

# ProfiCura Dim

Cup, wane and width measurements in saw mills



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## Cup, wane and width measurements in one sensor

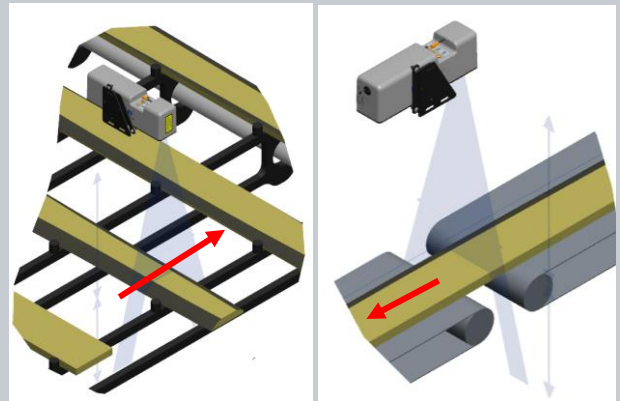
The ProfiCura Dim sensor is a standalone device that simultaneously measures the cup, wane and width of wooden boards. According to defined rules regarding wane and cup, that are set in the sensor, a digital control signal is generated to control a turning device. Typical applications are turners before a planer and turners in the pallet industry.

The basic measurement is done by the LIMAB ProfiCura 2D sensor and based on the triangulation measurement principle. The main advantage by using a 2D measurement is that the board profile is fully scanned. Movements of the board will not have any influence on the measured board profile, which will generate more secure measurements and more stable turner signals as compared to older systems based on 1D measurement technique.

The ProfiCura Dim can be used for both longitudinal and transversal saw lines.

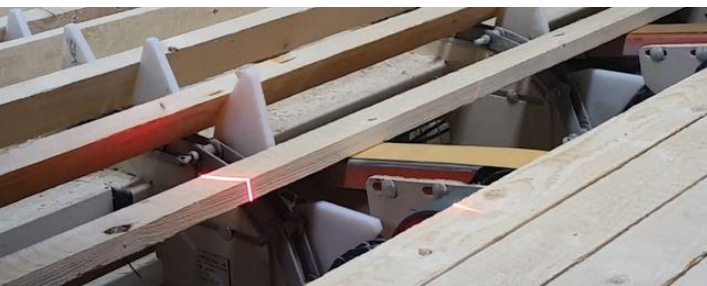
## Benefits

- Cup, wane and width measurements with one sensor
- No external controller. Measurement data directly out from sensor
- Self-triggering function for start of measurement
- Range masking feature, which eliminates measurement deterioration due to reflections from surrounding equipment
- Measurement algorithm that can distinguish between a cup and a wane
- High measurement rate will secure a high turning efficiency



Transversal

Longitudinal



## LIMAB

LIMAB has a history of more than 30 years designing high precision laser based measuring systems and sensors for the harsh environments in saw mills.

Today, we are considered as a world leader in non-contact, in-line measurements for saw mills with installations in all parts of the world.

## High accuracy 3D measurements

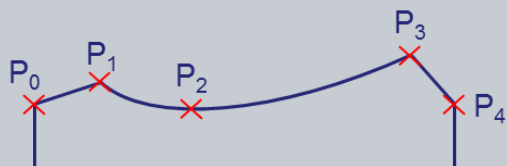
The ProfiCura Dim is based on our 2D sensor platform, the ProfiCura. These sensors are specially designed for high accuracy measurements and integrates the latest development in laser and CMOS technology.

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## Accurate measurements

The ProfiCura Dim will automatically start to measure when the board enters the measuring field. The start-to-measure triggering can be adjusted with threshold values depending on if the board is transported in a transversal or lineal conveyor. The threshold values are defined with the LIMAB software configuration tool.

The board is scanned with 640 data points per profile at 200 Hz. All data points are then analyzed and will result in a board model with a set of five coordinate points ( $P_0$  to  $P_4$ ), which will have all necessary information to determine the cup, wane and width.



All turning rules are defined in the sensor. According to the rules and the board model, a turn/not-turn signal will trigger the digital 1 bit output. One additional output can be given through the standard analogue interface. Through an optional fieldbus interface all other measurement data is available.

## Outputs

### Standard

- Turn/not turn signal
- One additional analogue selectable as for example width or cup height

### Optional (through Fieldbus)

- Width, min/max/average
- Wane height, min/max/average
- Wane width, min/max/average
- Cup concave, min/max/average
- Cup convex, min/max/average

## Applications

The ProfiCura Dim can be used anywhere in a sawmill for turning or rejecting in lineal or transversal processes in applications such as:

- Planer lines for turning cup correctly
- Dimension control of width
- Pallet production lines before nailing machines to control wane for turning

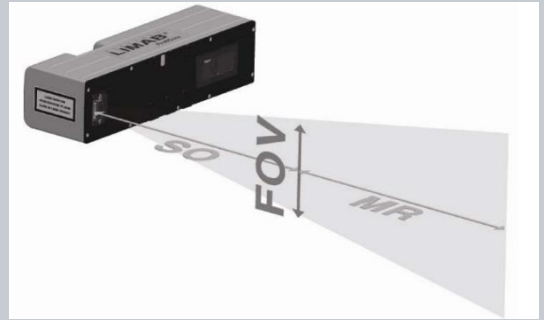
## Output features

- Analogue, 0-20 mA, 1 channel for 1 selectable measurement parameter
- Digital 1 bit, Output control signal for board turning
- Ethernet, LIMAB proprietary data format
- Profibus DPV1
- Modbus TCP

# ProfiCura Dim

## Technical Specification

Measuring speed	200 Hz
Stand-off (SO)	750 mm
Measurement range (MR)	500 mm
Field-of-view (FOV) at SO	300 mm
Field-of-view (FOV) at SO+MR	500 mm
Data points per profile	640
Output resolution, both axis	0,1 mm
Laser class	3B
Weight	5,5 kg
Size	515x134x162 mm
Operating temperature	0-40°C
Interfaces, standard	Analogue 0-20 mA, digital 1 bit
Interfaces, optional	Profibus DPV1, Modbus TCP
Cup measurement accuracy	+/- 0,2 mm
Cup turning accuracy	If cup height >0,6 mm → 99%
Wane measurement accuracy	+/- 1 mm on reference board
Wane turning accuracy	If wane height/width > 4/4 mm → 99%
Width measurement accuracy	+/- 2 mm on sharp edges



We reserve the right to introduce modifications without prior notice

## LIMAB – the complete solution provider for non contact dimensional measurements

Our core capability resides in our ability to deliver effective laser scanning sensors and systems for our customers. Through our experience and understanding of your needs, we engineer and produce sensor and system solutions that will fulfil your requirements of best-in-class technology and quality.

LIMAB was founded 30 years ago and has a long tradition of developing and manufacturing laser based technology. We supply laser guide lines, laser sensors and complete systems for dimensional and profile measurement in sawmills, panel production and steel mills. Headquarters and manufacturing plant is located in Gothenburg, Sweden. LIMAB has regional offices in the USA, UK and Germany as well as approved distributors and partners in other regions.



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