

INUITIVE

DEPTH, AI AND TRACKING SENSOR MODULES



KEY FEATURES

Built around the NU4000 and NU4100 Vision-on-Chip processors, Inuitive's series of depth, AI and tracking sensor modules, easily integrate into robotic and other edge-AI vision systems, providing them with a human-like visual perception.

This series of sensor modules is specially designed in a metal case to best serve in industrial environmental conditions. It features accurate tracking, VSLAM navigation based on fisheye cameras and an IMU, along with depth sensing and on-chip AI processing. This configuration enables free navigation, localization, path planning, and static and dynamic obstacle avoidance—addressing the main challenges for AMR and AGV systems.



Wide field of view
Depth (88°x58°)



Sensing range
(30 cm - 8 m)



SLAM on-chip



High ambient temperature
up to 50C°



On-chip AI
Processing core



Class: Obstacle
Sub class: pallet
Distance: 205 cm

Class: Person
Sub class: female
Distance: 146 cm

Class: Obstacle
Sub class: safety bar
Distance: 50 cm

KEY PARAMETERS

GENERAL PARAMETERS

Parameter	M4.3WN/ M4.31WN	M4.51-L
Module size – XYZ	125,40,27 mm	127,36,23.5 mm
Operating temperature range (tested on case; with airflow)	0-50°C	

DEPTH IMAGE GENERATION

Parameter	M4.3WN/ M4.31WN	M4.51-L
Sensor	OV9282	ams Mira130
Baseline	100mm	
Full Resolution	1280x800	1080x720
Binning Resolution	640x400	544x360
Hybrid Resolution	N/A	848x480
IR Filter	850nm	850nm
FOV (Calibrated) [HxV]	66°x44°	88°x58°
Min Sensing Range, Full Mode	72cm	30cm
Max Sensing Range	6m	8m
Depth Accuracy	0.3% at 1m	0.5% at 1m

InuView SDK

Supported operating systems	✓ Linux	✓ Win	✓ Android
Supported platforms	✓ RoS	✓ Ras-Pi	✓ ARM

AI PERFORMANCE

Performance	M4.3WN	M4.31WN, M4.51-L
TOPs	1.8	3.5
Yolo V3	12 fps	40 fps
Yolo V7x	N/A	9 fps
Mobilenet SSD	60 fps	150 fps

RGB

Parameter	M4.3WN, M4.31WN	M4.51-L
Sensor	OV2685	OV9782
Max Resolution (Full; Pixels)	1600x1200	1280x800
FOV	60°x45°	108°x80°

TRACKING

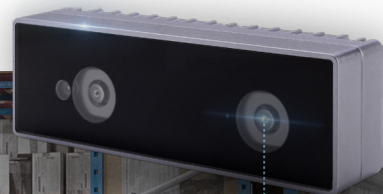
Parameter	M4.3WN, M4.31WN
Sensor	OV7251
Resolution	640x480
FOV	133°x100°

* The M4.51-L does not support tracking

IMU

Parameter	M4.3WN, M4.31WN	M4.51-L
Unit	BMI160	BMI055

**SIMULTANEOUS DEPTH SENSING,
AI PROCESSING
AND VSLAM CAPABILITIES**



HIGH LEVEL BLOCK DIAGRAM

