



# XTOF-M-101



## 160 x 60 Pixels TOF Sensor

The XTOF-M-101 is a miniaturized and cost optimized 3D TOF camera. It is based on a proprietary time-of-flight technology using the XTOF-101-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.

The depth images are compensated against ambient light, temperature and reflectivity of the scene. Thanks to the high performance of the imager chip with the unique ambient light suppression, the camera can be used in many cases under full sunlight condition. The output of the XTOF-M-101 is depth and gray-scale images, allowing a variety of new applications, e.g. for mobile robotics. This module brings you right in front with the latest technology of 3D depth sensing. 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, and industrial control applications.

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

## APPLICATIONS

- Industrial automation and quality control
- Robotics and autonomous navigation
- Security and surveillance systems
- Agricultural monitoring systems

## YOUR BENEFITS

- Low power consumption
- Ambient-light tolerant up to 100 kLux
- Calibrated and compensated
- High speed serial interface UART 10 Mbit/s

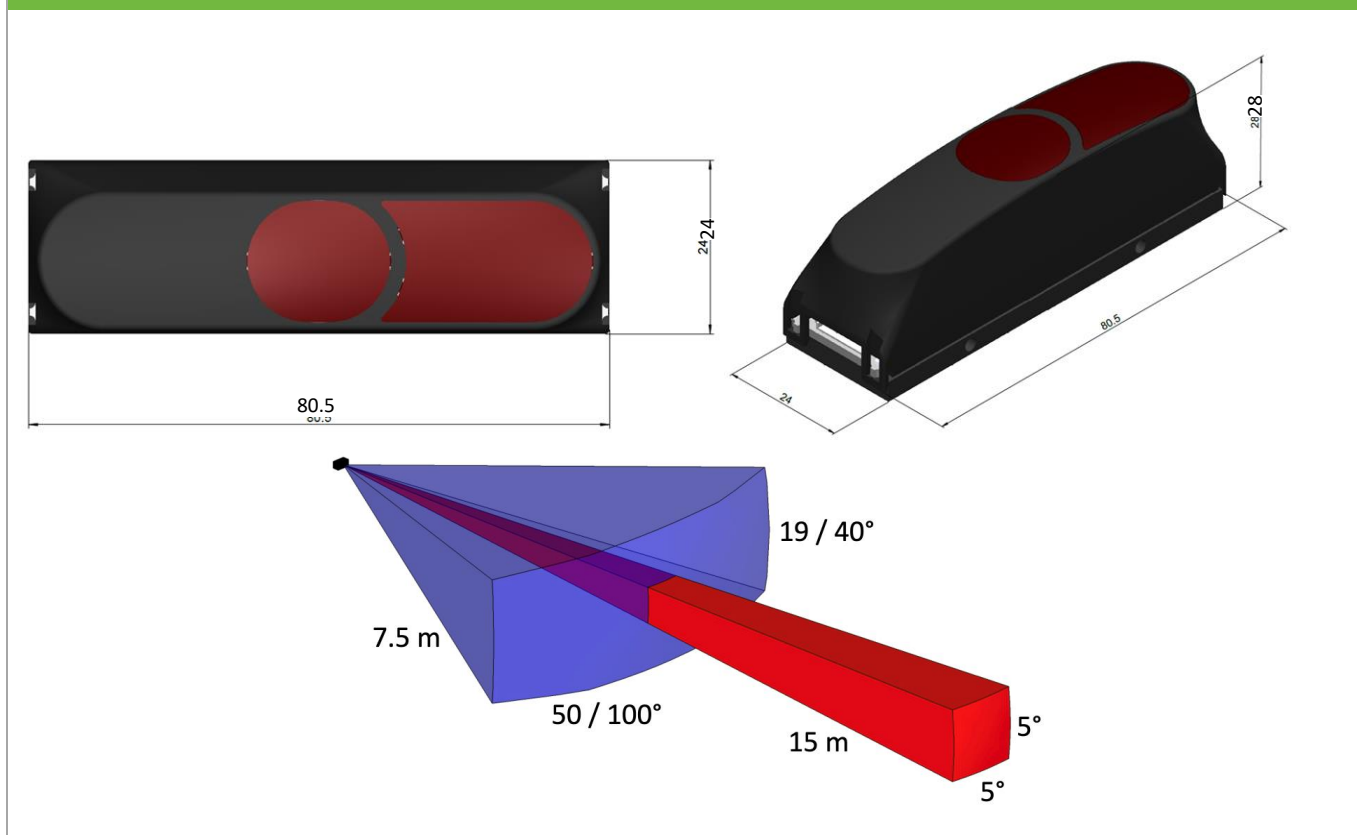
## SPECIFICATIONS

- Maximum operating range: 15 m
- 9600 TOF pixels
- FoV : 50° horizontal and 19° vertical
- Up to 50 TOF measurements per second

## Key Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Field of view (hor/ver)	FOV	Standard Wide field Long range		50 x 19 100 x 40 5 x 5		°
Operating range	d	Standard Wide field Long range		7.5 7.0 15.0		m
No. of pixels		Standard Wide field Long range		9,600 9,600 1		#
Accuracy	d <sub>acc</sub>	0.1 – 2 m > 2 m		± 4 ± 2		cm %
Supply voltage	V		4.75	5	5.25	V
Power consumption	P			1.5		W
UART Interface speed	f <sub>UART</sub>				10	Mbit/s
Data output resolution				1		mm
Ambient light suppression	E <sub>E</sub>			100		kLux
Temperature range	T <sub>Amb</sub>		-20		60	°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 is 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.



---

**Excelitas Technologies**  
22001 Dumberry Road  
Vaudreuil-Dorion, Quebec  
Canada J7V 8P7  
Telephone: (+1) 450.424.3300  
Toll-free: (+1) 800.775.6786  
Fax: (+1) 450.424.3345

---

**Excelitas Technologies  
GmbH & Co. KG**  
Wenzel-Jaksch-Str. 31  
D-65199 Wiesbaden  
Germany  
Telephone: (+49) 611 492 430  
Fax: (+49) 611 492 165

---

**Excelitas Technologies Singapore, Pte. Ltd.**  
8 Tractor Road  
Singapore 627969  
Telephone: (+65) 6775 2022 (Main number)  
Telephone: (+65) 6770 4366 (Customer Service)  
Fax: (+65) 6778-1752

For a complete listing of our global offices, visit [www.excelitas.com/locations](http://www.excelitas.com/locations)

© 2025 Excelitas Technologies Corp. The Excelitas logo and design are registered trademarks of Excelitas Technologies Corp. Excelitas reserves the right to change this document at any time without notice and disclaims liability for editorial, pictorial or typographical errors.

XTOF-M-101\_Rev.2026.03.25