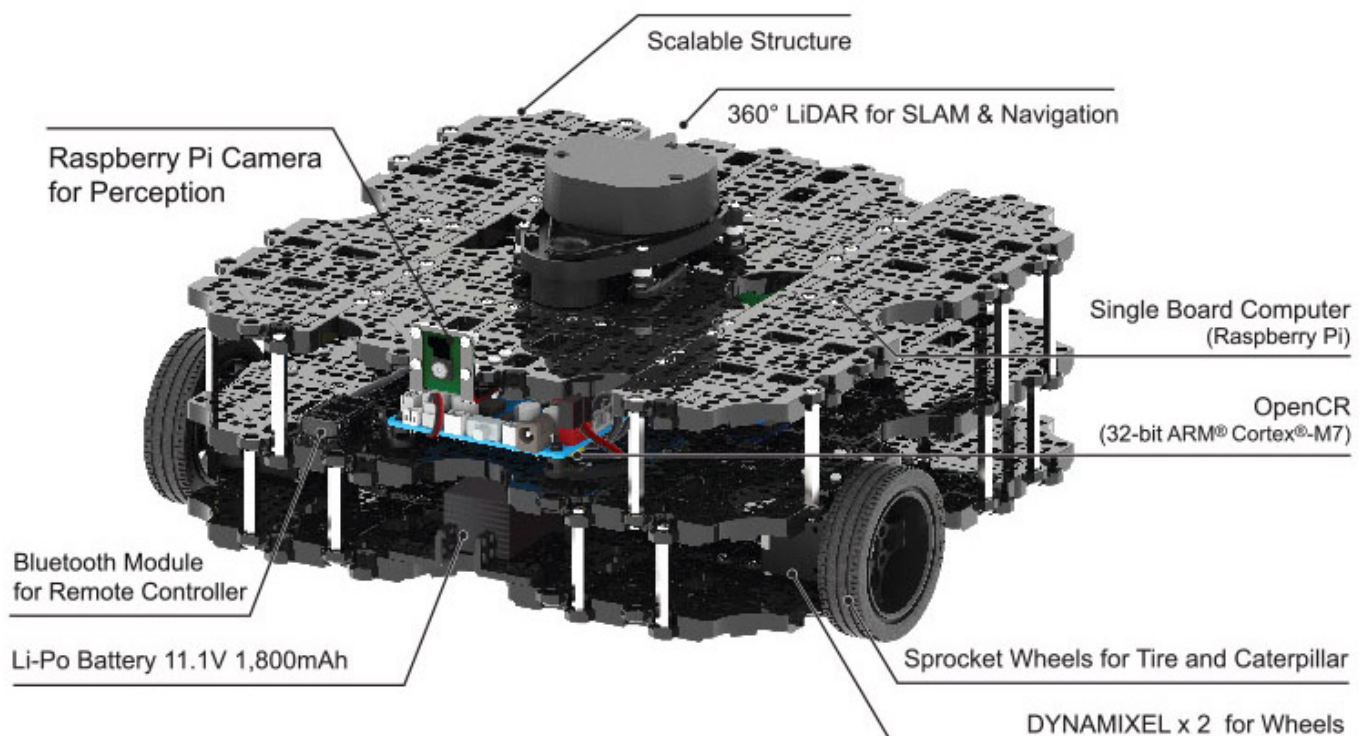
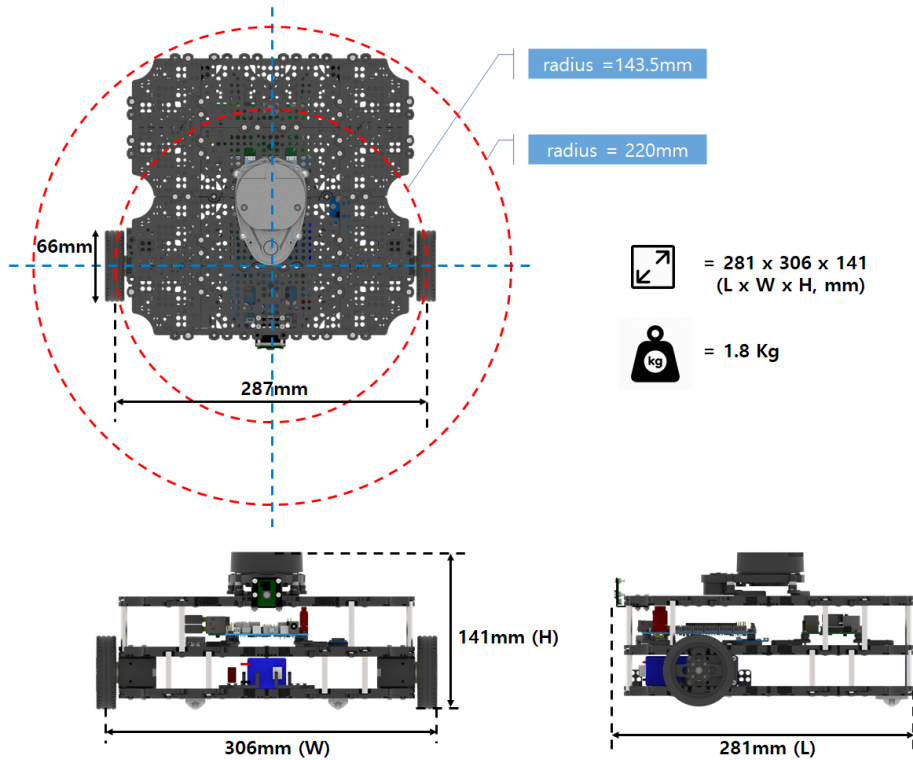


TURTLEBOT3 WAFFLE PI

TURTLEBOT3 IS A NEW
GENERATION MOBILE ROBOT
THAT'S MODULAR, COMPACT &
CUSTOMIZABLE





= 281 x 306 x 141 (L x W x H, mm)

= 1.8 Kg

HARDWARE SPECIFICATIONS

Maximum translational velocity	0.26 m/s	Dynamixel ports	RS485 x 3, TTL x 3
Maximum rotational velocity	1.82 rad/s (104.27 deg/s)	Audio	Several programmable beep sequences
Maximum payload	30kg	Programmable LEDs	User LED x 4
Size (L x W x H)	281mm x 306mm x 141mm	Status LEDs	Board status LED x 1 Arduino LED x 1 Power LED x 1
Weight (+ SBC + Battery + Sensors)	1.8kg	Buttons and Switches	Push buttons x 2, Reset button x 1, Dip switch x 2
Threshold of climbing	10 mm or lower	Battery	Lithium polymer 11.1V 1800mAh / 19.98Wh 5C
Expected operating time	2h	PC connection	USB
Expected charging time	2h 30m	Firmware upgrade	via USB / via JTAG
SBC (Single Board Computers)	Raspberry Pi 3 Model B	Power adapter (SMPS)	Input : 100-240V, AC 50/60Hz, 1.5A I _{max} Output : 12V DC, 5A
MCU	32-bit ARM Cortex®-M7 with FPU (216 MHz, 462 DMIPS)		
Remote Controller	RC-100B + BT-410 Set (Bluetooth 4, BLE)		
Actuator	Dynamixel XM430-W210		
LDS(Laser Distance Sensor)	360 Laser Distance Sensor LDS-01		
Camera	Raspberry Pi Camera Module v2.1		
IMU	Gyroscope 3 Axis Accelerometer 3 Axis Magnetometer 3 Axis		
Power connectors	3.3V / 800mA 5V / 4A 12V / 1A		
Expansion pins	GPIO 18 pins Arduino 32 pin		
Peripheral	UART x3, CAN x1, SPI x1, I2C x1, ADC x5, 5pin OLLLO x4		

COMPONENTS

SBC	Raspberry Pi 3 Model B Intel® Joule™
Sensor	360 Laser Distance Sensor LDS-01 Intel® Realsense™ R200 The Raspberry Pi Camera Module v2.1
Control Board	OpenCR1.0
Actuator	Dynamixel X series