

# TURTLEBOT® 4

## ROBOTICS LEARNING PLATFORM



MOBILE ROBOT PLATFORM  
FOR LEARNING AND  
DEVELOPMENT



**TurtleBot 4** is the next-generation of the world's most popular open-source robotics platform for education and research, offering superior computing power, more payload capacity, improved sensors and a world-class user experience at an affordable price.

### GET STARTED QUICKLY

TurtleBot 4 ships assembled with ROS 2 installed and configured along with detailed user documentation, a Gazebo simulation model, demo code and tutorials, allowing you to get started quickly with learning and developing robotics applications. Tap into the thriving open-source ROS developer community and get started learning robotics on day one.

### SENSOR PACKED

TurtleBot 4 is built on the iRobot® Create® 3 mobile base which comes with a charging dock and an array of integrated ROS supported sensors ideal for many SLAM and AI-based robotics applications. Sensors include a spatial AI stereo camera, 2D LiDAR, IMU, optical floor tracking sensor, wheel encoders, infrared, cliff, bump, slip detection and more.

### BUILD & EXPAND

Once you have mastered the basics, easily expand the capabilities of TurtleBot 4 by adding your own sensors and custom payloads. Accessible USB ports, user power breakouts and a top mounting plate make it easy to integrate third-party hardware and fully customize your robot†.

Visit [clearpathrobotics.com/turtlebot](https://clearpathrobotics.com/turtlebot) for more information or to contact a global distributor.

# TECHNICAL SPECIFICATIONS



	TurtleBot 4	TurtleBot 4 Lite
<b>SIZE AND WEIGHT</b>		
EXTERNAL DIMENSIONS (LxWxH)	341 x 339 x 351 mm (13.4 x 13.3 x 13.8 in)	341 x 339 x 192 mm (13.4 x 13.3 x 7.5 in)
WEIGHT	3.9 kg (8.6 lbs)	3.3 kg (7.2 lbs)
WHEELS (Diameter)	72 mm (0.55 in)	
GROUND CLEARANCE	4.5 mm (0.17 in)	
<b>SPEED AND PERFORMANCE</b>		
MAX PAYLOAD	9 Kg - Default 15 kg - Custom Configuration	
MAX SPEED	0.31 m/s (safe mode), 0.46 m/s (cliff sensors disabled)	
MAX ROTATIONAL SPEED	1.90 rad/s	
<b>BATTERY AND POWER SYSTEM</b>		
CHEMISTRY	26 Wh Lithium Ion (14.4V nominal) Rechargeable	
CHARGE TIME	2.5 hrs	
OPERATINGTME	2.5 - 4.0 hrs (load dependent)	
USER POWER	VBAT @ 300mA, 12V @300mA, 5V @ 500mA 3.3V @ 250mA	VBAT @ 1.9A (14.4V nominal) Low current 5V and 3.3V via Raspberry Pi GPIO
DOCKING	Base station for docked charging	
<b>SENSORS</b>		
2D LIDAR	<b>RPLIDAR-A1</b> 0.15-12m range; 8kHz sampling rate; 360 degree angular range; 1 degree angular resolution.	
CAMERA	<b>OAK-D-PRO</b> 4K RGB auto focus camera (IMX378) Mono stereo camera pair (OV9282) IMU, Spatial AI processor IR Laser Dot Projector & Illumination LED	<b>OAK-D-LITE</b> 4K RGB auto focus camera (IMX214) Mono stereo camera pair (OV251) Spatial AI processor
OTHER SENSORS	2x front bumper zones, 2x wheel encoders, 4x IR cliff sensors, 6x IR obstacle sensors, 1x downward optical flow sensor for odometry, 1x 3D gyroscope, 1x 3D accelerometer, 1x battery level monitor	
OTHER ACTUATORS	2x Drive Motors, 6x RGB LED Ring 1x Speaker, 5 Status LEDs 2 User LEDs, 128x64 OLED Display	2x Drive Motors, 6x RGB LED Ring 1x Speaker
<b>COMPUTERS</b>		
COMPUTER	Raspberry Pi 4B (4 GB)	
SOFTWARE	Ubuntu 20.04, ROS 2	

## Support Open Source

TurtleBot 4 is an open source platform and you can get the designs and software at [clearpathrobotics.com/turtlebot](http://clearpathrobotics.com/turtlebot). You're encouraged to try it out, extend it, or build your own. For every TurtleBot 4 shipped, a portion of the proceeds goes to the Open Robotics for the continued support of the development, distribution, and adoption of open-source software in robotics research and education.

