

PROFILEMASTER® SPS 200 / 400 / 800

Profile Measurement

Dimensional and shape tolerances for billets, tubes and profiles are becoming increasingly tight. Furthermore, the market demands to detect surface faults such as convex or concave zones, the possibility to monitor radii and angle tolerances.

Advantages of Light Section Technique

Complete profile shapes can be measured by the high precision laser light section technique. Dimensions with tight tolerances such as width, thickness, diagonals etc. as well as radii and angles, can be monitored.

Highly Accurate and Reliable System

Based on long experience with STEELMASTER gauges and with PROFILEMASTER® systems for precision profiles, ZUMBACH has developed the SPS 200/400/800 models based on the latest "light cut" technology with laser contouring and CMOS matrix cameras.

A wide product line of PROFILEMASTER® models is also available for any kind of materials, such as plastics, rubber etc.

The processing and operator interface is performed by an industrial PC with a highly developed software. The operating system is Windows XP embedded for operation without hard disc. This makes the system simple, reliable and crash proof.

The software features in addition to the standard functions for profile measurement, geometry and arithmetic also a special mode especially for round products, offering the precise measurement of roundness and polygonality (EPM* and FPS* functions for 3-roll technology).

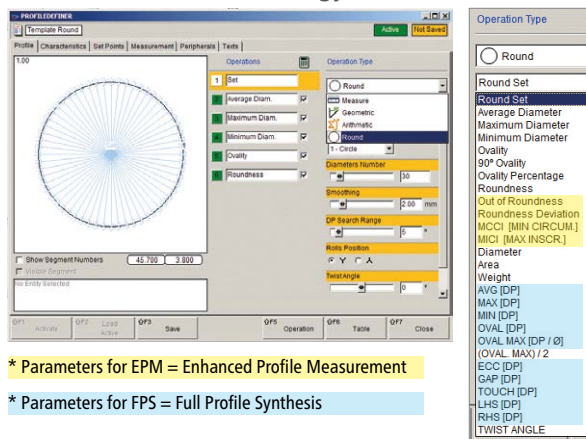


PROFILEMASTER® SPS 800-S8

Advantages – Main Features

- With 4 up to 8 cameras which can be equipped modularly, any shape can be captured and measured
- Real time monitoring of complex profiles
- Special mode for roundness/polygonality of rounds
- Shape fault detection (SFD) thanks to high sampling rate
- High sampling rate of 500 / second
- Compilation of a 3D model thanks to high sampling rate
- Highly accurate measurements
- Detects process problems in an early stage
- Reliable operation at harsh mill conditions up to 1200°C (2192°F) *
- Simple cleaning, short maintenance
- Logging of all production data for QC department
- Networking capability with a higher level system
- Makes post production measurements irrelevant

* Models without heat protection and cooling devices are also available for cold applications such as QC stations.



* Parameters for EPM = Enhanced Profile Measurement

* Parameters for FPS = Full Profile Synthesis

Technology

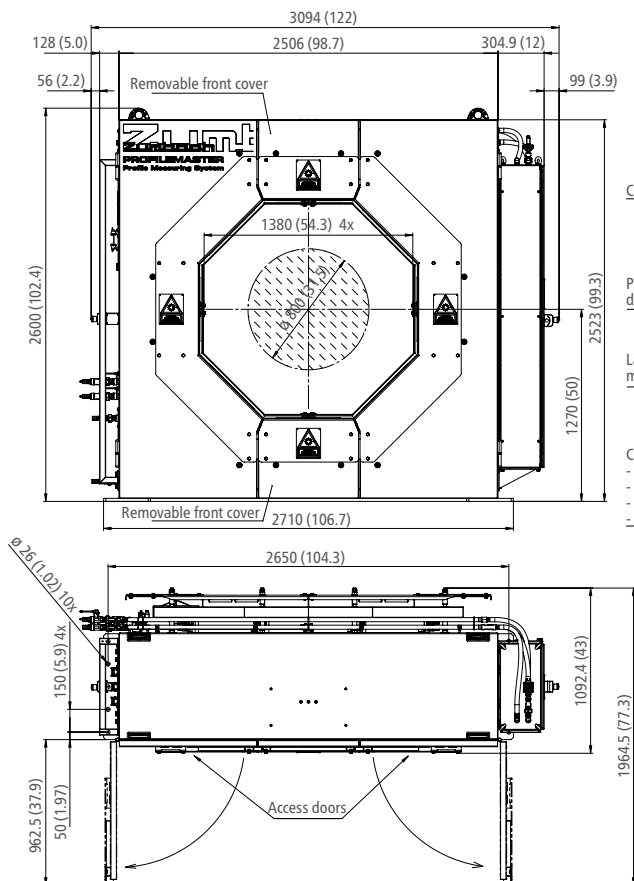
The working principle is based on laser light-section technique. The product surface is highlighted by 4-8 (depending the model) line lasers and the respective matrix cameras capture the traces from an oblique angle. A powerful and fast processor completes the captured trace segments to a complete, orthogonal section of the product. Thanks to its unique concept, accurate and reliable measurements can be guaranteed for practically any shape, independent of torsion. It also offers an in-built advanced software "tool box" for obtaining measurements such as angles, widths, thickness, radii, depths, separations, diameters or deviation from set point. The profile shapes can be easily imported, using existing DXF files. The "Product Generator" allows a quick "Read In" of any round or rectangular product thanks to predefined forms.

Key Data

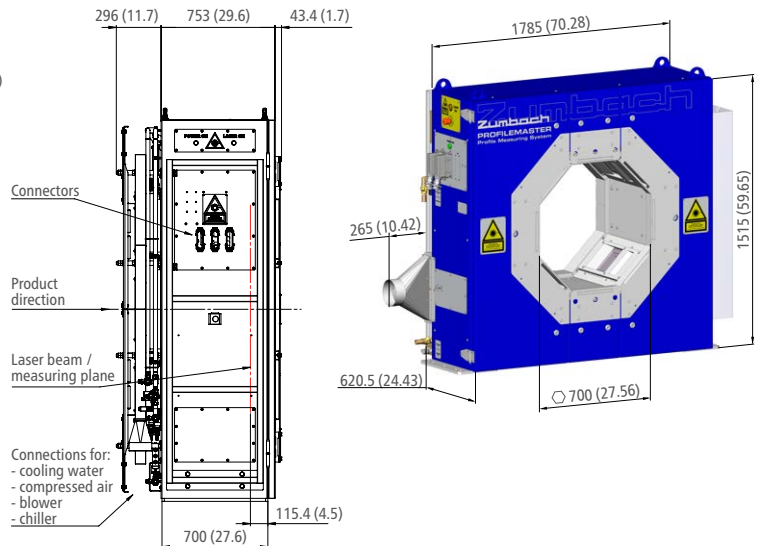
Model	PROFILEMASTER® SPS 200-Sx	PROFILEMASTER® SPS 400-Sx	PROFILEMASTER® SPS 800-Sx
Number of camera modules	4...8		
Measuring field	ø 200 mm (7.9 in.), 8 angles of view	ø 400 mm (15.8 in.), 8 angles of view	ø 800 mm (31.5 in.), 8 angles of view
Largest product (depends on worst case off-centre position)	Round: ø 180 mm or Square: 125 x 125 mm (ø 7.09 in. or 4.92 x 4.92 in.)	Round: ø 360 mm or Square: 250 x 250 mm (ø 14.17 in. or 9.84 x 9.84 in.)	Round: ø 600 mm or Square: 550 x 550 mm (ø 23.62 in. or 21.65 x 21.65 in.)
Resolution	0.001 mm (0.00004 in.)		
Temperature	Max. 1200°C (2192°F)		
Repeatability	Better than 0.01 mm (0.0004 in.)		
Overall error (under hot dynamic condition)	Typically within +/- 0.03 mm (.001 in.)	Typically within +/- 0.05 mm (.002 in.)	Typically within +/- 0.1 mm (.004 in.)
Laser class	3B		

* Technical specifications are subject to change without notice

Dimensions PROFILEMASTER® SPS 800-S8



SPS 200-S4/400-S4



- Dimensions for PROFILEMASTER® SPS 200-Sx/SPS 400-Sx models on request.

- Dimensions in mm (inch)

System Components

Measuring units

Local processing and operation unit LPO

Processing and display unit

Blower unit

Cooling unit

To be supplied by the customer

Profile measuring system SPS 200-Sx or SPS 400-Sx or SPS 800-Sx

Control cabinet with basic control buttons

Industrial computer with latest operating system and screen

Purging air supply for the laser/camera windows

Chilled water for inside conditioning of the measuring unit

3-phase (and 1-phase) power supply, compressed air, cooling water

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