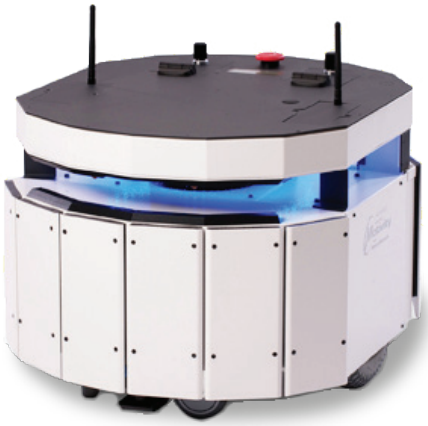


Autonomous Research PatrolBot

Autonomous Research PatrolBot is a high-quality, differential-drive robot designed for research projects that require reliable, continuous duty cycle or a mid-size payload. The PatrolBot has been designed to carry effectors and sensors over all normal indoor surfaces in wheelchair-accessible facilities.

With included laser guidance and navigation software, onboard computer, and docking station, the Autonomous Research PatrolBot is capable of a continuous tasking/charging cycle. PatrolBot can map buildings and continuously localize within a few centimeters while traveling in mapped areas. With the proper accessories, the robot is able to speak, play and hear audio, transmit a mounted camera view, and drive without supervision.

Product Features and Benefits

- **Reliable** - In tests, the Autonomous Research PatrolBot completed over 500 km of autonomous navigation and automatic recharge without intervention. Construction is very durable and rugged. PatrolBot 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

Autonomous Research PatrolBot - includes On-board Computer, Laser Navigation System, Charging Dock, Segmented Bumper Array, Rear SONAR, Gyroscopic Correction, Speakers and Speech Synthesis Package, Emergency Stop Switch, and Joystick.

Research 3D Mapping PatrolBot - includes On-board Computer, Laser Navigation System, Charging Dock, Segmented Bumper Array, Rear SONAR, Gyroscopic Correction, Speakers and Speech Synthesis Package, Additional Vertically-Mounted Laser, Color Stereo-Camera, Emergency Stop Switch, and Joystick

PatrolBot Base - Chassis, Power Train and MicroController only; includes Rear SONAR, Segmented Bumper Array, Emergency Stop Switch, and Plug-in Charger.

Specifications

Construction
- Body: 2.3 mm aluminum (powder-coated)
- IP-Rating: 42
- Tires: Foam-filled rubber

Operation
- Robot Weight: 45 kg
- Operating Payload:
  - 40 kg level surface (intermittent use only)
  - 25 kg up to 12% grade
  - 10 kg up to 20% grade

Differential Drive Movement
- Turn Radius: 0 cm
- Swing Radius: 29 cm
- Max. Forward/Backward Speed: 1.8 m/s
- Rotation Speed: 300°/s
- Max. Traversable Step: 15 mm
- Max. Traversable Gap: 15 mm
- Traversable Terrain: Indoor, wheelchair-accessible

Power
- Run Time: 1 - 3 hours (w/laser and computer)
- Charge Time: 3.2 hours
- Available Power Supplies:
  - 5 V @ 2 A switched
  - 12 V @ 2 A switched
  - 24 V @ 4 A switched
  - 20 - 30 @ 7.5 A Raw Battery

Batteries
- Nominal Voltage: 24 V
- Nominal Capacity: 20 Ah
- Chemistry: lead acid

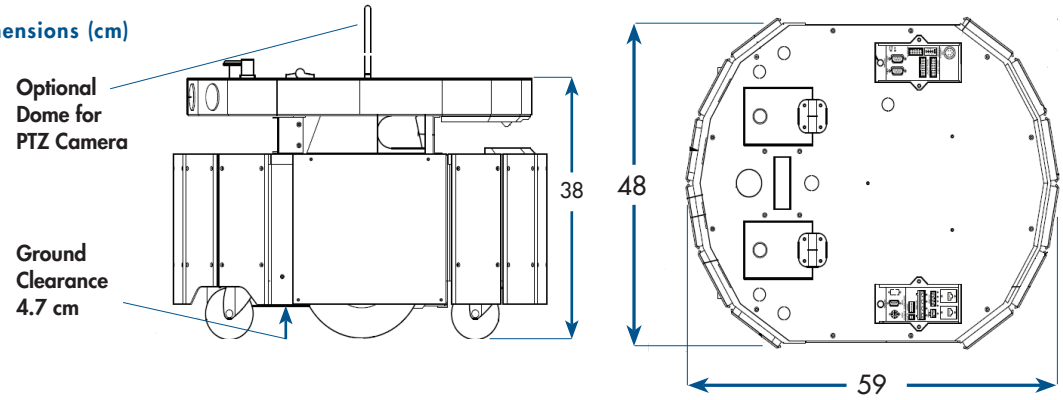
Available Recharge Options:
- Direct plug-in
- Docking station

Top-Mounted I/O Panel
- 8 x Digital IN
- 8 x Digital OUT
- 8 x AUX Bumper inputs
- 6 x Analog IN
- Ethernet
- 2 x Serial
- VGA
- USB
- PS/2 mouse and keyboard
- Joystick Plugin

Robot Status LCD Display
- Battery Voltage
- Calibration
- AUX Power status
- PC, Laser Power
- MicroController Status
- Motor Status

Autonomous Research PatrolBot

Dimensions (cm)



Include our integrated & supported accessories with your PatrolBot.

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.

Accessory Support Software - bundled with purchase of robotic accessory

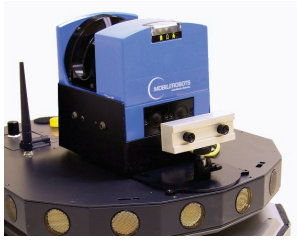
ARNL enables robust, laser-based autonomous localization and navigation.

Robotic Arm Support Pioneer 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.

PTZ Color Camera



Stereo Camera & Vertical Mounted Laser for VSLAM applications

Autonomous Docking Station

Optional Industrial Grade Internally Mounted Computers

Cobra EBX-12 (1.8 GHz - 1 GB RAM)
4 X USB2.0 Ports
3 X PC/104+ Slots
4 X RS-232 Serial Ports
2 X 10/100 Ethernet Ports
Onboard Audio & Video
Optional Wireless Ethernet

Available Accessories:

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

Adept MobileRobots, LLC. 10 Columbia Drive, Amherst, NH 03031
Tel: 603-881-7960 Email: sales@mobilerobots.com
www.mobilerobots.com

Specifications subject to change without notice.

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