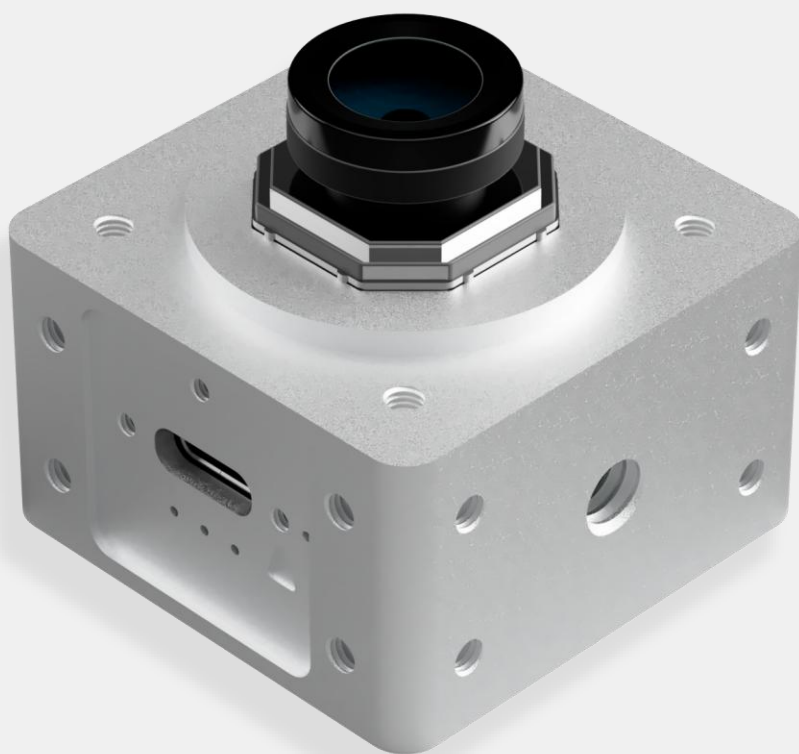




olixVision™ V1

Edge-AI Camera Dev Kit

Embedded AI | Onboard IMU | USB-C Power Delivery | ROS 2 Native



Technical Document No. 1772812800 | SKU# OLVX-V1-02MP-USB-W | Revision 0.1 - Mar 2026

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1. Product Overview

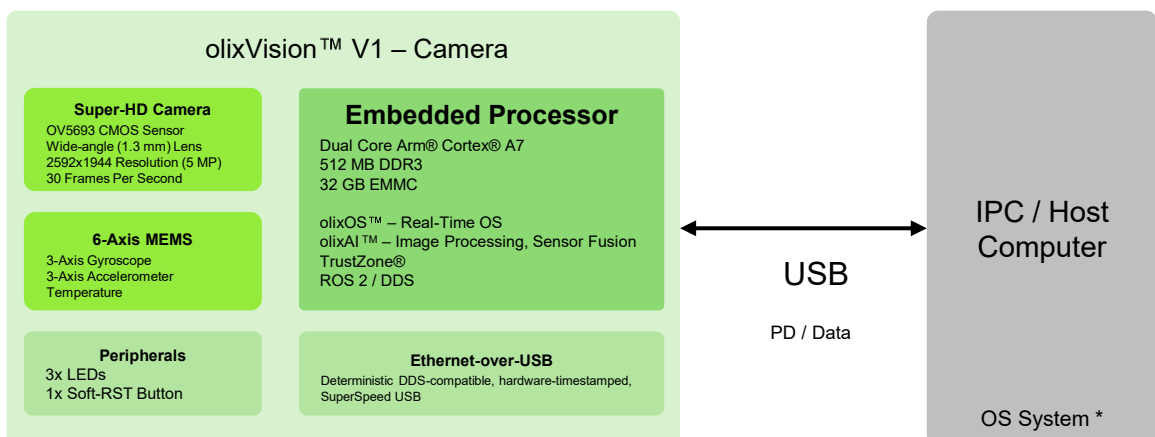
The olixVision™ V1 is an industrial-grade camera development kit designed for mobile robots, industrial automation, autonomous systems, presence detection, and monitoring. It features Super-HD (2.5K) resolution, USB connectivity and power, orientation/motion tracking using an onboard IMU, numerous mounting options, modular construction, plug-and-play usability, and precise synchronization through hardware timestamps. Image processing and compression operate at low latency in-camera using a dual-core microprocessor, real-time Linux kernel (olixOS™), and native, driverless ROS 2 integration.

2. Key Features

- Power and connectivity via SuperSpeed USB-C
- IMU-based motion tracking and positioning
- ROS 2 Native: flexible DDS communication, plug-and-play for robotic middleware
- Configuration and firmware updates via an individualized IP address
- Onboard Processing: Dual-core Cortex-A7 + 512MB DDR3 RAM
- Industrial-Grade: Tested against vibration and climate extremes
- Compact: 65 g, 38×38×34 mm



3. System Architecture



IP Address: **192.168.7.100**

IP Address: **192.168.7.XXX**

* This device does not require any additional driver installation.

4. Applications

- Mobile Robot (AMR, AGV, UAV) Navigation
- Process Inspection and Monitoring
- Research and SLAM Systems
- Presence Detection and Safety
- AI-powered Identification

5. Camera Specifications

- Performance

Parameter / Metric	OV5693	OV9281	SC035	OG02B10	OG02B1B
Resolution	2592x1944	1280x800	640x480	1600x1300	1600x1300
Frame Rate	30 FPS	120 FPS	180 FPS	60 FPS	60 FPS
Dynamic Range	67 dB	67 dB	100 dB	67 dB	67 dB
Pixel Pitch	1.4 µm	3.0 µm	3.7 µm	3.0 µm	3.0 µm
CMOS Sensor Size	1/4"	1/4"	1/6"	1/2.9"	1/2.9"
Shutter	Elec. rolling	Global	Global	Global	Global
White Balance	Automatic	Monochrome	Monochrome	Automatic	Monochrome

- Physical and Electrical

Weight	65 g
Size	38.0 mm x 38.0 mm x 38.3 mm
Power Consumption	3.0 W (Typical), 4.0 W (Heavy Load)
Operating Voltage	5 VDC (USB)
Operating Temperature	-20°C to 80°C
Interface LEDs	3x (Heartbeat, User, System)

* The heading accuracy depends on IMU sensor configuration and calibration. A fully calibrated sensor and ideal tilt compensation are assumed.

- Communication Interface / ODR

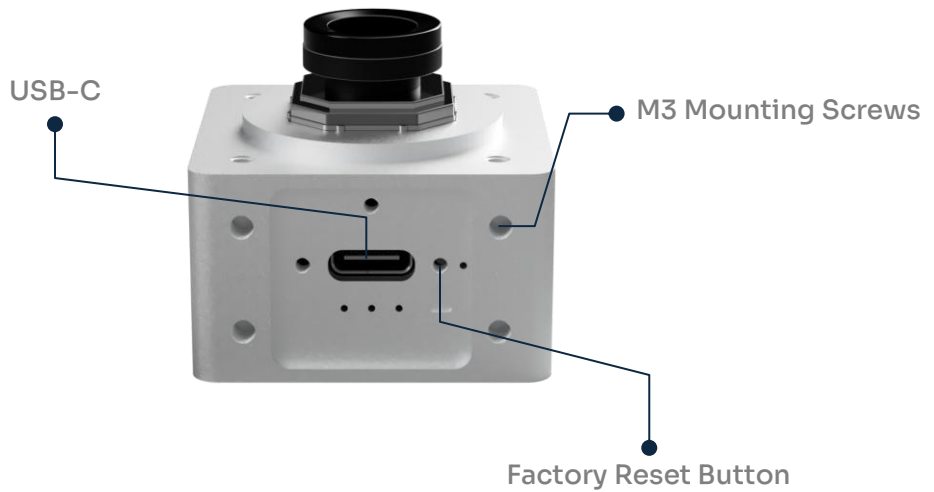
Interface Connector	USB-C
Communications Protocol	USB 3.2, Ethernet over USB
Output Data Rate (Video)	30 FPS
Output Data Rate (IMU)	100 Hz
Middleware / Protocols (DDS)	- rmw_fastrtps_cpp - rmw_cyclonedds_cpp - rmw_connext_cpp - rmw_zenoh
ROS 2 Distribution	- Humble - Jazzy

- ROS 2 Native Messages

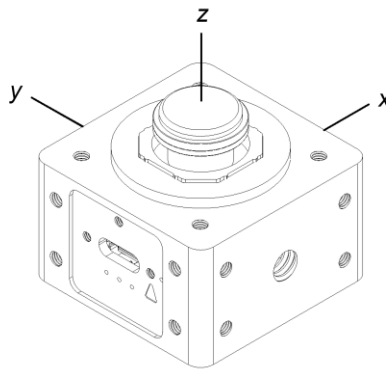
Topic/Service Name	Type	Description
/image/camera_info	sensor_msgs/msg/CameraInfo	Imaging/Sensor parameters
/image/compressed	sensor_msgs/msg/CompressedImage	JPEG video stream
/imu	sensor_msgs/Imu	Acc, Gyro, Quaternion
/acceleration	geometry_msgs/msg/AccelStamped	Gravity Compensated Accel
/magneticfield	sensor_msgs/MagneticField	Magnetic Field
/velocity	geometry_msgs/msg/TwistStamped	Relative Velocity
/temperature	sensor_msgs/msg/Temperature	Camera Temperature
/status	diagnostic_msgs/msg/DiagnosticStatus	Camera Status

Other topics may be generated by nodes started by the user to process video data.

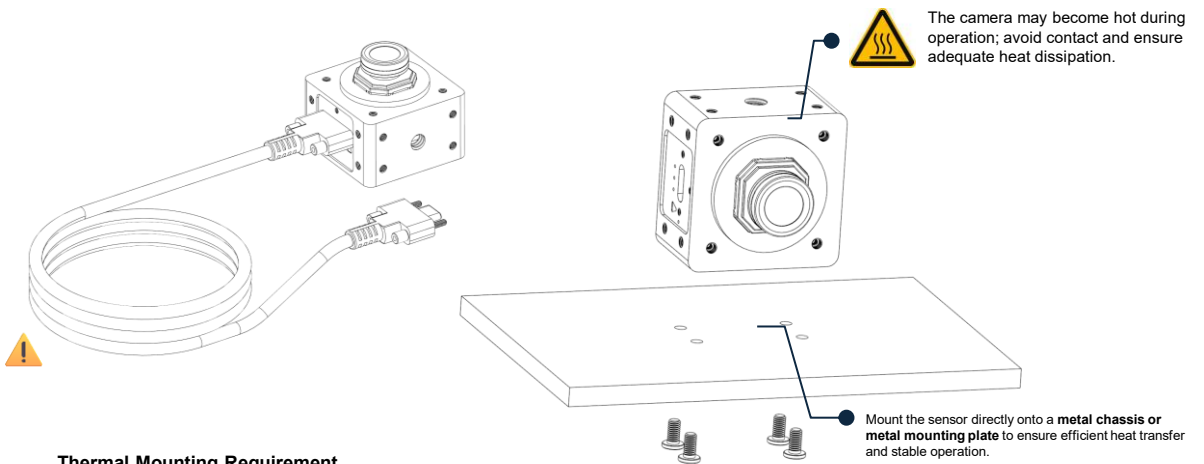
- Camera Interface / Peripherals



- Coordinate Frame / Axis



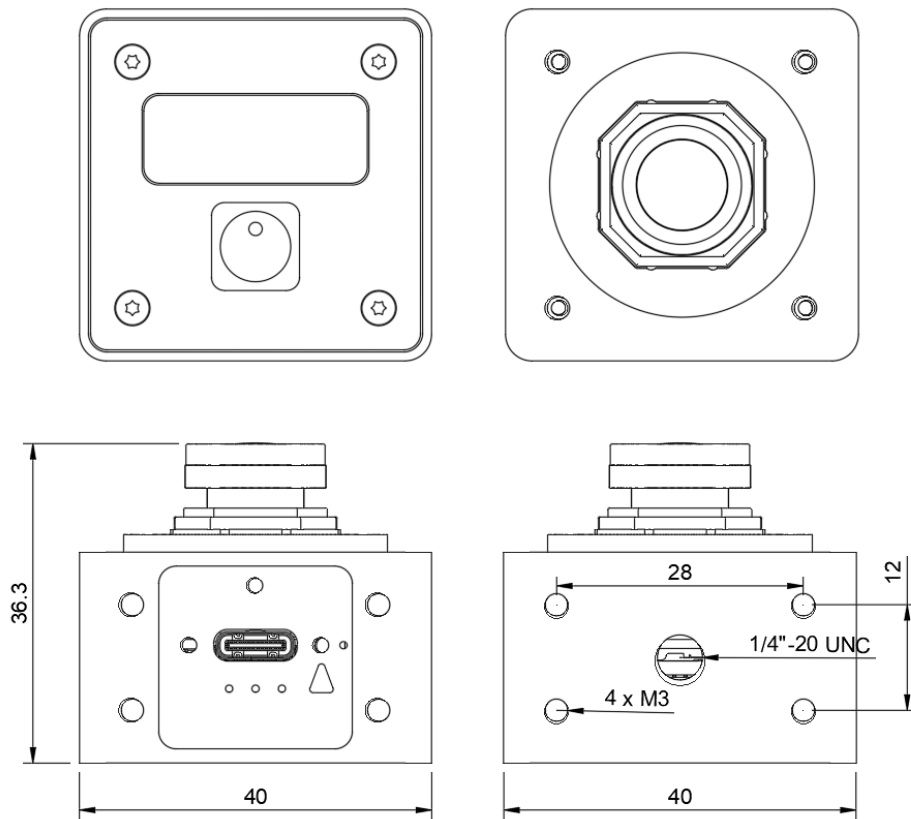
- Mechanical Installation Overview



Thermal Mounting Requirement

For proper operation and long-term reliability, the camera **must be mounted on a metal surface** of the system or robot to allow effective heat dissipation. Operating the camera **without adequate thermal coupling**, or in **warm or poorly ventilated environments**, can lead to elevated internal temperatures. Prolonged exposure to excessive heat **may degrade performance and cause permanent damage** to the camera over time.

- Physical Dimensions





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