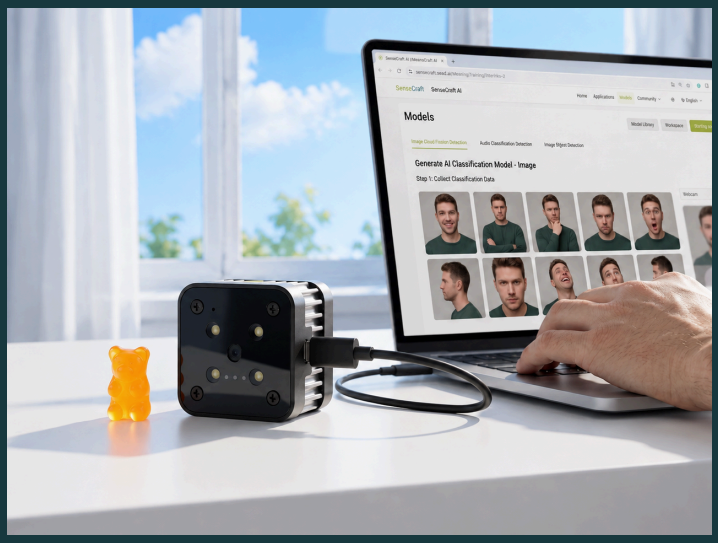
seeed studio

INDUSTRIAL PRODUCT DATASHEET

reCamera 2002w 64GB - Open Source AI Camera

Open-source AI camera with on-device YOLO11 inference, 1 TOPS NPU, modular design, and open hardware/software for rapid edge AI vision deployment.

SKU	UPDATED	PRICE
102991897	2026-09-03 05:53:09	$109.90(Excl. VAT)



Overview



The reCamera 2002w 64GB - Open Source AI Camera is a compact, modular edge AI vision platform powered by a RISC-V SoC with 1 TOPS INT8 NPU and pre-installed YOLO11 models for object detection, classification, pose estimation, and instance segmentation. It provides fully open hardware and software, Node-RED visual workflows, and standard connectivity via RTSP, HTTP, WebSocket, TCP/UDP, and MQTT for seamless integration into industrial, warehouse, agriculture, and smart-city applications.

Key Features

reCamera：Your Shortest Pathway to Build a Market-ready AI Camera

From AI model deployment to real-world applications, reCamera provides an integrated edge AI platform that helps developers and system integrators build, customize, and deploy intelligent vision solutions faster.

How does it Works？

reCamera transforms real-world data into intelligent actions through an edge AI pipeline.
SenseCraft AI is an all-in-one platform designed to empower developers and creators in building and deploying AI projects with ease. The website offers a wide range of tools and features to streamline the AI development process, making it accessible to users with varying levels of expertise.

Feature 1: Run AI Vision at the Edge

Powered by 1TOPS NPU computing, reCamera comes with pre-installed YOLO11 models for instant AI vision deployment:

- Object Detection
- Object Classification
- Pose Estimation
- Instance Segmentation

Licensing: reCamera does not include an Ultralytics commercial license. For commercial use of Ultralytics YOLO models, please visit **Ultralytics YOLO Licensing page** for available options.

Feature 2: Build AI Applications Faster with Visual Workflows

Connect AI models, devices, and actions through an intuitive visual workflow interface.
Powered by Node-RED, reCamera enables developers to build AI application logic with minimal coding — from model inference to real-world actions.
Simply connect nodes for:
- Camera input
- AI model inference
- Result processing
- Device control
- Data communication

Modular Hardware, Adaptable for Any Scenario
reCamera adopts a modular architecture that lets developers configure imaging, compute, storage, connectivity, and expansion options for different deployment needs.

Sensor Board

- OV5647 standard configuration
- GC2053 Sensor Board option
- Interchangeable M12 lenses for different FOV and working-distance requirements

Core Board

- RISC-V based SoC

- 1 TOPS INT8 NPU
- Wi-Fi connectivity options
- 8GB / 64GB eMMC configurations
- Standalone Core Board options for custom builds

Base Board

Choose how reCamera connects to networks, external hardware, and expansion modules.
- USB, Ethernet, and serial interfaces
- Standalone Base Board options for custom builds
- Available Base Board options include Wi-Fi HaLow and PoE with GPIO expansion

Feature 4: Fully Open Hardware & Software Freedom

reCamera delivers end-to-end openness across hardware, AI, and software—empowering developers to modify, customize, and optimize their own vision solutions without proprietary lock-in.
Open-source resources cover the full stack:
Hardware – schematics, PCB, 3D files
System – Linux (Buildroot, kernel, drivers)
AI – NPU runtime, inference pipelines
Applications – Node-RED workflows, C++ SDK, APIs
From silicon to software, all source files, drivers, and models are public. No black boxes. Fork it, build it, and deploy it.
Click here: **GitHub**

Feature 5: Seamlessly Integrate with Existing Systems

reCamera outputs data through standard protocols such as RTSP, HTTP, WebSocket, and TCP/UDP, virtually any online platform or application. Also, use MQTT to connect to other IOT devices.
It also works with **Frigate**.

Feature 6: Flexible Installation Options

Compact and adaptable, reCamera is designed for flexible deployment across different environments.
reCamera 2002 series: (40 × 40 × 36.5 mm)
reCamera HQ PoE: (40 × 40 × 53.1 mm)
With reCamera, developers can quickly transform AI models into practical vision applications across industries.

Deploy customizable AI vision across your entire site to monitor people, vehicles, and safety compliance in real time. reCamera enables on-device detection of specific objects and behaviors, triggering instant alerts or structured events without relying on cloud processing.
Perimeter Security | PPE Compliance | Vehicle Access Control | Restricted Area Monitoring
From conveyor lines to storage racks, reCamera brings flexible AI vision to every step of warehouse operations. Train custom models to recognize packages, monitor inventory status, and detect operational exceptions — all processed locally at the edge for faster decisions.
Custom Object Recognition | Quality Inspection | Inventory Tracking | Edge AI Automation
Every farm has unique management needs. With customizable AI models, reCamera helps farmers recognize specific livestock, track animal populations, and detect unusual behaviors — enabling automated monitoring without complex infrastructure.

- **Object Classification**: Classify the entire image
- **Parking Occupancy Detection**: Identify available and occupied parking spaces
- **People Counting**: Detect and count foot traffic in crowded areas such as subways and malls.
- **Restricted Area Intrusion Detection**: Detect unauthorized entry into hazardous areas

- **PPE Detection**: Verify whether workers are wearing required personal protective equipment
- **Object Tracking**: Track targets and visualize their movement paths
- **Fall Detection**: Detect falls using human pose estimation
- **Smart Fitness Assistant**: Evaluate exercise form using pose estimation
- **Defect Detection**: Segment surface defects on parts or equipment

More demos waiting to be explored, such as a turn your reCamera into a motion-sensing game controller.

Product Gallery





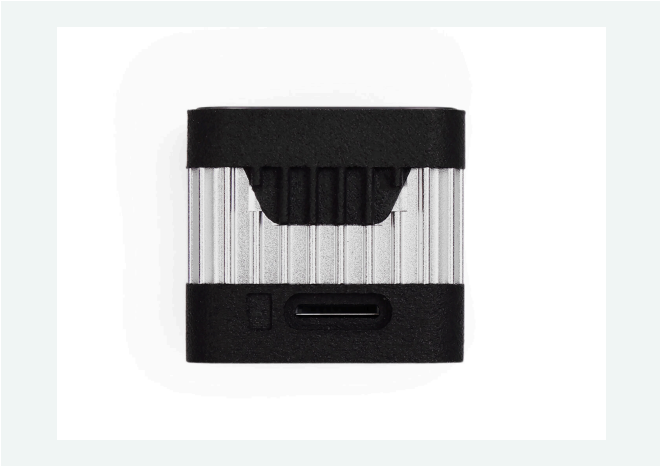


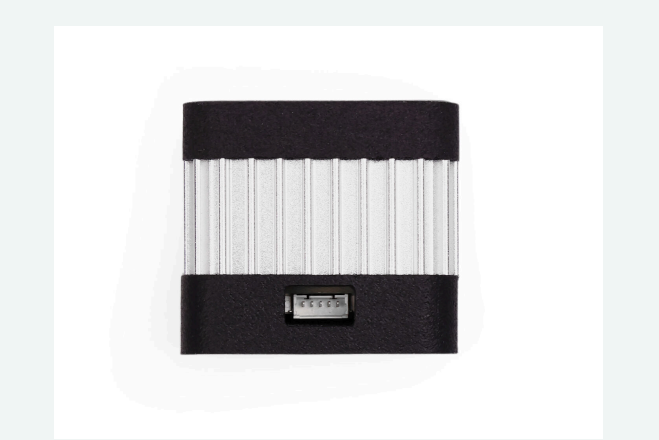














Specification

		reCamera Basic			reCamera Pro
	Product Series	reCamera 2002 Series	reCamera HQ POE	reCamera Gimbal	
	Mounting Method	Magnetic/ Quarter-inch screw thread	Quarter-inch screw thread	/	Quarter-inch screw thread

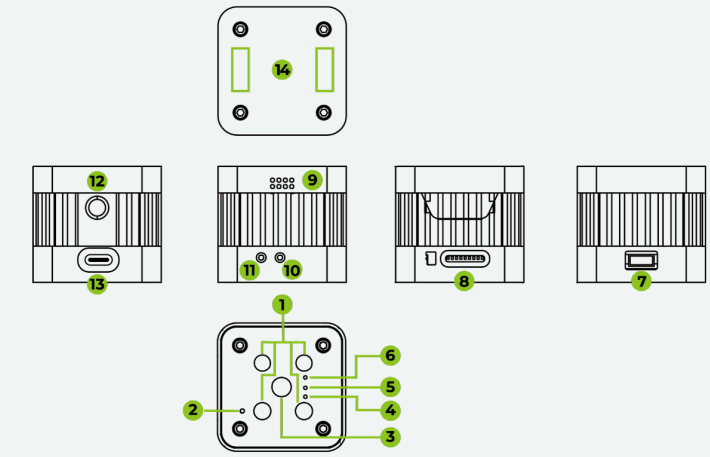
Core Processing & System	AI Performance	1TOPS@Int8			3TOPS @ INT8
	SOC	SG2002			RV1126B
	CPU	C906@1GHz + C906@700MHz			Quad-core Arm Cortex-A53 processor
	MCU	8051@8KB SRAM			RISC-V MCU as Co-processor
	Memory	256MB			2GB/4GB
	eMMC	8GB/64GB			16GB
	Operating System	OS Type: Embedded Linux (Buildroot) Kernel Version: 5.10.4 (RISC-V 64-bit) Instruction Set: RV64IMAFDVC			Buildroot
	Video Codec	1080p @ 30FPS			4k@30FPS
Imaging Sensor	Camera Sensor	OV5647	GC2053	OV5647	SC850SL
	Optical Format	1/4" CMOS Sensor	1/2.9inch	1/4" CMOS Sensor	1/1.8-inch, starlight-level
	Pixels	2MP	2MP	2MP	8MP
	Pixel Size	1.4μm		1.4μm	2.0μm
	Resolution	1920x1080			3840×2160
	Max Frame rate	30fps@full size			4k30fps
	Output Format	RAW10		RAW 10	RAW,MP4,JPG
	Shutter Type	Rolling Shutter			
Optics & Lens	lens mount	/	M12	/	M12 x 0.5mm
	Focal Length	3.46mm	2.9mm ±0.5%	3.46mm	2.75mm
	Aperture	F2.8			F2.4
	FOV	65°	93°	65°	123°±5°
	Minimum Focus Distance		39CM		0.6m ~ Infinity
	Focus Distance（DOF）		50CM		2.7m

Connectivity & Interfaces	Ethernet	100Mbps			1000Mbps
	Wireless	Wi-Fi 2.4G/5G Bluetooth 4.2/5.0	/	Wi-Fi 2.4G/5G Bluetooth 4.2/5.0	Wi-Fi 2.4G/5G WIFI 5.0 Bluetooth 5.4
	USB	USB Type-C(2.0)			USB Type-C(3.0)
	Expansion	removable TF card (up to 512GB)	/	/	removable TF card (up to 512GB, not included)
	CSI				Supports 2-channel 4-wire MIPI-CSI interfaces (One additional interface supports Raspberry Pi camera modules.)
	Output Port	/	1 x RJ45 port for 802.3af PSE. 1 x UART port. 1 x Debug port. 3 x IO port.	CAN	2 x CAN 2 x GPIO 1 x UART 1 x Debug UART 1 x MIPI DSI
HMI & Peripherals	Button	1 Reset Button, 1 Boot Button			A custom button
	Status Light	1 × Power Indicator, 2 × IO Programmable Indicator			Power indicator light*1, Status indicator light*1
	Fill Light	4 × 0.3W White Light	/	4 × 0.3W White Light	/
	Mic	On-board Mic			mic * 2
	Speaker	Built-in speaker			Built-in speaker

Physical & Environmental	Dimension	40x40x36.5mm	40x40x45.8mm, 40x40x53.1mm with lens	68×112×71mm	67*67*89.8mm
	Power Supply	5V 1A	5V 1A	12V DC Jack to XT30 connector	12V 2A（DC），POE，TYPE-C，Battery(7.4V)
	Power Consumption			12V, 185mA (static)	
	Operation Temperature	0～50°C			
	Enclosure	Polyamide (PA) Nylon			
	Weight (Net)	66g	75g	230g	324g±1g

Motor Spec	Parameter	/	MS3008	MS3506	/
	Turns		54	60	
	Rated Voltage (V)		12		
	Max Speed (rpm)		2000	2100	
	Rated Torque (N·m)		0.04	0.05	
	Rated Speed (rpm)		1160	1250	
	Rated Current (A)		0.64	0.79	
	Max Power (W)		4.6	6.4	
	Motor Poles		14		
	Operating Temperature (℃)		-25~60		
	Weight (g)		49	63	
	Drive Input Voltage (V)		6~16		
	Communication		CAN		
	Communication Frequency		CAN@1Mbps:2KHz		
	Encoder		15-bit Magnetic Encoder		
	CAN Baud Rate		100K、125K、250K、500K、1M		
	Control Mode		Open Loop(24KHz) / Speed Loop(4KHz) / Position Loop(2KHz)		

Hardware Overview



1. White LEDs
2. Mic
3. Camera
4. User(R)
5. Power(G)
6. Disk(B)
7. Ethernet
8. TF Card Slot
9. Speaker
10. User
11. Reboot
12. J/4" Screw Hole
13. USB Type-C
14. Magnet built-in

Applications

- **Integration of Real-time Heatmap with Grafana Data Dashboard:** The project conducts target detection using the YOLO11n model built into reCamera. It performs fuzzy processing on personnel targets and displays a heat map effect. All of this is handled locally within reCamera! And reCamera will send the detected data to the locally running Influxdb database. Then, Grafana reads the data from the Influxdb database to display real-time data dashboards.
- **AI Remote Wireless Monitoring System Based on reCamera and Wifi Halow:** An AI-based remote wireless monitoring system using Wi-Fi HaLow. It combines edge AI vision with long-range, low-power wireless communication to enable real-time detection, data transmission, and monitoring in remote or infrastructure-limited environments such as farms, factories, and outdoor sites. Video link: https://www.linkedin.com/posts/seeedstudio_howtobuildanaicamera-outdoor-wifi-activity-7401880305940553729-R57w?utm_source=share&utm_medium=member_desktop&rcm=ACoAAGCDEqUBKdDsqK6EqGXClNocxAAtw3IA_T0 Tutorial: https://wiki.seeedstudio.com/ai_remote_wireless_monitor_system_with_wifi_haLow/
- **AI Parking Management with reCamera:** This project uses Seeed's reCamera to detect parking slot occupancy in real-time. It features multi-frame stabilization to avoid flickering and displays results (free/occupied counts) directly on the video stream. The entire workflow runs automatically on the device via a pre-configured Node-RED setup. Tutorial: https://wiki.seeedstudio.com/ai_parking_slot_monitoring_demo_with_recamera/
- **Play Subway Surfers with reCamera HQ PoE:** Using its built-in pose detection model, reCamera can recognize your hand and body movements in real time and convert them into game actions, no controllers, no wearables, just pure gesture play. Wave your hand to jump, raise your arm to attack, or lean left and right to dodge obstacles. Video link: https://www.linkedin.com/posts/seeedstudio_howtobuildanaicamera-recamera-yolo11n-activity-7399730949401526272-UdZ4?utm_source=share&utm_medium=member_desktop&rcm=ACoAAGCDEqUBKdDsqK6EqGXClNocxAAtw3IA_T0 Tutorial: https://wiki.seeedstudio.com/use_the_motion-sensing_function_of_recamera_to_play_games/

Part List

reCamera 2002w 64GB	x1
USB type-c Cable	x1
Ethernet Cable	x1

Compliance & Logistics



HSCODE	9031809090
USHSCODE	9031808085
UPC	
EUHSCODE	8517180000
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- https://www.seeedstudio.com/reCamera-2002w-64GB-p-6249.html
- User Manual
- Data Sheet
- reCamera Github
- reCamera OS Github
- reCamera Flyer
- reCamera Flyer - CN

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