



XTOF-RM-100



TOF Range Finder Module

The XTOF-RM-100 is a miniaturized and cost optimized TOF range finder module. It is based on a proprietary time-of-flight technology using the XTOF-100-A TOF chip and a small LED to illuminate the scenery.

The camera controls the illumination and the imager chip to obtain distance and confidence images. Due to the high performance of the imager chip with its unique ambient light suppression, the camera can be used in outdoor applications at full sunlight. This allows a wide variety of new applications, e.g. for mobile robotics.

This very small module is easy to use because it delivers fully calibrated and compensated 3D distances up to 15 m. All the complex engineering and time-consuming design tasks regarding optics, illumination and signal processing are already solved.

This module finds many applications in gesture recognition, space monitoring, people counting, mobile robots, automatic doors and gates, parking space monitoring, and industrial control applications.

A robot operating system (ROS) driver is available for easy integration into robot operating systems.

APPLICATIONS

- Safety and collision avoidance
- Distance measurement from centimeters to meters
- Level measurement

YOUR BENEFITS

- Low power consumption
- Ambient-light tolerant up to 100 kLux
- Calibrated and compensated
- High speed serial interface

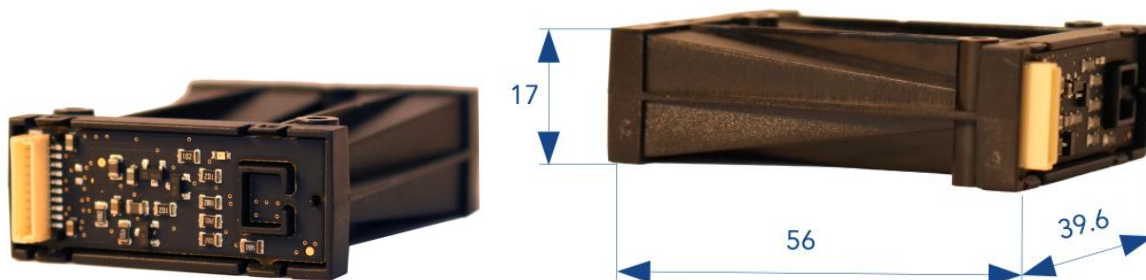
SPECIFICATIONS

- Range: 0.05 to 15 m
- FoV: 0.18° horizontal/vertical
- Small detection spot of 3 x 3 mm at 1 m distance
- More than 500 measurements per second

Key Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Operating range	d	0.05		15	m
No. of pixels	Res		1		#
Field of view (hor/ver)	FOV		0.18		°
Accuracy	d_{acc}		<2 m: ±4 >2 m: ±2		cm %
Supply voltage	V	4.75	5	5.25	V
Power consumption	P		400		mW
UART Interface speed	f_{UART}			1	Mbit/s
Data output resolution			0.1		mm
Ambient light suppression	E_E		100		kLux
Temperature range	T_{Amb}	-20		85	°C

FIG 1. MECHANICAL DIMENSIONS



Testing and operation methods

Excelitas verifies the electro optical specifications on every sensor. Electrical and imaging performance tests as well as visual inspection (AOI) during fabrication are performed as per our quality standard on every sensor.

Excelitas Technologies is certified to meet ISO-9001.

Packaging and shipping

The sensors are shipped in individual plastic bags.

Storage and handling

Excelitas highly recommends following the notes below:

- Keep devices in an ESD controlled environment until final assembly.
- Don't touch the lenses at the front of the sensor.
- Make sure that no dust or dirt is deposited on the emitter or receiver lens.

RoHS compliance

This series of XTOF sensors is designed and built to be fully compliant with the European Union Directive on restrictions on the use of certain hazardous substances in electrical and electronic equipment.



Warranty

A standard 12-month warranty following shipment applies.



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