



# xcelstor CHARGE H2™

## Fuel cell-electric and zero-emission.



### Extended range.

New Flyer fuel cell technology is a unique and innovative way to obtain extended-range operation similar to existing transit vehicles using a fully zero-emission solution.

Save **85-135 tons of greenhouse gases per year** from tailpipe emissions per year compared to a diesel bus.



### Robust Design

Built on the proven Xcelstor® platform, the Xcelstor CHARGE H2™ utilizes the same robust electric propulsion system as the Xcelstor CHARGE™ battery-electric bus, featuring industry-proven Siemens and ZF components.



### Eco Friendly

Hydrogen is clean, abundant, and can be reformed into hydrogen from natural gas (methane) or created from renewable sources such as wind or solar energy through electrolysis.



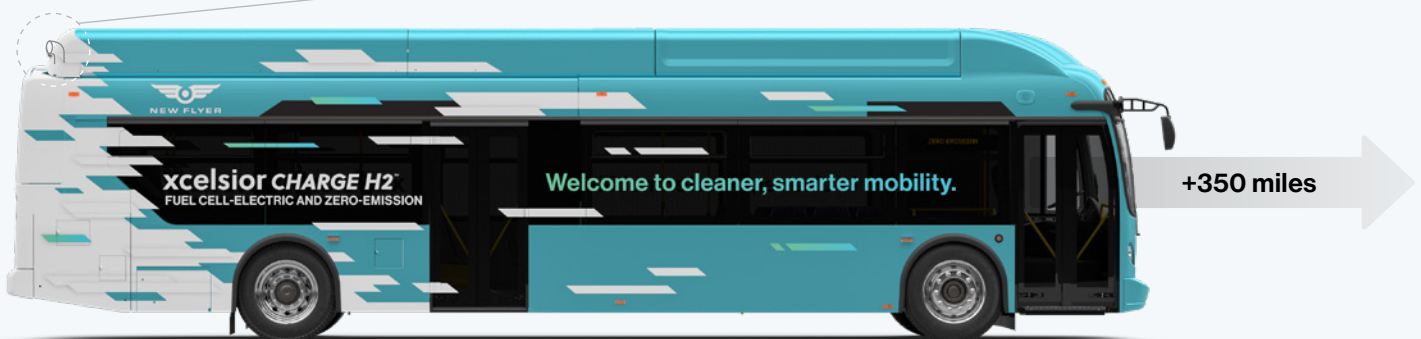
### Extended Range

The Xcelstor CHARGE H2™ can travel up to 350 miles on a single refueling and requires no off-board electric recharging.



**Clean**  
The only output from the tailpipe is water vapor.

Fuel Cell-Electric



# How it works.

Xcelsior CHARGE H2™ is an electric vehicle that uses compressed hydrogen as an energy source.



**Integration with Battery-Electric Technology**



**Smart Refueling**



**Powered by Ballard Fuel Cells**

## What is a fuel cell? It is a device that converts chemical energy into electric energy.

A series of chemical reactions splits hydrogen into protons and a current of electrons and then combines them with oxygen, which produces water. The flow of electrons is the electric current. The electric current is used to power the batteries and ultimately power the bus.

## Fueling

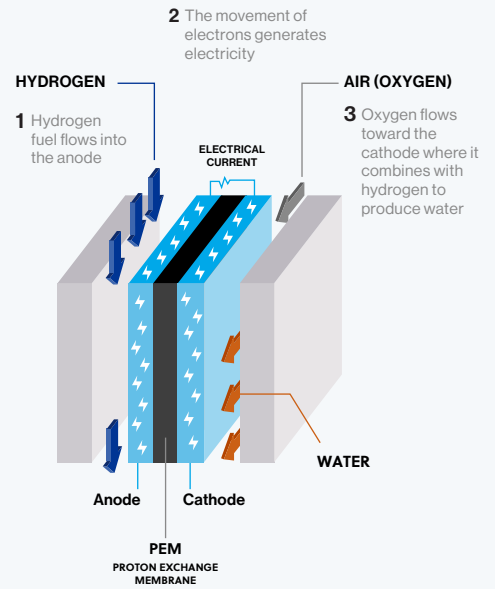
**40-foot:** 6 - 10 min

**60-foot:** 12 - 20 min

*\*depending on operating conditions*

Equipped with either or both TN1 or TN5 fill receptacles or a multi-fill port configuration. Receptacles can also be equipped with IR transmitters or hardwired communication ports to support fast filling at smart fill stations.

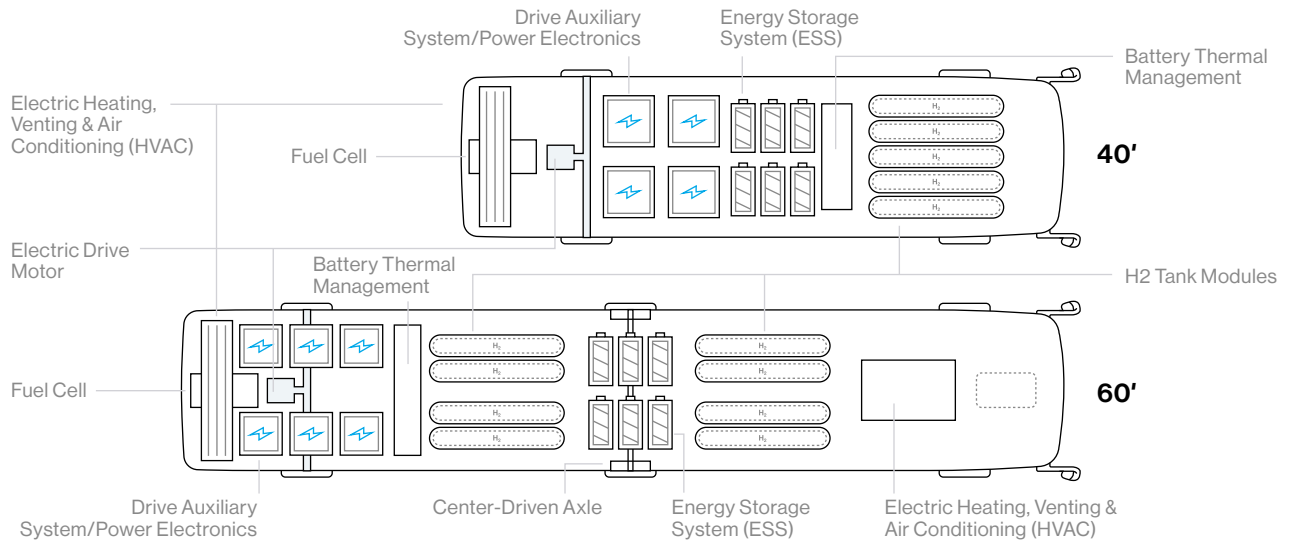
Lightweight Type 4 HGV2 tanks with 95% usable capacity.



## Technology

Fuel cell buses combine the best of battery electric bus technology with an on-board power generator (fuel cell).

Fuel cell buses use a battery-dominant hybrid architecture, where the batteries are large enough to handle all vehicle performance needs while the fuel cell acts like a continuous battery charger to extend the range of the vehicle.



	40'	60'
<b>Measurements</b>		
<b>Length</b>	41' 0" (12.50m) over bumpers 40' 2" (12.24m) over body	60' 10" (18.54m) over bumpers 60' 0" (18.29m) over body
<b>Width</b>	102" (2.6m)	102" (2.6m)
<b>Roof Height</b>	11' 1" (3.3m)	11' 1" (3.3m)
<b>Step Height</b>	14" (356mm)	14" (356mm)
<b>Front Step Height (Kneeled)</b>	10" (254mm)	10" (254mm)
<b>Interior Height – Floor to Ceiling</b>	79" (2m) over front and rear axle; 95" (2.4m) mid-coach	79" (2m) over front and rear axle; 95" (2.4m) mid-coach
<b>Tire Size</b>	305/70R22.5	305/70R22.5
<b>Wheelbase</b>	283.75" (7.2m)	229" (5.8m) front / 293" (7.4m) rear

<b>Propulsion</b>		
<b>Motor</b>	Siemens ELFA2 Electric Drive System Optional High Gradeability Motor	Siemens ELFA2 Electric Drive System ZF AVE130 In-Wheel Motor Center Drive Axle Optional High Gradeability Motor
<b>Rated Power</b>	160 kW	320 kW
<b>Rated Torque</b> (*Based on 1:5.67 ratio axle)	1,033 lb-ft	2,066 lb-ft

<b>Passenger Capacity</b> (*Based on 150kWh ESS configuration)		
<b>Seats</b>	Up to 40*	Up to 52 (with one exit door)*
<b>Standees</b>	Up to 42*	Up to 73 (with one exit door)*

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

<b>Weight</b>		
<b>Curb Weight*</b> *for high-grade packages add 500 lb (227 kg)	32,250 lb (14,628 kg)	49,900 (22,634 kg)

<b>Approach Angle</b>		
<b>Approach/Departure/Breakover Angles</b>	9°/9°/9°	9°/9°/12° (front) 9° (back)

<b>Turning Radius</b> (Body, with aluminum wheels; *varies with wheel type)		
<b>Turning Radius</b>	43.5' (13.3)*	42' (12.8m)*

<b>Main Components</b>		
<b>Floor</b>	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
<b>Electrical System</b>	Parker Vansco	Parker Vansco
<b>Cooling System</b>	Electric cooling fans	Electric cooling fans
<b>HVAC</b>	Thermo King TE15 (rear)	Thermo King RLFE (front) TE15 (rear)
<b>Axles</b>	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

<b>Energy Storage System</b>		
<b>Fuel Cell</b>	Ballard FCvelocity-HD85	Ballard FCvelocity-HD85
<b>Equivalent Battery Energy</b>	700 kWh	1100 kWh
<b>Hydrogen Storage Volume</b>	37.5 kg	60 kg
<b>Net Power</b>	85 kW	85 kW



# xcelstor *CHARGE H2*™

[newflyer.com/chargeH2](http://newflyer.com/chargeH2)



**VIC** | VEHICLE INNOVATION CENTER

Learn more about this technology at the Vehicle Innovation Center  
[newflyer.com/vic](http://newflyer.com/vic)