USER MANUAL

LDS

Laser Distance Sensor

LMI Technologies B.V.

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3D MACHINE VISION

SAFETY REGULATIONS

The "LXS-range" from LMI Technologies bv are precision instruments in which a semi-conductor laser is being used as a light source.

Power	:	35 mW
Spectrum	:	655 nm, visible red light

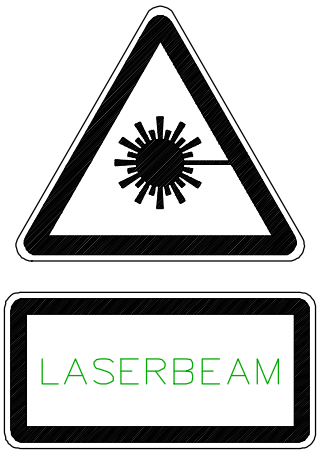
According to the European Safety norm the Laser is divided in class IIIb.

Do not point the sensor at any person!!!

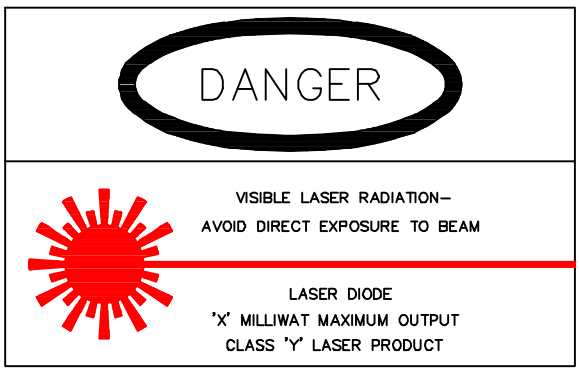
Labels

The following labels must always be shown perceptible on the laser sensor (if not possible: in the direct surrounding).
Standard, the sensors have been supplied for the required labels by LMI Technologies bv.

- Standard Laser Symbol



- Classification laser



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GENERAL

The producer and supplier are not responsible for damage, which is caused by inexpert use and/or faulty working of the sensor.

In connection with safety reasons the laser sensor only needs to be installed and maintained by authorized personnel. In cause of malfunction, please contact LMI Technologies bv.

INSTALLATION

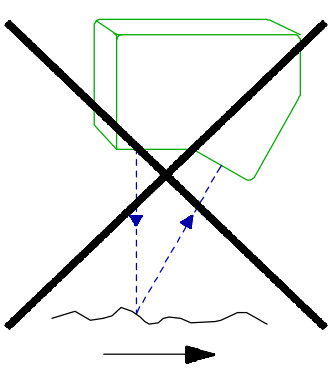
When installing the ***"Laser Distance Sensor"*** you need to take the following points into account:

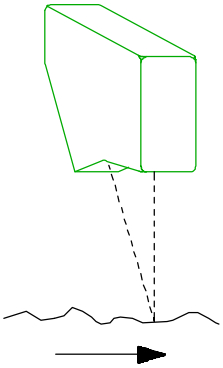
- During assembling and maintenance the sensor needs to be switched off. This to prevent that somebody looks into the laser beam per mistake.
- A non-solid attachment of the sensor will effect the measurement negatively.
- In spite of the sensor housing being extremely robust and the electronic, optics and laser being protected in this way, you need to take into account that vibrations c.q. Resonance's in the system can cause undesirable measurement faults.
- The light the laser emits is visible red. If the light is to soft, you can make it brighter by holding your hand over de detector lens.
- Since this is an "optical system" you need to prevent that the lenses to get dirty. This has a negative effect on the measurement.
  The cleaning of the lenses needs to take place with a suitable means for that (for example optical cleaning cloth).
- A clean environment is recommended. Smoke and dirt can influence the laser beam.
- The maximum temperature on which the semi-conductor laser may be exposed, amounts to 50 °C.
- Avoid direct radiation from sunlight.

LDS

Installation

- Please take care that the LDS sensor is mounted rectangular to the measuring surface.
- In case of moving objects the LDS must be mounted transverse to the transport direction.





Warming-up time

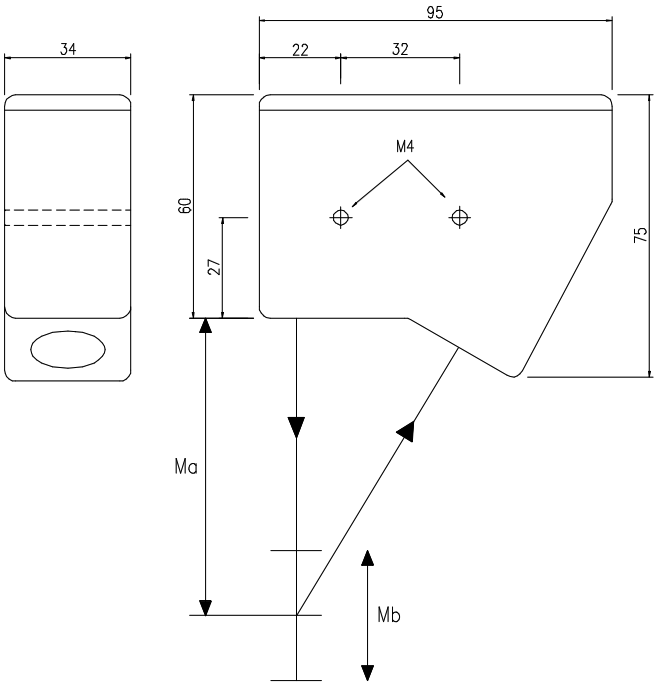
Please reckon a warming-up time of ± 10 minutes.

Connections:

Brown	:	+15 Vdc
Green/Black	:	GND
White	:	-15 Vdc
Yellow	:	Distance Output (0-10Vdc)*
Pink	:	Distance Output (0/4-20mA)*
Grey	:	Intensity Output (0-6Vdc)
Blue	:	Data valid Output (In-range –0,7Vdc, Out of range 4,7Vdc)
Red	:	Laser ON Input (Laser is on when red cable is connected to a voltage between 5 and 15Vdc, when connected to 0Vdc the laser is OFF)

**** Depending on model!***

N.B. : ***Only use a linear power supply***



Dimensions LDS-sensor

Ma : stand off
Mb : measuring range

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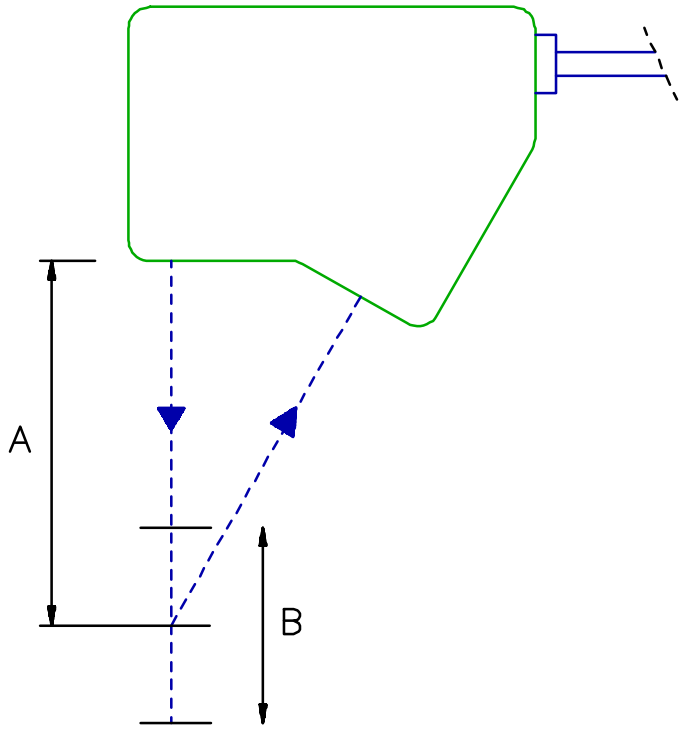
Specifications LDS 80/10-M

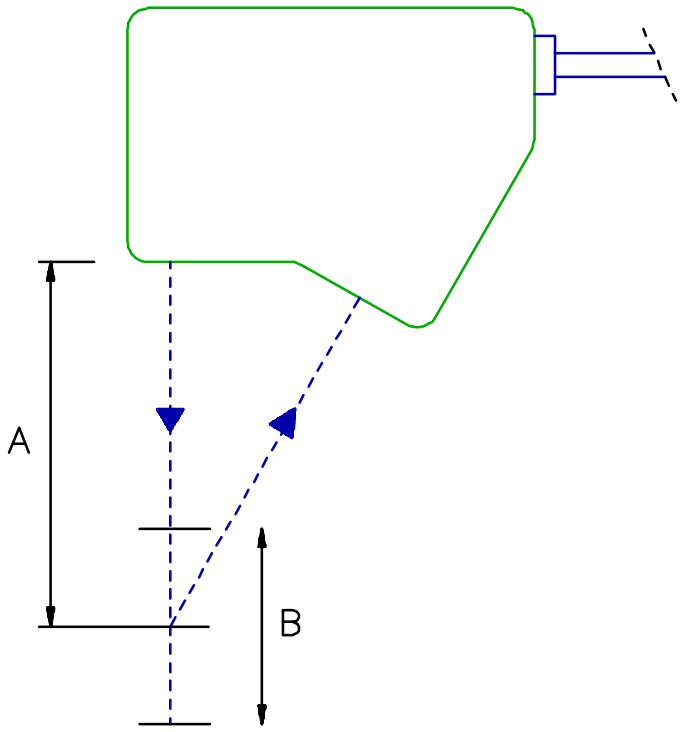
Measuring distance (A)		80 mm (75-85)
Measuring range (B)		10 mm
Accuracy		0.10 mm
Resolution		0.01 mm
Measuring frequency		3 kHz
Modulation frequency		50 kHz
Temperature range		0 - 50 °C
Humidity		max 90%
Output		0-10 Vdc
		min.: 4k7Ù
	A = 75 mm:	U_{out} = 10 Vdc
		10 mm
	A = 85 mm:	U_{out} = 0 Vdc
		0 mm
Supply		±15Vdc ±1%
		Max. 5W



A: Measuring distance
B: Measuring range

Specifications LDS 80/20-M

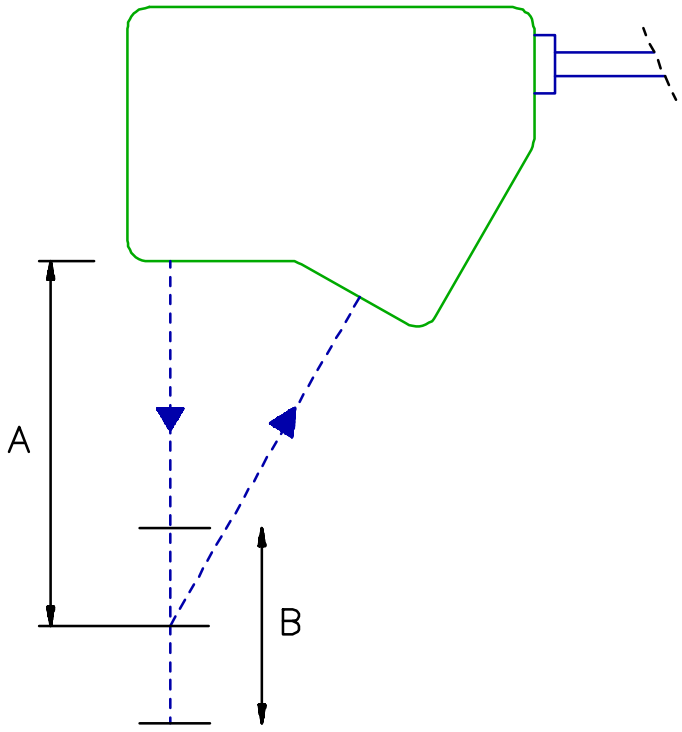
Measuring distance (A)		80 mm (70-90)
Measuring range (B)		20 mm
Accuracy		0.10 mm
Resolution		0.02 mm
Measuring frequency		3 kHz
Modulation frequency		50 kHz
Temperature range		0 - 50 °C
Humidity		max 90%
Distance Output		0 – 10 Vdc
	Load:	Max. 500Ω
	A = 70 mm:	U_{out} = 10 Vdc
		20 mm
	A = 90 mm:	U_{out} = 0 Vdc
		0 mm
Intensity Output		0-6 Vdc
Laser On Input		5-15Vdc = laser on
		0 Vdc = laser off
Data Valid Output		-0.7Vdc=data valid
		+4.7 Vdc=data not valid
Supply		±15Vdc ±1%
		Max. 5W



A: Measuring distance
B: Measuring range

Specifications LDS 90/40-M

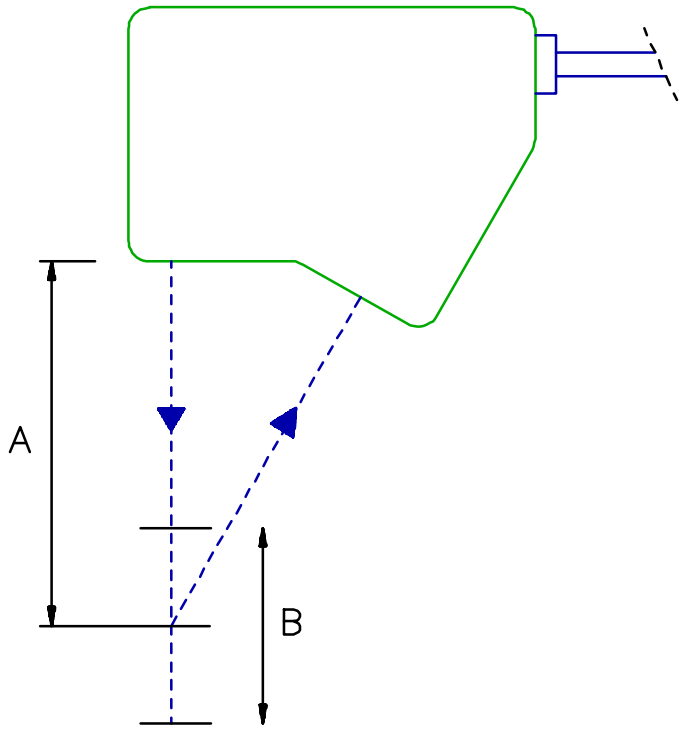
Measuring distance (A)		80 mm (65-95)
Measuring range (B)		30 mm
Accuracy		0.15 mm
Resolution		0.03 mm
Measuring frequency		3 kHz
Modulation frequency		50 kHz
Temperature range		0 - 50 °C
Humidity		max 90%
Distance Output		0-10 Vdc
	Load:	Max. 500Ω
	A = 65 mm:	U_{out} = 10 Vdc
		30 mm
	A = 95 mm:	U_{out} = 0 Vdc
		0 mm
Intensity Output		0-6 Vdc
Laser On Input		5-15Vdc = laser on
		0 Vdc = laser off
Data Valid Output		-0.7Vdc=data valid
		+4.7 Vdc=data not valid
Supply		±15Vdc ±1%
		Max. 5W



A: Measuring distance
B: Measuring range

Specifications

Measuring distance (A)		90 mm (70-110)
Measuring range (B)		40 mm
Accuracy		0.20 mm
Resolution		0.04 mm
Measuring frequency		3 kHz
Modulation frequency		50 kHz
Temperature range		0 - 50 °C
Humidity		max 90%
Output		0-10 Vdc
		min.: 4k7Ù
	A = 70 mm:	U_{out} = 10 Vdc
		40 mm
	A = 110 mm:	U_{out} = 0 Vdc
		0 mm
Supply		±15Vdc ±1%
		Max. 5W

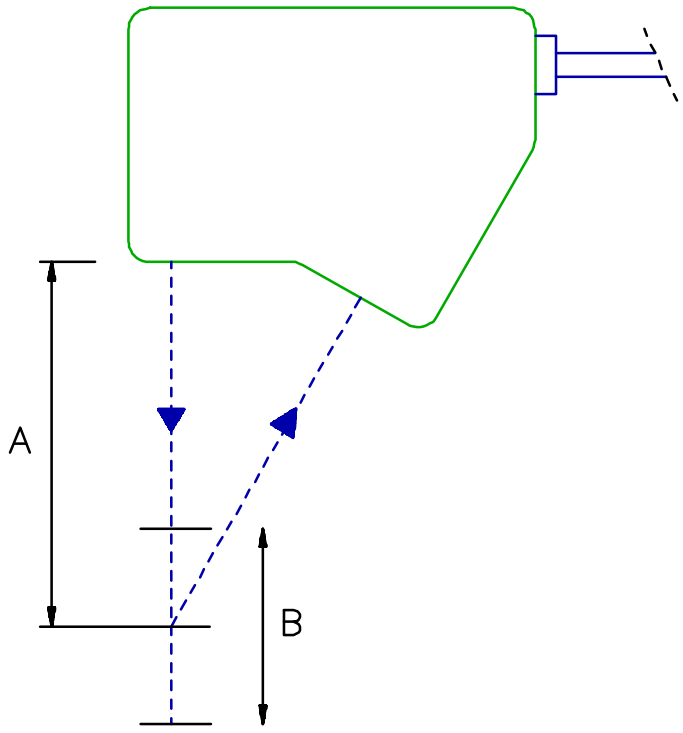


A: Measuring distance
B: Measuring range

3D MACHINE VISION

Specifications LDS 90/45-M

Measuring distance (A)		90 mm (68.5-112.5)
Measuring range (B)		45 mm
Accuracy		0.25 mm
Resolution		0.05 mm
Measuring frequency		3 kHz
Modulation frequency		50 kHz
Temperature range		0 - 50 °C
Humidity		max 90%
Output		0-10 Vdc
		min.: 4k7Ù
	A = 68.5 mm:	U_{out} = 10 Vdc
		45 mm
	A = 112.5mm:	U_{out} = 0 Vdc
		0 mm
Supply		±15Vdc ±1%
		Max. 5W



A: Measuring distance
B: Measuring range