

## DS1 SERIES

The **DS1 AREAscan™** series are compact multibeam light grids suitable for the detection and measurement of objects with different shapes and dimensions. Different models are available with **100, 150 and 300 mm controlled height, 4 mm resolution and operating distance reaching 4 m.** Versions with trimmer adjustment. The electronics is fully integrated and so no external drivers are required.



SENSORS



## HIGHLIGHTS

- Measurement of object dimensions or position
- 4mm resolution and 1ms response time
- Controlled heights ranging from 100 to 300mm
- Operating distance reaching 4m
- PNP and 0-10V analogue output
- Adjustment trimmer
- Fully embedded electronics

## APPLICATIONS

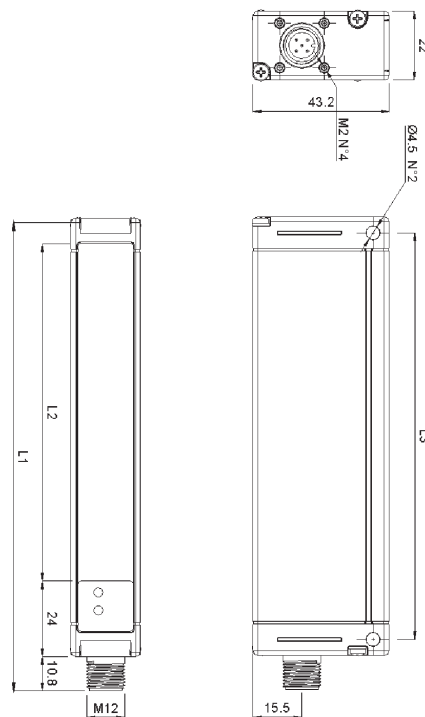
- Object dimension measurement
- Shape or profile detection
- Positioning, spacing, centering, stacking
- Edge guiding
- Object counting



The measurement of the object's position or dimensions, placed inside the sensitive area, is obtained thanks to the 0 - 10V analogue output, which supplies a signal proportional to the number of interrupted beams. The PNP digital output is activated each time that a beam is intercepted by an object; in this case, the yellow OUT LED on the receiving unit panel turns on. The green POWER ON LED, always on this panel, signals also the wrong alignment between the emitting and receiving units as well as the functioning outside or near the maximum operating distance.



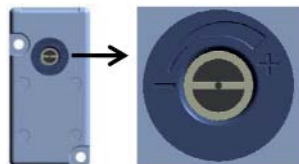
## DIMENSIONS



MODELS	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>
DS1-xx-010-xx	150.1	107	129.1
DS1-xx-015-xx	200.1	157	179.1
DS1-xx-030-xx	350.1	307	329.1

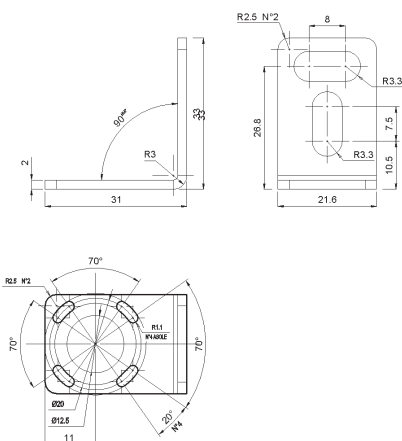
mm

## INDICATORS AND SETTING (trimmer versions)



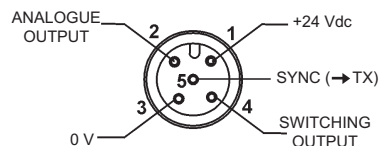
Emitter is equipped with a manual regulation which lets the user change the emission power by means of a screwdriver. The emission power reduction can be particularly useful to lower passive reflections when maximum operating distance it is not required.

## FIXING BRACKET



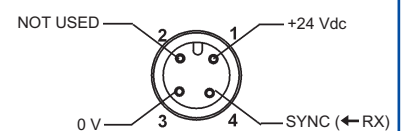
## CONNECTIONS

### RECEIVER (RX)



- 1 = brown = +24 Vdc
- 2 = white = ANALOGUE OUTPUT
- 3 = blue = 0 V
- 4 = black = SWITCHING OUTPUT
- 5 = grey = SYNC

### EMITTER (TX)



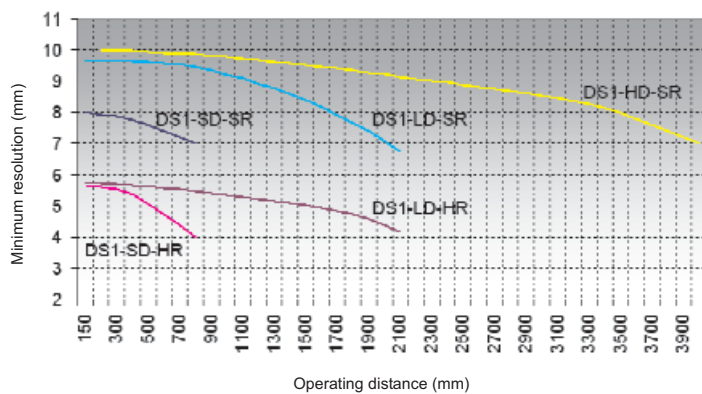
- 1 = brown = +24 Vdc
- 2 = white = NOT USED
- 3 = blue = 0 V
- 4 = black = SYNC

**TECHNICAL DATA**

<b>Power supply:</b>	24 Vdc ± 15 %
<b>Consumption on emitter unit:</b>	150 mA max.
<b>Consumption on receiver unit:</b>	50 mA max. without load
<b>Outputs:</b>	1 PNP output
	1 0 - 10 V analogue output
<b>Load current on PNP output:</b>	100 mA; short circuit protection
<b>Saturation voltage on PNP output:</b>	≤ 11.5V at T=25°C
<b>Response time:</b>	1 ms - 2.75ms
<b>Emission type:</b>	infrared 880nm
<b>Resolution:</b>	4 - 7mm
<b>Measurement precision:</b>	± 3.5 - 7mm
<b>Operating distance:</b>	0.15 - 0.80m (SD vers.)
	0.15 - 2.10 m (LD vers.)
	0.20 - 4.00m (HD vers.)
<b>Receiver indicators:</b>	green POWER ON LED
	yellow OUT LED
<b>Emitter indicators:</b>	green POWER ON LED
<b>Operating temperature:</b>	0 ... + 55 °C
<b>Storage temperature:</b>	- 25 ... + 70 °C
<b>Humidity:</b>	15...95 % (non condensing)
<b>Mechanical protection:</b>	IP65
<b>Housing material:</b>	aluminium
<b>Optics material:</b>	PMMA
<b>Connections:</b>	M12 4-pole connector for TX
	M12 5-pole connector for RX
<b>Weight:</b>	300g (DS1-xx-010-xx vers.)
	400g (DS1-xx-015-xx vers.)
	600g (DS1-xx-030-xx vers.)



**DETECTION DIAGRAMS**



Variation of the minimum resolution according to the operating distance between the emitting and receiving units.

## MODEL SELECTION AND ORDER INFORMATION

MODEL	RESOLUTION	OPERATING DISTANCE	CONTROLLED HEIGHT	TRIMMER ADJUSTMENT	ORDER N°
DS1-LD-SR-010-JV	standard	0.15 - 2.10m	100mm		957701130
DS1-LD-HR-010-JV	high	0.15 - 2.10m	100mm		957701120
DS1-LD-SR-015-JV	standard	0.15 - 2.10m	150mm		957701150
DS1-LD-HR-015-JV	high	0.15 - 2.10m	150mm		957701140
DS1-LD-SR-030-JV	standard	0.15 - 2.10m	300mm		957701160
DS1-LD-SR-010-PV	standard	0.15 - 2.10m	100mm	•	957701250
DS1-LD-SR-015-PV	standard	0.15 - 2.10m	150mm	•	957701260
DS1-LD-SR-030-PV	standard	0.15 - 2.10m	300mm	•	957701270
DS1-SD-SR-010-JV	standard	0.15 - 0.80m	100mm		957701170
DS1-SD-HR-010-JV	high	0.15 - 0.80m	100mm		957701200
DS1-SD-SR-015-JV	standard	0.15 - 0.80m	150mm		957701180
DS1-SD-HR-015-JV	high	0.15 - 0.80m	150mm		957701210
DS1-SD-SR-030-JV	standard	0.15 - 0.80m	300mm		957701190
DS1-HD-SR-010-JV	standard	0.20 - 4.00 m	100mm		957701220
DS1-HD-SR-015-JV	standard	0.20 - 4.00 m	150mm		957701230
DS1-HD-SR-030-JV	standard	0.20 - 4.00 m	300mm		957701240

*Fixing brackets and screws are supplied with the product*

## ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER N°
CS-A1-03-G-03	axial M12-5 pole unshielded 3 m connector	95ACC2110
CS-A1-03-G-05	axial M12-5 pole unshielded 5 m connector	95ACC2120
CS-A1-03-G-10	axial M12-5 pole unshielded 10 m connector	95ACC2140
CS-A1-02-G-03	axial M12-4 pole unshielded 3 m connector	95A251380
CS-A1-02-G-05	axial M12-4 pole unshielded 5 m connector	95A251270
CS-A1-02-G-10	axial M12-4 pole unshielded 10 m connector	95A251390



The company endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct installation and use, the company can guarantee only the data indicated in the instruction manual supplied with the products.