



**DETROIT**<sup>™</sup>  
ASSURANCE

**RADAR SYSTEM**

**CAMERA SYSTEM**

## **DETROIT ASSURANCE<sup>™</sup> SUITE OF SAFETY SYSTEMS**



**New Cascadia<sup>®</sup>  
Detroit Assurance 4.0**



**Cascadia<sup>®</sup>  
Detroit Assurance 2.0**

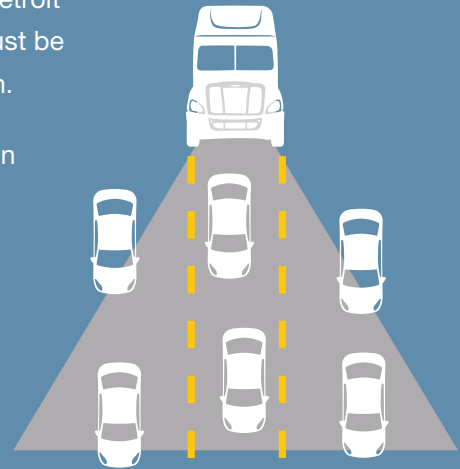
# Detroit Assurance delivers exceptional control, protection, and driver experience.

Through a radar and optional camera system, Detroit Assurance provides optimum on-road safety, as it integrates seamlessly into any of the Freightliner Cascadia models. Detroit Assurance 2.0 will continue to be offered in the Cascadia, whereas the new Cascadia will offer Detroit Assurance 4.0. As a requirement of Detroit Assurance, all models must be equipped with a Detroit™ engine and DT12™ or manual transmission.

With the bumper-mounted radar and the optional camera mounted on the windshield, Detroit Assurance communicates information to the truck's brakes, engine, and transmission in real time.

The radar system, working with the Video Radar Decision Unit (VRDU or VRDU2), tracks up to 40 objects at once and identifies the top six by level of threat while refreshing 200 times per second.

Detroit Assurance 4.0 in the new Freightliner Cascadia offers additional features that build upon existing technology to create even more peace of mind for drivers.



*Detroit Assurance radar reports the distance, velocity, width, lateral offset, type, and confidence level of six vehicles in the truck's path.*



## RADAR SYSTEM (standard)



# Active Brake Assist

Active Brake Assist 2.0 (ABA 2.0) or Active Brake Assist 4.0 (ABA 4.0) is always on, detecting the distances to objects, calculating speed, and determining if a warning or action is necessary. Based on the position and speed of your truck and other vehicles, all Active Brake Assist versions warn the driver and have the potential to engage full or partial braking to mitigate collisions that might otherwise be unavoidable.

## How Active Brake Assist works



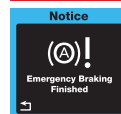
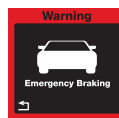
ABA 4.0 Dash Display

### 1. VISUAL/AUDIO WARNING

The driver receives a simultaneous visual dash alert with a warning tone.

### 2. HAPTIC WARNING

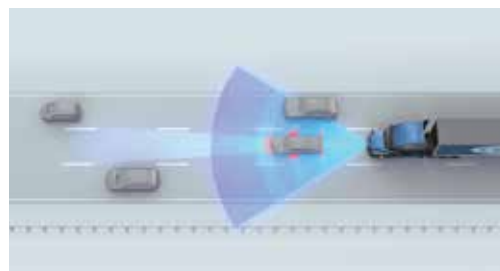
If the driver does not respond to the audio/visual warning, the system will trigger a visual dash alert with solid warning tone and initiate brake pulsation simultaneously.



ABA 4.0 Dash Displays

### 3. ACTIVE BRAKING

If there is still no driver input, the system will trigger a visual dash alert, solid warning tone and partial or full braking using the transmission, engine brake, and service brake.



## Detroit Assurance 4.0: Additional features in new Cascadia

**Full braking on stationary objects (ABA 4.0)** With ABA 4.0, the radar now tracks constantly stationary objects and has the capacity to engage full braking on these objects, such as a vehicle parked and unloading or stopped traffic in the truck's path that has not moved as the truck approaches.

**Moving pedestrian warning (ABA 4.0)** With Moving Pedestrian Warning, the radar system on the new Cascadia can detect most pedestrians in motion and, as long as they stay in motion, can act to help mitigate a collision at vehicle speeds below 25 MPH. Moving Pedestrian Warning can detect most pedestrians that are moving within the truck's path. If the Moving Pedestrian Warning system detects a pedestrian in motion within the radar system's parameters for potential danger, the truck will engage in partial braking. Moving Pedestrian Warning is not functional at highway speeds and may not detect pedestrians in every possible situation, nor is it a substitute for cautious driving.

## RADAR SYSTEM (standard)



# Adaptive Cruise Control

Adaptive Cruise Control (ACC) automatically adjusts your truck's cruising speed to maintain a safe following distance – 3.5 seconds on today's Cascadia models and 3.6 seconds on the new Cascadia – from other vehicles in its path, allowing

the truck to remain in cruise control longer. With the optional headway switch on today's Cascadia models, following distance can be adjusted between 2.3 and 3.5 seconds. On the new Cascadia, the optional headway control is part of the new interactive dash display and distance can now be adjusted between 2.4 and 3.6 seconds.



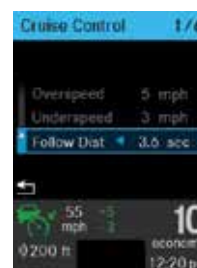
## Cascadia



*Optional headway switch on the instrument panel to adjust following time.*

FOLLOWING DISTANCE SETTINGS
3.5 SECONDS
3.2 SECONDS
2.9 SECONDS
2.6 SECONDS
2.3 SECONDS

## New Cascadia

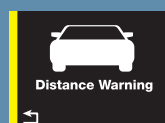


FOLLOWING DISTANCE SETTINGS
3.6 SECONDS
3.2 SECONDS
2.8 SECONDS
2.6 SECONDS
2.4 SECONDS

ACC progressively reacts to detected risks:

- Decelerates truck to a preset distance using torque reduction, engine braking, and service braking when sensing a slower vehicle ahead
- Maintains reduced cruising speed
- Reaccelerates to set cruising speed when slower vehicle clears

## Detroit Assurance 4.0: Additional features in new Cascadia



Detroit Assurance 4.0 Dash Display

**Tailgate warning** Independent of the ABA and ACC features, Tailgate Warning will activate according to a truck's speed and the following distance. If a driver remains at the following speeds for 10 seconds or longer, a visual dash alert will trigger:

- At speeds greater than 45 miles per hour, following within 2.7 or fewer seconds
- At speeds between 25 and 35 miles per hour, following within 1.8 seconds or less
- At speeds between 35 and 45 miles per hour, following at a ramp-up distance between 1.8 and 2.7 seconds

Once activated, Tailgate Warning will deactivate only at speeds of less than 20 miles per hour. By remaining in any Tailgate Warning mode for 10 seconds or longer, the event will become reportable via J1939 to the selected telematics system.

## CAMERA SYSTEM (optional)

### OPTIONAL FEATURE:

# Lane Departure Warning

The optional camera system is only available as an addition to the radar system.

Lane Departure Warning (LDW) tracks the truck's position and sounds a warning if the truck veers out of its lane. A windshield-mounted, forward-facing camera detects the reflective paint and raised reflectors in lane markers. If the truck crosses those markers without using a turn signal, the radio is muted and an audible warning is sent through the speaker on the side of the truck crossing the lane marker.



### Cascadia

*Lane Departure switch is available on the instrument panel to disable LDW for 15 minutes.*

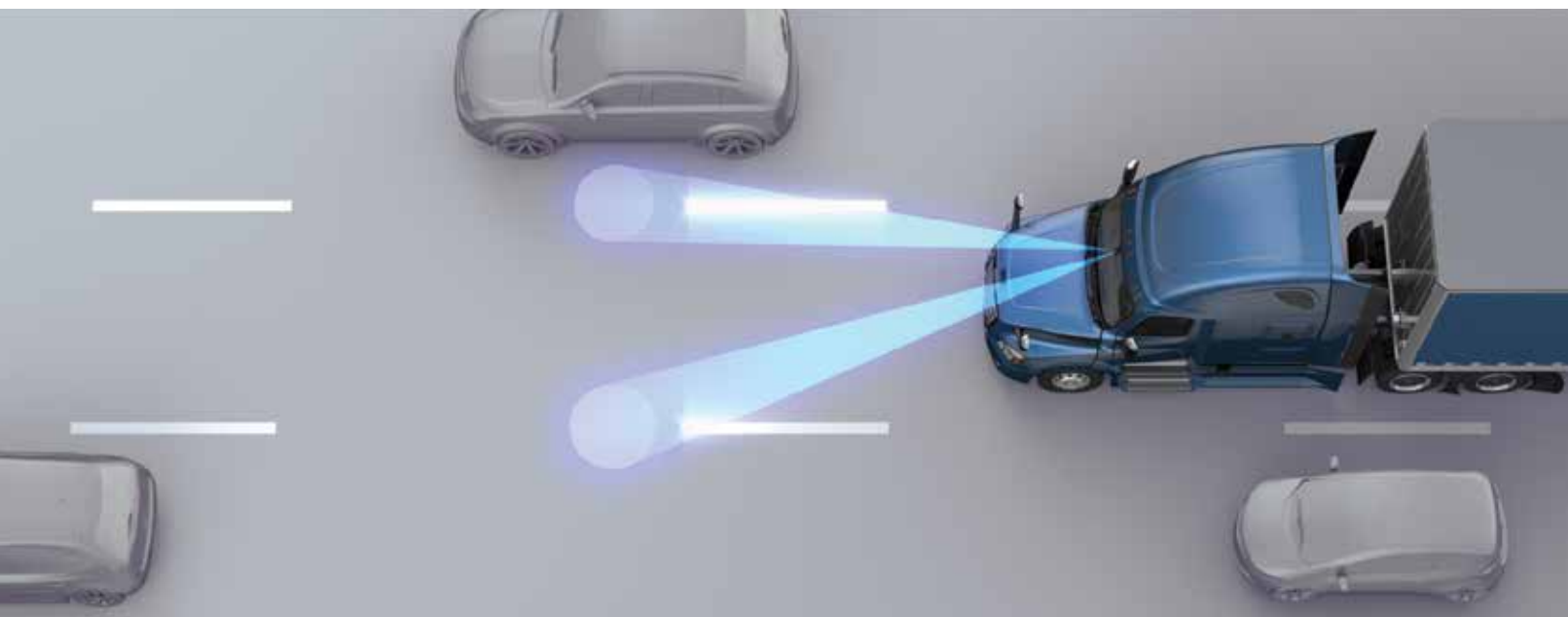


### New Cascadia

*Lane Departure switch is available on the instrument panel to disable LDW.*

## Video Capture with Bendix SafetyDirect

The camera on the windshield continuously records video of the truck's activity on the road to capture any severe collision mitigation events. In such an event, a total of 20-30 seconds of recording – along with other driver performance data – is transmitted to the SafetyDirect web portal for fleet operators and safety personnel to download and analyze.



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