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

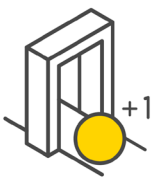
- Infrared Time-of-Flight technology
- Select from 1, 2 or 4 pixel modes
- Optimized for indoor measurements - from just 0.03 m to 3.3 m
- Lightweight & small size design - only 9 grams (including backboard)
- Low power consumption - suitable to battery-powered IoT projects
- Select from USB, UART and 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

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Technical specifications

Product code	TR-EVO-MINI-USB/TR-EVO-MINI-I2C
Performance	
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
Electronics	
Supply voltage	5V DC +/-5%
Current consumption average	50 mA
Initialization time	< 1 s
Communication	
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)
Mechanical data	
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
Conformity	
Reference standard	CE, RoHS

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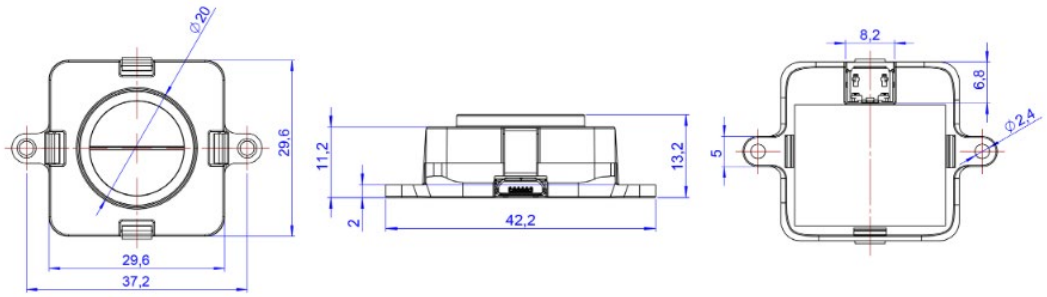
Dimensions



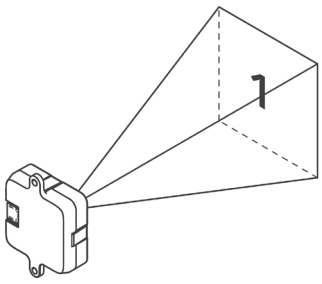
Performance Matrix

Range	Short Range			Long Range		
Pixel mode	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

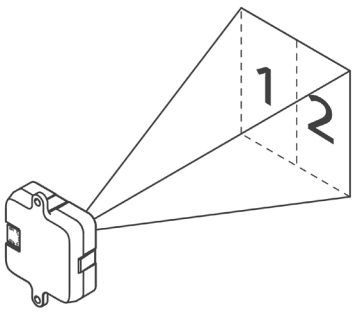
Specifications are derived from tests in controlled conditions (target with 80% diffuse reflectivity, indoor fluorescent lighting, ambient temperature around 25°C). Note that bright sunlight, target surface reflectivity and other variables can affect sensor performance.

Pixel Modes

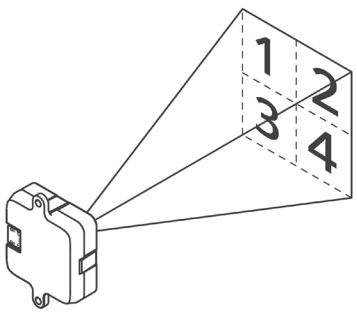
1px mode



2px mode



4px mode



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Communication Interfaces

	Short Range			Long Range		
Interface	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!

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