



斯坦德机器人 Standard Robots



LEAD FLEXIBLE INDUSTRIAL
REVOLUTION

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Wechat

FIRST EDITION, 2022

East China Digital Logistics Demonstration Plant

14000m² | 5000units/year

Consistent Strict Quality Control
and Fast Product Delivery



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Lead Flexible Industrial Revolution

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ABOUT US

Lead Flexible Industrial Revolution

Standard Robots (Shenzhen) Co., Ltd. focuses on AMR (Autonomous Mobile Robot) R&D and manufacturing, applying broad and self-developed technologies including robot positioning algorithm, operation system and robot controller. Our main business involves laser SLAM navigation AMR and flexible industrial logistics solution.

Founded in 2016, Standard Robots is committed to develop standardized and practical robot application for outstanding system integrator and end users, helping achieve agile and flexible logistics in factory. Featuring in less investment and quicker return, Standard Robots provides laser SLAM AMR to manufacturers worldwide to aid on both logistics automation and intelligent manufacturing.

350+ Projects Completed & **4000** AMRs Delivered

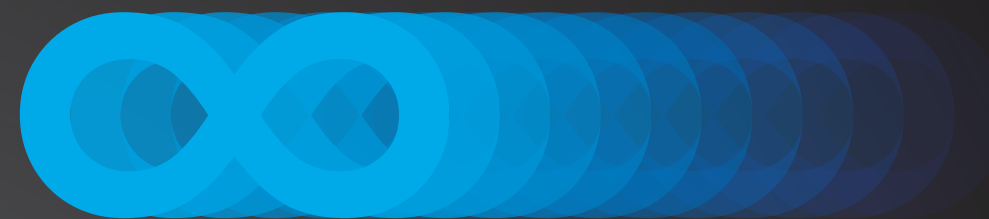


Broad range of industry application including 3C Electronics, Semiconductor, Photovoltaic, Lithium Battery, Display, Automobile & Auto Parts, Medical & Pharmaceutical and etc.

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1+N+X =



1 set of core technology platforms for mobile robots

Numerous mobile robots developed based on the technology platform

Provide X sets of industry-level solutions according to the needs of various industries

∞ stands for industry-level standard solutions for various industries through a 1+N+X approach, to create consistent value in the digitization and intelligentization of industrial logistics.



SOLUTION & PRODUCT

Lead Flexible Industrial Revolution

Automated Storage and Picking
Raw material picking & finished goods storage
Accurate material identification
Automatic high rack storage

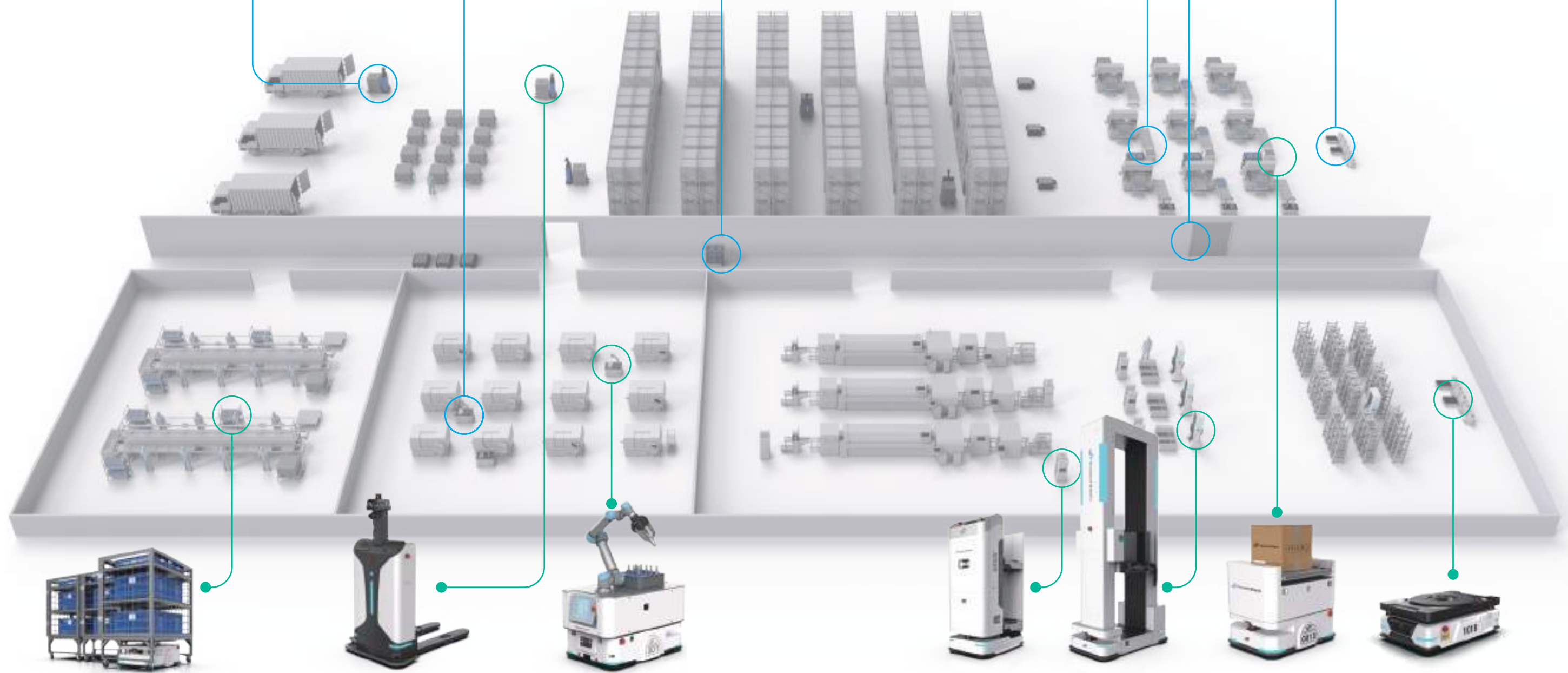
Automatic loading and unloading
Execution accuracy around $\pm 0.3\text{mm}$
Multi-module docking for diversified production equipment

Flexible Operation and Rapid Deployment
Laser SLAM navigation integrated with multiple sensors
No infrastructure modification is needed, and the system can be rapidly deployed
Flexible adaptations to production line changes

Smart Goods-to-Person Picking
Multi-vehicle adaptation, one-key feeding call

Cross-scenario Transportation
Automatic entry and exit of auto-door/elevator

Automatic Charging
One-hour charge for 8 hours of operation



Flexible Industrial Logistics Solution

Based on self-developed laser SLAM AMR and Fleet Management System (FMS), Standard Robots developed multiple industry targeted logistics solution which enables automated material warehousing, production line feeding, processing material transportation and goods storage. Data visualization is also supported, production and logistics data are recorded, by which users could export report any time for further optimization.

Solution Features /

Standardized Implementation

Numerous project practiced, the standardized implementation process meet diversified industries' needs. Along with a one-on-one service, Standard Robots could better understand clients' requirements with quicker response.

Outstanding Performance

Edge research and development on laser SLAM technology and algorithm ensures higher reliability and broad adaptability on complex environments and diversified industries.

High Flexibility

Simple and fast in both installation and operation - the solution adapts to dynamic production mode and high takt time; both software and hardware are customization available to fit with clients' reality.

Impacts & Benefits /



- ### 1 Labor Saving and Efficiency Increase

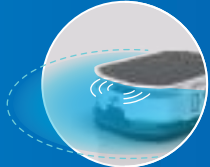
One AMR equals to 1-2 labors and supports 24/7 operation. Visualized data management helps consistent logistics & production process optimization and efficiency improvement.
- ### 2 Quick Returns

The average return period is within 24 months with lower operation and maintenance costs. Along with a long after-sales guarantee and product life-cycle, the ROI keeps growing though project completed.
- ### 3 Light Asset Investment

No facility or workspace reconstruction is needed which reduces operation and maintenance input. Average deployment time is within one week, leading to less influences to existing production plan.
- ### 4 Digital Logistics

Industry-leading software and hardware performance and system construction service aid clients on both automation and digitalization revolution.

Laser SLAM Navigation Technology Advantages

AGV VS AMR	 Magnetic Tape Navigation AGV	 QR-Code Navigation AGV	 Laser SLAM Navigation AMR
Field Requirement	Magnetic Tapes Required	QR-Code Required	Non/Few Reconstruction
Environment Adjustability	×	×	Fit with Complex/Dynamic Environment
Map Generating	×	×	○
Navigation Accuracy	×	mm	mm
Obstacle Avoidance	×	×	○
Deployment Time Cost	> 4 Weeks	2~3 Weeks	<1 Week
Maintenance Cost	High	Medium	Low
Application Scenario	Fixed Path Transportation	Closed&Man-cleared Environment	Workshop/Warehouse/Cross-Scenarios



Flexible Operation

Complex operation paths and modes, such as "single-location to multi-location," "multi-location to multi-location," "autonomous path planning" and "autonomous obstacle avoidance" can be achieved without magnetic tapes or QR-codes.



Robust Expandability

Operation path and process can be easily programmed, according to actual production environments and requirements.



Lower Operation and Maintenance Cost

Without magnetic tapes or QR codes, maintenance manpower and costs are perfectly saved. Regular maintenance is only required for the robot itself.



Strong Environmental Adaptability

Strong adaptability to complex environments, such as narrow passages and compact workspace.



High and Stable Positioning Accuracy

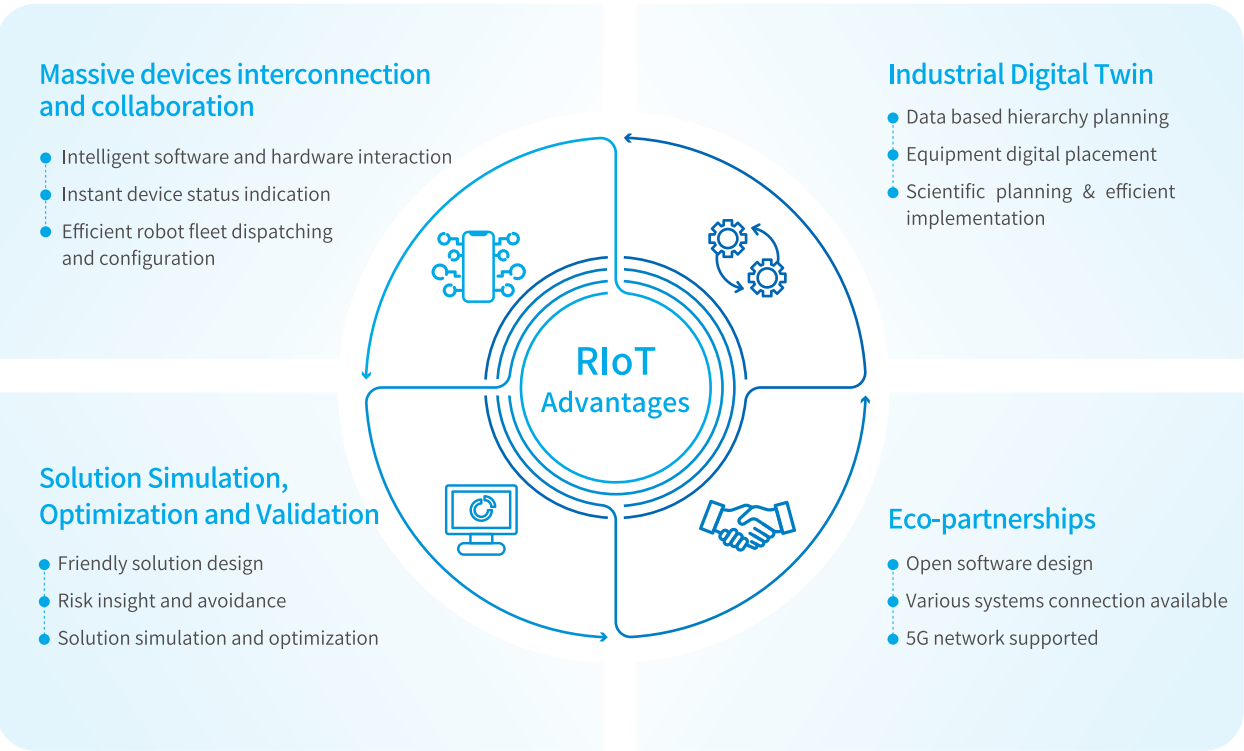
Standard positioning accuracy is ± 10 mm, positioning success rate exceeding 99.99%. Higher accuracy is supported based on multi-sensor options.



RIoT Flexible Logistics Platform

The RIoT (Robot Internet of Things) is a flexible logistics platform built by Standard Robots, which places AMR at its core to achieve seamless hardware interconnection; uses FMS (Fleet Management System) as its main control to achieve a high degree of software integration; and combines plant layouts, production business scenarios, and human/machine/material/line/warehouse interactions to create a hybrid flexible logistics operation mechanisms.

RIoT empowers industrial production through cutting-edge technologies, such as 5G communication, cloud computing, AI deep learning, edge computing, distributed storage, and big data analysis. Based on a massive amount of circulating data, RIoT can thoroughly explore production laws, independently iterate AI algorithm models, and continuously optimize production models to help smart factories achieve even more efficient production.



FMS - Fleet Management System /

The FMS (Fleet Management System), or Standard Robots dispatching system, is responsible for task allocation, scheduling and logistics data statistics. It is equipped with a multi-task scheduling algorithm and is flexibly configured according to clients' requirements to realize optimal task allocation. Along with multi-robot path planning and traffic control algorithms, FMS enables robot fleet collaboration for overall efficiency improvement.

FMS monitors, analyze and records robot operation status instantly, such as mileage, abnormal events and etc. Order data can be processed to calculate efficiency indexes such as the utilization rate and robot average response time. The system also enables data visualization and report exporting for overall logistics optimization in the future.



Rapid Deployment

Supports a variety of operation systems to realize one-key installation. User can access to system through browser directly, with no software installation needed.

Intelligent Task Assignment

The intelligent task allocation algorithm ensures efficient robot fleet collaboration.

Efficient Path Planning

Real-time path planning and optimization to realize dynamic traffic control while avoiding bottlenecks and congestion.

Data Visualization and Management

Instant data tracking on robot operation and data import/-export function aid on and overall process optimization.

Solid Expandability

Open and HTTP-based interface allow FMS to connect with clients' upper system, MES, WMS and ERP, seamlessly.

Friendly and Interactive Operation

The operation interface fits with the production process and logic, while providing a friendly visual and interactive experience.

OASIS & AMR



Oasis & AMR Series • Mobile Robot Chassis

The Oasis and AMR series mobile robot can be deployed and operated without workspace reconstruction. Intelligent obstacle avoidance is realized through multiple sensors integration. It can be widely applied to manufacturing scenarios or other complex environments to aid on automation transformation. With diversified add-on modules and carries, it can meet different logistics needs. Along with FMS, the robot connect with MES/WMS/ERP seamlessly to achieve both logistics automation and information visualization.



Rapid Deployment

Self-developed laser SLAM navigation can be utilized for automatic mapping and rapid deployment without modifying the infrastructure.



Precise Positioning

The new generation of positioning algorithms support long corridor positioning and dynamic map update, to ensure continuous and stable operations and consistent client value implementation.



High Expandability

Multi-interface controller and industrial designs realize diversified customization of functional modules to meet logistics needs for different manufacturing industries and production processes.



Safety and Reliability

LIDAR, 3D vision sensors, safety bumpers, and proximity sensors have been installed to detect near-ground objects or ground obstacles, enhancing overall safety performance.

											
			Oasis 180D	Oasis 300UL	Oasis 300C	Oasis 600UL	Oasis 600C	AMR 600	Oasis 1200D		
Basic Specification	Radar Layout	Single, Front	Single, Front	Single, Front	Single, Front	Double, Diagonal	Double, Diagonal	Double, Diagonal			
	Navigation Mode	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM			
	Dimensions (L*W*H mm)	650*500*260	850*605*290	760*545*260	995*690*290	950*630*260	1000*770*310	1200*800*265	Module Excluded		
	Weight (kg)	80	128	93	161	155	160	200	Module Excluded		
	Lifting Module Type	NA	Lifting & Rotation	Lifting & Rotation	Lifting & Rotation	Lifting & Rotation	Lifting	Lifting & Rotation			
	Height with Lifting Module (mm)	—	310	300	315	280	365	300			
	Weight with Lifting Module (kg)	—	173	150	219	187	230	310	Carrier Included		
	Payload (kg)	180	300	300	600	600	600	1200			
	Visual Camera for Higher Accuracy	Optional	Optional	Optional	Optional	Optional	Optional	Optional			
Network	5G, Optional	5G, Optional	5G, Optional	5G, Optional	5G, Optional	5G, Optional	5G, Optional	5G, Optional			
	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	Wi-Fi (2.4Ghz/5.8Ghz), Standard Config	802.11b/g/n 802.11a/n/ac		
Operation Performance	Max. Speed (m/s)	1.5	1.5	1.5	1.5	1.6	1.5	1			
	Turning Radius (mm)	0	0	0	0	0	0	0			
	Rotating Radius (mm)	325	485	400	568	550	590	700			
	Gradeability	3°/ 5%	3°/ 5%	3°/ 5%	3°/ 5%	3°/5%	3°/5%	3°/5%			
	Obstacle Climbing Ability (mm)	10	10	10	10	10	10	10			
	Floor Gap Tolerance (mm)	20	30	30	30	30	30	30			
	Running Corridor Width (mm)	Min 700	Min 800	Min 750	Min 890	Min 850	Min 950	Min 1000			
	Rotating Corridor Width (mm)	Min 850	Min 1200	Min 1000	Min 1300	Min 1300	Min 1400	Min 1650			
	Positioning Accuracy (mm)	±10	±10	±10	±10	±10	±10	±10			
	Angle Positioning Accuracy (°)	±1	±1	±1	±1	±1	±1	±1			
	Accurate Positioning Accuracy (mm)	±5	±5	±5	±5	±5	±5	±5	Optional with QR-Code Positioning		
Battery Performance	Capacity	51.2V 23Ah	51.2V 30Ah	51.2V 25Ah	51.2V 40Ah	51.2V 30Ah	51.2V 30Ah	51.2V 67Ah	LFP Battery		
	Duration (h)	8	8	8	8	8	8	8	In Full Load Condition		
	Lifecycle (times)	2000(DOD≥80%)	2000(DOD≥80%)	2000(DOD≥80%)	2000(DOD≥80%)	2000(DOD≥80%)	2000(DOD≥80%)	2000(DOD≥80%)	0.5C, Charging; 1C, Discharging (Room-TEMP)		
	Charging Mode	Automatic; Manual; Switching	Automatic; Manual; Switching	Automatic; Manual; Switching	Automatic; Manual; Switching	Automatic; Manual; Switching	Automatic; Manual; Switching	Automatic; Manual; Switching	Max. Current = 10A, Manual Mode Max. Current = 30A, Automatic Mode		
	Charging Time (h)	1	1	1	1.3	1	1	2	To 95%		
Interactive Function	Light, Speaker, Display	Standard Configuration			External Interface	Power Output	2 Way DC 51.2V 1000W(40~57.6) 2 Way*2DC 24V 20W (Stabilized Voltage Supply)		Safety Control	Front Radar	Standard Configuration
Operation Environment	Temperature (°C)	0~50				Communication	1 Way RS232 1 Way CAN			Rear Radar	AMR 600 , Oasis 600C and Oasis 1200D
	Humidity (%)	5~95								Visual Camera	Front, for Low Obstacle Detection
	Air Condition	No Dusty, Flammable, Explosive or Corrosive Gases				I/O				Proximity Sensor	Back, 4 Units (AMR600, Oasis 600C and Oasis 1200D Excluded)
	Indoor/Outdoor	Indoor					Extended CAN communication Supported			Safety Rim	Standard Configuration (AMR 600 Excluded)
							Kill Switch	2 Units, Standard Configuration (4 Units for AMR 600 and Oasis 1200D)			

*For more specifications please contact us at overseas@standard-robots.com

Add-on Module

Customization Supported

Standard Robots Arm Module /



ARM Module / ARM + Roller Module

The robot surface is integrated with a collaborative robot, to realize both automated transportation and collaborative processing. It is also adaptable to integrate both arm and roller module for even diversified automation, including picking and placing, material stacking or sorting and distribution.

Adaptable Collaborative Robot	UR, Elite, JAKA and etc.
Options	Collaborative Robot; Collaborative Robots + Roller
AMR Accuracy	±5mm
Collaborative Robot Accuracy	±0.3mm



Lifting Module SRL /

Standard Robots Lift Module

The robot operates under the carrier, lifts the whole material/carrier and move. The total weight of the material and the carrier will not exceed the robot payload.

The lift module provides more flexible handling ability. It has great advantages in terms of narrow path traffic, small-space turning and other scenarios. The module size can be customized to suit different types of pallets, material frames and shelves, etc.

Drawing Module SRD /

Standard Robots Draw Module

The robot moves under the carrier, then uses the external interface (normally a towbar) to automatically dock with the carrier and draws single or multiple carriers. The total weight of the materials/carriers will not exceed the robot payload.

Lifting and drawing allows the transportation of larger-size carts or trolleys.



Transmitting Module SRT /

Standard Robots Transport Module

The robot carries rollers or conveyor belts, allowing robot to transport materials or goods to production lines or machine tools directly. It realizes automatic loading and unloading without manual operation. It solves the problem of overweight materials/goods transportation, while the number and surface size of roller/belt is customization available.

Typical Application for 3C Industry

Oasis-SMT and Oasis-ATS provide a complete logistics solution among warehouse, production line and line-side warehouse for SMT workshops.

Oasis-SMT-A2-R01 Mobile Robot /

Oasis-SMT-A2-R01 is a transfer robot specifically for SMT production line, meeting the need for automatically transferring magazine bins in the circuit board loading and unloading machines in surface mounted production lines.

For different bins sizes, line heights and layers, the robot applies modular deign to meet diverse requirements, avoid or release site reconstruction necessity, reduce preliminary investments, provide a one-stop solution for full bin loading and empty bins recycling and improve the overall operation efficiency.



Overall dimension (L × W × H (mm))	1056*641*1443	No. of layer/roller	2
Single roller max. payload (kg)	50	Lower roller min. docking height (mm)	215
Corridor width (mm)	Min 1050	Upper roller docking height (mm)	930(Adjustable according to client needs)
Pivoting width (mm)	Min 1150	Roller surface width (mm)	320
Precise docking accuracy (mm)	±5/±1°	Magazine max. height (mm)	580

Oasis-ATS-A1 Warehouse Robot /

The Oasis-ATS-A1 warehouse robot combines lifting and picking modules, specifically for line-side warehouse in SMT workshops, to meet demands for magazine bin loading and unloading.

As line-side warehousing features in compact space and multiple operation location, also facing the challenge of unbalanced productivity among different processes, the robots applies bilateral telescopic mechanism to realize automated lifting and picking, which can access bins on both sides without rotating, improving workshop 5S management, enhancing operation efficiency and reducing error rates.

Bin picking height:
300-1800mm

Bin width: 460mm
Customization available to
suit bin width at 320mm,
400mm or 530mm

Max. payload: 50kg



Overall dimension (L × W × H (mm))	1160*660*2550	Max. Speed (m/s)	1.67
Single roller max. payload (kg)	50	Storage Capacity	1
Corridor width (mm)	Min 800	Magazine Dimensions (mm)	530*460(L*W)
Pivoting width (mm)	Min 1400	Picking Height Range (mm)	300-1800
Precise docking accuracy (mm)	±5/±0.5°	Extending Distance (mm)	720



Gulf Series • Smart Unmanned Forklift

Gulf series applies laser SLAM navigation technology to enable deployment and operation without modifying existing infrastructure. Multiple safety functions, such as 360° full-area obstacle avoidance, spatial 3D obstacle avoidance, emergency stop buttons, and sounds and light alarms are integrated. In addition, the pallet detection sensors, obstacle avoidance sensors, 3D vision cameras, RFIDs and other multi-sensor integration technologies are installed to intelligently achieve safe and efficient loading/unloading operations. High-current automatic charging technology ensures 24/7 operations. The robots are widely used in intelligent manufacturing and warehousing logistics, with an FMS scheduling management system, seamless docking to enterprise MES/WMS/ERP, and other management systems to achieve synchronous upgrades of enterprise logistics automation and production data informationization.



Quick Deployment

Self-developed laser SLAM navigation can be utilized for rapid deployment without modifying existing infrastructure.



Self-detection

Real-time hardware and operation status acquisition enables self-detection and troubleshooting.



Efficient Handling

3D visual camera ensures pallet position identification to avoid pallet misalignment.



Safety and Reliability

360° omnidirectional obstacle avoidance radar, audible and visual alarms, and bumpers are equipped for better safety control.

					
		Gulf-600-CBD	Gulf-1500-CPD	Gulf-1400-CDD	
Basic Specification	Radar Layout	Multiple, Front and Rear	Multiple, Front and Rear	Multiple, Front and Rear	3 Units, Omnidirectional Obstacle Avoidance
	Navigation Mode	Laser SLAM	Laser SLAM	Laser SLAM	
	Dimensions (L*W*H mm)	1060*715*1623	2728*1166*2330	1706*990*1863	
	Weight (kg)	400	2325	720	Battery Included
	Payload (kg)	600	1500	1400	
	Load Centre Distance (mm)	300	500	600	
	Standard Lifting Height (mm)	400	3000	1600	Customization Supported and will Influence Loading Ability; Gulf-1500-CPD Max. Lifting Height = 4.5m, Gulf-1400-CDD Max. Lifting Height = 3m
	Min. Fork Ground Clearance (mm)	100	50	85	
	Fork Dimensions (mm)	55/105/495	40/120/1070	55/180/1150	Customization Supported
	Fork Outer Width (mm)	400	350-740	680	Customization Supported
	Network	5G, Optional Wi-Fi (2.4Ghz/5Ghz), Standard Config	5G, Optional Wi-Fi (2.4Ghz/5Ghz), Standard Config	5G, Optional Wi-Fi (2.4Ghz/5Ghz), Standard Config	802.11b/g/n 802.11a/n/ac
Operation Performance	Running Speed (m/s)	1.5/1.5	1.5/1.5	1.5/1.5	Full Load / Empty Load
	Lifting Speed (mm/s)	-	95/120	115/175	Full Load / Empty Load
	Lowering Speed (mm/s)	-	120/85	-	
	Gradeability	5%/8%	5%/8%	5%/8%	Full Load / Empty Load
	Positioning Accuracy (mm)	±10/±1°	±10/±1°	±10/±1°	
	Right-angle Stacking Width (mm)	1050 for Trolley in 600*600 (L*W)	2994 for Pallet in 1000*1000 (1000 Across the Fork)	2070 for Pallet in 1000*1200 (1200 Across the Fork) 2130 for Pallet in 800*1200 (1200 Along the Fork)	
	Min. Turning Radius (mm)	970	1536	1180	
Battery Performance	Capacity	48V 60Ah	24V 270Ah	24V 180Ah	LFP Battery
	Duration (h)	6-8	6-8	6-8	Depended by Operation Condition
	Lifecycle (times)	DOD≥80% 2000	DOD≥80% 3500	DOD≥80% 3500	0.5C, Charging; 1C, Discharging (Room-TEMP)
	Charging Mode	Automatic; Manual	Automatic; Manual	Automatic; Manual	80A, Automatic Mode; 60A, Manual Mode
	Charging Time (h)	2	2.5	2.5	To 95%

Interactive Function	Light, Speaker, Display	Standard Config
Accessibility	Pallet In Place Recognition	Standard Config
	Goods Recognition	Standard Config
	Pallet Posture Recognition	Standard Config
	RFID	Optional

Safety Control	Front Radar	2 Units
	Rear Radar	1 Unit
	Visual Camera	Optional
	Optoelectronic switch	Standard Config
	Front Safety Rim	Standard Config
	Kill Switch	3 Units

*For more specifications please contact us at overseas@standard-robots.com

			
		Gulf-3000-QDD	
Basic Specification	Radar Layout	Multiple, Front and Rear	3 Units, Omnidirectional Obstacle Avoidance
	Navigation Mode	Laser SLAM	
	Dimensions (L*W*H mm)	1754*976*1835	
	Weight (kg)	1030	Battery Included
	Towing Ability (kg)	3000	
	Standard Towing Strength (N)	600	
	Driving Platform Height (mm)	159	
	Network	5G, Optional Wi-Fi (2.4Ghz/5Ghz), Standard Config	802.11b/g/n 802.11a/n/ac
Operation Performance	Running Speed (m/s)	1.9/2.7	Full Load / Empty Load
	Gradeability	6%/15%	Full Load / Empty Load
	Positioning Accuracy (mm)	±10/±1°	
	Max. Towing Strength (N)	2400	
	Min. Turning Radius (mm)	1288	
Towbar Connection/Disconnection	Towbar Height Range (mm)	150-400	Automatically
Battery Performance	Capacity	24V 270Ah	LFP Battery
	Duration (h)	6~8	Depended by Operation Condition
	Charging Mode	Automatic; Manual	120A, Automatic Mode; 60A, Manual Mode
	Charging Time (h)	2.2	To 95%
Safety Control	Front Radar	2 Units	
	Rear Radar	1 Unit	
	Front Safety Rim	Standard Config	
	Kill Switch	3 Units	
	Horizontal and Vertical Obstacle Avoidance	Standard Config	
	Automatic Docking Correcting	Standard Config	
	Alarm and Indicator	Standard Config	

Operation Environment	Temperature (°C)	0~50
	Humidity (%)	5~95
	Noise	≤70dB (A)
	Air Condition	No Dusty, Flammable, Explosive or Corrosive Gases
	Indoor/Outdoor	Indoor