

MORE THAN EYE EXPECT

Optical inspection systems

QR

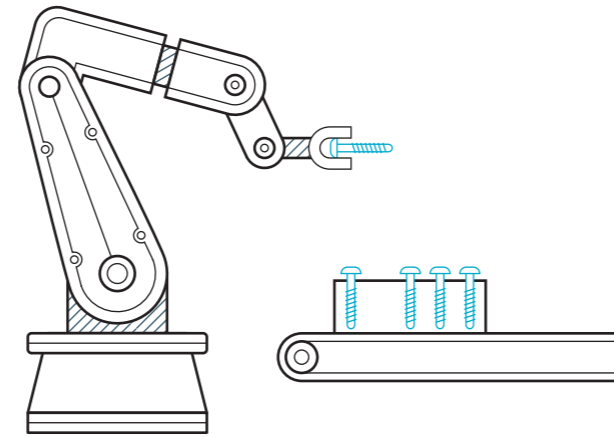


EYESPECFAW
GROUP

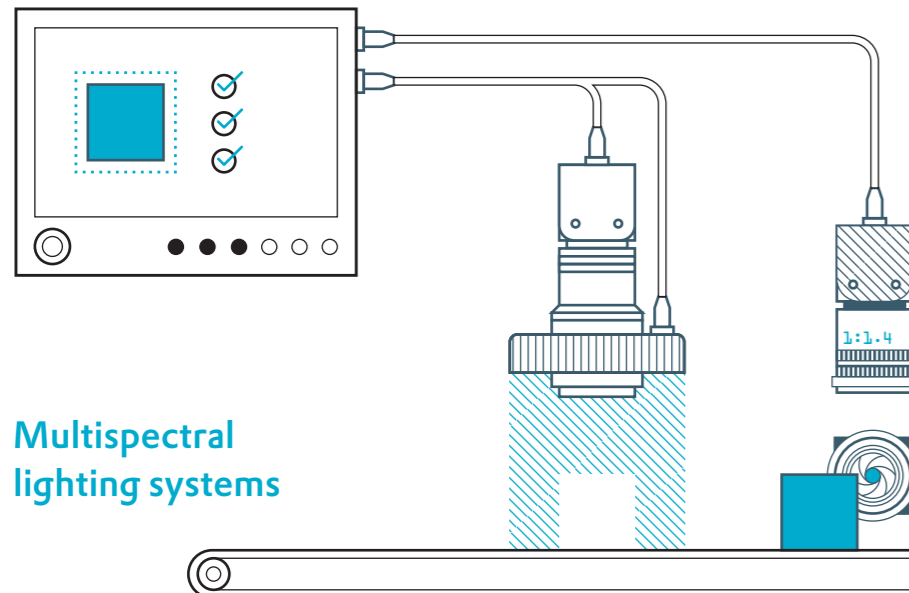
Process visualization



Handling systems

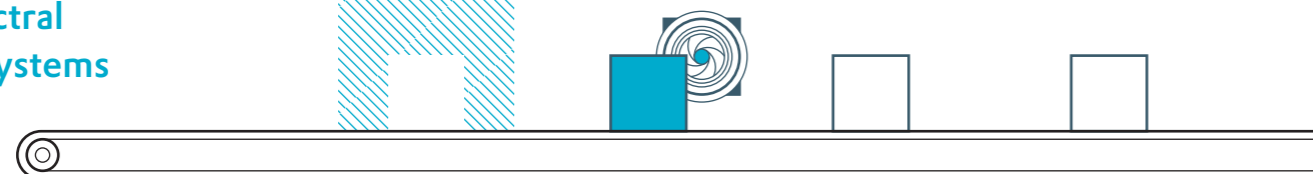


Validation

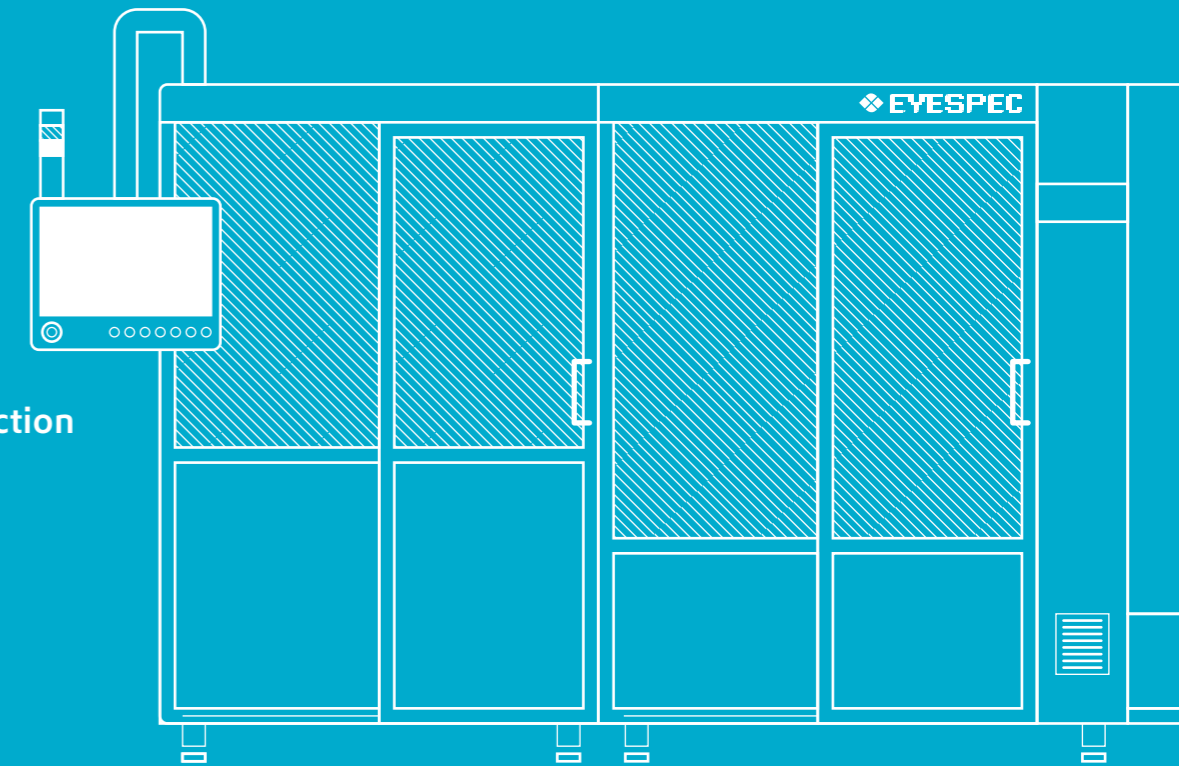


Multispectral lighting systems

Inspection systems



Inspection cells

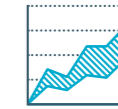


More than eye expect

The EYESPEC-FAW-GROUP is a major driver of innovation in industrial image processing. Across various industries, our motivated team of engineers develops highly specific, ready-to-use custom solutions tailored to the needs of customers all around the world: from feasibility studies to implementation through to validation and documentation. With our sites in Heide, Hamburg and Leonberg near Stuttgart, we guarantee efficient proximity to our customers.

Our services

Your production is our top priority. We therefore orientate ourselves and our work based on your framework conditions. Effective processes and short reaction times are par for the course, and underline our constant endeavor for perfection.



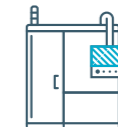
Optimization

With our comprehensive experience in quality assurance, we analyze your processes and offer you solutions that go far beyond simple image processing.



Integration

We inspect possible installation spaces on site, and develop systems that can be integrated into your process.



Ready to use

Complete inspection cells and integrated inspection stations ensure 100% control along your production line.



Service

To optimize your processes, we offer you a perfect all-round service for your existing inspection systems.



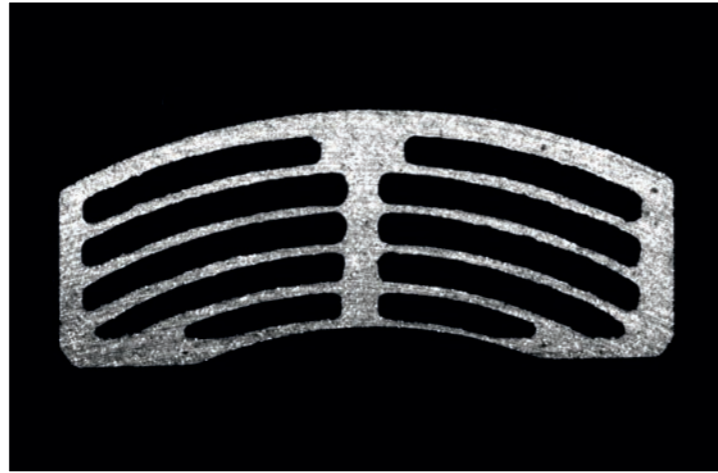
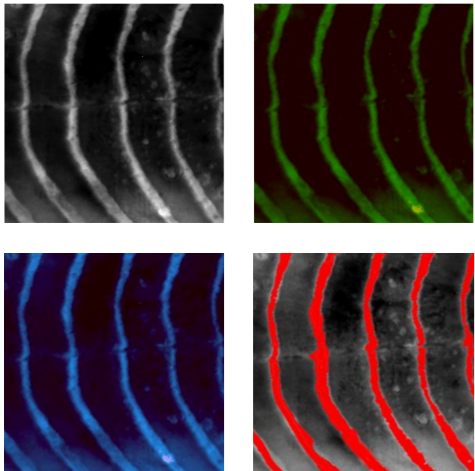
Remote maintenance

We can fit our systems with a remote maintenance module on request. This facilitates very short reaction times and reduces running costs.



Spectral optimization of product imaging

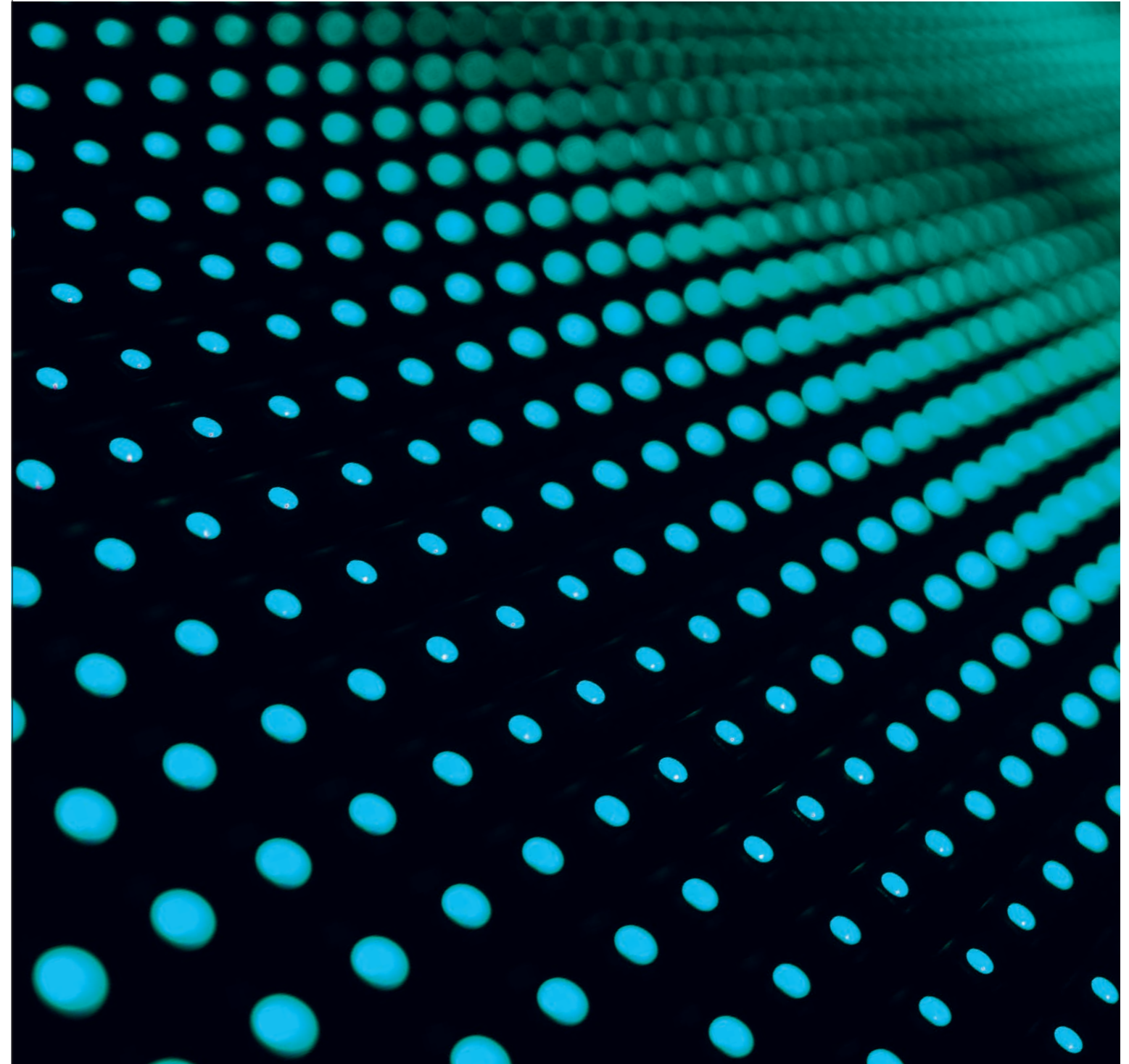
Up to ten color channels are available
to expand contrast. Final image data
ensures optimal feature segmentation.



TOP Spectral optimized imaging via a
brake pad line camera. The individual
elements of the friction lining are
contrasted to one another.

All of our in-house feasibility studies begin with
a spectral analysis to achieve the best possible contrasts.
Based on this, we develop special lighting systems custom-
ized to your needs. From simple single-spectral LED units to
multi-spectral high-performance modules, we will find the
optimal setup for your application.

With MultiSpec, we are setting new standards
in intensity and image frequency. Innovative controls
facilitate the multi-spectral implementation of rapid line
camera processes.

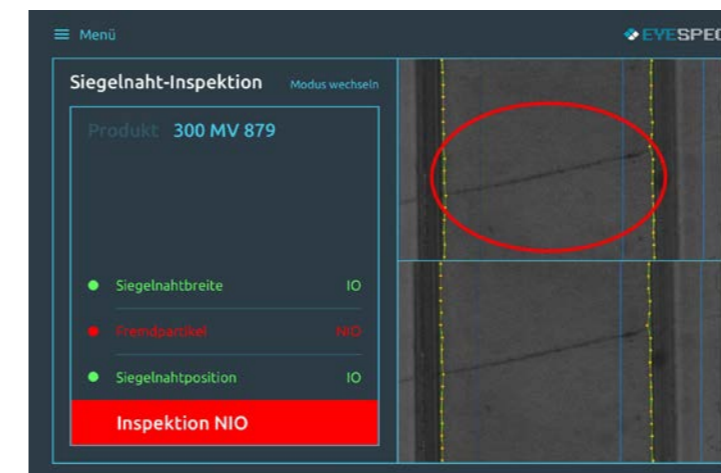
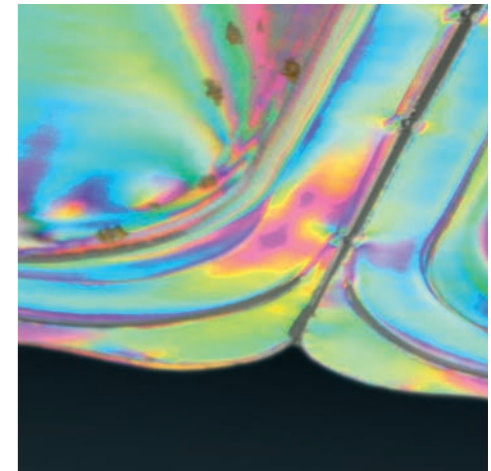
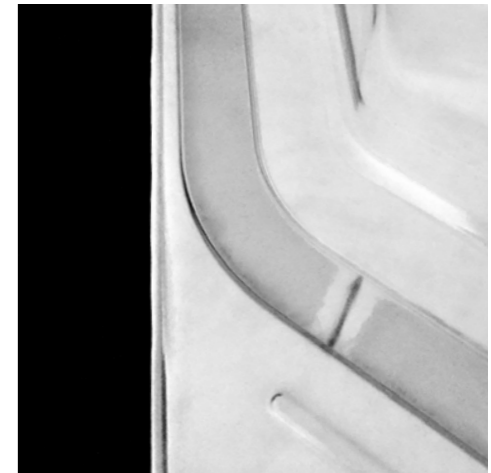




SEALSPEC

With SealSpec seal seam inspection systems, we have introduced a line of standardized models to the market that will find even the smallest defects in seal seams. The systems work with cameras and can be used at any position within the sealing process. Spectral optimized lighting contrasts the seal seam perfectly, forming the basis for clear segmentation of defect features.

The benefits of SealSpec systems are clear to see: unlike standard IR or optical coherence tomography systems, they facilitate an extremely high resolution of seal seams. Evaluation takes place at production speed, allowing highly efficient processes. As well as position, measurement and standard sealing defects, evaluation of the intact width of the seal seam is possible.



TOP Foreign bodies in the seal seam lead to product contamination.

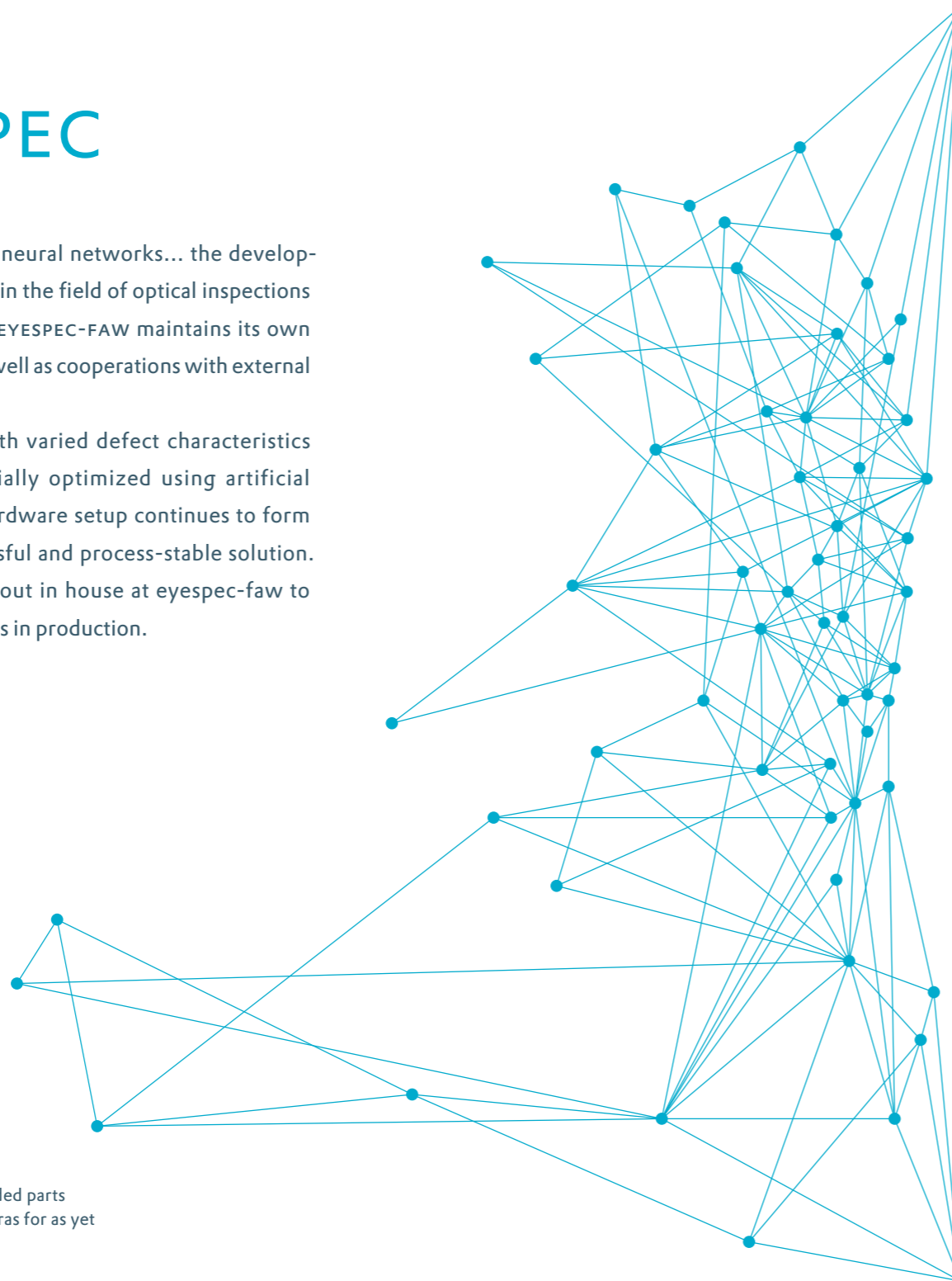
BOTTOM Spectral reflection on transparent packaging

LEFT Individual hmi: detection of defects, seal seam position and width using real-time seal seam tracking.

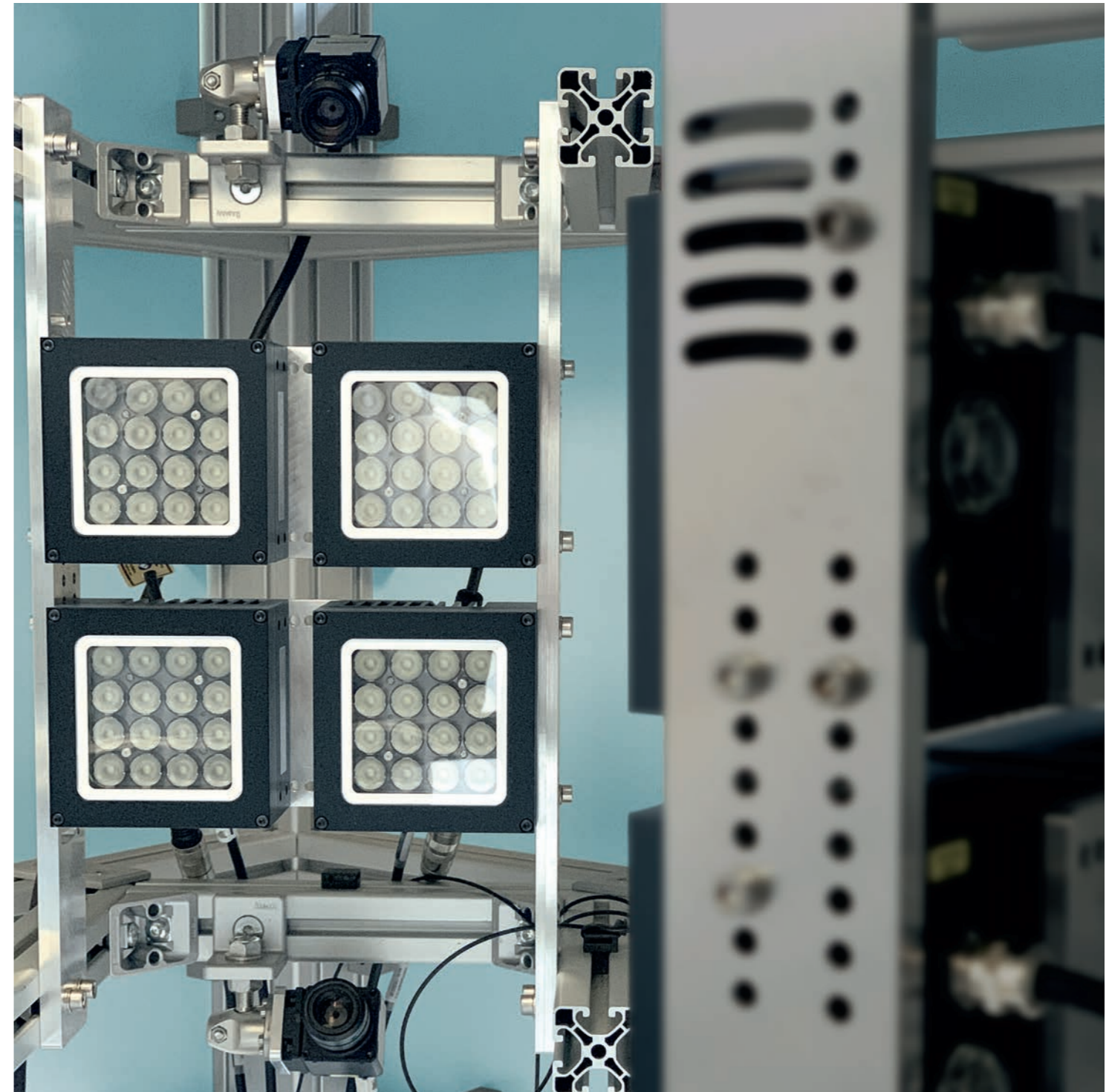


KI, AI, deep learning, neural networks... the development of artificial intelligence in the field of optical inspections has taken on a rapid speed. EYESPEC-FAW maintains its own development department as well as cooperations with external partners in this field.

Less defined tasks with varied defect characteristics in particular can be financially optimized using artificial intelligence. The optimal hardware setup continues to form the foundations for a successful and process-stable solution. Software training is carried out in house at eyespec-faw to minimize commissioning costs in production.

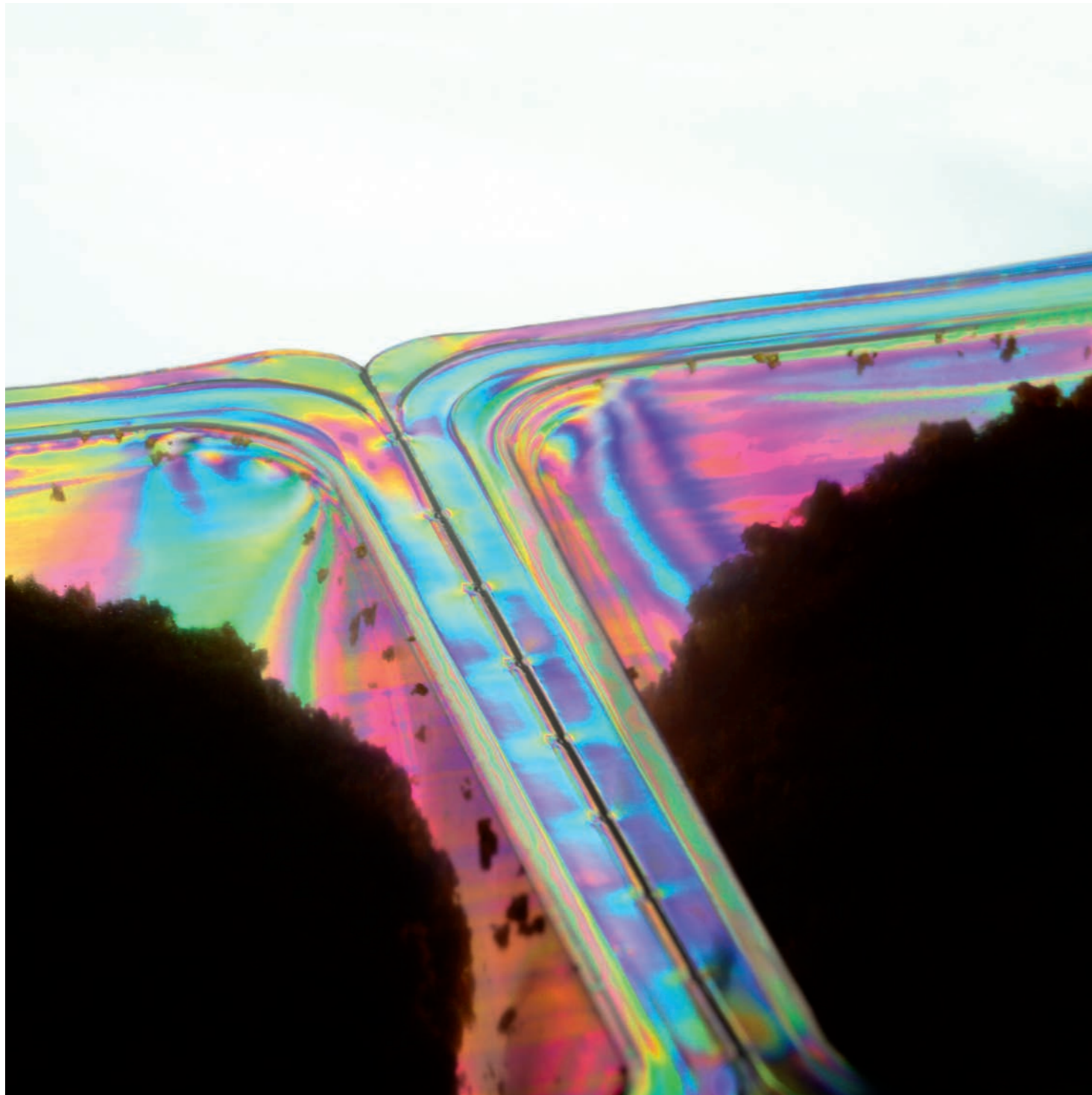


RIGHT In this cell, injection-molded parts are inspected by six cameras for as yet unidentified defects.



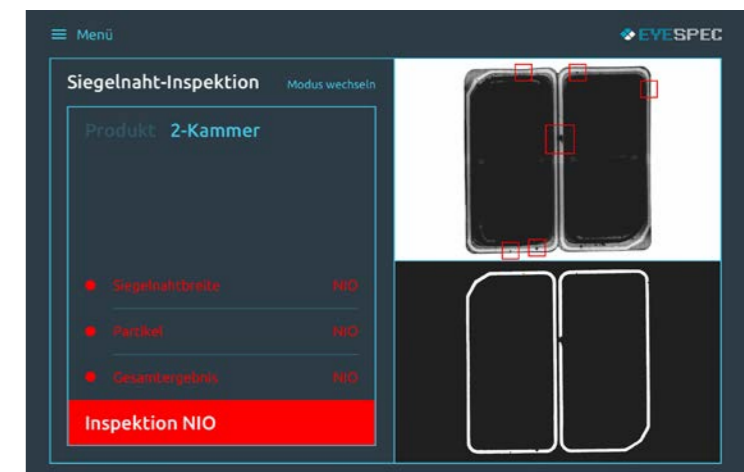
Seal seam

The seal seam is dynamically tracked via an algorithm developed in house. This lets the system evaluate defects not only in the seal but also in uncritical areas. Internationally leading medical, pharmaceutical and food companies trust our inline seal seam inspection and avoid more expensive complaints and equally high pseudo rejections.

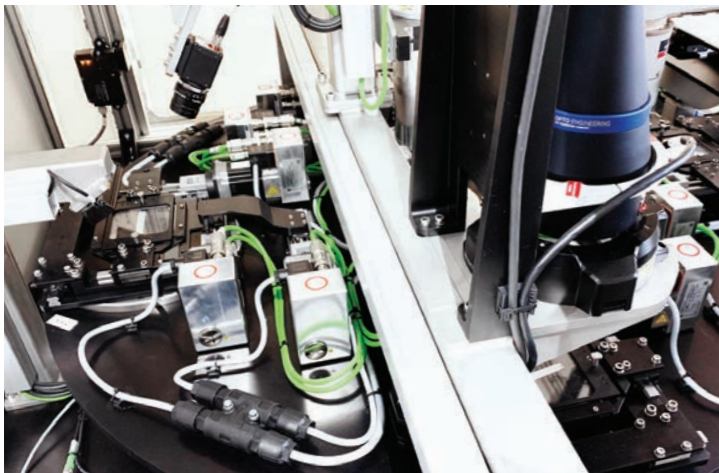
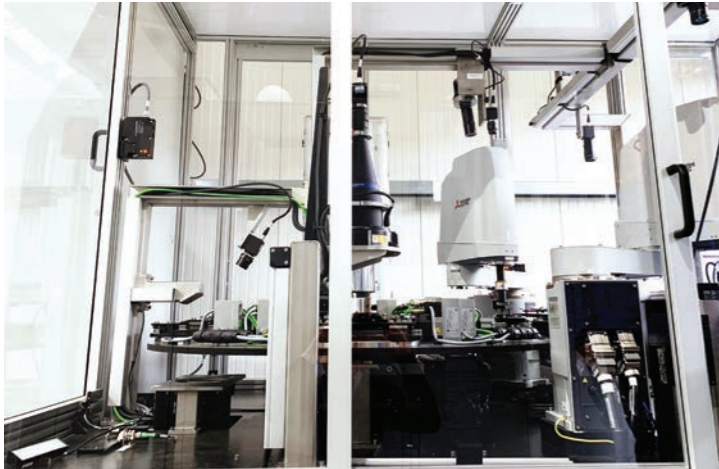


TOP The Tyvek aseptically seals the seal seam with the blister. Even the smallest gaps can lead to product contamination.

BOTTOM Our systems can detect and visualize a variety of possible defects for you. The course of the seal seam is tracked automatically, so that even flexible geometries are safely analyzed.



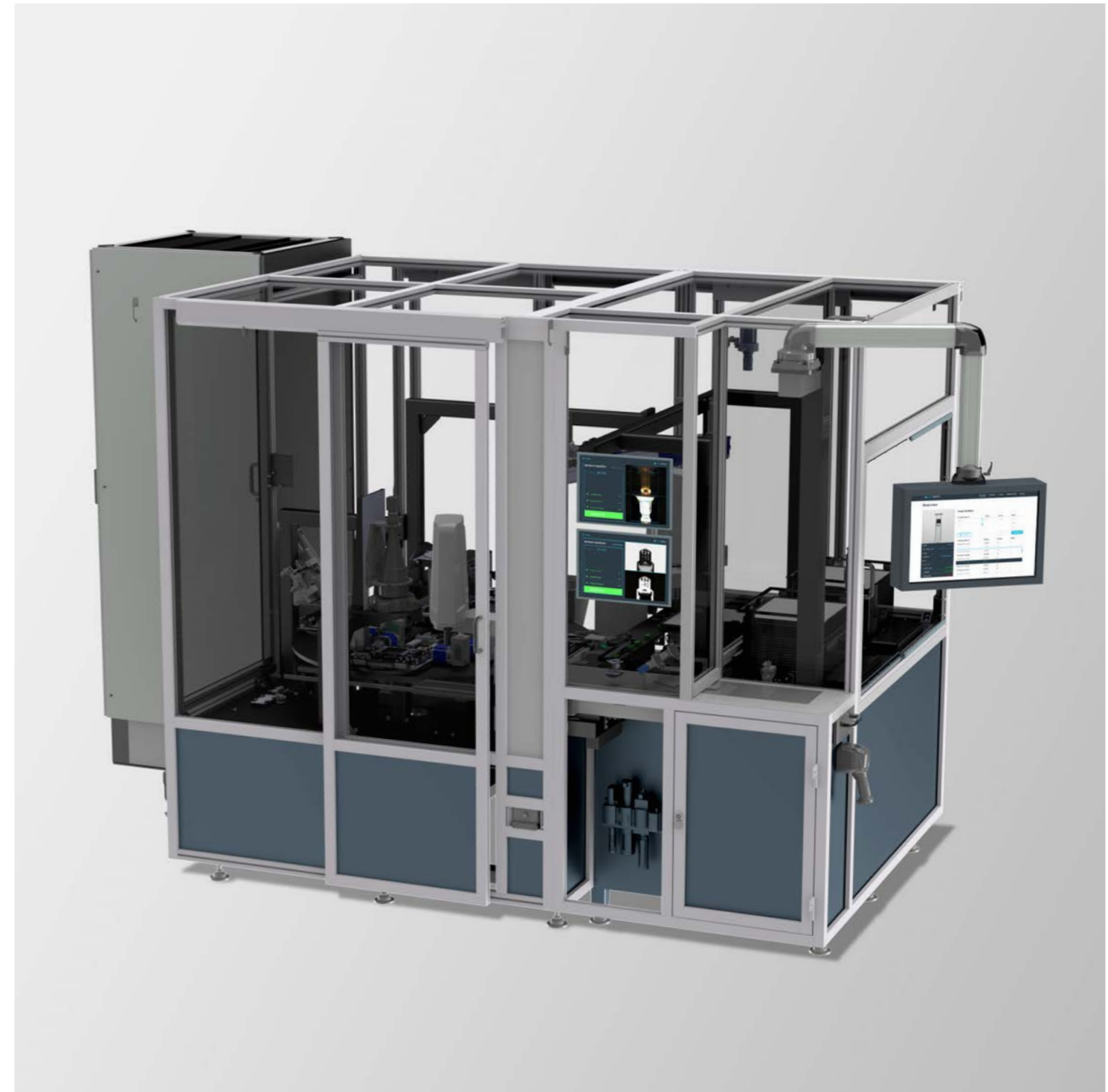
Inspection cells



EYESPEC-FAW offers ready-to-use inspection cells that are tailored to your products. From part isolation to box access to the actual inspection task, the necessary process is completed in full. Our solutions are based on many years of automation experience with a particular focus on the needs of image processing. Process stability and system availability come first for us.

TOP Inspection cells with two Scara robots, a rotary table and palletizing system.

BOTTOM There are four nests with X-Y and rotation orientation on the rotary table so that the product can be positioned at precisely 20µm.



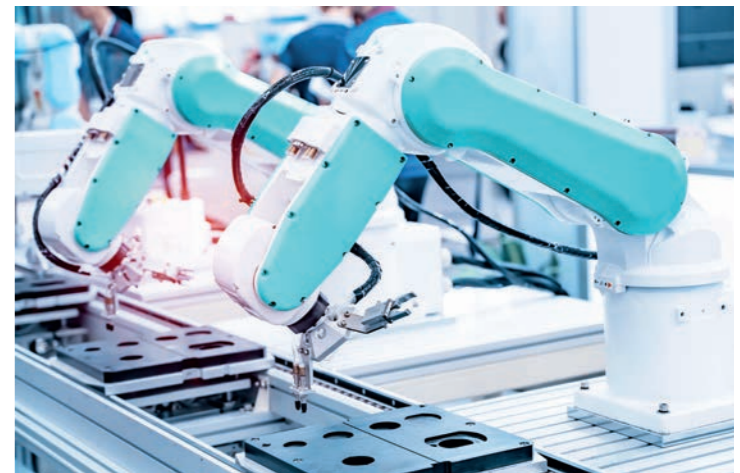
Automation

EYESPEC-FAW offers handling as well as image capturing. We provide you with ready-to-use complete systems that rise to even the greatest challenges: starting with simple conveying solutions right through to robot handling.

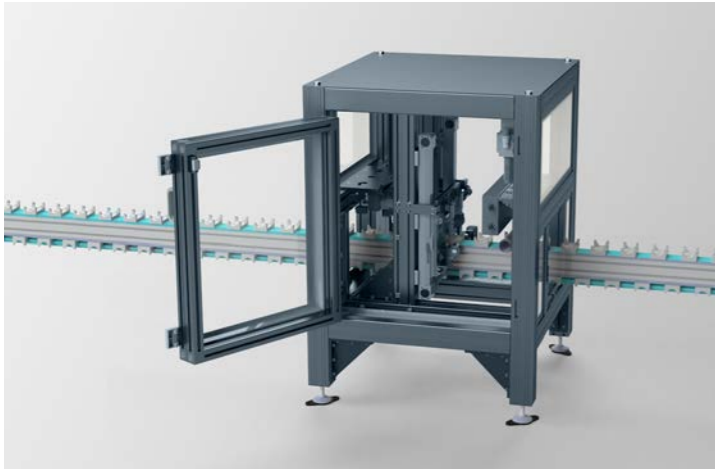


TOP Our solutions start with simple handling and extend to the highest precision and efficiency for cleanrooms.

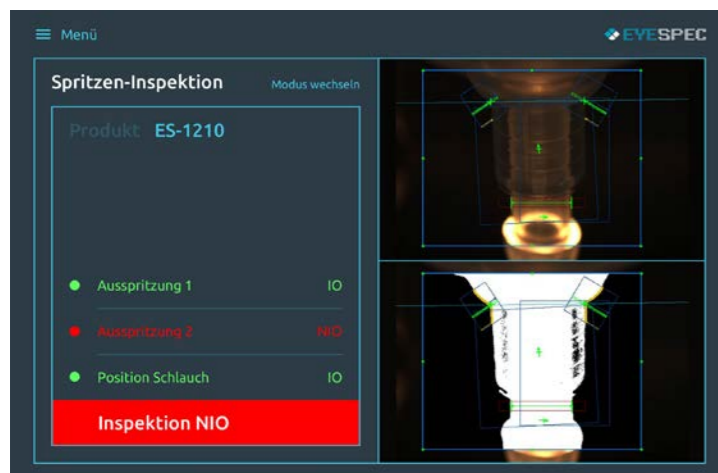
BOTTOM Precise measurements require precise handling. EYESPEC-FAW always considers the required precision of the overall inspection in robot dimensioning.



Medical technology



We specialize in the inspection of medical products. Part 11, GAMP5 and other FDA requirements are part of our daily work. We offer ready-to-use solutions, including qualification and suitable documentation. The world's largest companies in this industry place their trust in EYESPEC-FAW solutions.



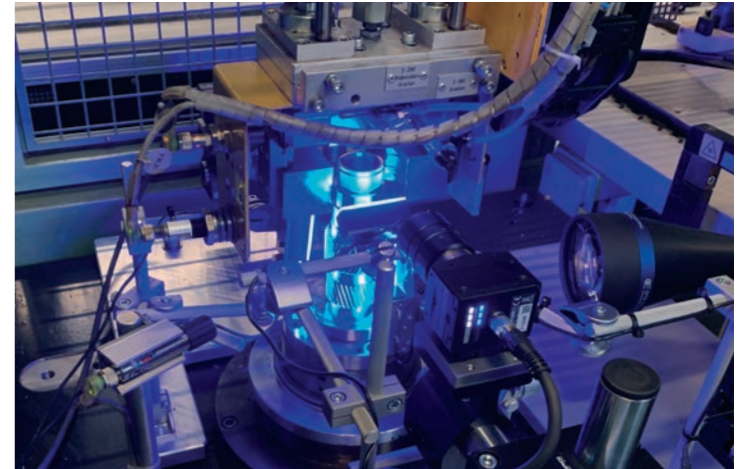
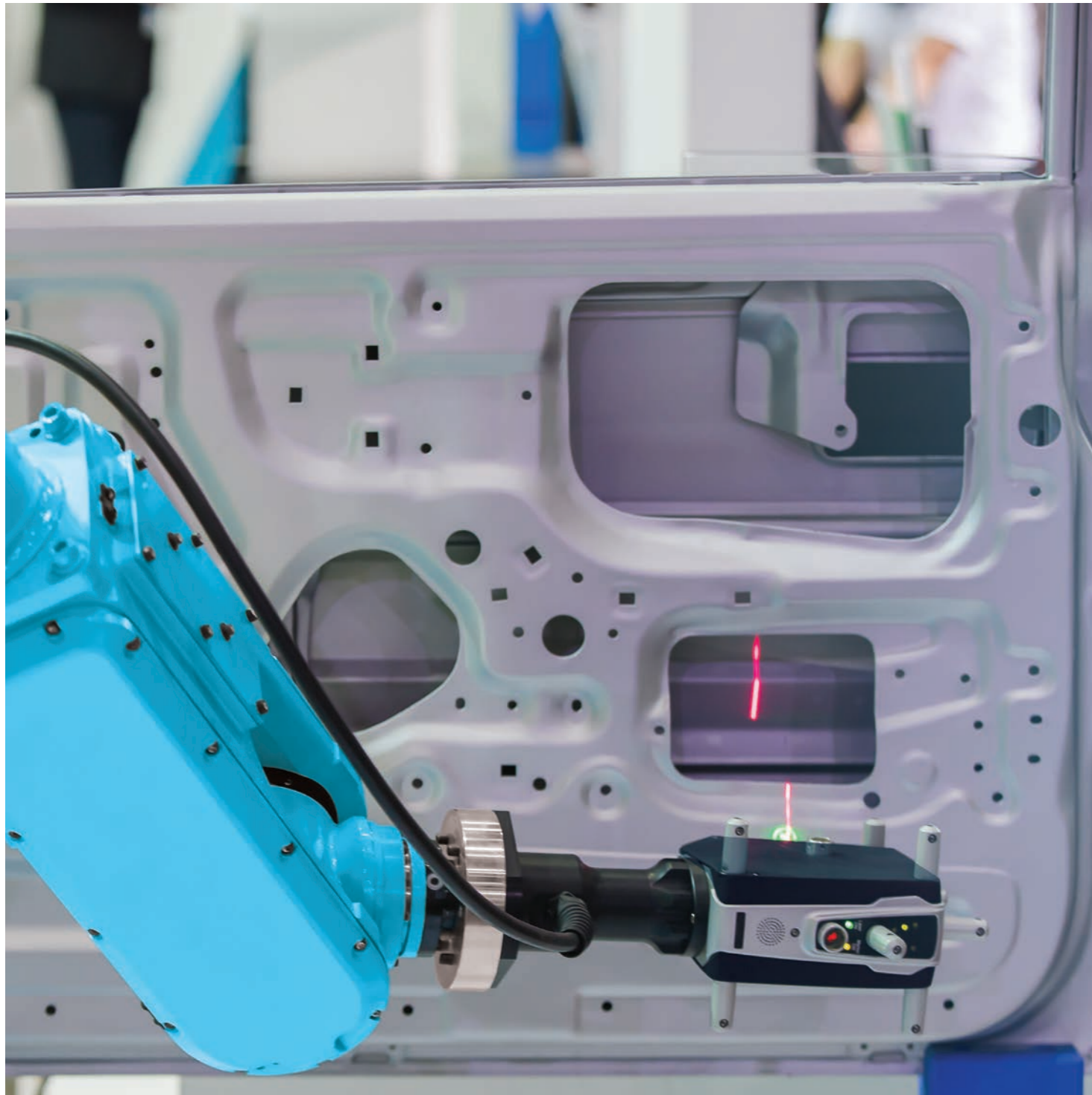
TOP Your dialysis filter inspection cells.

BOTTOM Alongside surface defects, the measurement of critical elements plays a major role. We can reduce your costs as only classified IO products are processed further.



Automotive

EYESPEC-FAW has a strong position in the automotive industry. We supply the largest car manufacturers and their OEMs. Thanks to our Germany-wide locations, we are in an excellent position to put our service philosophy into practice. We are involved in many new developments from the very beginning. We are especially involved in complex requests and processes.

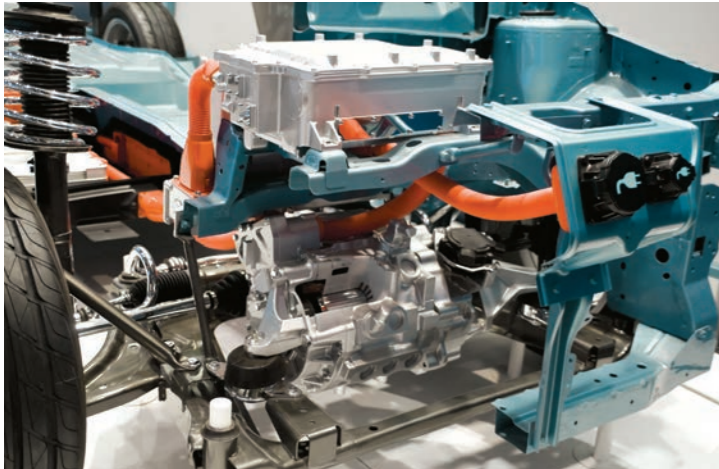


TOP Gear part inspection with multi-line camera system.

BOTTOM In this cell, the whole exhaust gas system is checked for correct assembly.



E-mobility – fuel cell



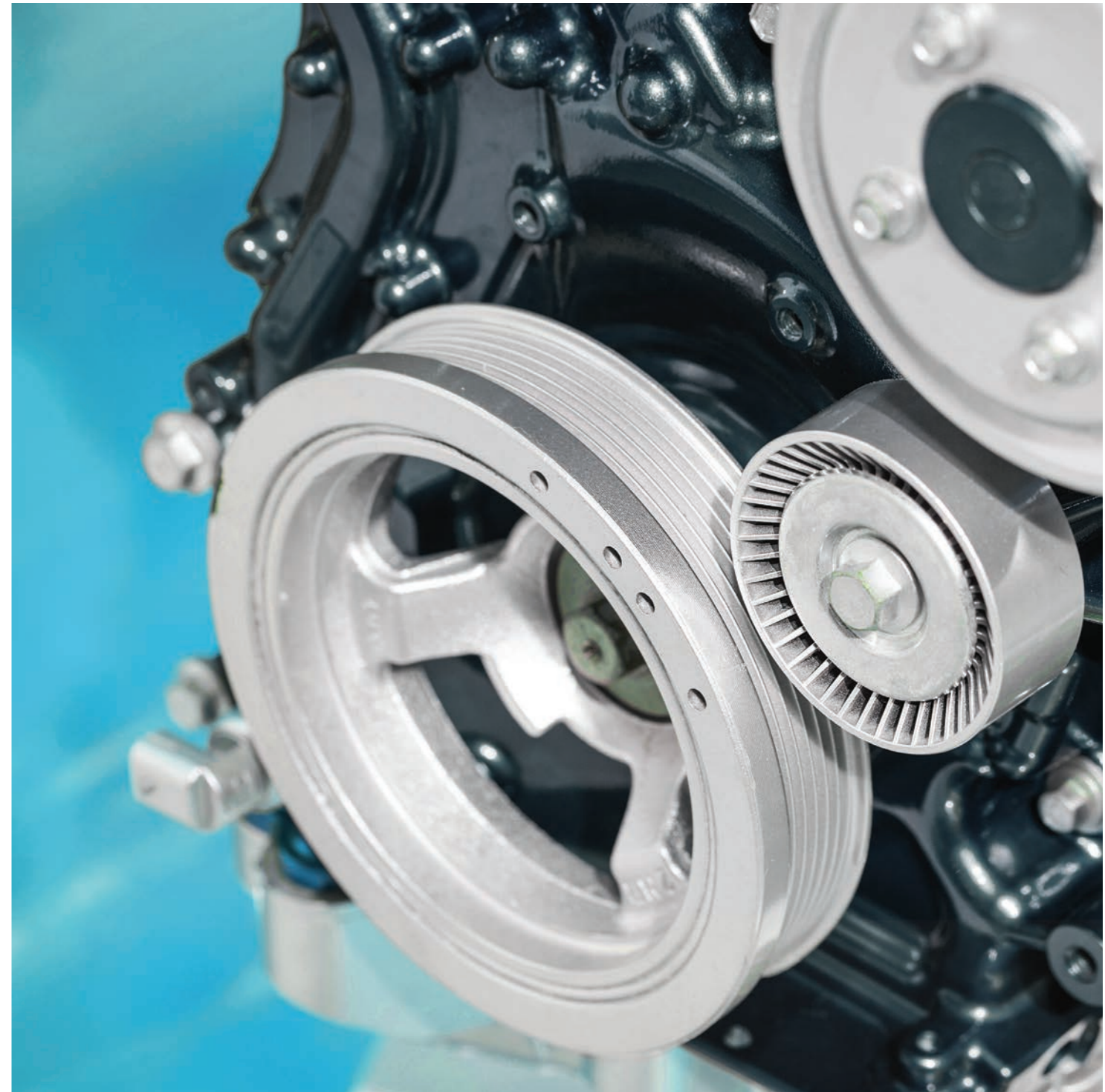
The EYESPEC-FAW group contributes to the quality assurance of new motor concepts. In cooperation with the pioneers of trail-blazing motor technologies, our solutions are used in battery assembly and production, fuel cell inspection and the inspection of many electrical motor components.

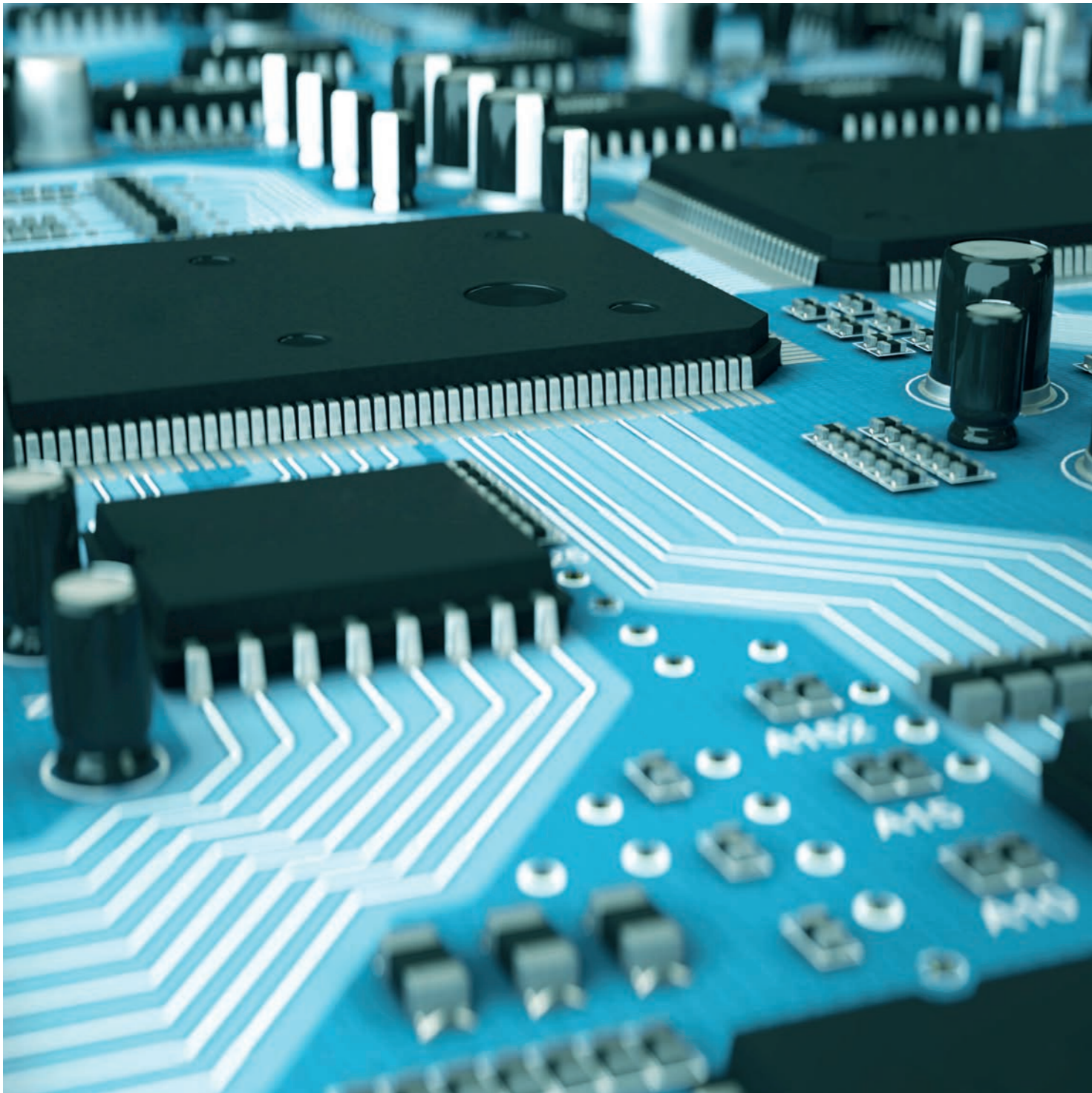
We accompany new processes from the beginning to successfully shape quality concepts together. The biggest players in this field rely on our solutions.



TOP The transition of motor technology requires further development of inspection systems.

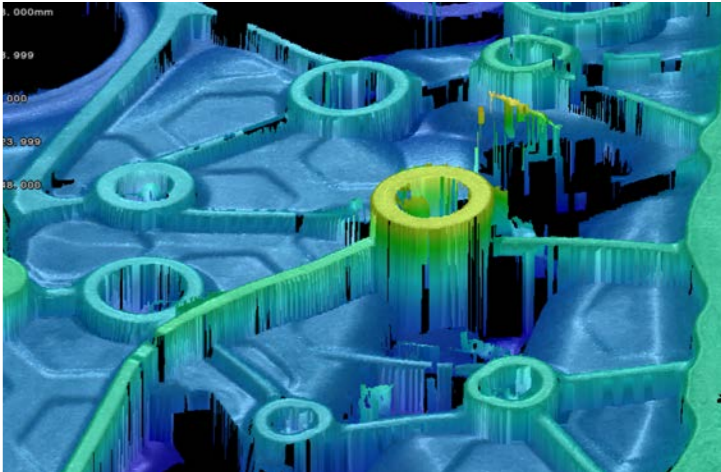
BOTTOM eyespec-faw has already developed a variety of solutions for e-mobility.





Third dimension

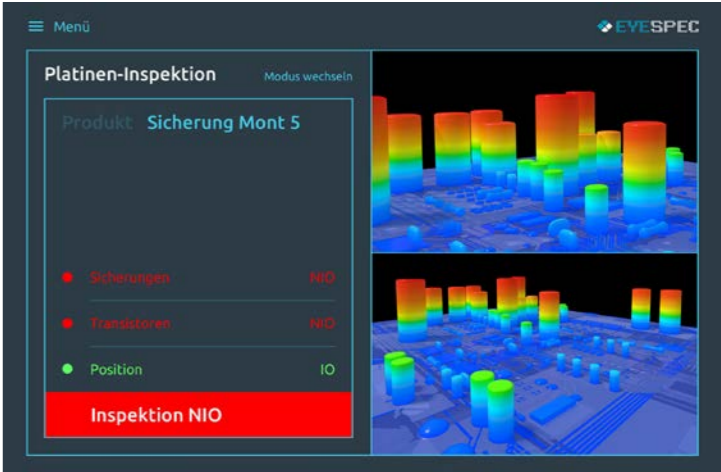
The market for 3D inspection continues to grow. We have specialized in two processes: laser triangulation and pattern projection. With these methods, we can resolve height information down to the micrometer. The systems are used for electronic parts, welding as well as adhesion processes and in assembly.



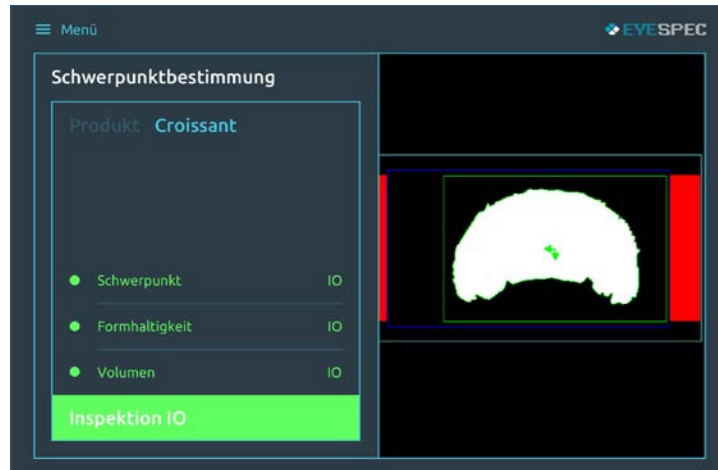
- TOP

We realize 3D inspections for you using laser triangulation and pattern projection. Short cycle times and a high level of three-dimensional precision are guaranteed.
- BOTTOM

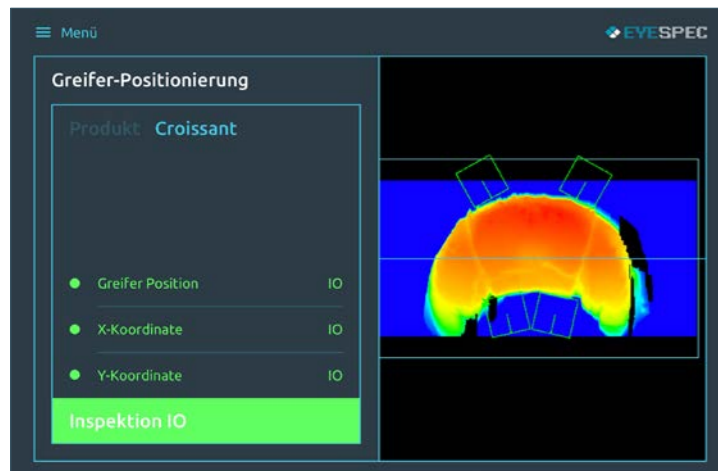
Alongside soldering joints, the systems can also inspect correct mounting and positioning. In addition to 3D information, there is also a gray-value image for reading a DMC or OCR.



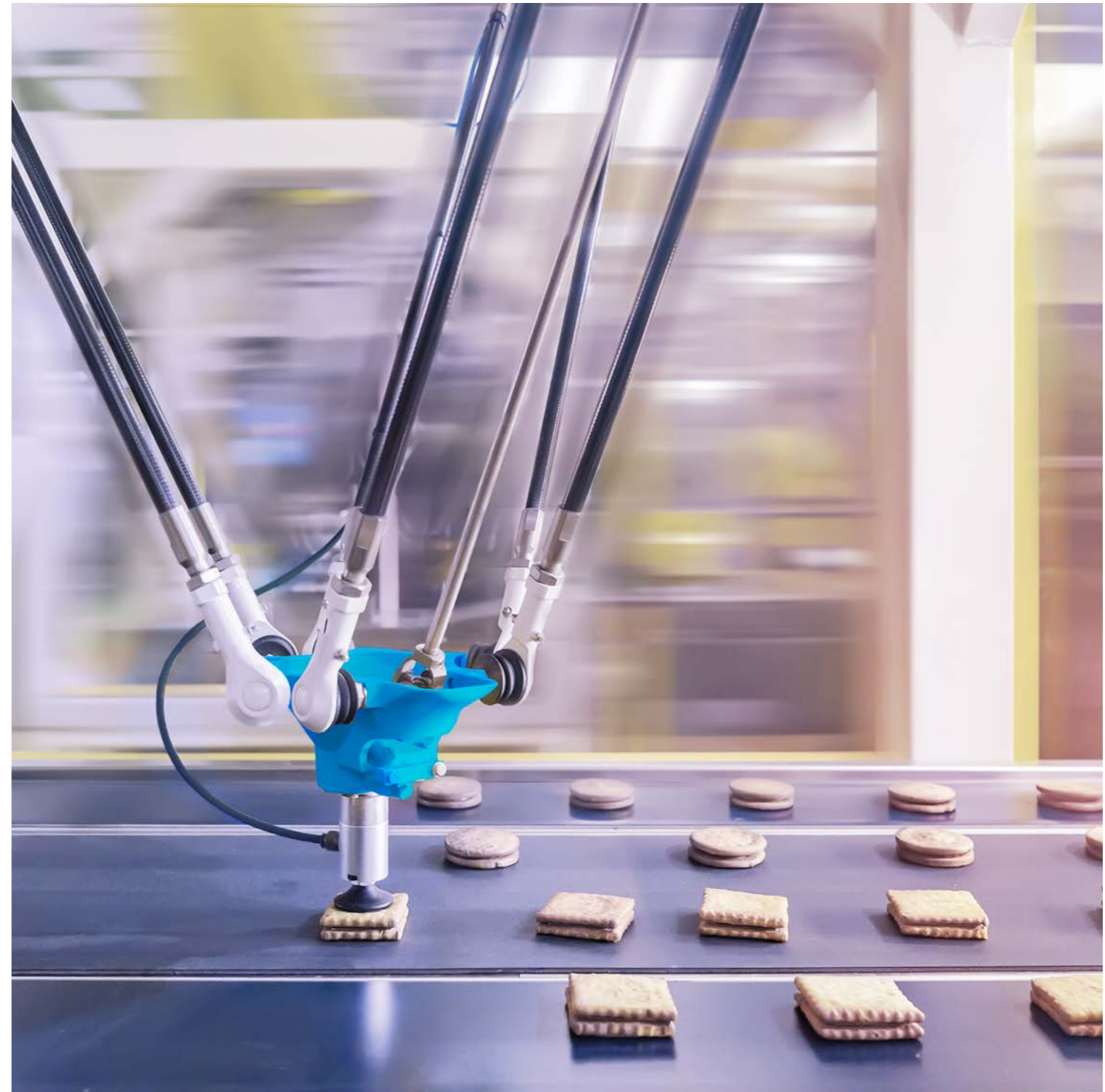
Conveyor tracking



Line camera and triangulation applications are our pet issues. High-speed processes with position detection and synchronized pick and place tasks require process-stable solutions with the best availability. Controller-based solutions can be set up in a modular way, simultaneously parametrized and configured via a central HMI. These solutions are primarily used in the food, consumer and pharmaceutical industries.



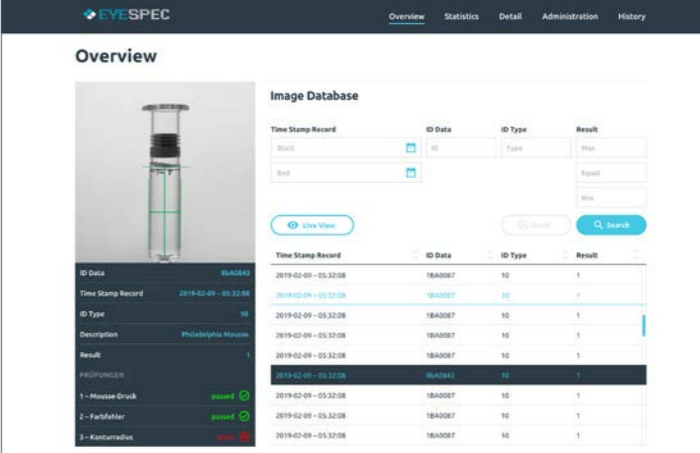
- TOP** Here, parameters such as position, shape and volume are collected and compared.
- BOTTOM** Gripper positions are inspected for interfering contours on each product.



EyeSpec platform

The EyeSpec platform is the tool for the advanced evaluation and visualization of all automatically generated data. The panel PC in the IP67 pressure die-cast aluminum housing is particularly well suited for use in raw environments or in cleanrooms for the medical and pharmaceutical industry.

Our platform offers you all the benefits of big data, statistics, audit trail, visualization and check-the-checker. We solve a variety of tasks with one single interface. You can link all your cameras and sensors, and collate the data. At the same time, you can check the abilities of your validated systems online. A tool that's sure to impress.



Overview

Image Database

Time Stamp Record	ID Data	ID Type	Result
Start	ID	Type	Pass
End	ID	Type	Repeat
			Stop

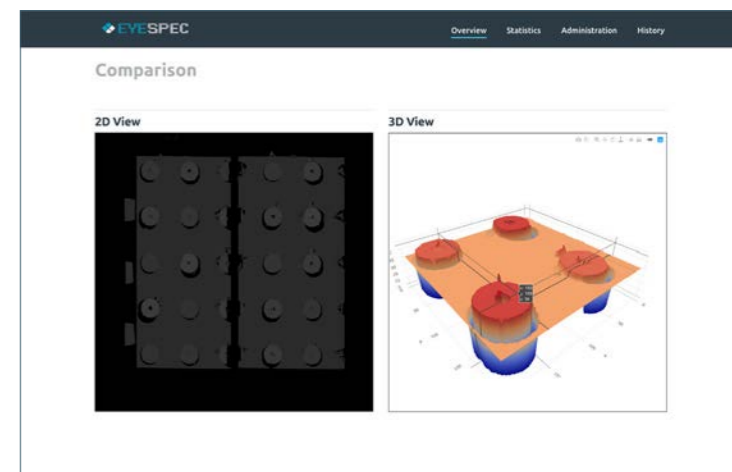
[Live View](#) [Search](#)

Time Stamp Record	ID Data	ID Type	Result
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1
2019-02-09 - 05:32:08	18A0087	10	1

ID Data 18A0087
Time Stamp Record 2019-02-09 - 05:32:08
ID Type 10
Description Philadelphia Mouse
Result 1

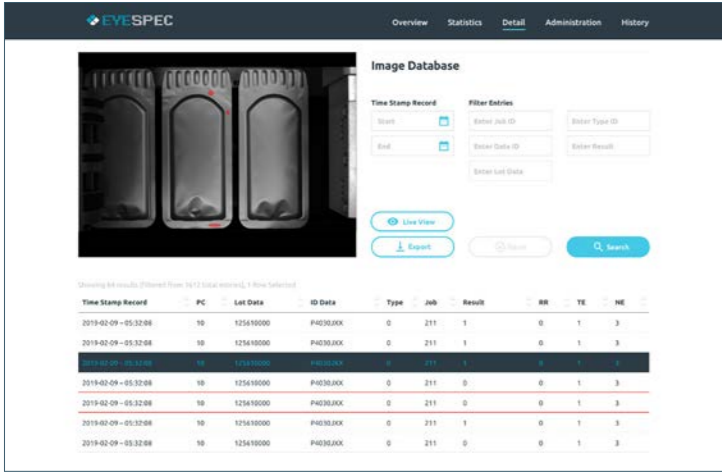
PREPUNCE

- 1 - Mouse Crank **passed**
- 2 - Fullfehler **passed**
- 3 - Konstruktiv **passed**



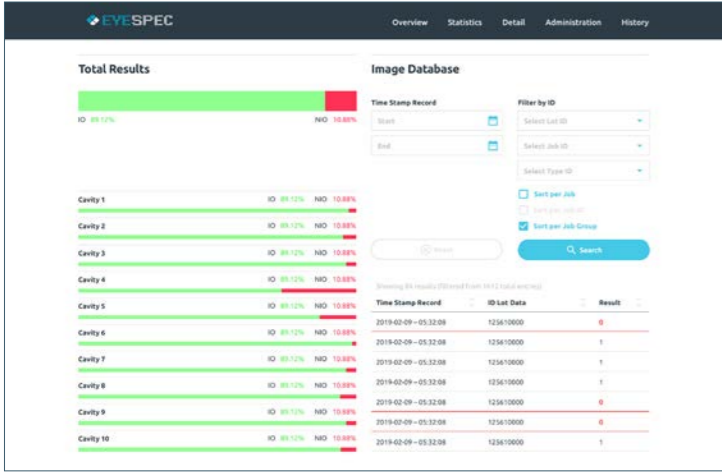
TOP Collation of image and result data

BOTTOM Visualization of an image from multiple sensors. 2D and 3D view.



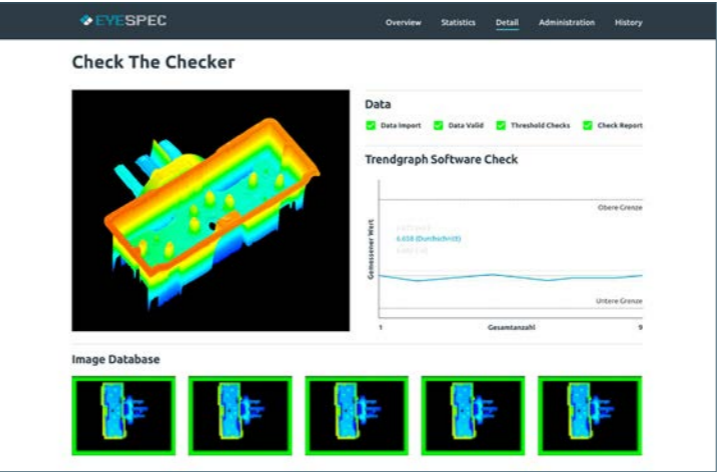
Visualization

The platform can visualize multiple cameras or camera systems. As well as pure reproduction, defect maps with detailed shots can also be generated. The user therefore sees the product and where it is positioned within the system, and receives an understandable visualization of defects, collated from all cameras and sensors. These defects can be selected individually to view results data and images.



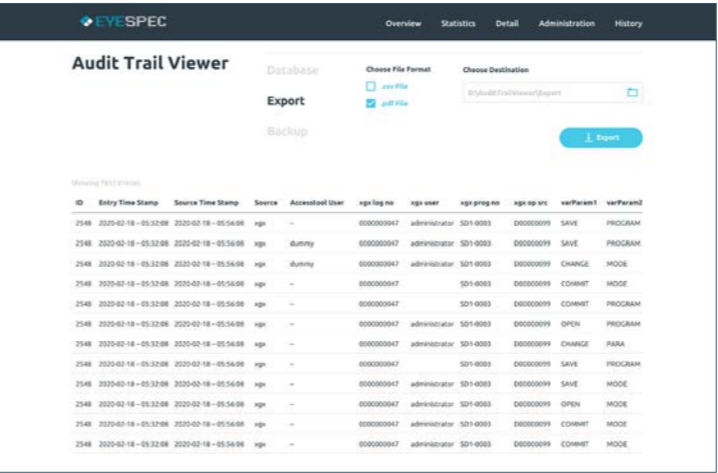
Statistics

Evaluation is limitless. The platform offers all statistical opportunities with the saving of application-specific formulas. All results can be used in combination with serial numbers, batch numbers, time stamps or user IDs. Reports can be exported.



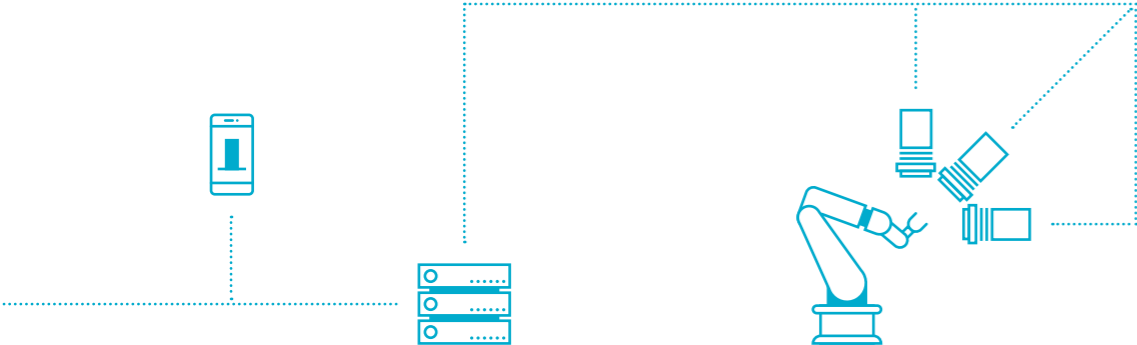
Check the checker

The platform facilitates regular self-checking of the inspection system. Already logged and validated data is hereby compared with current parameter sets. The major benefit here is that this takes place alongside production, so system output is not negatively impacted.



Audit trail

The platform offers the opportunity to display audit trails compliant with the FDA's Part 11. Local user management assigns various different access rights and allows all user-specific changes to be logged and redundantly archived via a rate system in an operative audit trail review. The applicable password guidelines are implemented.



Our customers

Our customers include machine producers as well as manufacturers, forming the whole supply chain in the automobile, medical, food and electronics industries.



» The longstanding partnership between Keyence and EYESPEC-FAW is based on mutual trust, with the bundling of both key skills forming a clear added value for our customers.«

ANDREAS WÖRZ
CEO, Keyence Deutschland GmbH

Excellent quality



Deloitte.

Gewinner
Technology Fast 50 Award 2019
Powerful Connections



50 Technology Fast 50
2019



Global project locations

UNITED STATES
US

MEXICO
MX

» The EYESPEC-FAW team shows above-and-beyond dedication to the implementation of their projects. The collaboration generates technical know-how, a welcoming attitude towards challenges and success in implementation.«

SERGEY KHOPTA
Process Engineer - NxStage GmbH & Co. KG

BRAZIL
BR

DENMARK
DK

FRANCE
FR

SWEDEN
SE

GERMANY
DE

UNITED KINGDOM
GB

IRELAND
IE

CZECH REPUBLIC
CZ

HUNGARY
HU

ISRAEL
IL

SWITZERLAND
CH

POLAND
PL

AUSTRIA
AT

ITALY
IT

SPAIN
ES

» We have already implemented very technically challenging projects with EYESPEC-FAW. We value their good level of support a lot, and would recommend EyeSpec without hesitation.«

MARIO BOBERTZ
Senior Engineer Equipment & Projects, Ethicon

CHINA
CN

JAPAN
JP

INDIA
IN

SOUTH AFRICA
ZA

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KEYENCE

PREFERRED

SOLUTION NETWORK PARTNER

Gefördert durch:



Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages