Table 1: Main components

Component	Description	Purpose	#	á price (price per robot) SEK	Price in USD
DF45L024048-A	Brushless direct current (BLDC) motor with integrated hall sensors for the wheels	Used to spin the wheels of the robot.	4	830.4 (3273.60)	74.74 (294.6)
Hobbywing FPV XRotor 3110 900KV	Brushless DC motor	High revolutions per minute (RPM) motor used to control the dribbler.	1	175.20 (175.20)	15.77 (15.77)
B-G431B-ESC1	BLDC motor driver	Motor driver with embedded μController current sensing and hall sensing to form a closed-loop control algorithm	5	208.96 (1044.8)	18.8 (94.032)
NUCLEO-H723ZG	μController	Computational power and real-time processing capabilities, supports μROS	1	322.58 (322.58)	29 (29)
Raspberry Pi 4 Model B/8GB	Single-board computer	Processing camera input and performing local path planning	1	979 (979)	88.11 (88.11)
VL53L4CD ToF	Lidar	Obstacle detection (Could not find VL53X ToF)	2	176.32 (176.32)	15.87 (15.87)
VL6180 TOF	Lidar	Obstacle detection	1	39.62 (39.62)	3.57 (3.57)
APDS-9960	RGB Sensor	Ball detection	1	199 (199)	17.91 (17.91)
SENS0374	9-Dof IMU	Acceleration, Gyroscope, Magnetometer	1	191 (191)	17.19 (17.19)
6s 1300mAh -120C - GNB HV XT60	LiPo-battery	Used to power the robot	1	351.20 (351.20)	31.6 (31.6)
iC-PX2604 + PX01S 26-30	Wheel encoders	Will be used for odometry and determining the RPM	4	224.40 (897.60)	20.2 (80.78)
WSEN-ISDS 6 Axis IMU	6-DoF IMU	Will be used for odometry of the robot	10	N/A	N/A
Raspberry Pi Camera-module 3	Camera	Provide images in front of the robot to detect the ball and obstacles	1	369 (369)	33.21 (33.21)