

xcelstor CHARGE™

Our zero-emission battery-electric bus.

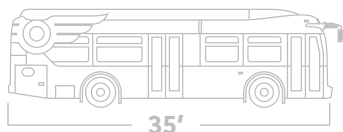


Smart Mobility.

Zero emissions, lower operating costs, interoperable charging systems — New Flyer's Xcelstor CHARGE™ is a sophisticated battery-electric bus that is ready to meet tomorrow's transportation demands today.



Available in 3 lengths.



Benefits of Xcelstor CHARGE™.



Fuel Economy

Highest passenger per mile fuel economy of any zero-emission vehicle based on FTA Altoona fuel economy test protocol.



Energy Savings

Save up to \$400,000 in fuel costs over the 12-year life of the bus. Actual savings will depend on regional energy costs and charging methods.



Maintenance Savings

With no engine, transmission, intake or exhaust, customers can save up to \$125,000 in maintenance costs over 12 years.



Environment First

Reduction of 100 - 160 tons of greenhouse gas per year compared to a 40' diesel bus and 75 - 110 tons compared to a 40' diesel-hybrid bus.

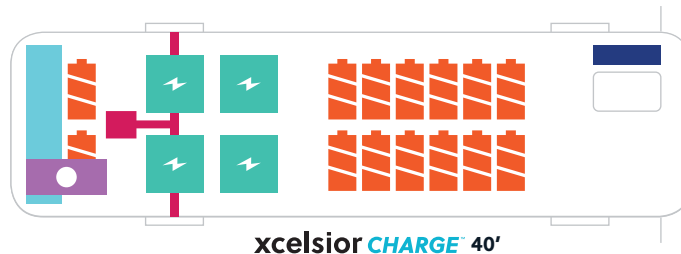
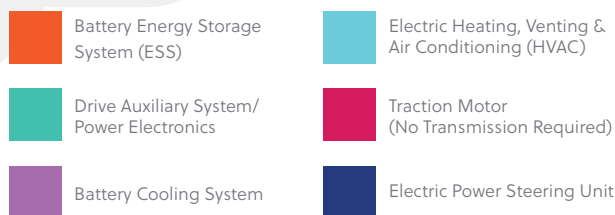


Noise Reduction

Electric motors emit very little external noise making for a greater rider experience.

How it Works.

The Xcelsior CHARGE™ uses an electric motor powered by energy stored in rechargeable batteries.



xcelcior **CHARGE**™ 40'

Electric Drive System

- Features a Siemens high-efficiency permanent magnet (PEM) motor.
- Supplies three-phase alternating current (AC) power to drive the traction motor by converting direct current (DC) power from the batteries.
- Direct drive: No transmission required, reducing cost, weight, maintenance and propulsion complexity.
- Regenerative braking while decelerating recharges the batteries, reducing energy consumption and extending range.

Energy Storage Systems

- Industry-leading range capability from 160 kWh to 466 kWh of electricity.
- US battery suppliers: XALT Energy and A123 Systems.
- Battery configuration available for long-range depot charging and on-route high-power charging.
- Monitored by a battery management system for added protection, longevity, and charging efficiency.
- Thermal management for maximum battery life in rapid charge applications and extreme ambient temperatures.

Functionality & Accessibility

- Improved traction and gradeability with a high-gradeability motor available on all lengths.
- SmartRider™ enables kneeling to variable heights and minimizes the slope difference between a low-floor ramp and the bus floor.
- SmartRider™ ramp achieves a 1:6 slope ratio with a self-leveling feature that can withstand up to 1000lbs.
- Industry-leading passenger carrying capacity with up to 82 total (40 seated and 42 standees).

CONNECT 360™

Connect 360™, operated by New Flyer Connect®, is a customizable performance dashboard that provides smart analytic reporting to expand insight and intelligence for managing your Xcelsior CHARGE™ battery-electric bus.

Connect 360™ is included on every new Xcelsior CHARGE™. Learn more at newflyer.com/connect.



Additional range capability with improved driver performance.



Decision-making information to optimize charging strategies.



Intelligence on how to preserve battery energy throughout the day.



Reduced operating cost and maximum fleet utilization.



NEW FLYER[®] / INFRASTRUCTURE SOLUTIONS[™]

New Flyer Infrastructure Solutions[™] is a service dedicated to providing safe, reliable, smart and sustainable charging and mobility solutions.

Learn more at newflyer.com/infrastructureolutions.

What our New Flyer Infrastructure Solutions[™] can do for you.

- ✓ Support mobility projects from start to finish.
- ✓ Focus on energy management optimization.
- ✓ Provide infrastructure planning and development.
- ✓ Provide cohesive transition of bus fleets to zero-emission electric technology.

Committed to Smart Mobility.

- Joined CharIN to support industry charging standards for all electric vehicles.
- Became the first licensee outside the Volvo Group to join OppCharge in North America.
- Supported the CUTRIC launch of the Pan-Canadian Electric Bus Demonstration and Integration Trial.
- Became the first bus manufacturer to sign on to the Shared Mobility Principles for Livable Cities.
- Committed to CALSTART's Global Commercial Drive to Zero Pledge.
- Signed on to the U.S. Transportation Electrification Accord.



Learn more about this technology at New Flyer's Vehicle Innovation Center.

newflyer.com/vic

50 Years Experience.

New Flyer has been manufacturing zero-emission buses since 1969. We've delivered over 7,300 buses powered by electric motors and batteries in North America, and are the only bus manufacturer to offer all three types of zero emission propulsion systems—battery-electric, fuel cell-electric and trolley-electric.

Measurements

	xcelsior CHARGE 35'	xcelsior CHARGE 40'	xcelsior CHARGE 60'
Length	36' 3" (11.05m) Over bumpers; 35' 5" (10.80m) Over body	41' 0" (12.50m) Over bumpers; 40' 2" (12.24m) Over body	60' 10" (18.54m) Over bumpers; 60' 0" (18.29m) Over body
Width	102" (2.6m)	102" (2.6m)	102" (2.6m)
Roof Height	11' 1" (3.3m) Over charging rails	11' 1" (3.3m) Over charging rails	11' 1" (3.3m) Over charging rails
Step Height	14" (356mm)	14" (356mm)	14" (356mm)
Front Step Height (Kneeled)	10" (254mm)	10" (254mm)	10" (254mm)
Interior Height – Floor to Ceiling	79" (2m) Over front and rear axle; 95" (2.4m) Mid-coach	79" (2m) Over front and rear axle; 95" (2.4m) Mid-coach	79" (2m) Over front and rear axle; 95" (2.4m) Mid-coach
Tire Size	305/70R22.5	305/70R22.5	305/70R22.5
Wheelbase	226.75" (5.8m)	283.75" (7.2m)	229" (5.8m) Front / 293" (7.4m) rear

Propulsion Motor

Siemens ELFA2 electric drive system; Standard or optional high gradeability motor	Siemens ELFA2 electric drive system; Standard or optional high gradeability motor	Siemens ELFA2 electric drive system; ZF AVE130 in-wheel motor center drive axle; Standard or optional high gradeability motor
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Energy Storage System

Rapid Charge	160 kWh, 213 kWh	160 kWh, 213 kWh & 267 kWh, 320 kWh	213 kWh, 267 kWh, 320 kWh
Rated Power	160 kW	160 kW	210 kW
Long Range Charge	311 kWh, 388 kWh	311 kWh, 388 kWh & 466 kWh	466 kWh
Rated Torque	1,033 lb-ft	1,033 lb-ft	1,475 lb-ft

Passenger Capacity

(*Based on 160 kWh ESS configuration)

Seats	Up to 32*	Up to 40*	Up to 52 (with one exit door)*
Standeers	Up to 35*	Up to 42*	Up to 73 (with one exit door)*

Accessibility

Doors	2	2	2 or 3 (option for up to 5 doors)
Wheelchair Accessibility	32" (813mm) Wide, 1:6 slope; Flip out NFIL ramp, front door	32" (813mm) wide, 1:6 slope; Flip out NFIL ramp, front door	32" (813mm) wide, 1:6 slope; Flip out NFIL ramp, front door
Wheelchair Locations	2 - Front location, rear location also available (other options available)	2 - Front location, rear location also available (other options available)	2 - Front location, rear location also available (other options available)

Weight

(Approximate weights;
*Varies with ESS configuration)

Curb Weight	28,556 lb (12,953 kg)*	28,751 lb (13,041kg)*	45,662 lb (20,712 kg)*
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Approach Angle

Approach/Departure/Breakover Angles

9°/9°/12°	9°/9°/9°	9°/9°/12° (front) 9° (back)
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Turning Radius

(Body, with aluminum wheels;
*Varies with wheel type)

Turning Radius	39' (11.9m)*	43.5' (13.3)*	44' (13.4m)*
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Main Components

Floor	Marine grade plywood floor; Optional composite floor; Composite rear interior step; Tarabus, Altro, RCA floor covering	Marine grade plywood floor; Optional composite floor; Composite rear interior step; Tarabus, Altro, RCA floor covering	Marine grade plywood floor; Optional composite floor; Composite rear interior step; Tarabus, Altro, RCA floor covering
Electrical System	Parker Vansco	Parker Vansco	Parker Vansco
Cooling System	Electric cooling fans	Electric cooling fans	Electric cooling fans
HVAC	Thermo King TE15 (rear)	Thermo King TE15 (rear)	Thermo King RLFE (front) TE15 (rear)
Axles	MAN VOK 07 Front disc brakes; MAN HY-1350 Rear disc brakes; Single reduction axle	MAN VOK 07 Front disc brakes; MAN HY-1350 Rear disc brakes; Single reduction axle	MAN VOK 07 Front disc brakes; ZF AVE 130 Center disc brakes; MAN HY-1350 Rear disc brakes; Single reduction axle



12-Year comprehensive warranty available on batteries, inverters and electric motors.

Six minutes of rapid recharge time with a 450 kWh charger equals 1.5 hours of operation.

Rapid charge configuration fully compliant with OppCharge and charging protocols.



Charging.

New Flyer buses are interoperable with charging equipment that supports all heavy-duty electric vehicles. You can customize your Energy Storage Systems (ESS) and charging solutions so you can develop the right ESS and infrastructure solution for your needs.

Xcelsior CHARGE™ is interoperable with charging systems available from:

SIEMENS

—chargepoint+

ABB

On-Route Charging

The on-route rapid charger provides the means for the Xcelsior CHARGE™ to stay in service 24 hours daily. To charge, the bus stops underneath the charger and the pantograph makes contact with the charge bars.

Plug-In Charging

Plug-in chargers are available as a supplement or alternative to on-route rapid chargers and can be used for overnight, mid-day and off-route charging. A full charge requires 3.2 hours for a 466 kWh ESS.

Range Capability

The 40' Xcelsior CHARGE™ has a range of up to 225 miles (466 kWh)* on a single charge, but with on-route, charging range is unlimited.

** Range per FTA Altoona test protocol - HVAC off*

Industry Leading Range Capability.

Length		ESS (kWh)	Maximum Range* (Miles)
35' & 40'	Rapid Charge	160	75
35' & 40'		213	100
40'		267	115
35' & 40'	Long Range	311	160
35' & 40'		388	195
40'		466	225
60'	Rapid Charge	213	55
60'		267	70
60'		320	85
60'	Long Range	466	135

*dependent on model, length and motor option



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