



WET CLEANING ROBOT

SCM-L3

A CUTTING-EDGE AUTONOMOUS CLEANER
DESIGNED TO OPTIMIZE PERFORMANCE,
ENSURING SPARKLING CLEANLINESS AND
MAXIMUM ENERGY OUTPUT.

Revolutionizing Solar Panel Cleaning

The DarbSense technology allows users of the DARBCO robotic solution to manage and supervise all the components of the system using a smart IoT platform or a mobile application, either locally or remotely.

OUR SEQUENTIAL CLEANING

SCM -L3 uses a three-stage sequential cleaning process:

- **Water injection stage:** it is essential in cleaning to soften hard soil and dust particles, prevent scratches on ARC coating, and remove sticky materials like litter and bird droppings.
- **Brushing stage:** soften hard soil and dust with water, removing 99% of dust, and are specially designed to prevent panel surface damage.
- **Wiping stage:** it removes dust, litter, and water, prevents lime deposition, and enhances cleaning performance.



CUSTOMIZED AUTOMATION LEVEL

SCM-L3 can be tailored to meet the specific needs and requirements of different types of solar panel systems. It is designed to accommodate various panel sizes, and tilts, ensuring optimal cleaning performance for each unique configuration.



ANTI-FALL PROTECTION

Darbco has developed specialized hardware and software systems that protect robots from potential falls at edges or into gaps



GAPS BYPASSING TECHNOLOGY

SCM-L3 has the ability to bypass gaps in the robot-cleaning path using bypass technology. The technology enables the robot to bypass any gap up to 30cm without installing rails, which reduces the cleaning system installation cost significantly.



SELF-LOCK MECHANISM

Ensuring proper alignment between the robot and the solar panels. This specially designed mechanism helps the robot maintain a secure and precise position while cleaning.



IOT-BASED CONTROL SYSTEM

Supported by DarbSense technology, allowing for remote monitoring, control, and management of the robot's operations.



EDGE DETECTION SENSORS

Edge detection sensors play a crucial role in ensuring robot safety and preventing potential accidents.



SELF-ALIGNING

SCM-L3 utilizes self-alignment technology that enables the cleaning robot to override the solar table misalignment issues that occur when adjacent solar panels are improperly installed and do not align with each other.



ACTIVE WIPING

SCM-L3 uses active wiping technology to enhance the wiping process, hence ensuring panel dryness and preventing dust accumulation, even in unlevelled solar panels installations.



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SCM-L3 SINGLE AXIS WITH DRAG CHAIN

Family	SCM-L3	
Model	SCM-L3/D	
Length	4m (4-4.6m)	6m(6-6.8m)
Cleaning technology	Wet	Wet
Weight	65 kg	89 kg
Dimensions (W, H, L)	(600X220x4620) mm	(600X220x6840) mm
Max running distance	50 m	50 m
Water consumption	200 mL/m2	
Max in-motion angle	3°	
**Level of Autonomy	3	
Max Cleaning frequency	Unlimited	
Ingress Protection	IP65	
Max speed	20m/min	
Corrosion Resistance	C4	
Amb working temperature	(1°C - 60°C)	
Max operating wind speed	17 m/s, 4-second gust, 10 m	
Max docking wind speed	55 m/s, 4-second gust, 10 m	
Power supply	Self-powered- AC feeder	
System communication technology	LoRa/ Xbee / Wi-Fi	
Control system interconnection	Modbus/ Wi-Fi	
Control & monitoring interface	DarbSense local mobile App, DarbSense on-line platform, BMS, SCADA	
Humidity	100%	
Electrical safety	Overcurrent Protection, Overheating Protection, Overvoltage Protection	
Motion safety	Anti-fall protection, Edge detection, Gaps detection	
Gaps bypassing	300 mm (customized)	
AI	Abnormal Condition Detection, Self-Cleaning Cycle Triggering, Auto safe mode	
Structure compatibility	Fixed, Tracker, Rooftop, car-parking.	
Multi-Row	No	

*W/D: REFERS TO WET CLEANING TECHNOLOGY/
DRY CLEANING TECHNOLOGY

**LEVEL OF AUTONOMY:

LEVEL "1" REFERS TO PORTABLE

LEVEL "2" REFERS TO WITH OPERATOR

LEVEL "3" REFERS TO NO OPERATOR

SCM-L3 WITH FILLING MULTIAACCESS

Family	SCM-L3	
Model	SCM-L3/F	
Length	4m (4-4.6m)	6m(6-6.8m)
Cleaning technology	Wet	Wet
Weight	73 kg	95 kg
Dimensions (W, H, L)	(720X220x4620) mm	(720X220x6840) mm
Basic running distance	400 m	250 m
Max running distance	5 Km	
Water consumption	200 mL/m ²	
Max in-motion angle	10°	
**Level of Autonomy	3	
Max Cleaning frequency	3 cleanings/day	
Ingress Protection	IP65	
Max speed	20m/min	
Corrosion Resistance	C4	
Amb working temperature	(1°C - 60°C)	
Max operating wind speed	17 m/s, 4-second gust, 10 m	
Max docking wind speed	55 m/s, 4-second gust, 10 m	
Power supply	Self-powered, AC, DC	
System communication technology	LoRa/ Xbee / Wi-Fi	
Control system interconnection	Modbus/ Wi-Fi	
Control & monitoring interface	DarbSense local mobile App, DarbSense on-line platform, BMS, SCADA	
Humidity	100%	
Charging time	Two hours	
Electrical safety	Overcurrent Protection, Overheating Protection, Overvoltage Protection	
Motion safety	Anti-fall protection, Edge detection, Gaps detection	
Gaps bypassing	300 mm (customized)	
AI	Abnormal Condition Detection, Self-Cleaning Cycle Triggering, Auto safe mode	
Structure compatibility	Fixed, Tracker, Rooftop, car-parking.	
Multi-Row	Yes	

*W/D: REFERS TO WET CLEANING TECHNOLOGY/
DRY CLEANING TECHNOLOGY

**LEVEL OF AUTONOMY:

LEVEL "1" REFERS TO PORTABLE

LEVEL "2" REFERS TO WITH OPERATOR

LEVEL "3" REFERS TO NO OPERATOR

SCM-L3 WITH OPERATOR

Family	SCM-L3	
Model	SCM-L3/W	
Length	4m (4-4.6m)	6m(6-6.8m)
Cleaning technology	Wet	Wet
Weight	65 kg	89 kg
Dimensions (W, H, L)	(600X220x4620) mm	(600X220x6840) mm
Max running distance	Unlimited	
Water consumption	200 mL/m ²	
Max in motion angle	10°	
**Level of Autonomy	2	
Max Cleaning frequency	Unlimited	
Ingress Protection	IP65	
Max speed	20m/min	
Corrosion Resistance	C4	
Amb working temperature	(1°C - 60°C)	
Max operating wind speed	17 m/s, 4-second gust, 10 m	
Max docking wind speed	55 m/s, 4-second gust, 10 m	
Power supply	AC Feeder/ DC Feeder	
System communication technology	LoRa/ Xbee / Wi-Fi	
Control system interconnection	BT/ Wi-Fi	
Control & monitoring interface	DarbSense local mobile App, DarbSense on-line platform	
Humidity	100%	
Electrical safety	Overcurrent Protection, Overheating Protection, Overvoltage Protection	
Motion safety	Anti-fall protection, Edge detection, Gaps detection	
Gaps bypassing	300 mm (customized)	
Structure compatibility	Fixed, Tracker, Rooftop, car-parking.	
Multi-Row	Yes	

*W/D: REFERS TO WET CLEANING TECHNOLOGY/
DRY CLEANING TECHNOLOGY

**LEVEL OF AUTONOMY:

LEVEL "1" REFERS TO PORTABLE

LEVEL "2" REFERS TO WITH OPERATOR

LEVEL "3" REFERS TO NO OPERATOR