

PreciCura and ProfiCura

High precision laser sensors for dimensional measurements
in harsh conditions



Laser Sensors for dimensional measurements

LIMAB is offering a wide product range of non-contact 1D and 2D laser sensors for dimensional measurements. PreciCura is our single point 1D sensors and ProfiCura is our 2D sensor. The basic measurement principle is optical triangulation, which has been further developed for maximum performance.

The sensors are robust and specially designed for tough industrial applications in industries like steel, saw mills and wood based panels.



PreciCura – Our 1D sensors



LIMAB has designed and produced 1D laser sensors for over 30 years and has an extensive technology knowledge in this field. More than 20.000 sensors have been installed all over the world. During this period, LIMAB has released several generations and different versions. The sensors of today are robust, rugged and versatile for use in the toughest applications.

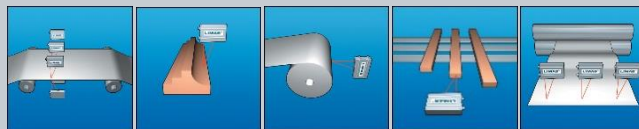
Accurate distance measurements

The PreciCura is a range of high performance industrial laser distance sensors that are suitable for high accuracy gauging applications. The non-contact sensor is capable of measuring a wide range of materials, including surfaces such as soft and hot materials. Due to the high measurement speed of 4 kHz and up to 32 kHz, they can measure on fast moving objects. There are four sensor versions in the product range with different measuring ranges, from 50 to 5.000 mm.

The PreciCura uses the principle of laser based optical triangulation. A laser spot is projected on to the surface of the material being measured. The laser spot is diffusely reflected by the surface and focused to a CCD detector by a high quality lens system. The position of the reflected light on the CCD array varies according to how far the target is from the sensor. The processor converts the pixel position to a mm position using a unique calibration look up table stored within the sensor. Several post-processing possibilities are available, like filtering and modification of output frequency.

Applications

The PreciCura sensors are used in a wide range of applications in many different industries for measurements of diameters, flatness, width and thickness, positions, profiles and length.



Benefits

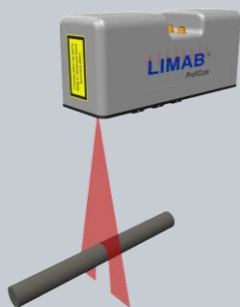
- Simple to interface – no separate processor needed
- High accuracy, repeatability and stability
- High measurement speed
- Factory calibrated
- Versions for hot and cold applications
- Factory customization to meet special requirements

Accessories

All our sensors can be delivered with several accessories, such as mounting brackets, communication cables, air knives, cooling boxes, Windows-based programming kit for sensor set-up and calibration tools.

ProfiCura – Our 2D sensor

ProfiCura is our range of high definition 2D laser profile sensors that have been developed for in-process measurement for industrial applications. Using the latest developments in image processing the sensors will capture the 2D profile of all types of material. They have been developed to meet the needs of harsh industrial applications.

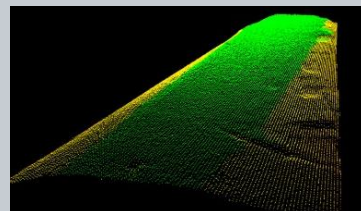
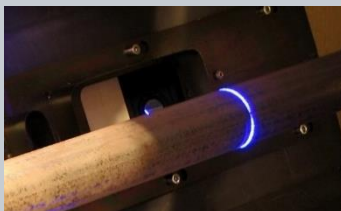


High accuracy 3D scanning

The ProfiCura sensors projects a laser line on the measurement target. This laser line is reflected back on a two-dimensional CMOS array detector in the sensor. By using 2D laser triangulation, the exact dimension and shape of the object can be measured. To improve the measuring performance an advanced modified center of gravity processing algorithm is utilized. Several post-processing methods are available in the sensor.

The ProfiCura can measure on both cold and hot objects as well as on different material qualities. Since measurements normally are done on a moving object, the shape of the object can be fully scanned.

The ProfiCura range consists of several sensor versions. Depending on the installation location and the object to be measured, different configurations regarding stand-off, measurement range and field-of-view can be selected.



ProfiCura Smart

The ProfiCura Smart Sensor is a version of the ProfiCura series, where pre-defined measurement modes can be selected. The sensor set-up is done through an easy-to-use configuration tool and measurement results are directly delivered through different interfaces including field buses such as ProfiBus and Modbus.

Selectable measurement modes include min/max/average, edge position, gap width, groove, bump, cross section, step height, tongue/groove, fit-to-circle and compare.

Benefits

- High speed measurements
- High resolution along the laser line
- High accuracy, repeatability and stability
- Factory calibrated
- Versions for hot and cold applications
- Off-the-shelf product

LIMAB sensors

LIMAB sensors are designed and manufactured at our HQ in Göteborg, Sweden. The sensors we are offering are also used in our own measurement systems. We offer high-end measurement systems for applications in saw mills as well as in the steel and panel industry.

LIMAB Laser Sensors for Dimensional Measurements

Technical Specification

Sensors

Measuring technique
Operating temperature
Data interface

ProfiCura

2D laser triangulation
0°C ... +40°C
Ethernet

PreciCura

1D laser triangulation
0°C ... +40°C
µR/SR/MR: Ethernet, RS422
LR: Analogue, CAN, RS232

Field bus interface

For ProfiCura Smart

No

Laser

Visible red, blue, green laser

Visible red laser

Laser class

Laser Class according to EN 60825-1:2014 and 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

3B

2, 3R or 3B

Power supply

10 ... 36 VDC

10 ... 36 VDC

Protection class

IP65

IP65

Measurement speed

240 - 1.000 Hz

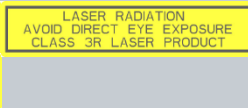
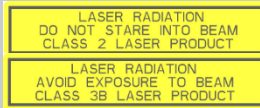
4 kHz (32 kHz version for SR)

ProfiCura (mm/inch)	50/ 50H	70/ 70H	85/ 85H	170/ 170H	180/ 180H	280/ 280H	300/ 300H	600
Stand-off	170/6.7	230/9.1	185/7.3	350/13.8	700/27.6	700/27.5	900/35.4	600/23.6
Measuring Range	50/2.0	70/2.8	200/7.9	320/12.6	1.000/39.4	700/27.5	1.000/39.4	200/7.9
FOV at SO	50/2.0	70/2.8	85/3.3	170/6.7	180/7.1	280/11	300/11.8	600/23.6
FOV at SO+MR	60/2.4	85/3.3	175/6.9	325/12.8	440/17.3	560/22	630/24.8	800/31.5
Dimensions (HxDxW)	134 x 162 x 387 / 5.3 x 6.4 x 15.2				134 x 162 x 515 / 5.3 x 6.4 x 20.2			

PreciCura (mm/inch)	µR	SR	MR			LR	
Stand-off	100/3.9	100/3.9	200/7.9	300/11.8	300/11.8	600/23.6	650/25.6
Measuring Range	50/2.0	230/9.1	320/12.6	300/11.8	1.000/39.4	3.000/118.1	5.000/196.8
Dimensions (HxDxW)	44 x 112 x 165 1.7 x 4.4 x 6.5		54 x 155 x 300 2.1 x 6.1 x 11.8			56 x 148 x 551 2.2 x 5.8 x 21.7	

We reserve the right to introduce modifications without prior notice

LIMAB was founded nearly 40 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.



LIMAB®
CONTROL BY MEASUREMENT

LIMAB North America Inc
9301 Monroe Road, Suite B
Charlotte, NC 28270
USA
Tel: +1 704 321 0760
www.limab.com

LIMAB GmbH
Dompfaffstr. 26
D-82223 Eichenau
Germany
Tel: +49 (0) 8141 5276880
www.limab.de

LIMAB UK LTD
Unit 3L, Westpark 26
Wellington
Somerset, TA21 9AD, UK
Tel +44 (0) 1823 668 633
www.limab.co.uk

Almedalsvägen 15
SE-412 63 Göteborg
Sweden
Phone +46 (0)31-58 44 00
sales@limab.se
www.limab.com