xcelsior CHARGE™
Our zero-emission battery-electric bus.

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

Available in 3 lengths.

- 35’
- 40’
- 60’

Benefits of Xcelsior 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.

newflyer.com/CHARGE
How it Works.

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

**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.
- 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.
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 at newflyer.com/infrastructuresolutions.

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.

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

**Propulsion**

- **Motor**: Siemens ELFA2 electric drive system; Standard or optional high gradeability motor
- **Energy Storage System**
  - **Rapid Charge**: 160 kWh, 213 kWh
  - **Rated Power**: 160 kW
  - **Long Range Charge**: 311 kWh, 388 kWh
  - **Rated Torque**: 1,033 lb-ft

**Passenger Capacity**

- **Seats**: Up to 32*
- **Standees**: Up to 35*

**Accessibility**

- **Doors**: 2
- **Wheelchair Accessibility**: 32" (813mm) Wide, 1:6 slope;
- **Wheelchair Locations**: 2 - Front location, rear location also available (other options available)

**Weight**

- **Curb Weight**: 28,556 lb (12,953 kg)*

**Approach Angle**

- **Approach/Departure/Breakover Angles**: 9°/9°/12°

**Main Components**

- **Floor**: Marine grade plywood floor;
- **Electrical System**: Parker Vansco
- **Cooling System**: Electric cooling fans
- **HVAC**: Thermo King TE15 (rear)
- **Axles**: MAN VOK 07 Front disc brakes; Single reduction axle

*Based on 160 kWh ESS configuration

(newflyer.com/CHARGE)
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.

<table>
<thead>
<tr>
<th>Length</th>
<th>ESS (kWh)</th>
<th>Maximum Range* (Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35’ &amp; 40’</td>
<td>160</td>
<td>75</td>
</tr>
<tr>
<td>35’ &amp; 40’</td>
<td>213</td>
<td>100</td>
</tr>
<tr>
<td>40’</td>
<td>267</td>
<td>115</td>
</tr>
<tr>
<td>Long Range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35’ &amp; 40’</td>
<td>311</td>
<td>160</td>
</tr>
<tr>
<td>35’ &amp; 40’</td>
<td>388</td>
<td>195</td>
</tr>
<tr>
<td>40’</td>
<td>466</td>
<td>225</td>
</tr>
<tr>
<td>Rapid Charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60’</td>
<td>213</td>
<td>55</td>
</tr>
<tr>
<td>60’</td>
<td>267</td>
<td>70</td>
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<tr>
<td>60’</td>
<td>320</td>
<td>85</td>
</tr>
<tr>
<td>60’</td>
<td>466</td>
<td>135</td>
</tr>
</tbody>
</table>

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.

- dependent on model, length and motor option
Learn more about this technology at New Flyer’s Vehicle Innovation Center

newflyer.com/vic