



MaCharge

Beyond  Charging  
Moving

SWAPPING  
BATTERY



DC CHARGER  
80-240 kW



EV CHARGING  
STATION

EV Charging Station

SOLAR  
ROOFTOP/FARM FLOORING

ENERGY STORAGE  
SYSTEM



DC CHARGER  
40 kW



SWEEPER



AC CHARGER



# Black Pearl



Charging

220  
Voltage (V)  
32  
Current (A)  
7  
Power (kW)

10  
Total kW  
00:03:50  
Duration (Min)  
6  
CP Index (V)

Power OCPP App Charge



Scan for Use

(Only Black Pearl)



Real-time Display



Various Connection

(Supports WiFi, Bluetooth 4G, Ethernet)



LCD Screen



Charging History

(Smart EZ Application)



Advance Booking

(Only use in Station)



Cable Length 5 meters



Protection System

(Overload, Over/Under Voltage, Short Circuit, Over Temperature)

## Max Performance

- Charging Standard Type 2 (IEC 62196-2)
- 7kW/22kW Max Output
- Low Power Standby

## Structure and Design

- Designed for Convenient Installation
- Compact and Space-Saving

## SmartEZ Application

- Energy Management
- Membership Management
- Schedule Charging Time



Download on the App Store

GET IT ON Google Play



A backup unit is provided in case of equipment issues

- 1 year warranty on the device
- Free on-site assessment!
- The charger complies with international standards
- The price does not include installation fees\*
- Terms and conditions as specified by the company
- The displayed product prices do not include VAT 7%

# SPECIFICATION

## Specification

Black Pearl  
**7 kW**

Black Pearl+  
**22 kW**

Voltage	230Vac ± 10%	400Vac ± 10%
Power Supply Line	1 phase L/N/PE	3 phases L1, L2,L3/N/PE
Power / Current	7 kW / 32 A (1 phase)	22kW / 32 A (3 phases)
Frequency	50-60Hz	50-60Hz

## Function

User Authentication	RFID (ISO 14443)
Network	LAN Standard - Wi-Fi ; 2.4 GHz Ethernet & WAN Standard - 4G Cellular (Optional) Bluetooth Standard (Optional)
Platform Connectivity	OCPP 1.6 J (Optional)
Grounding System	TN, TT and IT
Cooling Way	Natural Air Cooling

## Protection & Standard

Certificate	CE, UKCA
Charging Interface	IEC 62196-2 , Type 2
Safety Compliance	IEC 61851-1 , IEC 61851-21-2
RCD	Type A 30 mA + DC 6 mA
Multiple Protection	UVP , OVP , RCD , SPD , Ground Fault Protection , OCP , OTP Control Pilot Fault Protection
IP & IK Protection	IP65 / IK10

## General

Dimension	Width 320 mm. x Length 210 mm. x Height 120 mm.
Weight	3.8 kg
Installation	Wall and Column Mounted (Column not included)
Operating Temperature	-30°C ~ 50°C
Relative Humidity	Up to 95% Non-Condensing
Cable Length	5 m.
Emergency	Emergency Stop Button



## High Reliability

With a low failure rate and minimal operation and maintenance costs, this product is designed for ease of use and offers high profitability.



## Environmental Friendly

With low noise, minimal lifecycle costs, and an environmentally friendly design, To be one of the sustainable choices in the future.



## High Efficiency

Featuring a smart air duct design that minimizes heat loss, this system reduces overall power consumption, achieving an impressive 95% power efficiency.



## Fast Charging

Consistent power output across varying voltages and temperatures, with fast charging capabilities in all scenarios. It efficiently dispatches power according to different demands.



## High Safety

With a dual protection strategy, this system eliminates the risk of fire or electric shock, ensuring a safe network and reliable power supply.



## Intelligent

Enables remote operation and management by connecting multiple devices with information-based control. Supports soft simultaneous and dynamic charging for enhanced flexibility.



# DC 40 kW



Taxi, Personal Car



Personal SUV



Public Bus



Electric Truck, Special Transport Vehicle



Public charging station



Enterprises and institutions



Residence community



Commercial complex

# Technical specifications

Model		Quartz 40 MCDC40-01		
General	Dimension (W*D*H)	750x300x750mm		
	Installation	Ground mounted, indoor/outdoor		
	Certification	CE , CB , UKCA , TR25		
	Net weight	180 kg		
	Payment mode	QR Code / RFID Card / POS (optional)		
	Energy meter	MID or DC Meter		
Electrical Specification	Input voltage	400VAC $\pm$ 10% , 3P + N + PE		
	Frequency	50Hz / 60Hz		
	Input current	61A max.		
	Output voltage	200 - 1000VDC		
	Output current	CCS2 133A max.		
	Output power	CCS2 40kW max.		
	Peak efficiency	$\geq$ 95%		
	Harmonics	iTHD < 5%		
Power factor	>0.98 (50% - 100% load)			
User Design	Connector types	CCS2 / CHAdMo (optional) / GBT (optional)		
	Display	LCD Screen		
	Interface	7 inch touch screen, language Thai / English (default), other language (optional)		
Communication	EVSE	PCL (DIN 70121: 2014-12 / ISO 15118)		
	Protocol	OCPP 1.6 / OCPP 2.0 (Upgradable)		
	Network	Ethernet / 4G / WIFI		
		Technology	Frequency Band Tx ( MHz )	Rx ( MHz )
		WCDMA Band 1	1920 - 1980	2110 - 2170
		WCDMA Band 8	880 - 915	925 - 960
		LTE Band 1	1920 - 1980	2110 - 2170
		LTE Band 3	1710 - 1785	1805 - 1880
	LTE Band 7	2500 - 2570	2620 - 2690	
	LTE Band 8	880 - 915	925 - 960	
	LTE Band 20	832 - 862	791 - 821	
Environment	Operating temp	-30°C to + 50°C		
	Relative humidity	5 to 95% RH, non-condensing		
	Cooling	Fan Cooling		
	Noise	$\leq$ 65dB		
Protection	Protection grade	IK10 & IP55		
	Multiple protection	<ul style="list-style-type: none"> <li>• RCD (Residual Current Device) Protection</li> <li>• Over/Under Voltage Protection</li> <li>• Overload Protection</li> <li>• Short Circuit Protection</li> <li>• Over Temperature Protection</li> <li>• Grounding Protection</li> <li>• Surge Protection</li> </ul>		



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## Intelligent

Enables remote operation and management by connecting multiple devices with information-based control. Supports soft simultaneous and dynamic charging for enhanced flexibility.



# 80 kW-240kW



Taxi, Personal Car



Personal SUV



Public Bus



Electric Truck ,  
Special Transport Vehicle



Public charging station



Enterprises and institutions



Residence community

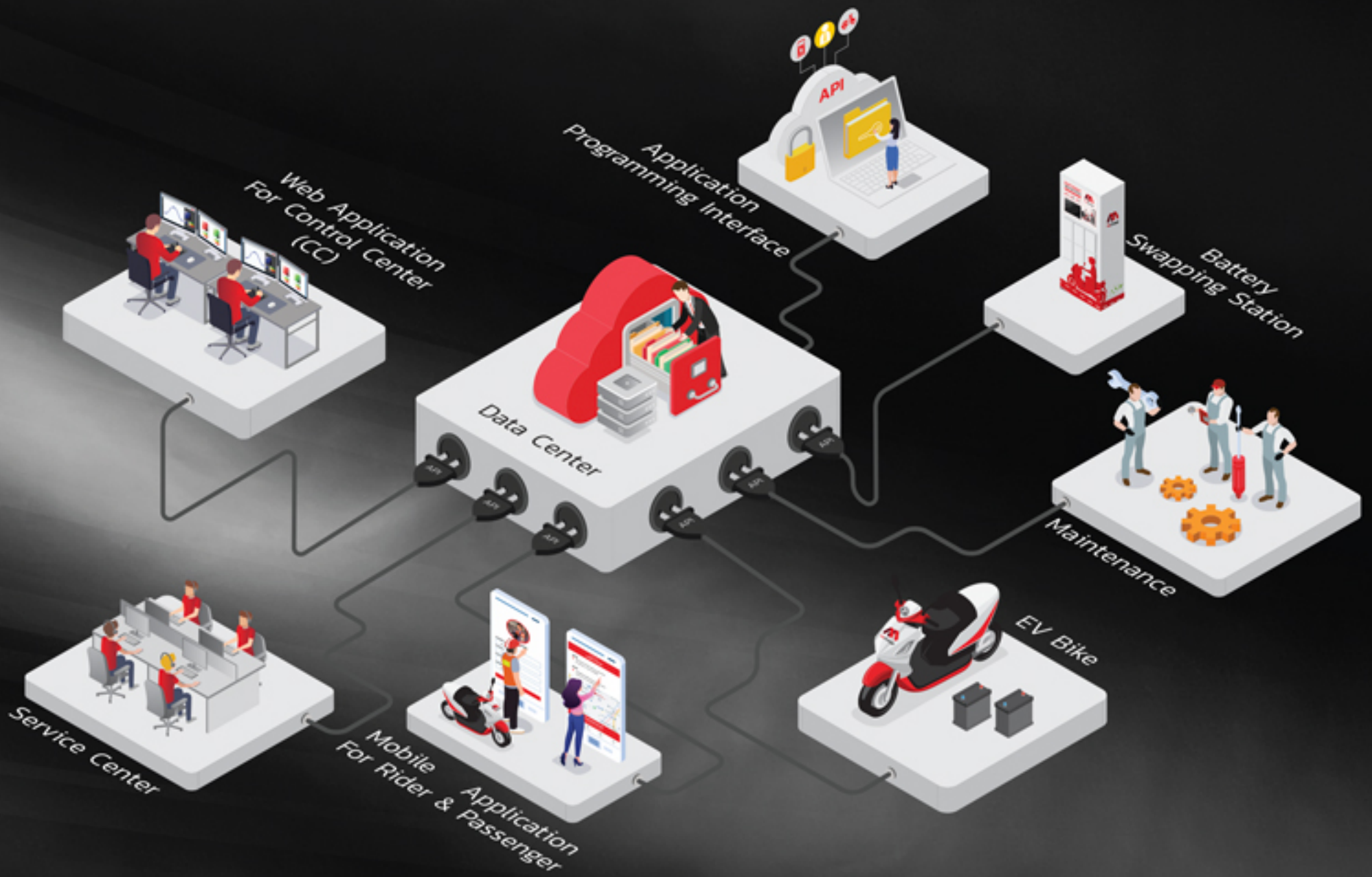


Commercial complex

# Technical specifications

Model		Emerald 80 MCDC80-01	Ruby 160 MCDC160-01	Sapphire 240 MCDC240-01
General	Dimension (W*D*H)	850x500x1800mm	850x610x2000mm	850x800x2000mm
	Installation	Ground mounted, indoor/outdoor		
	Certification	CE , CB , UKCA , TR25		
	Net weight	≤ 250 kg	≤ 350 kg	≤ 450 kg
	Payment mode	QR Code / RFID Card / POS (optional)		
	Cable Length	5 m.		
Electrical Specification	Input voltage	400VAC ± 10% , 3P + N + PE		
	Input current	123A max.	246A max.	368A max.
	Frequency	50Hz / 60Hz		
	Output voltage	200 - 1000VDC		
	Output current	CCS2 200A max.	CCS2 200A max.	CCS2 300A max.
	Output power	CCS2 80kW max.	CCS2 120/160kW max.	CCS2 180/240kW max.
	Peak efficiency	≥ 95%		
	Harmonics	iTHD < 5%		
	Power factor	>0.98		
User Design	Connector types	CCS2 / CHAdeMo (optional) / GBT (optional)		
	Display Interface	LCD Screen		
	Interface	10.1 inch	10.1 inch	10.1 inch
touch screen, language Thai / English (default), other language (optional)				
Communication	EVSE Protocol	PCL (DIN 70121: 2014-12 / ISO 15118)		
	Network	OCPP 1.6 / OCPP 2.0 (Upgradable)		
		Ethernet / 4G / WIFI		
Environment	Operating temp	-30°C to + 50°C		
	Relative humidity	5 to 95% RH, non-condensing		
	Cooling	Fan Cooling		
	Noise	≤ 55dB	≤ 60dB	≤ 65dB
Protection	Protection grade	IK10 & IP55		
	Multiple protection	<ul style="list-style-type: none"> <li>• RCD (Residual Current Device) Protection</li> <li>• Over/Under Voltage Protection</li> <li>• Overload Protection</li> </ul>	<ul style="list-style-type: none"> <li>• Short Circuit Protection</li> <li>• Over Temperature Protection</li> <li>• Grounding Protection</li> </ul>	<ul style="list-style-type: none"> <li>• Surge Protection</li> </ul>

# MaCharge Platform



## Smart Design

Save on fuel and maintenance costs



## Real-Time Management

Monitor vehicle, battery, and station data



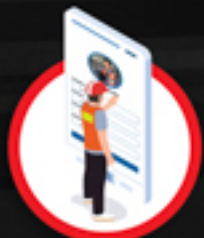
## Quick Self-Swap

Fast battery swap without staff support



## Instant Support

Report issues and get quick assistance



## Find & Reserve

Locate stations and book via app



## Data-Driven Efficiency

Analyze usage to enhance performance



## Full After-Sales Service

Preventive and corrective care by experts



## Platform Integration

Ready to connect with external systems

# MaCharge SWAPPING BATTERY

## MACHARGE SWAPPING CABINET SPECIFICATIONS

Current	220VAC/50Hz
Power	4,850W
Volt	67V/10A
Charger power input	600W
Display Screen	LCD 15 inch
Charging slots Communication	9 slots
Station dimensions	900mm x 800mm x 1950mm

## MOBILE APPLICATION

The Mobile App Makes Station Use Seamless for Drivers  
Navigate to the nearest station, check battery status in real time, reserve your battery in advance, and report any issues — all from your mobile device.

GET IT ON  
Google Play

Download on the  
App Store



Swap in 1 Minute



Easy to Use



Clean Energy

# MaCharge SOLAR

- Solar Rooftop
- Solar Farm
- Solar Floating
- Energy Storage System



**Solar Panels**

**30-Year Performance Warranty**  
Ensuring long-term energy generation efficiency.  
**12-Year Product Warranty**  
Covering manufacturing defects and panel damage.



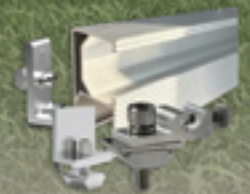
**Inverter**

**10-Year Warranty**  
Certified by Metropolitan Electricity Authority (MEA) and Provincial Electricity Authority (PEA).  
Equipped with an Anti-Backflow Protection System to prevent reverse power flow.



**Optimizer**

**10-Year Warranty**  
Enhances and controls the performance of each individual solar panel, ensuring stable and efficient power generation.



**Roof Mounting Structure**

**5-Year Warranty**  
Compatible with all roof types. Engineered for high durability, corrosion resistance, and structural strength.

Capacity	Number of Electrical Appliances	Panels (625 W)	Price (Including Installation)
<b>3 kW</b> Single-phase	<b>20</b> <b>01</b> <b>01</b> <b>02</b> Save approximately 1,500-1,800 Baht/Months	<b>5</b>	<b>110,000 Baht</b>
<b>5 kW</b> Single-phase	<b>25</b> <b>03</b> <b>01</b> <b>03</b> Save approximately 2,500-3,000 Baht/Months	<b>8</b>	<b>150,000 Baht</b>
<b>5 kW</b> Three-phase	<b>30</b> <b>03</b> <b>01</b> <b>03</b> Save approximately 3,000-3,500 Baht/Months	<b>8</b>	<b>165,000 Baht</b>
<b>10 kW</b> Single-phase	<b>50</b> <b>04</b> <b>03</b> <b>05</b> Save approximately 7,000-7,500 Baht/Months	<b>16</b>	<b>240,000 Baht</b>
<b>10 kW</b> Three-phase	<b>50</b> <b>04</b> <b>03</b> <b>05</b> Save approximately 7,000-7,500 Baht/Months	<b>16</b>	<b>255,000 Baht</b>
<b>15 kW</b> Three-phase	<b>60</b> <b>05</b> <b>04</b> <b>06</b> Save approximately 16,000-16,500 Baht/Months	<b>24</b>	<b>300,000 Baht</b>
<b>20 kW</b> Three-phase	<b>70</b> <b>06</b> <b>04</b> <b>07</b> Save approximately 16,000-16,500 Baht/Months	<b>32</b>	<b>350,000 Baht</b>

## How Does a Solar Rooftop System Work ?

- 1** **The Sun**  
The sun is the primary energy source, providing renewable power whenever sunlight is available.
- 2** **Solar Panels**  
Solar panels convert sunlight into direct current (DC) electricity.
- 3** **Inverter**  
The inverter converts DC electricity into alternating current (AC) for use in homes or buildings.
- 4** **Electricity Meter**  
Measures the amount of electricity consumed within the building.
- 5** **Electrical Distribution Panel**  
Distributes electricity safely to appliances and electrical systems within the building.
- 6** **Battery (Optional)**  
Stores excess electricity for use at night or serves as backup power during outages.



# MaCharge Battery Energy Storage System

Smart Energy Storage System for a Sustainable Future

"High Reliability, Durable Performance, Easy Operation, and Cost-Effective Returns."

## Technical Specifications

Battery Technology	LiFePO <sub>4</sub> (LFP) – High Safety Standard
Energy Capacity	215 kWh
System Efficiency	Up to 95% with an intelligent thermal management system
Cooling System	Intelligent Liquid Cooling (Quiet operation and extended battery lifespan)
Protection Rating	IP55 / IK10 (Weather-resistant – suitable for outdoor installation)
Connectivity	LAN / 4G / Wi-Fi with smart application monitoring



# Intelligent Energy Storage for a Sustainable Future



## Healthcare Sector

(Healthcare: Life-Critical Reliability)

- Because every second of power stability matters.
- Reliable electricity is essential to ensure the continuous operation of critical hospital systems.



## Industrial Sector

(Industrial: ROI & Sustainability)

- Transform energy into a strategic asset that enhances operational efficiency while supporting ESG standards.



## Agricultural Sector

(Smart Agriculture: Precision & Growth)

- Empowering modern agriculture with stable electricity access to support productivity anytime, anywhere.



### Seamless Backup Power :

Operates automatically as a backup generator, ensuring continuous power supply during outages and preventing damage to critical electrical equipment.



### Peak Shaving & Load Shifting :

Stores energy during Off-Peak periods (lower electricity cost) and uses it during On-Peak periods, reducing Demand Charges and lowering operational costs.



### Off-Grid Energy Solution :

Ideal for remote locations where grid electricity is unavailable, including irrigation systems, greenhouse cooling systems (Evap), and agricultural processing facilities.



### Demand Charge Reduction :

Helps reduce electricity costs during peak consumption periods, particularly for facilities operating air conditioning and electrical equipment continuously.



### Solar Energy Optimization :

Integrates seamlessly with MaCharge Solar to store surplus solar energy generated during the day, supporting long-term Net Zero energy goals.



### Fuel Cost Reduction :

Replace diesel-based power generation with clean energy supported by a Battery Energy Storage System, delivering both cost savings and environmental benefits.



### Low Noise Operation :

Equipped with an intelligent thermal management system that maintains noise levels below 65 dB, ensuring minimal environmental disturbance.



### Maximum Safety :

Designed with Dual Protection safety architecture, protecting against electrical and fire risks and ensuring high reliability across multiple industries.



### Smart Energy Management System :

Monitor and manage energy usage through the MaCharge smart application, providing real-time visibility of battery status and power consumption.

# Green Revolution is the Best Solution



👂 With low noise, minimal lifecycle costs, and an environmentally friendly design, To be one of the sustainable choices in the future.👂

## SPECIFICATIONS

Overall Dimensions (Width x Length x Height)	1,350 x 2,560 x 1,880 MM
Minimum ground clearance	55 MM.
Vehicle Weight	370 KG.
Maximum Load Capacity	600 KG.
Passenger Capacity	1 Person
Maximum Speed	≤ 25 KM/H
Range Without Load	≥ 100 KM.
Turning Radius	< 4 M
Climbing Ability	20%
Braking Distance	≤ 3 M
Maximum Motor Power	1,000 W
Voltage	48 V
Charging Time	8 - 10 H
Waste Tank Capacity	180 L
Water Tank Capacity	120 L
Brush Motor Power	60 x 3 W
Cleaning Width	1,400 MM.
Operating Time	6 H
Maximum Cleaning Area	10,000 S.M/H

# MaCharge SWEEPER



## Compact & Versatile Design

Perfectly designed for narrow streets and confined spaces.



## Powerful Dual-Hub Motor

Delivers strong propulsion for efficient sweeping performance.



## 180L Waste Bin

Simultaneously sweeps and collects waste, reducing handling effort.



## Lithium Battery 48V 150AH

Provides up to 6 hours of continuous operation on a single charge.



## 120L Water Tank

Minimizes dust dispersion and enhances cleaning efficiency.



## Durable & Long-Lasting Build

Fiberglass body with high-strength carbon steel frame for durability.



## Eco-Friendly & Zero Emissions

Fully electric system reduces pollution and airborne dust.






MaCharge Line Official




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