

Description

The BVR0 is a compact sidewalk-scale robotic platform for snow clearing and grounds maintenance. Four independently-driven hub motors provide omnidirectional control. A modular tool interface accepts snow augers, sweepers, and brine applicators. Remote operation via LTE teleoperation with 360° video.

Mechanical Specifications

Parameter	Value
Length	600 mm (23.6")
Width	600 mm (23.6")
Height	400 mm (15.7")
Ground Clearance	50 mm (2.0")
Wheel Diameter	160 mm (6.3")
Track Width	550 mm (21.7")
Wheelbase	550 mm (21.7")
Weight (dry)	25 kg (55 lb)
Weight (w/ battery)	30 kg (66 lb)
Max Payload	10 kg (22 lb)

Electrical Specifications

Parameter	Value
Battery Chemistry	Li-ion (13S4P)
Nominal Voltage	48V
Voltage Range	39V - 54.6V
Capacity	20 Ah (960 Wh)
Motor Power	4 × 350W (1.4 kW)
Peak Current	60A per motor
Control Voltage	12V DC
CAN Bus	500 kbps

Performance

Parameter	Value
Max Speed	5.5 m/s (12 mph)
Operating Speed	1.0 - 1.5 m/s
Max Wheel RPM	650 RPM
Max Angular Velocity	2.5 rad/s
Max Acceleration	3.0 m/s ²
Max Deceleration	8.0 m/s ²
Runtime	3-4 hours
Max Grade	15%

Environmental

Parameter	Value

Sensors

Sensor	Specification
LiDAR	Livox Mid-360
• FOV	360° × 59° (-7° to +52°)
• Range	0.1m - 70m
• Points	200,000 pts/sec
• IMU	Built-in, 200 Hz
Camera	Insta360 X4
• Resolution	8K (5.7K @ 30fps)
• FOV	360° spherical
• Interface	USB-C (UVC)

Compute

Component	Specification
Processor	Jetson Orin NX 16GB
• CPU	8-core Arm Cortex-A78AE
• GPU	1024-core Ampere
• AI	100 TOPS
Connectivity	Sierra MC7455 LTE
• Bands	LTE Cat 6
• Speed	300 Mbps down
Display	7" HDMI (optional)

Motor Controllers

Parameter	Value
Controller	VESC 6.6 × 4
Continuous Current	60A
Peak Current	150A
Control Mode	FOC (Field Oriented)
Feedback	Hall sensors
Motor Type	32-pole BLDC hub

Connectors

Interface	Connector
Battery	XT90 (90A rated)
Motor Phase	5.5mm bullet
12V Aux	XT30 (30A rated)
Tool Interface	Deutsch DT06-6S
CAN Bus	JST-XH 4-pin

Tool Interface

Pin	Function
1	12V Power
2	GND

Operating Temp	-20°C to +40°C
Storage Temp	-30°C to +50°C
IP Rating	IP54 (splash resistant)
Precipitation	Light rain/snow
Max Wind	40 km/h

3	CAN High
4	CAN Low
5	Reserved
6	Reserved

Safety Features

- Physical E-Stop button (mushroom, NC relay)
- Software E-Stop via operator interface
- Automatic stop on connection loss (>2s)
- LiDAR-based obstacle detection (1.5m radius)
- 100A main fuse at battery

Dimensions

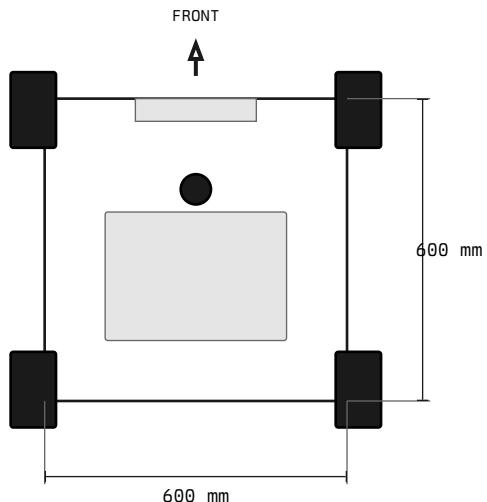


Figure 1: Top view

Ordering Information

Part Number	Description
BVR0-BASE	Rover platform (no tools)
BVR0-AUGER	Snow auger attachment
BVR0-BRINE	Brine sprayer attachment
BVR0-SWEEP	Sweeper attachment

Included

- BVR0 rover platform
- 48V 20Ah battery pack
- Battery charger
- XT90 battery cable
- Quick start guide

Not Included

- Tool attachments (sold separately)
- LTE SIM card
- Operator workstation

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Specifications subject to change without notice. December 2025.