

**Vehicle Research and Test Center  
Oblique Side Pole Impact  
WorldSID  
2011 Ford Explorer  
TRC Inc. Test Number 110908**

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**Final Report  
September 2011**

**Prepared For  
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**TRC TEST NUMBER: 110908**

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Report Approved January 13, 2011 by:



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Section 1.0

Purpose and Test Procedure

## Purpose

This side impact test is part of FMVSS 214 Oblique Pole Side Impact Protection. It was conducted for the National Highway Traffic Safety Administration (NHTSA) and Vehicle Research and Test Center (VRTC) by Transportation Research Center Inc. (TRC Inc.). The purpose of this test was to refine the seating procedure for the 50<sup>th</sup> male WorldSID dummy and to begin to evaluate the performance of the post-FMVSS 214 fleet with the new dummy. The test was conducted in accordance with the National Highway Traffic Safety Administration's test procedure TP-214P-00 Draft4FR, August 2007.

Section 2.0

Side Impact Test

## Summary of Side Impact Test

A 2011 Ford Explorer impacted an oblique rigid pole barrier at an angle of 74.5° between the line of forward motion and the centerline of the vehicle, at a velocity of 32.2 km/h (20.2 mph). The pole was aligned with the dummy's head center of gravity. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on September 8, 2011. Pre-test and post-test photographs of the test vehicle, the rigid pole barrier, and the side impact dummy (WorldSID) are included in Appendix A.

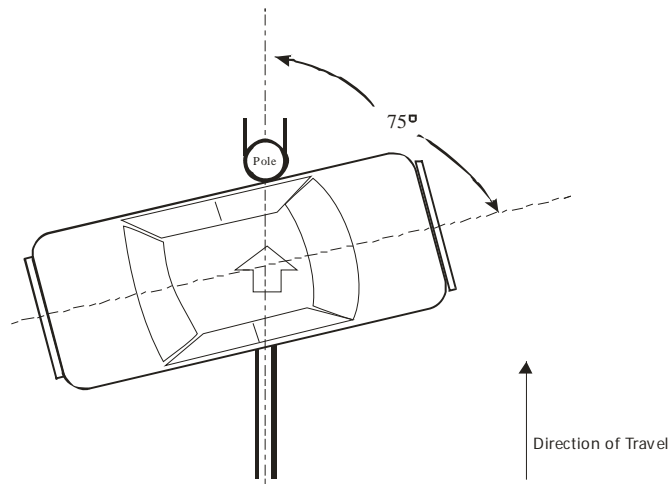
One restrained Side Impact Dummy (WorldSID) S/N 014, was placed in the driver (Position #1) designated seating position according to the instructions specified in the WorldSID Seating Procedure Draft 5.1. The WorldSID was calibrated prior to this test. The side impact test was documented by one (1) real-time camera and nine (9) high-speed digital cameras. Camera locations and other pertinent camera information are included in this report.

The driver front airbag, passenger front airbag, and passenger side curtain and torso airbags were disabled prior to the test performance.

The WorldSID instrumentation is detailed in Table 4. Ninety (90) dummy channels of acceleration, force, moment, and displacement data were collected for this test.

A summary of the side impact dummy (WorldSID) configuration and verification test data can be found in Appendix C. A total of 130 channels of data were recorded. Appendix B contains the vehicle, barrier, and dummy response data traces.

## Test Results Summary



	Front WorldSID (#014)
HIC36 CFC 1000	393
Thorax Rib Deflection (mm) CFC 600	
Rib 1	43
Rib 2	24
Rib 3	22
Abdomen Rib Deflection (mm) CFC 600	
Rib 1	33
Rib 2	39
Lower Spine Resultant (g) CFC 180	81.2
Pubic Symph. Force (N) CFC 600	912

	2011 Ford Explorer
Vehicle Test Weight	2254.4 kg (4970.1 lbs)
Impact Point (Horizontal)-behind center of front axle	1339 mm
Impact Angle	74.5
Maximum Crush	385 mm Level 3
Impact Speed	32.2 km/h

### Data Acquisition Explanations

The Lumbar Moment about the Z-axis data is suspect.

The Vehicle Center of Gravity X-, Y-, and Z-axis acceleration data is suspect after 52 ms.

The Vehicle Center of Gravity X-axis roll rate sensor exceeded full scale at 24 ms and failed at 43 ms. The Vehicle Center of Gravity Y-axis roll rate sensors exceeded full scale at 27 ms and failed at 45 ms. The Vehicle Center of Gravity Z-axis roll rate sensors exceeded full scale at 31 ms and failed at 52 ms.

The Left Lower B-pillar Y-axis acceleration data is suspect after 28 ms.

The Left Front Door Upper Centerline Y-axis acceleration data is suspect after 86 ms.

The Driver Side Curtain Fire Inductor indication is suspect.

Section 3

Summary of Test Results

Table 1 General Test Vehicle Parameter Data

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

**TEST VEHICLE INFORMATION**

Make	Ford
Model	Explorer
Body Style	SUV
VIN	1FMHK7D88BGA24591
Color	Silver
Odometer Reading	334
Transmission	Automatic
Final Drive	Front wheel drive
Number of Cylinders	6
Engine Displacement	3.5L
Engine Placement	Transverse
Air Conditioning	Yes
Power Windows	Yes
Power Seats	Yes
Cruise Control	Yes
Tinted Glass	Yes
Keyless Entry	Yes

**TEST VEHICLE OPTIONS**

Driver Front Airbag	Yes <sup>1</sup>
Driver Side Curtain Airbag	Yes
Driver Side Torso Airbag	Yes
Rear Passenger Side Curtain Airbag	Yes
Rear Passenger Side Torso Airbag	--- <sup>2</sup>
Power Steering	Yes
Power Door Locks	Yes
Tilt Wheel	Yes
Anti-lock Brakes	Yes
Traction Control	No
Bucket Seats	Yes
Rear Defroster	Yes
2-Door/4-Door	4
AM/FM Radio	Yes
CD Player	Yes
Sun Roof	No
Telescoping Steering Wheel/Column	Yes

**DATA FROM CERTIFICATION LABEL**

Manufactured By	General Motors Corp
Date of Manufacture	2/11

GVWR (kg)	6160
GAWR Front (kg)	3080
GAWR Rear (kg)	3300

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	Bucket	Bench	
Number Of Occupants	2	2	3	7
Capacity Wt. (VCW) (kg)				1595

<sup>1</sup> Airbags were disabled prior to the test performance

<sup>2</sup> Not applicable to test mode.

Table 1 General Test Vehicle Parameter Data, Continued

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

**TEST VEHICLE WEIGHTS**

	Units	As Delivered (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	569.6	464.2		612.0	509.2	
Right	kg	565.2	450.8		610.4	522.8	
Ratio	%	55.4	44.6		54.2	45.8	
Totals	kg	1134.8	915.0	2049.8	1222.4	1032.0	2254.4

**TARGET TEST WEIGHT CALCULATION**

Measured Parameter	Units	Value
Total Delivered Weight	kg	2049.8
Weight of WorldSID ATD	kg	76.0
Rated Cargo/Luggage Weight (RCLW)	kg	136.0
Calculated Vehicle Target Weight (TVTW)	kg	2261.8

**TEST VEHICLE ATTITUDES AND CG**

	Units	LF	RF	LR	RR	CG(aft of front axle)
As Delivered	mm	815	818	843	845	1281
As Tested	mm	805	802	832	831	1314
Fully Loaded	mm					

**GENERAL TEST VEHICLE DATA**

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2870
Total Vehicle Length at Left Side	mm	4735
Total Vehicle Length at Centerline	mm	5012
Total Vehicle Length at Right Side	mm	4735
Weight of Ballast	kg	119.8
Amount of Stoddard Solvent in Fuel Tank	liters	65.9

**TEST VEHICLE IMPACT ACCURACY DATA**

Measurement Description	Units	Intended	Actual	Difference
Impact Reference Line From Front Axle	mm	1345	1339	6
Impact Point Angle	Degrees	75	74.5	0.5

Table 1 General Test Vehicle Parameter Data, Continued

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

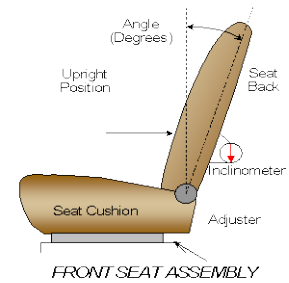
**WORLDSID RIDING POSITION**

The driver seat back is positioned according to the procedure defined in SAE J826, “Devices for use in Defining and Measuring Vehicle Seating Accommodation”, November, 2008.

Driver seat back angle: The back was adjusted to 20.1° as measured at head restraint with Oscar.

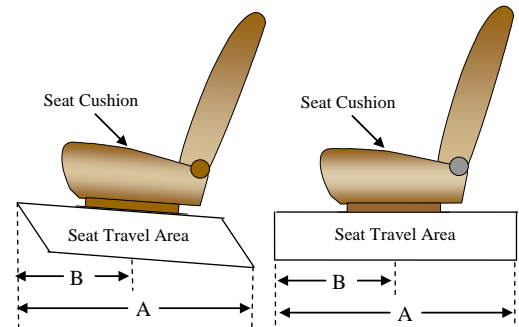
**SEAT FORE/AFT POSITIONS**

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for the driver. The rear seating position was not tested.



**SEAT FORE/AFT POSITIONING**

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	270 mm	20 mm rear of mid
Rear Seat	Not applicable	Not applicable



**SEAT BELT UPPER ANCHORAGE**

	Total No. of Positions	Placed in Position No.
Driver Seat	4	2
Rear Seat	Not applicable	Not applicable

Position number one is the uppermost adjustment position.

Table 1 General Test Vehicle Parameter Data, Continued

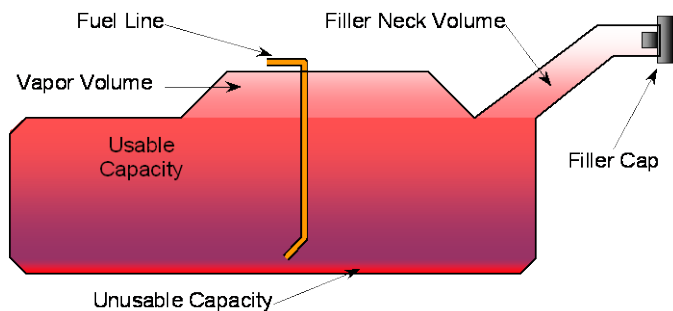
Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

**FUEL TANK CAPACITY**

	Liters
Usable Capacity of "Standard Tank"	7.04
Usable Capacity used for FMVSS 301	64.8-66.2
Actual Amount of Solvent used	65.9

The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies the area under the rear seat.

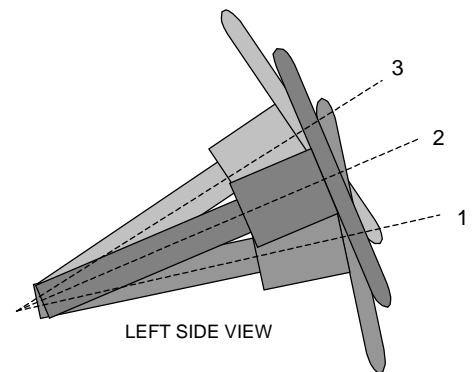


*VEHICLE FUEL TANK ASSEMBLY*

**STEERING COLUMN ADJUSTMENT**

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when moved through its full range of motion. An aluminum plate is placed across the rim of the steering wheel, an inclinometer is placed on the plate and the angle is measured.

Steering Column Tilt Position	Degrees
Lowermost Position	25.5
Geometric Center Position	28.5
Uppermost Position	31.6



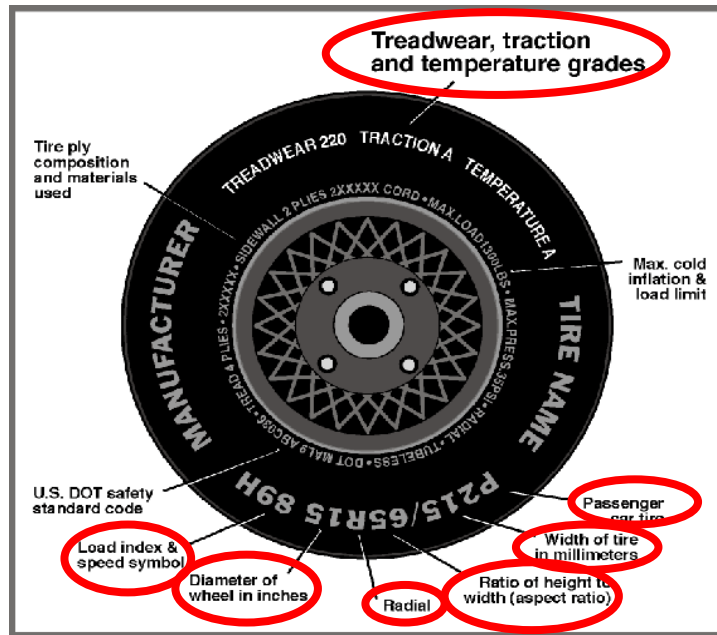
*STEERING COLUMN ASSEMBLY*

Steering Column Telescoping Position	(mm)
Full In Position	0.0
Full Out Position	50.0
Test Position	25.0

Table 2 Test Vehicle Tire Information

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	240	240
Recommended Tire Size	P245/60R18	P245/60R18
Tire Size on Vehicle	P245/60R18	P245/60R18
Tire Manufacturer	Michelin	Michelin
Tire Name	Latitude	Latitude
Radial	Yes	Yes
Wheel Diameter	18	18
Load Index & Speed Symbol	104H	104H
Treadwear	440	440
Traction Grade	A	A
Temperature Grade	A	A

Table 3 Post-Test Observations

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

**TEST DUMMY INFORMATION AND CONTACT POINTS**

Description	Front Seat WorldSID
Dummy Type / Serial No.	WorldSID / 014
Head Contact	Side curtain airbag, head restraint
Upper Torso Contact	Side airbag
Lower Torso Contact	Door panel
Left Knee Contact	Door panel
Right Knee Contact	None

**POST TEST DOOR OPENING AND SEAT TRACK INFORMATION**

Description	Front	Rear
Locked/Unlocked Doors	Unlocked	Unlocked
Left Side Door Opening	Jammed and latched	Jammed and latched
Right Side Door Opening	Closed and latched	Closed and latched
Seat Movement	None	None
Seat Back Failure	None	None

**POST-TEST STRUCTURAL OBSERVATIONS**

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Did not separate from vehicle
Sill Separation	Did not separate from vehicle
Windshield Damage	Windshield cracked
Window Damage	Driver's side window shattered
Other Notable Effects	None

**SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION**

Restraint Type	Left Front (Driver) Occupant Location 01	
	Installed	Operation
Front Airbag	Yes	No <sup>1</sup>
Torso Airbag	Yes	Yes
Head Airbag	No	Not applicable
Curtain Airbag	Yes	Yes
Seat Belt Pretensioner	Yes	Unknown
Seat Belt Load Limiter	No	Not applicable

<sup>1</sup> The driver front airbag was disabled for this test.

Section 4

Occupant and Vehicle Information

Table 4 WorldSID Instrumentation Data

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

Driver Dummy Serial Number: 014

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Head Acceleration (g)	X	12.3	174.6	-22.2	60.5
	Y	56.5	61.4	-8.0	124.6
	Z	11.8	58.0	-12.1	66.8
	R	60.7	60.5		
Head Angular Displacement (rad/sec <sup>2</sup> )	X	2473.3	56.5	-1821.1	138.3
	Y	1287.6	89.0	-958.2	67.2
	Z	1297.0	61.2	-1339.0	50.8
Upper Neck Force (N)	X	241.3	61.5	-98.4	176.7
	Y	173.1	61.9	-308.3	125.2
	Z	194.4	72.0	-589.3	59.2
Upper Neck Moment (N-m)	X	61.1	66.6	-7.8	90.5
	Y	22.6	91.1	-36.2	64.3
	Z	12.6	64.7	-9.0	132.8
Lower Neck Force (N)	X	211.3	175.6	-251.7	67.6
	Y	621.5	48.7	-491.9	121.7
	Z	199.0	145.5	-968.1	58.4
Lower Neck Moment (N-m)	X	40.1	49.8	-67.7	151.7
	Y	26.4	84.8	-22.7	175.2
	Z	8.8	64.8	-10.0	135.2
Shoulder Force (N)	X	1.1	9.7	-373.5	49.5
	Y	2411.6	51.4	-193.7	122.7
	Z	144.4	109.1	-757.7	61.5
Shoulder Displacement (mm)	Y	60.4	58.3	-2.5	21.2
Shoulder Acceleration (g)	X	78.9	19.4	-153.4	19.0
	Y	96.4	42.5	-98.8	18.5
	Z	102.3	18.7	-152.2	19.0
	R	225.3	19.0		

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

Driver Dummy Serial Number: 014

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
T1 Acceleration (g)	X	7.7	159.3	-15.7	48.5
	Y	54.5	55.8	-16.3	104.8
	Z	11.4	54.1	-2.5	121.2
	R	55.8	55.9		
T4 Acceleration (g)	X	6.3	160.9	-13.0	48.4
	Y	53.9	55.0	-13.8	104.4
	Z	10.7	53.9	-3.5	23.4
	R	55.0	54.9		
T12 Acceleration (g)	X	6.8	74.4	-10.7	24.2
	Y	81.0	52.8	-19.3	97.1
	Z	5.9	54.0	-4.4	122.6
	R	81.2	52.8		
Thorax Rib 1 Displacement (mm)	Y	42.5	55.4	-2.0	23.4
Thorax Rib 1 Acceleration (g)	X	56.9	89.5	-55.0	54.6
	Y	131.9	44.8	-87.9	48.2
	Z	71.7	48.1	-51.5	48.3
	R	131.9	44.8		
Thorax Rib 2 Displacement (mm)	Y	23.7	54.3	-2.1	126.2
Thorax Rib 2 Acceleration (g)	X	21.8	91.0	-37.4	69.1
	Y	97.3	63.0	-36.9	53.1
	Z	29.6	52.9	-104.0	62.5
	R	109.7	62.5		
Thorax Rib 3 Displacement (mm)	Y	22.0	54.3	-1.5	218.0
Thorax Rib 3 Acceleration (g)	X	33.8	23.4	-36.1	25.9
	Y	121.8	47.8	-35.1	69.1
	Z	81.6	62.5	-90.5	80.1
	R	122.4	47.8		

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

Driver Dummy Serial Number: 014

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Abdominal Rib 1 Displacement (mm)	Y	33.2	53.7	-2.2	16.9
Abdominal Rib 1 Acceleration <sup>1</sup> (g)	X	37.0	12.8	-39.0	20.0
	Y	175.1	44.1	-144.3	47.4
	Z	69.6	47.2	-104.9	47.5
	R	175.9	44.1		
Abdominal Rib 2 Displacement (mm)	Y	39.3	53.3	-2.1	216.0
Abdominal Rib 2 Acceleration (g)	X	41.7	81.0	-70.0	42.0
	Y	230.8	43.1	-159.0	45.6
	Z	76.6	45.4	-94.7	45.7
	R	230.9	43.1		
Lumbar Force (N)	X	483.0	112.4	-226.7	20.5
	Y	1260.0	49.1	-56.1	22.9
	Z	9.6	-18.7	-1452.6	71.7
Lumbar Moment <sup>1</sup> (N-m)	X	88.7	52.6	-3.9	24.7
	Y	8.9	21.0	-26.4	112.4
	Z	0.0	41.6	0.0	41.3
Pelvis Acceleration (g)	X	9.7	66.1	-12.0	19.2
	Y	80.7	44.7	-23.3	90.1
	Z	13.7	87.8	-17.2	65.1
	R	80.8	44.7		
Sacro-Iliac Left Force (N)	X	162.1	20.4	-920.6	52.8
	Y	4171.7	48.2	-4.6	0.5
	Z	311.2	54.8	-488.0	74.8

<sup>1</sup> See Data Acquisition Explanations

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

Driver Dummy Serial Number: 014

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Sacro-Iliac Left Moment (N-m)	X	18.8	73.8	-74.9	44.6
	Y	38.7	50.7	-7.9	79.7
	Z	79.8	44.3	-23.3	123.1
Sacro-Iliac Right Force (N)	X	380.7	111.7	-460.7	50.5
	Y	2211.9	48.2	-5.9	10.5
	Z	6.3	-19.6	-973.4	53.6
Sacro-Iliac Right Moment (N-m)	X	59.2	71.0	-20.4	41.1
	Y	30.3	53.7	-28.2	78.7
	Z	62.5	43.6	-22.7	124.4
Pubic Force (N)	Y	912.4	46.7	-7.1	-18.9
Left Mid Femur Force (N)	X	40.9	159.7	-307.5	64.4
	Y	47.6	114.9	-296.3	43.9
	Z	58.7	303.5	-1604.4	61.7
Left Mid Femur Moment (N-m)	X	157.7	54.4	-0.6	16.6
	Y	1.2	63.5	-46.6	86.2
	Z	13.8	159.2	-46.5	52.2
Left Femoral Neck Force (N)	X	646.7	57.1	-75.0	159.4
	Y	280.4	143.6	-370.3	61.9
	Z	2156.1	58.8	-12.3	16.4
Left Knee Outboard Force (N)	Y	374.5	73.4	-229.3	49.1
Left Knee Inboard Force (N)	Y	227.5	118.4	-802.0	74.6
Right Femoral Neck Force (N)	X	382.7	73.0	-175.0	97.0
	Y	729.6	51.5	-568.6	70.5
	Z	230.4	104.0	-1172.4	66.4

Positive Direction

Longitudinal: Forward  
 Lateral: Rightward  
 Vertical: Downward

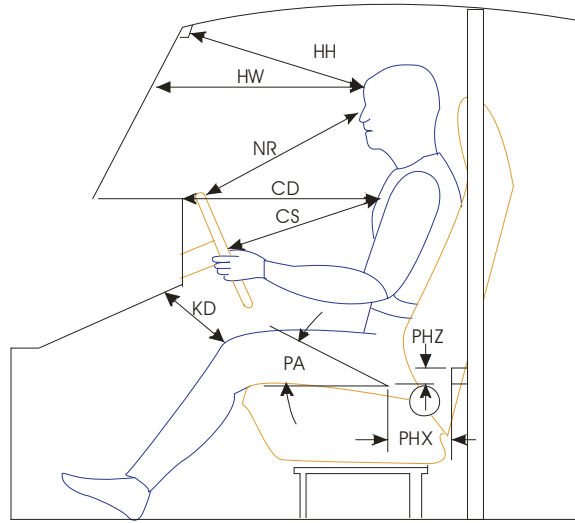
Negative Direction

Longitudinal: Rearward  
 Lateral: Leftward  
 Vertical: Upward

Figure 1 WorldSID Longitudinal Clearance Dimensions

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



Left Side View

Note: All measurements are in millimeters with tolerance of  $\pm 0.1$  mm

Measurement	Driver WorldSID # 014
HH	546
HW	836
HZ	307
NR <sup>1</sup>	529
CD	675
CS	430
KDL(KDA°)	125/(4.0°)
KDR(KDA°)	123/(5.9°)
PHX	200
PHZ	114

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.

Location	Measurement
Head X-Angle	0.0°
Head Y-Angle	0.5°
Thorax X-Angle	-0.4°
Thorax Y-Angle	0.0°
Pelvis X-Angle	0.0°
Pelvis Y-Angle	4.0°

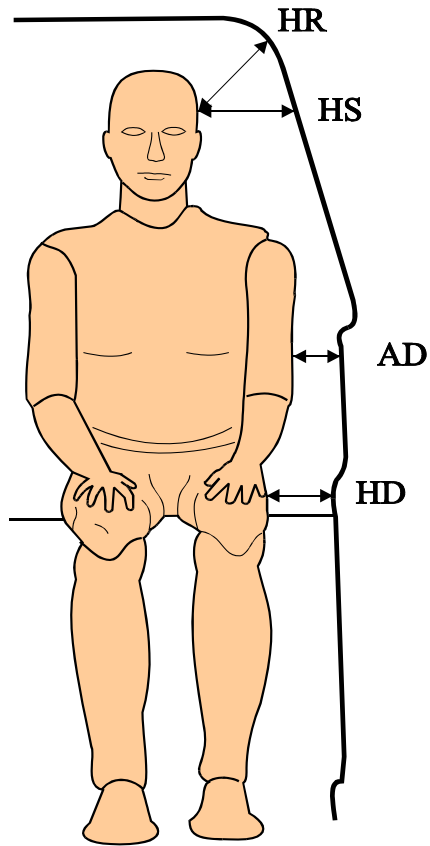
Note: Measurements recorded from WorldSID tilt sensors. The neck was moved forward 1 notch to level the head.

<sup>1</sup> NR was measured from bridge of nose

Figure 2 WorldSID Lateral Clearance Dimensions

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



Note: All measurements are in millimeters with tolerance of  $\pm 0.1$  mm

Measurement	Driver WorldSID # 014
HR	293
HS	440
AD	Lower: 167      Upper: 175
HD	149

Table 5 WorldSID Position Relative to Striker

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

Driver Dummy Serial Number: 014

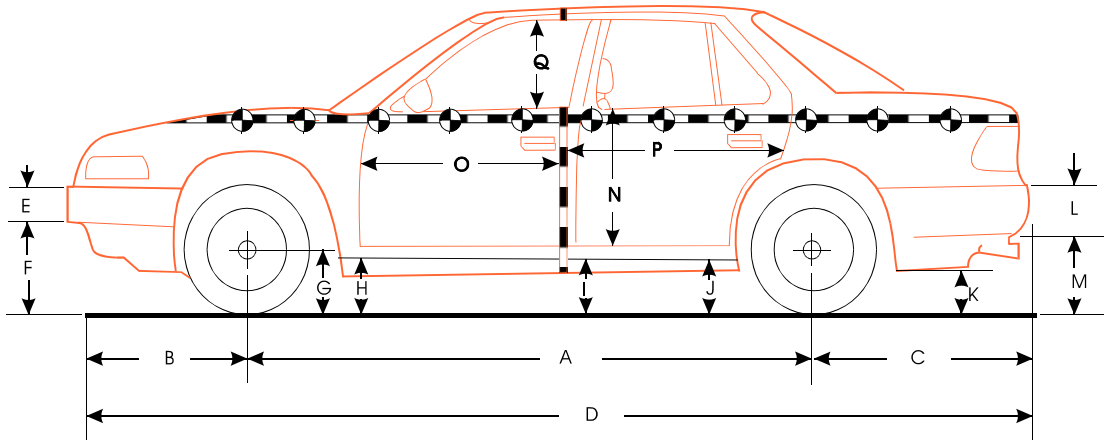
Location	Longitudinal X (mm)	Vertical Z (mm)
M_HEAD CG	14.3	546.6
M_SHOULDER BOLT	NA	NA
M_ELBOW	NA	NA
M_H POINT	200.4	114.4
M_KNEE	626.7	-30.3
M_ANKLE	865.5	333.1
M_LOWER NECK	33.8	-361.4
M_SHOULDER	NA	NA
M_RIB 1	67.6	-322.2
M_RIB 2	105.5	243.7
M_RIB 3	145.1	-178.7
M_RIB 4	166.3	-129.0
M_RIB 5	200.1	-37.0

Note: All measurements are in millimeters with tolerance of  $\pm 0.1$  mm  
Positive values are forward and down relative to the striker.

**Figure 3 Vehicle Pre-Test And Post-Test Measurements**

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



Left Side View

Note: Measurements were achieved by using a tape measure.  
All dimensions are in millimeters with tolerance of  $\pm 0.1$  mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2870	2870	2765	105
B	970	970	970	0
C	1172	1172	1172	0
D	5012	5012	4964	48
E	177	177	177	0
F	483	469	497	-28
G	357	360	355	5
G1	343	340	340	0
H	355	354	360	-6
I	314	311	335	-24
J1	272	270	305	-35
J2	328	326	380	-54
K	412	403	444	-41
L	120	120	120	0
M	490	480	520	-40
N	997	997	1000	-3
O	830	830	830	0
P	1415	1415	1370	45
Q	431	431	410	21
R	4735	4735	4720	15
S	4735	4735	4625	110
T	1435	1435	1225	210

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

Table 6 Vehicle Structural Measurements<sup>1,2</sup>

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

	Elements	Pre-Test
1	Total Length	5012
2	Total Width	1985
3	Bumper Top Height	647
4	Bumper Bottom Height	501
5	Longitudinal Member Top Height	657
6	Longitudinal Member Bottom Height	526
7	Distance Between Longitudinal Members	1150
7'	Longitudinal Member Width	85
8	Engine Top Height	955
9	Engine Bottom Height	263
10	Engine and Gearbox Width	900
11	Front Bumper - Engine Distance	404
12	Front Shock Absorber Fixing Height	987
13	Bonnet Leading Edge Height	1012
14	Front Shock Absorber Fixing Width	1255
15	Front Bumper - Front Axle Distance	970
16	Front Axle - A Pillar Distance	630
17	A Pillar - B Pillar Distance	1020
18	B Pillar - Rear Axle Distance	1193
19	B Pillar - C Pillar Distance	1010
20	Roof Sill Bottom Height	1565
21	Roof Sill Top Height	1630
22	Floor Sill Bottom Height	430
23	Floor Sill Top Height	470

All distance measurements are in millimeters and achieved by using a tape measure.

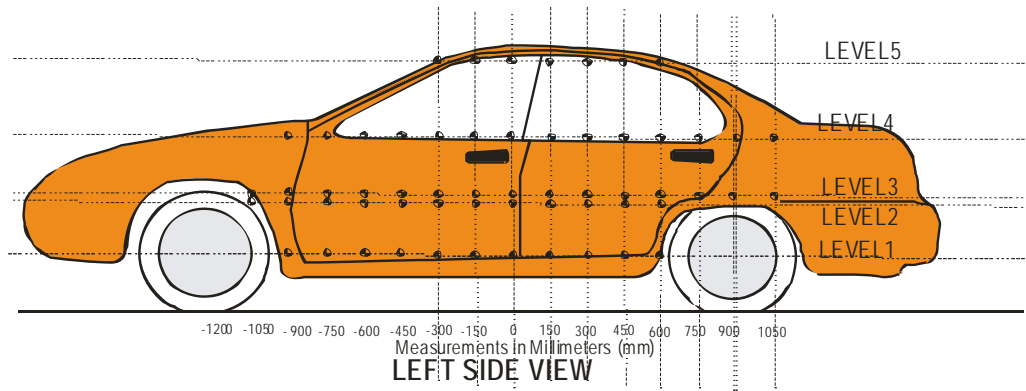
<sup>1</sup> Taken from INSIA report, "Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body", March 1999.

<sup>2</sup> The vertical measurements from the ground are adjusted based on the test vehicle's pre-test attitude measurements.

Figure 4 Vehicle Side Measurements from Impact Point

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



Measurements are taken when the vehicle is in the “As Tested” configuration.

Measurements vehicle forward of the impact line are negative.

All measurements below in mm.

The target impact point was 89 mm rearward of the crush grid zero point taken at level 2.

Level	Measurement Description	Height Above Ground
5	Window Top	1696
4	Window Sill	1186
3	Mid Door	751
2	Occupant H-Point	724
1	Side Sill	538

Vehicle: 2011 Ford Explorer

Table 7 Vehicle Exterior Crush Profiles - All Levels

Location	Height	(mm) From Impact Point																
		-1500	-1350	-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	
Level 1 Side Sill	538	Pre					975	964	963	965	967	969	970	972	974	975	975	976
		Post					989	960	896	824	739	646	594	664	808	841	873	903
		Crush					-14	4	67	141	228	323	376	308	166	134	102	73
Level 2 H-Point	724	Pre				997	989	970	965	967	968	968	967	966	966	966	966	966
		Post				1029	1012	985	911	819	731	649	585	664	785	821	861	901
		Crush				-32	-23	-15	54	148	237	319	383	303	181	145	105	65
Level 3 Mid-Door	751	Pre				997	988	970	967	968	969	970	969	968	967	967	965	963
		Post				1031	1011	983	912	820	733	653	584	664	787	818	855	896
		Crush				-34	-23	-13	55	148	236	317	385	304	180	149	110	67
Level 4 <sup>1</sup> Window Sill	1186	Pre				882	893	900	908	914	920	925	929	933	933	932	930	930
		Post				936	930	921	885	811	735	654	579	645	754	785	813	840
		Crush				-54	-37	-21	23	103	185	271	350	288	179	148	119	90
Level 5 Window Top	1696	Pre				843	818	787	751	715	686	679	677	677	676	675	673	673
		Post				891	858	793	725	661	601	555	562	582	602	616	618	618
		Crush				-48	-40	-6	26	54	85	124	115	95	74	59	55	55

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

Note: Negative measurements are vehicle forward of the impact point.

The crush profile grid is established prior to test day based on an estimated impact point.

<sup>1</sup> The target impact point was 89 mm rearward of the crush grid zero line.

Vehicle: 2011 Ford Explorer

Table 7 Vehicle Exterior Crush Profiles - All Levels, Continued

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	538	Pre	979	983											
		Post	936	974											
		Crush	43	9											
Level 2 H-Point	724	Pre	971	990	993										
		Post	949	970	983										
		Crush	22	20	10										
Level 3 Mid-Door	751	Pre	969	991	996										
		Post	945	981	979										
		Crush	24	10	17										
Level 4 Window Sill	1186	Pre	927	923	918	913	909								
		Post	866	889	912	932	886								
		Crush	61	34	6	-19	23								
Level 5 Window Top	1696	Pre	671	670	667	663	658								
		Post	624	638	646	649	649								
		Crush	47	32	21	14	9								

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

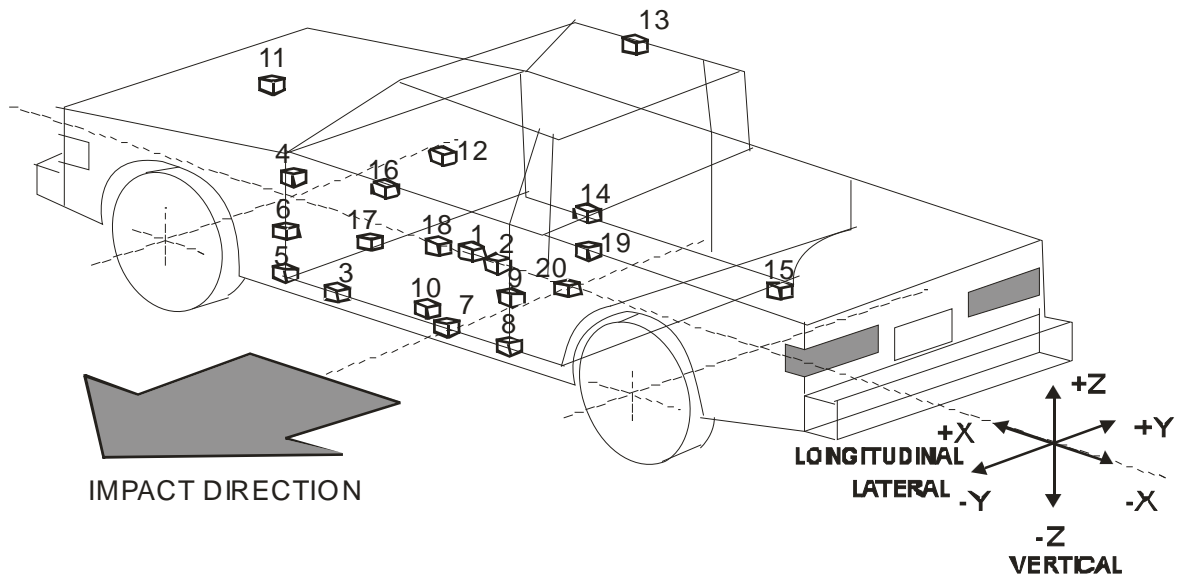
The crush profile grid is established prior to test day based on an estimated impact point.

<sup>1</sup> The target impact point was 89 mm rearward of the crush grid zero line.

Figure 5 Test Vehicle Accelerometer Locations and Data Summary

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



- 1-Vehicle Center of Gravity
- 2-Vehicle Center of Gravity Gyroscopes
- 3-Left Floor Sill Between A-Pillar and Impact Line
- 4-Left Side Sill at A-Pillar
- 5-Left Side Lower A-Pillar
- 6-Left Side Middle A-Pillar
- 7-Left Side Sill at Rear Seat
- 8-Left Side Lower B-Pillar
- 9-Left Side Middle B-Pillar

- 10-Left Side Front Seat Track at H-point
- 11-Top of Engine
- 12-Center Firewall
- 13-Right Side Roof Rail
- 14-Right Side Floor Sill
- 15-Rear Deck Behind Rear Axle
- 16-Front Door Upper Centerline
- 17-Front Door Centerline
- 18-Front Door Mid Rear
- 19-Rear Door Upper Centerline
- 20-Rear Door Mid Rear

Table 8 Test Vehicle Accelerometer Locations and Data Summary

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

	Location	Coordinates ( mm)			Positive Direction Max.	Time	Negative Direction Max.	Time
		X	Y	Z	(g)	(ms)	(g)	(ms)
1	Vehicle CG	3325	-60	515				
	Longitudinal				19.8	203.3	-14.1	53.0
	Lateral				41.1	36.6	-16.5	46.3
	Vertical				19.3	40.2	-13.3	21.5
	Resultant				41.3	36.6		
2	Vehicle CG Gyroscopes <sup>1</sup>	3355	-40	515				
	Longitudinal °/sec				1103.4	44.5	-1179.7	67.7
	Lateral °/sec				788.0	117.1	-1454.6	46.1
	Vertical °/sec				1347.6	46.7	-1337.0	57.4
3	Left Side Sill Between A-Pillar and Impact Line <sup>1</sup>	3450	670	433				
	Lateral				42.7	19.4	-5.8	42.0
4	Left Side Sill at A-Pillar	3725	735	480				
	Lateral				28.3	35.1	-11.5	42.0
5	Left Side Lower A-Pillar	3720	810	580				
	Lateral				24.0	35.4	-15.4	42.4
6	Left Side Middle A-Pillar	3805	890	1061				
	Lateral				22.6	39.1	-1.0	3.5
7	Left Side Sill at Rear Seat	2512	670	432				
	Lateral				36.7	23.8	-1.4	57.6
8	Left Side Lower B-Pillar <sup>1</sup>	2783	907	634				
	Lateral				72.0	18.8	-12.2	96.8
9	Left Side Middle B-Pillar	2723	888	1093				
	Lateral				50.0	20.7	-36.4	55.4

Table 8 Test Vehicle Accelerometer Locations and Data Summary, Continued

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

Location	Coordinates ( mm)			Positive Direction Max.	Time	Negative Direction Max.	Time
	X	Y	Z	(g)	(ms)	(g)	(ms)
10 Left Side Front Seat Track at H-Point	2932	620	424				
	Lateral			111.6	23.8	-2.5	67.0
11 Top of Engine	4287	0	864				
	Longitudinal			11.6	102.9	-21.9	39.7
	Lateral			15.5	58.9	-2.8	231.8
12 Firewall	3622	0	1004				
	Lateral			15.0	45.1	-1.1	49.3
13 Right Side Roof Rail	3052	-660	1650				
	Lateral			35.4	41.3	-28.5	58.2
14 Right Side Sill	3280	-680	412				
	Lateral			17.2	21.8	-1.0	176.1
15 Rear Deck Behind Rear Axle	1455	0	625				
	Longitudinal			2.6	151.6	-5.1	56.3
	Lateral			15.7	34.3	-0.9	291.4
16 Front Door Upper Centerline	3253	835	1137				
	Lateral			67.9	11.7	-42.1	17.5
17 Front Door Centerline	3253	835	814				
	Lateral			122.0	19.4	-61.0	12.7
18 Front Door Mid Rear <sup>1</sup>	2935	835	814				
	Lateral			126.1	86.7	-11.8	77.1
19 Rear Door Upper Centerline	2271	845	1159				
	Lateral			53.0	32.1	-56.6	45.5
20 Rear Door Mid Rear	2015	845	816				
	Lateral			33.2	44.8	-12.7	81.9

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

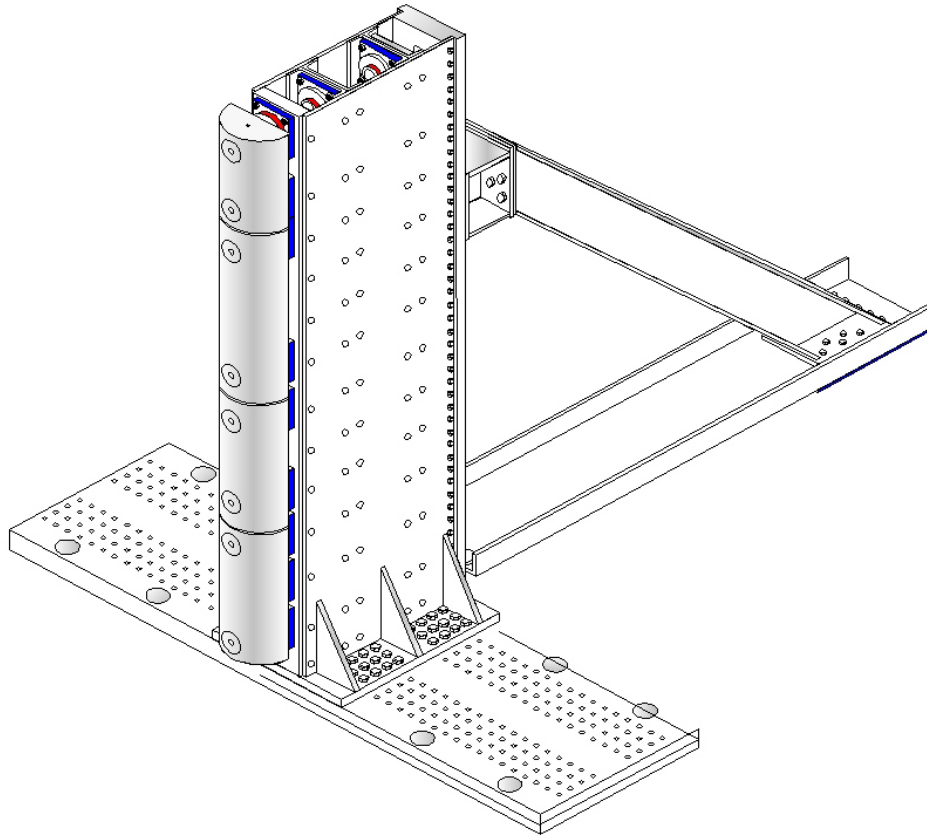
For acceleration data sign convention see Report Sign Convention in Appendix D.

Figure 6 Pole Load Cell Locations

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11

**FOIL 300K RIGID POLE**

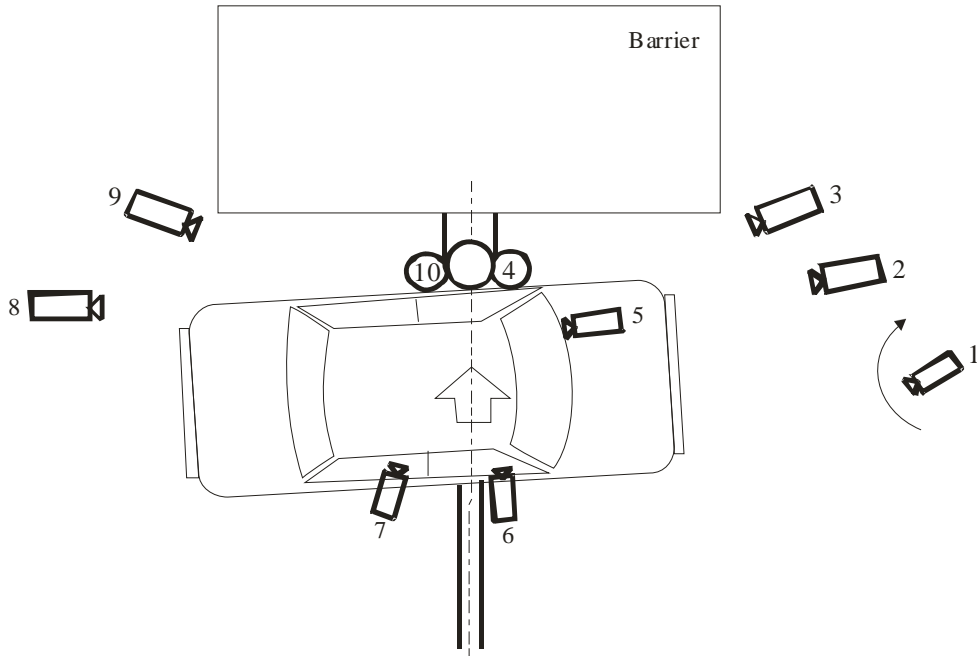


Load Cell Locations	
ID	Height From Top of Carrier (mm)
1	87
2	468
3	648
4	978
5	1168
6	1651
7	1816
8	2057

**Figure 7 High-Speed Camera Locations and Data Summary**

Test Vehicle: 2011 Ford Explorer

Test Date: 09/08/11



No.	Camera View	Lens (mm)	Speed (fps)
1	Real-time	Zoom	30
2	Front view	N/D	1000
3	Front oblique	N/D	1000
4	Overhead tight	N/D	1000
5	Onboard vehicle front	N/D	1000
6	Onboard right front door	N/D	1000
7	Onboard right rear door	N/D	1000
8	Rear view	N/D	1000
9	Rear oblique view	N/D	1000
10	Overhead wide view	N/D	1000

Vehicle was at a 75° angle to the rigid pole.

Appendix A

Photographs



**Figure A-1 Pre-Test Front View**



**Figure A-2 Post-Test Front View**



**Figure A-3 Pre-Test Left Front View**



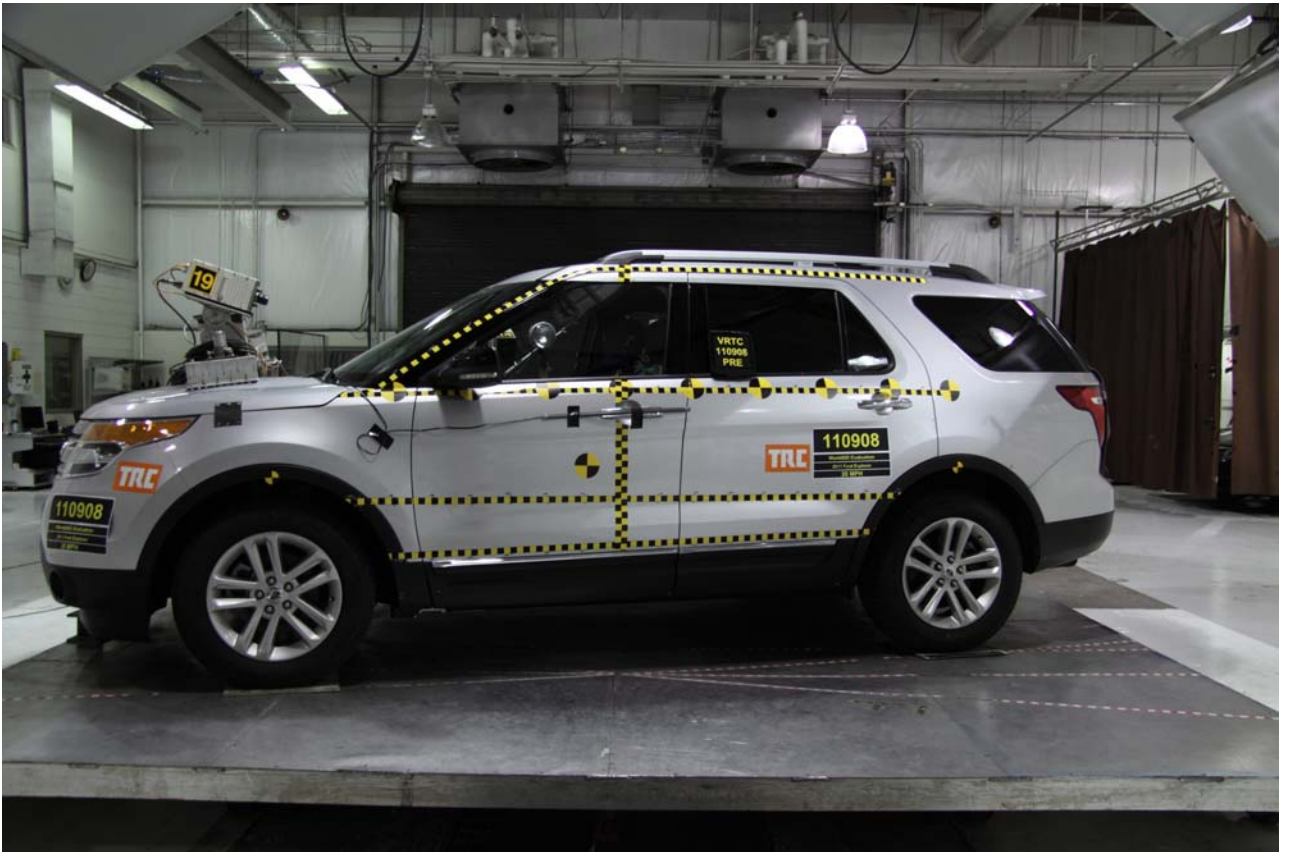
**Figure A-4 Post-Test Left Front View**

**Photograph Not Taken**

**Figure A-5 Pre-Test Left Front Tight View**

**Photograph Not Taken**

**Figure A-6 Post-Test Left Front Tight View**



**Figure A-7 Pre-Test Left Side View**



**Figure A-8 Post-Test Left Side View**



Figure A-9 Pre-Test Left Rear View



Figure A-10 Post-Test Left Rear View

**Photograph Not Taken**

**Figure A-11 Pre-Test Left Rear Tight View**

**Photograph Not Taken**

**Figure A-12 Post-Test Left Rear Tight View**



Figure A-13 Pre-Test Rear View



Figure A-14 Post-Test Rear View

**Photograph Not Taken**

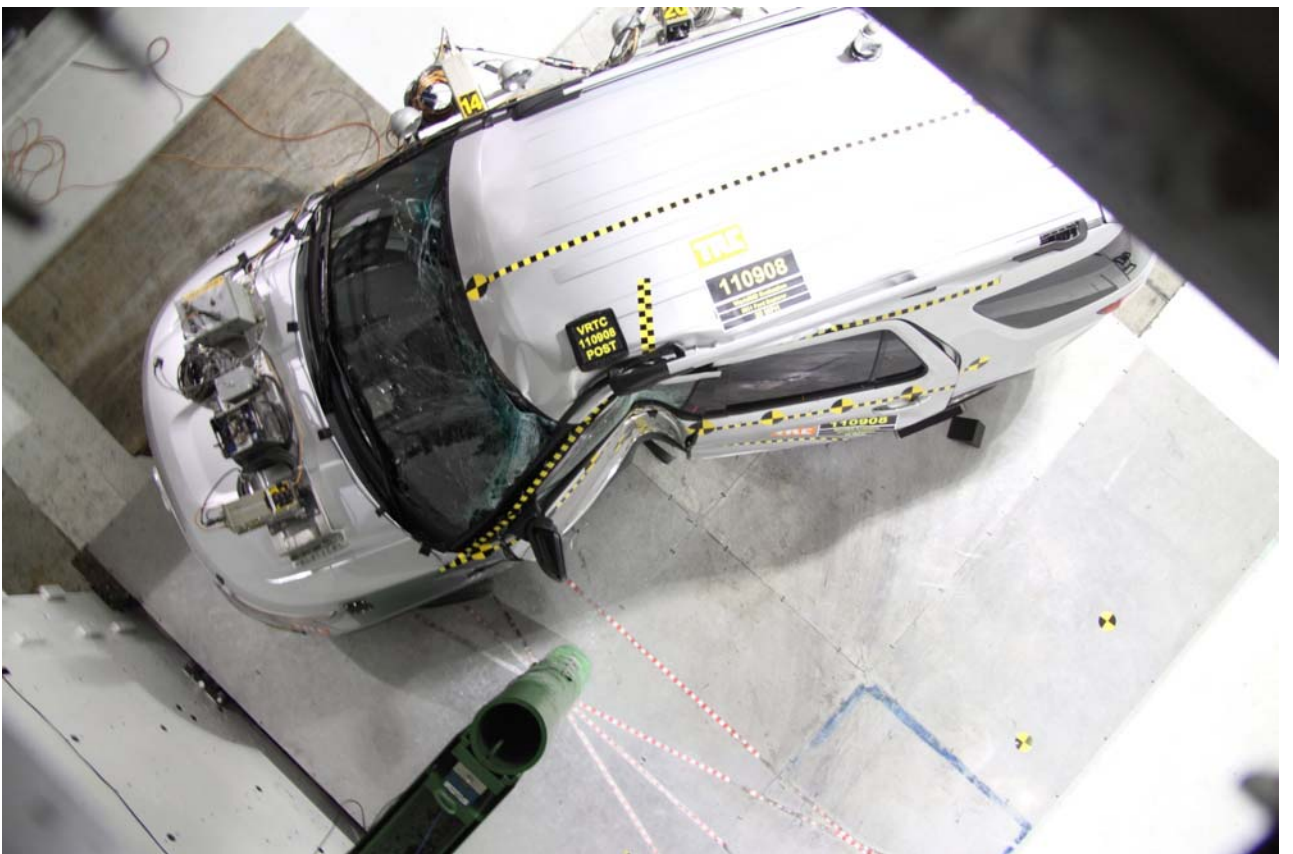
**Figure A-15 Pre-Test Right Side View**

**Photograph Not Taken**

**Figure A-16 Post-Test Right Side View**



**Figure A-17 Pre-Test Overhead View**



**Figure A-18 Post-Test Overhead View**



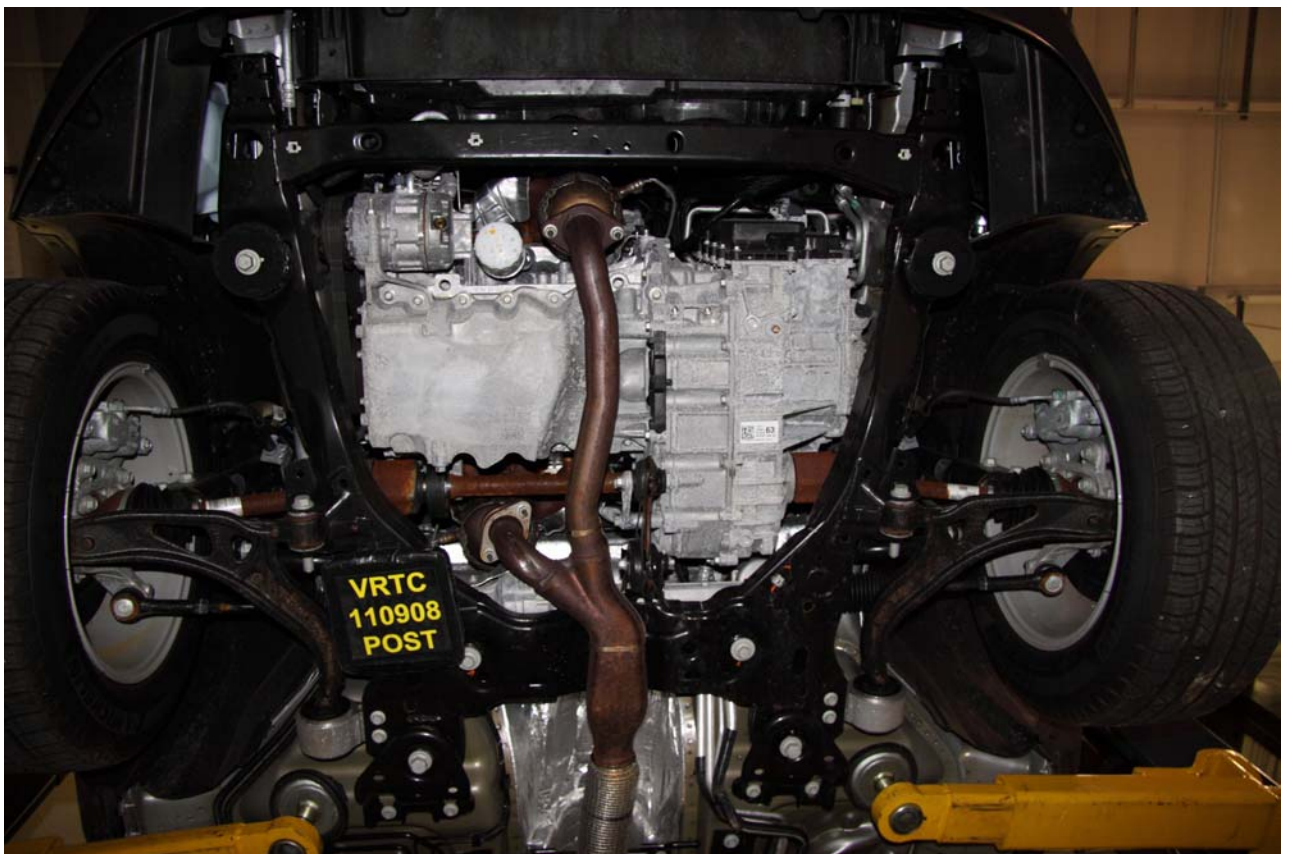
Figure A-19 Pre-Test Impact Point View



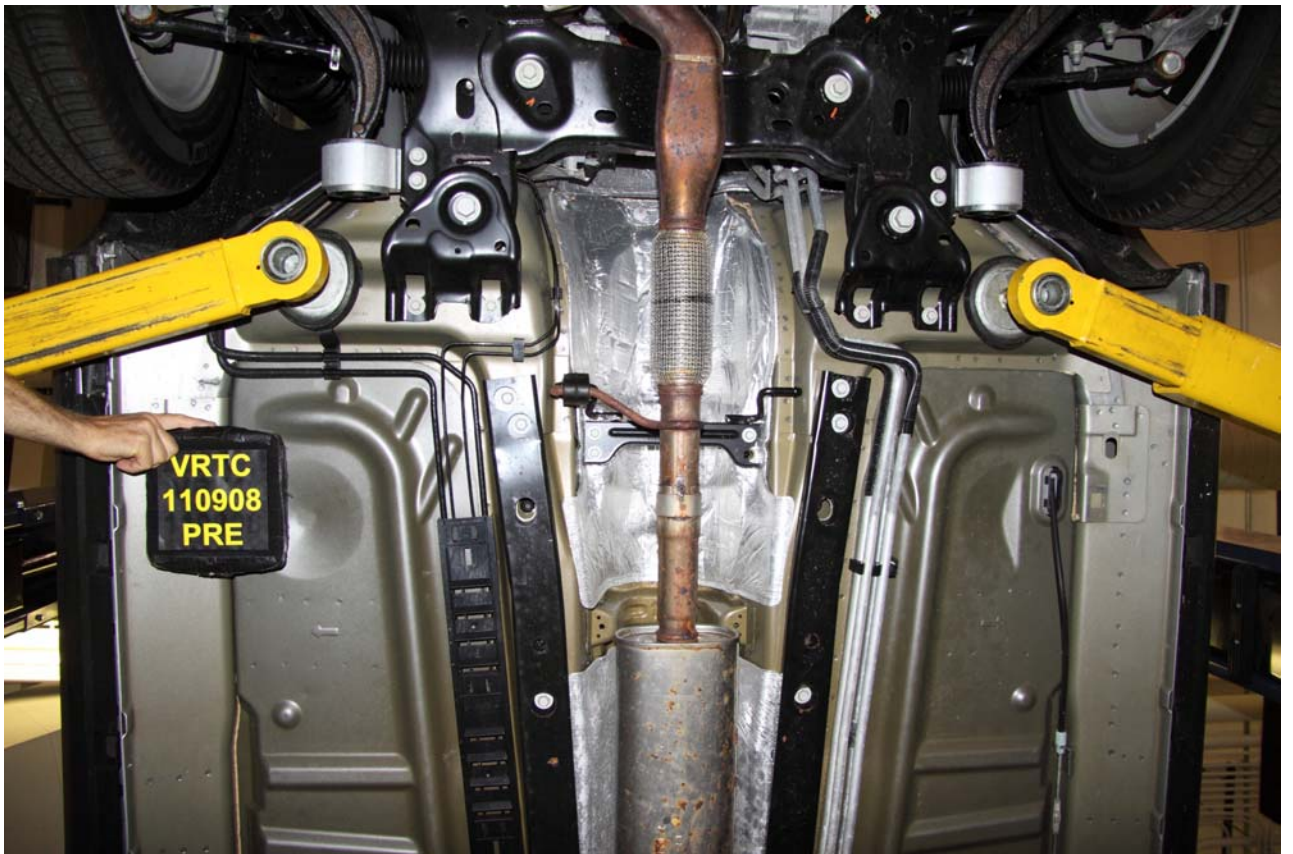
Figure A-20 Post-Test Impact Point View



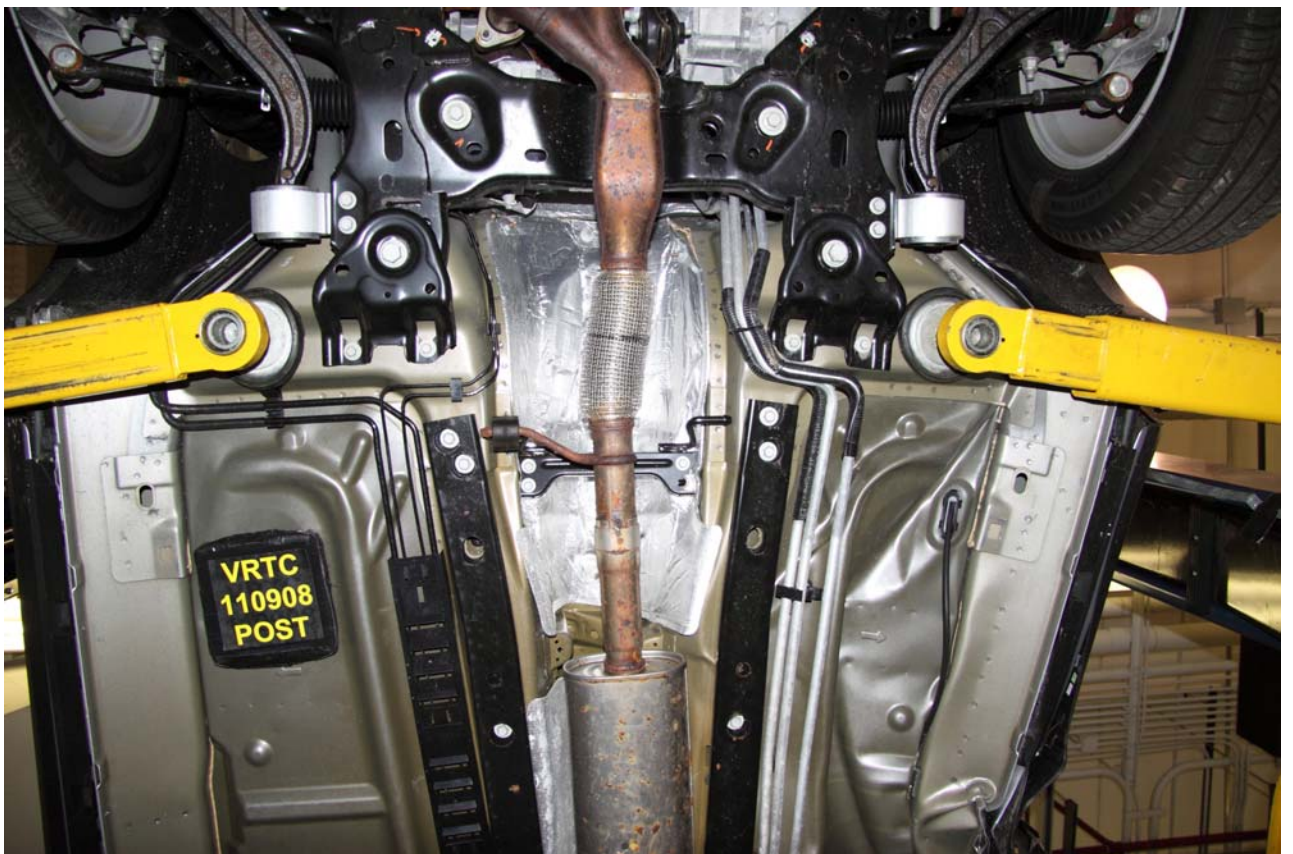
**Figure A-21 Pre-Test Front Underbody View**



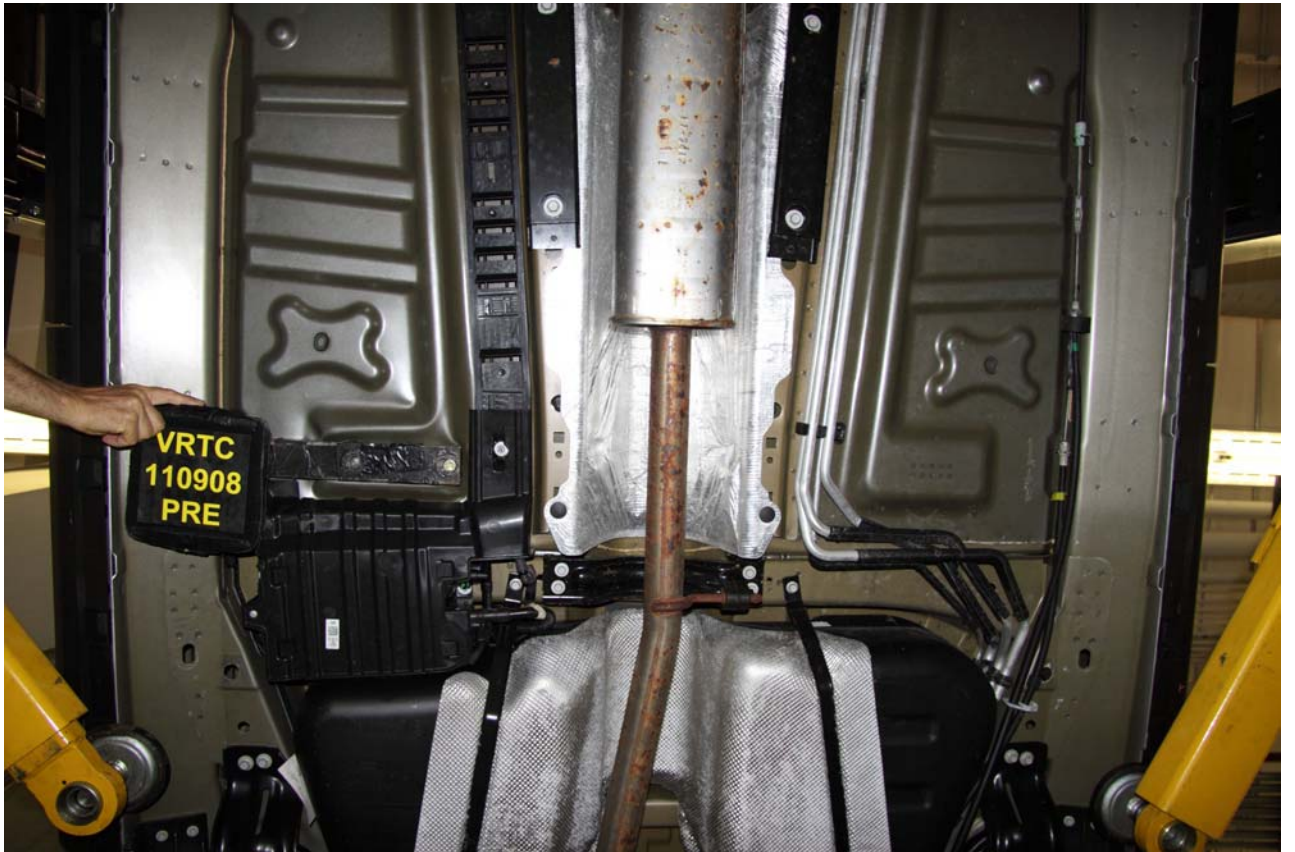
**Figure A-22 Post-Test Front Underbody View**



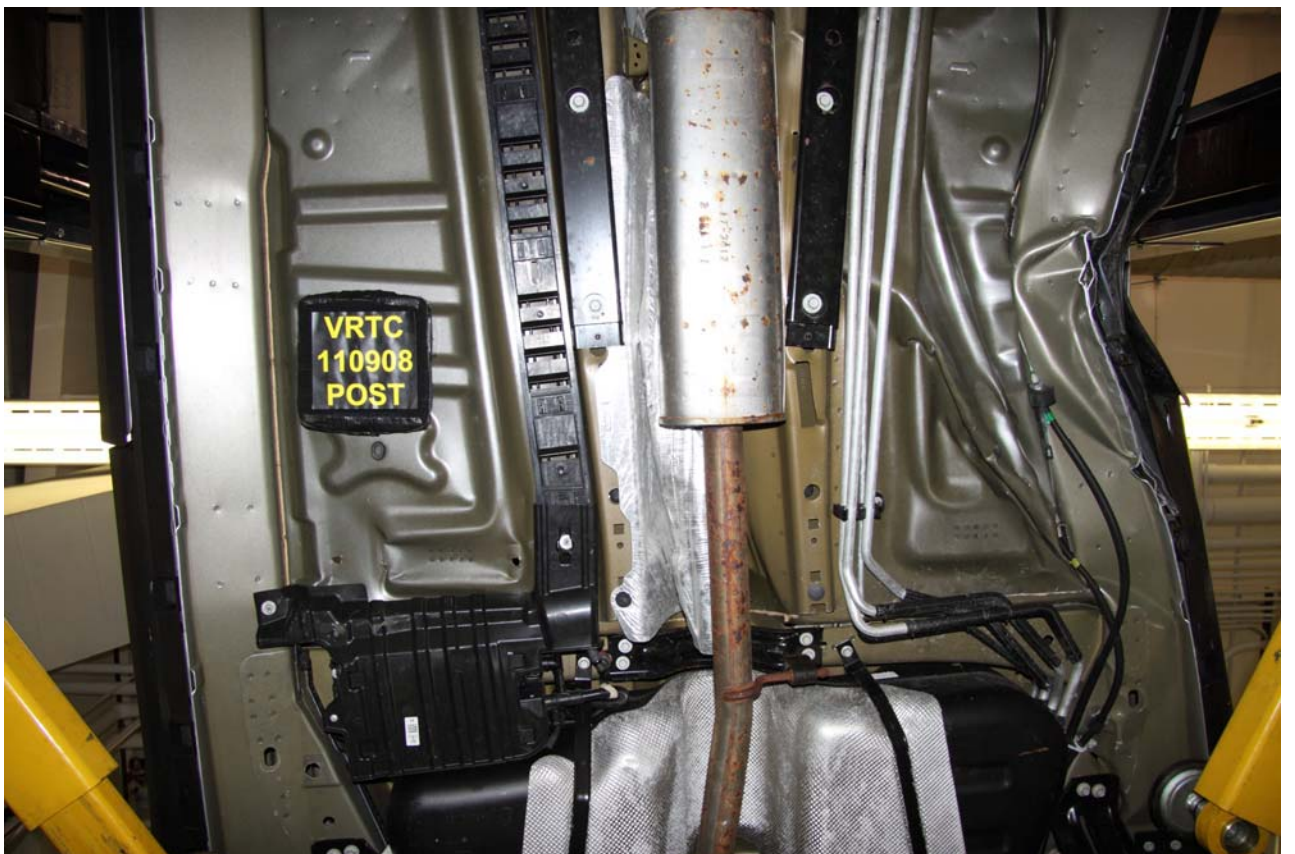
**Figure A-23 Pre-Test Front Mid Underbody View**



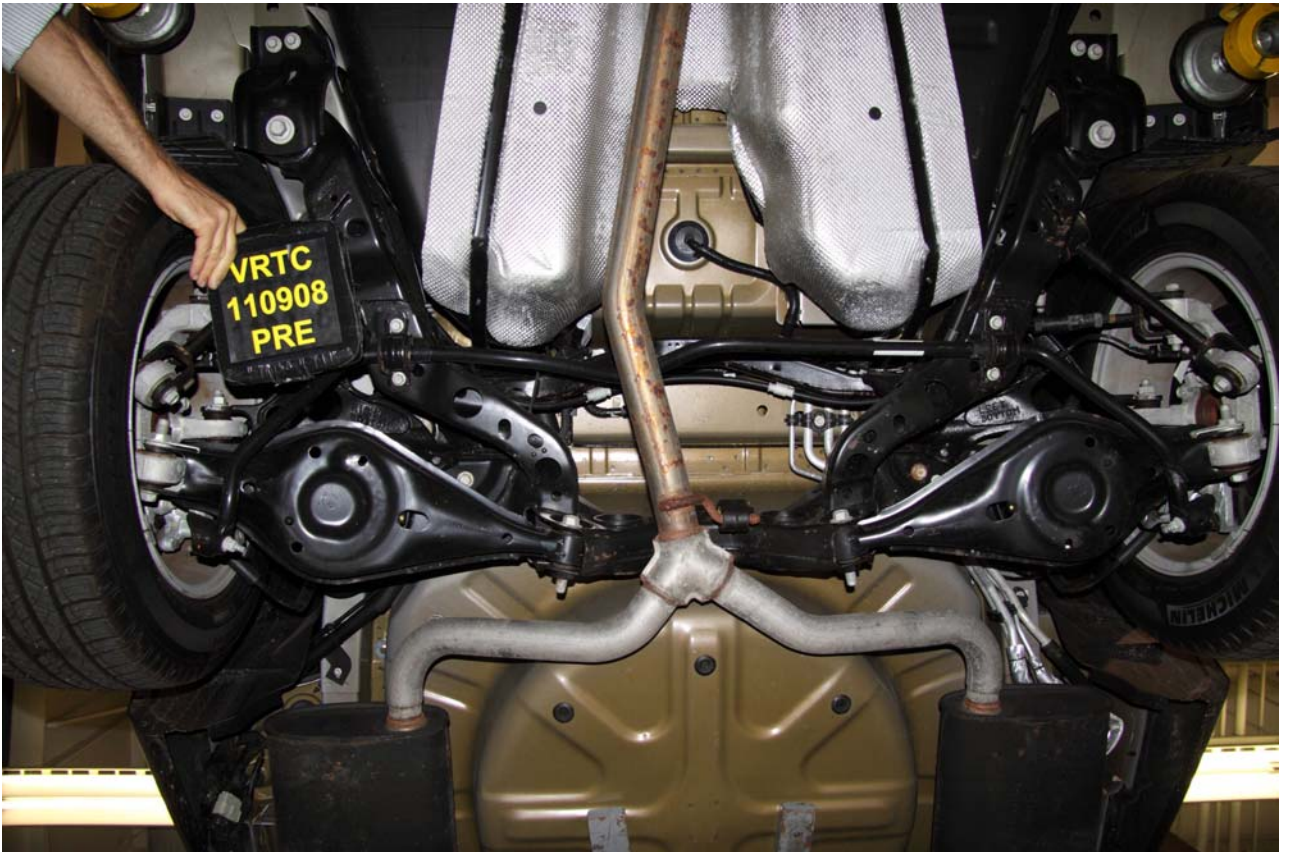
**Figure A-24 Post-Test Front Mid Underbody View**



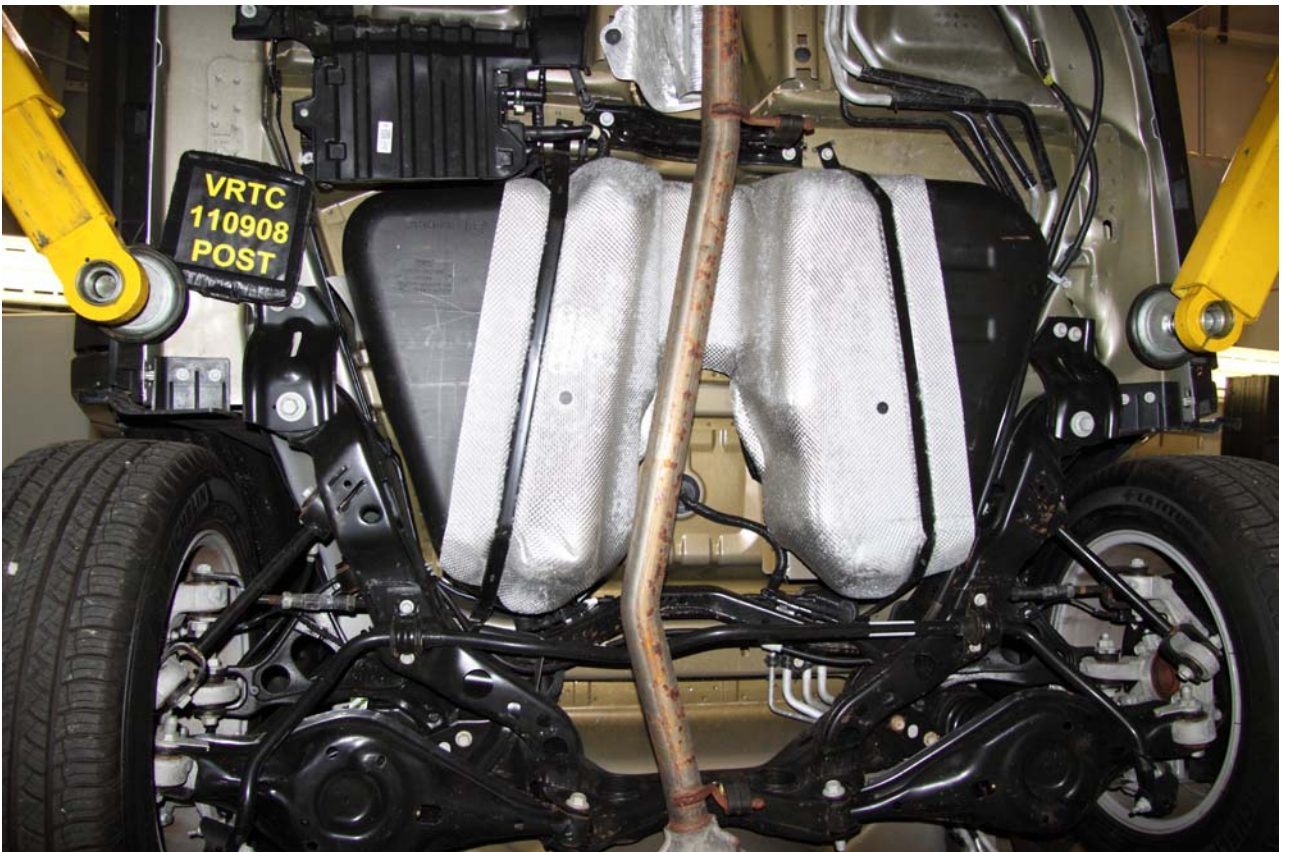
**Figure A-25 Pre-Test Mid Underbody View**



**Figure A-26 Post-Test Mid Underbody View**



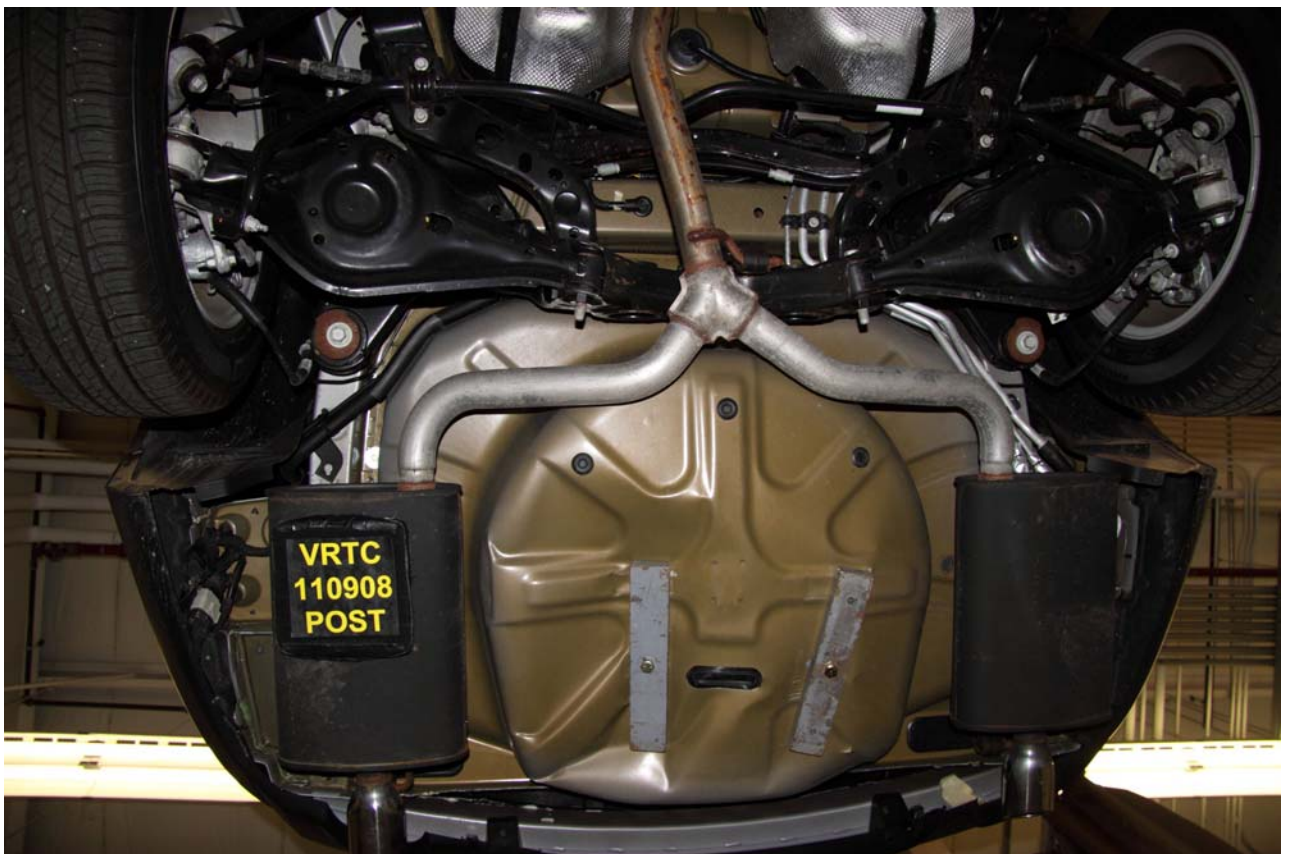
**Figure A-27 Pre-Test Rear Mid Underbody View**



**Figure A-28 Post-Test Rear Mid Underbody View**



**Figure A-29 Pre-Test Rear Underbody View**



**Figure A-30 Post-Test Rear Underbody View**



Figure A-31 Pre-Test Driver Dummy - View 1



Figure A-32 Post-Test Driver Dummy - View 1



**Figure A-33 Pre-Test Driver Dummy - View 2**

**Photograph Not Taken**

**Figure A-34 Post-Test Driver Dummy - View 2**

**Photograph Not Taken**

**Figure A-35 Pre-Test Driver Dummy - View 3**

**Intentionally Left Blank**



**Figure A-36 Pre-Test Driver Dummy - View 4**



**Figure A-37 Post-Test Driver Dummy - View 4**



**Figure A-38 Pre-Test Driver Dummy - View 5**

**Photograph Not Taken**

**Figure A-39 Post-Test Driver Dummy - View 5**



**Figure A-40 Pre-Test Driver Door Panel View**



**Figure A-41 Post-Test Driver Door Panel View**



Figure A-42 Post-Test Driver Dummy Contact - View 1



Figure A-43 Post-Test Driver Dummy Contact - View 2



**Figure A-44 Post-Test Driver Dummy Contact - View 3**



**Figure A-45 Post-Test Driver Dummy Contact - View 4**



**Figure A-46 Post-Test Driver Dummy Overall View**

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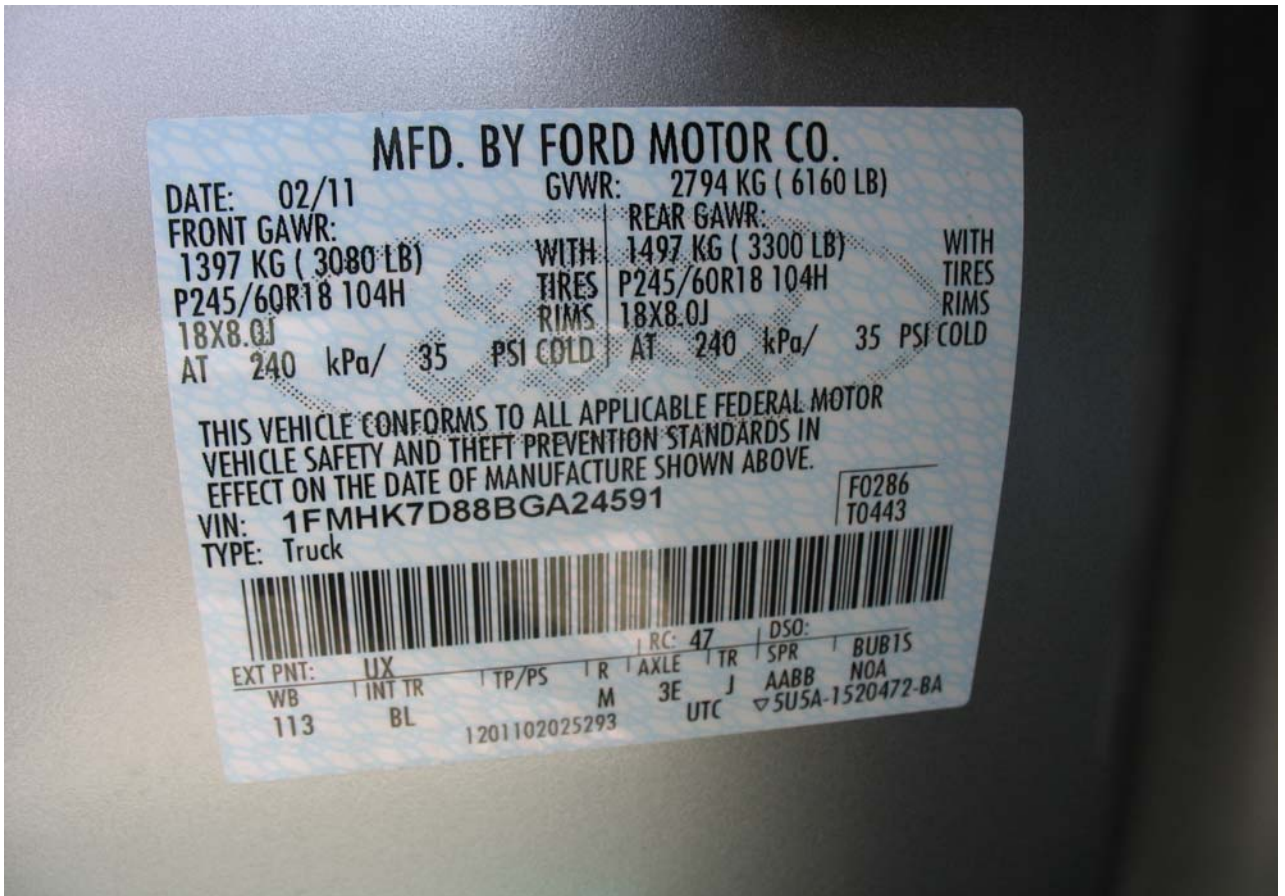


Figure A-47 Vehicle Certification Label

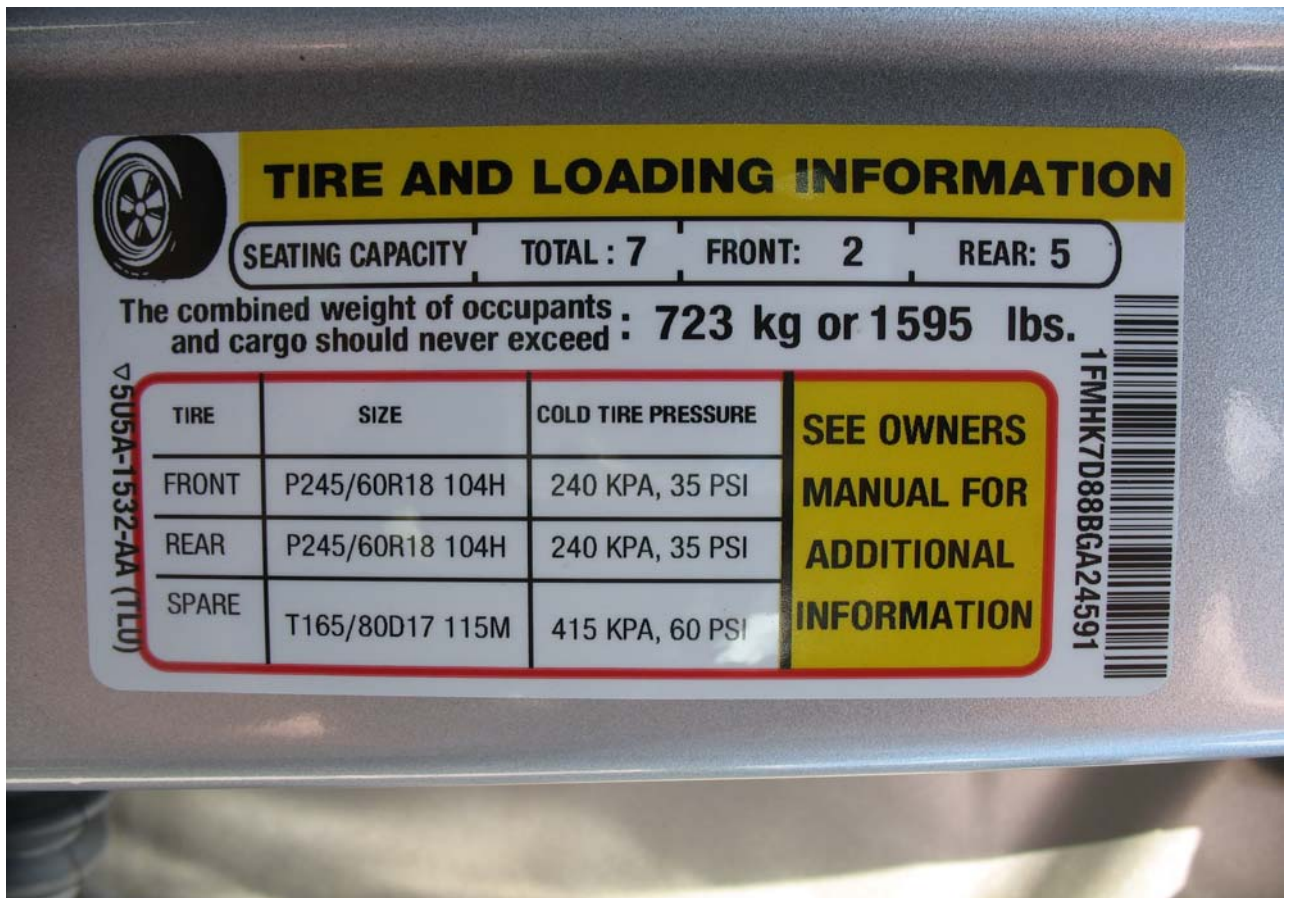


Figure A-48 Tire Pressure Label

## Appendix B

### Data Plots



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

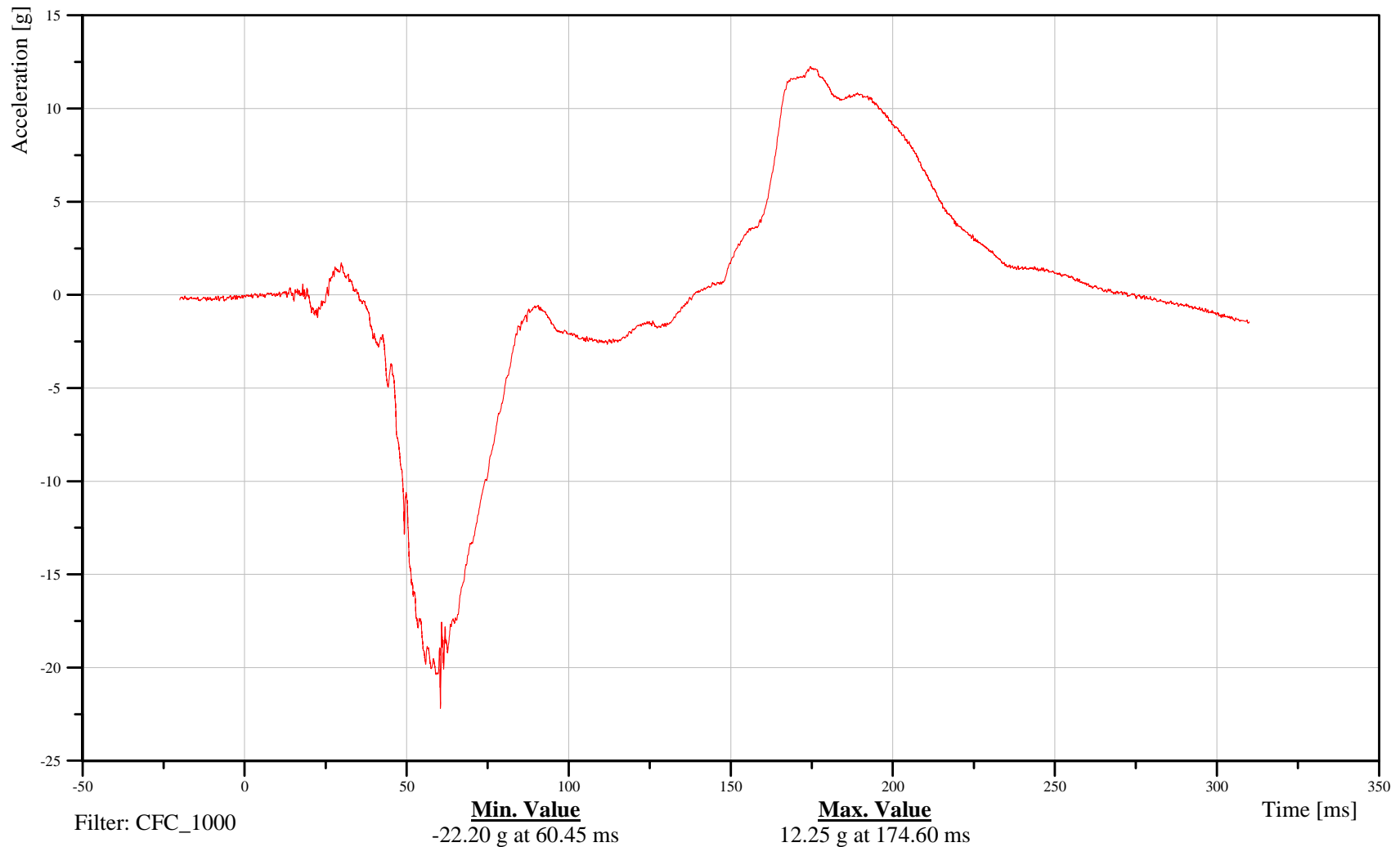
## Head X-Axis Acceleration

Customer: VRTC

# 11HEADCG00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-2

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

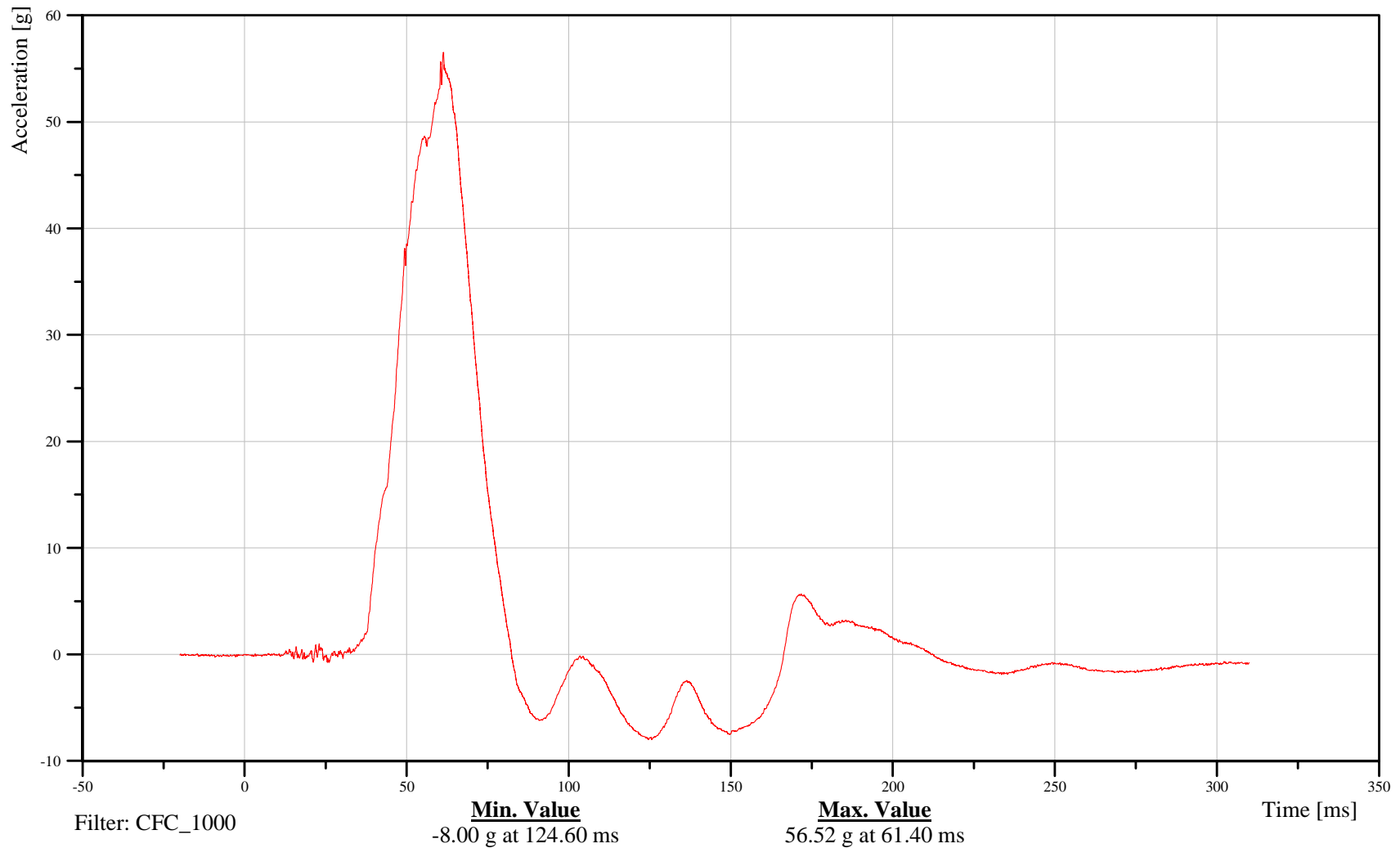
## Head Y-Axis Acceleration

Customer: VRTC

# 11HEADCG00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-3

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

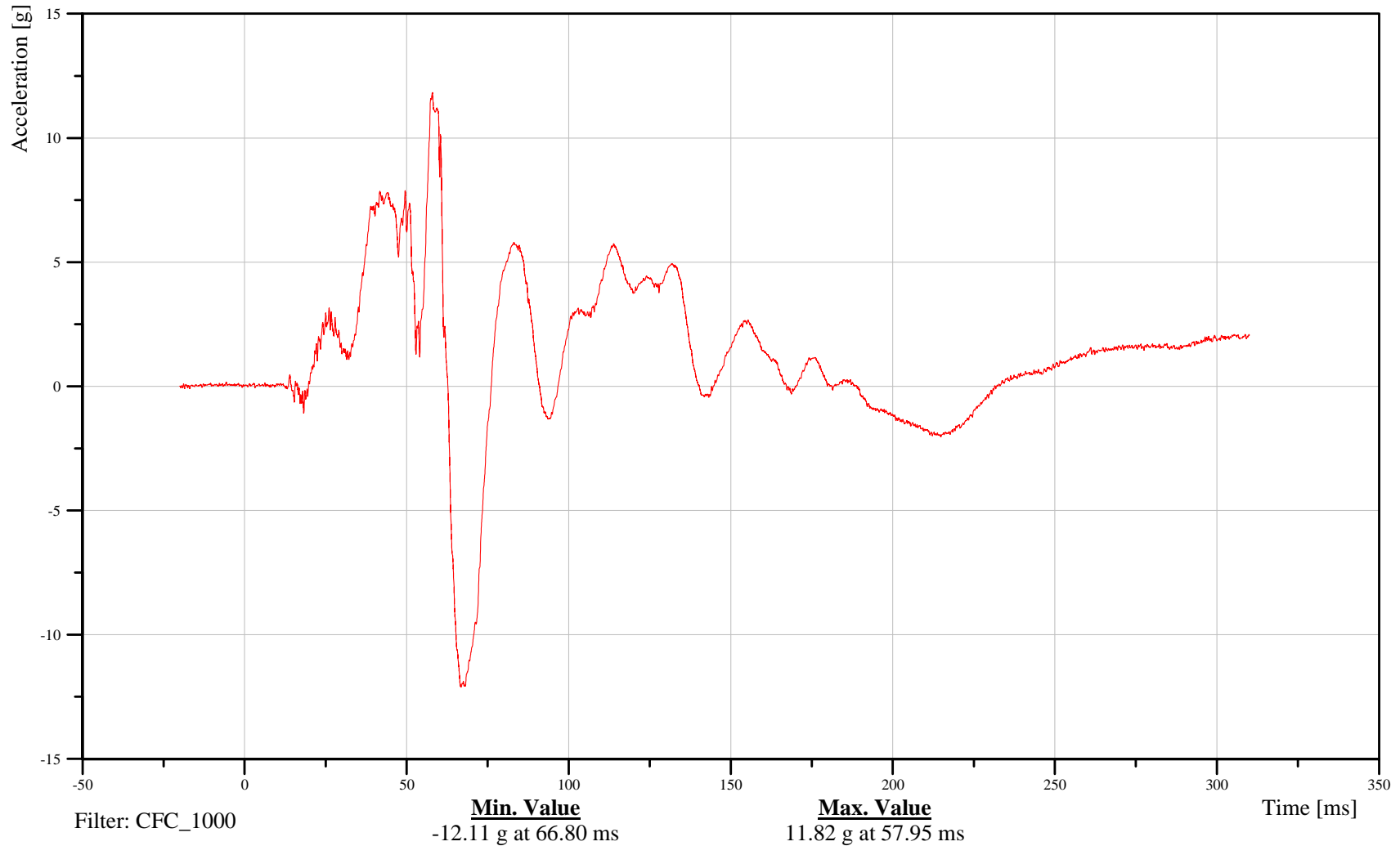
## Head Z-Axis Acceleration

Customer: VRTC

# 11HEADCG00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-4

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

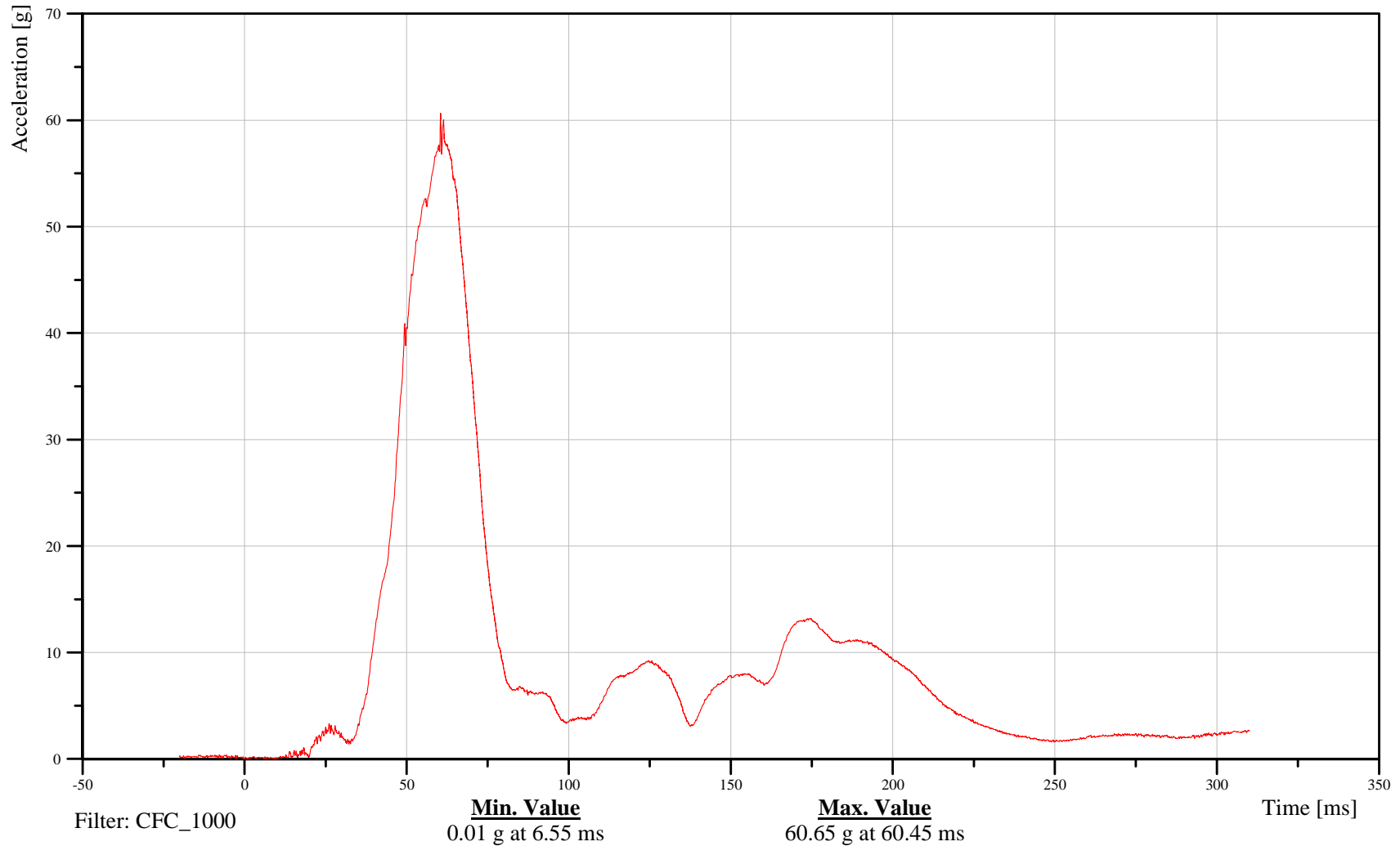
## Head Resultant Acceleration

Customer: VRTC

# 11HEADCG00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-5

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

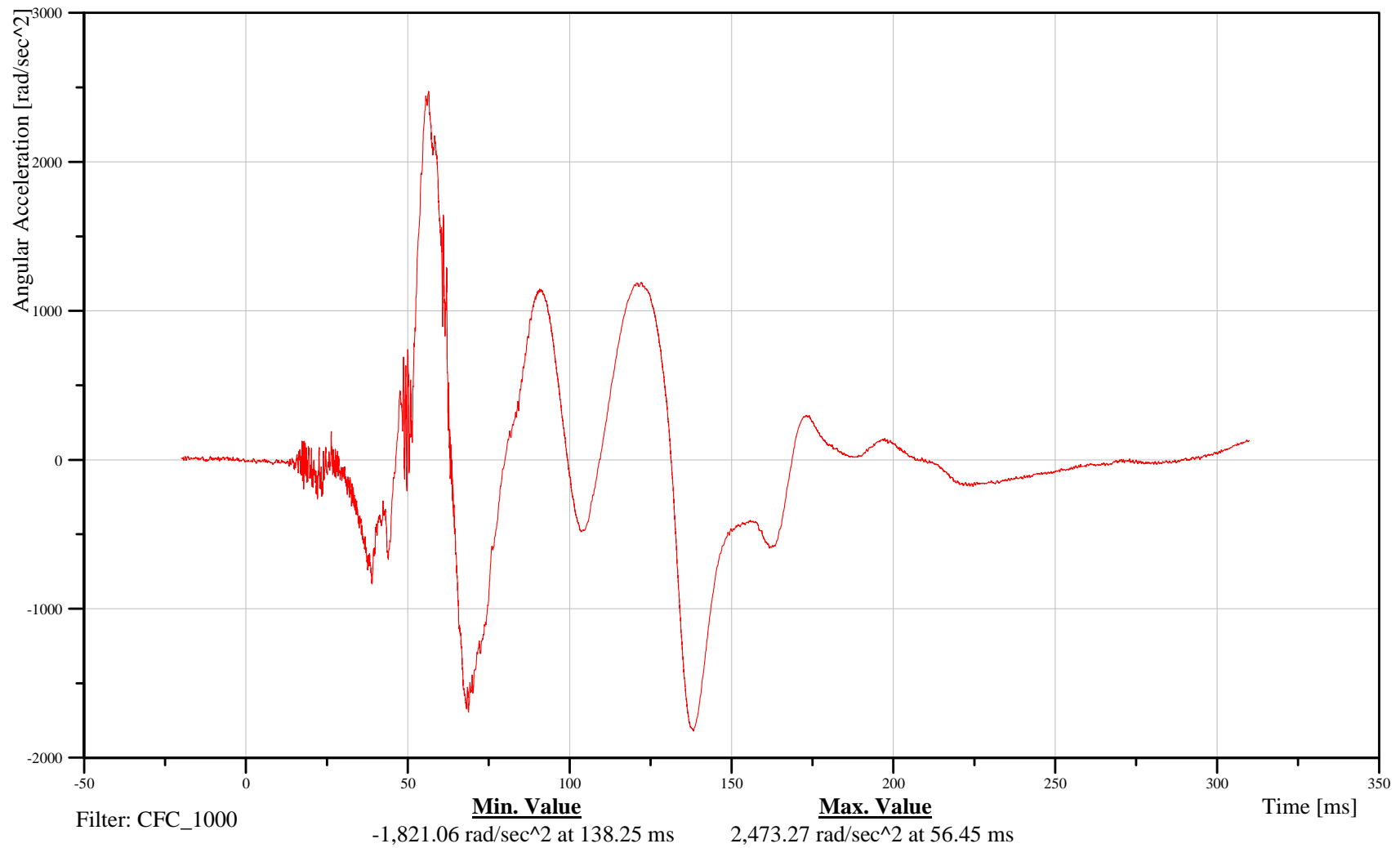
## Head X-Axis Angular Displacement

Customer: VRTC

# 11HEADCG00WSAAXA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-6

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

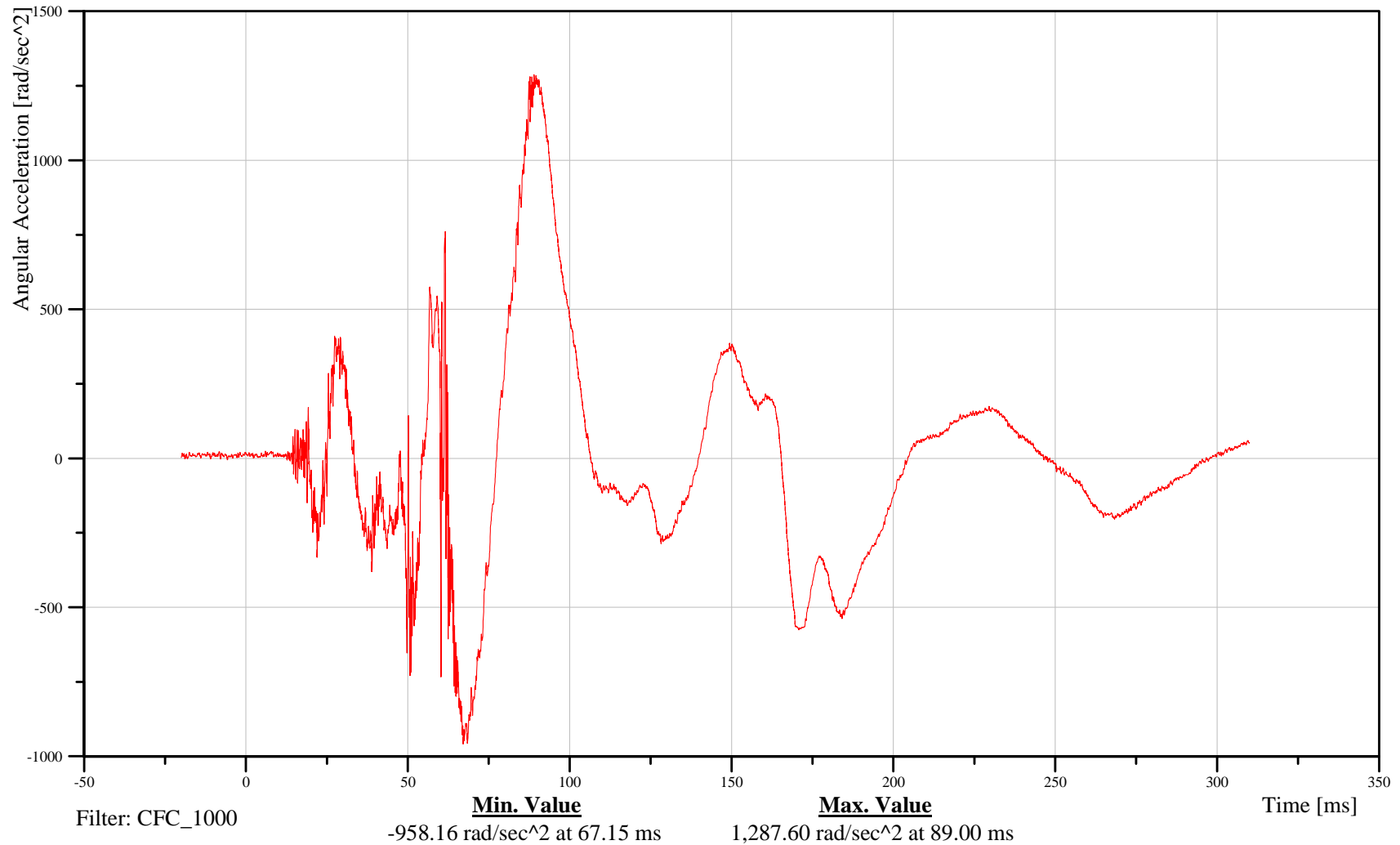
## Head Y-Axis Angular Displacement

Customer: VRTC

# 11HEADCG00WSAAYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-7

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

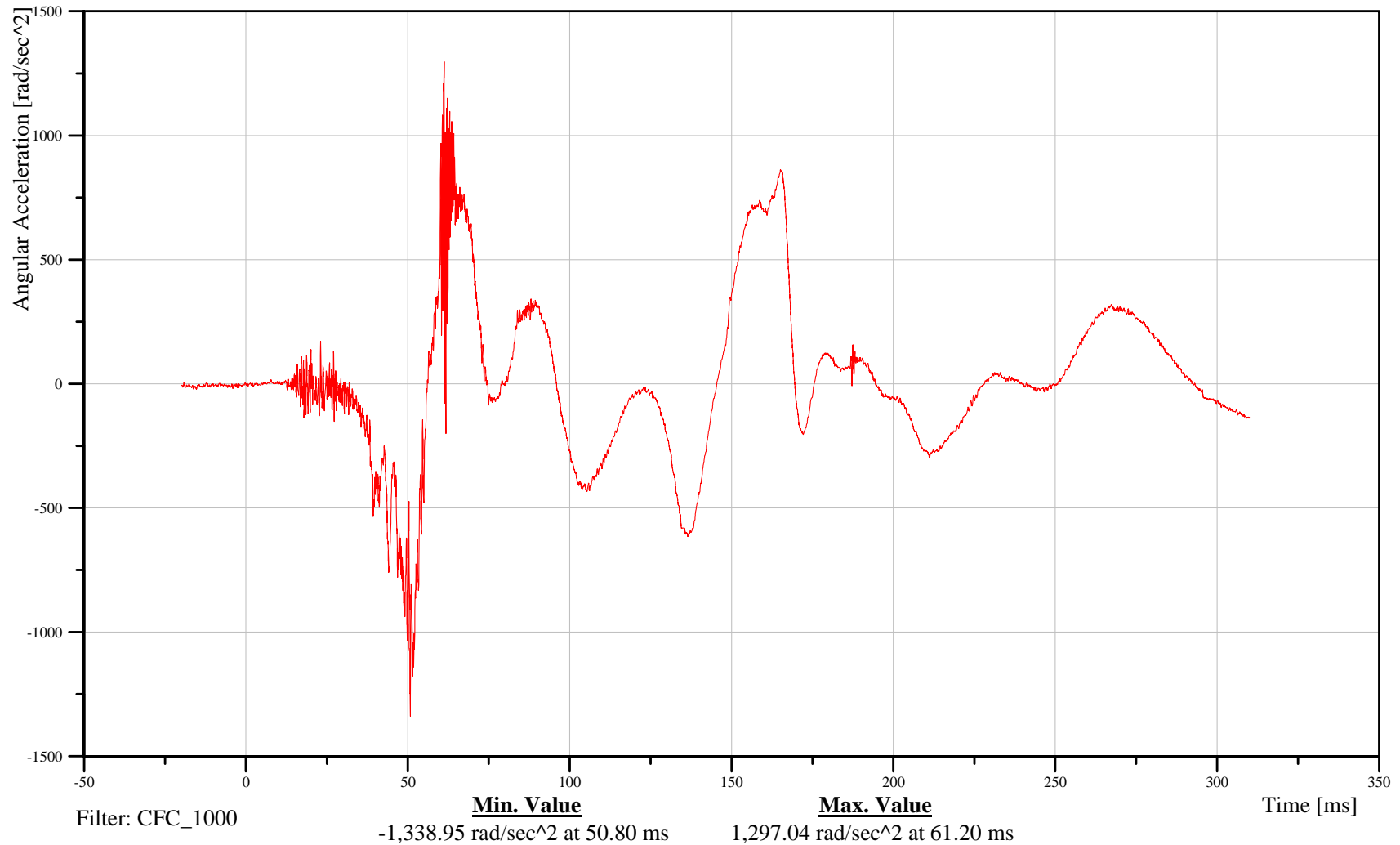
## Head Z-Axis Angular Displacement

Customer: VRTC

# 11HEADCG00WSAAZA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-8

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

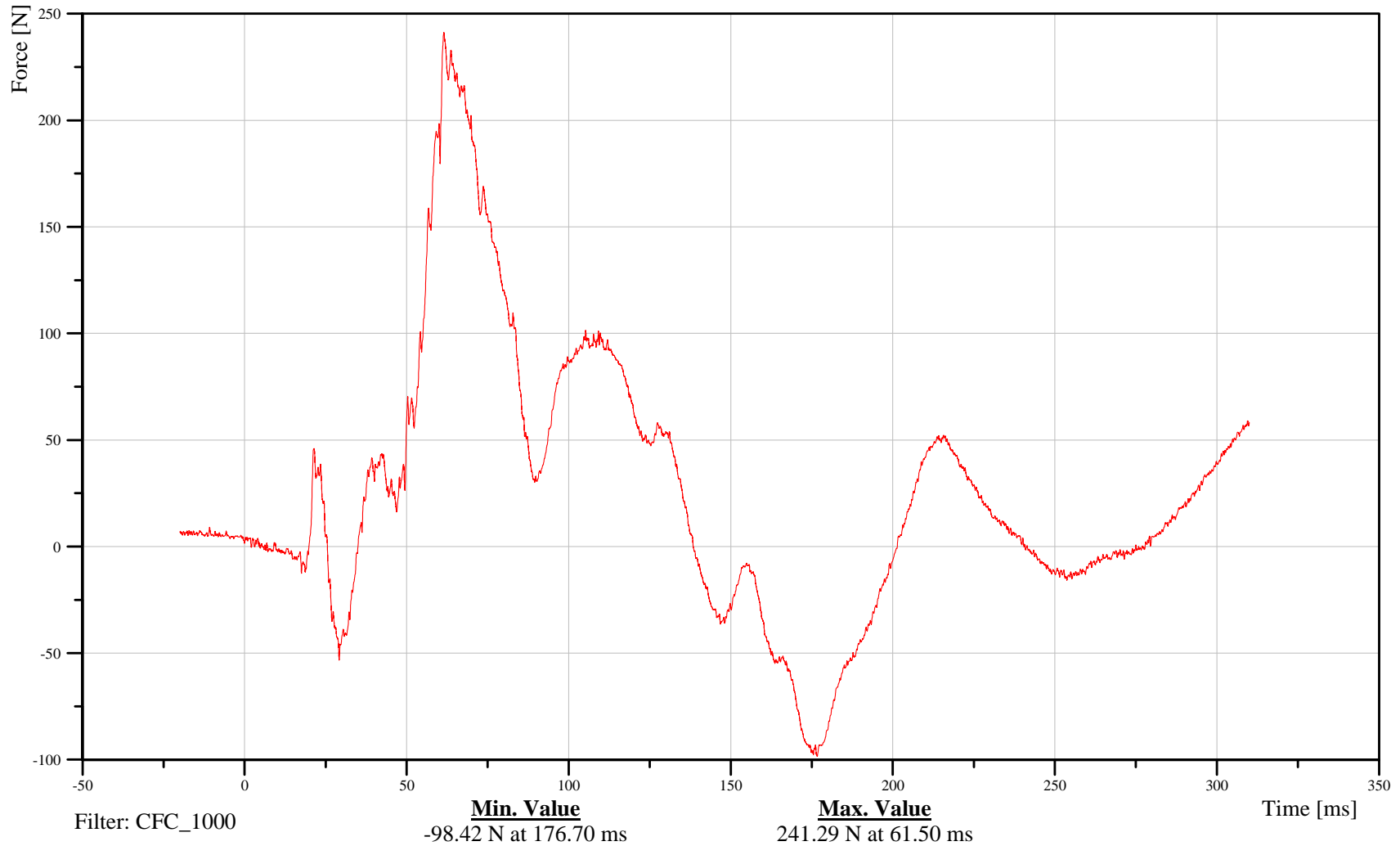
## Upper Neck X-Axis Force

Customer: VRTC

# 11NECKUP00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

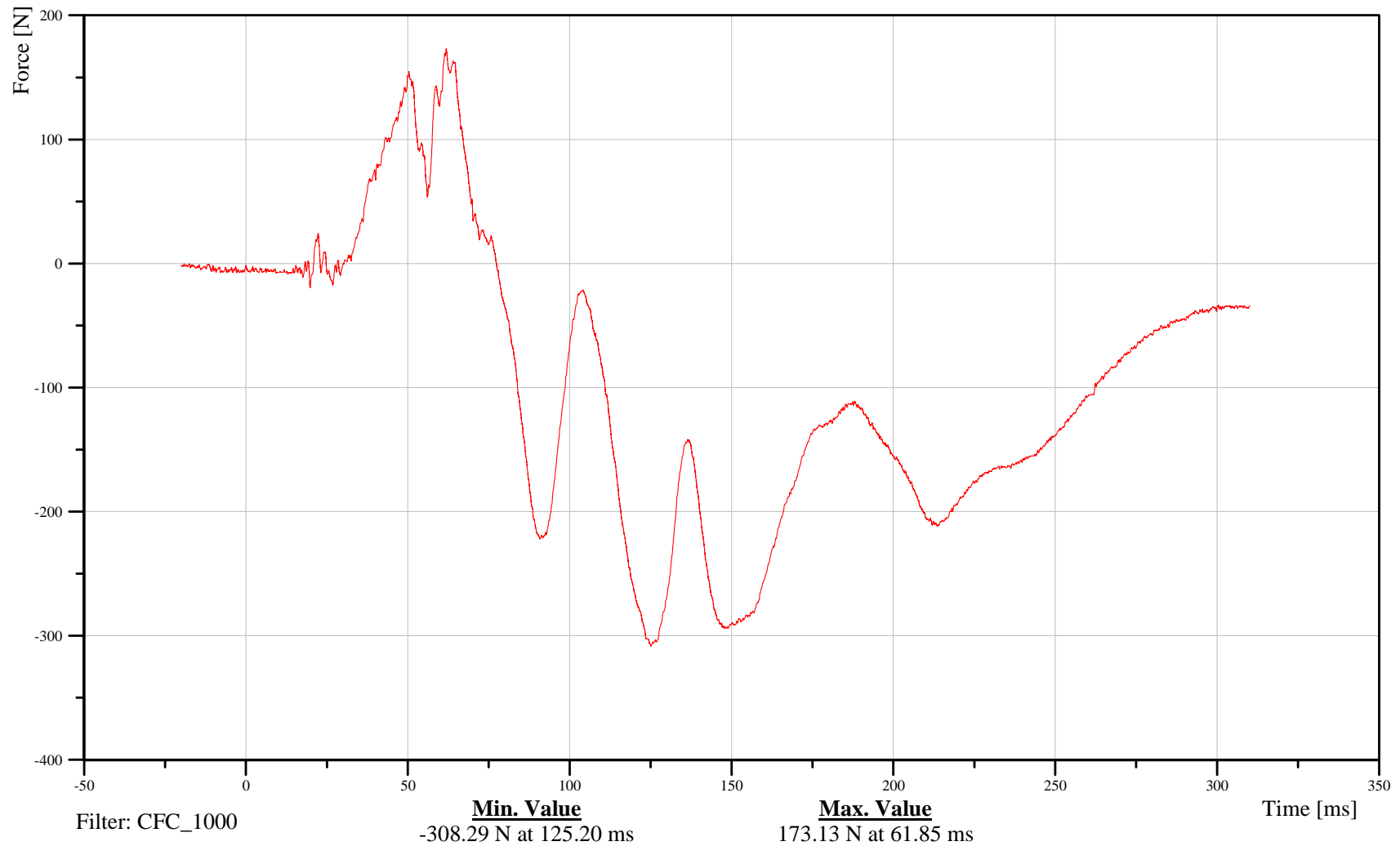
## Upper Neck Y-Axis Force

Customer: VRTC

# 11NECKUP00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

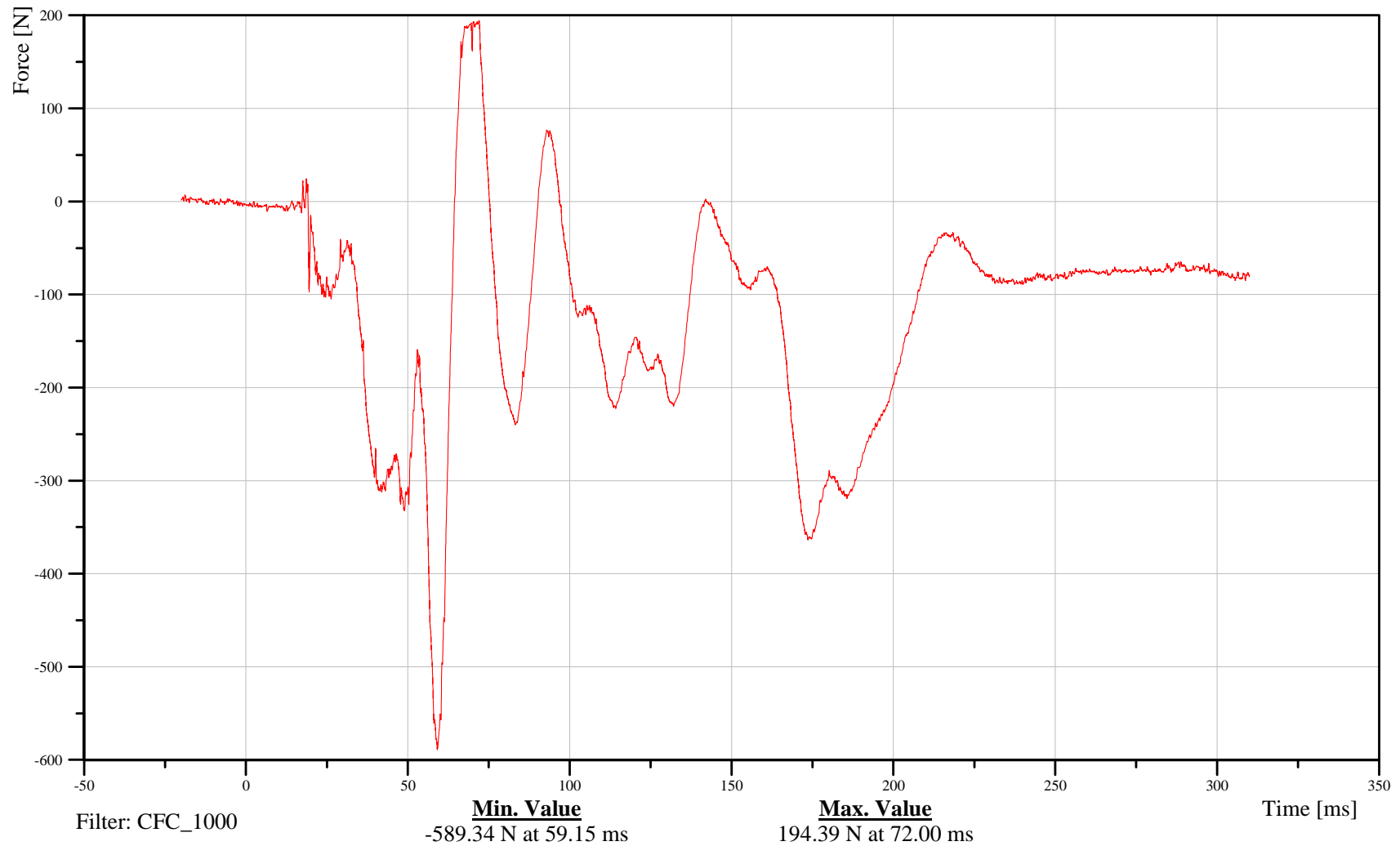
## Upper Neck Z-Axis Force

Customer: VRTC

# 11NECKUP00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-11

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

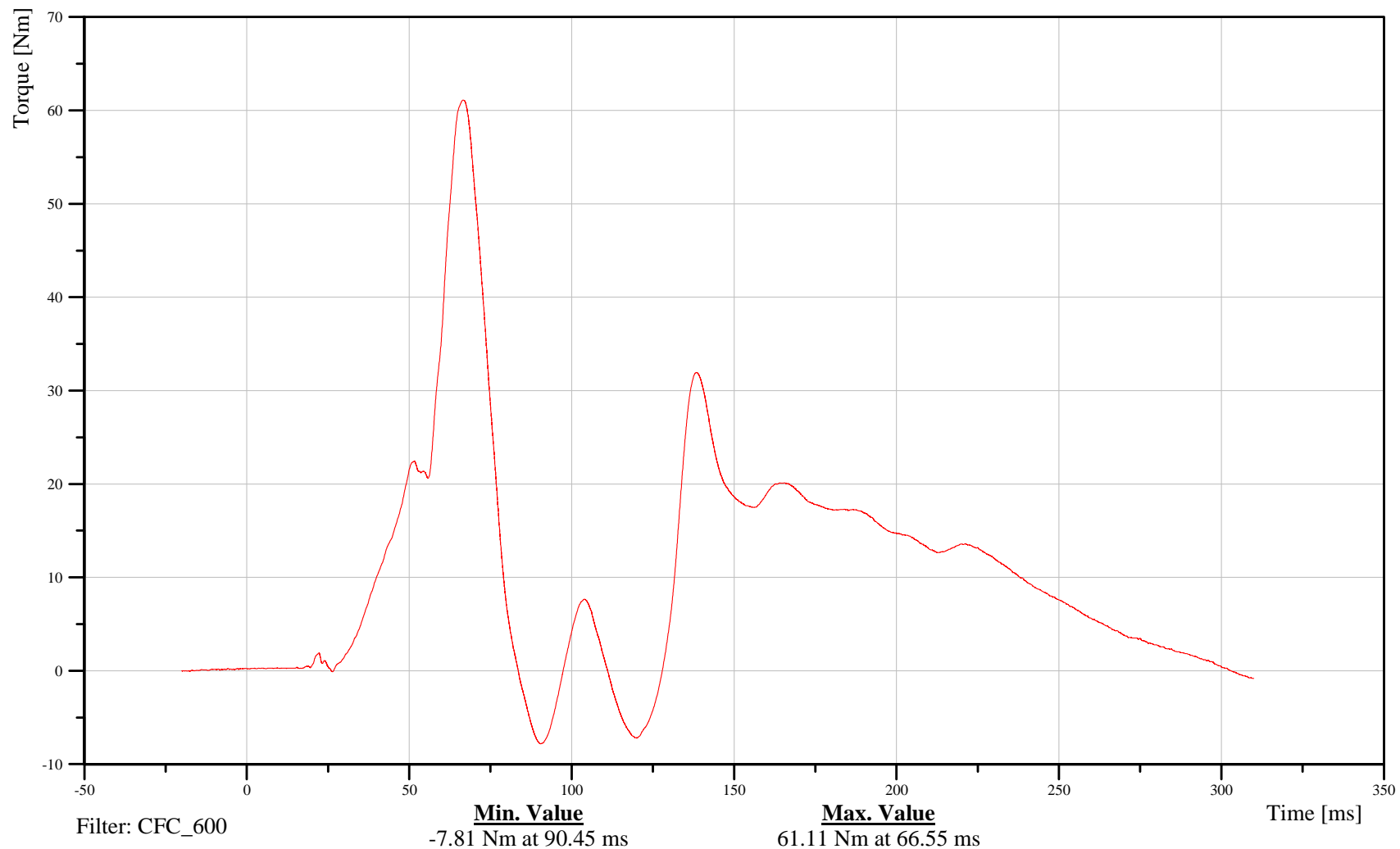
## Upper Neck Moment About X Axis

Customer: VRTC

# 11NECKUP00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-12

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

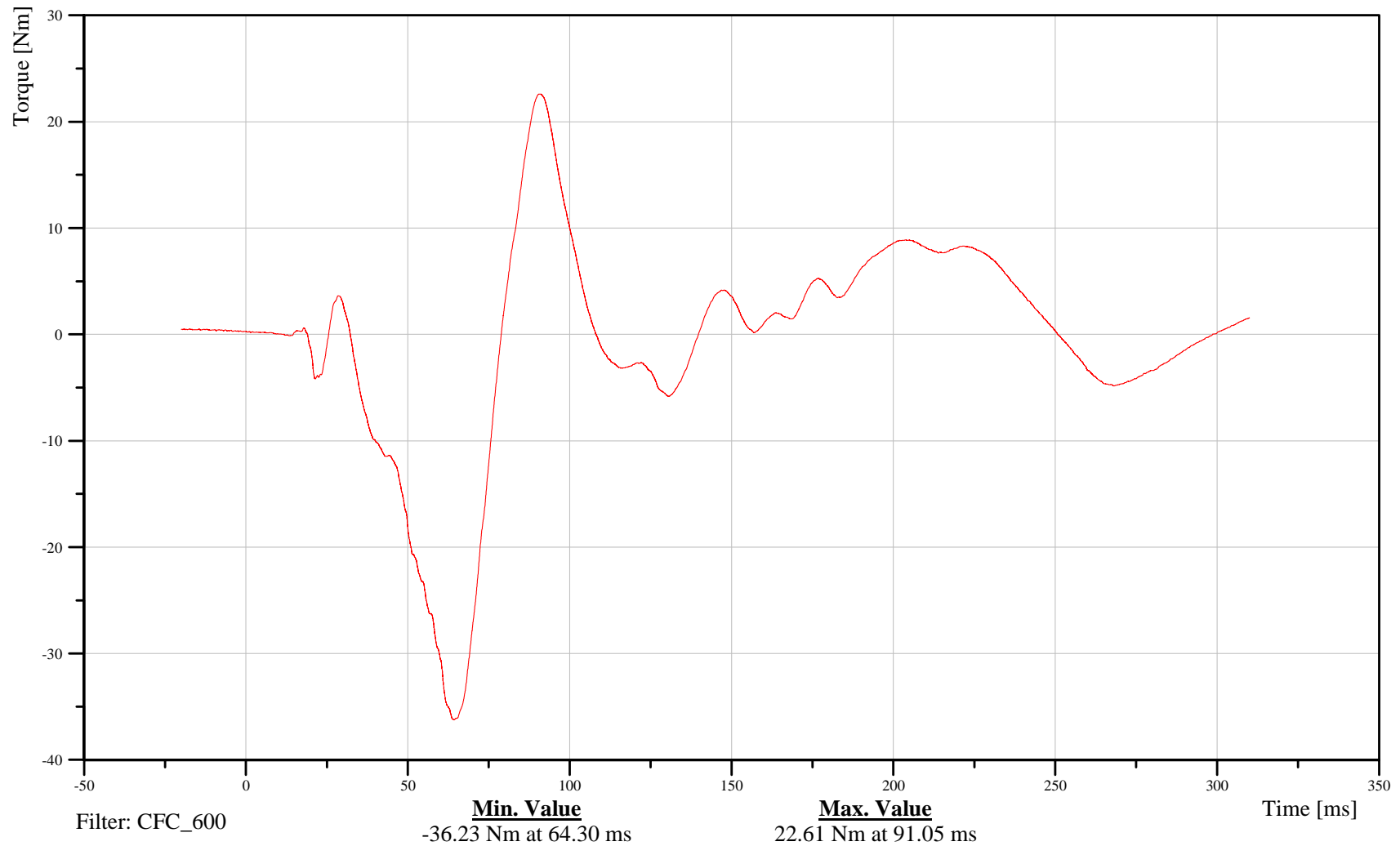
## Upper Neck Moment About Y Axis

Customer: VRTC

# 11NECKUP00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

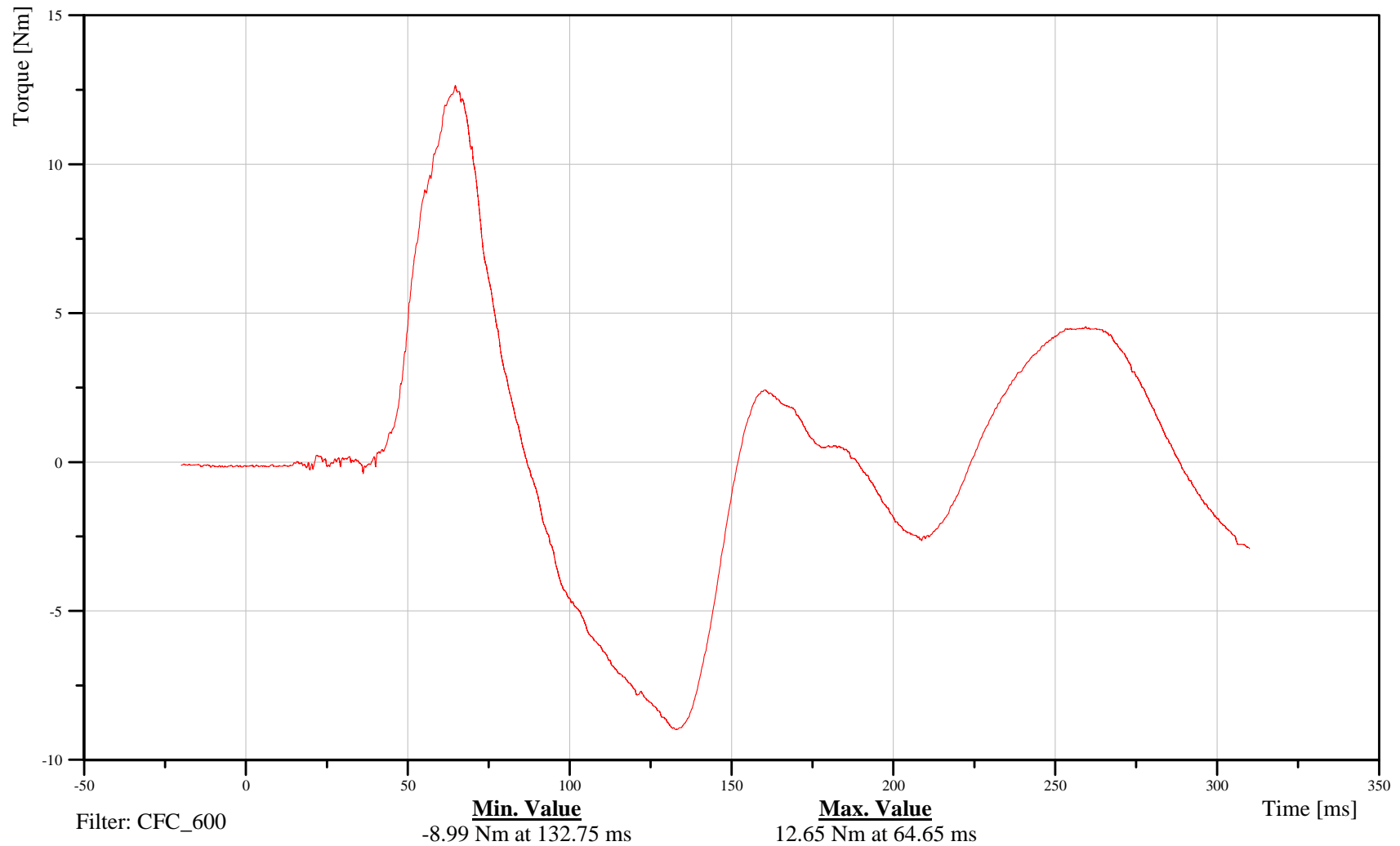
## Upper Neck Moment About Z Axis

Customer: VRTC

# 11NECKUP00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

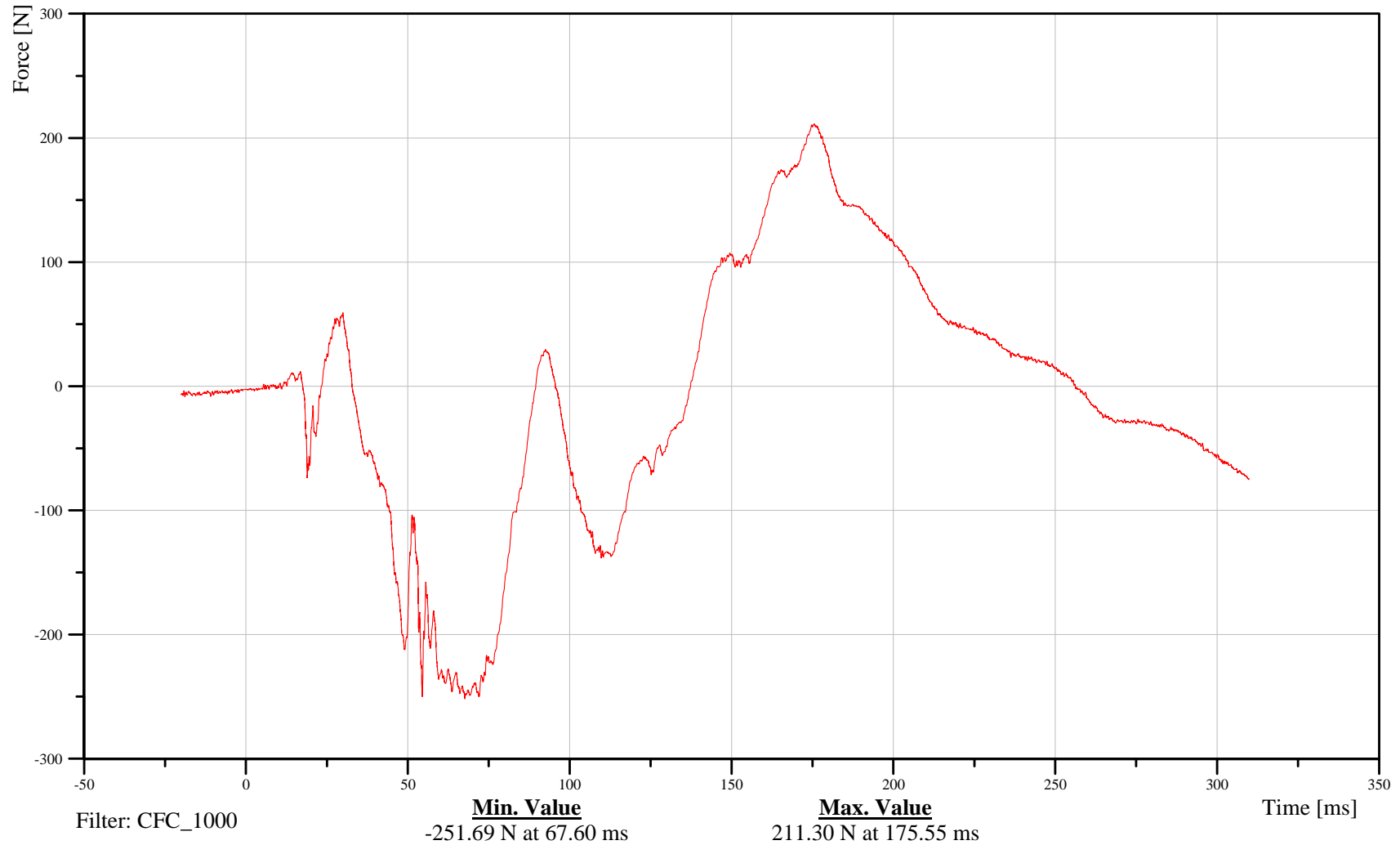
## Lower Neck X-Axis Force

Customer: VRTC

# 11NECKLO00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

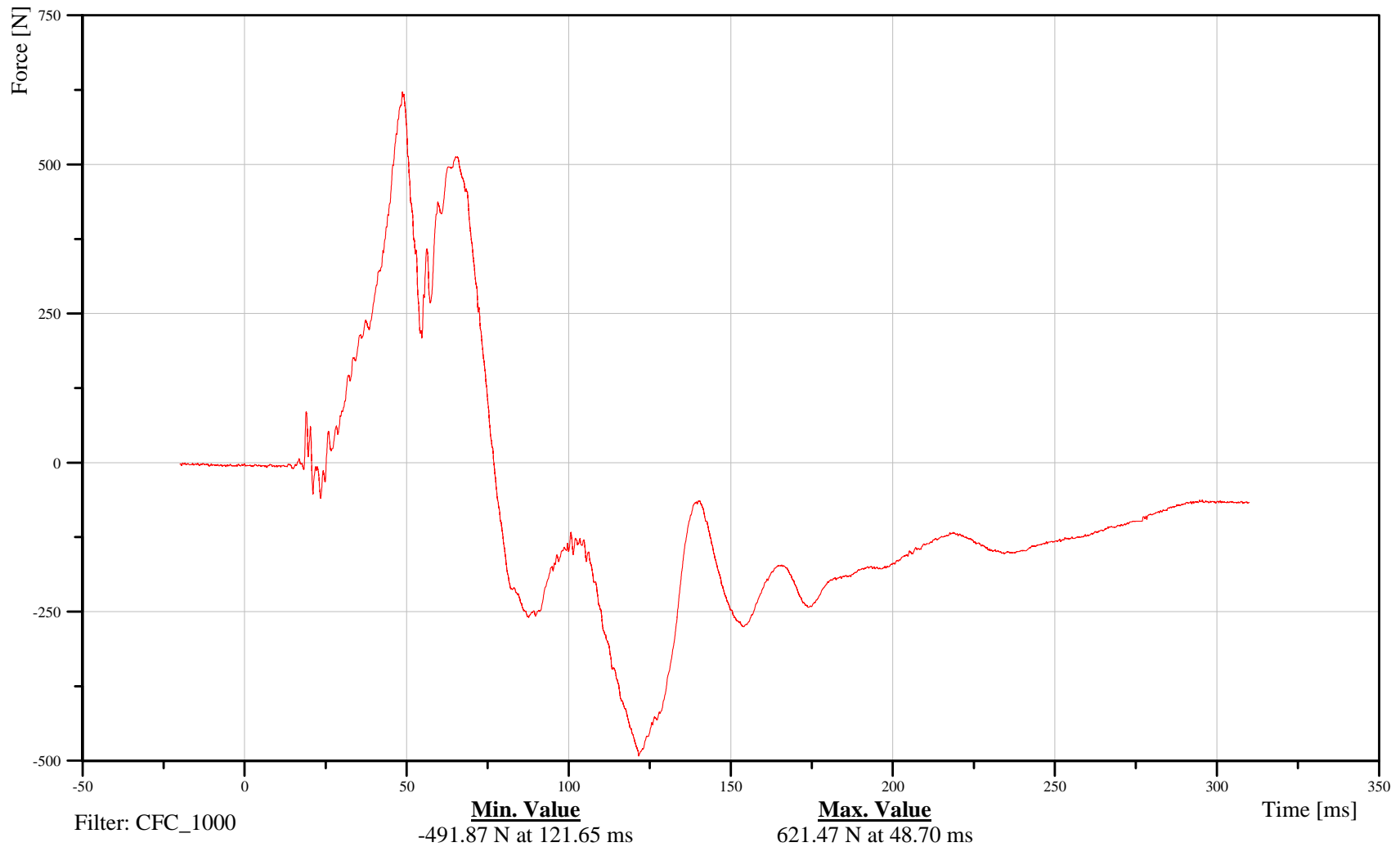
## Lower Neck Y-Axis Force

Customer: VRTC

# 11NECKLO00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

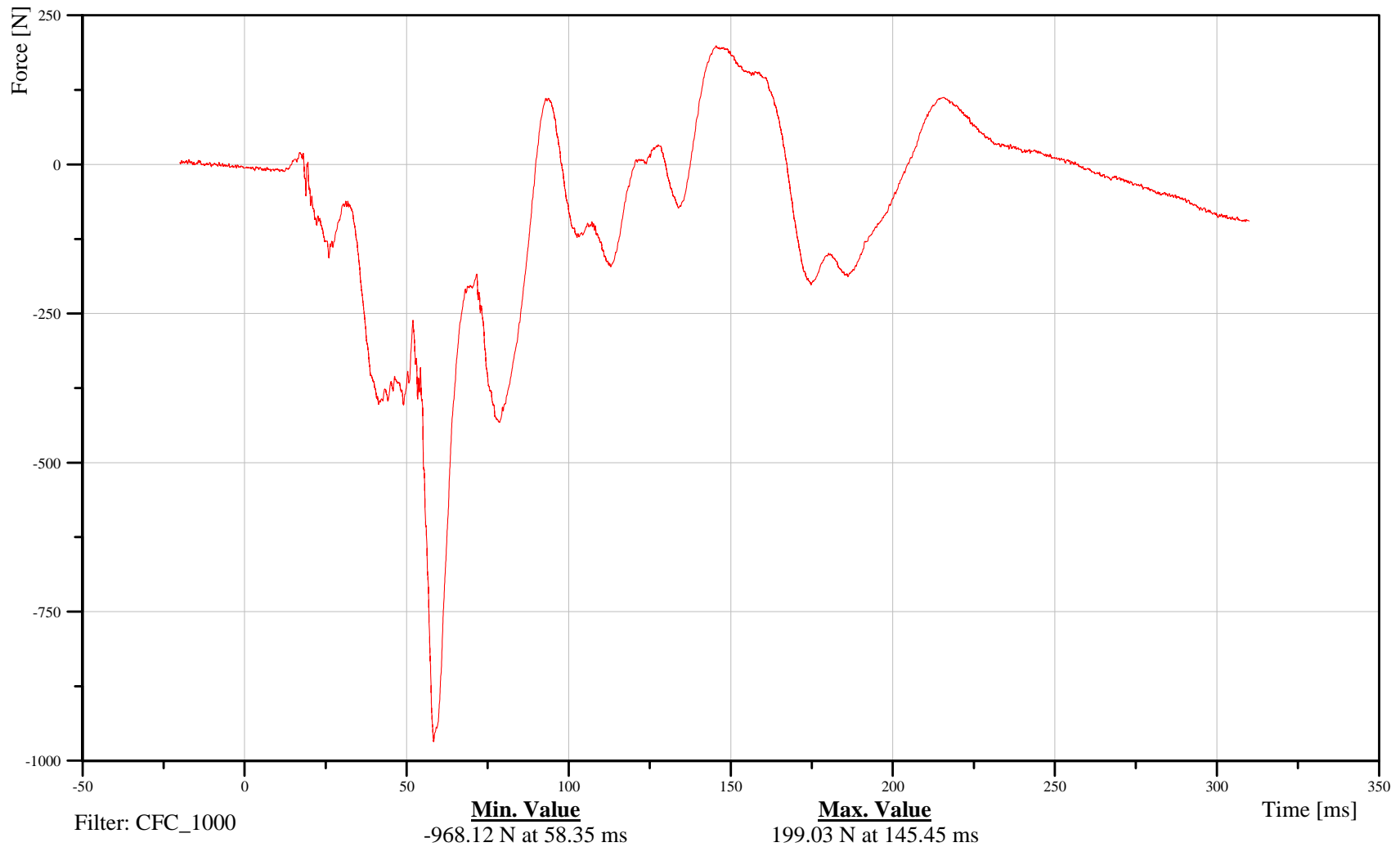
## Lower Neck Z-Axis Force

Customer: VRTC

# 11NECKLO00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

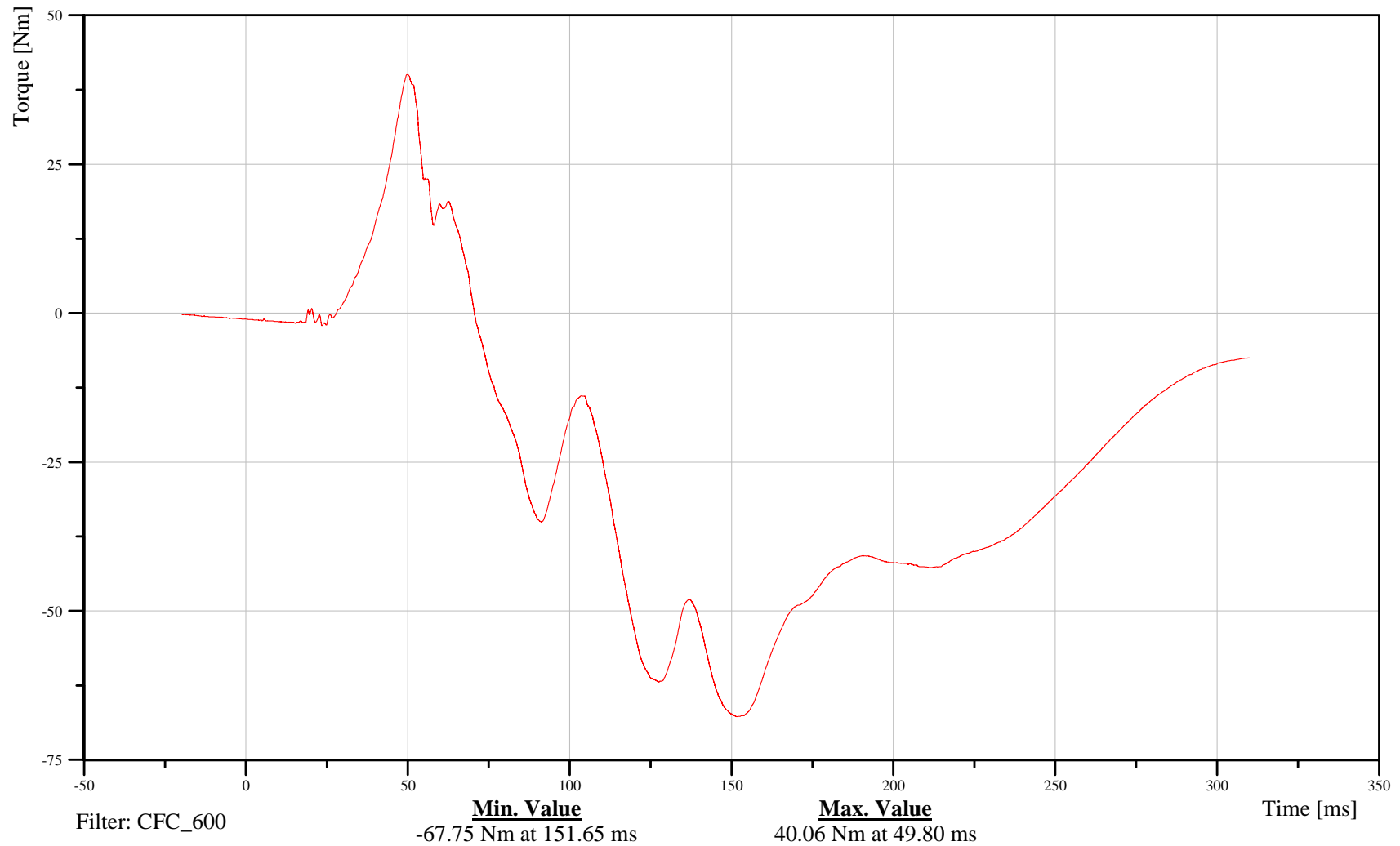
## Lower Neck Moment About X Axis

Customer: VRTC

# 11NECKLO00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

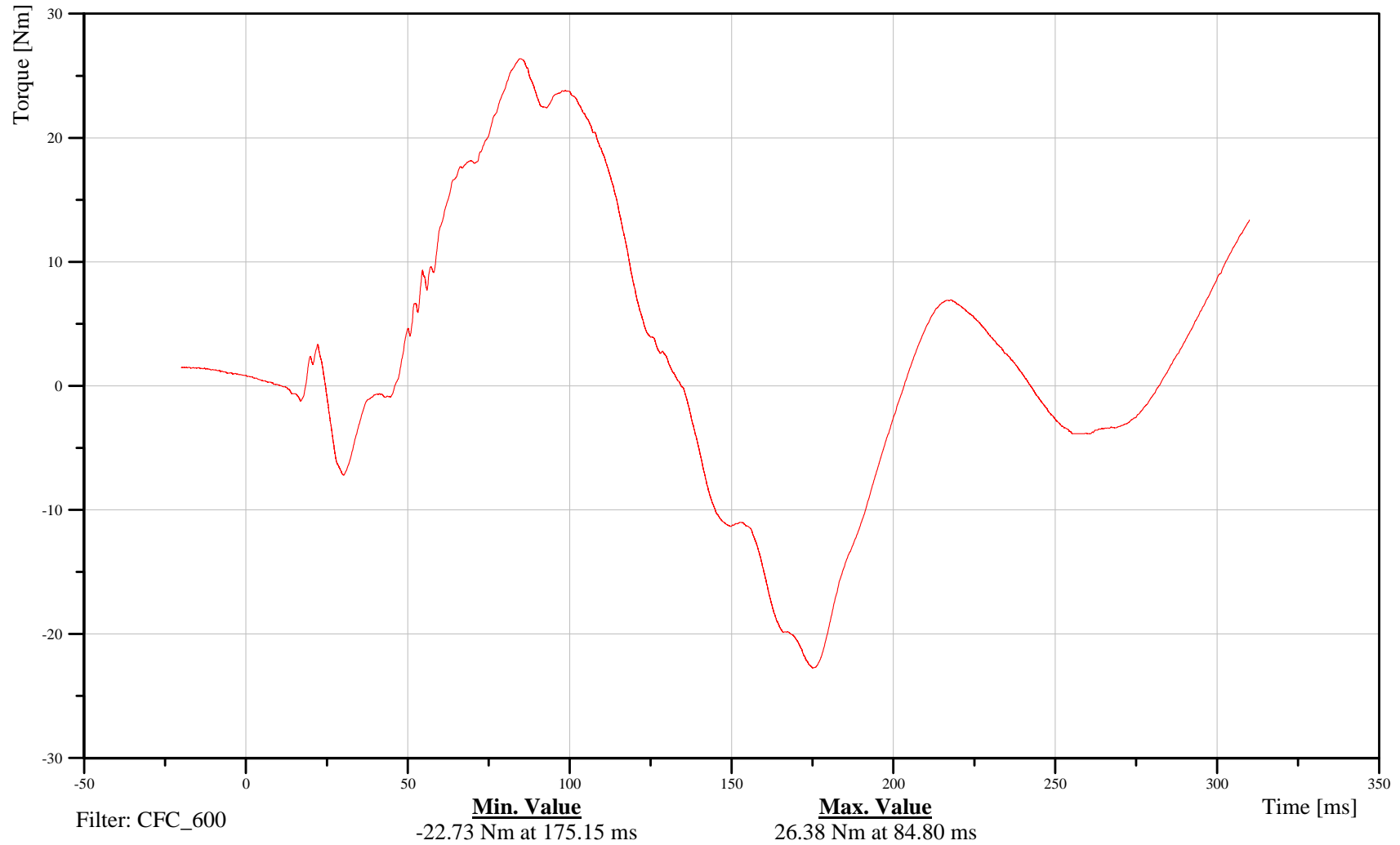
## Lower Neck Moment About Y Axis

Customer: VRTC

# 11NECKLO00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

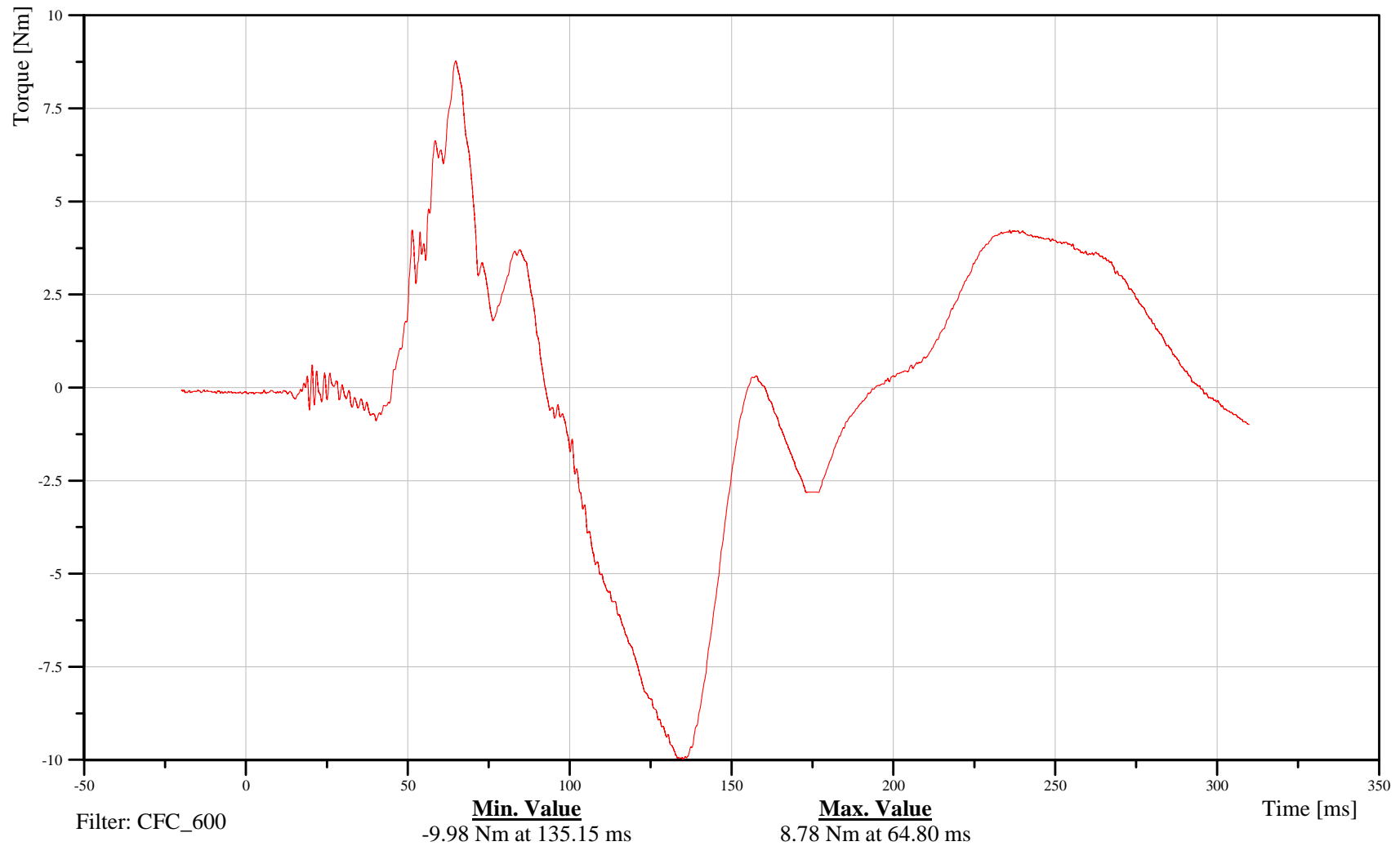
## Lower Neck Moment About Z Axis

Customer: VRTC

# 11NECKLO00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

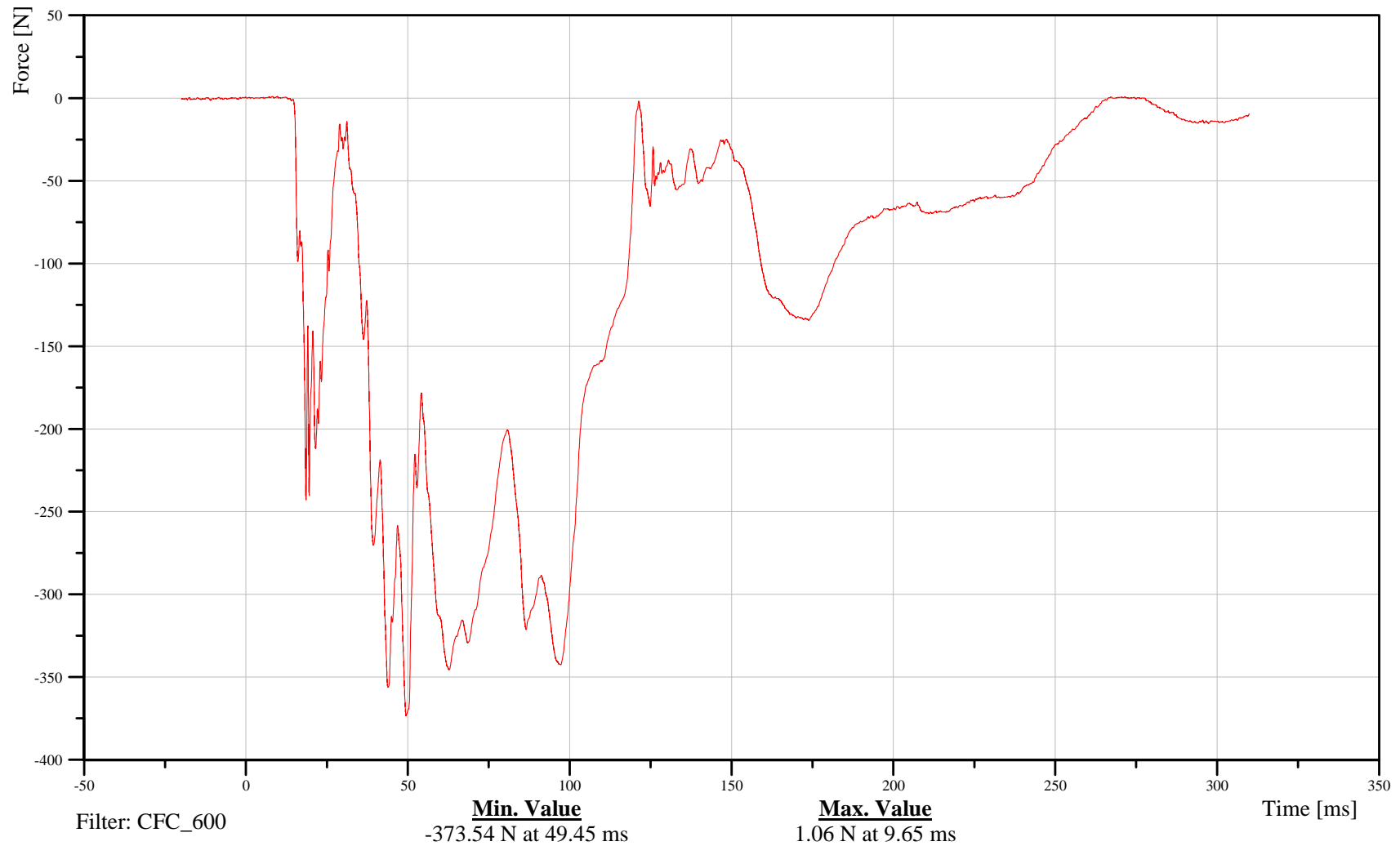
## Shoulder X-Axis Force

Customer: VRTC

# 11SHLDLE00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

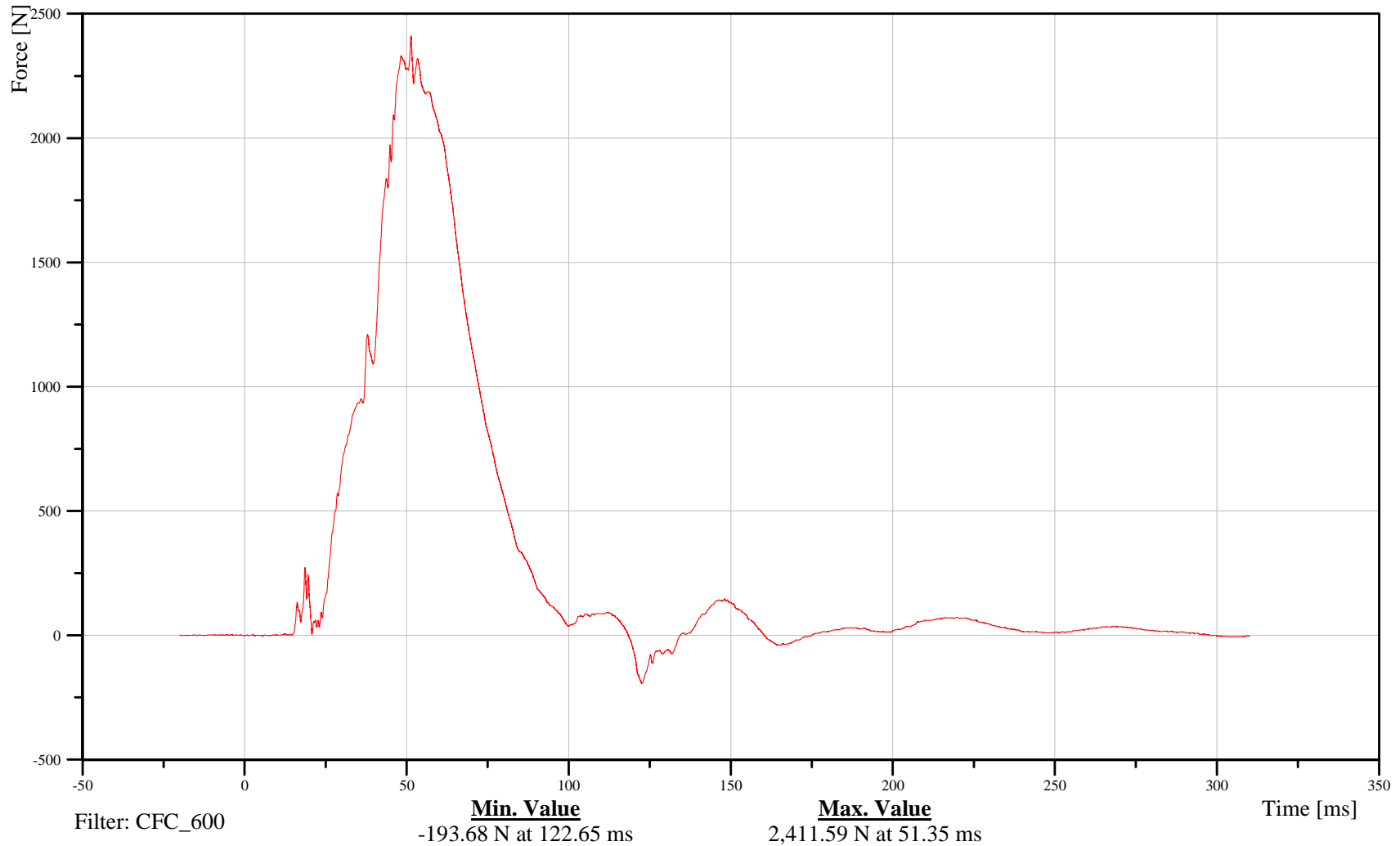
## Shoulder Y-Axis Force

Customer: VRTC

# 11SHLDLE00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

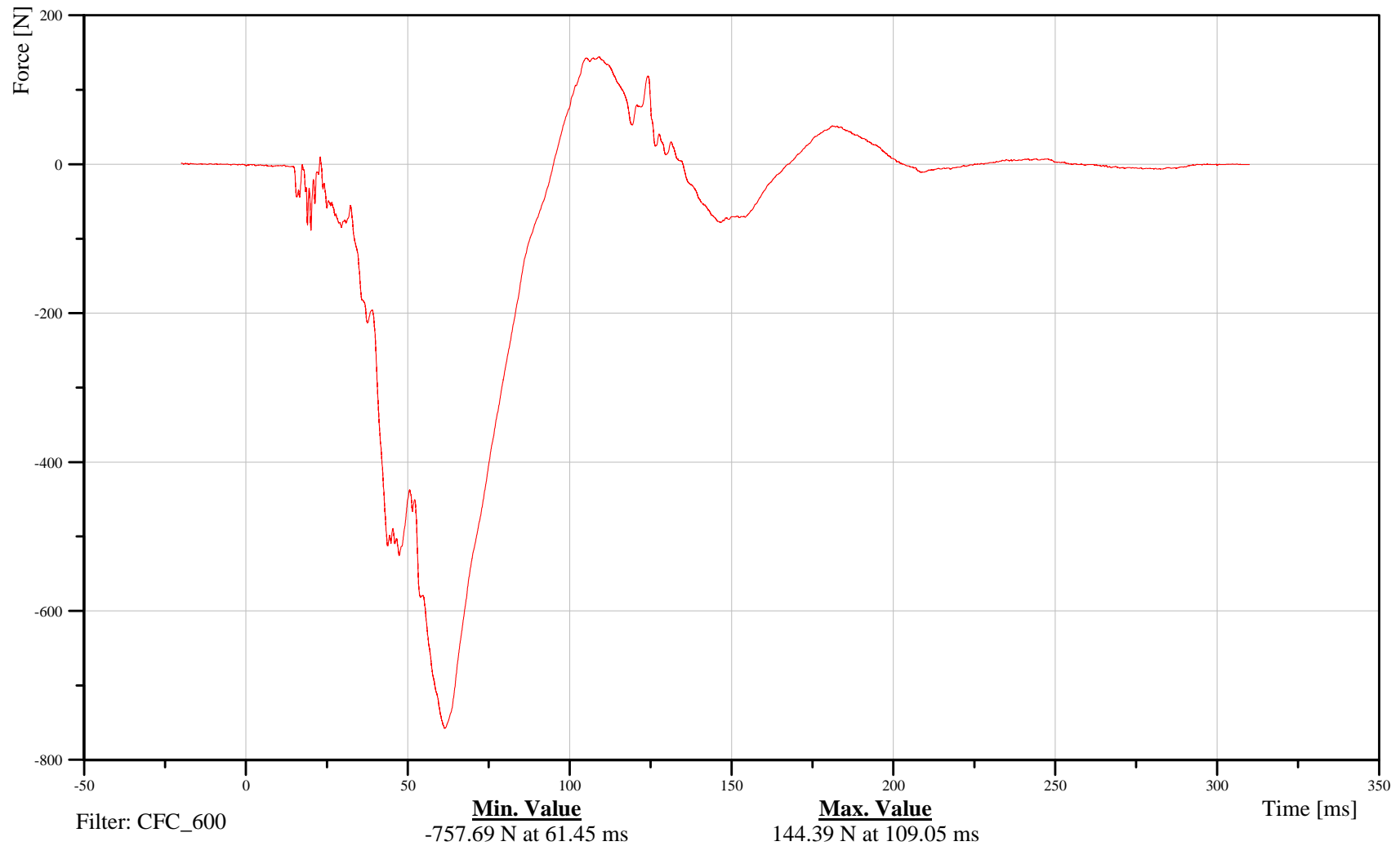
## Shoulder Z-Axis Force

Customer: VRTC

# 11SHLDLE00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

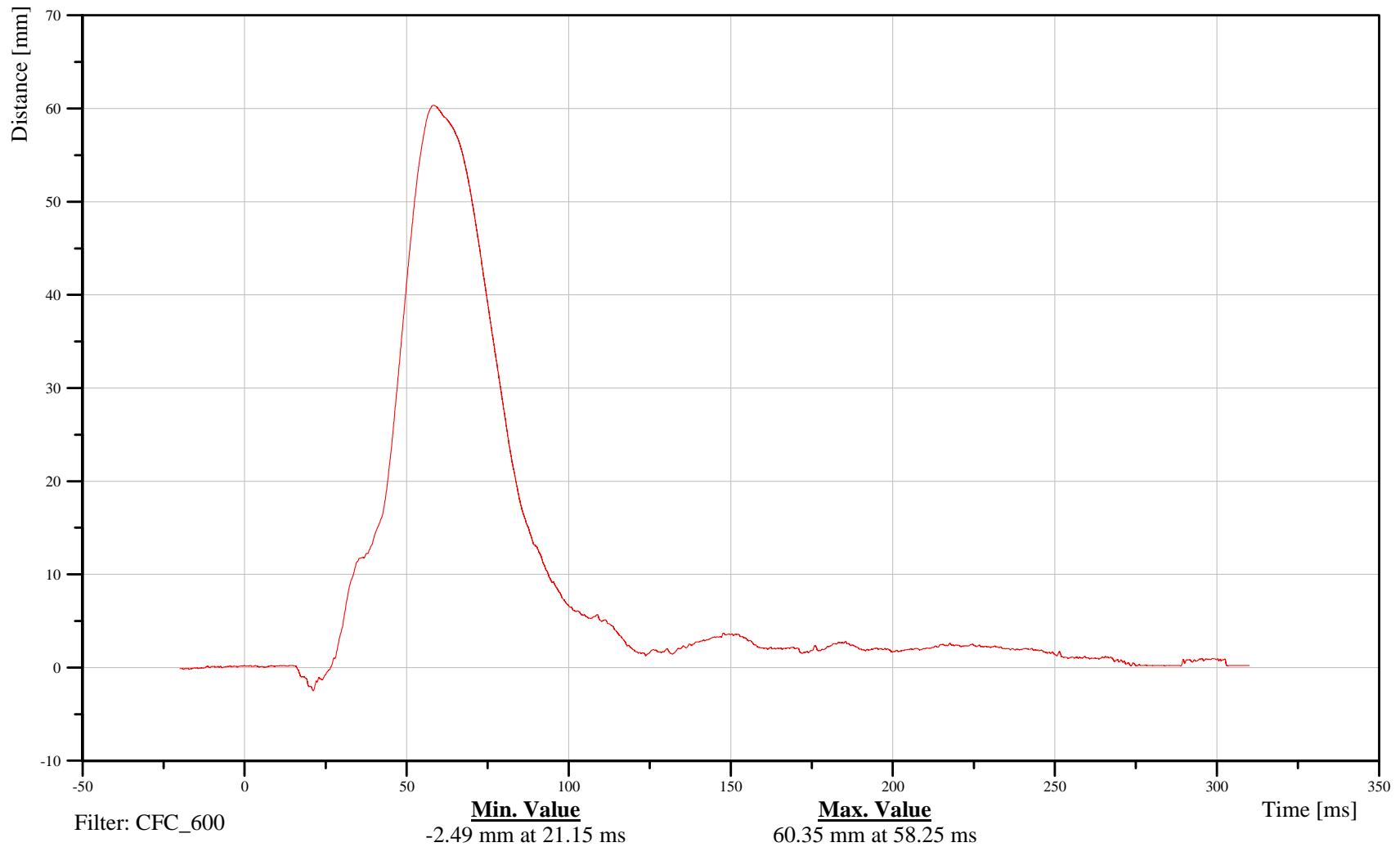
## Shoulder Y-Axis Displacement

Customer: VRTC

# 11SHLDLE00WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

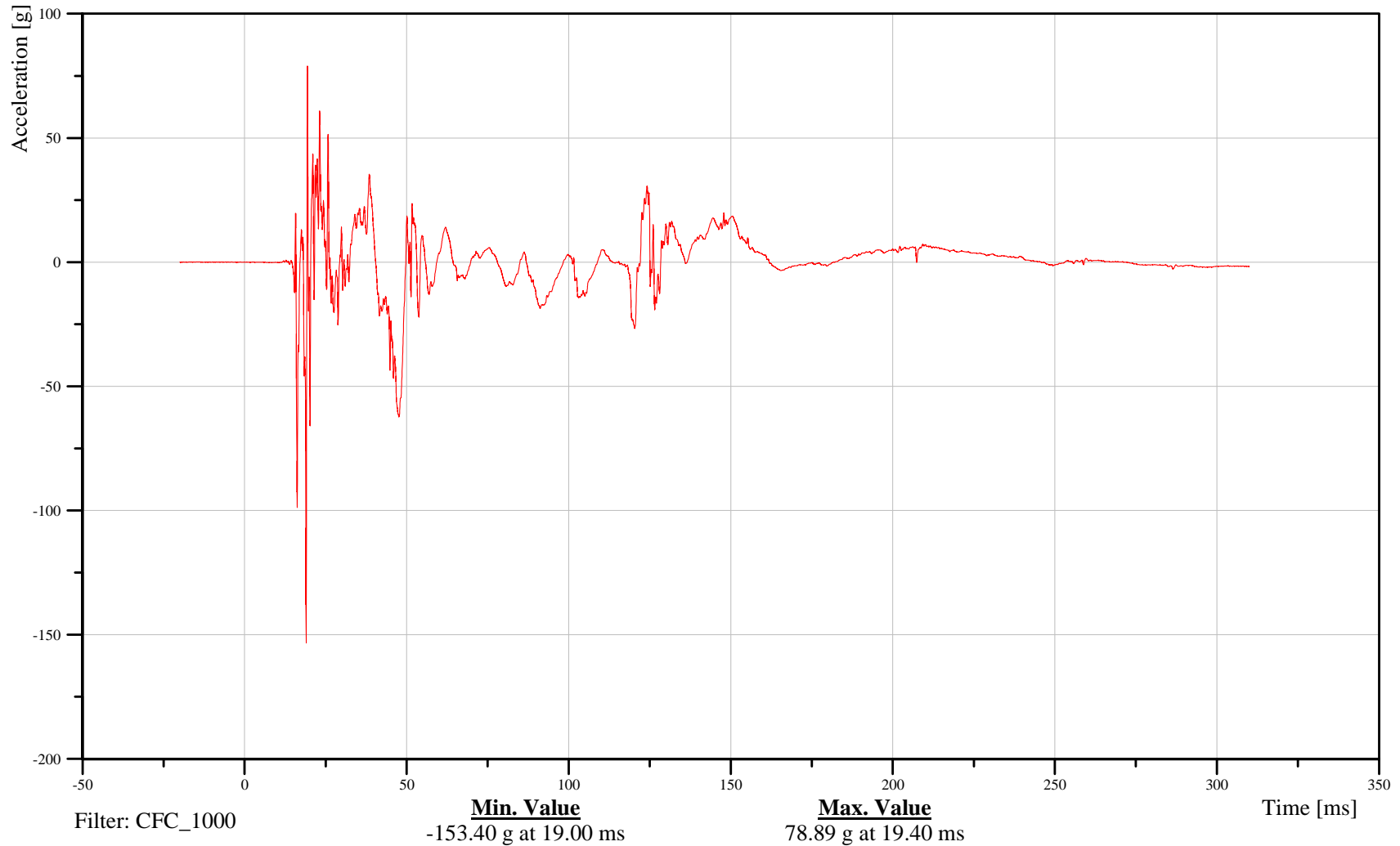
## Shoulder X-Axis Acceleration

Customer: VRTC

# 11SHLDLE00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

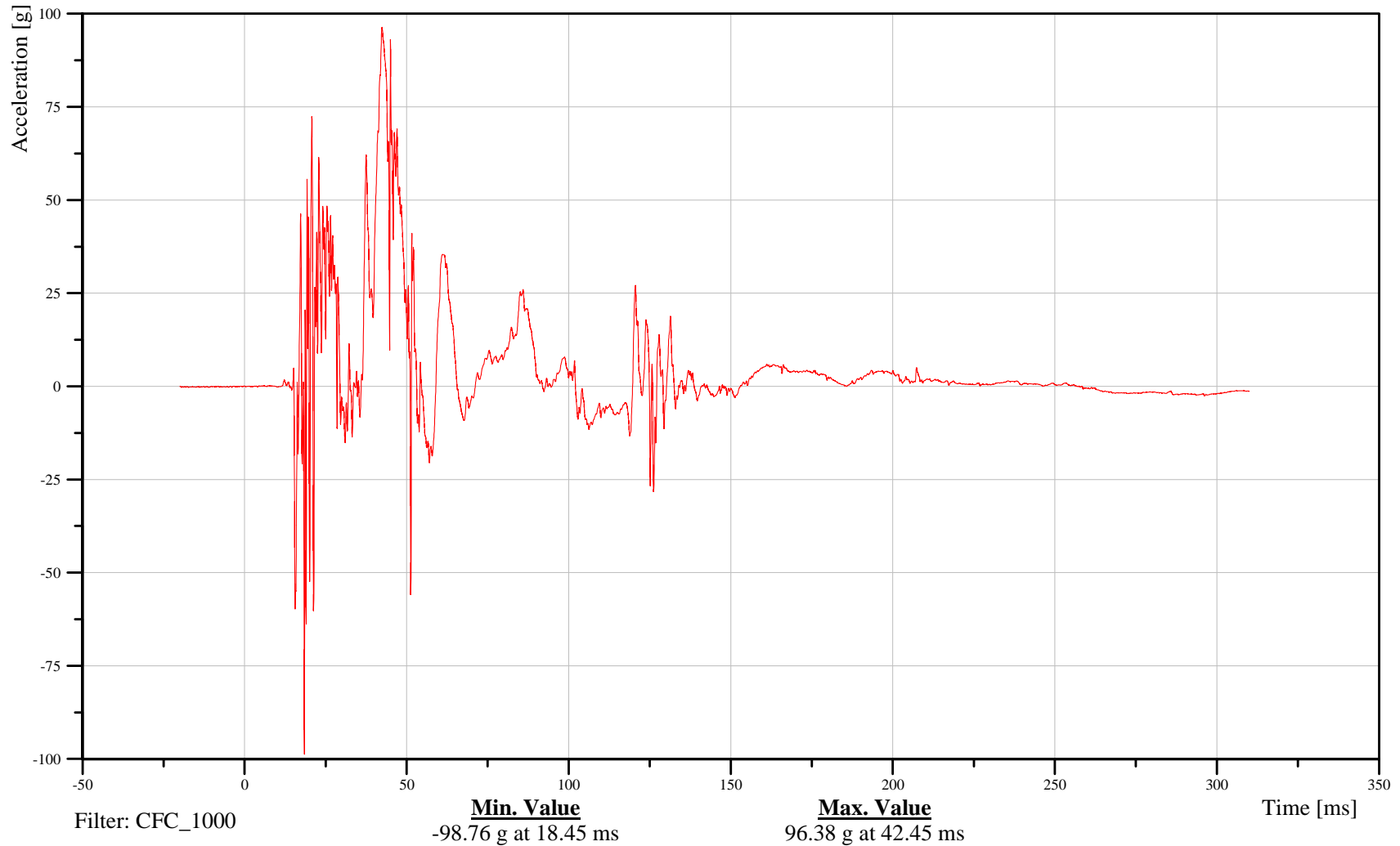
## Shoulder Y-Axis Acceleration

Customer: VRTC

# 11SHLDLE00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

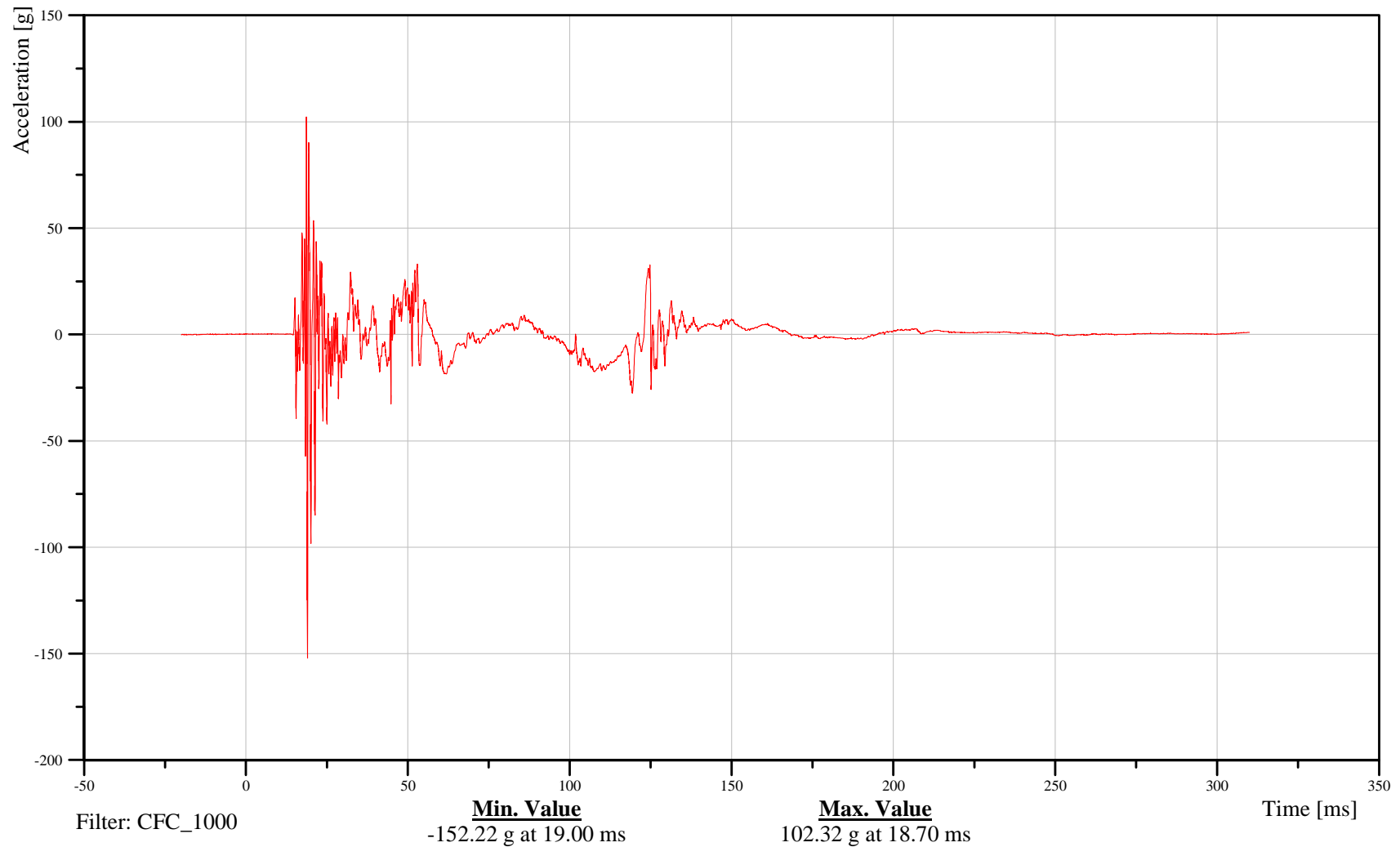
## Shoulder Z-Axis Acceleration

Customer: VRTC

# 11SHLDLE00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

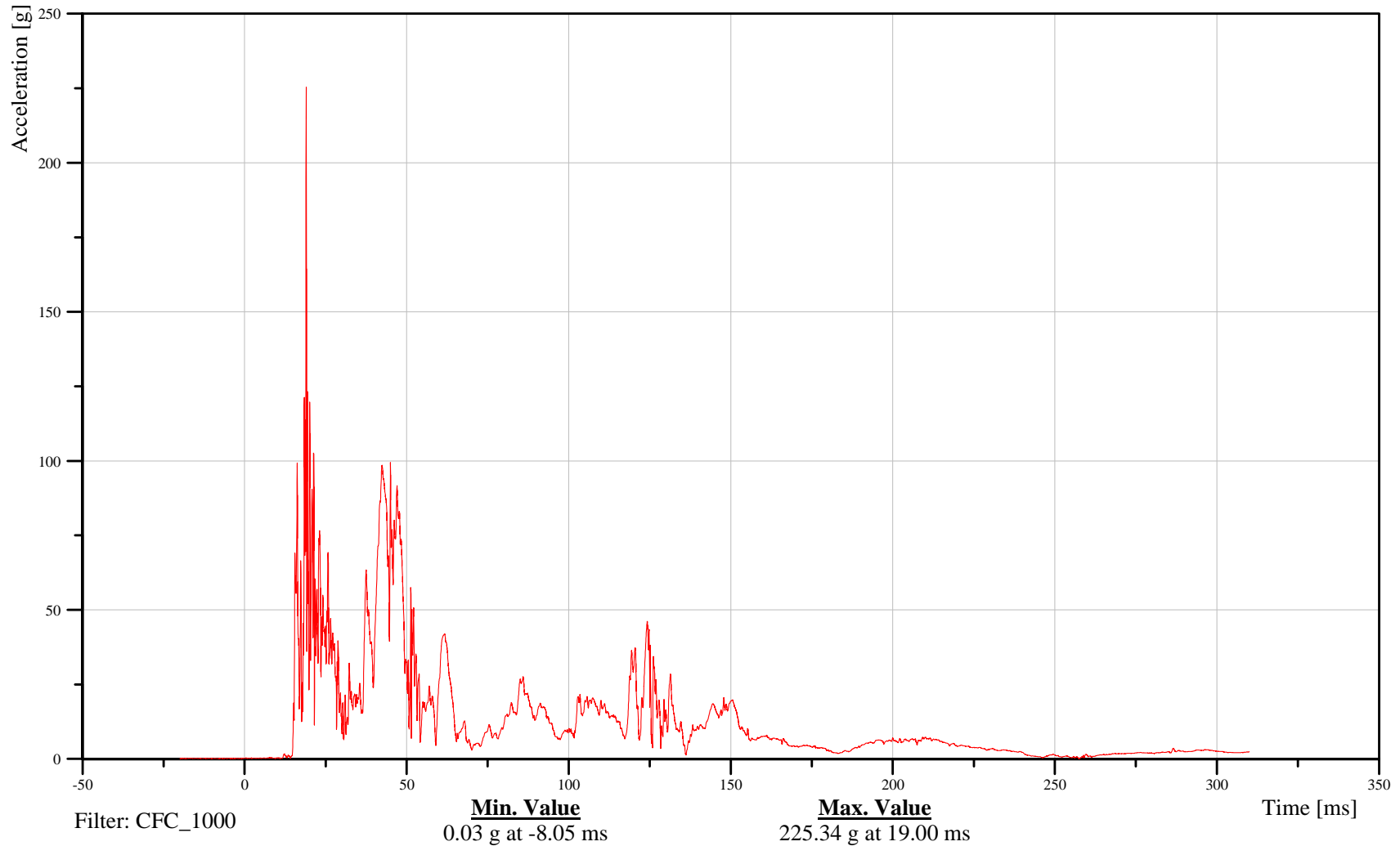
## Shoulder Resultant Acceleration

Customer: VRTC

# 11SHLDLE00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

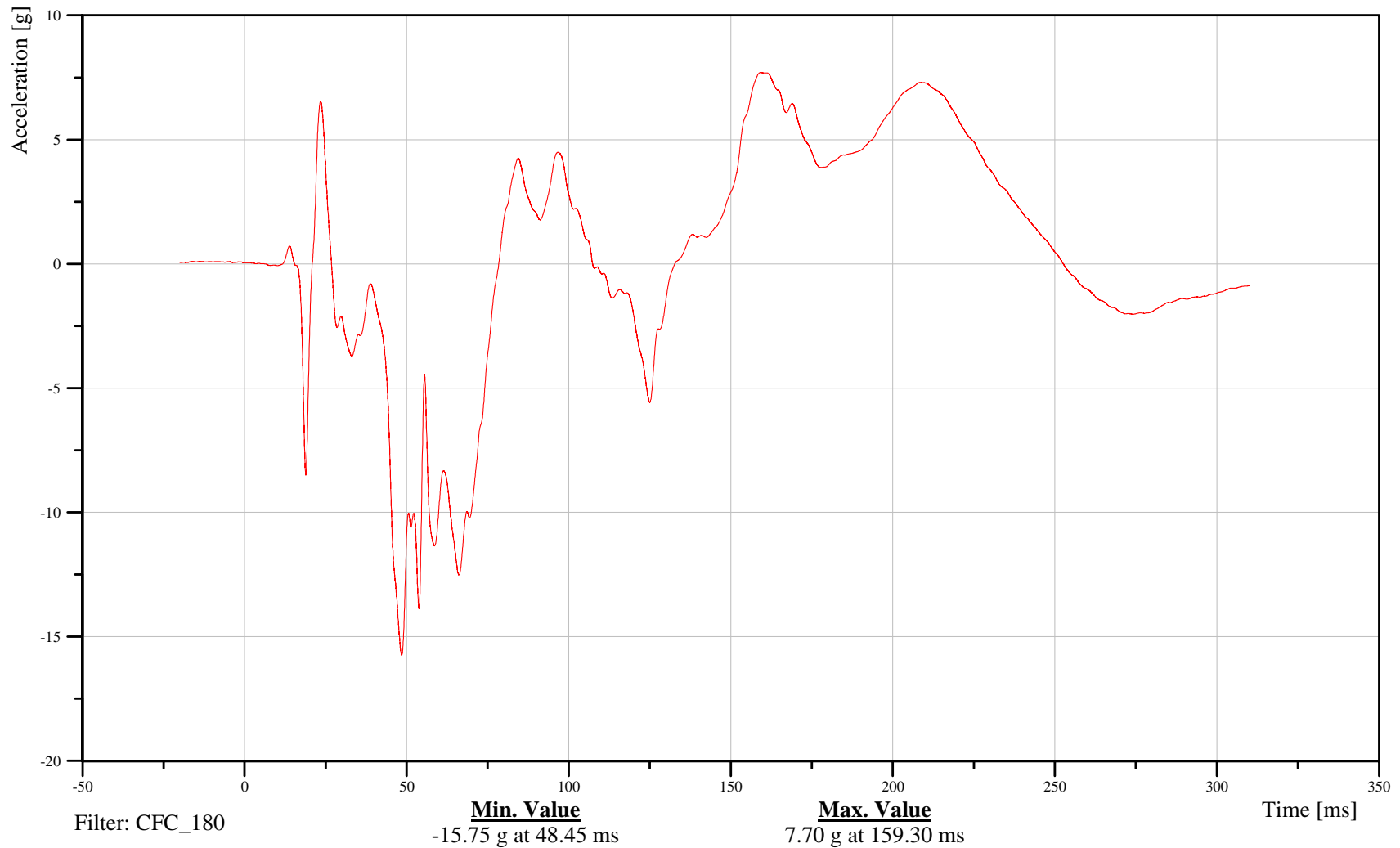
## T1 X-Axis Acceleration

Customer: VRTC

# 11THSP0100WSACXC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

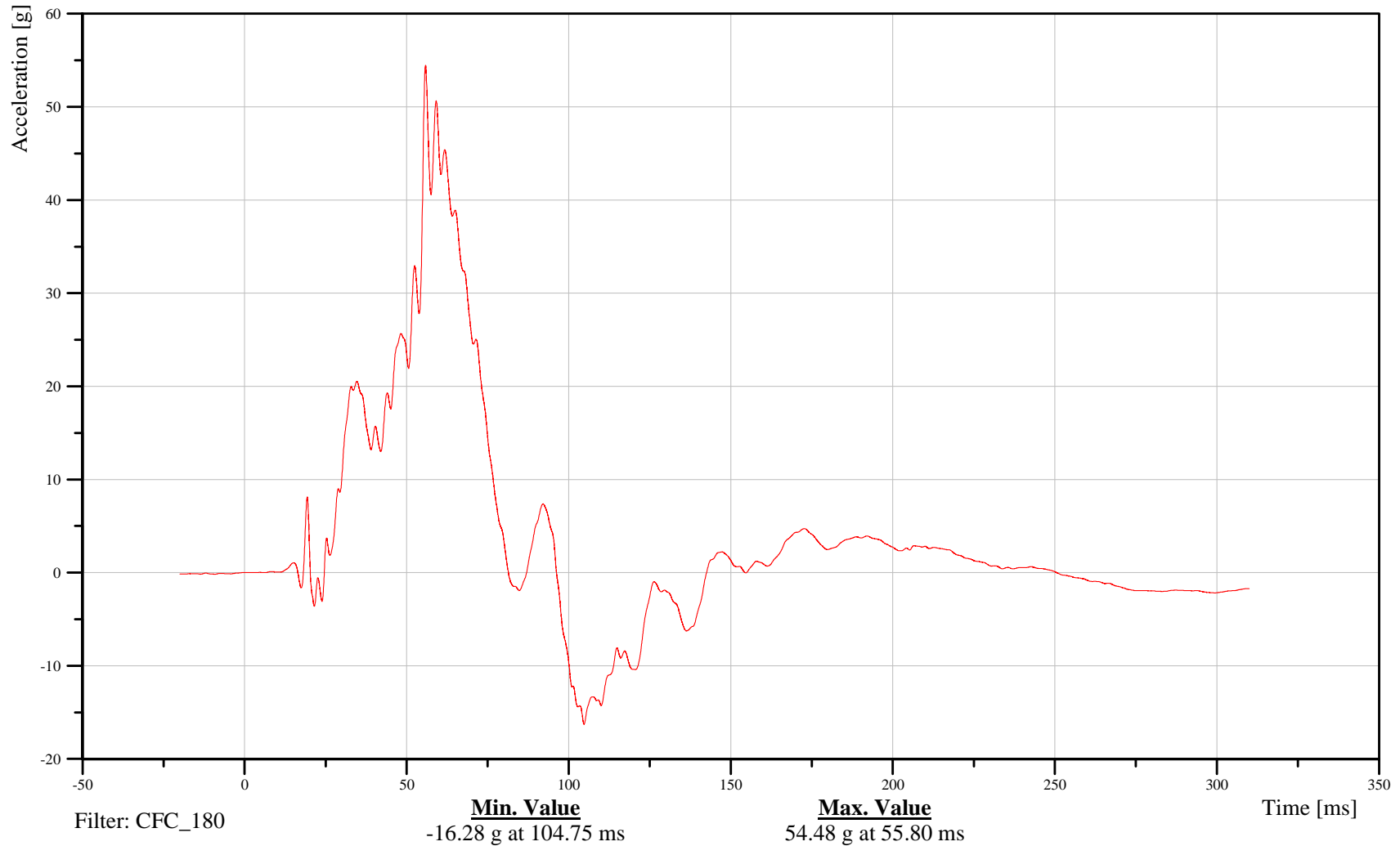
## T1 Y-Axis Acceleration

Customer: VRTC

# 11THSP0100WSACYC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

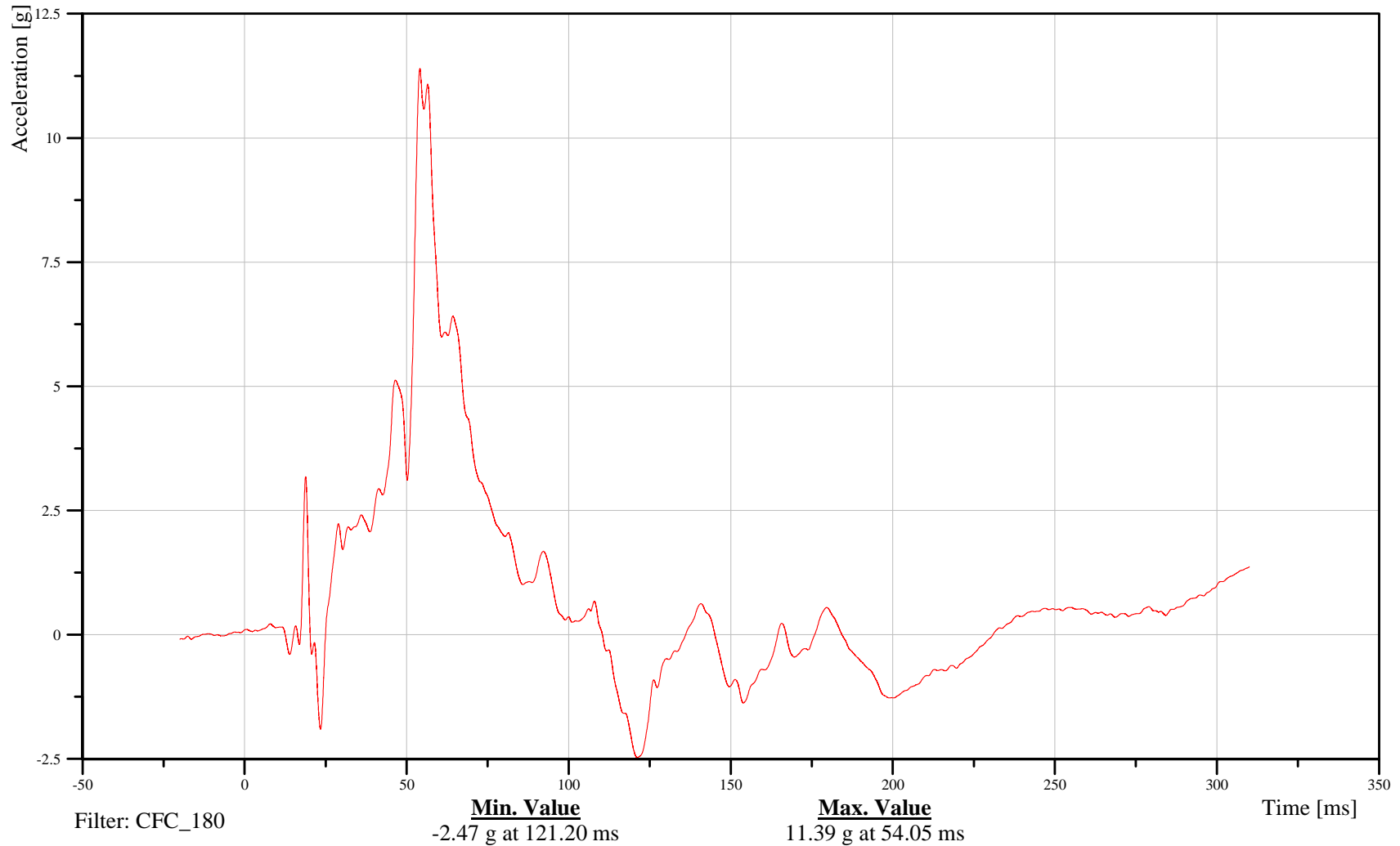
## T1 Z-Axis Acceleration

Customer: VRTC

# 11THSP0100WSACZC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

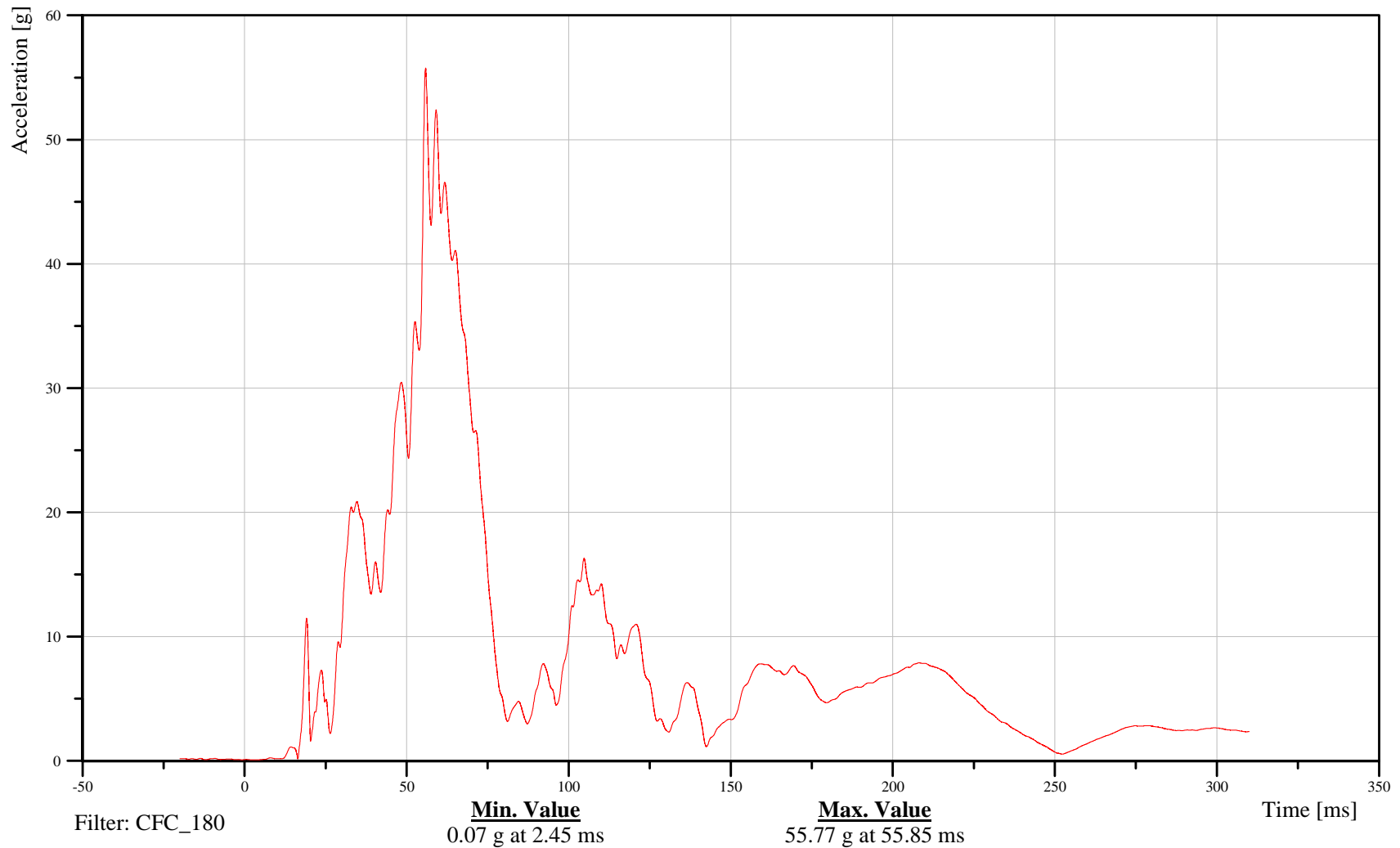
## T1 Resultant Acceleration

Customer: VRTC

# 11THSP0100WSACRC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

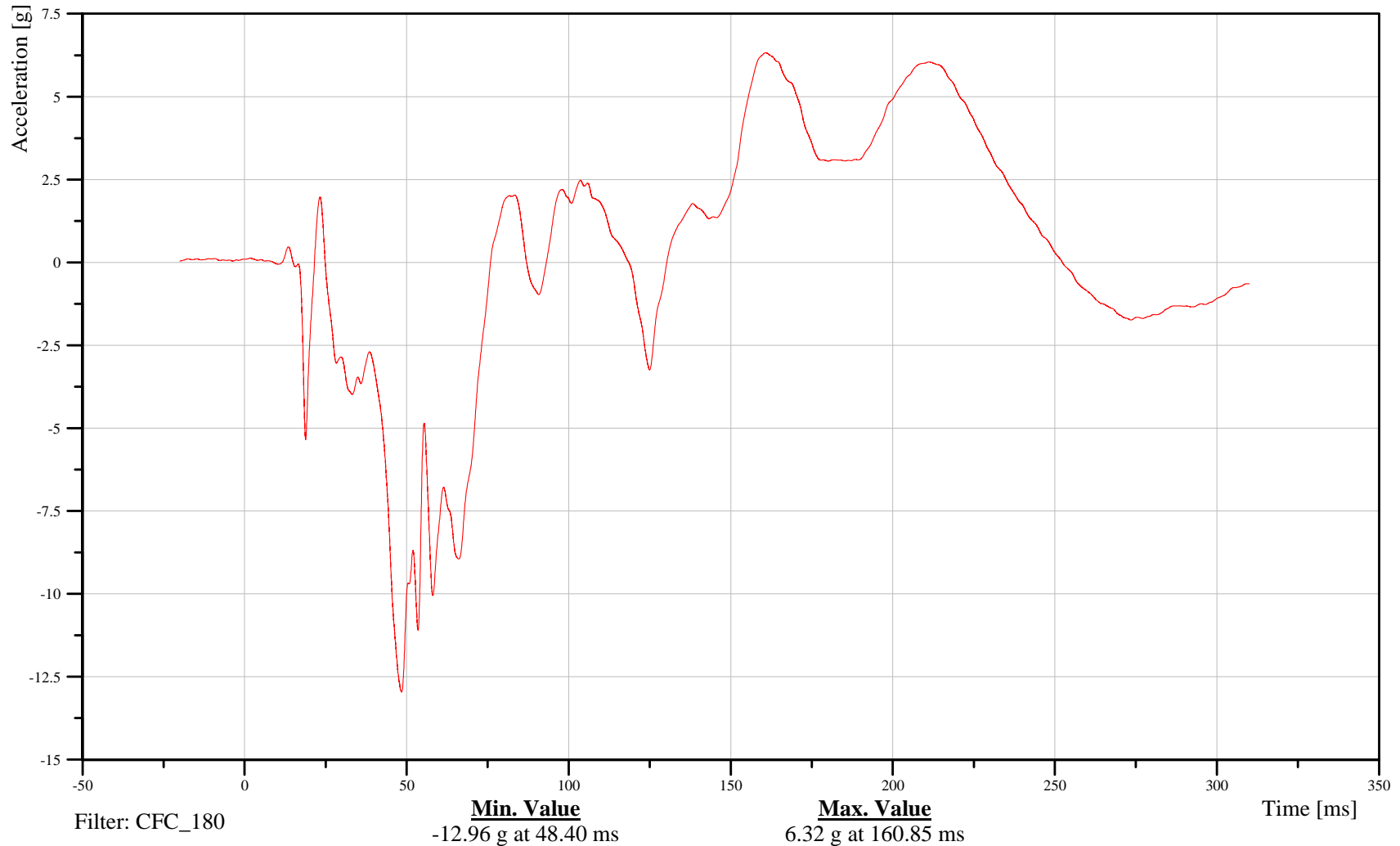
## T4 X-Axis Acceleration

Customer: VRTC

# 11THSP0400WSACXC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

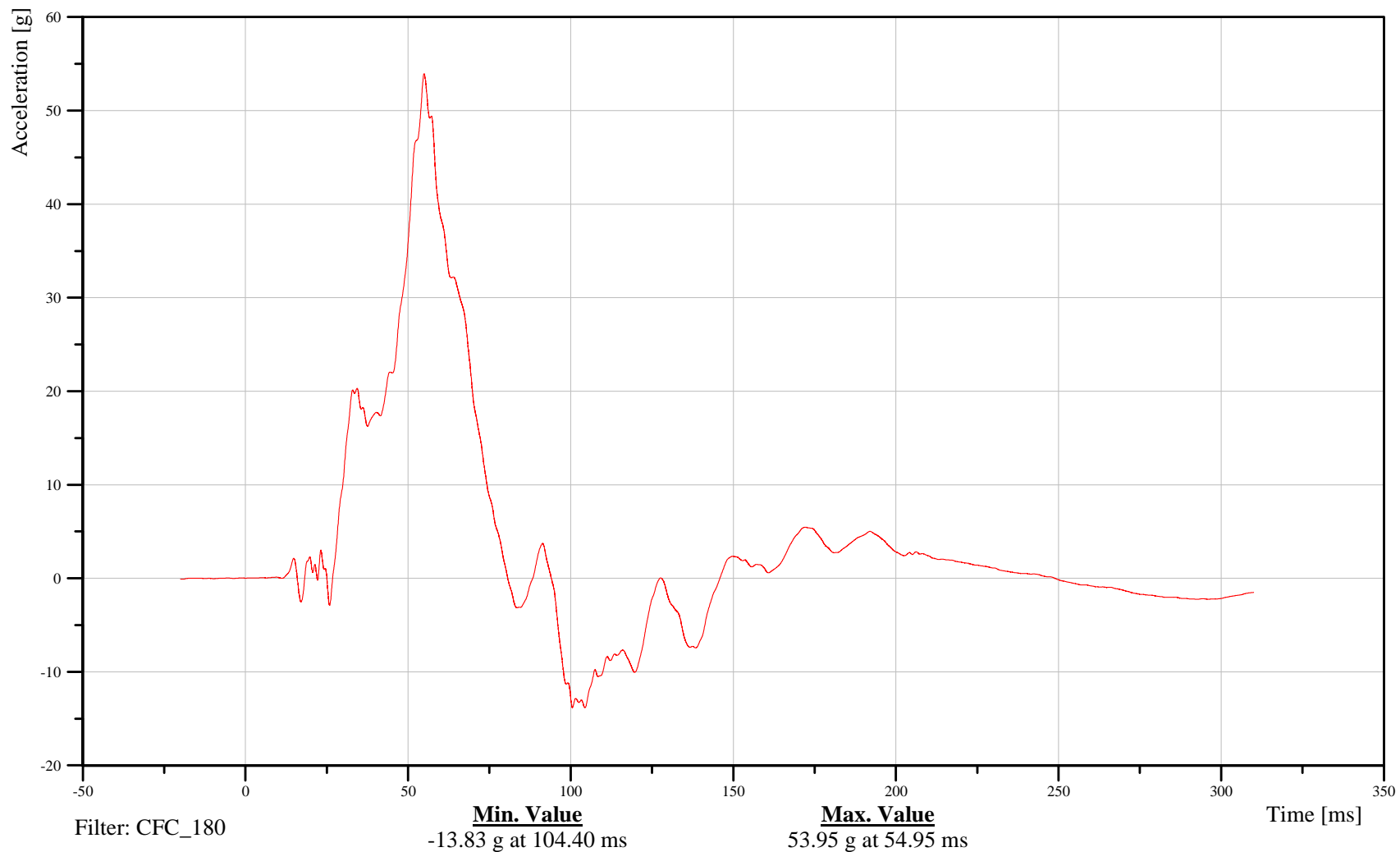
## T4 Y-Axis Acceleration

Customer: VRTC

# 11THSP0400WSACYC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

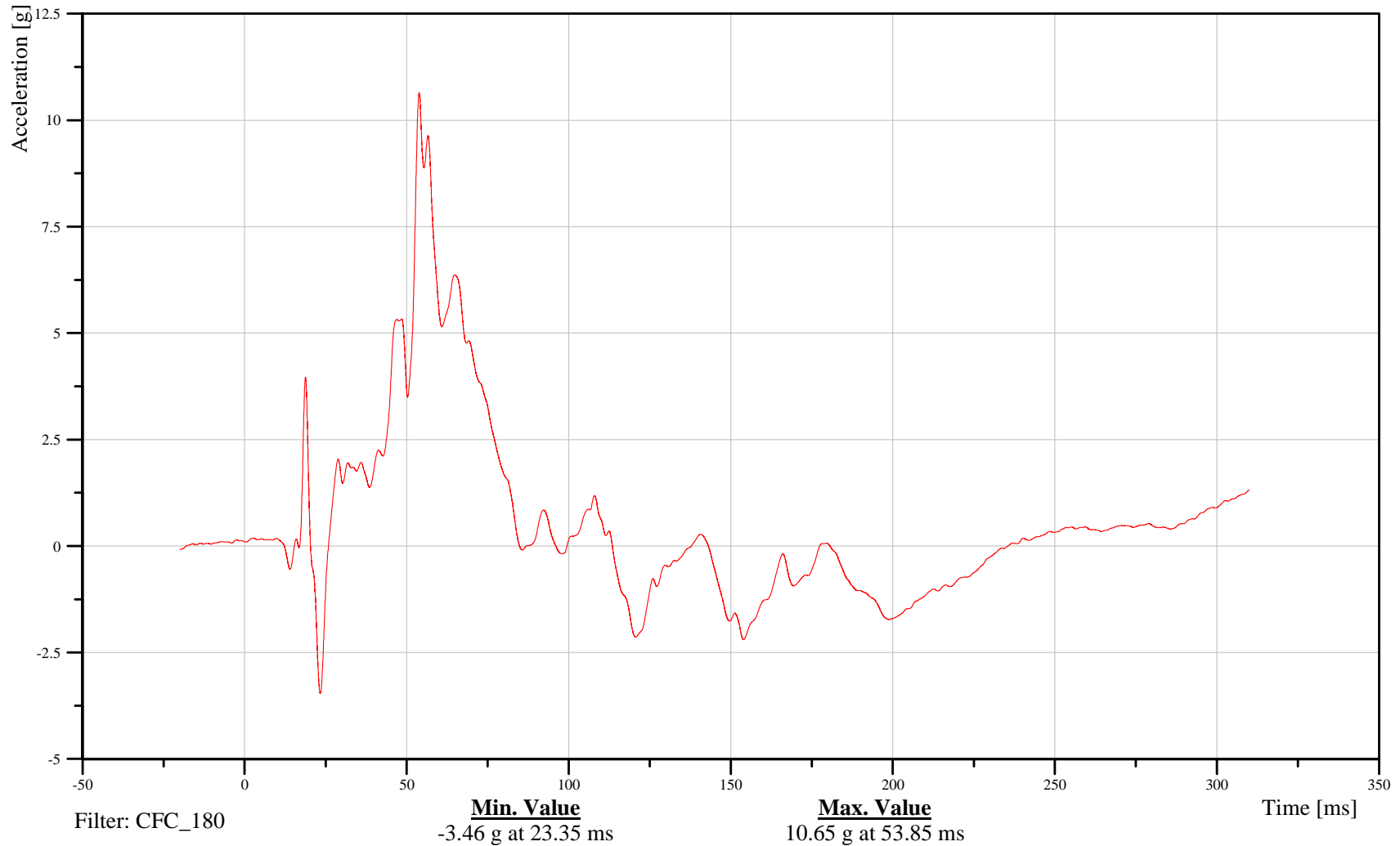
## T4 Z-Axis Acceleration

Customer: VRTC

# 11THSP0400WSACZC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

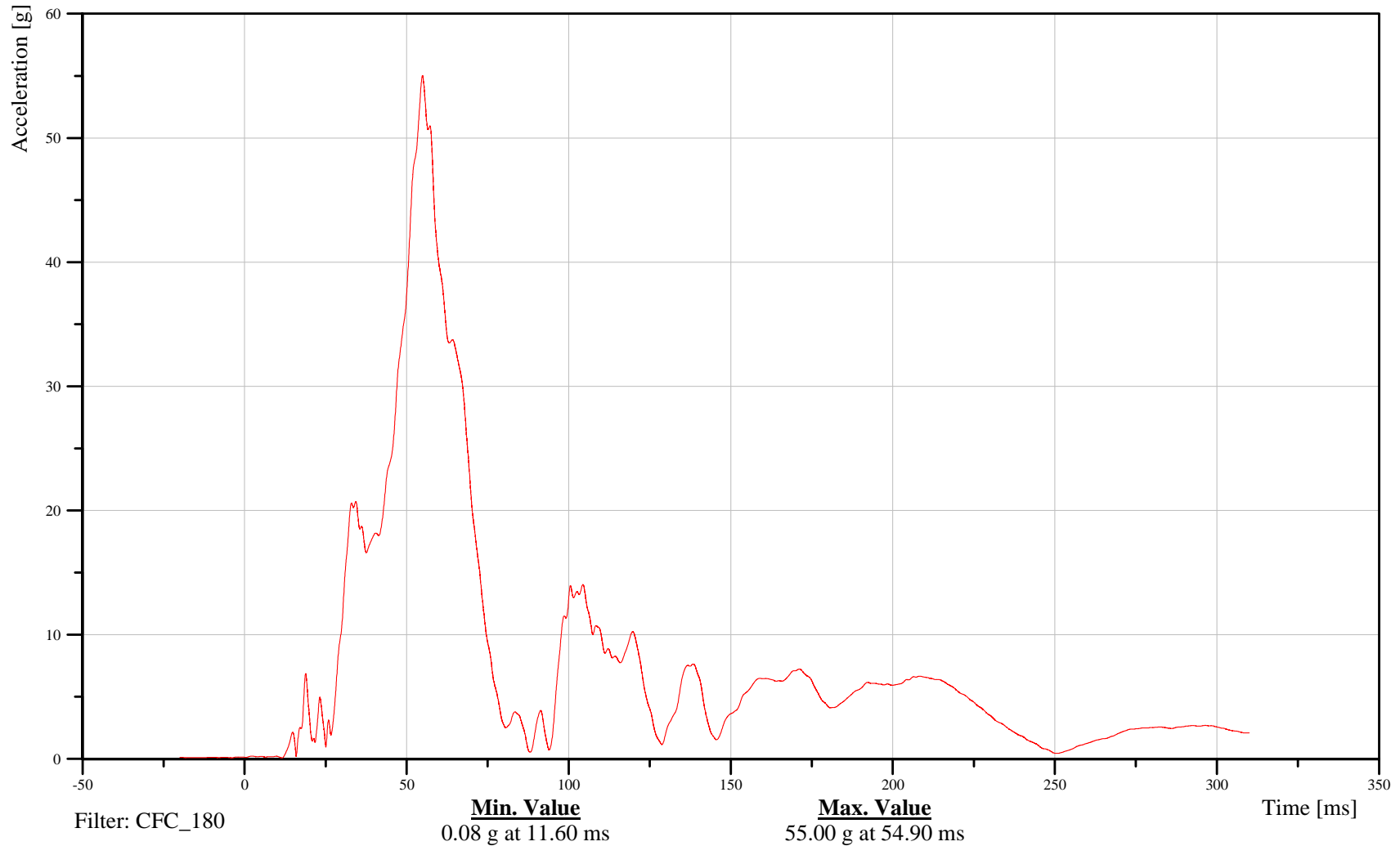
## T4 Resultant Acceleration

Customer: VRTC

# 11THSP0400WSACRC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

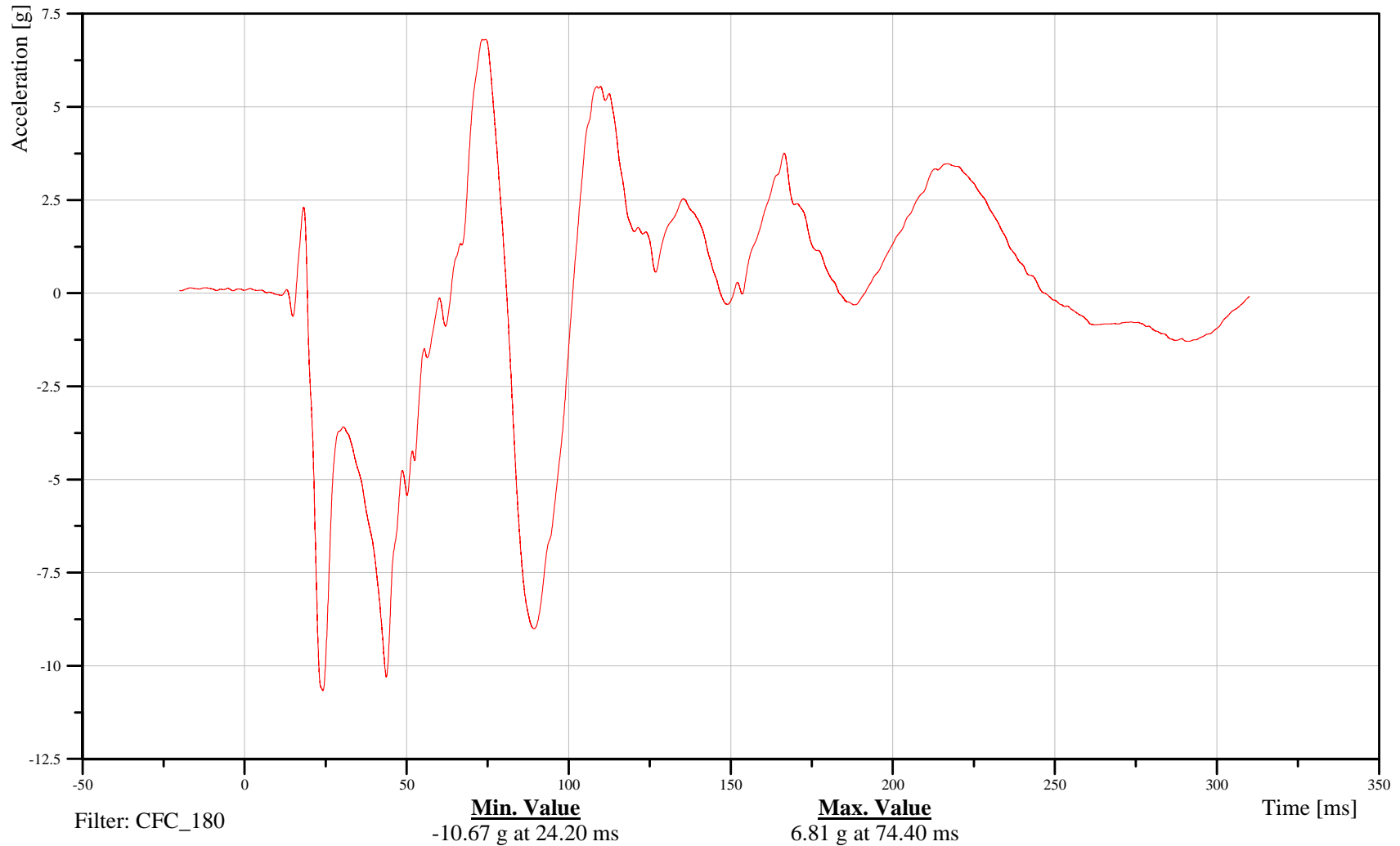
## T12 X-Axis Acceleration

Customer: VRTC

# 11THSP1200WSACXC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

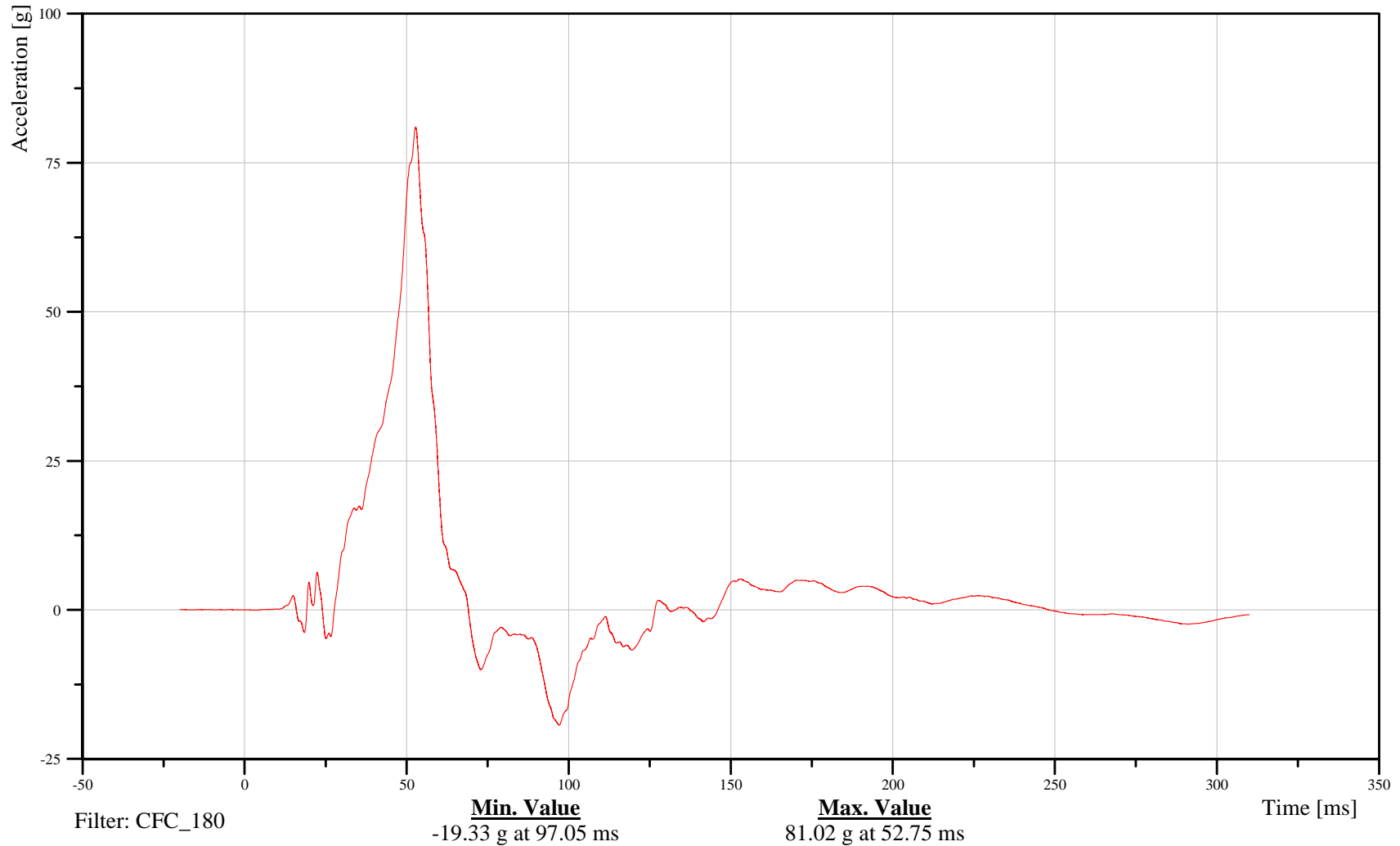
## T12 Y-Axis Acceleration

Customer: VRTC

# 11THSP1200WSACYC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

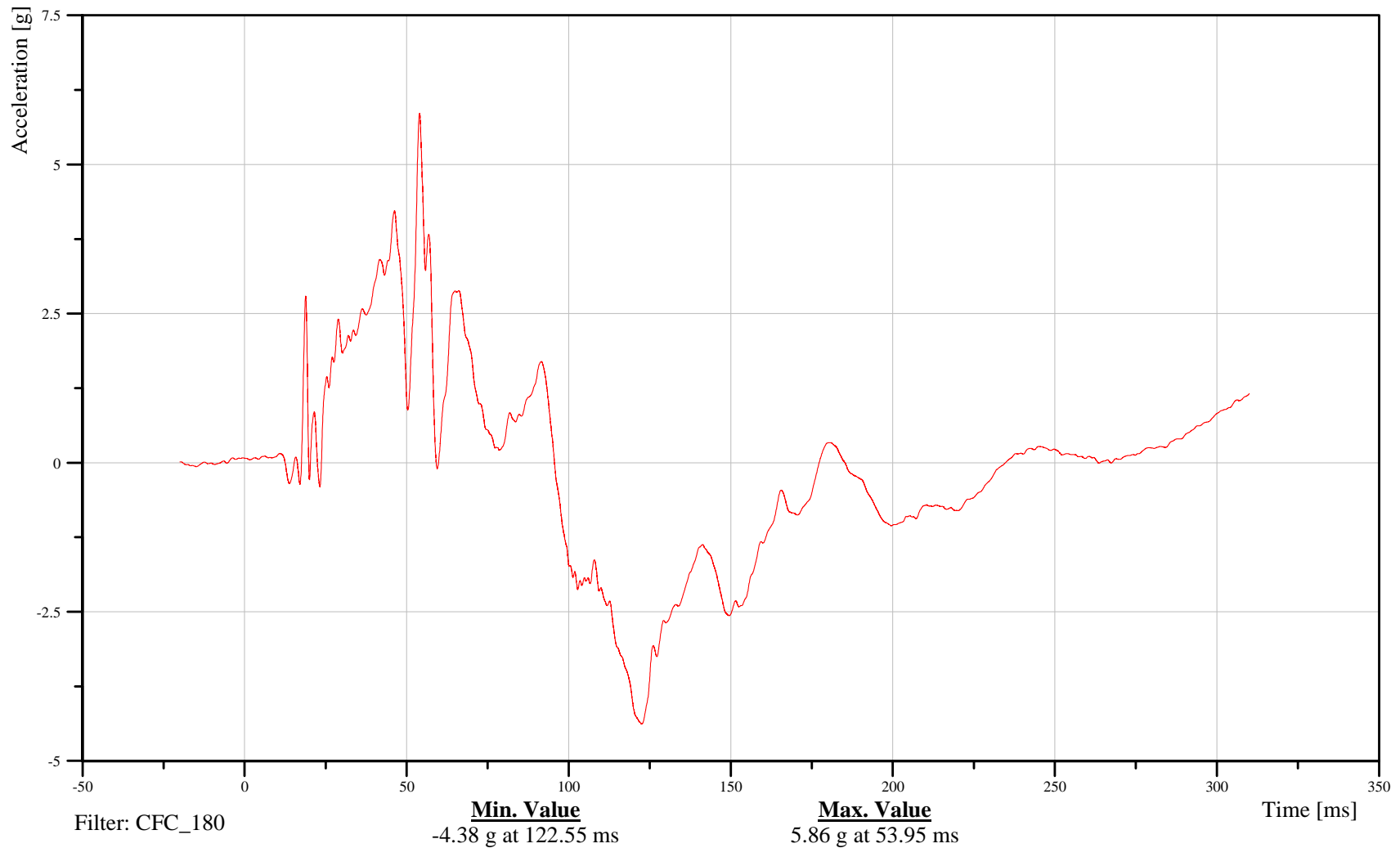
## T12 Z-Axis Acceleration

Customer: VRTC

# 11THSP1200WSACZC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

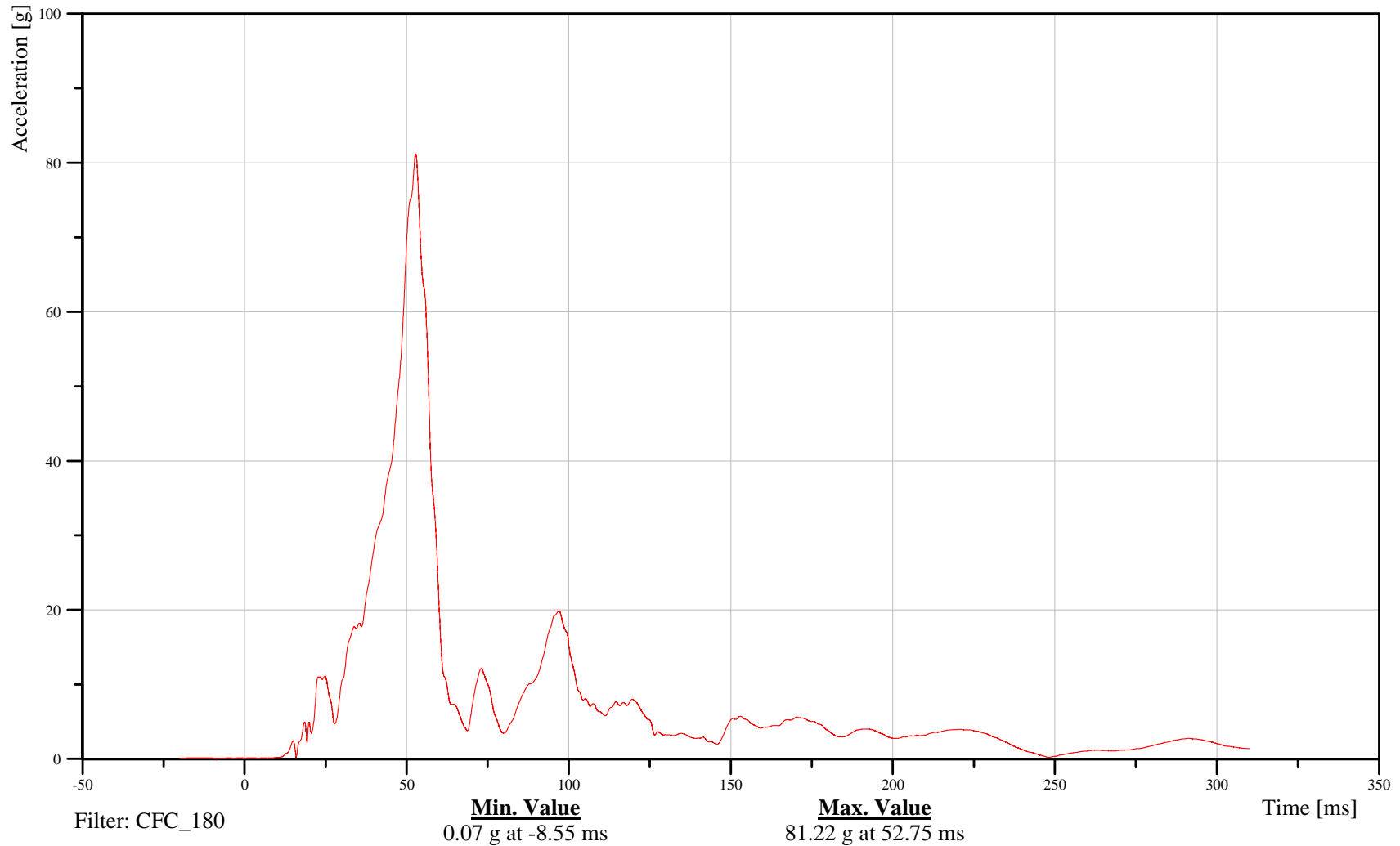
## T12 Resultant Acceleration

Customer: VRTC

# 11THSP1200WSACRC

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

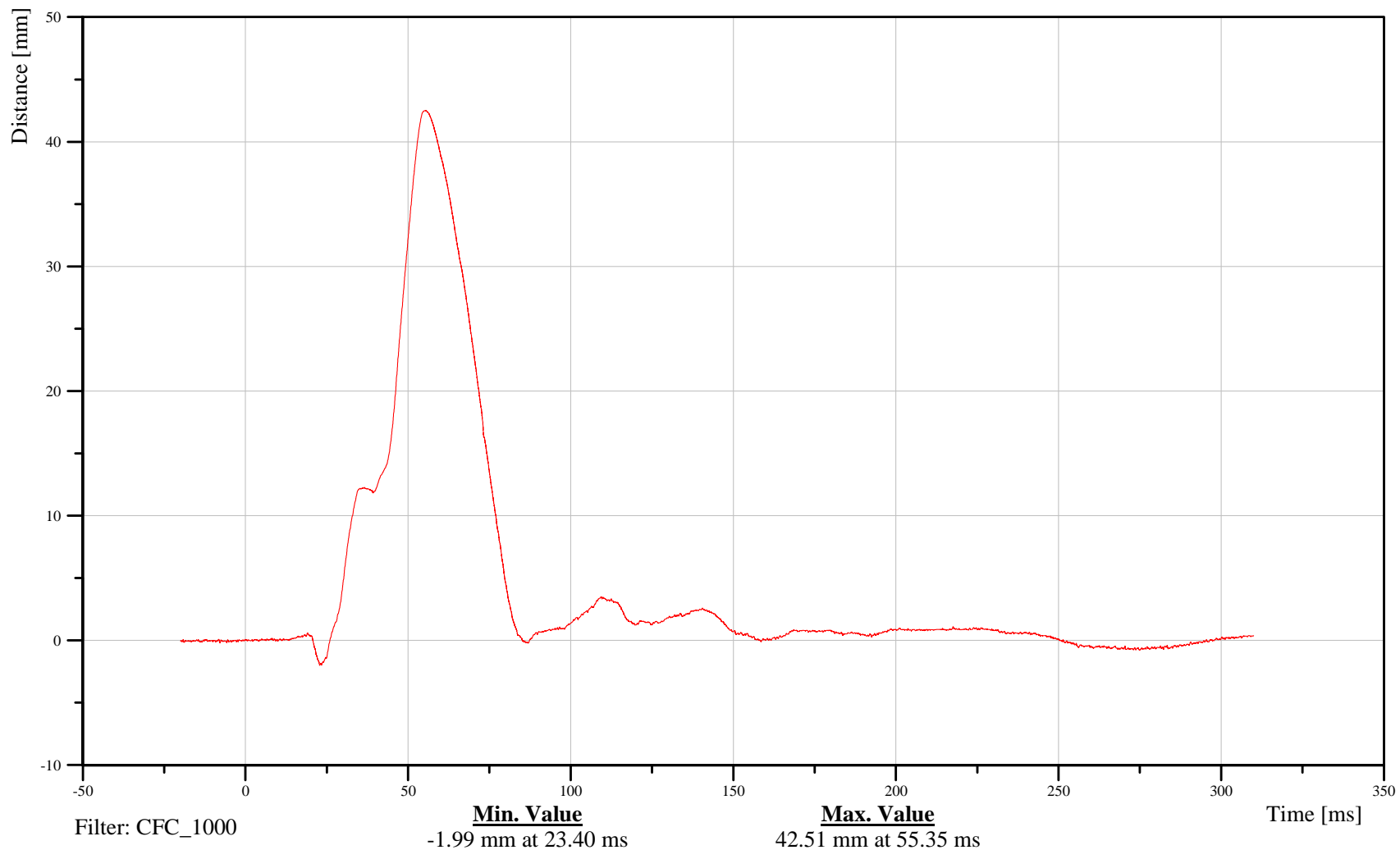
## Thorax Rib 1 Y-Axis Displacement

Customer: VRTC

# 11TRRILE01WSDSYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

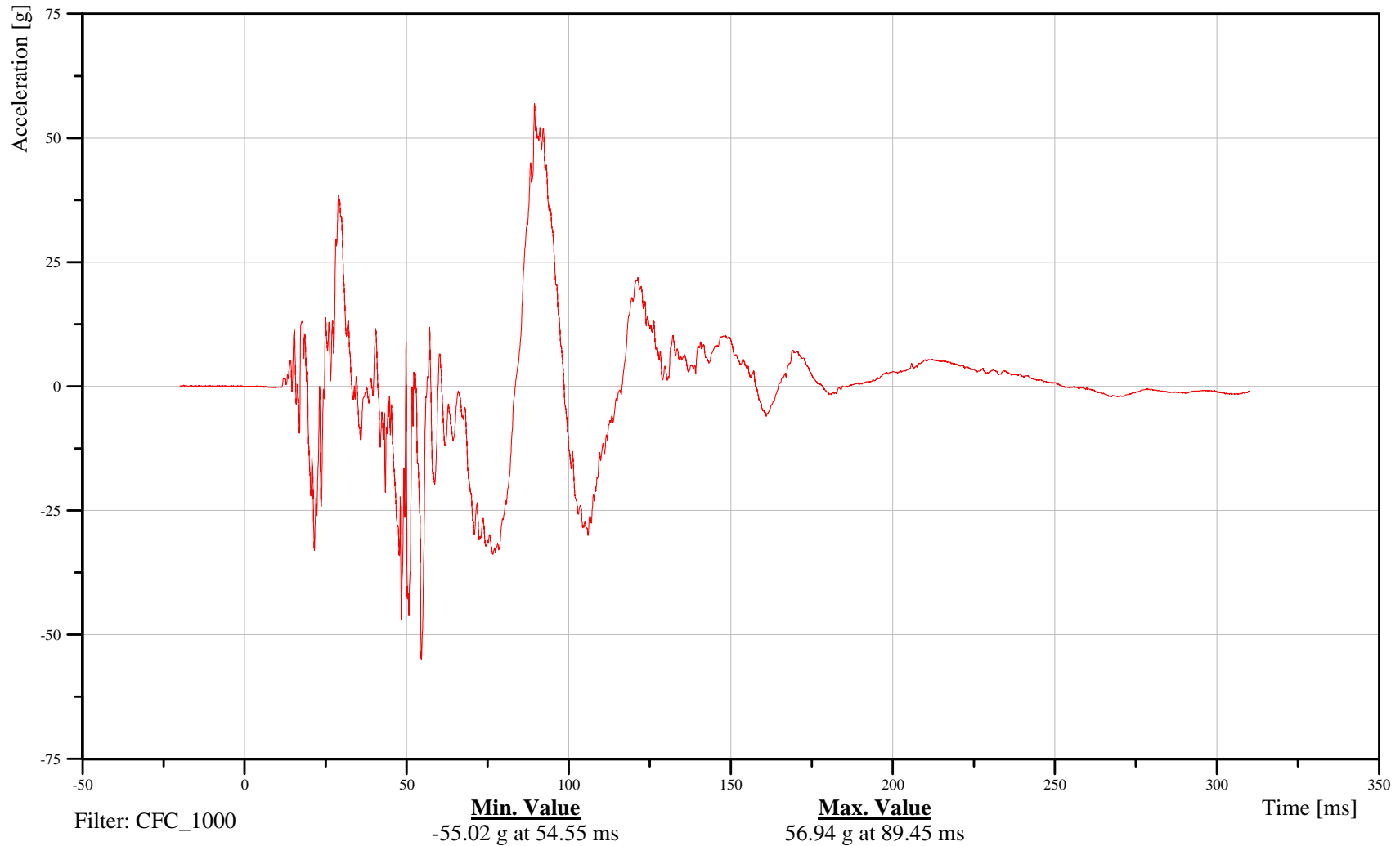
## Thorax Rib 1 X-Axis Acceleration

Customer: VRTC

# 11TRRILE01WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

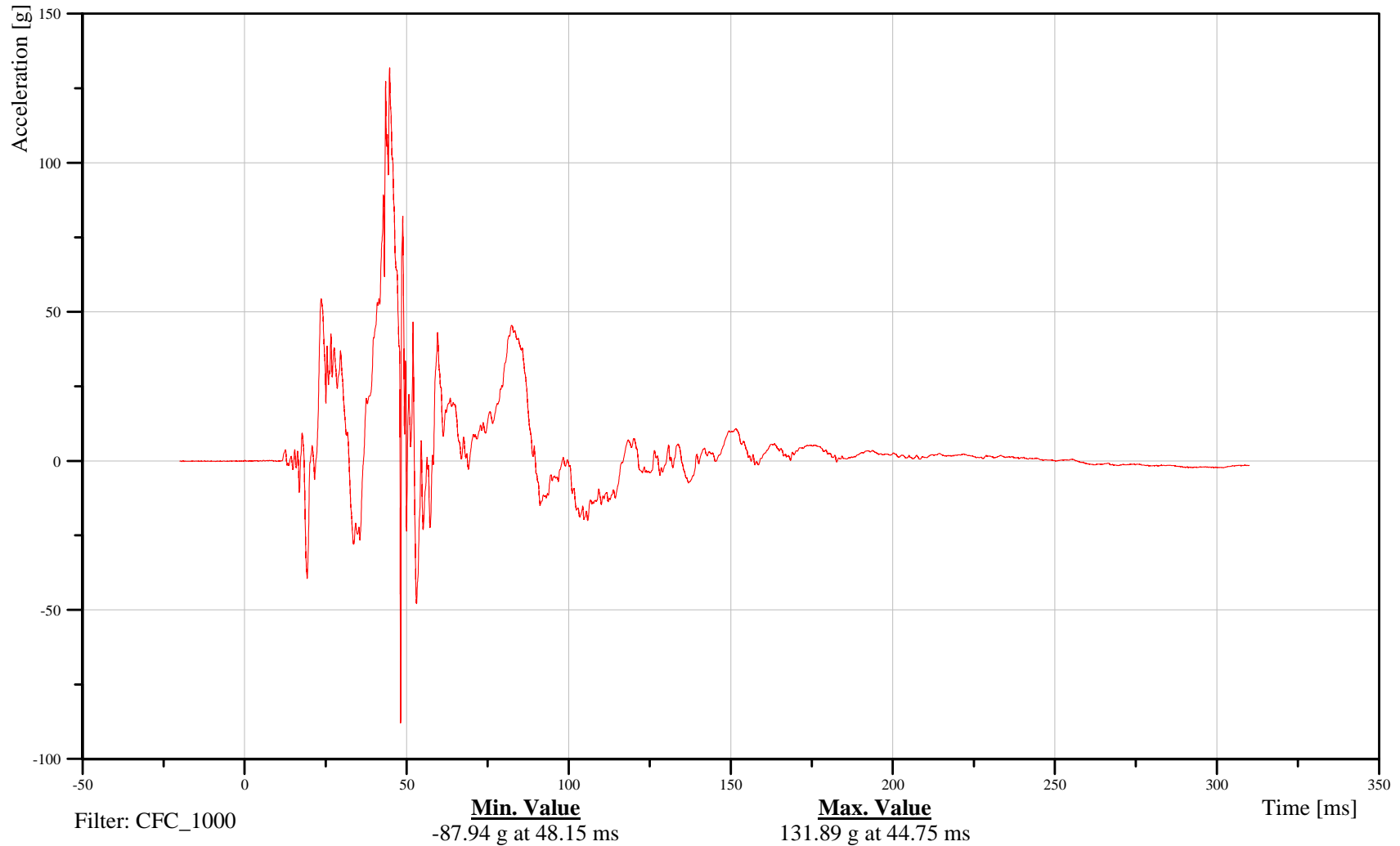
## Thorax Rib 1 Y-Axis Acceleration

Customer: VRTC

# 11TRRILE01WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

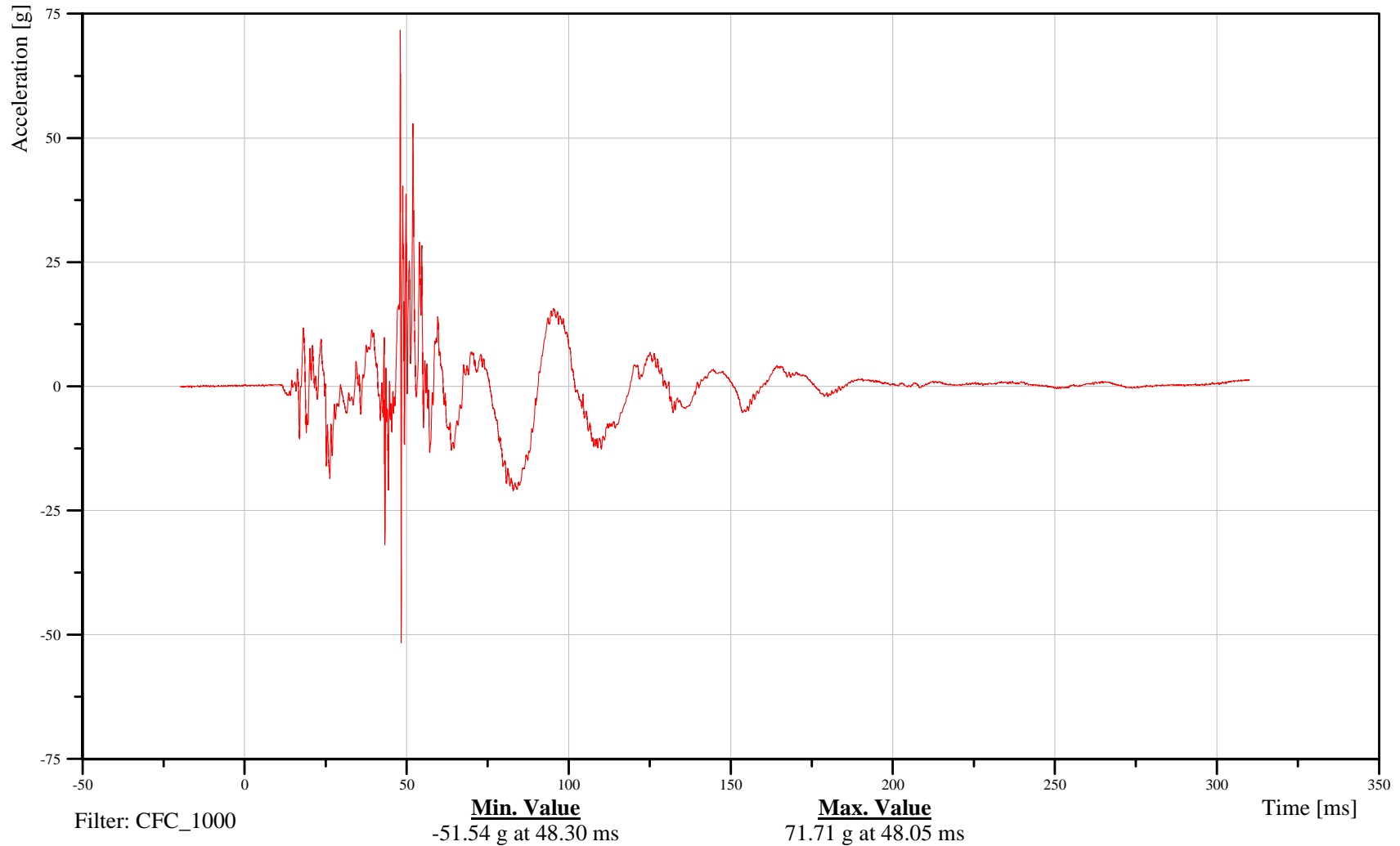
## Thorax Rib 1 Z-Axis Acceleration

Customer: VRTC

# 11TRRILE01WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

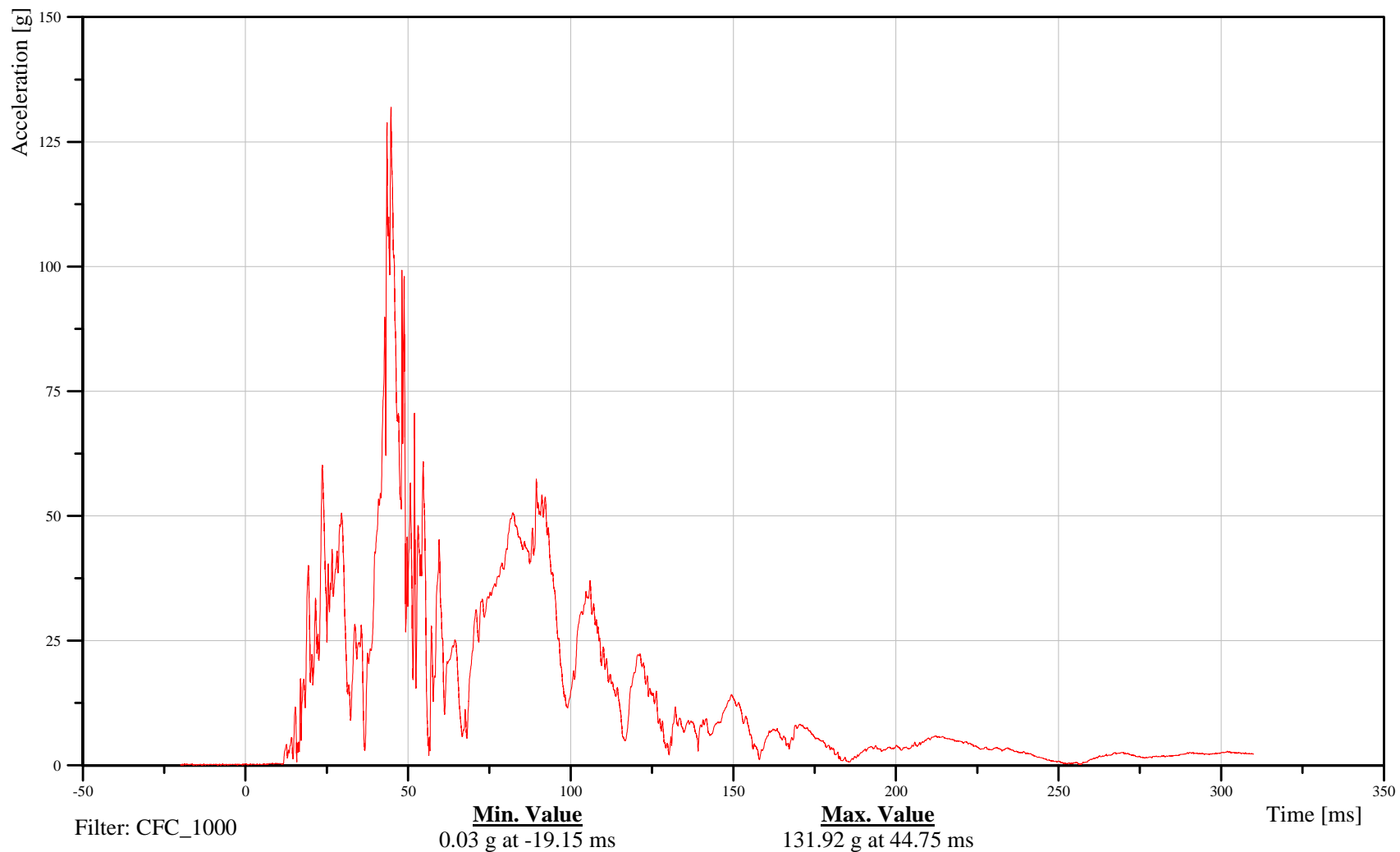
## Thorax Rib 1 Resultant Acceleration

Customer: VRTC

# 11TRRILE01WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

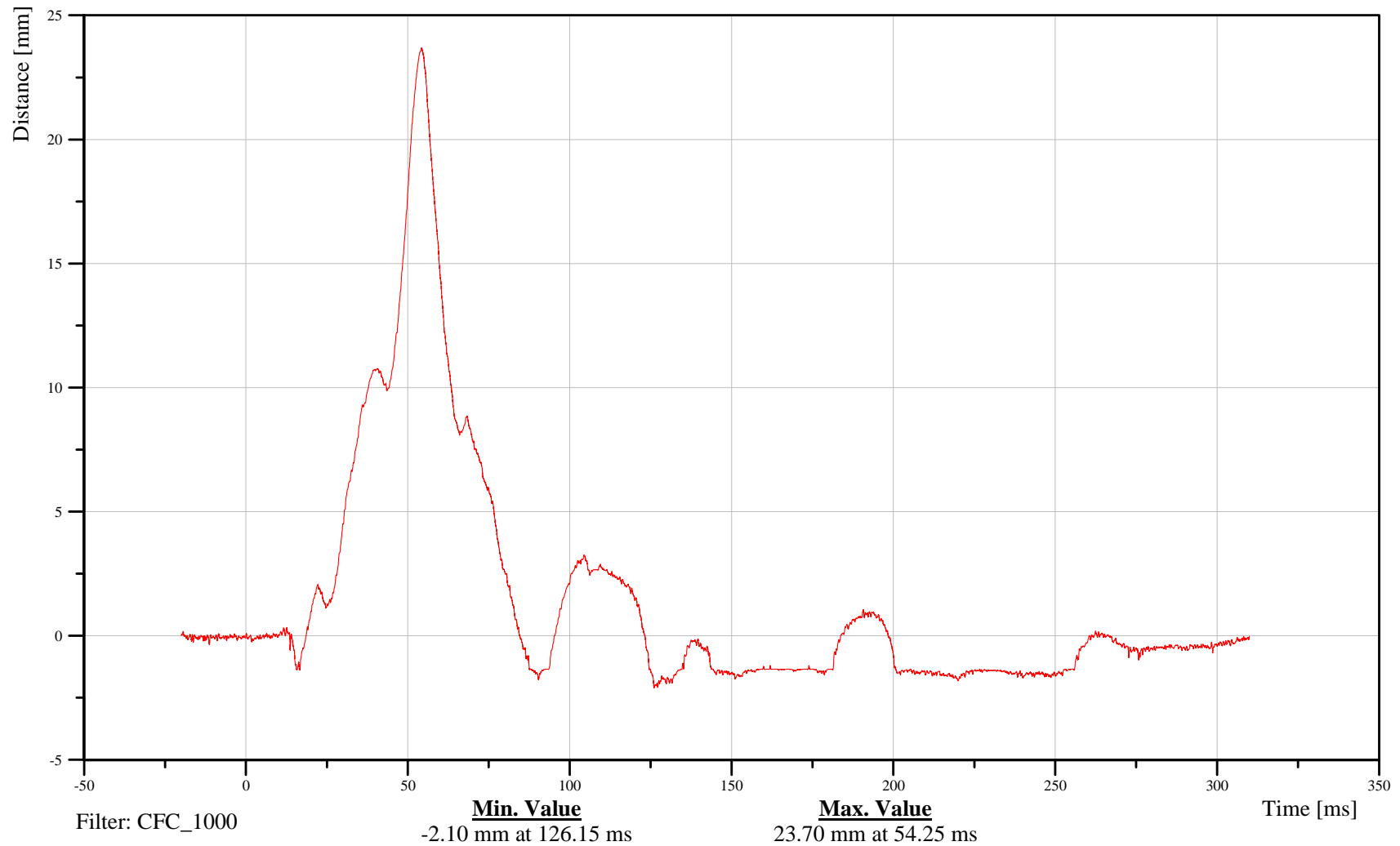
## Thorax Rib 2 Y-Axis Displacement

Customer: VRTC

# 11TRRILE02WSDSYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

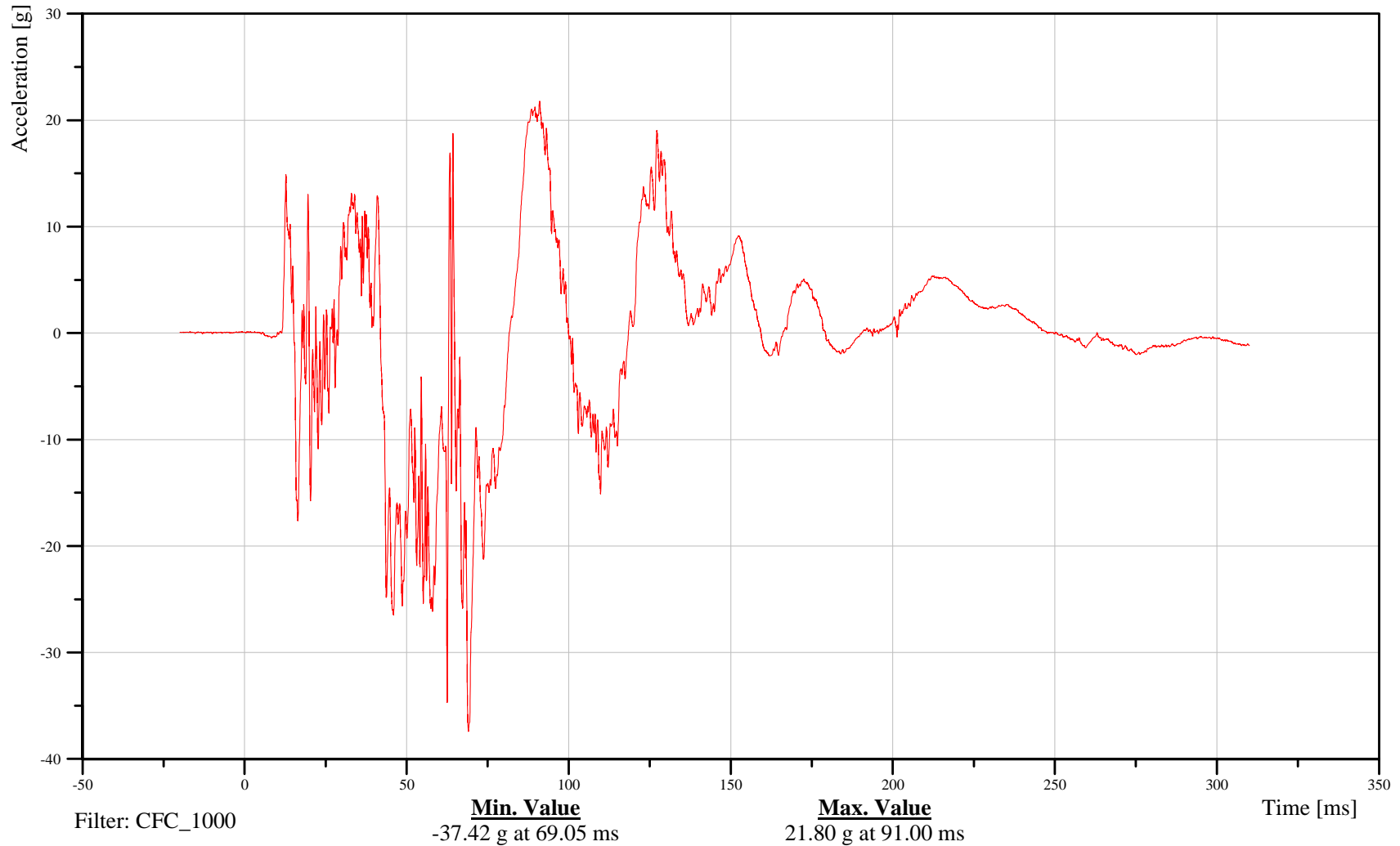
## Thorax Rib 2 X-Axis Acceleration

Customer: VRTC

# 11TRRILE02WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

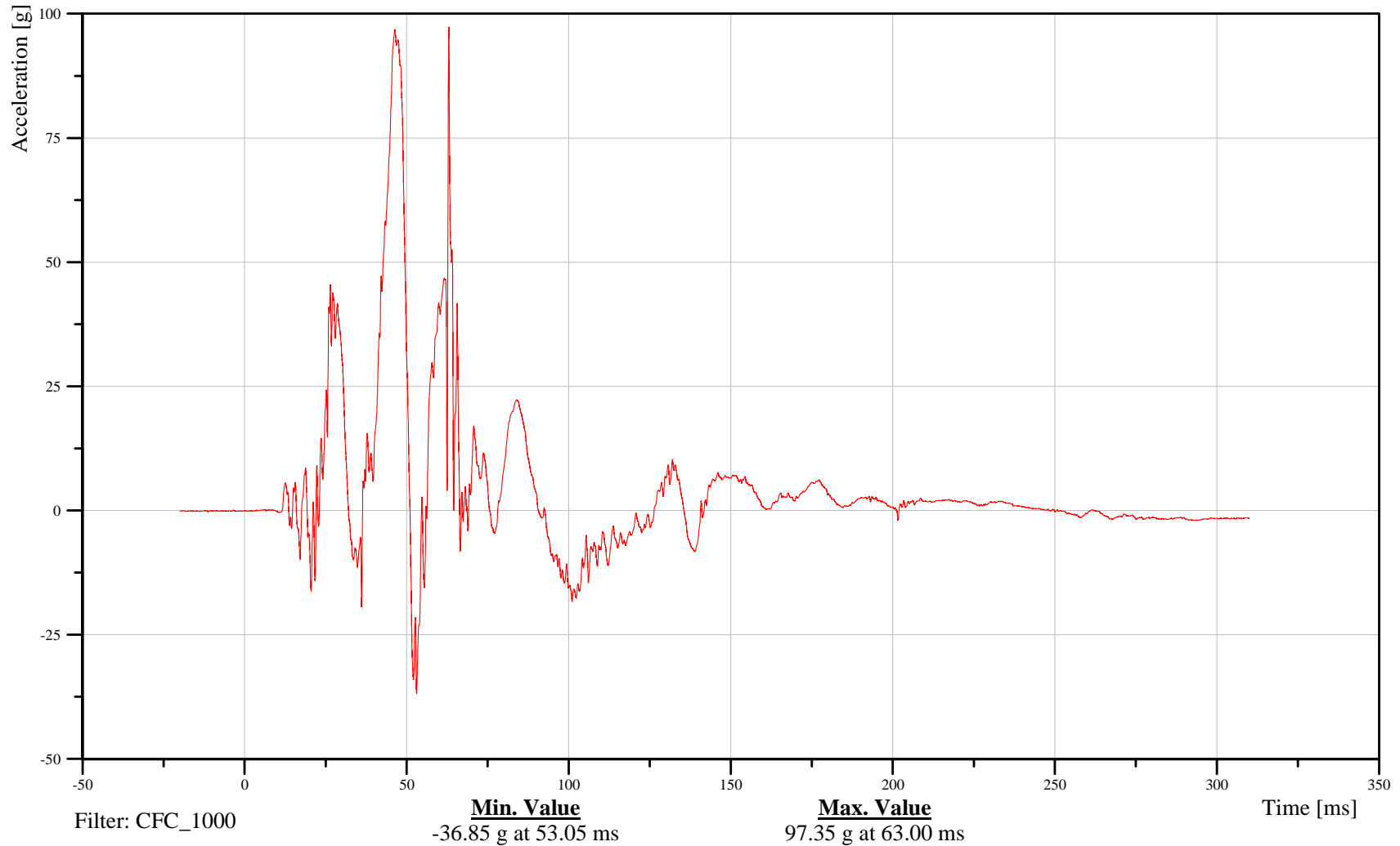
## Thorax Rib 2 Y-Axis Acceleration

Customer: VRTC

# 11TRRILE02WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

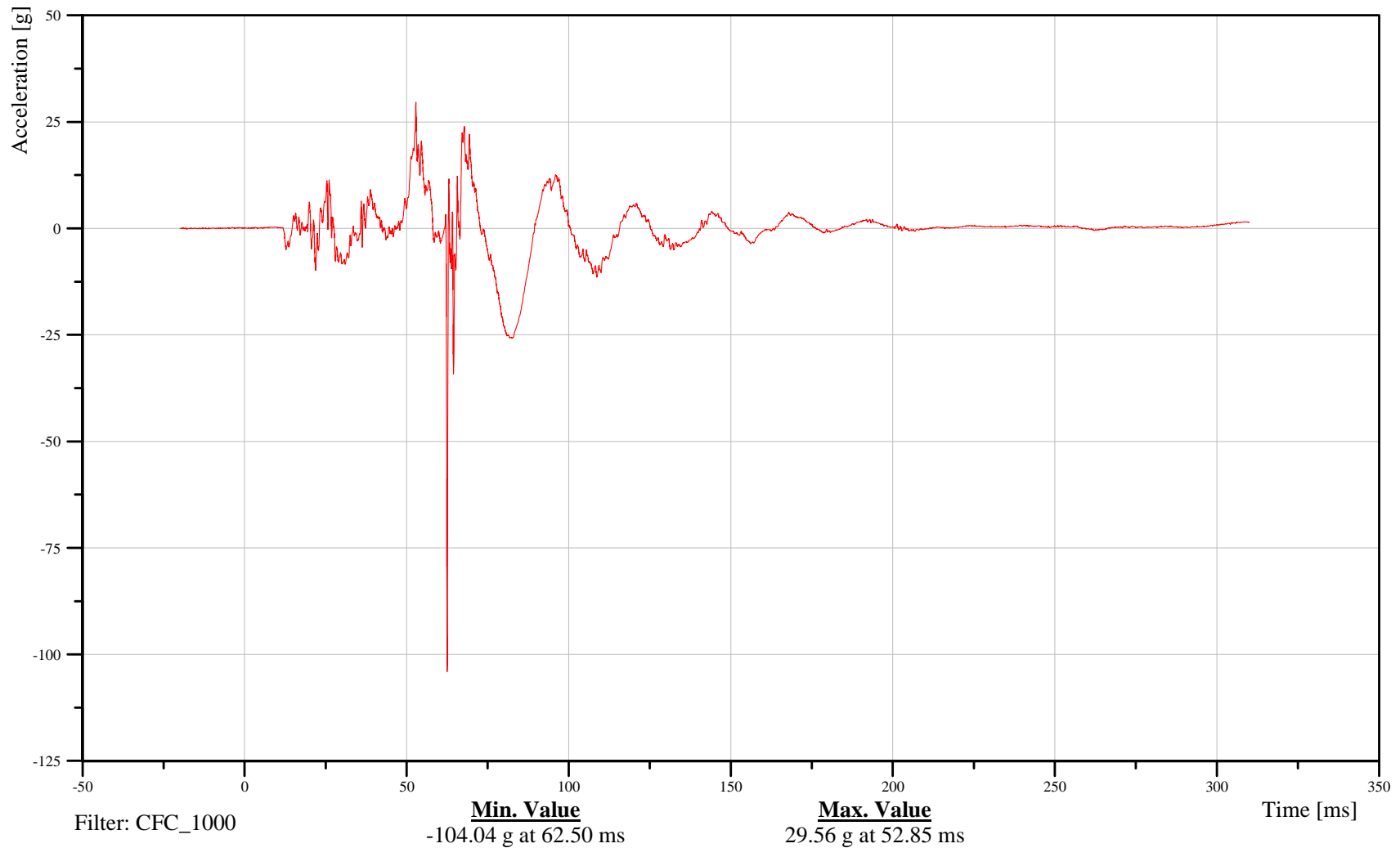
## Thorax Rib 2 Z-Axis Acceleration

Customer: VRTC

# 11TRRILE02WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

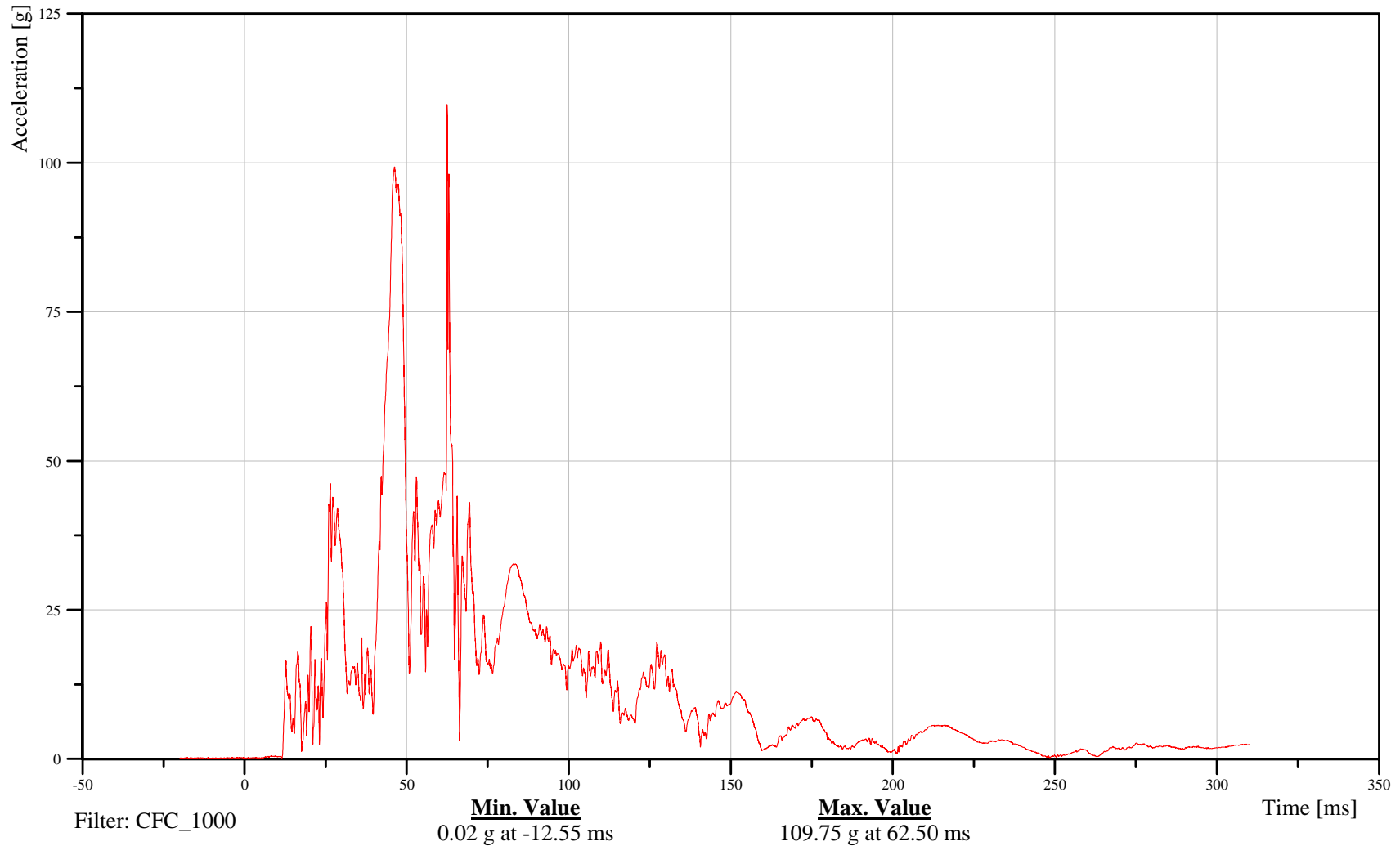
## Thorax Rib 2 Resultant Acceleration

Customer: VRTC

# 11TRRILE02WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

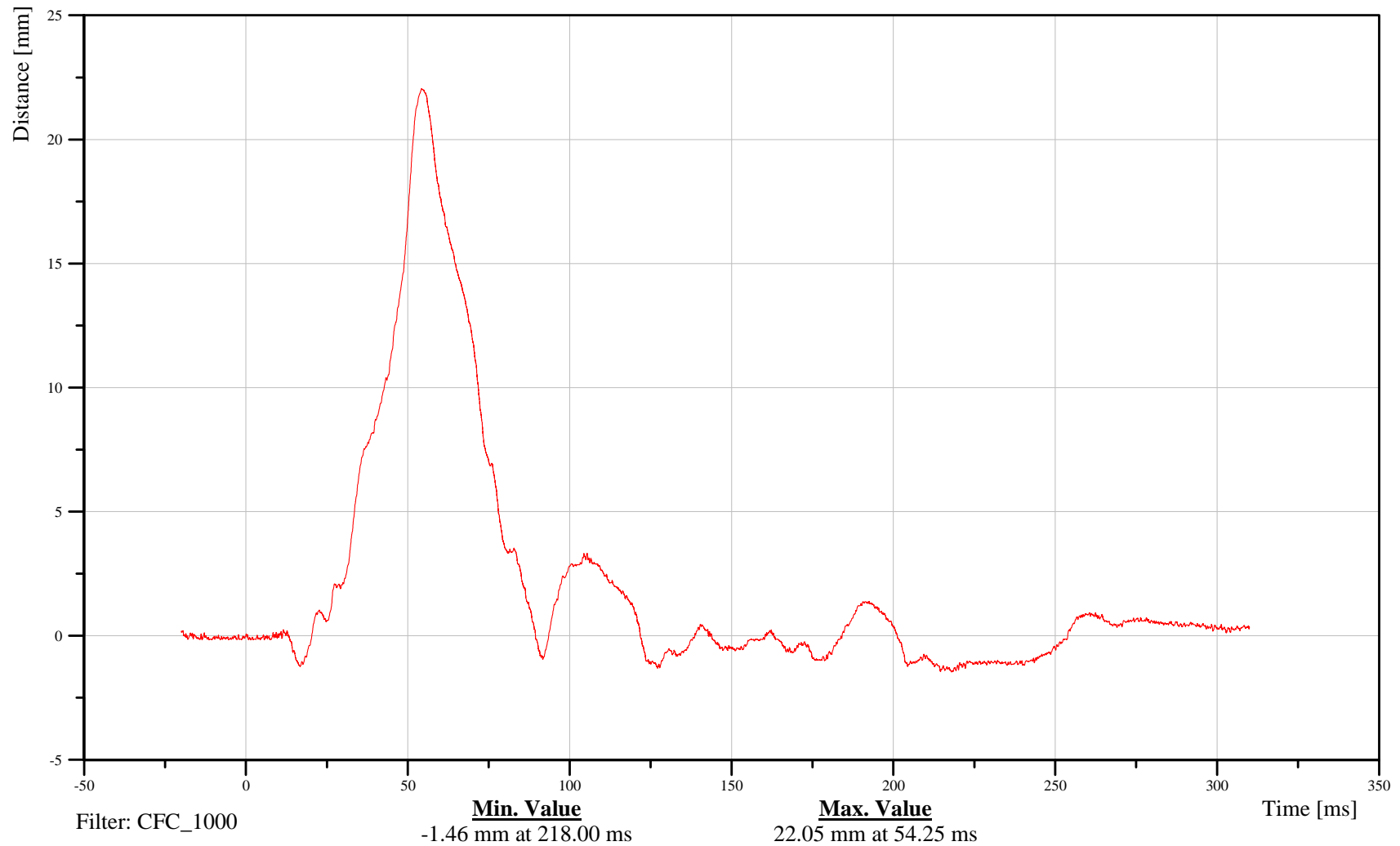
## Thorax Rib 3 Y-Axis Displacement

Customer: VRTC

# 11TRRILE03WSDSYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

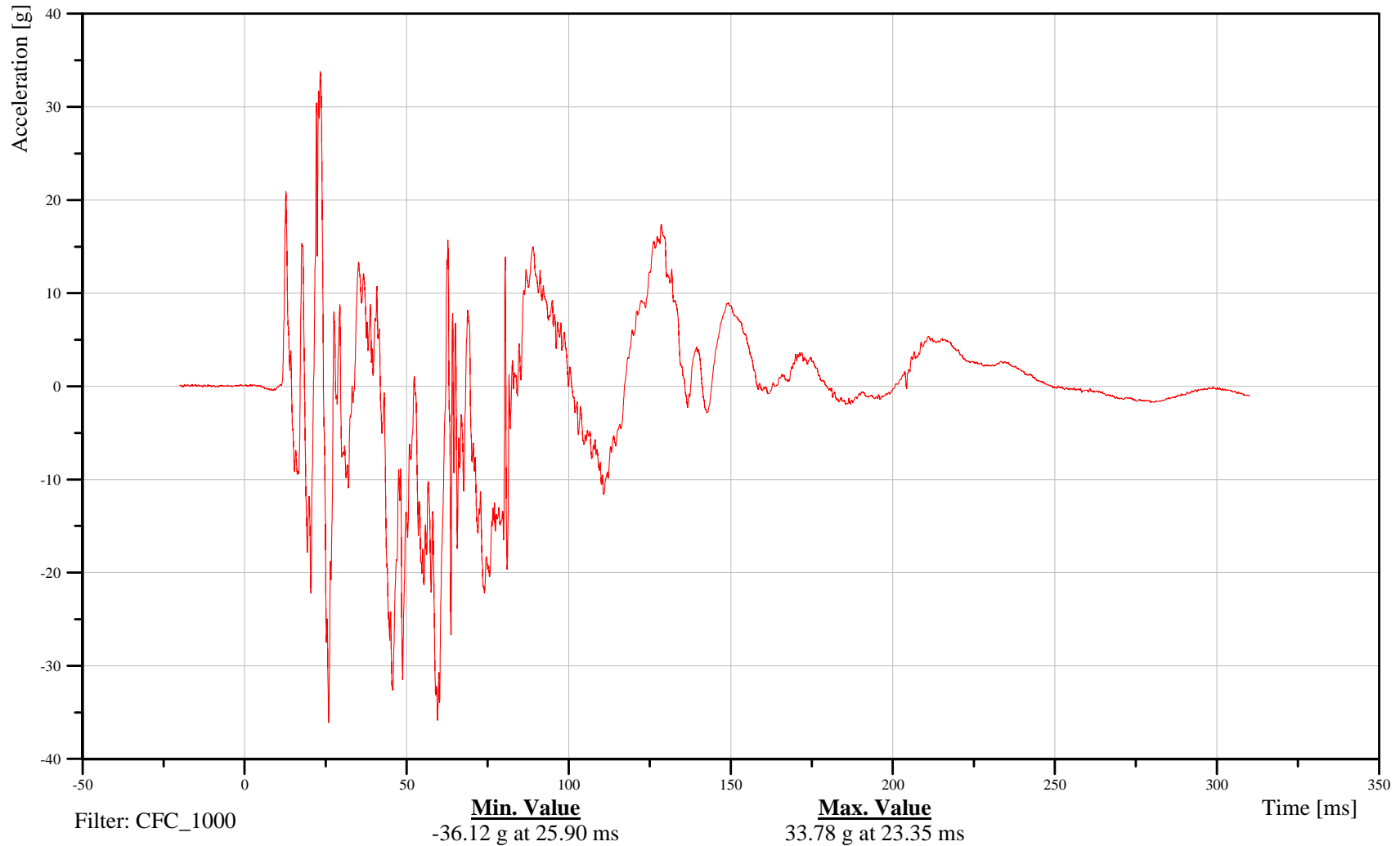
## Thorax Rib 3 X-Axis Acceleration

Customer: VRTC

# 11TRRILE03WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

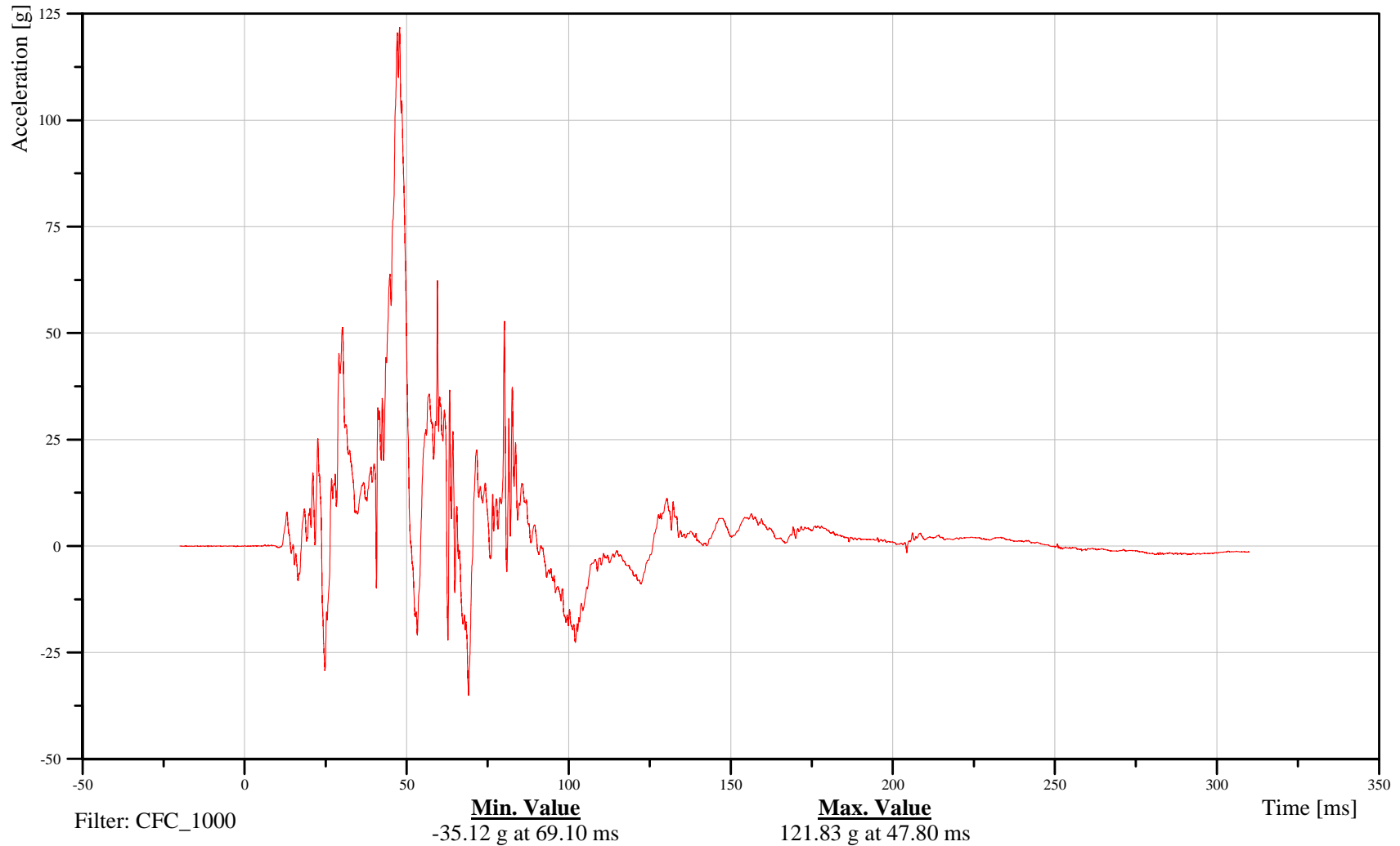
## Thorax Rib 3 Y-Axis Acceleration

Customer: VRTC

# 11TRRILE03WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

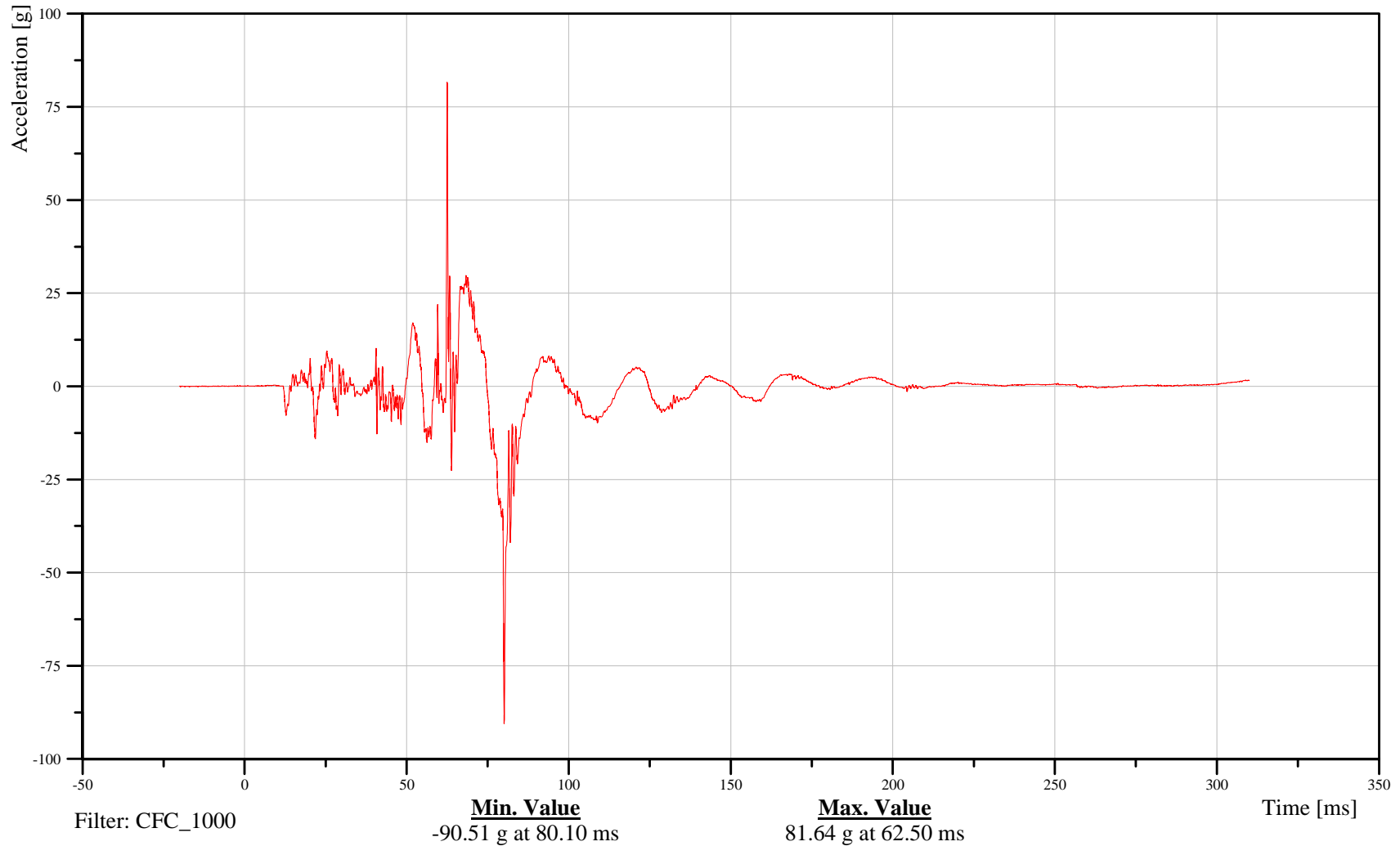
## Thorax Rib 3 Z-Axis Acceleration

Customer: VRTC

# 11TRRILE03WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



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110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

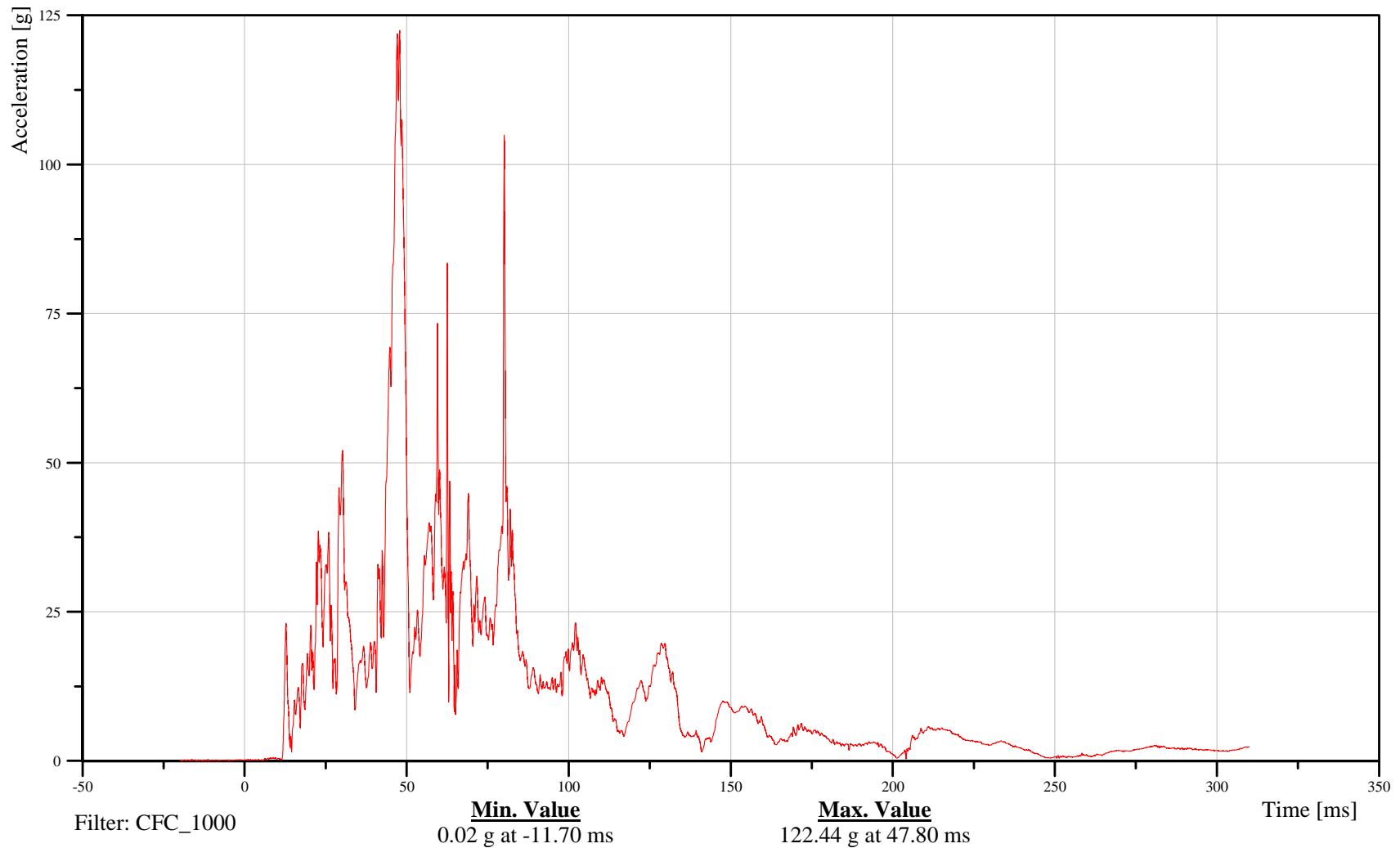
## Thorax Rib 3 Resultant Acceleration

Customer: VRTC

# 11TRRILE03WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-55

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

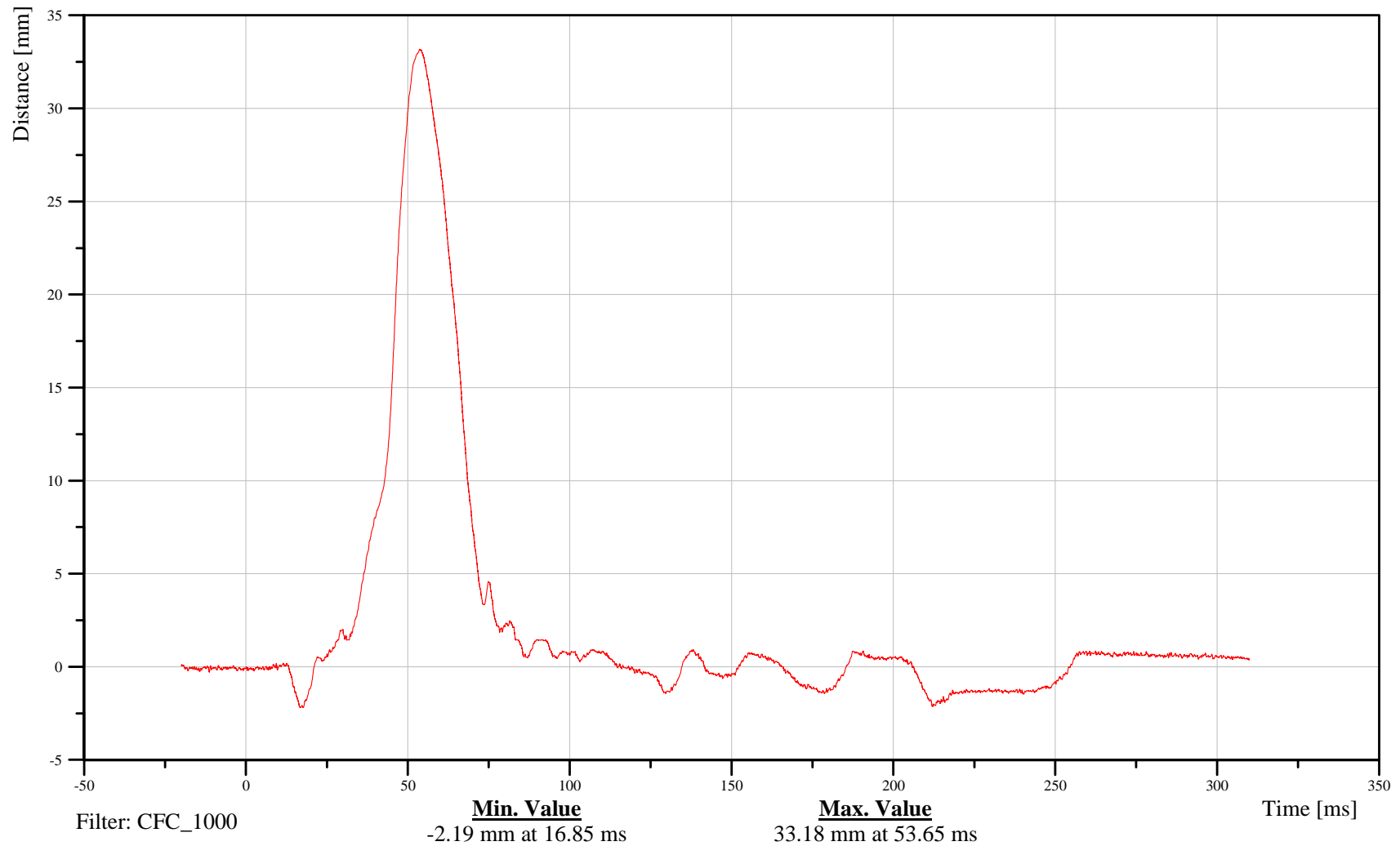
## Abdominal Rib 1 Y-Axis Displacement

Customer: VRTC

# 11ABRILE01WSDSYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-56

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

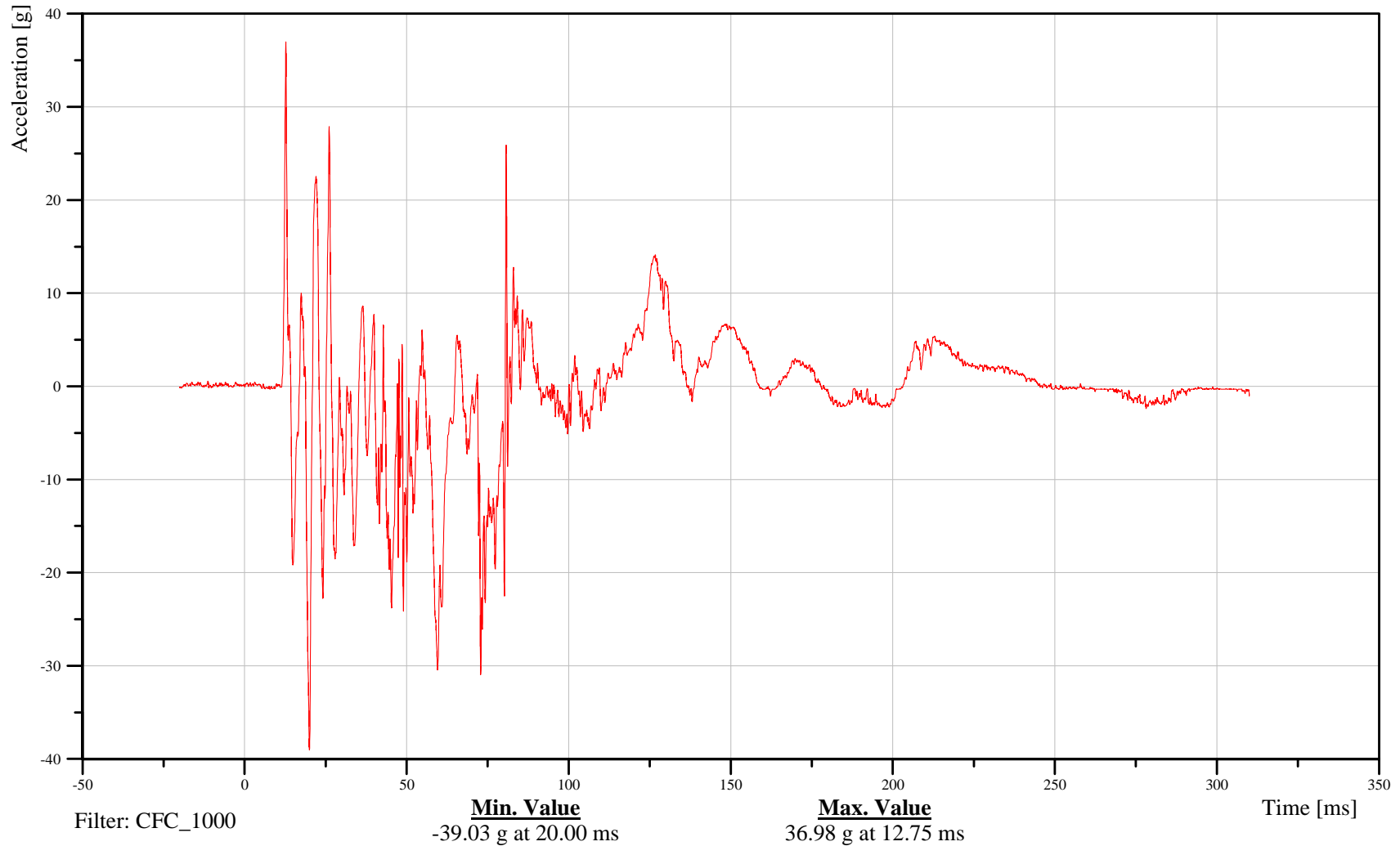
## Abdominal Rib 1 X-Axis Acceleration

Customer: VRTC

# 11ABRILE01WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-57

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

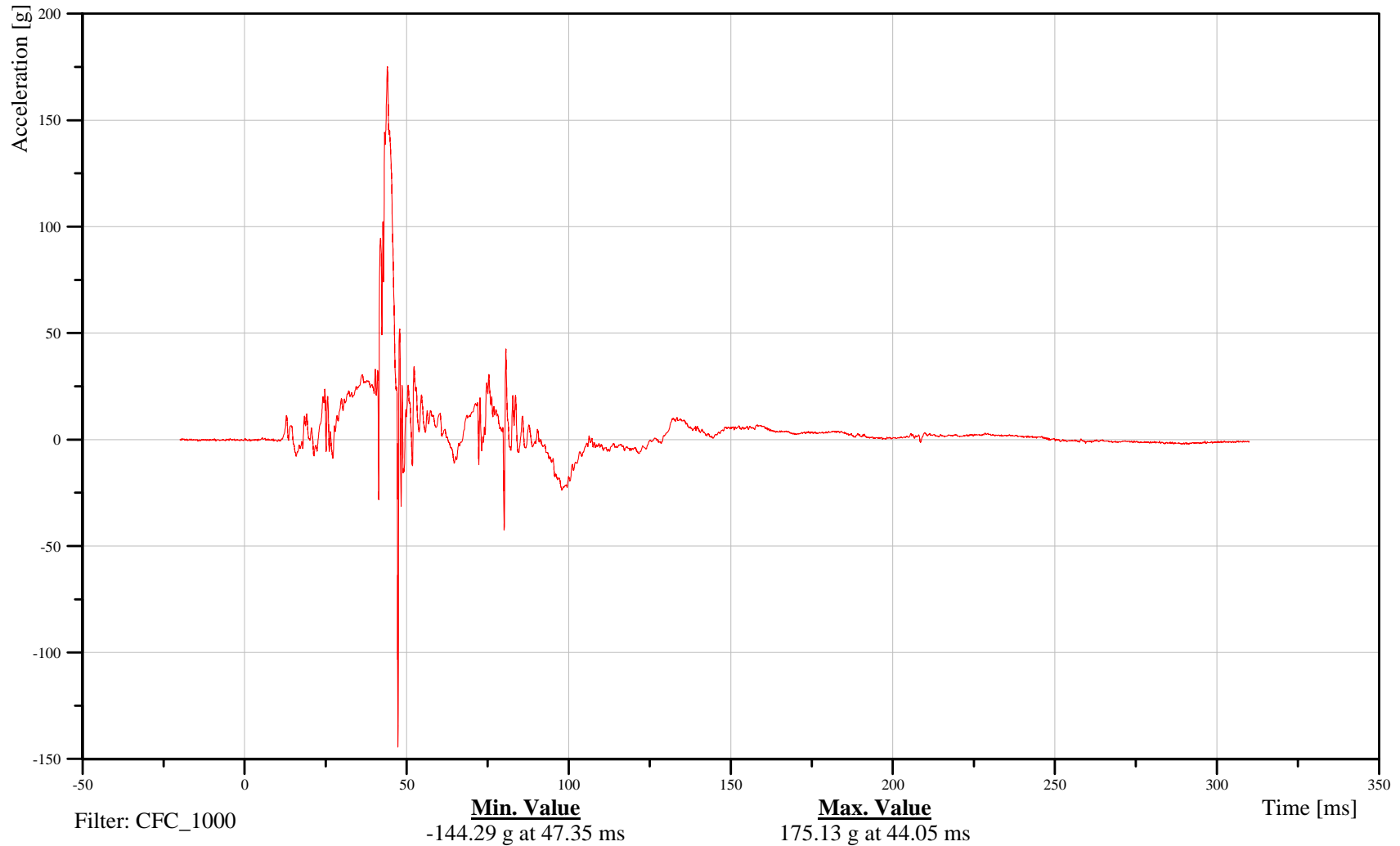
## Abdominal Rib 1 Y-Axis Acceleration

Customer: VRTC

# 11ABRILE01WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-58

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

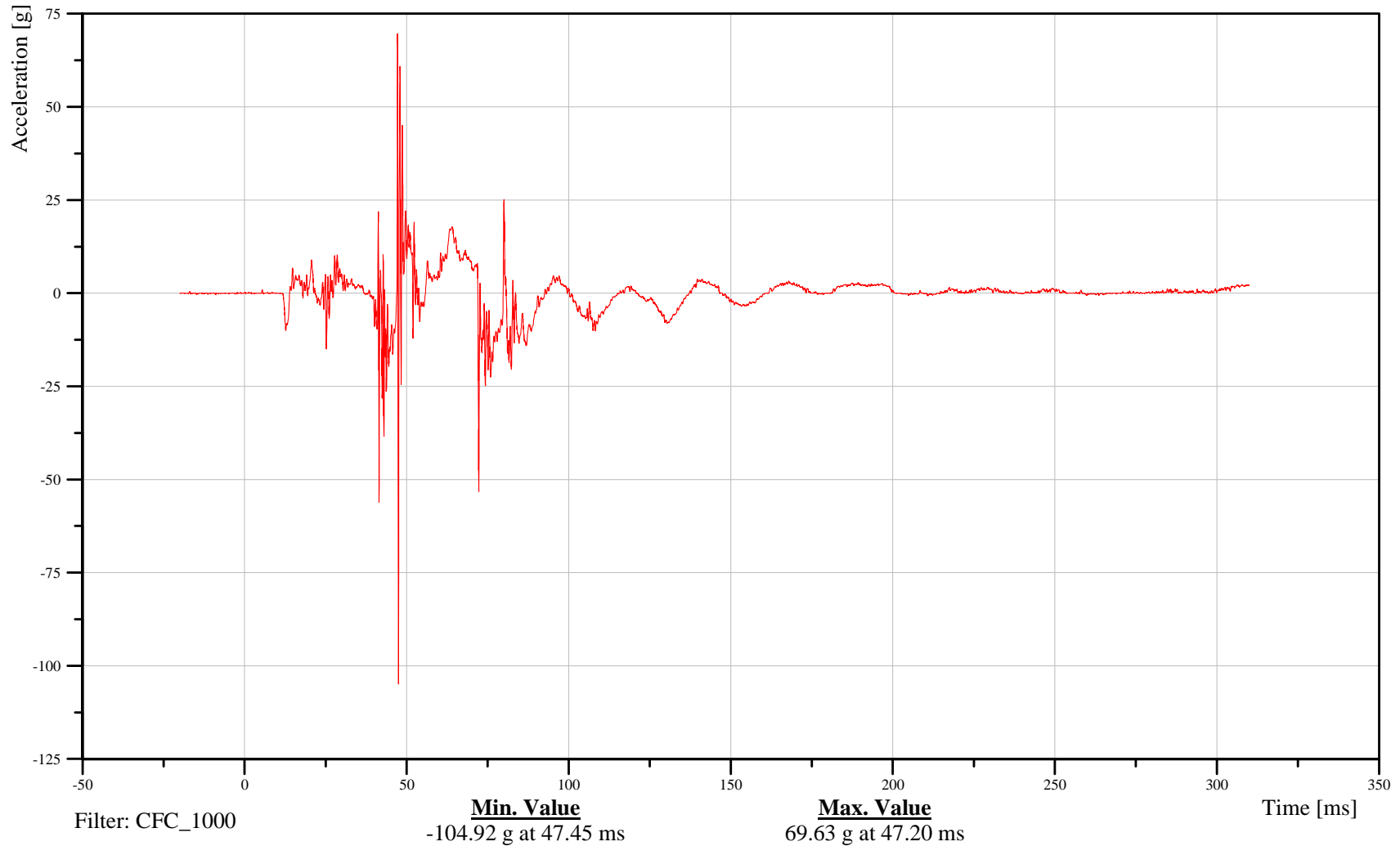
## Abdominal Rib 1 Z-Axis Acceleration

Customer: VRTC

# 11ABRILE01WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-59

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

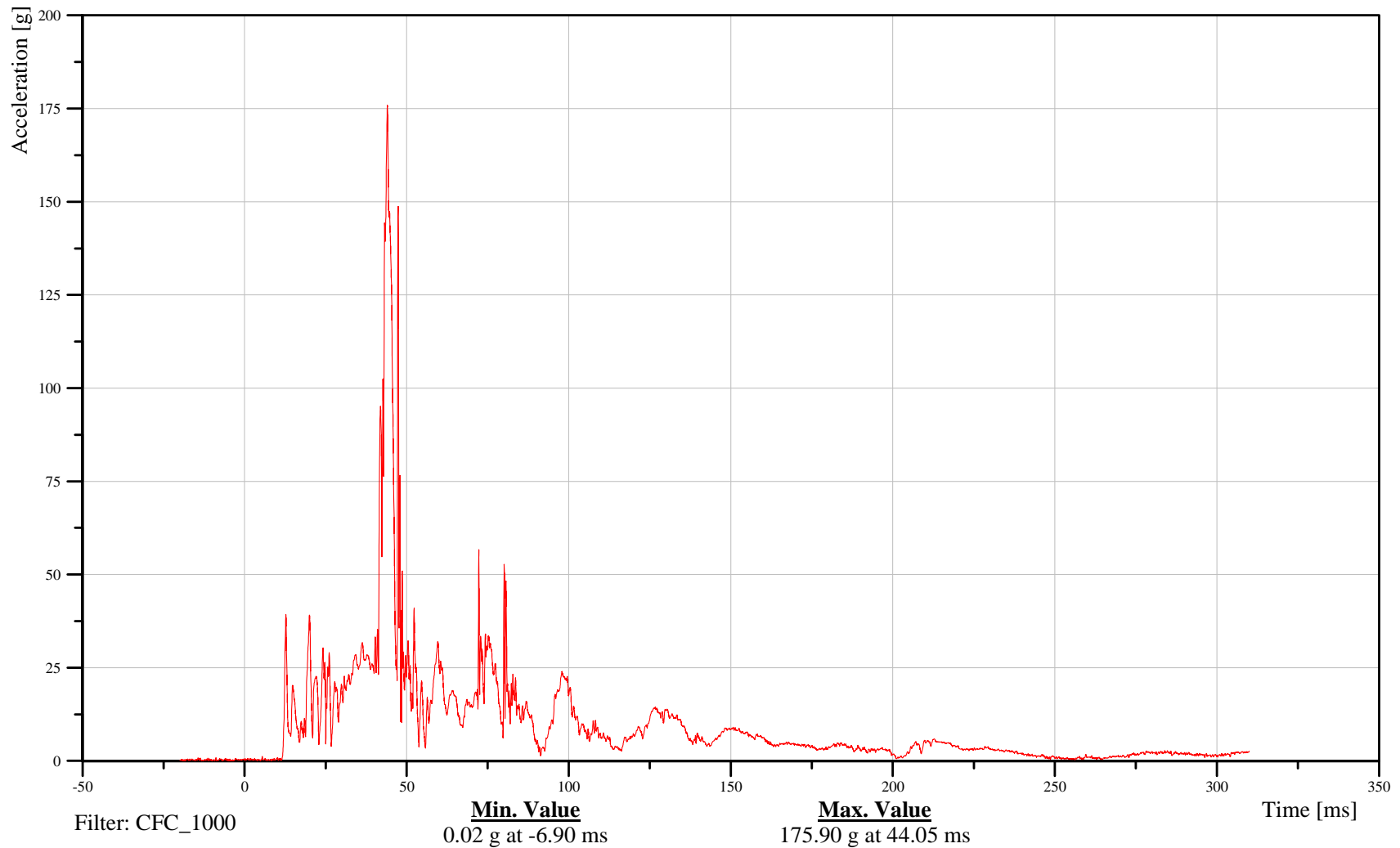
## Abdominal Rib 1 Resultant Acceleration

Customer: VRTC

# 11ABRILE01WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-60

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

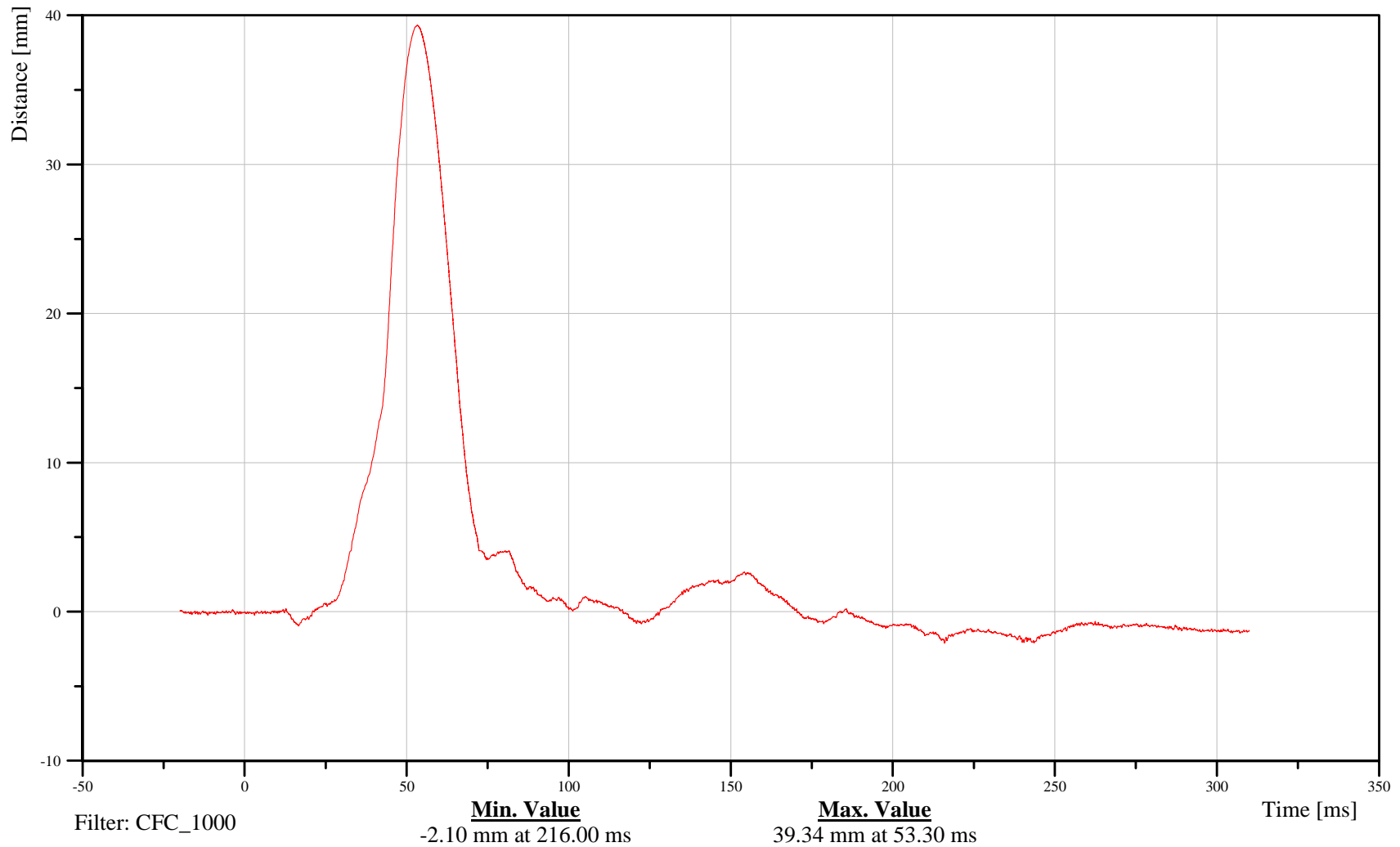
## Abdominal Rib 2 Y-Axis Displacement

Customer: VRTC

# 11ABRILE02WSDSYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-61

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

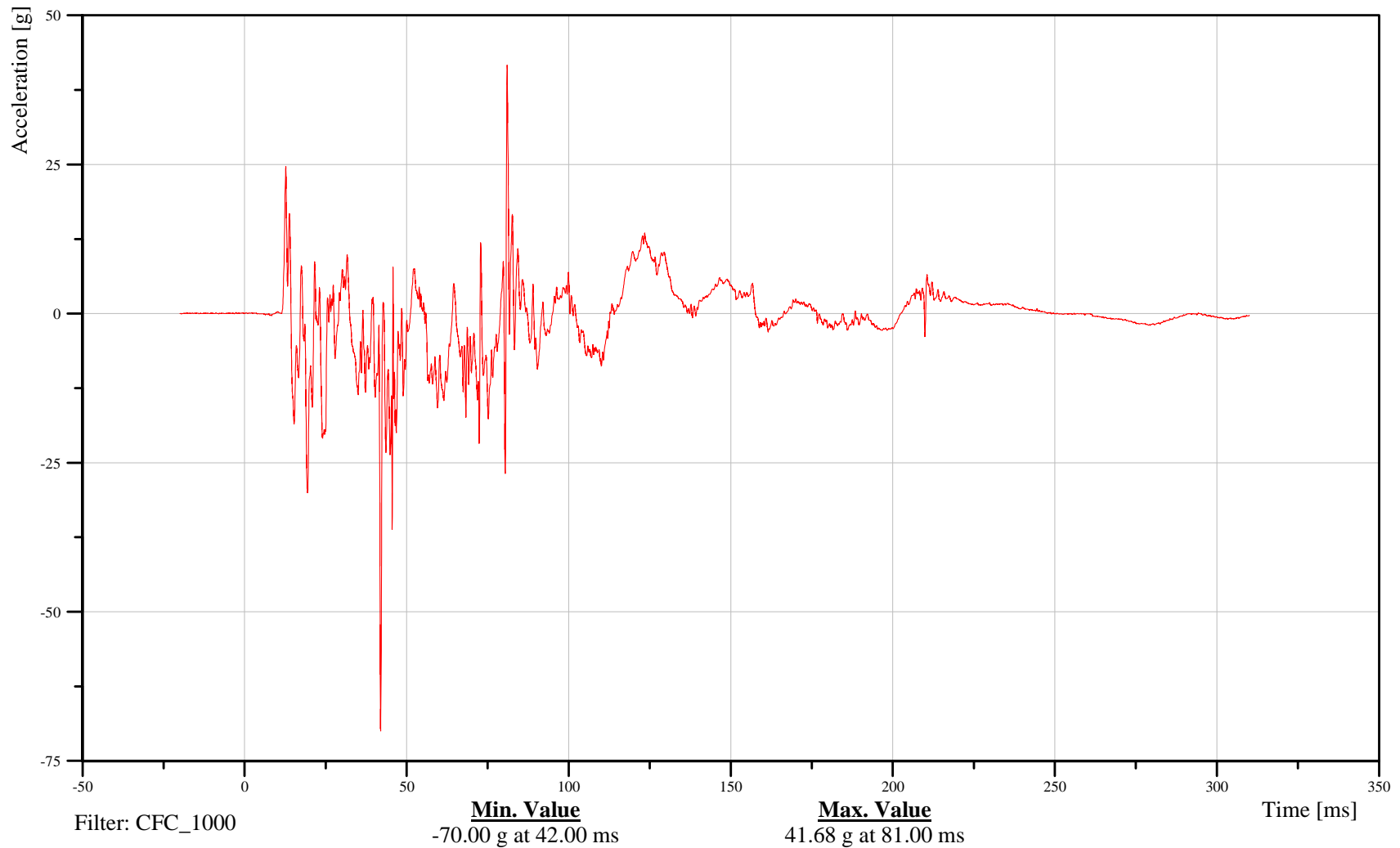
## Abdominal Rib 2 X-Axis Acceleration

Customer: VRTC

# 11ABRILE02WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-62

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

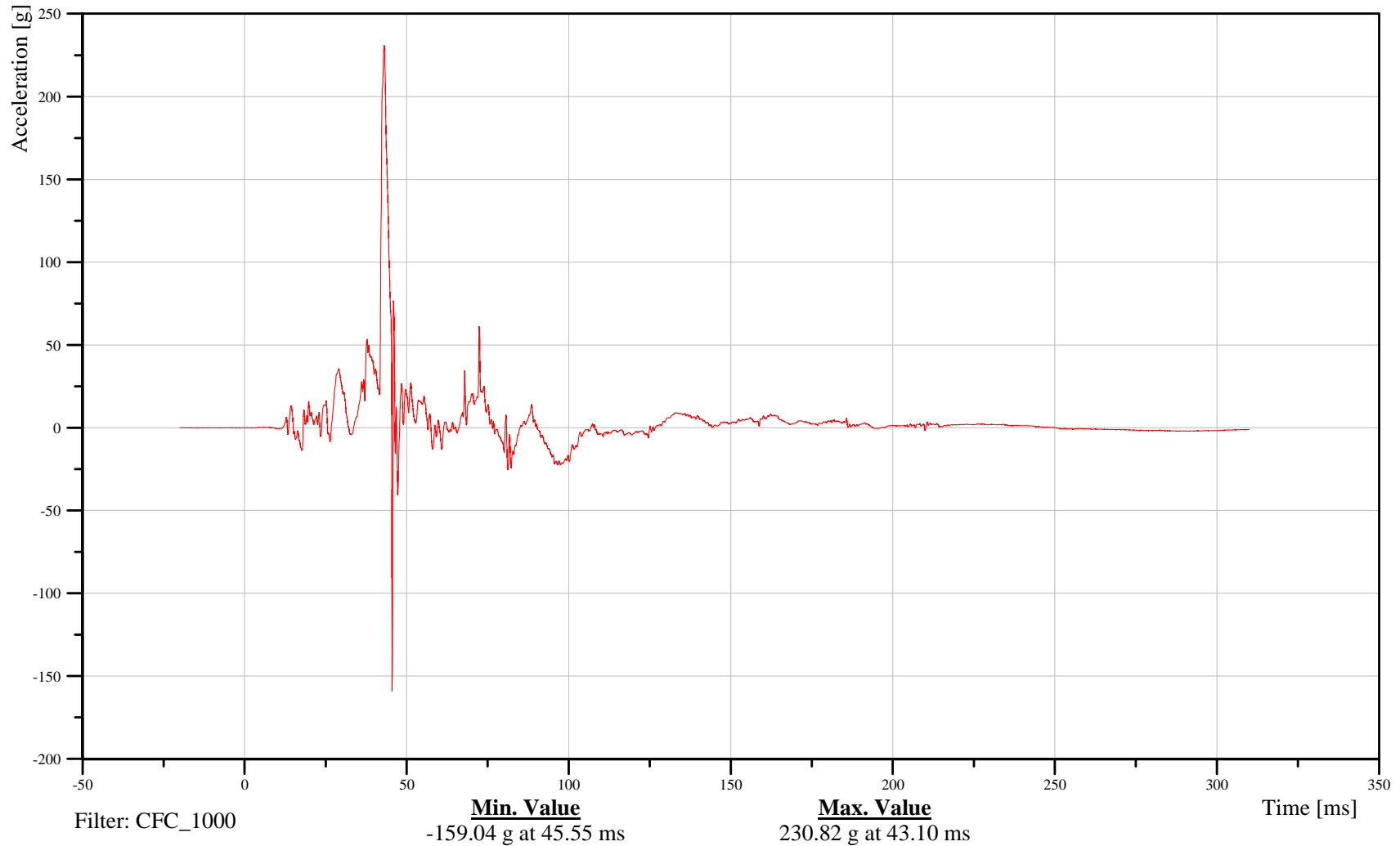
## Abdominal Rib 2 Y-Axis Acceleration

Customer: VRTC

# 11ABRILE02WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-63

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

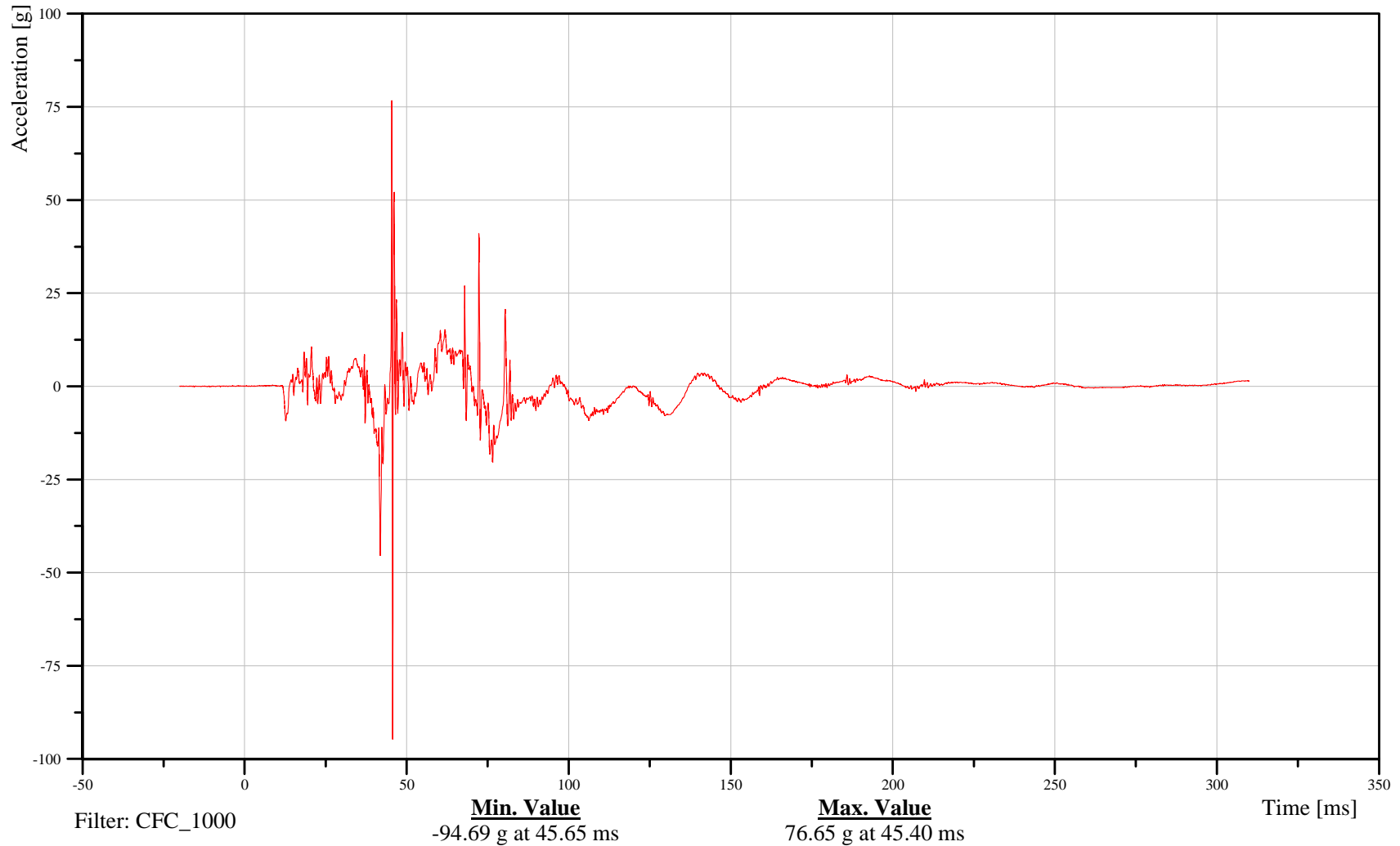
## Abdominal Rib 2 Z-Axis Acceleration

Customer: VRTC

# 11ABRILE02WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-64

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

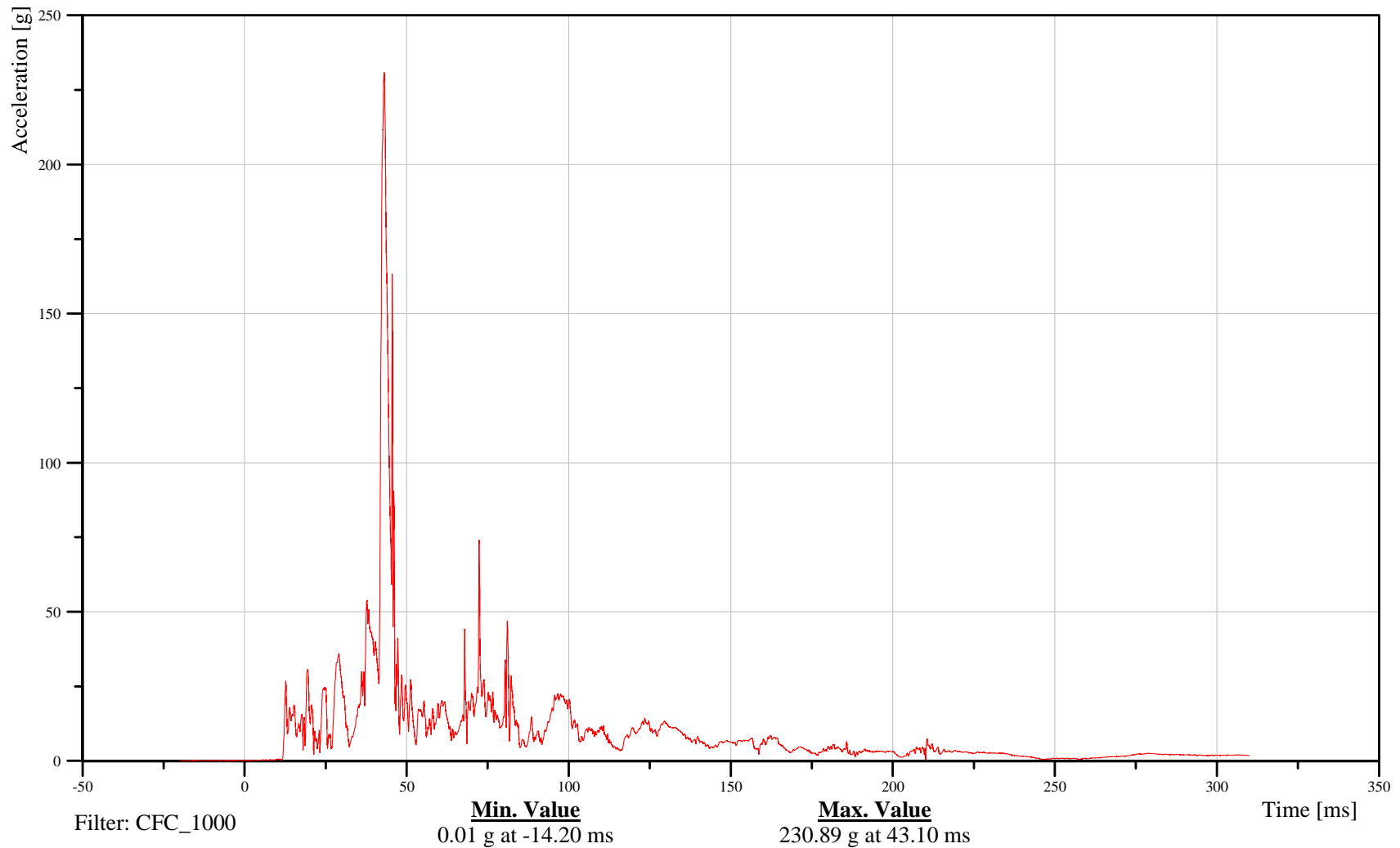
## Abdominal Rib 2 Resultant Acceleration

Customer: VRTC

# 11ABRILE02WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-65

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

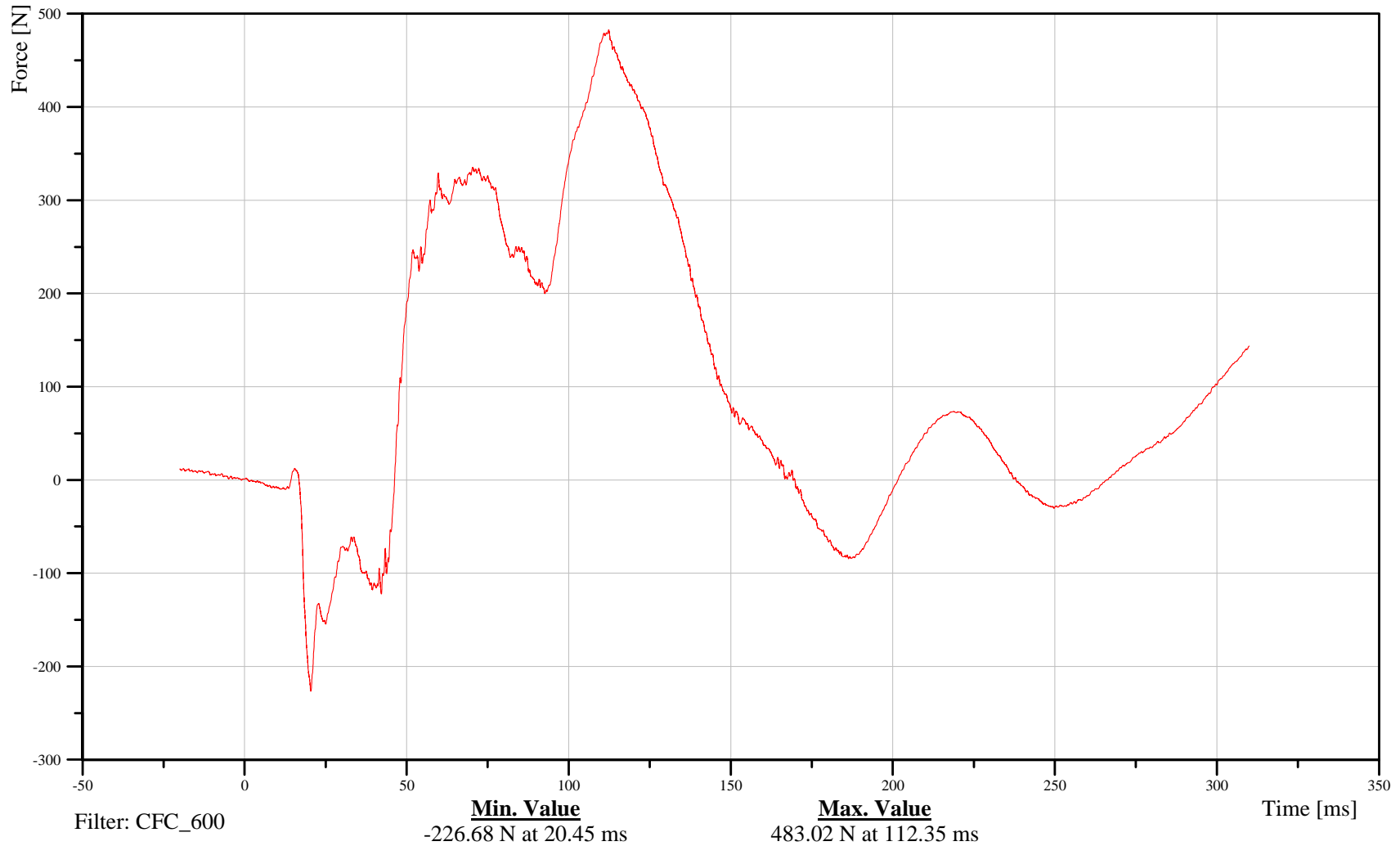
## Lumbar X-Axis Force

Customer: VRTC

# 11LUSP0000WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-66

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

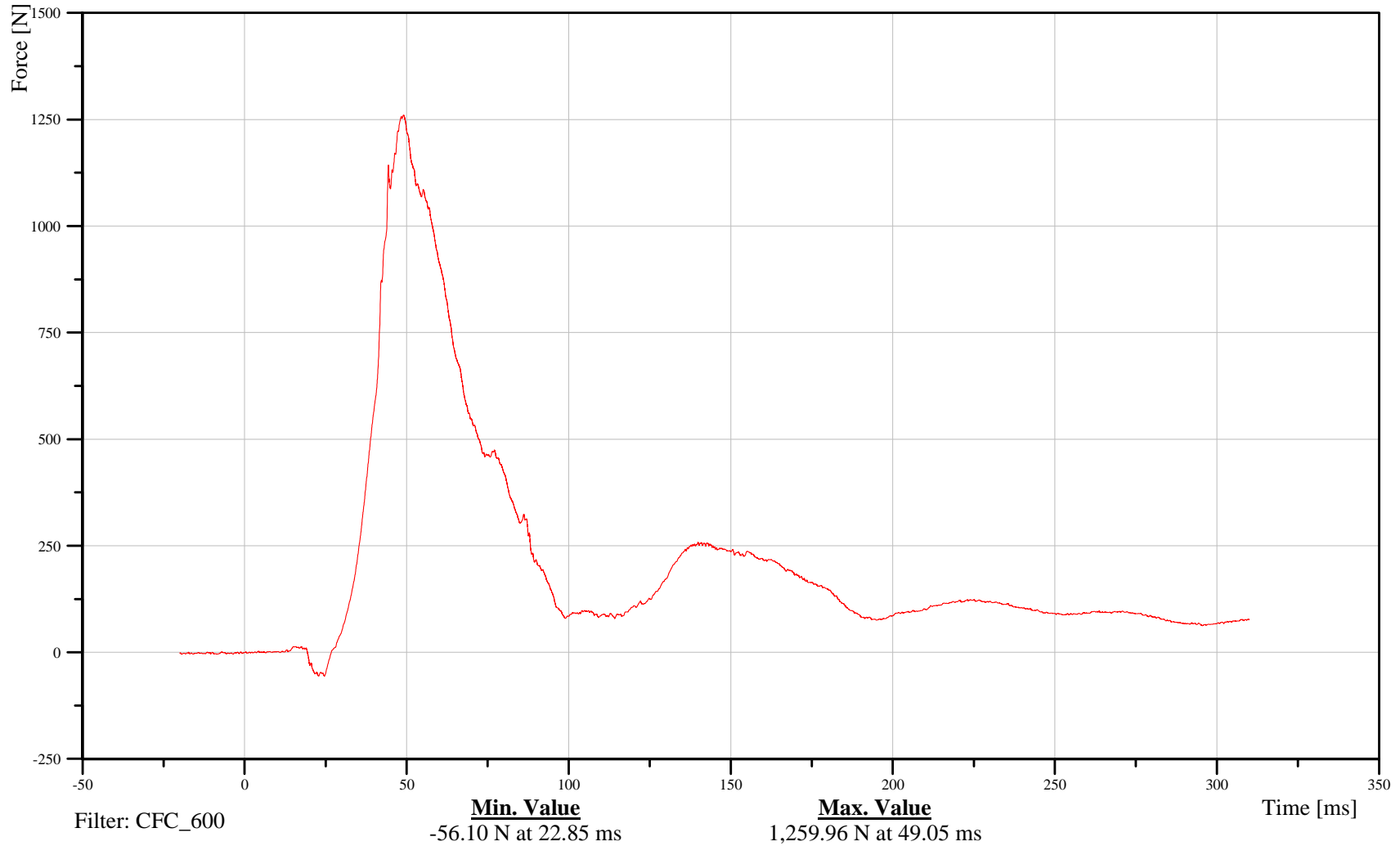
## Lumbar Y-Axis Force

Customer: VRTC

# 11LUSP0000WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-67

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

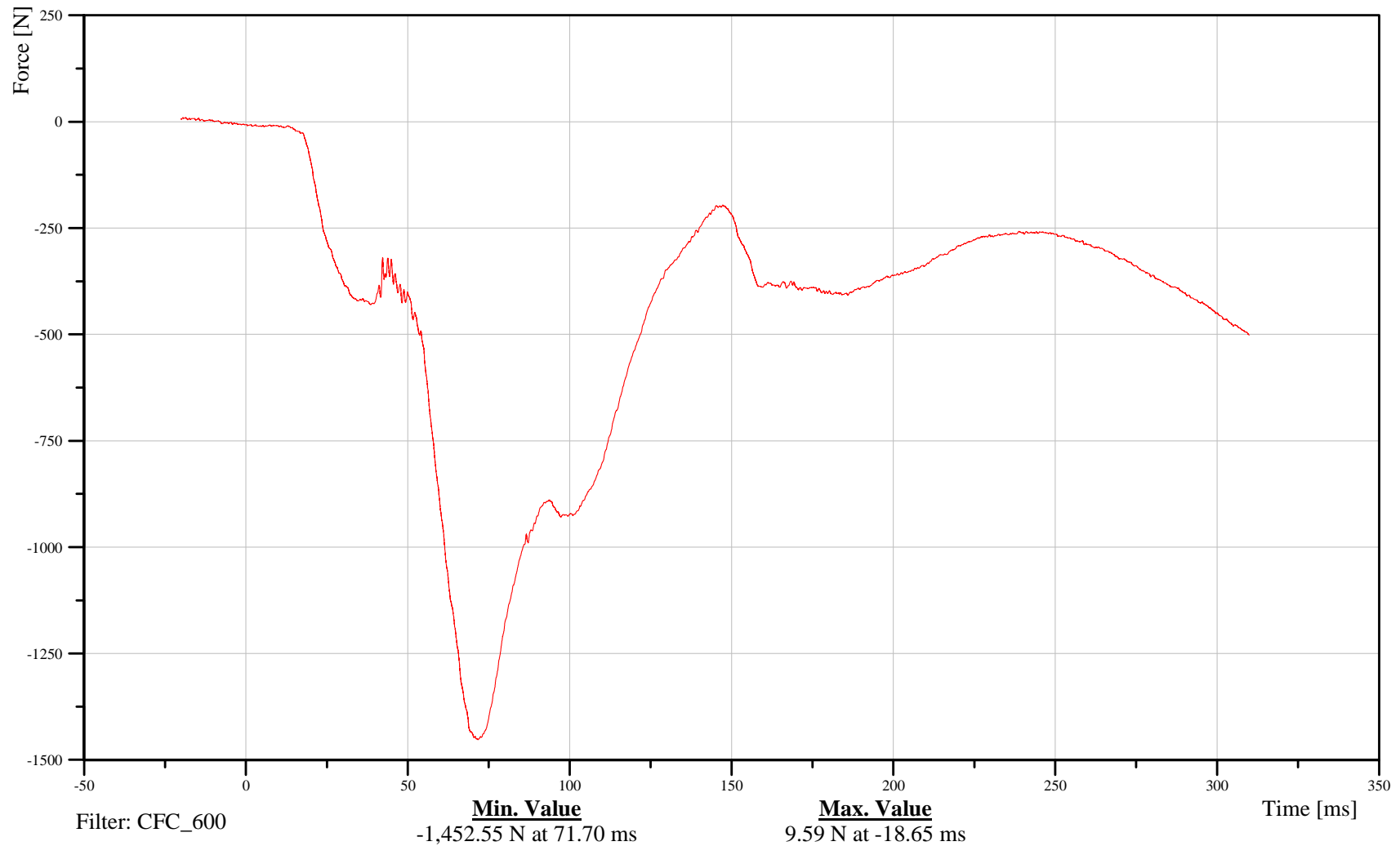
## Lumbar Z-Axis Force

Customer: VRTC

# 11LUSP0000WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-68

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

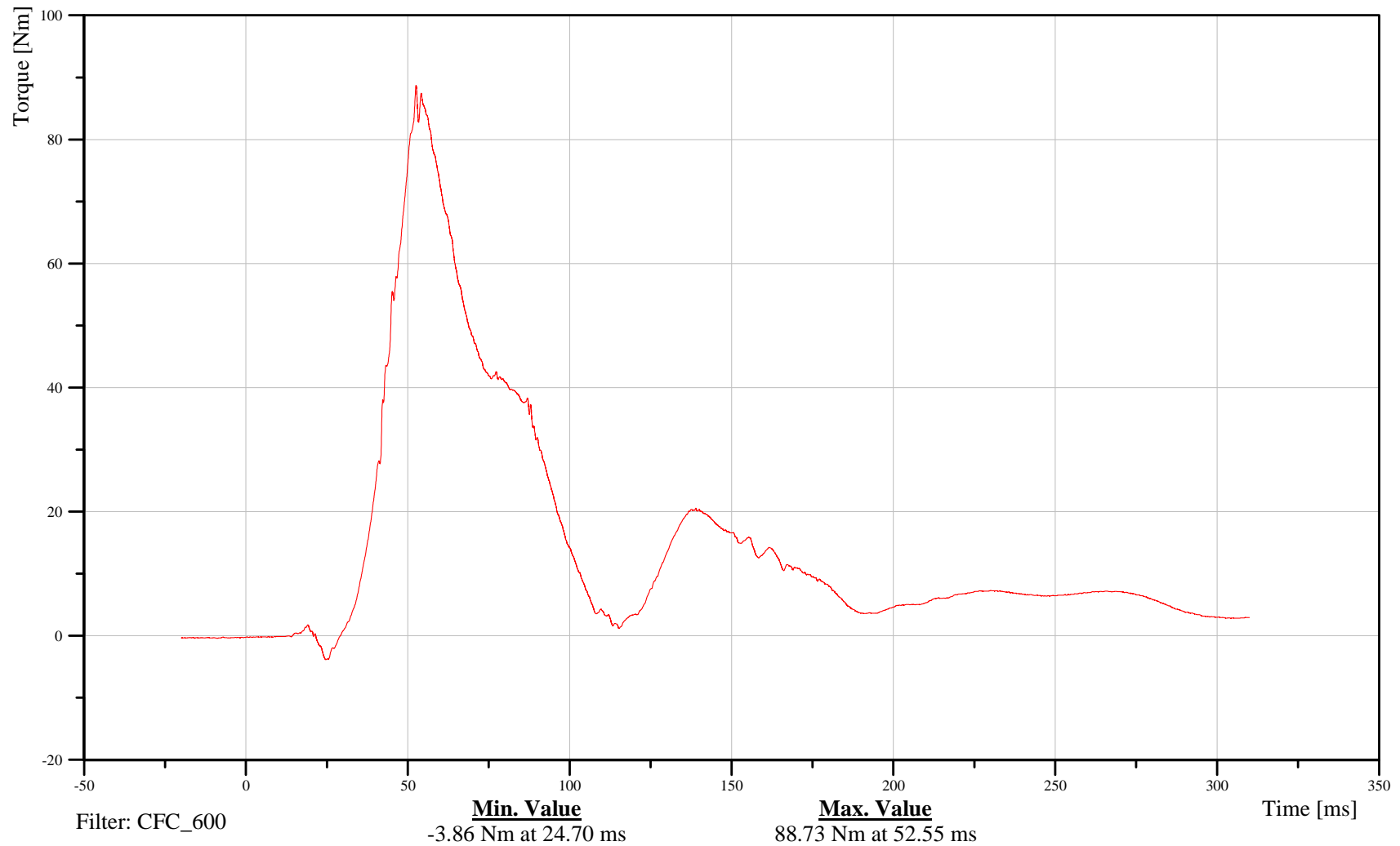
## Lumbar Moment About X Axis

Customer: VRTC

# 11LUSP0000WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-69

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

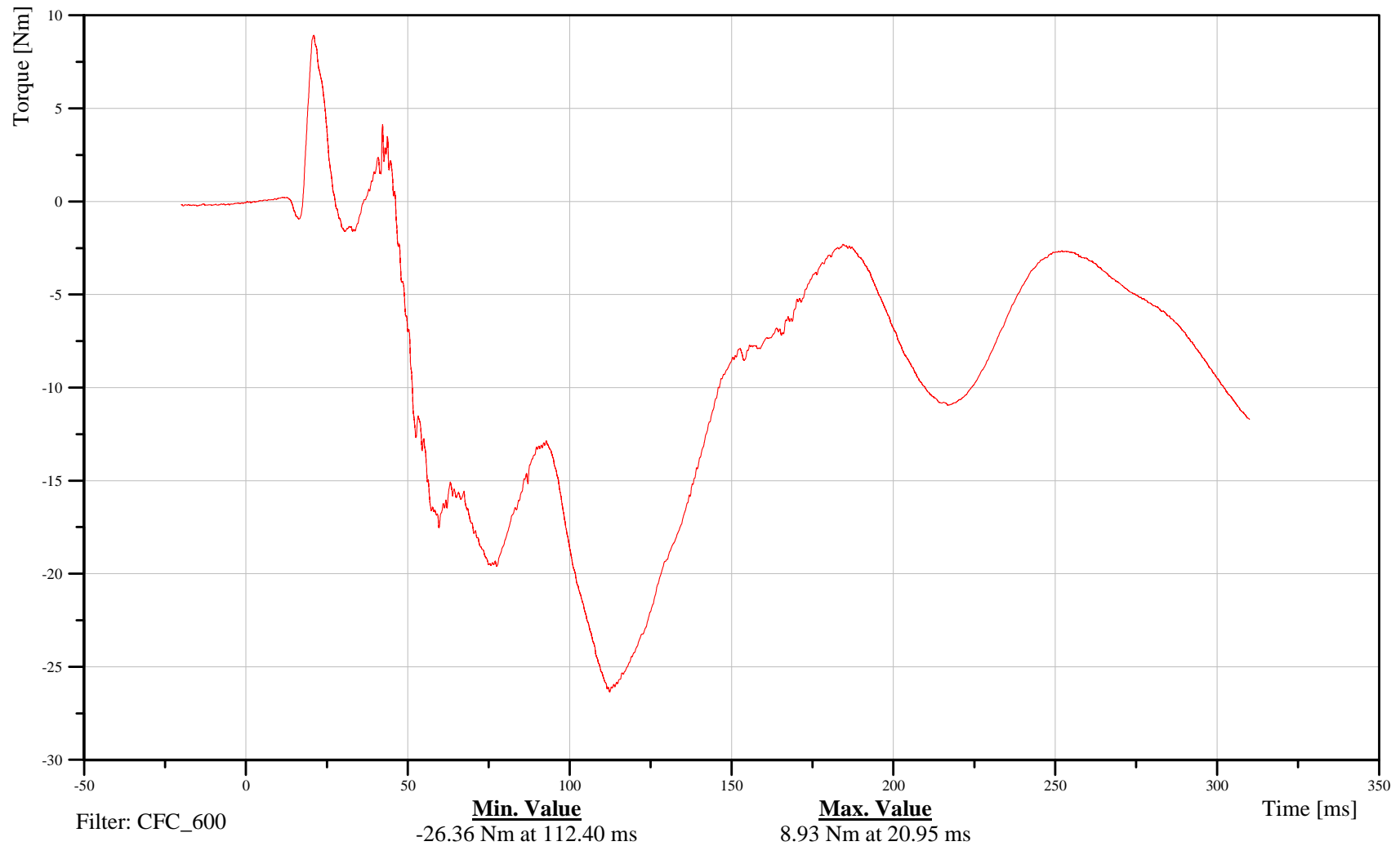
## Lumbar Moment About Y Axis

Customer: VRTC

# 11LUSP0000WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-70

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

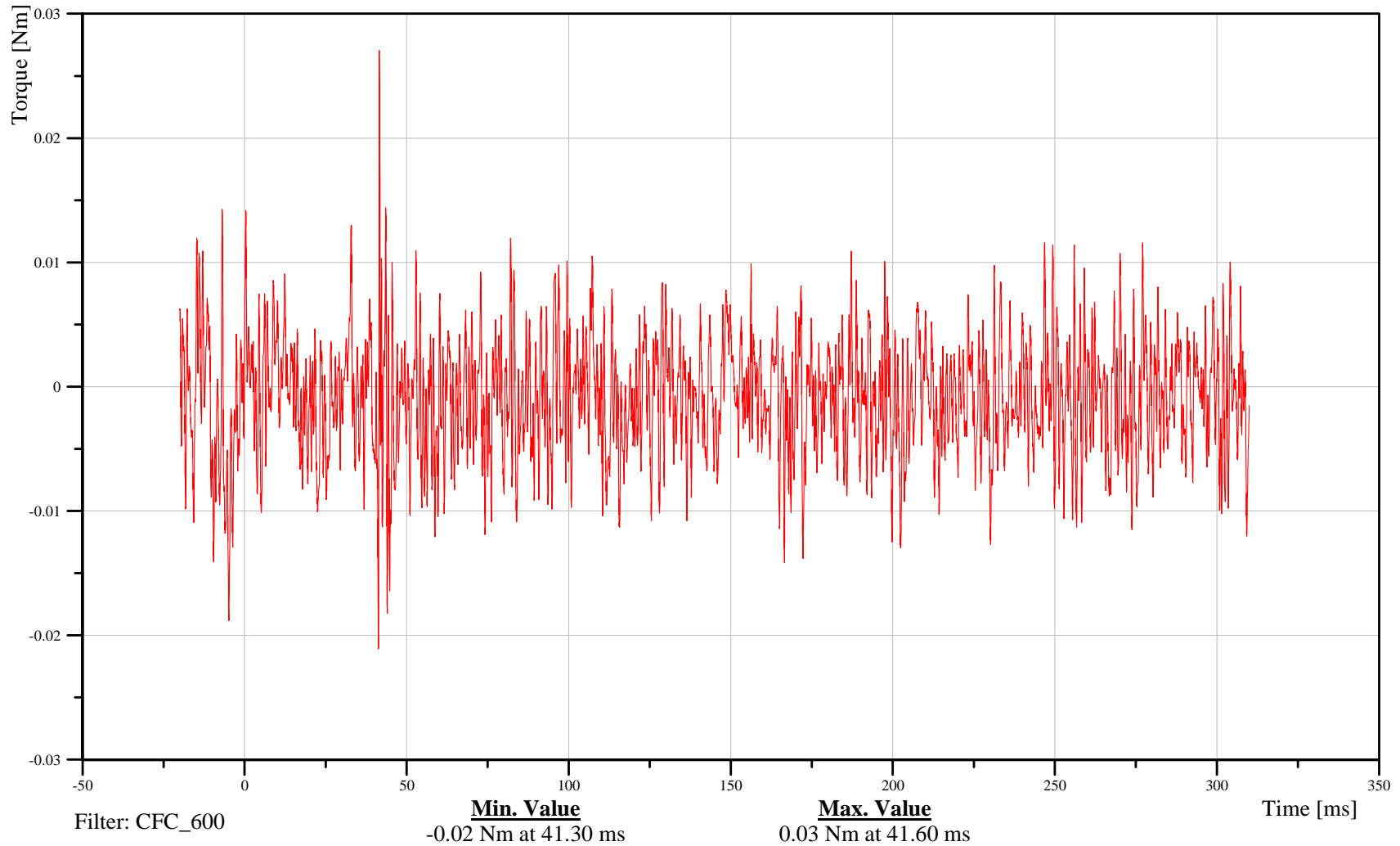
## Lumbar Moment About Z Axis

Customer: VRTC

# 11LUSP0000WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-71

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

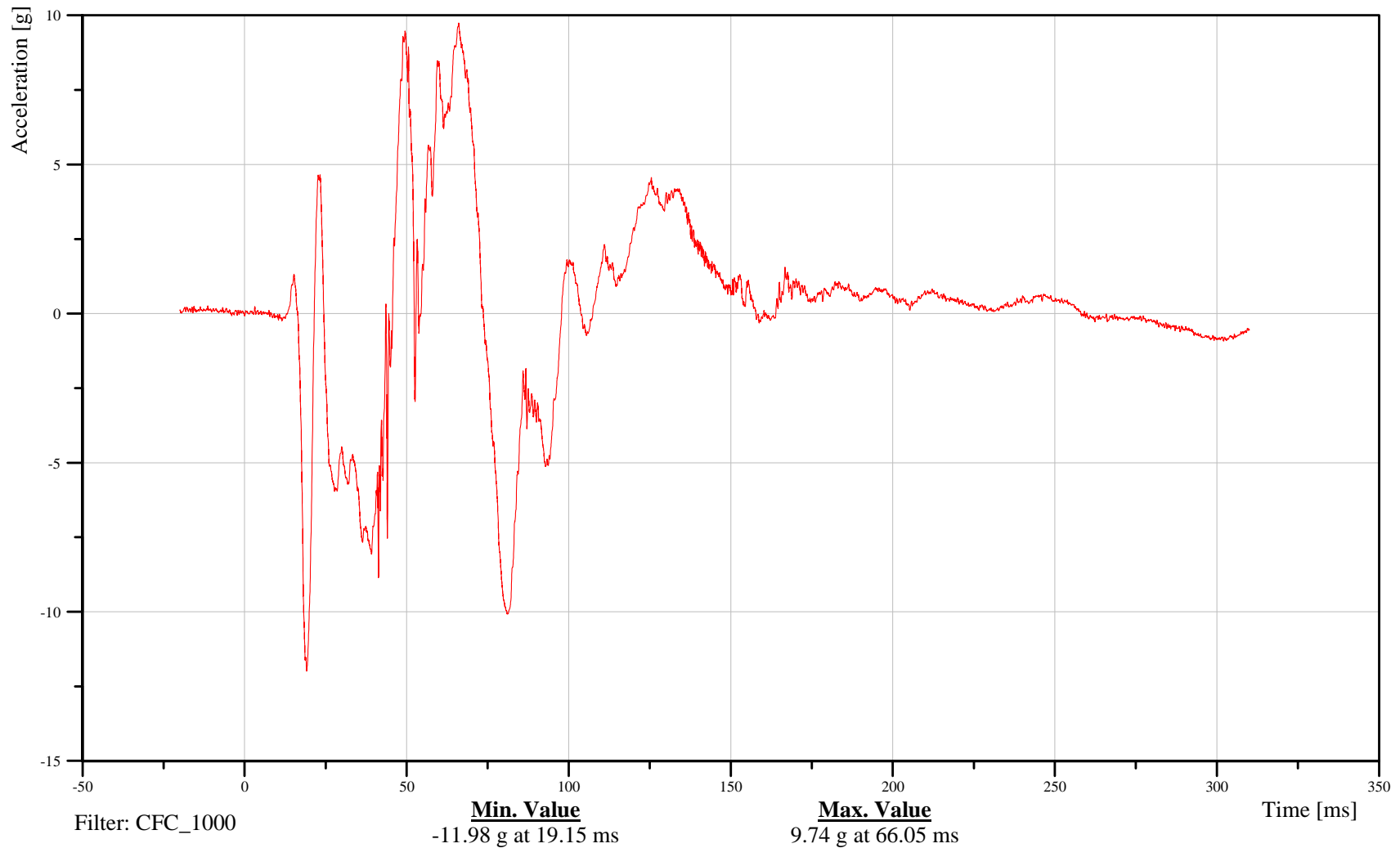
## Pelvis X-Axis Acceleration

Customer: VRTC

# 11PELVCG00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-72

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

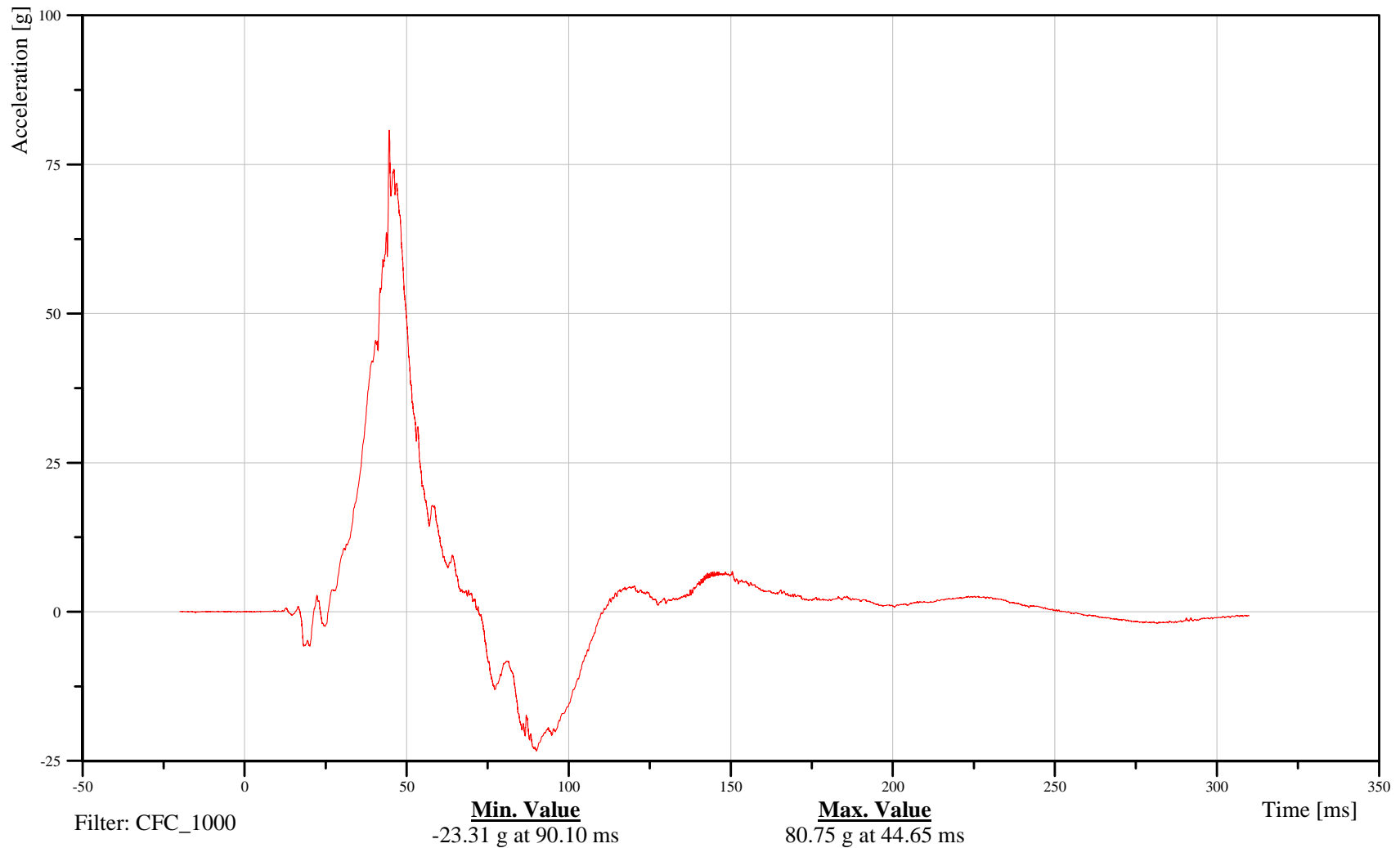
## Pelvis Y-Axis Acceleration

Customer: VRTC

# 11PELVCG00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-73

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

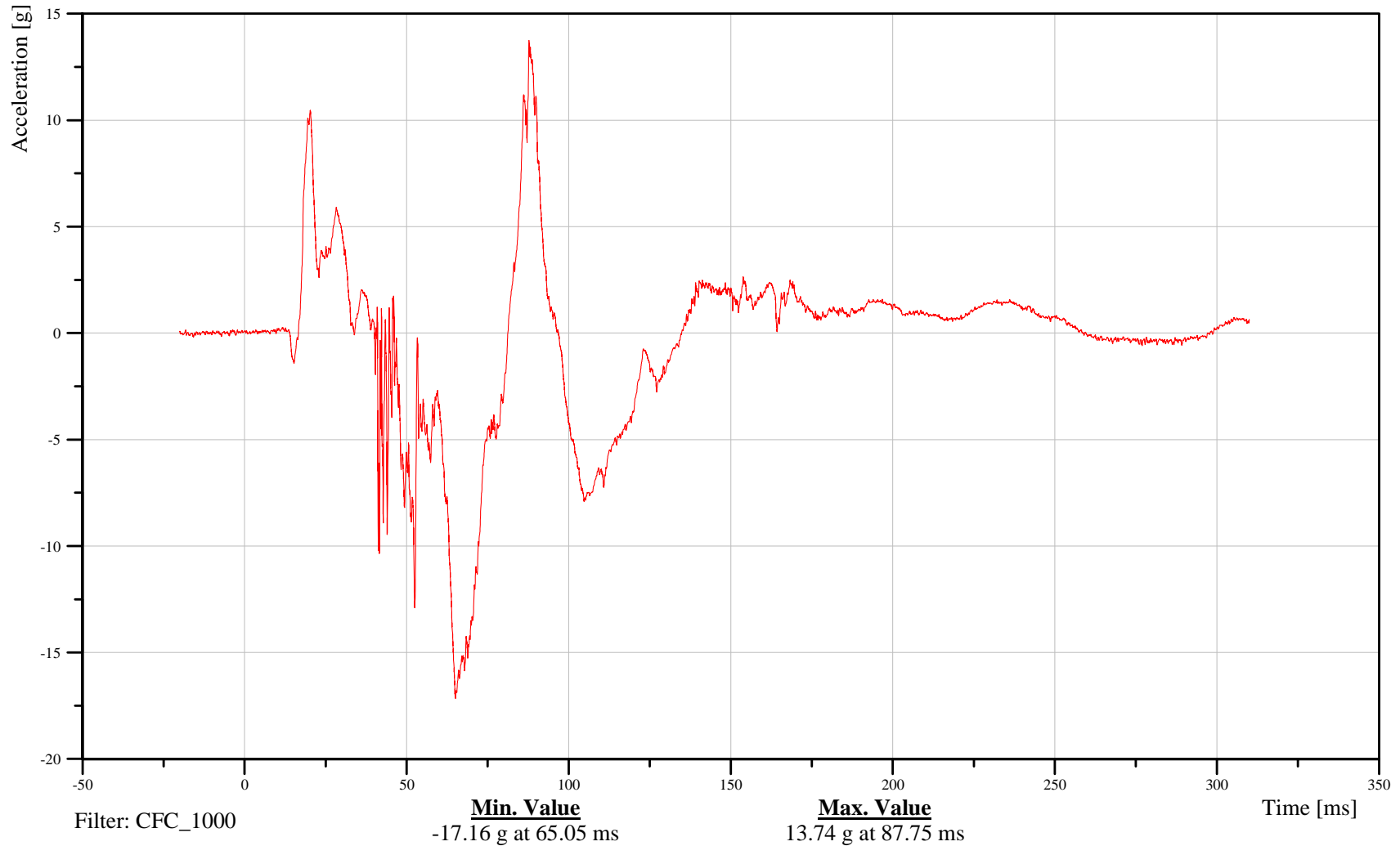
## Pelvis Z-Axis Acceleration

Customer: VRTC

# 11PELVCG00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-74

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

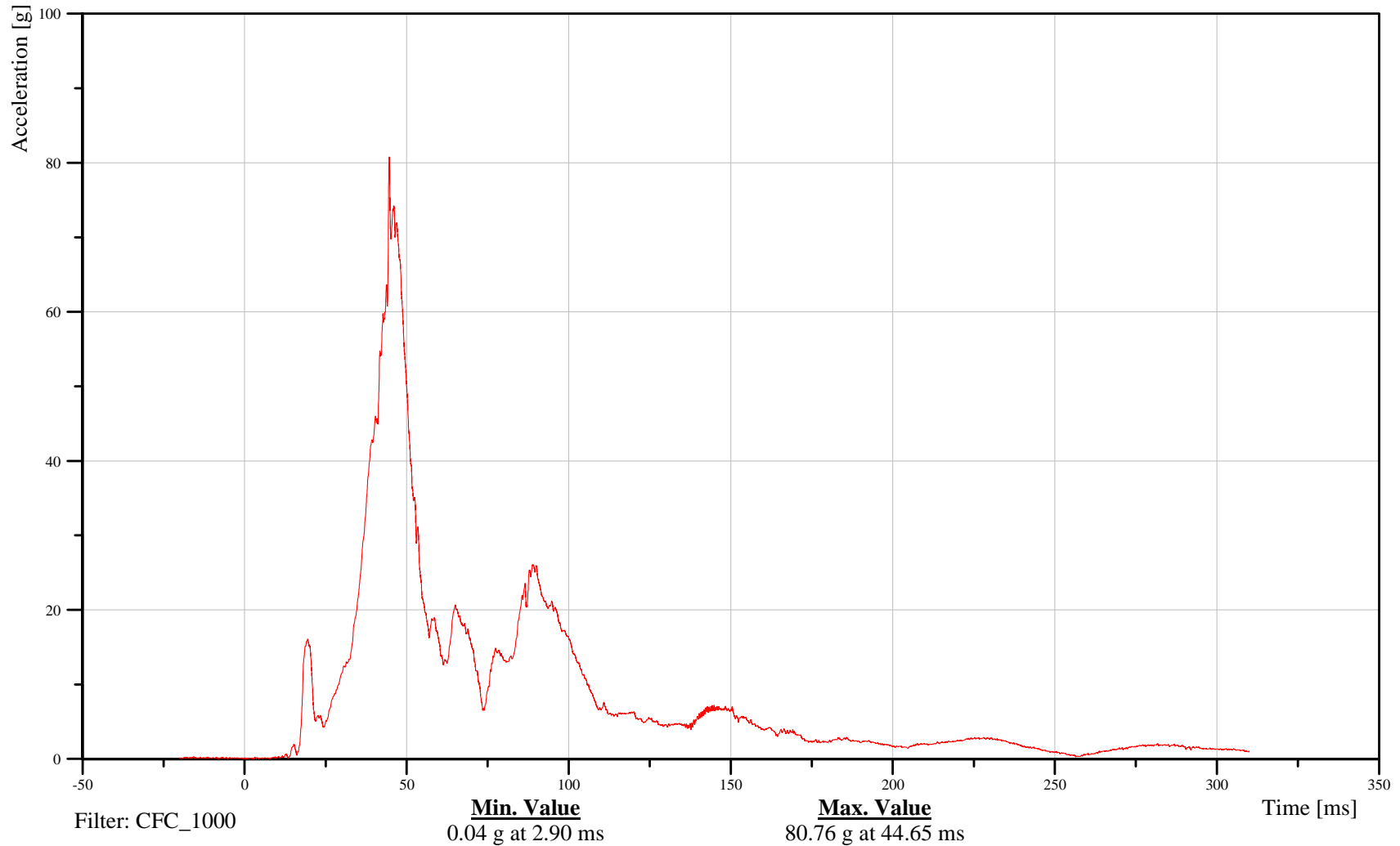
## Pelvis Resultant Acceleration

Customer: VRTC

# 11PELVCG00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-75

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

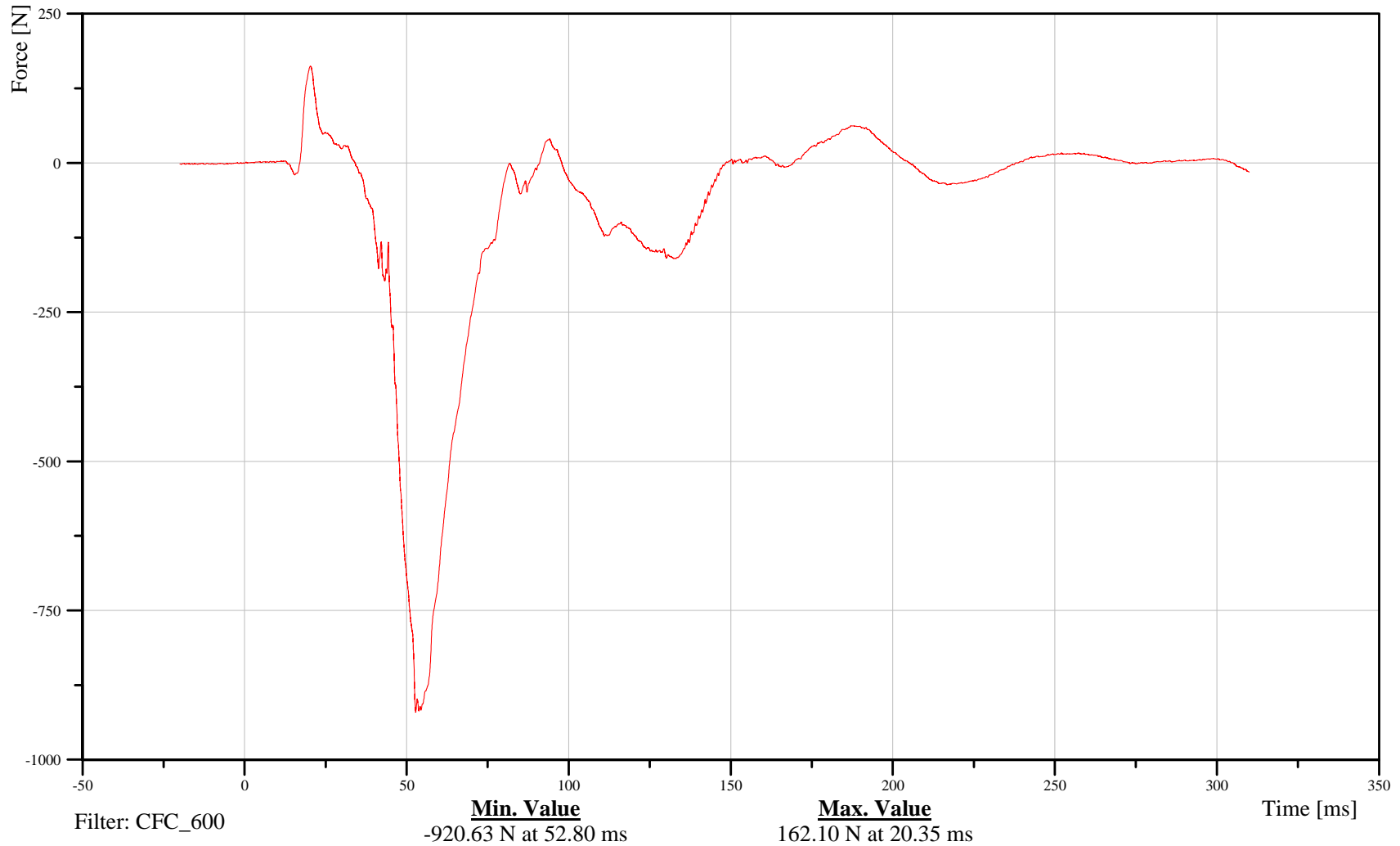
## Sacro-Iliac Left X-Axis Force

Customer: VRTC

# 11SACRLE00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-76

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

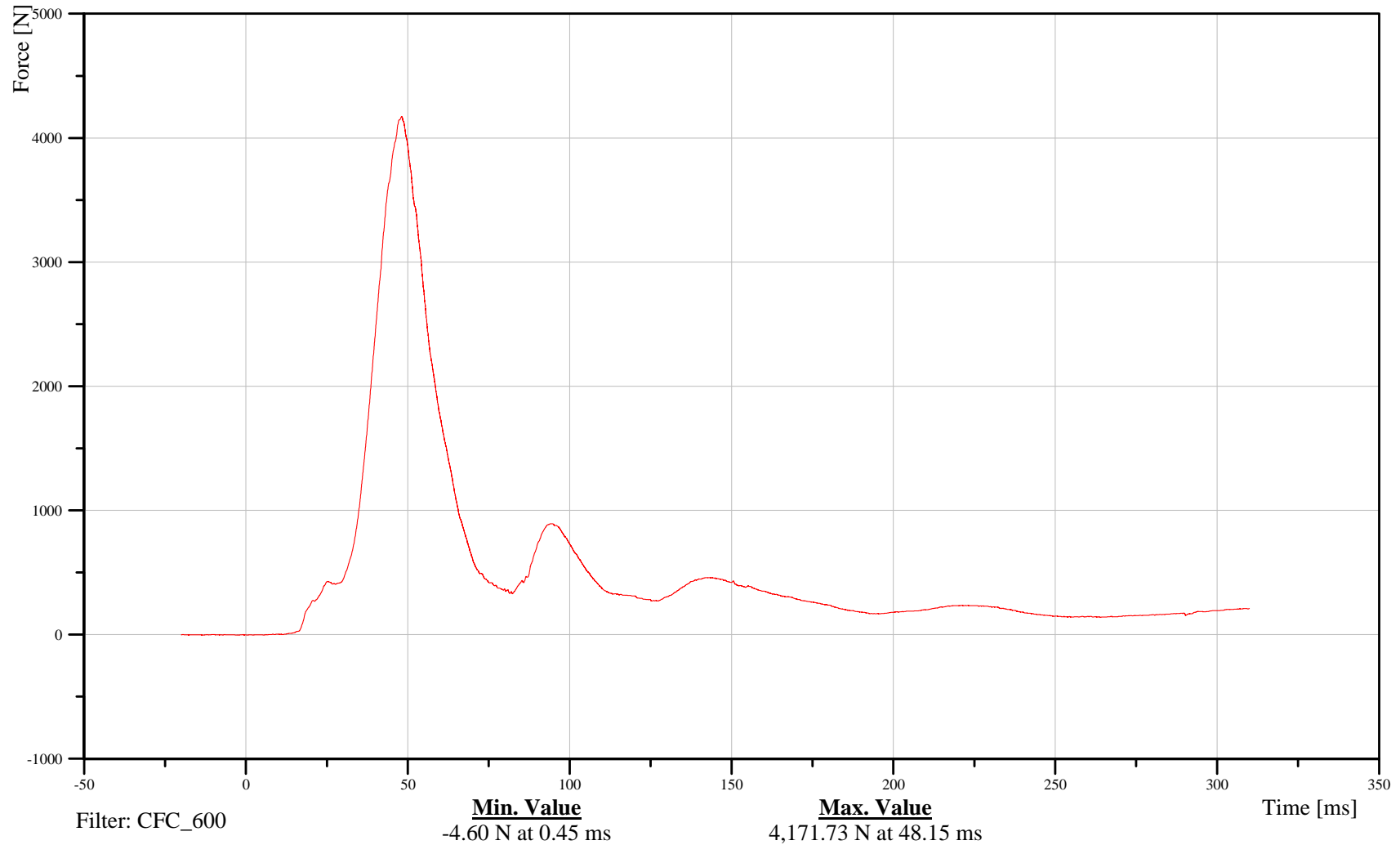
## Sacro-Iliac Left Y-Axis Force

Customer: VRTC

# 11SACRLE00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-77

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

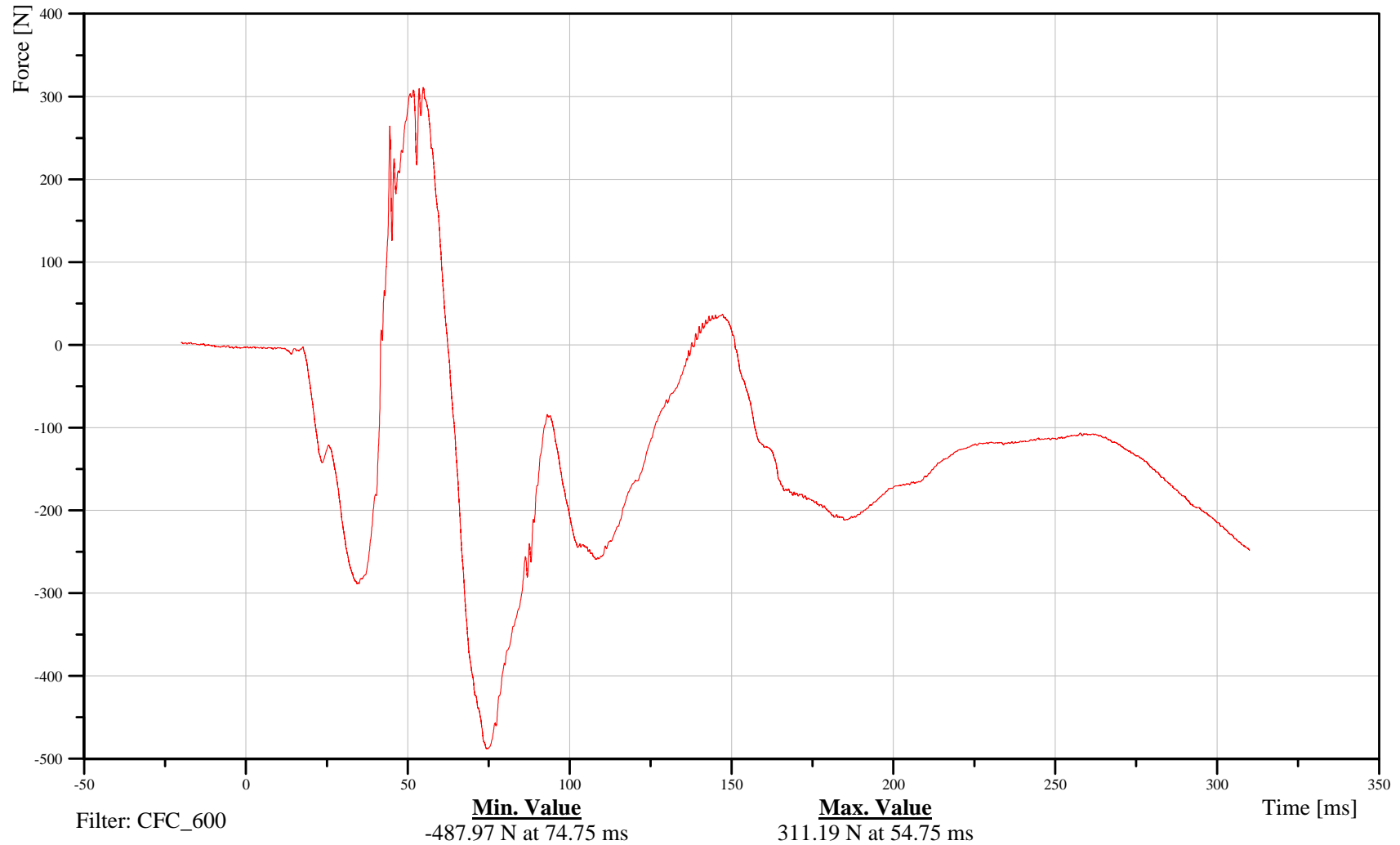
## Sacro-Iliac Left Z-Axis Force

Customer: VRTC

# 11SACRLE00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-78

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

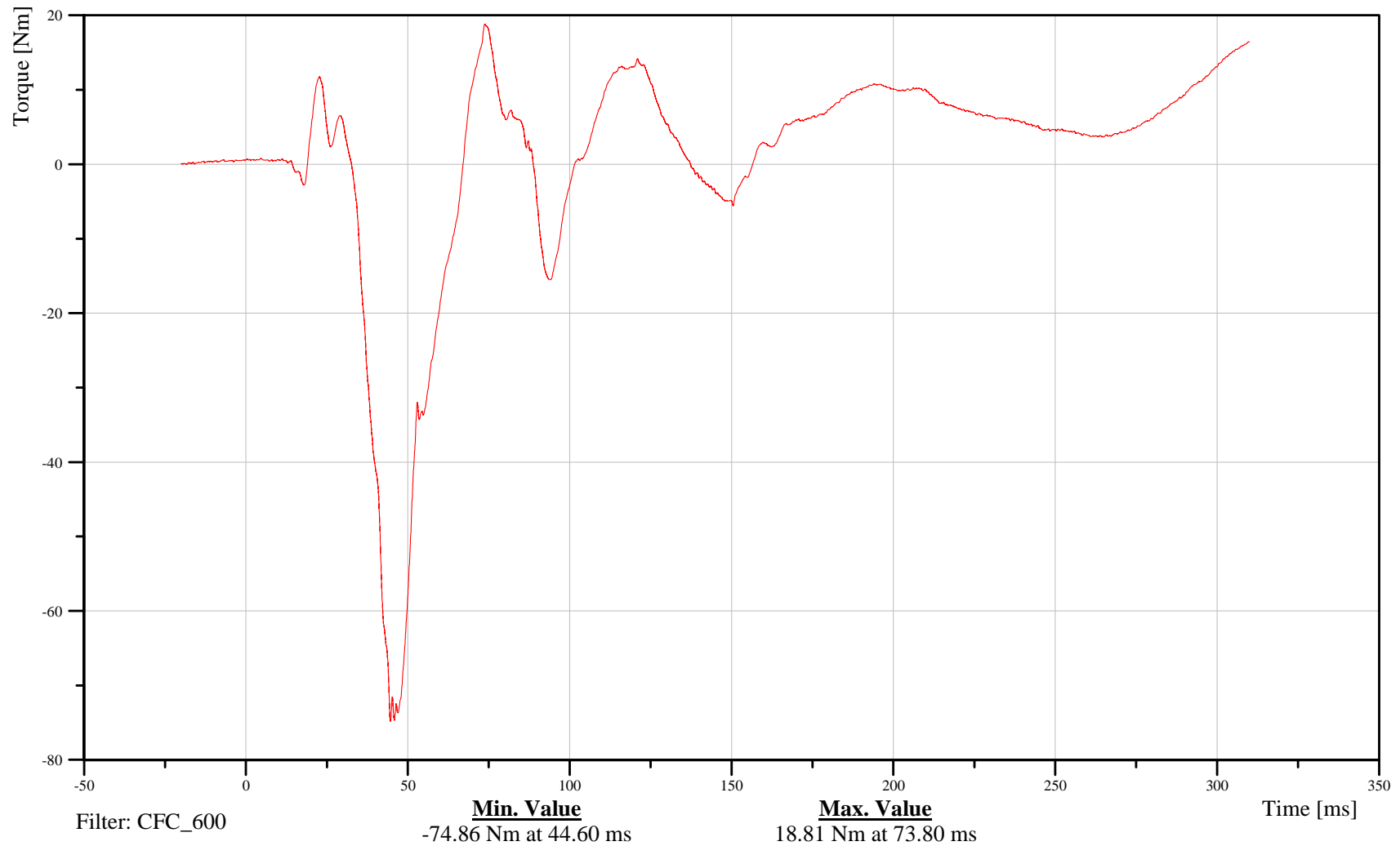
## Sacro-Iliac Left Moment About X Axis

Customer: VRTC

# 11SACRLE00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-79

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

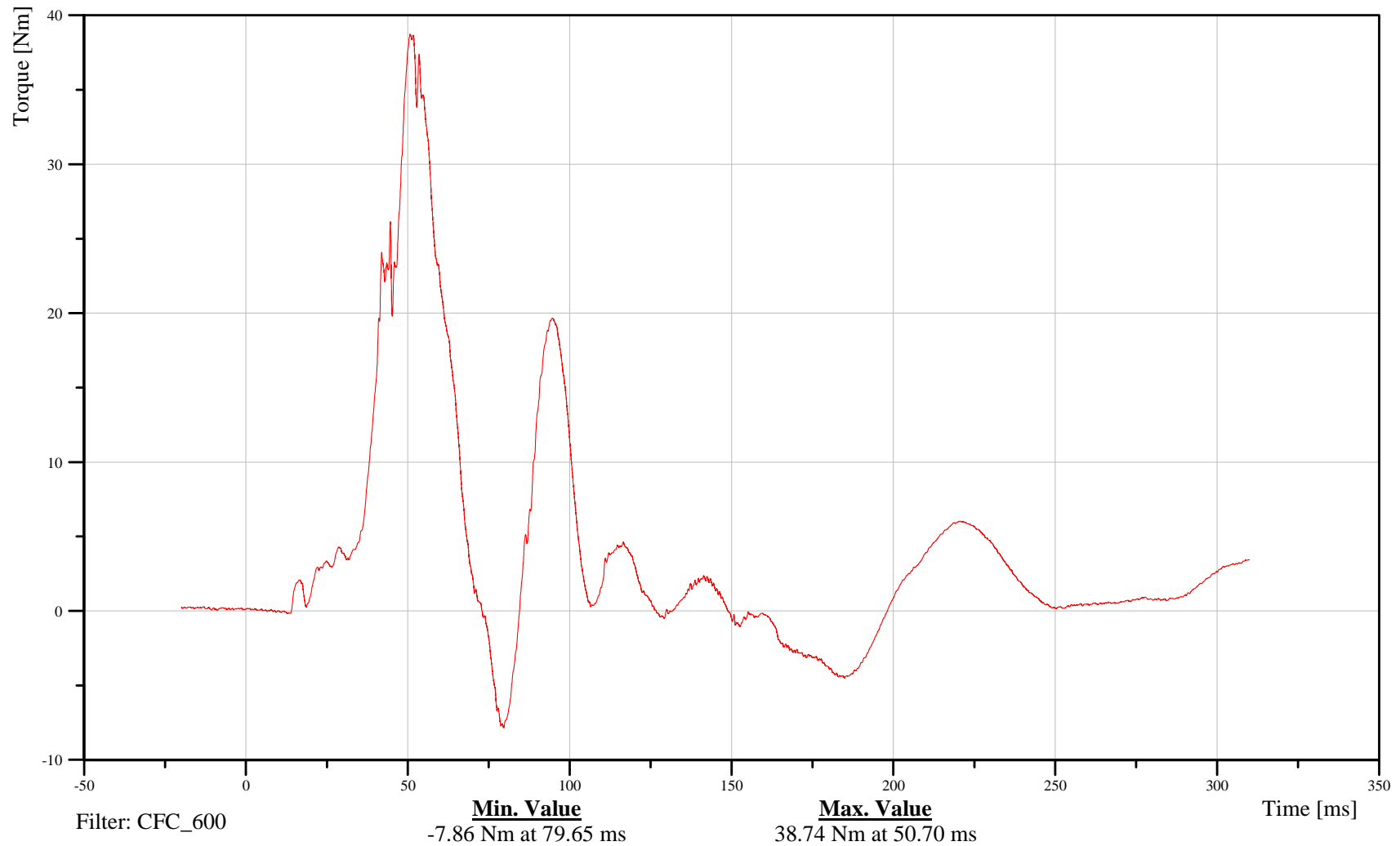
## Sacro-Iliac Left Moment About Y Axis

Customer: VRTC

# 11SACRLE00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-80

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

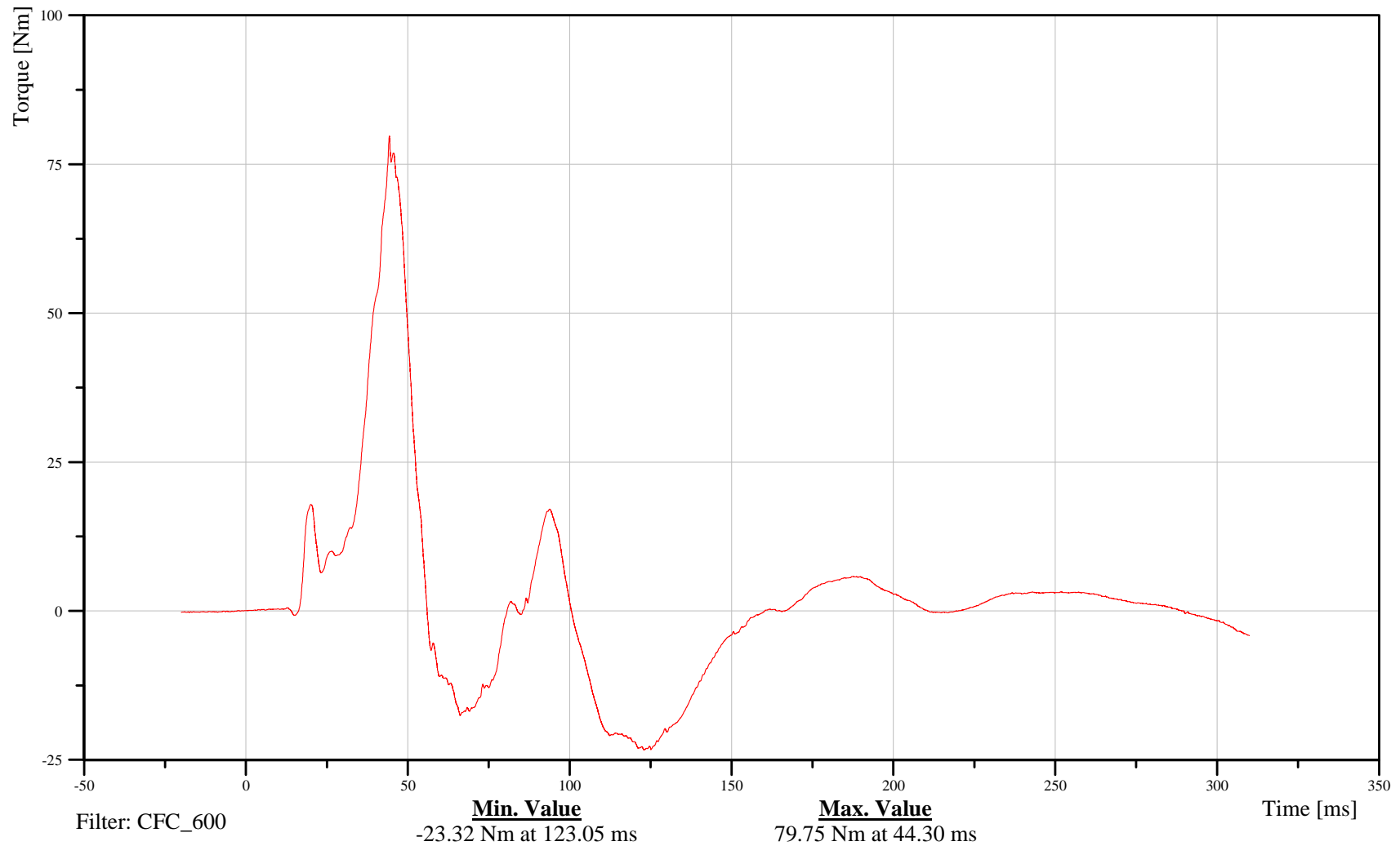
## Sacro-Iliac Left Moment About Z Axis

Customer: VRTC

# 11SACRLE00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-81

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

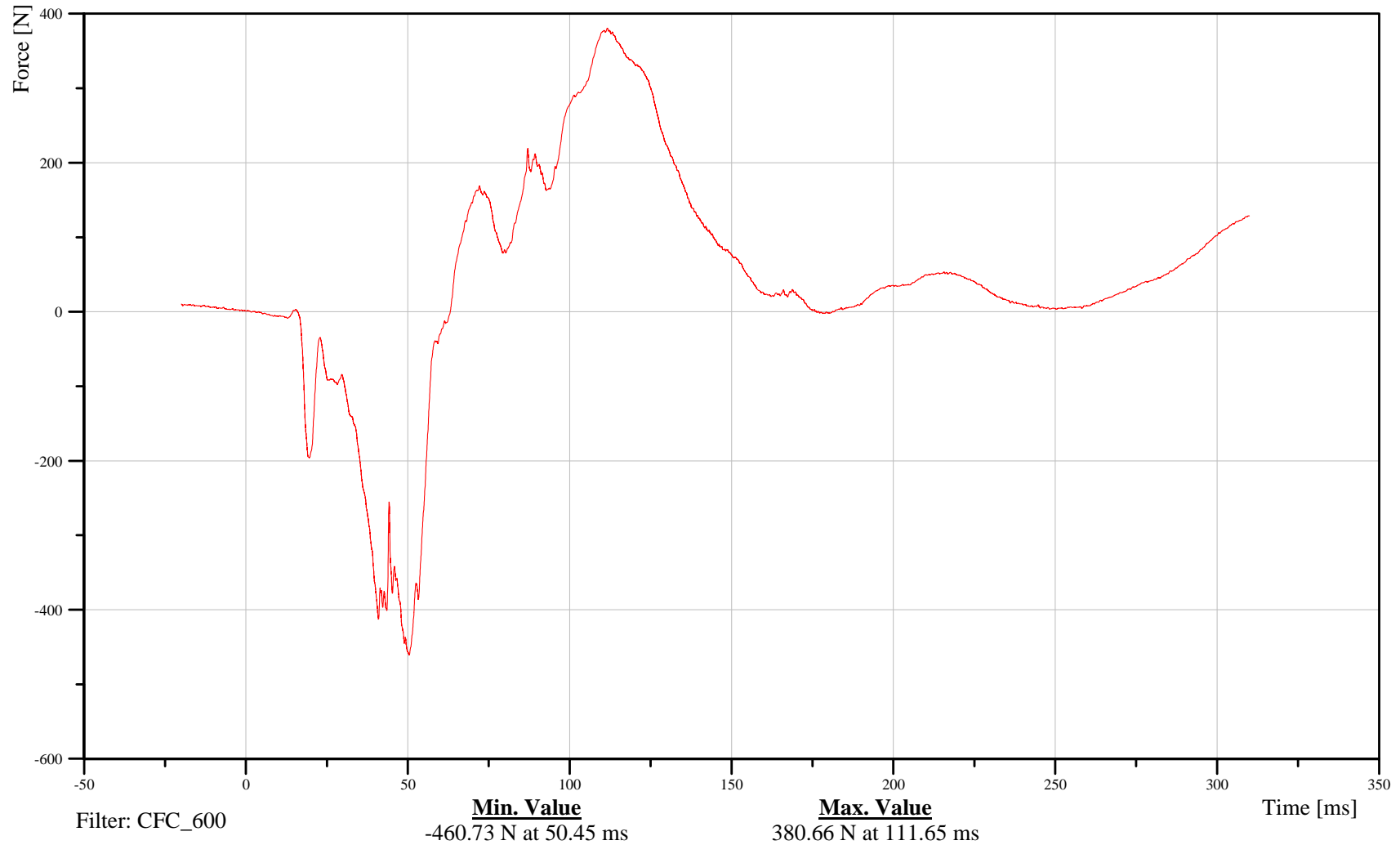
## Sacro-Iliac Right X-Axis Force

Customer: VRTC

# 11SACRRI00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-82

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

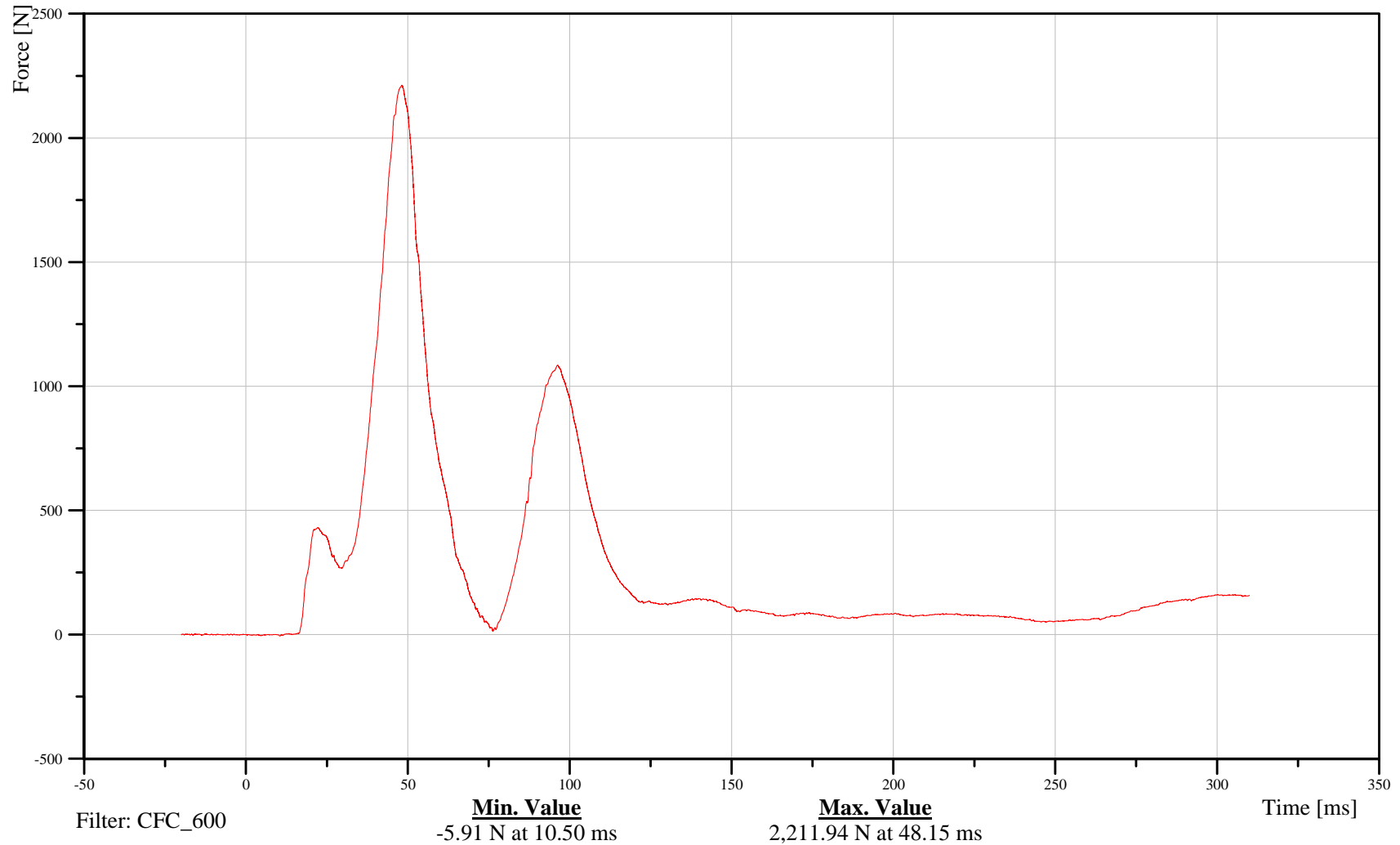
## Sacro-Iliac Right Y-Axis Force

Customer: VRTC

# 11SACRRI00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-83

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

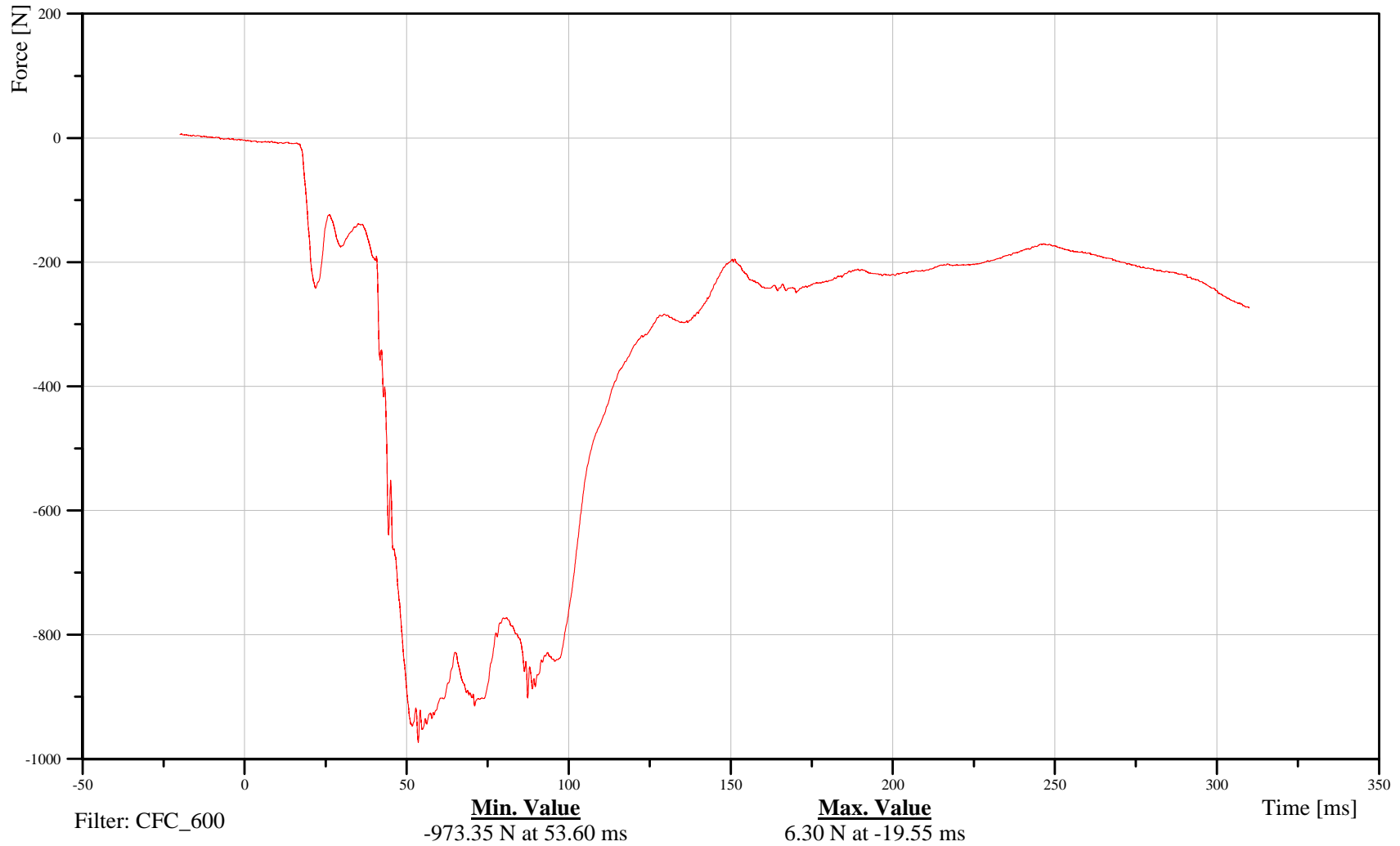
## Sacro-Iliac Right Z-Axis Force

Customer: VRTC

# 11SACRRI00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-84

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

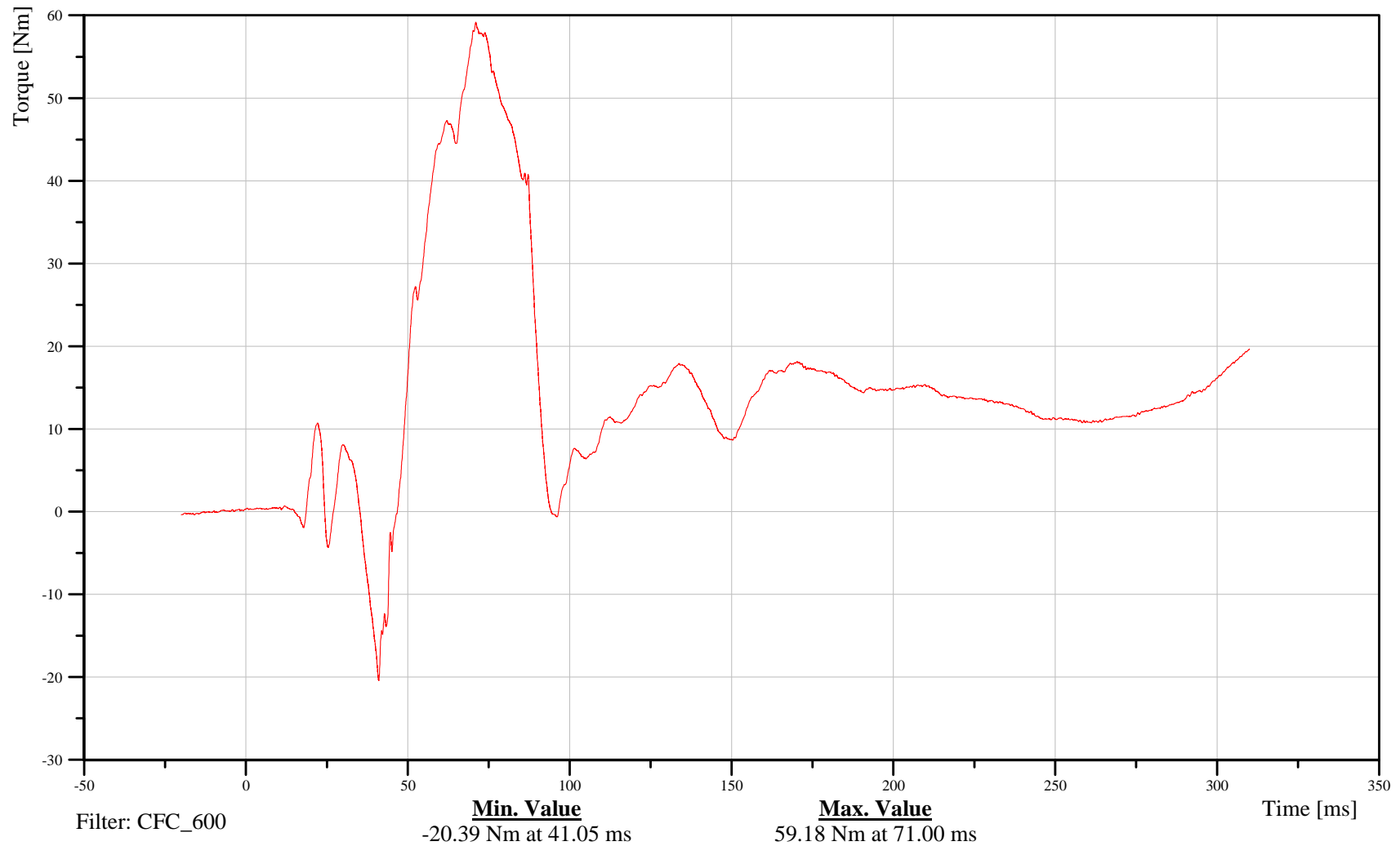
## Sacro-Iliac Right Moment About X Axis

Customer: VRTC

# 11SACRRI00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-85

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

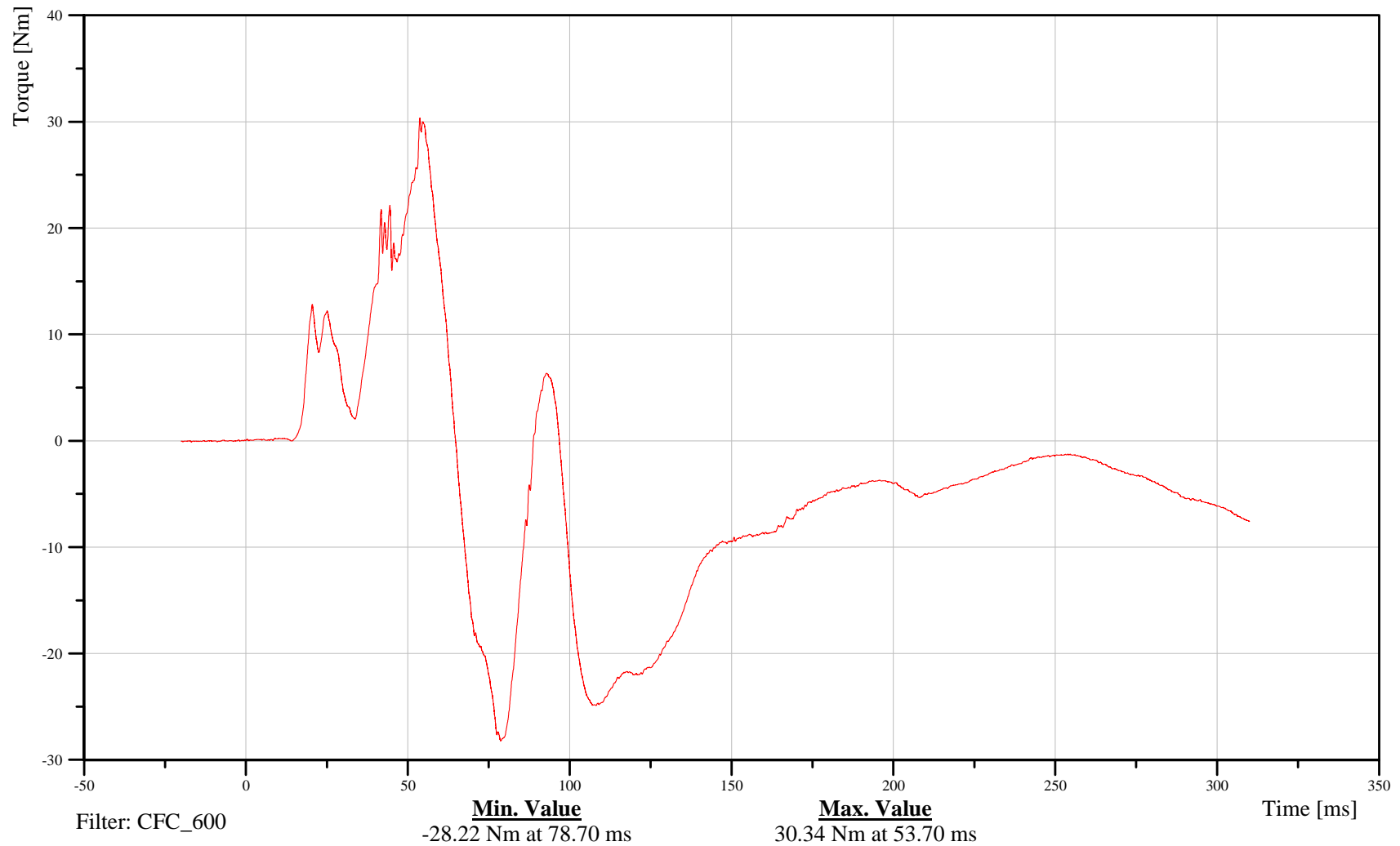
## Sacro-Iliac Right Moment About Y Axis

Customer: VRTC

# 11SACRRI00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-86

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

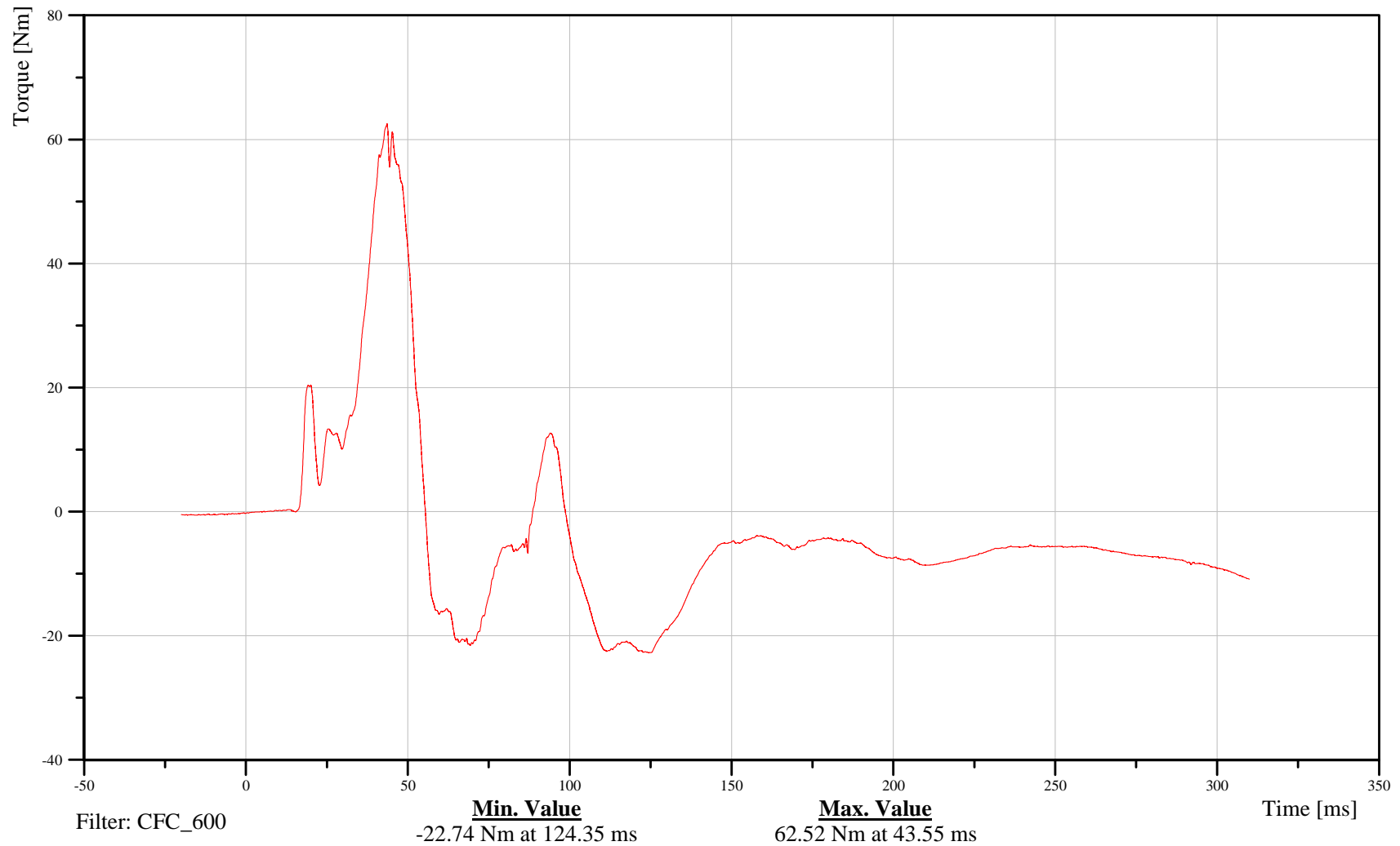
## Sacro-Iliac Right Moment About Z Axis

Customer: VRTC

# 11SACRRI00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-87

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

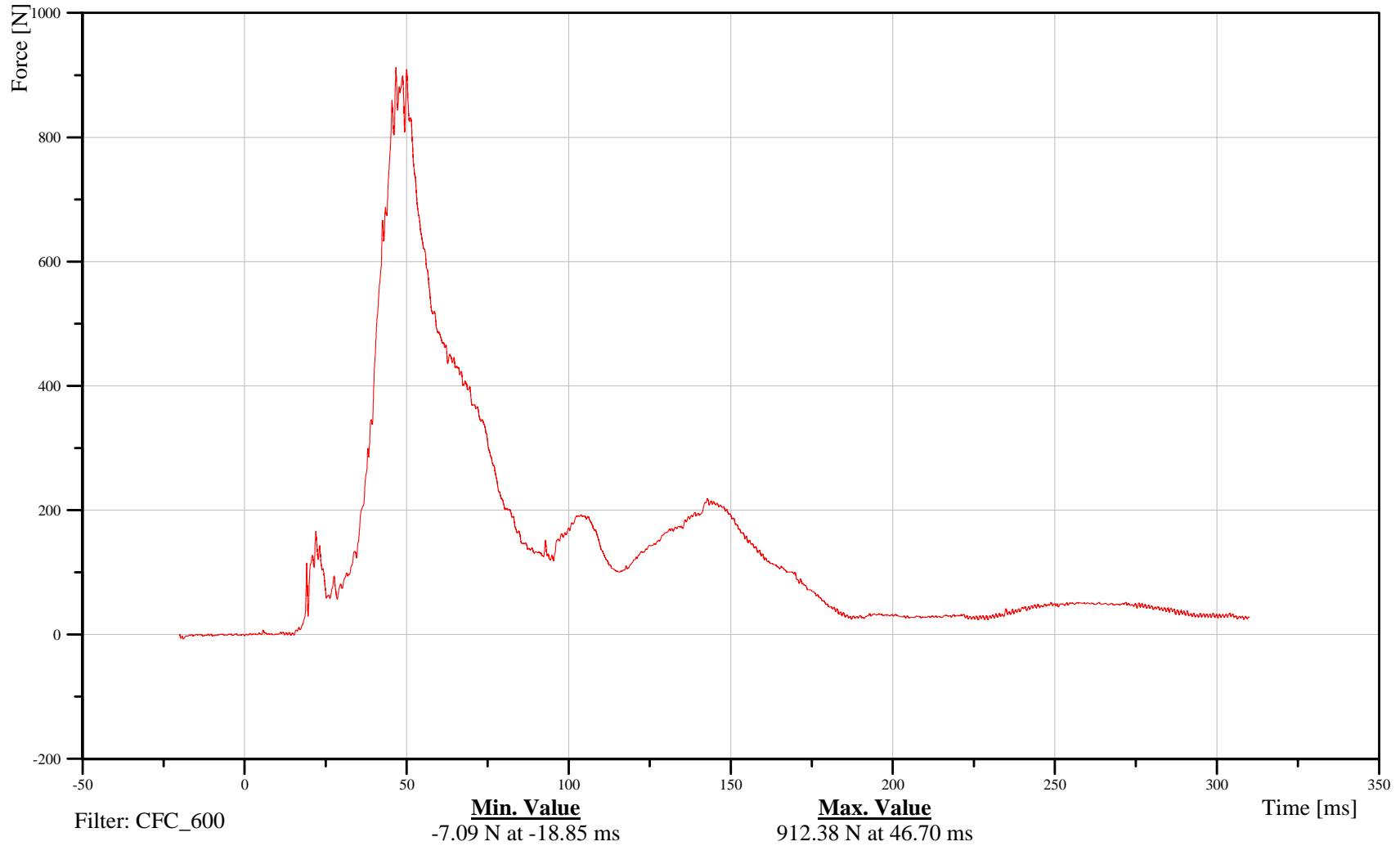
## Pubic Symphysis Y-Axis Force

Customer: VRTC

# 11PUBC0000WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-88

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

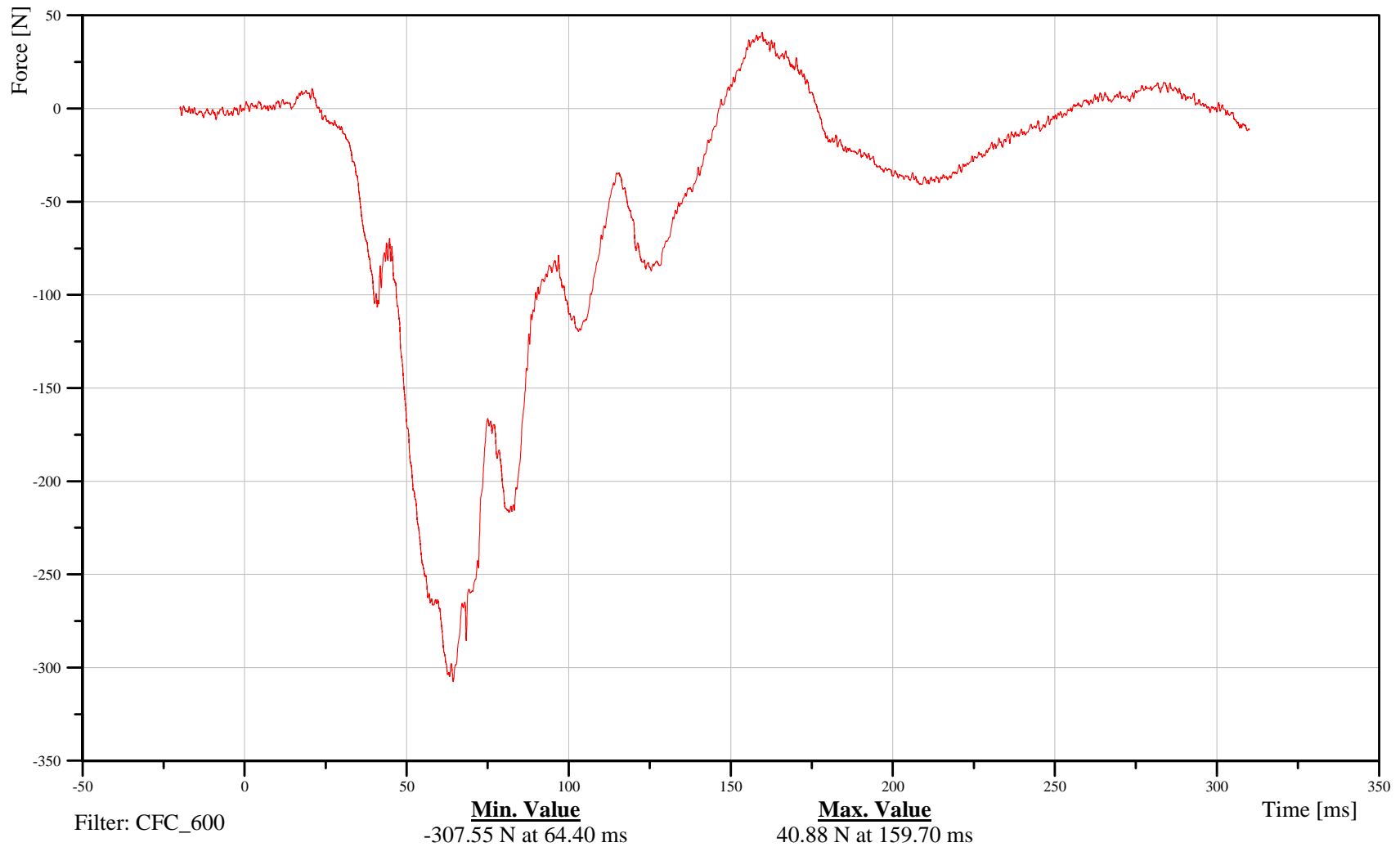
## Left Mid Femur X-Axis Force

Customer: VRTC

# 11FEMRLEMIWSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-89

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

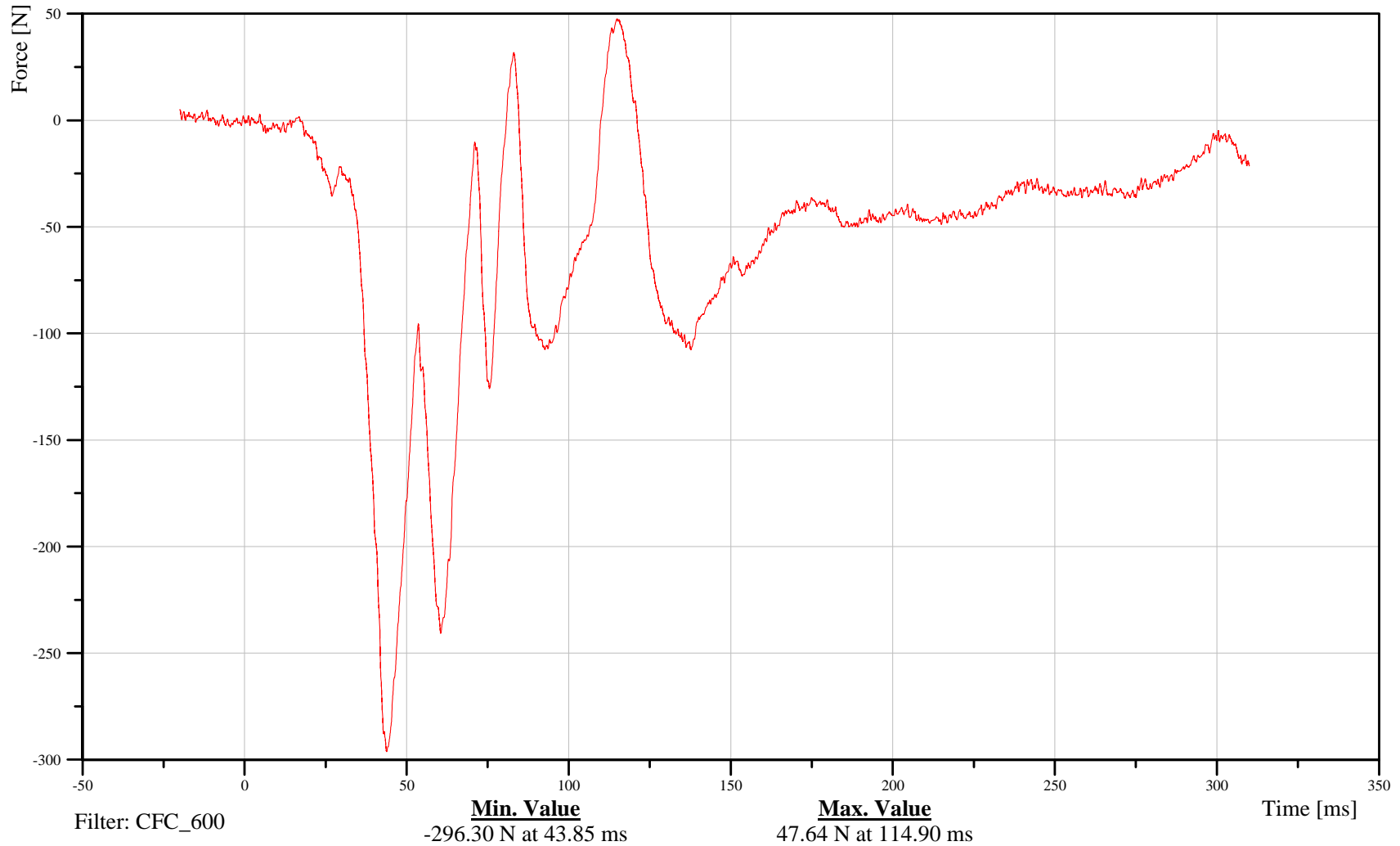
## Left Mid Femur Y-Axis Force

Customer: VRTC

# 11FEMRLEMIWSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-90

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

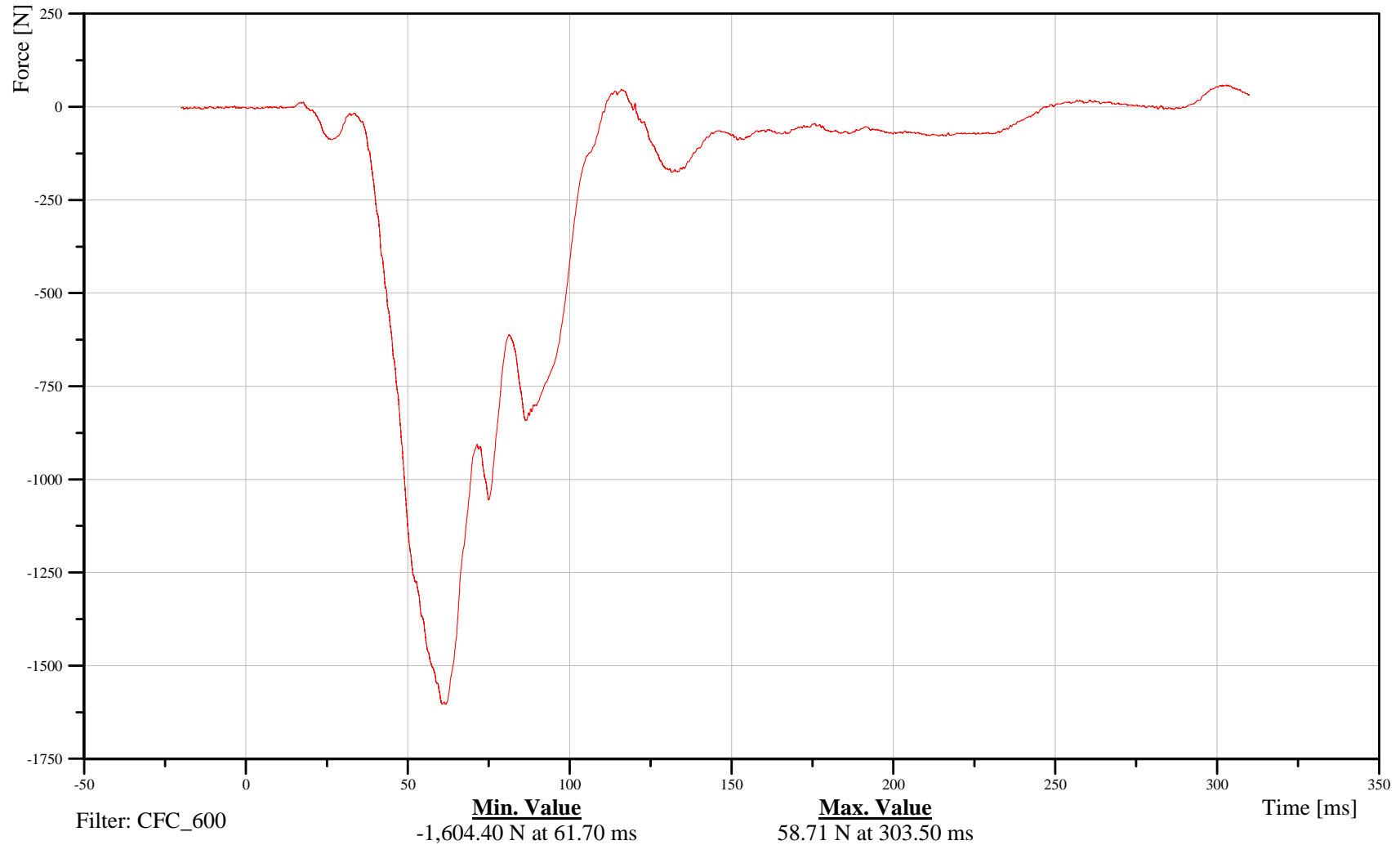
## Left Mid Femur Z-Axis Force

Customer: VRTC

# 11FEMRLEMIWSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-91

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

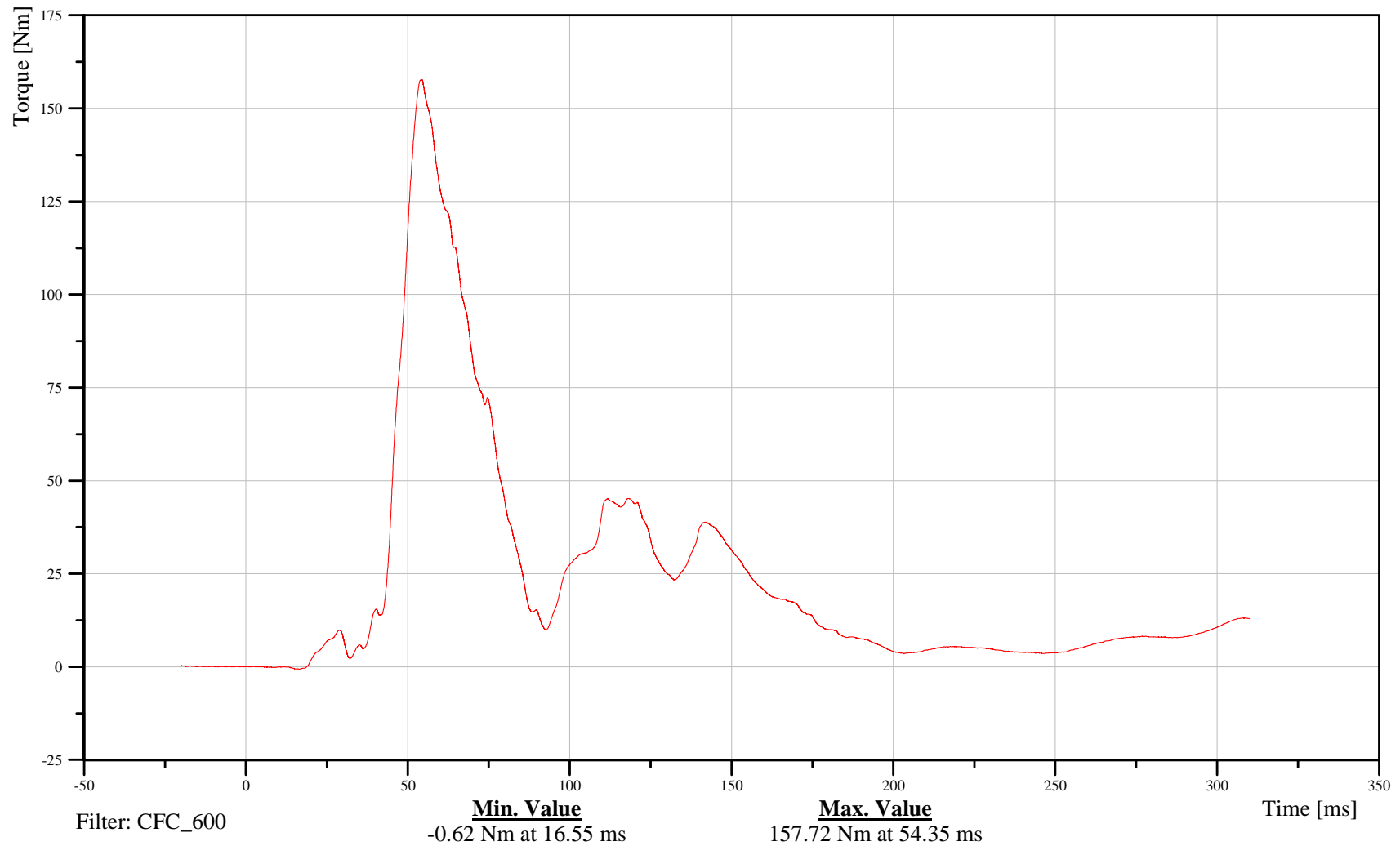
## Left Mid Femur Moment Mx

Customer: VRTC

# 11FEMRLEMIWSMOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-92

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

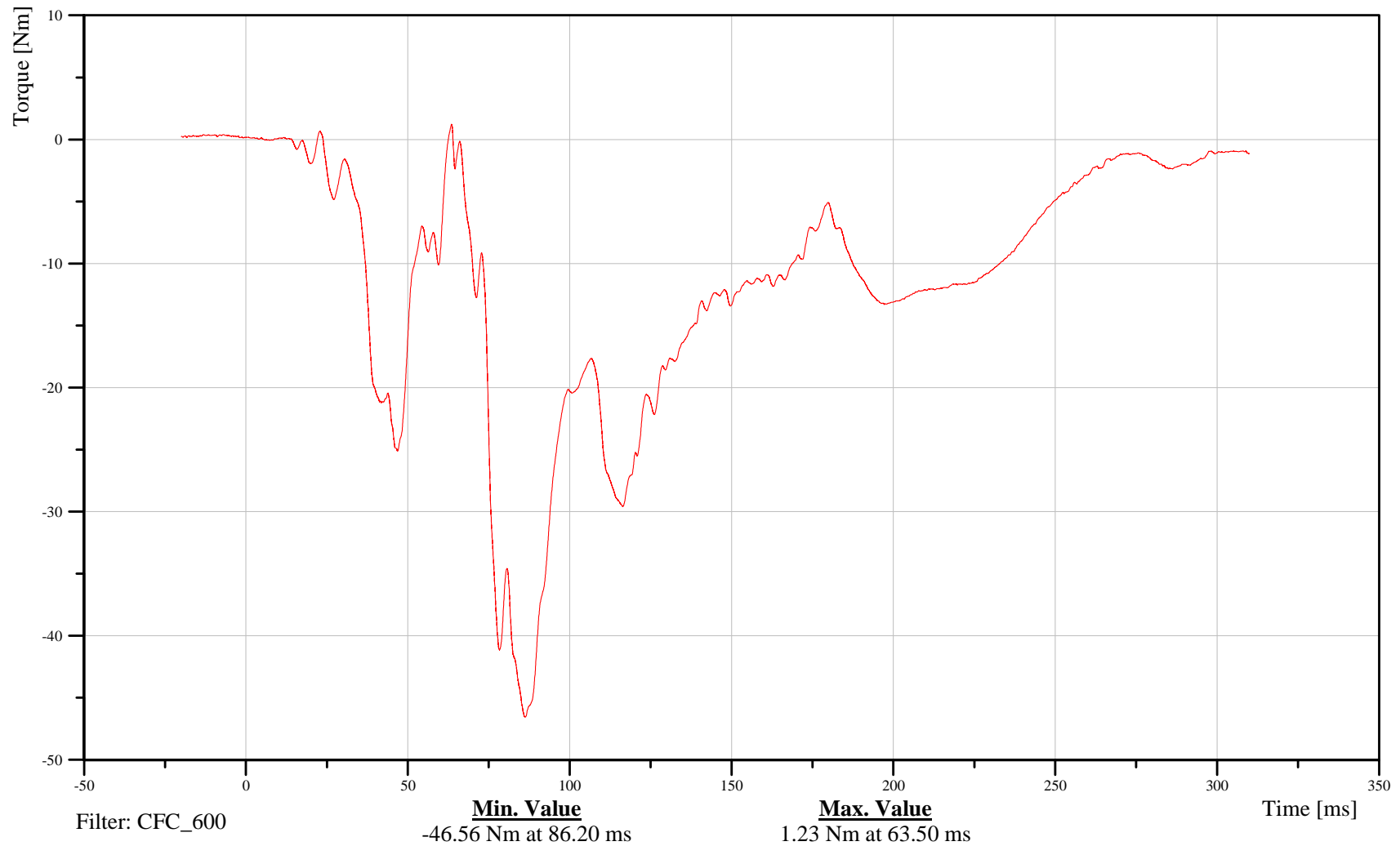
Left Mid Femur Moment My

Customer: VRTC

## 11FEMRLEMIWSMOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-93

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

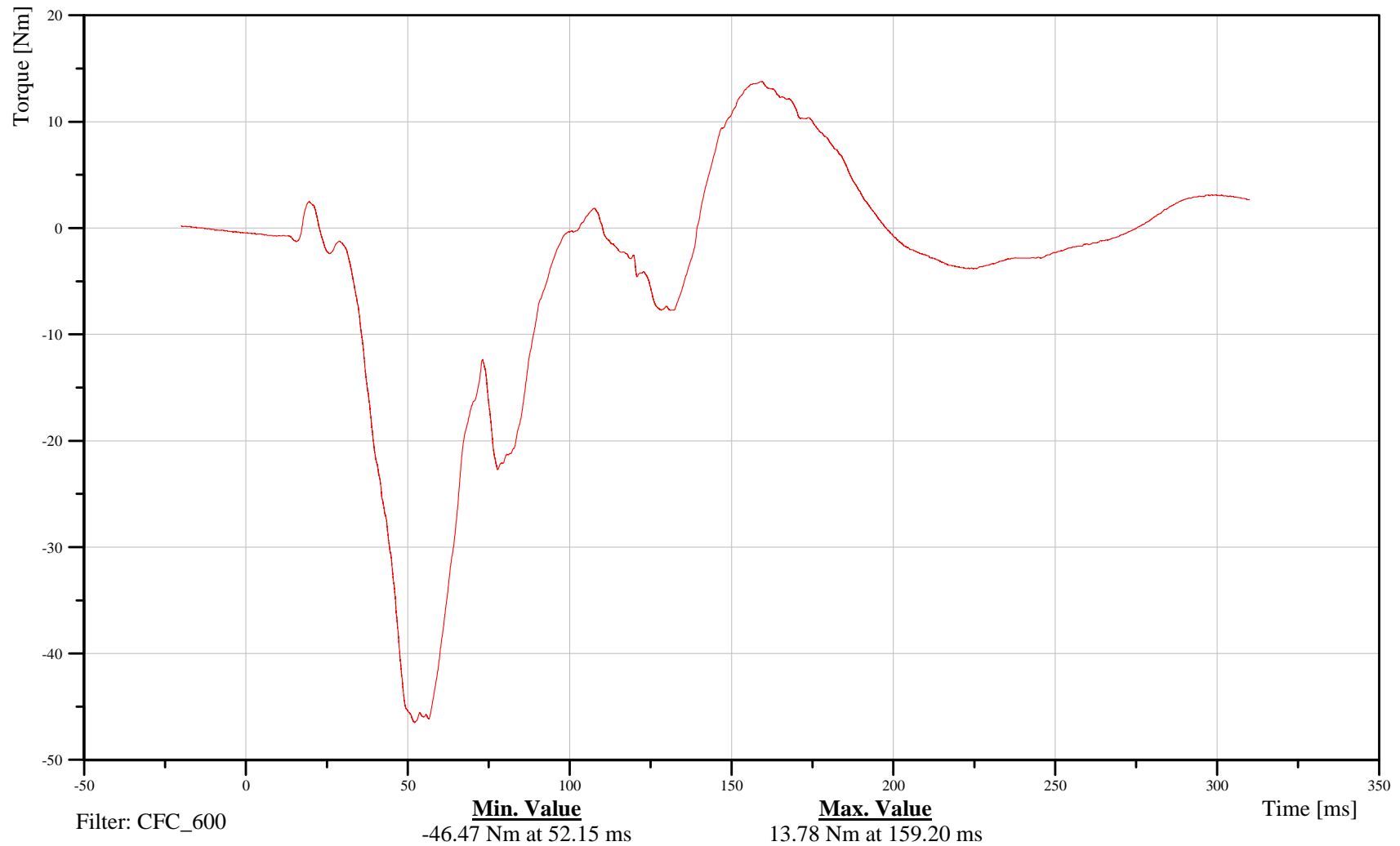
Left Mid Femur Moment Mz

Customer: VRTC

## 11FEMRLEMIWSMOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-94

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

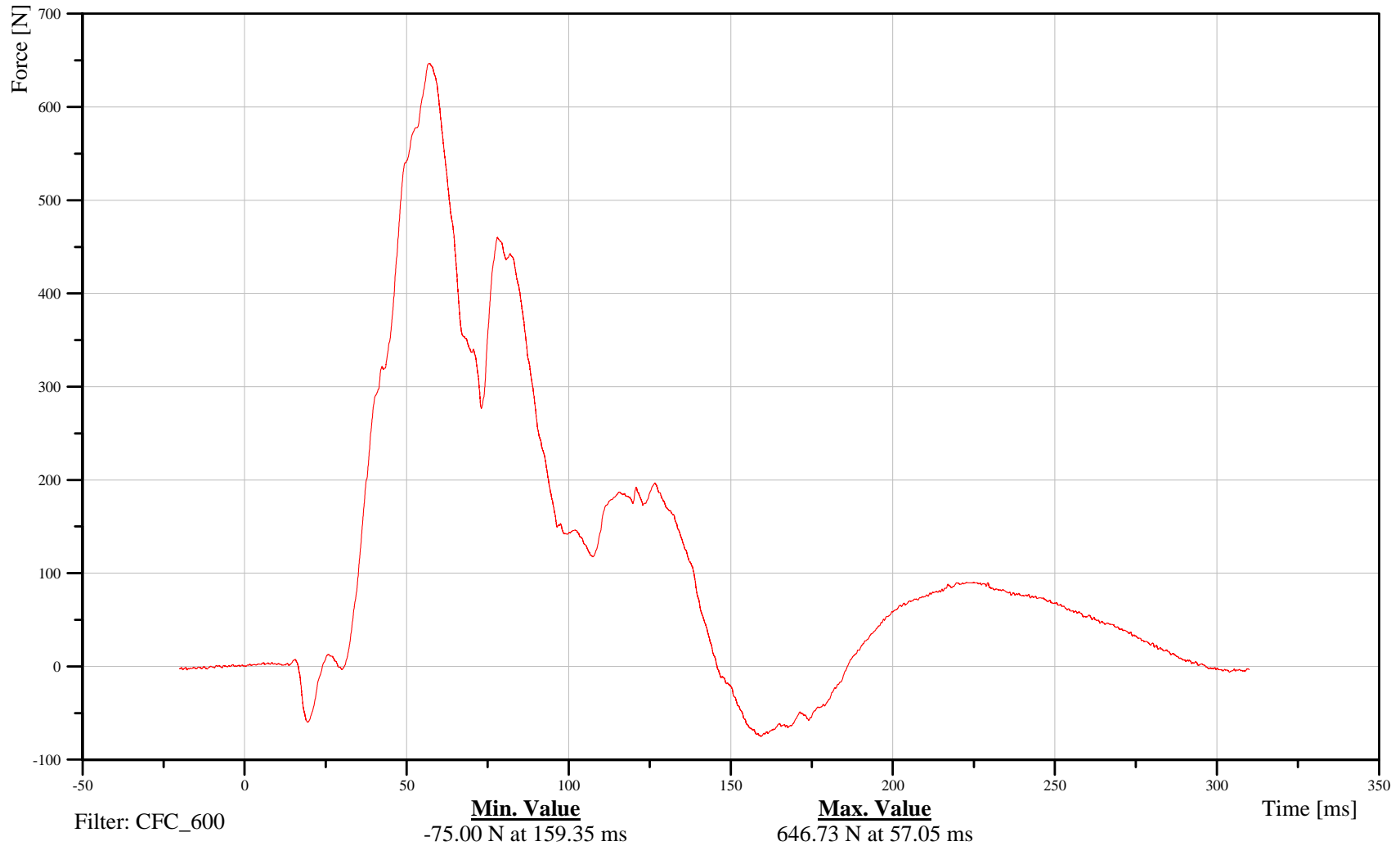
## Left Femoral Neck X-Axis Force

Customer: VRTC

# 11FEMRLL00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-95

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

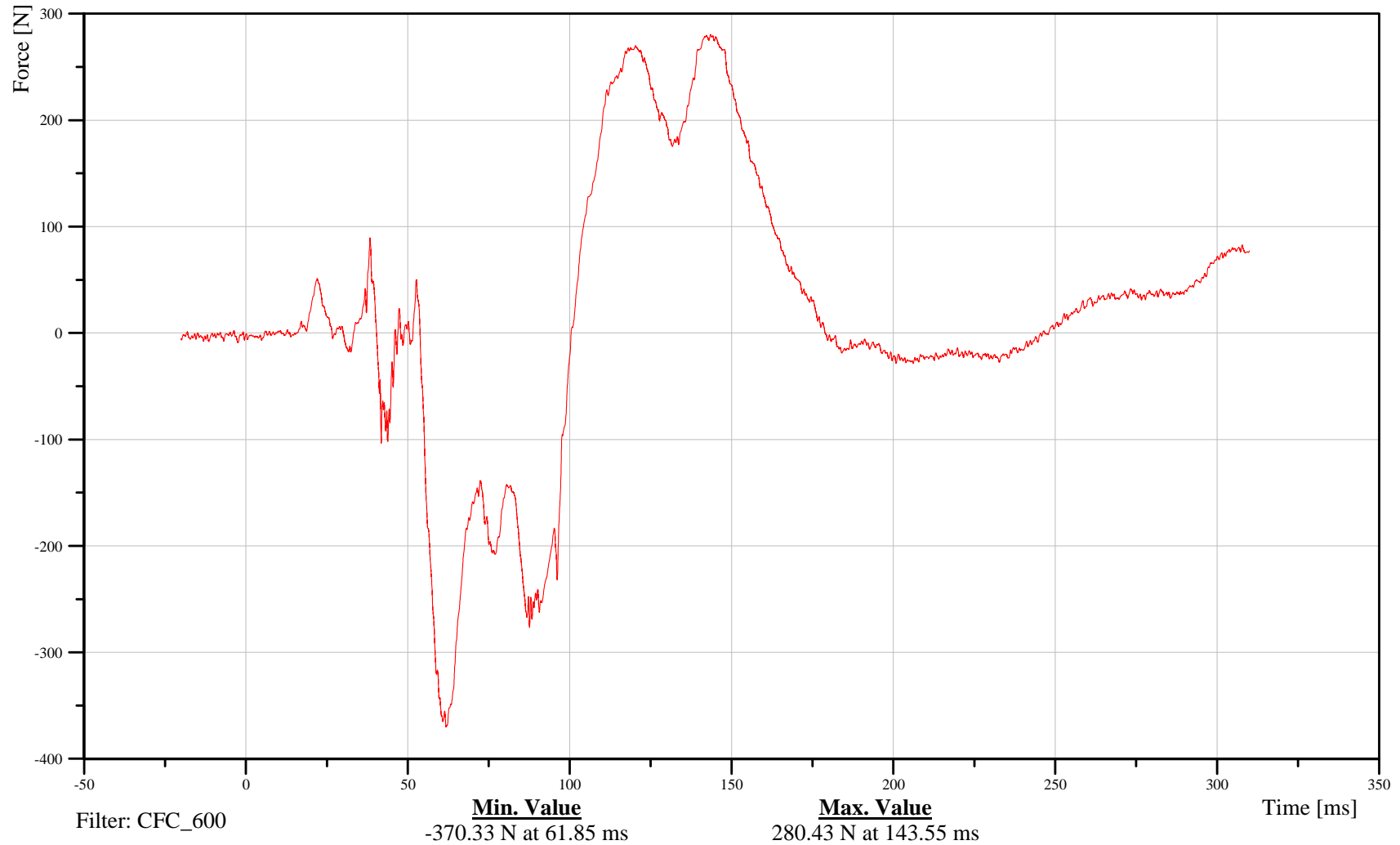
## Left Femoral Neck Y-Axis Force

Customer: VRTC

# 11FEMRLL00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-96

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

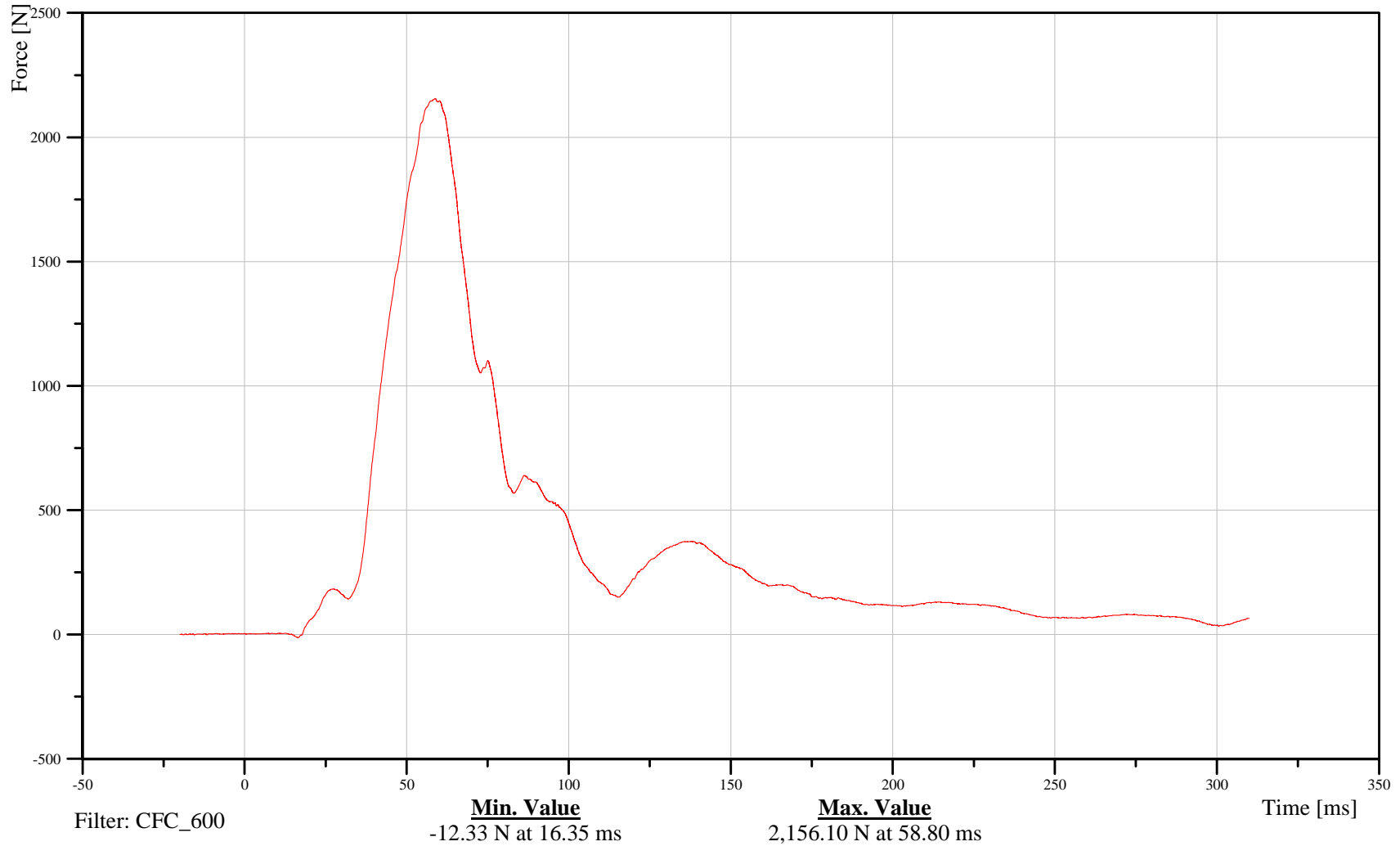
## Left Femoral Neck Z-Axis Force

Customer: VRTC

# 11FEMRLL00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-97

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

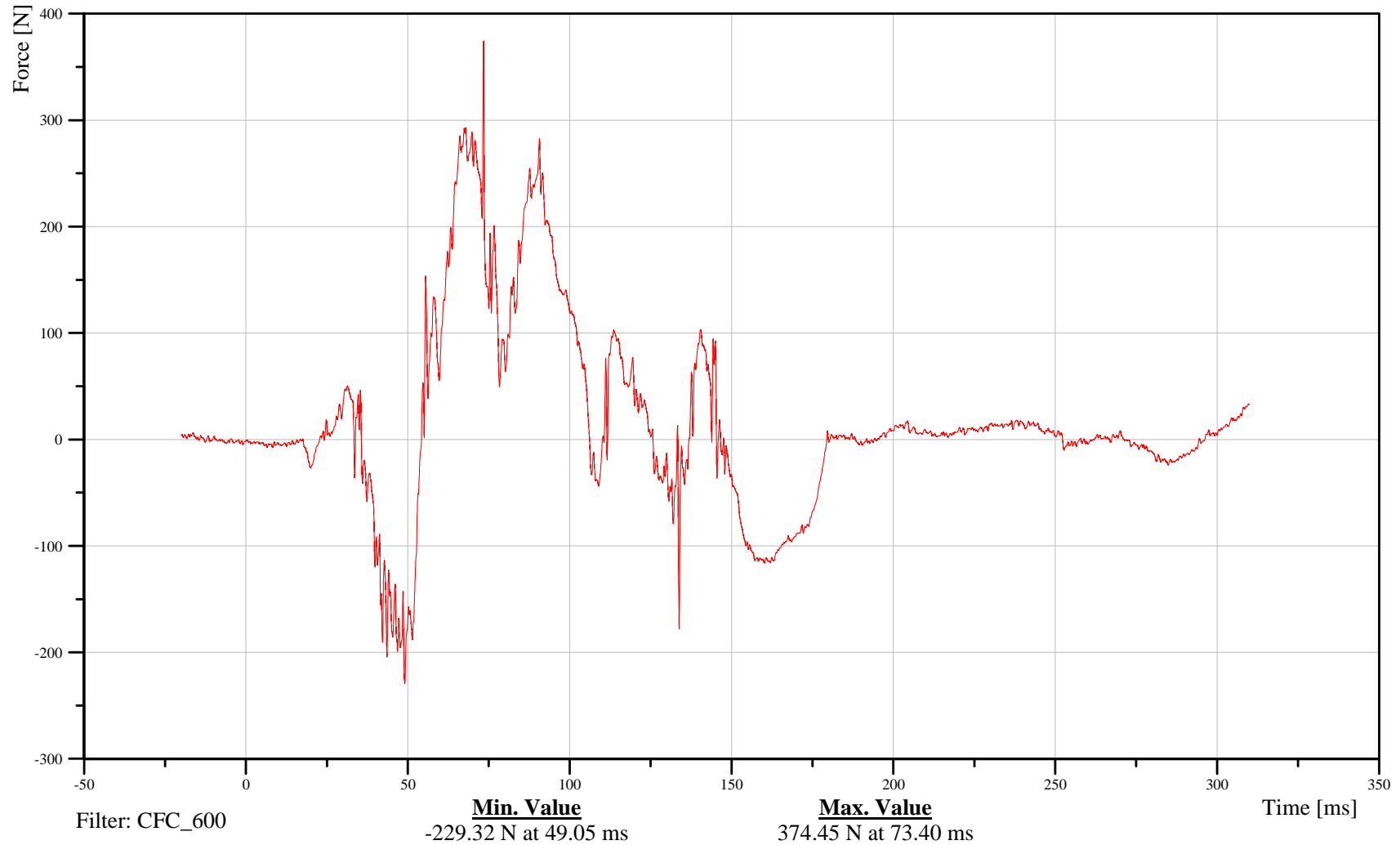
## Left Knee Outboard Y-Axis Force

Customer: VRTC

# 11KNEELEOUWSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-98

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

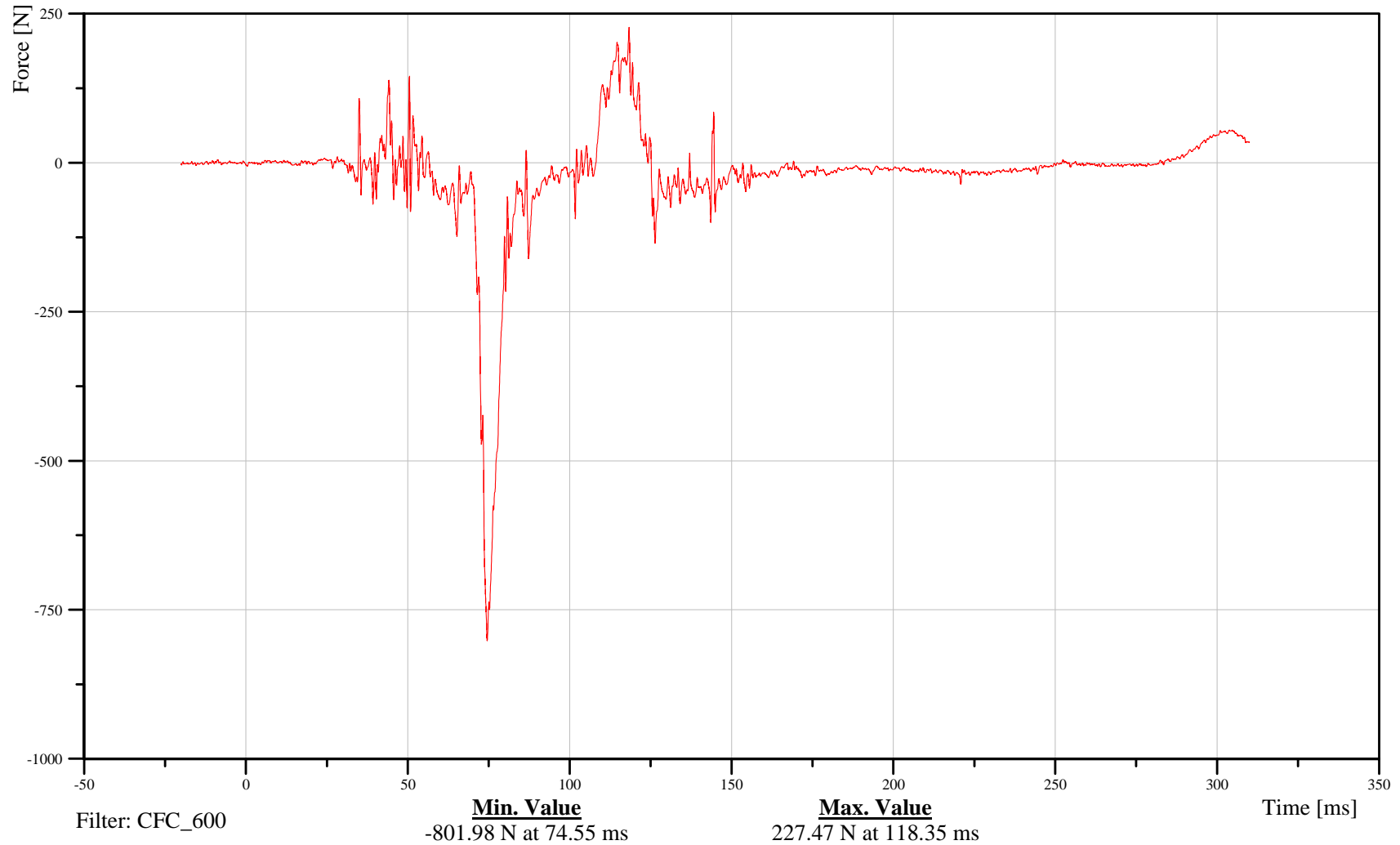
## Left Knee Inboard Y-Axis Force

Customer: VRTC

# 11KNEELEINWSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-99

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

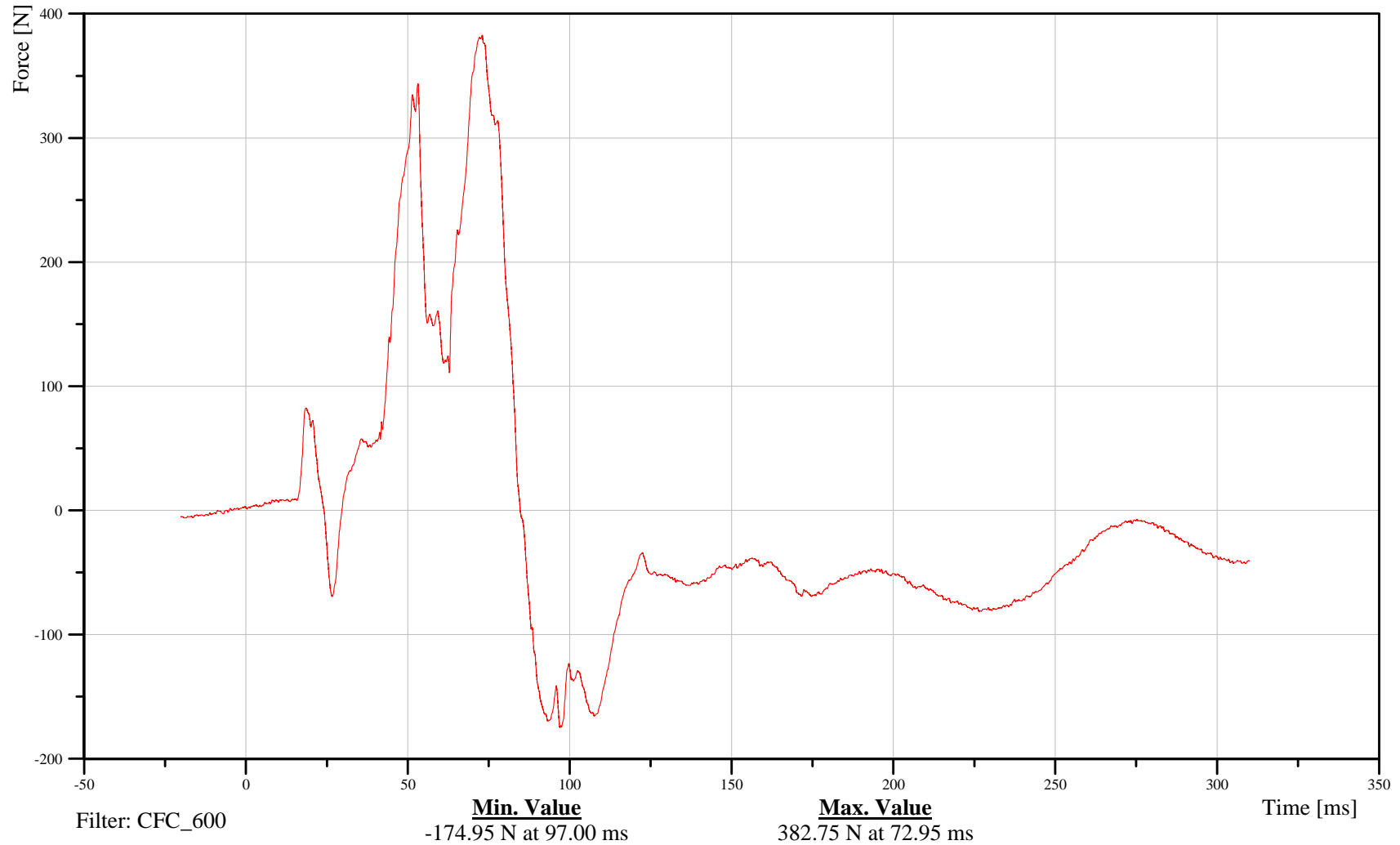
## Right Femoral Neck X-Axis Force

Customer: VRTC

### 11FEMRRL00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-100

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

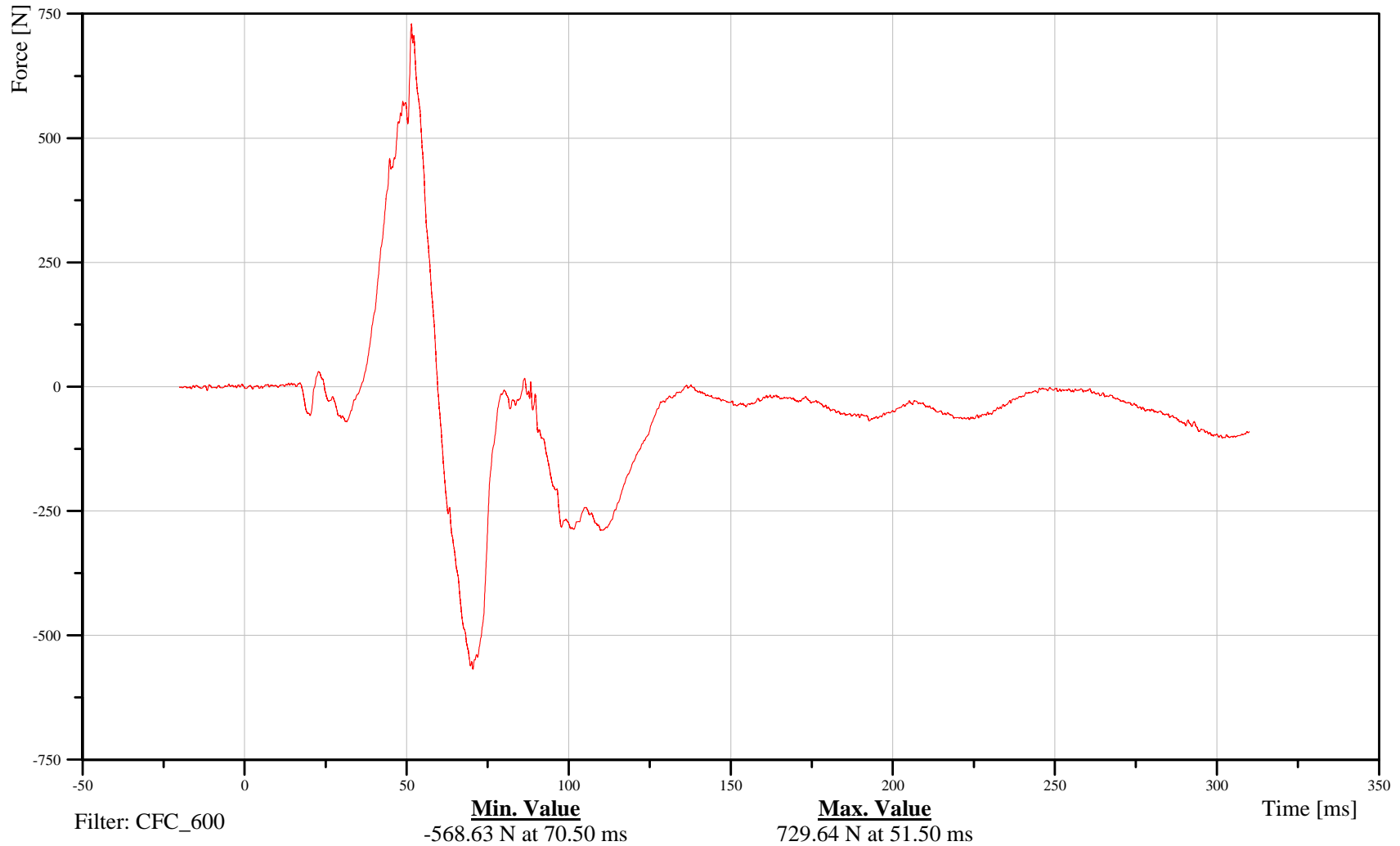
## Right Femoral Neck Y-Axis Force

Customer: VRTC

# 11FEMRRL00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-101

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

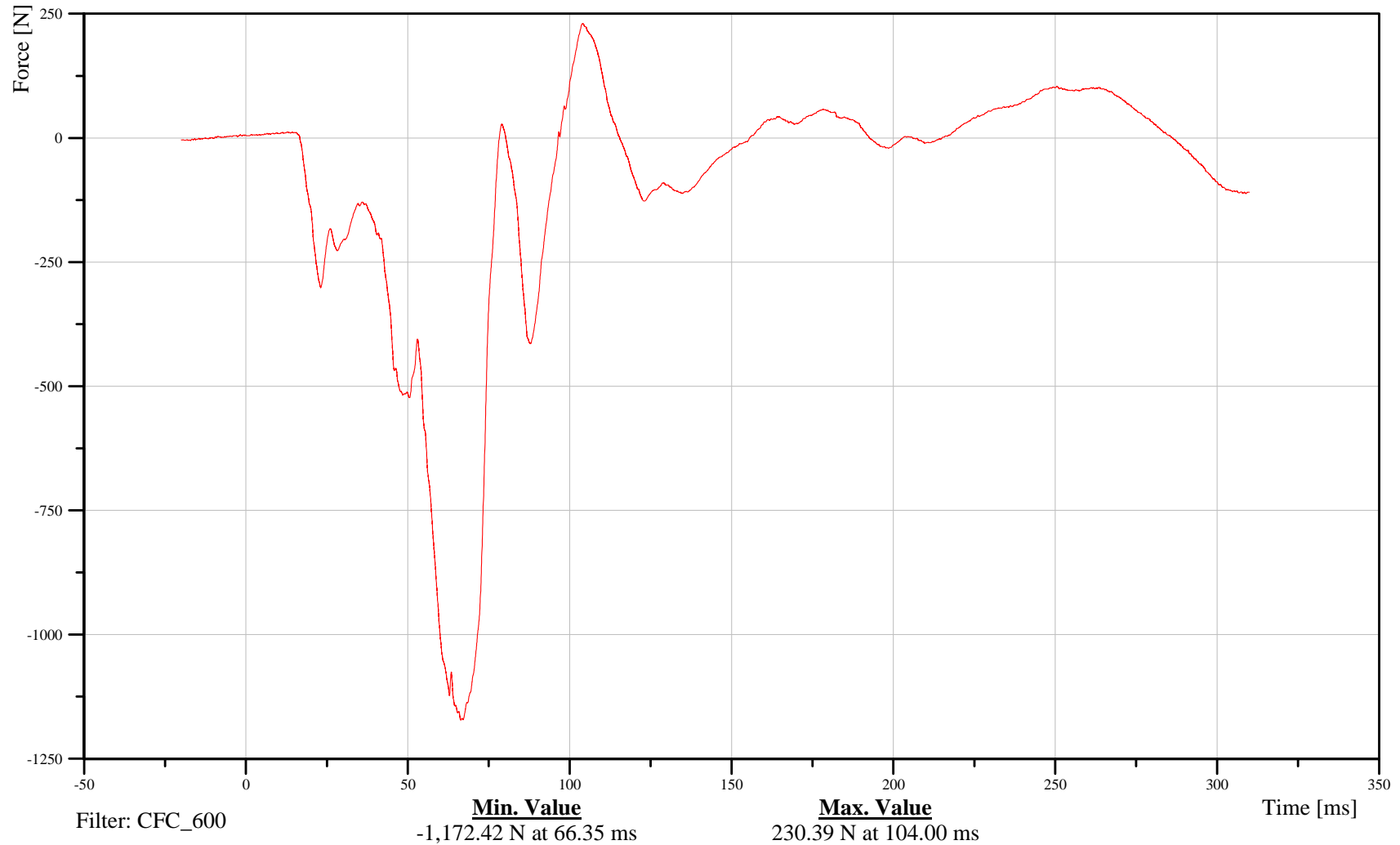
## Right Femoral Neck Z-Axis Force

Customer: VRTC

### 11FEMRRL00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 110908



B-102

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

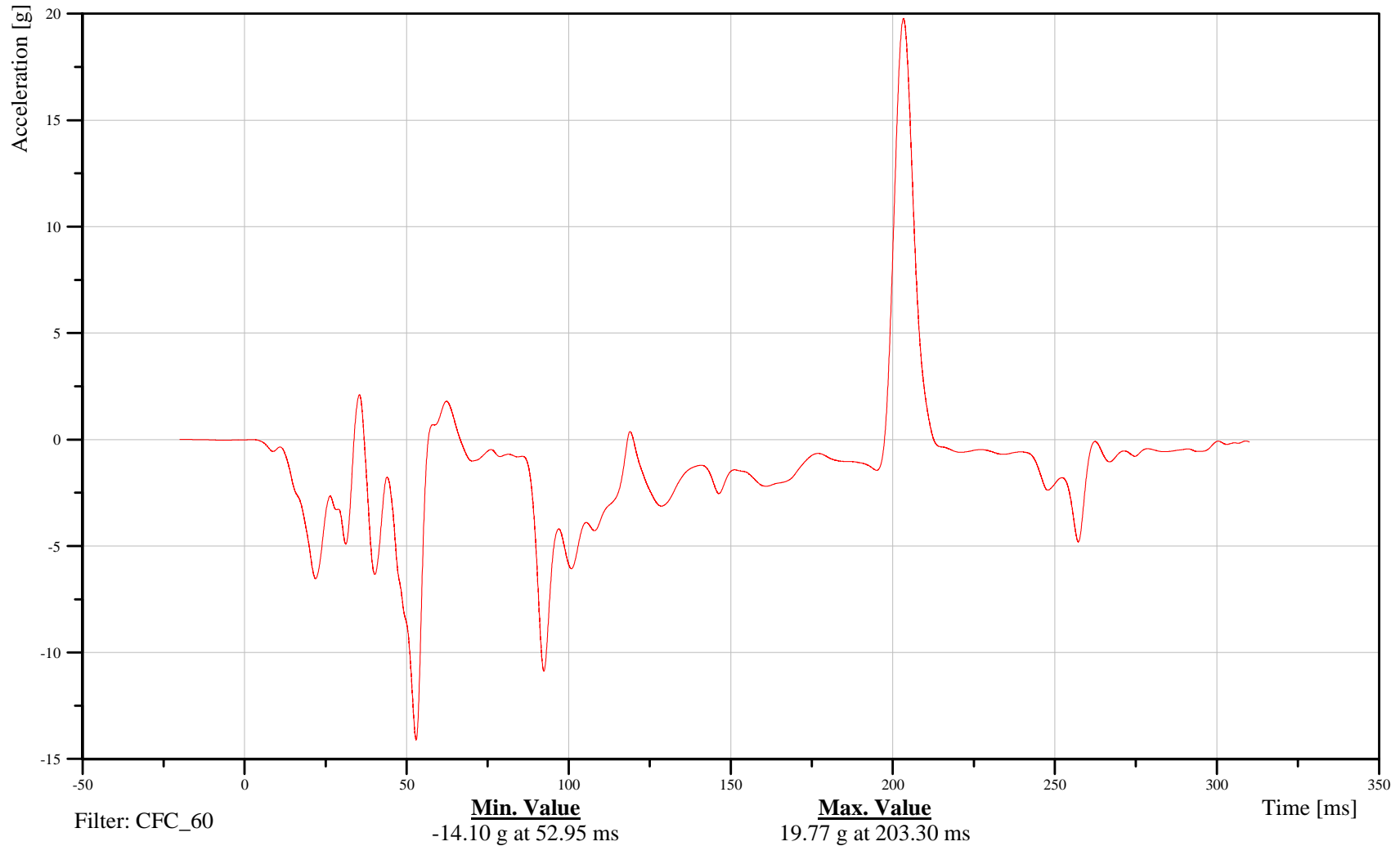
## Vehicle Center of Gravity X-Axis Acceleration

Customer: VRTC

# 10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-103

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

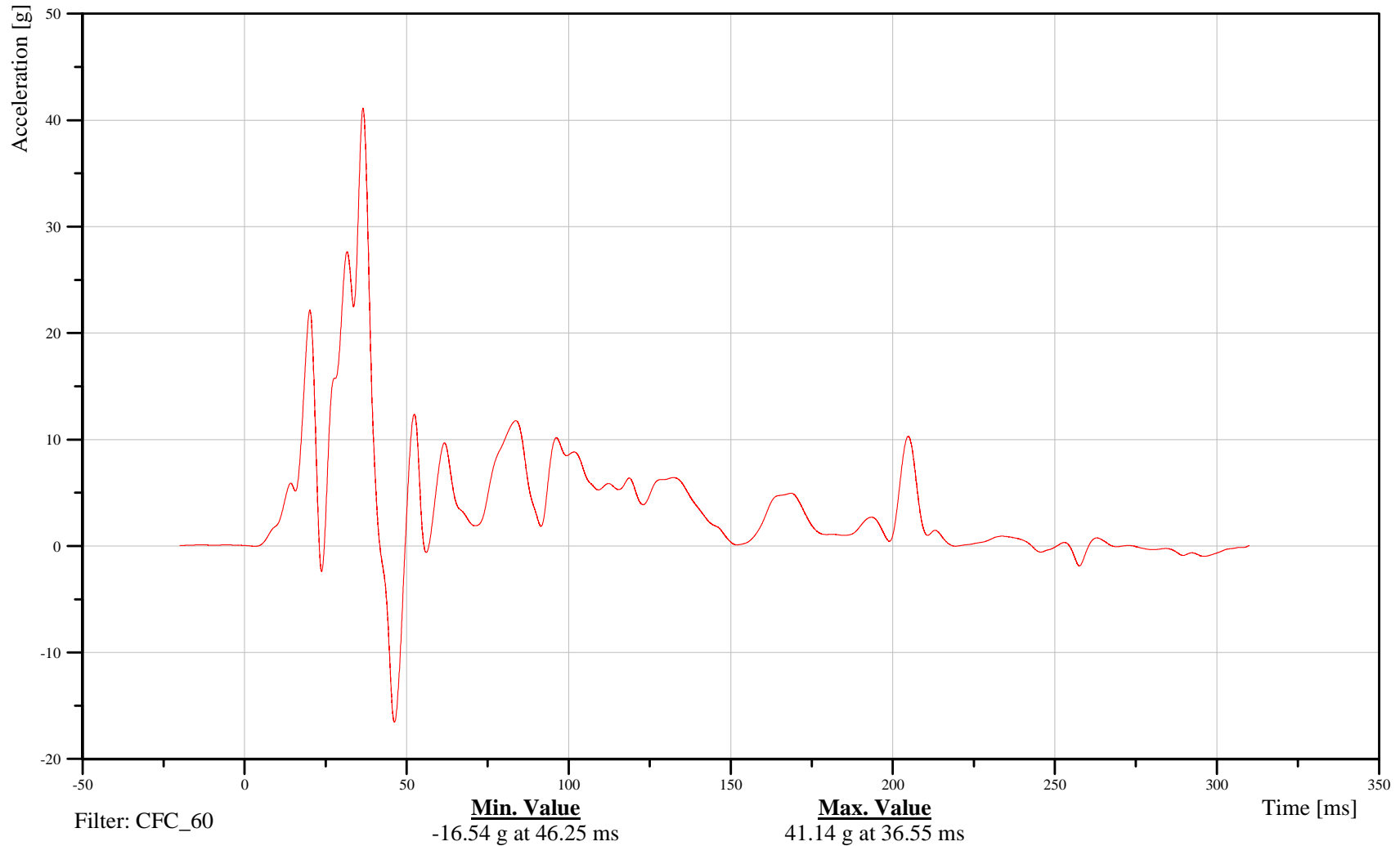
## Vehicle Center of Gravity Y-Axis Acceleration

Customer: VRTC

# 10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-104

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

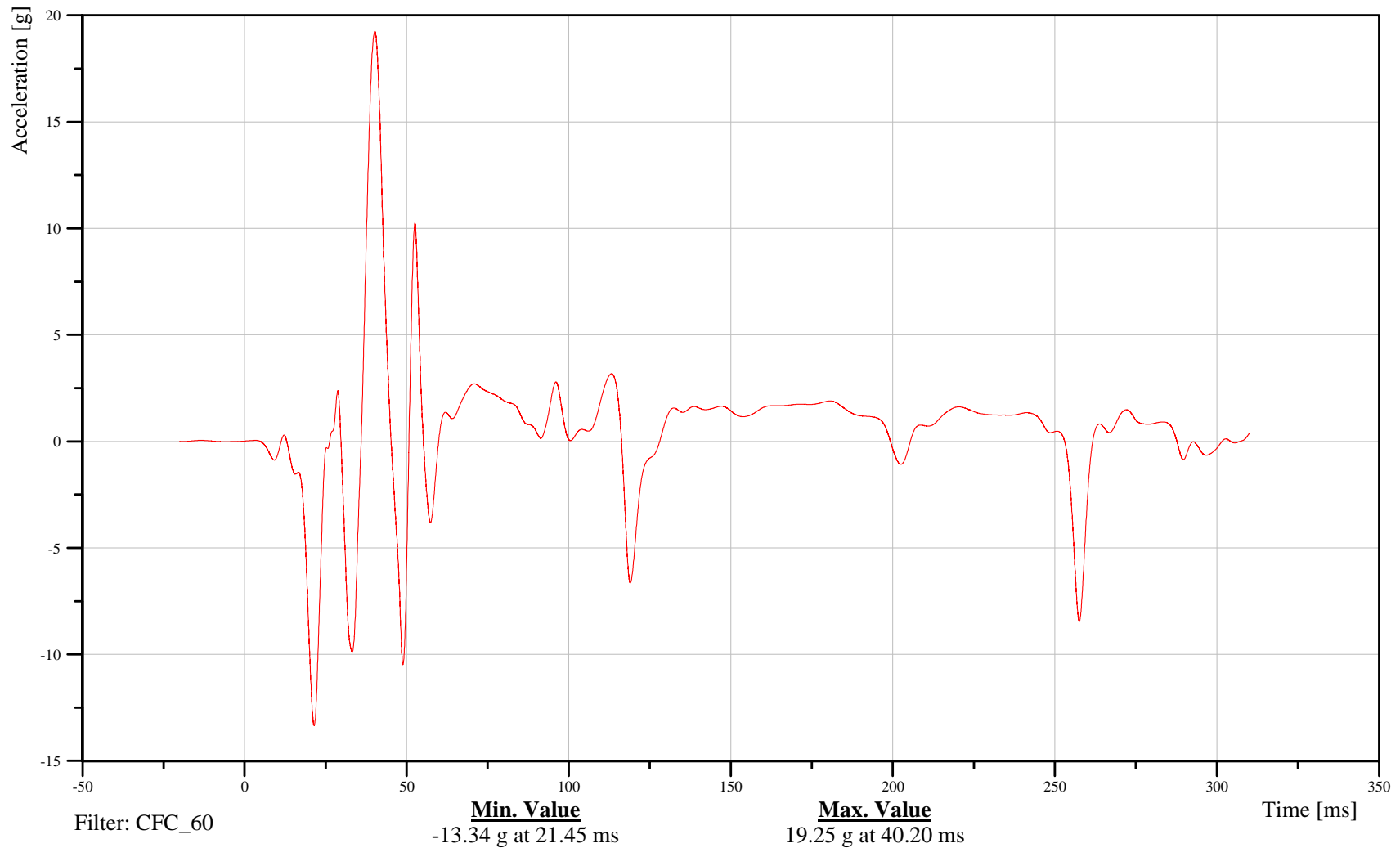
## Vehicle Center of Gravity Z-Axis Acceleration

Customer: VRTC

# 10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-105

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

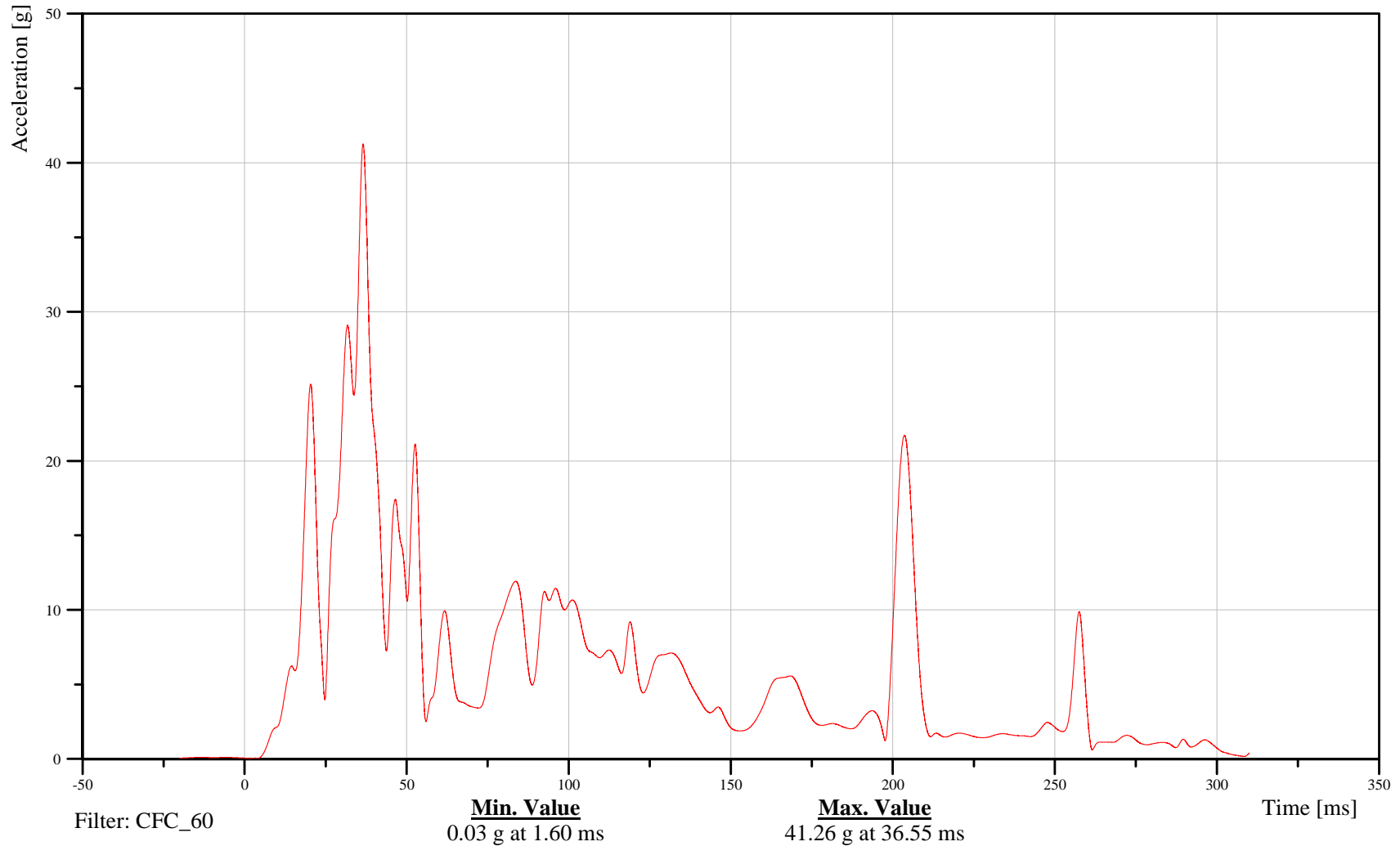
## Vehicle Center of Gravity Resultant Acceleration

Customer: VRTC

# 10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-106

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

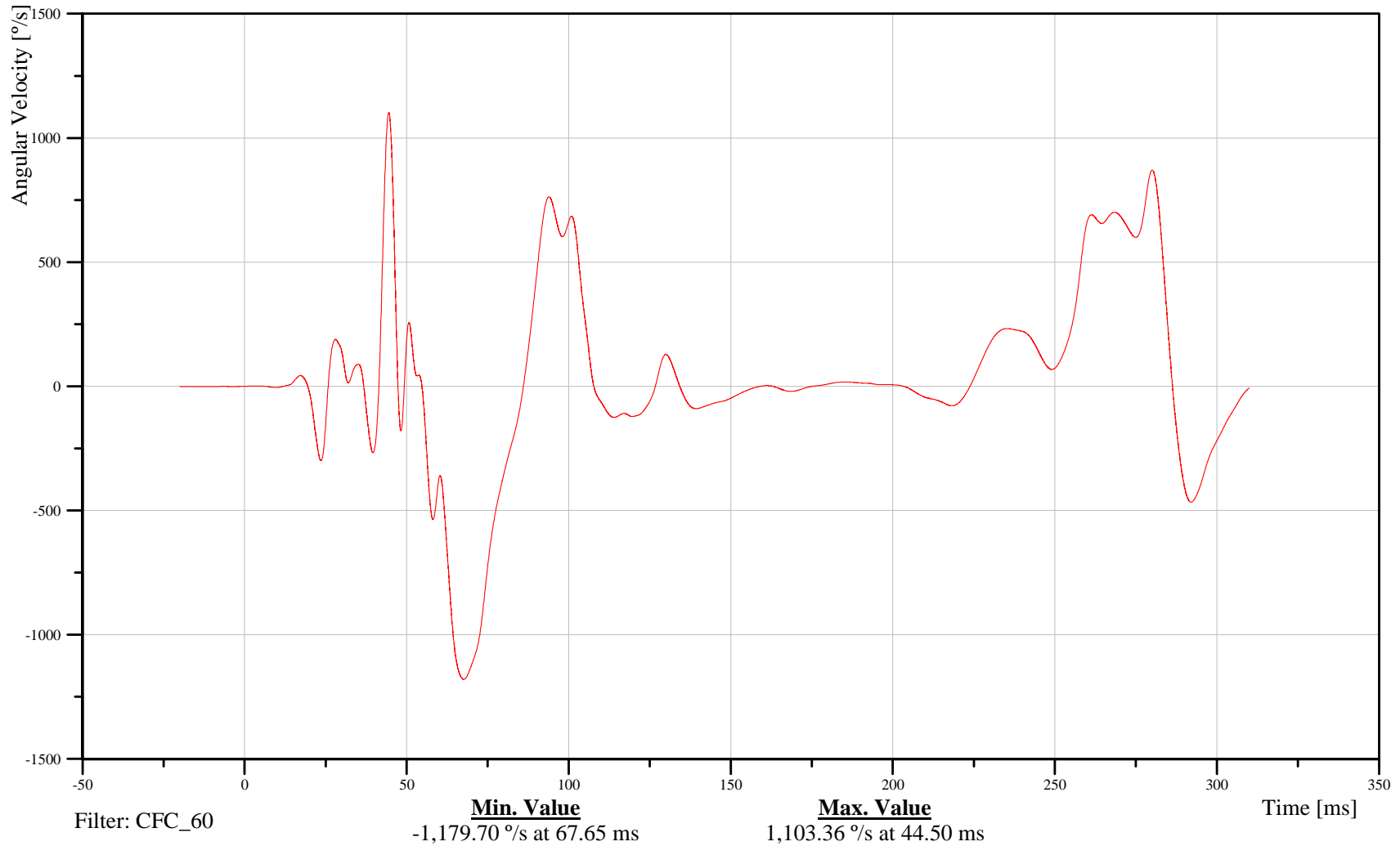
## Vehicle Center of Gravity Roll Rate Gyroscope

Customer: VRTC

# 10VEHCCG0000AVXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-107

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

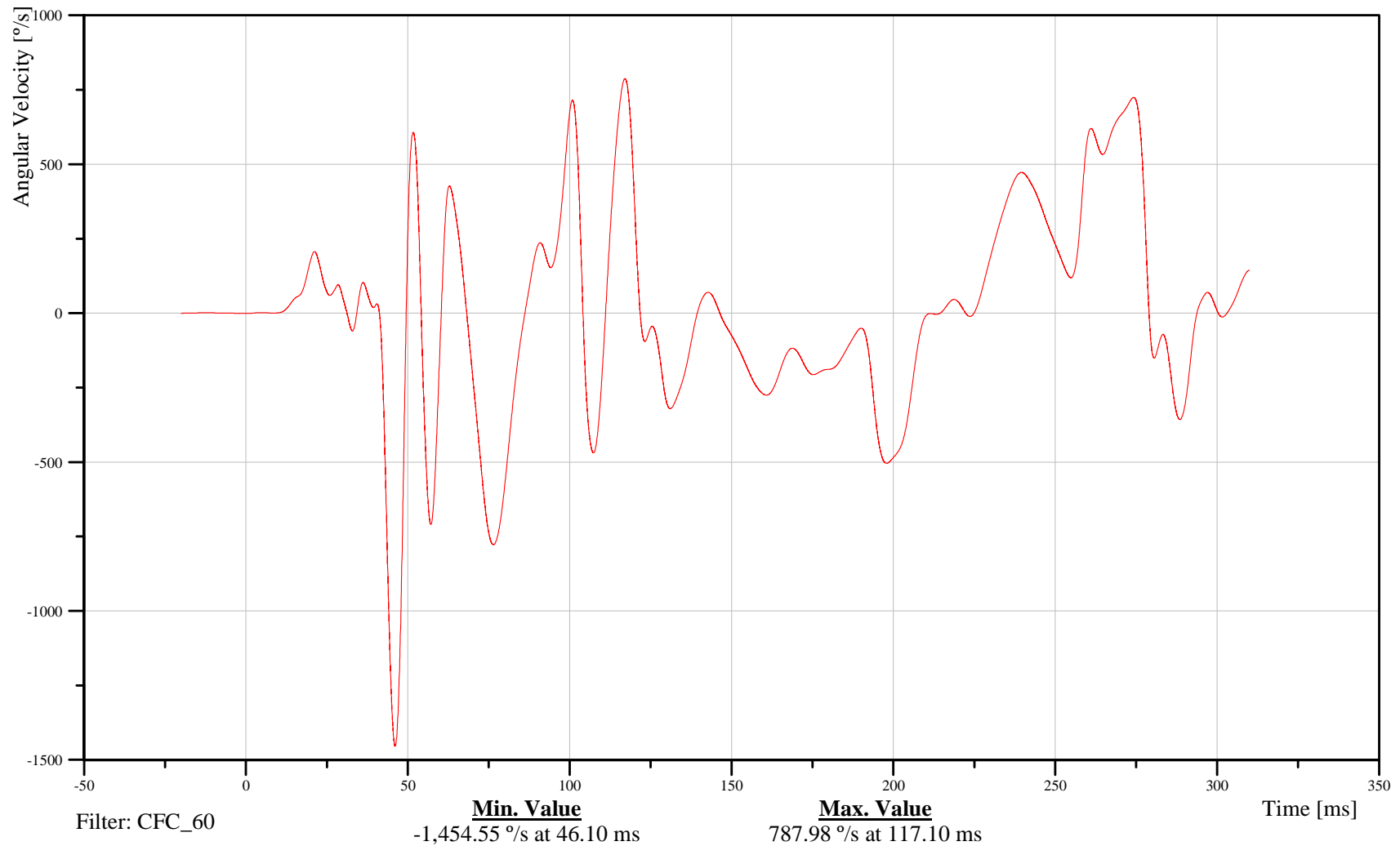
## Vehicle Center of Gravity Pitch Rate Gyroscope

Customer: VRTC

# 10VEHCCG0000AVYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-108

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

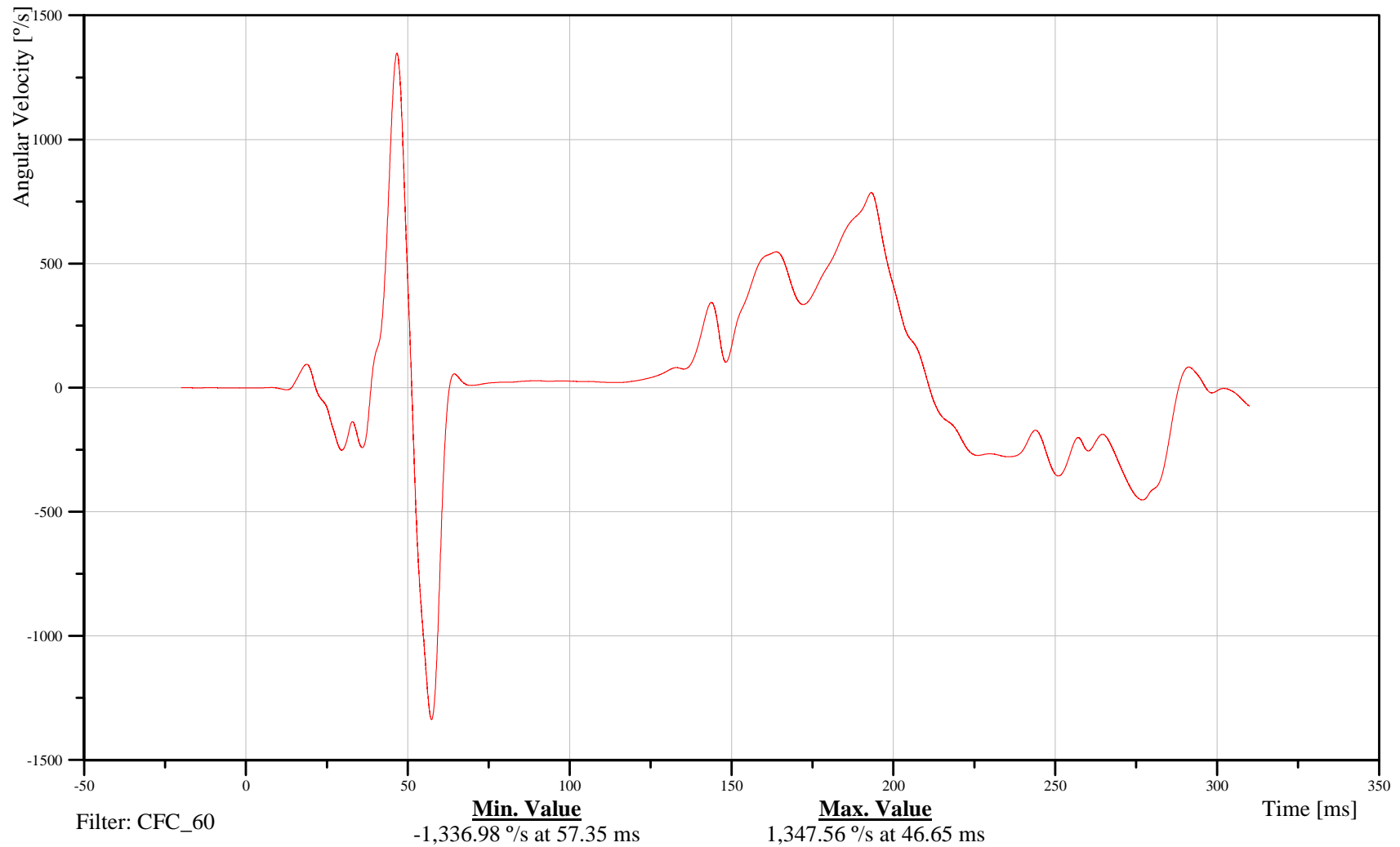
## Vehicle Center of Gravity Yaw Rate Gyroscope

Customer: VRTC

### 10VEHCCG0000AVZD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-109

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

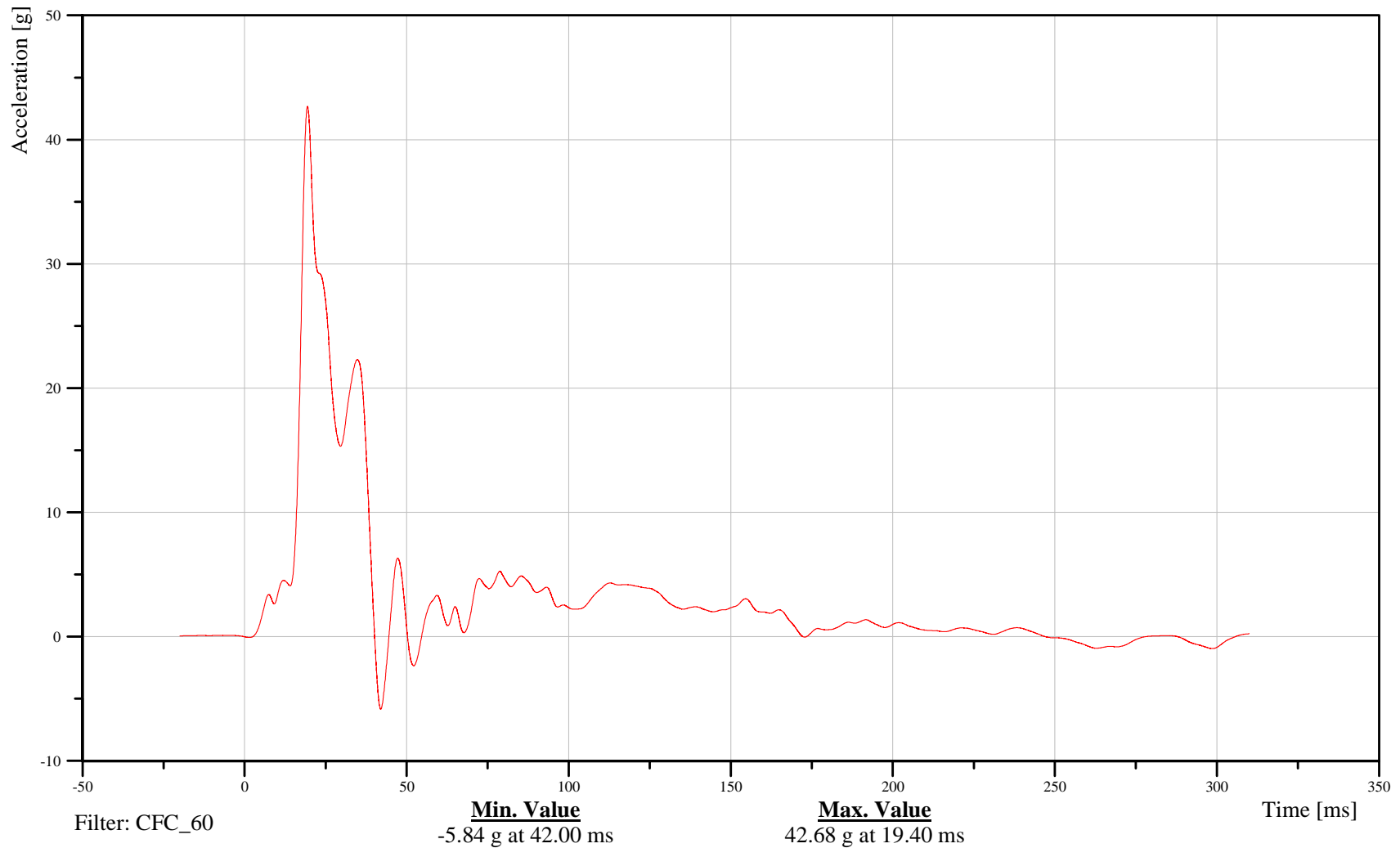
## Left Side Sill Near Impact Point Y-Axis Acceleration

Customer: VRTC

# 11SILBRE0100ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-110

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

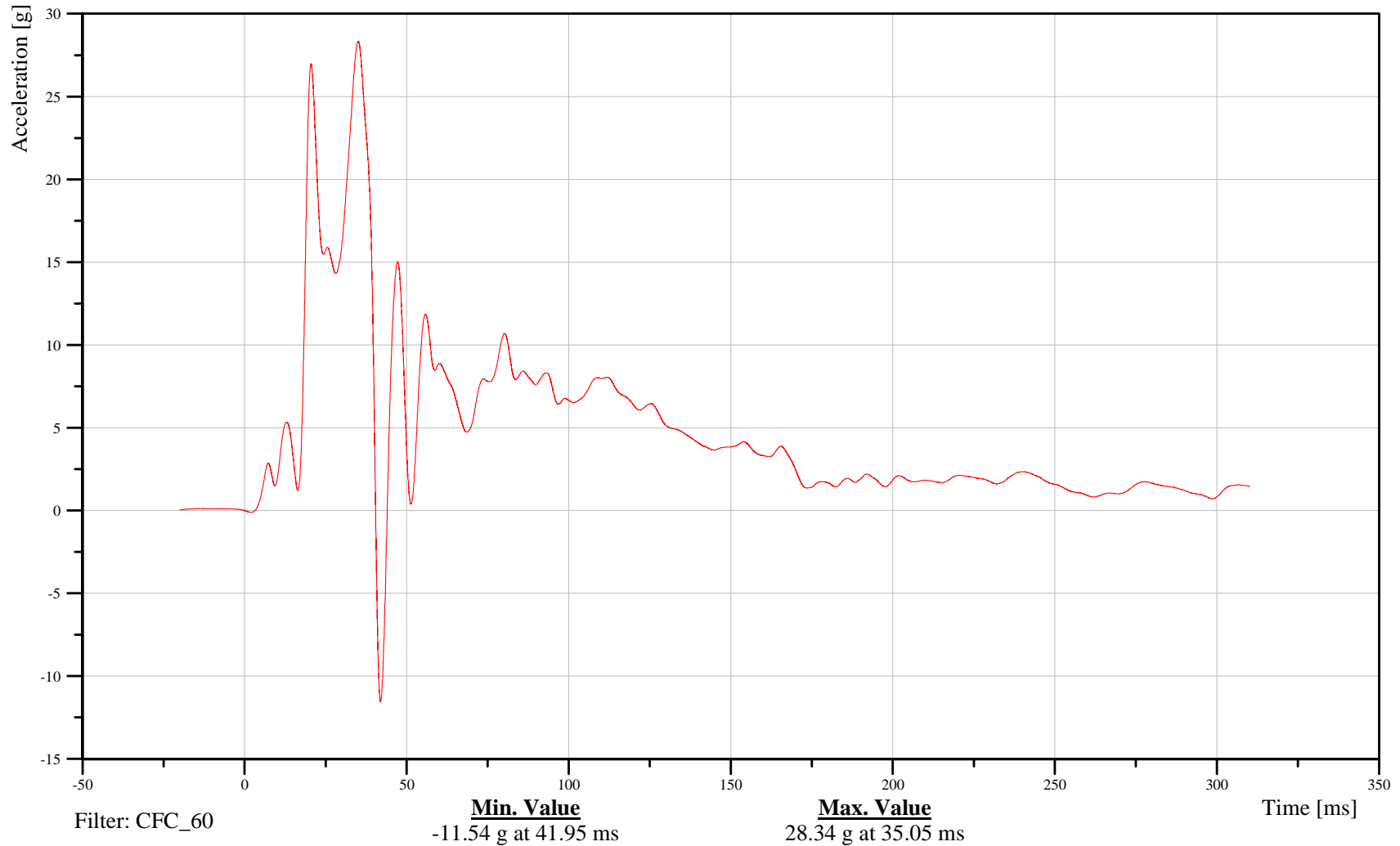
## Left A-Pillar Side Sill Y-Axis Acceleration

Customer: VRTC

### 14SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-111

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

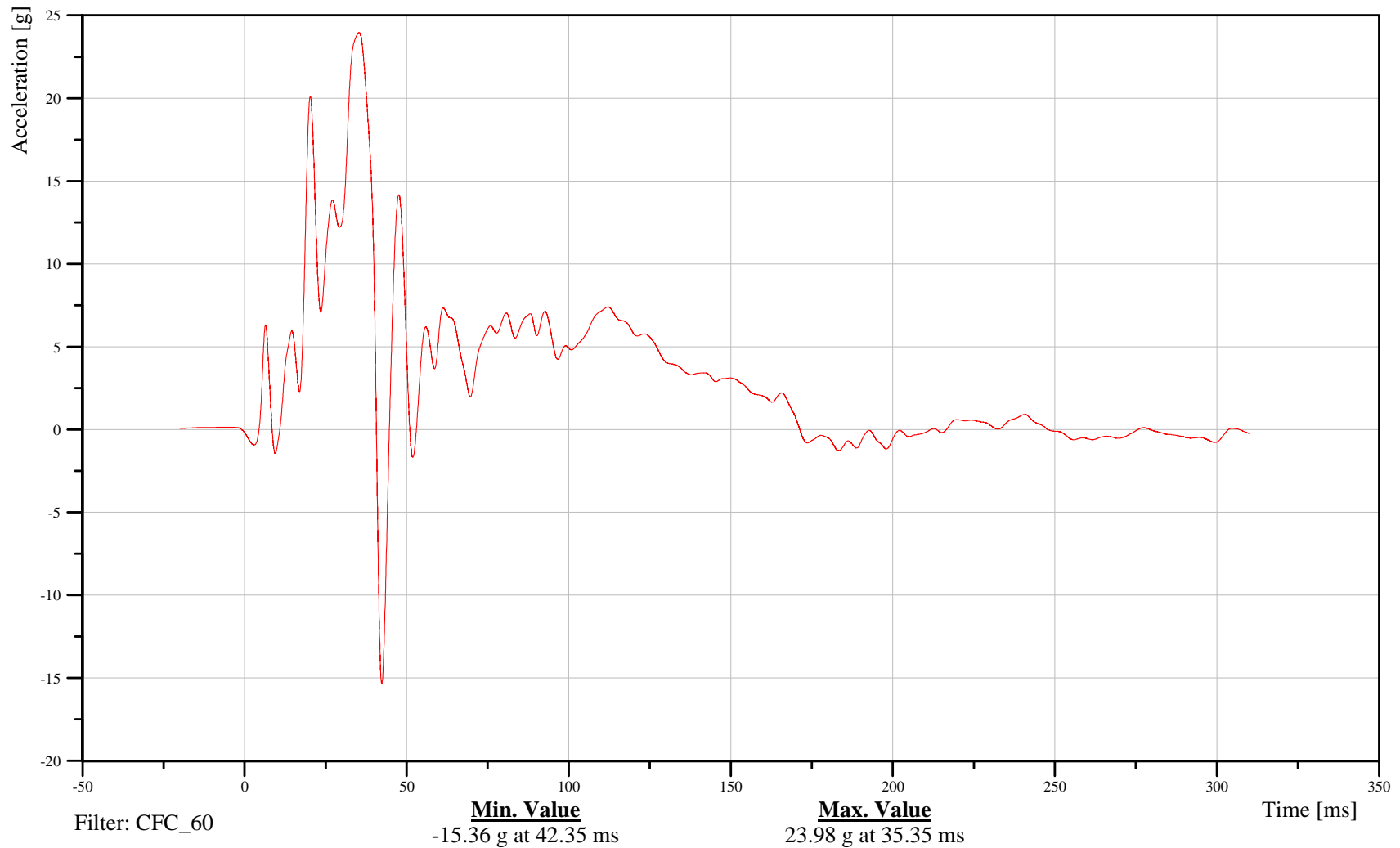
## Left Lower A-Pillar Y-Axis Acceleration

Customer: VRTC

# 11APILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-112

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

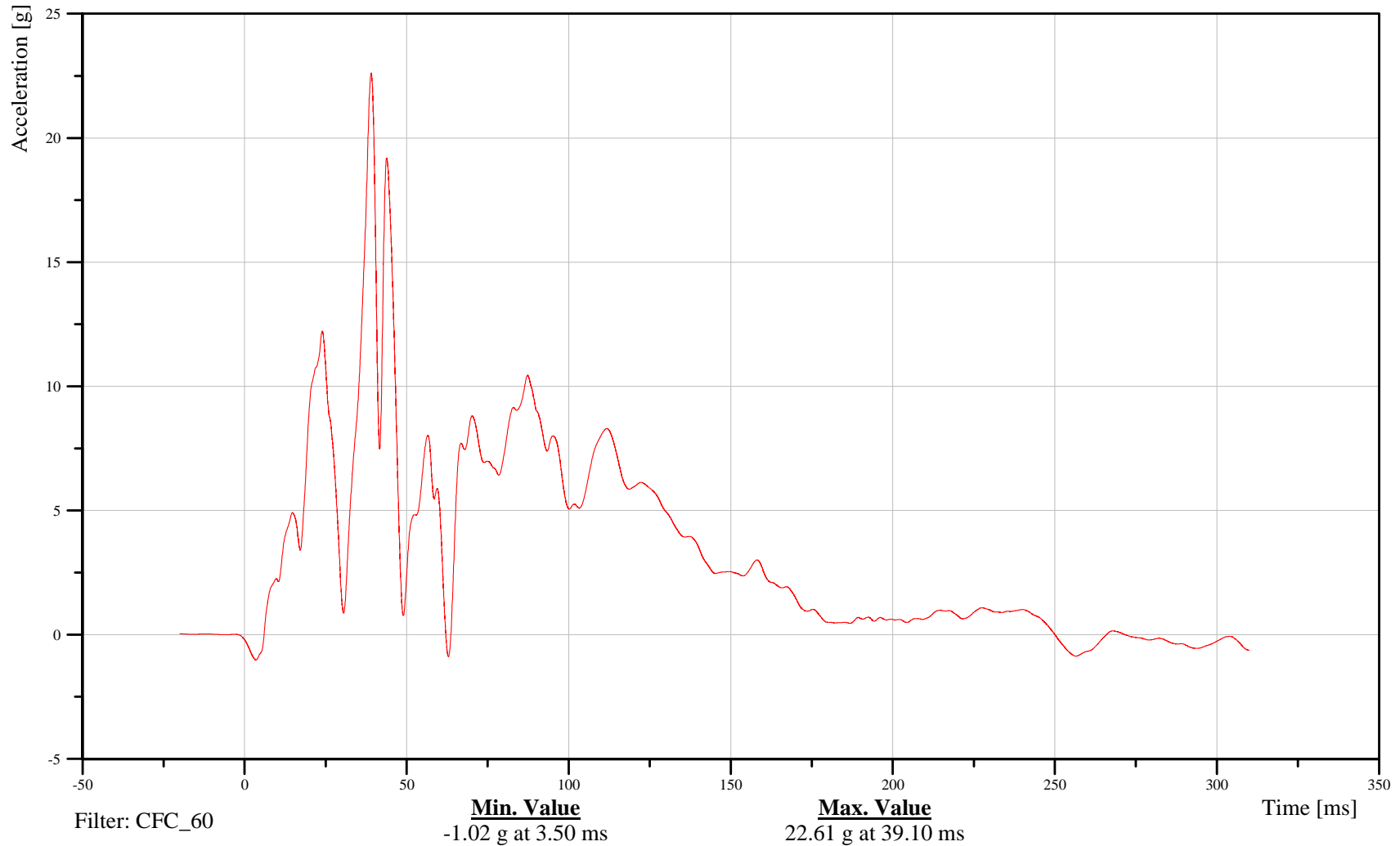
## Left Mid A-Pillar Y-Axis Acceleration

Customer: VRTC

# 11APILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-113

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

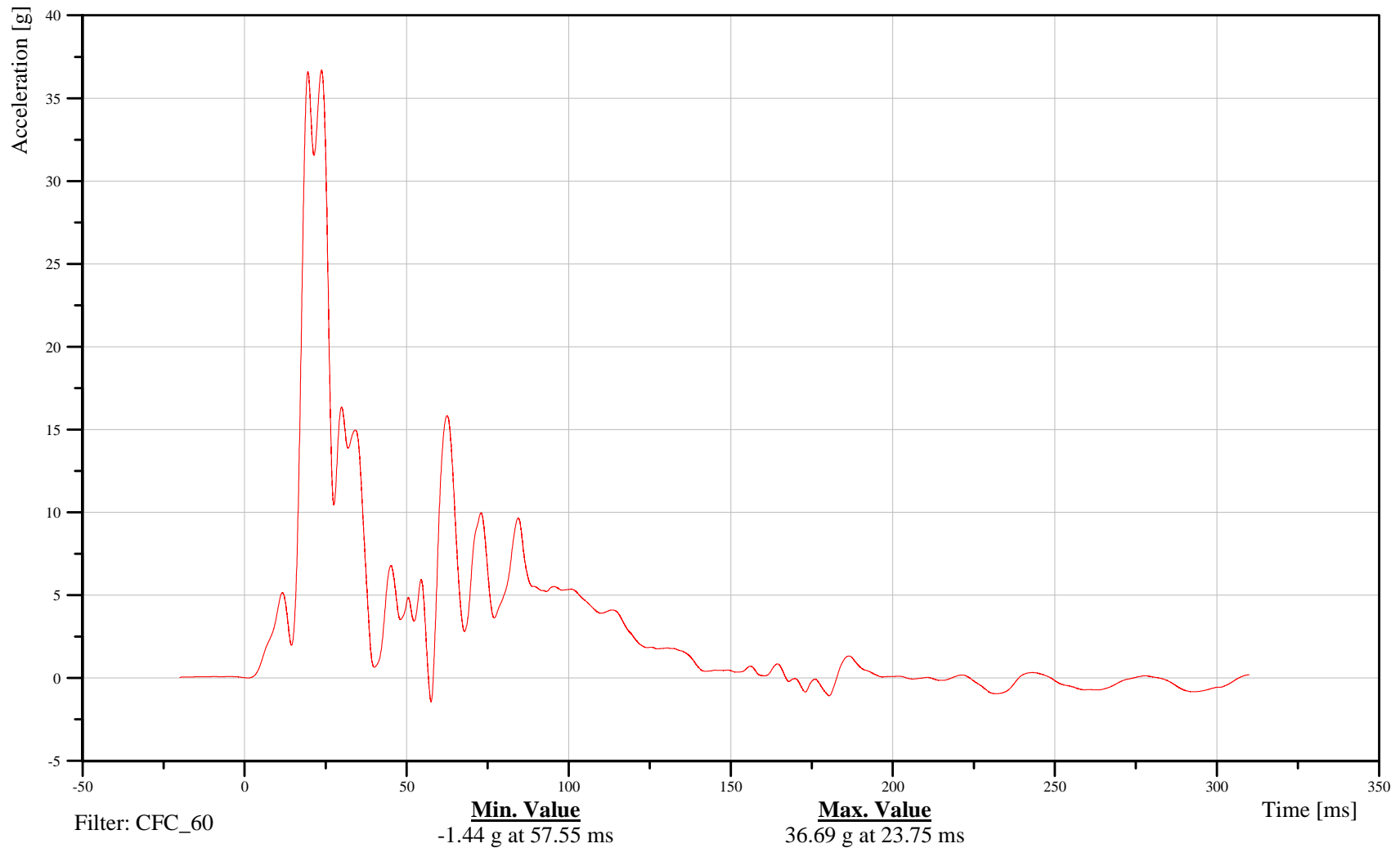
## Left Side Sill at Rear Seat Y-Axis Acceleration

Customer: VRTC

# 14SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-114

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

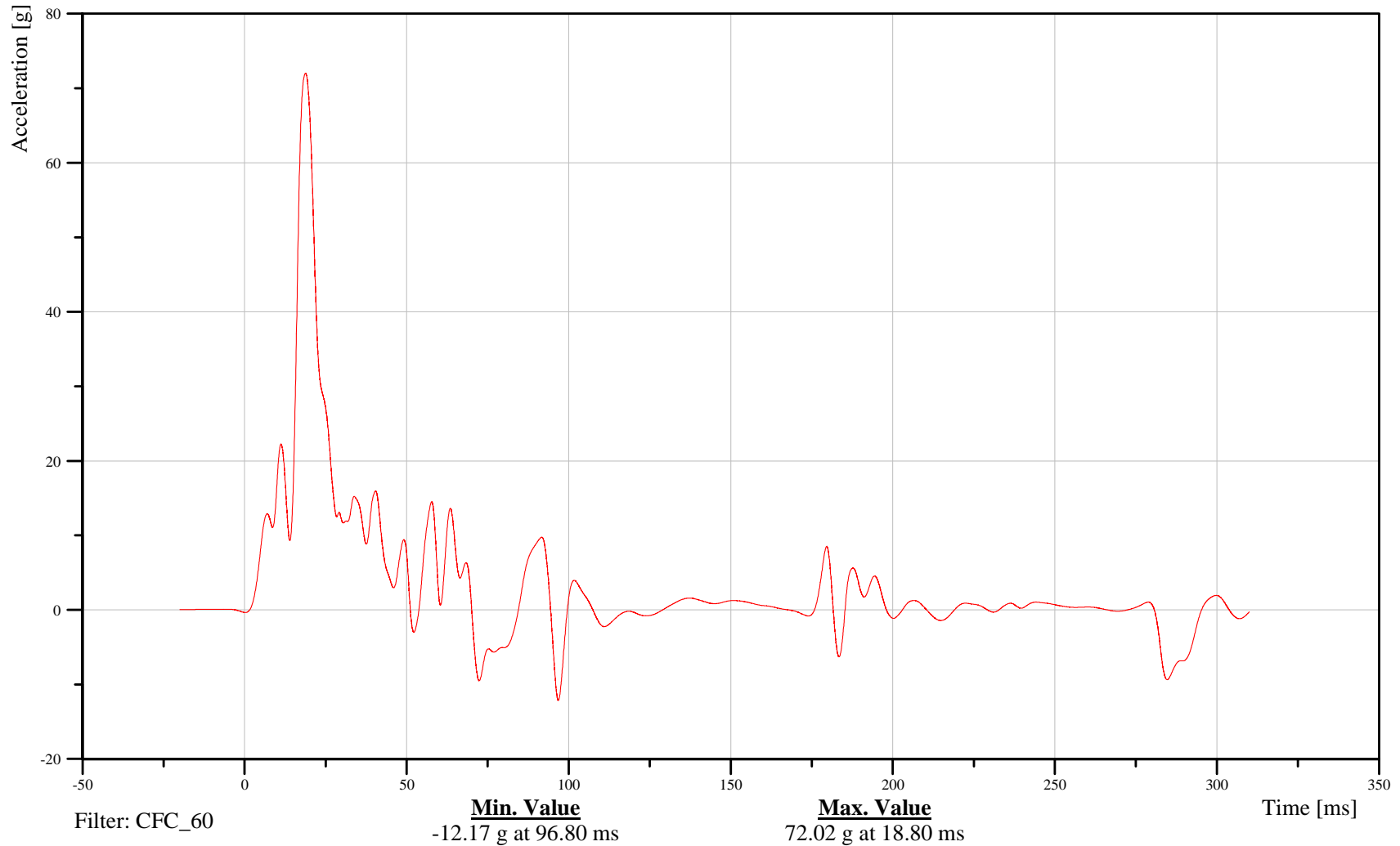
## Left Lower B-Pillar Y-Axis Acceleration

Customer: VRTC

# 14BPILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-115

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

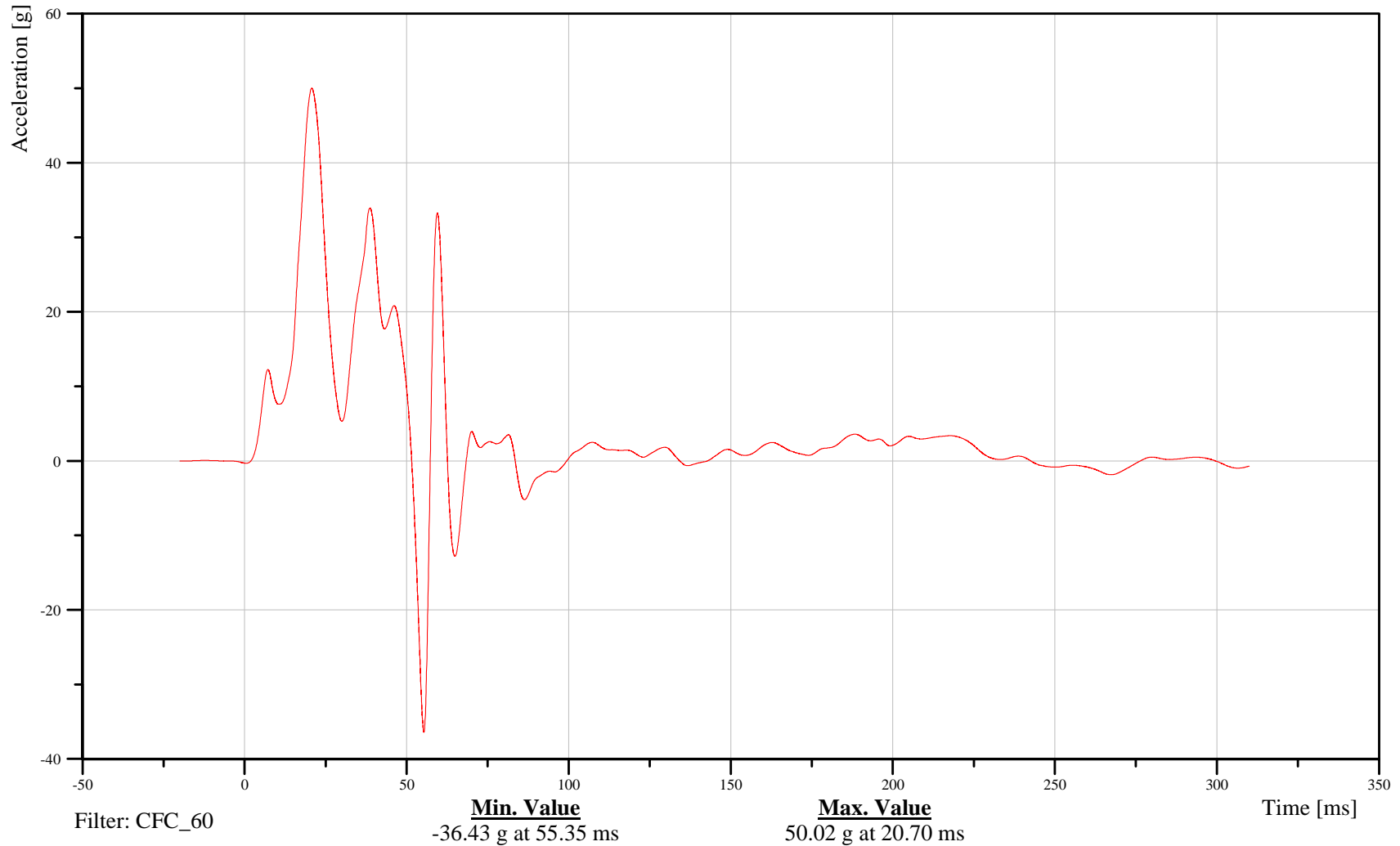
## Left Mid B-Pillar Y-Axis Acceleration

Customer: VRTC

# 14BPILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-116

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

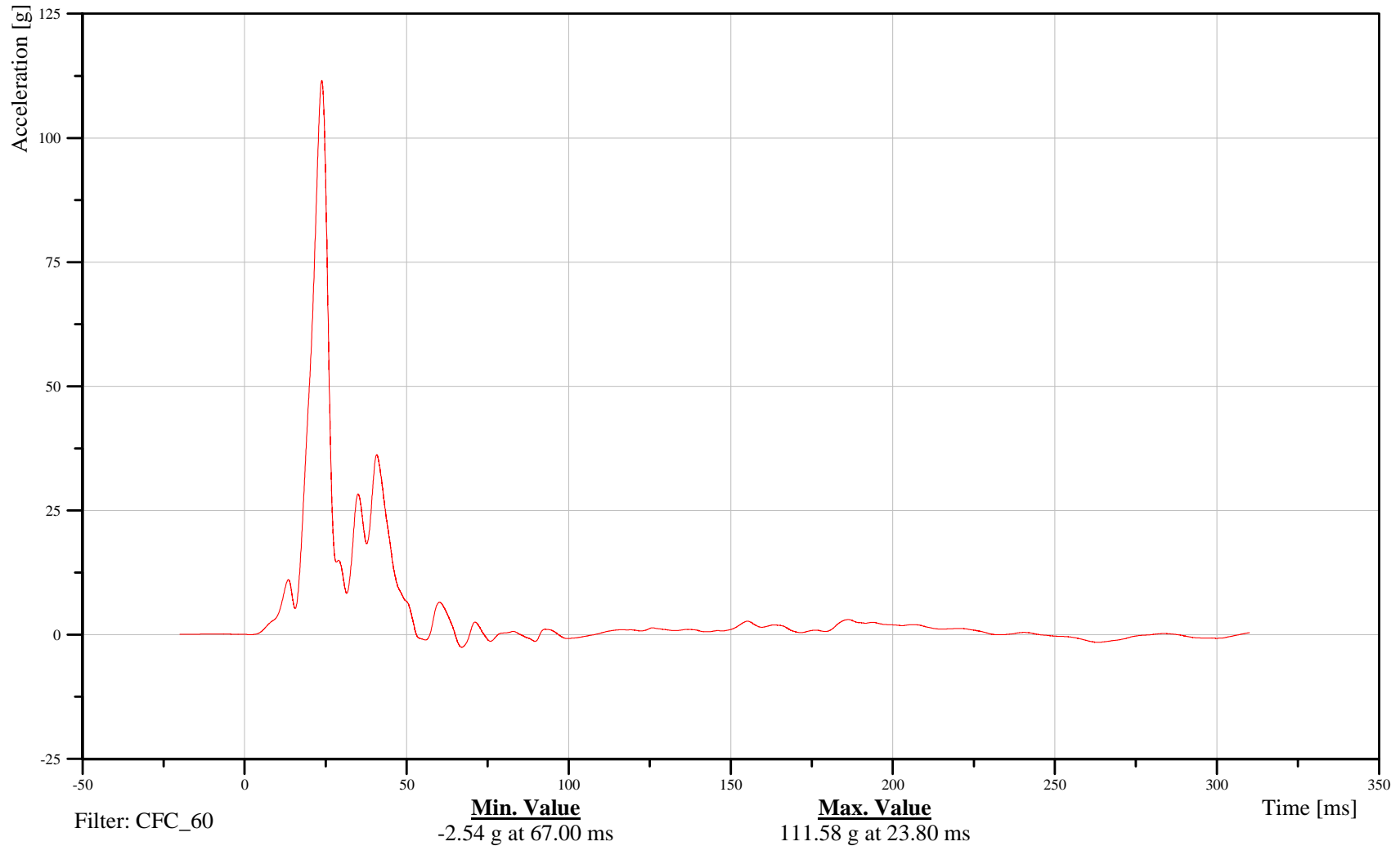
## Left Front Seat Track at H-Point Y-Axis Acceleration

Customer: VRTC

# 11SETRFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-117

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

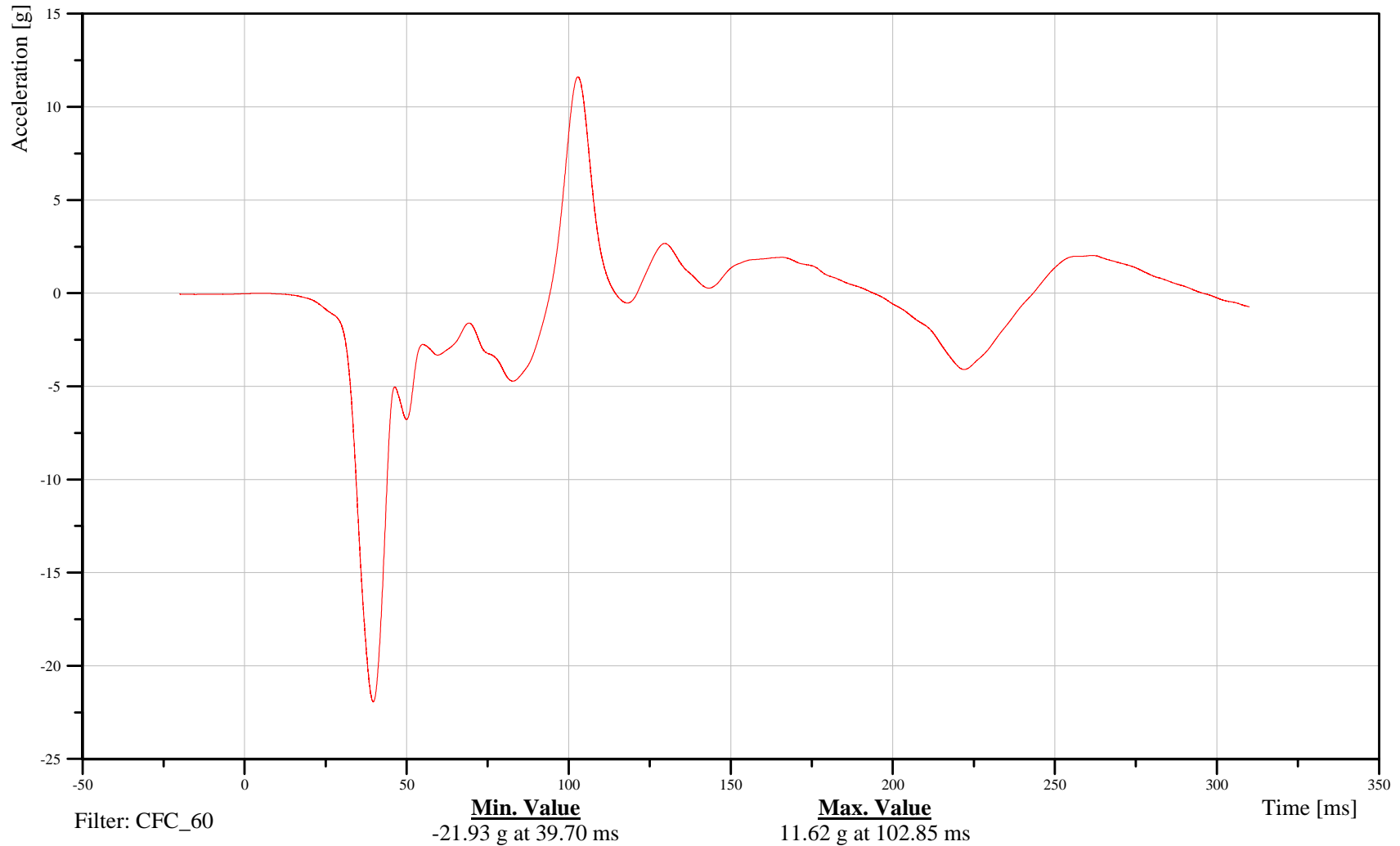
## Top of Engine X-Axis Acceleration

Customer: VRTC

# 12ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-118

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

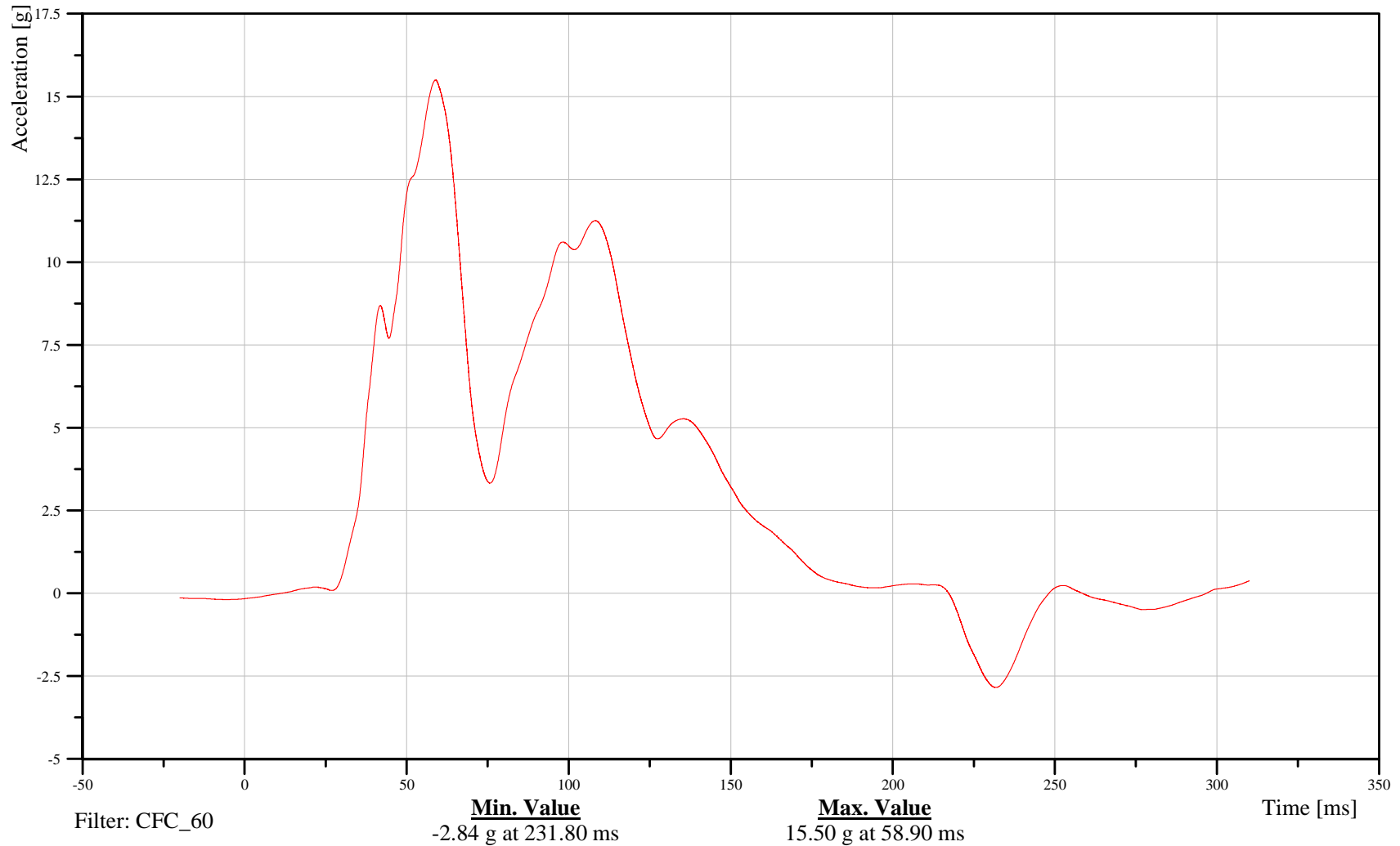
## Top of Engine Y-Axis Acceleration

Customer: VRTC

# 12ENGNTTP0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-119

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

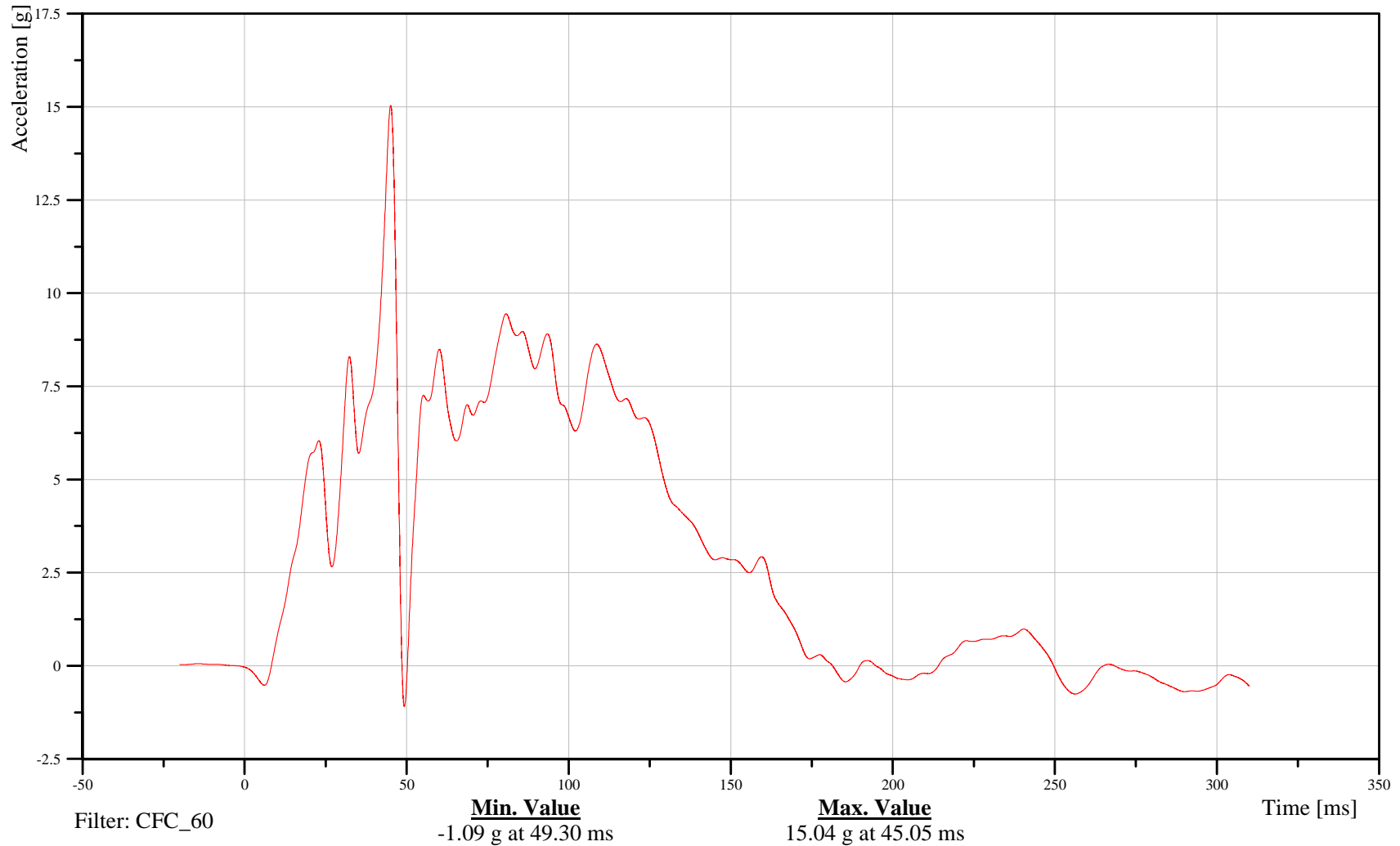
## Firewall Y-Axis Acceleration

Customer: VRTC

# 12VEHC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-120

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

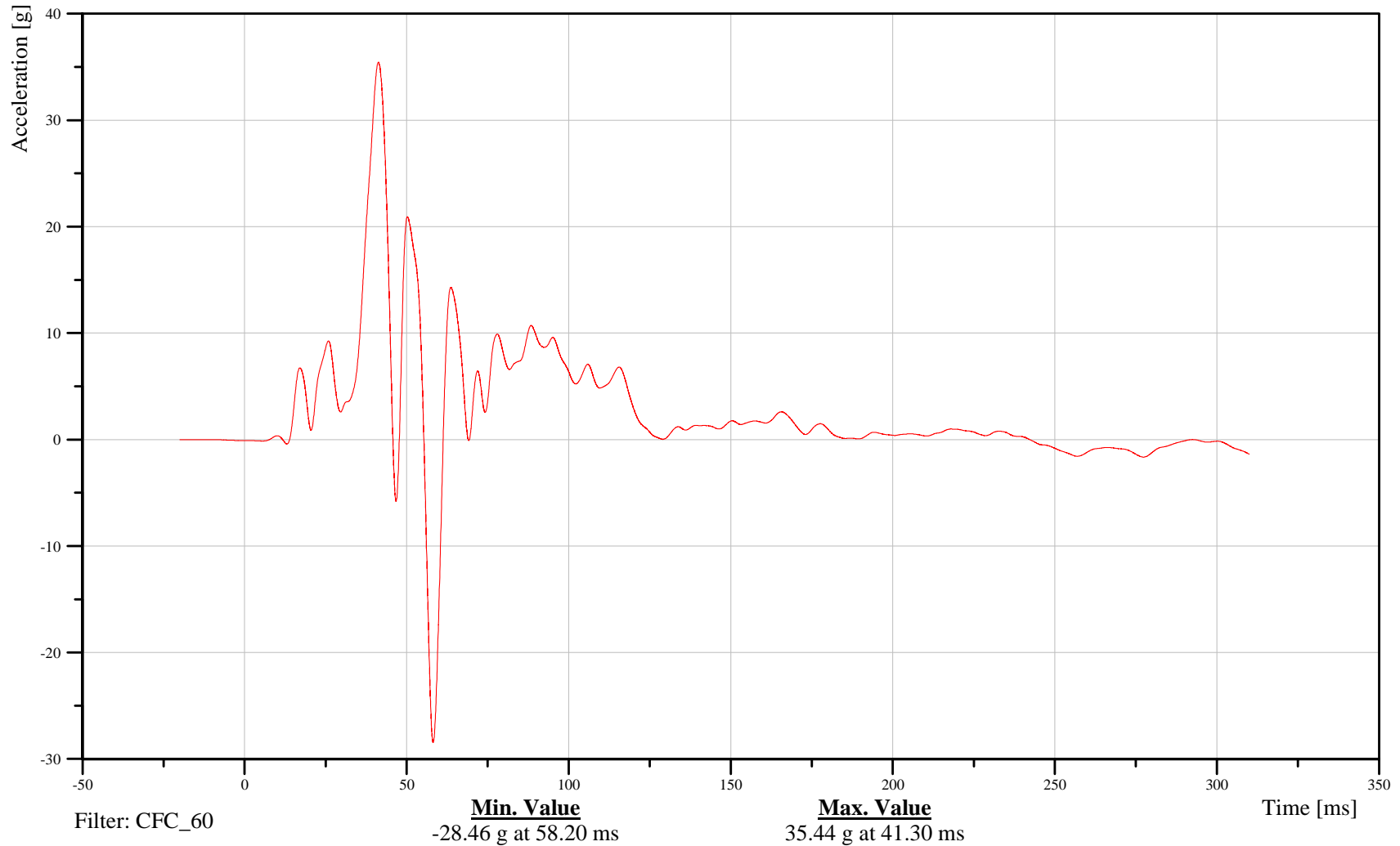
## Right Side Roof Rail Y-Axis Acceleration

Customer: VRTC

# 13ROOF000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-121

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

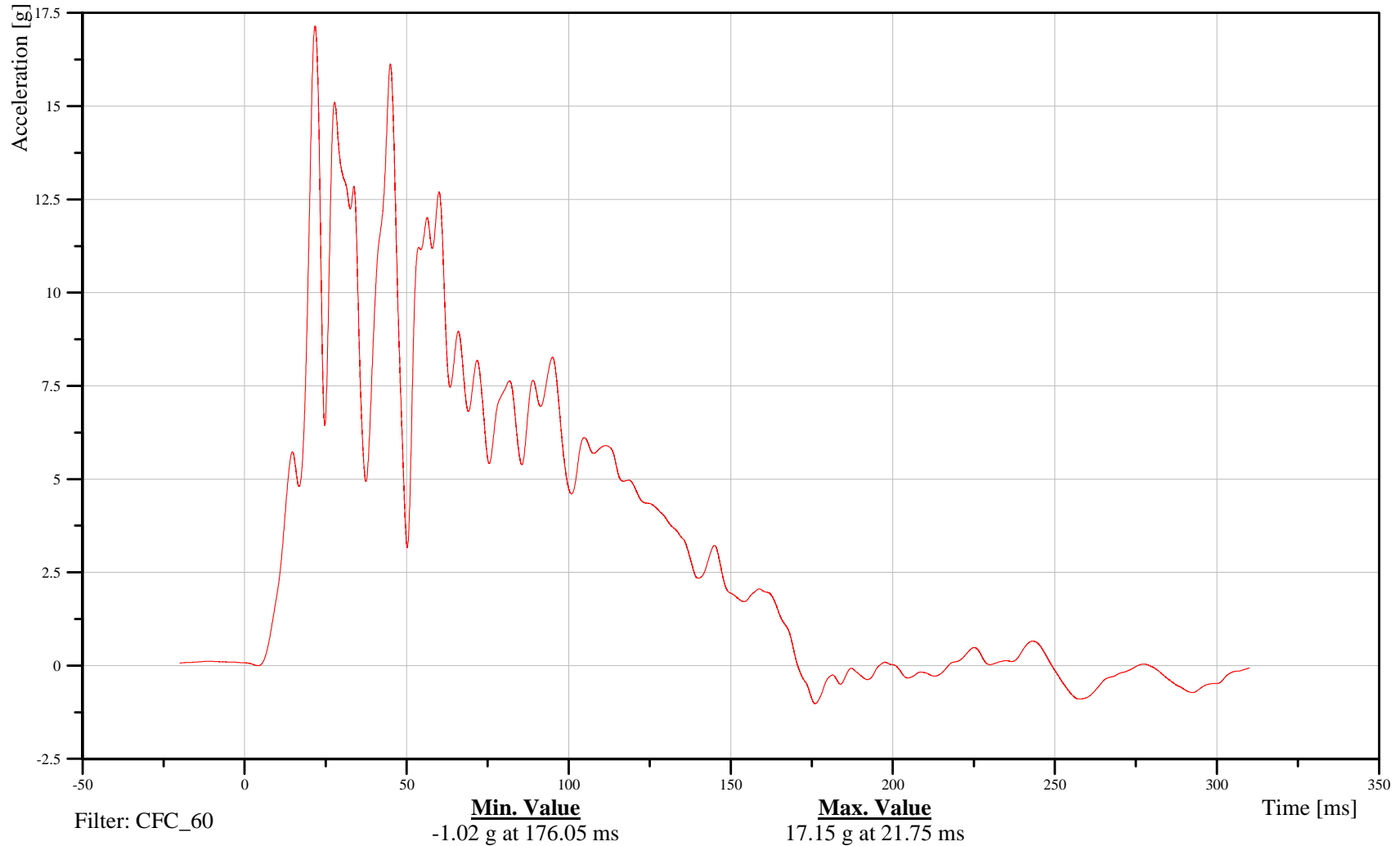
## Right Side Sill Y-Axis Acceleration

Customer: VRTC

# 13SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-122

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

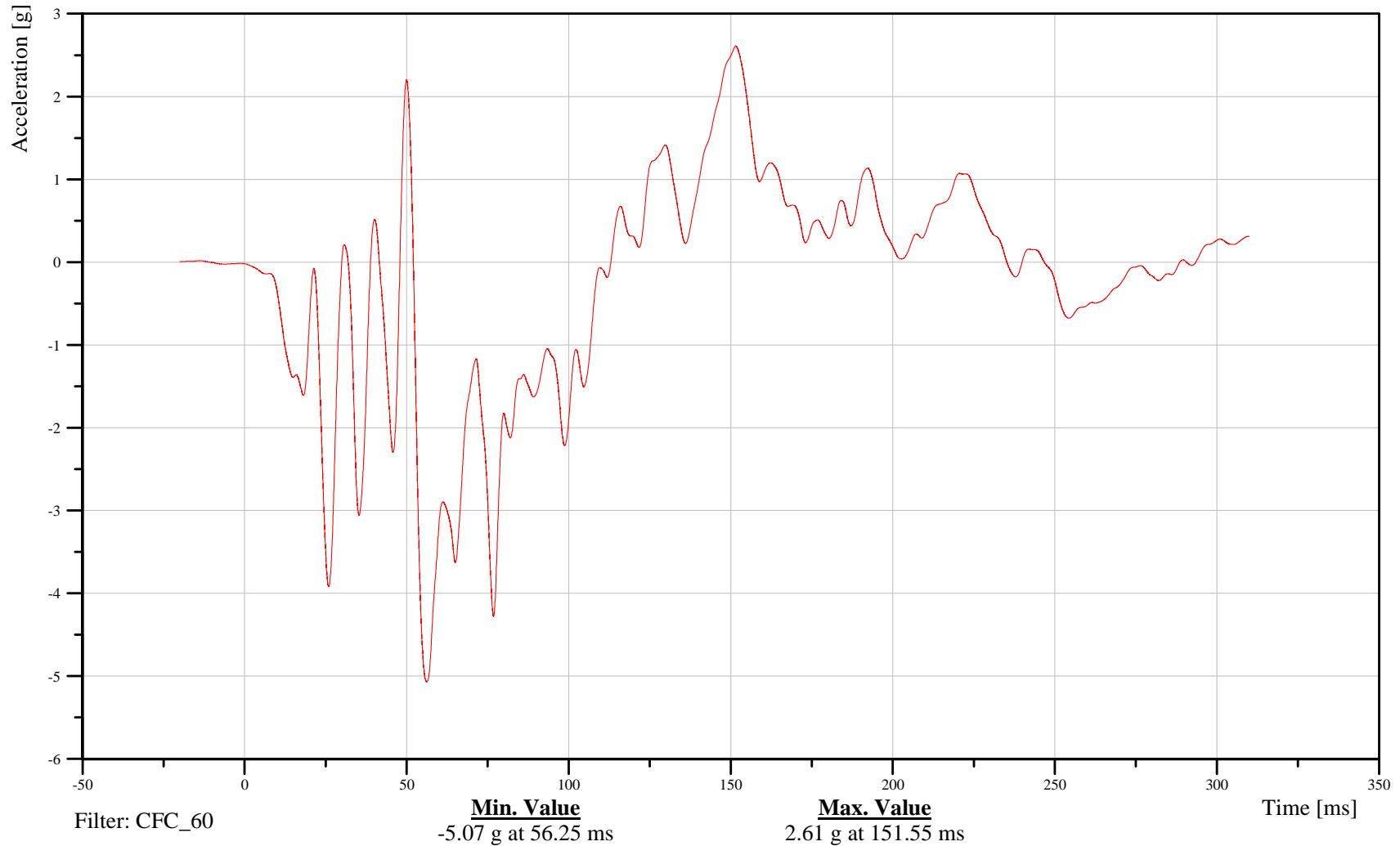
## Rear Deck Behind Rear Axle X-Axis Acceleration

Customer: VRTC

### 18DECK000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-123

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

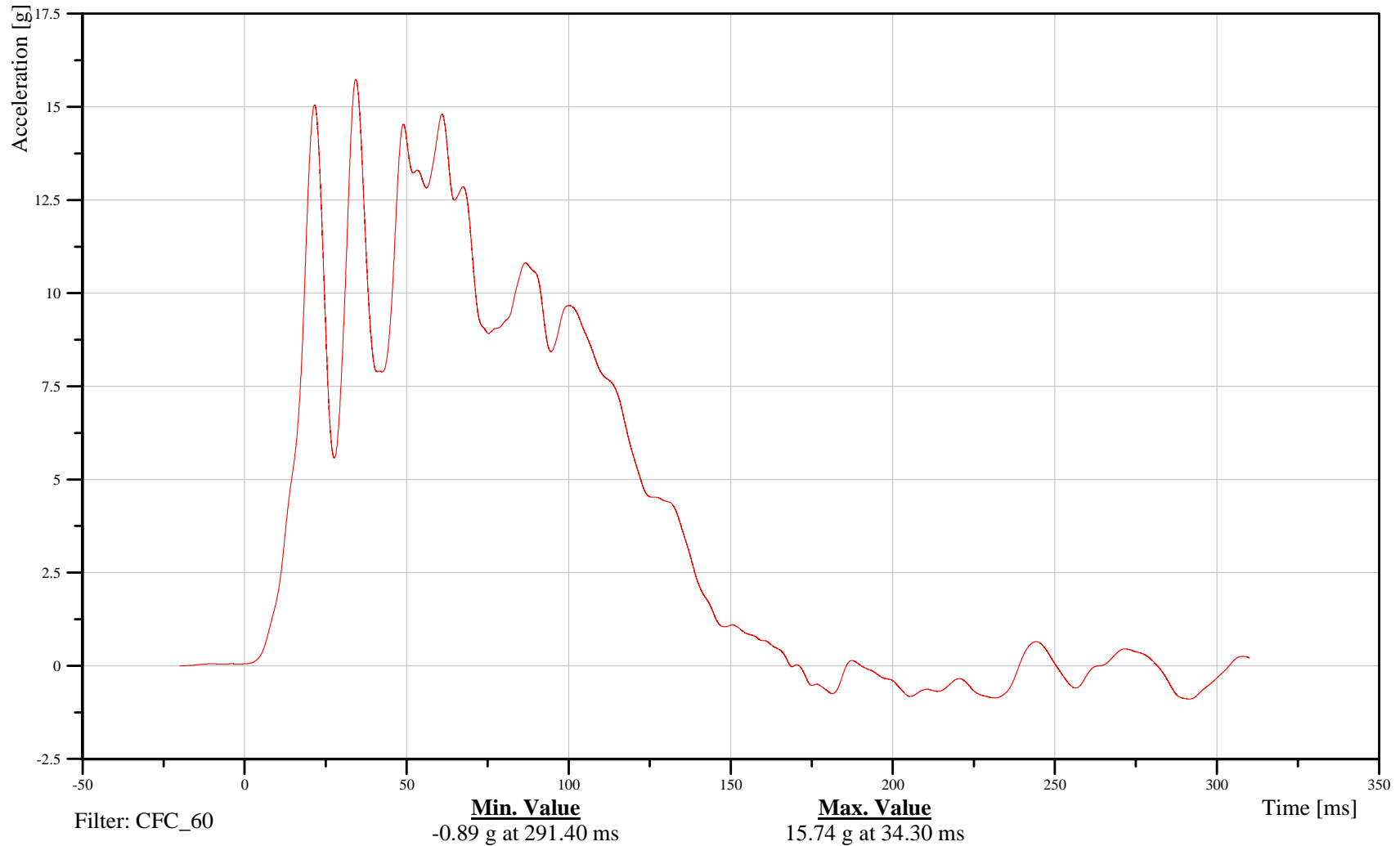
## Rear Deck Behind Rear Axle Y-Axis Acceleration

Customer: VRTC

# 18DECK000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-124

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

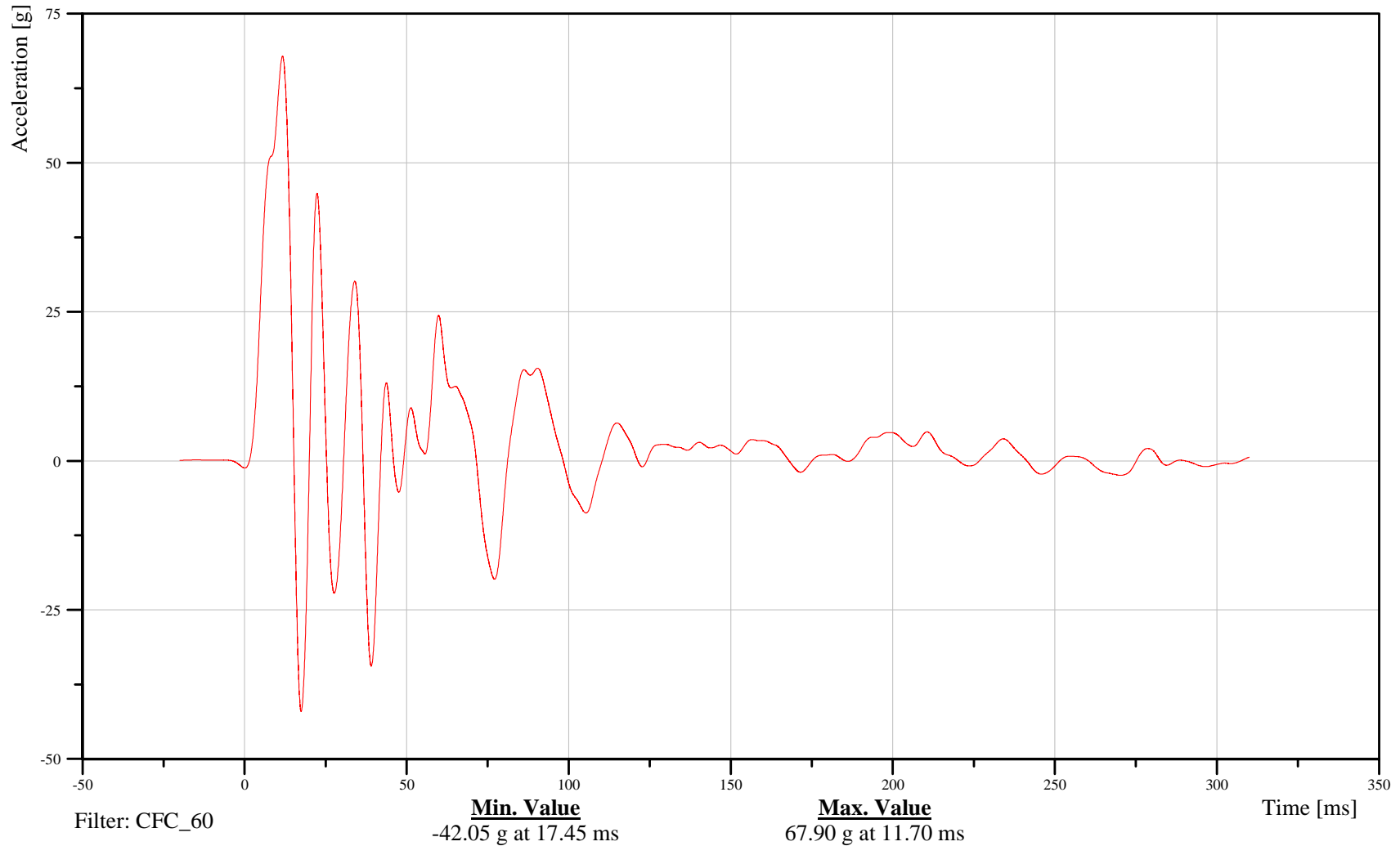
## Left Front Door on Center Line X-Axis Acceleration

Customer: VRTC

# 11DOORFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-125

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

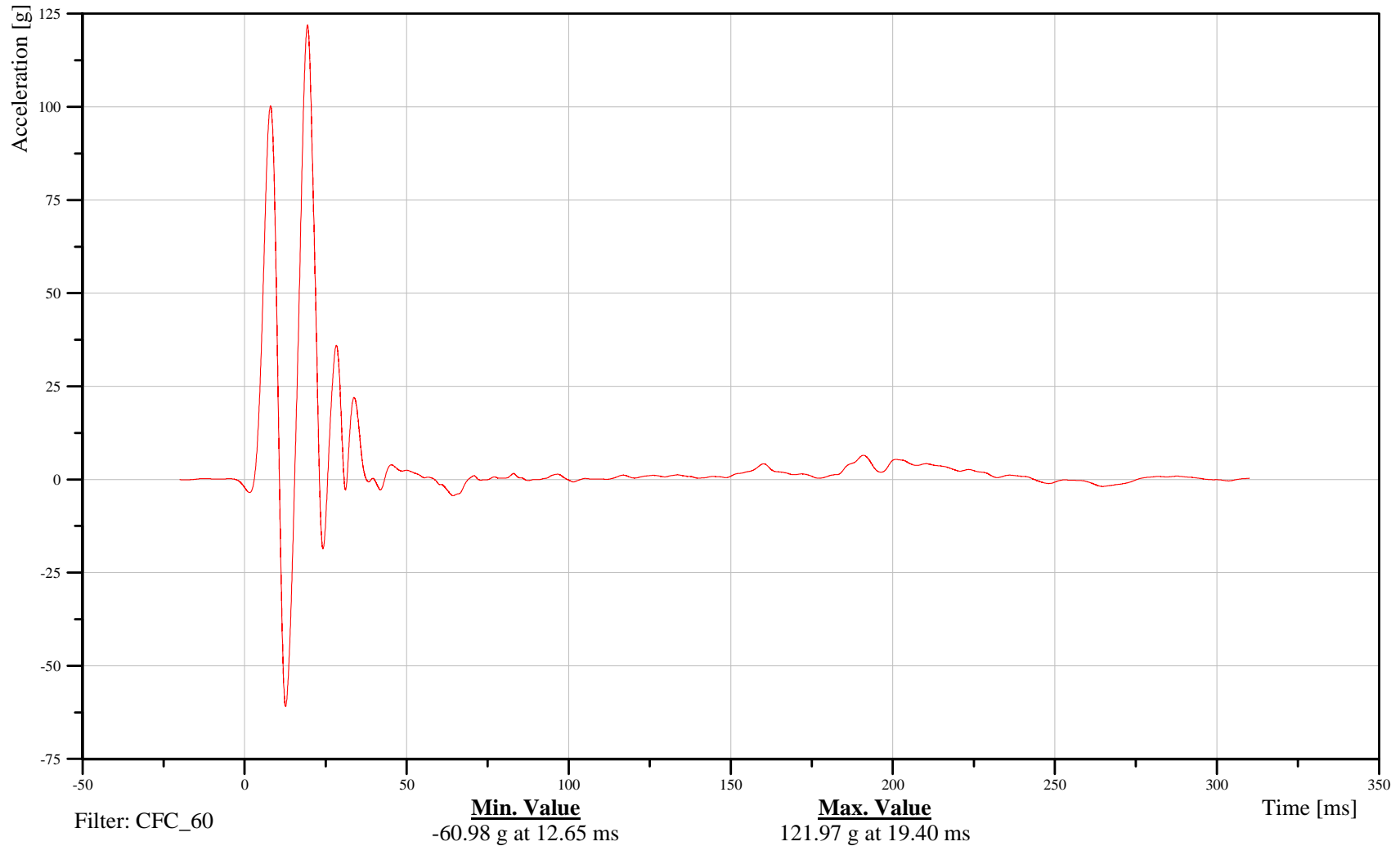
## Midrear of Left Front Door Y-Axis Acceleration

Customer: VRTC

# 11DOORMIRE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-126

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

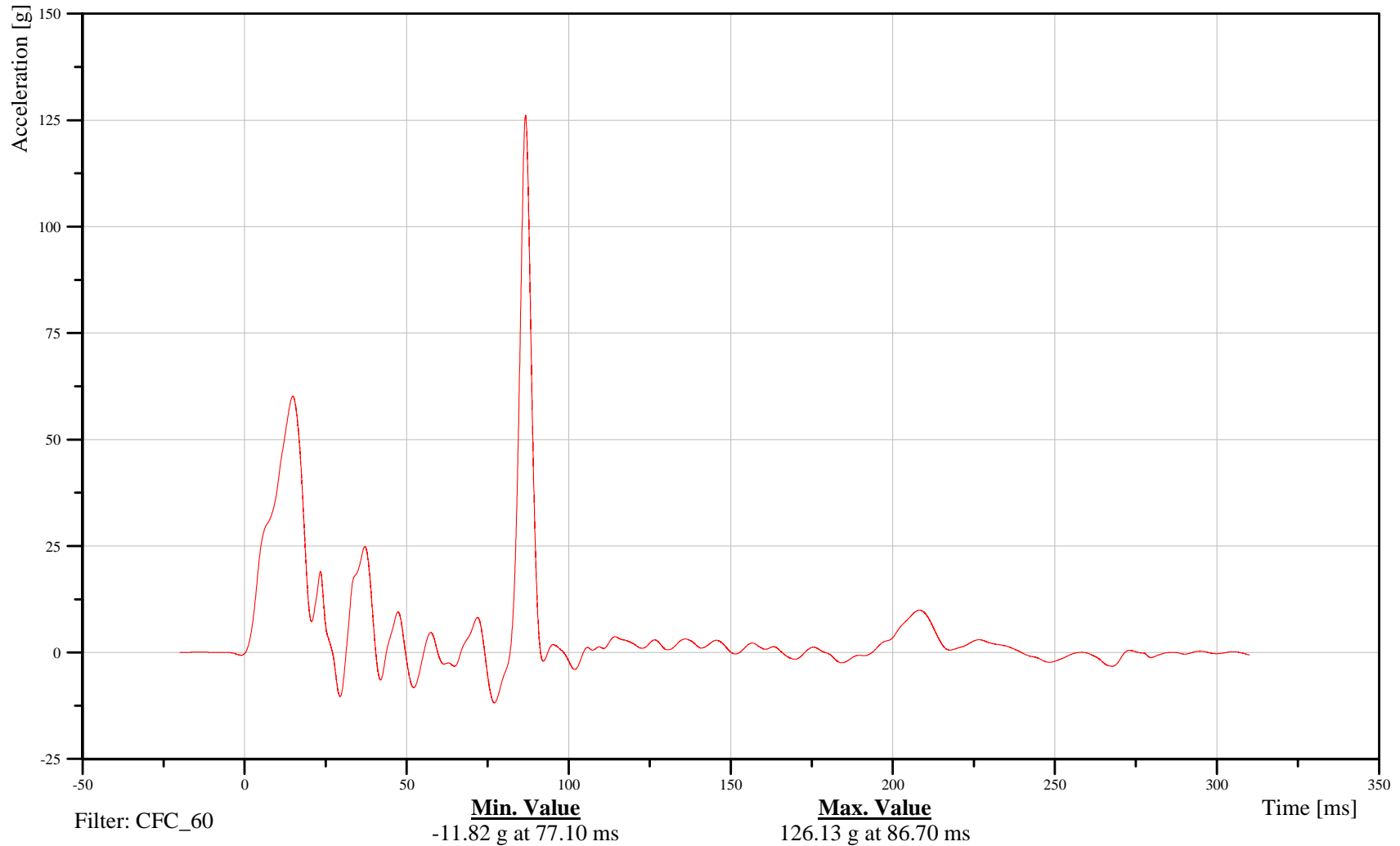
## Left Front Door Upper Centerline Y-Axis Acceleration

Customer: VRTC

# 11DOORLEFRUPACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-127

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

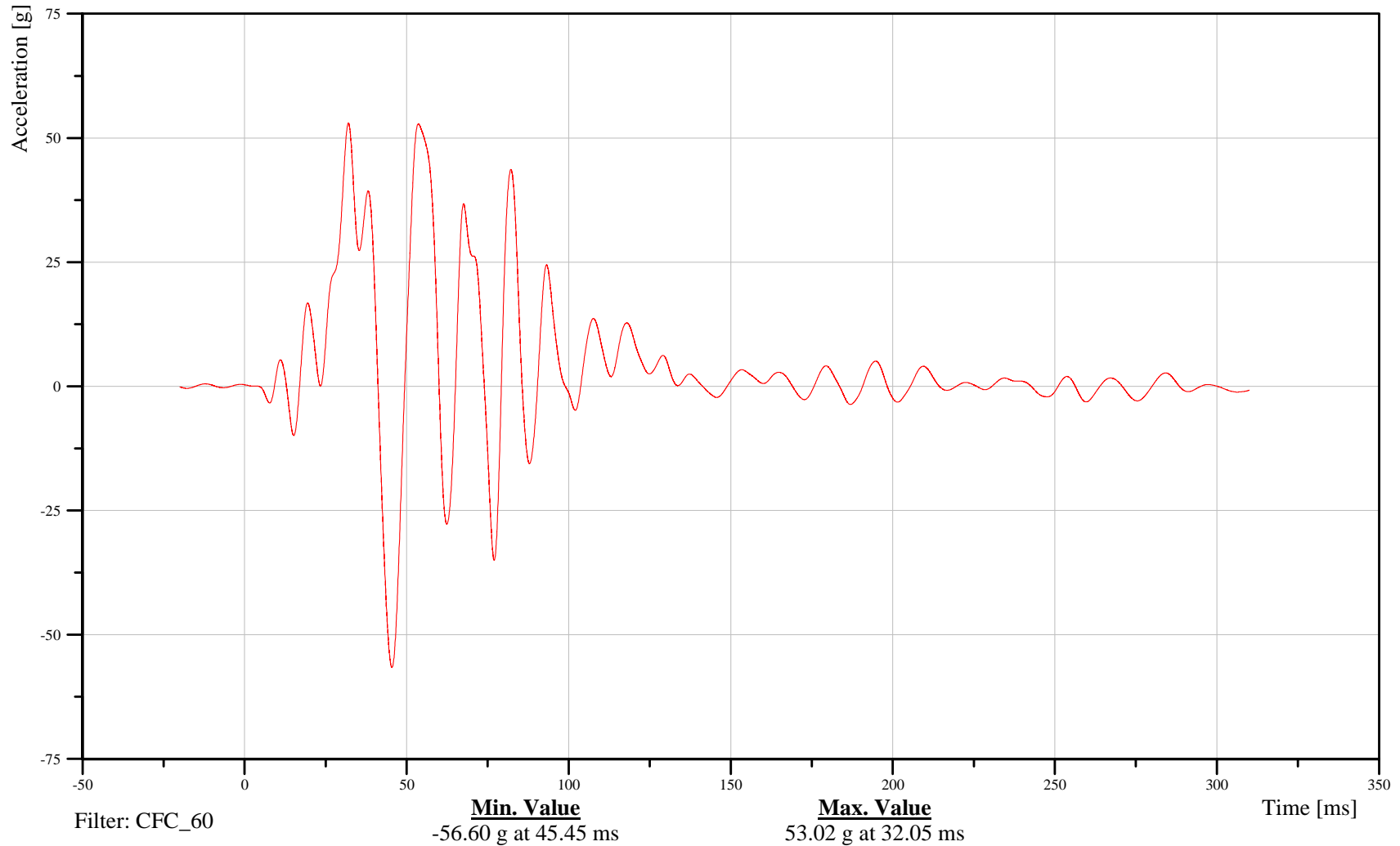
## Midrear of Left Rear Door Y-Axis Acceleration

Customer: VRTC

# 14DOORMIRE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-128

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

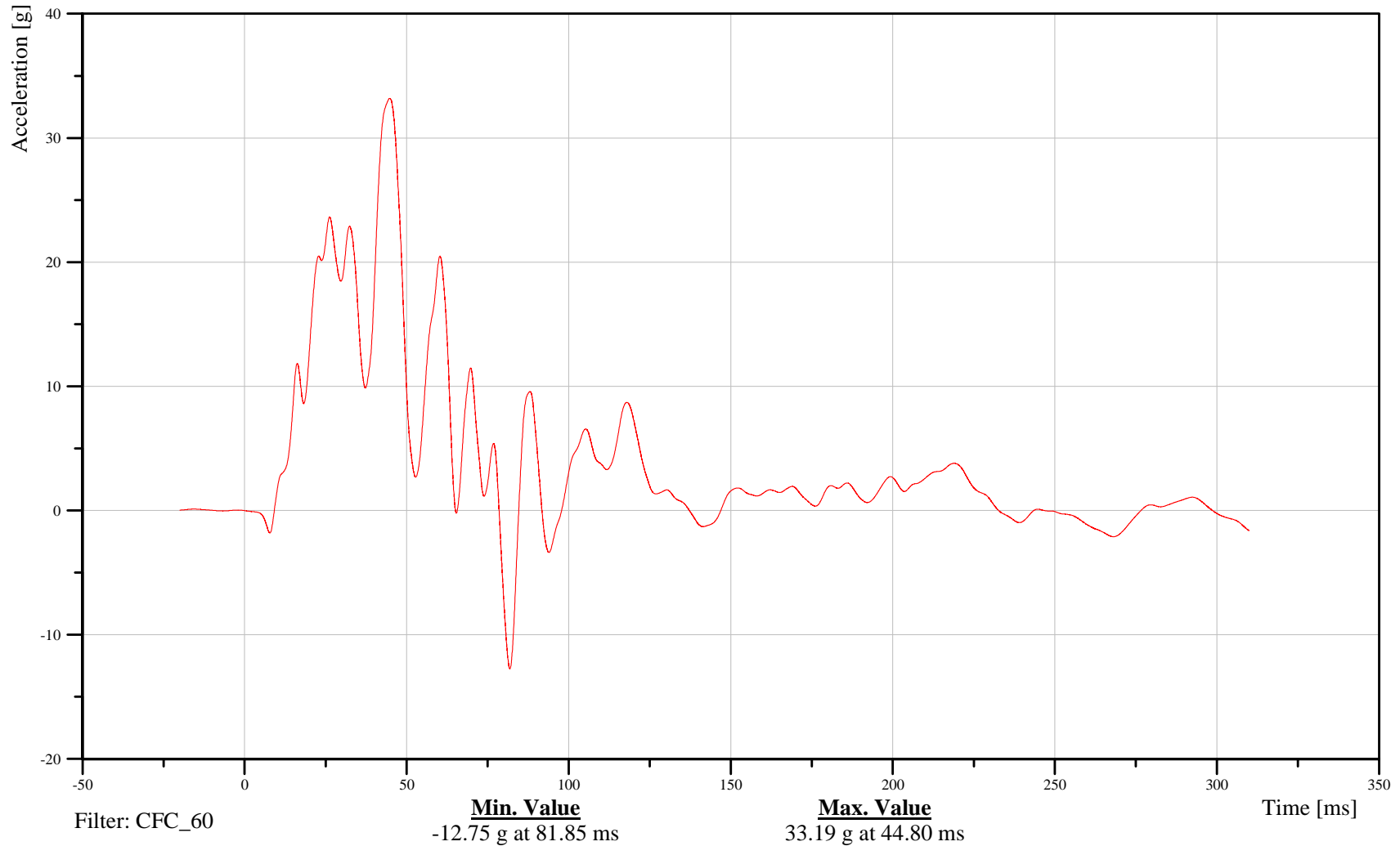
## Left Rear Door Upper Centerline Y-Axis Acceleration

Customer: VRTC

# 14DOORLEREUPACYD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-129

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

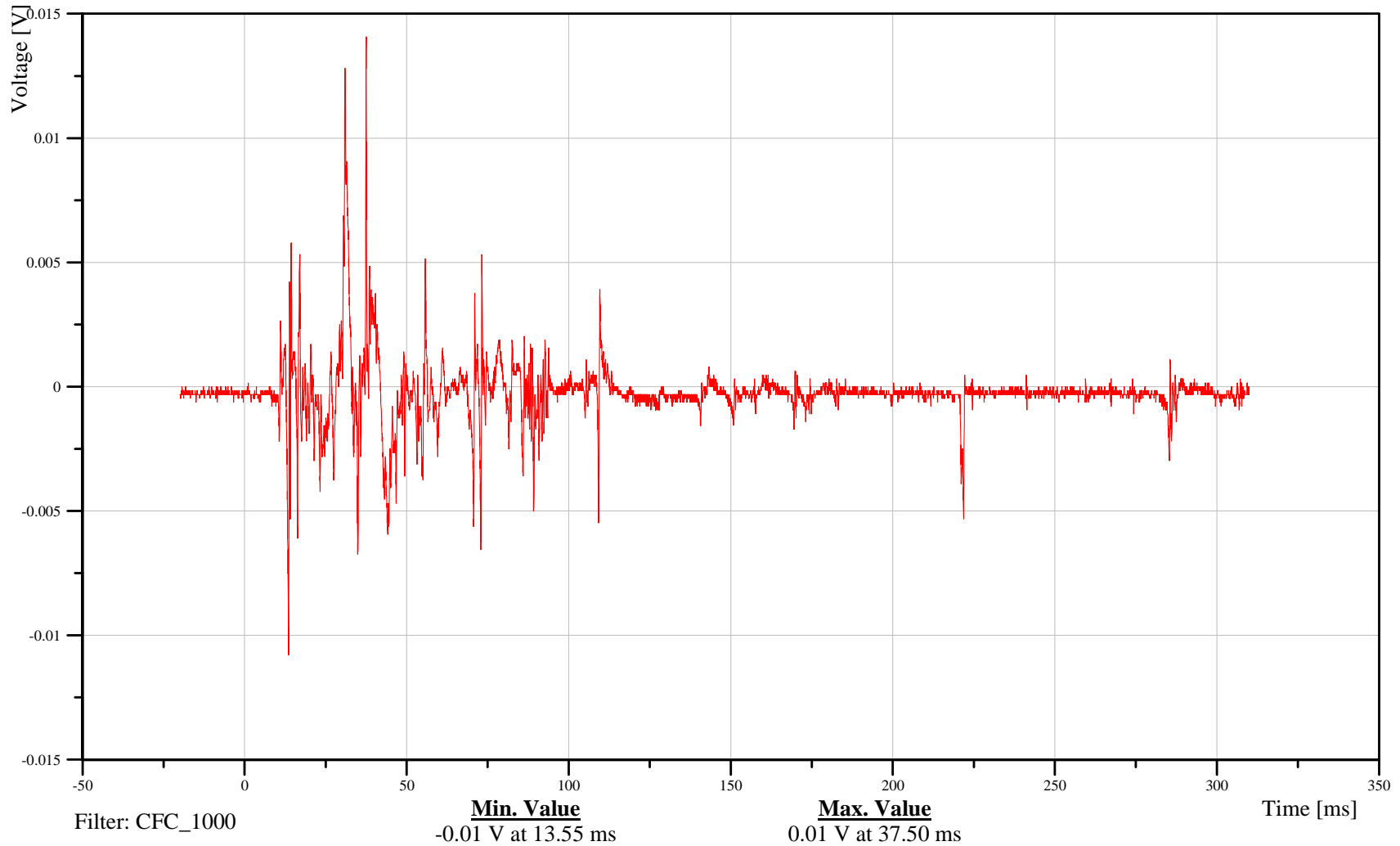
## Driver Side Curtain Inductor

Customer: VRTC

# 11AIRBTPLE00EV0A

TRC Inc. Test Lab: CTF

Test Number: 110908



B-130

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

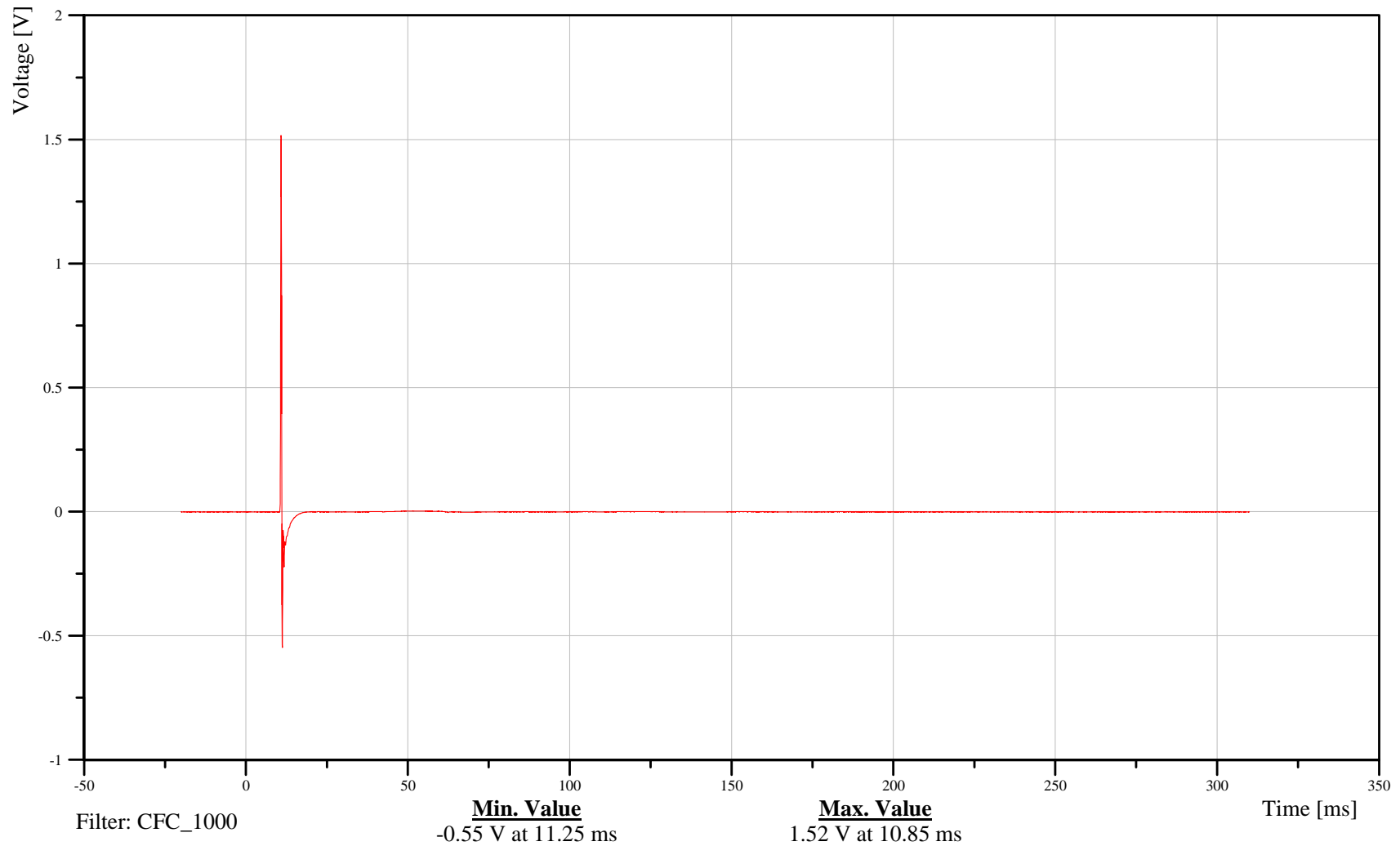
Driver Torso Airbag Fire Inductor

Customer: VRTC

## 11AIR02N0000EVOA

TRC Inc. Test Lab: CTF

Test Number: 110908



B-131

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

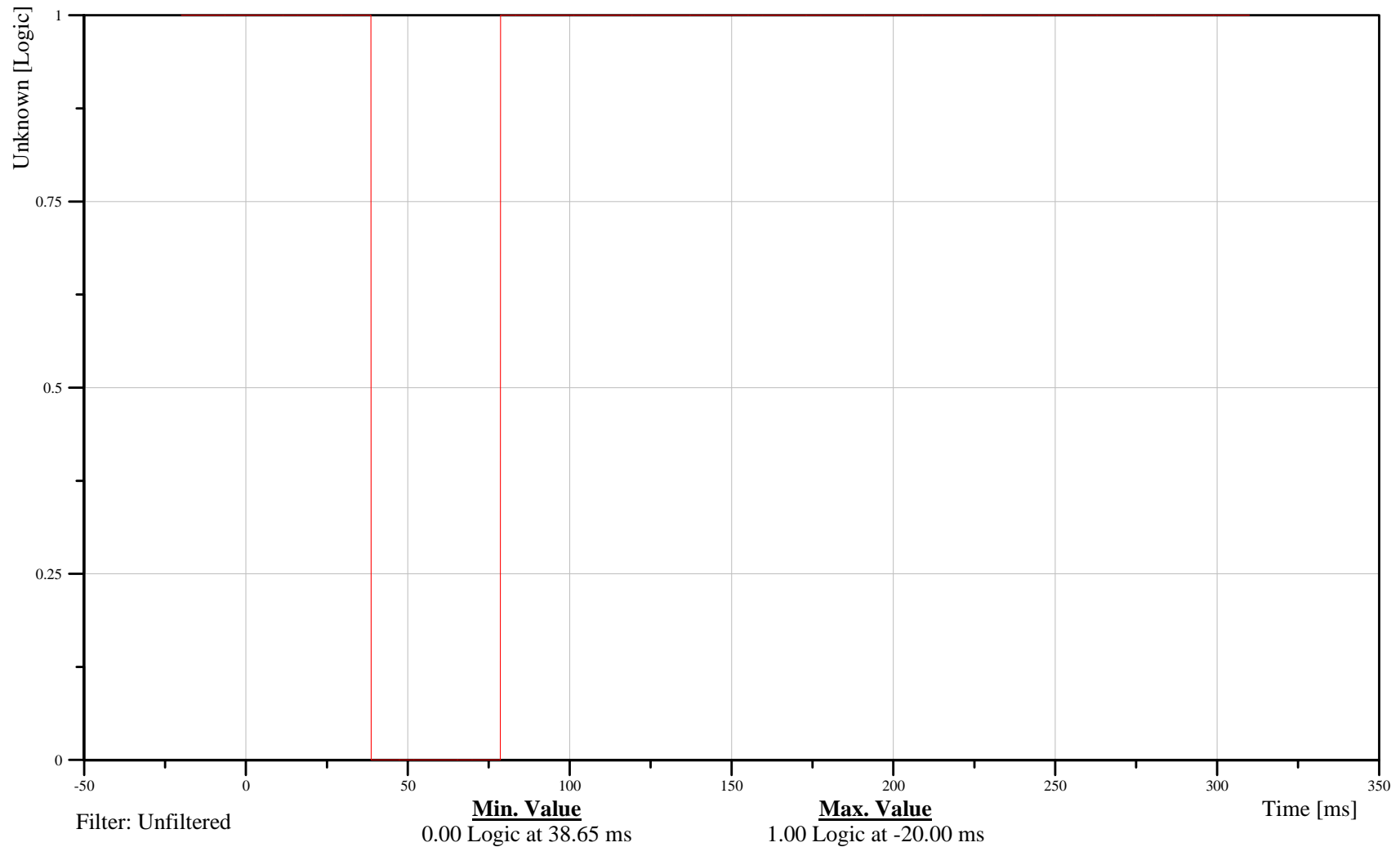
## Head Contact Switch

Customer: VRTC

# 11CONT000001VO00

TRC Inc. Test Lab: CTF

Test Number: 110908



B-132

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

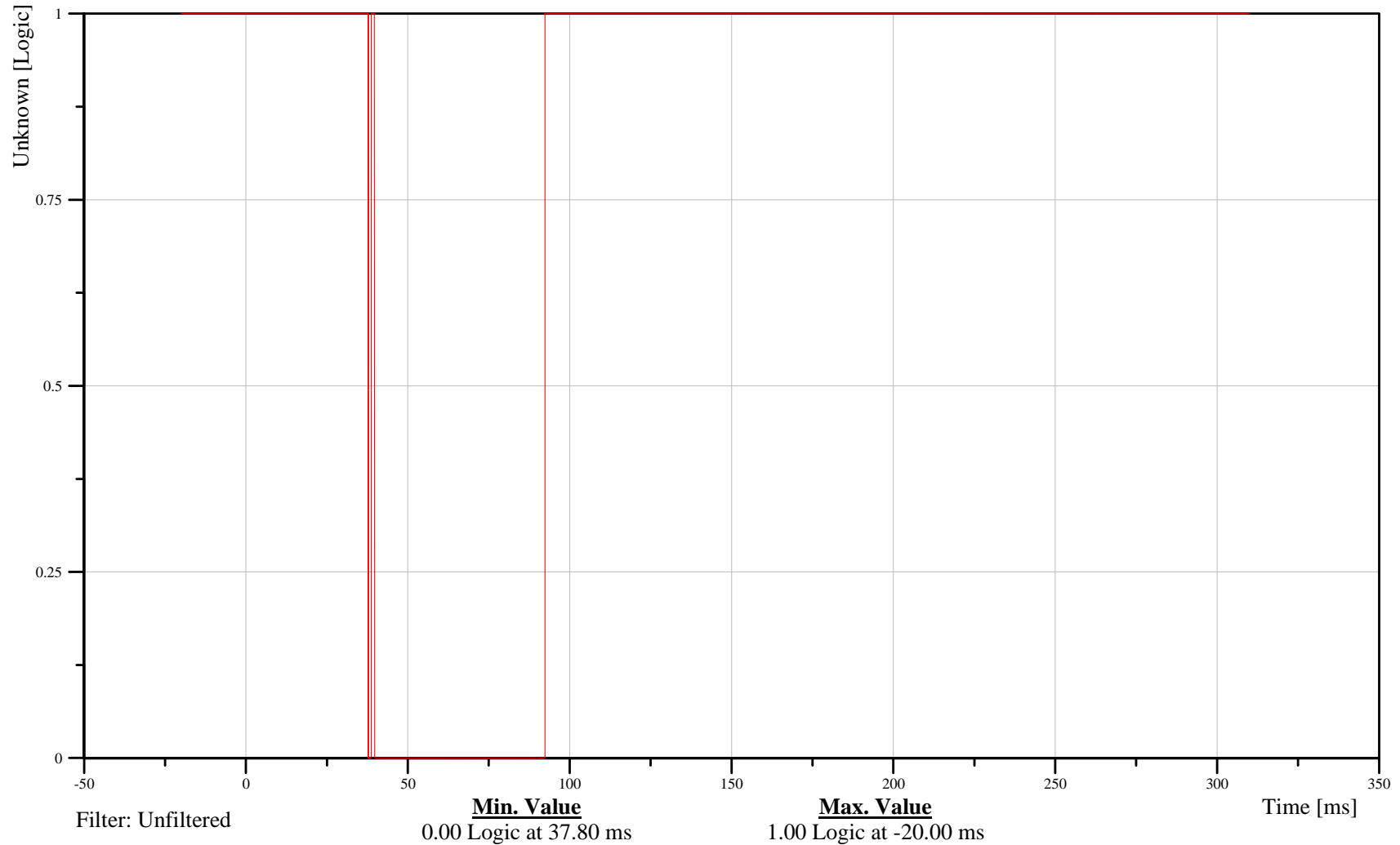
## Shoulder Contact Switch

Customer: VRTC

# 11CONT000002VO00

TRC Inc. Test Lab: CTF

Test Number: 110908



B-133

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

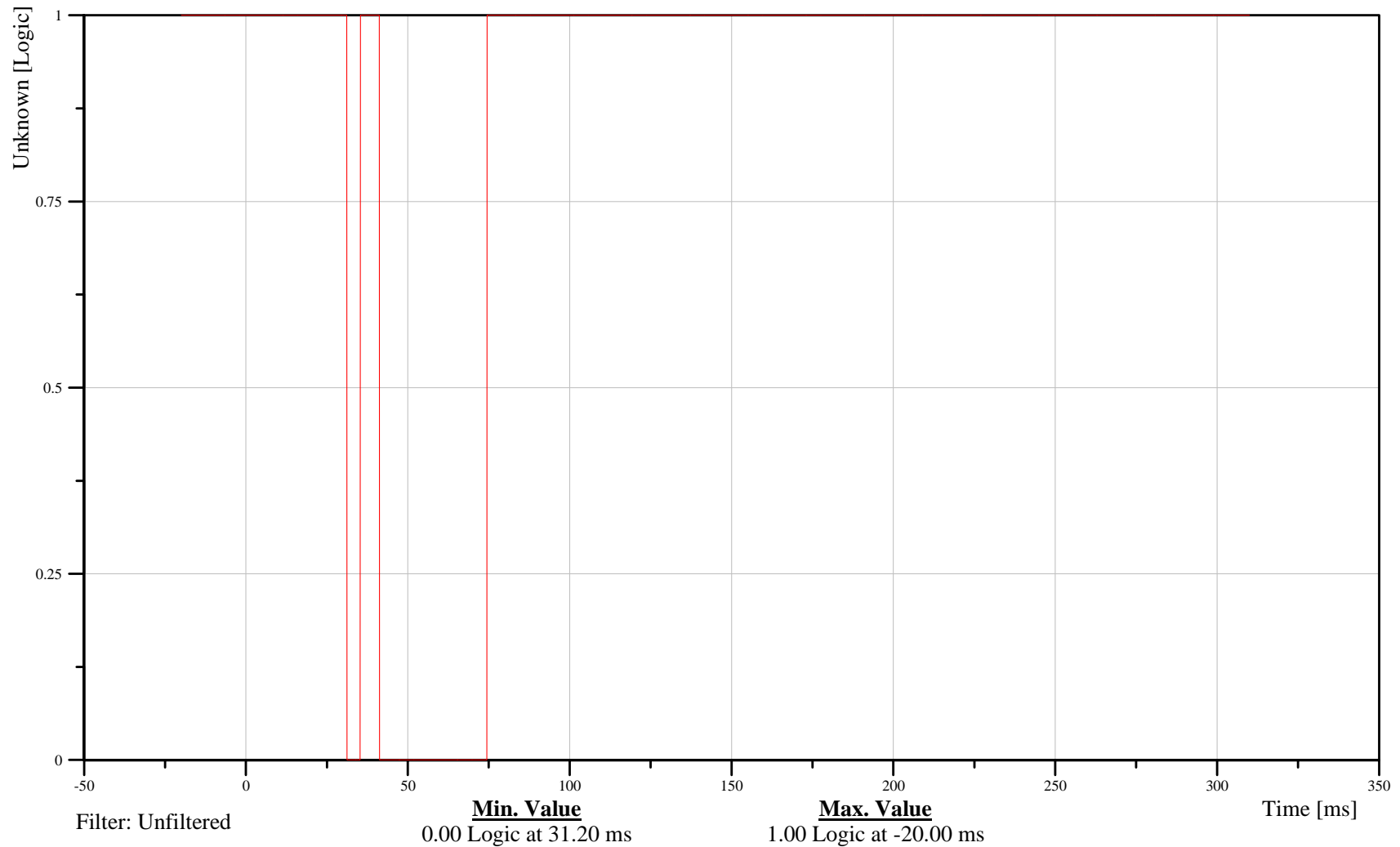
## Torso Contact Switch

Customer: VRTC

# 11CONT000003VO00

TRC Inc. Test Lab: CTF

Test Number: 110908



B-134

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

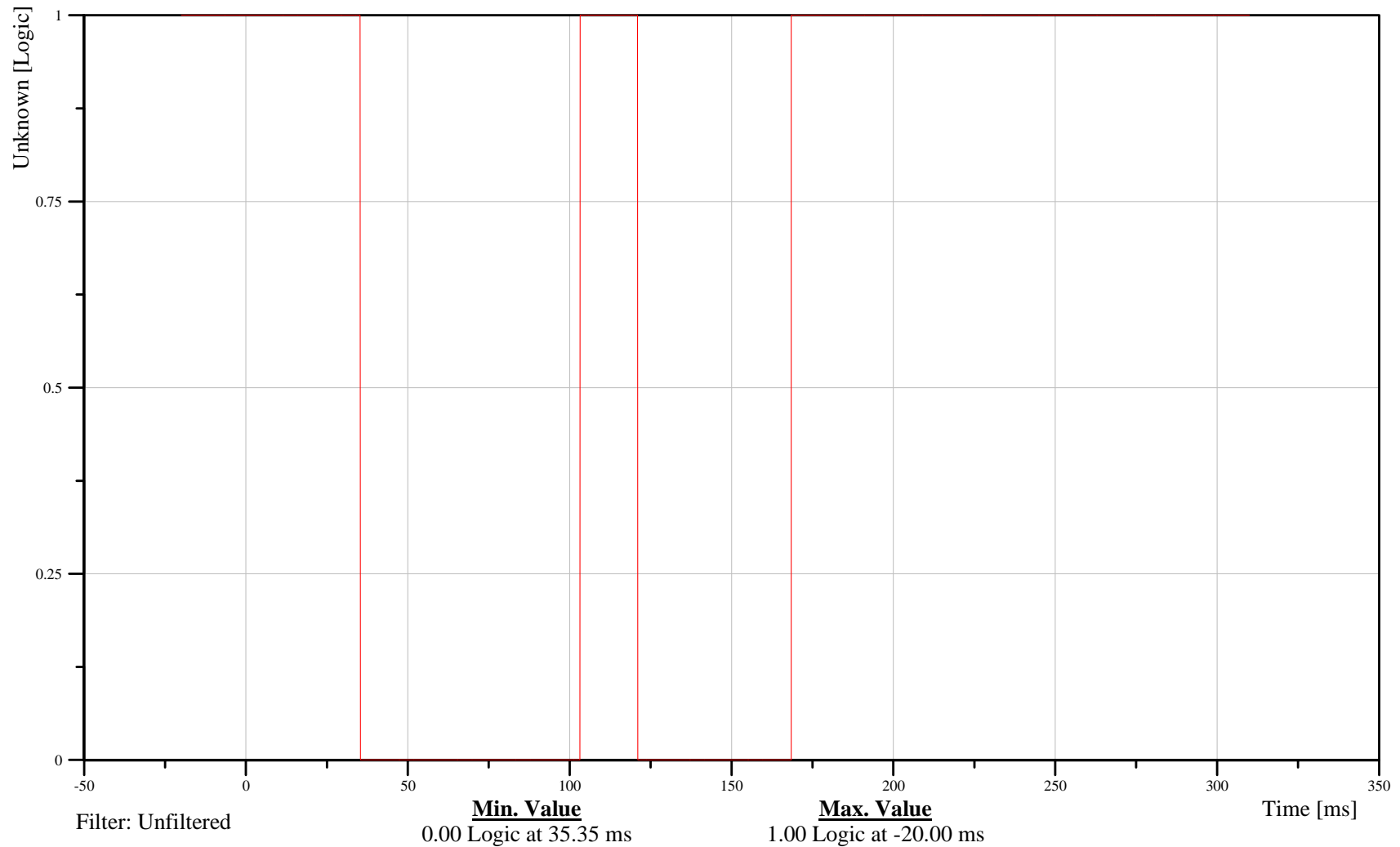
## Left Contact Switch

Customer: VRTC

# 11CONT000004VO00

TRC Inc. Test Lab: CTF

Test Number: 110908



B-135

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

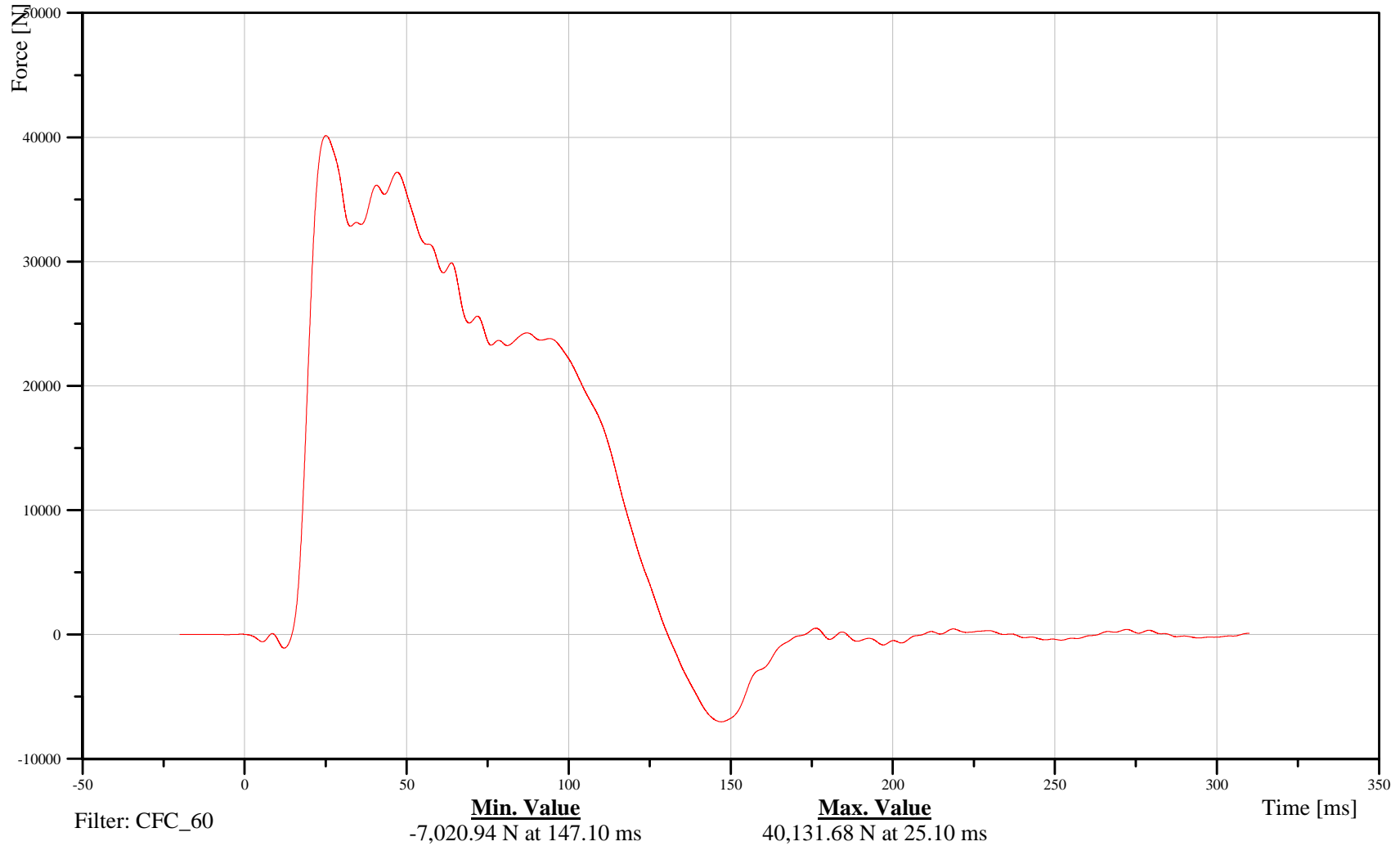
Pole Load Cell 1

Customer: VRTC

## K0FBAR010000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-136

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

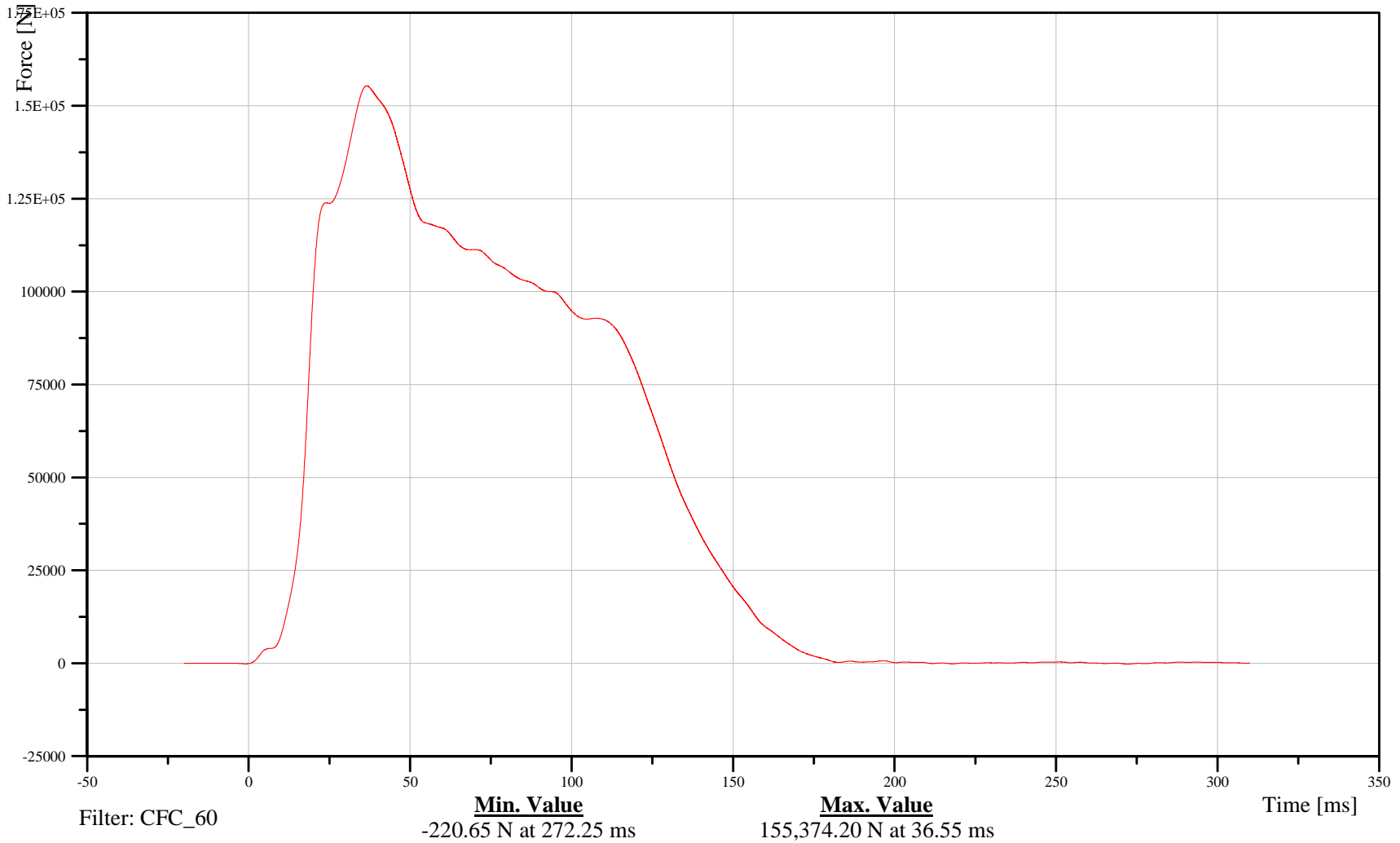
Pole Load Cell 2

Customer: VRTC

## K0FBAR020000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-137

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

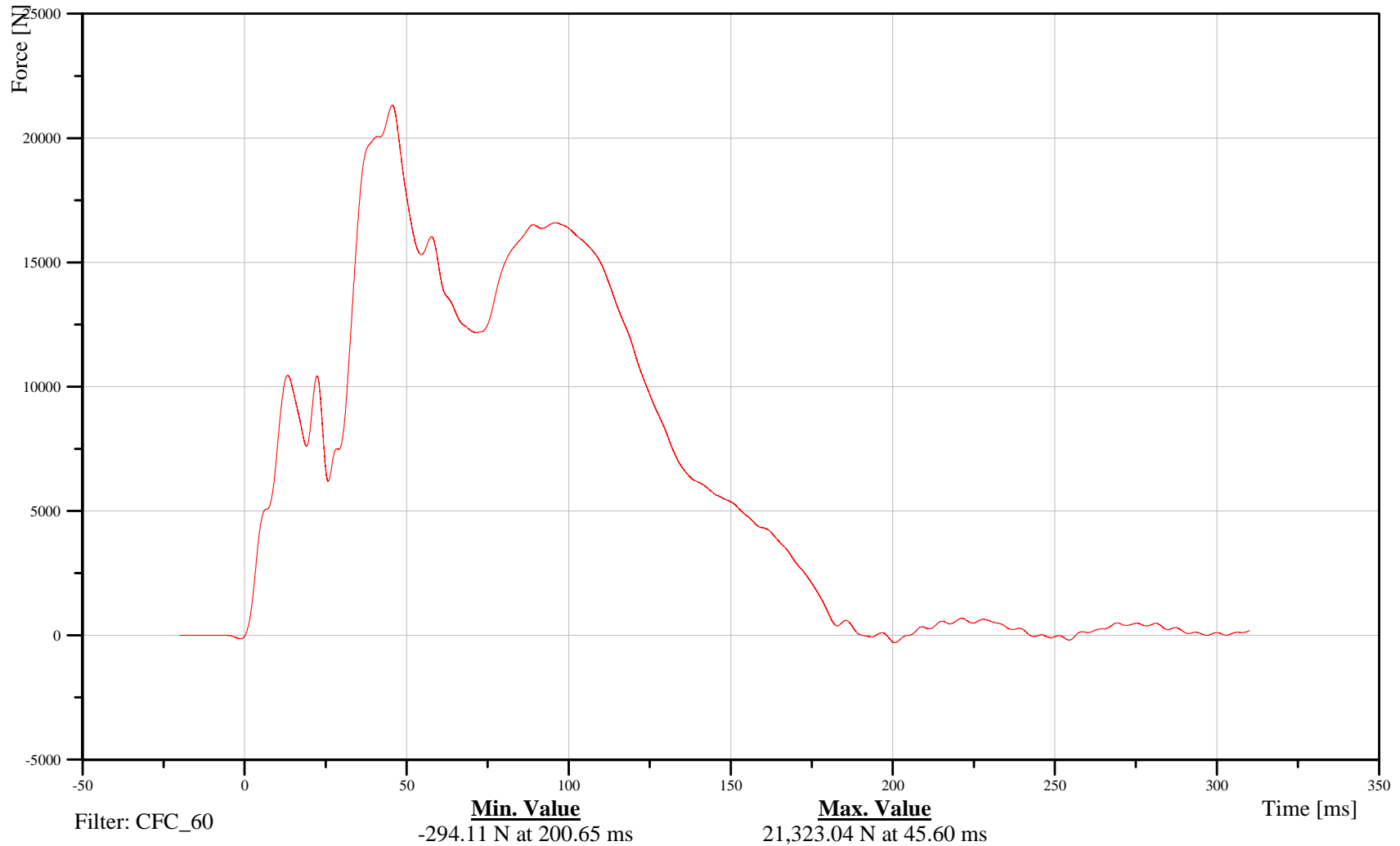
Pole Load Cell 3

Customer: VRTC

## K0FBAR030000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-138

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

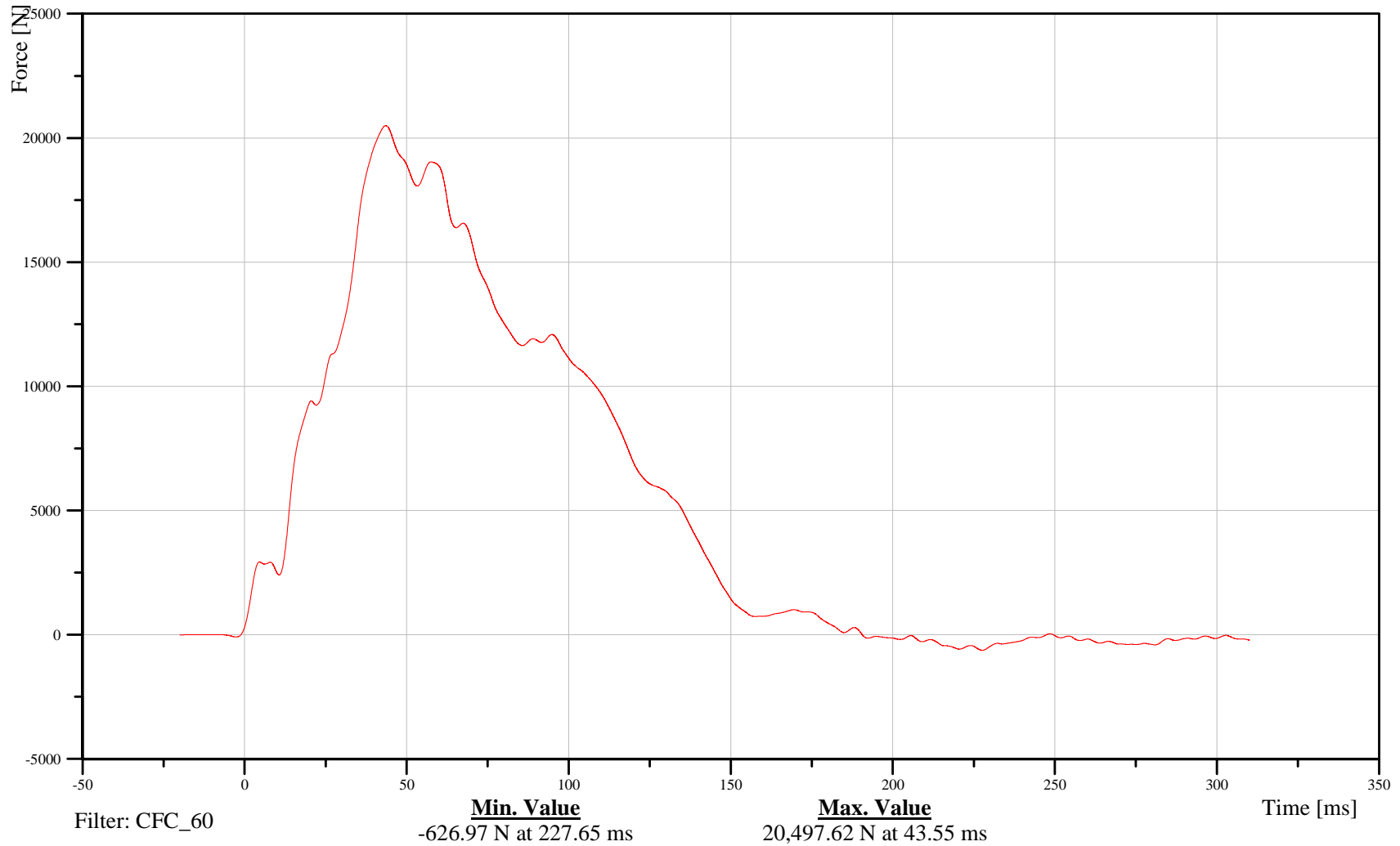
Pole Load Cell 4

Customer: VRTC

## K0FBAR040000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-139

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

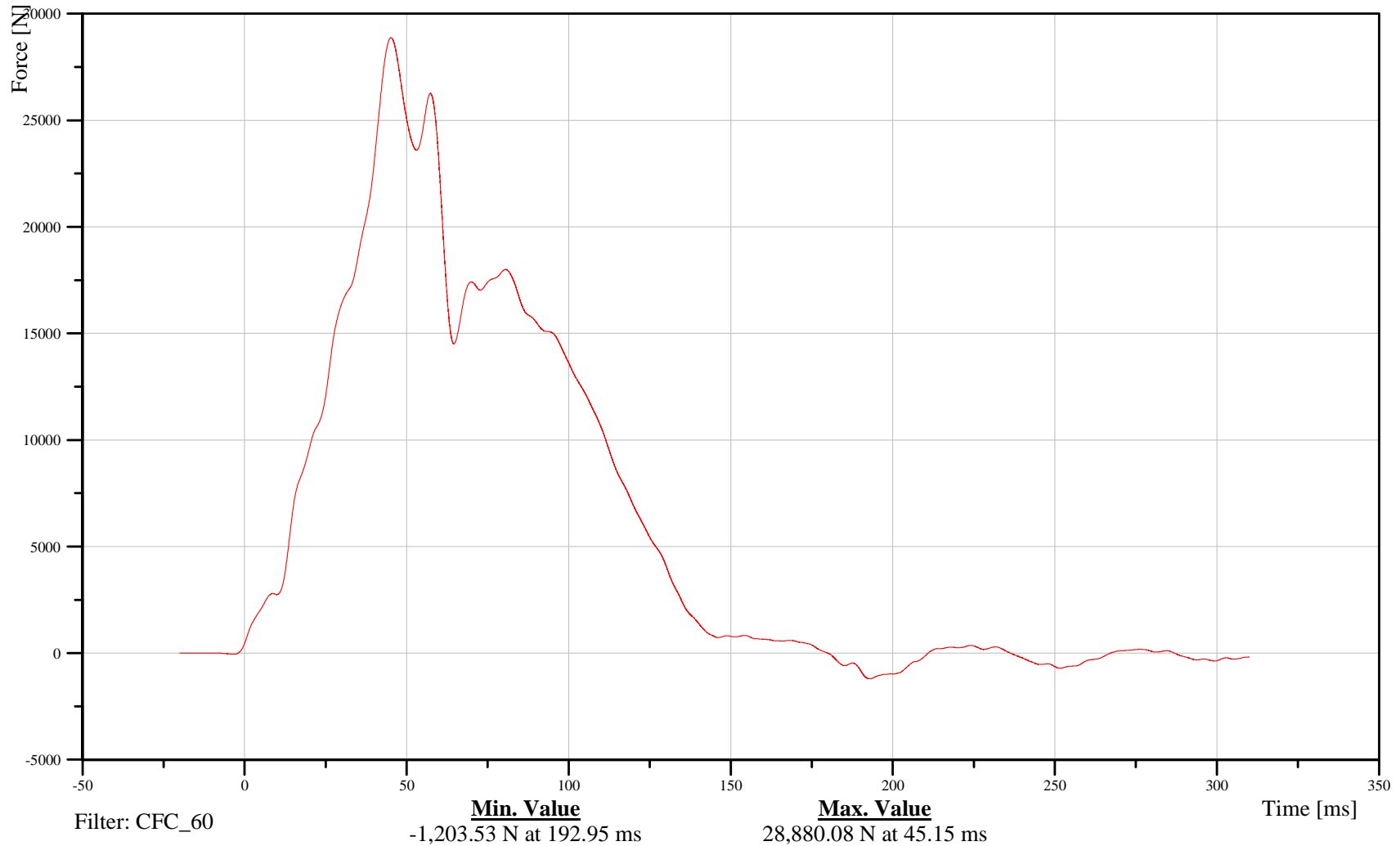
Pole Load Cell 5

Customer: VRTC

## K0FBAR050000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-140

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

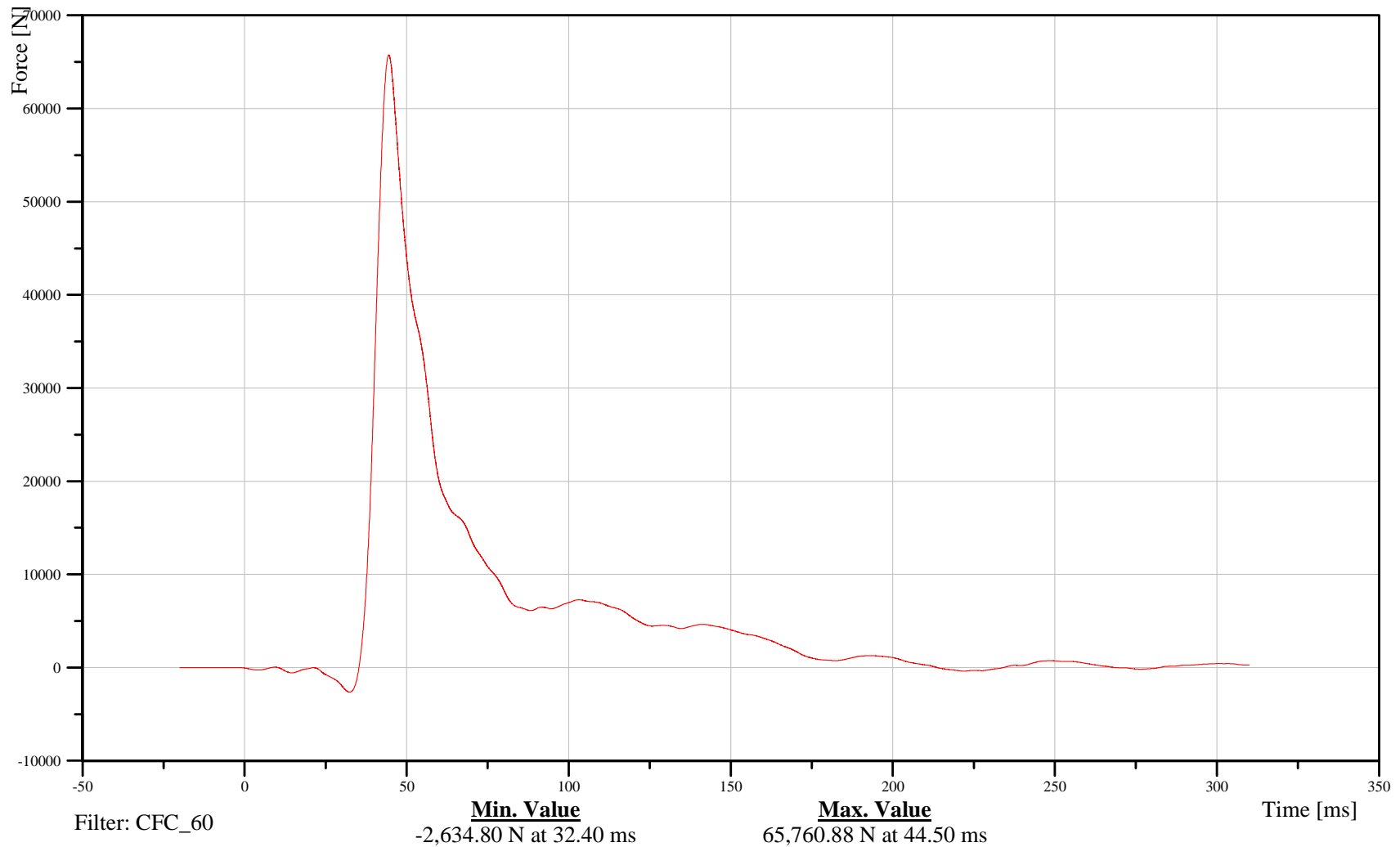
Pole Load Cell 6

Customer: VRTC

## K0FBAR060000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-141

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

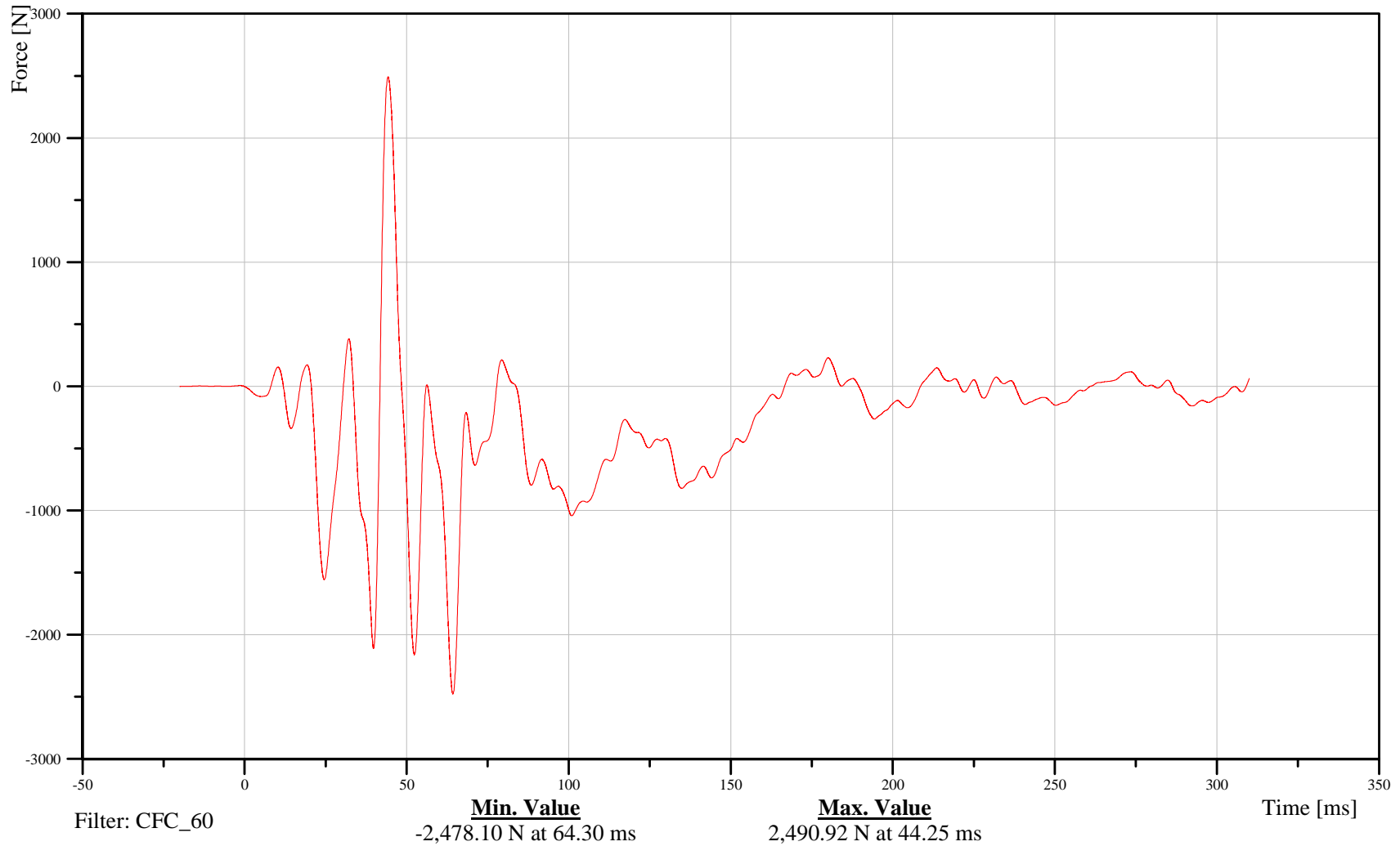
Pole Load Cell 7

Customer: VRTC

## K0FBAR070000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-142

110908



# 2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph

Date: 09/08/2011  
Time: 07:38

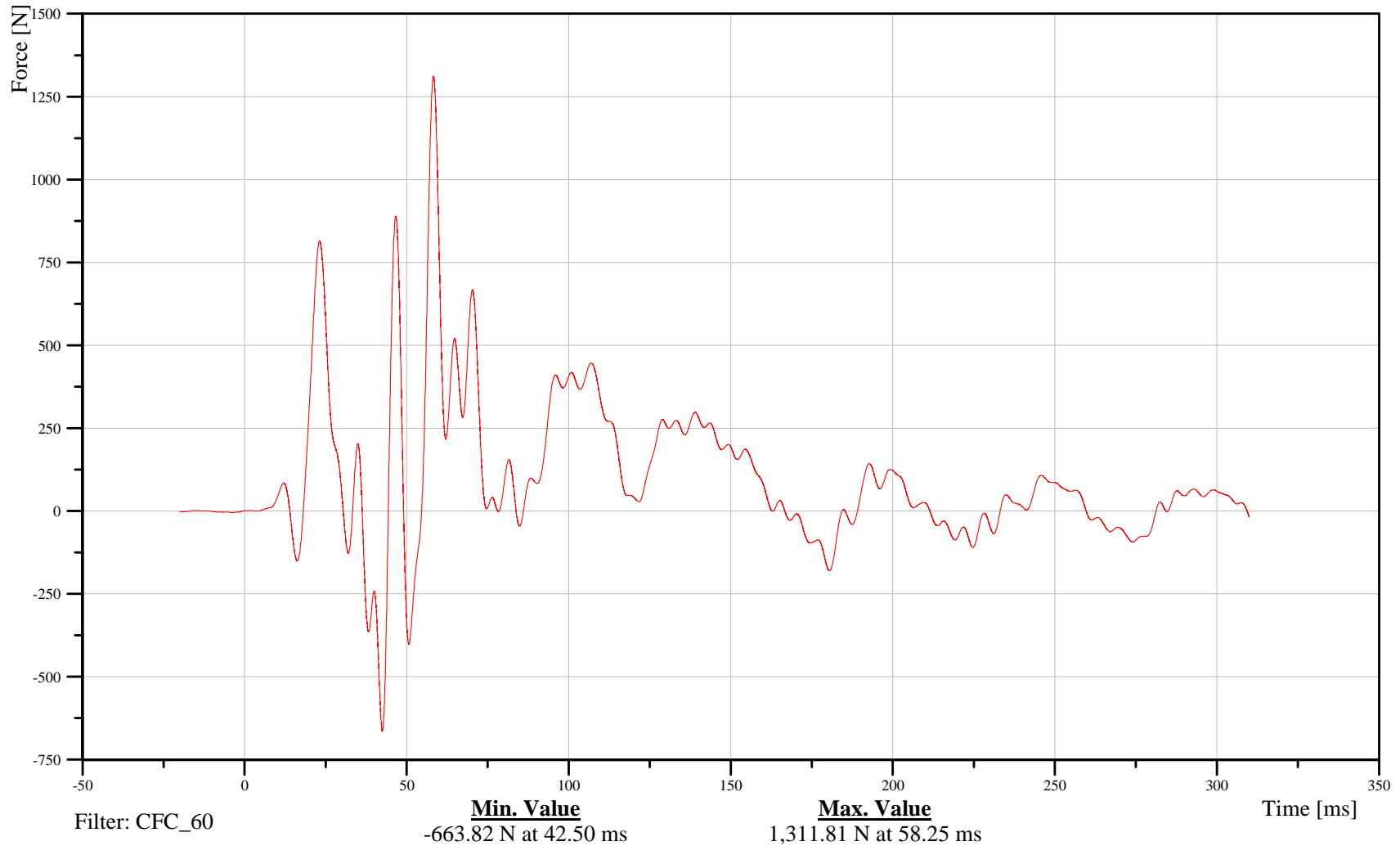
Pole Load Cell 8

Customer: VRTC

## K0FBAR080000FOXD

TRC Inc. Test Lab: CTF

Test Number: 110908



B-143

110908

## Appendix C

### WorldSID Configuration and Performance Verification Data

Calibration Test Results

Pre-Test

WorldSID: 014

Configured for Left Side Impact

# Transportation Research Center Inc.

Front Head Drop

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	248.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-4.3 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**

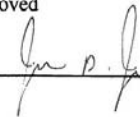
**Comments:**

Technician



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Approved



---

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 15:19:55 612

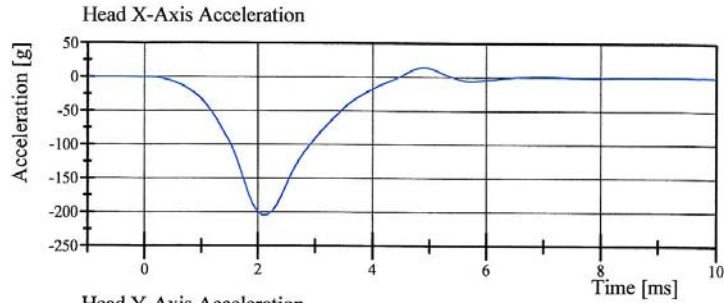


# Transportation Research Center Inc.

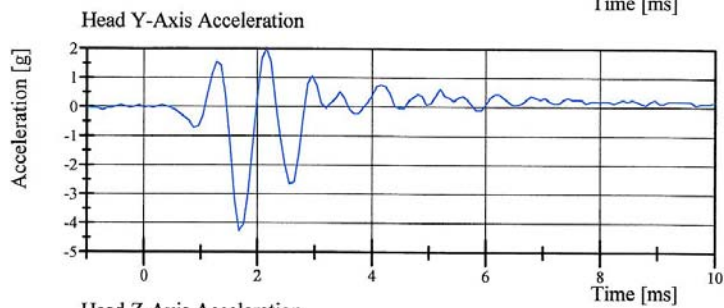
Front Head Drop

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

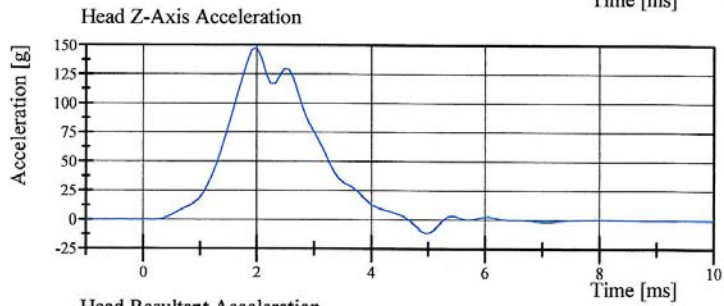
Test Date: 8/31/2011



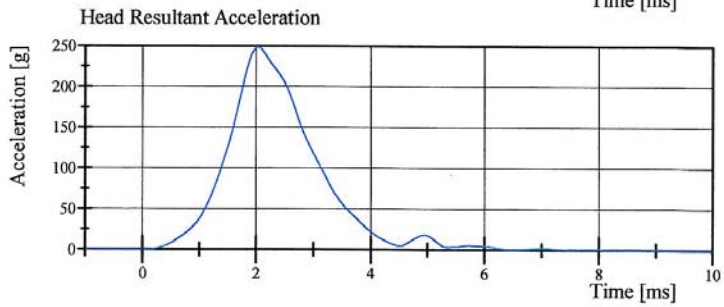
Filter Class: CFC\_1000  
Max: 14.5 gn at 4.9 ms  
Min: -204.4 gn at 2.1 ms



Filter Class: CFC\_1000  
Max: 2.0 gn at 2.2 ms  
Min: -4.3 gn at 1.7 ms



Filter Class: CFC\_1000  
Max: 147.6 gn at 2.0 ms  
Min: -11.7 gn at 5.0 ms



Filter Class: CFC\_1000  
Max: 248.3 gn at 2.0 ms  
Min: 0.1 gn at -0.9 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 15:20:17 612



# Transportation Research Center Inc.

Left Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

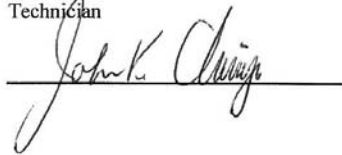
Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Peak Head Resultant Acceleration	99 - 121 g	115.1 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	6.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician



Approved



Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 14:08:31 605

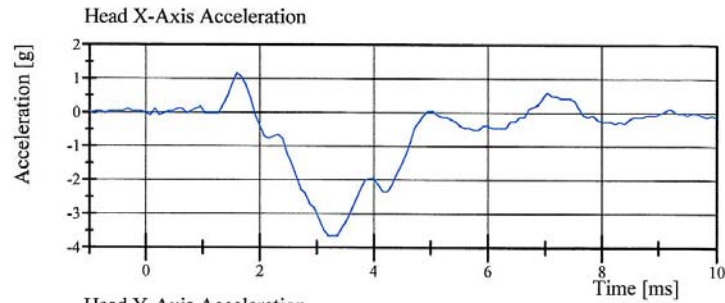


# Transportation Research Center Inc.

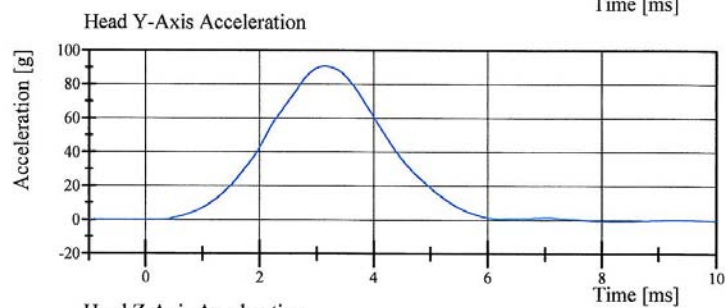
Left Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

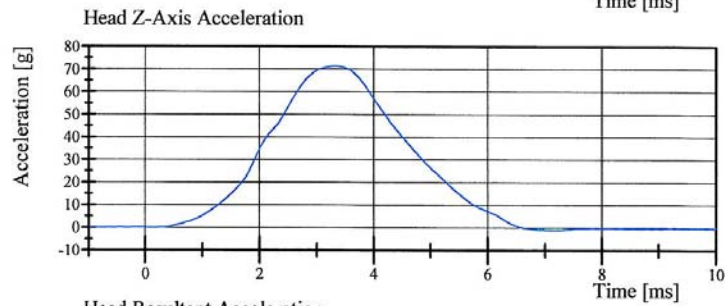
Test Date: 8/31/2011



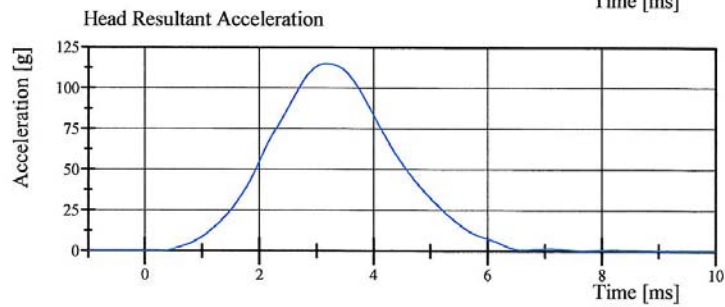
Filter Class: CFC\_1000  
Max: 1.2 gn at 1.6 ms  
Min: -3.7 gn at 3.2 ms



Filter Class: CFC\_1000  
Max: 90.6 gn at 3.1 ms  
Min: -0.8 gn at 8.2 ms



Filter Class: CFC\_1000  
Max: 71.3 gn at 3.3 ms  
Min: -1.0 gn at 7.2 ms



Filter Class: CFC\_1000  
Max: 115.1 gn at 3.2 ms  
Min: 0.1 gn at -0.6 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 14:08:49 605



## Transportation Research Center Inc.

Right Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-2


Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	65 %	Yes
Peak Head Resultant Acceleration	99 - 121 g	111.2 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	2.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

**Test meets specifications.**

**Comments:**

Technician



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Approved



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Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 16:53:19 608

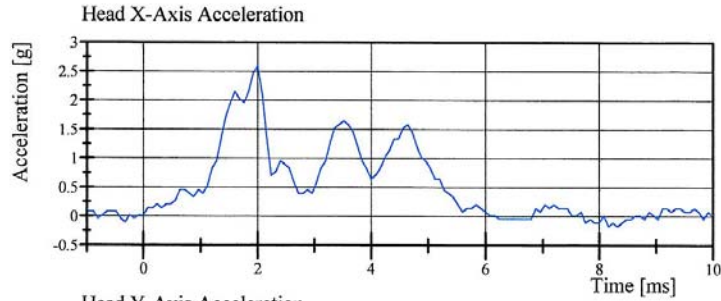


# Transportation Research Center Inc.

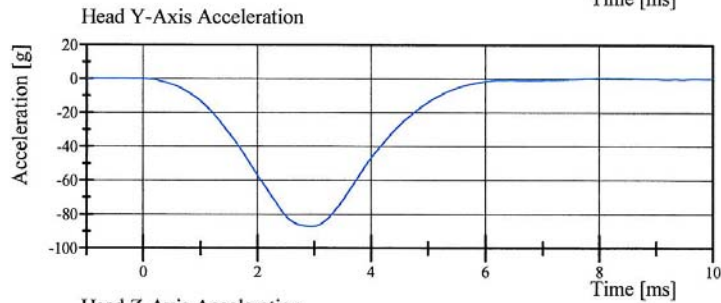
Right Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-2

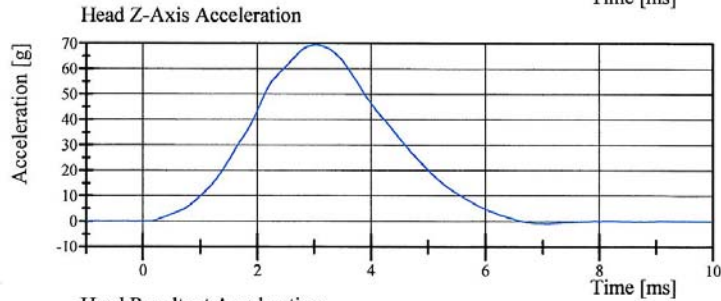
Test Date: 8/31/2011



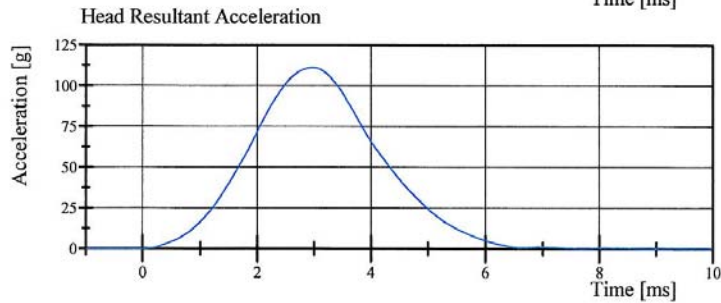
Filter Class: CFC\_1000  
Max: 2.6 gn at 2.0 ms  
Min: -0.2 gn at 8.2 ms



Filter Class: CFC\_1000  
Max: 0.6 gn at 8.1 ms  
Min: -87.1 gn at 3.0 ms



Filter Class: CFC\_1000  
Max: 69.3 gn at 3.0 ms  
Min: -0.8 gn at 7.0 ms



Filter Class: CFC\_1000  
Max: 111.2 gn at 3.0 ms  
Min: 0.1 gn at -0.4 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 16:53:36 608



## Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-4

Test Date: 9/1/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	58 %	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.48 m/s	Yes
Pendulum Integrated Velocity			
Change at 4 ms	0.77 - 1.04 m/s	0.775 m/s	Yes
Change at 8 ms	1.6 - 2.16 m/s	1.857 m/s	Yes
Change at 12 ms	2.43 - 3.29 m/s	3.150 m/s	Yes
Maximum Headform Flexion	(-50) - (-61) deg	-54.7 deg	Yes
Headform Flexion Decay			
- from Peak to Zero Degrees	58 - 72 ms	62.2 ms	Yes
Total Neck Occipital Condyles Moment	55 - 68 N·m	64.1 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	71 - 87 ms	79.0 ms	Yes
Maximum Forward Pot Rotation			
Peak	(-32) - (-39) °	-35.4 °	Yes
Time of Peak	56 - 68 ms	65.8 ms	Yes
Maximum Rear Pot Rotation			
Peak	(-30) - (-37) °	-32.1 °	Yes
Time of Peak	56 - 68 ms	61.5 ms	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

09.01.2011 10:24:07 1299

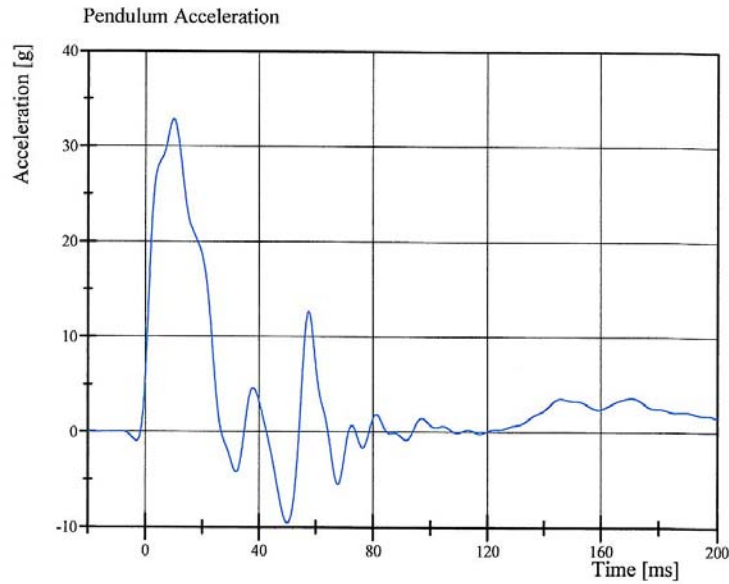


# Transportation Research Center Inc.

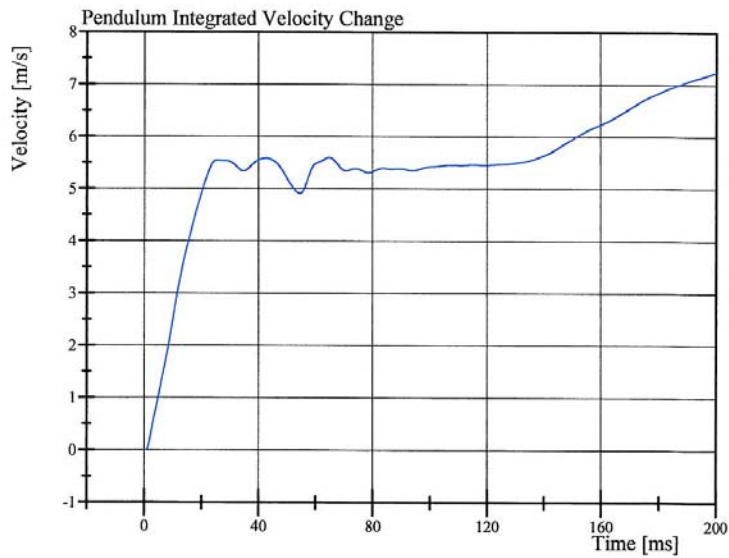
Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-4

Test Date: 9/1/2011



Filter Class: CFC\_60  
Max: 32.8 gn at 10.0 ms  
Min: -9.6 gn at 50.0 ms



Filter Class: CFC\_180  
Max: 7.2 m/s at 200.0 ms  
Min: -0.0 m/s at 0.4 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

09.01.2011 10:24:17 1299

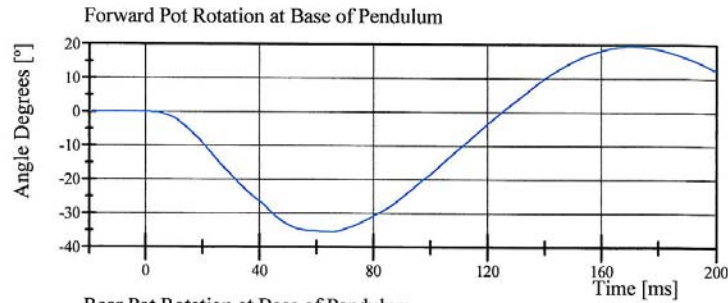


# Transportation Research Center Inc.

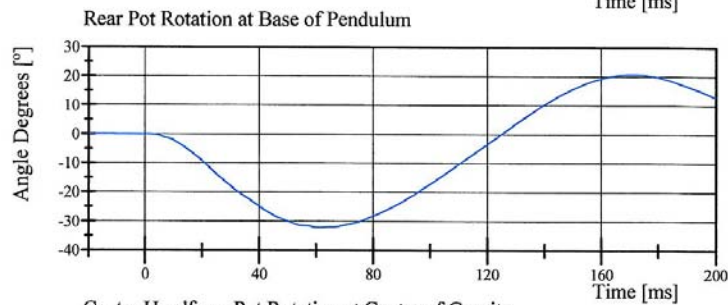
Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-4

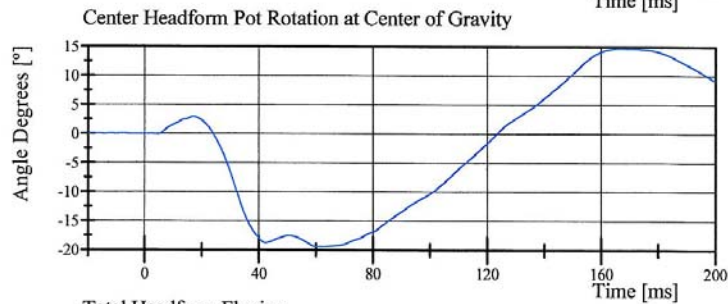
Test Date: 9/1/2011



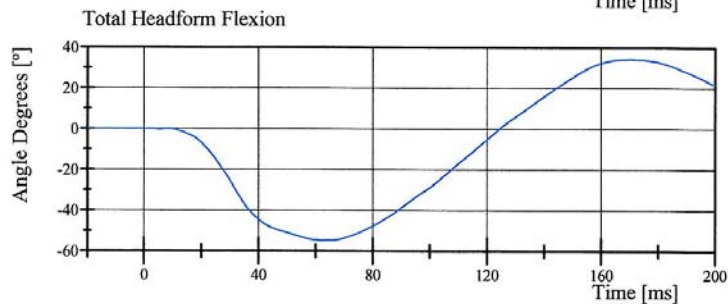
Filter Class: CFC\_180  
Max: 19.6 ° at 171.2 ms  
Min: -35.4 ° at 65.8 ms



Filter Class: CFC\_180  
Max: 20.8 ° at 170.6 ms  
Min: -32.1 ° at 61.5 ms



Filter Class: CFC\_180  
Max: 14.7 ° at 168.1 ms  
Min: -19.4 ° at 62.2 ms



Filter Class: CFC\_180  
Max: 34.3 ° at 170.2 ms  
Min: -54.7 ° at 62.2 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

09.01.2011 10:24:17 1299

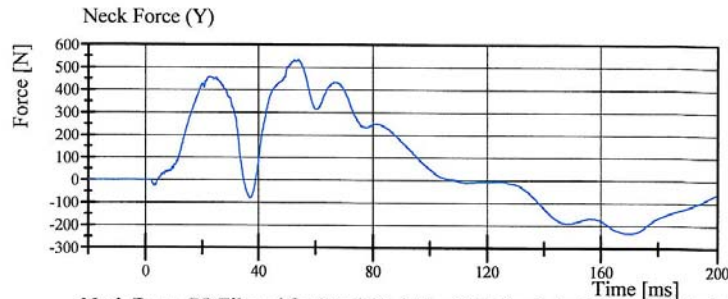


# Transportation Research Center Inc.

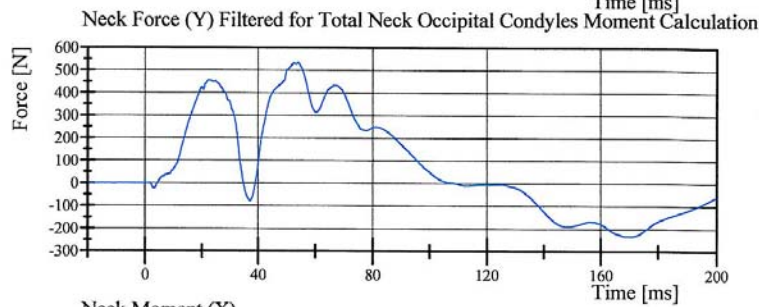
Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-4

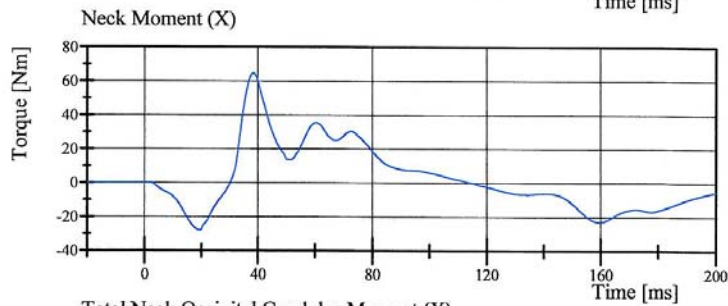
Test Date: 9/1/2011



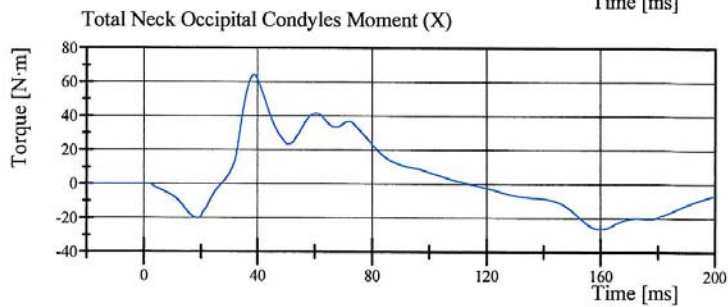
Filter Class: CFC\_1000  
Max: 535.6 N at 53.9 ms  
Min: -233.2 N at 170.2 ms



Filter Class: CFC\_600  
Max: 534.5 N at 53.9 ms  
Min: -232.8 N at 170.1 ms



Filter Class: CFC\_600  
Max: 64.7 Nm at 38.3 ms  
Min: -28.0 Nm at 19.4 ms



Filter Class: Without\_(Consta  
Max: 64.1 N-m at 38.7 ms  
Min: -26.4 N-m at 160.2 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

09.01.2011 10:24:18 1299



## Transportation Research Center Inc.

Left Lateral Shoulder

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	56 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Force	(-2,600) - (-3,300) N	-2,933.8 N	Yes
Shoulder Displacement	35 - 44 mm	41.0 mm	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



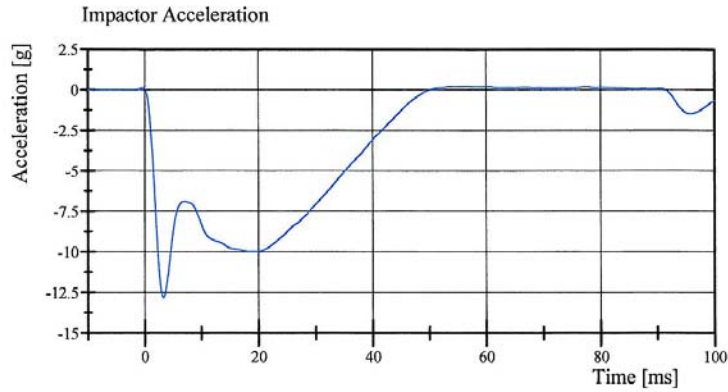
Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 10:24:09 3984

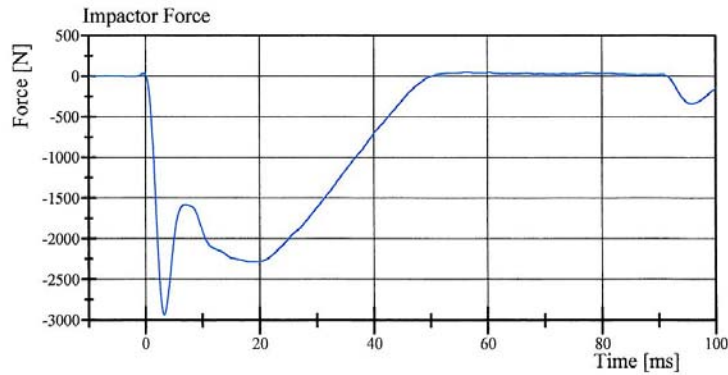


# Transportation Research Center Inc.

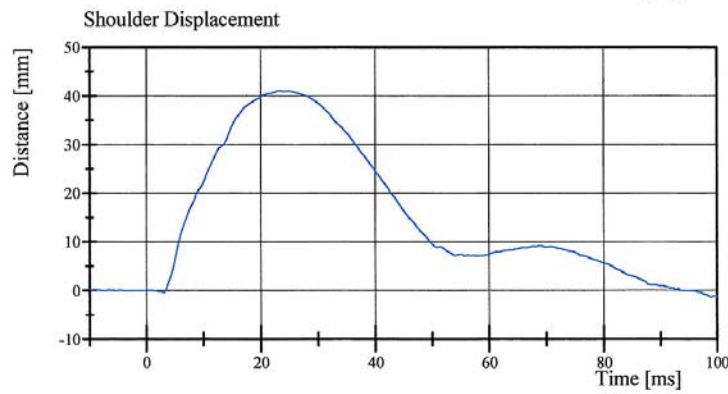
Left Lateral Shoulder  
WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1  
Test Date: 8/31/2011



Filter Class: CFC\_180  
Max: 0.2 gn at 56.5 ms  
Min: -12.8 gn at 3.3 ms



Filter Class: CFC\_180  
Max: 46.8 N at 56.5 ms  
Min: -2,933.8 N at 3.3 ms



Filter Class: CFC\_600  
Max: 41.0 mm at 23.4 ms  
Min: -1.3 mm at 99.0 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 10:24:17 3984



## Transportation Research Center Inc.

Left Lateral Thorax without Arm  
WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1  
Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.386 m/s	Yes
Impactor Force	(-3,200) - (-3,800) N	-3,565.2 N	Yes
Upper Thorax Rib Displacement	33 - 43 mm	38.6 mm	Yes
Center Thorax Rib Displacement	35 - 43 mm	38.6 mm	Yes
Lower Thorax Rib Displacement	32 - 40 mm	37.2 mm	Yes
Upper Spine Lateral Acceleration	14 - 20 g	14.3 g	Yes
Lower Spine Lateral Acceleration	14 - 22 g	14.7 g	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 10:45:41 3991

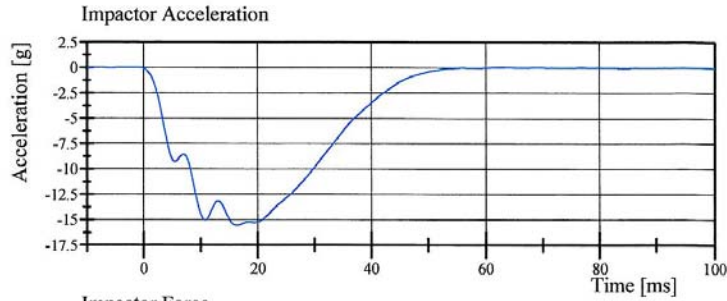


# Transportation Research Center Inc.

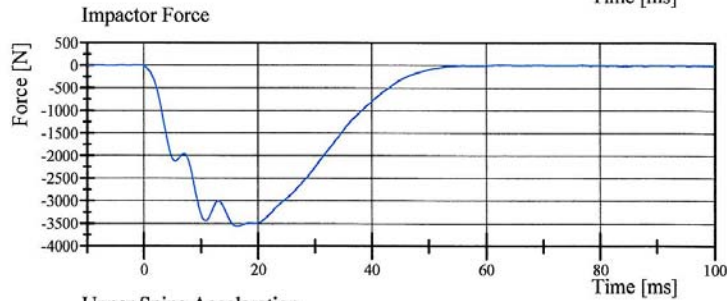
Left Lateral Thorax without Arm

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

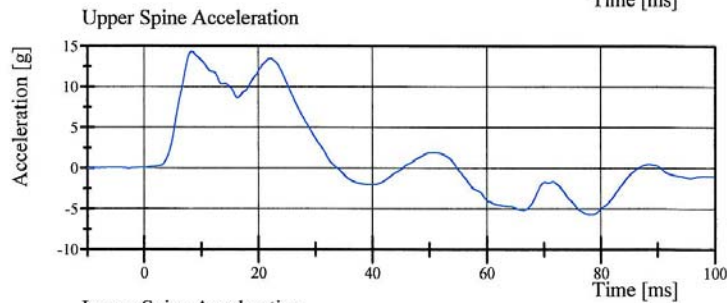
Test Date: 8/31/2011



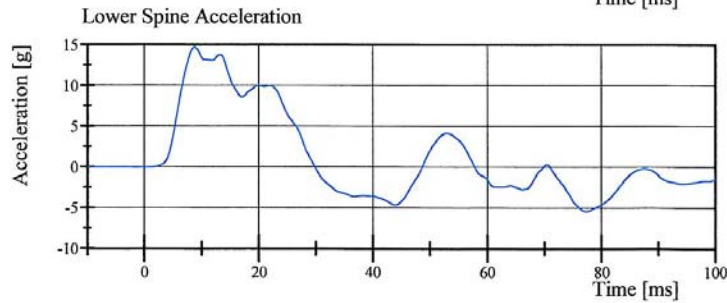
Filter Class: CFC\_180  
Max: 0.1 gn at 62.6 ms  
Min: -15.6 gn at 16.4 ms



Filter Class: CFC\_180  
Max: 12.7 N at 62.6 ms  
Min: -3,565.2 N at 16.4 ms



Filter Class: CFC\_180  
Max: 14.3 gn at 8.4 ms  
Min: -5.7 gn at 78.6 ms



Filter Class: CFC\_180  
Max: 14.7 gn at 8.8 ms  
Min: -5.4 gn at 77.5 ms

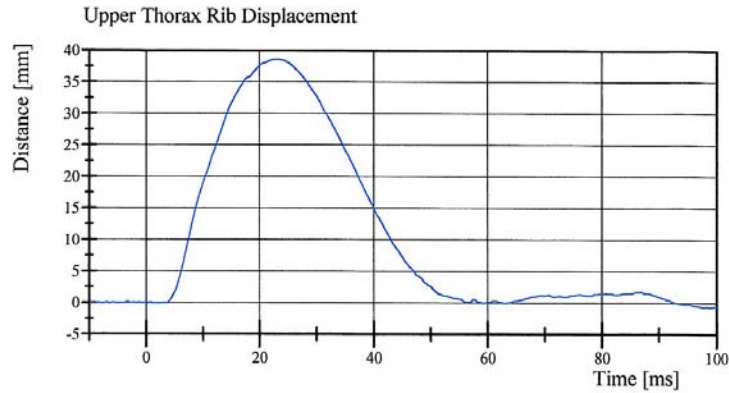
Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 10:45:50 3991

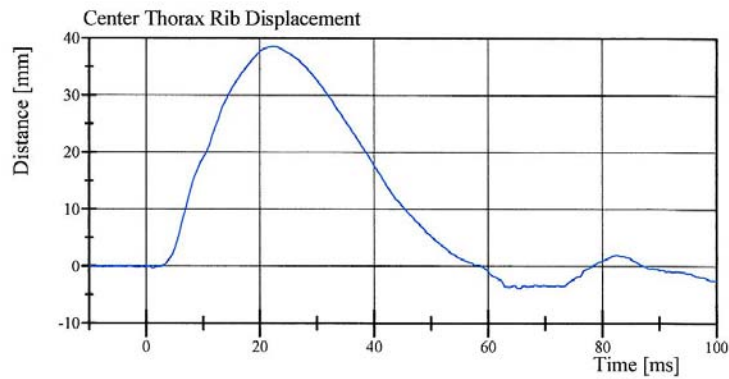


# Transportation Research Center Inc.

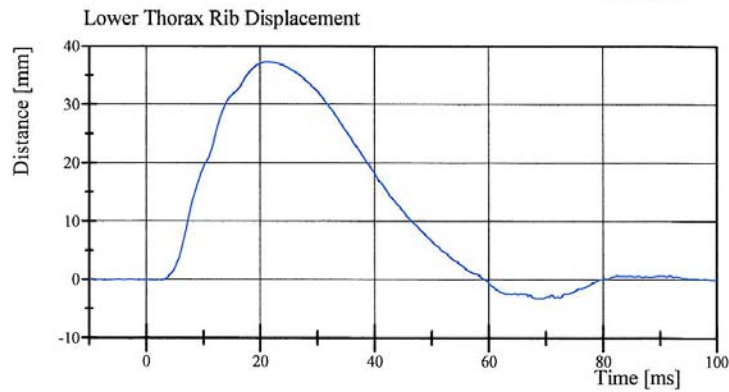
Left Lateral Thorax without Arm  
WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1  
Test Date: 8/31/2011



Filter Class: CFC\_600  
Max: 38.6 mm at 22.8 ms  
Min: -0.7 mm at 98.0 ms



Filter Class: CFC\_600  
Max: 38.6 mm at 22.5 ms  
Min: -3.9 mm at 65.5 ms



Filter Class: CFC\_600  
Max: 37.2 mm at 21.0 ms  
Min: -3.2 mm at 69.5 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 10:45:51 3991



# Transportation Research Center Inc.

Left Lateral Thorax with Arm  
WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1  
Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	60 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.77 m/s	Yes
Impactor Force	(-4,900) - (-5,800) N	-5,283.1 N	Yes
Upper Thorax Rib Displacement	35 - 47 mm	43.7 mm	Yes
Center Thorax Rib Displacement	46 - 56 mm	51.4 mm	Yes
Lower Thorax Rib Displacement	39 - 46 mm	44.7 mm	Yes
Upper Spine Lateral Acceleration	28 - 37 g	26.4 g	No
Lower Spine Lateral Acceleration	22 - 28 g	22.5 g	Yes

**Test does not meet specifications.**

**Comments: Ok per Allison Louden**

Technician



Approved



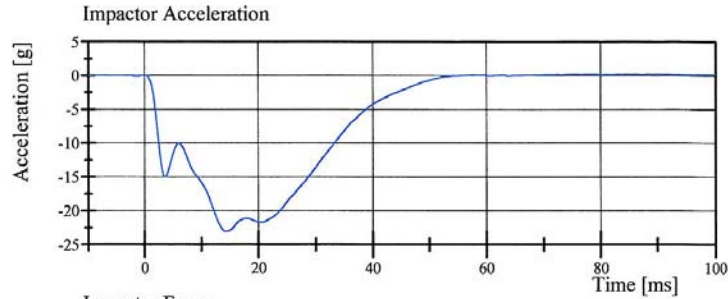
Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 12:38:25 3996

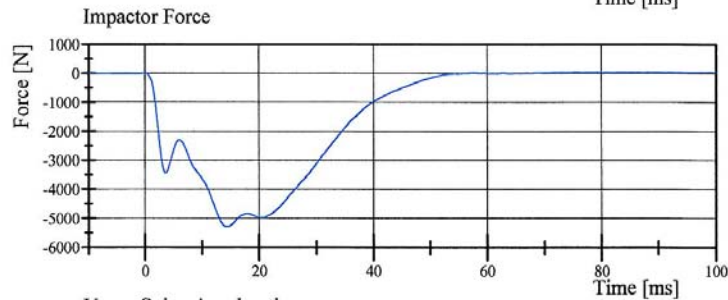


# Transportation Research Center Inc.

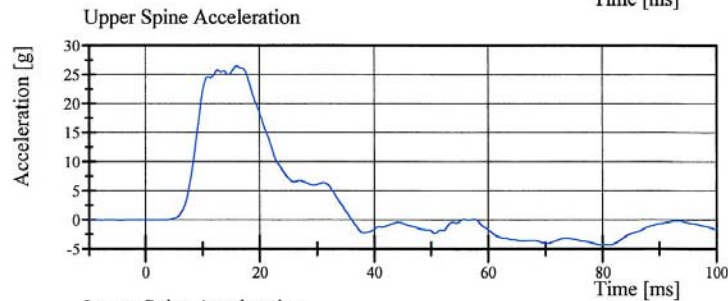
Left Lateral Thorax with Arm  
WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1  
Test Date: 8/31/2011



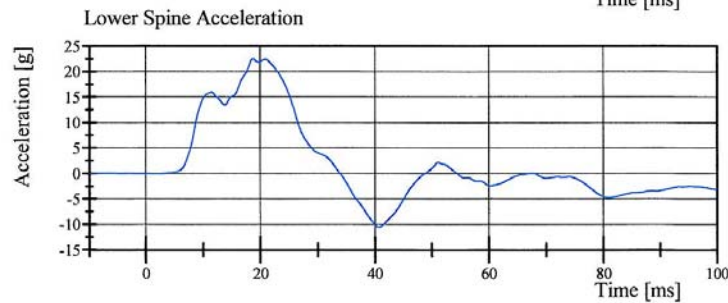
Filter Class: CFC\_180  
Max: 0.2 gn at 90.0 ms  
Min: -23.1 gn at 14.4 ms



Filter Class: CFC\_180  
Max: 49.5 N at 90.0 ms  
Min: -5,283.1 N at 14.4 ms



Filter Class: CFC\_180  
Max: 26.4 gn at 16.0 ms  
Min: -4.3 gn at 79.8 ms



Filter Class: CFC\_180  
Max: 22.5 gn at 18.7 ms  
Min: -10.6 gn at 40.7 ms

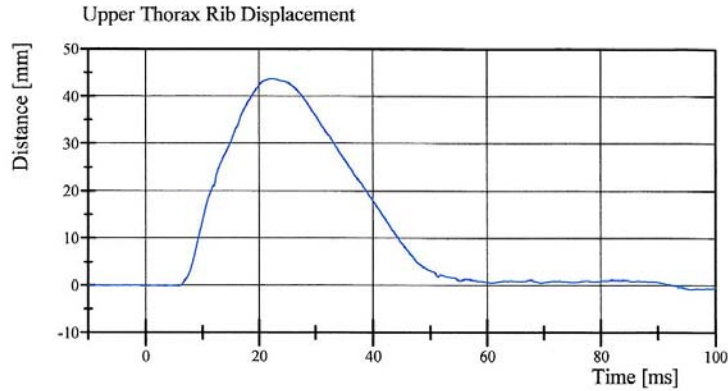
Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 12:39:10 3996

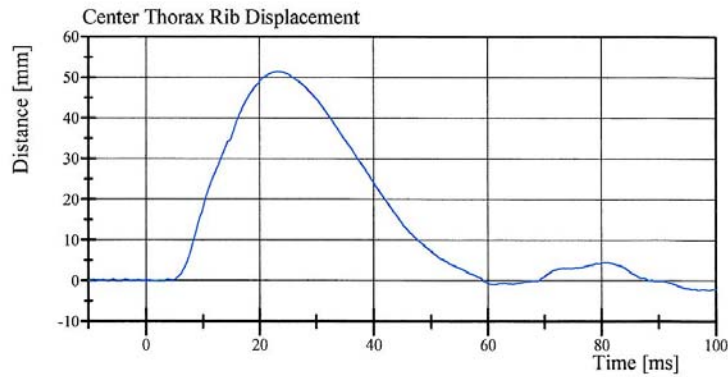


# Transportation Research Center Inc.

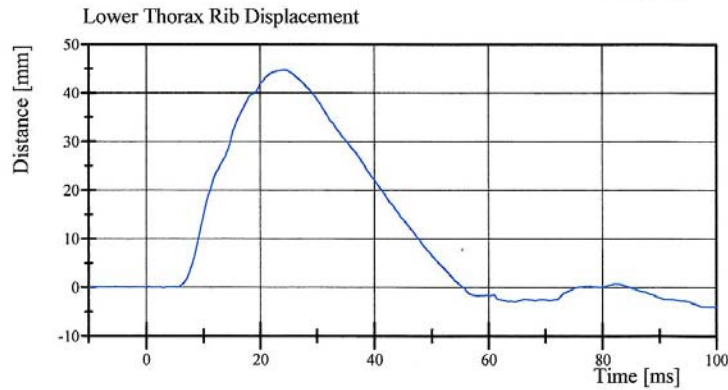
Left Lateral Thorax with Arm  
WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1  
Test Date: 8/31/2011



Filter Class: CFC\_600  
Max: 43.7 mm at 22.4 ms  
Min: -0.7 mm at 95.7 ms



Filter Class: CFC\_600  
Max: 51.4 mm at 23.3 ms  
Min: -2.3 mm at 97.0 ms



Filter Class: CFC\_600  
Max: 44.7 mm at 24.3 ms  
Min: -4.0 mm at 100.0 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 12:39:11 3996



## Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.39 m/s	Yes
Impactor Force	(-2,700) - (-3,100) N	-2,925.2 N	Yes
Upper Abdominal Rib Displacement	33 - 40 mm	34.8 mm	Yes
Lower Abdominal Rib Displacement	30 - 36 mm	31.2 mm	Yes
Lower Spine Lateral Acceleration	15 - 20 g	16.5 g	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 12:56:00 3997

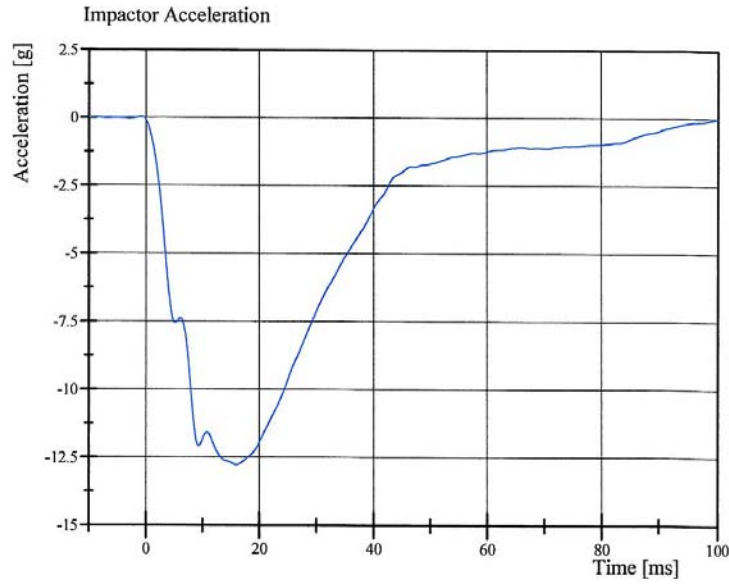


# Transportation Research Center Inc.

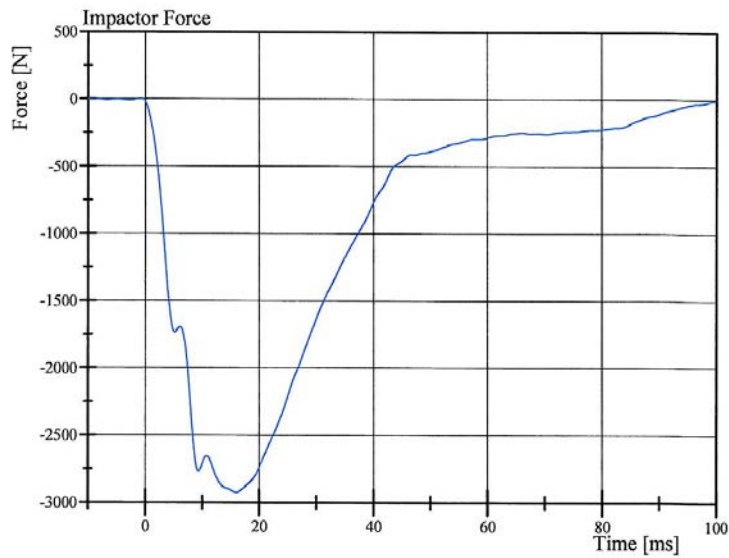
Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

Test Date: 8/31/2011



Filter Class: CFC\_180  
Max: 0.0 gn at -0.8 ms  
Min: -12.8 gn at 16.0 ms



Filter Class: CFC\_180  
Max: 4.1 N at -0.8 ms  
Min: -2,925.2 N at 16.0 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 12:56:08 3997

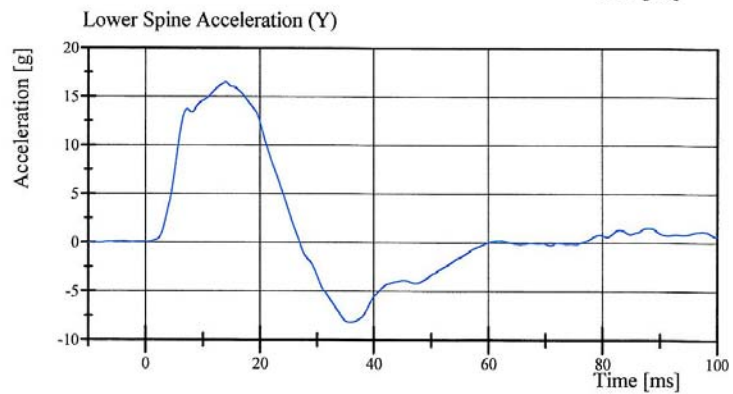
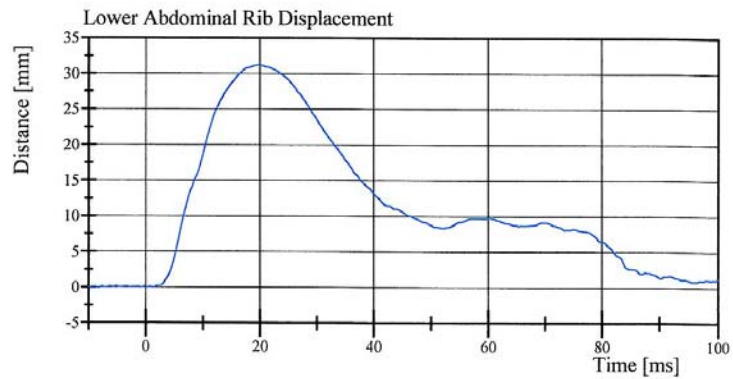
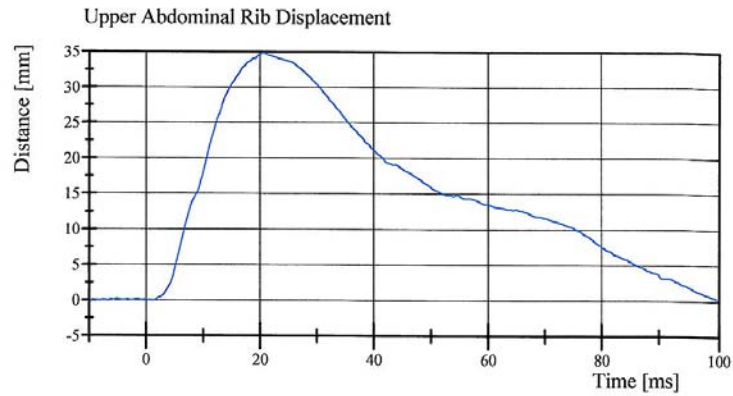


# Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

Test Date: 8/31/2011



Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 12:56:09 3997



## Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

Test Date: 8/31/2011

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.77 m/s	Yes
Impactor Force	(-6,300) - (-7,800) N	-7,007.4 N	Yes
Pelvis Lateral Acceleration	41 - 51 g	49.7 g	Yes
Lower Spine Lateral Acceleration	10 - 14 g	11.4 g	Yes

**Test meets specifications.**

**Comments:**

Technician



Approved



Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 13:11:21 3995

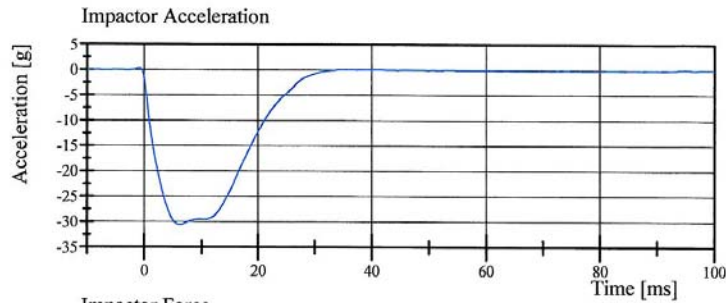


# Transportation Research Center Inc.

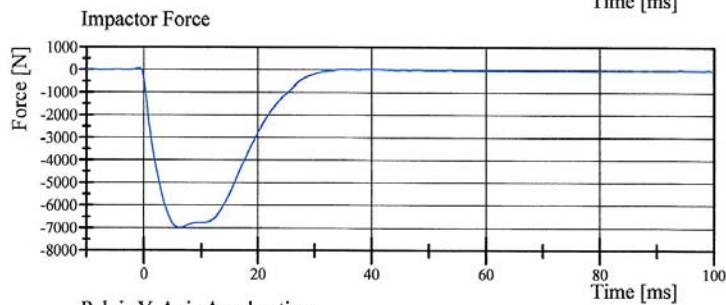
Left Lateral Pelvis

WorldSID ISO 15830-2 Serial No. 014 Certification No. 9-1

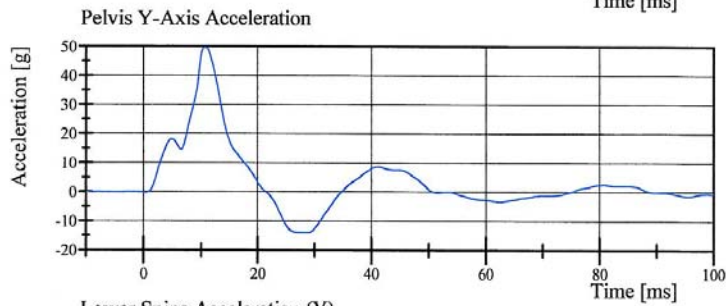
Test Date: 8/31/2011



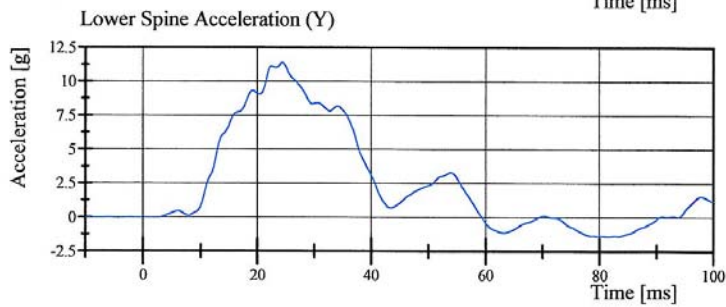
Filter Class: CFC\_180  
Max: 0.4 gn at -0.8 ms  
Min: -30.6 gn at 6.3 ms



Filter Class: CFC\_180  
Max: 85.4 N at -0.8 ms  
Min: -7,007.4 N at 6.3 ms



Filter Class: CFC\_180  
Max: 49.7 gn at 10.7 ms  
Min: -14.0 gn at 28.7 ms



Filter Class: CFC\_180  
Max: 11.4 gn at 24.4 ms  
Min: -1.4 gn at 81.7 ms

Specification Source: ISO 15830-2, dated 02/10/2009  
with Polarity in accordance with J211

08.31.2011 13:11:29 3995



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

Lumbar load cells: +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 110908**

Ref	Transducer ID	Description	ISO Signal I.D.	Polarity	FScale	Units	Assembly
1	Trig D1	EVENT	10ZERO000000VO0A	Bipolar		1 Logic	
2	P68751	Vehicle Center of Gravity X-Axis Acceleration	10VEHCCG0000ACXA	Bipolar	1000	g	
3	P67031	Vehicle Center of Gravity Y-Axis Acceleration	10VEHCCG0000ACYA	-Bipolar	1000	g	
4	P66698	Vehicle Center of Gravity Z-Axis Acceleration	10VEHCCG0000ACZA	-Bipolar	1000	g	
5	P45699	LEFT SIDE SILL Between A-Pillar & Impact Poi	00FOOTRI00H3ACXA	Bipolar	2000	g	
6	P54532	Left A Pillar Side Sill Y-Axis Acceleration (Locat	14SILBFR0000ACYA	Bipolar	1000	g	
7	P59725	Left Lower A-Pillar Y-Axis Acceleration 1/3 from	11APILLO0000ACYA	-Bipolar	2000	g	
8	P57151	Left Mid A-Pillar Y-Axis Acceleration 2/3 from fl	11APILMI0000ACYA	-Bipolar	2000	g	
9	P66706	Left Side Sill at Rear Seat Y-Axis Acceleration	14SILBRE0000ACYA	Bipolar	1000	g	
10	P57128	Left Lower B-Pillar Y-Axis Acceleration 1/3 from	14BPILLO0000ACYA	-Bipolar	2000	g	
11	P62215	Left Mid B-Pillar Y-Axis Acceleration 2/3 from fl	14BPILMI0000ACYA	-Bipolar	2000	g	
12	P61997	Left Front Seat Track @ H-Point Y-Axis Acceler	11SETRFR0000ACYA	-Bipolar	2000	g	
13	P33865	Top of Engine X-Axis Acceleration (Location 10	12ENGNTPO000ACXA	-Bipolar	1000	g	
14	P63134	Top of Engine Y-Axis Acceleration (Location 10	12ENGNTPO000ACYA	-Bipolar	1000	g	
15	P61552	Firewall Centerline Y-Axis Acceleration (Locatio	12VEHC000000ACYA	Bipolar	1000	g	
16	P57178	Right Side Roof Rail (in line with impact point)	13ROOF000000ACYA	-Bipolar	1000	g	
17	P57176	Right Side Floor Sill (in-line with impact locati	13SILBFR0000ACYA	-Bipolar	1000	g	
18	P63176	Rear Deck Centerline Behind Rear Axle X-Axis	18DECK000000ACXA	Bipolar	1000	g	
19	P62546	Rear Deck Centerline Behind Rear Axle Y-Axis	18DECK000000ACYA	-Bipolar	1000	g	
20	ARS-1500-ARS0665	VEHICLE CENTER OF GRAVITY (X) ROLL RA	10VEHCCG0000AVXA	Bipolar	1500	%s	
21	ARS-1500-ARS1091	VEHICLE CENTER OF GRAVITY (Y) PITCH R	10VEHCCG0000AVYA	-Bipolar	1500	%s	
22	ARS-1500-ARS2722	VEHICLE CENTER OF GRAVITY (Z) YAW RA	10VEHCCG0000AVZA	-Bipolar	1500	%s	
23	P68545	Left Front Door on Center Line Y-Axis Accelera	11DOORFR0000ACYA	Bipolar	2000	g	
24	P68543	Midrear of Left Front Door Y-Axis Acceleration	11DOORMIRE00ACYA	Bipolar	2000	g	
25	P68753	Left Front Door Upper Centerline Y-Axis Accele	11DOORLEFRUPACYA	Bipolar	2000	g	
26	P68558	Midrear of Left Rear Door Y-Axis Acceleration	14DOORMIRE00ACYA	Bipolar	2000	g	
27	P68764	Left Rear Door Upper Centerline Y-Axis Accele	14DOORLEREUPACYA	Bipolar	2000	g	
28	IP 124	Driver Side Curtain Fire Inductor	11AIRBTPL00E0V0A	Bipolar		5 V	
29	IP 120	LH Torso Airbag Fire Inductor	11AIR02N0000EVOA	Bipolar		5 V	
30	Bit.00	Head Contact Switch	11CONT000001VO00	Bipolar		1 Logic	
31	Bit.01	Shoulder Contact Switch	11CONT000002VO00	Bipolar		1 Logic	
32	Bit.02	Torso Contact Switch	11CONT000003VO00	Bipolar		1 Logic	
33	Bit.03	Leg Contact Switch	11CONT000004VO00	Bipolar		1 Logic	
34	5763-86-FX	POLE LOAD CELL 1	K0FBAR010000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.001
35	5763-91-FX	POLE LOAD CELL 2	K0FBAR020000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.002
36	5763-89-FX	POLE LOAD CELL 3	K0FBAR030000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.003
37	5763-77-FX	POLE LOAD CELL 4	K0FBAR040000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.004
38	5763-90-FX	POLE LOAD CELL 5	K0FBAR050000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.005

**Channel Report Test Number 110908**

Ref	Transducer ID	Description	ISO Signal I.D.	Polarity	FScale	Units	Assembly
39	5763-88-FX	POLE LOAD CELL 6	K0FBAR060000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.006
40	5763-92-FX	POLE LOAD CELL 7	K0FBAR070000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.007
41	5763-78-FX	POLE LOAD CELL 8	K0FBAR080000FOXA	Bipolar	200000	N	0-Barrier Segmented Pole.008

**Command File Test Number 110908**

Channel	ISO mnemonic	Channel Title	Filter	Flip	Zero	Full Scale	V5 Index
1	11HEADCG00WSACXP	Head X-Axis Acceleration	1000	+	yes	400	1
2	11HEADCG00WSACYP	Head Y-Axis Acceleration	1000	+	yes	400	2
3	11HEADCG00WSACZP	Head Z-Axis Acceleration	1000	+	yes	400	3
3A	11HEADCG00WSACRA	Head Resultant Acceleration	1000				
4	11HEADCG00WSAAXP	Head X-Axis Angular Displacement	1000	+	yes	50000	4
5	11HEADCG00WSAAYP	Head Y-Axis Angular Displacement	1000	+	yes	50000	5
6	11HEADCG00WSAAZP	Head Z-Axis Angular Displacement	1000	+	yes	50000	6
7	11NECKUP00WSFOXP	Upper Neck X-Axis Force	1000	+	yes	10000	7
8	11NECKUP00WSFOYP	Upper Neck Y-Axis Force	1000	+	yes	10000	8
9	11NECKUP00WSFOZP	Upper Neck Z-Axis Force	1000	+	yes	12000	9
10	11NECKUP00WSMOXP	Upper Neck Moment About X Axis	600	+	yes	300	10
11	11NECKUP00WSMOYP	Upper Neck Moment About Y Axis	600	+	yes	300	11
12	11NECKUP00WSMOZP	Upper Neck Moment About Z Axis	600	+	yes	200	12
13	11NECKLO00WSFOXP	Lower Neck X-Axis Force	1000	+	yes	10000	13
14	11NECKLO00WSFOYP	Lower Neck Y-Axis Force	1000	+	yes	10000	14
15	11NECKLO00WSFOZP	Lower Neck Z-Axis Force	1000	+	yes	12000	15
16	11NECKLO00WSMOXP	Lower Neck Moment About X Axis	600	+	yes	300	16
17	11NECKLO00WSMOYP	Lower Neck Moment About Y Axis	600	+	yes	300	17
18	11NECKLO00WSMOZP	Lower Neck Moment About Z Axis	600	+	yes	200	18
19	11SHLDLE00WSFOXP	Shoulder X-Axis Force	600	+	yes	5000	19
20	11SHLDLE00WSFOYP	Shoulder Y-Axis Force	600	+	yes	10000	20
21	11SHLDLE00WSFOZP	Shoulder Z-Axis Force	600	+	yes	5000	21
22	11SHLDLE00WSDSY	Shoulder Y-Axis Displacement	600	+	yes	90	22
23	11SHLDLE00WSACXP	Shoulder X-Axis Acceleration	1000	+	yes	400	23
24	11SHLDLE00WSACYP	Shoulder Y-Axis Acceleration	1000	+	yes	400	24
25	11SHLDLE00WSACZP	Shoulder Z-Axis Acceleration	1000	+	yes	400	25
25A	11SHLDLE00WSACRA	Shoulder Resultant Acceleration	1000				
26	11THSP0100WSACXP	T1 X-Axis Acceleration	180	+	yes	400	26
27	11THSP0100WSACYP	T1 Y-Axis Acceleration	180	+	yes	400	27
28	11THSP0100WSACZP	T1 Z-Axis Acceleration	180	+	yes	400	28
28A	11THSP0100WSACRA	T1 Resultant Acceleration	180				
29	11THSP0400WSACXP	T4 X-Axis Acceleration	180	+	yes	400	29
30	11THSP0400WSACYP	T4 Y-Axis Acceleration	180	+	yes	400	30
31	11THSP0400WSACZP	T4 Z-Axis Acceleration	180	+	yes	400	31
31A	11THSP0400WSACRA	T4 Resultant Acceleration	180				
32	11THSP1200WSACXP	T12 X-Axis Acceleration	180	+	yes	400	32
33	11THSP1200WSACYP	T12 Y-Axis Acceleration	180	+	yes	400	33
34	11THSP1200WSACZP	T12 Z-Axis Acceleration	180	+	yes	400	34

Channel	ISO mnemonic	Channel Title	Filter	Flip	Zero	Full Scale	V5 Index
34A	11THSP1200WSACRA	T12 Resultant Acceleration	180				
35	11TRRILE01WSDSYP	Thorax Rib 1 Y-Axis Displacement	600	+	yes	90	35
36	11TRRILE01WSACXP	Thorax Rib 1 X-Axis Acceleration	1000	+	yes	400	36
37	11TRRILE01WSACYP	Thorax Rib 1 Y-Axis Acceleration	1000	+	yes	400	37
38	11TRRILE01WSACZP	Thorax Rib 1 Z-Axis Acceleration	1000	+	yes	400	38
38A	11TRRILE01WSACRA	Thorax Rib 1 Resultant Acceleration	1000				
39	11TRRILE02WSDSYP	Thorax Rib 2 Y-Axis Displacement	600	+	yes	90	39
40	11TRRILE02WSACXP	Thorax Rib 2 X-Axis Acceleration	1000	+	yes	400	40
41	11TRRILE02WSACYP	Thorax Rib 2 Y-Axis Acceleration	1000	+	yes	400	41
42	11TRRILE02WSACZP	Thorax Rib 2 Z-Axis Acceleration	1000	+	yes	400	42
42A	11TRRILE02WSACRA	Thorax Rib 2 Resultant Acceleration	1000				
43	11TRRILE03WSDSYP	Thorax Rib 3 Y-Axis Displacement	600	+	yes	90	43
44	11TRRILE03WSACXP	Thorax Rib 3 X-Axis Acceleration	1000	+	yes	400	44
45	11TRRILE03WSACYP	Thorax Rib 3 Y-Axis Acceleration	1000	+	yes	400	45
46	11TRRILE03WSACZP	Thorax Rib 3 Z-Axis Acceleration	1000	+	yes	400	46
46A	11TRRILE03WSACRA	Thorax Rib 3 Resultant Acceleration	1000				
47	11ABRILE01WSDSYP	Abdominal Rib 1 Y-Axis Displacement	600	+	yes	90	47
48	11ABRILE01WSACXP	Abdominal Rib 1 X-Axis Acceleration	1000	+	yes	400	48
49	11ABRILE01WSACYP	Abdominal Rib 1 Y-Axis Acceleration	1000	+	yes	400	49
50	11ABRILE01WSACZP	Abdominal Rib 1 Z-Axis Acceleration	1000	+	yes	400	50
50A	11ABRILE01WSACRA	Abdominal Rib 1 Resultant Acceleration	1000				
51	11ABRILE02WSDSYP	Abdominal Rib 2 Y-Axis Displacement	600	+	yes	90	51
52	11ABRILE02WSACXP	Abdominal Rib 2 X-Axis Acceleration	1000	+	yes	400	52
53	11ABRILE02WSACYP	Abdominal Rib 2 Y-Axis Acceleration	1000	+	yes	400	53
54	11ABRILE02WSACZP	Abdominal Rib 2 Z-Axis Acceleration	1000	+	yes	400	54
54A	11ABRILE02WSACRA	Abdominal Rib 2 Resultant Acceleration	1000				
55	11LUSP0000WSFOXP	Lumbar X-Axis Force	600	+	yes	10000	55
56	11LUSP0000WSFOYP	Lumbar Y-Axis Force	600	+	yes	10000	56
57	11LUSP0000WSFOZP	Lumbar Z-Axis Force	600	+	yes	12000	57
58	11LUSP0000WSMOXP	Lumbar Moment About X Axis	600	+	yes	300	58
59	11LUSP0000WSMOYP	Lumbar Moment About Y Axis	600	+	yes	300	59
60	11LUSP0000WSMOZP	Lumbar Moment About Z Axis	600	+	yes	200	60
61	11PELVCG00WSACXP	Pelvis X-Axis Acceleration	1000	+	yes	400	61
62	11PELVCG00WSACYP	Pelvis Y-Axis Acceleration	1000	+	yes	400	62
63	11PELVCG00WSACZP	Pelvis Z-Axis Acceleration	1000	+	yes	400	63
63A	11PELVCG00WSACRA	Pelvis Resultant Acceleration	1000				
64	11SACRLE00WSFOXP	Sacro-Iliac Left X-Axis Force	600	+	yes	6000	64
65	11SACRLE00WSFOYP	Sacro-Iliac Left Y-Axis Force	600	+	yes	6000	65
66	11SACRLE00WSFOZP	Sacro-Iliac Left Z-Axis Force	600	+	yes	6000	66

Channel	ISO mnemonic	Channel Title	Filter	Flip	Zero	Full Scale	V5 Index
67	11SACRLE00WSMOXP	Sacro-Iliac Left Moment About X Axis	600	+	yes	1000	67
68	11SACRLE00WSMOYP	Sacro-Iliac Left Moment About Y Axis	600	+	yes	400	68
69	11SACRLE00WSMOZP	Sacro-Iliac Left Moment About Z Axis	600	+	yes	400	69
70	11SACRRI00WSFOXP	Sacro-Iliac Right X-Axis Force	600	+	yes	6000	70
71	11SACRRI00WSFOYP	Sacro-Iliac Right Y-Axis Force	600	+	yes	6000	71
72	11SACRRI00WSFOZP	Sacro-Iliac Right Z-Axis Force	600	+	yes	6000	72
73	11SACRRI00WSMOXP	Sacro-Iliac Right Moment About X Axis	600	+	yes	1000	73
74	11SACRRI00WSMOYP	Sacro-Iliac Right Moment About Y Axis	600	+	yes	400	74
75	11SACRRI00WSMOZP	Sacro-Iliac Right Moment About Z Axis	600	+	yes	400	75
76	11PUBC0000WSFOYP	Pubic Symphysis Y-Axis Force	600	+	yes	12000	76
77	11FEMRLEMIWSFOXP	Left Mid Femur X-Axis Force	600	+	yes	15000	77
78	11FEMRLEMIWSFOYP	Left Mid Femur Y-Axis Force	600	+	yes	15000	78
79	11FEMRLEMIWSFOZP	Left Mid Femur Z-Axis Force	600	+	yes	15000	79
80	11FEMRLEMIWSMOXP	Left Mid Femur Moment Mx	600	+	yes	350	80
81	11FEMRLEMIWSMOYP	Left Mid Femur Moment My	600	+	yes	350	81
82	11FEMRLEMIWSMOZP	Left Mid Femur Moment Mz	600	+	yes	300	82
83	11FEMRLL00WSFOXP	Left Femoral Neck X-Axis Force	600	+	yes	10000	83
84	11FEMRLL00WSFOYP	Left Femoral Neck Y-Axis Force	600	+	yes	25000	84
85	11FEMRLL00WSFOZP	Left Femoral Neck Z-Axis Force	600	+	yes	10000	85
86	11KNEEEOUWSFOYP	Left Knee Outboard Y-Axis Force	600	+	yes	20000	86
87	11KNEELEINWSFOYP	Left Knee Inboard Y-Axis Force	600	+	yes	20000	87
88	11FEMRRL00WSFOXP	Right Femoral Neck X-Axis Force	600	+	yes	10000	88
89	11FEMRRL00WSFOYP	Right Femoral Neck Y-Axis Force	600	+	yes	25000	89
90	11FEMRRL00WSFOZP	Right Femoral Neck Z-Axis Force	600	+	yes	10000	90
91	10VEHCCG0000ACXA	Vehicle Center of Gravity X-Axis Acceleration	60	+	yes	1000	91
92	10VEHCCG0000ACYA	Vehicle Center of Gravity Y-Axis Acceleration	60	+	yes	1000	92
93	10VEHCCG0000ACZA	Vehicle Center of Gravity Z-Axis Acceleration	60	+	yes	1000	93
93A	10VEHCCG0000ACRA	Vehicle Center of Gravity Resultant Acceleration	60				
94	10VEHCCG0000AVXA	Vehicle Center of Gravity Roll Rate Gyroscope	60	+	yes	1500	94
95	10VEHCCG0000AVYA	Vehicle Center of Gravity Pitch Rate Gyroscope	60	+	yes	1500	95
96	10VEHCCG0000AVZA	Vehicle Center of Gravity Yaw Rate Gyroscope	60	+	yes	1500	96
97	11SILBRE0100ACYA	Left Side Sill Near Impact Point Y-Axis Acceleration	60	+	yes	2000	97
98	14SILBFR0000ACYA	Left A-Pillar Side Sill Y-Axis Acceleration	60	+	yes	1000	98
99	11APILLO0000ACYA	Left Lower A-Pillar Y-Axis Acceleration	60	+	yes	2000	99
100	11APILMI0000ACYA	Left Mid A-Pillar Y-Axis Acceleration	60	+	yes	2000	100
101	14SILBRE0000ACYA	Left Side Sill at Rear Seat Y-Axis Acceleration	60	+	yes	1000	101
102	14BPILLO0000ACYA	Left Lower B-Pillar Y-Axis Acceleration	60	+	yes	2000	102
103	14BPILMI0000ACYA	Left Mid B-Pillar Y-Axis Acceleration	60	+	yes	2000	103
104	11SETRFR0000ACYA	Left Front Seat Track at H-Point Y-Axis Acceleration	60	+	yes	2000	104

Channel	ISO mnemonic	Channel Title	Filter	Flip	Zero	Full Scale	V5 Index
105	12ENGNT0000ACXA	Top of Engine X-Axis Acceleration	60	+	yes	1000	105
106	12ENGNT0000ACYA	Top of Engine Y-Axis Acceleration	60	+	yes	1000	106
107	12VEHC000000ACYA	Firewall Y-Axis Acceleration	60	+	yes	1000	107
108	13ROOF000000ACYA	Right Side Roof Rail Y-Axis Acceleration	60	+	yes	1000	108
109	13SILBFR0000ACYA	Right Side Sill Y-Axis Acceleration	60	+	yes	1000	109
110	18DECK000000ACXA	Rear Deck Behind Rear Axle X-Axis Acceleration	60	+	yes	1000	110
111	18DECK000000ACYA	Rear Deck Behind Rear Axle Y-Axis Acceleration	60	+	yes	1000	111
112	11DOORFR0000ACYA	Left Front Door on Center Line X-Axis Acceleration	60	+	yes	2000	112
113	11DOORMIRE00ACYA	Midrear of Left Front Door Y-Axis Acceleration	60	+	yes	2000	113
114	11DOORLEFRUPACYA	Left Front Door Upper Centerline Y-Axis Acceleration	60	+	yes	2000	114
115	14DOORMIRE00ACYA	Midrear of Left Rear Door Y-Axis Acceleration	60	+	yes	2000	115
116	14DOORLEREUPACYA	Left Rear Door Upper Centerline Y-Axis Acceleration	60	+	yes	2000	116
117	11AIRBTPLE00EVOA	Driver Side Curtain Inductor	1000	+	no	5	117
118	11AIR02N0000EVOA	Driver Torso Airbag Fire Inductor	1000	+	no	5	118
119	11CONT000001VO00	Head Contact Switch	0	+	no	1	119
120	11CONT000002VO00	Shoulder Contact Switch	0	+	no	1	120
121	11CONT000003VO00	Torso Contact Switch	0	+	no	1	121
122	11CONT000004VO00	Left Contact Switch	0	+	no	1	122
123	K0FBAR010000FOXA	Pole Load Cell 1	60	+	yes	200000	123
124	K0FBAR020000FOXA	Pole Load Cell 2	60	+	yes	200000	124
125	K0FBAR030000FOXA	Pole Load Cell 3	60	+	yes	200000	125
126	K0FBAR040000FOXA	Pole Load Cell 4	60	+	yes	200000	126
127	K0FBAR050000FOXA	Pole Load Cell 5	60	+	yes	200000	127
128	K0FBAR060000FOXA	Pole Load Cell 6	60	+	yes	200000	128
129	K0FBAR070000FOXA	Pole Load Cell 7	60	+	yes	200000	129
130	K0FBAR080000FOXA	Pole Load Cell 8	60	+	yes	200000	130

2011 Ford Explorer Left Side FMVSS 214 Pole Impact 32 kph 110908; Test Time 12:39

D-12

110908

