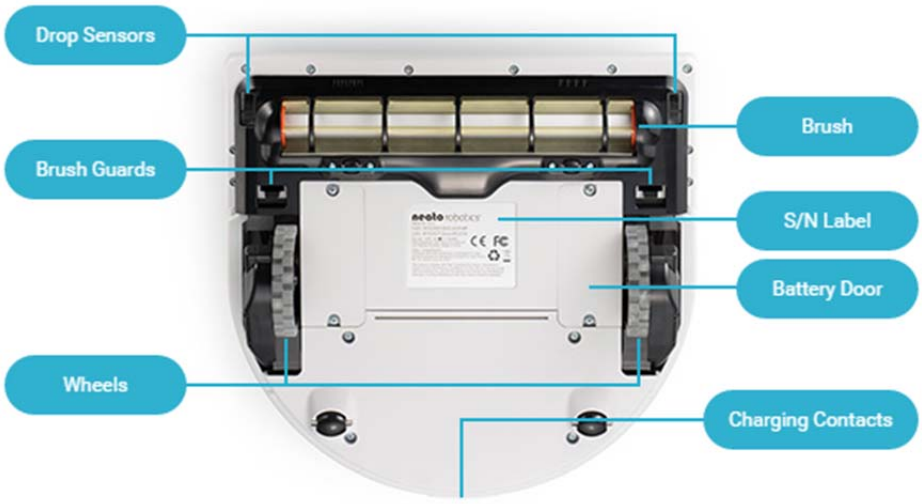
Robot & User Interface description

1. Robot description

It's a commercial model from the brand Neato, specifically the model XV-Essential.

What sets it apart from the other brands like 'Roomba' is its 360 degrees rotatory laser sensor which is interesting for SLAM projects. It also has other sensors, find them described below:

- Single wall sensor on the front right side.
- 4 bumpers. Two in the front, one in each side.
- 2 fall sensors, on the front bottom, on the sides.
- 360 degrees rotatory laser
- Wheel encoders with 1mm resolution.
- Accelerometer



2. Robot measures

Find below two diagrams with the robot measures.

Wheel radius = 3.85 cm

3. Communication interface description

The robot has an USB port which acts as a serial communication port. This serial port allows us to send commands in order to get sensor data and to give movement orders to the robot.

We have used a Raspberry Pi 2 acting as a communication interface.
In one side, the Raspberry connects trough USB to the Neato, and in the other side, it has a Wifi dongle publishing a communication socket. The use of this socket allows us to connect to the Raspberry and controlling the Neato using its own commands.