

# TF-Luna LiDAR (Underwater)

TF-Luna is a single-point LiDAR, based on ToF principle. Mainly used for stable, accuracy and high-frame rate range detection. The product is built with algorithms adapted to various application environments and adopts multiple adjustable configurations and parameters, especially suitable for applications on outdoor swimming pool cleaning robots under strong sunlight.



## Main Product Features

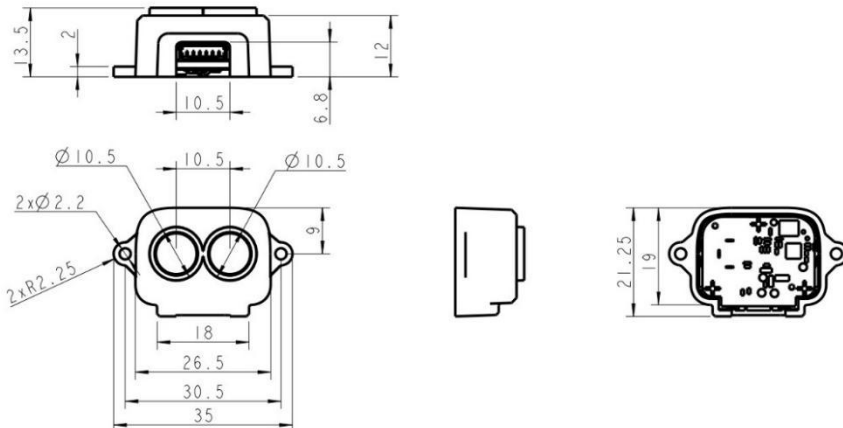
- Small size
- High precision
- Low power consumption
- Low cost

## Main Application Scenarios

- Pool mapping
- Obstacle avoidance underwater
- Step detection
- Waterline detection

## SPECIFICATIONS

Description		Parameter Value
Product performance	Operating range	5cm~55cm <sup>1</sup>
	Accuracy	<3 cm <sup>1</sup>
	Distance resolution	1cm
	Frame rate	1-250Hz <sup>2</sup>
	Ambient light immunity	70Klux
	Operation temperature	-10°C~60°C
	Enclose rating	/
Optical parameters	Light source	VCSEL
	Central wavelength	850nm
	Photobiological safety	Class1 (IEC60825)
	FOV	2° <sup>3</sup>
Electrical parameters	Supply voltage	3.7V-5.2V
	Average current	≤70mA
	Power consumption	≤0.35W
	Peak current	150mA
	Communication level	LVTTL(3.3V)
	Communication interface	UART, I <sup>2</sup> C, I/O

Others	Dimension		35mm*21.25mm*12.5mm (L*W*H)	
	Housing		ABS+PC	
	Storage temperature		-20°C~75°C	
	Weight		<5g	
Communication Interface	UART		I <sup>2</sup> C	
	Default baud rate	115200(adjustable)	Max transmission rate	400kbps
	Data bit	8	Master/Slave mode	Slave
	Stop bit	1	Default address	0x10
	Parity	None	Address range	0x08~0x77
Dimensions	 <p>The technical drawings show the module from three perspectives: top, front, and side. The top view shows a square footprint with dimensions 35mm (total length), 26.5mm (inner length), and 18mm (lens spacing). The front view shows a width of 21.25mm and a height of 12mm. The side view shows a thickness of 12.5mm. Other dimensions include 10.5mm for the lens diameter, 2xØ2.2 for mounting holes, and 2xR2.25 for the mounting hole radius.</p>			

1. The measurement distance is test with outdoors underwater, with the target object being common swimming pool wall tiles, under 25 °C conditions,
2. The Highest frame rate is 250Hz, the default frame rate is 100Hz. The customized update rate should be calculated by the formula:  $500/n$  (n is more than 2).
3. This is a theoretical reference value.