SoftBank
Robotics

Whiz

REINVENTING THE COMMERCIAL CLEANING INDUSTRY WITH ROBOTIC SOLUTIONS

香港科技零售商會
ADVERSITY
AWARD 2020
逆境表揚

Hong Kong Retail Technology
Innovation Award 2020
**Anti-epidemic Technology
Product Award 2020**

Korea Consumer Awards
대상

2020 Korea Cinsumer Award
Best Global Brand

Whiz is a product of SoftBank Robotics. ©SoftBank Robotics

Maximum Cleaning Efficiency with Cutting-Edge AI

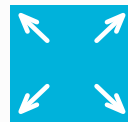Changing Professional Cleaning with Breakthrough AI Navigation Technology

Easy To Set-Up, Easy To Use

Teach cleaning route manually to save a route

Smart AI Cleaning

On-board BrainOS*[2] determines the best route given the surrounding environment

Outstanding Cleaning Efficiency

Continuous operation up to three hours Coverage up to $1,500m^2$

Simple Controls

Check status via smartphone or PC

*[2] Uses the BrainOS autonomous-driving AI. SoftBank is the exclusive license distributor for BrainOS in Japan.

>300
Whiz
DEPLOYED
across APAC[1]

>500
SITES
cleaned by
Whiz

18
CITIES[1]
embraced
Whiz

[1] Deployed across China, Hong Kong and Singapore.

EASY TO USE
User friendly, Whiz works right out of the box, so teams can start benefiting right away.

COVER MORE GROUND
Whiz learns all the routes your team needs — and cleans up to 1,500m^2 per charge.

REAL-TIME ALERTS
A notification pager alerts your team when Whiz is done — or if it needs a hand.

SAFETY AND PERFORMANCE
Whiz autonomously avoids people, glass walls, cliffs, and other hazards.

AUTONOMOUS AND MANUAL MODES
Let Whiz do the work, or take control when you need to.

CONFIRMED CLEAN
Whiz delivers robust cleaning performance data that can easily be shared with critical stakeholders.

SoftBank

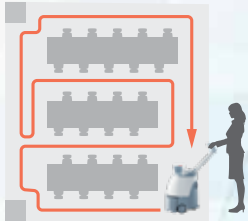## A · Simple to Use. Simple Setup.

Teach a cleaning route and press the start button. It's that simple.

Create a route (Teaching)

❶ Set the Home Location Code as the starting point.
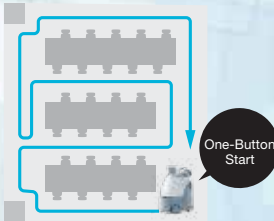❷ Manually push Whiz through the cleaning route to teach.

Use the Home Location Code to define start and end point.

Moves Autonomously Along the Cleaning Path

After initial use, simply press the start button for autonomous cleaning. Capable of memorizing several routes.

One-Button Start

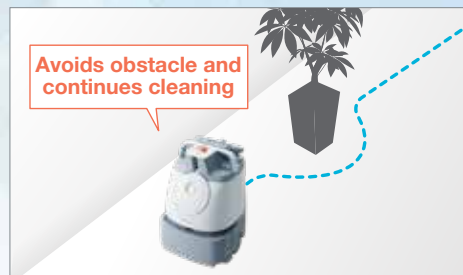## B · Whiz detects and avoids obstacles, responding to environmental changes.

Multiple sensors detect obstacles, stairs, and human movement. Whiz avoids objects or stops until the route clears.

Access and clean narrow spaces, even along hallway wall edges.

Detects Obstacle

Avoids obstacle and continues cleaning

Detects Movement

Pauses in place until route clears

WHAT IS THE A3 LUMITESTER SMART TEST KIT ?

• The A3 Test is a common sanitary cleanliness test and is used to test the cleanliness of a surface during food preparation.

• It is used to test the presence of;
  (a) Adenosine Triphosphate (ATP)
  (b) Adenosine Diphosphate (ADP)
  (c) Adenosine Monophosphate (AMP)

  [ATP is known to be hydrolyzed to adenosine diphosphate (ADP) and adenosine heat treatment or in acidic/alkaline conditions.]

• ATP swabs has been recommended as a cleanliness test by the United States Center for Disease Control and Prevention as one of the objective methods to evaluate environmental hygiene.

• SoftBank Robotics is using A3 Lumitester Smart Test Kit to test for surface A3 level.
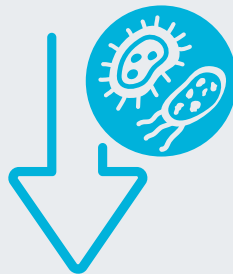
RESEARCH FINDINGS

SoftBank Robotics conducted a research in Tokyo, Japan to evaluate the effectiveness of Whiz to clean office buildings. The study was conducted across **116 sites.**
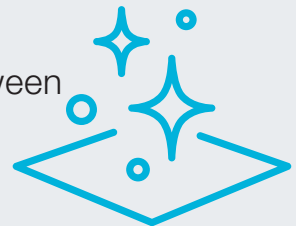
Findings

Whiz helped to **decrease airborne fungi** in indoor environments by **80%.**

There is a **correlation** between **floor cleanliness** and **air cleanliness.**

Hence, keeping the floor clean will result **IN BETTER AIR QUALITY.**

Manual cleaning

the concentration of **airborne fungi**[*3] (n / cubic meter) was **20,000 to 30,000.**

Using Whiz

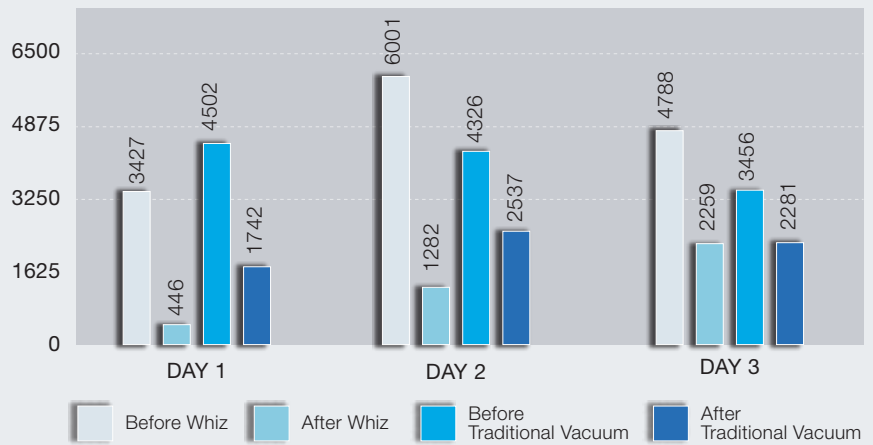the **residue** and **microorganisms** remain constant at **2,000RLU** to **4,000RLU**

—

Airborne fungi remained at a range of **4,000 to 6,000**
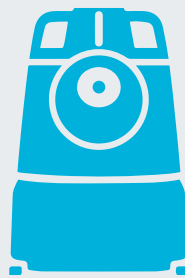
[*3] Measured using "Microbe Sensor BM-300C"

We spend countless hours in the office, **often staying at least 8 hours a day** or more. Hence, the cleanliness of the office is an important **occupational health and safety issue** to manage for both employers and employees. See how **Whiz is able to help reduce the A3 level** for a brand new, non-tenanted office over three days.

Chart Data

	DAY 1	DAY 2	DAY 3
Before Whiz	3427	6001	4788
After Whiz	446	1282	2259
Before Traditional Vacuum	4502	4326	3456
After Traditional Vacuum	1742	2537	2281

Y-axis values: 0, 1625, 3250, 4875, 6500

Legend: Before Whiz | After Whiz | Before Traditional Vacuum | After Traditional Vacuum

Comparison between Whiz and a traditional vacuum cleaner:

VS

An average of
71.95%
reduction in residue and microorganisms

An average of
46.6%
reduction in residue and microorganisms

Using Whiz resulted in a
25.35%
more reduction in residue and microorganisms.

Hoteliers all over the world face the same issue – **a short cleaning window** to turnaround rooms in-between guests, coupled with the need **to ensure a minimum standard of cleanliness** across the corridors and common areas. A Singapore 4-star hotel was looking for suitable robotics solutions **to augment its workforce and reduce operating cost.**
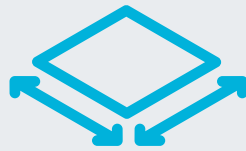
Total Gross Floor Area:
2,700m^2

No. of Rooms:
>400
rooms

By deploying Whiz, the Hotel **was able to save**

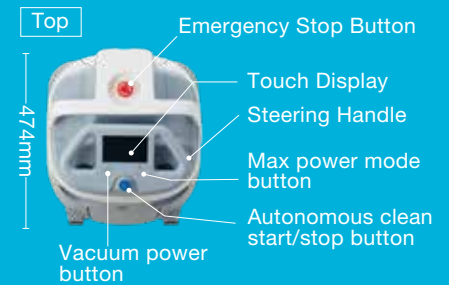**486**
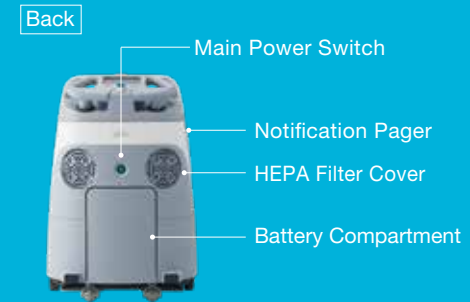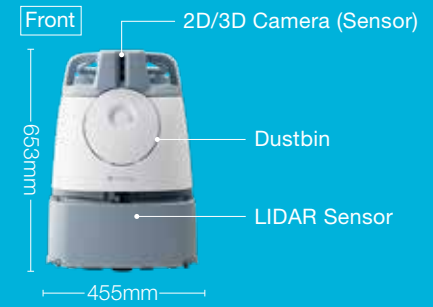minutes per day

equivalent to
S$2,525.20[*4]
per month

[*4] *Based on S$10.40/hr excluding the cost of Whiz rental.

Specifications
*Specifications and/or design details may change without prior notice.

Main Unit Dimensions (Handle Recessed)	455mm ✕ 474mm ✕ 653mm (Width, Length, Height)
Weight (Excluding Battery)	30kg
Coverage *5	500m2/hour
Continuous Operation *5	Approximately 3 hours (Normal mode) / 1.5 hours (Max Power Mode)
Speed	1.8km/h max.
Cleaning Capacity	4.0L (Paper Bag)
Battery	5kg lithium ion; 23.7 Ah, 25.2V
Charging Time	4 hours
Battery Charger Capacity	100-240V AC
Rated Output	29.4V / 8A ✕ 2
Safety Features	Obstacle detection, fall prevention (LIDAR sensor, 3D camera), impact detection (sensor-installed bumper), anomaly detection (Cliff sensors, wheel contact sensors, emergency brake function)
Alert functions	Notification Pager (attaches to main unit) and smartphone app
Accessories	Battery, Battery charger , Notification pager, HEPA filter, Paper bag, Brush

Parts/Functions

Front

- 2D/3D Camera (Sensor)
- Dustbin
- LIDAR Sensor

653mm
455mm

Back

- Main Power Switch
- Notification Pager
- HEPA Filter Cover
- Battery Compartment

Top

- Emergency Stop Button
- Touch Display
- Steering Handle
- Max power mode button
- Autonomous clean start/stop button
- Vacuum power button

474mm

Notification Pager
62mm ✕ 100mm ✕ 18mm
(Width, Length, Height)

Home Location Code
80mm ✕ 80mm

Supplies
*Includes charger, home location code, vacuum motor and other accessories.
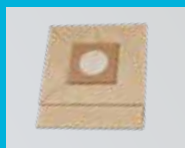
Paper Bag
Easy disposal; 4L max capacity

Brush
Removable rotating brush, auto height adjust

HEPA Filter
Captures 99.97% of PM2.5 particles, including pollen and house dust

Battery
Replaceable lithium ion battery

*5 May differ according to usage environment. * Whiz is a trademark of SoftBank Robotics. *BrainOS is a trademark of Brain Corp.

Website
For more information, visit our website.
https://www.softbankrobotics.com/apac