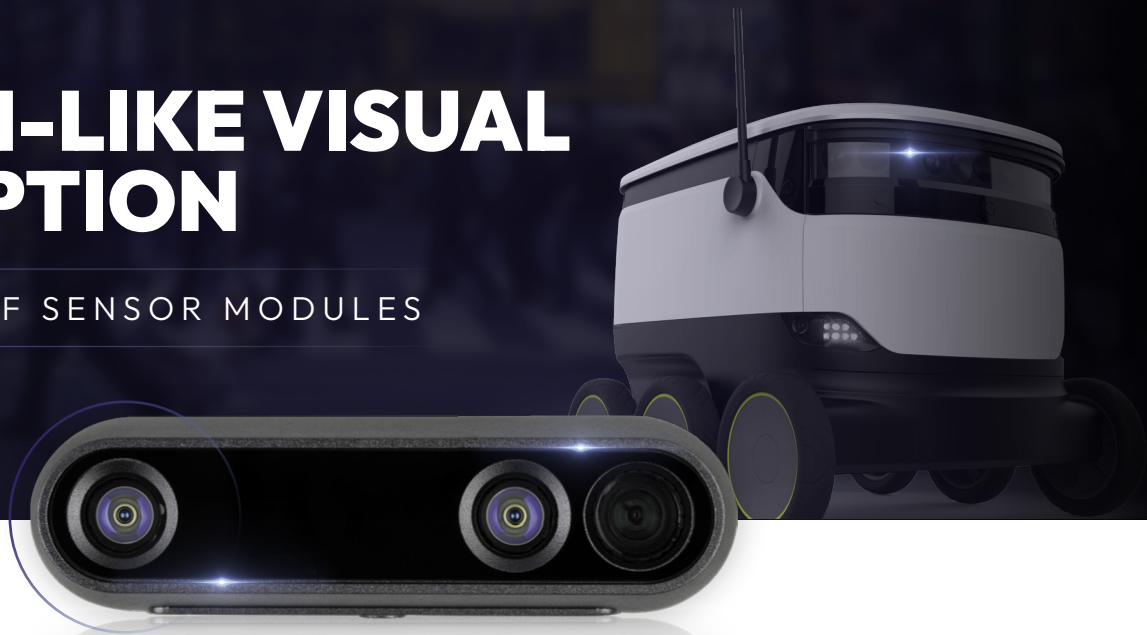# INUITIVE

HUMAN-LIKE VISUAL PERCEPTION

M4.5 SERIES OF SENSOR MODULES

Built around the NU4X00 Robot-on-Chip (RoC) ICs, Inuitive's M4.5 series of sensor modules easily integrate into robots and drone systems, providing them with a human-like visual perception. The cutting-edge technology that powers the M4.5 series combines depth sensing and AI-enabled image processing – it integrates accurate depth input from stereo sensing at wide FOV for obstacle detection as well as edge-AI capabilities for object recognition and semantic segmentation.

The M4.5 series is designed to be an easily adoptable, highly power efficient, and a self-sufficient depth sensor platform. When deployed together with the InuView SDK, the M4.5 series of sensor module significantly shortens time-to-market for commercial robotic systems.

KEY FEATURES

Wide field of view
Depth (88°x58° FoV)

Sensing range
(9 cm -2.5 M)

Registrated
Depth and RGB

High ambient temperature resilience - **up to 50°C**

Small size and easy to adopt
(90,25,25 mm)

SDK for Windows, Linux, and Android OS

ROS support

On-chip AI
processing core

ENDLESS APPLICATIONS

The most advanced sensor module, empowering the most advanced markets

DRONES

ROBOTICS

3D SCANNERS

SMART HOME

KEY PARAMETERS

GENERAL PARAMETERS

Parameter	Value	Units
Module size – XYZ	90,25,25	mm
Operating temperature range (tested on case; with airflow)	0-50	°C

DEPTH IMAGE GENERATION

Parameter	Value	Units
Stereo baseline	48	mm
Max field of view	88x58	°
Sensor's full resolution mode properties		
Depth map resolution	1080x720	Pixels
Max frame rate	30	fps
Depth operation range	0.3-2.0	m
Z resolution at max range	2	%
Sensor's binning resolution mode properties		
Depth map resolution	540x360	Pixels
Max frame rate	60	fps
Depth operation range	0.09-2.5	m
Z resolution at max range	3	%

AI PERFORMANCE

	Performance	Yolo V3	MobileNet SSD
M4.5S (based on NU4000)	1.5 TOPs	12 fps	60 fps
M4.51S (based on NU4100)	3.2 TOPs	27 fps	154 fps

RGB

Parameter	Value	Units
Resolution	1600X1200	Pixels
FOV	90X73	°

InuView SDK

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

SIMULTANEOUS DEPTH SENSING AND AI PROCESSING

M4.5 SENSOR MODULES HIGH LEVEL BLOCK DIAGRAM

RGB
GC2145

IR L
Mira130

IR R
Mira130

IR
projector

DDR

NU4000/4100

IMU
BMI055

USB 3.0

APPLICATION PROCESSOR

INUITIVE

Discover more: inuitive-tech.com