



LIPSedge™ T235

RGB-D 3D ToF Camera

Technical Specification

LIPS® LIPSedge™ series - ToF Camera

Feb. 2026

Revision : 1.4



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Revision History

Revision	Description	Date
1.0	Preliminary	Jul. 2025
1.1	1. Modification of Depth Camera Frame Rate 2. Modification of Camera Module Dimensions	Oct. 2025
1.2	1. Modification of Depth Camera Frame Rate	Nov. 2025
1.3	1. Modification of Depth Camera and RGB Camera Frame Rate 2. Modification of Camera Module Dimensions and Module Drawing	Dec. 2025
1.4	1. Modification of Weight 2. Modification of Power Consumption and Current	Feb. 2026

1. Overview

LIPSedge™ T235 3D ToF camera consists of a 640x480 resolution depth sensor and a 940nm illuminator, using short pulse technology to provide depth information.

It is designed for fast but low-power operation, delivering full resolution capture at up to 60 frames per second (fps) for raw image data.

Features

- Integrate compute and neural network inference for low-latency and instant analytics capabilities.
- 0.3 to 6 meters detection range
- Sunlight Resistance: 80K Lux , operates in all lighting conditions (from darkness to daylight)

Application Use-Cases

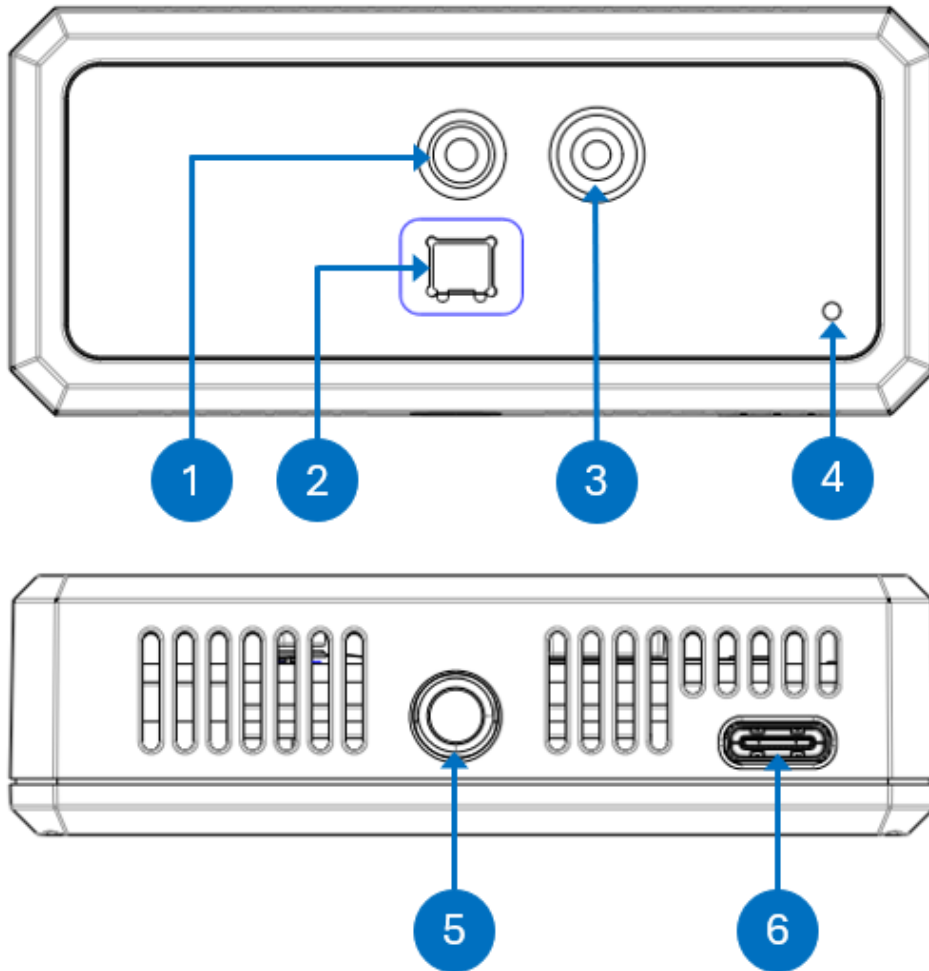
- Object Dimensioning, Packing Completeness
- Body pose and gesture recognition
- Driver monitoring, skeleton tracking
- People or Obstacle detection

2. Specifications

Image		
Depth	Technology	iTOF
	Maximum Working Distance	6 m +
	Minimum Working Distance	0.3 m
	Frame Rate	640 × 480 @ 60fps
	FoV (H × V × D)	85.1° x 69° x 98.9° (Standard model)
	Shutter Type	Global Shutter
	Z Accuracy	≤ 1%
RGB	Resolution	640 × 480 @ 60fps
	FoV (H × V × D)	71.1° x 56.8° x 84°
	Shutter Type	Rolling Shutter
Illumination		
Illumination Type		Infrared
IR Wavelength		940 nm
Illuminating Component		Vertical-Cavity Surface-Emitting Laser (VCSEL)
General		
Dimension (mm)		81.9 x 35.7 x 23.0
Weight (g)		98
Ambient Temperature (° C)		0 - 50
Storage Temperature (° C)		-20 - 60
Output Interface		USB Type-C
Power		DC 5V3A
Supported OS		Windows / Linux / Jetson Linux
Working Environment		Indoor

3. Hardware Details

3.1 General Characteristics



No.	Name	Functions
1.	Depth Camera	Captures depth information for distance measurement.
2.	NIR illuminator	Emits IR signal for measuring depth value.
3.	RGB Camera	Captures RGB image data.
4.	Power LED	Indicates the power and operational status of the device.
5.	Tripod Socket	Secures the camera to a tripod / camera stabilizer.
6.	USB 3.0 Interface	Connects to a USB 3.0 Type C to C Cable.

Note: Do **NOT** obscure or block the openings of the camera's optical components to ensure the optimal performance of the camera.

3.2 Host Connectivity

USB Type-C connector consists of 24 signal pins designed in a symmetrical way. The connector z-height is as low as 3 mm and enables enhanced user by allowing the USB Type-C plug to be plugged into a receptacle either right side up or upside down.

Pin	Signal	Function	Description
A1	GND	Power Delivery	Ground
A2	TX1+	USB 3.1 Gen 1 Data	First SuperSpeed TX Differential Pair Positive
A3	TX1-	USB 3.1 Gen 1 Data	First SuperSpeed TX Differential Pair Negative
A4	VBUS	Power Delivery	5 V
A5	CC1	Control	Configuration Channel 1
A6	D+	USB2.0 Data	USB 2.0 differential pair positive
A7	D-	USB2.0 Data	USB 2.0 differential pair negative
A8	SBU1	Sideband	Sideband Use Signal 1
A9	VBUS	Power Delivery	5 V
A10	RX2-	USB 3.1 Gen 1 Data	Second SuperSpeed RX Differential Pair Negative
A11	RX2+	USB 3.1 Gen 1 Data	Second SuperSpeed RX Differential Pair Positive
A12	GND	Power Delivery	Ground
B1	GND	Power Delivery	Ground
B2	TX2+	USB 3.1 Gen 1 Data	Second SuperSpeed TX Differential Pair Positive
B3	TX2-	USB 3.1 Gen 1 Data	Second SuperSpeed TX Differential Pair Negative
B4	VBUS	Power Delivery	5 V
B5	CC2	Control	Configuration Channel 2
B6	D+	USB 2.0 Data	USB 2.0 differential pair positive
B7	D-	USB 2.0 Data	USB 2.0 differential pair negative
B8	SBU2	Sideband	Sideband Use Signal 2
B9	VBUS	Power Delivery	5 V
B10	RX1-	USB 3.1 Gen 1.0 Data	First SuperSpeed RX Differential Pair Negative
B11	RX1+	USB 3.1 Gen 1.0 Data	First SuperSpeed RX Differential Pair Positive
B12	GND	Power Delivery	Ground

3.3 Thermal

3.3.1 Temperature Specification

Items	MIN	NOM	MAX	UNIT
Storage Temperature	-20	-	+60	°C
Ambient Operation Temperature	0	-	+50	°C

3.3.2 Power Consumption and Current

Items	Values
Average Power Consumption	7.5W
Continuous Current	1.5A
Peak Current	2.8A

4. Optical System

4.1 Cameras

ToF Sensor RX :

- 640 x 480 Indirect ToF Sensor
- 1/6.3" optical time-of-flight sensor
- 3.5 x 3.5 μm pixels
- I2C slave interface for configuration and control
- SPI Master for peripheral configuration
- Dual Modulation frequency @ 100Mhz & 20Mhz

Lens for ToF camera :

- Lens Effective Focal Length : 1.22 mm
- Lens Fno.: 1.3
- Lens FoV : (D) 98.9°x(H) 85.1°x(V) 69°
- Distortion : < 3%
- Relative Illumination 50% : $y=1.0F$ (Ref.)

RGB Sensor :

- 1/4" 500 MP(2592 x 1944) CMOS Image Sensor
- 1.4 μm x 1.4 μm pixels
- Data interfaces: MIPI CSI-2 2 Lanes

Lens for RGB camera :

- Lens Effective Focal Length : 2.56 mm
- Lens Fno.: 2.2
- Lens FoV : (D) 84°x(H) 71.1°x(V) 56.8°
- CRA : 32.7°

Table: T235 Camera sensor table

Items	ToF Sensor	RGB Sensor
Image	NIR/Depth	RGB
Lens FoV	85.1° H * 69° V * 98.9° D	71.1° H * 56.8° V * 84° D

4.2 Illuminators

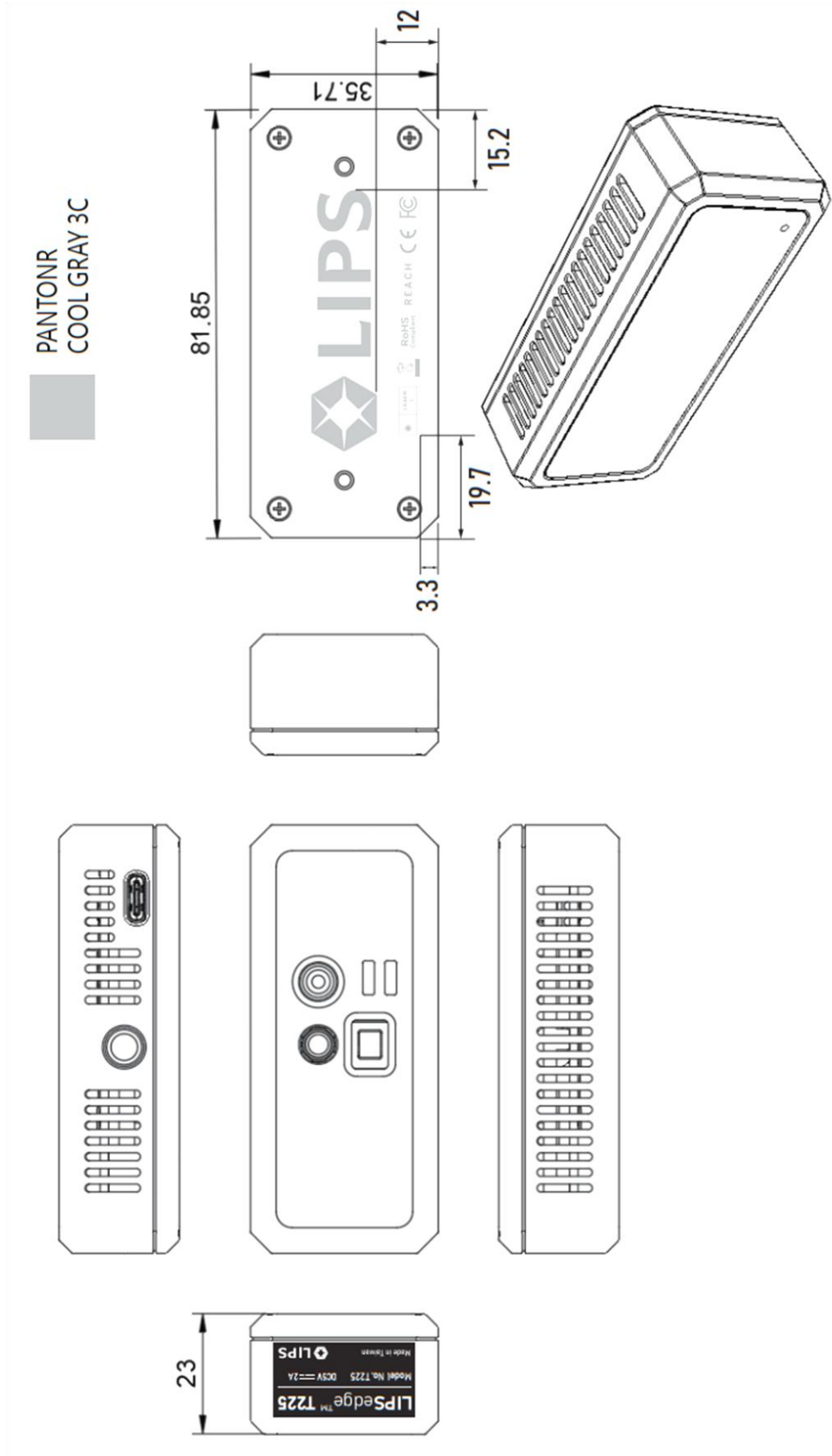
- IF current: 3.5A
- Radiant Power: 6W
- Rectangular emission FoV: 110° x 90°
- Peak wavelength: 940nm
- Modulation Frequency: 100/30 MHz(Dual), 50MHz(Single)

Table: Illuminator parameters

Items	Dot Projector
Illuminating Component	Vertical-Cavity Surface-Emitting Laser (VCSEL)
Wavelength	940 nm

5. Mechanical Engineering

5.1 Mechanical Dimensions of T235





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