



# LYNX

charge +





## THE NEW LYNX CHARGE

# Next-gen sweeping performance paired with a next-gen power system

### The LYNX lineage

With LYNX, we showed that a compact sweeper does not need to be handicapped by design compromises when its key functions are concerned. The LYNX sweeper, first introduced in 2018 features impressive sweeping and suctioning performance, effortless manoeuvring capabilities and the best-in-class autonomy. The user interface is on another level, giving both beginners and experts total control while working inside a spacious, comfortable cabin with great overview of the sweeper's surroundings. The sleek exterior design envelops a machine that is designed for heavy duty work, but easy to live with thanks to its accessibility and minimal maintenance requirements. The next phase in LYNX's evolution replaces its internal combustion-based powertrain for an all-electric solution, creating a new species in the LYNX genus: LYNX Charge.

### Charged by clean power to meet the needs of a carbon-neutral world

The urgent need to move beyond fossil fuel-powered machinery needs no further discussion. Electrically powered vehicles provide one in a suite of viable technologies that need to be widely adopted to meet this goal. A particular obstacle of achieving success in the field of compact sweepers has been ensuring sufficient working autonomy for the machine to last a whole working shift, without the need to stop for recharging.

LYNX Charge overcomes this challenge in two ways: first, it packs the biggest battery available on the market today in its vehicle class. The integration of the battery has been achieved without impeding any other vehicle characteristics such as maneuverability or trash hopper capacity. Secondly, LYNX Charge uses every available watt of power with maximum efficiency. Just like the apex predator that inspired its name, its every action is measured and precise, always mindful of conserving energy for moments when additional resources need to be employed to achieve the desired results.

LYNX DEVELOPMENT

# Design thinking of a sweeper

## Everything in the right place

The creation of LYNX Charge is based on a design thinking approach. LYNX Charge is more than a perfect sum of its parts. It embodies what we at RASCO believe in – great technology for efficient, comfortable and safe work build on a durable platform.

From field-proven electric motors and battery system, carefully designed suction turbine, powerful and smooth drive system, adaptable power delivery, high capacity hopper and water storage to the most comfortable and highest visibility cabin in modern sweepers, LYNX Charge is designed for continuous high-performance sweeping. Coupled with an unparalleled human machine interface based on years of operators' experience, our sweeper offers a working environment without reproach.

## A new perspective on what a sweeper should be

We took great care to focus on solving the problems of today's state of the art when designing LYNX Charge. We diverged in our thinking to advance both form and function. We focused on solutions and went through numerous iterations to find a perfect combination of power, agility and ease of use. What resulted is a cutting-edge design coupled with high performance harnessed in an easy to use form for the operator. No compromises were made. What resulted is beyond the norm.

What resulted is a machine for the city of tomorrow.



## LYNX CHARGE POWERTRAIN

# The power of electric systems working in perfect sync



90 kW

Traction drive motor



18.5 kW

LS pump drive motor



11.5 kW

Suction fan motor

### Driving quietly and efficiently

The main electric motor of LYNX Charge outputs up to 90 kW of continuous power to the drive system. The drive inverter that controls it can operate in either torque or speed control mode, depending on whether the machine is sweeping or in transport. The new electric drive system is not only cleaner and more efficient than that of a diesel-powered sweeper, but also quieter and requires less maintenance.

### Powering other subsystems with ease

Two other electric motors, each controlled by their own inverter, distribute power throughout the sweeper. The suction fan is driven by a 11,5 kW motor, giving it ample power to handle even the most demanding workloads. Other functions such as brush and suction mouth control as well as lifting and lowering the hopper are driven by an energy-saving load sensing hydraulic system, which is in turn powered by the third, 18,5 kW motor.

## BATTERY AND AUTONOMY

# An electric sweeper that just keeps going

### All the energy you need

LYNX Charge draws its power from an impressive 75 kWh Lithium-ion battery pack, supporting an operating time of up to 10 hours. Operators are provided with a sense of ease knowing they can comfortably complete their working shift without the need for recharging. The 22 kW onboard charger tops up the battery in 3,4 hours, so LYNX Charge can be rapidly redeployed for action.

### Extended autonomy and practicality

Battery capacity is just one side of the equation when it comes to the sweeper's autonomy. With a total of 230 L fresh water capacity stored in dual tanks, as well as a 170 L recirculation tank, LYNX Charge has excellent autonomy for extended working periods without interruptions for refilling. For maximum efficiency, both the wander hose and the manual pressure washer are immediately available, without any need to assemble hoses prior to work.





### Compact design, serious suction power

Cleaning width of 2.800 mm (3.200 mm for a three-brush system) combined with a custom-designed, quiet suction fan with more than 9.000 m<sup>3</sup>/h provides the highest possible sweeping performance in a compact package. Water recirculation ensures smooth flow of collected material and additional dust suppression.

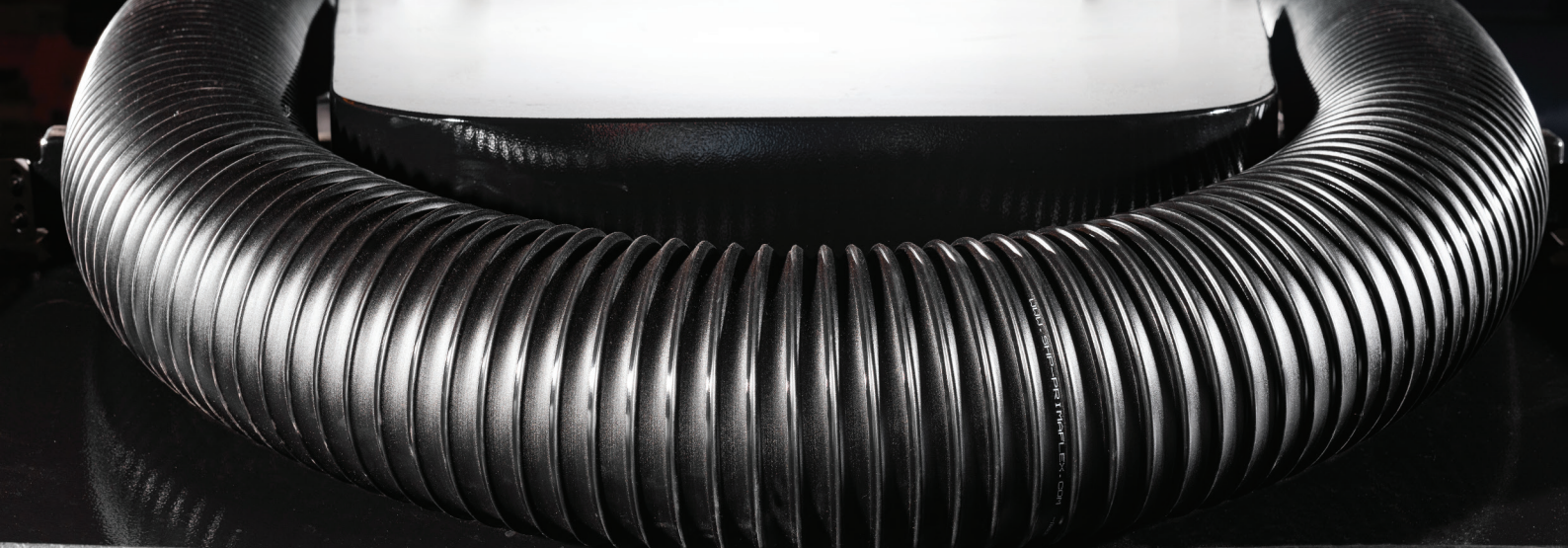
When the hopper is full, it's easy to unload with 1.55 m minimum tipping height and hydraulically controlled hopper door.



### Practicality and extended autonomy

Even with its light aluminium 2 m<sup>3</sup> hopper loaded to 4.500 kg total weight, climbing steep hills is no problem for LYNX Charge – it can manage a 30% climb. Moving from one location to another is done in a breeze with 50 km/h top speed in transport mode. Sweeping is fast at 12 km/h top sweeping speed. Steering on both axles is supported by a safety electronic controller, with the front axle turning up to 48 degrees.





## INSIDE LYNX CHARGE

# Comfort at reach



### Made with the user in mind

When designing LYNX Charge, one of the sweeper users we consulted had 16 years of sweeping behind him. His back hurt because he spent years leaning forward and to the right to see the sweeping brushes. He had headaches after working for 8 hours because he was in direct sunlight. In-cabin vibrations and noise made him tired. The seat was too stiff. Air conditioning had to be constantly adjusted.

We promised him we will change this. With LYNX Charge, we delivered on our promise.



### Unmatched visibility

LYNX Charge has a unique cabin design built around the operator. We combined comfort with visibility, providing a leaned back seating for the user, while at the same time enabling both brushes to remain in sight. A forward slanted two-piece windshield with different angles, complemented by full glass doors provide unparalleled visibility. And additional rear-view windows on both sides, with elaborate rear-view mirrors, ensure that safe and efficient movements can be made with ease.



### The not-so-little things that count

Both the user and passenger full size seats feature air suspension. The cabin is mounted on vibration absorbing elements for an overall smoother ride. But operator comfort does not stop there.

An automatic air conditioning system with dual filtration provides a comfortable working environment no matter the outside conditions.



A long roof protects the user from direct sunlight regardless of the large window areas. User comfort is further boosted by bottle storage, in-cabin smartphone charging and plenty of storage space for documents and tools.



# Complex operations performed with ease

### Smart control layout

The job of a sweeper operator requires high situational awareness and multi-tasking. The last thing anyone in such a position needs is constantly taking eyes off the work to look for knobs and switches. LYNX Charge's user interface has been designed with special care taken to control layout and grouping, giving the user maximum flexibility and minimising complexity at the same time.

LYNX Charge controls are grouped to be easily accessible and intuitive to use. Controls for all the functions related to steering and driving are placed on the steering column that minimally obstructs the front cab view. The most used controls related to sweeping are embedded into the hand rest on the driver's side door. Secondary sweeping controls are placed on the driver side cab pillar. Other vehicle controls, typically used less often, are placed on the overhead console accompanied by the 7" color touchscreen.

### Beginner friendly but deeply customizable

The learning curve and simplicity of use were two main factors we took into consideration when designing the control system.

LYNX Charge comes with a set of pre-defined working modes that allow the user to start working almost immediately. For more demanding and advanced users LYNX Charge implements simple and intuitive tweaking, customization and storing of all working parameters.

Whether you use predefined or customized working modes, LYNX Charge will track how you use the sweeper and suggest optimal working parameters to fully utilize its cleaning power while minimising energy consumption.

## LYNX CHARGE SAFETY FEATURES

# A new standard of safety

### Guaranteed stability

Compact machines can be a handful even for the most experienced users. But with LYNX Charge, the user is safe. With the battery, motors and water tanks placed at the lowest possible position, the centre of gravity remains low even when under load.

Hydro-pneumatic suspension ensures the vehicle remains stable regardless of the weight distribution. In combination with the largest tyres compact sweepers offer today, hydro-pneumatic suspension makes it easy to tackle high roadside curbs, as well as to enter low height spaces such as underground parking garages. LYNX Charge can really be used in any situation cities of tomorrow might require.

### Stops where you want, goes when you want

Even with the fully loaded hopper LYNX Charge is easy and safe to steer and will stop when required. Rear axle steering is fully electronically controlled and automatically disengaged when sweeper is in the transport mode. The limited slip differential takes care of safety on slippery terrain, while disc brakes on all wheels are a guarantee that LYNX Charge will stop when the brake pedal is pressed.

Dependable parking brake system even takes care and automatically compensates for the wear of brake pads. Once in the parking position, you will find LYNX Charge at the exact same place you left it.

We made sure LYNX Charge is safe to use and operate. Designed to tackle high curbs and creep into the confined spaces, driving fully loaded at 50 km/h or sweeping the most demanding surfaces, intelligent and reliable systems built into the machine will make sure LYNX Charge never lets you down.







THE FUTURE OF SWEEPING HAS ARRIVED

# Charged by LYNX

## The role of LYNX Charge in a 21st century urban ecosystem

On a global scale, including all-electric sweepers in municipal maintenance fleets will contribute to limiting harmful greenhouse gas emissions. But there are benefits that are relevant on a more local scale as well: less air pollution combined with reduced noise produced by sweeper operation, while achieving the goal of maintaining a clean and pleasant urban living environment. LYNX Charge is the tool to achieve this goal: An all-electric sweeper perfectly adapted to the carbon-neutral urban landscape.

## When you need more than just sweeping

LYNX Charge, primarily a compact sweeper, can do more than just sweeping. Equipped with high pressure front washer it can also wash dirt off the streets, pedestrian zones and public squares. Hopper and water tanks connected into one large water tank provide enough liquid for thorough washing of a large area. If in need, you can also use LYNX Charge as a winter maintenance vehicle. Equipped with a small snow plough in the front and a drop spreader in the back, LYNX Charge can be used as a handy tool to fight the light snowfall.

However, if you need a dedicated winter maintenance vehicle for the harsh winter conditions contact us, we can provide professional winter maintenance solutions.

## BATTERY

Battery type	Lithium ion
Battery capacity	75 kWh
Nominal voltage	345 V
Operating time	Up to 10 hours

## SWEEPING UNIT

Disc brush diameter / speed approx.	850 mm
Disc brush speed	0-125 rpm
Sweeping width (2 brush system)	2800 mm
Sweeping width (3 brush system)	3200 mm
Suction nozzle width	820 mm
Fan speed max.	3500 rpm
Air flow rate max.	9000 m <sup>3</sup> /h

## WEIGHT

Total permissible weight (GVW)	4500 kg
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## EMISSIONS

PM certification	PM 2.5 / PM10 * * * *
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## POWER SYSTEM

Electric drive motor	90 kW
LS pump electric motor	18,5 kW
Suction fan electric motor	11,5 kW

## DRIVE

Transport speed max.	50 km/h
Operating speed max.	12 km/h
Gradeability	30°

## WATER SYSTEM

Clean water tank	230 L
Recirculation system	170 L
Total water systems	400 L

## STEERING

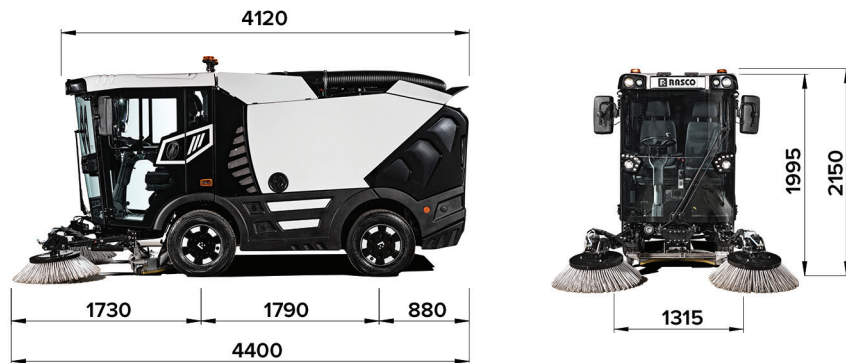
Steering angle front axle	48°
Steering angle rear axle	24°
Wheel diameter	15"

## HOPPER

Total volume	2.0 m <sup>3</sup>
Discharge angle	50°
Discharge height	1550 mm

## CHARGER

Onboard charger	22 kW
Charging time	3,4 h
Charger inlet	Type 2



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LYNX





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