

Interschutz 2022: curtains up for the L32A-XS electric aerial ladder



- *World's first aerial ladder on fully electric series chassis*
- *Powerful electric motors for both the driving and aerial ladder drives*
- *Same benefits and functionality as an L32A-XS with conventional drive*

Rosenbauer presents the first L32A-XS on a fully electric series chassis at Interschutz. When it was introduced nine years ago, the standard aerial ladder with lowerable cage boom took aerial rescue operations to a new level - especially in confined spaces - and is now opening the way to the (electric) mobility of the future for fire departments.

Volvo chassis

The L32A-XS electric is built on a Volvo FE Electric chassis and powered by two electric motors with a combined output of 225 kW (continuous duty) via an automated 2-speed transmission on the rear axle (4x2). For ladder operation, an additional electric motor is installed as an electric power takeoff (ePTO), which provides a peak power of 100 kW and continuous power of 70 kW. The entire system in the exhibition vehicle is supplied with energy by three lithium-ion rechargeable batteries with a usable capacity of 66 kWh each (total capacity of the battery storage approx. 200 kWh). The batteries are charged with up to 150 kW direct current or up to 22 kW alternating current via a standardised CCS Combo Type 2 socket (EU standard), provided the charging infrastructure is suitable.

Body from Rosenbauer

The L32A-XS electric aerial ladder offers the same advantages as the Rosenbauer standard aerial ladder in terms of performance, functionality and reliability. The aerial ladder superstructure is completely identical from the interface to the electric drive (ePTO), movement profile, working height, live load of the cage... everything is the same. With its lowerable cage boom, the L32A-XS electric can be optimally used even in confined spaces and at close range, while the high-performance hydraulics ensure fast set-up times. Stability is ensured by the proven Rosenbauer horizontal-vertical jacking system, and safe operation by the 3D load measurement, which permanently measures the loads and forces acting on the ladder set. From the jacks to the HLM body to the cage, the entire vehicle is LED-lit, and seven equipment compartments with roller shutter locks are installed in the body.

Multifunctional rescue cage

The HR-500 MF rescue cage has a live load of 500 kg (5 persons) and offers, among other things, the possibility of transporting persons secured in wheelchairs. The cage front can be opened completely in just a few steps by removing the patented multifunctional column and opening the swinging doors and handrails. With the water supply integrated into the cage structure and an attached manual or remote-controlled water turret, it is also already equipped for firefighting operations. At Interschutz, new special equipment will be on display and visitors can try out and experience all the advantages of the rescue cage for themselves.

Operating concept with CrossControl

In addition, the L32A-XS electric is equipped with the same operating concept as well as the new operating elements of the latest, "conventional" aerial ladder generation 3.2, which offer greater operating comfort. Jacks and ladder movements are controlled via joysticks, indicated on a colour display. Cameras monitor the cage when it is out of sight (e.g. at the back of a building). Automatic functions such as the Target Memory System for repeatedly approaching stored cage positions or the Rosenbauer CrossControl, which keeps the ladder set vertically above a point when moving vertically and keeps the rescue point at the same height when moving horizontally, make handling easier and provide relief for the machine operator in stressful operational situations.

Reach and operational scenarios

Rosenbauer used the exhibition vehicle to calculate two typical operational scenarios to show how often these can be repeated with fully charged battery packs before the batteries need to be recharged:

- Operational scenario A comprises a travel distance of eight kilometres (outward and return), two jacking operations, two movement cycles according to DIN EN 14043¹) as well as one hour of light mast operation and can be repeated eight to ten times - depending on the environmental conditions such as temperature and topography.

- Operational scenario B comprises a travel distance of 20 kilometres (outward and return), two jacking operations, five movement cycles according to DIN EN 14043¹⁾ as well as one hour of light mast operation and can be repeated three to four times - depending on the environmental conditions such as temperature and topography.

Since the reliability of the aerial ladder is crucial in firefighting operations, Rosenbauer has provided various fallback levels of power supply. For example, the high-voltage battery can also be charged slowly during aerial ladder operation, provided the corresponding external power supply is available, if the operation lasts longer than expected and the HV battery charge is nearing the end.

Specific values from operational practice will be available when the L32A-XS electric goes into service at Schutz & Rettung Zurich after the trade fair. As a Rosenbauer innovation partner, Switzerland's largest civilian rescue organisation will test the prototype under real operating conditions and make the findings and data obtained available for series development.

¹⁾ A cycle includes simultaneously turning the aerial ladder once by 90 ± 3 degrees, raising and extending it once until it stops automatically at the maximum upright limit, and, after a rest period of 20 ± 1 seconds, returning the aerial ladder to the starting position.

The Rosenbauer Group

Rosenbauer is an international group and a reliable partner to fire services around the world. The company develops and produces vehicles, fire extinguishing systems, fire and safety equipment and digital solutions for professional, industrial, plant and volunteer fire services and systems for preventive firefighting. Rosenbauer is represented in approximately 120 countries by a sales and service network. With revenues of € 975.1 million and around 4,100 employees (as of December 31, 2021), the Group is the world's largest firefighting technology provider.

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