
CASCADIA®
EVOLUTION
FREIGHTLINER®
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 the lowest total cost of ownership to our customers. And we exceeded even our own expectations. We invite you to explore the Cascadia Evolution.

LEFT: CASCADIA EVOLUTION 72" RAISED ROOF

RIGHT: CASCADIA EVOLUTION 113" BBC DAY CAB

CASCADIA EVOLUTION 72" MID-ROOF XT

OUT OF THE WIND TUNNEL AND ON TO 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 side 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 less heat rejection of the Detroit™ DD15® engine. 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.

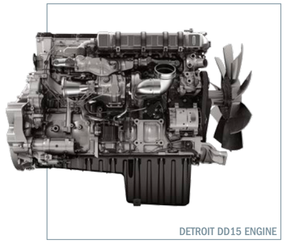
CASCADIA EVOLUTION 72" MID-ROOF XT

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, a friction-optimized piston 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 for 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. In fact, it was developed to interface with both the DD13® and DD15 engines, further enhancing performance and efficiency. 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 or fuel efficiency. The direct drive design improves durability, minimizing wear on drivetrain components. And it's easier to operate, making it ideal for all levels of drivers.

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

DETROIT Transmissions



DETROIT DD15 ENGINE

CASCADIA EVOLUTION MODEL	125 BBC	113 BBC
ENGINE SPECIFICATIONS	DD15	DD13
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 lb. (1254 kg)	2540 lb. (1152 kg)
Electronics	DDEC® 10	DDEC® 10
Oil Capacity	51.8 qt. (49 L)	42 qt. (39.7 L)
Horsepower Range	455-505	350-470
Torque Range	1550-1750 lb-ft	1250-1650 lb-ft

DETROIT DT12 TRANSMISSION

TRANSMISSION SPECIFICATIONS	DT12
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 lb. Overdrive: 97,000 lb. and up*
Dry Weight	646 lb. (293 kg)
Oil Capacity	15.4 qt. (14.6 L)

- **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 operates as a direct drive, sending engine input directly to the main shaft, eliminating parasitic gear mesh losses of power and fuel efficiency.
- **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 operations in all driving conditions.
- **WEIGHT ADVANTAGE.** The aluminum housing and single countershaft help save weight, allowing for even more payload efficiency.

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 (ECUs) with ease. This can significantly reduce downtime and 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 reduce downtime.

CASCADIA EVOLUTION 125" BBC DAY CAB

CASCADIA EVOLUTION 72" RAISED ROOF

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 to provide the lowest total cost of ownership.

The Cascadia Evolution is the result of the collaboration of great engineering and business-minded goals. With the development of the newly-designed Detroit™ DD15® engine, the DT12™ transmission and a full line of Detroit axles, the Cascadia Evolution offers the performance, fuel economy and durability of an integrated powertrain.

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 2.53 when paired with the DT12 transmission. And the Detroit™ Connect Virtual Technician™ on board 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 reducing downtime.

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*
  - *Hood-to-bumper fill*
  - *Bumper closure*
  - *Cooling enhancements*
  - *Windshield seal improvements*
  - *Elliptical-shaped mirrors*
  - *Side extender filler piece*
  - *Integrated antennas*
  - *Chassis side fairing enhancements*
  - *20-inch side extenders*
  - *Rear wheel covers*
- Large, comfortable seats
- Powerful HVAC system with six dash-mounted vents, eight blower speeds and 20 percent 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™ Connect Virtual Technician™ on board diagnostic system

OPTIONAL FEATURES

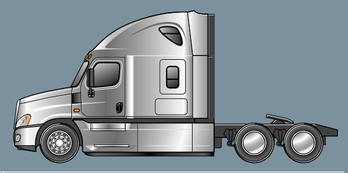
- Detroit™ Connect Visibility fleet software monitors trucks and improves performance and efficiency
- Detroit™ Connect On-Board Tablet featuring paperless HOS tracking, two-way messaging, advanced navigation and pre/post-trip inspections
- Detroit™ DT12™ 12-speed Automated Transmission
- Air disc brakes 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

CLASS	8		
GVW	Up to 60,700 lbs.		
BBC	113" 125"		
CAB/SLEEPER CONFIGURATIONS	Day Cab	48" Mid-Roof XT 60" Mid-Roof XT 72" Mid-Roof XT	60" Raised Roof 72" Raised Roof
LIGHTWEIGHT OPTIONS	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	
	** See dealer for complete list of lightweight options*		

ENGINES	
Detroit™ DD13®	350-470 HP, 1250-1650 lb-ft
Detroit™ DD15® AT	455-560 HP, 1550-1750 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

FREIGHTLINER®

Run Smart℠