

# PROFILER™

## Automatic Surface Inspection Systems

COMVIS Profiler™ is a range of scalable automated surface inspection systems for fabrics, that ensures 100% inspection of your product, anywhere in your production process.

➤ **Profiler™ AREASCAN**

Suitable for most applications, also with variable speeds and stops. Including transmitted- and reflected illumination. Standard available in 12 widths up to 400 cm in HD (5px/mm) and UHD (10px/mm).

➤ **Profiler™ LINESCAN**

Suitable for continuous and/or space critical applications without stops. Including transmitted- and reflected illumination. Standard available in 8 widths up to 640 cm in HD (5px/mm) and UHD (10px/mm).

➤ **Profiler™ for Looms**

Multi-camera bar for automated inspection of fabrics on loom. Find defects at the source of your production process and stop on long running defects.

### About COMVIS

## Automating your quality inspection

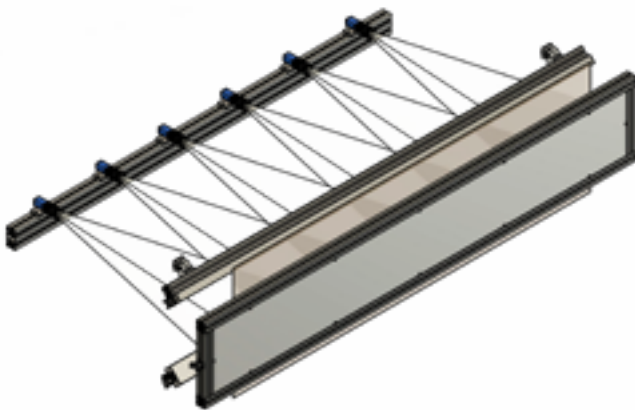
COMVIS is Dutch company specialized in development of machine vision inspection software and -systems for automated surface defect detection. With 25 years of experience, we provide our customers flexible automated solutions for quality determination of all kinds of surfaces. For instance (technical) textiles e.g. woven, nonwoven and knitted fabrics, both narrow and wide, and sheet materials. We are proud that our inspection systems are used by major reputable multinational companies, all over the world...

## Profiler™ AREASCAN & LINESCAN

COMVIS Profiler™ is a machine vision based automatic inspection system for e.g. fabrics, that uses state of the art inspection algorithms. It allows the manufacturer to inspect the product surface automatically, without the intervention of an operator. Profiler™ is able to detect any visible defects in uniform materials. Moreover, the detection is based on mathematical analysis, rather than human perception. This results in consistent quality inspection, even at high speeds, over and over again.

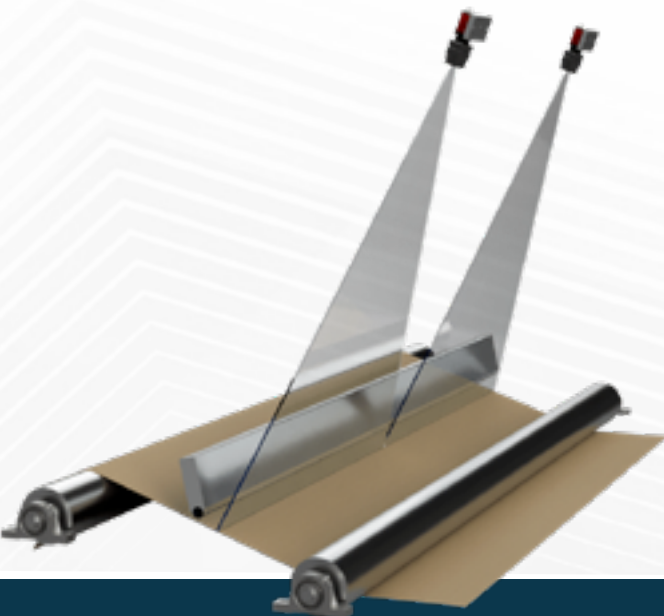
Profiler™ AREASCAN is suitable for most applications and uses a unique combination of both transmitted and reflected illumination. It can be used in applications with variable speeds and stops. Profiler™ LINESCAN is suitable for applications with continuous movement and consistent material transport (processes without stops) and space critical integrations.

### AREASCAN Width vs. Resolution



HD - 5 px/mm			UHD - 10 px/mm		
Cams	Resolution	FOV	Cams	Resolution	FOV
1	2k	332 mm	1	4k	332 mm
2	4k	664 mm	2	8k	664 mm
3	6k	996 mm	3	12k	996 mm
4	8k	1328 mm	4	16k	1328 mm
5	10k	1660 mm	5	20k	1660 mm
6	12k	1992 mm	6	24k	1992 mm
7	14k	2324 mm	7	28k	2324 mm
8	16k	2656 mm	8	32k	2656 mm
9	18k	2988 mm	9	36k	2988 mm
10	20k	3320 mm	10	40k	3320 mm
11	22k	3652 mm	11	44k	3652 mm
12	24k	3984 mm	12	48k	3984 mm

### LINESCAN Width vs. Resolution



HD - 5 px/mm			UHD - 10 px/mm		
Cams	Resolution	FOV	Cams	Resolution	FOV
1	2k	400 mm	1	2k	200 mm
1	6k	1200 mm	1	6k	600 mm
1	8k	1600 mm	1	8k	800 mm
2	12k	2400 mm	2	12k	1200 mm
2	16k	3200 mm	2	16k	1600 mm
3	18k	3600 mm	3	18k	1800 mm
3	24k	4800 mm	3	24k	2400 mm
4	24k	4800 mm	4	24k	2400 mm
4	32k	6400 mm	4	32k	3200 mm



## Full colour HD 16" HMI

Profiler™ can optionally be operated via our high definition full colour 16" HMI. It enables easy loading recipes and starting of inspection sessions, and separates operation of the system completely from configuration of inspection settings. Furthermore, the HMI let the customer configure the linear guide and print/mark system and displays (customized) alarms and dashboards for session counters.

## Customized enclosure

Profiler™ is delivered without a standard housing/enclosure, so it can be integrated in almost all types of (existing) processes and applications, even when space is limited. COMVIS offers customized (conditioned) housings to shield the system from external influences, such as contamination, dust, heat, moisture and/or (sun)light. The enclosure is completely engineered based on the customers application, needs and available space.



## Electrical cabinet

If desired, COMVIS integrates all control electronics into a suitable electrical cabinet. COMVIS provides complete electrical engineering including the delivery of a prewired electrical cabinet (Rittal or 19" server rack). The type is depending on the inspection systems configuration and position of the electrical cabinet in the customers applications.

## Automatic Marking Systems

In order to relocate the exact position of the found defects in your fabric during the cutting process, it is necessary to place a mark in the running direction of the fabric, often on the edge of the material. The markers are used, for example, for the relocation of defects in the cutting process. Profiler™ can either use synchronization points as well as exact defect position marking. Depending on your process, type of fabric and your exact needs, we provide 3 different marking systems:



### Labels

With the use of a label applicator we apply (metal containing) labels with speeds up to 100 m/min. Special labels are used with partial adhesive, in order let them stick out from the edge. This is a convenient method to see the position of all defects on the edge of the jumbo roll. The use of metal containing labels makes it easy to detect the position on the cutting table using an inductive sensor.



### Ink marks

Ink mark systems are a convenient and easy way to place (invisible) ink marks on fabrics even at high speeds. Using a UV or IR ink, the marks are not visible on the fabric for the human eye, but can easily be redetected using a mark read sensor. This system is only used for synchronization marks.



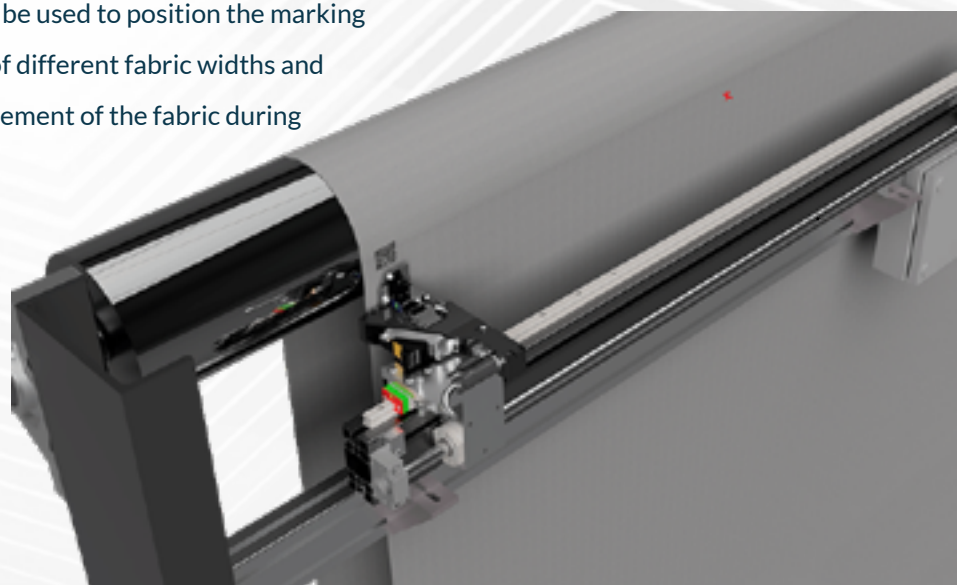
### Unique ID print

Industrial inkjet printing enable us to mark the position of the defects with a unique ID. In this way every detected defect gets its own unique printed code on the fabric. The need for synchronization points is eliminated because you only have to mark the defect position itself. In addition, the unique code allows you to always reposition in every single process and match with the exact corresponding defect information and defect images.

## Automatic Linear Guide & Edge Tracking

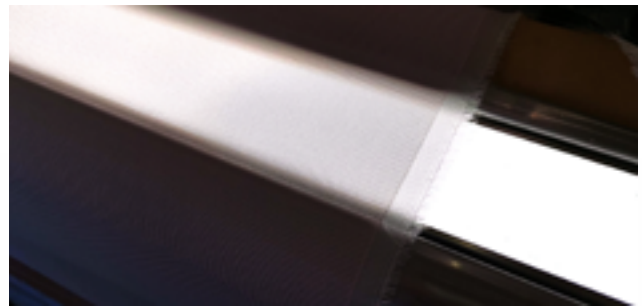
The automatic linear guide can optionally be used to position the marking systems accurately by tracking the edge of different fabric widths and additionally compensate little lateral movement of the fabric during transportation.

Automatic linear guides are available in different lengths and include fabric presence sensors, edge tracking sensors and homing sensors and are standard suitable for ink mark systems and code print systems.



## Profiler™ for Looms

The Profiler™ for Looms is a solid state vision system designed for on loom quality monitoring directly after the fabric formation process. It is ideal for preventing long running defects on demanding and high cost fabrics and thus prevents the production of off quality fabrics. Multiple alarms can be configured, depending on the customers needs. For instance, alarms for critical quality warning, alarms to stop the loom or even alarms for specific long running defects in a certain area. Profiler™ for Looms are suitable for retrofitting on all kinds of looms. Due to the versatile aluminum profile system, the inspection system can either be mounted on the loom itself, on the mill floor or even on the ceiling.



### Features

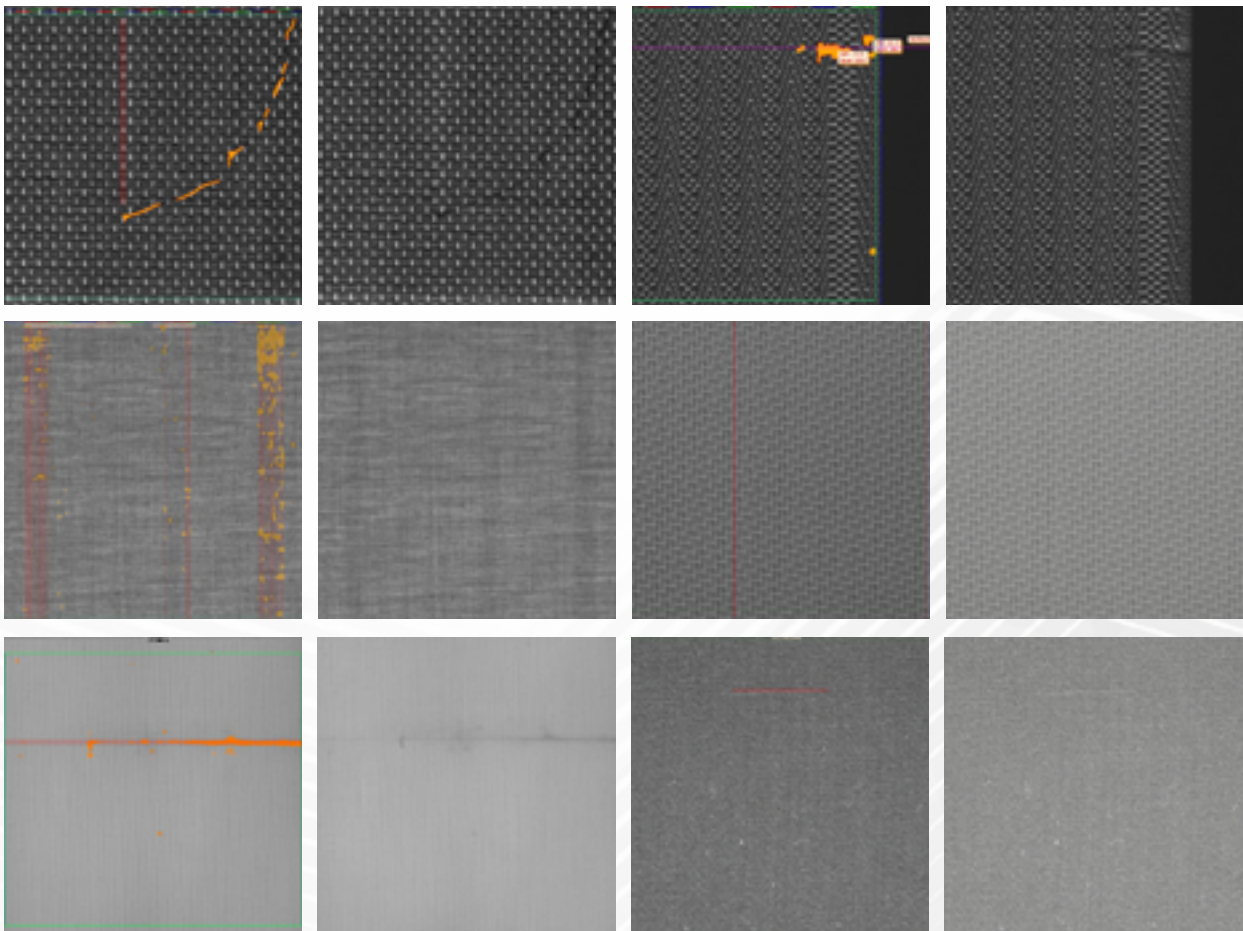
- Camera bar based on loom and fabric width
- HD 5px/mm or UHD 10 px/mm
- Available with transmitted and/or reflected light
- Optionally including 16" HMI with trend monitoring, alarm configuration and easy loading recipes and starting inspection sessions.





All our Profiler™ inspection systems use Texplorer™ CORE inspection software. It is the most advanced and proven inspection software **dedicated** for surface inspection on all kinds of fabrics, without the need of programming or configuring the software. Texplorer™ CORE is using a variety of optimized image processing algorithms for detection of deviations in the surface and edges of flat surfaces. The unique inspection tool doesn't need defect learning or difficult teaching procedures. You can start inspecting right away...

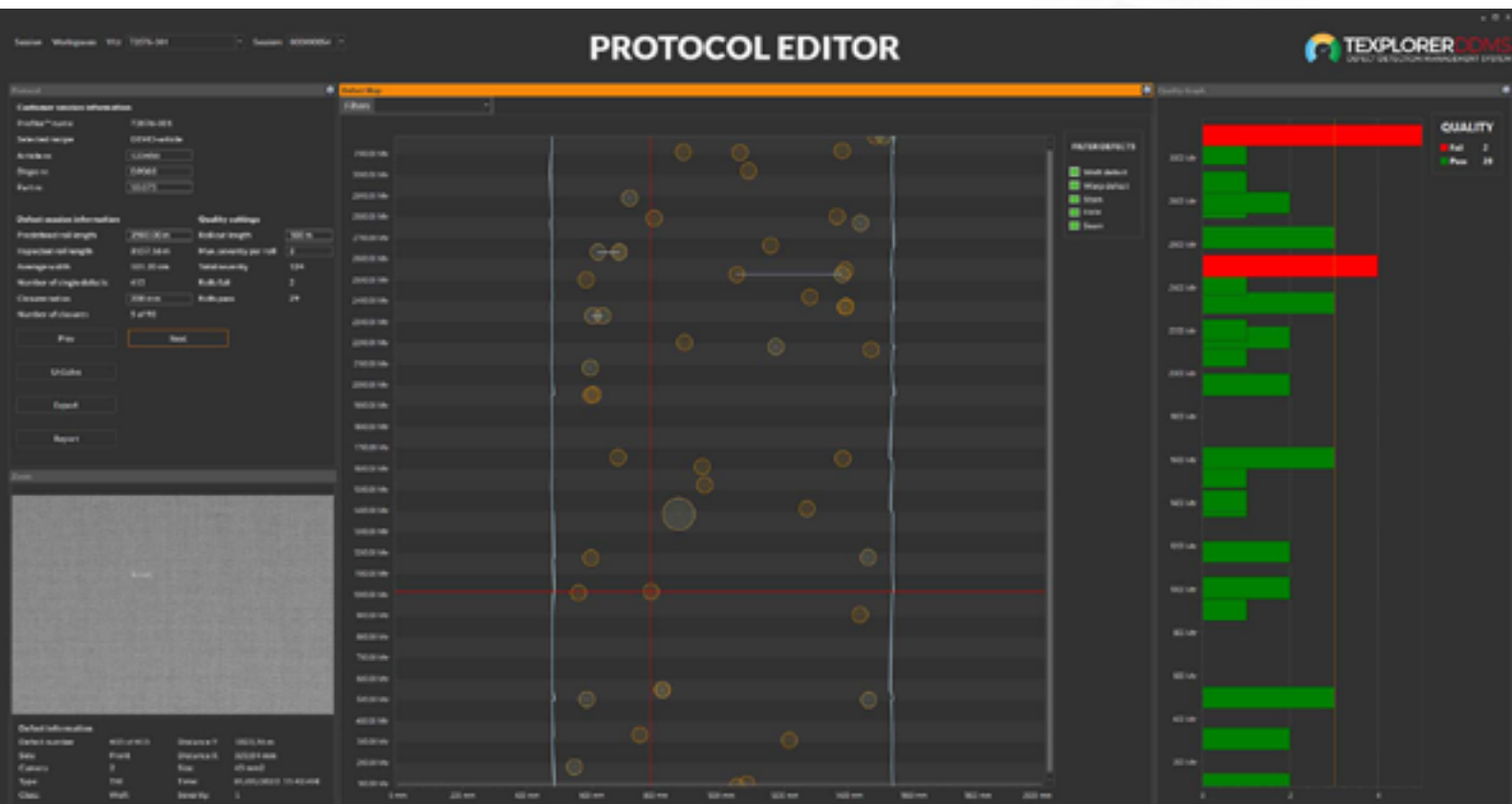
- Detects all types of visual defects, e.g. weaving- or knitting defects, spots, stains, etc.
- Optionally with accurate width measurement
- Fast creating, copying, loading and saving of recipes
- User defined fields, such as batch/piece numbers, article numbers and operator
- Worldwide secured remote access and support over TeamViewer





Texplorer™ DDMS Protocol Editor is able to import the inspection results from your Profiler™ inspection system and visualize the found defects in a digital roll protocol called the defect map. Based on the configured severity rules, defects are graded and/or clustered together. The customer specific severity rules in combination with the set length for the cut rolls determine the points given to a roll. The quality graph quickly shows the bad parts in the roll, or the pieces which need to be cut out. After reviewing the roll protocol, it is exported to the SQL database, where it is made available for the cutting process.

- Responsive application for reviewing roll protocol and prepare a cut list
- Access to full resolution defect images, even when defects cover a larger area
- Predefined filters for defects based on customer conditions
- Completely configurable defect severity and quality thresholds
- Export reports in PDF or Excel
- SQL based application for easy exchanging data with third party software



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