



I. Product Description

Product Name	Solar Pool Skimmer
Product Type	Solar Powered Automatic Floating Pool Surface Debris Collector Robot

II. Product Core Features

Solar Powered Main System
Automatic Floating Debris Collection
Dual-Side Edge Navigation
Automatic Edge Following
Automatic Obstacle Avoidance
Automatic Return Navigation
Large Capacity Debris Basket
Low Power Consumption Design
Day & Night Continuous Operation
Low Maintenance Design

III. Product Hardware Configuration

3.1 Solar Power System

Item	Specification
Solar Panel Type	Monocry stalline

Operating Voltage	9V
Maximum Operating Current	1100mA
Peak Power	约10W
Surface Process	ETFE层压
3.2 Battery System	
Item	Specification
Battery Type	Lithium Battery Pack
Battery Voltage	7.4V
Battery Capacity	9000mAh
Charging Method	Solar Charging + DC Charging Port
3.3 Propulsion System	
Item	Specification
Propulsion Motors	Brushless Propulsion Motors ×2
Motor Type	Dual Independent Propulsion System
Rated Voltage	DC 7.5V
Operating Voltage	DC 5–10V
Rated Speed	800 rpm
Rated Current	< 1A
Propeller Type	Low-Speed Three-Blade Propeller
Propeller Size	Φ65mm
3.4 Central Drive System	
Item	Specification
Drive Motor	Brushless Gear Motor ×1
Function Definition	Debris Collection Roller Drive
Roller Operating Speed	100 rpm
Guide Structure	Horizontal Guide Wheel
3.5 Filtration System	
Item	Specification

Filter Mesh	5–6L
Main Filter Hole Size	1mm
Fine Filter Hole Size	250µm
Filter Structure	Removable Snap-Fit Structure
Cleaning Method	Manual Cleaning
3.6 Sensor System	
Item	Quantity
Ultrasonic Sensors	2
Water Contact Sensors	1
3.7 Human-Machine Interaction System	
Item	Specification
Status Indicator Light	Dual-Color LED
Buzzer	Yes
Operating Modes	OFF / AUTO / ECO
IV. Functional Definitions	
AUTO Mode	Automatic Edge Following Navigation Automatic Edge Obstacle Avoidance Automatic Debris Collection Automatic Daytime Operation Automatic Floating Debris Collection
ECO Energy Saving Mode	Reduced Propulsion Power Interval Navigation Reduced Propulsion Power Consumption Extended Battery Runtime
V. Navigation Logic	
Dual-Side Edge Navigation	
Camera-Free Navigation	
Automatic Edge Following	

Automatic Obstacle Avoidance	
Automatic Return Navigation	
Maximizes Pool Surface Coverage Efficiency	
VI. Obstacle Avoidance Logic	
Distance	System Behavior
> 0.7m	Normal Navigation
0.3–0.7m	Deceleration / Steering
< 0.3m	Automatic Reverse Obstacle Avoidance VII. Jam Protection Logic
七、 Jam Protection Logic-When the debris collection roller detects abnormal current or motor stall:	
Automatic Stop	
Automatic Reverse Direction	
Restart Debris Collection Roller	
Multiple Failures Trigger Audible Alarm	
VIII. Product Advantages	
Low Power Consumption Design	
Long-Term Autonomous Operation	
Low Maintenance Design	
Large Capacity Debris Collection	
Simple & Reliable Structure	
Extended Battery Life	
Suitable for Most Pool Types	
IX. Environmental Adaptability	
Item	Specification
Operating Temperature	-20°C ~ 70°C
Storage Temperature	-30°C ~ 80°C
Operating Humidity	15 ~ 85%RH
Waterproof Rating	IPX8

