

# LaserSpeed® Pro Non-Contact Length & Speed Gauge



## Aluminum Industry

Peerless Performance in All Mill Applications





## LaserSpeed Pro is the Gauge of Choice by the World's Leading Aluminum Manufacturers

With more than 30 years of proven technological performance, the Beta LaserMike LaserSpeed® gauge was among the first non-contact length and speed measurement systems on the market. Since then, it has set the standard of innovation for accuracy, repeatability, versatility and reliability that competing measurement products have tried to follow.

LaserSpeed gauges are successfully serving the precision length and speed measurement needs of more than 8,000 production operations around the globe. LaserSpeed is proven in numerous aluminum mill applications, including continuous casting, hot and cold rolling, temper and skin pass, pipe and tube, bar and rod, coil and strip, extrusion and other processes.

Now, the world's best non-contact measurement system is even better! Featuring powerful new capabilities in connectivity, communication and control consistent with Industry 4.0, **LaserSpeed Pro** integrates more easily than ever into production networks, providing the real-time data exchanges and tight processing efficiencies that today's manufacturers need to deliver true product quality.

LaserSpeed Pro's unsurpassed performance and applications flexibility – all backed by worldwide service and support – make it the measurement solution of choice for quality-conscious aluminum mills around the globe. A complete range of LaserSpeed Pro measurement systems and accessories are available to meet your unique application needs.



# LaserSpeed Pro Advantages

Here are just a few reasons why LaserSpeed Pro is the superior measurement solution for aluminum mills:

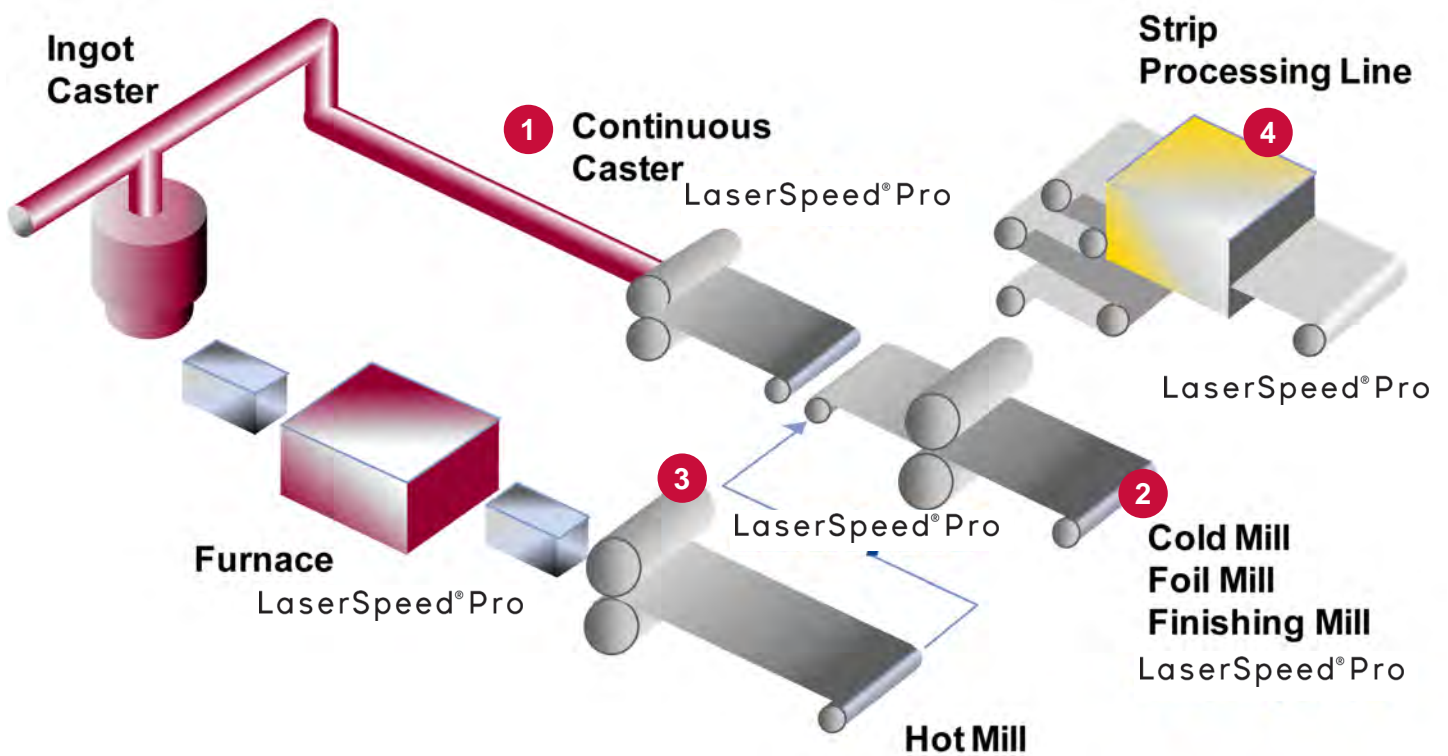
- ▶ **Industry-Leading Performance** – Dual-Beam Laser Doppler Velocimeter technology combined with the Auto Correlation algorithm enables LaserSpeed Pro to deliver better than  $\pm 0.03\%$  accuracy and  $\pm 0.02\%$  repeatability for the depth of field up to 100 mm and full velocity range – the finest performance in the industry!
- ▶ **Broad Speed Measurement Capabilities** – LaserSpeed Pro accurately measures product speed at any rate, from true zero to very slow (e.g., 760 mm/min.) to maximum application speed (e.g., 20,000 m/min.) – in both forward and reverse directions.
- ▶ **Ultra-Fine Movement Tracking** – LaserSpeed Pro can track the most minute product movements back-and-forth, even at rapid acceleration/deceleration rates. These advanced monitoring capabilities help reduce elongation ratio errors.
- ▶ **Versatile Installation** – Compact design and flexible stand-off distances (300 mm – 2,500 mm) allow LaserSpeed Pro to fit practically any application. Its integrated architecture (the processor is inside the gauge) works with all PLCs, making LaserSpeed Pro easy to set up and operate.
- ▶ **Adjustment-Free Operation** – With its 100% solid-state digital technology, LaserSpeed Pro never needs to be recalibrated after setup, saving the time and money previously spent tweaking the mill control system to keep product within specifications.
- ▶ **NEW Long, Rugged Service Life** – Our new advanced laser diode technology, backed by a 3-year warranty, doubles the life of conventional diodes – providing the longest service life in the industry! All other LaserSpeed Pro components come with a 2-year product warranty.  
  
LaserSpeed Pro can also be equipped with up to three layers of protection – water-cooled jacket, stainless-steel housing and heat-shield plate – for durable day-in, day-out operation, even in the most harsh production environments. Protection class is to IP 67.
- ▶ **User-Selectable Outputs** – Standard LaserSpeed Pro outputs consist of full RS-422 compatible quadrature or voltage scaleable pulse outputs to the existing control system and RS-422 and RS-232 serial outputs. Pulses per unit (e.g., m/min.) are configurable.
- ▶ **NEW Industry 4.0 Connectivity** – LaserSpeed Pro now includes expanded Ethernet connectivity that supports Industry 4.0 standards such as ModBus TCP, Ethernet/IP, and Profinet IO – as well as fieldbus support for Profibus DP. This new platform also lays the foundation for future connection via WIFI, Bluetooth or ZigBee.
- ▶ **LaserTrak Software** – This software suite provides complete digital control over LaserSpeed Pro setup and operation. Tools include gauge communication setup, length and speed pulse setup, high- and low-speed pulse output control, graphing/charting and data storage.



Intelligence that transforms the world.

# LaserSpeed Pro: Unsurpassed Control for Aluminum Production Operations

Count on LaserSpeed Pro versatility to improve performance, efficiency and quality at practically any location in the aluminum production process.



1

Cut length control and verification in a continuous caster line

2

Mass flow and elongation control in a cold mill, foil mill or finishing mill

3

Entry and exit mass flow and elongation control in a hot mill

4

Speed control, coil length and slitting at strip processing line



# LaserSpeed in Action

1



2



## 1 Continuous and Cut-to-Length

LaserSpeed measuring the continuous length of aluminum strip and making shear cuts with better than  $\pm 0.03\%$  accuracy.

## 2 Cut Control

LaserSpeed on a slitter line, capturing accurate product length measurements to ensure correct coil length, and avoid overages and shortages.

## 3 Elongation Control

LaserSpeed at the entry and exit sides of a cold-rolling station in foil mill to control elongation and reduce product thickness to specified dimensions.

## 4 Mass Flow Automatic Gauge Control (MFAGC)

LaserSpeed on cold-rolling mill providing MFAGC to increase the amount of coil on gauge while significantly reducing gauge control inaccuracies.



3

4



# Accessories



## Air Wipe/Quick Change Window

Designed for dirty environments, the airwipe and quick change window help to ensure minimal downtime and cleaning.



## Beam Path Air Purge

In environments with heavy dust or steam, the laser beam path may need to be cleared for proper measurement. The beam path air purge efficiently accomplishes this with a 20:1 air amplification ratio. (E-Housing only)



## Right Angle Mirror Assembly

Steers the laser beam at a 90° angle in applications where perpendicular gauge mounting is not possible. (E-Housing only)



## I/O Module

The I/O module takes the speed, length and status information from the gauge and provides various outputs for simple interfacing to a PLC. Outputs include a parallel I/O format, as well as Profibus or Ethernet fieldbus interfaces. The indicators on the front of the module allow the operator to check the status of the gauge with a quick glance.



## C-Frame Enclosure

Designed to be mounted inside the C-Frame of an X-Ray gauge, this enclosure consists of a mounting rail, a right angle mirror assembly and a safety cover. The mounting rail is designed so the gauge can be positioned at a specified distance for complete flexibility in optimizing the standoff distance/passline for each application.



## E-Housing

Houses the LS Pro 8500/9500 gauge within a rugged environmental for double-sealed protection against hot and hostile environments.

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