

LABELING & DECORATION

VISION INSPECTION SYSTEMS FOR THE PLASTIC PACKAGING INDUSTRY



WWW INTRAVIS COM



INTRAVIS

WE SOLVE PROBLEMS. BEFORE THEY OCCUR.

HOW WE LIVE OUR VISION

Your quality control requirements present tasks that we gladly face and successfully solve every day. At INTRA-VIS, engineers, skilled workers and technicians work every day to find solutions for challenges in the plastic packaging industry that have not been solved yet. Our customers benefit from more than 30 years of experience in the plastic packaging industry.

We are dealing with topics right now that will become challenges for the industry in the coming years. We ask ourselves: How can vision inspection systems deliver added value for prospective production processes? What contribution will quality inspection solutions make to the smart factory of the future? How can inspection systems and analysis software help to increase production efficiency?

Finding answers together with customers and partners is what drives us every day.

INTRAVIS

ABOUT US

SIMPLY BETTER PRODUCTS

For more than 30 years, producers in the plastic packaging industry have relied on INTRAVIS solutions. In the areas of preforms, closures, stretch- and extrusion-blown bottles and containers, as well as decoration, we offer systems that meet all of the requirements of a sustainable quality inspection solution.

You have the choice: do you need a cost-effective standard system which fulfills fundamental inspection tasks, or a specialized solution ready to fit your specific needs? Whether you want to inspect inline or offline – all of our solutions are flexible and customizable.



PREFORMS

PreMon
PreWatcher Offline
PreWatcher Inline
Sample-PreWatcher
ColorWatcher Lab
LayerWatcher



BOTTLES & CONTAINERS

SpotWatcher Basic SpotWatcher Customized SpotWatcher Pharma IntraOne BarrierWatcher

INTRAVIS SYSTEMS OFFER:

 Security that you will always deliver the best possible quality to your customer



CAPS & CLOSURES

CapWatcher Q-Line CapWatcher B-Line CapWatcher SC CapWatcher FC IntraOne BarrierWatcher

PERIPHERY

CapFeeder
CapFeeder + Tower Hopper
Cross Conveyor
Cooling Conveyor

- **2.** Full production control and optimization of your production process
- **3.** High comparability of different production conditions and results
- **4.** Turnkey systems with complete commissioning and extensive 24/7 service
- **5.** Customized solutions for perfect integration into the customer's production or laboratory



LABELING & DECORATION

LabelWatcher 360° IMLWatcher SleeveWatcher IntraOne

INTRAVIS ABOUT US

YOUR ADVANTAGES

There are many reasons to buy an INTRAVIS inspection system. Some examples of how you can benefit from our solutions:

RENOWNED SOLUTIONS

- INTRAVIS technology helps you to be a global leader in the plastic packaging industry
- We are driven to develop innovative solutions to new and customized challenges
- INTRAVIS means quality "made in Germany" trusted by many global players



BARRIER LAYER

BarrierWatcher LayerWatcher



SOFTWARE

IntraVision IntraVisualizer IntraRecommender

PROCESS OPTIMIZATION

- Get unique insights into your production process through comprehensive statistics, reports, diagrams and trend calculations
- Connect your INTRAVIS systems with your Manufacturing Execution System (MES) to take the next step towards your Smart Factory of the future
- Fast and space-saving integration into your production line or laboratory

SECURITY

- Enjoy the security of delivering only flawless products to your customers
- In-house programmed and userfriendly software interface to ensure that your machine operators easily handle the system on their own

 Assurance of regular maintenance and immediate troubleshooting thanks to our worldwide network of service centers and our free telephone hotline

PARTNERSHIP RELATIONS

- In cooperation with you, our team is looking forward to developing a customized solution for your individual inspection task
- We strive for long-term partnerships to provide our customers with a complete and interconnected inspection solution for an entire plant or even multiple sites



LABELING & DECORATION

The customers of our label inspection systems consist of many global players in various industries. They appreciate the ease-of-use and precise defect detection. The systems help them to meet and exceed their product quality standards and to comply to legal regulations. Moreover, further processing of already defective products can be prevented at an early stage.

Our product portfolio provides inspection solutions based on the individual characteristics of each kind of label. Each labeling process can lead to different types of defects: In-mold labeled products might have blow-byes whereas pressure-sensitive labeled products are full of bubbles, and sleeve labeled products are distorted. The software and hardware of our label vision systems is perfectly adapted to the special characteristics to ensure 100% quality control.

LABELING & **ECORATIC** COMPARISON

We do not provide one general label inspection system, but our systems focus on the specific characteristics of each type of label. This is the best way to ensure 100% quality control.

Stand-alone placed above conveyor belt **INSPECTED LABELS & DECORATION** Robot of injection molding machine Shrink and stretch sleeve labels Cold, hot and wet glue labels Pressure sensitive labels Conical, cylindrical, oval **NSPECTED OBJECTS** Labeling machine Various shapes INTEGRATION In mold labels Unoriented **LABELWATCHER** \bigcirc **LABELWATCHER 360°** $\overline{}$ **IMLWATCHER SLEEVEWATCHER** INTRAONE 1

¹ Single-camera-system: Inspection criteria depend on area of application / camera position



WHICH ONE FITS YOUR NEEDS BEST? GET IN TOUCH WITH OUR SALES TEAM.

MAX. INSPECTION SPEED parts / h Color inspection at injection point Print defects and contaminations Smiling and frowning effects Inspection of various codes Inspection of inner surface **INSPECTION CRITERIA** Defects at the label joint Print-to-cut offset -abel presence Label position **Artwork offset** Label identity Short shots **Blow-byes** Bubbles Folds Holes 108,000 36,000 36,000 54,000 108,000

LABELING & DECORATION

LABELWATCHER

The LabelWatcher is the universal inspection system for labels on bottles, jars, cans and containers: Global players in the cosmetics, food, pharmaceutical and personal care industries use the turnkey inspection system to inspect every details of their labels and

to read a huge range of different codes. Even at high speed, a full label evaluation and code reading is possible. The vision system can be integrated into your linear or rotary labeling machine or used as a stand-alone solution behind the labeler.



Quality control through full label evaluation, code reading and trend calculations

INDUSTRY 4.0 APPLICATIONS

Take the efficiency of your production facility to the next level! With the data collected by the system, you do not only receive comprehensive statistics and reports, but you will identify crucial trends that help you to optimize your whole production process. By creating an interface between the labeling machine and the LabelWatcher, re-adjustments of the label dispensing heads can be carried out fully automatically. Thus, the reject rate is minimized, the refinement of already faulty products is avoided, and the overall production quality increases.

SIMPLE PRODUCT SETUP

The inspection software can be operated in a user-friendly and time-saving way. If a new label needs to be inspected, a new reference is automatically created in just a few seconds. In case of a product change, valuable time can be saved by simply switching between

the references saved in the software's product management.

WASHDOWN DESIGN AVAILABLE

If you use harsh cleaning routines in your production, the LabelWatcher can also be delivered in a washdown design. It is designed to fit to the common market requirements of a wet production area.



Full label and code evaluation: Focus on label-specific defects and



Production optimization: Closed loop application with labeling machine possible



OAO Washdown design: Can also be used in wet areas for easy cleaning

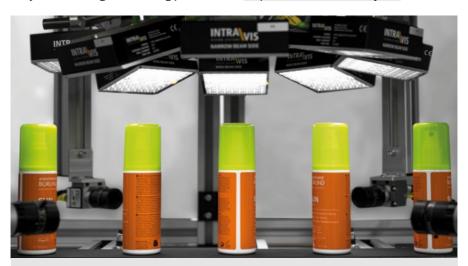
LABELING & DECORATION

LABELWATCHER 360°

The vision system is specially designed for the label quality control of products which can have any product shape and any rotational position while inspecting. Thereby, the system's hardware and software focus on defects that can typically occur during the labeling process.

INSPECTION OF UNORIENTED OBJECTS

Thanks to a newly developed imaging design as well as a sophisticated referencing procedure developed especially for the LabelWatcher 360°, you can inspect unoriented objects with the



Label inspection for unoriented objects - LabelWatcher 360°



vision system just as reliably as you are used to with other INTRAVIS label inspection systems, such as the Label-Watcher.

Another advantage: the setup of new inspection objects is even faster and can be done easily by your operators without in-depth prior knowledge.

EXTENSIVE RANGE OF INSPECTIONS

In addition to inspecting for presence and identity, the LabelWatcher 360° also verifies the offset of a label on the object and the correctness of the label joint. Labels are also inspected for wrinkles and bubbles as well as print defects and contamination.

Furthermore, you also have the po ssibility to equip your LabelWatcher 360° with code reading. With this functionality, barcodes, Data Matrix codes, plain text codes or QR codes can be read and compared with a predefined code.

INFORMATION SOURCE FOR PROCESS IMPROVEMENTS

Like all INTRAVIS systems, the Label-Watcher 360° provides you with extensive information about the quality of your products. Based on the collected data, you can make well-founded decisions to optimize your production process and thus influence the quality of your future products at an early stage.



Quality assurance of unoriented products



Focus on full label evaluation and code reading



Fast product setup with sophisticated referencing process

LABELING & DECORATION

IMLWATCHER

The IMLWatcher is the complete package for vision inspection of your IML-decorated products. Hardware optimally adapted to your production line is combined with software that is exclusively designed to detect IML-specific defects, thereby creating a turn-

key and ready-to-use IML inspection system!

AUTOMATED REFERENCE CREATION

A fast product change during ongoing measuring operation is often needed in the IML production process, which is



Inspection system specially designed for the quality assurance of in-mold labels

why the IMLWatcher software focuses on a quick and easy setup of a new product. The system automatically generates a ready-to-use reference for a new label in seconds, using the Quick Reference Mode. Moreover, the reference evaluation helps the operator to find out about the impact of a new reference compared to the previous one. Thus, only perfect references will be activated and the quality inspection can be seamlessly continued with the new product.

INSPECTION OF ROTATED PRODUCTS

You no longer have to worry about positioning the inspection object perfectly in front of the camera. In our basic IML software, slight deviations are already taken into account in the evaluation. But even for completely randomly oriented objects, the IML software has a solution at hand.

EXTENSIVE STATISTICS & REPORTS

The software presents all data in

meaningful statistics and diagrams on the user interface to identify all key information and trends at first glance. All data collected by the IMLWatcher can also be issued in the form of reports or exported to your MES or ERP system via a FAS interface. Moreover, the data cannot only be correlated to the a specific product, shift or day, but also to the exact cavity.



Focus on IML: Specifically designed for the inspection of in-mold labeled products



High scalability: solution betweer 1 and 14 cameras based on the customer's application



Huge time savings: Automated reference creation during active measurement mode

LABELING & DECORATION

SLEEVEWATCHER

The SleeveWatcher is the vision system for a full 360° inspection of sleeve labels. Even unusual object shapes are no challenge for the system.

The specially arranged hardware and

the IntraVision software are optimally adjusted to the challenging characteristics of sleeve labels. Thus, the Sleeve-Watcher guarantees a comprehensive inspection at highest accuracy with a



Vision system for the detection of sleeve-specific defects



performance of up to 15 objects per second.

As a turnkey system, the SleeveWatcher can be easily integrated into an existing production line behind the shrink tunnel. Even not perfectly oriented objects can be easily inspected with the help of a rotation detection.

STATISTICS, REPORTS & TREND CALCULATIONS

In addition to the pure sorting out of faulty parts, the SleeveWatcher is characterized by the collection of product-related quality data. The measurement results are presented in clear statistics and diagrams, and offer various information about the production quality. Moreover, this data serves as the basis for comprehensive inspection reports and trend calculations. Thus, undesired trends can be uncovered before they lead to production defects.

CUSTOMIZED SOLUTIONS

Special products require special solutions. Configure your SleeveWatcher for a perfect adaptation to your production environment, products and existing equipment. If required, we will be glad to provide you with all necessary components – for example an ejector for filled or unfilled products, a separation screw or a conveyor belt.



Focus on sleeve labels: detection and analysis of sleeve-specific



Special lighting technology for the avoidance of reflections and false rejects



Customized solution: Adjustment to your production environment and requirements

LABELING & DECORATION

INTRAONE

Designed as a single-camera-system, the IntraOne combines the advantages of a smart camera solution with the well-established IntraVision software. It can be used for the quality control of closures, bottles, containers as well as labels and decoration.

The IntraOne can be easily integrated into any production line. Its design allows for the use even in the most demanding environments. The vision system uses an integrated industrial PC and is therefore particularly space-saving. The system can be installed quickly and effortlessly. To-



Smart camera solution – universally applicable

gether with you and on-site, our experienced service technicians will find the ideal configuration for your inspection task.

WIDE-RANGING CAPABILITIES

The IntraOne is based on INTRA-VIS' long-time experience and expertise in the quality control of plastic packages. The well-known IntraVision software is installed on the system and enables the use of all proven inspection modules. All data collected is presented in the form of statistics and diagrams. Trends and possible countermeasures can be identified at an early stage.

The system inspects for typical defects such as contaminations, color, or contour deviations. In addition to the basic package consisting of a camera and appropriate lighting, further options like a rejector or IP65 protection are available.





Smart camera solution: ready-to-use, but full service and comprehensive training



Focus on 1 camera: budgetfriendly and short delivery time



Space-saving design: integrable in any production line



SOFTWARE

INTRAVIS develops proprietary software for the vision inspection of plastic packages. It is our goal to develop inspection solutions customized to the packaging producers' requirements. Our software products are user-friendly, easy to handle and provide automatic functionalities. Thus, machine operators as well as production managers can focus on their core activities without spending much time setting up the inspection systems.

Our software products aim to reach two main goals:

- 1. Detect and eject defective products so that only products with the desired quality are delivered to your customers. Therefore, software is needed that can quickly and precisely identify and analyze defects.
- 2. Quickly react in the right way and prevent the production of faulty products. In this way, production costs can be reduced and profitability is improved. This goal can be achieved by permanently analyzing quality trends and by receiving detailed production insights.

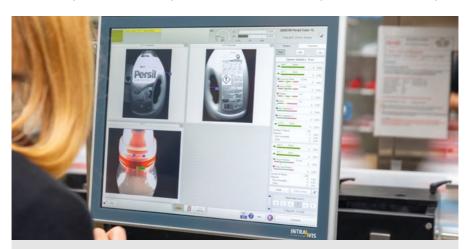
SOFTWARE

INTRAVISION

The IntraVision is the inspection and administration software for every IN-TRAVIS system. Based on the customer's products, several suitable inspection modules are embedded in it. They are used to analyze parameters which present important quality characteristics for the products to be inspected.

STATISTICS & REPORTING

The user interface shows current statistical data in various time intervals and display modes about every inspection criterion separately. Do you need to submit these data in extensive, meaningful inspection reports to your customers? No problem for the export



IntraVision UI for an integrated LabelWatcher

function for reports! In addition, all data can be used for further processing by means of Factory Automation Services (FAS) – either as a database export or as a status message to higher-level systems.

PROCESS SAFETY

To meet all legal requirements, you can also set up a detailed Audit Trail to keep track of any change in the process settings. In addition, the IntraVision offers comprehensive possibilities of authorization assignment. Each operator gets exactly the access rights needed. Trend calculations are possible as well! The Warning Threshold issues a warning to the operator if the deviation of a measurement increases during a period of time and if it is expected that the adjusted tolerance will be exceeded soon.

MAINTENANCE

Every system requires regular maintenance for optimal performance. On the

one hand, the software supports you by establishing defined maintenance intervals, after which a warning message is displayed on the system. On the other hand, the System Self Monitoring helps you to recognize malfunctioning of all inspection-relevant components. Potential disruptions and failures are prevented and unwanted machine downtimes are reduced to a minimum.



Easy operation: simple setup and clear user interface



Customized software extensions: tailored to your production requirements



Overall production overview: through extensive statistics, diagrams and reports

SOFTWARE

INTRAVISUALIZER

IMPROVE YOUR PRODUCTION ...

Nowadays, inspection systems provide a huge amount of data and deep insights into your production lines. But: Are you already taking advantage of all this information?

... WITH THE INTRAVISUALIZER

The IntraVisualizer is a complete software solution that analyzes and visualizes the product data of all INTRAVIS systems in your production plant.

This key information supports you in your daily job to keep the product



Data analytics software for comprehensive analysis of all production lines simultaneously

quality at high level, by delivering crucial production insights to your management and by helping your manufacturing team to plan the production.

DEPLOYMENT CONVENIENCE

The IntraVisualizer is available for you as a cloud solution. This means: This means: Full flexibility and simplicity, scaling as needed, and connection of unlimited systems. We care for updates and backups so that you do not need any IT infrastructure.

Thanks to the browser-based software, you can use it from everywhere in the world on your computer and mobile device.

BENEFITS FOR YOUR TEAMS

Your quality team, manufacturing team as well as management team can exploit the IntraVisualizer's huge range of functionalities. It helps you to minimize recalls, assure quality standards, react promptly to unforeseen events,

and gain overall strategic insights.

YOU ALREADY HAVE A DATA ANA-LYTICS SOFTWARE?

If you prefer to export the data of your INTRAVIS inspection systems to your ERP, MES, IIOT or other analytics software, we can also offer you several solutions.



Performance monitoring of all inspection systems at a glance



Detection of quality issues and their reasons to increase production efficiency



Trend analysis to detect maintenance needs and minimize unplanned downtime

SOFTWARE

INTRA-RECOMMENDER

IMPROVE YOUR PRODUCTION ...

Is the IntraVisualizer not sufficient for your production data analysis and usage? Take your data analysis to the next level with recommended actions to optimize the production process.

... WITH THE INTRARECOMMENDER

The IntraRecommender is your intelligent production assistant. Through recommended actions, every machine operator can immediately make the right decisions to solve production issues and reduce machine downtimes signifi-



Well-founded recommendations for optimizing the production process

cantly. Production process optimization as well as the overall effectiveness of your production line will be raised to a new level.

DATA COLLECTION OF THE WHOLE PRODUCTION LINE

The IntraRecommender collects high-precision, comprehensive quality data from your INTRAVIS inspection system during production. At the same time, the IntraRecommender receives a variety of important process data from the injection molding machine, hot runner, cavity pressure sensors and more via a robust OPC UA interface according to the EUROMAP standard.

RECOMMENDED ACTIONS

Machine learning algorithms analyze product and process data in real time, recognizing correlations and combining them with your process know-how. Based on this comprehensive database, the machine operator receives

well-founded recommendations for optimizing the production process. As a result, the IntraRecommender continuously learns and creates an extensive knowledge database, specialized to your production process. Every machine operator receives the same reliable recommendations for action and can immediately make targeted decisions in the event of a problem.



Increased OEE through analysis of product and process data



Multiplication of expert knowledge through an extensive knowledge database



Significant reduction of machine downtimes through real-time recommendation



SERVICE

At INTRAVIS, we recognize our customers as partners and invest in a long-term relationship. Therefore, our work does not end with the successful acceptance of the system.

Whenever questions or problems occur, INTRAVIS is ready to support you with skilled technicians and service locations spread over four continents.

SERVICE

WORLDWIDE

RETENTION OF SYSTEM VALUE

If you decide to purchase an inspection system, you expect that it performs its tasks reliably and permanently. Regular service visits by our

qualified service technicians increase the average service life and ensure consistently high performance. How? Our technicians identify failing parts before they break, adjust your system



At your service at any time: our INTRAVIS service technicians

optimally for your inspection tasks, and train your team to keep your system performing at peak performance.

line and worldwide service centers, a technician can be at your site within the shortest possible time.

MINIMIZE DOWNTIME AND COSTS THROUGH SERVICE VISITS

Schedule service visits so that they match the service intervals of your upstream and downstream machines. In this way, your production line will have less downtime and you can resume production faster. A variety of service contracts are available that allow you to calculate your costs clearly in advance.

RELIABILITY THROUGH SERVICE CHECKS

Imagine your products must be shipped to the customer uninspected because your inspection system failed due to a missing wear part. Regular service checks ensure your inspection system operates reliably and without problems. Thanks to our service hot-

PROCESS OPTIMIZATION BY TRAINED PERSONNEL

An inspection system can only achieve optimum performance through the correct handling by a trained operator. Therefore, we offer training sessions for your key users with a final user certificate for every installation of a system. This training helps to perfectly operate the system in everyday life, and to draw the right conclusions from the comprehensive data that is generated by the system. Of course, you can receive additional training for new employees at any time.

SERVICE

CONTRACTS

Focus on your strengths, we take care of everything else. It does not matter how many INTRAVIS systems you have – a service contract guarantees maximum system availability.

To offer you full flexibility, our service contracts consist of a basic package and possible optional packages. Among other things, our basic contract contains:

- an annual service check,
- free software updates,
- telephone support, and
- the exclusive availability of a service technician departing within 96 hours.

For extra protection, you can include optional packages. For example, you can add 24/7 telephone support and faster availability of a service technician.

ANNUAL SERVICE CHECK

INTRAVIS systems are stable and durable. Nevertheless, annual service checks are recommended for each of our systems. With an annual service check, you can make sure that your systems are in an optimal condition, so you can ensure a flawless inspection performance. This increases the effectiveness of your system and thus the efficiency of your entire production line.

HIGHER SUPPORT AVAILABILITY

If you need a service technician on site, a service contract means that you are of highest priority. With an optional package, you have the security to reach a technician of our service department at any time and every day of the week.

REMOTE ASSISTANCE

Some challenges need more than phone calls and email support. In



MAXIMUM SYSTEM AVAILABILITY DESIRED? GET IN TOUCH WITH OUR SERVICE TEAM.

these moments, remote assistance provides us the tools to assist you as if we were there.

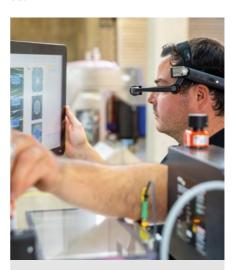
- REMOTE SUPPORT: Our service technicians support you remotely by accessing your system with TeamViewer via Internet connection. In this way, we can quickly solve many problems from a remote location.
- REMOTE GUIDANCE: Our technicians will guide you with Team-Viewer Pilot in a video call with augmented reality via smartphone, tablet, or even smart glasses. Thus, our technicians see what you see as if they were directly at your production site.

SPARE PARTS KITS AND TRAININGS

We provide kits with the most frequently used spare parts. With these kits, you have the most important parts

for a maintenance job already on site.

And if you have new employees, you can always book training for your IN-TRAVIS systems whenever you need it. For more information, please contact us.



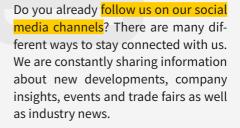
Remote guidance by our service technicians

KEEP UP-TO-DATE





Weekly updates can be found in LinkedIn whereas Youtube is the right channel for watching our vision systems live in action. If you prefer to receive the latest news directly in your digital inbox, subscribe to our email newsletter. Last but not least, you can find indepth articles about our innovations in the blog on our website.











Scan the QR codes to check us out across our different social media channels!

CAREER AT INTRAVIS





The corporate culture among our employees is very amicable: whether during coffee breaks, lunch, crossteam meetings or company parties – we place great value on personal and professional exchange.

Open and respectful communication, feedback and a good working relationship are very important to us.

Individual development and the promotion of personal initiative are essential components of our corporate policy.

Our fields of activity are just as diverse as our entry-level opportunities. Whether in form of an apprenticeship, an internship, a student job or a permanent employment – with or without professional experience, as a career changer, full-time or part-time, with leadership responsibility or as a technical expert – the opportunities are diverse.

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