



The Mobile Robot Company

Knowledge Center — Load Detection · 2026-08-04

<https://info.mobilerobot.com/safety-compliance/safety-functions/load-detection>

Load Detection

Load detection is a certified J1600 safety function rated **Performance Level b (PL b)**. A dedicated load-detection sensor is part of the vehicle's [safety architecture](https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/) (<https://info.mobilerobot.com/safety-compliance/safety-overview/safety-architecture/>).

What the vehicle senses

The load-detection sensor lets the vehicle register whether it is carrying a load. Load state matters to safe operation: the J1600's rated payload is 1,600 kg (about 3,500 lb), and [performance figures](https://info.mobilerobot.com/products/j1600/dimensions-and-performance/) (<https://info.mobilerobot.com/products/j1600/dimensions-and-performance/>) differ between loaded and unloaded travel — for example, fork lifting speed is 0.10 m/s without load and 0.08 m/s at full load. A lifting-height sensor is also fitted as part of the control system.

The limits load detection works within

Load detection is a sensor function, not a substitute for load limits or judgment:

Limit	Value
Rated payload	1,600 kg / about 3,500 lb
Maximum pallet or load length, including overhang	1,250 mm / 49 in
Maximum pallet or load width, including overhang	1,250 mm / 49 in
Maximum load height from floor	1,700 mm / 67 in
Carrier type	Open-base, forkable, no bottom deck board

The operator's part

Judging load stability stays with the operator: pallet condition, stacking, top-heaviness, and whether a carrier is suitable at all. Pallet pickup is always manual, and no [blanket approval](https://info.mobilerobot.com/safety-compliance/safe-deployment/approved-loads-and-pallets/) exists for every carrier or for hazardous materials. See [Human responsibilities](https://info.mobilerobot.com/safety-compliance/safety-overview/human-responsibilities/).

Related pages

- [Performance levels](https://info.mobilerobot.com/safety-compliance/safety-functions/performance-levels/) — all assigned levels in one table.
- [Technical specifications](https://info.mobilerobot.com/products/j1600/technical-specifications/) — full load and dimension data.

PRELIMINARY SPECIFICATION

Performance Levels come from the preliminary January 2026 product documentation and are subject to change.