SECURITY SYSTEMS DIVISION

PENTAX
A RICOH COMPANY

PENTAX Info Service to our Customers

Dear valued customer,

With this information letter, we like to inform you about new products, updates on our product range and news about interesting facts in the industry.

Topics:

- PENTAX + RICOH = PENTAX RICOH IMAGING
- New: RICOH Cameras and Lenses for Machine Vision
- Exhibition Review: Counter Terror Expo in London in 2012
- Exhibition Outlook: GPEC in Leipzig
- BLS-1: Set of 5 Megapixel Board Camera Lenses
- Now with fixing screws: UV-Lens B7838-UV
- Success Story: PENTAX RICOH Machine Vision Lenses at Trioptics

If you have questions or need a quote on our products,
please feel free to contact us.

Yours sincerely,

Thomas Feichtner
Head of Sales & Marketing

PENTAX + RICOH = PENTAX RICOH IMAGING

As previously announced, PENTAX IMAGING SYSTEMS, and with it the Security Systems Division, which deals with CCTV lenses, merged into Ricoh.

Thus, the company name has changed and we are now PENTAX RICOH IMAGING. In Japan, our parent company is Ricoh Company, Ltd. and is part of the Ricoh Group. We belong to a successful, globally orientated group with over 130,000 employees.

As our customer, when you want to use our logo, please give us a call or send an email to ssd@pentax.de.

NEW: RICOH CAMERAS AND LENSES FOR MACHINE VISION

At the end of May 2012, a series of RICOH Machine Vision Cameras and Lenses were introduced in Japan. With that step, RICOH again asserted the importance of the Factory Automation field in the CCTV division. RICOH plan to implement and introduce these cameras and lenses in Europe shortly.

For more information, please visit www.ricoh.co.jp/fa_security

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EXHIBITION REVIEW: COUNTER TERROR EXPO IN LONDON IN 2012

For the second time, Pentax Ricoh was exhibiting successfully at the Counter Terror Expo. Of special interest was the newest development in the area of Homeland Security, the H55ZBME-F-HD-PR02 - an extremely long focal length lens, full HD resolution and the ability to reduce atmospheric disturbances in the video‘s image.

More information available on our website

EXHIBITION OUTLOOK: GPEC IN LEIPZIG

Also at GPEC in Leipzig, 11 to 13 September 2012, we will be exhibiting our products. Of course, we will show among other lenses our flagship H55ZBME-F-HD-PR02 as an active demonstration. We invite you to visit us at our booth on **Stand K20 in Hall 2**. We look forward to meeting you!

More information available at der GPEC website

BLS-1: SET OF 5 MEGAPIXEL BOARD CAMERA LENSES

Set of 5 board camera lenses with S mount (M12) in a robust case specially designed for our factory automation and security clients. The set comprises of the following focal lengths: 6mm, 8mm, 12mm, 16mm and 25mm. The iris range is F1.6.

Part. No.	Designation	Focal length	Iris range	Hor. angle of view	S Mount
C998001SO	PBL-106IR	6mm	F1.6	43.6°	for 1/3"
C998002SO	PBL-108IR	8mm	F1.6	34.9°	for 1/3"
C998003SO	PBL-112IR	12mm	F1.6	22.6°	for 1/3"
C998004SO	PBL-116IR	16mm	F1.6	17.1°	for 1/3"
C998005SO	PBL-125IR	25mm	F1.6	10.9°	for 1/3"

This set is specially designed for laboratory work, as well as demonstrations by technical sales executives where a range of different focal lengths are required. This series of lenses are extremely robust with a compact, lightweight construction. The transmission range covers both visible and near IR wavelengths. The lenses are particularly suitable for modern megapixel board cameras.

The set of 5 megapixel lenses BLS-1 are delivered in an elegant, robust case ensuring safe transportation.

More Information available on our website

NOW WITH FIXING SCREWS: UV-LENS B7838-UV

Our UV lens C91698 - B7838-UV now comes equipped with locking screws. These locking screws are provided to prevent changes to focus and iris during operation due to vibration rendering images useless. UV lenses are predominantly used for surface inspection, quality control, in medical technology and the detection of forged documents, banknotes or credit cards.

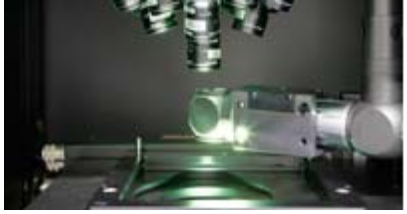
More Information available on our website

TRIOPTICS
STEMMER IMAGING

SUCCESS STORY: PENTAX RICOH MACHINE VISION LENSES AT TRIOPTICS

Technological development through precision measuring technology in the example of cellphone lenses: 10 years of cooperation between the two companies Stemmer Imaging and TRIOPTICS GmbH demonstrate how the exchange of expertise from the fields of image processing and optical measuring technology accompanies and improves the entire technological development of cellphone lenses.

From the start of development in 2001 until today only high quality Pentax CCTV lenses are used. The lenses were able to meet the increasing demands for measuring the MTF (Modular Transfer



Function) at ever increasing spatial frequencies. This allows for all generations of the cellphone lenses to be measured precisely with the measuring instrument. The Pentax CCTV lenses have a very low image field curvature, low distortion and good contrast characteristics, an important condition for an MTF measuring system.

You will find the complete story attached as PDF-File.

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Interaction between image processing and optical measuring technology

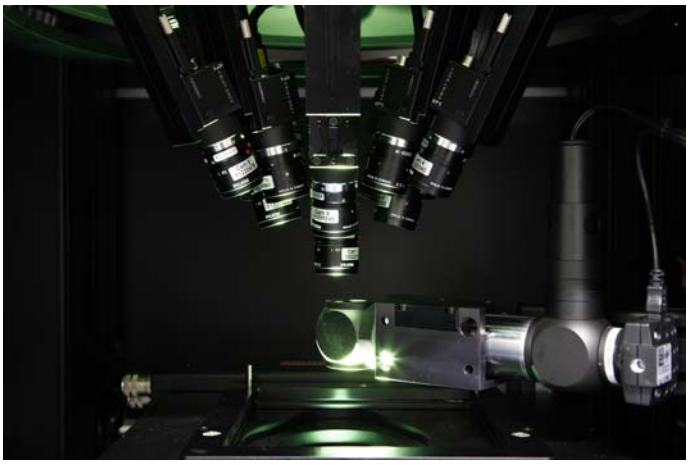
Technological development through precision measuring technology in the example of cellphone lenses

10 years of cooperation between the two companies Stemmer Imaging and TRIOPTICS GmbH demonstrate how the exchange of expertise from the fields of image processing and optical measuring technology accompanies and improves the entire technological development of cellphone lenses. Through a high degree of innovation TRIOPTICS GmbH was able to become a global market leader and supplies manufacturers of cellphone lenses with the most varied measuring systems that contributed to the improvement of the lenses.

To develop a measuring instrument measuring the imaging quality of lenses, measuring principle and optical components must be chosen that do not affect the measuring result, introducing additional errors. In addition, a very fast measuring method is required, characterizing the lens completely within 2.5 seconds. To be able to deploy the instrument during mass production, a simple pass/fail output must be issued for each lens. Since the measuring instruments are used round the clock, the measuring method and the instrument design must be very robust, which must be achieved through components of highest quality and durability.

From the start of development in 2001 until today only high quality Pentax CCTV lenses are used in the TRIOPTICS ImageMaster® PRO. The lenses were able to meet the increasing demands for measuring the MTF (Modular Transfer Function) at ever increasing spatial frequencies. This allows for all generations of the cellphone lenses to be measured precisely with the measuring instrument. The Pentax CCTV lenses have a very low image field curvature, low distortion and good contrast characteristics, an important condition for an MTF measuring system. To cover different focus ranges of the test specimens from 1 mm to 12 mm with the ImageMaster® PRO, different Pentax lenses are used in the measuring systems.
The ImageMaster® PRO is mainly used to measure cellphone lenses. Since the optical design of the cellphone lenses is becoming ever more sophisticated and ever more complicated aspherical lenses are integrated in the lenses, it is necessary to measure the MTF at more and more field positions. This means that the number of cameras and lenses in a measuring instrument has risen with the increasing requirements. At the start of the technological development 5 cameras and lenses were used in the ImageMaster® PRO. To measure a high quality lens, up to 17 measuring heads are used today. The

picture gives an insight into the measuring chamber of the MTF measuring instrument with 13 Pentax lenses.



Detailed image of the measuring chamber with cameras and the Pentax lenses

Facts about the measuring instrument ImageMaster® PRO 5

- Greatest MTF measuring accuracy with +/-3% MTF in the field
- Max. spatial frequency up to 300 lp/mm
- High resolution measuring heads with Pentax lenses Pent C5028-M
- MTF traceable to ISO standard through PTB Braunschweig
- Measuring time per lens 2.5 seconds
- Simultaneous measurement of 22 parameters:
  such as MTF at 17 field positions, focus, flange focal distance, angular image field displacement and curvature, astigmatism, focusing tolerance (depth of focus - DOF)
- Clean room compatibility ISO5 (US- FS209 class 100)
- 24 hours use in shift operation
- Throughput of approx. 34,000 lenses per day

TRIOPTICS GmbH company brief

The internationally active TRIOPTICS GmbH develops and sells fully automated, computer-aided optical measuring instruments for use in industry and research. Early 2012 the innovative medium-sized company celebrated its 20 year anniversary.

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