



## DS1

### AREAscan™ detection and measurement light grids with analog output

- 4 mm resolution and 1 ms response time
- 100 to 300 mm controlled height
- Operating distance up to 4 m
- PNP digital and 0-10 V analog outputs
- Adjustment trimmer

#### APPLICATIONS

- Processing and Packaging machinery
- Food, Cosmetic, Pharmaceutical
- Electronics and mechanical assembling
- Conveyor lines and sorting systems



SENSORS



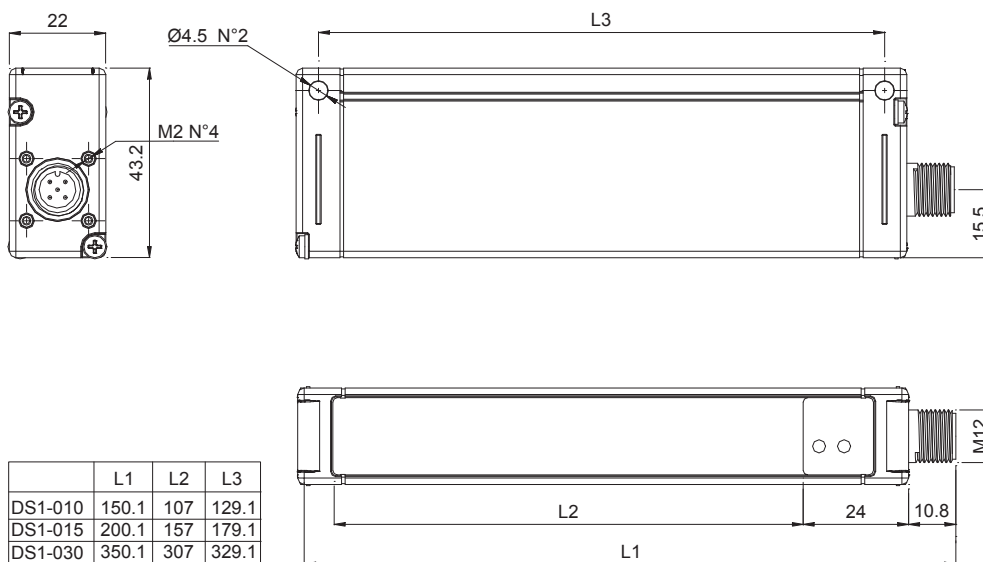
DS1		
Light array (controlled height)		100...300 mm
Resolution		4...7 mm
Number of beams		16...48
Light emission		IR LED
Response time		1...2,75 ms
Setting		Trimmer
Operating distance		0,15...0,8 m (SD)
		0,15...2,1 m (LD)
		0,2...4 m (HD)
Power supply	Vdc	24V +/- 15%
	Vac	
	Vac/dc	
Output	PNP	▪
	NPN	
	NPN/PNP	
	relay	
	other	0...10 V Analog output
Connection	cable	
	connector	▪
	pig-tail	
Approximate dimensions (mm)		22x43x(150/350)
Housing material		aluminium
Mechanical protection		IP65

# Dimension Light Grids - DS1



TECHNICAL DATA	
Power supply	24 Vdc $\pm$ 15%
Consumption on emitter unit (TX)	150 mA max.
Consumption on receiver unit (RX)	50 mA max. load excluded
Light emission	IR LED 880 nm
Setting	adjustment trimmer (mod. DS1...PV)
Indicators	yellow OUTPUT LED green POWER ON LED
Output	PNP; analog output
Output current	100 mA max.
Saturation voltage	1,5 V max.
Response time	1 - 2,75 ms
Connection	M12 4-pole connector (TX), M12 5-pole connector (RX)
Dielectric strength	500 Vac, 1 min between electronics and housing
Insulating resistance	>20 M $\Omega$ , 500 Vdc between electronics and housing
Mechanical protection	IP65 (EN 60529)
Vibrations	0,5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)
Shock resistance	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Housing material	black electro-painted aluminium
Lens material	PMMA
Operating temperature	0 ... 50 °C
Storage temperature	-25 ... 70 °C
Weight	300 g (mod. DS1...010) 400 g (mod. DS1...015) 600 g (mod. DS1...030)

## DIMENSIONS



# Dimension Light Grids - DS1

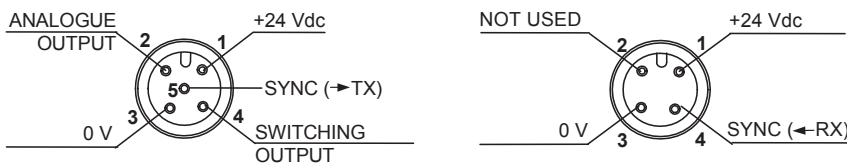


## INDICATORS AND SETTINGS (TRIMMER VERSIONS)



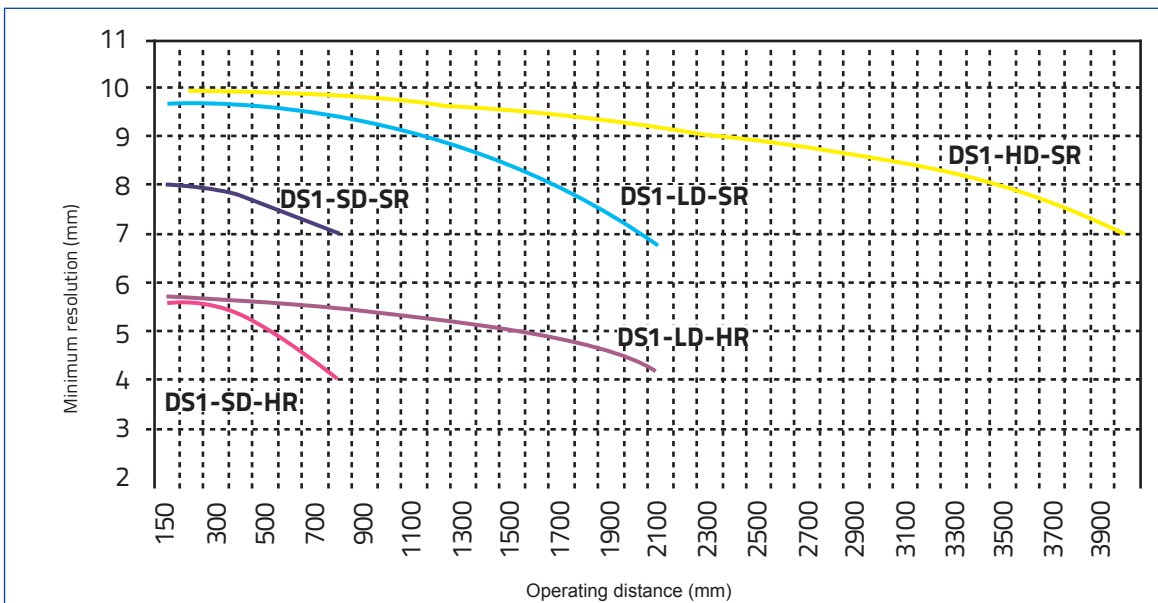
## CONNECTIONS

### M12 CONNECTOR



<b>RECEIVER (RX):</b> M12 5-pole connector	1 – brown:	+24 Vdc	<b>EMITTER (TX):</b> M12 4-pole connector	1 – brown:	+24 Vdc
	2 – white:	Analogue output		2 – white:	Not used
	3 – blue:	0 V		3 – blue:	0 V
	4 – black:	Switching output		4 – black:	SYNC
	5 – grey:	SYNC			

## DETECTION DIAGRAMS



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

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## MODEL SELECTION AND ORDER INFORMATION

OPTIC FUNCTION	OPERATING DISTANCE	SETTING	CONTROLLED HEIGHT & RESOLUTION	MODEL	ORDER NO	
Measurement light curtain	0,8 m	n/a	100 mm (res.: 7 mm)	DS1-SD-SR-010-JV	957701170	
			100 mm (res.: 4 mm)	DS1-SD-HR-010-JV	957701200	
			150 mm (res.: 7 mm)	DS1-SD-SR-015-JV	957701180	
			150 mm (res.: 4 mm)	DS1-SD-HR-015-JV	957701210	
			300 mm (res.: 7 mm)	DS1-SD-SR-030-JV	957701190	
	2 m		100 mm (res.: 7 mm)	DS1-LD-SR-010-JV	957701130	
			100 mm (res.: 4 mm)	DS1-LD-HR-010-JV	957701120	
			150 mm (res.: 7 mm)	DS1-LD-SR-015-JV	957701150	
			150 mm (res.: 4 mm)	DS1-LD-HR-015-JV	957701140	
			300 mm (res.: 7 mm)	DS1-LD-SR-030-JV	957701160	
	4 m	Adjustment trimmer	100 mm (res.: 7 mm)	DS1-LD-SR-010-PV	957701250	
			150 mm (res.: 7 mm)	DS1-LD-SR-015-PV	957701260	
			300 mm (res.: 7 mm)	DS1-LD-SR-030-PV	957701270	
			n/a	100 mm (res.: 7 mm)	DS1-HD-SR-010-JV	957701220
				150 mm (res.: 7 mm)	DS1-HD-SR-015-JV	957701230
300 mm (res.: 7 mm)	DS1-HD-SR-030-JV	957701240				

## CABLES

TYPE	DESCRIPTION	LENGTH	MODEL	ORDER No.
Axial M12 Connector	4-pole, grey, P.V.C.	3 m	CS-A1-02-G-03	95A251380
		5 m	CS-A1-02-G-05	95A251270
		10 m	CS-A1-02-G-10	95A251390
	4-pole, U.L., black, P.V.C.	3 m	CS-A1-02-U-03	95ASE1120
		5 m	CS-A1-02-U-05	95ASE1130
		10 m	CS-A1-02-U-10	95ASE1140
		15 m	CS-A1-02-U-15	95ASE1150
		25 m	CS-A1-02-U-25	95ASE1160
		5-pole, grey, P.V.C.	3 m	CS-A1-03-G-03
	5 m		CS-A1-03-G-05	95ACC2120
	10 m		CS-A1-03-G-10	95ACC2140
	5-pole, U.L., black, P.V.C.	3 m	CS-A1-03-U-03	95ASE1170
		5 m	CS-A1-03-U-05	95ASE1180
		10 m	CS-A1-03-U-10	95ASE1190
		15 m	CS-A1-03-U-15	95ASE1200
		25 m	CS-A1-03-U-25	95ASE1210
		50 m	CS-A1-03-U-50	95A252700