

OUR PARTS PUT YOU IN THE PASSING LANE

VISION SYSTEMS

The future is here.

Velvac has developed some of the most sophisticated vision systems in the industry. With the addition of both Road-iQ and 5th Wheel Dual Camera system to our line-up, you'll find that we're at the forefront in ensuring safety for drivers.

- **AeroCam**
- **Road-iQ**
- **5th Wheel Dual Camera**



Includes:



VISION SYSTEMS

CAMERA SYSTEMS

- Velvac offers a variety of camera systems and kits to increase safety and convenience
- Below camera placement can also be for straight trucks, RVs, buses and speciality vehicles

Helpful hint:

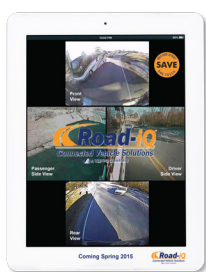
Be mindful of the connection type. The connectors are one of two types: A and B, shown to the right. All pieces must be compatible or will require the use of an adaptor



4-pin
'A' Connection



5-pin
'B' Connection



**Road-iQ
System**
Page V14



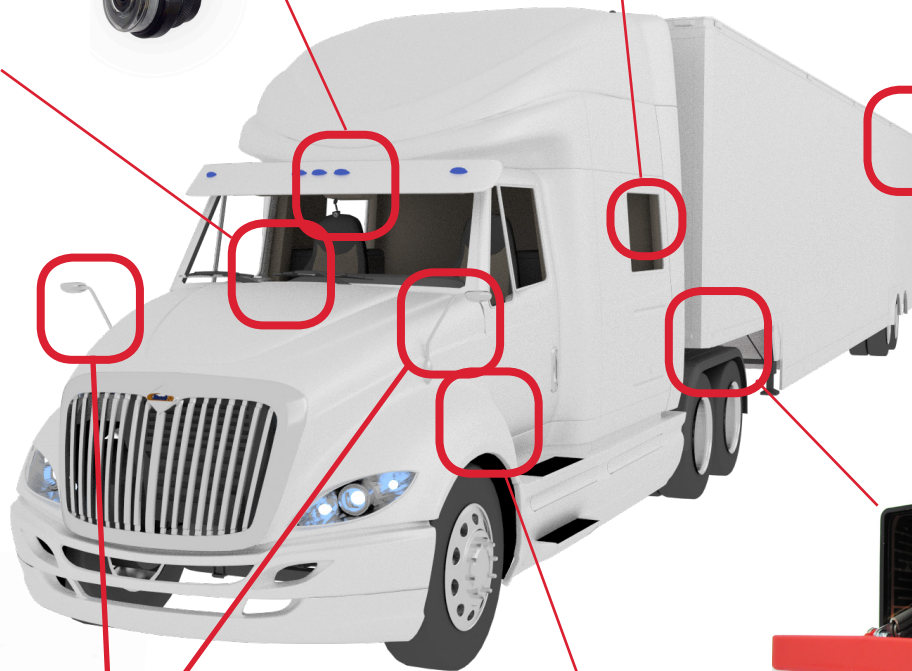
**Front View
Camera**
Page V5



**Interior
Camera**
Page V5



**Back-Up
Camera**
Page V3



AeroCam
Page V12

**Side View
Camera**
Page V5



**5th Wheel
Dual Camera**
Page V11



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

© VELVAC INC. • 2405 South Calhoun Road • New Berlin, WI 53151-2709 • Toll Free: 800.783.8871 • Fax: 262.786.4101

CAMERAS

Rear View Cameras



717973



710615

Flush Mount Rear View Camera

Part #	FOV	Connector	IP Rating	Power
717973	120° H, 90° V	B	IP69K	12 VDC
710615	120° H, 90° V	A	IP69K	12 VDC

- Velvac offers a variety of rear view cameras including the exclusive flush mount back-up camera and adjustable back-up style



710522



710521



710523



710326

Adjustable Rear View Camera

Part #	Housing	FOV	Connector	IP Rating	Power
710522	White	123° H, 95° V	A	IP69K	12 VDC
710523	Black	112° H, 80° V	A	IP69K	12 VDC
710521	Black	120° H, 90° V	A	IP69K	12 VDC
710326	Black	80° H, 60° V	B	IP69K	12 VDC

- Integrated flush mount provides clean appearance with no exposed wires or hardware
- Camera angle is preset to provide the optimum visibility with no needed adjustments
- IR-LED
- CMOS technology reduces blooming
- Includes durable backing plate, gasket and mounting hardware

710522, 710521, 710523

- Built-in microphone for enhanced safety with audio output (through the monitor) while backing up
- Waterproof housing
- IR-LED
- CMOS image technology (710522 uses CCD technology)
- Aluminum bracket and stainless steel mounting hardware included

710326

- IR-LED
- CMOS technology reduces blooming
- Mounting bracket and hardware included

NOTES

- CMOS** Complimentary metal oxide semiconductor
- CCD** Charged couple device
- Blooming** Glare due to sunlight, headlight conditions, etc.

NOTE: Part numbers listed in RED are NEW!

CAMERAS

Side View Cameras

- Velvac offers both traditional mount side view cameras and hood mount AeroCams, as well as side view CMOS cameras integrated into the Velvac 2020 Mini-LEM and V-MAX and V-MAX III LEM mirror systems (see page M37). Also featuring an integrated camera is the MirrorCam, part of the LaneOptics hood mount mirror series (see page M26).



AeroCam
Post Cam

Short Arm
AeroCam

AeroCam Post Cams

AeroCam Post Cam

- Post Cam kits include both 3/4" O.D. and 1" O.D. SS tube clamps for unlimited mounting options
- 1" clamp wraps around camera post for easy mounting to almost any surface
- 3/4" and 1" clamps can be nested together to allow Post Cam to mount to 3/4" tubular hood or side mount mirrors
- Includes (2) 15' camera cables for routing to monitor or recording device
- Note: Camera must be mounted horizontally for proper camera view

Right Side #	Left Side #	FOV	Connector	IP Rating	Power
717994	717993	73.7° H, 61° V	B	IP69K	12 VDC
717994-5	717993-5	73.7° H, 61° V	A	IP69K	12 VDC

Short Arm AeroCams

Right Side #	Left Side #	FOV	Connector	IP Rating	Power
717870	717869	73.7° H, 61° V	B	IP69K	12 VDC
717992	717991	73.7° H, 61° V	A	IP69K	12 VDC



Short Arm AeroCam

- Easily attaches to any flat vertical surface
- Applications include: walk in van, refuse truck, yard tractor, fire truck
- Black powder coated tube arm and mounting base
- Includes mounting hardware and universal backing plates
- Base mounting pattern is 2" x 3.75"

NOTES

For complete AeroCam kits with monitors see pages V12 - V13

AeroCam

Pair #	Vehicle Model	FOV	Connector	IP Rating	Power
717971	Volvo VNL	81° H, 61° V	B	IP69K	12 VDC
717901	Volvo VNM	81° H, 61° V	B	IP69K	12 VDC
717878	Kenworth T700	81° H, 61° V	B	IP69K	12 VDC
717897	All other PACCAR vehicles	81° H, 61° V	B	IP69K	12 VDC
717953	Freightliner Cascadia	81° H, 61° V	B	IP69K	12 VDC

AeroCam

- AeroCam pair includes right and left side AeroCams, cables and hardware



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

CAMERAS



Rear & Side
View Camera



Rear View
Camera

Rear & Side View Cameras

- Sleek design protects camera from dirt and contamination
- IR-LED
- CMOS technology reduces blooming
- Mounting bracket and hardware included

Part #	Side	Housing	FOV	Connector	IP Rating	Power
709941	Left	Gray primer	95° H, 75° V	A	IPX7	12 VDC
709942	Right	Gray primer	95° H, 75° V	A	IPX7	12 VDC
709949	Left	Chrome	95° H, 75° V	A	IPX7	12 VDC
709948	Right	Chrome	95° H, 75° V	A	IPX7	12 VDC
710325	Rear	Black	80° H, 60° V	B	IP69K	12 VDC

Rear View Camera

- High resolution color
- Waterproof housing
- Cylindrical 3/4" through hole mount
- IR-LED
- CMOS technology reduces blooming



Front Facing Cameras

- High resolution color
- Waterproof housing
- Mounts on top or bottom of windshield
- CMOS technology reduces blooming

Part #	FOV	Connector	IP Rating	Power
717871	120° H, 90° V	B	IP69K	12 VDC



Interior Cameras

- High resolution color
- IR-LED
- CCD image technology
- Mounting hardware included

Part #	FOV	Connector	IP Rating	Power
710589	120° H, 90° V	B	N/A	12 VDC

NOTES

CMOS Complimentary metal oxide semiconductor

CCD Charged couple device

NOTE: Part numbers listed in RED are NEW!

MONITORS

- Velvac's color 5.6" and 7" LCD monitors are designed for heavy duty and commercial truck applications - built and tested to withstand extreme road conditions such as vibrations, electrostatic discharge, humidity and temperature changes and to deliver high quality images to the driver
- 5.6" and 7" monitors include audio speaker with volume
- 5" monitor has full camera views
- 7" monitor has 8 different view modes; view 1 to 4 cameras at a time
- Velvac's 3.5" color monitor in a rear view mirror provides the ultimate in safety and convenience. The image is invisible while in drive and only activates when the camera trigger is engaged



709915



710723



716314



710323



710324

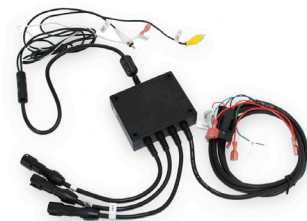
NOTES

- ¹ Requires the addition of mounting brackets shown on page V7
- ² Includes multi-image view modes: split screen (2-way), tri-view (3-way), and quad view (4-way); all other monitors have single screen viewing

Part #	Screen	Camera Inputs	Triggers	Mounting	Connector	Power
709915 ¹	5.6" Color LCD	2	2	4-hole amps pattern	A	12VDC
710723	7" Color LCD	4	4 + 1 split	T-slot	A	12VDC
716314	3.5" Color LCD	3	3	Universal windshield	A	12VDC
710323	5" Color LCD	3	3	Bracket included	B	12VDC
710324	7" Color LCD	4	4	Bracket included	B	12VDC

Three Camera Controller

- Allows 716314 camera input monitor to be converted to accept (3) cameras simultaneously
- This controller allows different views to automatically engage based on triggers for left / right turn signals or reverse
- This flexible control box can be wired for full time viewing of the rear camera if needed



Part #	Description	Connector
716318	Three camera controller	A



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

MONITOR MOUNTS

Part #	Description
790563	4" Single knuckle monitor mount (4-hole amps pattern) bracket with thumbscrew
790564	6" Double knuckle monitor mount (4-hole amps pattern) bracket with thumbscrew
790576	Double knuckle monitor mount for 1" ball (4-hole amps pattern)
790605	Double knuckle monitor mount (T slot)



790563



790564



790576



790605

CABLES

- Cables can be connected together to create various lengths
- Cable quantity and length will vary based on number of cameras and distance from camera to monitor
- Tractor to trailer camera cable kit includes all necessary straight and coiled cables to connect truck monitor to back up camera on top of trailer – the coiled cable is designed to safely span area between tractor and trailer

Part #	Description	Connector
747850	15' Camera to monitor cable	A
745243	15' Camera to monitor cable	B
747864	25' Camera to monitor cable	A
745244	25' Camera to monitor cable	B
747865	34' Camera to monitor cable	A
745245	34' Camera to monitor cable	B
747866	50' Camera to monitor cable	A
747867	75' Camera to monitor cable	A
745142	Camera splitter / Y-cable	B
745137	12" DVR adapter cable, B male / BNC	B
745138	12" DVR to camera cable	B
745252	Tractor to trailer camera cable kit*	B

*Kit includes coiled cable assembly with plug connectors, mating sockets for truck and tractor, 33' of camera cable for routing to truck monitor and 65' of camera cable for routing to back of trailer / back up camera



'A' connector cable



'B' connector cable



Tractor to trailer camera cable

Adaptor

- Use adaptor to connect A cameras to the B monitors (page V6)

Part #	Description	Connector
747894	Adaptor	A ---> B

NOTE: Part numbers listed in RED are NEW!

CAMERA KITS

Back-Up Camera Kits

- CMOS / IR-LED camera
- 5" Monitor with 3 camera inputs



Kit Part #	Camera	Monitor	Cables Included	Total Cable Length
719598	710326	710323	1 - 34'	34'
719599	710326	710323	2 - 25'	50'
719600	710326	710323	2 - 34'	68'

- CMOS / IR-LED camera
- 7" monitor has 8 different view modes; view 1 to 4 cameras at a time
- 4 Camera inputs



Kit Part #	Camera	Monitor	Cables Included	Total Cable Length
719601	710326	710324	1 - 34'	34'
719602	710326	710324	2 - 25'	50'
719603	710326	710324	2 - 34'	68'



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

© VELVAC INC. • 2405 South Calhoun Road • New Berlin, WI 53151-2709 • Toll Free: 800.783.8871 • Fax: 262.786.4101

CAMERA KITS



- For use with PACCAR SmartNav and NavPlus systems
- CMOS / IR-LED camera

Kit Part #	Camera	Cables Included	Total Cable Length
719612	710326	2 - 25'	50'

Side View Camera Kits



- CMOS / IR-LED camera
- 5" Monitor with 3 camera inputs

Kit Part #	Camera	Monitor	Cables Included	Total Cable Length
719592	710325	710323	1 - 34'	34'
719593	710325	710323	2 - 25'	50'
719594	710325	710323	2 - 34'	68'

CAMERA KITS

Side View Camera Kits



- CMOS / IR-LED camera
- 7" monitor has 8 different view modes; view 1 to 4 cameras at a time
- 4 Camera inputs



Kit Part #	Camera	Monitor	Cables Included	Total Cable Length
719595	710325	710324	1 - 34'	34'
719596	710325	710324	2 - 25'	50'
719597	710325	710324	2 - 34'	68'



- CCD / IR-LED camera
- 7" monitor
- 4 Camera inputs
- 4" Single knuckle monitor mount

Kit Part #	Camera	Monitor	Monitor Mount	Cables Included	Total Cable Length
709954	710522	710723	790563	1 - 34'	34'



- CCD / IR-LED camera
- 7" monitor
- 3 Camera inputs
- 4" Single knuckle monitor mount

Kit Part #	Camera	Monitor	Monitor Mount	Cables Included	Total Cable Length
709921	710522	709915	790563	1 - 34'	34'



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

© VELVAC INC. • 2405 South Calhoun Road • New Berlin, WI 53151-2709 • Toll Free: 800.783.8871 • Fax: 262.786.4101

5TH WHEEL DUAL CAMERA SYSTEM



The 5th Wheel Dual Camera System allows drivers to properly line up the king pin and fifth wheel, making coupling easier and preventing costly damage to the tractor or trailer

- Doors open automatically when vehicle is placed in reverse
- Dual cross hair cameras provide the driver with a clear view of king pin and fifth wheel alignment
- Heavy duty aluminum housing and reinforced molded doors help protect cameras from rain, snow and debris
- Integrated heating system allows for cold weather operation
- IR camera assists backing in low or no light conditions
- Mounting brackets are designed to fit a wide variety of vehicle applications
- Kits include dual camera, cables, hardware and installation information



5th Wheel Dual Camera Kit

Part #	Monitor	Mounting Bracket	Vehicle
710640	•	-	All
710640-1	•	•	All
710640-3	•	•	Kenworth
710640-4	•	•	Kenworth*
710651	-	-	All
710651-1	-	•	All
710651-3	-	•	Kenworth

Service Parts

Part #	Description
710641	Camera enclosure
745241	Wire harness
710649	Control module
710324	7" Monitor
351108**	Mounting bracket
351109	Mounting bracket (Kenworth only)
745245	34' Camera cable

- Velvac offers kits with two different mounting brackets for easy installation
- Kenworth brackets are for use on Kenworth trucks only
- Universal bracket fits all other vehicle applications except for Paccar trucks**



NOTES

* Compatible with Kenworth drop wire option package 8700919

** Contact Velvac for information on Paccar mounting brackets

VISION SYSTEMS

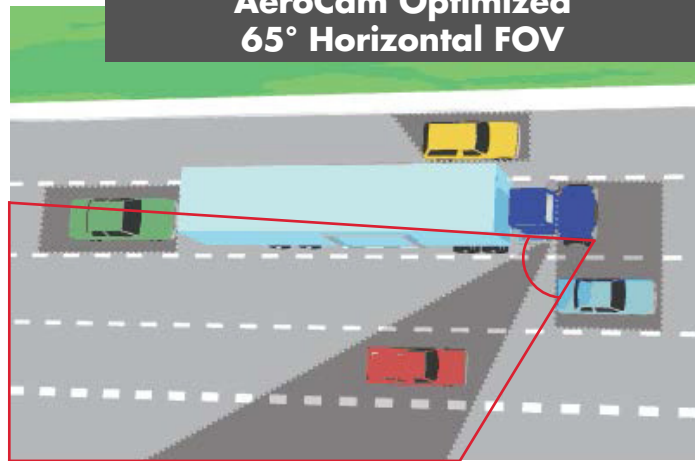
AEROCAM VISION SYSTEM

AeroCam Vision System

- Blind spot elimination system for heavy duty trucks
- The Velvac AeroCam is a camera-based vision system that provides the driver with clear views of blind spots and passing lanes around the vehicle, resulting in improved safety and reduced potential for costly and dangerous accidents
- According to National Highway Transportation Safety Administration (NHTSA), depth perception and object recognition are the keys to safe vehicle operation. With an optimal 65° viewing angle, CMOS vision processor and camera positioned above the splash zone, the AeroCam system clearly displays the most critical vision targets, allowing the driver to make faster and safer driving decisions. With its smaller profile in relation to conventional convex mirrors, the AeroCam is also designed to reduce drag, resulting in improved vehicle aerodynamics, a major contributor to improving fuel economy and reducing fuel consumption



**AeroCam Optimized
65° Horizontal FOV**



Custom kits for PACCAR and Volvo vehicles are designed for specific hood geometry and wire routing



1" OD stainless steel tubing arm can be rotated for fine camera angle adjustment. Also rotates upon impact to reduce the potential damage



Available with right side and left side dedicated dash mounted monitors as shown above



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

© VELVAC INC. • 2405 South Calhoun Road • New Berlin, WI 53151-2709 • Toll Free: 800.783.8871 • Fax: 262.786.4101

AEROCAM VISION SYSTEM

Vehicle Model	Pair #	Right Side #	Left Side #	5" Monitor	7" Monitor
Volvo VNL	717823	-	-	2	-
	717825	-	-	-	1
	717824	717826	717827	1	-
	-	717812	717811	AeroCam Only	
Volvo VNM	717828	-	-	2	-
	717830	-	-	-	1
	717829	717832	717831	1	-
	-	717812	717811	AeroCam Only	
Kenworth T700	717813	-	-	2	-
	717815	-	-	-	1
	717814	717816	717817	1	-
	-	717810	717809	AeroCam Only	
Kenworth T700 w/ Nav	719635	719636	719637	-	-
	-	717810	717809	AeroCam Only	
All other PACCAR vehicles	717818	-	-	2	-
	717820	-	-	-	1
	717819	717822	717821	1	-
	-	717810	717809	AeroCam Only	
All other PACCAR vehicles w/ Nav	719632	719634	719633	-	-
	-	717810	717809	AeroCam Only	

- Pair include right and left side AeroCams, monitor(s), cables and hardware
- Sides include right side or left side AeroCams, monitor, cables and hardware
- AeroCam Only is right side or left side AeroCam only; no monitor or hardware is included



NavPlus with Image from AeroCam

AeroCam Features

- Provides a clear view along the side of the truck and trailer to reduce blindspots and improve driver safety
- Optimized camera field of view provides better depth perception with less distortion: objects in blind spots appear larger and are easier to recognize on the color monitor
- Chrome plated aluminum mounting base with four hole mounting pattern for fast and easy installation. The same hole pattern as Velvac Pod and Mod Pod mirrors makes for easy retro-fits
- CMOS camera technology produces superior imaging and accurate colors even in extreme light conditions and harsh weather
 - » 40° to 85°C / -40° to 185°F
 - » Built-in anti-blooming protection to maintain visibility under sunlight, glare and headlight conditions
 - » Superior depth perception
 - » Vibrant colors and clarity
 - » Integrates seamlessly into the Kenworth NavPlus® and Peterbilt SmartNav™ monitors
- For a complete solution, Road-iQ and additional cameras can be integrated for full coverage
- FOV: 65° Horizontal, 55° Vertical
- IP Rating: IP69K



Road-iQ Vision System



Road-iQ is a connected vehicle technology that integrates a powerful video processor, up to 7 cameras, a unique telematics server platform and a tablet with the Road-iQ Connect app to provide a range of features to help you drive safer and smarter.

Components

1. Video Data Server (VDS)

The heart of the Road-iQ system. It collects and manages videos, tagged events and vehicle data for display and recording/playback of notable events. The VDS supports the most powerful range of vehicle monitoring capabilities available including J1939, OBD II, CAN, ethernet, USB, GPIO and LIN for control and recording of vehicle functions.

Camera Configuration Example

2. Forward/Driver Facing Camera See page V5

3. Rear Facing Camera See page V3

4. Hood Mount Cameras

a. MirrorCam See page M26

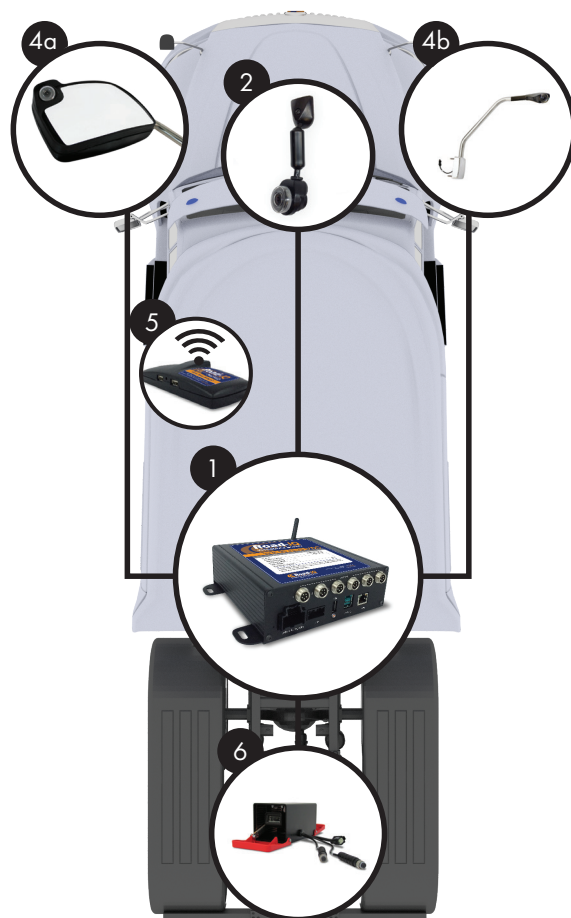
b. AeroCam See page V4

Optional Add-Ons

5. NetHub

Enables cellular and Wi-Fi connection from the VDS to the cloud for access to the Road-iQ portal for live stream video analysis, recorded event viewing, data archiving, vehicle diagnostics and trip reporting.

6. 5th Wheel Dual Camera System See page V11



Features



360° Views

Coverage of your blind spots in any driving conditions.



Vehicle Recording

Capture all events from any of your vehicles' cameras.



Remote Video Access

Check on your vehicle from anywhere via the Road-iQ portal.



Vehicle Diagnostics

Specific fault descriptions alert driver and fleet managers of potential vehicle problems.



Flexible Display

Connect to an iPad or iPhone for viewing in cab by the driver.



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

© VELVAC INC. • 2405 South Calhoun Road • New Berlin, WI 53151-2709 • Toll Free: 800.783.8871 • Fax: 262.786.4101

Road-iQ Vision System



How It Works



Connect any 6 cameras



VDS connects to J1939 or OBD II on vehicle



NetHub provides Wi-Fi hotspot and 4G LTE connection to the cloud



Display live camera views on a tablet or monitor for safer driving, along with local recording and playback of video

Remote Viewing: The Portal

The NetHub (pictured above) allows for 4G LTE connectivity and a Wi-Fi hotspot for uploading video from all cameras. Simply log on to the online portal to remotely view a vehicle's real time footage, events, location and diagnostics.

Live Viewing



Road-iQ Vision System



The Portal

Event Browsing

Event Type Summary

Event Type	Count
HA	51
LS	24
HZ	3
HB	64
ST	14
UE	21
GN	43
GO	56

Events List

Event Description	Vehicle	Speed (Mph)	Event Date (US/Central)	Transfer Date (US/Central)
Hard Braking	101953		Mar 21, 2018, 7:55:05 AM	Mar 22, 2018, 3:07:51 AM
Hard Acceleration	101953		Mar 19, 2018, 5:42:15 PM	
Hard Braking	325403		Mar 19, 2018, 5:33:53 PM	Mar 22, 2018, 3:07:56 AM

Geotracking

Select a Vehicle

There are multiple vehicles at this location, which did you mean?

- 325248
- 325401
- 325164
- 325403
- 325719
- 325331
- 325611
- 325329
- 325333

Fleet Monitoring

Vehicles

Last Connection Time	Name	Sub Company	Recent Events	Active DTCs
1 month	325164	-	0	1
1 month	325246	-	0	0
1 month	325247	-	0	0
1 month	325248	-	0	0
1 month	325401	-	0	0
1 month	325403	-	0	0
1 month	325718	-	0	0
1 month	325719	-	0	0

For more information, contact our sales team



Call the Velvac Sales Team: **800.783.8871** sales@velvac.com

© VELVAC INC. • 2405 South Calhoun Road • New Berlin, WI 53151-2709 • Toll Free: 800.783.8871 • Fax: 262.786.4101