LAM 50 Ex d

DATASHEET

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LAM 50 Ex d

Explosion proof laser distance meter

SP LAM 50 Ex d are explosion proof laser distance meters. They can be used in explosion hazardous environments (ATEX/IECEx) up to and including Zone 1 / 21. It measures distances and speeds of objects up to 30 meter onto natural surfaces and up to 150 meter on a target board or reflector. The maximum measurement speed is 50 Hz. The SP LAM 50 Ex d is a versatile sensor series that can be employed worldwide due to it's multiple certifications. It combines powerful specifications with a certified flameproof enclosure. Even in the most demanding and regulated environments these sensors go the extra mile and perform reliable measurements while others stop working. The SP LAM 50 Ex d series sensors are available with many different options and interface configurations.

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

Typical maximun measuring range (1) on target boards on natural surfaces (2)	 0.1 m ... 30m 25 m ... 150m
Measurement accuracy (1)	± 3 mm | ± 5 mm
Measurement frequency	10 Hz | 50 Hz
Measurement value resolution	0.1 mm
Reproducibility	≤ 0.5 mm
Laser classification	Class 2, ≤ 0,95 mW according to IEC 825-1 / EN 60825-1:2007
Wavelength	λ = 650 nm (red)
Laser divergence	0.6 mrad
Operating modes	Single measurement, continuous measurement, distance tracking
Interface options (depending on specific device configuration)	RS232 (max. 38.4 kBaud), RS422 (max. 38.4 kBaud), Profibus (max. 12 MBaud), SSI, 24 bit, Gray encoded (max. 1 MHz)
Switching output	1 or 2
Trigger	1x trigger in/out, 3 VDC ... 30 VDC
Connectors	12-pole M16 (Binder series 423) | optional 5-pole M12 (Binder series 766)*
Power supply	10 VDC ... 30 VDC
Power consumption typical (max.)	1.5 W | (3.2 W) | 24 W (in heating mode) (25.7 W)
Operating temperature (3)	-50 °C ... +60 °C (depending on configuration)
Storage temperature	-40 °C ... +50 °C | -40 °C ... +70 °C *
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
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.

* Uitleg *

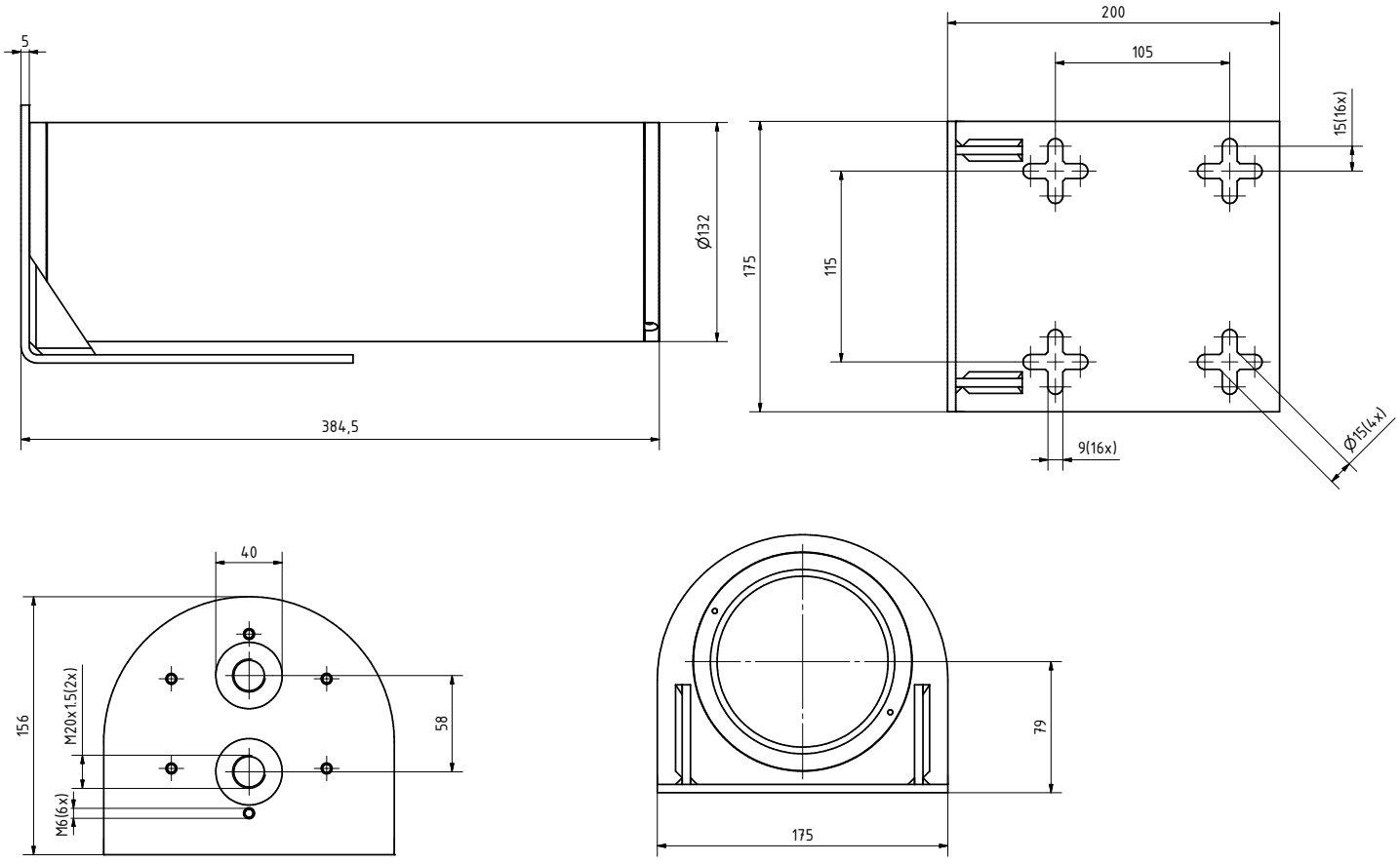
Model selection

Model	Communications & Interfaces, Extra Options
SP LAM 51.1 Ex d	RS232, 10 Hz
SP LAM 51.2 Ex d	RS422, 10 Hz
SP LAM 52.1 Ex d	RS232, 50 Hz
SP LAM 52.2 Ex d	RS422, 50 Hz
SP LAM 53 Ex d	Profibus + SSI, 50 Hz
SP LAM 54.1 Ex d	Profinet, 10 Hz
SP LAM 54.2 Ex d	Profinet, 50 Hz
SP LAM 51.11 Ex d *	RS232, 10 Hz
SP LAM 51.21 Ex d *	RS422, 10 Hz
SP LAM 52.11 Ex d *	RS232, 50 Hz
SP LAM 52.21 Ex d *	RS422, 50 Hz
SP LAM 53.01 Ex d *	Profibus + SSI, 50 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 50 Ex d and should be bought seperatly.

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.

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