

ARan

TECHNICAL SPECIFICATIONS

wiki.ros.org/Robots/ARan-base

Payload

150 kg

Dimensions

615 x 525 x 295 mm

Weight

47 kg

Max. speed

1 m/s

Autonomy

8 h

Traversable gap

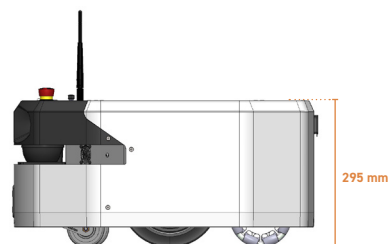
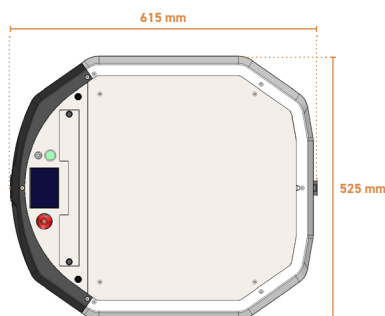
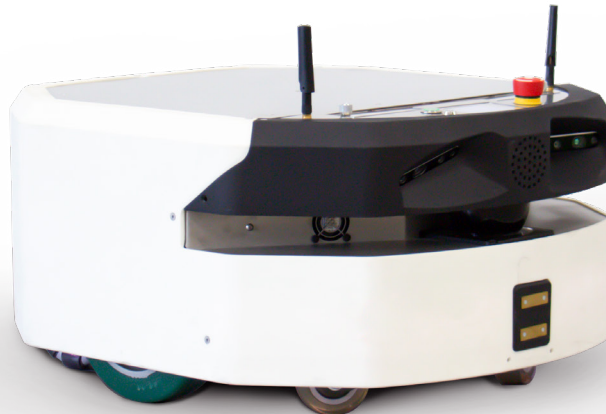
40 mm

ARan

ARan is the mobile base designed for you.

Obtain 3D environment perception and richer data collection with the robot's wide 245° Field of View (FoV) LiDAR and two RGB-D cameras. Unleash high performance computing for AI and Machine Learning research using ARan's NVIDIA Jetson GPU. Push the boundaries of research by applying your own algorithms in research areas like AI & Machine Learning, Navigation, Logistics and Fleet coordination. Enjoy the easy-to-use visual programming and advanced navigation suite to collaborate with people or other robots or devices and deploy the robot right away.

Move payloads of up to 150kg with excellent balance in indoor environments, including with harsh conditions and wet grounds, thanks to the built-in insulation and improved suspension system.



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FEATURES

CPU	i7	Active ventilation	✓
RAM	16 GB	IMU	✓
SSD	500 GB	Speaker	✓
GPU	NVIDIA® Jetson™	On/Off push button	✓
Dock station	✓	Emergency stop	✓
Rotation diameter	650 mm	Power charger	✓
Motorised Wheels	2	Indication lights	✓
Omni Wheels	4	Wireless joystick	✓
Tactile control display	HDMI Screen 4.3"	Battery	2x 36 V 20 Ah each

USER PANEL

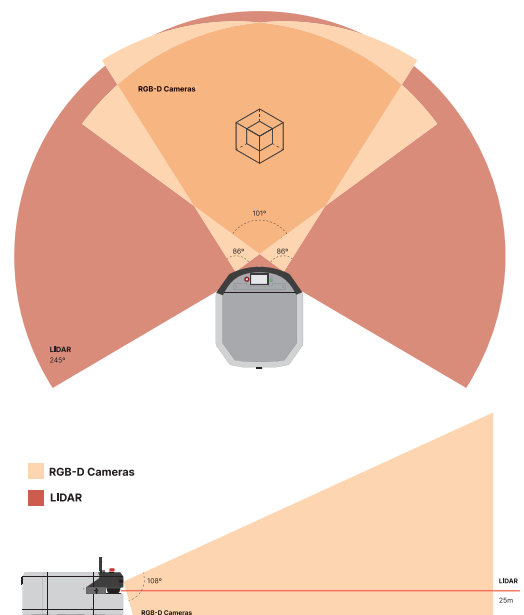
Expansion	10x GPIO
Power	1x 36 V / 10 A battery supply, 12 V / 4 A

CONNECTIVITY

Wi-Fi	Intel ® Wi-Fi 6AX201 (802.11ax Dual Band 2x2)
Bluetooth	5.2
Ethernet	2x Gigabit
USB	4x USB 3.2 Gen1
Service Panel	1x HDMI
CAN	2x channel bus

VISION

RGB-D	2x Intel ® RealSense™ D435 cameras
Depth Technology	Stereoscopic
Camera Sensor FoV	86° x 57°
Combined Cameras FoV	101° x 108°
LiDAR	Laser Scanner up to 25 m range and 245° FoV



SOFTWARE

Operating System	Ubuntu LTS
Middleware	100% ROS1 Noetic-based ROS2 coming soon
Gazebo Dynamic Simulation	✓
Rviz-based Interface	✓



HUMAN-ROBOT INTERACTION

Text-to-speech	Multiple languages and voices
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NAVIGATION

Advanced Navigation	Obstacle avoidance including RGB-D cameras data Navigation to or through a sequence of points of interests Detection of regions of interest Avoidance of virtual obstacles Navigation through highways Multiple map creation and management Rviz- and web-based Map Editor
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WEB INTERFACE

Visual Programming	Graphical interface for programming based on behaviour trees
Logistics Task Planner	Encapsulation of a visual program Taxi tasks: pick goods in a point and deliver to another point Bus tasks: pick goods in a point and deliver to a sequence of points Star tasks: pick goods in a point and deliver to a sequence of point returning to a given point every time Auto-Docking: automatic charging when low on battery or idle
Task Manager	Task queue based on priority and FIFO policy
Plugins	Create and schedule tasks Enqueue tasks Visualise active and pending tasks

