

PROFILEMASTER® SPS 300-S4

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 Cut" Technology

Complete profile shapes can be measured by the high precision "light cut" technology. Dimensions with tight tolerances such as width, thickness, diagonals etc. as well as radii and angles, can be monitored. Moreover, faults such as concave or convex zones, seams, holes, rough surfaces and similar, can be detected during the manufacturing. This provides additional possibilities to manufacture more complex profiles.

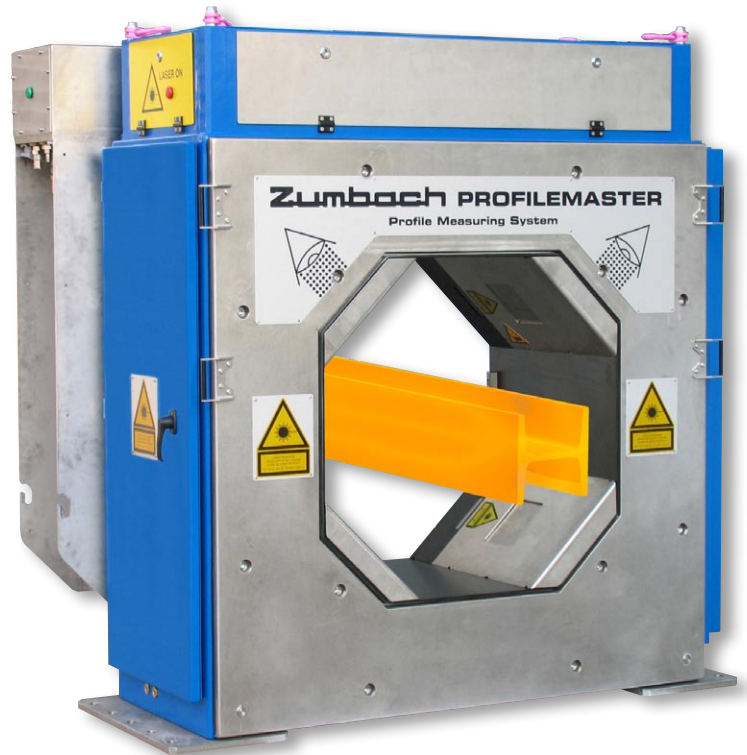
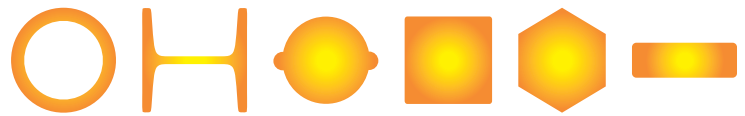
Highly Accurate and Reliable System

Based on long experience with STEELMASTER gauges and with PROFILEMASTER® systems for precision profiles, ZUMBACH has developed the SPS 300-S4 based on the latest "light cut" technology with laser contouring and CCD matrix cameras.

The system is designed for products made of steel, titanium, non-ferrous materials and similar*.

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.

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



Advantages – Main Features

- 4 cameras to capture the profile
- Real time monitoring of complex profiles
- Highly accurate measurements
- Detects process problems in an early stage
- Suitable for harsh mill environments
- Reliable operation at 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.

Technology

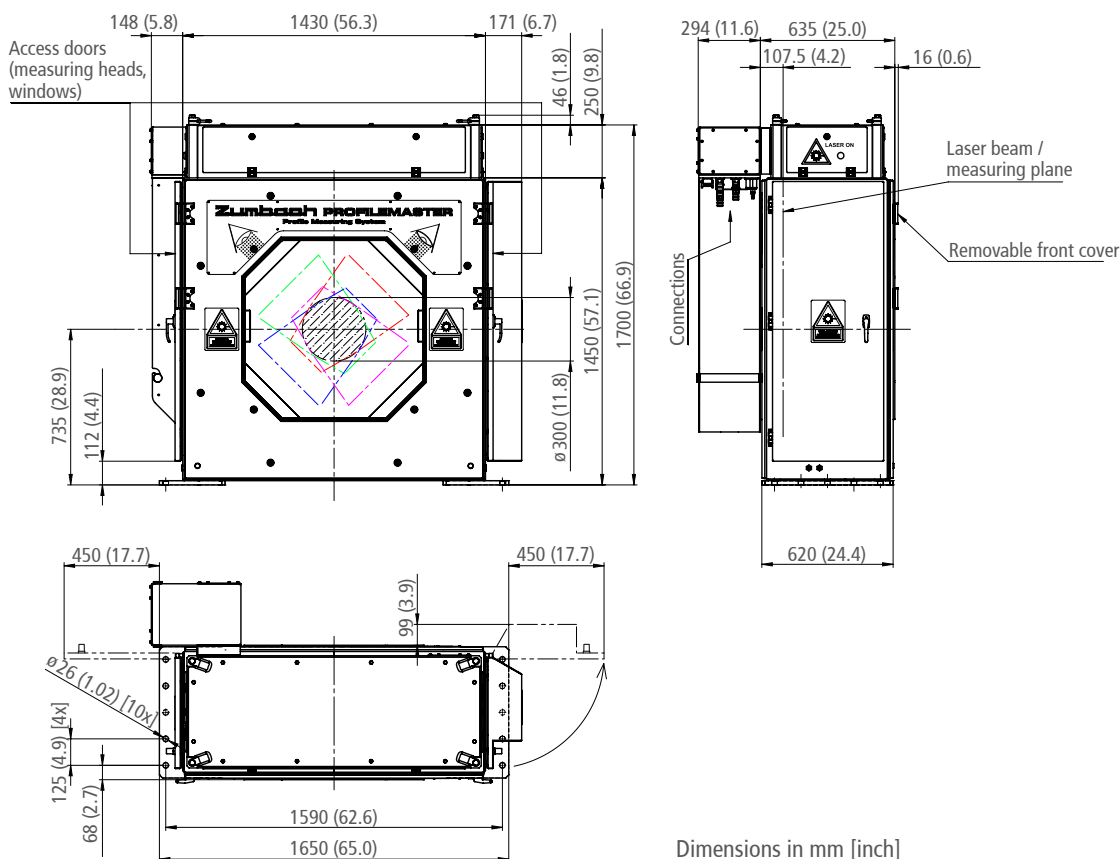
The working principle is based on laser light-section technique. The product surface is highlighted by 4 line lasers and the respective matrix cameras capture the traces from an oblique angle. A powerful and fast processor completes the captured trace segments to a complete, orthogonal section of the 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.

Key Data

Number of camera modules	4
Measuring field	ø 340 mm (13.4 in.), 4 angles of view
Largest product	ø 250 mm or 210 x 210 mm (ø 9.84 in. or 8.27 x 8.27 in.), depends on worst case off-centre position
Resolution	0.001 mm (.00004 in.)
Temperature	Max. 1200°C (2192°F)
Repeatability of measurement	+/- 0.004 mm (.00015 in.)
Overall error	Typically within +/- 0.15 mm (0.006 in.), under hot dynamic condition
Laser class	3B

• Technical specifications are subject to change without notice

Dimensions



System Components

Measuring unit	Profile measuring system SPS 300-S4
Local processing and operation unit LPO	Control cabinet with basic control buttons
Processing and display unit	Industrial computer with latest operating system and screen
Blower unit	Purging air supply for the laser/camera windows
Cooling unit	Chilled water for inside conditioning of the measuring unit
To be supplied by the customer	3-phase (and 1-phase) power supply, compressed air (for the shutter system), cooling water

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