

# Electrical Specifications 3-Wheeled Robot

## Battery

---

2 set Lithium-Ion 18650 batteries

- Main Supply: 9s Li-Ion battery (36.9V)
- Kicker Supply: 4s Li-Ion battery (16.4V)

## Motor Specifications

---

### ***Drive motors***

- 3x AC Servo Motor: ACM602V36-01-1000 (36V; 200W)
- 3x Elmo Motion Control: Sol-Gui/25/100

### ***Ball handling motors***

#### *Dribble Motor*

- 2x PG36 24 V with 1:19.2k Gearbox
- 2x Incremental Encoder 7ppr
- 1x Dual H-Bridge DC Motor Driver

#### *Kicking Mechanism Motor*

- 1x PG36 24 V with 1:19.2k Gearbox
- 1x Incremental Encoder 7ppr
- 1x Dual H-Bridge DC Motor Driver

## Sensor

---

#### *Ball Receive Sensor*

2x Sharp GP2Y0A41SK0F Analog Distance Sensor 4-30 cm

#### *Odometry*

2x Rotary Encoder Autonics E30S4-200-3-N-24

#### *Kicker Limit Switch*

2x MICRO SWITCH OMRON Z-15GQ22-B

#### *Angle Position Sensor*

2x MST.OTO-K0J-N01

## Main PC

---

### Intel® NUC Kit NUC6i7KYK

6th generation Intel Core i7-6770HQ processor (2.6 GHz up to 3.5 GHz Turbo, Quad-Core 6MB cache, 45W TDP)

Dual-channel DDR4 SODIMMs, 32GB maximum

Intel Iris Pro graphics 580

One Thunderbolt 3 port, One Display Port via USB-C

Four total USB 3.0 ports with one SDXC slot

Two M.2 slots with flexible support for a 42 or 80mm SATA or PCIe SSD

Intel Dual Band Wireless-AC 8260 and Bluetooth 4.2

Consumer Infrared sensor on the front panel

Support for user-replaceable 3rd party lids

19V DC power supply

## Vision

---

### Omnivision Camera

#### Logitech C920 Webcam

Max Resolution: 1080 p/30 fps - 720p/ 30 fps

Camera mega pixel: 3

Focus type: Autofocus

Lens type: Glass

Built-in mic: Stereo

Mic range: Up to 1 m

Diagonal field of view (dFoV): 78°

Power requirements (DC): 5V

## Capacitor for Kicker Solenoid

---

450 V; 5600 µF

## Software

---

- Linux (Ubuntu 20.04)