

Minimize errors, increase efficiency,
and improve product quality

Laser solutions for assembly
and commissioning

People and technology in perfect harmony

Automotive, e-commerce, mechanical engineering, electronics manufacturing, or logistics: assembly and commissioning operations are integral to the most important industries in the global economy. What unites them? Companies that want to be successful here must master efficient workflows, precision, and flexibility - ideal working conditions for laser solutions from Z-LASER: Our laser projectors, line lasers and lasers for image processing are used to realize efficiency gains, ensure quality and increase customer satisfaction.



Your challenge: Flexible and successful in a dynamic environment

Worldwide competition, a shortage of qualified employees, and increased demand for individualized products are global megatrends that are putting pressure on companies where assembly and picking work play a prominent role in the process chain. Four challenges are particularly striking.



Efficiency increase

Amid global cost pressures, companies are striving to continuously improve their assembly and commissioning processes to increase productivity, reduce costs and thus remain competitive.

Quality assurance

Assembly and picking operations require a high level of accuracy to avoid errors and quality issues. Companies must continuously ensure that the right parts are assembled correctly, and the right items are picked.

Shortage of skilled workers

The shortage of skilled labor can be a challenge, as many processes rely on manual labor. Companies need to find solutions that allow new employees to be trained quickly.

Flexibility

Customer requirements can change, and companies must be able to respond dynamically to these changes. The ability to quickly introduce new products, adapt assembly and commissioning processes, and respond to seasonal changes in demand are important challenges for companies in this area.

Your advantages with laser solutions from Z-LASER



More accurate work and assured quality.



More efficient processes with improved value added.



Fewer errors through clear guidance and early detection of deviations.



Reduced training time of new workers.



Increased flexibility to adapt to new requirements.

Our solution: Laser solutions for highest quality and minimum error rate

By using laser solutions, companies can make their assembly and commissioning processes more effective and efficient to meet the challenges of their dynamic business environment.



Efficiency increase

Laser projection systems can project exact positions of parts or products onto surfaces. This speeds up assembly work, as employees are guided directly to the correct position and do not have to spend time on tedious searching or counting.

Quality assurance

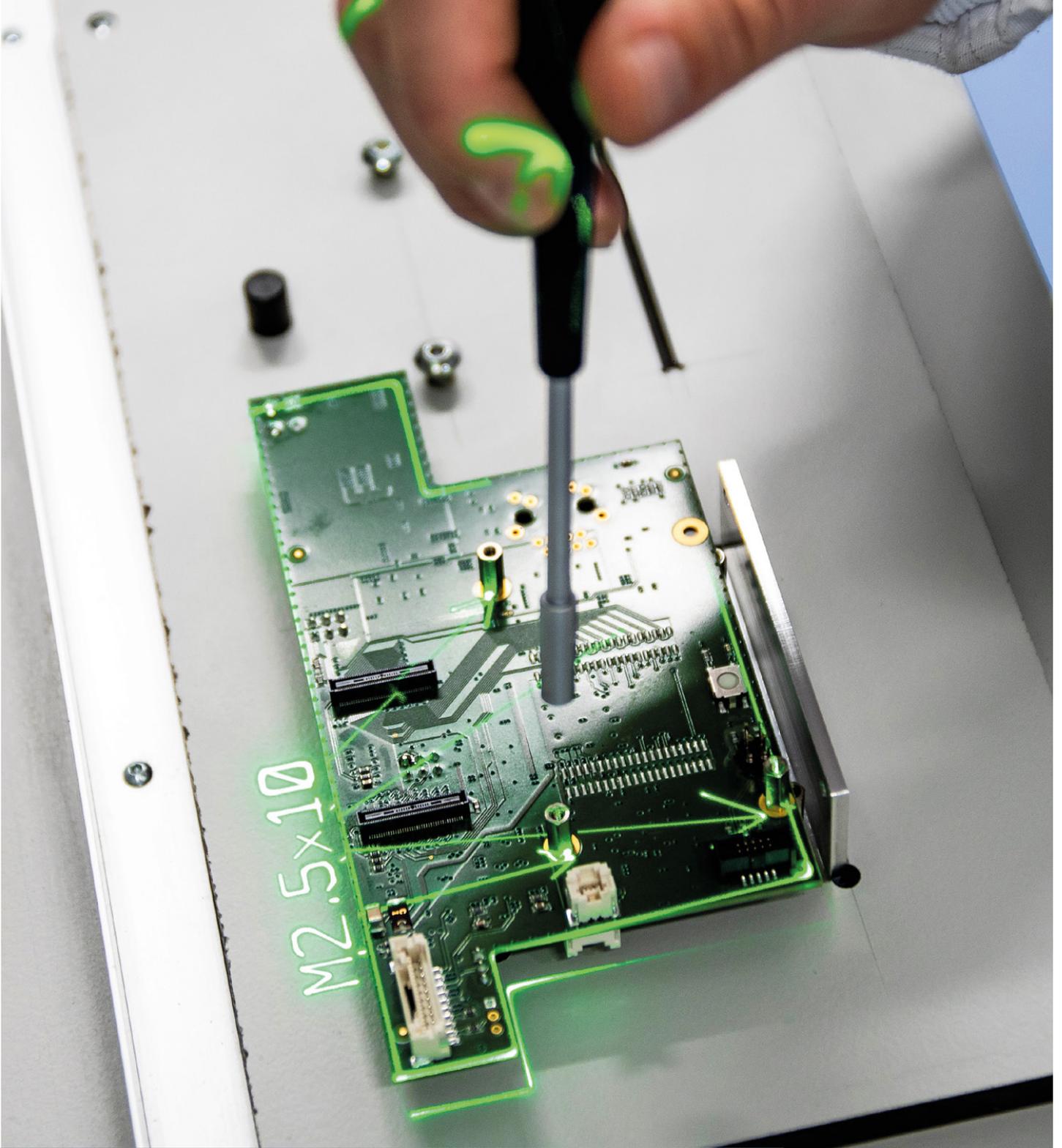
In combination with cameras, lasers help to detect defects more quickly. By projecting laser lines or points onto target positions, deviations can be quickly detected and corrected to ensure high accuracy and quality control.

Shortage of skilled workers

Visual guidance from laser light makes it easier to place parts or products correctly and reduces the learning curve so new employees can become productive faster.

Flexibility

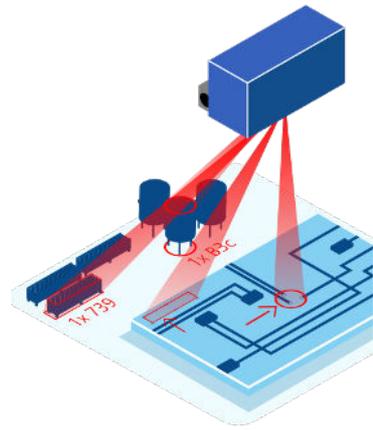
Laser solutions can be quickly and easily adapted to changing requirements. By programming laser projections, workflows and positions can be flexibly adjusted to accommodate new products or seasonal changes.



In action: How laser solutions impress in practical applications

In assembly and picking processes, laser solutions are ideal for positioning and identifying components more precisely. In combination with cameras and machine vision systems, among others, companies can achieve noticeably more efficient, more precise and faster results.

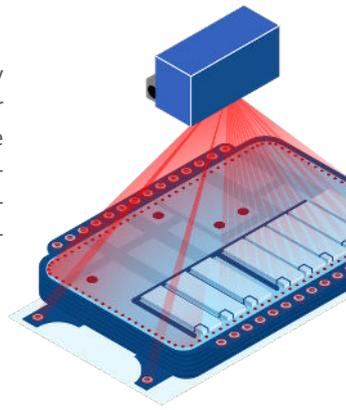
- ✓ Increase precision
- ✓ Boost efficiency
- ✓ Reduce assembly times



PCB assembly

The display of the complete freely programmable component contour on the printed circuit board by the laser projector shortens the assembly time and avoids expensive assembly errors, which optimizes the quality of the products.

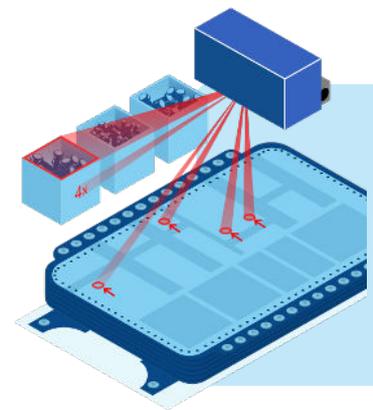
Laser Projectors



Battery assembly

A crucial application for electromobility: A laser projector displays the exact screw positions on the battery housing and assists with error correction after screwing by a robot. This noticeably saves time and ensures processing quality and product safety.

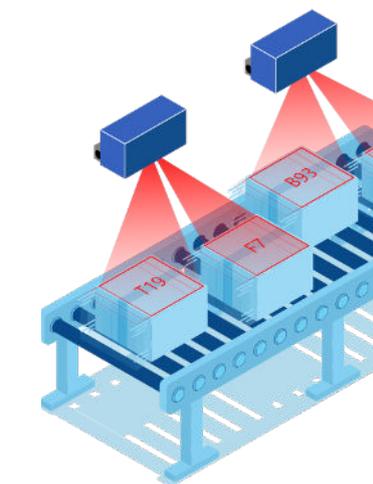
Laser Projectors



Pick-by-Light

In this proven picking application, the use of a laser projector enables significantly higher speeds, fewer errors, and clearer guidance for employees.

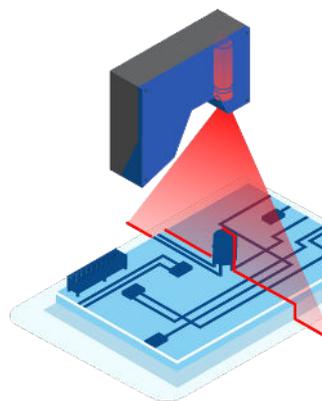
Laser Projectors



Package sorting

In combination with a camera or a motion sensor, the ZLP1 laser projector enables continuous projection on moving surfaces. Ideal for sorting packages - but also practical for assembly on the conveyor belt.

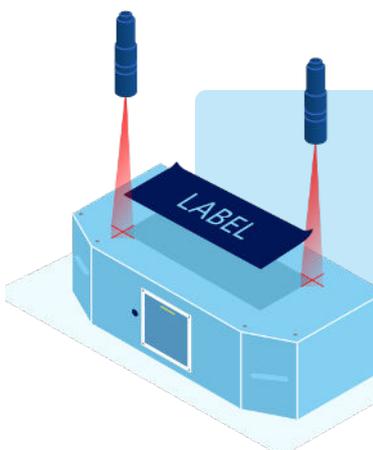
Laser Projectors



Quality assurance

In combination with a corresponding camera, the use of laser solutions for image processing allows fast and reliable checking of whether individual components and parts have been mounted in exactly the right place. Rework can thus be carried out more efficiently.

Laser for Machine Vision



Apply labels, tags, stickers

Exact positioning is not only important for parts. For reasons of brand impact, user safety and compliance, it is also important for markings such as labels or stickers to be applied in exactly the right position. Line lasers support this by providing clear and highly visible markings.

Positioning Laser

Laserprojector ZLP1

Compact, powerful, and easy to use

The ZLP1 is the ideal optical positioning system for commissioning, logistics and worker guidance applications. Optimize your production processes by guiding through the manufacturing process with optical work instructions. The ZLP1 is eye-safe (laser class 2M) and optimized for smaller working fields and short working distances.



Laser Projectors



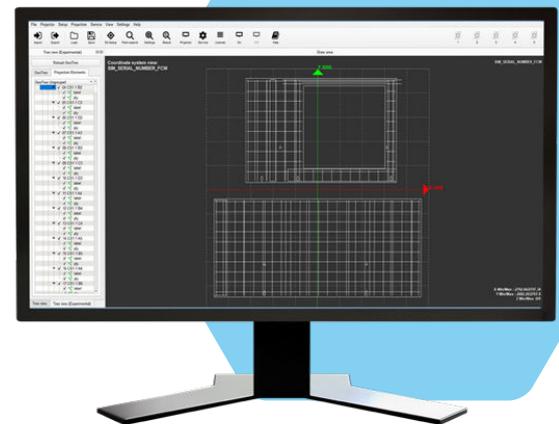
ZLP-Manager

The visual interface (GUI) for controlling the laser projectors without programming knowledge

The ZLP Manager offers a quick and easy introduction to the effective control of laser projectors with its graphical user interface (GUI). All functions of the ZLP service can be easily accessed and addressed via the ZLP Manager.



Laser Projectors



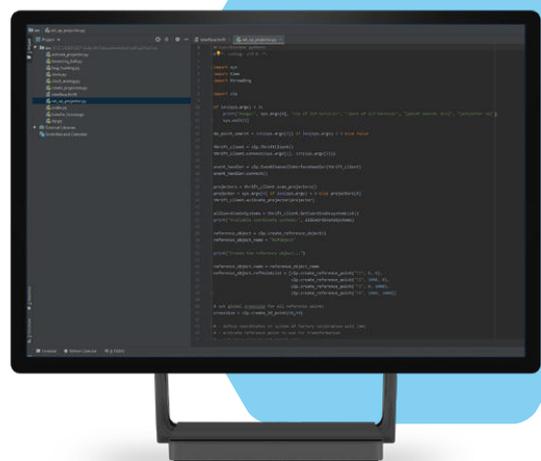
SDK & API

Direct integration into your existing software environment

The ZLP service can be controlled directly via the comprehensive programming interface (API). This allows for quick and reliable integration into an existing production network. You can, of course, make interface adjustments in your preferred programming language (e.g. Python, C++, C#, ...).



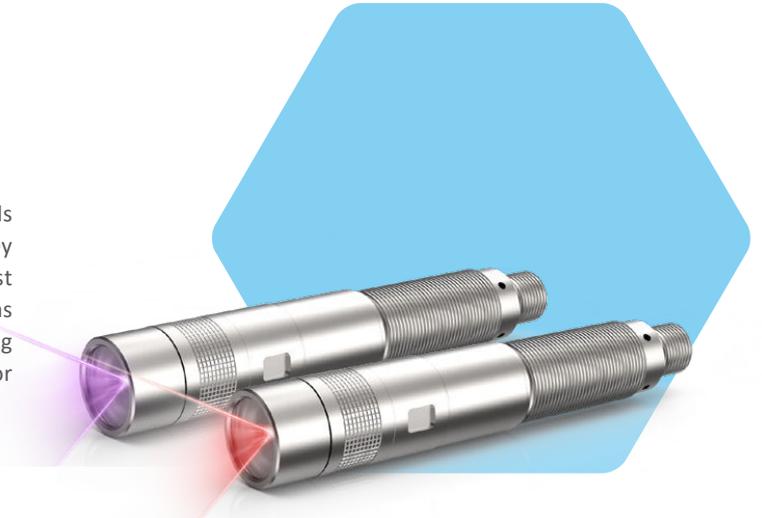
Laser Projectors



ZX

For highest precision in machine vision applications

With the introduction of the ZX laser modules, Z-LASER set new standards in laser precision. With their boresight error of less than 0.8 mrad, they are among the most precise lasers on the market. They offer the highest variability and allow for extensive, customer-specific adaptations. But as a standard version with industrial-grade stainless steel laser design, along with high power stability, they also guarantee the ideal component for machine vision applications, sensors, and machine manufacturers.



ZM

The perfect laser for almost any industrial application

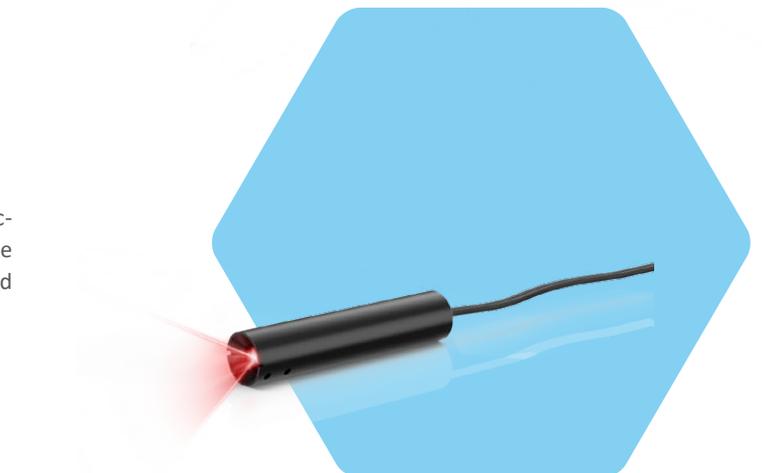
From classic use as a line laser for positioning assistance, to displaying a cutting edge, to industrial use in machine vision systems as a homogeneous light source – the ZM family is ideally suited for all these tasks thanks to its flexible configuration.



ZD

Universal mini laser module with excellent visibility Highlights

The ZD laser module can optionally project a line, point, or cross projection. It is often used as a positioning laser in the wood, stone, textile, tire and metal industries. With a diameter of only $\varnothing 11$ mm, it can be used universally.



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.



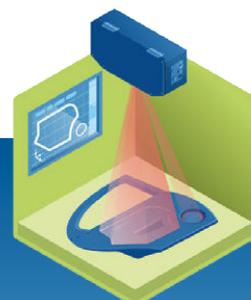
Positioning Laser

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.

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Contact us.
We would be happy to advise you!

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