

LAM 300 Ex d

DATASHEET

Sensor Partners BV

📍 James Wattlaan 15
5151 DP Drunen
The Netherlands

☎ +31 (0)416 - 37 82 39

✉ info@sensorpartners.com

🌐 sensorpartners.com

Sensor Partners BVBA

📍 Z.1 Researchpark 310
B-1731, Zellik
Belgium

☎ +32 (0)2 - 464 96 90

✉ info@sensorpartners.com

🌐 sensorpartners.com

LAM 300 Ex d

Explosion proof laser distance meter



The SP LAM 300 Ex d series are highly accurate explosion proof laser distance meters, capable of measuring distances and speeds of objects up to 500 meter onto natural reflecting surfaces and up to 3000 meter on a target board or reflector. The explosion proof rangefinder is IECEx certified and can be used in Gas applications classified as Zone 1 and/or 2 and work with Gas group IIC substances. For applications where a Dust environment is present it can be used in Zone 21 and/or Zone 22 explosion hazardous environments where IIIC categorized conductive dusts may be present. While speed measurements can be performed at a maximum of 4 Hz, refresh rates for continuous distance tracking can be performed at 2 kHz. The special models have an option to perform rangefinding with a staggering 10 kHz output frequency. The SP LAM 300 Ex d is a very robust, high-end and versatile laser measurement instrument combining powerful specifications with explosion protection according the IECEx requirements. There is no industrial measurement or detection application this high-end instrument can't handle. Even in the most demanding and challenging environments the SP LAM 300 Ex d has proven to stand out from the crowd. The SP LAM 300 Ex d is available with many different features and interfaces.



Scan ocean surface in offshore boat landing and oil rig levelling systems



Positioning ship in berthing and mooring applications



Presence detection of helicopters on (offshore) helipads



Gangway positioning at (offshore) wind farms



Distance and anti-collision measurements for (overhead) cranes



Level or height measurements of bulk goods inside silo's and storage bunkers

Specifications

Measuring range	0.15m ... 3000 m
Typical maximum measuring range (1) on target boards on natural surfaces (2)	3000 m 500 m
Measuring accuracy (1)	± 20 mm ± 60 mm
Time to Measure	min. 12.5 ms min. 2.5 ms
Maximum measurement frequency	2 kHz 10kHz
Laser classification	Class 1, EN 60825-1:2007
Wavelength	λ = 905 nm
Laser divergence	1.7 mrad 10 mrad
Interface options (depending on specific device configuration)	RS232 (max. 460.8 kBaud), RS422 (max. 460.8 kBaud), Profibus DP-V0 Slave (max. 12 MBaud), SSI, 24 bit, Gray encoded, 1 validity bit
Switching output	2x "High Side", max. load 0.2 A, permanent short-circuit-proof, adjustable windowing
Analog output	4 mA ... 20 mA, scalable
Trigger	1x trigger in/out, 3 VDC ... 30 VDC
Connection	1 or 2 Ex certified cable glands
Power supply	10 VDC ... 30 VDC
Power consumption (max.)	< 5 W <11.5 W (in heating mode, 24 V)
Operating temperature (3)	-50 °C ... +60 °C (depending on configuration)
Storage temperature	-40 °C ... +70 °C
Humidity	15 % ... 90 %
Dimensions (L x W x H)	385 mm x 175 mm x 156 mm
Weight	aprox 9000 g (depending on configuration)
Housing material	RVS 316L
Ingress protection class	IP66 (in accordance with IEC 60079-0 & IEC60529)
EMC	EN 61326-1
EX classification	Gas: Ex II 2G, zone 1, 2 Dust: Ex II 2D, zone 21, 22
Type of protection	d, e, op is, tb
Applied standards	IEC 60079-0, IEC 60079-1, IEC 60079-7 (optional), IEC 60079-28, IEC 60079-31
IECEX certificate	IECEX DEK 15.0056X
Ex marking	Gas Zone 1 & 2: Ex d e op is IIC T4 ... T6 Gb Gas Zone 1 & 2: Ex d op is IIC T4 ... T6 Gb Dust Zone 21 & 22: Ex tb IIIC T135 °C ... T85 °C Db

1. Measurement range and accuracy depending on measuring frequency, target reflectivity, stray light and environmental conditions.
2. On natural surfaces applies for natural, diffuse reflecting objects, targets and surfaces which could not be considered as a target board or a reflector with defined reflective properties.

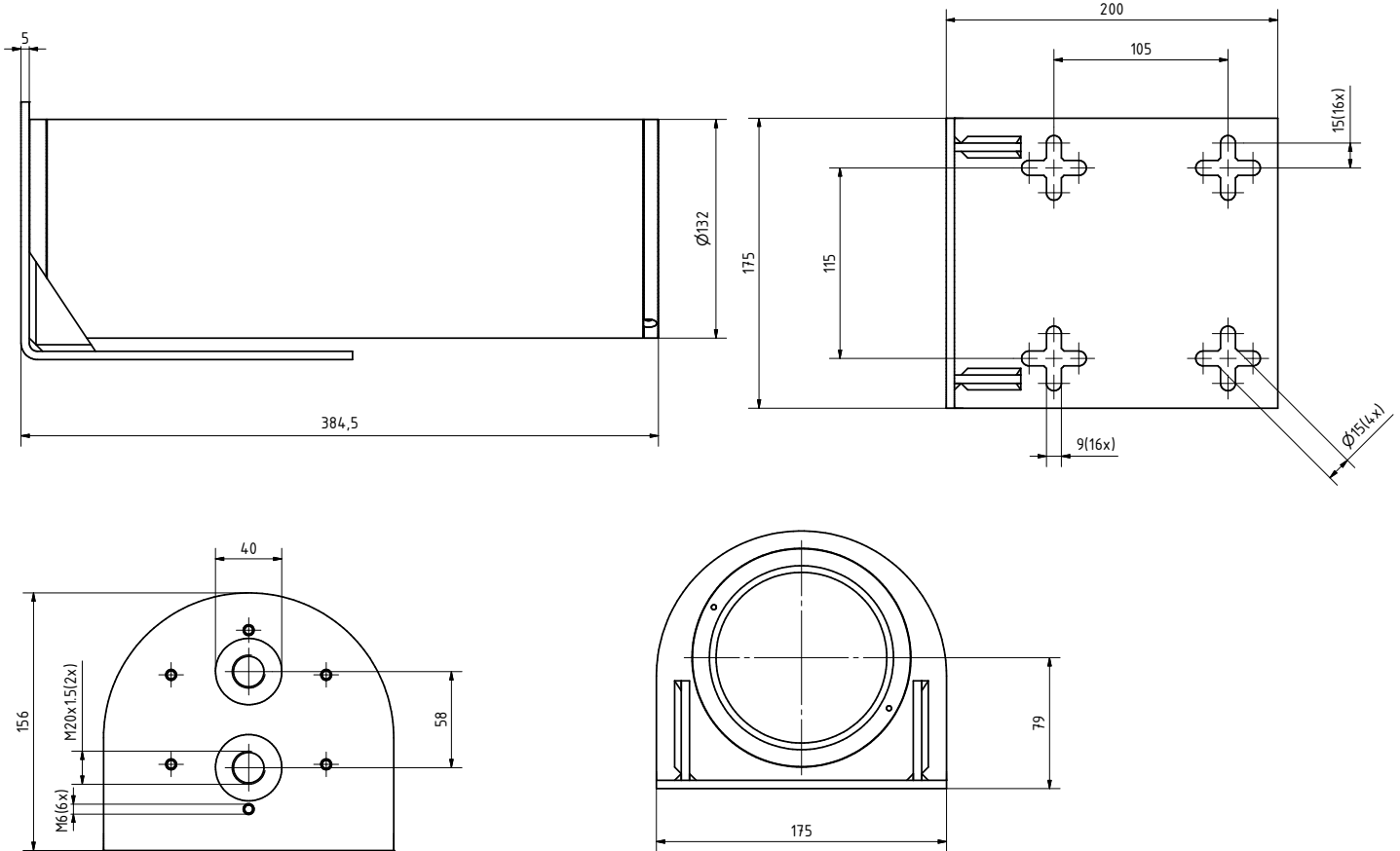
Model selection

Model	Communications & Interfaces, Extra Options
LAM 301.100 Ex d	RS232, 1.7 mrad 2 kHz
LAM 301.101 Ex d	RS232 + SSI, 1.7 mrad 2 kHz
LAM 301.102 Ex d	RS232 + Profibus, 1.7 mrad 2 kHz
LAM 301.110 Ex d	RS232, 1.7 mrad 10 kHz
LAM 301.120 Ex d	RS232, 10 mrad 2 kHz
LAM 301.130 Ex d	RS232, 10 mrad 10 kHz
LAM 301.131 Ex d	RS232 + SSI, 10 mrad 10 kHz
LAM 301.200 Ex d	RS422, 1.7 mrad 2 kHz
LAM 301.202 Ex d	RS422 + Profibus, 1.7 mrad 10 kHz
LAM 301.210 Ex d	RS422, 1.7 mrad 10 kHz
LAM 301.220 Ex d	RS422, 10 mrad 2 kHz
LAM 301.230 Ex d	RS422, 10 mrad 10 kHz
LAM 302.100 Ex d	RS232, 3.7 mrad 100 Hz
LAM 302.200 Ex d	RS422, 3.7 mrad 100 Hz

Accessories

Position	Description
1	Ex-interface cable, shielded, 12 x 0.25 mm ²
2	Interface cable with straight connector
3	SSI cable with straight connector
4	Profibus In/Out cable, straight connectors
5	Profibus Terminating resistor, M12
6	Screw cap for Profibus In, SSI connector
7	Screw cap for Profibus Out, SSI connector
8	Profibus Toolkit, USB to Profibus convertor with service software
9	Industrial Opto-Isolated USB to RS422/RS485 converter
10	Standard target board, 250 x 300 x 3 mm, white
11	3M Oralite 5200 target board, 250 x 300 x 3mm, grey
12	3M Oralite Special target board, 250 x 300 x 3mm, anthracite

Dimensions (in mm)



The mounting bracket as shown in the pictures above is not included with the LAM 300 Ex d and should be bought separately.



For mounting and installation instructions of the instrument housing, making the external wiring connection into the housing, as well as connecting the internally mounted laser sensor to the external wiring, please refer to the instruction manual provided by the manufacturer of the laser distance meter. The instructions in the manual must be followed stringently. Only properly educated and authorized personnel having extensive knowledge of the application and products are allowed to handle this sensitive equipment. In case of installing, connecting and normal maintenance authorized personnel may perform work on the laser distance meter. Repairs, overhauls and revisions however are prohibited to be performed by any other party than the manufacturer of the laser distance meter. Contact the manufacturer for more information.

It is our policy to continuously improve the design, specifications and performance of our products. Although this document was created with the utmost care, the details as represented in this document could not be considered as final, nor binding. We do not accept any liability or responsibility for mistakes, inaccuracies or printing errors. All rights reserved.

Sensor Partners BV

James Wattlaan 15
5151 DP Drunen
The Netherlands
+31 (0)416 - 37 82 39
info@sensorpartners.com
sensorpartners.com

Sensor Partners BVBA

Z.1 Researchpark 310
B-1731, Zellik
Belgium
+32 (0)2 - 464 96 90
info@sensorpartners.com
sensorpartners.com