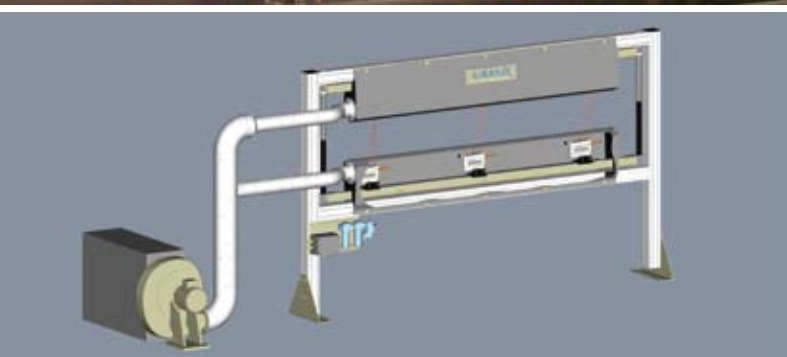


# Panel Profiler

## Board Thickness Measurement System



- *High accuracy at all speeds*
- *Non-contact – low maintenance*
- *No marking of surface*
- *Measures thin and soft panels*
- *Increased yield - quick pay back*

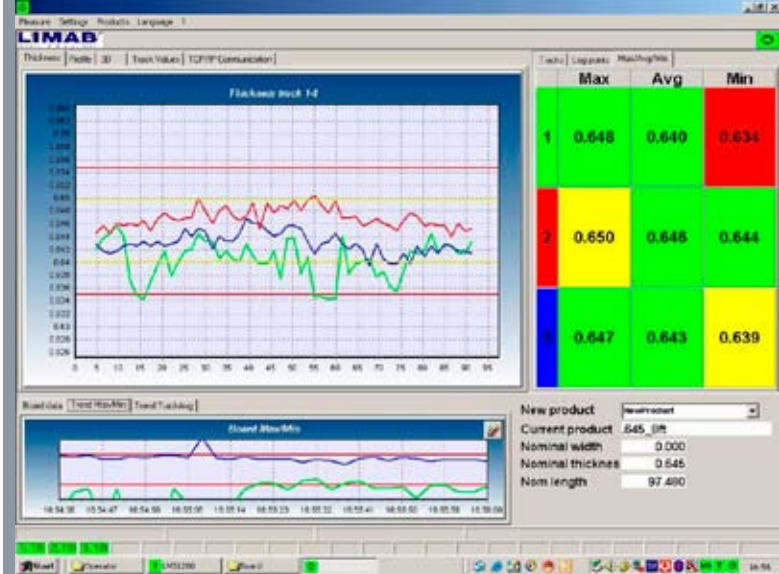


### Design for harsh conditions

LIMAB have a long experience in supplying laser measuring systems in tough production environments to ensure high accuracy and low maintenance. Depending on the application the Panel Profiler will be equipped with a fit for purpose high performance air purge system that ensures the sensors are kept clean and cool in warm and humid applications, like after presses. The measuring frame will be supplied to meet customer requirement for perfect integration into any process line.

### Design for accuracy

Achieving high accuracy is not only a question about using precision laser sensors, mechanical design considerations are equally important. The sensor mounting frames are built to minimize thermal distortion by carefully selecting materials with a low coefficient of expansion in combination with stress relieving of critical components by means of annealing. Together this result in a stable measuring system that does not need frequent recalibration. On most lines the product being measured will vibrate knowing this we have designed a system where this does not affect the measuring accuracy. This is achieved by using a method of differential thickness measurement and high speed synchronized sampling of the sensors at a rate of 2000Hz.



Operator software displaying three tracks thickness graphs, min-, max- average values and trends.

## LIMAB Panel Profiler

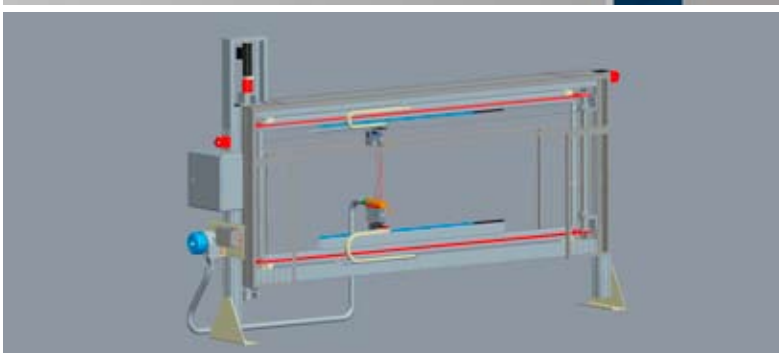
High accuracy – low maintenance costs

Panel Profiler is an in-process non-contact thickness profile measurement system. Having good control of panel thickness is essential during the manufacturing process. The Panel Profiler provides all the tools necessary to ensure this can be achieved with minimum effort. The system will alert operators immediately if the process is starting to drift out of control improving product quality and eliminating customer rejects. This powerful process monitoring system will also increase the production yield and save both material and energy.

The Panel Profiler uses the latest laser technology to measure using a non contact method. Providing very fast sampling rate of 2000 Hz and high resolution of 0.01mm (0.4 thou). This method has proved more reliable and much lower cost to maintain than older technologies based on contact measuring rollers. In addition there is the benefit of no product marking or compression. The laser sensors are installed in our unique and temperature stable mounting frame that provides maintenance free operation with no need for regular cleaning of the sensors. Being non contact there is no need for frequent calibration even on high speed and continuous lines. The laser technique ensures no blind spots with the full panel measurement edge to edge.

The easy to use Windows based system software has an extensive set of functions. Real time graphs in both 2D and 3D for every panel, on screen alarm indications, trends, product library and user database. In addition production statistics are compiled and are displayed or printed on request.

The system has over the years proved its capacity in many types of panel production facilities including numerous presses, both single and multi-opening types, after sanders and in other finishing lines.



### Panel Profiler – Versions for all applications

**Multi-Track** – user defined number of fixed measurement tracks (3-24). Allows measurement of smallest thickness variations and blows.

**Width adjustable** – automatically adjust outer sensors pairs to panel edges

**Traversing** – constantly scans giving complete Panel cross section profile.

**Single track** – Budget system for measuring at a single position on the panel

### Applications

Panel Profiler is a high accuracy in-process non contact thickness measuring system. Providing high accuracy on soft or hard materials whether thin or thick. Squariness, width and length measurement are system options.

Typical installations at:

Particleboard  
MDF  
OSB  
Plywood  
Veneer

Hardboard  
Lightweight panels  
Fibreboard  
Laminates  
Rigid foam insulation

# Technical specifications

## Panel Profiler

Measurement range (Other ranges on request)	0,1-200mm ( 0,004-7,9")
Accuracy	±0,03mm ( ±1 thou) ±2σ
Resolution	0,01mm (0,4 thou)
Sampling rate	2000Hz
Operating temperature (Increased temperature range possible)	0-40°C (32-104 °F)
Laser sensor, PreciCura SR: (Larger sensors, PreciCura MR, on request)	
Size	162x108x42mm (6,28x4,25x1,65")
Power	<1mW
Wavelength	670nm
Laser class (IEC825)	2
Protection class	IP65, NEMA 4X
PC, (subject to new technology upgrades):	
Operating system	Windows XP
Processor	Core 2Duo, 2,33GHz
Working memory	1GB
Hard disc	2x80GB, RAID 1
Screen	19" Flat screen
Cards	CAN-Bus card Digital I/O card 16DI, 16DO Graphics card TCP/IP, RS232C, Digital I/O
Interfaces	
PC cabinet	
Size	2000x600x600mm (78,7"x24"x24")
Protection class	IP 54
Sensor mounting frame	
Size (Customer specific)	
Height	No limit with leg extensions
Width	≤4000mm (157") without loss of accuracy
Length	<300mm (12")
Installation	Floor mounted
Encoder	Incremental, CAN-Bus

We reserve the right to introduce modifications without prior notice.



LIMAB has since its formation in 1979 been dedicated to on-line dimensional measurement in various types of industries. Today we are the market leader in non-contact thickness measurement of wood based panels. Design, production and assembly of both laser sensors and complete systems are made in house, backed up by an international service and sales organisation.



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