

# STONE PRO

LASER PROJECTION SYSTEM

for the stone processing industries

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





## STONE PRO – THE DIGITAL LASER TEMPLATE FOR THE STONE WORKING INDUSTRY



**STONE PRO** is a laser system for the projection of contours, cut-outs or positions on workbenches or workpieces. The projected laser lines are based on your technical drawings (CAD data), contours are reproduced on the workbench true to scale.

### STONE PRO HAS A VAST ARRAY OF POTENTIAL APPLICATIONS:

- Positioning of fixing elements of the cutting machine such as suction cups or clamping devices
- Aligning natural stone slabs in such a way that the orientation of the grain is correct and flaws lie outside the finished product
- Marking the position of cut-outs, bores or machining points
- Use laser projectors for your application – we will be happy to advise you!

The benefits of **STONE PRO** for your production:

### 3 IN 1

STONE PRO is an exactly balanced complete package: Projector, software, service.

### MORE PRECISE

More precision: Place your suction cups, workpieces or starting material exactly where you want it.

### FASTER

Save working time: No measuring and marking, no trial-and-error – load the file, start the projection and start working.

### CLEARER

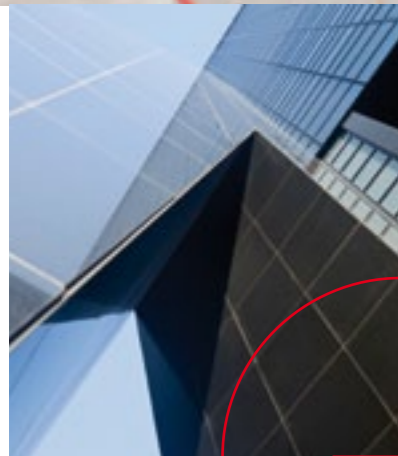
You can see what will happen and where it will happen before machining.

### MORE DEPENDABLE

Already recognise the problem areas when positioning the starting material.

### MORE COST EFFECTIVE

STONE PRO laser systems shorten set-up times, reduce rejects and thus save real money. They often have payback periods of just some months.



Countertops

Furniture

Washstands

Stair treads

Alignment

Window sills

Sawing

Facade elements

Positioning

Special parts

Milling

Drilling

Nesting

Bonding



## STONE PRO – DEVELOPED FOR INDIVIDUAL CHALLENGES

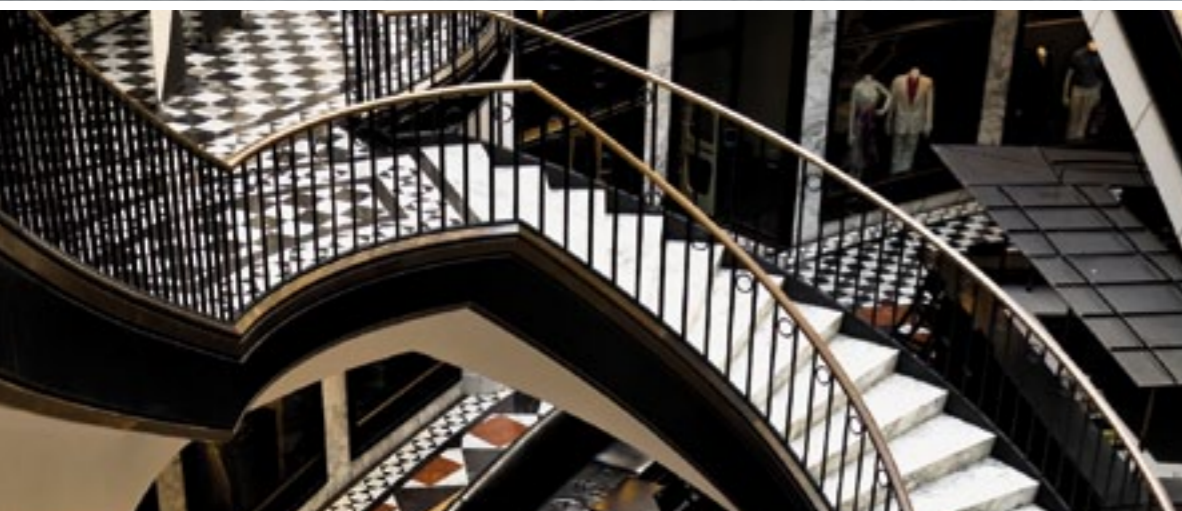
### KITCHEN WORKTOPS

Worktops of natural or artificial stone are not only a valuable acquisition – they are durable, hygienic and very decorative. And they are appreciated by more and more customers. But the customised production has to be carried out by you. LAP STONE PRO laser projectors help you here.



### WASHSTANDS

A washstand with recessed wash basin beats the bolted standard product by far. Impress your customers with precision fitted solutions and modern design. LAP STONE PRO laser projectors give you the assurance that all cut-outs and bores are exactly where they have to be.



### STAIR TREADS

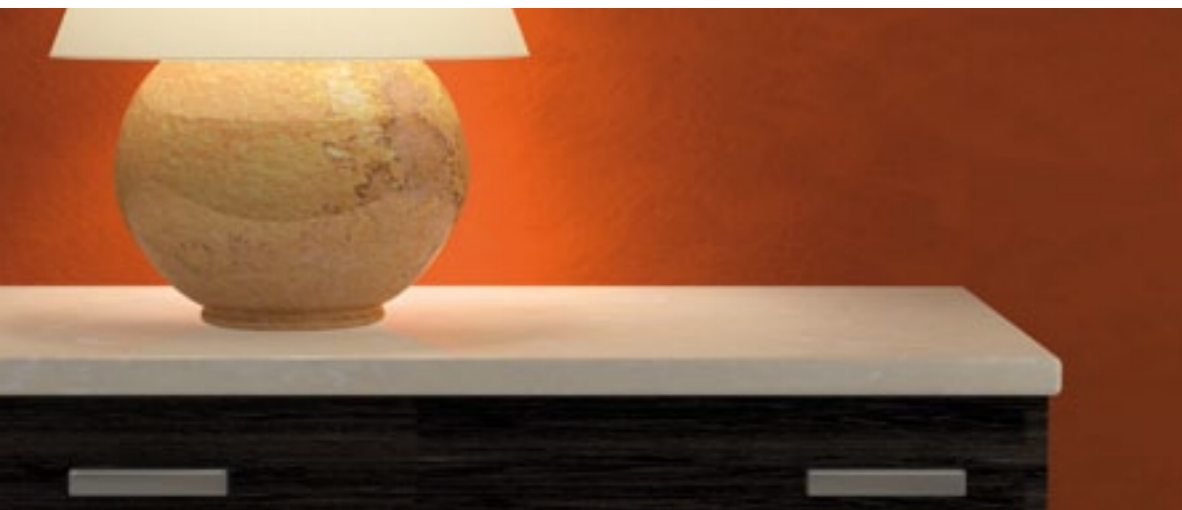
With STONE PRO laser projectors you can project the outlines of individual steps onto the starting material and thus ensure that the drawing of natural stone matches harmoniously from step to step.



## **STONE PRO – DEVELOPED FOR INDIVIDUAL CHALLENGES**

### **FACADE ELEMENTS**

Modern architecture uses not only square and rectangular slabs, but also irregular and organic shapes. LAP STONE PRO laser projectors show you the results of the machining before you start and where the suction cups have to be positioned. And certainly also during the reproduction of work-pieces according to historic models.



### **FURNITURE AND DECORATIVE ELEMENTS**

A designer table, a surround for the media centre, shelves, a chimney piece – a large number of residential elements take on an independent character in natural stone. But the time necessary for one-off production or small series is high. With STONE PRO, production becomes faster and simpler.



### **AND NOW IT'S UP TO YOU!**

We haven't listed all the application examples, and certainly haven't come across all the potential applications for our laser systems. Do none of these examples apply to you? Ask us! Describe your production task to us. And if there's a solution to optimising your production with our systems, we'll find it and offer it to you!

# LAP STONE PRO LASER PROJECTORS

## AT THE MACHINING CENTRE

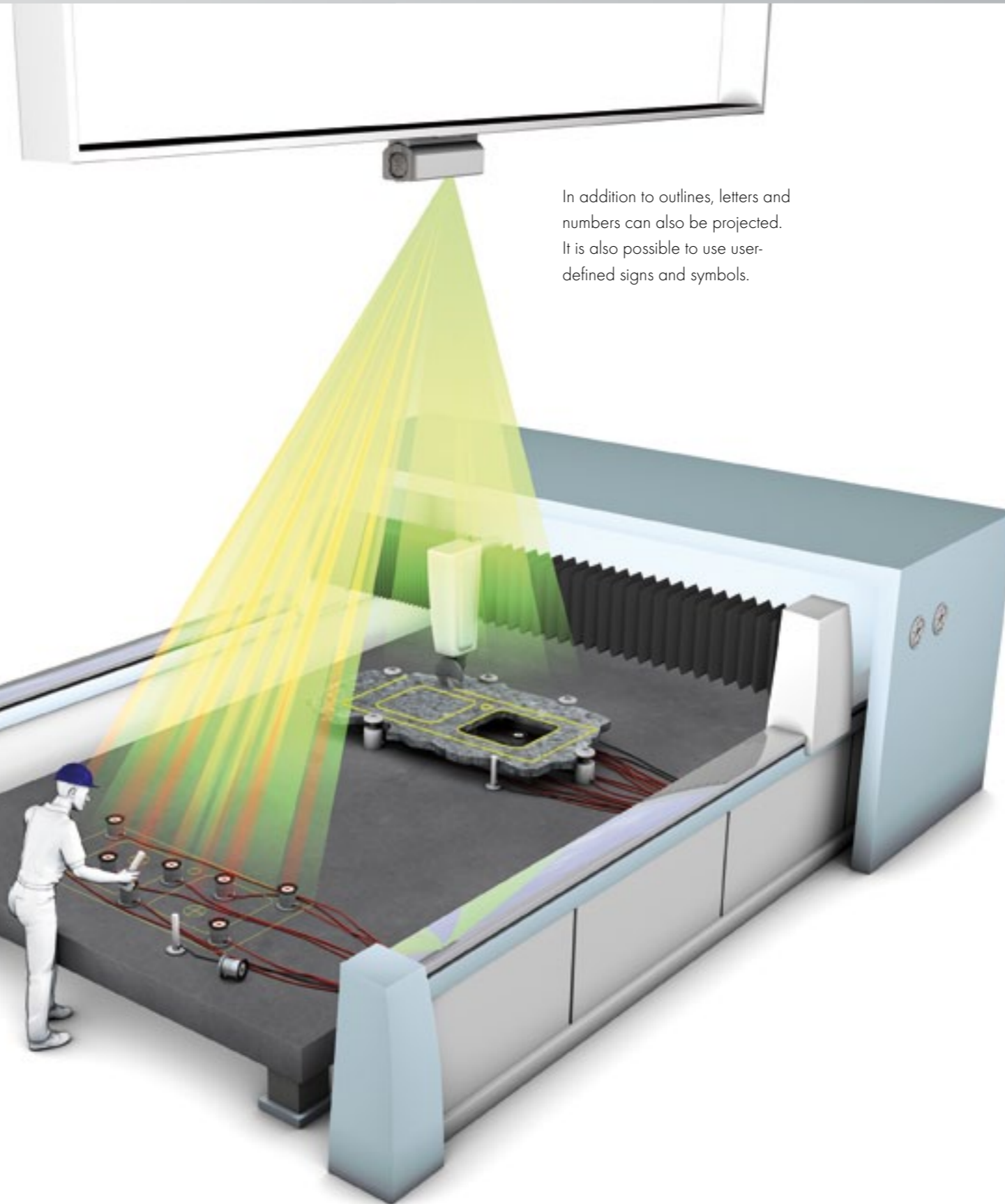
### LAP STONE PRO laser projectors

can be employed in several phases of the machining process:

- before loading of the workpiece for positioning the suction cups
- during loading of the workpiece for alignment
- with the workpiece loaded for a preview of the cut-outs and bore holes
- in nesting applications to display the contours
- with finished sections to display the bonding points

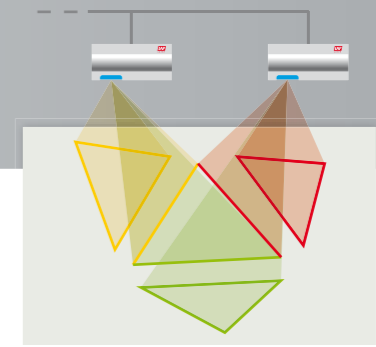


An industrial PC controls one or more laser projectors. The projectors depict the outlines individually or simultaneously.



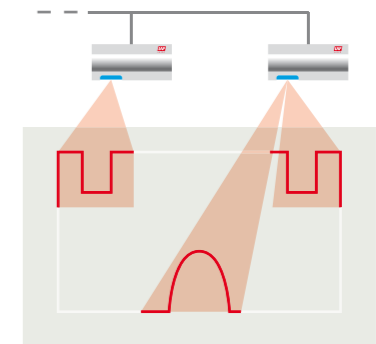
In addition to outlines, letters and numbers can also be projected.

It is also possible to use user-defined signs and symbols.



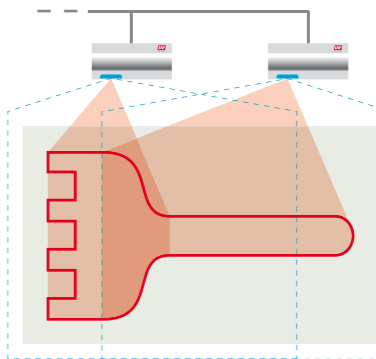
## LAP MULTICOLOUR

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.**

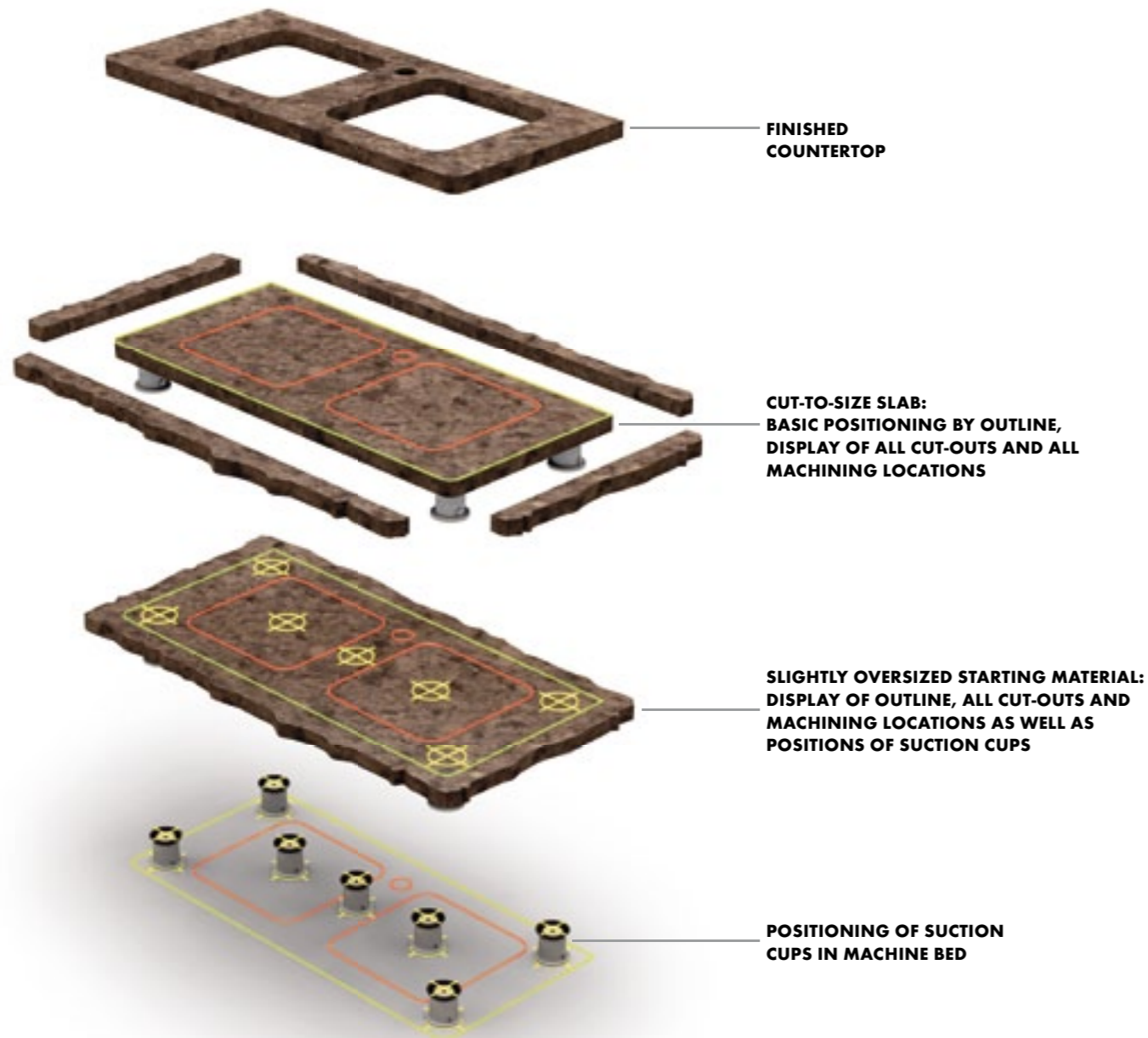


## LOAD-BALANCING

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.**

### VISUALISATION AND CONTROL OF EVERY WORK STEP

First the positions of the suction cups in the machine bed are displayed. Depending on the starting material and machine function, the outer contour, cut-outs and bores are displayed, and the suction cups hidden under the slab are shown as a check. The contour helps in aligning the slab. If there are optical flaws in the starting material, the slab can be positioned so that the flaw lies in the cut out areas or outside the finished form. After machining you can check whether all the machining steps have been performed.



LAP STONE PRO LASER PROJECTORS CAN ALSO BE EMPLOYED ON WATER JET CUTTING MACHINES



## STONE 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.



### OPERATING UNIT

We have developed the **STONE PRO Software** together with stonemasons and fabricators. The focus is on ease of operation and avoiding operating errors. The computer screen displays the current working state as an outline drawing. If projection is underway, a change-over between contours or contracts is made with the production-standard remote-control or by using the PC. The software provides compatibility with the most important 2-D and 3-D CAD data. Production data can be archived and assigned to contracts.

### 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 **STONE 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 **STONE 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



## 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

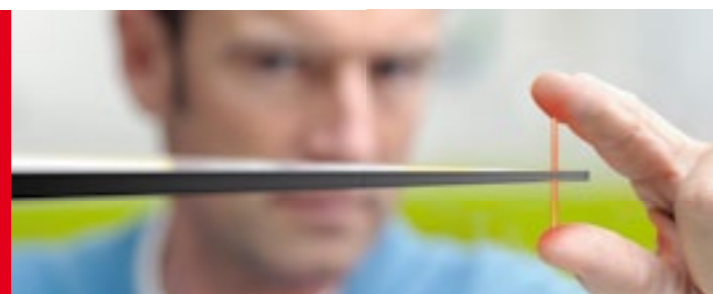


\*within a ± 30° range of projection, beam projected at right angles to the surface; equipment optimally focussed and calibrated; at least 30 minutes warm-up time.

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

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

[www.LAP-LASER.com](http://www.LAP-LASER.com)



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

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# STONE PRO, HIGH-TECH QUALITY BY LAP

For more than 25 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, roofs planted with grass and rain water. 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/STONE](http://www.lap-laser.com/STONE)



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