

OMRON



# Mobile Robots

TRANSFORMING MANUFACTURING AND LOGISTICS

# Modernize Your Workflow

Omron mobile robots are **Autonomous Intelligent Vehicles (AIVs)** designed to dramatically increase productivity in manufacturing and logistics operations. In addition to making your employees more efficient by allowing them to focus on tasks that require complex human skills, Omron mobile robots increase throughput, reduce machine dwell time, eliminate errors and improve material traceability.

## Flexible

### CUSTOMIZABLE PAYLOAD DESIGNS

- Easy conveyor-top integration
- Supports collaborative robotic arm
- Transports carts and totes
- Power, IO, Wi-Fi

## Safe

### FULL SAFETY COMPLIANCE

- Works collaboratively with people
- Able to avoid static and moving obstacles
- Easy addition of E-Stop equipment



### EASY TO DEPLOY

with true natural-feature navigation

- Reduce cost: no facilities modifications
- No need to pre-program path
- Self-mapping with onboard PC
- Short installation time



## Efficient

### OPTIMIZE YOUR OPERATIONS

- Uses shortest allowable path
- Automatic alternative route planning
- Easily add pickup and delivery points

## Scalable

### FLEETS OF UP TO 100 VEHICLES

- Job dispatch and management
- Centralized configuration and map management
- Facilitates traffic flow
- Centralized point of communication

## ROBUST 24X7 PRODUCTIVITY

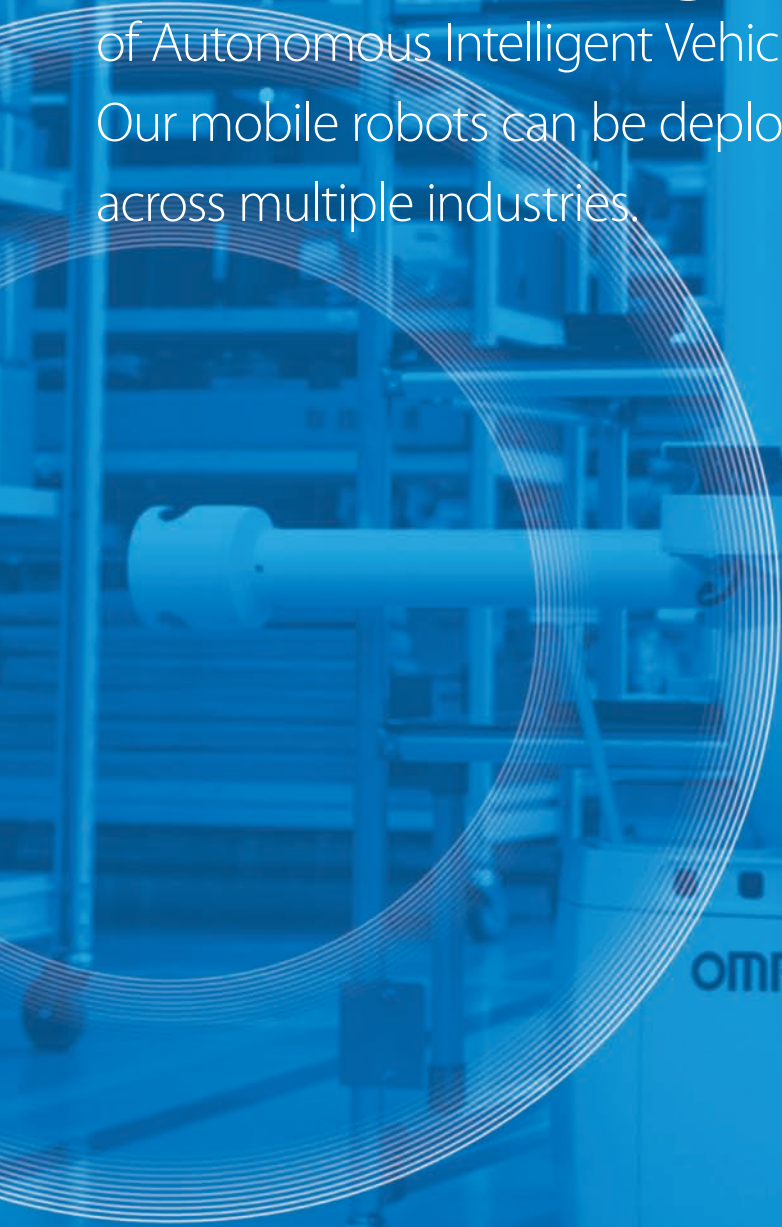
- Opportunistic charging
- Capable of operating in highly dynamic environment
- Proven worldwide installed base
- >17 years of continuous experience

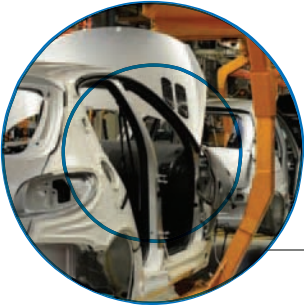


# Thousands

of possibilities to drive productivity gains.

Today, Omron has the **largest installed base** of Autonomous Intelligent Vehicles in manufacturing. Our mobile robots can be deployed in thousands of applications across multiple industries.



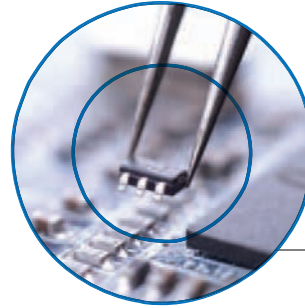


## Automotive

**Tire Assembly** | Transport green tires from intermediate storage to curing press stations.

**Automotive Electronics** | Transport sub-assemblies from kitting to line side replenishment.

**Automotive Accessories** | Transport totes to and from injection molding stations.



## Digital

**Semiconductor Wafer Fab** | Intra-bay WIP (SMIF Pods/FOUP) transport between stockers and process tools, or transport reticles for photolithography process.

**Semiconductor Packaging and Test** | Transport IC chip trays via cart.

**Mobile Device Manufacturing** | Transport totes of PCBs in handset assembly.

**Data Center** | Environmental (temperature, humidity, etc.) surveillance and troubleshooting.



## Logistics

**Warehouse** | E-commerce order fulfillment.

**Shipment Distribution Center** | Transport totes from shelves to loading docks.



## Consumer Products

**Jewelry Manufacturing** | Transport finished jewelry molds to casting stations.

**Designer Accessories** | "Virtual conveyor" to transport boxes of sunglasses from ASRS to manual sorting stations.



## Food, Beverage and Hospitality

**Catering Facility** | Transport baked food totes to stockroom.

**Hotel** | Linen and room service delivery.



## Medical

**Sterilization** | Transport surgical instruments to sterilization room.

**Blood Lab** | Secure sample transportation.



# Advanced, Integrated Technology

Why are Omron mobile robots the most advanced Autonomous Intelligent Vehicles?

## Mapping and Navigation

### ROBUST NAVIGATION WITH ACUITY (Patented)

Acuity provides an additional method of “localization” to the onboard laser, helping the robot adjust to frequently changing environments. It identifies overhead lights and overlays the “light map” with the “floor map”. It also allows the robots to move easily across wide-open areas in large warehouses.



## Safety

Omron mobile robots are fully safety compliant<sup>1</sup>. They use an onboard laser and other sensors to detect obstacles in their path and, based on speed of travel, trigger an E-stop to prevent vehicle collision.

Sensors:

- Safety Rated Main Laser
- Lower Laser
- Side Lasers (Patented)
- Front Bumper
- Rear Sonar
- Rear Laser

<sup>1</sup>Safety std: ISO 12100, ISO 14121-2, ISO 13849-1, IEC 61010 (battery only), IEC 60950 (battery only), EN 1525, ANSI B56.5 Part 3, JIS D 6802, IEC 60204

# ogy



## Fleet Management

### ENTERPRISE MANAGER

Enterprise Manager is a network appliance that provides coordination of mobile robots while providing traceability, job allocation and traffic control across the entire fleet.

**Transport Request (Job) Allocation:** Distributes across multiple mobile robots by selecting the best vehicle to perform the job.

**Traffic Control:** Optimizes traffic flow of vehicles.

**Communications:** Single point of contact for integration with factory systems (MES, WMS, ERP, etc.).

**MobilePlanner:** PC-based software user interface to manage the robot or the fleet.





Let us help you

# mobilize your operations



# Global Collaborative Network

Robotics Expertise and Machine Automation Support provided by a **unique global team.**



40 COUNTRIES

150 LOCATIONS

3000 APPLICATION ENGINEERS

Planning.  
Implementation.  
Support.

Omron is ready to help you every step of the way, anywhere in the world.

**Give us a call.** Our expert feasibility study can help you determine if mobile autonomous vehicles are right for your application.



Test with real products



Simulations

# Mobile Robot LD Series



## Autonomous Intelligent Vehicles (AIVs), self-mapping, self-navigation.

- Natural-feature navigation  
Automatically plans routes to prevent collisions
- Fleet management  
Supervises and coordinates the entire fleet of up to 100 vehicles
- Easy deployment  
Short installation time: no facilities modifications





## Ordering Information






### Mobile Robot-LD Platform

| Appearance  | Product Type | Product Name     | Maximum Load | Maximum Speed | Configuration & Attachment |  |             | Model |
|---|--------------|------------------|--------------|---------------|----------------------------|--|-------------|-------|
|  | LD-60        | OEM              | 60 kg        | 1.8 m/s       | Standard                   | Battery Power Cable (0.45 m) : 12676-000   | 37031-00000 |       |
|   |              |                  |              |               | Docking Station kit        | Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000  | 37031-00002 |       |
|   |              |                  |              |               | Starter kit                | Top Plate : 12944-000<br>Joystick : 13558-000<br>MobilePlanner Software Licence : 13495-200<br>Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000 | 37031-10004 |       |
|   | LD-90        |                  | 90 kg        | 1.35 m/s      | Standard                   | Battery Power Cable (0.45 m) : 12676-000   | 37041-00000 |       |
|   |              |                  |              |               | Docking Station kit        | Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000  | 37041-00002 |       |
|   |              |                  |              |               | Starter kit                | Top Plate : 12944-000<br>Joystick : 13558-000<br>MobilePlanner Software Licence : 13495-200<br>Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000 | 37041-10004 |       |
|   | LD105-CT     | Cart Transporter | 105 kg       | 1.35 m/s      | Standard                   | Battery Power Cable (0.45 m) : 12676-000   | 37141-00010 |       |
|   |              |                  |              |               | Docking Station kit        | Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000  | 37141-00012 |       |
|   |              |                  |              |               | Starter kit                | Cart : 75020-000<br>Joystick : 13558-000<br>MobilePlanner Software Licence : 13495-200<br>Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000      | 37141-01014 |       |
|   | LD130-CT     |                  | 130 kg       | 0.9 m/s       | Standard                   | Battery Power Cable (0.45 m) : 12676-000   | 37161-00010 |       |
|   |              |                  |              |               | Docking Station kit        | Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000  | 37161-00012 |       |
|   |              |                  |              |               | Starter kit                | Cart : 75020-000<br>Joystick : 13558-000<br>MobilePlanner Software Licence : 13495-200<br>Docking Station : 12477-000<br>Battery Power Cable (0.45 m) : 12676-000      | 37161-01014 |       |





### Software/Controller

| Appearance  | Product Name            | Configuration & Attachment        | Model     |
|---|-------------------------|-----------------------------------|-----------|
|  | MobilePlanner           | Installer (USB)<br>License dongle | 13495-200 |
|  | Enterprise Manager 1100 | License dongle                    | 11167-100 |

## Options

| Appearance  | Product Name                     | Specification | Configuration & Attachment  | Model     |
|---|----------------------------------|---------------|---|-----------|
|    | High Accuracy Positioning System | Single sensor | Sensor x 1, Mounting bracket x 1, Power connector x 1, RS-232 connector x 1, 25 mm wide magnetic tape South top side. 50 m roll   | 13660-100 |
|   |                                  | Double sensor | Sensor x 2, Mounting bracket x 2, Power connector x 1, RS-232 connector x 2, 25 mm wide magnetic tape South top side. 50 m roll   | 13660-000 |
|   |                                  | Magnetic Tape | 25 mm wide magnetic tape South top side. 50 m roll  | 14925-000 |
|    | Acuity Localization              | -             | Camera, Mounting Kit, cables, Leveling kit  | 13700-000 |
|    | Touchscreen                      | -             | Touchscreen with bracket, Power supply with bracket, Power cable, from core to power supply (33 cm in length), Power cable, from power supply to touchscreen (183 cm in length), Ethernet cable, between touchscreen and core (153 cm in length), Gasket, between touchscreen and AIV mounting surface, Software package, including touchscreen support | 13605-000 |
|   | Side Laser                       | Bundle        | Laser x 2, Cable x 1 (Y cable for 2 laser)  | 13456-000 |
|   |                                  | Kit           | Laser x 2, Cable x 1 (Y cable for 2 laser), Mounting kit x 2, Metal Cover x 2   | 13456-100 |
|  | Call/Door Box                    | WiFi<br>Wired | Call/Door Box, Cable  | 13029-802 |

## Accessories

| Appearance  | Product Name    | Specification           | Configuration & Attachment  | Model     |
|---|-----------------|-------------------------|---|-----------|
|  | Battery         | -                       | -   | 12072-000 |
|  | Docking Station | -                       | Docking station, AC Power cable   | 12477-000 |
|   |                 | Extended Wall Mount     | Docking Station, AC Power cable, Extended Wall mount (for Cart Transporter) | 12477-050 |
|  | Joystick        | -                       | -   | 13558-000 |
| -   | Breakout Cable  | -                       | DB44HD Breakout cable (D-SUB44 pin cable for Digital I/O interface)         | 14165-000 |
| -   | Top Plate       | Top cover for OEM Model | -   | 12944-000 |
|  | Cart            | -                       | With casters and braking hardware   | 75020-000 |



**Note: Do not use this document to operate the Unit.**

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