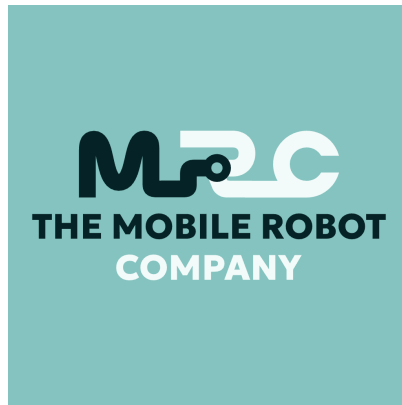




The Mobile Robot Company

Knowledge Center — Technical Reference · 2026-08-04

<https://info.mobilerobot.com/category/technical-reference>

Technical Reference

Reference data for the J1600: consolidated data sheets, dimensions, electrical and battery specifications, and interface details.



Product Data Sheets

The consolidated J1600 data sheet — headline specifications, operating environment limits, compliance summary, and pointers to the detailed reference pages.



Dimensions

All J1600 dimensions in metric and imperial units — vehicle envelope, fork geometry, wheelbase, turning radius, ground clearance, wheels, and the supported load envelope.



Electrical Specifications

J1600 electrical reference — drive and lift motors, 24 V LiFePO4 battery system, charging rates, manual and automatic chargers, and the electrical safety functions.



Battery Specifications

The J1600's 24 V, 200 Ah LiFePO4 battery — drain rates by operating state, charging rate, expected runtime, transport testing to UN 38.3, and regulatory coverage.



Interface Specifications

The J1600's operator and machine interfaces — 15-inch multi-touch HMI, key switch, start/resume button, tiller controls, light indicators, charging interface, and software integratio...

Product Data Sheets

This page consolidates the J1600's data-sheet figures in one place and points to the detailed reference pages. Use it when you need the headline numbers fast; use the linked pages when you need every value.

PRELIMINARY SPECIFICATIONS

The January 2026 specifications are preliminary and subject to change. Confirm current figures with The Mobile Robot Company or your partner before making deployment decisions.

Headline specifications

Parameter	Value
Drive type	Electric
Rated payload	1,600 kg / approximately 3,500 lb
Maximum manual pallet pick/drop height	1,600 mm / 63 in
Automatic pallet delivery height	Floor level
Top speed	5.4 km/h / 1.5 m/s / 3.4 mph
Truck weight	980 kg
Vehicle size (forks lowered)	1,893 × 850 × 2,060 mm
Turning radius	1,501 mm
Navigation	3D LiDAR SLAM
Compute	Industrial NVIDIA Jetson AI computer
Interface	15-inch multi-touch HMI
Battery	24 V, 200 Ah lithium iron phosphate (LiFePO4)
Ingress protection	IP21
Operating temperature	5–40 °C / 41–104 °F
Automatic gradeability	0° / 0%
Basic connectivity	Wi-Fi optional
Advanced integration	VDA 5050, REST API, fleet manager, advanced mission planning

The 1.6 m lift height is a manual capability; autonomous delivery is at floor level. Top speed is exactly 5.4 km/h.

Operating environment

Parameter	Limit
Gradeability, automatic mode	0° / 0%
Gradeability, manual mode, no load	2.86° / 5%
Gradeability, manual mode, full load	1.72° / 3%
Maximum traversable bump height	25 mm / 1 in
Maximum traversable gap width	20 mm / 0.8 in
Operating temperature	5–40 °C / 41–104 °F
Relative humidity	20–80%, non-condensing
Floor flatness/levelness	TR34 FM3 / FF 25, FL 20

Load-carrier envelope

The J1600 requires an [open-base carrier with no bottom deck board](https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/) (<https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/>). Maximum load length and width are 1,250 mm / 49 in each, including overhang; maximum load height from the floor is 1,700 mm / 67 in. Supported types include the EPAL Euro Pallet, EPAL 3, EPAL 6, all GMA pallets with an open base, and any forkable open-base carrier within the size limits.

Compliance summary

The J1600 is [CE marked](https://info.mobilerobot.com/safety-compliance/certificates/ce-declaration-of-conformity/) (<https://info.mobilerobot.com/safety-compliance/certificates/ce-declaration-of-conformity/>) and [meets EU and US safety requirements](https://info.mobilerobot.com/safety-compliance/certificates/compliance-statements/) (<https://info.mobilerobot.com/safety-compliance/certificates/compliance-statements/>), including [EN ISO 3691-4:2023](https://info.mobilerobot.com/safety-compliance/standards/iso-3691-4/) (<https://info.mobilerobot.com/safety-compliance/standards/iso-3691-4/>) and [ANSI/ITSDF B56.5-2024](https://info.mobilerobot.com/safety-compliance/standards/ansi-itsdf-b56-5/) (<https://info.mobilerobot.com/safety-compliance/standards/ansi-itsdf-b56-5/>). The battery is tested to [UN 38.3](https://info.mobilerobot.com/safety-compliance/certificates/battery-un-38-3-documentation/) (<https://info.mobilerobot.com/safety-compliance/certificates/battery-un-38-3-documentation/>). See [how J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>) for the safety architecture.

Detailed reference pages

- [Dimensions](https://info.mobilerobot.com/documentation/technical-reference/dimensions/) (<https://info.mobilerobot.com/documentation/technical-reference/dimensions/>) — every vehicle, fork, and wheel measurement.
- [Electrical specifications](https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/>) — motors, power, and charging.
- [Battery specifications](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>) — chemistry, drain rates, runtime, and transport testing.
- [Interface specifications](https://info.mobilerobot.com/documentation/technical-reference/interface-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/interface-specifications/>) — operator controls, indicators, and integration interfaces.
- [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>) — the product-section specification page.

Dimensions

Complete dimensional data for the [J1600 self-driving pallet jack](https://info.mobilerobot.com/products/j1600/overview/) (<https://info.mobilerobot.com/products/j1600/overview/>), in metric and imperial units. Use these figures for layout planning, aisle checks, and load-carrier verification.

 PRELIMINARY SPECIFICATIONS

The January 2026 specifications are preliminary and subject to change.

Vehicle dimensions

Parameter	Metric	Imperial
Vehicle length	1,893 mm	75 in
Vehicle width	850 mm	33 in
Vehicle height, forks lowered	2,060 mm	81 in
Vehicle height, forks at maximum height	2,350 mm	93 in
Ground clearance	30 mm	1.2 in
Wheelbase	1,106 mm	44 in
Turning radius	1,501 mm	59 in
Tiller-handle height, upright	1,234 mm	49 in
Truck weight	980 kg	—

Fork geometry

Parameter	Metric	Imperial
Fork height, lowest position	90 mm	3.5 in
Fork height, highest position	1,600 mm	63 in
Fork length	1,150 mm	45 in
Fork width	180 mm	7 in
Fork thickness	60 mm	2.4 in
Fork outer distance	680 mm	27 in
Fork inner distance	320 mm	13 in

The 1,600 mm maximum fork height applies to manual pick and drop. Autonomous pallet delivery is at floor level.

Wheels

Wheel	Size
Load wheels	70 mm wide × 80 mm diameter (2.8 × 3.1 in)
Drive wheel	75 mm wide × 230 mm diameter (3 × 9 in)

Wheels are polyurethane.

Supported load envelope

Parameter	Metric	Imperial
Maximum pallet/load length, including overhang	1,250 mm	49 in
Maximum pallet/load width, including overhang	1,250 mm	49 in
Maximum load height from floor	1,700 mm	67 in

The exact maximum envelope is 1,250 mm; carriers must have an [open base with no bottom deck board](https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/) (<https://info.mobilerobot.com/products/j1600/pallet-and-load-compatibility/>). Supported types include EPAL Euro Pallet, EPAL 3, EPAL 6, open-base GMA pallets, and any forkable open-base carrier within these limits.

Related reference

- [Product data sheets](https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/) (<https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/>) — the consolidated specification summary.
- [Electrical specifications](https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/>), and [battery specifications](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>).
- [J1600 technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) (<https://info.mobilerobot.com/products/j1600/technical-specifications/>) in the product section.

Electrical Specifications

Electrical reference data for the J1600: motors, battery system, charging, and the electrically relevant safety functions. For battery chemistry, drain rates, and runtime, see [battery specifications](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>).

PRELIMINARY SPECIFICATIONS

The January 2026 specifications are preliminary and subject to change.

Motors and drive

Parameter	Value
Drive motor	AC, 1.5 kW
Lift motor	2.2 kW
Drive type	Electric
Top speed	5.4 km/h / 1.5 m/s / 3.4 mph

Lift performance

Parameter	Metric	Imperial
Fork lifting speed, no load	0.10 m/s	0.33 ft/s
Fork lifting speed, full load	0.08 m/s	0.26 ft/s
Fork lowering speed, no load	0.08 m/s	0.26 ft/s
Fork lowering speed, full load	0.12 m/s	0.39 ft/s

Battery system

Parameter	Value
Nominal voltage	24 V
Capacity	200 Ah
Chemistry	Lithium iron phosphate (LiFePO4)
Charging rate	Approximately 47 percentage points per hour

Chargers

Charger	Behavior	End-user list price
Manual charger	Plug in during breaks or idle time, as with a conventional electric pallet jack	€3,600
Automatic charger	The robot drives to the station, positions itself, and a charging interface extends to the vehicle's charging plates; enables opportunity charging	€8,400

[Automatic charging](https://info.mobilerobot.com/applications/scenarios/automatic-charging/) (<https://info.mobilerobot.com/applications/scenarios/automatic-charging/>) is an advanced automation capability. When purchased with commissioning, its setup is part of installation Day 1.

Electrical protection and safety

Item	Value
Ingress protection	IP21 — protected against objects over 12.5 mm and vertically dripping water
Charging-current relay safety function	Performance Level b (PL b)

The [charging-current relay](https://info.mobilerobot.com/safety-compliance/safety-functions/charging-safety/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/charging-safety/>) is one of the certified safety functions in the J1600's layered safety architecture; [person detection](https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/person-detection/>), [braking](https://info.mobilerobot.com/safety-compliance/safety-functions/braking/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/braking/>), and emergency-stop functions carry higher [Performance Levels](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) (<https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/>). See [how J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/>).

Related reference

- [Battery specifications](https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/battery-specifications/>) — drain rates, runtime, and transport testing.
- [Product data sheets](https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/) (<https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/>) — the consolidated specification summary.

Battery Specifications

Reference data for the J1600's battery system: chemistry, consumption, charging, runtime, and compliance. For charger hardware and prices, see [electrical specifications](https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/>).

PRELIMINARY SPECIFICATIONS

The January 2026 specifications are preliminary and subject to change.

Battery data

Parameter	Value
Nominal voltage	24 V
Capacity	200 Ah
Chemistry	Lithium iron phosphate (LiFePO4)

LiFePO4 chemistry supports [opportunity charging](https://info.mobilerobot.com/application/s/scenarios/automatic-charging/) (<https://info.mobilerobot.com/application/s/scenarios/automatic-charging/>): topping up the battery during breaks or idle periods rather than waiting for a full discharge cycle.

Consumption and charging rates

Operating state	Rate
Driving, fully loaded	Approximately 13% of capacity per hour
Driving, without load	Approximately 12% per hour
Standby	Approximately 2% per hour
Charging	Approximately 47 percentage points per hour

Runtime

Runtime exceeds eight hours in a typical duty cycle. The drain rates above imply approximately 7.7 hours of continuous fully loaded driving, or 8.3 hours unloaded, before allowing for standby time, lifting, duty cycle, battery reserve, and operating conditions.

CALCULATED FIGURES

The 7.7- and 8.3-hour values are derived from the drain rates, not guaranteed runtimes. Real duty cycles mix driving, lifting, and standby, so achieved runtime varies by application.

Charging options

- **Manual charging** (<https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/>): plug in the charger during a break or while the machine is idle.
- **Automatic charging:** with the optional [automatic charger](https://info.mobilerobot.com/products/chargers-and-accessories/automatic-charger/) (<https://info.mobilerobot.com/products/chargers-and-accessories/automatic-charger/>), the robot drives to the station, positions itself, and the charging interface extends to the vehicle's charging plates — opportunity charging without operator involvement. This is an advanced automation capability.

Transport testing and regulation

Reference	Coverage
UN Manual of Tests and Criteria, subsection 38.3 (UN 38.3)	Lithium-battery transport testing
Regulation (EU) 2023/1542 — Batteries Regulation	EU battery regulation, part of the J1600's compliance list

Related reference

- [Electrical specifications](https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/>) — motors, chargers, and electrical safety functions.
- [Product data sheets](https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/) (<https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/>) — the consolidated specification summary.
- [Battery UN 38.3 documentation](https://info.mobilerobot.com/safety-compliance/certificates/battery-un-38-3-documentation/) (<https://info.mobilerobot.com/safety-compliance/certificates/battery-un-38-3-documentation/>) — what the transport test regime covers and how to request documentation.

Interface Specifications

Reference for every interface on the J1600: the controls an operator uses, the indicators the machine presents, the charging interface, and the [software interfaces available for integration](https://info.mobilerobot.com/documentation/technical-integration/integration-overview/) (<https://info.mobilerobot.com/documentation/technical-integration/integration-overview/>).

Operator controls

Control	Function
15-inch multi-touch HMI	Task creation, saved locations, tutorials, and the Help/Support menu
LED start/resume button	Physical confirmation and execution of automatic tasks
Three-position key switch	Selects power off, manual-only, or automatic mode
Tiller	Manual driving and lift control, as on a conventional electric pallet jack
Tiller-position switches	One switch for emergency stop, one for manual control — grabbing or moving the tiller enables immediate manual takeover
Emergency-stop buttons	Three, positioned on the vehicle
Belly button	Stop-and-reverse protection at the tiller

The operator must [confirm entry into automatic mode](https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes/) (<https://info.mobilerobot.com/documentation/getting-started/manual-and-autonomous-modes/>), on the physical start/resume button, and the interface instructs the operator to step away before the robot starts.

Indicators and feedback

Indicator	Meaning
Blue light strips (three)	Display the current protective field/safety zone in automatic mode; the field expands with speed
Floor-indicator lights	Show automatic-mode status on the floor around the vehicle
White light indication	Manual mode
Audio speaker	Audible signals and instructions

Charging interface

The vehicle carries charging plates for the optional [automatic charger](https://info.mobilerobot.com/products/chargers-and-accessories/automatic-charger/) (<https://info.mobilerobot.com/products/chargers-and-accessories/automatic-charger/>): the robot positions itself at the station and the charger's interface extends to the plates. [Manual charging](https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/) (<https://info.mobilerobot.com/products/chargers-and-accessories/manual-charger/>) uses a plug-in charger. See [electrical specifications](https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/) (<https://info.mobilerobot.com/documentation/technical-reference/electrical-specifications/>).

Support interface

The HMI's Help/Support menu provides a QR code through which technical requests can be sent directly from the machine.

Software and integration interfaces

Interface	Purpose	Availability
VDA 5050 (https://info.mobilerobot.com/documentation/technical-integration/vda-5050-documentation/)	Multi-vendor fleet interoperability	Advanced software
REST API (https://info.mobilerobot.com/documentation/technical-integration/rest-api-documentation/)	Integration with other software and equipment	Advanced software
Fleet Manager (https://info.mobilerobot.com/documentation/technical-integration/fleet-manager-guide/)	Orchestrated multi-robot deployments	Per-robot license
Wi-Fi	Optional; required only for connected functions such as come-to-me	All units

Related reference

- [Product data sheets](https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/) (https://info.mobilerobot.com/documentation/technical-reference/product-data-sheets/) — the consolidated specification summary.
- [How J1600 safety works](https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) (https://info.mobilerobot.com/safety-compliance/safety-overview/how-j1600-safety-works/) — the safety architecture behind the controls and fields.