

# Wood Industry

Optical Measurement and  
Inspection Systems



We develop optical inspection systems for various checking tasks of the industry for over 20 years. We combine high quality camera hardware with intelligent image processing software to automate your production and digitalise quality assurance.

We offer turnkey solutions and go with you all the way from concept over initial operation up to questions of the daily operator during production.

## Advantages of Optical Measurement



### operator independent

The influence of the operator on the results is excluded.



### easy documentation of measurement results

The results of the measurement are exactly recorded. Thus, users can prove the quality of the production and reduce complaints.



### automated

Using optical measurement and inspection techniques, automates the quality assurance and relieves operators.



### ready for Industry 4.0

imess measurement modules create detailed data of the production quality. This information is integrated in the customer network and control via various interfaces and digitalise the production



### economically efficient

Thanks to the use of high-quality hardware imess systems are as good as maintenance free and free of disruptions. The total life cycle costs are low compared to alternative systems or manual testing.

## Performance Features of our Software

### usable software surface

Intuitive operation is focus of the software design. Measurement results are visualised clearly both as table and graphically.



### protected parameter

The software has different password protected level of operation. Critical measurement settings are exclusively available for experienced operators or under imess instructions.



### measurement value export

All measurement values can be exported in Excel compatible formats. Subsequently, the operator can use them freely for analysing purposes.



### head data menu & article management

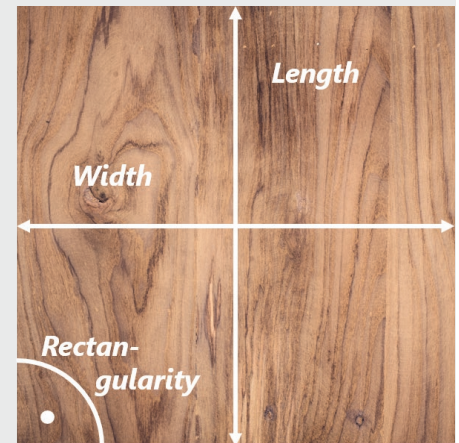
Nominal values, tolerances and further product data can be saved in a customized article management by the operator or the PLC. The setup is fast and easy.



## Geometry Inspection

The fronts on the conveyor belt are observed by one or more cameras against backlight illumination. Four edge coordinates are recorded in the software which calculates then the palette width, length and rectangularity.

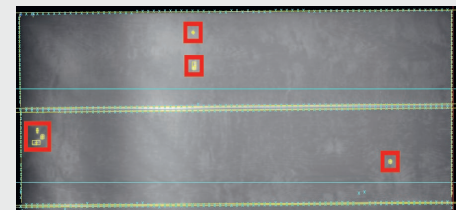
Technology	Typical Speed	Front Geometry		Typical Accuracy
Line Scan Camera	up to 1000 m / Min	Length	from 100 mm	from 0,1 mm
		Width	100 - 5000 mm	



Each front is checked in line regarding their measures.

## Detect Air Pockets

If air pockets form, they become visible in the field of view of thermography cameras due to the heating of the panel. The software recognises the pockets, localises and measures them. Once the size of the pocket exceeds setup tolerances, a signal is released from the customer PLC.



Air pockets become visible because of high temperature and marked in the camera picture.

Technology	Typical Speed	Typical Error Size
Thermography Camera	20 meter / minute	from 3 mm Ø



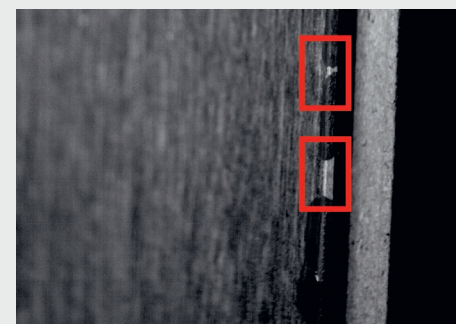
View the Product Video:

[www.imess.com/vertrieb/T100.mp4](http://www.imess.com/vertrieb/T100.mp4)

## Paint Chamfer Detection

Producing wood boards, four edges of the décor layer in are chamfered. Process related the paint might not be spread evenly. These error locations are detected reliably by fast line scan cameras with high step rate.

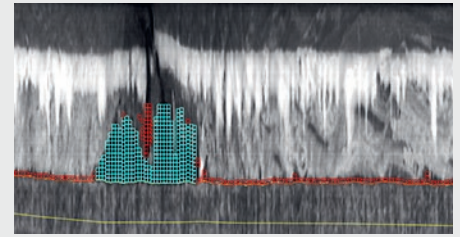
Technology	Typical Speed		Typical Error Size	
Line Scan Camera	Length-wise	130 m / Min	Length	5 mm
	Across	30 m / Min	Height	0,06 mm



If the paint is not spread evenly, breaks in the layer are visible.

### Detect Delamination

The décor layer is attached to the base plate. Due to curves, faulty paint may occur at the edges of the product which causes the paint to peel. The imess inspection module observes the attachment between upper layer and board with line scan camera in line. The recorded pictures are evaluated with regard to these errors.



Delamination at the edges of the plate are detected reliably by the software.

Technology	Typical Speed	Typical Error Size	
Line Scan Camera	75 meter / minute	Length	5 mm
		Height	0,06 mm

### Automated Staple Function / Commissioning

Single fronts and furniture parts are brought together during the commissioning. Generally, palettes are formed. The imess module calculates the ideal order and positioning to form the ideal staple for the palettes. The step of manual sorting is omitted to save time and costs.

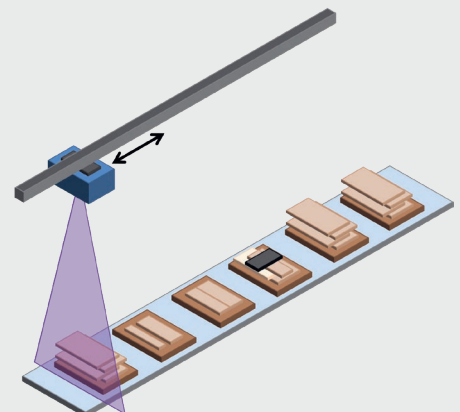


Sample view of a staple after commissioning with optimised sorting and positioning.

- automation, using robots
- ideal location and non-spillable transport units
- easy implementation of optimisation settings
- expandable for more staple locations

### Automated De-Stapling of Palettes

The upper layer of a palette is measured three dimensional with a scanner. The imess software isolates every single plate of the topography and hands the geometry information to a robot for further handling. The scan also detects the plate identity and thus, the nominal sizes which allows the separation of clotted plates, de-stapling or sorting out of falsely labelled parts (plausibility check).



The upper layer is detected three dimensional and subsequently the palette is de-stapled.

- automated de-stapling by robot



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