

# TeraRanger One

by TERABEE 

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- ▷ 14m Range
- ▷ 1000 Readings per Second
- ▷ 8 Grams
- ▷ Fully Eye-safe - no laser!

TeraRanger One is a distance measurement sensor that streams distance values in millimetres. The eye-safe infrared **Time-of-Flight (ToF)** technology provides **super-fast** distance readings up to **1000 times per second** with an **accuracy of  $\pm 4\text{cm}$** , and a range up to **14m**.

The **small size** and **low weight (8g)** make the sensor ideal for automation, robotics and drone applications. It can be mounted on fixed or fast moving parts without affecting their performance.

In contrast to older technologies, such as ultrasound, TeraRanger One provides fast, reliable data in a wide variety of environments and on most materials and surfaces, often outperforming laser-based systems that cost many times more!

The sensor has two modes; fast and precision. In fast mode, accuracy is reduced and readings are taken 1000 times a second (1kHz), making the sensor ideal for high speed obstacle avoidance. In precision mode distance readings are achieved at up to 600Hz with an accuracy of  $\pm 4\text{cm}$ , but  $\pm 2\text{cm}$  is possible with a custom calibration.

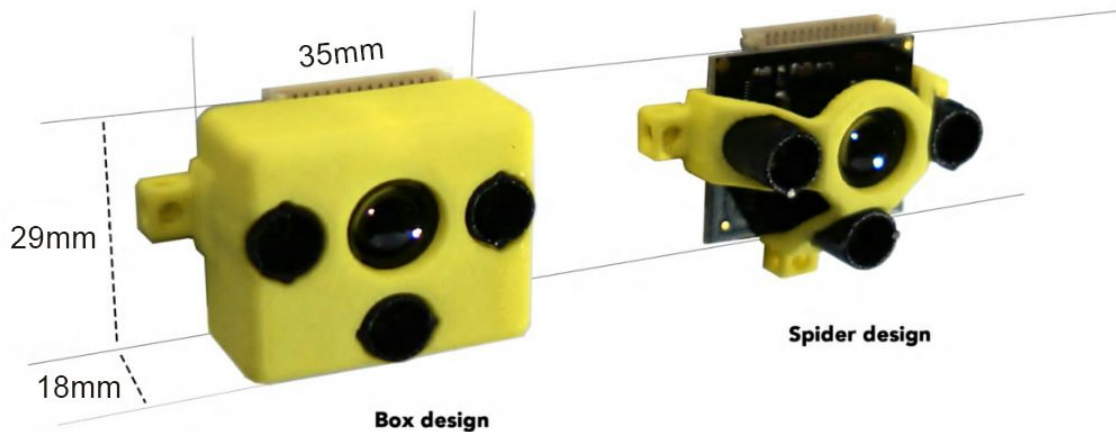
TeraRanger One is simple to connect and use and automatically adapts to changing light and temperature. UART is the default interface and **TWI** (I2C compatible) is also available. Drivers for **Robot Operating System (ROS)** and drone autopilots such as **Pixhawk PX4** and **APM** are available free of charge. TeraRanger One can also be **connected to a computer** using the optional USB adapter, enabling easy firmware upgrades and a direct data stream to a serial port.

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Principle:	Infrared Time-of-Flight (ToF)
Range:	Up to 14m indoors (At least 5 to 6m in sunlight)
Update rate:	1000Hz in fast mode (Up to 600Hz in precision mode)
Range resolution:	0.5cm
Accuracy:	± 4cm in precision mode
Field of view:	3°
Supply voltage:	12V DC recommended (10 to 20V DC accepted)
Supply current:	50mA average (110mA peak @12V)
Interfaces:	UART, +5V level, up to 115200,8,N,1. (Factory default when shipped) TWI (I2C compatible) +5V level (Firmware available on request)
Connector:	15 pin DF13 (open-ended cable provided)
Weight:	8g (Spider) or 10g (Box)

TeraRanger One, additional cables and accessories can be purchased from our online store:

[www.teraranger.com](http://www.teraranger.com)

Terabee  
90 Rue Henri Fabre  
01630 Saint-Genis-Pouilly  
France

Commercial enquiries: [teraranger@terabee.com](mailto:teraranger@terabee.com)  
Technical after-sales support: [support@teraranger.com](mailto:support@teraranger.com)

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