Laser type

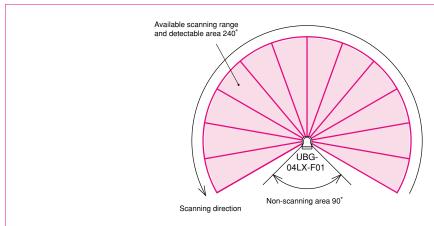# Scanning Laser Range Finder

UBG-04LX-F01 FDA approval

Scanning speed is 3 times faster than URG-04LX!

UBG-04LX-F01 is a 2-dimensional laser sensor for measuring the distance to the objects.

● Principle of distance measurement is based on calculation of the phase difference, due to which it is possible to obtain stable measurement with minimum influence from object's color and reflectance.

● Scanning speed (28msec) is 3 times faster than conventional models.

■ System structure

Available scanning range and detectable area 240°

UBG-04LX-F01

Scanning direction

Non-scanning area 90°

note) The above figure shows the detectable area for white Kent sheet (80mm✕80mm) and max. distance is 4m. Detection distance may vary with size and object.

■ Specifications

Kinds	Data output type (serial type)
Model No.	UBG-04LX-F01
Power source	12VDC ±10%
Current consumption	370mA or less (rush current approx.700mA)
Light source	Semiconductor laser diode λ =785nm (FDA approval, Laser safety class 1)
Detectable object	80✕80mm white sheet
Scanning range	0.06 to 4m
Scanning accuracy*	0.06 to 1m: ±10mm, 1 to 4m: 1% of measuring distance
Scanning angle	240°
Resolution	Approx.1mm
Angular Resolution	Step angle: approx.0.36° (360° /1,024 steps)
Beam diameter	Approx. ϕ 40mm (at 4m)
Scanning time	28msec/scan
Interface	USB2.0 (Full Speed) RS-232C (19.2k, 57.6k, 115.2k, 250k, 500k, 750kbps)
Communicating specifications	Exclusive command (SCIP Ver.Ver.2.0)
Output	Photo-coupler/NPN open-collector output (30VDC 50mA or less) Synchronous output and malfunction output
Indication lamps	Power lamp (green): Blinking when starting up or malfunction Operation lamp (red): Blinking when normal operation
Connection	USB connector mini 5 pins, cable 1m

Ambient illuminance note)	Sunlight/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/s², each 3 time in X, Y and Z directions
Protective structure	IP40 (IEC standard)
Life	5 years (motor life, vary depending on use conditions)
Noise	25dB or less (at 300mm)
Case materials	Front of case: Polycarbonate, back of case: ABS resin
Weight	185g (260g including cable 1m)

＊Accuracy is a value when shipment.
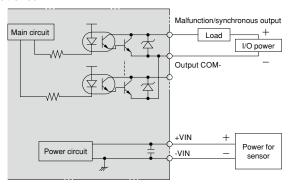Note) It may malfunction when receiving strong light like sunlight etc. directly.

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

Output circuit

Wiring table

● **Power/interface cable**

Cable colors	Signals
Red	Output common -
White	Malfunction output
Black	Synchronous output
Purple	GND (5P of 9-pin D-sub connector)
Yellow	RxD (3P of 9-pin D-sub connector)
Green	TxD (2P of 9-pin D-sub connector)
Blue	-VIN 0V
Brown	+VIN (12VDC)

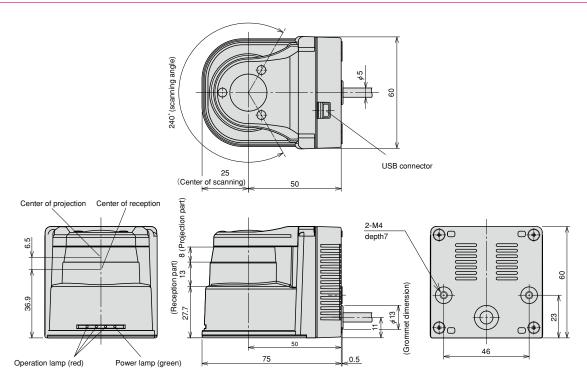Note) GND and 0V are connected inside the sensor.
Note) OV and output common - are isolated.
Note) Connector (PHR-8 JST made) is attached when shipment. Don't use only for operating check.

Note I/O direction is on the basis of URG.

● **CN USB-miniB（5P）**

USB cable is not attached. Use on-specification products.

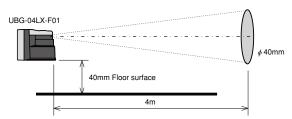## ■ External dimension

■ Caution for installation

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

2° tilt

(2) When installation, don't close light-projection/reception window or interrupt area.
(3) Don't make a wiring with high-voltage line or load line because of avoiding noise or surge induction.
(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.

UBG-04LX-F01

ϕ40mm

40mm Floor surface

4m

■ Supplement

● Scanning direction is counterclockwise from topview.
● About RS-232C connection

It may not communciation correctly if buad rate is 500kbps or more because of the compatibility between host and URG.

● 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.