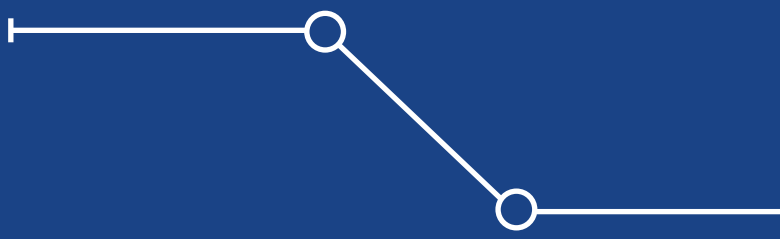
xcelsior CHARGE™

Built to RELY ON.™

NEW FLYER®

New Flyer has 50 years of experience manufacturing zero-emission buses, has delivered over 6,400 buses powered by electric motors and batteries in North America, and is the only bus manufacturer to offer all three types of zero emission propulsion systems - battery-electric, fuel cell-electric and trolley-electric.




It’s bright ahead.

NEW FLYER

How it works

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

- BATTERIES ENERGY STORAGE SYSTEM (ESS)
- DRIVE AUXILIARY SYSTEM/ POWER ELECTRONICS
- BATTERY COOLING SYSTEM
- ELECTRIC HEATING, VENTING AND AIR CONDITIONING (HVAC)
- TRACTION MOTOR (NO TRANSMISSION REQUIRED)
- ELECTRIC POWER STEERING UNIT

XE40 MODEL

ENERGY STORAGE SYSTEMS

- Industry-leading range capability from 100 kWh to 600 kWh of electricity
- XALT Energy and A123 Systems
- Battery configuration available for long-range depot charging and on-route high-power charging
- Monitored by a sophisticated battery management system for added protection, longevity and charging efficiency
- Available with fuel cell range extenders
- Thermal management for maximum battery life in rapid charge applications and extreme ambient temperatures

ELECTRIC DRIVE SYSTEM

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

FUNCTIONALITY & ACCESSIBILITY

- Improved traction and gradeability (powered center and rear axles comes standard on XE60 and an optional high-gradeability motor is available on all lengths)
- Smart Rider™ provides computer-controlled motion reduction offering a smoother ride and smoother leveling and height adjusting when stationary
- Flatlander™ wheelchair ramp that is integrated with Smart Rider achieves a 1:6 slope ratio with a self-leveling feature that can withstand up to 1000lbs
- Industry-leading passenger carrying capacity

KEY BENEFITS

FUEL ECONOMY

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

ENERGY COSTS

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 COSTS

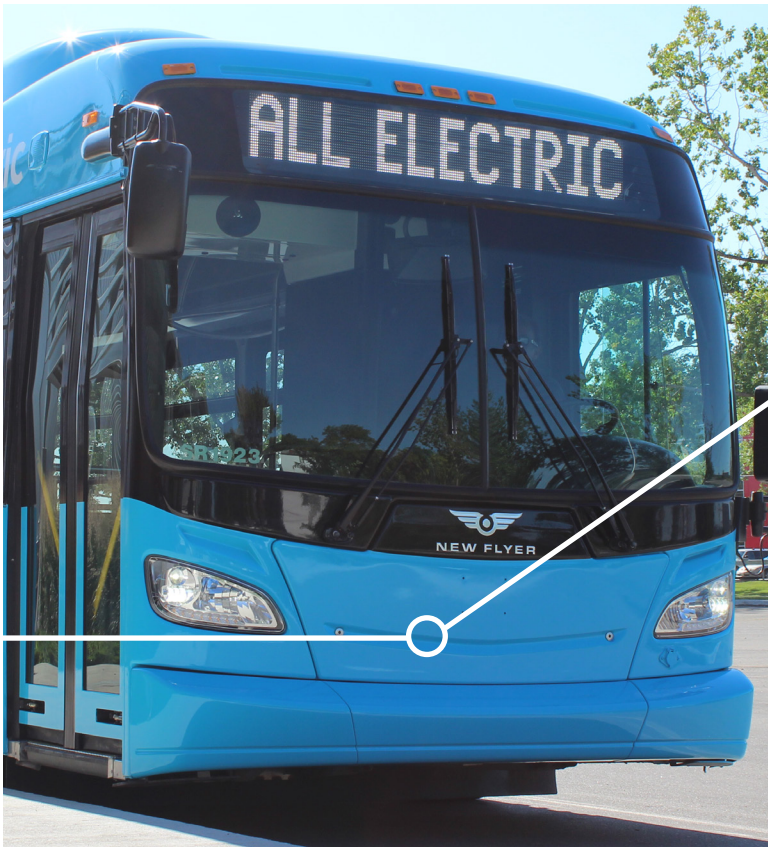
With no engine, transmission, intake or exhaust, customers can save up to $125,000 in maintenance costs over the 12-year life of the bus.

ENVIRONMENT

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.

QUIET

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



COMPREHENSIVE
12-YEAR
WARRANTY AVAILABLE ON
BATTERIES, INVERTERS AND
ELECTRIC MOTORS

NEW FLYER
CONNECT
AT NO ADDITIONAL CHARGE

XCELSIOR CHARGE™ IS INTEROPERABLE WITH CHARGING SYSTEMS AVAILABLE FROM SIEMENS, CHARGEPOINT AND ABB

Charging

New Flyer offers multiple Energy Storage Systems (ESS) and charging solutions so customers can develop the right ESS and infrastructure solution for their needs.

ON-ROUTE CHARGING

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

RANGE CAPABILITY

Xcelsior CHARGE™ has a range exceeding 200 miles (322 km)* on a single charge, but with on-route, charging range is unlimited.

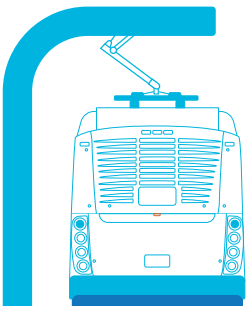
* Range per FTA Altoona test protocol - HVAC off

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. Charging can be initiated from either the charger user panel or the bus, but will only begin once all programmed safety conditions are met. A full charge requires 1.6 hours for a 200 kWh ESS.

RAPID CHARGE CONFIGURATION FULLY COMPLIANT WITH OPPCHARGE AND SAE CHARGING PROTOCOLS.

SIX MINUTES OF RAPID RECHARGE TIME WITH A 300KW CHARGER EQUALS ONE HOUR OF OPERATION.



All electric

ALL-ELECTRIC ACCESSORIES

The air compressor and air conditioning compressors are electrically powered. DC power is converted to AC power and is supplied to each of these major systems separately. This allows each system to operate more reliably and efficiently, with minimum power consumption. The bus also has a converter to supply 24-volt DC power for power steering, interior fans, lights, electric doors (optional) and other accessories.

BUILT FOR ACCESSIBILITY

Xcelsior CHARGE™ has best-in-class carrying capacity - up to 83 total (40 seated and 43 standees). Additional best-in-class accessibility features include an improved step height, an expanded door width and the best entry ramp ratio (1:6) in the industry for passengers with mobility devices.

SUPPORTED BY NEW FLYER OF AMERICA'S NETWORK OF PART DISTRIBUTION AND SERVICE CENTERS.

nfi.parts

xcelsior CHARGE™

	35′	40′	60′
MEASUREMENTS			
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
PASSENGER CAPACITY *(*Based on 150kWh ESS configuration)*			
Seats	Up to 32*	Up to 40*	Up to 61 (with one exit door)*
Standees	Up to 33*	Up to 43*	Up to 62 (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 such as bridge plates)
WEIGHT *(approximate weights; *varies with ESS configuration)*			
Curb Weight	29,300 lb (13,290 kg)*	30,500 lb (13,835 kg)*	45,500 lb (20,638 kg)*
APPROACH ANGLE			
Approach/departure/breakover angles	9º/9º/12º	9º/9º/9º	9º/9º/12º (front) 9º (back)
TURNING RADIUS *(body, with aluminum wheels; *varies with wheel type)*			
Turning radius	39′ (11.9m)*	44′ (13.4m)*	44′ (13.4m)*
MAIN COMPONENTS			
Floor	Composite at rear interior step, ACQ Plywood remainder (dB Ply used on upper deck). Tarabus, Altro, RCA	Composite at rear interior step, ACQ Plywood remainder (dB Ply used upper deck). Tarabus, Altro, RCA	Composite at rear interior step, ACQ Plywood remainder (dB Ply used upper deck). Tarabus, Altro, RCA
Electrical System	Parker Vansco	Parker Vansco	Parker Vansco
Cooling System	electric cooling fans	electric cooling fans	electric cooling fans
HVAC	Thermo King RLFE	Thermo King RLFE	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 AVN 132 center disc brake MAN HY-1350 rear disc brakes, single reduction axle
ENERGY STORAGE SYSTEM OPTIONS			
Rapid Charge	150 kWh, 200 kWh	150 kWh, 200 kWh	250 kWh
Long Range Charge	320 kWh, 400 kWh	320 kWh, 400 kWh, 480 kWh	450 kWh, 600 kWh

It's bright ahead.

BUY AMERICA COMPLIANT AND PROUD TO EMPLOY MORE AMERICAN WORKERS THAN ANY OTHER BUS MANUFACTURER IN NORTH AMERICA.