

# BarProfiler 3D

Dimensional and Shape Measurements of Bars



## BarProfiler 3D

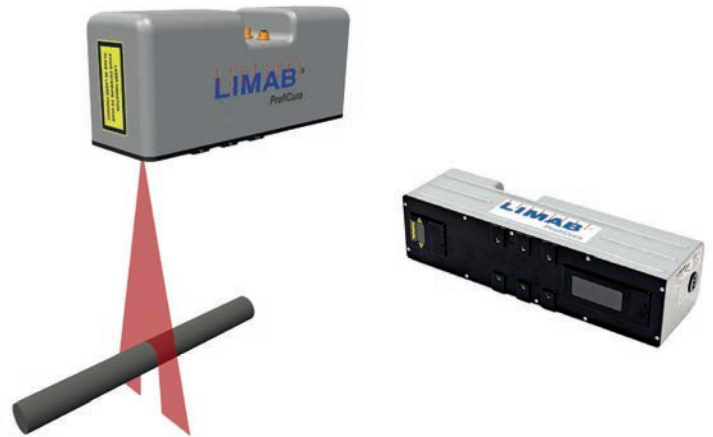
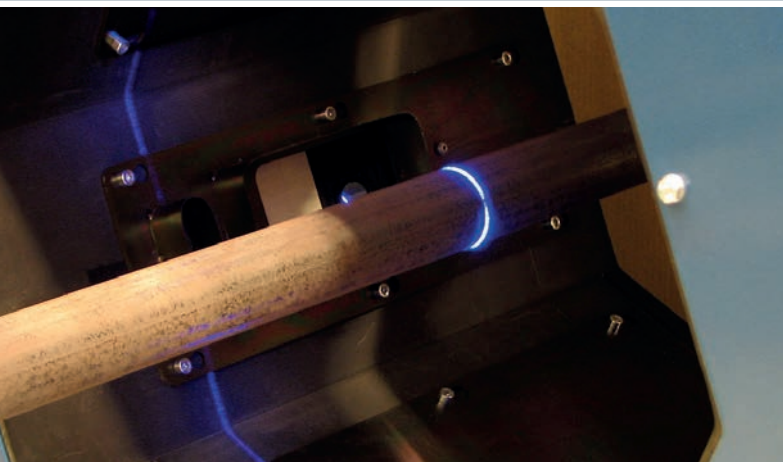
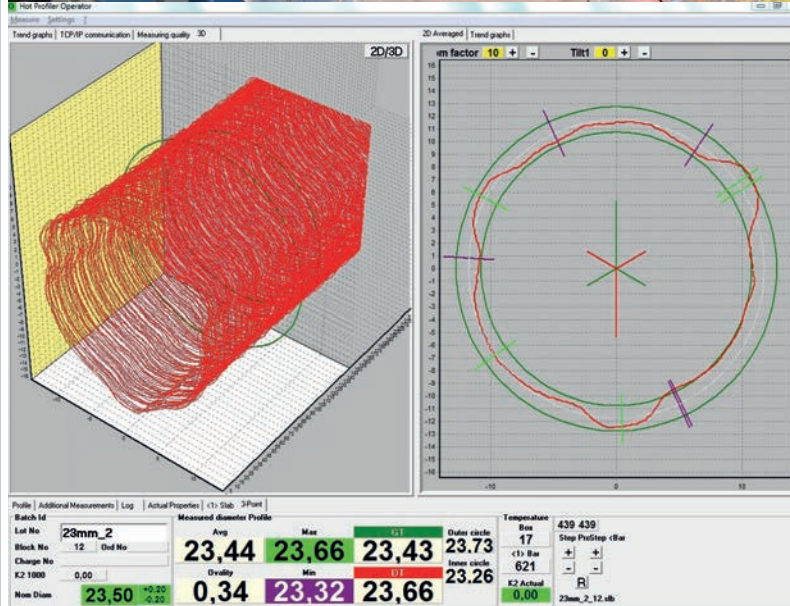
### System for accurate measurements of diameter, ovality and shape of bars

The BarProfiler 3D is equipped with up to 8 synchronized 2D laser triangulation sensors. The sensors are mounted in a temperature cooled frame and are kept clean by air purging. The complete bar circumference is scanned by the sensors ensuring that rolling errors such as under and over fills, concave and convex shapes will be detected.

The user friendly operator interface shows relevant information about the measured bar. Measured dimensions and alarms can be communicated to the plant management system.

The system incorporates an automated self-centering mechanism to adjust the height of the gauge to the mill pass line. An integrated pyrometer measures the material temperature and is used in the hot to cold conversion of the measurements. A large remote display can be installed to show selected key values. Furthermore, a Doppler gauge can be integrated to accurately measure the bar length.

Characteristic dimensions for 3-roll production lines, such as Kocks GT/DT values, are calculated and displayed.



## Complete scanning of the bar

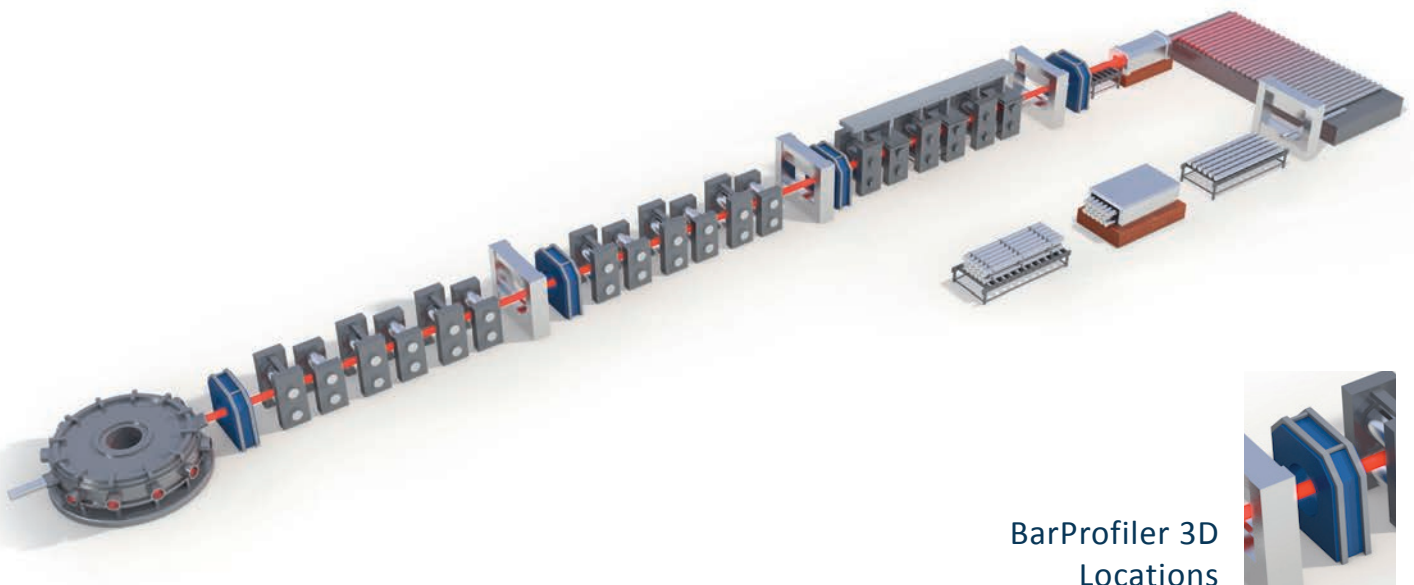
LIMAB has a history of 30 years designing high precision laser based measuring systems for the harsh environments in steel plants. This knowledge is engineered into the BarProfiler 3D to ensure high accuracy with very low maintenance. The BarProfiler 3D is equipped with LIMAB state-of-the-art 2D sensors, which ensures a complete scanning of the bar both in cold and hot applications.

## High accuracy 3D sensing

The BarProfiler 3D integrates our 2D sensors, the ProfiCura. These sensors are specially designed for high accuracy measurements of hot or cold bars. They use the latest development in laser and CCD technology. Different sensor models are available which means an optimum measuring performance no matter what size bars are to be measured for any given application.

## Benefits

- Full cross section shape measurement using high performance LIMAB 2D laser sensors. Complete 360° circumference of the bar is scanned with no blind spots.
- Fast 10ms profile measurement rate for maximum information of bar dimension and shape. Measurement data can be used for dynamic rolling adjustments under load.
- Instant recognition of rolling errors such as under fill, over fill, roll misalignment, concave and convex surfaces, allowing immediate action for rolling optimization.
- Mill setup time dramatically reduced between product changes. Elimination of manual measurements of bars.
- Continuous measurement of bars and tolerance monitoring eliminates production out of specification, which will increase yield and reduce scrapping.
- Process trend and data logging for 100 % quality control and process documentation.
- Compact design makes it easy to install in new or existing rolling line. Gauge can easily be relocated to new measuring locations if required.
- Improved safety. Eliminates manual inspection of hot bars by operators.



## Applications

The BarProfiler 3D can be installed at several locations in the steel bar production line, both on the hot and cold side. The system will display the true cross section profile and provide data such as min/max OD, ovality, length, the true cross section profile, GT/DT values (3-roll). Shapes measured: Rounds, squares, rectangles, flats, triangles, hexagons and angles.

## Software key features

- 3D and trend graph presentation
- Numerical presentation of key figures
- Tolerance and Alarm limits with on screen warnings
- System set-up
- Data logging for quality control
- Communication with level 2
- Remote service and supervision

# BarProfiler 3D

## Technical Specification

Measurement objects

Hot/Cold bars,  $\leq 1.200^{\circ}\text{C}$  (2.200 °F)

Round, square, rectangular, flat, hex

Dimensions: 5 to 650 mm (0,2 to 25,6")

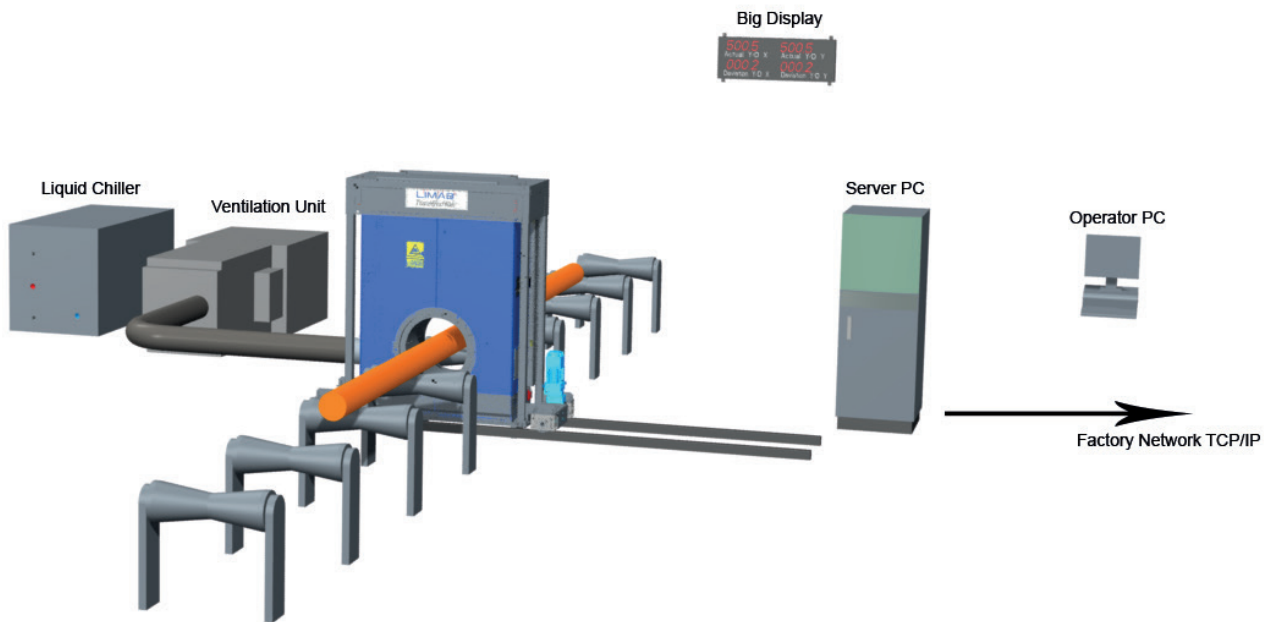
Standard gauge dimension

1.900 x 1.500 x 640 mm (74,8"x59,1"x25,2")

Laser class

3B

## Scope of Supply



We reserve the right to introduce modifications without prior notice

LIMAB was founded 1979 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. Headquarter and manufacturing plant is located in Gothenburg, Sweden. LIMAB has regional offices in the USA, UK, Germany and Finland as well as approved distributors and partners in other regions.



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