48-volt 3-phase AC technology

Up to 2 shifts without battery exchange

RFID technology

Redundant height and weight checks

Logistics Interface

Modular design and special build solutions ex-works

LI-ION technology

EKS 210/312

Medium/high level order pickers (1,000/1,200 kg)

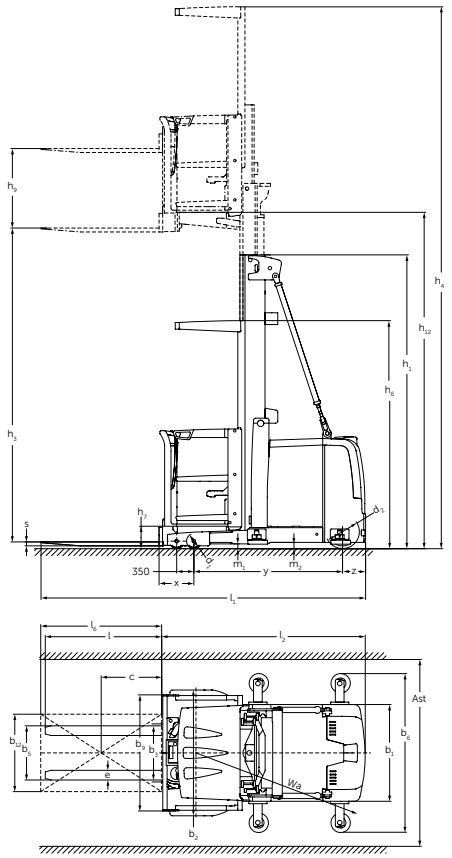
The EKS 210/312 order pickers offer the highest picking performance in the high-rack warehouse. Both truck concepts are optimised for their respective application. The EKS 210 with 1000 kg load capacity and order picking heights up to 7845 mm is specially designed for manoeuvrability in wide aisles. Its narrow frame size of just 900 mm ensures maximum agility. The EKS 312 with 1,200 kg load capacity and order picking heights up to 11,345 mm offers high throughput performance. Both order pickers set new benchmarks when it comes to flexibility, efficiency and ergonomics.

The Jungheinrich modular system offers flexibility and a multitude of customisation options for the future, e.g. modular load-bearing components such as platforms, walk-on load sections or additional lifts and an adapter system for the flexible design of cabin widths and electronic height limitations for the masts. The integrated Jungheinrich warehouseNAVIGATION system (optional) enables the control computers on the EKS to communicate directly with the warehouse management system. The target positions are approached automatically. Incorrect journeys are avoided. Productivity and picking quality are significantly improved. The 48-volt, 3-phase technology ensures strong acceleration and high lifting speeds with unrivalled low power consumption. The advantage: Fully usable throughout two shifts in normal operation without battery change.

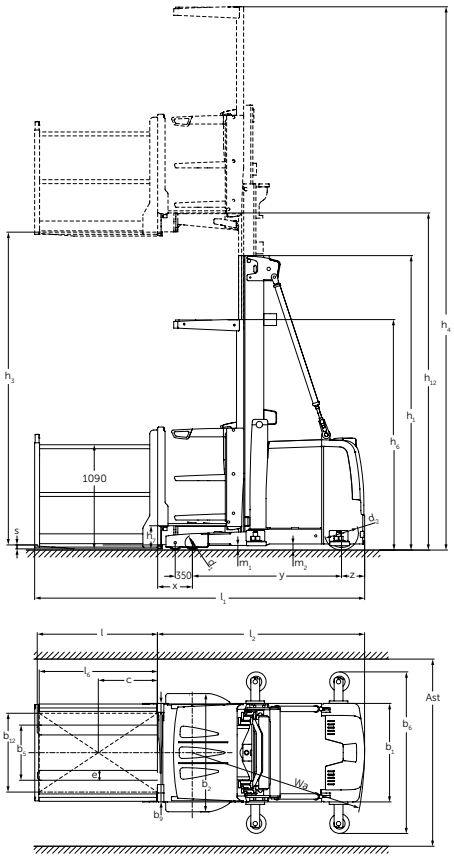
The EKS operator can achieve this performance with ease. The cab provides a generous workplace with excellent visibility. At the centre of the control concept, is the two-piece console for the operator and the large information display.

JUNGHEINRICH

EKS 210/312



EKS Z version



EKS L version

Technical data in line with VDI 2198

Identification	1.1	Manufacturer (abbreviation)			Jungheinrich			
	1.2	Model			**EKS 210**	**EKS 210**	**EKS 312**	**EKS 312**
					Z	**L**	**Z**	**L**
	1.3	Drive			Electric			
	1.4	Manual, pedestrian, stand-on, seated, order picker operation			Order pickers			
	1.5	Load capacity/rated load	Q	t	1	1	1.2[2]	1.2[2]
	1.6	Load centre distance	c	mm	400			
	1.8	Load distance	x	mm	350	350	325	325
	1.9	Wheelbase	y	mm	1,325	1,325	1,515	1,515
	1.10	Centre of drive wheel/counterweight	z	mm	210	210	235	235
Weights	2.1	Net weight		kg	2,850	2,950	3,650	3,750
	2.2	Axle loading, laden front/rear		kg	3,066 / 864	3,116 / 914	3,574 / 1,157	3,624 / 1,207
	2.3	Axle loading, unladen front/rear		kg	1,390 / 1,460	1,440 / 1,510	1,840 / 1,810	1,890 / 1,860
Wheels / frame	3.1	Tyres			Vulkollan			
	3.2	Tyre size, front		mm	Ø 150 x 95			
	3.3	Tyre size, rear		mm	Ø 250 x 80	Ø 250 x 80	Ø 343 x 110	Ø 343 x 110
	3.5	Wheels, number front/rear (x = driven wheels)			2 / 1 x			
	3.6	Tread width, front	b_{10}	mm	775	775	875	875
Basic dimensions	4.2	Mast height (lowered)	h_1	mm	2,330[1]	2,330[1]	3,330[1]	3,330[1]
	4.4	Lift	h_3	mm	3,000	3,000	5,000	5,000
	4.5	Extended mast height	h_4	mm	5,320[1]	5,320[1]	7,320[1]	7,320[1]
	4.7	Height of overhead guard	h_6	mm	2,320[1]			
	4.8	Seat height/standing height	h_7	mm	0[1]	0[1]	245[1]	245[1]
	4.8.1	Standing height	h_7	mm	245	245	0	0
	4.11	Auxiliary lift	h9	mm	810	0	810	0
	4.14	Standing height raised	h_{12}	mm	3,245[1]	3,245[1]	5,245[1]	5,245[1]
	4.19.2	Total length (without load)		mm	3,085	3,135	0	0
	4.19.4	Total length including fork length	l_1	mm	0	0	3,275	3,325
	4.20	Length including fork shank	l_2	mm	1,885	1,885	2,075	2,075
	4.21	Overall width	b_1/b_2	mm	900 / 900	900 / 1,000	1,000 / 1,000	1,000 / 1,000
	4.22	Fork dimensions	s/e/l	mm	40 / 100 / 1,200	40 / 100 / 1,250	40 / 100 / 1,200	40 / 100 / 1,250
	4.24	Fork carriage width	b_3	mm	600	0	600	0
	4.25	Width across forks	b_5	mm	560			
	4.27	Width across guide rollers		mm	1,100	1,200	1,200	1,200
	4.31	Ground clearance with load under mast	m_1	mm	50			
	4.32	Ground clearance, centre of wheelbase	m_2	mm	60			
	4.33.16	Working aisle width for 1200 x 800 pallet	Ast	mm	1,100	1,200	1,200	1,200
	4.35	Turning radius	W_a	mm	1,550	1,550	1,760	1,760
	4.38.1	Total lift		mm	3,810	0	5,810	0
	4.38.2	Order picking height		mm	4,845	4,845	6,845	6,845
	4.38.4	Pallet width		mm	800			
	4.38.5	Pallet length		mm	1,200			
	4.38.6	Clear width of operator entrance		mm	585			
	4.38.7	Inner clearance height of operator compartment		mm	2,050			
	4.38.8	Outer width of operator compartment		mm	900	1,000	1,000	1,000
	4.38.12	Platform length	l_3	mm	0	1,250	0	0
	4.38.12.1	height of protection device		mm	0	1,090	0	0
	4.38.12.2	platform width b9		mm	0	1,000	0	800
Performance data	5.1	Travel speed, laden/unladen		km/h	9 / 9	9 / 9	10.5 / 10.5	10.5 / 10.5
	5.2	Lift speed, laden/unladen		m/s	0.29 / 0.31	0.29 / 0.31	0.35 / 0.39	0.35 / 0.39
	5.3	Lowering speed, laden/unladen		m/s	0.34 / 0.31	0.34 / 0.31	0.39 / 0.37	0.39 / 0.37
	5.10	Service brake			reverse current/generated			
	5.11	Parking brake			electric spring-loaded			
Electrics	6.1	Drive motor, output S2 60 min.		kW	3.0	3.0	6.9	6.9
	6.2	Lift motor, output at S3 25%		kW	9.5			
	6.3	Battery as per DIN 43531/35/36 A, B, C, no			3 PzS 465	3 PzS 465	4 PzS 620	4 PzS 620
	6.4	Battery voltage/nominal capacity K5		V/Ah	48 / 465	48 / 465	48 / 620	48 / 620
	6.5	Battery weight		kg	740	740	930	930
Misc.	8.1	Type of drive control			AC Control			
	8.4	Sound pressure level at operator's ear as per EN 12053		dB (A)	62	62	69	69
	8.6	Steering			electric			

[1] +30 mm with mobile personal safety system (PSS)
[2] 1.0 t where c = 600 mm

In accordance with VDI Guideline 2198 this data sheet provides details of the standard truck only. Non-standard tyres, different masts, optional equipment etc. may result in different values.

EKS 210/312

Standard values for aisle widths (mm)						
with rail guidance						
Pallet size [mm]	Stacking depth	Ast		Ast/ theoretical VDI		Ast Practical
L design		**EKS 210 L**	**EKS 312 L**	**EKS 210 L**	**EKS 312 L**	
800 x 1200	800	1600	1600	3139	3328	+500
1200 x 1200	1200	1600	1600	3496	3684	+500
1200 x 800	1200	1200	1200	3426	3612	+500
Z design		**EKS 210 Z**	**EKS 312 Z**	**EKS 210 Z**	**EKS 312 Z**	
800 x 1200	800	1400	1400	3047	3235	+500
1200 x 1200	1200	1400	1400	3412	3599	+500
1200 x 800	1200	1100	1200	3351	3537	+500
with wire guidance						
Pallet size [mm]	Stacking depth	Ast		Ast/ theoretical VDI		Ast Practical
L design		**EKS 210 L**	**EKS 312 L**	**EKS 210 L**	**EKS 312 L**	
800 x 1200	800	1650	1650	3139	3328	+ 1000
1200 x 1200	1200	1650	1650	3496	3684	+ 1000
1200 x 800	1200	1250	1250	3426	3612	+ 1000
Z design		**EKS 210 Z**	**EKS 312 Z**	**EKS 210 Z**	**EKS 312 Z**	
800 x 1200	800	1450	1450	3047	3235	+ 1000
1200 x 1200	1200	1450	1450	3412	3599	+ 1000
1200 x 800	1200	1150	1250	3351	3537	+ 1000

EKS 210/312

Standard mast designs EKS 210/312											
	Lift h_3 (mm)	Lowered mast height[1] h_1 (mm)		Free lift h_2 (mm)		Extended mast height[1] h_4 (mm)		Overall lift height h3 + h9 (mm)		Order picking height[1] h_{15} (mm)	
		EKS 210	EKS 312	EKS 210	EKS 312	EKS 210	EKS 312	EKS 210	EKS 312	EKS 210	EKS 312
Duplex ZT	3000	2330	-	-	-	5320	-	3810	-	4845	-
	3500	2580	-	-	-	5820	-	4310	-	5345	-
	4250	2960	-	-	-	6570	-	5060	-	6095	-
	5000	-	3330	-	-	-	7320	-	5810	-	6845
	5500	-	3600	-	-	-	7820	-	6310	-	7345
	6500	-	4125	-	-	-	8820	-	7310	-	8345
	7500	-	4650	-	-	-	9820	-	8310	-	9345
	8500	-	5150	-	-	-	10820	-	9310	-	10345
Triplex DZ	4750	2330	2330	10	10	7070	7070	5560	5560	6595	6595
	5500	2580	2580	260	260	7820	7820	6310	6310	7345	7345
	6000	2770	2770	450	450	8320	8320	6810	6810	7845	7845
	6500	-	2950	-	630	-	8820	-	7310	-	8345
	7500	-	3330	-	1010	-	9820	-	8310	-	9345
	8300	-	3600	-	1280	-	10620	-	9110	-	10145
	9250	-	4125	-	1805	-	11570	-	10060	-	11095
	9500	-	4125	-	1805	-	11820	-	10310	-	11345
	10500	-	4650	-	1700	-	12820	-	11310	-	12345

[1] +30 mm with mobile personal safety system (PSS)

EKS 210/312

EKS 210 and EKS 312 standard equipment

- Energy recovery during lowering and braking.
- Active energy and battery management.
- Redundant AC drive control with adjustable drive and hydraulic functions.
- TÜV and CAN-Bus system.
- Maintenance-free drives for travel, lifting and steering.
- Wear-free inversion brake.
- Spring-loaded discs as parking brake.
- End position and transfer cushioning of all hydraulic functions.
- Integrated diagnostic system with service interface.
- Travel direction and height dependent diagonal travel speed.
- Jungheinrich curveCONTROL operator assistance system (steering-angle dependent speed control).
- Stepless speed control of all drives for gentle movement and efficiency.
- Tandem load wheels.
- Ergonomic and spacious cab with low entry/exit step.
- Modular, height-adjustable controls with integrated compartments.
- Graphics-compatible colour display with soft keys.
- Electronic power-assisted steering for effortless, precise manoeuvring.
- Battery roller conveyor for lateral battery exchange.
- Auxiliary lift for ergonomic order picking.

EKS 210 and EKS 312 optional equipment

- 24 volt version (EKS 210).
- Stationary or mobile battery changing stations.
- Walk-on pallet with guard.
- Picking platforms in different designs.
- Fork carriage with adjustable and removable forks.
- Mechanical rail guidance in different designs.
- Wire guidance for precise control in the aisle with no mechanical loading of components.
- End of aisle control with speed reduction.
- Access via PIN code (option for individual travel programs).
- Truck positioning in narrow aisles via RFID reader and transponder system.
- warehouseNAVIGATION for semi-automatic approach within the aisle.
- Jungheinrich Logistics Interface (connection to warehouse management).
- Two picking spotlights Pick-by-Light with display of the picking direction.
- Integrated personal protection system PPS (optional), factory-fitted integration into the safety computer.
- PSS Anti Collision protection system (mixed operations mode comprised of 2 trucks in the corridor).
- Workstation comfort package (LED working lights, LED interior lighting, fan).
- Radio with CD player and MP3 interface.
- Control panel layout: Load side, drive side, both sides.
- Button for pedestrian mode incl. 2° steering.
- Different transformers (e.g. power supply for terminals, printers etc.).
- Radio data terminal with mechanical and electrical interface for material flow management systems.
- Handheld scanner including holder on the railing or overhead guard.
- Information System for Truck Management ISM Online.

EKS 210/312

Benefit from the advantages




Pioneer of 3-phase AC technology
This expertise is reflected in our drive and control technology:
- Low energy consumption.
- Reduced maintenance and wear.

High throughput and order picking performance
- High acceleration for driving and lifting.
- Quick main and auxiliary masts.

Modular design
High flexibility through modular design:
- Range of chassis and cabin width options available.
- Flexible control panel design.
- Load handler Additional lift, walk-on pallets or platform solutions.
- Free ranging.
- Mechanical rail guidance or inductive guidance (both optional).

Future compatibility:
- Electronic height limitations.
- TÜV-certified control system (CAN-Bus).

Cost-effective energy management
- Doubled energy recovery through regenerative braking and lowering.
- Workplace lighting using energy-saving LED spotlights.
- Pick-by-Light: Activation of LED spotlights upon reaching the destination.
- Longer operating times with only one battery charge (up to 2 shifts).
- Active energy and battery management.
- Longer battery life.

RFID technology (optional)
- Truck control with transponder technology.
- Permanent distance measurement for exact positioning within the warehouse.
- High degree of safety for switching / safety functions (aisle end recognition), lift / drive cut-outs, speed reduction.
- Travel speeds optimised according to the floor topology.

warehouseNAVIGATION (optional)
- Linking the EKS to a warehouse management system (WMS) via radio data terminal or scanner.
- Direct acceptance of the target destination in the narrow aisle on the truck display.
- Automatic vertical positioning.
- Automatic horizontal position control system.
- High degree of automation.
- Improved order-picking performance.
- Effective twin cycles.
- Elimination of incorrect positioning through RFID location detection.
- Maximum flexibility in the warehouse when adapting to existing WMS and warehouse management.

Integrated personal safety system PSS (optional)
- On-site integration with the safety computer.
- Project planning, commissioning and maintenance by Jungheinrich.

Ergonomics and comfort
- Generously dimensioned entrance into the cab.
- Stand-on platform height lowered - only 245 mm.
- large headroom.
- Flat surrounding barrier for easy access to the pallet.
- Outstanding field of view over the load and the aisle.
- Height-adjustable operating consoles with integral shelf.
- Configurable membrane keyboard with numeric pad.
- Switchless two-handed operating concept
- Drive control by thumb movement.

Control system (CAN-Bus)
- All functions are adjustable.
- Electronically controlled drive wheel braking.

Commissioning and maintenance
- Quick and reliable commissioning through teach-in process.
- Integrated diagnostic system for remote maintenance via modem.
- Maintenance interval 1,000 operating hours.
- Electronics with non-wearing sensor system.

Lithium-ion technology
- High degree of availability thanks to extremely short charging times.
- No battery exchange required.
- Cost savings due to longer service life and low maintenance compared with lead-acid batteries.
- No charging rooms and ventilation required as there is no build up of gas.
- Longer service life with 5-year Jungheinrich guarantee.

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The German production facilities in Norderstedt, Moosburg and Landsberg are certified. ISO 9001 ISO 14001

Jungheinrich fork lift trucks meet European safety requirements. CE

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