



The Mobile Robot Company

Knowledge Center — Person Detection · 2026-08-04

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

Person Detection

Person detection in the safety field is a certified J1600 safety function rated **Performance Level d (PL d)** (<https://info.mobilerobot.com/it-it/safety-compliance/safety-functions/performance-levels/>) — the highest level assigned to any J1600 safety function.

How it works

Two 2D safety LiDAR scanners, mounted front and rear on the chassis, monitor a 360-degree protective field around the vehicle. The field covers forward and reverse autonomous travel and is speed-dependent: it expands as the vehicle drives faster, so detection distance grows with speed. See [Safety-field adjustment](https://info.mobilerobot.com/it-it/safety-compliance/safety-functions/safety-field-adjustment/) (<https://info.mobilerobot.com/it-it/safety-compliance/safety-functions/safety-field-adjustment/>).

Detection feeds an independent safety controller, and the certified [braking](https://info.mobilerobot.com/it-it/safety-compliance/safety-functions/braking/) (<https://info.mobilerobot.com/it-it/safety-compliance/safety-functions/braking/>) function (PL d) provides the [stopping reaction](https://info.mobilerobot.com/it-it/support/troubleshooting/obstacle-or-safety-field-stops/) (<https://info.mobilerobot.com/it-it/support/troubleshooting/obstacle-or-safety-field-stops/>). This chain is built from [certified safety components](https://info.mobilerobot.com/it-it/safety-compliance/safety-overview/safety-architecture/) (<https://info.mobilerobot.com/it-it/safety-compliance/safety-overview/safety-architecture/>) and runs separately from the 3D navigation system.

Detection vs. obstacle avoidance

The J1600 also [avoids obstacles](https://info.mobilerobot.com/it-it/products/j1600/navigation-and-obstacle-avoidance/) (<https://info.mobilerobot.com/it-it/products/j1600/navigation-and-obstacle-avoidance/>) using its 3D LiDAR map and RGB AI camera — but that is a navigation capability, not the certified protection layer. Person detection belongs to the independent 2D safety stack, so personnel protection does not depend on the AI navigation software. The distinction is explained in [Navigation sensors vs. safety sensors](https://info.mobilerobot.com/it-it/safety-compliance/safety-overview/navigation-sensors-vs-safety-sensors/) (<https://info.mobilerobot.com/it-it/safety-compliance/safety-overview/navigation-sensors-vs-safety-sensors/>).

What bystanders see

Three blue floor light strips display the currently protected area during automatic operation, so people nearby can see the active safety zone. White light indicates manual mode.

Operator's part

Before autonomous operation starts, the robot instructs the operator to step away — person detection protects people who end up in the vehicle's path, but the design keeps people clear of the field from the start. See [Human responsibilities](https://info.mobilerobot.com/it-it/safety-compliance/safety-overview/human-responsibilities/) (<https://info.mobilerobot.com/it-it/safety-compliance/safety-overview/human-responsibilities/>).

PRELIMINARY SPECIFICATION

Performance Levels are preliminary January 2026 specifications and are subject to change. For detection ranges, field geometries, and stopping distances, use current product documentation for deployment decisions.