

VOLUME 14
DECEMBER 2013

7

76 963

inspect

Applied Imaging and Optical Metrology



BuyersGuide 2014

400 Companies
Their Locations • Their Products • Their Services

EMVA • AIA • JIA
**EXCLUSIVE
REPORT ABOUT
G3 INTERNATIONAL
STANDARDS
MEETING**
Schongau 2013

Partner of



GIT VERLAG

A Wiley Brand

SUPERIOR SPEED & RESPONSIVITY, NEXT GENERATION CMOS

MONOCHROME

8kx2, CL, 100kHz/70kHz, 7.04um, 8/10/12 bit

4kx2, CL, 200kHz/100kHz, 10.56um, 8/10/12 bit

4kx2, CL, 100kHz/50kHz, 10.56um, 8/10/12 bit

2kx2, CL, 200kHz/100kHz, 10.56um, 8/10/12 bit

2kx2, CL, 100kHz/50kHz, 10.56um, 8/10/12 bit

Max line rate quoted in area mode/TDI mode

COLOR

8kx2, CL, 50kHz, 7.04um, 8 bit, bilinear RG/BG

4kx3, CL, 70kHz, 10.56um, 8/10/12 bit, trilinear

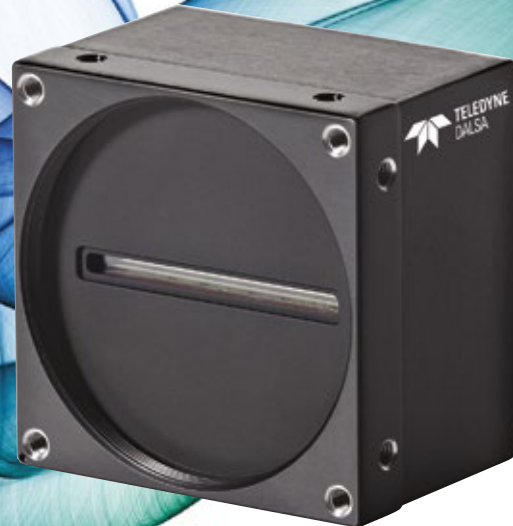
4kx3, CL, 40kHz, 10.56um, 8/10/12 bit, trilinear

2kx3, CL, 70kHz, 14.08um, 8/10/12 bit, trilinear

2kx3, CL, 40kHz, 14.08um, 8/10/12 bit, trilinear



Piranha4 8k



Piranha4k/2k/1k

Piranha™ 4 > Trilinear > Bilinear > Dual Line Scan

Teledyne DALSA raises the performance bar once again with the Piranha4. Powered by our latest high performance **CMOS imager**, with resolutions from 1k to 8k pixels and pixel sizes from 7 to 14µm, the Piranha4 is ideal for web and surface inspection applications allowing you inspect and detect with unrivalled precision, speed, and responsivity for industrial machine vision.



Get more vision.

Download our complementary white paper:

The Evolution of CMOS Imaging Technology

www.teledynedalsa.com/d/i2013e



TELEDYNE DALSA
Everywhere you look™

A Visit to the Plugfest



With the 5/2008 issue, inspect presented the Buyers Guide for the very first time. Just as in the present issue, readers were able to find the most important companies in the vision sector together with their products and services in a clear and well-presented structure.

Vision standards are also a regular topic in the Buyers Guide. Last year, we reported on a panel discussion on this subject, which was held at the Vision 2012. This year, there was no Vision exhibition. There has now been a change to a bi-annual sequence. However, even without this excellent exhibition platform, inspect was able to use a special opportunity to document the current state and trends in developments of vision standards in first-hand discussions with experts.

As exclusive guests at the standards meeting held under the patronage of the three international associations AIA, JIA and EMVA in Schongau, we were able to take a closer look at the work of the participants at the plugfest.

Technology experts from the industrial associations were available for discussions and answered our questions about standards and the importance and objectives of the regular international meetings held at varying locations.

From page 8 of this issue of the Buyers Guide, you can find answers and statements by experts about GenICam, Camera Link HS, GigE Vision, CoaXPress and USB3 Vision.

A report on the EMVA 1288 Standard on page 22 completes the overall picture of standardization in the vision sector.

As a reference work, the current Buyers Guide will again provide a helpful and useful list of sectors and services for anyone who wishes to implement a machine vision project in the near future. The company expertise which is accumulated here is immense. Access to it is quick and simple via the list of contact information. Keep this issue of our Buyers Guide at hand, so that you can quickly find the right partner for the projects which you have planned for 2014.

I wish you profitable reading.

Bernhard Schroth



The new FARO® Edge ScanArm® ES
Fast and easy scanning with Enhanced Scanning Technology

The new FARO® ScanArm ES allows the user to scan materials with challenging optical qualities like dark or reflective surfaces effortlessly. The new HDR Mode (High Dynamic Range) lets users save time by scanning materials with high contrasting colors simultaneously.

Call us at **00 800 32 76 72 53** for a free demo!

More information:

www.measuring-arms.faro.com





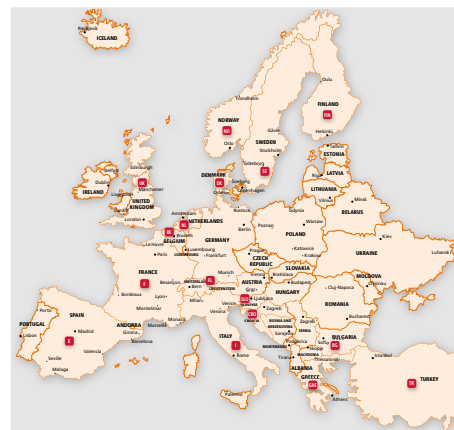
08

1288
EMVA Standard Compliant



22

Alfonso de Tomiás - Fotolia



60

Contents

Topics

- 3 Editorial
A Visit to the Plugfest
Bernhard Schroth
- 6 Machine Vision and Optical Metrology in Europe
The inspect Buyers Guide 2014
- 8 Standards Open up New Markets
International Cooperation Makes for Efficient Standard Setting: GenICam, GigE Vision, USB3 Vision, CoaXPress, Camera Link HS
- 20 International Machine Vision Standards Meeting
Schongau for One Week Becomes Epicenter of Standards Development
- 22 Objective Comparison of Machine Vision Cameras
Practical Experiences with the EMVA 1288 Standard
Prof. Dr. Bernd Jähne
- 25 Certified Support
Handling Sophisticated Algorithms Easily
Interview with Dr. Klaus-Henning Noffz from Silicon Software

Buyers Guide

- 27 Company Profiles
- 41 Germany – Austria – Switzerland
Location Map and Company Entries
- 60 Europe
Location Map and Company Entries
- 67 North America
Location Map and Company Entries
- 72 World
Location Map and Company Entries
- 74 Showcase
- 76 Cameras & Image Sensors
- 79 Consulting, Marketing, Education & Other Services
- 81 Frame Grabber
- 82 Illumination & Lighting Systems
- 84 Microscopes, Endoscopes & Equipment
- 86 Optical Metrology
- 88 Optics
- 90 Processors, Interfaces, Cables, Peripherals
- 91 R & D
- 92 Software
- 94 Vision Sensors, Smart Cameras & Embedded Systems
- 96 Vision Systems, Turnkey Solutions, Integration Services

-
- 101 Index
 - 102 Imprint

Partner of



USB VISION



MORE CHOICE

World's Largest USB 3.0 Selection. CCD & CMOS. Shipping since 2011.

In addition to a camera portfolio that ranges from 1.3 to 9.1 MP, Point Grey has developed a rich library of USB 3.0 resources with practical information on setting up and getting the most out of USB 3.0 imaging.

POINT GREY
Innovation in Imaging



www.usb3imaging.com

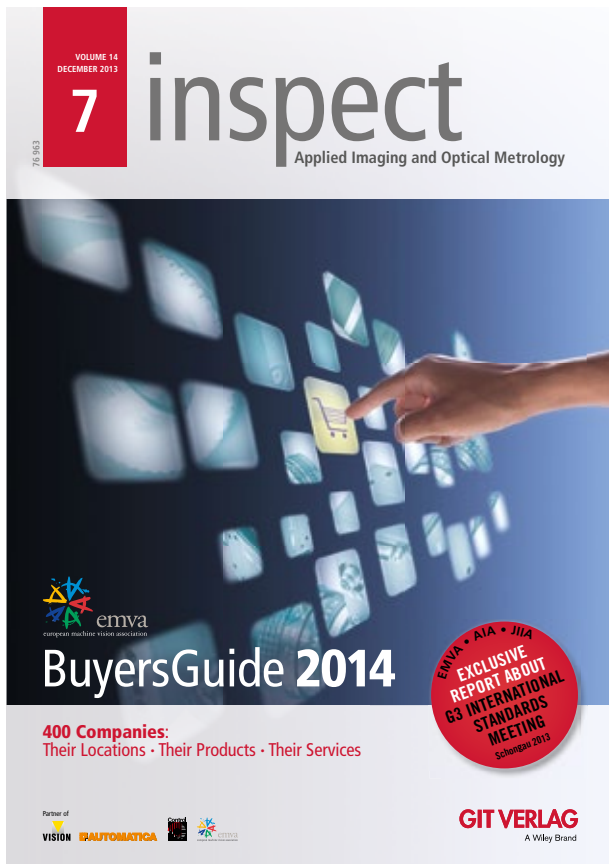
Everything you need to know about USB 3.0 imaging.

www.ptgrey.com

Machine Vision and Optical Metrology in Europe

The inspect Buyers Guide 2014

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.

The inspect Buyers Guide is published in its sixth year now, for the fifth 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 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 2014 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.

Contact
contact@inspect-online.com
www.inspect-online.com/buyers-guide



For a Jack and a King.

USB 3.0 Board Level cameras – the new wild card by Baumer.



With the new MXU Board Level cameras you always bet on the right card: High band width for dynamic applications, easy Plug & Play connection and maximum flexibility where installation space is limited.

Learn more under
www.baumer.com/cameras/mx





Men of action and international cooperation (f.l.t.r.): Bob McCurrach (AIA), Christoph Zierl (MVTec), Tsuneo Sakuma (JIIA, Kirin Techno System), Mike Miethig (Teledyne Dalsa), Eric Gross (National Instruments), Chris Beynon (Active Silicon), Sadafumi Torii (JIIA, Hamamatsu Photonics), Sachio Kiura (JIIA, Symco), George Chamberlain (Pleora), Jochem Herrmann (EMVA, Adimec), Eric Carey (Teledyne Dalsa) and Thomas Luebkeimeier (EMVA)

Standards Open up New Markets

International Cooperation Makes for Efficient Standard Setting: GenICam, GigE Vision, USB3 Vision, CoaXPress, Camera Link HS

Under the umbrella of the major machine vision standards associations, sometimes referred to as the G3, regular technical meetings take place at which numerous engineers put their heart and soul, as well as their valuable expertise, into advancing industrial standards in the field of Machine Vision. This crucial work makes implementation of camera solutions easier for manufacturers, integrators and end-users and it helps to reduce 'time-to-market'. A further consequence of this international cooperation is that it opens up new markets. inspect was allowed to listen in at the meetings and to talk to the experts.

This time the International Standards Meeting took place in a particularly charming, historical setting: the late-medieval Ballenhaus in the centre of the romantic old German town of Schongau. Members of the three international organizations AIA, JIIA (Japan Industrial Imaging Association) and the EMVA (European Machine Vision Association), meet two to four times a year, always at a different location around the globe, to advance the standardization of industrial and non-industrial image processing. The member companies take it in turns to host the meetings.



USB 3.0 cameras SuperSpeed

...and more



xiQ CMOS
VGA to 4 MP
up to 500 fps

xiD CCD
2.8 MP to 12 MP
ultra low-noise



George Chamberlain: "Standards enable manufacturers to save system costs and to accelerate the 'time-to-market' of their products."



Jochem Herrmann, George Chamberlain, Bob McCurrach (f.l.t.r.): "These standards live a long time, and that is why the effects extend even longer."

fast • robust • compact

xiMU
subminiature
USB2 cameras

CURRERA-R
Intelligent
PC-cameras

xiB
High-speed
PCIe cameras

xiCE
High-end
cameras



Every Standard Has Its Niche

The thicket of interface standards will be thinned out a bit. The standard experts expect, at least, that the use of the traditional Camera Link interface will decline over the next few years. And we can expect Firewire to be increasingly replaced by USB3 Vision. GigE Vision, USB3 Vision, CoaXPress and Camera Link HS complement each other very well and each one will find its own niche. But, ultimately, it will be the market and the users that will decide.

USB3 Vision Is Pushing onto the Market

The young communication interface standard USB3 Vision, Release 1.0, was published in January 2013. This Vision standard guarantees software compatibility as well as flexibility in the choice of camera. "We are reaching a status of maturity and can see that a large number of products are pushing onto the market. We expect it to be adopted by the market very quickly. USB3 Vision can offer a lot of advantages in comparison to Firewire. The pure physical layer alone is no reason to prefer Firewire. USB 3 Vision will be used in situations which require broad bandwidth together with low-cost cameras. USB3 Vision cameras are easy to install, Plug&Play, with only one inexpensive cable. In circumstances in which it is a question of capturing images and no additional I/Os are needed, USB3 Vision solutions are well suited. If longer cable lengths are required it is hardly any problem to transfer quickly to GigE Vision owing to their very similar specifications and consistent use of GenICam. GigE Vision and USB3 Vision complement each other very well and will co-exist happily," says Eric Gross, Senior Vision Software Engineer at National Instruments and Technical Head of the USB3 Vision group.

10 GigE Vision, Still Only Modest Enthusiasm

"Since the first release in 2006, the market share of GigE Vision cameras has grown steadily and, according to AIA's "2013 Machine Vision Camera Study", now accounts for 50% of cameras now sold worldwide. Yet the acceptance of its faster speed, 10 Gigabit/sec., has developed extremely slowly. There are a few products on the market, but not many, because the costs are still high. Unfortunately, as well as being fairly power-hungry, 10 GigE Vision also needs a larger amount of space than its one Gigabit counterpart. At present the design of the 10 GigE Vision interface does not lend itself to miniaturization which would make it suitable for installation in very small cameras. As 10 GigE becomes more commonplace, power consumption and space requirements will continue to drop and



Mike Miethig: "It will be the market that decides how well Camera Link HS is accepted as a standard."



Christoph Zierl: "Cameras will become ever more complex and will have more functions."



Eric Gross: "Camera manufacturers can now differentiate themselves from their competitors much better – and can penetrate into very specialized markets."

there will gradually be an increased demand," according to Eric Carey, Director of R&D at Teledyne Dalsa.

CoaXPress Goes for Speed

CoaXPress has been in existence for about two-and-a-half years and is conceived for high-end cameras. "In February 2013, Version 1.1 was published and it accommodated the high-speed uplink and new connector options. Frame grabber and camera manufacturers are now in the process of implementing Version 1.1 of the communication standard. We are currently investigating what we should add to it in Release 1.2 or 2.0. The key factor is speed. We want to ensure that in future the fastest cameras on the market will continue to be able to operate with CoaXPress and, by evaluating feedback from users, we intend to achieve this. As part of this we are planning to support 10 Gigabit and 12.5 Gigabit cable speeds, and we are also discussing whether the standard should be extended to enable it to support multiple frame grabbers installed in one application for operation with very fast cameras. But the whole multi-frame-grabber system should also be very easy for a user to deal with using GenICam, too, and that means we still have a lot of work to do," reports Chris Beynon, Chief Technology Officer at Active Silicon and Technical Head of the CoaXPress standard.

Camera Link HS with 10 Gigabit in the Starting Blocks

Camera Link HS (CLHS) is a communication interface between cameras and frame grabber and is directed at more or less the same field of application as CoaXPress. "Both standards were developed independently of each other. Teledyne Dalsa developed HS-Link, a proprietary Dalsa protocol needed

for our high-end line scan cameras. When we suggested developing a standard on this basis, we found out about the attempts to standardize CoaXPress. Dalsa needed the trigger capability and reliability of the HSLINK/CLHS protocol for cameras with 200 kHz line frequency which CoaXPress didn't offer. Also Camera Link HS not only provides a checksum, but a re-send mechanism which is integrated in the hardware, i.e. implemented in FPGA, and thus does not need any external memory in the camera. Camera Link HS is able to spread the data from one source to a number of frame grabbers operating in parallel and to synchronize them. To achieve this, a lot of firms worked together to design an IP core, available from the AIA, which permits customers to develop their own cameras and frame grabbers. We considered these capabilities to be very important for our customers. Camera Link HS is designed to use proven off-the-shelf components leveraged from the telecom industry such as 10 GigE hardware. We add a protocol which fulfills the specific requirements of Machine Vision. CLHS Revision 1.0 is 10 Gigabit-approved and CLHS will continue to leverage the advances of telecom technology for Machine Vision. We want to ensure that Camera Link HS will be available for at least 20 years. Although there are hardly any products on the market at the moment, except for a 4.8 Gbyte/sec camera from PCO with an associated Dual 10 Gbps fiber-optic frame grabber from SISO and Teledyne Dalsa is currently developing a camera/frame grabber using the 2.1 Gbyte/sec. copper-cable connection, it will be the market that decides how well Camera Link HS is accepted as a standard," says Mike Miethig, Technical Manager for Digital Imaging at Teledyne Dalsa.

Little big shot



The Mako hits the scene with a perfect blend of performance, size and cost. Its rugged industrial housing ensures ultra-precise sensor alignment for razor-sharp images at up to 100 frames per second. Featuring 12V to 24V of power, four opto-isolated ports, Power over Ethernet, ultra-small size, and your choice of either CCD or CMOS sensors, the Mako fits a wide range of applications. Choose from competitively priced GigE models offering up to 4 megapixels. (USB3 Vision coming soon). Learn more at www.AlliedVisionTec.com/LittleBigShot



SEEING IS BELIEVING

Topics

“Although this time, as a firm with 10 employees, we are the smallest host company, we have organized the biggest meeting so far with 73 participants and more than 30 companies,” jokes Werner Feith, CEO of Sensor to Image in Schongau.

G3 came into existence back in 2009 to jointly promote vision standards, to make their development economical and to achieve maximum dissemination and application of them“, explains Werner Feith. “With the Future Standards Forum, the latest initiative of G3, we want to plan ahead and avoid a situation in the future in which we have competing standards,” agrees Jochem Herrmann, the EMVA’s Director responsible for Standards. “But it is also important that sensible standards with regard to quality and quantity should be developed,” adds Werner Feith.

G3 Puts Its Faith in Synergies

The members of the G3 are currently focusing their attention on different standards: the software interface standard GenICam (Generic Interface for Cameras) and the EMVA 1288 Standard for the characterization of digital camera systems are under the supervision of the EMVA. The AIA is mainly responsible for communication interfaces such as Camera Link (CL), Camera Link HS (CLHS), Gigabit Ethernet Vision (GigE Vision) and USB3 Vision (U3V). The JIIA is in charge of CoaXPress (CXP) as well as an optical standard and a lighting standard. “Until quite recently,” explains Jochem Herrmann, “Vision standards were initiated by relatively small groups. Today a lot more companies are involved; we are like a big family and we really cooperate with each other, which means that, across the organizations, we make use of each other’s technical solutions, knowledge and experience. Establishing standards is a very cost-intensive activity and G3 ensures that we work efficiently and effectively and we make real progress.”

The G3 has confidence in the synergy effects because Vision standards are very important worldwide. They make it a great deal easier for users, integrators or OEMs to incorporate cameras or frame grabbers in their applications and to reduce costs related to hardware and software. Among other things, the aim of the G3 is also to update Vision standards constantly, to develop them further and to achieve worldwide deployment by explaining the sense and the benefits of having standards in image processing. “Indeed, the G3 will grow even more, there will be G4, G5 or G6 and cooperation with countries such as China, Korea, India and in South America for example, Brazil,” says Sachio Kiura, Chairman of JIIA. Negotiations are already underway with Korea and China. “Worldwide co-operation on the subject of standards has advantages not only for the users but also for our members. It gives



Eric Carey: “In the field of intelligent traffic-management systems, mainly analogue cameras were dominant, but that has now changed because of the GigE Vision interface which permits long cable lengths and because of the GenICam interface, which makes implementation easy.”



Sachio Kiura: “The American and European markets have adopted digital technology very quickly.”

“ We expect the USB3 Vision to be adopted very quickly by the market. “



Tsuneo Sakuma: “What we want to prevent above all with FSF is that too many standards come onto the market.”



Chris Beynon: “We want to ensure that in future the fastest cameras on the market will continue to be able to operate with CoaXPress and, by evaluating feedback from users, we intend to achieve this.”

FICTION BECOMES REALITY

The new Ensenso N10 Stereo 3D camera
Realtime 3D – quick, easy, precise



- Global-Shutter CMOS Sensors
- Integrated Pattern Projector
- Precalibrated
- Multi-Camera Operation
- Free Software Package



ids ■ ■ ■
www.ids-imaging.com/ensenso

Ensenso N10 – the first stereo 3D camera by IDS. The compact and robust problem solver for all applications requiring quick and accurate 3D information on the fly – whether the objects are static or in motion. A frame rate of 30 fps at full resolution (752 x 480 pixels) makes the Ensenso N10 a perfect choice for quick volume determination, part presence checks, and robot gripper technology. The Ensenso N10 works right out of the box: Connect precalibrated camera and get started via MVTec HALCON interface or object oriented API. It's so easy!



Jochem Herrmann: "With G3, the international cooperation between the individual organizations, we want to avoid a situation in the future in which we have competing standards."



Bob McCurrach: "Help users and system integrators to find the optimal standard for their applications - and make it tangible to people outside our industry what the benefits of standardization and image processing are."

Plugfest: High-Tech Meets the Middle-Ages

In the medieval rooms of the Ballenhaus in Schongau it was not all theoretical discussion, there was some hands-on testing, too. "Our PlugFest has grown up alongside our two standards GigE Vision and GenICam. Today it is part and parcel of our International Vision Standard meetings," says Bob McCurrach, Director of Standards Development for AIA.

Here the manufacturers of cameras, frame grabbers and software tools come along and connect a device from manufacturer A with a device from manufacturer B and add the software of manufacturer C (Plug&Play) and test whether the products comply with the standards and are compatible. "When you put them all together you discover deficiencies, which is not necessarily so possible in the firm's own laboratories," explains Bob McCurrach. "The good thing about it," according to George Chamberlain, President of Pleora Technologies, "is that here technical knowledge is exchanged and discussed too, which really helps us to make progress." The most frequent faults, the experts say, arise as a result of the misinterpretation of standards. "That is what is always so significant about this standard work. We are still discussing formulations, e.g. of GigE Vision, to make sure that the requirements are understandable for everyone," explains Werner Feith, CEO of Sensor to Image. "In our experience standardized devices such as cameras work in 90% of cases; earlier, when there was no standardization, the rate used to be about 2%," remembers Werner Feith, and he continues: "If the inter-operability between devices does not work, we have the moral duty to find out the cause of the error, and at the next PlugFest to prove that it works. This is of benefit for the customers, the manufacturers and the industry, and every year we gradually become more Plug&Play."

” The most frequent errors at the plugfest result from the misinterpretation of standards.“

system manufacturers access to completely new markets," explains Jochem Herrmann. "The integration of components from a wide range of manufacturers is much easier if we have strong standards. What is more, standards enable manufacturers to save system costs and to accelerate the 'time-to-market' of their products," adds George Chamberlain, Managing Director of Pleora Technologies and member of the AIA Board.

Common Goal: to Capture New Fields of Application

Since the G3 has existed, the organizations have also presented themselves jointly at international trade fairs. "Some of the goals we are working towards are to help users and system integrators to find the optimal standard for their applications and to make the benefits of standardization and image processing tangible to people outside our



Discussing the benefits of standardization (f.l.t.r.): Mike Miethig (Teledyne Dalsa), Eric Gross (National Instruments) and Eric Carey (Teledyne Dalsa)



Testing, trying, speaking with each other:
Plugfest during International Standards Meeting Schongau



Plugfest participants with inspect:
Pascal Pellet (e2v) and Jean-Philippe Arnaud (Active Silicon)

PENNY PINCHER




The best value for your investment: you don't have to be a penny pincher to require that.

Getting value for money gives you the good feeling that you have done everything correctly. Our smallest



camera mvBlueFOX3 offers resolutions from VGA to 14 Mpxels and frame rates up to 600 fps. Exceptional performance – not only promised. Just try our USB 3.0 camera, and get more information at:

www.mv-penny-pincher.com

MATRIX VISION GmbH
 Talstr. 16 · 71570 Oppenweiler · Germany · Phone: +49-71 91-94 32-0
 info@matrix-vision.de · www.matrix-vision.com

RECOGNIZE



ANALYZE



DECIDE





Plugfest participants from Matrix Vision



Thomas Luebkeier, EMVA General Manager and inspect, leading magazine for machine vision

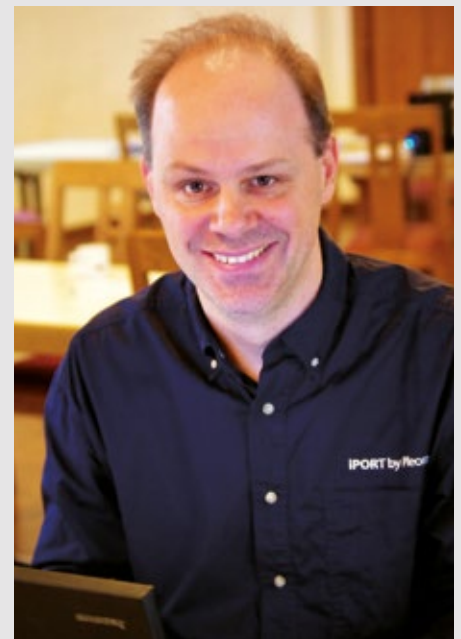


Plugfest participants discussing during a break

” The Future Standards Forum steers the evolution of standards for tomorrow.“



Christoph Zierl, Chris Beynon, Mike Miethig (f.l.t.r.): “A standard is never completely finished.”



Plugfest participant from Pleora



Thies Moeller, Technical Architect at Basler, "Experts from competing companies..."



...working shoulder to shoulder with each other," Max Larin, CEO of Ximea

“According to an AIA study, half of the new industrial cameras bought worldwide were equipped with GigE Vision and GenI-Cam interfaces.”

industry,” explains Bob McCurrach, Director of Standards Development for AIA. To this end, the G3 has for the first time composed a brochure which was introduced at the SPS/IPC/Drives Exhibition in Nürnberg. It gives a good overview, compares standards with each other, explains their benefits and thus assists the user to make the right choice. “The brochure is a great help, too, for example for customers who want to change from analogue to digital cameras,” Bob McCurrach adds. From his experience, Sachio Kiura observes that “the American and European markets have adopted digital technology very quickly. The change is moving more slowly in Asia, but now a lot of companies are also converting from analogue to digital because we have these standards. They are of great benefit to our customers.”

These international meetings are something unique because experts from different companies and different nations whose products compete on the market are here working shoulder to shoulder with each other. “When we come together at the International Standards Meetings,” explains Bob McCurrach, “the main focus is on communication and exchange with each other, whether in the consultation bodies or in the technical committees. Here communication is the key component.” “These international meetings reduce misunderstandings and help the entire industry to achieve higher quality vision standards,” stresses George Chamberlain. “We all have a

Optical inspection with Contact Image Sensors (CIS)

FAST AND PRECISE,
FLAT AND WIDE!



The KD series CIS from Mitsubishi Electric offers new possibilities for machine vision. Perfect for applications where flat or nearly flat objects and materials need to be inspected quickly, with high resolution and optimum colour quality.

Application areas: Print inspection, flaw detection on textiles, inspection of anti-counterfeit features, foils, holograms and other web-like materials, inspection of PCBs, wafers, solar cells or safety features, inspection of glass, metal and much more...

Imaging is our passion.

www.stemmer-imaging.com

Mitsubishi Electric CIS KD series
Contact Image Sensors

- ▶ Patented, tri-linear CMOS colour sensor
- ▶ Integrated white LED illumination
- ▶ 3 scan formats: A3, A1, A0
- ▶ Resolution: 600 dpi
- ▶ Scan rates: 960 mm/s and 44 µs/line
- ▶ Data output: 8- or 10-bit through up to 3 CameraLink Medium interfaces

STEMMER[®]
IMAGING



Plugfest participants from MVtec

common goal,” argues Bob McCurrach, “to introduce image processing into areas which have not been penetrated before but in which this technology can provide great advantages and innovative solutions.” In George Chamberlain’s view this could include above all segments of non-industrial application such as medicine, traffic, agriculture, solar- or wind-power generation and many more.

Future Standard Forum

For about a year now G3 has also set its sights on the future, and explicitly for this purpose founded the Future Standard Forum (FSF). “In the past we concentrated above all on existing standards, but there was no planning of new ones for the future,” says Jochem Herrmann. Now, with the FSF, we also look into the future to determine in which direction developments must go in order to fulfill the long-term needs of the

users of Machine Vision. What will be important in the future? How can we develop our standards to offer higher speeds, how can we reduce the costs for applications that only need moderate speeds? Which existing standards in the consumer industry, or from quite different branches of industry, could be useful? These are the kinds of questions that the FSF has to answer. So far there are two working groups within the FSF: one is responsible for digital interfaces and the other for extending the lighting standards. “The FSF Committee is currently working on an audit of where we stand at the moment. The next step will be to draw up a roadmap which should stretch five to 19 years into the future,” says Jochem Herrmann. “Standards live a long time,” adds George Chamberlain, “and that is why the effects extend even longer, perhaps about 20 years into the future, or further.” Indeed, Camera Link has already been in existence for 13 years

and GigE Vision has been in practical operation for seven years now, and both of them are still widely used. “In the FSF we want to converge ideas, feedback from users and market observations so that later, on the basis of this information, new and even better standards can be developed,” summarizes Werner Feith. “And what we want to prevent above all with the FSF;” agree Tsuneo Sakuma and Sadafumi Torii, both Vice-Chairman of JIJA, “is that too many standards come onto the market and that there are parallel developments. By preventing this we make life easier for the users.”

GenICam: Camera Describes Itself

At the International Standards Meeting in Schongau the spotlight was on GenICam because all the hardware interface standards supported by the G3, e.g. GigE Vision, USB3 Vision, CoaXPress, Camera Link and Camera Link HS, which control communication between camera and host, make use of the same software interface standard. GenICam enables a flexible description of all the camera’s features, in the form of an XML file usually stored in the camera’s firmware. A generic software can read this file and use these features to adjust parameters such as the analogue gain factor in the camera. In this way it is very easy to call up whichever camera function you want and have access to parameters. And if end-users decide to replace cameras already installed in the field with models by other manufacturers, this is no longer a problem because GenICam is used. The new cameras can be put into service and configured with very little effort. Christoph Zierl, Director of Product Management at MVtec Software, states that “the idea behind GenICam was a camera which describes itself. You ask the camera when it opens up: what are your features? Then the application learns what the current features are. This has been common practice in software development for many years now, I know, but we have adapted it for Machine Vision and the customers really appreciate it.” “There is no need to have a user manual anymore,” adds Eric Carey, Director of R&D at Teledyne Dalsa, “the XML file is loaded and it contains all the information needed to configure the camera.”

GenICam originated seven years ago in conjunction with GigE Vision and you might think that standardization should now have been completed. “A standard is never completely finished,” says Christoph Zierl, “because, as a result of developments in the field, there are always new challenges, and adaptations have to be made.” One good example of this, according to the experts, is the coordination of the special features of the recently approved USB3 Vision standard or the integration of 3D-cameras and -sensors.



Plugfest participants from Basler

At present, there are six GenICam modules which enable cooperation with the hardware standards: GenApi (camera configuration), SFNC (Standard Feature Naming Convention), GenTL (Generic Transport Layer), CLProtocol (explicitly for Camera Link), GenCP (Generic Control Protocol) as well as GenTL SFNC (recommends feature names and types for GenTL). In addition, the GenICam standard group has provided a reference implementation for GenApi. Werner Feith has many years' experience with the standards as his company develops and supplies the interface technology for a variety of different camera and frame grabber manufacturers: "When I visit a customer the first thing I have to do is to make it clear to him which of the six modules he needs. I think in the GenICam group we have more work to do here to achieve greater transparency."

Specify Conformity

One important issue for the members at the International Standards Meeting was to push forward GenICam Release 3.0. In Christoph Zierl's view: "Cameras will become ever more complex and will have more functions. Consequently, the storage needed for the XML file increases, as does the storage needed in the PC, and the time-lag from opening the camera until all the features are ready for the application increases, too. In particular customers using cameras in deep embedded systems would highly appreciate faster loading times and a smaller footprint of the reference implementation. The committee has responded to these requests and created a prototype for a new major release 3.0 which is up to five times faster than the upcoming version 2.4 and uses up to ten times less RAM at run-time. The new version is expected to hit the market mid-2014." "Another issue is the Transport Layer standard GenTL. We are striving to achieve 'plug & play', as is already common in the consumer market, in the Machine Vision sector, too. Application software should cooperate in a simple and generic way with a variety of different devices such as cameras (GigE Vision, USB3 Vision) or frame grabbers (Camera Link, CoaXPress, Camera Link HS) from different manufacturers, in the same way for instance that a scanner does when connected up to a PC. GenTL works and is also being increasingly used. So far, however, we have not developed official procedures to specify and validate conformity so that a product is authorized to carry the GenICam-GenTL logo. We need to work on this in the coming months," explains Christoph Zierl.

GenICam Goes 3D

The trend to 3D image processing is obvious. The standard-makers have recognized this and a few months ago launched a working group to investigate the requirements 3D



During Standards Committee Meeting: "Our plugfest has grown up alongside our two standards GigE Vision and GenICam."

camera manufacturers have vis-à-vis GenICam. "Initial results were presented here and the good thing about it was that all the major 3D camera manufacturers were present," said Christoph Zierl. "It is a sign of the resounding success of GenICam," stated Chris Beynon, Chief Technology Officer at Active Silicon, "that all the 3D camera manufacturers and distributors want to be involved in GenICam. They have recognized that the standard holds a lot of advantages for them." According to the experts, before 3D can be incorporated into GenICam, they have to investigate how suitable pixel formats are to be defined in 3D images. Explaining the next objective, Christoph Zierl declared that "in the course of next year we plan to integrate new pixel formats and special 3D features into the standard."

More Innovative and Quicker-to-Market

"The most impressive thing about GenICam for me is that the standard allows individual camera manufacturers to make their own specific innovations, e.g. integration of new functions which other manufacturers have not even thought of, and that these are able to work in a simple and uniform way with a third-party software. In the past everything was much more complicated and more difficult to apply. Camera manufacturers can now differentiate themselves from their competitors much better with special features and can penetrate into very specialized markets," stated Eric Gross, Senior Vision Software Engineer at National Instruments. This was confirmed by Christoph Zierl, who

added: "And they can get to market much faster with their new features. This is what is happening at the moment in the Machine Vision market and it is spreading to other markets, too."

AIA's global „2013 Machine Vision Camera Study“ study revealed that e.g. GigE Vision cameras, which include the GenICam Interface, already account for a 50% share of newly purchased industrial cameras. Over recent years, this combination has also conquered new markets. Giving an example, Eric Carey pointed out that, "in the field of intelligent traffic-management systems (ITS), mainly analogue cameras were dominant until up to ten years ago, but that has now changed because of the GigE Vision interface which permits long cable lengths and because of the GenICam interface, which makes implementation easy." "The modern hardware interface standards are based on GenICam and we are very satisfied with the current roll out," summarized Thomas Lübckemeier, General Manager of EMVA.

Further information

www.visiononline.org
www.emva.org
www.jiaa.org/en



German Version:

<http://www.inspect-online.com/topstories/topics/standards-offnen-neue-maerkte>



International Machine Vision Standards Meeting

Schongau for One Week Becomes Epicenter of Standards Development

Development engineers from leading image processing companies worldwide met under the patronage of G3 – a joint organization of the three international machine vision associations EMVA, AIA and JIIA – end of October in Schongau/Germany for this year’s second International Standards Meeting.

Organized by vision company Sensor to Image, the experts discussed the development of the current standards used in image processing. In addition, products and their compatibility to the standards were tested during a plugfest. Says Jochem Herrmann, Director Standards in the EMVA board: “For the first time, all actively hosted interface standards of the machine vision industry, namely USB3 Vision, Camera Link HS, GigE Vision, CoaXPress and the software interface standard GenICam were present at the meeting in Schongau. This made it the largest International Standards meeting ever with 73 persons representing over 30

companies from all over the world.” Herrmann emphasizes the positive atmosphere amongst the representatives who cooperated enthusiastically despite being competitors often in daily business.

Key Developments within the Standards

The GenICam software standard meeting agreed to force the development of GenApi 3.0 which will enable a significantly faster initializing of the camera’s features and will need less memory. Also, the participants discussed about further standardized camera features in the SFNC module, in particular regarding „UserSets“, „SequencerMode“, generic software trigger, firmware update, and TL-specific

features for USB3 Vision and CoaXPress. A proposal was made for integrating pixel formats and features for 3D cameras, along with an agreement to develop procedures to validate GenTL compliant products. GenICam 2.4 will be released end of 2013 and will include updated versions of the underlying modules GenApi (v2.4), GenTL (v1.4), and SFNC (v2.1). GenICam 3.0 is expected to be released in the second half of 2014.

The major work of the USB3 Vision committee in Schongau centered on clarifying open issues in order to roll them into a 1.0.1 standard release scheduled later this year. Another major item completed was the first official public certification event.

Since the past meeting, the first version of the compliance testing procedures and test suite had been released and it is likely the most comprehensive of any machine vision standard. Multi-camera synchronization, multiple image streams from a single camera, and enhanced power delivery for more power hungry cameras were research items discussed to be completed for the next meeting and in addition, research items slated for potential inclusion in a future version of the standard were discussed, including lowering the overhead of extremely fast frame rate acquisitions and more deterministic transfers for asynchronous events.

The Camera Link HS committee agreed to increase the speed of the C2 (CX4) cable to 5 Gbps/lane as is used by the Infiniband standard. This enables full use of the bandwidth available in off the shelf copper to fiber adapter enabling cable reach to 100 m. Also, the latch style CX4 connector for the frame grabber has been approved for use in support of the fiber converters. In addition, it was agreed to increase the speed of the M protocol to support default 3.125 Gbps, 5 Gbps, 6.25 Gbps and 8 Gbps to align with single lane SFP/SFP+ copper and fi-

1288



EMVA Standard Compliant

ber solutions using low cost FPGA families. Effective throughput with a single lane at 8 Gbps is about 760 Mbytes per second. In addition, it was agreed to add multiple ROI capability with each ROI able to support different data types and bit depths which supports 3D camera needs, or chunk data transfer from the camera. This feature adds a Frame Header and Frame Trailer packet to the video stream. Finally, a new virtual uplink channel was added to support commanding the camera to new ROI settings on a "frame by frame" basis. This "hardware to hardware" link bypasses the usual GenCP methodology to enable minimal latency camera interpretation with commands sourced from the application software or from the frame grabber hardware. The Camera Link HS committee targets a May 2014 release of Revision 2.0.

Major outcomes of the GigE Vision session were adding support for True Sense sparse color filter in the Pixel Format Naming Convention and the preparation to introduce 3D data support in GigE Vision. In addition, GigE Vision Validation Framework, a tool used to certify compliance for GigE Vision devices supporting the current version of the standard was driven forward. New developments for the next GigE Vision release 2.1 which is targeted for November 2014 are locking connectors with thumbscrews, 3D data support, testing specification to support the Validation Framework, and pixel formats fully referenced from Pixel Format Naming Convention (PFNC).

The CoaXPress standards meeting centered on the release 1.2 which is targeted for the fourth quarter 2014 and dealt with the subjects of faster speed (10 Gbps and 12.5 Gbps per cable; data striping to cope with cameras faster than one PC can cope with; forward error correction to correct any occasional bit errors on the link; and support for GenICam events.

The next international standards meeting will be held in the first half of 2014 in North America. www.emva.org

WE'LL DO CARTWHEELS FOR YOU



Yes, you read it correctly –

we'll do anything that's necessary to ensure that you, our customers, partners, readers and authors are happy.

We bring you in contact with the business leaders in the world of safety and security. So read our publications GIT SICHERHEIT + MANAGEMENT (circulation: 30,000; market leader in the region: Gemany, Austria, Switzerland) and GIT SECURITY (circulation: 20,000; region: EMEA Europe, Middle East, Africa). Click on and use our product platform PRO-4-PRO.com and the GIT Business Webs GIT-SICHERHEIT.de and GIT-SECURITY.com.

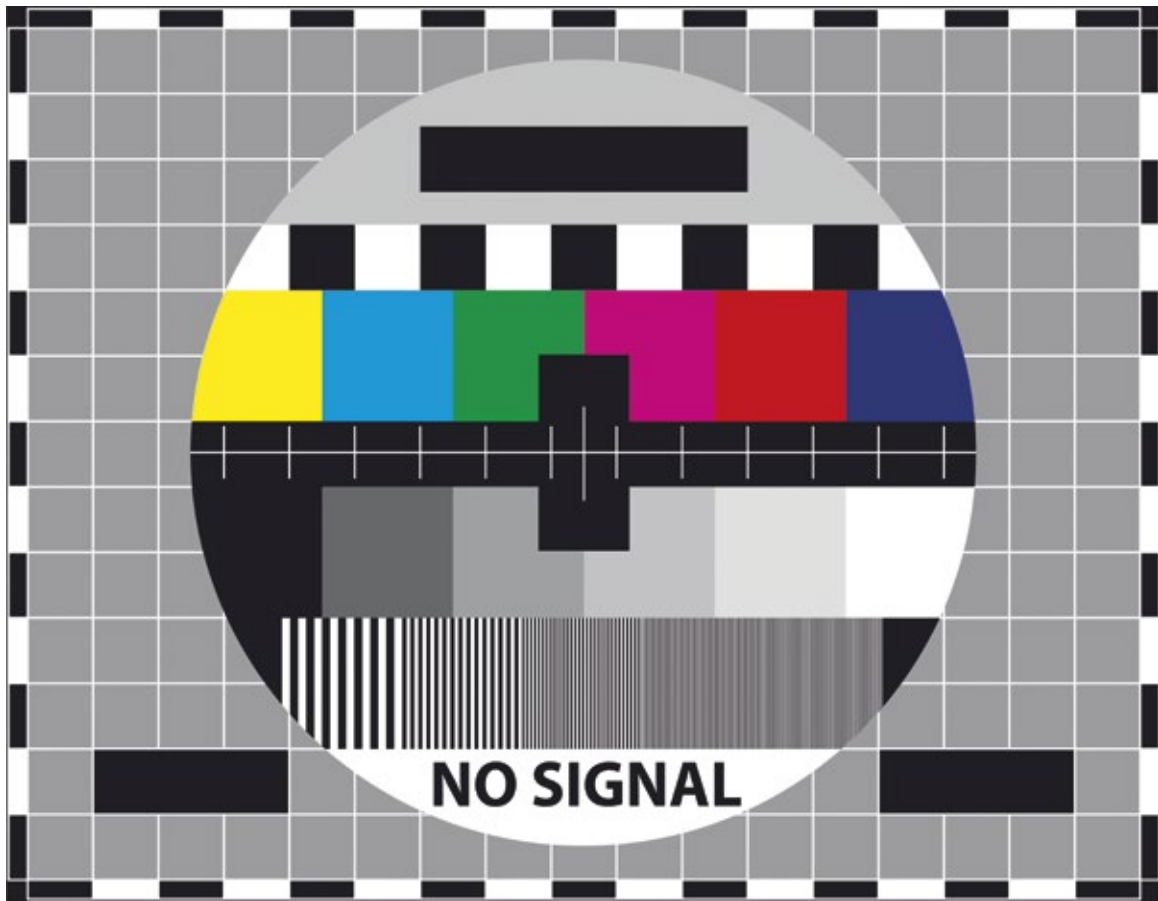
You can build on us. We are your Number One in communication with the world of safety and security.

www.gitverlag.com



GIT VERLAG

A Wiley Brand



Objective Comparison of Machine Vision Cameras

Practical Experiences with the EMVA 1288 Standard

Choosing the most suitable camera for a given machine vision application has become a much easier task using the Standard 1288 from the European Machine Vision Association (EMVA). It creates transparency by defining reliable and exact measurement procedures and by comparable data sheets. Version 3 has now been in use since 29 November 2010; Version 3.1 will be released soon with minor improvements and extensions and a data-sheet template.

The EMVA 1288 standard has been developed by a working group of over 20 leading manufacturers, vision users and research institutes within the European Machine Vision Association (EMVA). The group was founded in 2004 with the aim to assist users of industrial cameras in their selection process. The quality and the parameters of a camera (excluding the lens) or of an image sensor can be described by objective criteria because the operation of any digital camera system is based on elementary physical principles, which are well understood. Consequently, the aim of the working group has been to define a set of objective parameters that cover the complete functionality of line-scan and area-scan cameras, the necessary measurement procedures and data-presentation guidelines. In 2009, the Automated

Imaging Association (AIA), the European Machine Vision Association (EMVA) and the Japan Industrial Imaging Association (JIIA) signed a contract to jointly develop and promote global machine-vision standards. Meanwhile, the EMVA 1288 standard has become a globally accepted and used standard. This article gives a brief account of the key parameter categories for camera performance, some practical hints as to how to choose the best camera with a given application and some details about the upcoming release 3.1.

Four Key Parameter Categories for Camera Performance

The basic parameters that are provided by the EMVA 1288 standard are easy to understand. They can be reduced to a set of just four categories.

Sensitivity: The intensity of a camera signal or brightness of a camera image does not adequately describe its quality. The relevant parameter is the ratio between signal and noise, the so-called signal-to-noise ratio, abbreviated as SNR, at a given sensor illumination (irradiation) and wavelength. It turns out that the SNR of a camera with linear characteristics is just determined by two parameters, the quantum efficiency, i.e. the fraction of photons that are converted into charge units in a pixel, and the standard deviation of the dark signal noise. The best sensor theoretically conceivable would have a quantum efficiency of one and zero dark noise. This theoretical limit is used to describe how much the actual sensitivity of a real camera system falls short of the ideal one.

Linearity: A number of applications, especially measuring tasks, require a good linear relationship between the intensity of illumination and the digital gray scale value. Therefore, the EMVA 1288 standard specifies a measure, the linearity error, that describes the deviation from a linear regression for an illumination range from 5% to 95% of the sensor saturation. With release 3.1 the definition of the linearity error has been modified to give a more useful measure also for low sensor saturation.

Dark current: In an image sensor, a signal is generated which is not dependent on the intensity of the illumination but created by purely thermal effects. This so-called dark current accumulates charges over time. This effect determines the maximum useful exposure time of a camera. Therefore the dark current of a sensor is only important for rather long exposure times.

Nonuniformities: Due to the fact that a camera contains an array of sensor elements, these will not have exactly identical properties and therefore certain variations will inevitably occur. The image quality is heavily influenced by the type and intensity of these variations which will show as a static pattern ("fixed pattern noise") in the images. Two nonuniformities are con-

sidered: The dark signal non-uniformity (DSNU) describes the spatial variations in the dark image, and the photo response nonuniformity (PRNU), the spatial variation of the sensitivity. The standard computes values from these nonuniformities that help to understand easily how

the inhomogeneities influence the image quality. The question can then be answered whether these nonuniformities are visible to the human eye or – for measuring purposes – what is the smallest spatial variation of intensity that can be measured with the given sensor.

Data Template Sheet

The most important addition to the upcoming release 3.1 is a data template sheet. It includes a two-page summary sheet followed by detailed graphs presenting the camera performance parameters. This clear presentation of technical data

710 IMAGING LENSES.

In-stock for immediate delivery.



- 2D and 3D models for easy integration
- Downloadable datasheets

FEATURED PRODUCT ▶



TECHSPEC
Compact Fixed Focal Length Lenses

Need Help? Contact Our Experts Today!

www.edmundoptics.de/imaging

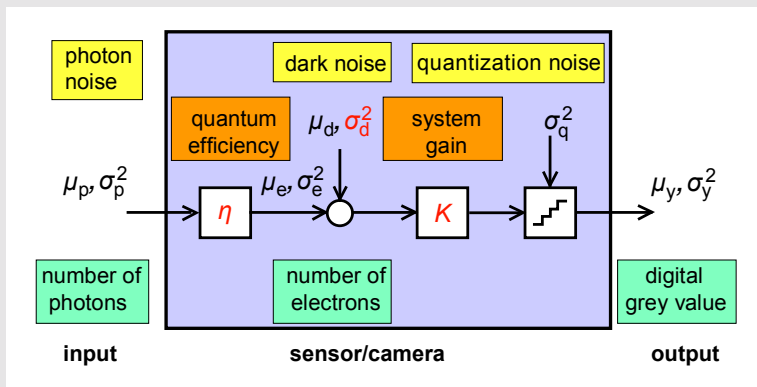


more optics | more technology | more service

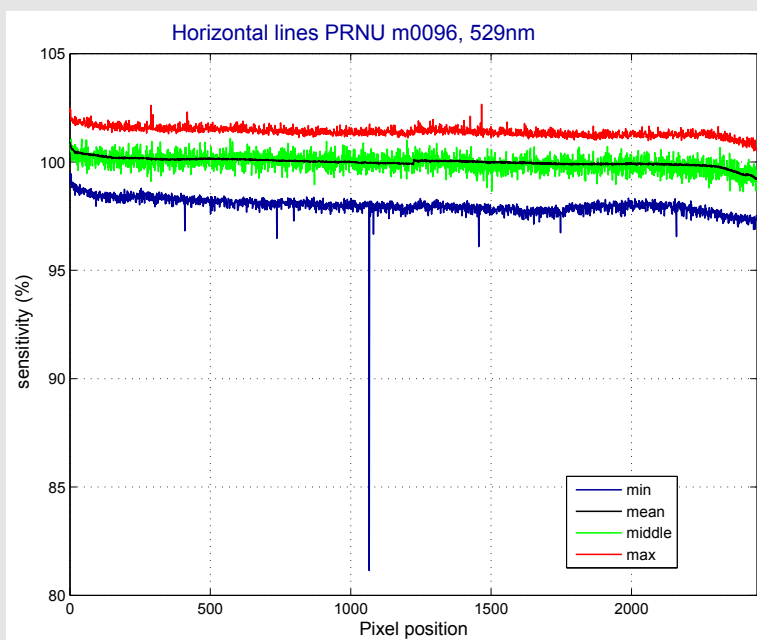
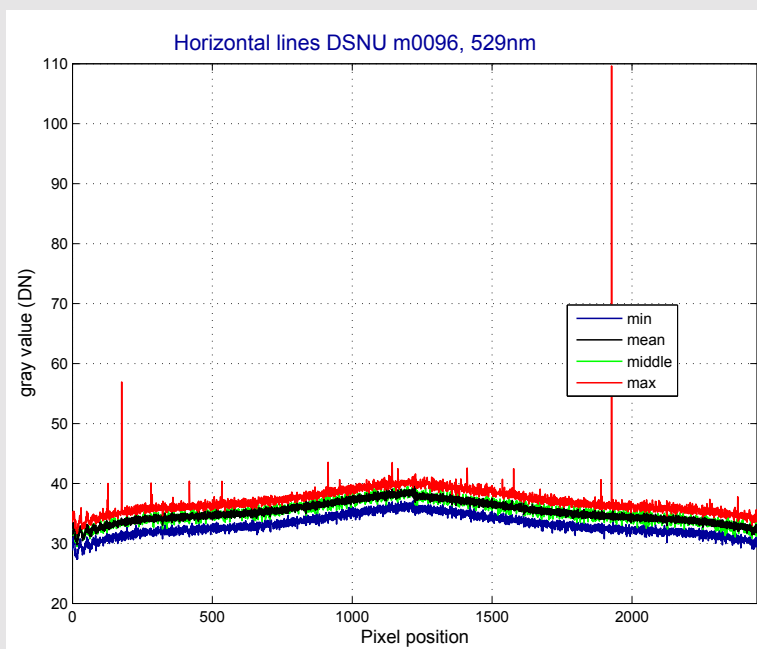
EO **Edmund**
optics | worldwide

+49 (0)721 6273730 | www.edmundoptics.de

Over 40,000 Technical Downloads Online Now!



The EMVA 1288 standard is based on a linear black-box model of a camera: the input signal is μ_p photons integrated over the exposure time, the output signal is the mean grey value μ_y and its variance σ_y^2 . No internal measurements are required. The unknown camera parameters, i.e. quantum efficiency η , variance of the dark noise σ_d^2 and camera gain K marked in red are estimated by the input/output relationship.



New to release 3.1 are profile plots of the dark signal nonuniformity (DSNU) and photo response nonuniformity (PRNU). These plots give a clear indication of the type of nonuniformities of the camera or

sensor. A few hot pixels are visible in the maximum profile plot of the DSNU and a few defective pixels are visible in the minimum profile plot of the PRNU.



guidelines further increase transparency and comparability.

Practical Usage

The camera parameters given by the EMVA 1288 standard can be used to give detailed answers and to choose the best possible camera for a given application. Here only a few examples can be given. If enough light is available for your application, then the most critical parameter for a good camera signal is a high SNR and a low PRNU. In light-critical applications a camera with the lowest possible dark noise signal is the best choice. If you have to observe scenes with high contrast (very dark and bright parts) in the same image, choose a camera with the highest dynamic range DR. This figure can be derived from the signal/noise diagram of the camera.

Easy Access to the EMVA 1288 Standard

More information on the standard and licensing documents are available at www.standard1288.org. The complete standard can be downloaded free of charge. The working group is open to all manufacturers, system integrators and distributors of cameras and image sensors. Institutes carrying out research in this field are also welcome to join. Participation is free of charge. Producers who wish to introduce 1288-compliant products must first obtain a license from the EMVA, which is also free of charge.

Companies providing services/equipment for the EMVA 1288 standard

- (in alphabetical order)
- Aeon, Hanau Germany: http://www.aeon.de/pages/ip_sensor.aspx
- Aphesa, Belgium: www.aphesa.com/
- Image Engineering, Cologne, Germany: <http://www.image-engineering.de/>

EMVA 1288 courses offered:

18 February 2014 and 2 April 2014 Aeon, Hanau, Germany, in German language; courses in English language and/or in-house courses are given on request (http://www.aeon.de/pages/ed_bv_emva.aspx)

Author

Prof. Dr. Bernd Jähne,
Chair of the EMVA 1288 Standard Committee

Contact

Heidelberg Collaboratory for Image Processing (HCI)
University of Heidelberg, Germany
Tel.: +49 6221 54 88 75
bernd.jaehne@iwr.uni-heidelberg.de
<http://hci.iwr.uni-heidelberg.de>

Certified Support

Handling Sophisticated Algorithms Easily

Interview with **Dr. Klaus-Henning Noffz**
from **Silicon Software**



VisualApplets by Silicon Software allows the programming of FPGAs for use in imaging applications via a graphic user interface. The second version of the tool was presented recently. Managing Director Dr. Klaus-Henning Noffz discusses the background to this interesting technology, the significance of VisualApplets Competence Centres (VACC) and VisualApplets Design Centres (VADC) as well as the cooperation with Stemmer Imaging.

The Stemmer Imaging headquarters in Germany were recently appointed a VADC, the subsidiary in the UK as a VACC. What do these appointments imply from your point of view and what is the general purpose behind these categories?

Dr. Noffz: With VACC and VADC we have introduced a two-tier certification system for VisualApplets. This is a quality statement to help the users of VisualApplets to find a suitable and competent partner for their VisualApplets projects. A VisualApplets Competence Centre can conduct training and provide in-depth consultation. Even if programming cannot be implemented directly by our VACC partner companies, the certification of trained employees allows them to understand the project requirements and to make recommendations vis-a-vis a VADC partner or direct referral to Silicon Software. This quickly provides customers with qualified responses on the opportunities and implementation of complete or partial projects.

Our partner companies who have achieved VADC certification go one step further: they are able to solve image processing requirements via FPGA programming with VisualApplets themselves. This helps us to establish an international, decentralized competence network which allows real-time implementation on FPGAs.

How many partners hold this certification?

Dr. Noffz: The interest of our partners in a qualified recommendation of image processing software to their customers has, admittedly, taken us by surprise. In the past two years we have certified close to 92% of our partner companies as VACCs. This is a tremendous success. However, Stemmer Imaging is first partner company to have successfully achieved the second level, VADC. This has given us a very strong presence in European countries to realize customer-specific projects. We hope to expand the partner network with further potential partners, especially from Asia and Israel.

What are the benefits for VisualApplets users when cooperating with your VACC/VADC partners?

Dr. Noffz: There are a number of approaches for the implementation of projects. There are users who wish to retain control of their entire project and need to perform programming themselves. These customers often require introductory training or application-specific coaching. Many customers want to skip the first step and modify a solution or develop it further. They commission programming and are coached, for example, on how to implement adaptations for new cameras or sophisticated algorithms themselves. These customers require a VDAC partner to realize VisualApplets applications.

A customer can be assured that our VACC and VADC partners have state-of-the-art knowledge of the technology and can guarantee competent advice and timely implementation. In addition, decentralized, competent support may also prove useful in the local language. As the duration of certification is limited, our partners undergo training on a regular basis.

How do you cooperate with your VACC and VADC partners?

Dr. Noffz: Next to training on site, our partners are trained via tele-conferences on specific topics or application foci, for example, 3D measurement. And our partners are never left standing alone: as the software manufacturer we always provide tips on optimization and can provide assistance quickly for second level support or application problems.

We have prepared a so-called technical short description (TSD) which queries project-relevant criteria and values in brief

form. This description proves very useful for the high demands of real-time conditions or algorithmic processing during the communication between customers and partners, and, of course, with us.

What are the main features of VisualApplets?

Dr. Noffz: Version 2.0 of VisualApplets was launched in May 2013. Operation has been made even simpler with this version and we were able to design error detection and automatic rectification even more effectively. In addition, the scope of functions both for the process imaging libraries and simulation as well as the analysis tools has been extended considerably. This not only helps our customers, but also our partners who can in turn implement customer projects safely and quickly.

For which fields of application is the software particularly suited?

Dr. Noffz: VisualApplets contains so-called basic operators and complex operators. The basic operators enable simple visual programming and the creation of own operators, compiling own libraries and programming of applications. There are hardly any dependencies with regard to our own libraries offered.

The complex operators enable the implementation of applications via simple programming designs. For example, an application for object segmentation and classification only requires a single operator for a blob analysis to fulfill the task in real-time.

In order to best support users with their developments, we include over 60 design examples from different areas. Partial solutions for virtually all applications are available, ranging from adaptive binarisation via a variety of filter operations, color processing, pattern matching as well as compressions. A main reason for the use of VA is the programming option of the triggers and digital control signals.

Can you give us some examples where VA has already been employed with success?

Dr. Noffz: Quoting the most typical examples of the numerous applications is somewhat difficult. We had an interesting experience in Asia with an application for self-controlling welding robots, as this clearly displayed the benefits of real-time processing without CPU effect. In this example we also managed to exceed the time requirements for processing by a factor of 5. We also had a completely different experience with manufacturers of cameras who employed the software for sorting sensor data in the development phase. The programming designs are not very elaborate and can be implemented quickly. This is an excellent example for time-to-market.

However, two examples were very important for us, and these were presented at the Vision trade fairs 2011 and 2012 by Stemmer Imaging. In the first demonstration, free-falling, colored tennis balls were recognized and sorted, in the second a ball was balanced real-time. Both these interesting exhibition demonstrations showed us that our partners are able to implement highly demanding applications with VA without difficulty and are already solution partners for our customers.

Which projects have already been implemented with VADC partners?

Dr. Noffz: Often it is the small additional functions which make the difference to using VisualApplets. Stemmer Imaging has already made many of these adaptations for customers. Examples of such individual system configurations include adaptation of the latest camera to a project, individual timing of peripheral controls, the synchronization of cameras, or stitching, i.e. seamless sequencing of camera images. The use of a high-pass or low-pass filter, edge detection or noise suppression are typical examples for additional functions which can be programmed with VisualApplets without any load on the CPU, ensuring high data rates and providing considerable added value.

What are the requirements necessary for users to work with VA?

Dr. Noffz: VisualApplets is directed at software programmers. Time and time again, we have seen that hardware programmers can develop designs directly without training and are able to realize high performance programs with VisualApplets. It is even possible for newcomers to adapt or create new designs after a short period of time. Of course, experience in imaging is useful, but not essential. As analytical tools and automatism have been integrated in the image processing software and as a high level simulation also is available, the user can concentrate on his imaging problem and forget that he is dealing with hardware programming. The only requirement that remains for the user is enjoying imaging.

Contact

Silicon Software GmbH, Mannheim, Germany
Tel: +49 621 789 507 0
info@silicon-software.de
www.silicon-software.de

Stemmer Imaging GmbH, Puchheim, Germany
Tel: +49 89 809 02 0
info@stemmer-imaging.de
www.stemmer-imaging.de

About Allied Vision Technologies

Founded in 1989, Allied Vision Technologies GmbH of Germany designs, produces and sells cameras and components for image processing in various applications including industrial inspection, medical imaging, scientific experimentation, security, traffic monitoring, logistics and multimedia entertainment.

A Camera for Every Application

With innovative products, superior manufacturing quality and a service-driven organization, Allied Vision Technologies is well established as a premier provider of digital camera solutions for machine vision worldwide. Its product portfolio offers one of the widest choices of high-performance cameras in the market. Black-and-white, color, high resolution, high speed or infrared: for every application there is the right AVT camera.

High Quality Made in Germany... and Canada

AVT cameras are manufactured according to the highest quality standards in the company's own production facilities located in Germany and Canada. Highly skilled staff and on-going investment in the state-of-the-art facilities guarantee the best possible product quality. Every single camera leaving Allied Vi-



sion Technologies' production undergoes a thorough test including operation under high temperature conditions. AVT is ISO 9001-certified and also holds an ISO 13485 for the development and production of medical equipment.

First-Class Service, Worldwide

Allied Vision Technologies is represented in more than 30 countries worldwide by a network of distribution partners selected to offer a high level of service and support locally. The company has its own sales and support offices in Germany (Stadtroda), the USA (Newburyport, MA), Canada (Burnaby, BC), Singapore and China (Shanghai).

Office(s)

Allied Vision Technologies
Canada Inc.
Canada
Tel.: +1 604 875 8855
Fax: +1 604 875 8856

Allied Vision Technologies Inc.

United States of America
Tel.: +1 877 USA 1394
Fax: +1 978 225 2029

Allied Vision Technologies Asia Pte. Ltd.

Singapore
Tel.: +65 6634 9027
Fax: +65 6634 9029

Allied Vision Technologies (Shanghai) Co. Ltd.

China
Tel.: +86 21 64861133
Fax: +86 21 54233670

Management

Frank Grube, CEO

Foundation

1989

Staff

101–250

Products

Cameras, Interfaces/Cables/ Peripherals, Optics

Applications

Character Recognition, Digitalization, Inspection Piece Parts, Inspection Webbed Material, Part Identification, Robot Vision 2D, Robot Vision 3D

Industries served

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

Associations

AIA, EMVA, JIA, VDMA

Regions served

Asia, Europe, Latin America, North America, national



Allied Vision Technologies GmbH

Taschenweg 2a
07646 Stadtroda
Germany
Tel.: +49 36428 677 0
Fax: +49 36428 677 24
info@alliedvisiontec.com
www.alliedvisiontec.com

See our ads on page 11



About Basler



Basler Gives Technology the Power of Sight

Basler is a leading global manufacturer of digital cameras for industrial and video surveillance applications, medical devices, and traffic systems. Founded in 1988, the company has long-year experience in vision technologies and has designed and manufactured high quality digital cameras for more than 15 years. Basler employs more than 350 people at its headquarters in Ahrensburg, Germany, as well as in international subsidiaries and offices in the U.S., Singapore, Taiwan, Korea, and China.

Our Promise

Basler grew to be the biggest volume industrial digital camera producer by continually reinvesting in research, development and superior manufacturing capabilities. We lead the development of the technical standards that the entire vision industry relies on. In our manufacturing facility in Ahrensburg

we learn through on-going experience to improve critical aspects of our cameras' performance, such as image quality, reliability, repeatability and ease of use. Each and every camera undergoes exhaustive mechanical, electrical, and optical testing before leaving our facility. That's how we ensure our cameras' superior performance and reliability. And it's how we can offer the industry's longest warranty.

Our Products

Our product portfolio offers customers the vision industry's widest selection of industrial and network cameras. Today it includes some 300 models – and it's still growing. Only Basler offers a full portfolio of line scan, area scan and network cameras. Our expertise includes different sensor technologies and covers all important standards and promising emerging interfaces: Gigabit Ethernet, FireWire, Camera Link and USB 3.0.

Office(s)

Basler, Inc
United States of America
Tel.: +1 610 280 0171
sales.usa@baslerweb.com

Basler Asia Pte Ltd.

Singapore
Tel.: +65 6425 0472
sales.asia@baslerweb.com

Management

Dr. Dietmar Ley, CEO
Alexander Temme,
Director of Sales
Herfried Beckdorf,
Head of European Sales

Foundation

1988

Staff

251–500

Products

Cameras

Applications

Character Recognition,
Digitalization, High Speed
Analysis, Inspection Piece Parts,
Inspection Webbed Material,

Material Testing, Metrology
2D, Metrology 3D, Part
Identifikation, Particle Analysis,
Robot Vision 2D, Robot Vision
3D, Symbol Recognition, Others

Industries served

Automotive and Suppliers,
Electronics/Semiconductors,
Energy/Water/SolarTechnology,
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

Platforms supported

Windows, Linux

Associations

AIA, VDMA

Regions served

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



Basler AG

An der Strusbek 60-62
22926 Ahrensburg
Germany
Tel.: +49 4102 463 500
Fax: +49 4102 463 599
sales.europe@baslerweb.com
www.baslerweb.com



About Baumer

The Baumer Group is leading at the international level in the development and production of sensors, shaft encoders, measuring instruments as well as components for automatic image processing. As an owner-managed family business, Baumer employs about 2,300 workers worldwide in 37 subsidiaries and 19 countries.

Capture the Essential: Industrial Cameras and Vision Sensors

Merging cutting-edge technologies and customer-focused consultancy has made us one of the leading manufacturers for image processing components. We offer a unique range of products, from industrial cameras and vision sensors to image processing components, for many different applications across varied industries. The location in Germany accommodates R&D and production under one roof which ensures our high product quality standards. Prior to delivery, every component undergoes rigid electrical and optical testing and inspection.

High-performance Industrial Cameras

High frame rates, exceptional image quality and ease of integration – that's what our industrial cameras stand for. Their robust, industrial design is the basis for long-term stability and precise image analysis. The portfolio includes CCD- and CMOS-based matrix cameras with GigE Vision, Camera Link, USB3 Vision and FireWire



interfaces. Our many years of expertise make us understand your requirements to provide the optimum product for your application. Where standard products are too limited, we work together with you to develop customized components that fit perfectly to your application.

Easy and Intuitive Vision Sensors

Intuitive operation, fast and easy integration and configuration within minutes: These attributes characterize the Baumer VeriSens vision sensors. They can perform up to 19 different feature checks on object position and location, presence and completeness, reading and verifying human-readable imprints (OCR/OCV) or bar and matrix codes including GS1 codes. High process reliability is achieved with our patented FEX image processor. Models with C-Mount design and integrated flash controller are also available as well as models with integrated white and infrared illumination.

Office(s)

Baumer Electric AG
Switzerland
Tel.: +41 52 728 1122
sales.ch@baumer.com

Baumer Italia S.r.l.
Italy
Tel.: +39 02 4570 6065
sales.it@baumer.com

Baumer Ltd.
USA
Tel.: +1 860 621 2121
sales.us@baumer.com

Baumer (China) Co., Ltd.
China
Tel.: +86 21 6768 7095
sales.cn@baumer.com

Baumer Korea
Republic Korea
Tel.: +82 31 995 6377
sales.kr@baumer.com

Baumer (Singapore) Pte. Ltd.
Singapore
Tel.: +65 6396 4131
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, Europe, North America



 **Baumer**
Passion for Sensors

Baumer GmbH
Pfungstweide 28
61169 Friedberg
Germany
Tel.: +49 6031 60 07 0
Fax: +49 6031 60 07 70
sales.de@baumer.com
www.baumer.com

See our ad on page **7**

F

About IDS Imaging Development Systems

A Leading Manufacturer of USB 3.0, 2.0 and GigE Industrial Cameras



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

Around half of our 145 employees are engineers in hardware and software development as well as engineering and applications. Assisted by our skilled sales team, they provide our customers with service and support, both before and after sales.

Founded in 1997, we are now internationally represented by offices in the USA, Japan, and France and through our network of distributors 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. We have 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 us as sustainable development and production.

IDS Product Portfolio

Industrial cameras with

- USB 3.0, 2.0 and GigE interfaces,
- CCD & state-of-the-art CMOS sensors from e2v and CMOSIS,
- Resolutions from VGA up to 10 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 and 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) – Pharmaceutical - Microscopy - Science and research – Robotics - Semiconductor manufacturing – Transport and logistics – Packaging - Printing - Surveillance and security – ITS (Intelligent Traffic Systems).



Office(s)

Head Office:
 IDS Imaging Development Systems GmbH
 Dimbacher Straße 6-8
 74182 Obersulm
 Germany
 Tel.: +49 7134 961 96 0
 Fax: +49 7134 961 96 99
 info@ids-imaging.com
 www.ids-imaging.com

IDS Imaging Development Systems Inc.
 400 West Cummings Park,
 Suite 2050
 01801 Woburn, MA
 United States
 Tel.: +1 781 787 0048
 Fax: +1 781 287 1258
 usasales@ids-imaging.com

IDS Imaging Co., Ltd
 Koike Building No. 2, 5F, Room C
 1-1-16 Kita-Shinagawa,
 Shinagawa-ku
 140-0001 Tokyo, Japan
 Phone: +81 36433 0777
 apacsales@ids-imaging.com

IDS Imaging Development Systems GmbH
 5-7 Rue Sauval
 75001 Paris, France
 Tel.: +33 1 422 147 04
 m.mahmoudi@ids-imaging.fr

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, JIA, 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

Dimbacher Str. 6-8
 74182 Obersulm
 Germany
 Tel.: +49 7134 961 96 0
 Fax: +49 7134 961 96 99
 info@ids-imaging.com
 www.ids-imaging.com

See our ad on page

13



About Olympus Europa Holding

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.

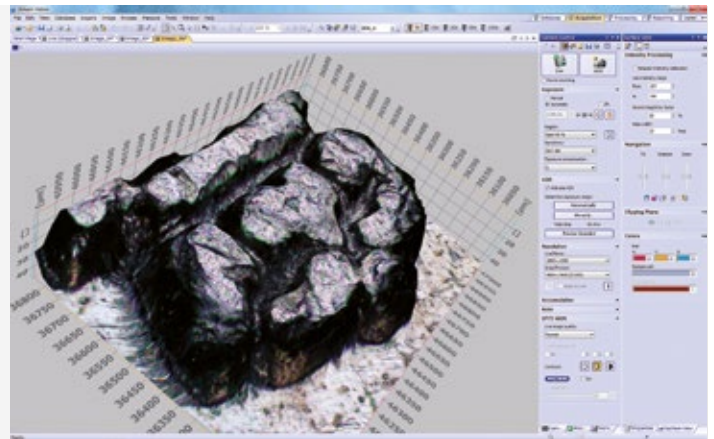
The high-end, fully-automated DSX500 and DSX500i offer advanced options such as 3D analysis, without compromising ease-of-use. The DSX500i is the first industrial inverted microscope, opening up the benefits of advanced light microscopy to a wider range of analytical tasks.

The Lext OLS4000 – Advanced Surface Analysis

The examination of surface topology is a vital requirement across industry sectors with an ever-increasing demand for accuracy. The Lext OLS4000 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 1.8 – Documentation and Analysis Technology

The enhanced Olympus Stream 1.8 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
Arni Ekholm
Yasuo Takeuchi
Nick Williams

Prof. Dr. Dr. Ernst-Günter Afting
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

Olympus Europa Holding GmbH

Wendenstr. 14–18
20097 Hamburg
Germany

Tel.: +49 40 23773 0

Fax: +49 40 23773 4647

microscopy@olympus-europa.com

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



See our ad on **Outside Back Cover**

About Point Grey Research

Point Grey is a world-leading designer and manufacturer of innovative, high-performance digital cameras for industrial, life science, traffic, and surveillance applications. We offer a unique and comprehensive portfolio of USB 3.0, GigE, 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 groundbreaking 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 cannot be printed until the cam-

era 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
- 175 staff worldwide
- ISO 9001:2008 registered company



Office(s)

Headquarter
Point Grey Research, Inc.
12051 Riverside Way
V6W 1K7 Richmond, BC

Canada
Tel.: +1 604 242 9937
Fax: +1 604 242 9938
info@ptgrey.com

Management

Michael Gibbons
Director of Sales & Marketing

Joerg Clement
Business Development Manager
– EU Operations

Foundation

1997

Staff

175

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



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



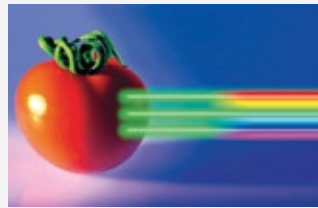
See our ad on page

5

About CTR

- Industrial / Inline Vision Systems
- System integration
- Raman Imaging
- Terahertz
- Spectral Imaging
- Partner along the entire R&D value chain – feasibility studies, conception, tests, prototyping, individual system/product solutions.

CTR is an industry-oriented Research & Development centre supporting companies to optimise existing procedures and develop new solutions in the field of automated process and quality control.



Competence

Optical sensors (x-Ray-UV-VIS-NIR-MIR-IR-THz), spectral imaging, spectroscopy, image processing, high speed raman, laser technology, terahertz spectroscopy, fluorescence spectroscopy, statistical classification, software development, handling/automation technologies, optical simulation/design, MEMS/MOEMS.

CTR – Carinthian Tech Research AG
 Technologiepark Villach
 Europastraße 4/1
 9524 Villach
 Austria
 Tel.: +43 4242 56300
 info@ctr.at
 www.ctr.at



Management

DI Simon Grasser
 Managing Director
 simon.grasser@ctr.at

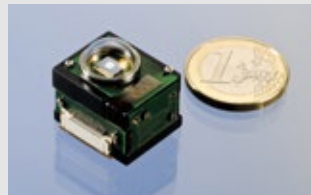
Dr. Raimund Leitner
 R&D machine vision/
 molecular imaging
 raimund.leitner@ctr.at

Foundation

1997

Staff

11-50



Applications

Character Recognition, High Speed Analysis, Industrial Inspection, Part Identification, Particle Analysis, Machine Vision, Cell Imaging, Industrial Sorting, Robot Vision 2D/3D, Thermography, Optical Simulation



Industries served

Life Sciences, Medical, Biomedical Science, Pharmaceuticals/Cosmetics/Chemicals, Foodstuffs/Beverages, Plastics/Paper/Wood Industry, Textile/Leather Industry

Associations

other

About Framos



Since more than 30 years, Framos serves customers in the field of industrial image processing. We offer a comprehensive range of sensors, cameras and image processing components as well as development support services and complete solutions for image processing applications.

“Teaching machines to see” is what drives us. For us, image processing is a fascination, the future and our mission. Our

30 years of participation in a revolutionary new technology defines our three areas of business:

- **Imaging Products** – Components for image processing
- **Engineering Support** – Development support for cameras, modules and software
- **Imaging Solutions** – Customized image processing solutions

Framos GmbH
 Mehlbeerstr. 2
 82024 Taufkirchen
 Germany
 Tel.: +49 89 710667 0
 Fax: +49 89 710667 66
 info@framos.de
 www.framos.com



Office(s)

Framos Electronics Limited, UK
 Tel.: +44 1276 404 141
 info@framos.co.uk

Framos Italia srl, Italy
 Tel.: +39 039 68 99 635
 info@framos.it

Framos France, France
 Tel.: +33 1 395 207 82
 info@framos.fr

Framos Technologies Inc., CA
 info@framos.ca

Management

Dr. Andreas Franz, CEO
 Dr. Ronald Müller,
 Head of Product Marketing

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, Aptina, Smartek Vision, Lumenera, Datalogic, Emergent Vision, Toshiba Teli, Visiosens, 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

65

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 imaging with GigE Vision, Camera Link, USB 3.0 and CoaXPress interfaces.



JAI Group 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



See the possibilities

See our ad on page **43**



Office(s)

JAI Germany
Tel.: +49 6022 26 1500
camerasales.emea@jai.com

JAI, TVI Vision Oy, Finland
Tel.: +358 207 579 518
camerasales.emea@jai.com

JAI Inc. USA
Tel.: +1 408 383 0300
camerasales.americas@jai.com

JAI Ltd. Japan
Tel.: +81 45 440 0154
camerasales.apac@jai.com

JAI Ltd. China
Tel.: +86 21 61800533 053
camerasales.apac@jai.com

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
Todd Miller, General Manager,
JAI Inc.

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

Expert for Customer Series

The well-established German camera manufacturer focuses on customer-specific industrial camera solutions.

Kappa's Strong Point: Rugged Cameras

Kappa develops and manufactures rugged cameras for extreme environments.

De Novo Development

Due to its innovation capacity and profound experience Kappa is an expert partner for challenging visualization projects.



The Kappa Camera Line

Kappa's relatively small but distinct line of high-performance cameras also serves as a platform for economic customer-specific adaptations.

Kappa optronics GmbH
Kleines Feld 6
37130 Gleichen
Germany
Tel.: +49 5508 974 0
Fax: +49 5508 974 109
info@kappa.de
www.kappa.de



See our ad on page **47**



Office(s)

Kappa optronics GmbH
Bureau France
France

Tel.: +33 561 27 82 81
Fax: +33 561 27 81 15
info@kappa-optronics.fr

Kappa optronics Inc.
United States of America
Tel.: +1 626 256 43 43
Fax: +1 626 256 64 84
info@kappa-optronics.com

Management

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

Foundation

1978

Staff

51–100

Products

Cameras, Consulting, R&D,
Software, Other

Applications

Digitalization, Inspection Piece
Parts, Inspection Webbed
Material, Material Testing,
Metrology 2D, Part Identifikation,
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

Associations

AIA, EMVA, VDMA, Other

Regions served

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

About LMI Technologies

At LMI Technologies, we are passionate about developing innovative 3D scanning, measurement, and data visualization technologies that solve complex problems in a simple way. We take our knowledge and experience from working in the field and connect our customers to 3D solutions that enable them to achieve better business results. We build our products from the ground up; from concept, design, to manufacturing. With offices worldwide, we are committed to delivering the best 3D sensors, 3D smart sensors, and 3D scanners for your application.



LMI Technologies Inc.
1673 Cliveden Avenue
Delta, BC, V3M 6V5
Canada
Tel.: +1 604 636 1011
Fax: +1 604 516 8368
info@lmi3d.com
www.lmi3d.com



Office(s)

LMI Technologies Inc.
Head Office:
1673 Cliveden Avenue
Delta, BC, V3M 6V5
Canada
Tel.: +1 604 636 1011
Fax: +1 604 516 8368

LMI Technologies BV
Kerkrade, The Netherlands
Tel.: +31 45 850 7000
Fax: +31 45 574 2500

LMI Technologies GmbH
Munich, Germany
Tel.: +49 89 435 715513
Fax: +49 89 435 715577

Management

Terry Arden, CEO

Foundation

1976

Staff

51-100

Products

3D Scanners, 3D Smart Sensors

Applications

3D Inspection, 3D Scanning, 3D Visualization, Character Recognition, Digitalization, Error Proofing & Gauging, High Speed Analysis, Inspection Piece Parts, Metrology, Part Identification, Rapid Prototyping, Reverse Engineering, Robot Vision

Industries served

Automotive, Factory Automation, Transportation, Rubber & Tire, Metal, Packaging, Wood, Machine Vision, Electronics, Energy, Medical, Rail, Welding, Manufacturing, Visual Effects & Games, Arts & Archeology and more

Associations

AIA, EMVA, VDMA

Regions served

Global

Companies represented

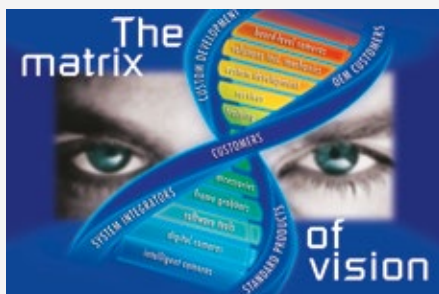
LMI Technologies



See our ad on page **37**

About Matrix Vision

In addition to frame grabbers, Matrix Vision offers a large spectrum of digital cameras – from USB, GigE with Power over Ethernet to intelligent cameras. A wide range of USB 3.0 cameras with CMOS sensors up to 14 megapixels will be offered with the USB3 Vision Standard. The mvImpact software provides optimal support for the hardware in applications such as measurement and OCR/OCV, as well as pattern, barcode, data matrix, object and colour recognition. With mvImpact Acquire, there



is a common programming interface for digital cameras on the market.

3D cameras for static and moving objects are one of the main focuses of our current development with an impressive accuracy of up to 1 µm.

Matrix Vision GmbH
Talstr. 16
71570 Oppenweiler
Germany
Tel.: +49 7191 9432 0
Fax: +49 7191 9432 288
info@matrix-vision.de
www.matrix-vision.com



Office(s)

Matrix Vision France
Tel.: +33 1 39429216
Mobile: +33 608860979
info-france@matrix-vision.com

Matrix Vision Italy
Tel.: +39 0308982839
Mobile: +39 3403161382
info-italy@matrix-vision.com

Management

Erhard Meier,
General Manager Business
Uwe Furtner,
General Manager Technic
Dietmar Unser, Sales Manager
Marcus Bleise,
International Sales Manager

Foundation

1986

Staff

51-100

Products

Digital Cameras, USB 3.0 Cameras, 3D Cameras, Frame Grabber, Lighting Equipment, Optics, Processors, R&D, Smart Cameras/Embedded Systems, 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, 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, Symop, VDMA, Other

Regions served

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



See our ad on page **15**

About Micro-Epsilon

Micro-Epsilon is a medium-sized family-run company which plays a leading role in measurement technology. For more than 40 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 very highest levels of precision are created through intensive research and development processes, unique know-how and a broad network of collaborative operations.



Micro-Epsilon Messtechnik GmbH & Co.KG

Königbacher Str. 15
94496 Ortenburg
Germany
Tel.: +49 8542 168 0
Fax: +49 8542 168-90
info@micro-epsilon.com
www.micro-epsilon.com



See our ad on page **53**

Office(s)

Micro-Epsilon UK Ltd
United Kingdom
Tel.: +44 151 3556070
info@micro-epsilon.co.uk

USA Headquarters
Tel.: +1 919 787-9707;
me-usa@micro-epsilon.com

China
Tel.: +86 10 64398934
info@micro-epsilon.com.cn

Czech Republic
Tel.: +420 38 1213011
info@micro-epsilon.cz

France
Tel.: +33 1 39102100
info@micro-epsilon.com

Switzerland
Tel.: +41 71 2500838
info@micro-epsilon.ch

Foundation

1968

Staff

> 500

Products

Vision Sensors/Smart Cameras/
Embedded Systems, Other

Applications

Character Recognition, Inspection Piece Parts, Metrology 3D, Robot Vision 2D, Robot Vision 3D, Symbol Recognition

Industries served

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

Associations

VDMA

Regions served

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

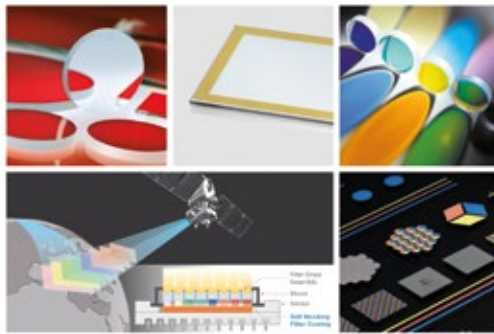
ADVERTORIAL

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 engi-

neering 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:

Optics Balzers Jena GmbH
Carl-Zeiss-Promenade 10
07745 Jena, Germany

Germany
Tel.: +49 6196 999 4144

France
Tel.: +33 699 5562 83

Switzerland, Austria
Tel.: +423 388 9216

USA
Tel.: +1 720 974 5927

Singapore
Tel.: +65 6809 5243

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

Neugrüt 35
9496 Balzers
Liechtenstein
Tel.: +423 388 9200
Fax: +423 388 9390
info@opticsbalzers.com
www.opticsbalzers.com



See our ad on page **75**

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)

Opto France S.A.R.L.
Tel.: +33 450 605822
info@opto-france.com

Opto UK Ltd.

Tel.: +44 151 346 2112
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

Consulting, Interfaces/Cables/Peripherals, Marketing, Microscopes, Optical Instruments, Optics, R&D, Software, Turn-key Systems, 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

Lochhamer Schlag 14
82166 Gräfelfing
Germany
Tel.: +49 89 898055 0
Fax: +49 89 898055 18
info@opto.de
www.opto.de



See our ad on page 55

SIMPLE.
SMART.
COMPLETE.
IT'S 3D FOR
EVERYONE.

Gocator
ALL-IN-ONE 3D SMART SENSOR

Gocator is the most cost effective 3D solution in the industry. Gocator delivers 3D scanning, measurement, and control in a single package with an ease of use suitable for everyone. Mount it, plug it in, set it up with your web browser and get results out of the box.

Discover what
Gocator can do for you at
www.lmi3d.com/inspect

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.



Ricoh Imaging Deutschland GmbH
Am Kaiserkai 1
20457 Hamburg
Germany
Tel.: +49 40 53 201 3366
Fax: +49 40 53 201 3339
iosd@eu.ricoh-imaging.com
www.ricoh-mv-security.eu



RICOH
imagine. change.



Offices

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

Ricoh Imaging
UK Ltd.
Tel.: +44 17 53 21 10 71
iosd@eu.ricoh-imaging.com

Ricoh Imaging
Europe S.A.S
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.

Jos. Schneider Optische Werke GmbH
Ringstr. 132
55543 Bad Kreuznach
Germany
Tel.: +49 671 601 0
Fax: +49 671 601 129
industrie@schneiderkreuznach.com
www.schneiderkreuznach.com



Schneider
KREUZNACH

Office(s)

Schneider Asia Pacific Ltd.
20/F Central Tower
28 Queen's Road
Central, Hong Kong, China
Tel.: +852 8302 0301
Fax: +852 8302 4722
info@schneider-asiapacific.com
www.schneider-asiapacific.com

Schneider Optics Inc.
285 Oser Ave.
Hauppauge, NY 11788
USA
Tel.: +1 631 761 5000
Fax: +1 631 761 5090
industrial@schneideroptics.com
www.schneideroptics.com/
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

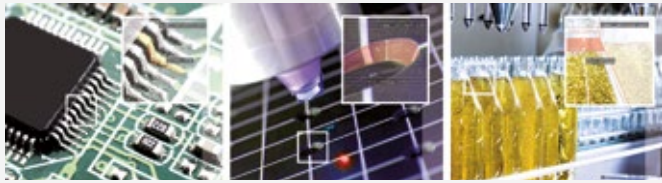
Regions served

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 subsidiaries in Germany, United Kingdom, France, Switzerland and The Netherlands. 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 pro-

gramming library for imaging applications, Common Vision Blox (www.commonvisionblox.com).

This broad range of components and solutions, our experience of more than 35 years in imaging and a comprehensive support by a staff of more than 190 employees allows us to offer you everything you need to solve your imaging task.

Stemmer Imaging – Imaging is our passion!

STEMMER[®]
IMAGING

Stemmer Imaging
Gutenbergstr. 9–13
82178 Puchheim
Germany
Tel.: +49 89 80902 0
Fax: +49 89 80902 116
info@stemmer-imaging.de
www.stemmer-imaging.com



See our ad on page **17**

Office(s)

Stemmer Imaging Ltd, UK
Tel.: +44 1252 780000
info@stemmer-imaging.co.uk

Stemmer Imaging S.A.S., France
Tel.: +33 1 45069560
info@stemmer-imaging.fr

Stemmer Imaging AG
Switzerland
Tel.: +41 55 4159090
info@stemmer-imaging.ch

Stemmer Imaging B.V.
The Netherlands
Tel.: +31 575 798888
info@stemmer-imaging.nl

Foundation
1987

Staff
101-250

Products

Cameras, Consulting, Frame Grabber, Interfaces/Cables/Peripherals, Lighting Equipment, Optics, Processors, R&D, Smart Cameras/Embedded Systems, Software, Vision Sensors

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 SVS-Vistek

Digital High-Performance Cameras and Comprehensive Machine Vision Expertise

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 expertise 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. The company's cameras are produced under strict quality control, assembled in clean rooms on-site and tested with state-of-the-art testing technology.

Knowledge Transfer

The three core competences of SVS-Vistek are:

- Camera development and production,
- Distribution and integration of imaging components,
- Imaging system solutions development.

SVS-Vistek GmbH
Mühlbachstr. 20
82229 Seefeld
Germany
Tel.: +49 89 9985 0
Fax: +49 89 9985 79
info@svs-vistek.com
www.svs-vistek.com



Management

Dipl.-Phys. Walter Denk, CEO
Dipl.-Ing. Ulf Weißer, CEO
Dipl.-Ing (FH) Andreas Schaarschmidt, CEO

Foundation
1987

Staff
40

Products

Cameras, Frame Grabber, Lighting Equipment, Optics, Software

Applications

Digitalization, Inspection Piece Parts, Inspection Web Material, Material Testing, Part Identification, Robot Vision

2D, Robot Vision 3D, Symbol Recognition

Industries served

Automotive and Suppliers, Electronics/Semiconductors, Energy/Water/Solar Technology, Foodstuffs/Beverages, Mechanical Engineering/Line Building, Medical Technology, Packaging, Paper/Wood, Pharmaceuticals/Cosmetics/Chemicals, Traffic/Logistics

Associations

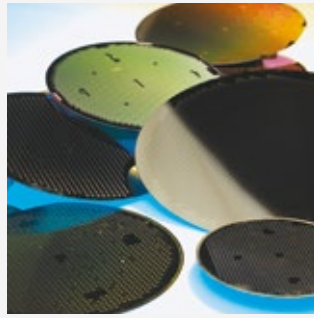
AIA, EMVA, VDMA, Bayern Photonics

Regions served

Asia and Pacific Rim, Europe, North America, South/Central America, national, ROW

About Teledyne Dalsa

Teledyne Dalsa is an international technology 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 currently 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 grabbers and software are used in thousands of automated inspection systems around the world and across multiple industries.

Office(s)

Teledyne Dalsa
Felix-Wankel-Str. 1
82152 Krailling
Germany
Tel: +49 89 89 54 57 3-80
Fax: +49 89 89 54 57 3-46
sales.europe@teledynedalsa.com

Management

Brian Doody, CEO

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, 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

Platforms supported

Windows/Linux/DSP,ARM/FPGA/x86/32 & 64 bit Associations
AIA, EMVA, JIIA

Regions served

Asia, China, Europe, Latin America, North America, national



Teledyne Dalsa
605 McMurray Road
N2V-2E9 Waterloo, ON, Canada
Tel: +1 519 886 6000
Fax: +1 519 886 8023
sales.americas@teledynedalsa.com
www.teledynedalsa.com/mv **ON**

See our ad on **Inside Front Cover**

About Ximea

Ximea design and produce leading-edge, high-performance cameras as well as highly optimized camera and imaging solutions for volume OEM applications.

Camera designs are based on powerful, flexible camera 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 support 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 our customers the optimal compromise between performance and cost with short lead times.

Office(s)

Ximea Corp.
United States of America
Tel.: +1 303 389 9838
Fax: +1 303 202 6350
info@ximea.com

Ximea s.r.o.

Slovakia
Tel.: +421 2 205 104 26
Fax: +421 2 205 104 27

Management

Dr. Vasant Desai
Max Larin

Foundation

2010 / 1992

Staff

11-50

Products

Cameras, Embedded PC-cameras, OEM Cameras, Subminiature Cameras, X-Ray

Applications

Astronomy, Character Recognition, Digitalization, Metrology 2D and 3D, Microscopy, Part Identification, Particle Analysis,



Robot Vision 2D and 3D, Symbol Recognition, Others

Industries served

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

Associations

AIA, EMVA, VDMA, Other

Regions served

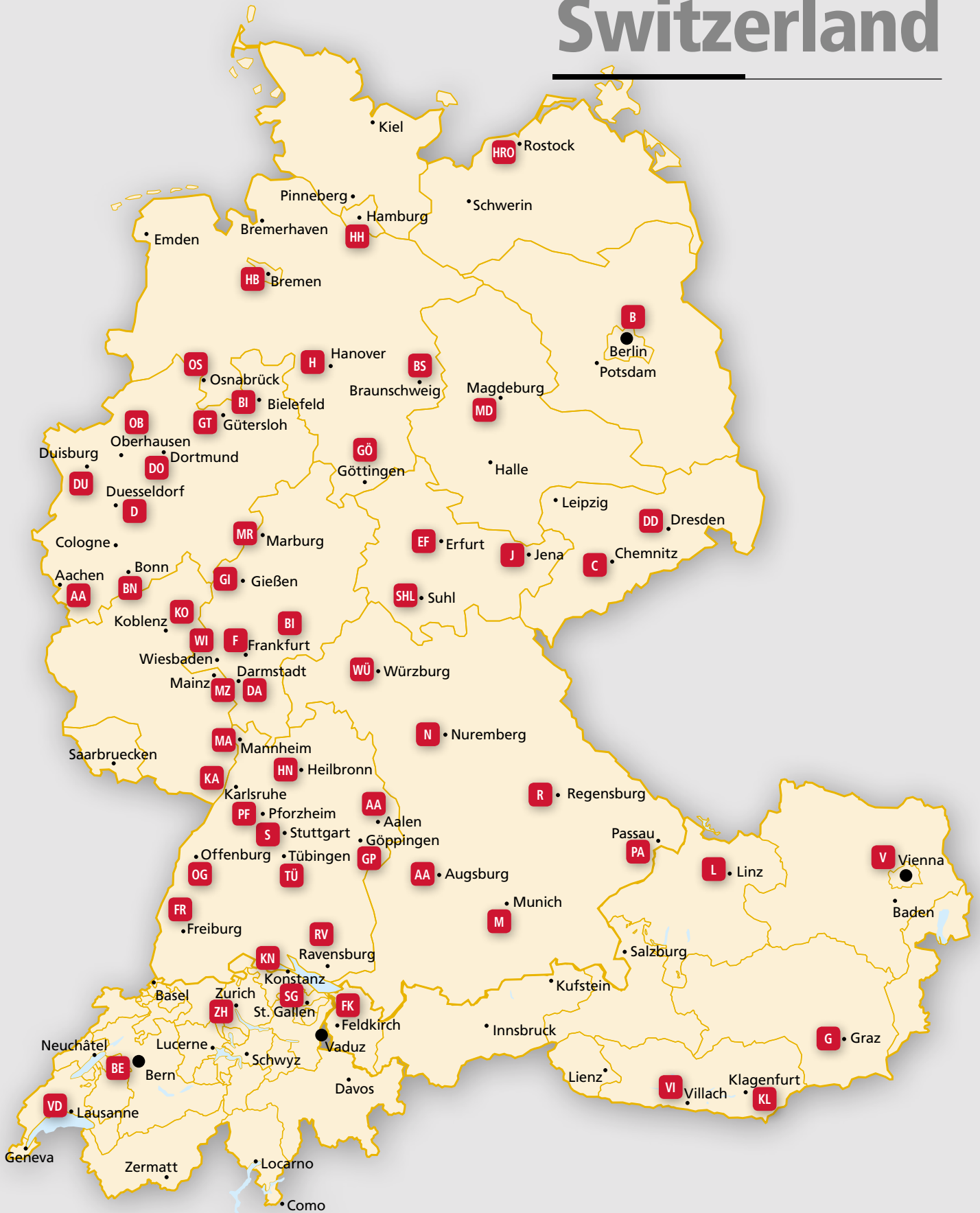
worldwide



Ximea GmbH
Hansestraße 81
48165 Münster
Germany
Tel: +49 2501 964 555 0
Fax: +49 2501 964 555 99
info@ximea.com
www.ximea.com **OS**

See our ad on page **9**

Germany Austria Switzerland



Producer, Solution Provider

ABW GmbH
Siemensstr. 3, 72636 Frickenhausen, Germany
Tel.: +49 7022 949292, info@abw-3d.de, www.abw-3d.de



Distributor

Acal Bfi Germany GmbH
Oppelner Str. 5, 82194 Gröbenzell, Germany
Tel.: +49 8142 6520 0, info.de@bfiopilas.com, www.bfiopilas.com



Producer

Aerotech GmbH
Südwestpark 90, 90449 Nürnberg, Germany
Tel.: +49 911 967 937 0, info@aerotechgmbh.de, www.aerotech.com



Distributor

AHF Analysentechnik AG
Kohlplattenweg 18, 72074 Tübingen, Germany
Tel.: +49 7071 970901 0, info@ahf.de, www.ahf.de



Machine Builder/OEM

Aicon 3D Systems GmbH
Biberweg 30C, 38114 Braunschweig, Germany
Tel.: +49 531 58 000 58, info@aicon.de, www.aicon.de



Integrator

AIT Göhner GmbH
Wilhelmsplatz 11, 70184 Stuttgart, Germany
Tel.: +49 711 23853 0, info@AIT.de, www.AIT.de



Distributor

AKE-Components GmbH
Bahnhofstr. 32, 76744 Wörth, Germany
Tel.: +49 7271 9897 20, sales@AKE-Components.de, www.ake-Components.de



Integrator

Aku.Automation GmbH
Robert-Bosch-Str. 80, 73431 Aalen, Germany
Tel.: +49 7361 89088 0, info@aku-automation.de, www.aku-automation.de



Solution Provider

Alfavisio GmbH & Co. KG
Am Sportfeld 2, 94121 Salzweg, Germany
Tel.: +49 851 75689 0, info@alfavisio.de, www.alfavisio.de



Producer

Alicona Imaging GmbH
Teslastr. 8, 8074 Grambach bei Graz, Austria
Tel.: +43 316 4000 700, info@alicona.com, www.alicona.com



Distributor, Producer, Solution Provider

Allsens Messtechnik
Im Bendersgarten 9-11, 63303 Dreieich, Germany
Tel.: +49 6074 9143025, support@allsens.de, www.allsens.de



Solution Provider

Alysium-Tech GmbH
Kuehnertsgasse 14, 90402 Nuremberg, Germany
Tel.: +49 911 937878 0, vertrieb@alysium-tech.com, www.alysium-tech.com



Consultant

AMC provides services and support in the areas of Market Research, Business Development, Sales Optimization and Strategic Marketing. AMC is focused on machine vision and the automation markets, both in the industrial and the non-industrial fields.

AMC Hofmann
PO Box 1156, 64646 Heppenheim, Germany
Tel.: +49 1577 530 6969, info@amc-hofmann.com, www.amc-hofmann.com



Distributor

AMS Technologies
Fraunhoferstr. 22, 82152 Martinsried/Munich, Germany
Tel.: +49 89 89577 0, info@ams.de, www.ams.de



Distributor, Producer, Solution Provider

Andanta GmbH
Stifterstr. 5R, 82140 Olching, Germany
Tel.: +49 8142 487658, epost@andanta.de, www.andanta.de



Producer

AOS Technologies AG
Taefernstr. 20, 5405 Baden-Daettwil, Switzerland
Tel.: +41 56 483 34 88, info@aostechologies.com, www.aostechologies.com



Solution Provider

Asentics GmbH & Co. KG
Birlenbacher Str. 19-21, 57078 Siegen, Germany
Tel.: +49 271 303 91 0, info@asentics.de, www.asentics.de



Solution Provider

ATMvision
Weiherstr. 5, 88682 Salem, Germany
Tel.: +49 7554 986990, info@atmvision.com, www.atmvision.com



Solution Provider

Attentra GmbH
Wilhelmstr. 8, 72074 Tübingen, Germany
Tel.: +49 7071 54955 0, info@attentra.de, www.attentra.de



Producer, Solution Provider

Automation Technology GmbH · Hermann-Bössow-Str. 6-8,
23843 Bad Oldesloe, Germany, Tel.: +49 4531 88011 0,
info@automationtechnology.de, www.automationtechnology.de



Producer

AutoVimation Peter Neuhaus
Haid-und-Neu-Str. 7, 76131 Karlsruhe, Germany
Tel.: +49 721 6276756, sales@autovimation.com, www.autovimation.com



Producer

B & M Optik GmbH
Am Fleckenberg 20, 65549 Limburg, Germany
Tel.: +49 6431 9860 0, baldus@bm-optik.de, www.bm-optik.de



Producer

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



Producer, Solution Provider

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



Integrator, Solution Provider

Bi-Ber GmbH & Co. Engineering KG
Ostendstr. 25, 12459 Berlin, Germany
Tel.: +49 30 5304 1253, info@bilderkennung.de, www.bilderkennung.de



Producer

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



Producer

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.



Büchner Lichtsysteme GmbH
 Büschelstr. 8a
 86465 Welden
 Germany
 Tel.: +49 8293 909 112
 Fax: +49 8293 909 111
 info@buechner-lichtsysteme.de
 www.buechner-lichtsysteme.de



Producer

High Resolution Lenses

Zeiss F-Mount lenses offer high resolution image quality for technical and industrial applications. The Zeiss ZF lenses for industrial applications are key components in complex production processes as well as in measuring tasks and quality assurance. The infrared lenses of the ZF series are suitable for the use with special cameras like IR cameras without an IR blocking filter.



Visionmes Telecentric Lenses

Zeiss Visionmes lenses are developed for crucial measuring tasks in industry and feature telecentric optics. Zeiss offers telecentric lenses with outstanding image performance and extremely low distortion. Visionmes lenses are manufactured in Germany and quality tested with the accurateness you can expect from Zeiss..



Carl Zeiss AG
 Carl-Zeiss-Str. 22
 73446 Oberkochen
 Germany
 Tel.: +49 7364 20 5590
 Fax: +49 7364 20 4045
 lenses4industry@zeiss.de
 www.zeiss.com/lenses4industry



Distributor, Producer

CBC (Europe) GmbH

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



Solution Provider

Ceres Vision GmbH

Kurt-Schumacher-Str. 1, 33615 Bielefeld, Germany
 Tel.: +49 521 9236930, info@ceresvision.de, www.ceresvision.de



Solution Provider

Chromasens designs, develops and produces innovative image capturing and processing systems. The optical, electronic and mechanical elements of high-performance cameras and illumination systems are perfectly adapted to suit the specific tasks faced by each individual customer. Production, as well as research and development, takes place in Constance, Germany. Chromasens offers professional advice and support throughout each phase of the project cycle.

dividual customer. Production, as well as research and development, takes place in Constance, Germany. Chromasens offers professional advice and support throughout each phase of the project cycle.

Chromasens GmbH

Max-Stromeyer-Str. 116 , 78467 Konstanz, Germany
 Tel.: +49 7531 876 0, info@chromasens.de, www.chromasens.de



20 megapixels at 30 fps?!



That's high performance!



Experience a combination of resolution, speed, and image quality that will shift your vision apps into high gear. JAI's new Spark Series SP-20000 delivers unprecedented performance for high resolution inspection tasks, persistent surveillance, aerial imaging, and other applications. Its leading-edge CMOS technology combines sheer power with low noise and high sensitivity that has to be seen to be believed. All at a price that will really get your motor running.

Visit www.jai.com/sp-20000.aspx to ask about a test drive at your facility.



Spark-Serie SP-20000

- 5120 x 3840 resolution (20 MP)
- 8/10/12-bit output @ 30 fps
- Advanced CMOS technology with global shutter and true CDS
- Monochrome and color models
- Multiple interface options



Get more info

Americas: +1 800 445-5444
 Europe & Middle East: +45 4457 8888
 Asia Pacific: +81 45-440-0154



www.jai.com

See the possibilities

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, USA, 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

ADVERTORIAL

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.



compar 
vision systems & robotics

Compar AG
Rietbrunnen 44
8808 Pfäffikon SZ
Switzerland
Tel.: +41 55 416 10 60
Fax: +41 55 416 10 61
info@compar.ch
www.compar.ch

ZH

Machine Builder/OEM

Confovis GmbH
Wildenbruchstr. 15, 07745 Jena, Germany
Tel.: +49 3641 527 4608, szabo@confovis.com, www.confovis.com

J

Distributor

Cosyco GmbH
Starnberger Weg 1A, 82110 Germering, Germany
Tel.: +49 89 847087, info@cosyco.de, www.cosyco.de

M

Consultant, Integrator, Producer, Solution Provider

CoSynth GmbH & Co. KG
Escherweg 2, 26121 Oldenburg, Germany
Tel.: +49 441 9722 289, info@cosynth.com, www.cosynth.com

HB

Producer, Solution Provider

Creaform Deutschland GmbH
Max-Lang-Str. 56/1, 70771 Leinfelden-Echterdingen, Germany
Tel.: +49 711 1856 8030, germany@creaform3d.com, www.creaform3d.com

ES

Integrator, Solution Provider

CTMV offers business solutions for quality assurance in the field of automotive as well as for process optimization of manufacturing in the fields of metal working, extrusion and foil/glass production. Applications are focused on cutting-edge, sophisticated surface inspection of visually difficult materials like glass, metals, plastic tubes and foils, precise dimensional measurements mainly for the stamping industry as well as position detection of moving and/or complex parts for handling.



CTMV
Consulting Team Machine Vision
Ihr Partner für Industrielle Bildverarbeitung & Automation

CTMV GmbH & Co. KG
Schwarzwaldstr. 7A
75173 Pforzheim
Germany
Tel.: +49 7231 566 177 200
Fax: +49 7231 566 177 299
info@ctmv.de
www.ctmv.de

PF

Producer

Datasensor GmbH
Tegernseer Str. 75, 83624 Otterfing, Germany
Tel.: +49 8024 90277 0, info@datasensor.de, www.datasensor.com

M

Integrator

De Man Industrie-Automation GmbH
Industriestr. 18, 33829 Borgholzhausen, Germany
Tel.: +49 5425 9497 0, info@deman.de, www.deman.de

H

Solution Provider

DHS Dietermann & Heuser Solution GmbH
Herborner Str. 50, 35753 Greifenstein-Beilstein, Germany
Tel.: +49 2779 9120 0, vertrieb@dhssolution.com, www.dhssolution.com

GI

Producer

Docter Optics GmbH
Mittelweg 29, 07806 Neustadt an der Orla, Germany
Tel.: +49 36481 27 0, info@docteroptics.com, www.docteroptics.com

J

Machine Builder/OEM

Dr. Heinrich Schneider Messtechnik GmbH
Rothlay Mühle, 55545 Bad Kreuznach, Germany
Tel.: +49 671 291 02, info@dr-schneider.de, www.dr-schneider.de

KO

Machine Builder/OEM

Dr. Noll Optical Measurement GmbH
Nikolaus-Otto-Str. 13, 55543 Bad Kreuznach, Germany
Tel.: +49 67179499610, service@drnoll.de, www.drnoll.com

KO

Solution Provider

Dr. Schwab Inspection Technology GmbH
Industriestr. 9, 86551 Aichach, Germany, Tel.: +49 8251 9008 0,
info@schwabinspection.com, www.schwabinspection.com

A

Solution Provider

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

B

Distributor

Duwe-3d AG
Peter-Dornier-Str. 9, 88131 Lindau, Germany
Tel.: +49 8382 275 900, info@duwe-3d.de, www.duwe-3d.de

RV

Distributor, Producer

Edmund Optics is a leading producer of optics, imaging, and photonics technology. Supporting the R&D, electronics, semiconductor and biomedical markets around the globe; EO products are used in a variety of applications ranging from DNA sequencing to retinal eye scanning to high-speed factory automation. EO's state of the art manufacturing capabilities combined with its global distribution network has earned it the position of the world's largest supplier of off-the-shelf optical components.

Edmund Optics

Zur Giesserei 19-27, 76227 Karlsruhe, Germany
Tel.: +49 721 6273 730, sales@edmundoptics.de, www.edmundoptics.de

KA

Distributor, Producer

EHD imaging GmbH

Zum Rennplatz 15, 49401 Damme, Germany
Tel.: +49 5491 2090, info@ehd.de, www.ehd.de

OS

Solution Provider

EHR GmbH

Wittumstr. 10, 75181 Pforzheim, Germany
Tel.: +49 7231 9731 0, vision@ehr.de, www.EHR.de

PF

Producer

ElektroPhysik Dr. Steingroever GmbH & Co. KG

Pasteurstr. 15, 50735 Köln, Germany
Tel.: +49 221 75204 0, info@elektrophysik.com, www.elektrophysik.com

K

Producer

Eltec Elektronik AG

Galileo-Galilei-Str. 11, 55129 Mainz, Germany
Tel.: +49 6131 918 100, info@eltec.com, www.eltec.com

MZ

Distributor, Producer, Solution Provider

Eltrotec Sensor GmbH

Heinkelstr. 2, 73066 Uhlingen, Germany
Tel.: +49 7161 98872 300, info@eltrotec.com, www.eltrotec.com

GP

Producer

Entner Electronics · Sigmund-Nachbauer-Str. 10, 6830 Rankweil, Austria
Tel.: +43 5522 75717 0, thomas.entner@entner-letronics.com, www.entner-electronics.com

FK

Producer

Epson Deutschland GmbH

Otto-Hahn-Str. 4, 40670 Meerbusch, Germany
Tel.: +49 2159 538 1391, robot.infos@epson.de, www.epson.de/robots

D

Solution Provider

Erhardt+Leimer GmbH

P.O. Box 10 15 40, 86136 Augsburg, Germany
Tel.: +49 821 2435 0, info@erhardt-leimer.com, www.erhardt-leimer.com

A

Producer

Ernst & Engbring GmbH & Co. KG

Industriestr. 9, 45739 Oer-Erkenschwick, Germany
Tel.: +49 2368 6901 0, info@eue-kabel.de, www.eue-kabel.de

D

Distributor

Eureca Messtechnik GmbH

Eupener Str. 150, 50933 Köln, Germany
Tel.: +49 221 430 823 90, info@eureca.de, www.eureca.de

K

Producer, Solution Provider

eVision Systems GmbH

Jahnstr. 12, 85661 Forstinning, Germany
Tel.: +49 8121 2208 0, sales@aivion.de, www.aivion.de

M

Solution Provider

EVK DI Kerschhaggl GmbH

Josef Krainer Str. 35, 8074 Raaba, Austria
Tel.: +43 316 461664 0, office@evk.biz, www. evk.biz

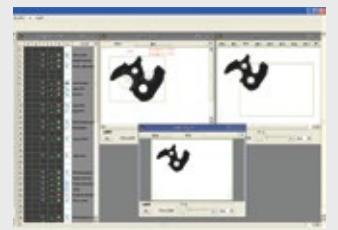
V

Producer

Manufacturer of Machine Vision Software for VisionSensors, SmartCameras and PC Systems - EyeVision the one software for all Hardware Platforms. With the new release 1,000 new functions are available and language support for Asian languages.

Standard Products are EyeVision Software, EyeCheck SmartCamera Systems, EyeSens VisionSensors and EyeSpector Systems. All hardware platforms are supported by the Eye-Vision Software for Windows up to 8 and Linux as well as special OS.

A build in WebServer for easy remote control as well as interfaces to SAP Oracle and SQL. For programmers a PlugIn Interface supports easy to integrate software modules. The software supports all major interfaces for cameras e.g. USB, FireWire, GigE, CL, CoaXPress and analog. Special cameras like 3D and thermal cameras as well as X-Ray are supported.



EVT Eye Vision Technology GmbH

Haid-und-Neu-Str. 7
76131 Karlsruhe
Germany
Tel.: +49 721 62690582
Fax: +49 721 62690596
sales@evt-web.com
www.evt-web.com

KA

Producer

Falcon Illumination MV GmbH & Co. KG · Fasanenweg 7, 74254 Offenau, Germany, Tel.: +49 7136 9686 0, info@falcon-illumination.de, www.falcon-illumination.de

HN

Producer

Faro develops and markets computer-aided measurement systems and software worldwide. The portable coordinate measuring devices from Faro, together with their industry-specific software solutions, allow high-precision 3D measurements and 3D comparisons of parts and complex systems directly within assembly and production processes. They are used for inspecting components and component assemblies, production planning and inventory documentation, as well as for the investigation and crime scenes.



Faro Europe GmbH & Co. KG

Lingwiesenstr. 11/2
70825 Korntal-Münchingen
Germany
Tel.: +49 7150 9797 0
Fax: +49 7150 9797 44
info@faro-europe.com
www.faro.com

S

Producer

Faseroptik Henning GmbH · Neumarkter Str. 29, 90584 Allersberg, Germany, Tel.: +49 9176 58 0, kontakt@faseroptik-henning.de, www.faseroptik-henning.de

N



- Producer**
- Festo AG & Co. KG, a leading provider of automation technology solutions, offers a tailor made range of vision systems: High-speed-cameras for optimisation of fast motion sequences as well as intelligent line- and area-scan cameras for position detection of parts, 2-D quality inspection, Barcode and Data-Matrix-Code reading and OCR. The cameras comprise a complete PLC according to IEC 61131-3 standard as well as Ethernet and CAN interfaces and 24V I/Os to communicate with higher order PLCs.
- Festo AG & Co. KG**
Rüter Str. 82, 73734 Esslingen, Germany
Tel.: +49 180 3033000, service_international@de.festo.com, www.festo.com
- Integrator, Solution Provider**
- FiberVision GmbH**
Jens-Otto-Krag-Str. 11, 52146 Würselen, Germany
Tel.: +49 2405 4548 0, info@fibervision.de, www.fibervision.de
- Producer, Solution Provider**
- Fisba Optik AG**
Rorschacherstr. 268, 9016 St. Gallen, Switzerland
Tel.: +41 71 282 3131, info@fisba.ch, www.fisba.com
- Producer**
- Flir Systems GmbH**
Bernstr. 81, 60437 Frankfurt am Main, Germany
Tel.: +49 69 950090 0, info@flir.de, www.flir.com
- Research Facility**
- Fraunhofer IFF, Business Unit of Measurement and Testing Technologies**
Postfach 1453, 39004 Magdeburg, Germany
Tel.: +49 391 4090 224, mpt@iff.fraunhofer.de, www.mpt.iff.fraunhofer.de
- Research Facility**
- Fraunhofer IMS**
Finkenstr. 61, 47057 Duisburg, Germany
Tel.: +49 2033 783 0, info@ims.fraunhofer.de, www.ims.fraunhofer.de
- Solution Provider**
- Fritz Pauker Ingenieure GmbH** · Paul-Lenz-Str. 5, 86316 Friedberg, Germany
Tel.: +49 821 26898 0, contact.us@pauker-ingenieure.de, www.pauker-ingenieure.com
- Producer**
- FRT, Fries Research & Technology GmbH**
Friedrich-Ebert-Str., 51429 Bergisch Gladbach, Germany
Tel.: +49 2204 2430, info@frt-gmbh.com, www.frt-gmbh.com
- Integrator, Solution Provider**
- Fuchs Engineering GmbH** · Sindelfinger Str. 4/4, 72070 Tübingen, Germany,
Tel.: +49 7071 97555 60, info@fuchs-engineering.de, www.fuchs-engineering.de
- Producer**
- Fujifilm Europe GmbH**
Heesenstr. 31, 40549 Düsseldorf, Germany
Tel.: +49 211 5089 0, cctv@fujifilm.eu, www.fujifilm.eu/fujinon
- Solution Provider**
- Futec Europe SRL**
Tecklenburger Str. 36, 49525 Lengerich, Germany
Tel.: +49 5481 997606, info@go-futec.de, www.futecurope.com
- Producer**
- GE Sensing & Inspection Technologies GmbH - phoenix|x-ray**
Niels Bohr Str. 7, 31515 Wunstorf, Germany
Tel.: +49 5031 172 0, phoenix-info@ge.com, www.gesensinginspection.com

- Integrator, Solution Provider**
- Gefasoft GmbH**
Donaustauer Str. 115, 93059 Regensburg, Germany
Tel.: +49 941 799 96 0, info@gefasoft.com, www.gefasoft.com
- Producer**
- Geomagic GmbH** · Leibnizstr. 51, 70193 Stuttgart, Germany,
Tel.: +49 178 7767 887, europe@geomagic.com, www.geomagic.com
- Machine Builder/OEM**
- Goepel electronic GmbH**
Göschwitzer Str. 58/60, 07745 Jena, Germany
Tel.: +49 3641 68960, sales@goepel.com, www.goepel.com
- Producer**
- GOM mbH**
Mittelweg 7-8, 38106 Braunschweig, Germany
Tel.: +49 531 390290, info@gom.com, www.gom.com
- Integrator, Solution Provider**
- GPP Chemnitz mbH**
Annaberger Str. 73-77, 09111 Chemnitz, Germany
Tel.: +49 371 523620, info@gppc.de, www.gppc.de
- Solution Provider**
- Graphikon GmbH**
Mandelstr. 16, 10409 Berlin, Germany
Tel.: +49 30 4210 4777, sales@graphikon.de, www.graphikon.de
- Producer**
- GreCon Greten GmbH & Co. KG**
Hannoversche Str. 58, 31061 Alfeld, Germany
Tel.: +49 5181 79 0, sales@grecon.de, www.grecon.de
- Producer**
- Granzebach Algoscan GmbH**
Machtlfinger Str. 21, 81379 München, Germany
Tel.: +49 89 748558 0, welcome@algoscan.com, www.algoscan.com
- Producer**
- Hamamatsu Photonics is a world-wide leading manufacturer of opto-electronic components and systems. Among others we offer sensors and systems for spectroscopy (including ultra fast), scientific-grade cameras, beam monitoring solutions, photon counting detectors and systems, photomultipliers, photodiodes, IR detectors.
- 
- HAMAMATSU**
PHOTON IS OUR BUSINESS
- Hamamatsu Photonics Deutschland GmbH**
Arzbergerstr. 10
82211 Herrsching
Germany
Tel.: +49 8152 375 0
Fax: +49 8152 2658
info@hamamatsu.de
www.hamamatsu.de
- Producer**
- HaSoTec GmbH**
Burgwall 20, 18055 Rostock, Germany
Tel.: +49 381 4909834, info@hasotec.com, www.hasotec.com
- Machine Builder/OEM**
- Heliotis AG**
D4 Platz 4, 6039 Root Längenbold, Switzerland
Tel.: +41 41 455 2220, info@heliotis.ch, www.heliotis.ch

LED lighting made in Germany
IMAGING LIGHT TECHNOLOGY
BÜCHNER
www.buechner-lichtsysteme.de/inspect



Solution Provider

Helms Technologie GmbH
An der Strusbek 8a, 22926 Ahrensburg, Germany
Tel.: +49 4102 22250, info@helms-technologie.de, www.helms-technologie.de **HH**

Producer

Helmut Hund GmbH
Wilhelm-Will-Str. 7, 35580 Wetzlar, Germany
Tel.: +49 6441 2004 0, info@hund.de, www.hund.de **GI**

Producer, Research Facility

Hema Electronic GmbH
Roentgenstr. 31, 73431 Aalen, Germany
Tel.: +49 7361 9495 0, info@hema.de, www.hema.de **GP**

Solution Provider

HGV Vosseler GmbH & Co. KG
An der Lehmgrube 9, 74613 Oehringen, Germany
Tel.: +49 7941 9100 0, info@hgv.de, www.hgv.de **HN**

Producer

Hitachi Kokusai Electric Europe GmbH
Siemensstr. 9, 63263 Neu-Isenburg, Germany
Tel.: +49 6102 833240, a.stueber@hitachi-keu.com, www.hitachi-keu.com **F**

Research Facility

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

Hochschule Darmstadt FB MN
Haardtring 100, 64295 Darmstadt, Germany
Tel.: +49 6151 168651, heckenkamp@h-da.de, www.fbm.h-da.de **DA**

Producer

Holoeye Photonics AG
Albert-Einstein-Str. 14, 12489 Berlin, Germany
Tel.: +49 30 6392 3660, contact@holoeye.com, www.holoeye.com **B**

Producer, Solution Provider

IB/E Optics Eckerl GmbH
Passauer Str. 13, 94078 Freyung, Germany
Tel.: +49 8551 917 65 05, ibe@ibe-optics.com, www.ibe-optics.com **PA**

Integrator

Ibea GmbH
Kleine Bahnstr. 8, 22525 Hamburg, Germany
Tel.: +49 40 6898870, info@ibea.de, www.ibea.de **HH**

Integrator, Solution Provider

ICW [Industrie-elektronik]
Engelschalkstr. 32, 86316 Friedberg, Germany
Tel.: +49 821 6099526, anfrage@icw-news.de, www.icw-news.de **A**

Producer, Solution Provider

ifm electronic GmbH
Friedrichstraße 1, 45128 Essen, Germany
Tel.: +49 201 24 22 0, info@ifm.com, www.ifm.com **E**

Producer

Lumimax LED lighting is specially designed and developed for use in industrial measurement and checking techniques. Our focus is on excellent quality, performance and functionality. A young team of highly qualified engineers, technicians and skilled tradesmen continually strive to find innovative solutions to be able to offer the optimal lighting for every image processing application. More than 60 basic light types for Machine Vision are available in approximately 4000 versions - as static or as flash lights in different dimensions and colours. Additional components such as diffusers, fresnel lenses and polarisation filters also belong to our range. Should you not be able to find the right component for your application, we will develop industrial LED lighting systems for Machine Vision especially suited to your requirements.



LUMIMAX®

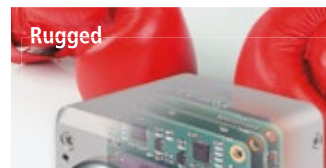
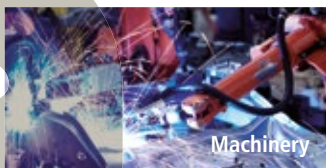
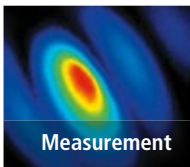
iIM AG
Neuer Friedberg 5
98527 Suhl
Germany
Tel.: +49 3681 45519 0
Fax:
info@iimag.de
www.iimag.de

SHL

Producer

Imago Technologies GmbH · Strassheimer Str. 45, 61169 Friedberg, Germany
Tel.: +49 6031 6842611, info.itf@imago-technologies.com, www.imago-technologies.com **F**

Application-Specific **Camera Series**



Kappa optronics GmbH
Germany | USA | France | UK/Ireland
www.kappa-optronics.com

realize visions .

Integrator

I-mation GmbH

Neckartal 234, 78628 Rottweil, Germany
Tel.: +49 741 94 22 86 00, info@i-mation.de, www.i-mation.de

KN

Integrator

Imess GmbH

Stockumer Str. 28, 58453 Witten, Germany
Tel.: +49 2302 96888 0, info@imess.com, www.imess.com

DO

Solution Provider

Impuls GmbH

Bahnhofstr. 8, 86807 Buchloe, Germany
Tel.: +49 8241 6059290, sales@impuls-imaging.com, www.impuls-imaging.com

A

Producer

Infinity Photo-Optical GmbH

Hans-Böckler-Str. 10a, 37079 Göttingen, Germany
Tel.: +49 551 49957 0, info@infinity-de.com, www.infinity-de.com

GÖ

Producer

Inos entwickelt und vermarktet innovative Lösungen im Bereich der Automatisierungstechnik. Dazu gehören Systeme mit eingebauter „Intelligenz“ sowie die dazugehörigen Dienstleistungen. inos verleiht den tausenden Industrierobotern, wie sie heute oder morgen in den modernen Produktionshallen stehen und arbeiten, sensitive Fähigkeiten. Dieses Sehen und Fühlen wird auch ohne Roboter zur flexiblen, Sensor-basierten, 100% Qualitätssicherung eingesetzt. Ziel ist es eine flexible und intelligente Automatisierung, die sich selbst überwacht (Null-Fehler-Produktion) und auf Veränderungen der Produktionsbedingungen flexibel reagiert.

Inos Automatisierungssoftware GmbH · Curiestr. 4, 70563 Stuttgart, Germany, Tel.: +49 711 68 68 97 00, info@inos-automation.de, www.inos-automation.de

S

Solution Provider

In-Situ GmbH

Mühlweg 2a, 82054 Sauerlach, Germany
Tel.: +49 8104 6482 30, vision@in-situ.de, www.in-situ.de

M

Integrator, Solution Provider

IOSS GmbH

Fritz-Reichle-Ring 18, 78315 Radolfzell, Germany
Tel.: +49 7732 982796 0, info@ioss.de, www.ioss.de

KN

Producer

Ircam GmbH

Nürnberger Str. 71, 91052 Erlangen, Germany
Tel.: +49 9131 970098 0, info@ircam.de, www.ircam.de

N

Distributor, Producer, Solution Provider

IS - Imaging Solutions GmbH · Arbachtalstr. 6, 72800 Eningen, Germany, Tel.: +49 7121 680853 1, info@imaging-solutions.de, www.imaging-solutions.de

TÜ

Solution Provider

The Isra group develops, produces and markets intelligent systems for industrial image processing using application-specific modular standard software solutions for surface inspection, robot guidance and quality control. Isra has focused on the automotive, general industries and food & packaging markets and offers surface inspection solutions for the glass, display glass, solar industry, plastics, films, nonwovens, print, printed electronics, paper, specialty paper and metal markets.

Isra Vision AG

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

DA

Integrator

Isys Vision GmbH & Co. KG

Gundelfinger Str. 2, 79108 Freiburg, Germany
Tel.: +49 761 79095 0, info@isys-vision.de, www.isys-vision.de

FR

Producer

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-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 imaging with GigE Vision, Camera Link, USB 3.0 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. In 2012, TVI Vision became part of the JAI Group.



See the possibilities

JAI - Germany
Industriering 7
63868 Grosswallstadt
Germany
Tel.: +49 6022 26 1500
Fax: +49 6022 26 1504
camerasales.emea@jai.com
www.jai.com

DA

Integrator, Machine Builder/OEM, Producer, Solution Provider

Jenoptik Optical Systems GmbH · Goeschwitzer Str. 25, 07745 Jena, Germany, Tel.: +49 3641 65 3083, digitalimaging.os@jenoptik.com, www.jenoptik.com/digitalimaging

J

Producer

Jenoptik Polymer Systems GmbH

Am Sandberg 2, 07819 Triptis, Germany
Tel.: +49 36482 45 0, sales-oes.os@jenoptik.com, www.jenoptik.com/oes

J

Producer

Kamera Werk Dresden Optronics GmbH

Bismarckstr. 57, 01257 Dresden, Germany
Tel.: +49 351 28 06 0, info@kwdo.de, www.kwdo.de

DD

Integrator, Solution Provider

Kdorf Automation

Industriering Ost 66, 47906 Kempen, Germany
Tel.: +49 2152 894 8033, kontakt@kdorf.de, www.kdorf.de

DU

Producer

Keyence Deutschland GmbH

Siemensstr. 1, 63263 Neu-Isenburg, Germany
Tel.: +49 6102 3689 0, info@keyence.de, www.keyence.de

F

Producer

Klasterch GmbH

Konrad-Adenauer-Allee 11, 44263 Dortmund, Germany
Tel.: +49 231 477 30 648, info@klasterch.com, www.klasterch.com

DO

Producer

Kontron

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

M

Germany / Austria / Switzerland

Producer

Kowa is a Japanese lens manufacturer with more than 50 years of experience in designing and manufacturing high quality optics for industrial applications and consumer products. Kowa is continuously adding new products to its standard product portfolio including 10 Megapixel C-mount lenses, 4/3" C-mount lenses, 3CCD Line Scan/ Area Scan lenses and a wide range of large format lenses with different mount options and Zoom lenses. With its technical support and service centre in Europe Kowa is supporting customization on standard lens products and designing customized lens solutions from the scratch. All development activities and production of Kowa's machine vision lenses are exclusively done in Japan.



Kowa Optimed Deutschland GmbH
Bendemannstr. 9
40210 Düsseldorf
Germany
Tel.: +49 211 542 184 0
Fax: +49 211 542 184 10
lens@kowaoptimed.com
www.kowa.eu/fa

D

Media

Landesmesse Stuttgart GmbH · Messepiazza 1, 70629 Stuttgart, Germany
Tel.: +49 711 18560 2541, florian.niethammer@messe-stuttgart.de,
www.vision-fair.de

S

Producer

LAP GmbH Laser Applikationen
Zeppelinstr. 23, 21337 Lüneburg, Germany
Tel.: +49 4131 9511 95, info@lap-laser.com, www.lap-laser.com

HH

Distributor, Producer

As a specialist supplier to the photonics market, Laser 2000 is committed to excellence in the quality of service and products that we provide to customers throughout Europe. Laser 2000 Business Unit "Image Processing & Machine Vision": To improve productivity

and quality in industrial environments we support the increasing demand for photonics products. Our engineers assist customers in selecting the appropriate combination of light source, camera and software.

Laser 2000 GmbH
Argelsrieder Feld 14, 82234 Wessling/Munich, Germany
Tel.: +49 8153 405 0, info@laser2000.de, www.laser2000.de

M

Distributor, Producer

Laser Components GmbH · Werner-von-Siemens-Str. 15, 82140 Olching, Germany, Tel.: +49 8142 2864 0, info@lasercomponents.com, www.lasercomponents.com

M

Producer

LayTec AG
Seesener Str. 10-13, 10709 Berlin, Germany
Tel.: +49 30 3980080 0, info@laytec.de, www.laytec.de

B

Producer

Leica Geosystems AG Metrology Products · Moenchmattweg 5, 5035 Unterentfelden, Switzerland, Tel.: +41 627376767, info.metrology@leica-geosystems.com, www.leica-geosystems.com/metrology

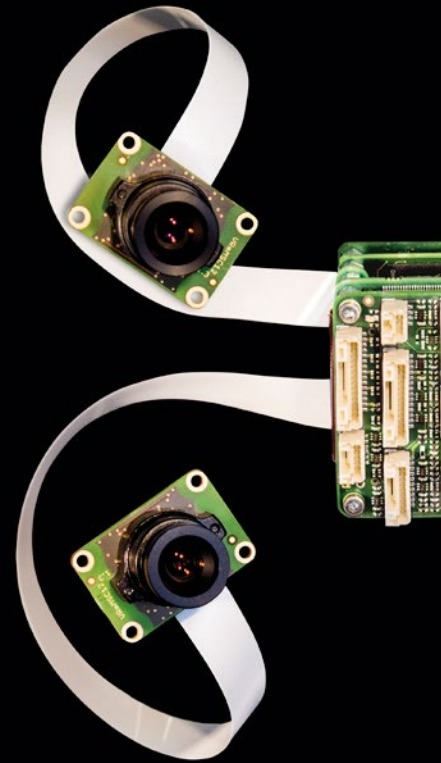
ZH

Producer

Leica Microsystems · Ernst-Leitz-Str. 17-37, 35578 Wetzlar, Germany, Tel.: +49 6441 29 4000, sales.germany@leica-microsystems.com, www.leica-microsystems.com

GI

D3 Intelligent Camera



- Freely programmable
- Linux OS
- 1 GHz ARM® Cortex™ -A8
- Floating point unit
- 700 MHz DSP C674x™
- 2 GB RAM / 32 GB Flash

Supports:

- Common Vision Blox Embedded
- EyeVision
- HALCON Embedded
- OpenCV
- Mono™ -compatible .NET interface

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 70
info@lej.de
www.lej.de

J

Producer

Lemo SA
28 champs courbes, 1024 Ecublens, Switzerland
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

Leutron Vison AG
Industriestr. 57, 8152 Glattbrugg, Switzerland
Tel.: +41 44 809 88 22, intsales@leutron.com, www.leutron.com

ZH

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

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

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

Distributor

Machine Vision Components

High-res and high-speed cameras, lenses, optics, illuminations, FPGA processing boards, etc. for quality control, inspection and measurement.

Wide Choice of Lenses

Unique lens portfolio including a variety of megapixel, line-scan and telecentric lenses from the world's leading manufacturers.

Wide Range of Zoom Cameras

Various Sony (Full) HD and SD Zoom Block Cameras and Pan Tilt Zoom Cameras.

On-Demand Imaging Systems

Fully customizable vision solutions.

Modifications, Consulting & Service

Mechanical, optical and electronic modifications to meet specific requirements.



MaxxVision®

MaxxVision GmbH
Sigmaringer Str.121
70567 Stuttgart
Germany
Tel.: +49 711 9979 963
Fax: +49 711 9799 650
info@maxxvision.com
www.maxxvision.com

S

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 52 1 96 29 63 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 8 94576950, 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

Distributor, Producer

NET GmbH is a manufacturer of high quality CCD and CMOS cameras for imaging solutions. The product line includes industrial and OEM board level cameras for a wide variety of applications in the industrial and medical field. The extensive range of vision cameras contains different interfaces like FOculus (IEEE1394), GimaGO (GigE), as well as iCube (USB

2.0). NET offers an extensive range of board level cameras and camera heads as well as customized solutions. Lenses, illumination and cable assemblies are offered as well. All of these products can be sourced either in Europe through NET GmbH or NET Italia S.r.l. or its world wide distribution network.

NET New Electronic Technology GmbH

Lerchenberg 7, 86923 Finning, Germany
Tel.: +49 8806 9234 0, info@net-gmbh.com, www.net-gmbh.com

M

Producer, Solution Provider

NeuroCheck GmbH

Neckarstr. 76/1, 71686 Remseck, Germany
Tel.: +49 7146 8956 0, info@neurocheck.com, www.neurocheck.com

S

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

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

HN

Producer

Opsira GmbH

Leibnizstr. 20, 88250 Weingarten, Germany
Tel.: +49 7515 61890, info@opsira.de, www.opsira.de

RV

Producer

OptoPolymer

Königsteinstr. 12, 80807 München, Germany
Tel.: +49 89 35657183, 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

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

Otto Vision Technology GmbH

Im Steinfeld 3, 07751 Jena, Germany
Tel.: +49 3641 67150, info@otto-jena.de, www.otto-jena.de

J

Producer, Solution Provider

High quality electronic and electro-mechanical components, automation solutions only experience can provide and that "extra" service and support are what characterize Panasonic Electric Works Europe AG. Our emphasis

on service is underlined by over 100 employees at our technology centers in Holzkirchen, Karlsruhe (founded 2008) and Gera as well as numerous sales offices around Germany.

Panasonic Electric Works Europe AG · Rudolf-Diesel-Ring 2, 83607 Holzkirchen, Germany, Tel.: +49 8024 648 0, info-de@eu.pewg.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 (PSCU) 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.



Panasonic

Panasonic System Communication Company Europe

Winsbergring 15
22525 Hamburg
Germany
Tel.: +49 40 8549 2835
Fax: +49 40 8549 2107
info.medicalvision@eu.panasonic.com
http://business.panasonic.co.uk/fmv

HH

FALCON
FALCON ILLUMINATION MV GMBH CO KG

Ask us for benefits

The Faltec-world of
**LED-lighting
for machine vision in Europe**



FALTEC

www.falcon-illumination.de

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, together with our own sales department and technical support assure that PCO keeps in touch with our customers and their needs.

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, info@pharmacontrol.de

DA

Producer

Photonfocus AG is a leading developer and manufacturer of high performance CMOS image sensor and camera technologies for the machine vision industry. Based on leading-edge, proprietary sensor designs, our products feature extremely high frame rates, high dy-

namic and extensive programmability for use in many industrial vision applications. Additional Photonfocus offers customized sensor and camera solutions and provides design-in support in vision system design.

Photonfocus AG

Bahnhofplatz 10, 8853 Lachen, Switzerland
Tel.: +41 55 4510000, 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@piezोजना.com, www.piezोजना.com

J

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

V

Producer

POG Präzisionsoptik Gera

Gewerbepark Keplerstr. 35, 07549 Gera, Germany
Tel.: +49 365 77393 0, info@pog.eu, www.pog.eu

J

Producer

Point Grey is a world-leading designer and manufacturer of innovative, high-performance digital cameras for industrial, life science, traffic, and surveillance applications. We offer a unique and comprehensive portfolio of USB 3.0, GigE, FireWire, USB 2.0 and Camera Link products known for their outstanding quality, ease of use, and unbeatable price-performance. Founded in 1997, Point Grey is based out of Richmond, Canada where the synergies of a broad range of hardware, software and mechanical engineering skills under one roof has allowed 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 smallest GigE camera, and the first USB 3.0 machine vision camera.



Point Grey Research GmbH

Schwieberdinger Str. 60
71636 Ludwigsburg
Germany
Tel.: +49 7141 488817 0
Fax: +49 7141 488817 99
eu-sales@ptgrey.com
www.ptgrey.com

S

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

M

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

L

Producer, Solution Provider

Proxitronic Industries AG

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

DA

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

Bötzingenstr. 60
79111 Freiburg
Germany
Tel.: +49 761 4514 792
Fax: +49 761 4514 70
sales@pyramid.de
www.pyramid.de

FR

Germany / Austria / Switzerland

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 GmbH & Co. KG

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

GÖ

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 manufac-

turing 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 GmbH

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

M

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 acces-

sories. 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

M

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

WI

Producer

Rheintacho Messtechnik GmbH

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

FB

Integrator

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

RV

Distributor

Rubroeder GmbH Factory Automation

Theodor-Neizert-Str. 1, 56170 Bendorf, Germany
Tel.: +49 2622 943 730, info@rubroeder.de, www.rubroeder.de

KO

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



COLOUR MEASURING SYSTEM

NEW colorCONTROL ACS 7000 for quality control (390 - 780nm)

- Non-contact colour measurement
- Measurement geometry: 30°/0° - 50mm distance
- Measurement precision: ΔE 0.08 (ΔE_{CMC})
- Online colour measurement: 25 Hz - 2000 Hz
- Colour recognition from a saved reference list
- Web browser operation
- Ethernet/EtherCAT, RS 422, digital I/O
- Adjustable colour space: XYZ; CIE; L*a*b*; L*u*v*
- Light source: A, C, D65, D50, D75, E, F4, F7, F11



www.micro-epsilon.com

MICRO-EPSILON
94496 Ortenburg / Germany
Tel. +49 85 42/168-0
info@micro-epsilon.com

Distributor, Integrator, Solution Provider

Schoenherr Elektronik GmbH · Kurze Str. 18, 09577 Niederwiesa, Germany
Tel.: +49 3726 79050, info@schoenherr-elektronik.com, www.schoenherr-elektronik.com **C**

Producer

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 has been developing and selling customized vision solutions, inspection systems and vision processors for all fields of industrial in-process quality inspection for more than 20 years. The code reading and code verification solutions of Seidenader Vision provide a reliable basis for traceability of pharmaceutical products. **M**

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 766594769 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 53015214, welcome@sglux.de, www.sglux.com **B**

Producer

Shape Drive GmbH
Bindingstr. 11, 82131 Stockdorf, Germany
Tel.: +49 89 45461286, 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. **FR**

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 1-D and 2-D codes, such as bar codes and data matrix codes, as well as optical character recognition (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. **N**

Siemens AG
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 5470550, 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. Advantage of this technology is the programmability of the on-board vision processor allowing to realize a broad range of real-time applications. **MA**

Silicon Software GmbH
Steubenstr. 46, 68163 Mannheim, Germany
Tel.: +49 621 789507 0, info@silicon-software.de, www.silicon-software.com **MA**

Producer

Sill Optics GmbH & Co. KG
Johann-Höllfritsch-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
Malmsheimer Str. 7, 71063 Sindelfingen, Germany
Tel.: +49 7031 3041800, info@smartsurv.de, www.smartsurv.de **S**

Producer

Solving3D GmbH Osteriede 5, 30827 Garbsen, Germany
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**

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 Erlenwädele 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

Producer

Streppel Glasfaser-Optik oHG

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

GL

Producer

STZ Qualitätsicherung & Bildverarbeitung

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

SHL

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
New eyes for industry

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 is an international technology 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 as well as in Europe and Asia supporting an international distribution network. Today, Teledyne Dalsa image sensors, cameras, frame grabbers and software are used in thousands of automated inspection systems around the world and across multiple industries.



Teledyne Dalsa

Felix-Wankel-Str. 1
82152 Krailing
Germany
Tel.: +49 89 89 54 57 3 80
Fax: +49 89 89 54 57 3 46
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

Optics for Quality Control

- Telecentric Lenses
- Miniature Microscopes
- Zoom Systems



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 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

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

Weißer Breite 7, 49084 Osnabrück, Germany
Tel.: +49 541 800 84 0, vds@vdsvoessk.de, www.vdsvoessk.de

OS

Producer

Vialux GmbH

Am Erlenwald 10, 09128 Chemnitz, Germany
Tel.: +49 371 33 42 47 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

Ettishofer Str. 8, 88520 Weingarten, Germany
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 3040800, post@visimation.de, www.visimation.de

TÜ

Producer

Vision & Control GmbH

Mittelbergstr.16, 98527 Suhl, Germany
Tel.: +49 3681 79 74 0, www.vision-control.com

SHL

Consultant, Other

Vision Academy

Konrad-Zuse-Str. 15, 99099 Erfurt, Germany
Tel.: +49 361 42 62 188, www.vision-academy.org

EF

Producer

Vision Components is a leading developer of machine vision technology, focusing on the manufacture and distribution of intelligent cameras for industrial use. 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 single board OEM, miniature and standard Smart Cameras.

Vision Components GmbH · Ottostr. 2, 76275 Ettlingen, Germany
Tel.: +49 7243 2167 0, 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

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

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



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
P.O. Box 1148
64629 Heppenheim
Germany
Tel.: +49 178 1755972
info@vision-ventures.eu
www.vision-ventures.eu



Producer

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



Integrator, Solution Provider

Visotect GmbH
Heubergstr. 19, 70806 Kornwestheim, Germany
Tel.: +49 7154 800 88 61, info@visotect.de, www.visotect.de



Distributor

Vistas GmbH
Freisinger Str. 13, 85737 Ismaning, Germany
Tel.: +49 89 929 280 90, info@vistas-gmbh.de, www.vistas-gmbh.de



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, 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



Distributor, Integrator, Producer, Solution Provider

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



Solution Provider

VMT Vision Machine Technic Bildverarbeitungssysteme GmbH
Mallaustr. 50-56, 68219 Mannheim, Germany
Tel.: +49 621 84250 0, info@vmt-gmbh.com, www.vmt-gmbh.com



Producer

Volpi develops and produces fiber optic and optoelectronic systems and equipment. The two Volpi plants are situated in the center of the major European and American economic zones.

In its target markets Life Science (Diagnostics, Bio-Pharma), Medical Technology, Machine Vision and Industrial Endoscopy, Volpi is the strategic part-

ner for sophisticated OEM components, high-quality standard products and private label solution.

Core Competencies: Optics, Fiber Optics, Optoelectronics, Light Emitters, High-Power LED, Thermal Management, Engineering, Contract Manufacturing.

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



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

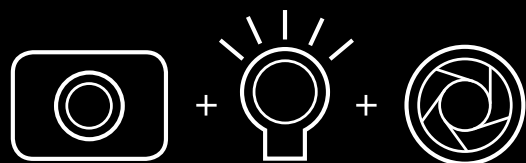


Integrator, Solution Provider

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



the easy way of machine vision



VISION SYSTEM

LIGHTING

OPTICS

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



Producer

Wenglor Sensoric GmbH

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



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



Producer

Werth Messtechnik GmbH

Siemensstr. 19, 35394 Giessen, Germany
Tel.: +49 641 7938 0, mail@werth.de, www.werth.de



Solution Provider

Wickon Hightech GmbH

Grieboer Dorfstr. 16B, 06886 Luth. Wittenberg, Germany
Tel.: +49 2131 20 199 0, vertrieb@wickon.com, www.wickon.com



Solution Provider

Wolf Systeme AG

Südweg 3, 75245 Neulingen, Germany
Tel.: +49 7237 48690 0, info@wolfsysteme.de, www.wolfsysteme.de



Producer

X-Rite Europe GmbH

Althardstr. 70, 8105 Regensburg, Switzerland
Tel.: +41 44 842 24 00, info-germany@xrite.com, www.xrite.com



Integrator, Solution Provider

Zertrox GmbH & Co. KG

Bachstr. 62-64, 52066 Aachen, Germany
Tel.: +49 241 9977 164, info@zertrox.de, www.zertrox.de



Machine Builder/OEM, Producer, Solution Provider

Ziemann & Urban GmbH

Am Bleichbach 28, 85452 Moosinning, Germany
Tel.: +49 8123 936880, info@ziemann-urban.de, www.ziemann-urban.de



Producer

Since 1985, Z-Laser is a leading manufacturer of laser systems for machine vision, measurement, medical and more. Laser modules and fibre-coupled solutions provide the highest requirements in projection accuracy that is demanded in many applications. Customized assemblies with waterproof housings, e.g. for OEM applications are supported for many products. Micro- or macrolines, various projection patterns such as multi-lines, dot matrices, and circles are available for a variety of wavelengths.



Z-Laser Optoelektronik GmbH

Merzhauserstr. 134
79100 Freiburg
Germany
Tel.: +49 761 29644 320
Fax: +49 761 29644 55
info@z-laser.de
www.z-laser.com



Producer

ZygoLOT GmbH

Im Tiefen See 58, 64293 Darmstadt, Germany
Tel.: +49 6151 8806 27, info@zygolot.de, www.zygolot.de



Europe





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 fac-

tors 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, SLO ONA lver, 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 Hold-

ing 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

Luchthavenweg 91, 5657 EA Eindhoven, Netherlands
Tel.: +31 40 2353900, SalesEU@adimec.com, www.adimec.com



Solution Provider

Alliance Vision

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



Producer, Solution Provider

Aqsense develops and commercializes 3D point cloud acquisition and processing libraries that allow high speed in-line 100% production inspection for the Machine Vision Industry. Our customers are Machine Builders and System Integration companies focused on production and quality systems for a wide range of sec-

tors like medical, automotive, food, dental, industrial or electronics. Our standard product is SAL3D, the 3D Shape Analysis Library, which is a comprehensive set of tools for acquiring and processing Clouds Of Points from different standard sources such as laser triangulation, stereo vision and time of flight among others.

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, 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 CH SA

Rue Galilée 9, 1400 Yverdon-les-bains, Portugal
Tel.: +41 24 510 38 03, 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
Passion for Sensors

Baumer Italia S.r.l.

Via Resistenza 1
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

LIGHTING SOLUTION

The world's highest standard of LED Lighting Technology
Let our expertise work for you.

CCS Lighting Solution is the world's highest standard of LED lighting technology. Let our expertise work for you! CCS provides high-added-value LED lighting that makes optimum use of our unique control, focus and heat dissipation technology. Lighting from CCS is widely used in machine vision, microscopy and Bio-medical. The key to success in these markets lies in the lighting technology. CCS proposes the most suitable solutions from a rich standard and a vast custom product lineup.



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



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

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 ap-

plications, 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

B. Bulv 177d2, 34394 Istanbul, Turkey
Tel.: +90 212 2752280, inform@e3tam.com, www.e3tam.com

TR

Producer

Effilux

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

F

Association

The EMVA has more than 120 members representing 20 nations. Its aim is to promote the development and use of machine vision technology and to support the interests of its members – machine vision companies, research institutions and national machine vision associations. EMVA focuses on standardization, statistics, the annual EMVA Business Conference and other networking events, public relations and marketing.

**EMVA – European Machine Vision Association**

Ronda Santa Eulalia 37, nave 13
08780 Pallesa - Barcelona
Spain
Tel.: +34 931 807060
Fax: +34 931 807060
info@emva.org
www.emva.org

E

Producer

Euresys is a major player in the field of machine vision, developing and marketing high-performance products and services for image acquisition and vision-oriented analysis. For industrial machine vision applications, Euresys offers a wide series of frame grabbers for digital and analog image acquisi-

tion. These boards include the features required for a convenient and precise industrial acquisition. Established in 1989, Euresys has built on a strong experience in machine vision and video surveillance, offering dedicated and efficient solutions for OEMs.

Euresys s.a.

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

B

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 develops real-time machine vision systems, proprietary software solutions and design and build turn-key vision system. These systems are in majority applied to car and automotive industry. Our solutions are applied worldwide and control sev-

eral million pieces of different products daily. FDS applications are based on common FDS Imaging Software platform. These kinds of solutions offer customers easier support, quick adjustment, improvement, and application optimization.

FDS Research, d.o.o.

Suhadolcanova 28, 1231 Ljubljana, Slovenia
Tel.: +386 1 589 75 81, info@fdsresearch.si, www.fdsresearch.si

SLO

Machine Builder/OEM

Flir Advanced Thermal Solutions

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@globallasertech.com, www.globallasertech.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

Europe

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

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, Greece
Tel.: +30 261 0911568, info@iridalabs.gr, www.iridalabs.gr

GRE

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

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-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 imaging with GigE Vision, Camera Link, USB 3.0 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. In 2012, TVI Vision became part of the JAI Group.



See the possibilities

JAI AS - Denmark
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 is a global leader in technology for precision data acquisition and control solutions serving a wide range of automation and OEM applications. Founded in 1982, Microscan has a strong history of technology innovation that includes the invention of the first laser diode barcode scanner and the 2D symbology, Data Matrix. Today, Microscan remains a technology leader in automatic identification and machine vision with extensive solutions for ID tracking, traceability and inspection ranging from basic barcode reading up to complex machine vision inspection, identification, and measurement. As an ISO 9001:2008 certified company recognized for quality leadership in the U.S., Microscan is known and trusted by customers worldwide as a provider of quality, high precision products. Microscan is a Spectris company.



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) offers world class CMOS imaging sensors based upon a unique and patented pixel technology which provides intrinsic high dynamic range response of more than 140dB, no noticeable fixed pattern noise and operability without

image artifacts to more than 90°C. NIT offers a complete range of standard, customized and full custom CMOS imaging sensors for a variety of applications where performance, cost, quality and reliability are of premium choice.

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 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 is a globally-operating company in the automation technology sector. In addition to state-of-the-art control, drive, safety and sensor technology, a main field of activity are image processing solutions for machine building and plant construction. As one of the world market leaders in industrial sensor technology, Omron has over 40 years experi-

ence in this sector. Omron's image processing product portfolio ranges from intelligent sensors to comprehensive image processing systems. The universal systems are used in all areas of industry. In addition, Omron provides sector-specific solutions for the pharmaceutical, automotive and photovoltaic industry.

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

Opto Engineering designs and manufactures optical systems for imaging, metrology, sensors, projection and lasers. Nowadays Opto Engineering is well recognized as one of the best re-

garded suppliers of machine vision optics and its specific and continuous focusing in telecentric lens design and manufacturing has made Opto Engineering "The Telecentric Company".

Opto Engineering Srl

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



Integrator, Solution Provider

OptoFidelity Oy

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



OptoMotive is specialized in FPGA based high-speed intelligent cameras and architectures for demanding and real-time processing machine vision solutions. OptoMotive assortment of modular high-speed intelligent cameras Cameleon, Camelopard and Ve-

lociraptor with its flexible architecture covers wide array of uses. Expandable FPGA architecture and real-time processing gives the camera a chance to control a process at a very high speed without any additional control units (camera centric systems).

OptoMotive, mechatronics Ltd.

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



Distributor

Parameter AB, with over 20 years in the business, is the largest Machine Vision distributor and represents the market leaders in cameras, frame grabbers, lenses, illumination and software for Machine Vision in the Nordic and Baltic countries, Poland and Iceland.

We offer consultative services and training to your Machine Vision professionals. Our customers are also market leaders in many different branches, such as paper, wood, bio medicine, electronics, food and manufacturing.

Parameter AB

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



Solution Provider

Phase One Industrial's camera systems are built specifically for industrial applications such as aerial photography, fine art reproduction and machine

vision, and provide advanced hardware and imaging software solutions that meet the unique requirements of their users.

Phase One Industrial

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



Producer

Phlox S.A.

415, rue Claude Nicolas Ledoux, 13854 Aix-en-Provence Cedex 3, France
Tel.: +33 4 42 90 76 27, c.halladjian@phlox-gc.com, www.phloc-gc.com



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



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



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/



Producer

SKS Vision Systems OY

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



Producer

Smartek Vision

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



Producer

Sony Europe's Image Sensing Solutions division has an in-depth range of industry leading analogue and digital component cameras and image sensing products. Sony ISS continues to expand its popular IEEE1394b camera series with his first CMOS Global Shutter industrial Camera: the revolution-

ary XCD-MV6 punches way above its weight, which is just 37 g. Less than two-thirds the size of the cubic, the new Micro Camera is a marvel of miniaturization and perfect for machine downsizing. A lightweight camera that performs like a heavyweight at unbeatable cost.

Sony Europe Limited

The Heights, Brooklands, KT13 0XW Weybridge, Surrey, United Kingdom
Tel.: +33 1 55 90 35 12, zone@eu.sony.com, www.pro.sony.eu/vision



Producer

SPC Company b.v.

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



FRAMOS

ENGINEERING IMAGING SOLUTIONS

Image Sensors · Cameras · Camera Modules
Optics · Cabels · Lighting · Image Aquisition
Accessories · Test Equipment · Software & Tools

www.framos.com · info@framos.de
FRANCE · GERMANY · ITALY · RUSSIA · UNITED KINGDOM

Europe

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

Tattile srl was set up on 7th January 1988 by a team with experience in quality control, providing solutions to engineering problems connected with automated production lines and quality control. Tattile produce a wide range of Cameras, Smart Cameras and Embedded Analyzers.

Tattile Srl

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

I

Producer

Tordivel 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 is the experienced manufacturer of the colour line scan cameras that are based on 3CCD architecture with beamsplitting prism technology, serving high demands of the industrial machine vision applications. Now TVI Vision has introduced new camera series based on CMOS technology with large pixel size (20 µm x 20 µm) and high line rate. New CMOS cameras are 3CMOS and 4CMOS prism based colour line scan cameras; and monochrome CMOS camera. These new Sweep +series cameras will be available with both CoaXPress and Camera Link interface. Sweep series monochrome camera will be available also with GigE interface.

TVI Vision

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

FIN

Integrator, Solution Provider

Machine Vision Systems supplier to OEM's and end users. Specialist in Inspection systems for PV solar cells, closures for bottles and liquid containers, Baby diapers.

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 is a leading provider of spectral imaging systems and instruments for laboratory as well as in-line applications within e.g. food, pharma, cosmetic, medical, and materials industries.

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 Automati-

tion (i. e. license plate recognition) and Security Business. We also customize standard products to suit individual customer requirements. VLT – creating optical solutions.

Vision Light Tech

Protonenlaan 22, 5405 NE Uden, Netherlands
Tel.: +31 413 260067, info@vlt.nl, www.visionlighttech.com

NL

Distributor

Visionlink srl

Via Marco Polo 22, 20038 Seregno, Italy
Tel.: +39 362 600202, info@visionlink.it, www.visionlink.it

I

Distributor, Integrator, Solution Provider

We are a systems integrator with over 25 years of experience in building custom-made machine vision systems.

Vistek Machine Vision and Automation AS

Kemal Nehrozoglu caddesi, 41480 Kocaeli, Turkey
Tel.: +90 262 6788 902, info@vistekas.com, www.vistekas.com

TR

Producer, Research Facility, Solution Provider

Xenics is a pioneer of path-breaking infrared technology with a proven track record of more than ten years. Xenics designs and markets infrared imagers, cores and cameras of best-in-class image quality to support innovative R&D, industrial automation, machine vision, process control and high-end security applications. The company offers a complete portfolio of line-scan and 2-D area-scan products for the VisNIR, SWIR, MWIR and LWIR ranges. A vertically integrated manufacturer with advanced production facilities and in-house know-how on detector, systems and software development.



Xenics
Infrared Solutions

Xenics

Ambachtenlaan 44
3001 Leuven
Belgium
Tel.: +32 16 38 99 00
Fax: +32 16 38 99 01
sales@xenics.com
www.xenics.com

BE

North America



North America

Solution Provider

A&B Software

5 Holly Ter, 6320 New London, CT, United States of America
Tel.: +1 860 823 8301, sales@ab-soft.com, www.ab-soft.com

CT

Machine Builder/OEM

AGR International, Inc.

615 Whitestown Road, 16001 Butler, PA, United States of America
Tel.: +1 724 482 2163, sales@agrintl.com, www.agrintl.com

PA

Distributor

Allied Scientific Pro · 815 Boul. de la Carrière, bureau 202, J9J2S8 Gatineau, QC, Canada, 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

6310 Hollister Ave., 93117 Santa Barbara, CA, United States of America
Tel.: +1 805 696 6466, sales@asylumresearch.com, www.asylumresearch.com

CA

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
Passion for Sensors

Baumer Ltd.

122 Spring Street, Unit C-6
06489 Southington, CT
United States of America
Tel.: +1 860 621 2121
Fax: +1 860 628 6280
sales.us@baumer.com
www.baumer.com

CT

Distributor

Bock Optronics Inc.

14 Steinway Blvd., Suite 7, M9W 6M6 Toronto, ON, Canada
Tel.: +1 416 674 2804, sales@bockoptronics.ca, www.bockoptronics.ca

ON

Integrator

Cepoint Networks, LLC.

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.

6979 S. High Tech Drive, 84047 Salt Lake City, UT, United States of America
Tel.: +1 801 256 6500, sales@cimetrix.com, www.cimetrix.com

UT

Producer

Coherent Canada is a leading designer and manufacturer of structured light lasers. Our Lasiris brand of industrial packaged diode lasers are used in industrial inspection and 3-D machine vi-

sion industries and more recently have been introduced into biomedical and military markets for specialized applications.

Coherent Canada

275 Kesmark, H9B3J1 Montreal, QC, Canada
Tel.: +1 514 685 1005, 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 40, 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 is an authorized manufacturer and global supplier of CameraLink and related cable assemblies serving the Machine Vision Industry. CEI's extensive product development & engineering support is recognized throughout the industry as be-

ing the forefront in cabling technology. Specializing in both custom and standard applications. Come visit us today and see why Components Express, Inc. is the worlds' greatest machine vision cable manufacturer!

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, CDSales@gefancu.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

890C Cowan Road, 94010 Burlingame, CA, United States of America
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

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

Manufacturer of standard and custom camera cable assemblies include CameraLink, Mini Camera Link, FireWire, USB, GigE and other analog and digital cable assemblies. Highflex and industrial grade cable assemblies are available for robotic and other high flex applications. Additional products include bulk cable, power supplies, and fiber optic extenders.

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

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-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 imaging with GigE Vision, Camera Link, USB 3.0 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. In 2012, TVI Vision became part of the JAI Group.



JAI Inc. - USA
625 River Oaks Parkway
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
119B Emerson Road, 3055 Milford, NH, United States of America
Tel.: +1 603 732 57, sales@lddligh.com, www.LDDLIGHT.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**

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**

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**

Producer

Midwest Optical Systems, Inc.
322 N. Woodwork Lane, 60067 Palatine, IL, United States of America
Tel.: +1 847 359 3550, midwest@midopt.com, www.midopt.com **IL**

Distributor, Integrator, Solution Provider

MsiVision
5 Herbert Drive, Suite 1N, 12309 Latham, NY, United States of America
Tel.: +1 518 346 7136, info@msivision.com, www.msivision.com **NY**

Producer, Solution Provider

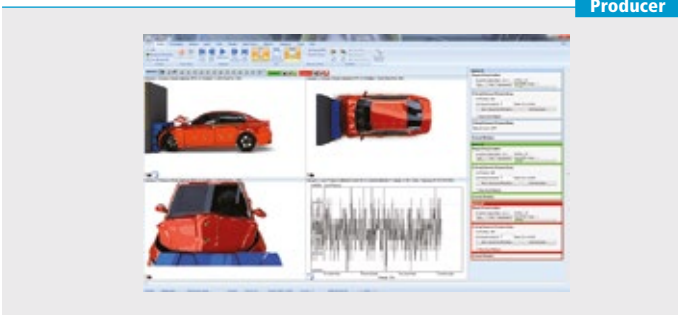
Navitar
200 Commerce Drive, 14623 Rochester, NY, United States of America
Tel.: +1 585 359 4000, info@navitar.com, www.navitar.com **NY**

Association, Machine Builder/OEM, Solution Provider, Other

Newnex Technology Corp.
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

StreamPix 6 brings digital video recording to a new level: DAQ : Capture high-rate analog/digital data along with the video. Record from multiple cameras with audio, DAQ data, GPS coordinates, IrigB timing and more. Synchronously playback video, audio, DAQ, GPS data and IrigB timing. Record at up to 2.6 GigaBytes/second.

NORPIX

Digital Video Recording Software

Norpix, Inc.
1751 Richardson St., Suite 6117
H3K1G6 Montreal, QC
Canada
Tel.: +1 514 846 0009
Fax: +1 514 846 0117
ln@norpix.com
www.norpix.com

QC

Other

An Innovative solutions provider, Northwire Technical Cable leads the industry in fast turnaround, with delivery of technical and retractile cable and cable assemblies from design to ship in as few as five days with no minimum order length or quantity requirements. Stock cable is shipped the same

day. Northwire offers free design and prototyping services to facilitate customers' pursuit of innovative solutions. Specialized staff members help customers navigate complex international standards, agency compliance, environmental regulations and electrical requirements.

Northwire Technical Cable
110 Prospect Way, 54020 Osceola, WI, United States of America
Tel.: +1 715 294 2121, cableinfo@northwire.com, www.northwire.com

WI

Producer

Novacam Technologies Inc.
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, orusintegration.com

QC

Distributor

Phase 1 Technology Corp.
44 Jefryn Boulevard, Suite Y, 11729 Deer Park, NY, United States of America
Tel.: +1 888 732 6474, info@phase1tech.com, www.phase1tech.com

NY

Producer

PixelLink
3030 Conroy, K1G 6C2 Ottawa, ON, Canada
Tel.: +1 613 247 1211, sales@pixelink.com, www.pixelink.com

ON

Producer

Pleora Technologies invented high-performance frame grabbers and embedded hardware for the delivery of video over Gigabit Ethernet, and leads the market in video interfaces for USB 3.0 and wireless. With this spirit of innovation, Pleora engineers reliable video interfaces for system manufacturers

and camera companies serving the military, medical, and industrial automation sectors. Pleora provides end-to-end solutions that shorten time-to-market, reduce risk, and lower system cost. We partner with customers and tailor our products to individual needs.

Pleora Technologies Inc.
340 Terry Fox Drive Suite 300, K2K 3A2 Kanata, ON, Canada
Tel.: +1 613 270 0625, info@pleora.com, www.pleora.com

ON

Producer

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

AR

Producer

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

MN

Solution Provider

Pressco Technology Inc.
29200 Aurora Road, 44139 Cleveland, OH, United States of America
Tel.: +1 440 498 2600, Sales@pressco.com, www.pressco.com

OH

Producer

ProPhotonix designs and manufactures machine-vision structured light laser modules, LED linescan illuminators, chip-on-board LED ring, spot, area and line lights, a wide range of laser modules, including fiber-coupled, for industrial, medical, security, defense and transportation industries. We also distribute laser diodes manufactured by

industry leaders including Sony, Oclaro/Opnext, Ondax and QSI. In addition, ProPhotonix creates custom OEM lighting solutions for scientific and industrial applications, including packaging, industrial inspection and alignment, high-speed scanning and sorting, patient positioning, targeting, and 3-D imaging.

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

NH

Producer

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.
30 Merion Pl., 8648 Lawrenceville, NJ, United States of America
Tel.: +1 609 642 1377, voigt@SensorDesk.com, www.SensorDesk.com

NJ

Machine Builder/OEM

Sensors Unlimited, Inc. · 3490 Route 1 Building 12, 08540-5914 Princeton, NY, United States of America
Tel.: +1 609 520 0610, Karen.Jeffers@goodrich.com, www.sensorsinc.com

NY

Integrator

Serview, Inc.
420D Kelley Drive, 8091 West Berlin, NJ, United States of America
Tel.: +1 856 719 9034, stevel@serview.net, www.serview.net

NJ

Producer

Servo-Robot Inc.
1370 Hocquart, J3V 6E1 St-Bruno, QC, Canada
Tel.: +1 450 653 7868, sales@servorobot.com, www.servorobot.com

QC

Producer

Smart Vision Lights · 1800 Holton Rd Suite D 353, 49445 Muskegon, MI, United States of America, Tel.: +1 231 722 1199, bobby@smartvisionlights.com, www.smartvisionlights.com

MI

Producer

Spectrum Illumination is the leading supplier of high output LED lighting for the Machine Vision Market. Spectrum Illumination was the first company to bring high output LED's to the market and we are still the only company with a full product line utilizing that technology. Spectrum Illumination has over 100,000 standard products with all different variations. Most standard products are available to ship within days of receiving a purchase order.



Spectrum Illumination
5114 Industrial Park Rd.
49437 Montague, MI
United States of America
Tel.: +1 231 894 4590
Fax: +1 231 894 4582
sales@spectrumillumination.com
www.spectrumillumination.com

MI

Solution Provider

SPG Data 3D Corporation
2151 Leonard de Vinci, J3E 1Z3 Ste-Julie, QC, Canada
Tel.: +1 450 922 3515, sales@spgdata3d.com, www.spgdata3d.com

QC

Producer

Sunex, Inc.
5963 La Place Court, Suite 3092, 92008 Carlsbad, CA, United States of America
Tel.: +1 760 602 0988, sales@sunex.com, www.sunex.com

CA

Producer

Sydor Optics
31 Jet View Drive, 14624 Rochester, NY, United States of America
Tel.: +1 585 271 7300, MikeV@sydor.com, www.sydor.com

NY

Consultant, Distributor, Integrator

Systematic Vision
PO Box 490, 1721 Ashland, MA, United States of America
Tel.: +1 508 5321116, info@systematicvision.com, www.systematicvision.com

MA

Producer

Tekstar Optical Inc.
270 Kohr Rd., 11754-1237 Kings Park, NY, United States of America
Tel.: +1 631 663 3558, info@tekstaroptical.com, www.tekstaroptical.com

NY

Machine Builder/OEM

Advanced video imaging technology and high resolution cameras such as Toshiba's 3CCD color cameras and their remote head camera family has earned Toshiba America's Imaging Systems Division the distinctive reputation for offering the most advanced imaging solutions to the industrial and scientific communities. Visit www.cameras.toshiba.com for more information.

Toshiba Imaging Systems Division · 9740 Irvine Blvd.,
92618-1697 Irvine, CA, United States of America, Tel.: +1 877 595 4425,
Vincent.Giovinco@tais.toshiba.com, www.cameras.toshiba.com

CA

Solution Provider

TYZX, Inc.
3715 Haven Avenue, Suite 110, 94025 Menlo Park, CA, United States of America
Tel.: +1 650.906.8434, info@tyzx.com, www.tyzx.com

CA

Distributor, Integrator

Vega Technology Group
548 Morello St SW, 44709 North Canton, OH, United States of America
Tel.: +1 330 265 3142, kdbusto@vegategroup.com

OH

Integrator, Solution Provider

Vision Machines Inc.
PO Box 447, 1730 Bedford, MA, United States of America
Tel.: +1 781 275 2020, info@vision-machines.com, www.vision-machines.com

MA

Producer

Vision Research
100 Dey Rd., 7470 Wayne, NJ, United States of America
Tel.: +1 973 696 4500, phantomn@visionresearch.com, www.visionresearch.com

NJ

Consultant

Vizzion, Inc.
321 Sasamat Lane, V7G 2S4 North Vancouver, BC, Canada
Tel.: +1 604 985 9399, info@vizzion.com, www.vizzion.com/development

BC

Distributor

www.USBFireWire.com
1815 E Douglas, 67211 Wichita, KS, United States of America
Tel.: +1 877 522 3779, sales@usbfirewire.com, www.USBFireWire.com

KS

Machine Builder/OEM

Xiris Automation Inc.
1016 Sutton Drive, Unit C5, L7L 6B8 Burlington, ON, Canada
Tel.: +1 905 331 6660, sales@xiris.com, www.xiris.com

ON

With 2 μs Trigger Latency, you do not miss anything!

SMARTEK Vision
Business Class Products at Economy Prices!

Giganetix GigE Vision Cameras

- 2μs trigger latency
- 4 I/O ports
- 17 sensors, VGA up to 10MP from Sony, Trusense Imaging and Aptina
- standard housing, 90° angled and board level options

IPSC LED Controller

- 20A @ 200V high power pulse
- 1μs to 1s variable pulse duration
- precise pulse adjustment per 1μs and 1mA
- models with 1, 2, 4 or 6 channels available
- intuitive and convenient user interface, incl. C/C++-SDK



www.smartekvision.com



Phone: +49 (89) 3815330-57 · Fax: +49 (89) 3815330-58 · eMail: info@smartekvision.com

World



Distributor

Adept Electronic Solutions

Level 1, 15 Drake St, 6017 Osborne Park, Australia
Tel.: +61 08 9242 5350, adept@adept.net.au, www.adept.net.au



Producer

Alditech

Institutskaia, 142290 Pushchino, Russia
Tel.: +7 4967 736220, web@alditech.ru, www.alditech.ru



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
Passion for Sensors

Baumer (China) Co., Ltd.

Building 30, 2nd Floor, Section A,
Minyi Road 201, Songjiang District
201612 Shanghai
China
Tel.: +86 21 6768 7095
Fax: +86 21 6768 7098
sales.cn@baumer.com
www.baumer.com



Distributor, Solution Provider

G4 Technology Co., Ltd.

5F, No. 46, Sec. 3, Minquan E. Rd, 104-77 Taipei, Taiwan
Tel.: +886 2 2503 1803, ken@g4.com.tw, www.g4.com.tw



Producer, Solution Provider

Gidel Ltd.

2 Ha'ilan St. P.O.Box 281, 30600 Or Akiva, Israel
Tel.: +972 4 610 2500, sales_eu@gidel.com, www.gidel.com



Producer

Goyo Optical Inc

3-8-31 Hamazaki, 351-0033 Asaka-Saitama, Japan
Tel.: +81 48 474 2235, info@gyooptical.com, www.gyooptical.com



Producer

JAI is a global manufacturer of digital cameras for machine vision, traffic imaging, global security, medical imaging and scientific research. Besides a broad range of leading-edge 1-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 imaging with GigE Vision, Camera Link, USB 3.0 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. In 2012, TVI Vision became part of the JAI Group.



see the possibilities

JAI Ltd. - Japan

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





Association

Japan Industrial Imaging Association

2-10-15, Nakameguro, Yamate Ave. K Bldg., 153-0061 Meguro, Japan
Tel.: +81 3 3716 3933, info@jiaa.org, www.jiaa.org



Producer

Kamera · 6A Massada St., 45294 Hod Hasharon, Israel
Tel.: +972 9 7603425, info@kamera.com, www.kamera.com



Machine Builder/OEM

Leading-Tech Laser Co., Ltd.

5th floor, building 52, No.5688, LongWu Road, 200241 Shanghai, China
Tel.: +86 2133588122, sale@leading-techlaser.com, www.leading-techlaser.com



Producer

NED (Nippon Electro-Sensory Devices Ltd)

Shinagawa-ku, Ohi 1-45-2 Gibraltar Ohi Bldg, 4f, 140-0014 Tokyo, Japan
Tel.: +81 3 5718 3181, sven@ned-sensor.com, www.ned-sensor.co.jp/en



Integrator

Nexus Engiconsults · A 115 2nd floor Shakarpur, 110092 New Delhi, India
Tel.: +91 9810769831, info@nexusengiconsults.com, www.nexusengiconsults.com



Machine Builder/OEM

RAA Vision Pvt Ltd.

Om vihar, 110058 New Delhi, India
Tel.: +91 9911690240, amit@raavision.com, www.raavision.com



Producer

Shenzhen Kuangshi Communication Technology · 6/F, No.1 Building, Zhongyuntai Industry Park, Tangtoushiyan, 51818 Shenzhen, China
Tel.: +86 0755 29781835, zteyhb@gmail.com, www.ksfiber optic.com



Producer

Toshiba Teli Corporation develops and manufactures CMOS and CCD cameras for machine vision, industrial automation, inspection, measurement, robotics, 3D, pick and place, AOI & medical imaging. The product assortment includes Gigabit, Firewire, PoCL, Cameralink, Linescan, analog, RS170 (EIA), CCIR, near infra-red, remote head cameras, mini-cube and HD CMOS cameras using CCD and CMOS sensors up to 12 megapixel. Toshiba Teli Corporation also manufactures OEM cameras and HD LCD Monitors for the medical industry. Our products are subject to total in-house manufacturing from the procurement and supply of components to assembly, wiring and inspection.



Toshiba Teli Corporation

4-7-1 Asahigaoka, 1910065 Hino, Tokyo, Japan
Tel.: +81 425 89 8771, teli_glb@toshiba-teli.co.jp, www.toshiba-teli.co.jp

Integrator

View-Factor

Av Circunvalacion, Cochabamba, Bolivia
Tel.: +591 4 445 4595, agalindo@view-factor.com, www.view-factor.com



LED Lighting from Polytec



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. The Latab lighting line with more than 3,000 standard products and a wide range of controllers (manual, analog, RS-232, Ethernet) ensures suitable products for a broad

spectrum of applications. Short delivery times, high quality and the ability to match customer demands through custom lighting developments are fundamental reasons to focus on LED lighting from Polytec.



Polytec GmbH
Polytec-Platz 1 -7
76337 Waldbronn
Germany
Tel.: +49 7243 604 0
Fax: +49 7243 699 44
info@polytec.de
www.polytec.de

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 three different GigE Vision models: VGA-Mono-chrome, UXGA (2 Megapixel)-Mono-chrome and UXGA (2-Mega-pixel)-Color. An Extended Depth of Field system consists of the camera itself, a



special lens and camera firmware, which is adjusted at the factory to the lens used. In total there are eight lenses available with focal lengths of 8.5 mm, 12 mm and 35 mm and different F-Stops available.



Ricoh Imaging Deutschland GmbH
Am Kaiserkai 1
20457 Hamburg
Germany
Tel: +49 40 53 201 33 66
Fax: +49 40 53 201 33 39
iosd@eu.ricoh-imaging.com
www.ricoh-mv-security.eu

See our profile on page **38**

Easy – New Intelligent Camera Platform

The new intelligent camera platform D3 by VRmagic was designed with usability, flexibility, and performance in mind. The D3 features a 1 GHz ARM Cortex-A8 Core with floating point unit running Linux and a 700 MHz C674x DSP with FPU, which is available for performance-demanding algorithms. 2 GB DDR3-800 RAM are available as memory. A Gigabit Ethernet interface provides fast and efficient transmission of image data. The extended software portfolio ranges from image processing libraries such as Halcon and open source software like OpenCV to a Mono compatible .NET interface. The embedded system supports a multitude of interfaces, which offers you a high level of flexibility. Besides a standard platform with a fix set of interfaces such as Ethernet, USB, and GPIOs, customers



can select a combination of interfaces that perfectly matches their requirements.



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

Smallest SWIR Line-Scan Cameras



Machine vision inspection using Xenics' uncooled Lynx cameras provides you high resolution information about quality assurance measurements. The SWIR cameras match perfectly the absorption spectra of low level photon emissions and provide increased subsurface penetration depth images.

The Lynx cameras are a flexible solution with industry-standard GigE Vision, Power over Ethernet or CameraLink interface, and at a later stage CoaXPress. Furthermore you can change integration times from 1 µs to several minutes. You will reach optimal image quality choosing from various configurations in High Sensi-

tivity mode (HS) or High Dynamic Range Mode (HDR) and multiple gain settings. The cameras are offered in multiple line resolutions: 512, 1024 or unique 2048 which substitutes for costly multiple camera solutions.



Xenics headquarters
Ambachtenlaan 44
3001 Leuven
Belgium
Tel.: +32 16 38 99 00
sales@xenics.com
www.xenics.com

See our profile on page **66**

Fastest USB3 Vision and Embedded PC-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.



PC-cameras Currera: The IP67 compliant PC based intelligent camera Currera-R comprises a complete PC and an industrial camera in a small, rugged housing.

PCIe based high speed cameras: with up to 20 MPix these cameras provide the fastest possible image acquisition at high resolution.

USB2.0 camera series xiMU: Ximea's smallest camera with a size of only 15x15x8.5 mm offers big performance in tight space.

Scientific and High performance cameras for the most demanding applications that require the ultimate image quality acquisition. With resolutions up to 16 Mpix, cooled and uncooled models, and signal fidelity of 14+bits, xiD, xiCe and xiRay cameras generate best-in-class images.



Ximea GmbH
 Hansestraße 81
 48165 Münster
 Germany
 Tel.: +49 2501 964 555 0
 Fax: +49 2501 964 555 99
 info@ximea.com
 www.ximea.com

See our profile on page **40**



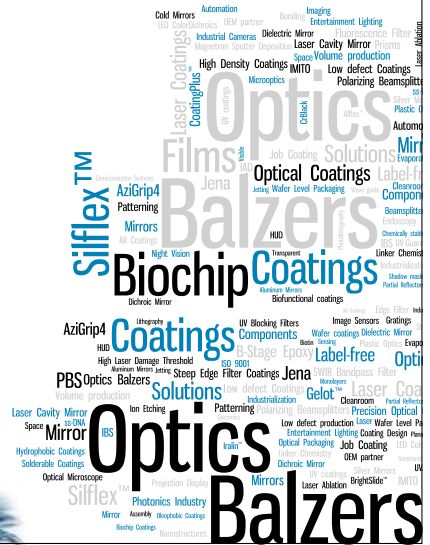
Enabling Innovative Optical Solutions

Optics Balzers has been the preferred partner for innovative optical solutions for more than 65 years. As a global leader, Optics Balzers focuses on high-tech markets such as Sensors & Imaging, Biophotonics, Laser, Space & Defence, Lighting & Projection, Automotive, and Industrial Applications. The company possesses comprehensive know-how in optical thin-film coatings and components, glass processing, patterning and sealing technologies.

Optics Balzers AG
 Balzers/Liechtenstein

Optics Balzers Jena GmbH
 Jena/Germany

www.opticsbalzers.com



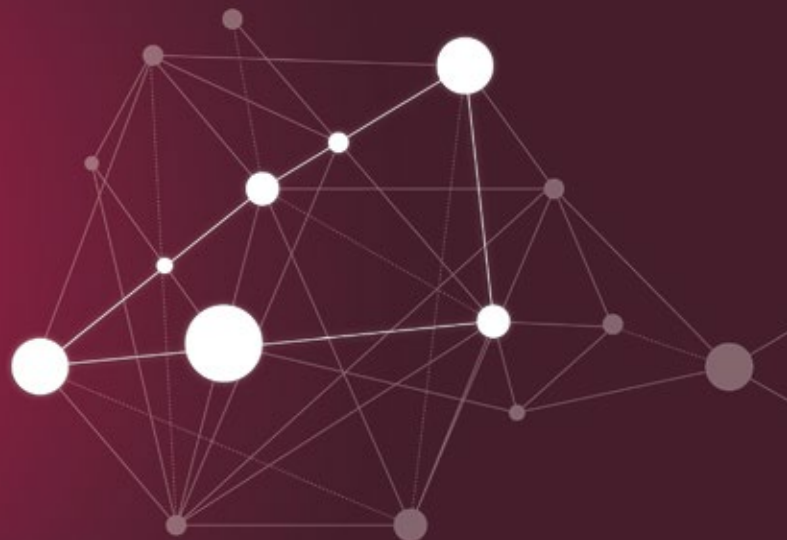
AMC Hofmann
 P.O. Box 1156
 64629 Heppenheim
 Germany

CONTACT
 E-Mail: info@amc-hofmann.com
 Telephone: +49-1577-530 6969
 Internet: www.amc-hofmann.com

Market Competence in Vision

” *To manage a business well is to manage its future; and to manage the future is to manage information.*

Marion Harper



Cameras & Image Sensors

ABS www.abs-jena.de	Awaiba www.awaiba.com	Cypress Semiconductor www.cypress.com	Fairchild Imaging www.fairchildimaging.com
Acal BFi Germany www.bfiophtilas.com	BAP Image Systems www.bapis.de	Data Vision www.datvision.com	Fastec Imaging www.fastecimaging.com
Adimec www.adimec.com	Basler Vision Technologies www.baslerweb.com	Datalogic Automation www.automation.datalogic.com	FiberVision www.fibervision.de
Aicon 3D Systems www.aicon.de	Baumer www.baumer.com	Dedo Weigert www.dedoweigertfilm.de	FJW Optical Systems www.findrscope.com
AIM Infrarot Module www.aim-ir.de	Beijing Microview www.microview.com.cn	Devitech www.devitech.dk	Flir Systems www.flir.com
AKE-Components www.ake-components.de	Bock Optronics www.bockoptronics.ca	Digital West Imaging www.DigitalWestimaging.com	Fluke www.fluke.de
Allied Vision Technologies www.alliedvisiontec.com	Canesta www.canesta.com	e2v www.e2v.com	Fort www.fort-fr.com
Allied Scientific Pro www.alliedscientificpro.com	C-Cam Technologies www.c-cam.be	Eastman Kodak www.kodak.com/go/imagers	Framos www.framos.com
Allison Park Group www.apgvision.com	China Daheng Group www.daheng-image.com	ebs Automatisierte Thermographie und Systemtechnik www.irpod.net	Fraunhofer IMS www.ims.fraunhofer.de
Alrad Imaging www.alrad.co.uk	Chromasens www.chromasens.de	Edmund Optics www.edmundoptics.de	FSI Technologies www.fsinet.com
AMS Technologies www.ams.de	Cmos Vision www.cmosvision.com	EHD Imaging www.ehd.de	Fuzhou Feihua Optoelectronic Technology www.fzfh.com
AnaFocus www.anafocus.com	CMOSIS www.cmosis.com	Eltec Elektronik www.eltec.com	G4 Technology www.g4.com.tw
Andanta www.andanta.de	Cognex www.cognex.com	Entner Electronics www.entner-electronics.com	Gevicam www.gevicam.com
Andor Technology www.andor.com	Cohu www.cohu-cameras.com	Epix www.epixinc.com	Goepel electronic www.goepel.com
AOS Technologies www.aostechologies.com	Compar www.compar.ch	Erhard + Leimer www.erhardt-leimer.com	Goodrich/SUI www.sensorsinc.com
Applied Scintillation Technologies www.appscintech.com	Computer BV www.computerbv.de	Eureca Messtechnik www.eureca.de	Goratec www.goratec.de
Artray www.artray.co.jp	Cosyco www.cosyco.de	Euresys www.euresys.com	gsvitec www.gsvitec.com
Asentics www.asentics.de	Crometic www.crometic.com	eVision Systems www.aivion.de	Hamamatsu Photonics www.hamamatsu.com
Automation Technology www.automationtechnology.de	CSEM www.csem.ch	Fabrimex Systems www.fabrimex-systems.ch	Helion www.helionvision.com

Heliotis
www.heliotis.ch

HGV Vosseler
www.hgv.de

High Speed Vision
www.hsvision.de

Hitachi Kokusai Electric Europe
www.Hitachi-keu.com

Horn Imaging
www.horn-imaging.de

Ico Data
www.icodata.de

IDS
www.ids-imaging.com

Ifm Electronic
www.ifm.com

Ikegami
www.ikegami.de

Illunis
www.illunis.com

Image House
www.imagehouse.dk

Image S
www.imagessrl.com

Imaging Solutions Group
www.isgchips.com

Imi Technology
www.imi-tech.com

Impac Infrared
www.impactinfrared.com

Imperx
www.imperx.com

IMS Chips
www.ims-chips.de

Industrial Vision Systems
www.industrialvision.co.uk

Infaimon
www.infaimon.com

InfraTec
www.infratec.de

Insensiv
www.insensiv.de

IOS
www.ios-web.de

Ircam
www.ircam.de

IS Imaging Solutions
www.imaging-solutions.de

ISVI
www.isvi-corp.com

JAI
www.jai.com

Japan F.A. Systems
www.jfas.co.jp

JenCam
www.jencam.de

Jenoptik Laser, Optik, Systeme
www.jenoptik-los.de

Kamera Werke Dresden
www.kwdo.de

Kamiera
www.kamiera.com

Kappa opto-electronics
www.kappa.de

Karlheinz Hinze Opto-engineering
www.hinze-opto.de

Keekoon Electronics
www.keekoon.com

Klughammer
www.klughammer.de

Kvant
www.kvant.sk

Lambda Photometrics
www.lambdaphoto.co.uk

Lambert Instruments
www.lambert-instruments.com

Leitner Industrial Endoscopy
www.leitner-efer.de

Leutron Vision
www.leutron.com

Leuze Electronic
www.leuze.com

LMI Technologies
www.lmi3d.com

Lord Ingenierie
www.lord-ing.com

LOT Oriel
www.lot-oriel.com

Lumenera
www.lumenera.com

Luster LightVision Tech
www.lusterinc.com

MAK Bildtechnik
www.mak-bildtechnik.de

Matrix Vision
www.matrix-vision.de

MaxxVision
www.maxxvision.com

Menzel Vision and Robotics
www.menzelab.com

Mesa Imaging
www.mesa-imaging.ch

MG Optical Solutions
www.mgopticalsolutions.com

Micro-Epsilon Eltrotec
www.eltrotec.com

Microsystems
www.microsystems.it

Mikromak Service
www.mikromak.com

Mikrotron
www.mikrotron.de

msiVision
www.msivision.com

NAC
www.nacinc.de

Narragansett Imaging
www.nimaging.com

National Instruments
www.ni.com

NED
www.ned-sensor.co.jp

NET
www.net-gmbh.com

NeuPro Solutions
www.neupro-solutions.com

New Imaging Technologies
www.new-imaging-technologies.com

NTI
www.nti-measure.com

OBE Ohnmacht & Baumgärtner
www.trevista.net

Odem Technologies
www.odem.co.il

Odos Imaging
www.odos-imaging.com

Olympus
www.olympus-europa.com

Omron
www.industrial.omron.de

Opto Fidelity
www.optofidelity.com

Opto Sonderbedarf
www.opto.de

Optrima
www.optrima.com

Optris
www.optris.de

Optronis
www.optronis.com

Orbis
www.orbis.eu

Panasonic Electric Works
www.panasonic-electric-works.de

Parameter
www.parameter.se

PCO
www.pco.de

Pentacore
www.pentacore.de

PerkinElmer Optoelectronics
www.perkinelmer.com

Phase 1 Technology Corp.
www.phase1tech.com

Phase One Industrial
http://industrial.phaseone.com

Philips
www.apptech.philips.com/vision

Photonfocus
www.photonfocus.com

Photon
www.photon.com

Phytec Messtechnik
www.phytec.de

pi4_robotics
www.pi4.de

Pieper
www.pieper-video.de

Pixelink
www.pixelink.com

PMDTec
www.pmdtec.com

Point Grey Research
www.ptgrey.com

Polytec
www.polytec.com

Polytec
www.polytec.de

Premier Electronics
www.premierelect.co.uk

Princeton Instruments
www.princetoninstruments.com

Cameras & Image Sensors

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

Consulting, Marketing, Education & Other Services

A.I.D.A. IMVG
www.associazionevisione-imvg.it

AIA Automated Imaging Association
www.machinevisiononline.org

Aido
www.aido.es

Alfvision
www.alfvision.de

Allied Scientific Pro
www.alliedscientificpro.com

AMC
www.amc-hofmann.com

Arvoo Imaging Products
www.arvoo.com

AS Thermographie
www.as-thermografie.de

Asentics
www.asentics.de

Austrian Research Centers
www.smart-systems.at

Awaiba
www.awaiba.com

Carl Zeiss 3D Metrology Services
www.zeiss3d.de

Cepoint Networks
www.cepoint.com

CMES - Chinese Mechanical Engineering Society
www.cmes.org

Cmos Vision
www.cmosvision.com

CMOSIS
www.cmosis.com

Cognex
www.cognex.com

Collischoen Optik-Design
www.mikro-optik.de

CSEM
www.csem.ch

CTMV
www.ctmv.de

Datapixel
www.datapixel.com

de Man Industrie-Automation
www.deman.de

Delta Digital Video
www.delta.dk

Digital West Imaging
www.DigitalWestimaging.com

Duwe 3D
www.duwe-3d.de

EMVA European Machine Vision Association
www.emva.org

Entner Electronics
www.entner-electronics.com

Erhard + Leimer
www.erhardt-leimer.com

Farbmessung Schröder
www.farbmessung.com

FiberVision
www.fibervision.de

Framos
www.framos.com

Fraunhofer Allianz Vision
www.vision.fraunhofer.de

Fritz Pauker Ingenieure
www.pauker-ingenieure.de

G4 Technology
www.g4.com.tw

GBS
www.gbs-ilmenau.de

GFai
www.gfai.de

Graphikon
www.graphikon.de

HGV Vosseler
www.hgv.de

IAI Imaging Association of India
www.iaionline.org

IDS
www.ids-imaging.com

Imaging Lab
www.imaginglab.it

Impuls
www.impuls-imaging.com

INB Vision
www.inb-vision.com

Infaimon
www.infaimon.com

InRay Solutions
www.inrays.com

Irida Labs
www.irdalabs.gr

IS Imaging Solutions
www.imaging-solutions.de

IVAN
www.feda.nl

JIIA Japan Industrial Imaging Association
www.jiia.org

Joanneum Research
www.joanneum.at

Kappa opto-electronics
www.kappa.de

Landesmesse Stuttgart
www.vision-fair.de

Lincoln Laser Company
www.lincolnlaser.com

Messe München
www.messe-muenchen.de

Michigan Metrology
www.michmet.com

msiVision
www.msivision.com

MT-Vision
www.mt-vision.de

Neurocheck
www.neurocheck.com

Norman N. Axelrod Associates
www.axelrodassociates.com

NTI
www.nti-measure.com

OBE Ohnmacht & Baumgärtner
www.trevista.net

Omron
www.industrial.omron.de

Optical Research Associates
www.opticalres.com

Opto Fidelity
www.optofidelity.com

Opto Sonderbedarf
www.opto.de

P.E. Schall
www.schall-messen.de

Phase 1 Technology Corp.
www.phase1tech.com

Phytec Messtechnik
www.phytec.de

pi4_robotics
www.pi4.de

Polytec
www.polytec.com

Rubroeder
www.rubroeder.de

Sensor to Image
www.sensor-to-image.de

SmartSurv
www.smartsurv.de

Solving3D
www.solving3d.de

SPG Data 3D
www.spgdata3d.com

Stemmer Imaging
www.stemmer-imaging.com

**STZ Qualitätssicherung und Bild-
verarbeitung**
www.stz-ilmeneau.de

Supercomputing Systems
www.scs-vision.ch

SVS Vistek
www.svs-vistek.com

Sympop
www.symop.com

Systematic Vision
www.systematicvision.com

UKIVA
www.ukiva.org

**University of Applied Sciences
Darmstadt**
www.fbmh.h-da.de

Univision
www.univision.it

**Van de Loosdrecht
Machine Vision**
www.vdlimv.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.automaatioseura.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

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

HGV Vosseler
www.hgv.de

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

Leutron Vision
www.leutron.com

Luster LightVision Tech
www.lusterinc.com

Matrix Vision
www.matrix-vision.de

Matrox Imaging
www.matrox.com/imaging

MaxxVision
www.maxxvision.com

Menzel Vision and Robotics
www.menzelab.com

Microsystems
www.microsystems.it

Mikrotron
www.mikrotron.de

msiVision
www.msivision.com

National Instruments
www.ni.com

Odem Technologies
www.odem.co.il

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

Rauscher
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 Bild-
verarbeitung**
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

Acal BFi Germany

www.bfiophtilas.com

Advanced Illumination

www.advancedillumination.com

AHF Analysentechnik

www.ahf.de

Alrad Imaging

www.alrad.co.uk

Allison Park Group

www.apgvision.com

Balluf

www.balluf.de

Baumer

www.baumer.com

Bock Optronics

www.bockoptronics.ca

Büchner Lichtsysteme

www.buechner-lichtsysteme.de

Cavitar

www.cavitar.com

CCS Europe

www.ccs-grp.com

Ceres Vision

www.ceresvision.de

Chromasens

www.chromasens.de

Cognex

www.cognex.com

Coherent

www.coherent.com

Collischon Optik-Design

www.mikro-optik.de

Computer BV

www.computerbv.de

Data Vision

www.datvision.com

DCM Sistemas

www.dcmsistemas.com

Dedo Weigert

www.dedoweigertfilm.de

Digital West Imaging

www.digitalwestimaging.com

Edmund Optics

www.edmundoptics.de

Effilux

www.effilux.fr

Erhard + Leimer

www.erhardt-leimer.com

Fabrimex Systems

www.fabrimex-systems.ch

Falcon Illumination MV

www.falcon-illumination.de

Faseroptik Henning

www.faseroptik-henning.de

Fiberoptics Technology

www.fiberoptix.com

FiberVision

www.fibervision.de

Finger

www.finger-kg.de

Framos

www.framos.com

Frankfurt Laser Company

www.frlaser.com

FSI Technologies

www.fsinet.com

G4 Technology

www.g4.com.tw

Gardasoft Vision

www.gardasoft.com

Global Laser

www.global-lasertech.co.jp

GPP Chemnitz

www.gppc.de

Hamamatsu Photonics

www.hamamatsu.com

Hema

www.hema.de

HGV Vosseler

www.hgv.de

Karlheinz Hinze Optoengineering

www.hinze-opto.de

Helmut Hund

www.hund.de

IB/E Optics

www.ibe-optics.com

Ifm Electronic

www.ifm.com

iiM

www.iimag.de

ILEE

www.ilee.ch

Image House

www.imagehouse.dk

Image S

www.imagesrl.com

Infaimon

www.infaimon.com

Insensiv

www.insensiv.de

IS Imaging Solutions

www.imaging-solutions.de

ISVI

www.isvi-corp.com

Japan F.A. Systems

www.jfas.co.jp

Jenoptik Laser, Optik, Systeme

www.jenoptik-los.de

Keyence

www.keyence.de

Klatsch

www.klatsch.com

Klughammer

www.klughammer.de

Kvant

www.kvant.sk

Lambda Photometrics

www.lambdaphoto.co.uk

Laser 2000

www.laser2000.de

Laser Components

www.lasercomponents.com

LAT Elektronik

www.latab.se

LDD Trading Associates

www.lddligh.com

Leitner Industrial Endoscopy

www.leitner-efer.de

LEJ Leistungselektronik Jena

www.lej.de

Leutron Vision

www.leutron.com

LMI Technologies

www.lmi3d.com

LOT Oriel

www.lot-oriel.com

Luster LightVision Tech

www.lusterinc.com

Matrix Vision

www.matrix-vision.de

MaxxVision

www.maxxvision.com

Menzel Vision and Robotics

www.menzelab.com

Metaphase Technologies

www.metaphase-tech.com

MG Optical Solutions

www.mgopticalsolutions.com

Microscan

www.microscan.com

Microsystems
www.microsystems.it

MikroVision
www.mikrovision.de

Moritex
www.moritex.com

msiVision
www.msivision.com

MTD
www.mtd-light.com

Myutron
www.myutron.com

NET
www.net-gmbh.com

NeuPro Solutions
www.neupro-solutions.com

OBE Ohnmacht & Baumgärtner
www.trevista.net

Odem Technologies
www.odem.co.il

Olympus
www.olympus-europa.com

Omicron Laserage
www.omicron-laser.de

Omron
www.industrial.omron.de

Opto Engineering
www.opto-engineering.com

Opto Precision
www.optoprecision.de

Opto Sonderbedarf
www.opto.de

Optometron
www.optometron.de

OptoPolymer
www.optopolymer.de

Orbis
www.orbis.eu

Parameter
www.parameter.se

PerkinElmer Optoelectronics
www.perkinelmer.com

Phaer
www.phaer.be

Phase 1 Technology Corp.
www.phase1tech.com

Phlox
www.phlox-gc.com

Phytec Messtechnik
www.phytec.de

pi4_robotics
www.pi4.de

Planistar Lichttechnik
www.planistar.de

POG Präzisionsoptik Gera
www.pog.eu

Polytec
www.polytec.com

Power Technology
www.powertechology.com

Profactor
www.profactor.at

Qualimatest
www.qmt.ch

Rauscher
www.rauscher.de

Rheintacho Messtechnik
www.rheintacho.com

RH Engineering
www.rhengineering.de

Special Application Products
www.sapltd.co.uk

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

Schmachtl
www.schmachtl.at

Jos. Schneider Optische Werke
www.schneiderindustrialoptics.com

Schott Lighting and Imaging
www.schott.com

Sedeco Vision Components
www.sedeco.nl

Seiwa Optical
www.seiwaopt.co.jp

Sharp Microelectronics
www.sharpsme.com

Sill Optics
www.silloptics.de

Smartek Vision
www.smartekvision.com

Smart Vision Lights
www.smartvisionlights.com

Soliton Technologies
www.solitontech.com

Spectrum Illumination
www.spectrumillumination.com

Stemmer Imaging
www.stemmer-imaging.com

StockerYale
www.stockeryale.com

Streppel Glasfaser-Optik
www.streppel.de

STZ Qualitätssicherung und Bildverarbeitung
www.stz-ilmenau.de

Schäfer + Kirchhoff
www.sukhamburg.de

SVS Vistek
www.svs-vistek.com

Symco
www.symco.co.jp

Tecin
www.tecin.de

Tekno Optik
www.teknooptik.se

Tema
www.temavisio.com

The Imaging Source
www.theimagingnsource.com

Univision
www.univision.it

Visiolaser
www.vannier-photelec.fr/visiolaser

V Cubed
www.vcubed.co.uk

Vialux
www.vialux.de

Visicontrol
www.visicontrol.com

Vision & Control
www.vision-control.com

Second2None
www.visiondragon.com

Vision Light Tech
www.visionlighttech.com

Visionlink
www.visionlink.it

Visionlink
www.visionlink.it

Vision Tools
www.vision-tools.com

Visitool
www.visitool.de

Vistas
www.vistas-gmbh.de

Vistek
www.vistekas.com

Volpi
www.volpi.ch

Herbert Waldmann
www.waldmann.com

Weiss Imaging and Solutions
www.weiss-imaging.de

Wenglor Sensoric
www.wenglor.com

Zertrox
www.zertrox.de

Microscopes, Endoscopes & Equipment

Alrad Imaging

www.alrad.co.uk

AMS Technologies

www.ams.de

Andor Technology

www.andor.com

Asylum Research

www.AsylumResearch.com

Atomic Force

www.atomicforce.de

Awaiba

www.awaiba.com

Bock Optronics

www.bockoptronics.ca

Breitmeier Messtechnik

www.breitmeier.de

Deben UK

www.deben.co.uk

**Dr. Heinrich Schneider
Messtechnik**

www.dr-schneider.de

Edmund Optics

www.edmundoptics.de

EHD Imaging

www.ehd.de

Fei Company

www.feicom

Fort

www.fort-fr.com

FRT Fries Research & Technology

www.frt-gmbh.com

G4 Technology

www.g4.com.tw

GE Inspection Technology

www.geinspectiontechnologies.com

Heliotis

www.heliotis.ch

Karlheinz Hinze Optoengineering

www.hinze-opto.de

Hipp Endoskop Service

www.hipp-endoskopservice.com

Horn Imaging

www.horn-imaging.de

Helmut Hund

www.hund.de

Infaimon

www.infaimon.com

Infinity Photo-Optical

www.infinity-de.com

Karl Storz

www.karlstorz.de

Kdorf Automation

www.kdorf.de

Keyence

www.keyence.de

Klughammer

www.klughammer.de

Kvant

www.kvant.sk

Leica Microsystems

www.leica-microsystems.com

Leitner Industrial Endoscopy

www.leitner-efer.de

LOT Oriel

www.lot-oriel.com

MBR

www.mbr-gmbh.com

Micos

www.micos.ws

Micro-Epsilon Eltrotec

www.eltrotec.com

Mikroskoptechnik Rathenow

www.askania.d

MikroVision

www.mikrovision.de

Mitutoyo

www.mitutoyo.de

Moritex

www.moritex.com

msiVision

www.msivision.com

NanoFocus

www.nanofocus.de

Nanosurf

www.nanosurf.com

Nikon

www.nikoninstruments.eu

Olympus

www.olympus-europa.com

Opto Sonderbedarf

www.opto.de

OptoMess

www.optomess.de

Optometron

www.optometron.de

Optoprime

www.optoprime.de

Oxford Instruments

www.oxford-instruments.com

PCE Power Control

www.pce-powercontrol.de

Physik Instrumente

www.pi.ws

pi4_robotics

www.pi4.de

Pro Design Electronic

www.prodesign-europe.com

Panasonic

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

Richard Wolf

www.richard-wolf.com

Rubroeder

www.rubroeder.de

Schäfer Technologie

www.schaefer-tec.com

Schael-Optik

www.schael-optik-ltd.com

Seiwa Optical

www.seiwaopt.co.jp

Seldes

www.seldes.com

Streppel Glasfaser-Optik

www.streppel.de

**STZ Qualitätssicherung und
Bildverarbeitung**

www.stz-ilmenau.de

Tecin

www.tecin.de

Tekno Optik

www.teknooptik.se

Thermosensorik

www.thermosensorik.de

Vega Technology Group

www.vegatcgroup.com

Vision Engineering

www.visioneng.de

Visitool

www.visitool.de

Walter Uhl

www.walteruhl.de

Weiss Imaging and Solutions

www.weiss-imaging.de

Werth Messtechnik

www.werthmesstechnik.de

Wild

www.wild.at

Carl Zeiss Microimaging

www.zeiss.de/mikro

Unique content



www.md-automation.de

www.gitverlag.com

GIT VERLAG
A Wiley Brand

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.drnull.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 Kerschhagl
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

HGV Vosseler
www.hgv.de

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

Isi Optronics
www.isi-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

Mirco-Epsilon Eltrotec
www.eltrotec.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 Fidelity
www.optofidelity.com

Opto Precision
www.optoprecision.de

Opto Sonderbedarf
www.opto.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.de

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

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.teknootik.se

Topometric
www.topometric.net

Tordivel
www.scorpionvision.com

Ulis
www.ulis-ir.com

Vialux
www.vialux.de

Videometer
www.videometer.com

Visiolaser
www.vannier-photelec.fr/visiolaser

Vision 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.zygotlot.de

Optics

AHF Analystechnik
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

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

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

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.imagesrl.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

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 Oriel
www.lot-oriel.com

Luster LightVision Tech
www.lusterinc.com

Matrix Vision
www.matrix-vision.de

MaxxVision
www.maxxvision.com

Menzel Vision and Robotics
www.menzelab.com

Meuser Optik
www.meuser-optik.com

MG Optical Solutions
www.mgopticalsolutions.com

Micos
www.micos.ws

Micro-Epsilon Eltrotec
www.eltrotec.com

Microsystems
www.microsystems.it

Midwest Optical Systems
www.midopt.com

Moeller-Wedel Optical
www.moeller-wedel-optical.com

Molenaar Optics
www.molenaar-optics.com

Moritex
www.moritex.com

msiVision
www.msivision.com

Myutron
www.myutron.com

Navitar
www.navitar.com

NET
www.net-gmbh.com

NeuPro Solutions
www.neupro-solutions.com

Odem Technologies
www.odem.co.il

Olympus
www.olympus-europa.com

Omron
www.industrial.omron.de

Optec
www.optec.eu

Optics Balzers
www.opticsbalzers.com

Opto Engineering
www.opto-engineering.com

Opto Precision
www.optoprecision.de

Opto Sonderbedarf
www.opto.de

Optometron
www.optometron.de

Orbis
www.orbis.eu

Parameter
www.parameter.se

**Pentax Ricoh Imaging
Deutschland**
www.pentax-security.com

Phaer
www.phaer.be

Phase 1 Technology Corp.
www.phase1tech.com

Photonic Products
www.photonic-products.com

pi4_robotics
www.pi4.de

POG Präzisionsoptik Gera
www.pog.eu

Polytec
www.polytec.com

Profactor
www.profactor.at

Qioptiq
www.qioptiq.com

Qualimatest
www.qmt.ch

Rauscher
www.rauscher.de

Resolve Optics
www.resolveoptics.com

RH Engineering
www.rhengineering.de

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

Schmachtl
www.schmachtl.at

Jos. Schneider Optische Werke
www.schneiderindustrialoptics.com

Schott Lighting and Imaging
www.schott.com

Sedeco Vision Components
www.sedeco.nl

Seiwa Optical
www.seiwaopt.co.jp

**Shenzhen Kuangshi Communica-
tion Technology**
www.ksfiber optic.com

Sill Optics
www.silloptics.de

Space
www.spacecom.co.jp

Spectros
www.spectros.ch

Spectrum Illumination
www.spectrumillumination.com

Stemmer Imaging
www.stemmer-imaging.com

Streppel Glasfaser-Optik
www.streppel.de

**STZ Qualitätssicherung und Bild-
verarbeitung**
www.stz-ilmenau.de

Sugitoh
www.sugitoh.jp

Schäfter + Kirchhoff
www.sukhamburg.de

Sunex
www.sunex.com

SVS Vistek
www.svs-vistek.com

Sydor Optics
www.sydor.com

Symco
www.symco.co.jp

Tamron
www.tamron.de

Tekno Optik
www.teknooptik.se

Tekstar Optical
www.tekstaroptical.com

The Imaging Source
www.theimagingnsources.com

Thermosensorik
www.thermosensorik.de

Vega Technology Group
www.vegatcgroup.com

Videology Imaging Solutions
www.videologyinc.com

Videor Technical
www.videor.com

Vision & Control
www.vision-control.com

Second2None
www.visiondragon.com

Vision Light Tech
www.visionlighttech.com

Visionlink
www.visionlink.it

Visitool
www.visitool.de

Volpi
www.volpi.ch

VS Technology
www.vst.co.jp

Weiss Imaging and Solutions
www.weiss-imaging.de

Carl Zeiss
www.zeiss.com/lenses4industry

Carl Zeiss IMT
www.zeiss.de

Carl Zeiss Microimaging
www.zeiss.de/mikro

ZygoLOT
www.zygot.de

Processors, Interfaces, Cables, Peripherals

ABS
www.abs-jena.de

Active Silicon
www.activesilicon.com

Adaptive Vision
www.adaptive-vision.com

Aerotech
www.aerotech.com

Allied Vision Technologies
www.alliedvisiontec.com

Alysium-Tech
www.alysium-tech.com

AMS Technologies
www.ams.de

Analogic Computers
www.analogic-computers.com

Andon Electronics
www.andonelect.com

Arvoo Imaging Products
www.arvoo.com

AutoVimation
www.autovimation.com

BAP Image Systems
www.bapis.de

Bock Optronics
www.bockoptronics.ca

Cepoint Networks
www.cepoint.com

Components Express
www.componentsexpress.com

Computer BV
www.computerbv.de

D.SignT
www.dsignt.de

de Man Industrie-Automation
www.deman.de

Diaplous
www.diaplous.com

DSM Computer
www.dsm.ag

EDT
www.edt.com

Eltec Elektronik
www.eltec.com

Epix
www.epixinc.com

Ernst & Engbring
www.eue-kabel.de

eVision Systems
www.aivion.de

Fabrimex Systems
www.fabrimex-systems.ch

FiberVision
www.fibervision.de

Framos
www.framos.com

G4 Technology
www.g4.com.tw

Gidel
www.gidel.com

GigaLinx
www.gigalinx.net

HaSoTec
www.hasotec.com

Hema
www.hema.de

HGV Vosseler
www.hgv.de

IDS
www.ids-imaging.com

Igus
www.igus.de

Image House
www.imagehouse.dk

Image S
www.imagesrl.com

Imaging Solutions Group
www.isgchips.com

Imago
www.strampe.de

Infaimon
www.infaimon.com

Intercon1
www.intercon-1.com

Japan F.A. Systems
www.jfas.co.jp

Kamera
www.kamera.com

Lemo
www.lemo.com

Leoni
www.leoni-fiber-optics.com

Lippert Adlink Technology
www.adlinktech.eu

LMI Technologies
www.lmi3d.com

Luster LightVision Tech
www.lusterinc.com

Mad City Labs
www.madcitylabs.com

Matrix Vision
www.matrix-vision.de

Matrox Imaging
www.matrox.com/imaging

MaxxVision
www.maxxvision.com

MaZet
www.mazet.de

Menzel Vision and Robotics
www.menzelab.com

Micro-Epsilon Eltrotec
www.eltrotec.com

Micron
www.micron.com

Microsystems
www.microsystems.it

Mikrotron
www.mikrotron.de

Newnex Technology
www.newnex.com

Northwire Technical Cable
www.northwire.com

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

Piezosystem Jena
www.piezosystem.com

Pleora Technologies
www.pleora.com

Pro Design Electronic
www.prodesign-europe.com

Pyramid Computer
www.pyramid.de

Schmachtl
www.schmachtl.at

Seidenader
www.seidenader.de

Seldes
www.seldes.com

Serview
www.serview.net

sglux
www.sglux.com

Silicon Software
www.silicon-software.de

Smartek Vision
www.smartekvision.com

Stemmer Imaging
www.stemmer-imaging.com

STZ Qualitätssicherung und Bildverarbeitung
www.stz-ilmeneau.de

Supercomputing Systems
www.scs-vision.ch

SVS Vistek
www.svs-vistek.com

Symco
www.symco.co.jp

Teledyne Dalsa
www.teledynedalsa.com

The Imaging Source
www.theimagingnsource.com

Thinklogical
www.thinklogical.com

Unibrain
www.unibrain.com

ViDiSys
www.vidisys.de

Vision & Control
www.vision-control.com

Vision Tools
www.vision-tools.com

Vistas
www.vistas-gmbh.de

www.USBFireWire.com
www.usbfirewire.com

Xilinx
www.xilinx.com

R&D

Acal BFi Germany
www.bfiophtilas.com

AHF Analysentechnik
www.ahf.de

Aido
www.aido.es

Alfvision
www.alfvision.de

Alicona Imaging
www.alicon.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.completeinspectionssystem.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

HGV Vosseler
www.hgv.de

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

Micro-Epsilon Eltrotec
www.eltrotec.com

Mikromak Service
www.mikromak.com

msiVision
www.msivision.com

Nexus Engiconsults
www.nexusengiconsults.com

Norpix
www.norpix.com

Opto Sonderbedarf
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

Schäfer + Kirchoff
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.teknootptik.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.vistek.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.aeousa.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

HGV Vosseler
www.hgv.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

Imagic
www.imagic-imaging.com

Imaging Lab
www.imaginglab.it

Imatec
www.imatec-bildanalyse.com

Impuls
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

Klughammer
www.klughammer.de

Kvant
www.kvant.sk

Lambda Photometrics
www.lambdaphoto.co.uk

Lambda Research Corporation
www.lambdaresearch.com

Leica Geosystems
www.leica-geosystems.com/
metrology

Leica Microsystems
www.leica-microsystems.com

Leutron Vision
www.leutron.com

LMI Technologies
www.lmi3d.com

Luster LightVision Tech
www.lusterinc.com

Math & Tech Engineering
www.mathtech.eu

Matrix Vision
www.matrix-vision.de

Matrox Imaging
www.matrox.com/imaging

MaxxVision
www.maxxvision.com

Menzel Vision and Robotics
www.menzelab.com

Metronom Automation
www.metronom-automation.de

Micro-Epsilon
www.micro-epsilon.com

Micro-Epsilon Eltrotec
www.eltrotec.com

Microscan
www.microscan.com

Microsystems
www.microsystems.it

Mikromak Service
www.mikromak.com

Mitutoyo
www.mitutoyo.de

msiVision
www.msivision.com

MVTec Software
www.mvtec.com

National Instruments
www.ni.com

Neogramm
www.neogramm.de

Neurocheck
www.neurocheck.com

Norpix
www.norpix.com

OBE Ohnmacht & Baumgärtner
www.trevista.net

Odem Technologies
www.odem.co.il

Olympus
www.olympus-europa.com

Omron
www.industrial.omron.de

Optical Research Associates
www.opticalres.com

Optis
www.optis-world.com

Optometron
www.optometron.de

Orbis
www.orbis.eu

Parameter
www.parameter.se

Phase 1 Technology Corp.
www.phase1tech.com

Phase One Industrial
http://industrial.phaseone.com

Photonfocus
www.photonfocus.com

pi4_robotics
www.pi4.de

Pleora Technologies
www.pleora.com

Polytec
www.polytec.com

Profactor
www.profactor.at

Qualimatest
www.qmt.ch

Rapidform
www.rapidform.com

Rauscher
www.rauscher.de

RH Engineering
www.rhengineering.de

Rubroeder
www.rubroeder.de

SAC
www.sac-vision.de

Schmachtl
www.schmachtl.at

Second2None
www.visiondragon.com

Sedeco Vision Components
www.sedeco.nl

SensorDesk
www.SensorDesk.com

Silicon Software
www.silicon-software.de

Simon IBV
www.simon-ibv.de

Smartek Vision
www.smartekvision.com

SmartSurf
www.smartsurf.de

SPG Data 3D
www.spgdata3d.com

Stemmer Imaging
www.stemmer-imaging.com

**STZ Qualitätssicherung und
Bildverarbeitung**
www.stz-ilmenau.de

Supercomputing Systems
www.scs-vision.ch

SVS Vistek
www.svs-vistek.com

Symco
www.symco.co.jp

Systematic Vision
www.systematicvision.com

Tekno Optik
www.teknooptik.se

Teledyne Dalsa
www.teledynedalsa.com

Tema
www.temavisio.com

The Imaging Source
www.theimagingnsource.com

The MathWorks
www.mathworks.com

Thermosensorik
www.thermosensorik.de

Tordivel
www.scorpionvision.com

TriVision
www.trivision.dk

TYZX
www.tyzx.com

Unique Vision
www.unique-vision.net

Univision
www.univision.it

**Van de Loosdrecht Machine
Vision**
www.vdlmv.nl

Vega Technology Group
www.vegatcgroup.com

Visicontrol
www.visicontrol.com

Visiolaser
www.vannier-photelec.fr/
visiolaser

Vision & Control
www.vision-control.com

Vision Components
www.vision-components.com

Vision Machines
www.vision-machines.com

Vision N
www.vision-n.de

Vision Tools
www.vision-tools.com

Visionlink
www.visionlink.it

Vistek
www.vistek.com

Vitronic
www.vitronic.com

Vizzion
www.vizzion.com

Weiss Imaging and Solutions
www.weiss-imaging.de

Wenzel
www.wenzel-cmm.com

X-Rite
www.xrite.com

Zertrox
www.zertrox.de

Vision Sensors, Smart Cameras & Embedded Systems

Acal Bfi Germany
www.bfioptilas.com

Active Silicon
www.activesilicon.com

Adaptive Vision
www.adaptive-vision.com

AIT Göhner
www.VisionAndID.com

Alfvision
www.alfvision.de

AMS Technologies
www.ams.de

Applied Scintillation Technologies
www.appscintech.com

Asentics
www.asentics.de

Awaiba
www.awaiba.com

Banner Engineering
www.bannerengineering.com

Basler Vision Technologies
www.baslerweb.com

Baumer
www.baumer.com

Camsensor Technologies
www.camsensor.com

Cmos Vision
www.cmosvision.com

CMOSIS
www.cmosis.com

Cognex
www.cognex.com

Compar
www.compar.ch

Computer BV
www.computerbv.de

Computer Dynamics
www.cdynamics.com

Cosyco
www.cosyco.de

Datalogic Automation
www.automation.datalogic.com

Datasensor
www.datasensor.com

de Man Industrie-Automation
www.deman.de

Diaplous
www.diaplous.com

Directed Perception
www.DPerception.com

Di-soric
www.di-soric.de

Eltec Elektronik
www.eltec.com

Erhard + Leimer
www.erhardt-leimer.com

EVT Eye Vision Technology
www.evt-web.com

Fabrimex Systems
www.fabrimex-systems.ch

FastVision
www.fast-vision.com

Festo
www.festo.com

FiberVision
www.fibervision.de

Finger
www.finger-kg.de

FSI Technologies
www.fsinet.com

G4 Technology
www.g4.com.tw

Graphikon
www.graphikon.de

Hans Turck
www.turck.com

Hema
www.hema.de

HGV Vosseler
www.hgv.de

IBN
www.ibn-gmbh.de

Ifm Electronic
www.ifm.de

Image House
www.imagehouse.dk

Image S
www.imagesrl.com

Imaging Solutions Group
www.isgchips.com

Imago Technologies
www.imago-technologies.com

Imagsa Technologies
www.imagsa.com

IMR Automatisierungstechnik
www.imr-le.de

Infaimon
www.infaimon.com

IOS
www.ios-web.de

IOSS
www.io.ss.de

Ipf Electronic
www.ipf-electronic.de

IS Imaging Solutions
www.imaging-solutions.de

Isra Vision
www.isravision.com

ISW
www.isw-gmbh.biz

Itava
www.itava.de

Japan F.A. Systems
www.jfas.co.jp

K + P Krempien + Petersen
www.kup-image.de

Kamera
www.kamera.com

Keyence
www.keyence.de

Kontron
www.kontron.com

Lambda Photometrics
www.lambdaphoto.co.uk

Leutron Vision
www.leutron.com

Leuze Electronic
www.leuze.com

Lippert Adlink Technology
www.adlinktech.eu

LMI Technologies
www.lmi3d.com

Lord Ingenierie
www.lord-ing.com

Luster LightVision Tech
www.lusterinc.com

Matrix Vision
www.matrix-vision.de

Matrox Imaging
www.matrox.com/imaging

MaxxVision
www.maxxvision.com

MaZet
www.mazet.de

Menzel Vision and Robotics
www.menzelab.com

Micro Epsilon
www.micro-epsilon.com

Micro-Epsilon Eltrotec
www.eltrotec.com

Microscan
www.microscan.com

Microsystems
www.microsystems.it

msiVision
www.msivision.com

National Instruments
www.ni.com

NeuPro Solutions
www.neupro-solutions.com

Neuricam
www.neuricam.com

Norpix
www.norpix.com

OBE Ohnmacht & Baumgärtner
www.trevista.net

Odem Technologies
www.odem.co.il

Omron
www.industrial.omron.de

Opto Sonderbedarf
www.opto.de

OptoMotive
www.optomotive.si

Orbis
www.orbis.eu

Panasonic Electric Works
www.panasonic-electric-works.de

Parameter
www.parameter.se

Pepperl & Fuchs
www.pepperl-fuchs.com

Peter Scholz Software + Engineering
www.scholzsue.de

Phase One Industrial
http:industrial.phaseone.com

Phytec Messtechnik
www.phytec.de

pi4_robotics
www.pi4.de

PMDTec
www.pmdtec.com

Pollux
www.pollux.com.br

Polytec
www.polytec.com

PPT Vision
www.pptvision.com

Profactor
www.profactor.at

Pulsotronic
www.bildverarbeitung.pulso-tronic.de

Qualimatest
www.qmt.ch

Rauscher
www.rauscher.de

RSB Optotechnik
www.rsb-optotechnik.de

SAC
www.sac-vision.de

Schmachtl
www.schmachtl.at

Schunk
www.schunk.com

Second2None
www.visiondragon.com

Sedeco Vision Components
www.sedeco.nl

SensoPart Industriesensorik
www.sensopart.de

Sensor to Image
www.sensor-to-image.de

Shape Drive
www.shape-drive.com

Sharp Microelectronics
www.sharpsme.com

Sick
www.sick.com

Siemens
www.siemens.de/simatic-sensors/mv

SKS Vision Systems
www.visionsystems.fi

Smartray
www.smartray.de

SmartSurv
www.smartsurv.de

Soliton Technologies
www.solitontech.com

Sony
www.pro.sony.eu/vision

Stemmer Imaging
www.stemmer-imaging.com

Supercomputing Systems
www.scs-vision.ch

SVS Vistek
www.svs-vistek.com

Symco
www.symco.co.jp

Tattile
www.tattile.com

Tekno Optik
www.teknooptik.se

Teledyne Dalsa
www.teledynedalsa.com

Tichawa Vision
www.tichawa.de

TopSenso
www.topsenso.de

Tordivel
www.scorpionvision.com

Turck
www.turck.de

TYZX
www.tyzz.com

Vega Technology Group
www.vegatcgroup.com

Vialux
www.vialux.de

Videor Technical
www.videor.com

Visicontrol
www.visicontrol.com

Visiolaser
www.vannier-photelec.fr/
visiolaser

Vision & Control
www.vision-control.com

Vision Components
www.vision-components.com

Vision Tools
www.vision-tools.com

Visionlink
www.visionlink.it

Vistek
www.vistekas.com

VRmagic
www.vrmagic.com

Webview
www.webspec.com

Wenglor Sensoric
www.wenglor.com

Werth Messtechnik
www.werthmesstechnik.de

Wintriss Engineering
www.weco.com

Ximea
www.ximea.com

Xiris Automation
www.xiris.com

Zertrox
www.zertrox.de

Vision Systems, Turnkey Solutions, Integration Services

3D Alliance
www.3dalliance.de

3D Shape
www.3d-shape.com

A&A Technologies
www.aa-technologies.de

ABB
www.abb.com

Act Smartware
www.act-smartware.de

Adaptive Vision
www.adaptive-vision.com

Adept Electronic Solutions
www.adept.net.au

Adept Technology
www.adept.de

AGR International
www.agrintl.com

AIT Göhner
www.VisionAndID.com

Aku.automation
www.aku-automation.de

Alfa Vision Systems
www.alfavisionsystems.com

Alfvision
www.alfvision.de

Allied Scientific Pro
www.alliedscientificpro.com

Alliance Vision
www.alliancevision.com

Altair Industries
www.altairindustriesinc.com

Applied Vision
www.appliedvision.com

ASB Automation Technology
www.asb-technologie.de

Asentics
www.asentics.de

ATM Vision
www.atmvision.com

ATN Automatisierungstechnik
www.atn-gmbh.com

Attentra
www.attentra.de

Austrian Research Centers
www.smart-systems.at

Automation Technology
www.automationtechnology.de

Automation W+R
www.automationwr.de

Autoware
www.autoware.it

AVT Advanced Vision Technology
www.avt-inc.com

Balluf
www.balluf.de

Basler Vision Technologies
www.baslerweb.com

Baumer
www.baumer.com

Beratronc
www.beratronc.de

Bertram Elektrotechnik
www.bertram-bevern.de

Bi-Ber
www.bildererkennung.de

Böwe Systec
www.bowesystec.com

Braintech
www.braintech.com

Brainware Solutions
www.brainware-solutions.de

BST International
www.bst-international.com

Camsensor Technologies
www.camsensor.com

Carl Zeiss OIM
www.zeiss.de

Cepoint Networks
www.cepoint.com

Ceres Vision
www.ceresvision.de

China Daheng Group
www.daheng-image.com

CLK
www.clkgmbh.de

Cognex
www.cognex.com

Coherix
www.coherix.com

Compar
www.compar.ch

Complete Inspection Systems
www.completeinspectionssystems.com

Computer BV
www.computerbv.de

Cosyco
www.cosyco.de

CoSynth
www.cosynth.com

**Cruse Leppelmann
Kognitionstechnik**
www.clkgmbh.de

Cyth Systems
www.cyth.com

Datalogic Automation
www.automation.datalogic.com

Datapixel
www.datapixel.com

Datasensor
www.datasensor.com

de Man Industrie-Automation
www.deman.de

DE Software & Control
www.de-gmbh.com

Desconpro Engineering
www.desconpro.de

Diaplous
www.diaplous.com

Digital West Imaging
www.DigitalWestimaging.com

Divisoft
www.divisoft.com

DMC Vision & Motion
www.dmc-vision-motion.de

Dr. Schenk Industriemesstechnik
www.dr.schenk.com

**Dr. Schwab Inspection
Technology**
www.schwabinspection.com

Dunkley International
www.dunkleymachinevision.com

Dutch Vision Systems
www.dvs-vision.de

e3tam
www.e3tam.com

Eckelmann
www.eckelmann.de

Edixia
www.edixia.com

EHR
www.ehr.de

Eines
www.eines.es

Electronic Systems
www.electronicssystem.it

Ellips
www.ellips.nl

Eltromat
www.eltromat.de

Emhart Glass
www.emhartglass.com

Epix
www.epixinc.com

Epson Deutschland
www.epson.de/robots

Erhard + Leimer
www.erhardt-leimer.com

EVK DI Kerschagl
www.evk.biz

EVT Eye Vision Technology
www.evt-web.com

EyeC-UK
www.eyec-ukandireland.co.uk

Fast
www.fast-corp.co.jp

Faude Automatisierungstechnik
www.faude.de

**FAW Freudenberg Anlagen-
und Werkzeugtechnik**
www.faw-freudenberg.de

FDS Research
www.fdsresearch.si

FiberVision
www.fibervision.de

Finger
www.finger-kg.de

Fritz Pauker Ingenieure
www.pauker-ingenieure.com

Fuchs Engineering
www.fuchs-engineering.de

Fuetec
www.fuetec.de

Futec Europe
www.futeceurope.com

G4 Technology
www.g4.com.tw

GBS
www.gbs-ilmenau.de

Gefasoft
www.gefasoft.com

Gefat
www.gefat.de

GF Messtechnik
www.gfmestechnik.de

GFai
www.gfai.de

Gidel
www.gidel.com

Goldlücke Ingenieurleistungen
www.giib.de

GOM
www.gom.com

Göpel Electronic
www.goepel.com

GPP Chemnitz
www.gppc.de

Graphikon
www.graphikon.de

GreCon
www.grecon.de

Grenzbach Algoscan
www.algoscan.com

HaSoTec
www.hasotec.com

Heitec
www.heitec.de

Helms Technologie
www.helms-technologie.de

Hengstmann Solutions
www.hengstmann.com

HGV Vosseler
www.hgv.de

i2s
www.i2s-linescan.com

I3 tech
www.i3tech.de

Ibat
www.ibat-berlin.de

Ibea
www.ibeade.de

Icos Vision Systems
www.icos.be

ICW [industrie-elektronik]
www.icw-news.de

iiM
www.iimag.de

Ikegami
www.ikegami.de

Image House
www.imagehouse.dk

Image S
www.imagesrl.com

Imago Technologies
www.imago-technologies.com

I-mation
www.i-mation.de

Imess
www.imess.com

Impuls
www.impuls-imaging.com

IMR Automatisierungstechnik
www.imr-le.de

INB Vision
www.inb-vision.com

Industrial Vision Systems
www.industrialvision.co.uk

Infaimon
www.infaimon.com

InfraTec
www.infratec.de

Inos Automationssoftware
www.inos-automation.com

InRay Solutions
www.inrays.com

Insensiv
www.insensiv.de

In-situ
www.in-situ.de

Inspectron
www.inspectron.ch

InSystems Automation
www.insystems.de

Intego
www.intego.de

Intopii
www.intopii.fi

IOS
www.ios-web.de

IOSS
www.ioss.de

Ipasort
www.ipasort.com

Irida Labs
www.irdalabs.gr

IS Imaging Solutions
www.imaging-solutions.de

Isa Industrielektronik
www.isaweiden.de

Isomorph
www.isomorph.it

Isra Vision
www.isravision.com

ISW
www.isw-gmbh.biz

Isys Industrielle Bildverarbeitung
www.isys-vision.de

Itech engineering
www.itech-ag.ch

IVS
www.industrialvision.co.uk

J&P Vision
www.jupvision.de

Japan F.A. Systems
www.jfas.co.jp

JasVisio - Vision Artificial
www.jasvisio.com

JLI Vision
www.jli.dk

Joanneum Research
www.joanneum.at

K + P Krempien + Petersen
www.kup-image.de

Kaiser Computersysteme
www.isotronika.de

Kdorf Automation
www.kdorf.de

Keyence
www.keyence.de

Kirin Techno-System
www.kirintechno.co.jp

KMS Vision Systems
www.kms-vision.de

L&P
www.lp-gmbh.de

Laetus
www.laetus.com

Leuze Electronic
www.leuze.com

Limess
www.limess.com

Lincoln Laser Company
www.lincolnlaser.com

Machine Vision Technology
www.machine-vision-technology.co.uk

Menzel Vision and Robotics
www.menzelab.com

Vision Systems, Turnkey Solutions, Integration Services

Meta Vision Systems www.meta-mvs.co.uk	OCS www.ocsgmbh.com	Phytec Messtechnik www.phytec.de	Rubroeder www.rubroeder.de
Metronom Automation www.metronom-automation.de	Octum www.octum.de	pi4_robotics www.pi4.de	Rudolph Technologies www.rudolphtech.com
Mevisco www.mevisco.com	Odos Imaging www.odos-imaging.com	Pilz www.pilz.de	SAC www.sac-vision.de
Micro-Epsilon www.micro-epsilon.com	Omron www.industrial.omron.de	Pixargus www.pixargus.de	Scanware Electronic www.scanware.de
Micro-Epsilon Eltrotec www.eltrotec.com	Opsis www.opsis.de	Plasmo Industrietechnik www.plasmo.eu	Schmachtl www.schmachtl.at
Microscan www.microscan.com	Optel Vision www.optelvision.com	POG Präzisionsoptik Gera www.pog.eu	Schönherr Elektronik www.schoenherr-elektronik.com
Mikrotron www.mikrotron.de	OptoFidelity www.optofidelity.com	Pollux www.pollux.com.br	Second2None www.visiondragon.com
Modi Modular Digits www.modi-gmbh.de	OptoNova www.optonova.se	Polygon www.polygon-technology.de	Seidenader www.seidenader.de
Moser Industrielektronik www.moser-gmbh.de	Orbis www.orbis.eu	Polytec www.polytec.de	Sensor Control www.sensorcontrol.com
MSC Inspection www.msc.fr	Orbotech www.orbotech.com	PPT Vision www.pptvision.com	Seritec www.seritec.de
msiVision www.msvision.com	Orus Integration www.orusintegration.com	Pressco Technology www.pressco.com	Serview www.serview.net
MT-Vision www.mt-vision.de	Otto Vision Technology www.otto-jena.de	Profactor www.profactor.at	Servo-Robot www.servorobot.com
Neogramm www.neogramm.de	Panasonic Electric Works www.panasonic-electric-works.de	Prüftechnik Schneider & Koch www.prsuk.de	Sidonia Systems www.sidoniasystems.de
NeuPro Solutions www.neupro-solutions.com	Parameter www.parameter.se	Pulsotronic www.bildverarbeitung.pulsotronic.de	Signum www.signum-vision.de
Neuricam www.neuricam.com	Pattern Recognition Company www.pattern-recognition-company.de	Qualimatest www.qmt.ch	Simac Masic www.simacmasic.nl
Neurocheck www.neurocheck.com	Paul Leibinger www.leibinger-group.com	Quiss www.quiss.com	Simon IBV www.simon-ibv.de
Neurotechnology www.neurotechnology.com	PCE Pharmacontrol www.pharmacontrol.de	RAA Vision www.raavision.com	SL Tec www.sltec.de
Nexus Engiconsults www.nexusengiconsults.com	PCS Industries www.pcs-industries.co.uk	R&W Industrieautomation www.r-u-w.de	Smartray www.smartray.de
Nikka Research Deutschland www.nikka-research.com	Pepperl & Fuchs www.pepperl-fuchs.com	Radix Controls www.radixcontrols.com	Solex www.solexvision.com
Nikon Metrology www.nikonmetrology.com	Perceptron www.perceptron.com	RBC Robotics www.rbc-robotics.de	Solving3D www.solving3d.de
Nokra www.nokra.de	Peter Scholz Software + Engineering www.scholzszue.de	Recognitec www.recognitec.de	Soma www.soma.de
Norman N. Axelrod Associates www.axelrodassociates.com	Phase 1 Technology Corp. www.phase1tech.com	RH Engineering www.rhengineering.de	SPG Data 3D www.spgdata3d.com
Norpix www.norpix.com	Phase One Industrial http://industrial.phaseone.com	Rohwedder www.rohwedder.com	Steinbichler Optotechnik www.steinbichler.com
Northwire www.northwire.com		RSB Optotechnik www.rsb-optotechnik.de	Stöhrmann Systemtechnik www.stoehrmann.de

Stratec Control Systems
www.bbull.com

Streppel Glasfaser-Optik
www.streppel.de

STZ Qualitätssicherung und Bildverarbeitung
www.stz-ilmenau.de

Sundance Multiprocessor Technology
www.sundance.com

Surface Inspection
www.surface-inspection.com

SVS Vistek
www.svs-vistek.com

Symacon Engineering
www.symacon.de

Symetix
www.symetix.com

SysCon
www.syscon-vision.de

Systech
www.systech-tips.com

Systematic Vision
www.systematicvision.com

Tattile
www.tattile.com

TechnoTeam
www.technoteam.de

Teledyne Dalsa
www.teledynedalsa.com

Tema
www.temavisio.com

Thermosensorik
www.thermosensorik.de

Tichawa Vision
www.tichawa.de

Tordivel
www.scorpionvision.com

TriVision
www.trivision.dk

TST Technological Solutions
www.tst.pt

TYZX
www.tyzx.com

Unique Vision
www.unique-vision.net

Univision
www.univision.it

Vega Technology Group
www.vegatcgroup.com

Vester Elektronik
www.vester.de

Videometer
www.videometer.com

View-Factor
www.view-factor.com

Vigitek
www.vigitek.com

Viscom
www.viscom.com

Visicontrol
www.visicontrol.com

Visimation
www.visimation.de

Visio Nerf
www.visionerf.com

Visiolaser
www.vannier-photelec.fr/visiolaser

Vision Automation
www.visionautomation.dk

Vision Experts
www.vision-experts.com

Vision Machines
www.vision-machines.com

Vision Projekt
www.vision-projekt.de

Vision Tools
www.vision-tools.com

Vision-Consult Bildverarbeitung
www.vision-consult.com

Visionlink
www.visionlink.it

VisioTek
www.visiotek.com.tr

Visolution
www.visolution.de

Visotect
www.visotect.de

Vistek
www.vistekas.com

Visuelle Technik
www.visuelle-technik.de

Vitronic
www.vitronic.com

VMT
www.vmt-gmbh.com

V-Research
www.v-research.at

Weber Systemtechnik
www.wesys.de

Weiss Imaging and Solutions
www.weiss-imaging.de

Weitblick Systems
www.weitblick-systems.at

Wenglor Sensoric
www.wenglor.com

Wente/Thiedig
www.wente-thiedig.de

Wickon Hightech
www.wickon.com

Wintriss Engineering
www.weco.com

Wolf Systeme
www.wolfssysteme.de

Zertrox
www.zertrox.de

Ziemann & Urban
www.ziemann-urban.de

www.inspect-online.com

The

INSPECT

is

online

The

**INTERNET-
PORTAL**

for

- MACHINE VISION
- OPTICAL METROLOGY
- CONTROL

online



inspect

Index

Company	Page	Company	Page	Company	Page	Company	Page
A&B Software	68	CoSynth	44	Global Laser	63	Laser 2000	49
ABW Dr. Wolf	42	Creaform Deutschland	44	Goepel electronic	46	Laser Components	49
Acal BFI Germany	42	Crometic-Innovation Vision	63	GOM Ges. f. Optische Messtechnik	46	Laser Quantum	64
Active Silicon	8, 62	CSI	63	Goyo Optical	72	LAT elektronik	64
Adept Electronic Solutions	72	CTMV	44	GPP Ges. für Prozessrechner- programmierung	46	LayTec	49
Adimec Ad. Image Systems	8, 62	CTR Carinthian Tech Research	33	Graphikon	46	LDD Trading Associates	69
Aerotech	42	CyberOptics Semiconductor	68	Grecon Greten	46	Leading Tech Laser	73
AGR International	68	Cyth Systems,	68	Grenzbach Algoscan	46	Leica Geosystems	49
AHF Analysentechnik	42	Datasensor	44	Hamamatsu Photonics Europe	46	Leica Mikrosysteme	49
AIA	8	de Man Industrie-Automation	44	HaSoTec Hardware & Software Technology	46	LEJ Leistungselektronik Jena	50
Aicon 3D	42	Deben	63	Heliotis	46	Lemo	50
AIT Goehner	42	Deposition Sciences	68	Helms Technologie	47	Lensation	50
AKE Components	42	Dhs Solution	44	Hema electronic	47	Leutron Vision	50
Aku.automation	42	Digital Surf	63	Hexagon Metrology	63	Leuze electronic	50
Alditech	72	Digital West Imaging	68	Hitachi Kokusai Electric Europe	47	Lincoln Laser	69
Alfavisio & CO	42	Directed Perception	68	Hochschule Darmstadt	47	Lippert Adlink Technology	50
Alicona Imaging	42	Docter Optics	44	Holoeye Photonics	47	LMI Technologies	35, 37
Alliance Vision	62	Dr. Noll	44	Helmut Hund	47	Lumenera	69
Allied Scientific Pro	68	Dr. Schneider Messtechnik	44	I-mation	48	M-u-t Meßgeräte für Medizin und Umwelttechnik	51
Allied Vision Technologies	11, 27	Dr. Schwab Inspection Technology	44	IB/E Optics Eckerl	47	Mad City Labs	69
Allison Park Group	68	Dunkley International	68	Ibea	47	Math & Tech Eng.	50
Allsens Messtechnik	42	Duwe-3d	44	Icos Vision Systems	64	Matrix Vision	15, 35
Altair Industries	68	DVS Dutch Vision Systems	44	ICW Ing.-Büro Ch. Wölz	47	Matrox Electronic Systems	69
Alysium Tech	42	e2v Semiconductors	63	IDS Imaging Development Systems	13, 30	MaxxVision	50
AMC Hofmann	42, 75	e3tam	63	IFF Fraunhofer Inst. f. Fabrikbetrieb und -automatisierung	46	Metaphase Technologies	69
AMS Technologies	42	Edmund Optics	23, 45	Ifm electronic	47	MG Optical Solutions	50
AnaFocus	62	EDT	68	iIM	47	Michigan Metrology	69
Andanta	42	Effilux	63	Imago Technologies	47	Micro-Epsilon Eltrotec	45
Andor Technology	62	EHD imaging	45	Imess	48	Micro-Epsilon Messtechnik	36, 53
AOS Technologies	42	EHR	45	Imperx	69	Microscan Systems	64
Applied Electro Optics	68	Eltec Elektronik	45	Impuls Bildanalyse	45, 48	Midwest Optical Systems	69
Applied Scintillation Technology	62	EMVA European Machine Vision Association	8, 20, 22, 63	IMS Fraunhofer Inst. f. Mikroelektron. Schaltungen u. Systeme	46	Mikromak Service	50
Aqsense	62	Entner Electronics	45	In-situ	48	Mikrotron	50
Asentics	42	Epix	69	Infaimon	64	Mitutoyo Europe	50
Asylum Research	68	Epson Deutschland	45	Infinity Photo-Optical	48	Molenaar Optics	64
ATMvision	42	Erhardt + Leimer	45	Inos Automationssoftware	48	MsiVision	69
Attentra	42	Ernst & Engbring	45	InRay Solutions	64	MT Vision	50
Automation Technology	42	Eureca Meßtechnik	45	Intercon 1	69	MVTec Software	8, 51
AutoVimation	42	Euresys	63	loss	48	Möller-Wedel Optical	50
Awauba	62	eVision Systems	45	Ircam	48	NanoFocus	51
B&M Optik	42	EVK DI Kerschhaggl	45	Irida Labs	64	National Instruments	8, 51
Balluff	42	EVT Eye Vision Technology	45	IS Imaging Solutions	48	Navitar	69
BAP Image Systems	42	EyeC	63	Isra Vision	48	Neogramm	51
Basler	8, 28	Falcon Illumination mv	45, 51	ISVI Corp	69	NET New Electronic Technology	51
Baumer	7, 29, 62, 68, 72	Faro Europe	3, 45	Isys vision	48	NeuroCheck	51
Bentham Instruments	62	Faser-Optik Henning	45	JAI	34, 43, 48, 64, 69, 72	Newnex Technology	69
Bi-Ber	42	FastVision	69	JasVisio	64	Nexus Engiconsults	73
Bock Optronics	68	FDS Research	63	Jenoptik Optical Systems	48	Nikka Research Deutschland	51
Breuckmann	42	Festo	46	Jenoptik Polymer Systems	48	Nikon Metrology Deutschland	51
Büchner Lichtsysteme	43, 46	Fiberoptics	69	JIA Japan Industrial Imaging Association	8, 73	Nippon Electro-Sensory	73
Carl Zeiss	43	FiberVision	46	JLI Vision	64	NIT New Imaging Technology	64
Carl Zeiss Automated Inspection	47	Fisba Optik	46	Kamera Werk Dresden	48	Norman N. Axelrod Associates	69
CBC (Europe)	43	FJW Optical Systems	69	Kamiera	73	NorPix	70
CCS Europe	62	Flir Commercial Vision Systems	63	Kappa optronics	34, 47	Northwire	70
Cepoint Networks	68	Flir Systems	46	Kdorf Automation	48	Novacam Technologies	70
Ceres Vision	43	Fort	63	Keyence Deutschland	48	NTI	64
Chromasens	43	Framos	33, 65, 71	Kirin	8	OB E Ohnmacht & Baumgärtner	51
Cimetrix	68	Fritz Pauker Ing.-Büro	46	Klastech	48	Octum	51
CLK - Cruse-Leppelmann- Kognitionstechnik	44	FRT Fries Research & Technology	46	Kontron	48	Odos Imaging	64
Cmosis	63	FSI Technologies	69	Kowa Optimed Deutschland	49	Olympus Europa 31, Outside Back Cover	
Cognex Germany	44	Fuchs engineering	46	Lambda Photometrics	64	Omron Europe	64
Coherent Canada	68	Fujifilm Europe	46	Lambda Research	69	Opsira	51
Coherix	68	Futech Deutschland	46	Lambert Instruments	64	Optel Vision	70
Compar	44	G4 Technology	72	Landesmesse Stuttgart	49, Inside Back Cover	Optical Research	70
Complete Inspection Systems	68	GE Sensing & Inspection Technologies	46	LAP Laser Applikation	49	Optics Balzers	36, 75
Components Express	68	Gefasoft Automatisierung & Software	46			Opto	37, 55
Computer Dynamics	68	Geomagic	46			Opto Engineering	65
Confovis	44	Gevicam	69			OptoFidelity	65
Cosyco	44	Gidel	72			OptoMotive	65

Company	Page	Company	Page	Company	Page	Company	Page
OptoPolymer	51	Rauscher	53	SPG Data 3D	71	Visioncontrol Ges. f. elektr. Bildverarbeitung	56
OptoSurf	51	RBC Robotics	53	Steinbeis Transferzentrum Qualitätssicherung und BV	55	Visionation	56
Optris	51	Rheintacho Messtechnik	53	Steinbichler Optotechnik	54	Vision & Control	56, 57
Optronis	51	Ricoh Imaging Deutschland	38, 74	Stemmer Imaging	17, 25, 39	Vision Academy	56
Orus Integration	70	Rohwedder	53	Stiefelmayer-Reicherter	54	Vision Components	56
Otto Vision Technology	51	Rubröder Factory Automation	53	Stil	66	Vision Engineering	56
Panasonic Electric Works Deutschland	51	SAC	53	Stratec Control-Systems	55	Vision Light Tech	66
Panasonic Marketing Europe	51	Schaefer Technologie	53	Streppel Glasfaser-Optik	55	Vision Machines	71
Parameter	65	Jos. Schneider Optische Werke	38	Sundance Multiprocessor Technology	66	Vision Research	71
Paul Leibinger Numbering and Markingsystems	52	Schott	54	Sunex	71	Vision Research Europe	56
PCE Pharmacontrol Electronic	52	Schäfer + Kirchhoff	53	SVS-Vistek	39	Vision Tools Bildanalyse-Systeme	57
PCO	52	Schönherr Elektronik	54	Sydor Optics	71	Vision Ventures	57
PCS Industries	65	Seidenader Vision	54	Symco	8	Visionlink	66
Phase 1 Technology	70	SensoPart Industriesensorik	54	SynView	55	Visiosens	57
Phase One Industrial	65	Sensor to Image	54	Systematic Vision	71	Visotect	57
Phlox	65	SensorDesk	70	Tamron Europe	55	Vistas	57
Photonfocus	52	Sensors Unlimited	70	Tattile	66	Vistek Machine Vision and Automation	66
Photonic Products	65	Seritec	54	Tekstar Optical	71	Vitronic Dr.-Ing. Stein Bildverarbeitungssysteme	57
Photron	65	Serview	70	Teledyne Dalsa	8, 40, 55, Inside Front Cover	VIZaar industrial imaging	57
Phytec Messtechnik	52	Servo-Robot	70	Tema	55	Vizzion	71
pi4 Robotics	52	Sgflux	54	The Imaging Source Europe	56	VMT Vision Machine Technic Bildverarbeitungssysteme	57
Piezosystem Jena	52	ShapeDrive	54	Thermosensorik	56	Volpi	57
PixeLink	70	Sharp Microelectronics Europe	54	Tichawa Vision	56	VRmagic	49, 57, 74
Plasmo Industrietechnik	52	Shenzhen Kuangshi Communication Technology	73	Tordivel	66	Weber Systemtechnik	57
Pleora Technologies	8, 70	Sick	54	Toshiba Teli	73	Weiss Imaging and Solutions	58
POG Präzisionsoptik Gera	52	Siemens	54	TriDiCam	56	Wenglor sensoric	58
Point Grey Research	5, 32, 52	Signum Computer	54	TriVision	66	Wenzel Group	58
Polytec	64, 74	Silicon Software	25, 54	TVI Vision	66	Werth Messtechnik	58
Power Technology	70	Sill Optics	54	TYZX	71	Wickon Hightech	58
PPT Vision	70	Simon IBV	54	Unique vision	56	Wolf Systeme	58
Premier Electronics	65	SKS Vision Systems	65	Universität Heidelberg	22	X-Rite Europe	58
Pressco Technology	70	Slomotec	54	Univision	66	Xenics	66, 74
Profactor	52	Smart Vision Lights	70	USBFireWire	71	Ximea	8, 9, 40, 75
ProPhotonix	70	Smartek Vision	65	VDS Vosskühler	56	Xiris Automation	71
Proxitronic Industries	52	SmartRay	54	Vega Technology Group	71	Z-Laser Optoelektronik	58
Pyramid Computer	52	SmartSurv Vision Systems	54	Vialux	56	Zertrox	58
Qioptiq	53	Sony Europe	65	Videometer	66	Ziemann & Urban	58
Quiss	53	SPC Company	66	Videor E. Hartig	56	ZygoLot	58
RAA Vision	73	Special Application Products	66	View-Factor	73		
Rad-Icon Imaging	70	Spectrum Illumination	71				

Imprint

Published by
Wiley-VCH Verlag GmbH & Co. KGaA
GIT VERLAG
Boschstraße 12, 69469 Weinheim,
Germany
Tel.: +49/6201/606-0

Publishing Director
Steffen Ebert

Editorial Team
Bernhard Schroth (Editor-in-Chief)
Tel.: +49/6201/606-718
bernhard.schroth@wiley.com

Andreas Grösslein (Online)
Tel.: +49/6201/606-718
andreas.groesslein@wiley.com

Bettina Schmidt
Tel.: +49/6201/606-750
bettina.schmidt@wiley.com

Advisory Board
Roland Beyer, Daimler AG
Prof. Dr. Christoph Heckenkamp,
Hochschule Darmstadt
Dipl.-Ing. Gerhard Kleinpeter, BMW Group
Dr. rer. nat. Abdelmalek Nasraoui,
Gerhard Schubert GmbH
Dr. Dipl.-Ing. phys. Ralph Neubecker,
Hochschule Darmstadt

Commercial Manager
Oliver Scheel
Tel.: +49/6201/606-748
oliver.scheel@wiley.com

Sales Representatives
Claudia Brandstetter
Tel.: +49/89/43749678
claudia.brandst@t-online.de

Manfred Höring
Tel.: +49/6159/5055
media-kontakt@t-online.de

Dr. Michael Leising
Tel.: +49/3603/893112
leising@leising-marketing.de

Production
Christiane Potthast
Claudia Vogel (Sales Administrator)
Maria Ender (Layout)
Ramona Kreimes (Litho)

Reprints
Oliver Scheel
Tel.: +49/6201/606-748
oliver.scheel@wiley.com

Bank Account
Commerzbank AG, Darmstadt, Germany
Account No. 0171550100
Routing No. 50880050

Circulation
20,000 copies



Advertising price list
from October 1st 2013

Individual Copies
Seven issues € 47.00;
single copy € 15.10 plus postage.

Pupils and students receive a discount of 50% at sight of a valid certificate. Subscription orders can be revoked within 1 week in writing. Dispatch complaints are possible only within four weeks after publishing date. Subscription cancellations are accepted six weeks before end of year. Specially identified contributions are the responsibility of the author. Manuscripts should be addressed to the editorial office. We assume no liability for unsolicited, submitted manuscripts. Reproduction, including excerpts, is permitted only with the permission of the editorial office and with citation of the source.

The publishing house is granted the exclusive right, with regard to space, time and content to use the works/editorial contributions in unchanged or edited form for any and all purposes any number of times itself, or to transfer the rights for

the use of other organizations in which it holds partnership interests, as well as to third parties. This right of use relates to print as well as electronic media, including the Internet, as well as databases/data carriers of any kind.

Material in advertisements and promotional features may be considered to represent the views of the advertisers and promoters.

All names, designations or signs in this issue, whether referred to and/or shown, could be trade names of the respective owner.

Print
Frotscher Druck
Riedstr. 8, 64295 Darmstadt

Printed in Germany
ISSN 1616-5284
ISSN 1616-5284



Find the
difference

Next time
in 2014

The Heart of Vision Technology

VISION is setting the course for the future: **With the new two-year cycle**, you can now look forward to even more new products and innovations. To all the key players in the industry. To a first-class accompanying programme. To the optimal location and infrastructure of the Messe Stuttgart venue. To the leading world trade fair for machine vision, which will be bigger and more attractive than ever before.

Come to VISION, come to the Heart of Vision Technology.

www.vision-fair.de



VISION

Leading world
trade fair for
machine vision

4 – 6 November 2014
Messe Stuttgart

OLYMPUS

Your Vision, Our Future

Discover another dimension
IT'S SIMPLE, IT'S RELIABLE, IT'S OPTO-DIGITAL



High-resolution
Upright scope
DSX500



Free-angle
Wide zoom scope
DSX100



High-resolution
Inverted scope
DSX500i

Unbeatable optics.
Leading-edge digital technology.
The perfect combination.

The DSX Series, opto-digital microscopes.

For more detailed information about the DSX series, please visit our website www.olympus-ims.com/opto-digital