



Electric Bus

## Competitive Comparison

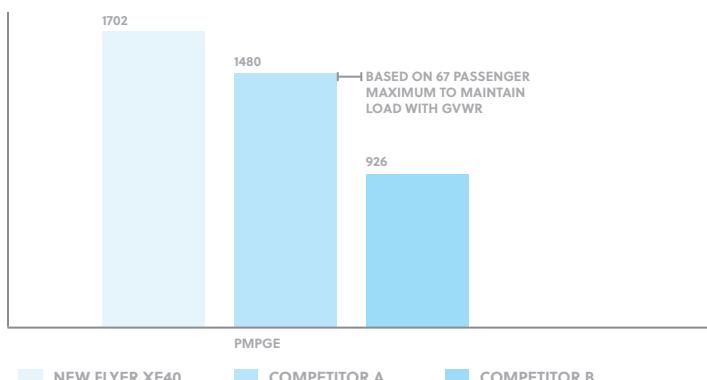
New Flyer has 50 years of experience manufacturing zero-emission buses, has delivered over 6,400 buses powered by electric motors and batteries in North America, and is the only bus manufacturer to offer all three types of zero emission propulsion systems - battery-electric, fuel cell-electric and trolley-electric.

	Excelsior CHARGE™ XE40	COMPETITOR A	COMPETITOR B
<b>Buses Manufactured in North America with Electric Propulsion (Electric-Trolley, Electric-Hybrid, Fuel Cell-Electric &amp; Battery-Electric)</b>	> 6,000	< 150	< 100
<b>CONSTRUCTION</b>			
<b>Body and Chassis Construction</b>	Semi-Monocoque <ul style="list-style-type: none"> <li>Carbon Steel Frame (std.)</li> <li>Stainless Steel (optional)</li> <li>Composite Body Panels</li> </ul>	<ul style="list-style-type: none"> <li>Monocoque Body Composite</li> </ul>	<ul style="list-style-type: none"> <li>Semi-Monocoque (Steel &amp; Aluminum)</li> </ul>
<b>MEASUREMENTS</b>			
<b>Length</b>	40' 9.5" (also available in 35')	42' 7.5"	40' 2"
<b>Wheelbase</b>	283.8"	296.5"	245.5"
<b>Ground Clearance: Lowest point outside axil area</b>	9.9"	7.9"	6.3"
<b>Curb Weight</b>	32,750 lb. (200 kWh batteries)	27,370 lb. (75 kWh batteries)	31,890 lb. (324 kWh batteries)
<b>Gross Vehicle Weight Rating</b>	44,320 lb.	39,550 lb.	39,242 lb.
<b>Max. Passenger Capacity</b>	83	79 (at gross vehicle weight the front axle reaction exceeds the front GAWR by 1,800 lb.)	49
<b>FUEL</b>			
<b>Fuel Economy (Altoona ADB cycle)</b>	20.5 MPGe (1.84 kWh/mile)	22.1 MPGe (1.7 kWh/mile)	18.9 MPGe (1.99 kWh/mile)
<b>Passenger Miles per Diesel Equivalent Gallon (PMPGe)</b>	1702	1480 (Based on 67 passenger max. to maintain load with GVWR)	926
<b>MOTOR</b>			
<b>Traction Motor: Type</b>	Siemens ELFA® Permanent Electromagnetic Motor (PEM)	Permanent Electromagnetic Motor (PEM) Requires separate transmission	AC Synchronous (Brushless)
<b>Driveline Configuration</b>	Direct Drive No Transmission	3-Speed Transmission T-Drive Configuration (Eaton Model EEV-7202 Transmission)	2 Wheel Motors Planetary Gear Reduction
<b>Traction Motor: Peak Power</b>	190 kW	220 kW	180 kW (90 kWx2)
<b>Traction Motor: Peak Torque</b>	2500 Nm	700 Nm	700 Nm (350 Nm x 2)

	NEW FLYER XCELSIOR XE40	COMPETITOR A	COMPETITOR B
<b>ENERGY</b>			
<b>Energy Storage System Batteries</b>	Lithium Ion-Nickel Manganese Cobalt (XALT Energy)	Lithium Titanate (Toshiba)	Lithium Iron Phosphate
<b>Battery Pack Locations</b>			
	Rear Compartment (engine bay area) and roof	Below seats, under floor	Bus Interior (rear of entry door- both sides) Roof, Rear Bay
<b>Battery Thermal Management System*</b>	Full direct liquid cooling for added efficiency and performance	Liquid over air cooling	Air cooled
<b>Charging System(s)</b>			
	Plug-In: 100 kW On Route: 300 kW (Conductive)	Plug-In: 100 kW On Route: 500 kW (Conductive)	Plug-In: 30kW / 200kW Option On Route: 50 kW (Inductive)
<b>Recharge Time Following One Hour of Altoona ADB Duty Cycle Service</b>	Option A (Plug-In): 13.8 min. Option B (On Route): 4.6 min.	Not available	Not available
<b>Range</b>	87 miles (as tested at Altoona) Note: 196 miles range can be achieved with optional 480 kWh battery capacity	38 miles (as tested at Altoona)	128 (as tested at Altoona) Note: Not compatible with on-route fast charge option
<b>MAIN COMPONENTS</b>			
<b>Air Compressor</b>	Powerex electric scroll oil-less air compressor (12.1 cfm)	Garden Denver/Hydrovane (10.3 cfm)	Fusheng (14.1 cfm)
<b>Power Steering System</b>	Hydraulic gear / electric pump assist (Sheppard steering gear with Parker Hannifin Corp. pump)	Hydraulic gear / electric pump assist (Baldor Hydraulic Motor)	Hydraulic gear / electric pump assist (ZF steering gear)
<b>HVAC (Passenger HVAC)</b>	Rear Mounted Thermo King TE15	Roof Mounted Electric Eberspächer / W3G300-RQ30-83	Roof Mounted Model
<b>ALTOONA PERFORMANCE</b>			
<b>Acceleration Time to Reach 20 mph*</b>	7.84 sec.	7.6 sec.	10.08 sec.
<b>Gradeability at 15 mph*</b>	10.3%	10.7%	8.1%
<b>Replacement and Repair of Selected Subcomponents*</b>	13.5 hr.	14.5 hr.	70.0 hr.
<b>Unscheduled Repair Time*</b>	74.0 hr	278.5 hr.	258.5 hr.
<b>Durability Failures*</b>	21	33	49
<b>Durability Class 1 or Class 2 Failures*</b>	0	1	2
<b>Interior Noise at 35 mph*</b>	68.6 db(A) average	75.2 db(A) average	70.4 db(A) average
<b>Static Pull Test*</b>	The Static Towing Test was performed using a target load (towing force) of 39,312 lbs. All four front pulls were completed to the full test load with no damage or deformation observed.	The test was performed to the full target test weight of 32,844 lb. (1.2 x 27,370 lbs. CW). No damage or deformation was observed during all 4 pulls of the test.	The target test load of 38,268 lb. (1.2 x 31,890 lbs. CW) was not reached during the first pull (20° up).
<b>WARRANTY</b>			
<b>Complete Bus Warranty*</b>	1 year / 50,000 miles Extended Base Warranty Option: Up to 2 years	1 year / 50,000 miles	1 year / 50,000 miles
<b>Battery Warranty*</b>	Base Warranty: 6 years Optional Extended Warranty: 12 years	Base Warranty: 6 years Optional Extended Warranty: 12 years	Base Warranty: 6 years Optional Extended Warranty: 12 years

\*Information sourced from Altoona reports and public facing marketing documents.

### PMPGe ( PASSENGER CAPACITY x MPGe )



### INTERIOR NOISE: 0 - 35 mph ACCELERATION TEST

