



Phantas

All in One One for All



reddot winner 2022



IF PRODUCT DESIGN
WINNER 2022
SILVER

Phantas

About Phantas

Phantas is an AI-powered floor cleaning robot designed for small- and medium-sized commercial facilities, particularly office buildings. It integrates 4 cleaning modes and all kinds of Gausium's latest technology breakthroughs to deliver a highly productive and cost-effective all-in-one cleaning solution.

Compactly designed, Phantas has strong passibility and enables cleaning in tight spaces such as under-table areas. This, combined with its powerful edge cleaning capacity, guarantees maximum floor cleaning coverage.

Driven by deep learning, Phantas is able to identify floor types and automatically adjust operation modes. It can also detect filth and perform autonomous spot cleaning, and recognizes obstacle types to make smart avoidance decisions.

Phantas is developed to free up manpower and reduce human intervention to the greatest extent. The workstation and IoT connectivity provide Phantas with highest level of autonomy. In the meantime, with the user-friendly Gausium App, operators can control the floor cleaning via any smart mobile devices from anywhere, anytime.

The superb versatility and ease of use make Phantas a product accessible to all – it is created to serve everyone, everywhere.



COMPACT BUT COMPREHENSIVE

All-in-one Floor Cleaning Solution

Phantas boldly integrates 4 floor cleaning modes, which grants it unrivaled versatility and usability for cleaning spaces with different types of flooring, both hard and soft.



Every Inch Matters

Strong Passibility

Compactly designed, Phantas can effortlessly pass through and clean narrow aisles and under-table areas.

Edge Cleaning

Zero Distance

Backed by the side brush and high-precision sensors, Phantas is able to clean along the edges 0cm-close.

The easy access to tight areas and powerful edge cleaning capacity guarantee maximum cleaning coverage

Every inch of your floor spaces, Phantas cares!

DISTANCE



AI-POWERED LEARNING WHILE CLEANING

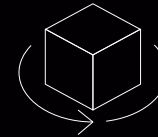
Gausium SLAM

Industry-leading Navigation Algorithms



Hassle-free Map Construction

Upon initial deployment, Phantas will automatically navigate the landscape and create a semantic map without any external tools for assistance.



Real-time Localization & 3D Environmental Perception

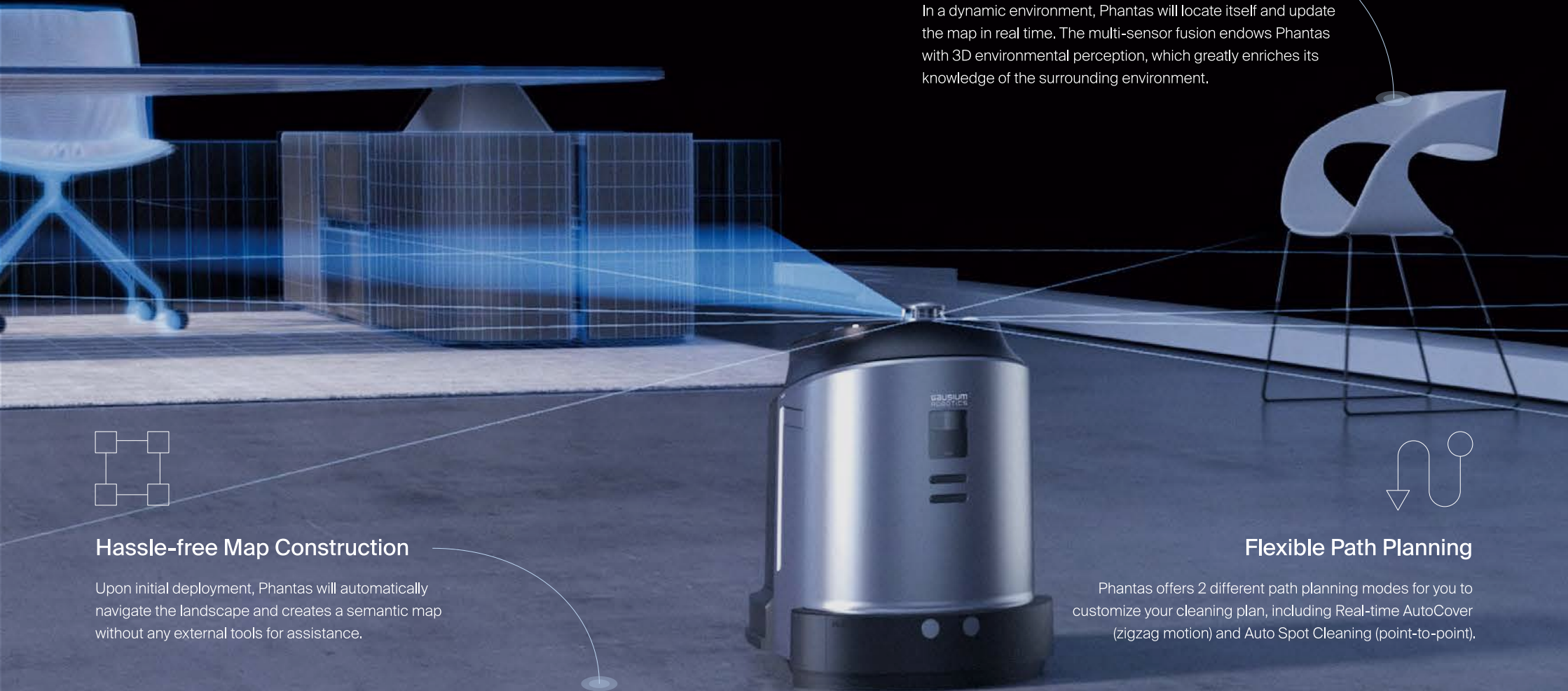
In a dynamic environment, Phantas will locate itself and update the map in real time. The multi-sensor fusion endows Phantas with 3D environmental perception, which greatly enriches its knowledge of the surrounding environment.

3D



Flexible Path Planning

Phantas offers 2 different path planning modes for you to customize your cleaning plan, including Real-time AutoCover (zigzag motion) and Auto Spot Cleaning (point-to-point).

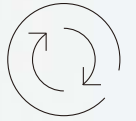
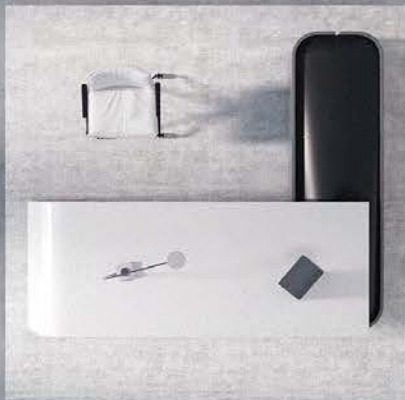


Deep Learning

Smart Obstacle Avoidance

Phantas detects static and dynamic obstacles from all directions and perform autonomous smart avoidance in real time, generating collision-free paths within its workspaces.

Driven by deep learning based on a million-scale benchmark dataset, Phantas has robust obstacle recognition capability and makes behavior decisions according to the types and features of obstacles, e.g., It would bypass electric wires rather than passing them over directly.



Auto Spot Cleaning 4X Efficiency Improvement

Phantas incorporates Gausium's groundbreaking Auto Spot Cleaning into its path planning. Under this mode, the robot scans the cleanliness of the nearby floor and autonomously performs spot cleaning where waste or stains are detected, removing the stains right off before they're spread all over the floor.

By cleaning only where it is needed, Phantas brings up to 4X efficiency improvement and significantly reduces energy consumption.



Floor Type Recognition

Phantas identifies flooring types and automatically adjusts brush height to protect flooring materials and ensures the best cleaning effect.

It is applicable to a variety of hard or soft flooring:

Low pile carpeting (Nylon, Polyester, Olefin, etc.)

Natural Stone (Marble, Granite, Belgian Bluestone, etc.)

Artificial Marble/Granite/Ceramic Tiles

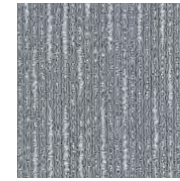
Hardwood

Concrete

PVC

Epoxy

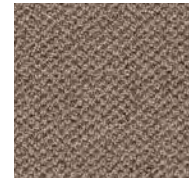
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Nylon



Polyester



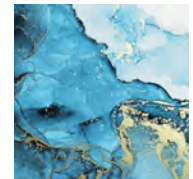
Olefin



Marble



Granite



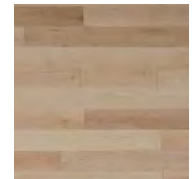
Belgian Bluestone



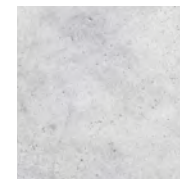
Artificial Marble



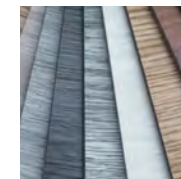
Ceramic



Hardwood



Concrete



PVC



Epoxy



TRUE AUTONOMY FREEING YOUR HANDS

Workstation

One Stop Self-Service

Phantas is paired with a workstation to minimize human intervention during operation. It is able to perform all-round self-services by autonomously docking with the workstation:



Auto power
charging



Auto water refill
and discharge



Auto water
tank cleaning



IoT Integration

Freedom to Go Anywhere

Phantas can be interconnected with the IoT system of a building through API or NFC. It can autonomously take elevators to perform cleaning across floors and pass through fare gates without human assistance. This significantly extends the boundary of "Autonomy" for cleaning robots.

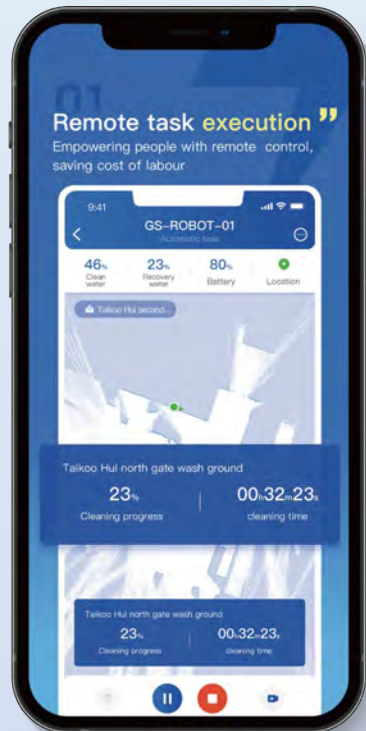


INTELLIGENT MANAGEMENT WITHIN YOUR PALM

Gausium Mobile

All on Your Smartphone

The Gausium App allows you to control floor cleaning from anywhere, anytime. It offers plentiful options like map editing, remote control, task scheduling, data reporting, etc.



Map Editing

Edit your floor map by setting virtual walls or No-go zones to avoid cleaning restricted areas.



Remote Control

Remotely activate, pause or terminate a cleaning task on your smartphone.



Task Scheduling

Set up a task on the App and the robot will automatically start cleaning at the scheduled time.



Data Reporting

Receive detailed reports of operational metrics and charts of historical statistics via the App to gain data insights and enable data-driven management decisions.



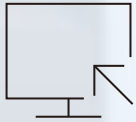
Gausium Cloud Platform

Cloud-based Maintenance



OTA Updates

Phantas connects to the Gausium Cloud Platform to receive over-the-air software updates, offering free and easy access to new features and ongoing innovations.



Remote Maintenance Center

The Gausium Remote Maintenance Center provides 24/7 cloud-based diagnostics and troubleshooting for your machine.



EXTENSIVE APPLICATIONS



Workspaces



Retail stores



Apartments



Hospitals

Redefining Service by Technology


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