



Gen 8.1 - 8.3 Technical Specifications (RevE)

Overview

BURRO is a people-scale robot, designed to help people work more productively by moving heavy loads from one location to the next autonomously. Currently they're used to assist workers in table grape, berry, citrus, and stone fruit harvest operations, as well as in nurseries and greenhouses.



Currently there are 4 different BURRO models that are in production:

- **BURRO Generation 7** (2021)
- **BURRO Generation 8.1** (2022)
- **BURRO Generation 8.2/8.3** (2023)

Dimensions & Weight	
Length	54.56 in (139 cm)
Width	36.25 in (92.1 cm)
Height	28.46 in (72.3 cm)
Weight - Standard Configuration*	322 lbs (146 kg)
Weight - XL Configuration*	349 lbs (159 kg)
Weight - Advanced Tow Pack (ATP) Configuration**	657 lbs (298 kg)

**Includes weight from Standard Top Tray, which has a weight of 42 lbs (19 kg)*

***Includes weight from ATP Top Tray & 4 counterweights. Each ATP Top Tray has a weight of 197 lbs (90 kg) & each counterweight has a weight of 45 lbs (20.5 kg)*

Top Tray Configurations	
Standard Top Tray	48 in (121.92 cm) x 36.25 in (92.1 cm) Cross-Bar Tray
Narrow Top Tray	48 in (121.92 cm) x 27.5 in (69.85 cm) Solid Tray
ATP Top Tray	Standard Top Tray + Advanced Tow Pack Features



Guard Dog™ Top Tray	Standard Top Tray + Guard Dog™ Pack Features
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Carrying & Towing Capacity	
Max Carrying Payload¹	500 lbs (226 kg)
Max Towing Payload²	1000 lbs (453 kg)
ATP Max Towing Payload²	2500 lbs (1134 kg)
Max Grade/Incline Angle³	15% (≈ 8.5°)

¹Rated for a Gen 8.1/8.2/8.3 at a speed of 2.7 mph (1.2 m/s) on loose dirt, relatively flat ground

²Rated for a Gen 8.1/8.2 at a speed of 2.2 mph (1.0 m/s) on flat concrete/asphalt

³Rated for carrying a 550 lbs (250 kg) payload. Higher payloads & slopes allowable with XL Configuration

Power & Range	
Motors	4 x Brushed DC - 32:1 Gear Reduction
Continuous Power	0.65 hp (0.48 kW)
Peak Power	5.21 hp (3.89 kW)
Continuous Torque	29.56 ft-lb (40.08 N-m)
Peak Torque	324.2 ft-lb (439.56 N-m)
Max Speed	4.5 mph (2 m/s)
Power Source	System: 24VDC <u>Standard Option:</u> 2 x 12V, 100Ah Lithium Iron Phosphate (LFP) battery <u>Extended Option (Advanced Tow Pack):</u> +200% battery capacity
Battery Range⁴	≈ 10 mi (16 km)
Operating Temperature	-4°F to 113°F (-20°C to 45°C)
Charging Input	110VAC, 3.7A / 220VAC, 1.9A <u>Advanced Tow Pack:</u> 110VAC, ≈ 6A
Charging Output	2 x 12VDC, 13A Onboard
Charging Temperature	32°F to 122°F (0°C to 50°C)

⁴Based on the standard battery option with an average carrying payload of 300 lbs (136 kg) at 2.7 mph (1.2 m/s) on loose dirt, relatively flat ground. Will vary with changes in average speed, carrying & towing payload, terrain type, and elevation grade

Wheels & Tires⁵	
Wheel	6" Split Rim (2-13/16" Bolt Pattern)



Tire	Carlisle Super Lug Tire, 14 x 4.5-6
Inner Tube	13 x 5-6
Air Pressure	15 psi (1.06 kg/cm ²)

⁵This is the standard tire & wheel configuration. Other configurations are available at time of purchase or sold separately

Computing & Sensors	
Camera System	4 x Stereo Camera (12 Cameras in Total)
GPS	RTK (Local & NTRIP Compatible)
Modem	4G LTE Modem
CPU & GPU	Onboard (All Computing Onboard/Local)
RAM	16 GB
Storage	256 GB SSD
Cooling	IP65 Forced-air Cooling System

Interface & Safety Features	
Screen	IP65 7" LCD Touch Monitor
Resolution	1024 x 600
Brightness	1000 nits
Bumper Bar/Safety Edge	Front & Rear
Visual	Front & Rear LEDs provide cues & safety/area lighting <u>Additional Lighting:</u> Advanced Tow Pack, Guard Dog™ Pack
Audio	Cues inform users of Burro's autonomy & when it's in motion

Autonomy	
Person Following	Vision Based



Teach & Repeat	Vision + GPS
ATLAS	GPS
Docking	Vision + GPS
Row Navigation + Row to Row	Vision Based
Obstacle Handling - Stopping & Avoidance/Path Planning	Vision Based
Crop Scouting	Vision Based
Data Collection	Up to 1 TB/hour