

MirrorCam System



MirrorCam System

What is it?

With the fifth generation Cascadia, Freightliner introduces the new factory installed MirrorCam System (MCS), utilizing Stoneridge technology. Equipped with 3 external cameras and 3 in-cab digital monitors the MirrorCam system provides increased visibility, safety and driver comfort. The external cameras include a driver side trailer view, passenger side down view and passenger side trailer view. The in-cab digital monitors display these 3 views on the driver side a-pillar monitor, center windshield mounted down view monitor, and passenger side a-pillar monitor. The system's arms and camera housing are a proprietary aerodynamic design with water management features to channel away moisture and debris from cameras, while a hydrophobic coating on the lenses works to repel water and other contaminants to enhance visibility. When drivers are in inclement weather conditions, the trailer and rear side views stay clearly in sight.

Integrated features like night vision, auto-panning and trailer distance lines help drivers with trailer location and maneuvering, keeping the truck, trailer and surroundings always in clear sight, even in low light and at night.

- **Night Vision:**
 - When using MirrorCam at night or in other low light settings, the infrared (IR) emitters located within the camera housing produce a flood of IR light to “light up the night”, allowing clear visibility on the in-cab screen displays down the sides of the truck and trailer. Night vision can be extremely useful in low light maneuvering such as backing into spaces or docks at night, or for inspecting surrounds areas from within the cab.
- **Auto-panning:**
 - The system monitors vehicle speed with the wheel speed sensors and steering wheel angle and pans the displayed field of view to keep the full length of the trailer in sight throughout the turn. The MirrorCam System uses the calculated kink-angle (angle between truck and trailer) to keep field of view adjusted to have the trailer always in sight. The limit on this functionality is approximately 65 degrees where the back of the trailer is outside of the cameras field of view, since the camera does not physically move. Speed is also a factor, as going above 31 mph, auto-panning is deactivated. MirrorCam only pans side to side and not up and down.
- **Trailer distance lines**
 - Trailer lines are set when the truck is turned out. The end of trailer of trailer line defaults automatically to the last distance set. You can adjust the distance by utilizing the mirror controls in the driver door panel. After end of trailer line is set (in red), you will see 2 additional trailer lines. A yellow line to indicated ~40 feet behind the trailer and a green line to indicate ~80 feet behind the trailer.

Why is it important?

Visibility is an important factor to safely operating a truck. MirrorCam is mounted up high, above the doors, to provide a panoramic “bird’s eye view,” which results in reduced blind spots, and better overall visibility. The high mounting position has the added benefit of keeping the arms and cameras protected from road spray, debris, and common low strikes to the mirrors. Should contact happen, the arms have a built-in breakaway feature that allows them to fold away (forward or backwards) from a strike to minimize damage.

The in-cab displays are also integrated with Detroit Assurance Side Guard Assist 2 visual alerts. A yellow or red triangle will appear in the a-pillar monitors to alert the driver of blind spot detection of vehicles, pedestrians, bicyclists, and objects on both the driver and passenger sides of the truck and trailer.

Interior screen placement on the A-pillars and windshield helps reduce driver fatigue due to less eye and head movement keeping safety front of mind. MirrorCam is available fully factory installed on fifth generation Cascadia vs. previously only being prewired and completed at PDI. Factory install saves costs, time, and allows MCS to be fully integrated into the driver door controls and instrument cluster for a clean factory finish. No more aftermarket drillings and controls are necessary.

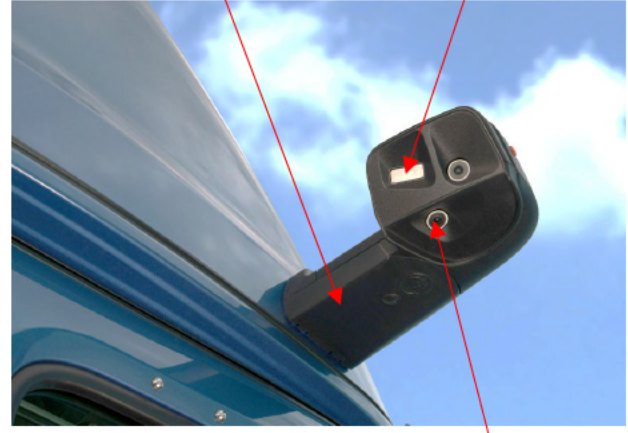
Turn signal marker

Infrared Emitter



“Breakaway arms” (fold forwards or backwards with force), feature mitigates permanent damage – and need to replace them – from strikes. (must be manually pushed back into place)

Infrared Emitter



Down view camera lens



Specifications are subject to change without notice. Copyright 2024, Daimler Truck North America. All rights reserved.

MirrorCam System

Three integrated in-cab displays provide real-time HD vision around the truck and trailer to increase side and rear visibility and safety. This helps reduce driver fatigue due to less eye and head movement keeping safety front of mind. The in-cab monitors are strategically placed for optimal agronomical positioning. Aerodynamic camera arm and housing are mounted high to provide a wide field of view and help protect from road spray, debris, and damage.

Driver

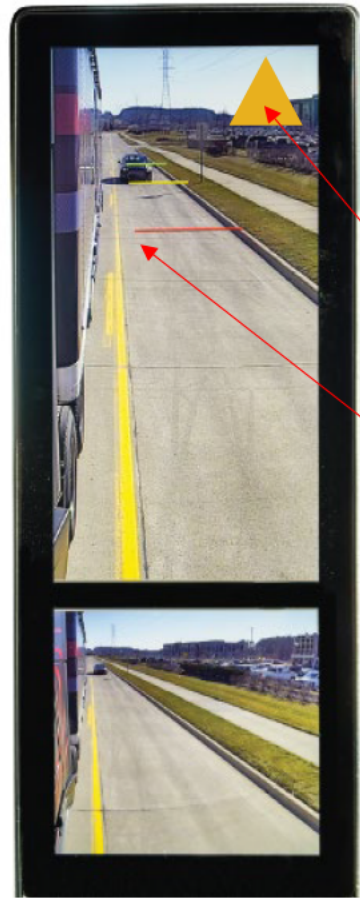


Green line - ~80 ft from end of trailer
 Yellow line - ~40 ft from end of trailer
 Red line - end of trailer

12.3" Driver Display
 (1920 x 720 pixels)



Passenger



Integrated Detroit Assurance Side Guard Assist alerts

Trailer & Distance Lines

15" Passenger Display
 (1920 x 720 pixels)

Passenger Down



Look Down Display
 (1280 x 760 pixels)

Key Features:

- Three integrated in-cab displays provide real-time HD vision around the truck and trailer
 - 12.3" driver display (1920x720p)
 - 15" passenger display (1920x720p)
 - 7" passenger look down blind spot display (1280x768p)
- Aerodynamic camera arms and housing are designed to channel away rain, and a hydrophobic lens coating provides additional clarity and protection from weather and debris.
- Cameras are mounted high, above the a-pillar, for a greater field of view and protect from road spray and damage
- Low-light and Infrared (IR) "night vision" automatically adjusts in low-light settings to improve visibility
- Trailer and distance lines help to locate the trailer, traffic and objects beyond the trailer
 - Red line = end of trailer
 - Yellow line = ~40 ft from end of trailer
 - Green line = ~80 ft from end of trailer
- Auto Panning automatically adjusts the field of view to always keep the rear of the trailer in view
- Integrates Detroit Side Guard Assist 2 (SGA2) alerts into A-pillar displays. SGA2 is a blind spot detection system that identifies vehicles, pedestrians, bicyclist, and objects on both driver and passenger sides.
- Controls and system information are integrated into the door controls and instrument cluster (pg. 4).
- Currently, our factory installed MirrorCam System doesn't have video recording capability or link to Detroit Connect.

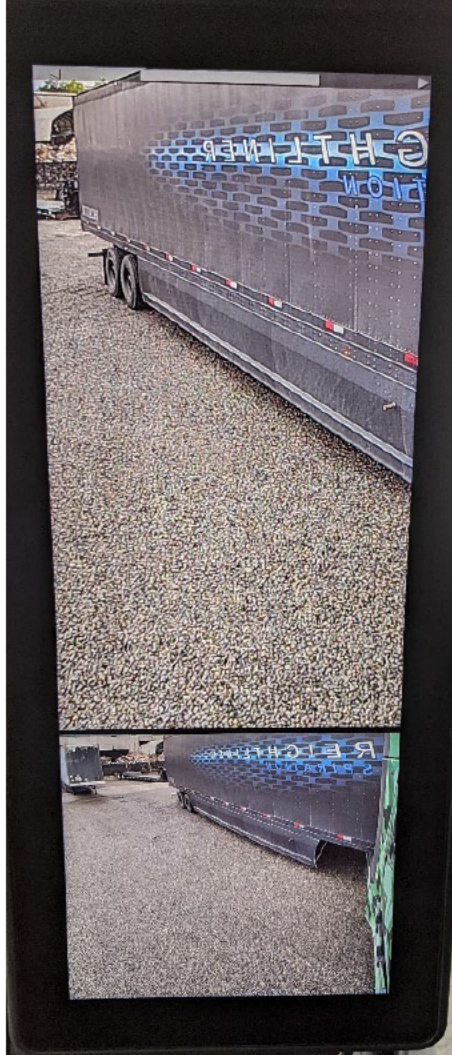


Specifications are subject to change without notice. Copyright 2024, Daimler Truck North America. All rights reserved.

MirrorCam System

Primary Display (Panning Enabled)

*trailer lines do not appear when auto-panning



Convex Display (non-panning)

Infrared (IR), Low-Light & "Night Vision"



Inclement Weather Visibility (road spray and window soiling)



MirrorCam System

Controls are factory integrated into driver door and dash controls for ease of use with no additional switches or controllers required

Controls integrated into Driver Door

Left MCS/mirror

- Adjusts left mirror

Right MCS/mirror

- Adjusts right mirror

Direction Pad

- Adjusts options and end of trailer lines distance

Brightness

- Adjust brightness of monitors

MCS/Mirror mode

- Toggles controls between MCS and traditional exterior mirrors
- Red LED illuminates indicating MCS mode
- No Red LED illuminated controls mirrors



Auto/Day/Night mode

- Adjusts settings of cameras and monitors depending on lighting conditions
- Default is **Auto** –the system will auto-detect ambient lighting conditions and automatically switch between day and night modes
- **Day** –the system will display visible true color in well lit areas
- **Night** –Infrared emitters located within the camera housing emit infrared light to “light up the night.” Displays will switch from color to grayscale.

Controls integrated into ICUC or Digital Dash*

Auto Panning

- Enable/Disable modes available
- Defaults to enabled each time

End of Trailer Line

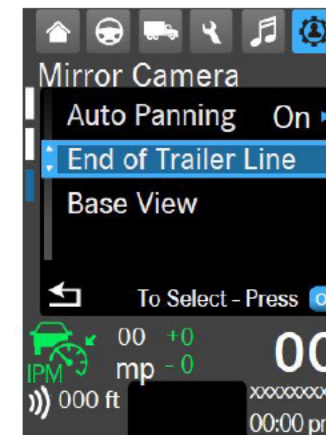
- Customize End of Trailer Line distance (red line), shows up at last distance set
- easily adjusts for different length trailers and loads
- If end of trailer line is not set, the lines will not appear

Base View

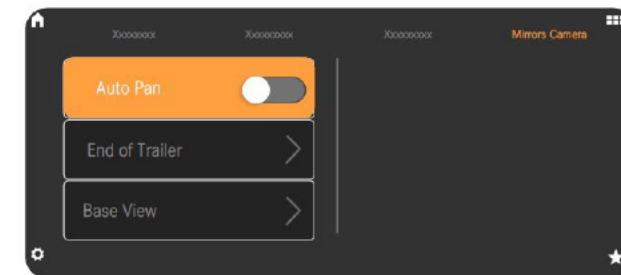
- Customize the field of view displayed on monitors and how much of vehicle/trailer is displayed

*while some controls are integrated into dash displays, you may be directed to finish setting controls with the driver door control pad

ICUC



Digital Dash B-Panel



Resources: [Highspot, Fifth Generation](#) | [Safety - Cascadia MirrorCam](#) | [Freightliner Driver Training Video](#) (Coming Q1 2025)

Affected Models: 5th Gen Cascadia, C/O Mid 2025

Data Code:

7A1-003 MIRROR CAMERA SYSTEM WITH RIGHT-HAND DOWN VIEW CAMERA