LooperRobotics

Insight 7

Insight 7 Tech Spec

Features

Use environment:	Indoor/Outdoor
Stereo Image sensor technology:	Global Shutter
Ideal Range:	0.15m to 5m
Baseline:	70 mm Standard
Inertial measurement unit:	Bosch BMI088(6 Axis)/± 24 g
Onboard Visual SLAM solution	Visual Inertial Odometry(VIO)
Onboard AI Models	Object Detection / Human Pose Estimation / Gesture recognition, etc

Major Components

Computing Unit:	10 TOPS AI acceleration engine
RGB Color Sensor:	SmartSens SC835HAI
Stereo Imagers:	Dual SmartSens SC132GS(Mono)

Depth

Depth Technology:	Learning-based Stereo
Minimum Depth Distance (Min-Z) at Max Resolution:	~12cm
Depth Accuracy:	<2% at 2m
Sensor Effective Pixels	1088 × 1280
Image Resolution & Frame Rate:	544 × 640 @20/30/60fps (mono8)
Sensor FOV (D x H x V):	157.2° × 96.8° × 115.6°
Depth Output Resolution:	Up to 544 × 640
Depth Frame Rate:	Up to 15 fps

RGB

RGB Frame Rate:	Up to 60fps
RGB Frame Resolution:	Up to 3840 × 2160
RGB Sensor Technology:	Rolling Shutter
RGB Resolution and Frame Rate:	1920 × 1080 at 30 fps
RGB Sensor FOV (D x H x V):	190° × 86° × 161°
RGB Sensor Resolution:	8.29 MP

Physical

Form Factor:	Camera Peripheral
Length x Depth x Height:	100.4mm x 36.4mm x 35.5 mm
Power Input:	Type C 5V/2A
Weight:	158g
Connectors:	USB-C® 3.1 Gen 1*
Mounting Mechanism:	- One 1/4-20 UNC thread mounting point - Two M4 thread mounting points - Tripod

Highlight Development

Insight 7 is a compact spatial perception camera designed for robots, quadrupeds, and mobile platforms. It integrates stereo depth, RGB, IMU, and onboard Visual-Inertial SLAM / VIO capabilities to provide front-end perception and localization input for robotic navigation systems.

Depth Map

Powered by stereo depth perception, Insight 7 delivers real-time and stable depth maps, helping robots understand spatial structures, detect obstacles, and provide reliable perception data for downstream navigation, obstacle avoidance, and scene understanding modules.

Built-in VSLAM

Insight 7 integrates built-in Visual-Inertial SLAM / VIO. The system is factory-calibrated and time-synchronized, requiring no additional camera calibration or low-level VSLAM algorithm development from the user, while delivering high-frequency, low-latency pose output.

VSLAM

Continuous Operation	>24h
Initialization Time	0.5s
Latency	<10ms
Pose Rate	Up to 100Hz
IMU Rate	400Hz
Camera Support	Mono / Stereo GS
Low-light Tracking	Supported

Insight 7 integrates depth perception, visual-inertial localization, and compact hardware into a single module, providing stable and easy-to-integrate front-end spatial perception for robots, quadrupeds, and mobile platforms.

Insight Series Product Matrix

	Insight 9	Insight 7	Insight 3
Product Positioning	Flagship long-range VSLAM spatial perception camera	Compact VSLAM spatial perception camera	Near-field high-precision spatial perception camera
Main Scenarios	Robots, quadrupeds, drones, AMRs, indoor/outdoor inspection	Robots, quadrupeds, drones, AMRs, space-constrained robotic platforms	Robotic arms, near-field manipulation, desktop robots, embodied AI data acquisition
Key Difference	100mm baseline, 0.3m-8m ideal range, ideal as mid- to long-range front-end perception and localization input	70mm baseline, more compact form factor, suitable for robotic platforms with different requirements for size, weight, or system integration	35mm baseline, 0.1m-1.5m ideal range, designed for close-range perception

To learn more about the Insight Series, please contact us for full product briefs and technical specifications.