LIPSedge™ AE430
3D Stereo Camera

Datasheet

LIPS® LIPSedge™ series - Stereo Camera

Mar 2025

Revision 1.1

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Jun 2023

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Revision History

Revision	Description	Date
1.0	Initial Release	June 2023
1.1	Specifications update	Oct 2024

1. Overview

LIPSedge™ AE430 is our next-generation ruggedized 3D active stereo camera which brings to heavy-duty users with upgraded depth precision and optical performances.

The camera is equipped with PoE Ethernet interface featuring high-speed transmission of images and control data while minimizing the need for extra power supply and cable planning. LIPSedge™ AE430 meets the IP67 standard for ingress protection.

Features

- High Z-accuracy (≤ 2% at 4 meters)
- Global shuttered RGB sensor
- Excellent 3D scanning performance for reflexive object
- Built-in IMU
- Built-in heat sink

Application Use-Cases

- VGR/AMR
- Dimension Measurements
- Facial Recognition
- Pick & Place Robot

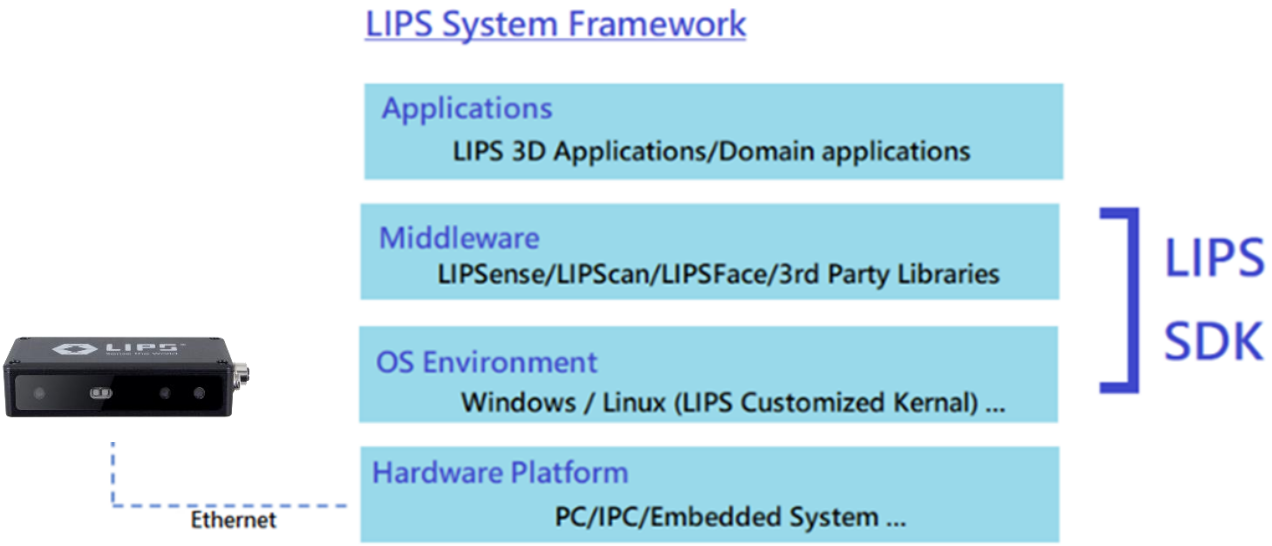
2. Specifications

Depth Sensor		
Item	Description	
Image Sensor	OmniVision OV2740	
Pixel Size	1.4 µm * 1.4 µm	
Optical Format	1 / 6"	
Active Pixels	1280x720	
Aperture	f/2.0	
Focal Length	1.88mm	
Focus Type	Fixed	
Shutter Type	Rolling Shutter	
Distortion	<=1.5%	
RGB Sensor		
Image Sensor	OmniVision OV2740	
Pixel Size	1.4 µm * 1.4 µm	
Optical Format	1 / 6”	
Active Pixels	1920 * 1080	
Video Format	10-bit RAW RGB	
Maximum Aperture	f / 2.0	
Focal Length	1.88 mm	
Focus Type	Fixed	
Shutter Type	Rolling shutter	
Distortion	<= 1.5 %	
IMU Sensor	3-axis accelerator & 3-axis gyroscope	
Illumination		
Illumination Type	Infrared	
IR Wavelength	850 nm ± 10 nm	
Pattern Type	Static	
Illuminating Component	Vertical-cavity surface-emitting laser (VCSEL) + Optics	
Output		
Ethernet Interface	Gigabit Ethernet	
Edge Processor		
Neural Processing Unit (NPU) A311D	ARM Cortex: Quad Core ARM Corex-A73, paired with Dual Core Cortex A-53 CPU, ARM Mali-G52 GPU	
Imager Description		
Depth	Technology	Active Stereo
	Baseline	55 mm
	Ideal Working Distance	4 meters for accuracy at <= 2%
	Minimum Working Distance	~ 45cm
	Resolution	1280x720 @ 30fps
	FoV (H * V * D)	65° * 40° * 72° (± 3°)
	Z Accuracy	Under 2% of distance
		Note: The accuracy varies according to distance.
RGB	Resolution	1920 * 1080 @ 15 fps, 1280 * 720 @ 30 fps, 640 * 480 @ 60 fps

	FoV (H * V * D)	69.4° * 42.5° * 77° (± 3°)
General		
Dimension (mm)		118 * 60 * 32
Weight		280 g / 496 g(w/ packing)
Ambient Temperature (° C)		0° ~ 40°
Storage Temperature (° C)		-20° ~ 60°
Power Supply		PoE (IEEE 802.3af/at), Power Wire (12V 1A, M8 Connector)
Hardware Mount		1/4” camera screw compatible (1/4 – 20 UNC)

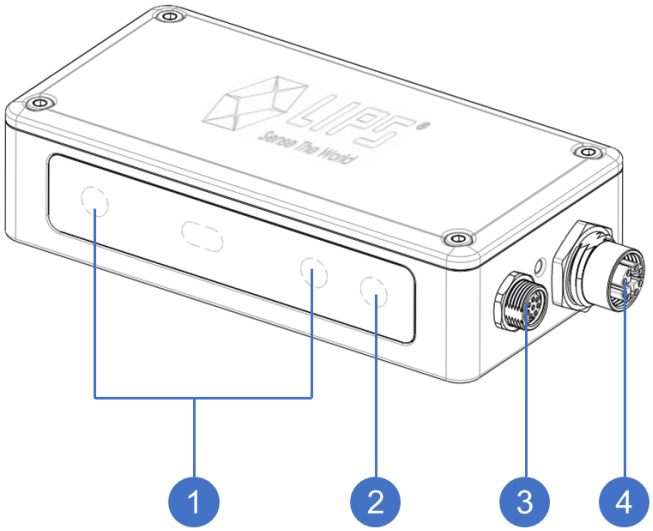
3. Description and Application Architecture

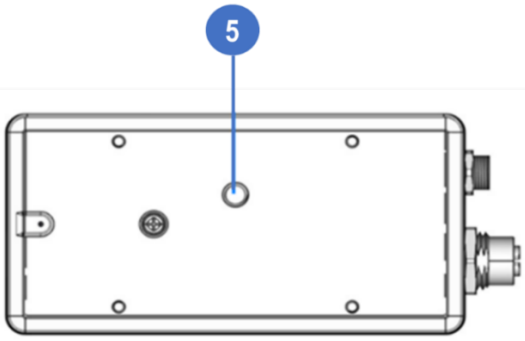
The LIPSedge ™ AE430 3D Depth Camera based on active stereo, which projects light patterns to calculate the depth and surface information of the objects in the scene. The camera uses an Ethernet connection interface to transmit the captured data from the Near-Infrared sensor and the RGB image sensor to process the depth information.



4. Hardware Details

4.1 General Characteristics

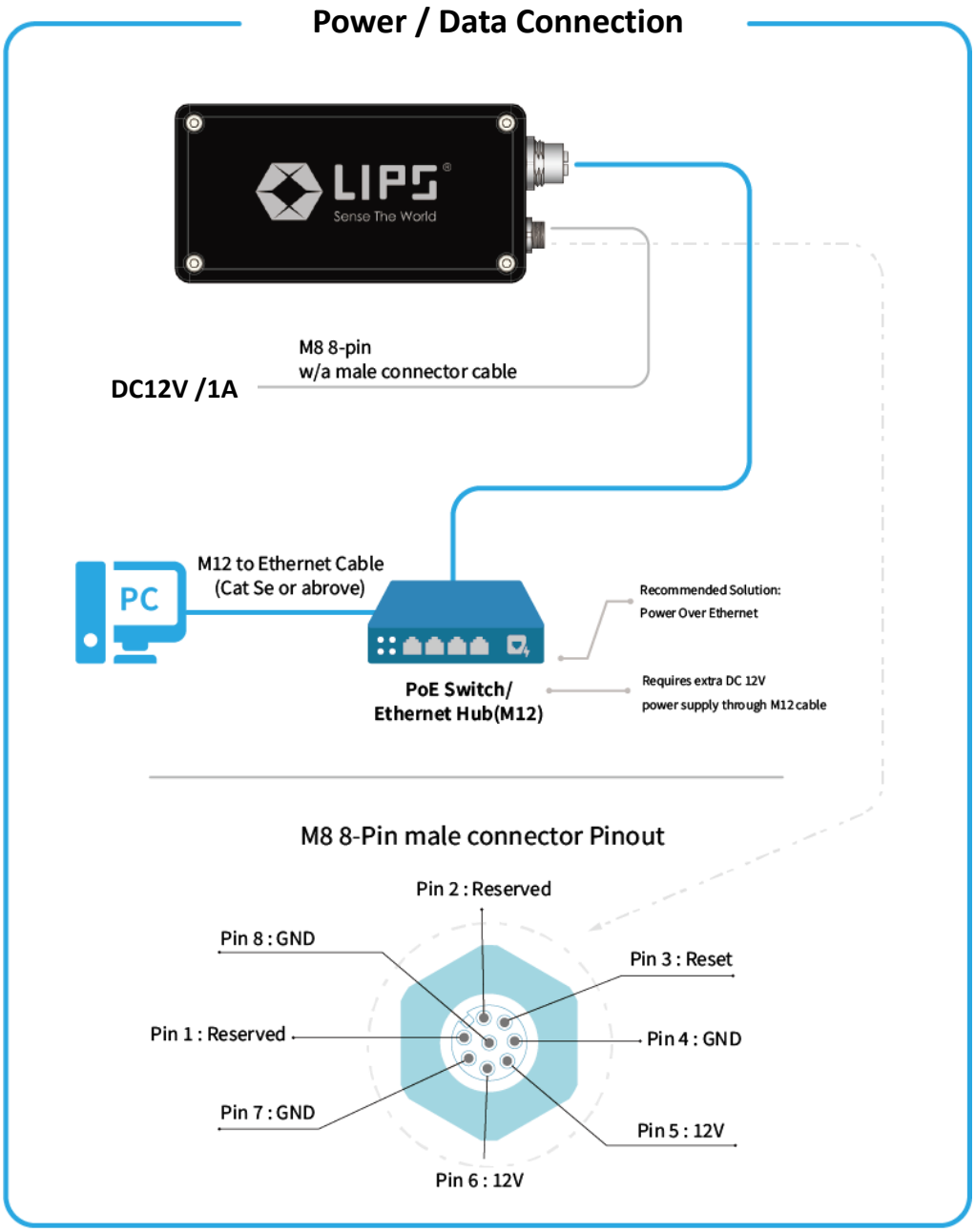




No.	Name	Functions
1.	IR Stereo Sensor	Receives the IR image.
2.	RGB Sensor	Receives the RGB image.
3.	M8 Connector	Connects to an M8 cable for power input / resets to factory default.
4.	M12 / Ethernet Connector	Connects to a M12 to Ethernet cable for power and data transmission.
5.	Tripod Socket	Secures the camera to a tripod / camera stabilizer.

4.2 Host Connectivity

LIPSedge™ AE430 has two power supply channels: M12 X-code Ethernet / PoE (Power over Ethernet) or M8 interface. We recommend using Ethernet / PoE as the standard scenario. For power supply / data transmission channel separation, optionally use M8 cable.



4.3 Thermal

4.3.1 Temperature Specification

Items	MIN	NOM	MAX	UNIT
Storage Temperature	-20	-	+60	°C
Ambient Operation Temperature	0	-	+40	°C

4.3.2 Power Consumption and Current

Items	Values
Average Power Consumption	9.1 W (maximum)
Continuous current	0.4 A (typical)
Peak current	0.7 A (typical)

5. Optical System

5.1 Cameras

The LIPSedge™ AE430 utilizes 3 camera sensors to capture NIR/Depth images and RGB color images.

Table: LIPSedge™ AE430 Camera sensor table

Items	Camera 1 (sensor)	Camera 2 (sensor)	Camera 3 (sensor)
Position	Left	Center	Right
Image	NIR/Depth	NIR/Depth	RGB
Lens FoV	65˚H * 40˚V * 72˚D	65˚H * 40˚V * 72˚D	69.4˚H * 42.5˚V* 77˚D

5.2 Illuminators

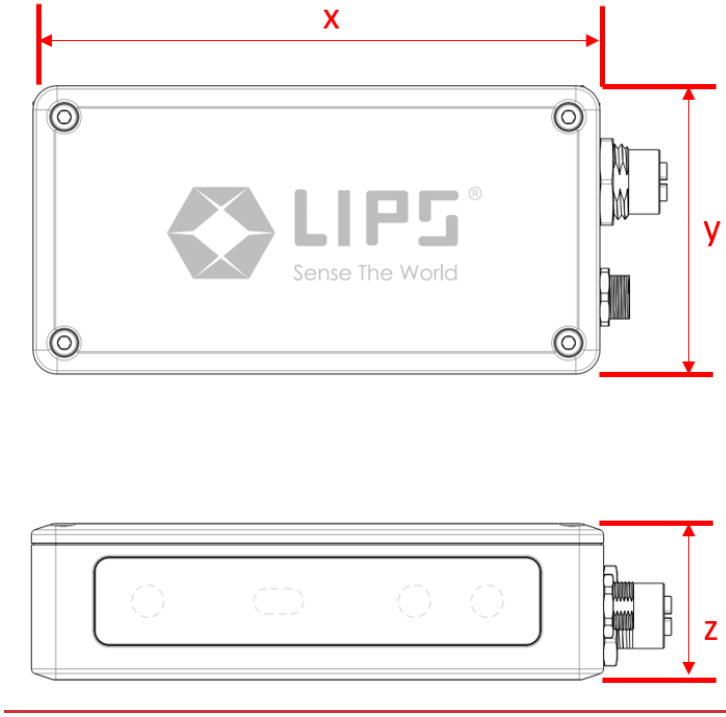
The LIPSedge™ AE430 optics include projecting a static IR pattern on the scene to add texture to low texture scenes.

Table: Illuminator parameters

Items	Dot Projector
Illuminating Component	Vertical-cavity surface-emitting laser (VCSEL) + Optics
Pattern Type	Static
Wavelength	850nm

6. Mechanical Engineering

6.1 Mechanical Dimension of LIPSedge™ AE430



Dimension	MIN	NOM	MAX	TOLERANCE	UNIT
X	117.5	118	118.5	±0.5	mm
Y	59.5	60	60.5	±0.5	mm
Z	31.5	32	32.5	±0.5	mm

7. LIPSedge™ SW Architecture and SDK

LIPSedge™ series includes a comprehensive support for development including LIPS® SDK and worldwide industry Frameworks and Wrappers libraries implementation. Please refer to our homepage and related links for more information.

7.1 SDK, Middleware and Sample Codes

LIPS-Developer: https://www.lips-hci.com/developer-documentation
LIPS-GitHub: https://github.com/lips-hci/ae400-realsense-sdk.git
LIPS User manual: https://www.lips-hci.com/lipssdk

8. Regulatory Compliance

LIPSedge™ AE430 is classified as a Class 1 Laser Product under EN/IEC 60825-1.

"Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019"

The product is being certified with FCC, CE, KCC (Korea) and BSMI Taiwan).

FCC Part 15:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

European Directives:

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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