

Electrical Specifications 3-Wheeled Robot

Battery

3 set Lithium-Ion 18650 batteries

- Main Supply: 2x5s Li-Ion battery (20V)
- 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

- 1 Solenoid 450 VDC
- Driver Booster Solenoid 40V to 450V

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 μ F

Software

• Linux (Ubuntu 20.04)