Laser PowerBot

Laser PowerBot is a large differential-drive robotic platform for research projects that require reliable, continuous duty or industrial payloads. A large mounting surface is available to carry cargo, effectors, and sensors over indoor surfaces in wheelchair-accessible facilities and warehouse spaces.

With included laser guidance and navigation software, onboard computer, and optional docking station, the Laser PowerBot is capable of a continuous tasking/charging cycle. Laser PowerBot can map buildings and continuously localize within a few centimeters while traveling in mapped areas.

Product Features and Benefits

- **Reliable** - The PowerBot's construction is very durable and rugged. PowerBot easily traverses power cords, elevator gaps, and ramp transitions, which can hinder other robotic platforms.
- **Pioneer Software Development Kit** - All Adept MobileRobots platforms include *Pioneer SDK*, a complete set of robotics applications and libraries that accelerate the development of robotics projects. Pioneer SDK is backed by our product support team.
- **Customizable** - Easily accessorize by choosing from dozens of supported and tested accessories that integrate with the robotic platform. Additional help is available for future upgrades or added accessories

Available Packages

Laser PowerBot - Laser Navigation System, Onboard Computer and Wireless Ethernet, Gyroscopic Correction System, 28-module Omnidirectional SONAR Array, Segmented Bumper Array, Joystick and Plug-In Charger.

PowerBot with Onboard PC & Ethernet - Onboard Computer and Wireless Ethernet, Gyroscopic Correction System, 28-module Omnidirectional SONAR Array, Segmented Bumper Array, Joystick and Plug-In Charger.

PowerBot Base - Chassis, Power Train and MicroController only; includes 28-module Omnidirectional SONAR Array, Segmented Bumper Array, Joystick and Plug-In Charger.

Specifications

Construction
- Body: 2.3 mm aluminum (powder-coated)
- Top Plate: 4.75 mm aluminum (anodized)
- Steel Box Tube Frame (chromed)
- IP-Rating: 20
- Tires: Pneumatic drive wheels and solid rubber casters

Operation
- Robot Weight: 120 kg
- Operating Payload: 75 kg

Differential Drive Movement
- Turn Radius: 0 cm
- Swing Radius: 54 cm
- Max. Forward/Backward Speed: 2.1 m/s
- Rotation Speed: 300°/s
- Max. Traversable Step: 3 cm
- Max. Traversable Gap: 8 cm
- Max. Traversable Grade: 15%
- Traversable Terrain: wheelchair accessible

Power
- Run Time: 4.5 hours (w/laser and computer)
- Charge Time: 2.5 hours
- Available Power Supplies:
  - 2 x 5 V @ 1 A switched
  - 2 x 12 V @ 1 A switched
  - 2 x 24 V @ 1 A switched
  - 24 V Raw Battery

Batteries
- Voltage: 24 V Series
- Capacity: 90 Ah (each)
- Chemistry: sealed lead acid

Available Recharge Options:
- Direct plug-in
- Docking station

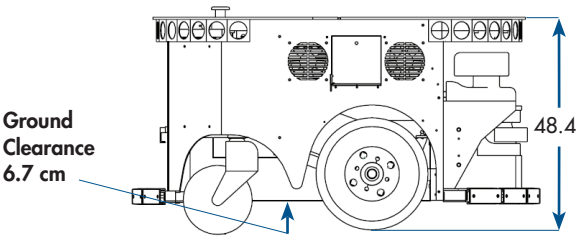
Top Panel
- Main power indicator
- Battery charge indicator
- 2 AUX power switches
- System reset
- Motor enable pushbutton
- Joystick Plugin
- Emergency Stop Buttons (2)

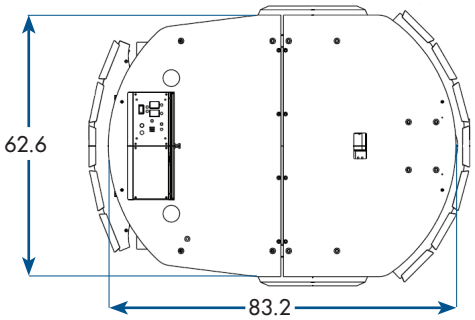
MicroController I/O
- System Serial
- 32 digital inputs
- 8 digital outputs
- 7 analog inputs
- 3 serial expansion ports

[Some ports may not be available if certain accessories are included with the robot]

PowerBot AGV

Dimensions (cm)





Include our integrated and supported accessories with your PowerBot.

Here are some popular configurations to choose from:

Core Software - included with all research platforms

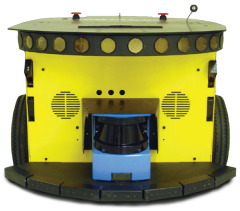
ARIA provides a framework for controlling and receiving data from all MobileRobots platforms, as well as most accessories. Includes open source infrastructures and utilities useful for writing robot control software, support for network sockets, and an extensible framework for client-server network programming.

MobileSim open-source simulator which includes all MobileRobots platforms and many accessories.

MobileEyes graphical user interface client for remote operation and monitoring of the robot.

Mapper 3-Basic tool for creating and editing map files for use with ARIA, MobileSim, and navigation software.

SONARNL provides sonar-based approximate localization and navigation.



Laser Indoor Navigation Package

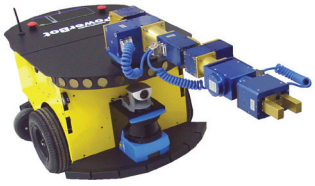
Accessory Support Software - bundled with purchase of robotic accessory

ARNL enables robust, laser-based autonomous localization and navigation.

Robotic Arm Support PowerBot arms are packaged with integrated software support.

Speech Recognition and Synthesis Library: Easy-to-use C++ development library for speech recognition based on the open source Sphinx2 system. Speech synthesis (text-to-speech) based on Cepstral synthesizer.

ACTS Color Tracking System: Software application which reads images from a camera and tracks the positions and sizes of multiple color regions. Information can be incorporated into your own software via ARIA.



Integrated Robotic Manipulator

Autonomous Docking Station

Optional Industrial Grade Internally Mounted Computer

Corvalent 965ATX - Intel® Core™ 2 Duo E4300 Processor	
Intel® Graphics Media Accelerator 3000	
Memory: 8 GB DDR2	
6 X Serial ATA2 connectors	4 X USB 2.0 connectors
4 X RS-232C Serial Ports	2 X Gigabit Ethernet ports
5 X Full size PCI slots	2 X PCI Express Ports
Intel® HD Audio, 3-Jack Audio, Surround sound & SPDIF header	

Available Accessories:

- Laser-range finders
- Mono- and stereo-vision cameras
- Wireless serial to Ethernet for remote operation
- Robotic arms
- WIFI
- Gyroscope
- Joystick
- Many more...

More Information:

See our website www.mobilerobots.com for a full range of supported accessories or contact our sales department to discuss your application.

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Specifications subject to change without notice.

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