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# inspect

Applied Imaging and Optical Metrology



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# Dear readers,



Welcome to the inspect Buyers Guide. This annual compendium supported by the European Machine Vision Association once again provides an up-to-date overview of suppliers in our industry and it will serve you as valuable assistant to find the right business contacts.

2014 has been a busy and successful year for the European machine vision industry, and likewise for the EMVA. Our association managed to strengthen the membership structure again throughout

the year with several new members from different countries in Europe and abroad. Members and non-members alike honored our two main networking events with their presence: The EMVA Business Conference 2014, held in Vienna with more than 100 conference attendees, and the International Vision Night on the eve of the Vision show opening in Stuttgart early November with more than 120 participants, were not only extremely well booked but a great pleasure and success for all those who attended. During the three show days of the Vision 2014 the International Machine Vision Standards Booth attracted many visitors especially through the hourly given tutorials on vision standards. Towards the end of exciting trade show days the stand became a well-known networking platform during the happy hour events sponsored by EMVA member companies.

Since standardization is a main pillar of the industries' advancement and the EMVA work, Jochem Herrmann, member of the EMVA Board, describes in a detailed article inside this edition the major steps made in standardization so far and he even takes a look at future challenges in standardization.

Besides the well known highlight events and the important topic of standardization, the EMVA work continued and has been focused even more towards local and regional vision industry needs. In cooperation with the French industry association SYMOP, the EMVA organized an information event during Enova trade show in Paris. SYMOP being an EMVA member and EMVA will further cooperate to strengthen the international visibility of French vision companies.

In addition, our latest market report for the first time maps the machine vision markets in Austria, Switzerland and Liechtenstein, and discloses names and sources of vision companies, research entities, clusters, associations and customer industries in the three countries. The successful format will be continued in 2015 and the countries to be targeted next will be decided soon. Moreover, the quarterly EMVA market survey on European vision sales is continuously gaining acceptance and participants benefit from the resulting report.

Looking forward to the upcoming year without the leading trade show Vision, the main event in 2015 for the European machine vision community will clearly be the EMVA Business Conference taking place 11 to 13 June 2015 in Athens.

Registration is already open at [www.emva.org](http://www.emva.org) and I would be happy to meet you in Greece.

**Thomas Lübke**  
General Secretary European Machine Vision Association (EMVA)



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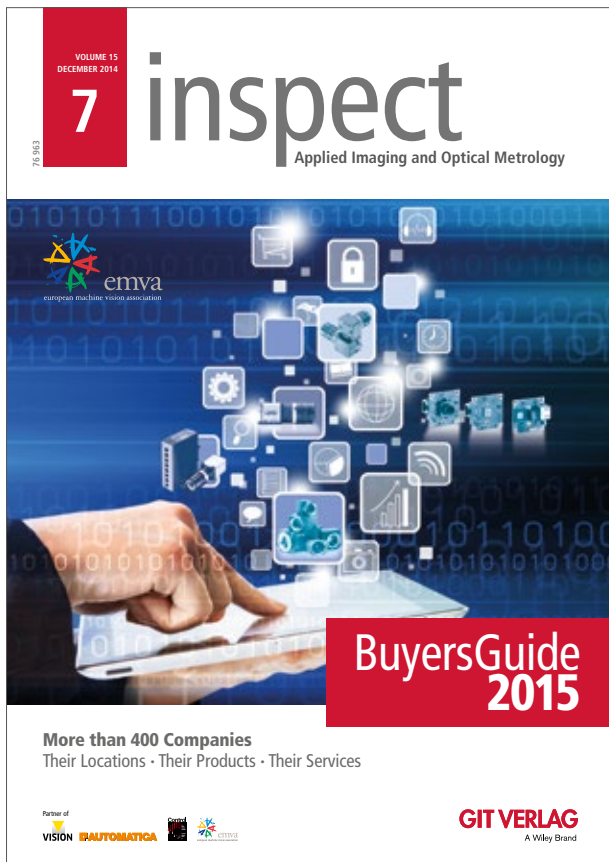


 Allied Vision

# Machine Vision and Optical Metrology in Europe

## The inspect Buyers Guide 2015

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 Online Buyers 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 "camera" yields 97 results: every company having used the word "camera" in their description is listed.

**T**he inspect Buyers Guide is published in its seventh year now, for the sixth time it also serves as the official Buyers Guide of the EMVA, the European Machine Vision Association. The guide contains information about more than 400 companies from over 30 countries. The inspect Buyers Guide has a clear focus on companies doing business in Europe or exporting their goods to Europe. Naturally this comprehends companies and organizations from all over the world.

**Online ...**

The inspect Buyers Guide is a true cross-media product. At [www.inspect-online.com/buyers-guide](http://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.

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 Buyers 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 inspect Buyers Guide printed edition 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 sub-divided into too many categories.

The inspect Buyers Guide 2015 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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# Joined Forces

## Taking Standardization to the Next Level

An important step in the coming-of age process of the machine vision industry over the last three decades was the early decision of the industry to cooperate on the definition of standards. For a technological driven industry like the machine vision sector it was a crucial step to learn how to manage the development and dissemination of new standards more jointly and efficiently. The global collaboration on the topic opens resources to identify and even influence future developments in the field of standardization.



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**S**tandardization gave way to conquer new customer industries and new geographic markets, in particular since the three international machine vision Associations AIA, EMVA and JIIA decided to join forces on the global coordination of future development of new hardware and software interface standards under the G3 umbrella. In November 2014, VDMA Machine Vision has joined the G3 initiative as fourth member. Through this global cooperation more people are involved in standards development leading to more re-use, better standards and faster acceptance of the market. One visible result of this collaboration is the International Machine Vision Standards booth which is present at important industry trade shows, where all commonly used machine vision interface standards are shown and explained. Behind the scenes of

standards development, two international standards meetings take place per year, rotating over Europe, Asia and North America. The spring 2015 meeting will take place in London and will be hosted by the EMVA and its member Active Silicon. Here, all standards technical committees meet and discuss the further development of their standard and new releases. During a plug fest for all standards compatibility is tested between products of different vendors.

### Future Standards Forum

Furthermore, under G3 the Future Standards Forum (FSF) was started, a proactive and globally acting forum for the exchange of information about standards for the machine vision industry. The FSF also wants to identify future opportunities and challenges in standards development, to create a road

mapping of standards, to promote harmonization and re-use of standards and to seek cooperation on standards outside its own industry. One major output of this global cooperation is the brochure Global Machine Vision Interface Standards, which provides for the first time an accurate comparison of all commonly used digital interface standards in the industry. It can be downloaded free of charge at [www.emva.org](http://www.emva.org). In addition, two working groups with company representatives are already active under the FSF; one is to plan and maintain the roadmap for digital interface standards. The second working group deals with the establishment of standards in the machine vision lighting equipment. This lighting standards initiative has been pushed to next level during the Vision show in Stuttgart in November 2014: Its main objectives are to standardize the





performance and function of lighting itself and related items as well as to improve the interfacing with other pieces of image processing equipment. In this respect, five working groups have been established that cover performance metrics of LED lighting as well as laser lighting, standardization of light connectors, lighting command and control and the photo-biological safety for LEDs and lasers.



Part of the road mapping process is to evaluate future requirements in the field of standardization. One major driver for the development of new interface standards is technological advance such as increasing speed, allowing for longer cables, or adding functionality. Still, what also triggers most developments of new standards is the ambition to drive down costs. An alternative to the development of a completely new standard is to adopt an existing standard from a related industry or even from the consumer sector and adapt it to the industry needs, as happened with the latest in-

terface standard USB3 Vision. By using a standard established in mass markets one can expect that scale effects will make solutions available at lower costs. In the future, applications of standards will develop in two directions. Firstly, the preference of the majority of users will be vision standards using interfaces that are already on a PC such as Gigabit Ethernet and USB3 because this allows having low cost solutions. Secondly, for high end and niche applications, special standards like the already existing CameraLink HS and CoaXPress will fill the gap. Fire Wire, one of the earliest used interfaces, is a standard which has reached the last period of its lifetime and is currently being phased out in most applications, since motherboard suppliers have switched to the technically faster USB3.

**Future Strategies**

Since the life cycle in the consumer world is much faster, so far the conversion of standards used for instance in smart phones is not sustainable for the machine vision world which needs robustness and long term support. Quite the contrary: Machine vision standards such as Camera Link, GiGE Vision and CoaXPress have been successfully exported into various non-industrial application fields. Future requirements of new standards will be measured on the existing parameters cost and ease of use; but also on new criteria such as plug & play as well as the increasing importance of embe-

ded systems. However, an integral part of the philosophy in machine vision standards development is to re-use existing standards and maybe even to reduce the number of standards or at least share physical interfaces. In this respect, a FSF working group is investigating the possibility to create an optical interface standard, i.e. for a common standard for connectors and cables for optical interfaces on the physical layer.

One significant part of the road mapping process within FSF is to reach out to other geographical areas by connecting with the industry in emerging countries like China and Korea to integrate them and create awareness. In addition, most of the existing standards will get new releases, which step by step improve their performance and add new features. On the software side for instance, EMVA 1288 is expected to be expanded in color and linearity in the future and GenICam will support 3D cameras in its next version.

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# The North American Vision Market

Healthy Manufacturing Sector Offers More Vision Opportunities

The North American vision market is on pace to set a new record with over \$2 billion in total sales for 2014.

**D**riven by a healthy U.S. manufacturing sector, the first quarter of 2014 saw expansive growth in vision components at 27% to \$77 million. The larger, vision systems category, grew 5% to \$426 million. Second quarter followed the strong start with further growth of 12% (to \$78 million) and 3% (to \$459 million) for vision components and systems respectively.

Vision component cameras have grown 25% on average over the past four quarters. Lighting (23%), optics (14%), software (12%), and imaging boards (8%) have also experienced growth, on average, in the same timeframe (fig. 1).

The application specific machine vision systems (ASMV) segment, nearly a \$400 million dollar quarterly market, has increased 13% on average since the third quarter of 2013. Sales of smart cameras have also increased at an impressive 20% on average over the last four quarters (fig. 1).

There are a number of indicators surrounding the North American manufacturing sector that are important to understand, because they

impact the performance of the vision market. One such indicator is the unemployment rate.

In recent months, the unemployment rate in the United States has also fallen to below 6%, its lowest level since September of 2008. Companies in the United States are not only profiting from a healthy economy, they're looking to hire new employees.

U.S. manufacturing PMI has just posted its 17th consecutive month of expansion, and the U.S. continues to be one of the strongest countries for manufacturing worldwide. Production is also up. Since 2010, industrial production in the United States has risen steadily, until finally surpassing pre-recessionary levels in the first quarter of 2014 (fig. 2). Most industries have experienced growth, but plastics and rubber, machinery, motor vehicles, and furniture have grown the most in the past year. Many vision opportunities exist for these segments in the U.S. market.

New orders of capital goods, while quite variable month-to-month, have risen steadily as well. Current levels have reached approximately \$70 billion dollars monthly, which is a great sign moving forward. Companies are investing in their production capabilities, and are planning on continuing to produce more goods.



Market	Average Quarterly Growth
	3Q 2013 thru 2Q 2014
<b>Components</b>	<b>30%</b>
Cameras	25%
Lighting	23%
Optics	14%
Software	12%
Imaging Boards	8%
<b>Systems</b>	<b>14%</b>
ASMV	13%
Smart Cameras	20%

Fig. 1

The Semiconductor market is an important market for the vision industry, and has also been healthy. Billings in the Americas at the end of 2013 rose sharply, but have since normalized. It is a positive sign to see billings increasing again as of May of 2014. A healthy semiconductor market will present more opportunities for vision companies in the near future.

With domestic auto production hovering between 300,000 and 350,000 units monthly, the automotive industry has continued driving opportunities for automation. Since the beginning of 2010, production, on average, has been steadily rising. As auto manufacturers plan for more production, they often look to upgrade or retool their production facilities, which often require the use of vision.

The robotics market in North America is also in the midst of its strongest year ever. As a related automation technology, this is great news for the vision industry. While all industries have been growing for robotics, the automotive industry is driving the bulk of the growth in 2014. The Robotic Industries Association (RIA) forecasts growth of 20 to 30% by year's end, which would mark the best year ever for the industry.

The manufacturing sector in the U.S. continues to grow, and there are no signs of a slowdown at the moment. This should propel sales of vision components and systems through the end of the year and into 2015. AIA is forecasting approximately 20% growth for components and 7% growth for systems by the end of 2014. Total, bottom line growth is expected at nearly 10% (fig. 3).



Fig. 2

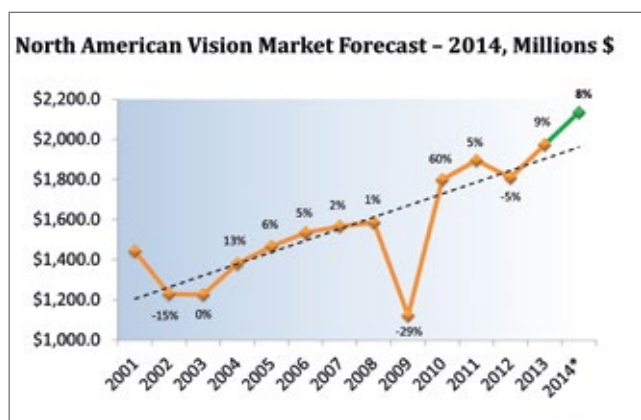
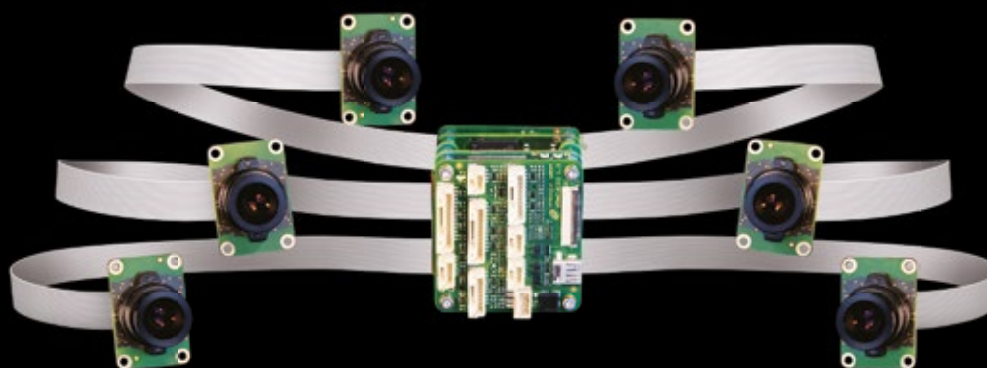


Fig. 3

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# Machine Vision Stronger than Ever

Growth of at Least 10% in 2014

The machine vision industry in Germany will grow in 2014 by 10% minimum. Hence, the industry turnover will even exceed its sales forecast of about € 1.8 billion by the end of this year. „For 2015, we are expecting further growth despite macroeconomic uncertainties,” stated Dr. Olaf Munkelt, Chairman, VDMA Machine Vision Group, on the occasion of the Vision press lunch in Stuttgart.

**T**he latest monthly VDMA incoming order index for machine vision indicates that turnover of machine vision will be growing further. Domestic order intake has been undergoing a robust growth. Strong momentum continues to come from abroad, in particular from Asia and the USA. „All over the world we see a strong demand for automation solutions and machine vision benefits as well. 100% quality checks keeping up with production speed and highest process reliability – it would be difficult to master the increasing requirements of a modern production without machine vision,” said Munkelt.

## Growth Market China

In the past few years China has been the most dynamic market for machine vision from Germany. Except for the 2009 crisis year, exports to China have risen signifi-



cantly above average. Since 2008, turnover has more than quadrupled. In 2013, turnover rose by 23%, compared to 2012. With a share of now 10% in total turnover, China already ranks second after North America.

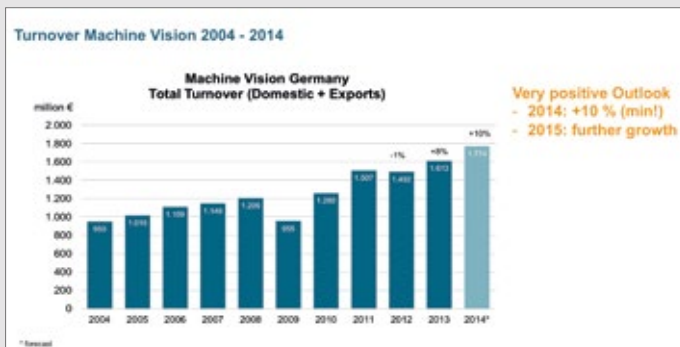
Sales figures of industrial robots are a good indication for the level of automatization and of the further development of the turnover of machine vision. According to the International Federation of Robotics (IFR), sales of industrial robots in China are expected to increase at least 25% on average per year from 2015 to 2017 reaching 100,000 units in 2017. By 2017, more than 400,000 indus-

trial robots will be installed in the factories of China – many of which will be equipped with “Robot Vision – Made in Europe.”

## Embedded Vision

Even before the discussion about „Industry 4.0” came up in Germany, machine vision had been dealing with challenges that an increasingly networked production brings along. Over the last years, machine vision systems have been evolving from pure inspection systems to production optimizers and as „Embedded Vision,” they nowadays play a key role in the production process. Machine vision systems collect data, interpret and evaluate them. By proper selection and preparation of data, they can identify trends as well as potential sources of fault in the production process. The number of possible applications of machine vision systems will be even more increasing in the

Source: VDMA Robotics + Automation



Machine Vision Germany: New record value expected in 2014

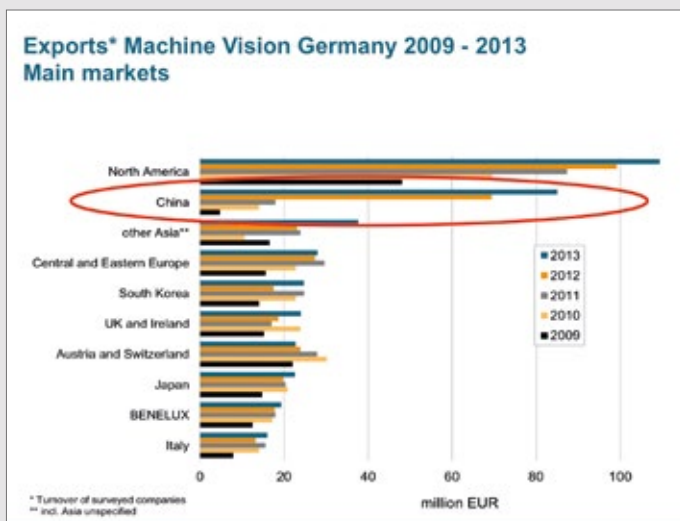
future due to the high availability of components, standardised interfaces, improved computer performance as well as shifting essential components to the Cloud.

Beyond the factory environment, embedded vision systems increasingly play a greater role. Whether in the medical technology field, in the food industry or in logistics: performance-adapted systems, often with a small form-factor, are needed to perfectly implement classical applications of machine vision like identification tasks.

### Machine Vision – a Developing Industry

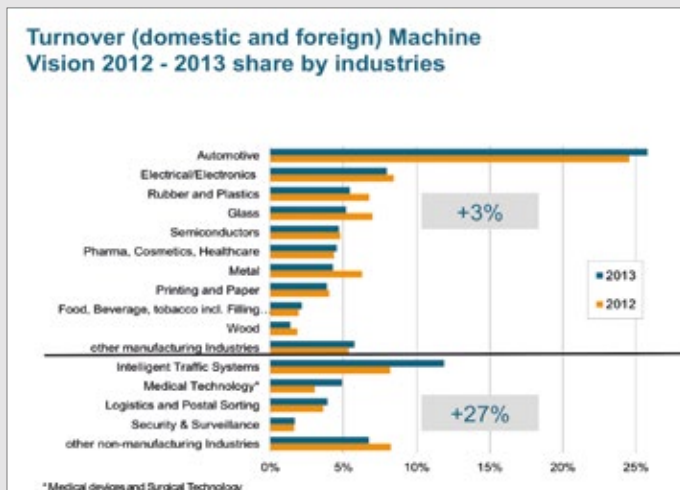
The development of machine vision has been spectacular. The VDMA market survey goes back to 1995 and a comparison of key parameters

Source: VDMA Machine Vision Market Survey 2014



North America still most important market

Source: VDMA Machine Vision Market Survey 2014



Decreasing sales in the non-automotive sectors

from then and now shows how quickly machine vision technology has succeeded in penetrating the most diverse fields of application:

The industry turnover of € 230 million in 1995 has increased over sixfold to more than € 1.6 billion last year. In the same period the average enterprise size increased its number of employees from 10 to almost 50 employees. In 2013, the German machine vision industry increased its number of employees by 9% to almost 8,100. The export share in 2013 accounted for 58%.

### Good Future Prospects

Machine vision has been conquering many new fields of application, in and outside the factory. Improved quality, greater reliability, increased safety and cost-effectiveness are benefits that are just as crucial in non-manufacturing contexts as in the realm of industrial production. In 2013, turnover of machine vision in non-industrial sectors grew by 25% raising the share of non-industrial applications in overall turnover to almost 29%.

Intelligent traffic systems accounted for the highest share in total turnover of non-industrial applications, followed by medical technologies, logistics, postal sorting as well as safety and surveillance.

Increasing standardization, simplification and intuitive user interfaces, greater efficiency, improved computer performance and miniaturization remain real growth drivers.

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# Embedded, PC, Cloud?

## What Comes Next for Machine Vision?

For industrial production the terms PC, embedded and Cloud stand for technologies that are crucial to the intelligent interaction of systems and components in an even more efficient production process. The systematic advancement of these technologies could drastically alter the vision-based problem solutions in the field of automation. What does this mean for planners, developers and users? Do we have to gear up for a rapid technological revolution?

**inspect:** What kind of great changes in hardware is industrial image processing facing and will the technological developments have an evolutionary or rather a revolutionary character?

**K. Borgwarth:** This year we discovered two basic trends; one was to be foreseen and that is that connectivity through FireWire disappears. The alternative inexpensive, fast and reliable solution is USB. The second trend was completely unexpected; we have already been offering computers with very high performance for machine vision for a couple of years, but this year the demand for these systems multiplied several times. Now we understand that this is driven by the chip manufacturers. The resolution is continually increasing; the data rates are kept constant or increase slightly; so the amount of data increases significantly. It is not the case anymore that processors are continually getting faster – the architecture

can be kept constant. It is more that strong CPUs are accompanied by a second strong CPU, or a strong CPU is accompanied by a graphic card for additional computing power, or it's accompanied by FPGAs. So this year we are at a transition stage where the architecture inside the systems is affected by a revolutionary step.

**inspect:** Where will we find the computation-intensive part of industrial image processing in the future; on the sensor, closer to the sensor or will it be outsourced to the Cloud?

**T. Evensen:** That's an interesting question. Where I see the trend is that the intelligence is sort of pushed in both directions; closer to the sensors and also out to the Cloud, and for very different reasons. You do want to be close to the sensors and one of the reasons is that you want to avoid sending uncompressed data all the way

up to the Cloud. That takes way too much bandwidth. So you want to do the compression and the image recognition and things like that locally for bandwidth reasons. But the other big reason why you want to do things there is because of latency. You just can't wait until you get an answer back from the Cloud, like when you do sorting, for example. If you have to wait for the Cloud to direct in which direction a packet should go it would take too long. So for latency reasons you need local intelligence. On the other hand, there are many situations where you have lots of data from different sensors – searching, pattern recognition and that kind of thing – where you push that kind of intelligence up into the Cloud.

**K.-H. Noffz:** Well, I disagree a little bit, because at least for our industry, I don't fear that the image reconstruction or image processing will be in the Cloud, just to address the argument with the latency. We have a real-time demand here, so I see a leading trend for embedded processing, because what you can see over the last few years is a dramatic increase in sensor size and sensor speed. Colour processing is more prevalent and we definitely have a high demand for increased processing power. I believe more will be done very close to the sensor and must be done by strong and very smart processing in embedded devices, so I see a trend towards smart systems.

**inspect:** Machine Vision does not work without sensor technology. How could changes in hardware architecture affect the future design of cameras and sensors and will new cameras and sensors be the future source of a tremendously increasing amount of data?

**D. Ley:** With regard to the performance aspects of future applications, we have been focusing over the last couple of years particularly on lowering the total cost of ownership. So we have been trying to make leaner products in such a way that there is no highly costly architecture in the system that is not needed. If we look at the mobile

devices of today and recognise their performance, then we can very well imagine in the future that many of the PC-based architectures of today may move over toward more embedded kind of architectures with, for example, ARM-based processors. These will enable our customers to reduce the cost of the vision system architecture dramatically from around € 3,000 to around € 500. And this is a dramatic benefit for many of

our current customers who are interested in getting the image as lean as possible but also in getting the image processed as lean a way as possible. So we think that there is not only the performance aspect to consider – in terms of higher bandwidth, higher frame rates and higher resolutions – but it's also the question of how you can manage a certain amount of data in the leanest possible fashion to make the whole machine vi-

sion solution as affordable as possible and to allow the vision technology to go into as many applications as possible. We think that embedded technology will be a big enabler in that direction.

**K.-H. Noffz:** A lot of very important things have already been mentioned so I won't address the hardware aspect anymore. But from my point of view, for the future success of embedded

(Continued on p. 16)

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**INNOVATION**



The panelists (from left to right): Dr. Klaus-Henning Noffz, CEO Silicon Software; Tomas Evensen, Chief Scientist of Embedded, Xilinx; Dr. Dietmar Ley, CEO Basler; Bernhard Schroth, Editor-in-Chief, inspect; Dr. Kai Borgwarth, Sales Director, Pyramid Computer; Philipp Altpeter, Senior Designer, Heitec.

systems, the key issue and the most important thing is the software. How are we able to handle more complex hardware systems in a simple software way? In my opinion, machine vision is already a long way down that road because I think it is understood by the industry that we have a lot of initiatives by standards in the software app specs that allow you to use devices from different vendors with the same software interface, and this is an enormous driver. I believe this will become a key question for many devices: Will the software of vendor A work in the camera or in the device of vendor B?

**inspect:** Does Moore's Law mean that „the sky is the limit“ for chip development and that more image data will be processed faster and cheaper after each step of development?

**T. Evensen:** Yes, Moore's Law – It's interesting, people have proclaimed that it's been dead for a long time and yet it still seems to be going strong. But it is definitely true that development is slowing down a little. It used to be the case that you reliably say that transistor density doubled every two years or so. What they're talking about is that you're trying to get more transistors on a certain area. But along with that comes the expectation that there will be less power consumption, they will be cheaper and so on. Nowadays it seems that when we go from one node to another it's very hard to get the performance, the power and the lower cost – especially the cost is very, very difficult to achieve. So what I see is rather a generic system way of thinking so that you get the performance out of the whole system as opposed to just relying on transistors becoming faster and smaller. So this will bring new architectures, where you have specialised systems for specialised problems. I think that's probably the reason Moore's Law seems to be slowing down a little. Xilinx has always been at the leading edge of looking at 28 nm, 20 nm and 16

nm, and now we have already started working on 10 nm. But it's becoming more and more expensive and you have to look at the underlying architecture, how you program the software on top of it, having specialised execution units. So I think that for some time to come, you will be able to actually get that improvement of total performance, but not just from transistors per se.

**inspect:** What will happen to industrial image processing if the „Internet of things“ then called industrial internet, or „Industrie 4.0“ in Germany, takes over the factory?

**P. Altpeter:** In my opinion, the Internet of Things will help to control all relevant data concerning an image processing system. At first the production data in the production field. Normally you have to catch an object batch, recognise it in the camera system for analysis and this data will come from the Internet of Things to the camera system. The second aspect is the parameters and limits. Often you find the parameter and limit files directly inside the camera today, with a secure connection to the Internet of Things. It is quite feasible that the camera systems download their parameters or even the program itself. That's often coded in the system itself at the moment and, after processing, there are often some measurement data or the images to store and, with the Internet of Things, it is possible to store all that data back in the system. That's not all futuristic – much is already done today, such as gathering that data from the POC, writing the measurement data back to a database is also often done. But there are currently many limitations with regard to images. Large images cannot be stored on the server for long periods – up to 10 years in the medical branch – so in the future I think all these parameters will be handled from a centralised ARM system or maybe a centralised system in the Cloud.

The Panelists of the podium discussion organised by inspect and held on 5 November during the Industrial Vision Days 2014 at the Vision in Stuttgart:

**Philipp Altpeter**, Senior Designer, Heitec AG: „As an integrated system solutions provider we offer standard and custom solutions for automation and production systems, developing new solutions for this type of clouding and personal computer-based systems.“

**Dr. Kai Borgwarth**, Sales Director, Pyramid Computer GmbH: „Our company is growing in the segment of machine vision, having been active for over 20 years in the subject of the Cloud, which remains an impulse for us in future.“

**Tomas Evensen**, Chief Scientist of Embedded, Xilinx: „FPGAs, systems on chips, provide highly paralleled processing capabilities to be able to detect things, and in this fast changing world being able to reprogram hardware becomes really important.“

**Dr. Dietmar Ley**, CEO Basler AG: „We are a German-based camera maker and feel that embedded vision technology will become very relevant in the next couple of years because it enables our customers to lower their total cost of ownership.“

**Dr. Klaus-Henning Noffz**, CEO Silicon Software GmbH: „We are a vendor of typical PC-based systems and we can see a dramatic change, a trend to less PCs and more embedded processing. Also pre-processing software in FPGAs and the trend to embedded is very challenging and a good opportunity.“

(Continued on p. 18)



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**D. Ley:** We think that the Internet of Things means more like enabling a manufacturing line to produce more customised products, to customise from one item to the next. If I look back to the history of Basler and inspection machines, then most of these machines were engineered to do a standard task, where the inspection task was always the same. And we think that in the future if there is a kind of mass customisation taking place where one product looks different from the next, then this means for the vision solution that it needs to be much more flexible, that configurations, illuminations, areas to be inspected and surface parameters need to be changed. So the system needs to be much more flexible than in the past to deal with all these potential changes in the object that needs to be tested. That brings many challenges both on the hardware side to put the right denomination through, to have the right field of view, but also on the software side. Then maybe we'll be exchanging algorithms on the fly, to make sure that you really have the appropriate inspection function available in the system when it's needed. This requires much more advanced vision technology. This is good news because it requires new development.

**inspect:** The various different components of vision solutions in the Industrial Internet will have to interact intelligently in the network. Will machine vision systems such as those that are used today soon disappear and what will software solutions for industrial image processing be like in the future?

**K.-H. Noffz:** I definitely don't think such systems will disappear. I think the ratio between hardware and software will shift more to the software side and I think that's

a valid trend. I would expect that system integrators will have to handle much more complex and integrated software systems to be much more integrated in their whole production process. So to be able to interact with the complete production, maybe this is the point where we have the Cloud again. And, on the other hand, because the devices will become smarter and more intelligent, we will have much more capability and flexibility in the devices. So from our experience in our business, we are able to change the hardware very flexible by reprogrammable chips inside the devices, inside the cameras, providing completely different image procession functions, adapting to a different lighting environment and controlling the sensor very differently.

**inspect:** At some point the Cloud will be a component of really big solutions. But the Cloud itself is nothing more than a very large piece of hardware that is firmly anchored some place on earth. However, this hardware will be less directly under the control of the users as should be the case for a modern industry PC. What will happen? Goodbye data security! – Will the transparent factory enter the Cloud?

**K. Borgwarth:** The Cloud by itself is nothing new. If we look to industries like the semiconductor industry, there has been a 'cloud' present for 25 years. Different departments gather their data, put it into one Cloud and extract additional information out of the combination of this data. Something similar is going on in the automotive industry, all within one company. And now the new aspect is that working in separate companies having different players in different organisations, the data shall be shared between them. That's a very interesting subject: how

can this work? The interests are different, the players are different and you have to apply – that's the basic point of your question – safety and security to the data. You might have recently seen some very prominent scandal about pictures and the Cloud. There were some very private photos in the iCloud, as some celebrities uploaded them into the iCloud of Apple using a password like „1234“ and then found them in the public Cloud. Well, what you saw there can easily happen within companies as well. It's not just a small scandal in the newspaper; it's about securing the IP at the core of the companies. It's the root of their existence which is at issue here. We have seen that the preconditions for "Industrie 4.0" for the Cloud are now slowly being integrated into companies, bringing firewalls into the production zones to make sure that the IP is really protected. I believe there really are a lot of preconditions to be established before "Industrie 4.0" can really become a mass phenomenon in production.

There are other sectors outside the industry where you will already find examples of the Cloud. Let me give you one example: it is about traffic control. When you have cameras adjusting to the traffic on the roads, they can detect what kind of vehicle is travelling there, what is printed on the number plate, how many people are in the vehicle. In some countries, like Great Britain, these data are sent to the Cloud. Then you have different interested parties: for example, the road company. They want to collect money from the haulage companies passing by. So they look for the number plate and the category of vehicle. You have other players like, for example, navigation software companies. They want to get the average speed of vehicles on the road at the current moment; a completely different question, and the data have to be split up for trucks and passenger vehicles. Then maybe you have security agents, the police. They are searching for a specific vehicle - is it currently on that road? You have one set of measurements and you have different roads, all accessing the same data and interpreting them at different times.

There will be software companies – software as a service – gathering data out of the raw information which is available, and the

key issue will be to make sure that people accept the existence of such data – it could be a question of people’s privacy and people’s habit – and it’s a question concerning the IT infrastructure: are the data really secure or easily accessible by everybody and non-intentional access is possible?

**Inspect:** If the industrial Internet becomes reality, how can machine vision technology and enterprise resource planning be part of the same entire solution?

**P. Altpeter:** An efficient enterprise resource planning system maps all processes of a business and a very important part of that process is quality control, online and offline. Most camera systems that do not serve as a kind of position detector can be seen as a quality control instance and often divide the flow of material into two routes; accepted products and rejected products. So I think the integration of the camera into the resource planning is almost mandatory. Even today, good or bad results from the camera flow back to the enterprise resource planning system or go into a database, one way or another. But I think in the future the enterprise resource planning system will take over the master role, over the camera. Today the camera

systems that we build have large data storage themselves for ring buffers of images or for measured data. I think in the future it could be that the ERP system pushes the parameters and the functions of control to the system and takes back these data sets from the camera. It’s not a degradation of the camera system but mainly a way back to the master function. The camera is concentrating on acquiring and processing images and not handling data or having a nice GUI or something like that.

**inspect:** Which players in the machine vision market will benefit from new technologies and which will lose out? And will there be new players in the machine vision market?

**D. Ley:** Well, I think there are always big opportunities associated with change and therefore I’m personally convinced that those companies who are eager to organise and drive the change will be those who most benefit from this change process. We at Basler have one firm belief: if there is the possibility for making things better, leaner or more affordable, this change will happen sooner or later. So the only question is: who is organising the change and how long will it take exactly? So I guess that especially those companies who confront

this technology and these new possibilities and change them, implement them in real-world products will be benefiting from the new times that are ahead of us.

**inspect:** A well-known IR camera manufacturer recently launched a module on the market, which along with an iPhone 5, will constitute a decent IR camera system accessible for all. This represents the first fusion of a previously professional product with a consumer product and we should take this seriously. Will there be more to follow? What opportunities do the technological developments that are mentioned here offer for new business models?

**K.-H. Noffz:** The business models will definitely become more widespread, more complex and more interesting. For us, around 10 years ago our business model was very easy – sell hardware at the list price – and that was straightforward. But now with our software, for example, we have products that run with third-party hardware. You have a completely different situation; software that runs in someone else’s camera, and you don’t sell the hardware, even though there is a lot of value in it. So you move to some kind of run-time licensing and contracting, which is completely different. But now the situ-

*(Continued on p. 20)*

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ation is that we have customers using our software in a third-party camera and developing highly advanced algorithms and applications that can be used throughout a complete industry. So they are themselves interested in being a part of the business model and selling to third parties. Then the next question arises of how you can technically enable something for your customers in your own software on a third-party device. There you can see the situation can become complex, because embedded devices require ever more different players working to a common goal. So we don't have one vendor that provides hardware, the software and everything else. The business models become more complex but I think, and that's my experience, you have a lot of new opportunities if you have good ideas, and I believe we are really at the beginning of a new trend and the future has just started. So let's use the opportunities.

**T. Evensen:** So definitely things are changing pretty fast. We, of course, produce hardware, but it's programmable hardware. Traditional people program that with hardware languages. Now of course more software programmers are getting access to it. In the software world, a lot of things have happened outside of machine vision, and I think it's going to come in here as well; things like Open Source, things like the whole App way of thinking that we have from Apple. If you start thinking about Open Source and writing applications – apps – suddenly it's a different mindset. It becomes less proprietary, it becomes more like working together, finding solutions that are out there, sometimes even for free. So it becomes more like: how do you put to-

gether a lot of complex software to make it work together with the hardware? I think the whole integration part will be harder and harder to solve while getting the algorithms and so on, a lot of them becoming Open Source.

**D. Ley:** We see also at Basler a lot of new opportunities coming. Having been almost completely focussed on industrial customers 10 years ago, we find most of our new customers not in the typical factory floor or automation environment. Many of our customers are using these cameras in applications that go closer to the end user, say in reverse vending machines, ticketing machines and other applications like that. That means that the end customer changes from a typical engineer towards someone who is more interested in getting visual data delivered in the easiest possible fashion. This whole area of 'prosumer', of professional consumer applications, is also getting closer to end users who are no longer just looking for the factory application. This is a big, big opportunity again for the companies that can make use of the almost universal applicability of our technology. So I think, looking 10 years down the road, what will this vision show here have to offer? Certainly also products that go closer to the end user, that go into applications we have not been thinking of 10 years ago.

**K. Borgwarth:** We observe a very interesting phenomena that machine vision comes more from the very well-defined conditions of automation and getting much closer to the people. In Silicon Valley you can see a lot of start-ups devoted to the subject, subtracting the background, being more flexible to the background and getting the same

quality of data, working with arbitrary conditions and still observing the right object, coming to the same level of quality of results, without defining the background, not getting into the lab, getting much closer to reality. For sure this is nice for us because it also requires more computing power. This is what we have observed at the first small companies growing over the past few years. You can also see some examples of this in real life – Mercedes has brought this into series production so that when a car runs through an arbitrary landscape it is able to detect other human beings. These pixels belong together, „Oh, this is a cat, this is a standing tree“, and stuff like that. Apply arbitrary conditions and it gets closer, that's the second point to what people really feel. It's not about so many millimetres or a number of pixels, it's more: what is the situation like? It's getting more personal, so machine vision really has a great future. The basic technology is present, well established and now it's moving increasingly into other applications in the field, not just to automation.

**P. Altpeter:** I believe what we talked about before is going in two directions. Some consumer products will emerge or will be used for image processing purposes on the one hand, and on the other hand it's going back to very efficient hardware for solving large images. So I think it's a great chance, for the customers as well, for getting good prices for affordable systems derived from consumer products. I think it's a chance for system integrators and the ones who build specialised hardware because, with all the new trends, you always need someone who helps you.



# Machine Vision Is Increasingly International

Industry Satisfied with New Two-year Rhythm of the Vision Show

The expectations were exceeded by far. The 26th edition of Vision produced not only a record number of exhibitors (432) with a high number of foreign exhibitors (54% / 2012: 37,49%) but also a record number of visitors.

Over 8,700 trade visitors came, equivalent to a growth of around 25%, compared with the last event in 2012. „An especially pleasing fact is there was also a rise in international visitor interest in Vision,“ said Thomas Walter, Manager of Industrial Solutions Department at Messe Stuttgart, delighted. At the last event, 36% of visitors came from abroad. At this event 40% came from 54 countries (2012: 53). Foreign visitors mainly came from Italy, France, Switzerland, Austria, the Netherlands, the United Kingdom, South Korea, Belgium, Spain, China and Japan. It is interesting to note the strong contingency of visitors from Asia.

Ultimately, the success of Vision 2014 is due to the new two-year rhythm. „It was a total success,“ confirmed Dr Olaf Munkelt, Chairman of the VDMA Machine Vision Group in Frankfurt and Managing Director of MVTec Software. „We are highly pleased with the number and quality of trade visitors. We have received very positive feedback from all branches of industry.“

Exhibitors at Vision 2014 came from 31 nations – all types of company were represented, ranging from start-ups to key players. They presented their new developments in machine vision components and systems, such as cameras, image sensors, processing units, frame grabbers, software tools, lighting systems, lenses, cables, accessories and complete application solutions. For the first time, the focus was on industry PCs (IPC)



and embedded PC systems which are ideally suited for complex, demanding machine vision applications. The first-time special stand IPC 4 Vision, on which 11 renowned manufacturers participated, was extremely well visited, as exhibitors confirmed.

Machine vision is encroaching in more and more fields of application and this is reflected by the leading trade fair Vision. The event featured new focal points such as Traffic Vision and Vision 4 Automation and therefore addressed these niche markets for the first time. So it is hardly surprising that 60% of trade visitors came for the first time, according to surveys. This is a rise of 4% compared with the event in 2012. Vision targets a broad spectrum of industrial sectors. However, 75% of visitors (2012: 76%) came from industry, whereby the machine vision sector itself leads with 35% followed by the automobile and automotive supply industries, mechanical engineering, the electrical and electronics industries, medical technology and pharmaceuticals.

As always, the hallmark of Vision is the constantly high quality of trade visitors. Visitors come mainly from development followed by research and members of corporate management. 82% of respondents (2012: 84%) said they were involved in purchasing and procurement decisions in their company.

Trade visitors also indicated a willingness to invest, a trend that is virtually uninterrupted. As a result, 84% of visitors 2014 (2012: 86%) intend to invest and the majority of them within the next six months. This also underlines the upwards trend in market growth and the promising outlook for the machine vision sector which experts generally rate as good. When viewed from the aspect of technology, visitors were primarily interested this time in machine vision components and applications, although turnkey systems were still in high demand.

This shows that the trade fair is on the right road with the trend to enhanced application orientation. Nearly 93% of visitors are already looking forward to Vision 2016, which will open its doors from 8 to 10. November 2016. They intend to return.

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## About Basler

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sales.sg@baumer.com

### Management

Dr. Oliver Vietze,  
CEO and Chairman

### Foundation

1952

### Staff

> 2000

### Products

Accessories, Cameras, Network Components, Software, Vision Sensors

### Applications

Character Recognition, Inspection Piece Parts, Medical Imaging, Metrology 2D, Part Identification, Particle Analysis, Pharmaceutical Applications, Robot Vision 2D, Solar Cell Inspection, Surface Inspection, Symbol Recognition, Text/Code Reading, Others

### Industries served

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

### Associations

AIA, EMVA, VDMA

### Regions served

Asia, China, Europe, India, North America



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Fax: +49 6031 60 07 70  
sales.de@baumer.com  
www.baumer.com

See our ad on page 15





## About IDS Imaging Development Systems

### The Global Market Leader in USB Industrial Cameras

IDS Imaging Development Systems GmbH is a leading manufacturer of digital industrial cameras with USB 2.0, USB 3.0 or GigE interfaces. Boasting more than a decade of experience in the development and sale of USB 2.0 cameras, IDS belongs to the pioneers in the development of digital USB 3.0 industrial cameras today. The visionary thinking and modular concepts enable customers to develop innovative and individual applications.



Around half of the 170 employees are engineers in hardware and software development as well as engineering and applications. Assisted by the skilled sales team, they provide customers with service and support, both before and after sales.

Founded in 1997, IDS nowadays has subsidiaries in the USA and Japan, offices in France and the UK, and professional distribution partners in almost every country in the world.

Extremely simple handling, high quality, long-term availability, and all-round service underpin the success of IDS products. IDS has created a corporate culture based on the fundamental values of sustainability, responsibility, and trust. High environmental and ethical standards along the value chain play a key role. A keen awareness of social responsibility is just as important to IDS as sustainable development and production.

### IDS Product Portfolio

Industrial cameras with

- USB 2.0, USB 3.0 and GigE interfaces
- CCD & state-of-the-art CMOS sensors from Sony, Aptina, e2v, CMOSIS and ON Semiconductor
- Resolutions from VGA up to 18 Megapixel

IP Cameras

Ensenso stereo 3D camera

IDS Software Suite  
Framegrabber.

### Custom Solutions

Our customized cameras provide you with the high quality, excellent functionality and ease of use that you expect from IDS. We modify our tried and tested standard products so that they meet your requirements: From slight changes to the design, to OEM solutions, through to special hardware and software alterations to give you the optimum solution for your application and your specific demands.

### Support & Services

Take advantage of our experience and our extensive internal development and design resources, and benefit from the expert knowledge of our experienced application and engineering teams. As well as feasibility studies our services include practical assistance with system integration and providing general or application-specific training.

### Markets

Machine vision, 3D vision, automation systems, medical technology, life sciences (e.g. ophthalmology, pharmacy, microscopy, science and research, robotics, semiconductor manufacturing, transport and logistics, packaging, printing, surveillance and security, ITS (Intelligent Traffic Systems).



### Office(s)

Head Office:  
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info@ids-imaging.com  
www.ids-imaging.com

### Subsidiaries:

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Fax: +1 781 287 1258  
usasales@ids-imaging.com

IDS Imaging Co., Ltd  
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apacsales@ids-imaging.com

### Sales Offices:

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IDS Imaging Development Systems GmbH  
1 Impstone Road  
Pamber Heath, RG26 3EG  
Tadley, UK  
Tel.: +44 118 970 1704  
s.hearn@ids-imaging.com

### Management

Juergen Hartmann, CEO  
Torsten Wiesinger, CEO

### Foundation

1997

### Staff

101-250

### Associations

AIA, JIIA, VDMA

### Regions served

Asia, Europe, Latin America, North America, national

### Companies represented

MVTec Software GmbH (Germany only), Ensenso GmbH



# IDS

### IDS Imaging Development Systems GmbH

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www.ids-imaging.com

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7

HN

## About Olympus Europa

Quality, Experience and Innovation

### From Conventional Microscopy to Advanced Opto-Digital Imaging Solutions

With advances in digital photography and image processing, analysis and archiving, the scope of applications in industrial microscopy has broadened significantly. Olympus, a respected provider of microscope systems for over 80 years, offers a wide range of microscopes, accessories and software for surface observation and the quantitative analysis of microstructures. Alongside the new DSX series of opto-digital microscopes and the Lext 3D confocal metrology system, Olympus provides a variety of microscope systems for standard inspection tasks to provide an extensive product portfolio for applications in materials science.

### The DSX Range – Expert Results with Minimal Training

Each member of the DSX series is intuitively controlled using a software interface. This eliminates binocular work and maximises operating simplicity, allowing every user to generate expert results with minimal experience.

The DSX100 is optimised for the inspection and analysis of industrial products and materials. Its sturdy, free-angle design negates any need to move the sample, recalibrate or adjust

focus when changing the viewing angle.

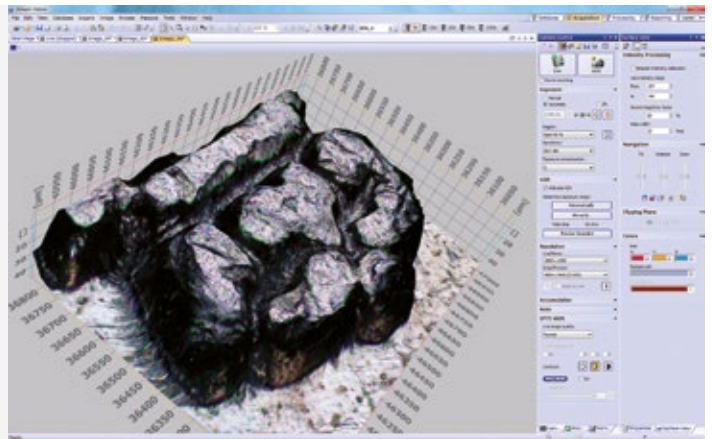
The high-end, fully-automated DSX500 and DSX500i offer advanced options such as 3D analysis, without compromising ease-of-use. The DSX500i is the first industrial inverted microscope, opening up the benefits of advanced light microscopy to a wider range of analytical tasks.

### The Lext OLS4100 – Advanced Surface Analysis

The examination of surface topology is a vital requirement across industry sectors with an ever-increasing demand for accuracy. The Lext OLS4100 confocal microscope provides high resolution surface analysis with superior slope detection and, since its launch, has become a valuable industry reference system in the metrology market.

### Stream 1.9 – Documentation and Analysis Technology

The enhanced Olympus Stream 1.9 software provides new and improved features to help users fully optimise their workflows. Users will benefit from the advanced automation of a multiple stage location engine, extended data management and new measurement options such as Particle Distribution, Porosity, Throwing Power and Phase Analysis, providing an additional depth to the standard quantitative analysis functions.



#### Management

Stefan Kaufmann  
Executive Managing Director

Frank Drewalowski  
Dr. André Roggan  
Michael Speiser  
Nick Williams

Stefan Kaufmann  
President Board of directors

#### Foundation

1963

#### Staff

> 5000

#### Products

Cameras, Lighting Equipment, Microscopes, Optical Instruments, Optics, Software, Topography

#### Applications

Digitalization, Inspection Piece Parts, Material Testing, Metrology 2D, Metrology 3D, Particle Analysis

#### Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Mechanical Engineering/Line Building, Medical Technology, Metal, Packaging

#### Associations

EUSPEN

#### Regions served

EMEA



**OLYMPUS**

Your Vision, Our Future

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microscopy@olympus-europa.com

www.olympus-ims.com/en/microscope/



See our ad on **Outside Back Cover**

## About Point Grey

Point Grey is a global leader in the design and manufacturing of innovative, high-performance digital cameras for industrial, scientific, medical, traffic, and security applications. We offer a unique and comprehensive portfolio of USB3 Vision, GigE Vision, FireWire, USB 2.0 and Camera Link products known for their outstanding quality, ease of use, and unbeatable price-performance.

### Innovation

At Point Grey, "innovation" is more than a tagline; it's a way of life. The synergies of a broad range of hardware, software and mechanical engineering skills under one roof allows Point Grey to successfully bring many innovative and ground-breaking products to market. This drive for innovation has led to many industry firsts, including the world's first and smallest 1394b digital camera, the world's smallest GigE camera, and the world's first USB 3.0 camera.

### Product Excellence

All design, prototyping, manufacturing, testing, and packaging is done out of a state-of-the-art facility in Vancouver, Canada. These facilities include dedicated SMT lines, AOI and X-ray machines, industrial clean room, and automated test stations. The "Seal of Quality" label on each camera can-

not be printed until the camera has been 100% inspected and tested. This rigorous quality testing, together with hassle-free product warranties, ensures that customers can rely on Point Grey cameras for their demanding vision applications.

### Customer Care

To ensure our customers achieve maximum value from their camera systems, Point Grey offers world-class support on installation, configuration, customization and trouble shooting. Our Customer Support program includes quick response email and phone support, online user manuals, online knowledge base articles and regular firmware updates.

### End-to-End Imaging

A critical component of any vision system is the speed and reliability of the imaging pipeline, from light hitting the image sensor to data reaching the host system. Point Grey Research has taken ownership of the entire pipeline, and over the last 15 years has created a diverse portfolio of digital cameras, peripheral components, and software.

- Designed and manufactured in Canada
- Global distribution network
- 200 staff worldwide
- ISO 9001:2008 registered company



### Office(s)

Headquarter  
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12051 Riverside Way  
V6W 1K7 Richmond, BC

Canada  
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Fax: +1 604 242 9938  
info@ptgrey.com

### Management

Michael Gibbons  
Director of Sales & Marketing

Joerg Clement  
Regional Manager EMEA

### Foundation

1997

### Staff

200

### Products

Cameras

### Applications

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

### 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

### Associations

AIA, EMVA, JIA, Other

### Regions served

Asia, Europe, Latin America, North America and ROW (Rest of the World)



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Fax: 49 7141 488817 99  
eu-sales@ptgrey.com  
www.ptgrey.com



See our ad on page 17

## About Chromasens



### Machine Vision 'Made in Germany'

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 company's know-how is further enhanced through continuous dialogue with universities and research centres. The intensive cooperation with the customer in the form of comprehensive support throughout every project phase is a cornerstone of the company philosophy. Development and manufacturing takes place at the company's facility in Constance.



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www.chromasens.com



### Management

Martin Hund, CEO  
Markus Schnitzlein, CEO

### Foundation

2004

### Staff

50

### Products

Cameras, Lighting equipment

### Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Web Material, Material Testing, Metrology 3D, Particle Analysis

### Industries served

Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Glass/Ceramics, Metal, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Precision Engineering/Optics/Machine Vision, Printing

### Associations

AIA, EMVA, VDMA

### Regions served

Asia and Pacific Rim, Europe, North America, Latin America, national, ROW



## About Framos

### We Enable Imaging – Solutions for Industry Applications and any Imaging Challenge

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 consulting 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.



- **Imaging Components** – Key components to build a camera or an entire imaging system
- **Engineering** – Design support, hard- and software development tailored to your needs
- **Imaging Systems** – Customised image processing solutions
- **Global Services** – Technical consulting, global sourcing and extensive logistics



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info@framos.it

Framos France, France  
Tel.: +33 1 39 52 07 82  
info@framos.fr

Framos Technologies Inc., Canada  
Tel.: +1 61208 1082  
info@framos.ca

### Management

Dr. Andreas Franz, CEO

### Foundation 1981

### Staff ~60

### Products

Cables, Cameras, Camera Modules, Converter, Frame Grabber, Interface Boards, Lighting, Optics, Smart Cameras, Software, Vision Sensors

### Applications

Character Recognition, High Speed Analysis, Inspection Piece Parts, Metrology 2D, Metrology 3D, Part Identification, Robot

Vision 2D, Robot Vision 3D, Symbol Recognition

### Industries served

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

### Associations

AIA, EMVA, VDMA, HybridSens, SwissT.net, Sensors Bavaria

### Regions served

Asia, Europe, North America, national

### Companies represented

Sony, OnSemi Aptina, Smartek Vision, Lumenera, Datalogic, Emergent Vision, Toshiba Teli, Visiosens, Hitachi, PrimeTech, Pacific Corporation, Videology, SVS Vistek, Pleora Technologies, Euresys, Sunex, Fujinon, Schott Moritex, Schneider Kreuznach, AlysiumTech, Pentax Ricoh, Tamron, Vision+Control, Falcon, Effilux, Norpix, VisionTools, Trimble

See our ad on page 67

## About the JAI Group

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, surveillance, life science and scientific research.

Besides a broad range of leading-edge 1-CCD and 1-CMOS interlaced/progressive area scan cameras, JAI is a leading provider of multi-imager cameras incorporating advanced prism-block technology, including 3-CCD RGB area scan cameras, 2-CCD multi-spectral/HDR cameras plus a complete family of 3-CMOS/4-CCD/4-CMOS line scan cameras. JAI's product program includes cameras for visible, UV and NIR im-



aging with GigE Vision, Camera Link, USB 3.0 Vision and CoaX-Press interfaces.



See the possibilities

See our ad on page **41**

**JAI Group A/S**  
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2500 Valby  
Denmark  
Tel.: +45 4457 8888  
Fax: +45 4491 3252  
camerasales.emea@jai.com  
www.jai.com



### Office(s)

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camerasales.emea@jai.com

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camerasales.americas@jai.com

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camerasales.apac@jai.com

JAI Ltd. China  
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### Management

Jørgen Andersen, CEO  
Masao Watabe,  
President of JAI Ltd. Japan  
Flemming W. Maunsbach,  
Group VP of Finance  
Henriette H. Olsen,  
Group VP of Marketing  
Yosuke Muraki,  
Group VP of R&D

### Foundation

1963

### Staff

101–250

### Products

Cameras, Interfaces/Cables/  
Peripherals, Software, Other

### Applications

Character Recognition, High  
Speed Analysis, Inspection Piece  
Parts, Inspection Webbed Material,  
Metrology 2D, Part Identification,  
Robot Vision 2D, Symbol  
Recognition

### 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, Precision  
Engineering/Optics/Machine  
Vision, Traffic/Logistics, Other

### Associations

AIA, EMVA, JIIA

### Regions served

APAC, EMEA, The Americas

## About Kappa optronics

### Application-specific Cameras

The German high-quality supplier develops and manufactures customer-specific cameras for diverse target industries. With first-rate project and quality management Kappa is a reliable partner for complex visualization projects. Customer series range from highly complex systems in small quantities to volume models in mass production.

Strong points:

- Modular high performance portfolio,
- Rugged cameras with highest signal quality for extreme environments,
- Integration capacity into higher level systems,
- Long-term availability,
- Competitive in cost-performance.



### Office(s)

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Kappa UK/Ireland  
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### Management

Jürgen Haese, President  
Hubertus Dornieden, CEO  
Karl-Heinz Bornemann,  
Director of Sales and Marketing  
Christian Koziol, Kappa USA,  
Director of Sales  
Christophe Tourné, Kappa  
France, Market Manager France  
Mariana Arce,  
Market Manager UK/Ireland

### Foundation

1978

### Staff

101–250

### Products

Cameras, Consulting, Embedded  
Systems, Integration Service,  
R&D, Software, Turn Key,  
X-Ray

### Applications

Digitalization, Inspection Piece  
Parts, Inspection Webbed  
Material, Material Testing,  
Metrology 2D, Part Identification,  
Particle Analysis, Robot  
Vision 2D, Robot Vision 3D,  
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

### Regions served

Asia, Central Europe, China,  
EMEA, Europe, North America,  
national



See our ad on page **43**

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Germany  
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Fax: +49 5508 974 109  
info@kappa.de  
www.kappa.de



## About Matrix Vision

Matrix Vision is a leading manufacturer and offers a large spectrum of digital cameras – from USB, GigE with Power over Ethernet to smart cameras with integrated easy configurable machine vision software. A wide range of USB 3.0 cameras with CMOS sensors up to 10 megapixels are provided with the USB3 Vision Standard. Matrix Vision introduced a new, revolutionary 6D perception camera at the Vision show in Stuttgart. It detects objects in space by means of motion, depth information and experience. The perception camera is ideal for palletizing, de-palletizing and pick & place



applications in logistic, packaging and automotive sectors. Besides an extensive range of standard products we offer custom solutions, which provide maximum utility for users as a result of continuous development. Join our vision world and benefit from cutting-edge technologies and extensive services.



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See our ad on page **19**

### Office(s)

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Matrix Vision Italy  
Carlo Peroni  
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Mobile: +39 340 3161382  
carlo.peroni@matrix-vision.de

### Management

Erhard Meier, CEO  
Uwe Furtner, CTO  
Dietmar Unser, Sales Manager  
Marcus Bleise,  
Sales Manager International

### Foundation

1986

### Staff

51-100

### Products

3D Cameras, Digital Cameras,  
Frame Grabber, Smart Cameras,  
USB 3.0 and GigE Cameras,  
Software, Vision Sensors

### Applications

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, Elec-  
tronics/Semiconductors, Energy/  
Water/Solar Technology, Food-  
stuffs/Beverages, Glass/Ceram-  
ics, Mechanical Engineering/Line  
Building, Medical Technology,  
Metal, Packaging, Paper/Wood,  
Pharmaceuticals/Cosmetics/  
Chemicals, Plastics, Precision  
Engineering/Optics/Machine  
Vision, Traffic/Logistics, Other

### Associations

AIA, DNHK, VDMA

### Regions served

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

## About Micro-Epsilon

Micro-Epsilon is a medium-sized family-run company which plays a leading role in measurement technology. For more than 45 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.

### Office(s)

Micro-Epsilon UK Ltd  
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### Foundation

1968

### Staff

> 500

### Products

Vision Sensors/Embedded  
Systems, Other

### Applications

Character Recogniton, Inspec-  
tion Piece Parts, Metrology 3D,  
Robot Vision 2D, Robot Vision  
3D, Symbol Recognition

### Industries served

Automotive and Suppliers,  
Electronics/Semiconductors,  
Foodstuffs/Beverages, Glass/  
Ceramics, Mechanical Engineer-  
ing/Line Building, Medical Tech-  
nology, 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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www.micro-epsilon.com



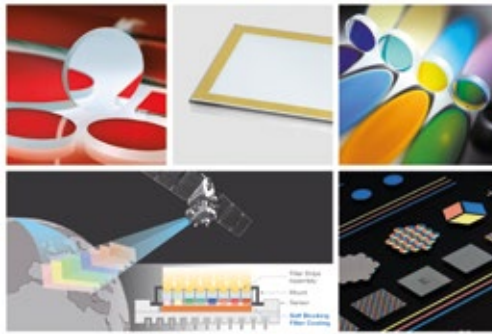
See our ad on page **3**

## 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 en-

gineering 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 Automotive, Biophotonics, Laser, Space & Defence, Lighting & Projection, Sensors & Imaging, and Industrial Applications.



### Offices

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Switzerland, Austria  
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USA  
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Singapore  
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**Foundation**  
2009 / 1946

### Staff

101-250

### 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



### Optics Balzers AG

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www.opticsbalzers.com



See our ad on page **13**

## About Opto

Opto is a leading developer and manufacturer of high-precision optomechanical inspection modules and devices, with facilities in Germany, the UK and France. Since its inception in 1980, Opto has been a provider of optical inspection and digital imaging engines to some of the world's most technologically advanced industrial and bioindustrial applications – including high-throughput cellular imaging, laser eye surgery, stent inspection, laser fault injection, and many more.

With this deep heritage in industrialised embedded microscopy and imaging, and



comprehensive international manufacturing capabilities, Opto is able to deliver technically perfect optomechanical inspection solutions in serial production to the most demanding applications in machine integrated vision and inspection.

### Office(s)

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info@opto-france.com

Opto UK Ltd.  
Tel.: +44 1925 606 595  
info@opto-uk.com

### Management

Markus Riedi, CEO  
Klaus Flügel, CTO  
Martin Price, Int. Sales  
and Business Development  
Patrick Trannois, French Sales  
Michael Niemeyer,  
German Sales

**Foundation**  
1980

**Staff**  
11-50

### Products

Marketing, Microscopes,  
Optical Instruments, Optics,  
R&D, Software, Vision Sensors

### Applications

High Speed Analysis, Inspection  
Piece Parts, Material Testing,  
Metrology 2D, Particle Analysis

### 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

### Associations

AIA, EMVA, VDMA

### Regions served

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



### Opto GmbH

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82166 Gräfelfing  
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Tel.: +49 89 898055 0  
Fax: +49 89 898055 18  
info@opto.de  
www.opto.de



See our ad on page **9**

## About Ricoh Imaging in Europe

Ricoh Imaging Deutschland-GmbH, formerly known as Pentax Imaging, is proud of the respect its products have gained over 50 years of high quality manufacturing. All lenses are developed with the focus on quality and performance and designed for a long service-free life.

This is achieved by the combination of modern technology and precision manufacturing. In 2012 Ricoh introduced MV cameras. The new range of cameras are extremely compact, robust and suitable for almost all industrial image processing applications.

Since 2013 Ricoh has been working on high technology "Special Camera Systems." The new Extended Depth of Field System is only one example. In 2014 Ricoh will show many more new and interesting innovations including lenses, intelligent cameras and equipment.



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**RICOH**  
imagine. change.



### Offices

Ricoh Imaging  
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Tel.: +49 40 532 01 33 66  
iosd@eu.ricoh-imaging.com

### Management (EMEA)

Eiki Nishine

### Foundation

1962

### Staff

11-50

### Products

Cameras, Equipment, Filters,  
Optics, Special Camera Systems

### Regions served

EMEA

## About Jos. Schneider Optische Werke

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. The understanding for the customer's demand and the in-depth expert knowledge lead to excellent opto-mechanical systems.

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**Schneider**  
KREUZNACH



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industrial

### Management

Dr. Josef Staub,  
Managing Director  
Ulf Grether,  
Head of Sales Industrial Solutions  
Dr. Lingli Wang, Head of R&D

### Foundation

1913

### Staff

~600

### Products

Optical Instruments, Optics,  
R&D, Other

### Applications

Character Recognition, Digitalization, High Speed Analysis, Inspection Piece Parts, Inspection Web Material, Material Testing, Metrology 2D/3D, Part Identification, Particle Analysis, Robot Vision 2D/3D, Security/Surveillance, Symbol Recognition

### Industries served

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

### Regions served

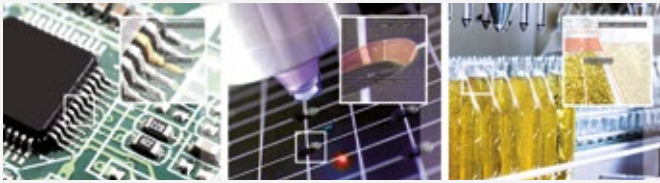
Asia, Europe, North America,  
South/Central America, national

### Associations

AIA, EMVA, VDMA



## About Stemmer Imaging



Stemmer Imaging is Europe's largest imaging technology and service provider with head office in Germany (Puchheim near Munich) and subsidiaries in many European countries. Our customers have access to a wide variety of imaging products and solutions from the world's leading manufacturers who provide cutting edge vision technology across all product segments, including Stemmer Imaging's independent,

modular programming library for imaging applications, Common Vision Blox ([www.commonvisionblox.com](http://www.commonvisionblox.com)).

This broad range of components and solutions, our experience of 40 years in imaging and a comprehensive support by a staff of more than 200 employees allows us to offer you everything you need to solve your imaging task.

Stemmer Imaging – Imaging is our passion!

**STEMMER**<sup>®</sup>  
IMAGING

**Stemmer Imaging**  
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[info@stemmer-imaging.de](mailto:info@stemmer-imaging.de)  
[www.stemmer-imaging.com](http://www.stemmer-imaging.com)

M

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### Office(s)

Belgium  
Denmark  
Finland  
France  
Germany (Head office)  
Ireland  
Poland  
Sweden  
Switzerland  
The Netherlands  
United Kingdom

### Additional served countries:

Austria, Estonia, Iceland, Latvia, Liechtenstein, Lithuania, Luxembourg, Norway

### Foundation

1987

### Staff

101-250

### Products

Accessories, 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, North America, national

## About Teledyne Dalsa

Teledyne Dalsa is a global leader in the design, development, and manufacture of digital imaging products and solutions. In addition, Teledyne Dalsa specializes in the engineering and fabrication of semiconductor components and services. The company employs approximately 1,000 people world-wide with sales offices across North America, Europe and Asia which support an international distribution network serving more than 40 countries.

Today, Teledyne Dalsa image sensors, cameras, frame grab-



bers and software are used in thousands of automated inspection systems around the world and across multiple industries.

### Office(s)

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### Management

Rex D. Geveden, President, Teledyne Dalsa, Executive Vice President, Teledyne Technologies Inc.

### Foundation

1980

### Staff

501–1000

### 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, 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 (ITS)/Logistics

### Platforms supported

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

### Associations

AIA, EMVA, JIIA

### Regions served

Asia Pacific, Europe, North America, South America

**TELEDYNE DALSA**  
Everywhere you look

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ON

## About Vieworks

Founded in 1999, Vieworks has been actively serving digital imaging markets with its distinguished vision technologies.

Vieworks' innovative Machine Vision cameras are adopted and used in a variety of industrial applications including but not limited to industrial automation and inspection, aerial imaging, surveillance, science and research. Manufacturers of machines, equipments and solutions, who are market-leading customers in different industries, incorporate our products into their systems, and acknowledge the performance of our products.

Our industrial camera solutions are designed and built to

provide customers with higher resolution, wider dynamic range and faster frame speed. This is realized by accumulated know-hows and technologies such as precision opto-mechanics technology and imaging signal processing technology as well as electronics design technology and software development technology.

As a fast growing technology company with long-term growth prospects globally, we endeavor endlessly to realize image beyond imagination by advancing vision technologies, innovating work process as well as focusing on the needs of our customers. Vieworks is an ISO-9001 certified company.

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www.vieworks.com

**VIEWORKS**



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### Management

Hooshik Kim, CEO  
Jeffrey Baik, Sales Manager

### Foundation

1999

### Staff

157

### Products

Cameras, Optics, X-ray Equipment

### Applications

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



### 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

### Associations

AIA, EMVA, JIIA

### Regions served

Asia and Pacific Rim, Europe, North America

## About Ximea

Ximea designs and produces leading-edge, high-performance cameras with the lowest power consumption and the smallest footprint as well as highly optimized camera and imaging solutions for volume OEM applications.

The camera designs are based on powerful, flexible technology platforms that include an application programming interface (API) for more than 30 of the most common Vision libraries as well as compliance with industry standards like USB3 Vision. xiAPI supports Windows, Linux and OS X operating systems.

Customers can further adapt Ximea cameras by selecting specialized optics and data interfaces, while OEM customers can leverage Ximea's Custom Engineering services. This is how Ximea differentiates from the competition.

To ensure that Ximea offers the highest quality cameras at the best price, Ximea owns and operates its own engineering and production facilities in Bratislava, Slovakia. This allows us to design your solution with only the best components and to guarantee the optimal compromise between performance and cost with short lead times.

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**ximea**

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### Ximea s.r.o.

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Fax: +421 2 205 104 27

### Management

Dr. Vasant Desai  
Max Larin

### Foundation

2010 / 1992

### Staff

11-50

### Products

Hyperspectral-, X-Ray- and Subminiature Cameras, OEM Cameras, USB-, PCIe-, Firewire- and Thunderbolt-Cameras

### Applications

Astronomy, Character Recognition, Digitalization, Metrology



2D and 3D, Microscopy, Part Identification, Particle Analysis, Robot Vision 2D and 3D, Symbol Recognition, Others

### Industries served

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

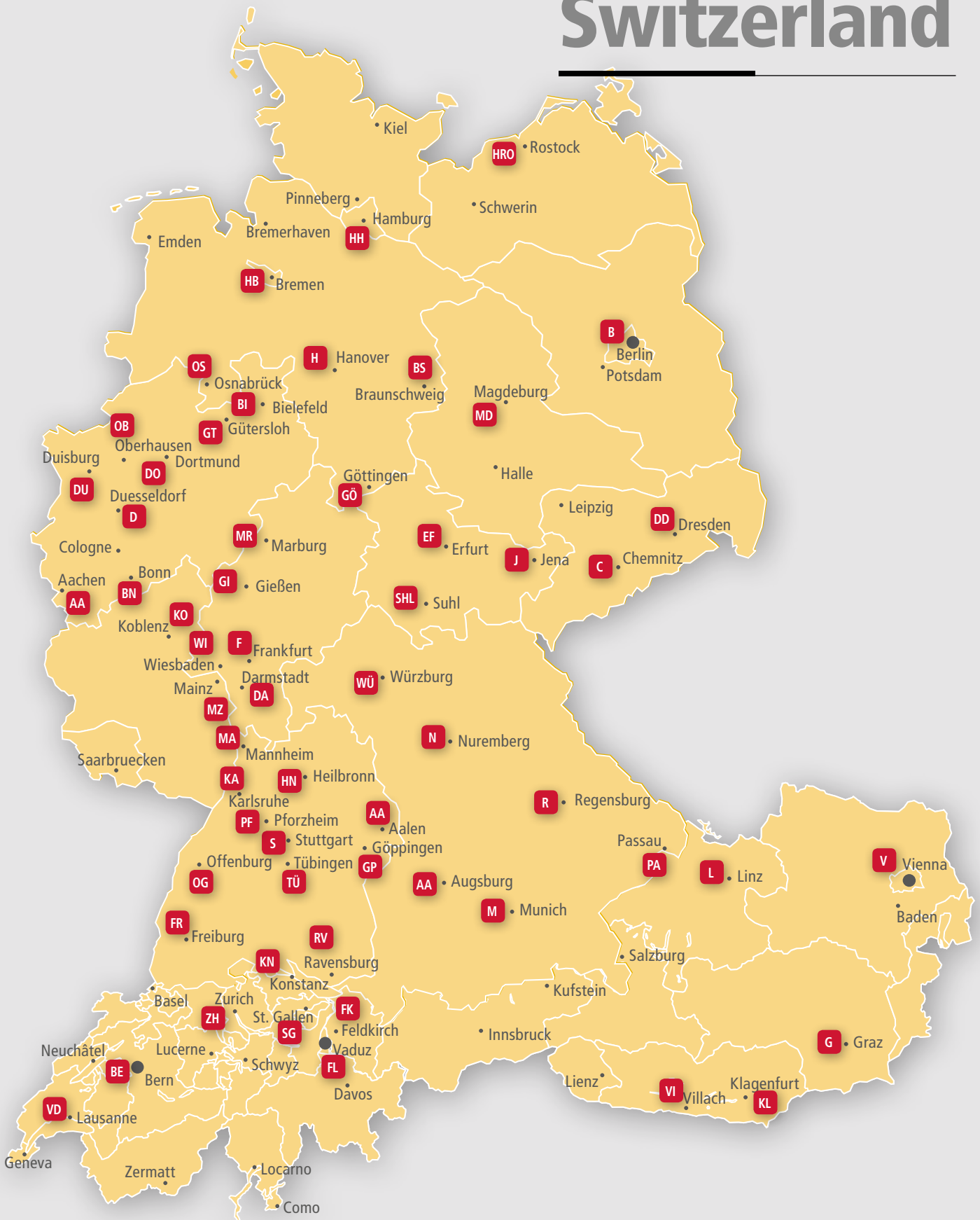
### Associations

AIA, EMVA, VDMA, Other

### Regions served

worldwide

# Germany Austria Switzerland



## Producer, Solution Provider

**ABW GmbH**

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TÜ

## Distributor

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M

## Producer

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N

## Distributor

**AHF Analysentechnik AG**

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TÜ

## Machine Builder/OEM

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BS

## Integrator

**AIT Goehner GmbH**

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Tel.: +49 711 23853 0, info@ait.de, www.ait.de

S

## Distributor

**AKE-Components GmbH**

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KA

## Integrator

**Aku.Automation GmbH**

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GP

## Solution Provider

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PA

## Producer

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G

## Producer

**Allied Vision Technologies GmbH**

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J

## Distributor, Producer, Solution Provider

**Allsens Messtechnik**

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F

## Solution Provider

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N

## Consultant

**AMC**

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DA

## Distributor

**AMS Technologies**

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M

## Distributor, Producer, Solution Provider

**Andanta GmbH**

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M

## Producer

**AOS Technologies AG**

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ZH

## Solution Provider

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KO

## Solution Provider

**ATMvision**

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Tel.: +49 7554 986990, info@atmvision.com, www.atmvision.com

RV

## Solution Provider

**Attentra GmbH**

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TÜ

## Producer, Solution Provider

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HH

## Producer

**AutoVimation Peter Neuhaus**

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KA

## Producer

**B & M Optik GmbH**

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KO

## Producer

**Balluff GmbH**

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GP

## Producer, Solution Provider

**BAP Image Systems GmbH**

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N

## Producer

**Basler AG**

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HH

## Producer

**Baumer GmbH**

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Tel.: +49 6031 60 07 0, sales.de@baumer.com, www.baumer.com

F

## Integrator, Solution Provider

**Bi-Ber GmbH & Co. Engineering KG**

An der Wuhlheide 232B, 12459 Berlin, Germany,  
Tel.: +49 30 8103 22260, info@bilderkennung.de, www.bilderkennung.de

B

## Producer

**Breckmann GmbH**

Torenstr. 14, 88709 Meersburg, Germany,  
Tel.: +49 7532 4346 0, sales@breckmann.com, www.breckmann.com

RV

The performance spectrum of Büchner Lichtsysteme GmbH extends from the concept via the development to the production of LED lighting systems. As a committed manufacturer we respond flexibly to the corresponding customer requirements. For instance, this includes the modification of our standard products as well as the development and manufacture according to customer-specific requirements.

**Producer**



**Büchner Lichtsysteme GmbH**  
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86465 Welden  
Germany  
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Fax: +49 8293 909 111  
info@buechner-lichtsysteme.de  
www.buechner-lichtsysteme.de

**AA**

**Carl Zeiss AG**

Carl-Zeiss-Str. 22, 73446 Oberkochen, Germany, Tel.: +49 7364 20 5590, lenses4industry@zeiss.de, www.zeiss.com/lenses4industry

**Producer**

**AA**

**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.

**Carl Zeiss Automated Inspection GmbH & Co. KG**

An der Lehmgrube 9, 74613 Oehringen, Germany, Tel.: +49 7941 9100 19, ai.metrology.de@zeiss.com, www.zeiss-ai.de

**HN**

**Distributor, Producer**

**CBC (Europe) GmbH**

Hansaallee 191, 40549 Düsseldorf, Germany, Tel.: +49 211 53067 0, info@cbc-europe.com, www.cbc-europe.com

**D**

**Solution Provider**

**Ceres Vision GmbH**

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

**BI**

**Machine Builder/OEM, Producer, Solution Provider**

**Chromasens GmbH**

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**KN**

**Integrator**

**CLK**

Mendelstr. 11, 48149 Münster, Germany, Tel.: +49 251 980 2087, cruse@clkgmbh.de, www.clkgmbh.de

**OB**

**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 6639 0, info@cognex.de, www.cognex.com

**KA**

► **Machine vision in the metal processing industry – A new dimension of quality, automation and productivity**

# VISION SOLUTIONS YOU CAN TRUST

Use the know-how from Europe's leading vision technology supplier to automate your production, increase efficiency and improve quality while reducing ongoing costs. STEMMER IMAGING combines the widest portfolio of machine vision systems, components and expertise with outstanding service – helping deliver market leadership for your products.

Imaging is our passion.

www.stemmer-imaging.com

**STEMMER**<sup>®</sup>  
IMAGING

**Distributor, Integrator, Producer, Solution Provider**

Compar industrial machine vision systems are the solution wherever quality control is required, zero-defects strategies are applied, or value for money and high productivity are needed. The main functions are inspection, identification, and robot guidance. Customers in all industries - however, especially in the automotive, watch-making, packaging, printing, electronics, medical and pharmaceutical sector - appreciate our innovative package solutions based on a modular system. Aspiring to be your competent system provider for machine vision and robotics, we offer solutions that include smart cameras, computer-based vision systems, accurate robots, and even integrated test installations that allow for highly flexible handling. It is our interdisciplinary and interconnected engineering knowledge about automation, image processing and robotics that enables us to create efficient systems that convince and delight our clients.



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ZH

**Machine Builder/OEM**

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J

**Distributor**

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M

**Consultant, Integrator, Producer, Solution Provider**

**CoSynth GmbH & Co. KG**  
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HB

**Producer, Solution Provider**

Creaform develops, manufactures and sells 3D portable measurement technologies and specializes in 3D engineering and metrology services. The company offers innovative solutions such as 3D scanning, reverse engineering, quality control, non-destructive testing, product development and numerical simulation (FEA/CFD). The product range includes handheld 3D scanners, optical CMMs, robot-mounted optical CMM-scanners for automated inspection as well as dynamic tracking devices. The Creaform products and services are intended for industries such as the automotive, aerospace, consumer products, heavy industries, health care, manufacturing, oil & gas, power generation and research & education.

Creaform is a unit of Ametek Ultra Precision Technologies, a division of Ametek, Inc.



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ES

**Producer**

**CSP Services GmbH**  
Friedrich-Ebert-Ufer 30, 51143 Köln, Germany,  
Tel.: +49 2203 9590 030, info@cspservices.de, www.cspservices.de

K

**Integrator, Solution Provider**

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PF

**Research Facility, Solution Provider**

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VI

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M

**Integrator**

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H

**Solution Provider**

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GI

**Producer**

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J

**Machine Builder/OEM**

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www.dr-schneider.de

MZ

**Machine Builder/OEM**

**Dr. Noll Optical Measurement GmbH**  
Nikolaus-Otto-Str. 13, 55543 Bad Kreuznach, Germany,  
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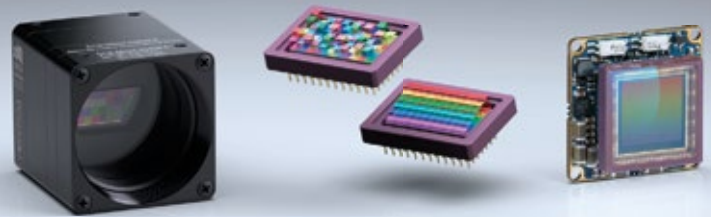
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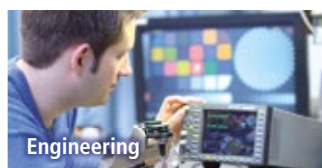
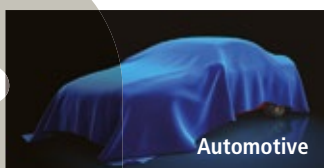
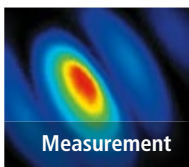
**Producer**

Leistungselektronik Jena GmbH (LEJ), this is more than 25 years of continuous research, product development and production in the field of electronic power supplies for gas discharge lamps, lamp housings and complete light sources also based on high power LED's. Additionally a selection of Xenon flashers in different versions is part of the product range. The products are used in industrial applications as microscopy, machine vision, research and education, analytical products and solar simulation. For optimum profit of our customers all devices could be tailored to adapt to their systems.



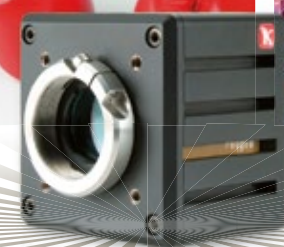
**LEJ Leistungselektronik Jena GmbH**  
 Stockholmer Str. 5  
 7747 Jena  
 Germany  
 Tel.: +49 3641 3530 0  
 Fax: +49 3641 3530 80  
 info@lej.de  
 www.lej.de **J**

# Application-Specific Camera Series



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 www.kappa-optronics.com

realize visions .



Producer

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Tel.: +41 21 695 16 00, info@lemo.com, www.lemo.com

VD

Distributor, Producer

**Lensation GmbH**  
Unterer Dammweg 12, 76149 Karlsruhe, Germany,  
Tel.: +49 721 6054 3390, info@lensation.de, www.lensation.de

KA

Producer

**Leuze electronic**  
In der Braike 1, 73277 Owen/Teck, Germany,  
Tel.: +49 7021 573 0, info@leuze.de, www.leuze.de

GP

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 Express modules for industrial computing, AdvancedTCA, Compact-PCI, 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.

**Lippert Adlink Technology GmbH**  
Hans-Thoma-Str. 11, 68163 Mannheim, Germany, Tel.: +49 621 432 140, emea@adlinktech.com, www.adlinktech.com

MA

Consultant, Integrator, Research Facility, Solution Provider

**Math & Tech Engineering GmbH**  
Robert-Bosch-Str. 6/1, 72654 Neckartenzlingen, Germany,  
Tel.: +49 7127 958350, sales@mathtech.de, www.mathtech.eu

TÜ

Producer

**Matrix Vision GmbH**  
Talstr. 16, 71570 Oppenweiler, Germany,  
Tel.: +49 7191 9432 0, info@matrix-vision.com, www.matrix-vision.de

S

Distributor

**Machine Vision Components**  
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Germany  
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Fax: +49 711 997996 50  
info@maxxvision.com  
www.maxxvision.com

S

Producer

**MBJ Imaging GmbH**  
Merkurerring 82, 22143 Hamburg, Germany, Tel.: +49 40 606870 90,  
andreas.bayer@mbj-imaging.com, www.mbj-imaging.com

HH

Machine Builder/OEM, Producer

**Micro-Epsilon** · Königbacher Str. 15, 94496 Ortenburg, Germany,  
Tel.: +49 8542 168 0, info@micro-epsilon.com, www.micro-epsilon.com

PA

Distributor

**MG Optical Solutions GmbH**  
Hauptstr. 35c, 86922 Eresing, Germany, Tel.: +49 8193 212610,  
contact@mgopticalsolutions.com, www.mgopticalsolutions.com

A

Producer

**Mikromak Service**  
Bernhard-Lichtenberg-Str. 10, 10407 Berlin, Germany,  
Tel.: +49 30 42022 402, info@mikromak.com, www.mikromak.com

B

Producer

Mikrotron GmbH develops, produces, and markets digital high-speed cameras, image processing components, and high-speed recording systems for industry, research and development worldwide. As a specialist for industrial image processing, Mikrotron also markets industrial cameras of leading manufacturers, as well as image processing software in Germany.



**Mikrotron Mikrocomputer, Digital- und Analogtechnik GmbH**  
Landshuter Str. 20-22  
85716 Unterschleißheim  
Germany  
Tel.: +49 89 726342 00  
Fax: +49 89 726342 99  
info@mikrotron.de  
www.mikrotron.de

M

Producer

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

D

Producer

**Moeller-Wedel Optical GmbH**  
Rosengarten 10, 22880 Wedel, Germany, Tel.: +49 4103 93776 10,  
info@moeller-wedel-optical.com, www.moeller-wedel-optical.com

HH

Consultant, Integrator, Machine Builder/OEM, Solution Provider

**MT-Vision GmbH**  
Am Stadtholz 24 - 26, 33609 Bielefeld, Germany,  
Tel.: +49 521 962 963 40, info@mt-vision.de, www.mt-vision.de

BI

Producer

**M-u-t AG**  
Am Marienhof 2, 22880 Wedel, Germany,  
Tel.: +49 4103 9308 0, info@mut-group.com, www.mut-group.com

HH

Producer

**MVTec Software GmbH**  
Neherstr. 1, 81675 München, Germany,  
Tel.: +49 89 457 69 50, info@mvtec.com, www.mvtec.com

M

Integrator, Producer, Solution Provider

**NanoFocus AG**  
Lindnerstr. 98, 46149 Oberhausen, Germany,  
Tel.: +49 208 62000 0, info@nanofocus.de, www.nanofocus.com

OB

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

M

Solution Provider

**Neogramm GmbH & Co. KG**  
Julius-Hatry-Str. 1, 68163 Mannheim, Germany,  
Tel.: +49 621 150 205 0, info@neogramm.de, www.neogramm.de

MA

## Machine Builder/OEM

**Nikka Research Deutschland GmbH** · Friedrich-List-Str. 20, 70771 Leinfelden-Echterdingen, Germany, Tel.: +49 711 1608 920, h-kounev@nikka-research.com, www.nikka-research.com

S

## Producer

**Nikon Metrology GmbH**

Siemensstr. 24, 63755 Alzenau, Germany, Tel.: +49 6023 91733 0, sales\_germany@nikonmetrology.com, www.nikonmetrology.com

F

## 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 92 34 0, info@net-gmbh.com, www.net-gmbh.com

M

## Solution Provider

**OBE Ohnmacht & Baumgärtner GmbH & Co. KG**

Turnstr. 22, 75228 Ispringen, Germany, Tel.: +49 7231 802 0, trevista@obe.de, www.trevista.net

PF

## Integrator

**Octum GmbH**

Rennalstr. 16, 74360 Ilsfeld, Germany, Tel.: +49 7062 914 94 0, info@octum.de, www.octum.de

HN

## Producer

**Olympus Europa SE & Co. KG**

Wendenstr. 14-18, 20097 Hamburg, Germany, Tel.: +49 40 23773 0, microscopy@olympus-europa.com, www.microscopy.olympus.eu

HH

## Solution Provider

**Opto GmbH**

Lochhamer Schlag 14, 82166 Gräfelfing, Germany, Tel.: +49 89 898 055 0, info@opto.de, www.opto.de

M

## 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**

Honsellstr. 8, 77694 Kehl, Germany, Tel.: +49 7851 9126 0, info@optronis.com, www.optronis.com

OG

## Producer

**Opsira GmbH**

Leibnizstr. 20, 88250 Weingarten, Germany, Tel.: +49 7515 6189 0, info@opsira.de, www.opsira.de

RV

## Producer

**OptoPolymer**

Königsteinstr. 12, 80807 München, Germany, Tel.: +49 89 356 571 83, info@optopolymer.de, www.optopolymer.de

M

## Machine Builder/OEM

**OptoSurf GmbH**

Nobelstr. 9-13, 76275 Ettlingen, Germany, Tel.: +49 7243 766 013, info@optosurf.com, www.optosurf.com

KA

## Producer

**Optris GmbH**

Ferdinand-Buisson-Str. 14, 13127 Berlin, Germany, Tel.: +49 30 500 197 0, sales@optris.com, www.optris.com

B

## Producer

**Otto Vision Technology GmbH**

Im Steinfeld 3, 07751 Jena, Germany, Tel.: +49 3641 6715 0, info@otto-jena.de, www.otto-jena.de

J

## 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

M

## Producer

Panasonic Corporation is one of the World's largest manufacturers of consumer electronics. Panasonic Systems Communications Company (PSCEU) as a group member of the Panasonic Co. uses this expertise in digital AV systems. Its Industrial and Medical Vision department offers a comprehensive range of micro cameras and block module cameras which achieve purest color reproduction, impressive accuracy and extremely high resolution suitable for applications including medical, industrial, live science and broadcast.

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**Panasonic**

**Panasonic System Communication Company Europe**

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Germany  
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Fax: +49 40 8549 2107  
info.medicalvision@eu.panasonic.com  
http://business.panasonic.co.uk/imv

HH

## Machine Builder/OEM

**Paul Leibinger GmbH**

Daimlerstr. 14, 78532 Tuttlingen, Germany, Tel.: +49 7461 9286 0, sales@leibinger-group.com, www.leibinger-group.com

KN

## 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. Worldwide representatives and our own sales department and technical support assure that we keep in touch with our customers.

**PCO AG**

Donaupark 11, 93309 Kelheim, Germany, Tel.: +49 9441 2005 0, info@pco.de, www.pco.de

R

## Solution Provider

**Pharmacontrol Electronic GmbH**

Gernsheimer Str. 2, 64673 Zwingenberg, Germany, Tel.: +49 6251 8545 0, info@pharmacontrol.de, www.pharmacontrol.de

DA

## Producer

**Photonfocus AG**

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

ZH

## Producer, Solution Provider

**Phytec Messtechnik GmbH**

Robert-Koch-Str. 39, 55129 Mainz, Germany, Tel.: +49 6131 9221 0, info@phytec.de, www.phytec.de

MZ

## Integrator, Solution Provider

**Pi4 Robotics GmbH**

Gustav-Meyer-Allee 25, 13355 Berlin, Germany, Tel.: +49 30 7009 694 0, sales@pi4.de, www.pi4.de

B

Producer

**Piezosystem Jena GmbH**

Stockholmer Str. 12, 07747 Jena, Germany,  
Tel.: +49 3641 66 88 0, info@piezosystem.com, www.piezosystem.com



Producer

**Planistar Lichttechnik GmbH**

Wiesenweg 4, 97267 Himmelstadt, Germany,  
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Consultant, Distributor, Producer, Solution Provider

**Plasmo Industrietechnik GmbH**

Dresdner Str. 81-85, 1200 Vienna, Austria,  
Tel.: +43 1 236 2607 0, sales@plasmo.eu, www.plasmo.eu



Producer

**POG Präzisionsoptik Gera**

Gewerbepark Keplerstr. 35, 07549 Gera, Germany,  
Tel.: +49 365 773 93 0, info@pog.eu, www.pog.eu



Producer

Point Grey is a global leader in the design and manufacturing of innovative, high-performance cameras for industrial, scientific, medical, traffic, and security applications. We offer a unique and comprehensive portfolio of USB3 Vision, GigE Vision, FireWire, USB 2.0 and Camera Link products known for their outstanding quality, ease of use, and unbeatable price-performance. Founded in January of 1997, the company's approach to product pricing, quality control, and customer service has attracted thousands of customers worldwide, and its organic growth through product sales has enabled the company to expand significantly without any outside investment. Point Grey currently employs more than 200 people worldwide and has offices in Canada, Germany, Japan, China, and Italy. The company partners with a network of distributors in Japan, Korea, China, Singapore, Taiwan, and the United Kingdom.



**Point Grey Research GmbH**  
Schwieberdinger Straße 60  
71636 Ludwigsburg  
Germany  
Tel.: +49 7141 488817 0  
Fax: +49 7141 488817 99  
eu-sales@ptgrey.com  
www.ptgrey.com



Distributor

With 16 years of experience in the machine vision market, Polytec has grown to be one of the major suppliers for components and instruments in German-speaking Europe. Today, Polytec offers the full range of machine vision hardware and provides application and 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.

**Polytec GmbH**

Polytec-Platz 1-7, 76337 Waldbronn, Germany,  
Tel.: +49 7243 604 180, bv@polytec.de, www.polytec.de



Producer

**Pro Design Electronic GmbH**

Albert-Mayer-Str. 14-16, 83052 Bruckmühl, Germany, Tel.: +49 171 30 34 752,  
frank.eckardt@prodesign-europe.com, www.prodesign-europe.com



Producer, Research Facility, Solution Provider

**Profactor GmbH**

Am Stadtgut A2, 4407 Steyr, Austria,  
Tel.: +43 7252 885 0, maria.fuehrlinger@profactor.at, www.profactor.at



Producer, Solution Provider

**Proxitronic Industries AG**

Robert-Bosch-Str. 32b, 64625 Bensheim, Germany,  
Tel.: +49 6251 1703 0, imaging@proxitronic.com, www.proxitronic.com



Producer

Pyramid is the leading specialist in the development and production of individualised IT systems and solutions. The company fulfils the most stringent requirements in the areas of network and security, industrial pc and imaging systems, servers and workstations. It offers a range that encompasses custom solutions across the entire process chain, from product development for quick market launches, to production and logistics, through to global support.



**Pyramid Computer GmbH**  
Bötzingstraße 60  
79111 Freiburg  
Germany  
Tel.: +49 761 4514 792  
Fax: +49 761 4514 70  
sales@pyramid.de  
www.pyramid.de



Producer

Qioptiq designs and manufactures photonic products and solutions that serve a wide range of markets and applications in the areas of industrial manufacturing, medical and life sciences, research and development, defense and aerospace. The company is known for

its high-quality standard components, products and instruments, its custom modules and assemblies, its leading-edge innovation, its precision manufacturing and its responsive global resourcing.

**Qioptiq Photonics GmbH & Co. KG**

Königsallee 23, 37081 Göttingen, Germany,  
Tel.: +49 551 6935 0, sales@qioptiq.de, www.qioptiq.com



Solution Provider

Quiss provides a wide selection of innovative systems for various inspection tasks in the fields of adhesive and sealant application, position detection and robot guidance as well as in the manufacture of metal packaging. Quiss systems detect and prevent manufacturing errors with utmost

reliability, indicate weak points and help achieve continuous improvement in the production process. We are proud to serve our customers now for two decades in the area of industrial image processing.

**Quiss AG**

Lilienthalstr. 5, 82178 Puchheim, Germany,  
Tel.: +49 89 894 590, info@quiss.com, www.quiss.com



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.

**Rauscher GmbH**

Johann-G.-Gutenberg-Str. 20, 82140 Olching, Germany,  
Tel.: +49 8142 448 41 0, info@rauscher.de, www.rauscher.de



Integrator, Machine Builder/OEM, Solution Provider

**RBC robotics**

Werner-von-Siemens-Str. 3, 65520 Bad Camberg, Germany,  
Tel.: +49 6434 4733, info@rbc-robotics.de, www.rbc-robotics.de



Producer

**Rheintacho Messtechnik GmbH**

Waltershofener Str. 1, 79111 Freiburg, Germany,  
Tel.: +49 761 4513 0, info@rheintacho.de, www.rheintacho.com



## Producer

**Ricoh Imaging Deutschland GmbH**

Am Kaiserkai 1, 22457 Hamburg, Germany, Tel.: +49 40 53 201 33 66,  
iosd@eu.ricoh-imaging.com, www.ricoh-mv-security.eu

HH

## Integrator

**Rohwedder AG**

Kesselbachstr. 1, 88697 Bermatingen, Germany, Tel.: +49 75 44 502 100,  
michael.stoecker@rohwedder.com, www.rohwedder.com

RV

## Solution Provider

**SAC Sirius Advanced Cybernetics GmbH**

Am Sandfeld 15, 76149 Karlsruhe, Germany,  
Tel.: +49 721 60 543 000, sales@sac-vision.net, www.sac-vision.net

KA

## Distributor

**Schaefer Technologie GmbH** · Robert-Bosch-Str 31, 63225 Langen, Germany,  
Tel.: +49 6103 300 980, info@schaefer-tec.com, www.schaefer-tec.com

F

## Producer

**Schäfter + Kirchhoff GmbH**

Kieler Str. 212, 22525 Hamburg, Germany,  
Tel.: +49 40 85 39 97 0, info@sukhamburg.de, www.sukhamburg.de

HH

## Distributor, Integrator, Solution Provider

**Schoenherr Elektronik GmbH**

Kurze Str. 18, 09577 Niederwiesa, Germany, Tel.: +49 3726 7905 0,  
info@schoenherr-elektronik.com, www.schoenherr-elektronik.com

C

## Producer

Schott Lighting and Imaging offers a broad range of lighting and image transmission solutions for customers in the industries automotive, aviation, medical, machine vision, and security technology. Innovative lighting solutions and combinations of light and image transmission are being developed

on the basis of LED technology and fiber optics. Together with our partner Moritex, an established leader in machine vision, we develop, manufacture and distribute lighting and imaging solutions and supply optical components and systems for machine vision and digital imaging.

**Schott AG Lighting and Imaging**

Otto-Schott-Str. 2, 55127 Mainz, Germany, Tel.: +49 6131 66 7752,  
lightingimaging@schott.com, www.schott.com/lightingimaging

MZ

## 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

M

## Producer

**SensoPart Industriesensorik GmbH** · Nägelseestr. 16, 79288 Gottenheim,  
Germany, Tel.: +49 7665 947 69 0, info@sensopart.de, www.sensopart.de

FR

## Producer

**Sensor to Image GmbH**

Lechtorstr. 20, 86956 Schongau, Germany, Tel.: +49 8861 2369 0,  
email@sensor-to-image.de, www.sensor-to-image.de

A

## Integrator, Solution Provider

**Seritec GmbH** · Gottlieb-Keim-Str. 60, 95448 Bayreuth, Germany,  
Tel.: +49 921 990093 30, info@seritec.de, www.seritec.de

N

## Machine Builder/OEM

**Sglux GmbH** · Ostendstr. 25, 12459 Berlin, Germany,  
Tel.: +49 30 530 152 14, welcome@sglux.de, www.sglux.com

B

## Producer

**Shape Drive GmbH**

Bindingstr. 11, 82131 Stockdorf, Germany,  
Tel.: +49 89 454 612 86, info@shape-drive.com, www.shape-drive.com

M

## Producer

**Sharp Microelectronics Europe**

Sonninstr. 3, 20097 Hamburg, Germany,  
Tel.: +49 40 2376 0, info.sme@sharp.eu, www.sharpsme.com

HH

## 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

FR

## Producer

Distinct coding of products or parts of products is a key requirement of modern production processes. With our stationary and handheld code reading systems we offer just the right products for reading and verification of 1D and 2D codes, such as bar codes and data matrix codes, as well as optical character rec-

ognition (OCR). This allows tracking and tracing of production batches along the entire production process and beyond. Application-specific machine vision tasks – such as the automatic parts recognition by means of shapes, dimensions, samples, outlines, or colors – can be optimally solved with our vision sensors.

**Siemens AG Industry Sector Industry Automation Division**

Gleiwitzer Str. 555, 90475 Nürnberg, Germany,  
Tel.: +49 911 895 0, info.rfid@siemens.com, www.siemens.de/ident

N

## Solution Provider

**Signum Computer GmbH**

Rüdesheimer Str. 21, 80686 München, Germany,  
Tel.: +49 89 547 055 0, sales@signum-vision.de, www.signum-vision.de

M

## 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.

Base products are the series of intelligent image acquisition and processing boards, supporting PCI, PCI Express with Camera Link, PoCL, PoCL lite, GigE Vision as well as CoaXPress and Camera Link HS.

**Silicon Software GmbH**

Steubenstr. 46, 68163 Mannheim, Germany,  
Tel.: +49 621 789 507 0, info@silicon-software.de, www.silicon-software.com

MA

## Producer

**Sill Optics GmbH & Co. KG**

Johann-Höflritsch-Str. 13, 90530 Wendelstein, Germany,  
Tel.: +49 9129 9023 0, info@silloptics.de, www.silloptics.de

N

## Solution Provider

**Simon IBV GmbH**

Bayreuther Str.5b, 95494 Gesees, Germany,  
Tel.: +49 9201 91 742 0, info@simon-ibv.de, www.simavis.de

N

## Producer, Solution Provider

**Slomotec, Dr. Frank Gabler** · Grimmelshausenstr. 14,  
63628 Bad Soden-Salmünster, Germany, Tel.: +49 6056 9836 674,  
info@slomotec.de, www.slomotec.de

F

## Producer, Solution Provider

**Smartray GmbH**

BGM-Finsterwalder-Ring 12, 82515 Wolfratshausen, Germany,  
Tel.: +49 8171 9683 400, info@smartray.de, www.smartray.de

M

## Integrator, Solution Provider

**SmartSurv Vision Systems GmbH**

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S

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www.buechner-lichtsysteme.de/inspect



Producer

**Solving3D GmbH**

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Tel.: +49 5131 907 97 20, info@solving3d.de, www.solving3d.de

H

Producer

**Steinbichler Optotechnik GmbH**

Georg-Wiesböck-Ring 12, 83115 Neubeuern, Germany,  
Tel.: +49 8035 8704 0, sales@steinbichler.de, www.steinbichler.de

M

Distributor, Producer

**Stemmer Imaging GmbH**

Gutenbergstr. 9-13, 82178 Puchheim, Germany, Tel.: +49 89 80902 0,  
info@stemmer-imaging.de, www.stemmer-imaging.com

M

Machine Builder/OEM

**Stiefelmayer-Reicherter GmbH & Co. KG**

Boschstr. 10, 73734 Esslingen, Germany, Tel.: +49 711 490 4690 0,  
reicherter@stiefelmayer.de, www.stiefelmayer.de

GP

Integrator

**Stöhrmann Systemtechnik**

Im Erlenwäldle 21, 77955 Ettenheim, Germany,  
Tel.: +49 7822 895203, info@stoehrmann.de, www.stoehrmann.de

OG

Producer

**Stratec Control Systems**

Ankerstr. 73, 75203 Königsbach-Stein, Germany,  
Tel.: +49 7232 4006 0, info@bbull.com, www.bbull.com

PF

Consultant

**Strategema Frank Olschewski Consulting**

Ernst-Ludwig-Str. 58, 64625 Bensheim, Germany,  
Tel.: +49 6251 869 78 44, info@stra-te-gema.com, www.stra-te-gema.com

HP

Producer

**Streppel Glasfaser-Optik oHG**

Döllersweg 3, 42929 Wermelskirchen, Germany,  
Tel.: +49 2196 94706 0, info@streppel.de, www.streppel.de

GL

Producer

**STZ Qualitätsversicherung & Bildverarbeitung**

Werner-von-Siemens-Str. 12, 98693 Ilmenau, Germany,  
Tel.: +49 3677 208066, stz@stz-ilmenau.de, www.stz-ilmenau.de

SHL

Producer

SVS-Vistek is one of Germany's most innovative manufacturers of industrial cameras, a reliable supplier of components for machine vision purposes, and a specialist for highly integrated imaging systems and solutions. Founded in 1987, SVS-Vistek has more than 20 years of comprehensive exper-

tise in the machine vision market. Since 1999 the company has been developing and manufacturing its own cameras. To this day 100% of SVS-Vistek's cameras are designed and manufactured near Munich in Seefeld, Germany.

**SVS-Vistek GmbH**

Mühlbachstr. 20, 82229 Seefeld, Germany,  
Tel.: +49 89 9985 0, info@svs-vistek.com, www.svs-vistek.com

M

Producer

**SynView GmbH**

Hessenring 83, 61348 Bad Homburg, Germany,  
Tel.: +49 6172 38800 0, info@synview.com, www.synview.com

F

Producer

Tamron is a global optical manufacturer that develops superior products to a variety of industrial fields for many years. Our Factory Automation/ Machine Vision fixed focal length lenses incorporate advanced technologies in compact design to deliver high quality even in close focus distances, providing solutions in a wide range of applications. We newly developed 7 models of fixed focal length lenses compatible with 2/3" 10-Mega-Pixel machine vision cameras to accommodate our customer's request.



**TAMRON**  
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**Tamron Europe GmbH**

Robert Bosch Str. 9  
50769 Köln  
Germany  
Tel.: +49 221 970 32 50  
Fax: +49 221 970 32 54  
cctv@tamron.de  
www.tamron.de

K

Producer

**Teledyne Dalsa**

Felix-Wankel-Str. 1, 82152 Krailling, Germany, Tel.: +49 89 895 457 380,  
sales.europe@teledynedalsa.com, www.teledynedalsa.com/mv

M

Solution Provider

**Tema**

Wilhelmstr. 41-43, 58332 Schwelm, Germany,  
Tel.: +49 2336 9298 50, info@temavisio.com, www.temavisio.com

KO

Producer

**Machine Vision –  
Designed in Germany**

Established in 1990, The Imaging Source is one of the leading manufacturers of industrial cameras, frame grabbers and video converters for production automation, quality assurance, logistics, medicine, science, security and traffic surveillance. The Imaging Source manufactures a comprehensive range of cameras with USB 3.0, USB 2.0, GigE, FireWire 800 and FireWire 400 interfaces. Their products are renowned for being innovative, high quality and constantly meeting the performance requirements of demanding industrial applications.



**THE IMAGING SOURCE**  
TECHNOLOGY BASED ON STANDARDS

**The Imaging Source Europe GmbH**

Sommerstr. 36  
28215 Bremen  
Germany  
Tel.: +49 421 335 91 0  
Fax: +49 421 335 91 80  
info@theimagingsource.com  
www.theimagingsource.com

HB

Producer, Solution Provider

**Thermosensorik GmbH**

Am Weichselgarten 7, 91058 Erlangen, Germany,  
Tel.: +49 9131 691 400, info@thermosensorik.de, www.thermosensorik.de

N

Producer

**Tichawa Vision GmbH**

Burgwallstr. 14, 86316 Friedberg, Germany,  
Tel.: +49 821 4555 53 0, sales@tichawa.de, www.tichawa.de

A

Producer

**TriDiCam GmbH**

Finkenstr. 61, 47057 Duisburg, Germany,  
Tel.: +49 204 3783 2937, Jochen.Noell@tridicam.de, www.TriDiCam.de

DU



## Machine Builder/OEM

Since 1992, Trioptics is known as a leading manufacturer of optical test equipment. From the beginning the company has focused on the research and development of accurate and fully PC controlled optical test instruments for the industrial and scientific use. The development of innovative solutions in many fields of optical testing allowed Trioptics to achieve a prominent presence on the international market. Our success is the result of the commitment and dedication of our employees.



**Trioptics GmbH**  
Hafenstr. 35-39  
22880 Wedel  
Germany  
Tel.: +49 4103 18006 0  
Fax: +49 4103 18006 20  
sales@trioptics.com  
www.trioptics.com

HH

## Producer, Solution Provider

unique vision is a spin-off of ibea (limited liability company) and is a system manufacturer. unique vision likes to continue the tradition of compact instruments of ibea, develops and brings these systems to perfection as in hardware and software. The goal is a smart system with every necessary element, modular and high-duty with a high ease of use without any limitations.



**Unique Vision GmbH**  
Kleine Bahnstr. 8  
22525 Hamburg  
Germany  
Tel.: +49 40 27 86 48 50  
Fax: +49 40 27 86 48 52  
info@unique-vision.net  
www.unique-vision.net

HH

## Producer

**VDS Vosskühler GmbH**  
Weiße Breite 7, 49084 Osnabrück, Germany,  
Tel.: +49 541 800 84 0, vds@vdsvoosk.de, www.vdsvoosk.de

OS

## Producer

**Vialux GmbH**  
Am Erlenwald 10, 09128 Chemnitz, Germany,  
Tel.: +49 371 334 247 0, info@vialux.de, www.vialux.de

C

## Distributor

**Videor E. Hartig GmbH**  
Carl-Zeiss-Str. 8, 63322 Rödermark, Germany,  
Tel.: +49 06074 888 0, info@videor.com, www.videor.com

F

## Solution Provider

**Visicontrol GmbH**  
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Tel.: +49 751 560 13 0, info@visicontrol.com, www.visicontrol.com

KN

## Machine Builder/OEM, Solution Provider

**Visimation GmbH**  
Arbuchtalstr. 20, 72800 Eningen, Germany,  
Tel.: +49 7121 304 080 0, post@visimation.de, www.visimation.de

TÜ

## Consultant, Other

**Vision Academy**  
Konrad-Zuse-Str. 15, 99099 Erfurt, Germany,  
Tel.: +49 361 4262 188, www.vision-academy.org

EF

## Producer

As a technology leader, our company develops, produces and sells an optimally attuned modular system worldwide. It ranges from complex image processing systems to individual high performance LED lighting and precision optics. To master challenging image processing tasks that would overtax standard components, we offer our customers tailor-made image capturing and processing solutions. Leading OEMs and system integrators have banked on state-of-the-art design by Vision & Control for almost 20 years.



**Vision & Control GmbH**  
Mittelbergstraße 16  
98527 Suhl  
Germany  
Tel.: +49 3681 79 74 0  
Fax: +49 3681 79 74 22  
www.vision-control.com

SHL

## Producer



Since 1996, Vision Components is a leading developer of embedded vision technology made in Germany, focusing on the manufacture and distribution of OEM embedded vision solutions. With strategic partnerships with many key integrators and software providers, Vision Components offers a complete line of advanced industrial smart cameras for an array of applications. Product line includes OEM single board, miniature and standard Smart Cameras all based on multicore ARM architecture running Linux or RT OS.



**Vision Components GmbH**  
Ottostr. 2  
76275 Ettlingen  
Germany  
Tel.: +49 7243 2167 0  
Fax: +49 7243 2167 11  
sales@vision-components.com  
www.vision-components.com

KA

## Producer

**Vision Engineering Ltd.**  
Anton-Pendele-Str. 3, 82275 Emmering, Germany,  
Tel.: +49 8141 401670, info@visioneng.de, www.visioneng.de

M

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# LED Lighting Catalog

Producer

Vision Research designs and manufactures high-speed digital imaging systems used in applications including defense, automotive, engineering, science, medical research, industrial manufacturing, sports, and digital cinematography for television and movie production. Marketed under the Phantom brand, Vision Research digital high-speed cameras add a new dimension to the sense of sight, allowing users to see details of an event when it's too fast to see, and too important not to.



**Vision Research Europe**  
 Baldreitstr. 5  
 76530 Baden-Baden  
 Germany  
 Tel.: +49 7221 97064 65  
 Fax: +49 7221 97064 66  
 heiner.ramsbott@visionresearch.com  
 www.visionresearch.com

KA

Producer, Solution Provider

Since 1984, machine vision specialist Vitronic in Wiesbaden, Germany, aims to contribute to the success of its customers. From qualitative surface inspections to three-dimensional weld seam inspections and 3D Robot Vision, the specialist Vitronic assists in optimizing production processes. All inspection solutions are individually tailored to the customers' needs. Hardware and software naturally originate from one source, the highest service quality is ensured. Vitronic is active in various industries, among them automotive, medical and pharmaceuticals, packaging and photovoltaics. Due to its pioneering efforts and permanent investments in research and development, Vitronic is one of the leading machine vision companies worldwide.



**Vitronic Dr.-Ing. Stein Bildverarbeitungssysteme GmbH**  
 Hasengartenstr. 14  
 65189 Wiesbaden  
 Germany  
 Tel.: +49 611 7152 0  
 Fax: +49 611 7152 133  
 sales@vitronic.com  
 www.vitronic.com

WI

Solution Provider

**Vision Tools Bildanalyse Systeme GmbH**  
 Goethestr. 63-65, 68753 Waghäusel, Germany,  
 Tel.: +49 7254 9351 0, info@vision-tools.com, www.vision-tools.com

MA

Distributor, Integrator, Producer, Solution Provider

**viZaar AG**  
 Hechinger Str. 152, 72461 Albstadt, Germany,  
 Tel.: +49 7432 98375 0, info@vizaar.de, www.vizaar.de

TÜ

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.

**Vision Ventures GmbH & Co. KG**  
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DA

Solution Provider

**VMT Vision Machine Technic Bildverarbeitungssysteme GmbH**  
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 Tel.: +49 621 84250 0, info@vmt-gmbh.com, www.vmt-gmbh.com

MA

Producer

**Volpi AG**  
 Wiesenstr. 33, 8952 Schlieren, Switzerland,  
 Tel.: +41 4473 243 43, mail@volpi.ch, www.volpi.ch

ZH

Producer

**Visiosens GmbH**  
 Hannah-Vogt-Str. 1, 37085 Göttingen, Germany,  
 Tel.: +49 551 305410 80, info@visiosens.de, www.visiosens.de

GÖ

Integrator, Solution Provider

**Visotect GmbH**  
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S

Distributor

**Vistas GmbH**  
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 Tel.: +49 89 929 280 90, info@vistas-gmbh.de, www.vistas-gmbh.de

M

Producer

VRmagic offers a wide range of components for industrial image processing. The product portfolio extends from intelligent cameras with Linux operating system through multi-sensor cameras with up to four synchronized remote sensors to USB cameras with small dimensions. The portfolio includes cameras with various CCD and CMOS sensors with rolling or global shutter, and with resolutions from VGA to 4.2 megapixels. The range of products is completed by analog-digital converters and 3D area sensors.



**VRmagic GmbH**  
 Augustaanlage 32  
 68165 Mannheim  
 Germany  
 Tel.: +49 621 400 416 20  
 Fax: +49 621 400 416 99  
 info.imaging@vrmagic.com  
 www.vrmagic-imaging.com

MA

Integrator, Solution Provider

**Weber Systemtechnik**  
 Hans-Sachs-Str. 10, 35576 Wetzlar, Germany,  
 Tel.: +49 6441 37804 0, info@wesys.de, www.wesys.de

GI

Distributor, Integrator, Solution Provider

**Weiss Imaging and Solutions GmbH**  
 Neufeldstr. 10, 85232 Bergkirchen/Günding, Germany,  
 Tel.: +49 8131 3798068, info@weiss-imaging.eu, www.weiss-imaging.eu

M

## Producer

**Wenglor Sensoric GmbH**

Wenglor Str. 3, 88069 Tettnang, Germany,  
Tel.: +49 7542 5399 0, info@wenglor.com, www.wenglor.com

KN

## Machine Builder/OEM, Solution Provider

**Wenzel Group GmbH & Co. KG**

Werner-Wenzel-Str., 97859 Wiesthal, Germany,  
Tel.: +49 6020 201 0, info@wenzel-cmm.com, www.wenzel-cmm.com

WÜ

## Producer

**Werth Messtechnik GmbH**

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GI

## Solution Provider

**Wickon Hightech GmbH**

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Tel.: +49 2131 20 199 0, vertrieb@wickon.com, www.wickon.com

MD

## Solution Provider

**Wolf Systeme AG**

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PF

## Producer

**Ximea GmbH**

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MS

## Producer

**X-Rite Europe GmbH** · Althardstr. 70, 8105 Regensdorf, Switzerland,

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ON

## Producer

**Xapt GmbH**

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Tel.: +49 209 883 070 0, info@xapt-gmbh.de, www.xapt-gmbh.de

DO

## Integrator, Solution Provider

**Zertrox GmbH & Co. KG** · Bachstr. 62-64, 52066 Aachen, Germany,  
Tel.: +49 241 9977 164, info@zertrox.de, www.zertrox.de

AC

## Machine Builder/OEM, Producer, Solution Provider

**Ziemann & Urban GmbH**

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Tel.: +49 8123 936880, info@ziemann-urban.de, www.ziemann-urban.de

ED

## Producer

Since 1985, Z-Laser is a leading manufacturer of laser systems for positioning, machine vision, measurement equipment, medical and more. Laser modules and fiber-coupled solutions provide the highest requirements in projection accuracy that is demanded in many applications. Micro- or macrolines, various projection patterns such as multi-lines, dot matrices, and circles are available for a variety of wavelengths and output powers. Customized laser solutions for OEM applications are also one of Z-Laser's specialties.

**Z-Laser Optoelektronik GmbH**

Merzhauserstr. 134  
79100 Freiburg  
Germany  
Tel.: +49 761 29644 44  
Fax: +49 761 29644 55  
info@z-laser.de  
www.z-laser.com

FR

## Producer

**ZygoLOT GmbH**

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Tel.: +49 6151 8806 552, info@zygolot.de, www.zygolot.de

DA

# Europe

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P

MADEIRA



Producer

Active Silicon specialises in the design, manufacture and supply of digital imaging products and custom vision systems. Frame grabbers include the Phoenix, LFG and Snapper boards in PCI Express, COM Express, PCI, PMC, cPCI and PCI/104-Express form factors with support for Windows, DOS,

Mac, OS X, Linux, QNX and VxWorks platforms. These provide acquisition solutions for a wide range of applications supporting analogue, CoaXPress, LVDS, HD-SDI and Camera Link (including PoCL) cameras.

**Active Silicon Ltd.**

Pinewood Mews, Bond Close, SL0 0NA Iver, United Kingdom,  
Tel.: +44 1753 650600, info@activesilicon.com, www.activesilicon.com



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.

**Adimec Advanced Image Systems, B.V.**

Luchthavenweg 91, 5657 EA Eindhoven, Netherlands,  
Tel.: +31 40 235 39 00, sales@adimec.com, www.adimec.com



Solution Provider

**Alliance Vision**

7 avenue du Meyrol, 26270 Montelimar, France,  
Tel.: +33 4 75 53 14 00, info@alliancevision.com, www.alliancevision.com



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

**AnaFocus**

Avda. Isaac Newton, 4, 7th floor, attic, 41092 Seville, Spain,  
Tel.: +34 954 081273, rafael.romay@anafocus.com, www.anafocus.com



Producer

**Andor Technology**

7 Millenium Way, BT12 7AL Belfast, United Kingdom,  
Tel.: +800 9027 0899, marketing@andor.com, www.andor.com



Distributor, Solution Provider

**Applied Scintillation Technologies**

8 Roydonbury Industrial Estate, CM19 5BZ Harlow, United Kingdom,  
Tel.: +44 1279 641234, sales@appsintech.com, www.appsintech.com



Producer, Solution Provider

Aqsense develops standard software products to allow users to easily enter on the 3D Machine Vision Industry. SAL3D, the 3D Shape Analysis Library (in C++ and .Net), provides a set of tools to acquire and process true 3D calibrated data for industrial applications. 3DExpress, based on SAL3D tools, offers an easy-to-use graphic interface as an easy door to 3D Machine Vision.

Besides our standard Software products, SAL3D and 3DExpress, Aqsense offers Customized Software Developments for specific 3D applications. In this case, we work hand by hand with System Integrators and OEMs to deliver 3D solutions to end users.



**Aqsense S.L.**

C/Pic de peguera 15, Parc científic i tecnològic de la UdG, Edifici Casademont, Porta A, Despatx 23 17003 Girona Spain  
Tel.: +34 972 183 215  
Fax: +34 972 487 487  
info@aqsense.com  
www.aqsense.com/



Solution Provider

Awaiba Lda is a design house of CMOS image sensors for specific applications. Awaiba, develops image sensors for industrial inspection, medical endoscopes, high speed video

systems and automotive on board cameras. Furthermore, Awaiba offers consulting and development services for optics and packaging.

**Awaiba Lda**

Madeira Tecnopolo , 9020-105 Funchal, Madeira - Portugal,  
Tel.: +351 291 723 124, info@awaiba.com, www.awaiba.com



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 Italia S.r.l.**

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20090 Assago MI  
Italy  
Tel.: +39 02 4570 6065  
Fax: +39 02 4570 6211  
sales.it@baumer.com  
www.baumer.com



Producer

**Bentham Instruments Ltd**

2 Boulton Road, RG2 0NH Reading, United Kingdom,  
Tel.: +44 118 975 1355, sales@bentham.co.uk, www.bentham.co.uk



## Producer

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**CCS Europe**  
Bergensesteenweg 423 B13  
1600 Sint-Pieters-Leeuw  
Belgium  
Tel.: +32 2 333 00 80  
Fax: +32 2 333 00 81  
info@ccseu.com  
www.ccs-grp.com

BE

## Producer

Image sensor design and production.

**CMOSIS nv**  
Amerikalei 163, 2000 Antwerpen, Belgium,  
Tel.: +32 32 168610, info@cmosis.com, www.cmosis.com

BE

## Producer

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

I

## Distributor

**CSI**  
7 Meadowfield Park South, NE43 7QA Stocksfield, United Kingdom,  
Tel.: +44 1661 842 741, gilscott@csi1.co.uk, www.csi-stocksfield.co.uk

UK

## Distributor, Producer, Solution Provider

**Deben UK Limited**  
Brickfields Business Park, IP30 9QS Woolpit, Bury St. Edmunds, Suffolk, United Kingdom, Tel.: +44 1359 244870, info@deben.co.uk, www.deben.co.uk

UK

## Solution Provider

**Digital Surf**  
6 rue Lavoisier, 5000 Besançon, France,  
Tel.: +33 3 81 50 48 00, contact@digitalsurf.fr, www.digitalsurf.com

F

## Producer

e2v is designer and manufacturer of high tech electronic components and subsystems including semiconductors, sensors and electronic tubes. e2v supplies high performance CCD and CMOS imaging sensors and cameras for a broad range of demanding applications, operating across the electro-magnetic spectrum from X-rays, through ultraviolet and visible light to infrared. Delivered to standard or highly customized designs, our sensors serve space, astronomy, dental, scientific, medical and industrial markets.

**e2v**  
Avenue de Rochepleine, BP123 3852 Saint Egreve Cedex, France,  
Tel.: +33 47658 3000, enquiries@e2v.com, www.e2v.com

F

## Integrator

We are well known in Turkey as a Hi-Tech vision system designer with robot integration.

**E3TAM A.S. Automated Test Solutions**  
B.Bulv 177d2, 34394 Istanbul, Turkey,  
Tel.: +90 212 2752280, inform@e3tam.com, www.e3tam.com

TR

## Producer

Optical Innovation for LED Illumination Effilux is a worldwide supplier of LED lighting devices for the machine vision market. Effilux offer includes a wide range of standard patented products for line scan inspection, 3D triangulation, 3D stereovision, accurate optical sorting and others. Additionally, Effilux uses its expertise in optical design to create innovative custom solutions meeting OEM and End Users specific requirements.

**Effilux**  
Bat 503 - Centre Scientifique, 91400 Orsay, France,  
Tel.: +33 1 69 35 87 56, sales@effilux.fr, www.ffmpeg.fr

F

## Association

**EMVA – European Machine Vision Association**  
Gran Vía de Carles III 84, 8028 Barcelona, Spain,  
Tel.: +34 931 80 70 60, info@emva.org, www.emva.org

E

## Producer

Euresys is a leading manufacturer and supplier of image acquisition and processing components for machine vision and video surveillance applications, with more than 25 years of imaging expertise, a worldwide customer base and patented technology. Euresys offers a wide range of frame grabbers for digital Camera Link, CoaXPress and analog image acquisition, Image analysis software tools and innovative IP video encoders for multiple HD-SDI / HDcctv cameras as well as high-quality video capture and compression cards for HD and standard analog cameras.

**Euresys S.A.**  
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Tel.: +32 4 367 72 88, sales@euresys.com, www.euresys.com

BE

## Distributor

**EyeC-UK Limited** - 6 Dauntless Road, RG7 3NZ Reading, Berkshire, United Kingdom, Tel.: +44 118 983 3347, info@eyec-ukandireland.co.uk, www.eyec-ukandireland.co.uk

UK

## Solution Provider

**FDS Research, d.o.o.**  
Suhadolcánova 28, 1231 Ljubljana, Slovenia,  
Tel.: +386 1 589 75 81, info@fdsresearch.si, www.fdsresearch.si

SLO

## Machine Builder/OEM

**Flir Commercial Vision Systems**  
19, bld Bidault, 77183 Croissy-Beaubourg, France,  
Tel.: +33 1 41 33 97 97, info@flir.com, www.flir.com

F

## 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

F

## Producer

**Global Laser Ltd**  
Cwmillery Industrial Estate, NP131LZ Abertillery, Gwent, United Kingdom,  
Tel.: +44 1495 212213, sales@globalasertech.com, www.globalasertech.com

UK

## Solution Provider

**Hexagon Metrology** - World Headquarters Office, Cedar House, 78 Portsmouth Road, KT11 1AN Cobham, Surrey, United Kingdom,  
Tel.: +44 20 7068 6540, marketing@hexagonmetrology.com, www.hexagonmetrology.com

UK

## 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

BE

## Europe

### Distributor

**Infaimon, S.L.**  
Vergós, 55, 8017 Barcelona, Spain,  
Tel.: +34 93 252 5757, infaimon@infaimon.com, www.infaimon.com

E

### Producer, Solution Provider

**InRay Solutions Ltd.**  
125 Tzarigradsko shosse blvd., block 2, room 510, 1113 Sofia, Bulgaria,  
Tel.: +359 2 971 5751, inrays@inrays.com, www.inrays.com

BG

### Machine Builder/OEM, Solution Provider

**Irida Labs**  
Patras Science Park, 26504 Rio, Achaia, Greece,  
Tel.: +30 261 0911568, info@iridalabs.gr, www.iridalabs.gr

GRE

### 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 1-CCD interlaced/ progressive area scan cameras, JAI is a leading provider of multi-imager cameras incorporating advanced prism-block technology, including 3-CCD RGB area scan cameras, 2-CCD multi-spectral cameras plus a complete family of 4-CCD and 3-CMOS line scan cameras. JAI's product program includes cameras for visible, UV and NIR imaging with GigE Vision and Camera Link, USB 3.0 Vision and CoaXPress interfaces. JAI is renowned as a supplier offering high quality and reliable camera technology with superior image fidelity supported by a dedicated worldwide customer support team.



See the possibilities

**JAI A/S**  
Valby Torvegade 17, 1st floor  
2500 Valby  
Denmark  
Tel.: +45 4457 8888  
Fax: +45 4491 3252  
camerasales.emea@jai.com  
www.jai.com

DK

### Integrator, Solution Provider

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

E

### Solution Provider

**JLI vision a/s**  
Poppelgaardvej 7-9, 2860 Soeborg, Denmark,  
Tel.: +45 39 66 08 09, info@jli.dk, www.jli.dk

DK

### Distributor

**Lambda Photometrics Ltd.**  
Lambda House, Batford Mill, AL5 5BZ Harpenden, United Kingdom,  
Tel.: +44 1582 764334, adrian@lambdaphoto.co.uk, www.lambdaphoto.co.uk

UK

### Producer

**Lambert Instruments**  
Oosteinde 16, 9301 ZP Roden, Netherlands, Tel.: +31 50 5018461,  
info@lambert-instruments.com, www.lambert-instruments.com

NL

### Producer

**Laser Quantum Ltd**  
Emery Court, SK4 3GL Stockport, United Kingdom,  
Tel.: +44 161 975 5300, info@laserquantum.com, www.laserquantum.com

UK

### Producer

**LAT elektronik AB**  
Krossgatan 18, 16250 Vällingby, Sweden,  
Tel.: +46 87049225, info@latab.se, www.latab.se

SE

### Producer



## MICROSCAN.

**Microscan Systems Inc.  
(European Headquarters)**  
Lemelerberg 17  
2402 ZN Alphen aan den Rijn  
Netherlands  
Tel.: +31 172 423360  
Fax: +31 172 423366  
emea@microscan.com  
www.microscan.com

NL

### Distributor

**Molenaar Optics VOF**  
P.O. Box 2, 3700 AA Zeist, Netherlands,  
Tel.: +31 30 6951038, info@molenaar-optics.nl, www.molenaar-optics.com

NL

### Producer

**New Imaging Technologies (NIT)** · 1-4 Impasse de la noisette,  
Bat D-1er étage, 91370 Verrières le Buisson, France, Tel.: +33 1 64 47 88 58,  
info@new-imaging-technologies.com, www.new-imaging-technologies.com

F

### Producer

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

F

### 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 7756, info@odos-imaging.com, www.odos-imaging.com

UK

### 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

NL

### Producer

**Optics Balzers AG**  
Neugrüt 35, 9496 Balzers, Liechtenstein,  
Tel.: +423 388 9200, info@opticsbalzers.com, www.opticsbalzers.com

FL

### Producer

**Opto Engineering Srl**  
via Cremona, 29/2, 46100 Mantova, Italy, Tel.: +39 0376 263525,  
info@opto-engineering.com, www.opto-engineering.com

I

### Integrator, Solution Provider

**OptoFidelity Oy**  
Hemiankati 8 D, 33729 Tampere, Finland,  
Tel.: +358 4 07749259, sales@optofidelity.com, www.optofidelity.com

FI



**Consultant, Machine Builder/OEM, Producer, Research Facility, Solution Provider****OptoMotive, mechatronics Ltd.**

V Murglah 229, 1000 Ljubljana, Slovenia,  
Tel.: +386 1 42 92 914, info@optomotive.si, www.optomotive.si

SLO

**Distributor****Parameter AB**

Sandhamnsgatan 63C, 102 52 Stockholm, Sweden,  
Tel.: +46 855511000, michael.cohn@parameter.se, www.parameter.se

SE

**Distributor, Integrator, Solution Provider****PCS Industries Ltd**

Unit 2 Brocks Business Park, SS11 2UG Wickford, Essex, United Kingdom,  
Tel.: +44 1268 733515, info@pcs-industries.co.uk, www.pcs-industries.co.uk

UK

**Solution Provider****Phase One Industrial**

Roskildevej 39, 2000 Frederiksberg, Denmark,  
Tel.: +45 36 46 0111, industrial@phaseone.com, http://industrial.phaseone.com

DK

**Producer****Phlox S.A.**

415, rue Claude Nicolas Ledoux, 13854 Aix-en-Provence, France,  
Tel.: +33 4 42 90 76 27, c.halladjian@phlox-gc.com, www.phloc-gc.com

F

**Distributor, Producer**

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

UK

**Producer****Photron (Europe) Ltd**

The Barn, Bottom Road, HP14 4BS West Wycombe, Bucks, United Kingdom,  
Tel.: +44 1494 481011, ahilton@photron.com, www.photron.com

UK

**Distributor****Premier Electronics Ltd** · Unit 9 Impresa Park, Pindar Road,

SG17 5AZ Hoddesdon, Herts, United Kingdom,  
Tel.: +44 1992478321, sales@premierelect.co.uk, www.premierelect.co.uk/

UK

**Solution Provider****Pro-Lite Technology France**

2 Allee Ulysse Gayon, 33650 Matrilac, France,  
Tel.: +33 5 56 49 24 92, jerome.castay@pro-lite.fr, www.pro-lite.fr

F

**Distributor****Pro-Lite Technology Ltd**

Innovation Centre, University Way, MK43 0BT Cranfield, UK, United Kingdom,  
Tel.: +44 1234 436110, info@pro-lite.co.uk, www.pro-lite.co.uk

UK

**Producer, Solution Provider****Sensofar**

Parc Audiovisual de Catalunya, Crta. BV-1274 Km 1, 8225 Terrassa, Spain,  
Tel.: +34 93 7001492, info@sensofar.com, www.sensofar.com

E

**Producer****SKS Vision Systems OY**

P.O. Box 353, 40101 Jyväskylä, Finland,  
Tel.: +358 20 764 8960, sales@visionsystems.fi, www.visionsystems.fi

FIN

**Producer****Smartek Vision**

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

CRO

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UK

**Producer****SPC Company b.v.**

Vimmerik 28, 5253 CB Nieuwkuijk, Netherlands,  
Tel.: +31 73 5131 188, sales@spccompany.nl, www.spccompany.nl

NL

**Distributor****Special Application Products Ltd**

Unit 5 Manor Farm Business Centre, IP9 2TD Ipswich, United Kingdom,  
Tel.: +44 1473 327 732, sales@sapltd.co.uk, www.sapltd.co.uk

UK

**Machine Builder/OEM****STIL**

595 rue Pierre Berthier - Domaine Saint Hilaire, 13855 Aix-en-Provence, France,  
Tel.: +33 4 42 39 66 51, contact@stilsa.com, www.stilsa.com

F

**Producer****Sundance Multiprocessor Technology Ltd**

"Ciltern House", HP5 1PS Waterside, Chesham, United Kingdom,  
Tel.: +44 1494 793167, DVIP@Sundance.com, www.sundance.com

UK

**Producer**

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**Tattile s.r.l.**

Via Gaetano Donizetti 1-3-5, 25030 Mairano (BS), Italy,  
Tel.: +39 030 97000, sales@tattile.com, www.tattile.com

I

**Producer****Toridvel AS**

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

NO

**Producer****TriVision**

Havnegade 23, 5000 Odense, Denmark,  
Tel.: +45 28353135, korsgaard@trivision.dk, www.trivision.dk

DK

**Producer****TVI Vision**

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

FIN

**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

UK

**Integrator, Solution Provider****Univision s.r.l.**

via Appiani 3, 20038 Seregno, Italy,  
Tel.: +39 0362 600201, info@univision.it, www.univision.it

I

**Machine Builder/OEM****Videometer A/S**

Lyngso Allé 3, 2970 Horsholm, Denmark,  
Tel.: +45 45761077, info@videometer.com, www.videometer.com

DK

**Distributor, Producer**

The trilogy of light, lens and filter is crucial for a good working vision system. We offer a wide range of illumination, lenses and filter solutions. Our products are used in the industrial Machine Vision industry, Traffic

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NL

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### Distributor, Integrator, Solution Provider

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### Producer, Research Facility, Solution Provider

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#### Xenics nv

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# North America



## North America

### Solution Provider

#### A&B Software

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Tel.: +1 860 823 8301, sales@ab-soft.com, www.ab-soft.com

CT

### Machine Builder/OEM

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PA

### Distributor

#### Allied Scientific Pro

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Tel.: +1 800 253 4107, info@alliedscientificpro.com, www.alliedscientificpro.com

QC

### Producer

#### Allison Park Group, Inc.

4055 Alpha Drive, 15101 Allison Park, PA, United States of America,  
Tel.: +1 412 487 8211, sales@apgvision.com, www.apgvision.com

PA

### Machine Builder/OEM

**Altair Industries, Inc.** - 217 Racquette Drive, #5, 80524 Fort Collins,  
CO, United States of America, Tel.: +1 970 217 1623,  
altair.industries@comcast.net, www.altairindustriesinc.com

CO

### Machine Builder/OEM

#### Applied Electro-Optics, Inc.

10619 Senna Hills DR, 78733-5729 Austin, TX, United States of America,  
Tel.: +1 512 6860752, sales@aeousa.com, www.aeousa.com

TX

### Producer, Solution Provider

#### Asylum Research

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CA

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sales.us@baumer.com  
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CT

### Distributor

#### Bock Optronics, Inc.

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Tel.: +1 416 674 2804, sales@bockoptronics.ca, www.bockoptronics.ca

ON

### Producer

#### Capovani Brothers, Inc.

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Tel.: +1 518 346 8347, cbi@capovani.com, www.capovani.com

NY

### Integrator

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1W Otterson Street, 03060-4500 Nashua, NH, United States of America,  
Tel.: +1 603 883 7979, sales@cepoint.com, www.cepoint.com

NH

### Solution Provider

#### Cimetrix, Inc.

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Tel.: +1 801 256 6500, sales@cimetrix.com, www.cimetrix.com

UT

### Producer

#### Coherent Canada

275 Kesmark, H9B3J1 Montreal, QC, Canada,  
Tel.: +1 514 685 2203, lasers@stockeryale.com, www.coherent.com

QC

### Research Facility, Solution Provider

#### Coherix, Inc.

3980 Ranchero Drive, 48108-2775 Ann Arbor, MI, United States of America,  
Tel.: +1 734 922 4073, rons@coherix.com, www.coherix.com

MI

### Solution Provider

**Complete Inspection Systems, Inc.** - 334 Fourth Avenue,  
32903 Indialantic, FL, United States of America, Tel.: +1 321 952 2490,  
gparish@autoproofpro.com, www.completeinspectionssystems.com

FL

### Producer

#### Components Express, Inc.

10330 Argonne Woods Drive Suite 100,  
60517 Woodridge, IL, United States of America, Tel.: +1 630 257 605,  
cei@componentsexpress.com, www.componentsexpress.com

IL

### Producer

#### Computer Dynamics

7640 Pelham Road, 29615 Greenville, SC, United States of America,  
Tel.: +1 864 627 8800, cdissales@gefanuc.com, www.cdynamics.com

SC

### Producer

#### CyberOptics Semiconductor, Inc.

13555 SW Millikan Way, 97005 Beaverton, OR, United States of America,  
Tel.: +1 503 495 2200, csinfo@cyberoptics.com, www.imagenation.com

OR

### Integrator

#### Cyth Systems, Inc.

9835 Carroll Centre Road, Suite 104,  
92126 San Diego, CA, United States of America,  
Tel.: +1 888 508 7355, info@cyth.com, www.cyth.com

CA

### Machine Builder/OEM

#### Deposition Sciences, Inc. (DSI)

3300 Coffey Lane, 95403 Santa Rosa, CA,  
United States of America,  
Tel.: +1 707 573 6785, solutions@depSci.com, www.depSci.com

CA

### Distributor

#### Digital West Imaging

450 Mountain View Road, 92021 El Cajon, CA,  
United States of America, Tel.: +1 866 593 1900,  
sales@digitalwestimaging.com, www.digitalwestimaging.com

CA

### Producer

#### Directed Perception

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Tel.: +1 650 692 3900, sales@dperception.com, www.dperception.com

CA

### Solution Provider

#### Dunkley International, Inc.

1910 Lake St., 49001 Kalamazoo, MI,  
United States of America, Tel.: +1 269 343 5583,  
ekenneway@dunkleyintl.com, www.dunkleymachinevision.com

MI

### Producer

#### EDT

1400 NW Compton Drive, Suite 315, 97006 Beaverton, OR, United  
States of America, Tel.: +1 503 690 1234, info@edt.com, www.edt.com

OR

### Producer

#### Epix, Inc.

381 Lexington Drive, 60089-6934 Buffalo Grove, IL, United States of America,  
Tel.: +1 847 465 1818, epix@epixinc.com, www.epixinc.com

IL

Producer

**FastVision**  
131 D.W. Highway #529, 3060 Nashua, NH, United States of America,  
Tel.: +1 603 891 4317, sales@fast-vision.com, www.fast-vision.com

NH

Producer

**Fiberoptics Technology**  
1 Quassett Road, 06258 Pomfret, CT, United States of America,  
Tel.: +1 860 928 0443, sgiamundo@fiberoptix.com, www.fiberoptix.com

CT

Producer

**Fifo Optics Co., Ltd** - 2010 Crow Canyon Place, Suite 100,  
94583 San Ramon, CA, United States of America,  
Tel.: +1 925 234 4868, fiorinashen@fifooptics.com, www.fifooptics.com

CA

Producer

**FJW Optical Systems, Inc.**  
322 N Woodwork Ln, 60067-4933 Palatine, IL, United States of America,  
Tel.: +1 847 358 2500, irsales@findscope.com, www.findscope.com

IL

Integrator, Solution Provider

**FSI Technologies, Inc.**  
668 Western Ave., 60148 Lombard, IL, United States of America,  
Tel.: +1 630 932 9380, info@fsinet.com, www.fsinet.com

IL

Producer

**Gevicam, Inc.**  
673 S. Milipitas Blvd, 95035 Milpitas, CA, United States of America,  
Tel.: +1 408 262 5772, info@gevicam.com, www.gevicam.com

CA

Producer

**Imperx**  
6421 Congress Avenue, 33487 Boca Raton, FL, United States of America,  
Tel.: +1 561 989 0006, sales@marketing.com, www.imperx.com

FL

Producer

**Intercon 1**  
7746 Goedderz Rd., Ste 110, 56425 Buxter, MN, United States of America,  
Tel.: +1 218 828 3157, intercon@nortechsys.com, www.intercon-1.com

MN

Machine Builder/OEM, Producer, Solution Provider

**ISVI Corp**  
290 Highland Ave 2nd Fl, 6410 Cheshire, CT, United States of America,  
Tel.: +1 951 317 0019, sales@isvi-corp.com, www.isvi-corp.com

CT

Producer

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95134 San Jose, CA  
United States of America  
Tel.: +1 408 383 0300  
Fax: +1 408 383 0301  
camerasales.americas@jai.com  
www.jai.com

CA

Producer

**Lambda Research Corporation**  
25 Porter Road, 01460-1434 Littleton, MA, United States of America,  
Tel.: +1 978 486 0766, sales@lambdare.com, www.lambdare.com

MA

Distributor

**LDD Trading Associates, LLC**  
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Tel.: +1 603 732 57, sales@lddlight.com, www.dddlight.com

NH

Producer

**Lincoln Laser Company**  
234 East Mohave, 85004 Phoenix, AZ, United States of America,  
Tel.: +1 602 257 0407, bcmcgrath@lincolnlaser.com, www.lincolnlaser.com

AZ

Solution Provider

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Tel.: +1 604 636 1011, info@lmi3d.com, www.lmi3d.com

BC

Producer

Lumenera Corporation is a leading developer and manufacturer of high performance digital cameras and custom/OEM imaging solutions used worldwide in a diverse range of industrial, scientific and security applications. Lumenera solutions provide unique combinations of speed, resolution and sensitivity to satisfy the most demanding digital imaging requirements.

**Lumenera Corporation**  
7 Capella Court, K2E 8A7 Ottawa, ON, Canada,  
Tel.: +1 613 736 4077, lutz.schmidt@lumenera.com, www.lumenera.com

ON

Producer

**Mad City Labs, Inc.**  
2524 Todd Drive, 53713 Madison, WI, United States of America,  
Tel.: +1 608 2980855, sales@madcitylabs.com, www.madcitylabs.com

WI

Producer

**Matrox Imaging**  
1055 St. Regis Blvd., H9P 2T4 Dorval, QC, Canada, Tel.: +1 514 822 6020,  
imaging.info@matrox.com, www.matroximaging.com

QC

Producer

**Metaphase Technologies, Inc.** - 3412 Progress Drive (unit C),  
19020 Bensalem, PA, United States of America, Tel.: +1 215 639 8699,  
info@metaphase-tech.com, www.metaphase-tech.com

PA

Producer

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United States of America  
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info@midopt.com  
www.midopt.com

IL

## North America

### Consultant

**Michigan Metrology LLC**  
17199 N. Laurel Park Drive Ste. #51, 48152-2679 Livonia, MI, United States of America, Tel.: +1 734 953 5030, info@michmet.com, www.michmet.com **MI**

### Distributor, Integrator, Solution Provider

**MsiVision**  
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### Producer, Solution Provider

**Navitar**  
200 Commerce Drive, 14623 Rochester, NY, United States of America, Tel.: +1 585 359 4000, info@navitar.com, www.navitar.com **NY**

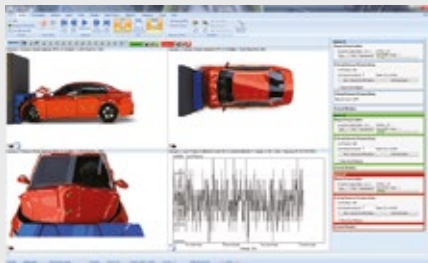
### Association, Machine Builder/OEM, Producer, Solution Provider, Other

**Newnex Technology Corporation**  
3041 Olcott Street, 95054 Santa Clara, CA, United States of America, Tel.: +1 408 986 9988, information@newnex.com, www.newnex.com **CA**

### Consultant, Integrator, Machine Builder/OEM, Research Facility, Solution Provider, Other

**Norman N. Axelrod Associates** - 445 East 86th Street, 10028 New York, NY, United States of America, Tel.: +1 212 741 6302, naxelrod@axelrodassociates.com, www.axelrodassociates.com **NY**

### Producer



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## NORPIX

Digital Video Recording Software

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### Producer

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277 Lakeshore Road, Suite 04, H9S 4L2 Pointe Claire, QC, Canada, Tel.: +1 866 694 4002, info@novacam.com, www.novacam.com **QC**

### Solution Provider

**Optel Vision**  
2680, boul. du Parc Technologique, G1P 4S6 Quebec City, QC, Canada, Tel.: +1 418 688 334, info@optelvision.com, www.optelvision.com **QC**

### Producer

**Optical Research Associates**  
3280 E Foothill Blvd Ste 300, 91107 Pasadena, CA, United States of America, Tel.: +1 626 795 9101, info@opticalres.com, www.opticalres.com **CA**

### Integrator

**Orus Integration, Inc.**  
1109 Hwy 13, H7W 5J8 Laval, QC, Canada, Tel.: +1 450 688 3151, ldicaire@orusintegration.com, http://orusintegration.com **QC**

### Distributor

**Phase 1 Technology**  
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### Producer

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12051 Riverside Way, V6W 1K7 Richmond, BC, Canada, Tel.: +1 604 242 9937, info@ptgrey.com, www.ptgrey.com **BC**

### Producer

**Power Technology, Inc.** - PO Box 191117, 72219-1117 Little Rock, AR, United States of America, Tel.: +1 501 407 0712, sales@powertechology.com, www.powertechology.com **AR**

### Producer

**PPT Vision**  
6301 Old Shakopee Road, 55438 Bloomington, MN, United States of America, Tel.: +1 952 996 9500, sales@pptvision.com, http://pptvision.com **MN**

### Solution Provider

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32 Hampshire Road, 3079 Salem, NH, United States of America, Tel.: +1 603 893 8778, sales@prophotonix.com, www.prophotonix.com **NH**

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**Rad-Icon Imaging Corporation**  
888 East Arques Avenue, 94085 Sunnyvale, CA, United States of America, Tel.: +1 408 736 6000, sales@rad-icon.com, www.rad-icon.com **CA**

### Producer

**SensorDesk, Inc.**  
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### Machine Builder/OEM

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Producer

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Producer

**Smart Vision Lights** · 1800 Holton Rd Suite D 353, 49445 Muskegon, MI,  
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www.spectrumillumination.com **MI**

Solution Provider

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Producer

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Consultant, Distributor, Integrator

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Tel.: +1 631 663 3558, info@tekstaroptical.com, www.tekstaroptical.com **NY**

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Machine Builder/OEM

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Solution Provider

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Distributor, Integrator

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Integrator, Solution Provider

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Consultant

**Vizzion, Inc.**  
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Distributor

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J

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IL

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CN

**Producer**

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J

**Integrator**

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IND

**Machine Builder/OEM**

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IND

**Producer**

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CN

**Producer**

Toshiba Teli Corporation provides CCD and CMOS cameras for various applications in a global market such as machine vision, industrial automation, as well as ITS and medical imaging. Toshiba Teli Corporation has a variety of camera lineup with a multiple selection of digital interfaces, GigE Vision, USB3 Vision, Cameralink and Firewire with using high quality sensors to meet customer's demands. Please visit our website to request more information as well as demonstration of our products including our new USB3 Vision cameras. 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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J

**Integrator**

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BOL

**Producer**

**Vieworks Co.** - Ltd. - 41-3, Burim-ro 170beon-gil, 431-060 Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea, Tel.: +82 70 7011 6161, sales@vieworks.com, www.vieworks.com

ROK

## New Extended Depth Field Camera

Ricoh's new Extended Depth of Field cameras have literally three times the depth of field that conventional cameras can offer at the same focal length, F-Stop and working distance without sacrificing resolution or brightness. Whilst conventional cameras require the closing of the iris in order to achieve increased depth of field and therefore darken the image, the Extended Depth of Field Camera with specialised lens and camera technology (built-in image processor) enables the brightness of the picture to be maintained. Applications like production line inspection, that used to require multiple cameras or focus re-adjustment can now be captured with a single camera. The new series of extended depth of field cameras comprises of four different GigE Vision and Camera Link models: VGA-Mono-chrome, 2 MP-Mono-chrome, 2-MP-Color and newly 5 MP-Color. An Extended Depth of Field system consists of the cam-



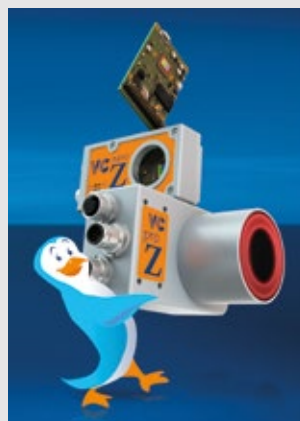
era itself, a special lens and camera firmware, which is adjusted at the factory to the lens used. In total there are lenses from 8.5 mm to 75 mm focal length available with different F-Stops.

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iosd@eu.ricoh-imaging.com  
www.ricoh-mv-security.eu

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## Innovative Generation of Intelligent Cameras



The new VC Z series feature an innovative hardware and software approach. All models are equipped with Xilinx' Zynq module, an ARM dual-core Cortex-A9 with 866 MHz and an integrated FPGA. Users thus gain extremely fast real-time image processing systems suitable for demanding high-speed and line scan applications. The new operating system VC Linux ensures optimal interaction between hardware and software.

The Z series is based on the board level VCSBC nano Z. They are optionally available with one or two remote sensor heads and thus suitable for stereo applications.

Users can choose between two enclosed camera types: the VC nano Z and the VC pro Z with IP67 rating featuring integrated lighting and optics as option. All models feature 512 MB RAM and 16 GB Flash as well as five global shutter CMOS sensors providing resolutions between Wide VGA and 4.2 megapixels.

**VC VISION  
components®**

**Vision Components GmbH**  
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Germany  
Tel.: +49 7243 216 723  
Fax: +49 7243 216 711  
vc-linux@vision-components.com  
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## Fastest USB3 Vision and PCIe-based-Cameras

**USB3 Vision camera series xiQ:** With this line of extraordinary small, lightweight, fast, efficient and highly integrated cameras, Ximea offers a unique value and performance proposition for the industrial market.



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**Pixelink**  
www.pixelink.com

**PMDTec**  
www.pmdtec.com

**Point Grey Research**  
www.ptgrey.com

**Polytec**  
www.polytec.de

**Premier Electronics**  
www.premierelect.co.uk

**Princeton Instruments**  
www.princetoninstruments.com

**Prosilica**  
www.prosilica.com

**Proxitronic**  
www.proxitronic.com

**Qualimatest**  
www.qmt.ch

**Quest Innovations**  
www.quest-innovations.com

**Rad-Icon Imaging**  
www.rad-icon.com

## Cameras & Image Sensors

<b>Rauscher</b> www.rauscher.de	<b>Smartray</b> www.smartray.de	<b>VDS Vosskühler</b> www.vdsvossk.de	<b>Xenics</b> www.xenics.com
<b>Redlake</b> www.redlake.com	<b>Softhard Technology</b> www.softhard.com	<b>Vega Technology Group</b> www.vegatcgroup.com	<b>Ximea</b> www.ximea.com
<b>RH Engineering</b> www.rhengineering.de	<b>Soliton Technologies</b> www.solitontech.com	<b>Vialux</b> www.vialux.de	<b>Zertrox</b> www.zertrox.de
<b>Ricoh Imaging Deutschland</b> www.ricoh-mv-security.eu	<b>Sony</b> www.pro.sony.eu/vision	<b>Vicon Motion Systems</b> www.vicon.com	
<b>Roper Scientific</b> www.roperscientific.de	<b>Stemmer Imaging</b> www.stemmer-imaging.com	<b>Videology Imaging Solutions</b> www.videologyinc.com	
<b>Rubroeder</b> www.rubroeder.de	<b>Streppel Glasfaser-Optik</b> www.streppel.de	<b>Videor Technical</b> www.videor.com	
<b>Salvador Imaging</b> www.salvadorimaging.com	<b>STZ Qualitätssicherung und Bildverarbeitung</b> www.stz-ilmeneau.de	<b>ViDiSys</b> www.vidisys.de	
<b>Schael-Optik</b> www.schael-optik-ltd.com	<b>Sugitoh</b> www.sugitoh.jp	<b>Vieworks</b> www.vieworks.com	
<b>Schäfter + Kirchhoff</b> www.sukhamburg.de	<b>SVS Vistek</b> www.svs-vistek.com	<b>Visicontrol</b> www.visicontrol.com	
<b>Schmachtl</b> www.schmachtl.at	<b>SVSI</b> www.southernvisionsystems.com	<b>Visiolaser</b> www.vannier-photelec.fr/ visiolaser	
<b>SDT - Dr. Seitner</b> www.sdt-seitner.com	<b>Symco</b> www.symco.co.jp	<b>Vision &amp; Control</b> www.vision-control.com	
<b>Second2None</b> www.visiondragon.com	<b>Systematic Vision</b> www.systematicvision.com	<b>Vision Components</b> www.vision-components.com	
<b>Secube</b> www.secube.co.kr	<b>Tattile</b> www.tattile.com	<b>Vision Research</b> www.visionresearch.com	
<b>Sedeco Vision Components</b> www.sedeco.nl	<b>Tekno Optik</b> www.teknooptik.se	<b>Vision Tools</b> www.vision-tools.com	
<b>Seiwa Optical</b> www.seiwaopt.co.jp	<b>Tekstar Optical</b> www.tekstaroptical.com	<b>Visionlink</b> www.visionlink.it	
<b>Sensor to Image</b> www.sensor-to-image.de	<b>Teledyne Dalsa</b> www.teledynedalsa.com	<b>Visiosens</b> www.visiosens.de	
<b>Sensors Unlimited</b> www.sensorsinc.com	<b>The Imaging Source</b> www.theimagingnsource.com	<b>Vistas</b> www.vistas-gmbh.de	
<b>Sentech</b> www.sentech.co.jp	<b>Thermosensorik</b> www.thermosensorik.de	<b>Vistek</b> www.vistekas.com	
<b>sglux</b> www.sglux.com	<b>Tichawa Vision</b> www.tichawa.de	<b>Vitronic</b> www.vitronic.com	
<b>Sharp Microelectronics</b> www.sharpsme.com	<b>Toshiba</b> www.toshiba.ch	<b>ViZaar</b> www.vizaar.de	
<b>SKS Vision Systems</b> www.visionsystems.fi	<b>Toshiba Teli</b> www.toshiba-teli.co.jp	<b>VKT</b> www.vkt.de	
<b>Slomotec</b> www.slomotec.de	<b>TriDiCam</b> www.TriDiCam.de	<b>VRmagic</b> www.vrmagic.com	
<b>Smartek Vision</b> www.smartekvision.com	<b>TVI Vision</b> www.tvivision.com	<b>Weiss Imaging and Solutions</b> www.weiss-imaging.de	
<b>Smartek</b> www.smartek.hr	<b>Unibrain</b> www.unibrain.com	<b>Werner Nophut</b> www.dsam.de	

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[www.machinevisiononline.org](http://www.machinevisiononline.org)

**Aido**  
[www.aido.es](http://www.aido.es)

**Alfvision**  
[www.alfvision.de](http://www.alfvision.de)

**Allied Scientific Pro**  
[www.alliedscientificpro.com](http://www.alliedscientificpro.com)

**AMC**  
[www.amc-hofmann.com](http://www.amc-hofmann.com)

**Arvoo Imaging Products**  
[www.arvoo.com](http://www.arvoo.com)

**AS Thermographie**  
[www.as-thermografie.de](http://www.as-thermografie.de)

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[www.asentics.de](http://www.asentics.de)

**Austrian Research Centers**  
[www.smart-systems.at](http://www.smart-systems.at)

**Awaiba**  
[www.awaiba.com](http://www.awaiba.com)

**Carl Zeiss 3D Metrology Services**  
[www.zeiss3d.de](http://www.zeiss3d.de)

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[www.cepoint.com](http://www.cepoint.com)

**CMES - Chinese Mechanical Engineering Society**  
[www.cmes.org](http://www.cmes.org)

**Cmos Vision**  
[www.cmosvision.com](http://www.cmosvision.com)

**CMOSIS**  
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**Cognex**  
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**Collischon Optik-Design**  
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**CSEM**  
[www.csem.ch](http://www.csem.ch)

**CSP Services**  
[www.cspservices.de](http://www.cspservices.de)

**CTMV**  
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**Datapixel**  
[www.datapixel.com](http://www.datapixel.com)

**de Man Industrie-Automation**  
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**Delta Digital Video**  
[www.delta.dk](http://www.delta.dk)

**Digital West Imaging**  
[www.DigitalWestimaging.com](http://www.DigitalWestimaging.com)

**Duwe 3D**  
[www.duwe-3d.de](http://www.duwe-3d.de)

**EMVA European Machine Vision Association**  
[www.emva.org](http://www.emva.org)

**Entner Electronics**  
[www.entner-electronics.com](http://www.entner-electronics.com)

**Erhard + Leimer**  
[www.erhardt-leimer.com](http://www.erhardt-leimer.com)

**Farbmessung Schröder**  
[www.farbmessung.com](http://www.farbmessung.com)

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[www.fibervision.de](http://www.fibervision.de)

**Framos**  
[www.framos.com](http://www.framos.com)

**Fraunhofer Allianz Vision**  
[www.vision.fraunhofer.de](http://www.vision.fraunhofer.de)

**Fritz Pauker Ingenieure**  
[www.pauker-ingenieure.de](http://www.pauker-ingenieure.de)

**G4 Technology**  
[www.g4.com.tw](http://www.g4.com.tw)

**GBS**  
[www.gbs-ilmenau.de](http://www.gbs-ilmenau.de)

**GFai**  
[www.gfai.de](http://www.gfai.de)

**Graphikon**  
[www.graphikon.de](http://www.graphikon.de)

**IAI Imaging Association of India**  
[www.iaionline.org](http://www.iaionline.org)

**IDS**  
[www.ids-imaging.com](http://www.ids-imaging.com)

**Imaging Lab**  
[www.imaginglab.it](http://www.imaginglab.it)

**Impuls**  
[www.impuls-imaging.com](http://www.impuls-imaging.com)

**INB Vision**  
[www.inb-vision.com](http://www.inb-vision.com)

**Infaimon**  
[www.infaimon.com](http://www.infaimon.com)

**InRay Solutions**  
[www.inrays.com](http://www.inrays.com)

**Irida Labs**  
[www.irdalabs.gr](http://www.irdalabs.gr)

**IS Imaging Solutions**  
[www.imaging-solutions.de](http://www.imaging-solutions.de)

**IVAN**  
[www.feda.nl](http://www.feda.nl)

**JIIA Japan Industrial Imaging Association**  
[www.jiia.org](http://www.jiia.org)

**Joanneum Research**  
[www.joanneum.at](http://www.joanneum.at)

**Kappa opto-electronics**  
[www.kappa.de](http://www.kappa.de)

**Landesmesse Stuttgart**  
[www.vision-fair.de](http://www.vision-fair.de)

**Lincoln Laser Company**  
[www.lincolnlaser.com](http://www.lincolnlaser.com)

**Messe München**  
[www.messe-muenchen.de](http://www.messe-muenchen.de)

**Michigan Metrology**  
[www.michmet.com](http://www.michmet.com)

**msiVision**  
[www.msivision.com](http://www.msivision.com)

**MT-Vision**  
[www.mt-vision.de](http://www.mt-vision.de)

**Neurocheck**  
[www.neurocheck.com](http://www.neurocheck.com)

**Norman N. Axelrod Associates**  
[www.axelrodassociates.com](http://www.axelrodassociates.com)

**NTI**  
[www.nti-measure.com](http://www.nti-measure.com)

**OBE Ohnmacht & Baumgärtner**  
[www.trevista.net](http://www.trevista.net)

**Omron**  
[www.industrial.omron.de](http://www.industrial.omron.de)

**Optical Research Associates**  
[www.opticalres.com](http://www.opticalres.com)

**Opto**  
[www.opto.de](http://www.opto.de)

**Opto Fidelity**  
[www.optofidelity.com](http://www.optofidelity.com)

**P.E. Schall**  
[www.schall-messen.de](http://www.schall-messen.de)

**Phase 1 Technology Corp.**  
[www.phase1tech.com](http://www.phase1tech.com)

**Phytec Messtechnik**  
[www.phytec.de](http://www.phytec.de)

**pi4\_robotics**  
[www.pi4.de](http://www.pi4.de)

**Polytec**  
[www.polytec.com](http://www.polytec.com)

**Rubroeder**  
[www.rubroeder.de](http://www.rubroeder.de)



**Sensofar**  
www.sensofar.com

**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-ilmenu.de

**Supercomputing Systems**  
www.scs-vision.ch

**SVS Vistek**  
www.svs-vistek.com

**Sympop**  
www.symop.com

**Systematic Vision**  
www.systematicvision.com

**UKIVA - UK Industrial Vision Association**  
www.ukiva.org

**University of Applied Sciences Darmstadt**  
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 Academy**  
www.vision-academy.org

**Vision Club of Finland**  
www.automatioseura.fi

**Vision Machines**  
www.vision-machines.com

**Vision N**  
www.vision-n.de

**Vision Tools**  
www.vision-tools.com

**Visionlink**  
www.visionlink.it

**Vision Ventures**  
www.vision-ventures.eu

**Vistek**  
www.vistekas.com

**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

**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

**Computer BV**  
www.computerbv.de

**Cosyco**  
www.cosyco.de

**Cyberoptics Semiconductor**  
www.imagenation.com

**Data Vision**  
www.datvision.com

**EDT**  
www.edt.com

**EHD imaging**  
www.ehd.de

**Ellips**  
www.ellips.nl

**Eltec Elektronik**  
www.eltec.com

**Epix**  
www.epixinc.com

**Euresys**  
www.euresys.com

**Fabrimex Systems**  
www.fabrimex-systems.ch

**Fast**  
www.fast-corp.co.jp

**Framos**  
www.framos.com

**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.imagessrl.com

**Imaging Solutions Group**  
www.isgchips.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

**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

**Orbis**  
www.orbis.eu

**Parameter**  
www.parameter.se

**Phase 1 Technology Corp.**  
www.phase1tech.com

**Phytec Messtechnik**  
www.phytec.de

**pi4\_robotics**  
www.pi4.de

**Polytec**  
www.polytec.com

**Premier Electronics**  
www.premierelect.co.uk

**Qualimatest**  
www.qmt.ch

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www.rauscher.de

**Schael-Optik**  
www.schael-optik-ltd.com

**Schmachtl**  
www.schmachtl.at

**Second2None**  
www.visiondragon.com

**Seldes**  
www.seldes.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-ilmeneau.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.theimagingnsource.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](http://www.abw-3d.de)

**Acal BFi Germany**

[www.bfiophtilas.com](http://www.bfiophtilas.com)

**Advanced Illumination**

[www.advancedillumination.com](http://www.advancedillumination.com)

**AHF Analysentechnik**

[www.ahf.de](http://www.ahf.de)

**Alrad Imaging**

[www.alrad.co.uk](http://www.alrad.co.uk)

**Allison Park Group**

[www.apgvision.com](http://www.apgvision.com)

**AutomationDirect**

[www.automationdirect.com](http://www.automationdirect.com)

**Balluf**

[www.balluf.de](http://www.balluf.de)

**Baumer**

[www.baumer.com](http://www.baumer.com)

**Bock Optronics**

[www.bockoptronics.ca](http://www.bockoptronics.ca)

**Büchner Lichtsysteme**

[www.buechner-lichtsysteme.de](http://www.buechner-lichtsysteme.de)

**Capovani Brothers**

[www.capovani.com](http://www.capovani.com)

**Cavitar**

[www.cavitar.com](http://www.cavitar.com)

**CCS Europe**

[www.ccs-grp.com](http://www.ccs-grp.com)

**Ceres Vision**

[www.ceresvision.de](http://www.ceresvision.de)

**Chromasens**

[www.chromasens.de](http://www.chromasens.de)

**Cognex**

[www.cognex.com](http://www.cognex.com)

**Coherent**

[www.coherent.com](http://www.coherent.com)

**Collischon Optik-Design**

[www.mikro-optik.de](http://www.mikro-optik.de)

**Computer BV**

[www.computerbv.de](http://www.computerbv.de)

**Data Vision**

[www.datvision.com](http://www.datvision.com)

**DCM Systemes**

[www.dcmsystemes.com](http://www.dcmsystemes.com)

**Dedo Weigert**

[www.dedoweigertfilm.de](http://www.dedoweigertfilm.de)

**Digital West Imaging**

[www.digitalwestimaging.com](http://www.digitalwestimaging.com)

**Edmund Optics**

[www.edmundoptics.de](http://www.edmundoptics.de)

**Effilux**

[www.afilux.fr](http://www.afilux.fr)

**Erhard + Leimer**

[www.erhardt-leimer.com](http://www.erhardt-leimer.com)

**Fabrimex Systems**

[www.fabrimex-systems.ch](http://www.fabrimex-systems.ch)

**Falcon Illumination MV**

[www.falcon-illumination.de](http://www.falcon-illumination.de)

**Faseroptik Henning**

[www.faseroptik-henning.de](http://www.faseroptik-henning.de)

**Fiberoptics Technology**

[www.fiberoptix.com](http://www.fiberoptix.com)

**FiberVision**

[www.fibervision.de](http://www.fibervision.de)

**Finger**

[www.finger-kg.de](http://www.finger-kg.de)

**Framos**

[www.framos.com](http://www.framos.com)

**Frankfurt Laser Company**

[www.frlaser.com](http://www.frlaser.com)

**FSI Technologies**

[www.fsinet.com](http://www.fsinet.com)

**G4 Technology**

[www.g4.com.tw](http://www.g4.com.tw)

**Gardasoft Vision**

[www.gardasoft.com](http://www.gardasoft.com)

**Global Laser**

[www.global-lasertech.co.jp](http://www.global-lasertech.co.jp)

**GPP Chemnitz**

[www.gppc.de](http://www.gppc.de)

**Hamamatsu Photonics**

[www.hamamatsu.com](http://www.hamamatsu.com)

**Hema**

[www.hema.de](http://www.hema.de)

**Karlheinz Hinze Optoengineering**

[www.hinze-opto.de](http://www.hinze-opto.de)

**Helmut Hund**

[www.hund.de](http://www.hund.de)

**IB/E Optics**

[www.ibe-optics.com](http://www.ibe-optics.com)

**Ifm Electronic**

[www.ifm.com](http://www.ifm.com)

**iiM**

[www.iimag.de](http://www.iimag.de)

**ILEE**

[www.ilee.ch](http://www.ilee.ch)

**Image House**

[www.imagehouse.dk](http://www.imagehouse.dk)

**Image S**

[www.imagessrl.com](http://www.imagessrl.com)

**Infaimon**

[www.infaimon.com](http://www.infaimon.com)

**Insensiv**

[www.insensiv.de](http://www.insensiv.de)

**IS Imaging Solutions**

[www.imaging-solutions.de](http://www.imaging-solutions.de)

**ISVI**

[www.isvi-corp.com](http://www.isvi-corp.com)

**Japan F.A. Systems**

[www.jfas.co.jp](http://www.jfas.co.jp)

**Jenoptik Laser, Optik, Systeme**

[www.jenoptik-los.de](http://www.jenoptik-los.de)

**Keyence**

[www.keyence.de](http://www.keyence.de)

**Klasech**

[www.klasech.com](http://www.klasech.com)

**Klughammer**

[www.klughammer.de](http://www.klughammer.de)

**Kvant**

[www.kvant.sk](http://www.kvant.sk)

**Lambda Photometrics**

[www.lambdaphoto.co.uk](http://www.lambdaphoto.co.uk)

**Laser 2000**

[www.laser2000.de](http://www.laser2000.de)

**Laser Components**

[www.lasercomponents.com](http://www.lasercomponents.com)

**LAT Elektronik**

[www.latab.se](http://www.latab.se)

**LDD Trading Associates**

[www.lddlight.com](http://www.lddlight.com)

**Leitner Industrial Endoscopy**

[www.leitner-efer.de](http://www.leitner-efer.de)

**LEJ Leistungselektronik Jena**

[www.lej.de](http://www.lej.de)

**LMI Technologies**

[www.lmi3d.com](http://www.lmi3d.com)

**LOT Oriel**

[www.lot-oriel.com](http://www.lot-oriel.com)

**Luster LightVision Tech**

[www.lusterinc.com](http://www.lusterinc.com)

**Matrix Vision**

[www.matrix-vision.de](http://www.matrix-vision.de)

**MaxxVision**

[www.maxxvision.com](http://www.maxxvision.com)

**MBJ Imaging**

[www.mbj-imaging.com](http://www.mbj-imaging.com)

**Menzel Vision and Robotics**

[www.menzelab.com](http://www.menzelab.com)

**Metaphase Technologies**

[www.metaphase-tech.com](http://www.metaphase-tech.com)

**MG Optical Solutions**

[www.mgopticalsolutions.com](http://www.mgopticalsolutions.com)

## Illumination & Lighting Systems

<b>Microscan</b> www.microscan.com	<b>Phlox</b> www.phlox-gc.com	<b>Soliton Technologies</b> www.solitontech.com	<b>Visitool</b> www.visitool.de
<b>Microsystems</b> www.microsystems.it	<b>Phytec Messtechnik</b> www.phytec.de	<b>Spectrum Illumination</b> www.spectrumillumination.com	<b>Vistas</b> www.vistas-gmbh.de
<b>MikroVision</b> www.mikrovision.de	<b>pi4_robotics</b> www.pi4.de	<b>Stemmer Imaging</b> www.stemmer-imaging.com	<b>Vistek</b> www.vistekas.com
<b>Moritex</b> www.moritex.com	<b>Planistar Lichttechnik</b> www.planistar.de	<b>StockerYale</b> www.stockeryale.com	<b>Volpi</b> www.volpi.ch
<b>msiVision</b> www.msivision.com	<b>POG Präzisionsoptik Gera</b> www.pog.eu	<b>Streppel Glasfaser-Optik</b> www.streppel.de	<b>Herbert Waldmann</b> www.waldmann.com
<b>MTD</b> www.mtd-light.com	<b>Polytec</b> www.polytec.com	<b>STZ Qualitätssicherung und Bildverarbeitung</b> www.stz-ilmenau.de	<b>Weiss Imaging and Solutions</b> www.weiss-imaging.de
<b>Myutron</b> www.myutron.com	<b>Power Technology</b> www.powertechnology.com	<b>Schäfter + Kirchhoff</b> www.sukhamburg.de	<b>Wenglor Sensoric</b> www.wenglor.com
<b>NET</b> www.net-gmbh.com	<b>Profactor</b> www.profactor.at	<b>SVS Vistek</b> www.svs-vistek.com	<b>Zertrox</b> www.zertrox.de
<b>NeuPro Solutions</b> www.neupro-solutions.com	<b>Qualimatest</b> www.qmt.ch	<b>Symco</b> www.symco.co.jp	
<b>OBE Ohnmacht &amp; Baumgärtner</b> www.trevista.net	<b>Rauscher</b> www.rauscher.de	<b>Tecin</b> www.tecin.de	
<b>Odem Technologies</b> www.odem.co.il	<b>Rheintacho Messtechnik</b> www.rheintacho.com	<b>Tekno Optik</b> www.teknooptik.se	
<b>Olympus</b> www.olympus-europa.com	<b>RH Engineering</b> www.rhengineering.de	<b>Tema</b> www.temavisio.com	
<b>Omicron Laserage</b> www.omicron-laser.de	<b>Special Application Products</b> www.sapltd.co.uk	<b>The Imaging Source</b> www.theimagingnsource.com	
<b>Omron</b> www.industrial.omron.de	<b>Schael-Optik</b> www.schael-optik-ltd.com	<b>Univision</b> www.univision.it	
<b>Opto</b> www.opto.de	<b>Schmachtl</b> www.schmachtl.at	<b>Visiolaser</b> www.vannier-photelec.fr/visiolaser	
<b>Opto Engineering</b> www.opto-engineering.com	<b>Jos. Schneider Optische Werke</b> www.schneiderindustrialoptics.com	<b>V Cubed</b> www.vcubed.co.uk	
<b>Opto Precision</b> www.optoprecision.de	<b>Schott Lighting and Imaging</b> www.schott.com	<b>Vialux</b> www.vialux.de	
<b>Optometron</b> www.optometron.de	<b>Sedeco Vision Components</b> www.sedeco.nl	<b>Visicontrol</b> www.visicontrol.com	
<b>OptoPolymer</b> www.optopolymer.de	<b>Seiwa Optical</b> www.seiwaopt.co.jp	<b>Vision &amp; Control</b> www.vision-control.com	
<b>Orbis</b> www.orbis.eu	<b>Sensofar</b> www.sensofar.com	<b>Second2None</b> www.visiondragon.com	
<b>Parameter</b> www.parameter.se	<b>Sharp Microelectronics</b> www.sharpsme.com	<b>Vision Light Tech</b> www.visionlighttech.com	
<b>PerkinElmer Optoelectronics</b> www.perkinelmer.com	<b>Sill Optics</b> www.silloptics.de	<b>Visionlink</b> www.visionlink.it	
<b>Phaer</b> www.phaer.be	<b>Smartek Vision</b> www.smartekvision.com	<b>Visionlink</b> www.visionlink.it	
<b>Phase 1 Technology</b> www.phase1tech.com	<b>Smart Vision Lights</b> www.smartvisionlights.com	<b>Vision Tools</b> www.vision-tools.com	

# Microscopes, Endoscopes & Equipment

**Alrad Imaging**

[www.alrad.co.uk](http://www.alrad.co.uk)

**AMS Technologies**

[www.ams.de](http://www.ams.de)

**Andor Technology**

[www.andor.com](http://www.andor.com)

**Asylum Research**

[www.AsylumResearch.com](http://www.AsylumResearch.com)

**Atomic Force**

[www.atomicforce.de](http://www.atomicforce.de)

**Awaiba**

[www.awaiba.com](http://www.awaiba.com)

**Bock Optronics**

[www.bockoptronics.ca](http://www.bockoptronics.ca)

**Breitmeier Messtechnik**

[www.breitmeier.de](http://www.breitmeier.de)

**Capovani Brothers**

[www.capovani.com](http://www.capovani.com)

**Deben UK**

[www.deben.co.uk](http://www.deben.co.uk)

**Dr. Heinrich Schneider  
Messtechnik**

[www.dr-schneider.de](http://www.dr-schneider.de)

**Edmund Optics**

[www.edmundoptics.de](http://www.edmundoptics.de)

**EHD Imaging**

[www.ehd.de](http://www.ehd.de)

**Euresys**

[www.euresys.com](http://www.euresys.com)

**Fei Company**

[www.feicom](http://www.feicom)

**Fort**

[www.fort-fr.com](http://www.fort-fr.com)

**FRT Fries Research & Technology**

[www.frt-gmbh.com](http://www.frt-gmbh.com)

**G4 Technology**

[www.g4.com.tw](http://www.g4.com.tw)

**GE Inspection Technology**

[www.geinspectiontechnologies.com](http://www.geinspectiontechnologies.com)

**Heliotis**

[www.heliotis.ch](http://www.heliotis.ch)

**Karlheinz Hinze Optoengineering**

[www.hinze-opto.de](http://www.hinze-opto.de)

**Hipp Endoskop Service**

[www.hipp-endoskopservice.com](http://www.hipp-endoskopservice.com)

**Horn Imaging**

[www.horn-imaging.de](http://www.horn-imaging.de)

**Helmut Hund**

[www.hund.de](http://www.hund.de)

**Infaimon**

[www.infaimon.com](http://www.infaimon.com)

**Infinity Photo-Optical**

[www.infinity-de.com](http://www.infinity-de.com)

**Karl Storz**

[www.karlstorz.de](http://www.karlstorz.de)

**Kdorf Automation**

[www.kdorf.de](http://www.kdorf.de)

**Keyence**

[www.keyence.de](http://www.keyence.de)

**Klughammer**

[www.klughammer.de](http://www.klughammer.de)

**Kvant**

[www.kvant.sk](http://www.kvant.sk)

**Leica Microsystems**

[www.leica-microsystems.com](http://www.leica-microsystems.com)

**Leitner Industrial Endoscopy**

[www.leitner-efer.de](http://www.leitner-efer.de)

**LOT Oriel**

[www.lot-oriel.com](http://www.lot-oriel.com)

**MBR**

[www.mbr-gmbh.com](http://www.mbr-gmbh.com)

**Micos**

[www.micos.ws](http://www.micos.ws)

**Mikroskoptechnik Rathenow**

[www.askania.de](http://www.askania.de)

**MikroVision**

[www.mikrovision.de](http://www.mikrovision.de)

**Mitutoyo**

[www.mitutoyo.de](http://www.mitutoyo.de)

**Moritex**

[www.moritex.com](http://www.moritex.com)

**msiVision**

[www.msivision.com](http://www.msivision.com)

**NanoFocus**

[www.nanofocus.de](http://www.nanofocus.de)

**Nanosurf**

[www.nanosurf.com](http://www.nanosurf.com)

**Nikon**

[www.nikoninstruments.eu](http://www.nikoninstruments.eu)

**Olympus**

[www.olympus-europa.com](http://www.olympus-europa.com)

**Opto**

[www.opto.de](http://www.opto.de)

**OptoMess**

[www.optomess.de](http://www.optomess.de)

**Optometron**

[www.optometron.de](http://www.optometron.de)

**Optoprim**

[www.optoprim.de](http://www.optoprim.de)

**Oxford Instruments**

[www.oxford-instruments.com](http://www.oxford-instruments.com)

**Panasonic**

<http://business.panasonic.co.uk/imv>

**PCE Power Control**

[www.pce-powercontrol.de](http://www.pce-powercontrol.de)

**Physik Instrumente**

[www.pi.ws](http://www.pi.ws)

**pi4\_robotics**

[www.pi4.de](http://www.pi4.de)

**Pro Design Electronic**

[www.prodesign-europe.com](http://www.prodesign-europe.com)

**Richard Wolf**

[www.richard-wolf.com](http://www.richard-wolf.com)

**Rubroeder**

[www.rubroeder.de](http://www.rubroeder.de)

**Schäfer Technologie**

[www.schaefer-tec.com](http://www.schaefer-tec.com)

**Schael-Optik**

[www.schael-optik-ltd.com](http://www.schael-optik-ltd.com)

**Seiwa Optical**

[www.seiwaopt.co.jp](http://www.seiwaopt.co.jp)

**Seldes**

[www.seldes.com](http://www.seldes.com)

**Sensofar**

[www.sensofar.com](http://www.sensofar.com)

**Streppel Glasfaser-Optik  
www.streppel.de****STZ Qualitätssicherung und  
Bildverarbeitung**

[www.stz-ilmenau.de](http://www.stz-ilmenau.de)

**Tecin**

[www.tecin.de](http://www.tecin.de)

**Tekno Optik**

[www.teknooptik.se](http://www.teknooptik.se)

**Thermosensorik**

[www.thermosensorik.de](http://www.thermosensorik.de)

**Vega Technology Group**

[www.vegatcgroup.com](http://www.vegatcgroup.com)

**Vision Engineering**

[www.visioneng.de](http://www.visioneng.de)

**Visitool**

[www.visitool.de](http://www.visitool.de)

**Walter Uhl**

[www.walteruhl.de](http://www.walteruhl.de)

**Weiss Imaging and Solutions**

[www.weiss-imaging.de](http://www.weiss-imaging.de)

**Werth Messtechnik**

[www.werthmesstechnik.de](http://www.werthmesstechnik.de)

**Wild**

[www.wild.at](http://www.wild.at)

**Carl Zeiss Microimaging**

[www.zeiss.de/mikro](http://www.zeiss.de/mikro)

# Optical Metrology

**3D Alliance**  
www.3dalliance.de

**3D Shape**  
www.3d-shape.com

**Alicon** Imaging  
www.alicon.com

**Allsens Messtechnik**  
www.allsens.de

**AMS Technologies**  
www.ams.de

**Andor Technology**  
www.andor.com

**Applied Electro-Optics**  
www.aeousa.com

**Applied Scintillation Technologies**  
www.appscintech.com

**Armstrong Optical**  
www.armstrongoptical.co.uk

**Avantes**  
www.avantes.com

**Benteler Maschinenbau**  
www.benteler.de/maschinenbau

**Bentham Instruments**  
www.bentham.co.uk

**Breitmeier Messtechnik**  
www.breitmeier.de

**Breuckmann**  
www.breuckmann.com

**BST International**  
www.bst-international.com

**Carl Zeiss IMT**  
www.zeiss.de

**Carl Zeiss Microimaging**  
www.zeiss.de/mikro

**Chunghwa Telecommunication Laboratories**  
www.leadinglight.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

**Delta Digital Video**  
www.delta.dk

**Digital Surf**  
www.digitalsurf.com

**Dr. Heinrich Schneider Messtechnik**  
www.dr-schneider.de

**Dr. Noll Optical Measurement**  
www.drnoll.com

**Dr. Wehrhahn Messsysteme**  
www.drwehrhahn.com

**Dyoptyka**  
www.dyoptyka.com

**EHD Imaging**  
www.ehd.de

**Electronic Systems**  
www.electronicssysteme.it

**ElektroPhysik Dr. Steingroever**  
www.elektrophysik.com

**Eltromat**  
www.eltromat.de

**EVK DI Kerschhaggl**  
www.evk.biz

**Farbmessung Schröder**  
www.farbmessung.com

**Faro**  
www.faro.com

**FJW Optical Systems**  
www.findscope.com

**Flir Systems**  
www.flirthermography.de

**Fraunhofer IFF**  
www.mpt.iff.fraunhofer.de

**Fritz Pauker Ingenieure**  
www.pauker-ingenieure.de

**FRT Fries Research & Technology**  
www.frt-gmbh.com

**G4 Technology**  
www.g4.com.tw

**GE Sensing & Inspection Technologies**  
www.gesensinginspection.com

**GF Messtechnik**  
www.gfmesstechnik.de

**GOM**  
www.gom.com

**Goodrich/SUI**  
www.sensorsinc.com

**Goratec**  
www.goratec.de

**Hamamatsu Photonics**  
www.hamamatsu.com

**Heitronics Infrarot Messtechnik**  
www.heitronics.com

**Hexagon Metrology**  
www.hexagonmetrology.net

**Hipp Endoskop Service**  
www.hipp-endoskopservice.com

**Hommel Etamic**  
www.hommel-etamic.de

**IB/E Optics**  
www.ibe-optics.com

**Ico Data**  
www.icodata.de

**iIM**  
www.iimag.de

**ILEE**  
www.ilee.ch

**Imetric**  
www.imetric.com

**Infaimon**  
www.infaimon.com

**Infinity Photo-Optical**  
www.infinity-de.com

**InfraTec**  
www.infratec.de

**Innowep**  
www.innowep.com

**InSystems Automation**  
www.insystems.de

**Intacton**  
www.intacton.de

**Isis Optronics**  
www.isis-optronics.de

**Isi-sys**  
www.isi-sys.com

**Jenoptik Laser, Optik, Systeme**  
www.jenoptik-los.de

**Jos. Schneider Optische Werke**  
www.schneiderindustrialoptics.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

**Leica Geosystems**  
www.leica-geosystems.com/metrology

**Leitner Industrial Endoscopy**  
www.leitner-efer.de

**Limes**  
www.limes.com

**LOT Oriel**  
www.lot-oriel.com

**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

**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**  
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

**Phoenix|x-ray**  
www.phoenixxray.com

**Phynix**  
www.phynix.de

**pi4\_robotics**  
www.pi4.de

**Plasmo Industrietechnik**  
www.plasmo.eu

**Polygon**  
www.polygon-technology.de

**Polytec**  
www.polytec.com

**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

**Sensofar**  
www.sensofar.com

**Sensor Instruments**  
www.sensorinstruments.de

**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

**Steinbichler Optotechnik**  
www.steinbichler.com

**Stiefelmayer**  
www.stiefelmayer.de

**STIL**  
www.stilsa.com

**Streppel Glasfaser-Optik**  
www.streppel.de

**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

**Trioptics**  
www.trioptics.com

**Ulis**  
www.ulis-ir.com

**Vialux**  
www.vialux.de

**Videometer**  
www.videometer.com

**Visiolaser**  
www.vannier-photelec.fr/visiolaser

**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

**ZygoLOT**  
www.zygot.com

# Optics

**AHF Analysentechnik**  
www.ahf.de

**Acal BFi Germany**  
www.bfiophtilas.com

**Allied Scientific Pro**  
www.alliedscientificpro.com

**Allied Vision Technologies**  
www.alliedvisiontec.com

**Alrad Imaging**  
www.alrad.co.uk

**AMS Technologies**  
www.ams.de

**Anteryon**  
www.anteryon.com

**Armstrong Optical**  
www.armstrongoptical.co.uk

**AutomationDirect**  
www.automationdirect.com

**Awaiba**  
www.awaiba.com

**Azure Photonics**  
www.azurephotonics.com

**Baumer**  
www.baumer.com

**B & M Optik**  
www.bm-optik.de

**BK Interferenzoptik**  
www.interferenzoptik.de

**Bock Optronics**  
www.bockoptronics.ca

**Capovani Brothers**  
www.capovani.com

**CBC Deutschland**  
www.cbc-de.com

**Collischon Optik-Design**  
www.mikro-optik.de

**Computer BV**  
www.computerbv.de

**Cosyco**  
www.cosyco.de

**Data Vision**  
www.datvision.com

**Deposition Sciences**  
www.depsci.com

**Devitech**  
www.devitech.dk

**Docter Optics**  
www.docter-optics.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

**Fifo Optics**  
www.fifooptics.com

**Finger**  
www.finger-kg.de

**Fisba Optik**  
www.fisba.ch

**Framos**  
www.framos.com

**FRT Fries Research & Technology**  
www.frt-gmbh.com

**Fujifilm Europe**  
www.fujifilm.eu/fujinon

**G4 Technology**  
www.g4.com.tw

**Goyo Optical**  
www.gyooptical.com

**Karlheinz Hinze Optoengineering**  
www.hinze-opto.de

**Holoeye Photonics**  
www.holoeye.com

**Helmut Hund**  
www.hund.de

**IB/E Optics**  
www.ibe-optics.com

**IDS**  
www.ids-imaging.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 Corporation**  
www.jfas.co.jp

**Jenoptik Laser, Optik, Systeme**  
www.jenoptik-los.de

**Jenoptik Polymersystems**  
www.jenoptik-ps.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

**LaserTechs**  
www.lasertechs.de

**Leading-Tech Laser**  
www.leading-techlaser.com

**Leica Geosystems**  
www.leica-geosystems.com/  
metrology

**Lensation**  
www.lensation.de

**Leoni**  
www.leoni-fiber-optics.com

**Lincoln Laser Company**  
www.lincolnlaser.com

**Linos Photonics**  
www.linos.de

**LMI Technologies**  
www.lmi3d.com

**LOT Oriol**  
www.lot-oriol.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



<b>Microsystems</b> www.microsystems.it
<b>Midwest Optical Systems</b> www.midopt.com
<b>Moeller-Wedel Optical</b> www.moeller-wedel-optical.com
<b>Molenaar Optics</b> www.molenaar-optics.com
<b>Moritex</b> www.moritex.com
<b>msiVision</b> www.msivision.com
<b>Myutron</b> www.myutron.com
<b>Navitar</b> www.navitar.com
<b>NET</b> www.net-gmbh.com
<b>NeuPro Solutions</b> www.neupro-solutions.com
<b>Odem Technologies</b> www.odem.co.il
<b>Olympus</b> www.olympus-europa.com
<b>Omron</b> www.industrial.omron.de
<b>Optec</b> www.optec.eu
<b>Optics Balzers</b> www.opticsbalzers.com
<b>Opto</b> www.opto.de
<b>Opto Engineering</b> www.opto-engineering.com
<b>Opto Precision</b> www.optoprecision.de
<b>Optometron</b> www.optometron.de
<b>Orbis</b> www.orbis.eu
<b>Parameter</b> www.parameter.se
<b>Pentax Ricoh Imaging Deutschland</b> www.pentax-security.com
<b>Phaer</b> www.phaer.be
<b>Phase 1 Technology Corp.</b> www.phase1tech.com

<b>Photonic Products</b> www.photonic-products.com
<b>pi4_robotics</b> www.pi4.de
<b>POG Präzisionsoptik Gera</b> www.pog.eu
<b>Polytec</b> www.polytec.com
<b>Profactor</b> www.profactor.at
<b>Qioptiq</b> www.qioptiq.com
<b>Qualimatest</b> www.qmt.ch
<b>Rauscher</b> www.rauscher.de
<b>Resolve Optics</b> www.resolveoptics.com
<b>RH Engineering</b> www.rhengineering.de
<b>Schael-Optik</b> www.schael-optik-ltd.com
<b>Schmachtl</b> www.schmachtl.at
<b>Jos. Schneider Optische Werke</b> www.schneiderindustrialoptics.com
<b>Schott Lighting and Imaging</b> www.schott.com
<b>Second2None</b> www.visiondragon.com
<b>Sedeco Vision Components</b> www.sedeco.nl
<b>Seiwa Optical</b> www.seiwaopt.co.jp
<b>Sensofar</b> www.sensofar.com
<b>Shenzhen Kuangshi Communication Technology</b> www.ksfiber optic.com
<b>Sill Optics</b> www.silloptics.de
<b>Space</b> www.spacecom.co.jp
<b>Spectros</b> www.spectros.ch
<b>Spectrum Illumination</b> www.spectrumillumination.com

<b>Stemmer Imaging</b> www.stemmer-imaging.com
<b>Streppel Glasfaser-Optik</b> www.streppel.de
<b>STZ Qualitätssicherung und Bildverarbeitung</b> www.stz-ilmenau.de
<b>Sugitoh</b> www.sugitoh.jp
<b>Schäfer + Kirchhoff</b> www.sukhamburg.de
<b>Sunex</b> www.sunex.com
<b>SVS Vistek</b> www.svs-vistek.com
<b>Sydor Optics</b> www.sydor.com
<b>Symco</b> www.symco.co.jp
<b>Tamron</b> www.tamron.de
<b>Tekno Optik</b> www.teknooptik.se
<b>Tekstar Optical</b> www.tekstaroptical.com
<b>The Imaging Source</b> www.theimagingnsources.com
<b>Thermosensorik</b> www.thermosensorik.de
<b>Trioptics GmbH</b> www.trioptics.com
<b>Vega Technology Group</b> www.vegatcgroup.com
<b>Videology Imaging Solutions</b> www.videologyinc.com
<b>Videor Technical</b> www.videor.com
<b>Vieworks</b> www.vieworks.com
<b>Vision &amp; Control</b> www.vision-control.com
<b>Vision Light Tech</b> www.visionlighttech.com
<b>Visionlink</b> www.visionlink.it
<b>Visitool</b> www.visitool.de
<b>Volpi</b> www.volpi.ch

<b>VS Technology</b> www.vst.co.jp
<b>Weiss Imaging and Solutions</b> www.weiss-imaging.de
<b>Carl Zeiss</b> www.zeiss.com/lenses4industry
<b>Carl Zeiss IMT</b> www.zeiss.de
<b>Carl Zeiss Microimaging</b> www.zeiss.de/mikro
<b>ZygoLOT</b> www.zygot.de

# Processors, Interfaces, Cables, Peripherals

<b>ABS</b> www.abs-jena.de
<b>Active Silicon</b> www.activesilicon.com
<b>Adaptive Vision</b> www.adaptive-vision.com
<b>Aerotech</b> www.aerotech.com
<b>Allied Vision Technologies</b> www.alliedvisiontec.com
<b>Alysium-Tech</b> www.alysium-tech.com
<b>AMS Technologies</b> www.ams.de
<b>AnaLogic Computers</b> www.analogic-computers.com
<b>Andon Electronics</b> www.andonelect.com
<b>Arvoo Imaging Products</b> www.arvoo.com
<b>AutomationDirect</b> www.automationdirect.com
<b>AutoVimation</b> www.autovimation.com
<b>BAP Image Systems</b> www.bapis.de
<b>Bock Optronics</b> www.bockoptronics.ca
<b>Cepoint Networks</b> www.cepoint.com
<b>Components Express</b> www.componentsexpress.com
<b>Computer BV</b> www.computerbv.de
<b>D.SignT</b> www.dsignt.de
<b>de Man Industrie-Automation</b> www.deman.de
<b>Diaplous</b> www.diaplous.com
<b>DSM Computer</b> www.dsm.ag
<b>EDT</b> www.edt.com
<b>Eltec Elektronik</b> www.eltec.com
<b>Epix</b> www.epixinc.com

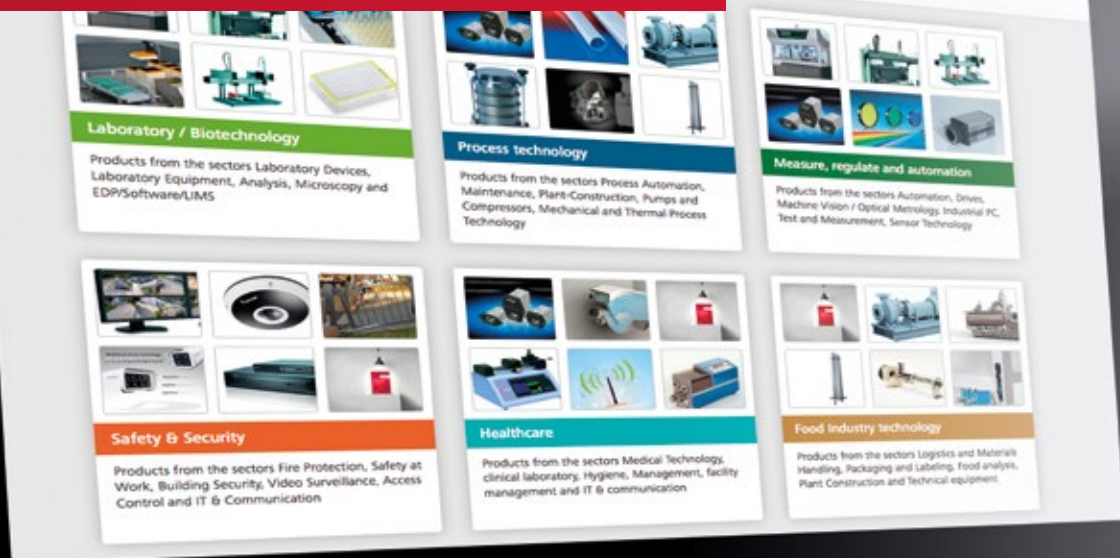
<b>Ernst &amp; Engbring</b> www.eue-kabel.de
<b>Euresys</b> www.euresys.com
<b>eVision Systems</b> www.aivion.de
<b>Fabrimex Systems</b> www.fabrimex-systems.ch
<b>FiberVision</b> www.fibervision.de
<b>Framos</b> www.framos.com
<b>G4 Technology</b> www.g4.com.tw
<b>Gidel</b> www.gidel.com
<b>GigalinX</b> www.gigalinx.net
<b>HaSoTec</b> www.hasotec.com
<b>Hema</b> www.hema.de
<b>IDS</b> www.ids-imaging.com
<b>Igus</b> www.igus.de
<b>Image House</b> www.imagehouse.dk
<b>Image S</b> www.imagesrl.com
<b>Imaging Solutions Group</b> www.isgchips.com
<b>Imago</b> www.strampe.de
<b>Infaimon</b> www.infaimon.com
<b>Intercon1</b> www.intercon-1.com
<b>Japan F.A. Systems</b> www.jfas.co.jp
<b>Kamera</b> www.kamera.com
<b>Lemo</b> www.lemo.com
<b>Leoni</b> www.leoni-fiber-optics.com

<b>Lippert Adlink Technology</b> www.adlinktech.eu
<b>LMI Technologies</b> www.lmi3d.com
<b>Luster LightVision Tech</b> www.lusterinc.com
<b>Mad City Labs</b> www.madcitylabs.com
<b>Matrix Vision</b> www.matrix-vision.de
<b>Matrox Imaging</b> www.matrox.com/imaging
<b>MaxxVision</b> www.maxxvision.com
<b>MaZet</b> www.mazet.de
<b>MBJ Imaging</b> www.mbj-imaging.com
<b>Menzel Vision and Robotics</b> www.menzelab.com
<b>Micron</b> www.micron.com
<b>Microsystems</b> www.microsystems.it
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<b>Newnex Technology</b> www.newnex.com
<b>Northwire Technical Cable</b> www.northwire.com
<b>Orbis</b> www.orbis.eu
<b>Parameter</b> www.parameter.se
<b>Phase 1 Technology</b> www.phase1tech.com
<b>Phytec Messtechnik</b> www.phytec.de
<b>pi4_robotics</b> www.pi4.de
<b>Piezosystem Jena</b> www.piezosystem.com
<b>Pleora Technologies</b> www.pleora.com
<b>Pro Design Electronic</b> www.prodesign-europe.com
<b>Pyramid Computer</b> www.pyramid.de

<b>Schmachtl</b> www.schmachtl.at
<b>Seidenader</b> www.seidenader.de
<b>Seldes</b> www.seldes.com
<b>Serview</b> www.serview.net
<b>sglux</b> www.sglux.com
<b>Silicon Software</b> www.silicon-software.de
<b>Smartek Vision</b> www.smartekvision.com
<b>Stemmer Imaging</b> www.stemmer-imaging.com
<b>STZ Qualitätssicherung und Bildverarbeitung</b> www.stz-ilmeneau.de
<b>Supercomputing Systems</b> www.scs-vision.ch
<b>SVS Vistek</b> www.svs-vistek.com
<b>Symco</b> www.symco.co.jp
<b>Teledyne Dalsa</b> www.teledynedalsa.com
<b>The Imaging Source</b> www.theimagingnsource.com
<b>Thinklogical</b> www.thinklogical.com
<b>Unibrain</b> www.unibrain.com
<b>ViDiSys</b> www.vidisys.de
<b>Vieworks</b> www.vieworks.com
<b>Vision &amp; Control</b> www.vision-control.com
<b>Vision Tools</b> www.vision-tools.com
<b>Vistas</b> www.vistas-gmbh.de
<b>www.USBFireWire.com</b> www.usbfirewire.com
<b>Xilinx</b> www.xilinx.com

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**Acal BFi Germany**  
www.bfioptilas.com

**AHF Analysentechnik**  
www.ahf.de

**Aido**  
www.aido.es

**Alfvision**  
www.alfvision.de

**Alicona Imaging**  
www.alicona.com

**Allied Scientific Pro**  
www.alliedscientificpro.com

**Anafocus**  
www.anafocus.com

**Austrian Research Centers**  
www.smart-systems.at

**Awaiba**  
www.awaiba.com

**Breuckmann**  
www.breuckmann.com

**Cepoint Networks**  
www.cepoint.com

**Cmos Vision**  
www.cmosvision.com

**CMOSIS**  
www.cmosis.com

**Cognex**  
www.cognex.com

**Collischon Optik-Design**  
www.mikro-optik.de

**Complete Inspection Systems**  
www.completeinspectionssystems.com

**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

**Delta Digital Video**  
www.delta.dk

**Docter Optics**  
www.docter-optics.com

**Eltec Elektronik**  
www.eltec.com

**Entner Electronics**  
www.entner-electronics.com

**Erhard + Leimer**  
www.erhardt-leimer.com

**FiberVision**  
www.fibervision.de

**Fraunhofer Allianz Vision**  
www.vision.fraunhofer.de

**Fraunhofer IFF**  
www.mpt.iff.fraunhofer.de

**Fraunhofer IMS**  
www.ims.fraunhofer.de

**FRT Fries Research & Technology**  
www.frt-gmbh.com

**GBS**  
www.gbs-ilmenau.de

**Gevicam**  
www.gevicam.com

**GFal**  
www.gfai.de

**Graphikon**  
www.graphikon.de

**HaSoTec**  
www.hasotec.com

**Helion**  
www.helionvision.com

**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

**Kamera Werke Dresden**  
www.kwdo.de

**Kamera**  
www.kamera.com

**Kappa opto-electronics**  
www.kappa.de

**Leica Geosystems**  
www.leica-geosystems.com/  
metrology

**Lincoln Laser Company**  
www.lincolnlaser.com

**LMI Technologies**  
www.lmi3d.com

**Matrix Vision**  
www.matrix-vision.de

**MaZet**  
www.mazet.de

**Mikromak Service**  
www.mikromak.com

**msiVision**  
www.msivision.com

**Nexus Engiconsults**  
www.nexusengiconsults.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

**Sarnoff**  
www.sarnoff.com

**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.spieurope.org

**Stemmer Imaging**  
www.stemmer-imaging.com

**Streppel Glasfaser-Optik**  
www.streppel.de

**STZ Qualitätssicherung und Bildverarbeitung**  
www.stz-ilmenau.de

**Tekno Optik**  
www.teknooptik.se

**Tema**  
www.temavisio.com

**Thermosensorik**  
www.thermosensorik.de

**Tichawa Vision**  
www.tichawa.de

**Tordivel**  
www.scorpionvision.com

**Univision**  
www.univision.it

**Vega Technology Group**  
www.vegatcgroup.com

**Vision & Control**  
www.vision-control.com

**Vision Machines**  
www.vision-machines.com

**Vision Tools**  
www.vision-tools.com

**Vistek**  
www.vistekas.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

**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.ams.de

**AnaLogic Computers**  
www.analogic-computers.com

**Andor Technology**  
www.andor.com

**AOS Technologies**  
www.aostechnologies.com

**Applied Electro-Optics**  
www.aeou.com

**Aqsense**  
www.aqsense.com

**Artray**  
www.artray.co.jp

**Asentics**  
www.asentics.de

**Attentra**  
www.attentra.de

**Baumer**  
www.baumer.com

**Braintech**  
www.braintech.com

**Cimetrix**  
www.cimetrix.com

**Cognex**  
www.cognex.com

**Computer BV**  
www.computerbv.de

**Cosyco**  
www.cosyco.de

**Data Vision**  
www.datvision.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 Thermo-  
graphie 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 Systems**  
www.flirthermography.de

**Framos**  
www.framos.com

**FSI Technologies**  
www.fsinet.com

**G4 Technology**  
www.g4.com.tw

**GBS**  
www.gbs-ilmenau.de

**Gefasoft**  
www.gefasoft.com

**Geomagic**  
www.geomagic.com

**Gevicam**  
www.gevicam.com

**Goldlücke Ingenieurleistungen**  
www.giib.de

**Graphikon**  
www.graphikon.de

**HaSoTec**  
www.hasotec.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

**Imatec**  
www.imatec-bildanalyse.com

**Impuls Imaging**  
www.impuls-imaging.com

**INB Vision**  
www.inb-vision.com

**Industrial Vision Systems**  
www.industrialvision.co.uk

**Infaimon**  
www.infaimon.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

**Japan F.A. Systems**  
www.jfas.co.jp

**JasVisio**  
www.visionint.com

**Joanneum Research**  
www.joanneum.at

**Kappa opto-electronics**  
www.kappa.de

**Karlheinz Hinze Optoengineering**  
www.hinze-opto.de

## Software

<b>Klughammer</b> www.klughammer.de	<b>Norpix</b> www.norpix.com	<b>Second2None</b> www.visiondragon.com	<b>Univision</b> www.univision.it
<b>Kvant</b> www.kvant.sk	<b>OBE Ohnmacht &amp; Baumgärtner</b> www.trevista.net	<b>Sedeco Vision Components</b> www.sedeco.nl	<b>Van de Loosdrecht Machine Vision</b> www.vdlmv.nl
<b>Lambda Photometrics</b> www.lambdaphoto.co.uk	<b>Odem Technologies</b> www.odem.co.il	<b>SensorDesk</b> www.SensorDesk.com	<b>Vega Technology Group</b> www.vegatcgroup.com
<b>Lambda Research Corporation</b> www.lambdares.com	<b>Olympus</b> www.olympus-europa.com	<b>Silicon Software</b> www.silicon-software.de	<b>Vieworks</b> www.vieworks.com
<b>Leica Geosystems</b> www.leica-geosystems.com/ metrology	<b>Omron</b> www.industrial.omron.de	<b>Simon IBV</b> www.simon-ibv.de	<b>Visicontrol</b> www.visicontrol.com
<b>Leica Microsystems</b> www.leica-microsystems.com	<b>Optical Research Associates</b> www.opticalres.com	<b>Smartek Vision</b> www.smartekvision.com	<b>Visiolaser</b> www.vannier-photelec.fr/ visiolaser
<b>LMI Technologies</b> www.lmi3d.com	<b>Optis</b> www.optis-world.com	<b>SmartSurv</b> www.smartsurv.de	<b>Vision &amp; Control</b> www.vision-control.com
<b>Luster LightVision Tech</b> www.lusterinc.com	<b>Optometron</b> www.optometron.de	<b>SPG Data 3D</b> www.spgdata3d.com	<b>Vision Components</b> www.vision-components.com
<b>Math &amp; Tech Engineering</b> www.mathtech.eu	<b>Orbis</b> www.orbis.eu	<b>Stemmer Imaging</b> www.stemmer-imaging.com	<b>Vision Machines</b> www.vision-machines.com
<b>Matrix Vision</b> www.matrix-vision.de	<b>Parameter</b> www.parameter.se	<b>STZ Qualitätssicherung und Bildverarbeitung</b> www.stz-ilmenau.de	<b>Vision N</b> www.vision-n.de
<b>Matrox Imaging</b> www.matrox.com/imaging	<b>Phase 1 Technology</b> www.phase1tech.com	<b>Supercomputing Systems</b> www.scs-vision.ch	<b>Vision Tools</b> www.vision-tools.com
<b>MaxxVision</b> www.maxxvision.com	<b>Phase One Industrial</b> http:industrial.phaseone.com	<b>SVS Vistek</b> www.svs-vistek.com	<b>Visionlink</b> www.visionlink.it
<b>Menzel Vision and Robotics</b> www.menzelab.com	<b>Photonfocus</b> www.photonfocus.com	<b>Symco</b> www.symco.co.jp	<b>Vistek</b> www.vistekas.com
<b>Metronom Automation</b> www.metronom-automation.de	<b>pi4_robotics</b> www.pi4.de	<b>Systematic Vision</b> www.systematicvision.com	<b>Vitronic</b> www.vitronic.com
<b>Micro-Epsilon</b> www.micro-epsilon.com	<b>Pleora Technologies</b> www.pleora.com	<b>Tekno Optik</b> www.teknooptik.se	<b>Vizzion</b> www.vizzion.com
<b>Microscan</b> www.microscan.com	<b>Polytec</b> www.polytec.com	<b>Teledyne Dalsa</b> www.teledynedalsa.com	<b>Weiss Imaging and Solutions</b> www.weiss-imaging.de
<b>Microsystems</b> www.microsystems.it	<b>Profactor</b> www.profactor.at	<b>Tema</b> www.temavisio.com	<b>Wenzel</b> www.wenzel-cmm.com
<b>Mikromak Service</b> www.mikromak.com	<b>Qualimatest</b> www.qmt.ch	<b>The Imaging Source</b> www.theimagingnsource.com	<b>X-Rite</b> www.xrite.com
<b>Mitutoyo</b> www.mitutoyo.de	<b>Rapidform</b> www.rapidform.com	<b>The MathWorks</b> www.mathworks.com	<b>Zertrox</b> www.zertrox.de
<b>msiVision</b> www.msivision.com	<b>Rauscher</b> www.rauscher.de	<b>Thermosensorik</b> www.thermosensorik.de	
<b>MVTec Software</b> www.mvtec.com	<b>RH Engineering</b> www.rhengineering.de	<b>Tordivel</b> www.scorpionvision.com	
<b>National Instruments</b> www.ni.com	<b>Rubroeder</b> www.rubroeder.de	<b>TriVision</b> www.trivision.dk	
<b>Neogramm</b> www.neogramm.de	<b>SAC</b> www.sac-vision.de	<b>TYZX</b> www.tyzx.com	
<b>Neurocheck</b> www.neurocheck.com	<b>Schmachtl</b> www.schmachtl.at	<b>Unique Vision</b> www.unique-vision.net	

# Vision Sensors, Smart Cameras & Embedded Systems

**Acal Bfi Germany**  
www.bfioptilas.com

**Active Silicon**  
www.activesilicon.com

**Adaptive Vision**  
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**AIT Göhner**  
www.VisionAndID.com

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**AMS Technologies**  
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**Ifm Electronic**  
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**Image House**  
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**Image S**  
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**Imaging Solutions Group**  
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www.isw-gmbh.biz

**Itava**  
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<b>NeuPro Solutions</b> www.neupro-solutions.com	<b>RSB Optotechnik</b> www.rsb-optotechnik.de	<b>Teledyne Dalsa</b> www.teledynedalsa.com	<b>Zertrox</b> www.zertrox.de
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<b>Norpix</b> www.norpix.com	<b>Schmachtl</b> www.schmachtl.at	<b>TopSenso</b> www.topsenso.de	
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<b>Odem Technologies</b> www.odem.co.il	<b>Second2None</b> www.visiondragon.com	<b>Turck</b> www.turck.de	
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<b>Peter Scholz Software + Engineering</b> www.scholzsue.de	<b>SKS Vision Systems</b> www.visionsystems.fi	<b>Vision &amp; Control</b> www.vision-control.com	
<b>Phase One Industrial</b> http:industrial.phaseone.com	<b>Smartray</b> www.smartray.de	<b>Vision Components</b> www.vision-components.com	
<b>Phytec Messtechnik</b> www.phytec.de	<b>SmartSurv</b> www.smartsurv.de	<b>Vision Tools</b> www.vision-tools.com	
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www.dr.schenk.com

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Technology**  
www.schwabinspection.com

**Dunkley International**  
www.dunkleymachinevision.com

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www.dvs-vision.de

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www.e3tam.com

**Eckelmann**  
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**Edixia**  
www.edixia.com

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<b>Eines</b> www.eines.es	<b>Gefat</b> www.gefat.de	<b>Image S</b> www.imagessrl.com	<b>Isomorph</b> www.isomorph.it
<b>Electronic Systems</b> www.electronicssystems.it	<b>GF Messtechnik</b> www.gfmestechnik.de	<b>Imago Technologies</b> www.imago-technologies.com	<b>Isra Vision</b> www.isravision.com
<b>Ellips</b> www.ellips.nl	<b>GFai</b> www.gfai.de	<b>I-mation</b> www.i-mation.de	<b>ISW</b> www.isw-gmbh.biz
<b>Eltromat</b> www.eltromat.de	<b>Gidel</b> www.gidel.com	<b>Imess</b> www.imess.com	<b>Isys Industrielle Bildverarbeitung</b> www.isys-vision.de
<b>Emhart Glass</b> www.emhartglass.com	<b>Goldlücke Ingenieurleistungen</b> www.giib.de	<b>Impuls</b> www.impuls-imaging.com	<b>Itech engineering</b> www.itech-ag.ch
<b>Epix</b> www.epixinc.com	<b>GOM</b> www.gom.com	<b>IMR Automatisierungstechnik</b> www.imr-le.de	<b>IVS</b> www.industrialvision.co.uk
<b>Epson Deutschland</b> www.epson.de/robots	<b>Göpel Electronic</b> www.goepel.com	<b>INB Vision</b> www.inb-vision.com	<b>J&amp;P Vision</b> www.jupvision.de
<b>Erhard + Leimer</b> www.erhardt-leimer.com	<b>GPP Chemnitz</b> www.gppc.de	<b>Industrial Vision Systems</b> www.industrialvision.co.uk	<b>Japan F.A. Systems</b> www.jfas.co.jp
<b>EVK DI Kerschagl</b> www.evk.biz	<b>Graphikon</b> www.graphikon.de	<b>Infaimon</b> www.infaimon.com	<b>JasVisio - Vision Artificial</b> www.jasvisio.com
<b>EVT Eye Vision Technology</b> www.evt-web.com	<b>GreCon</b> www.grecon.de	<b>InfraTec</b> www.infratec.de	<b>JLI Vision</b> www.jli.dk
<b>EyeC-UK</b> www.eyec-ukandireland.co.uk	<b>Grenzbach Algoscan</b> www.algoscan.com	<b>Inos Automationssoftware</b> www.inos-automation.com	<b>Joanneum Research</b> www.joanneum.at
<b>Fast</b> www.fast-corp.co.jp	<b>HaSoTec</b> www.hasotec.com	<b>InRay Solutions</b> www.inrays.com	<b>K + P Krempien + Petersen</b> www.kup-image.de
<b>Faude Automatisierungstechnik</b> www.faude.de	<b>Heitec</b> www.heitec.de	<b>Insensiv</b> www.insensiv.de	<b>Kaiser Computersysteme</b> www.isotronika.de
<b>FAW Freudenberg Anlagen- und Werkzeugtechnik</b> www.faw-freudenberg.de	<b>Helms Technologie</b> www.helms-technologie.de	<b>In-situ</b> www.in-situ.de	<b>Kdorf Automation</b> www.kdorf.de
<b>FDS Research</b> www.fdsresearch.si	<b>Hengstmann Solutions</b> www.hengstmann.com	<b>Inspectron</b> www.inspectron.ch	<b>Keyence</b> www.keyence.de
<b>FiberVision</b> www.fibervision.de	<b>i2s</b> www.i2s-linescan.com	<b>InSystems Automation</b> www.insystems.de	<b>Kirin Techno-System</b> www.kirintechno.co.jp
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<b>FueteC</b> www.fueteC.de	<b>Icos Vision Systems</b> www.icos.be	<b>IOSS</b> www.ioSS.de	<b>Leuze Electronic</b> www.leuze.com
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<b>G4 Technology</b> www.g4.com.tw	<b>iiM</b> www.iimag.de	<b>Irida Labs</b> www.iridalabs.gr	<b>Lincoln Laser Company</b> www.lincolnlaser.com
<b>GBS</b> www.gbs-ilmenau.de	<b>Ikegami</b> www.ikegami.de	<b>IS Imaging Solutions</b> www.imaging-solutions.de	<b>Machine Vision Technology</b> www.machine-vision-technology.co.uk

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www.leibinger-group.com

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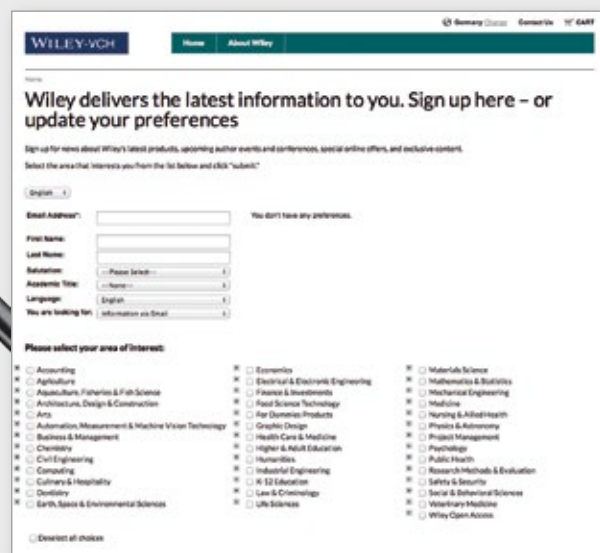
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