









Simplicity is the basis of our thinking and actions. This applies to our perfectly compatible cameras as well as to our ingeniously thought-out software. Future-oriented technologies from the consumer world, consistently further developed for the industry, contribute to this. The IDS "People inside" want to offer you - our customers and partners - the best user experience in the vision market. To achieve this, we are constantly rethinking ourselves and our products. What began with frame grabbers led to the first USB industrial camera on the market and is far from stopping at cameras with artificial intelligence. Because versatility is our great strength...

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— Managing Director

ALEXANDER LEWINSKY

Alexander Lewinsky initially studied Robotics and Automation (BEng) at Heilbronn University of Applied Sciences, then completed a Master's degree in Business Management at Middlesex University in London (MSc). He joined the company in 2012, first as product manager, later as head of purchasing and division manager for production/logistics and quality assurance.

— Managing Director

JAN HARTMANN

Jan Hartmann studied economics at the Goethe University in Frankfurt after completing his training as an IT specialist. He then joined the IDS Group in 2017. Initially, he was responsible for the corporate real estate division and afterwards for the sister company IDS Innovation. Before his entry into the IDS management board in March 2020, he was already in charge of the banking, insurance and legal departments.

Management



Founder and owner

JÜRGEN HARTMANN

Jürgen Hartmann first came into contact with image processing in 1988 while working in a laboratory. In 1997 he founded IDS Imaging Development Systems GmbH together with a partner. A pioneering spirit and the will to overcome borders and create something truly new still drive him today. This is how Jürgen Hartmann managed to become one of the largest manufacturers of industrial cameras with IDS.

"IF EVERYBODY RUNS IN ONE DIRECTION,
I LIKE TO RUN IN THE OTHER AS A MATTER
OF PRINCIPLE."

We develop high-performance USB, GigE and 3D cameras with a wide range of sensors and variants as well as

"WE OFFER OUR CUSTOMERS THE BEST USER EXPERIENCE IN THE VISION MARKET."

IDS Corporate Vision

We produce exclusively in Germany: Our development and production site is in Obersulm, Germany. With branches in the USA, Japan, South Korea and the UK as well as offices in Europe, IDS is represented internationally.

The combination of high quality "Made in Germany" - proven by external certifications according to international standards - long-term availability and particularly easy handling makes IDS cameras unique.

Under the motto "Knowledge becomes more when you share it", we make our expertise accessible on the IDS Vision Channel. It offers online sessions on image processing topics around 2D, 3D and embedded vision as well as artificial intelligence: https://ids-vision-channel.tech



Company

10

SUSTAINABILITY HAS MANY FACETS



Conserve raw materials, optimise processes, minimise CO2 footprint, think ahead...

"We focus on energy and resource efficiency. As a global technology company, sustainability is an essential part of our corporate strategy; technological progress and responsible entrepreneurship go hand in hand for us," explains Jan Hartmann.

IDS offsets unavoidable greenhouse gas emissions by supporting international climate protection projects and thus operates in a completely climate-neutral

With a responsible and holistic sustainability strategy, we aim to create long-term value while balancing environmental, social and economic aspects.

In this way, sustainability is lived in all areas of the company. In the core business, this is reflected, for example, in the development and production of climate-neutral camera families or in "green" logistics.

The further reduction of the company's own CO2 emissions is at the top of the corporate agenda. We work every day to reduce our ecological footprint.

We show you all facets of sustainability at IDS on our

HOLISTICAL CLIMATE **PROTECTION**

RESPONSIBILITY FOR PEOPLE AND THE **ENVIRONMENT**

- 100% climate neutral
- CO²-neutral camera families
- (7) 100% ggreen energy, including green electricity and green gas
- CO2-neutral transport
- Packaging and shipping plastic-free
- Protection of biodiversity
- Measures in the area of waste management and recycling
- Paperless office



PRODUCTS WITH VISION

Products with vision

12

Since 1997 we have been developing and producing products for industrial image processing. With technological foresight and a keen sense of future developments, we recognise the signs of the times. IDS made the USB interface for the camera sector suitable for industrial use and relied on CMOS sensors at an early stage. However, our latest innovation is the visionary, app-based product platform IDS NXT with artificial intelligence. It represents a new evolutionary stage of digital industrial cameras.

A total of three different product lines allow a limitless range of applications in the field of equipment, plant and mechanical engineering as well as in non-industrial areas.



PRODUCT-**PORTFOLIO**

uEye

Industrial cameras with USB or GigE interface

Ensenso

Flexible 3D camera systems





IDS NXT IDS NXT

IDS NXT VISION PLATFORM

A new generation of Vision App-based systems with artificial intelligence









Embedded vision system for image processing "on the edge"

CAMERAS

IDS NXT rio & rome

INTELLIGENT CAMERAS IN THE HOUSING OF STANDARD INDUSTRIAL

 Develop your own Vision Apps and install them "smartphone-like" on the cameras

IDS-developed AI core for inference times of a few milliseconds

Available with different protection classes and

ITHINK, SOIAM.







INDUSTRIAL CAMERAS **NEWLY DEFINED**

YOUR

IDS NXT is a platform for a new generation of app-based vision systems for industrial applications. The philosophy behind this marks a paradigm shift: IDS can therefore offer flexible complete systems with which all steps from image acquisition to machine control can be realised in one vision system.

CAMERA®

IDS NXT ocean is an all-in-one system for using artificial intelligence in image processing where rule-based approaches reach their limits - with out any programming effort.

Inference cameras for industrial use

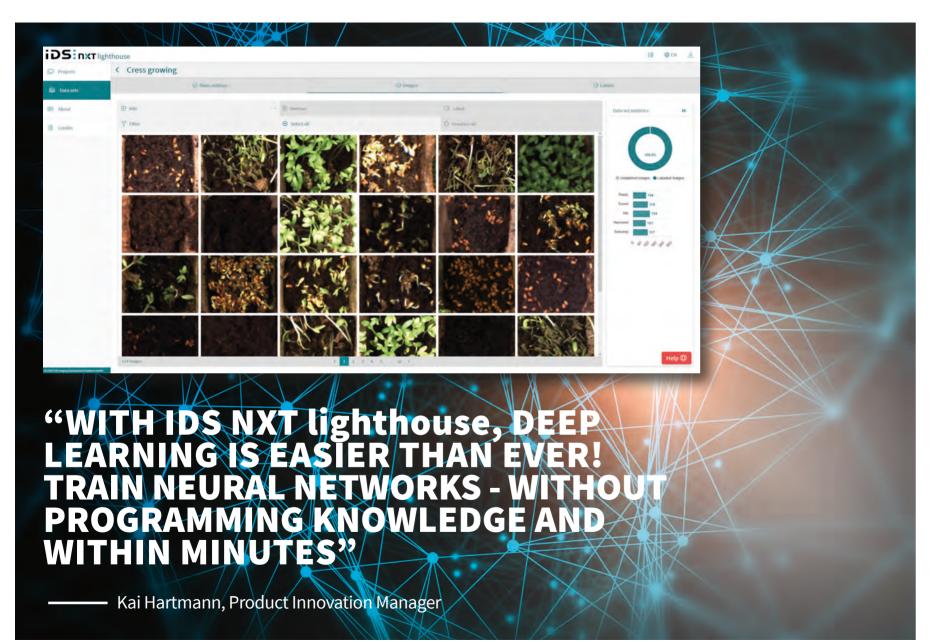
With the IDS NXT product line, we offer an industrial camera platform that enables on-camera image processing. Our goal is no longer to simply develop individual components, but to offer easy-to-use yet flexible complete systems that can be used to implement all steps of a vision system, from image acquisition, image analysis and processing to the control of industrial production machines. IDS NXT thus enables image processing tasks to be performed directly at the image source. With OPC UA, the compact embedded vision systems can now be integrated directly into factory automation as powerful vision sensors. IDS NXT cameras should not only generate results themselves, but should also be able to trigger subsequent processes - this simplifies and accelerates workflows,

reduces network load and lowers energy consumption. In addition, IDS NXT cameras are specifically designed for use in industrial environments. The IDS NXT platform is constantly evolving - we are already working on additional industrial interfaces for communication with machine controllers, as well as new Vision App features and other deep learning functions.

Customers can also develop their own Vision Apps and install them on their cameras, which makes their range of applications even broader and more individual. With IDS NXT ocean a complete system especially for AI-based image processing is already available. The cameras use your knowledge to solve tasks independently - simply and conveniently.

PC UA





WE MAKE THE INFERENCE EASY!









You already have the knowledge you need!

IDS NXT ocean is a complete system that makes it easy for users to get started with Al-based image processing. Hardware, software, infrastructure, knowledge and support come from one source: both the training software for neural networks and the IDS NXT industrial cameras with their powerful AI core were developed in-house at IDS. Users only need their application expertise and sample images to create a neural network.

With the help of the cloud software IDS NXT lighthouse, even users without any prior knowledge of artificial intelligence can train an AI classifier or an object detector with their own image data. Since it is a web application, all functions and the required infrastructure are immediately available. This means that users do not have to set up their own development environment, but

can directly start training their own neural network. This involves three main steps: upload sample images, label the images and then create the desired network at the push of a button. The generated network can then be run directly on the IDS NXT rio and rome industrial cameras, turning them into inference cameras - meaning that they can apply the knowledge they have acquired through deep learning to new data. Special tools illustrate how the AI works in the cameras - for more transparency and easy evaluation of the quality of the neural network generated. The integrated AI core ensures their hardware-accelerated execution directly on the devices. This allows inference times of a few milliseconds.

grab > label > train > run Al

IDS NXT ocean

THE ALL-IN-ONE INFERENCE CAMERA SYSTEM

Complete system especially for AI-based image processing

Makes it possible to solve tasks in which classic, rule-based image processing reaches its limits

Train neural networks without programming with the IDS NXT lighthouse training software

Requires no prior knowledge of camera programming or deep learning

Think inferent.

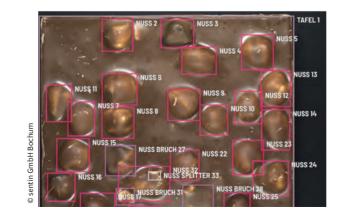
IDS NXT IN USE

Artificial intelligence (AI) opens up new fields of application for camera technology and image processing. This includes, for example, image processing tasks with strongly varying objects - such as classifying different types of fruit or identifying damaged parts (e.g. apples with bruises or colour deviations). To describe all occurring variances with classical image processing would be extremely time-consuming and therefore expensive. Artificial intelligence, on the other hand, can easily solve such challenges.

IDS NXT cameras with artificial intelligence can solve tasks wherever organic and variant-rich objects are to be detected and classified. In horticulture or agriculture, for example, they are the eyes of harvesting robots or rose cutters, can control seedlings or identify pests. In the automotive industry, they are used for quality control, and in the medical industry for diagnosis. IDS NXT cameras with Al facilitate tasks such as control, sorting, allocation and completeness control. It's so easy!











from image acquisition and management to training of the artificial intelligence and to the finished inference camera. You can learn more about this in the video: Artificial intelligence and image processing: the all-in-one system IDS NXT ocean



Modular, high-performance USB and GigE cameras with a wide range of sensors and variants



uEye

uEye

uEye FA

STRONG IN

"TRUE TO OUR CORPORATE PHILOSOPHY 'IT'S SO EASY', OUR CAMERAS ARE VERSATILE, POWERFUL AND PARTICULARLY EASY TO HANDLE."

Jürgen Hejna, Product Manager uEye cameras







Whether with USB or GigE interface, as a housing or board-level variant, there are virtually no limits to the application possibilities of IDS uEye industrial cameras. All models are 100% quality tested and pre-calibrated. Thanks to the extensive IDS software as well as IDS-typical plug & play, they can be integrated quickly and easily and are therefore particularly economical.

Discover the variety of our camera families or configure the perfect camera for your individual application...

ROBUST





Strong and robust

The uEye FA is particularly robust and thus ideally suited for demanding environments, such as factory automation. Camera housings, lens tubes and the screwable connectors (8-pin M12 connector with X-coding and 8-pin Binder connector) meet the requirements of protection class IP65/67. This means that the models can withstand even the harshest industrial environments. The extensive accessories, such as lens tubes and drag chain cables, are just as tough. The cameras are also suitable for large format sensors and are typically used for machine vision tasks in industrial plants and quality assurance.

Climate Neutral











uEye CP

SUPER FAST, POWERFUL, FUTURE-PROOF

Innovative, patented hous-

With 29 x 29 x 29 mm extreme-

applications

Screwable cables for a relia-







HIGH PERFORMANCE





Incredibly fast, incredibly reliable, incredible sensors

The uEye CP is the tiny powerhouse for industrial applications of all kinds. It offers maximum functionality with extensive pixel pre-processing, an internal 120 MB image memory and, thanks to modern CMOS-sensors from Sony, CMOSIS, e2v and ON Semiconductor also leave nothing to be desired in terms of image quality and resolution. With its super-light, robust housing, the GigE version in particular is ideally suited for applications on robot gripper arms. But the uEye CP is also at home in automation in general, in printing, logistics and packaging industry, medical technology or microscopy.



The uEye SE is the all-round industrial camera with a wide sensor portfolio and countless variants. For more than a decade it has proven itself in industrial use. It is consistently designed to support large-format and fast CMOS sensors. All uEye SE models are available either as a housing variant with a special, extremely dust-proof sensor seal or as a board level camera with various lens mount options. The field of application is correspondingly diverse and ranges from automation and mechanical engineering to the packaging industry and traffic monitoring.



ing design

ly compact and therefore ideal for space-critical applications

Lightweight for versatile

ble electrical connection

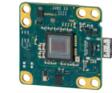
COST-EFFECTIVE











uEye

PERFECT FOR PRICE SENSITIVE PROJECTS

✓ Versatile CMOS cameras focused on essential functions

Optimal integration through extremely space-saving design - ideal for embedded applications

✓ Versatile thanks to USB Type-C connection

Vision standard compliant via U3V protocol







Perfect for price sensitive projects

The uEye XCP camera family proves that budget-friendly industrial cameras with C-mount can also be offered in the industry's smallest standard format. With their small size and low weight, the cameras can be easily integrated into image processing systems. Their cost-efficient design makes them perfect for price-sensitive applications where simple camera requirements are needed. The cameras are used, for example, for analysis tasks in laboratories, as eyes in autonomously navigating vehicles in production or for visual support of robots in the field of automation.

Consistently cost-optimised

Particularly affordable, particularly compact and particularly suitable when the essentials matter: The uEye XLE camera family is specially designed for high-volume and price-sensitive projects where basic functions are required. Thanks to different housing variants, a practical USB Type-C connector and a modern USB3 vision interface, uEye XLE cameras can be easily integrated into any machine vison system. Whether in small device construction, measurement technology, traffic or agricultural applications - the modern camera family is suitable for a wide range of application scenarios.

GiqE USB 2 USB 3

 \Leftrightarrow

COST-EFFECTIVE







DOWNSIZED





Large selection of sensors

Small and versatile

uEye LE cameras are bolt-on, cost-saving project cameras with a wide variety of lenses and sensors. They are available, for example, as a version with coated plastic housing and C-/CS-Mount or as a single-board version with or without S-mount lens connection. The space-saving design makes them particularly suitable for projects in small device construction and for integration into embedded systems. The cameras also show their strengths in medical technology, robotics and classic machine vision applications.

Tiny body, immense potential

The uEye XS combines the simplicity of a consumer camera with the application capabilities of an industrial camera. Thanks to its 5 megapixel OmniVision CMOS sensor and helpful functions such as automatic white balance, automatic exposure and autofocus, the camera delivers excellent images. The tiny device with the robust magnesium housing is also perfectly suited for industrial image processing and use in embedded systems, medical or security technology, in the transport and logistics sector or as a component for kiosk systems. Eight freely selectable and easily switchable image formats from VGA to HD and up to 5 MP are available.

Perfect for embedded systems

> USB 2 \Leftrightarrow

TAILOR-MADE

MODIFIED WITH THE **DEVELOPMENT KNOW-**HOW OF IDS

Changes in appearance/ design of hardware and software

Changes in the design, e.g. the housing or the board shape

Individual selection of connector types and integration of lighting

Changes in electronics and implementation of specific special functions

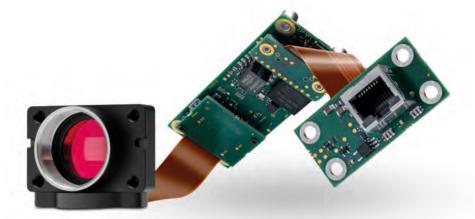
CUSTOMIZED



Unique requirements, unique solutions

If a standard solution is out of the question for your application, our experienced developers come into play. For volume projects, we can make almost anything technically possible - from customer-specific branding / white label and individual designs to special software adaptations. Simply make use of our comprehensive know-how.

CONFIGURED



Individual solutions based on a modular concept

With the uEye ACP camera configurator from IDS, you can create your individually designed camera yourself. The flexible modular principle allows for a wide variety of board level camera variants, which can be easily adapted to your requirements thanks to various interfaces, extensions and image sensors. On request, the components can be modified even further. It's so easy...

uEye ACP

OUICK AND EASY VARIATION OF CAMERA COMPONENTS

- Create your desired camera with the uEye ACP camera configurator using the following components:
 - Interface
 - Connectors
 - Sensor
 - Lens mount

Cameras from the uEye ACP family are already available in quantities starting at 1

(Individual and yet available at short notice







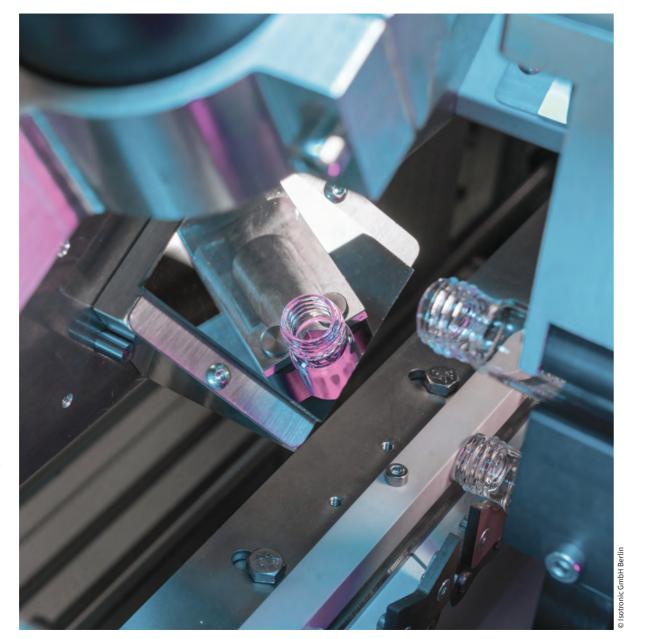




uEye IN USE

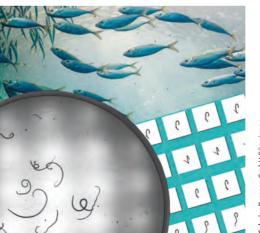
uEye stands for powerful and easy-to-use USB and GigE CMOS industrial cameras. Users have the choice between numerous camera families for the most diverse requirements - particularly versatile, space-saving, cost-optimised or extremely small.

This results in almost unlimited application possibilities in equipment, plant and mechanical engineering as well as in non-industrial areas such as medical technology, agriculture or logistics. They are suitable both for classic image processing tasks and as the eyes of the machine for Deep Learningbased applications in areas such as traffic & smart city, environment & smart farming or industry & automation.





uEye







You can find more details about these and many other applications in our Knowledge Base at ids-imaging.com/ case-studies

INTUITIVE PROGRAMMING

Easy to understand "It's so easy!" programming interface

INDEPENDENT

Hardware independent

SDK for all vision-compliant uEye+ cameras

GenICam COMPLIANT

Based entirely on the

vision standards of EMVA

(GenICam) and AIA (GigE

Vision, USB3 Vision)

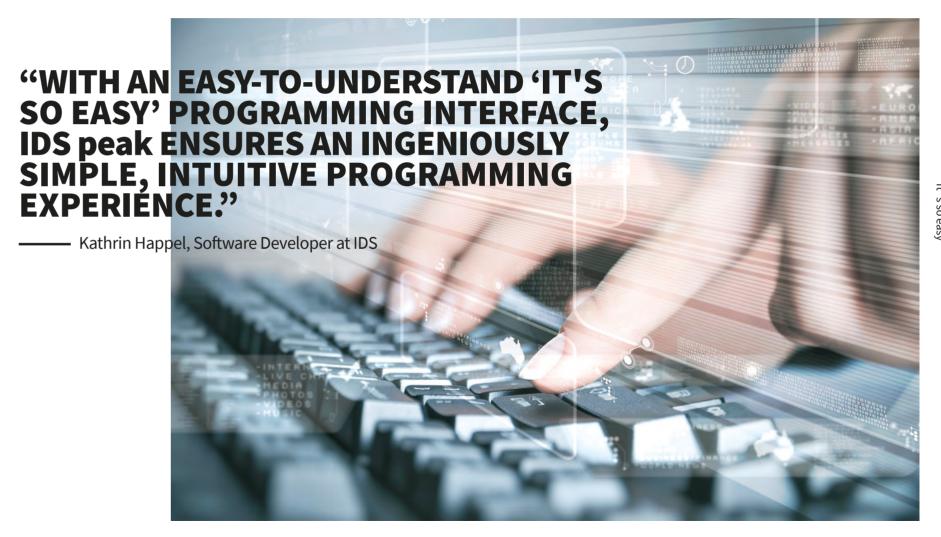
VERSATILITY
Stand-alone camera host
software without dependence
on individual uEye+ camera
models or firmware versions

THE RIGHT SOFTWARE FOR YOUR uEye+ CAMERAS

IDS peak is our modern software development kit for all USB3 Vision and GigE Vision compliant uEye+ industrial cameras. The combination of the IDS software with the GigE Vision® and USB3 Vision® standard vision transport protocols brings you the best of both worlds. Flexibility and independence of uEye+ cameras and complete software environment with seamless manufacturer support thanks to hardware and software from a single source.

As an SDK (Software Development Kit), IDS peak contains all libraries and software tools required for operating and programming uEye+ cameras. With an easy to understand "It's so easy!" programming interface, it simplifies the use of GenICam without limiting or bypassing its functionality. IDS peak thus ensures an intuitive programming experience as well as quick and easy startup of your uEye+ industrial cameras.

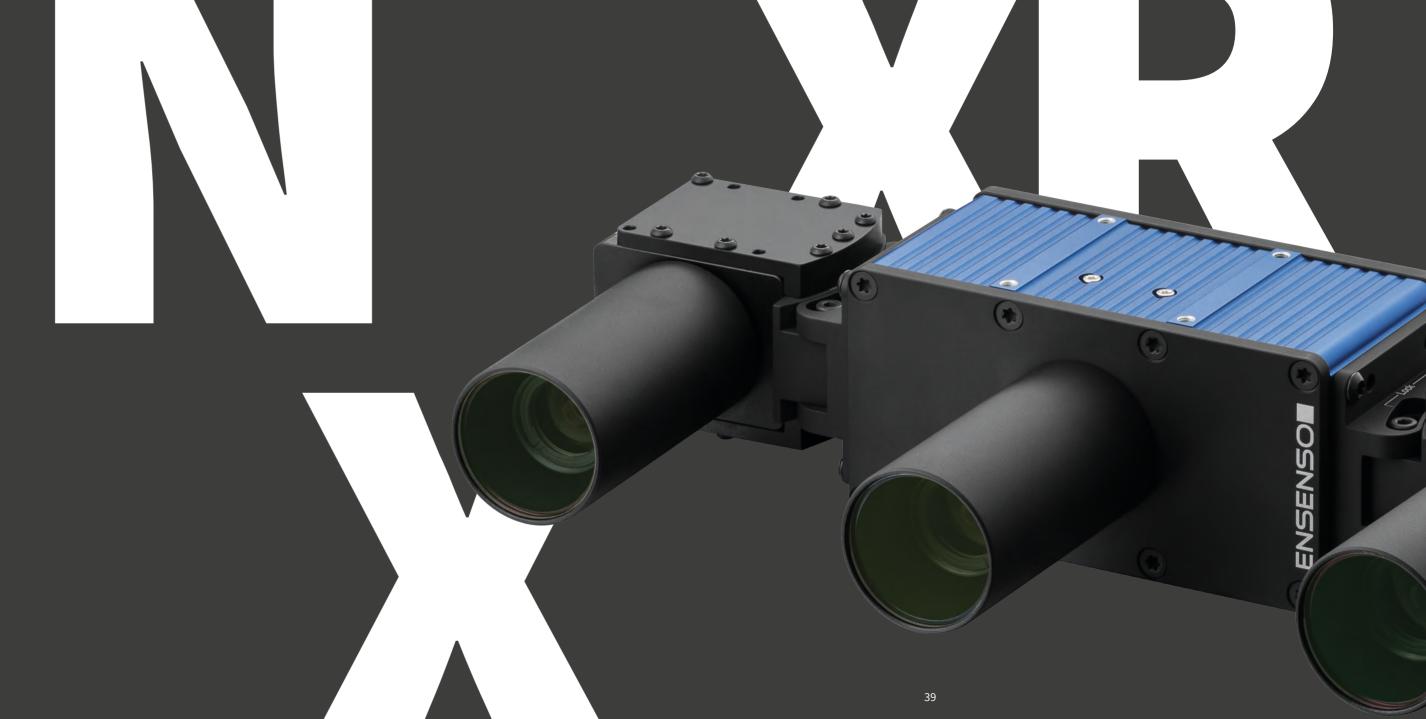








Cameras for precise 3D and robotic vision applications



3D VISION TECHNOLOGY AS EYE OF THE MACHINE

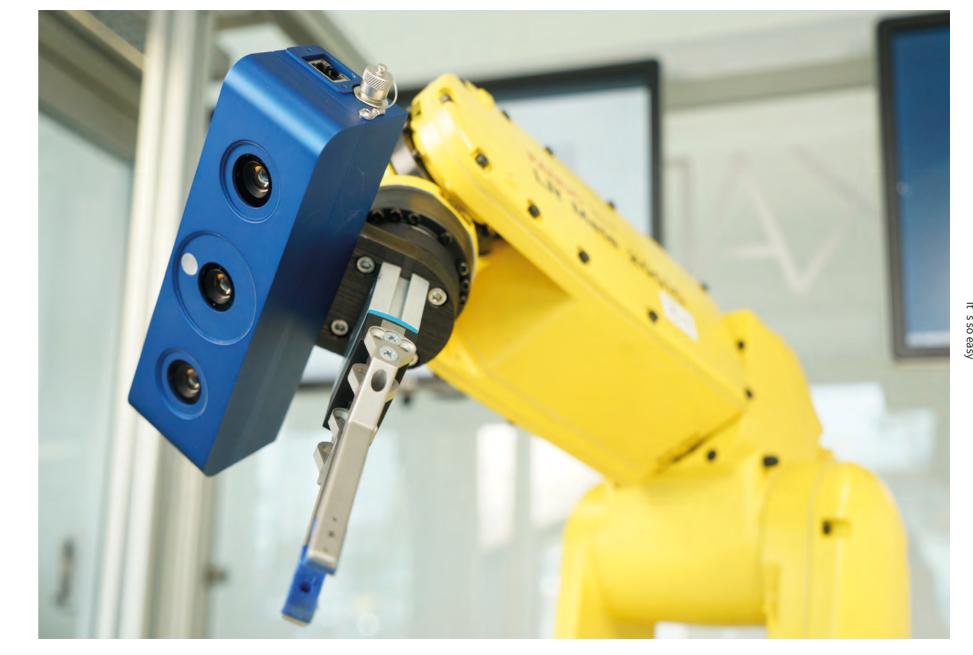
Precise 3D data is already indispensable for many applications in robotics and automated serial production accelerated by the digitisation of Industry 4.0.

Ensenso N, X and XR cameras work according to the stereo vision principle. Supported by a powerful projector, high-contrast textures are projected onto the object to be imaged, creating even more detailed 3D point clouds even at long distances.

The Ensenso S series uses an alternative 3D method with structured laser light, which enables a cost-efficient and more compact camera design. This allows the advantages of three-dimensional object information to finally be used for simple 3D applications where previous systems were too expensive and complex.

"FROM PICK & PLACE TO QUALITY ASSURANCE: ENSENSO 3D CAMERAS PROVE THEMSELVES IN A WIDE VARIETY OF APPLICATION SCENARIOS. THEY ARE FAST, EASY TO HANDLE AND PRECISE."

— Dr. Martin Hennemann, Product Manager Ensenso



Ultracompact and cost-

ULTRACOMPACT



3D for ALL

Even more compact! Even more affordable! This makes the new Ensenso S10 also suitable for price-sensitive and high-volume 3D applications. It generates 3D data using laser point triangulation, supported by artificial intelligence. Even for objects with difficult surfaces and working distances of up to 3 m, a high depth accuracy is achieved. Thanks to its compact casted Zinc housing with IP 65/67 protection class and screwable connectors, the camera is suitable for industrial environments and can therefore be used in a wide variety of applications.





Easy capture of textureless surfaces through integrated pattern projector

Multi-camera operation for object detection from different sides

Working distances up to 3 m - depending on model

Realtime 3D data with 30 fps at full resolution

GigE

Robust and fully integrated

Thanks to IP65/67, the compact stereo cameras of the Ensenso N series provide precise 3D data even under harsh conditions. They are suitable for the detection of of moving and stationary objects and also cut a fine figure on robot arms. The Ensenso N-Series includes the N30, N35 (each with aluminium housing) as well as the N40 and N45 (housing made of fibre-reinforced plastic - ideal for collaborative robotics).

ENSENSO X-SERIES

HIGHLY FLEXIBLE 3D CAMERA SYSTEM

Projector module with 100
W LED projector power and integrated GigE switch

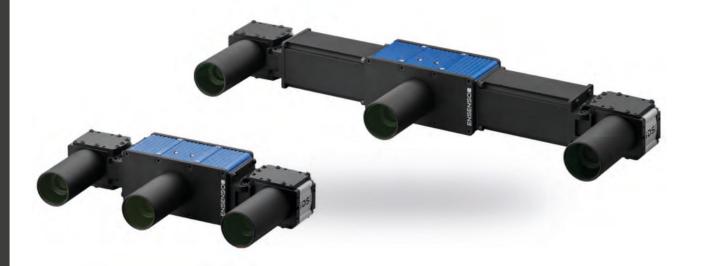
Camera mounting brackets for working distances up to 5 m or volumes up to 8 m³

Setup wizard for focusing and calibrating of the 3D cameras

3D cameras for stationary or moving objects

GigE

ULTRAFLEXIBLE



Modular 3D camera system

3D vision even more precise and flexible: through variable baselines, adjustable angles of view and various lens options, the Ensenso X series can be perfectly adapted to individual requirements. The FlexView2 technology of the X36 ensures even more detail accuracy and robustness for difficult surfaces. The Ensenso X models are easy to set up and operate in the usual way via the Ensenso SDK. The Ensenso X-Series includes the X30 and X36 models.

EMBEDDED



High-resolution 3D data directly from the camera

Data processing in FPGA: The Ensenso XR combines the modular design of the Ensenso X-Series with the advantages of an embedded system. The XR projector unit creates 3D data independently. Since the data comes directly from the camera, the calculations no longer have to be performed by industrial PCs. The transfer of results instead of raw data also reduces the network load. The Ensenso XR series includes the XR30 and XR36 models.

ENSENSO XR SERIES

WITH ONBOARD PROCESSING

3D data directly from the camera

Working distances up to 5 m - depending on model

 Ideal for multi-camera systems and other compute-intensive applications

Wireless data transmission via WLAN planned

GigE

Automate with 3D Vision

With the Ensenso 3D cameras, IDS offers a solution for 3D image capture that is impressively precise, cost-efficient and fast. Ideal for applications in areas such as:

- Logistics
- Automotive
- Food industry Agriculture and forestry
- Wood industry
- Medical technology
- Orthopaedics
- Horticulture
- Agriculture & Vertical Farming
- Research & Development
- and much more

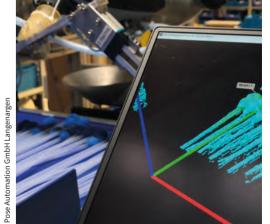








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You can find more details about these and many other applications in our Knowledge Base at ids-imaging.com/ case-studies

It's so easy!

Industrial image processing is a complex field - both exciting and challenging. It still holds unimagined potential for almost all industries and areas of application. It is the future!

We are right in the middle of it. With our products and all our experience of more than 20 years, we - the IDS People inside - stand by your side and support you in the realisation of your projects. Suddenly, machine vision becomes very simple...

www.ids-imaging.com



