



ALPHAROBOTICS SOLUTIONS
SMART TECH. HUMAN TOUCH

AlphaRobotics SP50

AI-Powered Spot-Cleaning Robot

Leading the New Era of Cleaning Robotics

SWEEP

VACUUM



Soft Floors

Hard Floors

Carpets

Worry-free robotic daytime sanitary maintenance for dynamic public facilities.



Operational Overview & Applications

The AlphaRobotics SP50 is an AI-enabled autonomous floor-cleaning robot designed for targeted spot-cleaning maintenance. It detects more than 30 types of waste and debris with 99% accuracy, then performs intelligent auto spot-cleaning — lifting cleaning efficiency by as much as a factor of about 8.



167,379 ft²/hr

Spot-cleaning
productivity (max.
theoretical)

21,388 ft²/hr

Regular cleaning
productivity (max.
theoretical)

13 hours

Max. spot-cleaning
runtime

Applicable Flooring

Soft Floors

Hard Floors

Carpets

Core Operating Value

Auto spot-cleaning

Reliably performs daytime sanitary maintenance with reduced manual intervention.

Adaptive cleaning method

Adjusts cleaning area and method according to the amount, size, and type of debris detected.

Close-edge cleaning

Removes debris nearest to the wall with <2 in / 5 cm distance-from-wall capability.



Key Technology Features

AI perception, adaptive cleaning and result verification.

Garbage Detection & Classification

More than 30 different types of waste and debris are automatically detected and classified, with 99% accuracy.

Self-Adaptive Cleaning Technology

Automatically adjusts its cleaning area and methods according to the amount, size, and type of waste and debris detected.

CRC — Cleaning Result Checkup

Repeatedly cleans the same area when needed to ensure the job is completed satisfactorily.

Superior Robot Sensing Capability

Automatically updates maps and resumes from a lost location in changing environments and long corridors.

Unbeatable Efficiency

Works on soft and hard floors and carpets with high productivity in regular and spot-cleaning modes.

Professional Service Workflow

Designed for worry-free robotic daytime sanitary maintenance across dynamic public facilities.





Safety Systems & Maintenance

Safety-first design with the easiest RMA process in the industry.

Highest Level of Safety

NVIDIA AI edge computing and 32-beam 3D LiDAR — technology used in autonomous driving — support the highest operating safety standards.

<2 in / 5 cm Wall Distance

Debris closest to the wall can be removed during robotic cleaning without manual follow-up.

Modular Service Design

Clear error code storage, easy parts replacement, and remote support streamline service workflows.

Map Recovery

No manual map changes are required when environments change; the robot resumes from a lost location.





Complete Specification Matrix

Manufacturer specifications preserved in dual units — imperial and metric.

PARAMETER	TECHNICAL VALUE
DIMENSIONS	
Length	33.4 in 855 mm
Width	23 in 600 mm
Height	41 in 1,050 mm
GVW	291 lb 132 kg
Sweeping Width (w/ side brushes)	28 in 720 mm
Roller Brush Width	18 in 460 mm
CLEANING	
Max. Theoretical Productivity (spot cleaning)	167,379 ft ² /hr 15,550 m ² /hr
Max. Theoretical Productivity (regular cleaning)	21,388 ft ² /hr 1,987 m ² /hr
Dust Filter Bag Capacity	4.8 gal 18 L
Trash Tray Capacity	1.3 gal 5 L
Max. Suction of Vacuum Motor	25 kPa

PARAMETER	TECHNICAL VALUE
MOVEMENT	
Max. Speed	2.68 mph 1.2 m/s
Min. Distance from Wall	<2 in 5 cm
Min. Passable Width	31 in 800 mm
Min. Turn-around Width	47 in 1,200 mm
Gradeability	8%
POWER	
Battery Type	Lithium Iron Phosphate
Battery Capacity	120 Ah
Rated Voltage	24 VDC
Charging Time	4 hours
Max. Runtime (spot- cleaning)	13 hours
Max. Runtime (regular cleaning)	8 hours
SENSING	
Sensing System	32-beam 3D LiDAR, 3D Depth Camera, Bumper Sensor, IMU Sensor
SOUND PRESSURE LEVEL	
Sound Pressure Level	At least as 58 dB(A)

Note: Technical values are reproduced from the manufacturer source brochure. Product performance may vary by site conditions, cleaning mode, and maintenance status.



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The Reliable, Hassle-free Robots You Can Trust



Leading the New Era of Cleaning Robotics

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