

AGILOX

AGILOX PRODUCTS

ONE, OCF, BCO, IO & ANALYTICS



THE AGILE VEHICLE
SMALL AND AGILE, THE AGILOX ONE DRIVES
THROUGH THE NARROWEST AISLES

DIMENSIONS (L x W x H)

1,510 MM × 800 MM × 1,870 MM
60 IN × 32 IN × 74 IN

PERFORMANCE DATA

500 MM 1,000 KG 1.4 M/S
20 IN 2204 LBS max. speed
max. lifting height max. lifting weight



AGILOX ONE 1,200 mm / 47 IN with obstacle avoidance, single scissors and signal light package



SPECIFICATIONS

4 omnidirectional drives Drive system	Dual electric spindles Lift system	LiFePO4 with BMS 3 min charging = 1 h running Battery	400 kg (880 lbs) Unit weight
< 12 hours (1 vehicle) / 15 minutes (each additional AMR) Commissioning time	CE, declaration of conformity Certification	203 mm / 8 IN width 100 mm / 4 IN height Fork dimensions	575 mm / 23 IN Overall fork width

MAXIMUM EFFICIENCY
ALL PRODUCTS WITH
THE PROVEN AGILOX
CORE INTELLIGENCE



ONE VARIATIONS

**ONE Double Scissor Lift**

AGILOX ONE 1200 mm with a double scissor lifting system

1,200 mm / 47 IN double scissor
750 kg / 1653 lbs
1,000 mm / 39 IN lifting height

**ONE Narrowfork**

AGILOX ONE basic vehicle with only one fork

1,200 mm / 47 IN single scissor
1,000 kg / 2,204 lbs
500 mm / 20 IN lifting height

**ONE 1400 / 1600 / 1800**

AGILOX ONE basic vehicle with lifting forks in three different lengths (1,400 mm, 1,600 mm, 1,800 mm)

V1400 1,400 mm / 55 IN single scissor 750 kg / 1653 lbs
500 mm / 20 IN lifting height

V1600 1,600 mm / 63 IN single scissor 750 kg / 1653 lbs
500 mm / 20 IN lifting height

V1800 1,800 mm / 71 IN single Scissor 750 kg / 1653 lbs
500 mm / 20 IN lifting height

ONE ADD-ONS

**Obstacle Avoidance**

Additional 3D sensor system in the direction of travel to increase safety in man-machine mixing mode

**Signal Light Package**

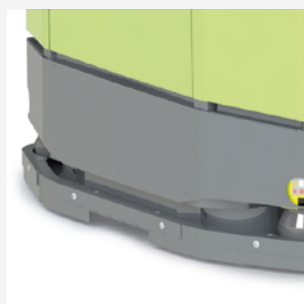
Light signal to increase safety in man-machine mixing mode (color: blue / green / red), additional signal lights in the fork tips (color: white / yellow)

**Barcode Identification Unit**

Scanner for the detection of barcodes or QR codes

**ESD Protection**

Protection or discharge measure for operation in areas with ESD requirements to prevent electrostatic charging

**Debris Protection**

Dirt deflector in the front area of the vehicle, versions in rubber lip or brush

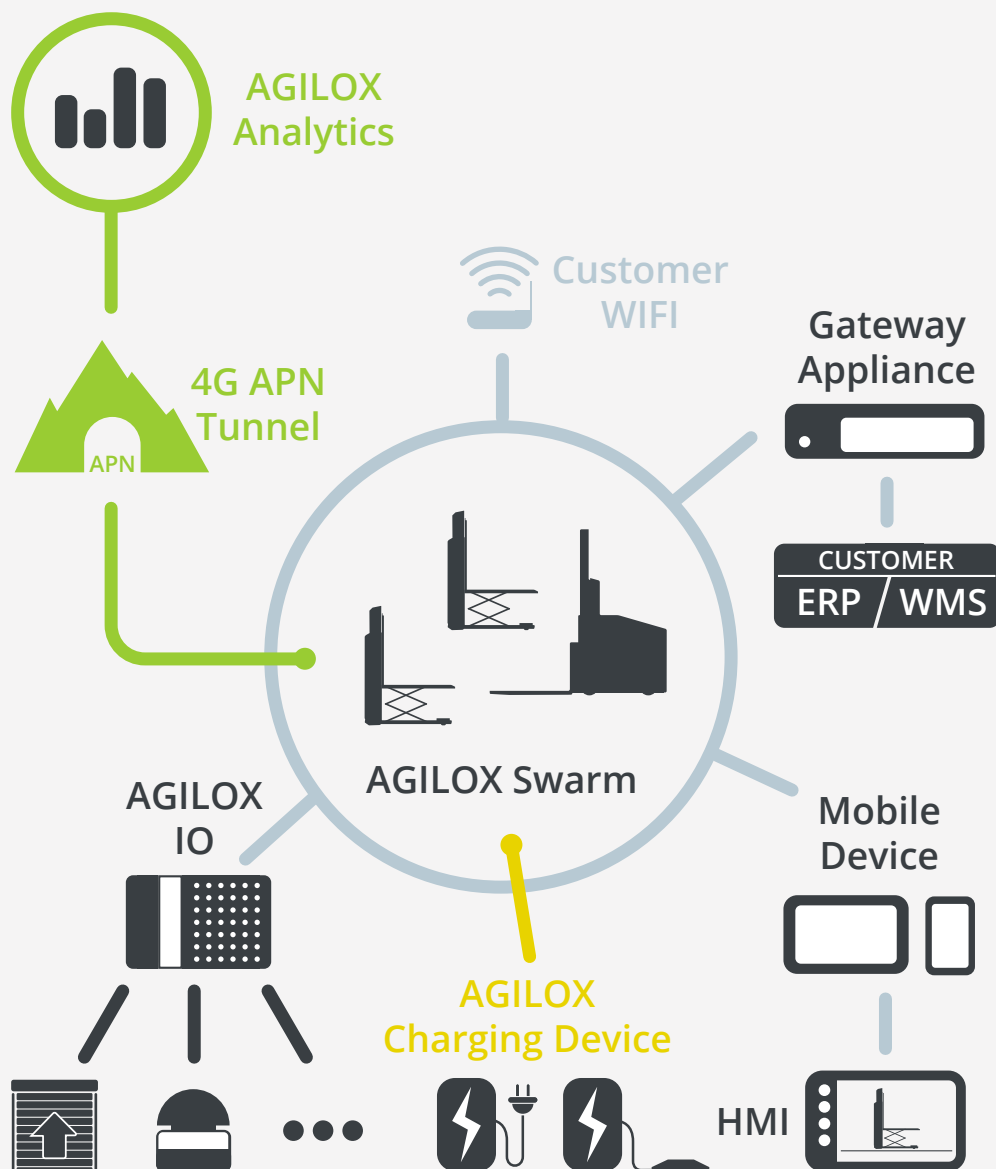
**Mobile Charging Device**

One mobile charger is recommended per AGILOX fleet (connection 230V / 16A)

AGILOX

SYSTEM OVERVIEW

The use of an AGILOX IGV is possible without adjustments and additions to the IT infrastructure. Thanks to swarm intelligence, neither a software nor a separate server for a master computer must be installed. AGILOX' plug and perform quality only requires customer provided WiFi and a 3-phase AC power connection. Open interfaces also allow the system to be flexibly and dynamically connected with the environment. Since navigation takes place without additional infrastructure, the system adapts to its changing environment almost automatically and adheres to the highest security standards.

**AGILOX Charging**

24/7 operations without changing the battery.
60 minutes of operation - 3 minutes to charge.

Customer WIFI

Customer-provided WiFi is required in order for vehicles to communicate with each other.

Customer ERP / WMS

Customer systems (e.g. ERP, WMS, MES, etc.) can be connected via the AGILOX JSON API.

AGILOX Swarm

Swarm Intelligence underpins the AGILOX fleet's navigation.

Mobile Device

The IGVs are controlled via mobile devices (e.g. smartphone, tablet, etc.) with browser access.

AGILOX HMI

The HMI is mapped in the web browser and is always available to interact with AGILOX vehicles.

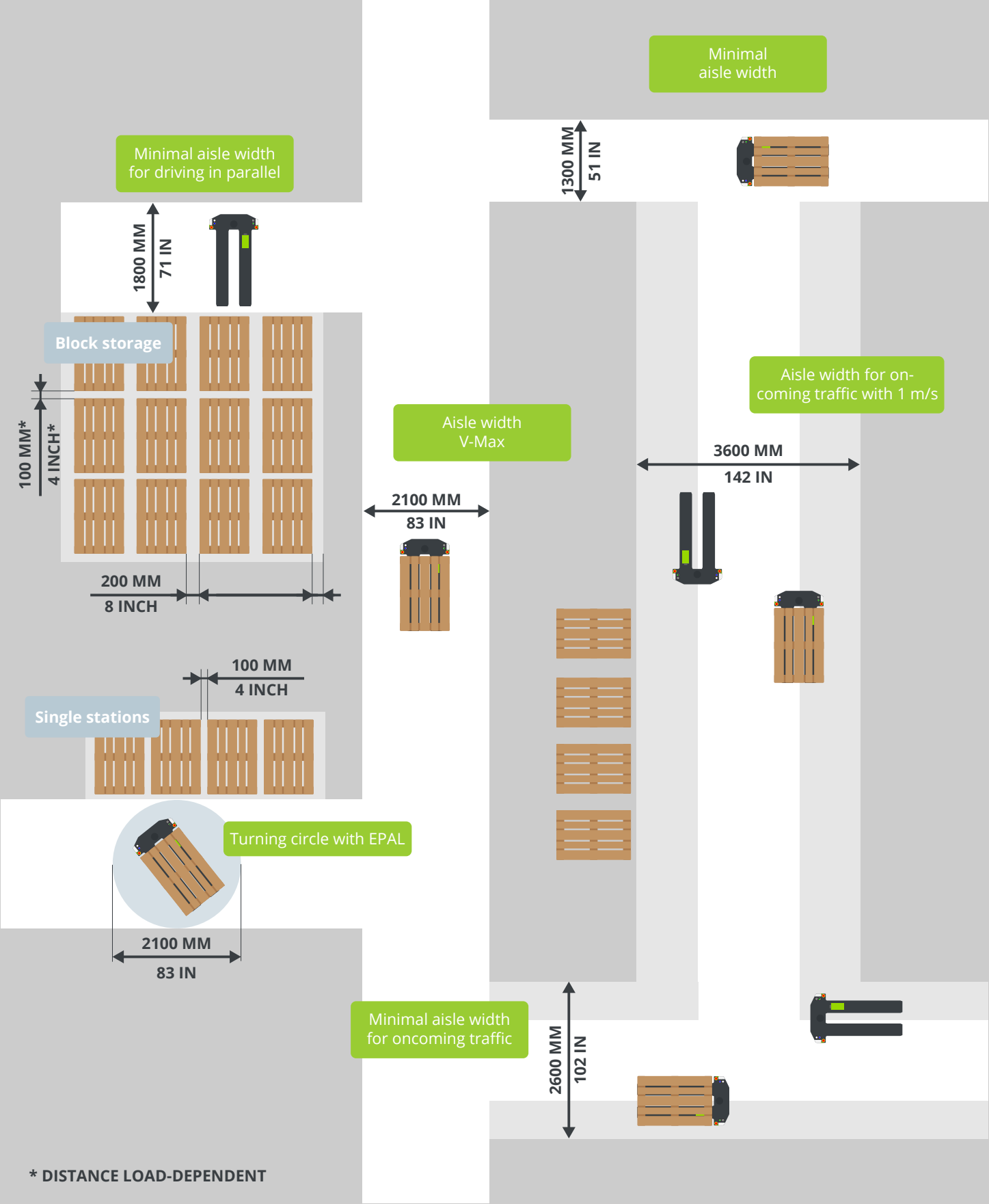
AGILOX IO Box

The IO Box assists the customer in connecting their existing infrastructure (e.g. roller doors, fire alarm systems) with the AGILOX network.

AGILOX Analytics

Access to the most important KPIs and data anytime and anywhere.

AGILOX ONE
DRIVING SURFACE DESIGN
OF A 1200 X 800 MM PALLET (EPAL)



FOR HEAVIER LOADS THE AUTONOMOUS COUNTERBALANCED FORKLIFT OCF IS A REAL POWER MONSTER

DIMENSIONS

(L x W x H)

2,800 MM × **1,200 MM** × **2,570 MM**
110 IN × **47 IN** × **101 IN**

PERFORMANCE DATA

1,600 MM **1,500 KG** **1.4 M/S**
63 IN **3306 LBS** max. speed
 max. lifting height max. lifting weight



AGILOX OCF 1200 mm /
47 IN with obstacle avoidance



SPECIFICATIONS

3 omnidirectional drives

Drive system

Electric

Lift system

LiFePO4 with BMS 3 min charging = 1 h running

Battery

3,600 kg (7940 lbs)

Unit weight

< 12 hours (1 vehicle) / 15 minutes (each additional AMR)

Commissioning time

CE, declaration of conformity

Certification

125 mm / 5 IN width 70 mm / 3 IN height

Fork dimensions

450 mm / 18 IN min. 960 mm / 38 IN max.

Overall fork width

MAXIMUM EFFICIENCY

**ALL PRODUCTS WITH
THE PROVEN AGILOX
X-SWARM TECHNOLOGY**





OBSTACLE AVOIDANCE

3D sensor system in the direction of travel to increase safety in man-machine mixing mode

OCF ADD-ONS



Barcode Identification Unit

Scanner for the detection of barcodes or QR codes



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OCF Lifting Aids



Standard Stationary Charging Station

Stationary charging station for the AGILOX OCF (connection 400V / 16A)



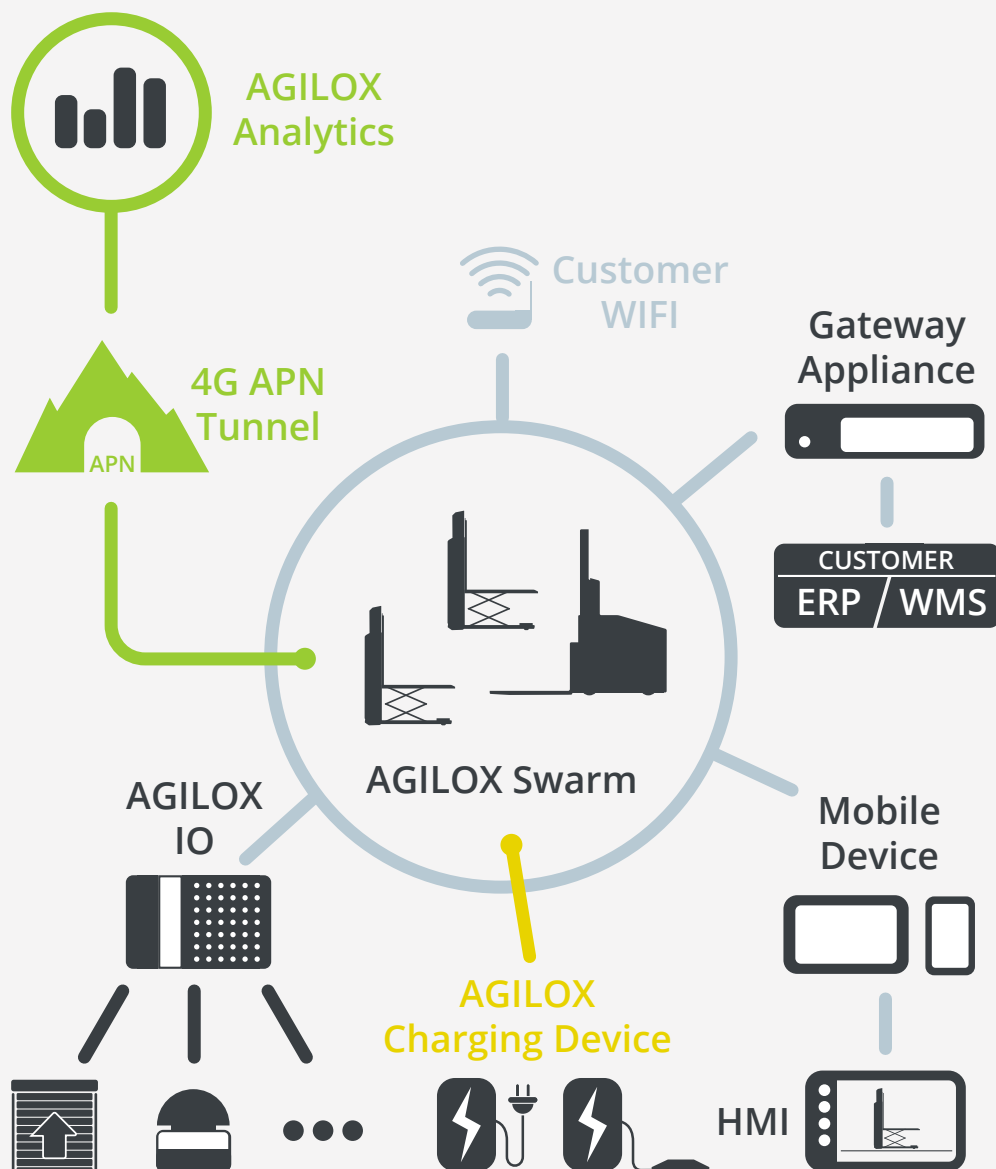
Quick Stationary Charging Station

Stationary fast charging station for the AGILOX OCF (connection 400V / 32A)

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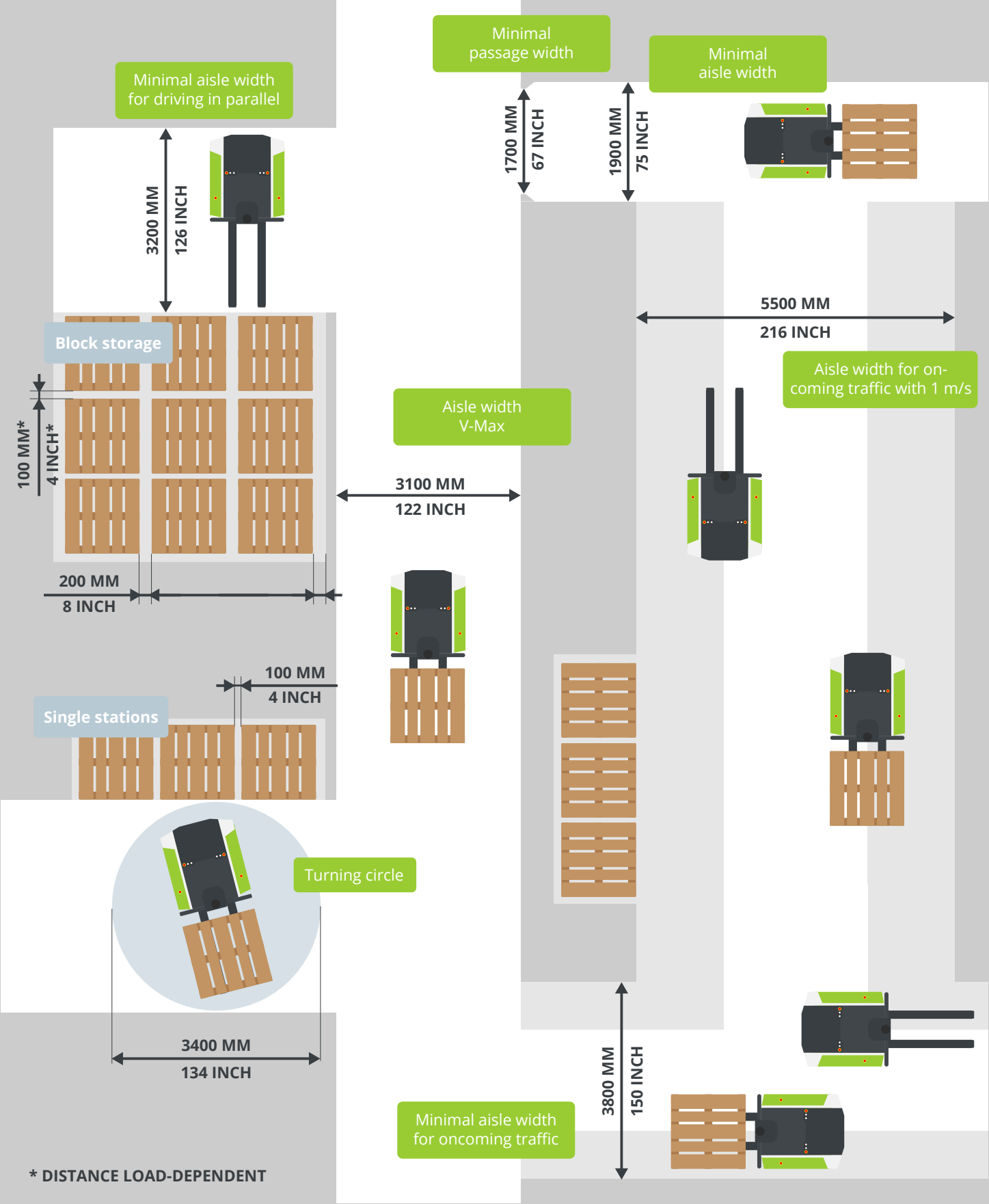
AGILOX Analytics

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AGILOX OCF

DRIVING SURFACE DESIGN

OF A 1,200 X 1,200 MM PALLET



WITH THE AGILOX BOX CARRIER, BOXES AND TRAYS CAN BE TRANSPORTED EFFORTLESSLY

BOX CARRIER

The AGILOX BCO (Box Carrier) is an additional module that the AGILOX ONE can hold like a Euro pallet. Power and controls are transmitted via CAN bus and the connection is made automatically – no human intervention is necessary to complete the retooling process. The upper part standard consists of two belt conveyors. On request, the conveyor technology can be expanded to up to eight conveyors on four levels.

DIMENSIONS

(L x W x H)

1,161 MM × **800 MM** × **250 MM**
46 IN × **31 IN** × **10 IN**

LOAD CARRIER

55 KG
123 LBS

max. box weight

400 MM
16 IN

max. box width

600 MM
24 IN

max. box length



Box Carrier single level
with belt conveyor

DELIVERY HEIGHT

250 MM
10 IN

min. delivery height

860 MM
34 IN

max. delivery height
single scissor lift

1,365 MM
54 IN

max. delivery height
double scissor lift



MAXIMUM EFFICIENCY

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CORE INTELLIGENCE**



VARIATION BCO

1 to 4 levels

Number of levels

Height of the levels individually designable

Level height

Between 2 and 8 conveyors

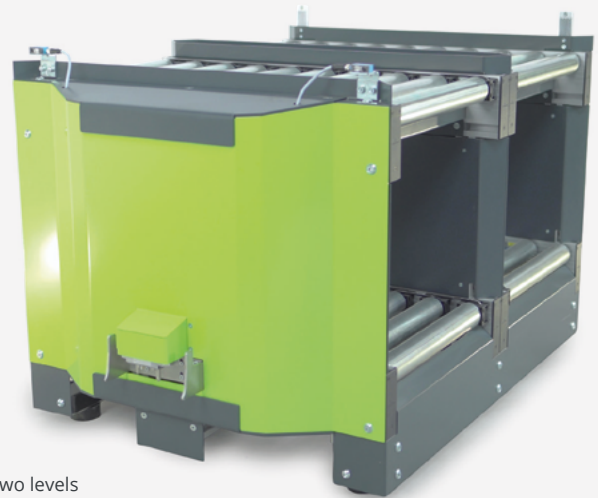
Number of conveyors

Roll or belt conveyor

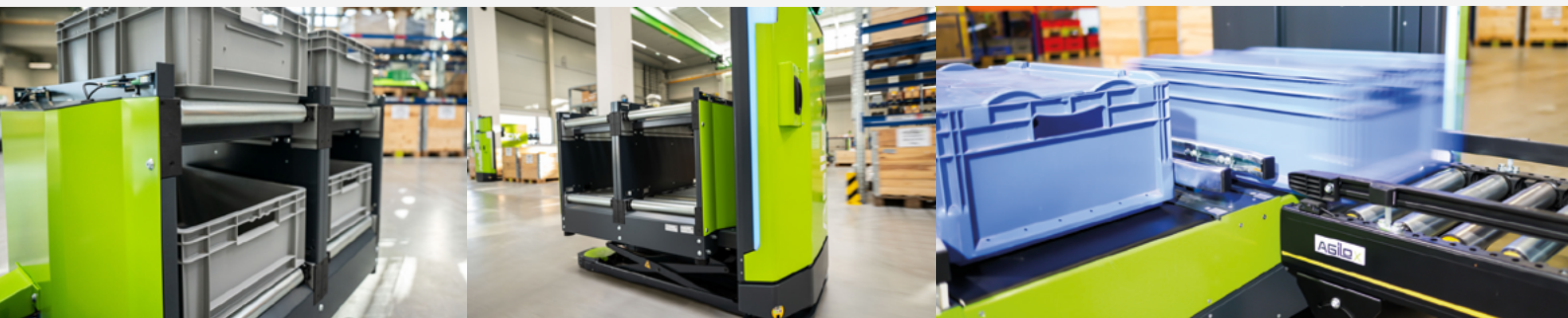
Conveyor type

Integrated scale

Optional add-on



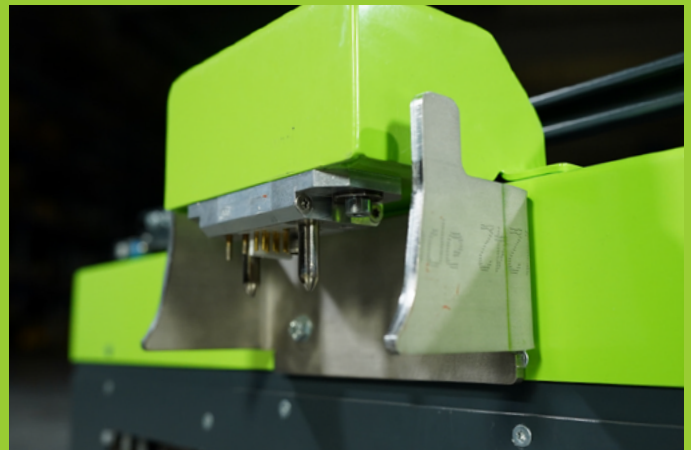
Box Carrier two levels with roll conveyor



CONNECTOR ONE / BCO

ONE connector for BCO

Connector BCO



THE AGILOX IO BOX MAKES THE COMMUNICATION WITH PERIPHERAL DEVICES POSSIBLE

AGILOX IO

The AGILOX IO is an industrial control system (optionally Beckhoff or Siemens) with potential-free relay outputs and digital inputs (24VDC), which is connected to the AGILOX network. It can be used as an interface with the system operator's automation world and connects fieldbus systems and the IOs with the AGILOX network to ensure the required data exchange.



Siemens



Beckhoff

StandardSI 14/10



StandardBE 12/6



MiniSI 6/4



Type	StandardSi 14/10	StandardBE 12/6	MiniSI 6/4
Art.-Nr.	AGIIO-NSI	AGIIO-NBES	AGIIO-MSIS
PLC Manufacturer	Siemens	Beckhoff	Siemens
Control Cabinet	760 x 760 x 300 mm (WxHxD)	400 x 300 x 155 mm (WxHxD)	Yes
Input Count	14	12	6
Output Count	10	6	4
Output Characteristics	potential-free	potential-free	potential-free
I/O Extension Possible	max. 7 x IO Extension SI 16/16	No	No
Network Connection	Ethernet	Ethernet	Ethernet
Decentralized IOs possible	No	No	No
Assembly and Wiring	by customer	by customer	by customer
Required Power Supply	110 - 230 VAC	110 - 230 VAC	110 - 230 VAC

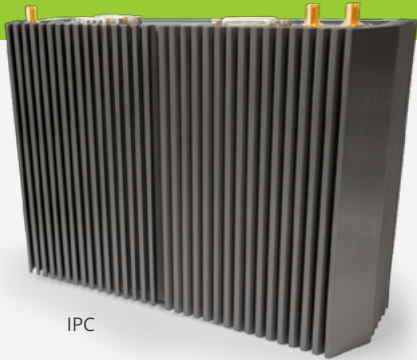
MAXIMUM EFFICIENCY

**ALL PRODUCTS WITH
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X-SWARM TECHNOLOGY**



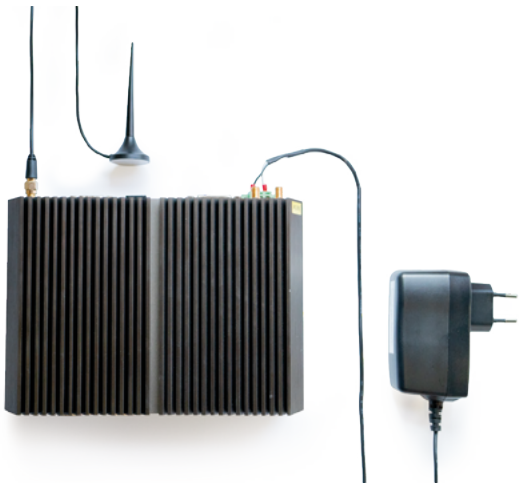
AGILOX IPC - GATEWAY APPLIANCE

AGILOX swarms do not need a master computer, the vehicles communicate with each other via WLAN and via this path they also communicate with higher-level IT systems (e.g. ERP, WMS, MES). In order to provide a permanently available contact person for these higher-level systems, who can also be reached via Ethernet, there is the Gateway Appliance. This instance consists of an industrial PC running the AGILOX Core Software. This means that orders from higher-level systems can also be transferred to the AGILOX system if, for example, all AGILOX vehicles are switched off or no WLAN is available at the moment.



IPC

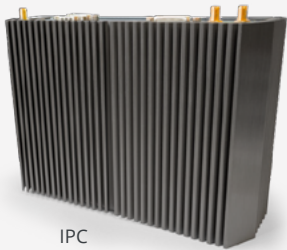
Type	Simple IPC
Art.-Nr.	AGIIO-SIPC
PLC Manufacturer	-
Control Cabinet	No
Input Count	-
Output Count	-
Output Characteristics	-
I/O Extension Possible	No
Network Connection	Ethernet + WiFi
Decentralized IOs possible	No
Assembly and Wiring	by customer
Required Power Supply	230V



IPC

AGILOX HYBRID BOX

The Hybrid Box combines the communication interface to automation units (IO Box) and IT systems (Gateway Appliance) in one control cabinet.



Beckhoff

Siemens

Type	Hybrid BE	Hybrid SI
Art.-Nr.	AGIPC-HBE	AGIPC-HSI
PLC Manufacturer	Beckhoff	Siemens
Control Cabinet	400 x 800 x 300mm (WxHxD)	760 x 760 x 300mm (WxHxD)
Input Count	12	14
Output Count	6	10
Output Characteristics	potential-free	potential-free
I/O Extension Possible	No	max. 7xIO Extension SI 16/16
Network Connection	Ethernet + WiFi	Ethernet + WiFi
Decentralized IOs possible	No	No
Assembly and Wiring	by customer	by customer
Required Power Supply	110V-230V	110V-230V



OTHER IO BOXES

Type	SimpleBE 12/6	SimpleBE 32/8	SimpleBE 128/32
Art.-Nr.	AGIIO-SBES	AGIIO-SBEM	AGIIO-SBEL
PLC Manufacturer	Beckhoff	Beckhoff	Beckhoff
Control Cabinet	No	No	No
Input Count	12	32	128
Output Count	6	8	32
Output Characteristics	potential-free	potential-free	non potential-free
I/O Extension Possible	No	No	No
Network Connection	Ethernet	Ethernet	Ethernet
Decentralized IOs possible	No	No	No
Assembly and Wiring	by customer	by customer	by customer
Required Power Supply	24VDC/4A	24VDC/4A	24VDC/4A

Type	SimpleSI 14/10	StandardBE 128/32	StandardBE WiFi 12/6
Art.-Nr.	AGIIO-SSI	AGIIO-NBEL	AGIIO-NBEW
PLC Manufacturer	Siemens	Beckhoff	Beckhoff
Control Cabinet	No	600 x 380 x 210 mm (WxHxD)	600 x 380 x 210 mm (WxHxD)
Input Count	14	128	12
Output Count	10	32	6
Output Characteristics	potential-free	non potential-free	potential-free
I/O Extension Possible	max. 7 x IO Extension SI 16/16	No	No
Network Connection	Ethernet	Ethernet	Ethernet + WiFi
Decentralized IOs possible	No	No	No
Assembly and Wiring	by customer	by customer	by customer
Required Power Supply	24VDC/4A	110V-230V	110V-230V

Type	StandardSI WiFi 14/10	Decentral BE 8/4
Art.-Nr.	AGIIO-NSIW	AGIIO-DBE
PLC Manufacturer	Siemens	Beckhoff
Control Cabinet	760 x 760 300 mm (WxHxD)	400 x 300 x 155 mm (WxHxD)
Input Count	14	8
Output Count	10	4
Output Characteristics	potential-free	potential-free
I/O Extension Possible	max. 7 x IO Extension SI 16/16	Beckhoff EP2338-1001
Network Connection	Ethernet	Ethernet
Decentralized IOs possible	No	max. 12 boxes with 8 digital channels each (max. 32 outputs can be used)
Assembly and Wiring	by customer	by customer
Required Power Supply	110V-230V	110V-230V

AGILOX ANALYTICS ENABLES UP-TO-THE-SECOND PERFORMANCE ANALYSIS AND THE EFFICIENCY INCREASE OF LOGISTICS PROCESSES

AGILOX ANALYTICS

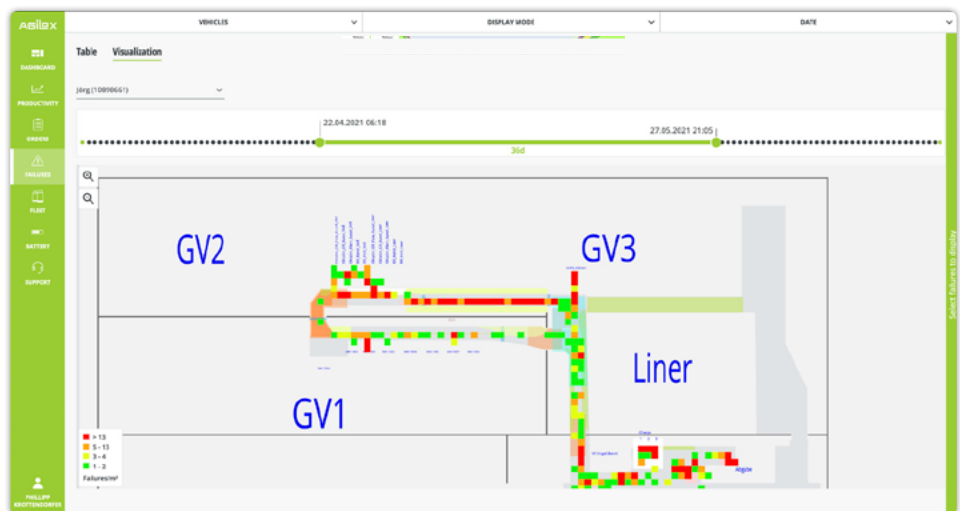
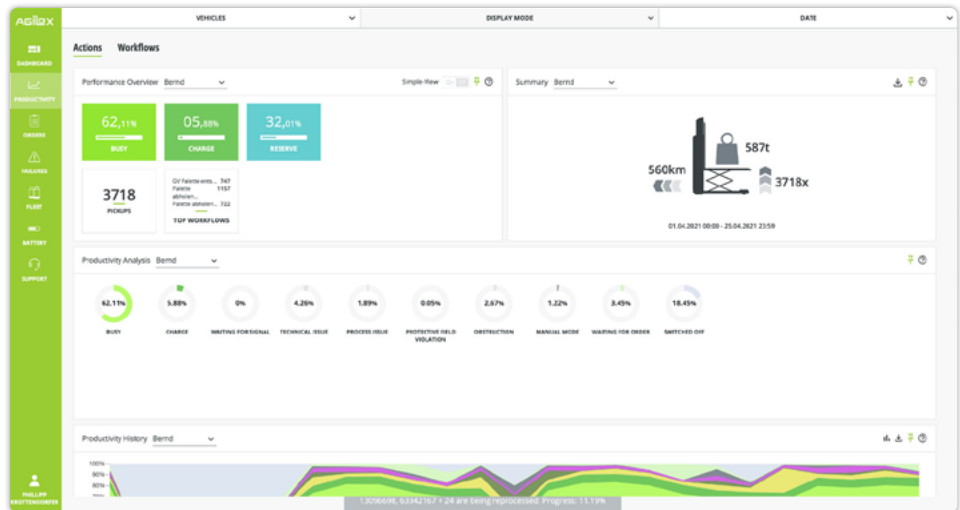
Collecting various process data and analyzing it is a key factor in optimizing operations in the material handling industry - especially when it can be done easily via a browser without any additional effort. As logistics processes are automated by an AGILOX, the volume of data increases, and with it the opportunity to make use of it. In AGILOX Analytics, the collected data is compiled and clearly presented. While our vehicles directly increase efficiency in operation, our private cloud-based data analysis platform AGILOX Analytics offers the possibility to do performance analysis as well as to get software support for the complete AGILOX fleet.

Guaranteed data safety

Because data security plays an essential role, AGILOX relies on a sophisticated security concept with a certified data center (ISO 27001). Data encryption to the highest security standards and a private connection to our cloud-based analytics platform, where the data is processed, guarantee the protection of customer data from unauthorized access and thus maximum data security.

Detailed data reports

AGILOX Analytics offers the possibility to analyze logistics processes as well as the condition of vehicles. More than 3.5 billion data points generated per vehicle in a year enable near real-time performance analysis down to the second over the entire service life. Sophisticated and detailed reports as well as an ongoing expansion of functions accommodate profound performance analysis. As a result, the productivity and efficiency of the entire logistics and production processes can be continuously improved, and forward-looking strategic decisions can be made. Browser-based access to the data is possible anytime and anywhere - whether via PC, tablet or smartphone.



ID	Name	Start	End	Duration	Distance	Batteryusage	Pickups
62237966212770018	Palette abholen SV starten	25.04.2021 11:41:49	25.04.2021 11:44:22	00:02:43	76.80m	-1%	0
27539990212770002	PARK	25.04.2021 11:22:06	25.04.2021 11:22:58	00:00:50	9.53m	0%	0
62237966212770003	Palette abholen SV	25.04.2021 11:16:29	25.04.2021 11:22:06	00:05:38	151.58m	-0%	1
27539990212770001	PARK	25.04.2021 11:16:38	25.04.2021 11:12:52	00:02:16	67.62m	-1%	0
27539990212770000	Supply Workflow V1 Ungefaltet SV	25.04.2021 11:06:45	25.04.2021 11:10:38	00:03:52	122.33m	-2%	1
62237966212770018	Supply V1 Ungefaltet SV starten	25.04.2021 11:04:35	25.04.2021 11:06:44	00:02:11	74.3m	-1%	0
62237966212770023	AGRO_2	25.04.2021 10:56:33	25.04.2021 11:04:34	00:04:58	94.05m	-2%	1
27539990212770006	Palette abholen SV	25.04.2021 10:54:11	25.04.2021 10:59:30	00:05:19	155.08m	-0%	1
Action		Start	End	Station			
1 PICKUP		25.04.2021 10:54:11	25.04.2021 10:56:42	V1_SV_VoE7			
2 DROP		25.04.2021 10:56:42	25.04.2021 10:59:30	Alphabe			
27539990212770004	Palette abholen SV	25.04.2021 10:48:05	25.04.2021 10:54:09	00:05:03	151.02m	-2%	1
27539990212770005	Palette abholen SV	25.04.2021 10:44:19	25.04.2021 10:49:09	00:04:43	93.64m	-2%	1
27539990212770007	DEBRADLOCK	25.04.2021 10:47:08	25.04.2021 10:47:30	00:00:20	1.73m	0%	0
62237966212770014	Palette abholen SV starten	25.04.2021 10:41:48	25.04.2021 10:44:17	00:02:31	77.03m	-1%	0
27539990212770003	PARK	25.04.2021 10:33:13	25.04.2021 10:34:15	00:01:05	13.99m	0%	0