline? Or is replacement within 24 hours, support during the working day, and regular training of your personnel sufficient for your needs? Just tell us what you want - we will find a suitable solution for you.



Customer-specific adaptations of the system

- Support during the planning of the work area(s)
- Supply of individual accessories closely related to the system (mounting options, pivot arms, traversing systems, ...)
- Software adaptations and extensions (connection to the company network, barcode scanners, ...)

Installation and commissioning

Training

Maintenance

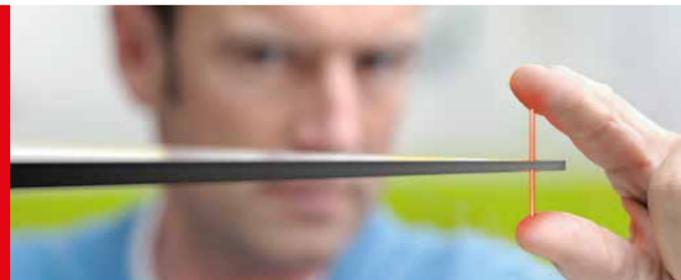
- Replacement equipment (loaners)
- Replacement of expendable parts
- Cleaning
- Adjustment

Updates for software and firmware

Repair

THERE'S EVEN MORE. LAP ENABLES YOU TO MEASURE GEOMETRICAL FEATURES WITHOUT CONTACT

www.LAP-LASER.com



**NEVER GO WRONG AGAIN:
LAP LINE LASERS FOR ALIGNMENT AND POSITIONING**

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TECHNICAL DATA FOR LASER-PROJECTOR

Laser type	Red: Diode, 635 nm
LAP Multicolour	Green: DPSS (solid body), 532 nm
	Yellow: Superposed projection of red and green
Accuracy*	± 0.1 mm/m**
Repeatability*	± 0.025 mm/m**
Beam width*	0.5 mm FWHM
Max. projection angle	80°x 80°
Laser power	from 5 mW
Laser Class	2M (3R, 3B)
Protection Class	IP 54
Conditions for use	0-40 °C, 35-85 % rel. humidity, non-condensing.
Power Supply	24 VDC, max. 3 A
Connection	RS 485, Ethernet via Interface
Dimensions (L x W x H)	300 x 110 x 110 mm
Weight	approx. 3 kg



*within a ± 30° range of projection, beam projected at right angles to the surface; equipment optimally focussed and calibrated; at least 30 minutes warm-up time.

** mm per m separation distance between projector and surface.

WOOD PRO, HIGH-TECH QUALITY BY LAP

For more than 30 years, LAP has been developing, manufacturing and distributing laser measurement systems, line lasers and laser template projectors for industrial and medical applications. LAP products are high-precision devices **Made in Germany**.

Using LAP laser systems, our customers improve performance and increase the quality of their products as well as the effectiveness of their processes.

As a result of continuous product innovation, LAP has become a world leader in lasers for projection and measurement. LAP products are setting the standards in a wide range of markets from manufacturing to heavy industrial environments and medical applications. Environmental protection is important to us. We use solar panels, green electricity and roofs planted with grass. Our production is planned by standards of sustainability.

Quality has always been part of our commitment. We are content if you are. We know your high demands. To meet your requirements, the quality management of LAP is certified by DIN EN ISO 9001:2008 for industrial products and by EN ISO 13485:2007 for medical engineering products.

www.lap-laser.com/WOOD



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