

Automated, reliable and efficient for performing routine tasks

Optimized transport routes

Utilization of existing routes

Short payback period

Manual or fully-automated operation



## **EZS 350a NA**

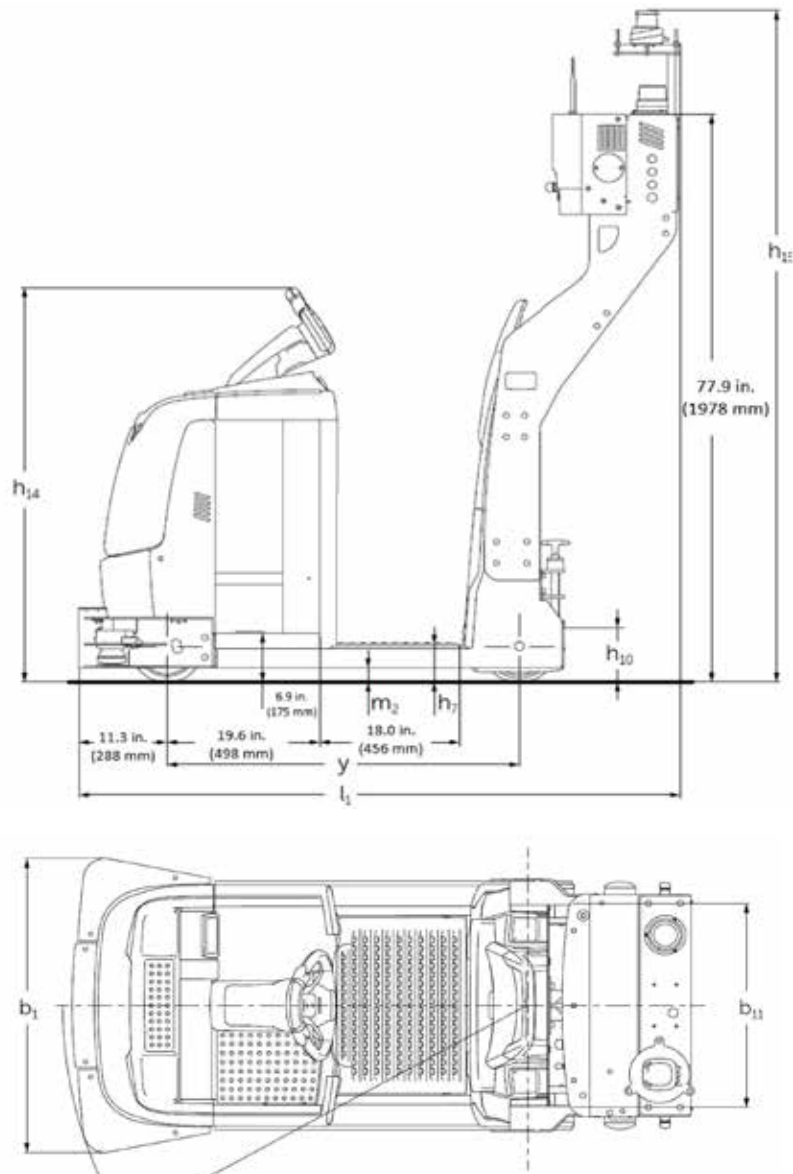
### **Automated Guided Vehicle (AGV) System, Electric Tow Tractor (11,000 lb.)**

The EZS 350a is an Automated Guided Vehicle based on our standard series truck. It combines proven mechanical engineering with precision navigation technology. This helps ensure reliable and efficient production. The EZS 350a can be used in mixed operations mode with manual trucks and pedestrians. Regardless of whether you integrate it in existing factory structures or use it in a new building, the EZS 350a is the perfect choice when it comes to raising the efficiency of your processes. The EZS 350a uses laser navigation so no floor work is required. Reflectors are attached to suitable objects along the travel route such as racking, columns and walls, natural landmarks can also be used.

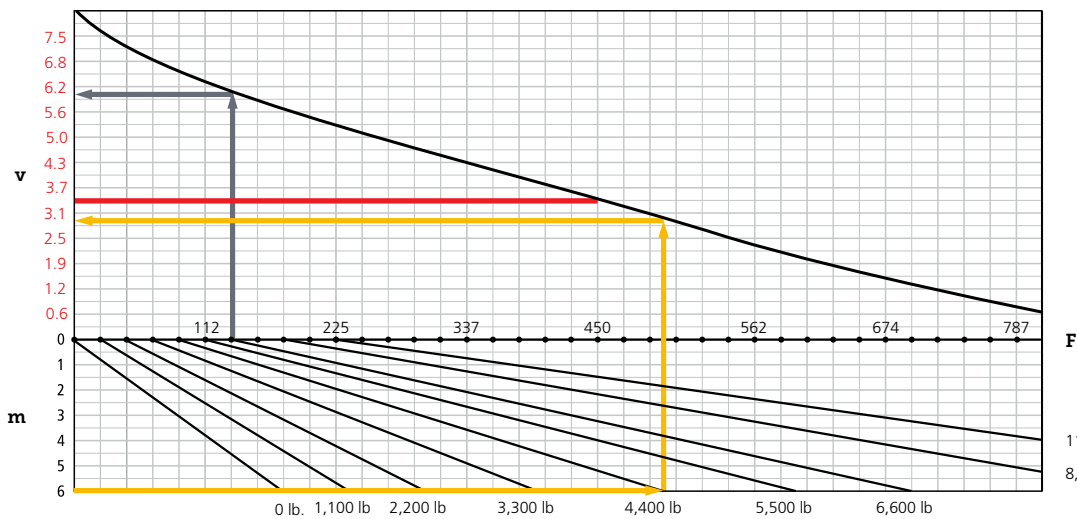
Using the EZS 350a will improve your work processes. The automated handling of standardized transport processes, e.g. for production supply, relieves strain on the employees with respect to additional transport tasks and gives them the opportunity to concentrate on their main tasks. Our AGV system can easily be integrated into the existing IT and software landscape. Our award-winning Jungheinrich Logistics Interface facilitates a smooth connection to any host system, such as your preferred WMS or ERP platform. However, you can also use your AGV system as a stand-alone system, i.e. as an autonomous system without a host connection.

The modular system structure creates the best conditions for representing individual customer processes as well as reacting flexibly and quickly to process changes. This creates a solid basis for efficient use, according to your requirements.

# EZS 350a NA



Performance Diagram EZS 350a NA



v = speed (mph) | m = incline (%) | F = drawbar pull (lbs.)

## Speed in automatic mode

Maximum speed in automatic mode 3.4 mph (red line in diagram). Optional raised travel speed with additional sensor.

## Reading examples:

1. The EZS 350a NA operates with a 6,600 lb. load on a level surface. To do this, it requires a drawbar pull of 135 lbs. and can achieve an approximate speed of 6.1 mph.

2. The EZS 350a NA is able to drive up a 6% gradient with a 4,400 lbs. load. To do this, it requires a drawbar pull of 501 lbs. and can achieve an approximate speed of 2.9 mph.

## Notes:

Continuous operation not possible for the EZS 350a NA above 224.8 lbs. 11,000 lb. 8,800 lb.

For inclines greater than 4% it is recommended that braked trailers be used.

# Technical data

as of: 01/2019

Characteristics	1.1	Manufacturer			Jungheinrich				
	1.2	Model			<b>EZS 350a NA</b>				
	1.3	Drive			electric				
	1.4	Type of operation			AGV				
	1.5	Load capacity / rated load	Q	lb	kg	11,000		5,000	
	1.7	Rated drawbar pull	F	lb-force	N	225		1,000	
1.9	Wheelbase	y	in	mm	46.9		1,149		
Weights	2.1	Service weight without battery			lb	kg	2,939		1,333
	2.3	Axle loading, no load, front / rear			lb	kg	1,310	1,629	594 739
Wheels, Chassis	3.1	Tire type / material			Vulkollan®				
	3.2	Tire size (drive)		in	mm	9.1 x 3.0		230 x 77	
	3.3	Tire size (rear)		in	mm	9.8 x 3.1		250 x 80	
	3.5	Wheels, number, steer / load (x=driven)			1x / 2				
	3.6	Tread width, rear	b <sub>11</sub>	in	mm	26.8		680	
	Dimensions	4.2.1	Total height (incl. scanner)	h <sub>15</sub>	in	mm	89.5		2,273
4.8		Step height	h <sub>7</sub>	in	mm	4.9		125	
4.12		Coupling height	h <sub>10</sub>	in	mm	6.2 <sup>2)</sup>		158 <sup>2)</sup>	
4.19		Overall length	l <sub>1</sub>	in	mm	77.2 <sup>5)</sup>		1,962 <sup>5)</sup>	
4.21		Overall width	b <sub>1</sub> / b <sub>2</sub>	in	mm	38.6		980	
4.32		Ground clearance at center of wheelbase	m <sub>2</sub>	in	mm	2.0		50	
4.33		Minimum outside turning radius	Wa	in	mm	57.7		1,466	
Performance	5.1	Travel speed, loaded / no load			mph	km/h	5.0 / 7.8 <sup>1) 4)</sup>		8.0 / 12.5 <sup>1) 4)</sup>
	5.5	Drawbar pull, loaded / no load			lb - force	N	225 <sup>3)</sup>		1,000 <sup>3)</sup>
	5.6	Maximum drawbar pull, loaded / no load			lb - force	N	832		3,700
	5.10	Brakes – service			reverse current / regenerative				
	5.11	Brakes – parking			automatic electric spring loaded				
Electrical	6.1	Drive motor (rating 60 min.)			HP	kW	3.8		2.8
	6.4	Battery voltage / nominal capacity K5			V	Ah	24 / 620		
	6.5	Battery weight, minimum / maximum			lb	kg	consult factory		
	6.5.1	Battery dimensions (length x width x height)			in	mm	consult factory		
Other	8.1	Type of drive control			AC speedCONTROL				
	8.4	Sound level at driver's ear			dB(A)		66		
<p>1) In manual operation                  2) Other coupling heights available                  3) Nominal tractive power                  4) See diagram                  5) Without option S3000, without tow hitch, as different tow hitch types (lengths) are available</p>									

This specification sheet only provides technical values for the standard truck. Non-standard tires, different masts, additional equipment, etc. could produce other values. Rights reserved for technical changes and improvements.

# The Jungheinrich Advantage



Additional personal protection scanner for higher travel speeds (optional)



Different couplings available (optional)



Floor Spot (optional)



jetPILOT steering wheel

## Established standard truck used as basis

The basis of the EZS 350a NA is the EZS 350NA / EZS 350XL electric tow tractor. The EZS 350a NA comprises this tried and tested standard truck with an extensive navigation and automation system. This means that, in addition to reliability and efficiency, the EZS 350a NA also offers other benefits of the standard truck:

- 24-V 3-phase AC drive motor
- No carbon brushes: Maintenance-free drive motor
- Robust design
- Compact design
- jetPILOT steering wheel

## High level of flexibility

Despite the automation features, the EZS 350a NA can also function fully as a manual truck. Surface transport can therefore be reliably carried out by the EZS 350a NA, while distribution of the goods can also be undertaken by an employee. The optional comfort terminal enables employees to determine the next destination of the EZS 350a NA and simply enter it with just one click at the truck.

## Everything at a glance – with the AGV control panel

The visualization on the AGV control panel displays all the information relating to the EZS 350a NA. This provides a rapid overview of the current status of transport tasks. Prioritized orders can also be entered and processed in the corresponding order.

## Integration into existing systems

Our Jungheinrich AGV system can easily be integrated into the existing IT and software landscape. The existing WLAN structure is used for communication with the EZS 350a NA. If an existing host system, such as a WMS or ERP platform, is to be used, the AGV can be connected to this system via the Logistics Interface.

## Precise navigation

The high degree of precision allows for pinpoint accuracy in the positioning of trucks and loads at defined stations. Different navigation types can be used for the EZS 350a NA, as with the other AGV models. These are designed and specified according to project and can also be used as hybrid navigation.

## Lithium-ion technology (optional)

- High utilization 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.

## Parts when you need them

Jungheinrich's Parts Fast or Parts Free Guarantee ensures next-business-day delivery by 5:00 PM of all Jungheinrich parts in the United States, or they're free, including freight. For customers in Canada and Mexico, the guarantee ensures shipping of parts within 24 hours from the time the order was placed by the dealer. See your local Jungheinrich dealer for program details.

- \* Programs may be subject to change without notice and may vary by region. Please ask your local Jungheinrich dealer for complete terms and conditions.

\*\*The product shown may be different than the actual configuration based on market requirements.