

RoboMaster EP Core Competition Database

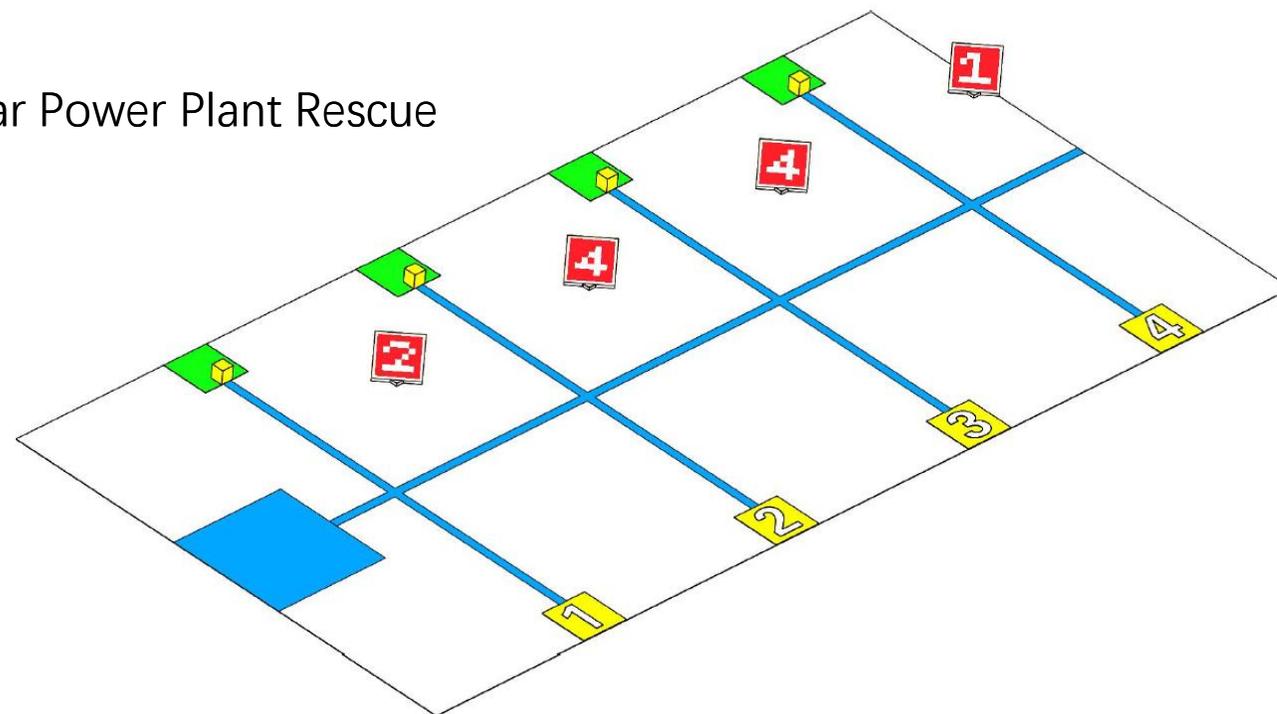
Intelligent Warehouse

Overview

Intelligent warehousing: A robot automatically completes warehousing tasks.

- Identifying signs and planning routes
- Transferring goods to the designated warehouse

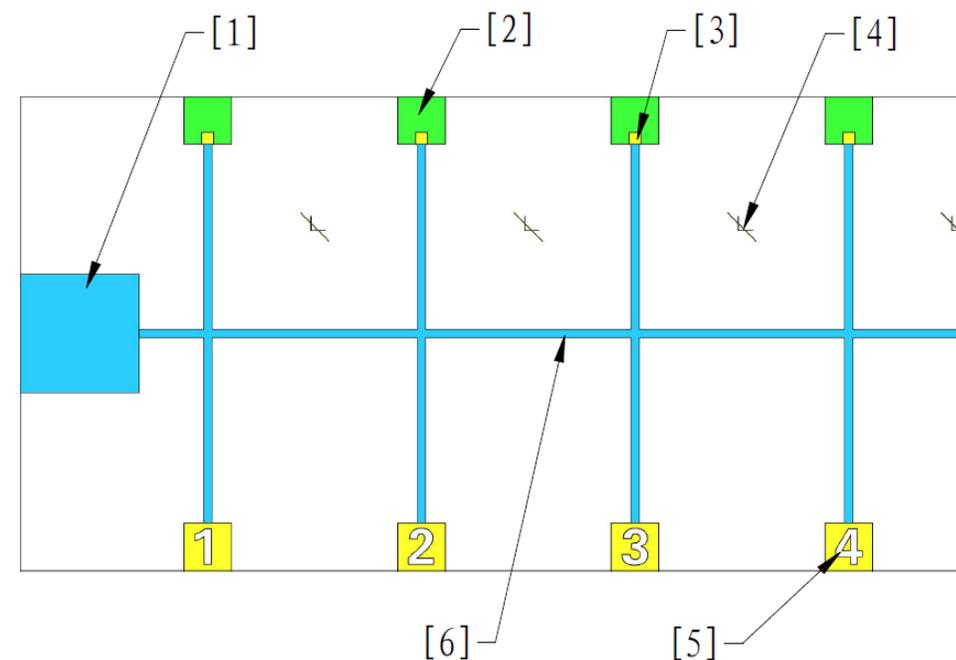
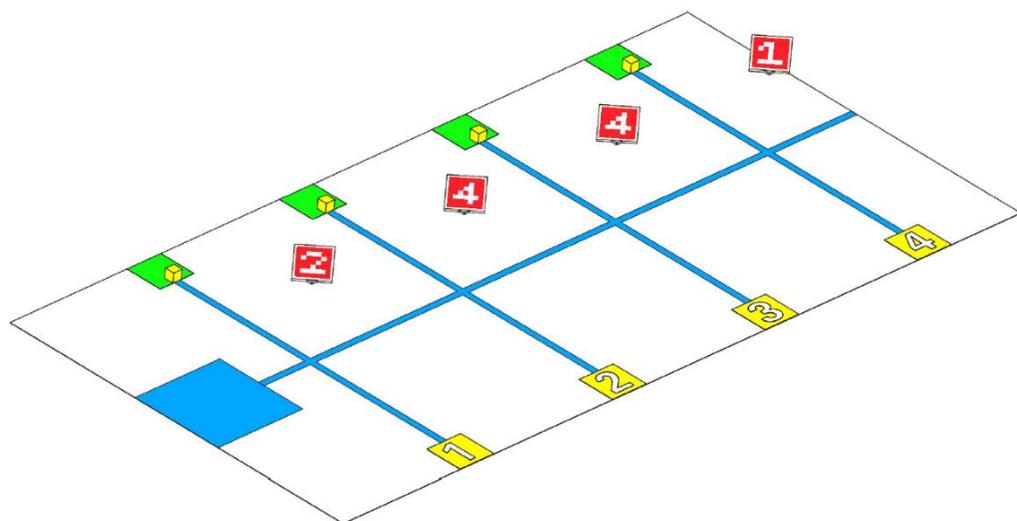
Nuclear Power Plant Rescue



Competition Area

Size: 2×4 m

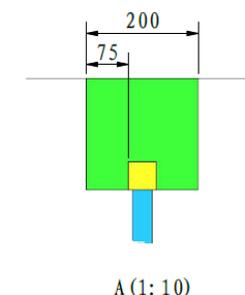
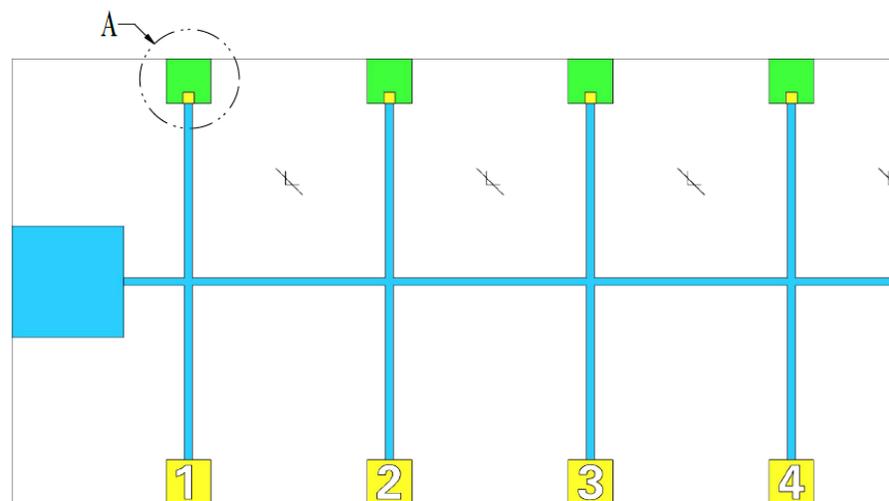
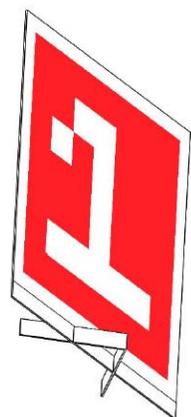
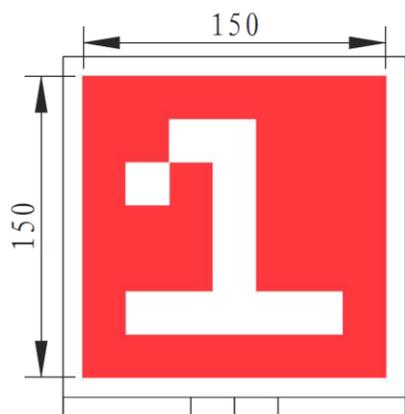
Components: Starting Zone, Pick-Up Points, Warehouses, Guiding Lines



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|-------------------|--------------------|-----------|-----------|
| [1] Starting Zone | [2] Pick-up Points | [3] Goods | [4] Signs |
| [5] Warehouses | [6] Guiding Lines | | |

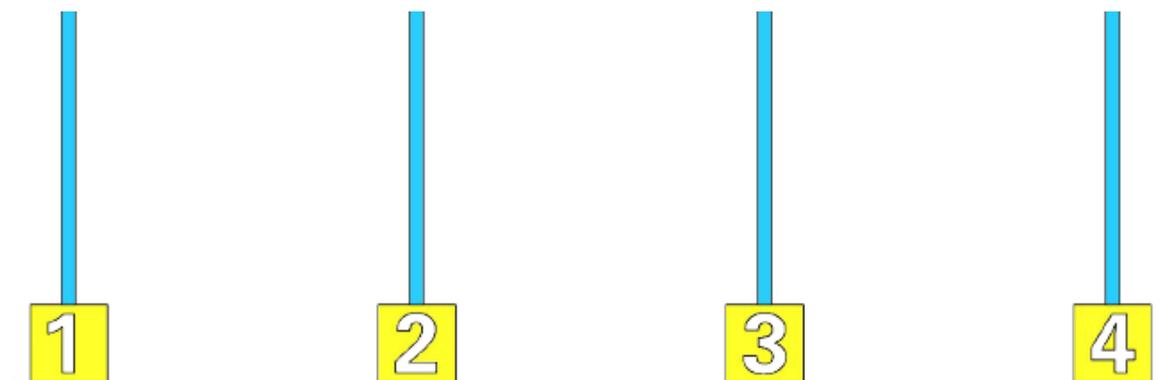
Pick-Up Points

- There are four pick-up points. Each has a size of 200×200 mm.
- One cubic goods module is placed within each pick-up point area.
- A visual marker is placed on the right side of each module.



Warehouses

- There are four warehouses. Each has a size of 200×200 mm.
- They are numbered 1-4.



Task Description

The ultimate goal: Transport all goods from pick-up points to their corresponding warehouses.

Identify signs: Identify the visual markers and indicate the relevant information through light signals.

Pick up goods: Pick up goods at the pick-up points.

Place goods: Transport goods to the corresponding warehouses as instructed by the signs (extra points are given if two goods in the same warehouse are stacked on top of one another).

Timing/Scoring Rules

- Each round is limited to three minutes.
- The full score for the completed mission is 100 points.
- The mission time of the participating teams will be recorded. In the event that two teams have a tied score, the ranking will be based on recorded time, with the fastest team being rewarded.

No.	Task	Score
1	Indicating the numeral information on the sign through light flashes	5 each
2	Picking up goods	5 each
3	Placing goods in the correct warehouse	10 each
4	Stacking up two goods in the same warehouse	15
5	Lighting up to indicate the completion of the task	5
6	Driving off the guiding line for more than 5 seconds	-5 each
7	Knocking goods out of the pick-up point area	-5 each
8	Goods falling to the floor during handling	-5 each

Warnings

- Before the competition starts, the robot must be placed in the starting zone.
- Once the competition begins, teams cannot touch their robots.
- Remote control of the robot by wire or radio is not allowed.
- You may not borrow another team's robot for a match.

Technical Points Summary

- Automatic line following
- Cross-road identification and turning
- Visual marker identification
- Mechanical claw control
- Path planning

Equipment

Recommended competition equipment:

RoboMaster EP Core

(Buy Now: <https://www.dji.com/robomaster-ep-core>)



Battlefield components list:

Material Name	Dimension (mm)	Quantity	Application
Blue tape	Width: 35 or 20	-	Guiding Line
Visual markers (including the base)	150×150	Numbered 1-4, two cards for each number	Signs
EVA cubes	50×50×50	4	Goods

Reference Materials (Released Soon)

- Rules manual
- Documentation for interpretation of rules
- Sample code
- Task demonstration video