

DATASHEET

The latest addition to Ecoppia's suit of solutions, combining Ecoppia's renowned **safety** capabilities alongside an **effective, swift** and **smart** cleaning

Powered by patented Helix cleaning technology, the H4 *moves* horizontally yet *cleans* vertically. Using safe microfibers and controlled airflow, the H4 channels dust and dirt particles downwards without accumulating them - eliminating the risk of damaging sensitive panel surfaces



Cost
Effective
Solution



Faster ROI -
1 robot per 1 MW



Minimal infrastructure
requirements and
quick deployment



Modular design -
tailored per site



SAFE

3 Layers Of Microfibers

A combination of polyester and polyamide, proven to preserve the delicate Anti Reflective Coating (ARC)

Soft & Flexible Wheels

Safely absorbing sudden movements while protecting the panels

Minimum Time On The Row

Bidirectional cleaning- the robot can clean from either side of row as needed, no unnecessary travel time returning to base

Secured Locked Parking

Patent mechanism allowing the robots to withstand high wind speed



SMART

Truly Autonomous Solution

Cloud based, remotely managed from anywhere, anytime

Auto Row Scanning

Multiple sensors mapping the rows, identifying challenging transitions and adjusting travel speed automatically

Adaptable Cleaning Direction

Patented auto switch in Helix cleaning direction allowing flexibility in cleaning sequence

Predictive Maintenance

Hundreds of data points sent constantly to the cloud for performance analysis, ensuring maintenance windows are planned well in advance



EFFECTIVE

Swift Cleaning

Cleaning 1Km in less than 1 hour. Ideal for humid environments when cleaning windows are limited

"Super Duster" Mode

The robot initiates turbo mode post extreme soiling events for optimal results

Flexible Structure

Providing an effective cleaning with supreme maneuverability and a safe load distribution – reaching even the hardest cleaning areas

4-Wheels Drive

Each set of wheels has its own independent motor, allowing great maneuverability around difficult structures and edges.

GENERAL AND MECHANICAL

Dimensions (cm)	200-430 L x 98-105 W x 30 H
Weight	40-50 kg
Cleaning Speed	22 m/min
Coverage	Up to 2 km
Cleaning Tilt	16°-35°
Installation Type	Fixed Tilt + Single Axis Trackers
Wind Speed Resistance (Docking)	180 km/hr
Wind Speed Resistance (Cleaning)	30 km/hr
Max. Ambient Temp. (Docking)	-10°C – 60°C
Max. Ambient Temp. (Cleaning)	0°C - 60°C

Advanced Maneuverability Features

Independent Driving	4 direct drive motor-gear
Flexible Robot Structure	Supporting up to 10° angular misalignment between trackers
Largely Unique Wheels	Overcoming up to 60 mm gaps between surfaces
Undulated Ground Support	Up to 12° (21%)

BATTERY AND CHARGING

Energy Efficiency	All robots are equipped with dedicated solar panels
Battery	LifePo4 Safe battery
Charger	MPPT (smart DC-DC converter)

COMMUNICATION AND MANAGEMENT

Communication	RF communication with continuous keep-alive
Connectivity	Centrally managed via cloud-based Master control
Monitoring And Reporting	Secured web-based dashboards providing data on all units
Remote Management	Remote operation through any web-based interface

PARKING

Docking Station	At the side of each row, avoiding shading during the day
Secured Locking	Patented mechanism for secured lock at up to 180 km/h

INSTALLATION AND MAINTENANCE

Deployment	"Plug & Play" - Robots are designed for a quick and low-cost deployment
Maintenance	Preventive and corrective maintenance performed by Ecoppia
Predictive Maintenance	Cloud-based processing of operation provide predictive maintenance for optimal service and lower O&M costs

