



Electric Bus

Competitive Comparison

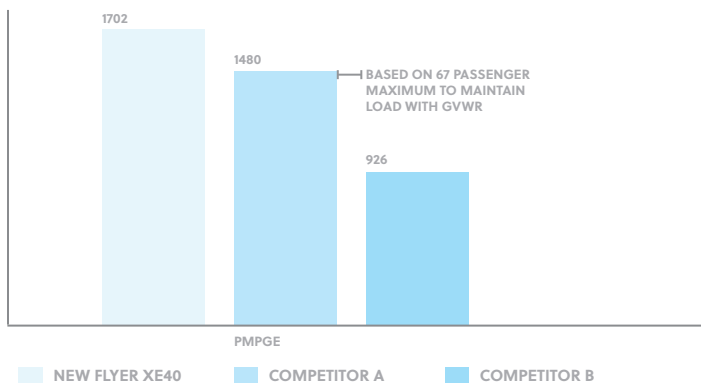
New Flyer has 50 years of experience manufacturing zero-emission buses, has delivered over 6,400 buses powered by electric motors and batteries in North America, and is the only bus manufacturer to offer all three types of zero emission propulsion systems - battery-electric, fuel cell-electric and trolley-electric.

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

	NEW FLYER XCELSIOR XE40	COMPETITOR A	COMPETITOR B
ENERGY			
Energy Storage System Batteries	Lithium Ion-Nickel Manganese Cobalt (XALT Energy)	Lithium Titanate (Toshiba)	Lithium Iron Phosphate
Battery Pack Locations	Rear Compartment (engine bay area) and roof	Below seats, under floor	Bus Interior (rear of entry door- both sides) Roof, Rear Bay
Battery Thermal Management System*	Full direct liquid cooling for added efficiency and performance	Liquid over air cooling	Air cooled
Charging System(s)	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)
Recharge Time Following One Hour of Altoona ADB Duty Cycle Service Range	Option A (Plug-In): 13.8 min. Option B (On Route): 4.6 min. 87 miles (as tested at Altoona) Note: 196 miles range can be achieved with optional 480 kWh battery capacity	Not available 38 miles (as tested at Altoona)	Not available 128 (as tested at Altoona) Note: Not compatible with on-route fast charge option
MAIN COMPONENTS			
Air Compressor	Powerex electric scroll oil-less air compressor (12.1 cfm)	Garden Denver/Hydrovane (10.3 cfm)	Fusheng (14.1 cfm)
Power Steering System	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)
HVAC (Passenger HVAC)	Rear Mounted Thermo King TE15	Roof Mounted Electric Eberspächer / W3G300-RQ30-83	Roof Mounted Model
ALTOONA PERFORMANCE			
Acceleration Time to Reach 20 mph*	7.84 sec.	7.6 sec.	10.08 sec.
Gradeability at 15 mph*	10.3%	10.7%	8.1%
Replacement and Repair of Selected Subcomponents*	13.5 hr.	14.5 hr.	70.0 hr.
Unscheduled Repair Time*	74.0 hr	278.5 hr.	258.5 hr.
Durability Failures*	21	33	49
Durability Class 1 or Class 2 Failures*	0	1	2
Interior Noise at 35 mph*	68.6 db(A) average	75.2 db(A) average	70.4 db(A) average
Static Pull Test*	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).
WARRANTY			
Complete Bus Warranty*	1 year / 50,000 miles Extended Base Warranty Option: Up to 2 years	1 year / 50,000 miles	1 year / 50,000 miles
Battery Warranty*	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

