

Market Segment & Fleet Profile Fact Sheet



Operational Characteristics

Duty Cycle	Return to Base
Use Case	Urban delivery / Last mile
Average Range	50 miles
Routes	Fixed
Fueling	Overnight
Miles per Gallon	7.4
Replacement Cycle	10 years
Average Age	8.4 years
Axle Configuration	4x2

Definition

Vans and step vans, in Class 3 to 6, are used in many different applications and play a major role in last mile delivery, giving fleets a flexible platform to service residential and commercial customers. While they are primarily recognized as package delivery vehicles, vans and step vans are highly customizable and are used by other segments like linen delivery, food and catering, parts and tool sales, emergency response, electrical contractors, and telecommunications companies.

Vans and step vans feature an open driving area, provide direct access to the cargo from multiple entry points and have low step height which reduces driver fatigue while entering and exiting the vehicle. These vehicles also are known by various other names, including walk-in van, parcel delivery van, multi-stop van, panel truck, bread van and delivery van.

Market Summary

With the explosive growth in e-commerce, companies are racing to solve the complex last mile delivery equation with vans and step vans continuing to play an integral role in that solution.

Run on Less – Electric highlighted three commercially available vans. The featured vehicles were the Lightning eMotors Electrified Ford Transit Van, a Class 3 urban delivery van DHL is using to service residential and commercial customers in New York City; the Motiv EPIC, a Class 6 step van Purolator operates to deliver packages in Vancouver, Canada; and the Workhorse C1000, a Class 4 step van being utilized by Servall Electric to move parts and supplies to worksites in the greater Cincinnati area. What makes the van and step van market segment unique, is the ability to electrify the conventional vehicle platforms, which is also known as upfitting, rebuilding, or remanufacturing.

Cargo Vans

Diesel vs. Electric Comparison

Gas	Fuel Type	Electric
10,001 – 14,000	GVW	10,360 – 11,000
148"	Wheelbase	148"
235"	Overall Length	235"
275 - 310	Horsepower	215
260	Torque (lbs-ft)	733
4,200	Est. Payload	5,000
358	Cargo Volume (cu-ft)	358
\$35,000	Avg. Purchase Price (USD)	\$79,900 - \$99,000

Step Vans

Diesel vs. Electric Comparison

Gas	Fuel Type	Electric
16,001 – 19,500	GVW	12,500
190"	Wheelbase	190"
27.75'	Overall Length	27'
350	Horsepower	425 BHP
468	Torque (lbs-ft)	7500 Nm
10,080	Est. Payload	6,000
948	Cargo Volume (cu-ft)	1,000
\$71,000	Avg. Purchase Price (USD)	\$100,000 - \$169,000

In the case of the Lightning eMotors Electrified Ford Transit Van, the van goes from the Ford plant to upfitting, where shelving and accessories are installed, and then on to Lightning eMotors, usually under gasoline-power, where the engine, fuel system and exhaust system are removed, and the all-electric drivetrain is installed.

Collectively, the duty cycles and use cases for the Run on Less

– Electric vans and step vans are highly representative of the broader market segment. The operational requirements of package, parcel, and vocational pickups and deliveries align well to the sweet spot of the current battery technology. And while there are some load types that can add an additional layer of complexity, like refrigeration, the challenge is manageable. **As a result, NACFE considers this segment to be 100% electrifiable.**

Run On Less – Electric Findings & Metrics

Following successful pilot programs, fleets in this segment of Run on Less – Electric are expanding their electrical vehicle (EV) footprint in the van and step van space. DHL is adding 85 Lightning eMotors electric transit vans to their fleet — 55 will be based in NYC (bringing their current total to 64) and 30 will be going to California. Servall Electric indicated it has plans to transition its entire fleet to electric to include providing in-home chargers for their service technicians who will take these vehicles home. Purolator has a goal to add 1,800 electric vehicles to its fleet over the next 10 years, as the company is seeing a 50% increase in the number of stops for urban residential delivery.

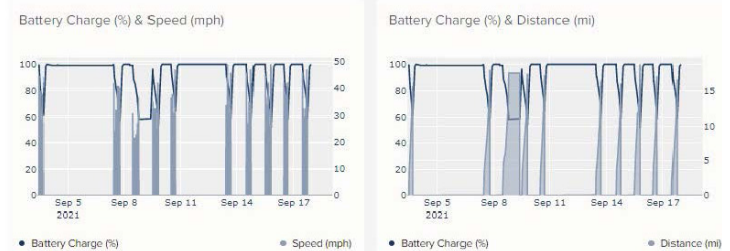
The Workhorse C1000 is 10” lower to the ground than a traditional step van, and only needs two steps instead of three to enter and exit the vehicle. This is a key feature to reducing driver fatigue.

Additionally, the chassis was designed to be highly modular, allowing for multiple battery pack configurations to meet customer requirements.

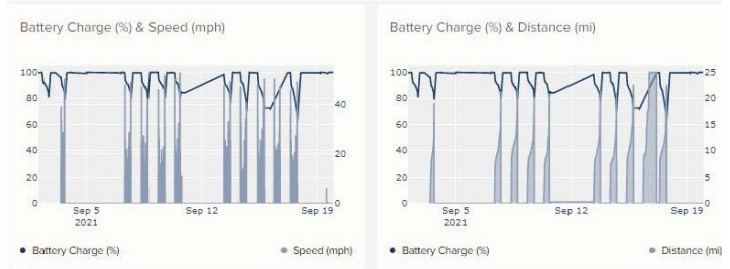
Range is not a factor for DHL in NYC, as vehicles typically only travel between 1.5 and 15 miles. This posed a unique challenge with respect to right-sizing the battery packs as DHL has struggled with EV manufacturers’ ability to provide one small enough.

Given the small battery packs on the DHL electric transit vans, charging is not much of a concern, and the power draw was not an issue in terms of grid impact. However, the DHL facility did have a microturbine in the basement generating electricity from natural gas.

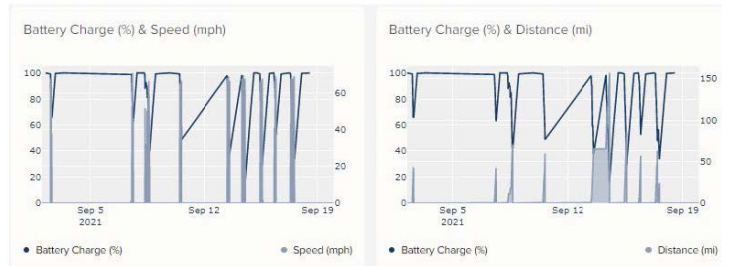
Lightning eMotors Electrified Ford Transit Van



Motiv EPIC



Workhorse C1000



To view the Lightning metrics in more detail, click [here](#).

To view the Motiv metrics in more detail, click [here](#).

To view the Workhorse metrics in more detail, click [here](#).

If 100% of the vans and step vans in the US and Canada were electrified, it would require approximately 89,342 gWh of electricity for charging and result in the avoidance of 43,476,632 MT CO₂e* annually.

* Carbon dioxide equivalent, used in GHG reporting to bundle greenhouse gases into a single number.



DHL
Lightning eMotors Transit 350HD



Purolator
Motiv Epic



Servall Electric
Workhorse C1000

	Lightning eMotors Transit 350HD	Motiv EPIC	Workhorse C1000
ROL-E Site	New York City	Vancouver, Canada	Cincinnati, OH
Fleet	DHL	Purolator	Servall Electric
Service Territory	15-mile radius of hub	Vancouver	Greater Cincinnati area
Facility Details	Three-story urban warehouse	210,000 sq. ft warehouse	Storage warehouse
Weather – Temp Range	55 – 86 degrees F	45 – 78 degrees F	52 – 89 degrees F
Duty Cycle Requirement	Less than 50 miles/day	Less than 100 miles/day	80 – 100 miles/day
Battery Capacity	43 kWh	127 kWh	120 kWh
Battery Range	61 miles	105 miles	150 miles
Battery Chemistry	NMC	NMC	LFP
Charging Rate	19.2 kW	19 kW	19.2 kW
Battery Charger	J1772	J1772	J1772
Total Miles	170	216	602
Estimated Moves	135	50	17
% of Speed <40 mph	99%	92%	37%
% of Speed >50+ mph	0%	0%	48%
Charging Opportunity	Overnight	Overnight	Overnight
Charger Location(s)	Inside facility	On yard	Warehouse
Charging Port on Tractor	Behind driver-side door	Rear of vehicle on driver-side	Rear of vehicle on driver-side
Parking to Charge	Back-in	Back-in	Back-in
Days in Operation	11	10	9