

## LSV-1000/-2000 Laser Surface Velocimeter

Precise speed and length measurements are critical for controlling the production of continuous materials, sheet materials and piece goods. Laser Surface Velocimeters optimize production processes by providing reliable measurements and increase the output worldwide in the metal, cable and converting industries.

Due to the highly precise, non-contact measurement principle, the LSV eliminates common problems of traditional contact-wheel measurement methods such as damage to delicate surfaces, slippage and thermal expansion on almost any surface.

The compact design of the LSV-1000 and LSV-2000 enable an easy integration into the production line. Use the LSV-2000 for determining also the direction of motion as well as standstill conditions.



### Highlights

- Easy process integration thanks to flexible interface concept
- No recalibration required
- Determines direction of motion and standstill (LSV-2000)
- Visible laser for easy alignment
- Robust sensor technology (IP 66, 67)
- Application-specific accessories (optional cooling, air purge, thermo-protective housing etc.)

## LSV-1000/-2000 Laser Surface Velocimeter

Precise, Non-Contact Speed and Length Measurement  
Datasheet



# Technical Data



## Metrological Specifications

Nominal working distance [mm]						
LSV-1000	200	300	500	700	1000	1500
LSV-2000	-	300	500	700	1000	1500
0.1%-Depth-of-field [mm]						
LSV-1000	±15	±20	±30	±40	±60	±70
LSV-2000	-	±60	±60	±70	±70	±70
Minimal velocity [m/min]						
LSV-1000	0.3	0.53	0.8	1.05	1.43	2.11
LSV-2000			0 (standstill)			
Maximal velocity [m/min]						
LSV-1000	875	1535	2296	3058	4188	6211
LSV-2000			-7700 ... +7700			
Measurement units	mm/s, m/min, ft/s, ft/min, m or ft (selectable)					
Accuracy	<0.05 % of reading**					
Repeatability	<0.02 % of reading**					
Measurement value output rate	1024 s <sup>-1</sup>					
Standard interfaces	<ul style="list-style-type: none"> <li>■ RS-422</li> <li>■ LAN (10/100 Mbit/s)</li> <li>■ RS-232</li> </ul>		<ul style="list-style-type: none"> <li>■ Encoder (user-selectable, max. 500 kHz)</li> <li>■ 24 V Status-I/O</li> </ul>			
Optional interfaces	<ul style="list-style-type: none"> <li>■ Profibus</li> <li>■ Profinet</li> </ul>		<ul style="list-style-type: none"> <li>■ Analog (voltage/current optional)</li> </ul>			

\*\* Under controlled conditions

## Optics Specifications

Wavelength	
LSV-1000	690 nm (visible laser beam)
LSV-2000	658 nm (visible laser beam)
Laser power	max. 25 mW
Laser class	3B
Beam cross section	2 x 4 mm



## General Specifications

Dimensions (L x W x H)	300 x 120 x 110 mm (see drawing)
Weight	4.3 kg
Power consumption	24 V DC / max. 15 W
	0 ... +45 °C
Relative humidity	max. 80 %, non-condensing

## Compliance with Standards

Protection class	IP66 and IP67 (according to EN 60529)
Mechanical shock reliability	10g according to EN 60068-2-29 (IEC 68-2-29)
Vibration reliability	according to EN 60068-2-6 (IEC 68-2-6)

# Accessories



## Connection Box

The connection box is completely wired for instant operation and contains a full terminal block, a universal power supply and a LAN connector.



## Air Wipe with quick-exchange window

A front-mounted, aerodynamically optimized air wipe unit keeps the sensor's optical window free of dust and steam. For cleaning or replacement, the quick release window can be easily exchanged.



## Mounting Platform

The 3-axis adjustable mounting platform simplifies the precise alignment of the LSV sensor in relation to the measurement object. When mounting the LSV in a cooling housing, a suitable mounting platform is available.



## Cooling Plate

The cooling plate keeps the sensor in its operational temperature range, even under hot ambient conditions.



## Thermo-Protective Housing

To handle hot and hostile environments in harsh environments, Polytec has developed a cooled protective housing consisting of an aluminum housing with integrated stainless steel cooling coils. The coolant can either be water, rolling coolant, paraffin oil or kerosene. An optional heat shield protects the system from heat radiation from the measurement object itself or other heat sources.

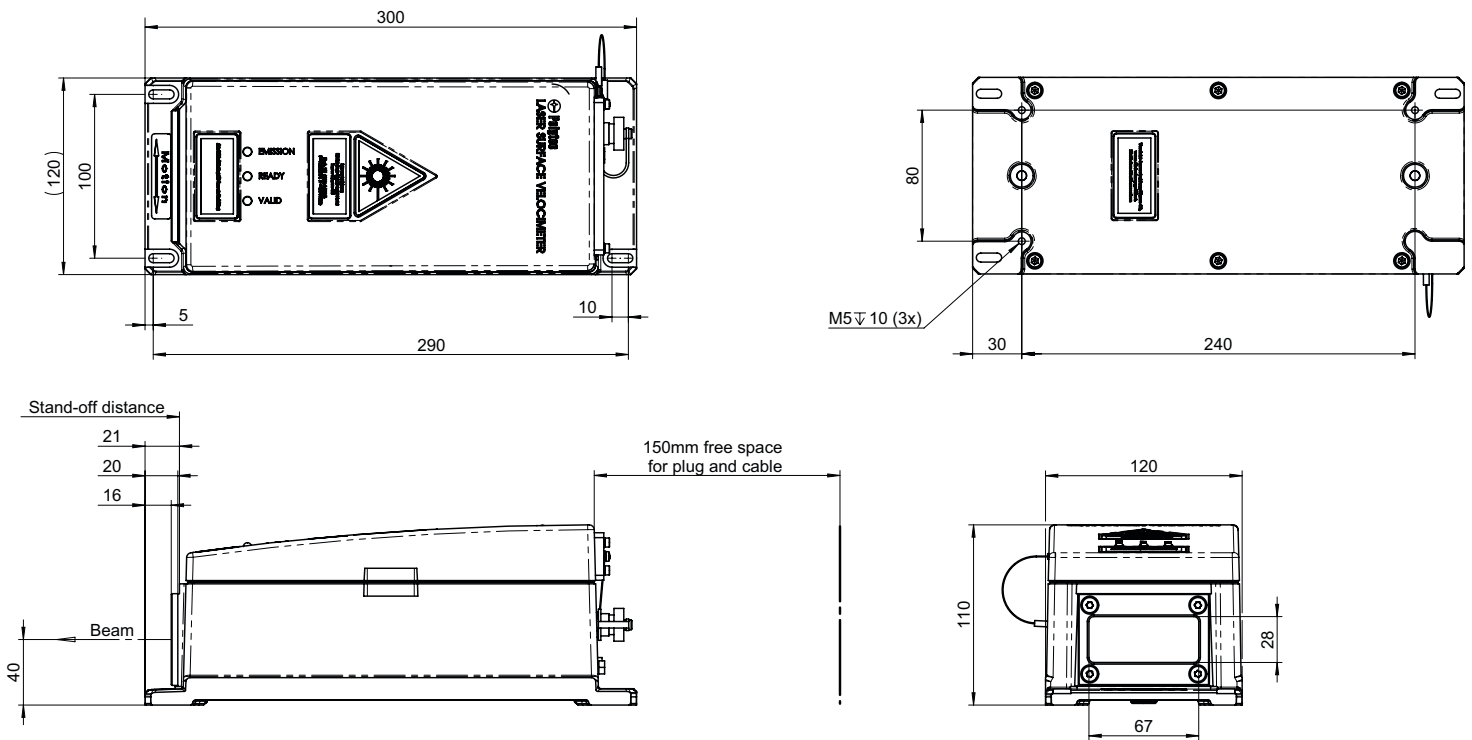


## Air Amplifier

The air amplifier is used for purging the beam path of the LSV in steamy or dusty environments. It provides a stronger and more concentrated air current than the default air purge unit and considerably reduces the consumption of compressed air in comparison with conventional nozzles.

## Further accessories

Measurement frame installation kit, external display, mobility-kit, beam protective sleeve, cable protection, air preparation unit



### More Information

For more information please contact your Polytec application/sales engineer or visit the LSV homepage [www.velocimeter.us](http://www.velocimeter.us) and [www.velocimeter.co.uk](http://www.velocimeter.co.uk).

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