



**Reconstruction Group Attachment – 2021 Tesla EDR Report**

**Coral Gables, FL**

**HWY21FH011**

(31 pages)

# EDR Report

File Information	Value
VIN	5YJ3E1EB2MF [REDACTED]
Retrieval Date	2021/10/26 21:06:32 (UTC)
Retrieval User Comments	
Retrieval Program Information	Tesla EDR Retrieval Program v20.20.1
EDR Report Information	Tesla EDR Reporting Service v21.36.1
Report Date	2021/10/26 21:05:45 (GMT)
Number Of Events	1
Time From Event 1 To 2 (seconds)	N/A
Ignition Cycle At Retrieval	162
RCM Part Number	1512876-00-B

# Model 3 Data Limitations

## General Data Limitations

This report represents data from a Tesla Event Data Recorder (EDR). The report was generated using EDR data that was uploaded to the Tesla EDR Report Service at <https://edr.tesla.com>. This service is periodically updated using the most current vehicle information available and report users should always ensure that the report was generated by the most recent version of the Report Service.

The Tesla EDR Retrieval Program and Tesla EDR Report Service are designed for vehicles configured for the North American market region only. Report elements found in this report may not have not been validated for vehicles configured for regions outside of North America.

The EDR is part of the vehicle's Restraints Control Module (RCM). When the EDR senses a crash or crash-like event, it may record a short period of data related to vehicle dynamics and safety systems. This recorded data may assist in understanding the crash or crash-like event. EDR data will only be recorded by a Tesla vehicle if the EDR senses a crash or crash-like event; no data is recorded by the EDR under normal driving conditions.

EDR data should only be used as part of a thorough and competent review of the human, vehicle, and environmental information associated with an event. The data recorded by the EDR has limitations including the number of items recorded, the time period of the recording, the data sampling interval, and the data range and resolution. Additionally, EDR data may be limited by sensor capabilities or the availability of 12 V DC power at the RCM. For these and other potential reasons, the EDR data may not capture an entire event, and the data elements captured may not fully represent all aspects of a given event.

Tesla has made all reasonable efforts to include sufficient information in this report's Data Limitations section to clarify terminology and data elements found in this document to assist the end user in understanding the recorded data. Tesla reserves the right to update, change or modify this information.

### Event Data Recorder

An Event Data Recorder is defined as a device or function in a vehicle that records the vehicle's dynamic time-series data during the time period just prior to a crash event (e.g., vehicle speed vs. time) or during a crash event (e.g., delta-V vs. time), intended for retrieval after the crash event. For the purposes of this definition, the event data do not include audio and video data (49 CFR Part 563).

### Data Synchronization

Pre-crash and crash data are recorded in discrete intervals and may be asynchronous.

### Events

The Model 3 RCM can store up to two events: Event 1 and Event 2. The conditions for triggering the recording of an event differs depending on event type.

### Time Zero

Time Zero, as indicated throughout the event record, is the point where the restraint control algorithm is activated in any sensing direction.

### Recording duration

The end of an event is typically the moment at which the cumulative delta-V within a 20ms time period does not change by more than 0.8 km/h or the moment at which the crash detection algorithm of the RCM resets. Some events may lead to the recording of different duration data as provided for by 49 CFR Part 563.

### Deployment events

A deployment event may be recorded when the RCM commands the deployment of a device (e.g. airbag, pretensioner, or High Voltage (HV) battery disconnect). Airbag deployment events are always locked in memory and are never overwritten. Pretensioner/HV disconnect only deployments may not be locked and may be overwritten.

### Non-deployment events

A non-deployment event may be recorded when the RCM senses a physical occurrence triggering the recording of an event but does not command the deployment of a device (e.g. airbag, pretensioner, High Voltage (HV) battery disconnect). A non-deployment event is recorded if one of the two event memory locations is available (not locked). Non-deployment events are not locked in memory. A non-deployment event is overwritten by another non-deployment event or a deployment event.

### Data polarity

Where applicable, the data in this report follows the polarity conventions found in SAE J1733 and J211. For example, forward longitudinal acceleration and resultant delta-V are positive and left-to-right lateral acceleration and resultant delta-V are positive. Positive roll angle is rotation about the vehicle's longitudinal axis using the right hand rule (clockwise vehicle roll when viewed from the rear of the vehicle). Positive steering wheel angle is clockwise rotation of the steering wheel (steering to the right from straight). Positive yaw rate is when the vehicle (seen from above) is rotating clockwise around the z-axis.

### Signal Not Available (SNA)

Signal Not Available (SNA) indicates a data element which is not available due to a fault or network communication disruption with the sensor that supplies the data to the EDR.

## Data Element Definitions

### Vehicle Identification Number (VIN)

The Vehicle Identification Number (VIN) is stored in the RCM when it is installed at the Tesla Fremont Factory or by Tesla Service. The last 6 digits of the VIN can be anonymized by selecting the "Save without VIN sequence number" option in the Tesla EDR Retrieval Program.

### Number Of Events

The Number Of Events represents the total number of events that are stored in the RCM memory. The maximum number of events that can be recorded is two.

### Time From Event 1 to 2 (seconds)

The Time From Event 1 to 2 is the amount of time elapsed between the Time Zero of two linked events (if applicable). Linked events must occur within 5 seconds and in the same ignition cycle. Non-linked events will report "N/A" in the Time From Event 1 to 2 value. The value is reported to the nearest fully elapsed 0.1 seconds.

### Retrieval Date

The Retrieval Date is the calendar date and time when the data was retrieved from the RCM. This date and time is sourced from the computer that was used to retrieve the data. This is not the date and time of an event.

### Retrieval User Comments

The Retrieval User Comments is an open field that can be used by the Tesla EDR Retrieval operator to record text comments at the time of retrieval.

### Retrieval Program Information

The Retrieval Program Information is the version number of the Tesla EDR Retrieval Program that was used to retrieve the EDR data from the RCM.

### EDR Report Information

The EDR Report Information identifies the version of the Tesla EDR Report Service.

### Report Date

Report Date is the calendar date when the online Tesla EDR Report Service was used to generate the report. The source of this data element is the Tesla server.

### Ignition Cycle At Retrieval

The Ignition Cycle At Retrieval is the number of times that the RCM had been powered on as reported at the time that the Tesla EDR Retrieval Program was used to retrieve the data from the RCM. The maximum value for ignition cycles is over 4 billion.

### Maximum Delta-V, Longitudinal/Lateral (km/h)

The Maximum Delta-V, Longitudinal/Lateral is the maximum magnitude of the recorded delta-V during the event. The value is truncated at whole kilometer per hour resolution. The range for Maximum Delta-V is -100 km/h to +100 km/h. The source of the data is the internal calculation (integration) of the sensor data inside of the RCM.

### Time to Maximum Delta-V, Longitudinal/Lateral (ms)

The Time to Maximum Delta-V, Longitudinal/Lateral is the time from Time Zero to the maximum magnitude of the recorded delta-V during the event. The maximum value is 300 ms and the value is reported to the nearest millisecond.

### Time to Maximum Delta-V, Resultant (ms)

The Time to Maximum Delta-V, Resultant is the time from Time Zero to the calculated maximum resultant of the longitudinal and lateral delta-V components. The maximum value is 300 ms and the value is reported to the nearest millisecond.

### Longitudinal Acceleration Sensor Clipping

The Longitudinal Acceleration Sensor Clipping data element indicates the first data point (in time) at which the maximum range of the longitudinal (x) accelerometer was exceeded. In this case, the actual acceleration (and calculated delta-v) of the vehicle may be more than the reported value. Only the first instance of sensor clipping is reported.

### Lateral Acceleration Sensor Clipping

The Lateral Acceleration Sensor Clipping data element indicates the first data point (in time) at which the maximum range of the lateral (y) accelerometer was exceeded. In this case, the actual acceleration (and calculated delta-v) of the vehicle may be more than the reported value. Only the first instance of sensor clipping is reported.

### Ignition Cycle At Event

The Ignition Cycle At Event is the number of times that the RCM had been powered on as reported at Time Zero. The maximum value for ignition cycles is over 4 billion.

### Ignition Cycle Runtime

Ignition Cycle Runtime is the total cumulated time from when the RCM was powered on to Time Zero for a given event. The maximum value of Ignition Cycle Runtime is over 70 million minutes and the resolution is 0.1 minutes.

#### Odometer At Event Time Zero

Odometer At Event Time Zero is the value of the vehicle's lifetime mileage accumulation at Time Zero. The maximum value for this data element is over 1 million kilometers and the resolution is 0.1 kilometers.

#### Airbag Warning Lamp Status

Airbag Warning Lamp Status indicates the commanded state of the warning lamp as "on" or "off" within approximately the last second before Time Zero.

#### ABS Warning Indicator Status

ABS Warning Indicator Status indicates the commanded state of the warning lamp as "on" or "off" within approximately the last second before Time Zero.

#### Vehicle Drive Mode

Vehicle Drive Mode is the status of the vehicle's powertrain setting within approximately the last second before Time Zero. Possible values for this data element include Park, Reverse, Neutral and Drive.

#### Driver/Passenger Safety Belt Status

The Driver/Passenger Safety Belt Status is the recorded status of the safety belt at the time of the event. This data element is recorded one second before Time Zero.

#### Occupant Classification In Front Passenger Seat

The Occupant Classification data element indicates the detected occupant type in the front passenger seat. Values include: Empty, Child, Small Adult, Large Adult, or Not Configured.

#### Passenger Seat Position

Passenger Seat Position indicates the recorded seat track position of the passenger seat. The possible values are Rearward and Forward.

#### Passenger Airbag Suppression Switch Status

The Passenger Airbag Suppression Switch Status represents the user selected status of the front passenger airbag system at one second prior to Time Zero. This switch is accessible using the vehicle's user interface. A "on" status indicates that the user has manually activated the front passenger airbag system. A "off" status indicates that the user has manually deactivated the front passenger airbag system. A "auto" status indicates that the vehicle has automatically activated or deactivated the front passenger airbag system based on the occupant classification system. In some regions, a "on" status may be reported but the option was not provided to user via the user interface (always "on" systems).

#### Rear occupant seat status

The Model 3 may record data associated with the second row seat occupancy and seat belt status. Seat occupancy status may not identify small occupants or child seats. The possible values for occupancy status include: Not Occupied or Occupied, or Not Available. The possible values for rear occupant seat belt status are Buckled, Not Buckled, or Not Available.

#### Driver Airbag Deployment 2nd Stage Disposal

This data element indicates if the driver airbag second stage was commanded to deploy (either for occupant restraint or propellant disposal purposes).

#### Right Front Passenger Airbag Deployment 2nd Stage Disposal

This data element indicates if the passenger airbag second stage was commanded to deploy (either for occupant restraint or propellant disposal purposes).

#### Complete File Recorded

Complete File Recorded indicates whether or not the complete data set available to the EDR was successfully recorded.

#### Deployment Summary

The Deployment Summary table indicates which of the deployable safety devices (if any) were commanded to deploy and at what time (relative to the event Time Zero). The possible values for the status of each device is "Deployment Commanded" or "Deployment Not Commanded". The deployment commanded time is to the nearest millisecond.

#### Time Series Data

All time references are based on the event definition of Time Zero.

#### Vehicle Speed

Vehicle Speed is calculated using the four wheel speed signals as well as inertial acceleration measurements. This speed will be reported either in kilometers per hour or miles per hour, depending on vehicle configuration. The minimum value for vehicle speed is 0 and the maximum value is greater than 200 km/h (124 mph). The resolution of Vehicle Speed is to the nearest kilometer per hour or mile per hour, depending on vehicle configuration.

#### Accelerator Pedal (%)

Accelerator Pedal (%) is the percent of full application of the accelerator pedal. The resolution of Accelerator Pedal (%) is to the nearest percent.

#### Rear Motor Speed (rpm)

Rear Motor Speed is the rate of rotation of the rear drive motor. The maximum value for Rear Motor Speed is 17,900 rpm (revolutions per minute). The resolution of Rear Motor Speed is to the nearest 1 rpm. Positive RPM values indicate that the vehicle motor is rotating negatively about the vehicle's lateral (y) axis, which provides forward motive force.

#### Service Brake

Service Brake indicates the status of the driver's application of the brake pedal as reported by the brake booster. The possible values for Service Brake are "On" (pedal being applied by driver) and "Off" (pedal not being applied by driver).

#### Stability Control

Stability Control is the status of the Electronic Stability Control system (ESC). The possible values are "On" (meaning the ESC was enabled but not active), "Off" (meaning the ESC was turned off), and "Engaged" (meaning that the ESC was active).

#### ABS Activity

ABS Activity is the status of the Anti-lock Braking System (ABS). The possible values are "On" (meaning the ABS was active) and "Off" (meaning the ABS was not active). Active ABS status does not necessarily indicate that the ABS control unit was actively modulating braking at one or more wheels.

#### Steering Wheel Angle (deg)

Steering Wheel Angle represents the measured rotational angle of the steering wheel. The range of Steering Wheel Angle data is -819 deg to +819 deg. The steering wheel angle value is truncated to the nearest whole degree. Data is recorded for 5 seconds prior to Time Zero every 0.1 seconds.

#### Normal Time Series Acceleration data

Normal Time Series Acceleration Data indicates the measured physical acceleration of the vehicle in the vertical direction parallel to the pull of gravity. The source of the data is an accelerometer located inside the RCM. The resolution of acceleration data is 0.04 g and the data is reported every 10 ms from 900 ms before Time Zero and 500 ms After Time Zero. The range of acceleration data is -4.8 g to +4.8 g.

#### Lateral/Longitudinal Pre-Crash Acceleration

Lateral and Longitudinal Pre-Crash Acceleration data is the measured physical acceleration of the vehicle as measured at the RCM during the 5 seconds prior to (and including) Time Zero.

#### Roll/Yaw Rate Pre-Crash Data

Roll and Yaw Rate Pre-Crash data is the measured angular velocity of the RCM for the 5 seconds prior to (and including) Time Zero. The resolution of this data element is to the nearest 0.1 degrees/second and the samples are recorded every 0.1 seconds.

#### Longitudinal/Lateral Delta-V data

Longitudinal and Lateral Time Series Delta-V Data indicates the change in velocity of the vehicle. The source of the data is the internal calculation (integration) of the sensor data inside of the RCM. The value is truncated at whole kilometer per hour resolution and the data is reported every 10 ms after Time Zero. The range for delta-V data is -100 km/h to +100 km/h.

#### Longitudinal/Lateral Time Series Acceleration data

Longitudinal and Lateral Time Series Acceleration Data indicates the measured physical acceleration of the vehicle. The source of the data is the accelerometers located inside the RCM. The resolution of acceleration data is 0.8 g and the data is reported every 0.5 ms after Time Zero. The range of acceleration data is -96 g to +96 g.

#### Lateral/Longitudinal/Normal Pre-Crash Acceleration data

Lateral, Longitudinal and Normal Pre-Crash Acceleration data is the measured physical acceleration of the vehicle as measured at the RCM. The resolution of acceleration data is 0.04 g and the data is reported every 100 ms 5 seconds prior to (and including) Time Zero. The range of acceleration data is -5 g to +5 g.

#### Roll Angle

Roll Angle indicates the vehicle roll angle at a specific time before and/or after Time Zero. The source of the data is the internal calculation (integration) of the sensor data inside of the RCM. The recording time for Roll Angle Data is 1 second before and 5 seconds after Time Zero and is sampled every 100 ms. The range of roll angle data is -1,270 deg to +1,270 deg and the resolution of roll angle data is to the nearest 10 deg.

#### Serial Numbers

Serial numbers are the sensor identification numbers that are stored in the RCM. These values are stored when the RCM is powered up (each ignition cycle).

#### Hexadecimal Data

The Hexadecimal Data found in this report represents the original, raw data and identifying information retrieved from the RCM accessed to ultimately generate this report. The binary data is represented in hexadecimal format as a matter of convenience. While it represents all the raw data retrieved from the subject RCM not all of that raw data may be used in a given report or application.

## Event 1 Data Record

Data Element	Value
Maximum Delta-V, Longitudinal (km/h)	-78
Time To Maximum Delta-V, Longitudinal (ms)	287.5
Maximum Delta-V, Lateral (km/h)	-74
Time To Maximum Delta-V, Lateral (ms)	132.5
Time To Maximum Delta-V, Resultant (ms)	287.5
Longitudinal Acceleration Sensor Clipping (ms)	33
Lateral Acceleration Sensor Clipping (ms)	26
Ignition Cycle At Event	161
Ignition Cycle Runtime (minutes)	30.1
Odometer At Event Time Zero (km)	768.5
Airbag Warning Lamp Status	Off
ABS Warning Indicator Status	On
Driver Safety Belt Status	Belted
Passenger Safety Belt Status	Belted
Second Row Left Safety Belt Status	Not Belted
Second Row Center Safety Belt Status	Not Belted
Second Row Right Safety Belt Status	Not Belted
Occupant Classification Status In Front Passenger Seat	Large Adult
Second Row Left Seat Occupancy Status	Not Occupied
Second Row Center Seat Occupancy Status	Not Occupied
Second Row Right Seat Occupancy Status	Not Occupied
Passenger Seat Track Position	Rearward
Passenger Airbag Suppression Switch Status	Not Configured
Vehicle Drive Mode	SNA
Driver Airbag Deployment 2nd Stage Disposal	No
Right Front Passenger Airbag Deployment 2nd Stage Disposal	No
Complete File Recorded	Yes

## Deployment Summary (Event 1)

Device	Status	Deployment Command Time (ms)
Driver Front Airbag Stage 1	Deployment Commanded	24
Driver Front Airbag Stage 2	Deployment Commanded	29
Driver Front Airbag Active Vent	Deployment Commanded	209
Driver Knee Airbag	Deployment Commanded	24
Passenger Front Airbag Stage 1	Deployment Commanded	24
Passenger Front Airbag Stage 2	Deployment Commanded	29
Passenger Front Airbag Active Vent	Deployment Commanded	209
Passenger Knee Airbag	Deployment Commanded	24
1st Row Left Seat Side Airbag	Deployment Not Commanded	
Left Curtain Airbag (1st Row)	Deployment Commanded	30
1st Row Left Retractor Pre-tensioner	Deployment Commanded	17
1st Row Left Outboard Lap Pre-tensioner	Deployment Commanded	17
1st Row Left Load Limiter	Deployment Commanded	54
1st Row Right Seat Side Airbag	Deployment Commanded	17
Right Curtain Airbag (1st Row)	Deployment Commanded	17
1st Row Right Retractor Pre-tensioner	Deployment Commanded	17
1st Row Right Outboard Lap Pre-tensioner	Deployment Commanded	17
1st Row Right Load Limiter	Deployment Commanded	94
2nd Row Left Seat Side Airbag	Deployment Not Commanded	
2nd Row Left Curtain Airbag	Deployment Not Commanded	
2nd Row Left Retractor Pre-tensioner	Deployment Not Commanded	
2nd Row Right Seat Side Airbag	Deployment Not Commanded	
2nd Row Right Curtain Airbag	Deployment Not Commanded	
2nd Row Right Retractor Pre-tensioner	Deployment Not Commanded	

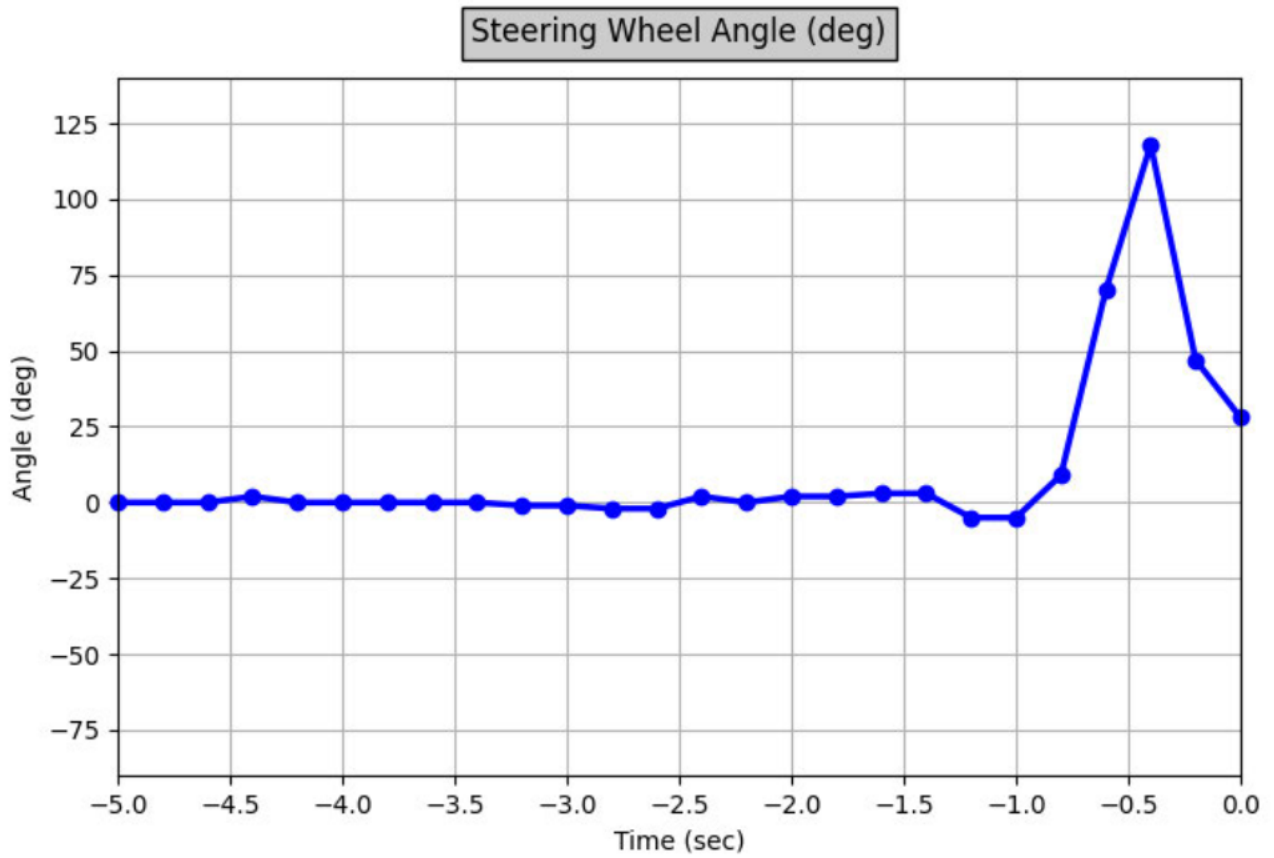


## Event Data (Event 1)

Time (sec)	Service Brake	Stability Control	ABS Activity
-5.0	Off	Not Engaged	Off
-4.8	Off	Not Engaged	Off
-4.6	Off	Not Engaged	Off
-4.4	Off	Not Engaged	Off
-4.2	Off	Not Engaged	Off
-4.0	Off	Not Engaged	Off
-3.8	Off	Not Engaged	Off
-3.6	Off	Not Engaged	Off
-3.4	Off	Not Engaged	Off
-3.2	Off	Not Engaged	Off
-3.0	Off	Not Engaged	Off
-2.8	Off	Not Engaged	Off
-2.6	Off	Not Engaged	Off
-2.4	Off	Not Engaged	Off
-2.2	Off	Not Engaged	Off
-2.0	Off	Not Engaged	Off
-1.8	Off	Not Engaged	Off
-1.6	Off	Not Engaged	Off
-1.4	Off	Not Engaged	Off
-1.2	Off	Faulted	Off
-1.0	Off	Faulted	Off
-0.8	Off	Faulted	Off
-0.6	Off	Faulted	Off
-0.4	Off	Faulted	Off
-0.2	Off	Faulted	Off
0.0	Off	Faulted	Off

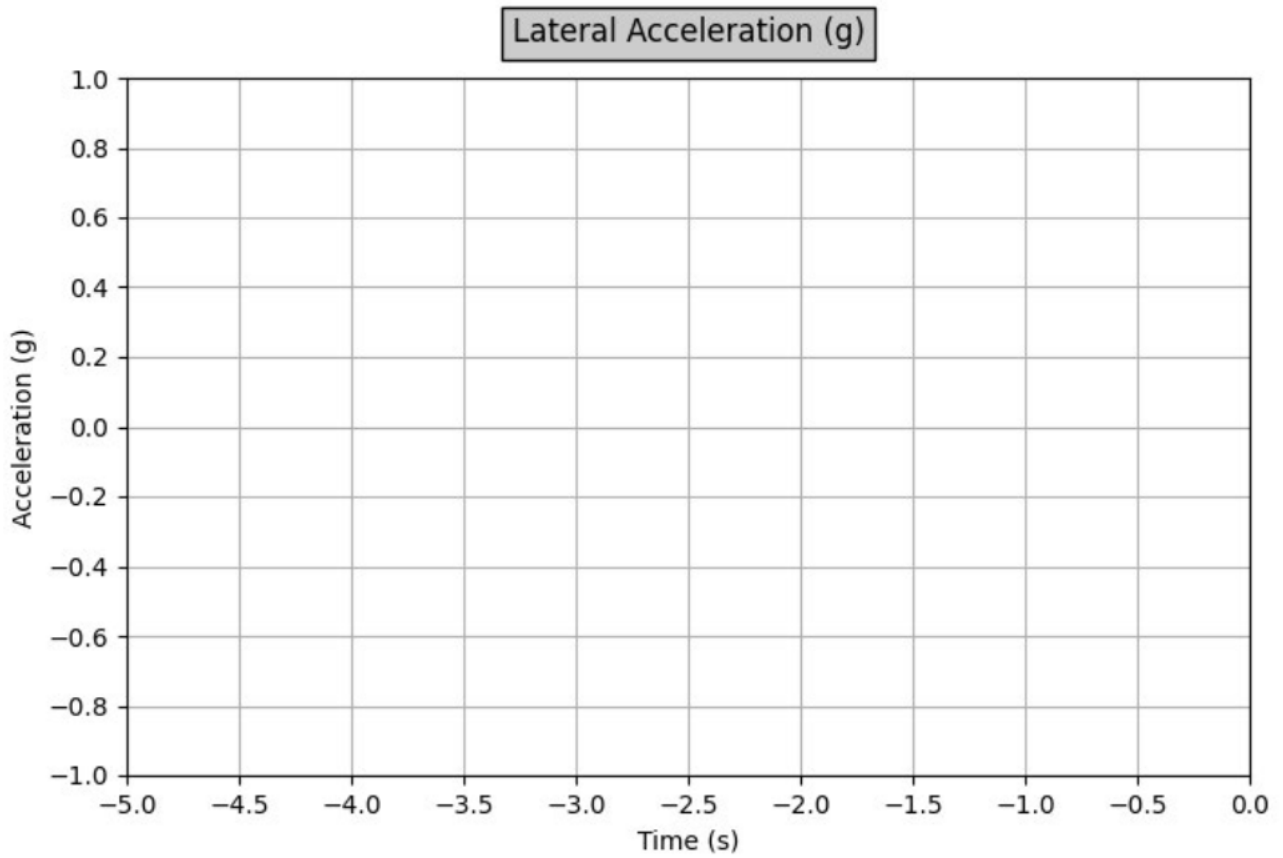
Time (sec)	Vehicle Speed (mi/h)	Accelerator Pedal (%)	Rear Motor Speed (rpm)
-5.0	68.0	92.4	7981
-4.8	70.0	93.2	8228
-4.6	72.0	93.2	8443
-4.4	73.0	100.0	8578
-4.2	75.0	100.0	8765
-4.0	77.0	100.0	8956
-3.8	78.0	100.0	9170
-3.6	80.0	100.0	9347
-3.4	81.0	100.0	9506
-3.2	83.0	100.0	9735
-3.0	84.0	100.0	9857
-2.8	85.0	100.0	9990
-2.6	87.0	100.0	10131
-2.4	88.0	41.2	10352
-2.2	89.0	31.2	10353
-2.0	89.0	31.2	10389
-1.8	90.0	0.0	10351
-1.6	90.0	0.0	10387
-1.4	89.0	0.0	9864
-1.2	89.0	0.0	10062
-1.0	86.0	0.0	9867
-0.8	86.0	0.0	9650
-0.6	87.0	0.0	9751
-0.4	83.0	0.0	9218
-0.2	81.0	0.0	9100
0.0	52.0	87.2	8426

# Steering Wheel Angle (Event 1)



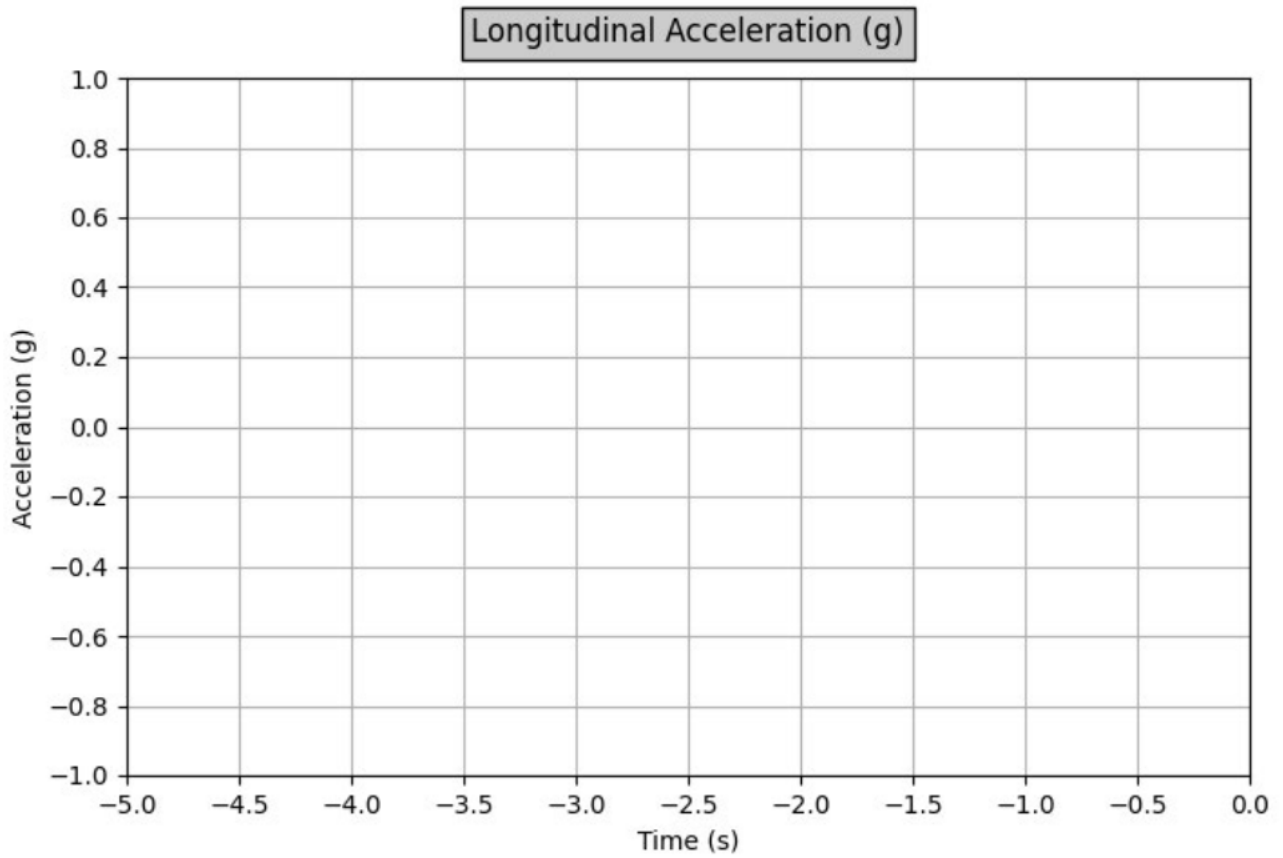
Time (sec)	Angle (deg)	Time (sec)	Angle (deg)
-5.0	0	-2.4	2
-4.8	0	-2.2	0
-4.6	0	-2.0	2
-4.4	2	-1.8	2
-4.2	0	-1.6	3
-4.0	0	-1.4	3
-3.8	0	-1.2	-5
-3.6	0	-1.0	-5
-3.4	0	-0.8	9
-3.2	-1	-0.6	70
-3.0	-1	-0.4	118
-2.8	-2	-0.2	47
-2.6	-2	0.0	28

# Lateral Pre-Crash Acceleration (Event 1)



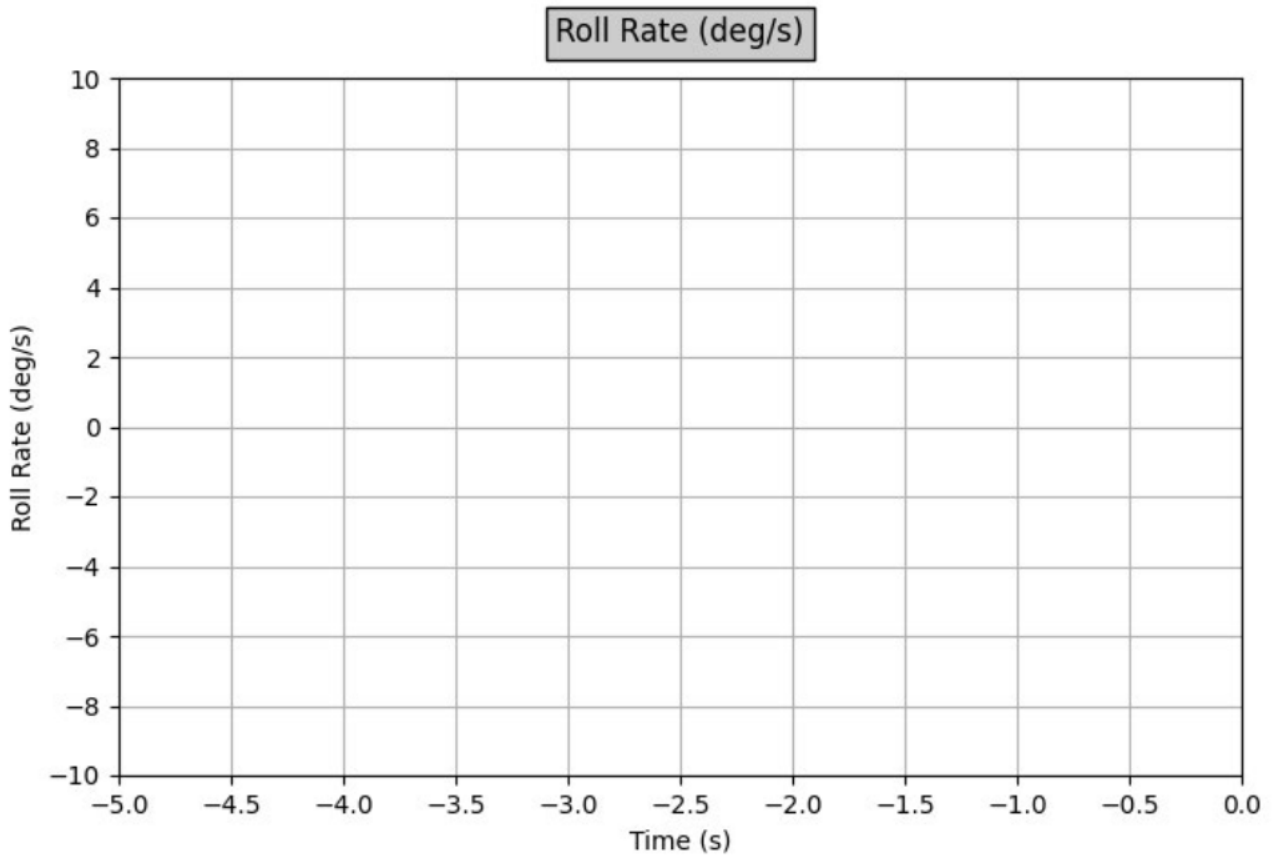
Time (s)	Acceleration (g)	Time (s)	Acceleration (g)	Time (s)	Acceleration (g)
-5.0	SNA	-3.3	SNA	-1.6	SNA
-4.9	SNA	-3.2	SNA	-1.5	SNA
-4.8	SNA	-3.1	SNA	-1.4	SNA
-4.7	SNA	-3.0	SNA	-1.3	SNA
-4.6	SNA	-2.9	SNA	-1.2	SNA
-4.5	SNA	-2.8	SNA	-1.1	SNA
-4.4	SNA	-2.7	SNA	-1.0	SNA
-4.3	SNA	-2.6	SNA	-0.9	SNA
-4.2	SNA	-2.5	SNA	-0.8	SNA
-4.1	SNA	-2.4	SNA	-0.7	SNA
-4.0	SNA	-2.3	SNA	-0.6	SNA
-3.9	SNA	-2.2	SNA	-0.5	SNA
-3.8	SNA	-2.1	SNA	-0.4	SNA
-3.7	SNA	-2.0	SNA	-0.3	SNA
-3.6	SNA	-1.9	SNA	-0.2	SNA
-3.5	SNA	-1.8	SNA	-0.1	SNA
-3.4	SNA	-1.7	SNA	0.0	SNA

# Longitudinal Pre-Crash Acceleration (Event 1)



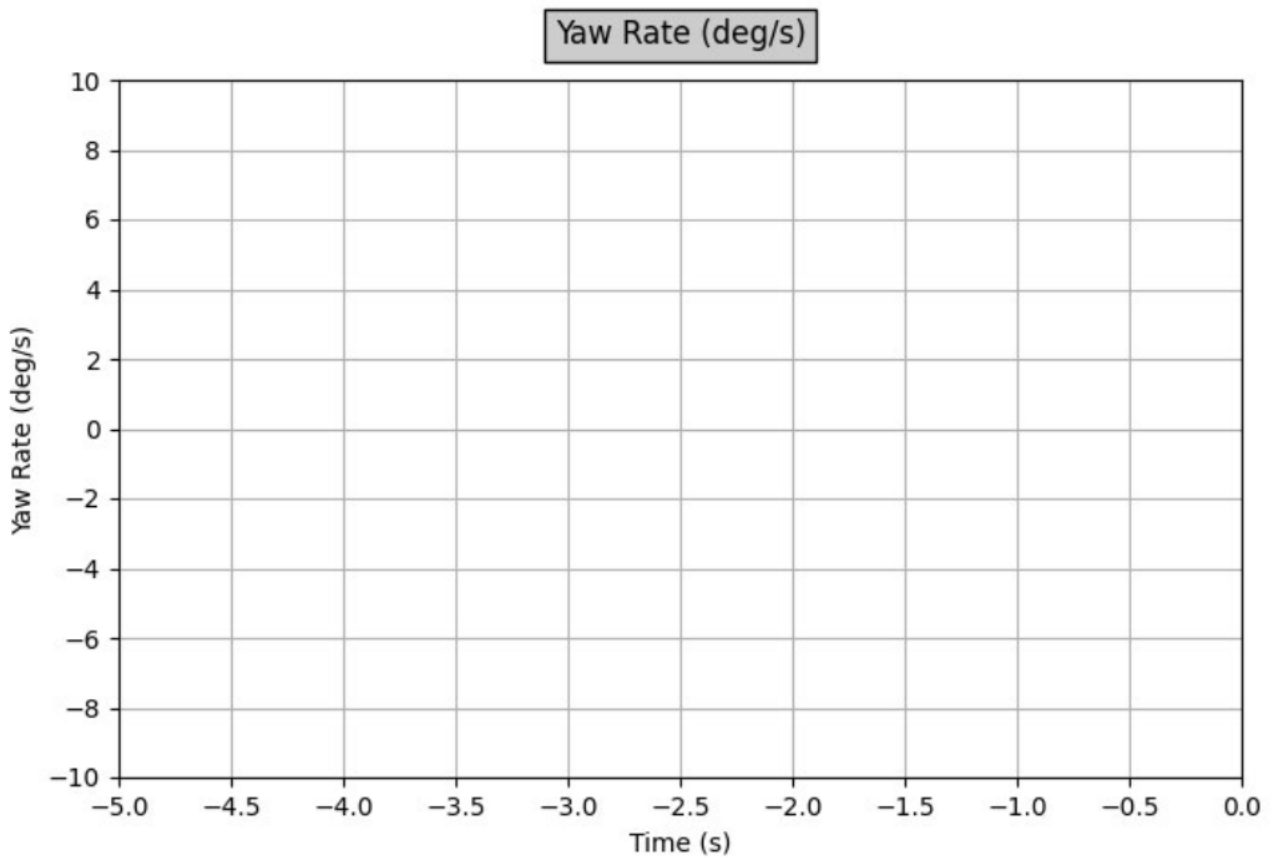
Time (s)	Acceleration (g)	Time (s)	Acceleration (g)	Time (s)	Acceleration (g)
-5.0	SNA	-3.3	SNA	-1.6	SNA
-4.9	SNA	-3.2	SNA	-1.5	SNA
-4.8	SNA	-3.1	SNA	-1.4	SNA
-4.7	SNA	-3.0	SNA	-1.3	SNA
-4.6	SNA	-2.9	SNA	-1.2	SNA
-4.5	SNA	-2.8	SNA	-1.1	SNA
-4.4	SNA	-2.7	SNA	-1.0	SNA
-4.3	SNA	-2.6	SNA	-0.9	SNA
-4.2	SNA	-2.5	SNA	-0.8	SNA
-4.1	SNA	-2.4	SNA	-0.7	SNA
-4.0	SNA	-2.3	SNA	-0.6	SNA
-3.9	SNA	-2.2	SNA	-0.5	SNA
-3.8	SNA	-2.1	SNA	-0.4	SNA
-3.7	SNA	-2.0	SNA	-0.3	SNA
-3.6	SNA	-1.9	SNA	-0.2	SNA
-3.5	SNA	-1.8	SNA	-0.1	SNA
-3.4	SNA	-1.7	SNA	0.0	SNA

# Roll Rate Pre-Crash Data (Event 1)



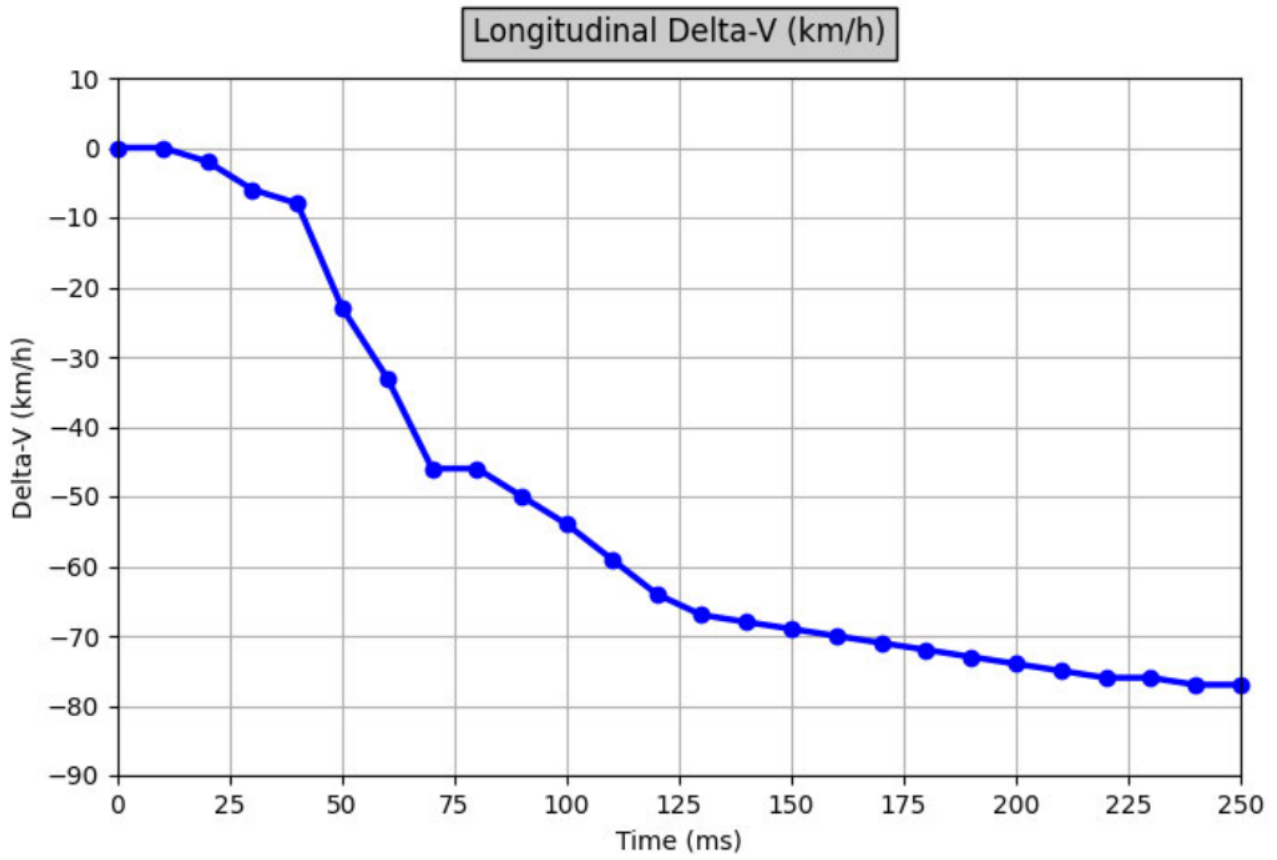
Time (s)	Roll Rate (deg/s)	Time (s)	Roll Rate (deg/s)	Time (s)	Roll Rate (deg/s)
-5.0	SNA	-3.3	SNA	-1.6	SNA
-4.9	SNA	-3.2	SNA	-1.5	SNA
-4.8	SNA	-3.1	SNA	-1.4	SNA
-4.7	SNA	-3.0	SNA	-1.3	SNA
-4.6	SNA	-2.9	SNA	-1.2	SNA
-4.5	SNA	-2.8	SNA	-1.1	SNA
-4.4	SNA	-2.7	SNA	-1.0	SNA
-4.3	SNA	-2.6	SNA	-0.9	SNA
-4.2	SNA	-2.5	SNA	-0.8	SNA
-4.1	SNA	-2.4	SNA	-0.7	SNA
-4.0	SNA	-2.3	SNA	-0.6	SNA
-3.9	SNA	-2.2	SNA	-0.5	SNA
-3.8	SNA	-2.1	SNA	-0.4	SNA
-3.7	SNA	-2.0	SNA	-0.3	SNA
-3.6	SNA	-1.9	SNA	-0.2	SNA
-3.5	SNA	-1.8	SNA	-0.1	SNA
-3.4	SNA	-1.7	SNA	0.0	SNA

# Yaw Rate Pre-Crash Data (Event 1)



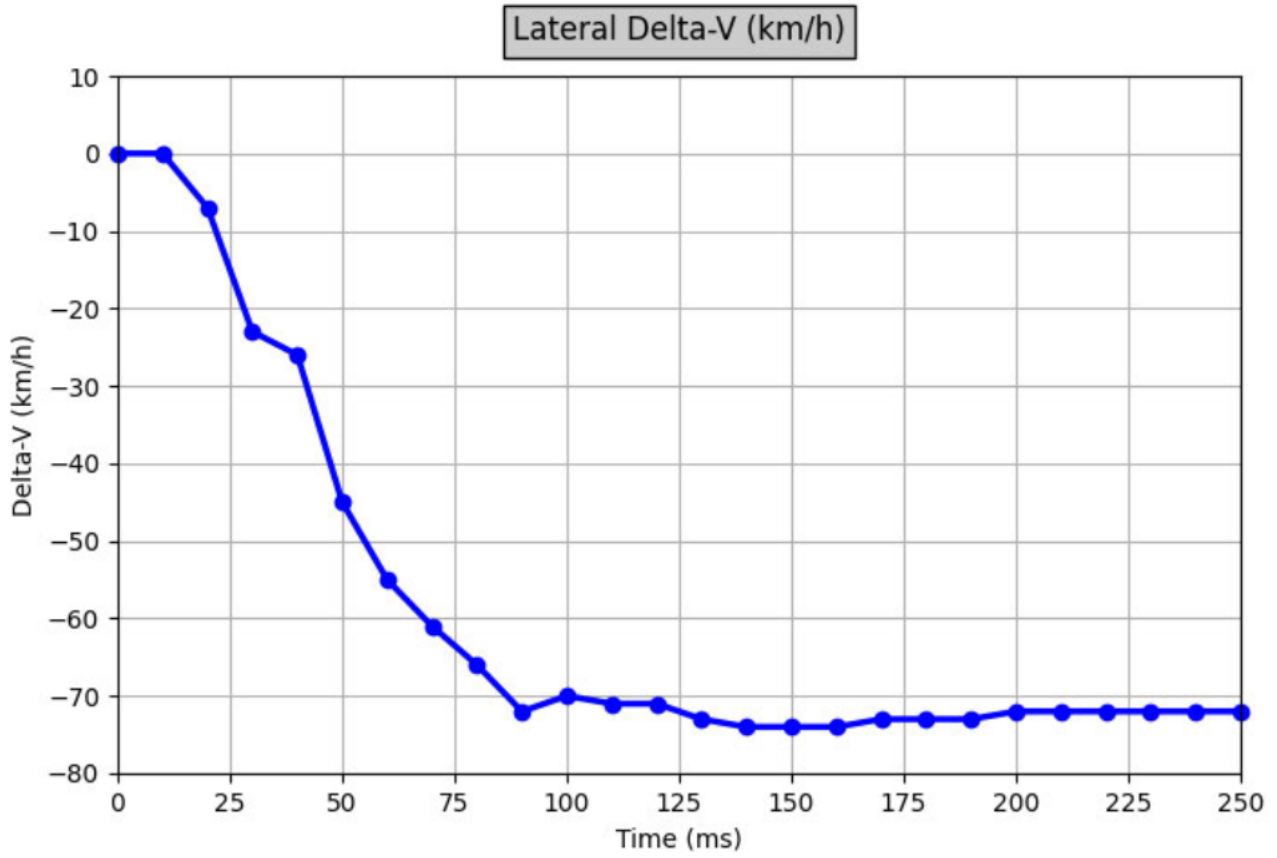
Time (s)	Yaw Rate (deg/s)	Time (s)	Yaw Rate (deg/s)	Time (s)	Yaw Rate (deg/s)
-5.0	SNA	-3.3	SNA	-1.6	SNA
-4.9	SNA	-3.2	SNA	-1.5	SNA
-4.8	SNA	-3.1	SNA	-1.4	SNA
-4.7	SNA	-3.0	SNA	-1.3	SNA
-4.6	SNA	-2.9	SNA	-1.2	SNA
-4.5	SNA	-2.8	SNA	-1.1	SNA
-4.4	SNA	-2.7	SNA	-1.0	SNA
-4.3	SNA	-2.6	SNA	-0.9	SNA
-4.2	SNA	-2.5	SNA	-0.8	SNA
-4.1	SNA	-2.4	SNA	-0.7	SNA
-4.0	SNA	-2.3	SNA	-0.6	SNA
-3.9	SNA	-2.2	SNA	-0.5	SNA
-3.8	SNA	-2.1	SNA	-0.4	SNA
-3.7	SNA	-2.0	SNA	-0.3	SNA
-3.6	SNA	-1.9	SNA	-0.2	SNA
-3.5	SNA	-1.8	SNA	-0.1	SNA
-3.4	SNA	-1.7	SNA	0.0	SNA

# Longitudinal Delta-V (Event 1)



Time (ms)	Delta-V (km/h)	Time (ms)	Delta-V (km/h)
0	0	130	-67
10	0	140	-68
20	-2	150	-69
30	-6	160	-70
40	-8	170	-71
50	-23	180	-72
60	-33	190	-73
70	-46	200	-74
80	-46	210	-75
90	-50	220	-76
100	-54	230	-76
110	-59	240	-77
120	-64	250	-77

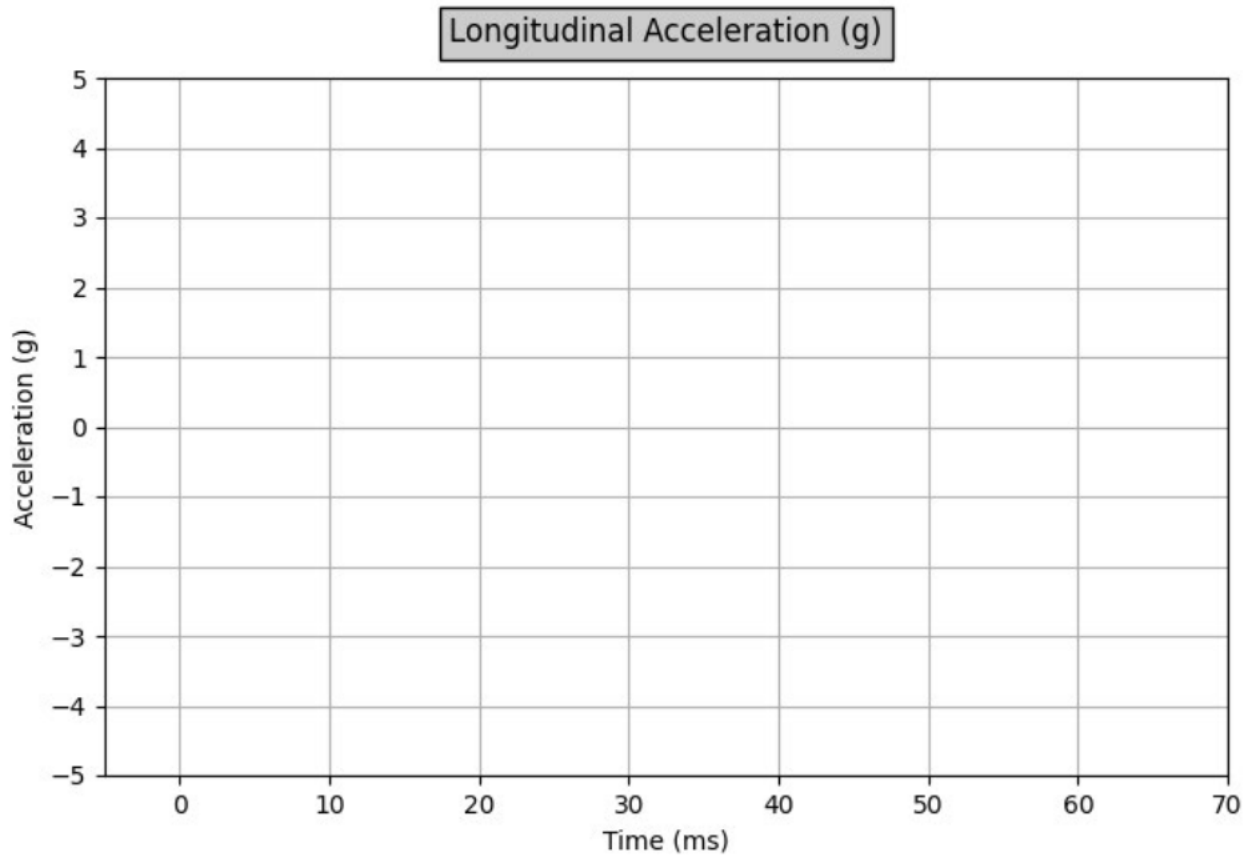
# Lateral Delta-V (Event 1)



Time (ms)	Delta-V (km/h)	Time (ms)	Delta-V (km/h)
0	0	130	-73
10	0	140	-74
20	-7	150	-74
30	-23	160	-74
40	-26	170	-73
50	-45	180	-73
60	-55	190	-73
70	-61	200	-72
80	-66	210	-72
90	-72	220	-72
100	-70	230	-72
110	-71	240	-72
120	-71	250	-72



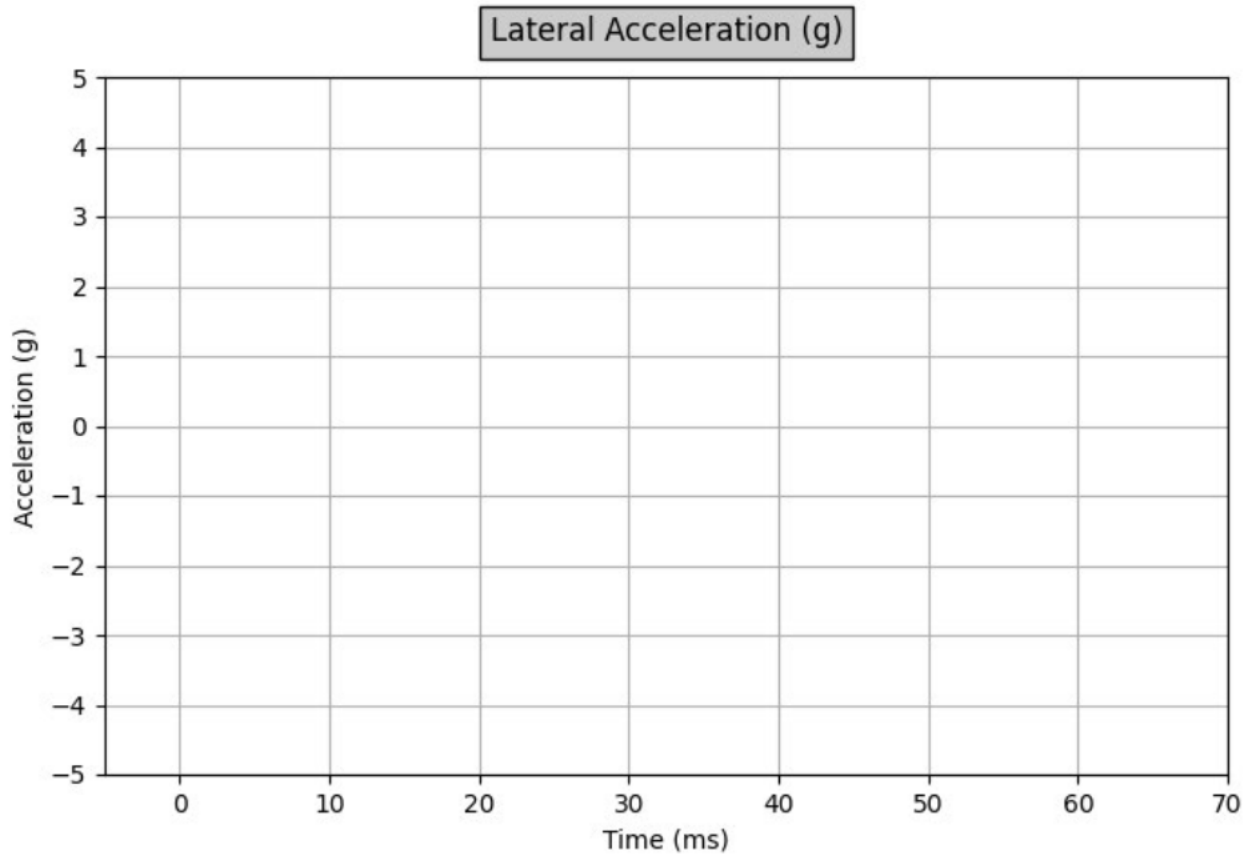
Longitudinal Acceleration (Event 1)



Longitudinal Acceleration Values (Event 1)

Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)
-5.0	SNA	17.0	SNA	39.0	SNA	61.0	SNA
-4.5	SNA	17.5	SNA	39.5	SNA	61.5	SNA
-4.0	SNA	18.0	SNA	40.0	SNA	62.0	SNA
-3.5	SNA	18.5	SNA	40.5	SNA	62.5	SNA
-3.0	SNA	19.0	SNA	41.0	SNA	63.0	SNA
-2.5	SNA	19.5	SNA	41.5	SNA	63.5	SNA
-2.0	SNA	20.0	SNA	42.0	SNA	64.0	SNA
-1.5	SNA	20.5	SNA	42.5	SNA	64.5	SNA
-1.0	SNA	21.0	SNA	43.0	SNA	65.0	SNA
-0.5	SNA	21.5	SNA	43.5	SNA	65.5	SNA
0.0	SNA	22.0	SNA	44.0	SNA	66.0	SNA
0.5	SNA	22.5	SNA	44.5	SNA	66.5	SNA
1.0	SNA	23.0	SNA	45.0	SNA	67.0	SNA
1.5	SNA	23.5	SNA	45.5	SNA	67.5	SNA
2.0	SNA	24.0	SNA	46.0	SNA	68.0	SNA
2.5	SNA	24.5	SNA	46.5	SNA	68.5	SNA
3.0	SNA	25.0	SNA	47.0	SNA	69.0	SNA
3.5	SNA	25.5	SNA	47.5	SNA	69.5	SNA
4.0	SNA	26.0	SNA	48.0	SNA	70.0	SNA
4.5	SNA	26.5	SNA	48.5	SNA		
5.0	SNA	27.0	SNA	49.0	SNA		
5.5	SNA	27.5	SNA	49.5	SNA		
6.0	SNA	28.0	SNA	50.0	SNA		
6.5	SNA	28.5	SNA	50.5	SNA		
7.0	SNA	29.0	SNA	51.0	SNA		
7.5	SNA	29.5	SNA	51.5	SNA		
8.0	SNA	30.0	SNA	52.0	SNA		
8.5	SNA	30.5	SNA	52.5	SNA		
9.0	SNA	31.0	SNA	53.0	SNA		
9.5	SNA	31.5	SNA	53.5	SNA		
10.0	SNA	32.0	SNA	54.0	SNA		
10.5	SNA	32.5	SNA	54.5	SNA		
11.0	SNA	33.0	SNA	55.0	SNA		
11.5	SNA	33.5	SNA	55.5	SNA		
12.0	SNA	34.0	SNA	56.0	SNA		
12.5	SNA	34.5	SNA	56.5	SNA		
13.0	SNA	35.0	SNA	57.0	SNA		
13.5	SNA	35.5	SNA	57.5	SNA		
14.0	SNA	36.0	SNA	58.0	SNA		
14.5	SNA	36.5	SNA	58.5	SNA		
15.0	SNA	37.0	SNA	59.0	SNA		
15.5	SNA	37.5	SNA	59.5	SNA		
16.0	SNA	38.0	SNA	60.0	SNA		
16.5	SNA	38.5	SNA	60.5	SNA		

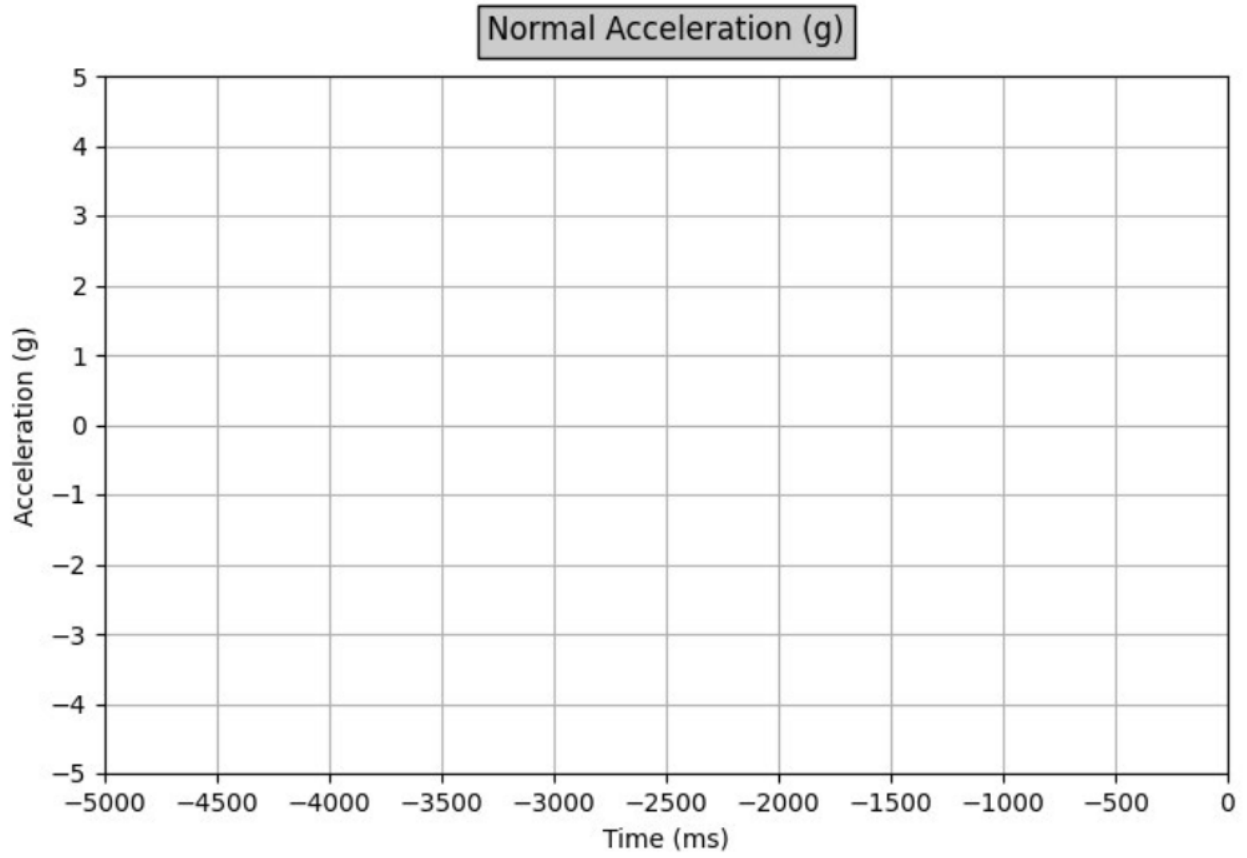
Lateral Acceleration (Event 1)



Lateral Acceleration Values (Event 1)

Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)
-5.0	SNA	17.0	SNA	39.0	SNA	61.0	SNA
-4.5	SNA	17.5	SNA	39.5	SNA	61.5	SNA
-4.0	SNA	18.0	SNA	40.0	SNA	62.0	SNA
-3.5	SNA	18.5	SNA	40.5	SNA	62.5	SNA
-3.0	SNA	19.0	SNA	41.0	SNA	63.0	SNA
-2.5	SNA	19.5	SNA	41.5	SNA	63.5	SNA
-2.0	SNA	20.0	SNA	42.0	SNA	64.0	SNA
-1.5	SNA	20.5	SNA	42.5	SNA	64.5	SNA
-1.0	SNA	21.0	SNA	43.0	SNA	65.0	SNA
-0.5	SNA	21.5	SNA	43.5	SNA	65.5	SNA
0.0	SNA	22.0	SNA	44.0	SNA	66.0	SNA
0.5	SNA	22.5	SNA	44.5	SNA	66.5	SNA
1.0	SNA	23.0	SNA	45.0	SNA	67.0	SNA
1.5	SNA	23.5	SNA	45.5	SNA	67.5	SNA
2.0	SNA	24.0	SNA	46.0	SNA	68.0	SNA
2.5	SNA	24.5	SNA	46.5	SNA	68.5	SNA
3.0	SNA	25.0	SNA	47.0	SNA	69.0	SNA
3.5	SNA	25.5	SNA	47.5	SNA	69.5	SNA
4.0	SNA	26.0	SNA	48.0	SNA	70.0	SNA
4.5	SNA	26.5	SNA	48.5	SNA		
5.0	SNA	27.0	SNA	49.0	SNA		
5.5	SNA	27.5	SNA	49.5	SNA		
6.0	SNA	28.0	SNA	50.0	SNA		
6.5	SNA	28.5	SNA	50.5	SNA		
7.0	SNA	29.0	SNA	51.0	SNA		
7.5	SNA	29.5	SNA	51.5	SNA		
8.0	SNA	30.0	SNA	52.0	SNA		
8.5	SNA	30.5	SNA	52.5	SNA		
9.0	SNA	31.0	SNA	53.0	SNA		
9.5	SNA	31.5	SNA	53.5	SNA		
10.0	SNA	32.0	SNA	54.0	SNA		
10.5	SNA	32.5	SNA	54.5	SNA		
11.0	SNA	33.0	SNA	55.0	SNA		
11.5	SNA	33.5	SNA	55.5	SNA		
12.0	SNA	34.0	SNA	56.0	SNA		
12.5	SNA	34.5	SNA	56.5	SNA		
13.0	SNA	35.0	SNA	57.0	SNA		
13.5	SNA	35.5	SNA	57.5	SNA		
14.0	SNA	36.0	SNA	58.0	SNA		
14.5	SNA	36.5	SNA	58.5	SNA		
15.0	SNA	37.0	SNA	59.0	SNA		
15.5	SNA	37.5	SNA	59.5	SNA		
16.0	SNA	38.0	SNA	60.0	SNA		
16.5	SNA	38.5	SNA	60.5	SNA		

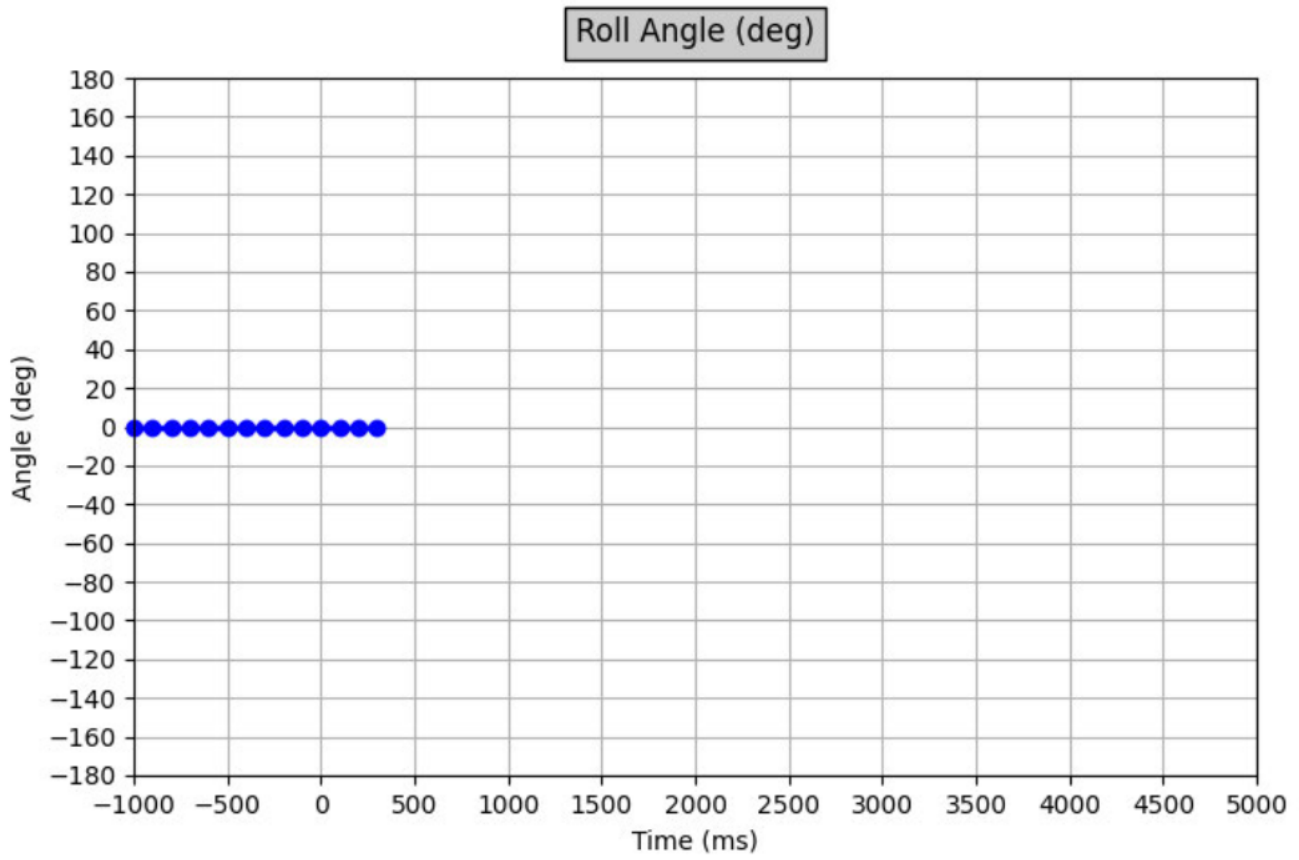
Normal Acceleration (Event 1)



Normal Acceleration Values (Event 1)

Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)	Time (ms)	Acceleration (g)
-5000	SNA	-3300	SNA	-1600	SNA
-4900	SNA	-3200	SNA	-1500	SNA
-4800	SNA	-3100	SNA	-1400	SNA
-4700	SNA	-3000	SNA	-1300	SNA
-4600	SNA	-2900	SNA	-1200	SNA
-4500	SNA	-2800	SNA	-1100	SNA
-4400	SNA	-2700	SNA	-1000	SNA
-4300	SNA	-2600	SNA	-900	SNA
-4200	SNA	-2500	SNA	-800	SNA
-4100	SNA	-2400	SNA	-700	SNA
-4000	SNA	-2300	SNA	-600	SNA
-3900	SNA	-2200	SNA	-500	SNA
-3800	SNA	-2100	SNA	-400	SNA
-3700	SNA	-2000	SNA	-300	SNA
-3600	SNA	-1900	SNA	-200	SNA
-3500	SNA	-1800	SNA	-100	SNA
-3400	SNA	-1700	SNA	0	SNA

Roll Angle Data (Event 1)



Roll Angle Values (Event 1)

Time (ms)	Angle (deg)	Time (ms)	Angle (deg)	Time (ms)	Angle (deg)	Time (ms)	Angle (deg)
-1000	0	800	SNA	2600	SNA	4400	SNA
-900	0	900	SNA	2700	SNA	4500	SNA
-800	0	1000	SNA	2800	SNA	4600	SNA
-700	0	1100	SNA	2900	SNA	4700	SNA
-600	0	1200	SNA	3000	SNA	4800	SNA
-500	0	1300	SNA	3100	SNA	4900	SNA
-400	0	1400	SNA	3200	SNA	5000	SNA
-300	0	1500	SNA	3300	SNA		
-200	0	1600	SNA	3400	SNA		
-100	0	1700	SNA	3500	SNA		
0	0	1800	SNA	3600	SNA		
100	0	1900	SNA	3700	SNA		
200	0	2000	SNA	3800	SNA		
300	0	2100	SNA	3900	SNA		
400	SNA	2200	SNA	4000	SNA		
500	SNA	2300	SNA	4100	SNA		
600	SNA	2400	SNA	4200	SNA		
700	SNA	2500	SNA	4300	SNA		



## Serial Numbers

Sensor Number	Sensor Type	Serial Number
1	RCM Serial Number	2C20292453AA11
2	Front Left Crash Sensor	SNA
3	Front Middle Crash Sensor	SNA
4	Front Right Crash Sensor	SNA
5	Left Side Impact Crash Sensor (B-Pillar)	SNA
6	Right Side Impact Crash Sensor (B-Pillar)	SNA
7	Left Side Impact Crash Sensor (C-Pillar)	SNA
8	Right Side Impact Crash Sensor (C-Pillar)	SNA
9	Front Left Side Door Pressure Sensor	SNA
10	Front Right Side Door Pressure Sensor	SNA







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0952 00 47 FF 00 48 FF 00 4B FF 00 4C FF 00 4D FF 00 4F FF 00 5B FF FF FF FF FF FF FF FF  
0980 FF  
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