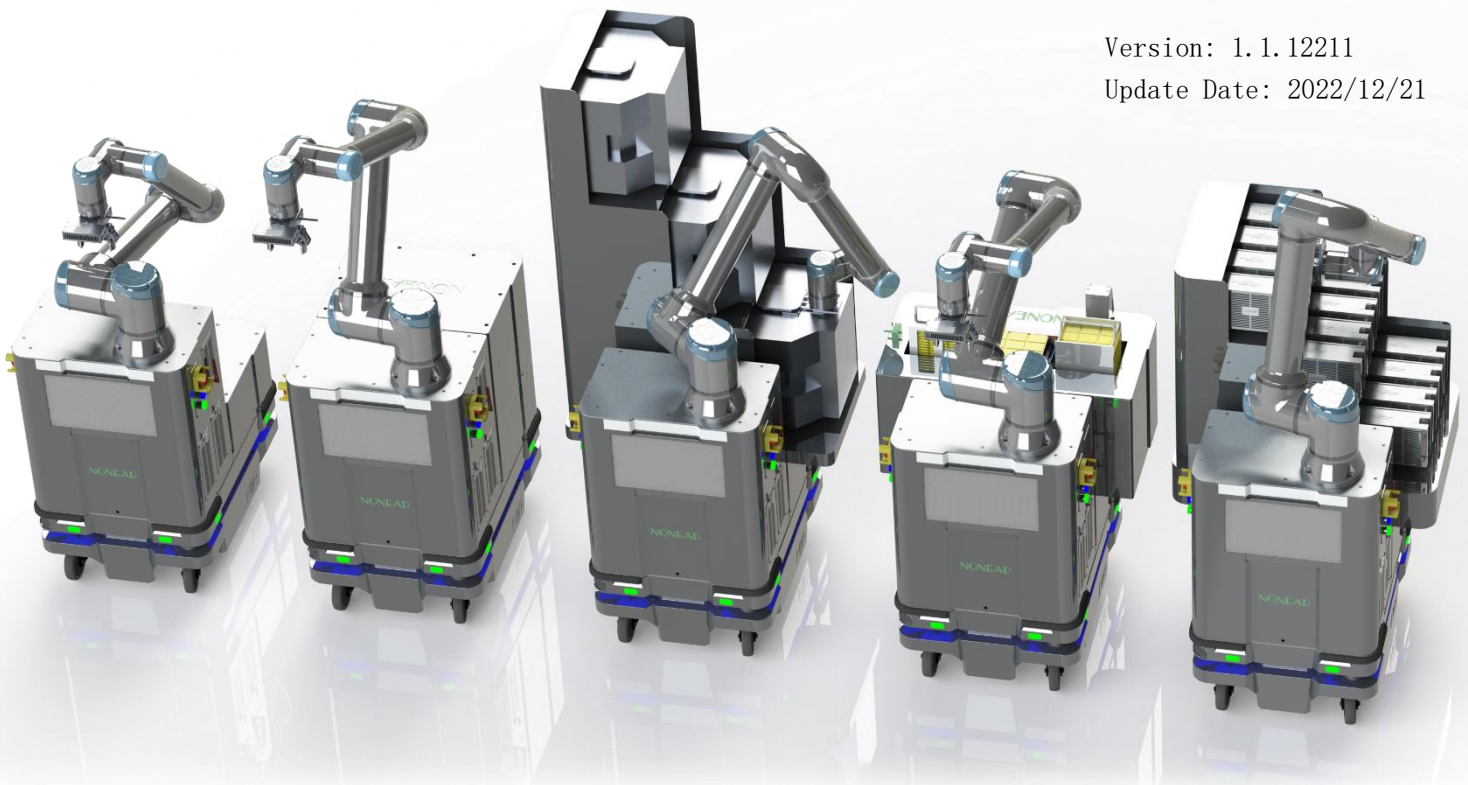


NONEAD nCobot2510e Limited CB2

Brochure

Version: 1.1.12211
Update Date: 2022/12/21



Software Version 2.0.0

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技术参数, 如有变更, 恕不另行通知

新版下载地址: https://www.nonead.com/hardware_content/20704.html

ICS CODE:
NO. DOC1911010000671-3



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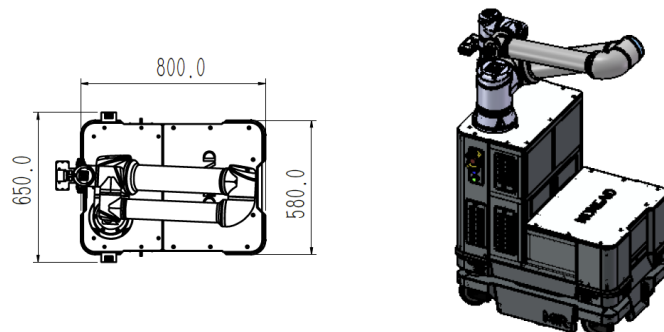
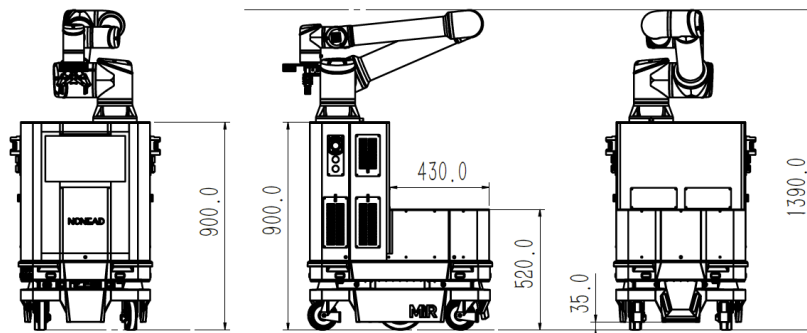
nCobot2510e is a kind of indoor industrial cooperative autonomous mobile robot, which can realize the automation of material transportation in the factory, improve the speed of internal logistics, and liberate the employees from the repetitive and dangerous transportation work, so as to ensure the safety and efficiency of employees and robots, and improve productivity.

nCobot2510e has the characteristics of rapid arrangement, simple programming, safety and reliability, and does not need to change the working environment layout. nCobot2510e enables user to adapt the changing market demands, new products and new production processes. Users can easily replace top modules, modify tasks, and add new features without external integration services.

NH0212_nCobot2510e_Limited_Body



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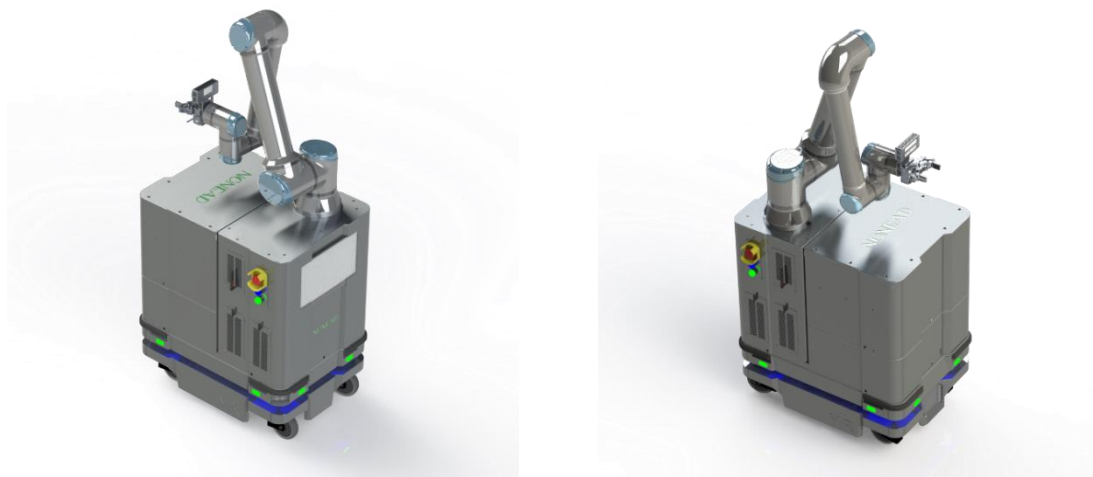




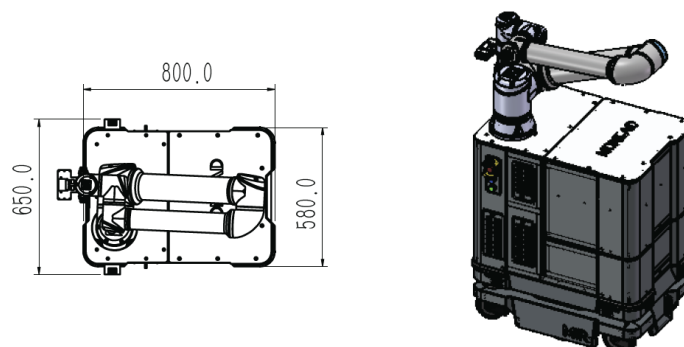
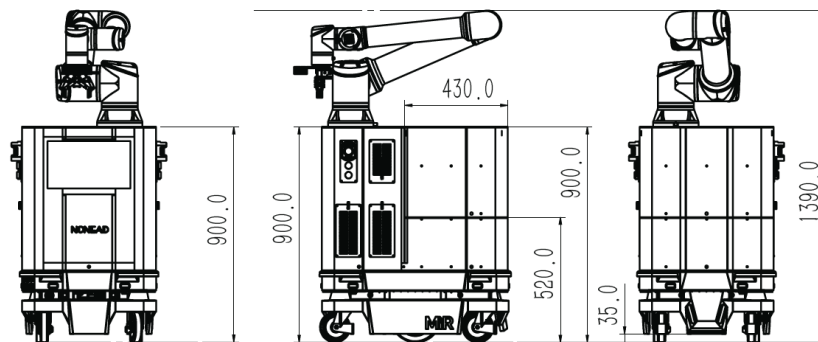
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NONEAD technology provides standard vehicle, modular design for the industrial cooperative hybrid robot, while it can plug and play. Users can also independently design the back vehicles. nCobot provides a larger number of simulation and digital input and output, which is ready for users to choose. Cooperated with nCobot V2, the hybrid robots programming platform independently developed by NONEAD technology, it can realize flexible combination and user function rapidly.

NH0213_nCobot2510e_Limited_vehicle module 1 platform vehicle (no NH0212)



nCobot2510e configured with platform standard vehicle

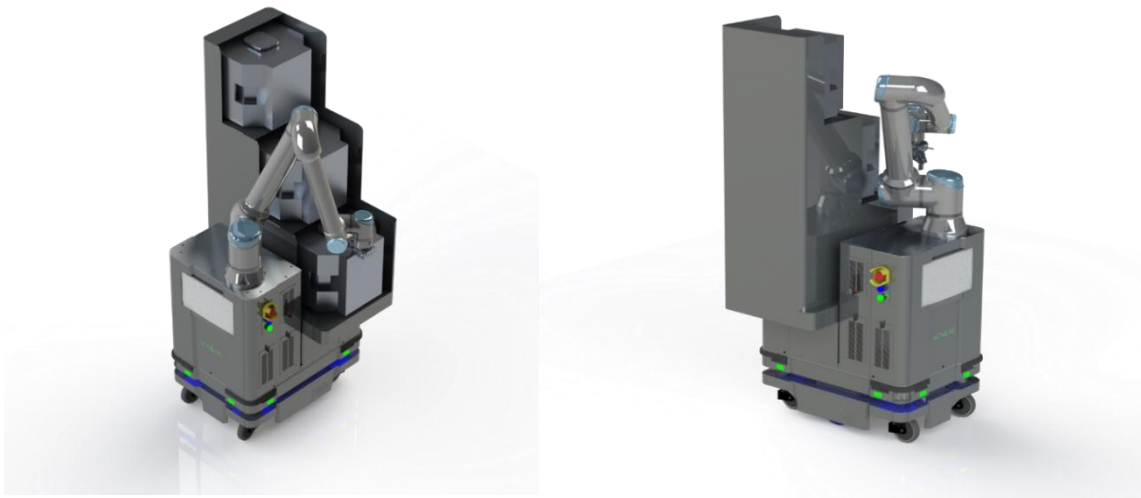




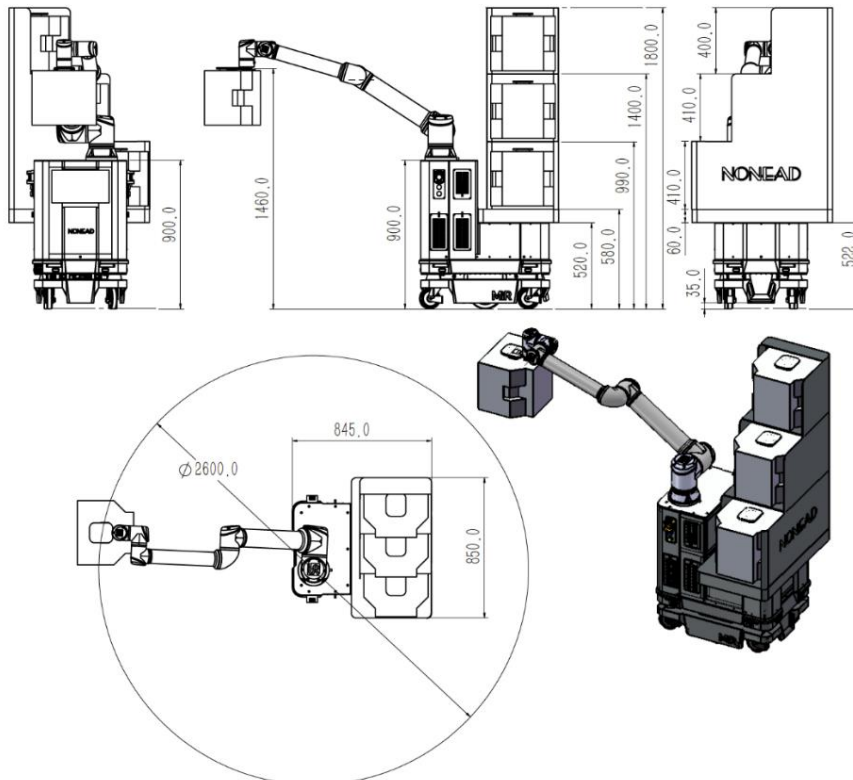
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NH0214_nCobot2510e_Limited_vehicle module 2 wafer box transportation vehicle module (no NH0212)

The wafer box transportation vehicle module is used for wafer box transportation in wafer industry and semiconductor industry. It supports 4-inch, 6-inch, 8-inch, 12-inch wafer boxes, up to 3 boxes of 12-inch wafer boxes. The wafer boxes carrying wafer must be less than 11KG. The standard vehicle is equipped with detection, vibration suppression and other devices. And RFID reading or barcode reading devices can be added for production traceability.



nCobot2510e configured with wafer box transportation vehicle module

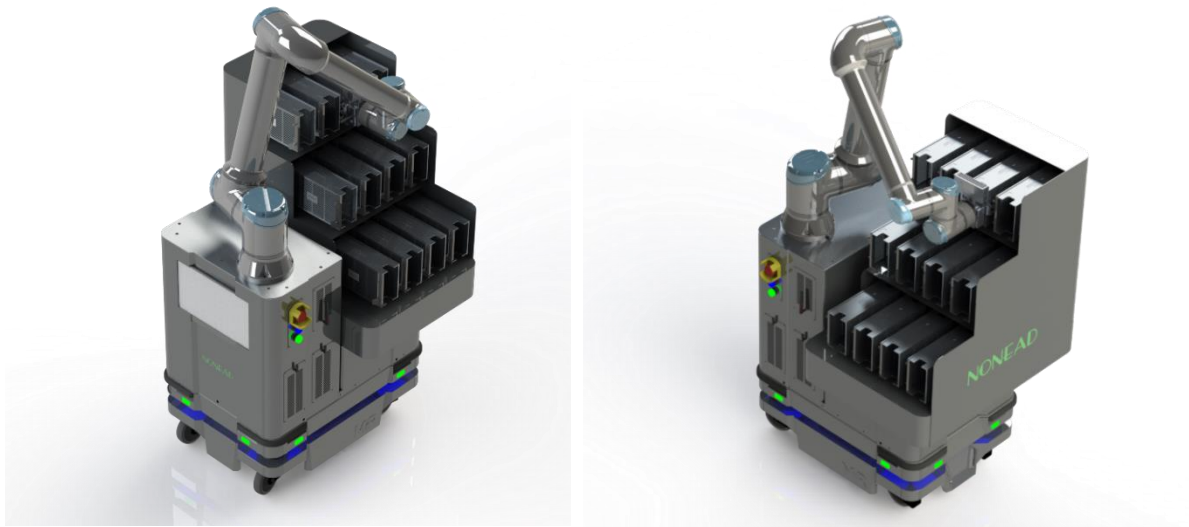




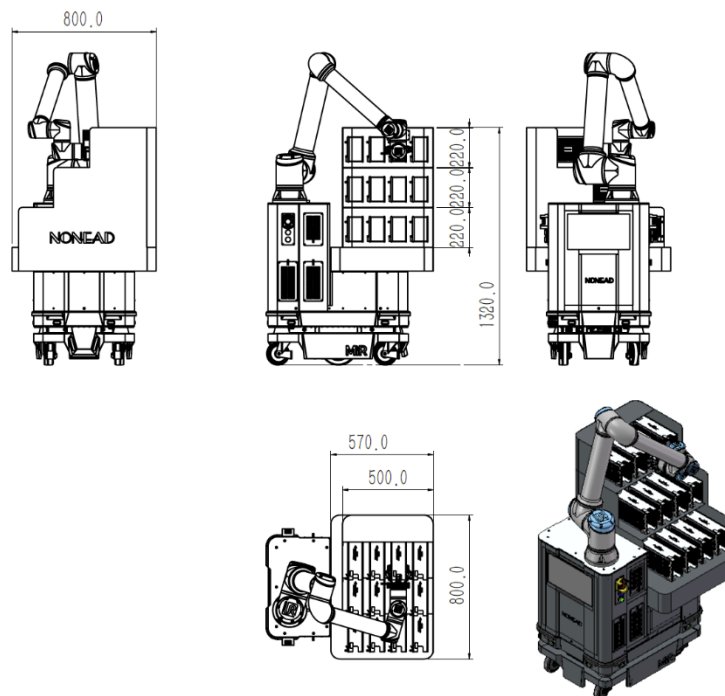
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NH0215_nCobot2510e_Limited_vehicle module 3 back-end package transportation vehicle module (no NH0212)

The back-end package transportation vehicle module is used for magazine transportation in the wafer industry and the semiconductor industry. The magazine is carried by an industrial cooperative six-axis robot to put in and take out the production equipment. 12 boxes of Magazine can be transported at a time. The weight of the magazine containing the product must be less than 11KG. The standard vehicle is equipped with detection, vibration suppression and other devices, and can be equipped with RFID reading or barcode reading devices for production traceability.



nCobot2510e configured with back-end package transportation vehicle module

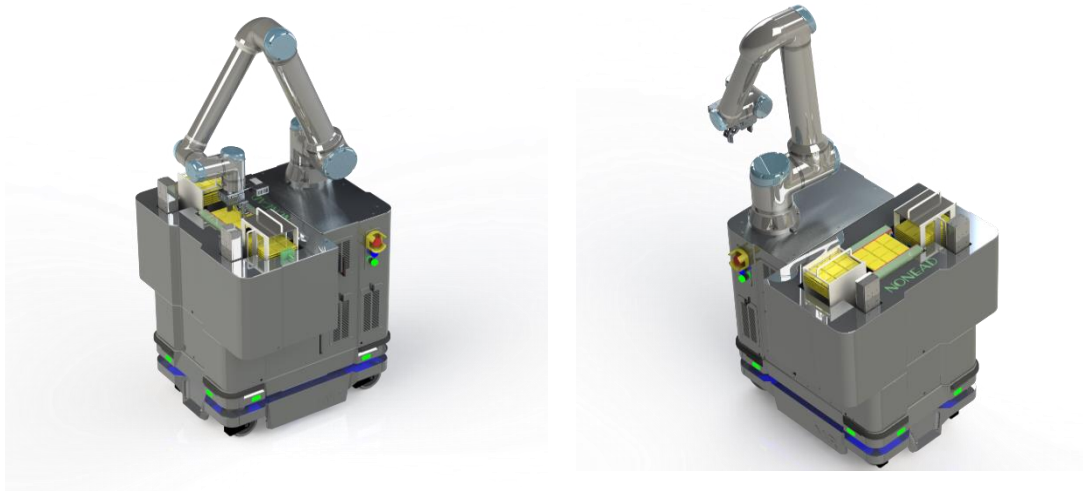




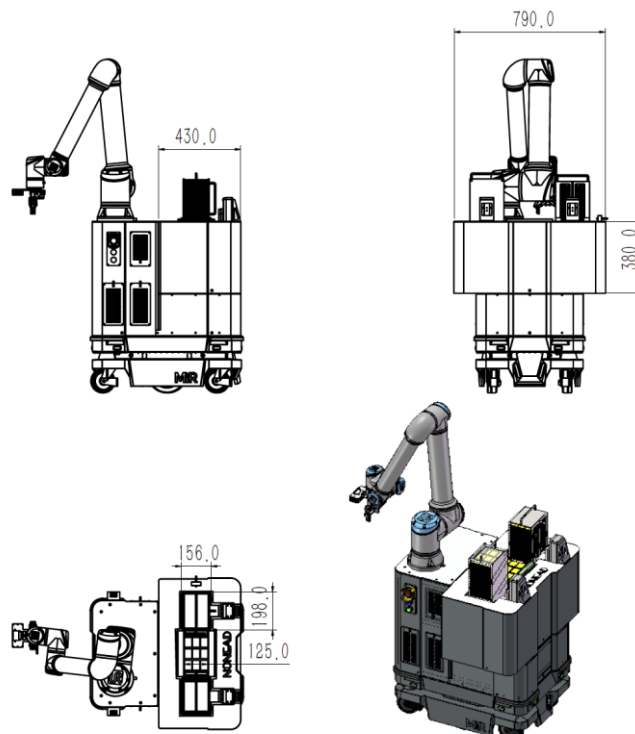
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NH0216_nCobot2510e_Limited_vehicle module 4 back-end package test vehicle module (no NH0212)

The back-end package testing vehicle module is used for magazine transportation in the wafer industry and semiconductor industry, as well as applying for single-chip product input and output. The carried vehicle is designed with Input Magazine and Output Magazine, an automation mechanism for product receiving and sending. The industrial cooperative robots can directly put the products in the Input Magazine into the production equipment for testing, and at the same time, the finished products can be returned to the Output Magazine. The weight of the magazine containing the product must be less than 11KG. The standard vehicle is equipped with detection, vibration suppression and other devices, and can be equipped with RFID reading or barcode reading devices for production traceability.



nCobot2510e configured with back-end package testing vehicle module





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Technical Parameters

Project		nCobot2510e Limited
Industrial Cooperative six-axis robot	Standard Modle	UR10e Universal-Robots 110210
	Arm Length	1300mm
	Variance	6 Variance
	Foundation	Motion Range $\pm 360^\circ$ Fastest Speed $\pm 120^\circ/s$
	Shoulders	Motion Range $\pm 360^\circ$ Fastest Speed $\pm 120^\circ/s$
	Elbow	Motion Range $\pm 360^\circ$ Fastest Speed $\pm 180^\circ/s$
	Wrist 1	Motion Range $\pm 360^\circ$ Fastest Speed $\pm 180^\circ/s$
	Wrist 2	Motion Range $\pm 360^\circ$ Fastest Speed $\pm 180^\circ/s$
	Wrist 3	Motion Range $\pm 360^\circ$ Fastest Speed $\pm 180^\circ/s$
	Tool side speed	1 m/s
Tool Side Force Control	Force x-y-z Range	100 N
	Force x-y-z Resolution	2.0 N
	Force x-y-z Precision	5.5 N
	Torque x-y-z Range	10 Nm
	Torque x-y-z Resolution	0.02 Nm
	Torque x-y-z Precision	0.60 Nm
Industrial Cooperative Mobile Robot	Standard Modle	MiR250
Robot End Effector	Standard Modle	nGripper90_CB4.0 + nUC-S_CB4.0
Robot Vision Positioning	2.5D Vision	NONEAD n3DVision_CB2.0
	3D Vision	ALSONTEC Nano AT-S1000-06C-S3_CN
Standard End Effector	Route	0-90mm
	Position	0-4095/0-90mm
	Force	0-1000/2N-150N
	Speed	$\leq 55\text{mm/s}$
	Repeated Precision	$\pm 0.25\text{mm}$
Load	Six-Axis Robot Load	Maximum $\leq 12.5\text{KG}$, Standard End Effector $\leq 10.5\text{KG}$
	Mobile Robot Load	$\leq 150\text{KG}$
	End Effector Load	Standard End Effector $\leq 4\text{KG}$
	Configuration weight	20KG
	Carried Container Size	Standard Maximum 430mm x 550mm x 1500mm (Inside the Vehicle) Maximum 800mm x 800mm x 1500mm (Beyond the vehicle)
Repeated Positioning Precision	First-Time Mobile Cooperative Robot Map Positioning	$\pm 30\text{ mm}$
	Second-Time VL-Marker Marked Positioning	$\pm 3\text{ mm}$
	Third-Time Vision Positioning	2.5D Camera $\pm 1\text{mm}$
		3D Camera $\pm 0.05\text{mm}$
	Cooperative Six-axis Robots	$\pm 0.05\text{mm}$
Comprehensive positioning accuracy	2.5D Camera Cobot is used to synthesize repeated positioning accuracy $\pm 2\text{mm}$	

		3D Camera Cobot is used to synthesize repeated positioning accuracy ±0.5mm
Speed and Performance	Running Time	The load varies from 5 hours to 8 hours
	Maximum Speed	Forward: 2 m/s Backward: 0.3m/s
	Turning Radius	0.52m (rotation around the center of the robot, measured without a container)
	Minimum crossing clearance	2cm
	Height above ground	30mm
	Minimum Size	850mm x 560mm x 1600mm
Navigation Mode	SLAM Navigation	Automatic map drawing, laser navigation, automatic path planning, autonomous operation, automatic obstacle avoidance, can take the elevator, can be mixed with people
Self-weight	Dead weight (not including rear vehicle)	160KG
Power Supply	Battery	1 Li-NMC, 48 V; Charging time: ≤ 1 hour 100%
Automatic charger	Length x width x height	620mm x 340mm x 200mm Charging plate depth 480mm
	weight	21 KG
	wall-mounted	Flush with the ground
	Installation height above ground level	The ground is 4.5cm to the bottom edge
	Power output	48V, Max current 40A
	Power input	Voltage 100-230V AC, 50-60Hz
	safety-related	Push-button relay activates automatic charging, short-circuit relay, 2 overheat protection fans, EN60335-2-29
Sensor System	SICK Laser Safety Scanner (2pcs)	360°SICK Nanoscan3 No dead Angle safety protection, SICK safety PLC, SICK safety relay
	3D Vision Intel RealSense (2pcs)	Detection object range: front of the robot, within 2 meters above the ground 50mm-1800mm, 2 meters above the ground 20mm-1800mm
	Ultrasonic Scanner (4pcs)	Detect transparent objects, such as glass doors
	Dual-channel range meter	Dual wheel independent travel recording
	Accelerometer, gyroscope	Acceleration and direction detection
Safety Standard	Six-axis cooperative robot	17 advanced adjustable safety features, including elbow joint monitoring, remote control compliant with ISO10218, EN ISO 13849-1, Cat.3, PL d, EN ISO 10218-1, TUV safety certification
	Mobile cooperative robot	Passed Industrial EN 1525 Indoor Unmanned Autonomous forklift safety Certification, safety level PLd cat.3
	CE certification	Pass
	UL certification	Pass
	Clean room class	Six-axis manipulator ISO Class Cleanroom 5, Mobile robot Clean Room certified: Yes
	ESD certification	Pass (non-ESD as standard)
Working Environment	Ambient temperature range	0°C to 50°C (humidity 10-90% non-condensing)
	IP protection level	Six-axis cooperative robot IP54, teaching device IP54, control cabinet IP20, mobile cooperative robot IP20
	Ground smoothness requirements	≤5mm
	Climbing ability	≤5°
Communication	WiFi	Dual-band wireless AC/G/N/B supports 2.4G or 5G
	I/O	16 digital inputs, 16 digital outputs, 1 analog input, 2 analog outputs
	API	nURHelper. nMiRHelper. nGripper90Helper. n4DVisionHelper. nCobot V2 API
Control System	Hardware (on-board)	Intel nUC, NONEAD nUC
	Software	Control software nCobot V2
	Programming	nCobot V2 extension independent research and development visual programming system, WiFi wireless programming, easy to use.
Fleet System	Hardware	Intel nUC x 2, non-standard, additional purchase required
	Software	MiR Fleet Official dispatch system, NONEAD Fleet calling system, non-standard, additional purchase required
	The interface of the upper computer	Web Service

Suzhou Nonead Robot S&T Co., LTD.

NONEAD[®]
Creativity changes the world

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NONEAD nCobot2510e Limited CB4

NONEAD has independently researched and developed centralized control system for industrial cooperative hybrid robot.

nCobot v2 software system is a control system used to control the nCobot v2 series of products. The software system includes the main functions of basic parameter configuration for the equipment, equipment programming, program management, task operation, user management and so on. The system supports multi-language, and users can switch the language of the system according to their own needs.

The system contains the following functional modules

System module includes management of system equipment, feedback and management of system status, and management of basic data.

Program task module contains functions such as program creation, debugging, editing, import and export, task creation, operation, status management and so on.

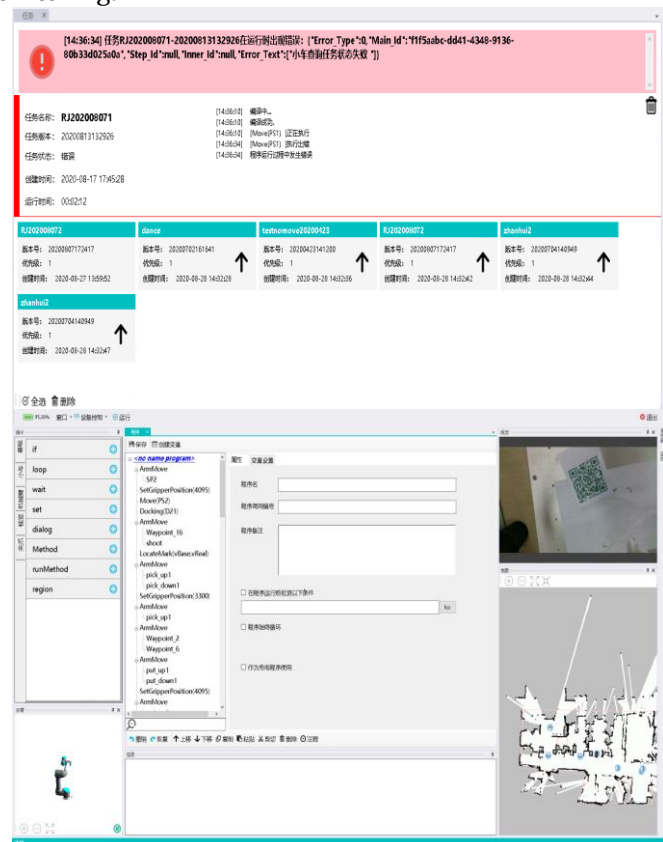
User module includes functions such as user login and logout, password modification, authority control, and user creation and editing and so on.

API module contains a series of rich APIs for users. API can realize task scheduling, device and task information query, and device signal interaction.

The log module includes the query and export of the system running log, and the query and export of the task running log.

Exception handling module includes functions such as handling, restoring, and managing for system operating errors and program task operating errors and so on.

Language module contains the system multi-language switching.



A rich API interface is provided for the upper system to directly call nCobot functions.

nCobot v2 API provides a standard open interface for data communication with the upper MES, ERP or SAP, and accepts operating instructions through the upper system.

Please refer to nCobot V2 User Manual and nCobot v2 API User Manual for more details.