

THE UNIQUE FEATURES OF THE TLS REVOLUTIONIZE THE LOADING ZONE

With the autonomously acting **TRAPO Loading System (TLS Series)**, TRAPO closes the safety gap between the warehouse and the loading bay.

Our knowledge - your advantage

- › High level of savings potential: swift, safe loading of pallet freight
- › Choice of stationary system or mobile between cargo hatches
- › ONE SYSTEM | ONE CONTROL: TRAPO-derived hard- and software
- › For employment no modifications are required at the truck box
- › Autonomous loading and unloading diffuses any danger zone
- › Starting of the loading process via operation outside the loading zone
- › Damage to the trailer is avoided
- › Low temperature loss between temperature-controlled warehouse and refrigerated box
- › Delivery of Euro pallets optionally by shuttle fleet or rigid conveying system
- › Direct connection to fully-automatic bay warehouse possible
- › Integration in TIM, the TRAPO Intelligent Managementsystem

You can count on us

Required area for autonomous loading and unloading in the loading zone:
approx. 14.00 m total length (including 3.00 m shunting distance):



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**LOAD AND UNLOAD AUTONOMOUSLY
INCREASE SAFETY AND EFFICIENCY
IN THE LOADING ZONE**

TRAPO | TRAPO LOADING SYSTEM (TLS SERIES)

SAVE TIME, LOAD AND UNLOAD TRUCKS EFFICIENTLY: THE AUTONOMOUSLY ACTING TLS 3600

Loading or unloading box trucks with Euro pallets has never been easier – with the **TRAPO Loading System (TLS Series)**. It is performed automatically, entirely without human intervention. Most critical goals are time saving and increase in safety. The position of the TLS is controlled autonomously before and during entry into the truck.

The loading zone is instantly flexibly employable: blocking by deployment of one-shot solutions and forklift transport mode is dispensed with*.

For a **14-meter trailer** the loading time for **33 Euro pallets** – depending on cargo – can be reduced to approximately **25 minutes**.



The **TLS 3600** owes its name to the fact that it always loads **three pallets of 1200 kg** each in parallel in a single work step, thus featuring a **payload of 3600 kg**.

Loading takes place in three steps: First, up to three pallets are placed side by side on the conveyor and aligned (step 1). This is followed by picking up (step 2) and loading of the row (step 3). During the loading process, the subsequent row of pallets is formed and staged. Unloading is performed in reverse order.

Optimal teamwork: The TLS Series is always composed of a vehicle and a dock which can be combined as desired.

For the vehicle you can choose between the wired or battery-powered version.

The dock is available as a fixed variant when it serves only one charging hatch. In the mobile version, the dock can serve up to three loading bays in succession. In the case of the rail-mounted variant, it must be clarified whether structural modifications are possible on the hall floor.

DOCK	VEHICLE	
	Wired	Battery
Fixed	TLS 3600 F-W > <small>TRAPO Loading System Fix-Wired</small>	TLS 3600 F-B > <small>TRAPO Loading System Fix-Battery</small>
Wheel	TLS 3600 W-W > <small>TRAPO Loading System Wheel-Wired</small>	TLS 3600 W-B > <small>TRAPO Loading System Wheel-Battery</small>
Rail	TLS 3600 R-W > <small>TRAPO Loading System Rail-Wired</small>	TLS 3600 R-B > <small>TRAPO Loading System Rail-Battery</small>

* With one-shot pallet freight, the entire pallet freight of a truck is readied in front of the loading hatch with a forklift on conveyor rollers in order to load the entire pallet freight in one operation. Prerequisite is a fixed rail-system – both in the loading zone and the truck.

THE TLS 3600 IN THE OVERALL CONTEXT

TLS 3600 > TRAPO Loading System



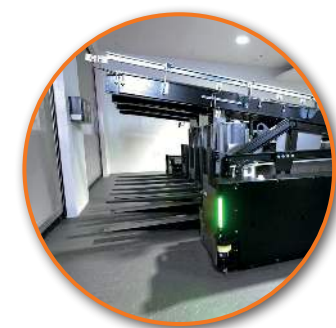
1 CHECK-IN/CHECK-OUT

- > Truck driver reports via operator panel in the waiting area
- > Fold out of the dock leveller/ start request
- > Check-out after completion of the loading procedure/departure



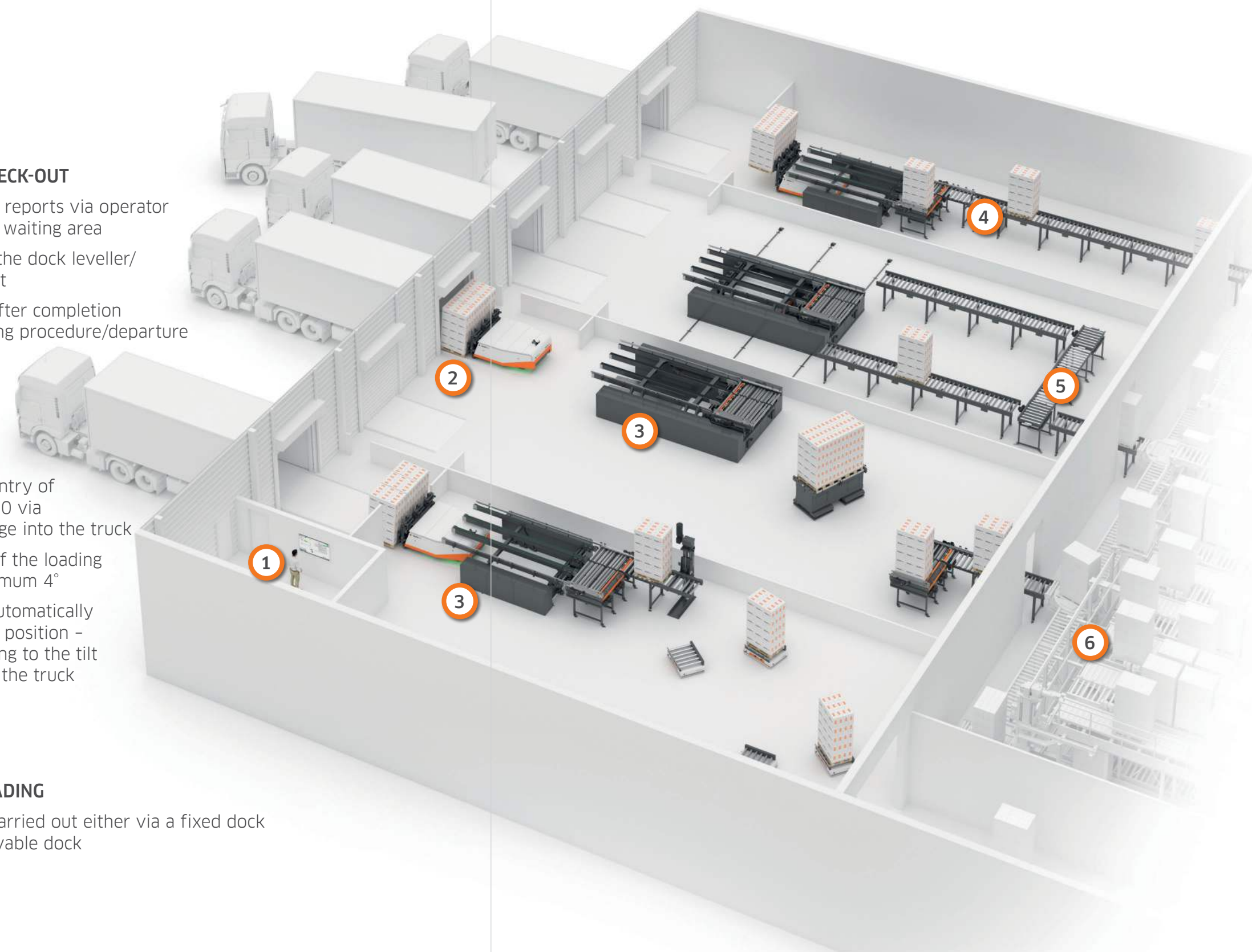
2 POSITIONING

- > Automatic entry of the TLS 3600 via loading bridge into the truck
- > Inclination of the loading bridge maximum 4°
- > TLS 3600 automatically corrects the position - corresponding to the tilt positions of the truck



3 FLEXIBLE LOADING

- > Loading is carried out either via a fixed dock or via a movable dock



4 FEED AND ALIGNMENT OF THREE EURO PALLETS

- > Continuous feed of pallet loads
- > Buffering, alignment and provision of three pallets each



5 PALLET TRANSPORT

- > Optimized, tailored material flow for storage and loading areas
- > Flexible pallet transport via autonomously navigating shuttle



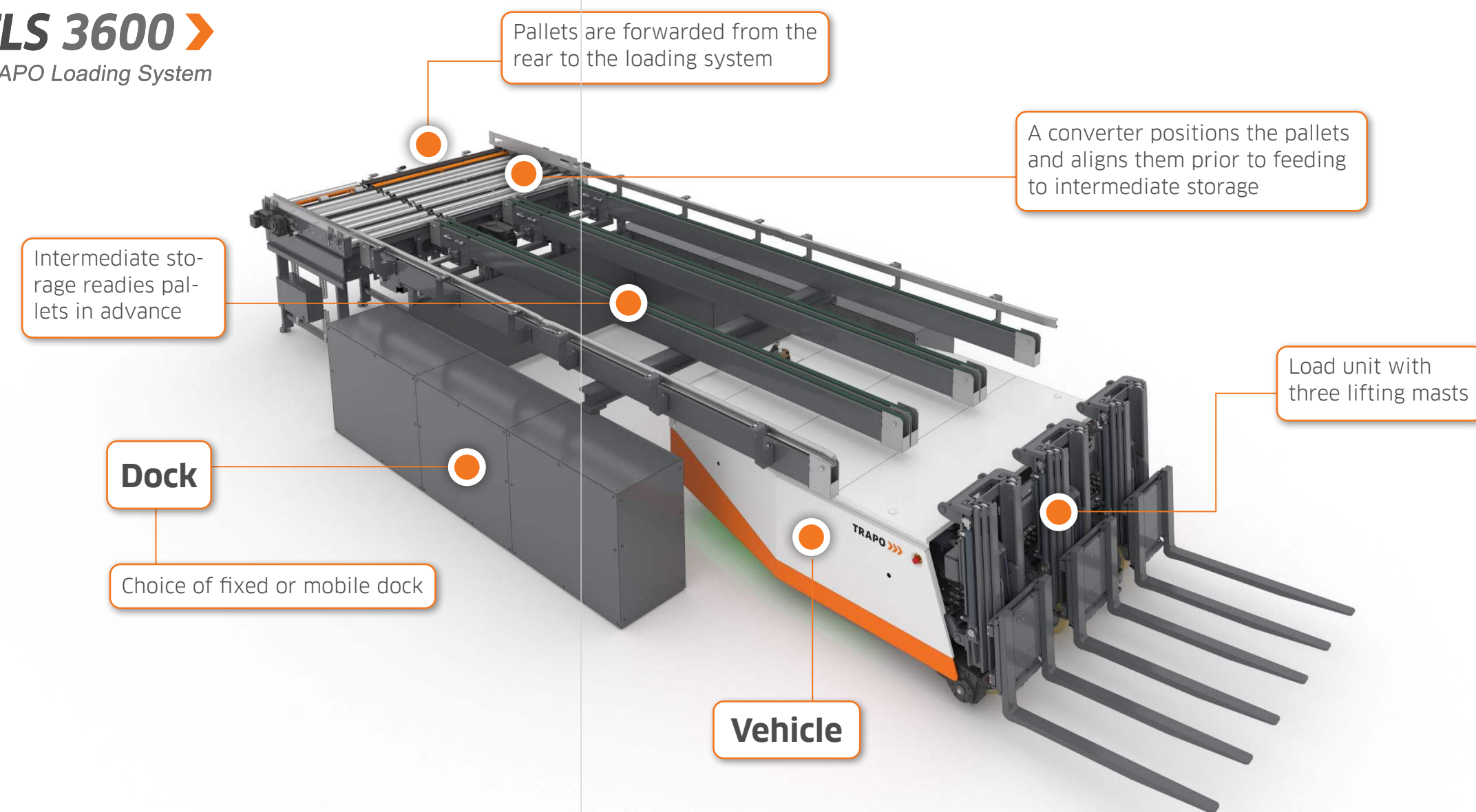
6 WAREHOUSE LOGISTICS

- > Automatic feed and retrieval of pallets with warehouse shuttle
- > Negotiating varying levels with warehouse lift



THE TLS 3600 IN DETAIL

TLS 3600 > TRAPO Loading System



Facts & figures

Features

- > Autonomously operating system consisting of vehicle and dock
- > Corrects height differences and misalignments of the truck autonomously
- > Max. 4° inclination of the dock leveller

Dimensions

Approx. 14.00 m overall length, including 3.00 m shunting distance

Vehicle:

Length: 4.40 m (incl. tines)
Width: 2.15 m
Height: 1.35 m (lift mast retracted)
Lifting: 1.60 m
Payload: 3.60 t

Weight unloaded: approx. 5.50 t
Weight at full load: approx. 9.10 t
Power supply: wired or with energy storage

Dock:

Length: 7.40 m
Width: 4.60 m
Lifting height: 1.50 m