

Report Number: 214-TRC-06-004

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

**Hyundai Motor Company
2006 Hyundai Azera 4-door sedan**

NHTSA Number: C60514

Transportation Research Center Inc.

10820 State Route 347

P. O. Box B-67

East Liberty, OH 43319



Test Date: July 14, 2006

Final Report: July 27, 2006

**U. S. Department Of Transportation
National Highway Traffic Safety Administration**

Enforcement

Office of Vehicle Safety Compliance

400 Seventh Street, S. W.

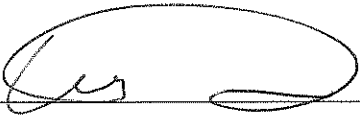
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Washington, DC 20590

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16. Abstract This 56/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2006 Hyundai Azera 4-door sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specifies) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on July 14, 2006. The impact velocity of the Moving Deformable Barrier (MDB) was 61.8 km/h, and the ambient temperature at the struck (driver) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 333 mm at Level 2. The test or target vehicle's performance is given below (with FIR filter): <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Front SID HIII</u></th> <th></th> <th style="text-align: center;"><u>Rear SID HIII</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;">42.6</td> <td>g's</td> <td style="text-align: center;">66.2</td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;">45.0</td> <td>g's</td> <td style="text-align: center;">71.2</td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;">54.3</td> <td>g's</td> <td style="text-align: center;">57.6</td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td style="text-align: center;">49.7</td> <td>g's</td> <td style="text-align: center;">64.4</td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;">69.1</td> <td>g's</td> <td style="text-align: center;">78.4</td> <td>g's</td> </tr> </tbody> </table> The driver door on the struck side of the vehicle did not separate from the body at the hinge or latch. The struck side passenger door separated from the body at the latch but did not open. The opposite doors did not open during the side impact event.				<u>Front SID HIII</u>		<u>Rear SID HIII</u>		Left Upper Rib Acceleration:	42.6	g's	66.2	g's	Left Lower Rib Acceleration:	45.0	g's	71.2	g's	Lower Spine Acceleration:	54.3	g's	57.6	g's	Thoracic Trauma Index, (TTI):	49.7	g's	64.4	g's	Pelvis Acceleration (PEV):	69.1	g's	78.4	g's
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Section 1

Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2006 Hyundai Azera 4-door sedan. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) (except the test was conducted 8 km/h (5 mph) faster than the standard specifies).

Section 2

Summary of Side Impact Test

A 2006 Hyundai Azera 4-door sedan was impacted on the left side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.8 km/h (38.4 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on July 14, 2006. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SID HIIIs) are included in Appendix A.

Two restrained Side Impact Dummies (SID HIIIs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SID HIII dummies were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID HIIIs were instrumented with the following accelerometers:

1. Head (HED) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

A summary of the side impact dummy (SID HIII) configuration and verification test data can be found in Appendix C. A total of 66 channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID HIII	Rear SID HIII
TTI (g)	49.7	64.4
PEV (g)	69.1	78.4

Data Acquisition Explanations

The vehicle's left side sill at front seat Y-axis acceleration data channel, 14SILBFR0000ACYA, exceeded full-scale at approximately 12 milliseconds and recorded no useful data after that. The velocity and displacement were also affected.

The vehicle's left lower A-post Y-axis acceleration data channel, 11APILLO0000ACYA, recorded questionable data after approximately 5 milliseconds. The velocity was also affected.

The vehicle's left mid A-post Y-axis acceleration data channel, 11APILMI0000ACYA, recorded questionable data after approximately 20 milliseconds. The velocity was also affected.

The vehicle's left lower B-post Y-axis acceleration data channel, 14BPILLO0000ACYA, exceeded full-scale at approximately 10 milliseconds. The velocity was also affected.

The vehicle's left rear seat track Y-axis acceleration data channel, 14SETRLERE00ACYA, recorded questionable data after approximately 50 milliseconds. The velocity was also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2006 Hyundai Azera
Vehicle Body Style/Color: 4-door sedan/Sage Green VIN: KMHFC46F26A052846
Vehicle NHTSA No.: C60514 Build Date: 11/05
Engine Data: 6 Cylinders; CID; 3.8 Liters; cc
Placement: - Longitudinal; or X Lateral; or - Horizontal
Transmission: 5 Speed; Manual; X Automatic; X Overdrive
Final Drive: - RWD; X FWD; - Four-Wheel Drive
Odometer Reading: 212 miles
Options: X A/C; X Power steering; X Power brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)¹ 210 kPa Front; 210 kPa Rear
Recommended Tire Size: P235/55R17
Tires on Test Vehicle: P235/55R17 Manufacturer: Michelin, MXV4

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 3rd seat; 5 Total
Type of Front Seats: X Bucket; - Bench; - Split bench
Type of Front Seat Back: - Fixed; X Adjustable with - Lever or X Knob
Vehicle Max. Capacity Loading = 390 kg (A)
No. of Occupants x 68.04 kg. = 340 kg (B)
Vehicle Cargo Capacity (A-B) = 50 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>528.0</u> kg	Left Rear	=	<u>342.5</u> kg
Right Front	=	<u>520.5</u> kg	Right Rear	=	<u>329.0</u> kg
Total Front	=	<u>1048.5</u> kg	Total Rear	=	<u>671.5</u> kg
Front % of Total Weight	=	<u>61.0</u> %	Rear % of Total Weight	=	<u>39.0</u> %
Total Weight	=	<u>1720.0</u> kg			

¹ Tire pressure used in test.

Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids	=	<u>1720.0</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>50.0</u>	kg (B)
Weight of Instrumented Side Impact Dummies (2 X <u>84.0</u> kg)	=	<u>168.0</u>	kg (C)
Test Vehicle Target Weight:	=	<u>1938.0</u>	kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SID HIII s + Cargo):

Left Front	=	<u>582.5</u>	kg	Left Rear	=	<u>435.0</u>	kg
Right Front	=	<u>517.5</u>	kg	Right Rear	=	<u>399.0</u>	kg
Total Front	=	<u>1100.0</u>	kg	Total Rear	=	<u>834.0</u>	kg
Front % of Total Weight	=	<u>56.9</u>	%	Rear % of Total Weight	=	<u>43.1</u>	%
Total Weight	=	<u>1934.0</u>	kg				

As Tested Weight of Test Vehicle (2 SID HIII s + Cargo):

Left Front	=	<u>595.4</u>	kg	Left Rear	=	<u>409.5</u>	kg
Right Front	=	<u>537.0</u>	kg	Right Rear	=	<u>390.8</u>	kg
Total Front	=	<u>1132.4</u>	kg	Total Rear	=	<u>800.3</u>	kg
Front % of Total Weight	=	<u>58.6</u>	%	Rear % of Total Weight	=	<u>41.4</u>	%
Total Weight	=	<u>1932.7</u>	kg				

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>711</u>	Right Front <u>698</u>	Right Front <u>696</u>
Left Front <u>711</u>	Left Front <u>680</u>	Left Front <u>686</u>
Right Rear <u>731</u>	Right Rear <u>655</u>	Right Rear <u>678</u>
Left Rear <u>728</u>	Left Rear <u>650</u>	Left Rear <u>665</u>

Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Test Vehicle Attitude:

	Left Sill Pitch	Right Sill Pitch	Front Bumper L-R Roll	Rear Bumper L-R Roll
As Delivered:	-0.1°	-2.5°	-0.5°	1.5°
Fully Loaded:	-0.6°	-1.8°	-0.8°	1.3°
As Tested:	-0.6°	-0.7°	0°	-0.4°
Negative Pitch Angle	= Vehicle front down			
Negative Roll Angle	= Driver side down			

Test Vehicle Wheelbase: 2777 mm

C.G. = 1084 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4720 mm

Left Side = 4720 mm

Centerline = 4900 mm

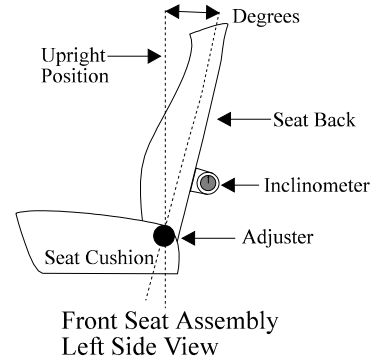
Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Front Seat Cushion Placement: 130 mm rearward of full forward

Total Length of Fore/Aft Adjustment Travel: 260 mm

Total Number of Adjustment Positions or Detents: N/A

Front Seat Back Adjustment Position: The seat back was adjusted to 8.5° at headrest support post.

Seat Back Torso Angle: 25 degrees

Second Position Seat Placement: Fixed

Total Length Of Fore/Aft Adjustment Travel: N/A mm

Seat Back Adjustment Position: Fixed

Adjustable Steering Column Position: 21.2°; middle of geometric range of travel

Window Positions:

Right Front: Open Right Rear: Open

Left Front: Closed Left Rear: Closed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent In Fuel Tank:

75.0 liters (fuel tank usable capacity)

69.6 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2777 millimeters

Intended impact point is 449 millimeters rearward of front axle centerline (which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 464 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2006/Hyundai/Azera

Body Style: 4-door sedan

VIN: KMHFC46F26A052846

NHTSA No.: C60514

Build Date: 11/ 05

Test Date: 07/14/06

Vehicle Overall Length = 4900 mm

Overall Width = 1847 mm

Vehicle Test Weight (Pre-Test):

Left Front = 595.4 kg Left Rear = 409.5 kg

Right Front = 537.0 kg Right Rear = 390.8 kg

Total Front = 1132.4 kg Total Rear = 800.3 kg

Total Weight = 1932.7 kg

Wheelbase = 2777 mm

Longitudinal C.G. From Center Of Front Axle = 1084 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 15 mm Right of nominal impact ref. line (Lateral)

Actual Impact Point is 2 mm Down from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (265 mm above ground) = 138 mm

2. Level 2 (610 mm above ground) = 333 mm

3. Level 3 (650 mm above ground) = 331 mm

4. Level 4 (900 mm above ground) = 247 mm

5. Level 5 (1420 mm above ground) = 2 mm

Maximum Post-Test Intrusion = 333 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification 055

059

Restraints Used 3-pt. seat belt, side curtain
and torso airbags

3-pt. seat belt, side
curtain and torso airbags

Instrumentation:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3 Offboard = 6 Total = 9

Data Sheet 3

Moving Deformable Barrier (MDB) Summary

MDB Face Manufacturer And Serial Number:

Cellbond, GB329

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage = 1251 mm
Overall Length of MDB (Incl. honeycomb impact face) = 4014 mm
Wheelbase of Framework Carriage = 2591 mm
Track of Framework Carriage (Front & Rear) = 1881 mm
C.G. Location Rearward of Front Axle = 1108 mm

MDB Weight:

Left Front	=	<u>511.6</u>	kg	Left Rear	=	<u>176.8</u>	kg
Right Front	=	<u>273.0</u>	kg	Right Rear	=	<u>403.6</u>	kg
Total Front	=	<u>784.6</u>	kg	Total Rear	=	<u>580.4</u>	kg
Total MDB Weight	=	<u>1365.0</u>	kg				

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees
Impact Speed = 61.8 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level	=	<u>108</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>62</u>	millimeters
3. Row C at Mid Level	=	<u>100</u>	millimeters
4. Row D at Top of Stack Level	=	<u>136</u>	millimeters

Instrumentation:

Number of MDB Data Channels = 7

Data Sheet 4

Post-Test Observations

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Visible Dummy Contact Points:

	<u>Left Front SID HIII</u>	<u>Left Rear SID HIII</u>
Head:	<u>Side curtain airbag, headliner, head restraint</u>	<u>Side curtain airbag, headliner</u>
Upper Torso:	<u>Side torso airbag</u>	<u>None</u>
Lower Torso:	<u>Side torso airbag</u>	<u>None</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

	<u>Left Side</u>	<u>Right Side</u>
Front:	<u>Jammed and latched</u>	<u>Easy</u>
Rear:	<u>Jammed and unlatched</u>	<u>Easy</u>

MDB Distance From Target Impact Point:

Vertical: 2 mm down from target

Horizontal: 15 mm right from target

Arm Rest Locations:

Front: 244 mm below the bottom of the window

Rear: 262 mm below the bottom of the window

Seat Movement:

Front: None

Rear: None

Glazing Damage:

Windshield: None

Window: Impacted side windows broken.

Pillar Separation: None

Sill Separation: None

Other Notable Impact Effects:

Left rear door unlatched but jammed shut. See Figures A-87 and A-88 in Appendix A.

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID HIII Instrumentation Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Test Number: 060714

Driver Dummy Serial Number: 055

Location	Positive Direction Max. Time (g) (ms)		Negative Direction Max. Time (g) (ms)	
Head Acceleration (g) Longitudinal X Lateral Y Vertical Z Resultant HIC 36				
	5.4	222.6	11.2	58.7
	22.2	56.8	4.9	193.6
	8.8	179.6	8.8	57.8
	26.2	57.4		
	73			
Head Redundant Acceleration (g) Longitudinal X Lateral Y Vertical Z Resultant				
	5.4	222.6	11.3	59.1
	22.4	57.0	4.8	198.4
	8.9	179.6	8.7	57.9
	26.1	57.1		
Neck Force X-Axis Shear Y-Axis Shear Z-Axis Shear				
	209.0	222.7	148.0	127.5
	176.8	57.5	170.2	198.6
	399.2	179.9	133.0	66.6
Neck Moment About X-Axis About Y-Axis About Z-Axis Occipital Cond				
	13.3	127.0	64.1	43.6
	15.4	120.9	44.2	59.8
	7.1	71.0	5.9	21.8
Left Upper Rib Acceleration Lateral (P) Lateral (R)				
	42.7	25.0	3.3	88.2
	42.2	25.0	3.6	88.2
Left Lower Rib Acceleration Lateral (P) Lateral (R)				
	45.0	23.1	6.5	87.5
	46.8	23.1	6.8	87.5

Data Sheet 5 (Continued)

SID Instrumentation Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Test Number: 060714

Driver Dummy Serial Number: 055

Location	Positive Direction		Negative Direction	
	Max. (g)	Time (ms)	Max. (g)	Time (ms)
Lower Spine Acceleration				
Lateral (P)	54.3	28.8	10.4	58.7
Lateral (R)	54.3	28.8	10.6	58.8
Pelvis Acceleration				
Lateral (P)	69.1	26.8	15.1	86.9
TTI	49.7			

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

Data Sheet 5 (continued)

SID HIII Instrumentation Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Test Number: 060714

Left Rear Dummy Serial Number: 059

Location	Positive Direction Max. (g)	Time (ms)	Negative Direction Max. (g)	Time (ms)
Head Acceleration (g)				
Longitudinal X	4.5	21.2	21.0	70.7
Lateral Y	28.9	53.8	10.5	156.9
Vertical Z	21.9	40.1	29.3	60.7
Resultant	40.4	60.6		
HIC 36	73			
Head Redundant Acceleration (g)				
Longitudinal X	4.2	21.2	21.6	70.3
Lateral Y	29.1	57.0	10.4	156.0
Vertical Z	21.9	40.1	29.4	60.8
Resultant	40.5	60.6		
Neck Force				
X-Axis Shear	253.9	61.2	87.4	206.2
Y-Axis Shear	36.3	119.8	530.2	67.8
Z-Axis Shear	722.2	40.2	1086.9	61.0
Neck Moment				
About X-Axis	10.6	111.5	65.9	56.2
About Y-Axis	8.1	110.2	28.3	69.8
About Z-Axis	11.6	83.1	21.8	167.5
Occipital Cond				
Left Upper Rib Acceleration				
Lateral (P)	66.2	48.2	8.2	127.5
Lateral (R)	64.8	48.2	8.0	127.5
Left Lower Rib Acceleration				
Lateral (P)	71.2	45.6	16.1	71.3
Lateral (R)	69.9	45.6	15.8	71.8

Data Sheet 5 (Continued)

SID Instrumentation Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Test Number: 060714

Left Rear Dummy Serial Number: 059

Location	Positive Direction		Negative Direction	
	Max. (g)	Time (ms)	Max. (g)	Time (ms)
Lower Spine Acceleration				
Lateral (P)	57.6	40.6	17.0	75.0
Lateral (R)	56.9	40.6	17.2	75.6
Pelvis Acceleration				
Lateral (P)	78.4	35.0	17.3	66.2
TTI	64.4			

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

Lateral: Leftward

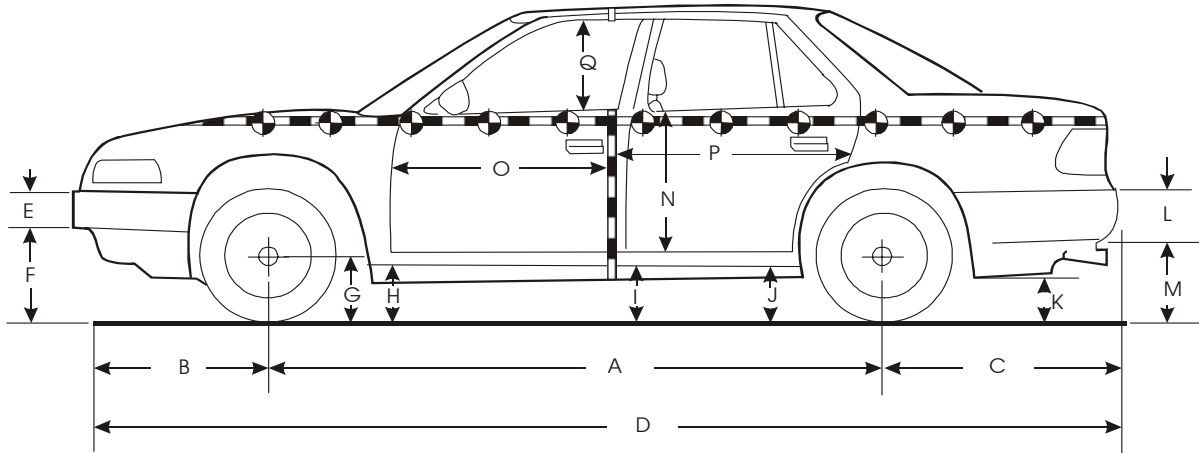
Vertical: Upward

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



Left Side View

Note: All dimensions are in millimeters with tolerance of ± 3 mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2777	2777	2737	40
B	970	970	972	-2
C	1153	1153	1151	2
D	4900	4900	4876	24
E	515	515	515	0
F	360	355	359	-4
G	323	319	317	2
H	230	212	275	-63
I	250	226	285	-59
J1	214	171	184	-13
J2	250	206	220	-14
K	289	239	245	-6
L	220	220	220	0
M	418	363	370	-7
N	720	720	582	138
O	897	897	837	60
P	1264	1264	1066	198
Q	424	424	405	19
R	4720	4720	4699	-21
S	4720	4720	4670	50
T	1367	1367	1591	-224

D = Length at centerline

E and L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-pillar

J1 = To Pinch Weld

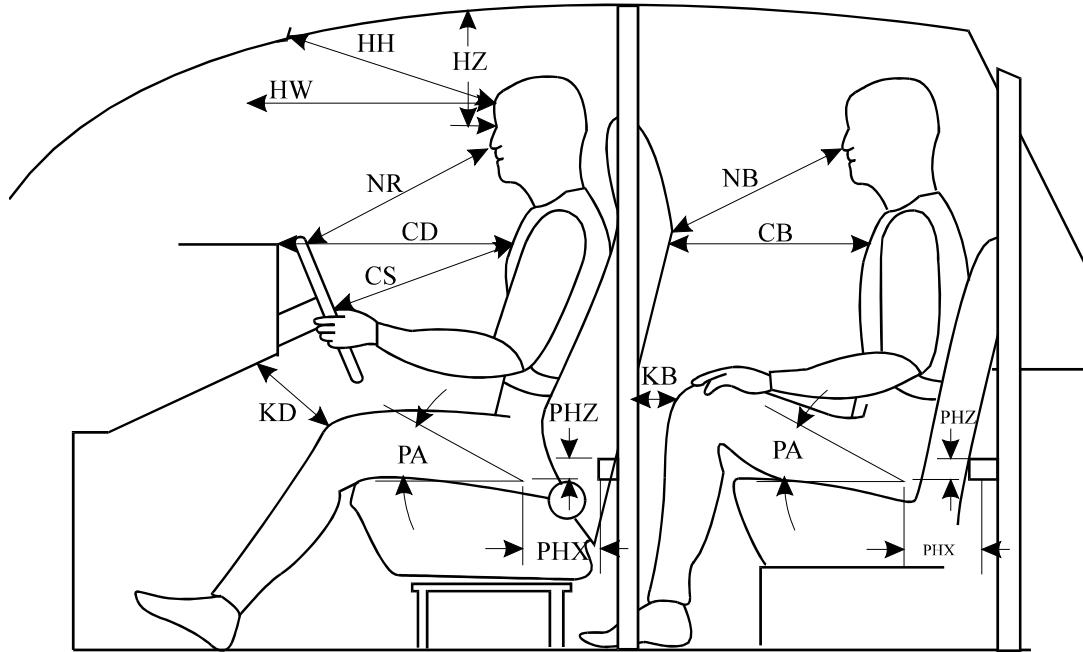
J2 = To Sill

Data Sheet 7

SID HIII Longitudinal Clearance Dimensions

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



Left Side View

Note: All measurements are in millimeters with tolerance of ± 3 mm

Measurement	Driver SID HIII # 055	Left Rear Pass. SID HIII # 059
HH	351	N/A
HW	545	N/A
HZ	149	180
NR/NB	442	690
CD/CB	568	628
CS	350	N/A
KDL(KDA°)/KBL(KBA°)	85/(31°)	220/(0°)
KDR(KDA°)/KBR(KBA°)	85/(31°)	235/(0°)
PA°	24.7°	24.5°
PHX	237	178
PHZ	203	248

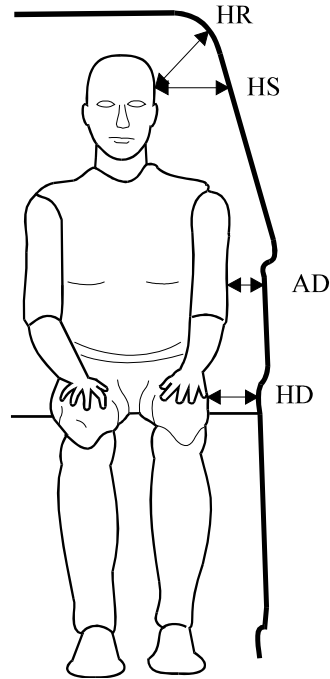
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID HIII Lateral Clearance Dimensions

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



Note: All measurements are in millimeters with tolerance of ± 3 mm

Measurement	Driver SID HIII # 055	Left Rear Pass. SID HIII # 059
HR	161	150
HS	250	250
AD*	Lower: 135 Upper: 119	Lower: 80 Upper: 120
HD	204	124

* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

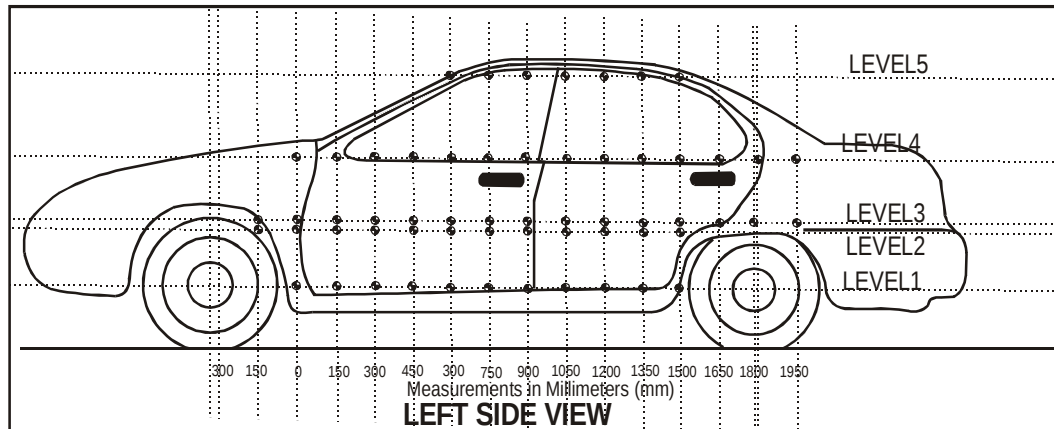
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID HIII arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The “As Tested” Configuration.

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1420</u>	mm
Level 4 @ Window Sill	=	<u>900</u>	mm
Level 3 @ Mid Door	=	<u>650</u>	mm
Level 2 @ Occupant H-Point	=	<u>610</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>265</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	265	Pre	---	---	---	---	---	---	---	---	857	855	853	851	850	850
		Post	---	---	---	---	---	---	---	---	774	767	757	748	739	730
		Crush	---	---	---	---	---	---	---	---	83	88	96	103	111	120
Level 2 H-Point	610	Pre	---	---	---	886	913	---	---	927	921	917	914	911	908	906
		Post	---	---	---	885	911	---	---	912	912	723	682	659	647	629
		Crush	---	---	---	1	2	---	---	15	9	194	232	252	261	277
Level 3 Mid-Door	650	Pre	---	---	880	912	---	---	---	826	922	919	916	913	910	908
		Post	---	---	881	910	---	---	---	917	919	746	700	664	642	644
		Crush	---	---	-1	2	---	---	---	-91	3	173	216	249	268	264
Level 4 Window Sill	900	Pre	---	---	---	---	---	827	844	856	864	866	872	875	875	876
		Post	---	---	---	---	---	827	841	850	855	781	752	713	677	654
		Crush	---	---	---	---	---	0	6	9	9	85	120	162	198	222
Level 5 Window Top	1420	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	594
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	603
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	-9

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Location	Height	(mm) From Impact Point													
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	265	Pre	850	847	848	848	849	851	853	---	---	---	---	---	---
		Post	718	713	710	726	741	749	801	---	---	---	---	---	---
		Crush	132	134	138	122	108	102	52	---	---	---	---	---	---
Level 2 H-Point	610	Pre	904	903	900	899	899	899	899	903	---	---	---	---	906
		Post	603	615	596	580	579	577	566	676	---	---	---	---	946
		Crush	301	288	304	319	320	322	333	227	---	---	---	---	-40
Level 3 Mid-Door	650	Pre	906	905	902	902	901	900	901	904	---	---	---	---	899
		Post	630	621	612	601	589	578	570	691	---	---	---	---	941
		Crush	276	284	290	301	312	322	331	213	---	---	---	---	-42
Level 4 Window Sill	900	Pre	877	875	874	874	873	542	873	873	883	889	890	884	873
		Post	665	672	656	635	626	617	664	783	900	903	917	921	917
		Crush	212	203	218	239	247	-75	209	90	-17	-14	-27	-37	-44
Level 5 Window Top	1420	Pre	604	609	611	608	607	605	604	602	599	---	---	---	---
		Post	613	612	609	608	613	618	626	630	630	---	---	---	---
		Crush	-9	-3	2	0	-6	-13	-22	-28	-31	---	---	---	---

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

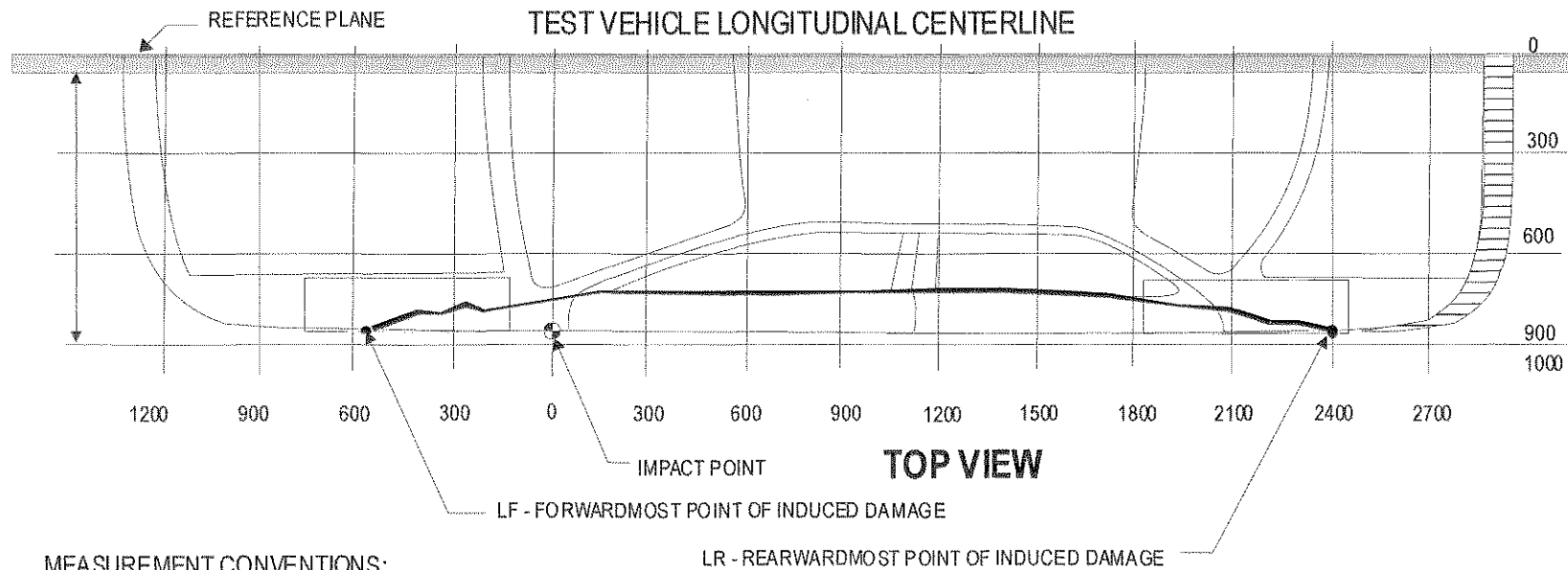
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

NOTE: All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of plus or minus 0.1 mm.



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-)

Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
6: LF = -150 mm (Level 2)	927	912	15
5: 300 mm (Level 2)	914	682	232
4: 750 mm (Level 2)	906	629	277
3: 1050 mm (Level 2)	903	615	288
2: 1500 mm (Level 2)	899	579	320
1: LR = 1950 mm (Level 2)	903	676	227

Full length of induced damage was 2100 mm.

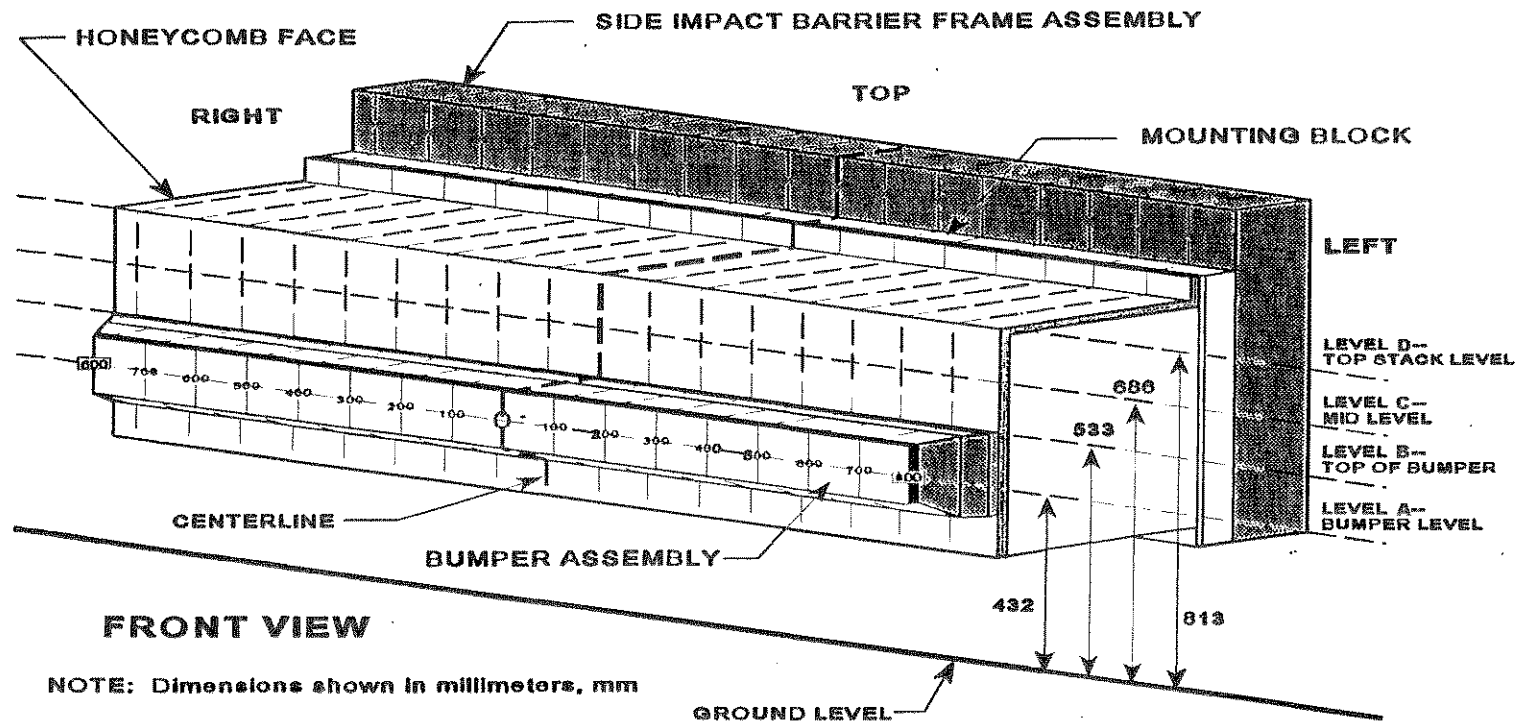
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

		Distance Right of Center (mm)										Distance Left of Center (mm)								
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800		
Top Stack Level - Level D	814	-49	-12	-12	-14	-20	-32	-58	-63	-43	-31	-25	-30	-34	-48	-72	-97	-136		
Mid Level Level C	685	-17	1	-3	-5	-7	-7	-16	-32	-16	-6	-4	-5	-9	-15	-27	-58	-100		
Top Bumper Level-Level B ¹	560	-62	-49	-32	-27	-24	-26	-26	-24	-22	-22	-21	-23	-22	-22	-24	-37	-53		
Mid Bumper Level - Level A	432	-108	-96	-75	-70	-70	-70	-69	-69	-69	-69	-68	-68	-69	-69	-69	-81	-90		

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of ± 0.1 mm.

¹ Top Bumper measurements are collected at 560 mm to eliminate post-test measurement point obstruction by the bumper element.

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

Deformable Barrier Face Profile

NHTSA No.: C60514

Pre-Test

Index	Xmm	Ymm	Zmm
1	-389.0	799.0	-53.0
2	-389.0	698.5	-53.7
3	-388.7	598.6	-53.7
4	-388.6	498.5	-54.1
5	-388.1	398.6	-54.3
6	-388.2	298.5	-54.3
7	-387.8	198.5	-54.4
8	-387.5	98.7	-54.6
9	-387.3	-1.5	-54.5
10	-387.1	-101.4	-54.2
11	-386.8	-201.2	-54.6
12	-386.6	-301.5	-54.5
13	-386.2	-401.2	-54.8
14	-386.0	-501.1	-54.7
15	-385.9	-602.3	-53.5
16	-385.5	-701.4	-54.5
17	-385.2	-800.9	-54.7
18	-387.7	800.1	-181.6
19	-387.7	699.7	-181.8
20	-387.7	599.7	-182.2
21	-387.5	499.3	-183.0
22	-387.2	399.7	-183.0
23	-387.0	300.0	-182.8

Post-Test

Index	Xmm	Ymm	Zmm
1	-339.9	752.9	-81.4
2	-377.0	664.6	-69.2
3	-376.5	565.5	-69.0
4	-375.1	465.5	-68.7
5	-367.7	366.2	-69.4
6	-356.7	266.7	-70.2
7	-330.0	170.1	-76.0
8	-324.3	72.3	-79.6
9	-344.7	-25.2	-76.2
10	-356.4	-123.7	-65.8
11	-361.8	-223.6	-56.6
12	-356.4	-324.2	-55.1
13	-352.4	-423.3	-50.3
14	-337.8	-522.1	-48.5
15	-313.9	-619.5	-49.4
16	-288.4	-715.3	-48.7
17	-249.5	-801.0	-50.7
18	-370.5	763.6	-197.5
19	-388.4	666.3	-196.2
20	-384.3	566.3	-196.3
21	-382.3	465.8	-196.6
22	-380.7	366.2	-196.4
23	-379.7	266.6	-195.9

Difference

Index	Xmm	Ymm	Zmm
1	-49.1	46.1	28.4
2	-12.0	33.9	15.5
3	-12.2	33.1	15.3
4	-13.5	33.0	14.6
5	-20.4	32.4	15.1
6	-31.5	31.8	15.9
7	-57.8	28.4	21.6
8	-63.2	26.4	25.0
9	-42.6	23.7	21.7
10	-30.7	22.3	11.6
11	-25.0	22.4	2.0
12	-30.2	22.7	0.6
13	-33.8	22.1	-4.5
14	-48.2	21.0	-6.2
15	-72.0	17.2	-4.1
16	-97.1	13.9	-5.8
17	-135.7	0.1	-4.0
18	-17.2	36.5	15.9
19	0.7	33.4	14.4
20	-3.4	33.4	14.1
21	-5.2	33.5	13.6
22	-6.5	33.5	13.4
23	-7.3	33.4	13.1

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

Deformable Barrier Face Profile Cont'd.

NHTSA No.: C60514

Pre-Test

Index	Xmm	Ymm	Zmm
24	-386.9	200.0	-183.3
25	-386.5	99.9	-182.9
26	-386.4	-0.3	-183.1
27	-386.1	-100.4	-183.3
28	-385.9	-200.3	-183.5
29	-385.6	-300.6	-183.6
30	-385.2	-400.6	-183.4
31	-384.9	-500.3	-183.3
32	-384.6	-600.2	-183.9
33	-384.5	-700.6	-183.4
34	-384.1	-800.4	-184.2
35	-387.5	799.4	-308.2
36	-387.4	698.8	-308.9
37	-387.5	599.1	-308.9
38	-387.1	499.0	-309.0
39	-386.6	399.2	-309.1
40	-386.3	299.1	-309.2
41	-386.1	199.2	-309.2
42	-385.8	99.2	-309.3
43	-385.6	-0.8	-309.4
44	-385.2	-101.0	-309.3
45	-384.9	-201.3	-309.5
46	-384.6	-301.8	-309.4

Post-Test

Index	Xmm	Ymm	Zmm
24	-370.9	167.1	-197.4
25	-354.9	69.2	-199.4
26	-370.6	-29.6	-191.2
27	-380.5	-129.2	-186.1
28	-382.0	-229.3	-182.1
29	-380.2	-329.5	-178.0
30	-376.3	-429.8	-173.7
31	-370.4	-530.1	-170.3
32	-357.7	-629.7	-168.1
33	-327.0	-725.5	-168.8
34	-284.4	-815.9	-172.9
35	-325.7	762.6	-296.6
36	-338.7	662.7	-305.1
37	-355.8	564.8	-314.9
38	-360.4	463.7	-316.9
39	-362.8	365.5	-314.8
40	-360.5	263.9	-318.5
41	-360.3	164.0	-318.0
42	-362.1	64.8	-315.4
43	-363.6	-35.0	-310.3
44	-363.0	-135.1	-306.5
45	-363.9	-236.1	-303.4
46	-362.0	-336.8	-301.0

Difference

Index	Xmm	Ymm	Zmm
24	-16.0	32.9	14.1
25	-31.6	30.7	16.5
26	-15.8	29.3	8.1
27	-5.6	28.8	2.8
28	-3.9	29.0	-1.4
29	-5.4	28.9	-5.6
30	-8.9	29.2	-9.7
31	-14.5	29.8	-13.0
32	-26.9	29.5	-15.8
33	-57.5	24.9	-14.6
34	-99.7	15.5	-11.3
35	-61.8	36.8	-11.6
36	-48.7	36.1	-3.8
37	-31.7	34.3	6.0
38	-26.7	35.3	7.9
39	-23.8	33.7	5.7
40	-25.8	35.2	9.3
41	-25.8	35.2	8.8
42	-23.7	34.4	6.1
43	-22.0	34.2	0.9
44	-22.2	34.1	-2.8
45	-21.0	34.8	-6.1
46	-22.6	35.0	-8.4

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

Deformable Barrier Face Profile Cont'd.

NHTSA No.: C60514

Pre-Test

Index	Xmm	Ymm	Zmm
47	-384.3	-401.4	-309.6
48	-383.9	-501.7	-309.5
49	-383.6	-601.8	-309.8
50	-383.6	-701.6	-309.9
51	-383.2	-801.4	-310.1
52	-477.6	795.7	-435.2
53	-489.4	698.1	-435.6
54	-489.4	598.5	-435.7
55	-489.2	498.2	-435.7
56	-488.6	398.1	-435.9
57	-488.1	298.4	-435.9
58	-487.6	198.4	-436.1
59	-487.6	98.5	-436.5
60	-487.4	-1.4	-436.7
61	-486.9	-101.7	-436.7
62	-486.6	-201.5	-437.2
63	-486.2	-301.7	-437.3
64	-486.4	-401.4	-437.8
65	-486.3	-501.3	-437.9
66	-485.6	-601.2	-438.2
67	-484.9	-701.8	-438.0
68	-473.2	-797.7	-437.6

Post-Test

Index	Xmm	Ymm	Zmm
47	-362.1	-435.6	-296.4
48	-361.9	-535.8	-294.6
49	-359.9	-636.5	-291.8
50	-346.5	-736.1	-284.9
51	-330.3	-833.6	-273.7
52	-369.2	756.3	-420.7
53	-393.8	659.9	-425.0
54	-414.8	562.5	-428.0
55	-419.4	462.1	-428.2
56	-419.0	362.2	-427.2
57	-418.6	262.4	-426.2
58	-418.8	163.0	-424.3
59	-418.5	62.5	-424.0
60	-418.6	-37.3	-423.2
61	-418.3	-137.6	-422.1
62	-418.3	-237.5	-421.5
63	-417.8	-337.6	-420.0
64	-417.9	-437.1	-418.7
65	-417.8	-537.1	-417.5
66	-417.1	-637.2	-416.2
67	-404.1	-736.7	-413.0
68	-383.0	-831.3	-405.9

Difference

Index	Xmm	Ymm	Zmm
47	-22.2	34.2	-13.2
48	-22.0	34.1	-14.9
49	-23.7	34.7	-18.0
50	-37.1	34.5	-25.0
51	-52.9	32.2	-36.4
52	-108.4	39.4	-14.5
53	-95.6	38.2	-10.6
54	-74.6	36.0	-7.7
55	-69.8	36.1	-7.5
56	-69.6	35.9	-8.7
57	-69.5	36.0	-9.7
58	-68.8	35.4	-11.8
59	-69.1	36.0	-12.5
60	-68.8	35.9	-13.5
61	-68.6	35.9	-14.6
62	-68.3	36.0	-15.7
63	-68.4	35.9	-17.3
64	-68.5	35.7	-19.1
65	-68.5	35.8	-20.4
66	-68.5	36.0	-22.0
67	-80.8	34.9	-25.0
68	-90.2	33.6	-31.7

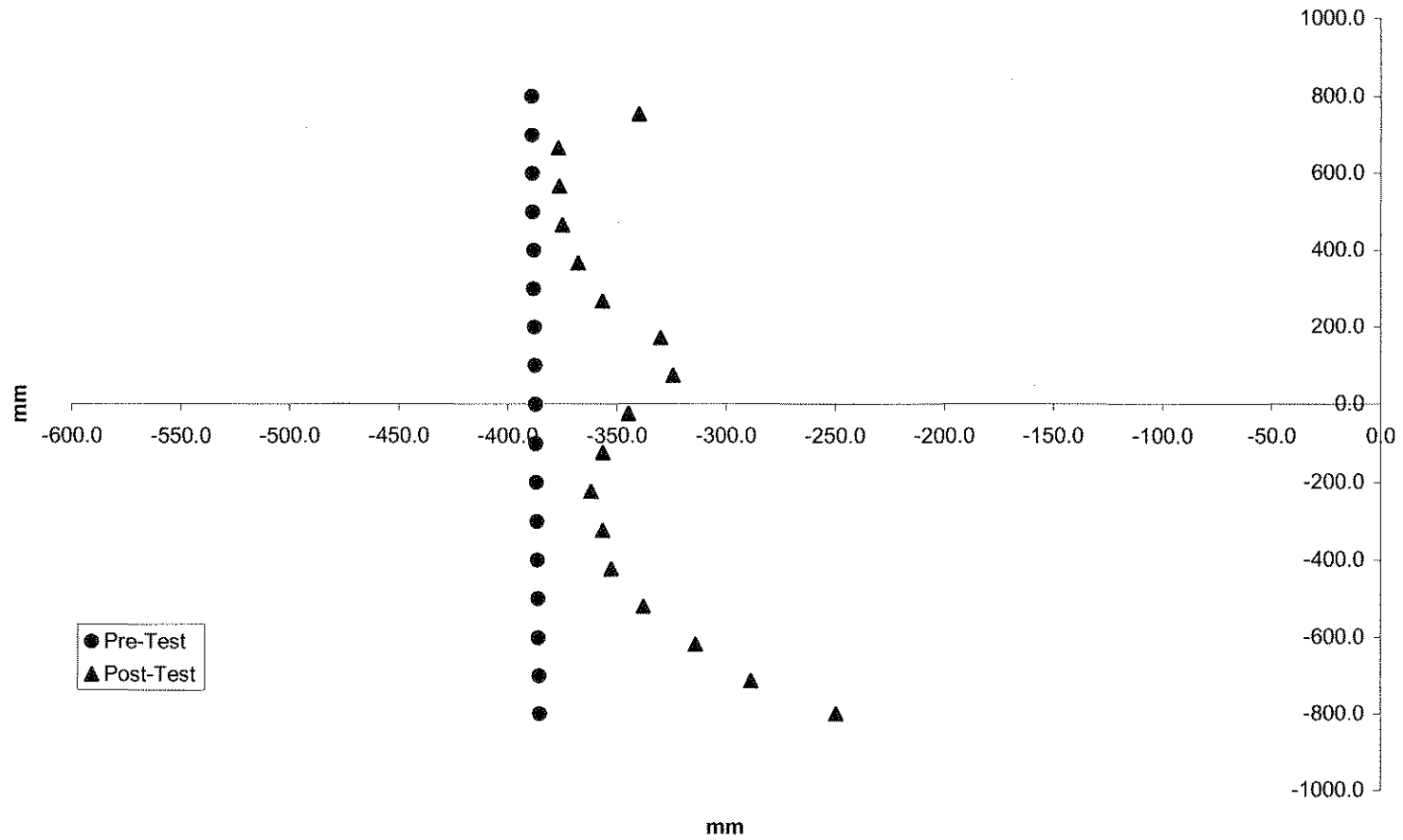
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Deformable Barrier Face Profile 1-17



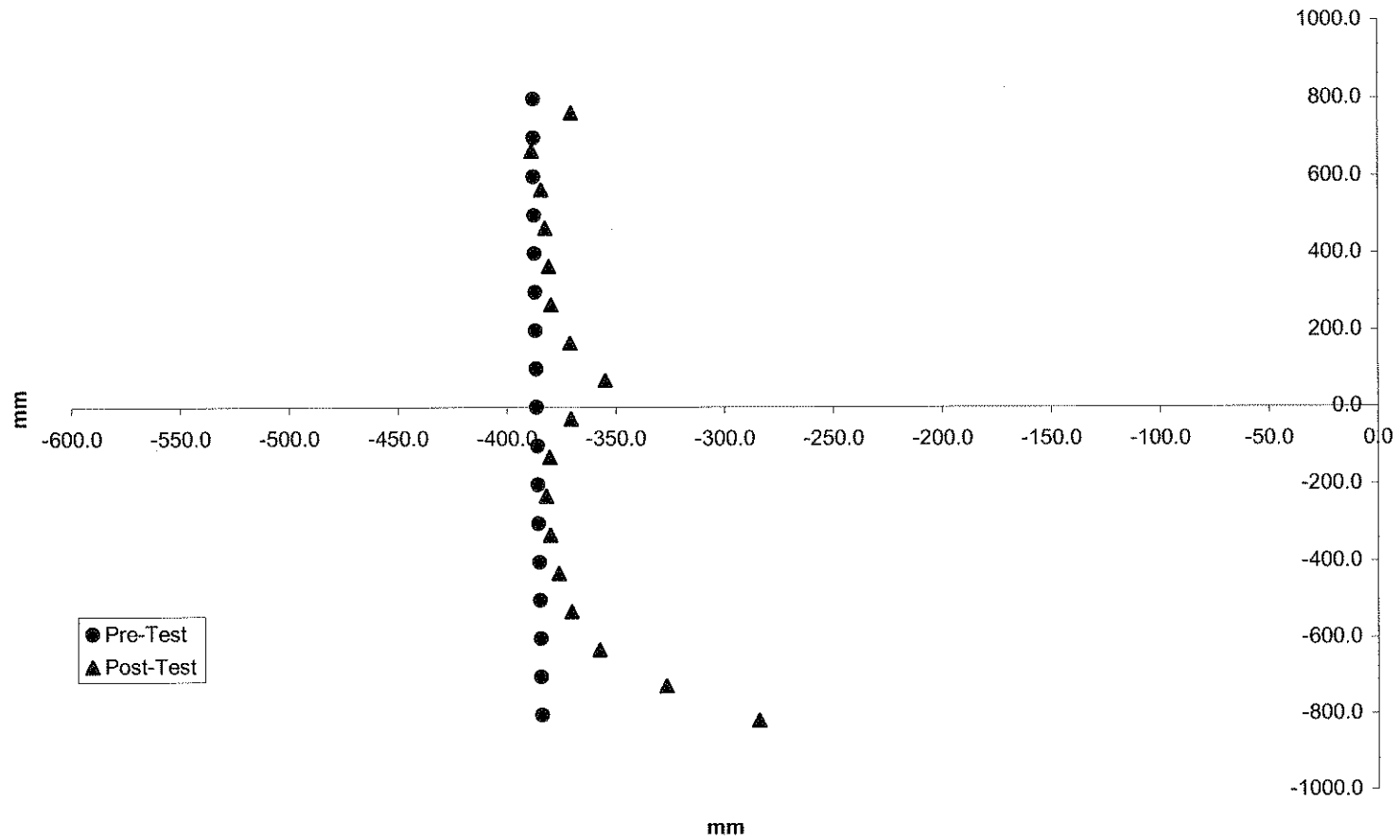
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Deformable Barrier Face Profile 18-34



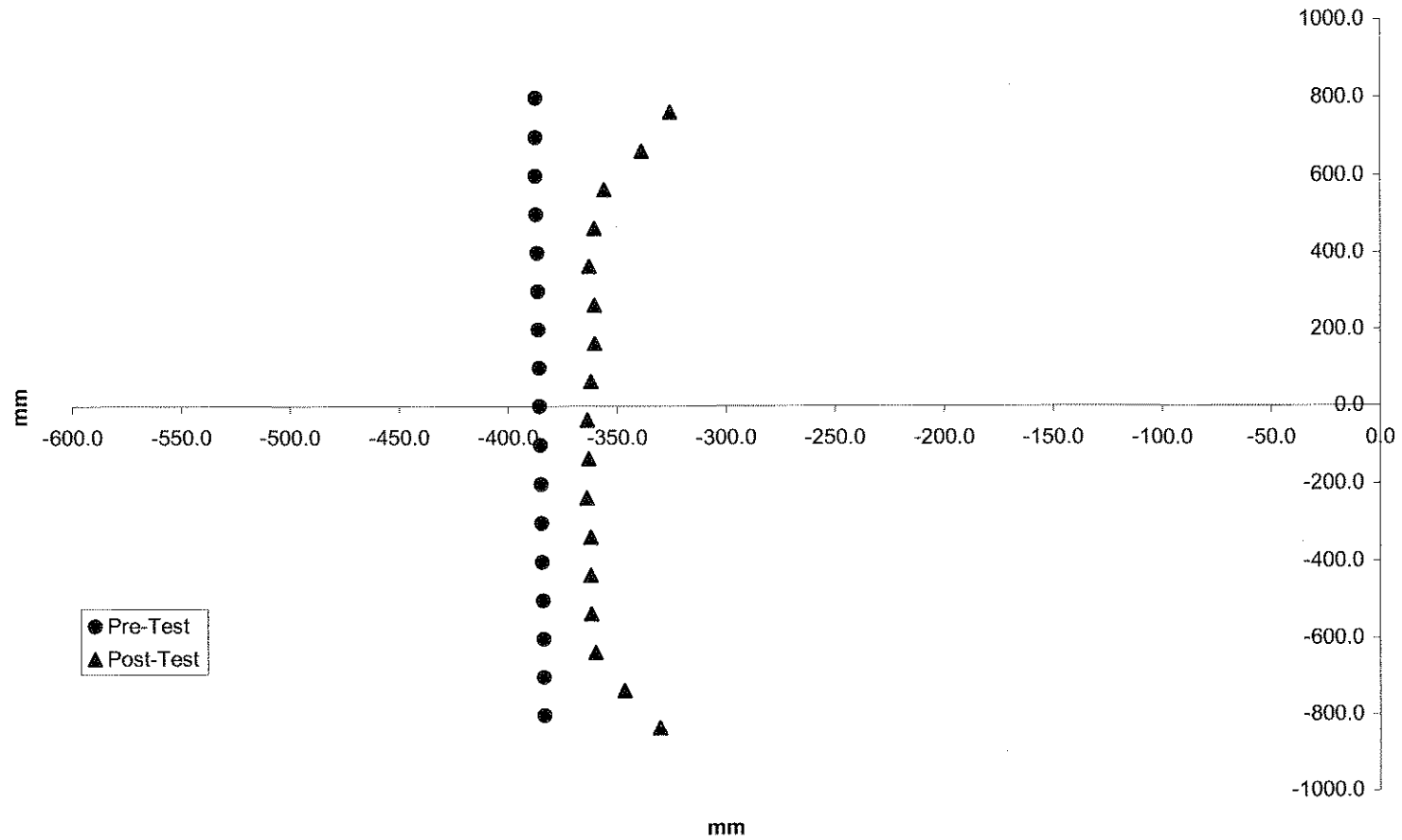
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Deformable Barrier Face Profile 35-51



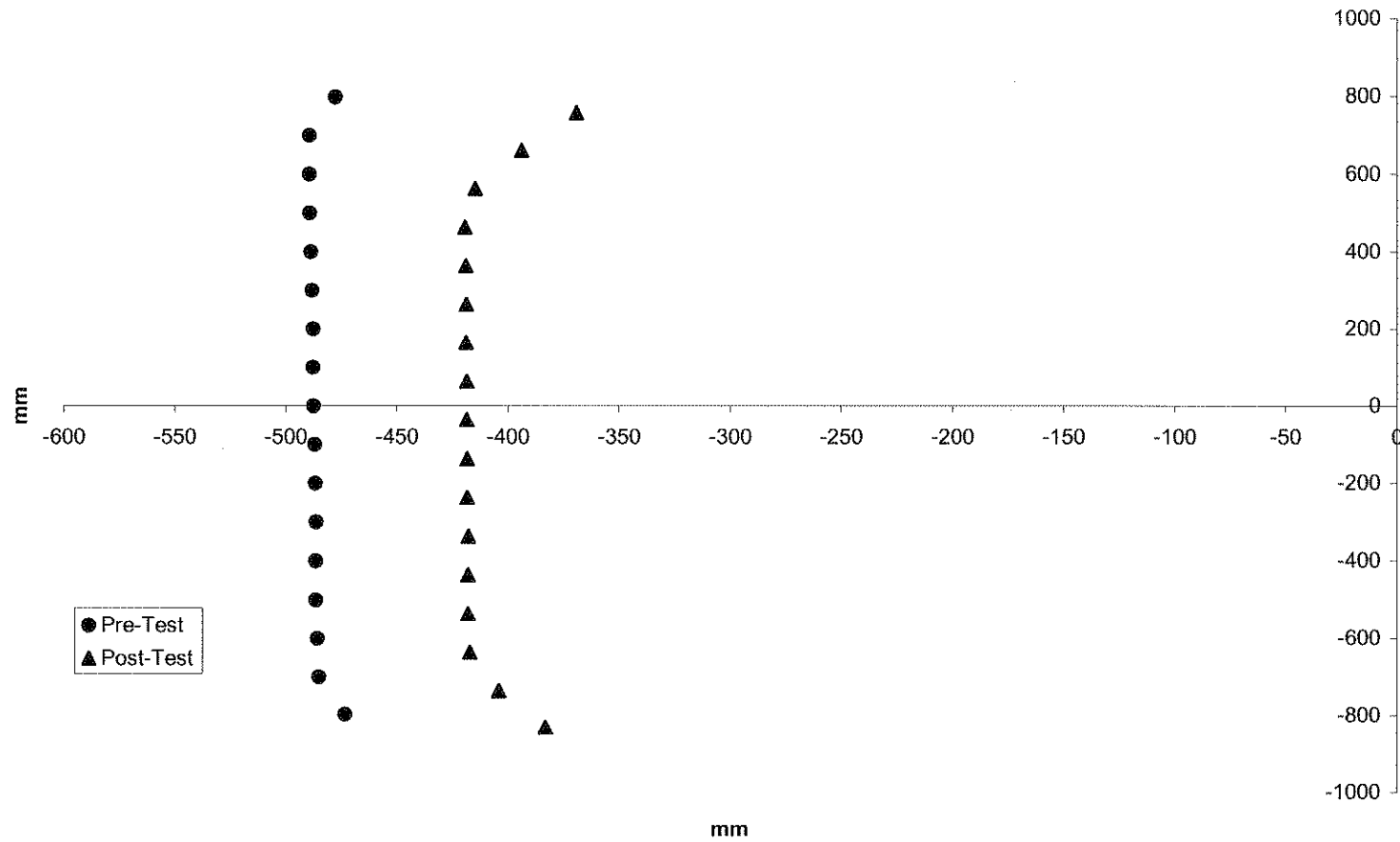
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Deformable Barrier Face Profile 52-68

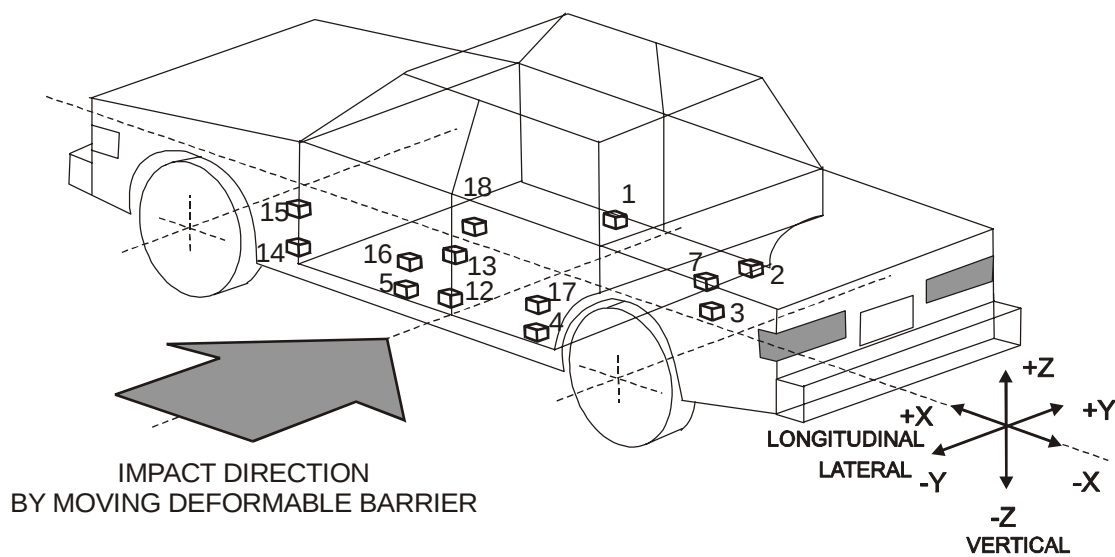


Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



1-Right Front Side Sill
2-Right Side Sill at Rear Seat
3-Rear Floorpan above Axle
4-Left Side Sill at Rear Seat
5-Left Front Side Sill
7-Right Rear Occupant Compartment
12-Left Side Lower B-pillar

13-Left Side Middle B-pillar
14-Left Side Lower A-pillar
15-Left Side Middle A-pillar
16-Left Side Front Seat Track at H-point
17-Left Rear Seat Track at H-point
18-Vehicle Center of Gravity

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Location	Coordinates (millimeters)			Positive Direction Max. Time (g) (ms)		Negative Direction Max. Time (g) (ms)	
	X	Y	Z				
1 Right Side Sill at Front Seat	3620	685	-294				
Longitudinal				4.3	63.0	4.3	9.9
Lateral				21.1	23.2	6.9	28.9
Vertical				4.6	73.0	3.6	22.1
Resultant				21.6	23.1		
2 Right Side Sill at Rear Seat	2575	685	-255				
Longitudinal				4.5	63.0	4.5	10.0
Lateral				19.7	19.8	1.8	139.2
Vertical				6.7	34.0	5.0	28.2
Resultant				20.4	19.8		
3 Rear Floorpan Above Axle	1535	0	-501				
Longitudinal				1.7	13.4	8.0	26.8
Lateral				19.4	20.3	2.2	121.0
Vertical				7.3	43.8	6.8	63.2
Resultant				19.9	20.3		
4 Left Side Sill at Rear Seat	2590	-685	-274				
Longitudinal							
Lateral				70.9	15.3	20.3	54.6
Vertical							
Resultant							
5 Left Side Sill at Front Seat	3630	-685	-285				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
7 Right Rear Occupant Compartment	2400	484	-294				
Longitudinal							
Lateral				22.3	19.2	1.8	143.4
Vertical							
Resultant							
12 Left Lower B-Pillar	2750	-820	-432				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							
13 Left Middle B-Pillar	2740	-804	-790				
Longitudinal							
Lateral				144.3	3.6	36.8	24.9
Vertical							
Resultant							
14 Left Lower A-Pillar	3803	-840	-485				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							
15 Left Middle A-Pillar	3833	-830	-748				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
16 Left Front Seat Track	3050	-590	-277				
Longitudinal							
Lateral				44.0	11.4	25.0	24.2
Vertical							
Resultant							
17 Left Rear Seat Track	2070	-546	-312				
Longitudinal							
Lateral ¹				----	----	----	----
Vertical							
Resultant							
18 Vehicle CG	3215	0	-562				
Longitudinal				13.2	44.8	17.5	33.0
Lateral				112.4	21.4	25.1	41.4
Vertical				31.4	24.4	24.9	30.2
Resultant				113.7	21.4		

Reference: X: + Forward from rear bumper
Y: + Rightward from vehicle centerline
Z: + Downward from ground level

For acceleration data sign convention see Report Sign Convention in Appendix D.

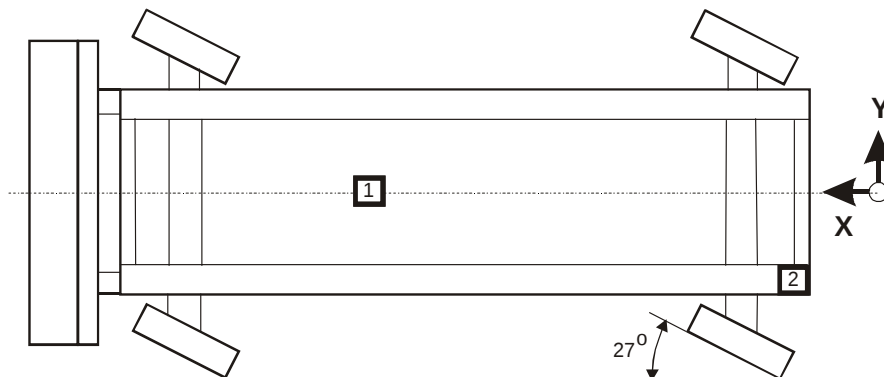
¹ See Data Acquisition Explanations

Data Sheet 14

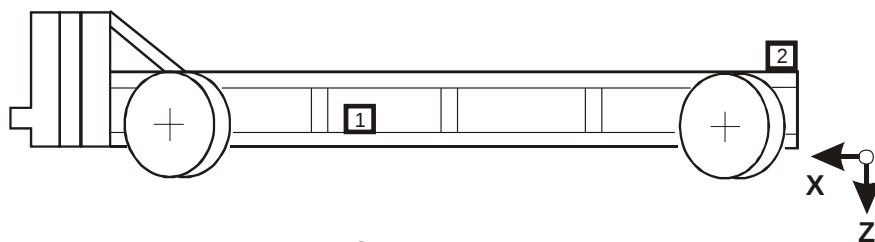
MDB Accelerometer Locations and Data Summary

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				2.0	135.8	21.2	26.7
	Lateral Y				3.0	58.6	8.7	29.4
	Vertical Z				5.8	14.9	9.5	20.4
	Resultant R				22.6	26.9		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.6	118.2	23.2	40.9
	Lateral Y				4.5	29.4	2.2	124.4

*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

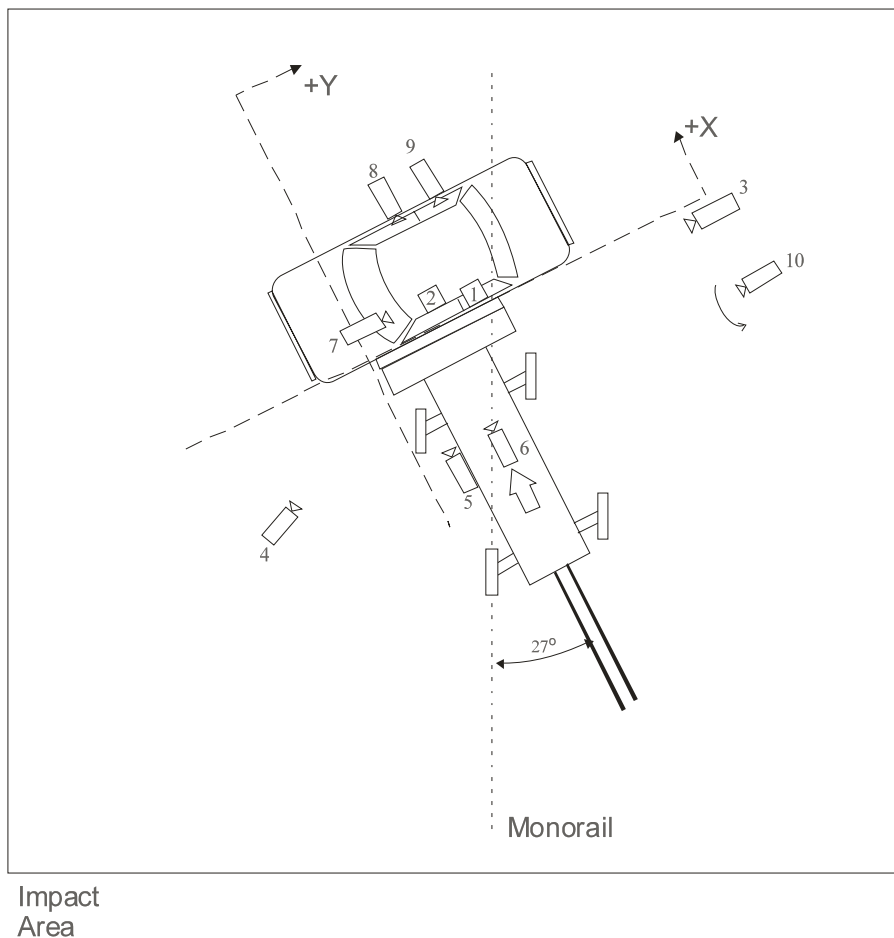
All measurements accurate to within ± 3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514



Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	10	1000
2	Overhead tight	370	1800	-5750	-85.5	25	1000
3	Right side of MDB	0	9200	-1100	-3.0	12.5	1000
4	Left side of MDB	-2400	4500	-1110	-3.0	12.5	1000
5	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
6	Onboard MDB center	-2480	830	-1353	-5.2	13	1000
7	Onboard vehicle front	450	580	-1340	-13.0	12.5	1000
8	Onboard side front door	1650	760	-1150	-10.0	6.5	1000
9	Onboard side rear door	1800	1640	-1100	-10.0	6.5	1000
10	Documentary/Panning	N/A	N/A	N/A	N/A	Zoom	30

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C60514

Test Date: 07/14/06

Vehicle Year/Make/Model/Body Style: 2006 Hyundai Azera 4-door sedan

Test Vehicle Impact Type : _____ Frontal (48.3 km/h)
_____ Oblique (48.3 km/h) with _____° barrier face
first contacting the (driver/passenger) side
_____ Rear Moving Barrier (48.3 km/h)
_____ Lateral Moving Barrier (32.2 km/h)
X _____ Side Impact Moving Deformable Barrier (61.8
km/h) contacting the driver side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

None

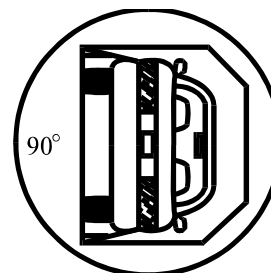
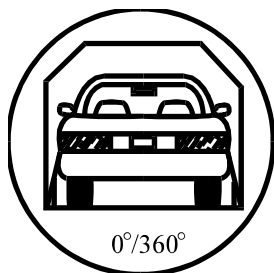
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

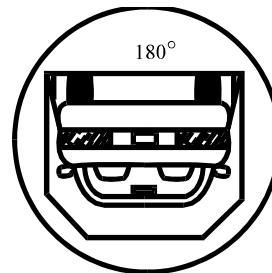
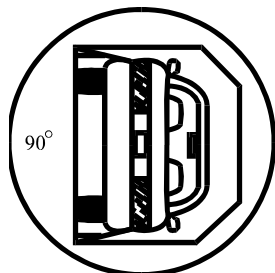
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

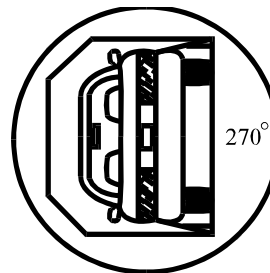
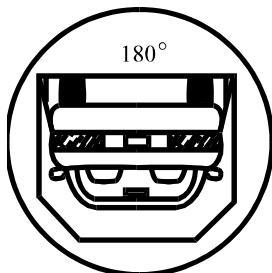
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

Total 6 minutes 30 seconds

Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

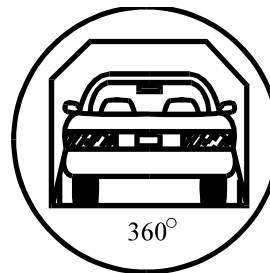
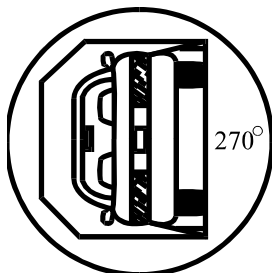
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Hyundai Azera 4-door sedan

NHTSA No.: C60514

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

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Figure A-1 Pre-Test Front View of Test Vehicle



Figure A-2 Post-Test Front View of Test Vehicle



Figure A-3 Pre-Test Left Front View of Test Vehicle



Figure A-4 Post-Test Left Front View of Test Vehicle



Figure A-5 Pre-Test Impacted Side View of Test Vehicle



Figure A-6 Post-Test Impacted Side View of Test Vehicle



Figure A-7 Pre-Test Left Rear View of Test Vehicle



Figure A-8 Post-Test Left Rear View of Test Vehicle

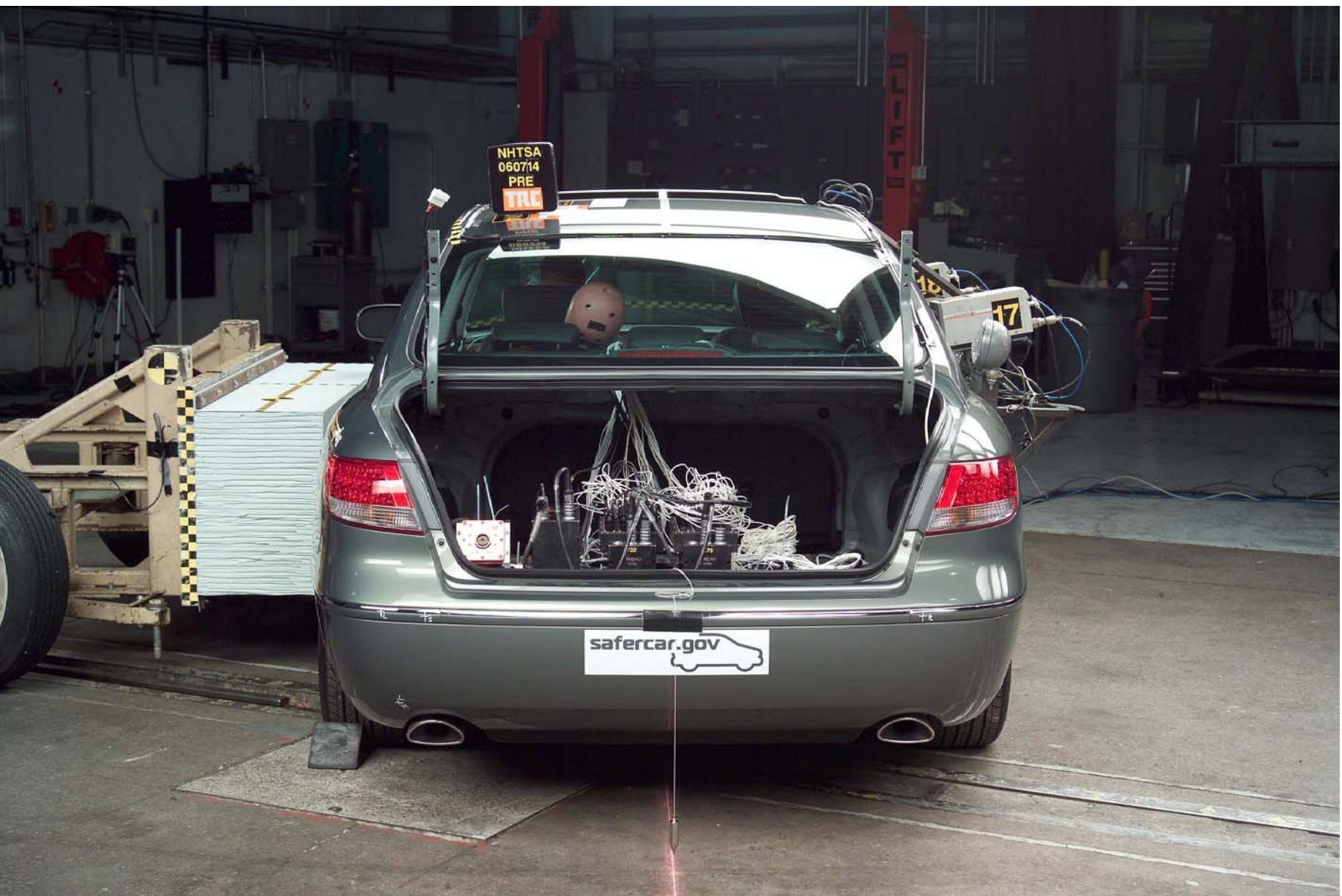


Figure A-9 Pre-Test Rear View of Test Vehicle



Figure A-10 Post-Test Rear View of Test Vehicle



Figure A-11 Pre-Test Right Rear View of Test Vehicle



Figure A-12 Post-Test Right Rear View of Test Vehicle



Figure A-13 Pre-Test Right Side View of Test Vehicle



Figure A-14 Post-Test Right Side View of Test Vehicle



Figure A-15 Pre-Test Right Front View of Test Vehicle



Figure A-16 Post-Test Right Front View of Test Vehicle

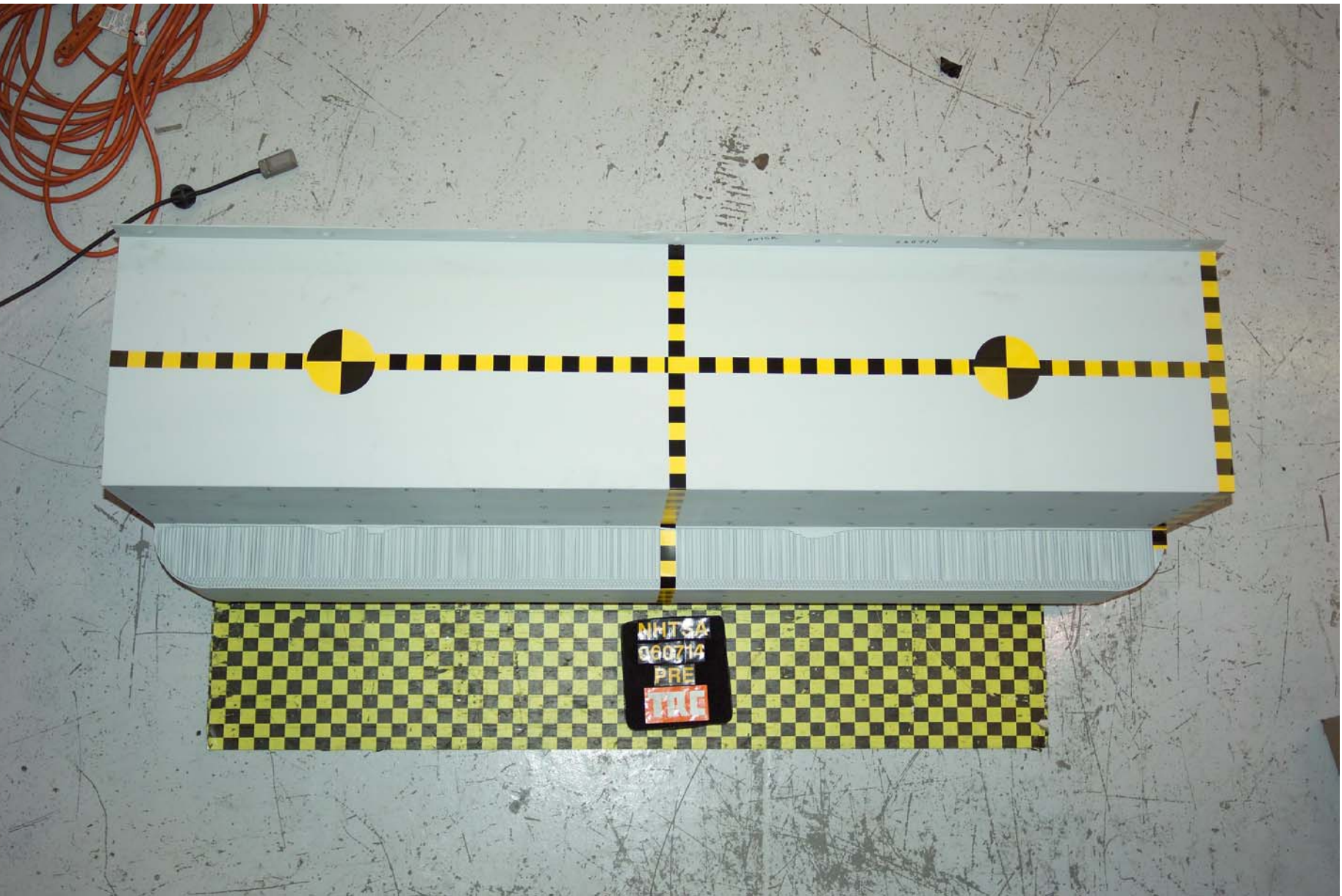


Figure A-17 Pre-Test Frontal View of Impactor Face



Figure A-18 Post-Test Frontal View of Impactor Face



Figure A-19 Pre-Test Left Side View of Impactor Face



Figure A-20 Post-Test Left Side View of Impactor Face



Figure A-21 Pre-Test Right Side View of Impactor Face



Figure A-22 Post-Test Right Side View of Impactor Face

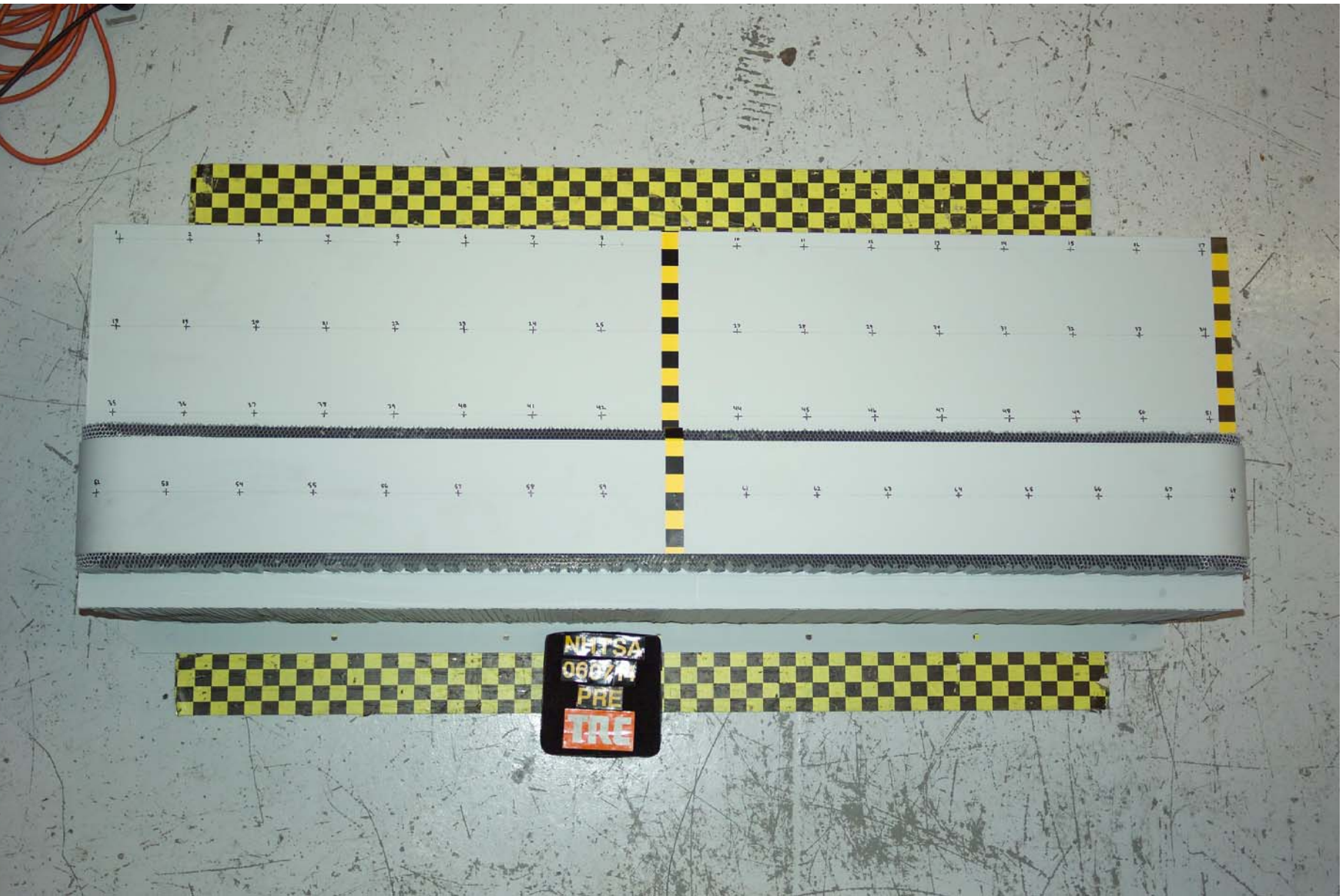


Figure A-23 Pre-Test Top View of Impactor Face



Figure A-24 Post-Test Top View of Impactor Face



Figure A-26 Post-Test Front View of Impactor



Figure A-27 Pre-Test Left Side View of Impactor



Figure A-28 Post-Test Left Side View of Impactor

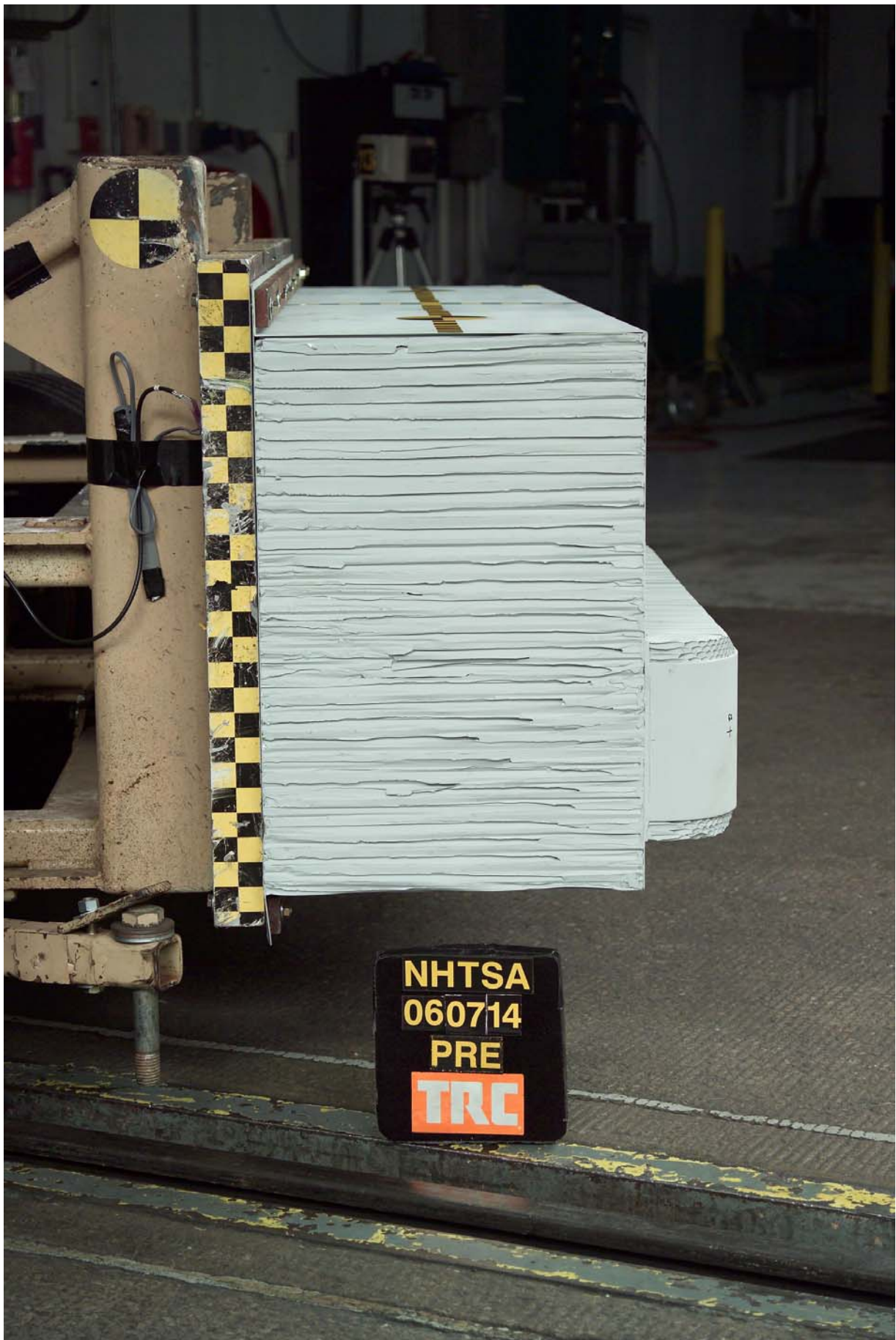


Figure A-29 Pre-Test Right Side View of Impactor



Figure A-30 Post-Test Right Side View of Impactor



Figure A-31 Pre-Test Top View of Impactor

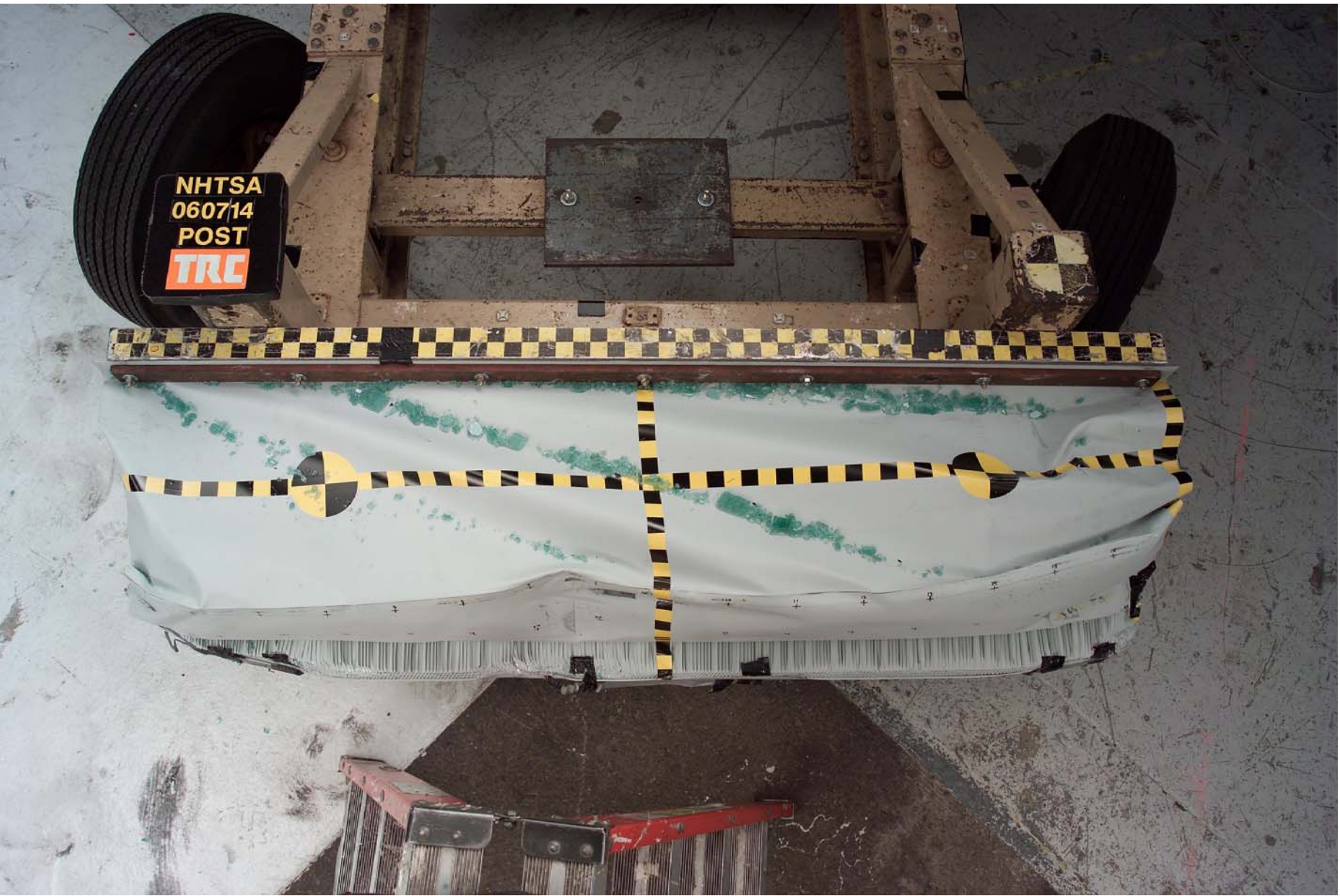


Figure A-32 Post-Test Top View of Impactor

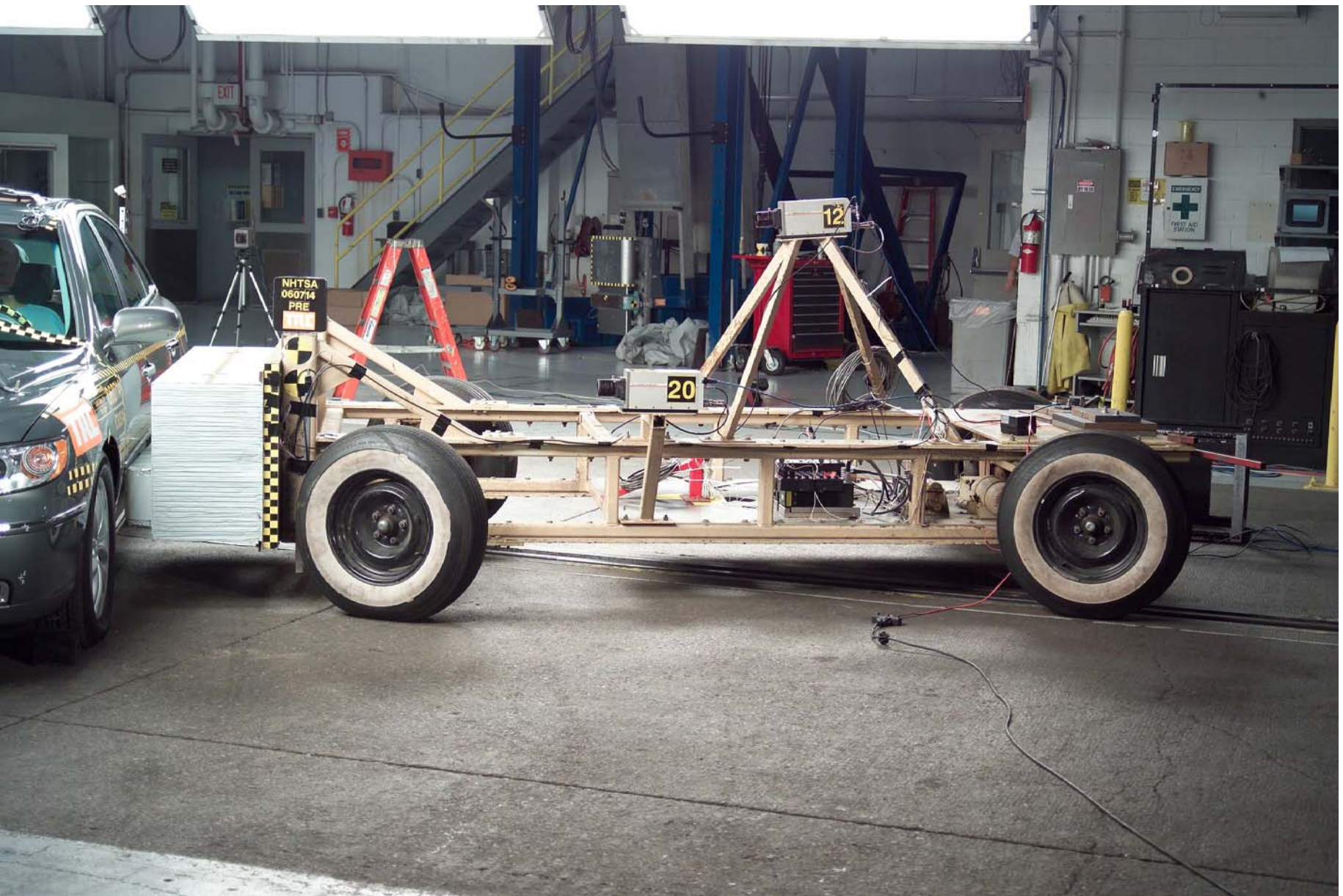


Figure A-33 Pre-Test Left Side Overall View of Impactor

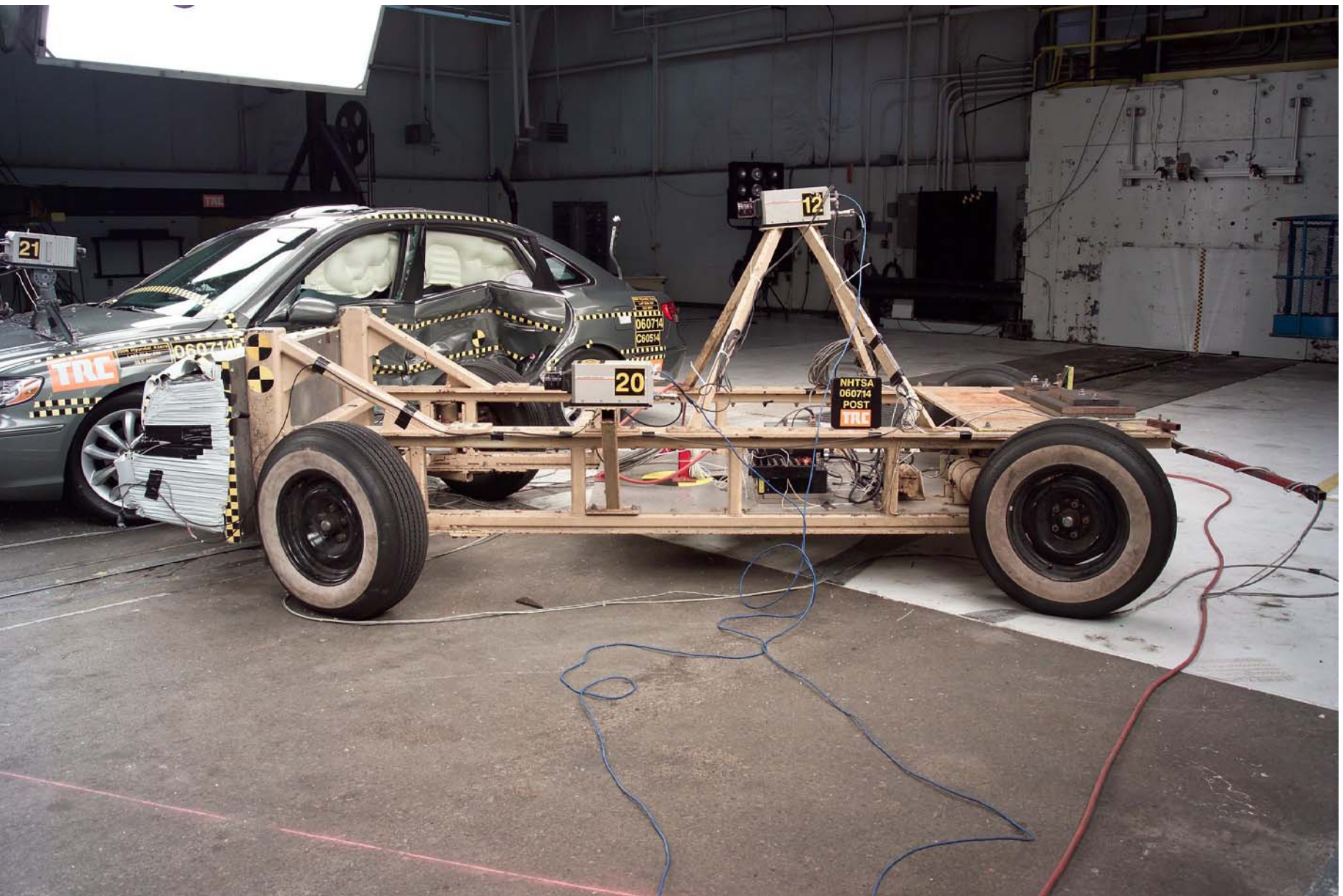


Figure A-34 Post-Test Left Side Overall View of Impactor



Figure A-35 Pre-Test Rear Overall View of Impactor

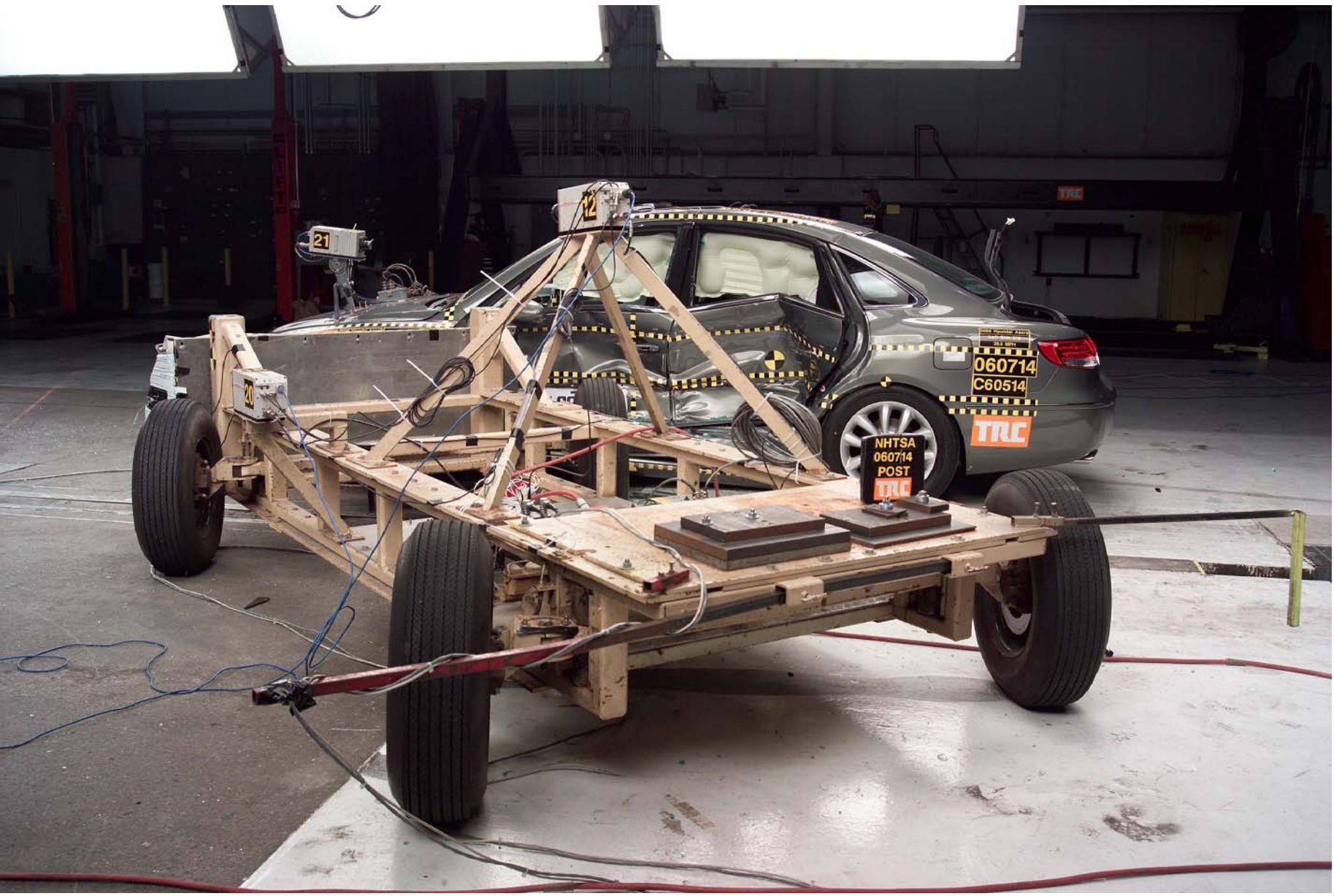


Figure A-36 Post-Test Rear Overall View of Impactor

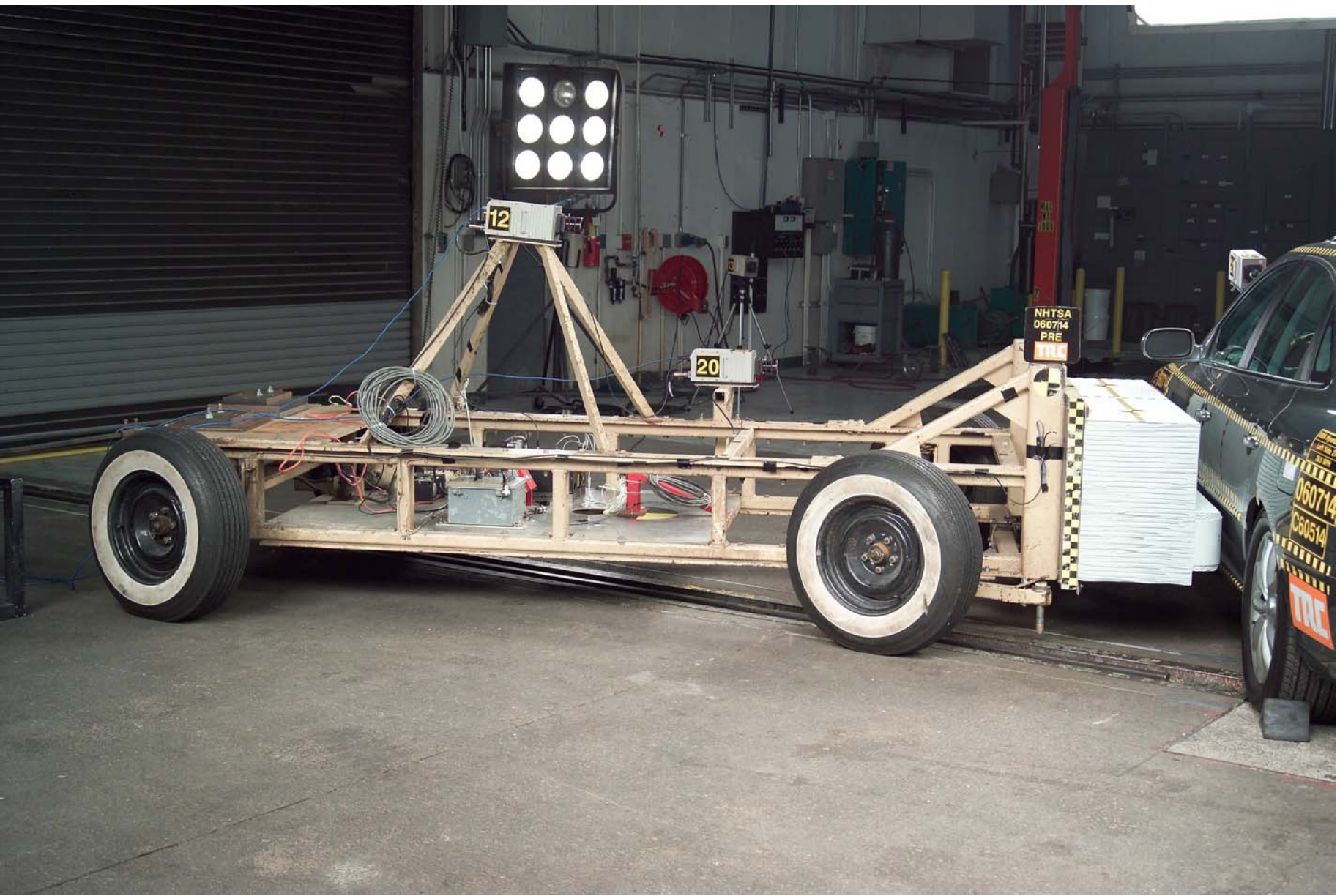


Figure A-37 Pre-Test Right Side Overall View of Impactor

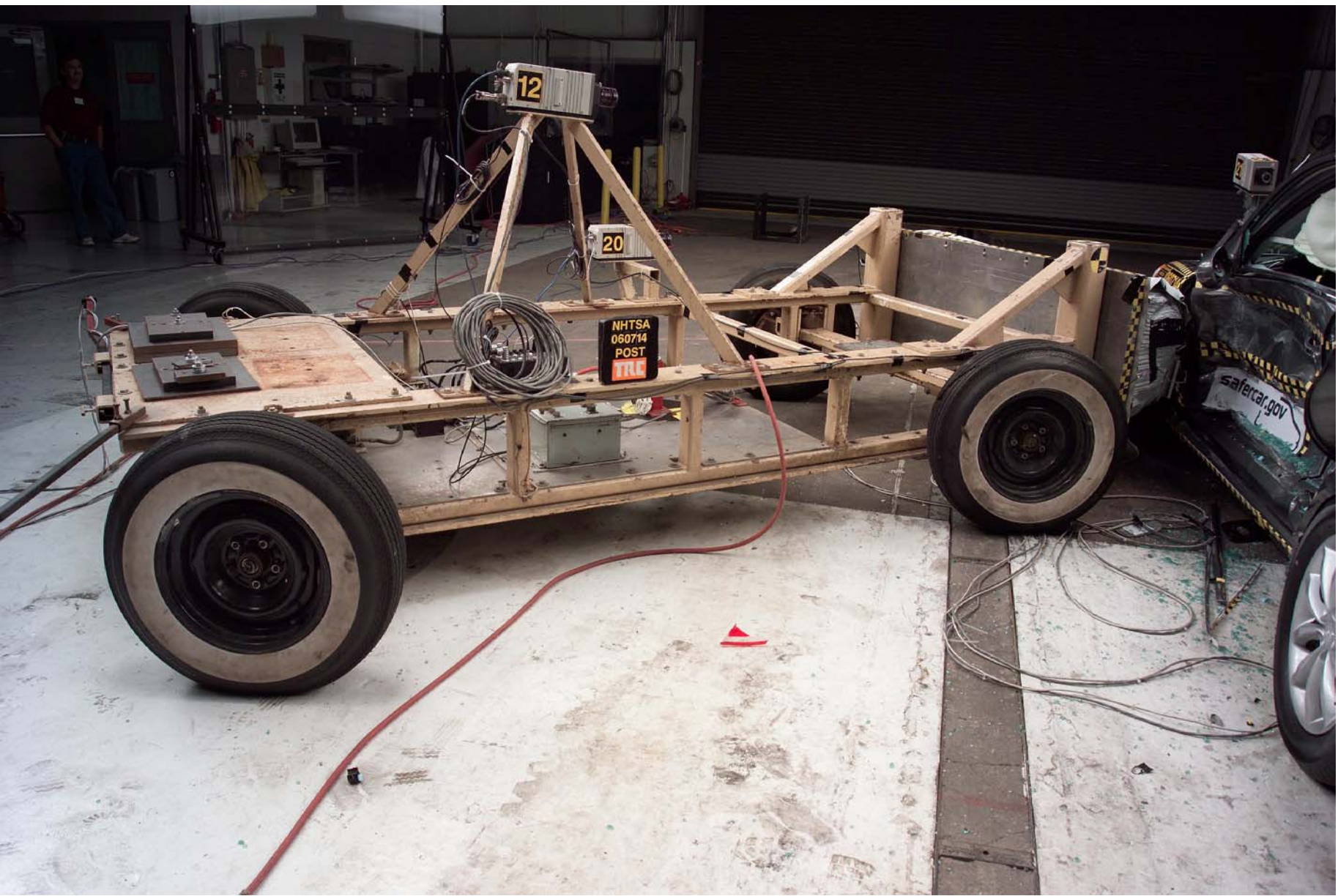


Figure A-38 Post-Test Right Side Overall View of Impactor



Figure A-39 Pre-Test View of MDB Showing Contact Switches in Place

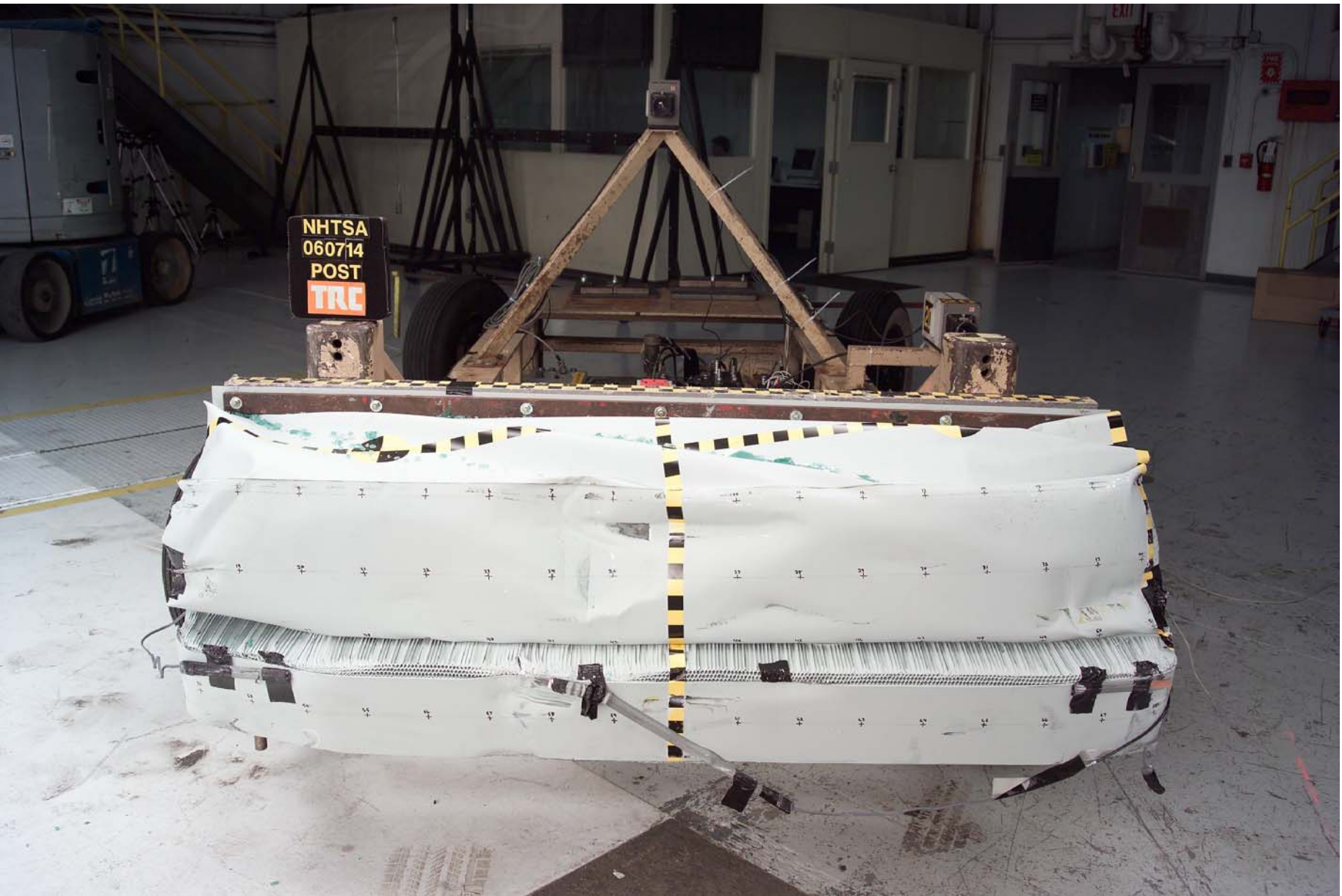


Figure A-40 Post-Test View of MDB Showing Contact Switches in Place



Figure A-41 Pre-Test Overhead View of MDB Aligned with Vehicle

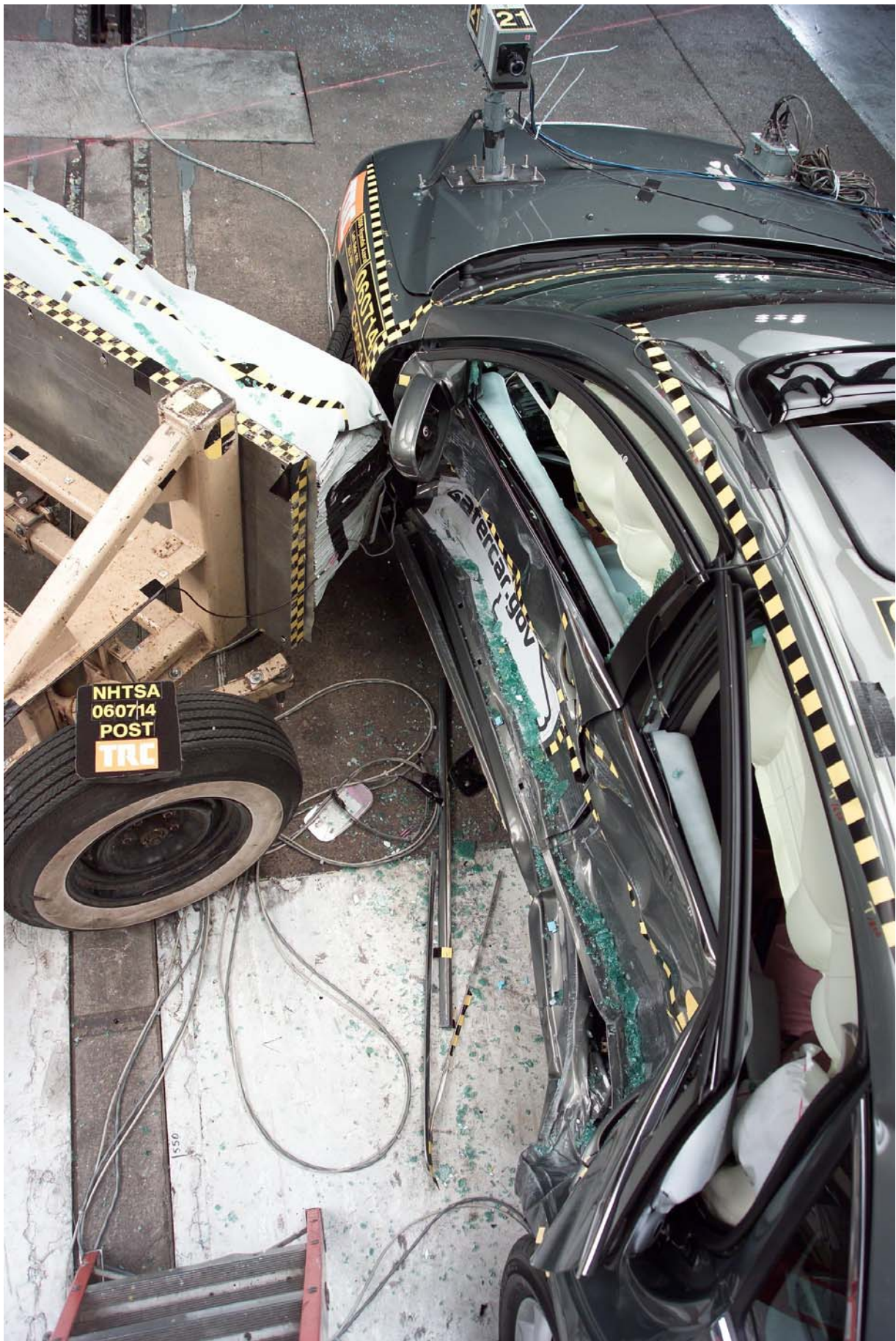


Figure A-42 Post-Test Overhead View of MDB and Vehicle



Figure A-43 Pre-Test Right Occupant Compartment View of Front SID HIII



Figure A-44 Post-Test Right Occupant Compartment View of Front SID HIII



Figure A-45 Pre-Test Right Occupant Compartment View of Rear SID HIII



Figure A-46 Post-Test Right Occupant Compartment View of Rear SID HIII



Figure A-47 Pre-Test Left View of Front SID HIII



Figure A-48 Post-Test Left View of Front SID HMI



Figure A-49 Pre-Test Left View of Front SID Hill and Belt Position



Figure A-50 Pre-Test Left View of Front SID HIII and Door Clearance



Figure A-51 Post-Test Left View of Front SID HIII and Door Clearance

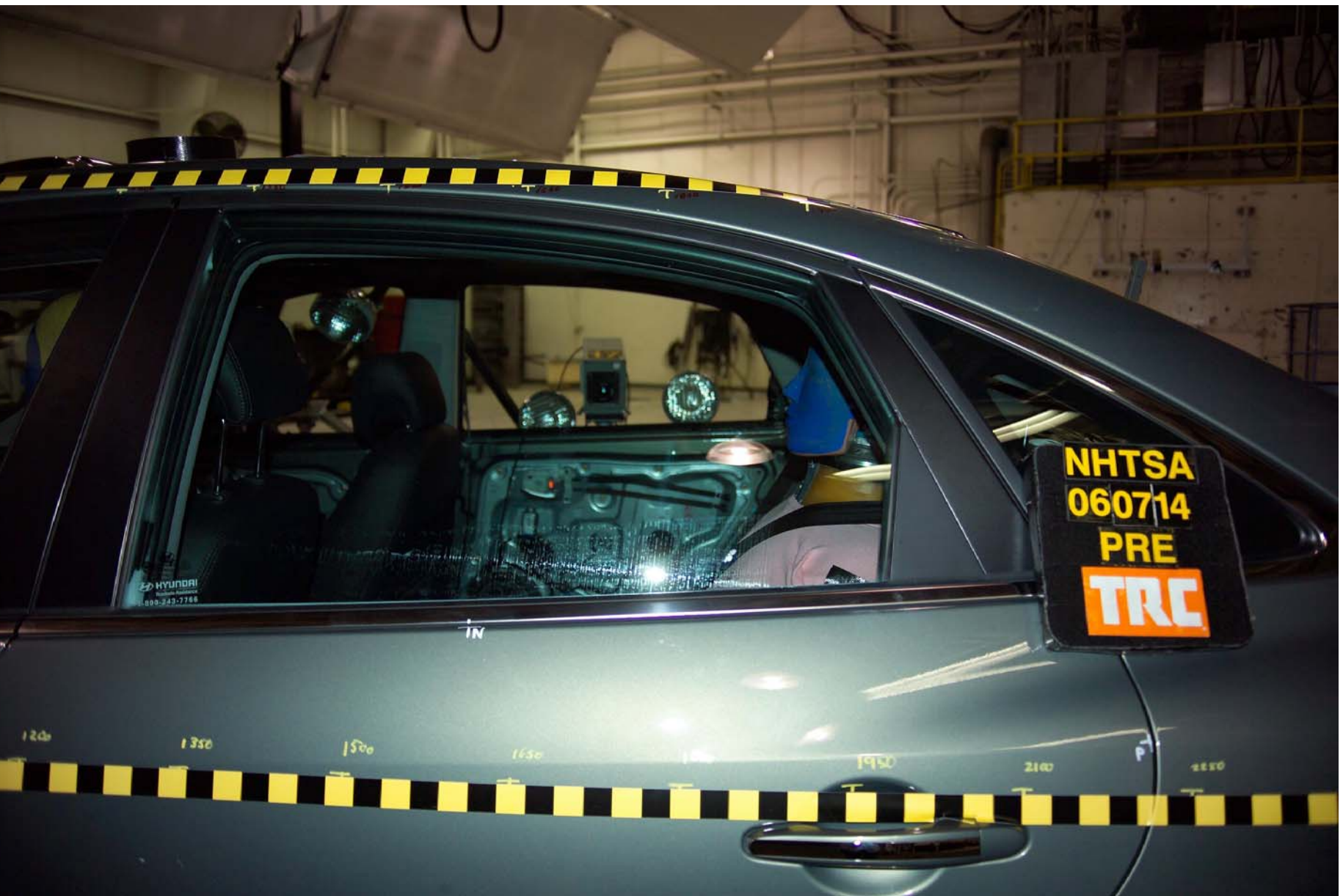


Figure A-52 Pre-Test Left View of Rear SID HIII



Figure A-53 Post-Test Left View of Rear SID HIII



Figure A-54 Pre-Test Left of Rear SID HIII and Belt Position

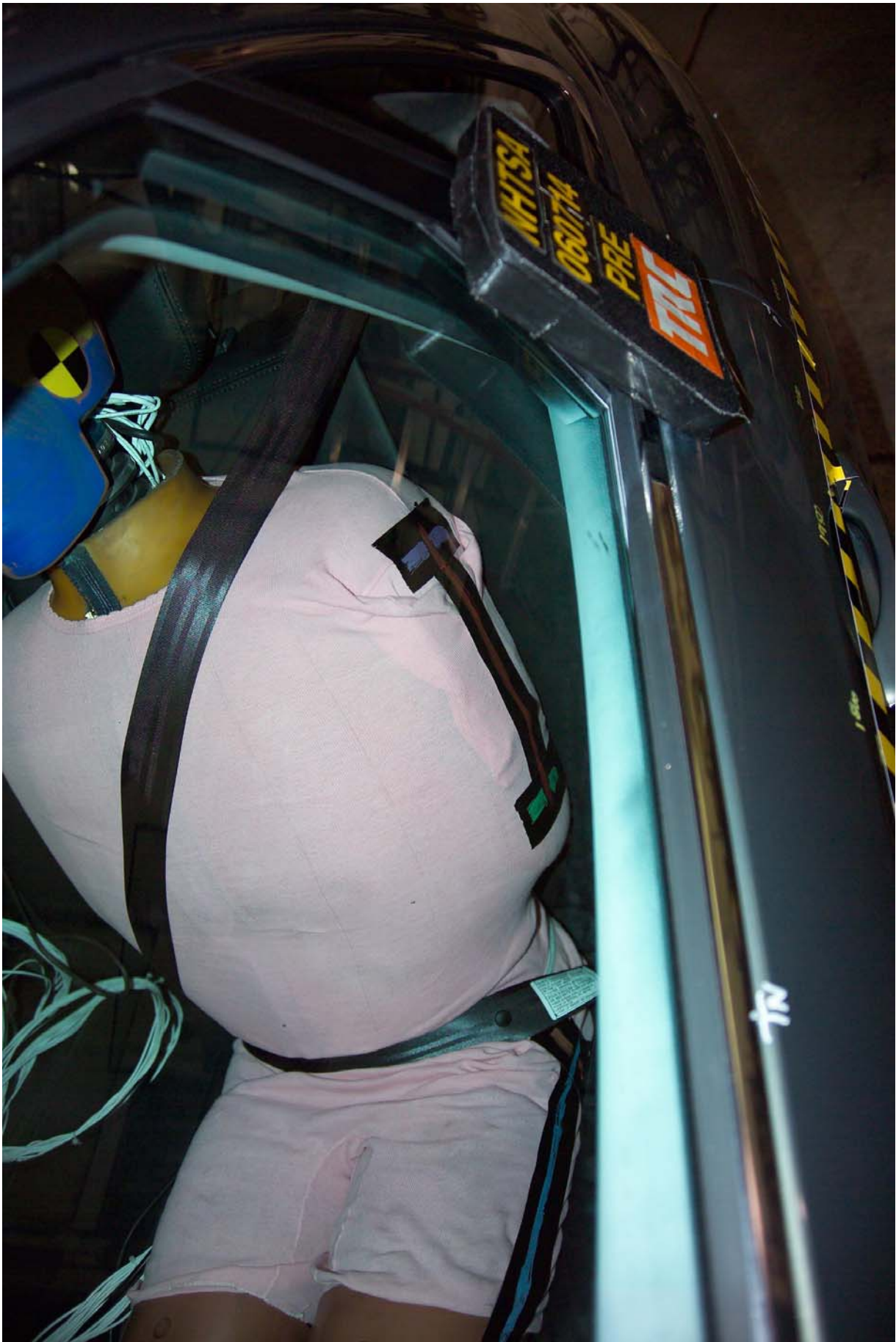


Figure A-55 Pre-Test Left View of Rear SID HIII and Door Clearance



Figure A-56 Post-Test Left View of Rear SID HIII and Door Clearance



Figure A-57 Pre-Test Interior of Front Door



Figure A-58 Post-Test Interior of Front Door Showing SID HIII Impact Locations



Figure A-59 Post-Test Front SID HIII Contact - View 1



Figure A-60 Post-Test Front SID HIII Contact - View 2



Figure A-61 Post-Test Front SID HIII Contact - View 3



Figure A-62 Pre-Test Interior of Rear Panel



Figure A-63 Post-Test Interior of Rear Panel Showing SID HIII Impact Locations



Figure A-64 Post-Test Rear SID HIII Contact - View 1



Figure A-65 Post-Test Rear SID HIII Contact - View 2



Figure A-66 Post-Test Rear SID HIII Contact - View 3



Figure A-67 Pre-Test Left Side View of MDB With Impactor Face in Position



Figure A-68 Post-Test Left Side View of MDB With Impactor Face in Position

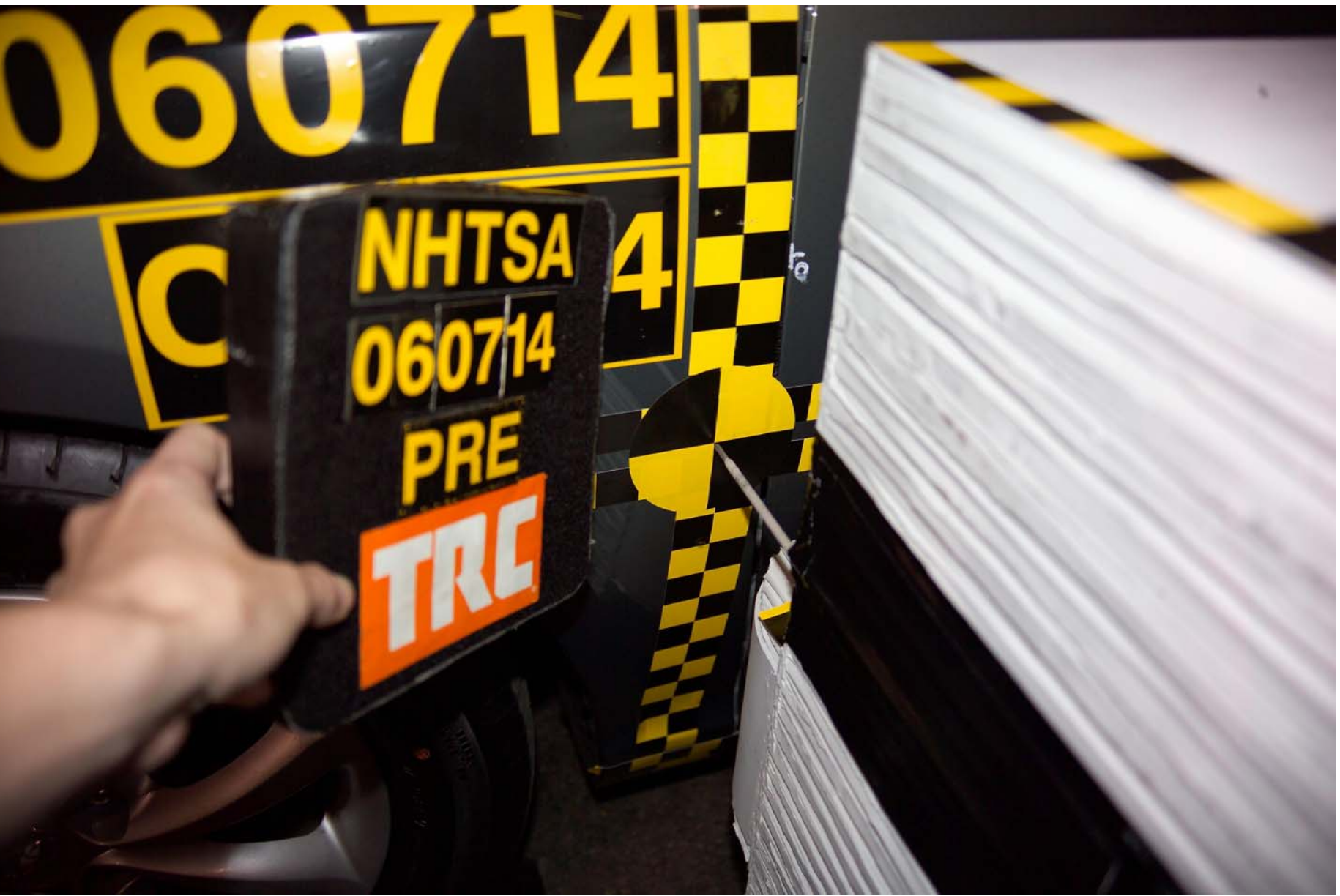


Figure A-69 Pre-Test Primary Impact Point View



Figure A-70 Post-Test Primary Impact Point View



Figure A-71 Pre-Test Right Side View of MDB With Impactor Face in Position



Figure A-72 Post-Test Right Side View of MDB With Impactor Face in Position



Figure A-73 Pre-Test Secondary Impact Point View



Figure A-74 Post-Test Secondary Impact Point View



Figure A-75 Pre-Test Vehicle Certification Label View



Figure A-76 Pre-Test Vehicle Recommended Tire Pressure Label View



Figure A-77 Post-Test Light Trap Digital Readout - View 1



Figure A-78 Post-Test Light Trap Digital Readout - View 2



Figure A-79 Post-Test Light Trap Digital Readout - View 3



Figure A-80 Impact Event



Figure A-81 Pre-Test Fuel Cap



Figure A-82 Post-Test Fuel Cap



Figure A-83 FMVSS 301 Rollover View at 90°

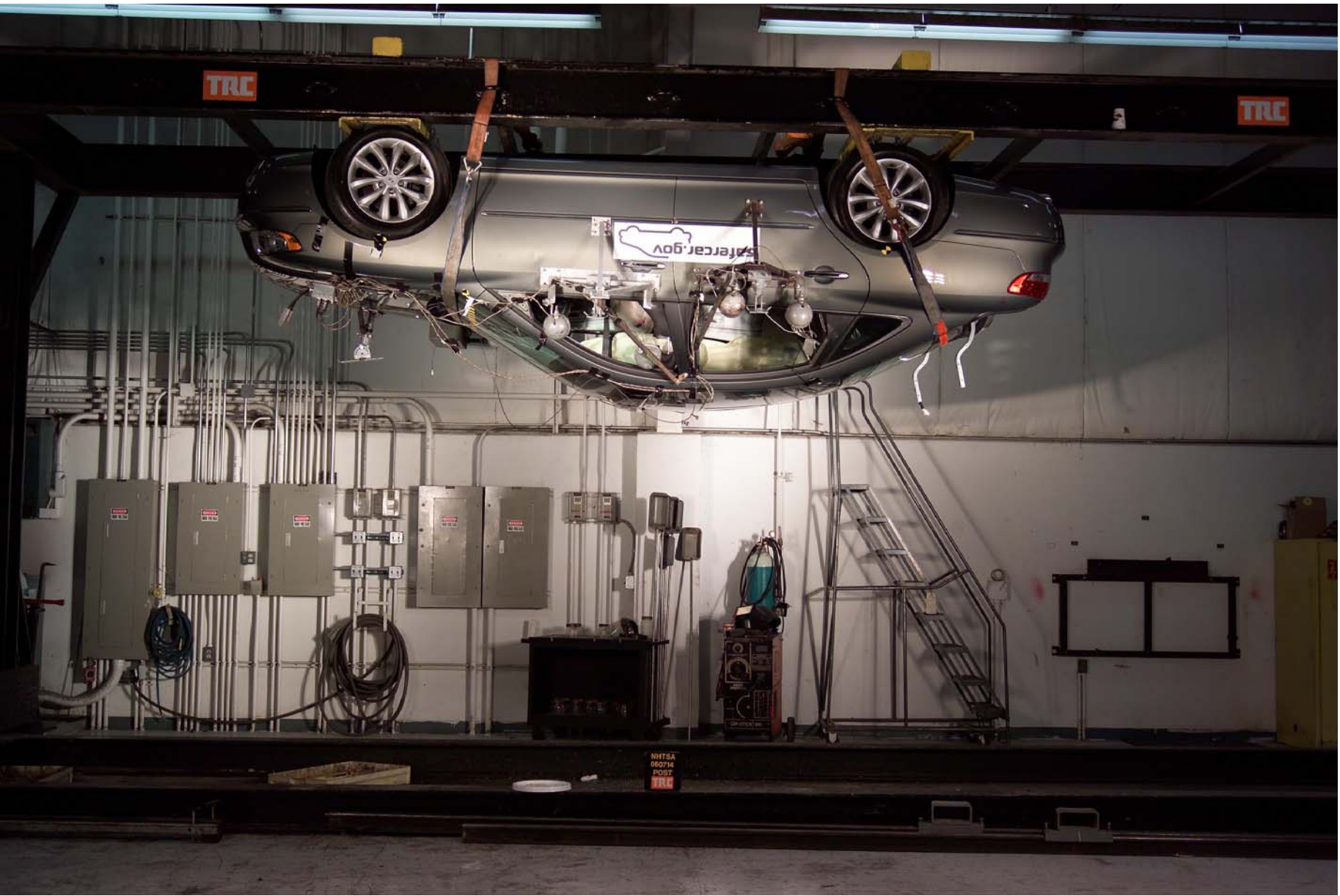


Figure A-84 FMVSS 301 Rollover View at 180°

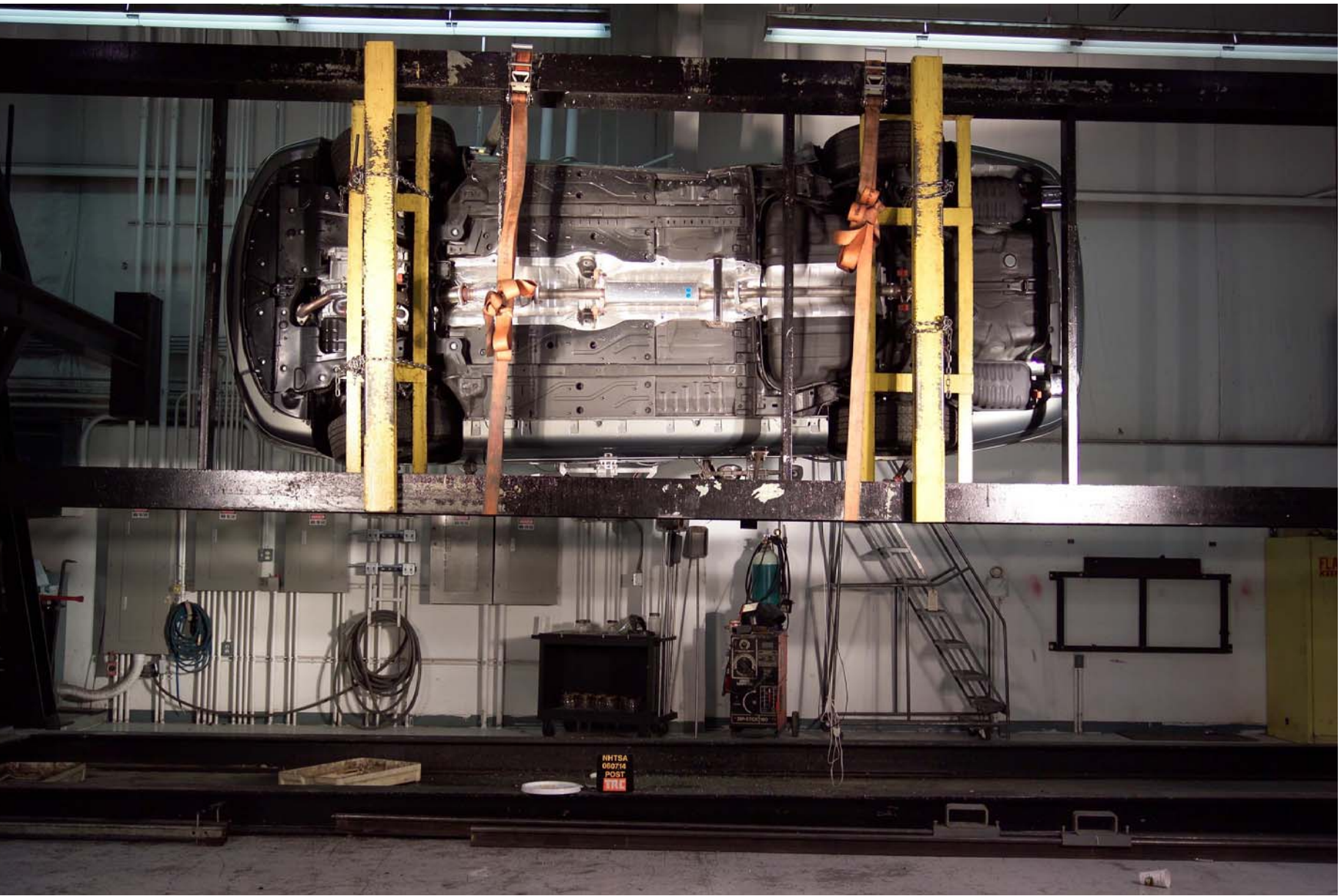


Figure A-85 FMVSS 301 Rollover View at 270°

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060714



Figure A-86 FMVSS 301 Rollover View at 360°



Figure A-87 Post-Test Left Rear Door Latch - View 1



Figure A-88 Post-Test Left Rear Door Latch - View 2

Appendix B

Data Plots

Table of Data Plots

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Neck X-Axis Shear Force	B-17
9	Driver Neck Y-Axis Shear Force	B-18
10	Driver Neck Z-Axis Axial Force	B-19
11	Driver Neck Moment about X Axis	B-20
12	Driver Neck Moment about Y Axis	B-21
13	Driver Neck Moment about Z Axis	B-22
14	Driver Neck Occipital Condyle Moment about X Axis	B-23
15	Driver Upper Rib Y-Axis Acceleration	B-24
16	Driver Upper Rib Y-Axis Velocity	B-25
17	Driver Lower Rib Y-Axis Acceleration	B-26
18	Driver Lower Rib Y-Axis Velocity	B-27
19	Driver Lower Spine Y-Axis Acceleration	B-28
20	Driver Lower Spine Y-Axis Velocity	B-29
21	Driver Pelvis Y-Axis Acceleration	B-30
22	Driver Pelvis Y-Axis Velocity	B-31
23	Left Rear Passenger Head X-Axis Acceleration	B-32
24	Left Rear Passenger Head X-Axis Velocity	B-33

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots (Continued)

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
25	Left Rear Passenger Head Y-Axis Acceleration	B-34
26	Left Rear Passenger Head Y-Axis Velocity	B-35
27	Left Rear Passenger Head Z-Axis Acceleration	B-36
28	Left Rear Passenger Head Z-Axis Velocity	B-37
29	Left Rear Passenger Head Resultant Acceleration	B-38
30	Left Rear Passenger Neck X-Axis Shear Force	B-39
31	Left Rear Passenger Neck Y-Axis Shear Force	B-40
32	Left Rear Passenger Neck Z-Axis Axial Force	B-41
33	Left Rear Passenger Neck Moment about X Axis	B-42
34	Left Rear Passenger Neck Moment about Y Axis	B-43
35	Left Rear Passenger Neck Moment about Z Axis	B-44
36	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-45
37	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-46
38	Left Rear Passenger Upper Rib Y-Axis Velocity	B-47
39	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Lower Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Spine Y-Axis Velocity	B-51
43	Left Rear Passenger Pelvis Y-Axis Acceleration	B-52
44	Left Rear Passenger Pelvis Y-Axis Velocity	B-53

Table of Data Plots (Continued)

Driver and Passenger Dummy Redundant Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
45	Driver Head X-Axis Redundant Acceleration	B-55
46	Driver Head X-Axis Redundant Velocity	B-56
47	Driver Head Y-Axis Redundant Acceleration	B-57
48	Driver Head Y-Axis Redundant Velocity	B-58
49	Driver Head Z-Axis Redundant Acceleration	B-59
50	Driver Head Z-Axis Redundant Velocity	B-60
51	Driver Head Resultant Redundant Acceleration	B-61
52	Driver Upper Rib Y-Axis Redundant Acceleration	B-62
53	Driver Upper Rib Y-Axis Redundant Velocity	B-63
54	Driver Lower Rib Y-Axis Redundant Acceleration	B-64
55	Driver Lower Rib Y-Axis Redundant Velocity	B-65
56	Driver Lower Spine Y-Axis Redundant Acceleration	B-66
57	Driver Lower Spine Y-Axis Redundant Velocity	B-67
58	Left Rear Passenger Head X-Axis Redundant Acceleration	B-68
59	Left Rear Passenger Head X-Axis Redundant Velocity	B-69
60	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-70
61	Left Rear Passenger Head Y-Axis Redundant Velocity	B-71
62	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-72
63	Left Rear Passenger Head Z-Axis Redundant Velocity	B-73
64	Left Rear Passenger Head Resultant Redundant Acceleration	B-74
65	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-75
66	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-76
67	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-77
68	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-78
69	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-79
70	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-80

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
71	Right Side Sill at Front Seat X-Axis Acceleration	B-82
72	Right Side Sill at Front Seat X-Axis Velocity	B-83
73	Right Side Sill at Front Seat Y-Axis Acceleration	B-84
74	Right Side Sill at Front Seat Y-Axis Velocity	B-85
75	Right Side Sill at Front Seat Z-Axis Acceleration	B-86
76	Right Side Sill at Front Seat Z-Axis Velocity	B-87
77	Right Side Sill at Front Seat Resultant Acceleration	B-88
78	Right Side Sill at Rear Seat X-Axis Acceleration	B-89
79	Right Side Sill at Rear Seat X-Axis Velocity	B-90
80	Right Side Sill at Rear Seat Y-Axis Acceleration	B-91
81	Right Side Sill at Rear Seat Y-Axis Velocity	B-92
82	Right Side Sill at Rear Seat Z-Axis Acceleration	B-93
83	Right Side Sill at Rear Seat Z-Axis Velocity	B-94
84	Right Side Sill at Rear Seat Resultant Acceleration	B-95
85	Rear Floorpan Above Axle X-Axis Acceleration	B-96
86	Rear Floorpan Above Axle X-Axis Velocity	B-97
87	Rear Floorpan Above Axle Y-Axis Acceleration	B-98
88	Rear Floorpan Above Axle Y-Axis Velocity	B-99
89	Rear Floorpan Above Axle Z-Axis Acceleration	B-100
90	Rear Floorpan Above Axle Z-Axis Velocity	B-101
91	Rear Floorpan Above Axle Resultant Acceleration	B-102
92	Left Side Sill at Front Seat Y-Axis Acceleration	B-103
93	Left Side Sill at Front Seat Y-Axis Velocity	B-104
94	Left Side Sill at Front Seat Y-Axis Displacement	B-105

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots (Continued)
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
95	Left Side Sill at Rear Seat Y-Axis Acceleration	B-106
96	Left Side Sill at Rear Seat Y-Axis Velocity	B-107
97	Left Side Sill at Rear Seat Y-Axis Displacement	B-108
98	Right Rear Occupant Compartment Y-Axis Acceleration	B-109
99	Right Rear Occupant Compartment Y-Axis Velocity	B-110
100	Right Rear Occupant Compartment Y-Axis Displacement	B-111
101	Left Lower A-Post Y-Axis Acceleration	B-112
102	Left Lower A-Post Y-Axis Velocity	B-113
103	Left Middle A-Post Y-Axis Acceleration	B-114
104	Left Middle A-Post Y-Axis Velocity	B-115
105	Left Lower B-Post Y-Axis Acceleration	B-116
106	Left Lower B-Post Y-Axis Velocity	B-117
107	Left Middle B-Post Y-Axis Acceleration	B-118
108	Left Middle B-Post Y-Axis Velocity	B-119
109	Left Front Seat Track Y-Axis Acceleration	B-120
110	Left Front Seat Track Y-Axis Velocity	B-121
111	Left Rear Seat Track Y-Axis Acceleration	B-122
112	Left Rear Seat Track Y-Axis Velocity	B-123
113	Vehicle Center of Gravity X-Axis Acceleration	B-124
114	Vehicle Center of Gravity X-Axis Velocity	B-125
115	Vehicle Center of Gravity Y-Axis Acceleration	B-126
116	Vehicle Center of Gravity Y-Axis Velocity	B-127
117	Vehicle Center of Gravity Z-Axis Acceleration	B-128
118	Vehicle Center of Gravity Z-Axis Velocity	B-129
119	Vehicle Center of Gravity Resultant Acceleration	B-130

Table of Data Plots (Continued)
 MDB Instrumentation Plots
 Acceleration Data - Filter Class 60
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
120	MDB Center of Gravity X-Axis Acceleration	B-132
121	MDB Center of Gravity X-Axis Velocity	B-133
122	MDB Center of Gravity Y-Axis Acceleration	B-134
123	MDB Center of Gravity Y-Axis Velocity	B-135
124	MDB Center of Gravity Z-Axis Acceleration	B-136
125	MDB Center of Gravity Z-Axis Velocity	B-137
126	MDB Center of Gravity Resultant Acceleration	B-138
127	MDB Rear X-Axis Acceleration	B-139
128	MDB Rear X-Axis Velocity	B-140
129	MDB Rear Y-Axis Acceleration	B-141
130	MDB Rear Y-Axis Velocity	B-142
131	MDB Right Contact Switch	B-143
132	MDB Left Contact Switch	B-144

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Driver and Passenger Dummy Instrumentation Plots
Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
133	Driver Upper Rib Y-Axis Acceleration	B-146
134	Driver Lower Rib Y-Axis Acceleration	B-147
135	Driver Lower Spine Y-Axis Acceleration	B-148
136	Driver Pelvis Y-Axis Acceleration	B-149
137	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-150
138	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-151
139	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-152
140	Left Rear Passenger Pelvis Y-Axis Acceleration	B-153
141	Driver Upper Rib Y-Axis Redundant Acceleration	B-154
142	Driver Lower Rib Y-Axis Redundant Acceleration	B-155
143	Driver Lower Spine Y-Axis Redundant Acceleration	B-156
144	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-157
145	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-158
146	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-159

Driver and Passenger Dummy Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD X-AXIS ACCELERATION

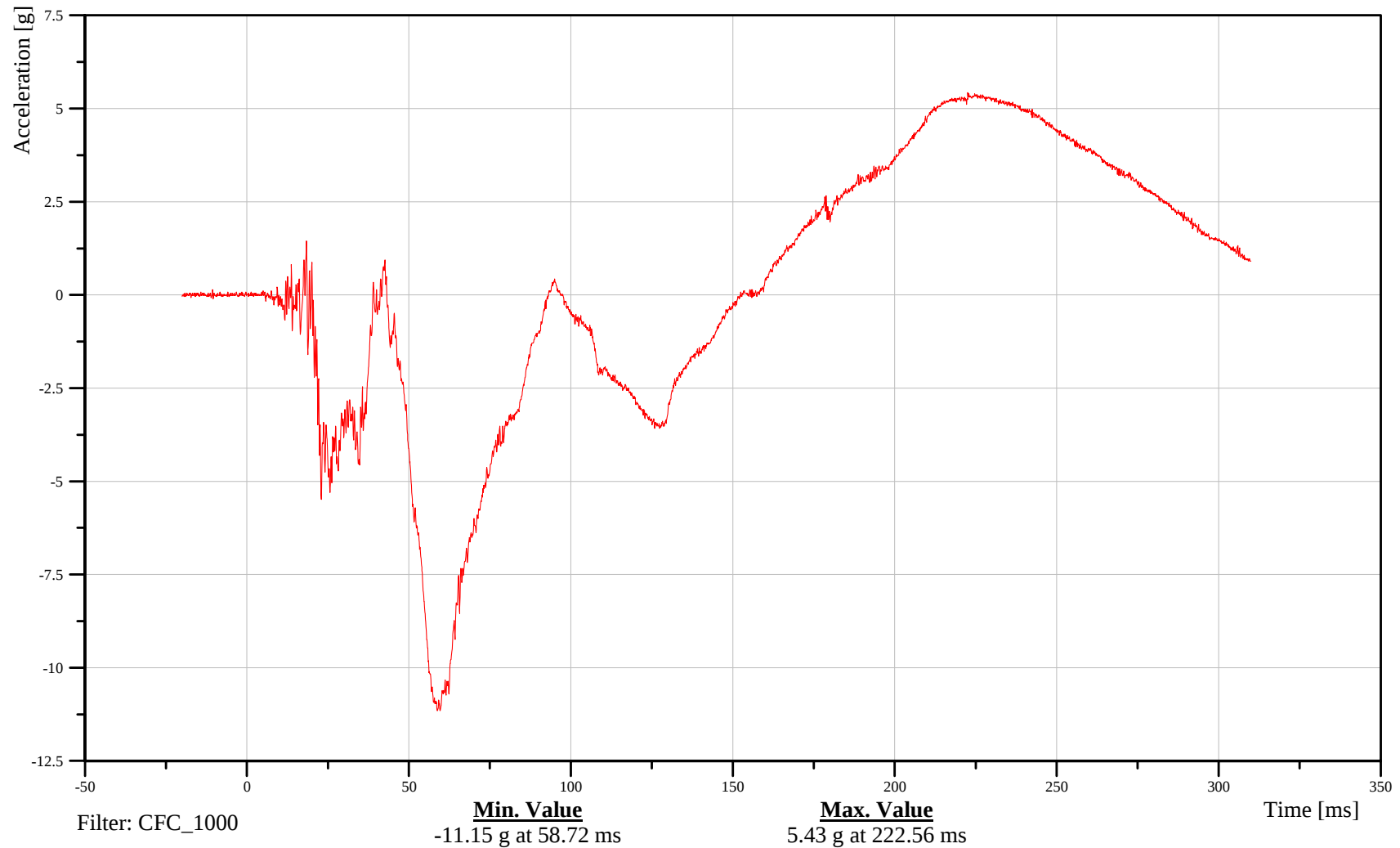
Customer: NHTSA

Test Number: C60514

11HEADCG00SHACXA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006
Time: 13:32

DRIVER HEAD X-AXIS VELOCITY

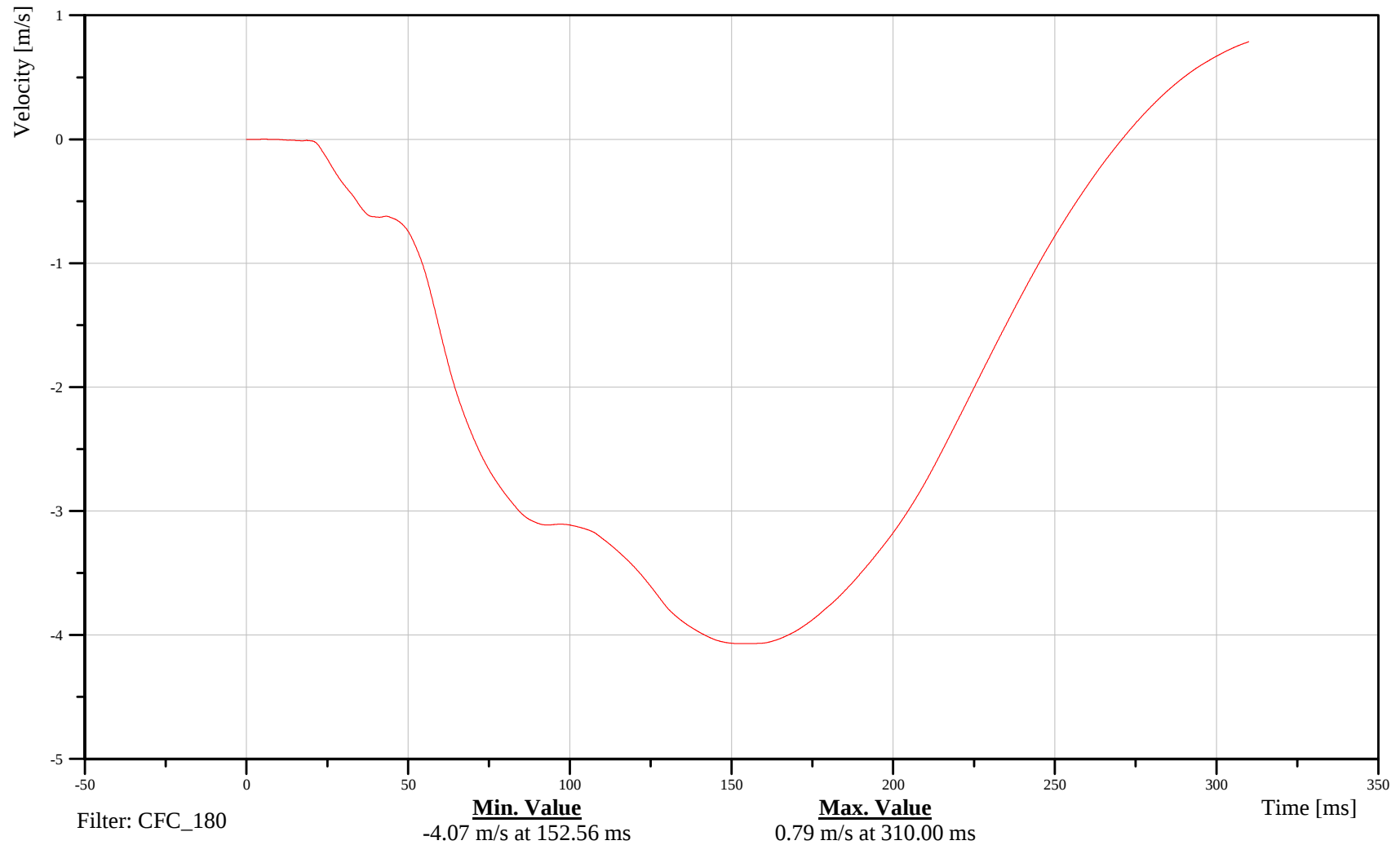
Customer: NHTSA

Test Number: C60514

11HEADCG00SHVEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-11

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

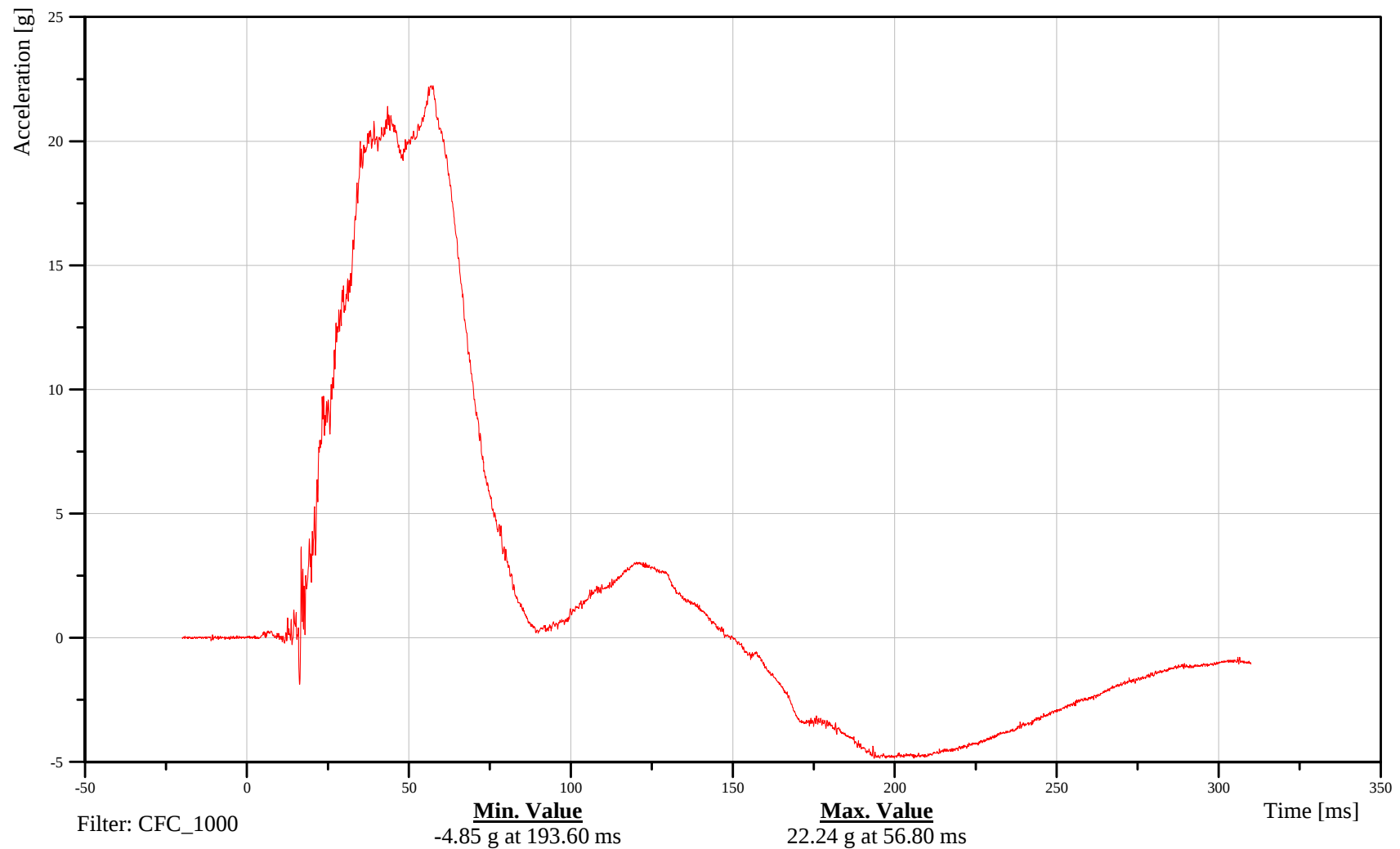
Date: 07/14/2006
Time: 13:32

DRIVER HEAD Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60514

11HEADCG00SHACYA

TRC Inc. Test Lab: CTF
Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

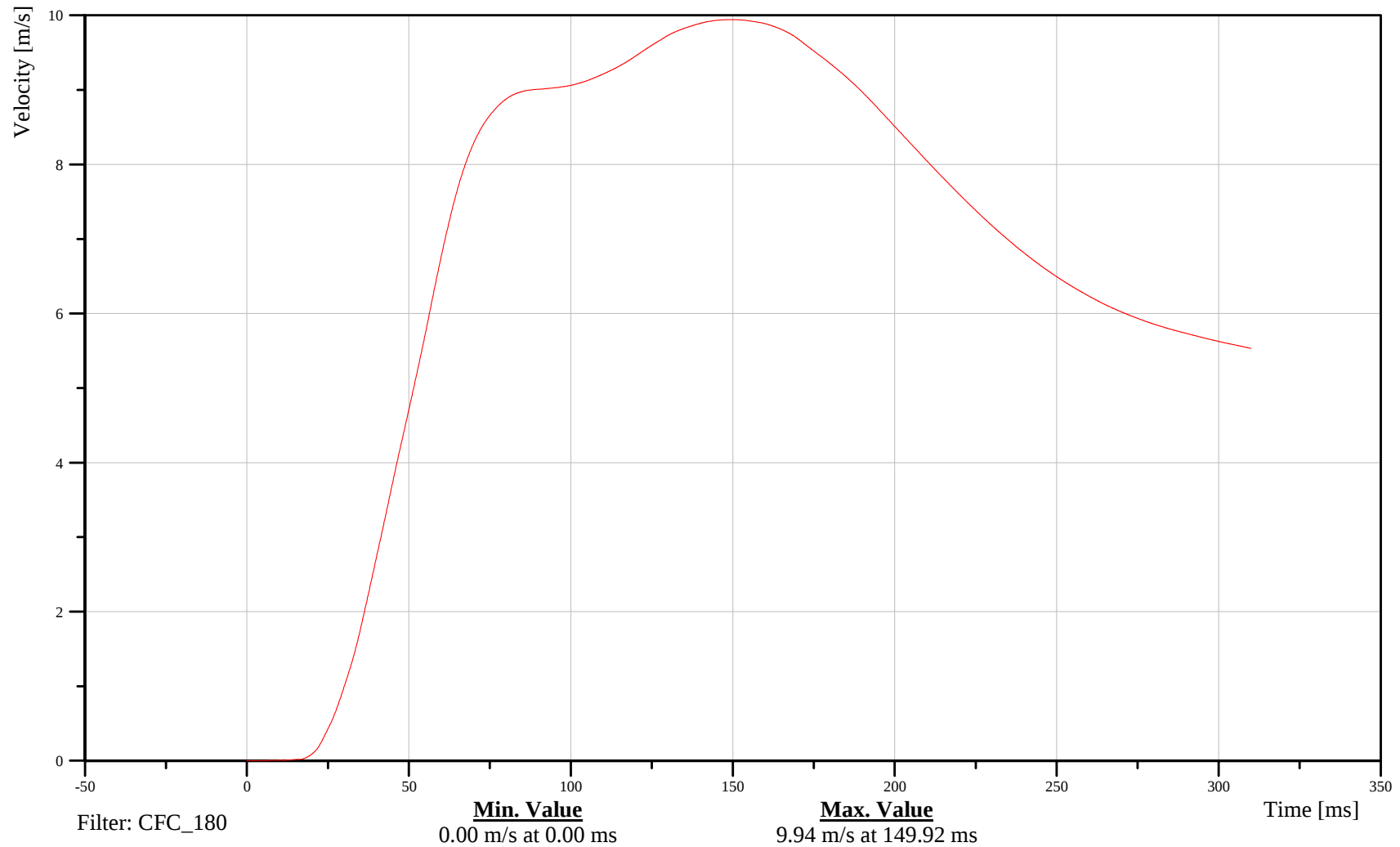
Date: 07/14/2006
Time: 13:32

DRIVER HEAD Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

11HEADCG00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD Z-AXIS ACCELERATION

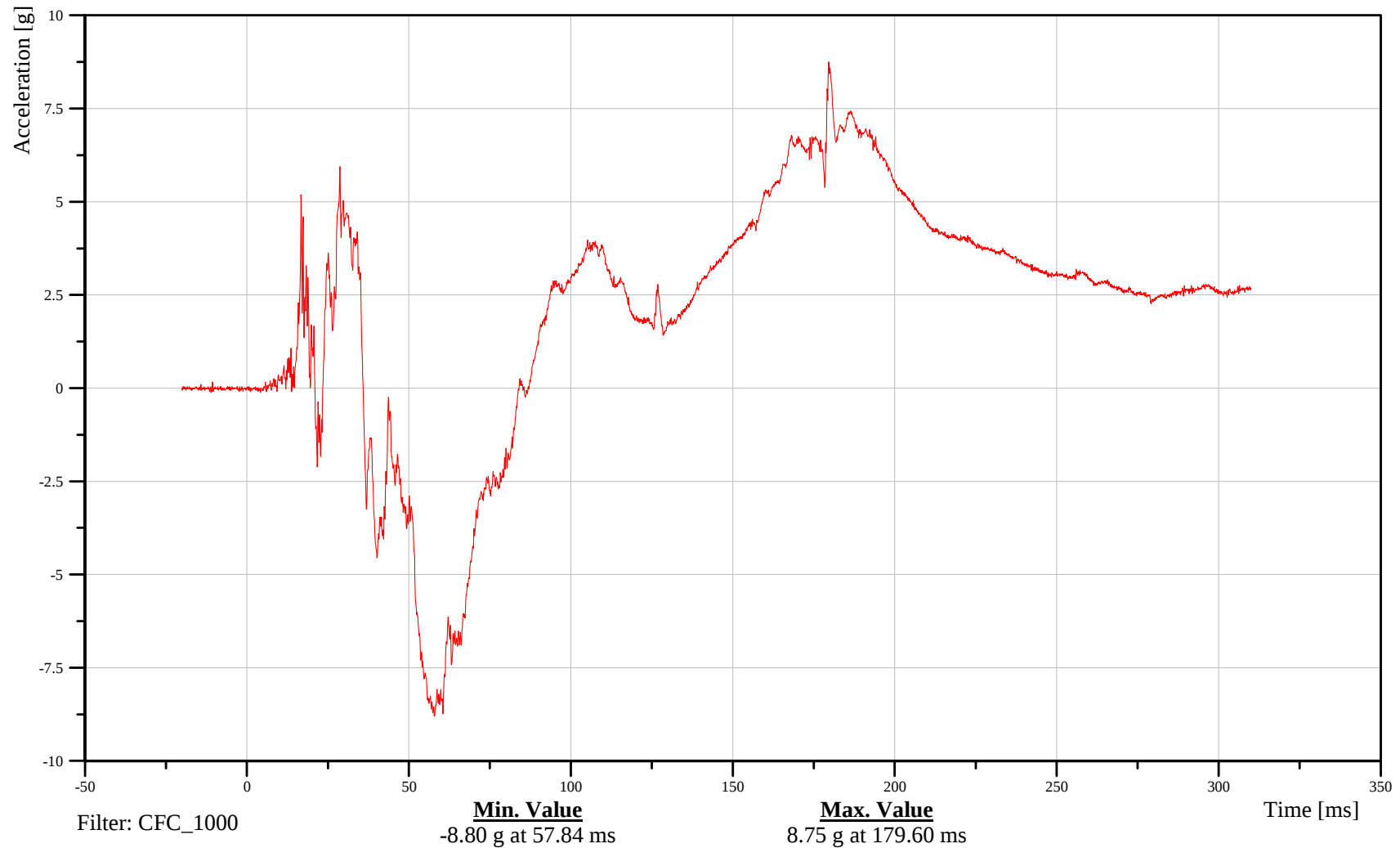
Customer: NHTSA

Test Number: C60514

11HEADCG00SHACZA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-14

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

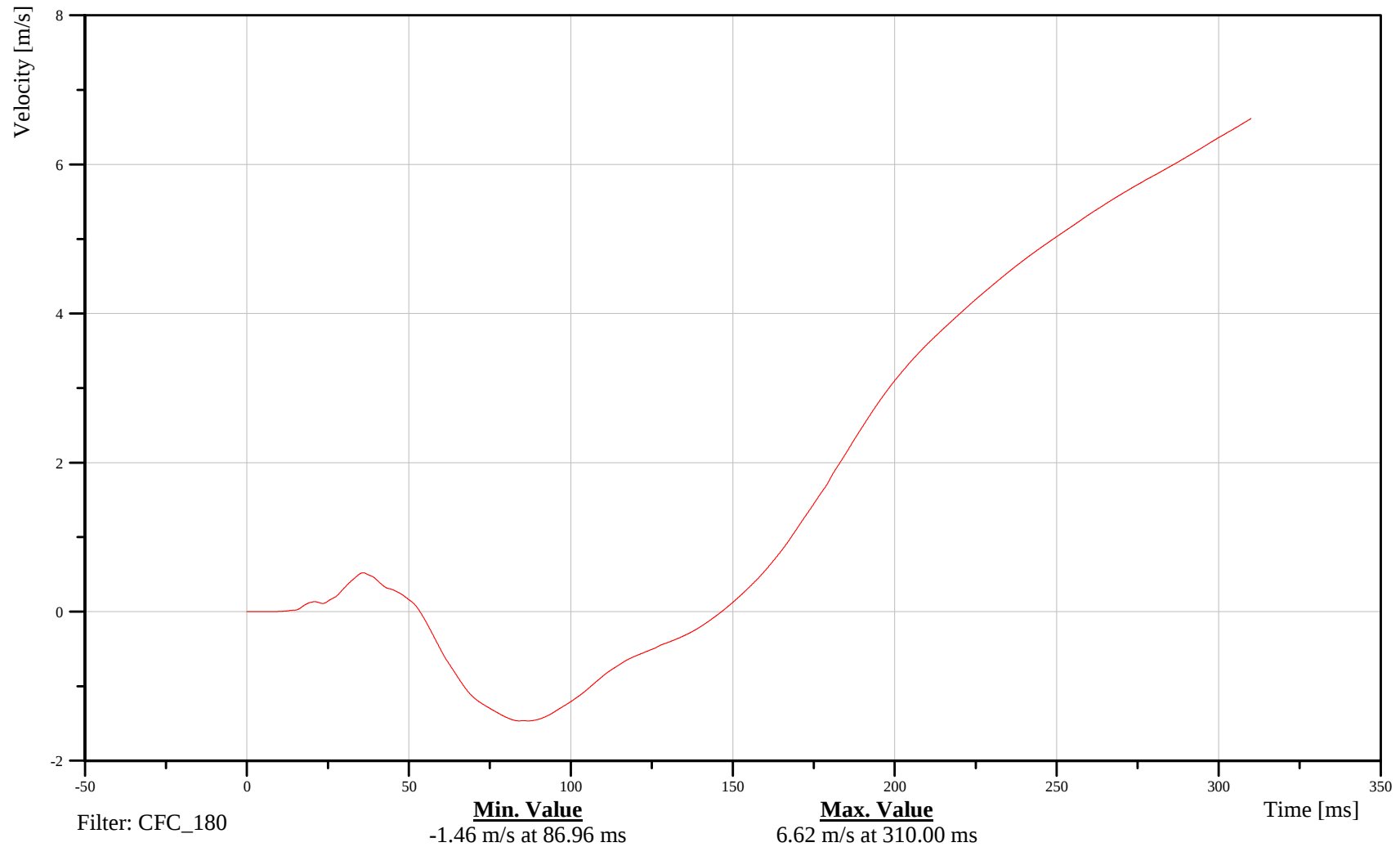
Date: 07/14/2006
Time: 13:32

DRIVER HEAD Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

11HEADCG00SHVEZC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD RESULTANT ACCELERATION

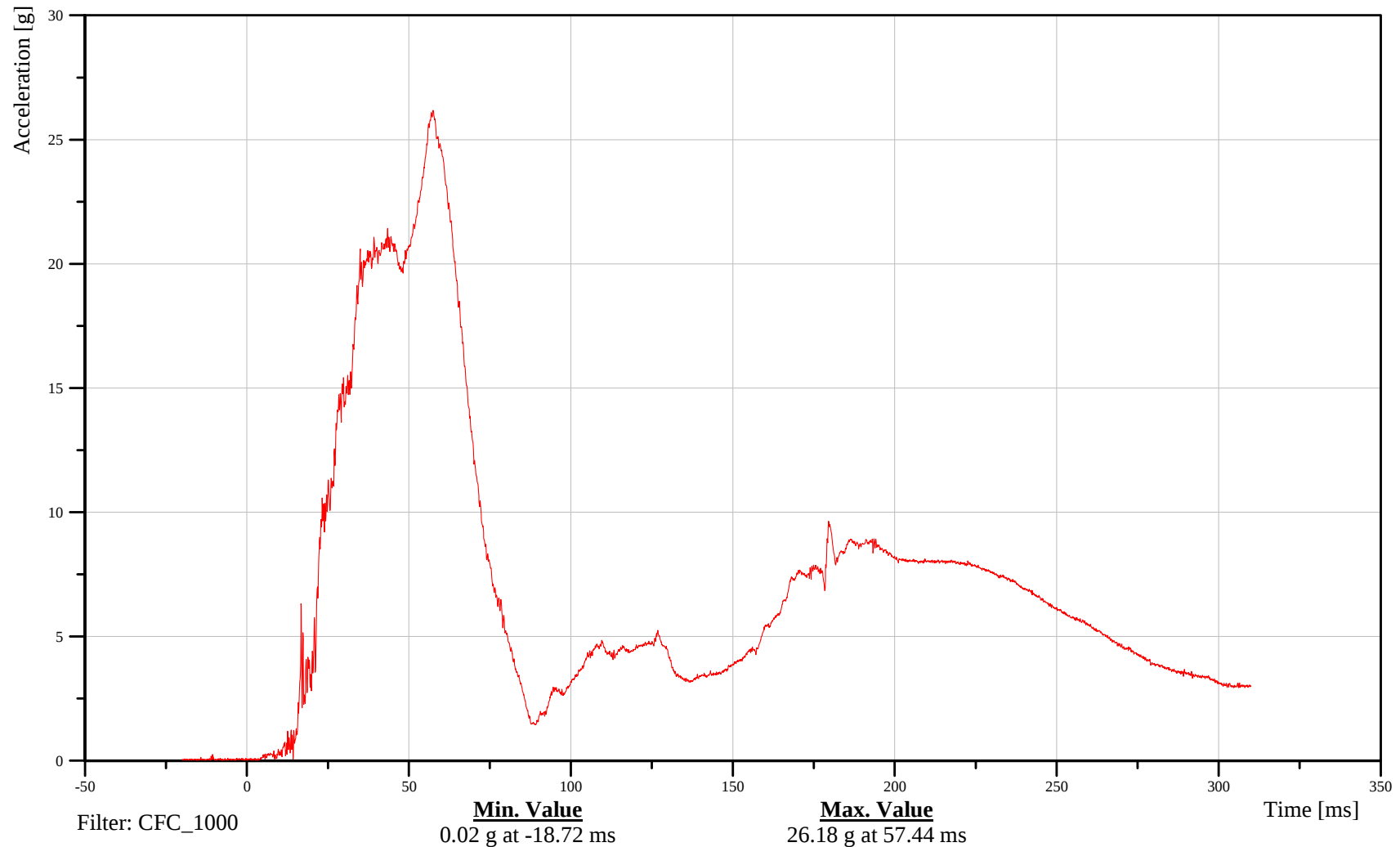
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Test Number: C60514

11HEADCG00SHACRA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER NECK X-AXIS SHEAR FORCE

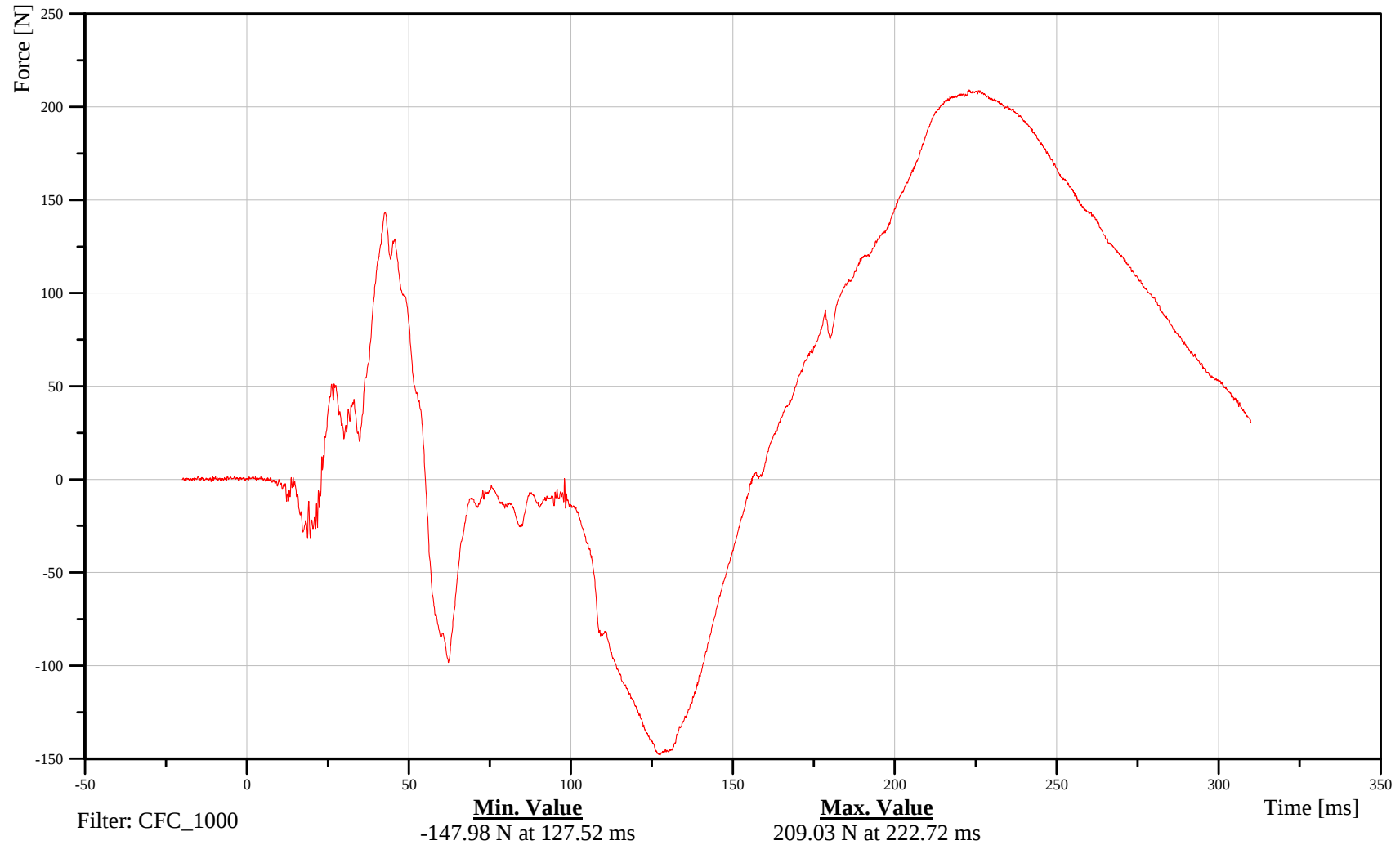
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Test Number: C60514

11NECKUP00SHFOXA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

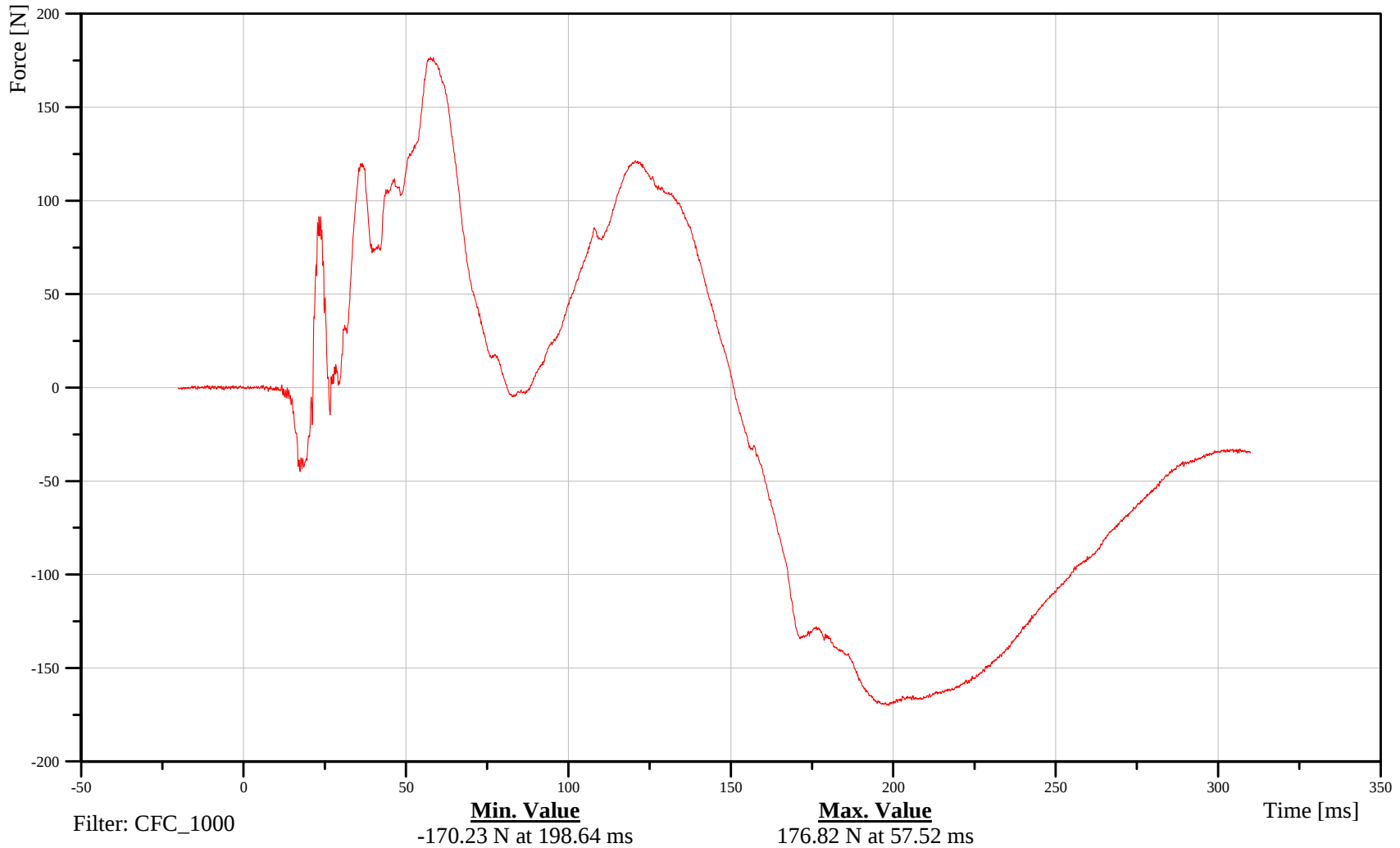
Date: 07/14/2006
Time: 13:32

DRIVER NECK Y-AXIS SHEAR FORCE

Customer: NHTSA
Test Number: C60514

11NECKUP00SHFOYA

TRC Inc. Test Lab: CTF
Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER NECK Z-AXIS AXIAL FORCE

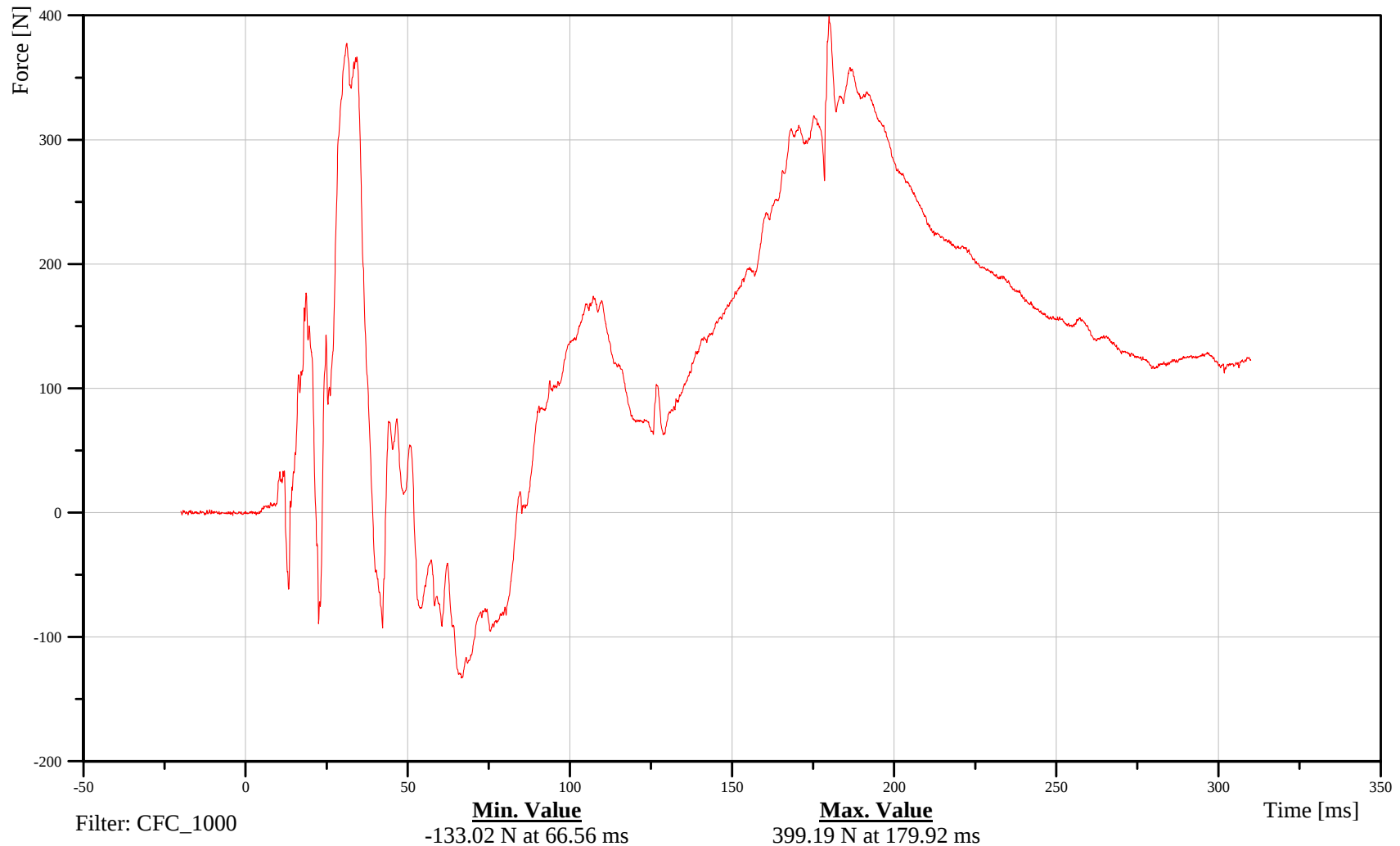
Customer: NHTSA

Test Number: C60514

11NECKUP00SHFOZA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER NECK MOMENT ABOUT X AXIS

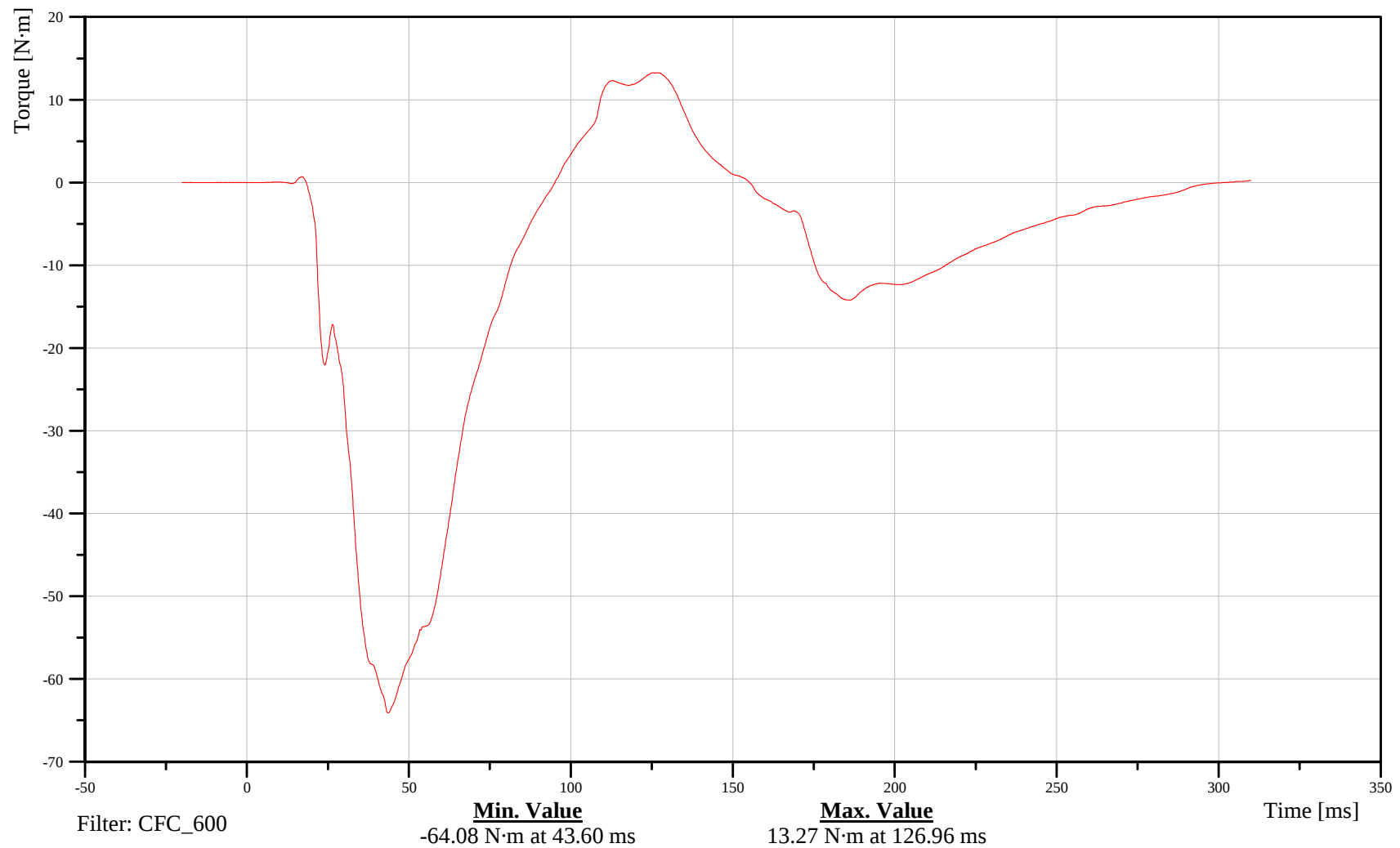
Customer: NHTSA

Test Number: C60514

11NECKUP00SHMOXB

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-20

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER NECK MOMENT ABOUT Y AXIS

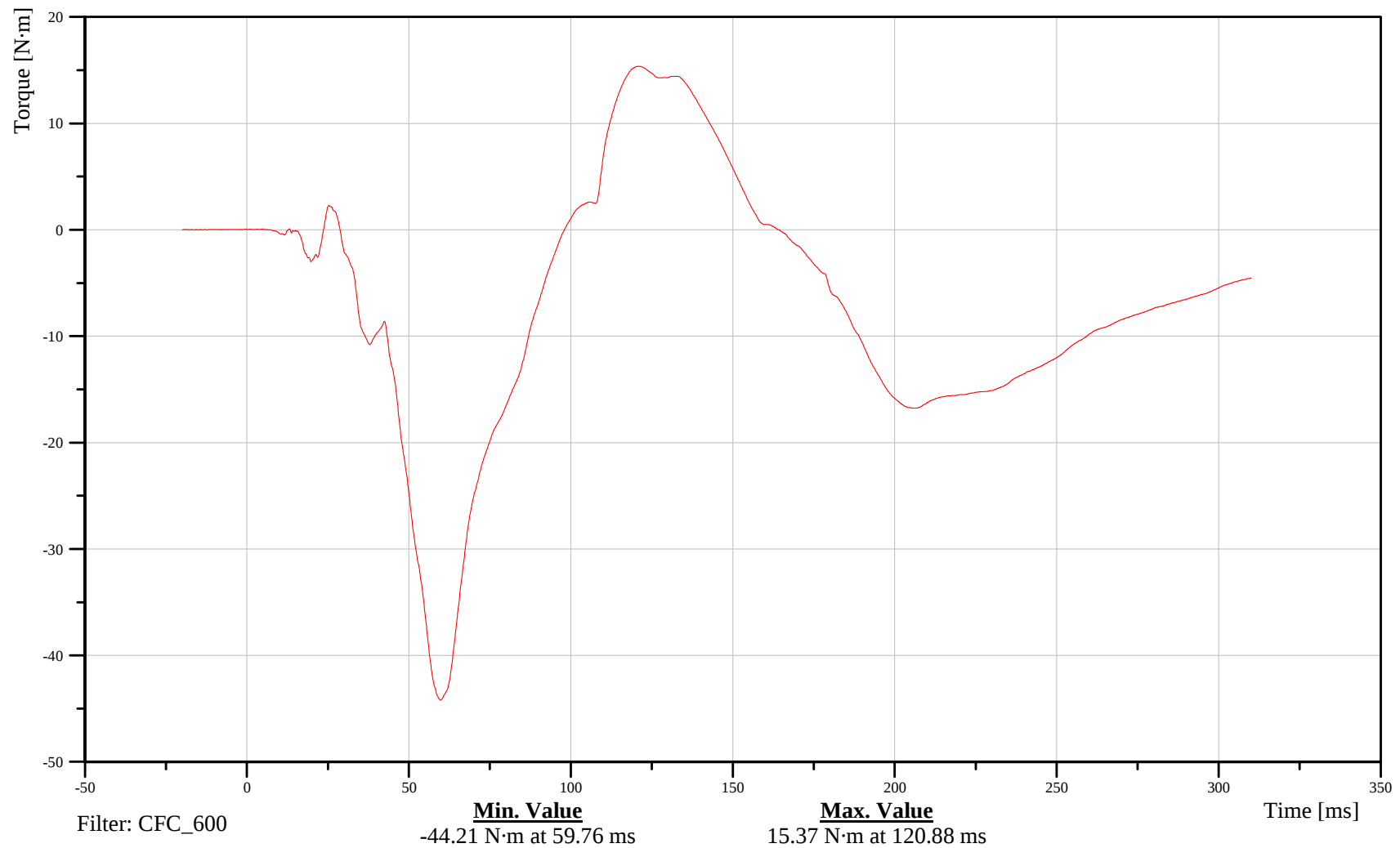
Customer: NHTSA

Test Number: C60514

11NECKUP00SHMOYB

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER NECK MOMENT ABOUT Z AXIS

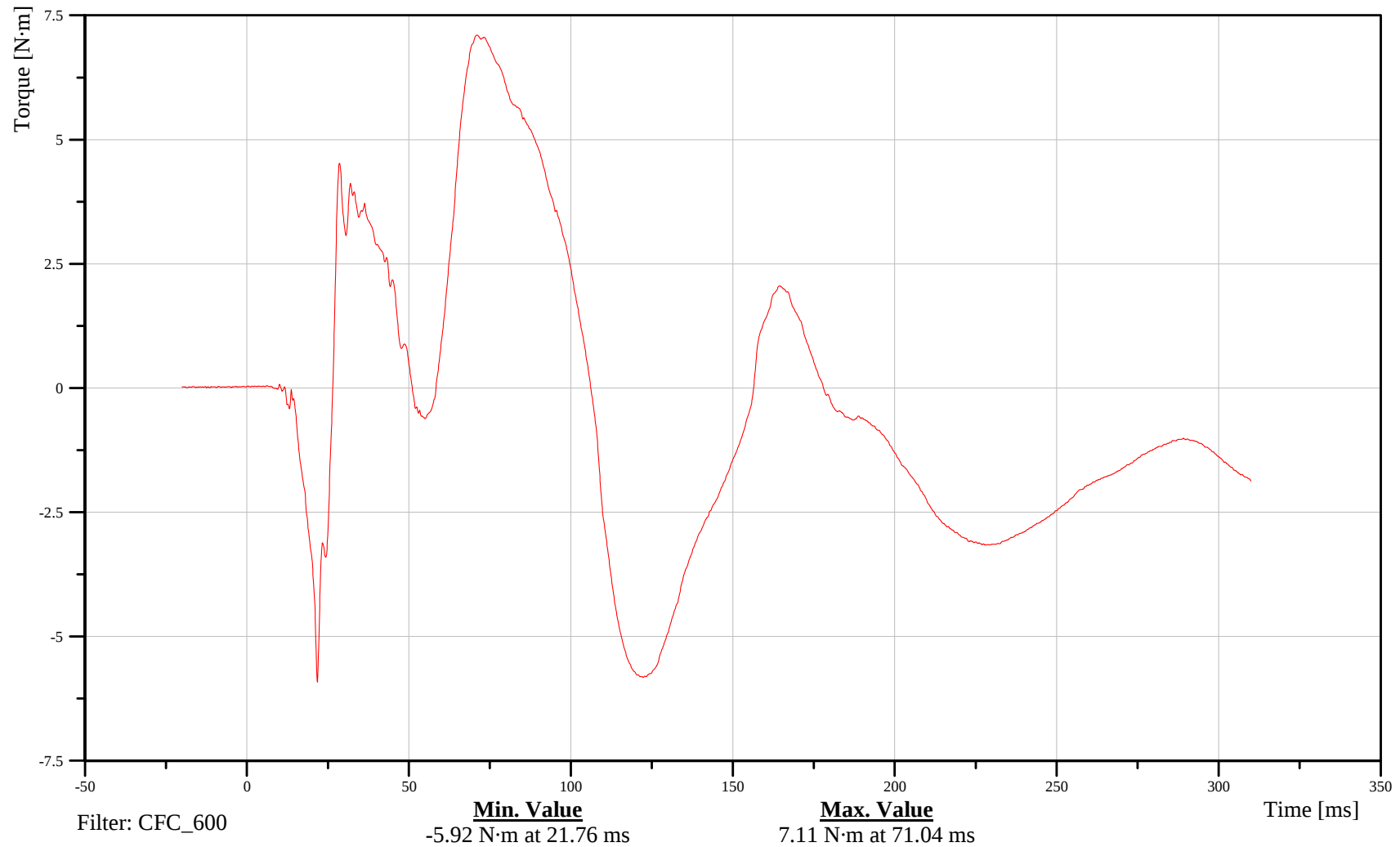
Customer: NHTSA

Test Number: C60514

11NECKUP00SHMOZB

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera Neck Moment about the Occipital Condyle (NECK OM)

Date: 07/14/2006
Time: 13:32

Customer: NHTSA

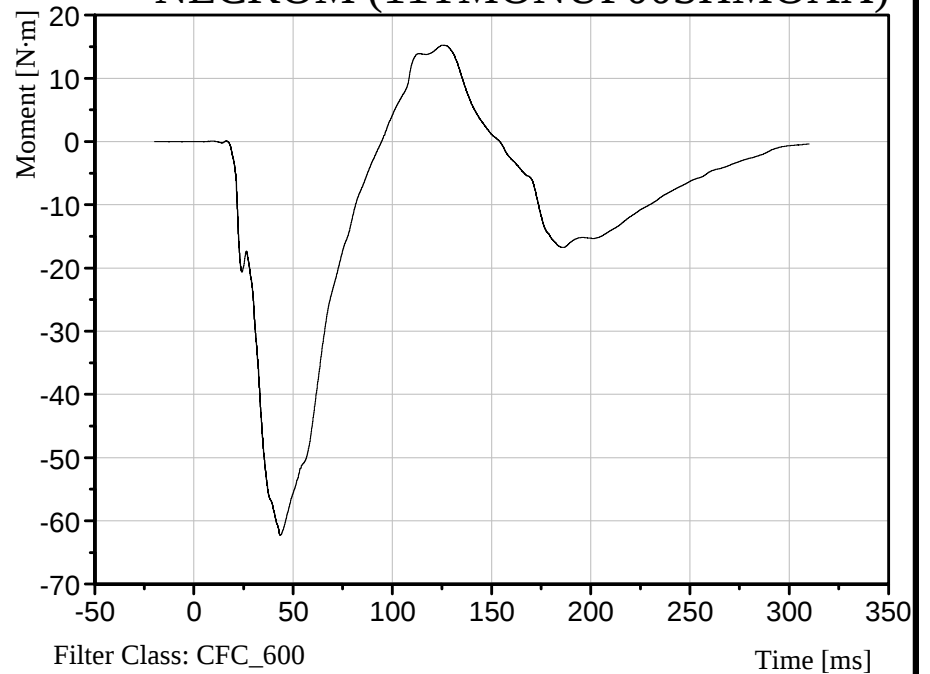
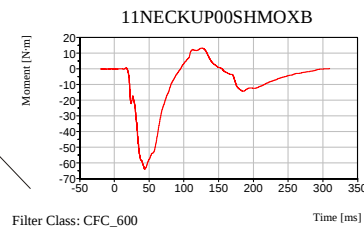
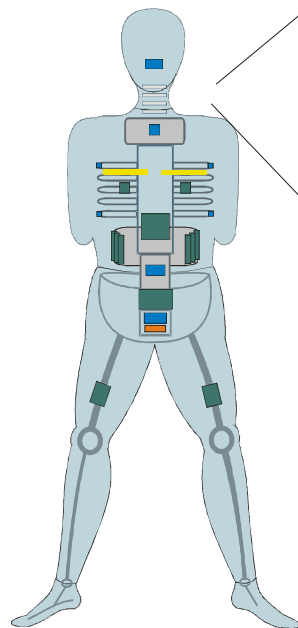
Test Number: C60514

Test Orientation = Side

TRC Inc. Test Lab: CTF

Test Number: 060714-1

NECKOM (11TMONUP00SHMOXX)



Dummy: HIII/SID

Seating Position:

Driver

Neck OM Source Code: $M_x + (D \cdot F_y)$

[Max.] 15.25 N·m at 125.60 ms

[Min.] -62.26 N·m at 43.44 ms



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER UPPER RIB Y-AXIS ACCELERATION

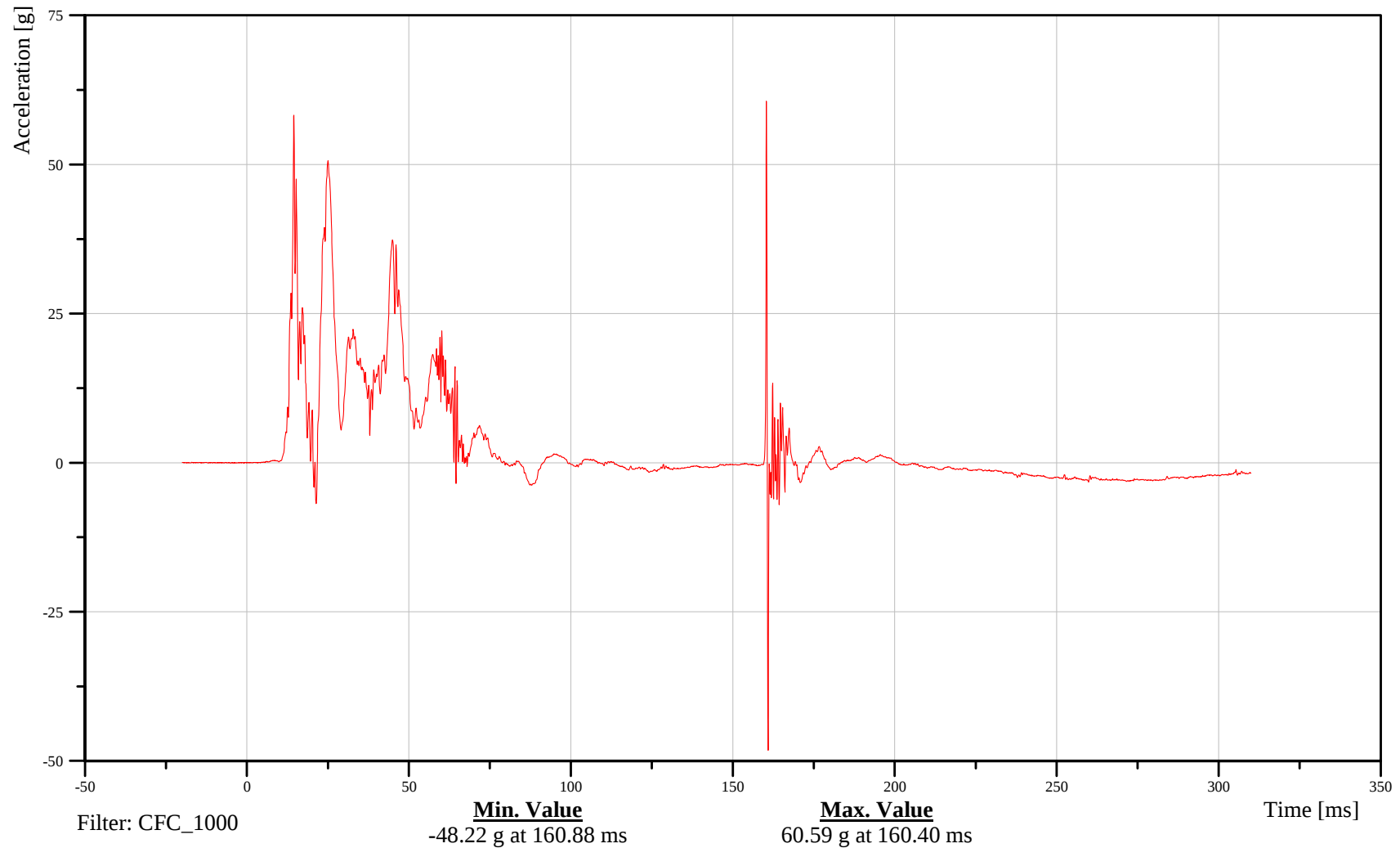
Customer: NHTSA

Test Number: C60514

11RIBSLU00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

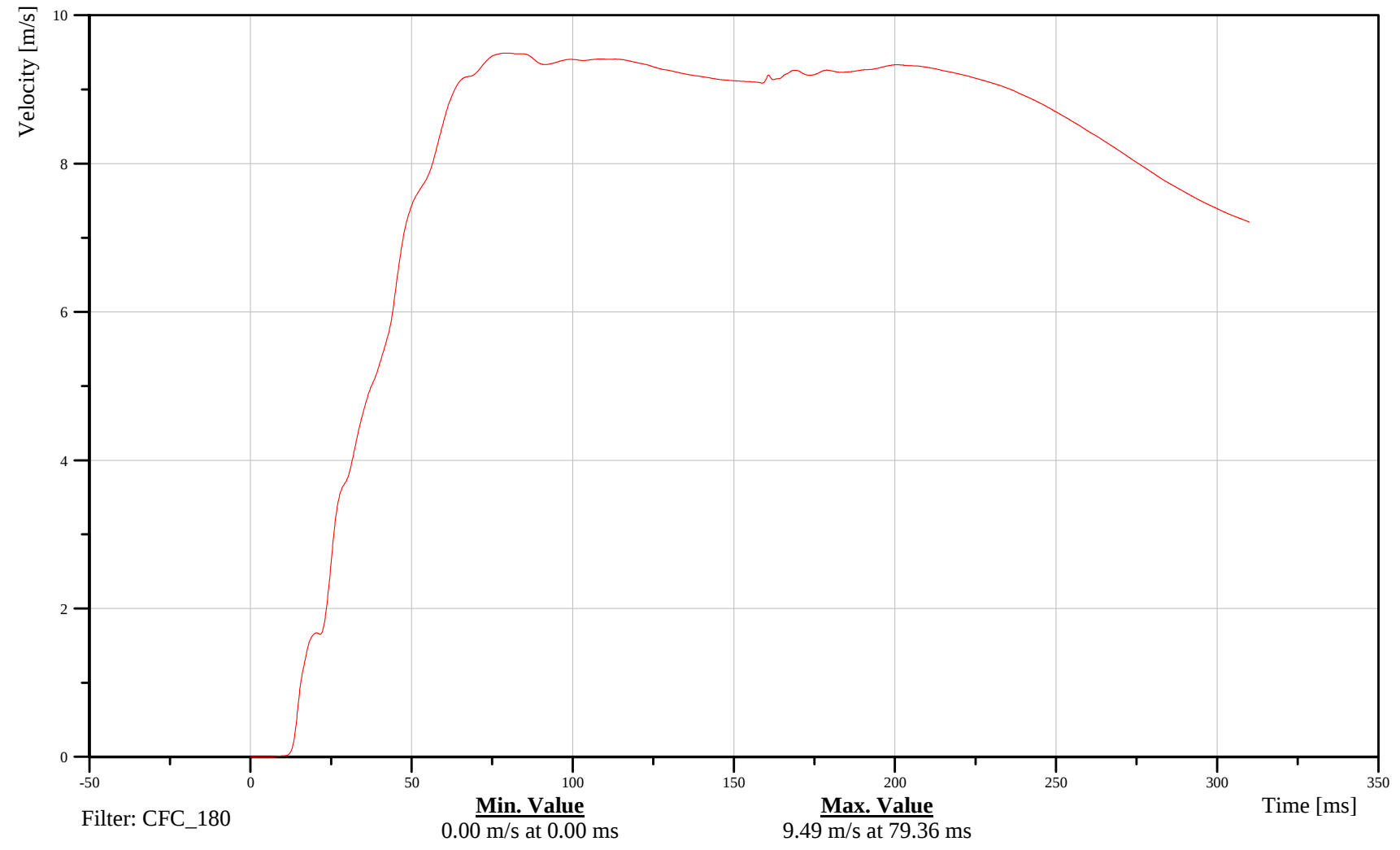
Date: 07/14/2006
Time: 13:32

DRIVER UPPER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

11RIBSLU00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



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060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER RIB Y-AXIS ACCELERATION

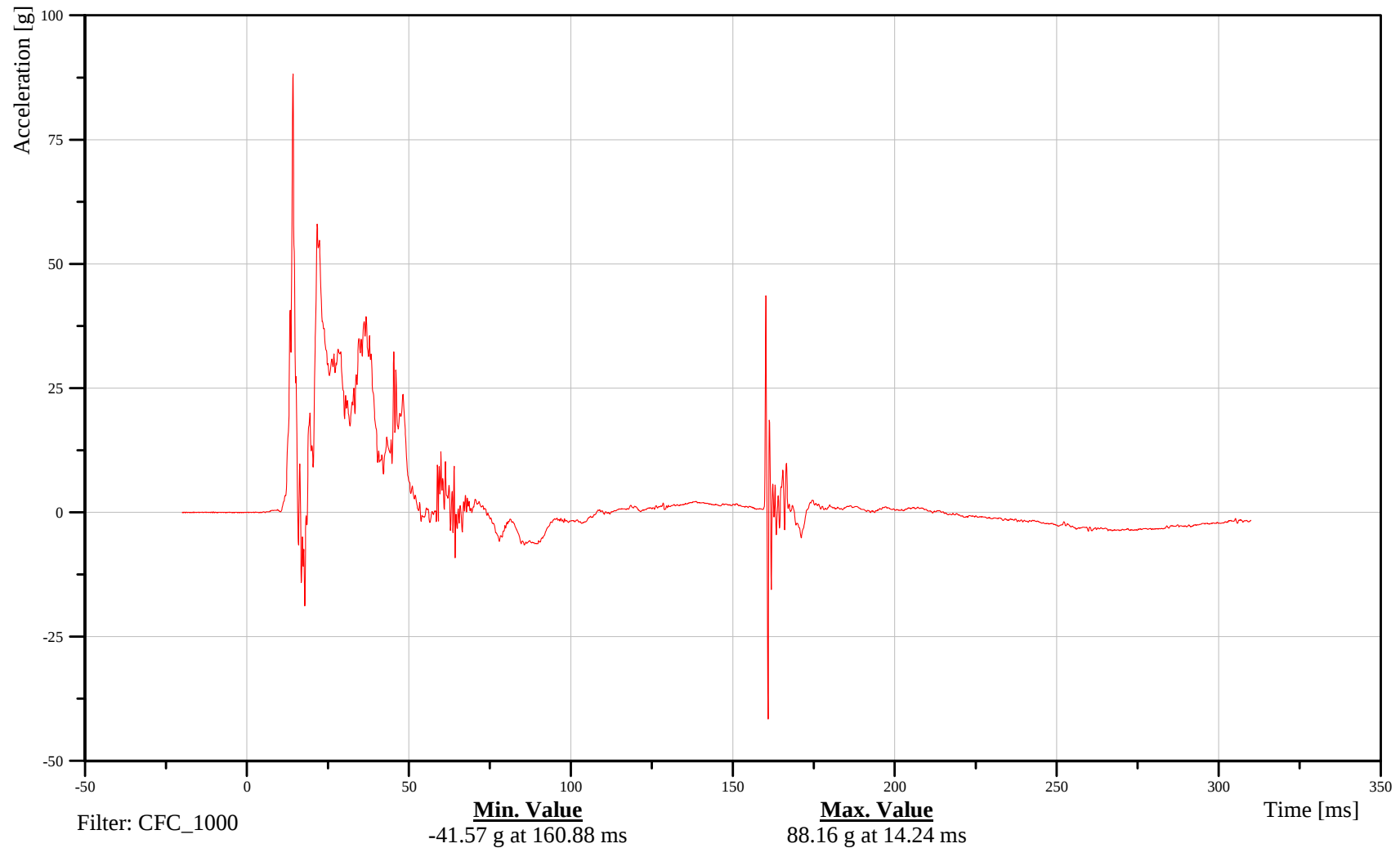
Customer: NHTSA

Test Number: C60514

11RIBSLL00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-26

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

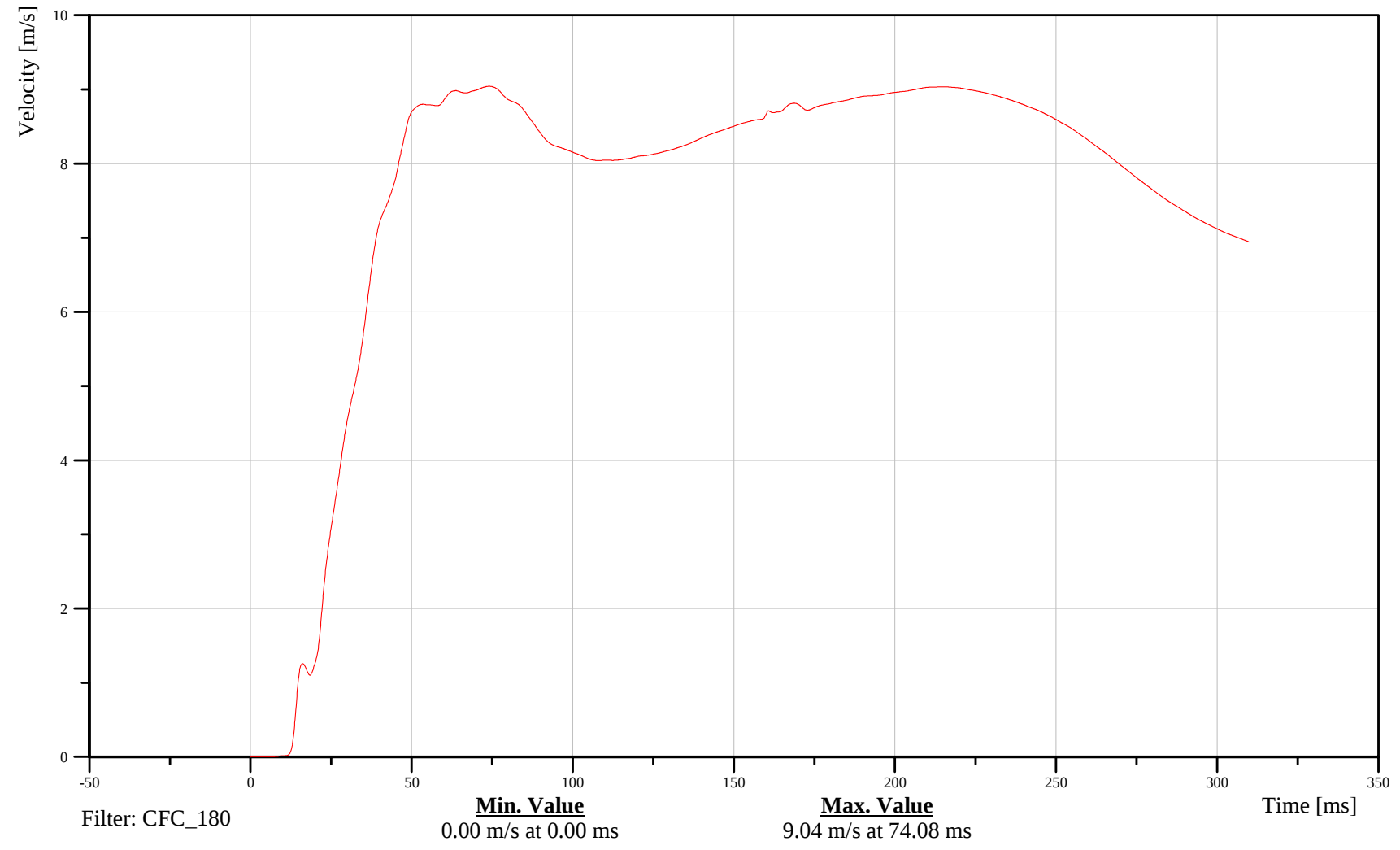
Date: 07/14/2006
Time: 13:32

DRIVER LOWER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

11RIBSLL00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-27

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER SPINE Y-AXIS ACCELERATION

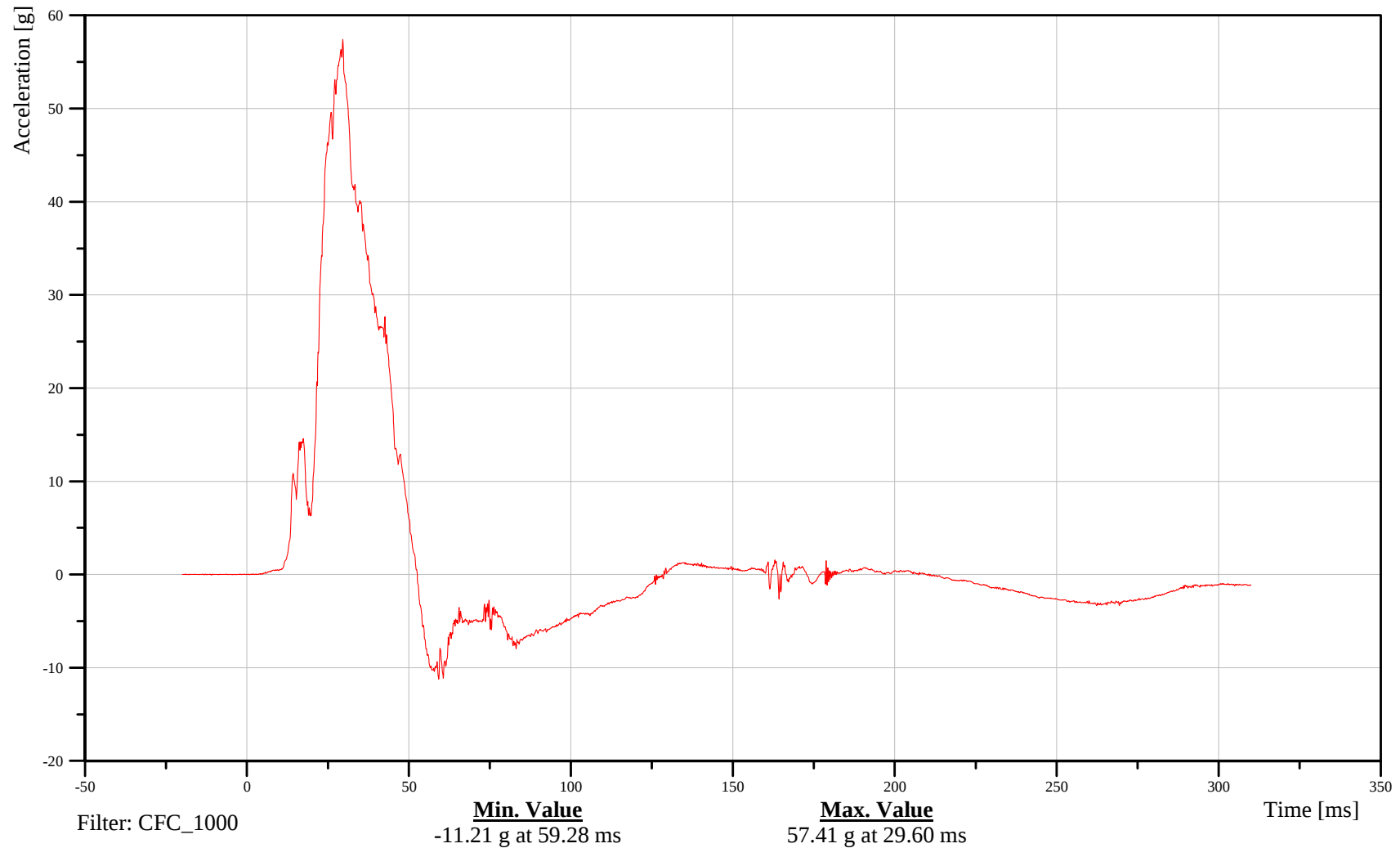
Customer: NHTSA

Test Number: C60514

11SPIN1200SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-28

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER SPINE Y-AXIS VELOCITY

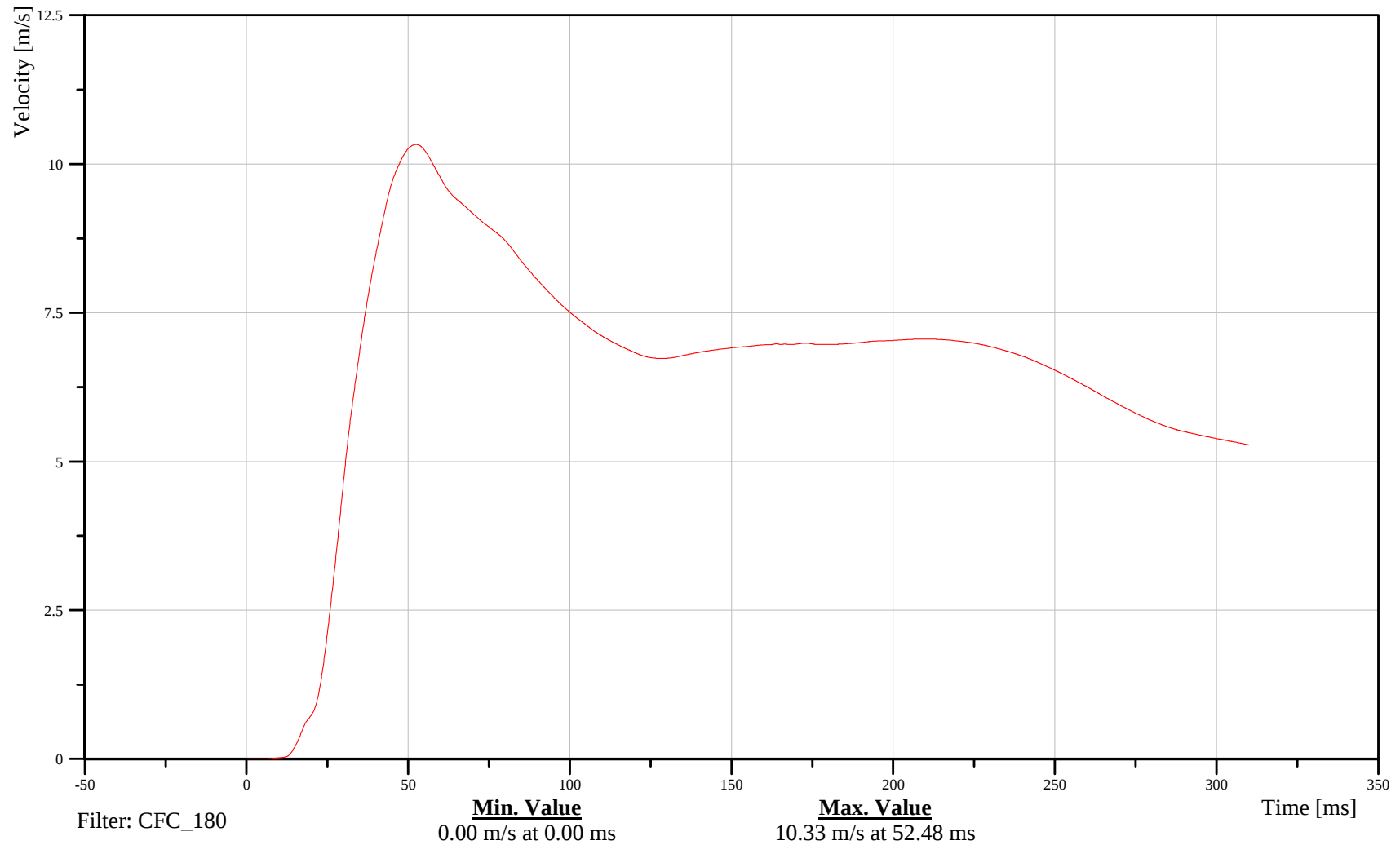
Customer: NHTSA

Test Number: C60514

11SPIN1200SHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-29

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER PELVIS Y-AXIS ACCELERATION

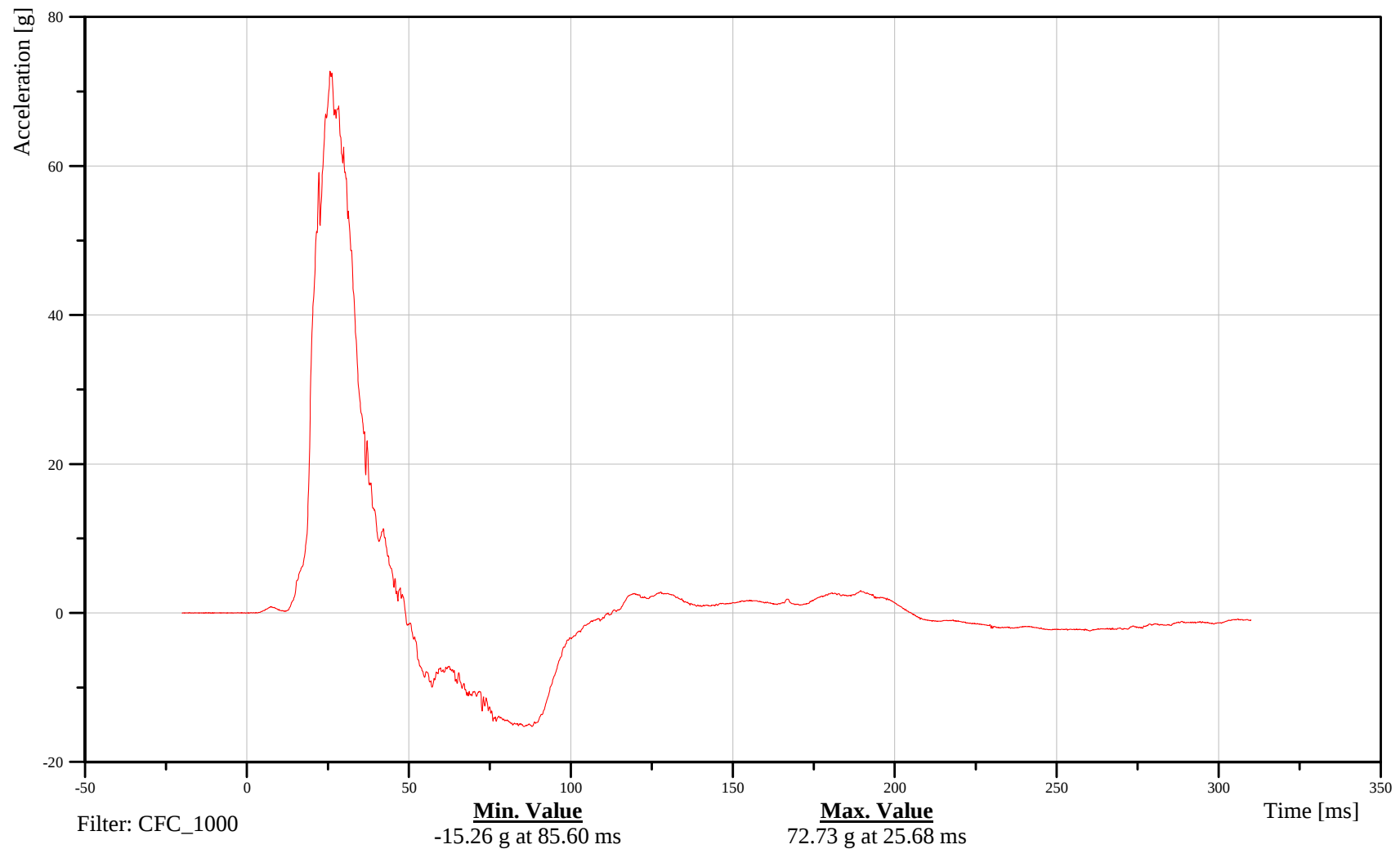
Customer: NHTSA

Test Number: C60514

11PELVCG00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-30

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER PELVIS Y-AXIS VELOCITY

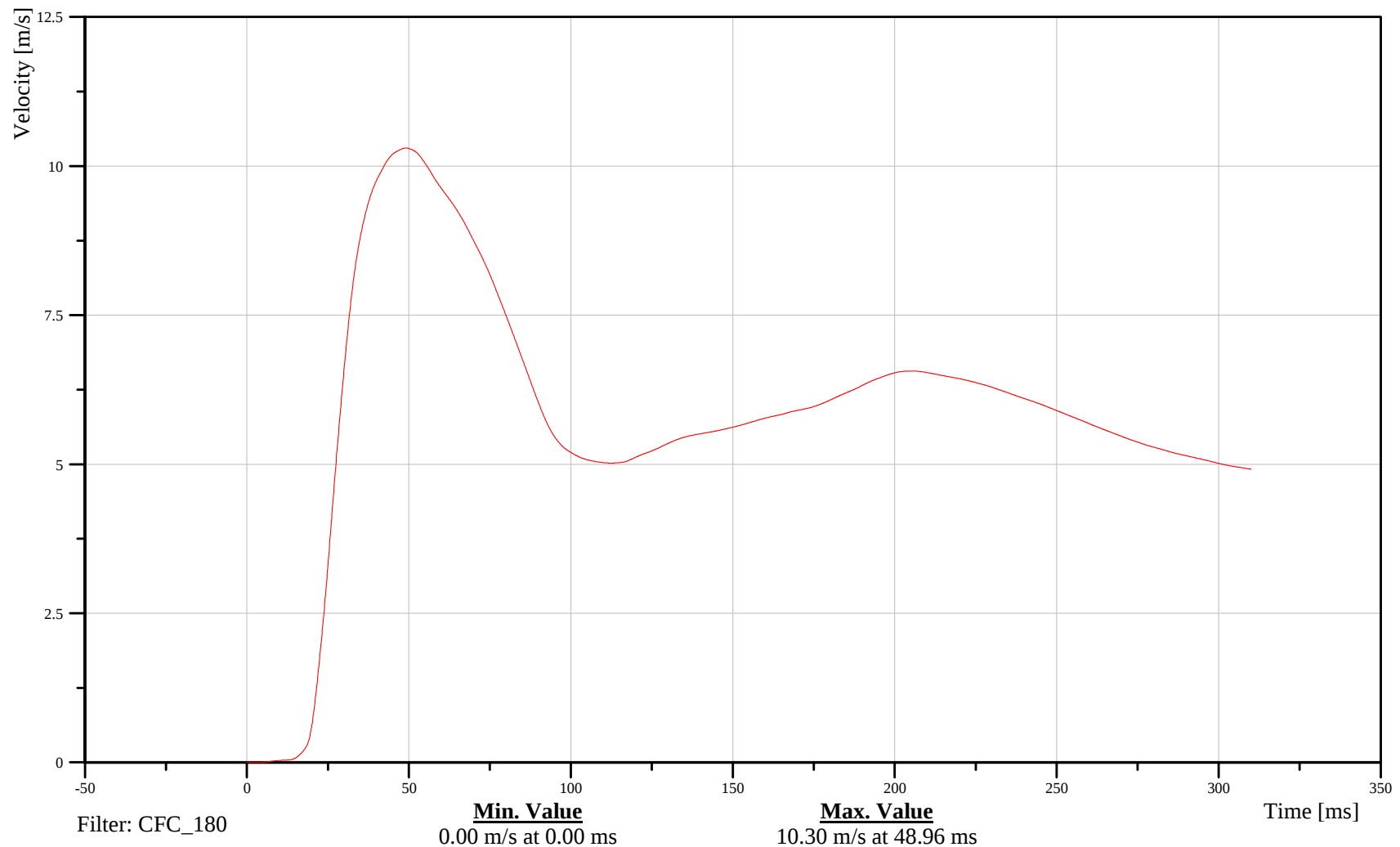
Customer: NHTSA

Test Number: C60514

11PELVCG00SHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-31

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

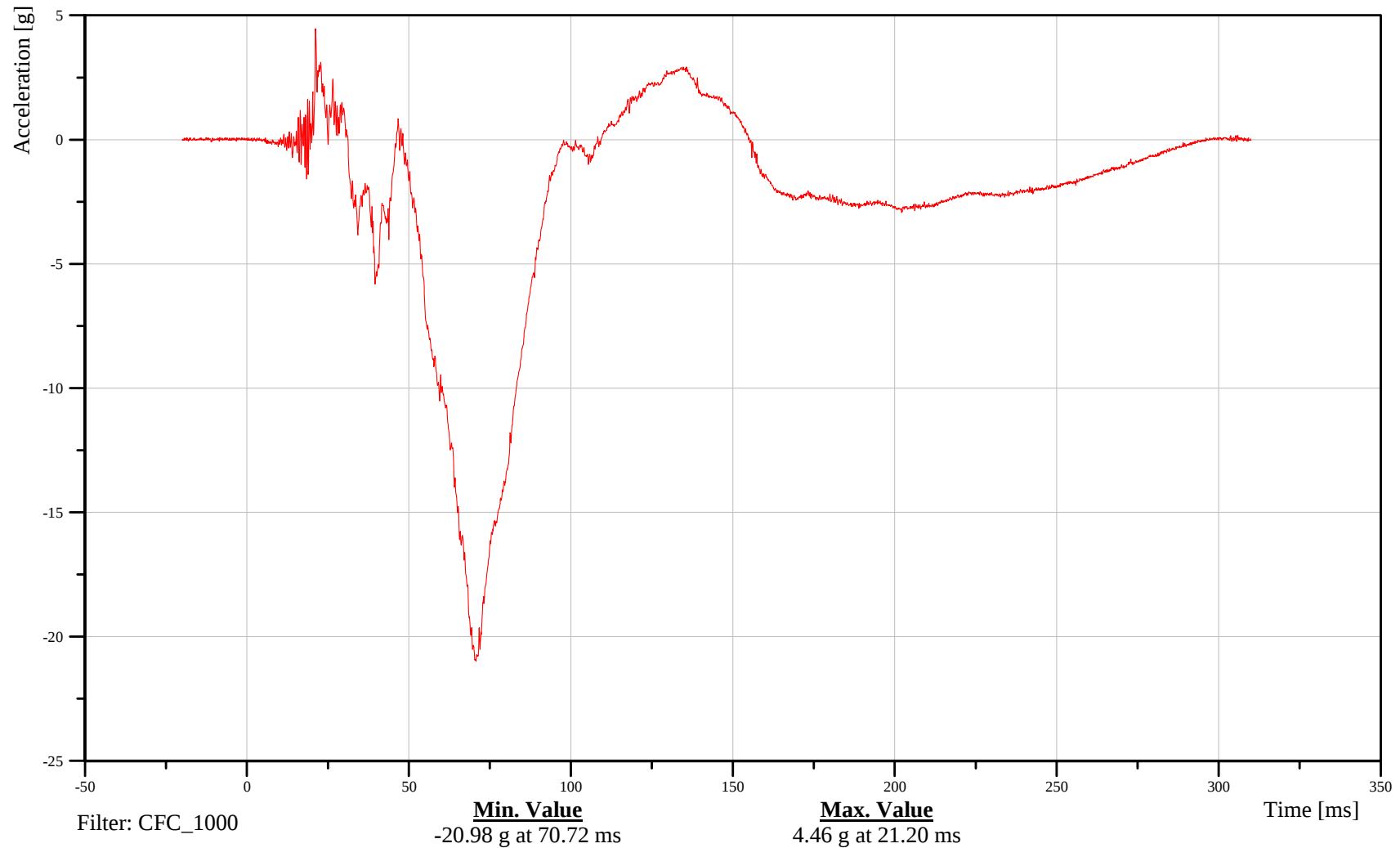
Customer: NHTSA

Test Number: C60514

14HEADCG00SHACXA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-32

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD X-AXIS VELOCITY

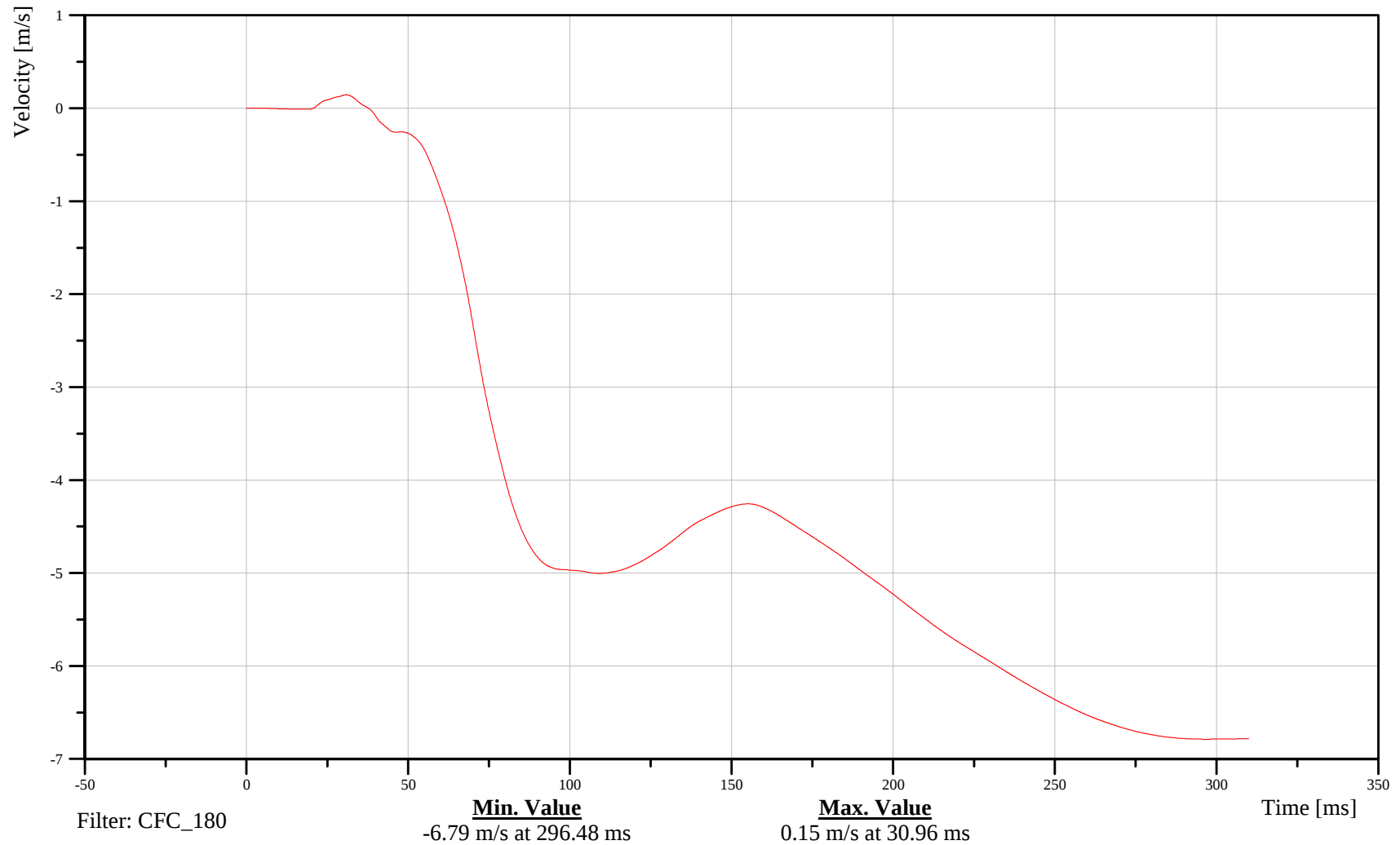
Customer: NHTSA

Test Number: C60514

14HEADCG00SHVEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-33

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION

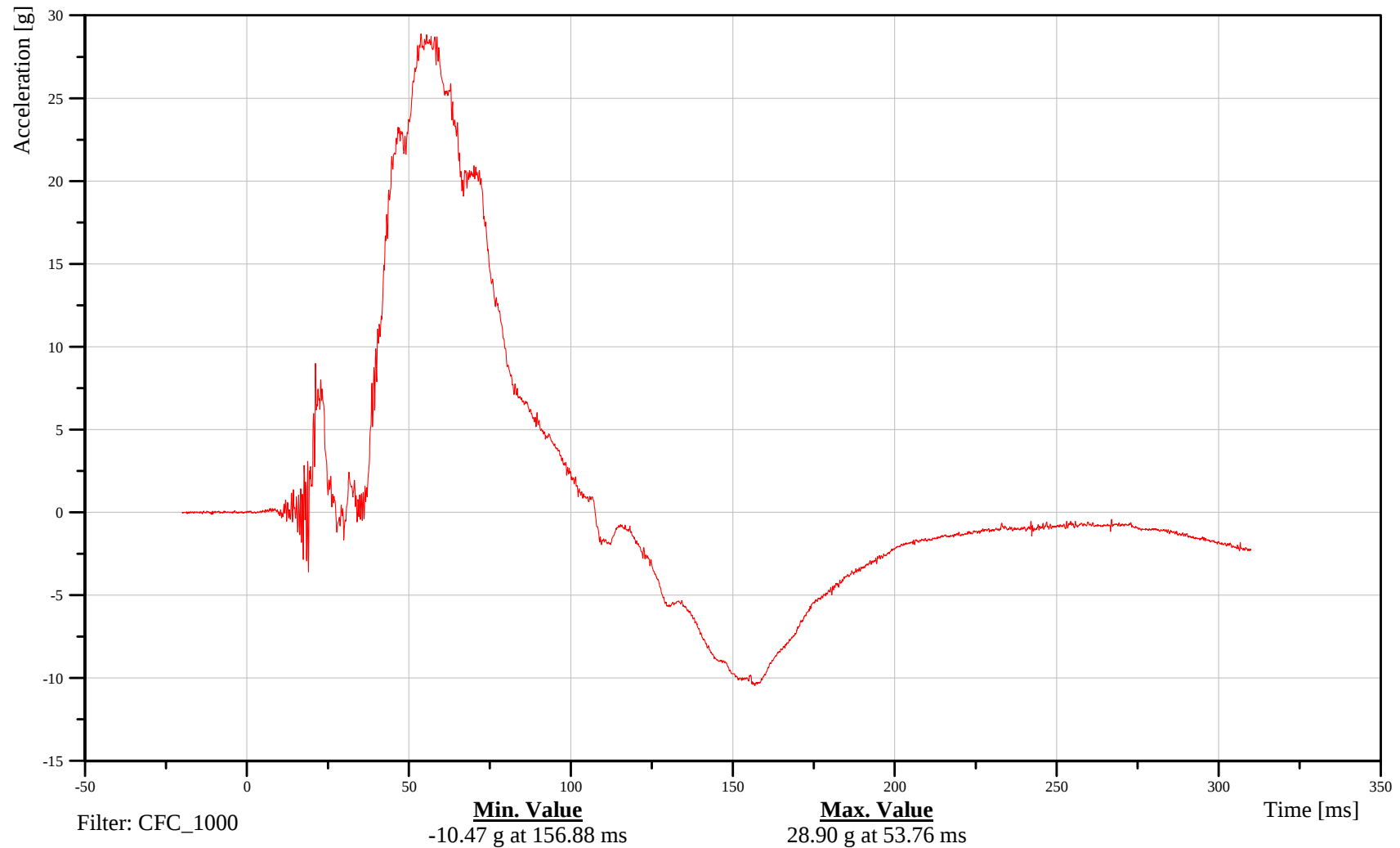
Customer: NHTSA

Test Number: C60514

14HEADCG00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-34

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

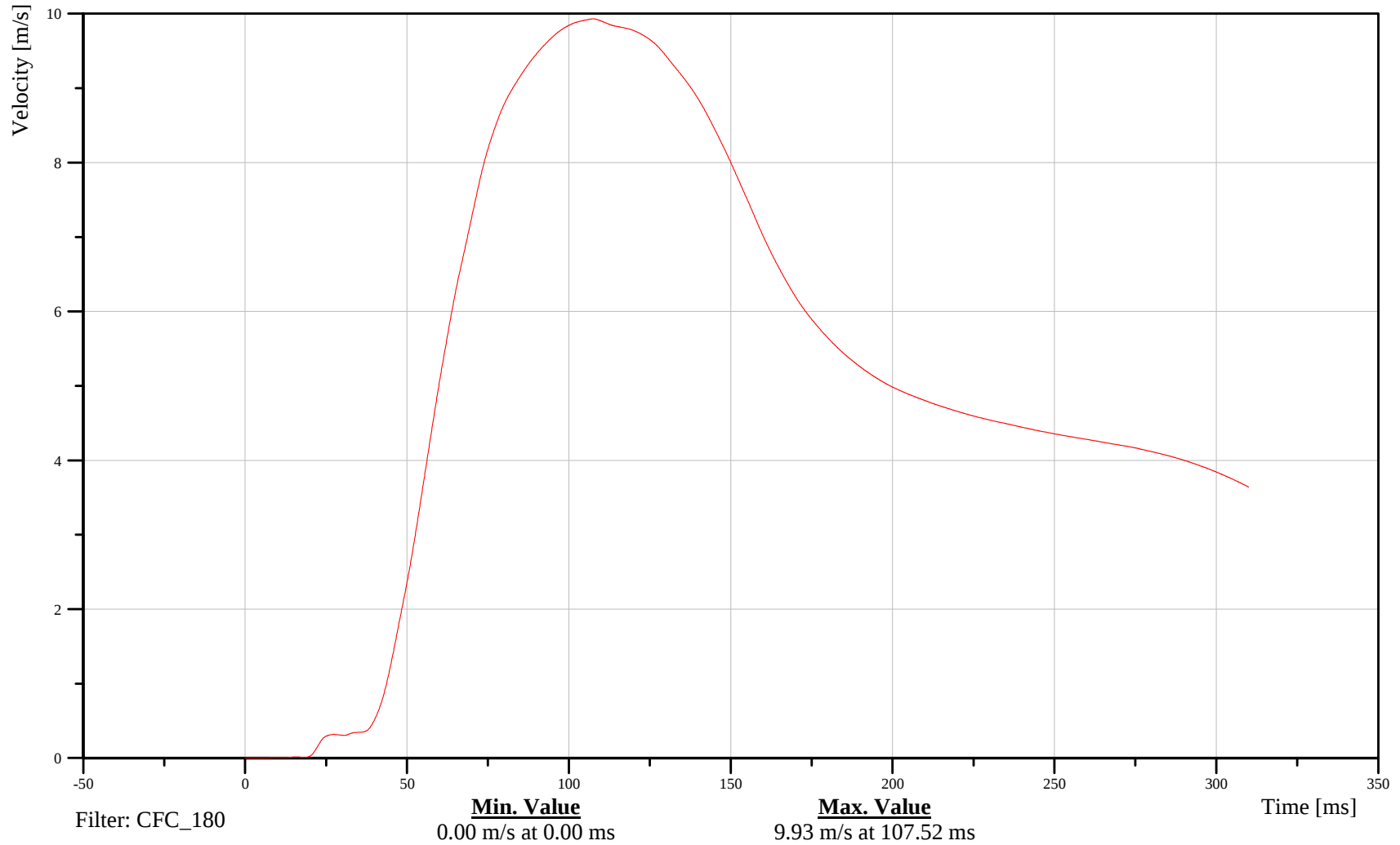
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

14HEADCG00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-35

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

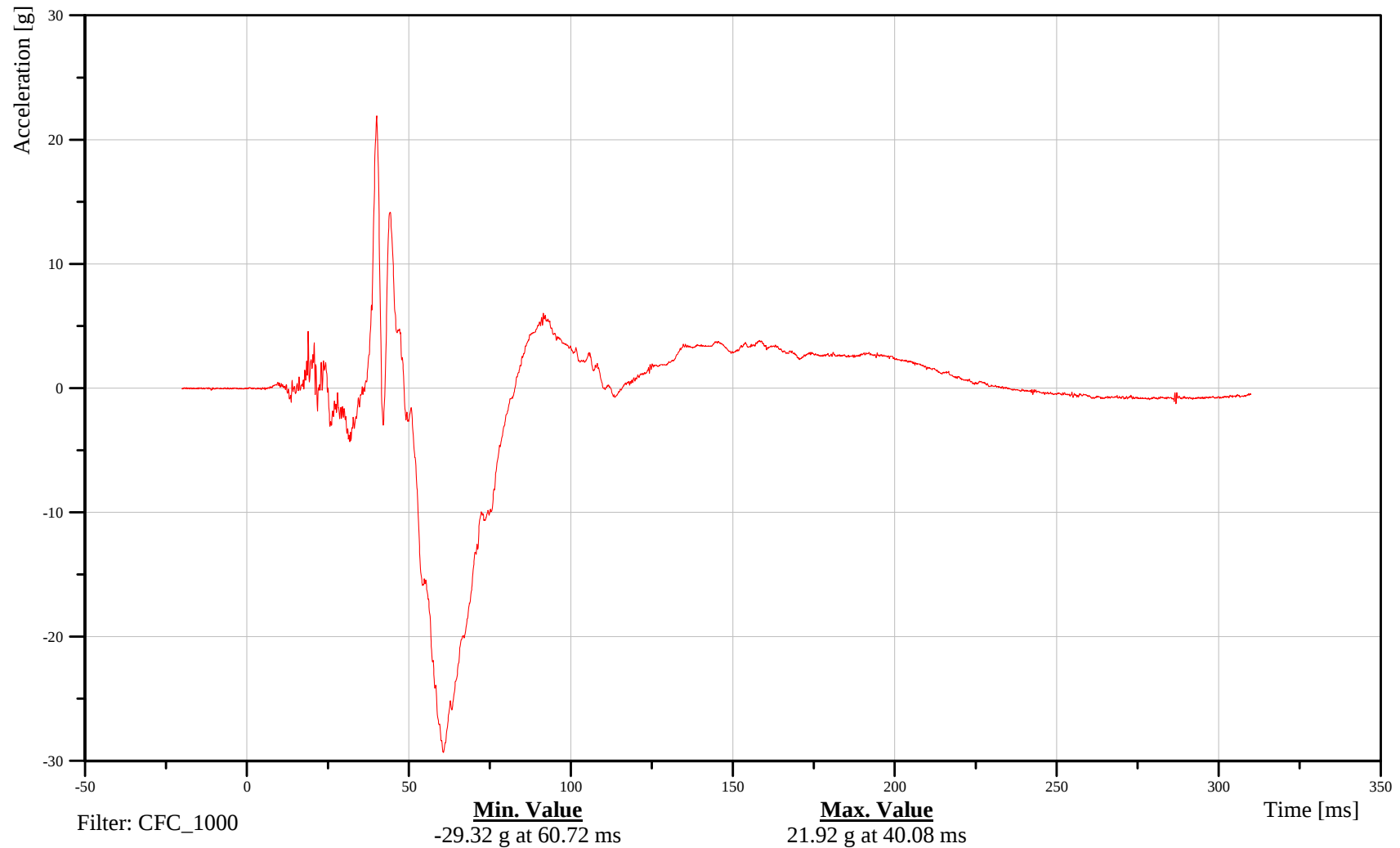
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60514

14HEADCG00SHACZA

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-36

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

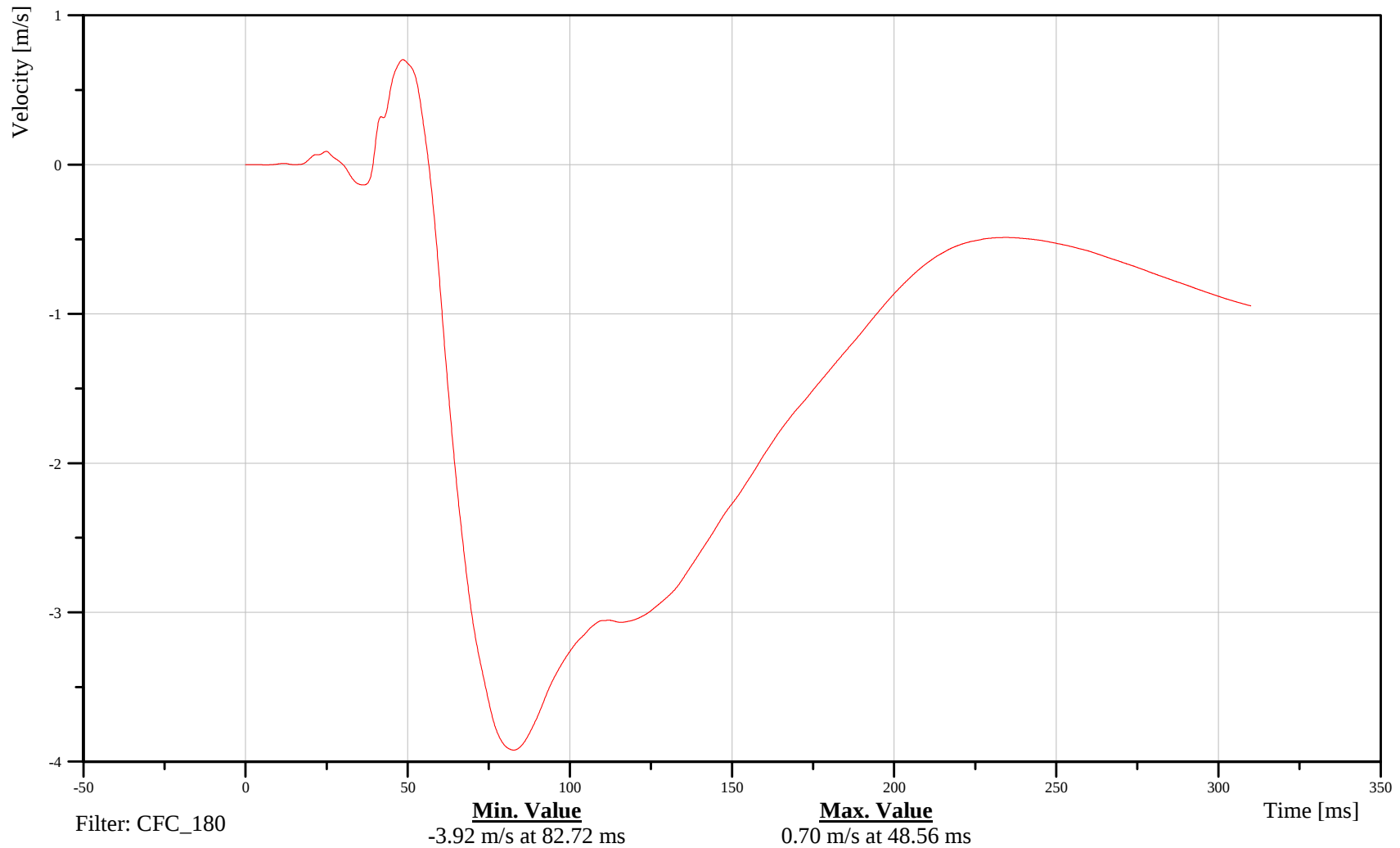
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

14HEADCG00SHVEZC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-37

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

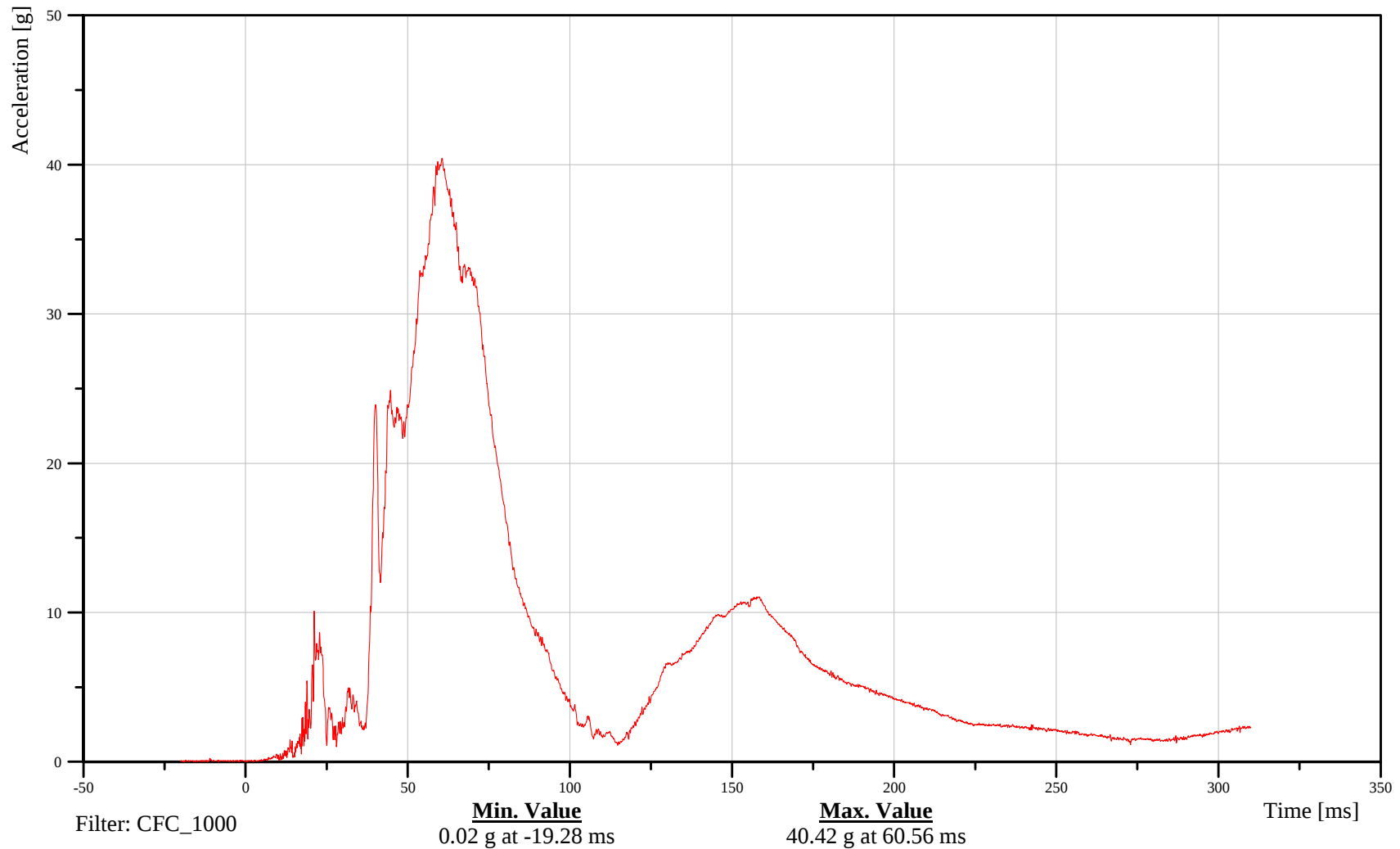
Customer: NHTSA

Test Number: C60514

14HEADCG00SHACRA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-38

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE

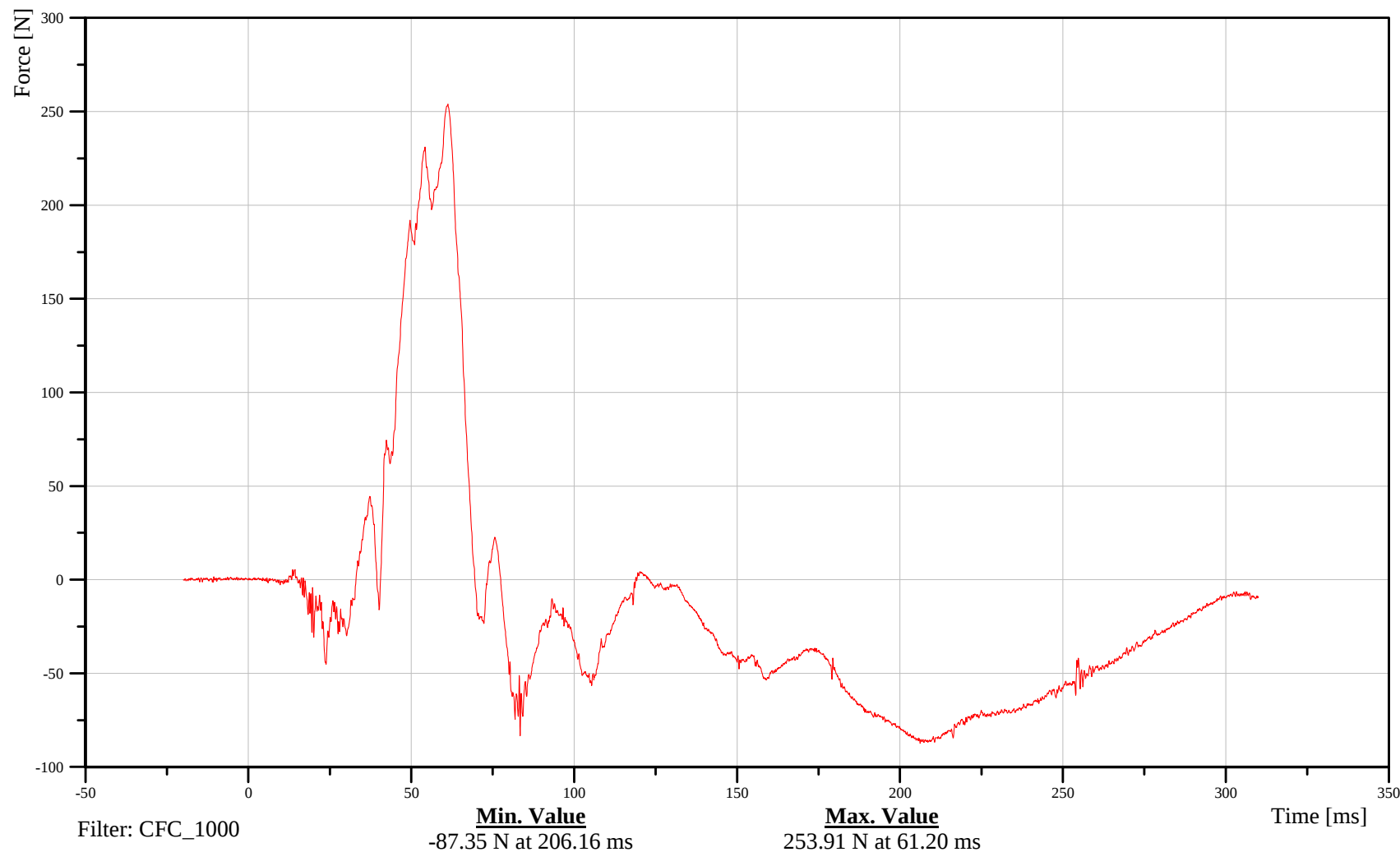
Customer: NHTSA

Test Number: C60514

14NECKUP00SHFOXA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-39

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE

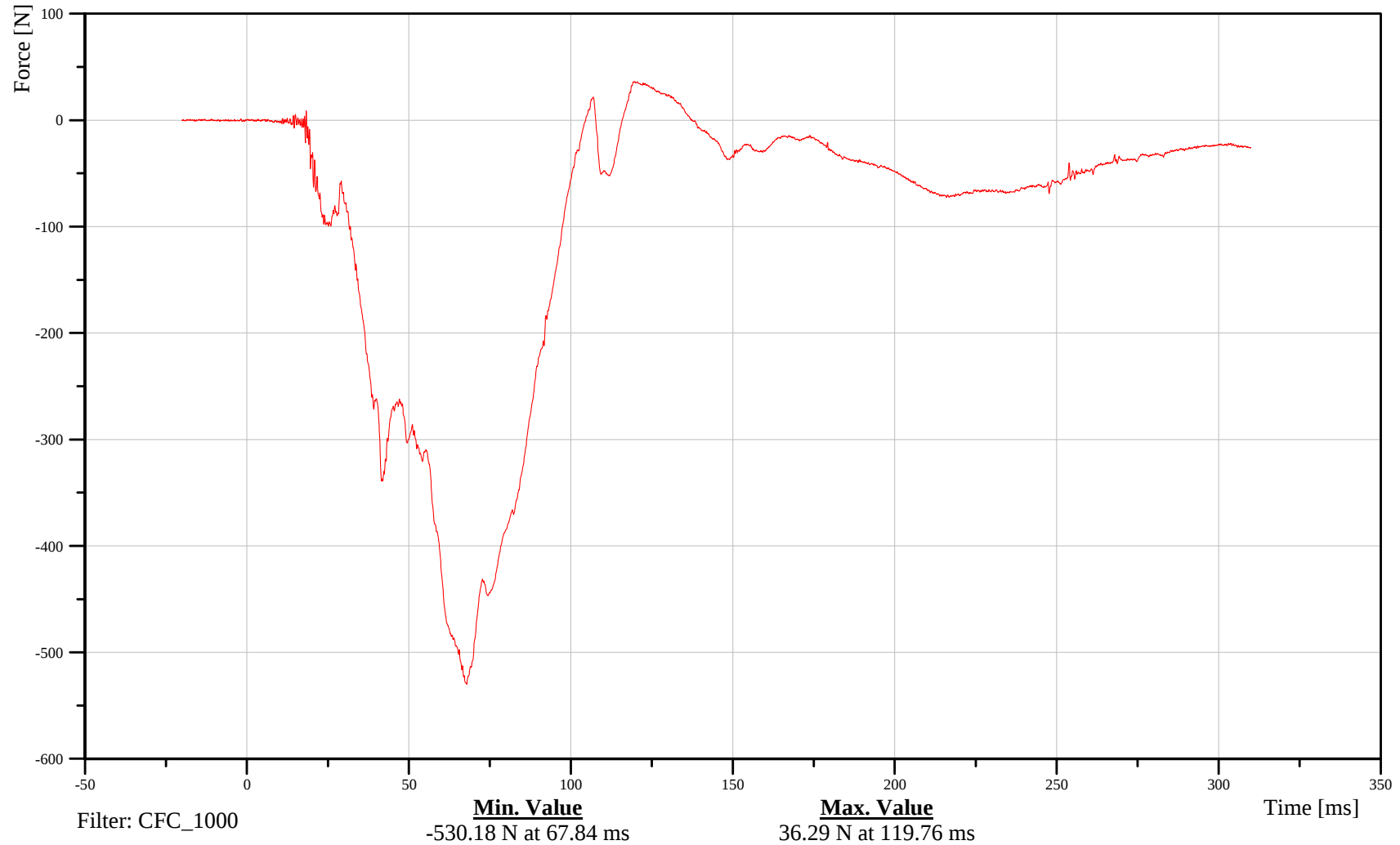
Customer: NHTSA

Test Number: C60514

14NECKUP00SHFOYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-40

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE

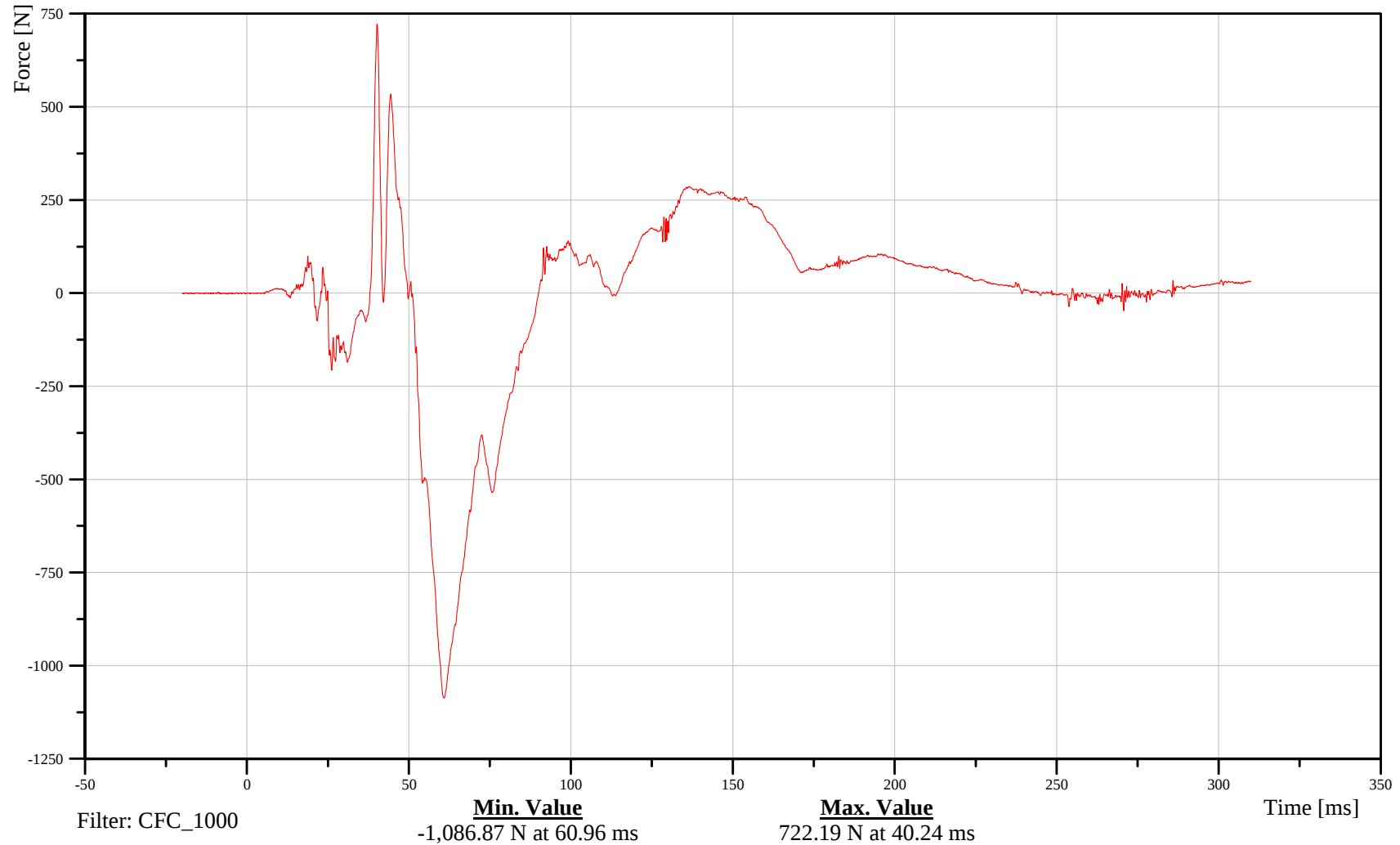
Customer: NHTSA

Test Number: C60514

14NECKUP00SHFOZA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-41

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS

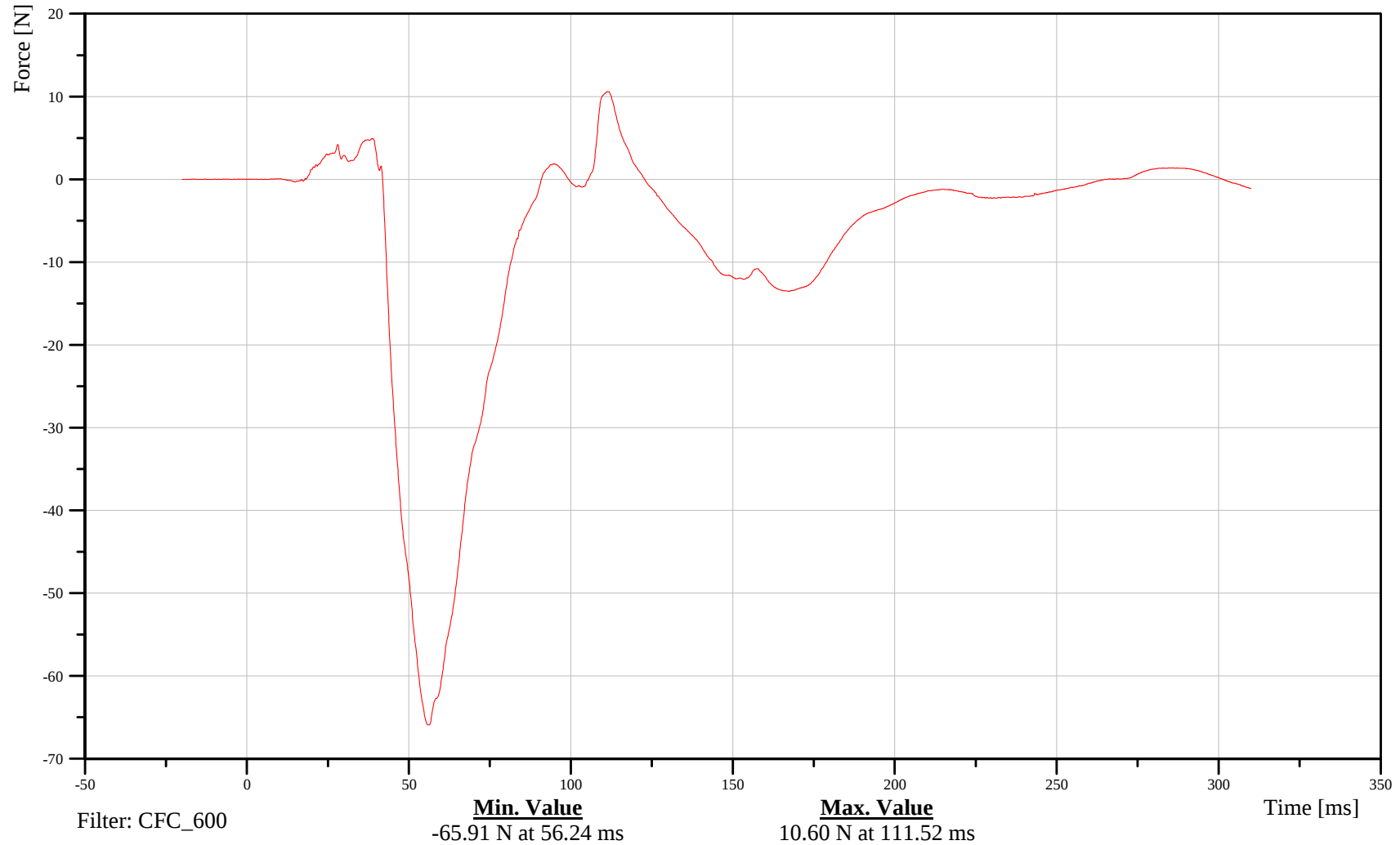
Customer: NHTSA

Test Number: C60514

14NECKUP00SHMOXB

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-42

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS

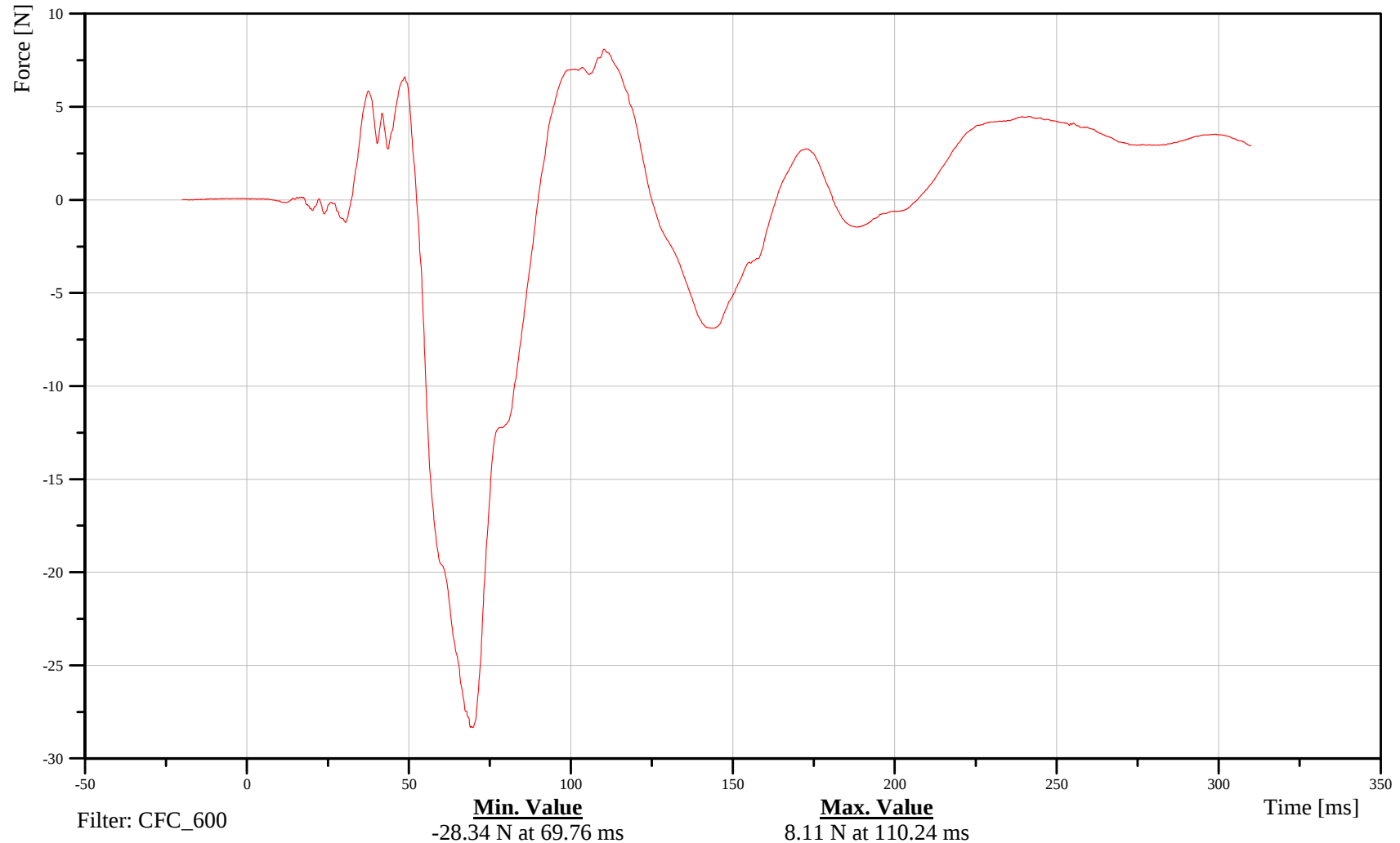
Customer: NHTSA

Test Number: C60514

14NECKUP00SHMOYB

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-43

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

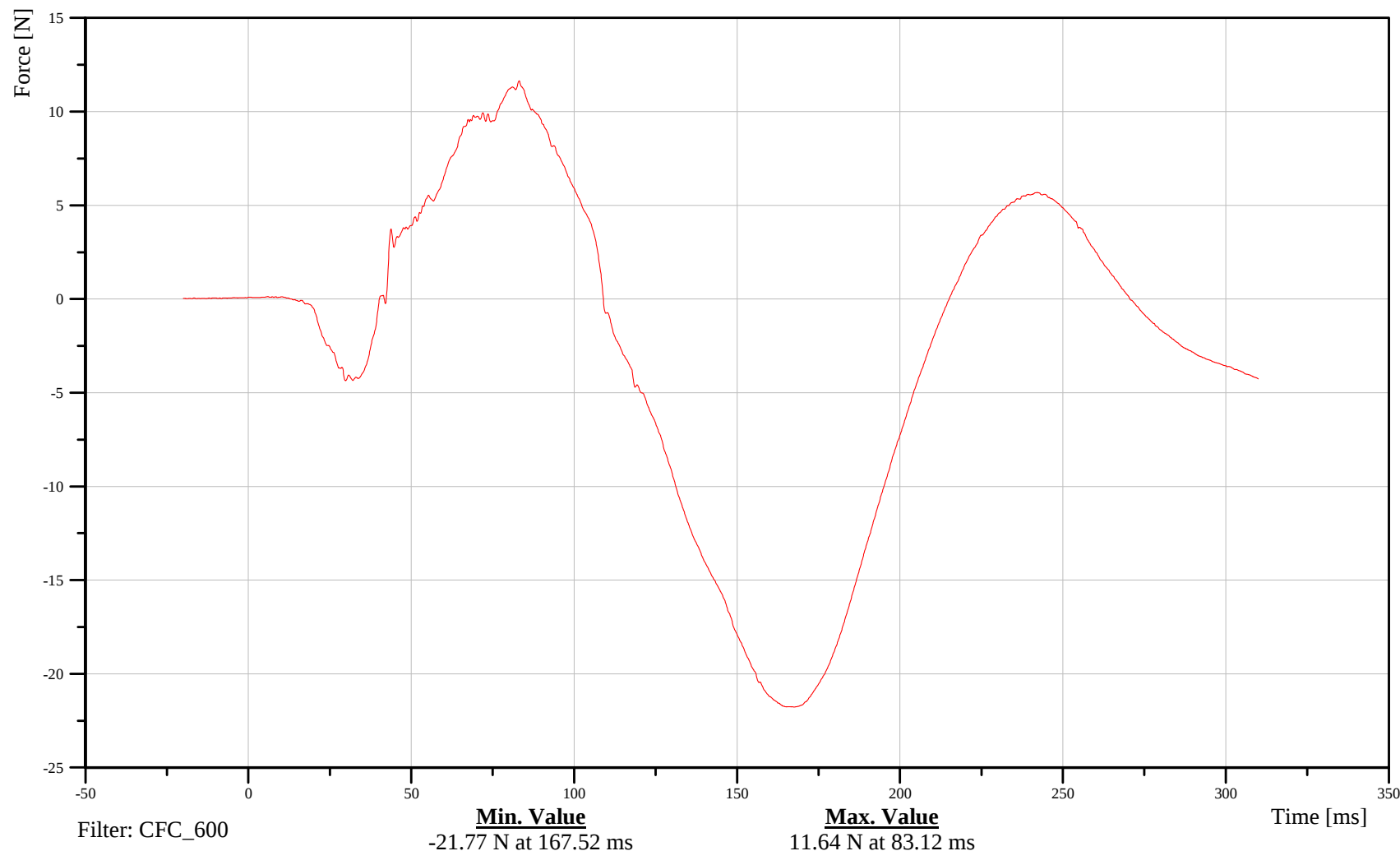
Customer: NHTSA

Test Number: C60514

14NECKUP00SHMOZB

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-44

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera Neck Moment about the Occipital Condyle (NECK OM)

Date: 07/14/2006
Time: 13:32

Customer: NHTSA

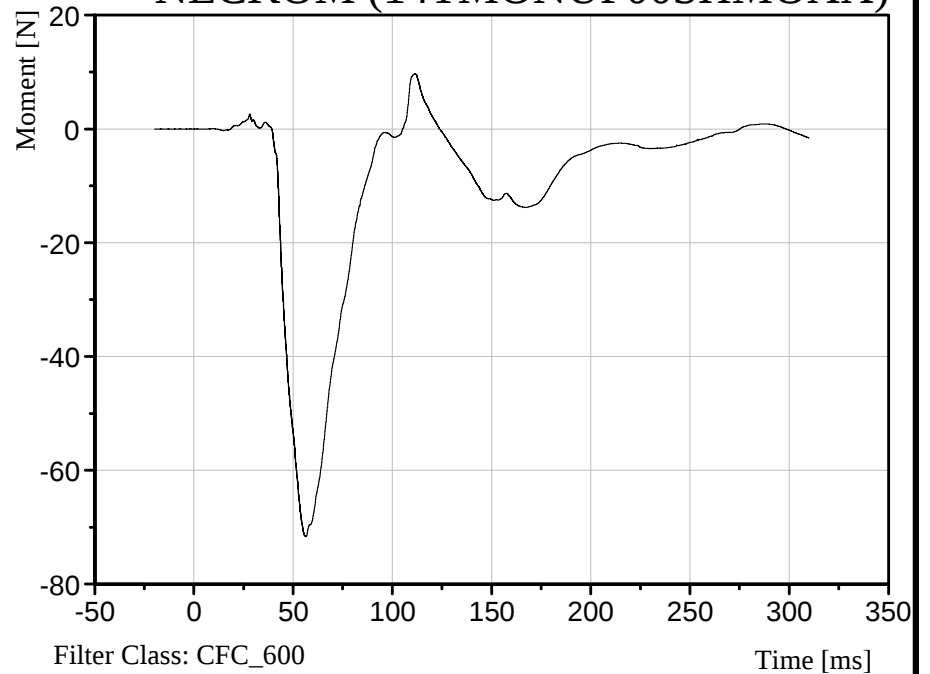
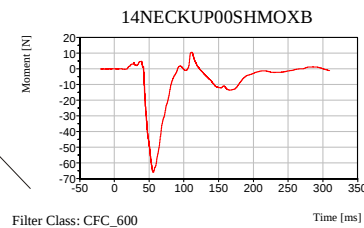
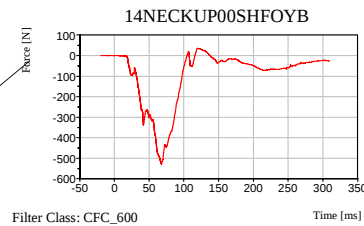
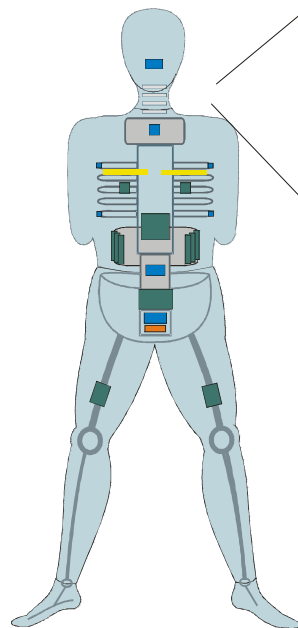
Test Number: C60514

Test Orientation = Side

TRC Inc. Test Lab: CTF

Test Number: 060714-1

NECKOM (14TMONUP00SHMOXX)



Dummy: HIII/SID

Seating Position:

Left Rear Passenger

Neck OM Source Code: $M_x + (D \cdot F_y)$

[Max.] 9.68 N at 111.44 ms

[Min.] -71.65 N at 56.40 ms

B-45

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

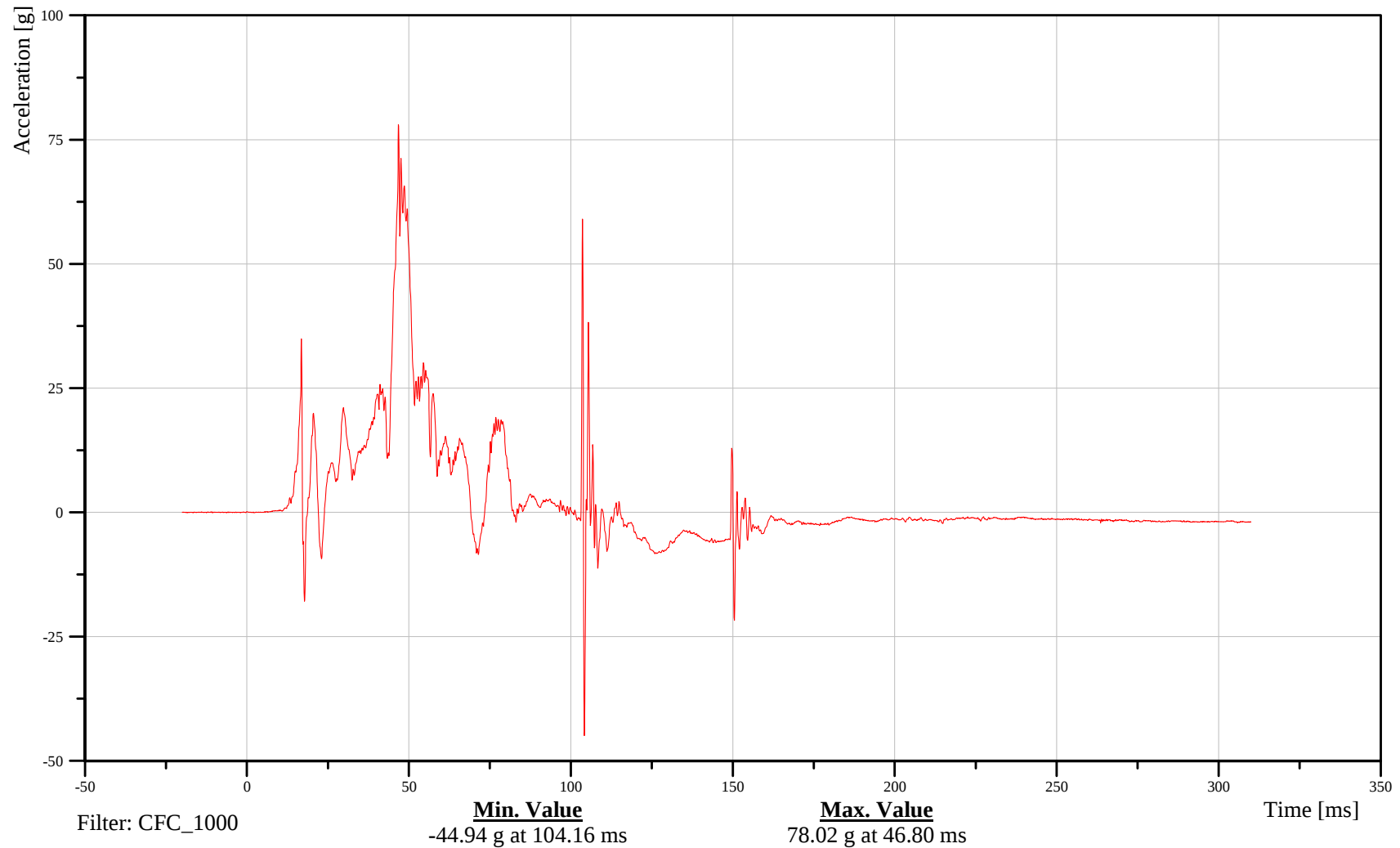
Customer: NHTSA

Test Number: C60514

14RIBSLU00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-46

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

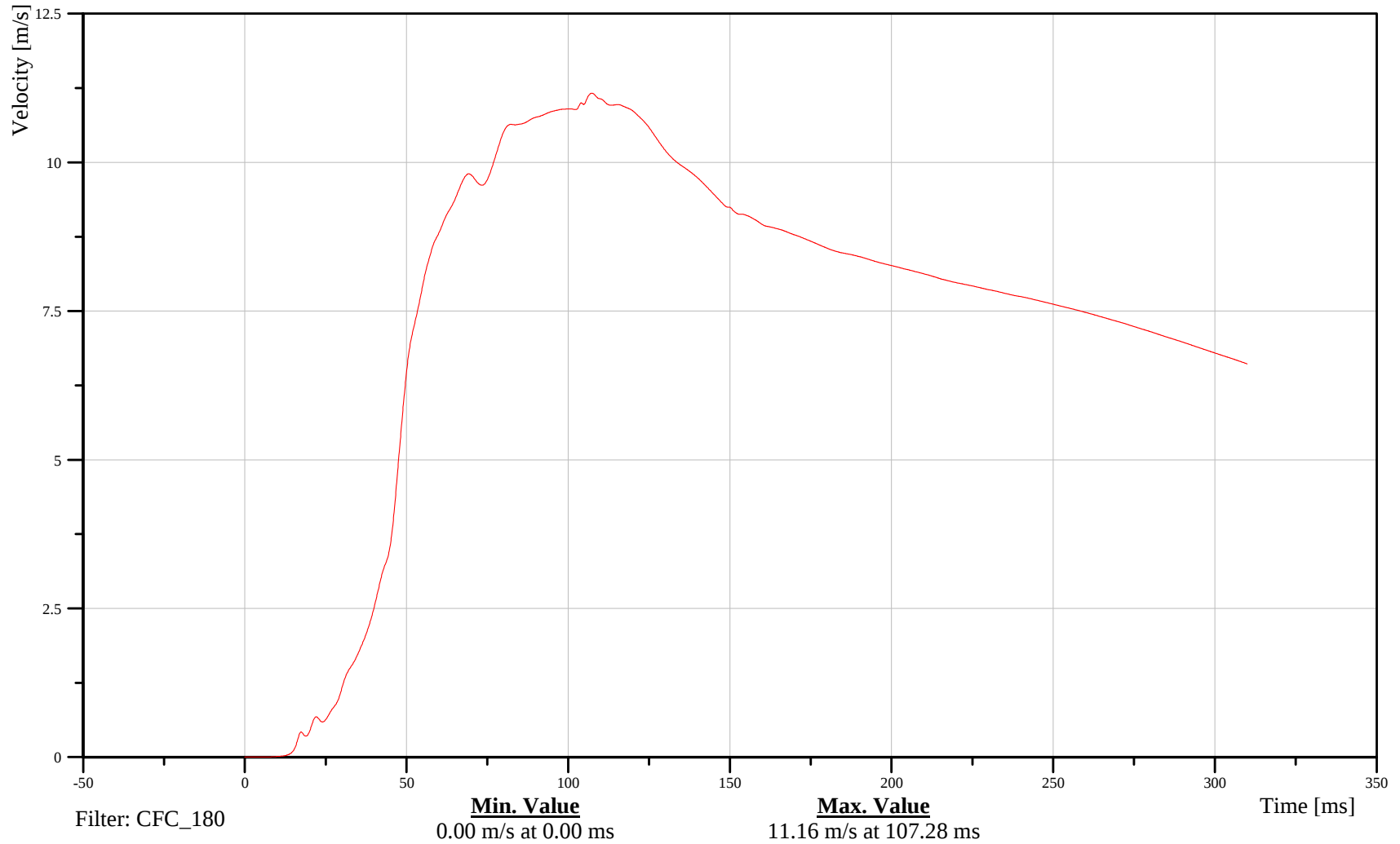
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

14RIBSLU00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-47

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

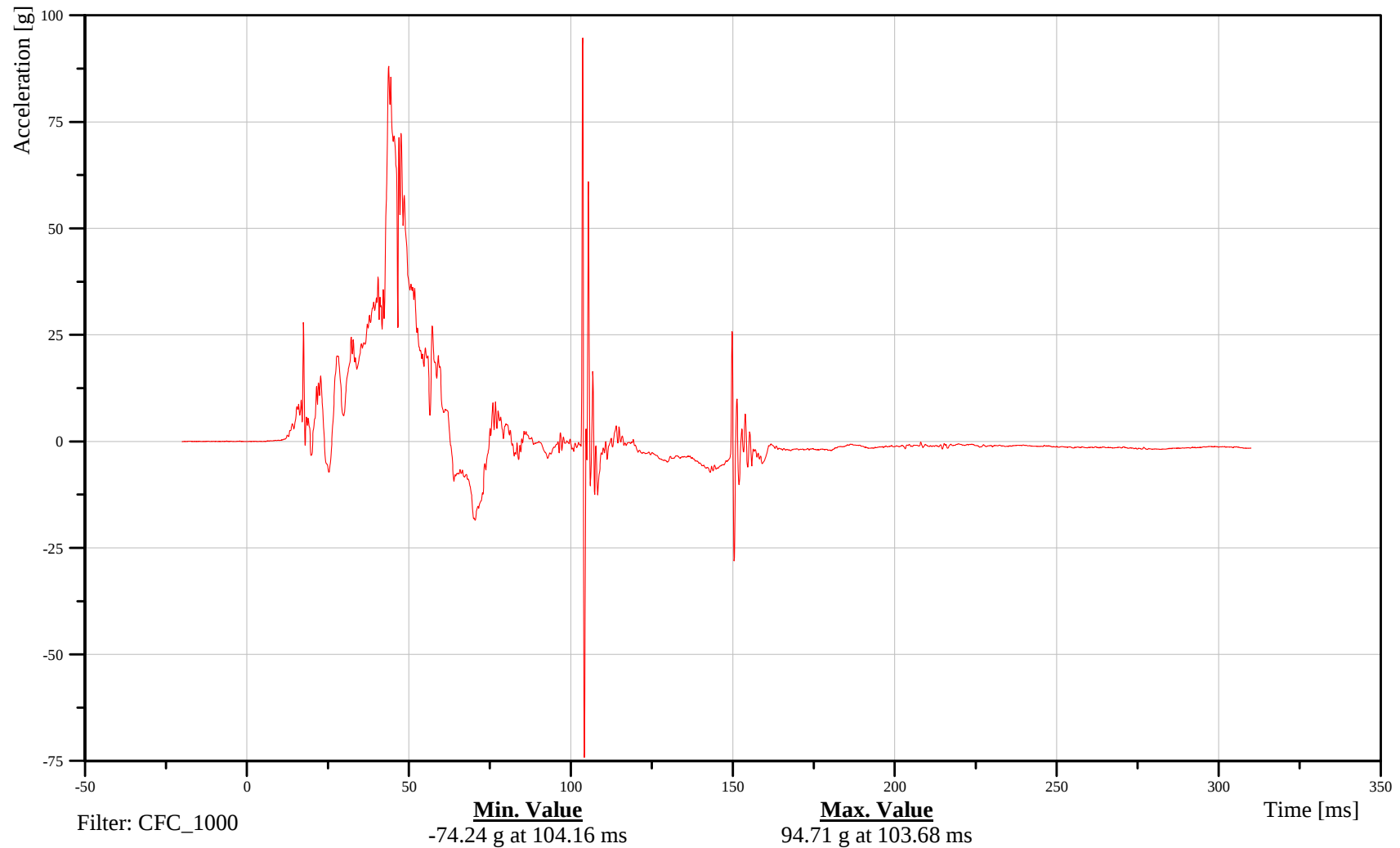
Customer: NHTSA

Test Number: C60514

14RIBSLL00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-48

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY

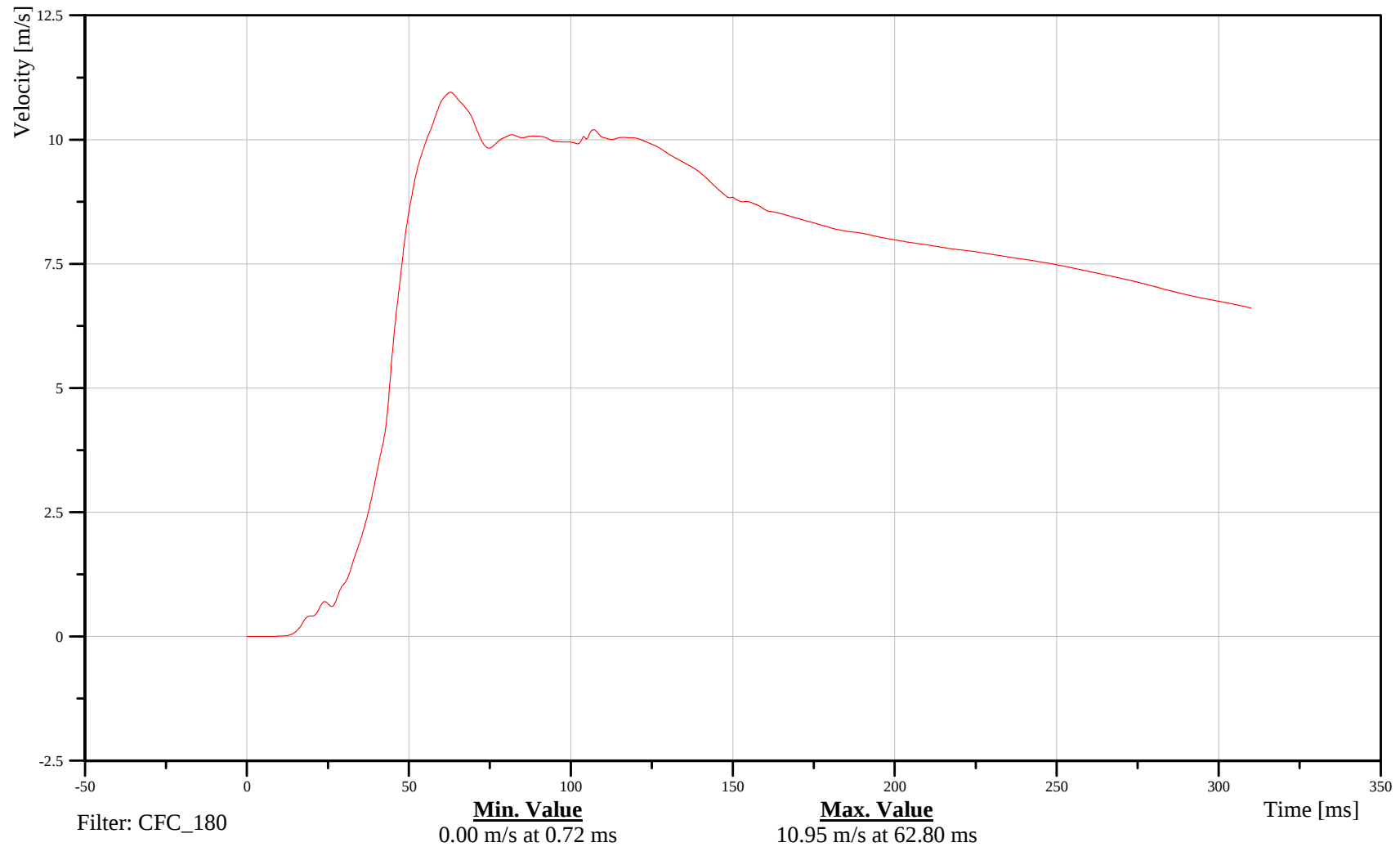
Customer: NHTSA

Test Number: C60514

14RIBSLL00SHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-49

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

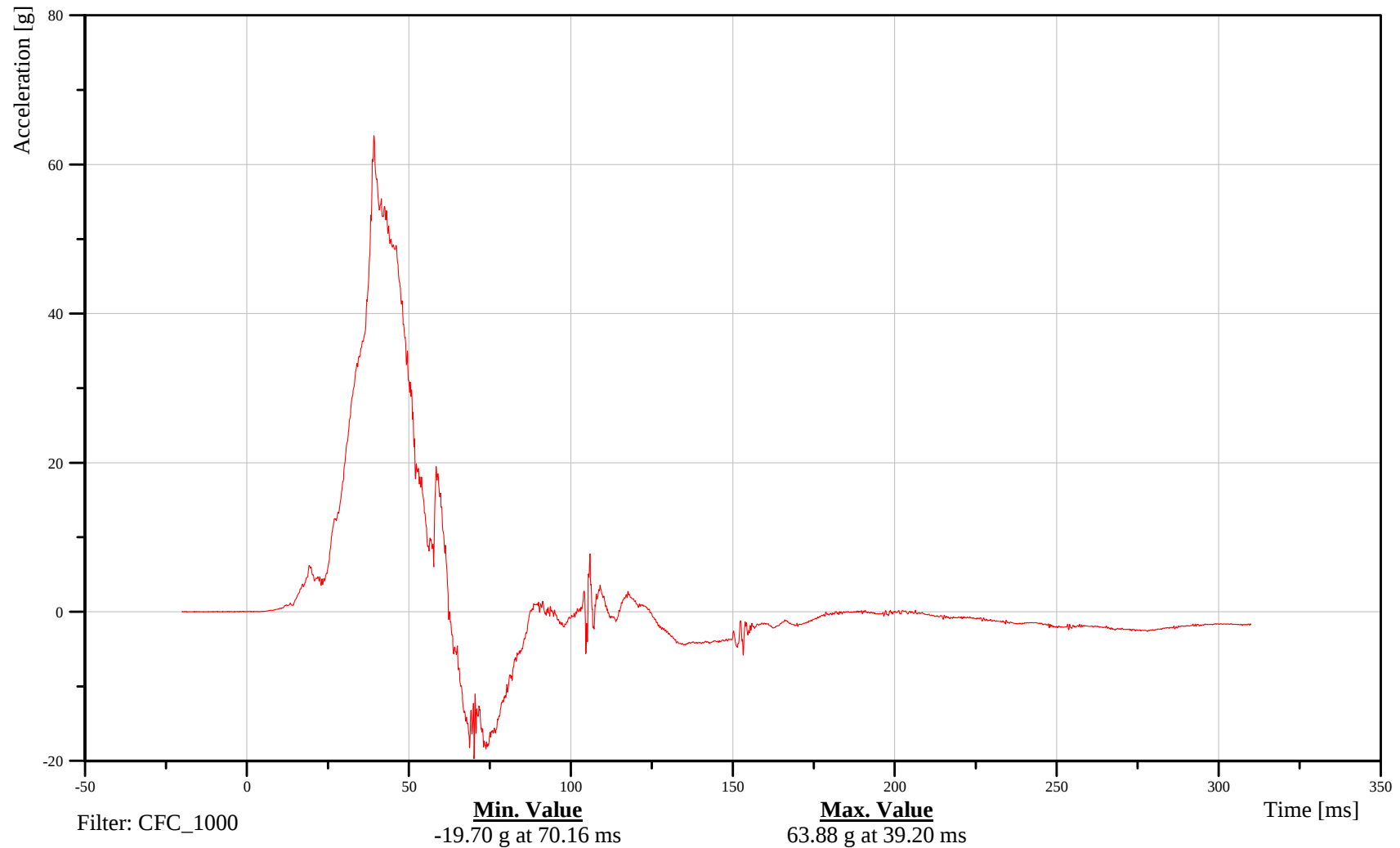
Customer: NHTSA

Test Number: C60514

14SPIN1200SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-50

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY

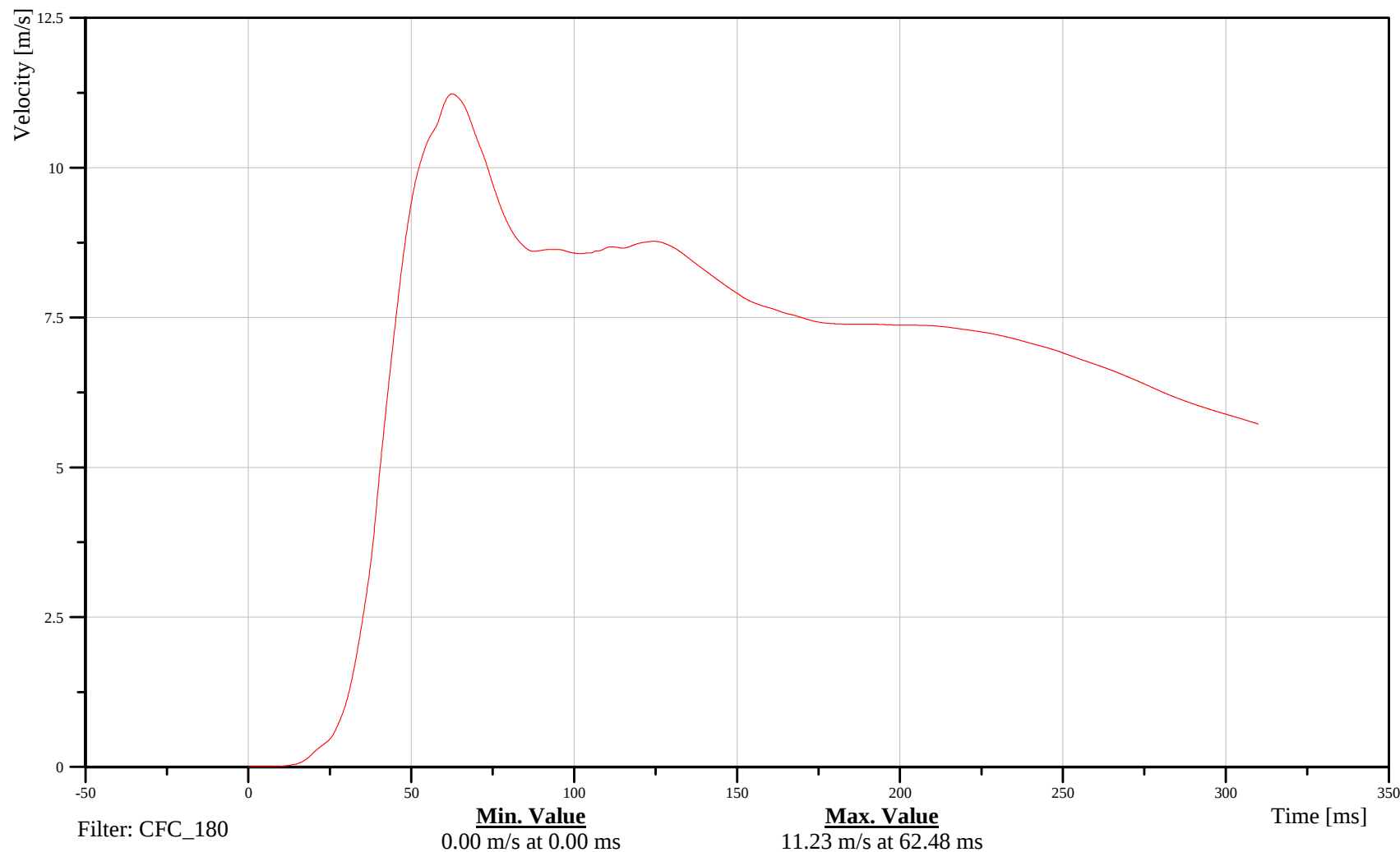
Customer: NHTSA

Test Number: C60514

14SPIN1200SHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-51

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

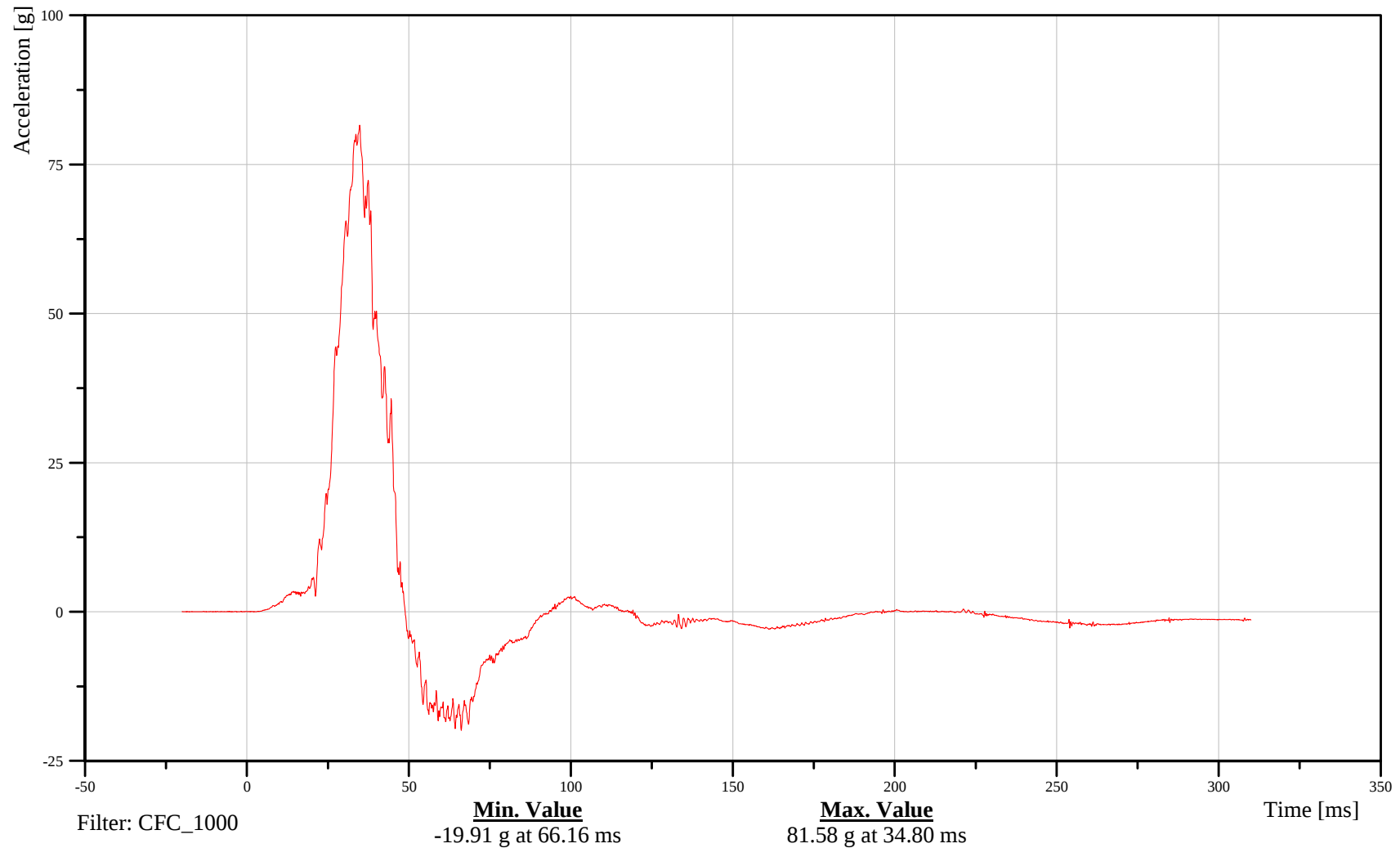
Customer: NHTSA

Test Number: C60514

14PELVCG00SHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-52

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

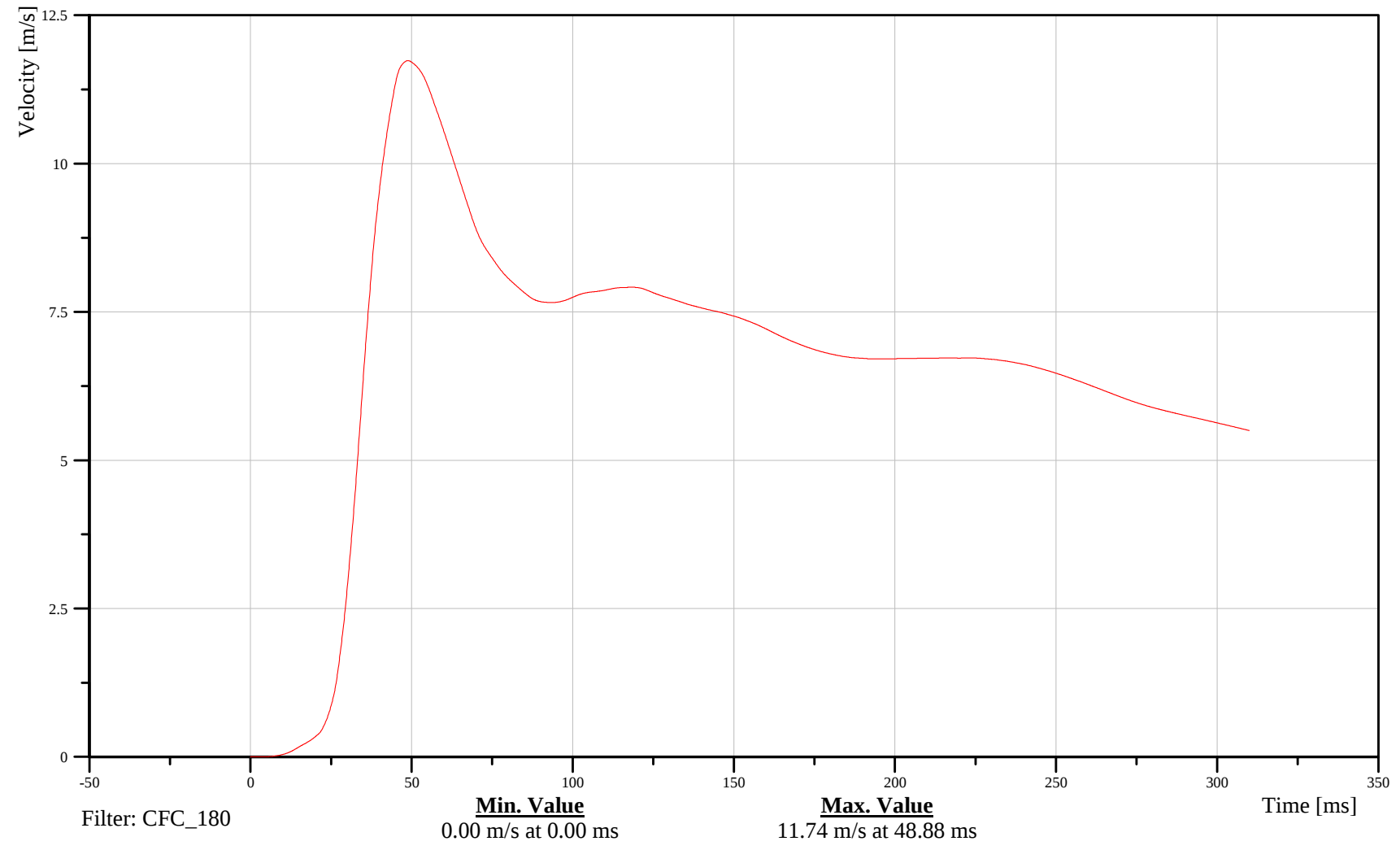
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

14PELVCG00SHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-53

060714

Driver and Passenger Dummy Redundant Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD X-AXIS REDUNDANT ACCELERATION

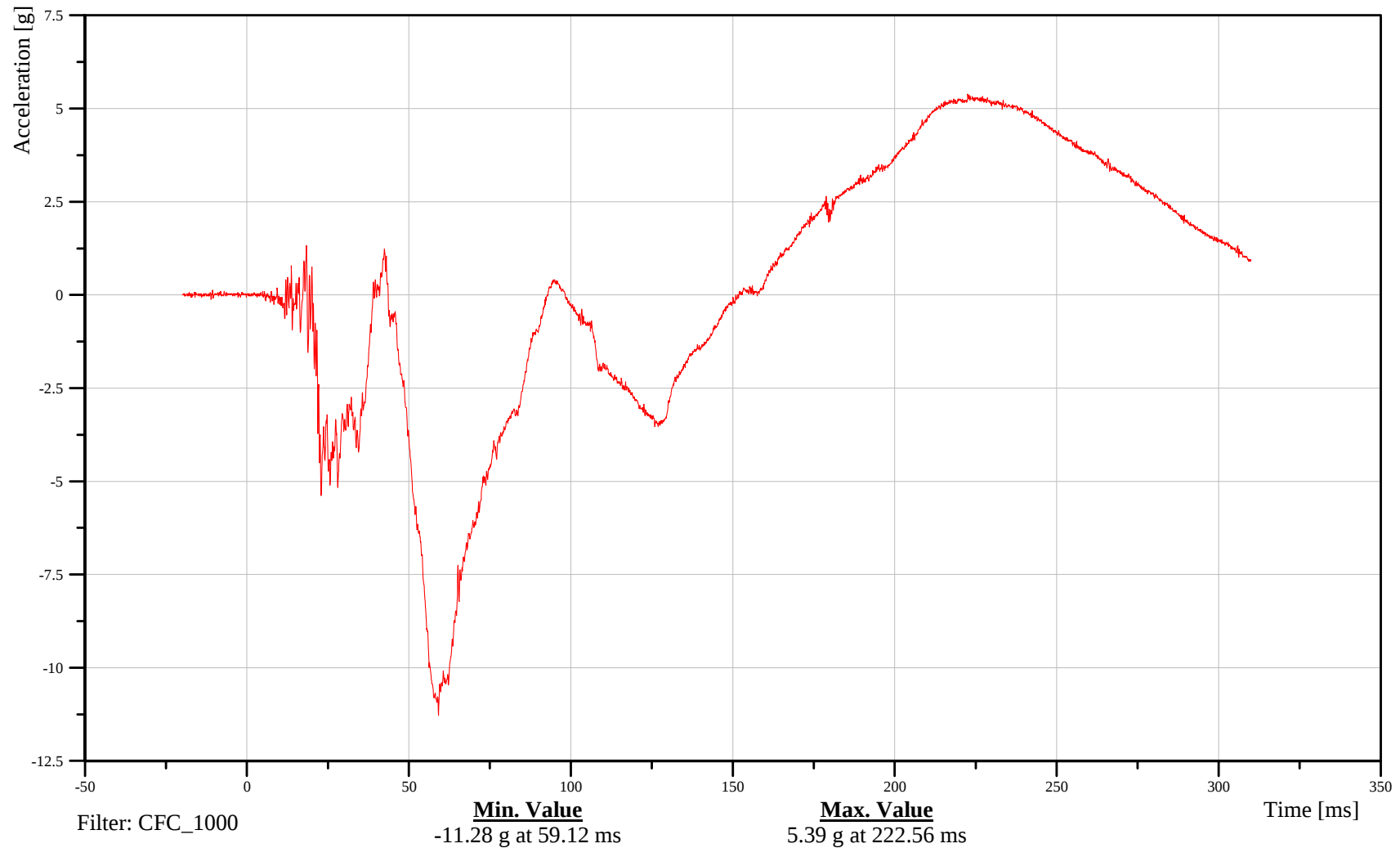
Customer: NHTSA

Test Number: C60514

11HEADCGRDSHACXA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-55

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

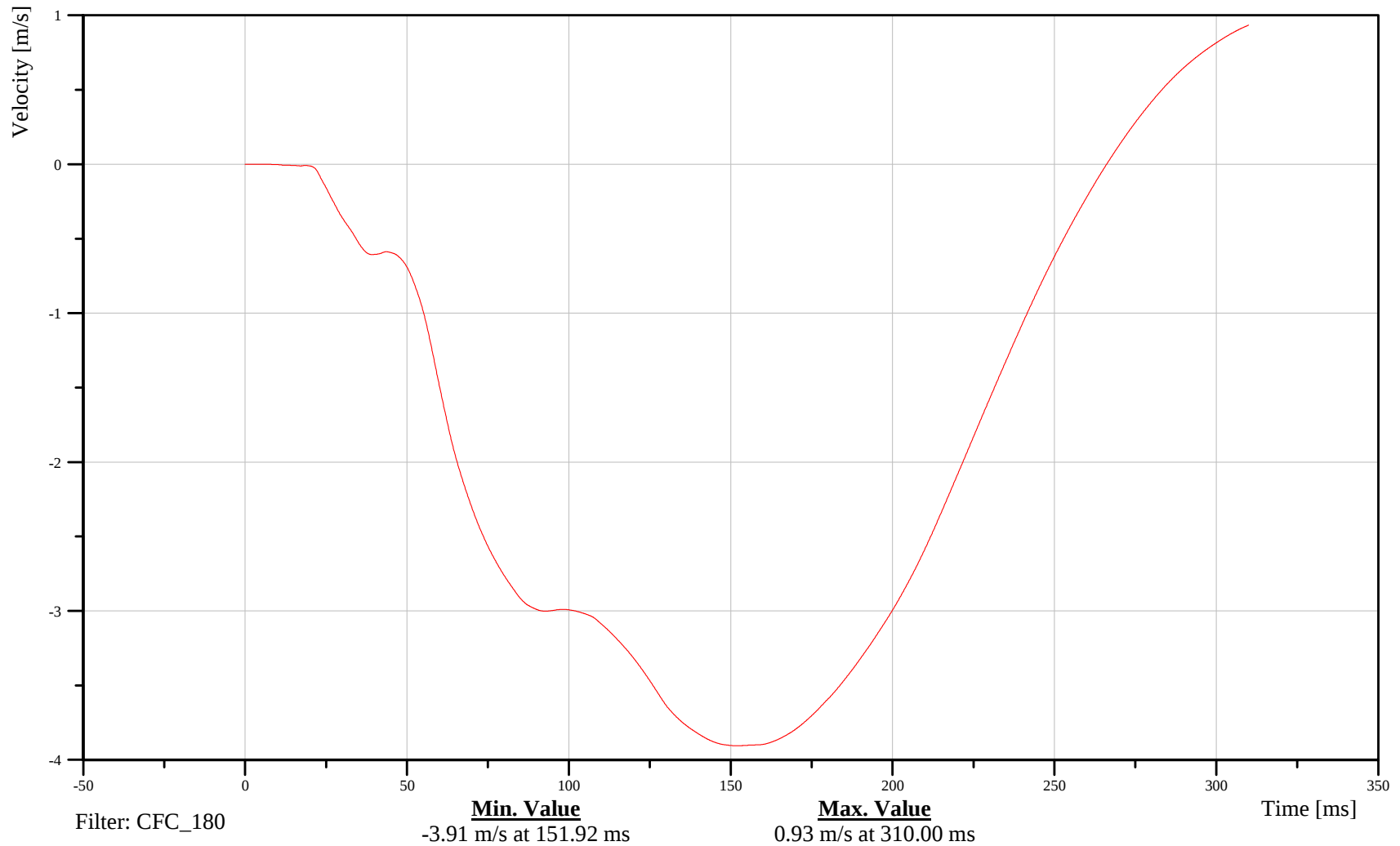
Date: 07/14/2006
Time: 13:32

DRIVER HEAD X-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60514

11HEADCGRDSHVEXC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-56

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION

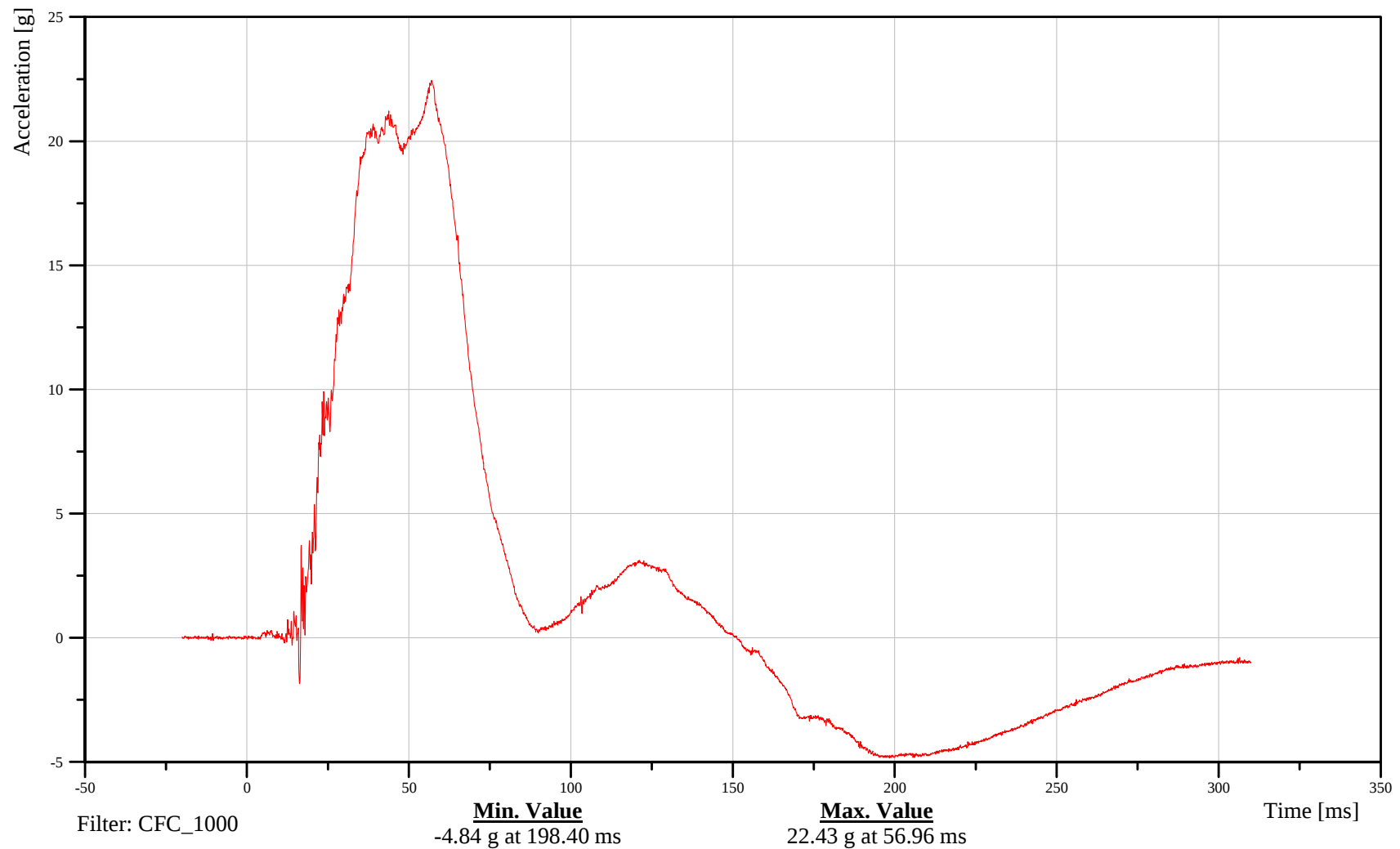
Customer: NHTSA

Test Number: C60514

11HEADCGRDSHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-57

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD Y-AXIS REDUNDANT VELOCITY

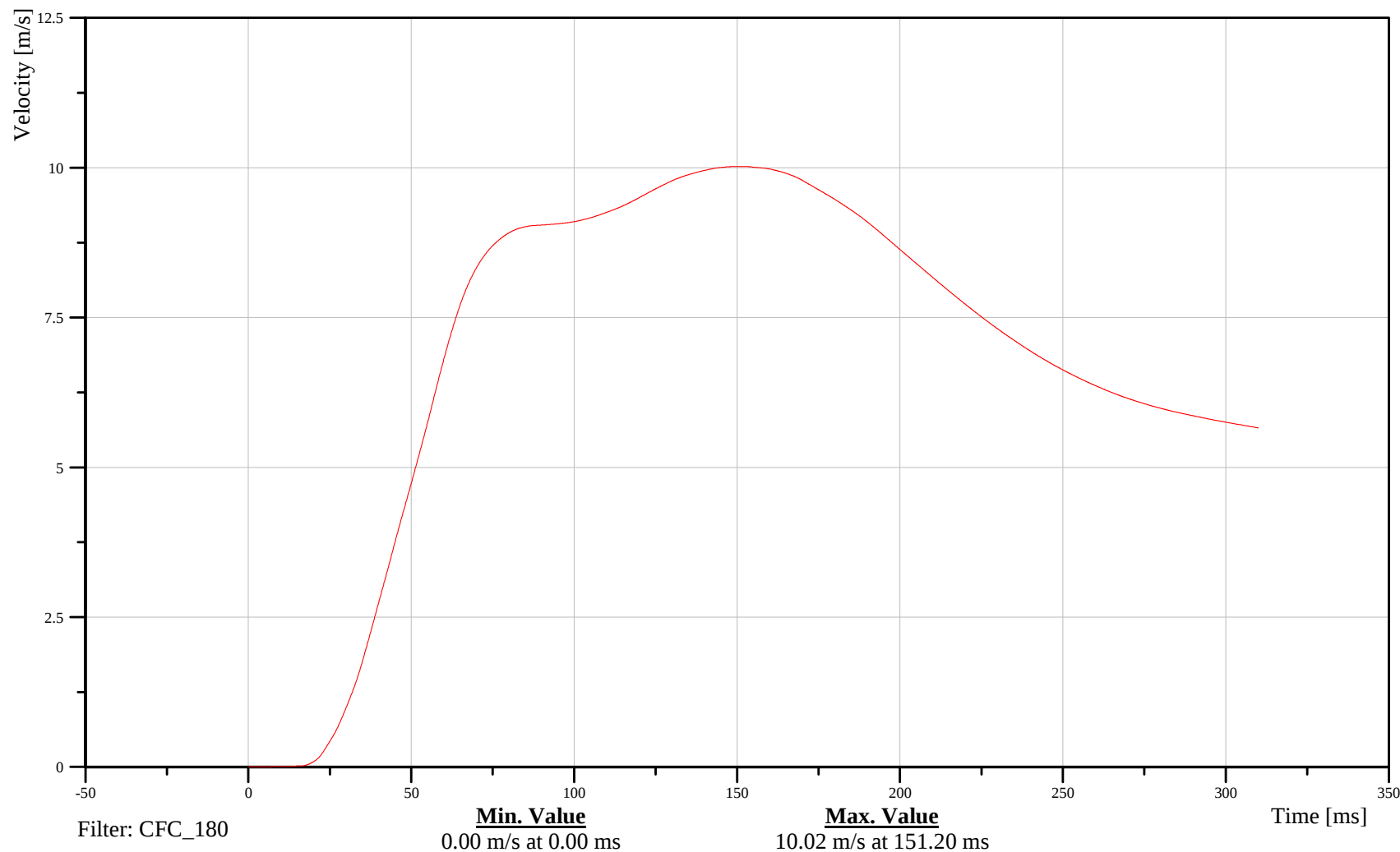
Customer: NHTSA

Test Number: C60514

11HEADCGRDSHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-58

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION

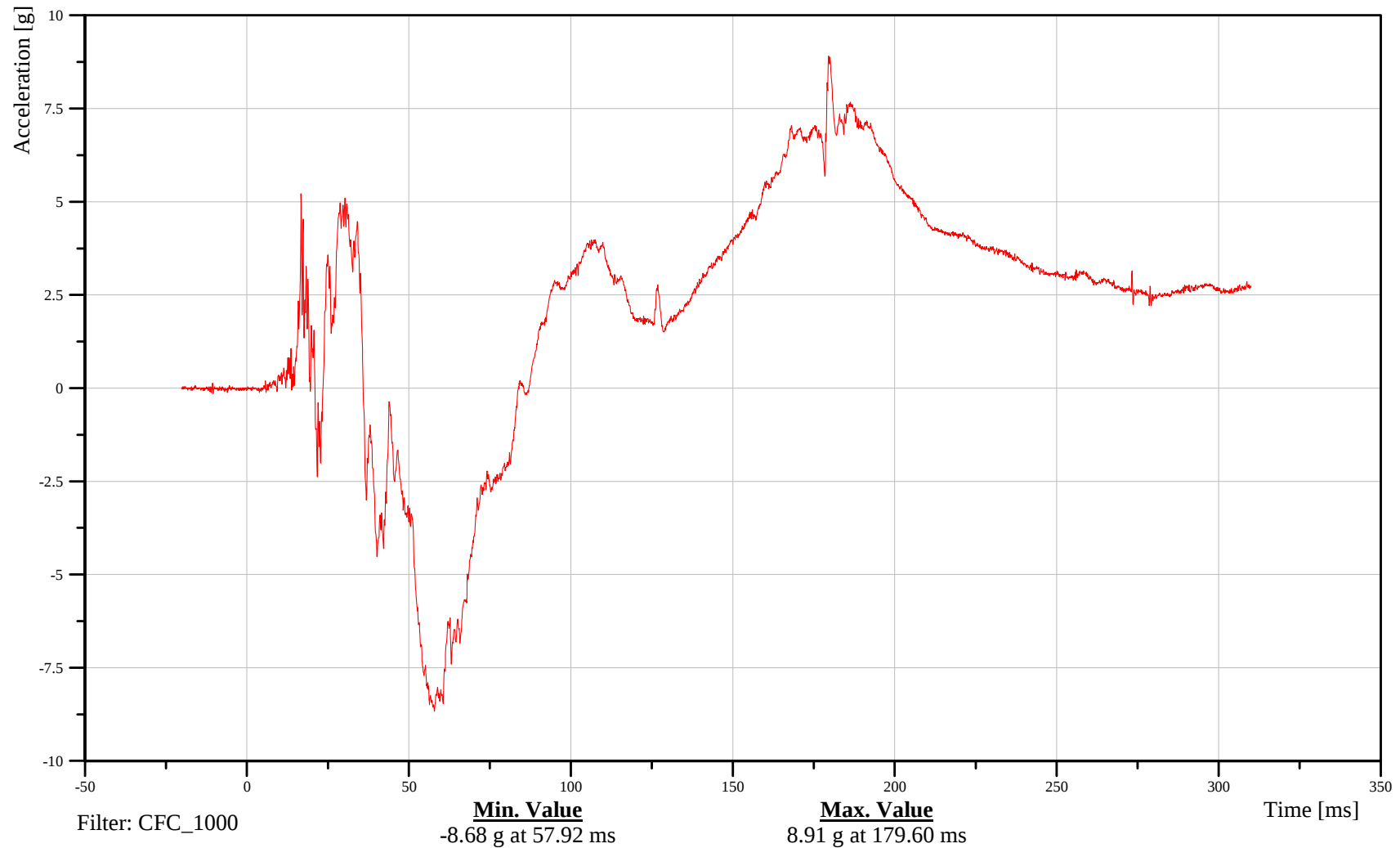
Customer: NHTSA

Test Number: C60514

11HEADCGRDSHACZA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-59

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD Z-AXIS REDUNDANT VELOCITY

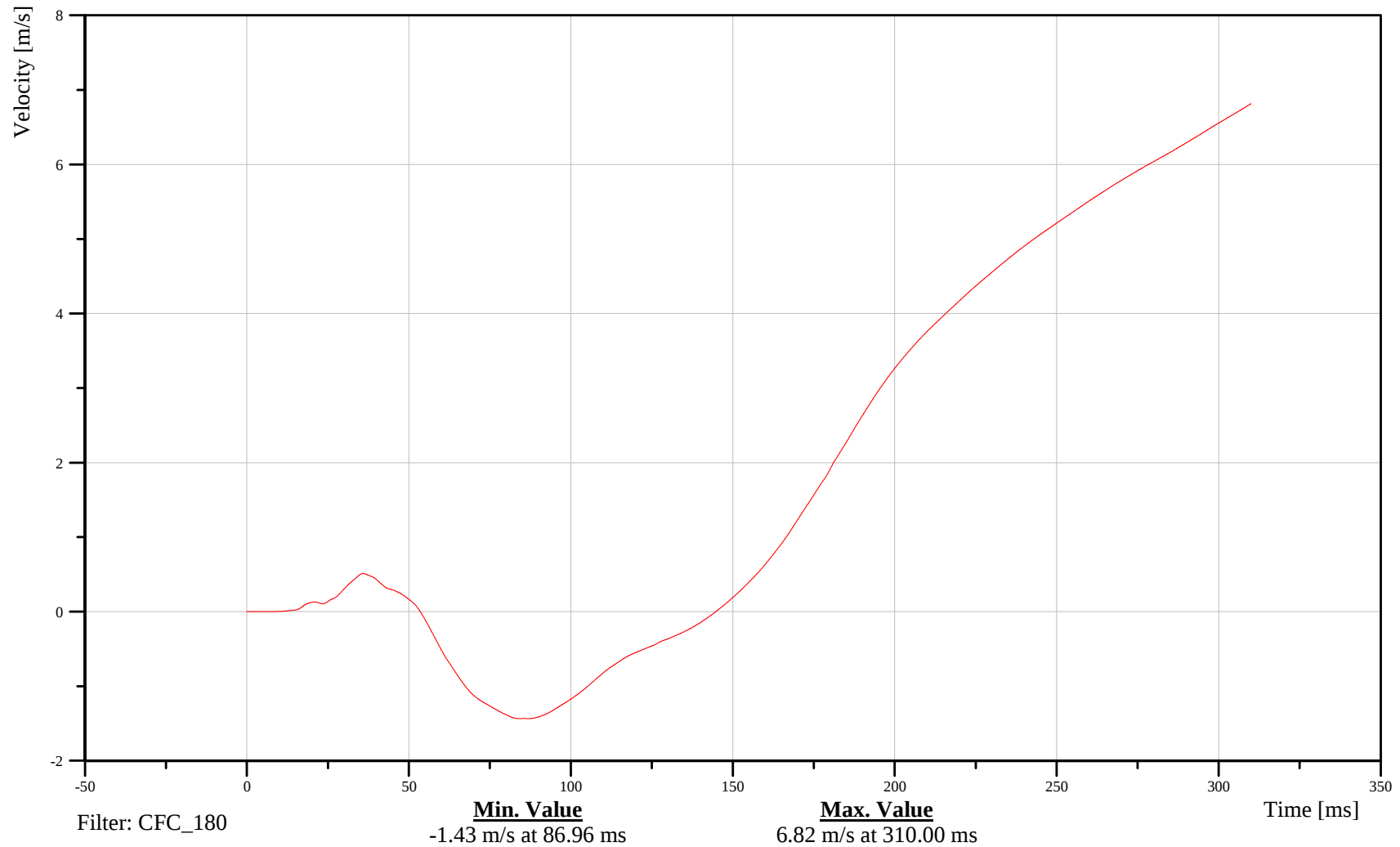
Customer: NHTSA

Test Number: C60514

11HEADCGRDSHVEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-60

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER HEAD RESULTANT REDUNDANT ACCELERATION

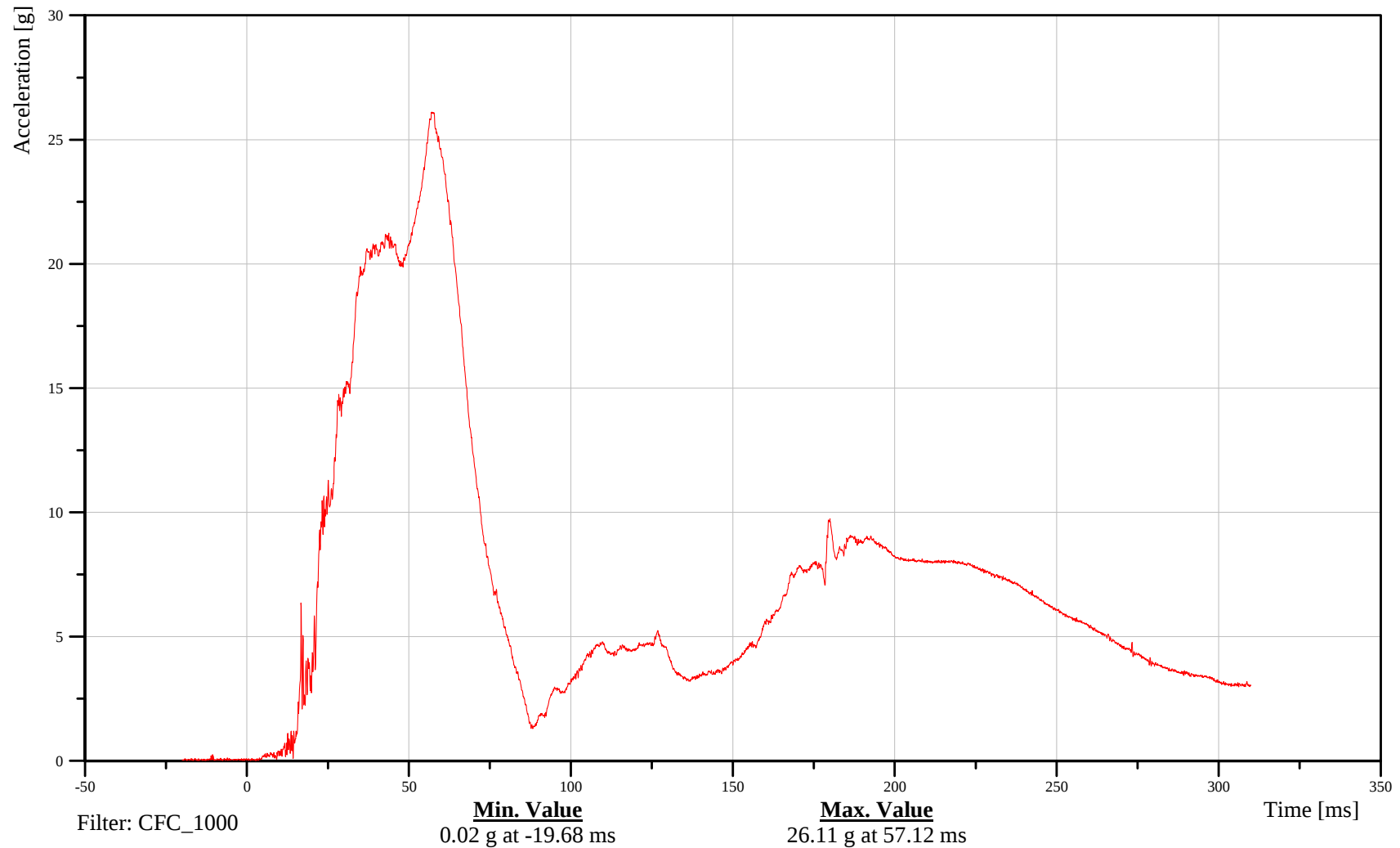
Customer: NHTSA

Test Number: C60514

11HEADCGRDSHACRA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-61

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

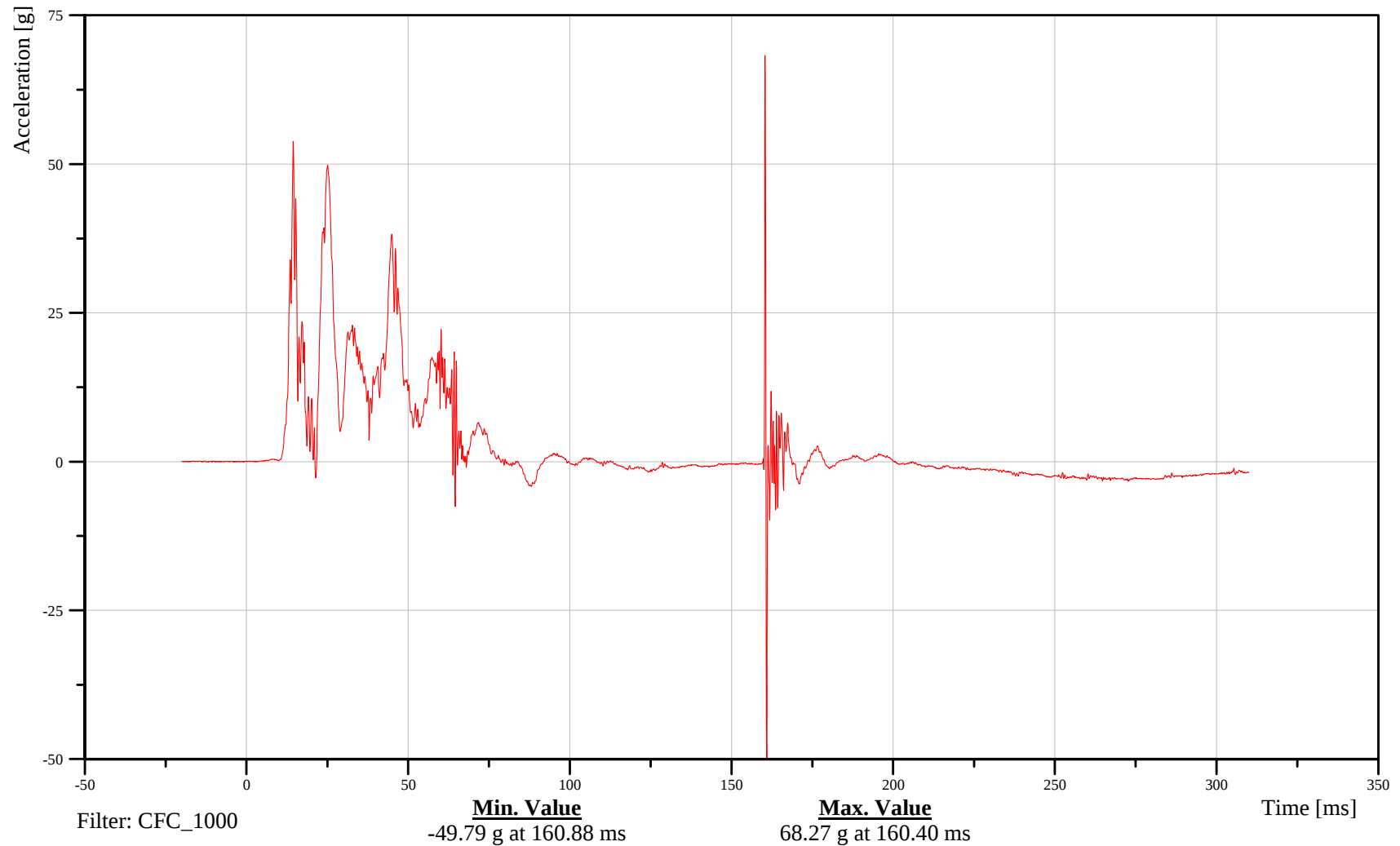
Customer: NHTSA

Test Number: C60514

11RIBSLURESHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-62

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

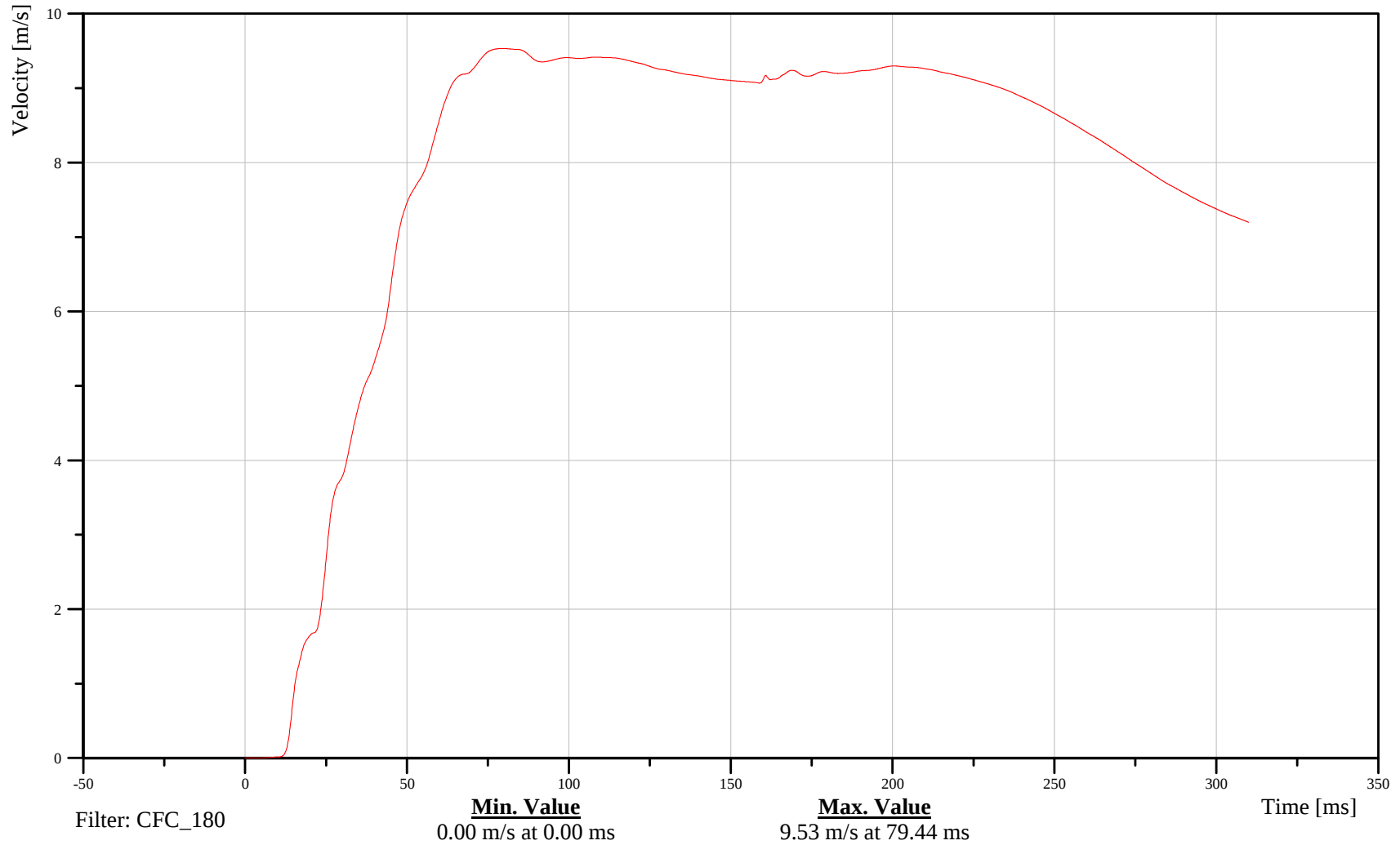
Date: 07/14/2006
Time: 13:32

DRIVER UPPER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60514

11RIBSLURESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-63

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

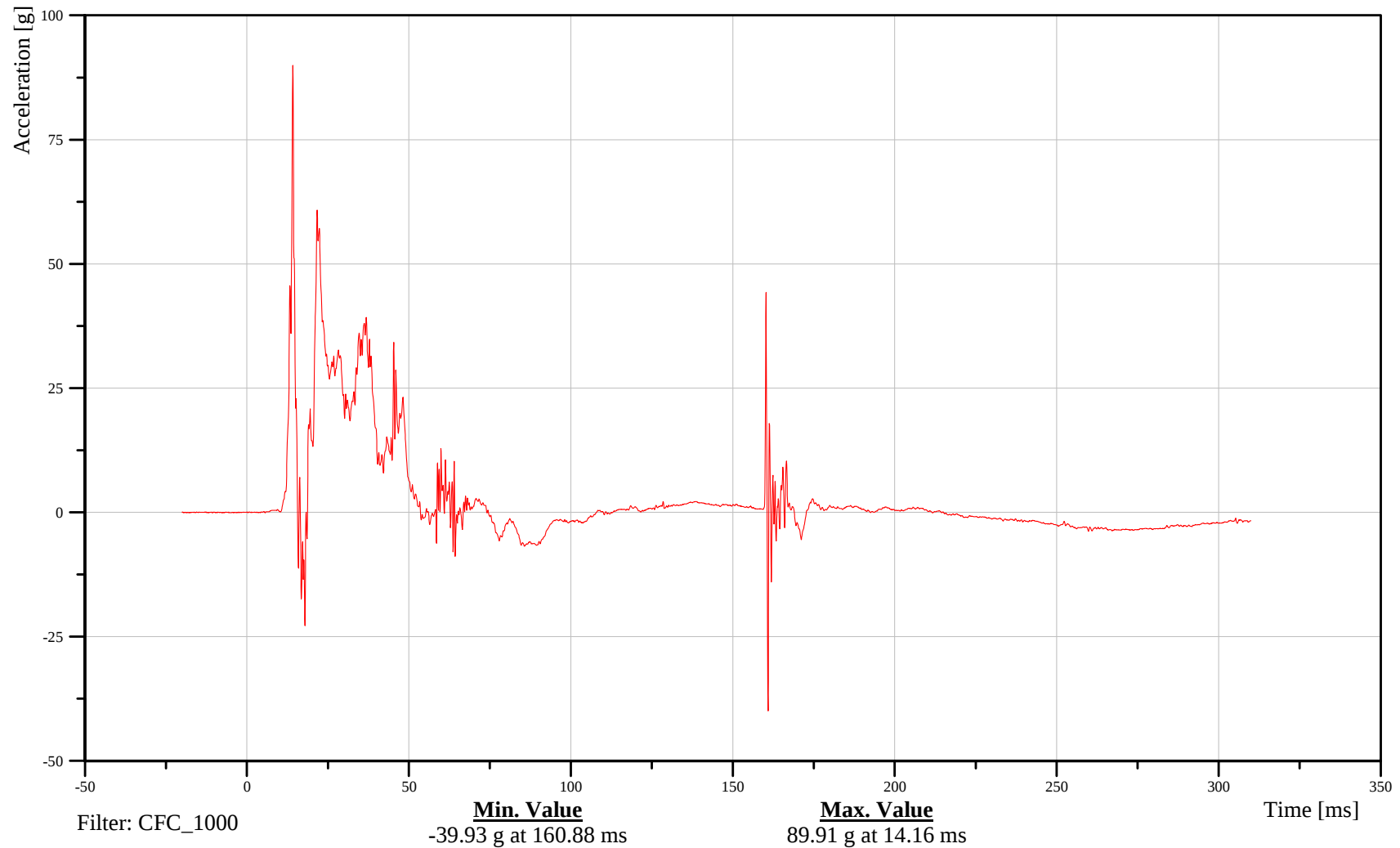
Customer: NHTSA

Test Number: C60514

11RIBSLLRESHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-64

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

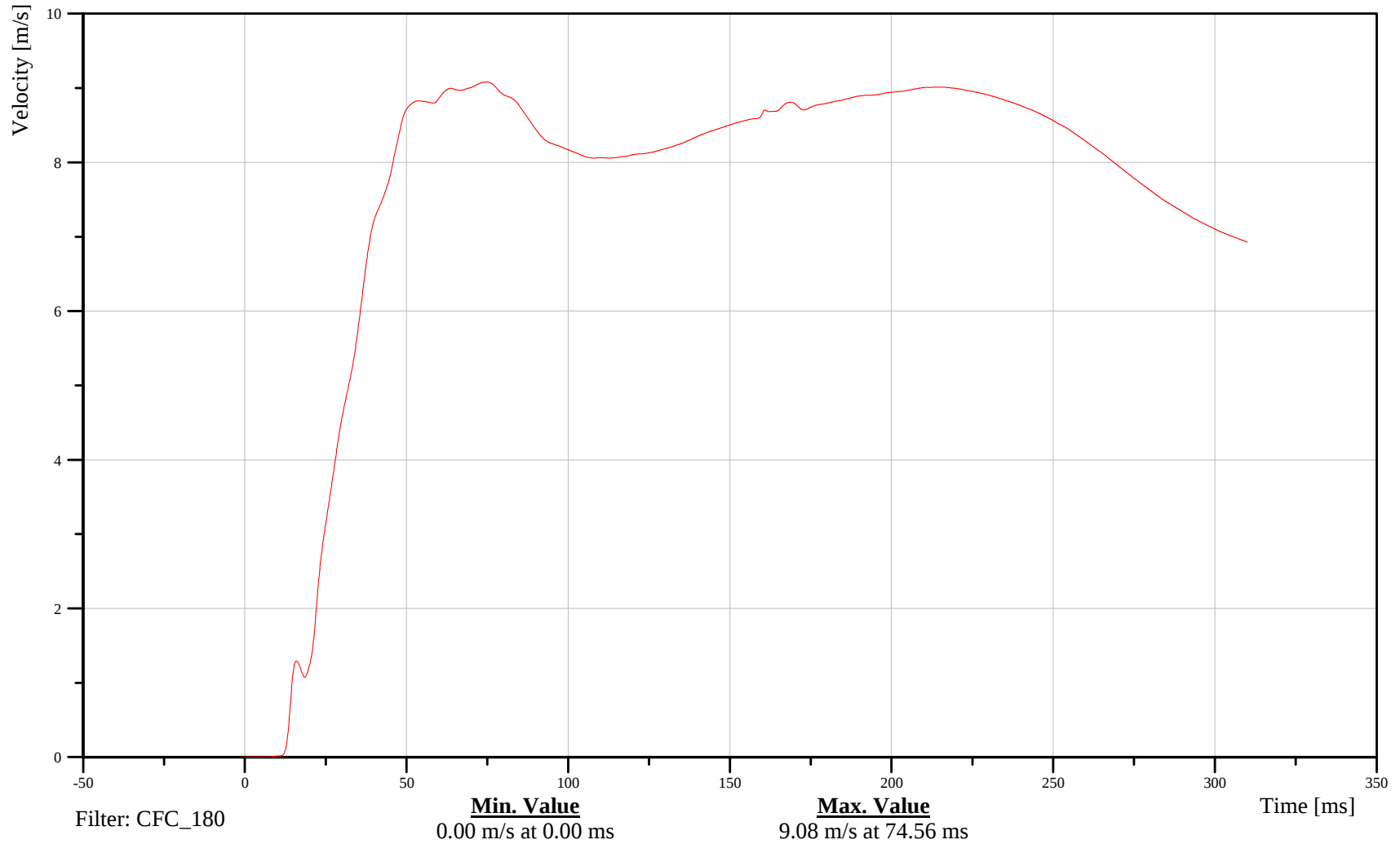
Date: 07/14/2006
Time: 13:32

DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60514

11RIBSLLRESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-65

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

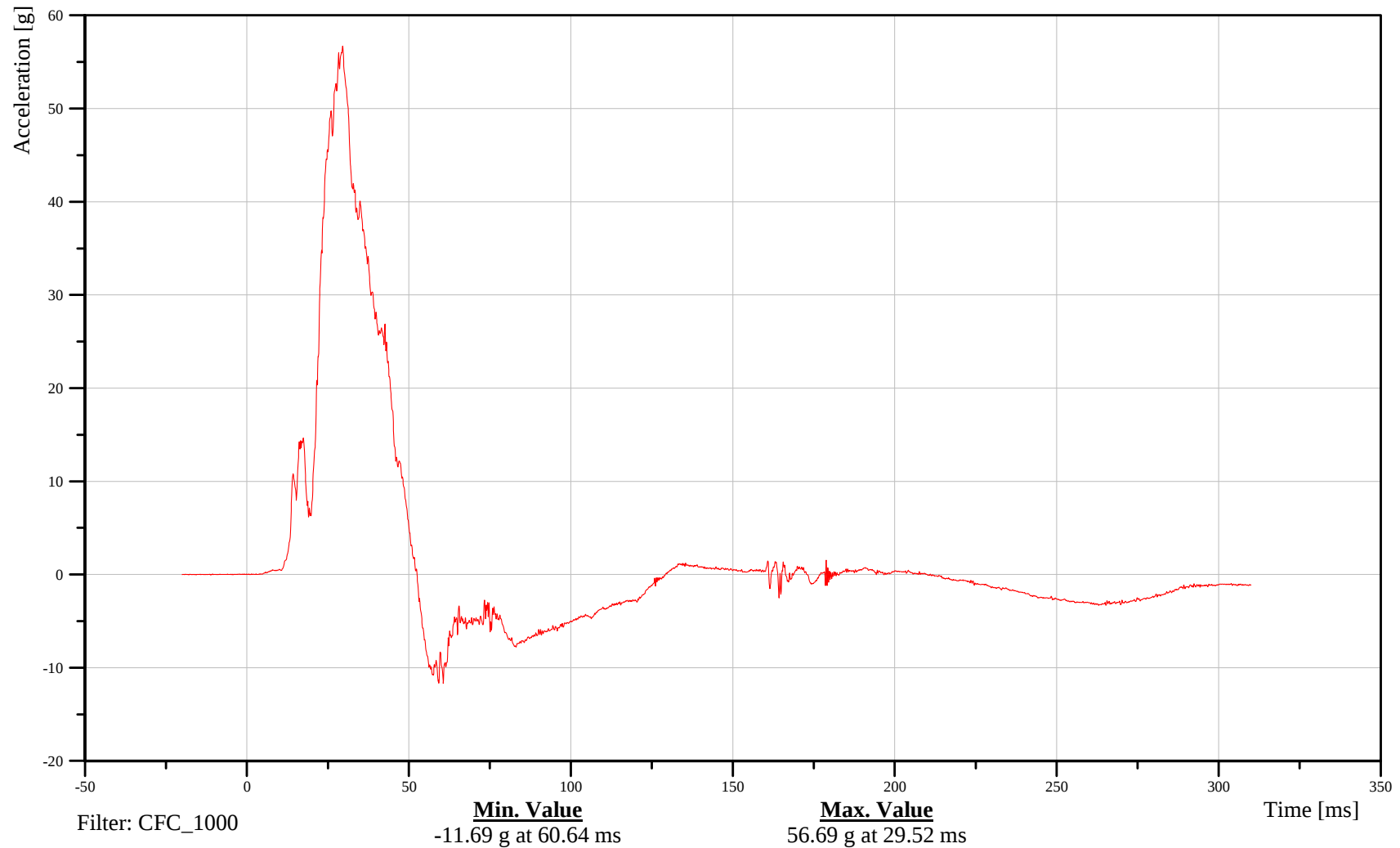
Customer: NHTSA

Test Number: C60514

11SPIN12RDSHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-66

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

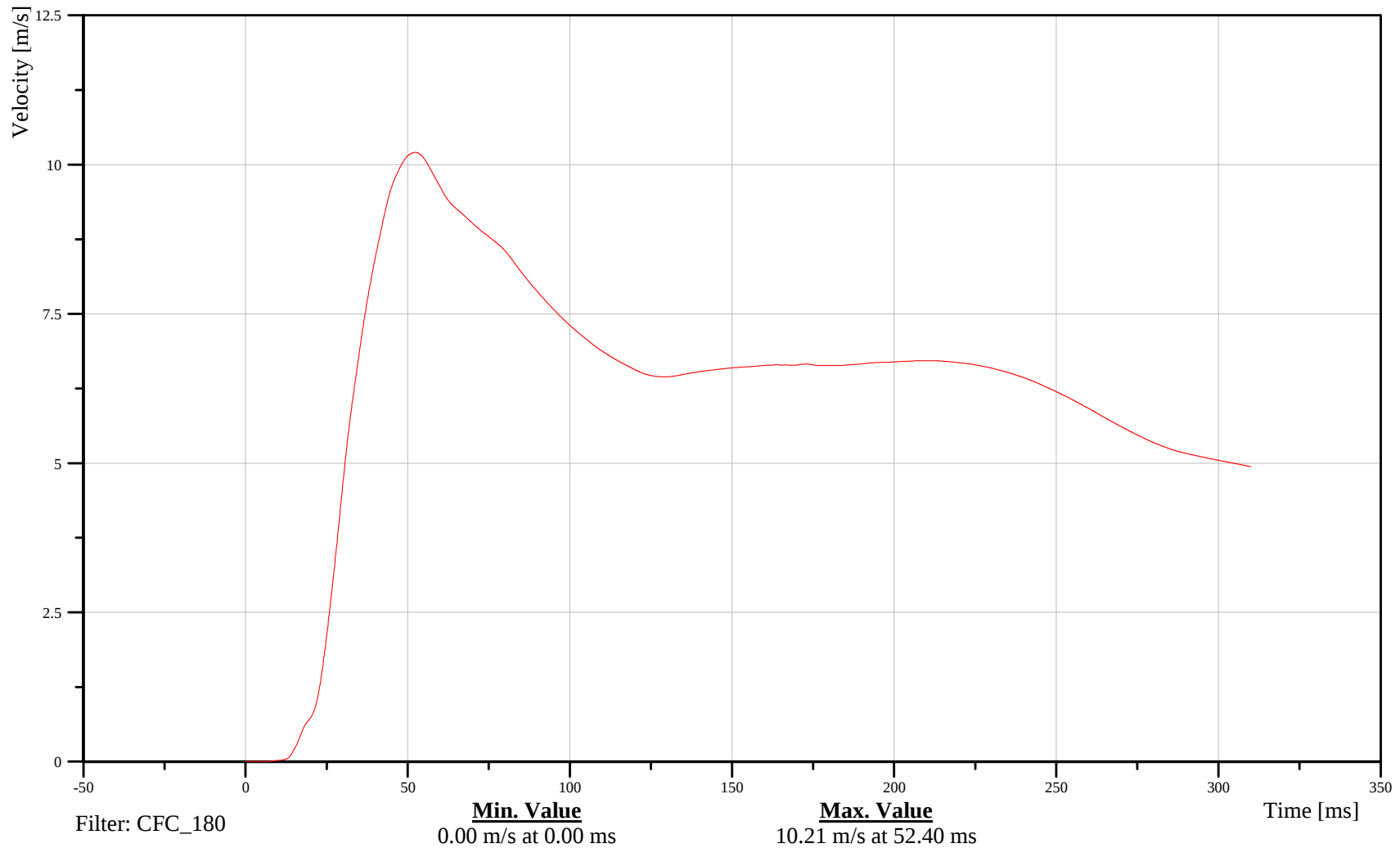
Customer: NHTSA

Test Number: C60514

11SPIN12RDSHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-67

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION

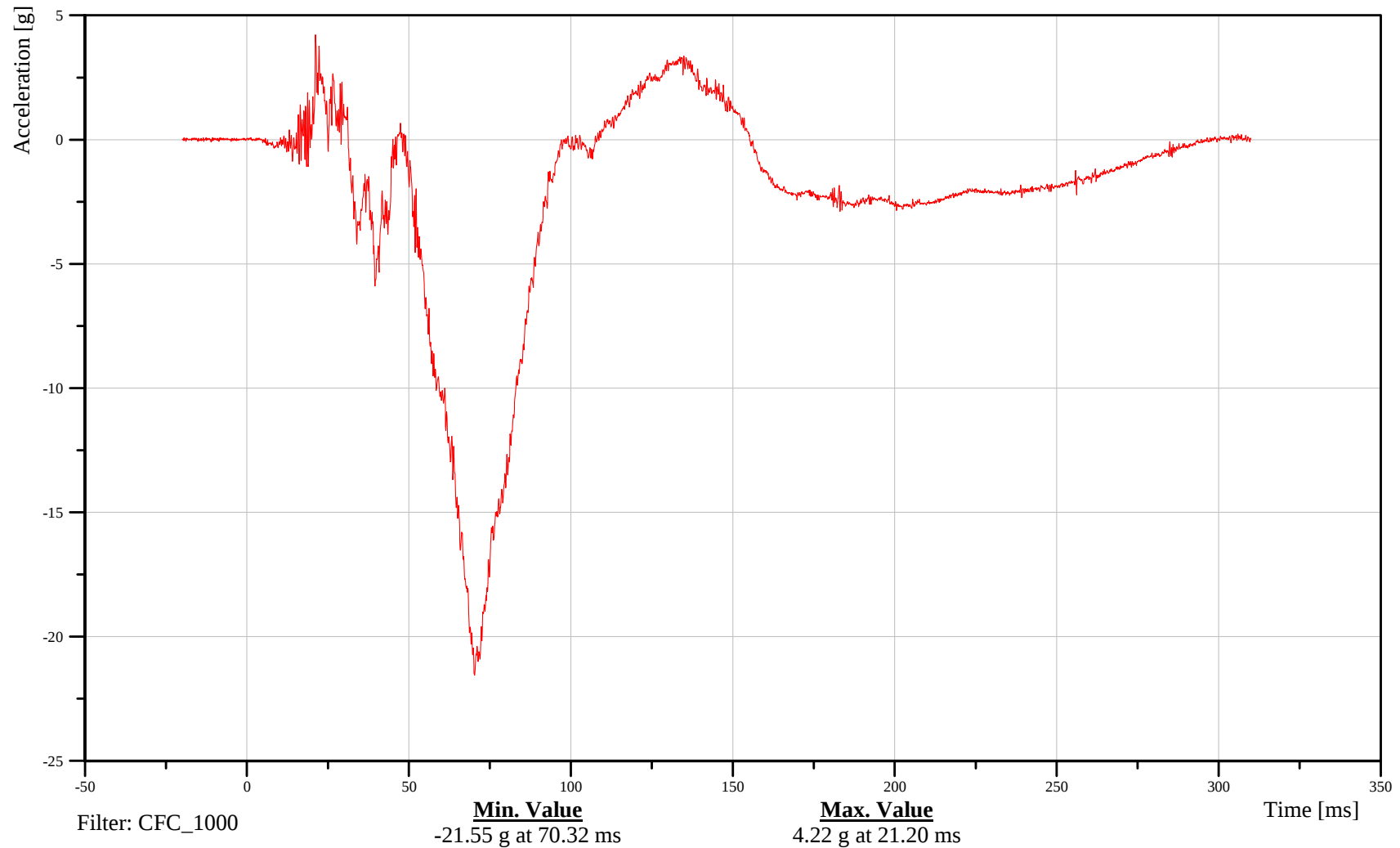
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHACXA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-68

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY

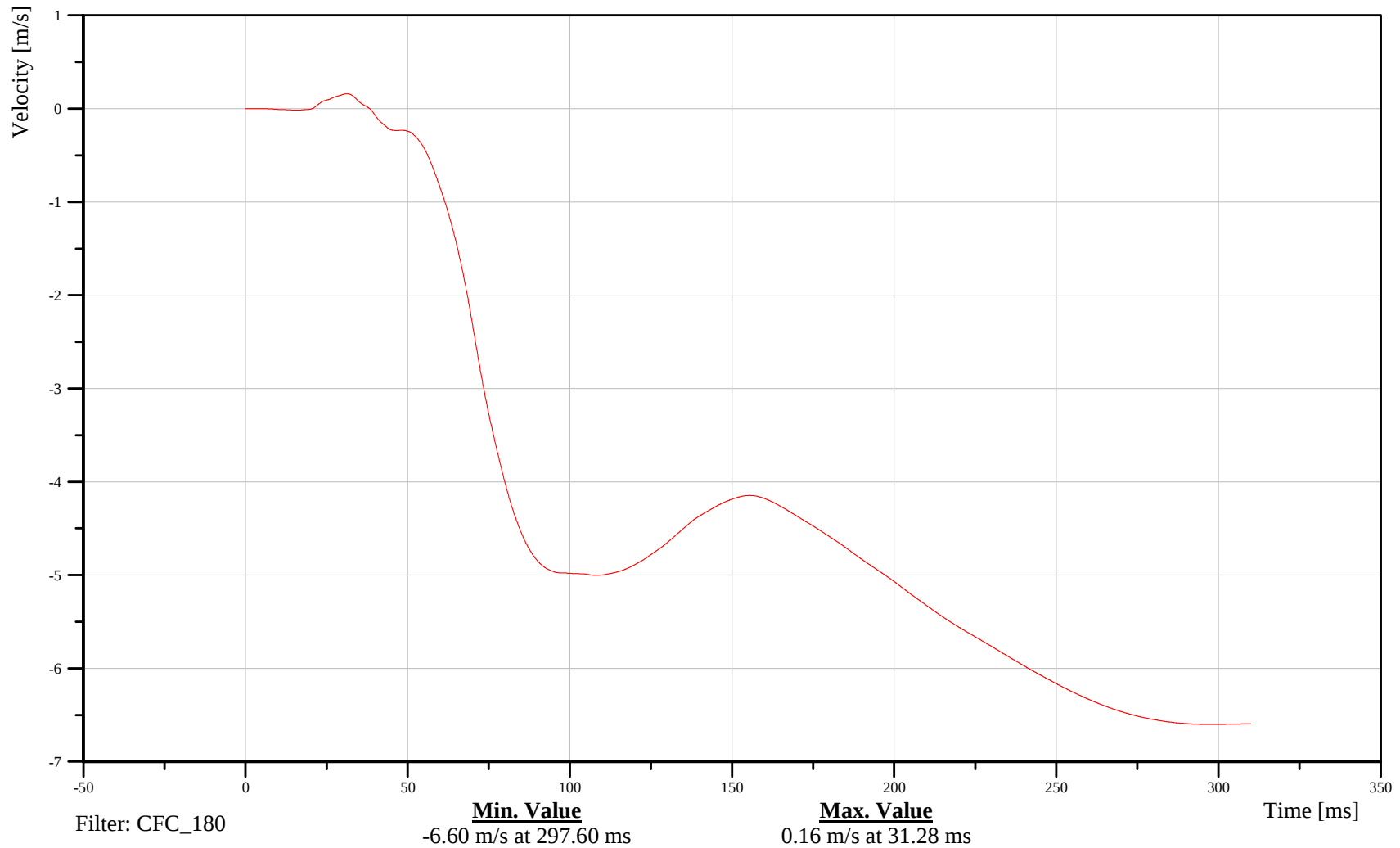
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHVEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-69

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION

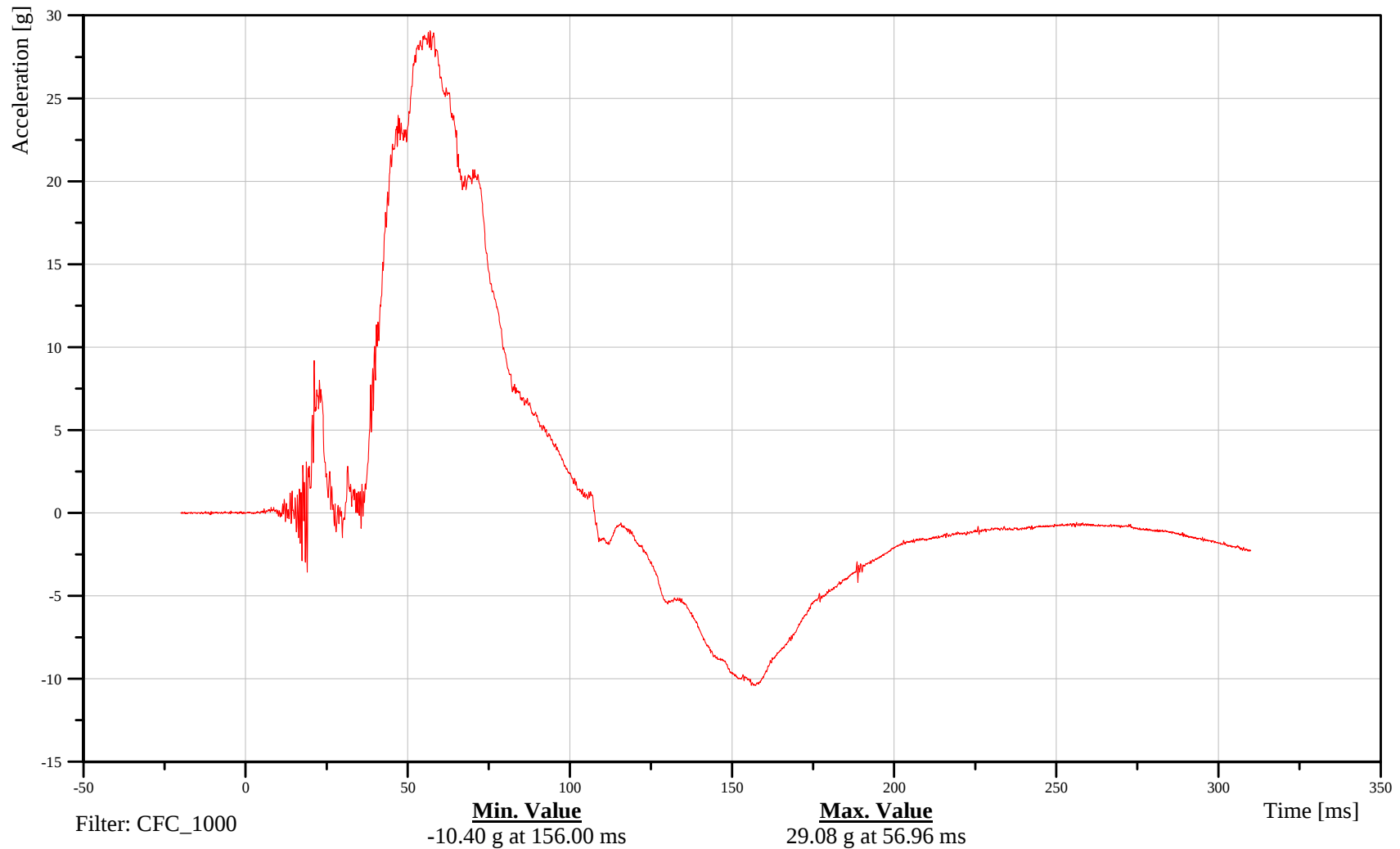
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHACYA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-70

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY

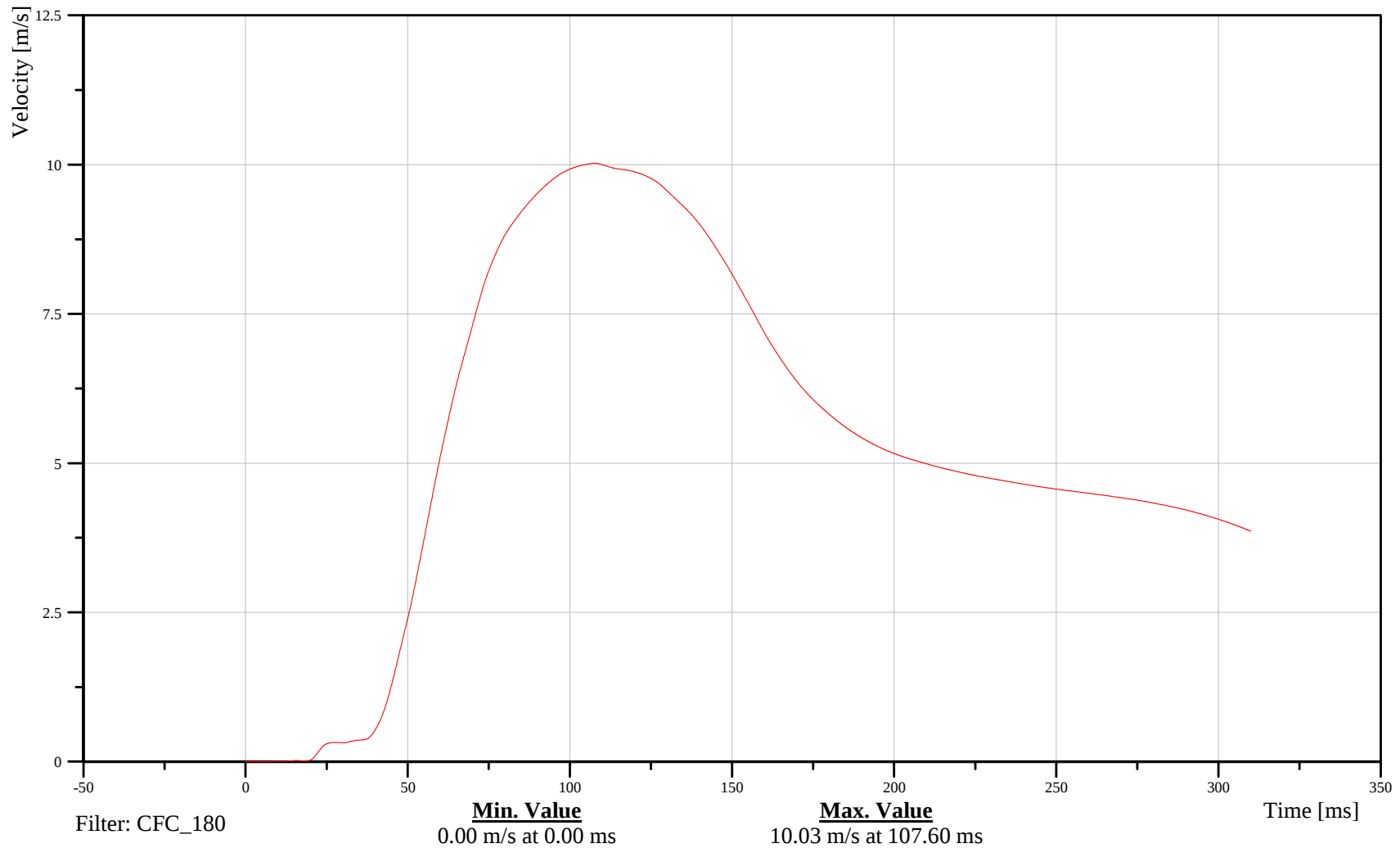
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-71

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION

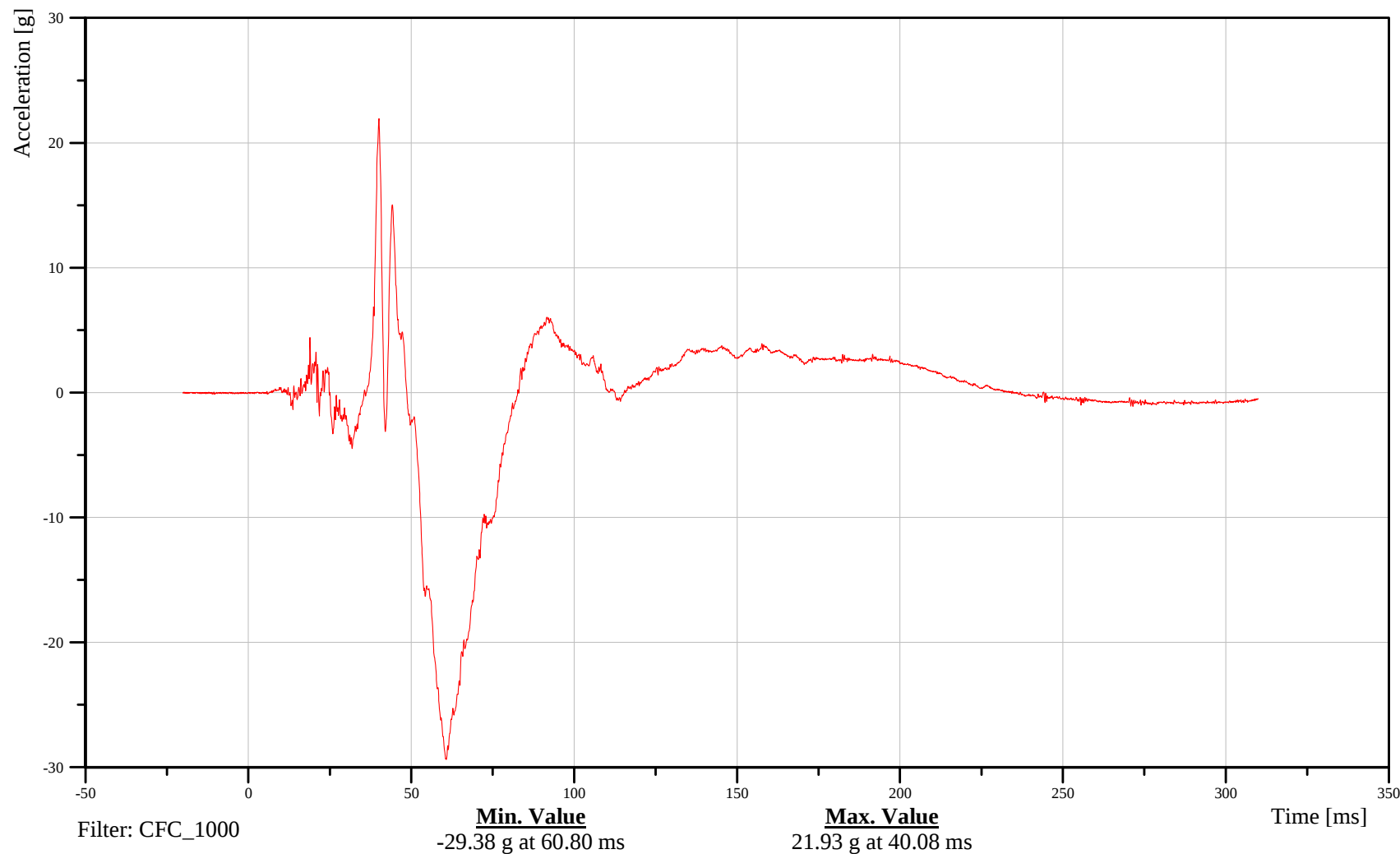
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHACZA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-72

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT VELOCITY

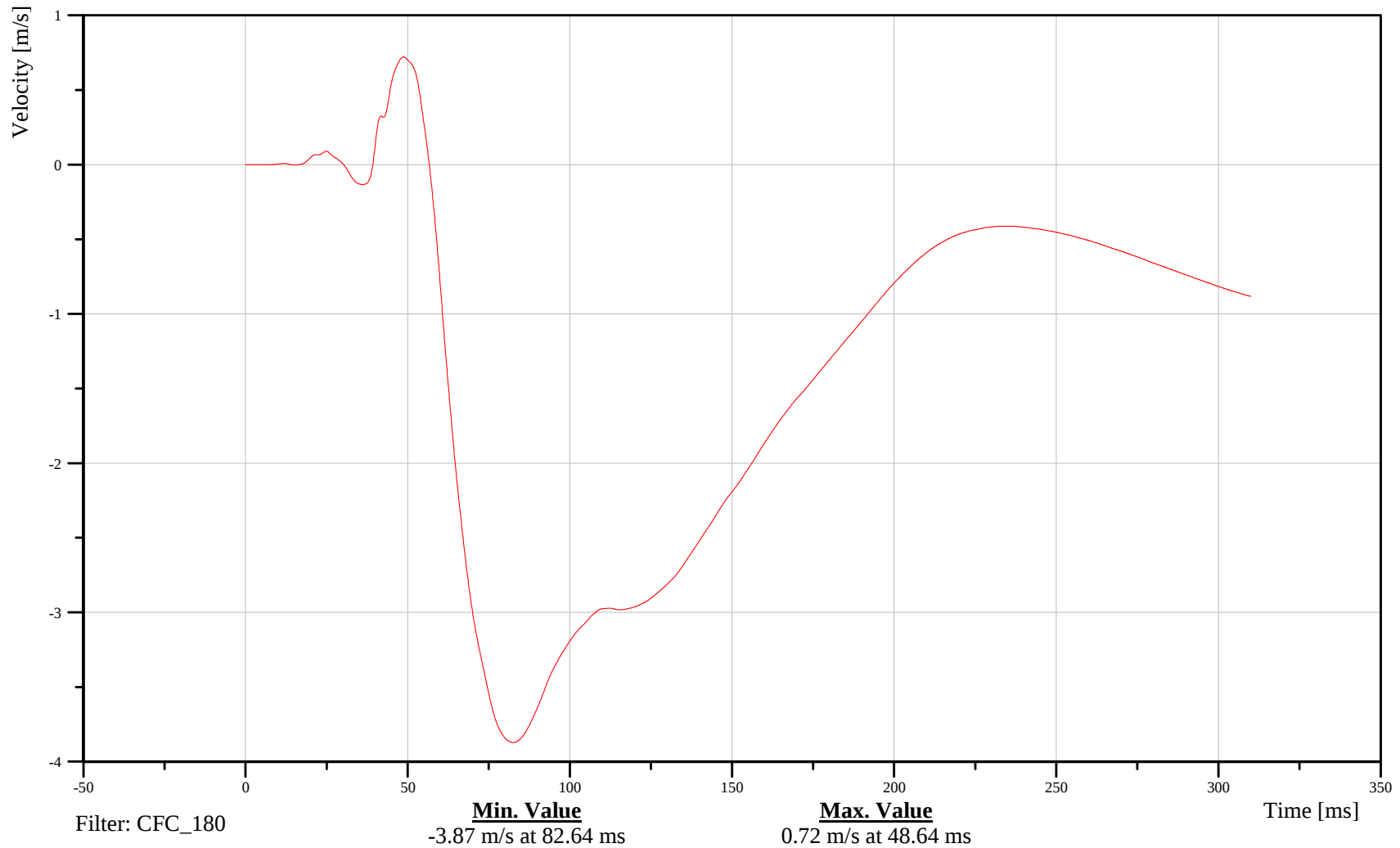
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHVEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-73

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

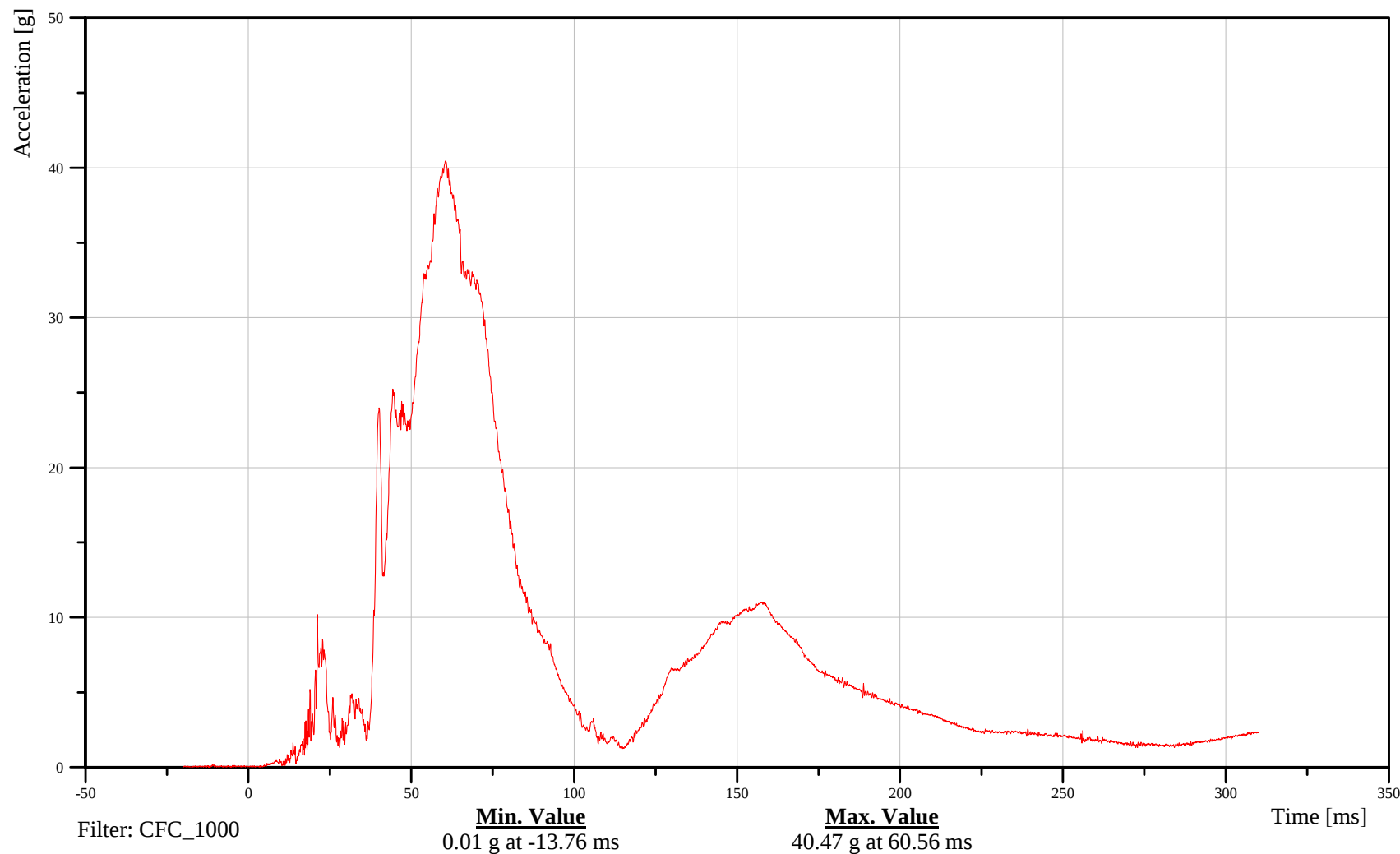
Customer: NHTSA

Test Number: C60514

14HEADCGRDSHACRA

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-74

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

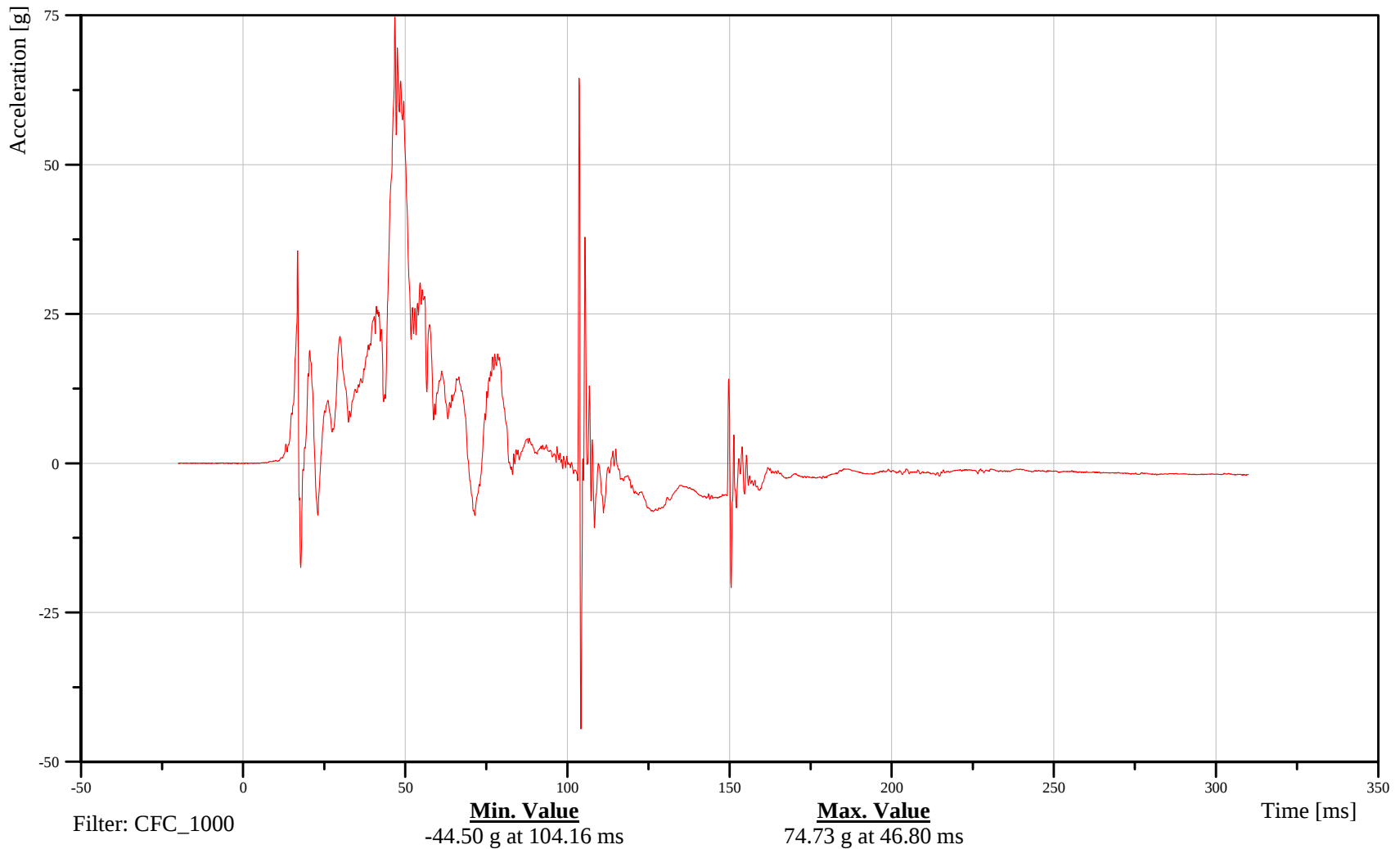
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

14RIBSLURESHACYA

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-75

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

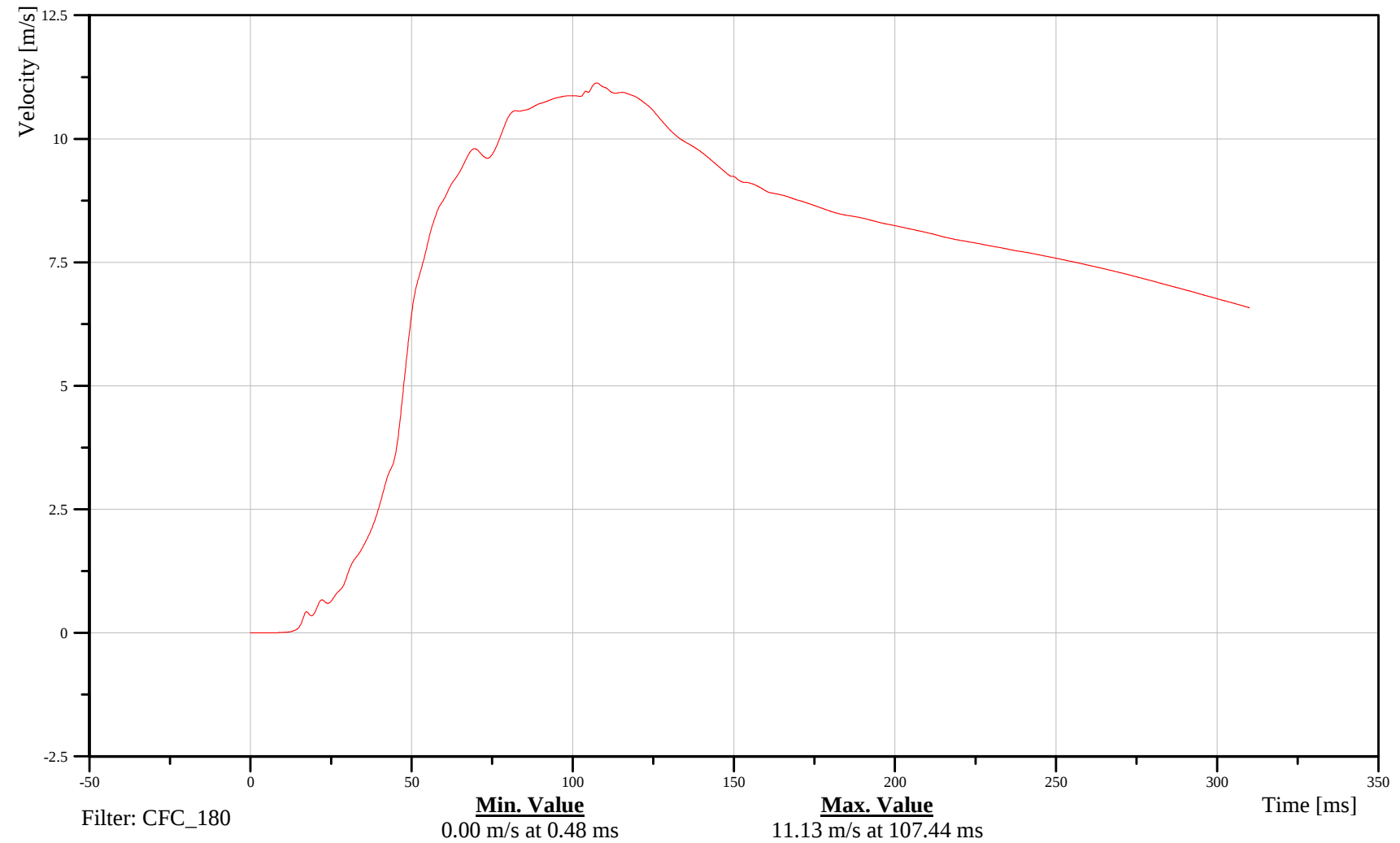
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60514

14RIBSLURESHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-76

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

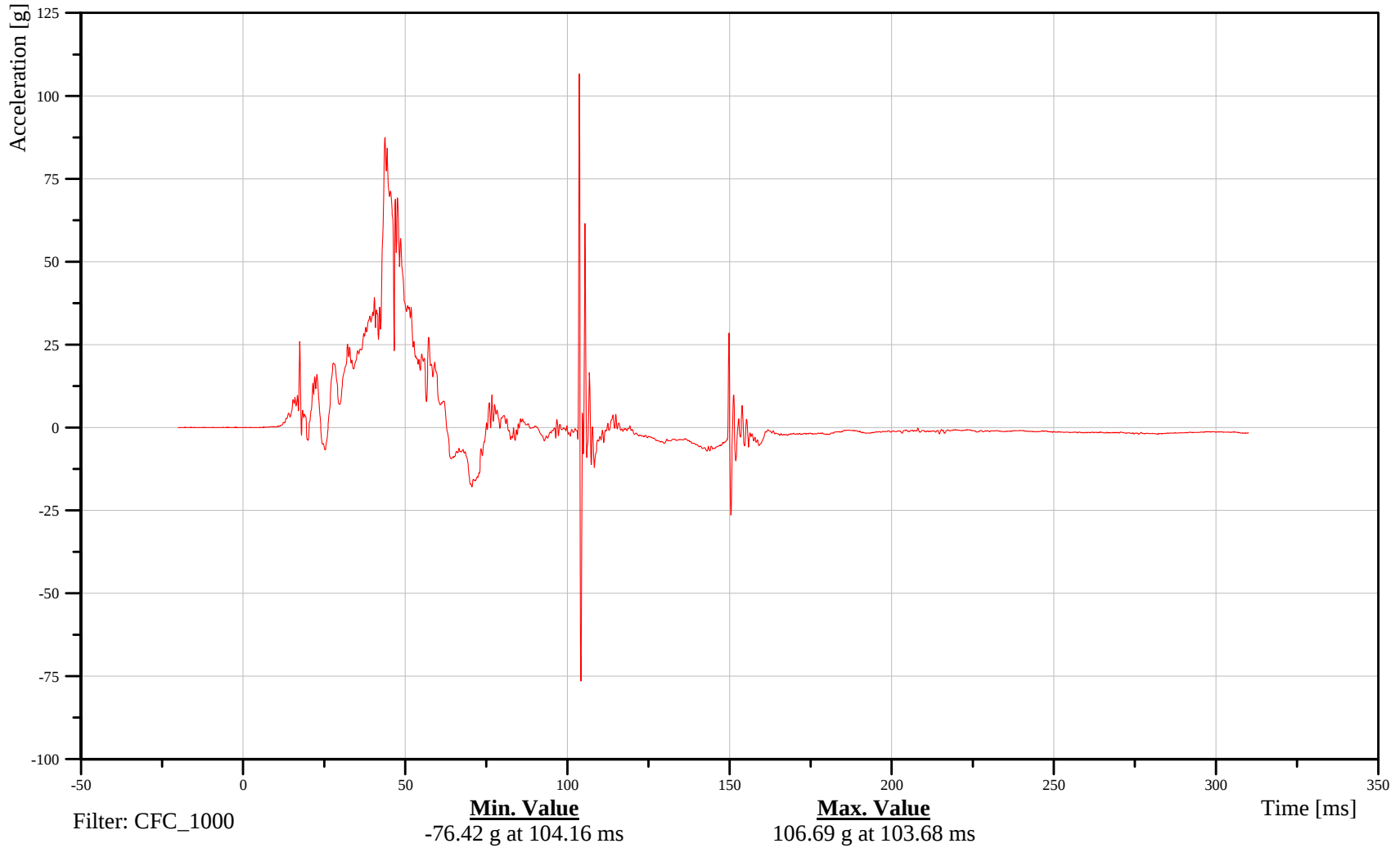
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

14RIBSLLRESHACYA

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-77

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY

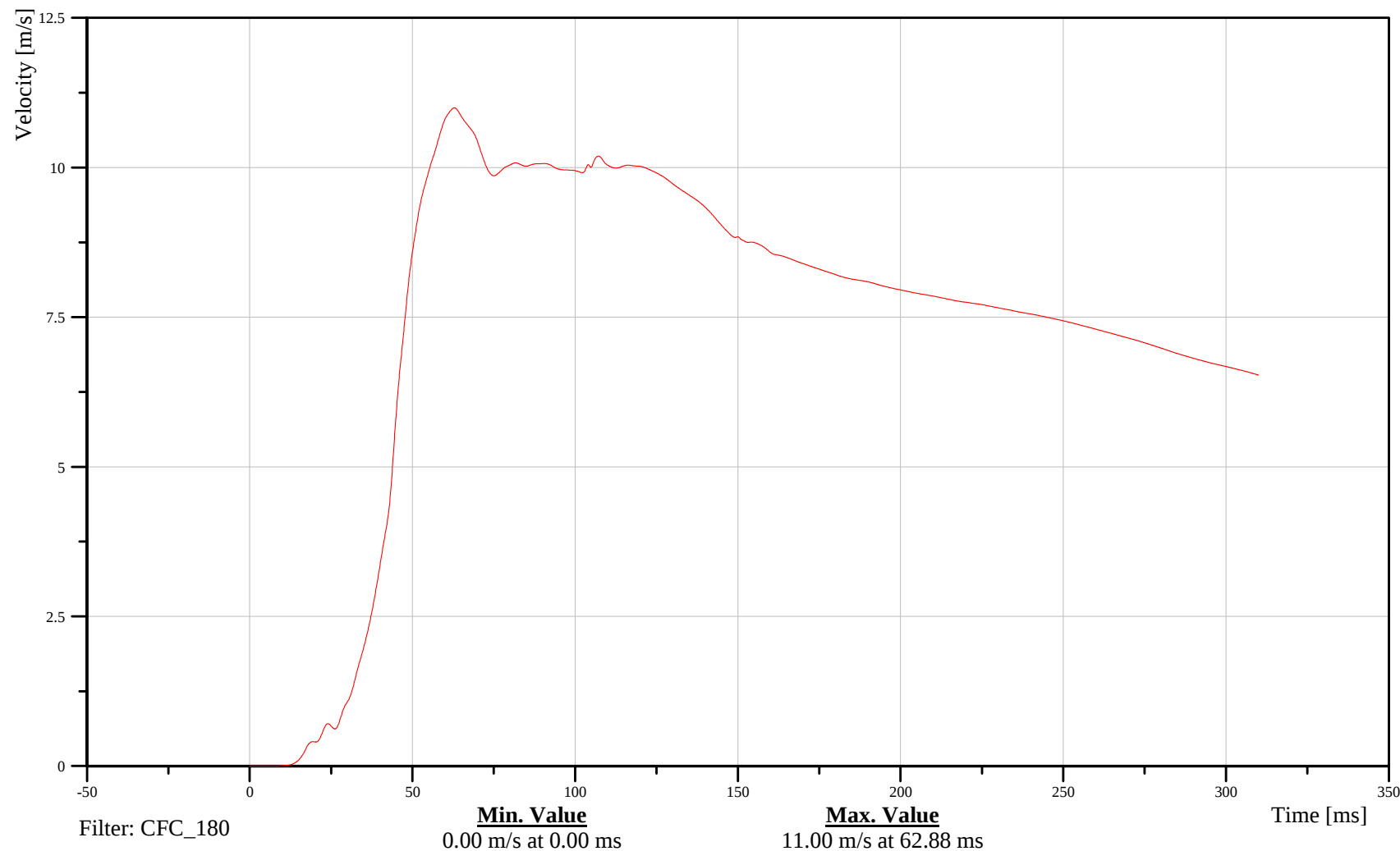
Customer: NHTSA

Test Number: C60514

14RIBSLLRESHVEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-78

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

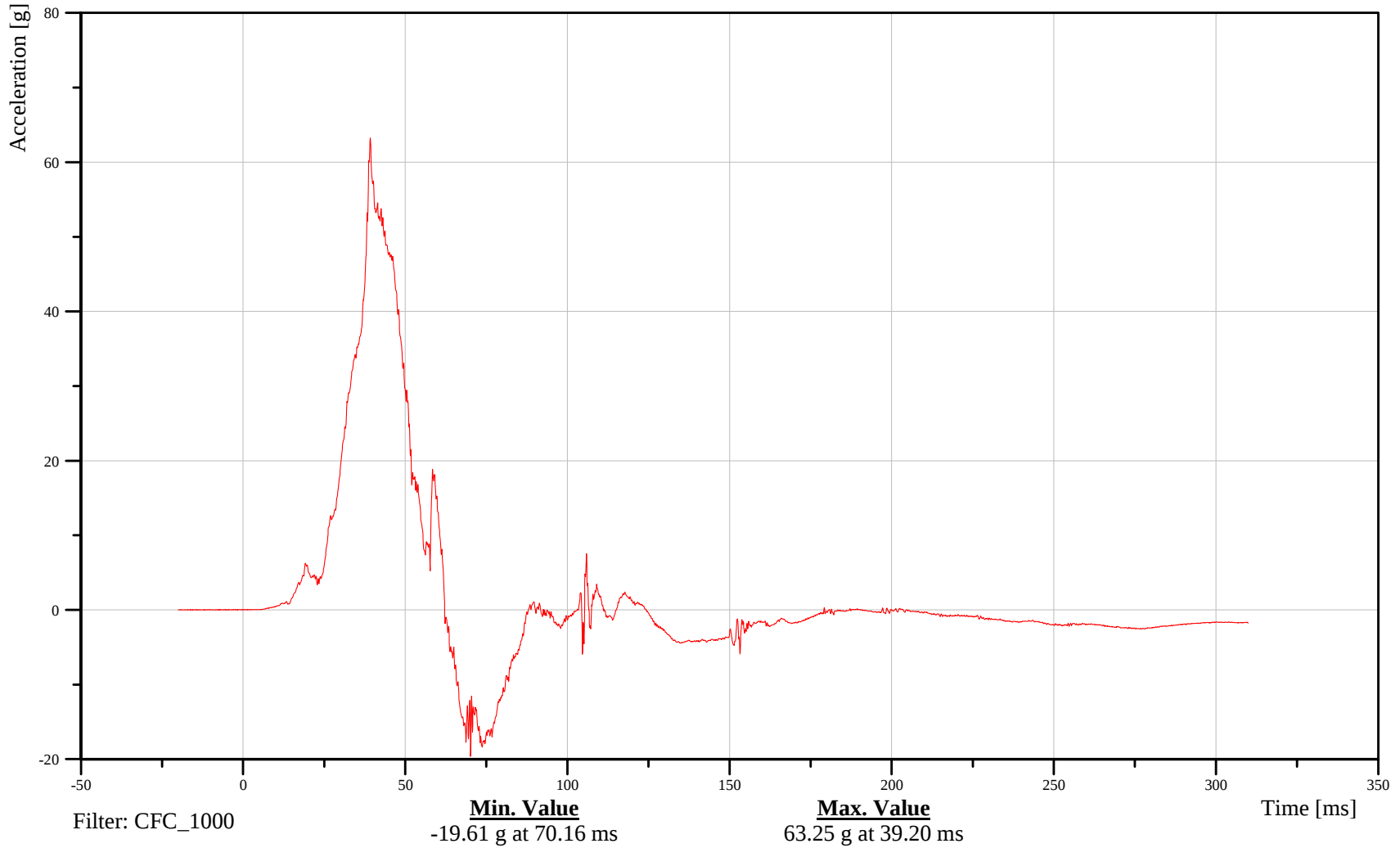
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

14SPIN12RDSHACYA

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-79

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

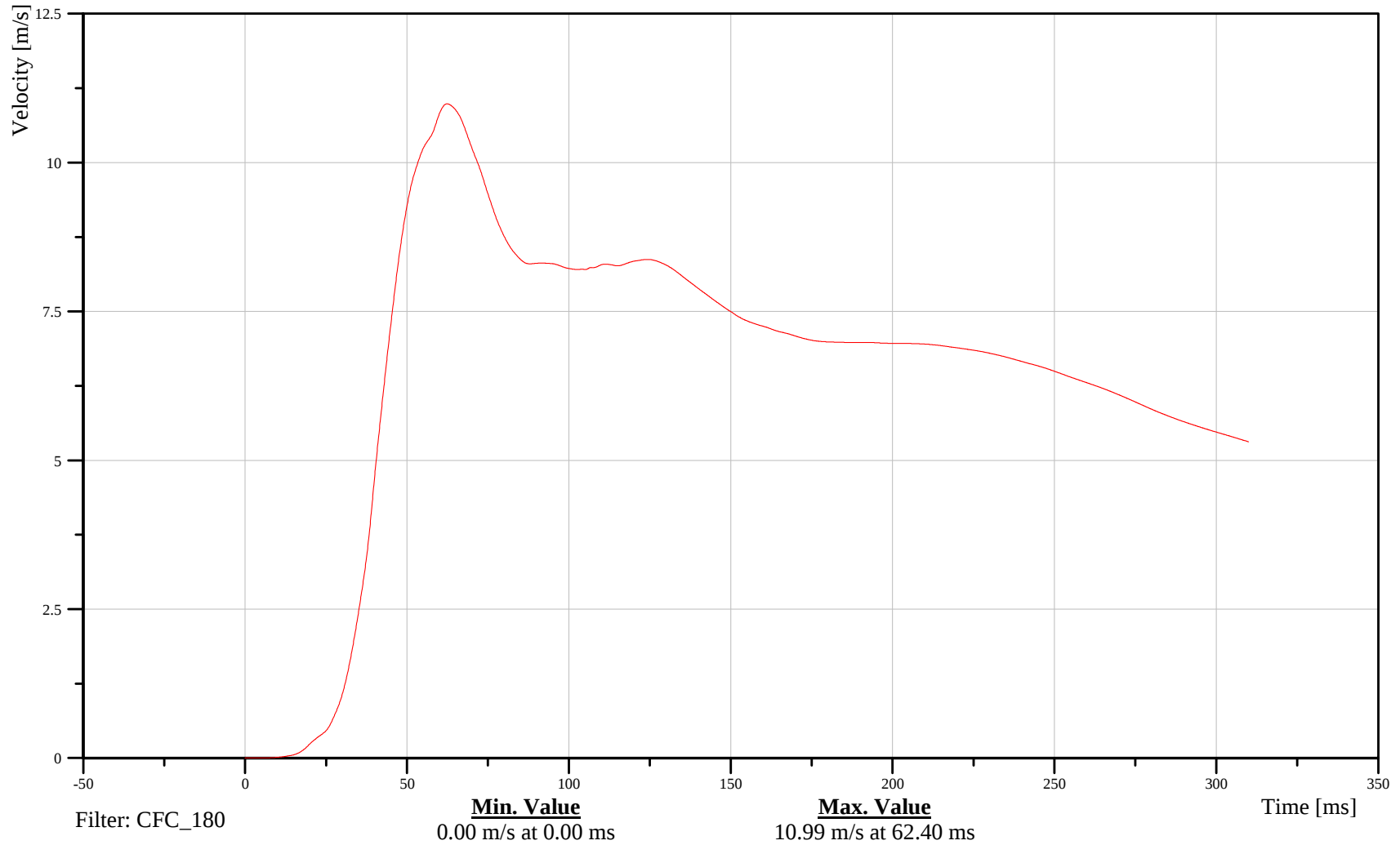
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

Customer: NHTSA
Test Number: C60514

14SPIN12RDSHVEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-80

060714

Test Vehicle Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION

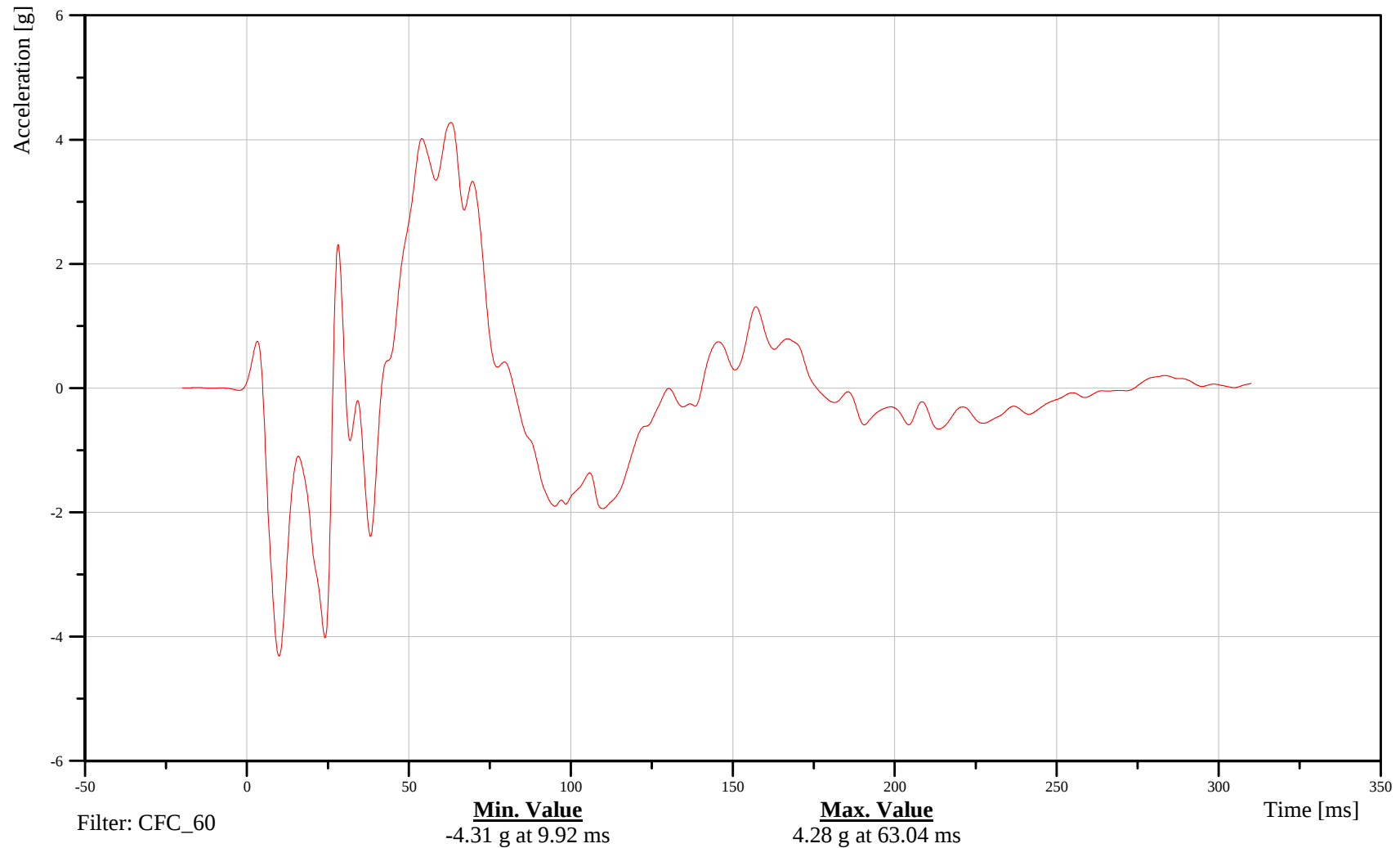
Customer: NHTSA

Test Number: C60514

16SILBFR0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-82

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT X-AXIS VELOCITY

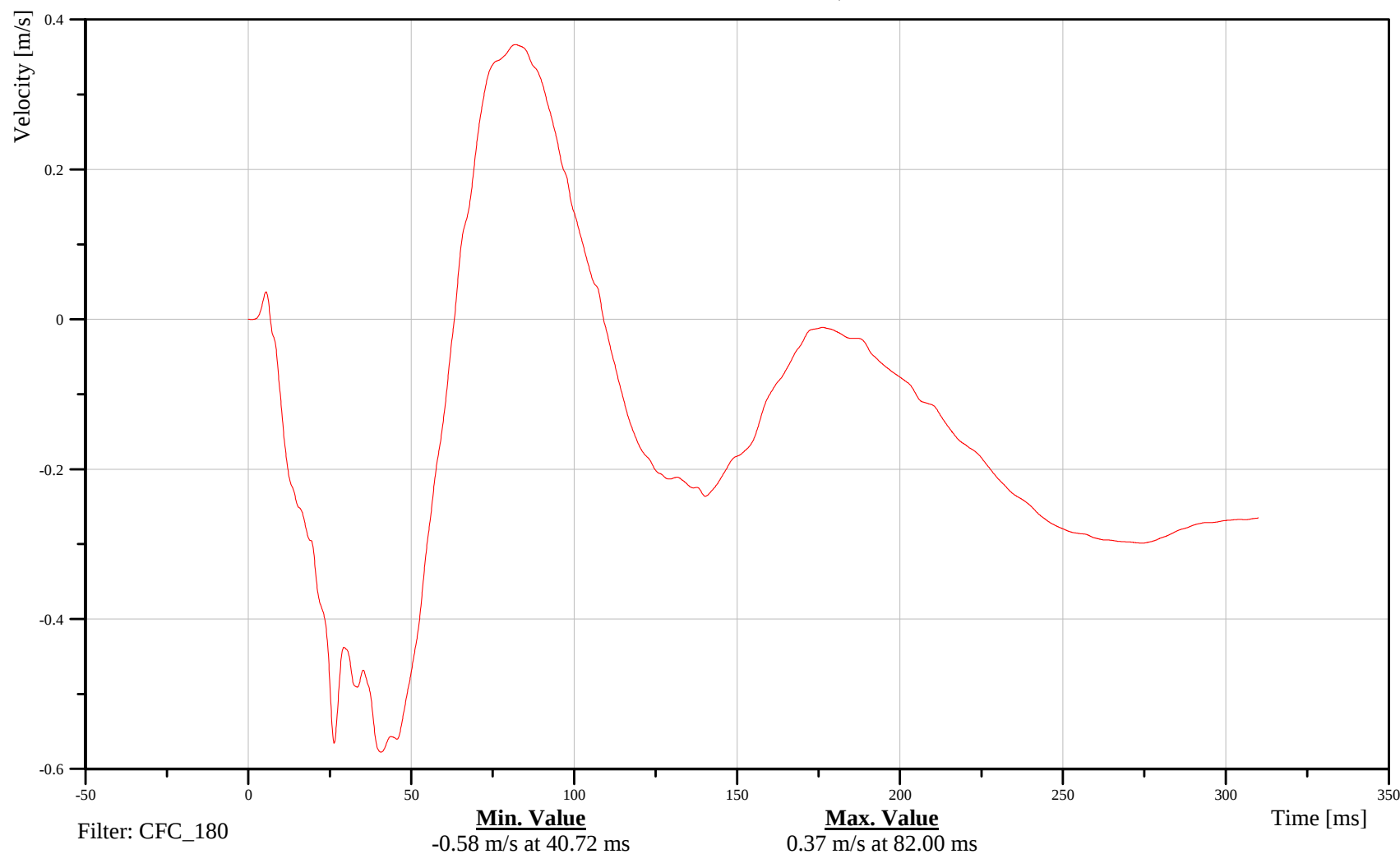
Customer: NHTSA

Test Number: C60514

16SILBFR0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-83

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

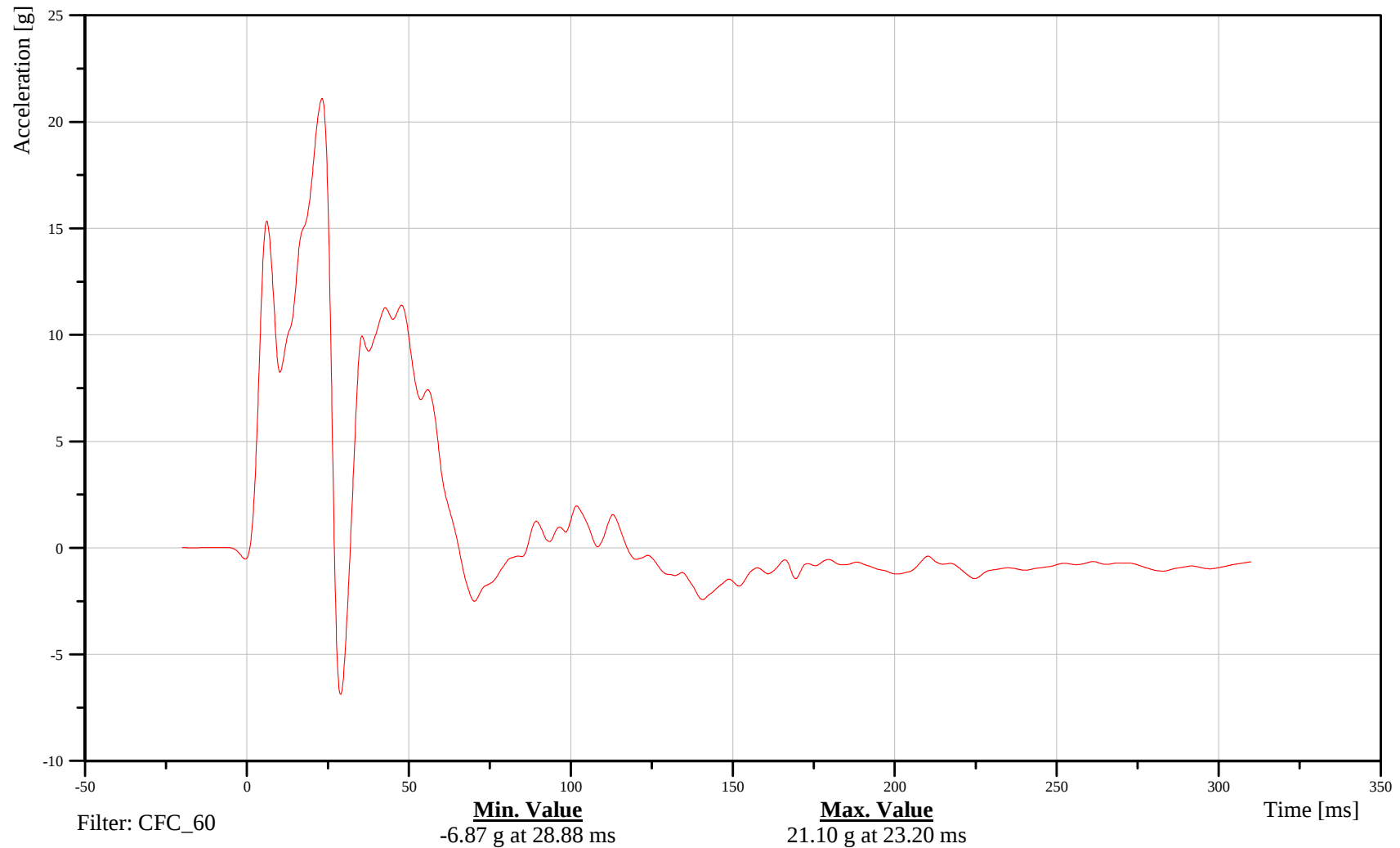
Customer: NHTSA

Test Number: C60514

16SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-84

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

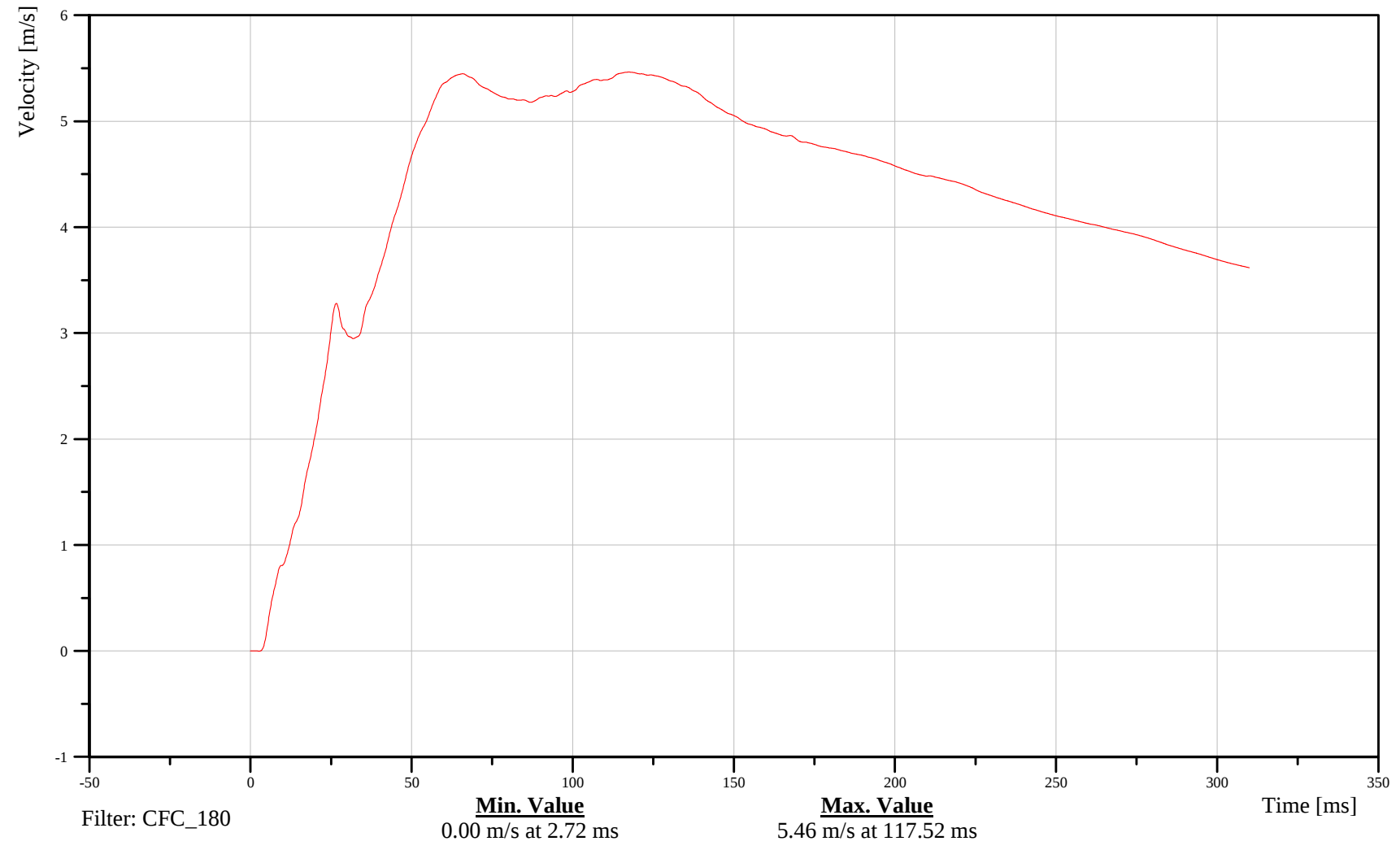
Date: 07/14/2006
Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

16SILBFR0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-85

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

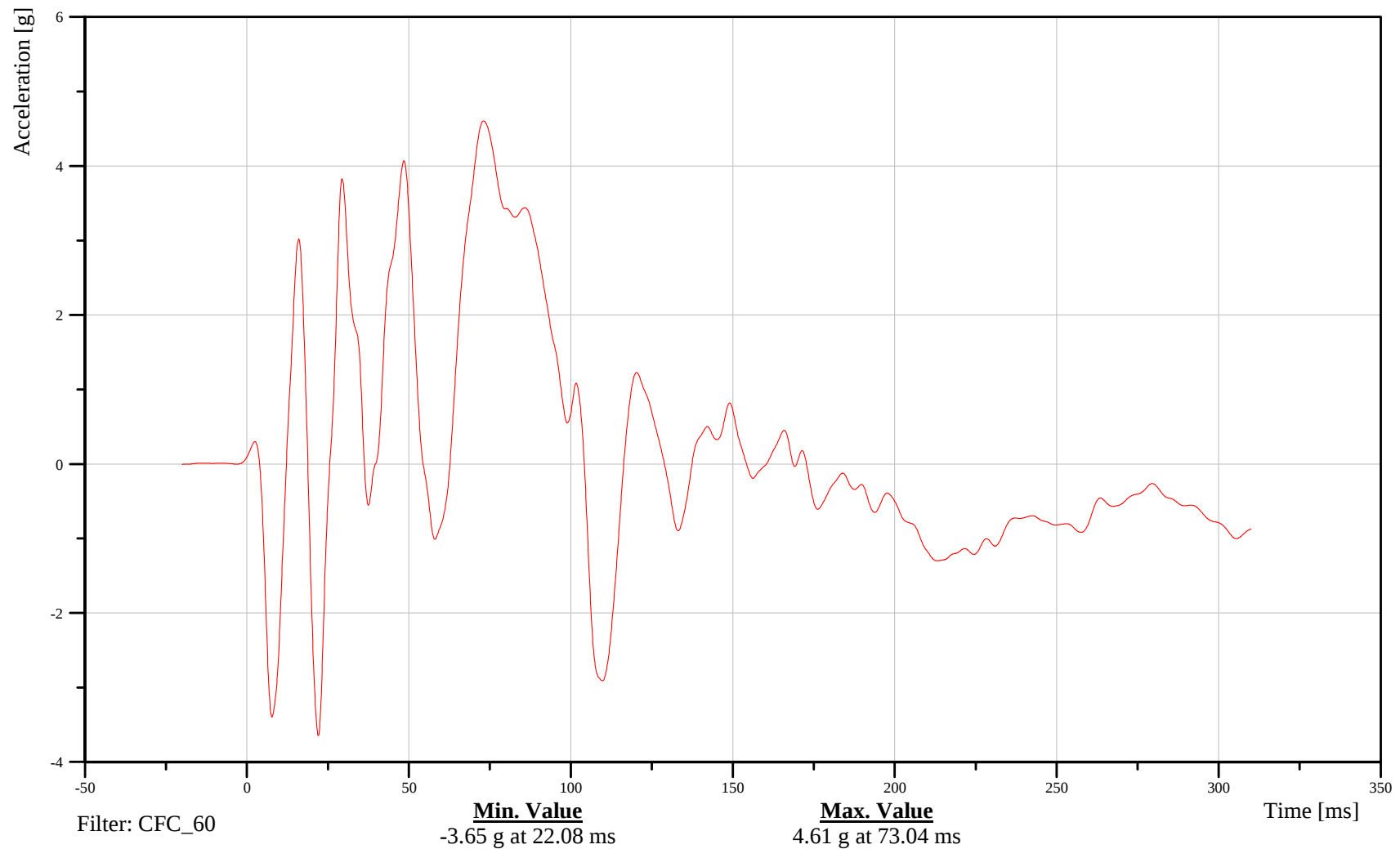
Customer: NHTSA

Test Number: C60514

16SILBFR0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-86

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY

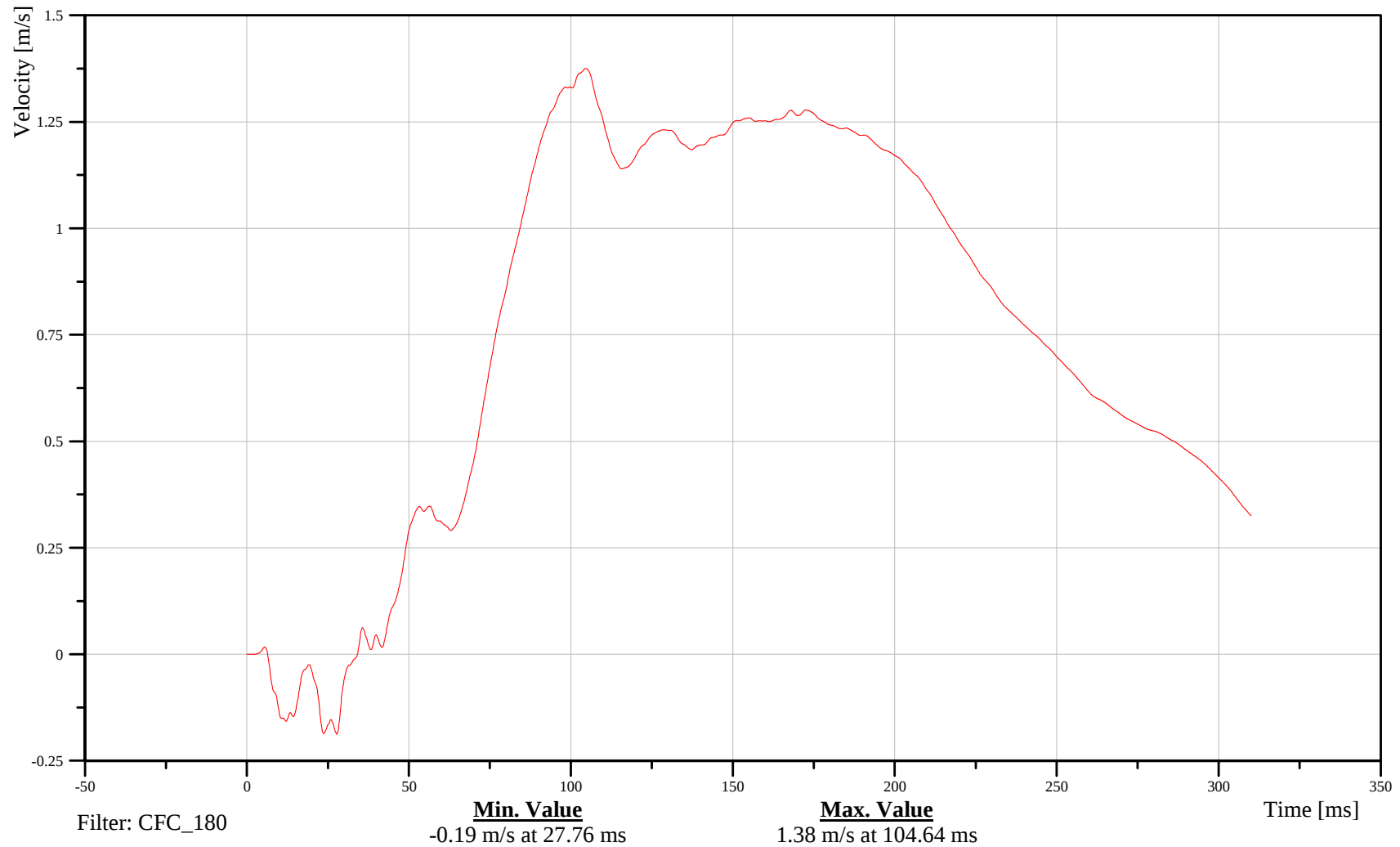
Customer: NHTSA

Test Number: C60514

16SILBFR0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-87

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

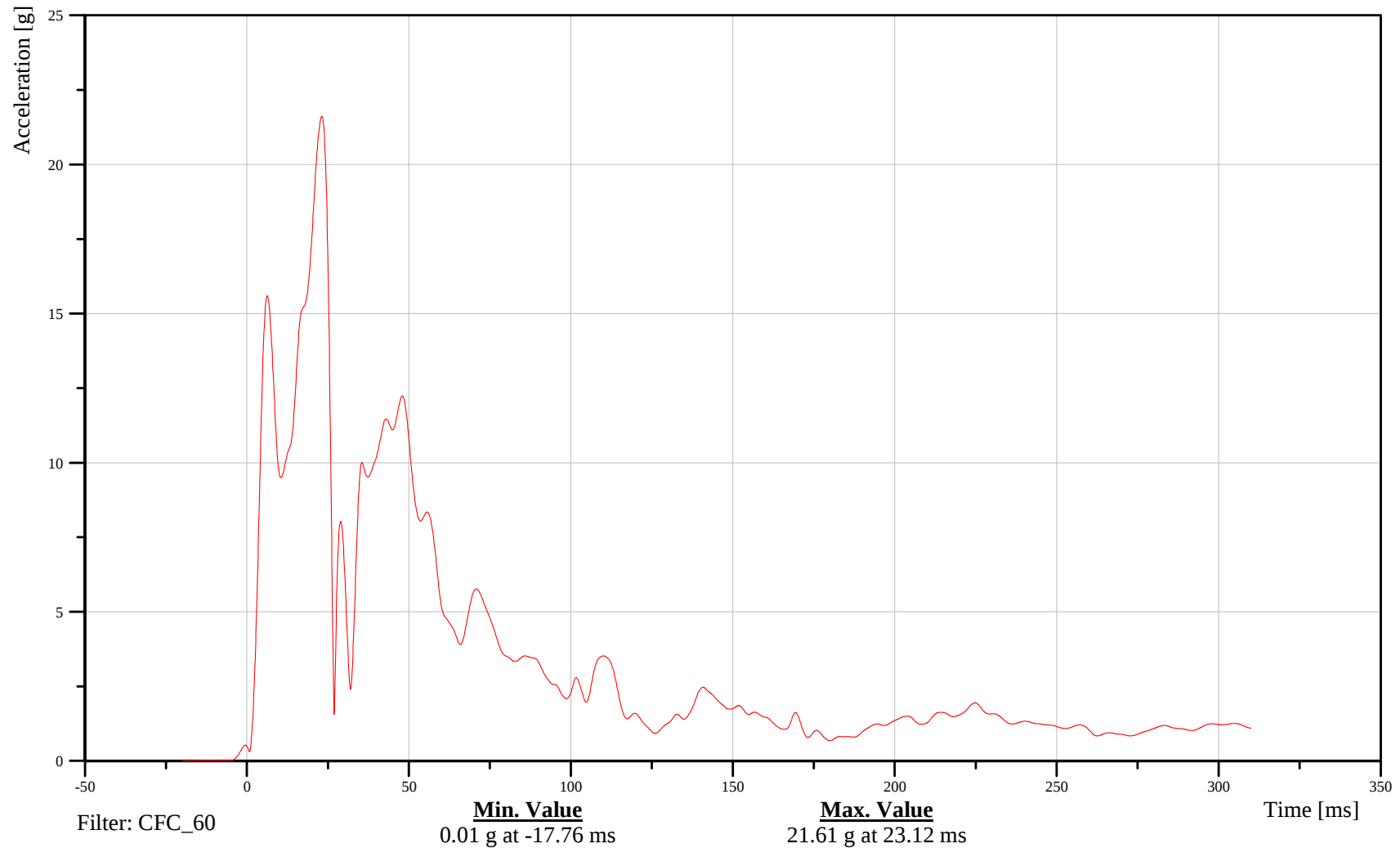
Customer: NHTSA

Test Number: C60514

16SILBFR0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-88

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION

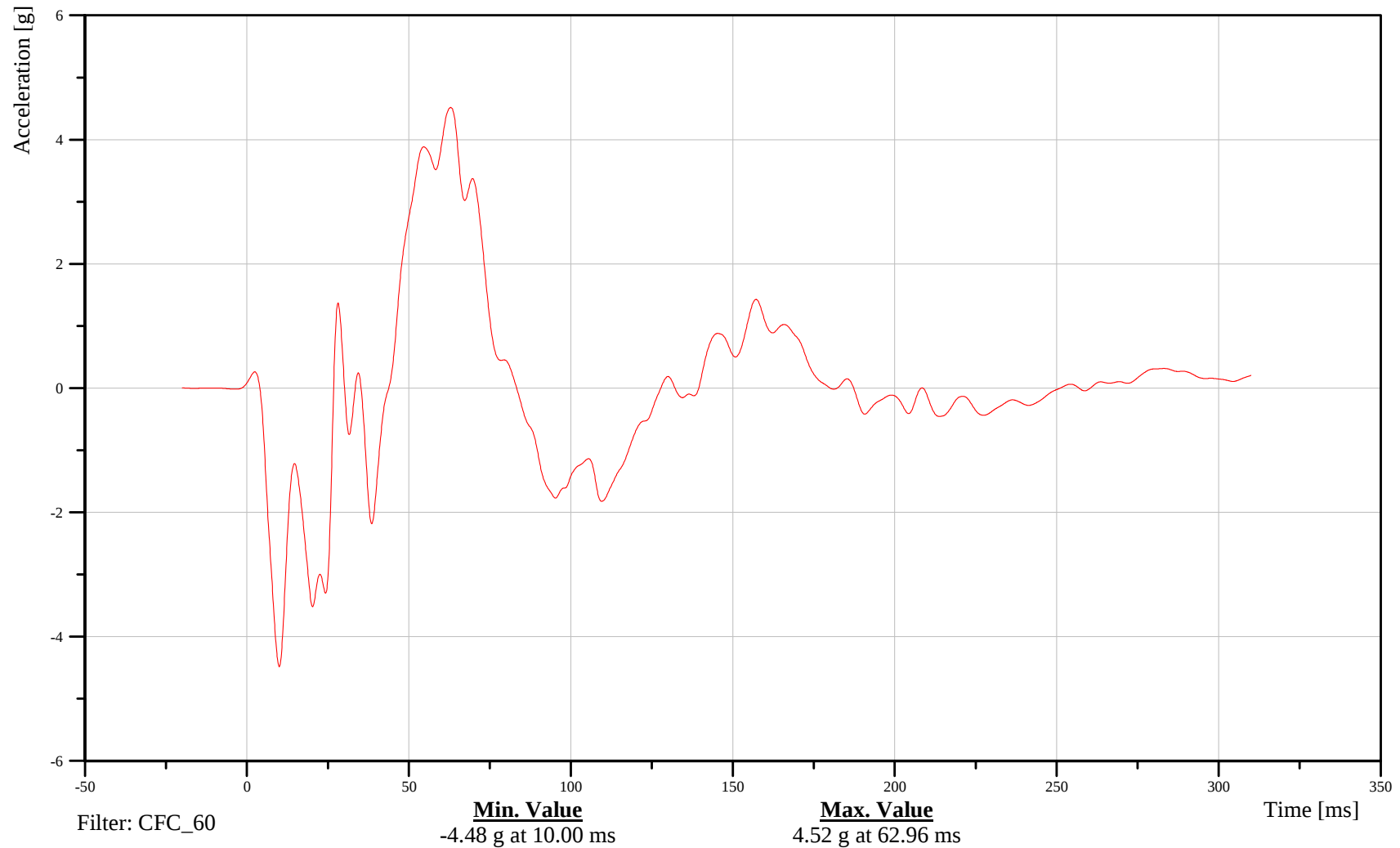
Customer: NHTSA

Test Number: C60514

16SILBRE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-89

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

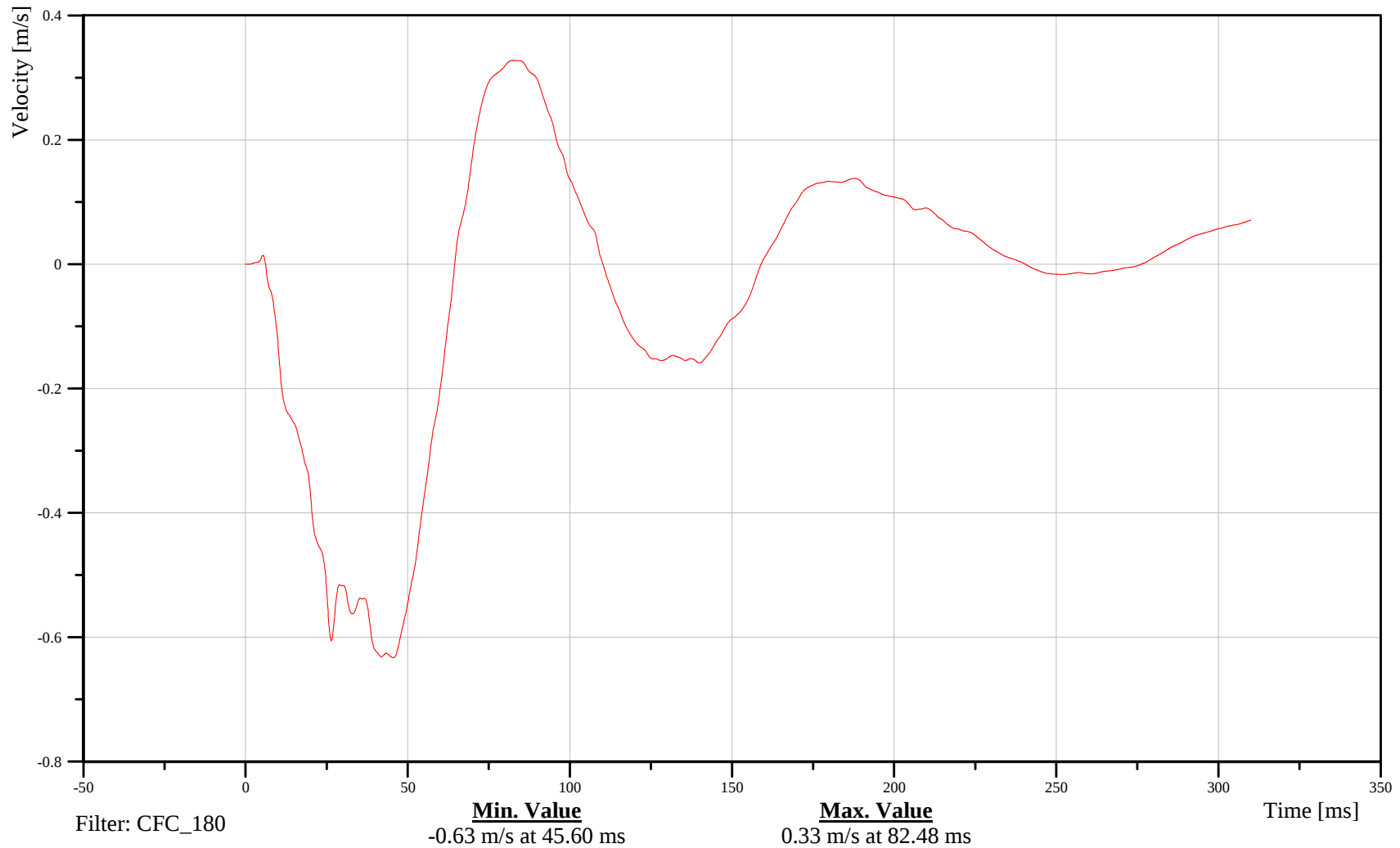
Date: 07/14/2006
Time: 13:32

RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

16SILBRE0000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-90

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

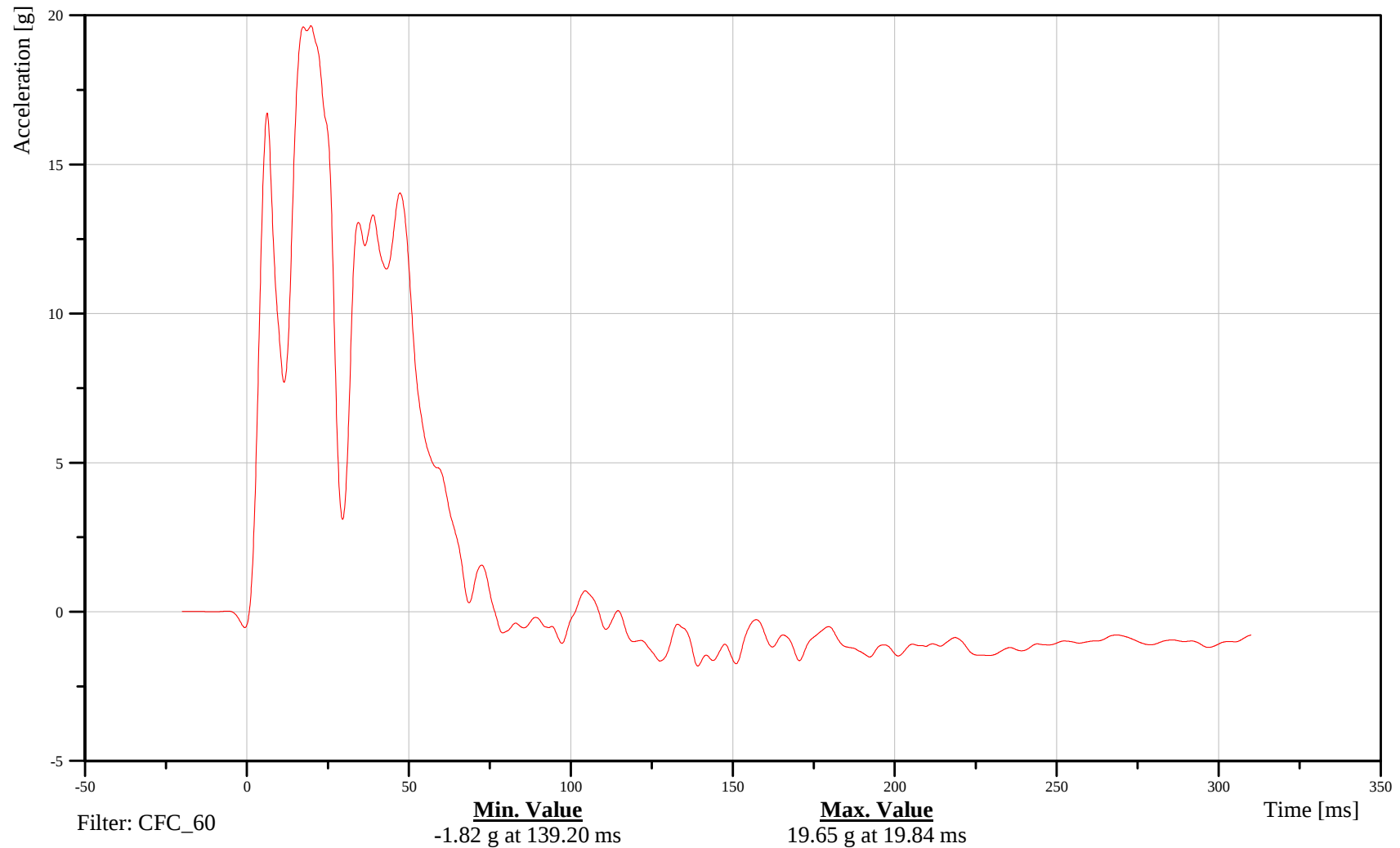
Customer: NHTSA

Test Number: C60514

16SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-91

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

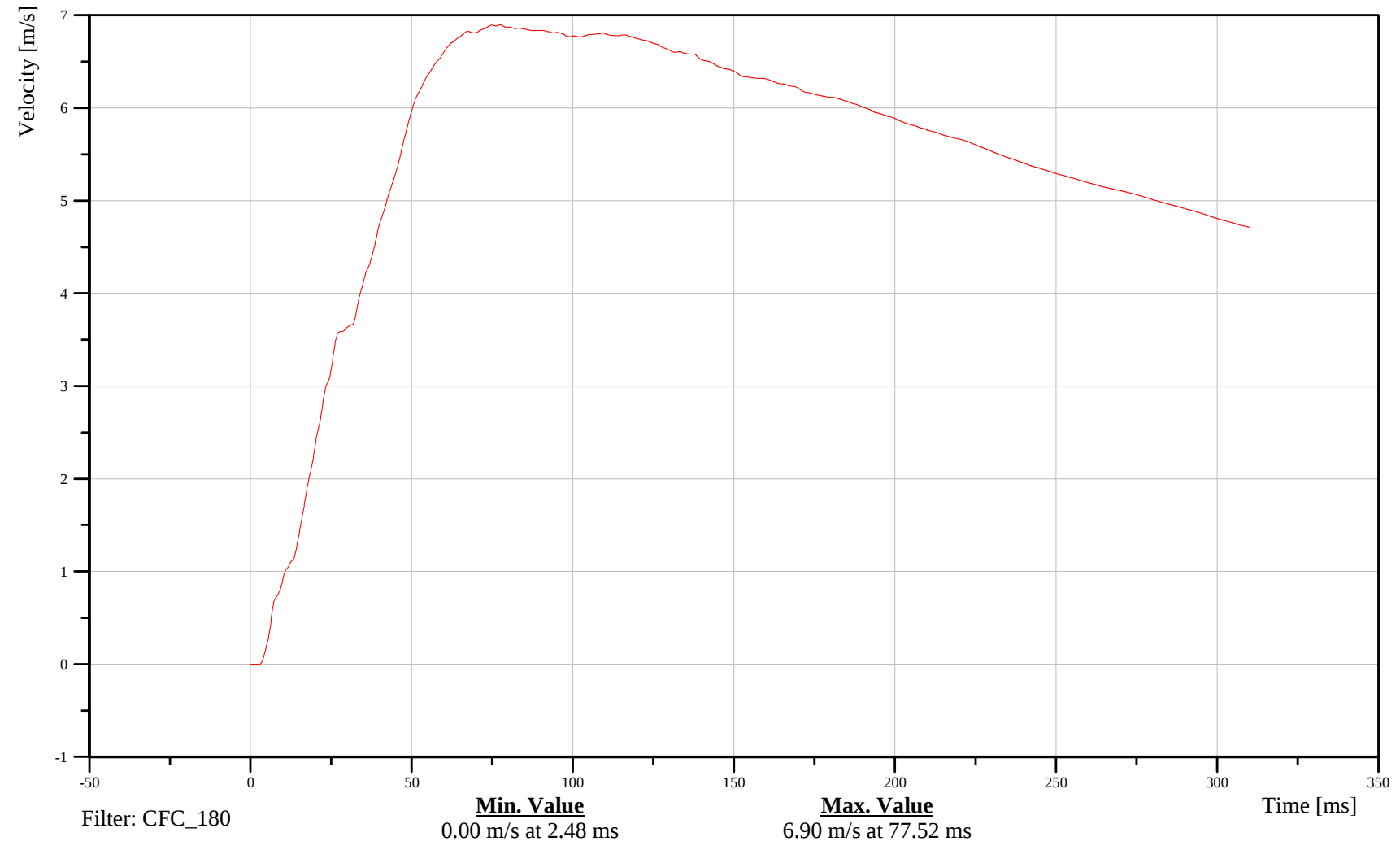
Date: 07/14/2006
Time: 13:32

RIGHT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

16SILBRE0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-92

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION

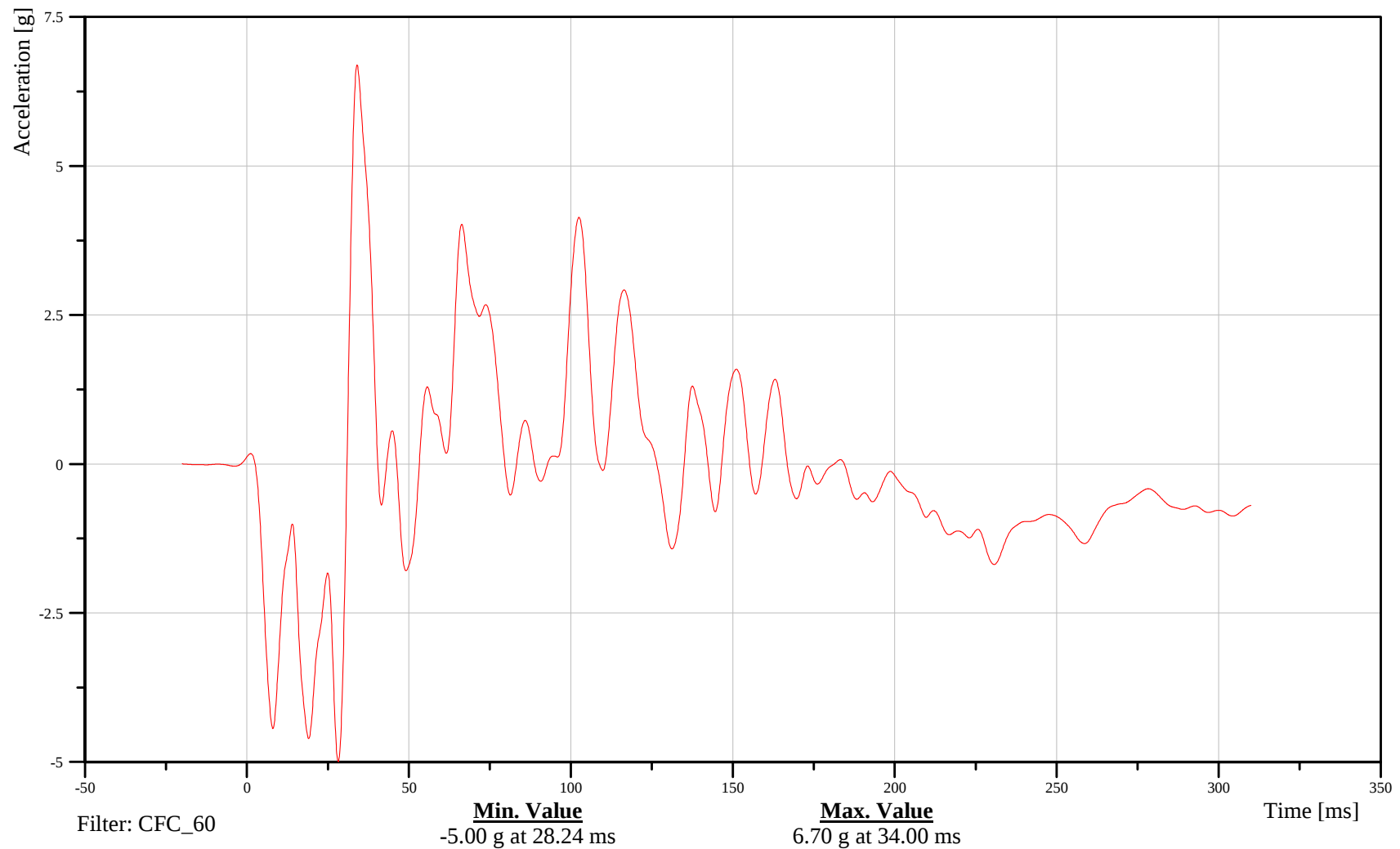
Customer: NHTSA

Test Number: C60514

16SILBRE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-93

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY

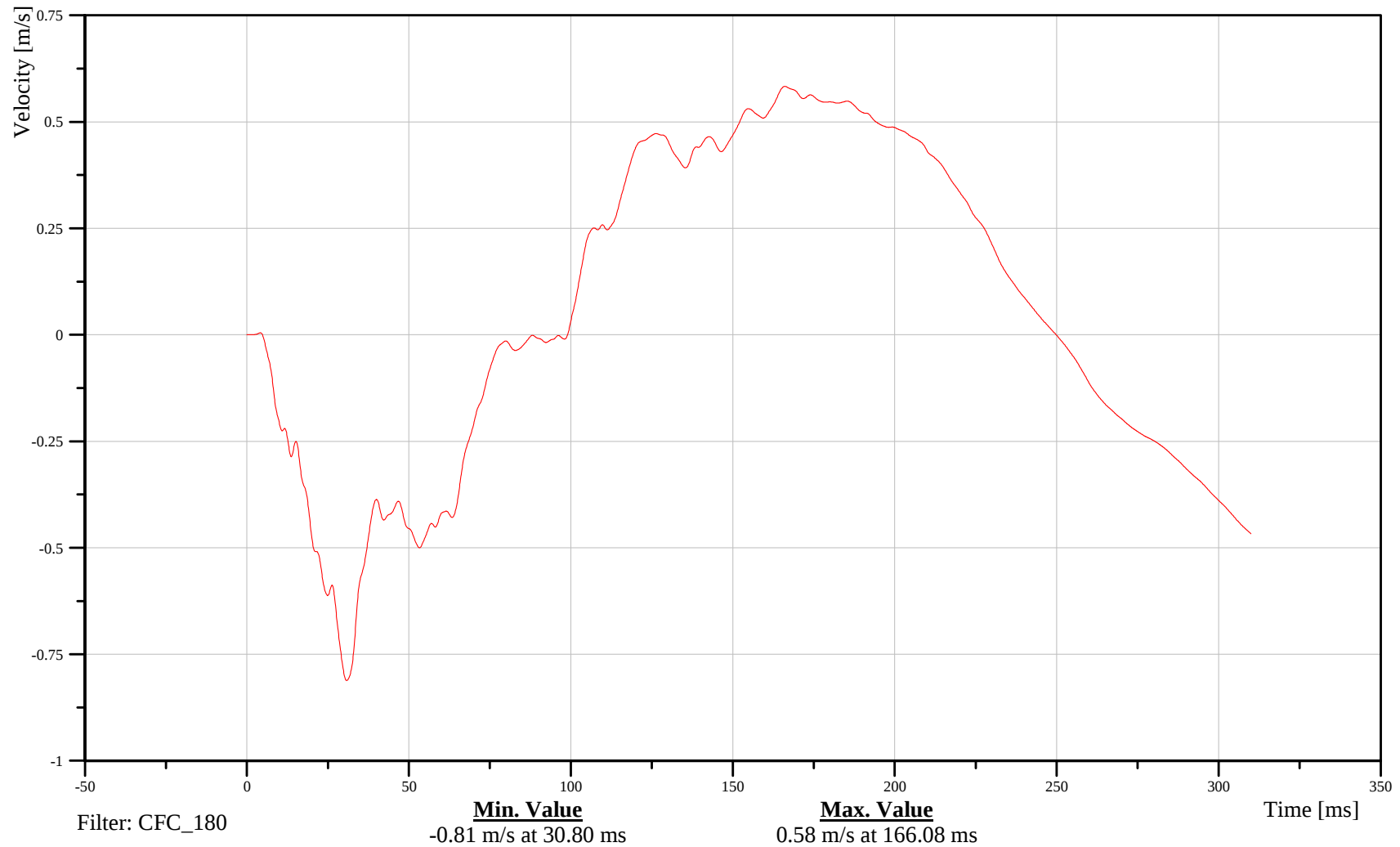
Customer: NHTSA

Test Number: C60514

16SILBRE0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-94

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

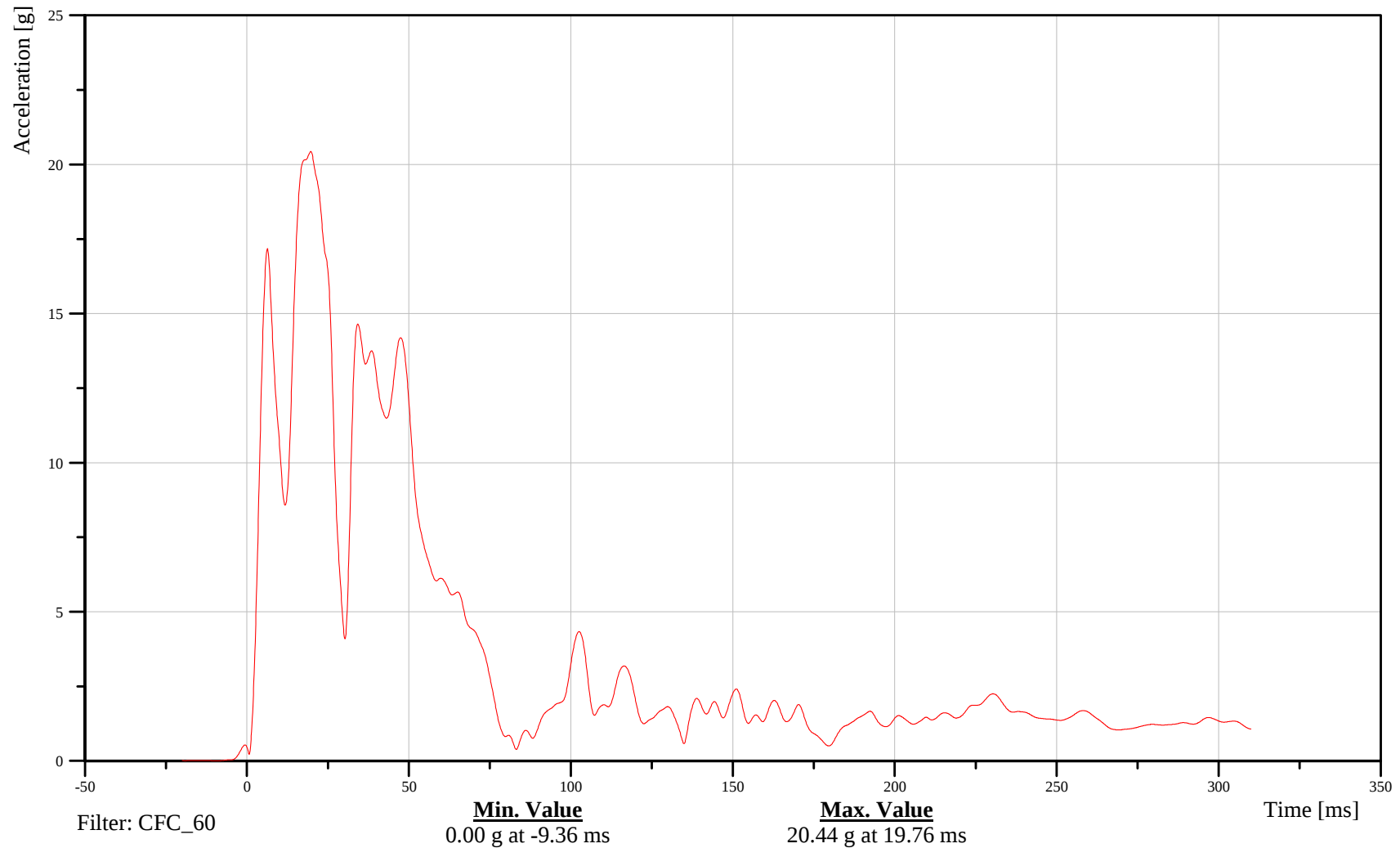
Customer: NHTSA

Test Number: C60514

16SILBRE0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-95

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION

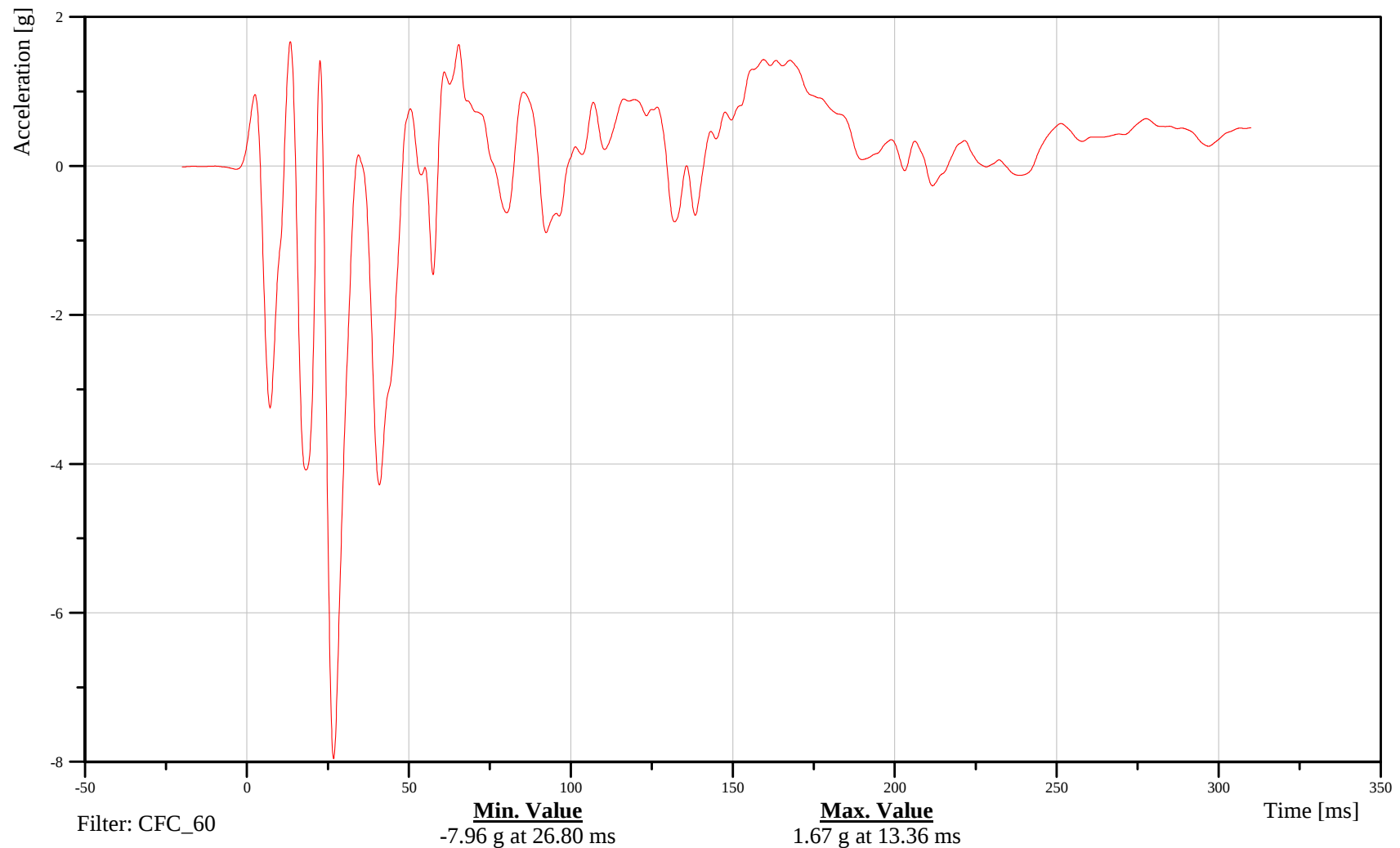
Customer: NHTSA

Test Number: C60514

18FORA000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-96

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY

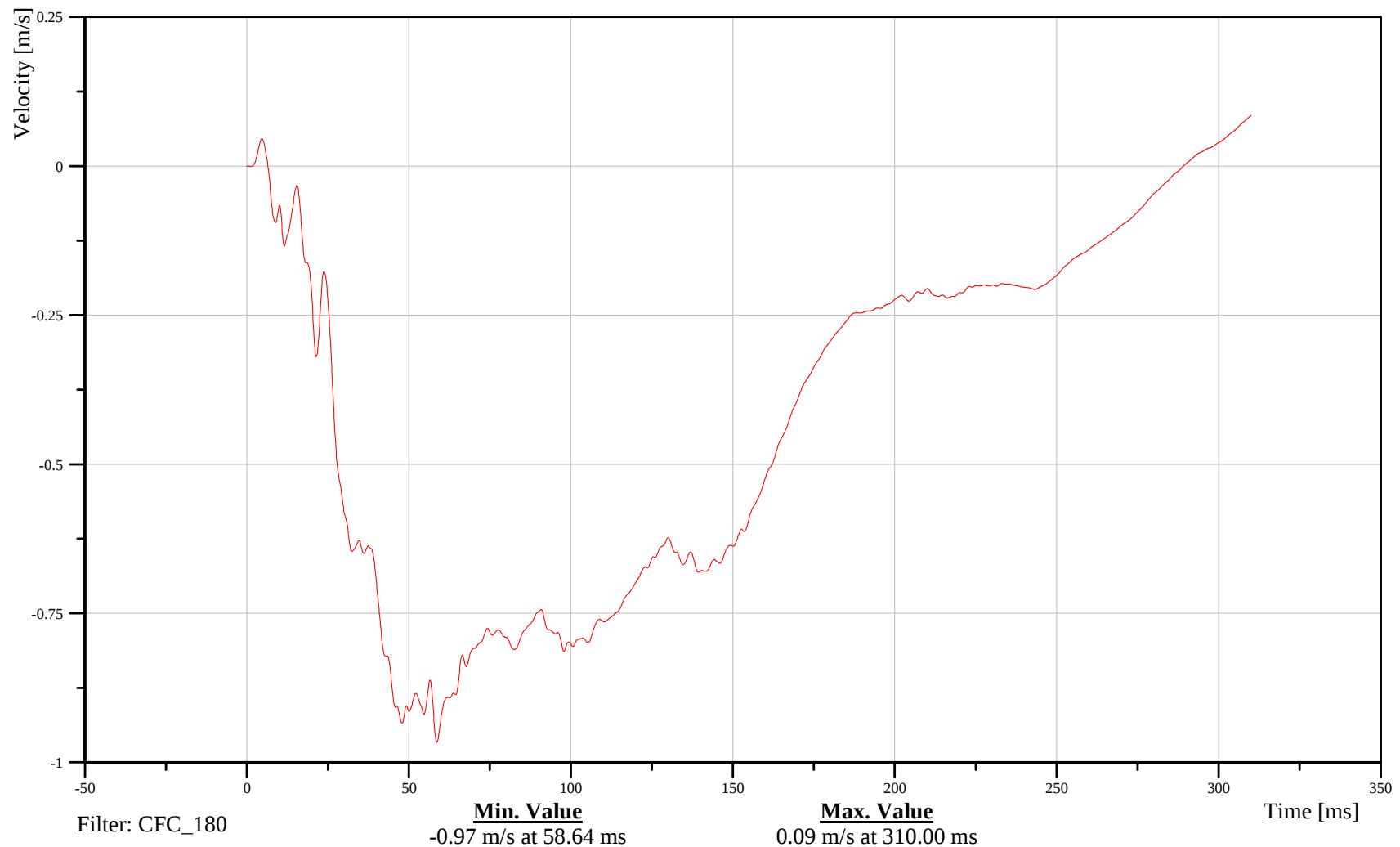
Customer: NHTSA

Test Number: C60514

18FORA000000VEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-97

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION

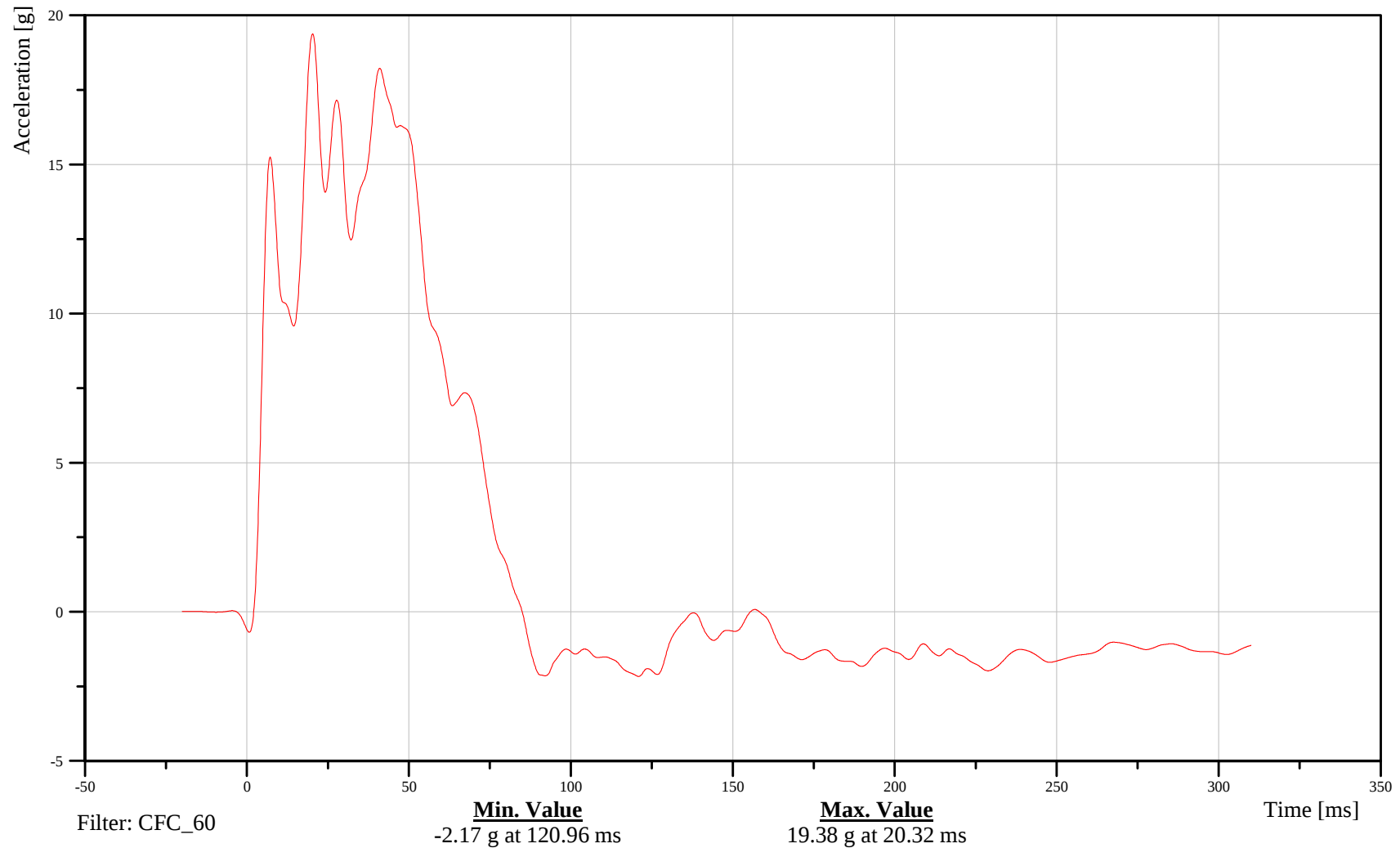
Customer: NHTSA

Test Number: C60514

18FORA000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-98

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY

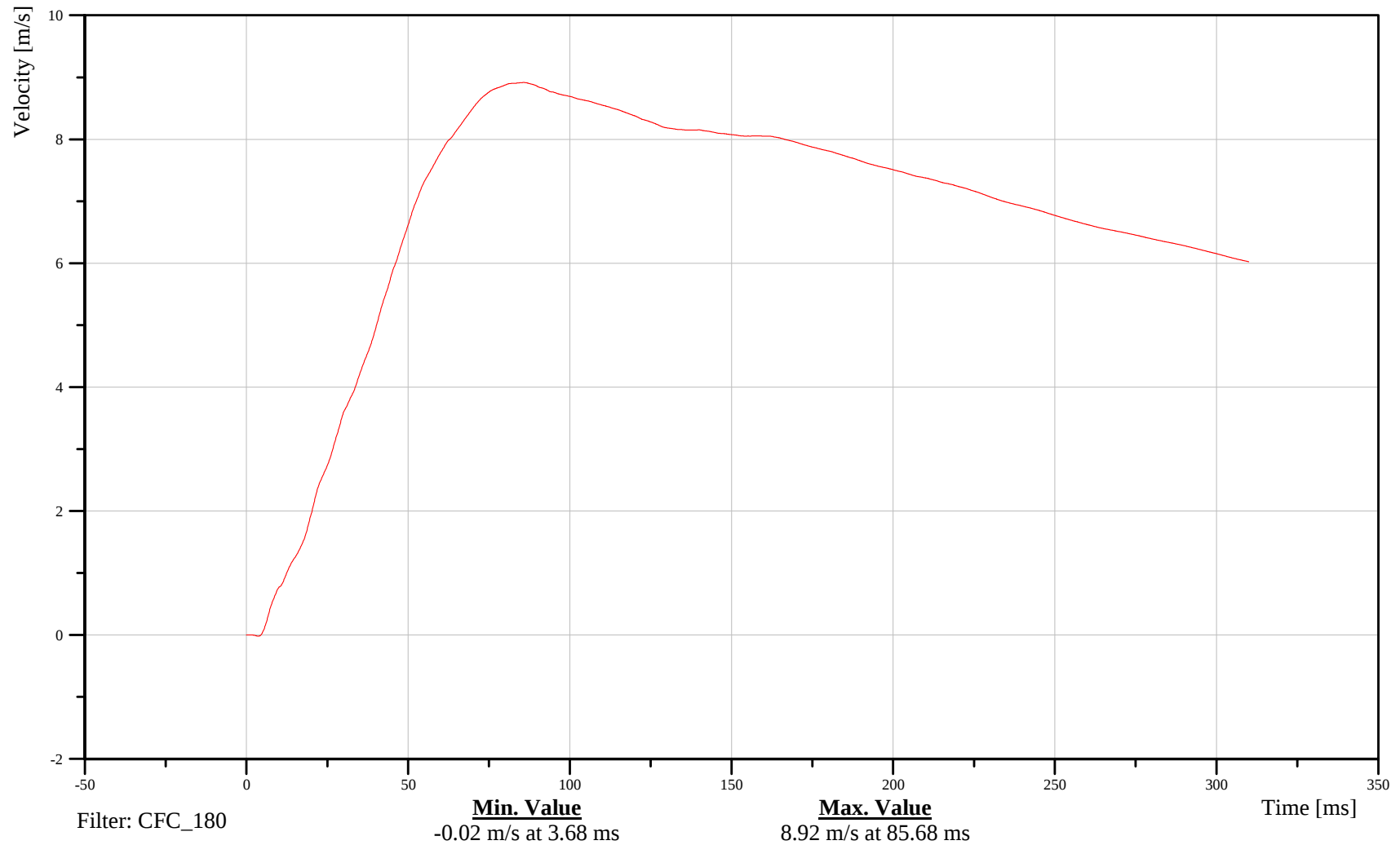
Customer: NHTSA

Test Number: C60514

18FORA000000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-99

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE Z-AXIS ACCELERATION

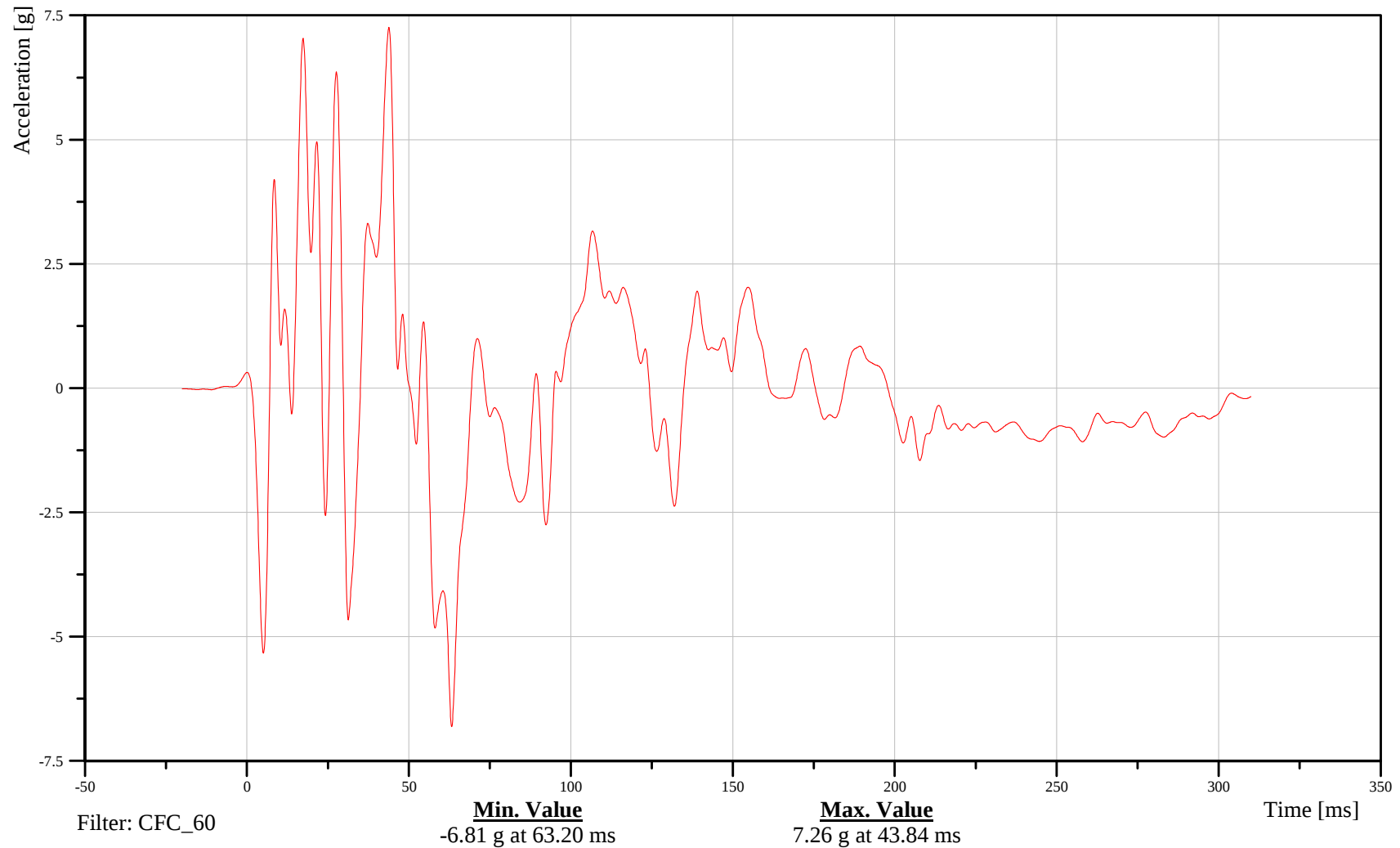
Customer: NHTSA

Test Number: C60514

18FORA000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-100

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY

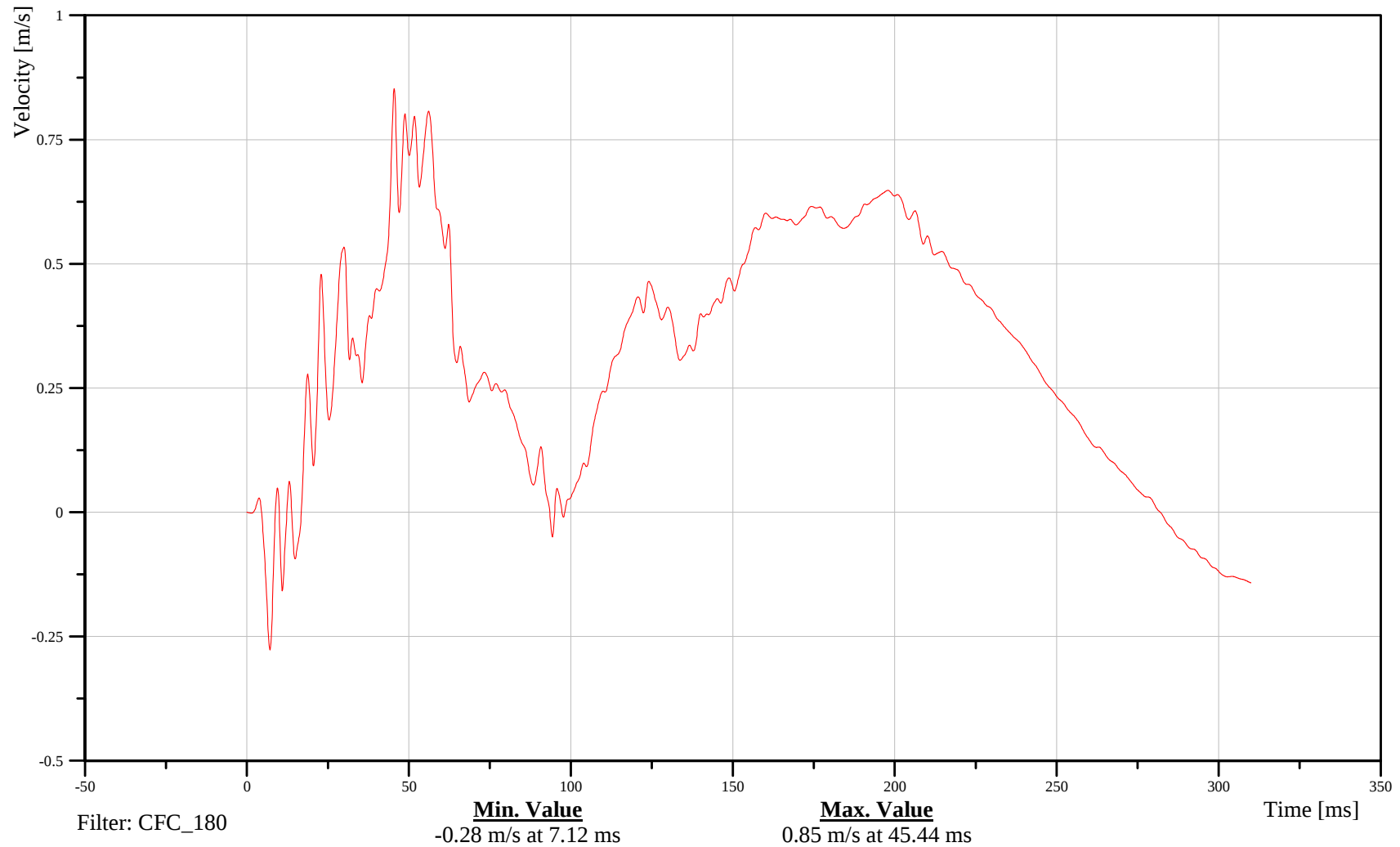
Customer: NHTSA

Test Number: C60514

18FORA000000VEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-101

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

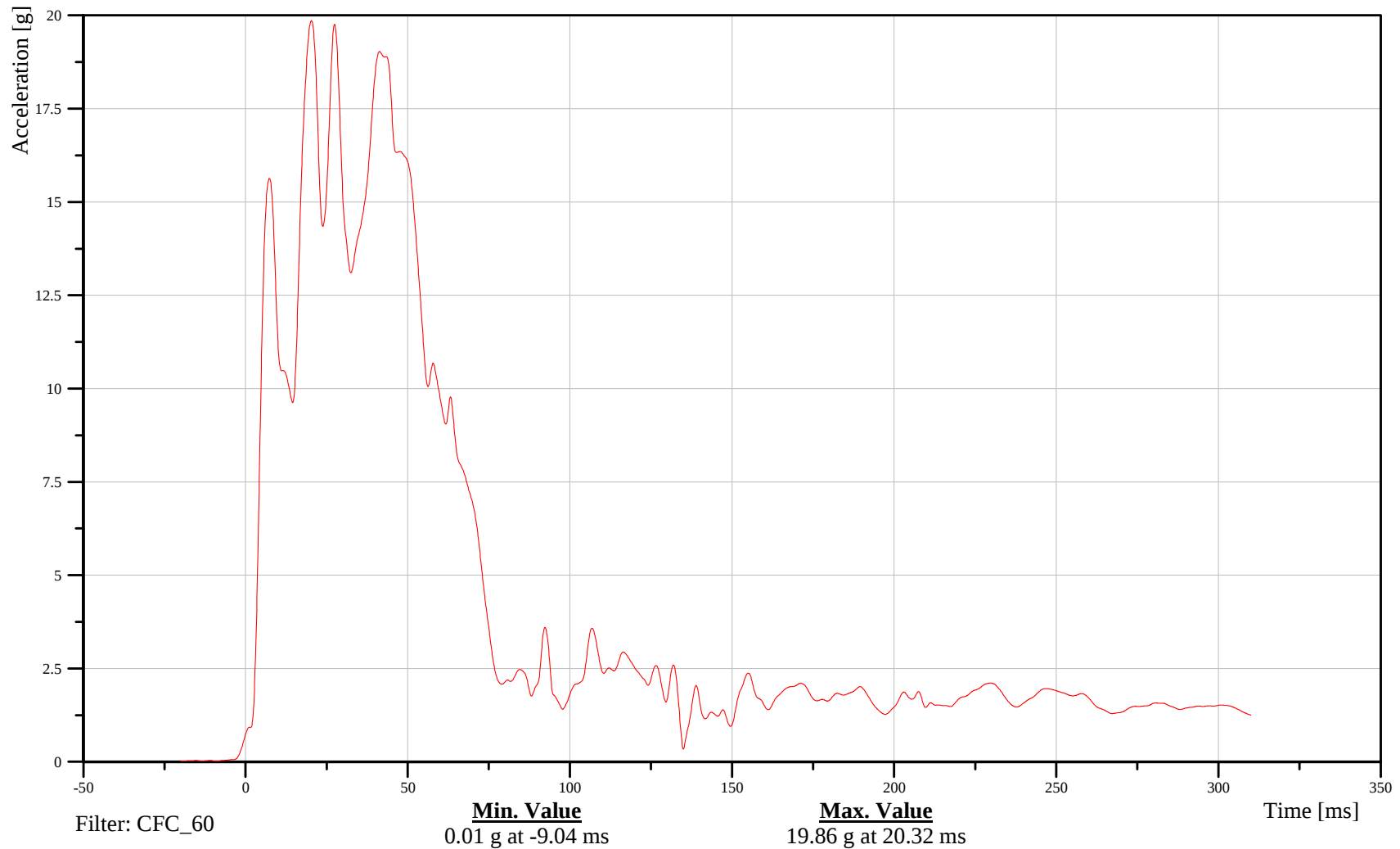
Customer: NHTSA

Test Number: C60514

18FORA000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-102

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION

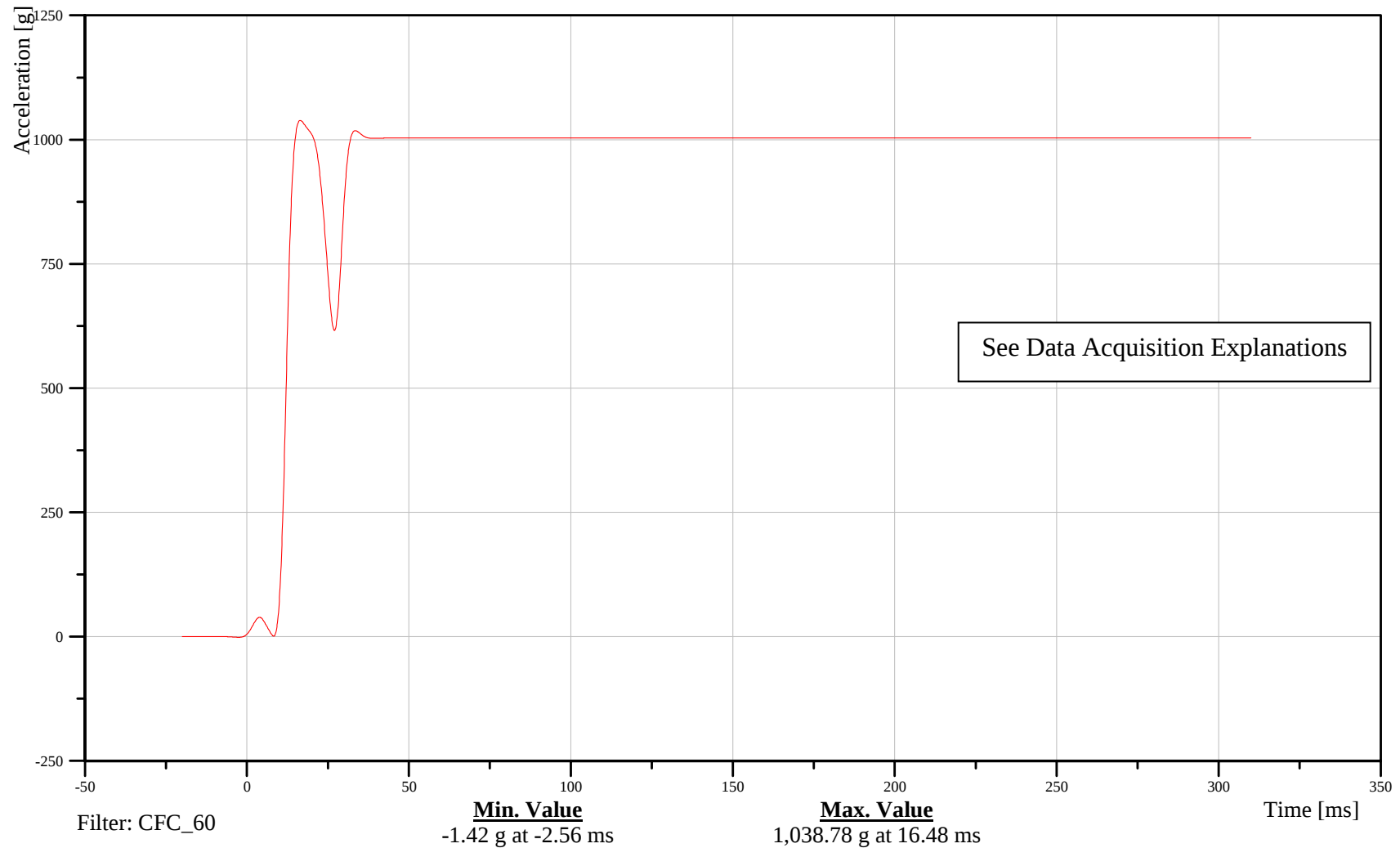
Customer: NHTSA

Test Number: C60514

14SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-103

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY

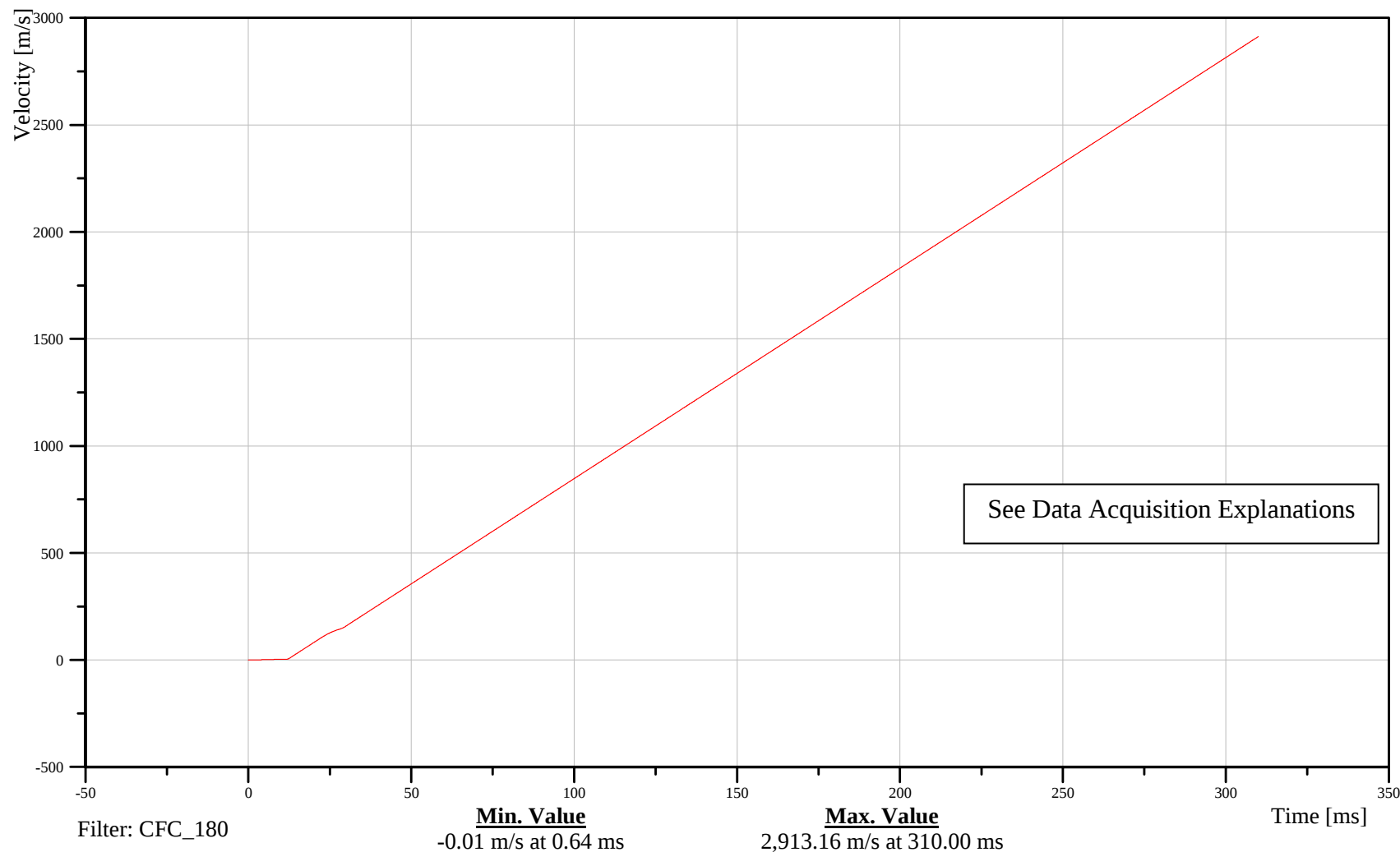
Customer: NHTSA

Test Number: C60514

14SILBFR0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-104

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT

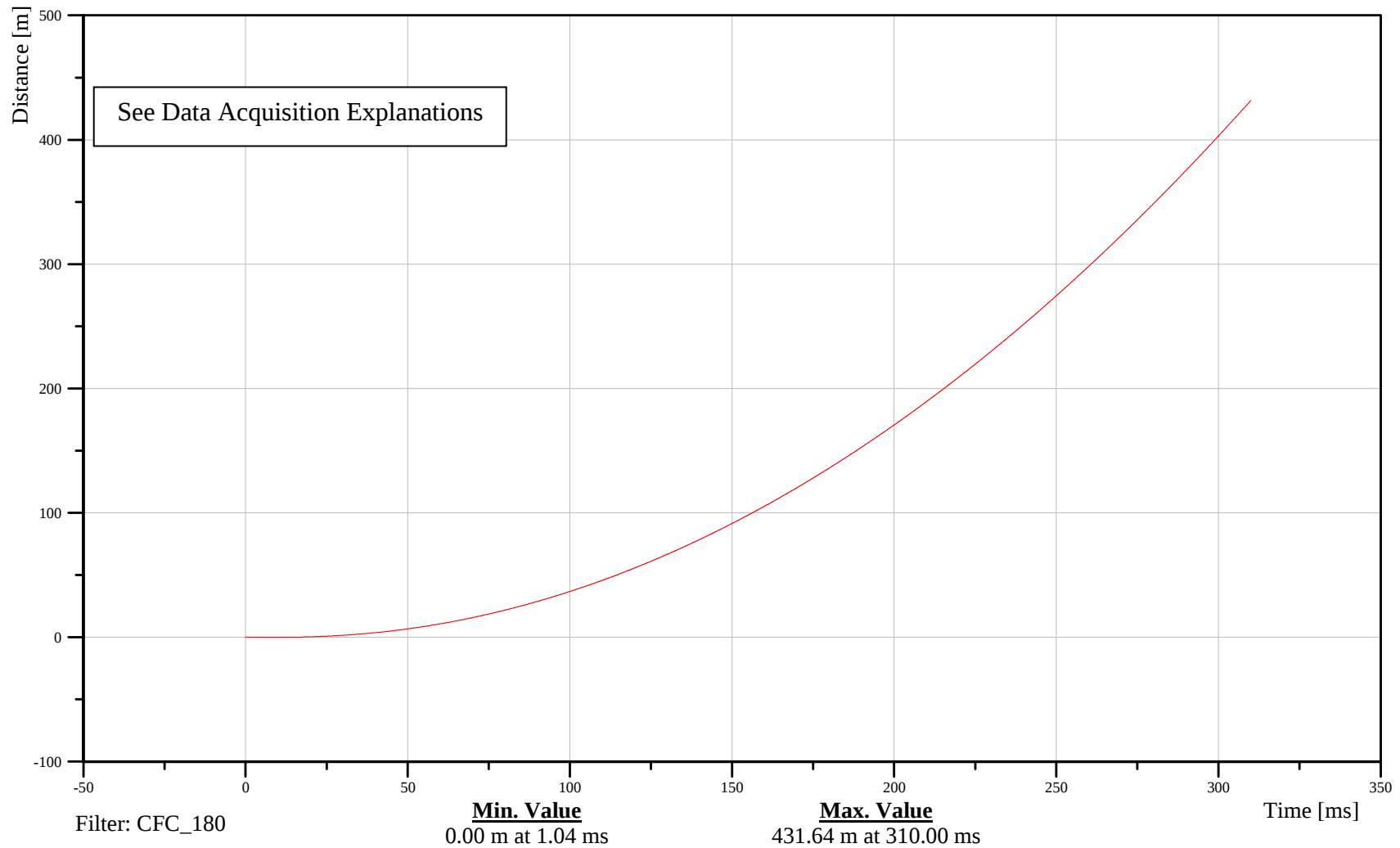
Customer: NHTSA

Test Number: C60514

14SILBFR0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-105

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION

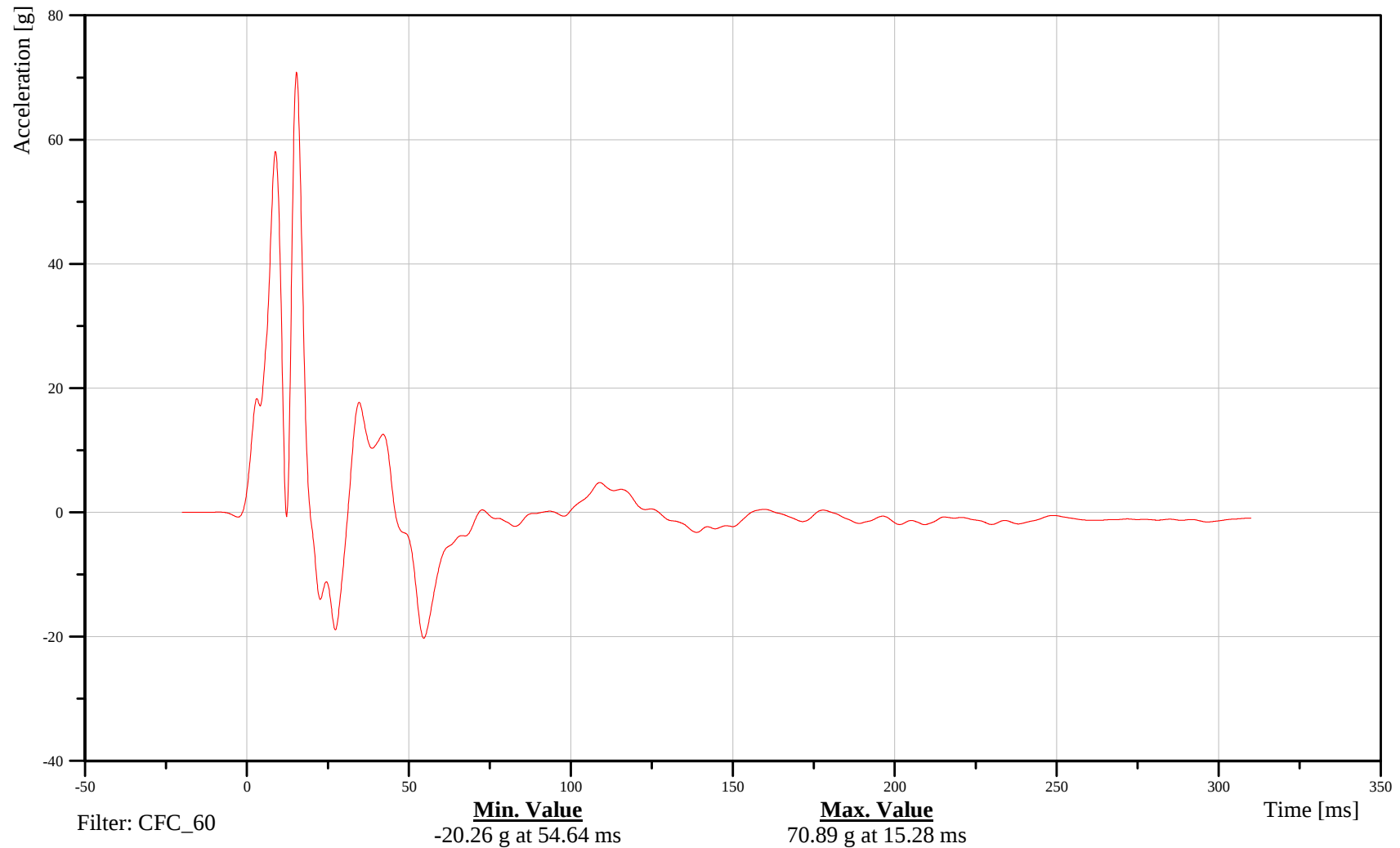
Customer: NHTSA

Test Number: C60514

14SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-106

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY

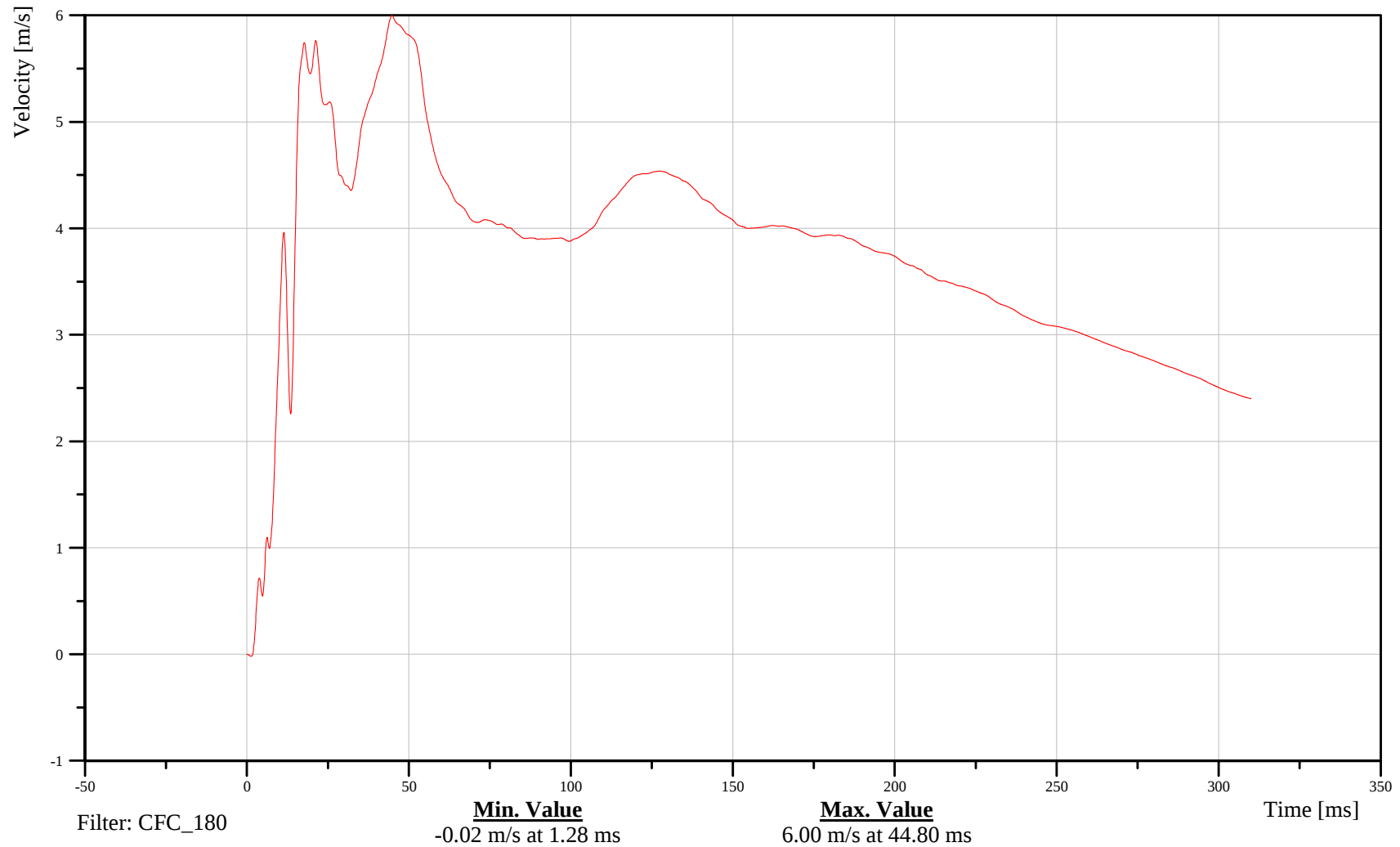
Customer: NHTSA

Test Number: C60514

14SILBRE0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-107

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT

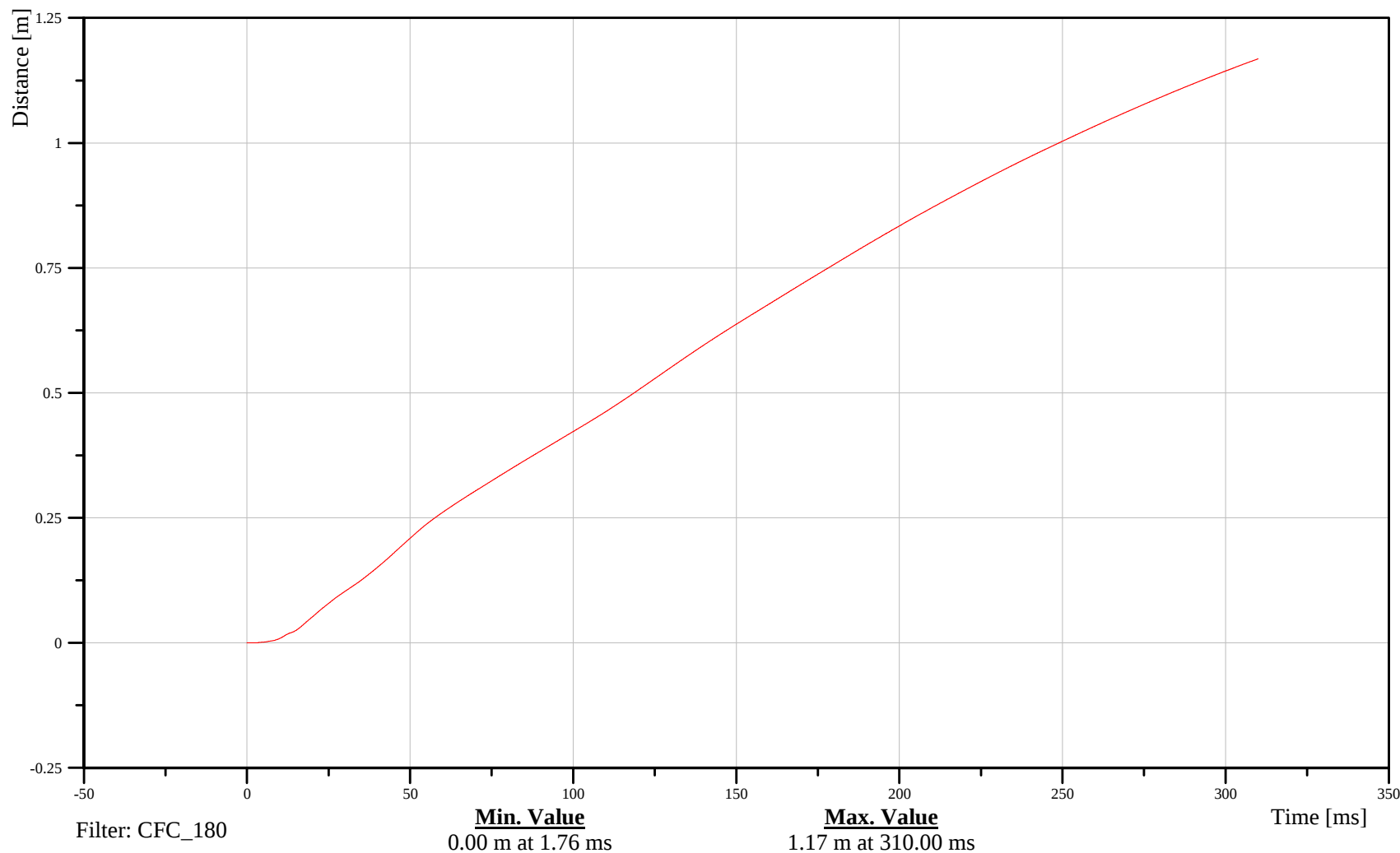
Customer: NHTSA

Test Number: C60514

14SILBRE0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-108

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

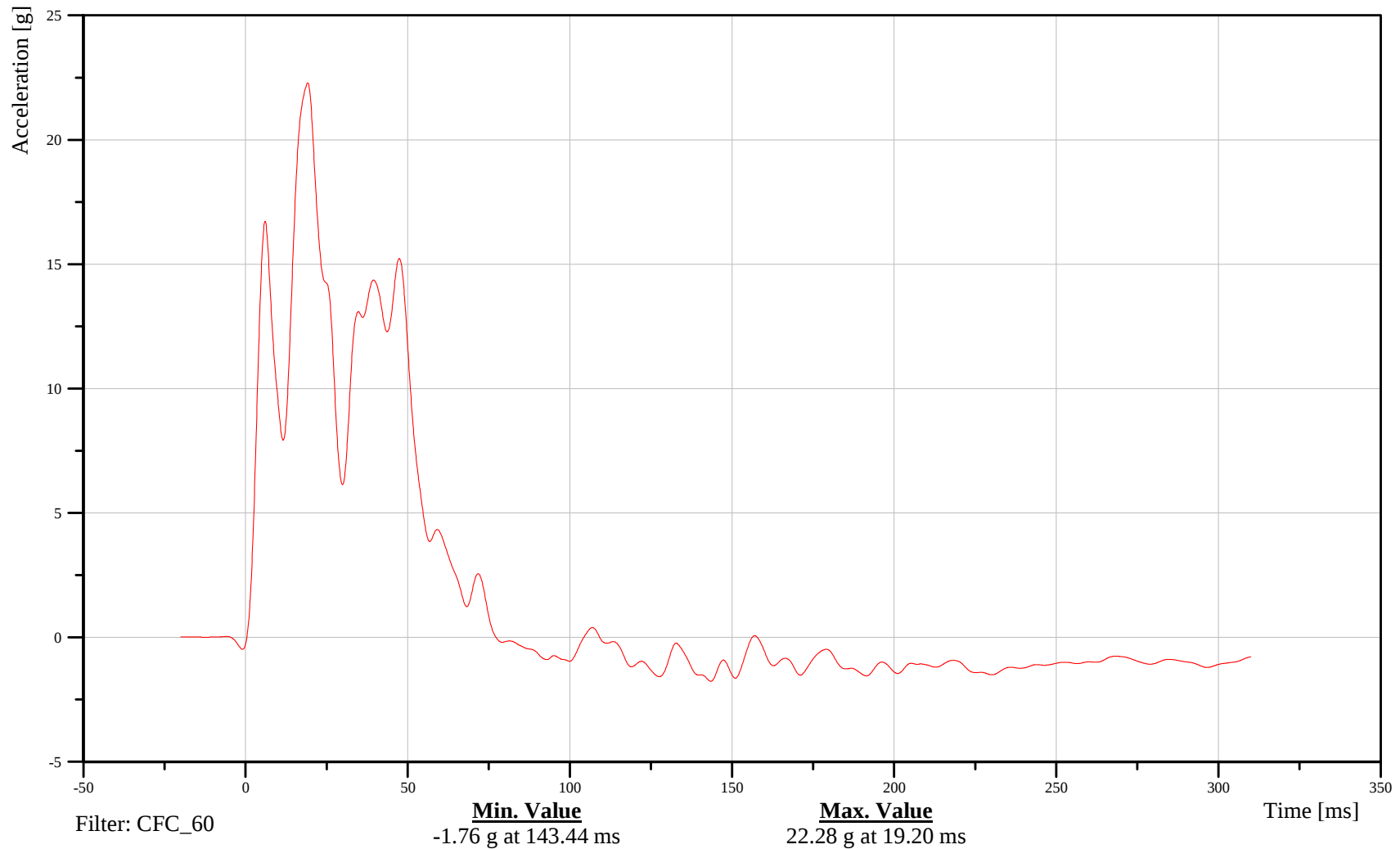
Date: 07/14/2006
Time: 13:32

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60514

16VEHCRE0000ACYD

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-109

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY

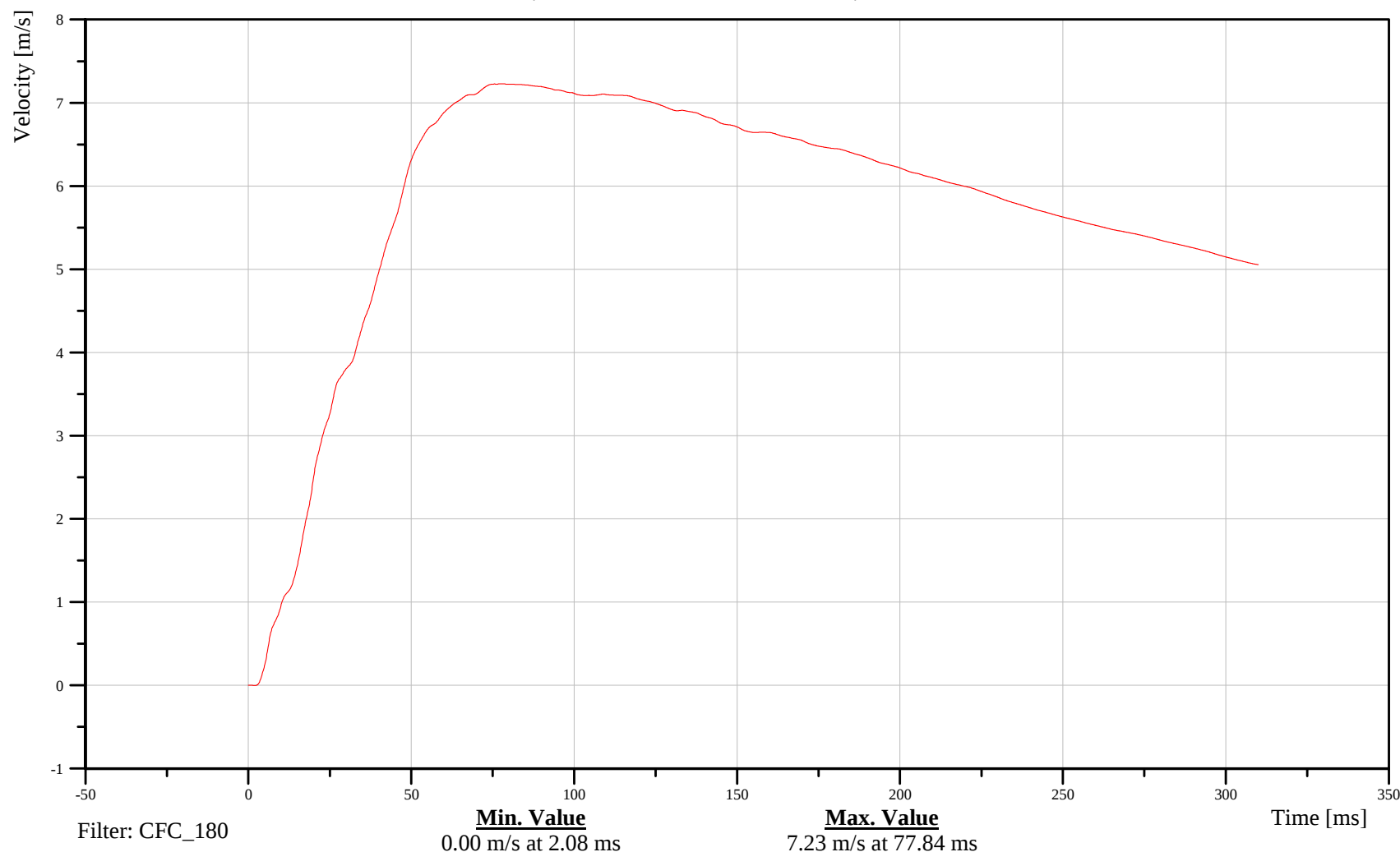
Customer: NHTSA

Test Number: C60514

16VEHCRE0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-110

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT

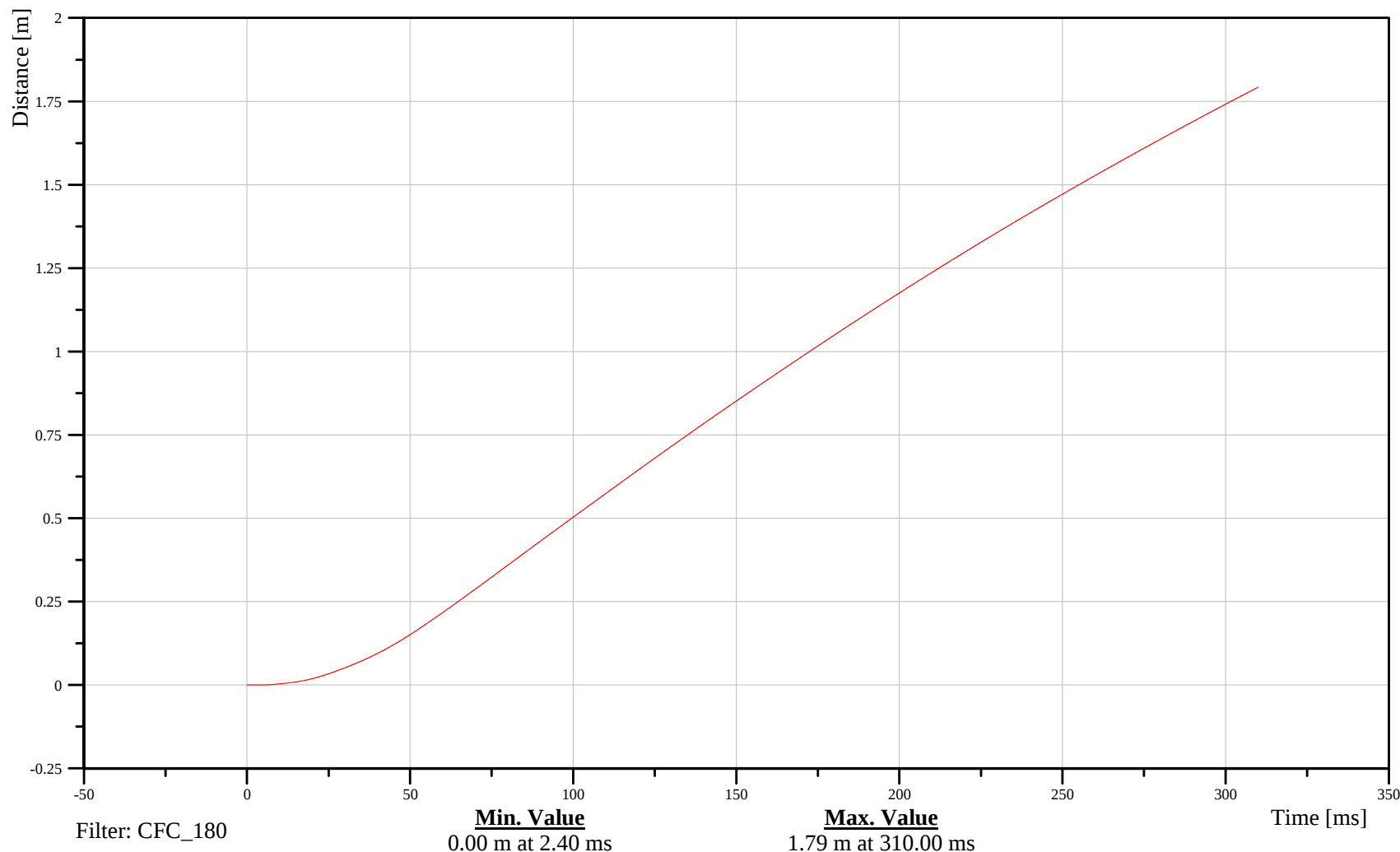
Customer: NHTSA

Test Number: C60514

16VEHCRE0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-111

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT LOWER A-POST Y-AXIS ACCELERATION

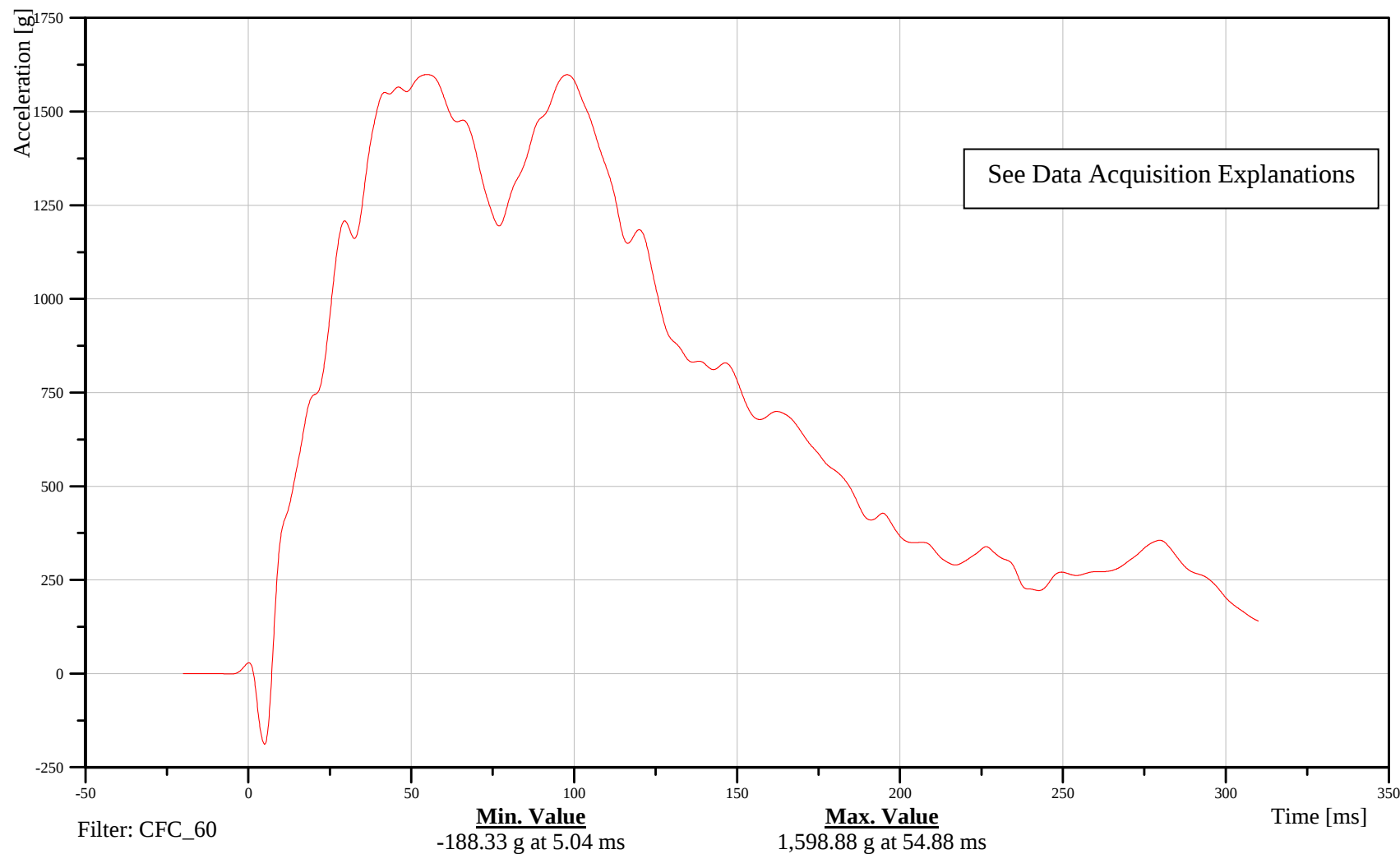
Customer: NHTSA

Test Number: C60514

11APILO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-112

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT LOWER A-POST Y-AXIS VELOCITY

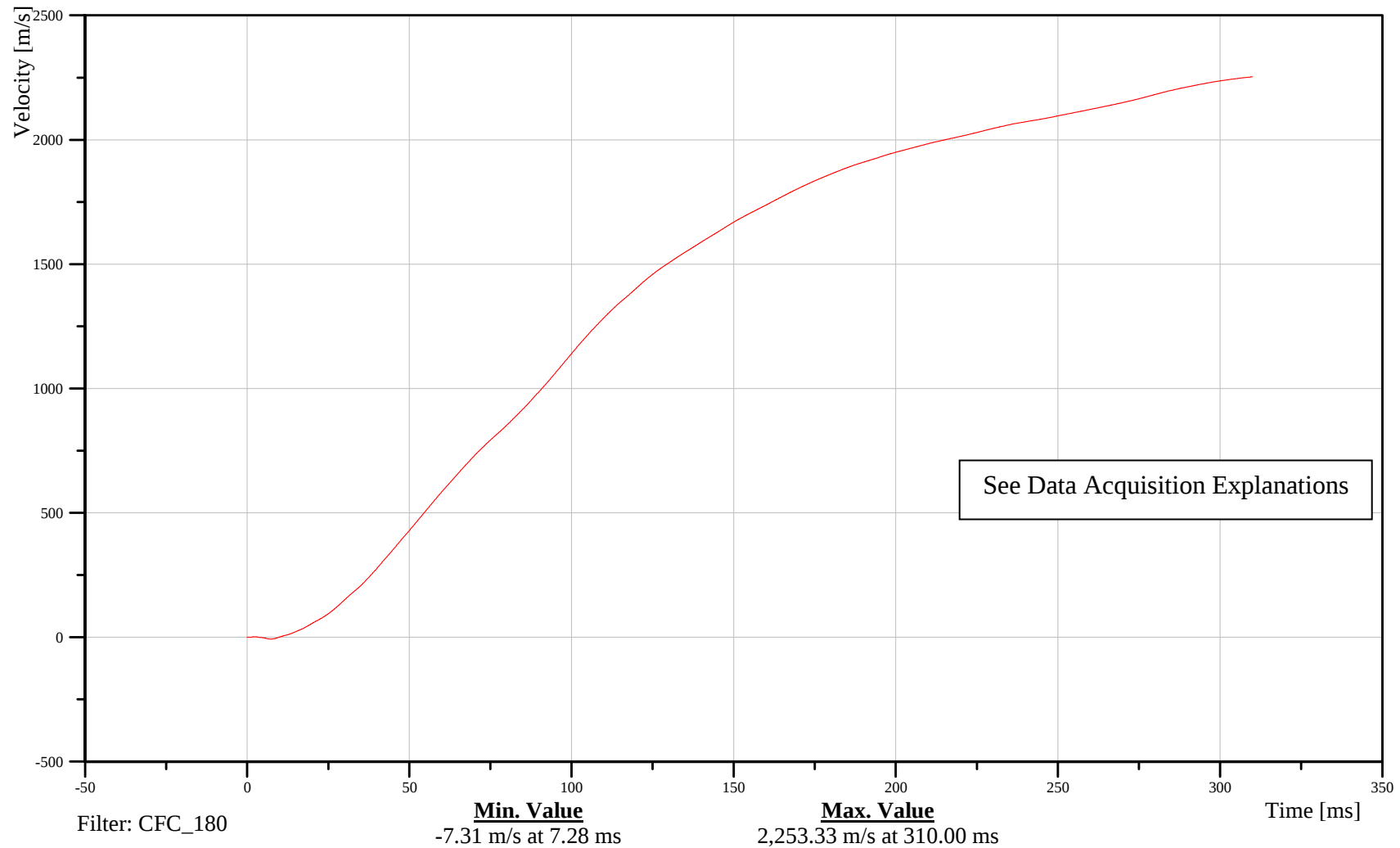
Customer: NHTSA

Test Number: C60514

11APILLO0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-113

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT MIDDLE A-POST Y-AXIS ACCELERATION

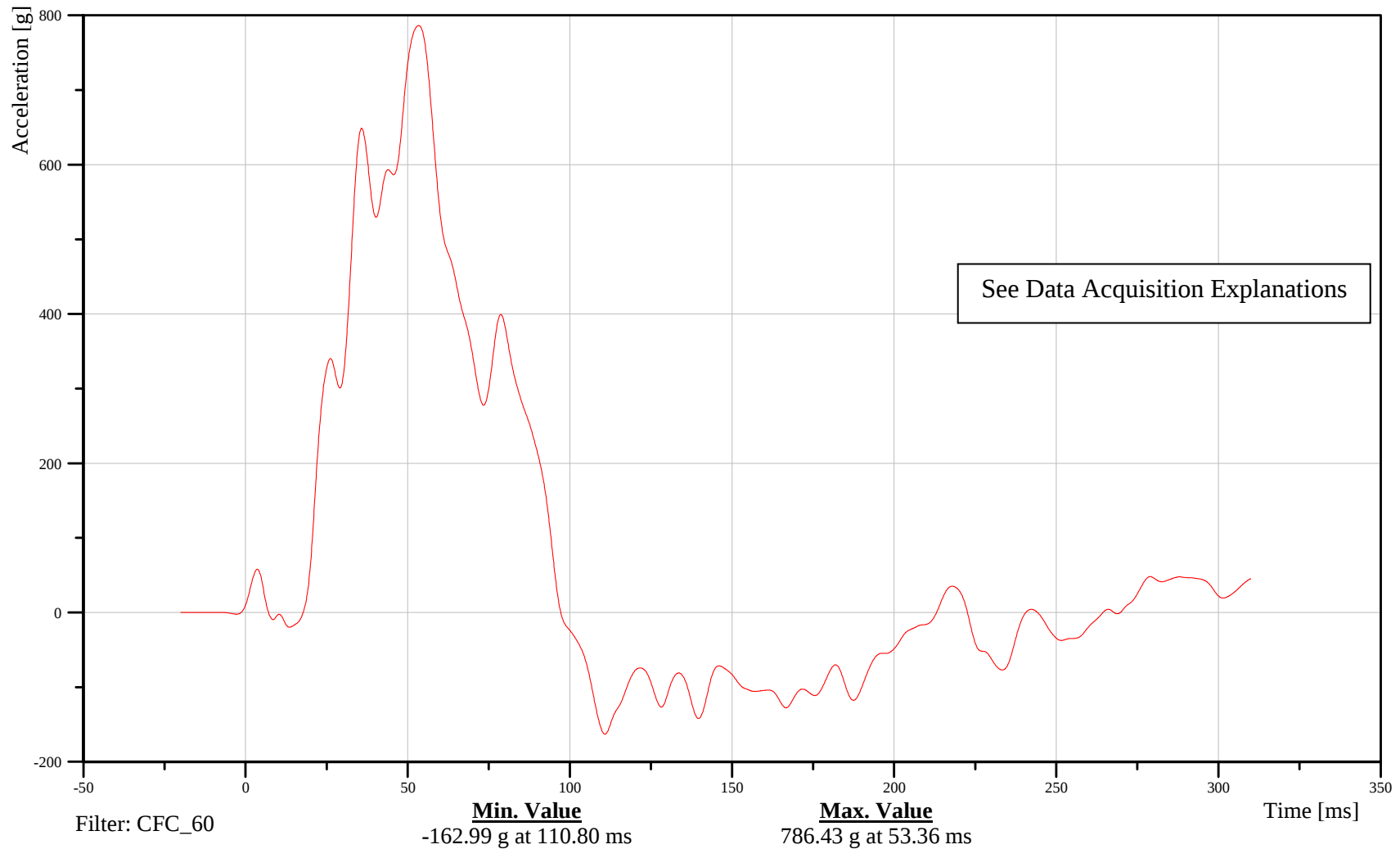
Customer: NHTSA

Test Number: C60514

11APILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-114

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT MIDDLE A-POST Y-AXIS VELOCITY

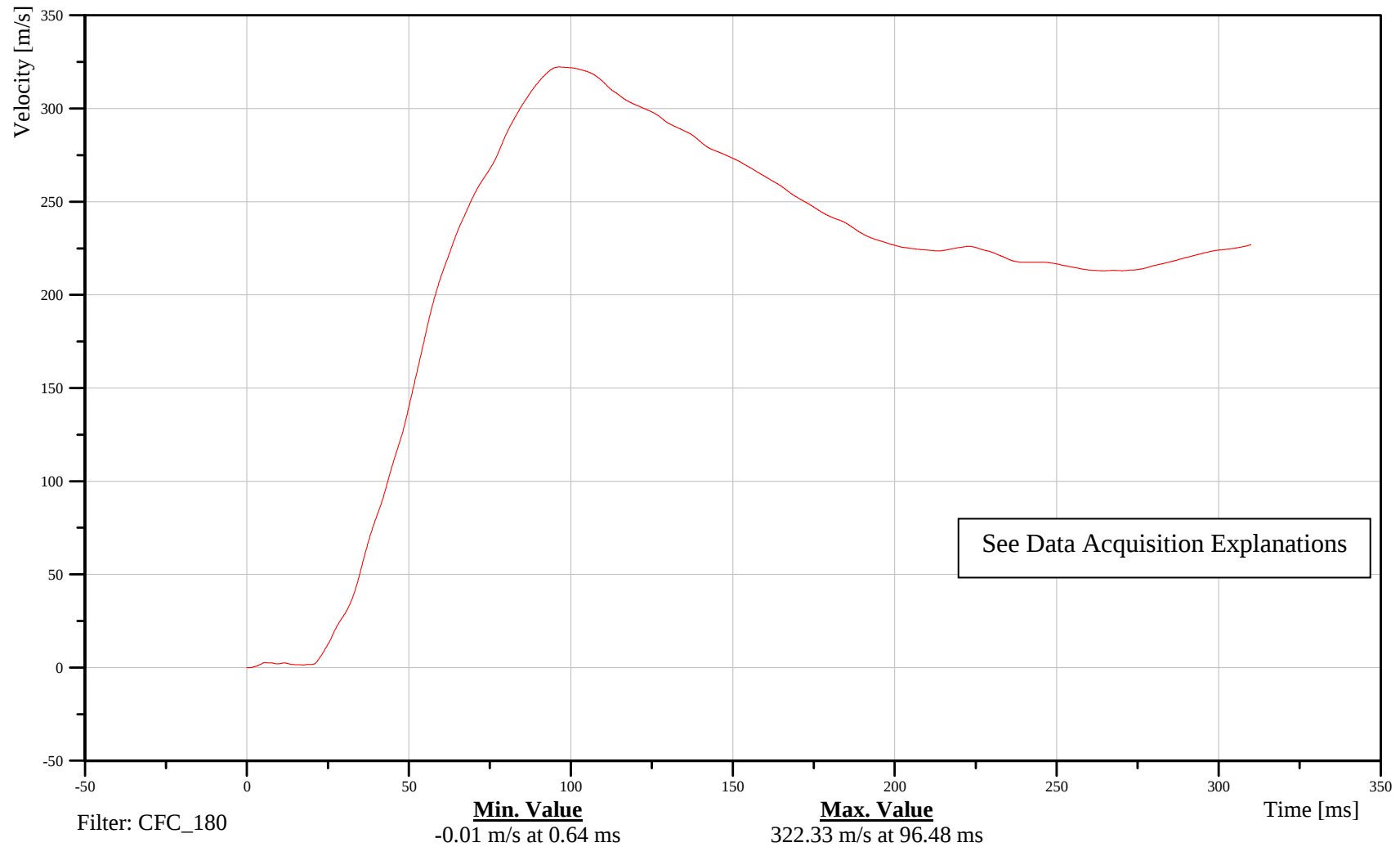
Customer: NHTSA

Test Number: C60514

11APILMI0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-115

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT LOWER B-POST Y-AXIS ACCELERATION

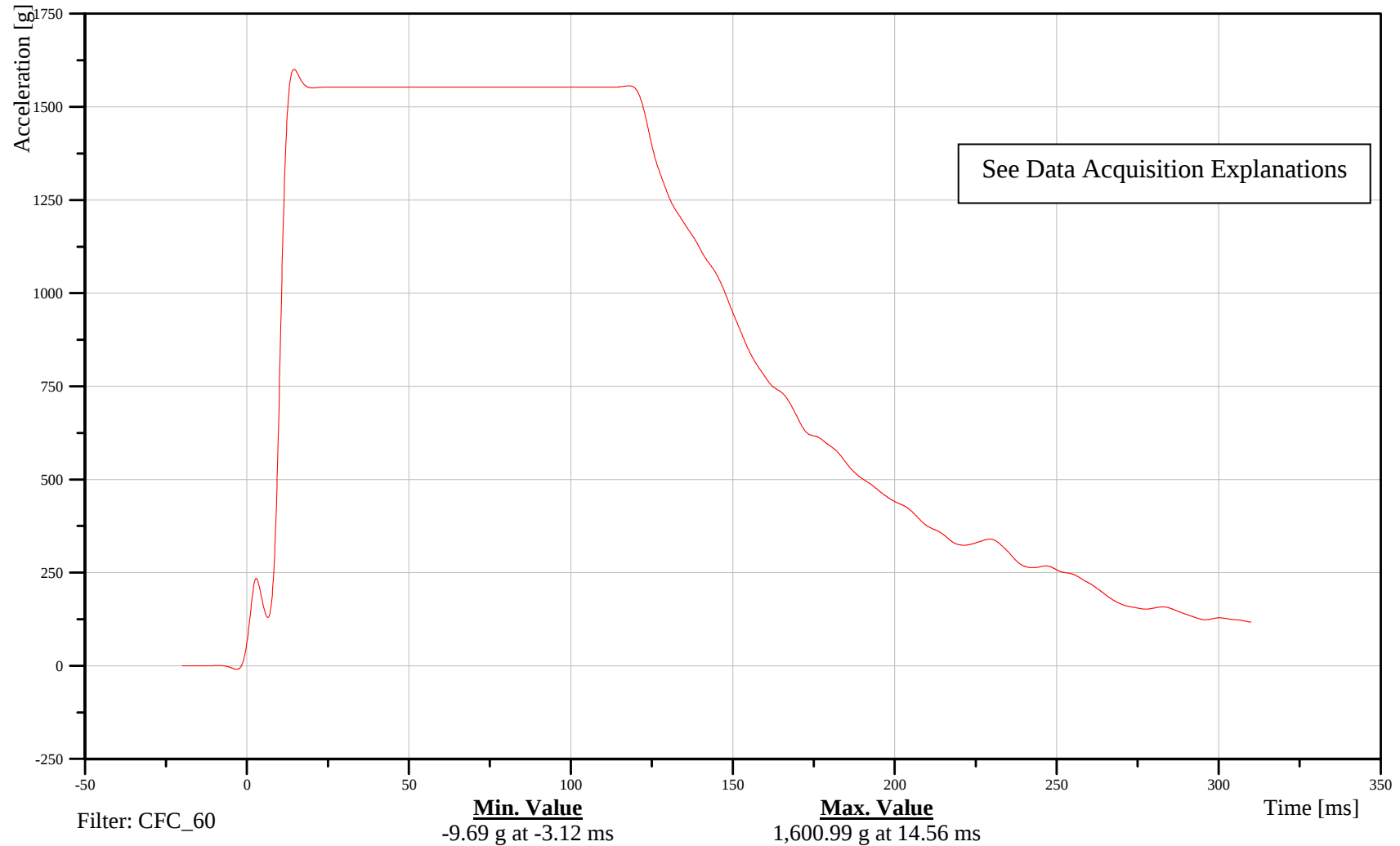
Customer: NHTSA

Test Number: C60514

14BPILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-116

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT LOWER B-POST Y-AXIS VELOCITY

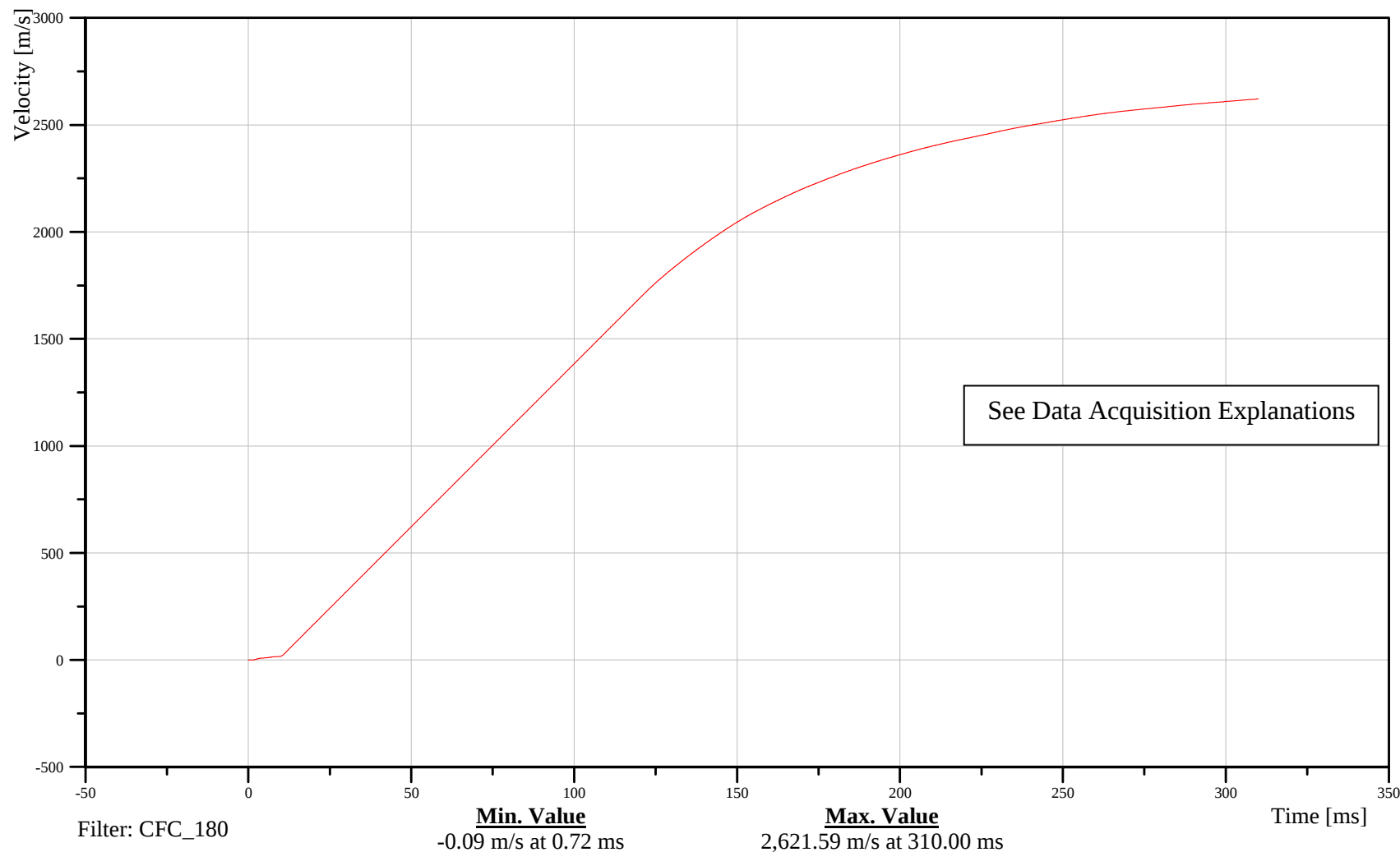
Customer: NHTSA

Test Number: C60514

14BPILLO0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-117

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT MIDDLE B-POST Y-AXIS ACCELERATION

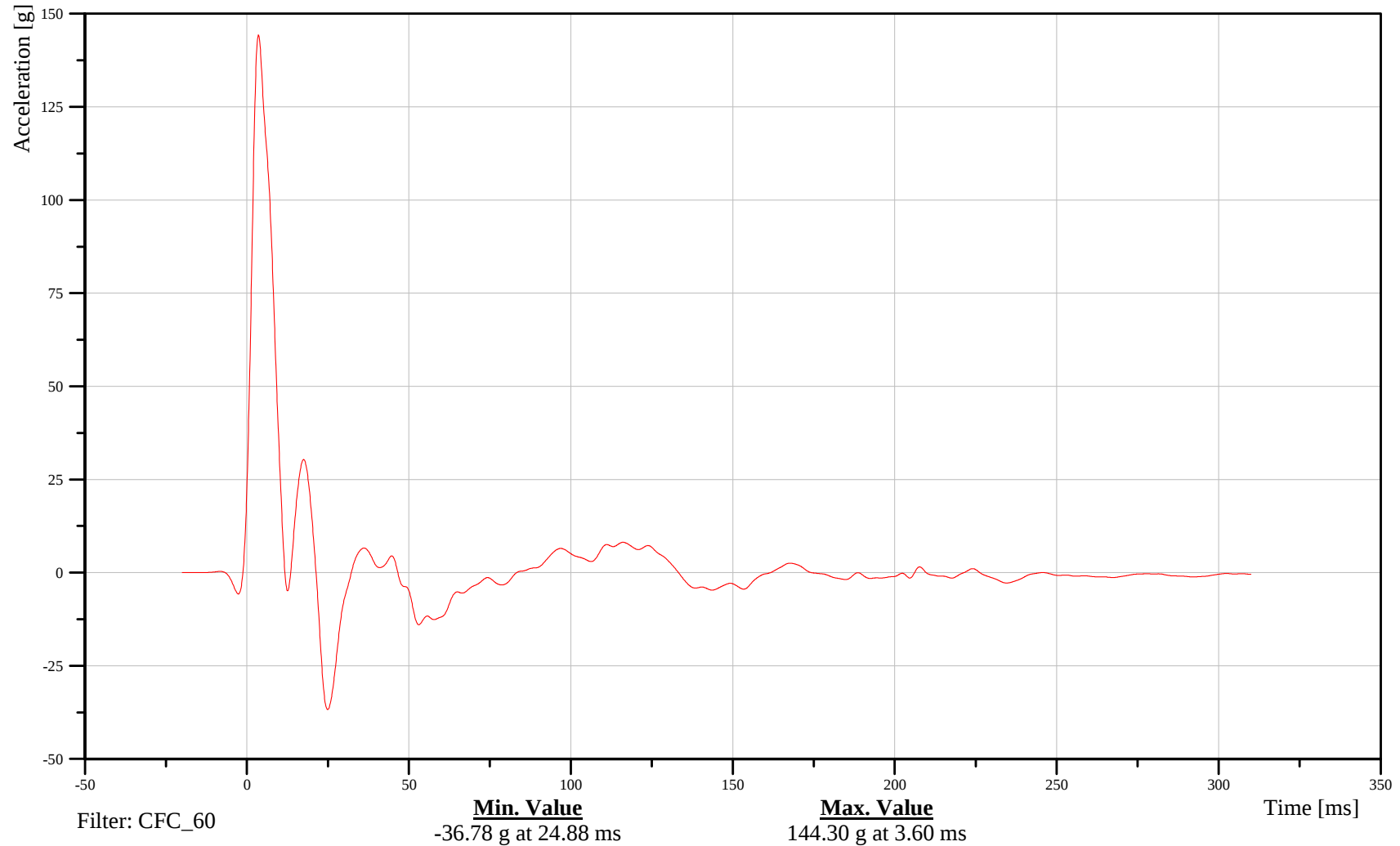
Customer: NHTSA

Test Number: C60514

14BPILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-118

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

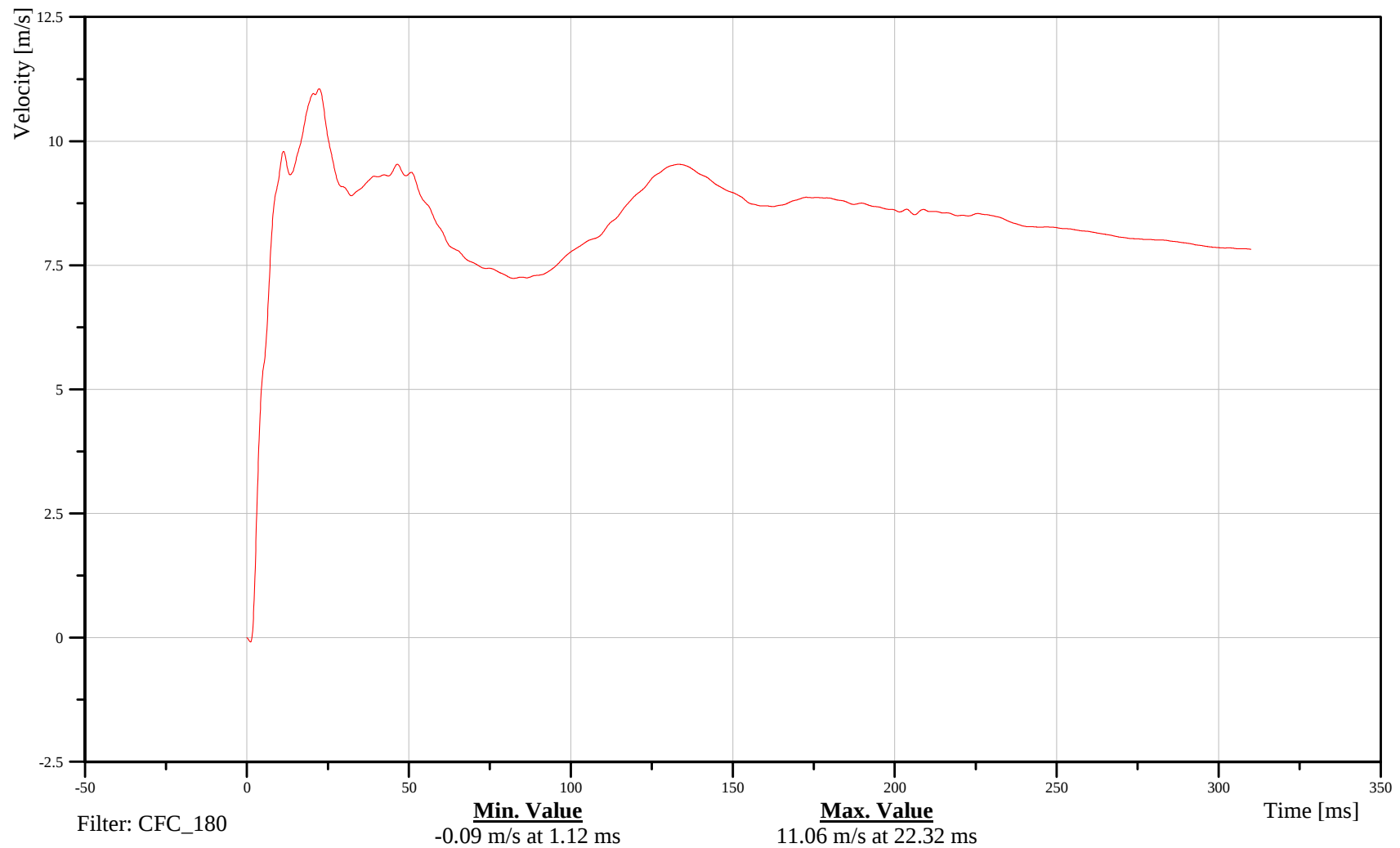
Date: 07/14/2006
Time: 13:32

LEFT MIDDLE B-POST Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

14BPILMI0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-119

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION

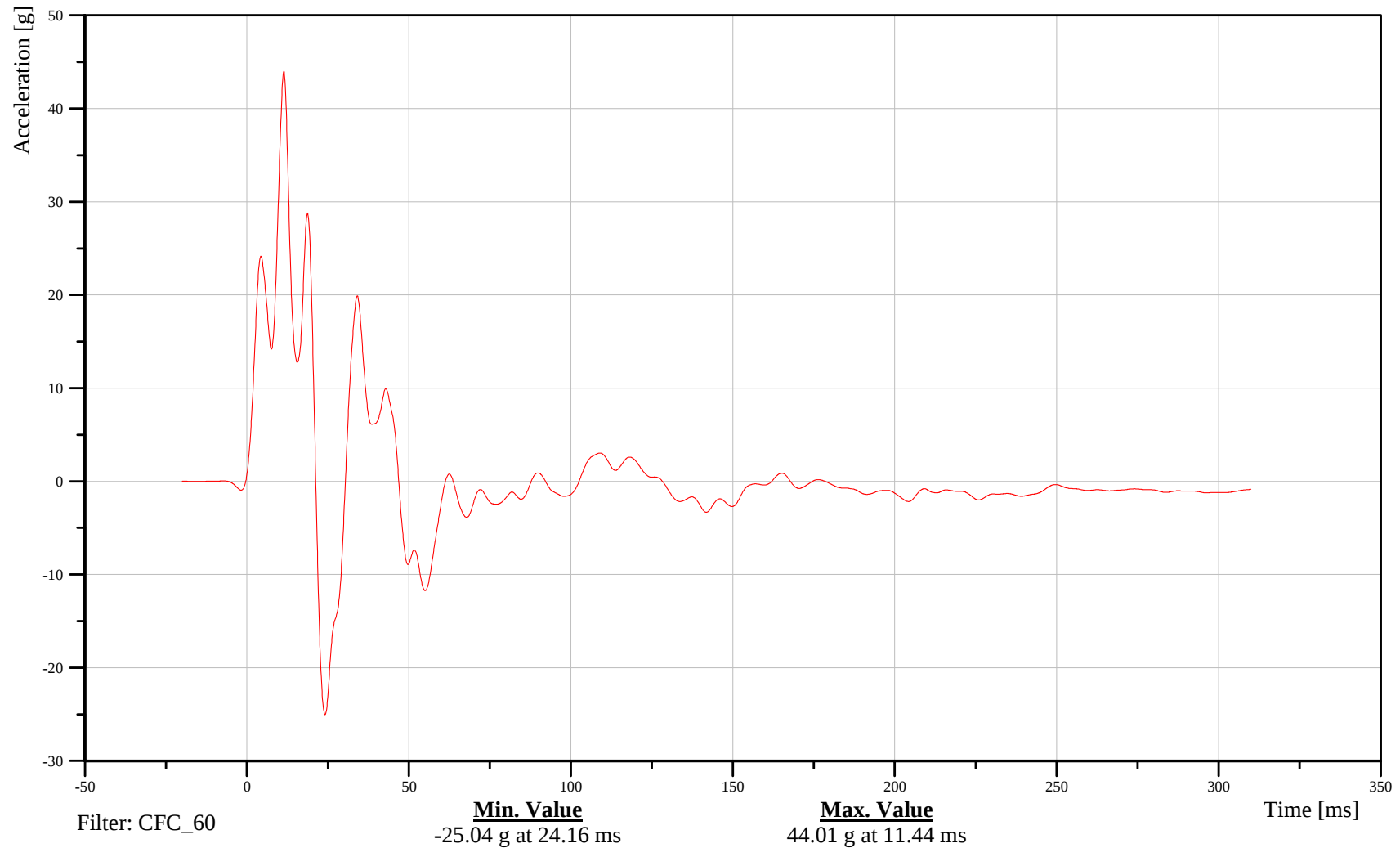
Customer: NHTSA

Test Number: C60514

11SETRFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-120

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT FRONT SEAT TRACK Y-AXIS VELOCITY

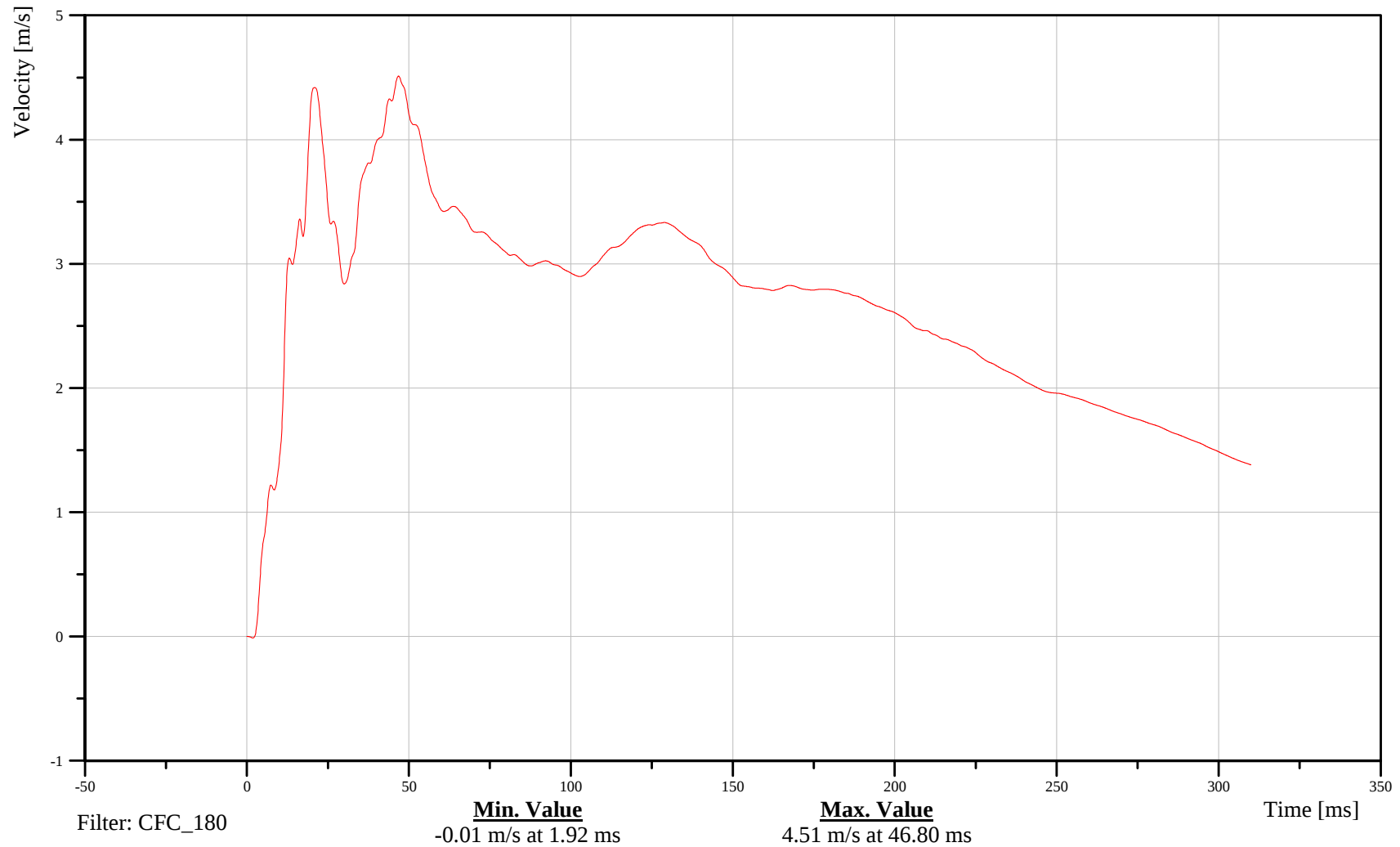
Customer: NHTSA

Test Number: C60514

11SETRFR0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-121

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

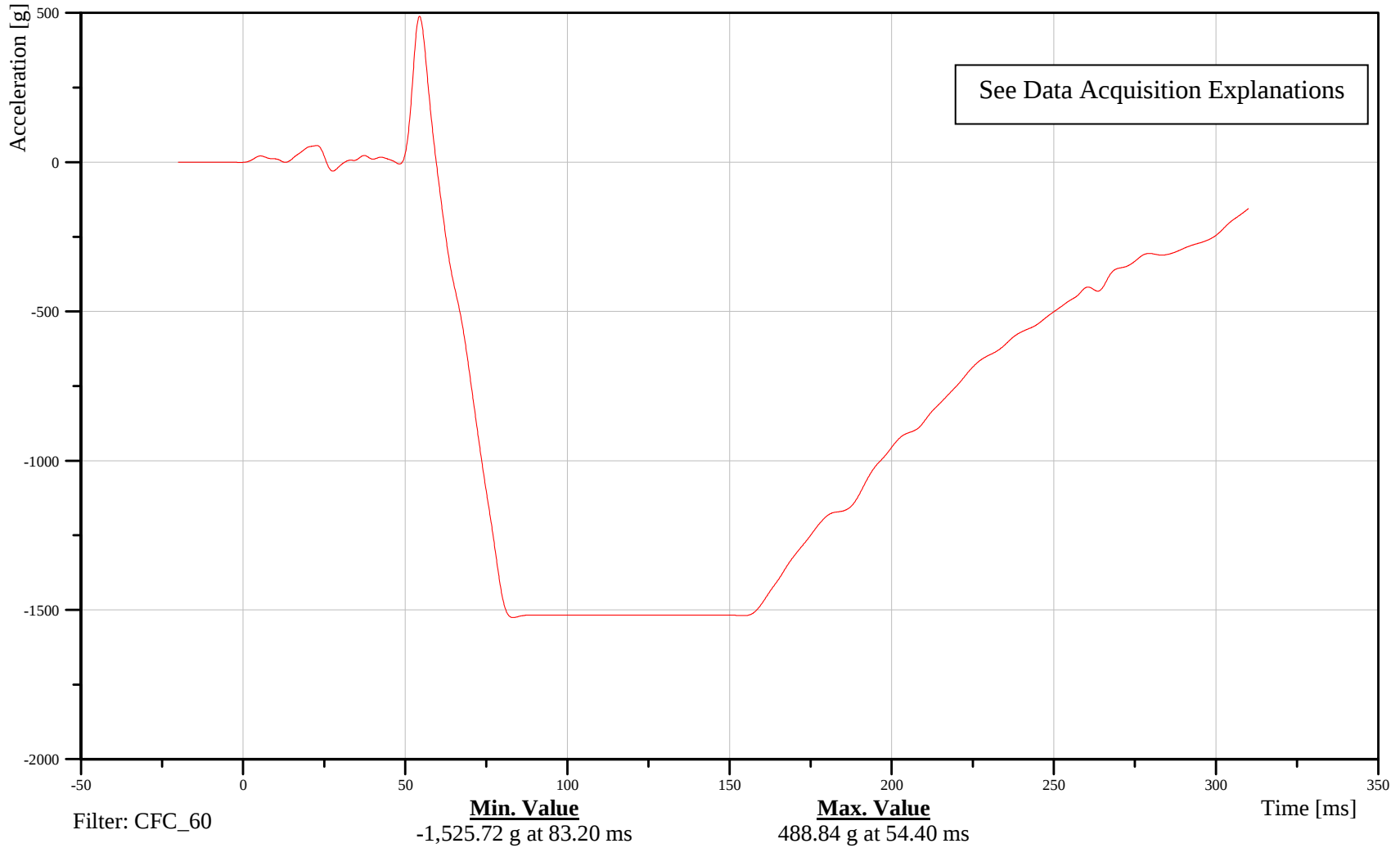
Date: 07/14/2006
Time: 13:32

LEFT REAR SEAT TRACK Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60514

14SETRLERE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-122

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR SEAT TRACK Y-AXIS VELOCITY

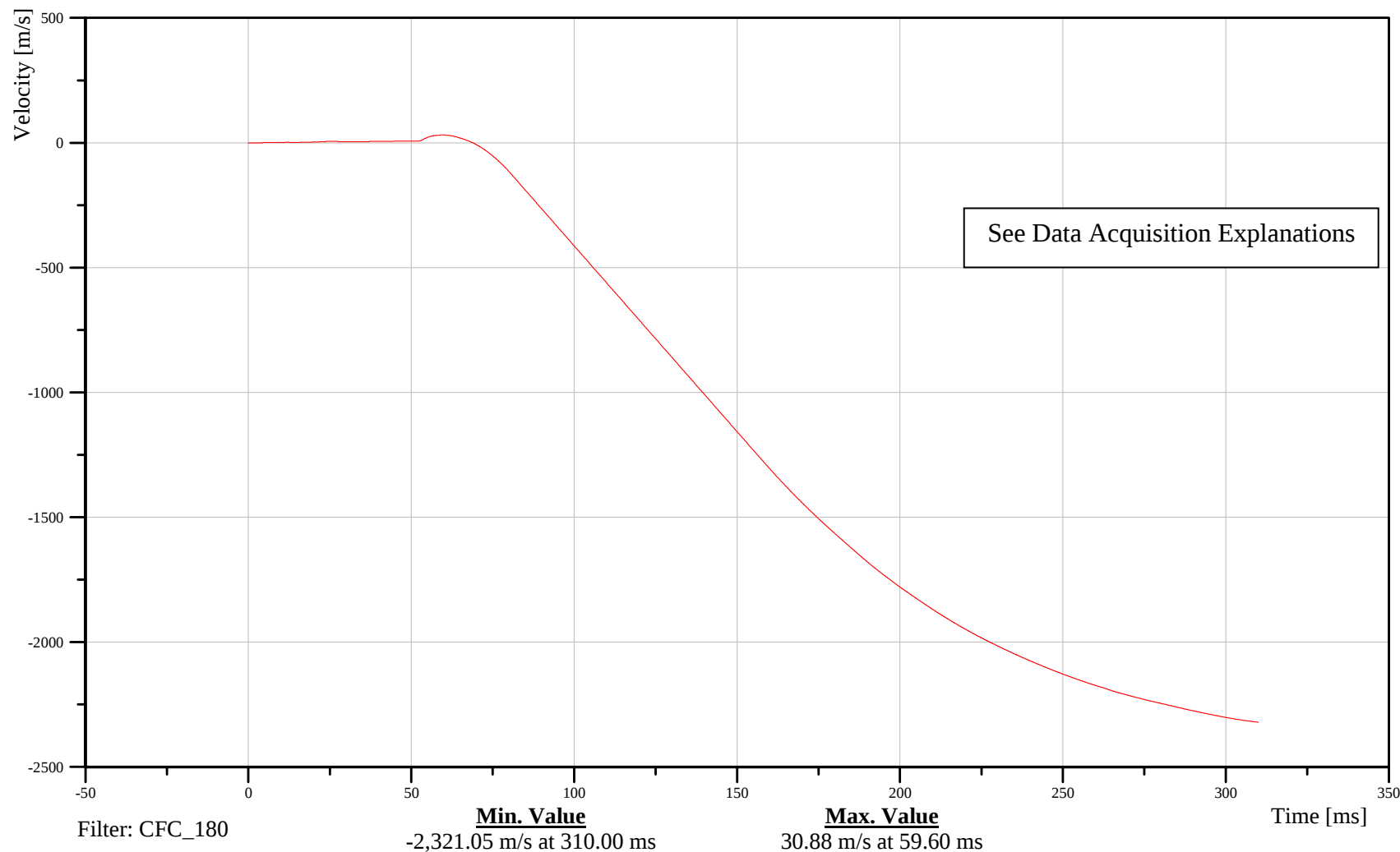
Customer: NHTSA

Test Number: C60514

14SETRLERE00VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-123

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION

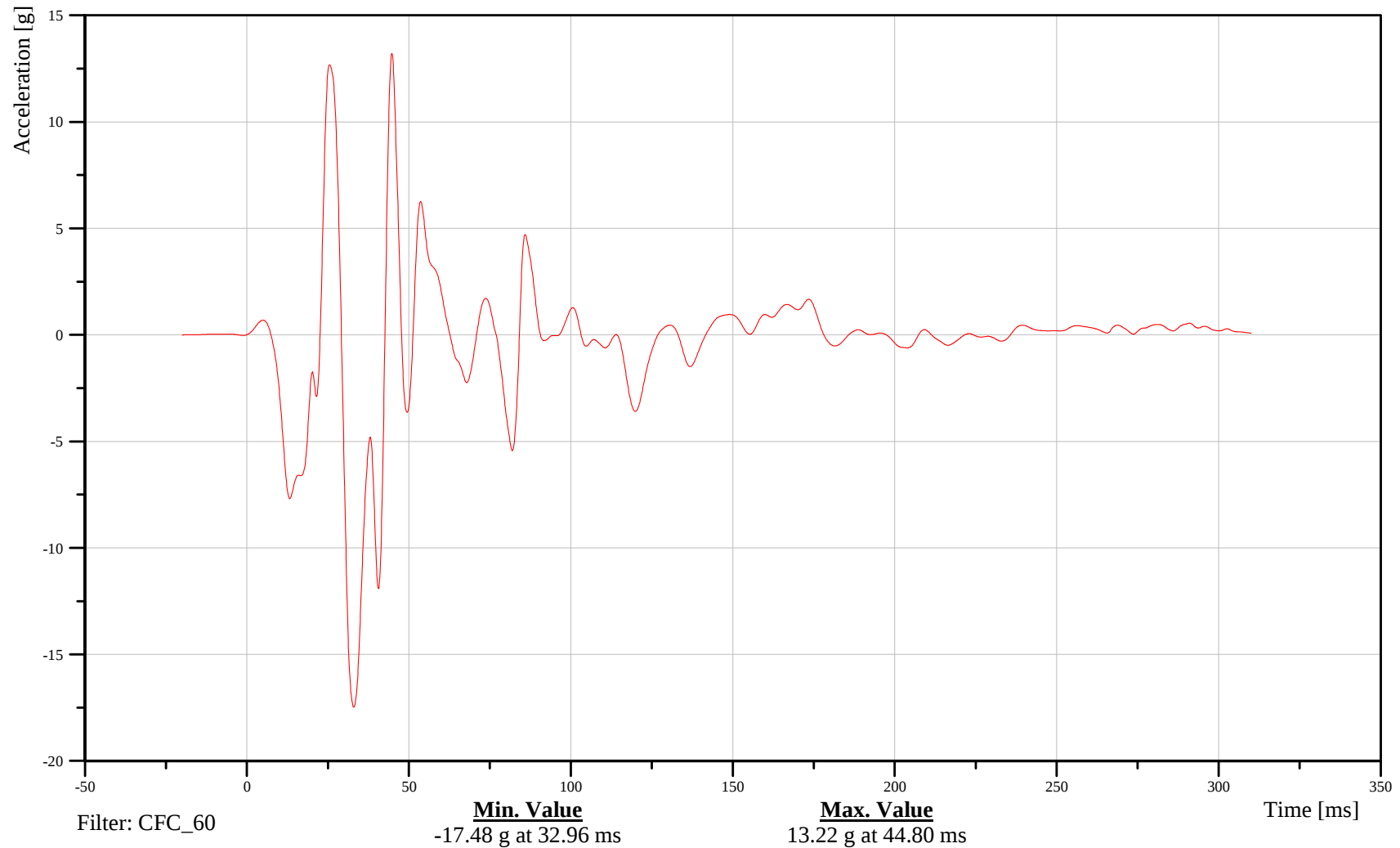
Customer: NHTSA

Test Number: C60514

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-124

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY

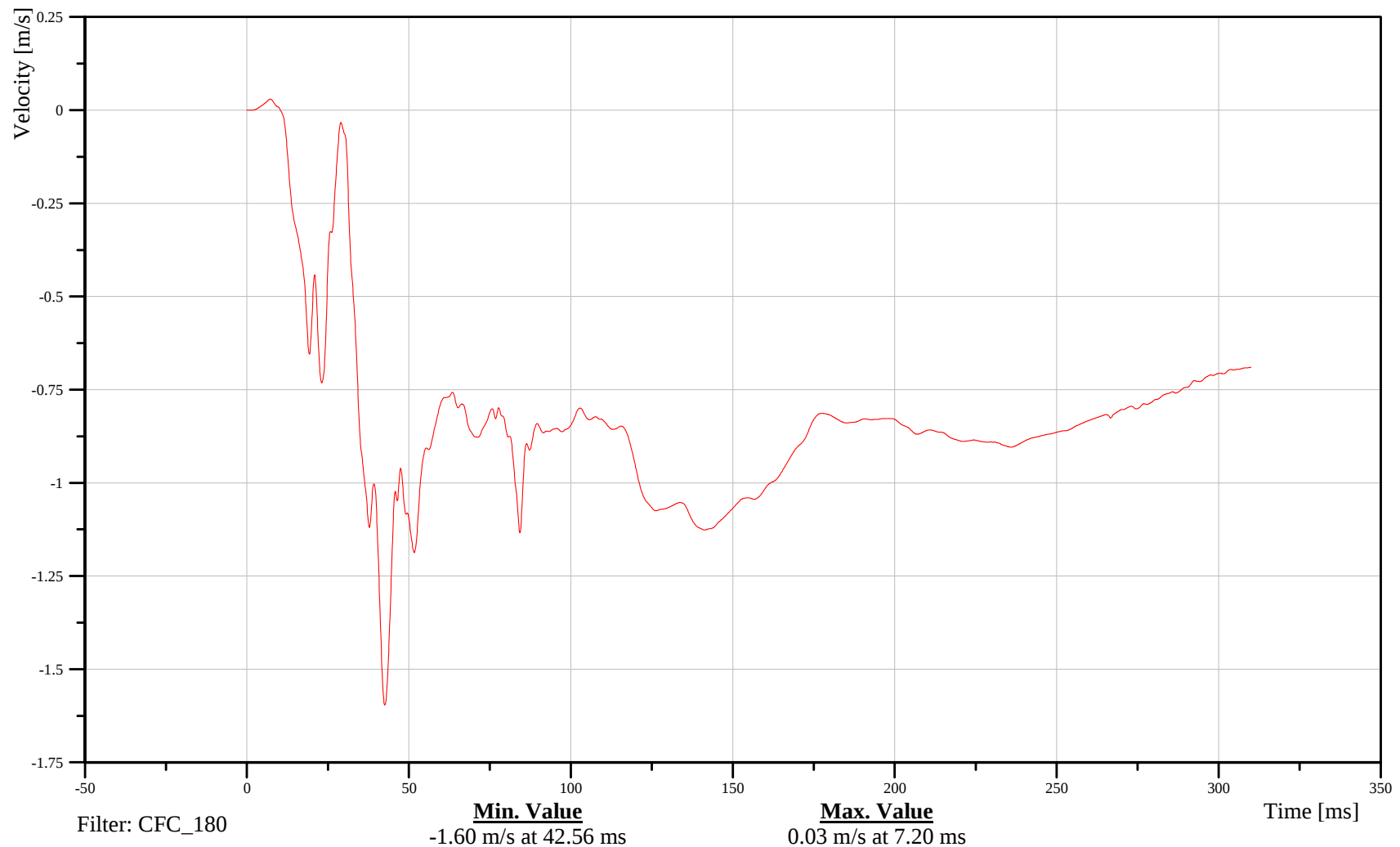
Customer: NHTSA

Test Number: C60514

10VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-125

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION

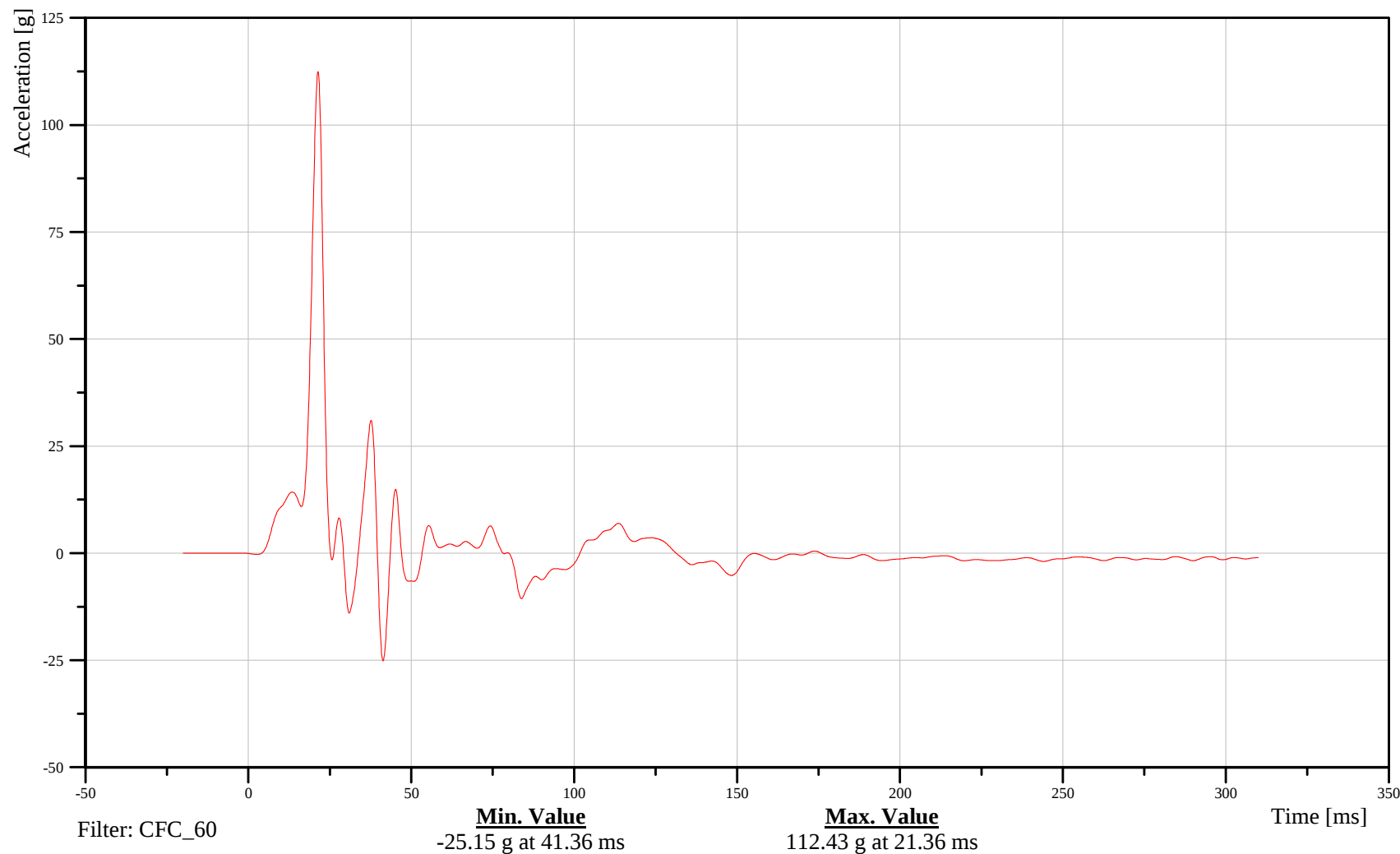
Customer: NHTSA

Test Number: C60514

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-126

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY

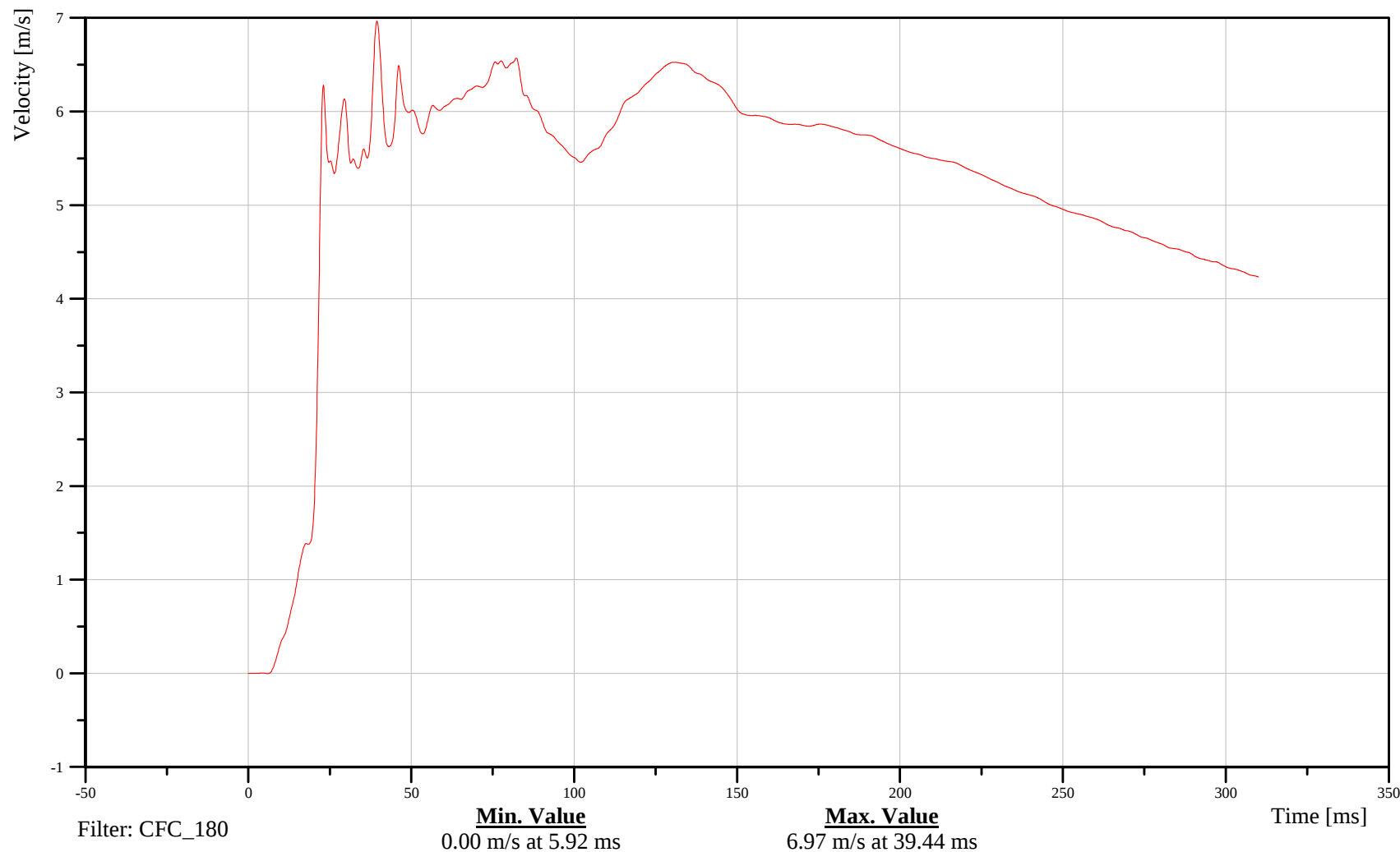
Customer: NHTSA

Test Number: C60514

10VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-127

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION

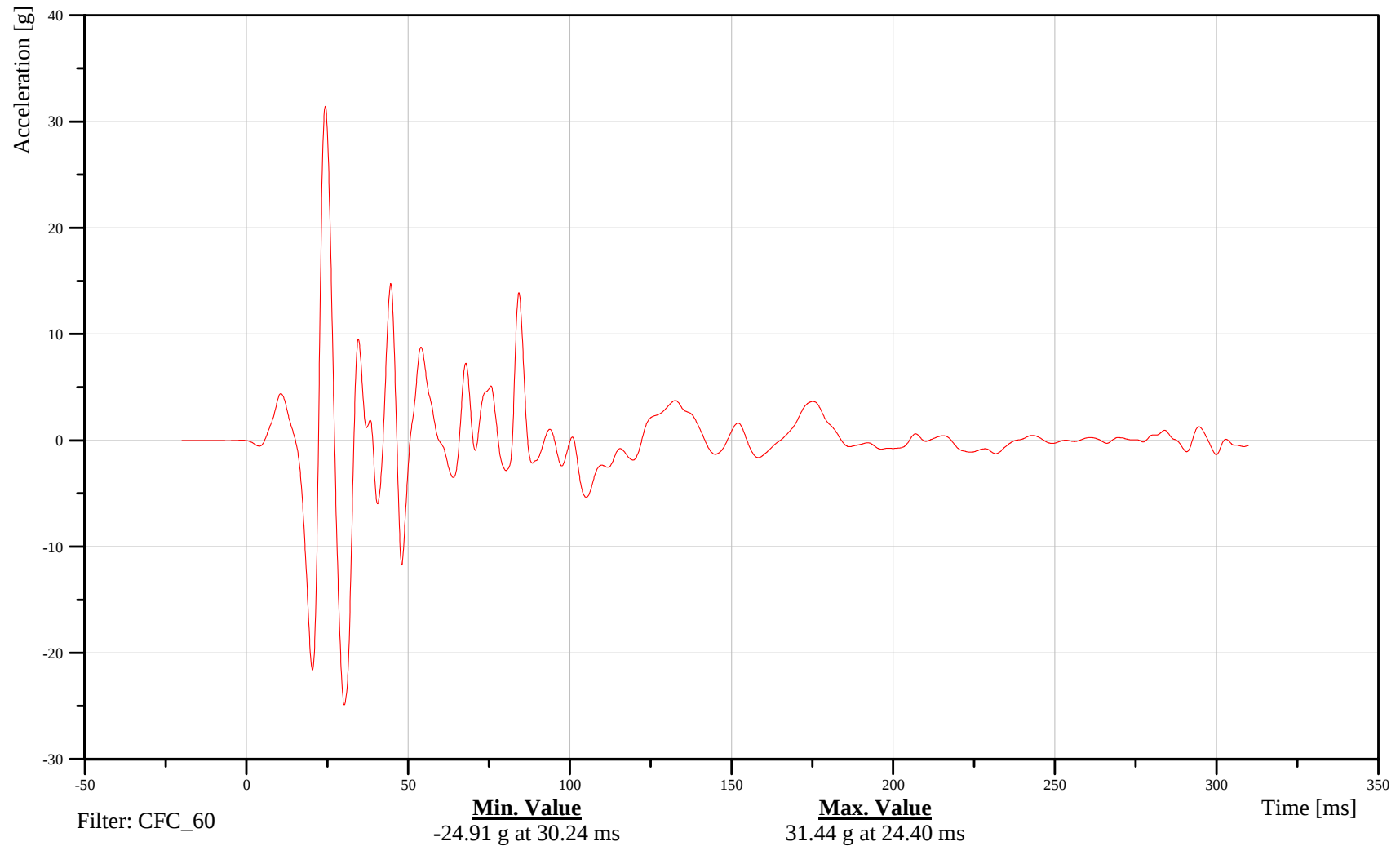
Customer: NHTSA

Test Number: C60514

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-128

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY

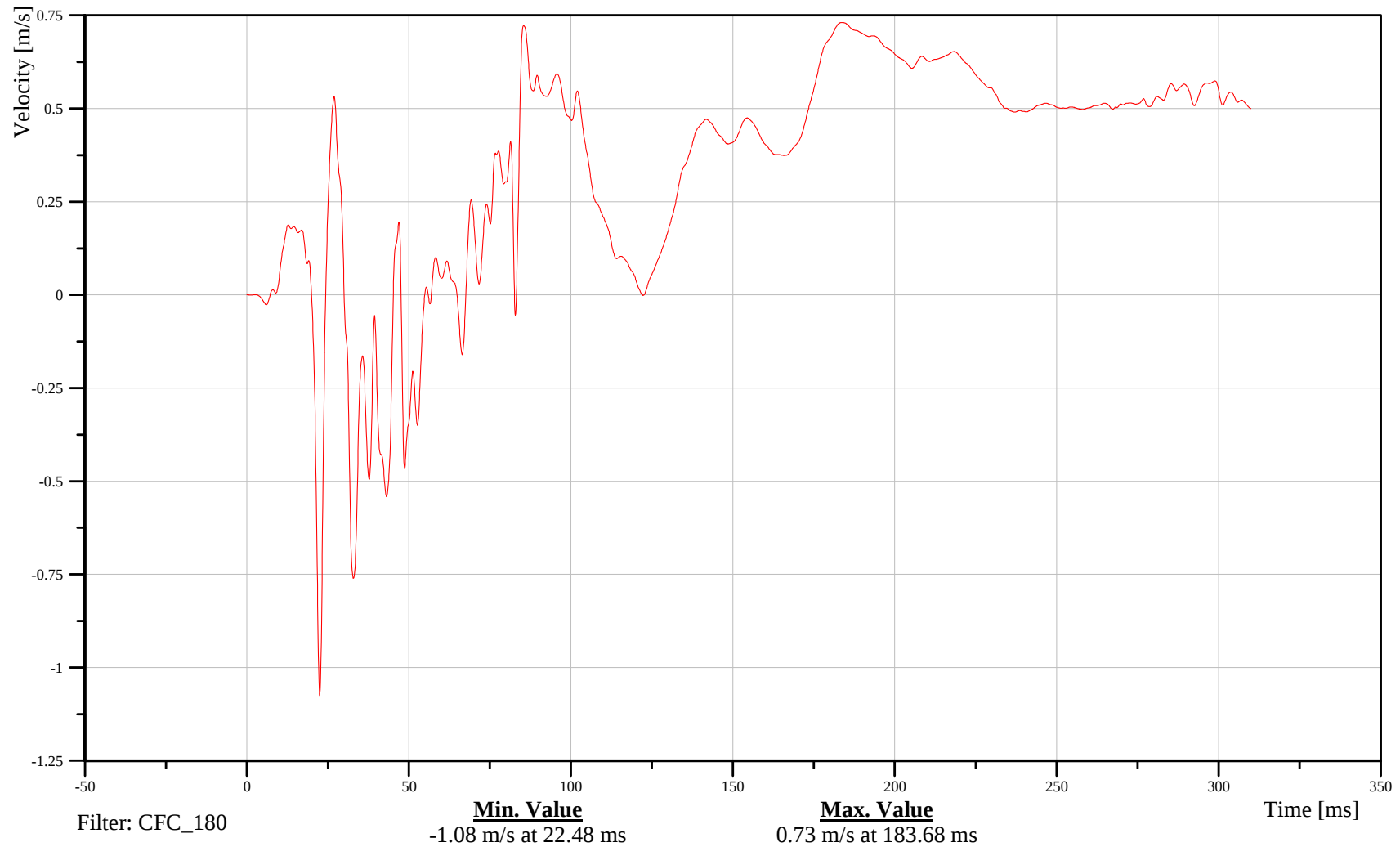
Customer: NHTSA

Test Number: C60514

10VEHCCG0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-129

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION

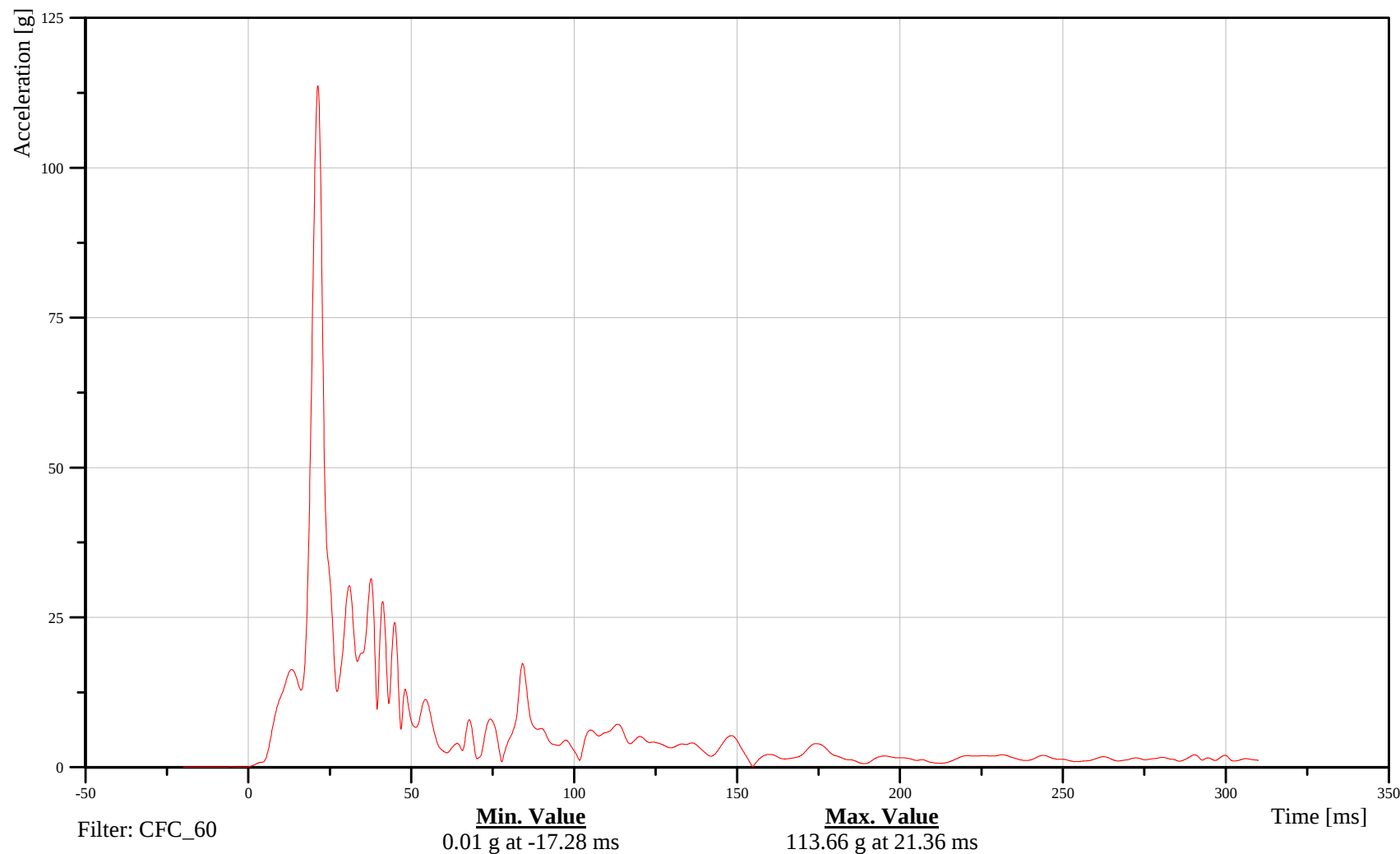
Customer: NHTSA

Test Number: C60514

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-130

060714

MDB Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB CENTER OF GRAVITY X-AXIS ACCELERATION

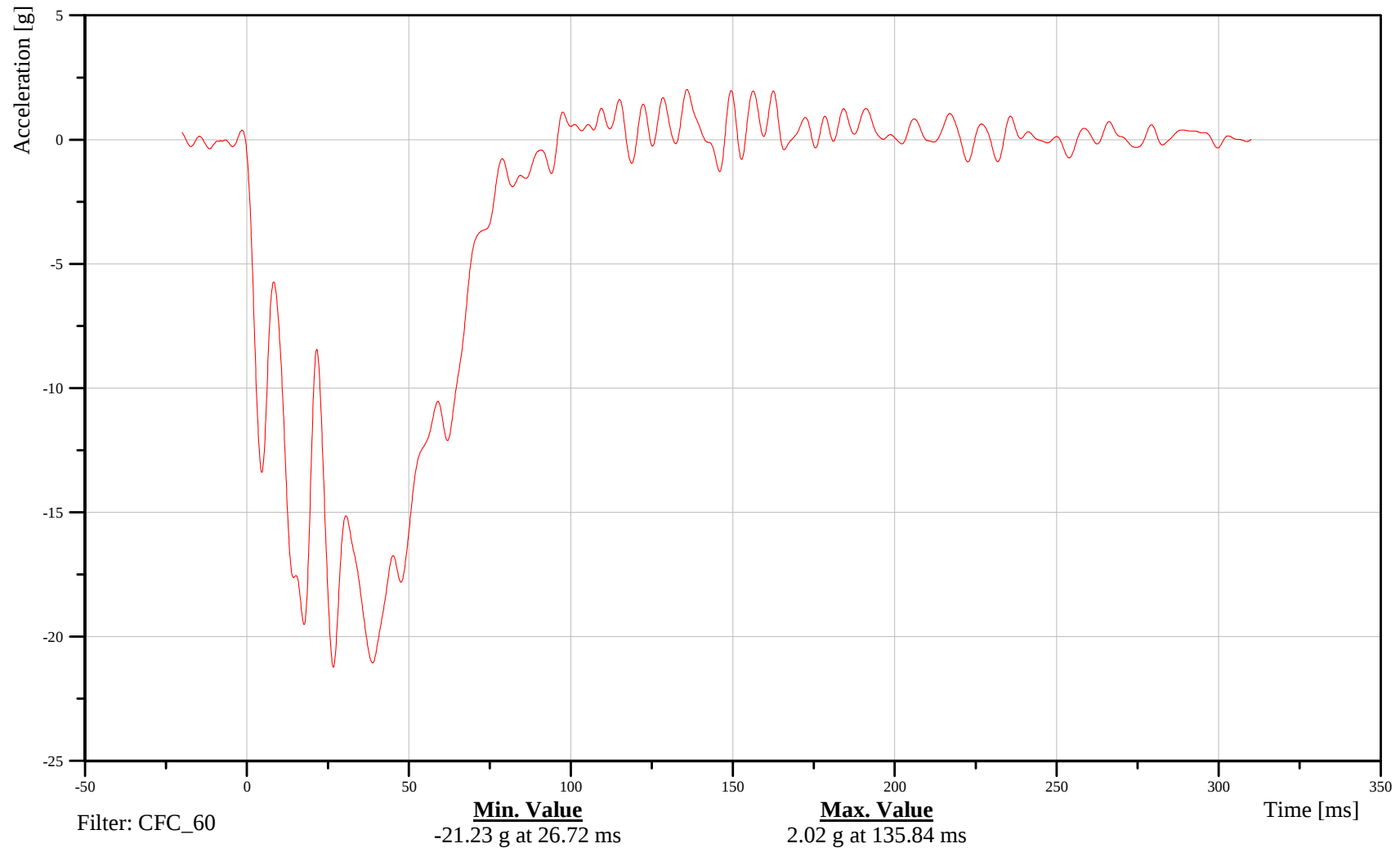
Customer: NHTSA

Test Number: C60514

M0VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-132

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006
Time: 13:32

MDB CENTER OF GRAVITY X-AXIS VELOCITY

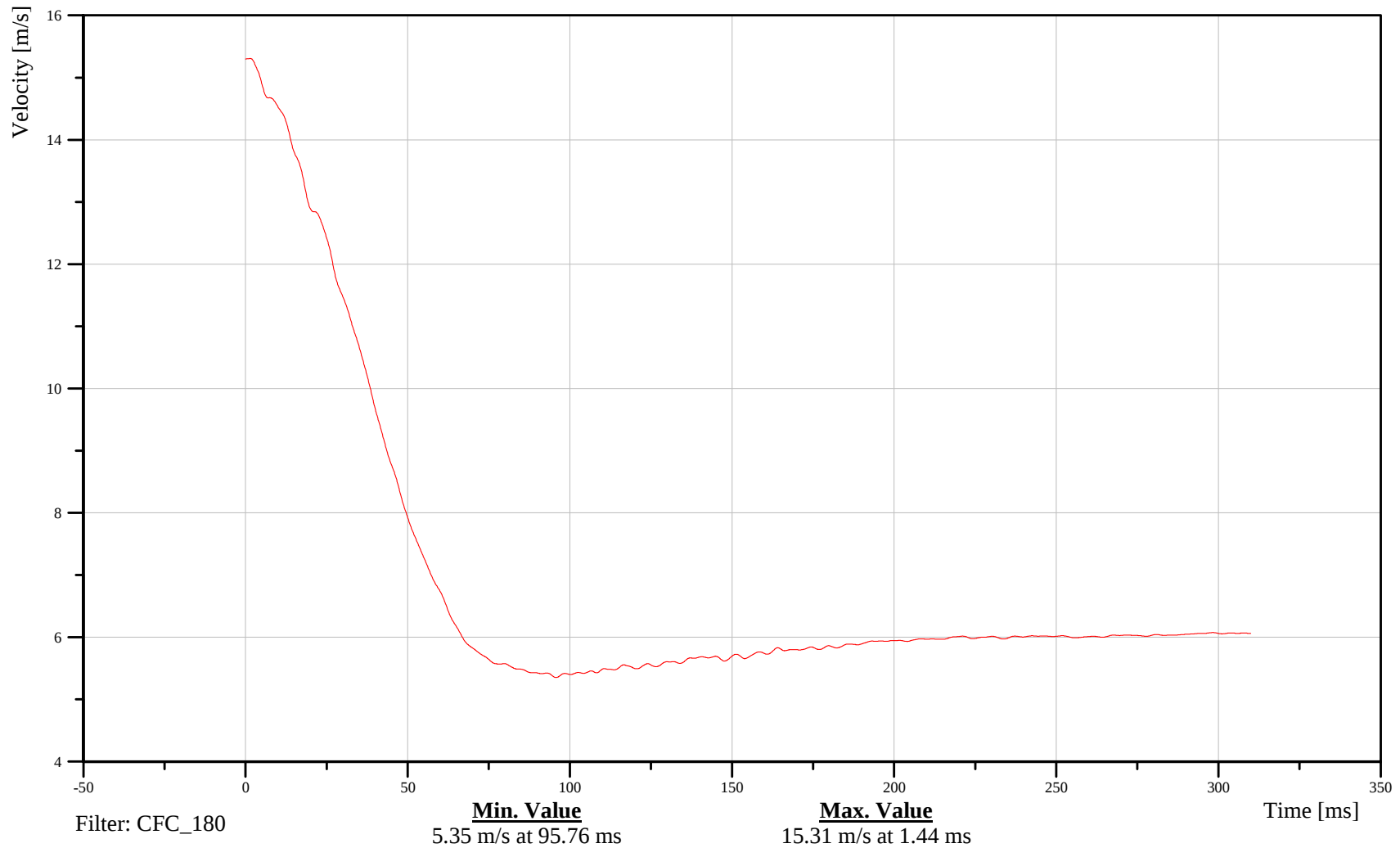
Customer: NHTSA

Test Number: C60514

M0VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-133

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB CENTER OF GRAVITY Y-AXIS ACCELERATION

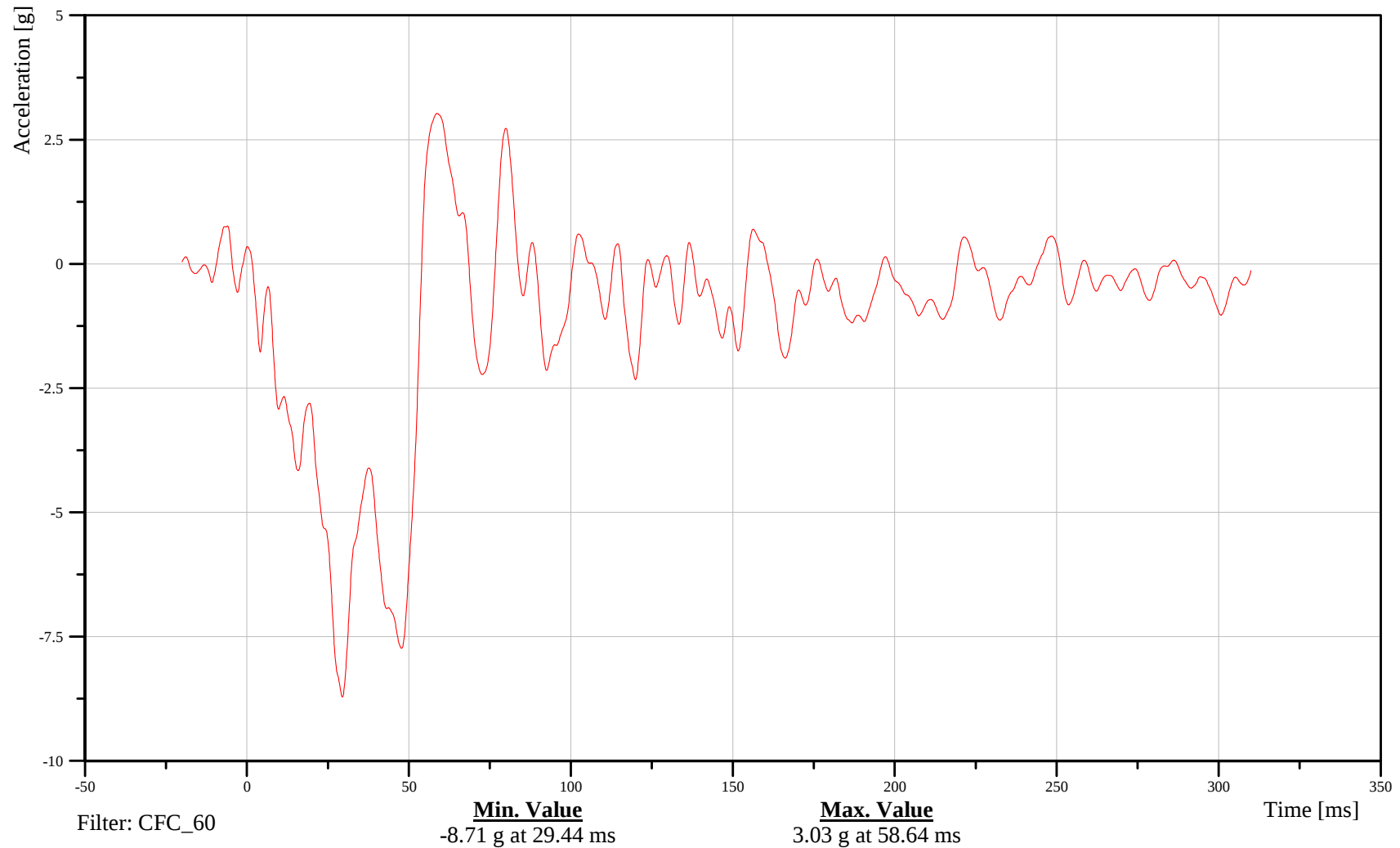
Customer: NHTSA

Test Number: C60514

M0VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-134

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

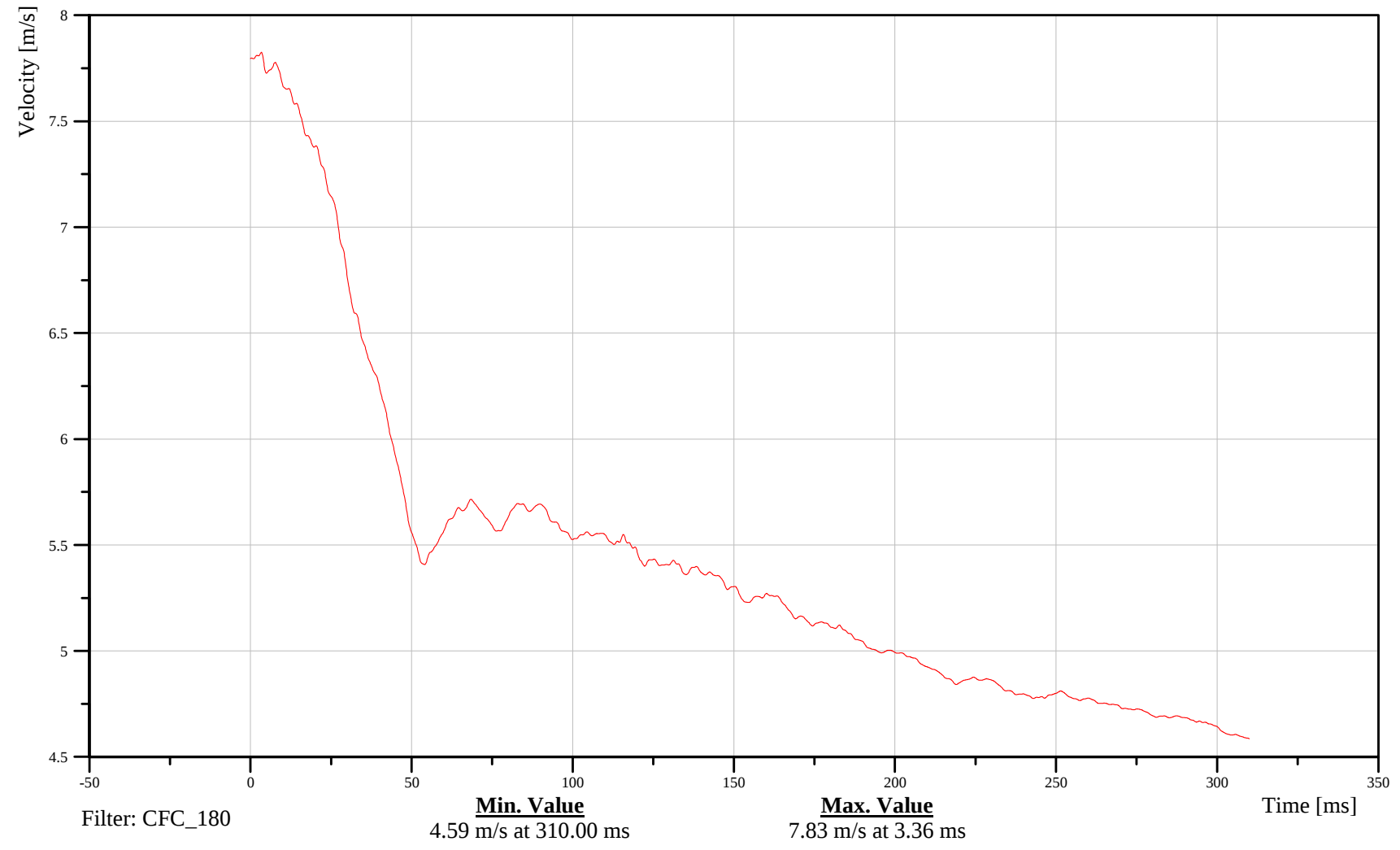
Date: 07/14/2006
Time: 13:32

MDB CENTER OF GRAVITY Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

M0VEHCCG0000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-135

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB CENTER OF GRAVITY Z-AXIS ACCELERATION

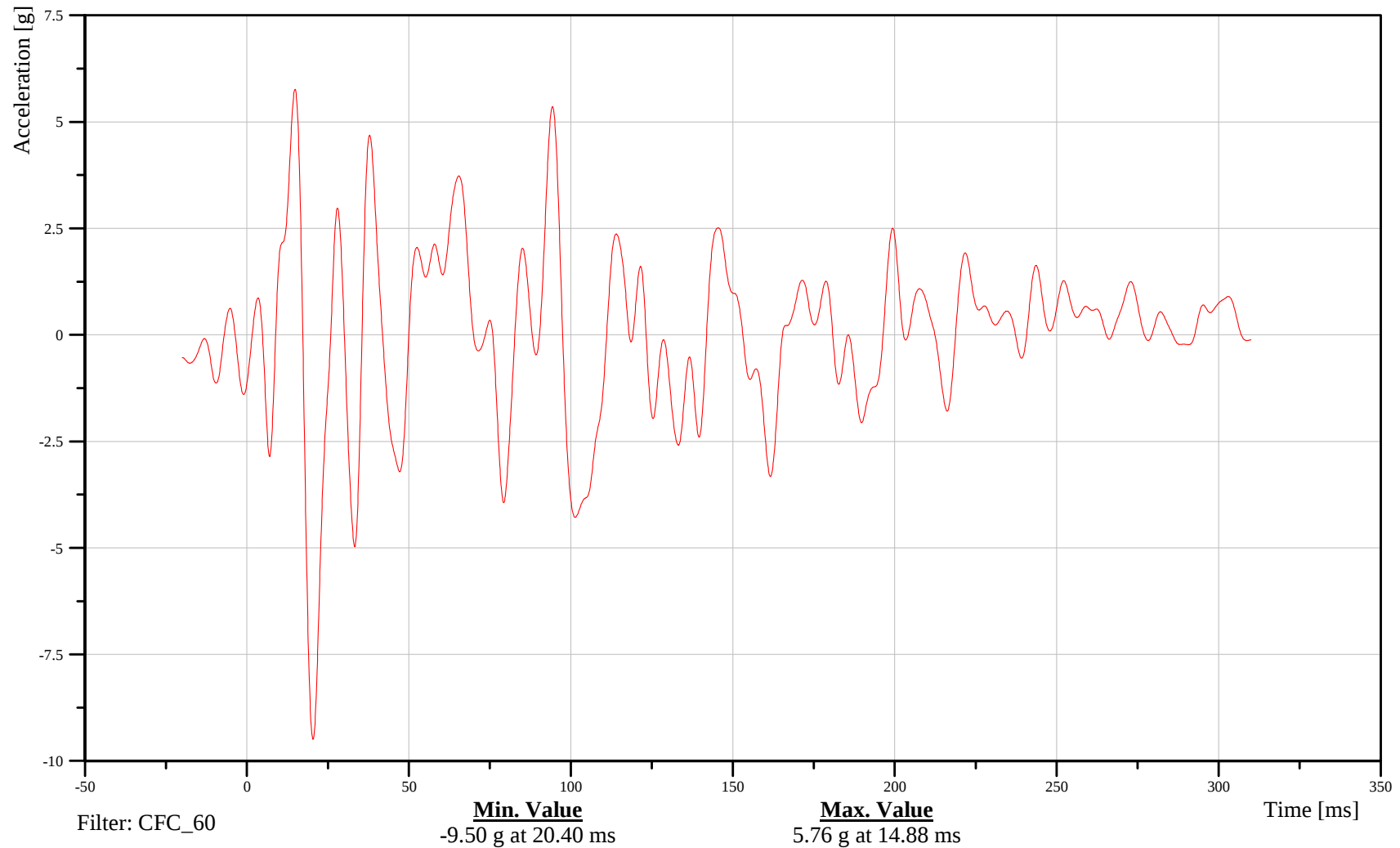
Customer: NHTSA

Test Number: C60514

M0VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-136

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB CENTER OF GRAVITY Z-AXIS VELOCITY

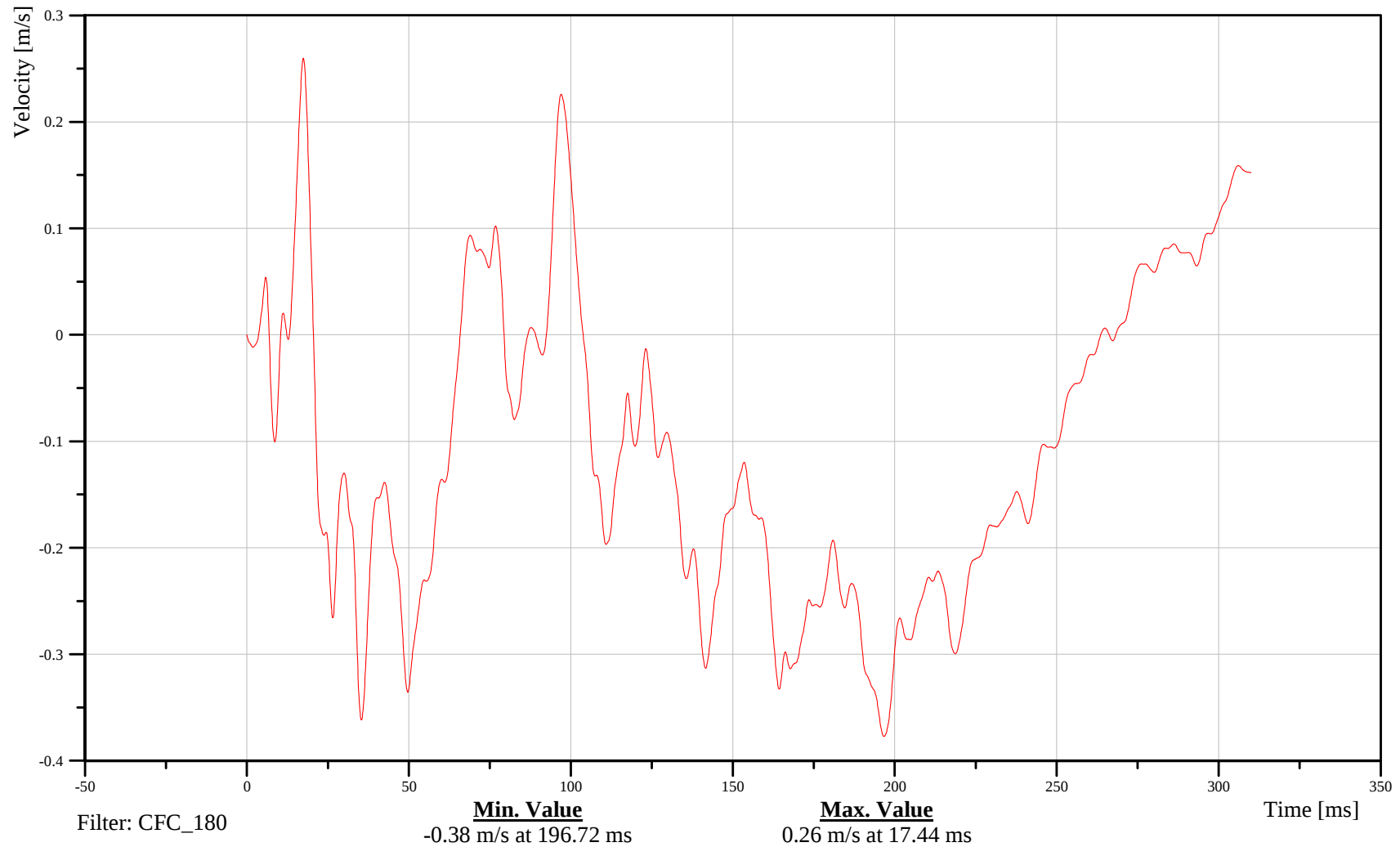
Customer: NHTSA

Test Number: C60514

M0VEHCCG0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-137

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB CENTER OF GRAVITY RESULTANT ACCELERATION

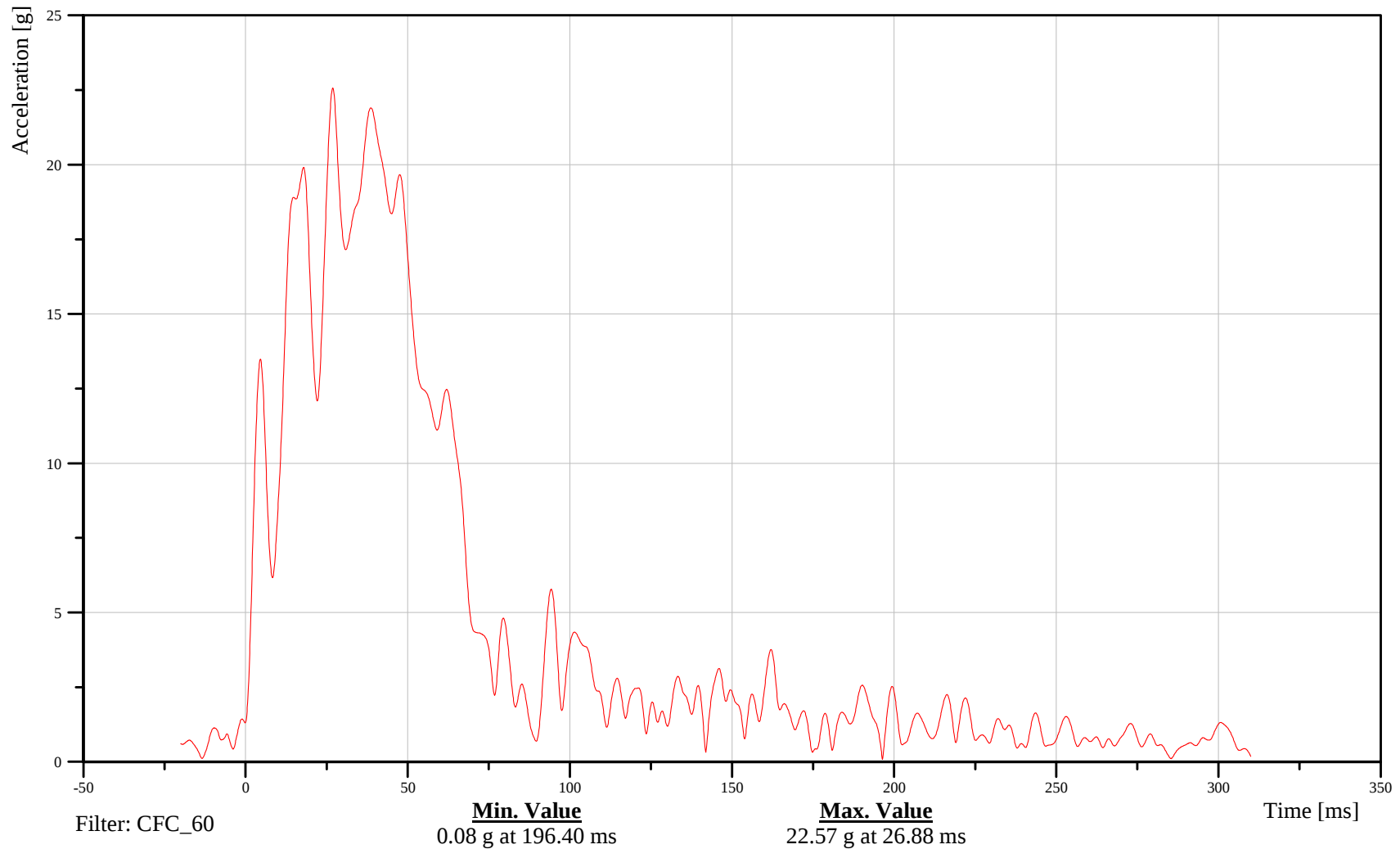
Customer: NHTSA

Test Number: C60514

M0VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-138

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

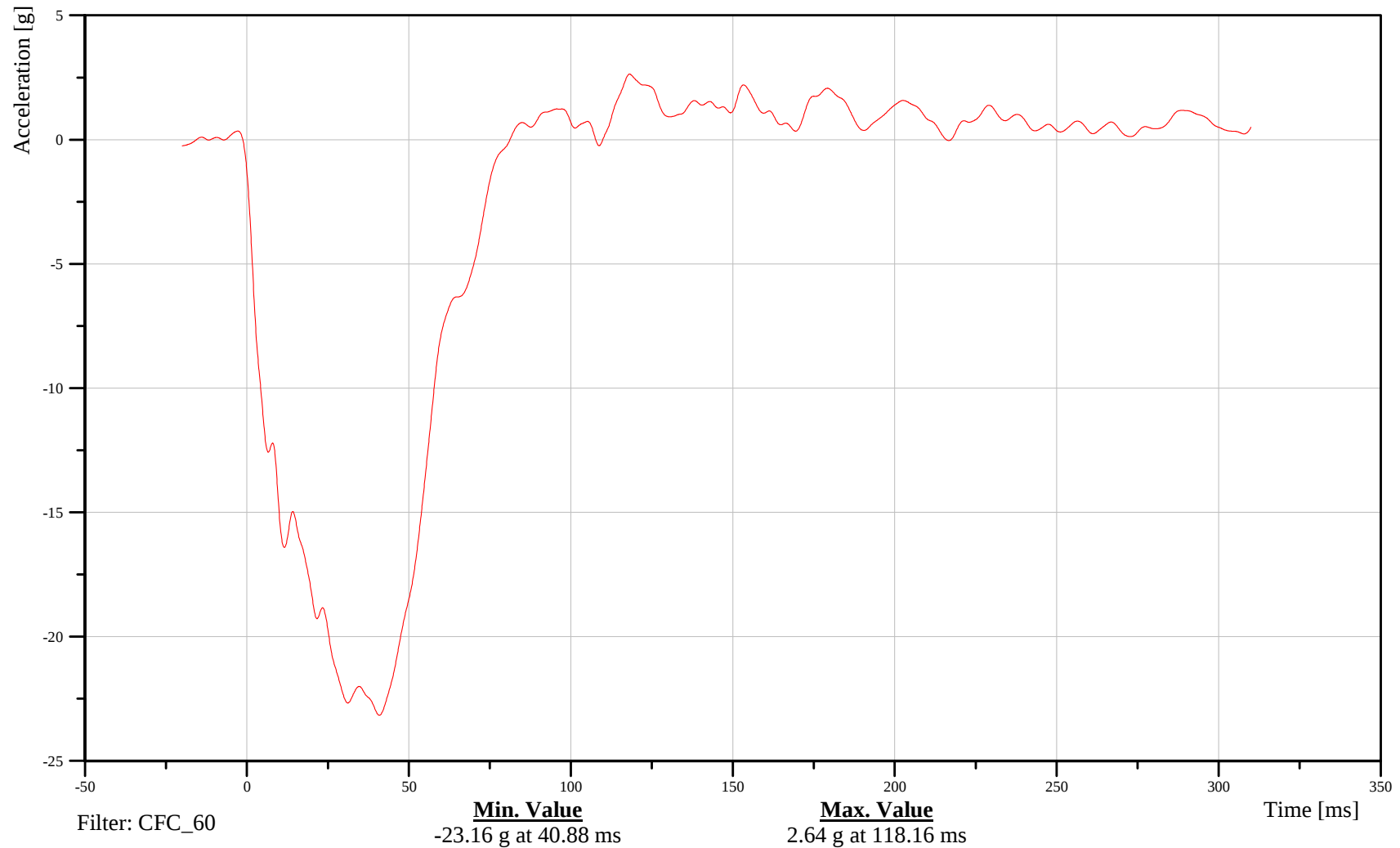
Date: 07/14/2006
Time: 13:32

MDB REAR X-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60514

M7FRAM000000ACXD

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-139

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

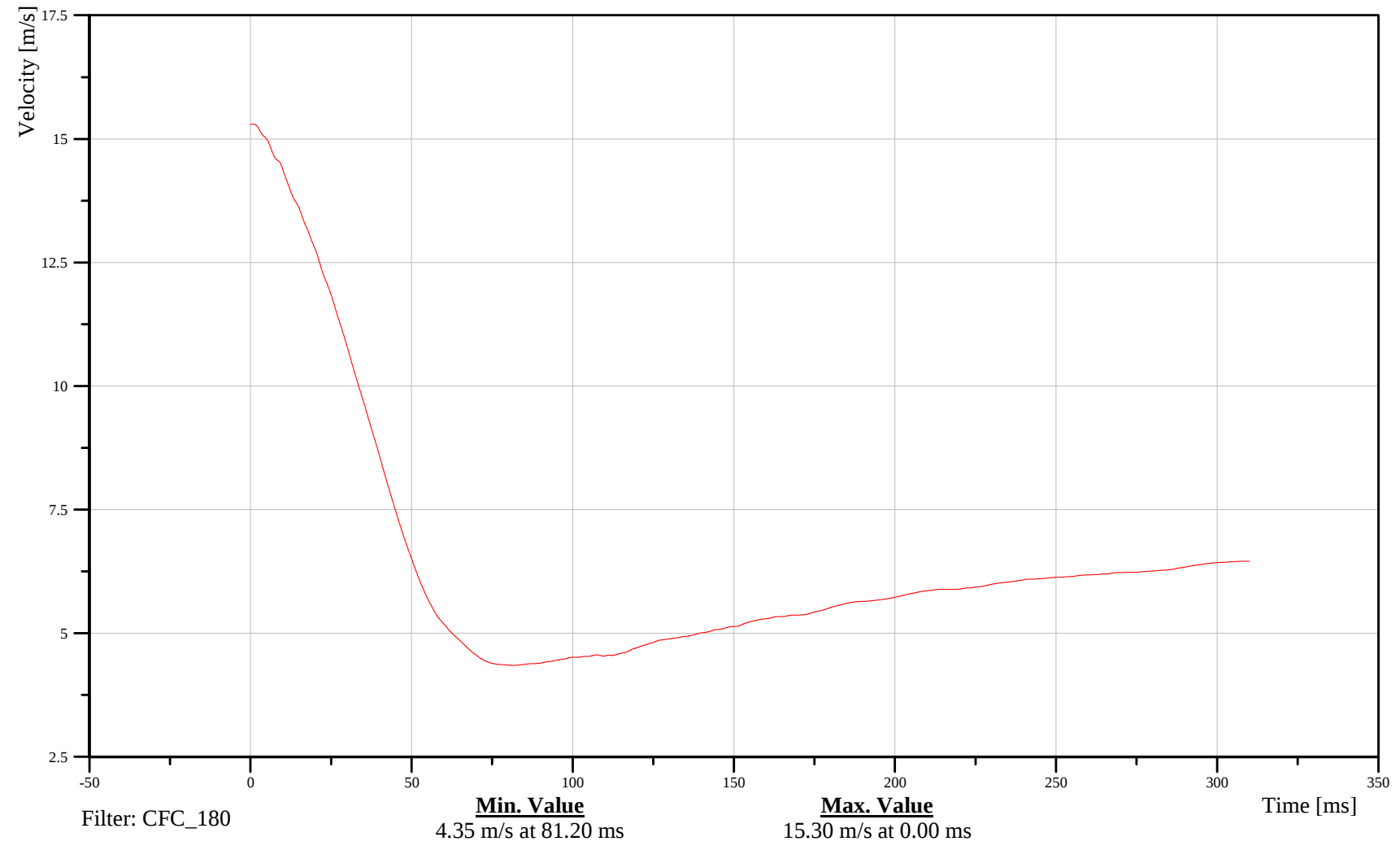
Date: 07/14/2006
Time: 13:32

MDB REAR X-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

M7FRAM000000VEXC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-140

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB REAR Y-AXIS ACCELERATION

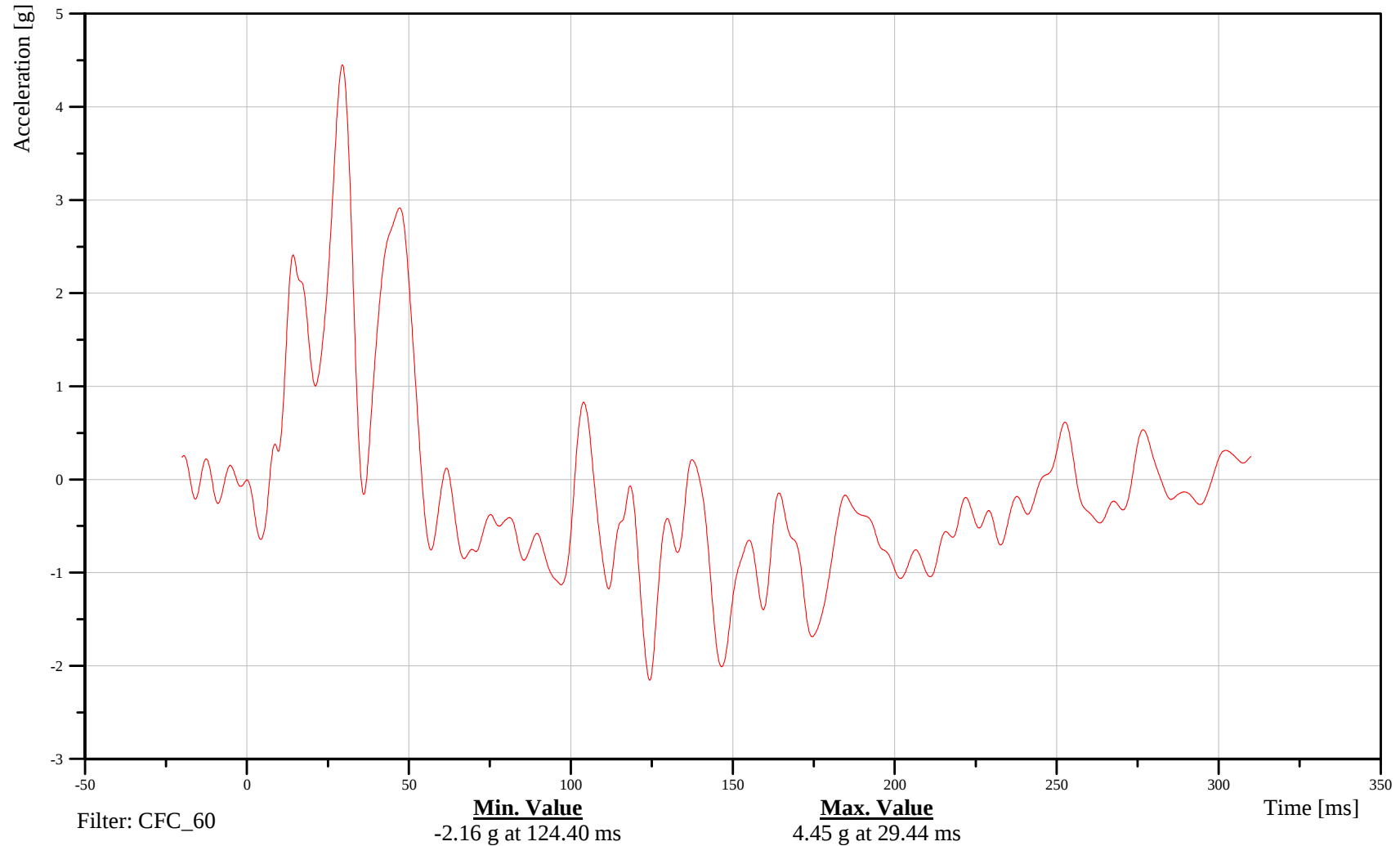
Customer: NHTSA

Test Number: C60514

M7FRAM000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-141

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

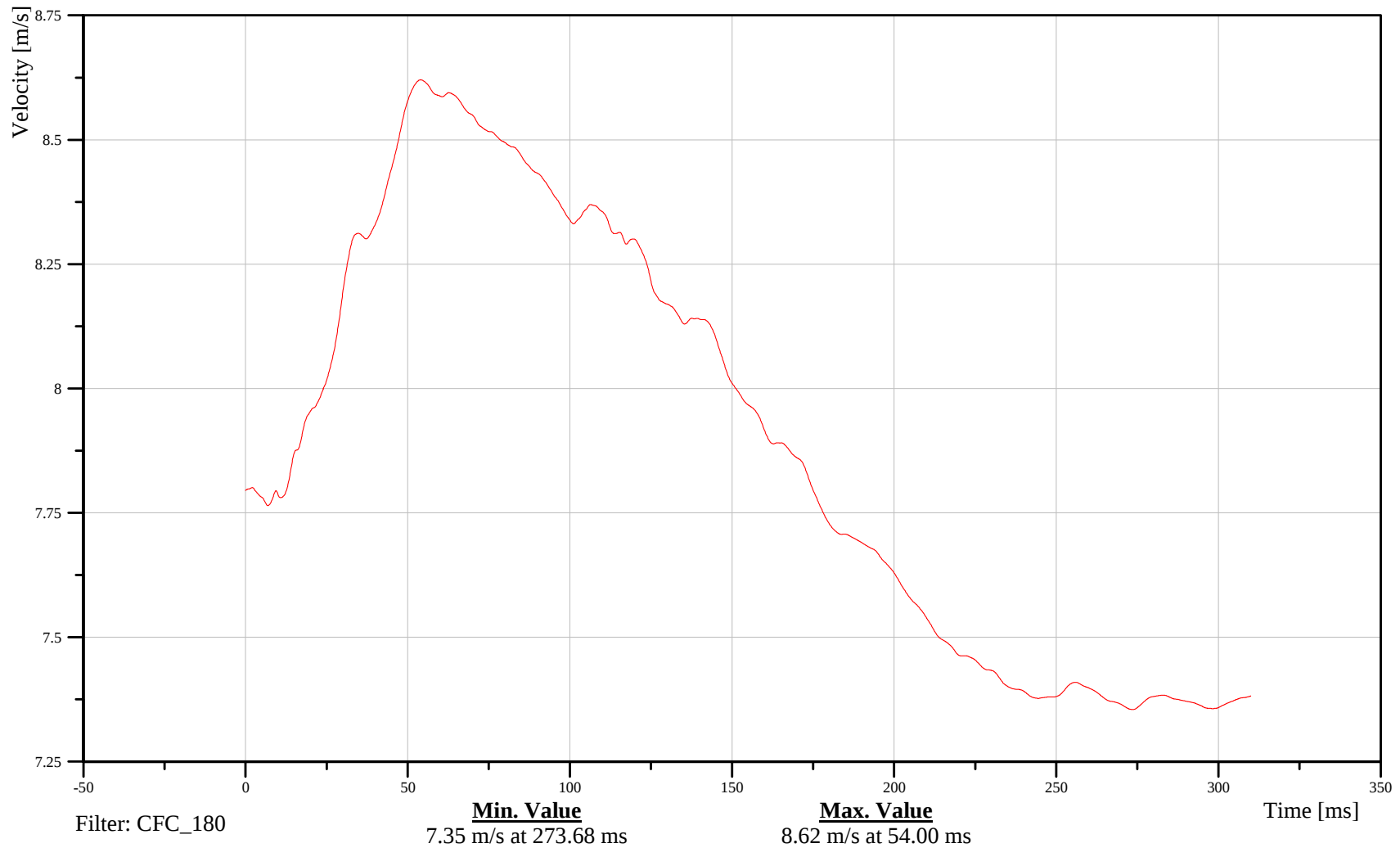
Date: 07/14/2006
Time: 13:32

MDB REAR Y-AXIS VELOCITY

Customer: NHTSA
Test Number: C60514

M7FRAM000000VEYC

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-142

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

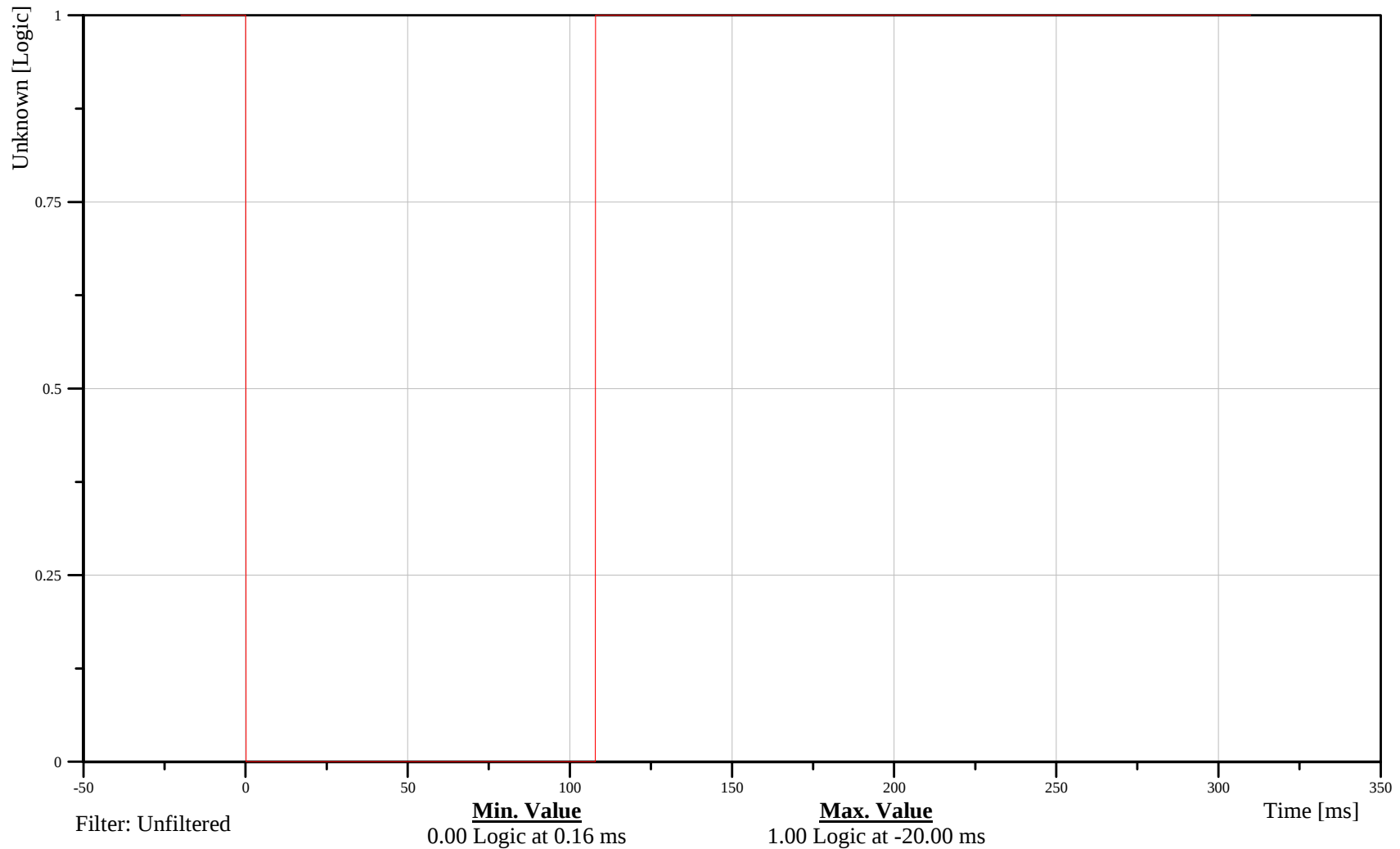
Date: 07/14/2006
Time: 13:32

MDB RIGHT CONTACT SWITCH

Customer: NHTSA
Test Number: C60514

M3CONT000000VO00

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-143

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

MDB LEFT CONTACT SWITCH

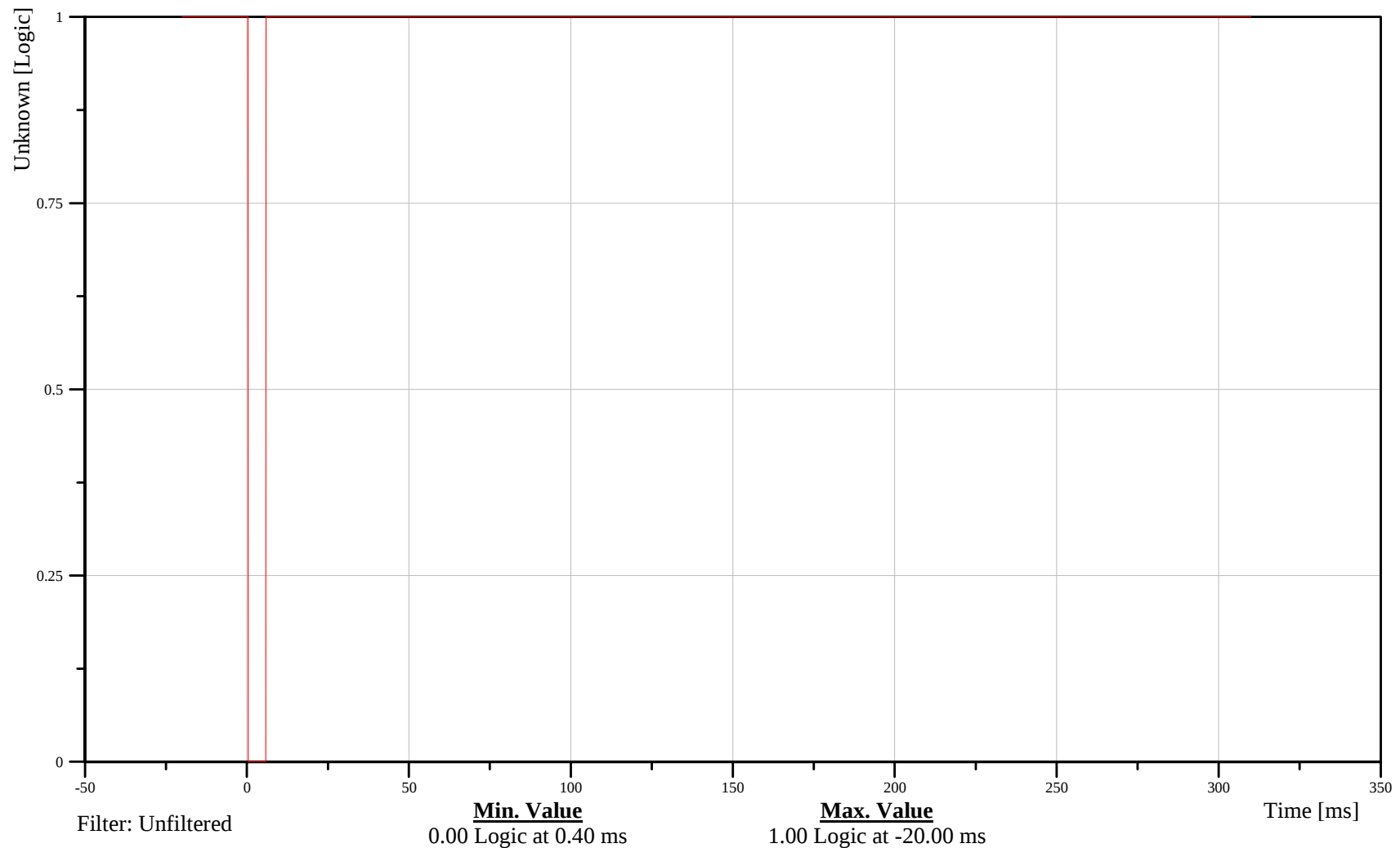
Customer: NHTSA

Test Number: C60514

M1CONT000000VO00

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-144

060714

Driver and Passenger Dummy Instrumentation Plots



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER UPPER RIB Y-AXIS ACCELERATION

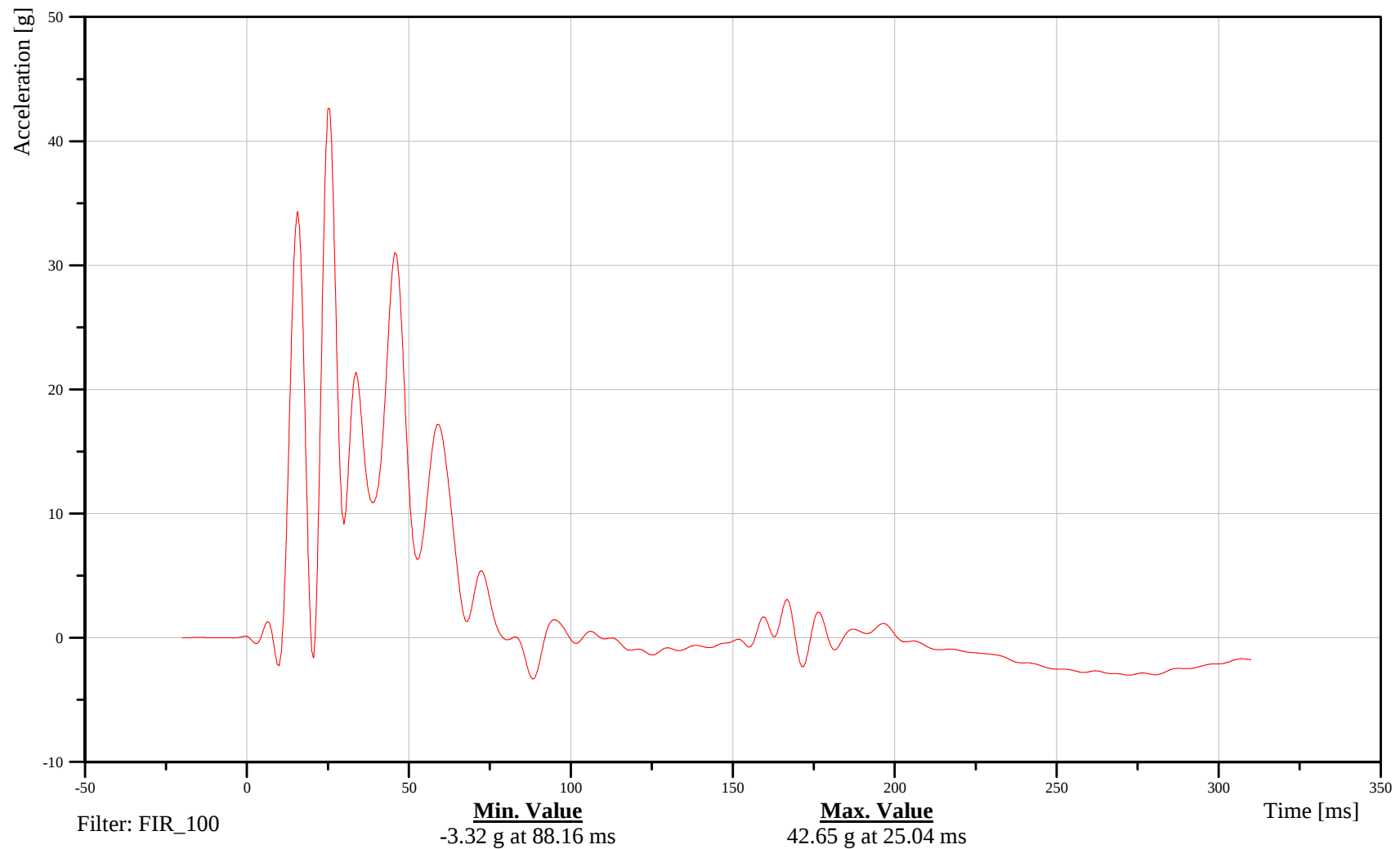
Customer: NHTSA

Test Number: C60514

11RIBSLU00SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-146

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER RIB Y-AXIS ACCELERATION

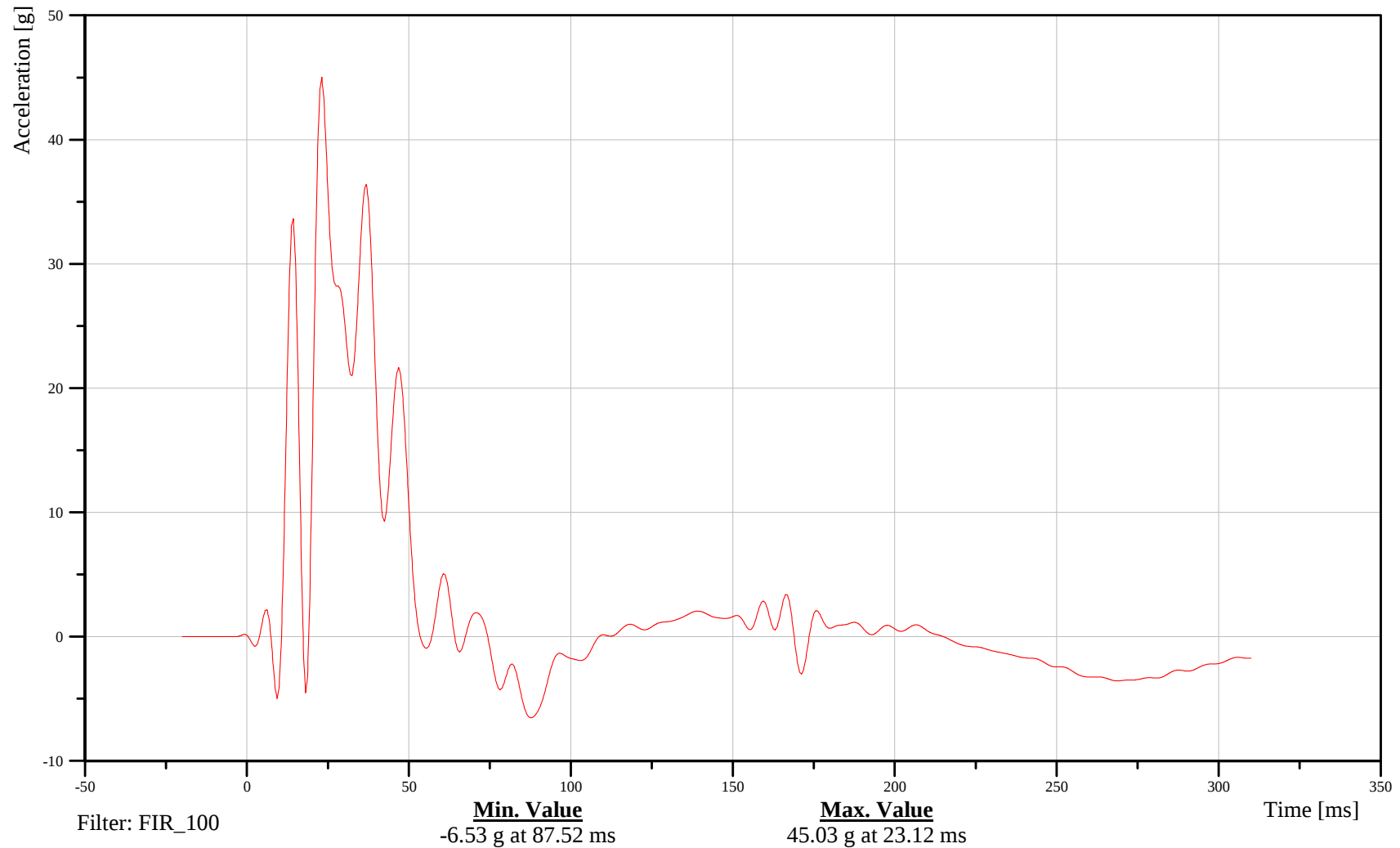
Customer: NHTSA

Test Number: C60514

11RIBSL00SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-147

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER SPINE Y-AXIS ACCELERATION

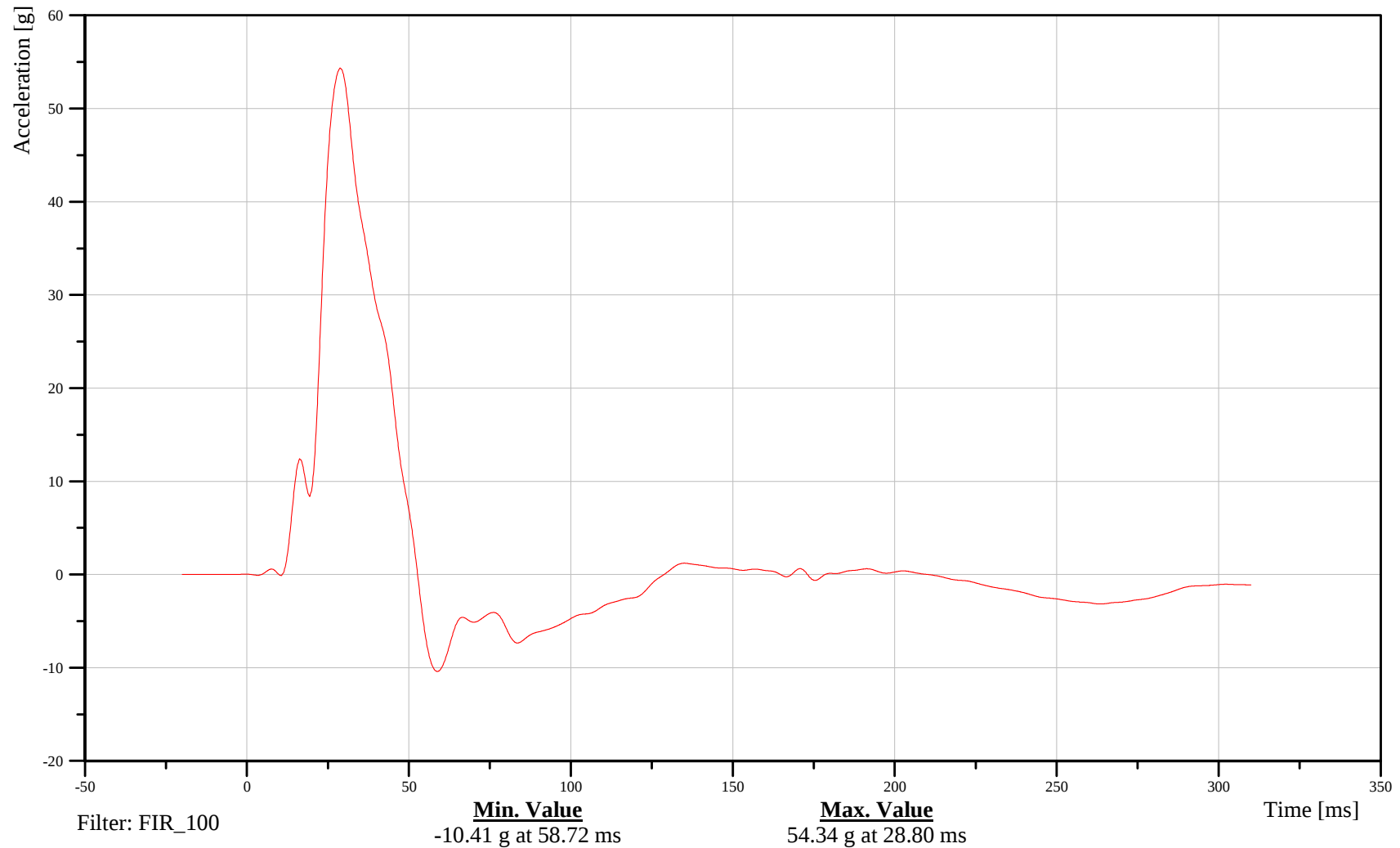
Customer: NHTSA

Test Number: C60514

11SPIN1200SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-148

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER PELVIS Y-AXIS ACCELERATION

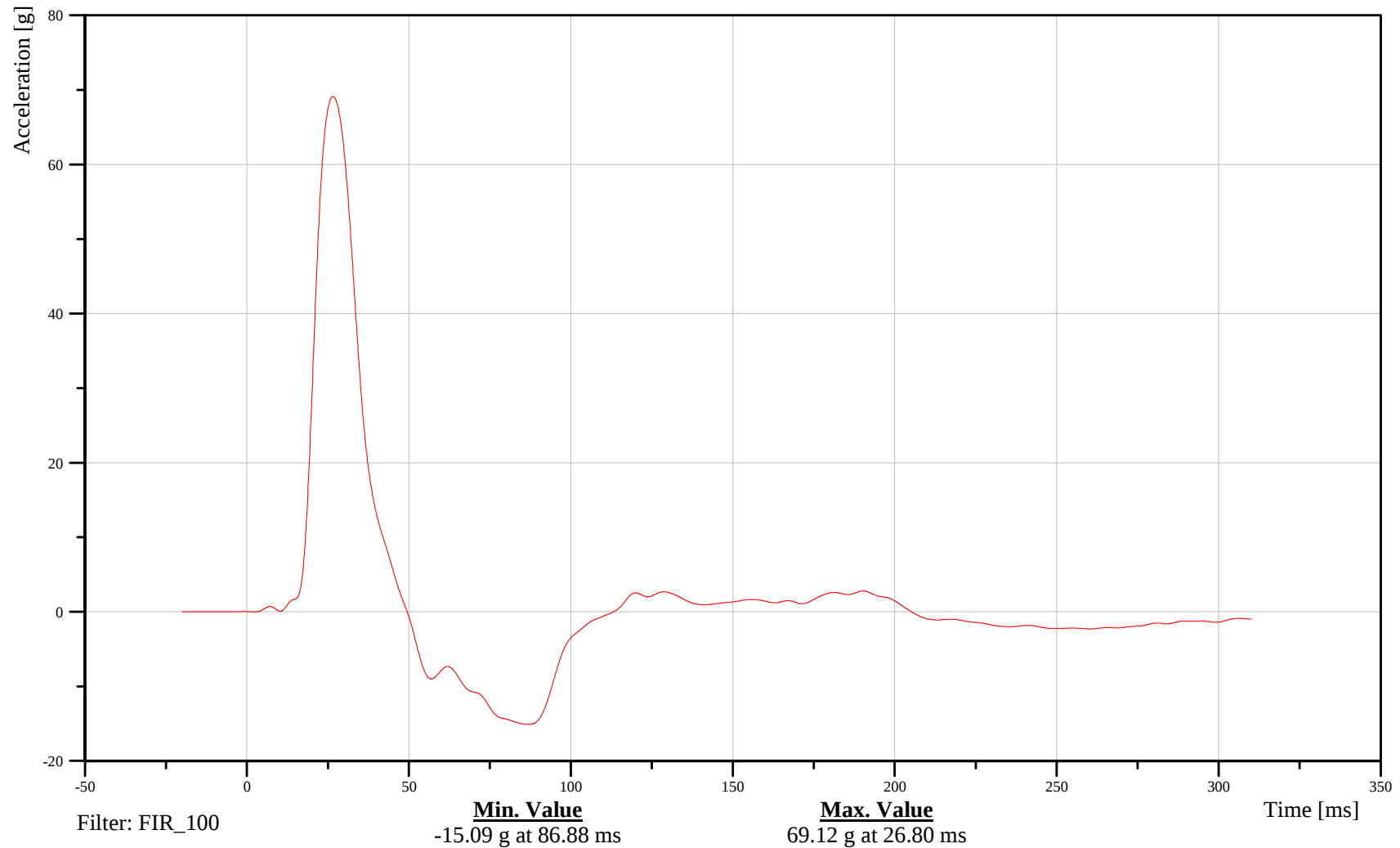
Customer: NHTSA

Test Number: C60514

11PELVCG00SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-149

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

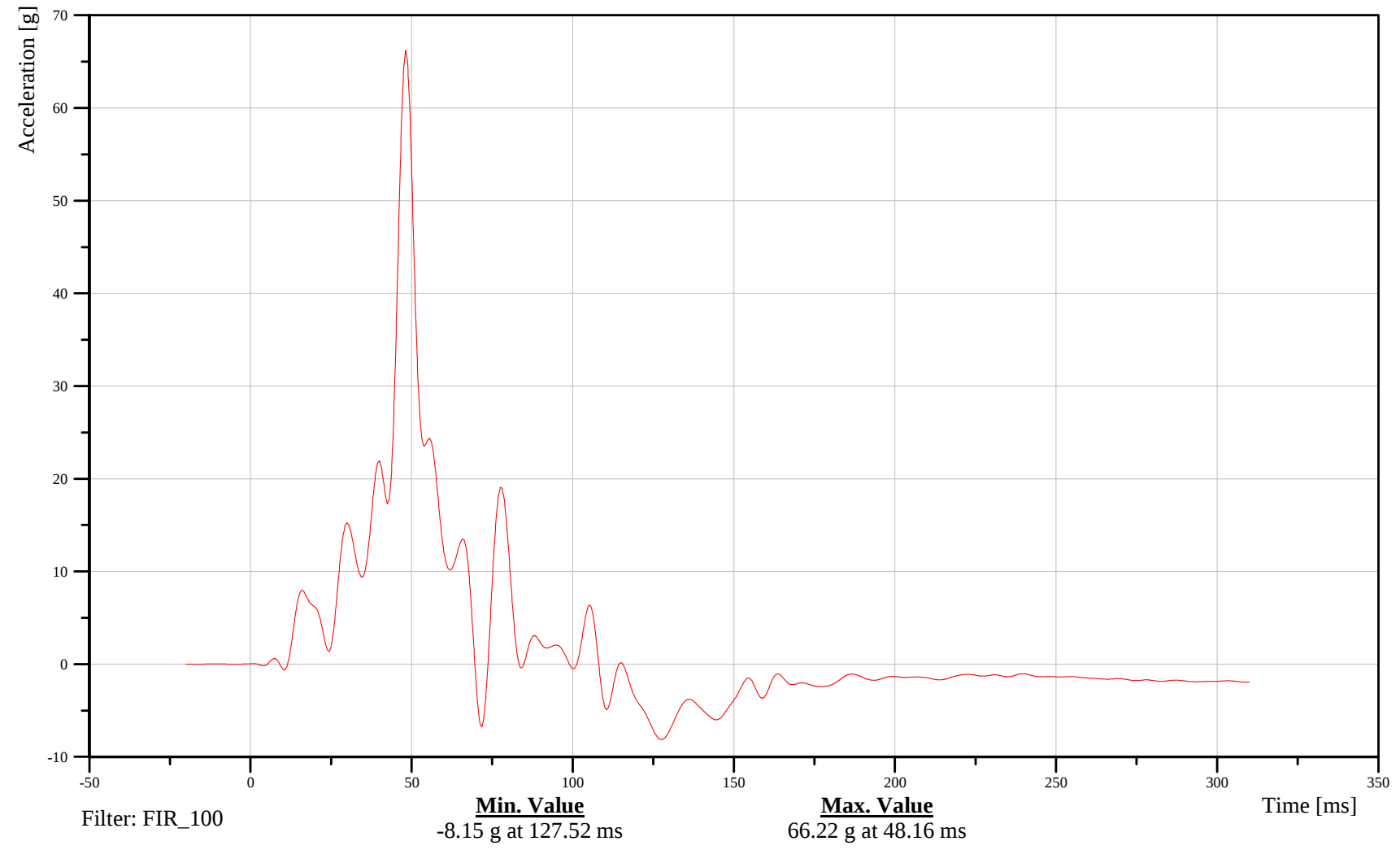
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION

Customer: NHTSA
Test Number: C60514

14RIBSLU00SHACY1

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-150

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

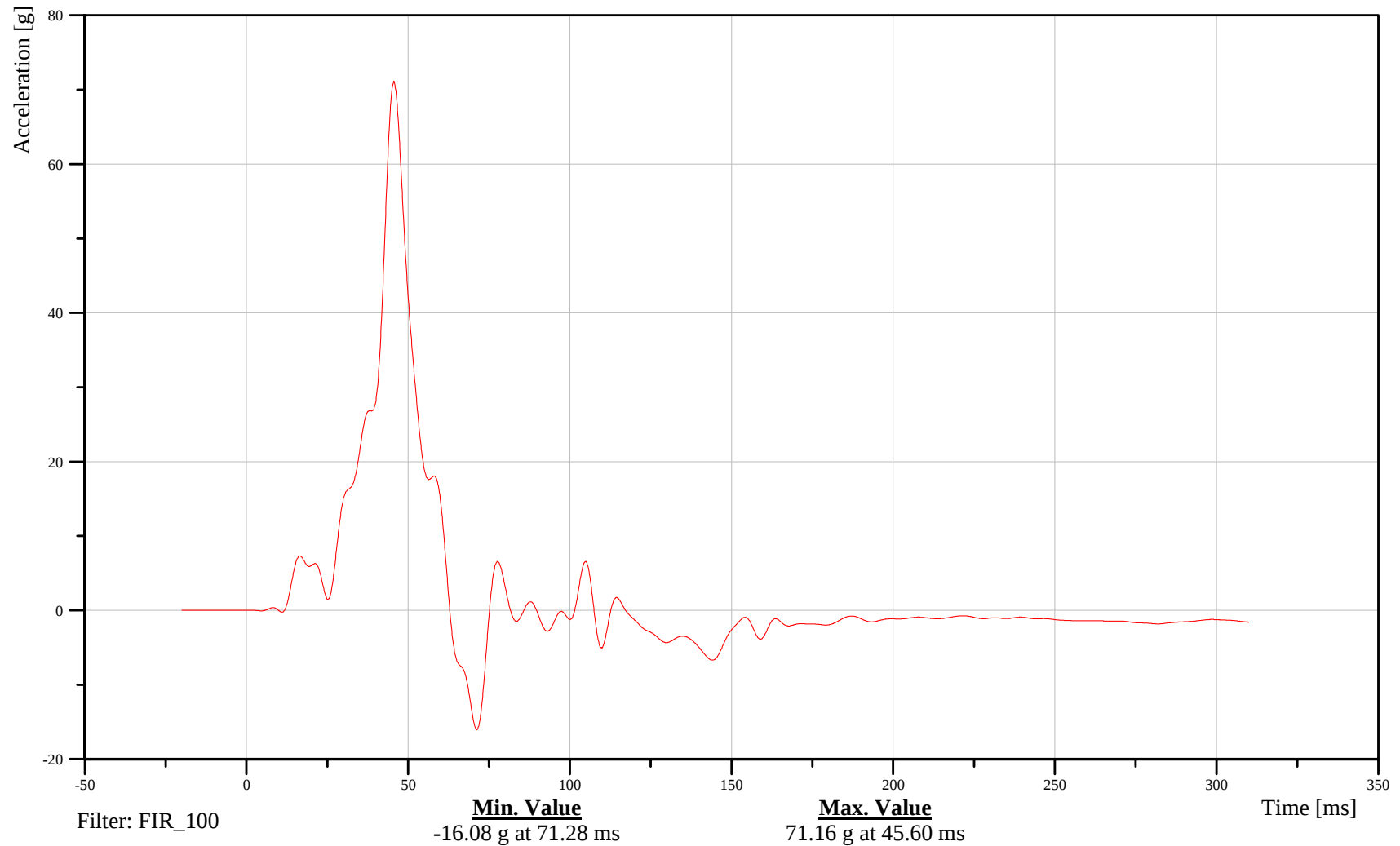
Customer: NHTSA

Test Number: C60514

14RIBSLL00SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-151

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

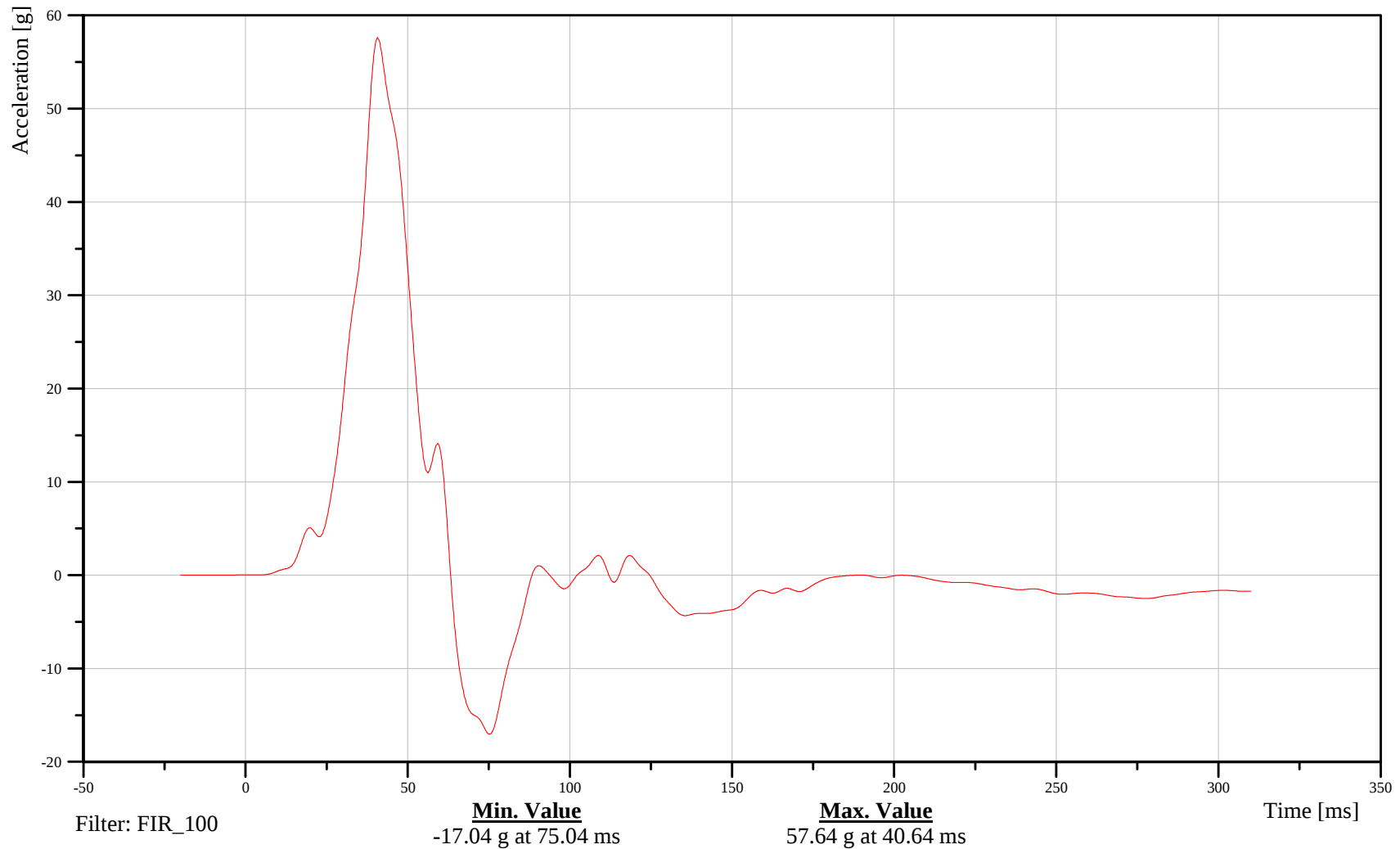
Customer: NHTSA

Test Number: C60514

14SPIN1200SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-152

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

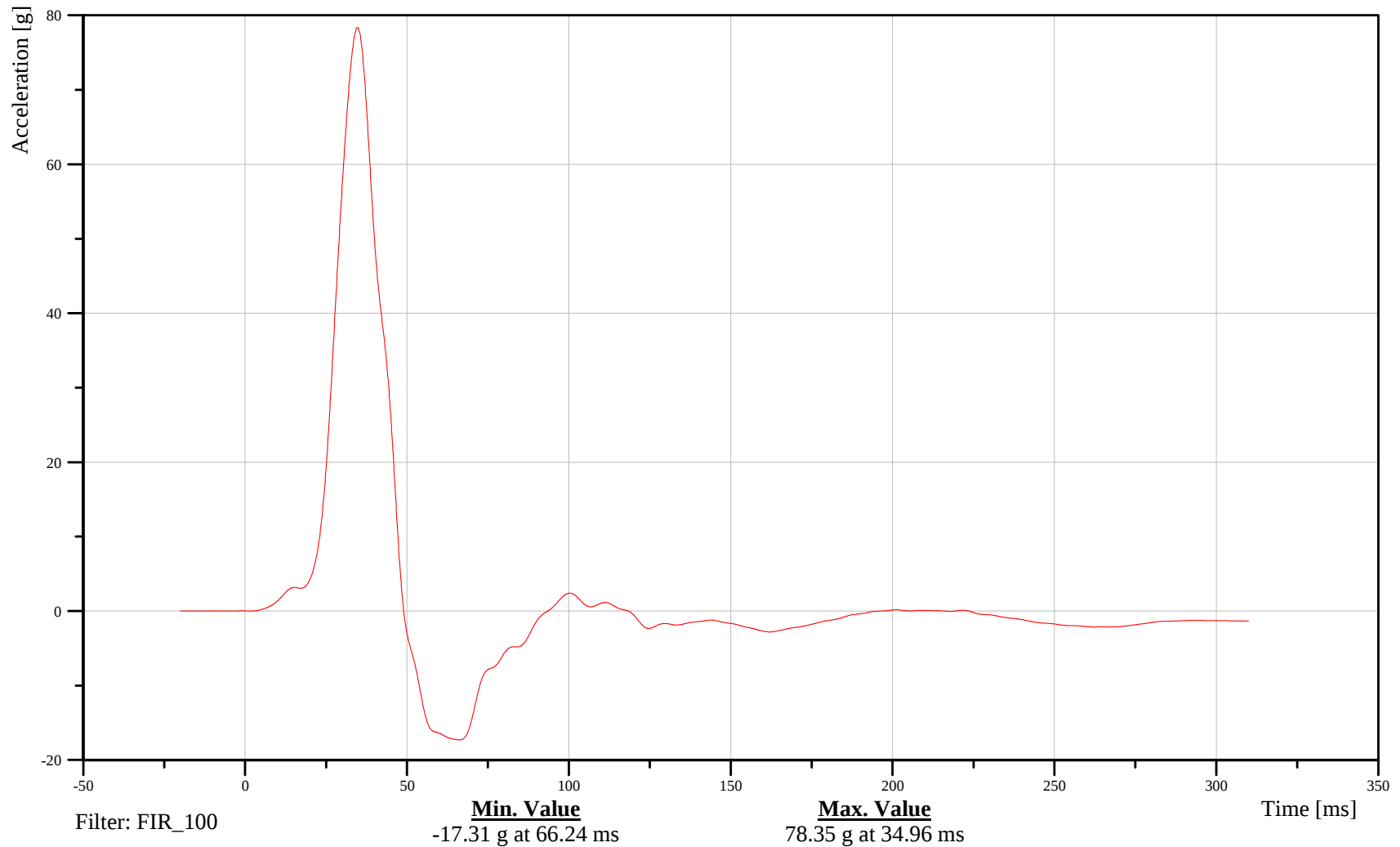
Customer: NHTSA

Test Number: C60514

14PELVCG00SHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-153

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

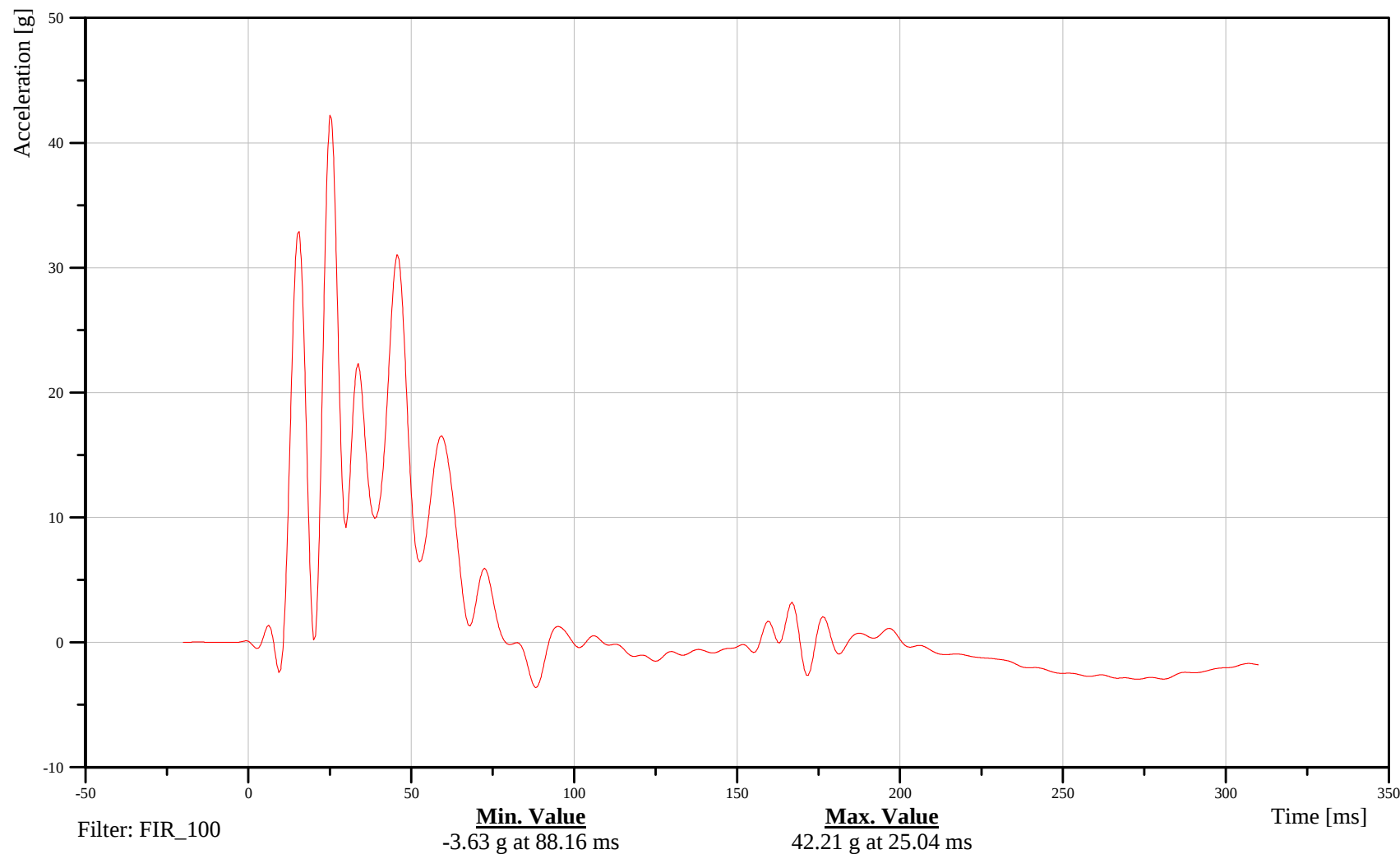
Customer: NHTSA

Test Number: C60514

11RIBSLURESHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-154

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

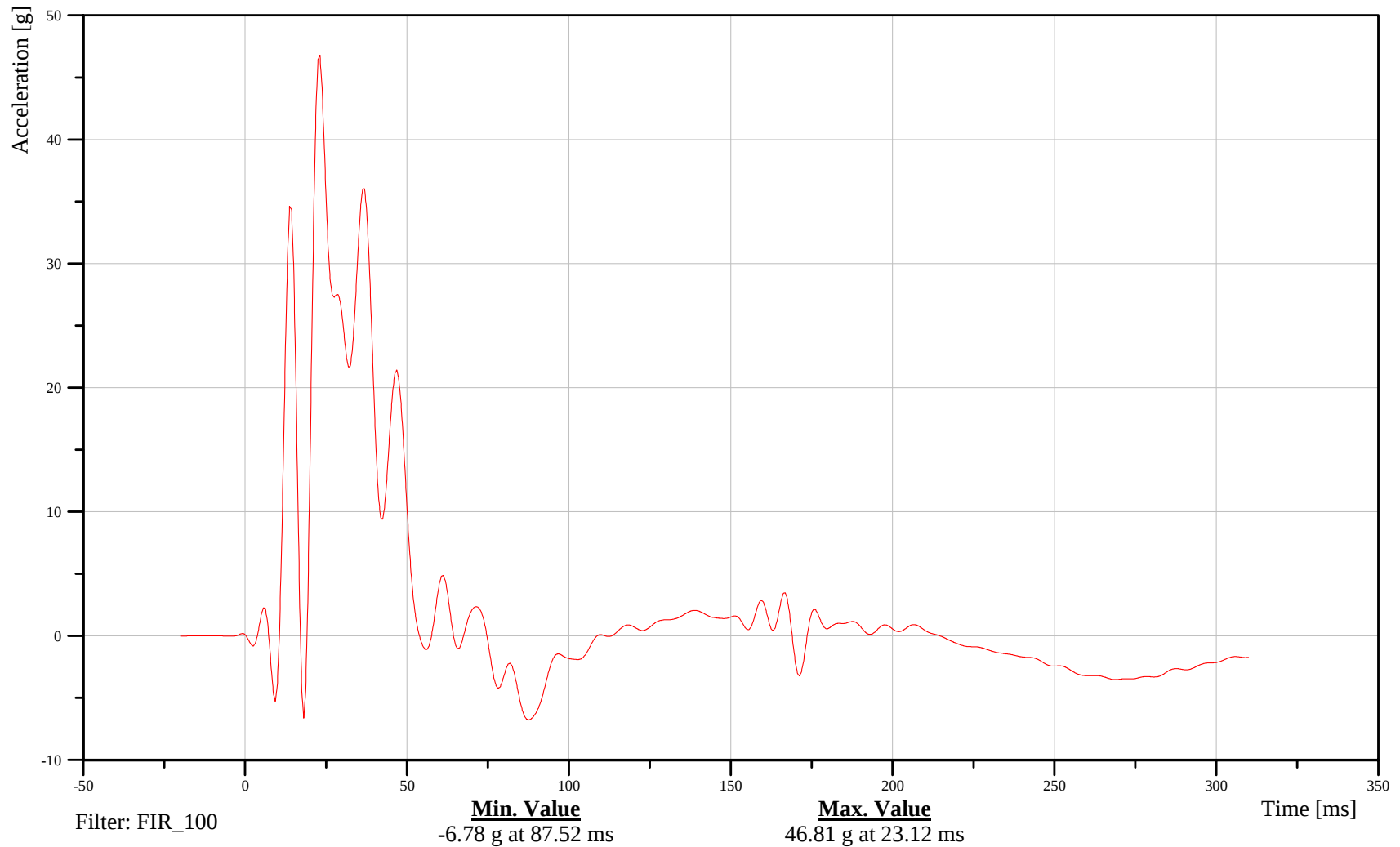
Date: 07/14/2006
Time: 13:32

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

11RIBSLLRESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-155

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

Date: 07/14/2006

Time: 13:32

DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

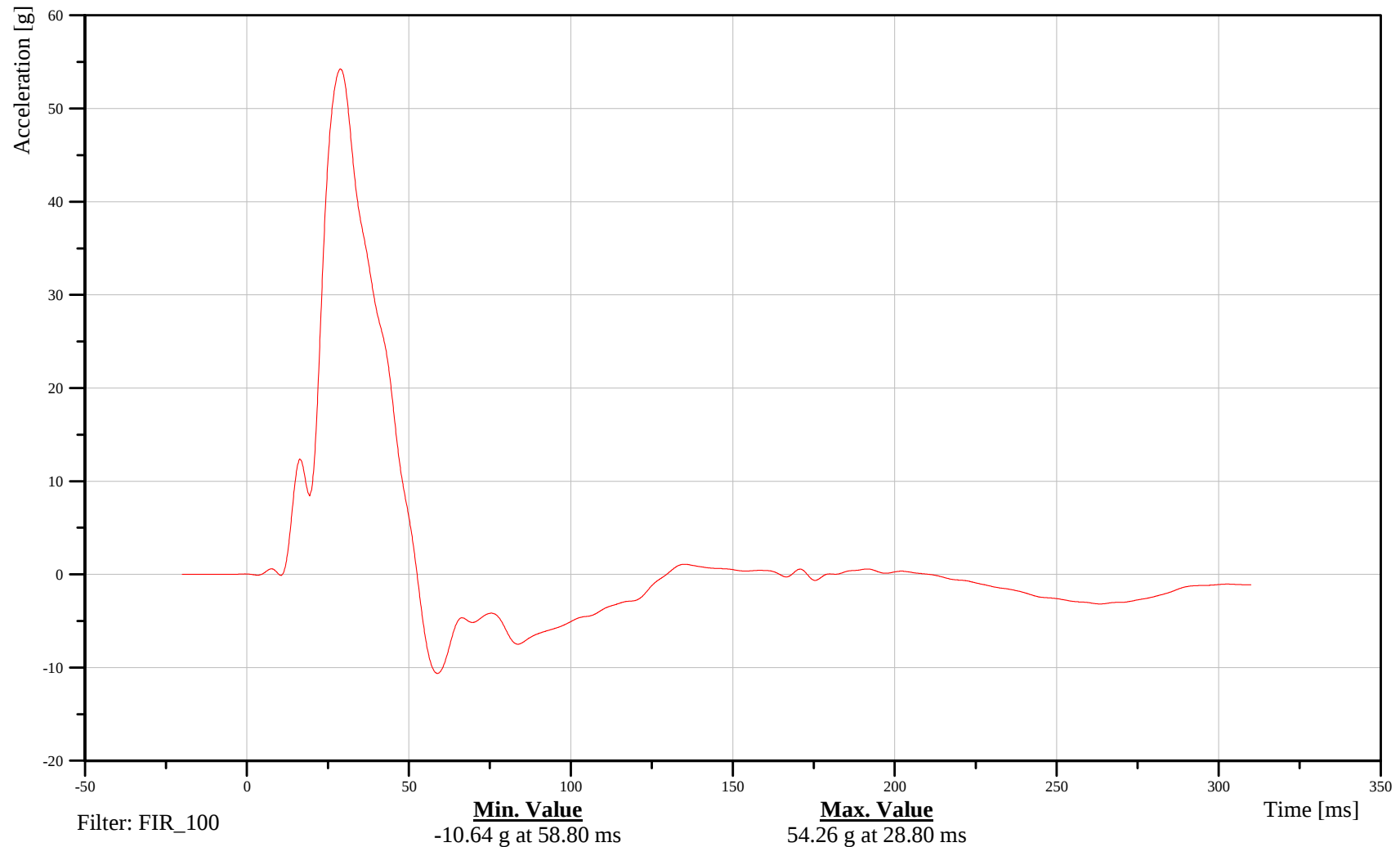
Customer: NHTSA

Test Number: C60514

11SPIN12RDSHACY1

TRC Inc. Test Lab: CTF

Test Number: 060714-1



B-156

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

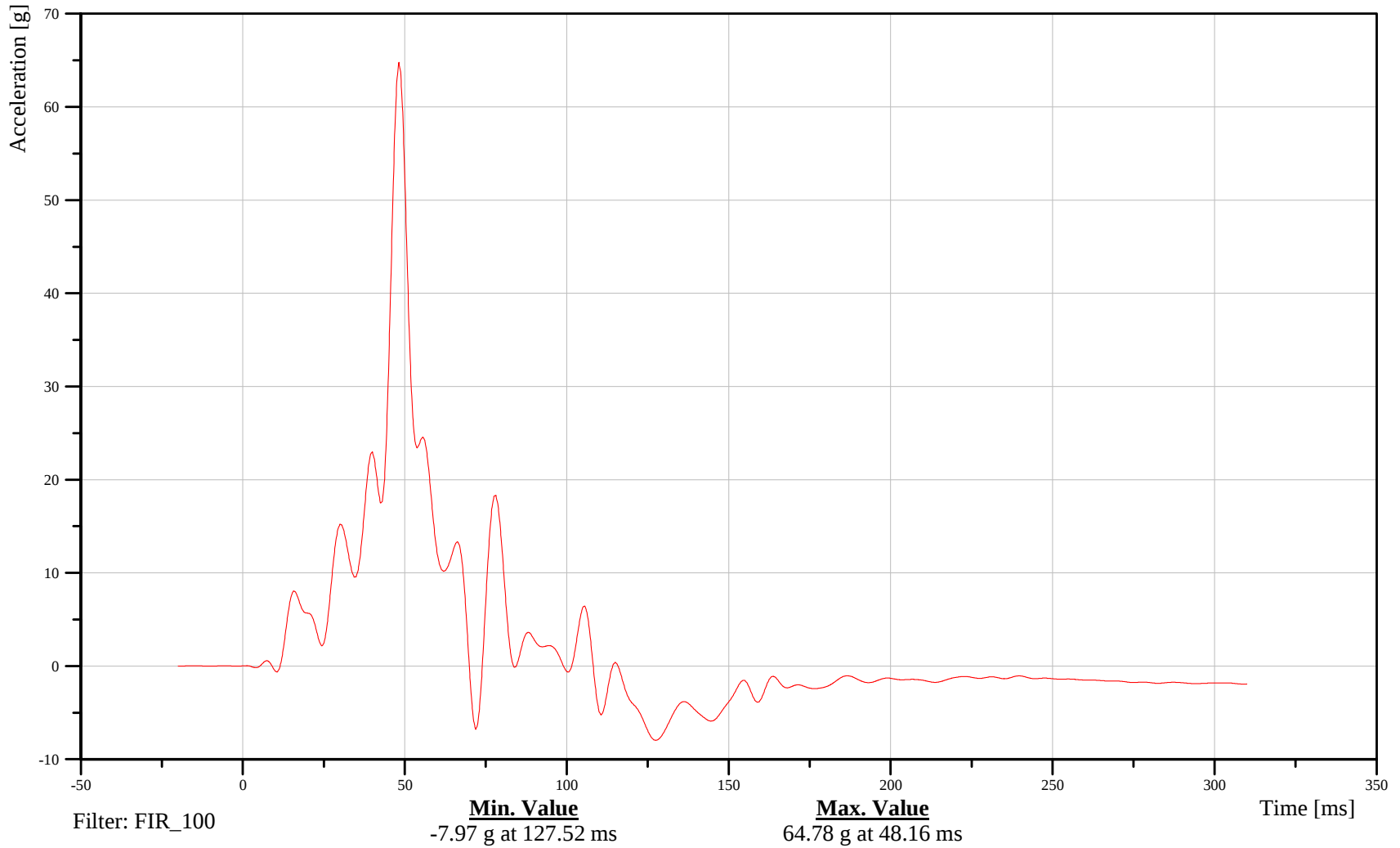
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

14RIBSLURESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-157

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

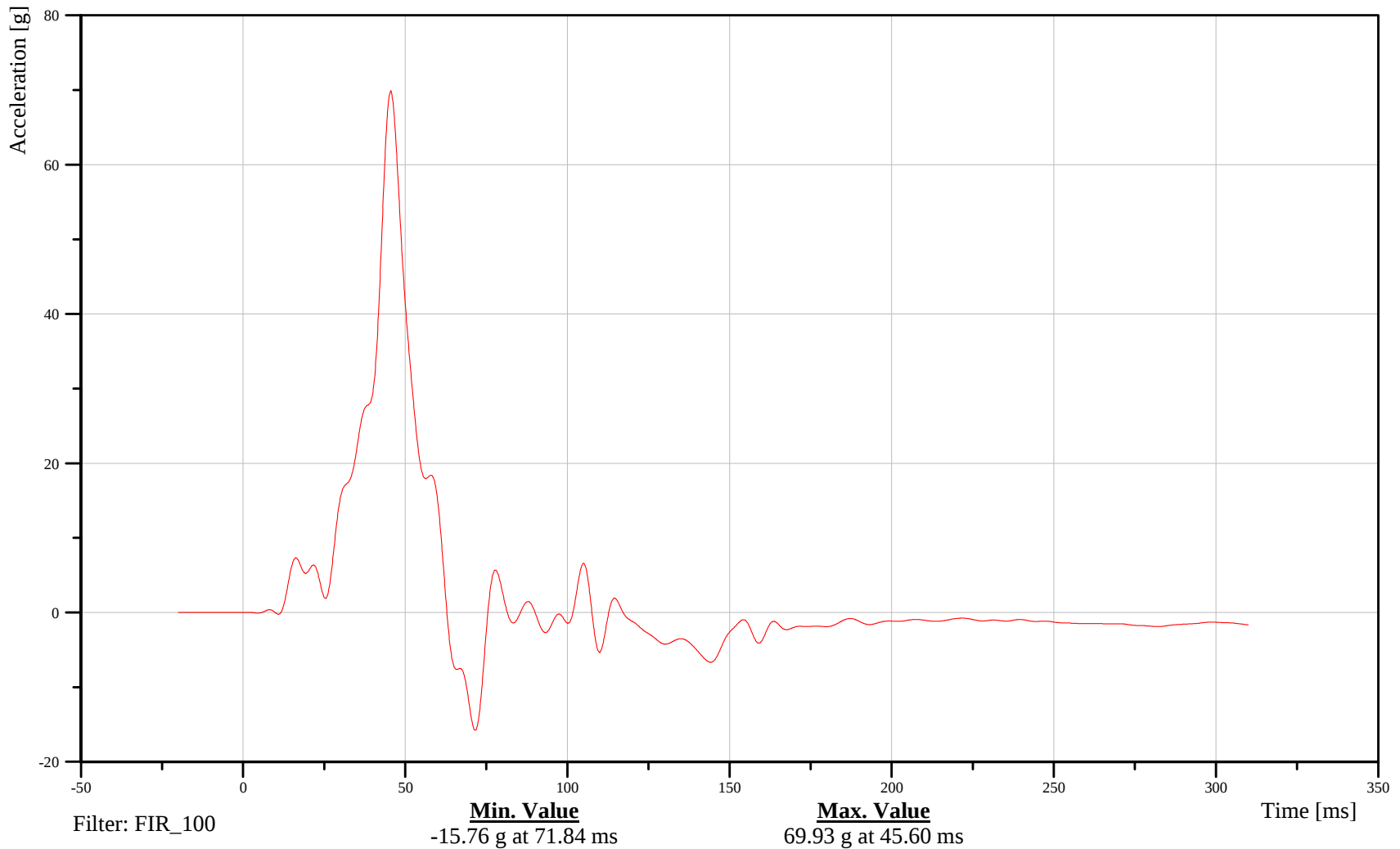
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

14RIBSLLRESHACY1

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-158

060714



56/28 kph 90 Deg. Side Impact (MDB) into Left Side of 2006 Hyundai Azera

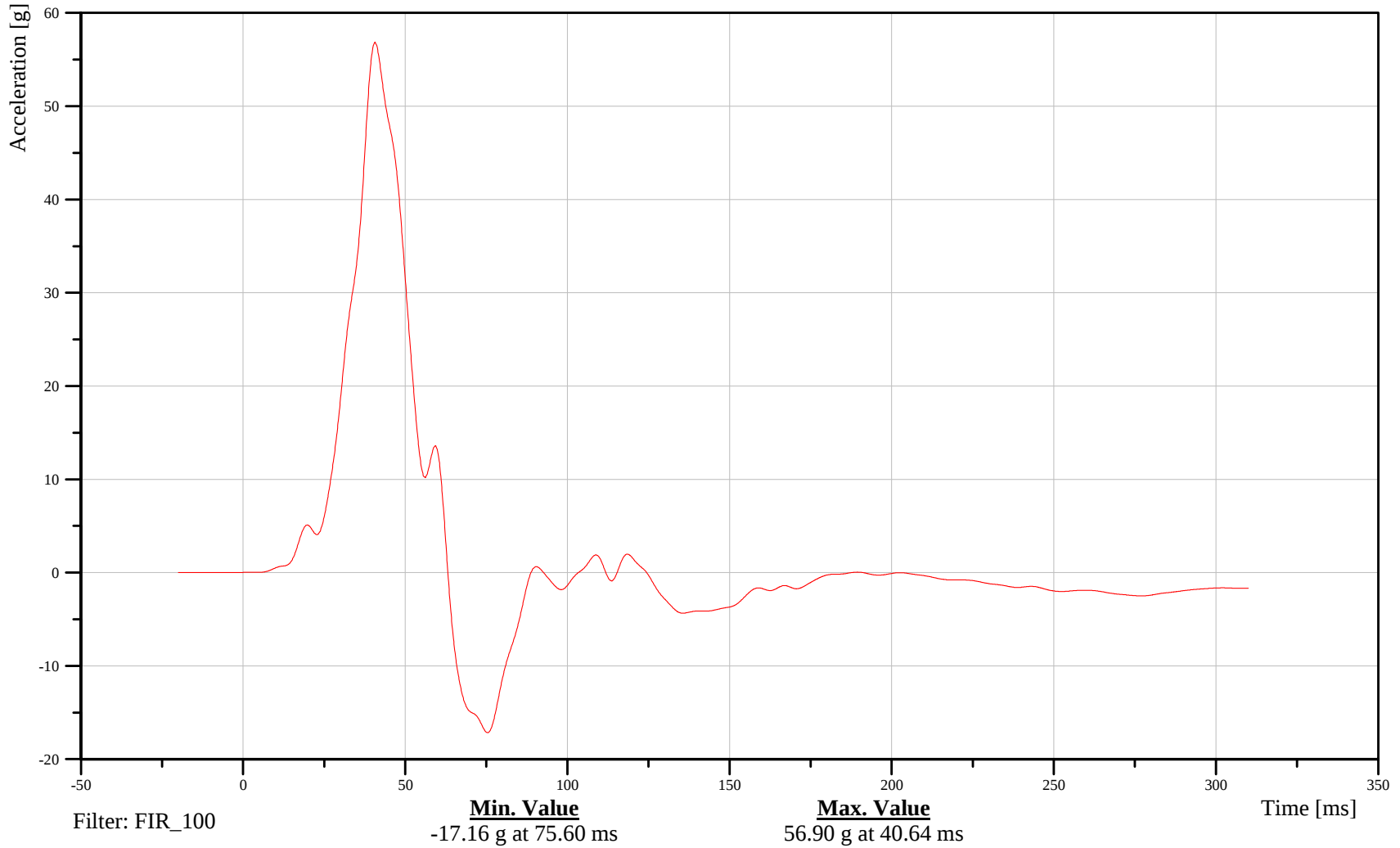
Date: 07/14/2006
Time: 13:32

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION

Customer: NHTSA
Test Number: C60514

14SPIN12RDSHACY1

TRC Inc. Test Lab: CTF
Test Number: 060714-1



B-159

060714

Appendix C

SID HIII Configuration and Performance Verification Data

Summary
SID HIII Pre-Test and Post-Test Calibration
Configured For Left Side Impact

Date: 03/24/06-07/25/06 TRC Inc. Test Number: S/N055 & S/N059
Laboratory Technician: D. Holloway, R. Stoner

Test Parameter	Specification	SID HIII 055		SID HIII 059	
		Pre-Test	Post-Test	Pre-Test	Post-Test
SH - Seated Height (mm)	889-909	905	903	901	902
RH - Rib Height (mm)	502-520	512	509	509	515
HP - Hip Pivot Height (mm)	99 ref	99.1	99.1	99.1	99.1
KH - Knee Pivot from Back Line (mm)	511-526	522	515	521	523
KV - Knee Pivot to Floor (mm)	490-505	495	493	494	503
HW - Hip Width (mm)	356-391	370	364	366	360
Thorax Impacts					
Temperature (°C)	18.9-25.5	21.2	21.2	21.6	20.9
Relative Humidity (%)	10-70	32	49	48	52
Probe Speed (m/s)	4.27-4.33	4.287	4.276	4.293	4.301
Upper Rib (g's)	37-46	41.7	40.5	41.0	40.4
Lower Rib (g's)	37-46	40.9	40.0	37.1	38.3
Lower Spine (g's)	15-22	19.5	18.4	17.3	18.0
Pelvis Impacts					
Temperature (°C)	18.9-25.5	21.1	20.6	21.4	20.8
Relative Humidity (%)	10-70	31	48	45	48
Probe Speed (m/s)	4.27-4.33	4.292	4.271	4.292	4.283
Pelvis (g's)	40-60	52.3	57.4	42.9	42.5

Calibration Test Results

Pre-Test

SID HIII: 055

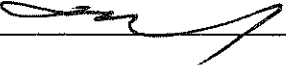
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was tested on March 17, 2006 for a previous calibration series.

Transportation Research Center Inc.
SID/HIII Dummy
External Dimensions
Serial No. 055 Calibration No. 20

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	905 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	512 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	522 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	495 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	370 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	171 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	170 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	0.0 mm	Yes

Technician



Approved




Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 055 Certification No. 20-1

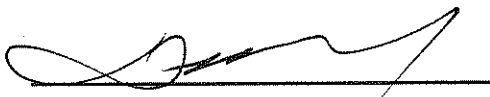
Test Date: 03/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	141.1 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	6.1 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

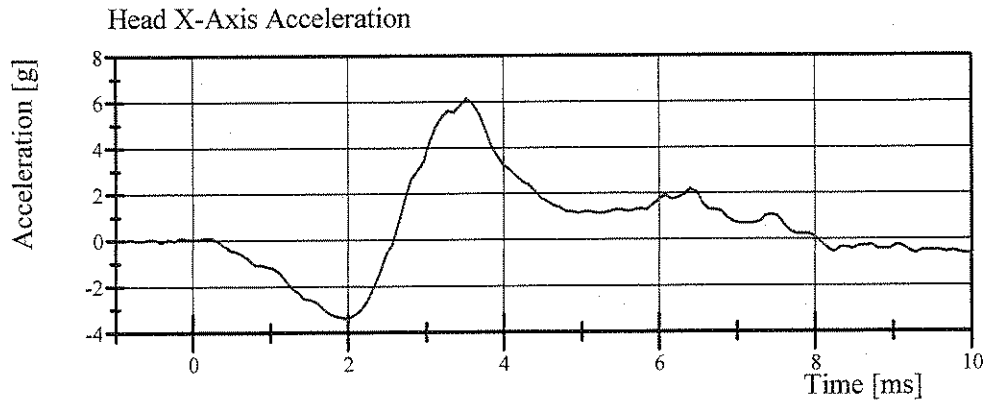


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 055 Certification No. 20-1

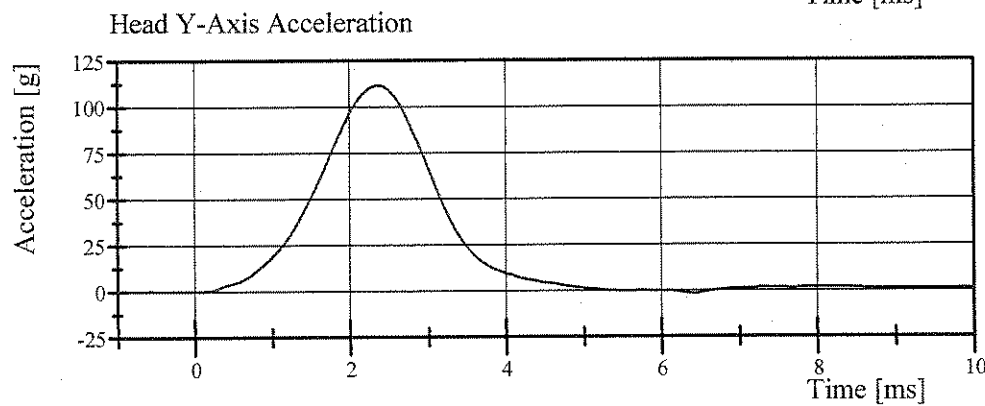
Test Date: 03/24/2006



Filter Class: CFC_1000

Max: 6.1 g at 3.5 ms

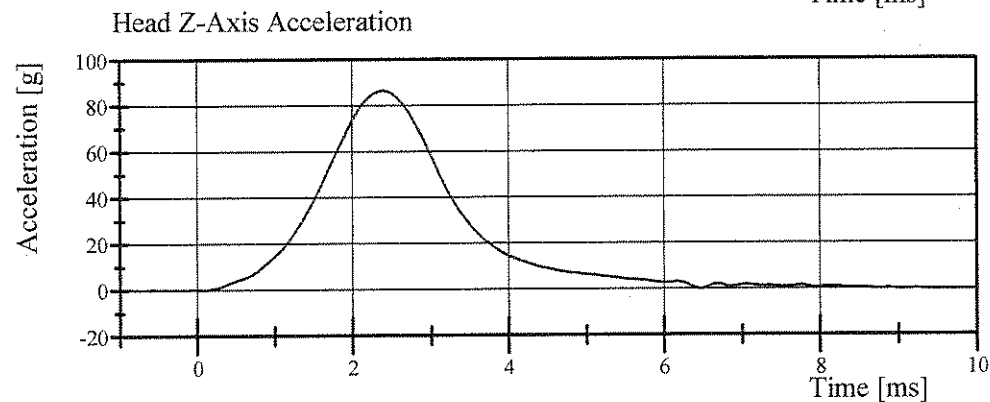
Min: -3.4 g at 2.0 ms



Filter Class: CFC_1000

Max: 111.5 g at 2.4 ms

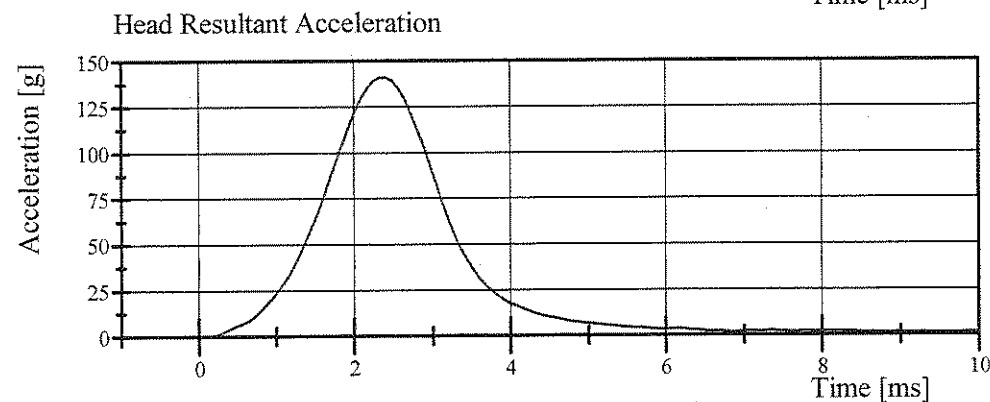
Min: -1.8 g at 6.4 ms



Filter Class: CFC_1000

Max: 86.5 g at 2.4 ms

Min: -0.4 g at 9.4 ms



Filter Class: CFC_1000

Max: 141.1 g at 2.4 ms

Min: 0.0 g at -0.2 ms

Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 20-1

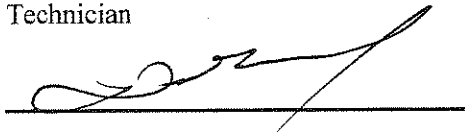
Test Date: 03/27/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	28 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.012 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.296 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.604 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.528 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.263 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-71.7 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	60.6 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	83.1 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	53.5 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	8.2 ms	Yes

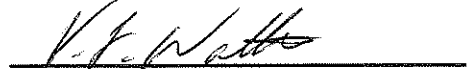
Test meets specifications.

Comments:

Technician



Approved



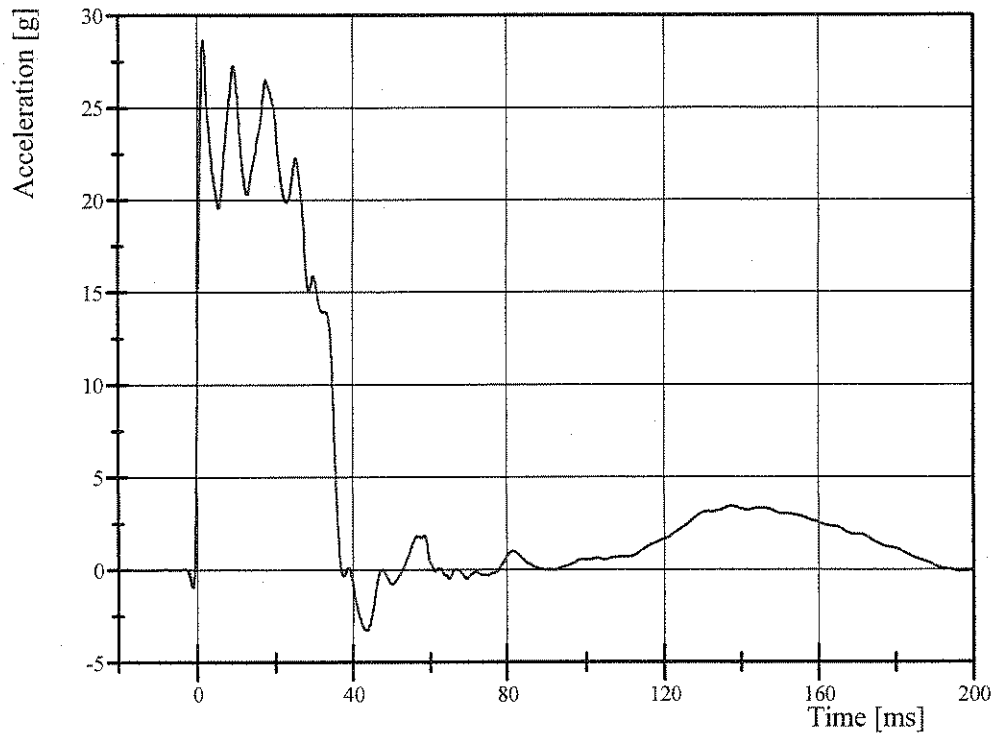
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 20-1

Test Date: 03/27/2006

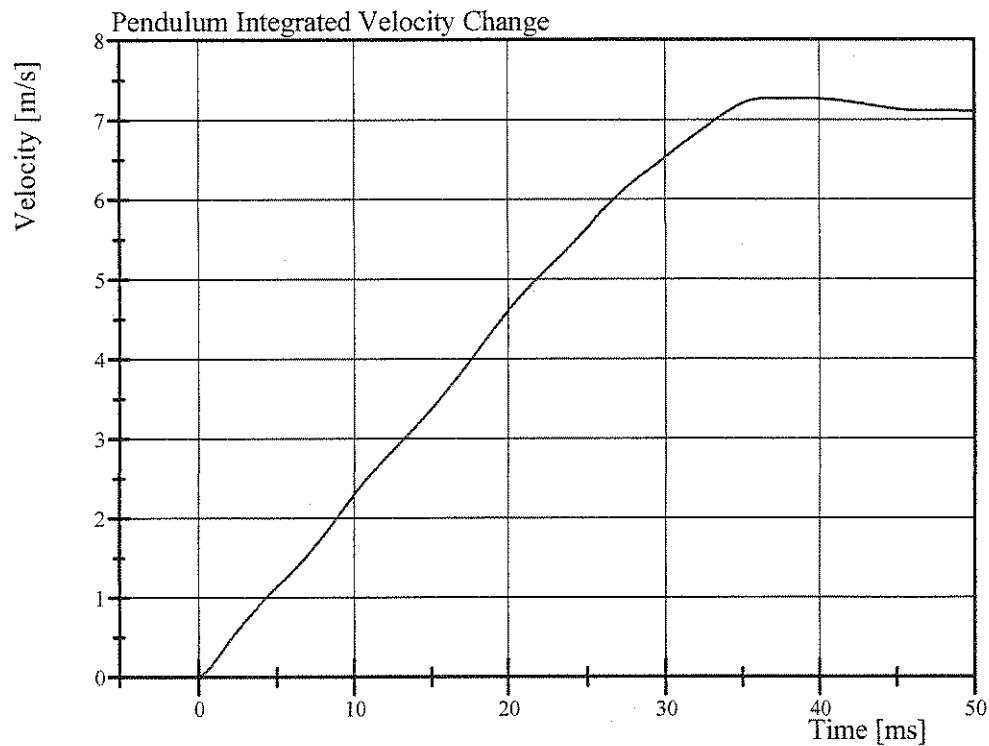
Pendulum Acceleration



Filter Class: CFC_180

Max: 28.6 g at 1.4 ms

Min: -3.3 g at 43.5 ms



Filter Class: CFC_180

Max: 7.3 m/s at 36.9 ms

Min: 0.0 m/s at 0.0 ms



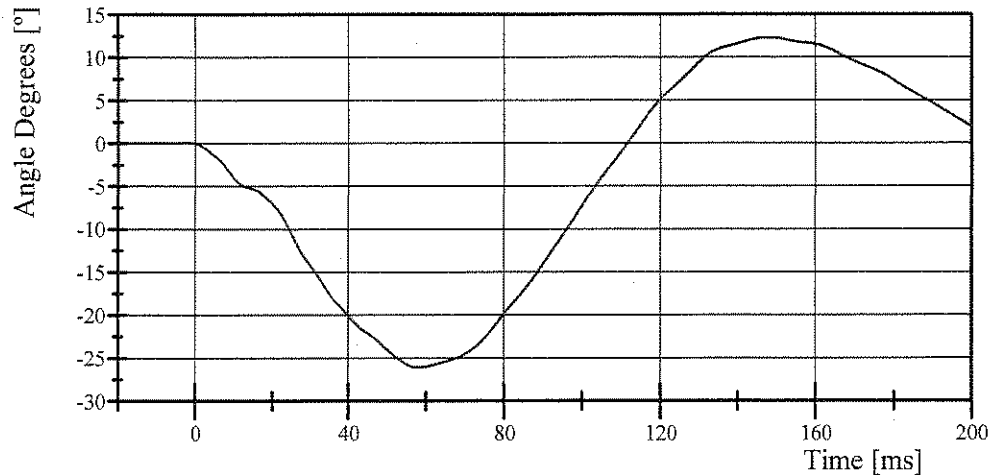
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 20-1

Test Date: 03/27/2006

Pot Rotation at the Base of Neck

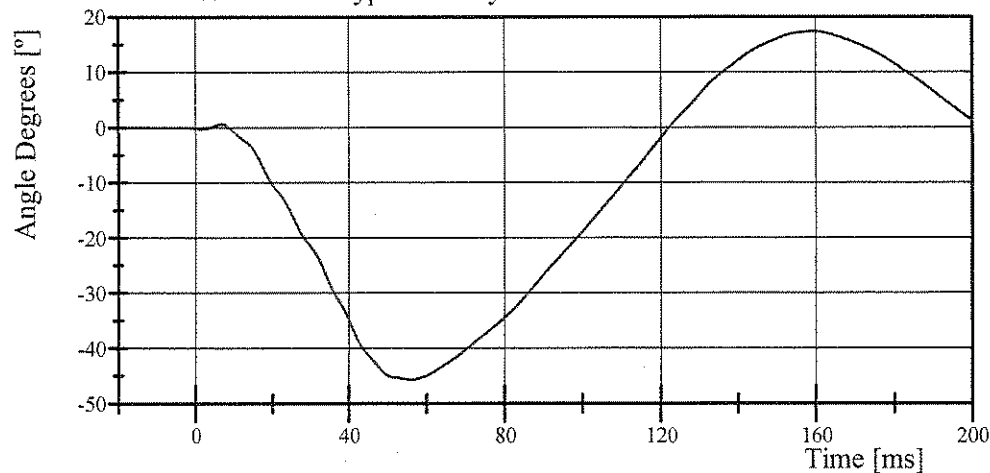


Filter Class: CFC_60

Max: 12.3 ° at 147.9 ms

Min: -26.1 ° at 58.1 ms

Head Rotation at Occypital Condyles

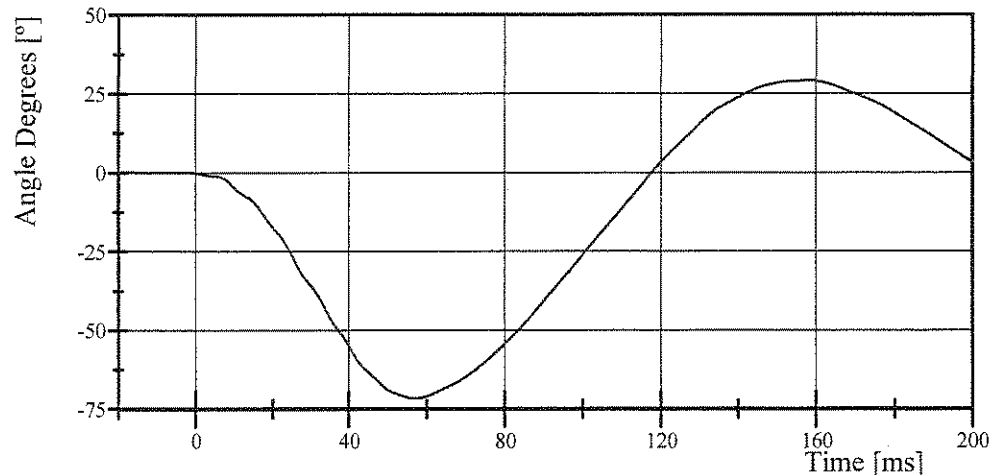


Filter Class: CFC_60

Max: 17.4 ° at 159.4 ms

Min: -45.7 ° at 56.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 29.0 ° at 158.3 ms

Min: -71.7 ° at 57.0 ms

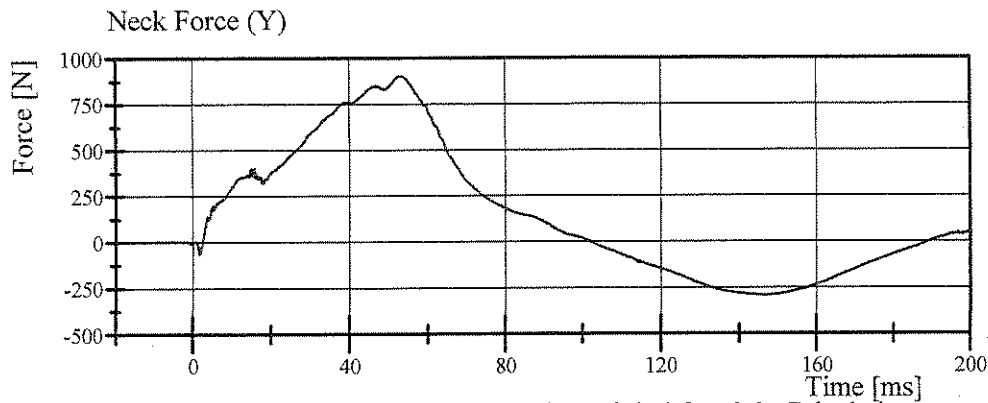


Transportation Research Center Inc.

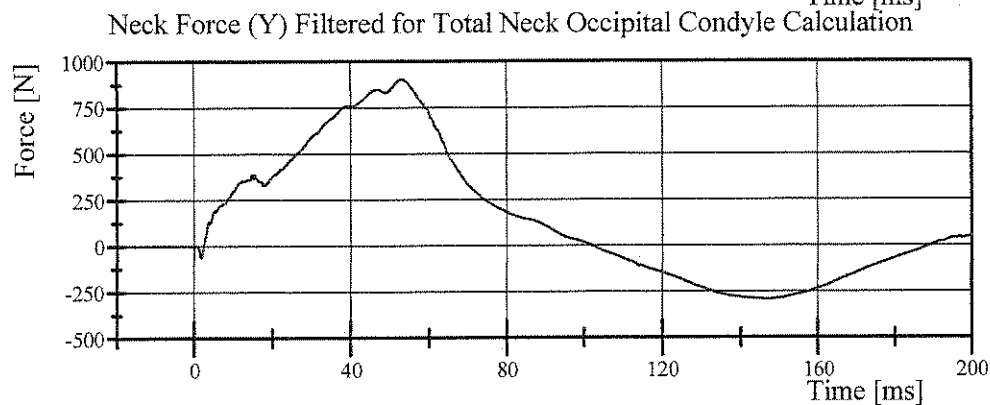
Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 20-1

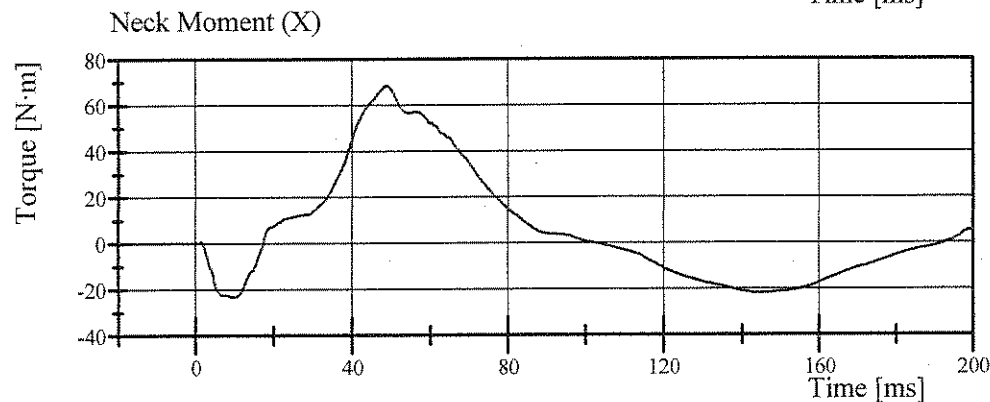
Test Date: 03/27/2006



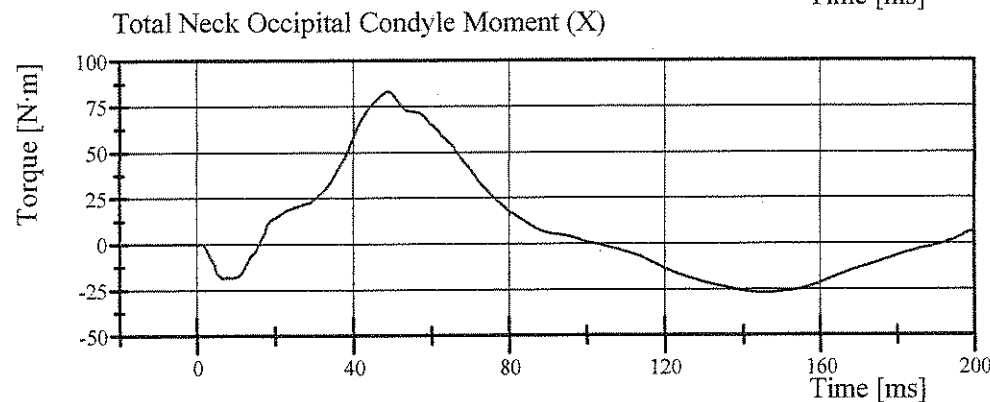
Filter Class: CFC_1000
Max: 901.9 N at 52.9 ms
Min: -293.9 N at 146.4 ms



Filter Class: CFC_600
Max: 901.5 N at 52.9 ms
Min: -293.5 N at 146.4 ms



Filter Class: CFC_600
Max: 68.3 N·m at 48.8 ms
Min: -23.3 N·m at 9.9 ms



Filter Class: CFC_600
Max: 83.1 N·m at 48.8 ms
Min: -27.0 N·m at 145.0 ms



Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 055 Certification No. 20-1

Test Date: 03/28/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.287 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	41.7 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	40.9 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	19.5 g	Yes

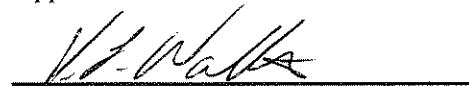
Test meets specifications.

Comments:

Technician



Approved



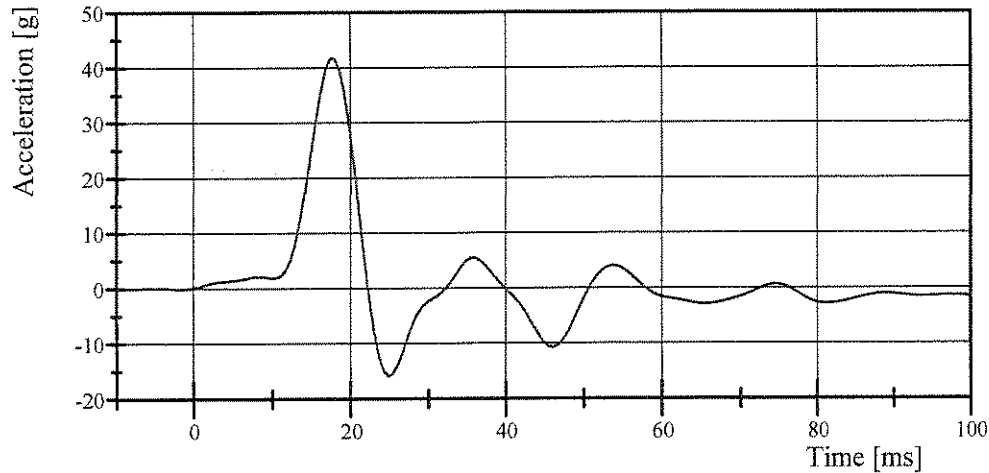
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 055 Certification No. 20-1

Test Date: 03/28/2006

Upper Rib Acceleration (Y)

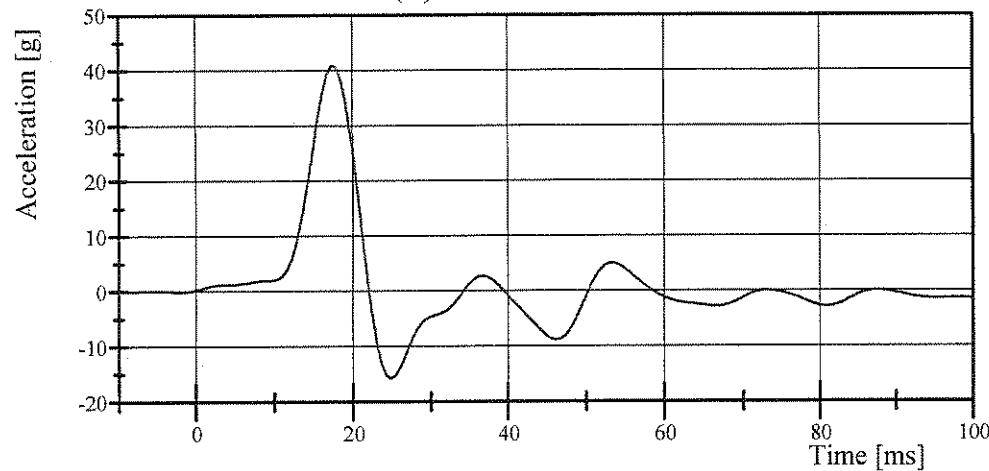


Filter Class: FIR_100

Max: 41.7 g at 17.9 ms

Min: -15.9 g at 24.9 ms

Lower Rib Acceleration (Y)

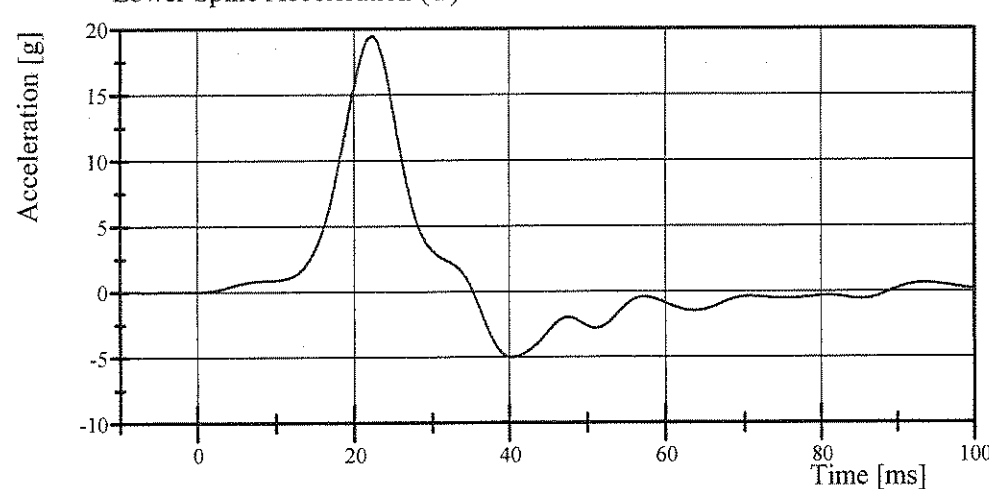


Filter Class: FIR_100

Max: 40.9 g at 17.4 ms

Min: -15.8 g at 24.8 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100

Max: 19.5 g at 22.3 ms

Min: -5.0 g at 40.5 ms



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 055 Certification No. 20-1

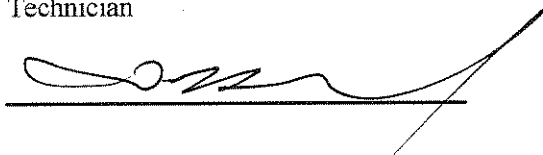
Test Date: 03/28/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.292 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	5.8 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	52.3 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

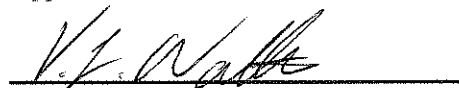
Test meets specifications.

Comments:

Technician



Approved



Transportation Research Center Inc.

3.05 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 055 Certification No. 19-1

Test Date: 03/17/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Maximum Force at Test Velocity	855 - 1,144 N	973.8 N	Yes
Maximum Displacement at Test Velocity	30.2 - 35.19 mm	31.291 mm	Yes

Test meets specifications.

Comments:

Actual Impactor Velocity (m/s): 3.074

Damper Setting: 9.0

Technician



Approved



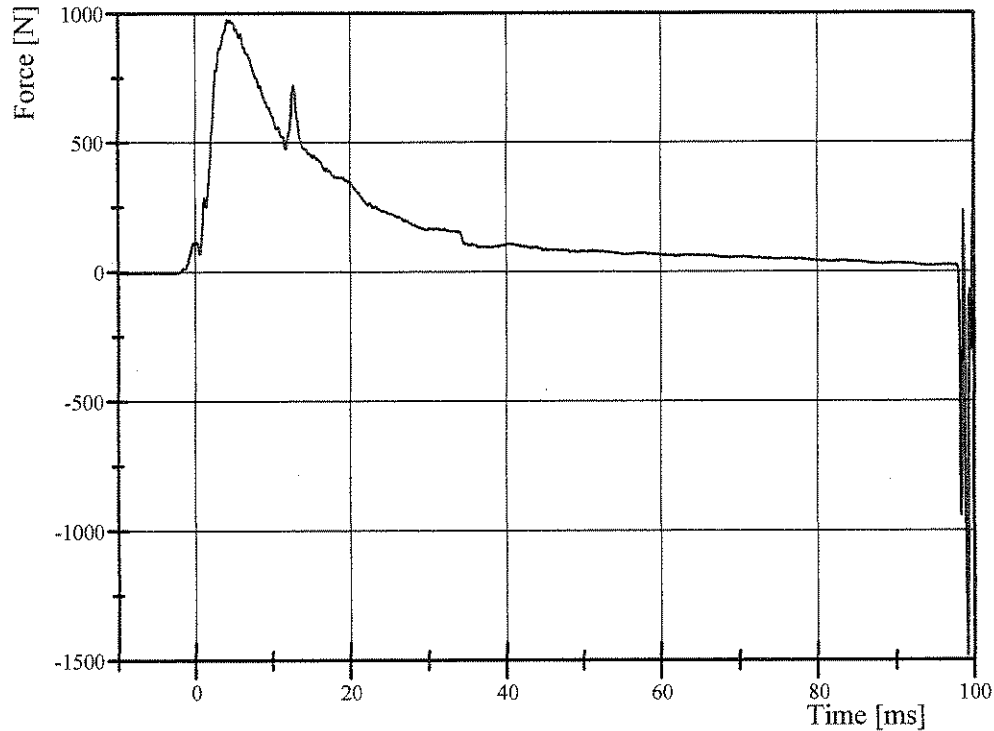
Transportation Research Center Inc.

3.05 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 055 Certification No. 19-1

Test Date: 03/17/2006

Shock Absorber Resistive Force

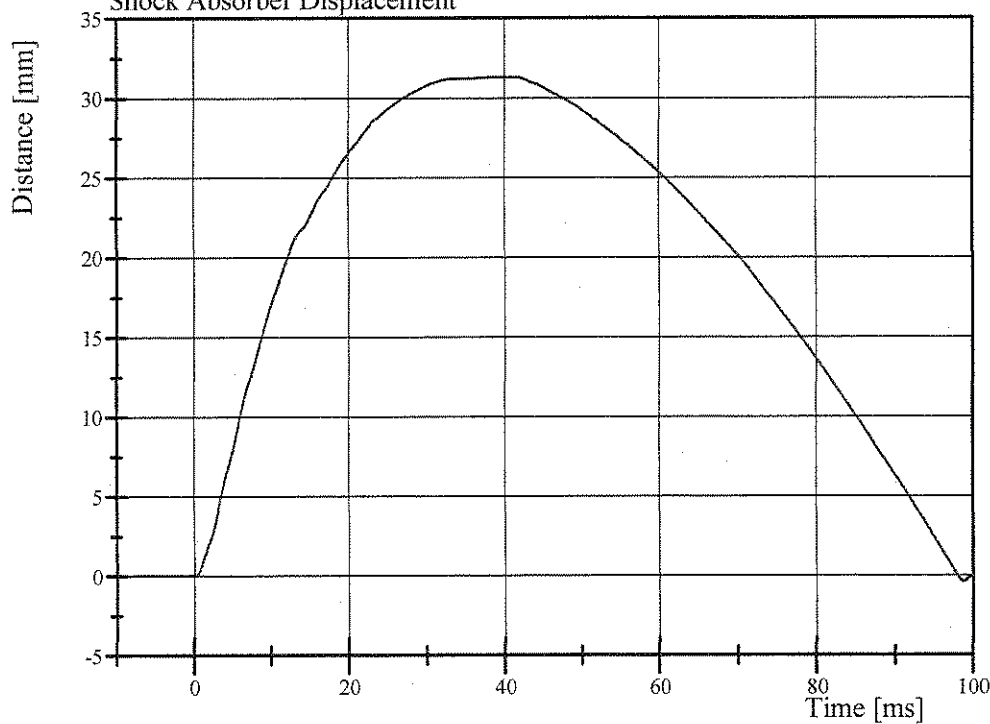


Filter Class: CFC_1000

Max: 973.8 N at 4.2 ms

Min: -1,481.2 N at 99.1 ms

Shock Absorber Displacement



Filter Class: CFC_1000

Max: 31.3 mm at 40.6 ms

Min: -0.4 mm at 98.8 ms



Transportation Research Center Inc.

4.27 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 055 Certification No. 19-1

Test Date: 03/17/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Maximum Force at Test Velocity	1,758 - 2,125 N	1,944.0 N	Yes
Maximum Displacement at Test Velocity	31.71 - 37.26 mm	34.448 mm	Yes

Test meets specifications.

Comments:

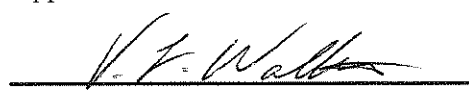
Actual Impactor Velocity (m/s): 4.294

Damper Setting: 9.0

Technician



Approved



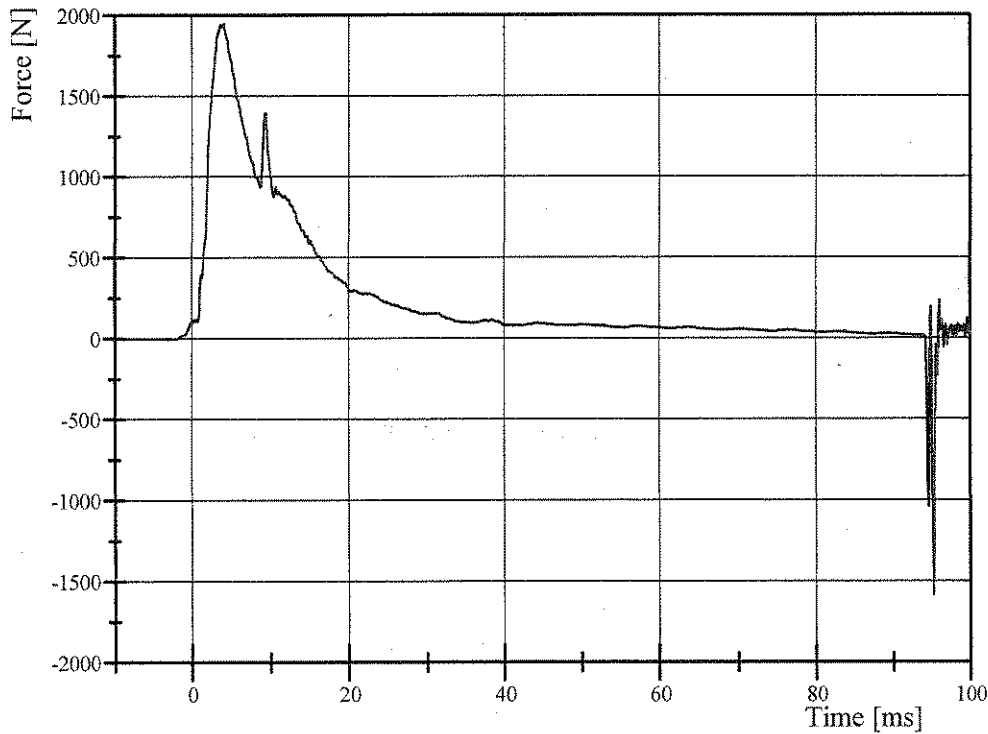
Transportation Research Center Inc.

4.27 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 055 Certification No. 19-1

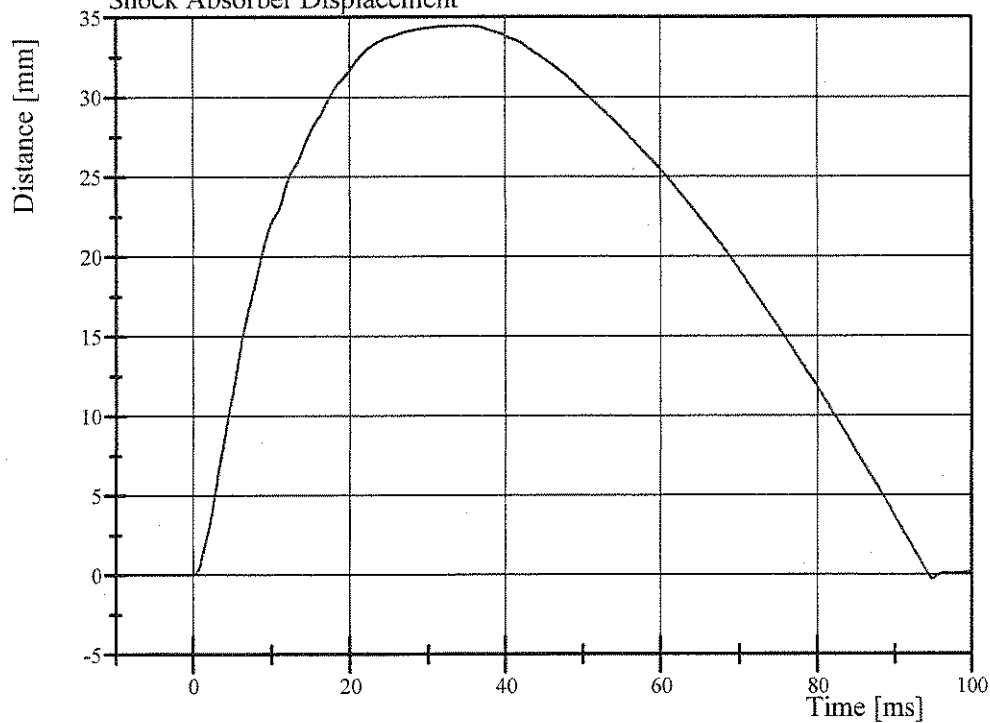
Test Date: 03/17/2006

Shock Absorber Resistive Force



Filter Class: CFC_1000
Max: 1,944.0 N at 4.1 ms
Min: -1,583.3 N at 95.2 ms

Shock Absorber Displacement



Filter Class: CFC_1000
Max: 34.4 mm at 34.6 ms
Min: -0.3 mm at 94.9 ms



Transportation Research Center Inc.

6.10 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 055 Certification No. 19-1

Test Date: 03/17/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Maximum Force at Test Velocity	3,740 - 4,434 N	4,431.3 N	Yes
Maximum Displacement at Test Velocity	33.36 - 39.56 mm	36.343 mm	Yes

Test meets specifications.

Comments:

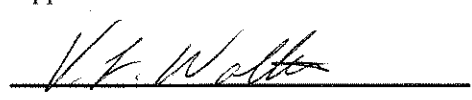
Actual Impactor Velocity (m/s): 6.093

Damper Setting: 9.0

Technician



Approved



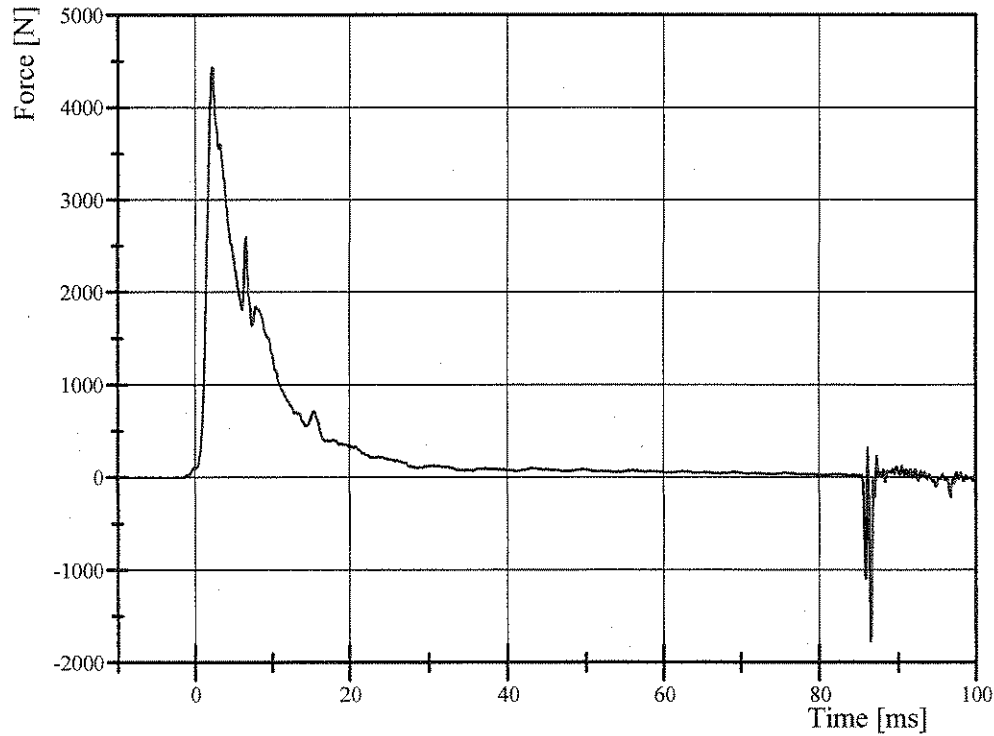
Transportation Research Center Inc.

6.10 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 055 Certification No. 19-1

Test Date: 03/17/2006

Shock Absorber Resistive Force



Filter Class: CFC_1000

Max: 4,431.3 N at 2.2 ms

Min: -1,776.8 N at 86.5 ms

Shock Absorber Displacement



Filter Class: CFC_1000

Max: 36.3 mm at 28.2 ms

Min: -0.5 mm at 86.2 ms



Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 055 Certification No. 20-5

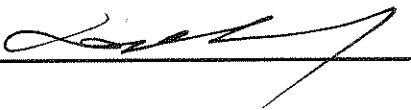
Test Date: 03/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	27 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.887 mm/s	Yes

Test meets specifications.

Comments:

Technician



Approved

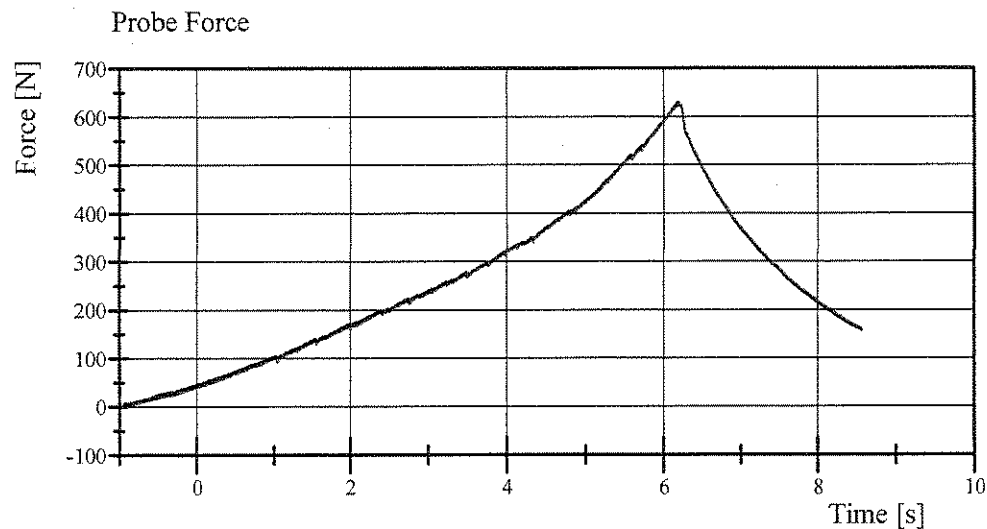


Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 055 Certification No. 20-5

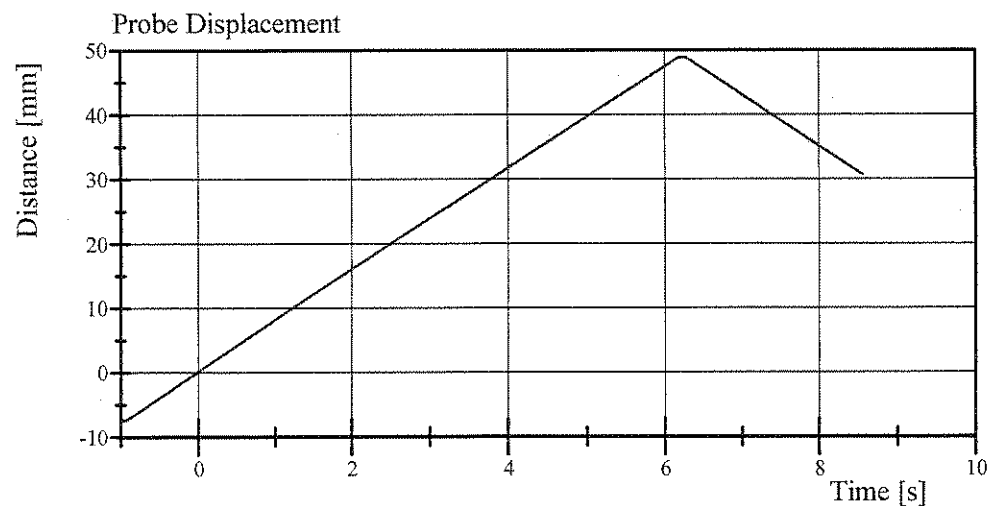
Test Date: 03/24/2006



Filter Class: CFC_600

Max: 629.6 N at 6.2 s

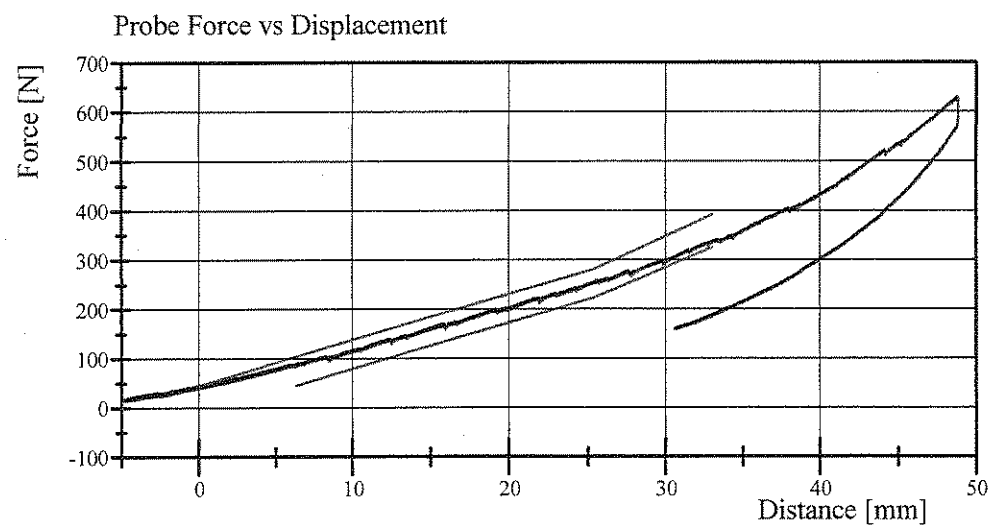
Min: -2.5 N at -1.0 s



Filter Class: CFC_180

Max: 48.8 mm at 6.2 s

Min: -7.4 mm at -1.0 s



Filter Class: CFC_600

Max: 629.6 N at 48.7 mm

Min: -2.5 N at -7.4 mm



TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

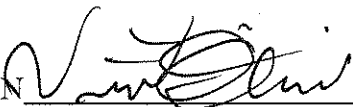
SID/HII

CAL DATE: 24-Mar-06

TRC, INC. TEST NO: TOFL-01 572M SN 055 TORSO FLEX CAL 20

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.3°C
RELATIVE HUMIDITY	10 – 70 %	26 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	129.0 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	169.0 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	213.5 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	11 °

TEST MEETS SPECIFICATIONS

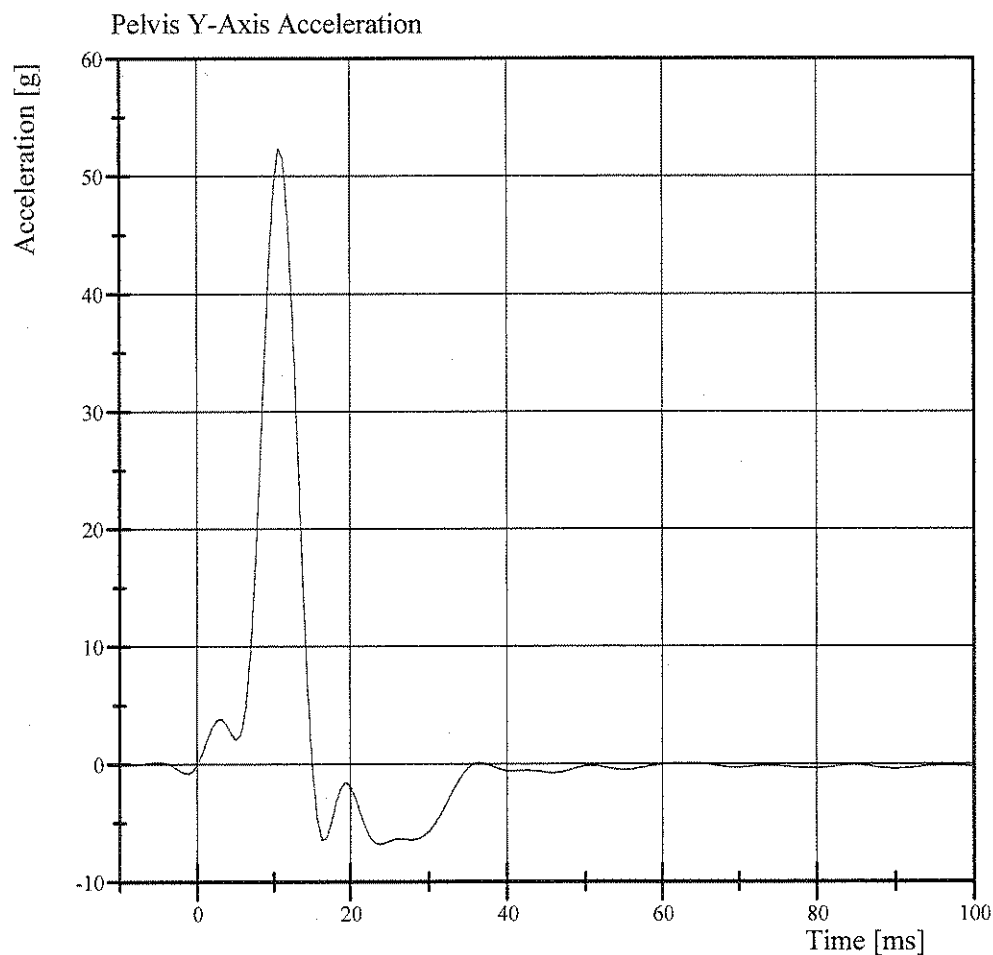
TECHNICIAN 

Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 055 Certification No. 20-1

Test Date: 03/28/2006



Filter Class: FIR_100
Max: 52.3 g at 10.7 ms
Min: -6.8 g at 23.8 ms



Calibration Test Results

Pre-Test

SID HIII: 059

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was tested on March 17, 2006 for a previous calibration series.

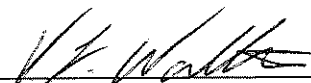
Transportation Research Center Inc.
SID/HIIH Dummy Pre-Test
External Dimensions
Serial No. 059 Calibration No. 15

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	901 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	509 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	521 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	494 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	366 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	177 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	177 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	0.0 mm	Yes

Technician



Approved




Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 6/6/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	147.6 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	4.5 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

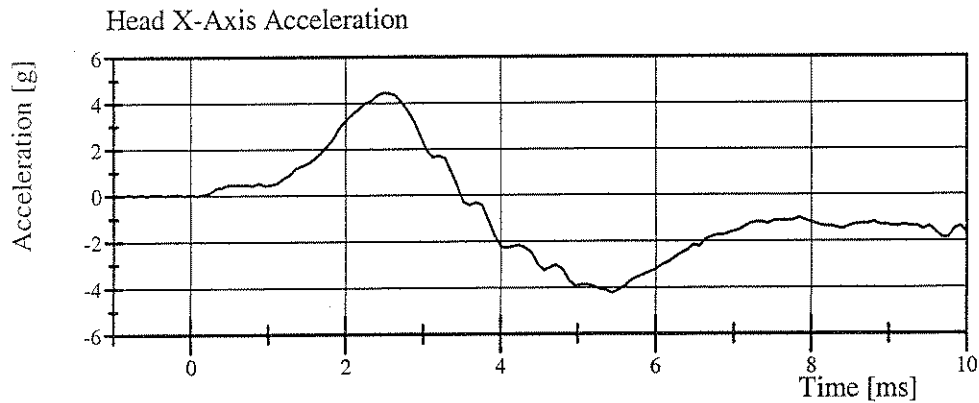


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 15-1

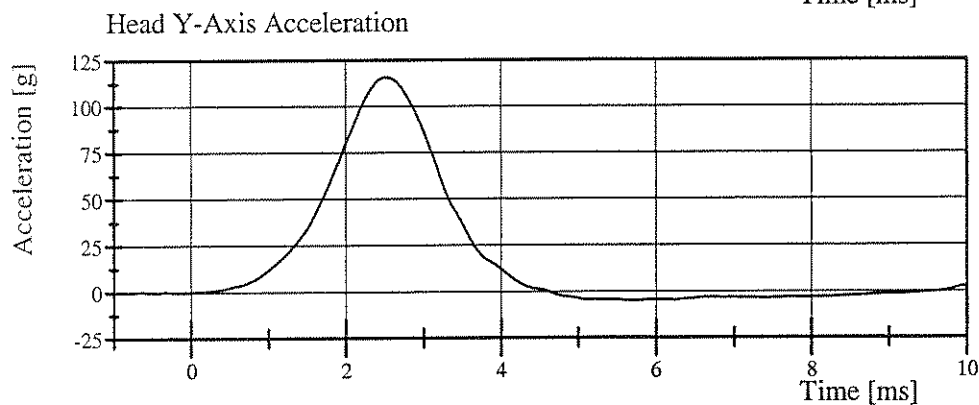
Test Date: 6/6/2006



Filter Class: CFC_1000

Max: 4.5 g at 2.5 ms

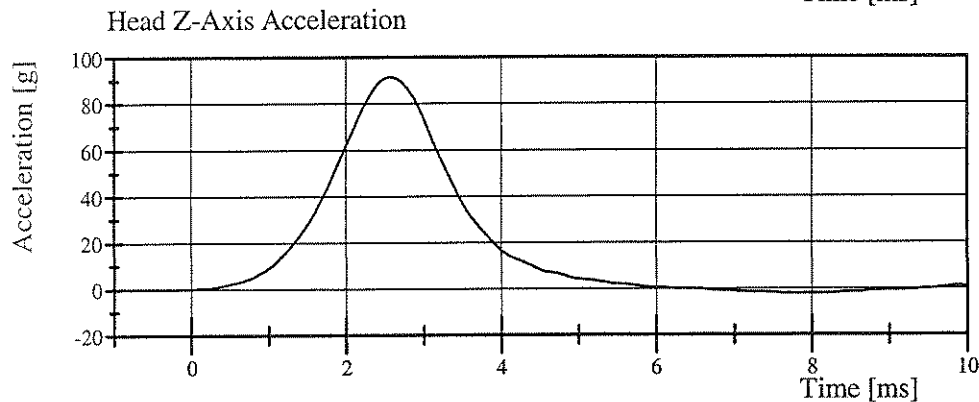
Min: -4.2 g at 5.4 ms



Filter Class: CFC_1000

Max: 115.7 g at 2.5 ms

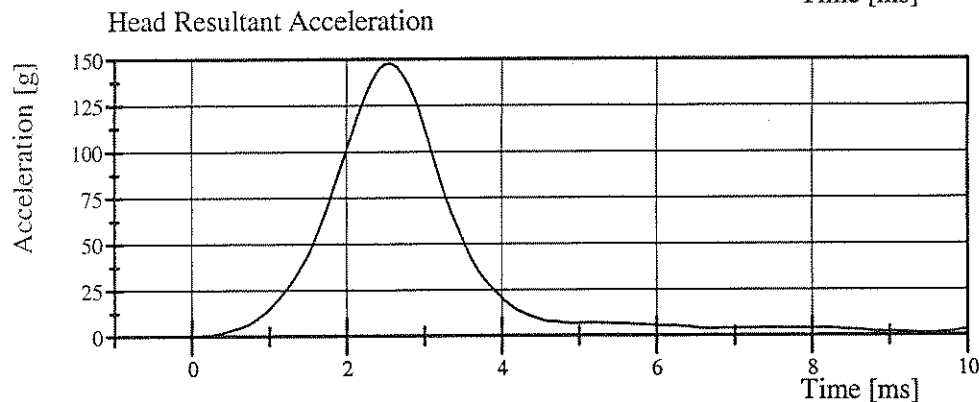
Min: -5.1 g at 5.8 ms



Filter Class: CFC_1000

Max: 91.7 g at 2.6 ms

Min: -2.3 g at 7.8 ms



Filter Class: CFC_1000

Max: 147.6 g at 2.6 ms

Min: 0.1 g at -0.7 ms

Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

Test Date: 06/09/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.041 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.245 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.386 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.214 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.270 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-75.6 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	62.4 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	80.6 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	54.1 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	6.6 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

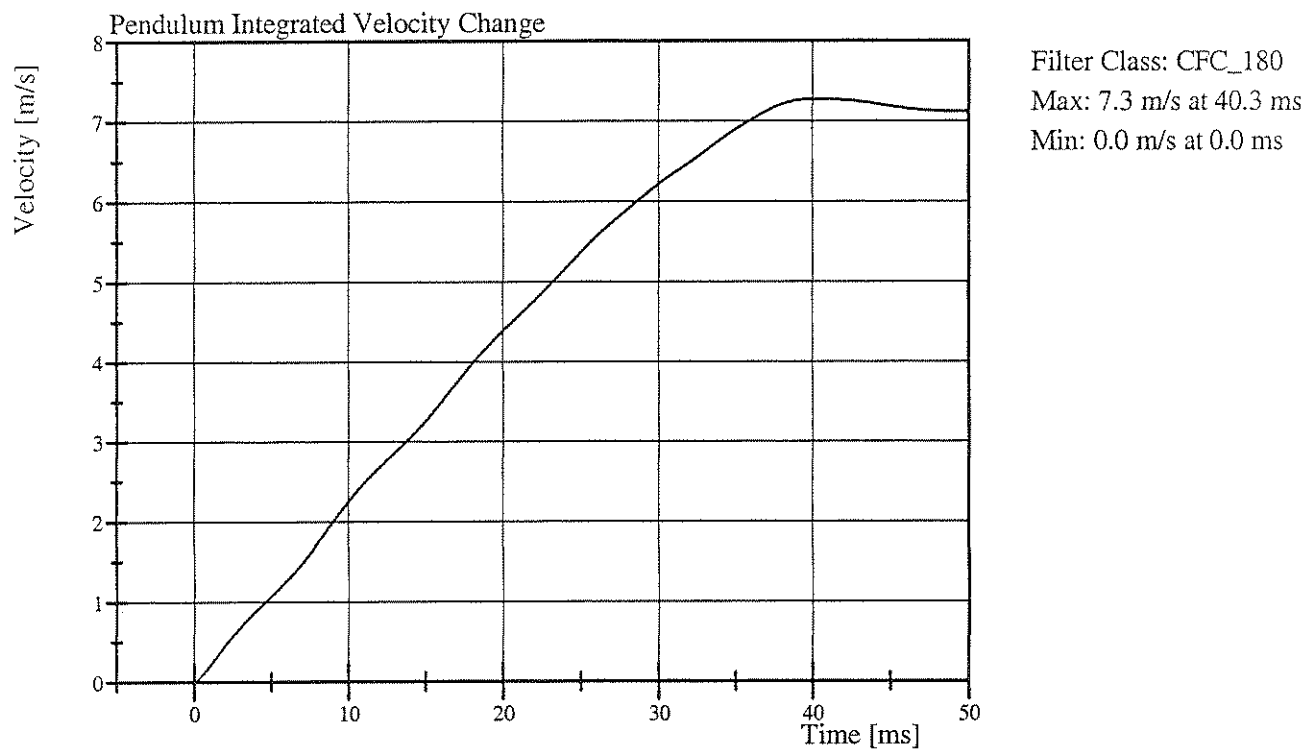
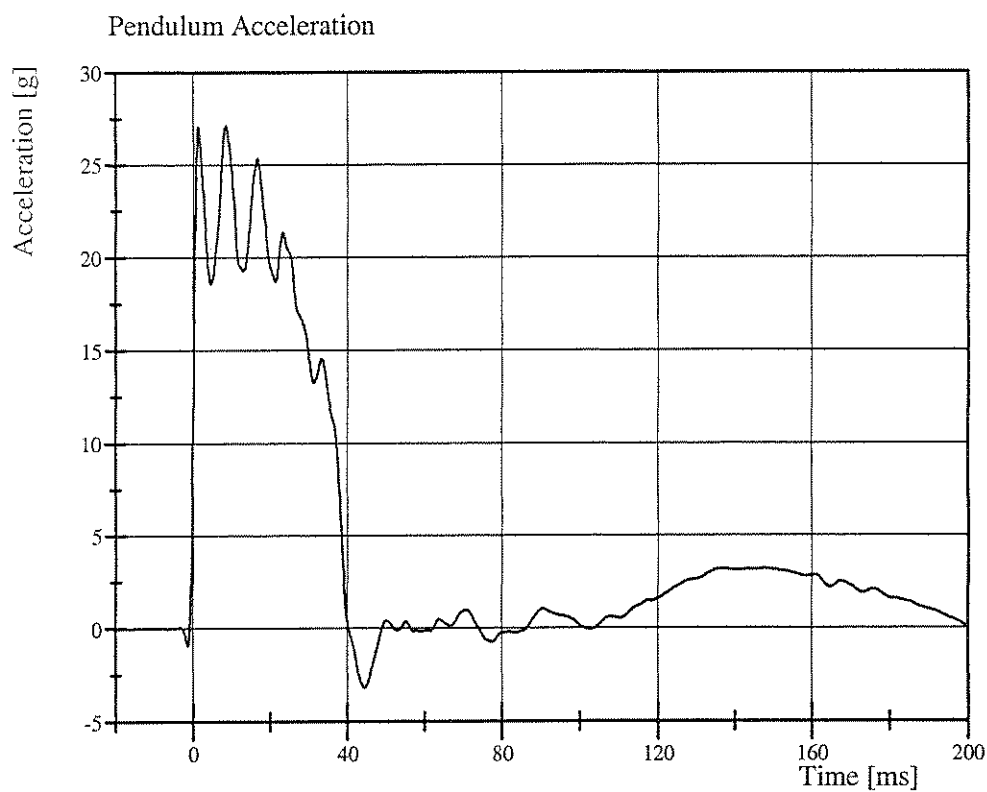


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

Test Date: 06/09/2006



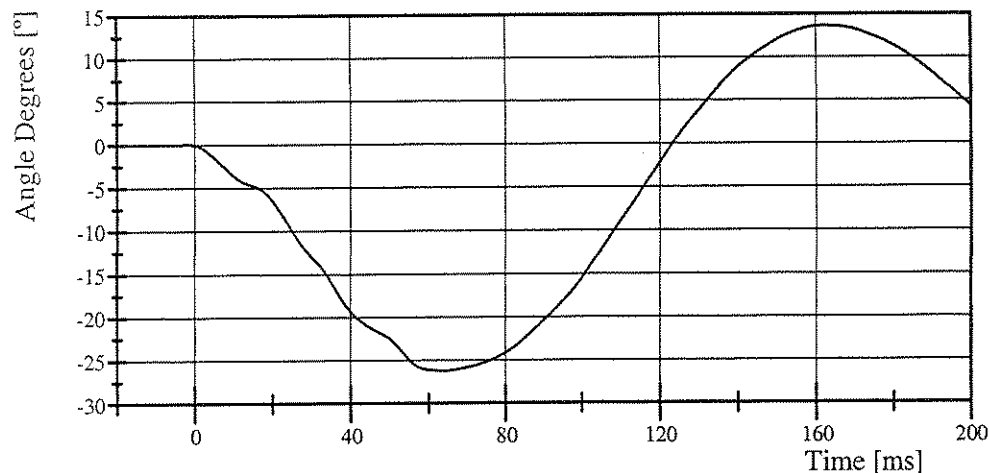
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

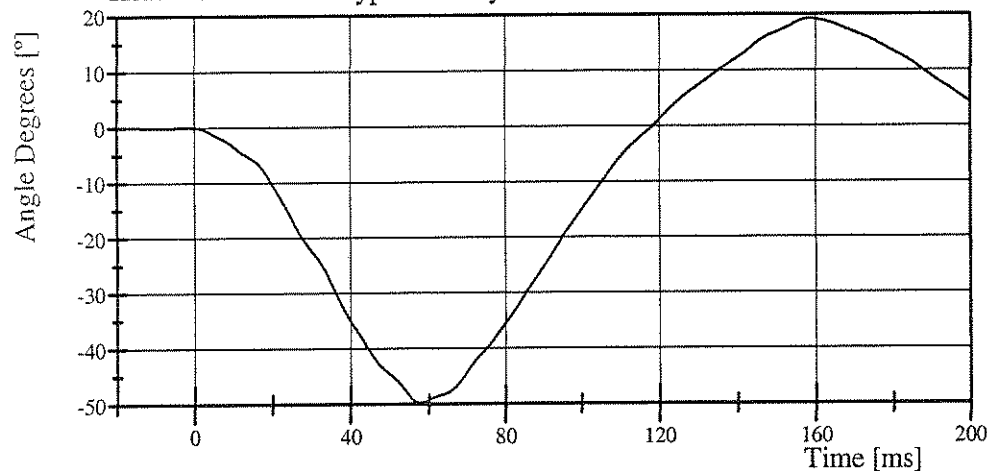
Test Date: 06/09/2006

Pot Rotation at the Base of Neck



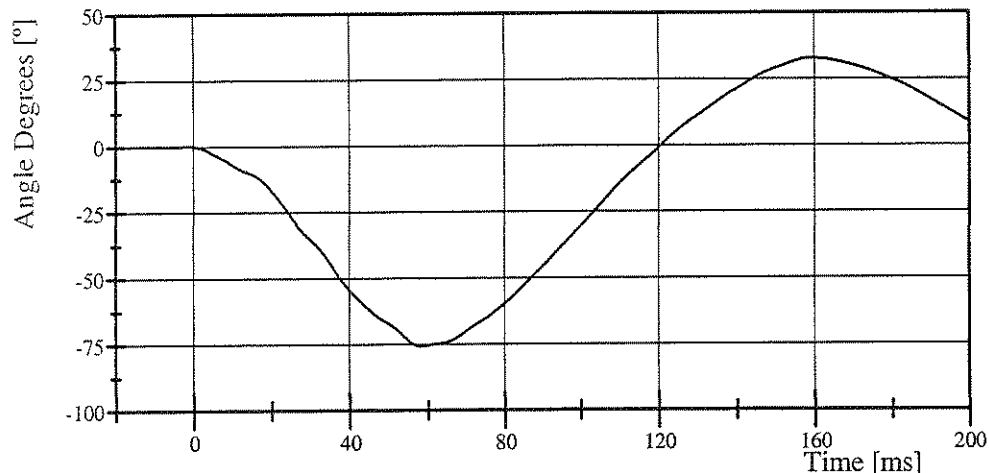
Filter Class: CFC_60
Max: 13.6 ° at 162.2 ms
Min: -26.2 ° at 64.2 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 19.2 ° at 158.5 ms
Min: -49.7 ° at 57.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60
Max: 32.7 ° at 159.3 ms
Min: -75.6 ° at 58.3 ms

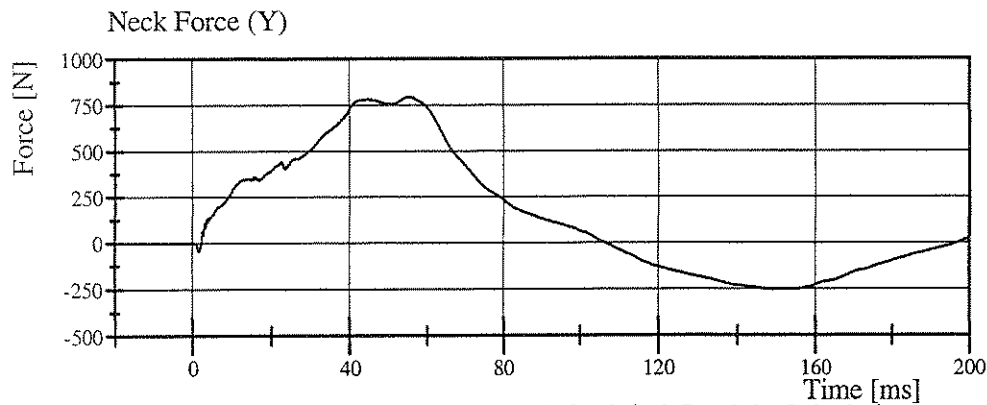


Transportation Research Center Inc.

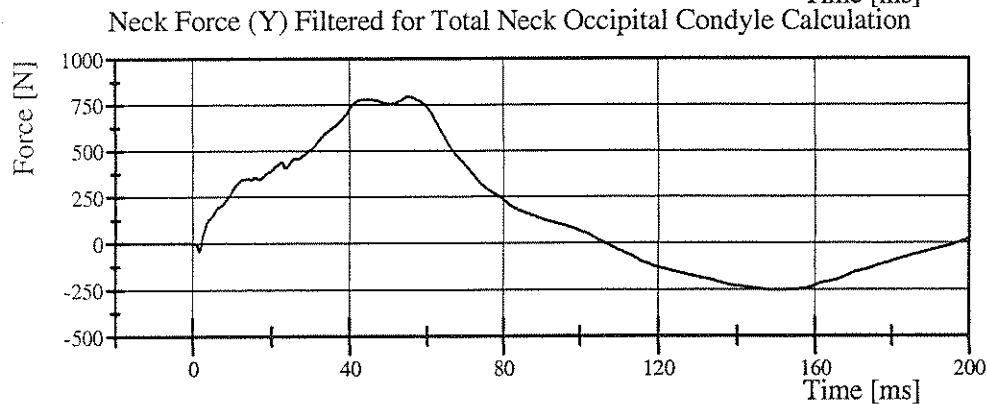
Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 15-3

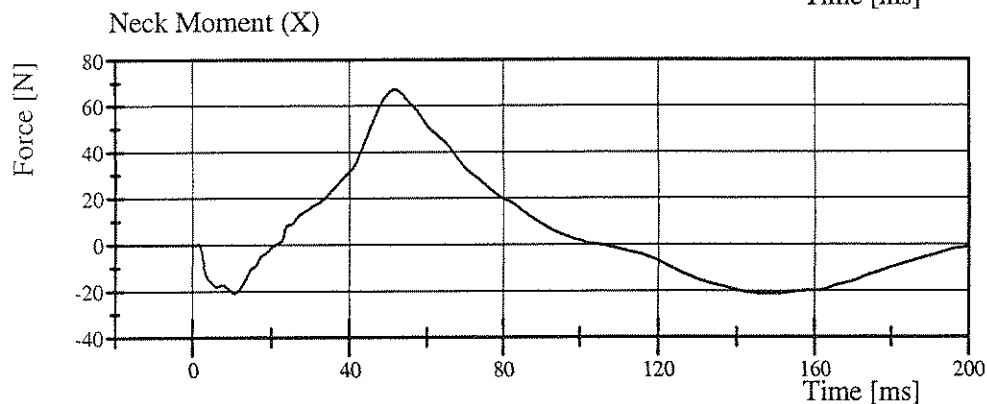
Test Date: 06/09/2006



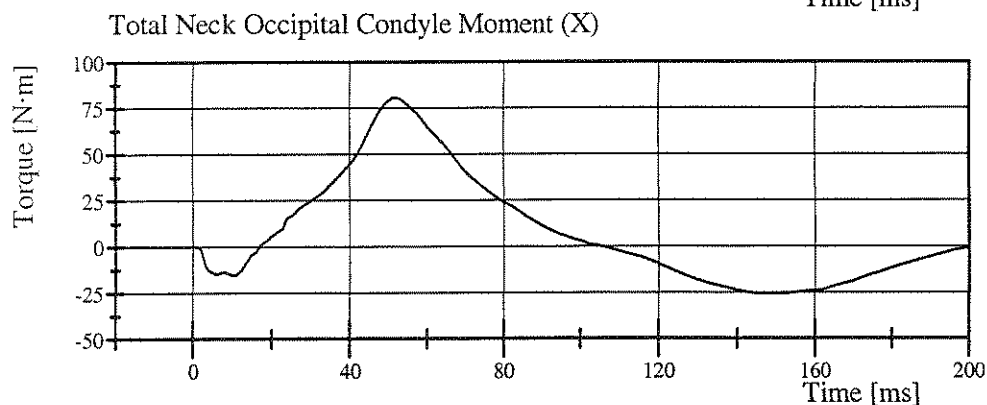
Filter Class: CFC_1000
Max: 793.6 N at 55.0 ms
Min: -253.8 N at 149.0 ms



Filter Class: CFC_600
Max: 793.6 N at 55.7 ms
Min: -253.3 N at 148.9 ms



Filter Class: CFC_600
Max: 67.1 N at 51.6 ms
Min: -21.2 N at 149.9 ms



Filter Class: CFC_600
Max: 80.6 N·m at 51.8 ms
Min: -25.7 N·m at 149.9 ms



Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 15-2

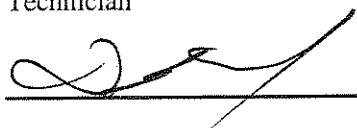
Test Date: 06/12/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.293 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	41.0 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	37.1 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	17.3 g	Yes

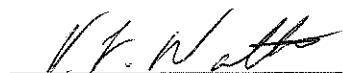
Test meets specifications.

Comments:

Technician



Approved



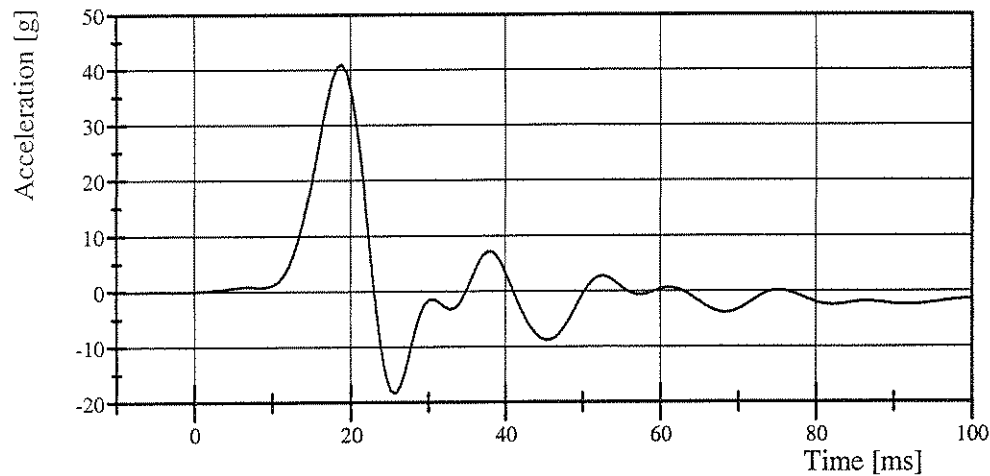
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 15-2

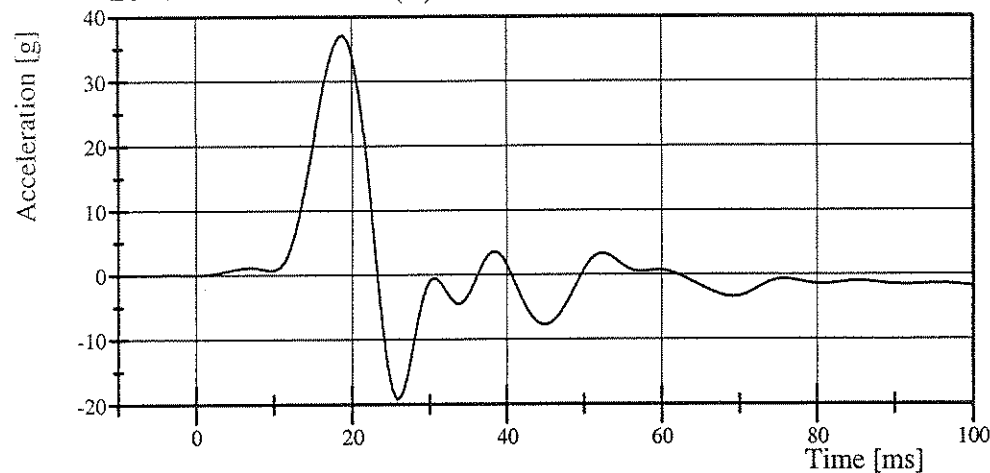
Test Date: 06/12/2006

Upper Rib Acceleration (Y)



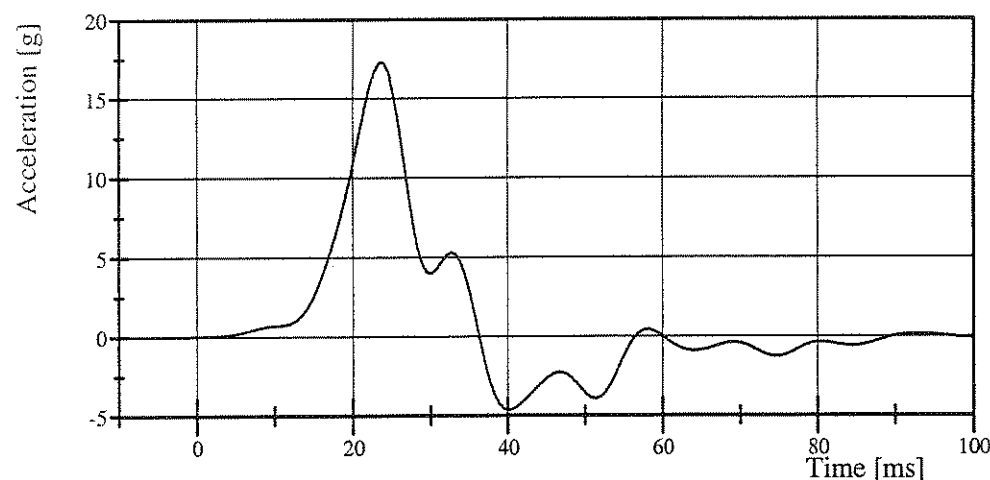
Filter Class: FIR_100
Max: 41.0 g at 18.9 ms
Min: -18.3 g at 25.8 ms

Lower Rib Acceleration (Y)



Filter Class: FIR_100
Max: 37.1 g at 18.9 ms
Min: -19.2 g at 25.8 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100
Max: 17.3 g at 23.3 ms
Min: -4.7 g at 40.2 ms



Transportation Research Center Inc.

3.05 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 059 Certification No. 13-3

Test Date: 03/17/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Maximum Force at Test Velocity	854 - 1,143 N	1,010.0 N	Yes
Maximum Displacement at Test Velocity	30.2 - 35.18 mm	30.406 mm	Yes

Test meets specifications.

Comments:

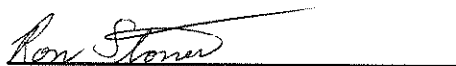
Actual Impactor Velocity (m/s): 3.073

Damper Setting: 5.5

Technician



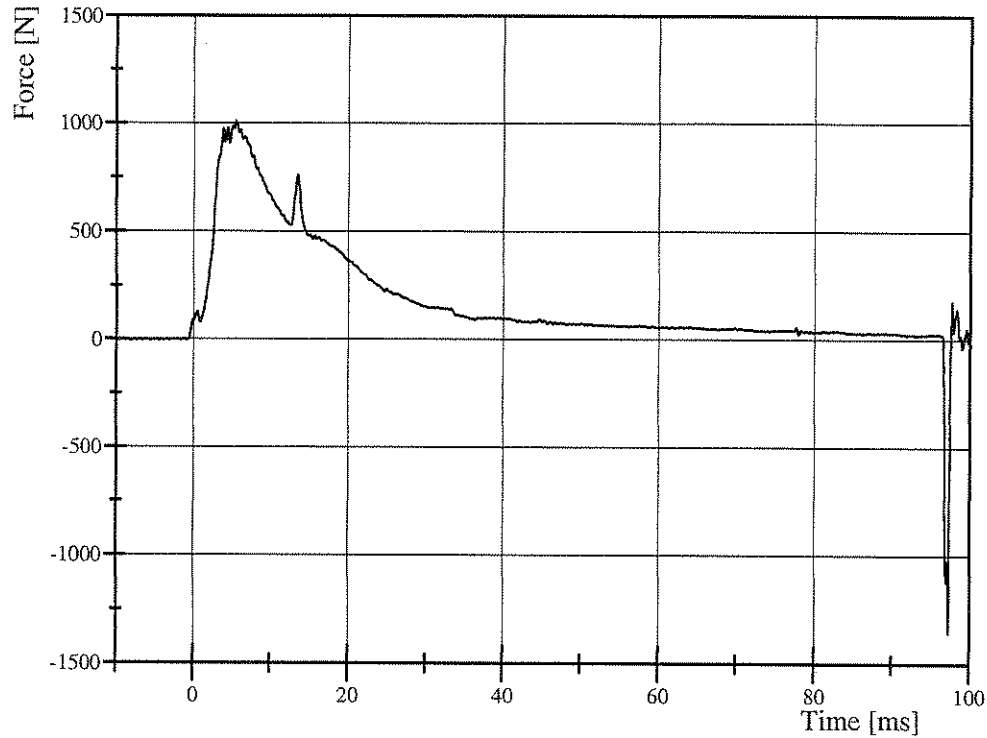
Approved



Transportation Research Center Inc.

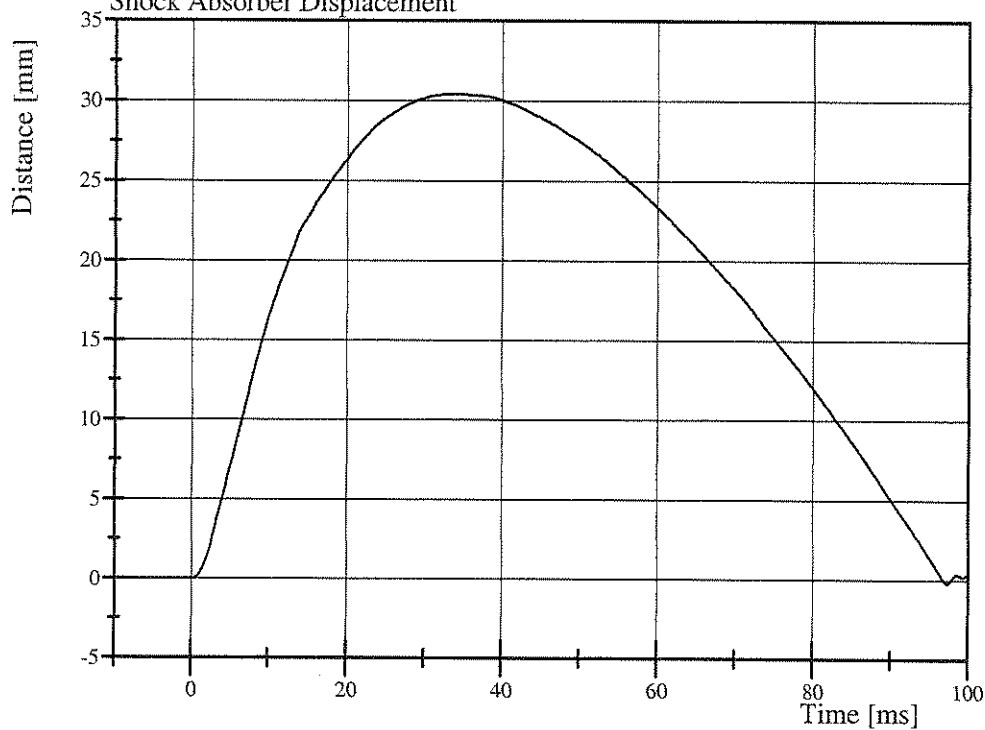
3.05 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 059 Certification No. 13-3
Test Date: 03/17/2006

Shock Absorber Resistive Force



Filter Class: CFC_1000
Max: 1,010.0 N at 5.5 ms
Min: -1,354.1 N at 97.3 ms

Shock Absorber Displacement



Filter Class: CFC_1000
Max: 30.4 mm at 33.9 ms
Min: -0.2 mm at 97.3 ms

Transportation Research Center Inc.

4.27 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 059 Certification No. 13-1
Test Date: 03/17/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Maximum Force at Test Velocity	1,749 - 2,115 N	2,025.5 N	Yes
Maximum Displacement at Test Velocity	31.69 - 37.25 mm	33.030 mm	Yes

Test meets specifications.

Comments:

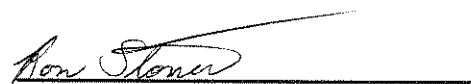
Actual Impactor Velocity (m/s): 4.284

Damper Setting: 5.5

Technician

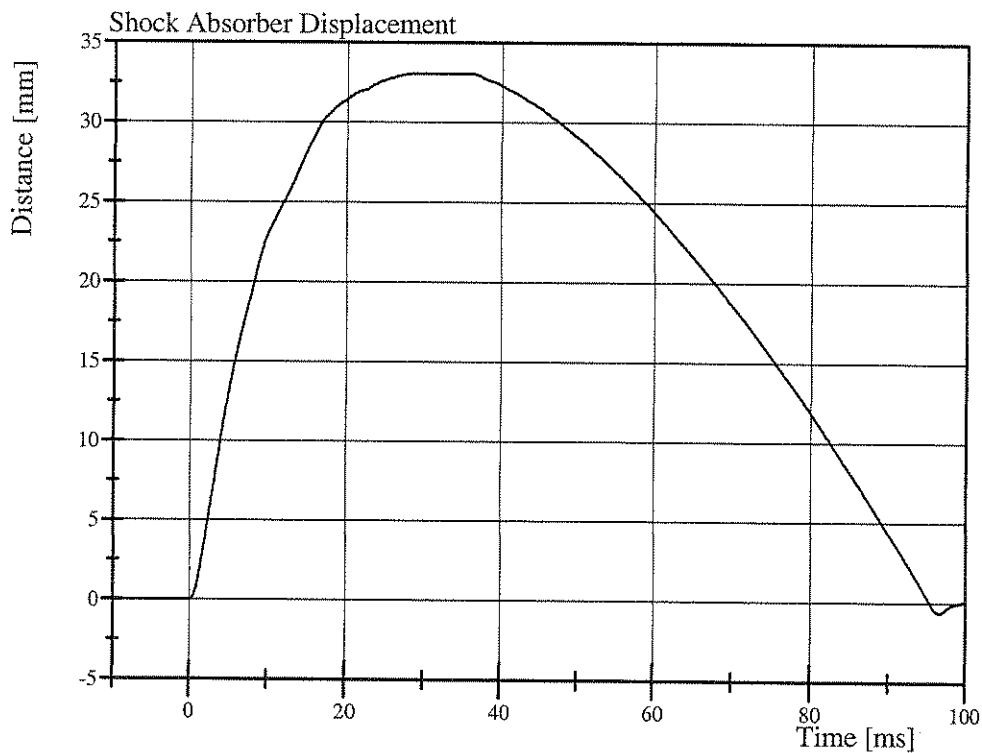
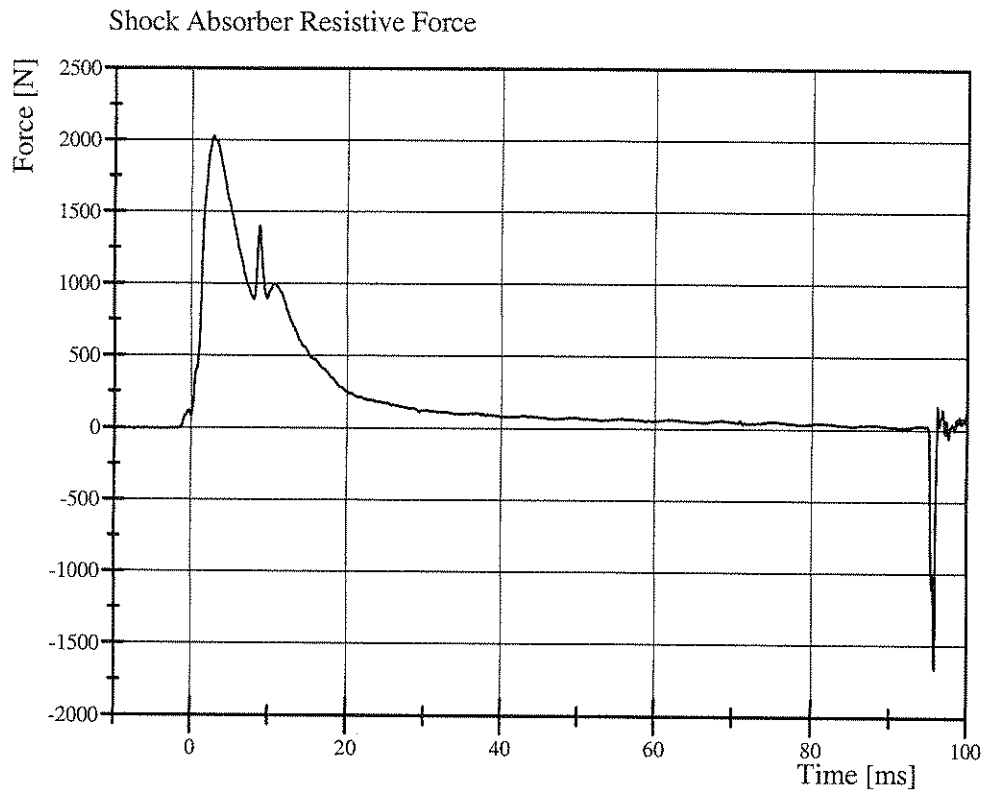


Approved



Transportation Research Center Inc.

4.27 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 059 Certification No. 13-1
Test Date: 03/17/2006



Transportation Research Center Inc.

6.10 m/s Thoracic Shock Absorber Compression
SID-HIII Serial No. 059 Certification No. 13-2
Test Date: 03/17/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Maximum Force at Test Velocity	3,766 - 4,464 N	4,391.9 N	Yes
Maximum Displacement at Test Velocity	33.38 - 39.59 mm	37.172 mm	Yes

Test meets specifications.

Comments:

Actual Impactor Velocity (m/s): 6.112

Damper Setting: 5.5

Technician



Approved



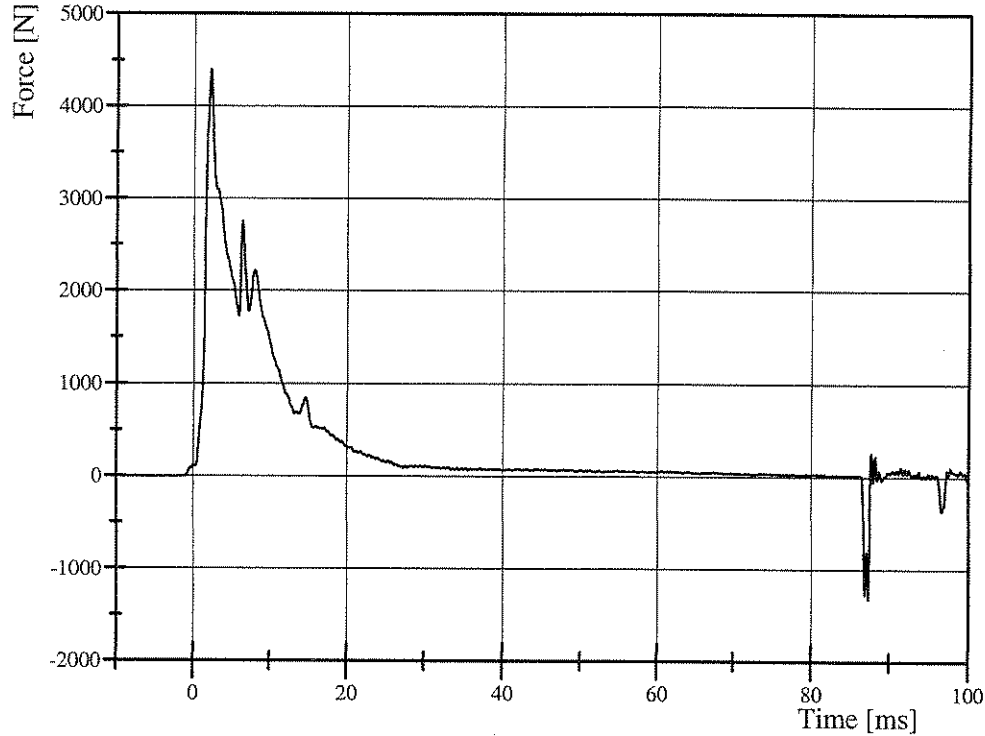
Transportation Research Center Inc.

6.10 m/s Thoracic Shock Absorber Compression

SID-HIII Serial No. 059 Certification No. 13-2

Test Date: 03/17/2006

Shock Absorber Resistive Force

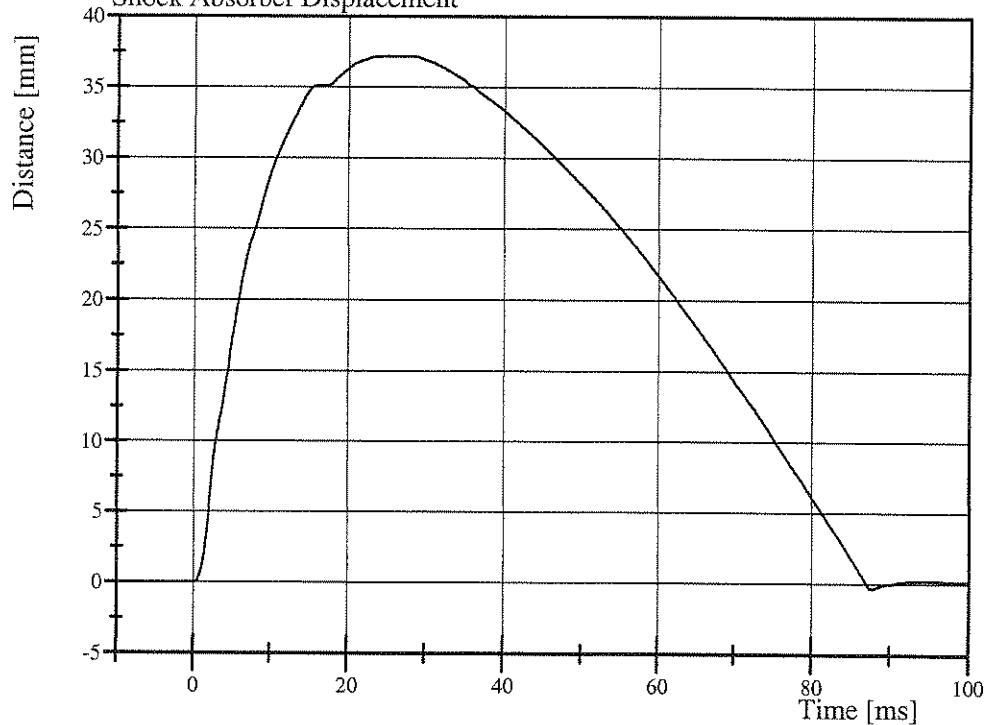


Filter Class: CFC_1000

Max: 4,391.9 N at 2.1 ms

Min: -1,315.0 N at 87.3 ms

Shock Absorber Displacement



Filter Class: CFC_1000

Max: 37.2 mm at 24.8 ms

Min: -0.3 mm at 87.9 ms

TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 09-Jun-06

TRC, INC.

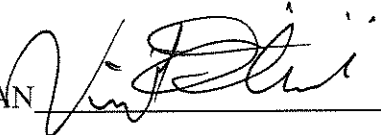
TEST NO: LUFL-01

572B SN 059 TORSO FLEX CAL 15

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.5 C
RELATIVE HUMIDITY	10 – 70 %	51 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	142.3 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	177.9 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	226.9 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	8.7 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 15-5

Test Date: 06/10/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.804 mm/s	Yes

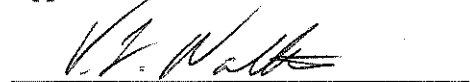
Test meets specifications.

Comments:

Technician



Approved

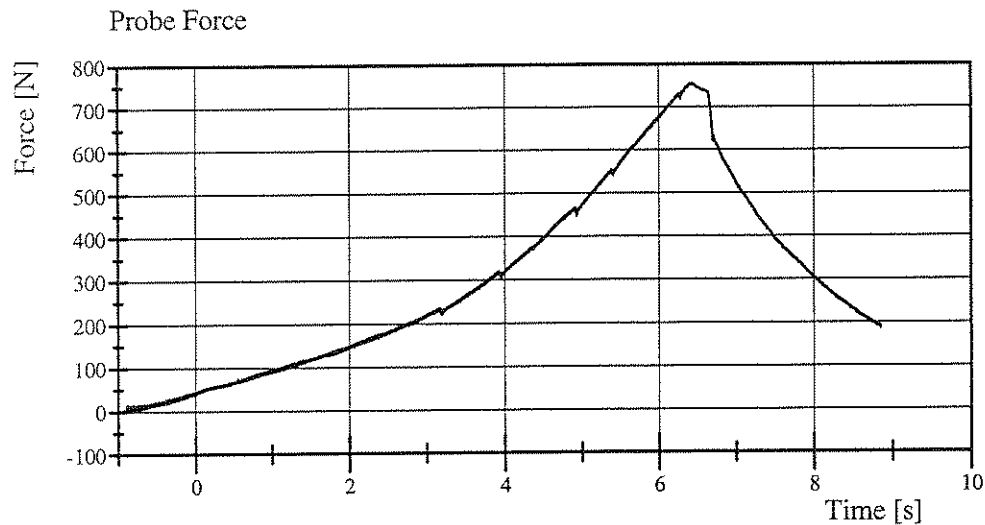


Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 15-5

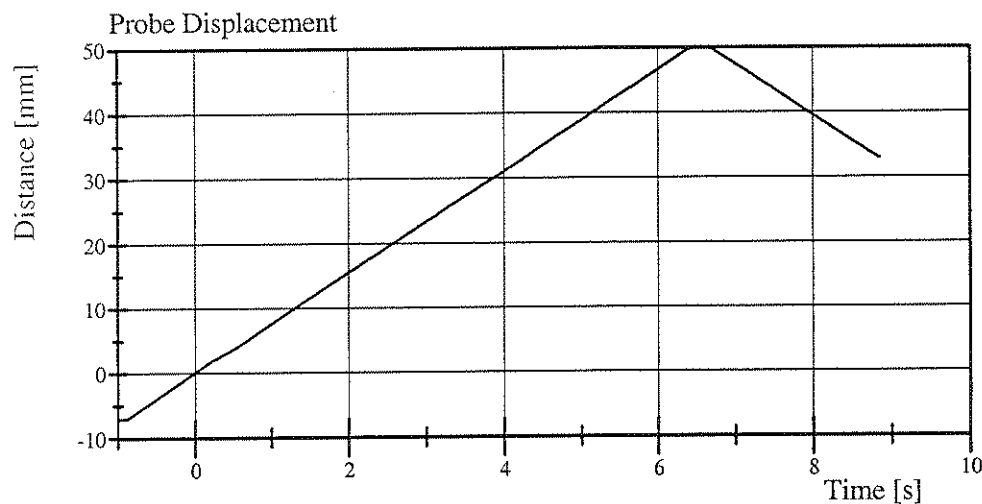
Test Date: 06/10/2006



Filter Class: CFC_600

Max: 754.4 N at 6.4 s

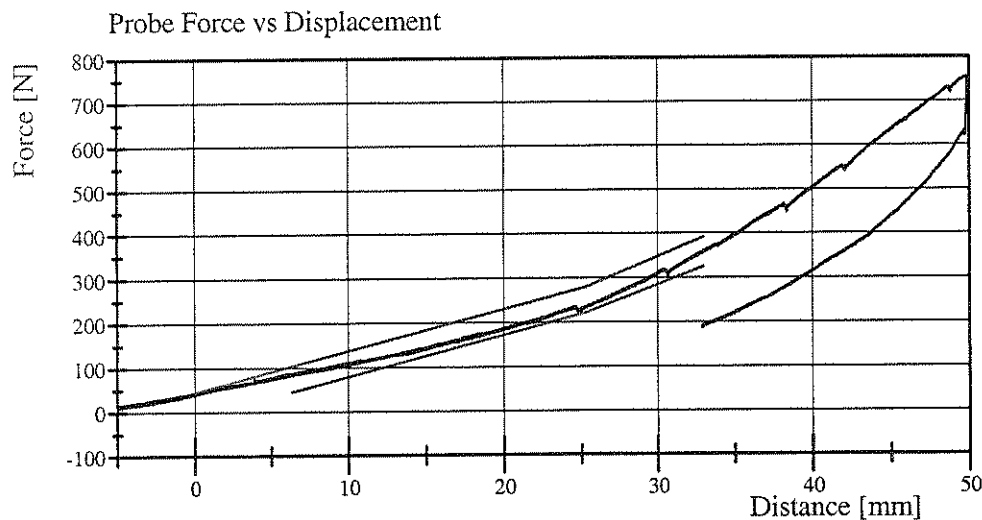
Min: -0.6 N at -0.8 s



Filter Class: CFC_180

Max: 49.9 mm at 6.6 s

Min: -7.0 mm at -1.0 s



Filter Class: CFC_600

Max: 754.4 N at 49.8 mm

Min: -0.6 N at -6.6 mm



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 06/12/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.292 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	6.4 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	42.9 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

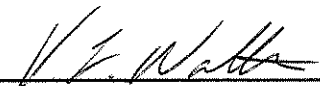
Test meets specifications.

Comments:

Technician



Approved

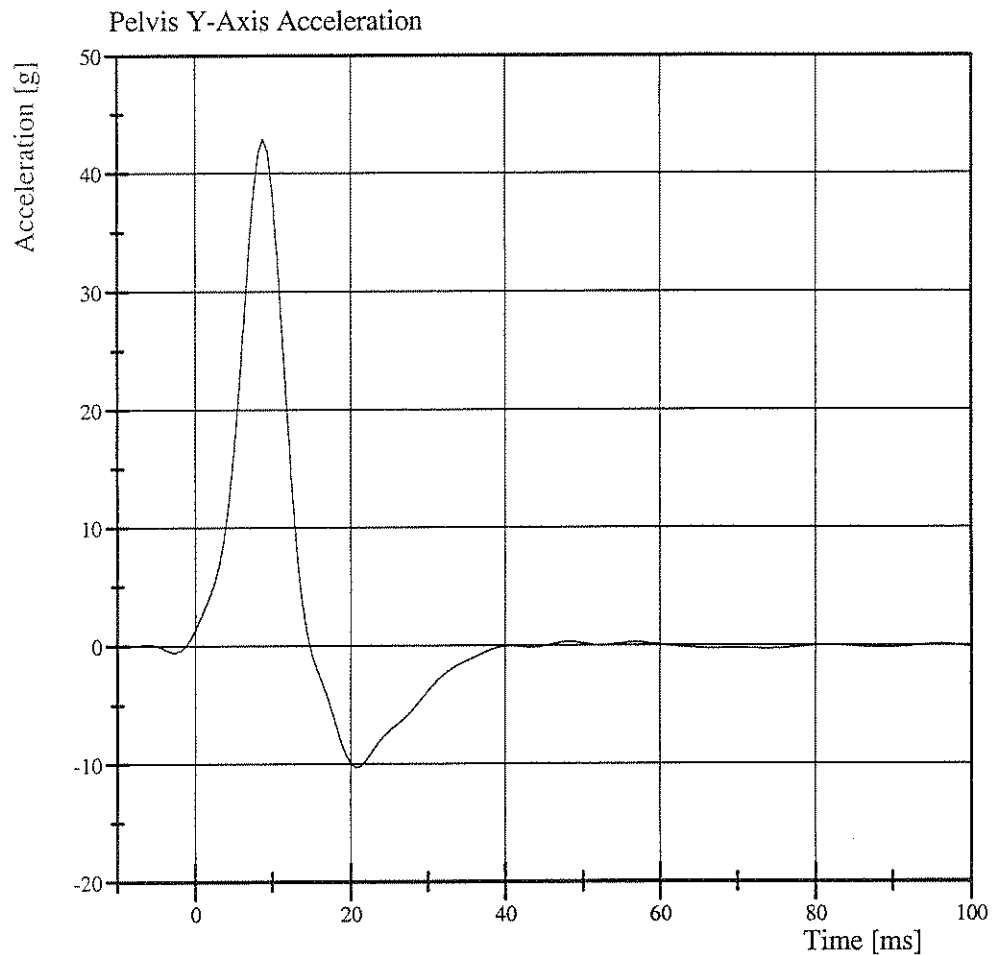

_____

Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 15-1

Test Date: 06/12/2006



Filter Class: FIR_100
Max: 42.9 g at 8.8 ms
Min: -10.3 g at 20.7 ms

Calibration Test Results

Post-Test

SID HIII: 055

Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.

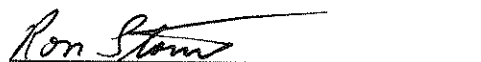
Transportation Research Center Inc.
SID/HIII Dummy
External Dimensions
Serial No. 055 Calibration No. 21

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	903 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	509 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	515 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	493 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	364 mm	Yes
Top Rib Width From C/L	RW-1	165.1 - 180.3 mm	171 mm	Yes
Bottom Rib Width From C/L	RW-2	165.1 - 180.3 mm	170 mm	Yes
Difference Between Top & Bottom Rib Width from C/L		<= 2.5 mm	1.0 mm	Yes

Technician



Approved




Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 055 Certification No. 21-1

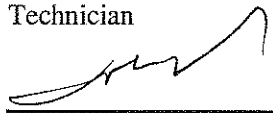
Test Date: 07/21/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	140.0 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-6.4 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

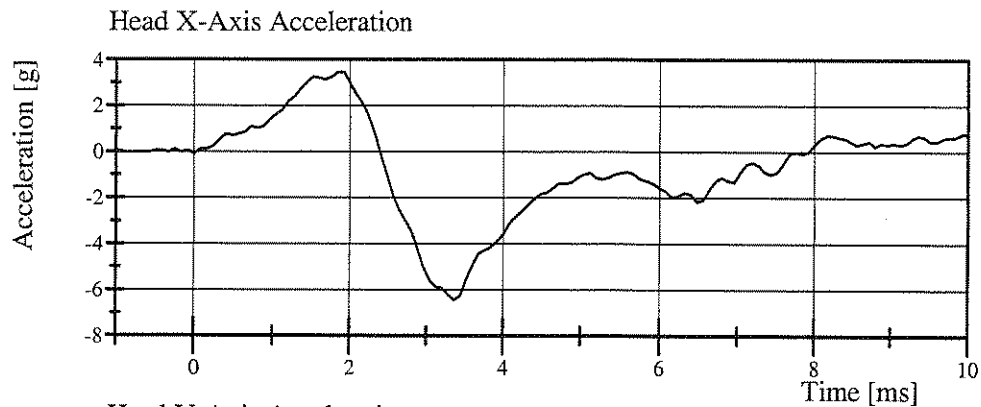


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 055 Certification No. 21-1

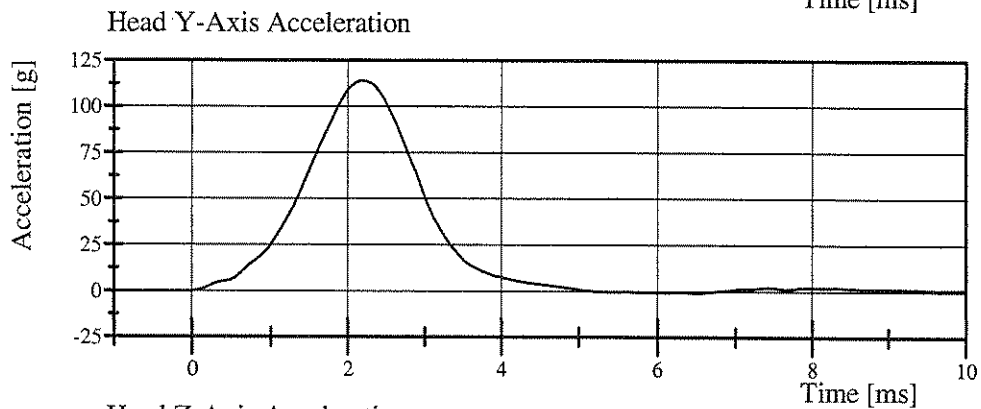
Test Date: 07/21/2006



Filter Class: CFC_1000

Max: 3.5 g at 1.8 ms

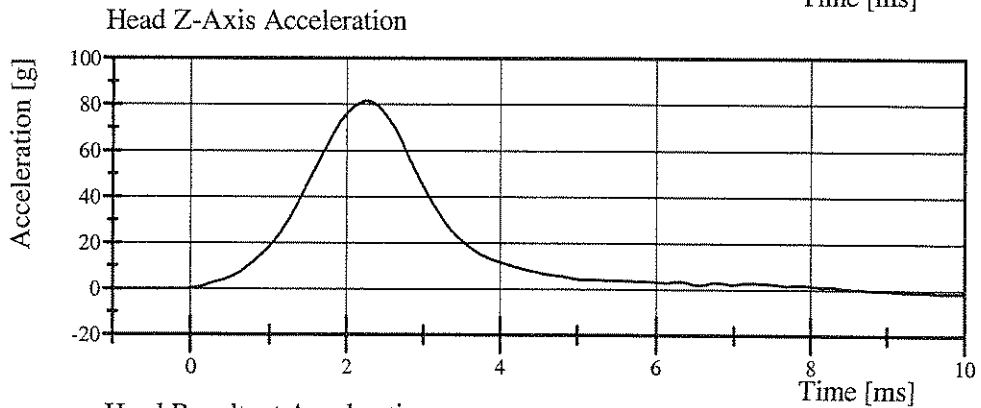
Min: -6.4 g at 3.4 ms



Filter Class: CFC_1000

Max: 114.1 g at 2.2 ms

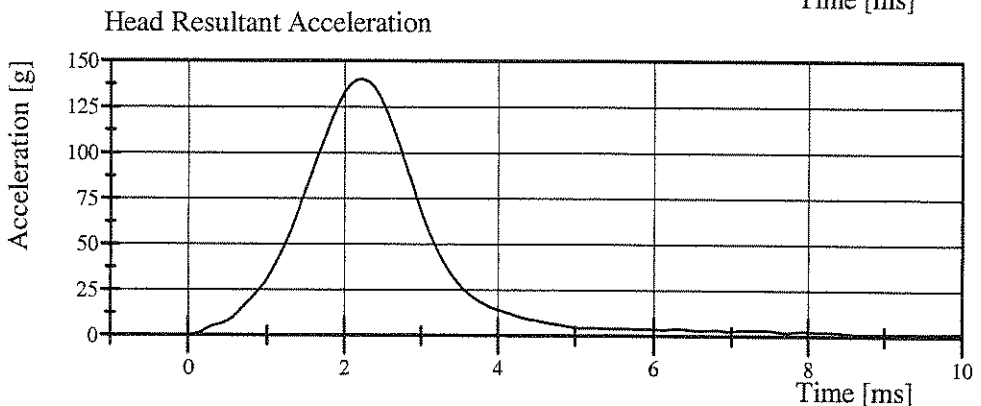
Min: -1.0 g at 6.5 ms



Filter Class: CFC_1000

Max: 81.6 g at 2.2 ms

Min: -1.4 g at 9.9 ms



Filter Class: CFC_1000

Max: 140.0 g at 2.2 ms

Min: 0.0 g at -0.8 ms

Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 21-2

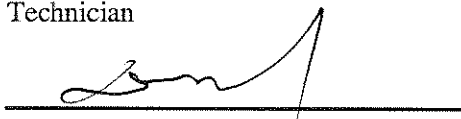
Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.034 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.225 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.447 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.311 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.319 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-71.5 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	58.6 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	83.7 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	52.2 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	10.2 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

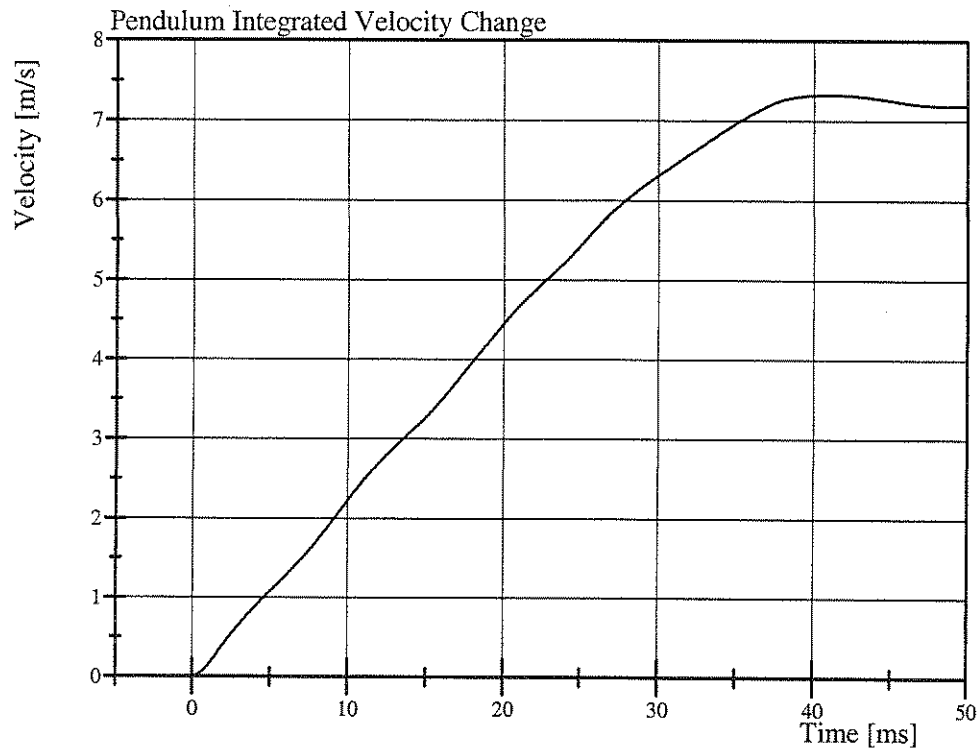
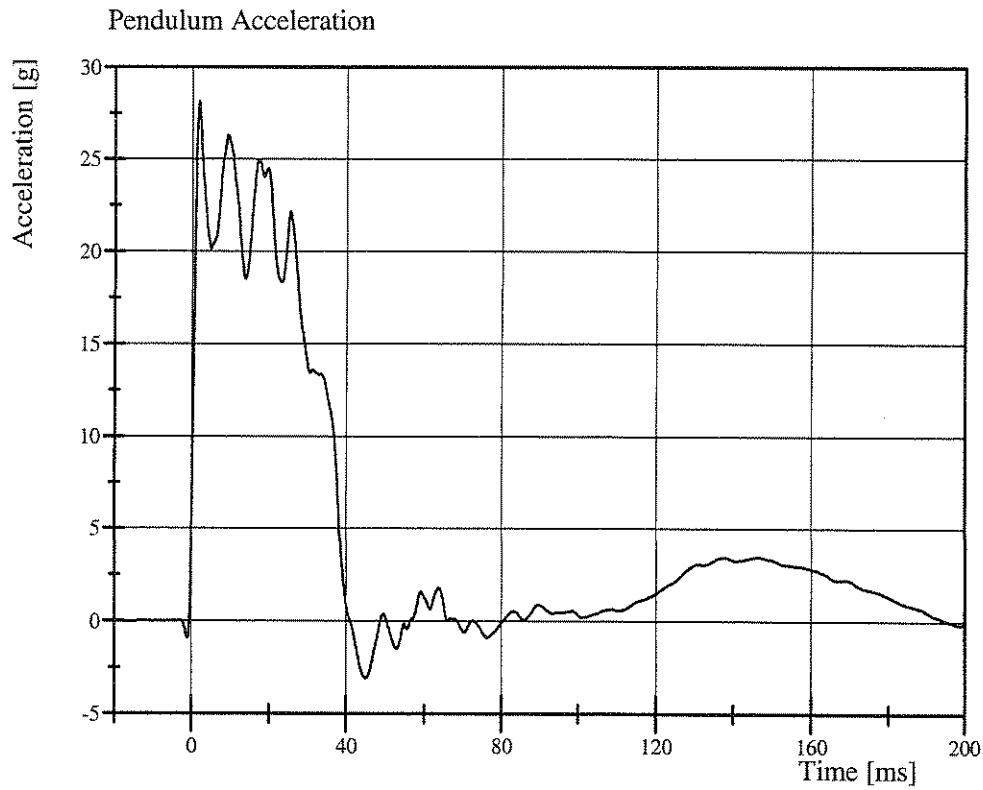


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 21-2

Test Date: 07/24/2006



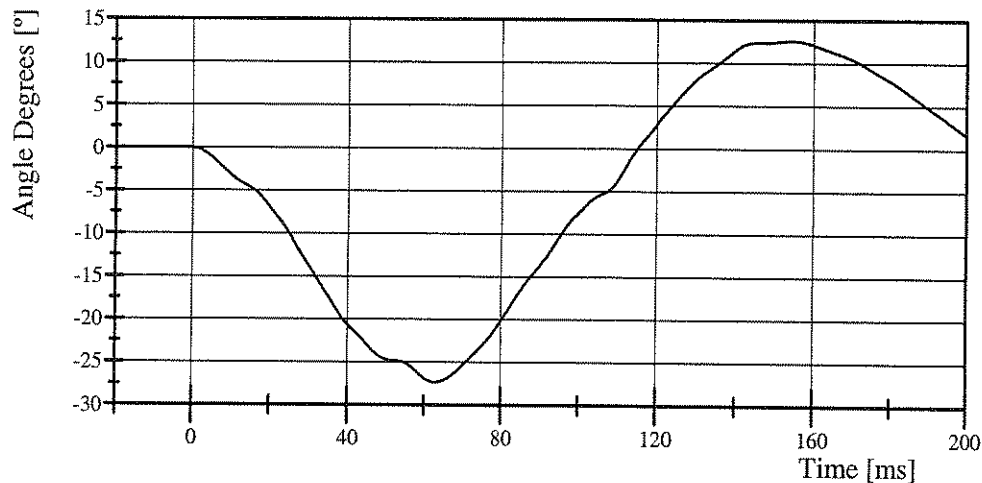
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 21-2

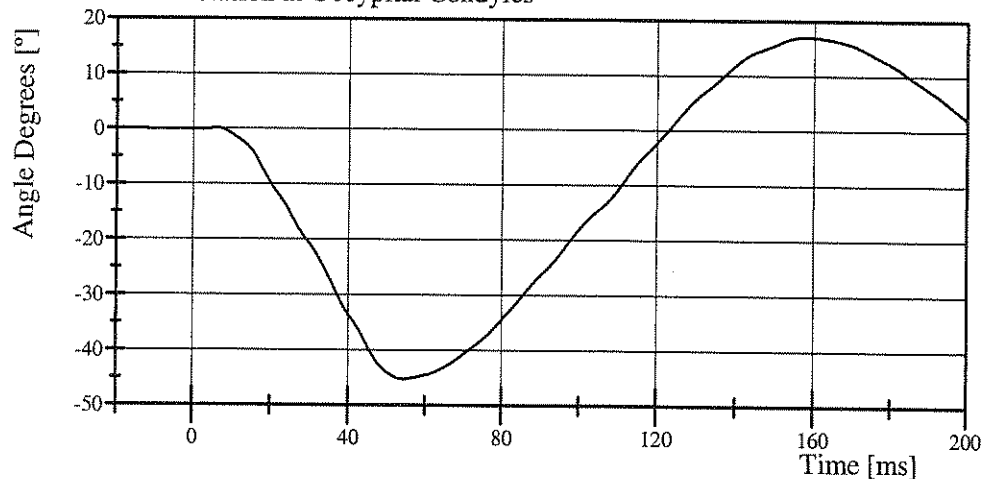
Test Date: 07/24/2006

Pot Rotation at the Base of Neck



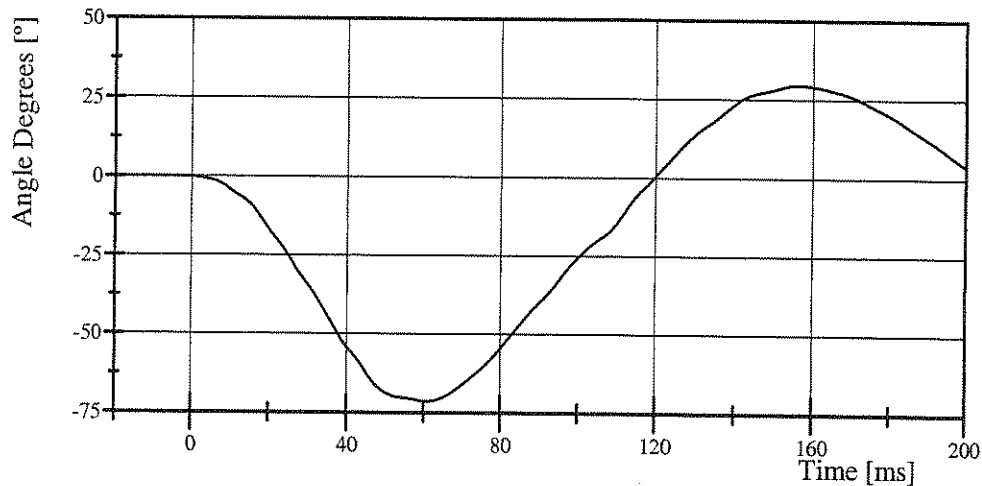
Filter Class: CFC_60
Max: 12.6 ° at 154.2 ms
Min: -27.3 ° at 62.9 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 17.1 ° at 157.7 ms
Min: -45.3 ° at 54.5 ms

Total Head D-Plane Rotation



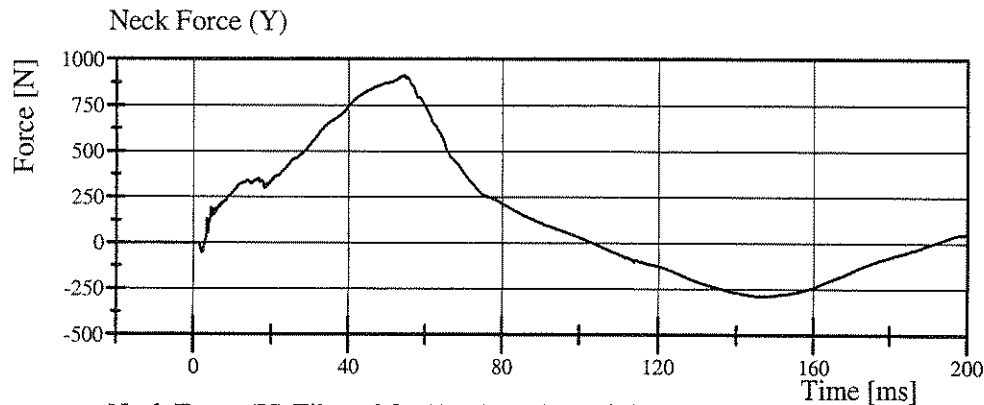
Filter Class: CFC_60
Max: 29.7 ° at 156.2 ms
Min: -71.5 ° at 61.0 ms

Transportation Research Center Inc.

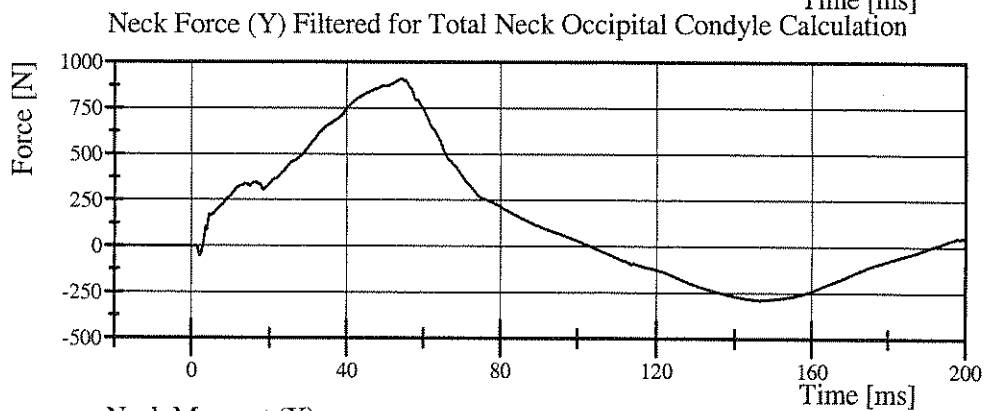
Left Lateral Neck

SID-HIII Serial No. 055 Certification No. 21-2

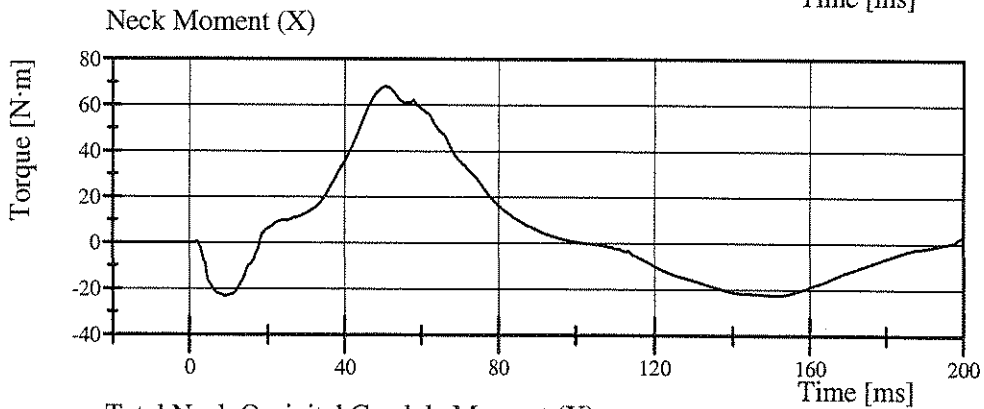
Test Date: 07/24/2006



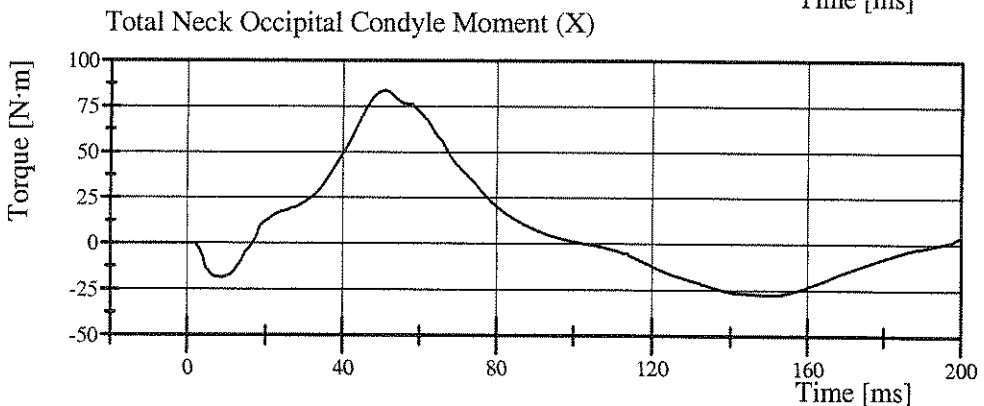
Filter Class: CFC_1000
Max: 912.3 N at 54.5 ms
Min: -288.2 N at 145.4 ms



Filter Class: CFC_600
Max: 910.7 N at 54.3 ms
Min: -288.0 N at 146.8 ms



Filter Class: CFC_600
Max: 68.2 N·m at 50.7 ms
Min: -23.1 N·m at 9.0 ms



Filter Class: CFC_600
Max: 83.7 N·m at 50.7 ms
Min: -27.6 N·m at 150.6 ms

Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 055 Certification No. 21-1

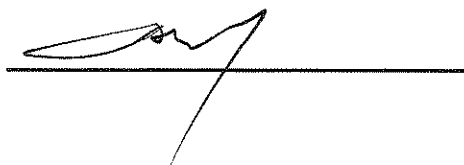
Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.276 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	40.5 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	40.0 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	18.4 g	Yes

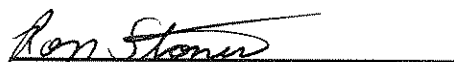
Test meets specifications.

Comments:

Technician



Approved



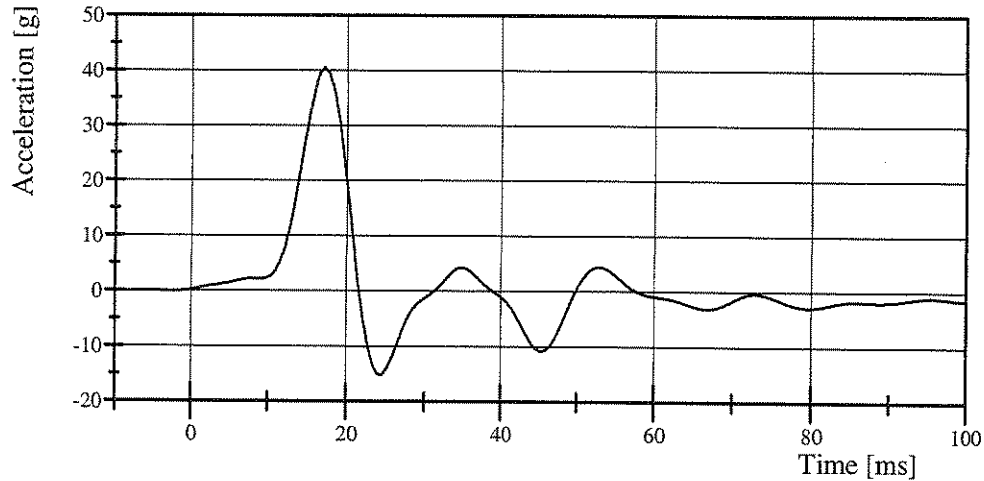
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 055 Certification No. 21-1

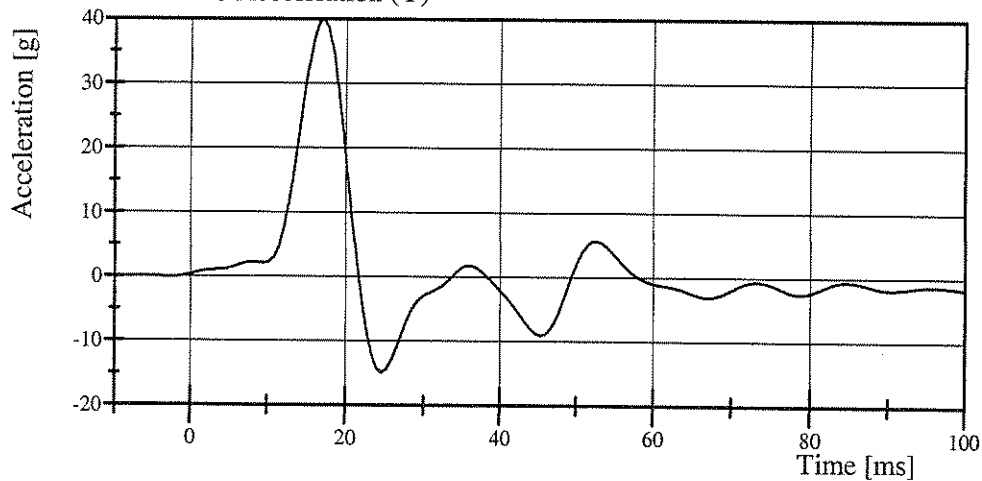
Test Date: 07/24/2006

Upper Rib Acceleration (Y)



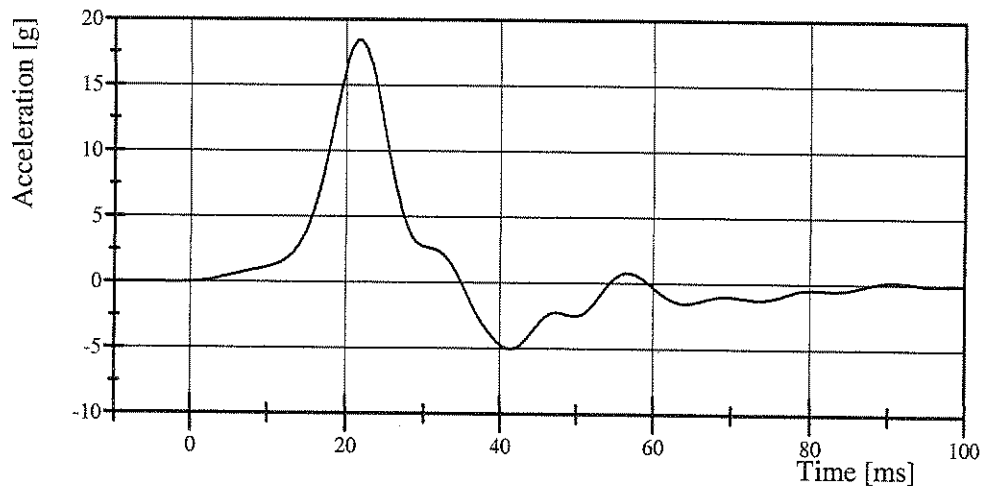
Filter Class: FIR_100
Max: 40.5 g at 17.1 ms
Min: -15.1 g at 24.6 ms

Lower Rib Acceleration (Y)



Filter Class: FIR_100
Max: 40.0 g at 17.0 ms
Min: -14.9 g at 24.6 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100
Max: 18.4 g at 22.1 ms
Min: -5.0 g at 41.4 ms

Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 055 Certification No. 21-3

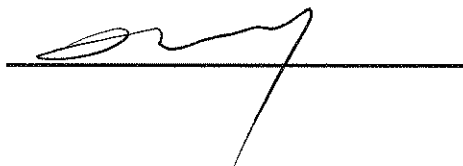
Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.762 mm/s	Yes

Test meets specifications.

Comments:

Technician



Approved

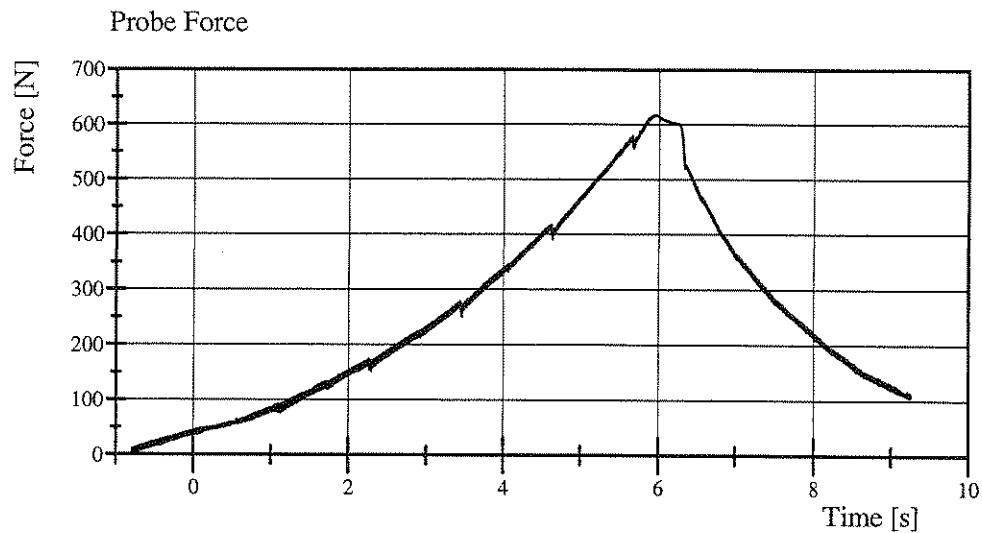


Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 055 Certification No. 21-3

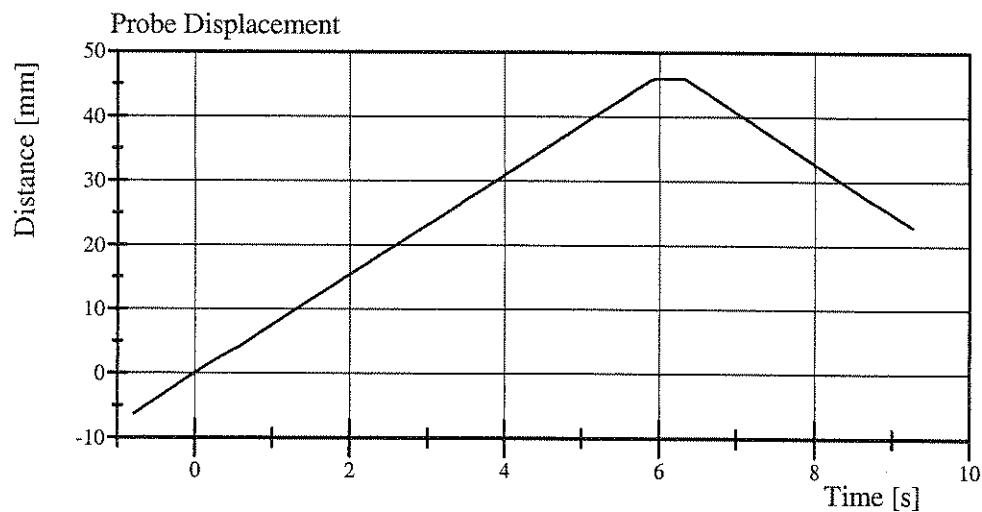
Test Date: 07/24/2006



Filter Class: CFC_600

Max: 617.6 N at 6.0 s

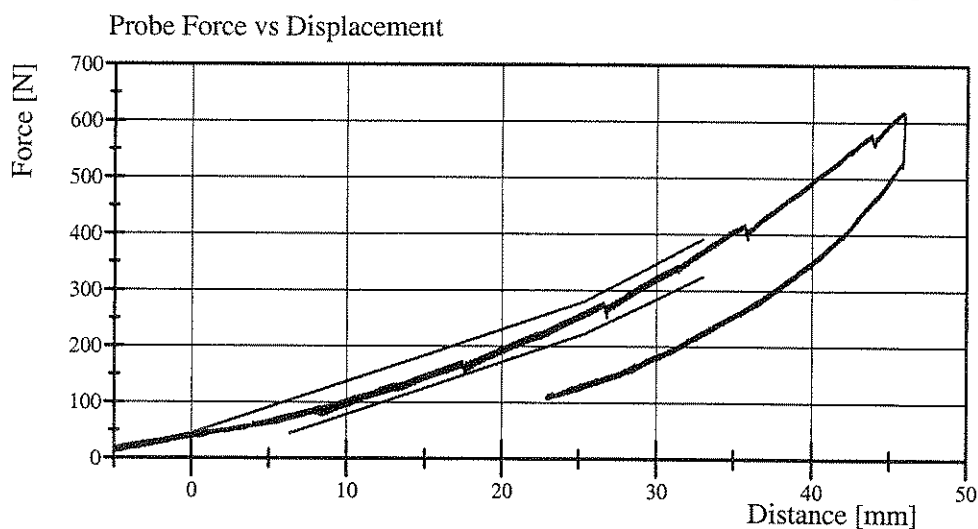
Min: 2.7 N at -0.8 s



Filter Class: CFC_180

Max: 45.9 mm at 6.3 s

Min: -6.4 mm at -0.8 s



Filter Class: CFC_600

Max: 617.6 N at 45.9 mm

Min: 2.7 N at -6.2 mm

TRANSPORTATION RESEARCH CENTER INC.

PART 572B LUMBAR FLEXION TEST

SID/HIII

CAL DATE: 24-Jul-06

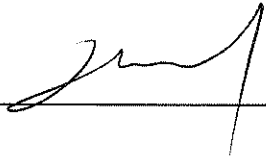
TRC, INC.

TEST NO: LUFL-01

572M SN 055 TORSO FLEX CAL 21

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.0°C
RELATIVE HUMIDITY	10 – 70 %	48 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	115.7 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	155.7 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	213.5 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	10.8 °

TEST MEETS SPECIFICATIONS

TECHNICIAN 

Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 055 Certification No. 21-3

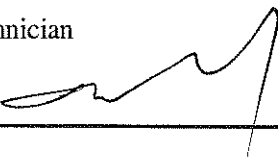
Test Date: 07/25/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.6 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.271 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	5.7 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	57.4 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

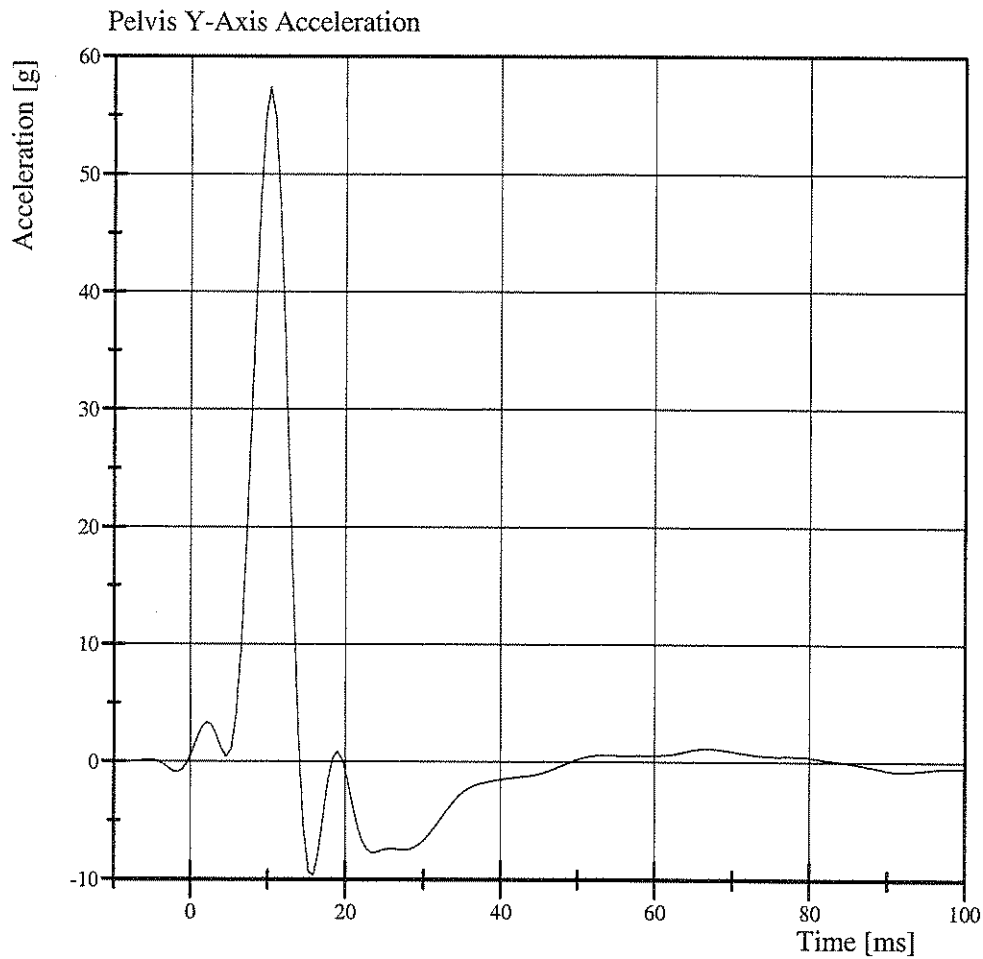


Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 055 Certification No. 21-3

Test Date: 07/25/2006



Filter Class: FIR_100
Max: 57.4 g at 10.2 ms
Min: -9.6 g at 15.8 ms

Calibration Test Results

Post-Test

SID HIII: 059

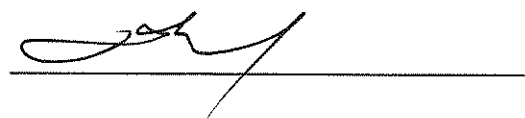
Configured for Left Side Impact

External Dimensions:	The dummy passed all external dimension requirements.
Lateral Head Drop Test:	The head passed all lateral drop test requirements.
Lateral Neck Test:	The neck passed all impact test requirements.
Lateral Thorax Impact Test:	The thorax passed all impact test requirements.
Lumbar Flexion Test:	The dummy met the lumbar flexion test requirements.
Abdominal Compression Test:	The abdomen met the compression test requirements.
Pelvis Impact Test:	The lateral pelvis passed all impact test requirements.
Thoracic Shock Absorber Test:	The thoracic shock absorber was not tested at this time.

Transportation Research Center Inc.
SID/HIII Dummy Pre-Test
External Dimensions
Serial No. 059 Calibration No. 16

Test Parameter	Dimension	Specification	Results	Pass
Seated Height	SH	889.0 - 909.3 mm	902 mm	Yes
Rib Height	RH	501.7 - 520.7 mm	515 mm	Yes
Hip Pivot Height	HP	99.1 REF mm	99.1 mm	
Knee Pivot From Backline	KH	510.5 - 525.8 mm	523 mm	Yes
Knee Pivot From Floor	KV	490.2 - 505.5 mm	503 mm	Yes
Hip Width	HW	355.6 - 391.2 mm	360 mm	Yes
Top Rib Width From CVL	RW-1	165.1 - 180.3 mm	175 mm	Yes
Bottom Rib Width From CVL	RW-2	165.1 - 180.3 mm	175 mm	Yes
Difference Between Top & Bottom Rib Width from CVL		<= 2.5 mm	0.0 mm	Yes

Technician



Approved




Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 16-3

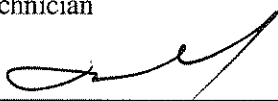
Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Peak Head Resultant Acceleration	120 - 150 g	149.5 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-5.7 g	Yes
Is Head Resultant Acceleration Curve Unimodal Within 15% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved



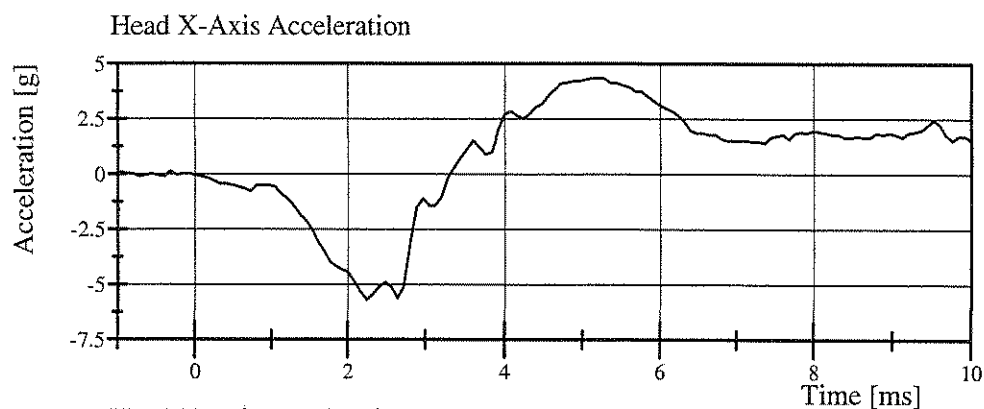


Transportation Research Center Inc.

Left Lateral Head Drop

SID-HIII Serial No. 059 Certification No. 16-3

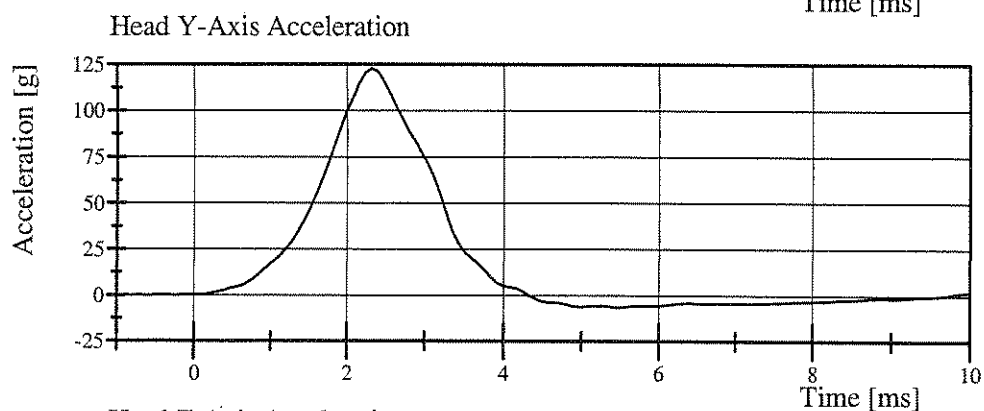
Test Date: 07/24/2006



Filter Class: CFC_1000

Max: 4.4 g at 5.1 ms

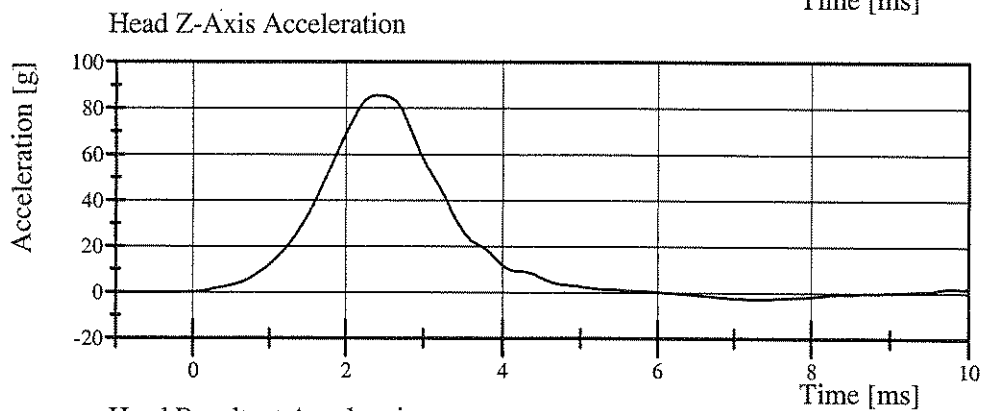
Min: -5.7 g at 2.2 ms



Filter Class: CFC_1000

Max: 122.8 g at 2.3 ms

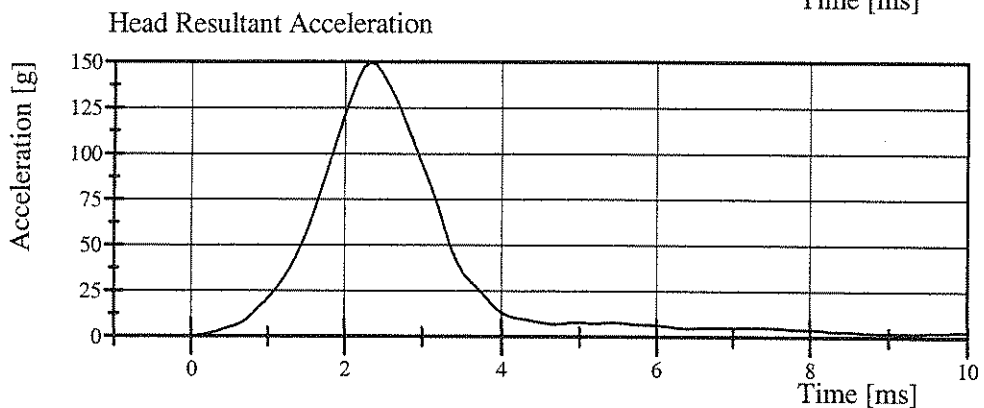
Min: -6.5 g at 5.4 ms



Filter Class: CFC_1000

Max: 85.7 g at 2.4 ms

Min: -2.8 g at 7.3 ms



Filter Class: CFC_1000

Max: 149.5 g at 2.3 ms

Min: 0.0 g at -0.6 ms



Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 16-1

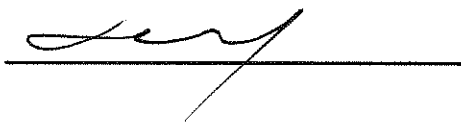
Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Pendulum Velocity	(-6.89) - (-7.13) m/s	-7.034 m/s	Yes
Pendulum Integrated Velocity Change at 10 ms	1.96 - 2.55 m/s	2.323 m/s	Yes
Pendulum Integrated Velocity Change at 20 ms	4.12 - 5.10 m/s	4.602 m/s	Yes
Pendulum Integrated Velocity Change at 30 ms	5.73 - 7.01 m/s	6.486 m/s	Yes
Pendulum Integrated Velocity Change at 40 to 70 ms	6.27 - 7.64 m/s	7.295 m/s	Yes
Total Head D-Plane Rotation	(-66) - (-82) °	-70.0 °	Yes
Total Head D-Plane Rotation Time to 0° after Peak Rotation	58 - 67 ms	62.1 ms	Yes
Total Neck Occipital Condyle Moment	73 - 88 N·m	78.2 N·m	Yes
Total Neck Occipital Condyle Moment Time to 0 N·m after Peak Moment	49 - 64 ms	54.6 ms	Yes
Time from Peak Moment to Peak Rotation	2 - 16 ms	7.4 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

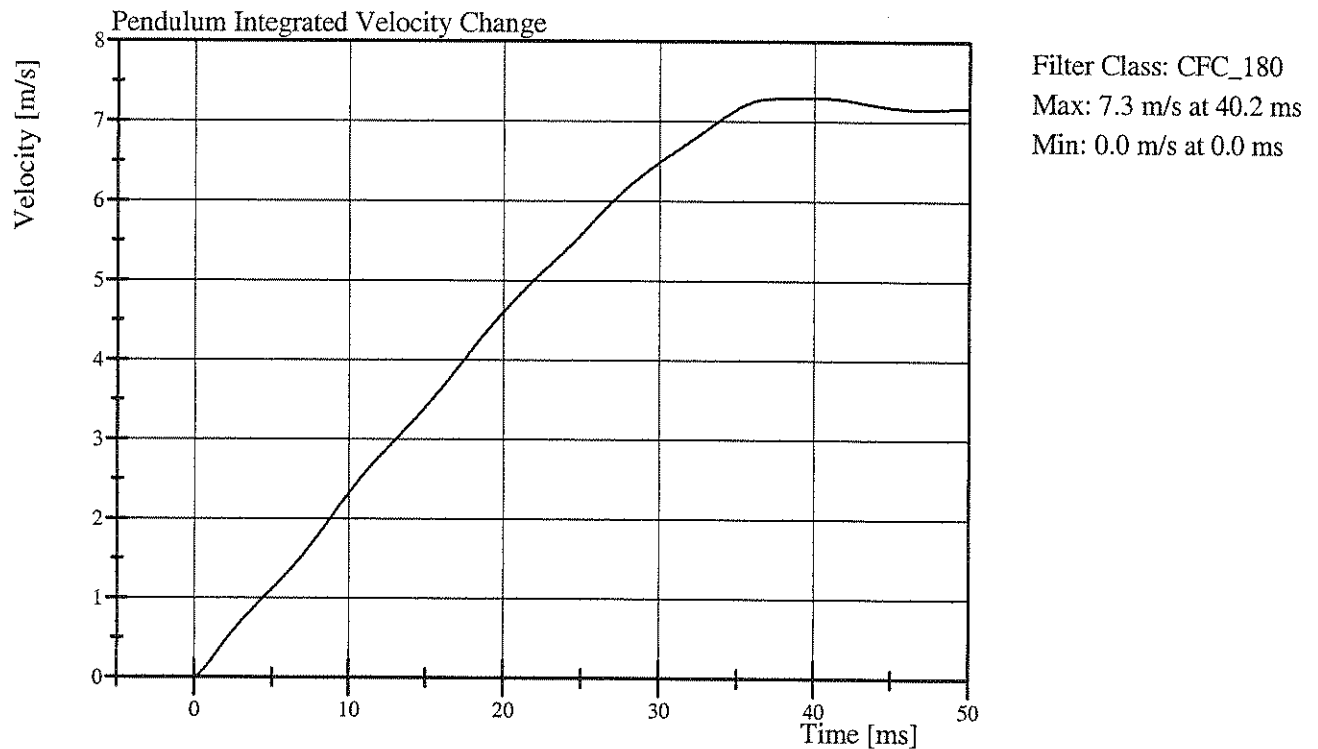
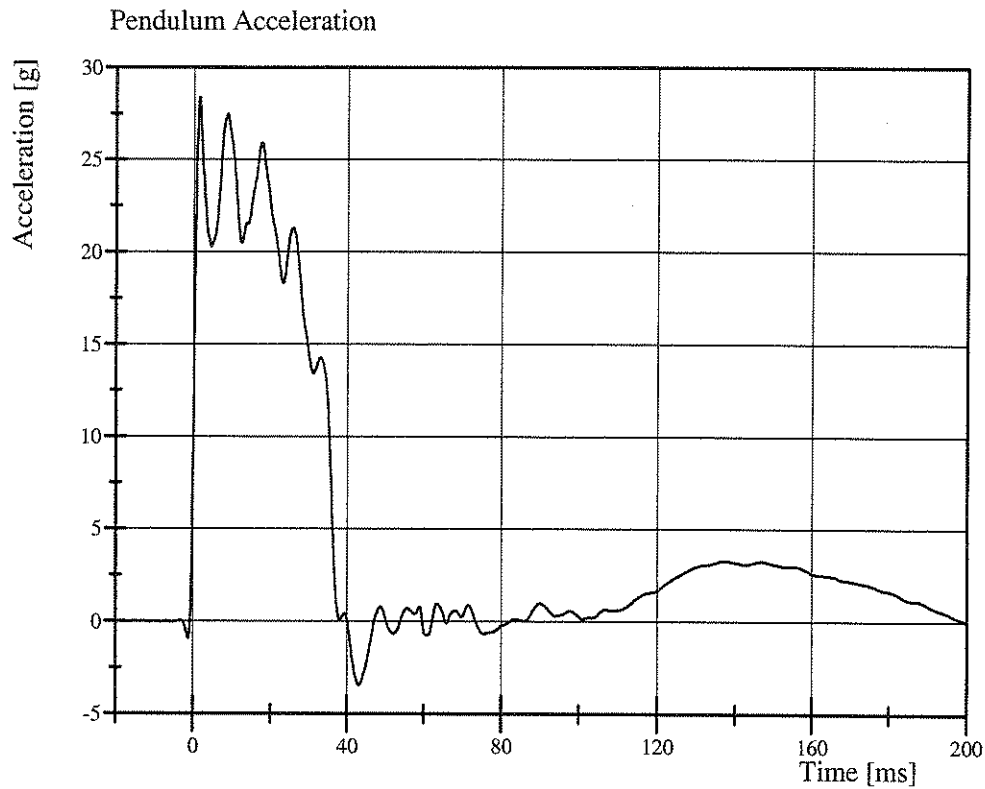


Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 16-1

Test Date: 07/24/2006



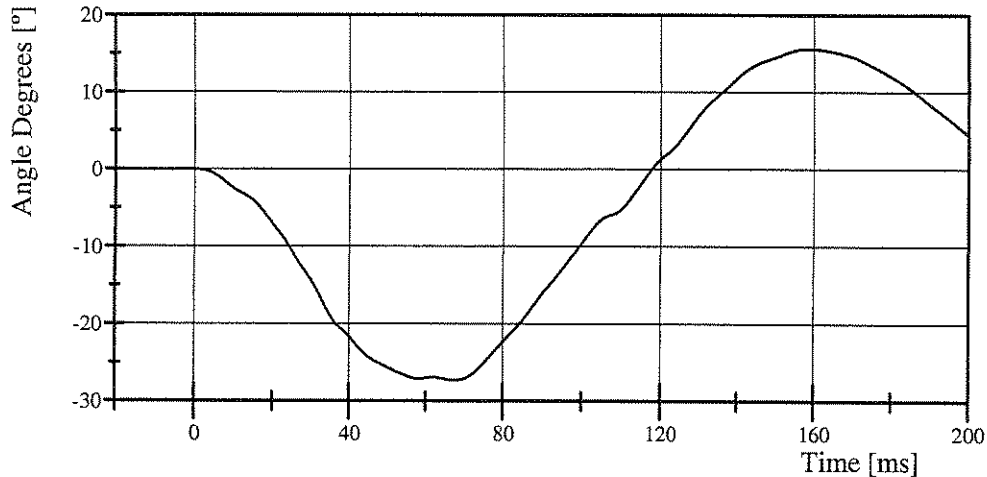
Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 16-1

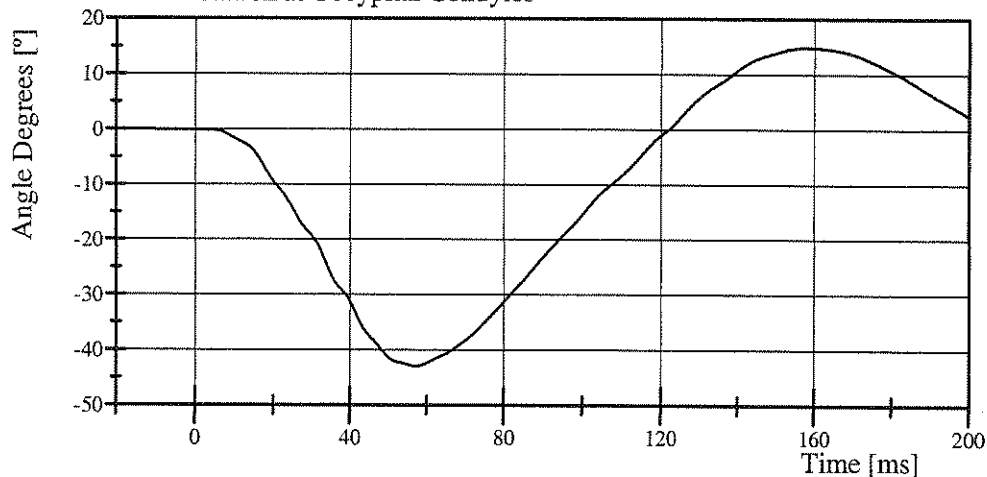
Test Date: 07/24/2006

Pot Rotation at the Base of Neck



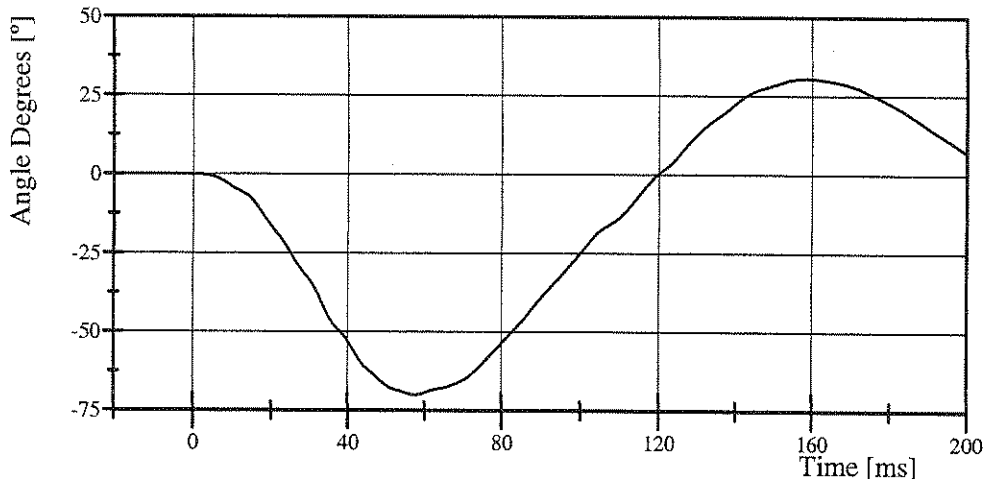
Filter Class: CFC_60
Max: 15.7 ° at 158.7 ms
Min: -27.3 ° at 67.5 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 14.9 ° at 158.2 ms
Min: -42.9 ° at 57.3 ms

Total Head D-Plane Rotation



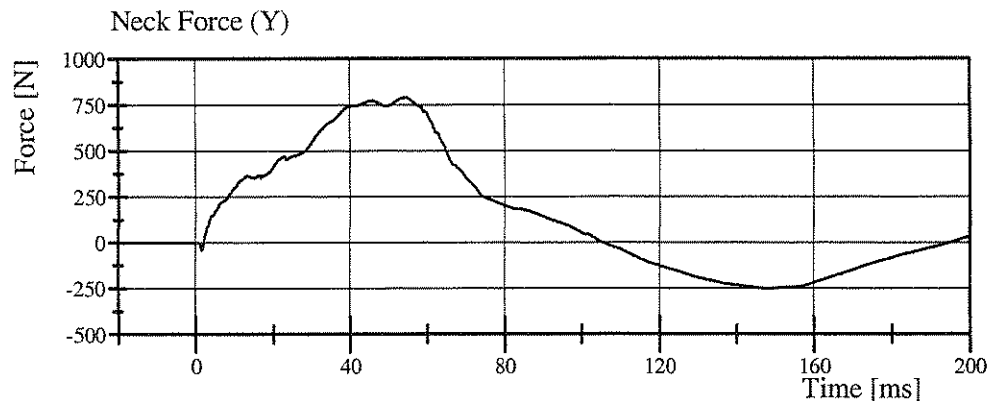
Filter Class: CFC_60
Max: 30.6 ° at 158.6 ms
Min: -70.0 ° at 57.6 ms

Transportation Research Center Inc.

Left Lateral Neck

SID-HIII Serial No. 059 Certification No. 16-1

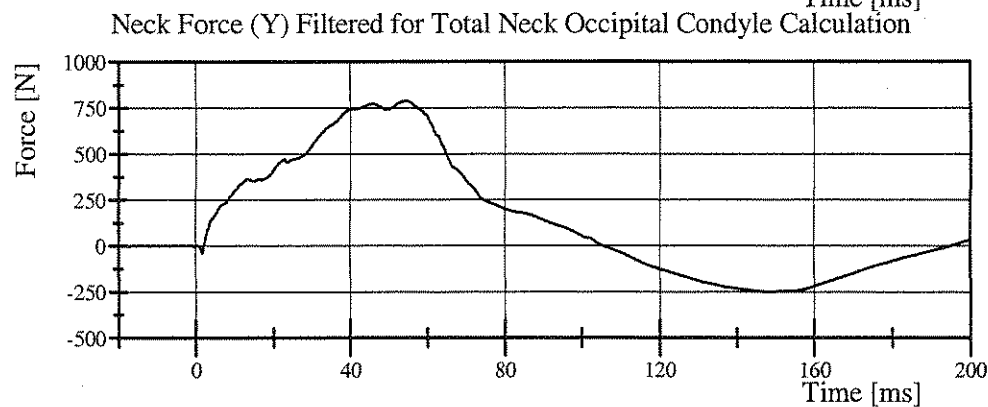
Test Date: 07/24/2006



Filter Class: CFC_1000

Max: 789.8 N at 54.4 ms

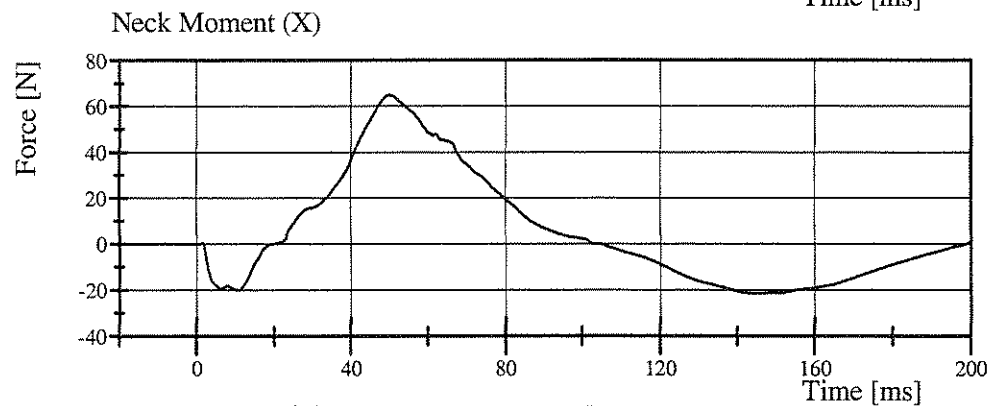
Min: -251.6 N at 147.6 ms



Filter Class: CFC_600

Max: 789.5 N at 54.4 ms

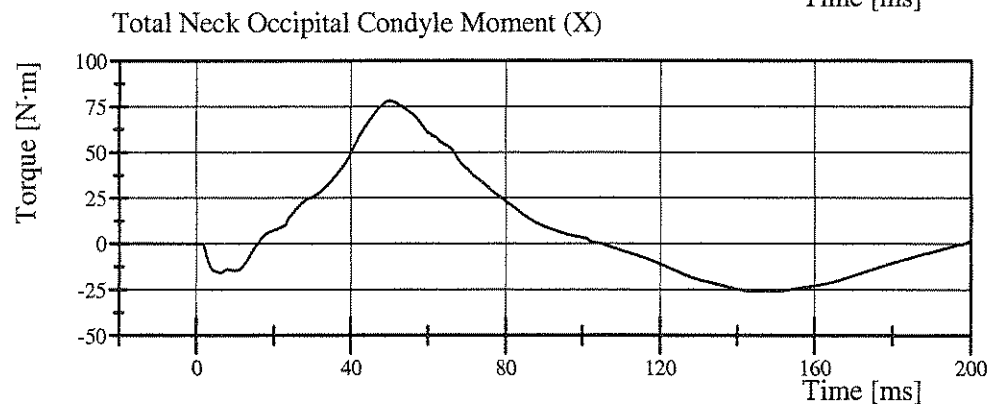
Min: -251.1 N at 147.8 ms



Filter Class: CFC_600

Max: 65.0 N at 50.1 ms

Min: -21.5 N at 144.2 ms



Filter Class: CFC_600

Max: 78.2 N·m at 50.2 ms

Min: -25.8 N·m at 144.9 ms

Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 16-1

Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.301 m/s	Yes
Upper Rib Lateral Acceleration	37 - 46 g	40.4 g	Yes
Lower Rib Lateral Acceleration	37 - 46 g	38.3 g	Yes
Lower Spine Lateral Acceleration	15 - 22 g	18.0 g	Yes

Test meets specifications.

Comments:

Technician



Approved



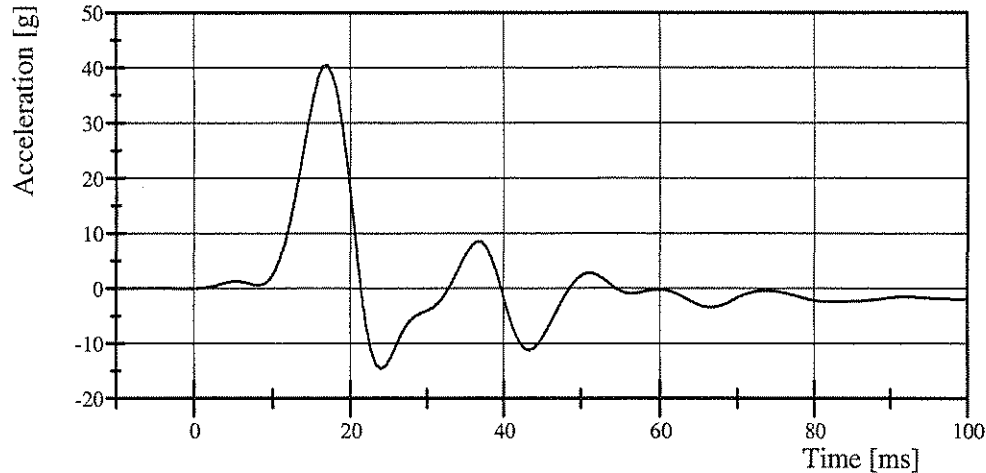
Transportation Research Center Inc.

Left Lateral Thorax

SID-HIII Serial No. 059 Certification No. 16-1

Test Date: 07/24/2006

Upper Rib Acceleration (Y)

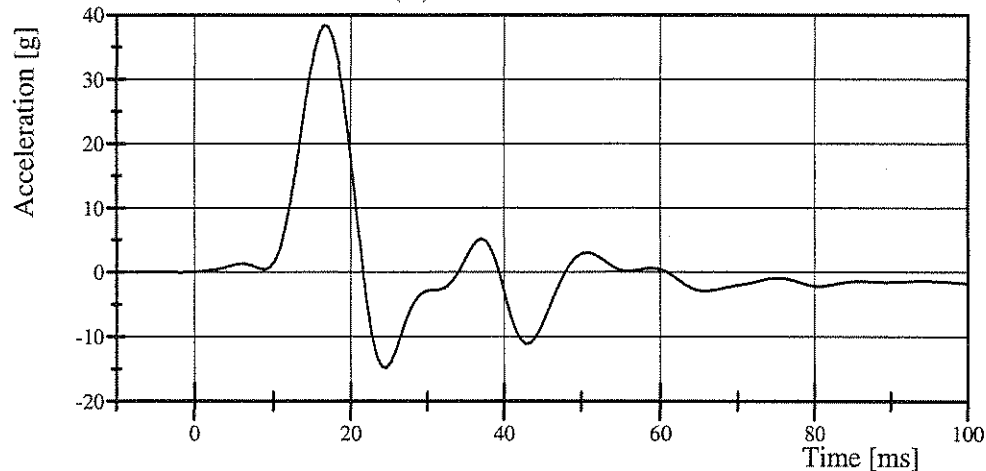


Filter Class: FIR_100

Max: 40.4 g at 17.1 ms

Min: -14.6 g at 24.0 ms

Lower Rib Acceleration (Y)

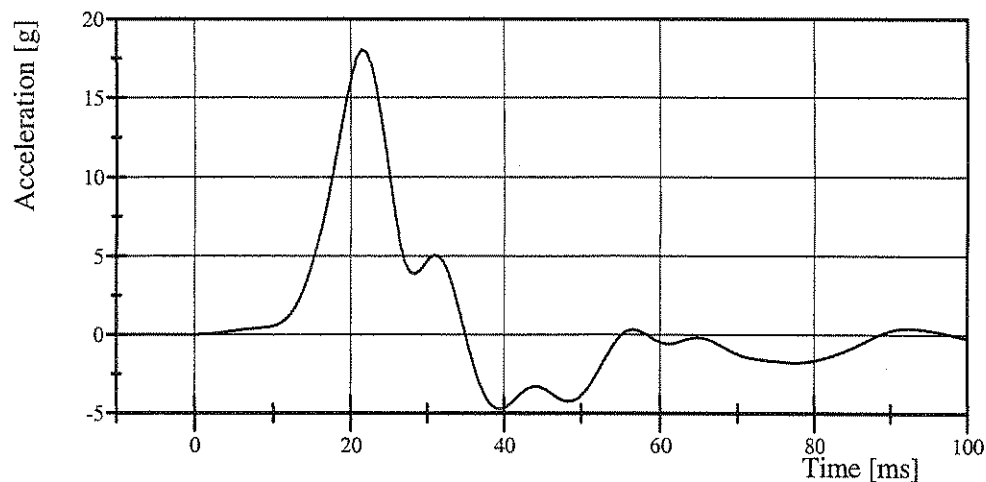


Filter Class: FIR_100

Max: 38.3 g at 16.5 ms

Min: -14.8 g at 24.6 ms

Lower Spine Acceleration (Y)



Filter Class: FIR_100

Max: 18.0 g at 21.5 ms

Min: -4.7 g at 39.6 ms

Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 16-3

Test Date: 07/21/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Probe Force within Corridor	Yes	Yes	Yes
Probe Velocity	6.35 - 8.89 mm/s	7.873 mm/s	Yes

Test meets specifications.

Comments:

Technician



Approved

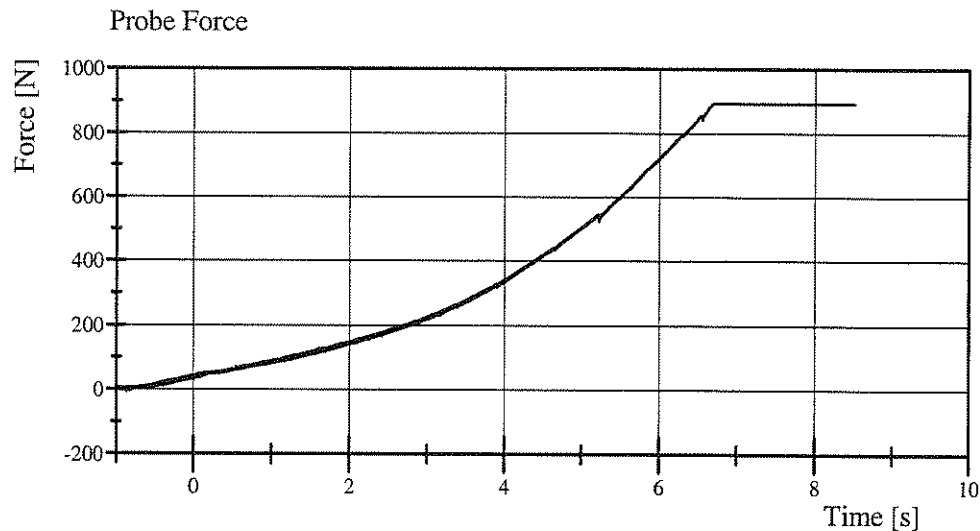

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Transportation Research Center Inc.

Abdomen Compression

SID-HIII Serial No. 059 Certification No. 16-3

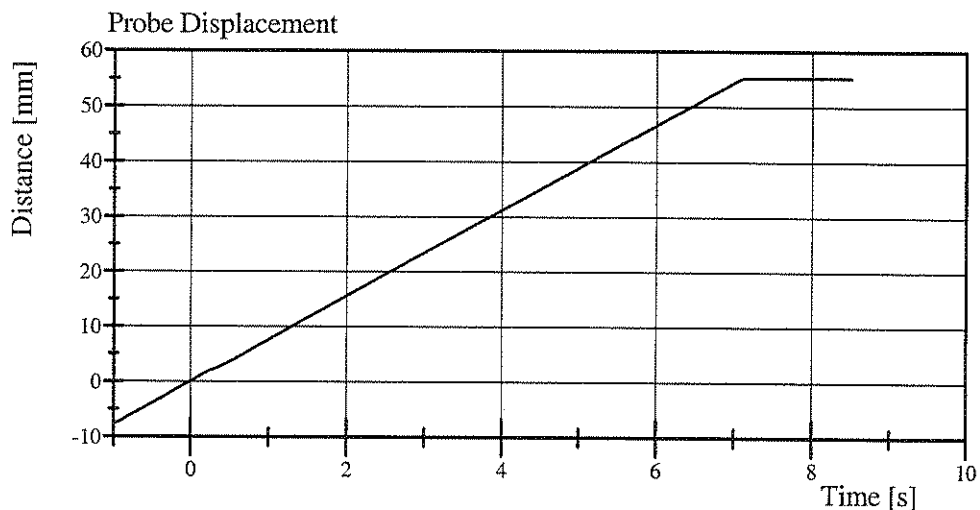
Test Date: 07/21/2006



Filter Class: CFC_600

Max: 893.2 N at 6.7 s

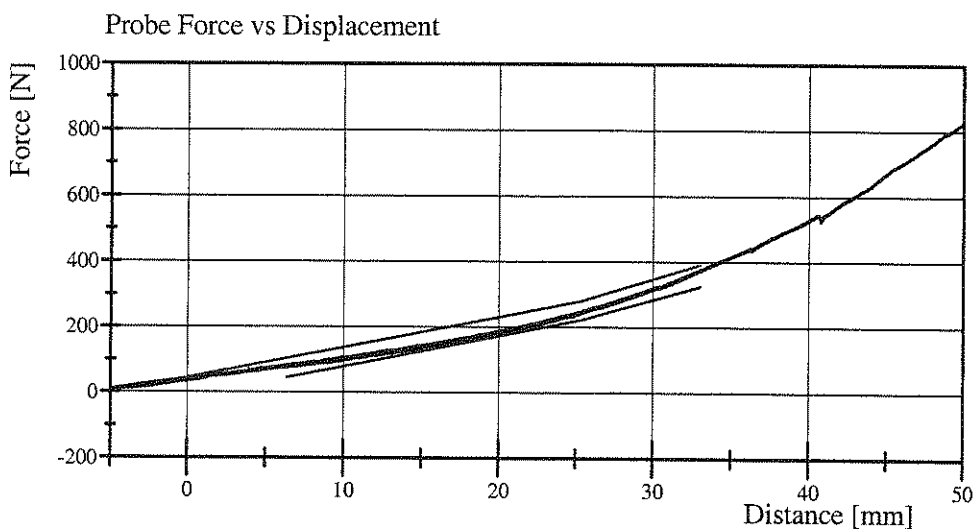
Min: -7.0 N at -0.9 s



Filter Class: CFC_180

Max: 55.3 mm at 8.4 s

Min: -7.4 mm at -1.0 s



Filter Class: CFC_600

Max: 893.2 N at 52.1 mm

Min: -7.0 N at -6.7 mm



TRANSPORTATION RESEARCH CENTER INC.

LUMBAR FLEXION TEST

SID PART 572B

CAL DATE: 24-Jul-06

TRC, INC.

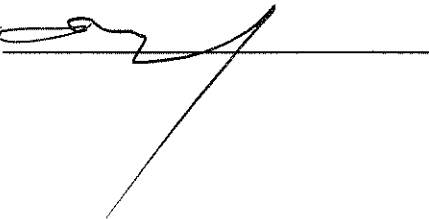
TEST NO: LUFL-01

572B SN 059 TORSO FLEX CAL 16

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	18.9 – 25.6° C	21.0 C
RELATIVE HUMIDITY	10 – 70 %	49 %
FORCE AT 0 DEG. FLEXION	-27 – 27 N	0 N
FORCE AT 20 DEG OF FLEXION	98 – 151 N	137.9 N
FORCE AT 30 DEG OF FLEXION	151 – 205 N	191.3 N
FORCE AT 40 DEG OF FLEXION	205 – 258 N	222.4 N
NET RETURN ANGLE AFTER 3 MINUTES	< 12 °	8.9 °

TEST MEETS SPECIFICATIONS

TECHNICIAN



Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 16-1

Test Date: 07/24/2006

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Impactor Velocity	4.27 - 4.33 m/s	4.283 m/s	Yes
Pelvis Lateral Acceleration Duration above 20g	3 - 7 ms	6.2 ms	Yes
Pelvis Lateral Acceleration	40 - 60 g	42.5 g	Yes
Is Acceleration Curve Unimodal Above 20g?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved

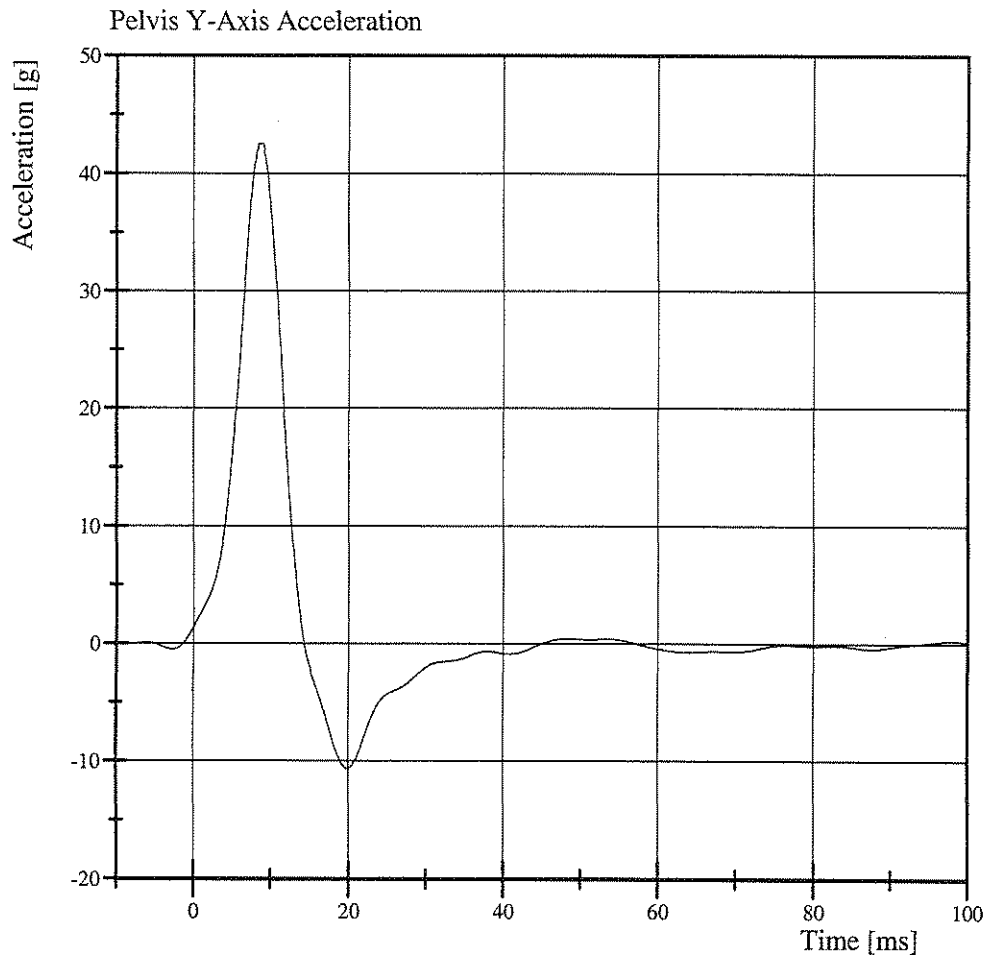


Transportation Research Center Inc.

Left Lateral Pelvis

SID-HIII Serial No. 059 Certification No. 16-1

Test Date: 07/24/2006



Filter Class: FIR_100
Max: 42.5 g at 9.0 ms
Min: -10.6 g at 19.7 ms

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 07/14/06
 Proj./Seg. No.: 20020455-3030 Test Eng.: Walter D. Dudek

ITEM	PRE-USE	
HEAD:		
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left)	(Right) X
NECK:		
Rubber Condition and Separation From End Caps	X	
NECK-SID/HIII only:		
Condyle Pin, Set Screws	X	
* Neck Cable Torque (10-14 in-lb) Actual:	X	
* Nodding Blocks Condition and Position	X	
THORAX: Left side configuration		
Stacked Shoulder Foams and Bolts	X	
Rib Wrap Condition	X	
Rib Cage Spring and Support Assembly	X	
Rib Cage Bolts	X	
Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
Location and Adjustment of Chest Pot Bracket and Collars	X	
Chest Pot Rod End Nuts and Eyebolt	N/A	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
Adjust rib cage position to full extension	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
LEGS AND FEET:		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	
ATTACH TEMPERATURE LOGGER TO DUMMY	X	

* Items checked during calibration; these items need checked when the dummy is used without recalibration.

Inspection Completed By: J. Clarridge Date: 07/12/06

Type: SID HIII S/N: 059 Mfr: ASTC Test Date: 07/14/06
 Proj./Seg. No.: 20020455-3030 Test Eng.: Walter D. Dudek

ITEM	PRE-USE	
HEAD:		
Skull Cap Bolts	X	
Head Skin Condition	X	
Accel. Cable Exit (left or right)	(Left) X	(Right)
NECK:		
Rubber Condition and Separation From End Caps	X	
NECK-SID/HIII only:		
Condyle Pin, Set Screws	X	
* Neck Cable Torque (10-14 in-lb) Actual: 12	X	
* Nodding Blocks Condition and Position	X	
THORAX: Left side configuration		
Stacked Shoulder Foams and Bolts	X	
Rib Wrap Condition	X	
Rib Cage Spring and Support Assembly	X	
Rib Cage Bolts	X	
Damper Rear Attachment Ring, Pivot Pins, and Bracket	X	
Location and Adjustment of Chest Pot Bracket and Collars	X	
Chest Pot Rod End Nuts and Eyebolt	N/A	
Arm Foam Orientation	X	
Thorax/Lumbar Spine Bolts	X	
Adjust rib cage position to full extension	X	
PELVIS:		
Tightness and Alignment of H-Point Tool Insert	X	
* Hips Range of Motion and 1-2g Adjustment (before calibration only)	X	
Upper Femur Bolt Adjustment and Position	X	
LEGS AND FEET:		
Femur Load Cell Bolts (30 ft/lbs)	X	
Breakaway Femur Bolts	X	
Knee Joint Function and Range of Motion	X	
Leg Skin Condition and Position	X	
Ankle Range of Motion	X	
Foot Condition	X	
OTHER:		
Cleanliness	X	
Target Position	X	
Clothes	X	
Shoes	X	
Knee & Ankle One G Joint Adjustments	X	
ATTACH TEMPERATURE LOGGER TO DUMMY	X	

* Items checked during calibration; these items need checked when the dummy is used without recalibration.

Inspection Completed By: J. Clarridge Date: 07/13/06

Type: SID HIII S/N: 055 Mfr: ASTC Test Date: 07/14/06
 Proj./Seg. No.: 20020455-3030 Test Eng.: Walter D. Dudek

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
NECK-SID/HIII only:	
Nodding Blocks Condition and Position	X
Nodding Joint Function (no lateral motion)	X
THORAX: Left side configuration	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen Condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest Bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X
Temperature Data:	
Download temperature data logger	

NOTES: No damage

Inspection Completed By: J. Clarridge

Date: 07/17/06

Type: SID HIII S/N: 059 Mfr: ASTC Test Date: 07/14/06
 Proj./Seg. No.: 20020455-3030 Test Eng.: Walter D. Dudek

ITEM	POST-USE
HEAD:	
Head Skin Condition	X
NECK:	
Rubber Condition and Separation From End Caps	X
NECK-SID/HIII only:	
Nodding Blocks Condition and Position	X
Nodding Joint Function (no lateral motion)	X
THORAX: Left side configuration	
Jacket Condition	X
Arm Foam Condition	X
Damper and Chest Pot Movement and Condition	X
Rib Cage Spring and Support Assembly Condition	X
Rib Wrap Condition	X
Abdomen Condition	X
Thorax/Lumbar Spine Bolts	X
Lumbar Spine Condition and Separation From End Caps	X
PELVIS:	
Iliac Crest Bone	X
Flesh Condition	X
Hip Range of Motion	X
LEGS AND FEET:	
Knee Skins and Castings Condition	X
Leg Skin Condition	X
Foot Condition	X
Knee Joint Range of Motion	X
Ankle Range of Motion	X
Temperature Data:	
Download temperature data logger	

NOTES: No damage

Inspection Completed By: J. Clarridge

Date: 07/17/06

Appendix D

Test Equipment List and Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

+X: Forward
+Y: Rightward
+Z: Downward

Potentiometers:

+Chest longitudinal deflection: Outward
+Chest lateral deflection: Rightward
+Seat belt displacement: Outward
+Seat belt extension: Elongation
+Knee slider displacement: Distance between femur and tibia increased (in relation to a seated dummy)

Rotation potentiometers:

+About the X-axis: Left foot-eversion
Right foot-inversion
+About the Y-axis: Left/right foot-dorsiflexion
+About the Z-axis: Left foot-internal
Right foot-external

Load cells:

+Femur force: Tension
+Seat belt force: Tension
+Barrier force: Tension

Neck load cells:

+X force: Head pushed rearward
+Y force: Head pushed leftward
+Z force: Head pulled upward (tension on neck)
+X moment: Left ear rotating toward left shoulder
+Y moment: Chin rotating toward chest
+Z moment: Chin rotating toward left shoulder

Tibia load cells:

+X force: Ankle forward, knee rearward
+Y force: Ankle rightward, knee leftward
+Z force: Tension
+X moment: Bottom of tibia moving leftward
+Y moment: Bottom of tibia moving rearward

Sign Convention (Continued)
SAE J211 MAR95

<u>Lumbar load cells:</u>	+X force:	Chest rearward, pelvis forward
	+Y force:	Chest leftward, pelvis rightward
	+Z force:	Chest upward, pelvis downward
	+X moment:	Left shoulder toward left hip
	+Y moment:	Sternum toward front of legs
	+Z moment:	Right shoulder forward, left shoulder rearward

Frequency Response Classes
SAE J211 MAR95

<u>Typical Test Measurements</u>	<u>Channel Class</u>
Vehicle Structural Accelerations for use in:	
Total vehicle comparison	60
Collision simulation input	60
Component analysis	600
Integration for velocity or displacement	180
Barrier Face Forces	60
Belt Restraint System Loads	60
Anthropomorphic Test Device	
Head accelerations (linear and angular)	1000
Neck	
Forces	1000
Moments	600
Thorax	
Spine accelerations	180
Rib accelerations	1000
Sternum accelerations	1000
Deflections	600
Lumbar	
Forces	1000
Moments	1000
Pelvis	
Accelerations	1000
Forces	1000
Moments	1000
Femur/Knee/Tibia/Ankle	
Forces	600
Moments	600
Displacements	180
Sled Accelerations	60
Steering Column Loads	600
Head Form Accelerations	1000

The direction column on the following sheets describes the transducer output as mounted and wired in the test location. The polarity column indicates whether a polarity change occurred during data acquisition to conform to J211 MAR95. See Report Sign Convention sheet for description of data output as presented in the report: occasionally channels have been adjusted in post-acquisition processing to conform to J211 MAR95.

Channel Report Test Number 060714

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Positive Polarity	Assembly
						Flip			
1	Trig D1	10ZERO000000EV00	Event		1 Logic	+		Bipolar	
2	P49045	11HEADCG00SHACXA	Head Accel X	1000	g	-		Rearward	1-055 SID/HIII ASTC.001
3	P49057	11HEADCG00SHACYA	Head Accel Y	1000	g	-		Leftward	1-055 SID/HIII ASTC.002
4	P49037	11HEADCG00SHACZA	Head Accel Z	1000	g	-		Upward	1-055 SID/HIII ASTC.003
5	P49050	11HEADCGRDSHACXA	Head Accel X Red	1000	g	-		Rearward	1-055 SID/HIII ASTC.004
6	P46511	11HEADCGRDSHACYA	Head Accel Y Red	1000	g	-		Leftward	1-055 SID/HIII ASTC.005
7	P49021	11HEADCGRDSHACZA	Head Accel Z Red	1000	g	-		Upward	1-055 SID/HIII ASTC.006
8	1716A-1634-FX	11NECKUP00SHFOXA	Neck Force X	8896	N	-		Head forward, chest rearward	1-055 SID/HIII ASTC.007
9	1716A-1634-FY	11NECKUP00SHFOYA	Neck Force Y	8896	N	+		Head leftward, chest rightward	1-055 SID/HIII ASTC.008
10	1716A-1634-FZ	11NECKUP00SHFOZA	Neck Force Z	13344	N	+		Head upward, chest downward	1-055 SID/HIII ASTC.009
11	1716A-1634-MX	11NECKUP00SHMOXA	Neck Moment X	282	N·m	-		Right ear toward right shoulder	1-055 SID/HIII ASTC.010
12	1716A-1634-MY	11NECKUP00SHMOYA	Neck Moment Y	282	N·m	+		Chin toward sternum	1-055 SID/HIII ASTC.011
13	1716A-1634-MZ	11NECKUP00SHMOZA	Neck Moment Z	282	N·m	+		Chin toward left shoulder	1-055 SID/HIII ASTC.012
14	P46524	11RIBSLU00SHACYA	Left Upper Rib Y	800	g	+		Rightward	1-055 SID/HIII ASTC.013
15	P45008	11RIBSLURESHACYA	Left Upper Rid Red Y	800	g	+		Rightward	1-055 SID/HIII ASTC.014
16	P49030	11RIBSLU00SHACYA	Left Lower Rib Y	800	g	+		Rightward	1-055 SID/HIII ASTC.015
17	P46513	11RIBSLURESHACYA	Left Lower Rib Red Y	800	g	+		Rightward	1-055 SID/HIII ASTC.016
18	P49029	11SPIN1200SHACYA	Lower Spine Y	400	g	-		Leftward	1-055 SID/HIII ASTC.017
19	P49036	11SPIN12RDSHACYA	Lower Spine Red Y	400	g	-		Leftward	1-055 SID/HIII ASTC.018
20	P49018	11PELVCG00SHACYA	Pelvis Accel Y	400	g	-		Leftward	1-055 SID/HIII ASTC.019
21	P46512	14HEADCG00SHACXA	Head Accel X	1000	g	-		Rearward	4-059 SID/HIII ASTC.001
22	P49052	14HEADCG00SHACYA	Head Accel Y	1000	g	-		Leftward	4-059 SID/HIII ASTC.002
23	P49038	14HEADCG00SHACZA	Head Accel Z	1000	g	-		Upward	4-059 SID/HIII ASTC.003
24	P49048	14HEADCGRDSHACXA	Head Accel X Red	1000	g	-		Rearward	4-059 SID/HIII ASTC.004
25	P49043	14HEADCGRDSHACYA	Head Accel Y Red	1000	g	-		Leftward	4-059 SID/HIII ASTC.005
26	P49039	14HEADCGRDSHACZA	Head Accel Z Red	1000	g	-		Upward	4-059 SID/HIII ASTC.006
27	1716A-1624-FX	14NECKUP00SHFOXA	Neck Force X	8896	N	-		Head forward, chest rearward	4-059 SID/HIII ASTC.007
28	1716A-1624-FY	14NECKUP00SHFOYA	Neck Force Y	8896	N	+		Head leftward, chest rightward	4-059 SID/HIII ASTC.008
29	1716A-1624-FZ	14NECKUP00SHFOZA	Neck Force Z	13344	N	+		Head upward, chest downward	4-059 SID/HIII ASTC.009
30	1716A-1624-MX	14NECKUP00SHMOXA	Neck Moment X	282	N	-		Right ear toward right shoulder	4-059 SID/HIII ASTC.010
31	1716A-1624-MY	14NECKUP00SHMOYA	Neck Moment Y	282	N	+		Chin toward sternum	4-059 SID/HIII ASTC.011
32	1716A-1624-MZ	14NECKUP00SHMOZA	Neck Moment Z	282	N	+		Chin toward left shoulder	4-059 SID/HIII ASTC.012
33	P44972	14RIBSLU00SHACYA	Left Upper Rib Y	800	g	+		Rightward	4-059 SID/HIII ASTC.013
34	P46518	14RIBSLURESHACYA	Left Upper Rid Red Y	800	g	+		Rightward	4-059 SID/HIII ASTC.014

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060714

Channel Report Test Number 060714

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
35	P46514	14RIBSL00SHACYA	Left Lower Rib Y	800	g	+	Rightward	4-059 SID/HIII ASTC.015
36	P44985	14RIBSL00RESHACYA	Left Lower Rib Red Y	800	g	+	Rightward	4-059 SID/HIII ASTC.016
37	P49046	14SPIN1200SHACYA	Lower Spine Y	400	g	-	Leftward	4-059 SID/HIII ASTC.017
38	P49055	14SPIN12RDSHACYA	Lower Spine Red Y	400	g	-	Leftward	4-059 SID/HIII ASTC.018
39	P49047	14PELVCG00SHACYA	Pelvis Accel Y	400	g	-	Leftward	4-059 SID/HIII ASTC.019
40	P50841	16SILBFR0000ACXA	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME (#1)	400	g	+	Forward	
41	P50797	16SILBFR0000ACYA	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#1)	1000	g	-	Leftward	
42	P50329	16SILBFR0000ACZA	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME (#1)	400	g	-	Upward	
43	P50845	16SILBRE0000ACXA	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME (#2)	400	g	+	Forward	
44	P50799	16SILBRE0000ACYA	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME (#2)	1000	g	-	Leftward	
45	P50803	16SILBRE0000ACZA	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME (#2)	400	g	+	Downward	
46	P50488	18FORA000000ACXA	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME (#3)	1000	g	+	Forward	
47	P50289	18FORA000000ACYA	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME (#3)	1000	g	-	Leftward	
48	P50859	18FORA000000ACZA	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME (#3)	1000	g	-	Upward	
49	P50579	14SILBFR0000ACYA	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#5)	1000	g	+	Rightward	
50	P50931	14SILBRE0000ACYA	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	1000	g	+	Rightward	
51	P50869	16VEHCRE0000ACYA	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME (#7)	1500	g	-	Leftward	
52	P38644	11APILLO0000ACYA	LEFT LOWER A-POST (Y) ACCELERATION VS TIME (#14)	1500	g	-	Leftward	
53	P50283	11APILMI0000ACYA	LEFT MID A-POST (Y) ACCELERATION VS TIME (#15)	1500	g	-	Leftward	
54	P50308	14BPILLO0000ACYA	LEFT LOWER B-POST (Y) ACCELERATION VS TIME (#12)	1500	g	-	Leftward	
55	P50452	14BPILMI0000ACYA	LEFT MID B-POST (Y) ACCELERATION VS TIME (#13)	1500	g	-	Leftward	
56	p50934	11SETRFR0000ACYA	LEFT FRONT SEAT TRACK (Y) ACCELERATION VS TIME (#16)	1500	g	-	Leftward	
57	p50898	14SETRLERE00ACYA	LEFT REAR SEAT TRACK (Y) ACCELERATION VS TIME	1500	g	-	Leftward	
58	P50774	10VEHCCG0000ACXA	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME (#18)	2000	g	+	Forward	
59	P50811	10VEHCCG0000ACYA	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME (#18)	2000	g	-	Leftward	
60	P50836	10VEHCCG0000ACZA	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME (#18)	2000	g	-	Upward	

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060714

Channel Report Test Number 060714

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS	
						Flip	Positive Polarity
1	P50838	M0VEHCCG0000ACXA	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME (#1)	1000	g	+	Forward
2	P50798	M0VEHCCG0000ACYA	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME(#1)	1000	g	-	Leftward
3	P50850	M0VEHCCG0000ACZA	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME(#1)	1000	g	-	Upward
4	P50650	M7FRAM000000ACXA	MDB REAR (X) ACCELERATION VS TIME (#2)	1000	g	+	Forward
5	P49961	M7FRAM000000ACYA	MDB REAR (Y) ACCELERATION VS TIME (#2)	1000	g	-	Leftward
6	Bit.00	M3CONT000000VO00	MDB RIGHT CONTACT SWITCH (2)	1	Logic	+	Bipolar
7	Bit.01	M1CONT000000VO00	MDB LEFT CONTACT SWITCH (1)	1	Logic	+	Bipolar

Command File Test Number 060714

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00SHACXA	DRIVER HEAD X-AXIS ACCELERATION	1000	+	yes	1000
1A	11HEADCG00SHVEXA	DRIVER HEAD X-AXIS VELOCITY	180			
2	11HEADCG00SHACYA	DRIVER HEAD Y-AXIS ACCELERATION	1000	+	yes	1000
2A	11HEADCG00SHVEYA	DRIVER HEAD Y-AXIS VELOCITY	180			
3	11HEADCG00SHACZA	DRIVER HEAD Z-AXIS ACCELERATION	1000	+	yes	1000
3A	11HEADCG00SHVEZA	DRIVER HEAD Z-AXIS VELOCITY	180			
3B	11HEADCG00SHACRA	DRIVER HEAD RESULTANT ACCELERATION	1000			
4	11NECKUP00SHFOXA	DRIVER NECK X-AXIS SHEAR FORCE	1000	+	yes	8896
5	11NECKUP00SHFOYA	DRIVER NECK Y-AXIS SHEAR FORCE	1000	+	yes	8896
6	11NECKUP00SHFOZA	DRIVER NECK Z-AXIS AXIAL FORCE	1000	+	yes	13344
7	11NECKUP00SHMOXA	DRIVER NECK MOMENT ABOUT X AXIS	600	+	yes	282
8	11NECKUP00SHMOYA	DRIVER NECK MOMENT ABOUT Y AXIS	600	+	yes	282
9	11NECKUP00SHMOZA	DRIVER NECK MOMENT ABOUT Z AXIS	600	+	yes	282
10	11RIBSLU00SHACYA	DRIVER UPPER RIB Y-AXIS ACCELERATION	1000	+	yes	800
10A	11RIBSLU00SHVEYA	DRIVER UPPER RIB Y-AXIS VELOCITY	180			
11	11RIBSLL00SHACYA	DRIVER LOWER RIB Y-AXIS ACCELERATION	1000	+	yes	800
11A	11RIBSLL00SHVEYA	DRIVER LOWER RIB Y-AXIS VELOCITY	180			
12	11SPIN1200SHACYA	DRIVER LOWER SPINE Y-AXIS ACCELERATION	1000	+	yes	400
12A	11SPIN1200SHVEYA	DRIVER LOWER SPINE Y-AXIS VELOCITY	180			
13	11PELVCG00SHACYA	DRIVER PELVIS Y-AXIS ACCELERATION	1000	+	yes	400
13A	11PELVCG00SHVEYA	DRIVER PELVIS Y-AXIS VELOCITY	180			
14	14HEADCG00SHACXA	LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION	1000	+	yes	1000
14A	14HEADCG00SHVEXA	LEFT REAR PASSENGER HEAD X-AXIS VELOCITY	180			
15	14HEADCG00SHACYA	LEFT REAR PASSENGER HEAD Y-AXIS ACCELERATION	1000	+	yes	1000
15A	14HEADCG00SHVEYA	LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY	180			
16	14HEADCG00SHACZA	LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION	1000	+	yes	1000
16A	14HEADCG00SHVEZA	LEFT REAR PASSENGER HEAD Z-AXIS VELOCITY	180			
16B	14HEADCG00SHACRA	LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION	1000			
17	14NECKUP00SHFOXA	LEFT REAR PASSENGER NECK X-AXIS SHEAR FORCE	1000	+	yes	8896
18	14NECKUP00SHFOYA	LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE	1000	+	yes	8896
19	14NECKUP00SHFOZA	LEFT REAR PASSENGER NECK Z-AXIS AXIAL FORCE	1000	+	yes	13344
20	14NECKUP00SHMOXA	LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS	600	+	yes	282
21	14NECKUP00SHMOYA	LEFT REAR PASSENGER NECK MOMENT ABOUT Y AXIS	600	+	yes	282
22	14NECKUP00SHMOZA	LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS	600	+	yes	282
23	14RIBSLU00SHACYA	LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION	1000	+	yes	800
23A	14RIBSLU00SHVEYA	LEFT REAR PASSENGER UPPER RIB Y-AXIS VELOCITY	180			
24	14RIBSLL00SHACYA	LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION	1000	+	yes	800

Command File Test Number 060714

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
24A	14RIBSLL00SHVEYA	LEFT REAR PASSENGER LOWER RIB Y-AXIS VELOCITY	180			
25	14SPIN1200SHACYA	LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION	1000	+	yes	400
25A	14SPIN1200SHVEYA	LEFT REAR PASSENGER LOWER SPINE Y-AXIS VELOCITY	180			
26	14PELVCG00SHACYA	LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION	1000	+	yes	400
26A	14PELVCG00SHVEYA	LEFT REAR PASSENGER PELVIS Y-AXIS VELOCITY	180			
27	11HEADCGRDSHACXA	DRIVER HEAD X-AXIS REDUNDANT ACCELERATION	1000	+	yes	1000
27A	11HEADCGRDSHVEXA	DRIVER HEAD X-AXIS REDUNDANT VELOCITY	180			
28	11HEADCGRDSHACYA	DRIVER HEAD Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	1000
28A	11HEADCGRDSHVEYA	DRIVER HEAD Y-AXIS REDUNDANT VELOCITY	180			
29	11HEADCGRDSHACZA	DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION	1000	+	yes	1000
29A	11HEADCGRDSHVEZA	DRIVER HEAD Z-AXIS REDUNDANT VELOCITY	180			
29B	11HEADCGRDSHACRA	DRIVER HEAD RESULTANT REDUNDANT ACCELERATION	1000			
30	11RIBSLURESHACYA	DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	800
30A	11RIBSLURESHVEYA	DRIVER UPPER RIB Y-AXIS REDUNDANT VELOCITY	180			
31	11RIBSLLRESHACYA	DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	800
31A	11RIBSLLRESHVEYA	DRIVER LOWER RIB Y-AXIS REDUNDANT VELOCITY	180			
32	11SPIN12RDSHACYA	DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	400
32A	11SPIN12RDSHVEYA	DRIVER LOWER SPINE Y-AXIS REDUNDANT VELOCITY	180			
33	14HEADCGRDSHACXA	LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION	1000	+	yes	1000
33A	14HEADCGRDSHVEXA	LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT VELOCITY	180			
34	14HEADCGRDSHACYA	LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	1000
34A	14HEADCGRDSHVEYA	LEFT REAR PASSENGER HEAD Y-AXIS REDUNDANT VELOCITY	180			
35	14HEADCGRDSHACZA	LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION	1000	+	yes	1000
35A	14HEADCGRDSHVEZA	LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT VELOCITY	180			
35B	14HEADCGRDSHACRA	LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION	1000			
36	14RIBSLURESHACYA	LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	800
36A	14RIBSLURESHVEYA	LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT VELOCITY	180			
37	14RIBSLLRESHACYA	LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	800
37A	14RIBSLLRESHVEYA	LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT VELOCITY	180			
38	14SPIN12RDSHACYA	LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION	1000	+	yes	400
38A	14SPIN12RDSHVEYA	LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY	180			
39	16SILBFR0000ACXA	RIGHT SIDE SILL AT FRONT SEAT X-AXIS ACCELERATION	60	+	yes	400
39A	16SILBFR0000VEXA	RIGHT SIDE SILL AT FRONT SEAT X-AXIS VELOCITY	180			
40	16SILBFR0000ACYA	RIGHT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION	60	+	yes	1000
40A	16SILBFR0000VEYA	RIGHT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY	180			
41	16SILBFR0000ACZA	RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION	60	+	yes	400

Command File Test Number 060714

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
41A	16SILBFR0000VEZA	RIGHT SIDE SILL AT FRONT SEAT Z-AXIS VELOCITY	180			
41B	16SILBFR0000ACRA	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION	60			
42	16SILBRE0000ACXA	RIGHT SIDE SILL AT REAR SEAT X-AXIS ACCELERATION	60	+	yes	400
42A	16SILBRE0000VEXA	RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY	180			
43	16SILBRE0000ACYA	RIGHT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION	60	+	yes	1000
43A	16SILBRE0000VEYA	RIGHT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY	180			
44	16SILBRE0000ACZA	RIGHT SIDE SILL AT REAR SEAT Z-AXIS ACCELERATION	60	+	yes	400
44A	16SILBRE0000VEZA	RIGHT SIDE SILL AT REAR SEAT Z-AXIS VELOCITY	180			
44B	16SILBRE0000ACRA	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION	60			
45	18FORA000000ACXA	REAR FLOORPAN ABOVE AXLE X-AXIS ACCELERATION	60	+	yes	1000
45A	18FORA000000VEXA	REAR FLOORPAN ABOVE AXLE X-AXIS VELOCITY	180			
46	18FORA000000ACYA	REAR FLOORPAN ABOVE AXLE Y-AXIS ACCELERATION	60	+	yes	1000
46A	18FORA000000VEYA	REAR FLOORPAN ABOVE AXLE Y-AXIS VELOCITY	180			
47	18FORA000000ACZA	REAR FLOORPAN ABOVE AXLE Z-AXIS ACCELERATION	60	+	yes	1000
47A	18FORA000000VEZA	REAR FLOORPAN ABOVE AXLE Z-AXIS VELOCITY	180			
47B	18FORA000000ACRA	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION	60			
48	14SILBFR0000ACYA	LEFT SIDE SILL AT FRONT SEAT Y-AXIS ACCELERATION	60	+	yes	1000
48A	14SILBFR0000VEYA	LEFT SIDE SILL AT FRONT SEAT Y-AXIS VELOCITY	180			
48B	14SILBFR0000DCYA	LEFT SIDE SILL AT FRONT SEAT Y-AXIS DISPLACEMENT	180			
49	14SILBRE0000ACYA	LEFT SIDE SILL AT REAR SEAT Y-AXIS ACCELERATION	60	+	yes	1000
49A	14SILBRE0000VEYA	LEFT SIDE SILL AT REAR SEAT Y-AXIS VELOCITY	180			
49B	14SILBRE0000DCYA	LEFT SIDE SILL AT REAR SEAT Y-AXIS DISPLACEMENT	180			
50	16VEHCRE0000ACYA	RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS ACCELERATION	60	+	yes	1500
50A	16VEHCRE0000VEYA	RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS VELOCITY	180			
50B	16VEHCRE0000DCYA	RIGHT REAR OCCUPANT COMPARTMENT Y-AXIS DISPLACEMENT	180			
51	11APILLO0000ACYA	LEFT LOWER A-POST Y-AXIS ACCELERATION	60	+	yes	1500
51A	11APILLO0000VEYA	LEFT LOWER A-POST Y-AXIS VELOCITY	180			
52	11APILMI0000ACYA	LEFT MIDDLE A-POST Y-AXIS ACCELERATION	60	+	yes	1500
52A	11APILMI0000VEYA	LEFT MIDDLE A-POST Y-AXIS VELOCITY	180			
53	14BPILLO0000ACYA	LEFT LOWER B-POST Y-AXIS ACCELERATION	60	+	yes	1500
53A	14BPILLO0000VEYA	LEFT LOWER B-POST Y-AXIS VELOCITY	180			
54	14BPILMI0000ACYA	LEFT MIDDLE B-POST Y-AXIS ACCELERATION	60	+	yes	1500
54A	14BPILMI0000VEYA	LEFT MIDDLE B-POST Y-AXIS VELOCITY	180			
55	11SETRFR0000ACYA	LEFT FRONT SEAT TRACK Y-AXIS ACCELERATION	60	+	yes	1500
55A	11SETRFR0000VEYA	LEFT FRONT SEAT TRACK Y-AXIS VELOCITY	180			
56	14SETRLERE00ACYA	LEFT REAR SEAT TRACK Y-AXIS ACCELERATION	60	+	yes	1500
56A	14SETRLERE00VEYA	LEFT REAR SEAT TRACK Y-AXIS VELOCITY	180			

Command File Test Number 060714

Channel	ISO Mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
57	10VEHCCG0000ACXA	VEHICLE CENTER OF GRAVITY X-AXIS ACCELERATION	60	+	yes	2000
57A	10VEHCCG0000VEXA	VEHICLE CENTER OF GRAVITY X-AXIS VELOCITY	180			
58	10VEHCCG0000ACYA	VEHICLE CENTER OF GRAVITY Y-AXIS ACCELERATION	60	+	yes	2000
58A	10VEHCCG0000VEYA	VEHICLE CENTER OF GRAVITY Y-AXIS VELOCITY	180			
59	10VEHCCG0000ACZA	VEHICLE CENTER OF GRAVITY Z-AXIS ACCELERATION	60	+	yes	2000
59A	10VEHCCG0000VEZA	VEHICLE CENTER OF GRAVITY Z-AXIS VELOCITY	180			
59B	10VEHCCG0000ACRA	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION	60			
60	M0VEHCCG0000ACXA	MDB CENTER OF GRAVITY X-AXIS ACCELERATION	60	+	yes	1000
60A	M0VEHCCG0000VEXA	MDB CENTER OF GRAVITY X-AXIS VELOCITY	180			
61	M0VEHCCG0000ACYA	MDB CENTER OF GRAVITY Y-AXIS ACCELERATION	60	+	yes	1000
61A	M0VEHCCG0000VEYA	MDB CENTER OF GRAVITY Y-AXIS VELOCITY	180			
62	M0VEHCCG0000ACZA	MDB CENTER OF GRAVITY Z-AXIS ACCELERATION	60	+	yes	1000
62A	M0VEHCCG0000VEZA	MDB CENTER OF GRAVITY Z-AXIS VELOCITY	180			
62B	M0VEHCCG0000ACRA	MDB CENTER OF GRAVITY RESULTANT ACCELERATION	60			
63	M7FRAM000000ACXA	MDB REAR X-AXIS ACCELERATION	60	+	yes	1000
63A	M7FRAM000000VEXA	MDB REAR X-AXIS VELOCITY	180			
64	M7FRAM000000ACYA	MDB REAR Y-AXIS ACCELERATION	60	+	yes	1000
64A	M7FRAM000000VEYA	MDB REAR Y-AXIS VELOCITY	180			
65	M3CONT000000VO00	MDB RIGHT CONTACT SWITCH	0	+	no	1
66	M1CONT000000VO00	MDB LEFT CONTACT SWITCH	0	+	no	1
67A	11RIBSLU00SHACYA	DRIVER UPPER RIB Y-AXIS ACCELERATION	100	+	yes	800
67B	11RIBSLL00SHACYA	DRIVER LOWER RIB Y-AXIS ACCELERATION	100	+	yes	800
67C	11SPIN1200SHACYA	DRIVER LOWER SPINE Y-AXIS ACCELERATION	100	+	yes	400
67D	11PELVCG00SHACYA	DRIVER PELVIS Y-AXIS ACCELERATION	100	+	yes	400
67E	14RIBSLU00SHACYA	LEFT REAR PASSENGER UPPER RIB Y-AXIS ACCELERATION	100	+	yes	800
67F	14RIBSLL00SHACYA	LEFT REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION	100	+	yes	800
67G	14SPIN1200SHACYA	LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION	100	+	yes	400
67H	14PELVCG00SHACYA	LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION	100	+	yes	400
67I	11RIBSLURESHACYA	DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION	100	+	yes	800
67J	11RIBSLLRESHACYA	DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION	100	+	yes	800
67K	11SPIN12RDSHACYA	DRIVER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION	100	+	yes	400
67L	14RIBSLURESHACYA	LEFT REAR PASSENGER UPPER RIB Y-AXIS REDUNDANT ACCELERATION	100	+	yes	800
67M	14RIBSLLRESHACYA	LEFT REAR PASSENGER LOWER RIB Y-AXIS REDUNDANT ACCELERATION	100	+	yes	800
67N	14SPIN12RDSHACYA	LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT ACCELERATION	100	+	yes	400

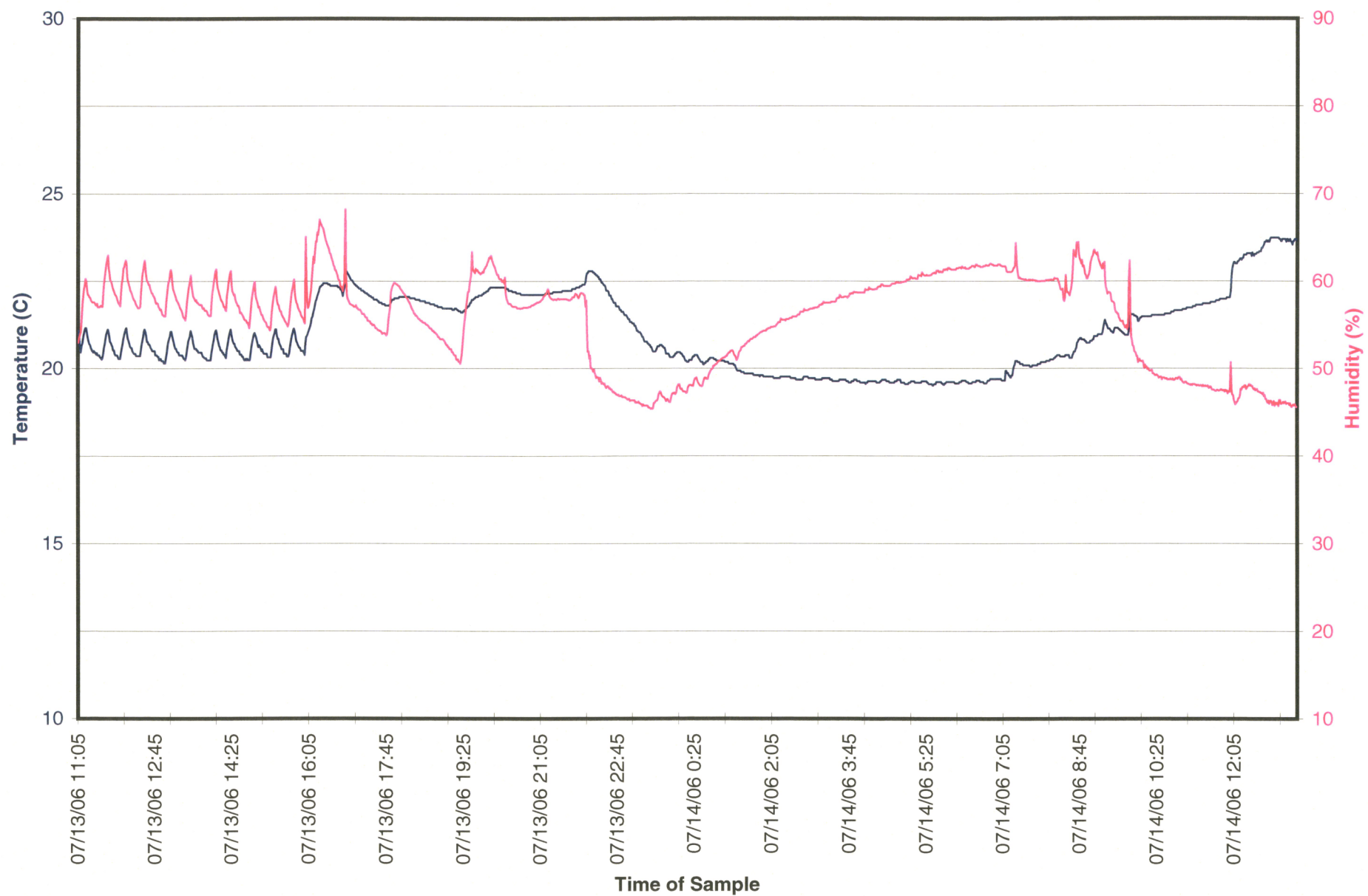
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HYUNDAI

2006 AZERA LIMITED

VIN: KMHFC46F26A052846
Engine #: G6DA5S05692
Color: Sage Green

Model: 71452
Port of Entry: PT
Mode of Transport: TRUCK

Sold To: SUBURBAN HYUNDAI
MI042 1810 MAPLELAWN
TROY, MI 48084

Shipped to:
MI042

Compare this vehicle to others in the FREE FUEL ECONOMY GUIDE available at the dealer.

CITY MPG

19

Actual Mileage

will vary with options, driving conditions, driving habits and vehicle's condition. Results report to EPA indicate that the majority of these vehicles with these estimates will achieve between:
16 and 22 mpg in city and between
23 and 33 mpg on the highway



2006 AZERA LIMITED 3.8 LITER
V6 ENGINE ELEC. FUEL INJECTION
AUTO 5 SPD. TRANS CATALYST

Estimated Annual Fuel Cost:

\$1,502.00

HIGHWAY MPG

28

For comparison shopping
all vehicles classified as
LARGE CAR

have been issued mileage ratings
from **10 to 24 mpg** city
and **14 to 34 mpg** highway

See www.fueleconomy.gov

PART CONTENT INFORMATION

FOR VEHICLE IN THIS CARLINE:

U.S. / Canadian Parts Contents:

5 %

Major Sources of Foreign Parts Contents: Korea

93 %

Note: Parts content does not include final assembly, distribution, or other non-parts cost.

FOR THIS VEHICLE:

Final Assembly Point: Asan, Korea

Country of Origin: Engine: Korea

Transmission Parts: Korea

2006 Azera offers unprecedented safety, roominess and premium features.

Class-leading Standard Safety Technologies

- Eight standard airbags: Dual front, front and rear seat-mounted side-impact and roof-mounted side-curtain airbags
- Standard Electronic Stability Control (ESC) with Traction Control
- Standard ABS with Electronic Brake Force Distribution (EBD)
- Standard front active head restraints

Large Interior Volume

- More interior volume than key competitors

America's Best Warranty

- 5-year/60,000-mile New Vehicle Warranty*
 - 10-year/100,000-mile Powertrain Warranty*
 - 7-year/Unlimited-mile Anti-perforation Warranty*
 - 5-year/Unlimited-mile Roadside Assistance
- *Limited warranties, see dealer for details

High Value Features:

*Electronic Stability Control	INCLUDED
*Traction Control System	INCLUDED
*4-Wheel Anti-Lock Brakes	INCLUDED
*Front/Rear Seat Side Airbags	INCLUDED
*Side Curtain Airbags	INCLUDED
*Active Head Restraints	INCLUDED
*3.8L MPI-DOHC V6 Engine w/ Variable Intake System	INCLUDED
*5-Spd Automatic Transmission w/SHIFTRONIC® Function	INCLUDED
*4-Wheel Disc Brakes	INCLUDED
*17" 10-Spoke Alloy Wheels	INCLUDED
*Remote Keyless Entry w/Alarm	INCLUDED
*Leather Seating Surfaces	INCLUDED
*Dual Front Heated Seats	INCLUDED
*Dual Front Power Seats	INCLUDED
*Split-Fold 60/40 Rear Seat	INCLUDED
*Fully Automatic Non-CFC Air Conditioning	INCLUDED
*Electroluminescent Gauges	INCLUDED
*Power Rear Sunshade	INCLUDED
*Woodgrain-Trimmed Steering Wheel & Door Pulls	INCLUDED
*AM/FM/CD/MP3 Audio System w/ Steering Wheel Controls	INCLUDED
*Power Windows/Locks/Mirrors	INCLUDED
*Cruise Control	INCLUDED
*Automatic Headlight Control	INCLUDED
*Full-Size Alloy Spare Wheel	INCLUDED
*Carpeted Floor Mats	INCLUDED

Manufacturer's Suggested

Retail Price: **\$26,835.00**

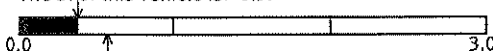
Optional Features:

*This vehicle is certified to meet emission requirements in all 50 states	
*Premium Package	\$1,500.00
includes; Power Sunroof Infinity Audio w/ 6-Disc In-Dash CD Changer	
*Sunroof Wind Deflector	\$80.00

Inland Freight & Handling **\$660.00**
**Total Manufacturer's
 Suggested Retail Price: \$29,075.00**

SMOG EMISSION INFORMATION

The SI of this vehicle is: 0.39



Note: The Smog Index (SI) indicates the relative level of smog-forming pollutants emitted by the vehicle. The lower the SI, the lower the vehicle's emissions.

Manufacturer's suggested retail price includes manufacturer's recommended pre-delivery service. Gasoline license and title fees, state and local taxes and dealer installed options and accessories are not included in the manufacturer's suggested retail price.

This label has been affixed to this vehicle by Hyundai Motor America, pursuant to the requirements of 15 U.S.C. 1231 et seq. which prohibits its removal or alteration prior to delivery to the ultimate purchaser.



CERTIFICATE OF CONFORMITY

Certificate No. 26902
Serial No. GB329

Cellbond Composites Ltd
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF
United Kingdom

Product Description	NHTSA Side Impact Barrier
Cellbond Part No.	70NHTSASI US

telephone
+44 (0) 1480 435302
telefax
+44 (0) 1480 450181
email
sales@cellbond.com
website
www.cellbond.com

	Test Results	GR No.	Blk No.
1	6568-8	CHC13030017GB	N/A
2	7727-8	CHC0511015FL	N/A

Declaration.

The above moving deformable barrier has been manufactured in accordance with the provisions of FMVSS 214.

Additional Information...

company registration
England 1944904

registered office
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF

Cellbond Offices
United Kingdom
United States of America



06071428320
PM 51401



NHTSA / IIHS DEFORMABLE SIDE IMPACT BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

MAIN BLOCK
Core: 1.6 3/8 5052

Required Crush Strength
42.5 PSI to 47.5 PSI

Test No: 6568-8

GR No: CHC13030017GB

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38 inch	0.38 to 0.52 inch	0.52 to 0.65 inch	
Sample* 1	45.579	45.230	45.330	PASS
Sample 2	44.226	45.213	46.313	PASS
Sample 3	47.423	47.316	47.567	FAIL
Sample 4	47.183	46.937	46.796	PASS
Sample 5	45.523	45.743	45.222	PASS
Sample 6	45.103	44.889	44.971	PASS
Sample 7	44.868	44.426	44.094	PASS
Sample 8	46.663	45.809	45.206	PASS

Seven out of the eight samples must fulfil the crush strength
requirement in order to pass the block certification

*Sample size and location as per R94.

RESULT: PASSED

NHTSA / IIHS DEFORMABLE SIDE IMPACT BARRIER
MAIN BLOCK

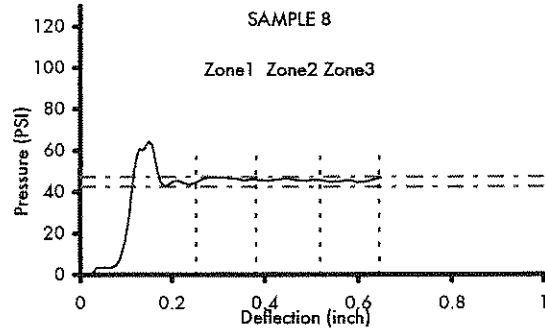
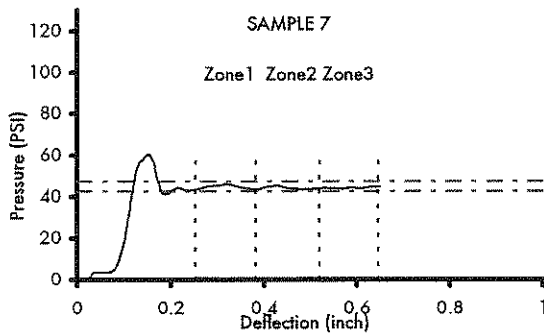
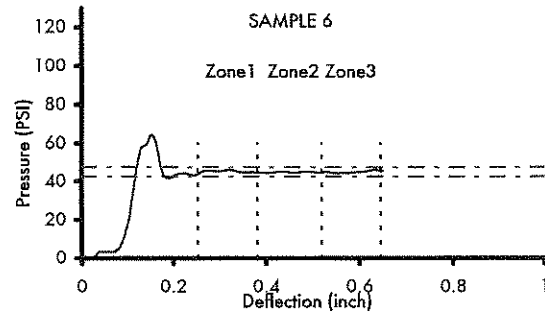
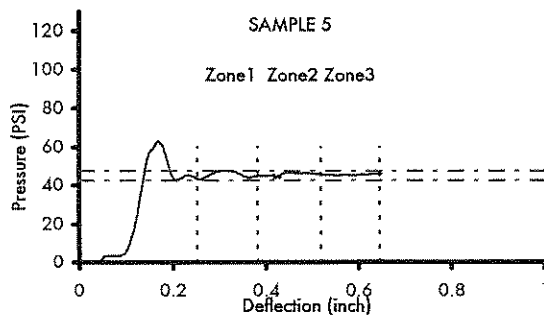
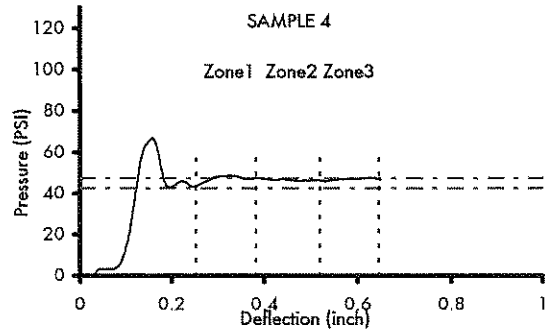
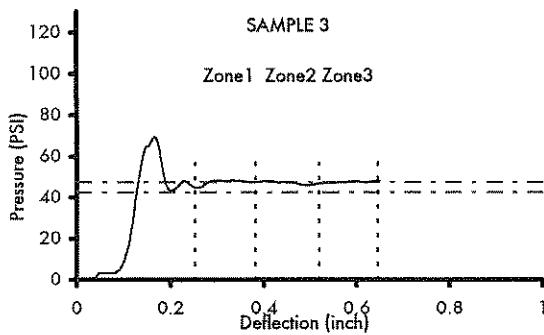
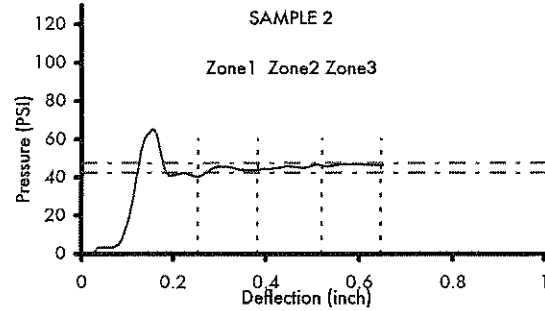
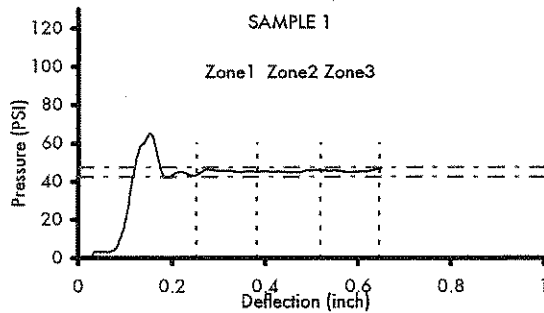
Honeycomb Type: 1.6 3/8 5052
Higher Acceptable Crush Strength Limit: 47.5 PSI
Lower Acceptable Crush Strength Limit: 42.5 PSI

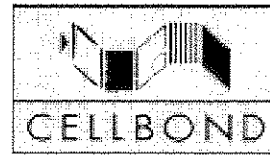
Section 1: 0.25 - 0.38 inch
Section 2: 0.38 - 0.52 inch
Section 3: 0.52 - 0.65 inch
Speed: 0.25 inch/min

Test No: 6568-8

GR No: CHC13030017GB

Block No: N/A





NHTSA / IIHS DEFORMABLE SIDE IMPACT BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

BUMPER

Core: 5.2 1/4 3003

Required Crush Strength
230 PSI to 260 PSI

Test No: 7727-8

GR No: CHC0511015FL

Block No: N/A

	Crush Strength (PSI)			RESULT
	0.25 to 0.38	0.38 to 0.52	0.52 to 0.65	
Sample* 1	236.82	236.14	231.81	PASS
Sample 2	240.17	236.46	235.13	PASS
Sample 3	235.39	231.35	230.90	PASS
Sample 4	238.04	234.36	234.88	PASS
Sample 5	237.55	237.53	235.15	PASS
Sample 6	237.20	236.40	234.53	PASS
Sample 7	237.49	235.45	235.25	PASS
Sample 8	234.04	232.52	231.69	PASS

Seven out of the eight samples must fulfil the crush strength
requirement in order to pass the block certification

*Sample size and location as per R94.

RESULT: PASSED

NHTSA / IIHS DEFORMABLE SIDE IMPACT BARRIER BUMPER

Honeycomb Type: 5.2 1/4 3003
Higher Acceptable Crush Strength Limit: 260 PSI
Lower Acceptable Crush Strength Limit: 230 PSI

Section 1: 0.25 - 0.38 inch
Section 2: 0.38 - 0.52 inch
Section 3: 0.52 - 0.65 inch
Speed: 0.25 inch/min

Test No: 7727-8

GR No: CHC0511015FL

Block No: N/A

