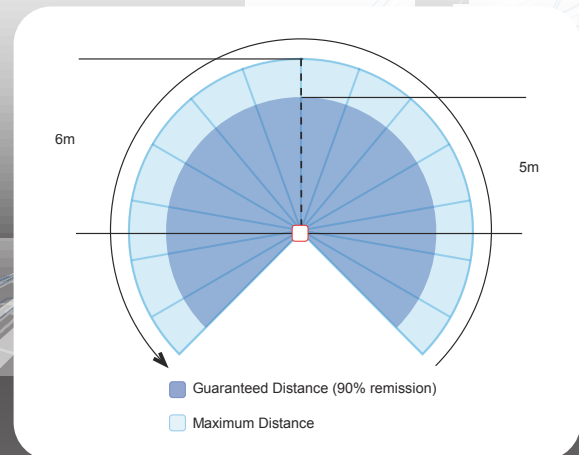


Area Detection Model



CE UST-05LA



At a glance

- Max. range for data output : 6m
- Max. range for area detection : 6m
- NPN output
- 3 detection output
- 31 field sets are available
- Data output is available by RS422
- Compact (size : W50xD50xH70mm, weight : 130g)

Type	Model	Data output	NPN	PNP
Detection output	UST-05LA	○	○	—
	UST-05LAP	○	—	○
	UST-05LN	—	○	—
	UST-05LNP	—	—	○

Product description

- 2D laser scanner for object detection
- Distance and intensity data is available via RS422
- Compatible with ROS1 and ROS2
- The software library is available online for free
- Compact. Easy to install in AGVs and other applications
- Fast scanning speed (25msec) and high angular resolution (0.5°)

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Specification		UST-05LA
Electronics	Supply voltage	12VDC / 24VDC (operation range 10 to 30V)
	Supply current	150mA or less (24VDC)
	Start-up time	Within 10sec
	Light source	Laser semiconductor (905nm) , Laser class 1
Detection	Maximum distance (Area detection)	0.06m~6m
	Maximum distance (Data output)	0.06m~6m
	Guaranteed distance (w/ white 90% remission)	5m
	Guaranteed distance (w/ black 10% remission)	2m
	Distance accuracy	± 40mm (0.06 to 5m w/ white 90% remission)
	Standard deviation	$\sigma < 20\text{mm}$ (0.06 to 5m w/ white 90% remission)
	Angle	270°
	Scanning speed	25msec
	Angular resolution	0.5°
Function	Data output	Available by serial communication (RS422)
	PNP / NPN output	NPN
	No. of digital area output	3
	No. of digital area input	5 (31 area patterns and 1 laser off mode)
	LED indicator	1 x Blue : power, 3 x Orange : area status
	Response time	Delay time : 66msec to 3241msec Dwell time : 66msec to 3241msec
Interface / Software	Interface	micro USB type-B
	Area configuration	Configured by software
General	Ambient illuminance	80,000lx (Note : avoid direct sunlight)
	Ambient operating temperature and humidity	Temperature : -10~50°C Humidity : below 85%RH (without dew, frost)
	Storage temperature and humidity	Temperature : -30~70°C Humidity : below 85%RH (without dew, frost)
	Vibration resistance	10 to 55Hz double amplitude of 1.5mm 55 to 200Hz 98m/s ² sweep of 2min
	Shock resistance	196m/s ² (20G)
	Insulation resistance	10MΩ / 500VDC
	IP protection	IP65
	Weight	130g
	Size W x D x H (mm)	50 x 50 x 70
	Material	Optical window : Polycarbonate, Case : Aluminum
Standards	EMC	(EMI) EN61326-1:2013 EN55011:2009 + A1:2010 (EMS) EN61326-1:2013 EN61000-4-2:2009 EN61000-4-3:2006 + A1:2008 + A2:2010 EN61000-4-4:2012 EN61000-4-6:2009 EN61000-4-8:2010

Connection

Power source, I/O cable :

Cable length 1000mm flying lead

Color	Function
Brown	+VIN (12VDC / 24VDC)
Blue	-VIN
Black	Output 1
White	Output 2
White (blue)	Output 3
Orange	Malfunction output
Light green	Synchronous output
Gray	COM -
Red	COM +
Green	Input 1

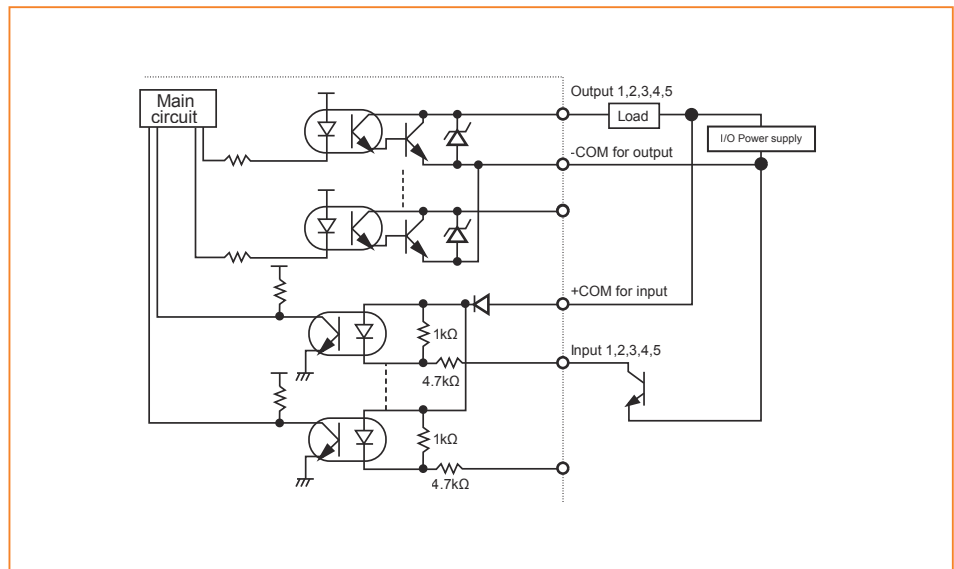
Color	Function
Yellow	Input 2
Purple	Input 3
White (black)	Input 4
White (red)	Input 5
Light blue	Synchronous input
Pink	RS422 GND
Yellow (red)	RS422 TXD +
Yellow (black)	RS422 TXD -
Light blue (red)	RS422 RXD +
Light blue (black)	RS422 RXD -

Input states and corresponding area number

Input 1	Input 2	Input 3	Input 4	Input 5	Area number
ON	ON	ON	ON	ON	Laser off
OFF	ON	ON	ON	ON	Area 1
ON	OFF	ON	ON	ON	Area 2
OFF	OFF	ON	ON	ON	Area 3
ON	ON	OFF	ON	ON	Area 4
OFF	ON	OFF	ON	ON	Area 5
ON	OFF	OFF	ON	ON	Area 6
OFF	OFF	OFF	ON	ON	Area 7
ON	ON	ON	OFF	ON	Area 8
OFF	ON	ON	OFF	ON	Area 9
ON	OFF	ON	OFF	ON	Area 10
OFF	OFF	ON	OFF	ON	Area 11
ON	ON	OFF	OFF	ON	Area 12
OFF	ON	OFF	OFF	ON	Area 13
ON	OFF	OFF	OFF	ON	Area 14
OFF	OFF	OFF	OFF	ON	Area 15

Input 1	Input 2	Input 3	Input 4	Input 5	Area number
ON	ON	ON	ON	OFF	Area 16
OFF	ON	ON	ON	OFF	Area 17
ON	OFF	ON	ON	OFF	Area 18
OFF	OFF	ON	ON	OFF	Area 19
ON	ON	OFF	ON	OFF	Area 20
OFF	ON	OFF	ON	OFF	Area 21
ON	OFF	OFF	ON	OFF	Area 22
OFF	OFF	OFF	ON	OFF	Area 23
ON	ON	ON	OFF	OFF	Area 24
OFF	ON	ON	OFF	OFF	Area 25
ON	OFF	ON	OFF	OFF	Area 26
OFF	OFF	ON	OFF	OFF	Area 27
ON	ON	OFF	OFF	OFF	Area 28
OFF	ON	OFF	OFF	OFF	Area 29
ON	OFF	OFF	OFF	OFF	Area 30
OFF	OFF	OFF	OFF	OFF	Area 31

I/O circuit



External dimension

