THE RESULTS ARE IN

INTERNATIONAL IT'S UPTIME

LT INTERNATIONAL | A26

INTERNATIONAL® LT™ SERIES
FUEL EFFICIENCY TEST

THE NUMBERS DON'T LIE: INTERNATIONAL® LT™ SERIES IS MPG LEADER

The Situation

The recently-launched International A26 engine was born from a new way of thinking. International engineers were given free rein to create the industry's best 12.4L (12-13L) engine, and that's exactly what they did. As with any new product launch, customers want to see proof that the numbers add up before making a decision. Today, we're excited to announce that the proof is in.

International Truck contracted the PIT Group to conduct an unbiased, third-party fuel economy test between the LT Series and its main competitors. PIT Group, a division of FPInnovations, is a leading research organization with extensive knowledge of the trucking industry, strong engineering capacity, and the ability to provide indisputable test results.

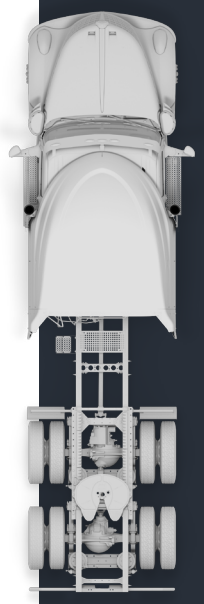
The testing compared the 2018 International LT 625 Class 8 tractor equipped with the 12.4L A26 engine, 2018 Freightliner Cascadia CA126SLP with a DD13, 2018 Kenworth T680 with a PACCAR MX-13 and 2018 Volvo VNL670 equipped with a Volvo D13.

The results were remarkable and will reshape the way the industry thinks about 12-13L engines.

A History of Proof

International has a long history of using third-party validation. We recognize the value our customers place on making decisions that are informed, and results from third-party testing help them do just that.

To date, International Truck is the only Class-8 truck manufacturer to publish company-initiated third-party testing results. Here are a few examples that demonstrate fuel economy leadership.



2006

In conjunction with launch of the International® ProStar®, we took the vehicle into a full-scale wind tunnel for comparison testing. The result: best-in-class drag co-efficient up to 11% better than other long haul tractors

2007

Conducted SAE Type III testing to measure fuel economy. The result: best-in-class with a 0.5% advantage vs. Freightliner Cascadia

2008

Tested LoneStar®, ProStar and competitors truck in a full-scale wind tunnel, resulting in ProStar as #1 and LoneStar as #2 in aerodynamic efficiency

Conducted TMC Type IV testing to measure fuel economy. The result: a 7% advantage vs Freightliner Cascadia

2010

With changes to emmissions regulations and complying technolgies, we engaged in TMC Type IV testing to measure fluid economy, resulting in the ProStar having a .8% - 2% edge over Kenworth T660, Freightliner Cacadia and Volvlo VNL 780.

2012

ProStar utilized as benchmark for developing GHG standards

Additional testing of latest class 8 models and engine calibrations through TMC Type IV testing to measure fluid economy. The result: ProStar again best-in-class by 1.1% - 4.6%

2013

Internal tests show ProStar with ISX15 remains industry leader

2017

Independent testing by the PIT Group compared 2018 Class 8 models using TMC Type III and IV testing procedures and determined that the International LT Series was the most efficient with respect to fuel economy.

TEST SITE

The fuel consumption measurement tests were conducted from September 27 to October 20, 2017, in Quebec (Canada), on the test route Mirabel - Gatineau – Maniwaki (mid-point) – Grand-Remours - Mont-Laurier - Mont- Tremblant – Mirabel (Figure 1).

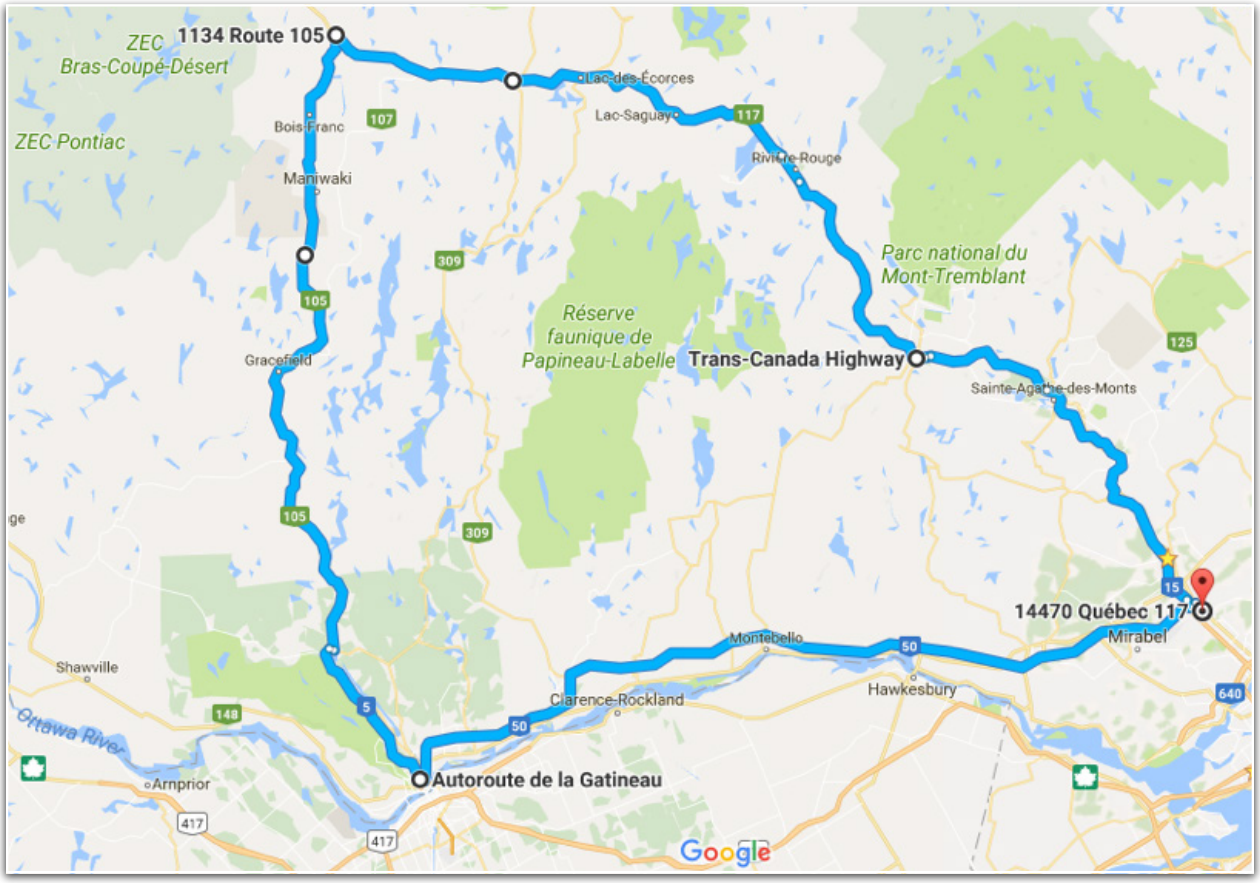


Figure 1. Test route

The test route had a length of 341 miles with an average total duration of 7h 20 min. It was divided into two segments, the midpoint situated 173 miles from the start. The maximum altitude was 1,409 ft., with a maximum elevation difference of 1254 ft. Figure 2 presents the road profile. The test began and ended at the Centre de Formation de Transport Routier de St-Jérome (CFTR), a truck driver training facility located in Mirabel.

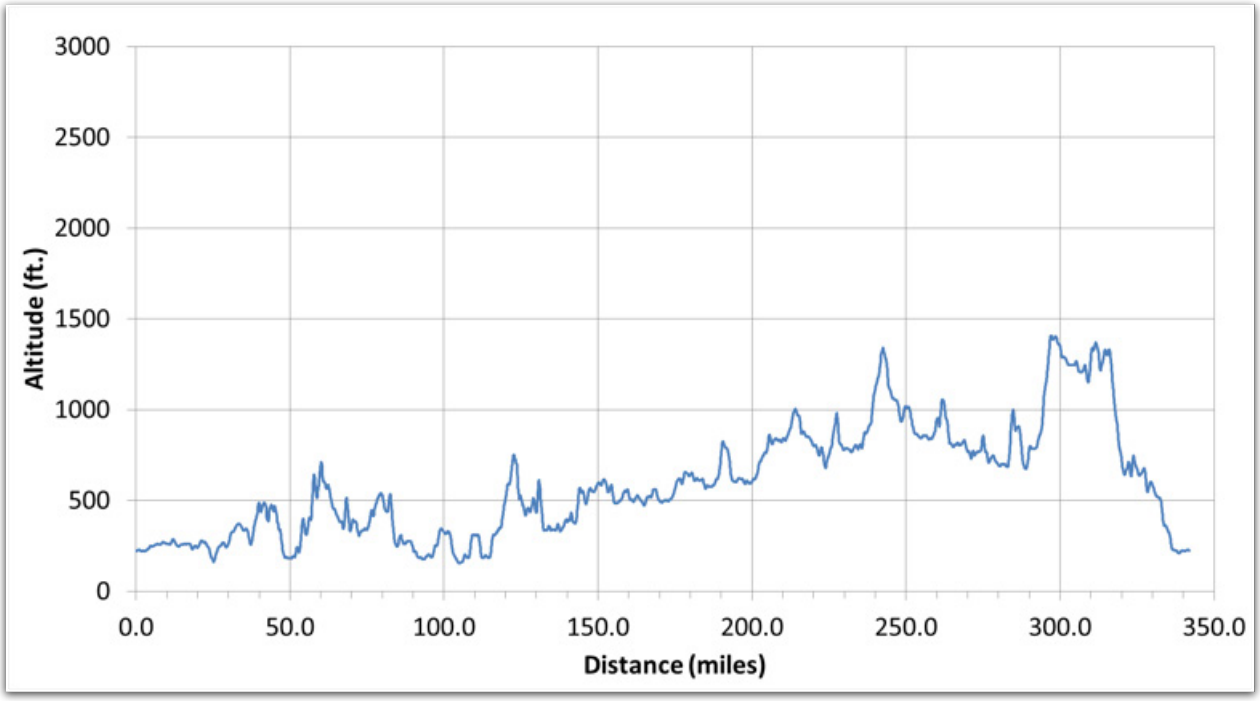


Figure 2. Road profile

Speed limits are presented in Table 1. Highway exits and access ramps might have varying speed limits for a short distance, and multiple roundabouts on Trans-Canada Hwy have varying speed limits prior to the intersection.

Table 1. Test route speed limits

Segment	Approximative distance (miles)	Speed limit (km/h)	Speed limit (mph)
From CFTR to Highway 50 West	2	50	31
Highway 50 West	96	100	62.5
From Highway 50 West to Highway 5	7	50	31
Highway 5 and Highway 105	95	100	62.5
Highway 117 (Trans-Canada Hwy) and Highway 15 South	140	100	62.5
Highway 15 South to CFTR	1	50	31

TEST VEHICLES

Vehicle configurations and benchmark data are presented in Table 2.

Table 2. Vehicle data

Tractors				
Vehicle test ID	C1	C2		
Test Group	Pool A, B, C	Pool A	Pool B	Pool C
Make and model	International LT 625	Volvo VNL64T670	Kenworth T680	Freightliner Cascadia CA126SLP
Build (model) year	2017 (2018)	2017 (2018)	2017 (2018)	2017 (2018)
Odometer reading	5592 mi	59827 mi	32406 mi	5025 mi
Engine make and model	International A26	Volvo D13	Paccar MX-13	DD13
Emissions	EPA 2017			
Rated power	400 HP / 1700 rpm	455 HP / 2100 rpm	455 HP / 1600 rpm	400 HP / 1625 rpm
Peak torque	1550-1750 lb.-ft. / 975 rpm	1550-1850 lb.-ft. / 900 rpm	1650 lb.-ft. / 900 rpm	1750 lb.-ft. / 975 rpm
Governed speed	1800 rpm	2100 rpm	2000 rpm	1900 rpm
Transmission	Automated			
	FAOM-15810S-EN3 10 sp-Fully Automated Manual, Overdrive	VOLVO I-SHIFT ATO2612F, 12 sp	FLR ADV Automated FAO-16810S-EP3 10 sp	DT12-1750-DH1 Heavy Duty 12 sp Direct Drive Automated Manual
Differential ratio	2.47	2.79	2.64	2.28
Tires	Continental 295/75 R22.5 Eco Plus HS3; Hybrid HD3			
Tire pressure	100 psi			
Test weight	18938 lb.	20260 lb.	19533 lb.	20944 lb.
Tractor-trailer gap	48 in.	48 in.	47 in.	48 in.
Aerodynamic gap	27 in.	27 in.	27 in.	24 in.

Trailers		
Vehicle test ID	T1	T2
Test Group	Pool A, B, C	
Make and model	Utility VS2DX	
No. of axles	2	
Build (model) year	2016 (2017)	
Type	53-foot Cube Van	
Tires	Michelin 275/80 R22.5	
Tire pressure	100 psi	
King Pin Setting	36 in.	
Bogey position	40 ft., California	
Test weight	46099 lb.	46165 lb.

Figures 3 to 6 represents photos of the actual test vehicles.

Figure 3. International LT 625

Figure 4. Volvo VNL64T670

Figure 5. Kenworth T680

Figure 6. Freightliner Cascadia CA126SLP

Test Procedure

The test procedure was based on TMC Fuel Economy Test Procedure – Type IV, RP 1109B and TMC Fuel Consumption Test Procedure – Type III, RP 1102A.

- One test consisted of three valid test runs.
- One test run consisted of one complete test route, which was divided in two segments, the midpoint being situated at 173 miles from the start.
- Trailers and drivers paired with tractors in the first test segment were consequently switched to the other tractors during the following test segment.
- Fuel consumption was accurately measured by weighing portable tanks before and after each run. Two portable tanks were used for each vehicle, one for each test segment of the run. The test vehicles were also instrumented with flowmeters and onboard computers for obtaining supplementary data.
- Gravimetric measurement of fuel consumption according to TMC Type III procedure is more precise and accurate than volumetric measurement, and it is not affected by temperature variances.
- The total fuel consumed by the tractors when pulling each semi-trailer and being driven by each driver was calculated. The results of the complete test were expressed as fuel efficiency in miles per US gallon (MPG) and as a fuel savings percentage.

Test Results

The LT Series equipped with an A26 engine proved to be the most fuel-efficient truck and engine combination in the test. International beat out the Freightliner Cascadia by 0.35%, the Kenworth T680 by 2.44% and the Volvo VNL by 9.57%.

Table 3 presents the test results.

Table 3: Test Results

Pool	Make and model	MPG	Fuel savings
A	**International LT 625 with 12.4L A26**	**7.74**	**9.57 %**
	Volvo VNL64T670 with Volvo D13	7.00	-
B	**International LT 625 with 12.4L A26**	**7.85**	**2.44 %**
	Kenworth T680 with PACCAR MX-13	7.66	-
C	**International LT 625 with 12.4L A26**	**7.71**	**0.35%**
	Freightliner Cascadia 126 with DD13	7.69	-

ADVANTAGE: INTERNATIONAL LT SERIES

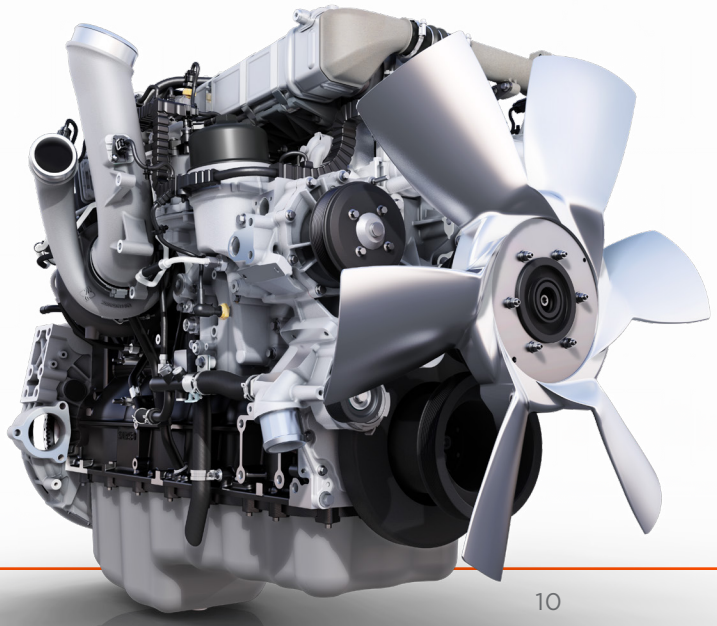
The LT Series fuel-efficiency advantage is due to a variety of factors including reduced weight, aerodynamic improvements and especially the advanced A26 engine. Our commitment to modern engine design, combined with excellent aerodynamic performance, has resulted in a truck that performs at the top of its class.

VEHICLE AND DRIVETRAIN IMPROVEMENTS

- Sophisticated new electronic control systems use programmable parameters to optimize efficiency. Predictive cruise control recognizes when the vehicle should accelerate or decelerate before grades to avoid downshifts and minimize braking.
- A number of measures contribute to a weight reduction of over 400 lbs. vs. the previous model. The suspension and single canister after-treatment system are refined. Plus, mounting hardware for the fuel tank and exhaust system has been streamlined.
- The LT Series uses efficient new lubricants for the drivetrain and axles to reduce parasitic losses from friction.

The A26 Engine was specifically designed to enhance fuel efficiency:

- Maximized fuel injection pressure from the 2500 bar (36,300 psi) HPCR fuel system reduces both fuel consumption and emissions
- New cylinder head coolant passages are 50% less restrictive to reduce parasitic loss to the water pump
- A simplified air management system with the new Variable Geometry Turbocharger delivers optimal fuel economy and performance
- An oil cooler thermostat bypass allows oil to bypass the oil cooler in colder weather to improve fuel economy

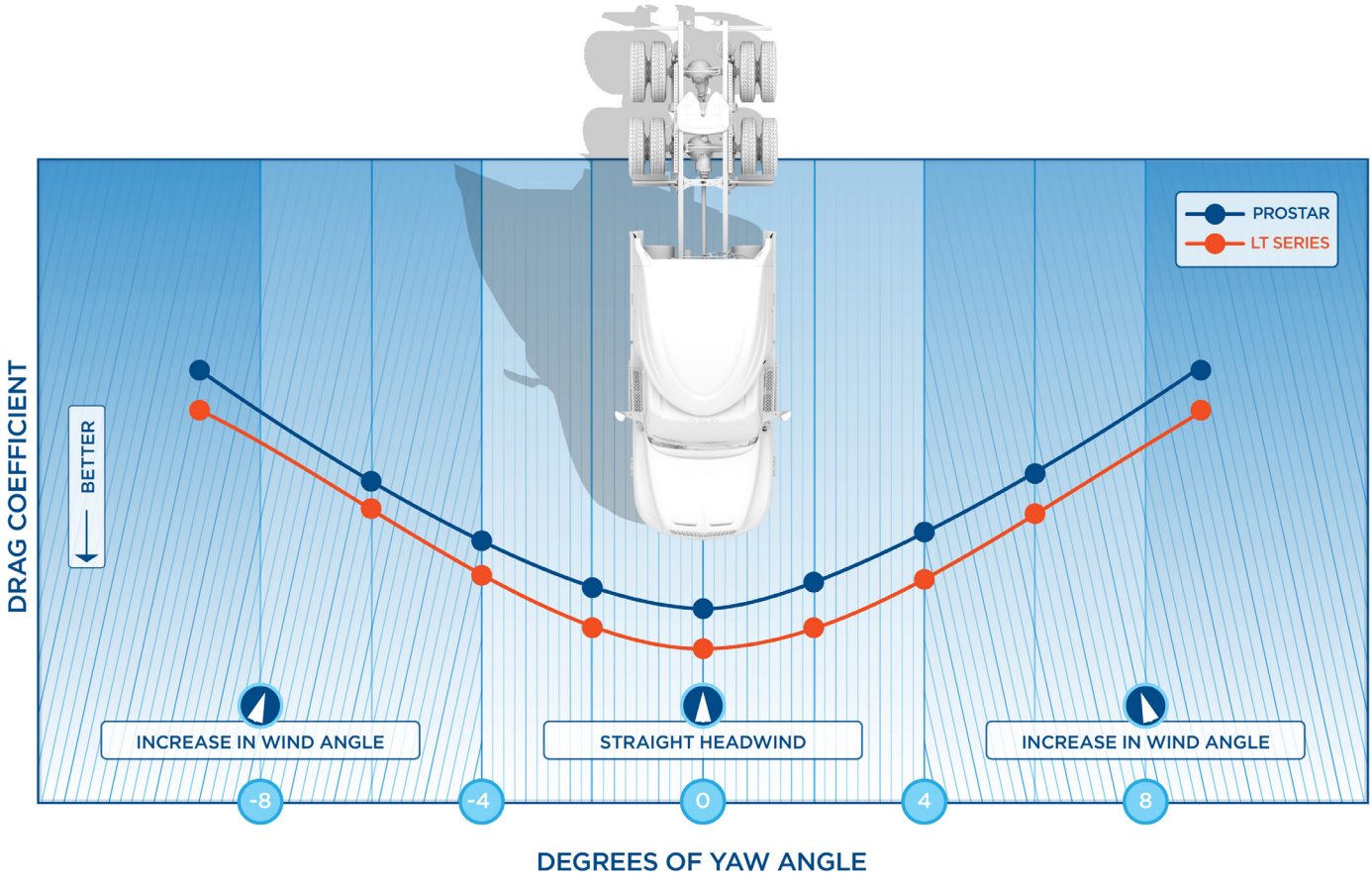


EXTENSIVE AERODYNAMIC IMPROVEMENTS OPTIMIZE AIRFLOW AND REDUCE DRAG BOTH AROUND AND THROUGH THE LT SERIES

- Pedestal mirrors reduce drag and wind noise
- The hood top and shoulder are redesigned to enhance air flow
- New longer 125" BBC hood better directs and smooths out airflow around the cab
- All-new fender shape optimizes airflow
- 22" cab extenders close the gap between cab and trailer to limit air turbulence
- An aero-enhanced 3-piece bumper and front wheel openings are contoured to minimize resistance
- Chassis skirts have been refined to reduce aerodynamic drag
- The new cooling module is sealed to smooth airflow under the hood
- The front air dam design reduces drag by efficiently pushing air down, under and around the truck

THE WIND AVERAGED DRAG ADVANTAGE

In real-world conditions, wind almost always hits the truck at an angle, not head on. The LT Series was designed with this in mind and is a leader in wind averaged drag. The higher the yaw angle, the better the LT Series performs against the competition.



PUTTING EFFICIENCY TO THE TEST

The design of the LT Series was honed using industry-leading testing and retesting processes – including wind tunnel testing of scale models, full-size trucks and coast-down testing. With every 1% of aerodynamic improvement netting a .5% improvement in fuel economy, the LT Series delivers sizable fuel savings that consumers will appreciate mile after mile, year after year.

The design of the LT Series was honed using state-of-the art wind tunnel testing

WHAT DOES IT MEAN TO THE CUSTOMER?

To the customer better fuel economy means one thing: lower operating costs so they can make more money in profit.

As an example, if you had a 100 truck fleet and assumed:

- Each truck drove 120,000 miles per year
- Plug in your current average MPG per truck
  - » 7.69 MPG for Freightliner
  - » 7.71 MPG for LT with A26
- Diesel price $2.50/gallon

If each fleet drove a total of 12,000,000 miles per year, the results would be:

- The Freightliner fleet would buy 1,560,468 gallons of diesel per year
- The International fleet would buy only 1,556,420 gallons of diesel per year or 4,048 gallons less

Conclusion:

- The Freightliner fleet would pay $10,120 more in fuel costs per year than the International fleet