

LASER RANGE FINDER  
UXM-30LN  
SPECIFICATIONS

Symbol	Amended reason			Pages	Date	Corrector	Amended No.
Approved by	Checked by	Drawn by	Designed by	Title	Laser Range Finder UXM-30LN Specifications		
KAMITANI	KAMITANI	KAMON	KAMON		Drawing No.	C-42-3686	1/4

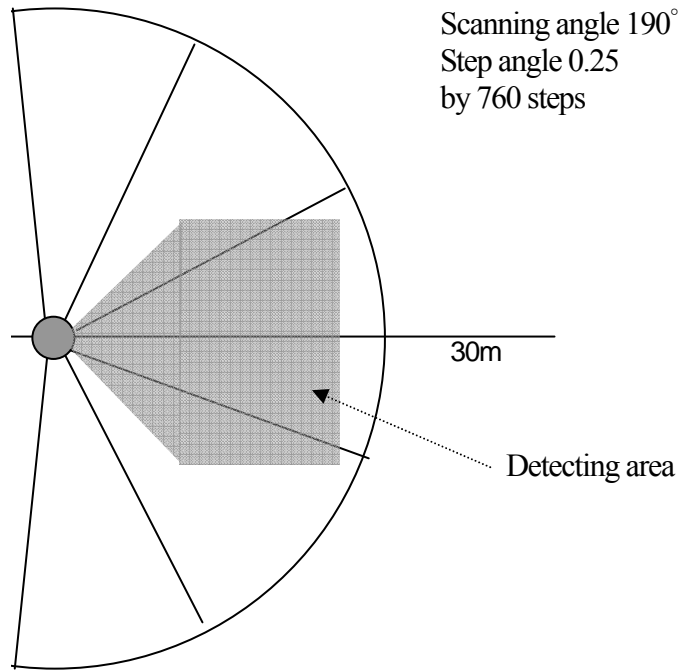
### 1. General

Operating principle

\*This device uses laser source ( $\lambda = 905\text{nm}$ ) to scan semicircular field. It measures distance to objects in the range and co-ordinates of those point calculated using the step angle and it detects an object in the setting area.

\*Laser is Class 1.

### 2. Structure(Light scanning image)



### 3. Disclaimer

\*This is not a safety device/tool

\*This is not for use in military or relative applications.

\*Make sure to read this specifications carefully before use.

### 4. Specifications

Kind	Laser Range Finder
Model No.	UXM-30LN
Light source	Semiconductor laser( $\lambda=905\text{nm}$ ), Laser safety class 1(FDA)
Supply voltage	24VDC $\pm$ 10%
Supply current	Max.0.8A, normal : 0.3A or less
Power consumption	15W or less
Detection Range and object	Guaranteed range : 0.1~30m <sup>*2</sup> (Black objects with 10% reflectance) Min. objects : $\phi$ 10mm(at 6m), $\phi$ 20mm(at 10m), $\phi$ 130mm(at 30m)
Accuracy	3,000lux or less : $\pm$ 50mm <sup>*1</sup> : black objects with 10% reflectance(at 10m) 100,000lux or less <sup>*2</sup> : $\pm$ 100mm <sup>*1</sup> : black objects with 10% reflectance(at 10m)
Resolution/repeatability	1mm unit 3,000lux or less : $\sigma$ =10mm(white paper up to 10m) 100,000lux or less : $\sigma$ =30mm(white paper up to 10m)
Scanning angle	190°
Angular resolution	Approx.0.25° (360° /1,440)

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#### 4. Specifications

Scanning speed	50msec(Motor rotating number 1200rpm)
Interface	USB Ver2.0 FSmode(12Mbps)
Output	2 pcs : Detection output, malfunction output LED : power(green), detection/warning(orange), lights up when detecting, blinks when malfunctioning
Ambient temperature/ humidity	-10 to +50°C, 85%RH or less(Not condensing and icing)
Temperature when storing	-25 to +75°C,
Environmental effect	Measured distance will be shorter than the actual distance under rain, snow and sunlight*2.
Vibration resistance	10~55Hz, double amplitude 1.5mm Each 2 hour in X, Y and Z directions 55~200Hz, 98m/s <sup>2</sup> , sweep 2 min., Each 1 hour in X, Y and Z directions
Impact resistance	196m/s <sup>2</sup> (10G) Each 10 time in X, Y and Z directions
Protective structure	IP64
Insulation resistance	10MΩ, 500VDC megger
Weight	800g
Material	Front case : Polycarbonate, rear case : Aluminum
External dimension	120mm×125mm×146mm(MC-40-3176)

\*1 Accuracy can not be guaranteed under direct sunlight.

\*2 Make sure to confirm the sensor functions under operating environment.

#### 5. Quality reference value

Vibration resistance when operating	10~150Hz, 19.6m/s <sup>2</sup> , sweep 2 min., Each 30 min. in X, Y and Z directions
Impact resistance when operating	49m/s <sup>2</sup> (10G) Each 10 time in X, Y and Z directions
Angular Speed	$2\pi/s(1\text{Hz})$
Angular Acceleration	$\pi/2\text{rad/s}^2$
Life	5 Years (Varies with operating conditions)
Noise	25dB or less(at 300mm)
Certification	FDA Approval (21 CFR part 1040.10 and 1040.11)

#### 6. Interface

(1) 8 cores robot cable with 2m

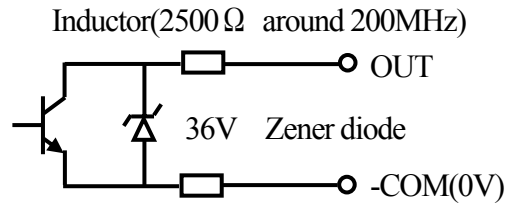
Colors	Functions
Brown	Power +24V
Blue	Power 0V
Green	Detecting output
White	Warning output
Black	For output 0V(common)

(2) USB connector type A

SG for communication and GND are connected inside (Isolated with Input -VIN). Isolate the device from any connections which generate the electric noise. This sensor is compatible with SCIP2.0 protocol standard.

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### (3) Output circuit



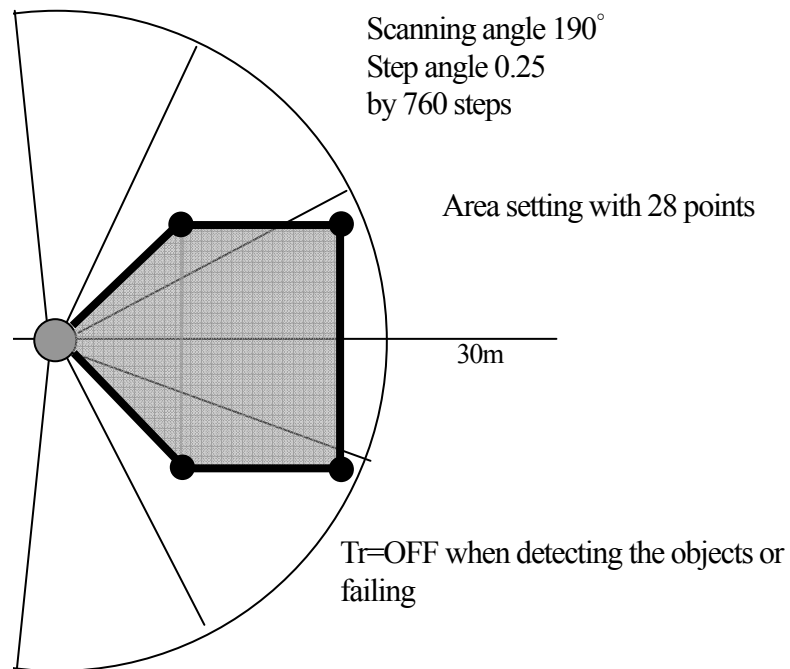
## 7. Control signal

### Detection output

- \* Output is switched off when any objects are detected inside the pre-set area (Output is ON when there are no objects).
- \* Setting area can be set with 28 points.
- \* Min. detection objects can be set from 10mm to 1,000mm.
- \* Dead-zone at near side can be set from 0 to 1,000mm.(under development)

Note) When lens surface is covered by dirt or water droplet, it can remove its signals by using this function.  
However, it may not detect them sometime because any objects in setting dead-zone become shadow.  
Make sure to set in accordance with the environment.

### Example)



## 8. Malfunction output

(1) Laser malfunction : When laser does not radiate or exceeds safety class 1.

(2) Motor malfunction : When rotation speed is not 1,2000rpm.

When malfunctioning, output is turned to OFF state and it stop radiating the laser beam and rotating the motor.  
Error analysis can be done via communication.