

**New Product  
Flash**

# SPEEL 3000

## Optical Length & Speed Gauge

### Optical Length and Speed Measurement

In highly automated production processes, length and velocity data are required for manifold purposes. For instance, measurement of operational throughput delivers essential data to control process parameters. In the manufacturing of piece-goods an automatic start and end recognition mechanism enables an autonomous length measurement.

### Advantages of Optical Metrology

For a variety of materials, especially those that are hot, elastic, highly sensitive, or dough-like, it is impossible to use tactile sensors such as odometers or tacho rolls. The accuracy of a mechanical sensor system is also reduced by slippage, which in practice can lead to measuring errors of 10% or more.

In both cases, non-contact optical metrology provides significant benefits. With the SPEEL 3000, Zumbach offers a high-tech gauge which can be used for a wide range of applications.



### Highly Accurate Measurement

The SPEEL 3000 is designed for applications requiring very high accuracy even at very high velocities.

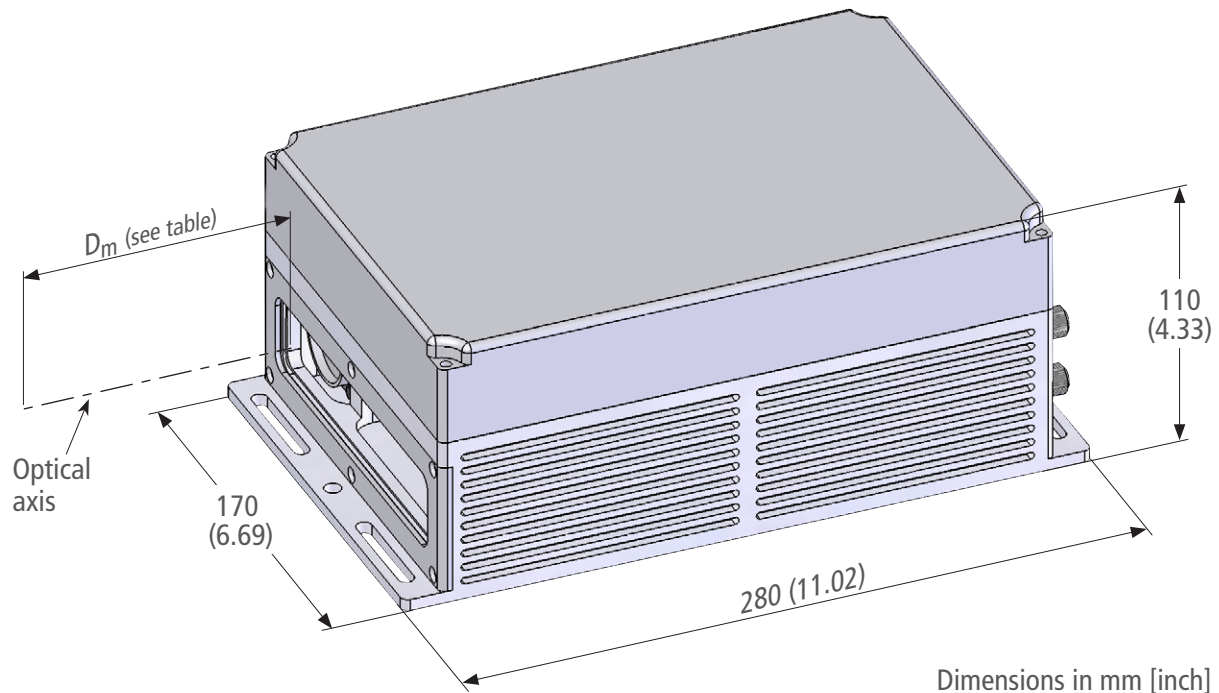
The SPEEL 3000 is available for a measuring distance of 300 mm (11.81 in). Considering the length measurement, it reaches an accuracy of 0.05% or better. The measured length is transmitted to subsequent electronics using an industry standard incremental interface.

In addition, an electrical output signal compatible with common incremental encoders is available and can be directly connected to control systems, electrical counters, or frequency inverters.

### Advantages - Main Features

- Non-contact optical measurement principle
- Compact, heavy-duty and industrial design
- Speed range up to 3000 m/min
- Detection of standstill
- Detection of direction
- Start and end recognition
- Allows deviation of the measuring distance
- For smooth and rough surfaces
- Measurement uncertainty < 0.05 %
- Long life LED illumination
- Maintenance free

## Dimensions



## Technology

The heart of the sensor system is a high-speed line scan camera that detects light reflected from the object being measured. The data processing is achieved by advanced algorithms running on a powerful signal processing platform. The sensor system thus shows a high degree of adaptability, and can be used on a wide range of industrial surfaces. It is even possible to detect lack of motion or direction-change in the object being measured, which are then taken into account in the measurement of distance covered.

Using built-in diagnostic LEDs, an RS232 interface, and appropriate software, extensive configuration and diagnosis possibilities are available for users, thus facilitating the start-up as well as enabling preventive maintenance.

## Technical Data

Speed range	0 up to 3'000 m/min. (0 up to 9'850 ft/min.)
$D_m$ (measuring distance)	300 mm (11.81 in.) <sup>1)</sup>
Max. distance deviation	$\pm 5\%$ <sup>2)</sup>
Illumination	Red LED
Measurement uncertainty	$< 0.05\%$
Resolution	10 $\mu\text{m}$ (.0004 in.) <sup>3)</sup>
Interfaces	Incremental, RS-232
Supply voltage	20...30V
Power consumption	24W
Type of protection	IP 65
Min. housing dimensions	254x150x120 mm (10x5.9x4.7 in.)
Weight	4 kg (8.8 lbs.)
Ambient temperature	operating 0...50° C (32...122° F)
Ambient temperature	storage 0...50° C (32...122° F)
Atmospheric humidity	operating Max. 80% non condensing
Atmospheric humidity	storage Max. 95% non condensing

<sup>1)</sup> Other distances on request

<sup>2)</sup> Max. admissible deviation distance (focus area); example at  $D_m$  of 300 mm / 11.81 in.: max. deviation = 15 mm / .6 in. (5%)

<sup>3)</sup> Other resolutions adjustable

• Technical specifications are subject to change without notice