

## Designated use

Collaborative mobile robot with hook for fully-automated pick-up and delivery of carts

## Dimensions

Length	1180 to 1275 mm (highest to lowest positions of hook arm)
Width	580 mm
Height	550 to 900 mm (lowest to highest positions of hook arm)
Height above floor	Robot: 50 mm; Gripping height: 50-390 mm
Weight (without load)	98 kg

## Color

RAL 7011 Iron Grey

## Towing capacity

Load on cart up to 500 kg at <1 % incline - 300 kg at 5% incline

## Speed and performance

Running time	8-10 hours or 15-20 km (depending on load)
Maximum speed	1.1 m/s (4 km/h)
Turning radius (without cart)	520 mm (around center of robot)
Swinging radius (with cart)	Total length of robot and cart plus 550 mm
Positioning accuracy (placing cart)	+/- 200 mm from center of position, 10° accuracy

## Power

Battery	Li-NMC, 24 V, 40 Ah; charging time: up to 3 hours (0-80%: 2 hours)
Internal charger	Input: 100-230 V ac, 50-60 Hz / Output: 24 V, max 15 A

## Environment

Ambient temperature range	+5°C to 50°C (humidity 10-95% non-condensing)
IP class	IP20

## Communication

WiFi	Dual-band wireless AC/G/N/B
Bluetooth	4.0 LE, range: 10-20 m
I/Os	USB and Ethernet

## Sensors

SICK safety laser scanners S300 (front and back)	360° visual protection around robot
3D camera Intel RealSense™ on robot	detection of objects ahead 50-500 mm above floor
3D camera Intel RealSense™ on front of hook	detection of objects ahead up to 2000 mm above floor
Ultrasonic scanners (4 pcs.)	Current status: Ongoing development. Application: Detection of transparent objects.

## Cart

Length	500 to 2400mm
Width	400 to 1500mm
Height	200 to 2000mm



