

CASCADIA<sup>®</sup>  
EVOLUTION



**FREIGHTLINER**<sup>®</sup>

*Run Smart™*



# TAKING SUCCESS TO THE NEXT LEVEL.

When Freightliner Trucks introduced the Cascadia® model, it set a new standard of excellence for fleets throughout North America. Today it is one of the most efficient trucks on the road with a solid track record of performance and reliability – which is why the Cascadia was a perfect platform to build upon.

Freightliner Trucks engineers spent years developing our latest flagship model, the Cascadia Evolution. It establishes new benchmarks of fuel economy, innovative design, ease of maintenance and state-of-the-art technology. Our objective was to deliver a lower Real Cost of Ownership<sup>SM</sup> to our customers. And we exceeded even our own expectations. We invite you to explore the Cascadia Evolution.



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LEFT: CASCADIA EVOLUTION 72" RAISED ROOF

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RIGHT: CASCADIA EVOLUTION 113" BBC DAY CAB



CASCADIA EVOLUTION 72" MID-ROOF XT

# OUT OF THE WIND TUNNEL AND ONTO THE ROAD.

Freightliner Trucks has been at the forefront of aerodynamic technology for years. Our 2007 and 2010 Cascadia models introduced a variety of design elements that greatly enhanced fuel economy. We spent thousands of hours testing airflow and wind resistance in Daimler Trucks North America's (DTNA) proprietary full-scale wind tunnel, as well as hundreds of thousands of miles on actual roads in real-world conditions. As a result of our commitment to continuous improvement, the Cascadia Evolution is equipped with even more groundbreaking aerodynamic enhancements. We considered every detail that could improve the fuel efficiency of the vehicle.

- › **HOOD-TO-BUMPER FILL** seals hood-to-bumper gap, preventing high-velocity air from entering the engine compartment.
- › **BUMPER CLOSURE** works as part of a system with the hood-to-bumper fill. It also reduces the amount of high-velocity air flowing under the hood. Both diminish drag on engine components.
- › **BUMPER AIR DAM** reduces drag on the underbody components by redirecting high-velocity airflow underneath the vehicle.
- › **WINDSHIELD SEAL IMPROVEMENTS** streamline airflow around the windshield and the A-pillars.
- › **ELLIPTICAL-SHAPED MIRRORS** on both the driver and passenger sides act like blades, slicing the wind to minimize drag.
- › **REAR WHEEL COVERS** reduce air turbulence caused by the cavities in the rear tractor wheels. This results in smoother airflow and less drag around the wheels.
- › **INTEGRATED ANTENNAS** replace previous vertical, cab-mounted antennas, reducing aerodynamic drag on the sidewalls.
- › **20-INCH SIDE EXTENDERS** are longer than previous panels and direct airflow around the trailer more efficiently, which lessens high-pressure areas. It also reduces the tractor-to-trailer gap, improving crosswind performance.
- › **CHASSIS SIDE FAIRING ENHANCEMENTS** work in concert with the longer side extenders to limit inefficient airflow into the tractor-to-trailer gap. Airflow is streamlined along the vehicle sides by closing the gaps between cab and chassis. This greatly improves aerodynamic performance in side-wind conditions. The new chassis fairing system also directs airflow around the drive wheels, shielding the trailer more effectively.
- › **SIDE EXTENDER FILLER PIECE** prevents high-velocity air from entering the trailer gap. Instead, it directs air around the trailer.

Freightliner Trucks has also implemented a number of cooling enhancements to increase aerodynamic performance even more. The Cascadia Evolution is equipped with a 1,400-square-inch radiator, which is smaller and lighter than previous models, thanks to the Detroit™ DD15® engine's lower heat rejection. The radiator and fan are securely mounted to the engine, which reduces vibration and enhances reliability. The improved fan shroud packaging allows better airflow and reduces stress to the radiator, because it is no longer subject to frame twist and vibration. The radiator even has more ground clearance than before, which lessens the chance of damage from road debris.



# EFFICIENT POWER TO EMPOWER SUCCESS.



CASCADIA EVOLUTION 72" RAISED ROOF

The Cascadia Evolution 125" BBC Day Cab, Mid-Roof XT and Raised Roof configurations are powered by a newly-designed DD15 engine.\* It features a proprietary asymmetric turbocharger for improved performance, friction-optimized pistons designed for better fuel economy, and a next-generation Amplified Common Rail Fuel System (ACRS™) for improved combustion control. Even the Fuel Filter Module was redesigned to have one less filter, and service change intervals are extended up to 100,000 miles.

The Detroit™ DT12™ Automated Manual Transmission (AMT) is available as an option on the Cascadia Evolution. The DT12 combines a traditional manual gearbox with a computer-controlled shift actuator and clutch. The best shift patterns are selected electronically to provide optimal power and fuel efficiency. The direct-drive and overdrive design improves durability, minimizing wear on drivetrain components. And it's easier to operate, making it ideal for all levels of drivers.

Detroit offers 6x2 and 6x4 axles with ratios that improve fuel economy and put the power to the pavement. Our 6x2 axle configuration incorporates a non-driven tag axle on the tandem, reducing total weight (by 380 lbs.) and the number of moving parts.

While available separately, together these components maximize efficiency and performance. That's because Detroit has designed, engineered and manufactured the DD15 engine, DT12 transmission and tandem axles to work together as one *integrated* Detroit™ Powertrain. No other powertrain does more to lower your Real Cost of Ownership.

\*The Cascadia Evolution 113" BBC Day Cab runs with the industry-leading Detroit™ DD13® engine.

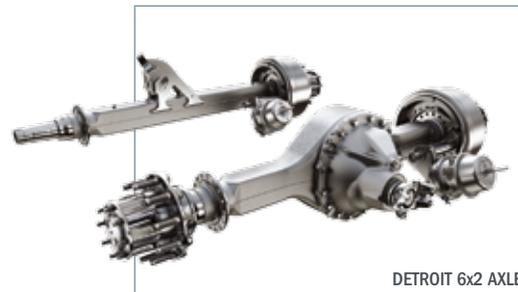
- **OPTIONAL DIRECT DRIVE.** The AMT is a 12-speed, lightweight transmission with shorter gear steps. It has one main shaft and one countershaft. In top gear the transmission can operate in direct drive, sending engine input directly to the main shaft, eliminating parasitic gear mesh losses of power and fuel efficiency.
- **INTELLIGENT POWERTRAIN MANAGEMENT.** IPM integrates terrain maps into the engine and transmission functions so the truck works with its surroundings, not against them.
- **ACTIVE DRIVELINE PROTECTION.** The Transmission Control Module (TCM) calculates the torque wind-up in the driveline and regulates with engine torque control for enhanced driving comfort and less driveline wear. The TCM even limits torque in severe surface conditions, protecting the driveline.
- **POWERTRAIN COMMUNICATION.** The powertrain communicates in real time with the proprietary powertrain network and motor control module to optimize efficiency through the entire powertrain.
- **SKIP SHIFT.** To increase shifting efficiency, the electronic powertrain controls automatically skip unnecessary gears. This helps increase acceleration to achieve cruising speed quickly and smoothly. This also allows the driver to begin the acceleration in the appropriate start gear, based on load and grade.
- **ECOAST.** To save even more fuel, the transmission is able to automatically disengage when the vehicle is coasting. Sophisticated transmission electronics ensure safe operation in all driving conditions.
- **WEIGHT ADVANTAGE.** The aluminum housing and single countershaft help save weight, allowing for even more payload efficiency.



CASCADIA EVOLUTION MODEL	125 BBC	113 BBC
<b>ENGINE SPECIFICATIONS</b>	<b>DD15</b>	<b>DD13 (Day Cab only)</b>
Configuration	Inline 6 cylinder	Inline 6 cylinder
Displacement	906 cu. in. (14.8 L)	781 cu. in. (12.8 L)
Compression Ratio	18.4:1	17.3:1
Bore	5.47 in. (139 mm)	5.2 in. (132 mm)
Stroke	6.42 in. (163 mm)	6.15 in. (156 mm)
Weight (Dry)	2763 lbs. (1254 kg)	2540 lbs. (1152 kg)
Electronics	DDEC® 10	DDEC® 10
Oil Capacity	51.8 qts. (49 L)	42 qts. (39.7 L)
Horsepower Range	400	350-470
Torque Range	1750 lb-ft	1250-1650 lb-ft



<b>TRANSMISSION SPECIFICATIONS</b>	<b>DT12</b>
Speeds	12
Gear Ratios / Overall Ratio	Direct Drive: 14.93:1 / 14.93 Overdrive: 11.67:0.78 / 14.96
GCW Limits	Direct Drive: 80,000 lbs. Overdrive: 97,000 lbs. and up*
Dry Weight	646 lbs. (293 kg)
Oil Capacity	15.4 qts. (14.6 L)



Model	Model 4, 6x4,	Model 6, 6x2
	Tandem Axle	Single Drive w/ Tag Axle
Weight Rating	40,000 lbs. (18,141 kg)	40,000 lbs. (18,141 kg)
Housing Wall Thickness	0.43 in. (11 mm)	Drive Axle: 0.37 in. (9.5 mm) Tag Axle: 0.43 in. (11 mm)
Max. Creep Rating	55,200 lbs. (25,038 kg)	48,000 lbs. (21,780 kg)
Ring Gear Size	15.35 in. (390 mm)	17.32 in. (440 mm)
Oil Capacity	Forward Axle: 16 qts. (15 L) Rear Axle: 12 qts. (11 L)	12 qts. (11 L)
Input Torque	1750 lb-ft	1750 lb-ft
Drive Ratio	2.41	2.41

# MAXIMIZING EFFICIENCY IS WITHIN YOUR REACH.

Freightliner engineers have pursued greater efficiency with every aspect of the Cascadia Evolution – from fuel economy and driver productivity to customization and maintenance. We've developed a variety of features that enable dealer and fleet technicians to keep the Cascadia Evolution on the road and profits rolling in.

**Intelligent Diagnostics.** The state-of-the-art, dual-functioning electrical system on the Freightliner Cascadia Evolution blends advanced diagnostic tools with the best of traditional systems. Just like the original Cascadia system, this evolutionary design allows any technician to access diagnostics, such as engine and transmission Electronic Control Units (ECU), with ease. This can significantly increase uptime and decrease repair costs.

**Flexible Electrical System.** Want the brake lights to come on whenever the engine brake is in use? In the past, that meant hardwiring. But with the Cascadia Evolution, electronic customization is much easier. The flexible electrical system allows technicians to inexpensively program a variety of options as needed.

**Ease of Maintenance.** The hood of the Cascadia Evolution opens wide and effortlessly for quick engine access. The standard roped-in windshield can be quickly replaced. The three-piece design of the bumper and the hood allows for easy repairs. Chassis side fairings also have smaller sacrificial parts and quick-release hinges, as well as molded-in color. These smart maintenance features help lower repair costs and increase uptime.





CASCADIA EVOLUTION 125" BBC DAY CAB

# IT TAKES MORE THAN TRUCKS TO DRIVE A BUSINESS.



The Freightliner Cascadia Evolution represents a major achievement in engineering. Yet the guiding principles of its development have always been focused on successful business. At Freightliner Trucks, we know it's a numbers game. That's why we're committed to helping customers operate more efficiently and profitably. Our goal is lowering your Real Cost of Ownership.

Detroit has designed, engineered and manufactured the DD15 engine, DT12 transmission and a full line of Detroit axles to work together as one *integrated* Detroit Powertrain in the Cascadia Evolution. This level of integration provides maximum performance, fuel economy and durability, lowering your Real Cost of Ownership.

Updated DDEC® engine electronics deliver improved engine control while meeting current OBD requirements. The engine and transmission communicate via the common powertrain controller, reducing drivetrain stress and optimizing shift points. Axle ratios are as fast as 2.41 when paired with the DT12 transmission. And the Detroit™ Virtual Technician™ onboard diagnostic system provides real-time diagnostics of fault codes, analyzed by the Detroit Customer Support Center. This kind of real-time information helps keep drivers and trucks safe, while improving uptime.

All of these innovations and integrations allow drivers and fleets to run smarter than ever before. The Cascadia Evolution truly represents the future of trucking.

## STANDARD FEATURES

- > Newly-designed Detroit™ DD13® and DD15® engines with proprietary asymmetric turbocharger
- > Advanced aerodynamic enhancements:
  - Bumper air dam*                      *Side extender filler piece*
  - Hood-to-bumper fill*                *Integrated antennas*
  - Bumper closure*                    *Chassis side fairing enhancements*
  - Cooling enhancements*
  - Windshield seal improvements*    *20-inch side extenders*
  - Elliptical-shaped mirrors*         *Rear wheel covers*
- > Large, comfortable seats
- > Powerful HVAC system with six dash-mounted vents, eight blower speeds and 20% greater airflow
- > High-tech thermal and noise insulation
- > Overhead storage console
- > Improved cab insulation
- > Adjustable tilt-telescoping steering column
- > Wraparound dash
- > Low-mounted dash and sloped hood
- > Steering-wheel-mounted controls
- > Large, dual rear window glass in a day cab application
- > Robust pedestal mirror design with power mirror adjustment
- > Up to a 50-degree wheel cut
- > Optimized aerodynamics
- > EPA 2013- and GHG14-compliant SCR technology
- > Long-lasting LED headlights improve visibility
- > Rugged three-piece bumper
- > Detachable rain tray for quick rear engine access
- > Gas strut-assisted hood
- > Roped-in windshield
- > Power Distribution Center fuses and circuit breakers grouped in a single location
- > Detroit™ Virtual Technician™ onboard diagnostic system

## OPTIONAL FEATURES

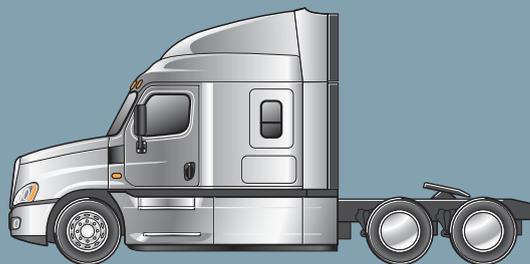
- > **Integrated** Detroit™ Powertrain downspeed package
- > Detroit™ Connect Visibility fleet software monitors trucks and improves performance and efficiency
- > Detroit Connect On-Board Tablet featuring paperless HOS tracking, two-way messaging, advanced navigation and pre- / post-trip inspections
- > Detroit™ DT12™ 12-speed Automated Manual Transmission
- > Air disc brakes for steer and drive axles
- > Wide-base single wheel and tire options
- > Steering-column-mounted controls for automated manual transmissions
- > Several dash gauge packages with optional Driver Message Center
- > Electronic Stability Control
- > Roll Stability Control
- > Qualcomm pre-wire packages
- > PeopleNet pre-wire package
- > Shatterproof rear window glass in a day cab application
- > LifeGuard RollTek® driver and passenger rollover restraint and seat-mounted air bag system
- > Driver's Supplemental Restraint System (SRS) steering wheel airbag
- > Meritor WABCO OnGuard™ collision mitigation system
- > Bendix™ VORAD® side object detection system
- > Lane guidance system
- > VS-400 collision warning and adaptive cruise control system
- > Hendrickson AERO CLAD® stainless steel clad aluminum bumper
- > Meritor WABCO Electronically Controlled Air Suspension (ECAS)
- > ParkSmart® battery powered auxiliary HVAC system
- > Factory-installed TriPac™ Auxiliary Power Unit powered by Thermo King
- > Heated and ventilated front seats
- > Bluetooth®-enabled radio

<b>CLASS</b>	8		
<b>GVW</b>	Up to 60,700 lbs.		
<b>BBC</b>	113" 125"		
<b>CAB / SLEEPER CONFIGURATIONS</b>	Day Cab	48" Mid-Roof XT 60" Mid-Roof XT 72" Mid-Roof XT	60" Raised Roof 72" Raised Roof
<b>LIGHTWEIGHT OPTIONS*</b>	Aluminum frame rails Aluminum wheels Aluminum axle carriers Aluminum fifth wheels Aluminum air tanks	Lightweight brake drums Wide-base single tires Horizontal exhaust Between-rail plastic battery box	<small>*See dealer for complete list of lightweight options</small>

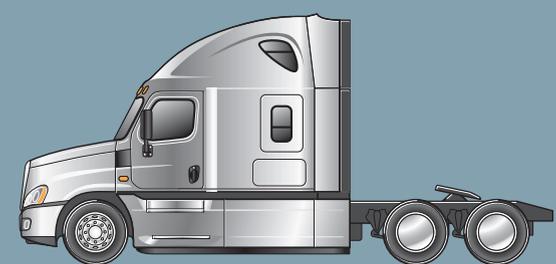
ENGINES	
Detroit™ DD13*	350-470 HP, 1250-1650 lb-ft
Detroit™ DD15*	400 HP, 1750 lb-ft
TRANSMISSIONS	
Manual	Eaton Fuller® 9-, 10-, 13-, 15- and 18-speed
Automated Manual	Detroit™ DT12™ 12-speed
Automatic	Allison® 3000, 4000 and 4500
SUSPENSIONS	
Front	Freightliner taperleaf 12,000-14,600 lbs. Hendrickson AIRTEK® 12,500 lbs.
Rear	Freightliner AirLiner™ 21,000-23,000 lbs. Freightliner AirLiner™ 40,000-46,000 lbs.
AXLES	
Front	Detroit 12,000-14,700 lbs. Meritor 12,000-14,700 lbs. Hendrickson STEERTEK® 12,500 lbs.
Rear	Detroit Tandem 40,000-46,000 lbs. Meritor Single 20,000-23,000 lbs. Meritor Tandem 40,000-46,000 lbs.
Configurations	4x2, 6x2, 6x4



DAY CAB



MID-ROOF XT



RAISED ROOF



*Run Smart*<sup>SM</sup>

Competitive financing available through Daimler Truck Financial. For the Freightliner Trucks dealer nearest you, call 1-800-FTL-HELP [www.freightlinertrucks.com](http://www.freightlinertrucks.com). 10.5M, 12/14, FTL/MC-B-1382. Specifications are subject to change without notice. Freightliner Trucks is registered to ISO 9001:2008 and ISO 14001:2004. Copyright © 2014 Daimler Trucks North America LLC. All rights reserved. Freightliner Trucks is a division of Daimler Trucks North America LLC, a Daimler company.