

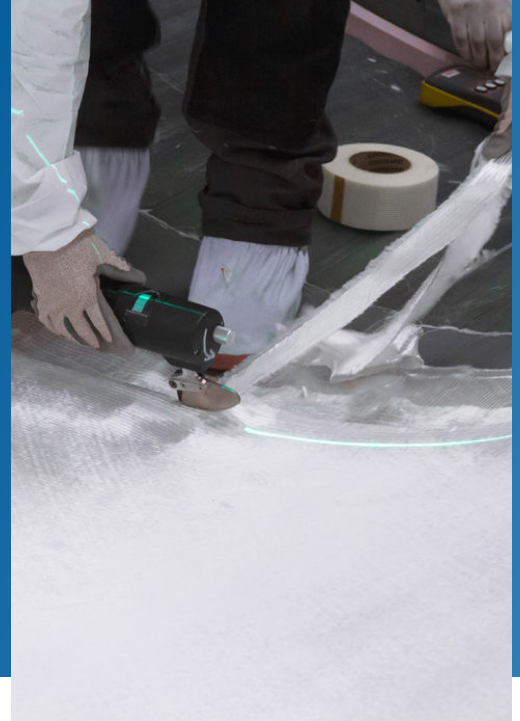


Laser solutions for the composites industry

You can increase efficiency and quality when processing composite materials – in every production step.

Z-LASER: The efficiency boost for composite production

Z-LASER optimizes production in the composites industry with highly developed laser projectors. Our solutions improve production speed and quality in areas such as boat and vehicle construction, aerospace and the manufacturing of wind turbine and helicopter rotor blades through precise 2D and 3D contour projections that enable fast and accurate positioning. Compatible with all common 3D CAD programs, Z-LASER laser projectors facilitate the production of complex components and reduce errors, increasing efficiency and minimizing manual rework.



Your challenge: to produce better, faster.

The composites industry faces numerous challenges, ranging from the precision of manufacturing processes to increasing efficiency and quality control.



Precise positioning and alignment

Accuracy in the placement of materials such as fiber mats or pre-pregs is critical to the structural integrity and performance of the end product. Imprecise positioning leads to weak points that can affect quality.

Efficiency in production

Time pressure and the need to speed up production cycles without compromising quality are a constant challenge. Manual processes are time-consuming and increase the potential for errors.

Flexibility and adaptability

The ability to quickly adapt production systems to new designs or materials is crucial in a rapidly evolving market. Rigid production lines can hinder innovation.

Quality control

Maintaining consistently high quality across different batches and production lines is difficult, especially with complex components and large production volumes.

Reduction of waste and rework

Material waste and the need to rework or replace parts due to defects are cost-intensive problems. Efficient use of raw materials and minimizing waste are key to cost efficiency.

5 reasons for laser projectors from Z-LASER



Increased precision and accuracy in positioning and processing.



Increased efficiency by automating processes.



Consistently high quality in production.



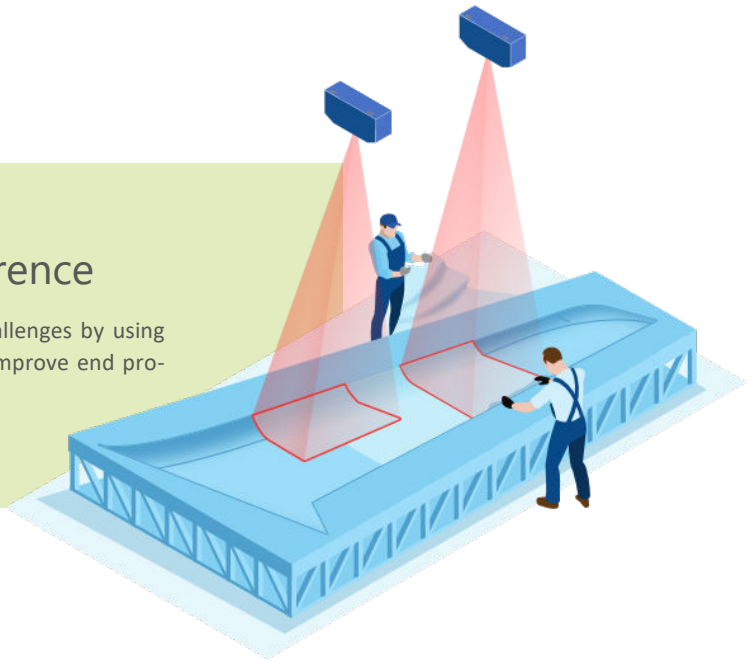
Flexibility through easy adaptation to different material thicknesses, types and complexities.



More efficient use of raw materials and reduced waste.

Our solution: laser innovations that make the difference

Laser solutions from Z-LASER offer innovative answers to these challenges by using state-of-the-art technology to optimize production processes and improve end product quality.



Precise positioning and alignment

Laser projectors make it possible to place and align materials more precisely. This improves the structural integrity of the components and reduces the risk of errors.

Efficiency in production

By eliminating manual measurements and markings, our laser projection systems speed up the production process considerably. Faster throughput times and increased productivity are the result.

Flexibility and adaptability

With interfaces for all common 3D CAD programs, our laser projectors enable a quick changeover to new designs or materials, which improves adaptability to market requirements and design changes.

Quality control

Z-LASER's technology supports consistently high quality by ensuring accuracy in material placement. This minimizes errors and improves the overall quality of the end product.

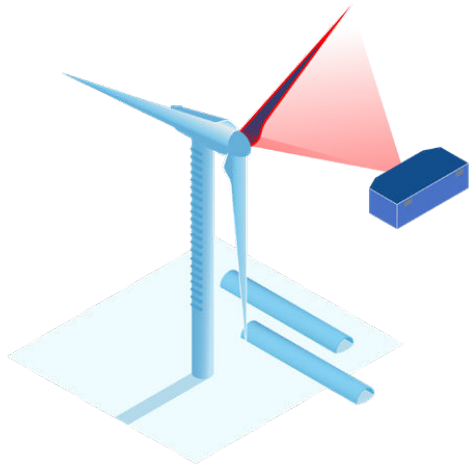
Reduction of waste and rework

The precise projection of the materials to be placed optimizes material consumption and reduces the need for reworking due to errors. This leads to significant savings in material costs and improves the environmental balance.



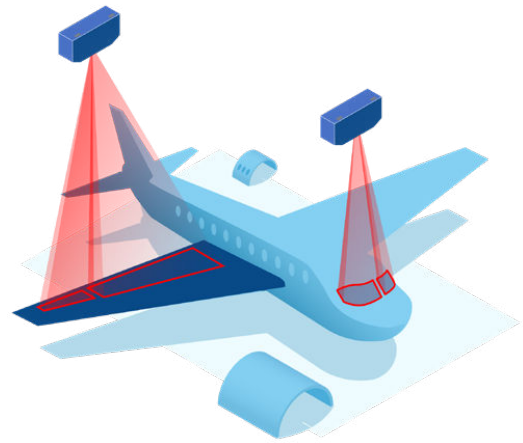
In Action: How our laser projectors impress in the application

Customers from the wind power, aerospace, shipbuilding and architecture industries rely on our solutions because they minimize production times, reduce material waste and offer a high degree of adaptability to complex geometric design requirements and material properties.



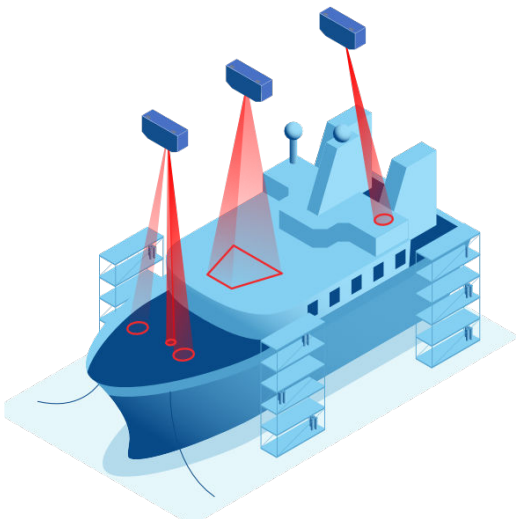
Rotor blades for wind turbines

Laser projectors simplify and accelerate the positioning of fiberglass mats and prepregs in wind rotor production by precisely displaying the contours of each layer. They are compatible with common 3D CAD formats, increase productivity by up to 30%, improve blade quality, minimize errors and simplify the production process.



Aerospace

Lasers are already being used successfully in the aerospace industry for material alignment and mould positioning during assembly. In the future, however, the use of composite components will increase, making the support of the manual insertion process of fibre mats (CFRP layers) with laser projectors more important.



Shipbuilding

Laser projectors also provide support in shipbuilding by guiding employees through the production process step by step using predefined sequences when manually inserting fiberglass mats into moulds. Areas of application include the construction of the hull, masts, interior design and the positioning of partition walls.



Architecture

Flexible wall constructions are becoming increasingly important in modern architecture and interior design. Mold makers use our laser projectors to flexibly position built-in parts and boundary elements, which significantly increases the precision and efficiency of construction processes.

Model ZLP2

Proven, powerful laser projector with Z-FIBER source


With the ZLP2, the performance features of the ZLP family have been consistently advanced. For example, the laser projector features an unprecedented beam quality due to the use of fiber-coupled laser sources. With an accuracy of 0.25mm/m working distance, the laser projector is predestined for classic industries such as wood and stone processing as well as for cross-industry applications with composite materials.

The ZLP2 can be controlled by the intuitive ZLP-Suite software with a graphical user interface. Likewise, the ZLP2 can be embedded into existing customer applications through the integrated application programming interface (API).

ZLP-Suite can be customized and extended by additional software modules. Furthermore, the ZLP2 can now be controlled natively via a TCP/IP-capable PLC.




Large workspaces (<math><10 \times 10\text{m}</math>)


Medium projection distances (0.5-7m)


Variable Focus


Medium accuracy ($\pm 0.25\text{mm/m}$)


Provides exact position information and outlines in 3D


Laser class 2M


Wavelength: 520 nm 638 nm

Highlights

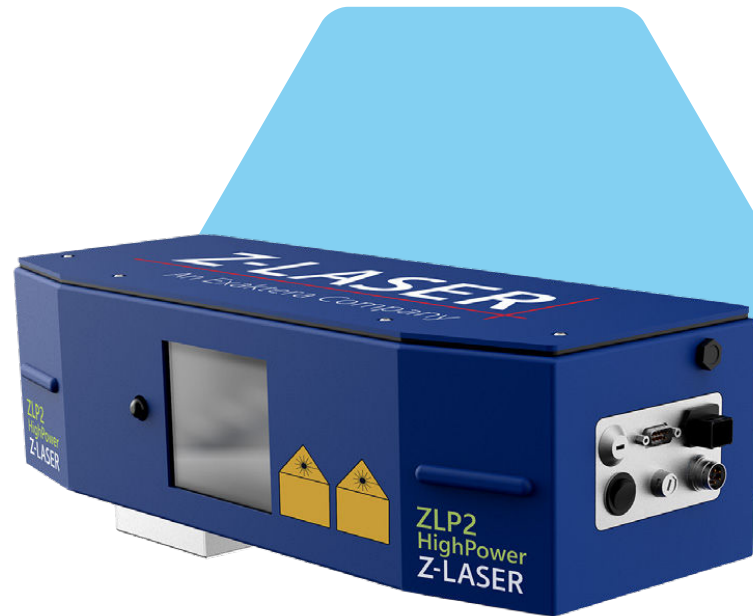
- Highly precise and stable laser projection
- Optimized for projection on 3D objects
- Excellent beam performance by the fiber-coupled laser source
- Large aperture (up to $80^\circ \times 80^\circ$) enables large working areas
- Data transmission via ethernet adapter
- Easy integration into multi projection systems
- Intuitive graphical user interface ZLP-Suite
- Advanced programming interface (API) for C++, C#, Python
- Client-/Server architecture
- PLC-Gateway (Siemens S7)

Model ZLP2-HighPower

Laser projector with unmatched visibility for the most demanding conditions.

The ZLP2-HighPower laser projector not only impresses with its particularly robust and high-quality workmanship. In addition to optimized software, the inner workings with a more powerful laser source, new mechanics and revised electronics also set new standards. The result: brightness, accuracy and durability of this laser projector will inspire you – not only in difficult lighting conditions or when mounted at great heights.

As an innovative tool, the ZLP2-HighPower is particularly impressive in the concrete industry, the aerospace industry, and the production of rotor blades for wind turbines. In all these industries, the laser projector makes daily processes easier, faster, and more precise. Be it because formwork elements and recesses are displayed more accurately or because material and tools can be aligned or positioned more precisely. Thus, productivity increases of up to 30% are possible with the ZLP2-HighPower.



Very large workspaces (>10x10m)



Long projection distances (<15m)



Variable Focus



High accuracy (+/-0.1mm/m)



Very fine lines in 3D even at large distances



Laser class 3R



Wavelength: 520 nm

Highlights

- Easy replacement of essential components by the customer in the field with a downtime of less than 1 hour
- Intuitive API for easy integration with customer software and existing systems
- Standardized power and network components avoid additional costs
- Optimized for working areas up to 10 m x 10 m and projection distances up to 15 m
- Adjustable focus enables precise projections at different distances and on different surfaces
- Accuracy of better than +/- 0.25 mm/m for highly precise results
- Fine 3D line quality even at high projection distances ensures visible and clear projections

Z-LASER

An Exaktera Company

Innovative light for better results

Providing visual guidance to people and machines with laser solutions

Z-LASER has been developing and producing innovative, high-quality laser solutions since 1985.

By providing visual guidance and orientation for people as well as machines, our lasers contribute to optimizing your production processes, ensuring quality, and to using resources carefully.



German engineering since 1985

Over 120 employees develop and manufacture completely in Freiburg, Germany.



Innovators by conviction

25 % of our workforce is involved in R&D.



Rooted locally, at home globally

Sales offices and over 60 distributors worldwide.



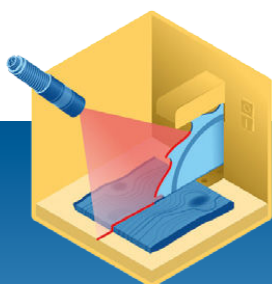
The right solution for every challenge

Developed in close customer exchange, our products adapt perfectly to your requirements.



Modular products for efficient processes

Modularity means less maintenance, optimized performance and better scalability.



Positioning Laser

Benefit from increased precision for more efficient processes with lower material consumption.



Laser for Machine Vision

Automate your optical quality control with structured laser light.



Laser Projectors

Replace mechanical templates with laser projections and save time, money and material.

Contact



Contact us. We would be happy to advise you!

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