



OP500

Outdoor Autonomous Load Carrying Robot





Introduction

Smarter Material Movement Starts Here

OP500 is Alphadroid's autonomous outdoor mobile robot designed to automate material transportation across industrial and commercial environments.

With a payload capacity of up to 500 kg, AI-powered navigation, and intelligent obstacle avoidance, it delivers safe, reliable, and efficient logistics around the clock.



Key Features



01

Heavy-Duty Payload

Up to 500 kg carrying capacity.

02

Smart Navigation

Moves independently with AI-powered route planning.

03

Intelligent Safety

Detects and avoids obstacles in real time.

04

Outdoor Ready

Designed to perform in diverse weather conditions.

05

Accurate Positioning

High-precision localization using LiDAR + IMU.

06

Built for Industry

Engineered for rugged commercial and industrial environments.

Technical Specifications

Navigation

- 3D LiDAR+ IMU
- AI Obstacle Detection
- Autonomous Mode

Performance

- 500 kg Payload
- 15 km/h Max Speed
- 1.2 m Turning Radius

Power

- 48V / 100Ah Battery
- 4 Hours Runtime
- 3–4 Hours Charging

Safety

- IP44 Protection
- Emergency Stop
- -10°C to 52°C Operating Temperature



**BUILT TO CARRY.
DESIGNED TO DELIVER.**



PAYLOAD CAPACITY
500 KG



HEAVY DUTY
BUILT



ALL TERRAIN
MOBILITY



ADVANCED
SAFETY



24/7
OPERATION

PAYLOAD CAPACITY

500 KG

MAX SPEED

1.5 m/s

BATTERY RUNTIME

8-10 HRS

GROUND CLEARANCE

70 mm

CLIMBING ABILITY

5°

NAVIGATION

LIDAR + VISION + RTK GPS

SAFETY

360° OBSTACLE AVOIDANCE



Details	Specification
Overall Dimensions	1200x830x500
Weight	200 kg
Maximum Load Capacity	500 kg
Ground Clearance	175 mm
Max Climb Capacity	10 - 15° Incline/Decline
Drive Form	Omni Directional Wheel & Indepndent Steering
Wheel Diameter	250mm
Wheel	Rubber Inflatable Tyre
Max Speed	15 kmph
Suspension	Independent Suspension
Braking Method	Electromagnetic Motor Brake
Parking Method	Motor Parking Brake + Electromagnetic Fail-Safe Holding Brake
Battery	48V/100AH
RunTime	4 Hour With Continue Weight
Charging Time	3-4 Hour
Charging Adapter	48V/35A
Charging Method	Manual + Dock
Emergency Stop	Bumper Sensor & Emergency Push Button
IP Rating	IP44
Communication Interface	CAN2.0B
Localization	3D Lidar + IMU
Obstacle Detection	2D Lidar, 3D Lidar, Depth Camera
Operation Mode	AutoNomous
Environmental Resistance	Dust, Rain, Shock, Wind, Heat, Cold
Operating Temperature	-10~52°C



500 kg
Payload



Autonomous
Navigation



15 kmph
Max Speed



4 Hrs
Runtime



IP44
Protection



OP500

Outdoor Autonomous Load Carrying Robot

BUILT FOR INDUSTRY



Manufacturing



Warehousing



Industrial Parks



Airports



Construction



Ports



Hospitals



Campus Logistics



Smart Logistics

Hardware Components

FRONT
DIAGONAL
VIEW



FRONT
VIEW



SIDE
VIEW



TURNING RADIUS

Minimum Turning
Radius: 1.2 m



GRADEABILITY

Climb Up To 15°



Thank You!