

Insight 3



Insight 3 Tech Spec

Features

Use environment:	Indoor
Stereo Image sensor technology:	Global Shutter
Ideal Range:	0.1m to 1.5m
Baseline:	35 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 Estimation, etc

Major Components

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

Depth

Depth Technology:	Learning-based Stereo
Minimum Depth Distance (Min-Z) at Max Resolution:	~6cm
Depth Accuracy:	<1% at 0.5m
Sensor Effective Pixels	1088 × 1280
Image Resolution & Frame Rate:	544 × 640 @20/30/60fps (YUV)
Sensor FOV (D × H × 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 120fps
RGB Frame Resolution:	Up to 1088 × 1280
RGB Sensor Technology:	Global Shutter
RGB Resolution and Frame Rate:	1088 × 1280 at 20 fps
RGB Sensor FOV (D × H × V):	157.2° × 96.8° × 115.6°
RGB Sensor Resolution:	1.39 MP

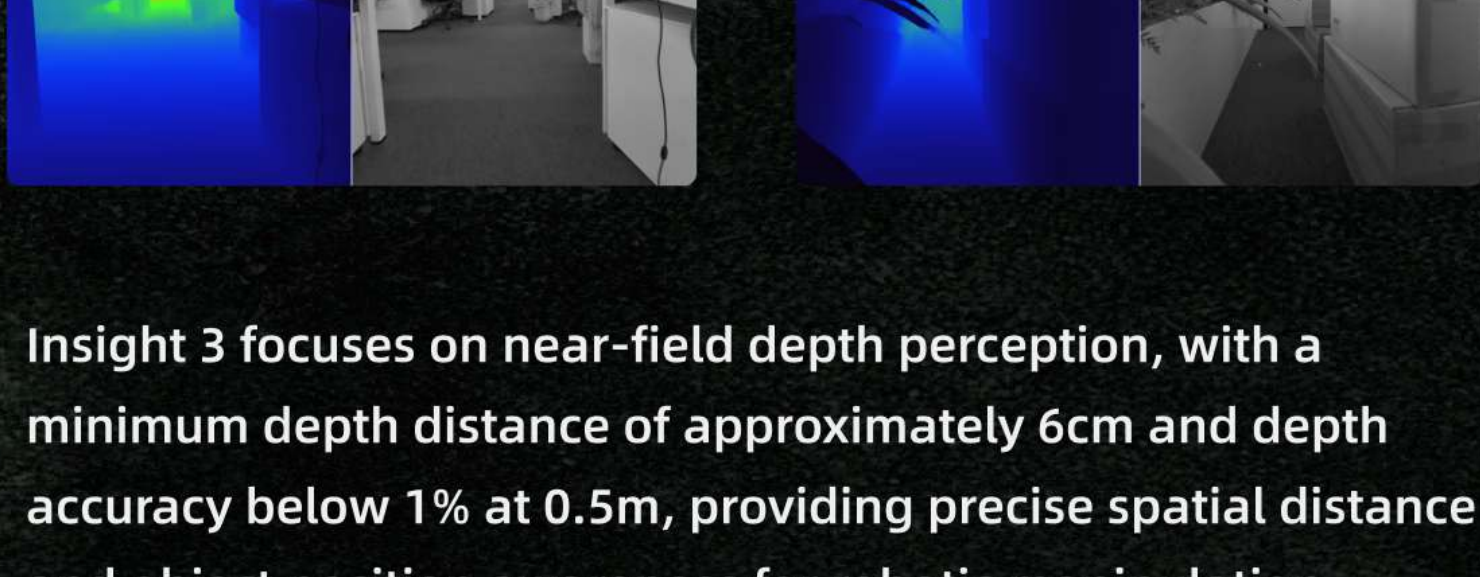
Physical

Form Factor:	Camera Peripheral
Length x Depth x Height:	98.4mm x 30.2mm x 33 mm
Power Input:	Type C 5V/2A
Weight:	103g
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 3 is a compact spatial perception camera designed for robotic arms, near-field manipulation, and embodied AI data acquisition. It provides indoor close-range depth perception, object spatial localization, and visual-inertial pose output.

Depth Map



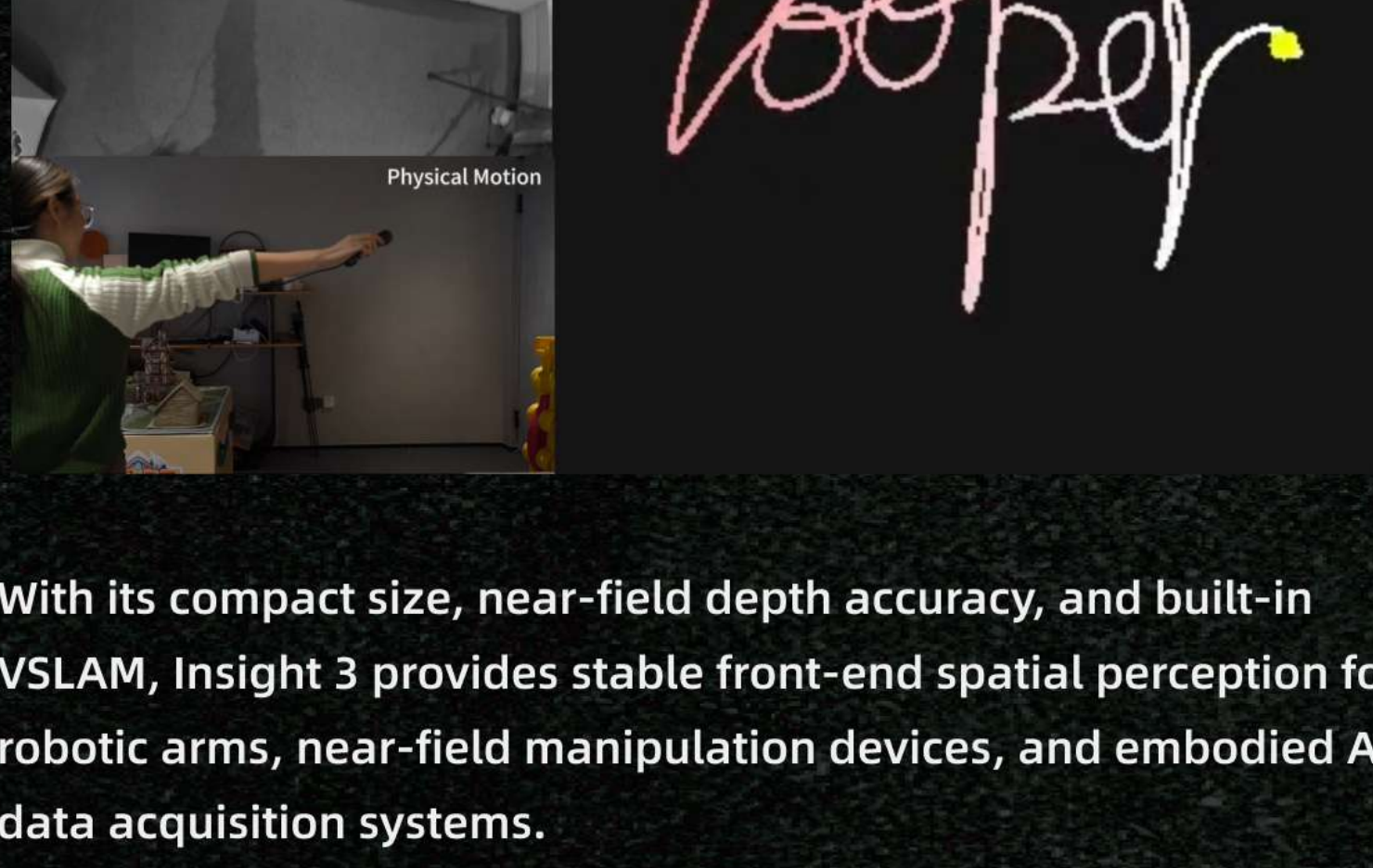
Insight 3 focuses on near-field depth perception, with a minimum depth distance of approximately 6cm and depth accuracy below 1% at 0.5m, providing precise spatial distance and object position awareness for robotic manipulation, object recognition, and data acquisition.

Built-in VSLAM

Insight 3 integrates onboard VIO. The system is factory-calibrated and time-synchronized, requiring no additional camera calibration or low-level VSLAM algorithm development from the user, providing visual-inertial localization in a compact and lightweight form factor.

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



With its compact size, near-field depth accuracy, and built-in VSLAM, Insight 3 provides stable front-end spatial perception for robotic arms, near-field manipulation devices, and embodied AI data acquisition systems.

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.