Laser type

Scanning Laser Range Finder
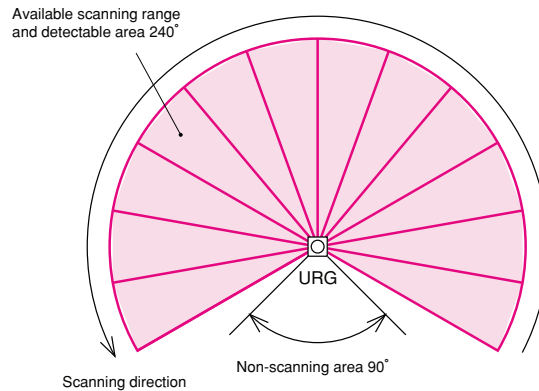
URG-04LX-UG01 FDA approval

User friendly.
Smart to run on USB bus power.

URG-04LX-UG01 is a 2-dimensional laser sensor for measuring the distance to the objects.

- Light weight (160g). Best for robot!
- Low-power consumption (2.5W) for longer working hours.
- Wide-range (5600mm×240˚).
- Accuracy (±30mm).*
- Distance and angle data output with high angular resolution (0.352˚).
- High quality product under Total Quality Management. Designed, manufactured and inspected by HOKUYO.
  *For distance above 1m, accuracy is ±3%.

■ System structure

Available scanning range and detectable area 240˚

URG

Non-scanning area 90˚

Scanning direction

Note) The above figure shows the detectable area for white Kent sheet (70mm×70mm). Detection distance may vary with size and object.

■ Specifications

Kinds	Data output type (serial type)
Model No.	URG-04LX-UG01
Power source	5VDC ±5% (USB Bus power)
Current consumption	500mA or less (rush current approx.800mA)
Light source	Semiconductor laser diode λ=785nm (FDA approval, Laser safety class 1)
Detectable object	70×70mm white sheet
Scanning range	0.06 to 4m
Scanning accuracy	0.06 to 1m: ±30mm, 1 to 4m: 3% of measuring distance
Repeatability	0.06 to 1m: ±30mm
Scanning angle	240˚
Resolution	Approx.1mm
Angular Resolution	Step angle: approx.0.36˚ (360˚/1,024 steps)
Beam diameter	Approx. φ40mm (at 4m)
Scanning time	100msec/scan
Interface	USB2.0 [Mini B] (Full Speed)
Communicating specifications	Exclusive command (SCIPVer.2.0)
Output	NPN open-collector output
Indication lamps	Power lamp (orange)
Connection	Exclusive cable (optional)

Ambient illuminance note)	Halogen/mercury lamp: 10,000lux or less, incandescent lamp: 6,000lux or less
Ambient temperature	-10 to +50℃ (-25 to +75℃ when stored)
Ambient humidity	85%RH or less, not icing, not condensing
Insulation resistance	10MΩ 500VDC megger
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz, each 2 hour in X, Y and Z directions
Impact resistance	196m/s^2, each 3 time in X, Y and Z directions
Protective structure	Optical surface: IP64 (IEC standard), case: IP40 (IEC standard)
Life	5 years (motor life, vary depending on use conditions)
Noise	25dB or less (at 300mm)
Case materials	ABS resin
Weight	Approx.160g

Note) It may malfunction when receiving strong light like sunlight etc. directly.

Note This sensor is not a safety device/tool.

Note This sensor is designed for indoor use only.

Note This sensor is not for use in military applications.

■ Connection

CN USB-miniB (5P)
● Cable URG-C001 (Option)

※During booting, 500mA current is required. Please use 2 USB cables (not included) for power supply from 2 USB ports.
Please connect to 2 independent USB ports which can supply 500mA.

⚠ PC's motherboard could be broken if the sensor is connected to the USB ports which are not able to supply 500mA x 2.

⚠ The GND lines connected to the USB are all shorted.

■ External dimension
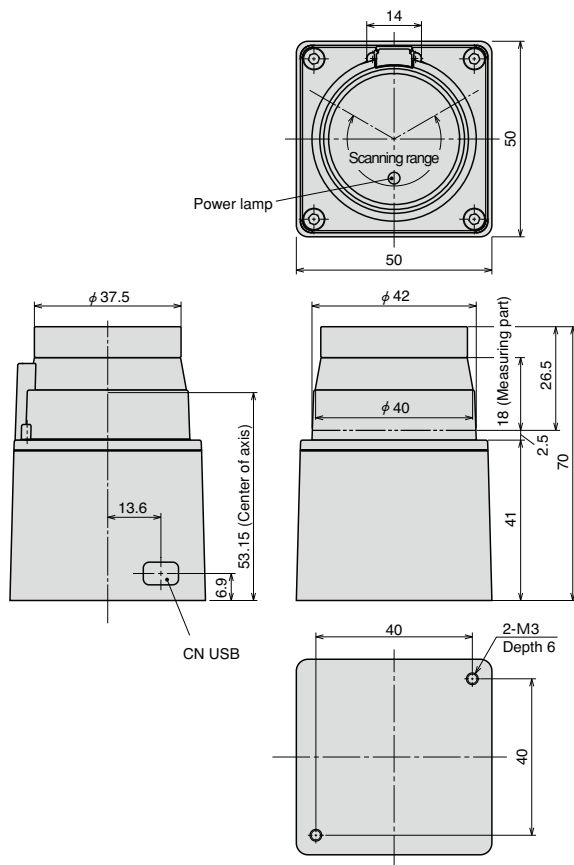
■ Caution for installation

(1) In case that mutual interference would occur, tilt it downward/upward with 2° or more.

2° tilt
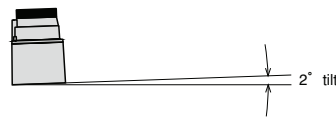
(2) Spread of optical axis is ±0.3° and min.detectable object is a size for 3 steps. However,min.detectable object may vary depending on the distance.

(3) When installation, don't close light-projection/reception window or interrupt area.

(4) Install it 40mm or more away from floor. If 40mm or less, install it 1° upward. Spread of sensor beam is φ40mm (Reference value) at 4m.

URG
φ40mm
40mm Floor surface
4m
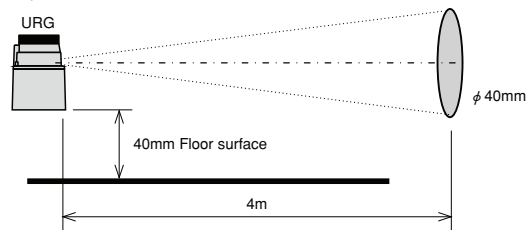
■ Supplement

(1) Power source is 5VDC. Pay attention to the overvoltage.
It may be broken.

(2) Scanning step numbers are 683 steps max. and so scanning angular range is (683-1)* 360/1024° because of angular resolution is 360/1024°.

(3) It can specify measuring angular range or angular resolution from host. Ask us in details.

(4) Scanning direction is counterclockwise from topview.

(5) About USB driver
It is connected as software COM port through CDC (Communication Device Class). It can be handled as well as COM port from applicatoin program of host. But this doesn't provide plug & play function.