One-Stop Intelligent Manufacturing and Smart Logistics Solutions

Pushing boundaries and helping enterprises realize an intelligent transformation



SRC | AMR Controller Solutions

- **Comprehensive AMR Controller**
  Compatible with a wide range of AMRs, featuring built-in functional safety, rich peripheral support, user-friendly and simple AMR construction solutions, along with precise and flexible movement controls.
- **Derivative Controller for Smart Factory Infrastructuresolutions, along with precise and flexible movement controls.**

AMR | Autonomous Mobile Robot Solutions

- **Complete Suite of AMRs**
  Comprehensive coverage of Latent Jacking Robots, Picking Robots, Automatic Forklifts, Composite Robots, Roller Robots, Shuttle Picking Robots, and more.
- **Full-Process Site Logistics**
  Suitable for all aspects of site logistics, including loading and unloading,sorting, moving, bin stacking, material cage stacking, pallet stacking, warehouse inbound/outbound, and line-side deposit/access.
- **A unified dispatching system connects all product categories for efficient collaboration.**

SEED | Enterprise Enhanced Digitalization

- **SEED RDS | Synergistic Resource Dispatch of Robotics and Automation Equipment**
  Unified dispatch of multiple robots and automation equipment, along with the ability to optimize task dispatch.
- **SEED WMS | Integrated Warehousing Logistics Management System**
  Automated management of flat storage warehouses, pallet stereoscopic warehouses, material Box stereoscopic warehouses, and automated stereoscopic warehouses.
- **SEED V | Data Visualization System**

RoboView | VisualVisual AI Solutions

- Visual AI ensures that robots can intelligently respond to complex site conditions and complete relevant production tasks.
- Visual AI enables real-time storage site, personnel, and integrated AGV management.
- The vision algorithm analyzes site situations, ensures safety during AGV obstacle avoidance deployment, and detects open flames, foreign obstacles, and other hazards to ensure work and production safety.

Advantages

To deliver “Standardized Products, Customized Applications”, adheres to the people-oriented product concepts of up ward integration, downward development, and full-scenario solutions, which help solve problems from the root, reali ze the intelligent transformation of traditional enterprises, and empowers smart logistics across various industries.

Core Control | True Integration

proprietary core controller provides enterprises with integrated solutions that realize true integra tion rather than the subcontracting typical of other industry solutions.

Large Robot Library | Full Coverage + Zero Development Costs

Built-in controllers empower a large library of robots with convenient dispatch functionality to realiz e full coverage of requirements. Zero-cost upper-layer system development meets project upgr ade requirements, realizes true integration, greatly shortens the delivery cycle, and saves on both time and capital investment.

Various Application Scenario Experience | 800+ Projects

Adhering to the enterprise mission of “standardized products and customized applications”, optimizes solutions for more than 5000 application scenarios, and provides one-stop soluti ons for 300+ end customers, 200+ integrators and 300+ ontology manufacturers such as 3C el ectronics, semiconductors, lithium batteries, automobiles, pharmaceuticals and FMCG, so as to continuously empower various industries.

One-Stop Intelligent Manufacturing and Smart Logistics Controller Solution



Built-in SRC core controller



Serials of products

Laser SLAM Stacker Automatic Forklift

TR-FL140
1400kg



TR-FL200
2000kg



TR-FL200L
2000kg



TR-FL140L
400kg



Laser SLAM Transfer Automatic Forklift

TR-FL200S
2000kg



TR-FL200T
2000kg



TR-FL080
800kg



TR-FL200TS
2000kg



TR-FL250S
2500kg



Laser SLAM Reach Automatic Forklift

TR-FL140R
1400kg



TR-FL140S
1400kg



TR-FL150M
1500kg



TR-FL160S
1600kg



Laser SLAM Counter Balanced Stacking Automatic Forklift

TR-FL150T
1500kg



TR-FL200A
2000kg



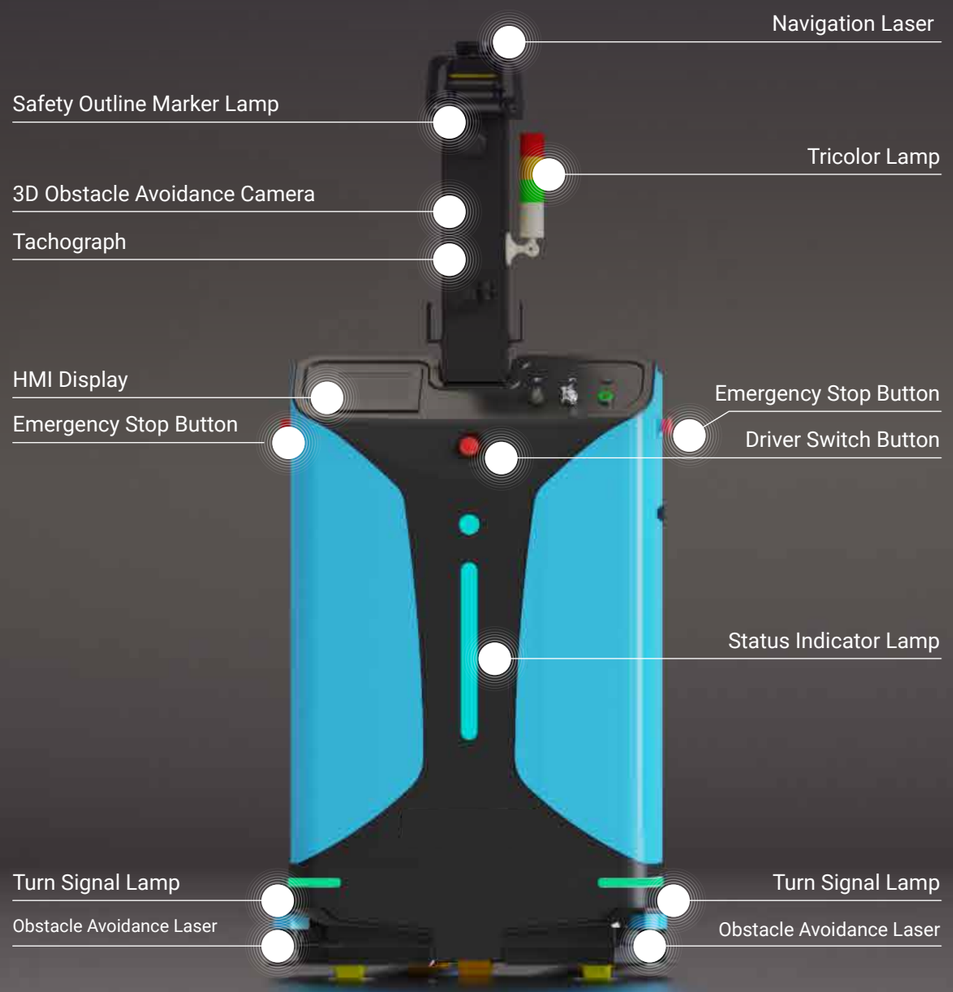
Laser SLAM Automatic Hook Forklift

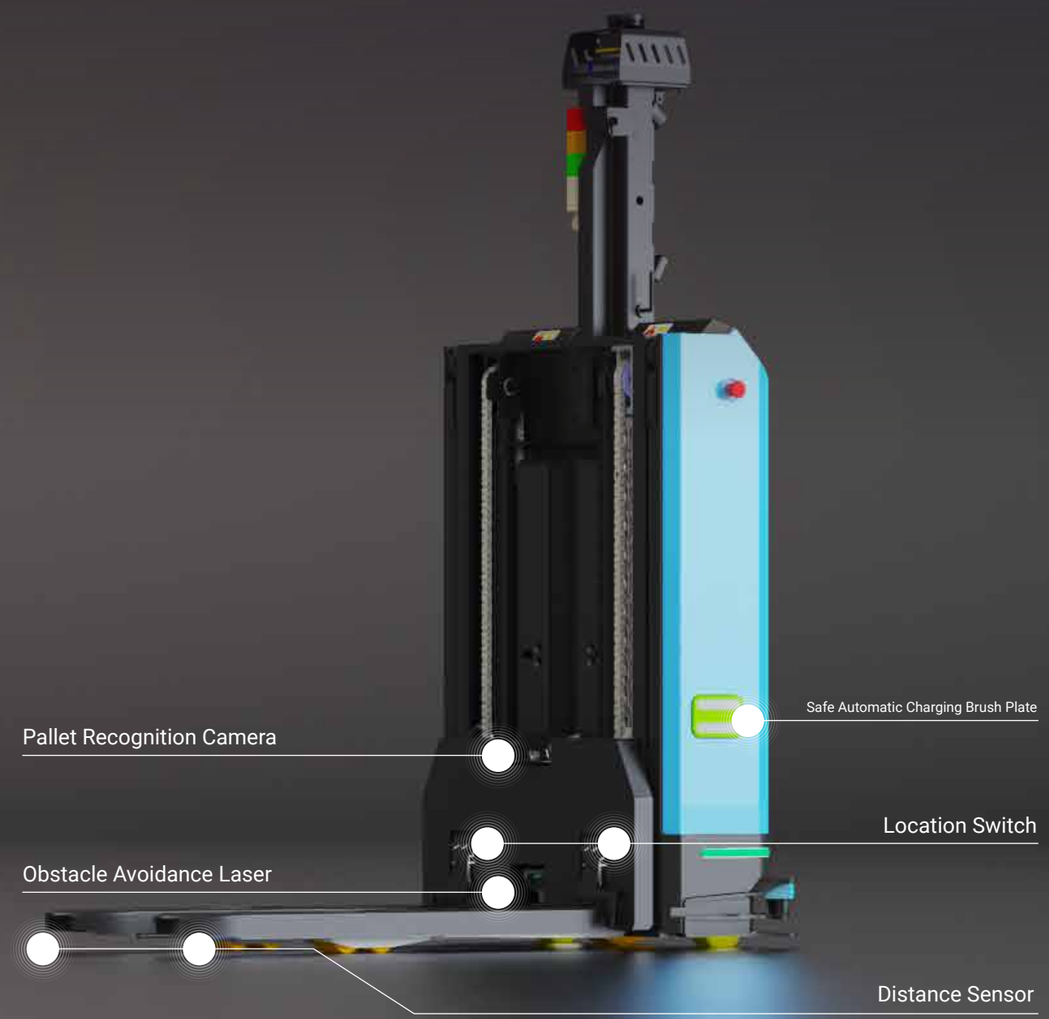
TR-FL300P
3000kg



Top Configuration with 360°safety Assurance

Full range of laser SLAM automatic forklifts realize the ultra-high configuration of various sensors, including: naviga tion laser, front and rear obstacle avoidance laser, safety position light, tri-color light, turn signal, status indica tor atmosphere light, safety edge, HMI display, power amplifier module, driving recorder, distance sensor, emer gency stop button, pallet identification camera, 3D obstacle avoidance camera, position switch, pull-wire enco der, safe automatic charging pole piece. Sensor configurations with of the whole vehicle improve the safety





Wide Adaptability, Free and Flexible

Suitable for a variety of lasers

Navigation Laser

Suitable for the mainstream indoor navigation laser in the industry, the SRC controller's maximum scanning range can reach 360°, and the maximum effective laser scanning radius 60 meters; SRC controller is also suitable for outdoor 32-line navigation laser, which can realize accurate positioning in outdoor environment.



SICK Safe NanoScan3



Pepperl+fuchs R2000 (30M)



Pepperl+fuchs R2000 (60M)



Robosense
32-line navigation laser



SICK Safe MicroScan3



SICK LMS1xx



SICK LMS5xx



Velodyne VLP-16

Obstacle Avoidance Laser

Equipped with mainstream obstacle avoidance laser, SRC core controller is directly takes point cloud data of the laser for algorithm calculation. Compared with the traditional IO obstacle avoidance laser, it does not need to draw various areas such as deceleration areas and obstacle stopping areas, more convenient for project implementation.



OLEI LR-1BS2



SICK TiM240



SICK TiM320



SICK Safe S301

Ultra-Adaptability with Drivers

SRC Series Core Controller is adapted to the two most commonly used drivers of the forklift industry, Zapi and Curtis. According to different models and load conditions, we have multiple sets of drive control solutions. In terms of steering control, we support the Curtis steering solution and the Kinco steering solution.

Driver Adaptation

CURTIS



[1298-2301]



[1232E-2121]



[1220C-2201]



[1253C-4402]



[1234SE-5421]



[1222-2101]



[1236SE-5621]



[1353-6104]



[1356P-6101]



[AC F2-A]

ZAPI



[ACE2]



[MDC2]



[MDC0]



[ACEX]



[Valve Control]

Steering Solution



Incremental Encoder



[Servo-steering Motor]



[Incremental Encoder]



[Proximity Switch]



[1220C-2201]



[Servo-steering Motor]



[incremental Encoder]



[Proximity Switch]



[Servo-driver]



Absolute Encoder



[Servo-steering Motor]



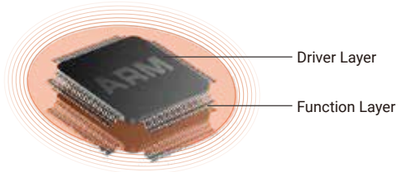
[Absolute Encoder]



[Servo-driver]

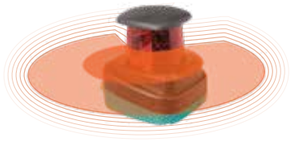
Safer for Multi-protection

Two-tier hardware architecture



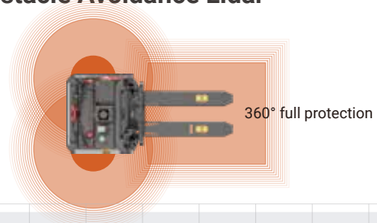
The SRC core controller adopts a two-tier architecture. The driver layer uses a stable embedded ARM chip, and the function layer is an intelligent navigation and obstacle avoidance algorithm. If an unexpected error occurs in the function layer, the driver layer can detect and stop the robot in real time to prevent the robot from getting out of control.

Navigation Lidar



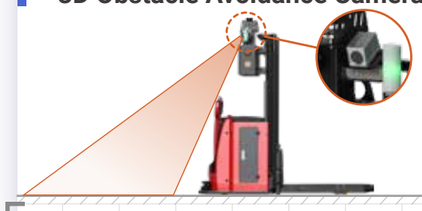
With the data acquisition frequency up to 30 Hz, the SRC core controller obtains the data of the navigation lidar in real time and calculates the collected data through the real-time algorithm. If an object enters the deceleration or stop range of the robot, the robot will decelerate or stop immediately.

Obstacle Avoidance Lidar



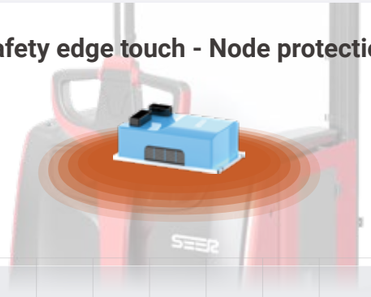
Equipped with mainstream obstacle avoidance laser, SRC core controller is directly takes point cloud data of the laser for algorithm calculation. Compared with the traditional IO obstacle avoidance laser, it does not need to draw various areas such as deceleration areas and obstacle stopping areas, more convenient for project implementation.

3D Obstacle Avoidance Camera



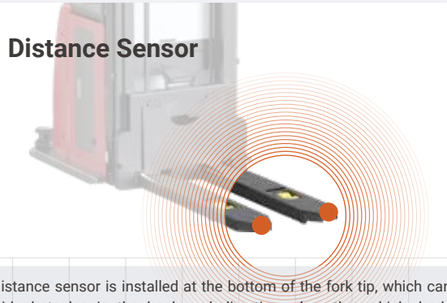
A 3D obstacle avoidance camera is installed above the vehicle head for scanning obliquely in the forward direction. With the laser angle of view reaching 70.4 °, it covers the space in front of the vehicle head and can detect obstacles with a side length of more than 5cm, with a distance error of less than 2cm and an angle error of less than 0.1 °.

Safety edge touch - Node protection



The SRC core controller will enable the function of node protection (watch dog), which can detect and alarm the fault of CAN bus in real time, and stop the robot at the same time to ensure safety.

Distance Sensor

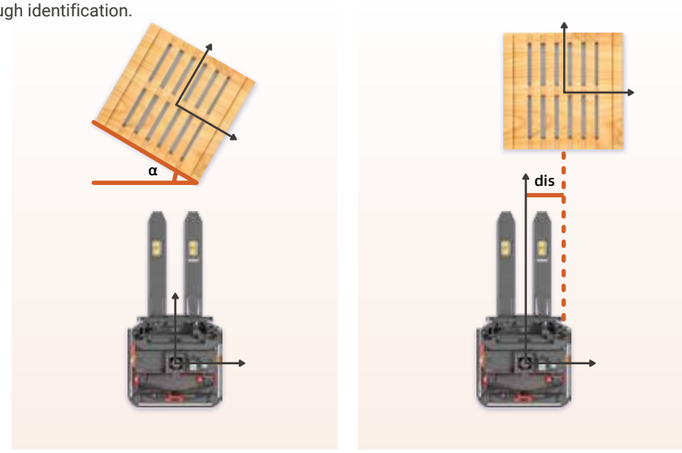


A distance sensor is installed at the bottom of the fork tip, which can avoid obstacles in the backward direction when the vehicle body performs the task of loading or unloading goods. Meanwhile, the adjustable obstacle avoidance distance, combined with the fork heel obstacle avoidance laser, forms a double insurance when the vehicle body retreats.

Load Recognition and Precise Forking

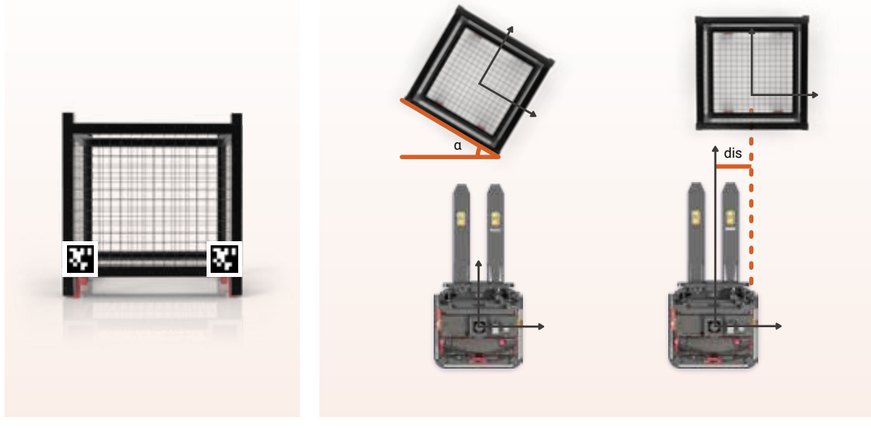
Pallet Recognition

When the mechanical limit cannot be added to the ground, the advanced pallet recognition function can be configured, and for scenes with pallet angle deviation within ± 30°and position deviation within ± 30cm, the forked pallet can be accurately adjusted through identification.



Cage Recognition

When the mechanical limit cannot be added to the ground, the advanced cage recognition function can be configured. Fix the QR code for recognition and location on the forking surface of the cage, and it will detect the position deviation of the cage through the camera, so as to realize recognition, correction and precise forking.

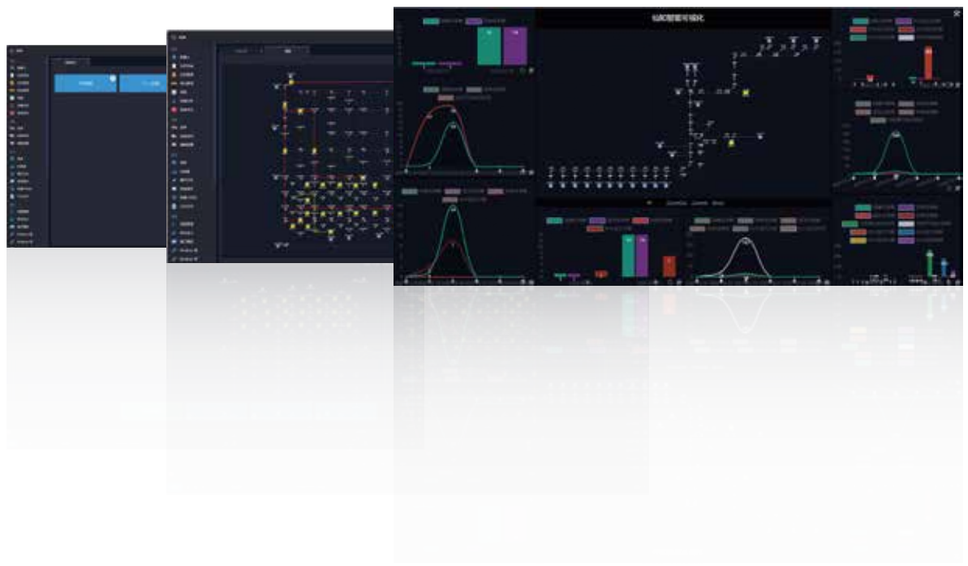


Dispatching from Different Robots

With the unified resource dispatching system RDS, it can realize the efficient, accurate and flexible dispatching of various types of mobile robots, including automatic forklifts, to achieve the highest work efficiency.



Load SRC core controller ➡ Cooperate with unified resource dispatching system ➡ Realize the dispatching of various types of mobile robots



Full automatic charging



Laser SLAM Mini Stacker Automatic Forklift

TR-FL140

Narrow Channel Applicatio
Slim body with small radius of rotation

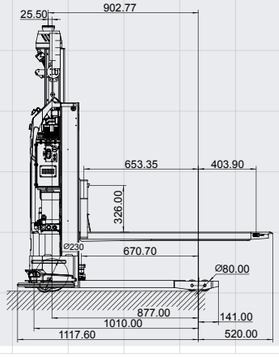
Pallet Recognition
Recognition with higher accuracy for precise forking

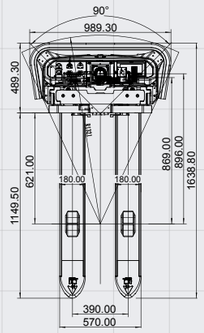
3D Obstacle Avoidance
360° full protection



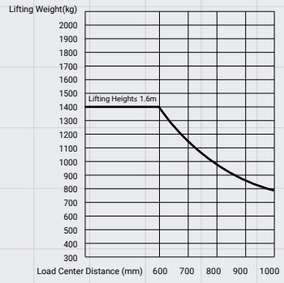
Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)





CDD14 Load Curve



Technical parameters

Product model	TR-FL140
Product name	Laser SLAM small stacker automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, handheld driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	1400kg
Load centre distance	600mm
Wheelbase	877mm
Dead weight (with battery)	680kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	1600/3000mm
Gantry height	2130mm
Fork surface ground clearance (at the lowest position)	85±5mm
Navigation laser scanning height	2025mm
Vehicle size: length * width * height	1640*990*2043mm
Fork size: length * width * height	1150*180*55mm
Fork outer width	570/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	1888mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	1880mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1182mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	115/170mm/s
Descent speed: full load/no load	160/125mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.25kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.165kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	80*54mm
Tire size: Balance wheel	115*55mm
Wheel number: driving wheel (x= driving wheel)/ bearing wheel	1X-2/4
Wheel base: bearing side	538mm
Wheel base: driving side	380mm

Battery parameters

Battery specifications	24/180 (Lithium Iron Phosphate)
Battery weight	58kg
Comprehensive battery life	10h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Counter Balanced Stacker Automatic Forklift

TR-FL150

Compatible with Various Pallets
Applicable both for 3-stinger pallet and field pallet

Long Life Battery
Meeting various working requirements with overall battery life over than 10h

Lifting Height Up to 3M
Customized lifting height with the maximum support of 6m

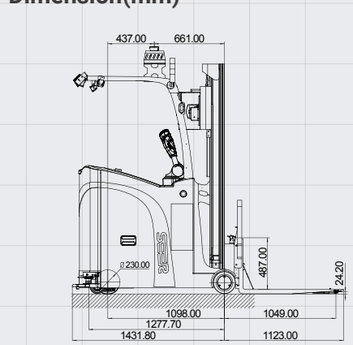
Pallet Recognition
Recognition with higher accuracy for precise forking

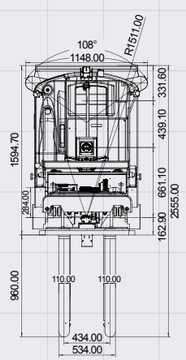
3D Obstacle Avoidance
360° full protection

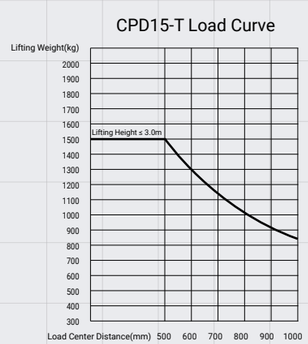


Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension(mm)







Technical parameters

Product model	TR-FL150
Product name	Laser SLAM counterbalanced automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, car driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet / Field pallet
Rated load capacity	1500kg
Load centre distance	500mm
Wheelbase	1098mm
Dead weight (with battery)	2325kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	3300mm
Gantry height	4208mm
Fork surface ground clearance (at the lowest position)	45±5mm
Navigation laser scanning height	2300mm
Vehicle size: length * width * height	2555*1150*2326mm
Fork size: length * width * height	950*110*40mm
Fork outer width	460-750mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	3600mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	3500mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1710mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	95/120mm/s
Descent speed: full load/no load	120/85mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.8kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.165kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	/mm
Tire size: bearing wheel	/mm
Tire size: Balance wheel	/mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	1X-2/2
Wheel base: bearing side	909mm
Wheel base: driving side	608mm

Battery parameters

Battery specifications	24/270 (Lithium Iron Phosphate)
Battery weight	230kg
Comprehensive battery life	10h
Charging time (10%-80%)	2.5h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Stacker Automatic Forklift

TR-FL200

Lifting Height Up to 6M
Customized lifting height with the maximum support of 6m

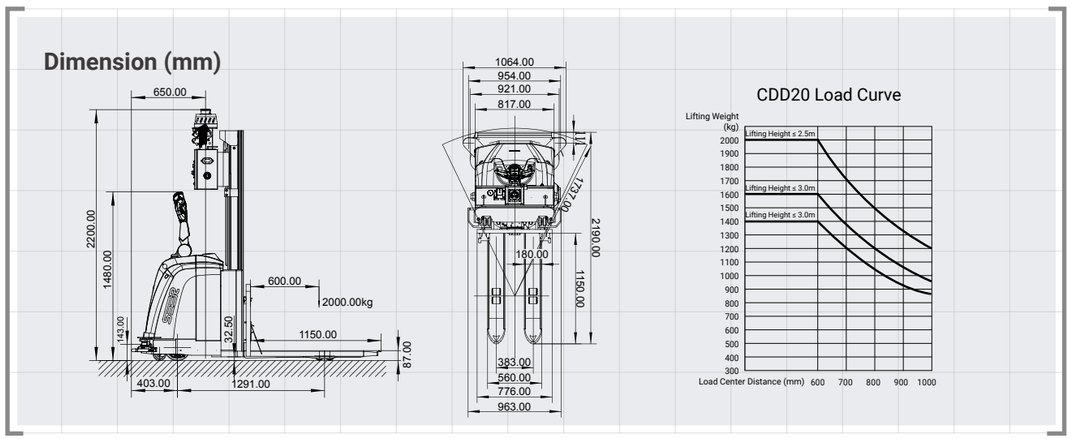
2T Large Load Capacity
Supporting 2000kg

Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection

Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging





Technical parameters

Product model	TR-FL200
Product name	Laser SLAM stacker automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	2000kg
Load centre distance	600mm
Wheelbase	1293mm
Dead weight (with battery)	1230kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	3000mm
Gantry height	3580mm
Fork surface ground clearance (at the lowest position)	85±5mm
Navigation laser scanning height	2177.5mm
Vehicle size: length * width * height	2190*1064*2200mm
Fork size: length * width * height	1150*180*55mm
Fork outer width	570/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	2900mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	2800mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1737mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	90/120mm/s
Descent speed: full load/no load	120/110mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.5kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.165kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	80*80mm
Tire size: Balance wheel	115*55mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	1X-2/4
Wheel base: bearing side	690mm
Wheel base: driving side	383mm

Battery parameters

Battery specifications	24/180 (Lithium Iron Phosphate)
Battery weight	90kg
Comprehensive battery life	10h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Stacker Automatic Forklift

TR-FL140L

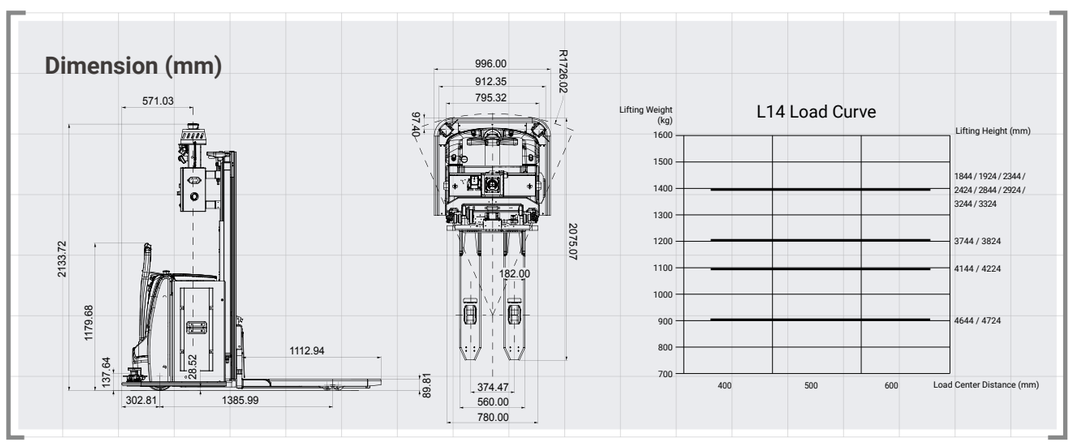
International Brand
Brand vehicle body with reliable quality

Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection

Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging





Technical parameters

Product model	TR-FL140L
Product name	Laser SLAM stacker automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	1400kg
Load centre distance	600mm
Wheelbase	1387±5mm
Dead weight (with battery)	1325kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	2924mm
Gantry height	3444mm
Fork surface ground clearance (at the lowest position)	86±5mm
Navigation laser scanning height	2098±5mm
Vehicle size: length * width * height	2075*996*2127mm
Fork size: length * width * height	1150*180*55mm
Fork outer width	560/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	2723mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	2719mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1726mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	160/250mm/s
Descent speed: full load/no load	450/450mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	2.3kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.4kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*90mm
Tire size: bearing wheel	85x65mm
Tire size: Balance wheel	140x50mm
Wheel number: driving wheel (x= driving wheel)/ bearing wheel	(1X+1)/4
Wheel base: bearing side	380mm
Wheel base: driving side	534mm

Battery parameters

Battery specifications	24/240 (Lithium Iron Phosphate)
Battery weight	65kg
Comprehensive battery life	10h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Transfer Automatic Forklift

TR-FL200S

2T Large Load Capacity
Supporting 2000kg

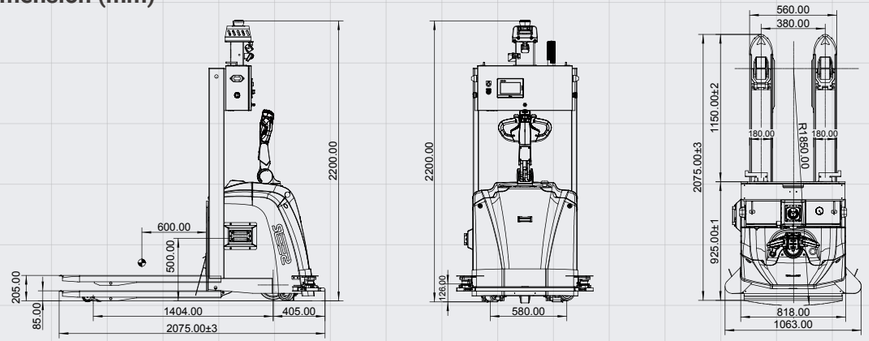
Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection



Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)



Technical parameters

Product model	TR-FL200S
Product name	Laser SLAM handling automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	2000kg
Load centre distance	600mm
Wheelbase	1404mm
Dead weight (with battery)	850kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	/mm
Standard lifting height	120mm
Gantry height	/mm
Fork surface ground clearance (at the lowest position)	85±5mm
Navigation laser scanning height	2168mm
Vehicle size: length * width * height	2075*1063*2200mm
Fork size: length * width * height	1150*180*55mm
Fork outer width	570/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	2760mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	2660mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1850mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	30/35mm/s
Descent speed: full load/no load	42/30mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.5kW
Lifting motor power (S3, 15%)	2.2kW
Steering motor power (S2, 10 min)	0.165kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	80*80mm
Tire size: Balance wheel	115*55mm
Wheel number: driving wheel (x= driving wheel)/ bearing wheel	1X-2/4
Wheel base: bearing side	500mm
Wheel base: driving side	580mm

Battery parameters

Battery specifications	24/180 (Lithium Iron Phosphate)
Battery weight	70kg
Comprehensive battery life	10h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +2 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	×
High shelf pallet recognition [3]	×
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	×
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	×
Bumper strip	√
High safety protection of fork teeth	×

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Ground Automatic Forklift

TR-FL080

Highly Customized Laser
More flexible for application scenario

Collision Avoidance, Safe and Secure
Increased protection range of anti-collision strip

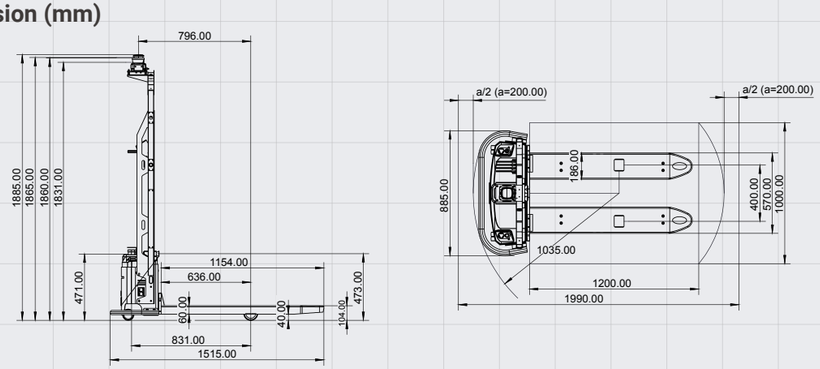
Pallet Recognition
Recognition with higher accuracy for precise

3D Obstacle Avoidance
360° full protection

Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging



Dimension (mm)



Technical parameters

Product model	TR-FL080
Product name	Laser SLAM ground automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	800kg
Load centre distance	600mm
Wheelbase	842mm
Dead weight (with battery)	210kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	/mm
Standard lifting height	70mm
Gantry height	/mm
Fork surface ground clearance (at the lowest position)	86/106±5mm
Navigation laser scanning height	1865mm
Vehicle size: length * width * height	1515*885*1885mm
Fork size: length * width * height	1150*186*60mm
Fork outer width	570/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	1990mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	1900mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1035mm

Performance parameters

Driving speed: full load/no load	0.6/0.8m/s
Lifting speed: full load/no load	/mm/s
Descent speed: full load/no load	/mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/5mm/10mm
Drive motor power (S2, 60 min)	0.6kW
Lifting motor power (S3, 15%)	0.8kW
Steering motor power (S2, 10 min)	/kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	100mm
Tire size: bearing wheel	80mm
Tire size: Balance wheel	/mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	/
Wheel base: bearing side	/mm
Wheel base: driving side	400mm

Battery parameters

Battery specifications	48/35 (Ternary lithium)
Battery weight	15kg
Comprehensive battery life	8h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 500

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +1 (OLEI LR-1BS2-V2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	×
High shelf pallet recognition [3]	×
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	×
The HMI screen	×
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	×
Bumper strip	√
High safety protection of fork teeth	×

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Reach Automatic Forklift

TR-FL140R

Narrow Channel Application
Slim body with small radius of rotation

Compatible with Various Pallets
Applicable both for 3-stinger pallet and field pallet

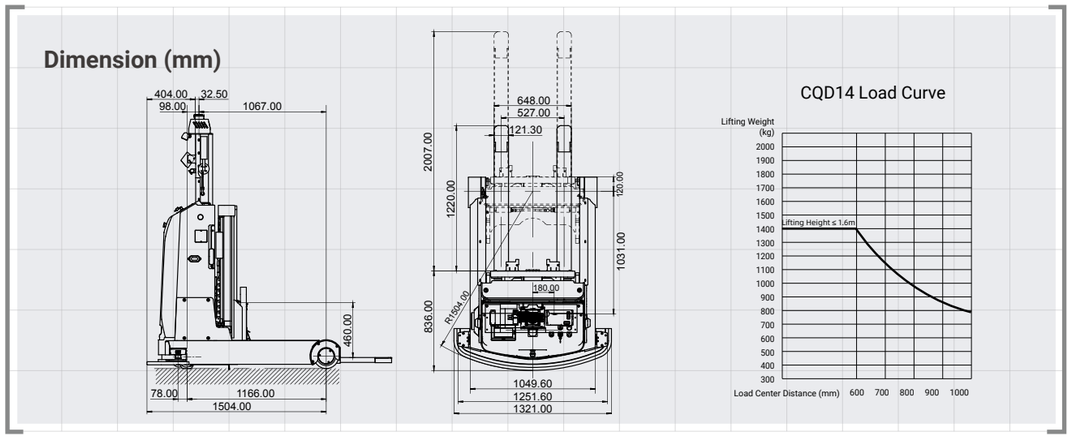
Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection



Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)



Technical parameters

Product model	TR-FL140R
Product name	Laser SLAM reach automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, handheld driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet / Field pallet
Rated load capacity	1400kg
Load centre distance	500mm
Wheelbase	1165mm
Dead weight (with battery)	1890kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	1600mm
Gantry height	2210mm
Fork surface ground clearance (at the lowest position)	40±5mm
Navigation laser scanning height	2104mm
Vehicle size: length * width * height	2054*1321*2130mm
Fork size: length * width * height	1220*120*40mm
Fork outer width	650mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	2195/2255mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	2125/2185mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1480mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	115/170mm/s
Descent speed: full load/no load	114/114mm/s
Gantry movement speed: full load/no load	176/197mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.25kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.165kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	210*85mm
Tire size: Balance wheel	140*60mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	1X-2/2
Wheel base: bearing side	967mm
Wheel base: driving side	520mm

Battery parameters

Battery specifications	24/180 (Lithium Iron Phosphate)
Battery weight	58kg
Comprehensive battery life	10h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Reach Automatic Forklift

TR-FL160

Lifting Height Up to 11M
Customized lifting height with the maximum support of 11m

International Brand
Brand vehicle body with reliable quality

Compatible with Various Pallets
Applicable both for 3-stinger pallet and field pallet

Faster Running Speed — merely 3 m/s

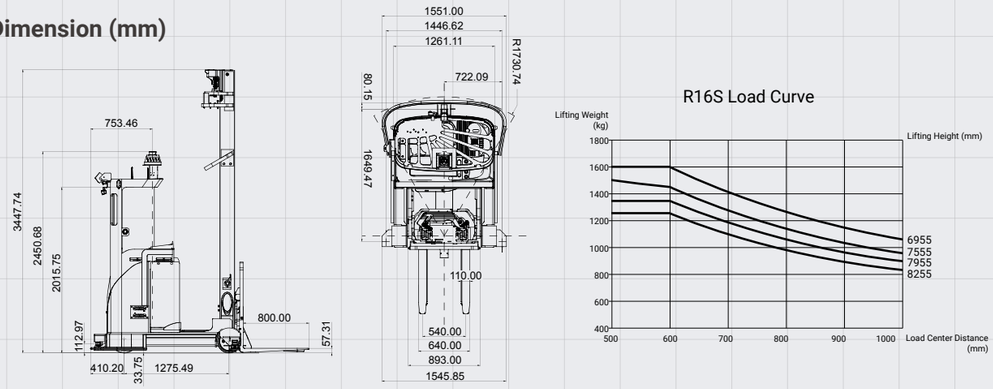
Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection

Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging



Dimension (mm)



R16S Load Curve

Technical parameters

Product model	TR-FL160
Product name	Laser SLAM reach automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, car driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet / Field pallet
Rated load capacity	1600kg
Load centre distance	600mm
Wheelbase	1275mm
Dead weight (with battery)	2940kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	5755mm
Gantry height	6495mm
Fork surface ground clearance (at the lowest position)	45mm
Navigation laser scanning height	2300mm
Vehicle size: length * width * height	2600*1600*2600mm
Fork size: length * width * height	1150*100*45mm
Fork outer width	316/710mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	3200mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	3100mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1840mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	160/250mm/s
Descent speed: full load/no load	450/450mm/s
Gantry movement speed: full load/no load	450/450mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	6.5kW
Lifting motor power (S3, 15%)	14kW
Steering motor power (S2, 10 min)	0.75kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	343*135mm
Tire size: bearing wheel	285*100mm
Tire size: Balance wheel	/mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	1X/2
Wheel base: bearing side	0mm
Wheel base: driving side	1150mm

Battery parameters

Battery specifications	48/420 (Lithium Iron Phosphate)
Battery weight	1200kg
Comprehensive battery life	10h
Charging time (10%-80%)	3.5h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Reach Automatic Forklift

TR-FL150M

High Customization
Highly customized for lifting height

International Brand
Brand vehicle body with reliable quality

Compatible with Various Pallets
Applicable both for 3-stinger pallet and field pallet

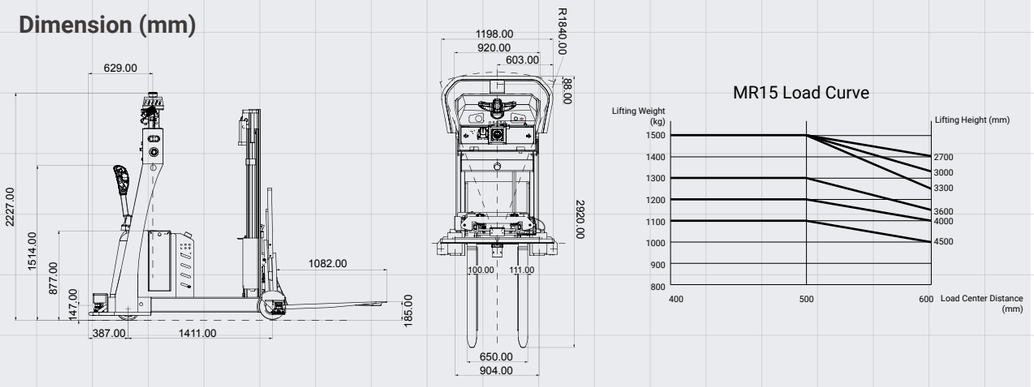
Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection



Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)



MR15 Load Curve

Technical parameters

Product model	TR-FL150M
Product name	Laser SLAM reach automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet / Field pallet
Rated load capacity	1500kg
Load centre distance	500mm
Wheelbase	1410mm
Dead weight (with battery)	1880kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	±10mm
Standard lifting height	3000mm
Gantry height	4000mm
Fork surface ground clearance (at the lowest position)	40mm
Navigation laser scanning height	2250mm
Vehicle size: length * width * height	2600*1200*2280mm
Fork size: length * width * height	1070*100*40mm
Fork outer width	200/650mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	3200mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	3100mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1800mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	110/160mm/s
Descent speed: full load/no load	170/150mm/s
Gantry movement speed: full load/no load	70/80mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.6kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.4kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	254*102mm
Tire size: Balance wheel	/mm
Wheel number: driving wheel (x= driving wheel)/ bearing wheel	1X2/2
Wheel base: bearing side	634mm
Wheel base: driving side	920mm

Battery parameters

Battery specifications	24/280 (Lithium Iron Phosphate)
Battery weight	200kg
Comprehensive battery life	10h
Charging time (10%-80%)	2.5h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	○
High shelf pallet recognition [3]	○
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	○
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	√

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Transfer Automatic Forklift

TR-FL200T

International Brand
Brand vehicle body with reliable quality

Long Life Battery
Meeting various working requirements with overall battery life over than 10h

2T Large Load Capacity
Supporting 2000kg

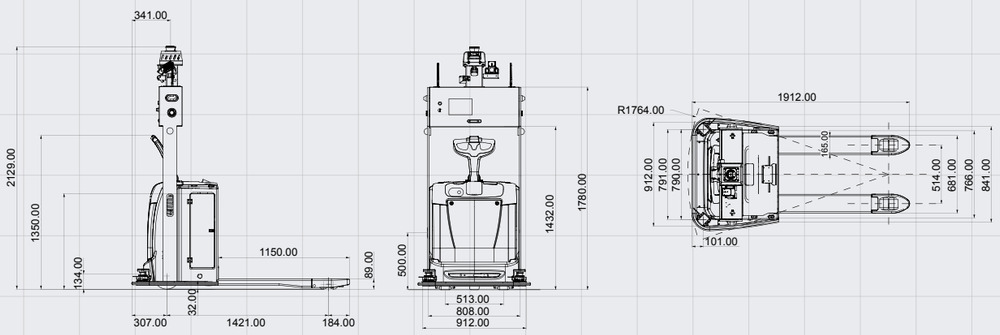
Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection



Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)



Technical parameters

Product model	TR-FL200T
Product name	Laser SLAM handling automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	2000kg
Load centre distance	600mm
Wheelbase	1534mm
Dead weight (with battery)	744kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	/mm
Standard lifting height	150mm
Gantry height	/mm
Fork surface ground clearance (at the lowest position)	85mm
Navigation laser scanning height	2250mm
Vehicle size: length * width * height	2200*900*2270mm
Fork size: length * width * height	1150*170*55mm
Fork outer width	570/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	3000mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	3000mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	2236mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	/mm/s
Descent speed: full load/no load	/mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.6kW
Lifting motor power (S3, 15%)	2.2kW
Steering motor power (S2, 10 min)	0.4kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	85*70mm
Tire size: Balance wheel	130*55mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	1X+2/4
Wheel base: bearing side	510mm
Wheel base: driving side	510mm

Battery parameters

Battery specifications	24/280 (Lithium Iron Phosphate)
Battery weight	200kg
Comprehensive battery life	10h
Charging time (10%-80%)	2.5h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	×
High shelf pallet recognition [3]	×
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	×
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	×
Bumper strip	√
High safety protection of fork teeth	×

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Automatic Hook Forklift

TR-FL300P

International Brand
Brand vehicle body with reliable

3T Extra Large Traction Weight
Supporting 3000kg

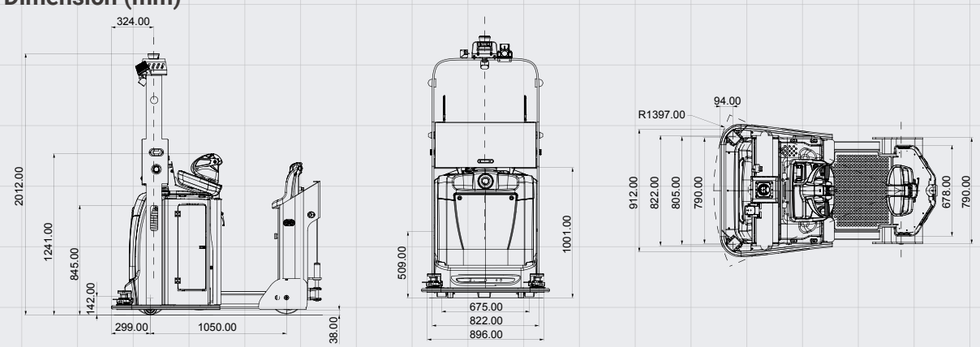
Optional Automatic Drag Hook Device

3D Obstacle Avoidance
360° full protection



Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)



Technical parameters

Product model	TR-FL300P
Product name	Laser SLAM automatic tractor
Dynamic form	Electric
Driving mode	Automatic navigation, handheld driving
Navigation type	Laser SLAM
Tray type	/
Rated load capacity	3000kg
Load centre distance	/mm
Wheelbase	1050mm
Dead weight (with battery)	940kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	/mm
Standard lifting height	/mm
Gantry height	/mm
Fork surface ground clearance (at the lowest position)	/mm
Navigation laser scanning height	2250mm
Vehicle size: length * width * height	1650*800*2043mm
Fork size: length * width * height	/mm
Fork outer width	/mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	/mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	/mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1230mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	/mm/s
Descent speed: full load/no load	/mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	3kW
Lifting motor power (S3, 15%)	/kW
Steering motor power (S2, 10 min)	0.4kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	254*102mm
Tire size: bearing wheel	250*80mm
Tire size: Balance wheel	100*40mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	1X+2/2
Wheel base: bearing side	544mm
Wheel base: driving side	675mm

Battery parameters

Battery specifications	24/280 (Lithium Iron Phosphate)
Battery weight	200kg
Comprehensive battery life	10h
Charging time (10%-80%)	2.5h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +3 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	×
Cage stack [3]	×
High shelf pallet recognition [3]	×
Pallet damage detection [3]	×
Pallet stacking and unstacking [5]	×
The HMI screen	√
Fork tooth distance sensor	×
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	√
Bumper strip	√
High safety protection of fork teeth	×

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Transfer Automatic Forklift

TR-FL250M

Long Life Battery
Meeting various working requirements with overall battery life over than 10h

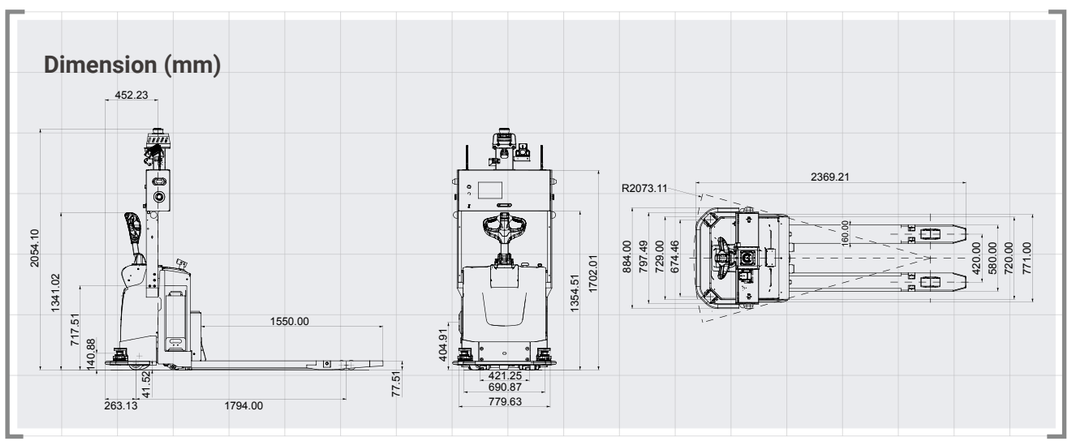
2.5T Large Load Capacity
Supporting 2500kg

Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection

Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging





Technical parameters

Product model	TR-FL250M
Product name	Laser SLAM handling automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet
Rated load capacity	2500kg
Load centre distance	600mm
Wheelbase	1345mm
Dead weight (with battery)	676kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	/mm
Standard lifting height	120mm
Gantry height	/mm
Fork surface ground clearance (at the lowest position)	85mm
Navigation laser scanning height	2100mm
Vehicle size: length * width * height	2100*730*2100mm
Fork size: length * width * height	1150*170*56mm
Fork outer width	570/680mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	2700mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	2660mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	2200mm

Performance parameters

Driving speed: full load/no load	1.2/1.5m/s
Lifting speed: full load/no load	40/55mm/s
Descent speed: full load/no load	42/30mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	1.5kW
Lifting motor power (S3, 15%)	2.2kW
Steering motor power (S2, 10 min)	0.2kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	230*75mm
Tire size: bearing wheel	80*70mm
Tire size: Balance wheel	125*50mm
Wheel number: driving wheel (×= driving wheel)/ bearing wheel	4/1X-2
Wheel base: bearing side	510mm
Wheel base: driving side	476mm

Battery parameters

Battery specifications	24/180 (Lithium Iron Phosphate)
Battery weight	70kg
Comprehensive battery life	10h
Charging time (10%-80%)	2h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +2 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	×
High shelf pallet recognition [3]	×
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	×
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	×
Bumper strip	√
High safety protection of fork teeth	×

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Laser SLAM Counter Balanced Stacking Transfer Automatic Forklift

TR-FL200A

Compatible with Various Pallets
Applicable both for 3-stinger pallet and field pallet

2T Large Load Capacity
Supporting 2000kg

Automatic Fork Distance Adjustment

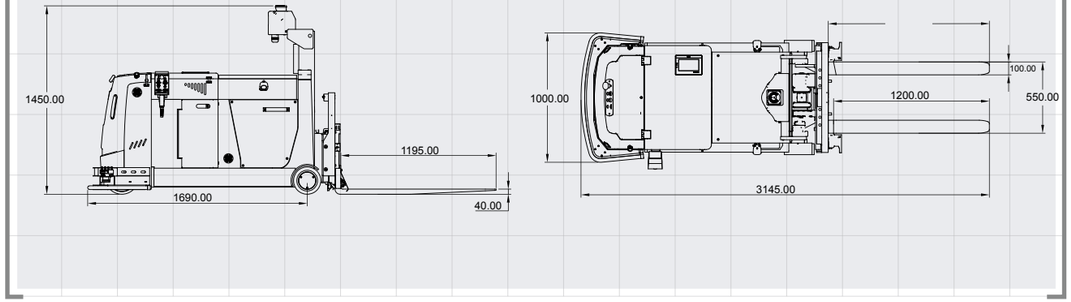
Pallet Recognition
Recognition with higher accuracy for precise forking

3D Obstacle Avoidance
360° full protection



Real Laser SLAM | Full Protection | Flexible Dispatching | Better Adaptability | Automatic Charging

Dimension (mm)



Technical parameters

Product model	TR-FL200A
Product name	Laser SLAM counterbalanced automatic forklift
Dynamic form	Electric
Driving mode	Automatic navigation, walking driving
Navigation type	Laser SLAM
Tray type	3-stringer pallet / Field pallet
Rated load capacity	2000kg
Load centre distance	600mm
Wheelbase	1425mm
Dead weight (with battery)	2525kg
Navigation position accuracy [1]	±10mm
Navigation angle accuracy [1]	±0.5°
Fork in-position accuracy [1]	/mm
Standard lifting height	300mm
Gantry height	/mm
Fork surface ground clearance (at the lowest position)	45±5mm
Navigation laser scanning height	1432mm
Vehicle size: length * width * height	3145*1000*1450mm
Fork size: length * width * height	1200*100*40mm
Fork outer width	260-550mm
Right-angle stacking channel width, pallet 1000×1200 (1200 placed across forks)	4200mm
Right-angle stacking channel width, pallet 800×1200 (1200 placed along the fork)	4100mm
Map Area (Single)	≤ 400000m²
Minimum turning radius	1690mm

Performance parameters

Driving speed: full load/no load	1.0/1.2m/s
Lifting speed: full load/no load	/mm/s
Descent speed: full load/no load	/mm/s
Gantry movement speed: full load/no load	/mm/s
Passability (slope/step/gap)[2]	< 5%/20mm/30mm
Drive motor power (S2, 60 min)	2.5kW
Lifting motor power (S3, 15%)	3kW
Steering motor power (S2, 10 min)	0.4kW
Service braking mode	Electromagnetic brake
Drive control mode	Servo control

Wheel parameters

Tyre type: drive wheel/support wheel	Polyurethane/Polyurethane
Tire size: driving wheel	254*100mm
Tire size: bearing wheel	210*85mm
Tire size: Balance wheel	/mm
Wheel number: driving wheel (x= driving wheel)/ bearing wheel	1X-1/2
Wheel base: bearing side	/mm
Wheel base: driving side	/mm

Battery parameters

Battery specifications	24/280 (Lithium Iron Phosphate)
Battery weight	255kg
Comprehensive battery life	10h
Charging time (10%-80%)	2.5h
Charging method	Manual/Automatic
Battery cycle number	> 2000

Certifications

ISO 3691-4	×
EMC/ESD	√
UN38.3	√
RoHS	√
REACH	√

Function configurations

Lidar number	1 (P+F R2000) +2 (OLEI LR-1BS2)
Wi-Fi roaming function	√
3D obstacle avoidance [3]	○
Remote emergency stop [4]	○
Pallet recognition [3]	○
Cage stack [3]	×
High shelf pallet recognition [3]	×
Pallet damage detection [3]	○
Pallet stacking and unstacking [5]	×
The HMI screen	√
Fork tooth distance sensor	√
Cargo weight detection	○

Safety configurations

E-stop button	√
Sound and light indicator	√
Braking distance: 1m/s / 1.5m/s	≤30 / ≤50cm
Vehicle hardware fault detection	√
360° laser protection	×
Bumper strip	√
High safety protection of fork teeth	×

Others

Network	4G / 5G / Wi-Fi 802.11 a/b/g/n/ac
Ground flatness	±5mm/m²
Scenario requirements	Only suitable for indoor, light intensity: ≤40 klx (IEC 61496-3), ground without water and oil and other scenes
Ambient temperature and humidity range	TEMP: 0-50 / RH: 10-90, no compression, no condensation
IP rating	IP20
Noise near driver's ear according to EN12053	≤70B(A)

Parameters of Automatic forklifts










	Product model	TR-FL140	TR-FL140L	TR-FL200	TR-FL150T	TR-FL160	TR-FL140R	TR-FL160S	TR-FL140S
Technical parameters	Product name	Laser SLAM small stacker automatic forklift	Laser SLAM small stacker automatic forklift	Laser SLAM stacker automatic forklift	Laser SLAM counterbalanced automatic forklift	Laser SLAM stacker automatic forklift	Laser SLAM reach automatic forklift	Laser SLAM stacker automatic forklift	Laser SLAM stacker automatic forklift
	Driving mode	Automatic navigation, handheld driving	Automatic navigation, handheld driving	Automatic navigation, walking driving	Automatic navigation, car driving	Automatic navigation, walking driving	Automatic navigation, handheld driving	Automatic navigation, walking driving	Automatic navigation, walking driving
	Navigation type	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM
	Tray type	3-stringer pallet	3-stringer pallet	3-stringer pallet	3-stringer pallet / Field pallet	3-stringer pallet	3-stringer pallet / Field pallet	3-stringer pallet	3-stringer pallet
	Rated load capacity（kg）	1400	1400	2000	1500	1600	1400	1600	1400
	Dead weight (with battery)（kg）	680	740	1230	2325	1950	1890	1325	1325
	Navigation position accuracy（mm）	±10	±10	±10	±10	±10	±10	±10	±10
	Navigation angle accuracy（mm）	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5
	Fork in-position accuracy（mm）	±10	±10	±10	±10	±10	±10	±10	±10
	Standard lifting height（mm）	1600/3000	3000	3000	3300	3000	1600	2844	2924
	Vehicle size: length * width * height（mm）	1640*990*2043	1650*990*2240	2190*1064*2200	2555*1150*2326	3445*1065*2218	2054*1321*2130	2100*970*2270	2075*996*2127
	Fork size: length * width * height（mm）	1150*180*55	1150*180*55	1150*180*55	950*110*40	2400*150*70	1220*120*40	1150*180*55	1150*180*55
	Fork outer width（mm）	570/680	570/680	570/680	460-750	570/680	650	570/680	560/680
	Right-angle stacking channel width pallet 1000×1200 (1200 placed across forks)（mm）	1888	1888	2900	3600	4300	2195/2255	2659	2723
	Right-angle stacking channel width pallet 800×1200 (1200 placed along the fork)（mm）	1880	1880	2800	3500	4200	2125/2185	2619	2719
	Minimum turning radius（mm）	1182	1206	1737	1710	3260	1480	1720	1726
Performance parameters	Driving speed: full load/no load（m/s）	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5
	Lifting speed: full load/no load（mm/s）	115/170	115/170	90/120	95/120	90/120	115/170	160/250	160/250
	Descent speed: full load/no load（mm/s）	160/125	160/125	120/110	120/85	120/110	114/114	450/450	450/450
Wheel parameters	Wheel number: driving wheel (x= driving wheel)/ bearing wheel	1X-2/4	1X-2/4	1X-2/4	1X-2/2	1X-2/4	1X-2/2	(1X+1)/4	(1X+1)/4
Battery parameters	Battery specifications(V/Ah)	24/180 (Lithium Iron Phosphate)	24/180 (Lithium Iron Phosphate)	24/180 (Lithium Iron Phosphate)	24/270 (Lithium Iron Phosphate)	24/180 (Lithium Iron Phosphate)	24/180 (Lithium Iron Phosphate)	24/240 (Lithium Iron Phosphate)	24/240 (Lithium Iron Phosphate)
	Battery weight(kg)	58	58	90	230	90	58	65	65
	Comprehensive battery life(h)	10	10	10	10	10	10	10	10
	Charging time (10%-80%)(h)	2	2	2	2.5	2	2	2	2
	Charging method	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic
Certifications	ISO 3691-4	×	√	×	×	×	×	×	×
	EMC/ESD	√	√	√	√	√	√	√	√
	UN38.3	√	√	√	√	√	√	√	√
	RoHS	√	√	√	√	√	√	√	√
	REACH	√	√	√	√	√	√	√	√
Function configurations	Wi-Fi roaming function	√	√	√	√	√	√	√	√
	3D Obstacle Avoidance	○	○	○	○	○	○	○	○
	Pallet recognition	○	○	○	○	○	○	○	○
	Cage stack	○	○	○	○	○	○	○	○
	High shelf pallet recognition	○	○	○	○	○	○	○	○
	Pallet damage detection	○	○	○	○	○	○	○	○
	Pallet stacking and unstacking	○	○	○	○	○	○	○	○
Safety configurations	E-stop button	√	√	√	√	√	√	√	√
	Sound and light indicator	√	√	√	√	√	√	√	√
	360° laser protection	√	√	√	√	√	√	√	√
	Bumper strip	√	√	√	√	√	√	√	√
	High safety protection of fork teeth	√	√	√	√	√	√	√	√

Parameters of Automatic forklifts										
	Product model	TR-FL160RS	TR-FL150M	TR-FL200TS	TR-FL300P	TR-FL250S	TR-FL200S	TR-FL200L	TR-FL200A	TR-FL080
Technical parameters	Product name	Laser SLAM reach automatic forklift	Laser SLAM reach automatic forklift	Laser SLAM handling automatic forklift	Laser SLAM automatic tractor	Laser SLAM handling automatic forklift	Laser SLAM handling automatic forklift	Laser SLAM handling automatic forklift	Laser SLAM counterbalanced automatic forklift	Laser SLAM ground automatic forklift
	Driving mode	Automatic navigation, car driving	Automatic navigation, walking driving	Automatic navigation, walking driving	Automatic navigation, car driving	Automatic navigation, walking driving	Automatic navigation, walking driving	Automatic navigation, walking driving	Automatic navigation, walking driving	Automatic navigation
	Navigation type	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM	Laser SLAM
	Tray type	3-stringer pallet / Field pallet	3-stringer pallet / Field palle	3-stringer pallet	/	3-stringer pallet	3-stringer pallet	3-stringer pallet	3-stringer pallet / Field palle	3-stringer pallet
	Rated load capacity（kg）	1600	1500	2000	3000	2500	2000	2000	2000	800
	Dead weight (with battery)（kg）	2940	1880	744	940	676	850	947	2525	210
	Navigation position accuracy（mm）	±10	±10	±10	±10	±10	±10	±10	±10	±10
	Navigation angle accuracy（mm）	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5
	Fork in-position accuracy（mm）	±10	±10	/	/	/	/	/	/	/
	Standard lifting height（mm）	5755	3000	150	/	120	120	120	300	70
	Vehicle size: length * width * height（mm）	2600*1600*2600	2600*1200*2280	2200*900*2270	1650*800*2043	2100*730*2100	2075*1063*2200	2824*1063*2200	3145*1000*1450	1515*885*1885
	Fork size: length * width * height（mm）	1150*100*45	1070*100*40	1150*170*55	/	1150*170*56	1150*180*55	1900*180*55	1200*100*40	1154*186*60
	Fork outer width（mm）	316/710	200/650	570/680	/	570/680	570/680	570/680	260-550	570/680
	Right-angle stacking channel width,pallet 1000×1200 (1200 placed across forks)（mm）	3200	3200	3000	/	2700	2760	3600	4200	1990
	Right-angle stacking channel width,pallet 800×1200 (1200 placed along the fork)（mm）	3100	3100	3000	/	2660	2660	3500	4100	1900
	Minimum turning radius（mm）	1840	1800	2236	1230	2200	1850	2166	1690	1035
Performance parameters	Driving speed: full load/no load（m/s）	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.2/1.5	1.0/1.2	0.6/0.8
	Lifting speed: full load/no load（mm/s）	160/250	110/160	/	/	40/55	30/35	30/35	/	/
	Descent speed: full load/no load（mm/s）	450/450	170/150	/	/	42/30	42/30	42/30	/	/
Wheel parameters	Wheel number: driving wheel (x= driving wheel) / bearing wheel	1X/2	1X2/2	1X+2/4	1X+2/2	4/1X-2	1X-2/4	1X-2/4	1X-1/2	/
Battery parameters	Battery specifications(V/Ah)	48/420 (Lithium Iron Phosphate)	24/280 (Lithium Iron Phosphate)	24/280 (Lithium Iron Phosphate)	24/280 (Lithium Iron Phosphate)	24/180 (Lithium Iron Phosphate)	24/280 (Lithium Iron Phosphate)	24/270 (Lithium Iron Phosphate)	24/280 (Lithium Iron Phosphate)	48/35 (Ternary lithium)
	Battery weight(kg)	1200	200	200	200	70	70	97	255	15
	Comprehensive battery life(h)	10	10	10	10	10	10	10	10	8
	Charging time (10%-80%)(h)	3.5	2.5	2.5	2.5	2	2	2.5	2.5	2
	Charging method	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic	Manual/Automatic
Certifications	ISO 3691-4	×	×	×	×	×	×	×	×	×
	EMC/ESD	√	√	√	√	√	√	√	√	√
	UN38.3	√	√	√	√	√	√	√	√	√
	RoHS	√	√	√	√	√	√	√	√	√
	REACH	√	√	√	√	√	√	√	√	√
Function configurations	Wi-Fi roaming function	√	√	√	√	√	√	√	√	√
	3D Obstacle Avoidance	○	○	○	○	○	○	○	○	○
	Pallet recognition	○	○	○	×	○	○	○	○	○
	Cage stack	○	○	×	×	×	×	×	×	×
	High shelf pallet recognition	○	○	×	×	×	×	×	×	×
	Pallet damage detection	○	○	○	×	○	○	○	○	○
	Pallet stacking and unstacking	○	○	×	×	×	×	×	×	×
Safety configurations	E-stop button	√	√	√	√	√	√	√	√	√
	Sound and light indicator	√	√	√	√	√	√	√	√	√
	360° laser protection	√	√	×	√	×	×	×	×	×
	Bumper strip	√	√	√	√	√	√	√	√	√
	High safety protection of fork teeth	√	√	×	×	×	×	×	×	×



Textile Industry

One-Stop Intelligent Manufacturing and SmartLogistics Solutions

Growing Demands for Intelligent Transformation in the Textile Industry

While the Chinese textile industry has great prospects for development, it has been plagued by manufacturing problems such as harsh working environments and high labor intensity requirements. These issues have led to difficulties in recruitment, high employee turnover, high costs, and low efficiency. While textile enterprises urgently require intelligent transformation to save on costs and increase their production capacity, few smart logistics companies have the ability to provide solutions for their complex industry scenarios without altering the original factory environment.

One-Stop Solution forWeiyi Holdings Limited

Utilizing its rich on-site experience and superb product performance, SEER provided Weiyi Holdings Limited with a one-stop logistics solution capable of comprehensively resolving pain points; replacing manual operations through large-scale smart transfer; and realizing transfer between the production line buffer zone and the warehouse, transportation from the warehouse to the delivery point, and automatic nighttime warehouse management.

Solution Layout

- "Laser SLAM Mini Automatic Forklift (SMF-MP10S);
- Automatic charging station;
- Synergistic Resource Dispatch (SRD);
- Dispatch server;
- One-stop implementation tool: Roboshop Pro."

Client Profile

Serving as the workshop of the world, China's textile industry accounts for 50% of global production, while its chemical fiber production accounts for an even higher 70%. Zhejiang Weiyi Industry Co., Ltd. is a large-scale textile enterprise, primarily engaged in production and processing.

Challenges

- "Two-shift model, 24h continuous operation
- The weight of finished textile products are not uniform, making them difficult to move.
- Site space is narrow, storage is dense, and route planning is complex.
- Harsh working environments and dusty surfaces"

Additional Modifications

"Installation of dusters onto the vehicle body helps prevent wheels from getting stuck on debris.
Increase of vehicle rated load in accordance with product quality."



Solution Highlights

- "The RDS is deeply integrated with the client's ERP system to realize collaborative material management and AGV dispatch;
- The software is simple, easy to use, and supports execution via terminal;
- The ERP allocates store/delivery tasks → an order is placed through PDA code scan → RDS → robot selection → designated robot executes the task; Optimal route creation and SEER RDS route management prevents robot deadlocks and realizes two-way transportation across all workstations;
- Smart management, visualization across the entire production process, panoramic display of all factory data, along with timely and efficient site dispatch;
- Automatic night-time inventory greatly improves moving efficiency and saves on manpower."

2.5 times
transfer efficiency

99.99%
Supply timeliness

24 hours
uninterrupted operation

The SEER one-stop solution helped Weiyi Holdings Limited solve the major issues of high labor costs and low moving efficiency that had been plaguing its textile operations. As of present, production line automation and intelligent transformation of the first warehouse have been completed, greatly enhancing production capacity. Weiyi Holdings Limited has noted that its partnership with SEER has exceeded its original expectations for intelligent transformation. The enterprise plans to continue working with SEER to complete the intelligent transformation of its factories and realize smart manufacturing across its entire production chain.



Auto Parts Manufacturing Industry

One-Stop Intelligent Manufacturing and SmartLogistics Solutions

Transformation Requirements of the Automotive Industry

Auto parts manufacturing industry is developing rapidly in China, which is an important part of the auto industry belonging to the labor-intensive industry. The traditional production process requires manual handling of materials, but the limited passages in the factory workshop have caused problems such as workers with high mobility, insufficient labor, low efficiency, and potential safety hazards.

One-Stop Solution

In accordance with the actual site situation, SEER assisted the integrator in automating the client's workshop logistics through its one-stop solution tailored for the automobile industry. The solution reduced labor costs, eliminated hidden safety hazards, and greatly improved the factory's logistics and transportation efficiency.

Solution Layout

- "SRC-powered Laser SLAM Transfer Automatic Forklift;
- Automatic charging station;
- Dispatch server;
- One-stop implementation tool: Roboshop Pro."

Client Profile

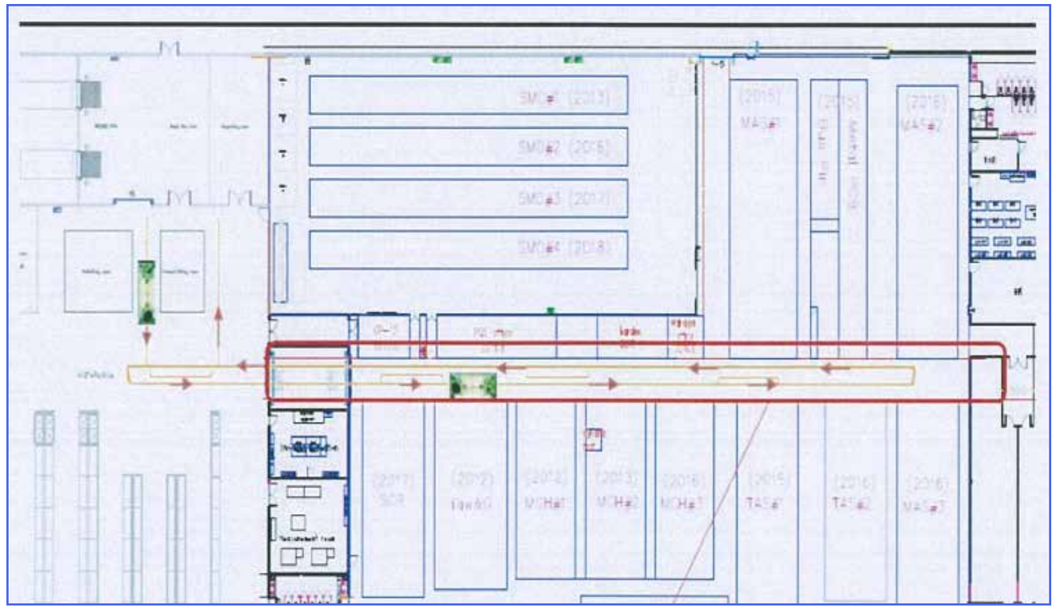
The client is primarily engaged in the R&D and manufacturing of electronic products and components such as automotive anti-lock braking systems, electronic control units (ECUs), and sensors for driver-assistance systems. While the operational requirements continue to rise and the demand for personnel is increasing, the enterprise's personnel costs remain high, efficiency is low, and operations are not optimally integrated with the MES. Enhanced workshop automation and intelligence are urgently required.

Challenges

The laser sensor used for navigation is installed at a high position, and it is difficult to detect an obstacle in a low position.

Additional Modifications

An additional laser scanner was added at a low elevation along with 2 sets of photoelectric sensors on the fork tip to improve safety in a comprehensive manner.



Solution Highlights

- The software is simple and easy to use, removing the need for long and costly training periods;
- SEER provides a comprehensive alert mechanism to ensure safety during transportation; The software can be used to delimit an area to reduce robot speeds and prevent high-speed collisions;
- Realizes obstacle detection by the automatic forklift to ensure the safety of personnel and goods during operations;
- Features a comprehensive safety training mechanism to ensure the safety of integrated man-machine operations.

2 times — transfer efficiency

99.99% — Supply timeliness

24 hours — uninterrupted operation

Saves labor force by replacing manual handling with robots, greatly reducing the labor cost of the enterprise and that of workshop personnel management; Improves the logistics and transportation efficiency between warehouse and workshop, further improving the production efficiency of enterprises; Promotes the automation and intelligence of workshop by effectively connecting with MES system.



Auto Parts Manufacturing Industry

One-Stop Intelligent Manufacturing and Smart Logistics Solutions

Transformation Requirements of the Automotive Industry

More than 100 years have witnessed the advancement of automotive industry in the global manufacturing system, thus, the level of its production automation has become increasingly sophisticated. However, in the production and processing workshop, its internal logistics automation level is still relatively low, which is not conducive to meet the current production needs of flexible and intelligent manufacturing. The industry, therefore, urgently needs to realize such manufacturing through intelligent logistics to improve production capacity.

One-Stop Solution

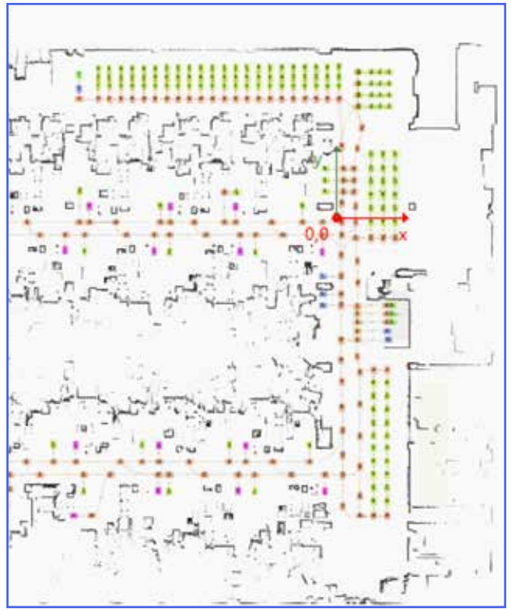
In accordance with the actual site situation, SEER provides one-stop logistics solution to solve the client's sore points in all aspects. We realize the whole process through large-scale intelligent transportation, including transporting the cage filled with materials in the blank warehouse to the production line, the empty cage back to the empty cage warehouse in the production line area, the processed finished products to the inspection area, and these finished products to the finished product warehouse.

Client Profile

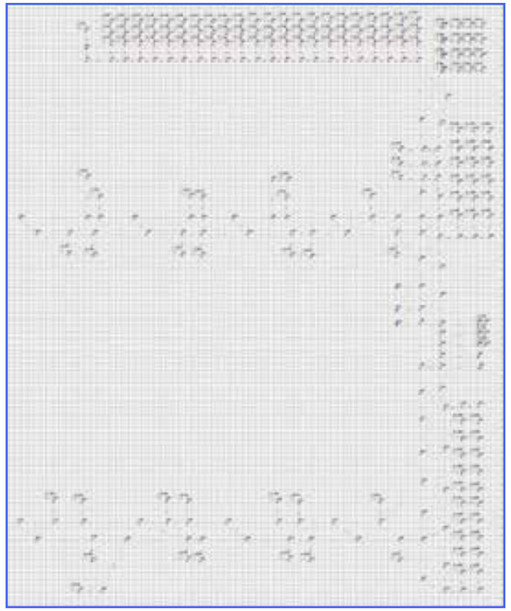
The client is mainly engaged in the R&D, production and sales of automotive aluminum alloy precision die castings. With advanced and efficient design concept in the die casting industry, it owns the ability of independent R&D, lean production and management. With a spurt of progress of the company, the traditional mode of human transportation can no longer meet the flexible production needs of the company. Hence, it is urgent to improve the automation and intelligence level of logistics transportation in warehouses and workshops.

Solution Layout

- Laser SLAM Mini Automatic Forklift (SMF-MP10S);
- Automatic charging station;
- Synergistic Resource Dispatch (SRD);
- Dispatch server;
- One-stop implementation tool: Roboshop Pro.



[Roboshop Pro Implementation Diagram]



[SRD Implementation Diagram]

Solution Highlights

- "The RDS is deeply integrated with the client's MES and WMS systems to realize collaborative material management and AGV dispatch;
- Smaller and more flexible, the laser slam ground automatic forklift SMF-MP10S overcomes such problems as narrow site space and difficult operation of multiple AGVs and avoids collision, deadlock and other dangerous situations, thus ensuring smooth operation;
- The location management function of RDS establishes a virtual location to match with the on-site station, and interacts with the on-site PLC to realize safe and efficient logistics transportation;
- The software is simple and easy to use, and PDA can scan the QR code to place an order;
- Smart management, visualization across the entire production process, panoramic display of all factory data, along with timely and efficient site dispatch."

3 times

transfer efficiency

99.99%

Supply timeliness

24 hours

uninterrupted operation

Through the one-stop intelligent manufacturing and intelligent logistics solution of auto parts processing workshop, SEER provides the client with the intelligent logistics between workshop and warehouse as well as the flexible manufacturing of workshop so as to greatly improve the production capacity while reducing labor cost and significantly enhance the overall intelligence, automation and informatization level of workshop.