GAUSIUM

Phantas

All in One One for All



ISSA SHOW 2022 INNOVATION AWARDS
INNOVATION OF THE YEAR

reddot winner 2022

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 passability 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 mode, it can also detect contaminations 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 docking station 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.





* Available via OTA upgrade in 2023

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.

4

in 1 Solution

- Vacuuming
- Scrubbing
- Sweeping
- Dust Mopping

Every Inch Matters

DISTANCE

Strong Passability

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!



AI-POWERED LEARNING WHILE CLEANING

Gausium SLAM

Industry-leading Navigation Algorithms

3D

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.



Hassle-free Map Construction

Phantas offers easy and hassle-free mapping and map editing via the mobile app, no need for professionals or external tools for assistance.

Flexible Path Planning

Phantas offers different path planning modes for you to customize your cleaning plan, including zigzag motion, square spiral motion.

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 the waste is detected. When encountering wastes that are too large for it to clean, the robot will send messages to operators via the App.

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



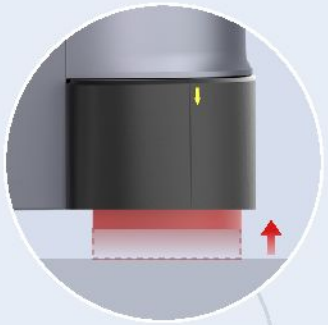
* vs.Traditional human cleaning efficiency
* Available via OTA upgrade in 2023

Floor Type Recognition

Auto Cleaning Mode Switch*

Phantas identifies flooring types and automatically adjusts brush height to protect flooring materials and ensures the best cleaning effect. It would automatically turn on the vacuuming mode when driving on a carpet.

Phantas will automatically lift its roller brush and squeegee on carpets.





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

.....



Nylon



Polyester



Olefin



Marble



Granite



Belgian Bluestone



Artificial Marble



Ceramic



Hardwood



Concrete



PVC



Epoxy

* Available via OTA upgrade in 2023

TRUE AUTONOMY FREEING YOUR HANDS

Docking Station

One Stop Self-Service

Phantas is paired with a charging dock to minimize human intervention during operation. It is able to perform self-services by autonomously connecting with the docking station.

An optional water tank trolley is available to save your effort for water refilling.

Charging Dock

- Auto power charging



IoT Integration

Freedom to Go Anywhere

Phantas can be interconnected with the IoT system of a building through API and other IoT communication protocals. It can be integrated with smart elevator systems* for autonomous elevator calling and taking. This significantly extends the boundary of "Autonomy" for cleaning robots.



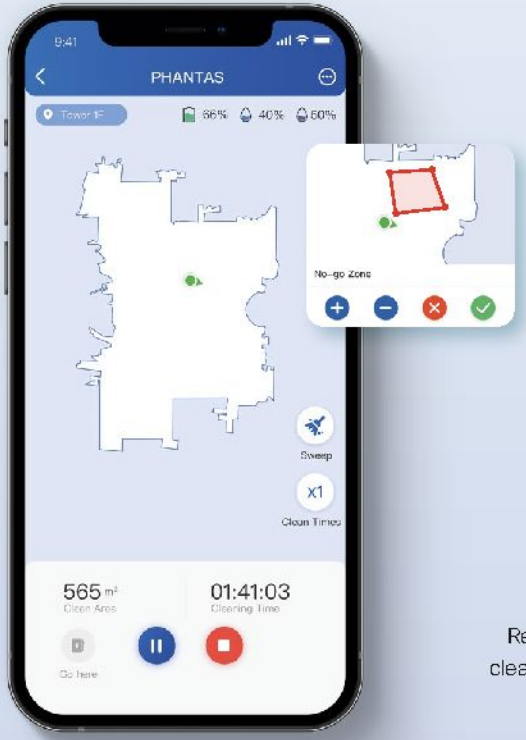
* The practicality of the solution is subject to the elevator supplier.

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

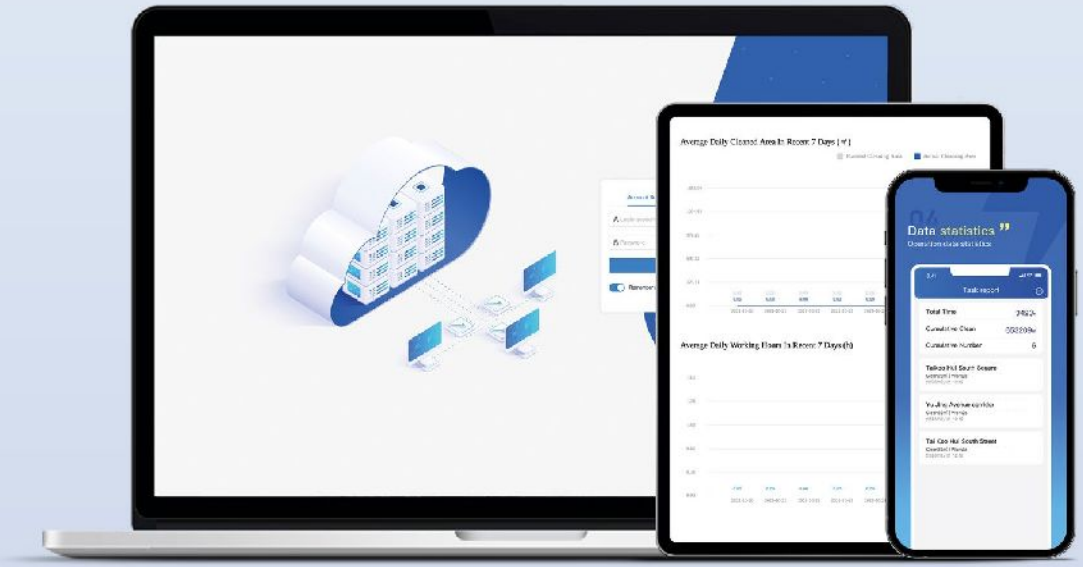
Remotely activate, pause or terminate a cleaning task, or control the movement of the robot on your smartphone.

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

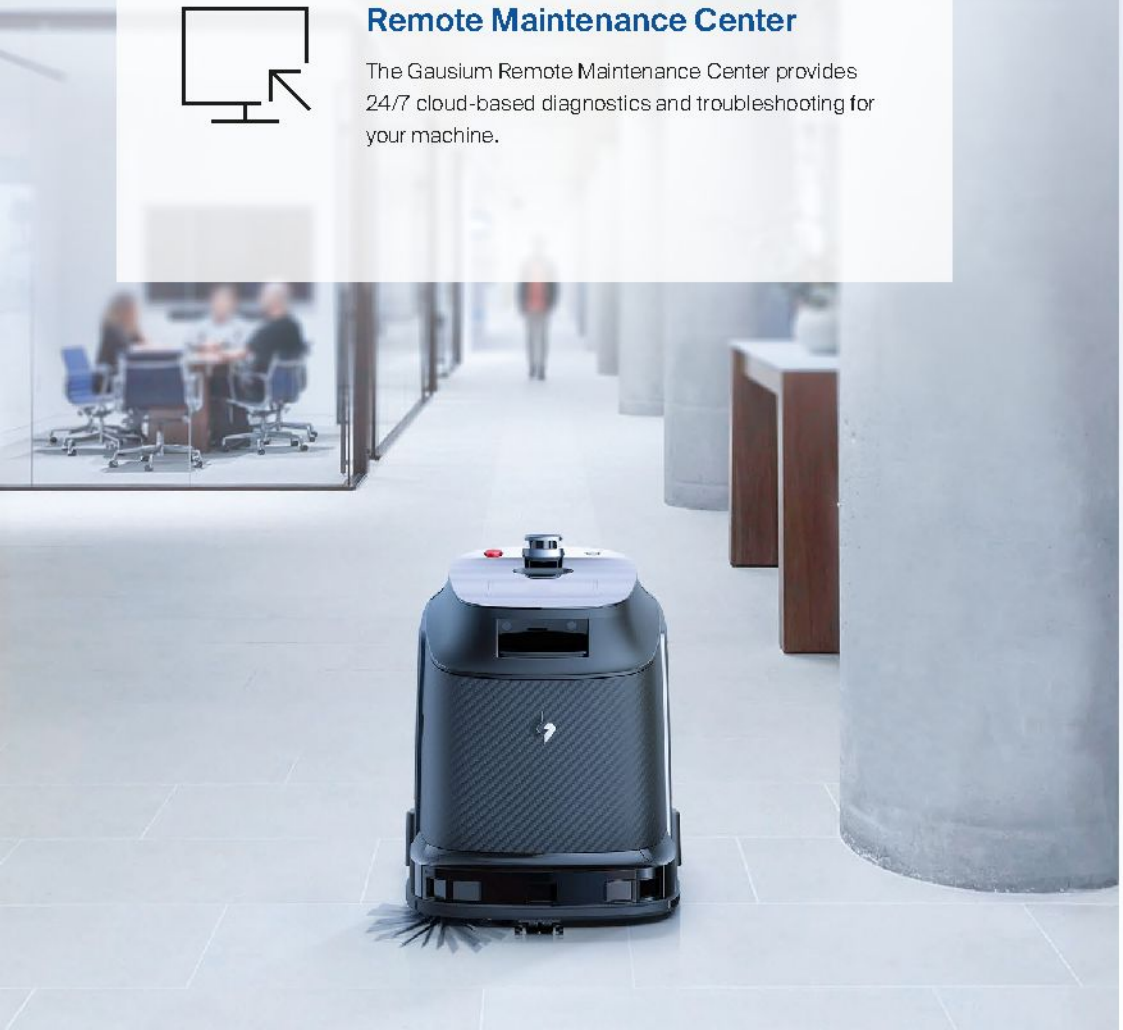
Cloud-based Maintenance

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.

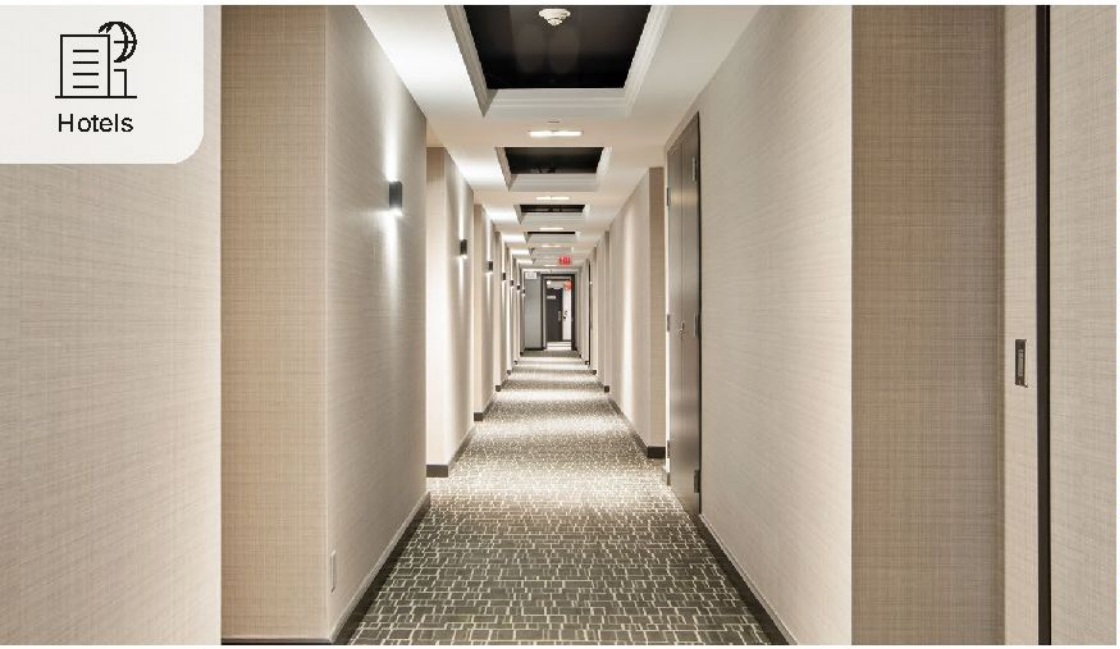


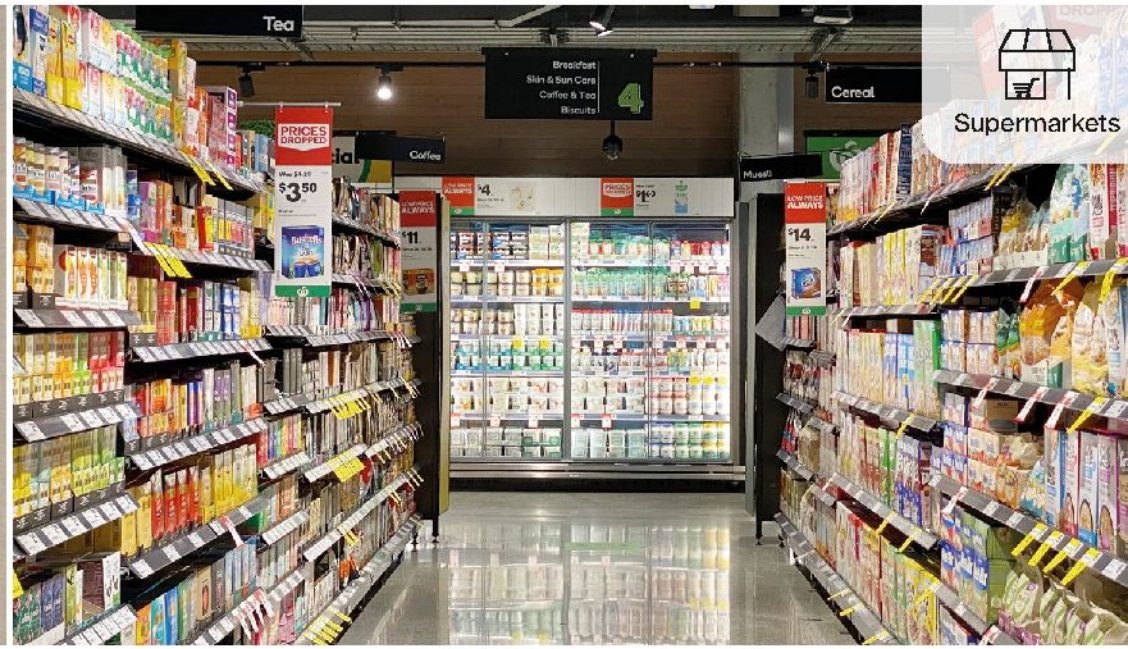
SPECIFICATIONS

DIMENSION	
Length	540 mm (21.3 in)
Width	440 mm (17.3 in)
Height	617 mm (24.3 in)
Net Weight	48 kg (106 lb)
Vacuuming/Sweeping Width	410 mm (16.2 in)
Scrubbing Width	330 mm (13 in)
CLEANING	
Cleaning Efficiency	400-700 m^2/h (4,305-7,534 ft^2/h)
Water Tank Capacity	> 1000 m^2 (10,763 ft^2) coverage
Dust Bag	Holds 3-7 days' dust
Trash Can	0.7 L (0.2 gal)
MOVEMENT	
Gradeability	8°
Max.Cleaning Speed	0.8 m/s (1.8 mph)
Min.Passable Width	600 mm(550 mm*) / 23.6 in(21.7 in*)
Min.Passable Height	650 mm (25.6 in)
Min.Turn-around Width	700 mm(650 mm*) / 27.6 in(25.6 in*)
Min.Height of Detected Obstacles	20 mm (0.8 in)
Edge Cleaning Capability	0 mm
ELECTRICAL	
Runtime	Scrubbing 4.5 h, Vacuuming 4.5 h Sweeping 18 h, Dust Mopping 10 h
Charging Time	2 h
Sound	< 65 dB
SENSING	
Standard	LiDARs, 3D Depth Cameras, RGB Camera, Anti-drop Sensor, Anti-collision sensor
ACCESSORIES	
	Charging Dock
	Water Tank Trolley

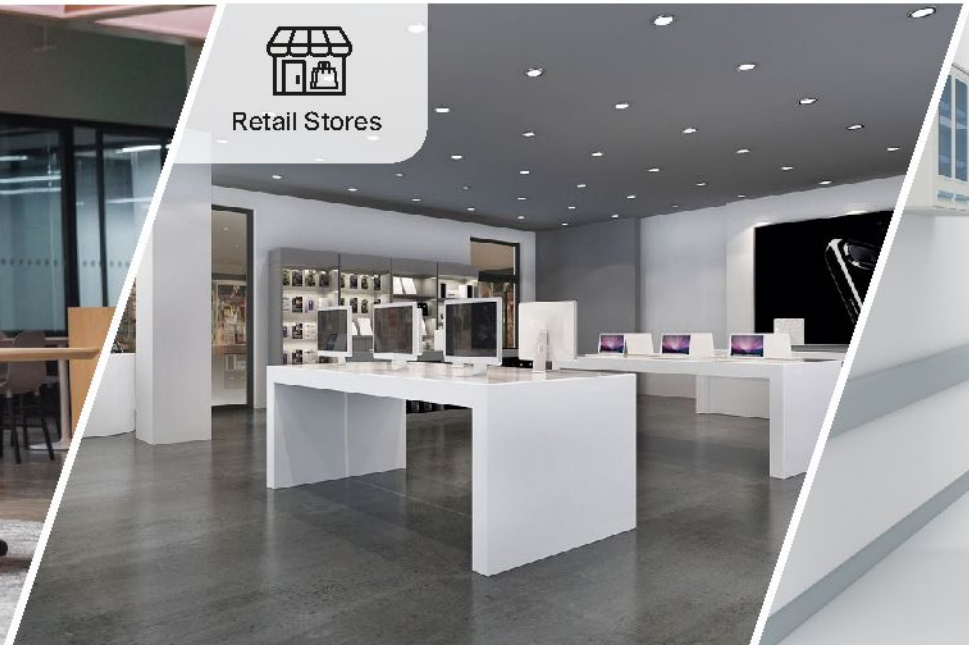
Note: Derived from Gausium's test results; actual performance data may vary in specific applications. * Available via OTA upgrade in 2023

EXTENSIVE APPLICATIONS











Redefining Service by Technology

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