

# TERABEE



## TeraRanger Evo Mini

### Mini price, great performance

Our smallest and lightest TeraRanger Evo sensor provides versatile performance and value for money. Optimized for indoor distance sensing, Evo Mini offers ranging capabilities from 3 cm up to 3.3 m. Switch easily from single-pixel to multi-pixel modes. Evo Mini also features a robust ABS enclosure for increased protection and is supported with Arduino & Raspberry Pi sample codes and free ROS nodes to get your projects up and running in no time.

## Key features

- Infrared Time-of-Flight technology
- Select from 1, 2 or 4 pixel modes
- Optimized for indoor measurements - from just 0.03 m to 3.3 m
- Lightweight & small size design - only 9 grams (including backboard)
- Low power consumption - suitable to battery-powered IoT projects
- Select from USB, UART and I2C clip on, interchangeable, interfaces
- Compatible with Arduino, Raspberry Pi, Pixhawk and ROS
- Product design optimized for OEM and easy integration

## Applications



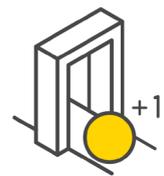
Basic gesture recognition



Cliff detection for mobile robotics



Level monitoring (bins, waste, etc.)

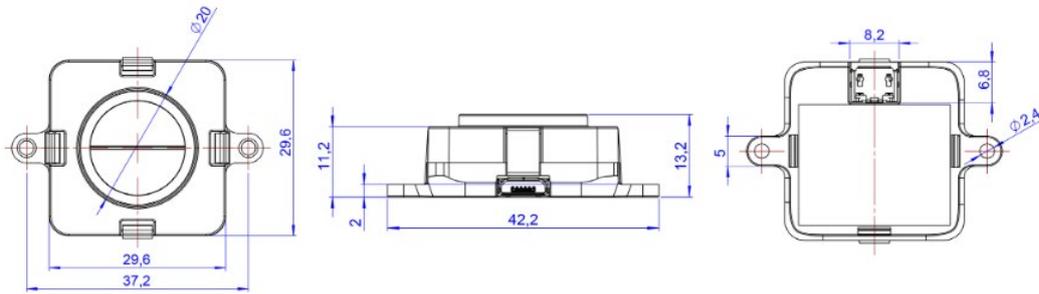


Presence, movement direction detection

# Technical specifications

Product code	TR-EVO-MINI-USB/TR-EVO-MINI-I2C
<b>Performance</b>	
Detection principle	Infrared Time-of-Flight
Light source wavelength	940 nm
Use environment	Indoors
Repeatability	< 5mm
Output distance resolution	1 mm
Field of View	27°
Projected reception area	48 cm x 48 cm @ 1 m
Operation	Pixel (px) modes: 1px, 2px, 4 px(2x2)
Range	Please see "Performance Matrix" table for more details
<b>Electronics</b>	
Supply voltage	5V DC +/-5%
Current consumption average	50 mA
Initialization time	< 1 s
<b>Communication</b>	
Serial interfaces	USB 2.0 Micro-B UART, +3.3V level, 115200,8, 1, None IC2, +3.3V level, 400kHz
Connectors	Single 9 pin Hirose DF13 Micro USB
Visual notification	2 x LEDs (built-in backboard)
<b>Mechanical data</b>	
Dimensions	42 x 30 x 13 mm (inc. backboard)
Weight	9 g (incl. backboard)
Operating temperature	-20°C to 75°C
Housing material	ABS
Mounting style	2 holes for M2 screws
Type of connection	USB backboard: USB 2.0 Micro-B I2C/UART Backboard: DF13-7p connector Hub Evo Backboard for use with TeraRanger Hub Evo
<b>Conformity</b>	
Reference standard	CE, RoHS

## Dimensions



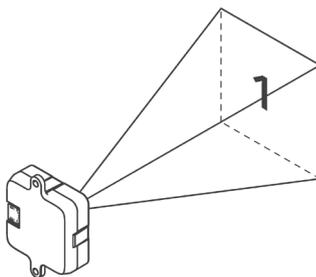
## Performance Matrix

Range Pixel mode	Short Range			Long Range		
	1px mode	2px mode	4px mode	1px mode	2px mode	4px mode
Range	0.03 m to 1.35 m	0.03 m to 1.35 m	0.03 m to 1.35 m	0.03 m to 3.3 m	0.03 m to 2.3 m	0.03 m to 1.65 m
Accuracy	Up to +/- 1.5cm	Up to +/- 1.5cm	Up to +/- 2cm	Up to +/- 2cm	Up to +/- 1.5cm	Up to +/- 3 cm
Update Rate	Fixed 40 Hz	Fixed 13 Hz	Fixed 6 Hz	Fixed 20 Hz	Fixed 8 Hz	Fixed 4 Hz

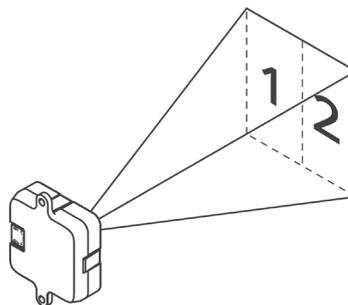
Specifications are derived from tests in controlled conditions (target with 80% diffuse reflectivity, indoor fluorescent lighting, ambient temperature around 25°C). Note that bright sunlight, target surface reflectivity and other variables can affect sensor performance.

## Pixel Modes

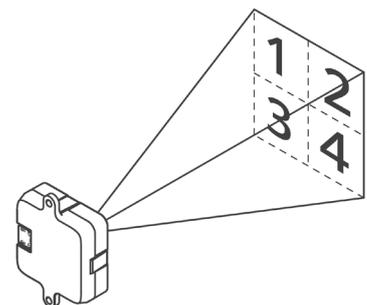
1px mode



2px mode



4px mode



## Communication Interfaces

Interface	Short Range			Long Range		
	1px mode	2px mode	4px mode	1px mode	2px mode	4px mode
USB	•	•	•	•	•	•
UART*	•	•	•	•	•	•
I2C*	•			•		
Hub Evo				•		

\* Please note that UART and I2C data communication is supported by the same interface backboard

## Recommended modes per application

Extended applications	Short Range			Long Range		
	1px mode	2px mode	4px mode	1px mode	2px mode	4px mode
 Counting applications, movement detection		•	•		•	•
 Basic gesture recognition		•				
 Stock level monitoring				•	•	•
 Anti collision, mobile robots	•			•		
 Robot positioning guidance	•			•		
 Precision landing for drones				•		
 Distance measurement applications	•	•	•	•	•	•

Have any questions? Contact us today!