TIAGo Base AI

| Payload	Dimensions	Weight	Max. speed	Autonomy	Traversable gap
80 kg	615 x 525 x 295 mm	47 kg	1 m/s	8 h	40 mm

TIAGo Base AI

TIAGo Base AI 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 TIAGo's Base AI 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.

615 mm

525 mm

295 mm
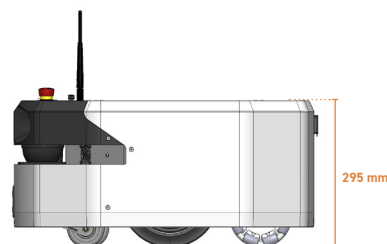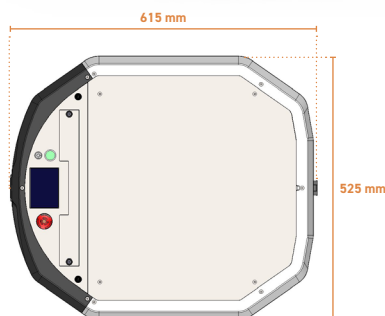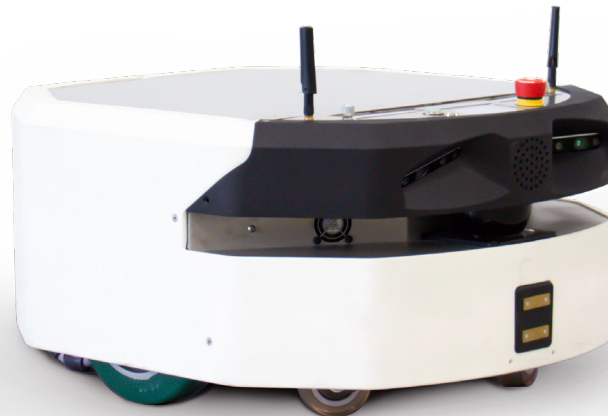
TIAGo Base AI

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	650mm	Power charger	✓
Motorised Wheels	2	Indication lights	✓
Omni Wheels	4	Wireless joystick	✓
Tactile control display	HDMI Screen 4.3"	Battery	2× 36 V 20 Ah each

USER PANEL

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

CONNECTIVITY

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

VISION

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

TIAGo Base AI
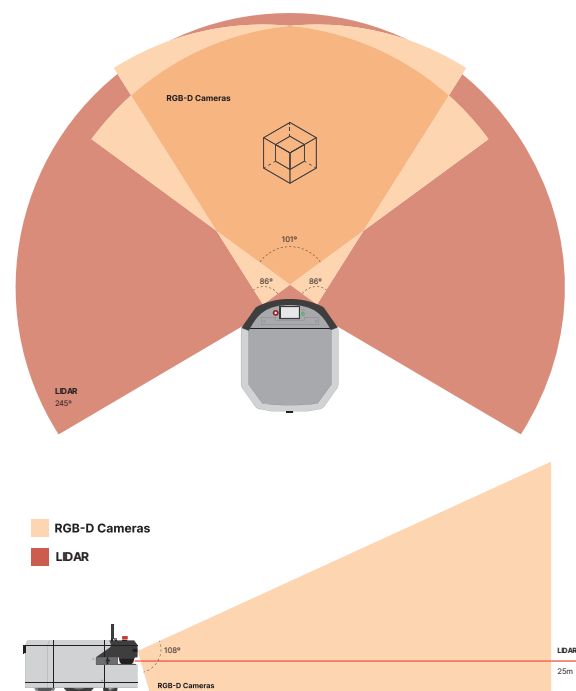
SOFTWARE

Operating System	Ubuntu LTS
Middleware	100% ROS1 Noetic-based
	ROS2 coming soon
Gazebo dynamic simulation	✓
Rviz and Web-based interface	✓

HUMAN-ROBOT INTERACTION

Text-to-speech	Multiple languages and voices

NAVIGATION

Advanced Navigation	Multiple languages and voices
	Obstacle avoidance including RGB-D cameras data
	Navigation to points of interest or through a sequence of points of interest
	Detection of regions of interest (topological localization)
	Avoidance of virtual obstacles or forbidden regions
	Navigation through preferred paths (highways)
	Multiple Map creation and management
	Rviz-based and Web-based Map Editor

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