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STANDARDS

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Healthy and Resilient



The machine vision industry is doing splendidly. This is demonstrated by the sales development of the last ten years, which the VDMA has reported on for the industry in Europe. Revenues doubled between 2008 and 2017. In Germany alone, industrial image processing now generates sales of EUR 2.7 billion (as of 2018). The current wave of takeovers (TKH – Lakesight, Stemmer Imaging – Primepulse, Teledyne Dalsa – Point Grey) is a sign that the industry and financial investors believe in a rosy future for machine vision. The fact that Beckhoff and

B&R integrate corresponding functions into their controllers is further proof of this thesis.

Accordingly, the companies confidently refer to their own industry trade fair Vision and at least most of them stay away from the major automation event SPS. Of course, this also has to do with the industry's structure and the rather general orientation of the Nuremberg trade fair. Nevertheless, the machine vision industry no longer has to gather at its own niche trade fair to be visible. Rather, it has created its own event that machine builders and users interested in machine vision should not miss.

But also here too, clouds can be seen on the horizon: The trade disputes between the USA and China, as well as Brexit and the introduction of customs duties are putting pressure on growth. Even the crisis in the automotive industry is not just a German problem.

All in all, the VDMA expects sales growth in machine vision to weaken. And how things will continue next year cannot be foreseen at present. Only one thing is certain: 2020 is a vision year and component and system manufacturers, software providers and integrators, distributors and research institutes are concentrating on the essentials, namely world-class machine vision. In recent years, they have proven that they are successful in this field and that's why the industry doesn't need to let forecasts slow it down.

I wish you a successful year 2020.

David Löh

Deputy Editor-in-Chief



Machine vision industry is doing splendidly. This is demonstrated by the sales development of the last ten years, which the VDMA has reported for the industry in Europe»



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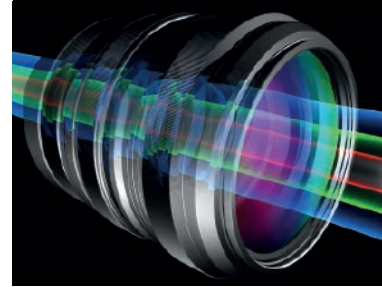
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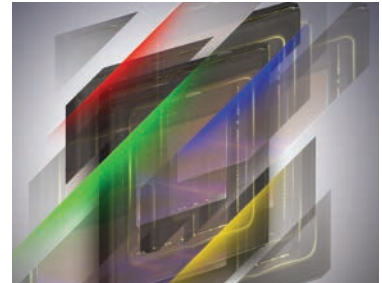
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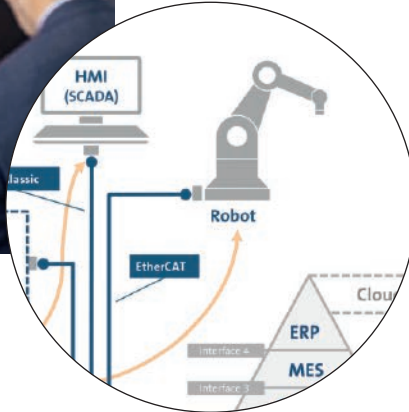


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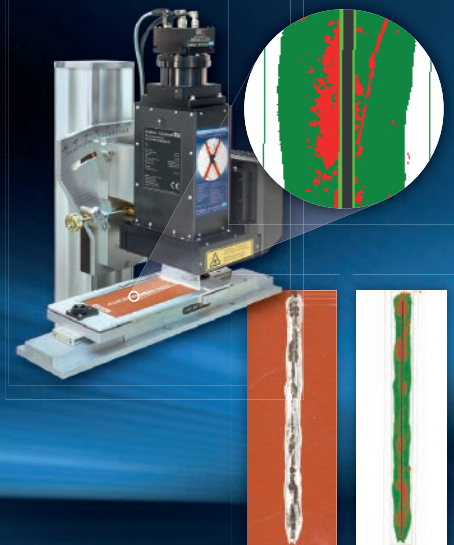
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Machine Vision and Optical Metrology in Europe

The inspect Buyer's Guide 2020

Throughout the year, we aim to provide you with information about new developments, technological trends, groundbreaking applications, new products and leading companies. Throughout the year, we are faced with the recurring challenge: What to select, what to highlight, what to point out. There is never enough room to cover it all. So once a year we seize the opportunity to present to you a comprehensive overview of the machine vision and optical metrology industries.

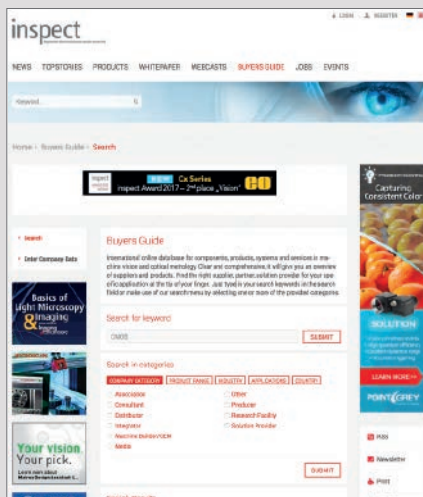
The inspect Buyer's Guide is published in its 11th year now, for the 12th time it also serves as the official Buyer's Guide of the EMVA, the European Machine Vision Association. The guide contains information about more than 500 companies from over 30 countries. The inspect Buyer's Guide has a clear focus on companies doing business in Europe or

exporting their goods to Europe. Naturally, this comprises companies and organizations from all over the world.

Online ...

The inspect Buyer's Guide is a true cross-media product. At www.inspect-online.com/buyers-guide the online database provides sophisticated search functions for all listed

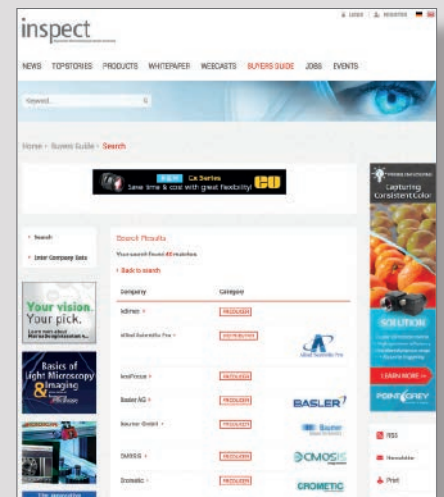
companies. Every entry can be searched for with full-text search, and every listed company will be found here based on the individual company description. Additionally, every listed company will be found by name, company category (e.g. producer, integrator, research facility, association, etc.) and country of headquarters.



The Online Buyer's Guide provides sophisticated search functions for all listed companies.



Companies providing a full-fledged company profile will be additionally found in multiple categories with the keyword search.



The full text search for "CMOS" yields 40 results: every company that used the word "CMOS" in their description is listed.

Companies wanting to provide more information and aiming at even better search results are listed with a company profile, including detailed company data and a listing of products offered, industries served and applications catered to. These, and only these, companies will be found in the respective search categories.

The online Buyer's Guide is open for companies within the scope of the inspect all year round. In this way it is always up-to-date.

... and Print

The availability of data online is a clear benefit when presented with clever search functions. However, sometimes you do not want to bother going online, or you don't want to search specifically but rather obtain a quick overview. In these instances a printed version has its unchallenged advantages. Not to mention the ease-of-use when taking notes right next to the provided data. Thus, once a year the printed edition of the inspect Buyer's Guide is provided to you. With this guide we aim to give you a full overview

that is still easy to use, a complete set of information that is still not too subdivided into too many categories.

The inspect Buyer's Guide 2020 is divided into three main chapters: Topics, company profiles for the main global regions,

and company listings for the main product categories. In an industry as innovative and dynamic as ours it will most likely never be possible to provide an overview that is final and complete, but we do our best to come as close as possible. ■



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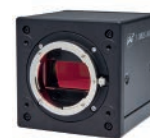
Not ready to transition to a 10 GigE architecture yet? No problem. These new cameras automatically negotiate to match the data rate of your host/network. Whether it's NBASE-T at 5 Gbps or 2.5 Gbps, or even traditional 1000BASE-T at 1 Gbps, the choice yours.

The SW-4000 10GE cameras feature user-selectable pixel sizes, V & H binning, connection to rotary encoders, and much more. They're the perfect combination of precision, performance, and functionality for your next color line scan system.

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SW-4000T-10GE

SW-4000Q-10GE

- ✓ 3-CMOS RGB
- ✓ Up to 97 kHz
- ✓ 8/10-bit

- ✓ 4-CMOS RGB + NIR
- ✓ Up to 73 kHz
- ✓ 8/10-bit



See the possibilities



Machine Vision Industry Today and Tomorrow

Market Developments and Trends Relating to Vision 2020

The machine vision industry can look back on a phase of strong growth. The future also promises brilliant business. One reason for this is that more and more user industries are recognizing the benefits of machine vision for their processes – not least in connection with industry 4.0. This development will also be reflected in the Vision 2020 trade fair.

Machine vision is conquering an increasing number of application areas – through its constant use for quality, efficiency and product reliability – also outside factories. According to the latest figures from the German Engineering Federation (VDMA), the machine vision industry in Germany and Europe has been posting turnover and growth records for years. Turnover increased by an average of 13 per cent per annum between 2013 and 2017. Turnover in the machine vision industry doubled within a space of just ten years (2008 to 2017). In 2017 the German machine vision industry alone achieved a new record turnover of €2.6 billion, i.e. an increase of 18 per cent. The industry grew even further in 2018 and recorded an increase of 4 per cent.

Machine Vision Industry Is a Data Supplier

Machines and robots learn “how to see” with machine vision systems. Machine vision is therefore becoming a key technology of the future. Not only is it being used to a greater extent in the worldwide automation competition between traditional branches of industry, it is also increasingly conquering new industries outside factory automation. Improved quality, higher reliability, increased safety and cost-efficiency are properties which are required both in non-industrial application areas and in the smart factory of the future.

The global machine vision market is also characterised by enormous dynamism: pronounced merger and acquisition activities

have been forecast for the industry for years and they increasingly seem to have started becoming reality in the last few weeks and months. Whereas image sensor manufacturers, in particular, were initially affected by changes, this now also increasingly applies to camera manufacturers. The industry is changing permanently and companies are being confronted by a continually changing competitive environment. A large number of companies are combining synergies and are merging in order to react to new market participants or jointly offer new system solutions over and beyond individual components.

Investor groups have also recognised the strategic importance of the industry and are investing more in machine vision companies. The new players include, for exam-



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The organizer of Vision expects more visitors and exhibitors than in 2018.

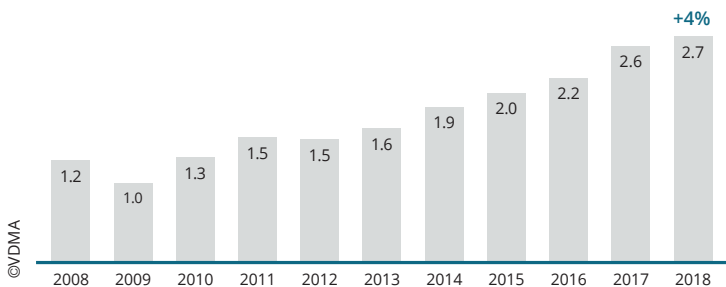
ple, camera suppliers from Asia, but also automation companies which do not originally come from the machine vision sector. These companies have recognised the attractiveness and key role of the machine vision industry, for example as a data supplier in the context of Industry 4.0, and have the necessary company size or R&D resources. Small and medium-sized machine vision firms are faced here with great challenges which are also being intensified by the imminent generation change in many companies and the lack of company successors. In addition to current market tendencies, we are seeing new technological trend topics which are now promoting machine vision and with which entirely new players are also entering "the machine vision stage."

Vision Expects More Growth

These developments will also be reflected at the forthcoming Vision, the leading world trade fair for machine vision, which will be held in Stuttgart from 10 to 12 November 2020. Messe Stuttgart is currently assuming that the trade fair will experience additional growth in terms of the number of exhibitors and visitors. In 2018, when the Vision last took place, 10,000 visitors came to see the products and services of 472 exhibitors from 31 countries.

New strategic company alliances will be presented in Stuttgart along with first-time exhibitors from the smart factory sector who seamlessly integrate the topic of machine vision in automation and the area of machine control systems. Due to the trend towards embedded vision, new exhibitors involved in

embedded systems will be able to show their portfolio and know-how at Vision 2020. The trade fair will focus on machine vision in the "non-visible area", i.e. short wave infrared (SWIR), hyperspectral imaging, polarisation cameras and thermography, as another trend topic. Visitors will also be able to experience even more start-ups and new companies from areas such as artificial intelligence and deep learning. Data security will be another exciting topic area. Last but not least, Vision 2020 will again feature all global key players from the area of machine vision components together with a large number of system integrators and solution providers who use the components to manufacture systems and implement them within the framework of application solutions in specific industries. ■



German machine vision industry: new record in 2018. Machine vision Germany total turnover 2008-2018

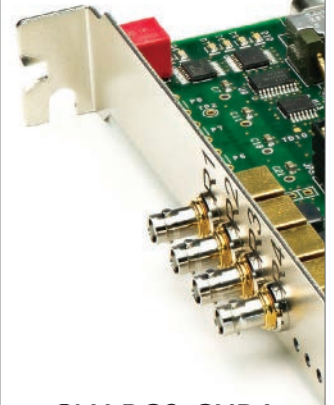
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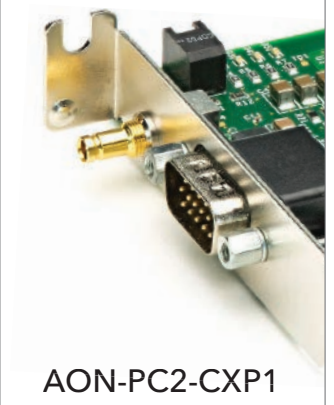
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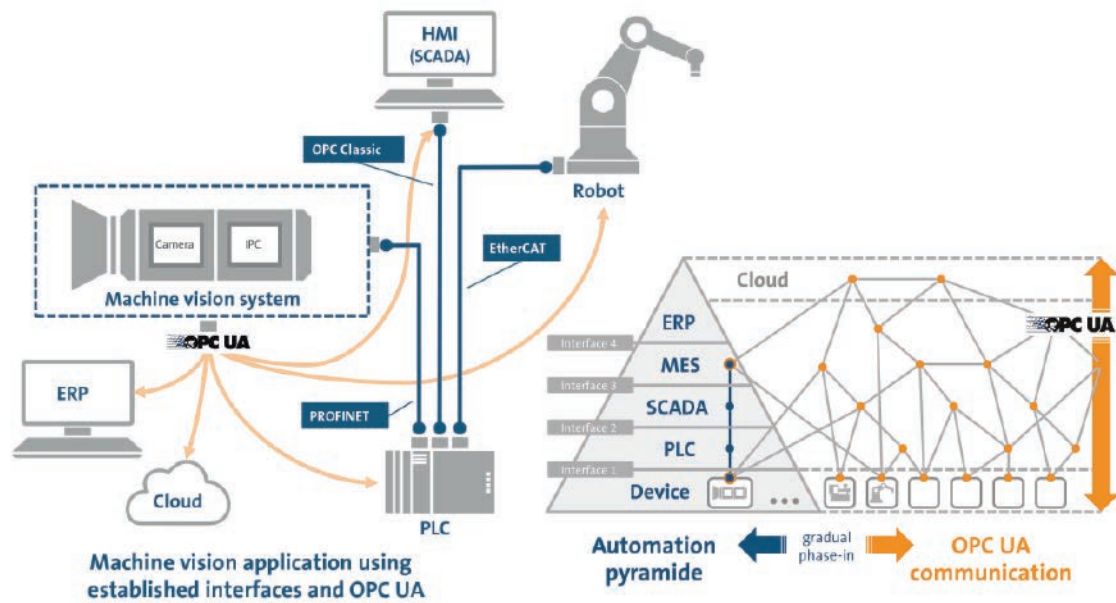


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Next Step towards Industry 4.0

OPC Vision

The most important prerequisite for industry 4.0 is the constant communication of the devices during the production process. For this to succeed, interfaces such as “OPC Vision” are required, which are manufacturer-independent and can therefore in principle be used in all devices. The lately released „OPC UA Companion Specification Part 1“ allows the control of a vision system in a generalized way, whereas the contents stay vendor-specific and are treated as black boxes.

“Wouldn't it be great, if machines could communicate in a direct way with each other? This idea is at the core of the Industry 4.0 movement to create the smart factory of the future. The goal of reaching ‘interoperability’ is the new core competence that must distinguish the future products in a connected world of Industrial IoT – but even more, the acting people and organizations involved,” says Dr. Horst Heinol-Heikkinen, Managing Director of Asentics and board member of VDMA Robotics and Automation and VDMA Machine Vision. “As chairman of the VDMA OPC Machine Vision Initiative and its working group, I am proud that Machine Vision plays a pioneering role and as one of the first VDMA divisions, is presenting the release of an OPC UA Com-

panion Specification to the public, thanks to the extraordinary commitment and cooperation by the core working group members who worked very hard and made it possible.”

Stefan Hoppe, President and Executive Director of the OPC Foundation commented: “The OPC Foundation truly appreciates the results of the VDMA OPC Machine Vision initiative. The initiative has taken a decisive step forward into the Industrie 4.0 era that is second to none. Beyond the work done to adopt OPC UA as the interoperability platform for Machine Vision, we applaud the joint working group for embracing the spirit of inter-organizational collaboration on a global scale with G3. This aligns well with a key OPC Foundation focus on encouraging organizations to work together to reduce the vast number of overlapping ‘custom’ information models into a harmonized set of OPC UA Companion Specifications. This will benefit end-users and vendors around the world by lowering the barriers in the way of true interoperability.”

The OPC UA Companion Specification Part 1

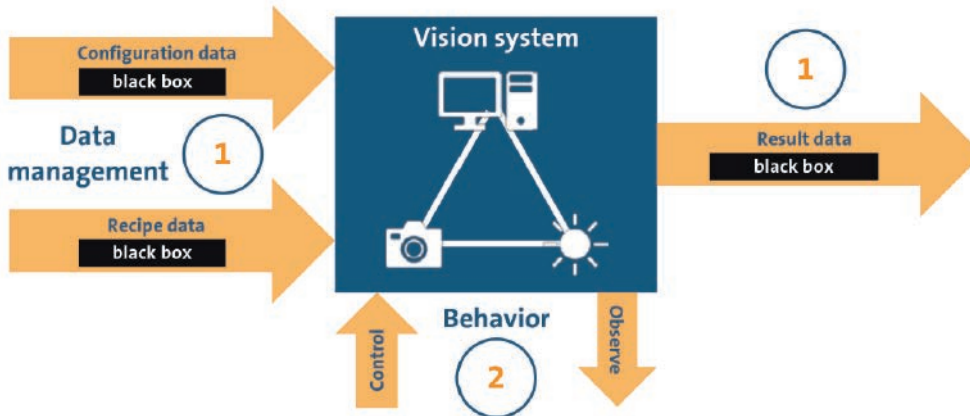
Part 1 describes an abstraction of the generic vision system, i.e. a representation of a so called digital twin of the system. It handles the management of recipes, configurations and results in a standardized way, whereas the contents stay vendor-specific and are treated as black boxes.

It allows the control of a vision system in a generalized way, abstracting the necessary behavior via a state machine concept. A test implementation has already been successfully completed and was presented to a large

audience of automotive engineering experts at a major event of the automotive industry in Germany dedicated to OPC UA in May 2019. A hardware demonstrator is now being developed which will be showcased at major trade shows in Germany soon. And, as the addition “Part 1” indicates: the work of the VDMA OPC Machine Vision Initiative does not stop here. In addition, Part 1 establishes a kind of infrastructure layer that enables a simplified and uniform integration of all possible image processing systems into higher IT

About VDMA Machine Vision

The VDMA represents over 3,200 mainly small and medium size member companies in the engineering industry, making it one of the largest and most important industrial associations in Europe. As a part of the VDMA Robotics + Automation Association, VDMA Machine Vision unites more than 115 members: companies offering machine vision systems and components. The objective of this industry-driven platform is to support the machine vision sector through a wide spectrum of activities and services. Current activities include statistics and the annual VDMA Machine Vision Market Survey, marketing services, public relations, trade fair policy, future radar, networking events and conferences. Find out more about VDMA Machine Vision at: www.vdma.com/vision.



The main focus of OPC Vision part 1

The OPC Foundation

The OPC Foundation, Scottsdale, AZ, USA, is the globally leading community for interoperability solutions based on the OPC communication specifications. OPC is an interoperability standard for the secure, reliable and platform-independent exchange of information. By defining an interface between

client and server or between server and server varying use-cases can be covered. OPC technology is extensively used for integrating information in industrial automation and for facilitating data transfer from the smallest sensor into enterprise IT. The objective of the OPC certification program

is to guarantee immediate operational readiness of OPC products in real-life applications. With over 700 member companies the OPC Foundation promotes globally training, awareness and adoption of the OPC specifications. Find out more about OPC Foundation: <https://opcfoundation.org>

production systems (PLC, Scada, MES, ERP, Cloud, ...). The idea is that beyond Part 1, other proprietary elements are broken down and replaced by standardized information structures and semantics, such as configuration, recipe and result information.

VDMA OPC Machine Vision Initiative

In January 2016, the VDMA Machine Vision Board decided to develop an OPC UA Companion Specification for Machine Vision. The work has been carried out within the joint working group, which consists by definition, of the OPC Foundation and a host organization, which is VDMA Machine Vision, a sector group within the VDMA Robotics + Automation association. A core working group with 17 experts

from leading European machine vision companies took on the pioneering challenge, came up with proposals for the approach and contents and monitored the feedback from the wider machine vision industry and end-users worldwide.

To have broader reach, VDMA Machine Vision decided to bring this important standardization work into the global standardization cooperation for Machine Vision called G3. This G3-cooperation consists of the American (AIA), Chinese (CMVU), European (VDMA and EMVA) and Japanese (JIIA) trade associations acting around the world. "Worldwide, the machine vision community has had the chance to contribute to the contents of the OPC UA Machine Vision companion specification – which will now lead to

a broad acceptance and uptake of the new standard," says Dr. Heinol-Heikkinen.

In total, 35 days of face-to-face meetings, about 50 online meetings and countless individual working hours of the Working Group now comes to an end with the release of the OPC UA Machine Vision Companion Specification Part 1. It is now available for download at the OPC Foundation website and on the VDMA website. ■

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Standardization as the Success Factor of Machine Vision Technology

Who Drives Standardization and What It Takes

The benefits of industrial standards are well known. But how do they actually come about? Who decides on their content and development direction? The EMVA as one of the essential drivers of standardization in industrial image processing explains the process.

Standardization is highly relevant to any industry, and none more so than the relatively complex and globally distributed Machine Vision industry. The standardization endeavors in the last 15 years have become a key pillar to the global breakthrough of machine vision technology in all kinds of customer industries. For this reason, EMVA plays an active role in the development of Machine Vision standards. Standards are developed by industry experts of the machine vision industry to ensure high quality and relevance to the sector. All machine vision companies are invited to participate in the standardization activities of the EMVA and standardization work is conducted in a spirit of co-operation with the objective of adding value to the development of the machine vision industry at large. In order to maintain transparency information on the standards and on the status standards development is regularly available.

Worldwide Cooperation on Standards

In a globalized world standardization cannot be driven by one region alone. This would potentially lead to development of competing standards. In order to avoid such developments and with respect to the time-consuming process of developing standards EMVA soon sought cooperation on the field of standards development with other Machine Vision associations. As a result already in 2009 EMVA (Europe), AIA

(North America) and JIIA (Japan) entered into a cooperation agreement on standards called the "G3". Since then two more associations joined "G3": VDMA (Germany) in 2014 and CMVU (China) in 2015. Through this cooperation within G3, EMVA members have access to the development process of all standards that are hosted by the G3 associations.

International Vision Standards Meetings (IVSM) and Future Standards Forum (FSF)

In practice, each machine vision standard is hosted by one of the associations within G3 and has a working group of machine vision engineers and scientists who may even work for competing institutions on the market but commonly develop the standards. All working groups of the different machine vision standards personally meet twice a year during the International Vision Standards Meeting (IVSM) in spring and fall that alternately takes place in Europe, Asia and North America. Thus, during the five days of the meetings close to 100 standards experts gather. One highlight of each International Vision Standard Meeting is the so-called Plugfest. During this event it is possible to test any exciting or new device with most worldwide available host-applications for interoperability. As the Plugfest attendance is restricted to people from the standard working groups and/or programmers from the involved companies most problems can be discussed and sometimes even solved short-term without the usual barriers where these engineers meet such as during trade shows or in a customer usage situation. The Plugfest has its roots in the development of the GenICam standard and nowadays includes practically all machine vision interface standards present during an IVSM.

In 2012, the Future Standards Forum (FSF) was established as a working group under the umbrella of the G3 in order to provide the necessary oversight of standards, and to plan future standard developments. The Future Standards Forum is chaired by representatives of the G3 associations and meets twice a year during the International Vision Standards Meeting (IVSM).

Machine Vision Standards Brochure

One of the first deliverables of the Future Standards Forum was the Global Machine Vision Interface Standards Brochure which is the first and only overview of all major MV interface standards in use today. The brochure is regularly updated to reflect the latest standard developments and can be downloaded free of charge. ■

AUTHOR

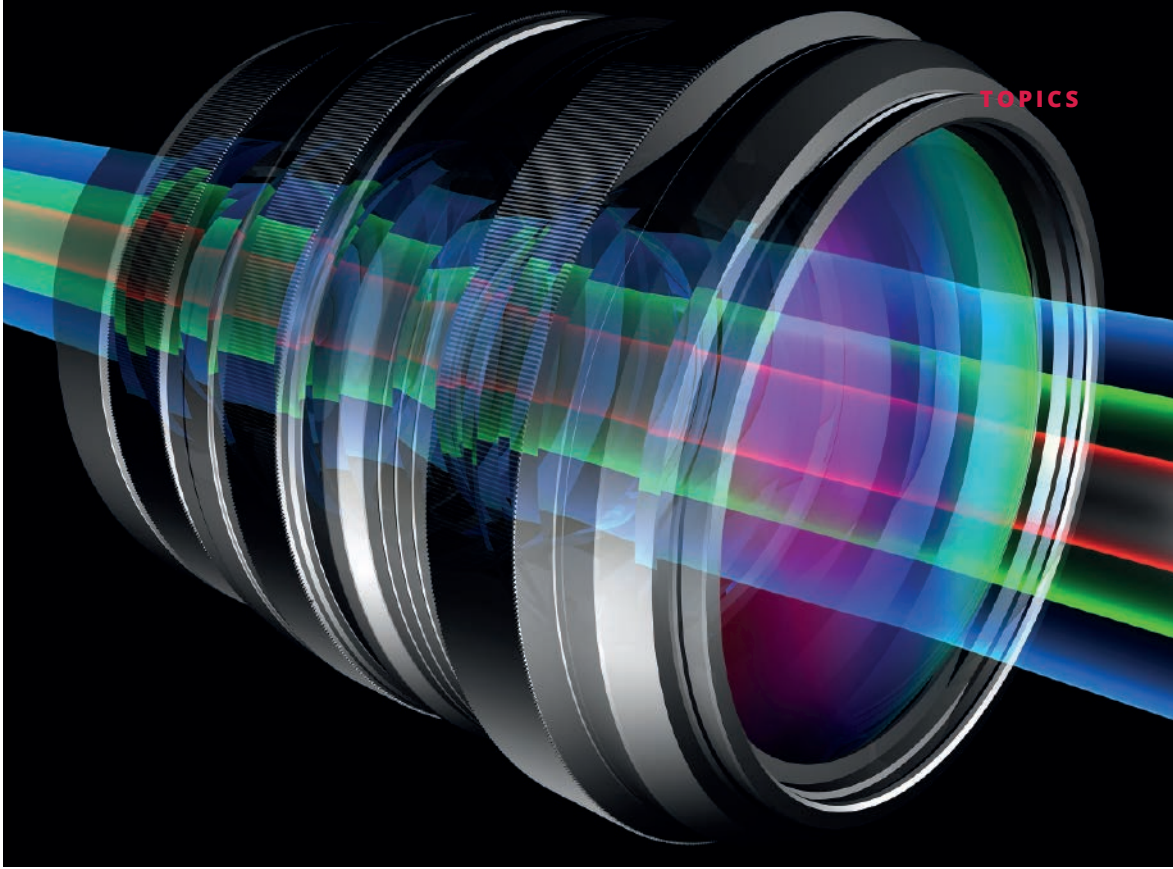
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New Standard Initiatives Hosted by EMVA

Open Optics Camera Interface (OOCI) and emVision

Along with the two widely accepted standards GenICam and EMVA1288 the EMVA is currently hosting two new standard initiatives which are geared towards new industry requirements.

The first one is called emVision and aims at the lasting industry trend towards embedded vision. Cameras and PCs as the main components of machine vision systems tremendously miniaturized over the last years. The combination of a processing board with a powerful small camera, make it possible to design a very compact vision system which can be integrated into a larger system. Such systems are called embedded vision systems and are of high interest to the machine vision industry. However, adaptation is needed in order to enable industrial solutions to use embedded systems. Hosted by the EMVA, in August 2018 this new standard initiative formed to address these needs. With an impressive support from the machine vision industry, the standardization group currently develops a standard to achieve an easy integration and exchange of different

embedded cameras within embedded vision applications. Already more than 40 companies are showing interest in this initiative and the working group of the standard includes delegates from Adimec, Allied Vision, Alysium, Avaldata, Basler, Baumer, Euresys, Flir, Framos, Matrix Vision, and Sony Semiconductor Solutions Corporation. The next steps of the standard initiative are to create a white paper with concepts and goals to be adopted by the Future Standards Forum (FSF) early in 2020, the year where also a first release candidate is targeted.

Open Optics Camera Interface (OOCI)

The second new standard initiative currently driven by the EMVA is the Open Optics Camera Interface (OOCI). As in machine vision the lens mount is still without any specification of how to control focus, aperture, etc. remotely the EMVA in 2017 has decided to start a new standardization group on an open lens camera communication standard to standardize the camera interface for optical components inside of, or attached to, machine vision cameras. Therefore, the focus of this standard is not so much the different mechanical existing as future lens mount, but a common communication protocol closely linked to the GenICam Standard. The stand-

ard is concentrated on the need to control lenses, filters, filter wheels, shutters, apertures, etc. with a common software interface. The basic idea is to reuse and apply existing technologies from the GenICam standard as much as possible and integrate the optics communication into GenTL and SFNC. GenTL will ensure compatibility with most vendor specific existing electrical interfaces such as Analog/OneWire/I2C/SPI. SFNC will make it easy to display and control the optics command interface from most existing end user applications. The OOCI working group believes that having this open standard will allow for the widest possible benefit to an industry that has to this date relied on de-facto standards, designed by single companies, for other markets. Already, major camera and optics manufactures have joined the working group and a white paper has been published as preparation for the global adoption of the standard. ■

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GEN*i*CAM

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GenICam: The Backbone of Machine Vision Standardization

Basics and Latest Updates

Since its release in 2006, the GenICam standard has evolved steadily. Today it is indispensable in the world of industrial machine vision. To keep it that way, the development continues.

In principle, machine vision camera interface standards are divided into hardware standards and software standards. While hardware interface standards ensure that cameras can be connected to any driver or frame grabber, the programming interface of software interface standards makes sure that the drivers/software development kits (SDKs) can be used from different vision libraries or even directly by developers. Developers can exchange cameras, drivers or even the whole interface technology without having to make significant changes to software if they use a standards-based SDK.

From the very beginning the Generic Interface for Cameras which is known as GenICam has been designed as generic programming interface for all kinds of devices (mainly cam-

eras), no matter what interface technology they are using or what features they are implementing. The result is that the application programming interface (API) will be identical regardless of interface technology. Since its initial release date in September 2006 the GenICam module family has constantly grown which makes the GenICam standard today the backbone of all standardization since all current machine vision hardware interface standards refer to GenICam as the widely established generic programming interface for all kinds of devices (like frame grabbers and cameras) and applications.

The GenICam standard is made up of modules. The number of modules has been growing within the years. Currently the following modules are available:

SFNC (Standard Features Naming Convention): This is the part of GenICam that most users see. It standardizes the name, type, meaning and use of device features so that devices from different vendors always use the same names for the same functionality. These features are typically shown in a tree view or can be directly controlled by an

application. A related standard is the PFNC (Pixel Format Naming Convention) which defines how to consistently name pixel formats and lists the formats in use.

GenApi (Application Programming Interface): This defines the mechanism used to provide the generic API via a self-describing XML file in the device that includes all available device features. It is also the name of the reference implementation of GenICam, provided as production-quality code, as part



With SDKs Developers can exchange cameras, drivers or the interface technology without making significant changes to software.«

of the GenICam download. Part of GenApi is the Schema which defines the format of the XML file.

GenTL (Transport Layer): This standardizes the transport layer programming interface. It is a low-level API to provide a standard interface to a device regardless of the transport layer (with or without a frame grabber). It allows enumerating devices, accessing device registers, streaming data and delivering asynchronous events. GenTL also has its own SFNC.

GenCP (Control Protocol): This is a low-level standard to define the packet format for device control and is used by interface standards to save them needing to reinvent a control protocol for each new standard.

GenDC (Data Container): GenDC stands for "Generic Data Container" and is the latest member of the GenICam standard family. Similar to other machine vision standardization projects, the main objectives of GenDC are to avoid work duplication, simplify common tasks, and establish a common definition between various manufacturers. The GenDC module defines a generic and flexible imaging data container representation. Its basic principle is to create a layer that decouples "what" to transport (i.e., the data container description) from "how" to transport it (i.e., the data transmission method) using a particular media. GenDC—being transport layer (TL) neutral—standardizes the format of the data buffers transmitted and received by various present and future TL standards.

Also, since it is defined and maintained by a common work-group composed of representatives from GenICam and each TL, the TL committees are now able to focus solely on providing efficient and reliable real-time data transmission over a particular physical media. TL standards specifications are thus no longer affected by changes to data representation or by new payload types, which can now be added without requiring updates. Moreover, since the GenDC specification defines a self-described data format, it is also a standard way to represent almost any imaging-related information in

many different contexts beyond the data exchange between a transmitter and a receiver. This includes, for example, data containers stored in host memory or in a file. Finally, with all the above features, GenDC completes the GenICam offering of TL-independent modules to control and exchange data between imaging devices including GenAPI, SFNC, GenCP, GenTL, and now GenDC.

Ever since its first release the GenICam standard has always

adapted to industry needs and with the latest GenDC module proofs that the standard permanently finds answers how to facilitate the application of machine vision technology through software standardization. Through common development efforts within the GenICam Working Group but increasingly also through growing cooperation with other standard working groups the evolution of GenICam will continue. So will the GenICam standard play an active

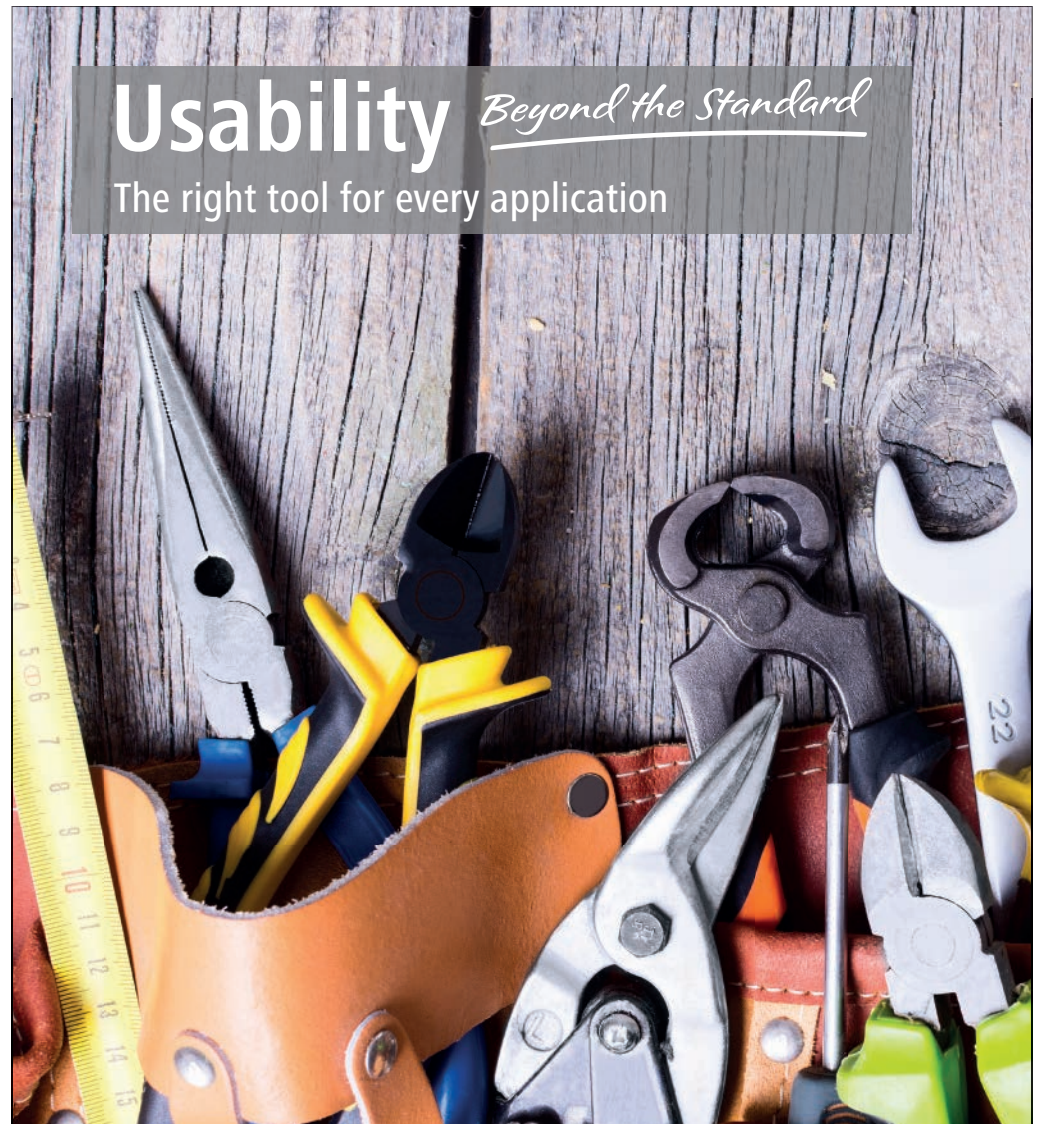
interface role in the development of the two currently new EMVA standard initiatives emVision and Open Optics Camera Interface (OOI). ■

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Sensor Review Mono Cameras

Part 1

Flir has just finished their 2019 edition of the camera sensor review of 100+ models, EMVA1288 tested and compared. In part 1 of this series, we are having a look at the EMVA1288 specification comparison charts and the guide to using the EMVA1288 specifications. Part 2 will be dealing with choosing the right sensor type.

EMVA1288 Specification Comparison Charts

Quantum Efficiency (%) at 530 nm

Quantum efficiency (QE) is the ability of the sensor to turn photons into electrons, or in other words, turn incoming light into an electrical signal for imaging. A higher QE % means greater sensitivity for detecting light. A sensor with a measurement of 79 % means that for every 100 photons that hit the sensor an average of 79 will be detected. Please note that the results below are taken at the wavelength of 530 nm.

Dynamic Range (dB)

Dynamic range describes the camera model's ability to detect the maximum and minimum of light intensities (shadows and highlights). Models with higher dynamic range can detect more detail in the darks and lights.

Temporal Dark Noise/Read Noise (e-)

Temporal dark noise (also known as read noise) comes from energy within the sensor and the surrounding sensor electronics. Over time, random electrons are created that fall into the sensor wells and are detected and turned into signal. Models with lower read noise measurements produce cleaner images.

Saturation Capacity (Well Depth; e-)

The saturation capacity (well depth) is the largest charge a pixel can hold before over-saturation occurs and signal degradation begins. Saturation must be avoided because it diminishes the quantitative ability of the sensor and in the case of CCDs produces image smearing due to a phenomenon known as blooming.

Absolute Sensitivity Threshold (γ)

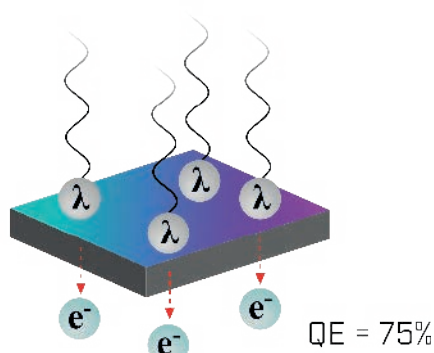
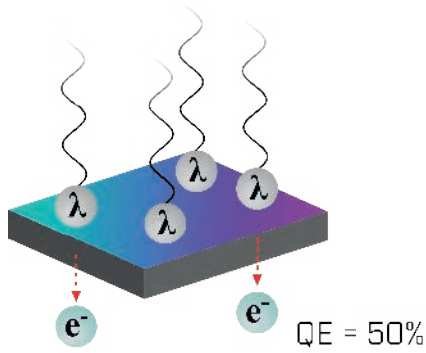
Absolute sensitivity threshold is the minimum number of photons needed to equal the noise level. The lower the number the less light is needed to detect useful imaging data.

Guide to Using the EMVA1288 Specifications

What Is the EMVA1288 Standard?

The EMVA1288 standard for measuring and reporting imaging performance of image sensors enables sensors to be compared based on objective and consistent measurements.

Combinations of EMVA1288 measurements can be used to easily assess the relative suitability of a sensor for your application. For example, fluorescence microscopy applications where every photon possible should be detected, will benefit from a low absolute sensitivity threshold, which is a com-



If more incident photons are successfully converted into electric charge, the quantum efficiency increases proportionally.

combination of quantum efficiency and temporal dark noise. Cameras for autonomous vehicle guidance will require high saturation capacity and dynamic range to perform well in uncontrolled lighting outside.

When comparing sensors, it is important to consider multiple performance criteria. Image sensors are designed to balance trade-offs, and reliance on a single measurement can result in poor overall performance other important criteria are neglected.

Quantum Efficiency

This measurement is often used as an indicator for low light sensitivity. CMOS and CCD

image sensors convert light into electrical signals using the photoelectric effect. When photons enter the photodiode in a pixel, they create a charge by knocking electrons off silicon atoms. The more efficiently a sensor can convert incoming photons into electrical charge, the higher its Quantum Efficiency will be. While no sensor is 100 % efficient, Sony CMOS sensors can achieve up to 77 % QE, compared to 50 % on popular legacy CCD sensors. QE is wavelength dependent. Silicon is most sensitive to green light with a wavelength of 530 nm, while the QE generally falls to 0 % at wavelengths beyond 1050 nm. Monochrome sensors have higher QEs than

color sensors, as the RGB color filters restrict the range of wavelengths which can enter the pixel, reducing the number of photons which reach the photodiode. On sensor polarizing filters will also reduce the amount of light that can enter a sensor's pixels, reducing its QE.

Temporal Dark Noise (Read Noise)

To read the information captured by a pixel on a CMOS image sensor, the charge created by incoming photons is converted to voltage and the voltage value is digitized. Small variations at each step of this process can add up and can appear to show a signal even when no photons entered the sensor. Read noise

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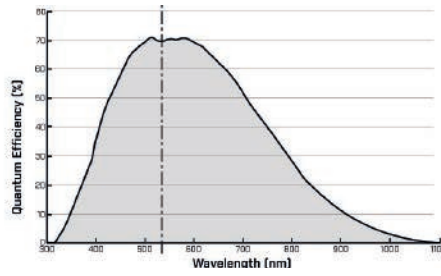
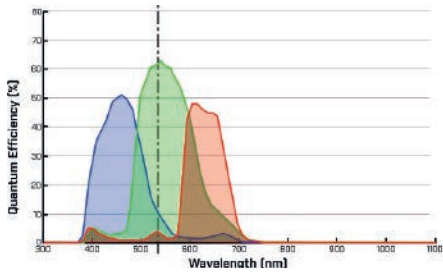


The new Fujinon CF-ZA series. Small size, great ideas

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TOPICS



Example curves for the quantum efficiency of IMX428 color and monochrome sensors

is not affected by exposure time. Typical read noise values of current CMOS sensors are around 2.5 e-, while CCD sensors are usually in the range of 8 to 10 e-.

Absolute Sensitivity Threshold

Absolute Sensitivity Threshold (AST) combines QE and read noise and provides a much more useful measure of the actual sensitivity of a sensor than either of these measurements alone. AST is weakest signal which can distinguished from the read noise.

AST is a key metric for applications where low-light imaging performance is critical. It is also extremely helpful when comparing sensors with different pixel architectures, as high QE does not necessarily translate into good low-light performance.

Signal to Noise Ratio (SNR)

The higher the signal to noise ratio, the greater the amount of signal there will be relative to noise. Greater SNR yields better contrast and clarity, as well as improved low-light performance. Typical CMOS SNR is about 40 dB, with some achieving an SNR of 44 dB in Low Conversion Gain mode.

Power dB Ratio

dB is measured on a logarithmic scale. With every increase in 10 dB, the power increases by a factor of 10.

Saturation Capacity

The photodiode in a pixel can only hold a finite amount of charge. Saturation capacity is the maximum number of electrons that an individual pixel can store. Generally, the larger the surface area of pixel, the greater the saturation capacity. At saturation, additional photons entering a pixel will not result in a further increase in the brightness value recorded by the pixel.

A small saturation capacity may limit dynamic range. However, due to the dependence of dynamic range on additional factors, a large saturation capacity does not guarantee higher dynamic range.

Dynamic Range

Dynamic range is the difference between the maximum and minimum light intensities that a sensor can detect. A high dynamic range will enable sensors to capture details in both dark shadows and brightly lit highlights.

Dynamic range is important for a wide range of applications including automated optical inspection where identifying defects on dark IC packages and reflective solder joints in a single exposure is desirable, and autonomous vehicles which must be able to detect and avoid obstacles in highly variable and uncontrolled lighting conditions.

The dynamic range of images capture by a camera can be limited by reducing the

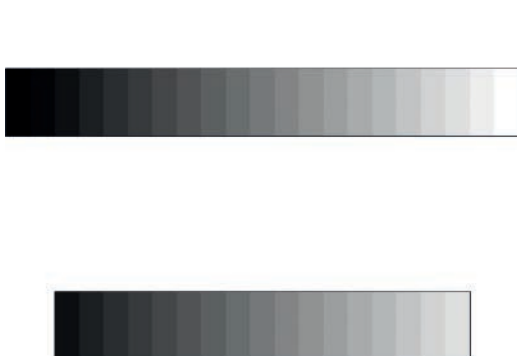
dB	Power Ratio
40	10,000
30	1,000
20	100
10	10
6	4
3	2
0	1

dB is measured on a logarithmic Scale. With every 10 dB increase, the power increases by a factor of 10.

bit-depth of the camera's Analog to Digital Converter (ADC), and by the bit-depth of the pixel format selected. When viewing images on a display, keep in mind that standard LCD displays are limited to 8-bit color, while HDR monitors are limited to 10-bit color. Compressing the dynamic range of higher bit-depth images to display on lower bit-depth displays requires post-processing known as tone mapping.

Gain

EMVA Gain is the number of electrons required to increase the pixel value from a 16-bit greyscale value to one value higher. Sensors with higher gain will appear brighter with fewer electrons. High gain can be useful for detecting very weak signals in low light conditions. ■



Reduced dynamic range leads to loss of detail in bright lighting and shadows.

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FURTHER INFORMATION
 If you would like to compare camera sensor performance for quantum efficiency, dynamic range, temporal dark noise (read noise), and more Flir's 2019 mono and color camera sensor review can be downloaded at:

www.flir.ca/discover/iis/machine-vision/camera-sensor-review/



Company Profiles

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The Baumer Group is one of the worldwide leading manufacturers of sensors, encoders, measuring instruments and components for automated image-processing. With around 2,700 employees and 38 subsidiaries in 19 countries, the family-owned group of companies is always close to the customer.

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About AutoVimation

AutoVimation produces protective camera enclosures and a wide range of accessories that allow to use machine vision systems in almost any environment. Thanks to the patented camera mount the enclosure works like a heat-sink and can so be used in higher ambient temperatures. Water or Peltier cooling systems are available in order to extend the temperature range further. The „Machine-Vision Construction Kit“ makes it easy to integrate cameras, lights and other components into a machine – using



prefabricated parts, avoiding design time and allowing simpler adjustment to the application.

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allow for custom system design and development.

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About Matrix Vision

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About Micro-Epsilon

Micro-Epsilon is a medium-sized family-run company which plays a leading role in measurement technology. For more than 50 years we have continuously offered reliable, high performance, unique solutions particularly when high precision measurement or inspection is required. Our product range covers sensors for the measurement of distance and displacement, sensors for IR temperature measurement and color detection, as well as



systems for dimensional measurement and defect detection.

Innovative products that provide the highest level of precision are created through intensive research and development processes, unique know-how and a broad network of collaborative operations.



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Foundation

1968

Staff

1,000

Products

Vision Sensors/Smart Cameras, Optical Instruments, Turn-Key Systems, Other

Applications

Inspection Piece Parts, Metrology 2D, Metrology 3D, Robot Vision 2D, Robot Vision 3D, Part Identification, High Speed Analysis, Thermography

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics

Associations

AMA

Regions served

Asia, China, Europe, North America, South/Central America, national

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About Optics Balzers

Optics Balzers is the innovative and independent industry partner for the development and production of coated optical components and subassemblies. The company possesses a broad and in-depth know-how in optical thin-film coating processes, complemented by sophisticated patterning, glass bonding and sealing, and further processing capabilities necessary for producing optical thin-film coated components up to optical subassemblies.

Highly experienced and skilled development and engineering teams closely collaborate with customers to develop innovative solutions meeting their requirements and design robust processes to manufacture the customer specific components. The combination of these capabilities and skills places Optics Balzers at the forefront of markets in the photonics industry such as Life Science, Industry, Consumer, Space, Automotive, and Lighting.



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Foundation
2009 / 1946

Staff

251-500

Products

Optics, Optical Coatings,
Optical Components

Industries served

Automotive, Medical Technology, Packaging, Precision Engineering/Optics/Machine Vision, Others

Applications

Others

Regions served

Asia, EMEA, Europe,
North America



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49

About Opto

Opto delivers integrated Imaging Modules consist of Optic, Light, Camera and Intelligence for Integrators, Product Manufacturers and Machine builder in the domains of Medtech and Industry. Opto is a globally recognised solution provider, able to support customers from around the globe.



Together with Opto France we extend our Optics KnowHow with Imaging and Automation skills on a solution level for high precision demands in Photonics and Machine Vision

applications. Through its deep application knowledge, Opto provides its clients with special optomechanical solutions that are reduced to the essentials of the application and perfectly cost optimised.

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Management

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Klaus Flügel, CTO
Martin Price, CMO
Roman Hartwich, COO

Foundation
1980

Staff
11-50

Products

Imaging Modules, Optical Instruments, Optics, Custom OEM Modules, Machine Vision Objectives, R&D, Vision Sensors

Applications

Cell Analysis, Inspection, Material Testing, Metrology 2D/3D

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Precision Engineering/Optics/Machine Vision, Biotechnology, Security, Aerospace

Associations

AIA, EMVA, VDMA,
Bayern Photonics

Regions served

Asia, Australia, China, EMEA, Europe, Japan, Latin America, North America



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About Ricoh International

Ricoh Machine Vision started in 1959 as Cosmimar, changing to Pentax in 2000 and finally to Ricoh in 2012 and is concentrated on the development, production and sale of high-quality optics for applications in machine vision and image processing.

The company is proud of the respect its products have gained over nearly 60 years of high quality manufacturing. All Ricoh Machine Vision lenses are developed with a focus on quality and performance and designed for a long service-free life, achieved by the combination of using modern technologies with precision manufacturing.

Ricoh offers a wide range of Machine Vision lenses to fulfil

almost any demand, producing a range of area scan lenses in VGA, 2MP, 5MP and 9MP/12MP resolutions, lines scan lenses and specialist UV lenses.

Development

Ricoh's latest developments are the use of floating focusing mechanisms to produce low-distortion, high resolution images at all distances, not just in the centre but over the entire image measurement field. Minimum object distances have been reduced to as low as 80mm. New models use JIA (Japan Industrial Imaging Association) lens standards and satisfy S-Rank* (Best Performance Class) criteria.

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Management (EMEA)

David Mills, Managing Director
 Hisashi Arai, General Manager

Foundation

1987

Staff

53

Applications

High Speed Analysis, Traffic, Robot Vision 2D/3D, Character & Symbol Recognition, Electronic Substrates, Fruit Sorting, Inspection

of Pharmaceuticals, Produce, and Grains

Industries served

Precision Engineering, Optical Sorting, Optics, Machine Vision

Regions served

EMEA



About Stemmer Imaging

Stemmer Imaging is a leading international machine vision technology provider. With staff located across Europe, Latin America and Asia, we provide state-of-the-art machine vision solutions, extensive knowledge and outstanding customer service.

Our customers value us as a trusted advisor, positioned to deliver tailored solutions. These include components that we can pre-configure, sub-systems designed to reduce time and effort when integrating vertical applications, and customer-specific solutions delivering a competitive advantage to predominantly OEMs – all powered by



our renowned knowledge and leading software tools including our own "Common Vision Blox".

Vision.Right.Now. symbolises our mission to make machine vision easy and accessible, empowering customers to deliver world-class solutions.

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 Sweden
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 United Kingdom

Foundation

1987

Staff

> 450

Products

Acquisition, Cabling, Cameras, Consulting, Illumination, Optics, Software, Vision Computers, Vision Systems

Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Webbed Material, Material Testing, Metrology 2D, Metrology 3D, Part Identification, Particle Analysis, Robot Vision 2D, Robot Vision 3D, Symbol Recognition, Thermography, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics, Other

Associations

AIA, EMVA, UKIVA, VDMA

Regions served

Asia, Europe, Latin America

About SVS-Vistek

SVS-Vistek GmbH – a member of the TKH Group – is an innovative manufacturer of high-quality cameras for industrial image processing for more than 30 years. We offer unique know how and experience in the field of machine vision. We exclusively develop and produce a wide range of standard industrial cameras as well as cameras with highest picture quality and all relevant interfaces in our own clean rooms at our headquarters in Seefeld



near Munich: Quality Made in Germany!

With powerful components such as lenses, lighting, filters, frame grabbers and cables, we support customers in the realization of economical and, if necessary, individual image processing solutions for a wide range of industries.



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11

Management

Walter Denk,
Managing Director

Andreas Schaarschmidt,
Managing Director

Dr. Thomas Dekorsy,
Managing Director

Foundation

1987

Staff

60-100

Products

Cameras, Consulting, Frame Grabber, Integration Services, Interfaces/Cables/Peripherals, Lighting Equipment, Optics, Software, Vision Sensors

Applications

Character Recognition, High Speed Analysis, Inspection Piece Parts, Metrology, Part Identification, Robot Vision, Symbol Recognition, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors,

Engery/Water/Solar Technology, Foodstuffs/Beverages, FPD Quality Control, Glass/Ceramics, Mechanical Engineering/Line Building, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic/Logistics

Companies represented

Euresys, Kowa, Moritex, Myutron

Associations

AIA, EMVA, VDMA, CMVU, JIIA

Regions served

Asia, Central Europe, China, EMEA, Europe, Japan, Latin America, North America



About Teledyne Dalsa

Teledyne Dalsa is part of the Teledyne Imaging group of leading-edge companies aligned under the Teledyne umbrella. With unrivalled expertise across the spectrum and decades of experience, the collective offers world-leading capabilities in sensing, signal generation and processing, enabling customers to succeed across a wide range of applications and industries. Offering worldwide customer support and the technical expertise to handle the toughest tasks, Teledyne Imaging

tools, technologies, and vision solutions are built to deliver to their customers a unique and competitive advantage.



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Management

Edwin Roks, Group President
Teledyne Dalsa, Inc. and
Teledyne e2v Digital Imaging
Corporate Vice President
Teledyne Technologies
Incorporated

Foundation

1980

Staff

1,000

Products

Cameras, Factory Floor Automation Solutions, Frame Grabber, Processors, Software, Vision Sensors/Smart Cameras/ Embedded Systems, X-ray Equipment

Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Web Inspection, Material Testing, Metrology 2D, Part Identification, Particle Analysis, Robot Vision 2D, Symbol Recognition, Thermography, Others

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Foodstuffs/Beverages, Glass/Ceramics, Medical Technology, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Plastics, Precision Engineering/Optics/Machine Vision, Traffic (ITS)/Logistics

Platforms supported

Windows/Linux/DSP/ARM/FPGA/x86/32 & 64 bit

Associations

AIA, EMVA, JIIA

Regions served

Asia, Australia, China, Europe, Japan, North America, Latin America

About Teledyne Lumenera

Teledyne Lumenera, part of the Teledyne Imaging Group, provides an extensive range of high-quality digital cameras with unique combinations of speed, resolution, and sensitivity to satisfy the demands of today's imaging applications. Teledyne Lumenera also offers custom design services to OEM partners requiring specialized hardware and software features.

Our core competencies include digital bus technologies such as USB 3.0, USB 2.0, Ethernet, HDMI and Gigabit Ethernet (GigE) as well as a complete command of digital imaging hardware and software built around CMOS and CCD based imagers. Our diversity provides our cus-



tomers with the benefits of superior price-to-performance ratios and faster time-to-market.

Teledyne Lumenera also provides customized design services and licensing options to our partners and OEM customers. Teledyne Lumenera cameras can be adapted to fit application-specific requirements whether simple or complex.

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Dany Longval, Vice President of Sales
Brooks Riendeau, Vice President of Marketing
Doug Sanderson, Vice President of Engineering
Rob Sample, Vice President of Manufacturing
Christine Longpre, Vice President of Human Resources

Foundation 2002

Staff 60

Products
Cameras, Software, Interfaces/
Cables/Peripherals, Consulting,
R&D

Applications
Inspection Piece Parts, Inspection webbed Material, Robot Vision 2D/3D, Character Recognition, Symbol Recognition, Part Identification, Metrology 2D/3D, High-Speed Analysis, Particle Analysis, Material Testing, Digitalization

Industries served
Mechanical Engineering/ Line Building, Automotive and Suppliers, Electronics/ Semiconductors, Packing, Precision Engineering/Optics/Machine Vision, Plastics, Pharmaceuticals/Cosmetics/ Chemicals, Foodstuffs/ Beverages, Medical Technology, Metal, Glass/Ceramics, Traffic/ Logistics, Paper/Wood, Energy/ Water/Solar Technology

Platforms supported
Windows XP, Vista, Win 7, Win 8, Win 10, Linux OS – both 32 and 64 versions; Most X86 and some ARM solutions

Associations
EMVA, AIA, AUVISI

About Ximea

For over 25 years Ximea is developing, manufacturing and distributing industrial and scientific cameras for a myriad of applications. From smallest board level units, over high-performance cameras, to embedded and multi-camera systems, specialized products for your challenging and advanced demands are offered.

Ximea serves all types of tech companies around the world, from global players to small start-ups. Its camera technologies allow the customers to improve their products and to enable their applications. Together with the client, Ximea is facing their challenges to solve individ-

ual needs not only with standard products but also with custom modifications and designs.

The latest innovations include tiny USB3 cameras, PCIe streaming cameras beyond 8K resolution and high dynamic range, 2K and 4K high-speed, cooled scientific and hyperspectral cameras, X-Ray and a multi-camera platform for high-bandwidth applications.

Ximea operates its agile R&D and production facilities, to ensure the highest quality. The 50/50 mixture of OEM and serial production guarantees sustainable innovations and high-level support. The fastest and most compact cameras with latest

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Max Larin, CEO
Jürgen Hillmann,
Managing Director

Foundation 2010

Staff 11-50

Products
Hyperspectral-, X-Ray-, USB-,
PCIe-, Subminiature Cameras,
OEM Cameras



Applications
Astronomy, (Aerial) Mapping, Digitalization, Metrology 2D/3D, Microscopy, Part Identification, Particle Analysis, Robot Vision 2D/3D, Symbol Recognition, Virtual Reality, Other

Industries served
Agriculture, Automotive and Suppliers, Defense, Electronics/ Semiconductors, Embedded Vision, Machine Vision, Medical Technology, Packaging, Paper/ Wood, Plastics, Traffic/Logistics, UAV, Other

Associations
AIA, EMVA, VDMA, Embedded Vision Alliance, Other

Regions served
Worldwide

Showcase

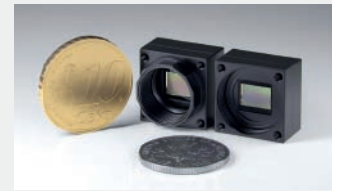
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Fast, Compact and Efficient Cameras

Subminiature USB cameras:

World's smallest industrial cameras with a size of only 15x15 mm offer 5 Mpix and 18 Mpix resolutions for size and weight constraint applications.



PCIe based high speed cameras:

These cameras use fast and high-resolution CMOS sensors and stream images with up to 64 Gbit/s to the host computer. The updated portfolio includes the CB654 with 65.4 Mpix@76 fps and CB262 with 26.2 Mpix @150 fps.

USB3 Vision camera series:

With this line of extraordinary small, lightweight, fast, efficient and highly customizable cameras, XIMEA offers a unique value and performance for the industrial market. The perfect fit for OEMs and system integrators.

Hyperspectral imaging cameras:

Smallest and most lightweight USB3 and PCIe based hyperspectral cameras with 16 up to 150 spectral bands in the visible light and near infrared. Ideal for UAV and mobile applications.

Scientific grade cameras:

For the most demanding applications that require the ultimate image quality. With large pixels, high resolutions, 16 bits dynamic range, low noise and high sensitivity. The utilized technologies include medium formats, back-thinned sCMOS, X-Ray, and subzero peltier cooling.



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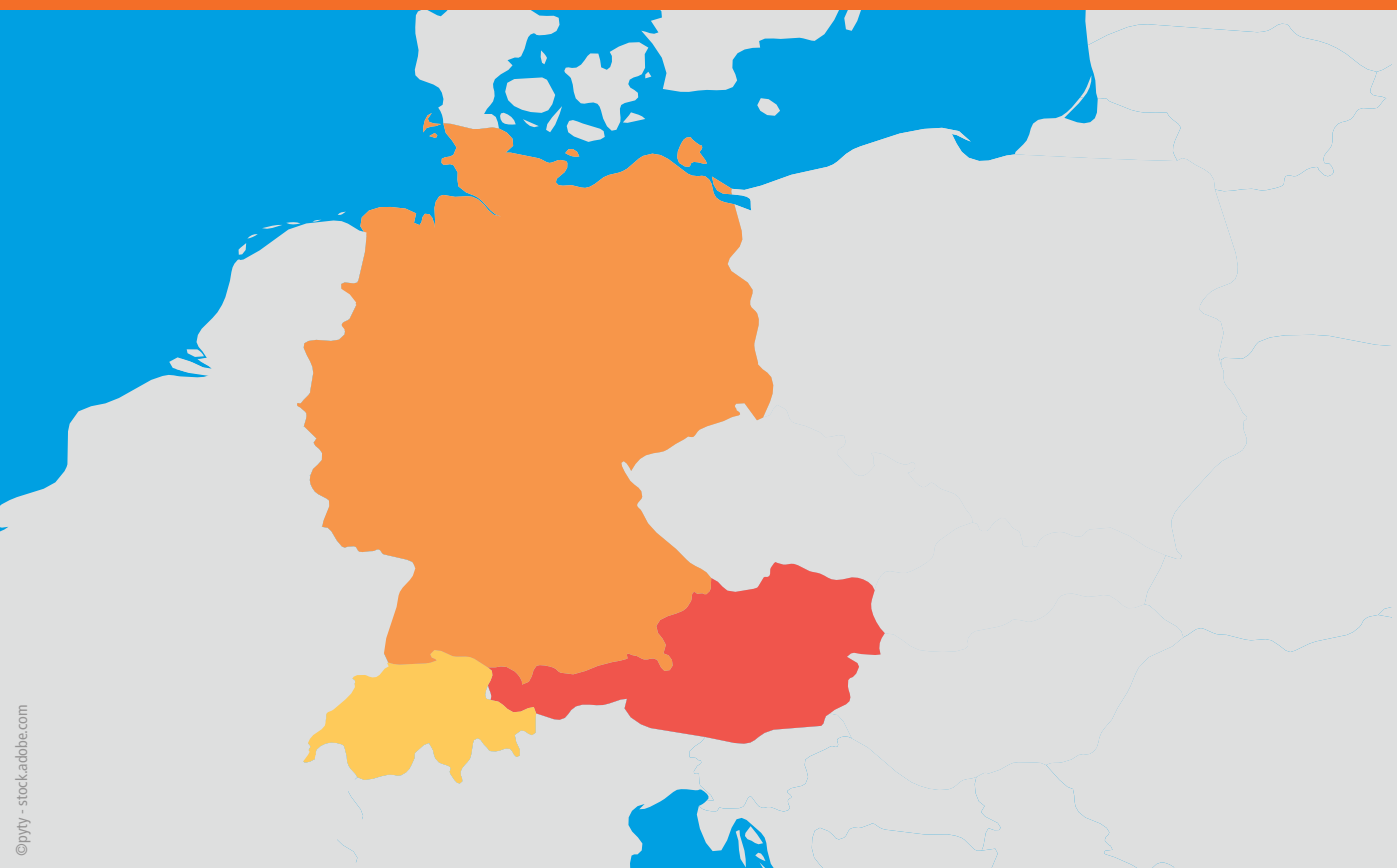


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Producer, Solution Provider

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Producer

Adlink Technology provides a wide range of embedded computing products and services to the test & measurement, automation & process control, gaming, communications, medical, network security, and transportation industries. Adlink products include ETX and COM Ex-

press modules for industrial computing, AdvancedTCA, CompactPCI, PCI Express-based data acquisition and I/O and vision and motion control. Adlink provides customization and system integration services, and maintains low manufacturing costs.

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Producer

Founded in 1983, Advantech is a leader in providing trusted, innovative products, services, and solutions. Advantech offers comprehensive system integration, hardware, software, customer-centric design services, embedded systems, automation products, and global logistics support. We cooperate closely

with our partners to help provide complete solutions for a wide array of applications across a diverse range of industries. Our mission is to enable an intelligent planet with Automation and Embedded Computing products and solutions that empower the development of smarter working and living.

Advantech · Hochdahler Str. 14, 40724 Hilden, Germany, Tel.: +49 2103 978 850, customercare@advantech.eu, www.advantech.eu

Producer, Solution Provider

Software: Image processing toolkit heurisko Quick heurisko-based custom image processing solution Camera and image sensor testing according to EMVA 1288 and beyond: Measuring services Customizable test equipment Consulting.

Education: EMVA 1288 standard Computational imaging 3D image acquisition Technical optics for image processing

Aeon Verlag & Studio GmbH & Co. KG · Alter Rückinger Weg 31, 63452 Hanau, Germany, Tel.: +49 6181 520 510, info@aeon.de, www.aeon.de

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Distributor

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Machine Builder/OEM

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Research Facility

The AIT Austrian Institute of Technology, Austria's largest non-university research institute, is among the European research institutes a specialist in the key infrastructure issues of the future. In the field of high-performance image processing AIT has a recognized position on the international technological and scientific level. More than 100 experts conduct research in close collaboration with leading companies in industry and science.

AIT Austrian Institute of Technology GmbH

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Integrator

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Producer

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Producer

For 25 years, Allied Vision Technologies has been helping people see the bigger picture. Allied Vision's camera portfolio is one of the largest in the market and offers a camera for nearly any application. If no standard product fits, the Allied Vision Modular Concept creates additional flexibility providing hardware option combinations that are almost endless. Allied Vision cameras are easy to integrate into any machine vision system thanks to our Software Development Kit (SDK) that is compatible with all common operating systems, camera interfaces and image-processing libraries.

Allied Vision Technologies GmbH · Taschenweg 2a, 07646 Stadtroda, Germany, Tel.: +49 36428 677 230, info@alliedvision.com, www.alliedvision.com

Distributor, Producer, Solution Provider

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Solution Provider

Alysium-Tech is your partner for high performance interconnect solutions. Strong production and engineering capabilities contribute to high quality. Superior, reliable and cost-effective solutions, which extend our customers' competitive advantage. Next to a wide range of Cable Assemblies for the machine Vision market (GigE, CameraLink, USB, Firewire, etc.), we are also looking forward to engineering and supplying the optimal solutions for your applications.



ALYSIUM

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Producer

AMS is a global leader in the design and manufacture of advanced sensor solutions which drive applications requiring small form factor, low power, highest sensitivity and multi-sensor integration. Products include sensor solutions, sensor ICs, interfaces and related SW for consumer, communications, industrial, medical, and automotive markets.
 With HQs in Austria, AMS employs about 9,000 people globally and is listed on the SIX Swiss stock exchange (AMS).

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Distributor, Producer, Solution Provider

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Producer

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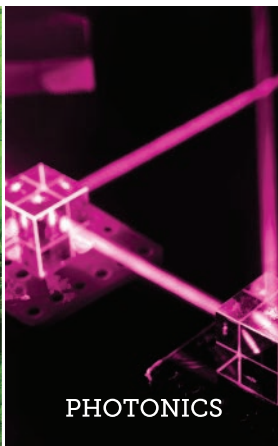
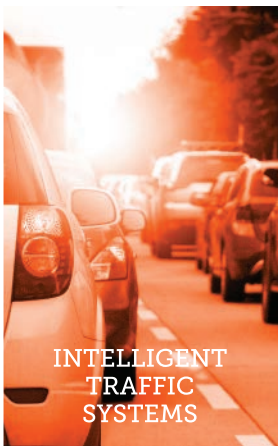
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Consultant, Producer

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High Performance Cameras To Meet Your Imaging Solution Needs



Part of the Teledyne Imaging Group

Solution Provider

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Producer, Solution Provider

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Producer

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Producer

B & M Optik GmbH · Am Fleckenberg 20, 65549 Limburg, Germany,
Tel.: +49 6431 986 00, baldus@bm-optik.de, www.bm-optik.de

Producer

Balluff GmbH · Schurwaldstr. 9, 73765 Neuhausen, Germany,
Tel.: +49 7158 173 0, balluff@balluff.de, www.balluff.de

Producer, Solution Provider

BAP Image Systems GmbH · Am Weichelsgarten 7, 91058 Erlangen, Germany,
Tel.: +49 9131 691 540, info@bapis.de, www.bapis.de

Producer

Basler AG · An der Strusbek 60-62, 22926 Ahrensburg, Germany,
Tel.: +49 4102 463 500, sales.europe@baslerweb.com, www.baslerweb.com

Producer

The Baumer Group is one of the worldwide leading manufacturers of sensors, encoders, measuring instruments and components for automated image-processing. With around 2,700 employees and 38 subsidiaries in 19 countries, the family-owned group of companies is always close to the customer. We offer a unique range of products, from industrial cameras and vision sensors to image processing components, for many different applications across varied industries. The location in Germany accommodates R&D and production under one roof which ensures our high product quality standards.



Baumer
Passion for Sensors

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Producer, Solution Provider

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Integrator, Solution Provider

Bi-Ber GmbH & Co. Engineering KG · An der Wuhlheide 232B, 12459 Berlin, Germany, Tel.: +49 30 810 322 260, info@bilderkennung.de, www.bilderkennung.de

Consultant, Distributor

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Tel.: +49 175 459 09 79, jan.biedenkap@bi-vis.com, bi-vis.business.site

Producer

Büchner Lichtsysteme GmbH · Uzstr. 2, 86465 Welden, Germany,
Tel.: +49 8293 909 112, info@buechner-lichtsysteme.de, www.buechner-lichtsysteme.de

Producer

Zeiss ZF lenses for industrial applications are key components in complex production processes as well as in measuring tasks, quality assurance and many other applications. The infrared lenses of the ZF series are suitable for the use with special cameras like IR cameras without an IR blocking filter. The transmission of ZF-IR lenses adds up to 70% at 1000 nm, while usual lenses exhibit only 20%. Zeiss Visionmes lenses are developed for crucial measuring tasks in industry and feature telecentric optics. For optical metrology at high precision telecentric optics are essential.

Carl Zeiss AG · Carl-Zeiss-Str. 22, 73446 Oberkochen, Germany,
Tel.: +49 7364 205 590, lenses4industry@zeiss.de, www.zeiss.com/lenses4industry

Solution Provider

HGV supplies scaleable turnkey machine vision solutions for all kinds of quality inspection: Flexible measurement systems (FMS) with robots, in-line-measurement, process control, robot guiding, assembly control, part handling (pick & place), surface inspection, sorting & identification.

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Carl-Zeiss-Straße 22, 73446 Oberkochen, Germany,
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Producer

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Producer

We develop, produce and distribute gratings, modules, spectrometer systems and solutions of highest quality, superior optical performance, robust design and fast analysis. Zeiss products are tailored to your processes and needs. In doing this we can continuously provide specific and innovative solutions for individual applications and create essential benefits in efficiency and process stability.

Carl Zeiss Spectroscopy GmbH · Carl-Zeiss-Promenade 10, 07745 Jena, Germany
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Distributor, Producer

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Solution Provider

Ceres Vision GmbH · Kurt-Schumacher-Str. 1, 33615 Bielefeld, Germany,
Tel.: +49 521 923 69 30, info@ceresvision.de, www.ceresvision.de

Machine Builder/OEM, Producer, Solution Provider

Chromasens develops and produces both standardized machine vision components – as color line scan cameras, spectral cameras, 3D stereo cameras and line scan lights – and custom-specific image processing solutions. Chromasens employees have comprehensive expertise in development, project management, application creation, system integration and professional services. The intensive cooperation with the customer in the form of comprehensive support throughout every project phase is a cornerstone of the company philosophy.

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Integrator

CLK · Mendelstr. 11, 48149 Münster, Germany,
Tel.: +49 251 980 20 87, cruse@clkgmbh.de, www.clkgmbh.de

Producer

Cognex Corporation designs, develops, manufactures, and markets machine vision sensors and systems. Cognex vision sensors are used in factories around the world to automate the manufacture of a wide range of items and to assure their quality. Cognex is the world's leader in the machine vision industry, having shipped more than 450,000 machine vision systems, since the company's founding in 1981. In addition to its corporate headquarters in Natick, Massachusetts, Cognex also has regional offices and distributors located throughout North America, Japan, Europe, Asia, and Latin America.

Cognex Germany, Inc. · Emmy-Noether-Str. 11, 76131 Karlsruhe, Germany,
Tel.: +49 721 663 90, info@cognex.de, www.cognex.com

Producer

ColVisTec · Max-Planck-Str. 3, 12489 Berlin-Adlershof, Germany,
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Distributor, Integrator, Producer, Solution Provider

Compar AG · Rietbrunnen 44, 8808 Pfäffikon SZ, Switzerland
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Machine Builder/OEM

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Distributor

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Consultant, Integrator, Producer, Solution Provider

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Producer, Solution Provider

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Consultant, Distributor, Integrator, Machine Builder/OEM

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Producer, Solution Provider

There is a great need in the industry for solutions and products that enable people, machines, plants, logistics and products to communicate and cooperate with each other. This is where Cretec comes in. Our products can do more, are smaller and cheaper than the products currently available on the market.

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Producer

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Integrator, Solution Provider

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Research Facility, Solution Provider

CTR - Carinthian Tech Research AG · Europastr. 4/1, 9524 Villach, Austria,
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Producer

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Producer

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Integrator

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Solution Provider

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Consultant, Integrator, Machine Builder/OEM, Producer, Solution Provider, Other

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Producer

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Machine Builder/OEM

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Consultant

Dr.-Ing. Jänchen Business Development supports international technology companies to gain profitable growth by providing professional Business Development consulting and comprehensive services. Depending on customer needs and requirements, duration and extend of the engagement can vary ranging from a single, individual project, to integrated packages of interconnected projects up to a long term collaboration.

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Solution Provider

Dutch Vision Systems · Am Lehmborg 2, 16928 Pritzwalk, Germany,
Tel.: +49 33986 614 0, info@dvs-vision.de, www.dvs-vision.de

Distributor

Duwe-3d AG · Peter-Dornier-Str. 9, 88131 Lindau (B), Germany,
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Distributor, Producer

Edmund Optics, leading supplier of optics, imaging, and photonics technology with manufacturing sites in the US, Asia and Europe as well as global sales offices, holds with a portfolio of more than 30.000 products the world's largest inventory of optical components for immediate delivery. Building up great competency in imaging and imaging components, EO provides complete imaging solutions with a large product line, technical expertise, manufacturing capabilities, extensive technical support, and assists customers in every way possible to maximize the performance of their imaging system.

Edmund Optics · Isaac-Fulda-Allee 5, 55124 Mainz, Germany, Tel.: +49 6131 570 00, sales@edmundoptics.de, www.edmundoptics.de

Distributor, Producer

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Solution Provider

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Producer

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Producer

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Distributor, Producer, Solution Provider

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Producer

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Producer

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Solution Provider

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Producer

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Distributor

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Producer, Solution Provider

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Solution Provider

EVK DI Kerschhagl GmbH · Josef Krainer Str. 35, 8074 Raaba, Austria, Tel.: +43 316 461 66 40, office@evk.biz, www.evk.biz

Consultant, Producer, Other

Evotron GmbH & Co. KG · Pfuetschbergstr. 16, 98527 Suhl, Germany, Tel.: +49 3681 452 99 50, info@evotron-gmbh.de, www.evotron-gmbh.de

Producer

EVT Eye Vision Technology GmbH · Haid-und-Neu-Str. 7, 76131 Karlsruhe, Germany, Tel.: +49 721 626 905 82, sales@evt-web.com, www.evt-web.com

Machine Builder/OEM

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Producer

Falcon is dedicated to provide best LED Lighting solution for manufacturers and system integrators of industrial Machine Vision applications. We design, produce and sell lights of highest reliability and longevity close to the lowest price points. We select LEDs from renowned manufacturers and you can experience the long-lasting expertise of our engineers. Our customers worldwide can rely on the short lead times of our rich portfolio of standard illuminations as well as customize solutions.

Falcon Illumination MV GmbH & Co. KG
In den Scheibigswiesen 8, 74257 Unterseesheim, Germany, Tel.: +49 7132 991 690, info@falcon-illumination.de, www.falcon-illumination.de

Producer

Faro Europe GmbH & Co. KG · Lingwiesenstr. 11/2, 70825 Korntal-Münchingen, Germany, Tel.: +49 7150 979 70, info@faro-europe.com, www.faro.com

Producer

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Producer

Festo AG & Co. KG, a leading provider of automation technology solutions, offers a tailor made range of vision systems: High-speed-cameras for optimisation of fast motion sequences as well as intelligent line- and area-scan cameras for position detection of parts, 2D quality inspection, Barcode and Data-Matrix-Code reading and OCR. The cameras comprise a complete PLC according to IEC 61131-3 standard as well as Ethernet and CAN interfaces and 24V I/Os to communicate with higher order PLCs.

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Integrator, Solution Provider

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Producer, Solution Provider

Fisba Optik AG · Rorschacherstr. 268, 9016 St. Gallen, Switzerland, Tel.: +41 71 282 31 31, info@fisba.ch, www.fisba.com

Producer

Flir Systems is a world-leading maker of sensor systems that enhance perception and heighten awareness, helping to save lives, improve productivity, and protect the environment. Flir Systems is a global leader in the design and manufacture of high-performance digital cameras for industrial, medical, life science, traffic, biometric, geographic information systems (GIS), and people counting applications.

Flir Integrated Imaging Solutions GmbH · Schwieberdinger Str. 60, 71636 Ludwigsburg, Germany, Tel.: +49 7141 488 817 0, mv-eusales@flir.com, www.flir.com/mv

Producer

Flir Systems is the global leader in the Design, Manufacture and Marketing of Thermal Imaging Infrared Cameras. The company is a leading manufacturer of innovative imaging systems that include infrared cameras, aerial broadcast cameras and machine vision systems. Our products play piv-

otal roles in a wide range of industrial, commercial and government activities in more than 60 countries.

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Distributor, Solution Provider

Since 1981 Framos is a leading technology provider in industrial, scientific and medical image processing. We enable manufacturers, system integrators and researchers to benefit from imaging technologies. Our team offers a fully comprehensive portfolio of imaging components, technical con-

sulting and support. Thanks to many years of experience in the industry we offer engineering services for custom camera development as well as complete turn-key-solutions.

Framos GmbH · Mehlbeerenstr. 2, 82024 Taufkirchen, Germany,
Tel.: +49 89 710 66 70, info@framos.eu, www.framos.com

Research Facility

The Fraunhofer Vision Alliance pools the expertise of the Fraunhofer Institutes in the fields of machine vision, image processing, optical testing and measurement techniques. The cooperation within this network enables the early detection of requirements of the market and allows the Fraun-

hofer Vision Institutes to tackle technological challenges.

Fraunhofer-Allianz Vision · Flugplatzstr. 75, 90768 Fürth, Germany,
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Research Facility

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Research Facility

400 scientists and engineers provide top service in applied research in the fields of industrial manufacturing and automation, medical technology, and improved quality of life. With an annual budget of more than 40 million euros, we develop customer-specific innovative MEMS components and

microelectronic parts on 200 mm & 300 mm wafers to complete whole systems.

Fraunhofer-Institut für Photonische Mikrosysteme IPMS
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Solution Provider

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Producer

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Integrator, Solution Provider

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Producer

Tapping into optical technologies and precision processing and assembling technologies nurtured over many years, Fujifilm offers a wide variety of Fujinon lenses. The Fujinon brand is world-renowned for its innovative and reliable products in the field of broadcast & cine lenses, binoculars, CCTV

lenses, machine vision applications as well as for special custom made optical products, for example those used in digital projectors, automobiles and in many other applications.

Fujifilm Europe GmbH · Heesenstr. 31, 40549 Düsseldorf, Germany,
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Solution Provider

Futec Europe SRL · Tecklenburger Str. 36, 49525 Lengerich, Germany,
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Producer

GE Sensing & Inspection Technologies GmbH - phoenix|x-ray
Niels Bohr Str. 7, 31515 Wunstorf, Germany,
Tel.: +49 5031 172 0, phoenix-info@ge.com, www.gemeasurement.com/x-ray

Integrator, Solution Provider

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Producer

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Machine Builder/OEM

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Producer

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Tel.: +49 531 390 290, info@gom.com, www.gom.com

Integrator, Solution Provider

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Producer

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Producer

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Producer

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Producer

Hamamatsu Photonics Deutschland GmbH
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Tel.: +49 8152 375 0, info@hamamatsu.de, www.hamamatsu.de

Producer

Hasotec GmbH · Burgwall 20, 18055 Rostock, Germany,
Tel.: +49 381 490 98 34, info@hasotec.com, www.hasotec.com

Research Facility

The strategic concept of the HCI is built on the fact that basic problems in image processing are largely application-independent. The approximately 80 scientists working in the HCI conduct basic research with the aim of providing cutting-edge solutions to basic image analysis problems for applications in industry and sciences. The HCI is part of the institutional strategy of the University of Heidelberg within the Excellence Initiative.

HCI at IWR Heidelberg University

Berliner Str. 43, Mathematikon B, 69120 Heidelberg, Germany, [hci@iwr.uni-heidelberg.de](https://hciweb.iwr.uni-heidelberg.de/), <https://hciweb.iwr.uni-heidelberg.de/>

Producer, Solution Provider

HD Vision Systems strives for making feasible highly accurate measurements of complex object's geometry and surface properties such as surface normals, color and specularities. The quality of the results makes manual post-processing unnecessary. The approach is applicable to industrial inspection.

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Machine Builder/OEM

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Solution Provider

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Producer

Helmut Hund GmbH · Wilhelm-Will-Str. 7, 35580 Wetzlar, Germany, Tel.: +49 6441 200 40, info@hund.de, www.hund.de

Producer, Research Facility

Hema Electronic GmbH · Roentgenstr. 31, 73431 Aalen, Germany, Tel.: +49 7361 949 50, info@hema.de, www.hema.de

Producer

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Research Facility

The department of optical technologies and machine vision (Optotechnik und Bildverarbeitung) is part of the faculty of mathematics and natural sciences at Darmstadt University of Applied Sciences (Hochschule Darmstadt). The joint experience of 12 professors from various fields of optics, laser technology, image processing and optical metrology provides the background for profound work on cutting-edge research projects and an outstanding commitment to a modern study program, integrating optical technologies and machine vision.

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Producer

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Integrator

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Producer, Solution Provider

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Integrator

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Integrator, Solution Provider

ICW [Industrie-Elektronik] · Engelschalkstr. 32, 86316 Friedberg, Germany, Tel.: +49 821 609 95 26, anfrage@icw-news.de, www.icw-news.de

Producer

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Distributor, Integrator, Solution Provider

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Producer, Solution Provider

Ifm electronic GmbH · Friedrichstr. 1, 45128 Essen, Germany, Tel.: +49 201 242 20, info@ifm.com, www.ifm.com

Producer

Lumimax LED lights by iIM AG are especially designed and developed for use in industrial Machine Vision applications. The high-performance lighting products with integrated controller technology for continuous, switch or flashing operation guarantee the utmost functionality and enable the stable, extraneous light-independent illumination of your test objects – even for extremely fast processes. Additional components such as mounting solutions for different cameras, diffusers, fresnel lenses and polarization filters are also available.

The team of iIM AG has extensive experience in Machine Vision and can apply this knowledge excellently when designing and realising its products and when providing consulting.



LUMIMAX®

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Producer

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Distributor, Producer, Solution Provider

IMM Photonics GmbH · Ohmstr. 4, 85716 Unterschleißheim, Germany, Tel.: +49 89 321 412 0, sales@imm-photonics.de, www.imm-photonics.de

Producer

Impuls Imaging GmbH · Schlingener Str. 4, 86842 Türkheim, Germany, Tel.: +49 8245 774 96 00, info@impuls-imaging.com, www.impuls-imaging.com

Solution Provider

In-Situ GmbH · Mühlweg 2c, 82054 Sauerlach / München, Germany, Tel.: +49 8104 909 600, vision@in-situ.de, www.in-situ.de

Producer

Infinity Photo-Optical GmbH · Hans-Böckler-Str. 10a, 37079 Göttingen, Germany, Tel.: +49 551 499 570, info@infinity-de.com, www.infinity-de.com

Producer

Since 2012, inos is a member of the internationally positioned Grenzebach Group.

By means of our sensors and systems the robots become clear-sighted - we migrate the scientific knowledge from laboratory to solid and industrial-grade systems.

The intensive cooperation with the OEM, their equipment and cell manufacturers pushes innovation. Together with our partners we develop solutions to create production-appropriate, operational and highly available automation systems.

Inos Automatisierungssoftware GmbH · Curierstr. 4, 70563 Stuttgart, Germany, Tel.: +49 711 686 897 00, info@inos-automation.de, www.inos-automation.de

Media

inspect · Boschstr. 12, 69469 Weinheim, Germany, Tel.: +49 6201 606 0, contact@inspect-online.com, www.inspect-online.com

Solution Provider

Intenta GmbH · Ahornstr. 55, 9112 Chemnitz, Germany, Tel.: +49 371 24354 0, info@intenta.de, www.intenta.de/en/home.html

Integrator, Solution Provider

ioss GmbH · Fritz-Reichle-Ring 18, 78315 Radolfzell, Germany, Tel.: +49 7732 982 79 60, info@ioss.de, www.ioss.de

Producer

Ircam GmbH · Nürnberger Str. 71, 91052 Erlangen, Germany, Tel.: +49 9131 970 09 80, info@ircam.de, www.ircam.de

Distributor, Producer, Solution Provider

IS - Imaging Solutions GmbH · Arbachtalstr. 6, 72800 Eningen, Germany, Tel.: +49 7121 680 85 31, info@imaging-solutions.de, www.imaging-solutions.de

Solution Provider

The Isra group develops, produces and markets intelligent systems for industrial image processing using application-specific modular standard software solutions for surface inspection, robot guidance and quality control. Isra has focused on the automotive, general industries and food

& packaging markets and offers surface inspection solutions for the glass, display glass, solar industry, plastics, films, nonwovens, print, printed electronics, paper, specialty paper and metal markets.

Isra Vision AG · Industriestr. 14, 64297 Darmstadt, Germany, Tel.: +49 6151 948 0, info@isravision.com, www.isravision.com

Integrator

Isys Vision GmbH & Co. KG · Gundelfinger Str. 2, 79108 Freiburg, Germany, Tel.: +49 761 790 950, info@isys-vision.de, www.isys-vision.de

Integrator

J-Vision GmbH · Marktplatz 3, 66687 Wadern, Germany, Tel.: +49 6871 920 13 81, info@jj-vision.de, www.jj-vision.de

Producer

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-CMOS progressive area scan and line scan cameras, JAI is a leading provider of multi-imager cameras incorporating advanced prism-block technology, including 3-CMOS RGB area scan cameras, 2-CMOS multi-spectral cameras plus a complete family of 3-CMOS/4-CMOS line scan cameras. JAI's product program includes cameras for visible, UV, NIR and SWIR imaging with GigE Vision, USB3 Vision, CoaXPress, Camera Link and SFP+ interfaces.



See the possibilities

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Integrator, Machine Builder/OEM, Producer, Solution Provider

Jenoptik Optical Systems GmbH · Goeschwitzer Str. 25, 7745 Jena, Germany, Tel.: +49 3641 653 083, digitalimaging.os@jenoptik.com, www.jenoptik.com/digitalimaging

Producer

Jenoptik Polymer Systems GmbH · Am Sandberg 2, 7819 Triptis, Germany, Tel.: +49 36482 45 0, sales-oes@jenoptik.com, www.jenoptik.com/oes

Producer

Jos. Schneider Optische Werke GmbH is a worldwide recognised manufacturer of high-performance lenses and filters as well as optical and mechanical components for industrial applications. With excellent optical and mechanical properties, Schneider-Kreuznach products suit perfectly to industrial

demands. The standard product range includes: C-Mount lenses (Compact), Unifoc lenses (V-Mount, Macro), Lenses for large sensors, (Xenon-Emerald), Industrial filters (Band-, Long- and Shortpasses, Polarizers). Schneider-Kreuznach also provides customised solutions for OEM projects.

Jos. Schneider Optische Werke GmbH · Ringstr. 132, 55543 Bad Kreuznach, Germany, Tel.: +49 671 601 0, industrie@schneiderkreuznach.com, www.schneiderkreuznach.com

Producer

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Producer, Solution Provider

Kappa optronics GmbH · Kleines Feld 6, 37130 Gleichen, Germany, Tel.: +49 5508 974 0, info@kappa-optronic.com, www.kappa-optronics.com

Integrator, Solution Provider

Kdorf Automation · Industriering Ost 66, 47906 Kempen, Germany, Tel.: +49 2152 894 80 33, kontakt@kdorf.de, www.kdorf.de

Producer

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Producer

Klasech GmbH · Konrad-Adenauer-Allee 11, 44263 Dortmund, Germany, Tel.: +49 231 477 306 48, info@klasech.com, www.klasech.com

Producer

Kontron · Oskar-von-Miller-Str. 1, 85386 Eching, Germany, Tel.: +49 8165 777 77, sales@kontron.com, www.kontron.com

Integrator, Solution Provider

Kortiq is committed to provide clients and partners universal, easy-to-use, efficient, scalable, flexible and lowest power FPGA based machine learning inference platforms. The AIScale architecture in combination with the DeepCompressor serves clients in the fields of computer vision, robotics, speech recognition, surveillance systems as well as data centers. Neural network acceleration from edge- to server devices.

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Producer

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Media

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Producer

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Distributor, Producer

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Distributor, Producer

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Producer

LaserTechs e.K. · Muehlstr. 100, Industriepark, 63741 Aschaffenburg, Germany, Tel.: +49 6021 369 71 70, vision@lasertechs.de, www.lasertechs.de

Producer

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Producer

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Producer

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Producer

LEJ - Lighting & Electronics Jena · Stockholmer Str. 5, 7747 Jena, Germany, Tel.: +49 3641 353 00, info@lej.de, www.lej.de

Producer

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Distributor, Producer

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Producer

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Producer

Lucid Vision Labs, Inc. designs and manufactures innovative machine vision cameras and components that utilize the latest technologies to deliver exceptional value to customers. The compact, high-performance GigE Vision cameras are suited for a wide range of industries and applications such as factory automation, medical, life sciences and logistics. The company innovates dynamically to create products that meet the demands of machine vision for Industry 4.0.

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Producer

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Solution Provider

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Consultant, Integrator, Research Facility, Solution Provider

Math & Tech Engineering GmbH · Robert-Bosch-Str. 6/1, 72654 Neckartenzlingen, Germany, Tel.: +49 7127 958 350, sales@mathtech.de, www.mathtech.eu

Producer

Matrix Vision GmbH · Talstr. 16, 71570 Oppenweiler, Germany, Tel.: +49 7191 943 20, info@matrix-vision.com, www.matrix-vision.de

Distributor

MaxxVision's customers benefit from an outstanding variety of cameras, lenses and LED illumination from the world's leading manufacturers. Maxx-Vision is one of the major suppliers of machine vision components, offering an extensive choice of high performance cameras equipped with CMOS / CCD sensors and high-end camera interfaces such as USB3 Vision, GigE Vision or CoaXPress. Our large lens portfolio offers various entocentric and telecentric lenses for the majority of sensor sizes and resolutions.

MaxxVision GmbH · Sigmaringer Str.121, 70567 Stuttgart, Germany, Tel.: +49 711 997 99 63, info@maxxvision.com, www.maxxvision.com

Producer



MBJ Imaging GmbH specializes in the development, manufacturing and sales of high quality low-cost LED lighting and controllers for industrial image processing.

Illumination as a core component of machine vision is critical for the performance of any automatic inspection system. Our lightings are inexpensive but of high quality, based on state-of-the-art LED technology.



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www.mbj-imaging.com

Machine Builder/OEM, Producer

The Product Inspection Division of Mettler Toledo is a leader in the field of automated inspection technology. The Division incorporates the Safeline Metal Detection and X-ray Inspection, Garvens and Hi-Speed Checkweighing and the CI Vision and PCE Track & Trace brands. The solutions provided

by the business increase process efficiency for manufacturers while supporting compliance with industry standards and regulations.

Mettler Toledo Product Inspection

Kampstr. 7, 31180 Giesen, Germany, Tel.: +49 5121 933 222, pid@mt.com, www.mt.com/de/de/home/products/product-inspection_1.html?cmp=als_pi

Distributor

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Machine Builder/OEM, Producer

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Producer

Mikromak Service · Bernhard-Lichtenberg-Str. 10, 10407 Berlin, Germany, Tel.: +49 30 420 224 02, info@mikromak.com, www.mikromak.com

Producer

Mikrotron GmbH, provides a full range of high-end imaging solutions for challenging applications in industry, engineering, science and sports. The company develops, produces, and markets digital high-speed cameras, image processing components, and high-speed recording systems

for production, research and development worldwide. Mikrotron's slow-motion recording enables customers to optimize manufacturing processes, improve product design, revolutionize quality management and analyze motion. The company is part of the Lakesight Technologies group.

Mikrotron GmbH · Landshuter Str. 20-22, 85716 Unterschleißheim, Germany, Tel.: +49 89 726 342 00, info@mikrotron.de, www.mikrotron.de

Producer

Mitsubishi Electric Contact Image Sensors (CIS) provide an optimum solution for the design of compact, high-speed optical image readers. With a 20-year history in the development and manufacturing of CIS, Mitsubishi Electric offers its long experience and

self-developed, dedicated key components to meet all its customers' needs.

Mitsubishi Electric · Gothaer Str. 8, 40880 Ratingen, Germany, pr@meg.mee.com, https://eu3a.mitsubishielectric.com/

Producer

Mitutoyo Messgeräte GmbH · Borsigstr. 8-10, 41469 Neuss, Germany, Tel.: +49 2137 102 0, info@mitutoyo.de, www.mitutoyo.de

Producer

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Consultant, Integrator, Machine Builder/OEM, Solution Provider

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Producer

MVTec Software GmbH is a leading international manufacturer of software for machine vision used in all demanding areas of imaging like the semi-conductor industry, inspection, optical quality control, metrology, medicine, or surveillance. In particu-

lar, software by MVTec enables new automation solutions in settings of the Industrial Internet of Things. MVTec is the developer and vendor of the general purpose machine vision software products Halcon and Merlic.

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Integrator, Producer, Solution Provider

NanoFocus AG · Max-Planck-Ring 48, 46049 Oberhausen, Germany, Tel.: +49 208 620 000, info@nanofocus.de, www.nanofocus.com

Producer

National Instruments Germany GmbH · Ganghoferstr. 70 b, 80339 München, Germany, Tel.: +49 89 741 31 30, info.germany@ni.com, www.ni.com/vision

Machine Builder/OEM, Solution Provider

Nela Brüder Neumeister GmbH · Gottlieb-Daimler-Str. 15, 77933 Lahr, Germany, Tel.: +49 7821 580 80, dominik_uhl@nela.de, www.nela.de

Solution Provider

Neogramm GmbH & Co. KG · Julius-Hatry-Str. 1, 68163 Mannheim, Germany, Tel.: +49 621 150 20 50, info@neogramm.de, www.neogramm.de

Producer

Nerian Vision GmbH · Zettachring 2, 70567 Stuttgart, Germany, Tel.: +49 711 219 594 14, info@nerian.com, http://nerian.com

Distributor, Producer

NET New Electronic Technology has more than 15 years of experience in the development, production and distribution of innovative camera technology. Its in-depth application knowledge enables NET to come up with creative concepts and solutions for the industrial and medical sectors. Camera technology, CCD and CMOS technology, FPGA programming, hardware and software design are NET's core skills which can be tapped within the company. The innovative portfolio is supplemented by a wide range of standard and custom vision components as well as machine vision software.

NET New Electronic Technology GmbH · Lerchenberg 7, 86923 Finning, Germany, Tel.: +49 8806 923 40, info@net-gmbh.com, www.net-gmbh.com

Producer, Solution Provider

NeuroCheck GmbH · Neckarstr. 76/1, 71686 Remseck, Germany, Tel.: +49 7146 895 60, sales@neurocheck.com, www.neurocheck.com

Machine Builder/OEM

Nikka Research Deutschland GmbH · Friedrich-List-Str. 20, 70771 Leinfelden-Echterdingen, Germany, Tel.: +49 711 160 89 20, h-kounev@nikka-research.com, www.nikka-research.com



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Producer

Nikon Metrology GmbH · Siemensstr. 24, 63755 Alzenau, Germany, Tel.: +49 6023 917 330, sales_germany@nikonmetrology.com, www.nikonmetrology.com

Distributor

With a broad spectrum, which includes all components necessary for image processing, the Notavis GmbH addresses customers with its own image processing department, like e.g. large engineering companies (OEMs), the manufacturing industry (automotive and supplier industry, automation and system suppliers) and integrators. The portfolio includes industrial cameras, image processing software, IPC and other components.

Notavis GmbH · Ottostr. 2, 76275 Ettlingen, Germany, Tel.: +49 151 296 095 28, thomas.schweitzer@notavis.com, www.notavis.com

Solution Provider

OBE Ohnmacht & Baumgärtner GmbH & Co. KG · Turnstr. 22, 75228 Ispringen, Germany, Tel.: +49 7231 802 0, trevista@obe.de, www.trevista.net

Producer, Solution Provider

As Ocean Insight, we bring application-specific expertise, services, and solutions to define and solve important challenges across multiple industries and disciplines. We invite you to explore our integrated approach to customer need. We call it Applied Spectral Knowledge (ASK) - innovative spectroscopy hardware, software, and on-demand data delivery backed by deep category expertise. More simply, we're turning spectra into answers.

Ocean Insight a brand of Ocean Optics B.V. · Maybachstr. 11, 73760 Ostfildern, Germany, Tel.: +49 711 341 69 60, info@oceaninsight.com, www.oceaninsight.com

Integrator

Octum GmbH · Renntalstr. 16, 74360 Ilsfeld, Germany, Tel.: +49 7062 914 940, info@octum.de, www.octum.de

Producer

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Integrator

Omni Control Prüfsysteme GmbH · In der Spöck 10, 77656 Offenburg, Germany, Tel.: +49 781 991 412, mail@omni-control.de, www.omni-control.de

Producer

Opsira GmbH · Leibnizstr. 20, 88250 Weingarten, Germany, Tel.: +49 7515 618 90, info@opsira.de, www.opsira.de

Solution Provider

Opto develops and manufactures customized, optoelectronic modules, optical components and systems for the industrial and biomedical markets. With its own facilities in Germany, France, the UK and Asia, Opto is a globally recognised solution provider, able to support customers from around the globe. Through its deep application knowledge, Opto provides its clients with special optomechanical solutions that are reduced to the essentials of the application and perfectly cost optimised.

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Producer

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Machine Builder/OEM

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Producer

Optris GmbH · Ferdinand-Buisson-Str. 14, 13127 Berlin, Germany, Tel.: +49 30 500 19 70, sales@optris.com, www.optris.com

Producer

Optronis develops, manufactures and distributes streak cameras and high-speed video cameras for scientific and industrial applications. Our high-end cameras can be used to capture ultra-fast phenomena. Our primary goal: to provide our customers with innovative solutions for fast optical measurements.

Optronis GmbH · Ludwigstr. 2, 77694 Kehl, Germany, Tel.: +49 7851 912 60, info@optronis.com, www.optronis.com

Producer

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Producer, Solution Provider

Panasonic Electric Works Europe AG · Rudolf-Diesel-Ring 2, 83607 Holzkirchen, Germany, Tel.: +49 8024 648 0, info.peweu@eu.panasonic.com, www.panasonic-electric-works.de

Producer

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Consultant, Integrator

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Machine Builder/OEM

Paul Leibinger GmbH · Daimlerstr. 14, 78532 Tuttlingen, Germany, Tel.: +49 7461 928 60, sales@leibinger-group.com, www.leibinger-group.com

Producer

In 1987, PCO AG was founded with the objective to develop and to produce specialized fast and sensitive video camera systems, mainly for scientific applications. Meanwhile the product range of PCO cameras covers digital camera systems with high dynamic range, high resolution, high speed and low noise, which are sold in the scientific and industrial market all over the world. Currently PCO is one of the leading manufacturers of scientific cameras. The actual wide range of specialized camera systems is the result of technical challenge and product specific know-how.

PCO AG · Donaupark 11, 93309 Kelheim, Germany, Tel.: +49 9441 200 50, info@pco.de, www.pco.de

Consultant, Solution Provider, Other

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Solution Provider

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Producer

Photonfocus AG · Bahnhofplatz 10, 8853 Lachen, Switzerland, Tel.: +41 55 451 00 00, sales@photonfocus.com, www.photonfocus.com

Producer, Solution Provider

Phytec Messtechnik GmbH · Robert-Koch-Str. 39, 55129 Mainz, Germany, Tel.: +49 6131 922 10, info@phytec.de, www.phytec.de

Integrator, Solution Provider

Pi4_robotics GmbH · Gustav-Meyer-Allee 25, 13355 Berlin, Germany,
Tel.: +49 30 700 969 40, sales@pi4.de, www.pi4.de

Producer

Piezosystem Jena GmbH · Stockholmer Str. 12, 7747 Jena, Germany,
Tel.: +49 3641 668 80, info@piezोजना.com, www.piezosystem.com

Producer

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Consultant, Distributor, Producer, Solution Provider

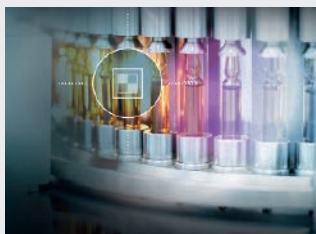
Plasmo Industrietechnik GmbH · Dresdner Str. 81-85, 1200 Vienna, Austria,
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Producer

POG Präzisionsoptik Gera · Gewerbepark Keplerstr. 35, 7549 Gera, Germany,
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Distributor

Polytec is one of the major suppliers for machine vision components in Europe with subsidiaries and sales partners in many countries. The company offers the full range of hardware and provides feasibility studies to solve complex illumination and image acquisition problems. Beyond that, Polytec produces and sells worldwide a broad range of industrial LED lighting components and stroboscopes such as the LATAB lighting line with more than 3,000 standard products as well as customer specific lighting.



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Producer

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Producer, Solution Provider

Precitec is the specialist for laser material processing and optical measuring technology. What does this mean? The company is not just a system and component supplier, but also a professional partner for smooth processing. It will develop sound and well-defined solutions together with the customer that match their needs and objectives.

Precitec Vision GmbH & Co. KG · Rotfarb 4, 8413 Neftenbach, Switzerland,
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Producer

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Producer, Research Facility, Solution Provider

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Producer, Solution Provider

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Producer

Pyramid Computer GmbH · Bötzingenstr. 60, 79111 Freiburg, Germany,
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Producer

Qioptiq is part of Excelitas Technologies Corp., a global technology leader focused on delivering innovative, high-performance, market-driven photonic solutions to meet the lighting, detection and optical technology needs of global customers. From biomedical technology to research laboratory, safety and security, consumer products, semiconductor, energy and environment, industrial sensing & imaging, defense and aerospace we are committed to enabling our customers' success in their end-markets. With approximately 6,500 employees in North America, Europe and Asia, Excelitas and Qioptiq serving customers across the world.

Qioptiq Photonics GmbH & Co. KG · Königsallee 23, 37081 Göttingen, Germany,
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Solution Provider

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Distributor

Rauscher GmbH is a leading distributor for all imaging components, including software, area- and linescan cameras, frame grabbers, image-processing boards, smart cameras, embedded systems, optics, lighting and accessories. Rauscher GmbH combines distribution with high engineering competence. This enables all customers to efficiently develop and market their vision system.

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Integrator, Machine Builder/OEM, Solution Provider

RBC Fördertechnik GmbH · Dieselstr. 5, 65520 Bad Camberg, Germany,
Tel.: +49 6434 207 910, info@rbc-robotics.de, www.rbc-robotics.de

Producer

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Producer

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Integrator

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Distributor

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Solution Provider

SAC Sirius Advanced Cybernetics GmbH · An der RaumFabrik 33b,
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Distributor

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Producer

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Distributor, Integrator, Solution Provider

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Producer, Solution Provider

Schölly Micro Optics GmbH · An der Amtmannsmühle 11, 35444 Biebertal, Germany, Tel.: +49 6409 661 100, info@schoelly-microoptics.de, www.schoelly-microoptics.de

Producer

Schott AG Lighting and Imaging · Otto-Schott-Str. 2, 55127 Mainz, Germany, Tel.: +49 6131 667 752, lightingimaging@schott.com, www.schott.com/lightingimaging

Machine Builder/OEM, Solution Provider

Seidenader Vision GmbH · Lilienthalstr. 8, 85570 Markt Schwaben, Germany, Tel.: +49 8121 802 0, info@seidenader.de, www.seidenader.de

Producer

Seiwa Optical Europe GmbH · Schubertstr. 14, 60325 Frankfurt/Main, Germany, Tel.: +49 69 740 878 47, info@seiwaeurope.com, www.seiwaeurope.com

Producer

SensoPart Industriesensorik GmbH · Nägelseestr. 16, 79288 Gottenheim, Germany, Tel.: +49 7665 947 690, info@sensopart.de, www.sensopart.de

Association, Strategische Partnerschaft

Sensorik e.V./Cluster Sensorik · Franz-Mayer-Str. 1, 93053 Regensburg, Germany, Tel.: +49 941 630 916 13, info@sensorik-bayern.de, www.sensorik-bayern.de

Producer

Sensor Technologies is a Japanese industrial camera manufacturer with more than 27 years of experience. The company specializes in the development of advanced digital and OEM cameras for machine vision, industrial, medical, microscope, military and traffic applications. Sentech's world-wide team consists of over 60 dedicated individuals represented in four countries.

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Producer

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Integrator, Solution Provider

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Integrator, Solution Provider

Seritec GmbH · Gottlieb-Keim-Str. 60, 95448 Bayreuth, Germany, Tel.: +49 921 990 093 30, info@seritec.de, www.seritec.de

Machine Builder/OEM

Sglux GmbH · Richard-Willstätter-Str. 8, 12489 Berlin, Germany, Tel.: +49 30 530 152 11, welcome@sglux.de, www.sglux.com

Producer

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Producer

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Producer

Sick is one of the world leading suppliers of Industrial Sensors and Safety solutions. Sick provides industrial vision cameras for factory and logistics automation. The product line includes Vision Sensors, Smart Cameras, Code readers, Accessories and Cameras for high speed 3D Machine Vision. Target customers are Machine Builders, System Integrators and End Users.

Sick AG · Erwin-Sick-Str. 1, 79183 Waldkirch, Germany, Tel.: +49 7681 202 0, bildverarbeitung@sick.de, www.sick.com

Producer

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Solution Provider

Signum Computer GmbH · Rüdeshheimer Str. 21, 80686 München, Germany, Tel.: +49 89 547 05 50, sales@signum-vision.de, www.signum-vision.de

Producer

Silicon Software is one of the international technology leaders with innovative product lines for industrial applications in Machine Vision and service provider for customized adaptations. The company produces off-the-shelf products as well as customized OEM solutions. Hardware products are the series of intelligent image acquisition and processing boards. VisualAplets offers a graphical programming of FPGA processors in frame grabbers and cameras.

Silicon Software GmbH · Konrad-Zuse-Ring 28, 68163 Mannheim, Germany, Tel.: +49 621 789 507 0, info@silicon-software.de, silicon.software

Producer

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Solution Provider

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Producer, Solution Provider

Smartray GmbH · BGM-Finsterwalder-Ring 12, 82515 Wolfratshausen, Germany, Tel.: +49 8171 968 34 00, info@smartray.de, www.smartray.de

Integrator, Solution Provider

SmartSurv Vision Systems GmbH · Malmshheimer Str. 7, 71063 Sindelfingen, Germany, Tel.: +49 7031 304 18 00, info@smartsurv.de, www.smartsurv.de

Distributor, Producer

Stemmer Imaging is Europe's largest machine vision technology provider for science and industry. The perfect combination of innovative products, intelligent consulting and extensive service helps our customers solve their imaging projects with speed and ease. Our experienced specialists are available to you in 19 European countries ensuring easy contact and optimum local consultancy service.

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Machine Builder/OEM

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Integrator

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Producer

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Consultant

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Association

Since 2006, Strategische Partnerschaft Sensorik has bundled the existing sensor technology expertise on behalf of the Free State of Bavaria in order to sustainably strengthen the innovative power and future viability of companies and institutions. As a regional network for the industry, we provide operational and strategic support. Our network is made up of over 80 highly innovative companies and institutions. Experts from science, research and development complement this high-tech expertise.

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Producer

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Producer

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Producer

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Solution Provider

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Producer

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Producer, Solution Provider

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Producer

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Producer

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Machine Builder/OEM

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Integrator

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Producer, Solution Provider

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University

Apart from industry driven research projects in Photonics and Photonics-related precision measurement and calibration services, University of Applied Sciences of the Grisons Chur – FHGR offers both a BSc in Photonics as well as a Masters of Advanced Studies (MAS) in Photonics, which are unique in Switzerland.

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Association

The VDMA Machine Vision Group forms part of the Robotics+Automation Association within the VDMA Engineering Federation. VDMA Machine Vision currently more than 100 members. Our members are manufacturers and suppliers of machine vision technology and cover customer-specific solutions, system integration, standard systems as well as components.

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Producer

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Producer

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Distributor

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Consultant, Integrator, Machine Builder/OEM, Producer, Solution Provider, Other

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Solution Provider

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Machine Builder/OEM, Solution Provider

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Producer



Vision & Control has been developing, manufacturing and marketing a coordinated portfolio of modular machine vision systems for more than 30 years. The company's product development expertise, together with many years of customer support and service experience, gives Vision & Control a unique pool of machine vision expertise, including R&D, production and training.

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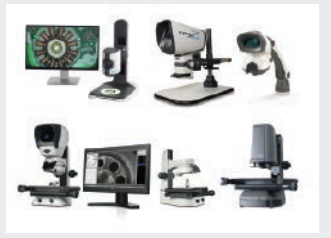
Media

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Producer

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Producer



Vision Engineering is a global leading-edge manufacturer of unique ergonomic stereo microscopes and non-contact measuring systems. Since its formation in 1958, Vision Engineering has become one of the world's most innovative and dynamic microscope manufacturers, with a global distribution network. The product range includes solutions for almost every inspection and measurement application. Choose unparalleled clarity and precision. Innovative and superior ergonomic designs lead to performance and productivity gains. Quality is the goal! For us and our customers as well. That's the reason why we present to our customer worldwide successful products. The eyepiece-less technology which is implemented in our systems allows a nearly fatigue-free operation with the microscope. More comfort is not possible.



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Consultant

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Solution Provider

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Consultant

Vision Ventures is an independent, internationally operating boutique M&A advisory that focuses on SMEs active in machine vision and optical technologies. Our services cover strategy consulting, identification and improvement of value drivers – especially in preparation of company

transactions –, market-based enterprise valuation and the end-to-end management of sell-side and buy-side M&A. For investors we also provide expert opinions on enterprise value, business plan and market environment.

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Producer

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Integrator, Solution Provider

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Distributor

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Producer, Solution Provider

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Distributor, Integrator, Producer, Solution Provider

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Distributor

VKT Video Kommunikation GmbH, Technisches Fernsehen
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Solution Provider

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Producer

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Solution Provider

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Producer

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Integrator, Solution Provider

Weber Systemtechnik · Hans-Sachs-Str. 10, 35576 Wetzlar, Germany,
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Distributor, Integrator, Solution Provider

Weiss Imaging and Solutions GmbH · Kohlstattstr. 3, 85235 Odelzhausen,
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Producer

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Machine Builder/OEM, Solution Provider

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Producer

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Solution Provider

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Producer

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Producer

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Machine Builder/OEM, Solution Provider

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Integrator, Solution Provider

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Machine Builder/OEM, Producer, Solution Provider

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Producer

Active Silicon designs and manufactures digital imaging products and technologies. These include embedded vision systems, camera-end interface boards and frame grabbers. Embedded vision systems include customized solutions typically built around the COM Express or Xilinx

Zynq architecture; camera interface boards include 3G-SDI, HDMI, USB 3.0 and IP solutions; CoaXPress and Camera Link frame grabbers are available in PC and embedded form-factors and are supported under Windows, Linux and QNX.

Active Silicon Ltd. · Pinewood Mews, Bond Close, Iver SL0 0NA, United Kingdom,
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Producer

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Producer

Adimec designs and manufactures high-performance industrial cameras for equipment manufacturers worldwide with demanding machine vision, medical, or military applications whose goal is to be a product leader in their market. The Netherlands-based Holding company has business offices in

Europe, the United States, Japan, and Singapore. Adimec cameras use high quality CCD and CMOS sensor technologies and support a range of interfaces such as CameraLink, GigE, CoaX-Press, LVDS, HD-SDI, DVI or custom.

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Producer

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Solution Provider

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Producer

AnaFocus is specialized in the design and production of custom high-speed, high-performance CMOS camera systems on-chip (camera SoC) and vision systems on-chip (VSoC) for industrial, surveillance, scientific, and medical applications. Additionally, AnaFocus develops and commercializes a cata-

logue of standard products consisting of high-performance CMOS single-chip solutions for imaging and vision.

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Producer

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Distributor

ATD Electronique offers innovative components dedicated to imaging applications for the European market: image sensors (CCD, CMOS, InGaAs, Thermal), optics, interface circuits, imaging processors, cables, M-OLED displays. Started with Sony 27 years ago, ATD Electronique's offer has been en-

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ATD Electronique SAS · 2-6 Rue Emile Pathé - Espace Lumière Bât 2, 78400 Chatou, France, Tel.: +33 1 301 569 70, sales@atdelectronique.com, www.atdelectronique.com

Solution Provider

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Distributor

By combining innovative technology and customer-oriented service, Baumer ranks among the leading manufacturers of digital cameras and vision sensors. Modern image processing applications face the challenge of successfully completing complex inspection tasks at top speed. Baumer products are specially developed for demanding applications with high performance and quality requirements. With long-time stable reliability, versatility and easy integration, they convince customers all over the world.



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Producer

Bentham Instruments Ltd. · 2 Boulton Road, RG2 0NH Reading, United Kingdom,
Tel.: +44 118 975 13 55, sales@bentham.co.uk, www.bentham.co.uk

Producer

CCS
CREATING CUSTOMER SATISFACTION

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Tel + 32 (0)2 333 00 80 • e-mail info@ccseu.com • www.ccs-grp.com

CCS Inc. is the global leader in LED lighting for machine vision applications, pioneering advances in illumination and Photonics products and technologies. Headquartered in Kyoto, Japan, CCS has over 25 years of experience in illumination and has more than 15 locations worldwide. The company is technology-driven and sets great store by research and development – filing over 270 lighting related patents worldwide, and constantly striving for the best technological solutions.



CCS Europe
Bergensesteenweg 421 B
1600 Sint-Pieters-Leeuw
Belgium
Tel.: +32 2 333 00 80
info@ccseu.com
www.ccs-grp.com

Producer

Comar Optics · Photon House, Station Road, Linton, CB21 4NW Cambridge, United Kingdom, Tel.: +44 1223 866 120, info@comaroptics.com, www.comaroptics.com

Producer

Crometic · Via Julius-Durst Str. 98, 39042 Bressanone/Brixen, Italy,
Tel.: +39 0472 273 730, info@crometic.com, www.crometic.com

Distributor

CSI · 7 Meadowfield Park South, NE43 7QA Stocksfield, United Kingdom,
Tel.: +44 1661 842 741, gilscott@csi.co.uk, www.csi-stocksfield.co.uk/

EUROPE

Association

The European Machine Vision Association EMVA is a non-for-profit and non-commercial association representing the Machine Vision industry in Europe. The association has been founded in 2003 in Barcelona by industry representatives from all over Europe as a network to promote the development

and use of machine vision technology. The EMVA is open for all types of organizations having a stake in machine vision, computer vision, embedded vision or imaging technologies.

EMVA – European Machine Vision Association

Gran Via de Carles III, 84 (3rd floor), 08028 Barcelona, Spain, Tel.: +34 93 180 70 60, info@emva.org, www.emva.org

Producer

Euresys SA · Avenue du Pré Aily 14, 4031 Angleur, Belgium, Tel.: +32 4 367 72 88, sales@euresys.com, www.euresys.com

Distributor

EyeC-UK Ltd. · 6 Dauntless Road, RG7 3NZ Reading, Berkshire, United Kingdom, Tel.: +44 118 983 33 47, info@eyec-ukandireland.co.uk, www.eyec-ukandireland.co.uk

Solution Provider

FDS Research, d.o.o. · Suhadolcanova 28, 1231 Ljubljana-Črnuče, Slovenia, Tel.: +386 1 589 75 81, info@fdsresearch.si, www.fdsresearch.si

Machine Builder/OEM

Flir Advanced Thermal Solutions · 19, bld Bidault, 77183 Croissy-Beaubourg, France, Tel.: +33 1 413 397 97, info@flir.com, www.flir.com

Producer

Fort SA · 3 rue Lambert ZL de la Gaudre, 91410 Dourdan, France, Tel.: +33 1 608 118 18, info@fort-fr.com, www.fort-fr.com

Producer

Gardasoft Vision was founded in 1999 producing LED lighting controllers for the Machine Vision industry, and is now established as a global leader in the design, manufacture and application of high performance LED control technology and high intensity LED lighting. Since its inception, Gar-

dasoft has grown strongly through a continuous high level of re-investment in Research and Development.

Gardasoft Vision Limited · Trinity Court Buckingham Business Park Swavesey, CB24 4UQ Cambridge, United Kingdom, Tel.: +44 1954 234 970, vision@gardasoft.com, www.gardasoft.com

Producer

Global Laser Ltd. · Units 9-10 Roseheyworth Business Park, NP131SP Abertillery, Gwent, United Kingdom, Tel.: +44 1495 212 213, sales@globalaserstech.com, www.globalaserstech.com

Integrator

Gpixel delivers off-the-shelf and customized CMOS image sensors that meet the demands of scientific, industrial, professional, and medical cameras. At Gpixel a seasoned, multi-disciplinary team of experts is passionate about pushing the boundaries of image sensing technologies. As a proven

designer and supplier of advanced CMOS image sensors, they deliver both off-the-shelf and fully-customized advanced image sensor solutions.

Gpixel NV · Mechelsesteenweg 271, 2018 Antwerp, Belgium, Tel.: +32 330 344 42, info@gpixel.eu, http://en.gpixelinc.com/

Machine Builder/OEM

Graticules Optics Limited · 17-19 Morley Road, TN9 1RN Tonbridge, United Kingdom, Tel.: +44 1732 360 460, sales@graticulesoptics.com, www.graticulesoptics.com

Solution Provider

Hexagon Manufacturing Intelligence · World Headquarters Office, Cedar House, 78 Portsmouth Road, KT11 1AN Cobham, Surrey, United Kingdom, Tel.: +44 20 706 865 80, marketing@hexagonmi.com, www.hexagonmi.com

Producer

Ibsen Photonics is a global leader in developing and manufacturing transmission grating components and grating based OEM spectrometer modules for a wide range of telecom, analytical, sensing, and laser mar-

kets. With more than 25 years of experience in transmission gratings and more than 10 years in high volume OEM spectrometer production (from 175 to 2500 nm), we are perfect fit for all kind of instrument makers.

Ibsen Photonics A/S · Ryttermarken 17, 3520 Farum, Denmark Tel.: +45 4434 700 0, inquiry@ibsen.com, https://ibsen.com/

Solution Provider

Icos Vision Systems · Industriepark Haasrode zone 1 Esperantolaan 8, 3001 Heverlee, Belgium, Tel.: +32 16 398 220, info@icos.be, www.icos.be

Research Facility

Ideko S.Coop develops its activity in eight research lines under the common scope of developing new products and/or services for manufacturing industry. In particular, Inspection and Measurement research line aims with the development of innovative automated measuring solu-

tions based on Machine Vision and Photonic technologies.

Ideko S.Coop · Arriaga Kalea 2, 20870 Elgoibar, Spain, amendikute@ideko.es, www.ideko.es

Distributor

Founded in 1994, Image S, based in Mariano Comense (CO) Italy, is a reference for system integrators and OEMs in the machine vision industry in Italy for over two decades. The solutions offered find application in different fields: manufacturing, military, medical and scientific. Image S supplies all

the products required to deploy vision systems: industrial cameras, frame grabbers, lenses, LED lights, laser and optical fiber standard and special cables, software and accessories.

Image S S.R.L. · Via Tommaso Grossi, 31, 22066 Mariano Comense (Co), Italy, Tel.: +39 031 746 512, sales@imagessrl.com, www.imagesspa.it

Distributor

Infaimon, S.L. · Vergós, 55, 8017 Barcelona, Spain, Tel.: +34 93 252 57 57, infaimon@infaimon.com, www.infaimon.com

Producer, Solution Provider

InRay Solutions Ltd. · 125 Tzarigradsko shosse blvd., block 2, room 510, 1113 Sofia, Bulgaria, Tel.: +359 2 971 57 51, inrays@inrays.com, www.inrays.com

Machine Builder/OEM, Solution Provider

Irida Labs · Patras Science Park, 26504 Rio, Achaia, Greece, Tel.: +30 26 109 115 68, info@iridalabs.gr, www.iridalabs.gr

Machine Builder/OEM

Ivisys · Siktgatan 2, 162 50 Vällingby, Sweden, Tel.: +46 073 464 66 63, vp@ivisys.com, www.ivisys.com

Producer

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-CMOS progressive area scan and line scan cameras, JAI is a leading provider of multi-imager cameras incorporating advanced prism-block technology, including 3-CMOS RGB area scan cameras, 2-CMOS multi-spectral cameras plus a complete family of 3-CMOS/4-CMOS line scan cameras. JAI's product program includes cameras for visible, UV, NIR and SWIR imaging with GigE Vision, USB3 Vision, CoaXPress, Camera Link and SFP+ interfaces.



See the possibilities

JAI AS - Denmark
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2500 Valby
Denmark
Tel.: +45 4457 8888
Fax: +45 4491 3252
camerasales.emea@jai.com
www.jai.com

Integrator, Solution Provider

JasVisio - Vision Artificial · Olivera, 3, 25286 Olius, Spain,
Tel.: +34 973 100 602, info@jasvisio.com, www.jasvisio.com

Solution Provider

JLI Vision A/S · Poppelgaardvej 7-9, 2860 Soeborg, Denmark,
Tel.: +45 396 608 09, info@jli.dk, www.jli.dk

Integrator

As a global supplier for quality tools for injection molding of thermosets and thermoplastic, Kolektor provides integral services and expert support in the demanding segments of the automotive industry and the industry of household appliances. The company specializes in development and pro-

duction of lines and machines, specialized equipment for production processes, production automation and machine vision.

Kolektor Orodjarna d.o.o. - BU Vision · Slandrova 10, 1231 Ljubljana, Slovenia,
vision@kolektor.com, www.kolektorvision.com

Distributor

Lambda Photometrics Ltd. · Lambda House, Batford Mill, AL5 5BZ Harpenden, United Kingdom, Tel.: +44 1582 764 334, adrian@lambdaphoto.co.uk, www.lambdaphoto.co.uk

Producer

Lambert Instruments · Leonard Springerlaan 19 (5th floor), 9727 KB Groningen, Netherlands, Tel.: +31 50 501 84 61, info@lambertinstruments.com, www.lambertinstruments.com

Producer

Laser Quantum Ltd. · Emery Court, SK4 3GL Stockport, United Kingdom,
Tel.: +44 161 975 53 00, info@laserquantum.com, www.laserquantum.com

Producer

LAT elektronik AB · Krossgatan 18, 16250 Vällingby, Sweden,
Tel.: +46 87 049 225, info@latab.se, www.latab.se

Producer

LED Microsensor NT · Kurchatova, 10A, 1N, 194223 Saint-Petersburg, Russia,
Tel.: +7 812 633 06 35, info@lmsnt.com, www.lmsnt.com

Distributor, Producer

Merz technologies is a Machine vision technology solution and service provider. Since 2013 the company has been involved in providing services in the field of machine vision software development, machine vision system verification and validation, testing machine vision hardware and software and commissioning robotic machine vision systems across global automobile manufactures.

Merz freeform technologies · ul. Bohaterow Westerplatte 9/303G, 65-034 Zielona Góra, Poland, Tel.: +48 68 320 79 34, info@freeform-technologies.de, www.merz-technologies.com

Producer

Microtec · Julius-Durst 98, 39042 Brixen, Italy,
Tel.: +39 0472 273 611, info@microtec.eu, raymetic.com

Distributor

Molenaar Optics VOF · P.O. Box 2, 3700 AA Zeist, Netherlands,
Tel.: +31 30 695 10 38, info@molenaar-optics.nl, www.molenaar-optics.com

Solution Provider

Neadvance Machine Vision S.A. · Travessa de Gaiao, 5/6 2ªFase, 4705-025 Braga, Portugal, Tel.: +49 3221 322 21 53, sales.de@neadvance.com, www.neadvance.com

Producer

New Imaging Technologies (NIT) · 1-4 Impasse de la noisette, Bat D-1er étage, 91370 Verrières le Buisson, France, Tel.: +33 1 644 788 58, info@new-imaging-technologies.com, www.new-imaging-technologies.com

High-Resolution Imaging Modules for Industrial and Non-Industrial Applications



Producer

NTI · 32 Route de Seichebrières, 45530 Vitry aux Loges, France, Tel.: +33 238 593 051, info@nti-measure.com, www.nti-measure.com

Machine Builder/OEM

Odos imaging is technology focused company manufacturing systems for the capture of high-resolution, time-of-flight, 3D video. Current systems have resolution exceeding 1.3 megapixels. High frame rates and performance in strong ambient light are key features, allowing operation both indoors and outside. GigEVision interfaces enable rapid deployment and simple multi-system connectivity. We offer both complete systems and component technologies for use in a wide variety of demanding applications.

Odos Imaging Ltd. · SMC, The Kings Buildings, EH3 9JF Edinburgh, Lothian, United Kingdom, Tel.: +44 131 650 77 56, info@odos-imaging.com, www.odos-imaging.com

Producer, Solution Provider

Omron Europe B.V. · Wegalaan 67-69, 2132 JD Hoofddorp, Netherlands, Tel.: +31 23 568 13 00, info@eu.omron.com, www.industrial.omron.eu

Producer

Omron Microscan Systems Inc. · Lemelerberg 17, 2402 ZN Alphen aan den Rijn, Netherlands, Tel.: +31 172 423 360, emea@microscan.com, www.microscan.com

Producer

Optics Balzers AG · Neugrüt 35, 9496 Balzers, Liechtenstein, Tel.: +423 388 92 00, info@opticsbalzers.com, www.opticsbalzers.com

Producer

Opto Engineering designs, manufactures and markets imaging components. Our expertise in developing innovative optical systems has earned us worldwide recognition as a supplier of unmatched optical solutions. Opto Engineering is the world leader in telecentric technology as well as the creator of many other optical products which helped our customers solve machine vision applications once considered impossible. Over the years, our expertise has expanded to other technologies; today Opto Engineering is also a primary supplier of advanced LED illuminators, imaging software, cameras, adaptive optics and artificial intelligence machine vision units. While we transform our know-how and ideas into added-value products and services for our customers, we stay true to our "Optics DNA": our constant drive is to deliver increasingly more advanced Optical Imaging Technologies.



Opto Engineering
Circonvallazione Sud, 15
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info@opto-engineering.com
www.opto-engineering.com

Integrator, Solution Provider

OptoFidelity Oy · Hemiankati 8 D, 33729 Tampere, Finland, Tel.: +35 840 774 92 59, sales@optofidelity.com, www.optofidelity.com

Consultant, Machine Builder/OEM, Producer, Research Facility, Solution Provider

OptoMotive is specialized in FPGA based high-speed intelligent cameras and architectures for demanding and real-time processing machine vision solutions. OptoMotive assortment of modular high-speed intelligent cameras Cameleon, Camelopard and Velociraptor with its flexible architecture covers wide array of uses. Expandable FPGA architecture and real-time processing gives the camera a chance to control a process at a very high speed without any additional control units (camera centric systems).

OptoMotive, mechatronics Ltd. · V Murglah 229, 1000 Ljubljana, Slovenia, Tel.: +386 1 429 29 14, info@optomotive.si, www.optomotive.si

Distributor, Integrator, Solution Provider

PCS Industries Ltd. · Unit 2 Brocks Business Park, SS11 2UG Wickford, Essex, United Kingdom, Tel.: +44 1268 733 515, info@pcs-industries.co.uk, www.pcs-industries.co.uk

Consultant, Solution Provider

Phaer, founded in 2007 and based in Gent, Belgium, represents technology leading vision component manufacturers in the Benelux market. Phaer provides its customers "advance in business with vision." Besides consulting and delivering innovative products, Phaer provides "vision system development support services," which are rooted in more than 20 years 'know how' in supporting vision experts with the selection, validation and application of vision components.

Phaer · Kerkstraat 108, 9050 Gentbrugge, Belgium, Tel.: +32 9 261 61 60, info@phaer.be, www.phaer.be

Solution Provider

Phase One Industrial · Roskildevej 39, 2000 Frederiksberg, Denmark, Tel.: +45 36 460 111, industrial@phaseone.com, industrial.phaseone.com

Producer

Phlox Corporation · Lot n° 8, Rue Louis Berton, Quartier de l'Enfant - ZAC du Quartier, 13100 Aix-en-Provence, France, Tel.: +33 4 429 076 20, christinablanc@mac.com, www.phlox-gc.com

Producer, Solution Provider, Other

Photoneo · Jamnickeho 3, 84105 Bratislava, Slovakia, Tel.: +421 948 766 598, pulisova@photoneo.com, www.photoneo.com

Distributor, Producer

Photonic Products Ltd. · Sparrow Lane, Hatfield Broad Oak CM22 7BA, United Kingdom, Tel.: +44 1279 717 170, sales@photonic-products.com, www.photonic-products.com

Producer

Photron (Europe) Ltd. · The Barn, Bottom Road, West Wycombe, Bucks, HP14 4BS, United Kingdom, Tel.: +44 1494 481 011, ahilton@photron.com, www.photron.com

Distributor

Premier Electronics Ltd. · Old Bishops College/Churchgate, EN8 9XH Waltham Cross, Herts, United Kingdom, Tel.: +44 1992 637 211, sales@premierelect.co.uk, www.premierelect.co.uk/

Solution Provider

Pro-Lite Technology France · 2 Allee Ulysse Gayon, 33650 Martillac, France, Tel.: +33 5 564 924 92, jerome.castay@pro-lite.fr, www.pro-lite.fr

Distributor

Pro-Lite Technology Ltd. · Innovation Centre, University Way, MK43 0BT Cranfield, United Kingdom, Tel.: +44 1234 436 110, info@pro-lite.co.uk, www.pro-lite.co.uk

Distributor, Integrator, Producer, Solution Provider

Prophesee is the inventor of the world's most advanced neuromorphic vision systems. The company's patented sensors and AI algorithms introduce a new computer vision paradigm based on how the human eye and brain work. Like the human vision, it sees events: essential, actionable information in the scene, not a succession of conventional images.

Prophesee (formerly Chronocam)
74 Rue du Faubourg Saint Antoine, 75012 Paris, France, Tel.: +33 1 85 73 27 33, contact@prophesee.ai, www.prophesee.ai

Solution Provider

Scintacor Ltd. · 8 Roydonbury Industrial Estate, CM19 5BZ Harlow, Essex, United Kingdom, Tel.: +44 1279 641 234, sales@scintacor.com, www.scintacor.com

Solution Provider

SEA Vision · via Folla di Sopra, 21, 27100 Pavia, Italy,
Tel.: +39 0382 529 576, czetta@seavision.it, www.seavision.it

Producer, Solution Provider

Sensofar · Parc Audiovisual de Catalunya, Crta. BV-1274 Km 1, 8225 Terrassa, Spain, Tel.: +34 93 700 14 92, info@sensofar.com, www.sensofar.com

Producer

Silios Technologies is specialized in micro-optics. Design and manufacture of VIS/NIR multispectral cameras and custom multispectral filters for any pixelated sensors from any manufacturer. Also diffractive optics for intense lasers, large grisms and CGH. The applications' fields are: Agriculture, Agro-food, MedTechs, Cosmetics, Lasers, Space & Astronomy, Homeland Security & Defense and Forensics.

Silios Technologies · ZI Peynier-Rousset, Rue Gaston Imbert prolongée, 13790 Peynier, France, Tel.: +33 442 53 89 60, contact@silios.fr, www.silios.com

Producer

SKS Vision Systems OY · P.O. Box 353, 40101 Jyväskylä, Finland, Tel.: +358 20 764 89 60, sales@visionsystems.fi, www.visionsystems.fi

Producer

Smartek Vision · Bana Josipa Jelacica 22c, HR-40000 Cakovec, Croatia, Tel.: +385 40 493 800, info@smartekvision.com, www.smartekvision.com

Producer

Sony Europe Ltd. · The Heights, Brooklands, KT13 0XW Weybridge, Surrey, United Kingdom, Tel.: +33 1 559 035 12, zone@eu.sony.com, www.pro.sony.eu/vision

Producer

SPC Company b.v. · Vimmerik 28, 5253 CB Nieuwkuijk, Netherlands, Tel.: +31 73 513 11 88, sales@spccompany.nl, www.spccompany.nl

Distributor

Special Application Products Ltd. · Unit 5 Manor Farm Business Centre, Ipswich IP9 2TD, United Kingdom, Tel.: +44 1473 327 732, sales@sapltltd.co.uk, www.sapltltd.co.uk

Distributor

Spectrum Metrology Ltd. · Unit 8 Ireton Ave, LE4 9EU Leicester, United Kingdom, Tel.: +44 116 276 62 62, sales@spectrum-metrology.co.uk, www.spectrum-metrology.co.uk

Distributor

Stemmer Imaging AB · Sandhamnsgatan 63C, 102 52 Stockholm, Sweden, Tel.: +46 85 551 10 00, michael.cohn@stemmer-imaging.se, www.stemmer-imaging.com

Machine Builder/OEM

Stil · 595 rue Pierre Berthier - Domaine Saint Hilaire, 13855 Aix-en-Provence, France, Tel.: +33 4 423 966 51, contact@stilsa.com, www.stilsa.com

Producer

Sundance Multiprocessor Technology Ltd · "Ciltarn House", HP5 1PS Waterside, Chesham, United Kingdom, Tel.: +44 1494 793 167, divp@sundance.com, www.sundance.com

Producer

Tattile since 1988 develops and produces sophisticated vision systems for different applications in the three divisions Industrial, Traffic and Railways. Tattile offers ANPR solutions for ITS applications and proposes a comprehensive catalogue of smart cameras, line scan cameras, digital cameras, and multi-camera vision controllers for high performing applications. Technological partnerships enable customized solutions, made to respond to the needs of industrial OEMs from the most different industry sectors. Tattile is member of the Lakesight Technologies group.

Tattile Srl · Via Gaetano Donizetti 1-3-5, 25030 Mairano (BS), Italy, Tel.: +39 030 970 00, sales@tattile.com, www.tattile.com

Solution Provider

Techway · 19 avenue de Norvège, 91140 Villebon sur Yvette, France, Tel.: +33 1 64 53 37 90, info@techway.fr, <http://www.techway.fr>

Research Facility

Tecnalia is the largest Research & Innovation company in Spain that was born in January 2011 when eight R&D centers located in the Basque country merged into one single organization. With 1.400 employees, Tecnalia is organized in seven business units, specialized in vertical markets: ICTs, Energy and Environment, Manufacturing, Construction Industry, Health, Innovation Policies, Technical Certification and Comfomity.

Tecnalia · Parque Científico y Tecnológico de Bizkaia Edificio 700, 48170 Bizkaia, Spain, jone.echazarra@tecnalia.com, www.tecnalia.com/en

Producer

Teledyne e2v Ltd is a leading designer and manufacturer of high performance image sensors (CMOS, CCD, EMCCD) and cameras for a broad range of applications including machine vision, medical, science, aerospace and defense imaging. e2v produces the class-leading Uniiqa+, Eliixa+, Aviiva, and Diviina line scan camera ranges, which address a broad range of applications.

Teledyne e2v Ltd · 106 Waterhouse Lane, CM1 2QU Chelmsford, United Kingdom, www.teledyne-e2v.com/

Producer

Teledyne Innovaciones Microelectronicas SLU is specialized in the design and production of custom high-speed, high-performance CMOS camera systems on-chip (camera SoC) and vision systems on-chip (VSoC) for industrial, surveillance, scientific, and medical applications. The team consists of fifty experienced and highly specialized engineers and PhDs expert in high-performance image sensor and SoC design, and in all aspects of vision technology.

Teledyne Innovaciones Microelectronicas SLU
C/ Isaac Newton 4, Pabellón de Italia, Planta 5 SE-NE, 41092 Sevilla, Spain,
Tel.: +34 954 081 273, <https://teledyne-anafocus.com>

Solution Provider, Producer

MSC and SGCC started inside two famous glassmakers: 1963 MSC is created within BSN, as a small department, to invent on-line inspection solutions for its hollow glass production. 1973 SGCC starts its existence within Saint-Gobain glassmaker to perform multi-inspection on glass containers with the first star-wheel principle machine. On December 1st, 2015 the corporate name of the company has changed for Tiama.

Tiama Group · ZA des Plattes, 1 Chemin des Plattes, 69390 Vourles, France, www.tiama.com

Producer

Tordivel AS · Storgata 20, 184 Oslo, Norway, Tel.: +47 2315 870 0, office@toridvel.no, www.scorpionvision.com

EUROPE

Producer

TriVision · Havnegade 23, 5000 Odense, Denmark,
Tel.: +45 28 353 135, korsgaard@trivision.dk, www.trivision.dk

Integrator

Operating in Europe, US and Asia markets for over 20 years, TST Engineering & Vision is specialized in artificial vision products and solutions. The company designs, develops, deploys and markets artificial vision systems for quality control, track & trace of industrial processes.

TST Engineering & Vision · Rua do Centro Empresarial Beloura Office Park Edifício 7 - Piso 0 - Loja 2, 2710 - 693 Sintra, Portugal, contact@tstvision.com, www.tstvision.com

Producer

TVI Vision · Asentajankatu 3, 880 Helsinki, Finland,
Tel.: +358 207 579 518, www.tvivision.com

Association

UKIVA - UK Industrial Vision Association · Stafford Road, SM6 9AA Wallington, Surrey, United Kingdom, Tel.: +44 20 8773 8111, chris.valdes@ppma.co.uk, www.ukiva.org

University

The University of Brescia offers a wide range of educational programmes with Bachelor's and Master of Science (MSc) degrees, postgraduate technical courses, residency programmes and PhD programmes in most areas: business and economics, engineering and technology, law, medicine and surgery.

The University of Brescia is engaged in various collaborative networks, both nationally and internationally.

University of Brescia – Department of Mechanical and Industrial Engineering (DIMI) · Via Branze 43, 25123 Brescia, Italy, https://en.unibs.it/departments/mechanical-and-industrial-engineering

Integrator, Solution Provider

Univision Srl · via Appiani 3, 20038 Seregno, Italy,
Tel.: +39 0362 600 201, info@univision.it, www.univision.it

Machine Builder/OEM

Videometer A/S · Lyngso Allé 3, 2970 Horsholm, Denmark,
Tel.: +45 457 610 77, info@videometer.com, www.videometer.com

Distributor, Producer

Vision Light Tech · Protonenlaan 22, 5405 NE Uden, Netherlands,
Tel.: +31 413 260 067, info@vlt.nl, www.visionlighttech.com

Distributor

Visionlink Srl · Via Marco Polo 22, 20038 Seregno, Italy,
Tel.: +39 0362 600 202, info@visionlink.it, www.visionlink.it

Distributor, Integrator, Solution Provider

Vistek Machine Vision and Automation AS · Kemal Nehrozoglu caddesi, 41480 Kocaeli, Turkey, Tel.: +90 262 678 89 02, info@vistekas.com, www.vistekas.com

Producer

V-Optics designs, manufactures and sells sensors and measurement systems able to characterize light reflective and transparent surfaces. The proposed solutions are based on phase shifting deflectometry technology.

V-Optics developed a set of sensors and equipment for several applications used in various industries, e.g. Plastics and Composites, Glazing, Paper Mills, Medical Devices.

V-Optics SAS · ZAC Mermoz - Espace Mermoz 10, rue du 11ème Régiment d'Aviation, 57155 Marly, France,
Tel.: +33 3 87 76 86 90, info@v-optics.fr, www.v-optics.fr

Research Facility

Vicomtech (Visual Interaction and Communication Technologies Centre) is an applied research centre specialising in Advanced Interaction, Computer Vision, Data Analytics and Computer Graphics technologies. The centre

aims to respond to the innovation requirements of companies and institutions. To do this, it conducts applied research and develops multimedia visual interaction and communications technologies.

Vicomtech · Paseo Mikeletegi 57, Parque Científico y Tecnológico de Gipuzkoa, 20009 Donostia / San Sebastian, Spain,
Tel.: +34 943 309 230, info@vicomtech.org, www.vicomtech.org/en

Producer

Video Systems is a company specialized on embedded vision systems development and production. A 20th year experienced staff support customer on R&D, develop and production of in-

dustrial quality control and process control systems. 3D acquisition and elaboration and neural network systems are key-points of final systems.

Video Systems · Via Marinelli 1/1, 33033 Codroipo (UD), Italy,
info@videosystems.it, https://videosystems.it/en/

Other

The Vision Club of Finland has over 200 members representing machine vision companies, endusers, universities and research organisations.

Vision Club of Finland · Asemapäällikönkatu 12 B, 00520 Helsinki, Finland,
Tel.: +358 50 400 6624, office@automaatioseura.fi, www.automaatioseura.fi/in-english/

Distributor, Integrator

ViTec was established in 1995 with headquarters located in Saint-Petersburg. Since that time the company has been working in the field of industrial measurements and automation. Through access to modern technologies and technical equipment

the team of professionals can efficiently solve the most complex technical problems. In order to increase the speed of customer service in Siberia and the Far East a ViTec-Siberia department was opened in 2006 in Tomsk.

ViTec · Fontanka 170, 198035 Saint-Petersburg, Russian Federation,
info@vitec.ru, www.vitec.ru

Producer

VST Europe is a subsidiary of VS Technology, a Japanese developer and manufacturer of sophisticated imaging equipment with a focus on lenses and lighting solutions. The company supports the machine vision market

with advanced optical know-how to meet the customers' various requirements. With the growth of IT and electronics industries, we are seeing high performance yet light and compact machine vision products.

VST Europe B.V · Herikerbergweg 292-342, 1101 CT Amsterdam, Netherlands,
Tel.: +31 20 305 13 10, https://vst.co.jp/en

Producer, Research Facility, Solution Provider

Xenics is a pioneer of path-breaking infrared technology with a proven track record of more than ten years. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality to support innovative R&D, industrial automation,

machine vision, process control and high-end security applications. The company offers a complete portfolio of line-scan and 2D area-scan products for the VisNIR, SWIR, MWIR and LWIR ranges.

Xenics · Ambachtenlaan 44, 3001 Leuven, Belgium,
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Machine Builder/OEM

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Integrator, Solution Provider

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Producer

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Producer

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Integrator

Serview, Inc. · 420D Kelley Drive, 8091 West Berlin, NJ, United States of America, Tel.: +1 856 719 90 34, steveL@serview.net, www.serview.net

Producer

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Machine Builder/OEM

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Solution Provider

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Consultant

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Machine Builder/OEM

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Machine Builder/OEM

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Other

Balaji MicroTechnologies is India's first company who designs and manufactures machine vision lenses, line scan cameras, complete machine vision solutions.

Balaji Microtechnologies Pvt. Ltd. · D-2/20, Sector-10, DLF Faridabad Haryana-12100, 121006 Delhi, India, Tel.: +91 29 400 62 03, administration@balaji-microtechnologies.com, www.balaji-microtechnologies.com

Producer

BitRefine group · 8 Argyle Street, 999077 Hong Kong, Hong Kong, Tel.: +852 8197 4631, hello@bitrefine.group, https://bitrefine.group

Distributor

By combining innovative technology and customer-oriented service, Baumer ranks among the leading manufacturers of digital cameras and vision sensors. Modern image processing applications face the challenge of successfully completing complex inspection tasks at top speed. Baumer products are specially developed for demanding applications with high performance and quality requirements. With long-time stable reliability, versatility and easy integration, they convince customers all over the world.



Baumer (China) Co., Ltd.
 Building 11, No. 1525 Minqiang Road,
 Songjiang District Shanghai PRC
 201612 Shanghai, China
 Tel.: +86 21 6768 7095
 Fax: +86 21 6768 7098
 sales.cn@baumer.com
 www.baumer.com

Distributor, Producer

Founded in 1991, Daheng Imaging is the most famous high-tech enterprise focusing on developing and manufacturing machine vision components, machine vision system and internet medical products in China. As core asset of public company Daheng Tech, Daheng Imaging are committed to

providing our customers with cutting edge technology, high quality products and perfect service.

China Daheng Group Inc. Beijing Image Vision Technology Branch
 12F Daheng Science & Technology Tower, No.3 Suzhou Str., Haidian District, 100080 Beijing, China, Tel.: +86 10 828 288 788 081, www.daheng-image.com/

Consultant, Distributor

Envision is #1 machine vision solution provider in Korea. The company provides all kinds of machine vision components and consultation. It also has

several custom project to meet customer's specific needs with the R&D center and global partners.

Envision Co. Ltd. · 1-603, IT Castle Gasandong Geumcheon-gu, 153-768 Seoul, Republic of Korea, info@envision.co.kr, www.envision.co.kr/en/main.asp

Distributor, Solution Provider

G4 Technology Co., Ltd. · 5F, No. 46, Sec. 3, Minquan E. Rd, Taipei 104-77, Taiwan, Tel.: +886 2 250 318 03, ken@g4.com.tw, www.g4.com.tw

Producer, Solution Provider

Gidel Ltd. · 2 Ha'ilan St. P.O.Box 281, 30600 Or Akiva, Israel, Tel.: +972 4 610 25 00, sales_eu@gidel.com, www.gidel.com

Producer

Goyo Optical Inc. · 3-8-31 Hamazaki, 351-0033 Asaka-Saitama, Japan, Tel.: +81 48 474 22 35, info@goyooptical.com, www.goyooptical.com

Solution Provider

Guangzhou Eusens Technology Co.,Ltd · Panyu Luoxi, 510075 Guangzhou, ACT, China, Tel.: +1 3760 812 861, sales@panasonicservomotor.com, panasonicservomotor.com/e5cn/

Producer

Hangzhou Hikvision Digital Technology Co.
 No.555 Qianmo Road, Binjiang District, 310051 Hangzhou, China,
 Tel.: +86 571 88075998, overseasbusiness@hikvision.com, www.hikvision.com

Producer

Hirakawa Hewtech, which established in September 1948 in Tokyo, is specializing in manufacturing and sales of electric wires for the electrical and electronic industries and consistently pursue leading-edge technologies that fill the needs of the times. In the FA field, Hirakawa Hewtech has devel-

oped a wide range of cables including Camera Link, USB3Vision, GigE Vision, CoaXPress and IEEE 1394b cable.

Hirakawa Hewtech Corp. · 6F JK-Omori Bldg., 3-28-10 Minami -oi Shinagawa-ku, Japan, eigyo@hewtech.co.jp, www.hewtech.co.jp/en

Producer

Innomiles teams have been dedicated to identification and industrial applications more than twenty years. Hardware and software have been designed based on years of firsthand experience working closely with customers. The machine vision software offers software development kit (SDK)

and enables developers to incorporate proprietary functions of their own.

Innomiles International Co. Ltd.
 4F-3, No.137, Sec. 1, Fuxing S. Rd., Da'an Dist., 10666 Taipei City, Taiwan,
 Tel.: +886 2 877 361 36, sales@innomiles.com, www.innomiles.com

Producer

Inspekto Autonomous Machine Vision systems are designed to put the Machine Vision market on a one-way course, replacing existing expert-centric solutions by ready-to-go out-of-the-box QA systems put at the very hands of the industrial plant QA manager. Inspekto is transforming the

€30B machine vision sector, introducing the world's first powerful entry into the new Autonomous Machine Vision Category.

Inspekto AMV Ltd. · 24 Raoul Wallenberg Street, 69719 Tel Aviv, Israel, info@inspekto.com, https://inspekto.com/

Producer

JAI is a global manufacturer of digital imaging cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-CMOS progressive area scan and line scan cameras, JAI is a leading provider of multi-imager cameras incorporating advanced prism-block technology, including 3-CMOS RGB area scan cameras, 2-CMOS multi-spectral cameras plus a complete family of 3-CMOS/4-CMOS line scan cameras. JAI's product program includes cameras for visible, UV, NIR and SWIR imaging with GigE Vision, USB3 Vision, CoaXPress, Camera Link and SFP+ interfaces.



See the possibilities

JAI Ltd. - Japan
 10-35 Sakae-chou Kanagawa-ku
 221-0052 Yokohama, Kanagawa
 Japan
 Tel.: +81 45 440 0154
 Fax: +81 45 440 0166
 camerasales.apac@jai.com
 www.jai.com

Association

Japan Industrial Imaging Association
 2-10-15, Nakameguro, Yamate Ave. K Bldg., 153-0061 Meguro, Tokyo, Japan,
 Tel.: +81 3 371 639 33, info@jiia.org, www.jiia.org

Producer

Kamera · 6A Massada St., 45294 Hod Hasharon, Israel,
 Tel.: +972 9 760 34 25, info@kamera.com, www.kamera.com

Producer

Kaya Instruments · 20 HaMesila St., 3688520 Neshar, Israel,
 Tel.: +972 72 272 35 00, george@kayainstruments.com, www.kayainstruments.com

Machine Builder/OEM, Solution Provider

KOS Laboratory Homogenizer · A18 Second Floor, Building 1,
 Shunlian Machinery Plaza, ChenCun Town, 528313 Foshan, Guangdong, China,
 Tel.: +86 757 293 185 41, drbluejack@yahoo.com,
 www.emulsifyingmixer.com/homogenizer/lab-homogenizer.html

Distributor, Machine Builder/OEM, Producer, Solution Provider

Lanoptik Technologies Ltd.
 R1002, No.140 Zhongshan Avenue, 510630 Guangzhou, China,
 Tel.: +86 20 389 860 17, info@lanoptik.com, www.lanoptik.com

Machine Builder/OEM

Leading-Tech Laser Co., Ltd.
 5th floor, building 52, No.5688, LongWu Road, 200241 Shanghai, China,
 Tel.: +86 21 335 881 22, sale@leading-techlaser.com, www.leading-techlaser.com

Producer

Mega Phase Industrial Inspection Technology (Shanghai) Co., Ltd. (Mega Phase Technology), as the leading industrial structured light 3D camera manufacturer and a member of Shanghai Software Industry Association, is located in Shanghai Zhangjiang Science City. Since the establishment,

the company has achieved great technical development and obtained a number of patent certificates, including invention patents, utility model patents and software copyrights.

Mega Phase Industrial Inspection Technology(Shanghai) Co., Ltd.
 #1690 Cailun Road, Pudong New District Room 408-410, 201203 Shanghai, China,
 Tel.: +86 21 63631362, marketing@mega-phase.cn, www.mega-phase.cn/3dvision

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Embedded and multi-camera systems

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- For all XIMEA USB3 and PCIe cameras
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- Multiple cameras to a single interface
- Over 100 meter cable length to host PC
- Centralized power supply and synchronisation

info@ximea.com www.ximea.com

Producer

Nacacue Corporation was established in August 1980. The company specializes in developing new technology. Specifically in fields closely link to trends in society. It manufactures optical equipment, LED lighting solutions and electronic control systems for industrial machine vision. The company

goal is to contribute to the societies in which our customers are located through developing new technology to cultivate new markets.

Nacacue Corporation

194-1, Higashitsuchikawa-cho, Kuze, Minami-ku, 601-8204 Kyoto, Japan, Tel.: +81 75 934 41 78, info@nacacue.co.jp, www.nacacue.com

Producer

NED (Nippon Electro-Sensory Devices Ltd.)

Shinagawa-ku, Ohi 1-45-2 Gibraltar Ohi Bldg, 4f, 140-0014 Tokyo, Japan, Tel.: +81 3 571 831 81, info@ned-sensor.com, www.ned-sensor.co.jp/en

Integrator

Nexus Engiconsults · A 115 2nd floor Shakarpur, 110092 New Delhi, India, Tel.: +91 98 107 698 31, info@nexusengiconsults.com, www.nexusengiconsults.com

Producer

OPT Machine Vision Tech Co., LTD

NO8. Jinsheng Road, 523853 Jinxia Chang'an Dongguan, Guangdong, China, Tel.: +86 769 827 161 88, optmv1@optmv.com, www.optmv.net

Distributor, Machine Builder/OEM, Solution Provider

Prime Technologies · # 302, Bajsons Industrial Estate, Cardinal Gracious road Chakala, Andheri (East), 400099 Mumbai, India, Tel.: +91 98 905 321 89, primetechindia@gmail.com, www.primetechindia.co.in

Machine Builder/OEM

RAA Vision Pvt Ltd. · Om vihar, 110058 New Delhi, Delhi, India, Tel.: +91 99 116 902 40, amit@raavision.com, www.raavision.com

Producer

Shenzhen Kuangshi Communication Technology · 6/F, No.1 Building, Zhongyuntai Industry Park, Tangtuo Shiyan, 51818 Shenzhen, China, Tel.: +86 755 297 818 35, zteyhb@gmail.com, www.ksfiber optic.com

Solution Provider

Sualab is an artificial intelligence-based provider of Deep Learning Machine Vision Solutions. The company combines the technologies of those industries to fuel research into various technologies and products that make human life more convenient. In particular, Sualab enables inspection

of the manufacturing industry by researching various machine vision systems that can replace the human eye in the industrial field.

Sualab · Gwanak-ro 1 Seoul National University Research Park Main Building Suite 511, Seoul Gwanak-gu, Republic of Korea, Tel.: +82 2 626 403 62, sales@sualab.com, www.sualab.com

Solution Provider

TMS Lite Sdn Bhd · 2A-2, Tingkat Kenari 5, Desa Ria, Sungai Ara, 11900 Bayan Lepas, Penang, Malaysia, Tel.: +604 646 84 28, sales@tms-lite.com, www.tms-lite.com

Producer

Toshiba Teli Corporation provides Vision, USB3 Vision, Cameralink and Firewire with using high quality sensors to meet customer's demands. Our products are subject to total in-house manufacturing from the procurement and supply of components to assembly, wiring and inspection.

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Toshiba Teli Corporation · 4-7-1 Asahigaoka, 1910065 Hino, Tokyo, Japan, Tel.: +81 425 898 771, teli_glb@toshiba-teli.co.jp, www.toshiba-teli.co.jp

Integrator

View-Factor · Av Circunvalacion, Cochabamba, Bolivia, Tel.: +591 4 445 45 95, agalindo@view-factor.com, www.view-factor.com

Producer

Vieworks' industrial cameras create values beyond what is visible.

Vieworks develops industrial cameras based on the industry's top optical design technology. The industrial camera plays the role of an "eye" in the machine vision, which is one of the core areas of industrial automation. For quality control and stabilization of the inspection objects, the company focuses on the development of camera technologies for taking higher resolution at a faster speed.

cutting edge technology and top quality as well as value proposition that goes beyond just imaging.



VIEWORKS

Vieworks Co., Ltd.

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Tel.: +82 70 7011 6161
Fax: +82 31 386 8631
vision@vieworks.com
vision.vieworks.com

For a company to achieve the maximum system performance in the machine vision industry, multilateral experiences and technical knowledge in sensors, optics, applications, etc. are essential. Vieworks is ready to step up to become "your vision partner" that proposes the optimized system based on the expertise and market experience in various applications. We will continue to provide cameras of the

Producer, Integrator

Located in Shanghai, China, xVision provides automation solutions for manufacturers, focusing on 3C (Computer, Communication, Consumer Electronics) customers. They have a powerful team that includes Structure Design, Robotic Application and Machine Vision Application. xVision pro-

vides a one of a kind 3D sensor that outputs Depth image, RGB images and Point Cloud data and wants to be one of the leading Machine Vision companies in China.

xVision Automation S&T Shanghai Inc. · 2F, Building C509, Caobao Road, Xuhui, 201108 Shanghai, China, Tel.: +86 18 621 600 840

Solution Provider

The Huaray Tech is machine vision subsidiary of Dahua Technology CO., LTD. Dahua Technology is a leading advanced video surveillance solution provider with a complete product portfolio including an advanced series of front to back end devices, display, software, smart home solutions,

access controls and alarms as well as intelligent traffic systems.

Zhejiang Huaray Technology CO.LTD. · NO.1199 BinAn Road, Binjiang District, Hangzhou, China, Tel.: +86 571 872 357 66, www.huaraytech.com

Products & Services



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70	Frame Grabbers
71	Illumination & Lighting Systems
73	Microscopes, Endoscopes & Equipment
74	Optical Metrology
76	Optics
78	Processors, Interfaces, Cables, Peripherals
80	R & D
81	Software
83	Vision Sensors, Smart Cameras & Embedded Systems
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Cameras & Image Sensors

ABS	www.abs-jena.de
Acal BFi Germany	www.bfiophtilas.com
Adimec	www.adimec.com
Aicon 3D Systems	www.aicon3d.de
AIM Infrarot Module	www.aim-ir.de
Allied Vision Technologies	www.alliedvisiontec.com
Allison Park Group	www.apgvision.com
Alrad Imaging	www.alrad.co.uk
AMS Technologies	www.amstechnologies.com
AnaFocus	www.anafocus.com
Andanta	www.andanta.de
Andor Technology	www.andor.com
AOS Technologies	www.aostechnologies.com
Applied Scintillation Technologies	www.scintacor.com
Artray	www.artray.co.jp
Asentics	www.asentics.de
Automation Technology	www.automationtechnology.de
BAP Image Systems	www.bapimngsys.com
Basler Vision Technologies	www.baslerweb.com
Baumer	www.baumer.com
Beijing Microview	www.microview.com.cn
Bock Optronics	www.bockoptronics.ca
C-Cam Technologies	www.c-cam.be
China Daheng Group	www.daheng-image.com
Chromasens	www.chromasens.de
Cmos Vision	www.cmosvision.com
Cognex	www.cognex.com
Cohu	www.cohu-cameras.com
Compar	www.compar.ch
Cosyco	www.cosyco.de
CSEM	www.csem.ch
Cypress Semiconductor	www.cypress.com
Datalogic Automation	www.datalogic.com
Datapixel	www.datapixel.com
Dedo Weigert	www.dedoweigertfilm.de
Digital West Imaging	www.highspeedvideos.com
E2v	www.e2v.com
Ebs Automatisierte Thermographie und Systemtechnik	www.irpod.net
Edmund Optics	www.edmundoptics.de
EHD imaging	www.ehd.de
Eltec Elektronik	www.eltec.com
Entner Electronics	www.entner-electronics.com

Epix	www.epixinc.com
Erhard + Leimer	www.erhardt-leimer.com
Eureca Messtechnik	www.eureca.de
Euresys	www.euresys.com
EVision Systems	www.evision-systems.de
Fabrimex Systems	www.fabrimex-systems.ch
Fairchild Imaging	www.fairchildimaging.com
Fastec Imaging	www.fastecimaging.com
FiberVision	www.fibervision.de
FJW Optical Systems	www.findrscope.com
Flir Advanced Thermal Solutions	www.flir.com
Flir Systems	www.flir.com
Flir Systems	www.flir.com/mv
Fluke	www.fluke.de
Fort	www.fort-fr.com
Framos	www.framos.eu
Fraunhofer IMS	www.ims.fraunhofer.de
FSI Technologies	www.fsinet.com
Fuzhou Feihua Optoelectronic Technology	www.fzfh.com
G4 Technology	www.g4.com.tw
Gevicam	www.gevicam.com
Gpixel	www.gpixelinc.com/
Gsvitec	www.gsvitec.com
Hamamatsu Photonics	www.hamamatsu.com
Helion	www.helionvision.com
Heliotis	www.heliotis.ch
High Speed Vision	www.hsvision.de
Hitachi Kokusai Electric Europe	www.Hitachi-keu.com
Horn Imaging	www.horn-imaging.de
Ico Data	www.icodata.de
IDS	www.ids-imaging.com
Ifm electronic	www.ifm.com
Ikegami	www.ikegami.de
Illunis	www.illunis.com
Image House	www.imagehouse.dk
Image S	www.imagessrl.com
Imaging Solutions Group	www.isgcameras.com
Imi tech	www.imi-tech.com
Imperx	www.imperx.com
IMS Chips	www.ims-chips.de
Industrial Vision Systems	www.industrialvision.co.uk
Infaimon	www.infaimon.com

InfraTec	www.infratec.de
Innomiles International	www.innomiles.com
Insensiv	www.insensiv.de
IOS	www.ios-web.de
Ircam	www.ircam.de
IS Imaging Solutions	www.imaging-solutions.de
ISVI	www.isvi-corp.com
JAI	www.jai.com
Japan F.A. Systems	www.jfas.co.jp
JenCam	www.jencam.de
Jenoptik	www.jenoptik.de
Kamera Werke Dresden	www.kwdo.de
Kappa opto-electronics	www.kappa.de
Karlheinz Hinze Opto-engineering	www.hinze-opto.de
KeeKoon Electronics	www.keekoon.com
Klughammer	www.klughammer.de
Kvant	www.kvant.sk
Lambda Photometrics	www.lambdaphoto.co.uk
Lambert Instruments	www.lambert-instruments.com
Leitner Industrial Endoscopy	www.leitner-efer.de
Leutron Vision	www.leutron.com
Leuze Electronic	www.leuze.com
LMI Technologies	www.lmi3d.com
Lord Ingenierie	www.lord-ing.com
LOT Quantum Design	http://lot-qd.de
Lucid Vision Labs	www.thinklucid.com
Lumasense Technology	www.lumasenseinc.com
Luster LightVision Tech	www.lusterinc.com
MAK Bildtechnik	www.mak-bildtechnik.de
Matrix Vision	www.matrix-vision.de
MaxxVision	www.maxxvision.com
Menzel Vision and Robotics	www.menzelab.com
Mega Phase Industrial Inspection Technology	www.mega-phase.cn
Mesa Imaging	www.mesa-imaging.ch
MG Optical Solutions	www.mgopticalsolutions.com
Micro-Epsilon	www.micro-epsilon.com
Microsystems	www.microsystems.it
Mikromak Service	www.mikromak.com
Mikrotron	www.mikrotron.de
Mitsubishi Electric	www.mitsubishielectric.com

MsiVision	www.msivision.com
NAC	www.nacinc.de
Narragansett Imaging	www.nimaging.com
National Instruments	www.ni.com
NED	www.ned-sensor.co.jp
NET	www.net-gmbh.com
NeuPro Solutions	www.neupro-solutions.com
New Imaging Technologies	www.new-imaging-technologies.com
Notavis	www.notavis.com
NTI	www.nti-measure.com
Odem Technologies	www.odem.co.il
Olympus	www.olympus-europa.com
Omron Microscan Systems	www.microscan.com
Omron	www.industrial.omron.de
ON Semiconductor	www.onsemi.com
Opto Fidelity	www.optofidelity.com
Opto Sonderbedarf	www.opto.de
Optrima	www.optrima.com
Optris	www.optris.de
Optronis	www.optronis.com
Orbis	www.orbis.eu
Panasonic Electric Works	www.panasonic-electric-works.de
Parameter	www.parameter.se
PCO	www.pco.de
Pentacon	www.pentacon.de
PerkinElmer Optoelectronics	www.perkinelmer.com
Phaer	www.phaer.be
Philips	www.apptech.philips.com/vision
Photonfocus	www.photonfocus.com
Photron	www.photron.com
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
Pieper	www.pieper-video.de
Pixelink	www.pixelink.com
PMDTec	www.pmdtec.com
Polytec	www.polytec.de/bv
Precitec	www.precitec.ch
Premier Electronics	www.premierelect.co.uk
Princeton Instruments	www.princetoninstruments.com
Prophesee	www.prophesee.ai

Proxitronic	www.proxitronic.com
Qualimatest	www.qmt.ch
Quest Innovations	www.quest-innovations.com
Rad-icon Imaging	www.rad-icon.com
Rauscher	www.rauscher.de
Redlake	www.redlake.com
RH Engineering	www.rhengineering.de
Ricoh International B.V. - German Branch	www.ricoh-iosd.eu
Roper Scientific	www.roperscientific.de
Rubroeder	www.rubroeder.de
Salvador Imaging	www.salvadorimaging.com
Schael-Optik	www.schael-optik.de
Schäfter + Kirchhoff	www.sukhamburg.de
Schmachtl	www.schmachtl.at
SDT - Dr. Seitner	www.sdt-seitner.com
Second2None	www.visiondragon.com
Secube	www.secube.co.kr
Sedeco Vision Components	www.sedeco.nl
Seiwa Optical	www.seiwaopt.co.jp
Sensor to Image	www.sensor-to-image.de
Sensors Unlimited	www.sensorsinc.com
Sentech	www.sentech.co.jp
Sglux	www.sglux.com
Sharp Microelectronics	www.sharpsme.com
SKS Vision Systems	www.visionsystems.fi
Slomotec	www.slomotec.de
Smartek	www.smartek.hr
Smartray	www.smartray.de
Soliton Technologies	www.solitontech.com
Sony	www.pro.sony.eu/vision
Stemmer Imaging	www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenu.de
Sugitoh	www.sugitoh.jp
SVS Vistek	www.svs-vistek.com
Symco	www.symco.co.jp
Systematic Vision	www.systematicvision.com
Tattile	www.tattile.com
Tekno Optik	www.teknooptik.se
Tekstar Optical	www.tekstaroptical.com
Teledyne Dalsa	www.teledynedalsa.com

Teledyne e2v	www.teledyne-e2v.com
Teledyne Lumenera	www.teledynelumenera.com
The Imaging Source	www.theimagingnsources.com
Thermosensorik	www.thermosensorik.de
Tichawa Vision	www.tichawa.de
Toshiba Teli	www.toshiba-teli.co.jp
Toshiba	www.toshiba.ch
TriDiCam	www.tridicam.de
TVI Vision	www.tvivision.com
Unibrain	www.unibrain.com
VDS Vosskühler	www.vdsvossk.de
Vega Technology Group	www.vegatcgroup.com
Vialux	www.vialux.de
Vicon Motion Systems	www.vicon.com
Videology Imaging Solutions	www.videologyinc.com
Videor Technical	www.videor.com
Vidisys	www.vidisys.de
Vieworks	www.vieworks.com
Visicontrol	www.visicontrol.com
Visiolaser	www.vannier-photelec.fr/visiolaser
Vision & Control	www.vision-control.com
Vision Components	www.vision-components.com
Vision Research	www.visionresearch.com
Vision Tools	www.vision-tools.com
Visiosens	www.visiosens.de
Vistas	www.vistas-gmbh.de
Vitronic	www.vitronic.com
Vizaar	www.vizaar.de
VKT	www.vkt.de
V-Optics	www.v-optics.fr
VRmagic	www.vrmagic.com
Weiss Imaging and Solutions	www.weiss-imaging.de
Wenglor Sensoric	www.wenglor.com
Werner Nophut	www.dsam.de
Xenics	www.xenics.com
Ximea	www.ximea.com
Zertrox	www.zertrox.de
Zhejiang Huaray Technology	www.huaraytech.com

Consulting, Marketing, Education & Other Services

AIA Automated Imaging Association	www.machinevisiononline.org
Alfavision	www.alfavision.de
Arvoo Imaging Products	www.arvoo.com
AS Thermographie	www.as-thermografie.de
Asentics	www.asentics.de
CMES - Chinese Mechanical Engineering Society	www.cmes.org
Cmos Vision	www.cmosvision.com
CMOSIS	www.cmosis.com
Cognex	www.cognex.com
Collischon Optik-Design	www.mikro-optik.de
CSEM	www.csem.ch
CTMV	www.ctmv.de
Datapixel	www.datapixel.com
De Man Industrie-Automation	www.deman.de
Digital West Imaging	www.highspeedvideos.com
Duwe 3D	www.duwe-3d.de
EMVA European Machine Vision Association	www.emva.org
Entner Electronics	www.entner-electronics.com
Envision	www.envision.co.kr
Erhard + Leimer	www.erhardt-leimer.com
Farbmessung Schröder	www.farbmessung.com
FiberVision	www.fibervision.de
Framos	www.framos.eu
Fraunhofer Allianz Vision	www.vision.fraunhofer.de
G4 Technology	www.g4.com.tw
Gesellschaft für Bild- und Signalverarbeitung (GBS)	www.gbs-ilmenau.de
GFal	www.gfai.de
IDS	www.ids-imaging.com
Imaging Lab	www.imaginglab.it
Impuls	www.impuls-imaging.com
INB Vision	www.inb-vision.com
Infaimon	www.infaimon.com
InRay Solutions	www.inrays.com
Inspect	www.inspect-online.com
Irida Labs	www.irdalabs.gr
IS Imaging Solutions	www.imaging-solutions.de
IVAN	www.feda.nl
Dr.-Ing. Jänchen Business Development	www.jaenchen-bd.com

JIIA Japan Industrial Imaging Association	www.jiia.org
Joanneum Research	www.joanneum.at
Kappa opto-electronics	www.kappa.de
Landesmesse Stuttgart	www.vision-fair.de
Lincoln Laser Company	www.lincolnlaser.com
Messe München	www.messe-muenchen.de
Michigan Metrology	www.michmet.com
MsiVision	www.msivision.com
Neurocheck	www.neurocheck.com
Norman N. Axelrod Associates	www.axelrodassociates.com
NTI	www.nti-measure.com
Omron	www.industrial.omron.de
Optical Research Associates	www.opticalres.com
Opto	www.opto.de
Opto Fidelity	www.optofidelity.com
P.E. Schall	www.schall-messen.de
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
Polytec	www.polytec.de/bv
Rubroeder	www.rubroeder.de
Sensor to Image	www.sensor-to-image.de
SmartSurv	www.smartsurv.de
Solving3D	www.solving3d.de
SPG Data 3D	www.spgdata3d.com
Stemmer Imaging	www.stemmer-imaging.com
Strategema Frank Olschewski Consulting	www.stra-te-gema.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de
Supercomputing Systems	www.scs-vision.ch
SVS Vistek	www.svs-vistek.com
Sympo	www.symop.com
Systematic Vision	www.systematicvision.com
Ukiva	www.ukiva.org
University of Applied Sciences	www.fbmn.h-da.de
Univision	www.univision.it
Van de Loosdrecht Machine Vision	www.vdlmv.nl
VDMA Industrielle Bildverarbeitung	www.vdma.org/vision
Vega Technology Group	www.vegatcgroup.com
Vision & Control	www.vision-control.com
Vision Club of Finland	www.automaatioseura.fi
Vision Machines	www.vision-machines.com

Vision Tools	www.vision-tools.com
Vision Ventures	www.vision-ventures.eu
Visionlink	www.visionlink.it
Vitronic	www.vitronic.com

VMT	www.vmt-gmbh.com
Wenglor Sensoric	www.wenglor.com
Zertrox	www.zertrox.de

Frame Grabber

Active Silicon	www.activesilicon.com
Adlink	www.adlinktech.eu
Advantech Europe	www.advantech.eu
Alacron	www.alacron.com
Alrad Imaging	www.alrad.co.uk
Arvoo Imaging Products	www.arvoo.com
Baumer	www.baumer.com
Beijing Microview	www.microview.com.cn
BitFlow	www.bitflow.com
Bock Optronics	www.bockoptronics.ca
China Daheng Group	www.daheng-image.com
Cognex	www.cognex.com
Cosyco	www.cosyco.de
Cyberoptics Semiconductor	www.imagenation.com
EDT	www.edt.com
EHD imaging	www.ehd.de
Ellips	www.ellips.nl
Eltec Elektronik	www.eltec.com
Epix	www.epixinc.com
Fabrimex Systems	www.fabrimex-systems.ch
Fast	www.fast-corp.co.jp
Framos	www.framos.eu
G4 Technology	www.g4.com.tw
Gidel	www.gidel.com
HaSoTec	www.hasotec.com
IDS	www.ids-imaging.com
Image House	www.imagehouse.dk
Image S	www.imagesrl.com
Imaging Solutions Group	www.isgcameras.com
Imperx	www.imperx.com

Infaimon	www.infaimon.com
IS Imaging Solutions	www.imaging-solutions.de
Isra Vision	www.isravision.com
Japan F.A. Systems	www.jfas.co.jp
Karlheinz Hinze Optoengineering	www.hinze-opto.de
Kvant	www.kvant.sk
Lambda Photometrics	www.lambdaphoto.co.uk
Leutron Vision	www.leutron.com
Luster LightVision Tech	www.lusterinc.com
Matrix Vision	www.matrix-vision.de
Matrox Imaging	www.matrox.com/imaging
MaxxVision	www.maxxvision.com
Menzel Vision and Robotics	www.menzelab.com
Microsystems	www.microsystems.it
Mikrotron	www.mikrotron.de
MsiVision	www.msivision.com
National Instruments	www.ni.com
Odem Technologies	www.odem.co.il
Omron Microscan Systems	www.microscan.com
Orbis	www.orbis.eu
Parameter	www.parameter.se
Phaer	www.phaer.be
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
Polytec	www.polytec.de/bv
Premier Electronics	www.premierelect.co.uk
Qualimatest	www.qmt.ch
Rauscher	www.rauscher.de
Schael-Optik	www.schael-optik.de
Schäfer+Kirchhoff	www.sukhamburg.de

Schmachtl	www.schmachtl.at
Second2None	www.visiondragon.com
Sensor to Image	www.sensor-to-image.de
Silicon Software	www.silicon-software.de
Stemmer Imaging	www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de
Sundance Multiprocessor Technology	www.sundance.com
SVS Vistek	www.svs-vistek.com
Symco	www.symco.co.jp
Systematic Vision	www.systematicvision.com

Teledyne Dalsa	www.teledynedalsa.com
The Imaging Source	www.theimagingnsources.com
Videology Imaging Solutions	www.videologyinc.com
Vidisys	www.vidisys.de
Vision Tools	www.vision-tools.com
Visionlink	www.visionlink.it
Vistek	www.vistekas.com
Weiss Imaging and Solutions	www.weiss-imaging.de

ILLUMINATION & LIGHTING SYSTEMS

ABW	www.abw-3d.de
Acal Bfi Germany	www.bfiophtilas.com
Advanced Illumination	www.advancedillumination.com
Allison Park Group	www.apgvision.com
Alrad Imaging	www.alrad.co.uk
AutoVimation	www.autovimation.com
Balluff	www.balluff.com
Baumer	www.baumer.com
Bock Optronics	www.bockoptronics.ca
Büchner Lichtsysteme	www.buechner-lichtsysteme.de
Cavitar	www.cavitar.com
CCS Europe	www.ccs-grp.com
Ceres Vision	www.ceresvision.de
Chromasens	www.chromasens.de
Cognex	www.cognex.com
Coherent	www.coherent.com
Collischon Optik-Design	www.mikro-optik.de
DCM Systemes	www.dcmsystemes.com
Dedo Weigert	www.dedoweigertfilm.de
Digital West Imaging	www.highspeedvideos.com

Edmund Optics	www.edmundoptics.de
Effilux	www.effilux.fr
Erhard + Leimer	www.erhardt-leimer.com
Fabrimex Systems	www.fabrimex-systems.ch
Falcon Illumination MV	www.falcon-illumination.de
Faseroptik Henning	www.faseroptik-henning.de
Fiberoptics Technology	www.fiberoptix.com
FiberVision	www.fibervision.de
Finger	www.finger-kg.de
Framos	www.framos.eu
Frankfurt Laser Company	www.frlaserco.com
FSI Technologies	www.fsinet.com
G4 Technology	www.g4.com.tw
Gardasoft Vision	www.gardasoft.com
GPP Chemnitz	www.gppc.de
Hamamatsu Photonics	www.hamamatsu.com
Helmut Hund	www.hund.de
Hema	www.hema.de
Herbert Waldmann	www.waldmann.com
IB/E Optics	www.ibe-optics.com

Ifm electronic	www.ifm.com
IiM	www.iimag.de
ILEE	www.ilee.ch
Image House	www.imagehouse.dk
Image S	www.imagessrl.com
Infaimon	www.infaimon.com
Innomiles International	www.innomiles.com
Insensiv	www.insensiv.de
IS Imaging Solutions	www.imaging-solutions.de
ISVI	www.isvi-corp.com
Japan F.A. Systems	www.jfas.co.jp
Jenoptik Laser, Optik, Systeme	www.jenoptik-los.de
Jos. Schneider Optische Werke	www.schneiderindustrial-optics.com
Karlheinz Hinze Optoengineering	www.hinze-opto.de
Keyence	www.keyence.de
Klastech	www.klastech.com
Klughammer	http://kms-e.de
Kvant	www.kvant.sk
Lambda Photometrics	www.lambdaphoto.co.uk
Laser 2000	www.laser2000.de
Laser Components	www.lasercomponents.com
LAT elektronik	www.latab.se
LDD Trading Associates	www.iddlight.com
Leistungselektronik Jena	www.lej.de
Leitner Industrial Endoscopy	www.leitner-efer.de
Leutron Vision	www.leutron.com
LMI Technologies	www.lmi3d.com
LOT Quantum Design	http://lot-qd.de
Luster LightVision Tech	www.lusterinc.com
Matrix Vision	www.matrix-vision.de
MaxxVision	www.maxxvision.com
Menzel Vision and Robotics	www.menzelab.com
Metaphase Technologies	www.metaphase-tech.com
MG Optical Solutions	www.mgopticalsolutions.com
Microsystems	www.microsystems.it
Moritex	www.moritex.com
MsiVision	www.msivision.com
MTD	www.mtd-light.com
Myutron	www.myutron.com
Nacacue	www.nacacue.com
NET	www.net-.com
NeuPro Solutions	www.neupro-solutions.com

Odem Technologies	www.odem.co.il
Olympus	www.olympus-europa.com
Omicron Laserage	www.omicron-laser.de
Omron Microscan Systems	www.microscan.com
Omron	www.industrial.omron.de
Opto	www.opto.de
Opto Engineering	www.opto-engineering.com
Opto Precision	www.optoprecision.de
Optometron	www.optometron.de
OptoPolymer	www.optopolymer.de
Orbis	www.orbis.eu
Parameter	www.parameter.se
PerkinElmer Optoelectronics	www.perkinelmer.com
Phaer	www.phaer.be
Phlox	www.phlox-gc.com
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
Planistar Lichttechnik	www.planistar.de
POG Präzisionsoptik Gera	www.pog.eu
Polytec	www.polytec.de/bv
Power Technology	www.powertechnology.com
Profactor	www.profactor.at
Qualimatest	www.qmt.ch
Quioptiq	www.quioptiq.de
Rauscher	www.rauscher.de
RH Engineering	www.rhengineering.de
Rheintacho Messtechnik	www.rheintacho.com
Schael-Optik	www.schael-optik.de
Schäfter + Kirchhoff	www.sukhamburg.de
Schmachtl	www.schmachtl.at
Schott Lighting and Imaging	www.schott.com
Second2None	www.visiondragon.com
Sedeco Vision Components	www.sedeco.nl
Seiwa Optical	www.seiwaopt.co.jp
Sharp Microelectronics	www.sharpsme.com
Sill Optics	www.silloptics.de
Smart Vision Lights	www.smartvisionlights.com
Smartek Vision	www.smartekvision.com
Soliton Technologies	www.solitontech.com
Special Application Products	www.sapltd.co.uk
Spectrum Illumination	www.spectrumillumination.com
Stemmer Imaging	www.stemmer-imaging.com

StockerYale	www.stockeryale.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de
SVS Vistek	www.svs-vistek.com
Symco	www.symco.co.jp
Tecin	www.tecin.de
Tekno Optik	www.teknooptik.se
Tema	www.temavisio.com
The Imaging Source	www.theimagingnsource.com
Univision	www.univision.it
V Cubed	www.vcubed.co.uk
Vialux	www.vialux.de
Visicontrol	www.visicontrol.com

Visiolaser	www.vannier-photelec.fr/visiolaser
Vision & Control	www.vision-control.com
Vision Light Tech	www.visionlighttech.com
Vision Tools	www.vision-tools.com
Visionlink	www.visionlink.it
Visitool	www.visitool.de
Vistas	www.vistas-gmbh.de
Volpi	www.volpi.ch
VS Technology	www.vst.co.jp
Weiss Imaging and Solutions	www.weiss-imaging.de
Wenglor Sensoric	www.wenglor.com
Zertrox	www.zertrox.de

Microscopes, Endoscopes & Equipment

Alrad Imaging	www.alrad.co.uk
AMS Technologies	www.amstechnologies.com
Andor Technology	www.andor.com
Asylum Research	www.asylumresearch.com
Bock Optronics	www.bockoptronics.ca
Breitmeier Messtechnik	www.breitmeier.de
Carl Zeiss Microimaging	www.zeiss.de/microscopy
Deben UK	www.deben.co.uk
Dr. Heinrich Schneider Messtechnik	www.dr-schneider.de
Edmund Optics	www.edmundoptics.de
EHD Imaging	www.ehd.de
Fei Company	www.feicom.com
Fort SA	www.fort-fr.com
FRT Fries Research & Technology	www.frt-gmbh.com
G4 Technology	www.g4.com.tw
Heliotis	www.heliotis.ch
Helmut Hund	www.hund.de
Hipp Endoskop Service	www.hipp-endoskopservice.com

Horn Imaging	www.horn-imaging.de
Infaimon	www.infaimon.com
Infinity Photo-Optical	www.infinity-usa.com
Karl Storz	www.karlstorz.com
Karlheinz Hinze Optoengineering	www.hinze-opto.de
Kdorf Automation	www.kdorf.de
Keyence	www.keyence.de
Klughammer	www.klughammer.de
Kvant	www.kvant.sk
Leica Microsystems	www.leica-microsystems.com
Leitner Industrial Endoscopy	www.leitner-efer.de
LOT Quantum Design	http://lot-qd.de
MBR	www.mbr-gmbh.com
Micos	www.micos.ws
Micro-Epsilon	www.elrotec.com
Mikroskoptechnik Rathenow	www.askania.de
Mitutoyo	www.mitutoyo.de
Moritex	www.moritex.com

MsiVision	www.msivision.com
NanoFocus	www.nanofocus.de
Nanosurf	www.nanosurf.com
Nikon	www.nikoninstruments.eu
Olympus	www.olympus-europa.com
Opto	www.opto.de
OptoMess	www.optomess.de
Optometron	www.optometron.de
Optoprim	www.optoprim.de
Oxford Instruments	www.oxford-instruments.com
Panasonic	http://business.panasonic.co.uk/imv
PCE Power Control	www.pce-powercontrol.de
Physik Instrumente	www.pi.ws
Pi4_robotics	www.pi4.de
Pro Design Electronic	www.prodesign-europe.com
Richard Wolf	www.richard-wolf.com

Rubroeder	www.rubroeder.de
Schael-Optik	www.schael-optik.de
Schäfer Technologie	www.schaefer-tec.com
Seiwa Optical	www.seiwaopt.co.jp
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de
Tecin	www.tecin.de
Tekno Optik	www.teknooptik.se
Thermosensorik	www.thermosensorik.de
Vega Technology Group	www.vegatcgroup.com
Vision Engineering	www.visioneng.de
Visitool	www.visitool.de
Walter Uhl	www.walteruhl.de
Weiss Imaging and Solutions	www.weiss-imaging.de
Werth Messtechnik	www.werthmesstechnik.de
Wild	www.wild.at

Optical Metrology

3D Shape	www.3d-shape.com
Alicona Imaging	www.alicona.com
Allsens Messtechnik	www.allsens.de
Ametek	www.ametek.de
AMS Technologies	www.amstechnologies.com
Andor Technology	www.andor.com
Applied Electro-Optics	www.aeousa.com
Applied Scintillation Technologies	www.scintacor.com
Armstrong Optical	www.armstrongoptical.co.uk
Avantes	www.avantes.com
Benteler Maschinenbau	www.benteler.de
Bentham Instruments	www.bentham.co.uk
Berliner Glas Gruppe	www.berlinglas.de
Breitmeier Messtechnik	www.breitmeier.de
BST eltromat International	www.bst-international.com
BST International	www.bst-international.com
Carl Zeiss IMT	www.zeiss.de/Messtechnik
Carl Zeiss Microimaging	www.zeiss.de/microscopy

Carl Zeiss Optotechnik	optotechnik.zeiss.com
Chunghwa Leading Photonics Tech (CLPT)	www.clpt.com.tw
CMC Kuhnke	www.cmc-kuhnke.de
ColorLite	www.colorlite.de
Confovis	www.confovis.com
Creaform Deutschland	www.creaform3d.com
Dantec Dynamics	www.dantecdynamics.com
Datapixel	www.datapixel.com
Digital Surf	www.digitalsurf.com
Dr. Heinrich Schneider Messtechnik	www.dr-schneider.de
Dr. Wehrhahn Messsysteme	www.drwehrhahn.com
Dyoptyka	www.dyoptyka.com
EHD Imaging	www.ehd.de
Electronic Systems	www.electronicssystem.it
ElektroPhysik Dr. Steingroever	www.elektrophysik.com
EVK DI Kerschhaggl	www.evk.biz

Farbmessung Schröder	www.farbmessung.com
Faro	www.faro.com
FJW Optical Systems	www.findrscope.com
Fraunhofer IFF	www.mpt.iff.fraunhofer.de
FRT Fries Research & Technology	www.frt-gmbh.com
G4 Technology	www.g4.com.tw
GE Sensing & Inspection Technologies	www.gemeasurement.com
GOM	www.gom.com
Hamamatsu Photonics	www.hamamatsu.com
HD Vision Systems	www.hdvvisionsystems.com
Heitronics Infrarot Messtechnik	www.heitronics.com
Hexagon Manufacturing Intelligence	www.hexagonmi.com
Hipp Endoskop Service	www.hipp-endoskopservice.com
IB/E Optics	www.ibe-optics.com
Ico Data	www.icodata.de
Ideko	www.ideko.es
iiM	www.iimag.de
ILEE	www.ilee.ch
Imetric	www.imetric.com
Infaimon	www.infaimon.com
Infinity Photo-Optical	www.infinity-usa.com
InfraTec	www.infratec.de
Innowep	www.innowep.com
InSystems Automation	www.insystems.de
Isi-sys	www.isi-sys.com
Jenoptik	www.jenoptik.de
Jos. Schneider Optische Werke	www.schneiderkreuznach.com
Kleiber Infrared	www.kleiberinfrared.com
Konica Minolta	www.konicaminolta.eu
Kreon Technologies	www.kreon3d.com
Lambda Photometrics	www.lambdaphoto.co.uk
LamTech	www.lamtech.de
Land Instruments	www.landinst.com
LAP	www.lap-laser.com
Laser 2000	www.laser2000.de
Laser Components	www.lasercomponents.com
Laser Quantum	www.laserquantum.com
LayTec	www.laytec.de
LDV Systeme	www.ldv-systeme.de
Leitner Industrial Endoscopy	www.leitner-efer.de
Limess	www.limess.com
LOT Quantum Design	http://lot-qd.de

Mahr	www.mahr.de
Meta Vision Systems	www.meta-mvs.co.uk
Metris	www.metris.com
MG Optical Solutions	www.mgopticalsolutions.com
Michigan Metrology	www.michmet.com
Mikropack	www.mikropack.de
Mirco-Epsilon Eltrotec	www.eltrotec.com
Mitutoyo	www.mitutoyo.de
Moeller-Wedel Optical	www.moeller-wedel-optical.com
Molenaar Optics	www.molenaar-optics.com
Moritex	www.moritex.com
M-u-t	www.mut-group.com
Mycrona	www.mycrona.de
NanoFocus	www.nanofocus.de
Nikon Metrology	www.nikonmetrology.com
Novacam Technologies Inc.	www.novacam.com
NTI	www.nti-measure.com
Nub3d	www.nub3d.com
Odem Technologies	www.odem.co.il
OGP Messtechnik	www.ogpmesstechnik.de
Olympus	www.olympus-europa.com
Opsira	www.opsira.de
Optimet Optical Metrology	www.optimet.com
Opto	www.opto.de
Opto Fidelity	www.optofidelity.com
Opto Precision	www.optoprecision.de
OptoMess	www.optomess.de
Optometron	www.optometron.de
OptoPolymer	www.optopolymer.de
Optoprim	www.optoprim.de
OptoSurf	www.optosurf.com
Optris	www.optris.de
Orbis	www.orbis.eu
Oxford Instruments	www.oxford-instruments.com
Parameter	www.parameter.se
Pentacon	www.pentacon.de
Perceptron	www.perceptron.com
PerkinElmer Optoelectronics	www.perkinelmer.com
Phaer	www.phaer.be
Phynix	www.phynix.de
Pi4_robotics	www.pi4.de
Plasmo Industrietechnik	www.plasmo.eu

Polygon	www.polygon-technology.de
Polytec	www.polytec.de/bv
Precitec Optronik	www.precitec-optronik.de
Premosys	www.premosys.com
Princeton Instruments	www.princetoninstruments.com
Proxitronic	www.proxitronic.com
Quest Innovations	www.quest-innovations.com
Raytek	www.raytek.de
Rheintacho Messtechnik	www.rheintacho.com
Richard Wolf	www.richard-wolf.com
Roper Scientific	www.roperscientific.de
Rudolph Technologies	www.rudolphtech.com
Schäfer Technologie	www.schaefer-tec.com
Schäfer + Kirchhoff	www.sukhamburg.de
Sensor Instruments	www.sensorinstruments.de
Sensors Unlimited	www.sensorsinc.com
SGM Schut	www.schut.com
Shape Drive	www.shape-drive.com
Sick	www.sick.com
SIOS Meßtechnik	www.sios.de
SKS Vision Systems	www.visionsystems.fi
Soliton	www.soliton-gmbh.de
Specim Spectral Imaging	www.specim.fi
Stiefelmayer	www.stiefelmayer.de
STIL	www.stilsa.com
SynView	www.synview.com

Taylor Hobson	www.taylor-hobson.com
Tec5	www.tec5.com
TechnoTeam	www.technoteam.de
Tekno Optik	www.teknooptik.se
Topometric	www.topometric.net
Tordivel	www.scorpionvision.com
Ulis	www.ulis-ir.com
Vialux	www.vialux.de
Videometer	www.videometer.com
Visiolaser	www.vannier-photelec.fr/visiolaser
Vision Engineering	www.visioneng.de
Vision Machines	www.vision-machines.com
ViZaar	www.vizaar.de
Volform	www.volform.se
Wente/Thiedig	www.wente-thiedig.de
Werth Messtechnik	www.werthmesstechnik.de
Wild	www.wild.at
Xenics	www.xenics.com
X-Rite	www.xrite.com
Yxlon International	www.yxlon.com
Z-Laser	www.z-laser.com
Zwick	www.zwick.de
Zygo BU der Ametek Germany	www.zygo.de

Optics

Acal BFi Germany	www.bfioptilas.com
AHF Analysentechnik	www.ahf.de
Allied Vision Technologies	www.alliedvisiontec.com
Alrad Imaging	www.alrad.co.uk
AMS Technologies	www.amstechnologies.com
Anteryon	www.anteryon.com
Armstrong Optical	www.armstrongoptical.co.uk
Azure Photonics	www.azurephotonics.com

B & M Optik	www.bm-optik.de
Basler	www.baslerweb.com
Baumer	www.baumer.com
Berliner Glas Gruppe	www.berlinglas.com
Birger Engineering	www.birger.com
BK Interferenzoptik	www.interferenzoptik.de
Bock Optronics	www.bockoptronics.ca
Carl Zeiss IMT	www.zeiss.de/messtechnik

Carl Zeiss Microimaging	www.zeiss.de/microscopy
Carl Zeiss	www.zeiss.com/lenses4industry
CBC Deutschland	www.cbc-de.com
China Daheng Group Inc.	www.daheng-image.com
Collischon Optik-Design	www.mikro-optik.de
Cosyco	www.cosyco.de
Deposition Sciences	www.depsci.com
Docter Optics	www.docteroptics.com
Edmund Optics	www.edmundoptics.de
EHD imaging	www.ehd.de
Eureca Messtechnik	www.eureca.de
Fabrimex Systems	www.fabrimex-systems.ch
FiberVision	www.fibervision.de
Finger	www.finger-kg.de
Fisba Optik	www.fisba.ch
Flir Advanced Thermal Solutions	www.flir.com/mv
Framos	www.framos.eu
FRT Fries Research & Technology	www.frt-gmbh.com
Fujifilm	www.fujifilm.eu
G4 Technology	www.g4.com.tw
Goyo Optical	www.gyooptical.com
Helmut Hund	www.hund.de
Holoeye Photonics	www.holoeye.com
IB/E Optics	www.ibe-optics.com
IDS	www.ids-imaging.com
Ifm Electronic	www.ifm.com
iIM	www.iimag.de
Image House	www.imagehouse.dk
Image S	www.imagessrl.com
IMT	www.imtag.ch
Infaimon	www.infaimon.com
Ircam	www.ircam.de
IS Imaging Solutions	www.imaging-solutions.de
ISVI	www.isvi-corp.com
Japan F.A. Systems	www.jfas.co.jp
Jenoptik	www.jenoptik.de
Jos. Schneider Optische Werke	www.schneiderkreuznach.com
Karlheinz Hinze Optoengineering	www.hinze-opto.de
KeeKoon Electronics	www.keekoon.com
Keyence	www.keyence.de
Kowa Europe	www.kowa.eu
Kvant	www.kvant.sk

Lambda Photometrics	www.lambdaphoto.co.uk
Laser 2000	www.laser2000.de
Laser Components	www.lasercomponents.com
Leading-Tech Laser	www.leading-techlaser.com
Lensation	www.lensation.de
Leoni	www.leoni-fiber-optics.com
Lincoln Laser Company	www.lincolnlaser.com
LMI Technologies	www.lmi3d.com
LOT Quantum Design	http://lot-qd.de
Lucid Vision Labs	www.thinklucid.com
Luster LightVision Tech	www.lusterinc.com
Matrix Vision	www.matrix-vision.de
MaxxVision	www.maxxvision.com
Menzel Vision and Robotics	www.menzelab.com
Meuser Optik	www.meuser-optik.com
MG Optical Solutions	www.mgopticalsolutions.com
Micos	www.micos.ws
Micro-Epsilon	www.eltrotec.com
Microsystems	www.microsystems.it
Midwest Optical Systems	www.midopt.com
Moeller-Wedel Optical	www.moeller-wedel-optical.com
Molenaar Optics	www.molenaar-optics.com
Moritex	www.moritex.com
MsiVision	www.msivision.com
Myutron	www.myutron.com
Nacacue	www.nacacue.com
Navitar	www.navitar.com
NET	www.net-gmbh.com
NeuPro Solutions	www.neupro-solutions.com
Notavis	www.notavis.com
Odem Technologies	www.odem.co.il
Olympus	www.olympus-europa.com
Omron	www.industrial.omron.de
Optec	www.optec.eu
Optics Balzers	www.opticsbalzers.com
Opto	www.opto.de
Opto Engineering	www.opto-engineering.com
Opto Precision	www.optoprecision.de
Optometron	www.optometron.de
Orbis	www.orbis.eu
Parameter	www.parameter.se
Phaer	www.phaer.be

Photonic Products	www.photonic-products.com
Pi4_robotics	www.pi4.de
POG Präzisionsoptik Gera	www.pog.eu
Polytec	www.polytec.de/bv
Profactor	www.profactor.at
Qioptiq	www.qioptiq.de
Qualimatec	www.qmt.ch
Rauscher	www.rauscher.de
Resolve Optics	www.resolveoptics.com
RH Engineering	www.rhengineering.de
Ricoh International B.V. - German Branch	www.ricoh-iosd.eu
Schael-Optik	www.schael-optik.de
Schäfer + Kirchhoff	www.sukhamburg.de
Schmachtl	www.schmachtl.at
Schott Lighting and Imaging	www.schott.com
Second2None	www.visiondragon.com
Sedeco Vision Components	www.sedeco.nl
Seiwa Optical	www.seiwaopt.co.jp
Sill Optics	www.silloptics.de
Space	www.spacecom.co.jp
Spectros	www.spectros.ch
Spectrum Illumination	www.spectrumillumination.com
Stemmer Imaging	www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de

Sugitoh	www.sugitoh.jp
Sunex	www.sunex.com
SVS Vistek	www.svs-vistek.com
Sydor Optics	www.sydor.com
Symco	www.symco.co.jp
Tamron	www.tamron.de
Tekno Optik	www.teknooptik.se
Tekstar Optical	www.tekstaroptical.com
The Imaging Source	www.theimagingnsource.com
Thermosensorik	www.thermosensorik.de
Vega Technology Group	www.vegatcgroup.com
Videology Imaging Solutions	www.videologyinc.com
Videor Technical	www.videor.com
Vision & Control	www.vision-control.com
Vision Engineering	www.visioneng.de
Vision Light Tech	www.visionlighttech.com
Visitool	www.visitool.de
Volpi	www.volpi.ch
VS Technology	www.vst.co.jp
Weiss Imaging and Solutions	www.weiss-imaging.de
ZygoLOT	www.zygot.de

Processors, Interfaces, Cables, Peripherals

ABS	www.abs-jena.de
Active Silicon	www.activesilicon.com
Adaptive Vision	www.adaptive-vision.com
Adlink	www.adlinktech.eu
Aerotech	www.aerotech.com
Allied Vision Technologies	www.alliedvisiontec.com
Alysium-Tech	www.alysium-tech.com
AMS Technologies	www.amstechnologies.com

Andon Electronics	www.andonelect.com
Arvoo Imaging Products	www.arvoo.com
AutoVimation	www.autovimation.com
BAP Image Systems	www.bapimgsys.com
Baumer	www.baumer.com
Bock Optronics	www.bockoptronics.ca
Components Express	www.componentsexpress.com
D.SignT	www.dsignt.de

De Man Industrie-Automation	www.deman.de
EDT	www.edt.com
Eltec Elektronik	www.eltec.com
Epix	www.epixinc.com
Ernst & Engbring	www.eue-kabel.de
Evision Systems	www.evision-systems.de
Fabrimex Systems	www.fabrimex-systems.ch
FiberVision	www.fibervision.de
Framos	www.framos.eu
G4 Technology	www.g4.com.tw
Gidel	www.gidel.com
GigaLinx	www.gigalinx.net
HaSoTec	www.hasotec.com
Hema	www.hema.de
Hirakawa Hewtech	www.hewtech.co.jp
IDS	www.ids-imaging.com
Igus	www.igus.de
Image House	www.imagehouse.dk
Image S	www.imagesrl.com
Imaging Solutions Group	www.isgcameras.com
Infaimon	www.infaimon.com
Intercon1	www.intercon-1.com
JAI	www.jai.com
Japan F.A. Systems Corporation	www.jfas.co.jp
Lemo	www.lemo.com
Leoni	www.leoni-fiber-optics.com
LMI Technologies	www.lmi3d.com
Lucid Vision Labs	www.thinklucid.com
Luster LightVision Tech	www.lusterinc.com
Mad City Labs	www.madcitylabs.com
Matrix Vision	www.matrix-vision.de
Matrox Imaging	www.matrox.com/imaging
MaxxVision	www.maxxvision.com
MaZet	www.mazet.de
Menzel Vision and Robotics	www.menzelab.com
Micro-Epsilon	www.eltrotec.com
Micron	www.micron.com
Microsystems	www.microsystems.it
Mikrotron	www.mikrotron.de
Nacacue	www.nacacue.com
NET New Electronic Technology	www.net-gmbh.com
Newnex Technology	www.newnex.com

Northwire Technical Cable	www.northwire.com
Orbis	www.orbis.eu
Parameter	www.parameter.se
Phaer	www.phaer.be
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
Pleora Technologies	www.pleora.com
Pro Design Electronic	www.prodesign-europe.com
Schäfter+Kirchhoff	www.sukhamburg.de
Schmachtl	www.schmachtl.at
Seidenader	www.seidenader.de
Serview	www.serview.net
Sglux	www.sglux.com
Silicon Software	www.silicon-software.de
Stemmer Imaging	www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmeneau.de
Supercomputing Systems	www.scs-vision.ch
SVS Vistek	www.svs-vistek.com
Symco	www.symco.co.jp
Teledyne Dalsa	www.teledynedalsa.com
The Imaging Source	www.theimagingnsources.com
Thinklogical	www.thinklogical.com
Unibrain	www.unibrain.com
USBFireWire	www.usbfirewire.com
Vidisys	www.vidisys.de
Vision & Control	www.vision-control.com
Vision Tools	www.vision-tools.com
Vistas	www.vistas-gmbh.de
WIR Electronic	www.wir-electronic.de
Xilinx	www.xilinx.com
Ximea	www.ximea.com

R&D

Acal BFi Germany	www.bfiophtilas.com
Alfavision	www.alfavision.de
Alicona Imaging	www.alicon.com
Anafocus	www.anafocus.com
Austrian Institute of Technology	www.ait.ac.at
AutoVimation	www.autovimation.com
Cmos Vision	www.cmosvision.com
Cognex	www.cognex.com
Collischon Optik-Design	www.mikro-optik.de
Creaform Deutschland	www.creaform3d.com
CSEM	www.csem.ch
CTR Carinthian Tech Research	www.ctr.at
Cypress Semiconductor	www.cypress.com
De Man Industrie-Automation	www.deman.de
Department of Mechanical and Industrial Engineering (DIMI) of the University of Brescia	https://en.unibs.it/departments/mechanical-and-industrial-engineering
Docter Optics	www.docteroptics.com
Eltec Elektronik	www.eltec.com
Entner Electronics	www.entner-electronics.com
Erhard + Leimer	www.erhardt-leimer.com
FiberVision	www.fibervision.de
Flir Advanced Thermal Solutions	www.flir.com
Fraunhofer Allianz Vision	www.vision.fraunhofer.de
Fraunhofer IMS	www.ims.fraunhofer.de
FRT Fries Research & Technology	www.frt-gmbh.com
Gesellschaft für Bild- und Signalverarbeitung	www.gbs-ilmenau.de
Gevicam	www.gevicam.com
GFai	www.gfai.de
HaSoTec	www.hasotec.com
HCI at IWR Heidelberg University	hciweb.iwr.uni-heidelberg.de
Helion	www.helionvision.com
Ideko	www.ideko.es
IDS	www.ids-imaging.com
Imaging Lab	www.imaginglab.it
Impuls	www.impuls-imaging.com
IMS Chips	www.ims-chips.de
Infaimon	www.infaimon.com
Isomorph	www.isomorph.it
Joanneum Research	www.joanneum.at
Jos. Schneider Optische Werke	www.schneiderkreuznach.com
Kamera Werke Dresden	www.kwdo.de

Kappa opto-electronics	www.kappa.de
Lincoln Laser Company	www.lincolnlaser.com
LMI Technologies	www.lmi3d.com
Matrix Vision	www.matrix-vision.de
Mazet	www.mazet.de
Micro-Epsilon	www.eltrotec.com
Mikromak Service	www.mikromak.com
MsiVision	www.msivision.com
Norpix	www.norpix.com
Opto	www.opto.de
Panavision Imaging	www.panavisionimaging.com
PCO	www.pco.de
Photonfocus	www.photonfocus.com
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
Profactor	www.profactor.at
Schäfter + Kirchhoff	www.sukhamburg.de
Sensor to Image	www.sensor-to-image.de
Smartsurv	www.smartsurv.de
SPG Data 3D	www.spgdata3d.com
SPIE	www.spieeuropa.org
Stemmer Imaging	www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de
Tecnia	www.tecnialia.com
Tekno Optik	www.teknioptik.se
Tema	www.temavisio.com
Thermosensorik	www.thermosensorik.de
Tichawa Vision	www.tichawa.de
Tordivel	www.scorpionvision.com
University of Applied Sciences of the Grisons Chur – FHGR	www.fhgr.ch
Univision	www.univision.it
Vega Technology Group	www.vegatcgroup.com
Vicomtech	www.vicomtech.org
Vision & Control	www.vision-control.com
Vision Machines	www.vision-machines.com
Vision Tools	www.vision-tools.com
V-Research	www.v-research.at
Zertrox	www.zertrox.de

Software

A&B Software	www.ab-soft.com
ABW	www.abw-3d.de
Adaptive Vision	www.adaptive-vision.com
Advantech Europe	www.advantech.eu
Alditech	www.alditech.ru
Alfvision	www.alfvision.de
Alicona Imaging	www.alicon.com
Alliance Vision	www.alliancevision.com
Alrad Imaging	www.alrad.co.uk
AMS Technologies	www.amstechnologies.com
Andor Technology	www.andor.com
AOS Technologies	www.aostechnologies.com
Applied Electro-Optics	www.aeousa.com
Artray	www.artray.co.jp
Asentics	www.asentics.de
Attentra	www.attentra.de
Baumer	www.baumer.com
Cimetrix	www.cimetrix.com
Cognex	www.cognex.com
Cosyco	www.cosyco.de
Datapixel	www.datapixel.com
De Man Industrie-Automation	www.deman.de
Dhs Solutions	www.dhssolution.com
Digital Surf	www.digitalsurf.com
Duwe 3D	www.duwe-3d.de
Dynalog	www.dynalog-us.com
Ebs Automatisierte Thermographie und Systemtechnik	www.irpod.net
EHD Imaging	www.ehd.de
Eltec Elektronik	www.eltec.com
Energid	www.energid.com
Epix	www.epixinc.com
Erhard + Leimer	www.erhardt-leimer.com
Euresys	www.euresys.com
EVT Eye Vision Technology	www.evt-web.com
Fabrimex Systems	www.fabrimex-systems.ch
Fast	www.fast-corp.co.jp
FDS Research	www.fdsresearch.si
FiberVision	www.fibervision.de
Flir Advanced Thermal Solutions	www.flir.com
Framos	www.framos.eu

FSI Technologies	www.fsinet.com
G4 Technology	www.g4.com.tw
Gefasoft	www.gefasoft.com
Geomagic	www.geomagic.com
Gesellschaft für Bild- und Signalverarbeitung	www.gbs-ilmenau.de
Gevicam	www.gevicam.com
Goldlücke Ingenieurleistungen	www.giib.de
Hasotec	www.hasotec.com
Hexagon Manufacturing Intelligence	www.hexagonmi.com
IB/E Optics	www.ibe-optics.com
IDS	www.ids-imaging.com
iiM	www.iimag.de
Image House	www.imagehouse.dk
Image S	www.imagesrl.com
Imagic	www.imagic-imaging.com
Imaging Lab	www.imaginglab.it
Impuls	www.impuls-imaging.com
INB Vision	www.inb-vision.com
Industrial Vision Systems	www.industrialvision.co.uk
Infaimon	www.infaimon.com
Innomiles International	www.innomiles.com
Inray Solutions	www.inrays.com
In-situ	www.in-situ.de
Ircam	www.ircam.de
IS Imaging Solutions	www.imaging-solutions.de
Isomorph	www.isomorph.it
Isra Vision	www.isravision.com
IVS	www.industrialvision.co.uk
JAI	www.jai.com
Japan F.A. Systems	www.jfas.co.jp
Joanneum Research	www.joanneum.at
Kappa opto-electronics	www.kappa.de
Karlheinz Hinze Optoengineering	www.hinze-opto.de
Klughammer	www.klughammer.de
Kortiq	www.kortiq.com
Kvant	www.kvant.sk
Lambda Photometrics	www.lambdaphoto.co.uk
Lambda Research	www.lambdares.com
Leica Microsystems	www.leica-microsystems.com
Leutron Vision	www.leutron.com

LMI Technologies	www.lmi3d.com
Luster Lightvision Tech	www.lusterinc.com
Math & Tech Engineering	www.mathtech.eu
Matrix Vision	www.matrix-vision.de
Matrox Imaging	www.matrox.com/imaging
MaxxVision	www.maxxvision.com
Menzel Vision and Robotics	www.menzelab.com
Merz freeform.technologies	www.merz-technologies.com
Mettler Toledo Product Inspection	www.mt.com
Micro Epsilon	www.micro-epsilon.com
Microsystems	www.microsystems.it
Mikromak Service	www.mikromak.com
Mitutoyo	www.mitutoyo.de
Msivision	www.msivision.com
MVTec Software	www.mvtec.com
National Instruments	www.ni.com
Neogramm	www.neogramm.de
NET New Electronic Technology	www.net-gmbh.com
Neurocheck	www.neurocheck.com
Norpix	www.norpix.com
Notavis	www.notavis.com
Odem Technologies	www.odem.co.il
Olympus	www.olympus-europa.com
Omron Microscan Systems	www.microscan.com
Omron	www.industrial.omron.de
Optical Research Associates	www.opticalres.com
Optis	www.optis-world.com
Opto	www.opto.de
Optometron	www.optometron.de
Orbis	www.orbis.eu
Parameter	www.parameter.se
Photonfocus	www.photonfocus.com
Pi4_robotics	www.pi4.de
Pleora Technologies	www.pleora.com
Polytec	www.polytec.de/bv
Profactor	www.profactor.at
Qualimatest	www.qmt.ch
Rapidform	www.rapidform.com
Rauscher	www.rauscher.de
RH Engineering	www.rhengineering.de
Rubroeder	www.rubroeder.de
SAC	www.sac-vision.de

Schäfer+Kirchhoff	www.sukhamburg.de
Schmachtl	www.schmachtl.at
Second2None	www.visiondragon.com
Sedeco Vision Components	www.sedeco.nl
SensorDesk	www.sensordesk.com
Silicon Software	www.silicon-software.de
Simon IBV	www.simon-ibv.de
SmartSurv	www.smartsurv.de
SPG Data 3D	www.spgdata3d.com
Stemmer Imaging	www.stemmer-imaging.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmenau.de
Sualab	www.sualab.com
Supercomputing Systems	www.scs-vision.ch
SVS Vistek	www.svs-vistek.com
Symco	www.symco.co.jp
Systematic Vision	www.systematicvision.com
Tekno Optik	www.teknooptik.se
Teledyne Dalsa	www.teledynedalsa.com
Tema	www.temavisio.com
The Imaging Source	www.theimagingnsources.com
The Mathworks	www.mathworks.com
Thermosensorik	www.thermosensorik.de
Tordivel	www.scorpionvision.com
Trivision	www.trivision.dk
TYZX	www.tyzz.com
Unique Vision	www.unique-vision.net
Univision	www.univision.it
Van de Loosdrecht Machine Vision	www.vdlmv.nl
Vega Technology Group	www.vegatcgroup.com
Visicontrol	www.visicontrol.com
Visiolaser	www.vannier-photelec.fr/visiolaser
Vision & Control	www.vision-control.com
Vision Components	www.vision-components.com
Vision Machines	www.vision-machines.com
Vision Tools	www.vision-tools.com
Visionlink	www.visionlink.it
Vitronic	www.vitronic.com
Vizzion	www.vizzion.com
Weiss Imaging and Solutions	www.weiss-imaging.de
Wenzel	www.wenzel-group.com
X-Rite	www.xrite.com
Zertrox	www.zertrox.de

Vision Sensors, Smart Cameras & Embedded Systems

Acal BFi Germany	www.bfioptilas.com
Active Silicon	www.activesilicon.com
Adaptive Vision	www.adaptive-vision.com
Adlink	www.adlinktech.eu
Advantech Europe	www.advantech.eu
AIT Göhner	www.visionandid.com
Alfavisision	www.alfavisision.de
AMS Technologies	www.amstechnologies.com
Asentics	www.asentics.de
Banner Engineering	www.bannerengineering.com
Basler Vision Technologies	www.baslerweb.com
Baumer	www.baumer.com
Camsensor Technologies	www.camsensor.com
Cmos Vision	www.cmosvision.com
Cognex	www.cognex.com
Compar	www.compar.ch
Computer Dynamics	www.cdynamics.com
Cosyco	www.cosyco.de
Cretec	www.cretec.gmbh
Datalogic	www.datalogic.com
De Man Industrie-Automation	www.deman.de
Si-soric	www.di-soric.de
Eltec Elektronik	www.eltec.com
Erhard + Leimer	www.erhardt-leimer.com
EVT Eye Vision Technology	www.evt-web.com
Fabrimex Systems	www.fabrimex-systems.ch
Fastvision	www.fast-vision.com
Festo	www.festo.com
Fibervision	www.fibervision.de
Finger	www.finger-kg.de
Flir Advanced Thermal Solutions	www.flir.com
Framos	www.framos.com
FSI Technologies	www.fsinet.com
G4 Technology	www.g4.com.tw
Hans Turck	www.turck.com
Hema	www.hema.de
Hexagon Manufacturing Intelligence	www.hexagonmi.com
IBN	www.ibn-gmbh.de
IDS Imaging Development Systems	www.ids-imaging.com
Ifm Electronic	www.ifm.de
Image House	www.imagehouse.dk
Image S	www.imagessrl.com

Imaging Solutions Group	www.isgcameras.com
Imago Technologies	www.imago-technologies.com
Imagsa Technologies	www.imagsa.com
IMR Automatisierungstechnik	www.imr-le.de
Infaimon	www.infaimon.com
IOS	www.ios-web.de
IOSS	www.iooss.de
Ipf Electronic	www.ipf-electronic.de
IS Imaging Solutions	www.imaging-solutions.de
Isra Vision	www.isravision.com
ISW	www.isw-gmbh.biz
Japan F.A. Systems Corporation	www.jfas.co.jp
K + P Krempien + Petersen	www.kup-image.de
Keyence	www.keyence.de
Kontron	www.kontron.com
Lambda Photometrics	www.lambdaphoto.co.uk
Leutron Vision	www.leutron.com
Leuze Electronic	www.leuze.com
LMI Technologies	www.lmi3d.com
Lord Ingenierie	www.lord-ing.com
Luster LightVision Tech	www.lusterinc.com
Matrix Vision	www.matrix-vision.de
Matrox Imaging	www.matrox.com/imaging
MaxxVision	www.maxxvision.com
MaZet	www.mazet.de
Menzel Vision and Robotics	www.menzelab.com
Micro Epsilon	www.micro-epsilon.com
Microsystems	www.microsystems.it
Msvision	www.msvision.com
National Instruments	www.ni.com
NET New Electronic Technology	www.net-gmbh.com
Neupro Solutions	www.neupro-solutions.com
Neuricam	www.neuricam.com
Norpix	www.norpix.com
Odem Technologies	www.odem.co.il
Omron Microscan Systems	www.microscan.com
Omron	www.industrial.omron.de
Opto	www.opto.de
Optomotive	www.optomotive.si
Orbis	www.orbis.eu
Panasonic Electric Works	www.panasonic-electric-works.de
Parameter	www.parameter.se

Pepperl & Fuchs	www.pepperl-fuchs.com
Peter Scholz Software + Engineering	www.scholzsue.de
Phytec Messtechnik	www.phytec.de
Pi4_robotics	www.pi4.de
PMDTec	www.pmdtec.com
Pollux	www.pollux.com.br
Polytec	www.polytec.de/bv
PPT Vision	www.pptvision.com
Profactor	www.profactor.at
Pulsotronic	www.bildverarbeitung.pulsotronic.de
Qualimatest	www.qmt.ch
Rauscher	www.rauscher.de
RSB Optotechnik	www.rsb-optotechnik.de
SAC	www.sac-vision.de
Schäfter+Kirchhoff	www.sukhamburg.de
Schmachtl	www.schmachtl.at
Schunk	www.schunk.com
Scintacor	www.scintacor.com
Second2none	www.visiondragon.com
Sedeco Vision Components	www.sedeco.nl
Sensopart Industriesensorik	www.sensopart.de
Sensor to Image	www.sensor-to-image.de
Shape Drive	www.shape-drive.com
Sharp Microelectronics	www.sharpsme.com
Sick	www.sick.com
Siemens	www.siemens.de/simatic-sensors/mv
SKS Vision Systems	www.visionsystems.fi
Smartek Vision	www.smartekvision.com
Smartray	www.smartray.de
Smartsurv	www.smartsurv.de
Soliton Technologies	www.solitontech.com
Sony	www.pro.sony.eu/vision
Stemmer Imaging	www.stemmer-imaging.com
Supercomputing Systems	www.scs-vision.ch
SVS Vitek	www.svs-vitek.com
Symco	www.symco.co.jp
Tattile	www.tattile.com
Tekno Optik	www.teknootptik.se
Teledyne Dalsa	www.teledynedalsa.com
Tichawa Vision	www.tichawa.de

Topsenso	www.topsenso.de
Tordivel	www.scorpionvision.com
Turck	www.turck.de
TYZX	www.tyzx.com
Vega Technology Group	www.vegatcgroup.com
Vialux	www.vialux.de
Videor Technical	www.videor.com
Video Systems	www.videosystems.it
Visicontrol	www.visicontrol.com
Visiolaser	www.vannier-photelec.fr/visiolaser
Vision & Control	www.vision-control.com
Vision Components	www.vision-components.com
Vision Tools	www.vision-tools.com
Visionlink	www.visionlink.it
VRmagic	www.vrmagic.com
Webview	www.webspec.com
Wenglor Sensoric	www.wenglor.com
Werth Messtechnik	www.werthmesstechnik.de
Wintriss Engineering	www.weco.com
Ximea	www.ximea.com
Xiris Automation	www.xiris.com
Zertrox	www.zertrox.de
ZheJiang Huaray Technology	www.huaraytech.com

Vision Systems, Turnkey Solutions, Integration Services

3D Shape	www.3d-shape.com
ABB	new.abb.com
Act Smartware	wp.act-smartware.de
Adaptive Vision	www.adaptive-vision.com
Adept Electronic Solutions	www.adept.net.au
Adept Technology	www.adept.de
AGR International	www.agrintl.com
AIT Göhner	www.ait.de
AKU Vision Technologie	www.aku.eu
Alfa Vision Systems	www.alfavisionsystems.com
Alfavisio	www.alfavisio.de
Alliance Vision	www.alliancevision.com
Altair Industries	www.altairindustriesinc.com
Applied Vision	www.appliedvision.com
Asentics	www.asentics.de
ATN Automatisierungstechnik	www.atn-gmbh.com
Attentra	www.attentra.de
Automation Technology	www.automationtechnology.de
Automation W+R	www.automationwr.de
Autoware	www.autoware.it
AVT Advanced Vision Technology	www.avt-inc.com
Balluf	www.balluf.com
Basler Vision Technologies	www.baslerweb.com
Baumer	www.baumer.com
Beratronc	www.beratronc.de
Bertram Elektrotechnik	www.bertram-bevern.de
Bi-Ber	www.bilderkennung.de
Böwe Systec	www.boewe-systec.com
Brainware Solutions	www.null-ppm.info
BST eltromat International	www.bst-international.com
BST International	www.bst-international.com
Camsensor Technologies	www.camsensor.com
Carl Zeiss Optotechnik	optotechnik.zeiss.com
Ceres Vision	www.ceresvision.de
China Daheng Group	www.daheng-image.com
CLK	www.clkgmbh.de
Cognex	www.cognex.com
Cogniac	www.cogniac.co
Coherix	www.coherix.com
Compar	www.compar.ch
Cosyco	www.cosyco.de
Cosynth	www.cosynth.com

Cyth Systems	www.cyth.com
Datalogic	www.datalogic.com
Datapixel	www.datapixel.com
Degotec	www.degotec.com
De Man Industrie-Automation	www.deman.de
DE Software & Control	www.de-gmbh.com
Desconpro Engineering	www.desconpro.de
Digital West Imaging	www.highspeedvideos.com
Divisoft	www.divisoft.com
DMC Vision & Motion	www.dmc-vision-motion.de
Dr. Schenk Industriemesstechnik	www.dr.schenk.com
Dr. Schwab Inspection Technology	www.schwabinspection.com
Dunkley International	www.dunkleymachinevision.com
Dutch Vision Systems	www.dvs-vision.de
E3tam	www.e3tam.com
Eckelmann	www.eckelmann.de
Edixia	www.edixia.com
EHR	www.ehr.de
Eines	www.eines.es
Electronic Systems	www.electronicssystemsi.it
Ellips	www.ellips.nl
Emhart Glass	www.emhartglass.com
Envision	www.envision.co.kr
Epix	www.epixinc.com
Epson Deutschland	www.epson.de/robots
Erhard + Leimer	www.erhardt-leimer.com
EVK DI Kerschaggl	www.evk.biz
EVT Eye Vision Technology	www.evt-web.com
Eyec-UK	www.eyec-ukandireland.co.uk
Fast	www.fast-corp.co.jp
Faude Automatisierungstechnik	www.faude.de
FAW Freudenberg Anlagen und Werkzeugtechnik	www.faw-freudenberg.de
FDS Research	www.fdsresearch.si
FiberVision	www.fibervision.de
Finger	www.finger-kg.de
Fuchs engineering	www.fuchs-engineering.de
Fuetec	www.fuetec.de
Futec Europe	www.futeceurope.com
G4 Technology	www.g4.com.tw
Gefasoft	www.gefasoft.com

Gefat Engineering	www.gefat-engineering.de
Gesellschaft für Bild- und Signalverarbeitung	www.gbs-ilmenau.de
GFal	www.gfai.de
Gidel	www.gidel.com
Goldlücke Ingenieurleistungen	www.giib.de
GOM	www.gom.com
Göpel Electronic	www.goepel.com
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Hasotec	www.hasotec.com
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Hengstmann Solutions	www.hengstmann.com
Hexagon Manufacturing Intelligence	www.hexagonmi.com
I3 Tech	www.i3tech.de
Ibea	www.ibea.de
ICW [industrie-elektronik]	www.icw-news.de
iIM	www.iimag.de
Ikegami	www.ikegami.de
Image House	www.imagehouse.dk
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Imago Technologies	www.imago-technologies.com
I-mation	www.i-mation.de
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Impuls	www.impuls-imaging.com
IMR Automatisierungstechnik	www.imr-le.de
INB Vision	www.inb-vision.com
Industrial Vision Systems	www.industrialvision.co.uk
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Insystems Automation	www.insystems.de
Intego	www.intego.de
Intopii	www.intopii.fi
IOS	www.ios-web.de

Ioss	www.iOSS.de
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IS Imaging Solutions	www.imaging-solutions.de
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Itech Engineering	www.itecheng.com
IVS	www.industrialvision.co.uk
J&P Vision	www.jupvision.de
Japan F.A. Systems	www.jfas.co.jp
Jasvisio - Vision Artificial	www.jasvisio.com
JLI Vision	www.jli.dk
Joanneum Research	www.joanneum.at
K + P Krempien + Petersen	www.kup-image.de
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Keyence	www.keyence.de
Kirin Techno-System	www.kirintechno.co.jp
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Polytec	www.polytec.de/bv
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Pressco Technology	www.pressco.com

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Prüftechnik Schneider & Koch	www.prsuk.de
Pulsotronic	www.bildverarbeitung.pulsotronic.de
Qualimatest	www.qmt.ch
Quiss	www.quiss.com
R&W Industrieautomation	www.r-u-w.de
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Solving3D	www.solving3d.de
Soma	www.soma.de
SPG Data 3D	www.spgdata3d.com
Carl Zeiss Optotechnik	optotechnik.zeiss.com
Stemmer Imaging	www.stemmer-imaging.com
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Stratec Control Systems	www.bbull.com
STZ Qualitätssicherung und Bildverarbeitung	www.stz-ilmeneau.de
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Vision-Consult Bildverarbeitung	www.vision-consult.com
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Visolution	www.visolution.de
Visotect	www.visotect.de
Visuelle Technik	www.visuelle-technik.de
ViTec	www.vitec.ru
Vitronic	www.vitronic.com
VMT	www.vmt-gmbh.com
V-Research	www.v-research.at
Weber Systemtechnik	www.wesys.de
Weiss Imaging and Solutions	www.weiss-imaging.de
Weitblick Systems	www.weitblick-systems.at
Wenglor Sensoric	www.wenglor.com
Wente/Thiedig	www.wente-thiedig.de
Wickon Hightech	www.wickon.com
Wintriss Engineering	www.weco.com
Wolf Systeme	www.wolfssysteme.de
Zertrox	www.zertrox.de
Ziemann & Urban	www.ziemann-urban.de

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