

Fagus-GreCon
Greten GmbH & Co. KG

P.O. Box 1243
D-31042 Alfeld-Hanover

Phone +49(0)5181-79-0
Fax +49(0)5181-79-229
E-Mail sales@grecon.com

www.grecon.com

GreCon

Surface Quality
Control for Inspection
of Coated Panels

GreCon

Fire
Protection

GreCon

Measuring
Technology

GreCon

Service



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GreCon
SUPERSCAN

SUPERSCAN SPM/L 6000



Your Benefit



- Reliable, objective, complete inspection of complete panels
- Quick and automatic learning of new decors
- Detection of optical and topological defects
- Early defect detection reduces customer quality complaints
- Detailed reports on defect location on the panel
- Inspection and marking of the individual panel sections

Automatic and Reliable Surface Inspection to Monitor the Panel Quality

The SUPERSCAN replaces the manual inspection of panel-shaped materials. This continuous and constant quality control ensures consistent panel quality. The SUPERSCAN inspects the surface decor of each panel inline. Fault reports and statistical data allow detailed conclusions of the upstream production process and the product quality. Not only sorting, but the entire production process can be optimised.

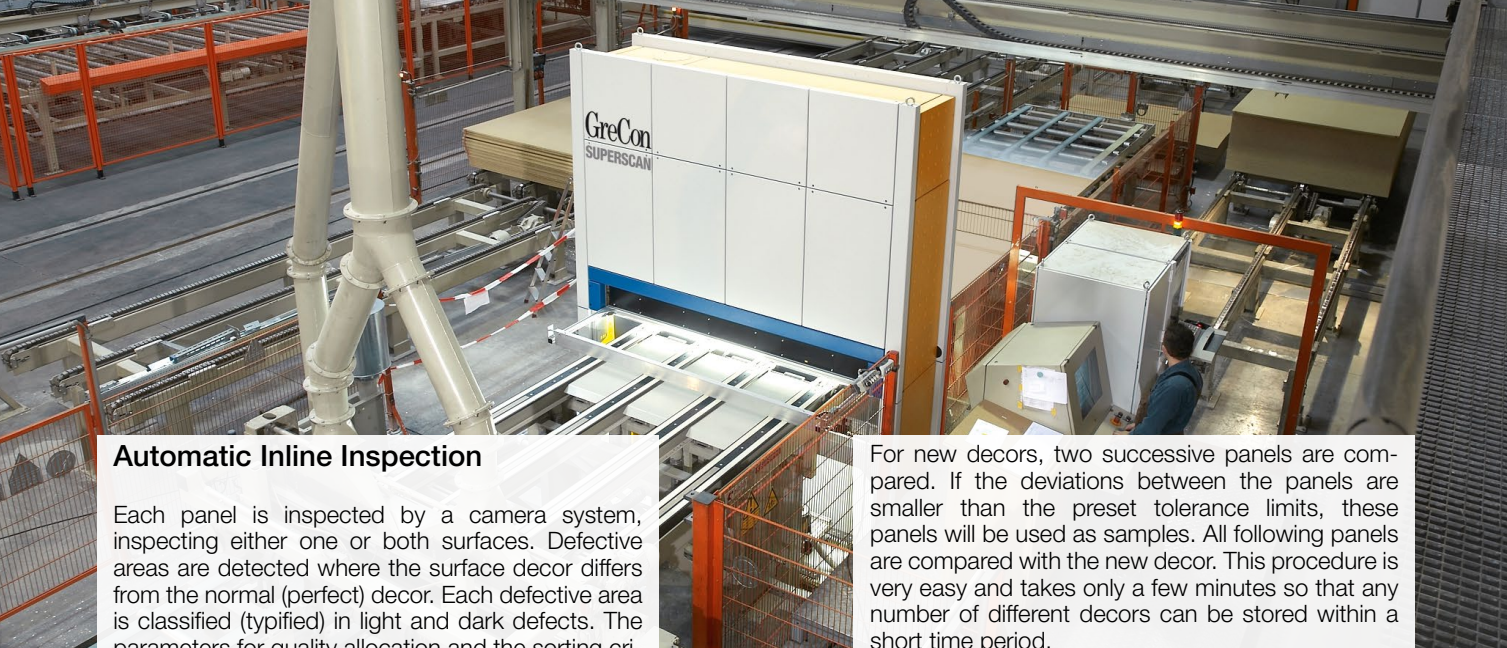
Furniture board: Virtual grid of the complete panel using cut-to-size sections is possible.

Flooring: Defect allocation of individual planks and marking on the complete panel for one-sided inspection.

Why GreCon



- Customer-specific system design
- High innovative capacity: more than 10 % of the employees work in the R & D division
- Worldwide customer service network: more than 80 service technicians on duty worldwide
- Efficient sales network: represented in more than 35 countries
- High expertise: more than 40 years of experience in the measuring technology sector



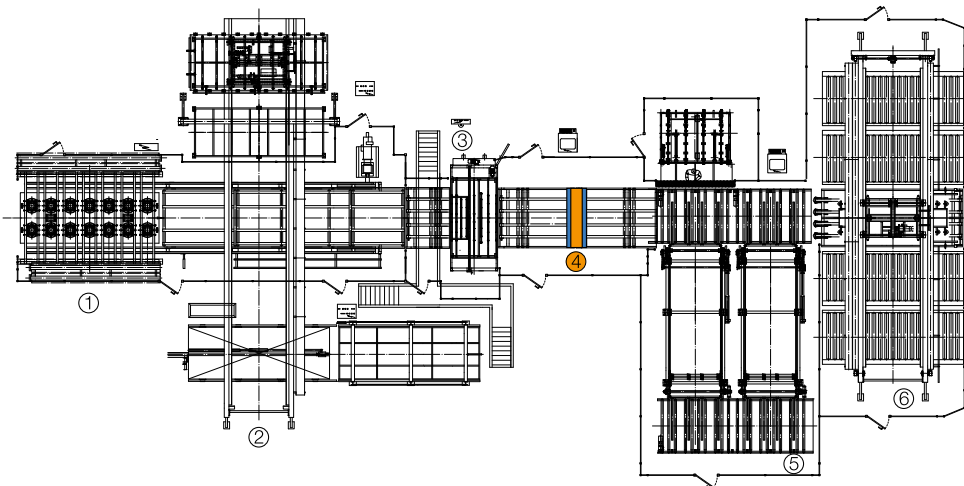
Automatic Inline Inspection

Each panel is inspected by a camera system, inspecting either one or both surfaces. Defective areas are detected where the surface decor differs from the normal (perfect) decor. Each defective area is classified (typified) in light and dark defects. The parameters for quality allocation and the sorting criteria are easily adjustable.

The system is self-learning. It can distinguish between new and known decors. For known decors, the stored image data is simply called up from a database at the beginning of a new order. The system is immediately operational.

For new decors, two successive panels are compared. If the deviations between the panels are smaller than the preset tolerance limits, these panels will be used as samples. All following panels are compared with the new decor. This procedure is very easy and takes only a few minutes so that any number of different decors can be stored within a short time period.

Defects on the surface of each panel are determined and, if desired, displayed on the monitor. Quality is determined by evaluating data, such as defect type, size and position. The sorting station is automatically triggered by the quality definition.



Layout of a short-cycle system with SUPERSCAN

- ① Short-cycle press
- ② Caul plate changer
- ③ Edge grater
- ④ SPM/L with conveyor
- ⑤ Cooling
- ⑥ Stacking



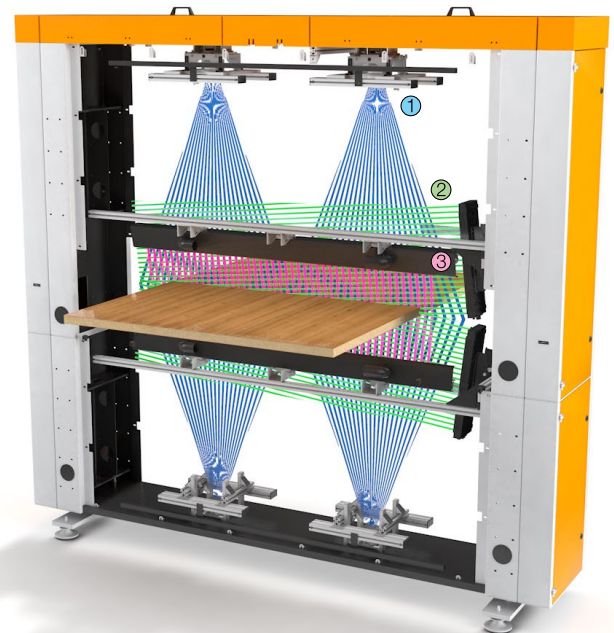
Design and Modules of the System

Modular, lacquered steel frame for one-sided or two-sided inspection:

- Bottom frame
- Top frame
- Conveying tables (belt or vacuum belt conveyors) before and after the scanner (option)
- Different lighting modules for detection of different defects:
 - A) Basic Module: patches, grey tinge, insects, dirt, paper displacement, paper folds, paper scraps, overlay faults, thermal reams
 - B) Reflex Module: dents, topological press plate faults, overlay faults, panel abrasion
 - C) Flooring Module: overlay faults: missing overlay, double overlay

The basic construction of the measuring system is a solid, closed frame. Doors allow easy access to individual measuring components.

Slight positive pressure provides optimum measuring conditions while cooling the light source. The lighting assembly is equipped with a quick-elevating motion to protect it against blisters.



- ① Camera system
- ② LED side lighting
- ③ LED top/bottom lighting

Software Functions

■ Software

The visualisation software of all GreCon measuring systems is based on Windows.

■ Network Connection

For the data transmission to higher-ranking process control systems, different network connections, such as Profibus, are available.

■ Visualisation

The core of the software package is the visualisation software. It records, stores and graphically represents all measured data. The simple menu structure, which is identical for all GreCon measuring systems, provides intuitive and user-friendly operation.

■ Database

The database stores the desired measured values, thus allowing to call up the panels inspected from history for analysis at any time.

■ Reporting

Using special software, individual reports can be generated from the database. Available reporting types are time-related reports, such as shift or monthly reports, and order-related reports that can be selected according to the requirements.

Detail of an identified defect



Visualisation of a decor

Rezept	Subsystem-Ränge	Subsystem-Ränge	Subsystem-Ränge	
Rangzeit	Normal Top, Threshold bright	100	Normal Bottom, Threshold bright	99
Klassifizierung	Normal Top, Threshold dark	99	Normal Bottom, Threshold dark	99
Dicke	Normal Top, Defect area bright	10 mm²	Normal Bottom, Defect area bright	10 mm²
Länge	Normal Top, Defect area dark	10 mm²	Normal Bottom, Defect area dark	10 mm²

18:00:06

Service

GreCon measuring systems are equipped with GreCon online support SATELLITE.

This provides safe, simple and fast remote support when there is trouble or to check the system. Each online support is logged and stored in the system's history.

Technical Specifications

- Panel width.....900 to 2650 mm (36 to 104 inch)
- Panel length.....up to 6500 mm (255 inch)
- Production processcycle/continous
- Panel thickness .. 2.5 to 50 mm (0.1 to 1.97 inch)
- Defect size..... from 1 mm² (from 1/25 inch²)

Applications


In the wood based panel industry, the SUPERSCAN is used in the following applications in furniture and flooring productions:

- After coating presses (short-cycle or continuous)
- Inspection of goods received for further processing

GreCon
SUPERSCAN

Surface Inspection Report

Report		System	
From	10.08.2014 01:46:55	GreCon SPM 6000	
To	10.08.2014 02:36:21	Alfeld, Germany	
Job	4711	Press 1	
Description			
GreCon Test		Throughput	
Production		Boards	50 p .min 1
From	10.08.2014 01:46:55	Inch	11.024 p .min 0
To	10.08.2014 02:36:21		
Duration [h:m:s]	00:49:26		

Recipe		Wooden Decor	
Description	-	Post Cuts Classifications	1 x 2 1st Choice
Board	391.925	Date	10.08.2014 01:55:00
		Defect Area	0,0270 in ²
Defect		Class	Bright
		Position	28,2 in / 78,0 in
		System	Bottom Normal
		Decor Type	Wandering
		Brightness Deviation / Defect Area	65 / 0,0054 in ²
		Brightness Tolerance / Defect Area	30 / 0,0046 in ²
		Bright	31 / 0,0046 in ²
		Dark	31 / 0,0046 in ²
			
Board	391.927	Date	10.08.2014 01:57:00
		Defect Area	0,0054 in ²
Defect		Class	Bright
		Position	26,6 in / 12,9 in
		System	Bottom Normal
		Decor Type	Wandering
		Brightness Deviation / Defect Area	56 / 0,0054 in ²
		Brightness Tolerance / Defect Area	30 / 0,0046 in ²
		Bright	30 / 0,0046 in ²
		Dark	31 / 0,0046 in ²
		