

**Vehicle Research and Test Center
2006 Ford F250 Pickup into
Fixed 40% Left Offset Deformable
Load Cell Barrier at 64.4 km/h
TRC Inc. Test Number: 071108**

**Prepared By:
Transportation Research Center Inc.
10820 State Route 347
East Liberty, OH 43319**

**Final Report
November - December 2007**

**Prepared For:
Vehicle Research and Test Center
P. O. Box 37
East Liberty, OH 43319**

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Section 1.0

Purpose and Summary of Tests

Purpose

This 64.4 km/h (target speed) Left 40% Offset Deformable Barrier test was conducted for the Vehicle Research and Test Center (VRTC) by Transportation Research Center Inc. (TRC Inc).

The purpose of this testing was to evaluate and compare vehicle and occupant responses during 40% frontal offset vehicle to deformable barrier crash tests. For this test, the subject vehicle was a 2006 Ford F250 Pickup with a 50th percentile driver dummy, and a 5th percentile right front passenger dummy.

Test Procedure

This test was conducted in accordance with VRTC's instructions for a 40% offset vehicle to deformable barrier crash test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" performance, FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity," performance.

The test vehicle, a 2006 Ford F250 Pickup, was instrumented with ten (10) accelerometers to measure longitudinal axis accelerations, six (6) accelerometers to measure vertical axis accelerations, and four (4) accelerometers to measure vertical axis accelerations. The driver's primary and secondary airbag signals were monitored with inductive pickups. The vehicle impacted a 40% left offset deformable barrier. The vehicle's specified impact velocity range was 63.6 to 65.2 km/h.

The test vehicle contained one (1) Part 572E 50th percentile adult male Hybrid III anthropomorphic test device (dummy) in the driver position, and one (1) Part 572O 5th percentile adult female Hybrid III dummy in the right front passenger position. The dummies were positioned in the front outboard designated seating positions according to a procedure provided by the NHTSA COTR on October 27, 2006. The seating procedure is included as Appendix D. The dummies were each restrained with a 3-point seat belt and a front dual stage airbag.

The driver dummy was instrumented with an array of six (6) accelerometers in the head, plus six (6) accelerometers in the chest and three (3) pelvis accelerometers oriented to measure longitudinal, lateral, and vertical accelerations (primary and redundant in the head and chest). The driver dummy was also instrumented with 6-channel upper neck moment and force load cells, left and right femur load cells to measure axial forces, a chest deflection potentiometer, and knee displacement potentiometers. The driver dummy was equipped with THOR-LX legs, which included upper and lower tibia load cells to measure forces and moments, longitudinal and lateral tibia accelerometers, three (3) foot accelerometers on each foot to measure accelerations in three (3) axes and three (3) rotary potentiometers at each ankle to measure foot rotations about three (3) axes.

The right front passenger dummy was instrumented with an array of three (3) accelerometers in the head, plus three (3) accelerometers in the chest and three (3) pelvis accelerometers oriented to measure longitudinal, lateral, and vertical accelerations. The passenger dummy was also instrumented with 6-channel upper neck moment and force load cells, left and right femur load cells to measure axial forces, a chest deflection potentiometer, and knee displacement potentiometers. The passenger dummy was equipped with THOR-FLX legs, which included upper and lower tibia load cells to measure forces and moments, longitudinal and lateral tibia accelerometers, three (3) foot accelerometers on each foot to measure accelerations in three (3) axes and three (3) rotary potentiometers at each ankle to measure foot rotations about three (3) axes.

The vehicle impacted a deformable barrier instrumented with 90 load cells to measure longitudinal forces.

The 230 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

The crash event was recorded by one (1) real-time panning motion picture camera and seventeen (17) high-speed digital motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

The 40% left frontal offset vehicle to deformable barrier crash test summary data are presented in Section 2.0. The FMVSS 208, 212, 219 (partial), and 301 summary data are presented in Section 3.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographs. Appendix B contains the dummy, vehicle, and barrier data plots. Appendix C contains the dummy verification data. Appendix D contains customer provided seating procedure. Appendix E contains miscellaneous test information. Appendix F contains an INSIA report that was the basis for the Structural Measurements presented in Table 8 of this report.

Section 2.0

Impact Test Summary

Test Results Summary

This 64.4 km/h (target speed) left 40% offset vehicle to deformable barrier crash test was conducted by TRC Inc. on November 8, 2007.

The test vehicle, a 2006 Ford F250 Pickup, was equipped with a 4-liter 8-cylinder longitudinally-placed engine, automatic transmission, power steering, power brakes and dual stage front airbags. The vehicle's test weight was 3153.3 kg. The vehicle's impact speed was 78.8 km/h. The vehicle sustained 935 mm of static crush during the impact.

The occupant injury assessment values are summarized below.

Injury Criterion	Limits	Driver	Right Front Passenger
Head			
HIC 36	1000	358	639
HIC 15	700	217	423
Neck			
Upper Neck Tension (N)	4170	1380	1143
Upper Neck Compression (N)	-4000	-180	-34
Neck Injury (NIJ) NTE	1.0	0.2	0.5
Neck Injury (NIJ) NTF	1.0	0.3	0.2
Neck Injury (NIJ) NCE	1.0	0.1	0.0
Neck Injury (NIJ) NCF	1.0	0.1	0.0
Chest			
3 ms Clip (g)	60	32	34
Chest Displacement (mm)	63	-23	-24
Femur			
Left Femur Force (N)	-9040	-4190	-114
Right Femur Force (N)	-9040	-2915	-288
Tibia			
Left Upper Tibia Index	0.91	0.69	0.32
Right Upper Tibia Index	0.91	0.51	0.19
Left Lower Tibia Index	0.91	0.75	0.40
Right Lower Tibia Index	0.91	0.56	0.27
Left Upper Tibia Force (N)	-5600	-1163	-643
Right Upper Tibia Force (N)	-5600	-3275	-707
Left Lower Tibia Force (N)	-5200	-2634	-1094
Right Lower Tibia Force (N)	-5200	-4615	-1148

Test Results Summary, Continued

Injury Criterion	Limits	Driver	Right Front Passenger
Ankle			
Left Inversion (degrees)	-35	-33	-7
Left Eversion (degrees)	35	0	1
Left Plantarflexion (degrees)	-	-22	-48
Left Dorsiflexion (degrees)	35	30	-13
Left External Rotation (degrees)	-	-20	-7
Left Internal Rotation (degrees)	-	13	5
Right Eversion (degrees)	-35	-22	-5
Right Inversion (degrees)	35	1	1
Right Plantarflexion (degrees)	-	-20	-42
Right Dorsiflexion (degrees)	35	33	-12
Right Internal Rotation (degrees)	-	-46	-4
Right External Rotation (degrees)	-	18	8

Data Acquisition Explanations

Electronic data anomalies are summarized below:

Channel Number	Sensor Type	Sensor Location	Sensor Attachment (Name)	Axis	Problem/Action
25	Displ	Driver Dummy	11KNSLLE00H3DSXA	X	Recorded questionable data throughout the event.
39	Ang	Driver Dummy	11FOOTLELXH3ANZ A	Z	Recorded questionable data between 0 - 75 ms
120	Accel	Vehicle	12ENGNBO0000ACX A	X	Over scaled at 26 ms and recorded questionable data throughout the event
134	Accel	Vehicle	11VEHC000001ACZA	Z	Over scaled at 114 ms and recorded questionable data thereafter. This affected the resultant calculation.
206	Force	Barrier	L0FBAR000066FOXA	X	Over scaled at 40 ms.

DATA SHEET NO. 1
CRASH VEHICLE SUMMARY

Test Mode: Left 40% Offset Deformable Barrier

Test Date: 11/08/07 Time: 13.29 Temperature: 20.0 °C

Vehicle Make/Model/Body Style: 2006/Ford/F250/Pickup

Vehicle Test Weight: 3153.3 kg

Vehicle/Barrier Impact Angle: 0 °

Vehicle/Barrier Impact Accuracy: 0 mm

1 mm left

Impact Velocity: 78.8 km/h

Maximum Static Crush: 935 mm

Vehicle Rebound: N/A mm

DUMMIES:

DRIVER #855

**RIGHT FRONT
PASSENGER #324**

Type: HIII 50th

HIII 5th

Type Lower Leg / Serial Number: THOR-LX/036 & 037

THOR-LX/015 & 016

Restraint System: 3-pt. sat belt, airbag

3-pt. sat belt, airbag

Number of Data Channels: 71

Number of Cameras: 1 Real-Time

17 High-Speed Digital

DOOR OPENING DATA:

Tools required - Left Front

Easy - Right Front

Tools required - Left Rear

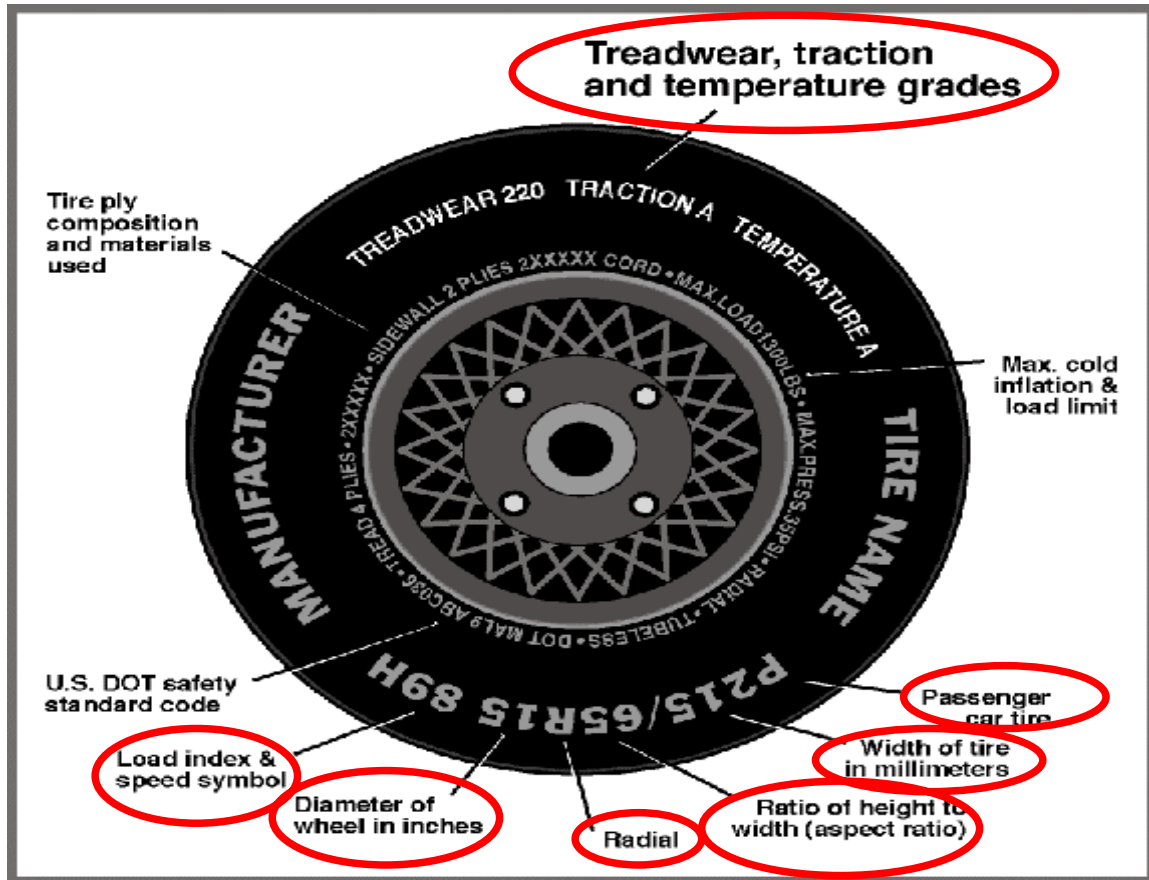
Easy - Right Rear

DATA SHEET NO. 1 (continued)
CRASH VEHICLE SUMMARY

<u>FRONT SEAT(S) DATA:</u>	<u>DRIVER</u>	<u>RIGHT FRONT PASSENGER</u>
Seat Track Failure (mm of shift):	None	None
Seat Back Failure:	None	None
<u>REAR SEAT(S) DATA:</u>	<u>LEFT REAR PASSENGER</u>	<u>RIGHT REAR PASSENGER</u>
Seat Track Failure (mm of shift):	N/A	N/A
Seat Back Failure:	N/A	N/A
<u>VISIBLE DUMMY CONTACT POINTS :</u>	<u>DRIVER</u>	<u>RIGHT FRONT PASSENGER</u>
Head:	Airbag, head restraint	Airbag, head restraint
Chest:	Airbag	Airbag
Abdomen:	Airbag	None
Left Knee:	Knee bolster	Glove box, airbag
Right Knee:	Knee bolster	Glove box, airbag

DATA SHEET NO. 2 (continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07



DATA RECORDED FROM ACTUAL TIRES ON TEST VEHICLE

	Front	Rear
Manufacturer	Continental	Continental
Brand Name	Contitrac	Contitrac
Tire Size (ex. P215/65R15)	LT245/75R17	LT245/75R17
Load Index and Speed Symbol	121/118S	121/118S
Treadwear	N/A	N/A
Traction	N/A	N/A
Temperature	N/A	N/A

DATA SHEET NO. 2 (continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with max. fluids) = UDW:

Right Front	=	<u>815.0</u>	kg	Right Rear	=	<u>610.6</u>	kg
Left Front	=	<u>816.6</u>	kg	Left Rear	=	<u>650.0</u>	kg
TOTAL FRONT	=	<u>1631.6</u>	kg	TOTAL REAR	=	<u>1260.6</u>	kg
TOTAL DELIVERED WEIGHT =				<u>2892.2</u>	kg		
% of Total Front of Vehicle Weight =				<u>56.4</u>	%		
% of Total Rear of Vehicle Weight =				<u>43.6</u>	%		

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW)	=	<u>2892.2</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>136.0</u>	kg
Weight of One Part 572E Dummy @ 76 each	=	<u>76.0</u>	kg
Weight of One Part 572O Dummy @ 53 each	=	<u>53.0</u>	kg
TARGET TEST WEIGHT	=	<u>3157.2</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES:

Right Front	=	<u>807.0</u>	kg	Right Rear	=	<u>740.2</u>	kg
Left Front	=	<u>844.6</u>	kg	Left Rear	=	<u>761.5</u>	kg
TOTAL FRONT	=	<u>1651.6</u>	kg	TOTAL REAR	=	<u>1501.7</u>	kg
TOTAL TEST WEIGHT =				<u>3153.3</u>	kg		
% of Total Front of Vehicle Weight =				<u>52.4</u>	%		
% of Total Rear of Vehicle Weight =				<u>47.6</u>	%		
Weight of Ballast Secured in Vehicle Trunk Area =				<u>86.2</u>	kg		
Vehicle Components Removed for Weight Reduction: <u>None</u>							

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED :	RF	<u>1000</u>	LF	<u>998</u>	RR	<u>1042</u>	LR	<u>1034</u>
FULLY LOADED :	RF	<u>N/A</u>	LF	<u>N/A</u>	RR	<u>N/A</u>	LR	<u>N/A</u>
AS TESTED :	RF	<u>996</u>	LF	<u>993</u>	RR	<u>1024</u>	LR	<u>1016</u>
Vehicle's Wheel Base :		<u>3600</u>	mm					
Location of Vehicle's C.G.:		<u>1714</u>	mm rearward of front wheel center.					

DATA SHEET NO. 2 (continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
Test Date: 11/08/07

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual = 114.7 liters
Usable Capacity Figure Furnished by COTR = N/A liters
Test Volume Range (92 to 94% of Usable Capacity) = 105.5 to 107.8 liters
ACTUAL TEST VOLUME = 106.7 liters (with entire fuel system filled)
Test Fluid Type: Stoddard; Specific Gravity = 0.764
Kinematic Viscosity = 0.99 centistokes; Color = Purple
Type of Fuel Pump: Electric- X; Mechanical-
Does Electric Pump operate with ignition switch "ON" & engine "OFF" Yes- X No-
Details of Fuel System: The fuel tank is located in front of the rear axle between the prop shaft and left frame rail. The fuel filler neck enters the left rear corner of the fuel tank. The fuel filler cap is located on the left rear bed side in front of the rear axle. The fuel lines run along the inside of the left frame rail.

DATA SHEET NO. 3
POST IMPACT DATA

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
Test Date: 11/08/07

TYPE OF TEST:

Type of Test: Left 40% Offset Deformable Barrier Impact Angle: 0 °
Test Date: 11/08/07 Time: 13:29 Temperature: 20.0 °C
Required Impact Velocity Range: 63.6 to 65.2 km/h

BARRIER IMPACT VELOCITY:

Trap No. 1 = 78.8 km/h; Trap No. 2 = 64.0 km/h

VEHICLE STATIC CRUSH: (mm)

Vehicle Length:

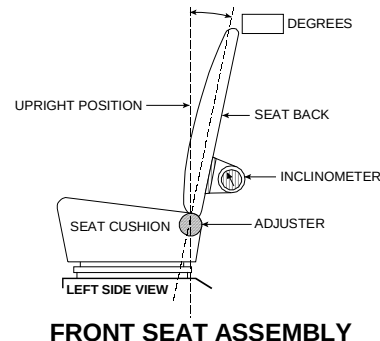
Pre-Test Right = 5622 ; C/L = 5862 ; Left = 5622
Post-Test Right = 5810 ; C/L = 5110 ; Left = 4535
Crush Right = -188 ; C/L = 752 ; Left = 1087
AVERAGE = 550 mm

DATA SHEET NO. 4
TEST VEHICLE INFORMATION

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

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



Left Front Seat Cushion Placement: Detent 15 of 19

Total Length of Fore/Aft Adjustment Travel: 180 mm

Total Number of Adjustment Positions or Detents: 19

Left Front Seat Back Adjustment Position: 17.7° measured at head restraint

Left Front Head Restraint Placement: Fixed

Left D-Ring Placement: Full up

Right Front Seat Cushion Placement: Detent 15 of 19

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

Total Number of Adjustment Positions or Detents: N/A

Right Front Seat Back Adjustment Position: 17.7° measured at head restraint

Right Front Head Restraint Placement: Fixed

Right D-Ring Placement: Full down

Adjustable Steering Column Position: 67.1°; middle of geometric range of travel

Window Positions:

Right Front: Open

Right Rear: Closed

Left Front: Open

Left Rear: Closed

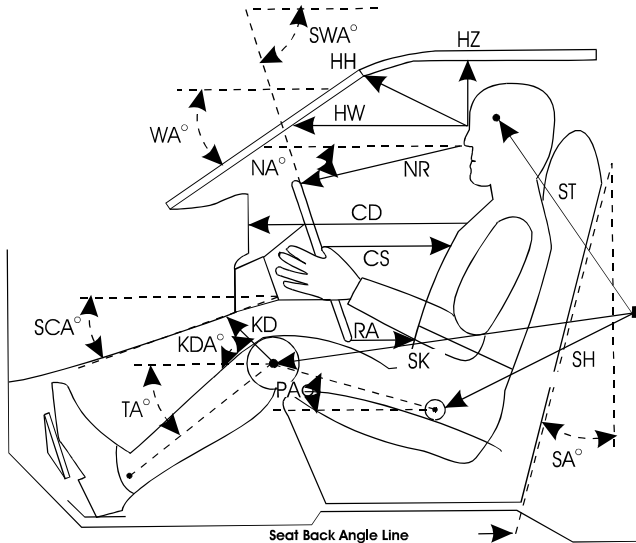
Amount of Stoddard Solvent In Fuel Tank:

114.7 liters (fuel tank usable capacity)

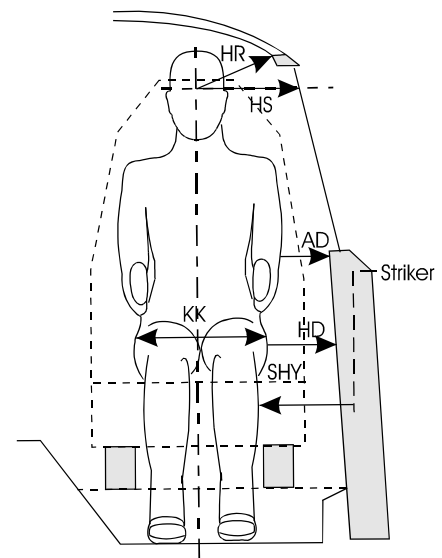
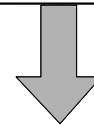
106.7 liters used in test (92% - 94% of fuel tank usable capacity)

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

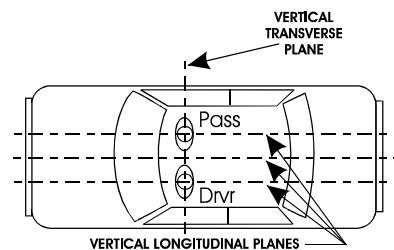
Test Date: 11/08/07



AD Arm to Door
HD H-Point to Door
HR Head to Side Header
HS Head to Side Window
KK Knee to Knee
SHY Striker to H-Point (Y-Axis)



CD Chest to Dash
CS Chest to Steering Wheel Hub
HH Head to Header
HW Head to Windshield
HZ Head to Roof
KDA Knee to Dash Angle
KDL Left Knee to Dash
NA Nose to Rim Angle
NR Nose to Rim
PA Pelvic Angle
RA Rim to Abdomen
SA Seat Back Angle
SCA Steering Column Angle
SH Striker to H-Point
SK Striker to Knee
ST Striker to Head
SWA Steering Wheel Angle
TA Tibial Angle
WA Windshield Angle



DUMMY MEASUREMENTS FOR FRONT SEAT OCCUPANTS

DATA SHEET NO. 5
FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

	DRIVER (Serial #855)				RIGHT FRONT PASSENGER (Serial #324)		
WA°	36.5°						
SWA°	22.9°						
SCA°	67.1°						
SA°	17.7°				17.7°		
HZ	275 mm				378 mm		
HW	740 mm				887 mm		
HH	533 mm				587 mm		
HR	258 mm				329 mm		
NR	492 mm						
NA°	11.8°						
CD	665 mm				662 mm		
CS	409						
RA	289						
KDL	263 mm	Angle (KDA)	1.7 °		305 mm		
KDR	266 mm				292 mm	Angle (KDA)	6.5 °
PA°	22.4°				19.6°		
TA°	43.8°				29.3°		
KK	270 mm				185 mm		
ST	686 mm	Angle	-78.0°		598 mm	Angle	-75.1°
SK	674 mm	Angle	-8.8°		715 mm	Angle	-8.4°
SH	274 mm	Angle	-2.3°		316 mm	Angle	-4.2°
SHY	198 mm				182 mm		
HS	298 mm				342 mm		
HD	243 mm				272 mm		
AD	199 mm				206 mm		

DATA SHEET NO. 5 (continued)
FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

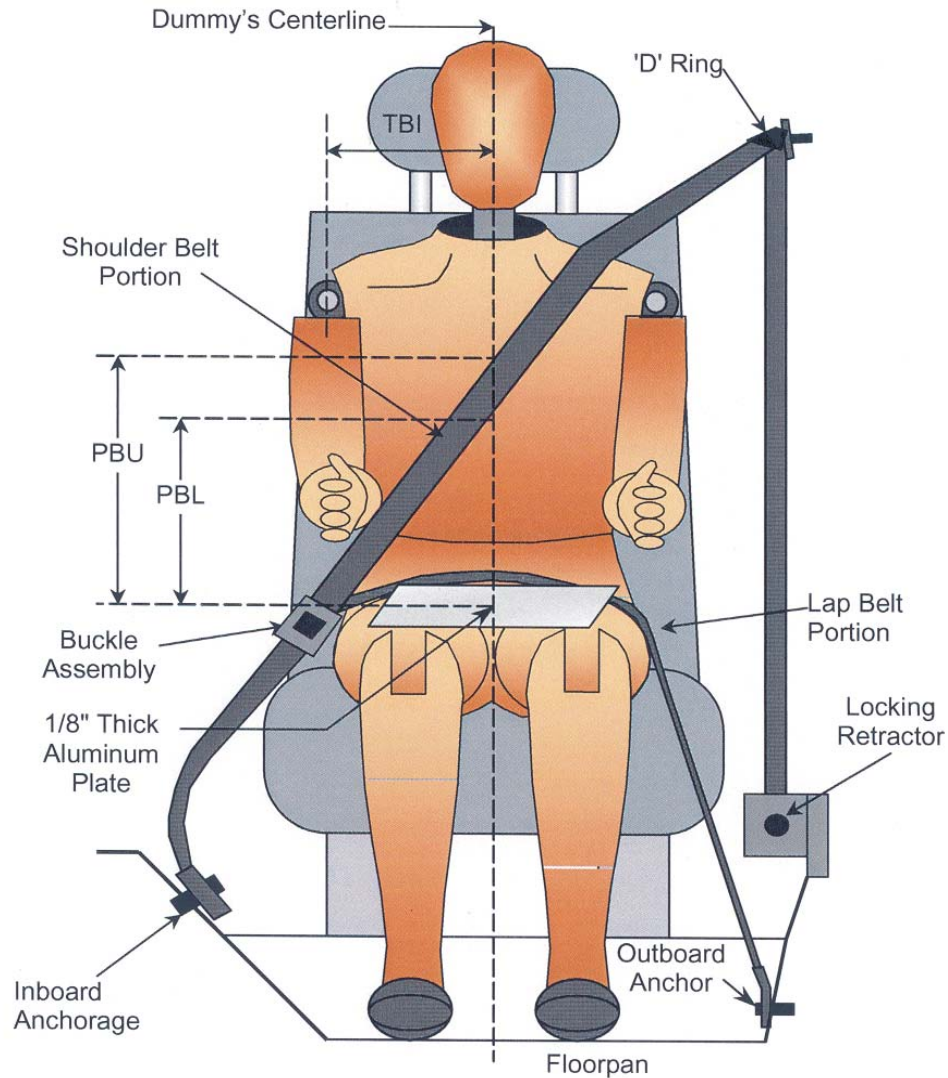
Test Date: 11/08/07

Location	DRIVER (Serial #855)			RIGHT FRONT PASSENGER (Serial #324)		
	X	Y	Z	X	Y	Z
Head Center Of Gravity	3229.25	-527.322	-1146.88	3234.036	507.8231	-1053.17
Nose Bridge	3316.316	-451.184	-1163.85	3319.192	441.9192	-1049.75
Nose Tip	3337.181	-451.173	-1114.6	3340.931	442.1332	-1015.73
Head Chin	3314.463	-452.354	-1044.33	3324.311	442.6725	-943.865
Arm	3233.054	-692.019	-865.154	3218.517	654.1711	-780.094
Hip-Point	3359.873	-699.082	-486.746	3396.072	731.5752	-498.375
Pelvic Fore	3322.55	-712.587	-551.7	3342.029	745.0049	-547.4
Pelvic Aft	3252.135	-708.56	-526.181	3274.354	744.5279	-523.767
Knee Outboard	3752.229	-610.235	-578.698	3785.358	534.0761	-578.524
Knee Inboard	3749.337	-279.497	-557.739	3789.532	401.5604	-569.041
Ankle Outboard	4062.49	-635.4	-292.351	3903.417	604.9067	-274.556
Headrest Top	3090.8	-739.414	-810.446	3082.501	730.0058	-834.51
Headrest Bottom	3194.076	-750.506	-588.346	3173.856	756.3509	-630.993
Roof	3316.316	-451.184	-1444.86	3319.192	441.9192	-1435.27
Header Front	3833.275	-451.153	-1345.6	3833.278	441.3154	-1331.29
Window Front	4104.952	-451.184	-1163.85	4259.546	441.9192	-1049.75
Steering Wheel Rim Top	3830.644	-452.476	-1029.28			
Dash Top	4002.382	-462.627	-992.762	3982.738	443.2704	-717.731
Steering Wheel Center	3751.347	-466.315	-848.433			
Chest Center	3364.767	-466.315	-848.433			
Steering Wheel Rim Bottom	3688.927	-455.369	-684.806			
Abdomen	3395.302	-455.369	-684.806			
Dash Bottom	3996.032	-548.649	-627.257	4030.721	536.9297	-592.391
Header Side	3318.933	-648.719	-1338.41	3320.408	685.7499	-1335.16
Window Side	3316.316	-813.146	-1163.85	3319.192	875.1021	-1049.75
Door Top	3233.054	-868.991	-865.154	3218.517	893.979	-780.094
Door Bottom	3359.873	-873.365	-486.746	3396.072	896.1102	-498.375
Striker	3086.075	-897.021	-475.769	3080.574	913.832	-475.066
Left Toe	4280.378	-605.381	-366.925	4098.648	442.9462	-296.553
Left Heel	4059.19	-609.476	-148.245	3894.196	424.9823	-142.837
Right Toe	4285.522	-290.424	-365.259	4098.492	560.8395	-295.52
Right Heel	4054.106	-297.627	-155.419	3884.017	573.676	-158.364
Seat Reference Point 1	3424.06	-769.03	-345.174	3171.948	783.2464	-435.559
Seat Reference Point 2	3031.813	-650.677	-939.104	3037.588	647.0168	-935.501

DATA SHEET NO. 6 **SEAT BELT POSITIONING DATA**

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07



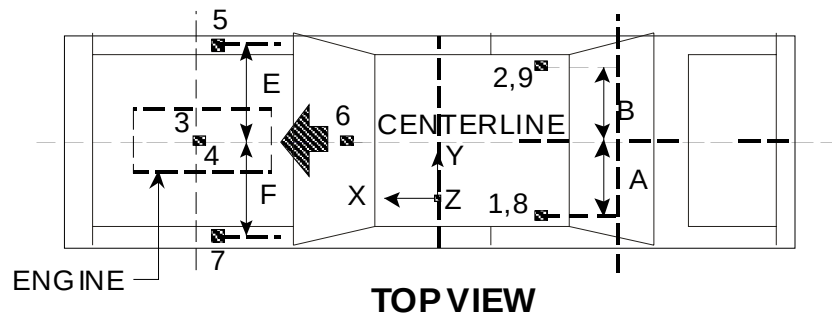
	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge, mm	384	290
PBL - Top surface of aluminum plate to belt lower edge, mm	290	210

DATA SHEET NO. 7

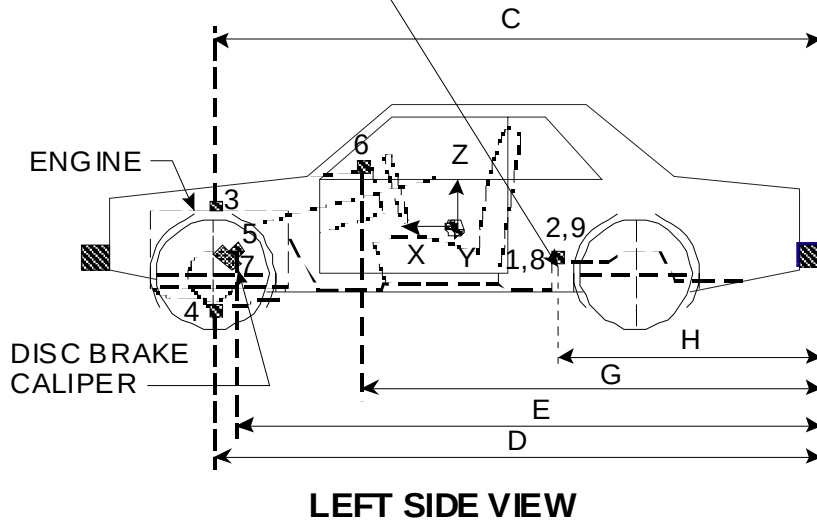
Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



NOTE: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 6.

DATA SHEET NO. 7 (continued)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

DIMENSION	LENGTH (mm)
	PRE-TEST VALUES
A Left Rear Seat Crossmember Y	633
B Right Rear Seat Crossmember Y	633
C Top of Engine X	5371
D Bottom of Engine X	5150
E Right Brake Calipers X	Accelerometer not used
F Left Brake Calipers X	Accelerometer not used
G Instrument Panel X	4405
H Left Rear Seat Cross Member X	3166
I Right Rear Seat Cross Member X	3166
Left Side Driver Mid Seat Track X	3906
Vehicle Center of Gravity X	3661
Under Accel Pedal X	4292
Under Accel Pedal Y	-321
Under Brake Pedal X	4213
Under Brake Pedal Y	-470
Outside Foot Rest X	Not recorded
Outside Foot Rest Y	Not recorded

DATA SHEET NO. 7 (continued)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

LOCATION NUMBER	<u>DESCRIPTION</u>	MAXIMUM VALUE (g's)			
		Positive	Time, ms	Negative	Time, ms
1	Left Rear Seat Cross Member X	3.2	262.2	36.9	77.9
2	Right Rear Seat Cross Member X	2.4	260.8	24.8	47.6
3	Left Rear Seat Cross Member Y	91.5	61.3	15.0	111.0
4	Right Rear Seat Cross Member Y	12.7	72.5	16.8	111.6
5	Top of Engine Block X	8.0	75.6	42.9	69.7
6	Bottom of Engine Block X	1635.0	30.2	872.6	204.1
7	Instrument Panel X	12.0	162.2	54.5	63.8
8	Left Side Driver Mid Seat Track X	3.5	263.0	28.3	103.7
9	Vehicle Center of Gravity X	3.5	93.3	32.1	104.3
	Vehicle Center of Gravity Y	17.5	74.0	12.6	111.1
	Vehicle Center of Gravity Z	20.1	97.4	17.2	74.6
	Vehicle Center of Gravity R	33.6	104.4		
10	Under Accel Pedal X	28.4	121.4	49.0	101.4
	Under Accel Pedal Y	27.0	60.3	13.8	127.8
	Under Accel Pedal Z	47.9	120.5	29.5	81.9
	Under Accel Pedal R	55.3	101.8		
11	Under Brake Pedal X	22.8	122.4	44.0	117.3
	Under Brake Pedal Y	29.9	80.8	25.0	118.0
	Under Brake Pedal Z	25.3	92.5	44.8	106.1
	Under Brake Pedal R	51.4	117.5		
12	Outside Footrest X	20.8	122.8	53.1	117.0
	Outside Footrest Y	70.0	85.2	28.3	117.9
	Outside Footrest Z	48.3	294.6	1072.2	118.6
	Outside Footrest R	1073.3	118.6		

DATA SHEET NO. 8
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

		MAXIMUM VALUE							
		Driver				Right Rear Passenger			
DESCRIPTION	Unit	Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Head X	g	2.8	187.4	46.2	121.4	54.1	130.2	2.9	310.0
Head Y	g	6.1	233.2	12.3	137.3	2.6	167.8	35.3	133.0
Head Z	g	21.8	93.0	6.4	145.3	26.7	113.4	5.3	63.0
Head Resultant	g	48.0	117.4			64.9	132.2		
Head Redundant X	g	3.8	186.2	46.2	121.4				
Head Redundant Y	g	8.3	185.8	21.2	131.8				
Head Redundant Z	g	21.0	93.0	6.8	145.3				
Head Redundant Resultant	g	47.5	121.4						
Upper Neck Fx	N	538.5	142.2	392.3	93.4	17.7	307.4	514.2	116.1
Upper Neck Fy	N	260.6	122.9	129.2	149.7	452.8	133.5	50.0	304.1
Upper Neck Fz	N	1380.1	110.7	180.2	158.3	1142.7	113.4	33.9	62.9
Upper Neck Mx	N-m	16.3	225.2	23.0	125.5	4.7	219.1	34.5	136.2
Upper Neck My	N-m	36.0	109.3	17.2	92.6	11.0	130.1	24.9	116.1
Upper Neck Mz	N-m	21.4	125.8	9.0	210.8	10.8	242.4	20.1	145.1
Chest X	g	1.1	309.1	33.1	108.9	0.7	267.4	33.2	102.2
Chest Y	g	9.1	162.3	2.7	85.4	9.8	119.3	2.8	20.0
Chest Z	g	9.7	85.4	12.7	130.0	7.7	146.7	5.4	130.9
Chest Resultant	g	33.7	108.9			34.5	102.4		
Chest Redundant X	g	0.3	307.3	33.8	108.7				
Chest Redundant Y	g	9.3	162.2	2.3	85.8				
Chest Redundant Z	g	9.9	85.6	12.7	130.4				
Chest Redundant Resultant	g	34.5	108.7						
Chest Displacement	mm	0.1	41.0	23.0	109.7	0.1	36.6	24.4	122.4

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

DESCRIPTION	Unit	MAXIMUM VALUE							
		Driver				Right Rear Passenger			
		Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Pelvis X	g	2.3	142.7	44.3	96.6	0.3	262.6	30.5	97.8
Pelvis Y	g	16.0	121.3	8.9	79.8	12.6	91.7	7.0	121.7
Pelvis Z	g	5.1	81.7	18.3	123.4	0.8	291.3	19.2	105.4
Pelvis Resultant	g	45.1	96.6			35.7	101.2		
Left Femur Z	N	1233.8	84.8	4190.1	115.9	881.9	92.5	113.7	68.1
Right Femur Z	N	780.7	103.8	2914.6	131.9	981.8	113.0	288.1	127.1
Left Knee Displacement X	mm	0.0	119.3	0.0	113.2	0.1	307.2	0.8	157.8
Left Upper Tibia Fx	N	704.9	127.9	977.3	84.0	370.7	93.6	38.3	282.9
Left Upper Tibia Fz	N	495.9	89.4	1162.8	114.2	77.1	61.8	642.9	91.5
Left Upper Tibia Mx	N-m	27.7	109.0	88.1	84.6	4.4	194.5	37.4	93.8
Left Upper Tibia My	N-m	132.2	84.0	79.0	137.9	6.5	137.3	54.2	92.6
Left Tibia X	g	14.9	93.8	132.1	83.4	0.6	290.1	71.6	93.5
Left Tibia Y	g	45.1	97.9	42.6	83.5	19.6	92.3	7.0	139.4
Left Lower Tibia Fx	N	190.3	103.3	1049.3	84.2	62.9	137.5	429.3	93.5
Left Lower Tibia Fy	N	7.2	71.6	624.0	84.3	125.4	94.0	16.5	279.9
Left Lower Tibia Fz	N	95.3	71.6	2633.6	114.2	26.1	51.3	1094.4	93.1
Left Lower Tibia Mx	N-m	46.9	83.0	62.2	107.5	5.1	187.2	41.2	93.1
Left Lower Tibia My	N-m	54.1	128.7	149.0	83.4	1.1	49.1	61.1	93.2
Left Foot Angular Displacement X	°	0.2	66.0	32.9	121.6	1.0	214.0	7.4	105.0
Left Foot Angular Displacement Y	°	30.1	121.3	21.6	43.6	13.4	1.4	48.2	130.2
Left Foot Angular Displacement Z	°	12.5	95.8	20.0	168.6	5.5	126.5	6.7	192.5
Left Foot X	g	43.6	97.3	175.8	80.9	1.5	278.0	72.1	89.1
Left Foot Y	g	92.5	104.7	24.6	87.2	31.2	88.4	30.7	136.4
Left Foot Z	g	81.0	87.6	138.6	82.0	44.9	136.1	39.0	83.3
Left Foot Resultant	g	186.2	80.9			77.6	88.6		
Right Knee Displacement X	mm	1.7	98.2	0.9	92.8	1.0	158.3	0.7	118.2

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

DESCRIPTION	Unit	MAXIMUM VALUE							
		Driver				Right Rear Passenger			
		Positive	Time, ms	Negative	Time, ms	Positive	Time, ms	Negative	Time, ms
Right Upper Tibia Fx	N	407.5	128.6	371.2	73.7	272.0	95.4	301.4	157.4
Right Upper Tibia Fz	N	51.3	55.6	3275.3	80.6	690.2	116.2	707.2	123.6
Right Upper Tibia Mx	N-m	94.1	133.2	36.8	159.0	21.4	138.8	32.4	161.4
Right Upper Tibia My	N-m	74.6	105.0	24.6	217.0	33.3	119.9	13.5	95.8
Right Tibia X	g	6.7	77.0	61.0	106.5	18.4	131.5	100.7	122.8
Right Tibia Y	g	42.9	107.1	11.7	184.2	13.6	120.8	10.9	135.6
Right Lower Tibia Fx	N	36.5	310.0	1257.1	106.7	322.0	119.7	160.0	95.8
Right Lower Tibia Fy	N	432.4	107.1	173.6	160.9	145.7	161.7	93.4	139.4
Right Lower Tibia Fz	N	7.9	57.3	4614.9	81.2	524.5	117.4	1147.8	123.6
Right Lower Tibia Mx	N-m	14.1	185.7	81.5	109.9	10.4	138.2	20.2	120.5
Right Lower Tibia My	N-m	34.6	118.8	56.3	72.9	9.3	133.1	42.0	122.4
Right Foot Angular Displacement X	°	1.2	69.8	22.4	109.5	0.6	75.4	4.8	164.5
Right Foot Angular Displacement Y	°	32.7	113.2	19.9	62.6	12.0	27.6	42.5	125.4
Right Foot Angular Displacement Z	°	18.4	110.6	46.1	27.4	7.7	130.5	3.8	182.9
Right Foot X	g	43.6	115.7	93.8	73.7	15.2	137.7	184.2	119.5
Right Foot Y	g	82.0	106.7	35.1	97.4	39.3	121.3	10.9	161.7
Right Foot Z	g	45.3	94.7	114.0	75.4	97.6	117.9	37.8	91.8
Right Foot Resultant	g	129.7	77.5			201.8	119.6		
Lap Belt Load	N	5257.4	90.7	10.4	275.8	4551.2	96.7	6.1	310.0
Shoulder Belt	N	4798.2	109.1	2.2	20.0	4366.0	110.7	20.9	310.0

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

	HEAD INJURY CRITERIA			
	HIC**	t ₁ (ms)	t ₂ (ms)	Average Acceleration t ₁ to t ₂ (g's)
Left Front - Driver	358	98.3	134.3	39.7
Right Front - Passenger	639	110.1	146.1	50.0
Left Rear - Passenger				
Right Rear - Passenger				

** Head Injury Criteria (HIC) is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 0.036 seconds.

	CLIP SUMMARY*			
	CLIP (g's)	t ₁ (ms)	t ₂ (ms)	Chest Severity Index
Left Front - Driver	32.4	93.7	96.7	252
Right Front - Passenger	34.0	101.1	104.1	221
Left Rear - Passenger				
Right Rear - Passenger				

* The maximum chest resultant acceleration (clip) is defined as the maximum acceleration that exceeds 0.003 seconds in duration.

DATA SHEET NO. 8 (continued)
DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

THOR LEG ZEROING DATA

Dummy Serial No. 855	X	Y	Z
Left Leg - 037	0.991409	12.4487	44.2515
Right Leg - 036	-0.03915	10.8803	44.5503

Dummy Serial No. 324	X	Y	Z
Left Leg - 016	3.32095	15.2142	43.9381
Right Leg - 015	-14.6214	-0.05819	42.6057

DATA SHEET NO. 9
SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
Test Date: 11/08/07

<u>BELT LENGTH DATA:</u>	<u>Driver*</u>	<u>Right Front Passenger *</u>
Total belt length.	<u>3320</u>	<u>3380</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>800</u>	<u>720</u>
Lap belt length as measured on Part 572 Dummy.	<u>790</u>	<u>770</u>
 <u>SHOULDER BELT SPOOL-OFF DATA:</u>	 <u>Driver*</u>	 <u>Right Front Passenger*</u>
As determined mechanically.	<u>N/A¹</u>	<u>N/A¹</u>

NOTE:

* All measurements in millimeters.

¹ Belt spool data not part of test request.

DATA SHEET NO. 10 **SUMMARY OF FMVSS 212 DATA**

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

FMVSS No. 212 – “Windshield Mounting” Data

Details Of Windshield Mounting Such As

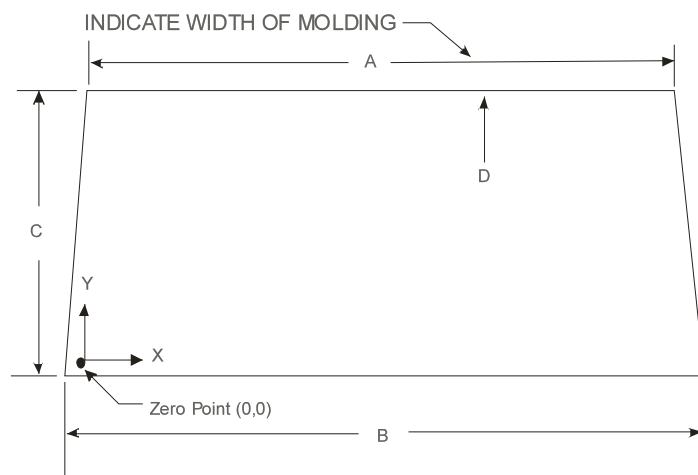
Retention Method, Trim Type, Etc.: adhesive, plastic trim, N/A

FMVSS 212 Requirements

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants.

	Windshield Periphery		% of Retention
	Pre-Test (mm)	Post-Test (mm)	
Right Side	2335	2335	100.0
Left Side	2335	2335	100.0
Total	4670	4670	100.0

Area of Retention Failure: None



Failure Details

Dimensions (mm)	
A	1450
B	1780
C	720
D	24

DATA SHEET NO. 11
FMVSS 219 (PARTIAL) – “WINDSHIELD ZONE INTRUSION” DATA

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

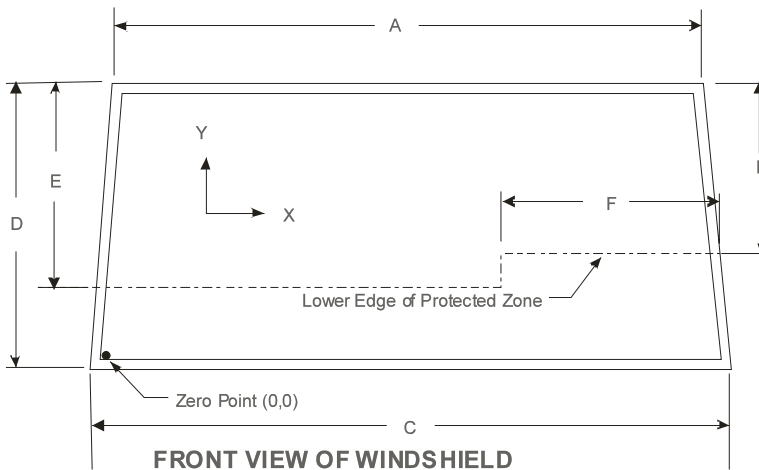
Test Date: 11/08/07

Protected Zone Lower Edge Requirement

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield; then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 Test Data

(Dimensions in mm)



Dimensions	
A	1450
B	445
C	1780
D	720
E	505
F	440

(Show location of penetration on the above sketch)

Details of Windshield Glass Penetration Greater Than 6 mm: None

COORDINATES		
	X	Y
1.	None	None
2.		
3.		
4.		

DATA SHEET NO. 12
FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

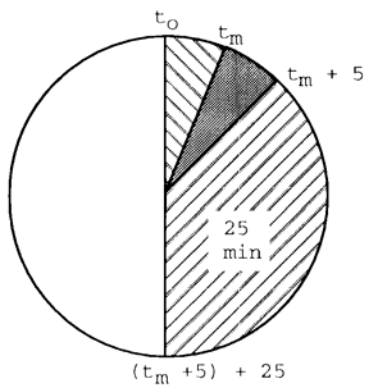
Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

The test vehicle was filled from 92% to 94% of the manufacturer's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

TEST VEHICLE IMPACT TYPE

X	Frontal (56 kph)
	Oblique (48 kph) with _____ deg. barrier face first contacting _____ side (driver / passenger)
	Rear Moving Barrier (48 kph)
	Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT¹



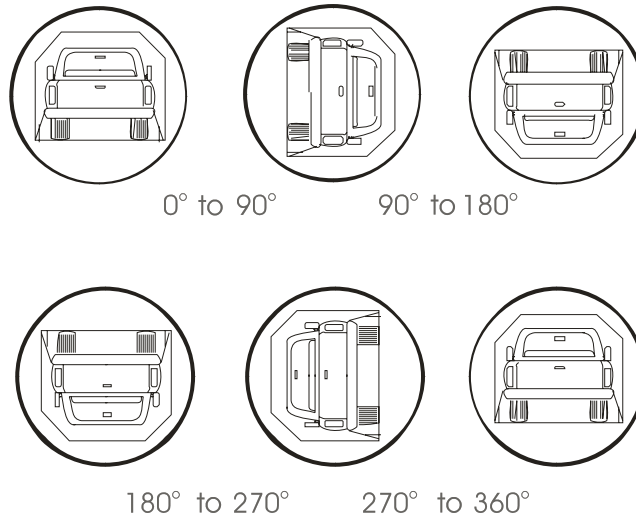
	ACTUAL	MAX. ALLOWED
1. From impact until vehicle motion ceases	g	28 g
2. For 5 minute period after vehicle motion ceases	g	141 g
3. For next 25 minutes	g	28 g/min.

SOLVENT SPILLAGE DETAILS

¹ Rollover could not be completed due to the extensive damage to the vehicle.

DATA SHEET NO. 13
FMVSS 301 STATIC ROLLOVER DATA SHEET

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
Test Date: 11/08/07



1. The specified fixture rollover rate for each 90° of rotation is 60 to 120 seconds.
2. The position hold time at each position is 300 seconds (minimum).

Details of Stoddard Solvent Spillage Locations¹

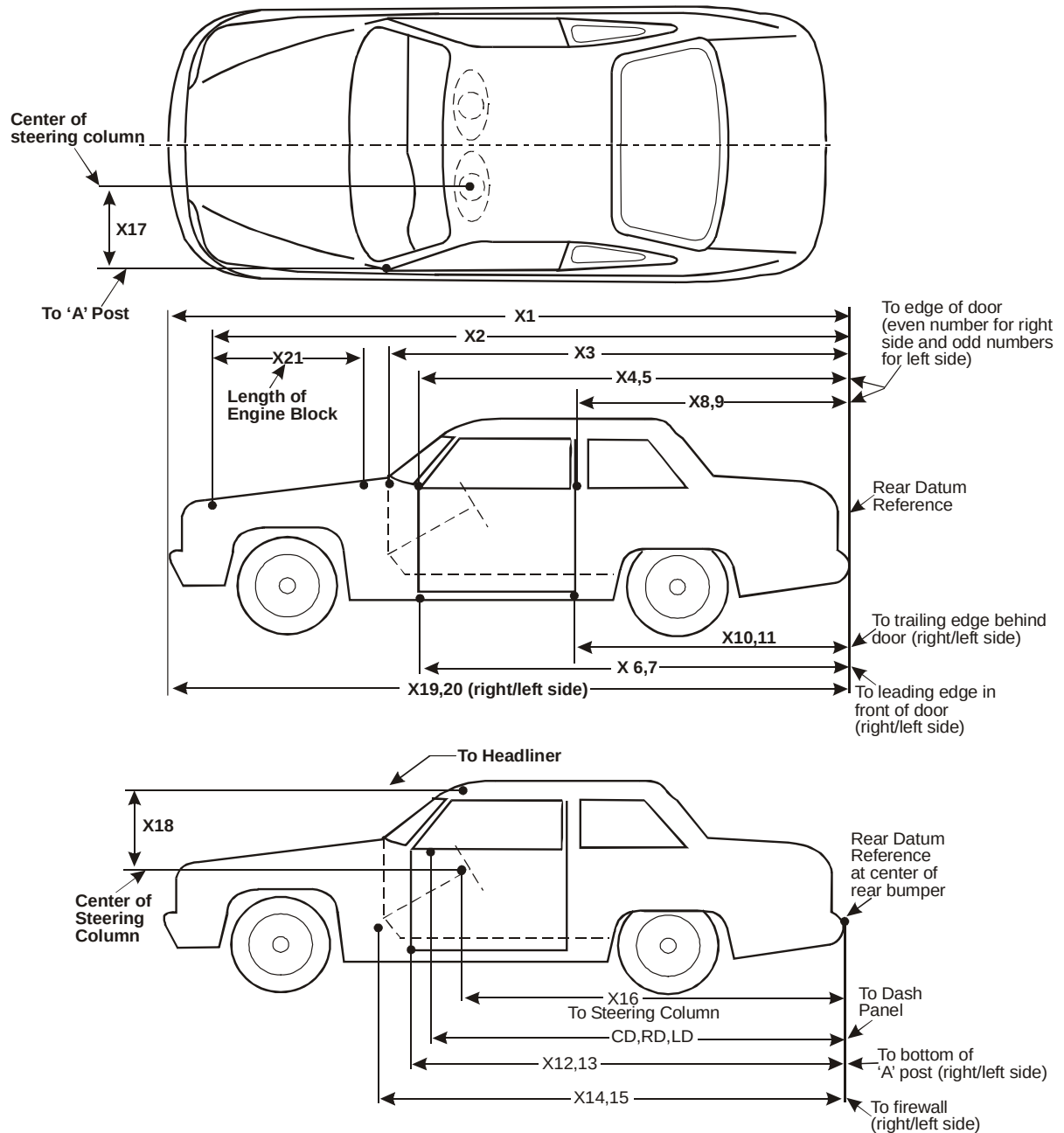
Test Phase	Rotation Time (sec.)	Hold Time (sec.)	Spillage (oz.)
0° to 90°	60	300	
90° to 180°	60	300	
180° to 270°	60	300	
270° to 360°	60	300	

¹ Rollover could not be completed due to the extensive damage to the vehicle.

DATA SHEET NO. 14 **TEST VEHICLE MEASUREMENTS**

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07



DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5862	5110	752
X2	Rear Surface of Vehicle to Front of Engine Block	4978		
X3	Rear Surface of Vehicle to Firewall	4717	-428	5145
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	4269	4234	35
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	4274	4259	15
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	4172	4084	88
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	4177	3111	1066
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	3037	2996	41
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	4039	3075	964
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	3045	2949	96
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	3048	3004	44
X12	Rear Surface of Vehicle to Bottom of " A " Post on Right Side	4187	4131	56
X13	Rear Surface of Vehicle to Bottom of " A " Post on Left Side	4187	4132	55
X14	Rear Surface of Vehicle to Firewall-Right Side	4560	4501	59
X15	Rear Surface of Vehicle to Firewall-Left Side	4602	4404	198
X16	Rear Surface of Vehicle to Steering Wheel Center	3742	3679	63
X17	Center of Steering Column to " A " Post	300	281	19
X18	Center of Steering Column to Headliner	480	430	50
X19	Rear Surface of Vehicle to Right Side of Front Bumper	5622	5810	-188
X20	Rear Surface of Vehicle to Left Side of Front Bumper	5622	4535	1087
X21	Length of Engine Block	600	600	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	4092	4051	41
CD	Rear Surface of Vehicle to Center of Dash Panel	3952	3908	44
LD	Rear Surface of Vehicle to Left Side of Dash Panel	4002	3914	88

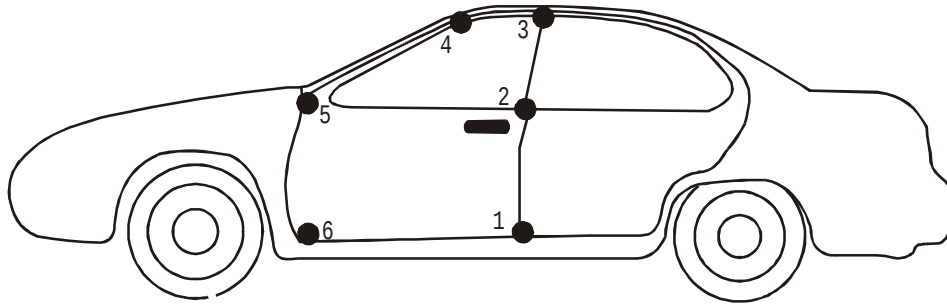
All measurements are in millimeters.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

DOOR OPENING WIDTH



Left Front

Point Location	PRE-TEST (mm)			POST-TEST (mm)			CHANGE (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
1	3101	-892	-138	3132	-789	-61	31	103	77
2	3064	-926	-694	3202	-875	-597	138	51	97
3	3108	-765	-1280	3383	-805	-1173	275	-40	107
4	3740	-731	-1257	3812	-423	-1297	72	308	-40
5	4197	-890	-553	4138	-489	-464	-59	401	89
6	4146	-891	-130	4105	-426	-40	-41	465	90

Right Front

Point Location	PRE-TEST (mm)			POST-TEST (mm)			CHANGE (mm)		
	X	Y	Z	X	Y	Z	X	Y	Z
1	3101	892	-261	3042	1148	-289	-59	256	-28
2	3064	920	-700	3008	1164	-728	-56	244	-28
3	3110	756	-1284	3080	995	-1308	-30	239	-24
4	3751	723	-1260	3728	1027	-1283	-23	304	-23
5	4200	877	-579	4148	1225	-597	-52	348	-18
6	4168	885	-170	4104	1228	-190	-64	343	-20

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	3600 mm	3600 mm
Post-Test	3191 mm	3868 mm
Difference	409 mm	-268 mm

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

	Elements	Pre-Test
1	Total Length	5862
2	Total Width	2040
3	Bumper Top Height	769
4	Bumper Bottom Height	481
5	Longitudinal Member Top Height	736
6	Longitudinal Member Bottom Height	581
7	Distance Between Longitudinal Members	1250
7'	Longitudinal Member Width	258
8	Engine Top Height	1297
9	Engine Bottom Height	407
10	Engine and Gearbox Width	800
11	Front Bumper - Engine Distance	887
12	Front Shock Absorber Fixing Height	867
13	Bonnet Leading Edge Height	1261
14	Front Shock Absorber Fixing Width	1035
15	Front Bumper - Front Axle Distance	940
16	Front Axle - A Pillar Distance	750
17	A Pillar - B Pillar Distance	1111
18	B Pillar - Rear Axle Distance	1715
19	B Pillar - C Pillar Distance	570
20	Roof Sill Bottom Height	1848
21	Roof Sill Top Height	1923
22	Floor Sill Bottom Height	606
23	Floor Sill Top Height	633

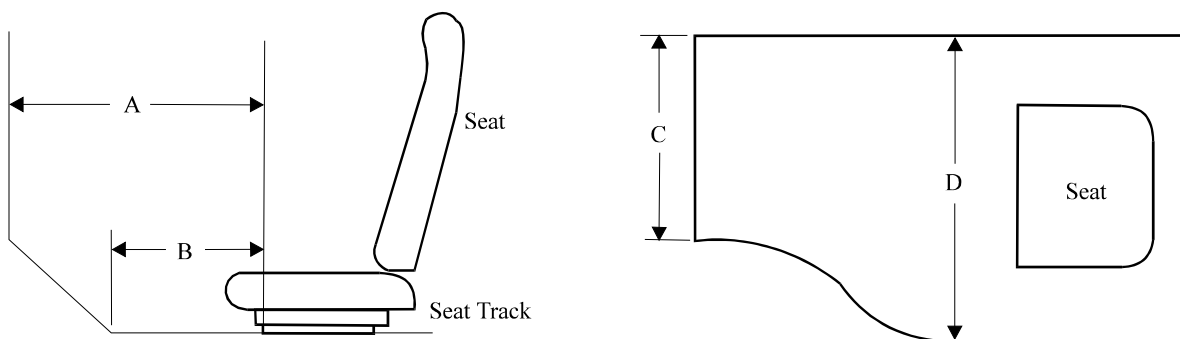
All distance measurements are in millimeters.

¹ Taken from INSIA report, "Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body", March 1999. This report is included in Appendix F.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

STATIC FOOTWELL DEFORMATION



DRIVER

Measurement	Pre-Test	Post-Test	Difference
A	586	466	-120
B	394	356	-38
C	373	322	-51
D	364	329	-35

All units in millimeters

PASSENGER

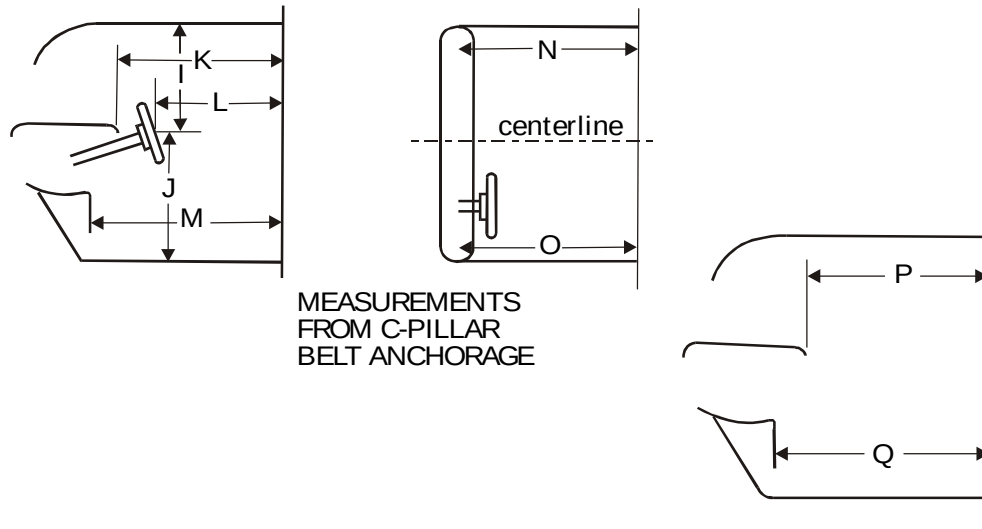
Measurement	Pre-Test	Post-Test	Difference
A	421	395	-26
B	359	308	-51
C	363	335	-28
D	372	367	-5

All units in millimeters

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

STATIC PASSENGER COMPARTMENT INTRUSION



Measurement	Pre-Test	Post-Test	Difference
I	480	525	-45
J	680	768	-88
K	1555	1345	210
L	1340	1134	206
M	1700	1500	200
N	1652	1600	52
O	1568	1330	238
P = K (PASS.)	1640	1630	10
Q = M (PASS.)	1700	1685	15

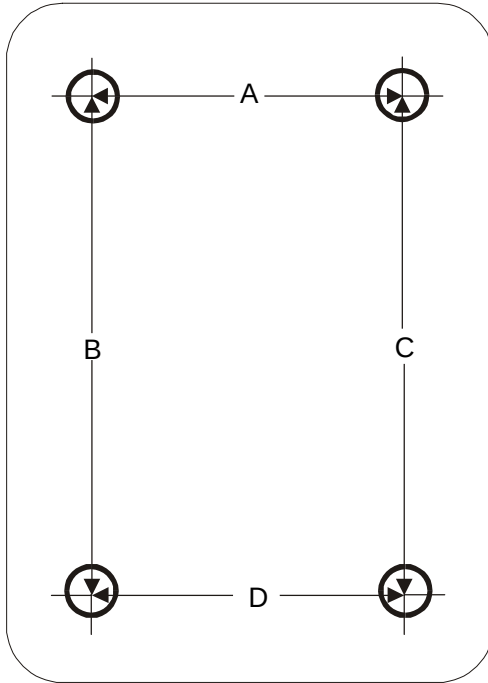
All units in millimeters

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

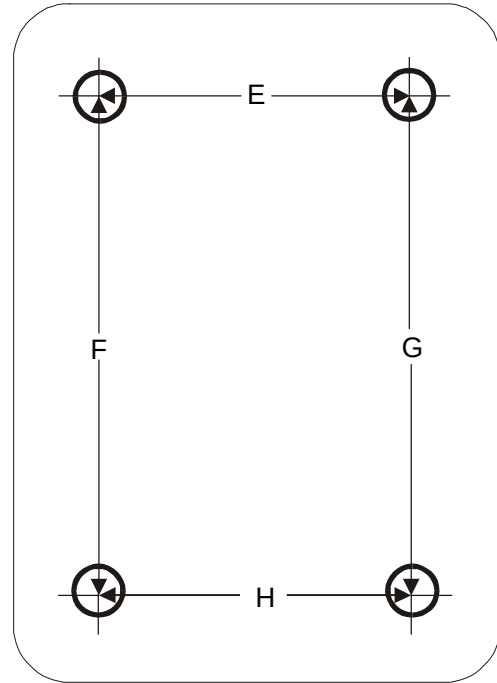
Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

FLOORBOARD DEFORMATION

DRIVERS SIDE



PASSENGERS SIDE



TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	392	356	-36
B	394	356	-38
C	388	276	-112
D	364	329	-35
E	393	348	-45
F	359	308	-51
G	384	381	-3
H	372	367	-5

All units in millimeters

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

Bottom of Front Bumper

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	5455	-947	85	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
2	5618	-915	53	4683	-449	-60	-935	466	-113
3	5738	-714	50	4951	-364	6	-787	350	-44
4	5821	-483	60	4991	-143	43	-830	340	-17
5	5850	-245	55	4970	89	26	-880	334	-29
6	5856	-3	61	5146	209	25	-710	212	-36
7	5846	238	64	5371	294	32	-475	56	-32
8	5818	478	61	5576	422	28	-242	-56	-33
9	5730	710	60	5742	605	16	12	-105	-44
10	5614	908	50	5863	800	-6	249	-108	-56
11	5454	940	76	5815	958	-1	361	18	-77

Top of Front Bumper

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	5412	-989	-141	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
2	5637	-927	-139	4756	-494	-231	-881	433	-92
3	5755	-716	-139	4938	-346	-177	-817	370	-38
4	5843	-489	-140	5032	-151	-153	-811	338	-13
5	5872	-247	-138	4986	83	-153	-886	330	-15
6	5880	-4	-134	5165	178	-140	-715	182	-6
7	5871	241	-139	5395	256	-165	-476	15	-26
8	5842	485	-140	5607	381	-166	-235	-104	-26
9	5753	713	-138	5767	566	-177	14	-147	-39
10	5636	922	-137	5896	768	-189	260	-154	-52
11	5410	981	-146	5843	992	-225	433	11	-79

Center of Grill

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	5567	-863	-398	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹	N/A ¹
2	5766	-521	-363	5067	-206	-413	-699	315	-50
3	5810	-182	-359	5025	119	-383	-785	301	-24
4	5811	165	-364	5339	265	-381	-472	100	-17
5	5769	507	-364	5614	472	-384	-155	-35	-20
6	5572	849	-402	5490	977	-414	-82	128	-12

Front of Hood

Pre-Test				Post-Test			Difference		
Index	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm	X, mm	Y, mm	Z, mm
1	5533	-861	-573	5007	-543	-765	-526	318	-192
2	5713	-539	-663	5006	-204	-748	-707	335	-85
3	5754	-186	-677	5017	124	-724	-737	310	-47
4	5754	166	-676	5297	308	-743	-457	142	-67
5	5717	518	-666	5480	611	-756	-237	93	-90
6	5538	844	-577	5476	995	-751	-62	151	-174

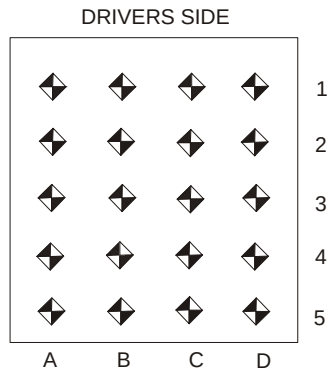
¹ Measurement point could not be located post-test.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

TOE PAN FLOORBOARD INTRUSION



DRIVER TOEPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	4379	4379	4374	4370	4217	4141	4099	4132	-162	-238	-275	-238
2	4308	4308	4298	4300	4200	4134	4071	4120	-108	-174	-227	-180
3	4187	4176	4180	4189	4107	4062	4031	4016	-80	-114	-149	-173
4	3998	3997	3993	4000	3937	3908	3880	3864	-61	-89	-113	-136
5	3793	3794	3798	3801	3751	3728	3708	3740	-42	-66	-90	-61

DRIVER TOEPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-705	-578	-459	-332	-211	-114	-7	111	494	464	452	443
2	-706	-572	-454	-321	-200	-88	9	125	506	484	463	446
3	-707	-570	-435	-315	-214	-84	44	142	493	486	479	457
4	-692	-561	-445	-313	-247	-139	-49	57	445	422	396	370
5	-678	-566	-446	-314	-298	-205	-100	31	380	361	346	345

DRIVER TOEPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-204	-205	-202	-201	-188	-217	-241	-249	16	-12	-39	-48
2	-137	-156	-157	-143	-94	-134	-159	-159	43	22	-2	-16
3	-92	-93	-94	-94	-8	-14	-39	-109	84	79	55	-15
4	-95	-102	-97	-103	40	-26	-94	-173	135	76	3	-70
5	-99	-101	-103	-109	14	-43	-97	-100	113	58	6	9

Pre-test and post-test measurement reference: +X forward; +Y right; +Z down.
 0, 0, 0 origin is center of rear bumper.

Procedure for measuring interior points is located in Appendix E.

DATA SHEET NO. 14 (continued)
VEHICLE MEASUREMENTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
Test Date: 11/08/07

IIHS MEASUREMENTS

Index	PRE-TEST			POST-TEST			CHANGE		
	X	Y	Z	X	Y	Z	X	Y	Z
SW	3763	-476	-807	3711	-149	-851	-52	327	-44
BP	4213	-470	-288	4006	-30	-350	-207	440	-62
AB	3690	-616	-176	3759	-272	-120	69	344	56

SW = Steering Wheel Center

BP = Brake Pedal

AB = Front Outboard Seat Anchor Bolt

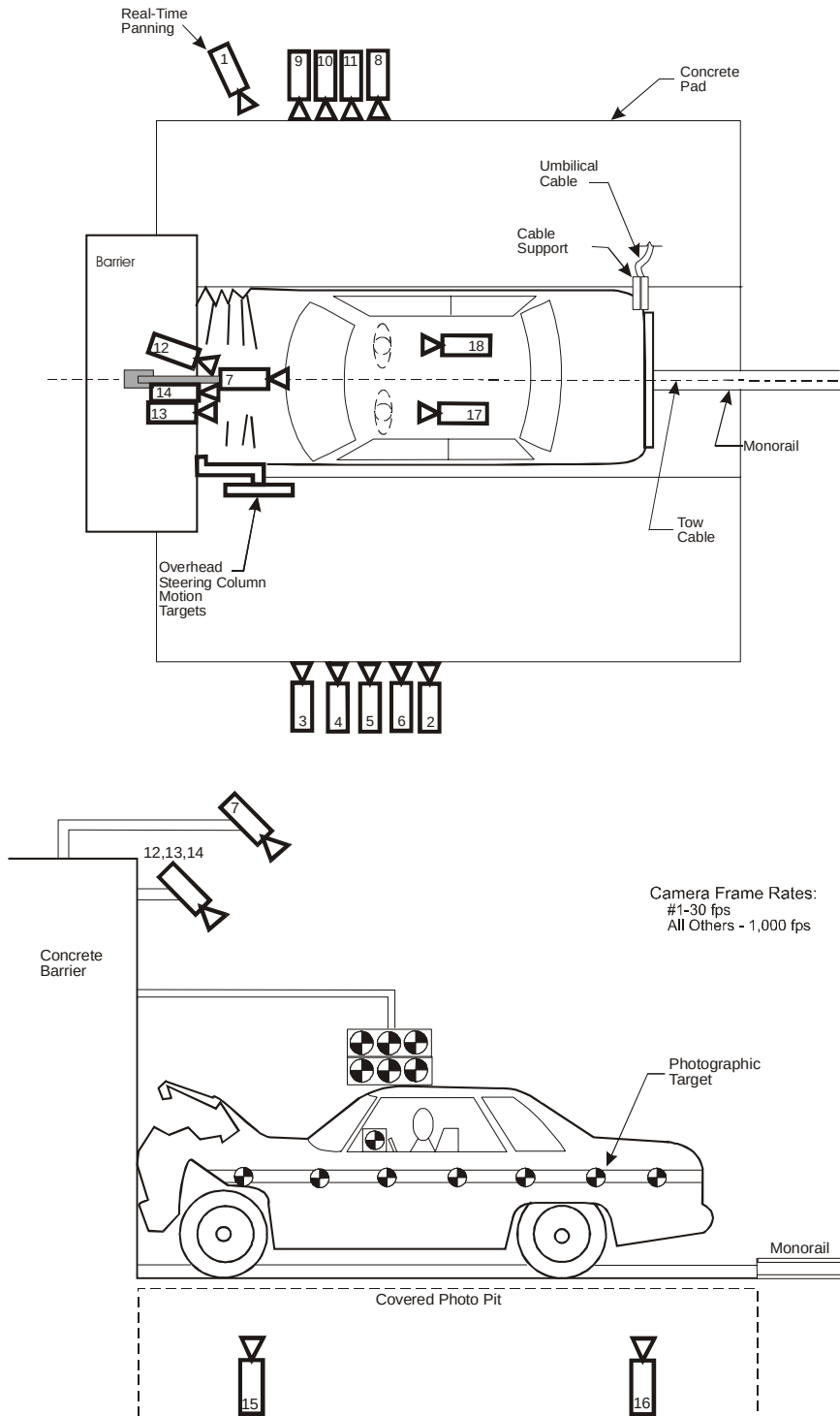
DATA SHEET NO. 15

CAMERA POSITIONS FOR FRONTAL IMPACTS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO. 15 (continued)
HIGH-SPEED CAMERA LOCATIONS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET (mm)	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	---	---	---	---	---	zoom	30
2	Overall Left Side	2500	6500	1270	2.0	5430	12.5	1000
3	Left Side View	0	7500	900	1.0	6730	50	1000
4	Driver View	1000	6610	1500	3.6	6550	25	1000
5	Steering Column Top	1600	6330	2270	10.6	6470	25	1000
6	Steering Column Bottom	1600	6330	1630	1.4	6250	50	1000
7	Top View	0	0	5620	90.0	4040	12.5	1000
8	Overall Right Side	2110	6450	1250	1.3	6100	12.5	1000
9	Right Side View	0	7370	970	2.0	6020	50	1000
10	Left Driver Foot View	1120	6520	1530	3.4	6430	25	1000
11	Right Driver Foot View	1230	6520	1530	1.1	6420	50	1000
12	Driver Front Angled View	2120	710	2010	19.4	4490	25	1000
13	Driver Front View	2120	590	2010	20.4	4490	25	1000
14	Windshield View	2120	0	2010	26.2	4490	12.5	1000
15	Pit View of Engine	300	0	3340	90.0	4870	25	1000
16	Pit View of Fuel Tank	2450	0	3340	90.0	4870	12.5	1000
17	Driver Lower Leg	1950	550	900	9.3	1050	4.8	1000

*X = film plane to impact location

Y = film plane to monorail centerline

Z = film plane to ground

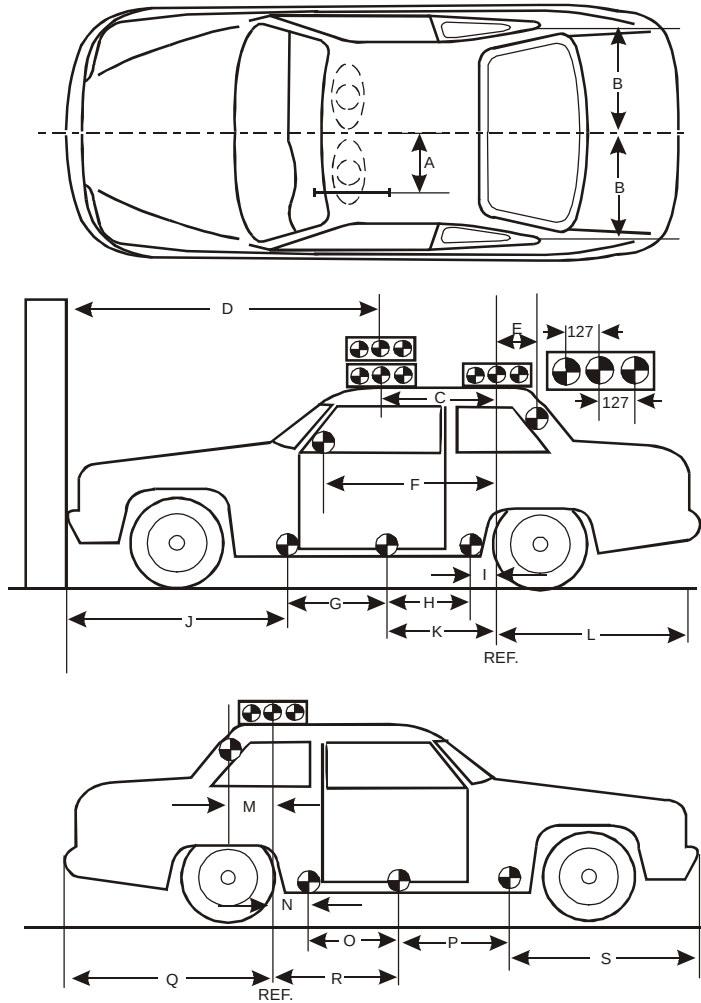
**Angle = referenced to horizontal plane

DATA SHEET NO. 16
VEHICLE REFERENCE PHOTO TARGET LOCATIONS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07

A	475
B	745
C	610
D	2152
E	418
F	1082
G	1255
H	1252
I	-983
J	1240
K	267
L	2860
M	400
N	-987
O	1255
P	1250
Q	2854
R	266
S	1252



All measurements in millimeters

DATA SHEET NO. 17
POST TEST AIR BAG DATA

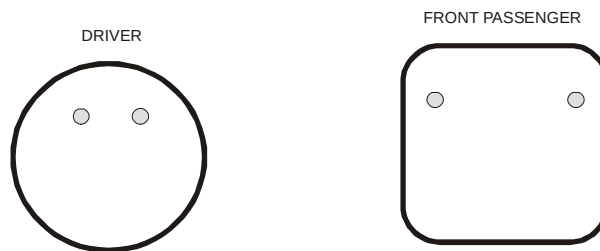
Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
Test Date: 11/08/07

Test Date: 11/08/07 Technician: Duey Thomas

Vehicle Model Year/Make/Model: 2006/Ford/F250

- A. No. of vent holes: 2 -Driver 0 -Passenger
- B. Size of vent holes: (mm²) 25 -Driver N/A -Passenger
- C. Total vent area: (mm²) 982 -Driver _____ -Passenger
- D. Deflated air bag length and width dimensions or, if round, diameter. (mm)
- Driver: 430 -Length; 500 -Width; _____ -Diameter
- Passenger: 730 -Height; 670 -Width; _____ -Depth
- E. Is the air bag tethered?
- Driver: _____ -Yes; X -No; If yes, record length of tether (mm)- No
- Passenger: _____ -Yes; X -No; If yes, record length of tether (mm)- No

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.



(Note: Not to scale; $V_n = \text{Vent hole}_n$, $T_n = \text{Tether}_n$).

- F. Record part numbers and manufacturer name of the air bag and gas generator.
- Driver: 6C3425043B13AC3JA6, 2DLV066T 10233
217M058T22231
- Passenger: 2003642A

DATA SHEET NO. 18
ACCIDENT INVESTIGATION DIVISION DATA

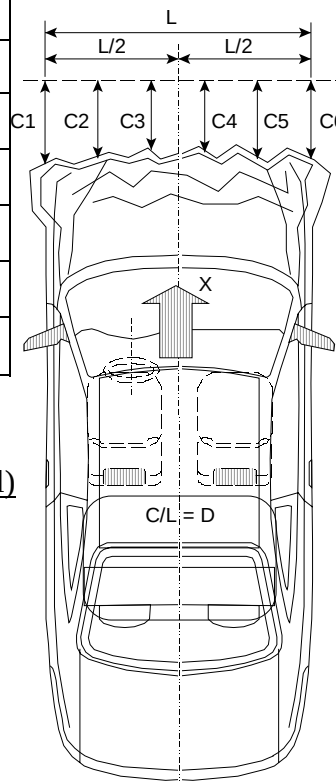
Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

FOR FRONTAL BARRIER IMPACT

VIN: 1FTSX21506ED38519
 Model Year: 2006 Build Date: 03/06 Test Date: 11/08/07
 Vehicle Size Category: Truck Test Weight: 3153.3 kg
 Vehicle Wheelbase: 3600 mm; Front Overhang: 940 mm; Overall Width: 2040 mm
 Collision Deformation Classification (CDC) Code: 12FDEW2

Crush Depth Dimensions with Bumper

	PRE-TEST	POST-TEST	DIFFERENCE	
C1 =	5618	4683	935	mm
C2 =	5737	4951	786	mm
C3 =	5819	4969	880	mm
C4 =	5845	5370	475	mm
C5 =	5730	5741	-11	mm
C6 =	5454	5815	-361	mm



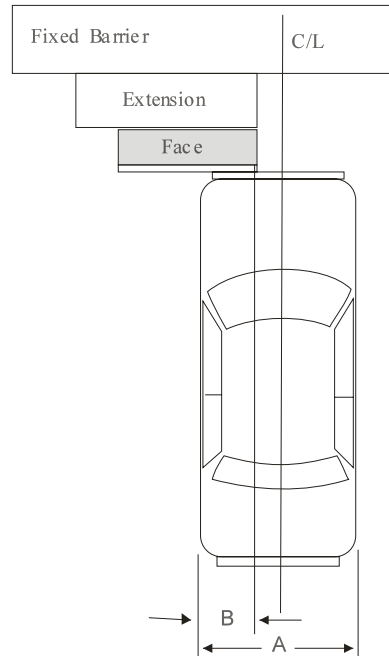
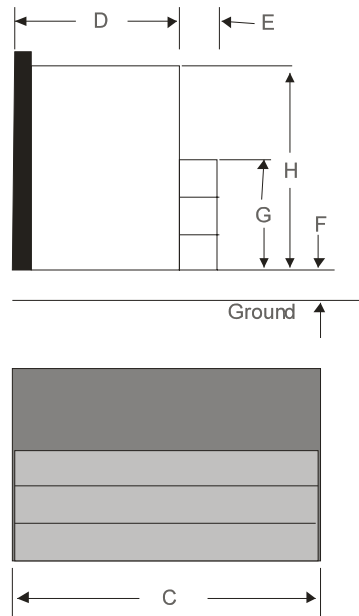
Midpoint of Damage: $D = \underline{\text{Vehicle Centerline (Longitudinal)}}$

Length of Damaged Region $L1 = \underline{2040}$ mm
 $L2 = \underline{1020}$ mm
 $L3 = \underline{1020}$ mm

DATA SHEET NO. 19 **OFFSET BARRIER AND VEHICLE ORIENTATION**

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07



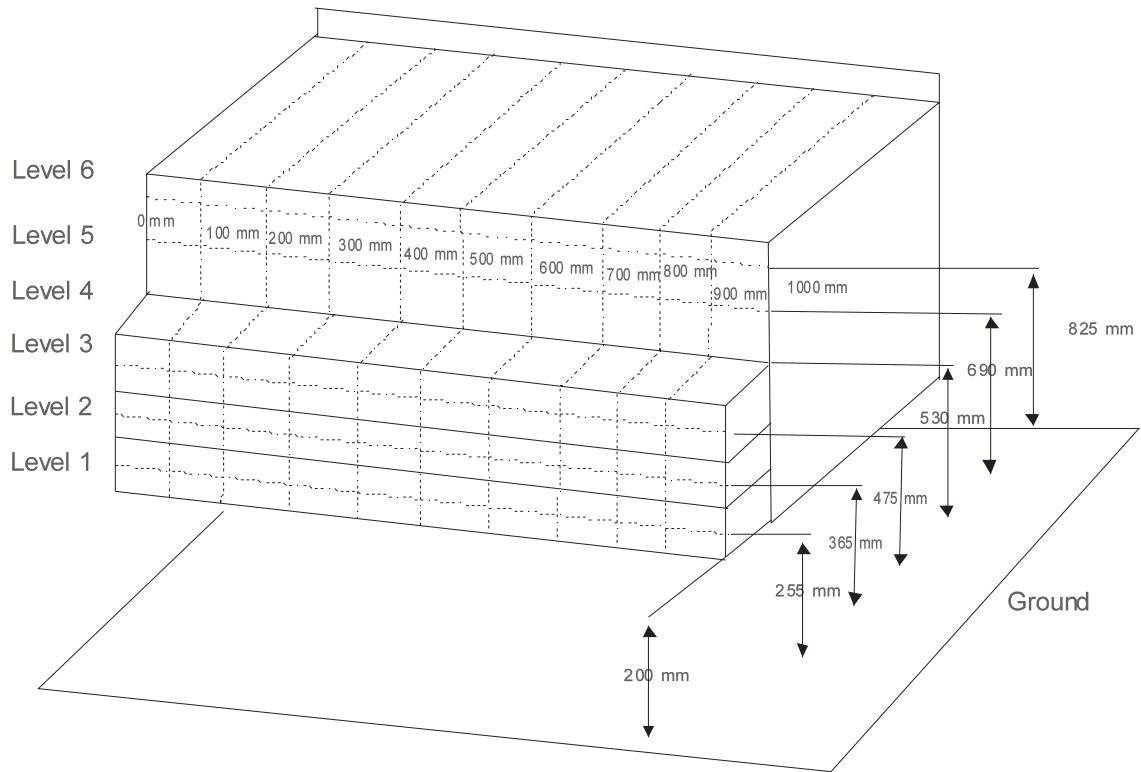
A. Total Vehicle Width	<u>2040</u>	mm
B. 40% Overlap Distance	<u>816</u>	mm
C. Deformable Face Width	<u>1000</u>	mm
D. Single Stage Honeycomb Depth	<u>450</u>	mm
E. Bumper Element Depth	<u>90</u>	mm
F. Lower Edge Height From Ground	<u>200</u>	mm
G. Bumper Element Height*	<u>330</u>	mm
H. Deformable Barrier Honeycomb Height	<u>650</u>	mm

* The bumper element consists of three 110 mm height blocks of 1.723 MPa honeycomb.

DATA SHEET NO. 20
DEFORMABLE BARRIER HONEYCOMB CRUSH

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup

Test Date: 11/08/07



Deformable Barrier Face Profile

Pre-Test

Index	Xmm	Ymm	Zmm
1	-454.7	491.9	50.9
2	-454.3	392.4	51.0
3	-454.1	292.6	50.7
4	-453.7	193.0	50.8
5	-453.6	92.9	50.9
6	-453.1	-7.1	50.8
7	-452.9	-107.4	50.8
8	-452.8	-207.2	50.4
9	-452.6	-307.3	50.1
10	-452.5	-407.0	50.2
11	-452.3	-497.4	49.5
12	-454.6	491.8	-83.2
13	-454.5	392.3	-83.4
14	-454.2	292.3	-83.8
15	-454.0	192.3	-83.8
16	-453.7	92.4	-84.1
17	-453.3	-7.1	-84.6
18	-453.1	-107.3	-84.5
19	-452.9	-207.6	-84.7
20	-452.9	-307.3	-85.0
21	-452.5	-407.7	-85.5
22	-452.4	-497.8	-85.6

Post-Test

Index	Xmm	Ymm	Zmm
1	-419.5	523.5	-46.5
2	-423.4	424.4	-49.0
3	-422.7	324.8	-52.7
4	-388.1	235.7	-47.6
5	-345.3	155.6	-25.1
6	-271.3	91.5	-16.9
7	-187.9	37.2	-12.8
8	-88.3	-138.3	16.9
9	-53.0	-223.4	24.3
10	-48.4	-319.2	37.6
11	-40.5	-409.2	30.7
12	-412.8	524.4	-178.4
13	-396.1	428.5	-178.8
14	-355.3	346.4	-161.8
15	-311.1	258.3	-146.9
16	-305.9	163.4	-150.5
17	-260.8	84.0	-150.2
18	-188.4	15.0	-142.2
19	-21.7	-105.9	-72.3
20	-13.7	-206.6	-76.1
21	-17.1	-305.9	-89.1
22	-22.3	-393.4	-98.8

Difference

Index	Xmm	Ymm	Zmm
1	-35.2	-31.6	97.4
2	-30.9	-32.0	100.0
3	-31.4	-32.2	103.4
4	-65.6	-42.7	98.4
5	-108.3	-62.7	76.0
6	-181.8	-98.6	67.7
7	-265.0	-144.6	63.6
8	-364.5	-68.9	33.5
9	-399.6	-83.9	25.8
10	-404.1	-87.8	12.6
11	-411.8	-88.2	18.8
12	-41.8	-32.6	95.2
13	-58.4	-36.2	95.4
14	-98.9	-54.1	78.0
15	-142.9	-66.0	63.1
16	-147.8	-71.0	66.4
17	-192.5	-91.1	65.6
18	-264.7	-122.3	57.7
19	-431.2	-101.7	-12.4
20	-439.2	-100.7	-8.9
21	-435.4	-101.8	3.6
22	-430.1	-104.4	13.2

Deformable Barrier Face Profile Cont'd.

Pre-Test

Index	Xmm	Ymm	Zmm
23	-454.3	491.7	-222.8
24	-454.3	392.5	-223.3
25	-454.1	292.5	-223.3
26	-453.7	192.7	-223.4
27	-453.3	92.9	-223.7
28	-453.1	-7.0	-224.0
29	-452.8	-106.8	-224.5
30	-452.6	-207.5	-224.6
31	-452.5	-307.4	-225.2
32	-452.4	-407.3	-225.5
33	-452.2	-497.4	-225.8
34	-545.3	491.7	-296.9
35	-545.0	392.0	-297.0
36	-544.9	292.0	-297.0
37	-544.7	191.8	-297.3
38	-544.3	92.4	-297.7
39	-544.1	-7.4	-298.4
40	-543.7	-107.5	-297.9
41	-543.7	-207.3	-298.6
42	-543.5	-307.0	-299.3
43	-543.0	-407.6	-299.3
44	-543.1	-497.9	-299.9

Post-Test

Index	Xmm	Ymm	Zmm
23	N/A	N/A	N/A
24	N/A	N/A	N/A
25	-291.3	360.6	-283.8
26	-245.9	272.2	-268.9
27	-251.0	173.4	-278.4
28	-245.6	75.0	-284.5
29	N/A	N/A	N/A
30	N/A	N/A	N/A
31	N/A	N/A	N/A
32	N/A	N/A	N/A
33	N/A	N/A	N/A
34	-388.7	476.7	-409.4
35	-310.3	418.5	-431.0
36	-255.3	337.2	-421.7
37	-209.7	249.6	-401.1
38	-235.2	158.8	-387.7
39	-270.3	65.9	-384.9
40	-208.2	-66.5	-376.6
41	-134.4	-128.3	-391.2
42	-91.3	-215.6	-390.8
43	-64.5	-310.8	-378.5
44	-46.1	-397.3	-366.9

Difference

Index	Xmm	Ymm	Zmm
23	N/A	N/A	N/A
24	N/A	N/A	N/A
25	-162.8	-68.1	60.5
26	-207.8	-79.5	45.5
27	-202.3	-80.5	54.7
28	-207.5	-82.0	60.5
29	N/A	N/A	N/A
30	N/A	N/A	N/A
31	N/A	N/A	N/A
32	N/A	N/A	N/A
33	N/A	N/A	N/A
34	-156.6	15.0	112.5
35	-234.7	-26.5	134.0
36	-289.6	-45.2	124.7
37	-335.0	-57.8	103.8
38	-309.1	-66.4	90.0
39	-273.8	-73.3	86.5
40	-335.5	-41.0	78.7
41	-409.3	-79.0	92.6
42	-452.2	-91.4	91.5
43	-478.5	-96.8	79.2
44	-497.0	-100.6	67.0

Deformable Barrier Face Profile Cont'd.

Pre-Test

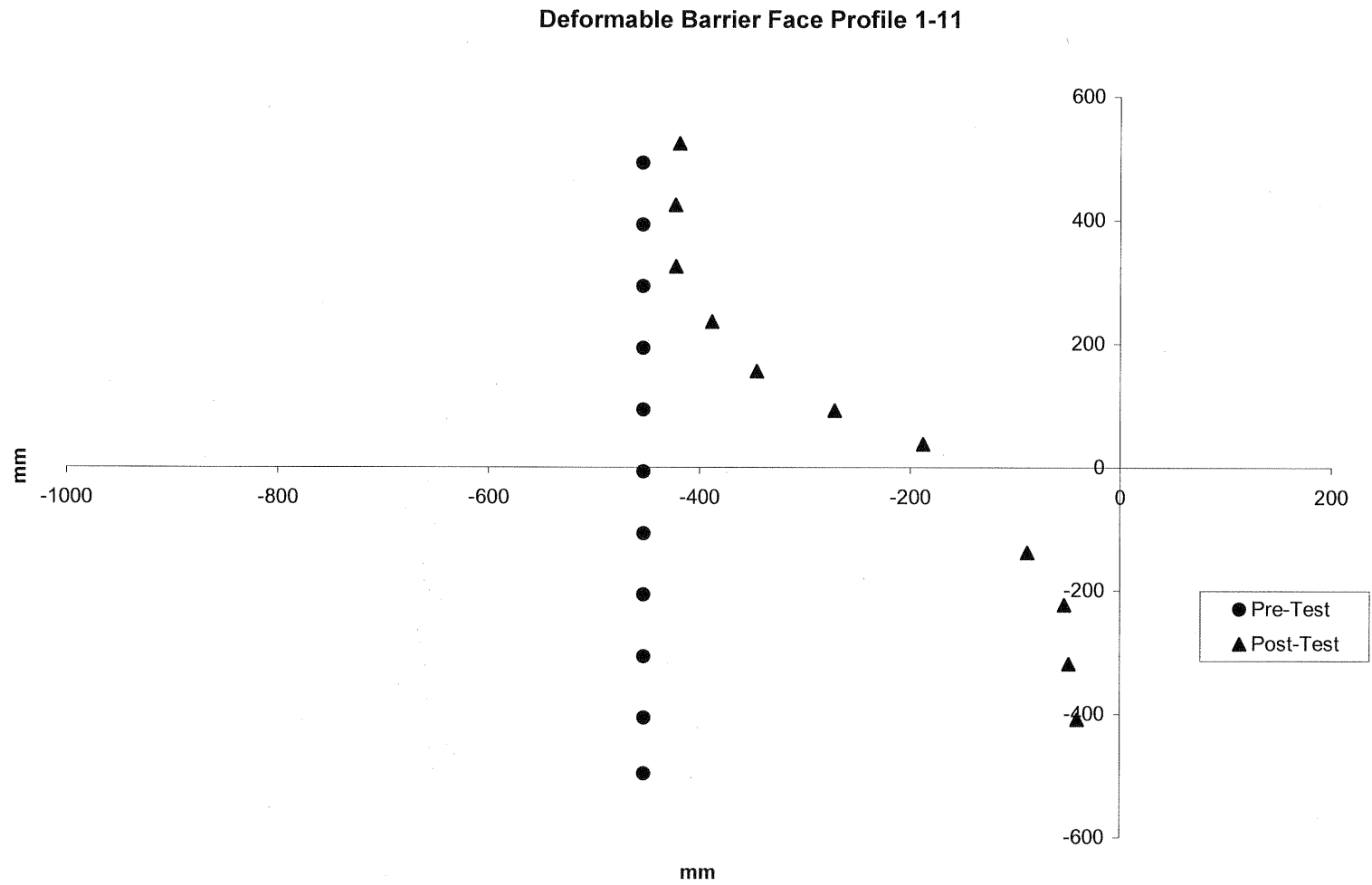
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45	-545.1	491.7	-405.5
46	-544.9	391.6	-405.9
47	-544.7	291.5	-406.5
48	-544.4	191.4	-406.8
49	-544.1	92.0	-407.1
50	-544.0	-7.7	-407.9
51	-543.7	-107.5	-408.4
52	-543.6	-207.1	-409.3
53	-543.5	-307.0	-409.8
54	-543.4	-407.4	-410.0
55	-543.5	-496.9	-411.0
56	-544.7	491.5	-521.4
57	-544.7	391.6	-521.5
58	-544.5	291.8	-522.1
59	-544.3	192.1	-522.2
60	-544.1	92.6	-522.3
61	-543.9	-7.4	-522.7
62	-543.8	-107.4	-523.1
63	-543.6	-207.0	-523.8
64	-543.6	-307.3	-524.6
65	-543.5	-406.9	-524.9
66	-543.6	-496.8	-525.7

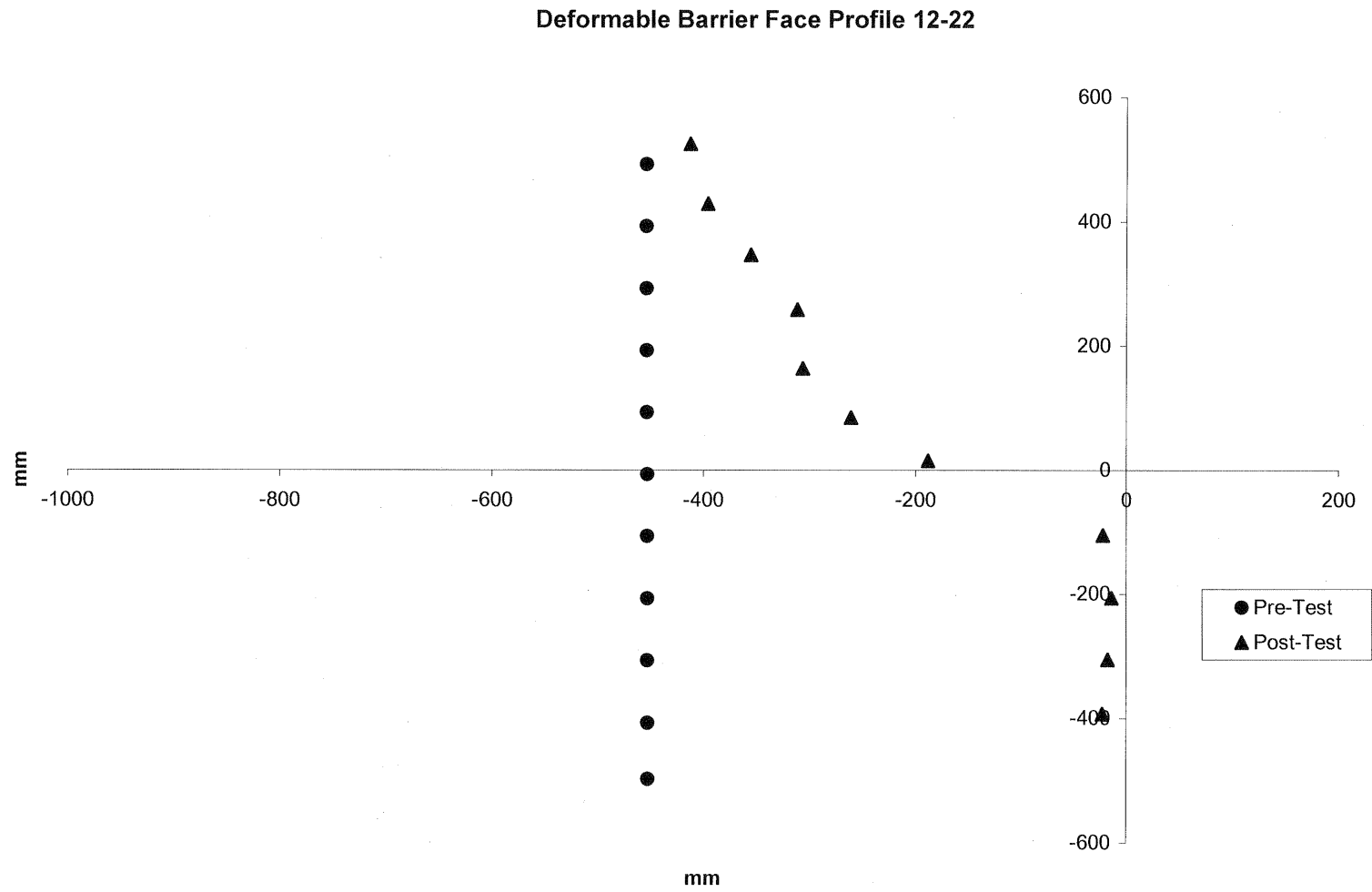
Post-Test

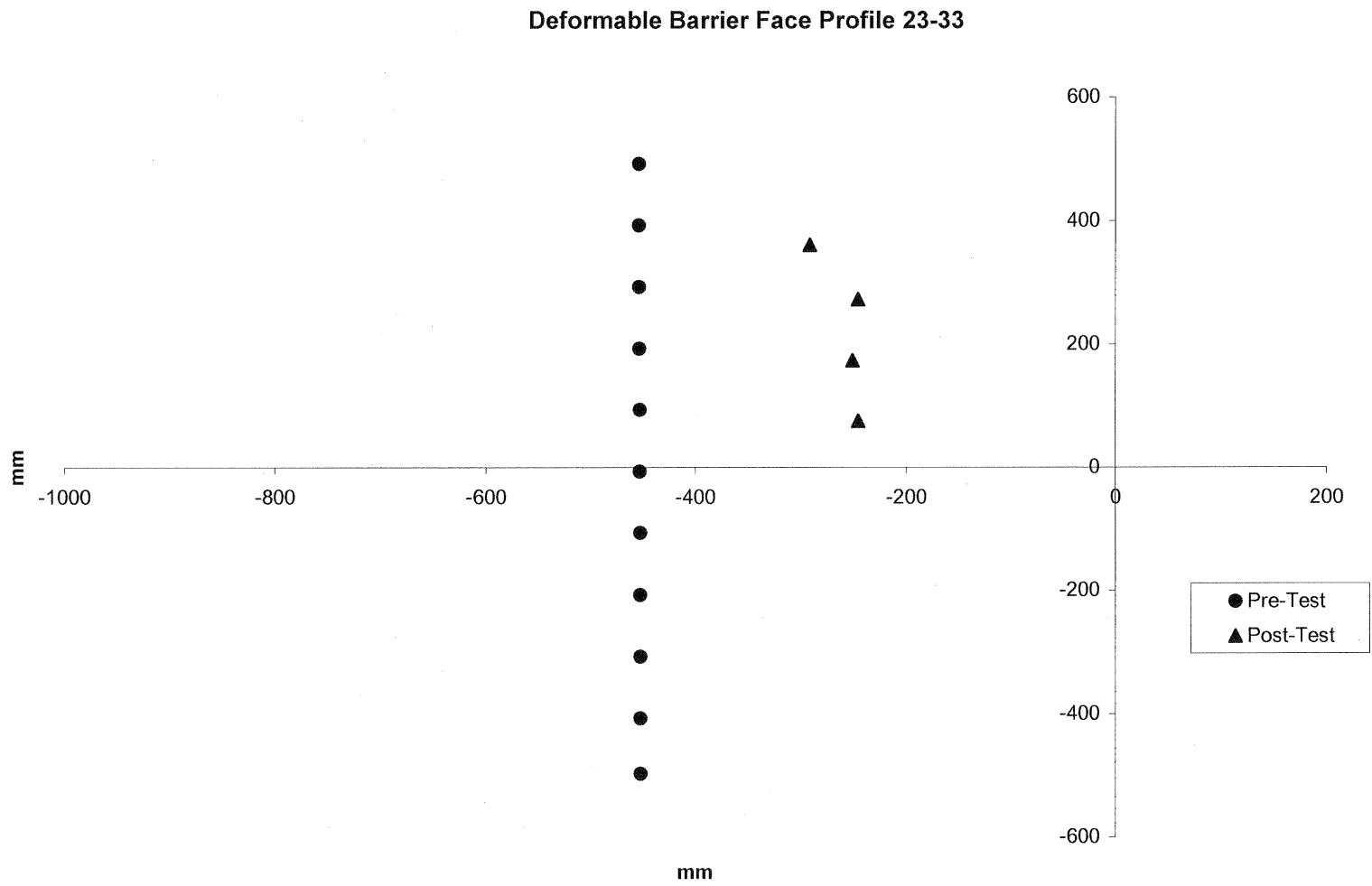
Index	Xmm	Ymm	Zmm
45	-369.7	510.5	-621.8
46	-346.3	413.8	-612.0
47	-322.8	317.3	-601.7
48	-297.2	221.0	-591.7
49	-279.6	132.7	-576.5
50	-300.2	43.2	-535.7
51	N/A	N/A	N/A
52	N/A	N/A	N/A
53	N/A	N/A	N/A
54	N/A	N/A	N/A
55	N/A	N/A	N/A
56	-416.1	489.7	-723.9
57	-393.4	392.7	-712.5
58	-370.5	295.7	-701.7
59	-347.8	199.1	-690.2
60	-325.3	102.9	-678.3
61	-324.1	31.6	-666.7
62	-349.8	-63.4	-647.3
63	-371.6	-159.1	-629.6
64	-380.8	-257.9	-617.4
65	-381.3	-357.2	-608.6
66	-382.9	-446.9	-600.4

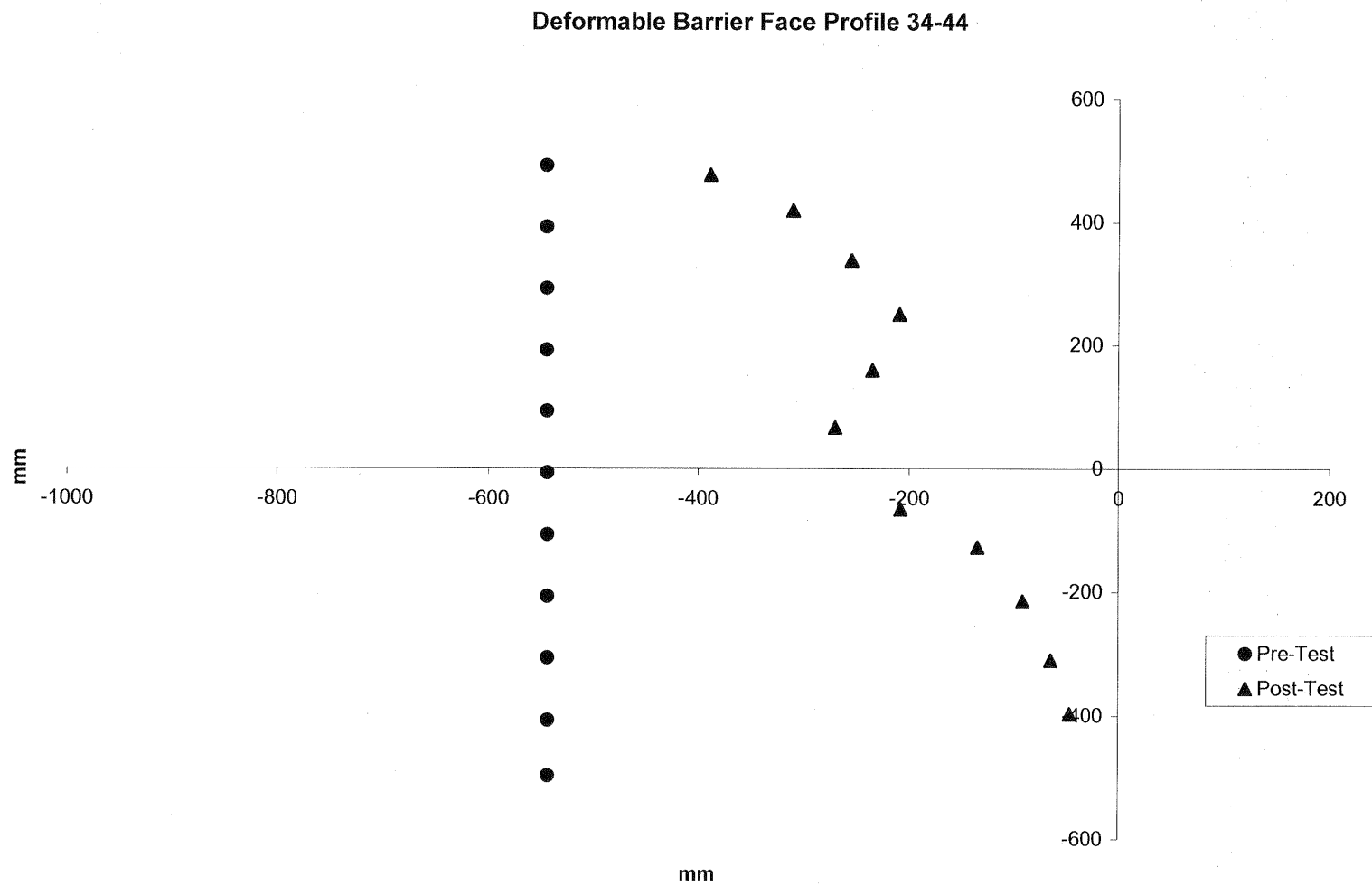
Difference

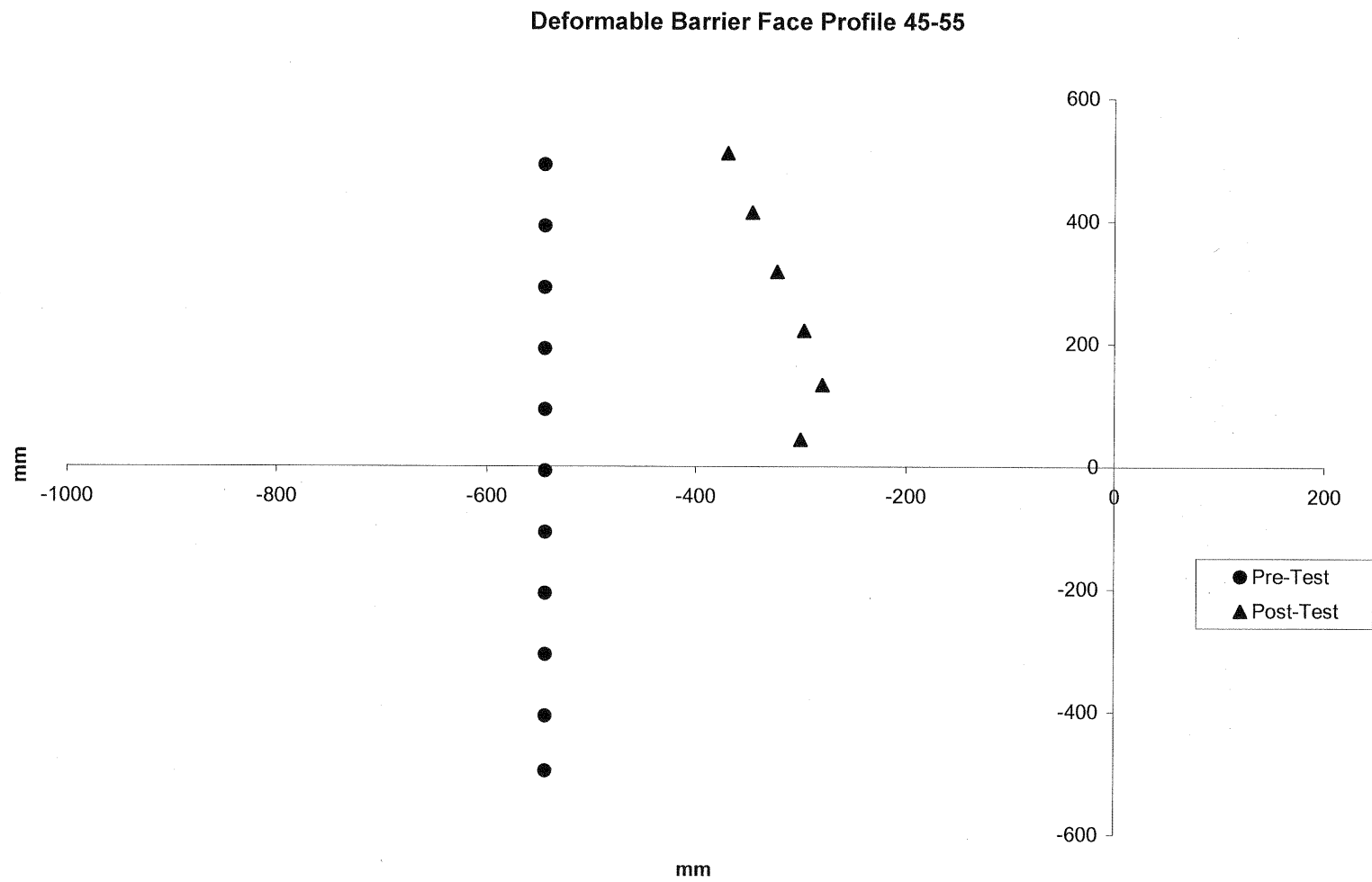
Index	Xmm	Ymm	Zmm
45	-175.4	-18.8	216.3
46	-198.6	-22.2	206.1
47	-221.9	-25.8	195.2
48	-247.2	-29.6	184.9
49	-264.5	-40.7	169.4
50	-243.8	-50.9	127.8
51	N/A	N/A	N/A
52	N/A	N/A	N/A
53	N/A	N/A	N/A
54	N/A	N/A	N/A
55	N/A	N/A	N/A
56	-128.6	1.8	202.5
57	-151.3	-1.1	191.0
58	-174.0	-3.9	179.6
59	-196.5	-7.0	168.0
60	-218.8	-10.3	156.0
61	-219.8	-39.0	144.0
62	-194.0	-44.0	124.2
63	-172.0	-47.9	105.8
64	-162.8	-49.4	92.8
65	-162.2	-49.7	83.7
66	-160.7	-49.9	74.7

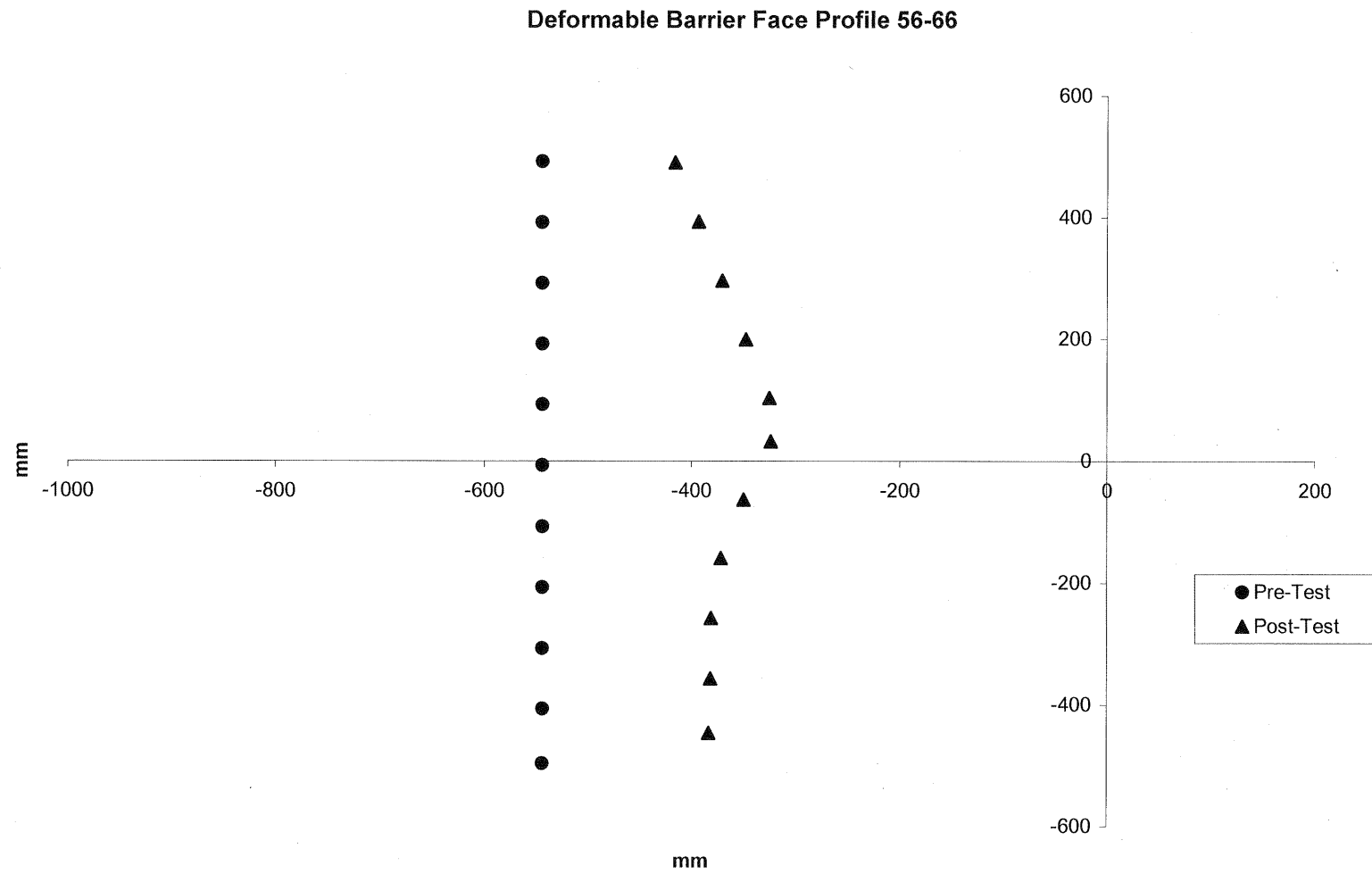












DATA SHEET NO. 21
DEFORMABLE BARRIER LOAD CELL LOCATIONS

Vehicle Year/Make/Model/Body Style: 2006/Ford/F250/Pickup
 Test Date: 11/08/07

ROW ONE

1	11	21	31	41	51	61	71	81
2	12	22	32	42	52	62	72	82
3	13	23	33	43	53	63	73	83
4	14	24	34	44	54	64	74	84
5	15	25	35	45	55	65	75	85
6	16	26	36	46	56	66	76	86
7	17	27	37	47	57	67	77	87
8	18	28	38	48	58	68	78	88
9	19	29	39	49	59	69	79	89
10	20	30	40	50	60	70	80	90

ROW TEN

⋮
Track C/L

90 LOAD CELLS
 10 ROWS
 9 COLUMNS

FRONT VIEW

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



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View



Figure A-8 Post-Test Left Rear View

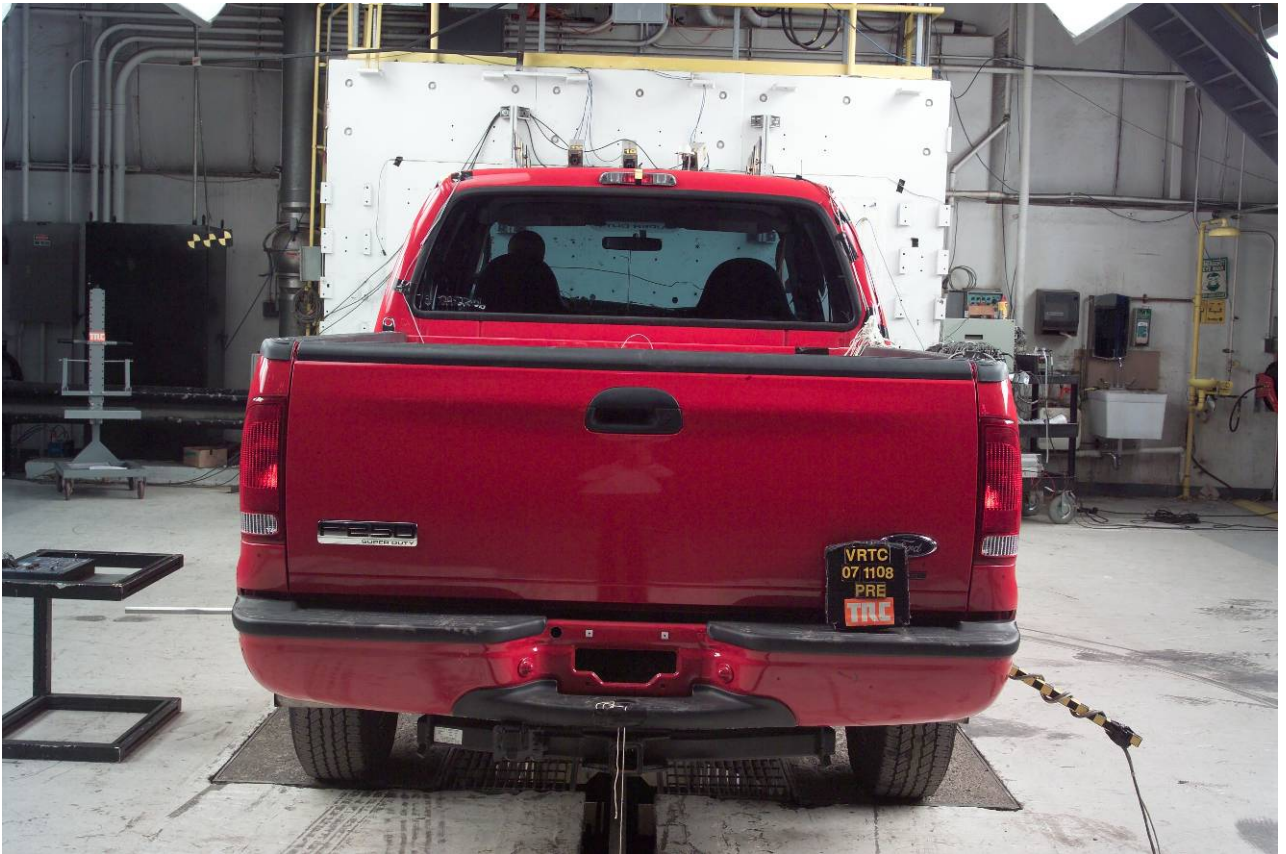


Figure A-9 Pre-Test Rear View



Figure A-10 Post-Test Rear View



Figure A-11 Pre-Test Right Rear View



Figure A-12 Post-Test Right Rear View



Figure A-13 Pre-Test Right Side View



Figure A-14 Post-Test Right Side View



Figure A-15 Pre-Test Right Front View

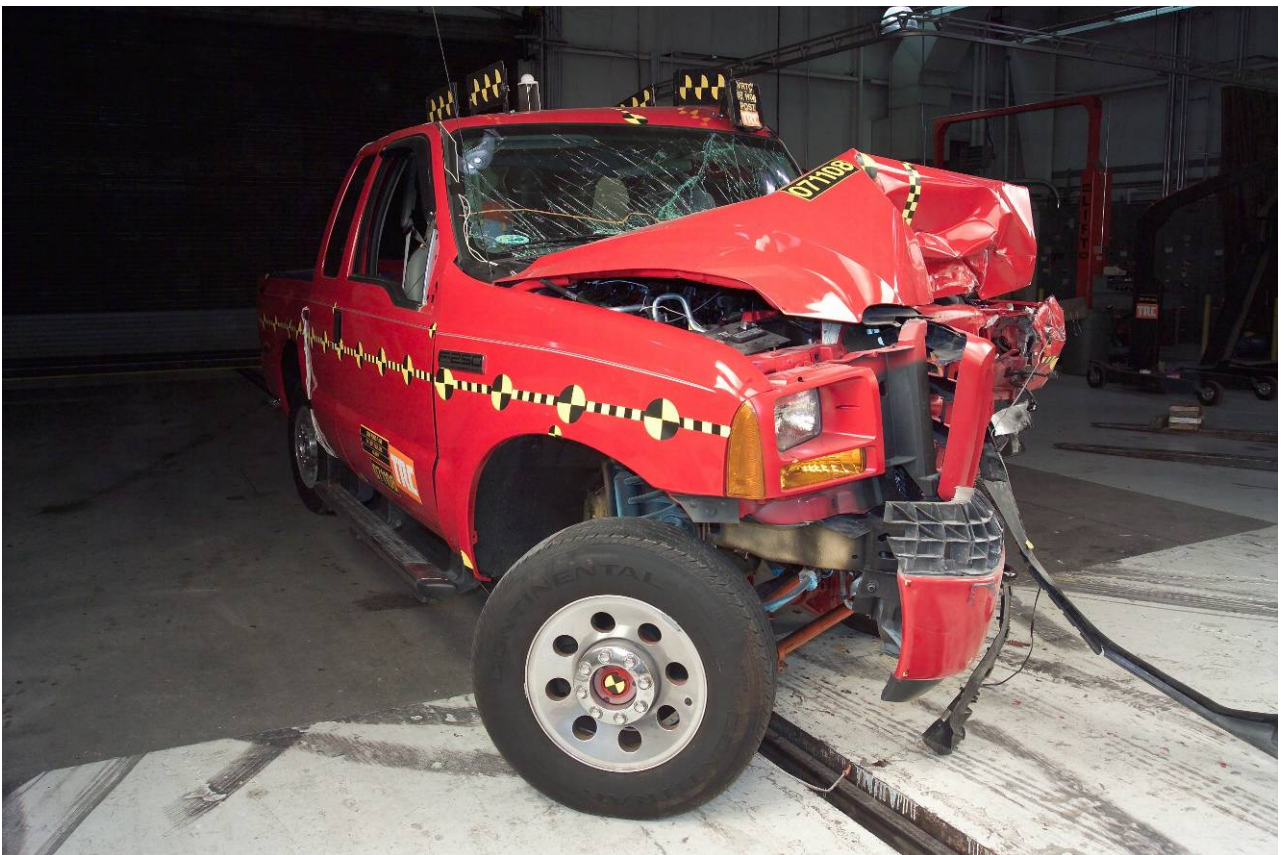


Figure A-16 Post-Test Right Front View



Figure A-17 Pre-Test Overhead View

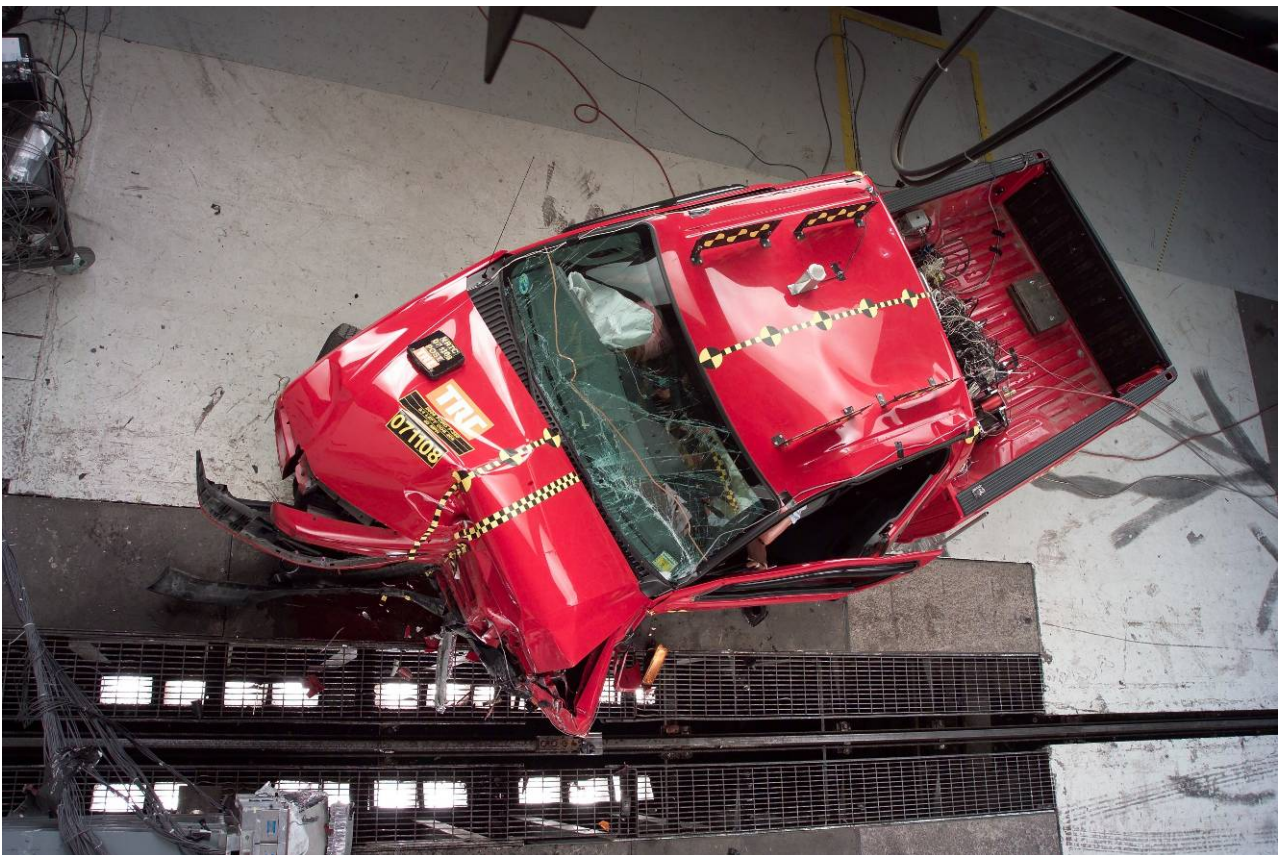


Figure A-18 Post-Test Overhead View



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

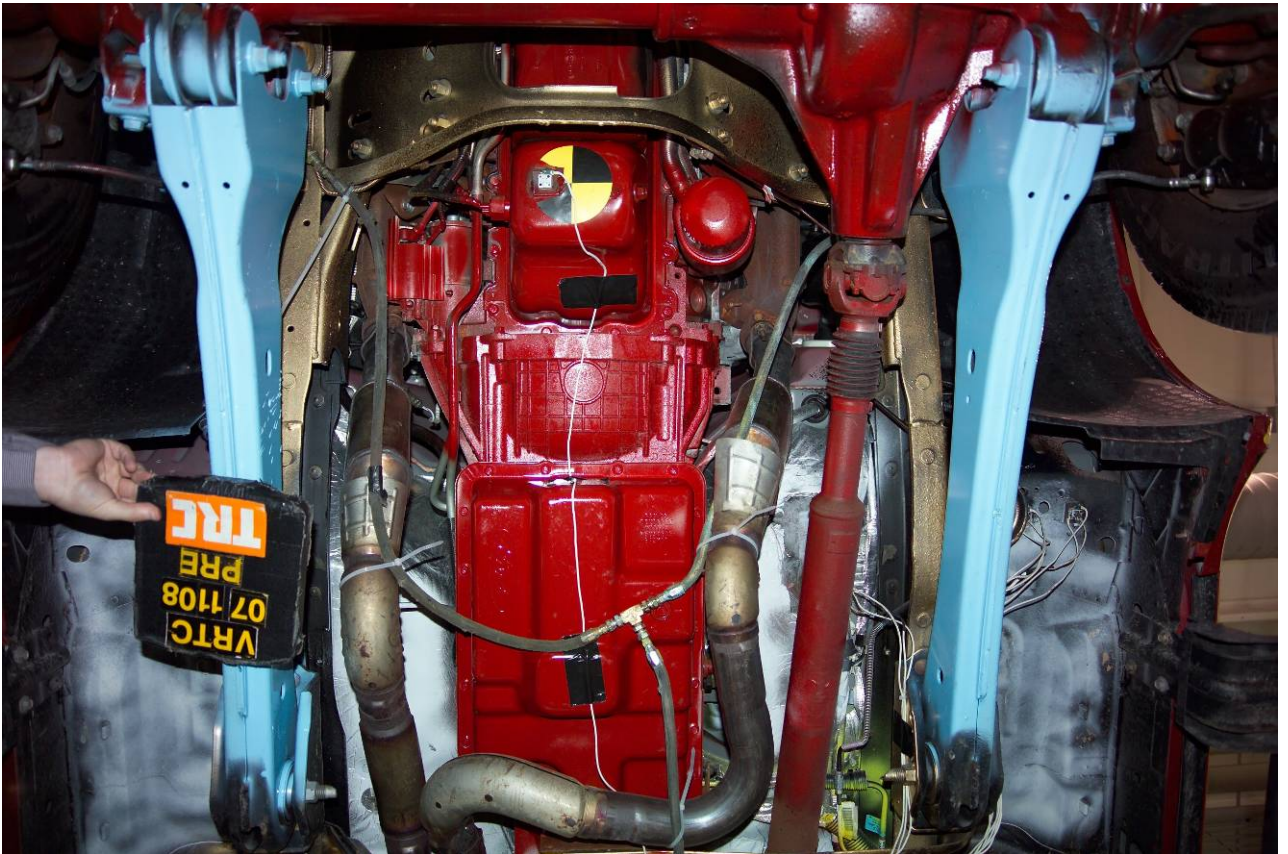


Figure A-23 Pre-Test Mid Front Underbody View

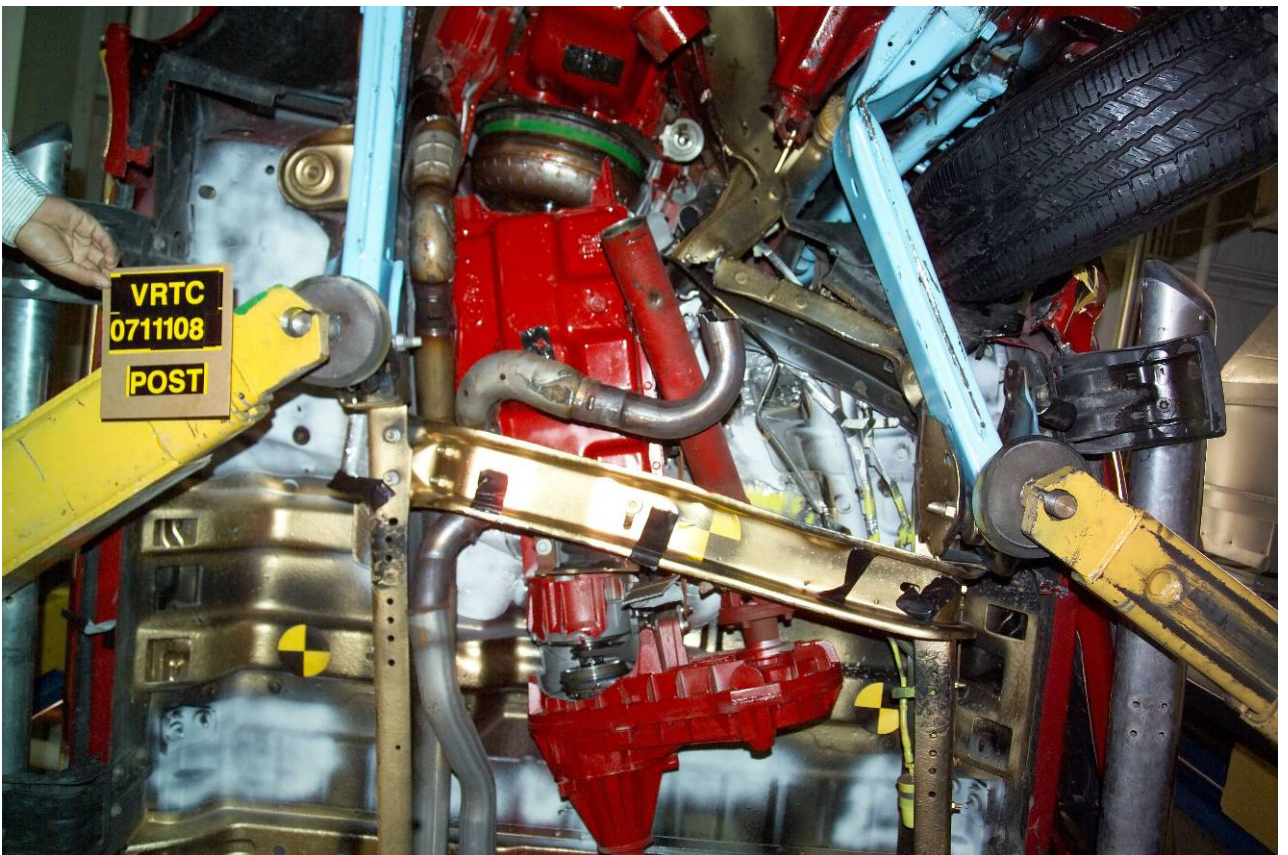


Figure A-24 Post-Test Mid Front Underbody View

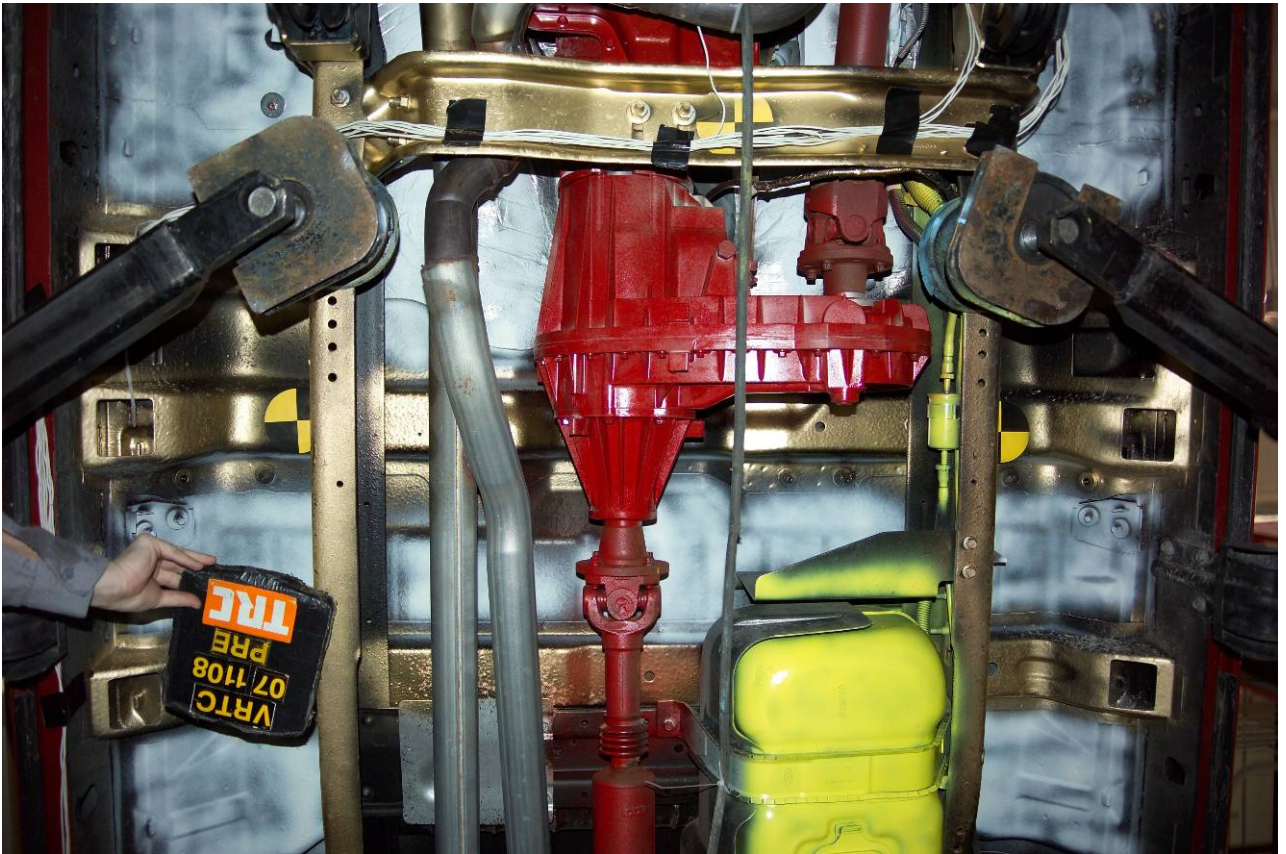


Figure A-25 Pre-Test Mid Underbody View

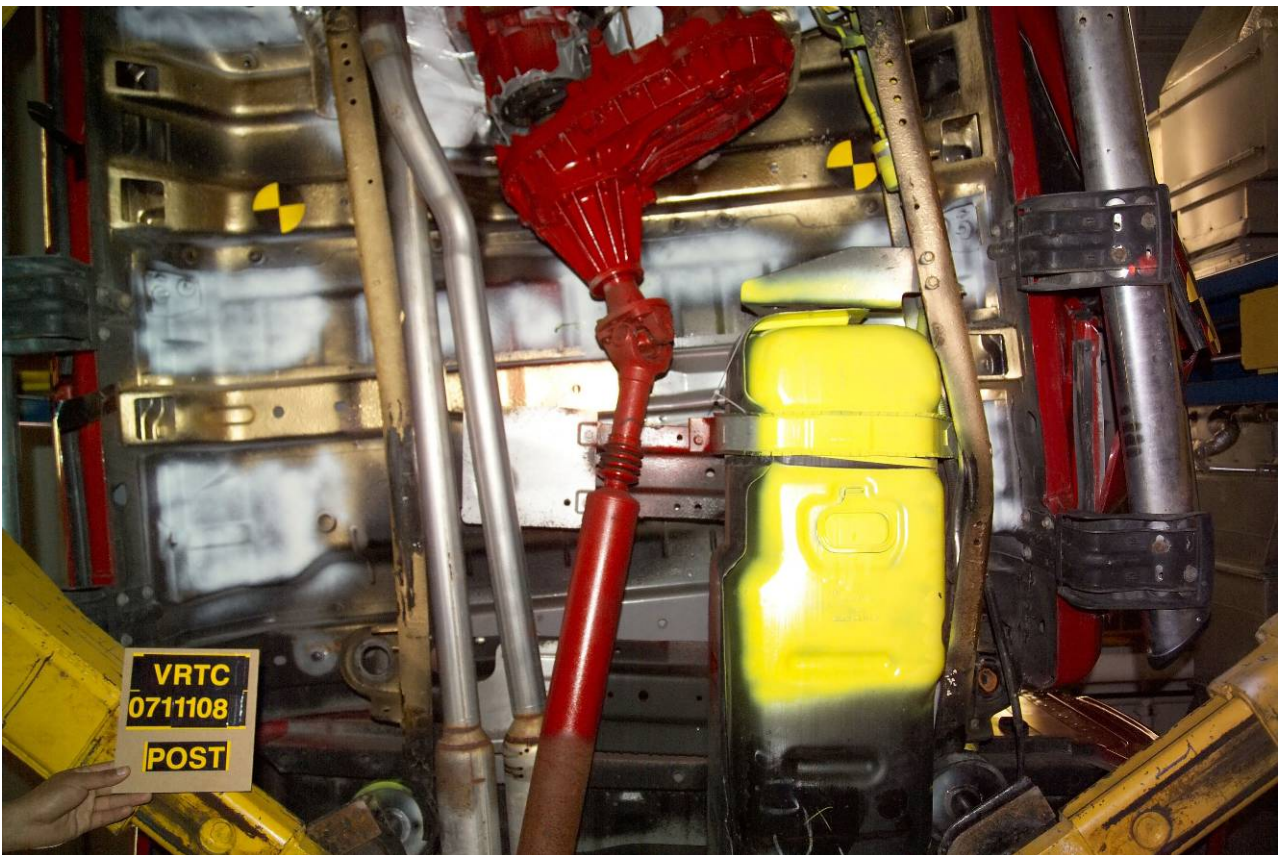


Figure A-26 Post-Test Mid Underbody View

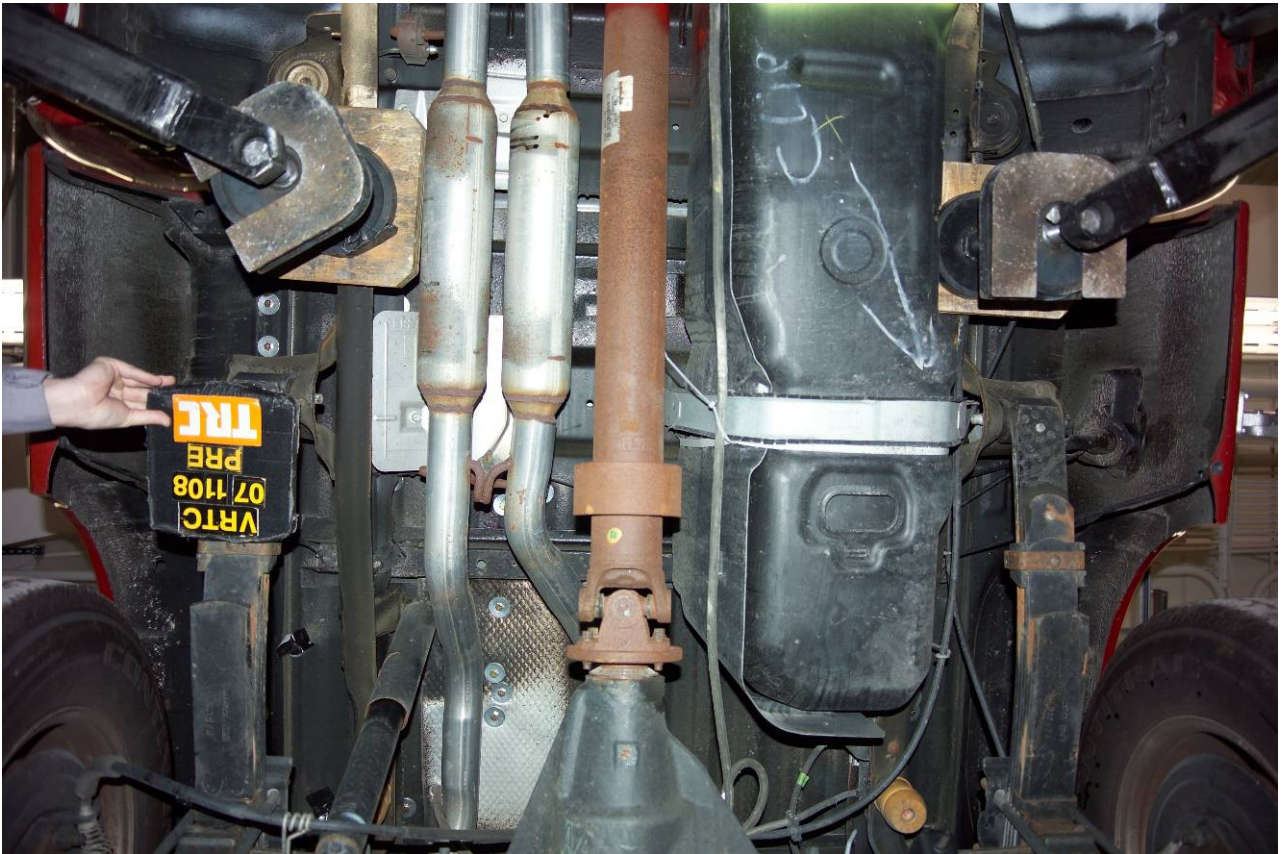


Figure A-27 Pre-Test Mid Rear Underbody View

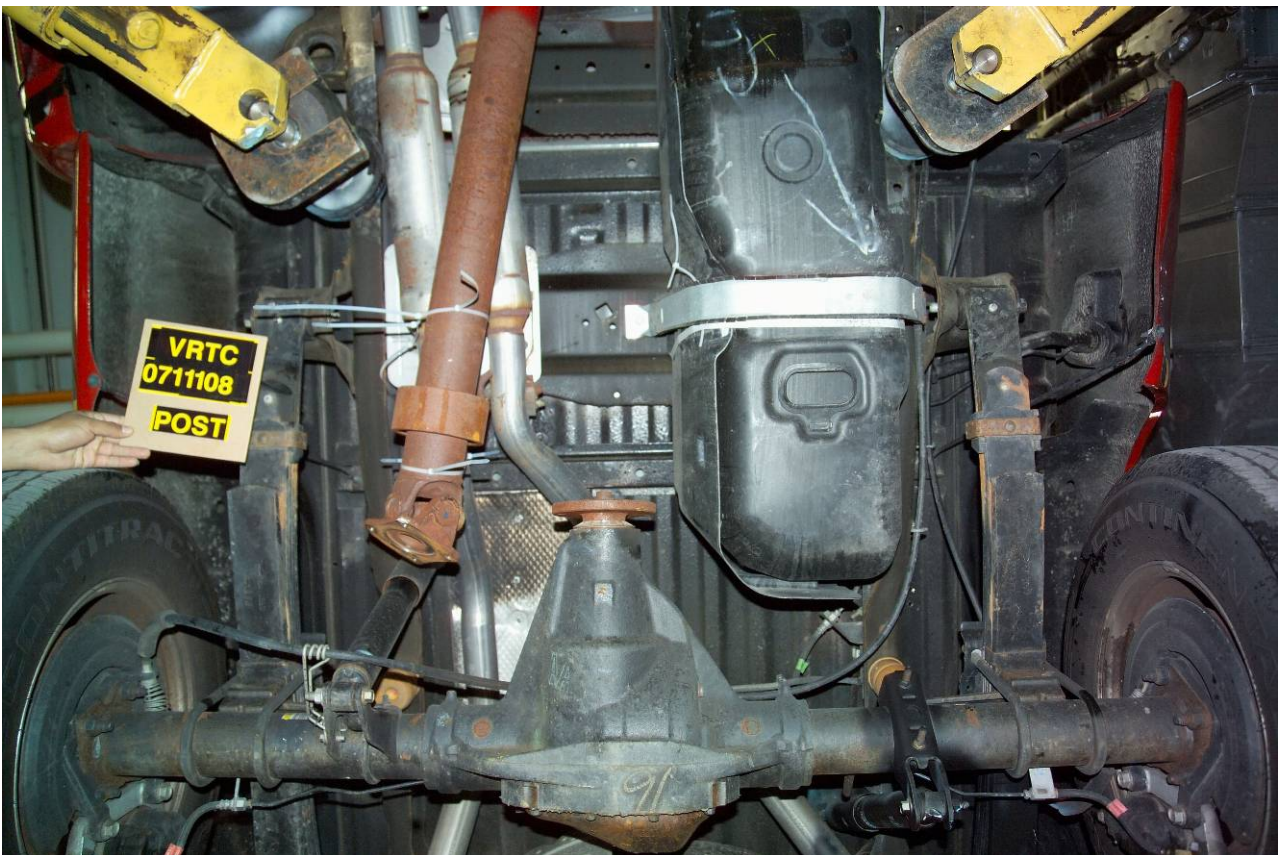


Figure A-28 Post-Test Mid Rear Underbody View



Figure A-29 Pre-Test Rear Underbody View

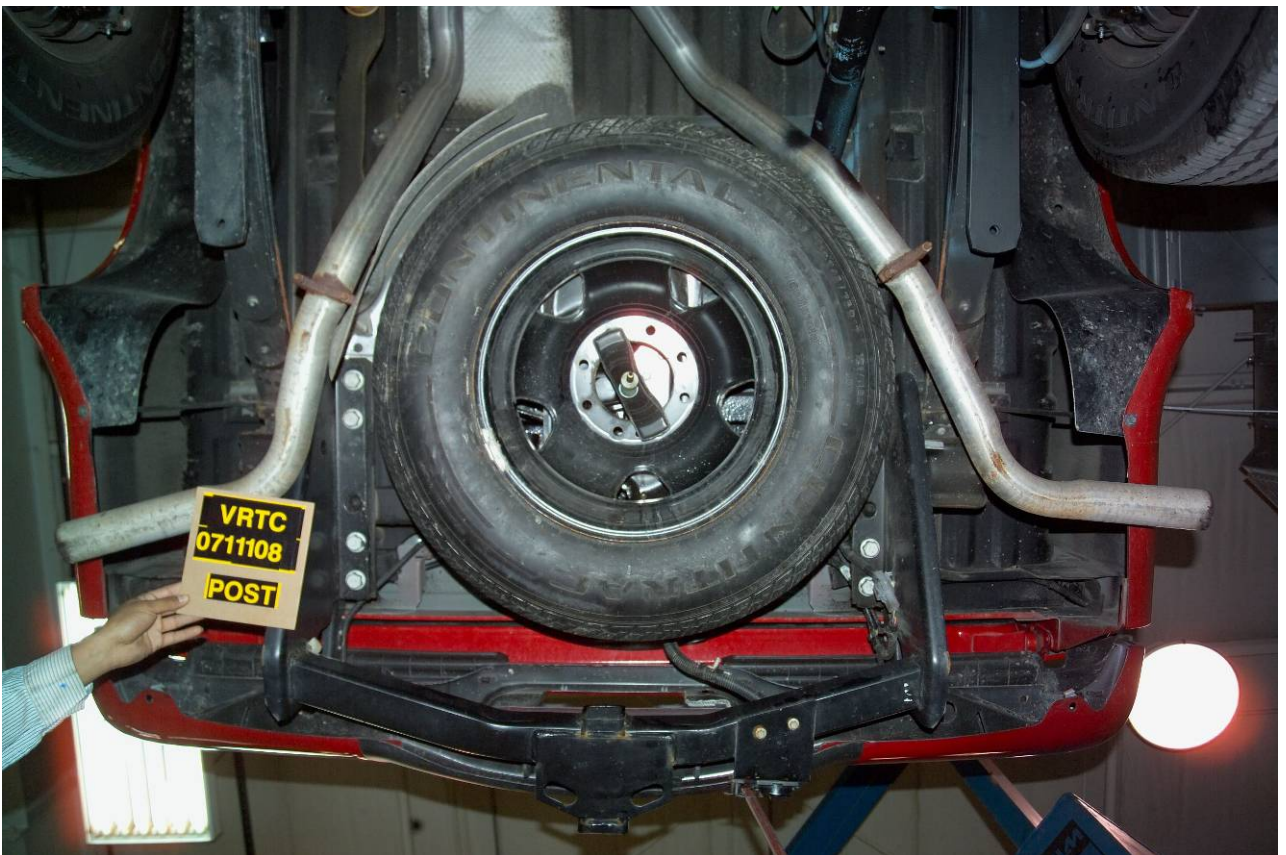


Figure A-30 Post-Test Rear Underbody View



Figure A-31 Pre-Test Fuel Tank View

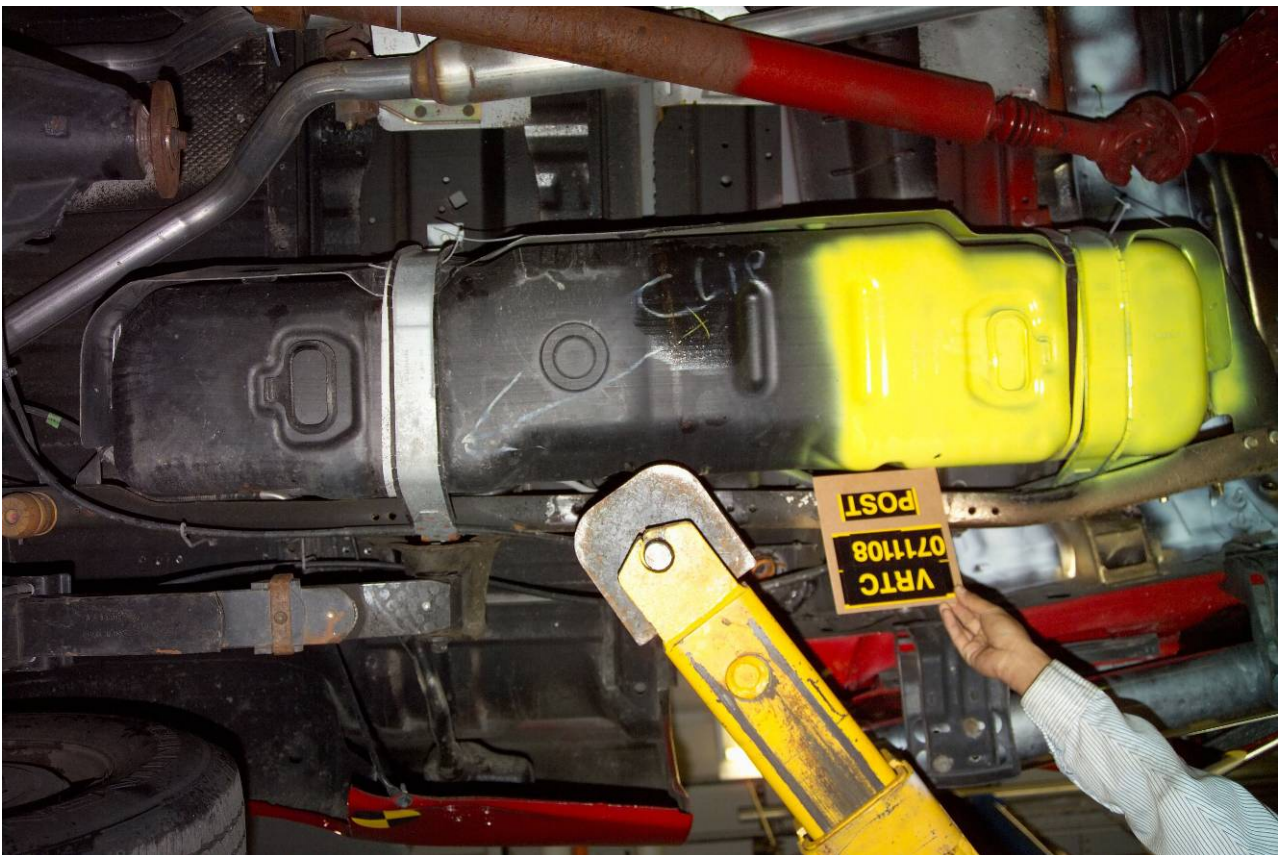


Figure A-32 Post-Test Fuel Tank View



Figure A-33 Pre-Test Fuel Filler Neck View



Figure A-34 Post-Test Fuel Filler Neck View



Figure A-35 Pre-Test Fuel Filler Cap View



Figure A-36 Post-Test Fuel Filler Cap View



Figure A-37 Pre-Test Engine Compartment View

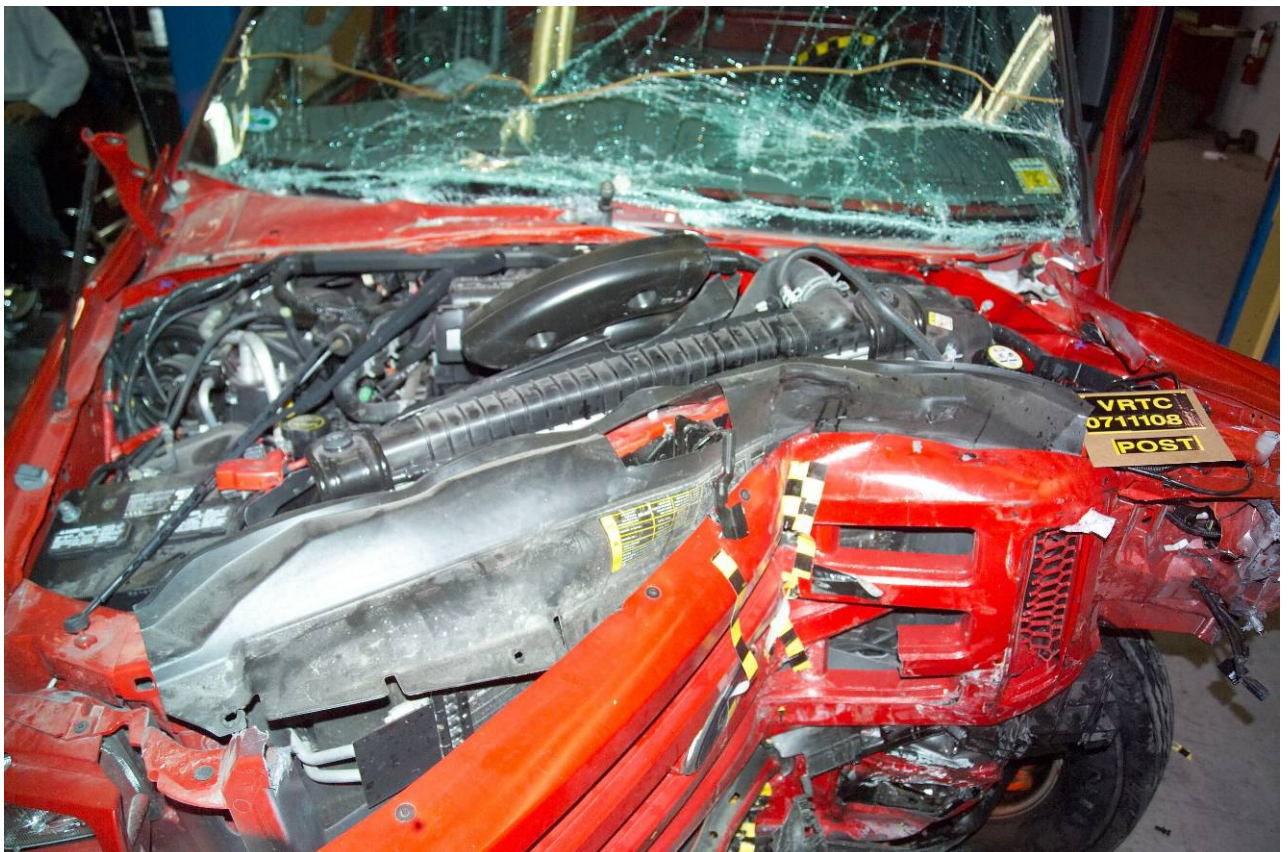


Figure A-38 Post-Test Engine Compartment View



Figure A-39 Pre-Test _____



Figure A-40 Pre-Test _____



Figure A-41 Pre-Test _____



Figure A-42 Pre-Test _____



Figure A-43 Pre-Test Windshield View



Figure A-44 Post-Test Windshield View



Figure A-45 Post-Test Windshield without Cowl – Left View



Figure A-46 Post-Test Windshield without Cowl - Front View



Figure A-47 Post-Test Windshield without Cowl – Right View

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Figure A-48 Pre-Test Driver and Passenger Dummies through Windshield View



Figure A-49 Post-Test Driver and Passenger Dummies through Windshield View

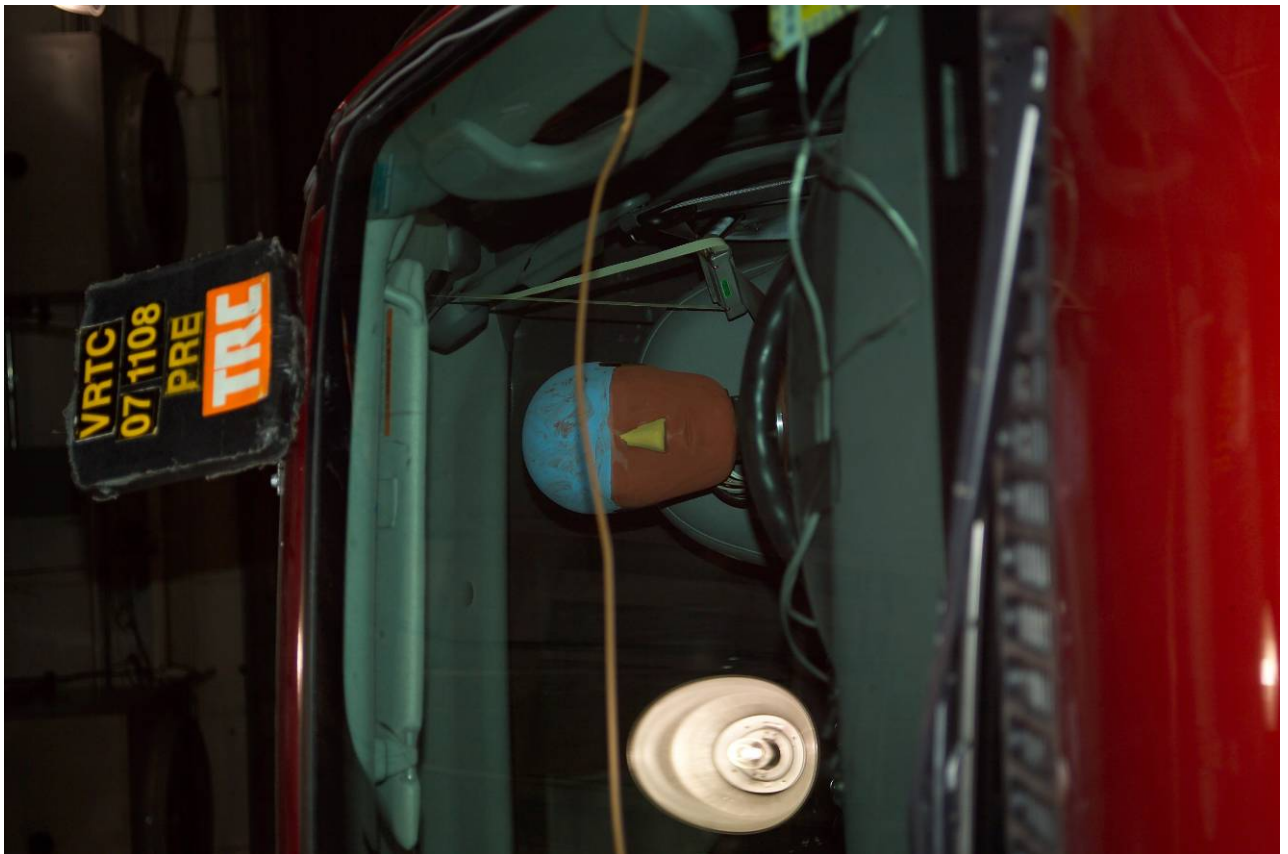


Figure A-50 Pre-Test Driver Dummy - View 1

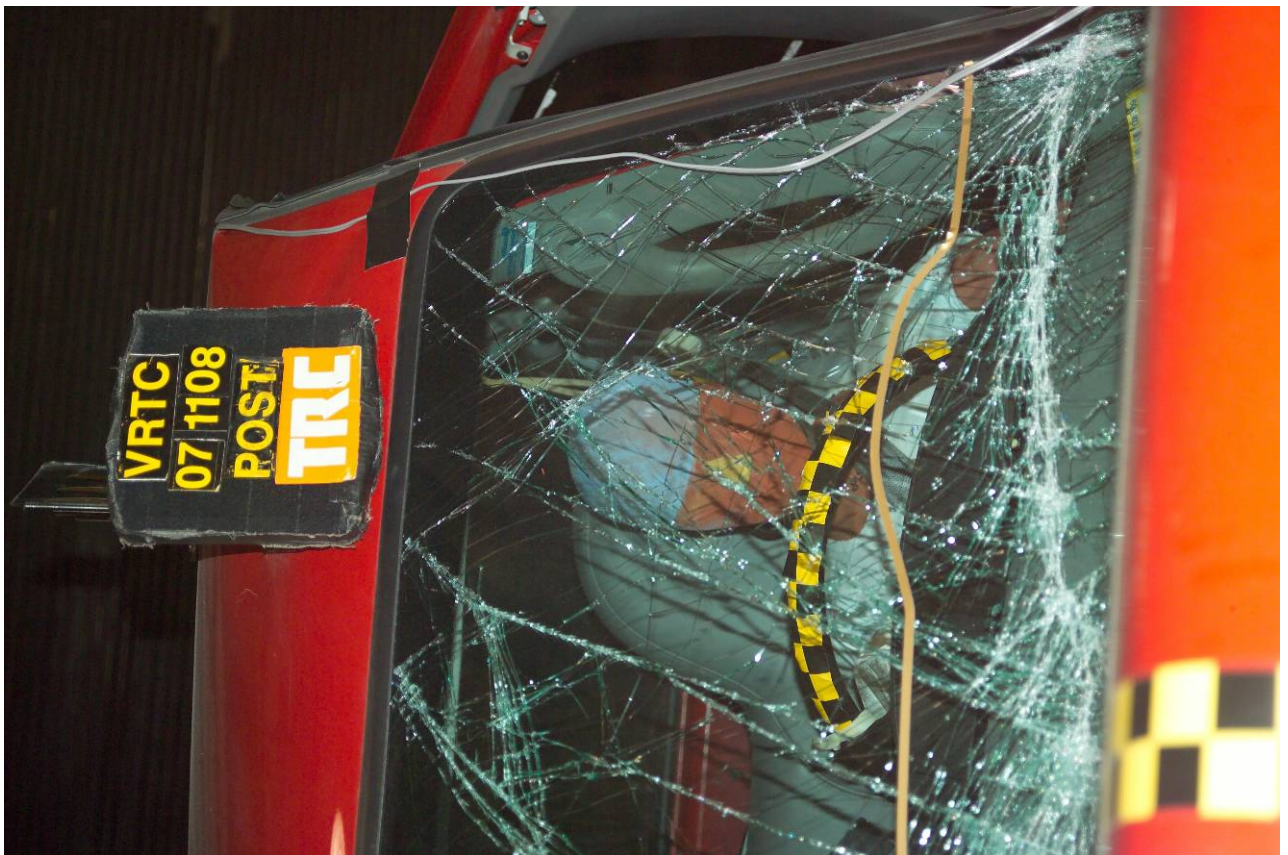


Figure A-51 Post-Test Driver Dummy - View 1



Figure A-52 Pre-Test Driver Dummy - View 2



Figure A-53 Post-Test Driver Dummy - View 2



Figure A-54 Pre-Test Driver Dummy - View 3



Figure A-55 Post-Test Driver Dummy - View 3



Figure A-56 Pre-Test Driver Dummy - View 4



Figure A-57 Post-Test Driver Dummy - View 4



Figure A-58 Post-Test Driver Dummy Seat Placement View

Intentionally Left Blank



Figure A-59 Pre-Test Driver Dummy Foot Placement View



Figure A-60 Post-Test Driver Dummy Foot Placement – View 1



Figure A-61 Post-Test Driver Dummy Foot Placement - View 2

Intentionally Left Blank



Figure A-62 Post-Test Driver Floorpan Deformation View



Figure A-63 Post-Test Driver Toeboard Deformation View

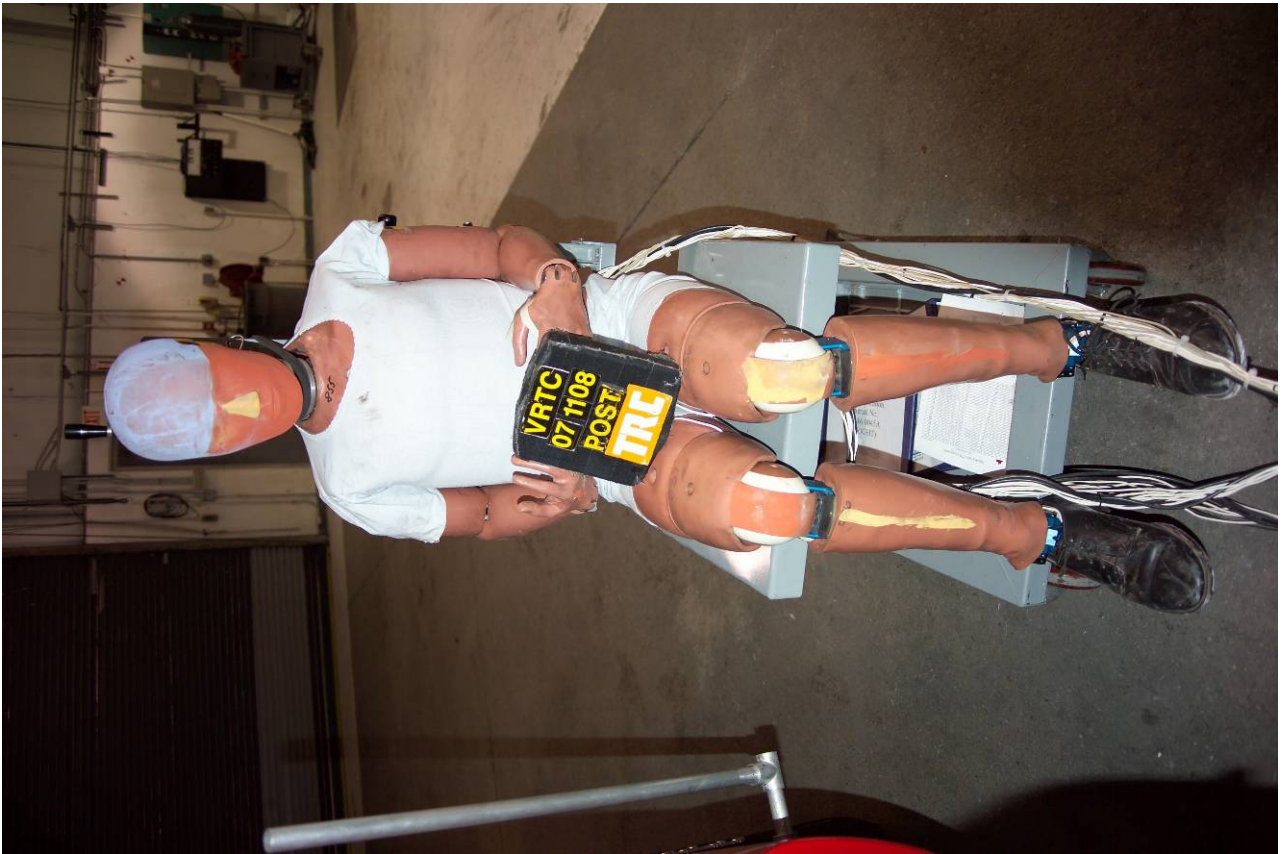


Figure A-64 Post-Test Driver Dummy Overall Contact View



Figure A-65 Post-Test Driver Dummy Head Contact View



Figure A-66 Post-Test Driver Dummy Chest Contact View



Figure A-67 Post-Test Driver Dummy Knee Contact View



Figure A-68 Post-Test Driver Instrument Panel Damage View



Figure A-69 Post-Test Driver Dummy Belt Spoolout View



Figure A-70 Pre-Test Passenger Dummy - View 1



Figure A-71 Post-Test Passenger Dummy - View 1



Figure A-72 Pre-Test Passenger Dummy - View 2



Figure A-73 Post-Test Passenger Dummy - View 2



Figure A-74 Pre-Test Passenger Dummy - View 3



Figure A-75 Post-Test Passenger Dummy - View 3



Figure A-76 Post-Test Passenger Dummy Seat Placement View



Figure A-77 Pre-Test Passenger Dummy Foot Placement View



Figure A-78 Post-Test Passenger Floorpan Deformation View



Figure A-79 Post-Test Passenger Toeboard Deformation View



Figure A-80 Post-Test Passenger Dummy Overall Contact View



Figure A-81 Post-Test Passenger Dummy Head Contact – View 1



Figure A-82 Post-Test Passenger Dummy Head Contact – View 2



Figure A-83 Post-Test Passenger Dummy Head Contact – View 3



Figure A-84 Post-Test Passenger Dummy Head Contact – View 4



Figure A-85 Post-Test Passenger Dummy Knee Contact View



Figure A-86 Post-Test Passenger Dash Damage View

Intentionally Left Blank



Figure A-87 Pre-Test Barrier Front View



Figure A-88 Post-Test Barrier Front View



Figure A-89 Pre-Test Barrier Left Side View



Figure A-90 Post-Test Barrier Left Side View



Figure A-91 Pre-Test Barrier Right Side View



Figure A-92 Post-Test Barrier Right Side View



Figure A-93 Pre-Test Barrier Top View



Figure A-94 Post-Test Barrier Top View



Figure A-95 Certification Label View



Figure A-96 Tire and Loading Information Label View

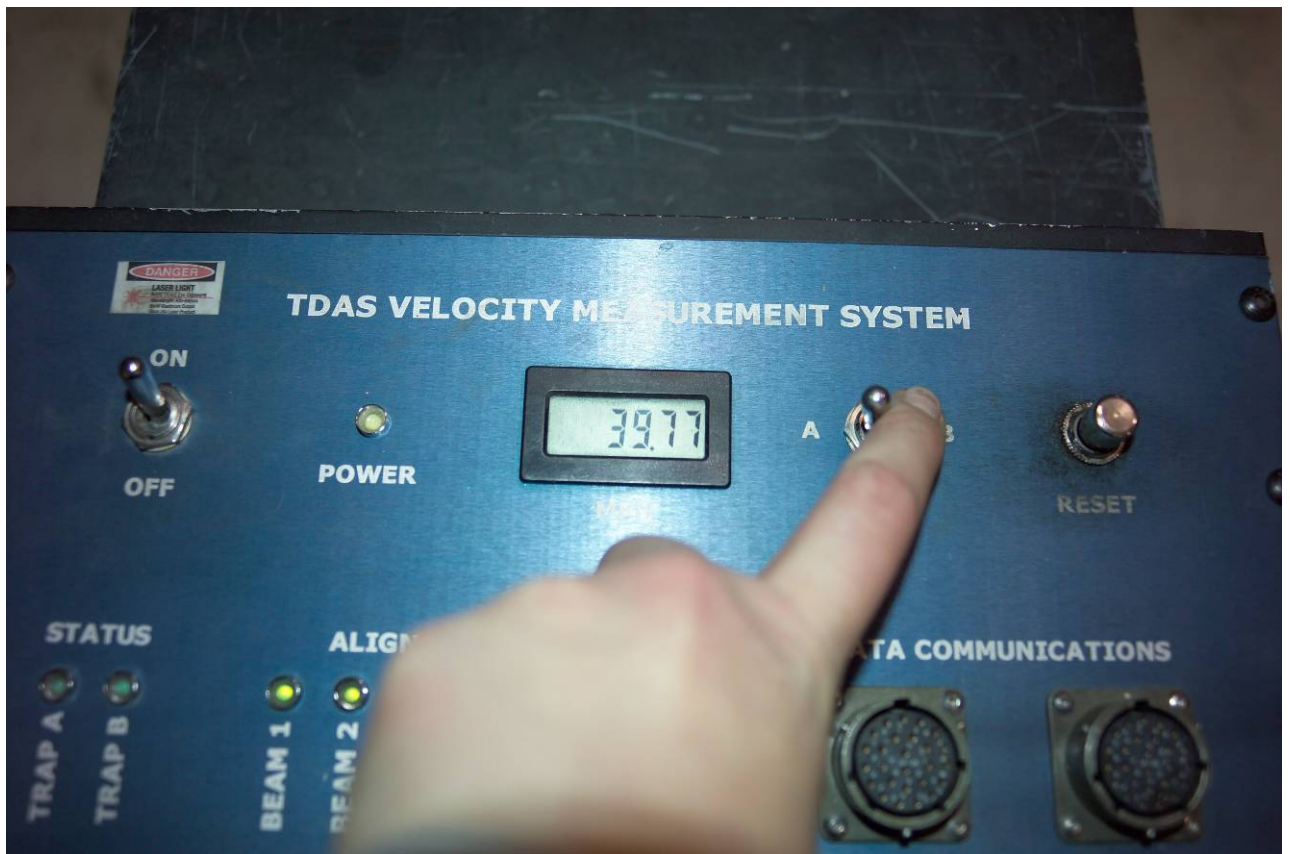


Figure A-97 Digital Light Trap Read-Out – View 1

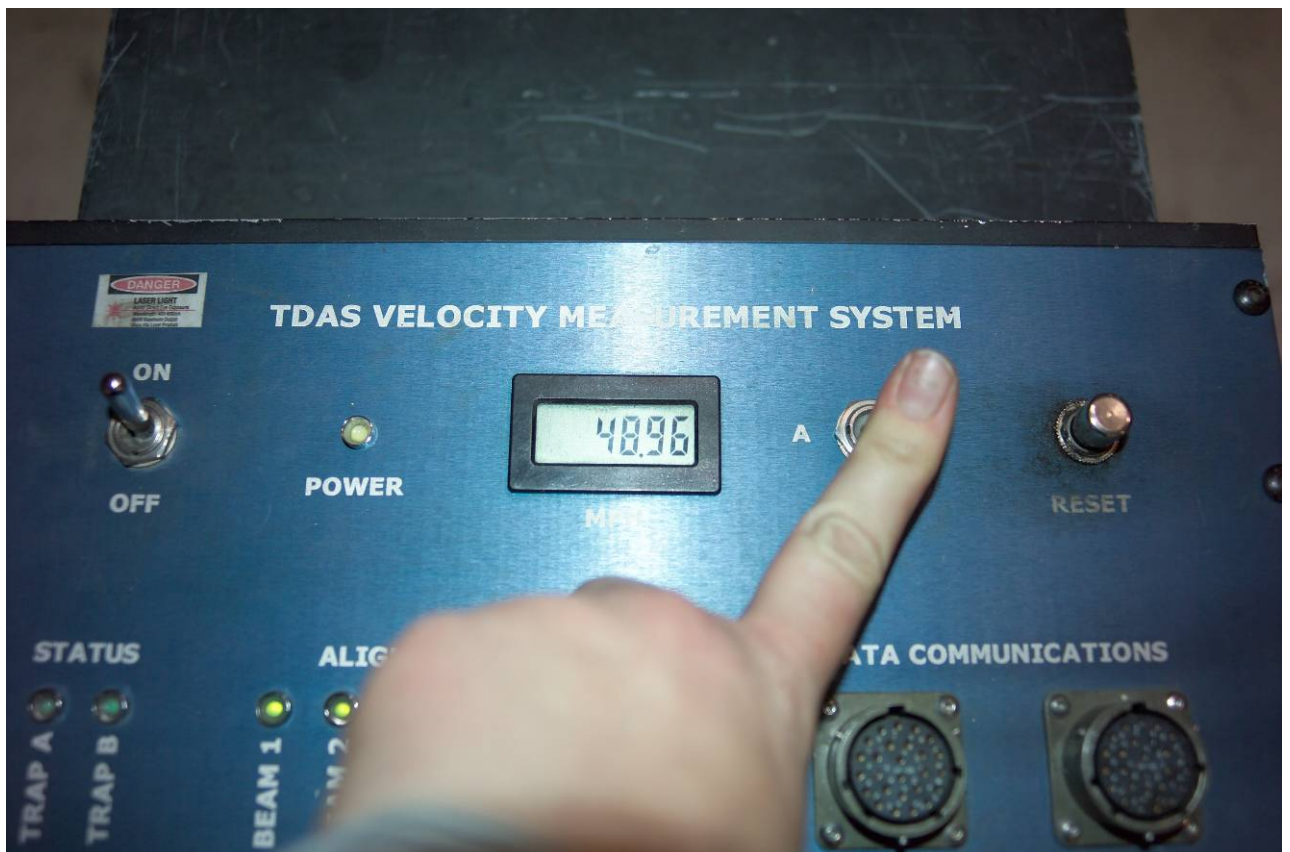


Figure A-98 Digital Light Trap Read-Out – View 2

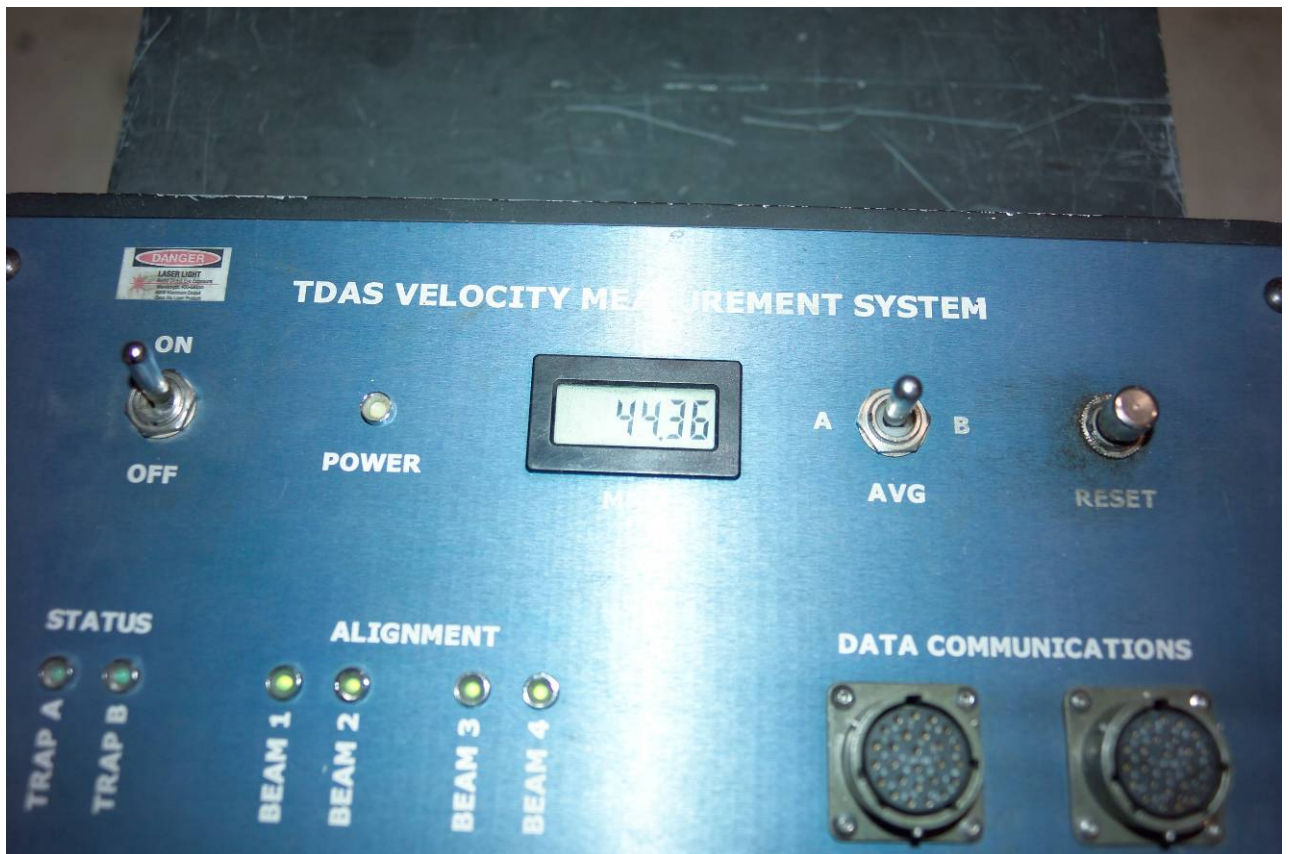


Figure A-99 Digital Light Trap Read-Out – View 3



Figure A-100 Post-Test Driver Floorpan – View 1



Figure A-101 Pre-Test Driver Floorpan – View 2



Figure A-102 Post-Test Driver Floorpan – View 2



Figure A-103 Pre-Test Driver Floorpan – View 3



Figure A-104 Post-Test Driver Floorpan – View 3



Figure A-105 Pre-Test Driver Floorpan – View 4



Figure A-106 Post-Test Driver Floorpan – View 4



Figure A-107 Pre-Test Driver Floorpan – View 5



Figure A-108 Post-Test Driver Floorpan – View 5



Figure A-109 Pre-Test Driver Floorpan – View 6



Figure A-110 Post-Test Driver Floorpan – View 6

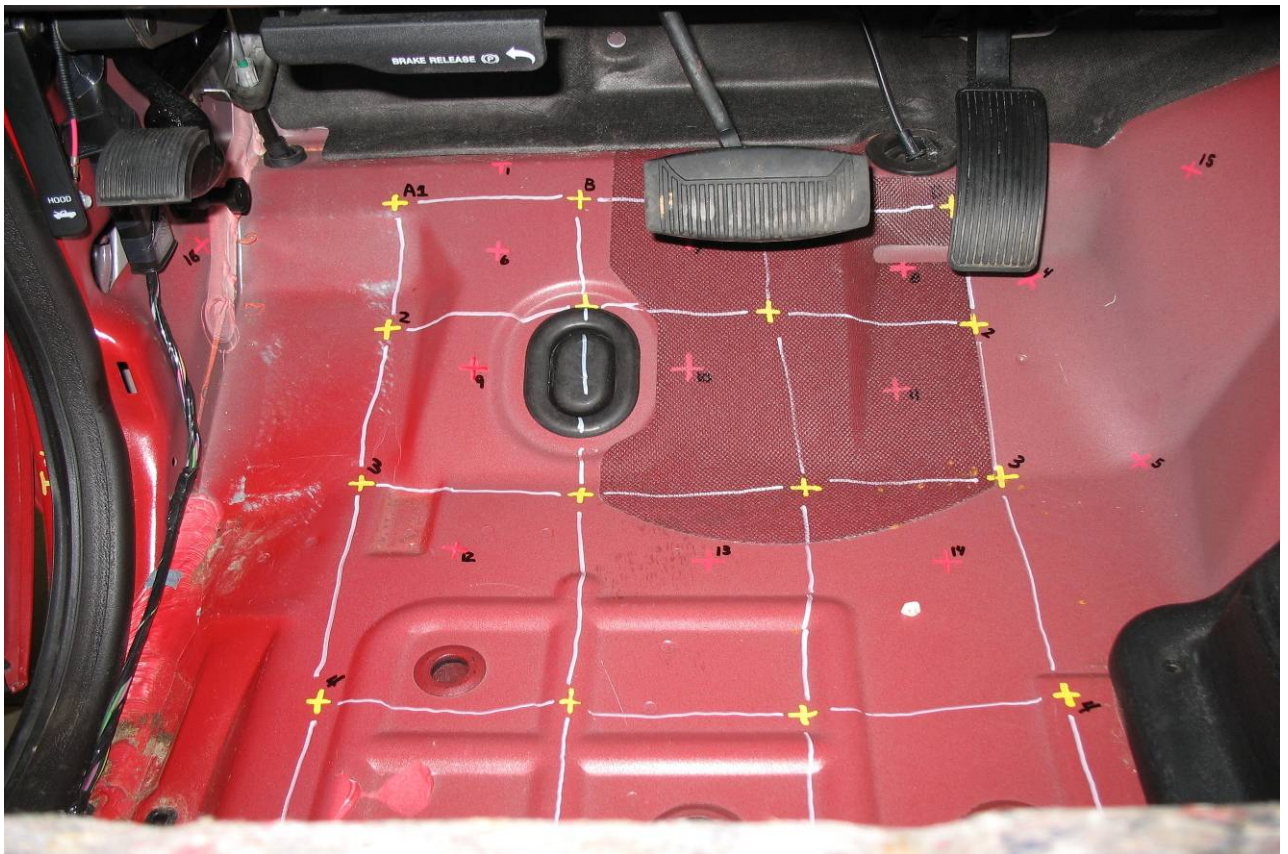


Figure A-111 Pre-Test Driver Floorpan – View 7

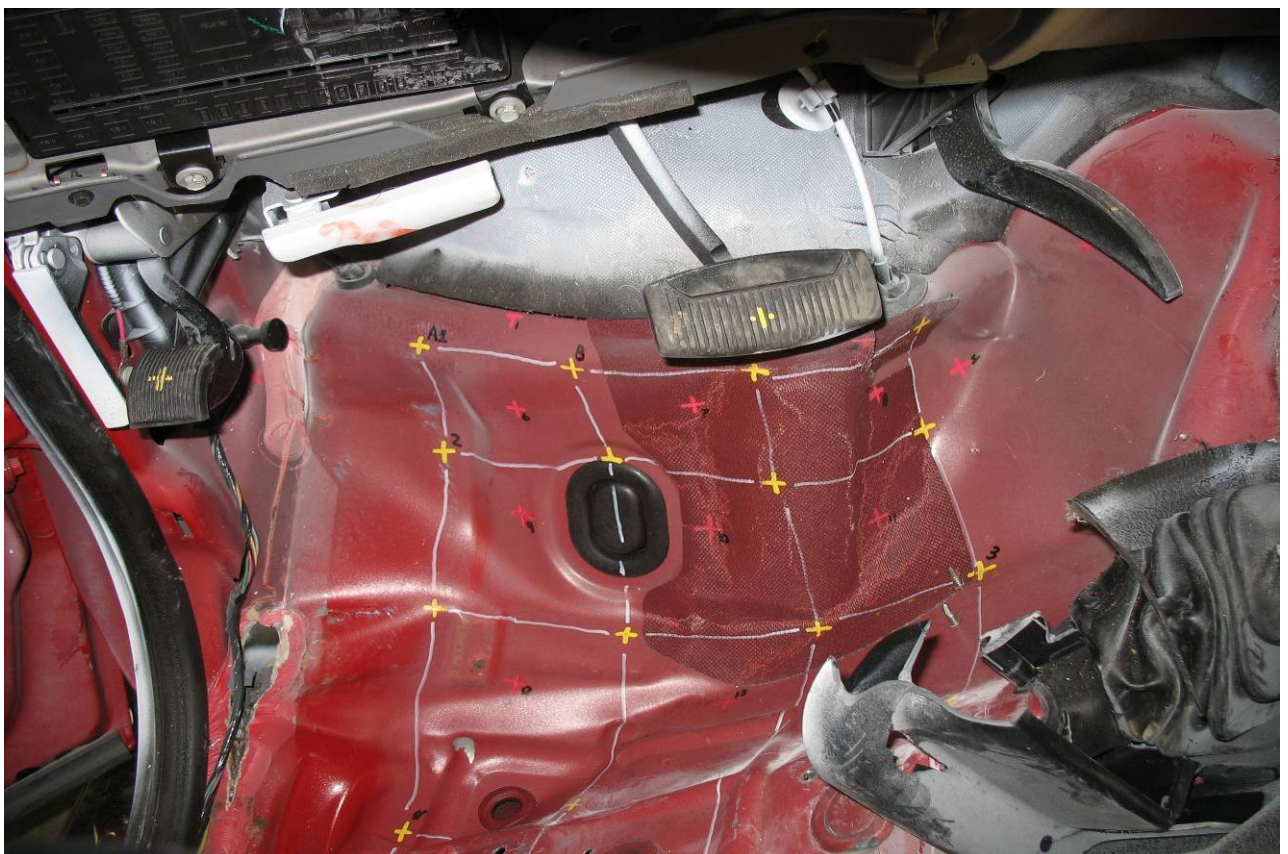


Figure A-112 Post-Test Driver Floorpan – View 7



Figure A-113 Pre-Test Driver Floorpan – View 8



Figure A-114 Post-Test Driver Floorpan – View 8



Figure A-115 Pre-Test Brake Pedal View



Figure A-116 Post-Test Brake Pedal View



Figure A-117 Pre-Test Passenger Floorpan – View 1



Figure A-118 Post-Test Passenger Floorpan – View 1



Figure A-119 Pre-Test Passenger Floorpan – View 2



Figure A-120 Post-Test Passenger Floorpan – View 2



Figure A-121 Pre-Test Passenger Floorpan – View 3



Figure A-122 Post-Test Passenger Floorpan – View 3



Figure A-123 Pre-Test Passenger Floorpan – View 4



Figure A-124 Post-Test Passenger Floorpan – View 4

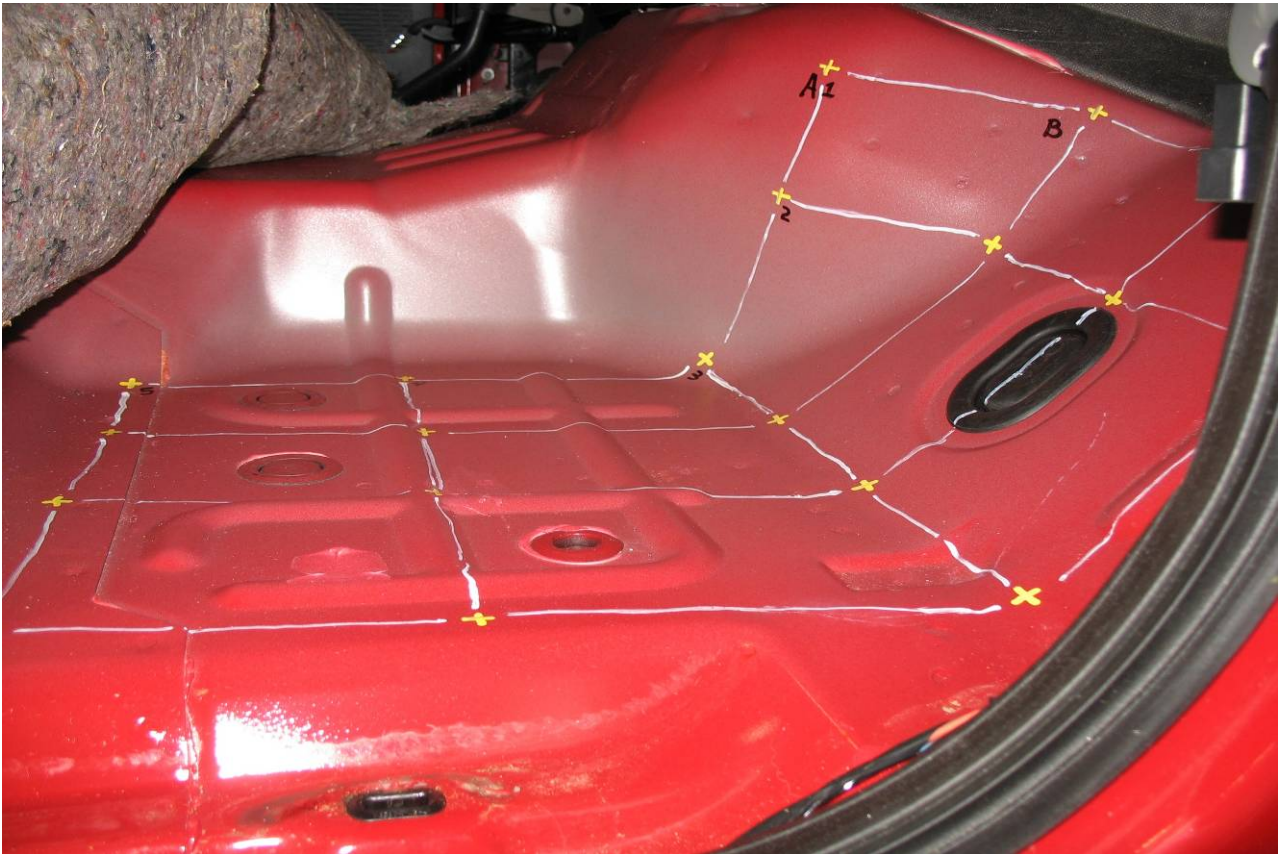


Figure A-125 Pre-Test Passenger Floorpan – View 5

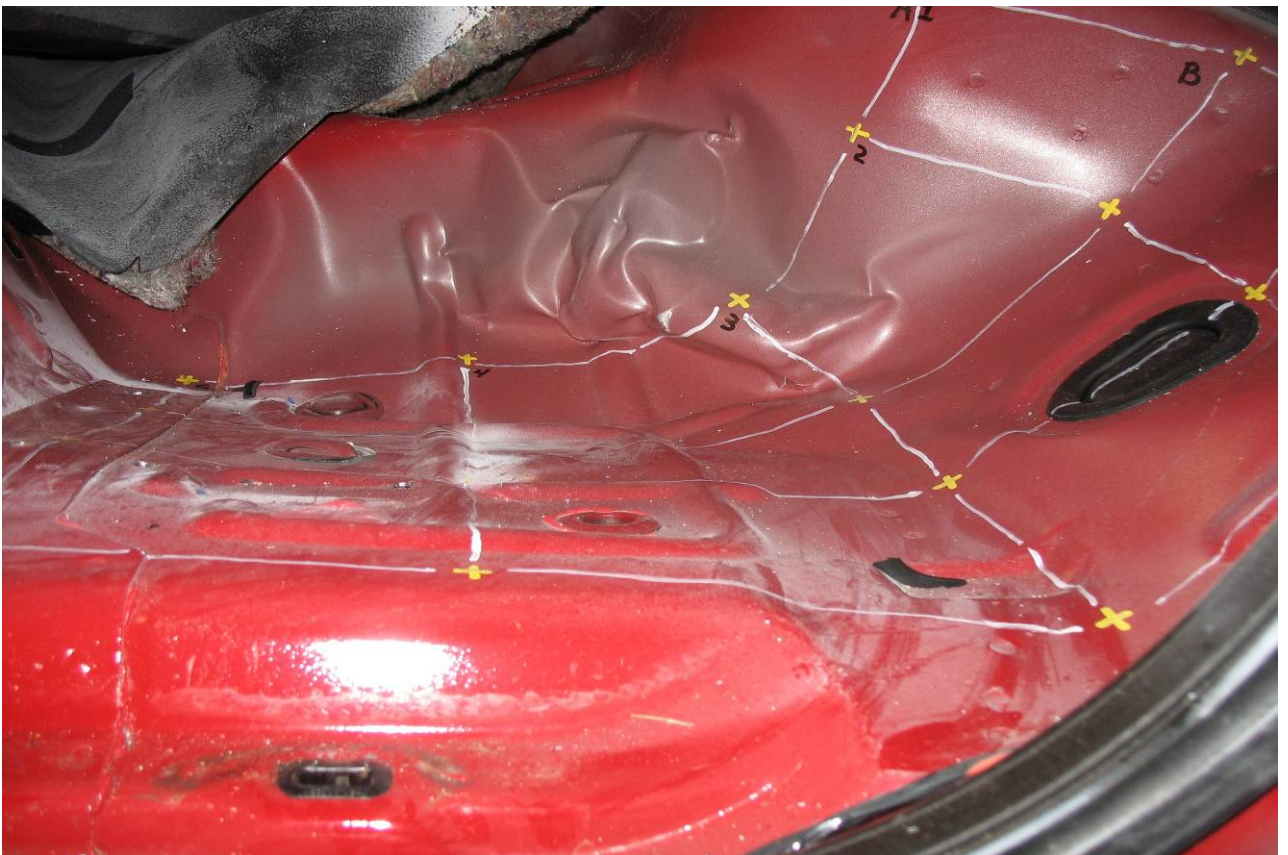


Figure A-126 Post-Test Passenger Floorpan – View 5



Figure A-127 Pre-Test Passenger Floorpan – View 6



Figure A-128 Post-Test Passenger Floorpan – View 6



Figure A-129 Pre-Test Passenger Floorpan – View 7

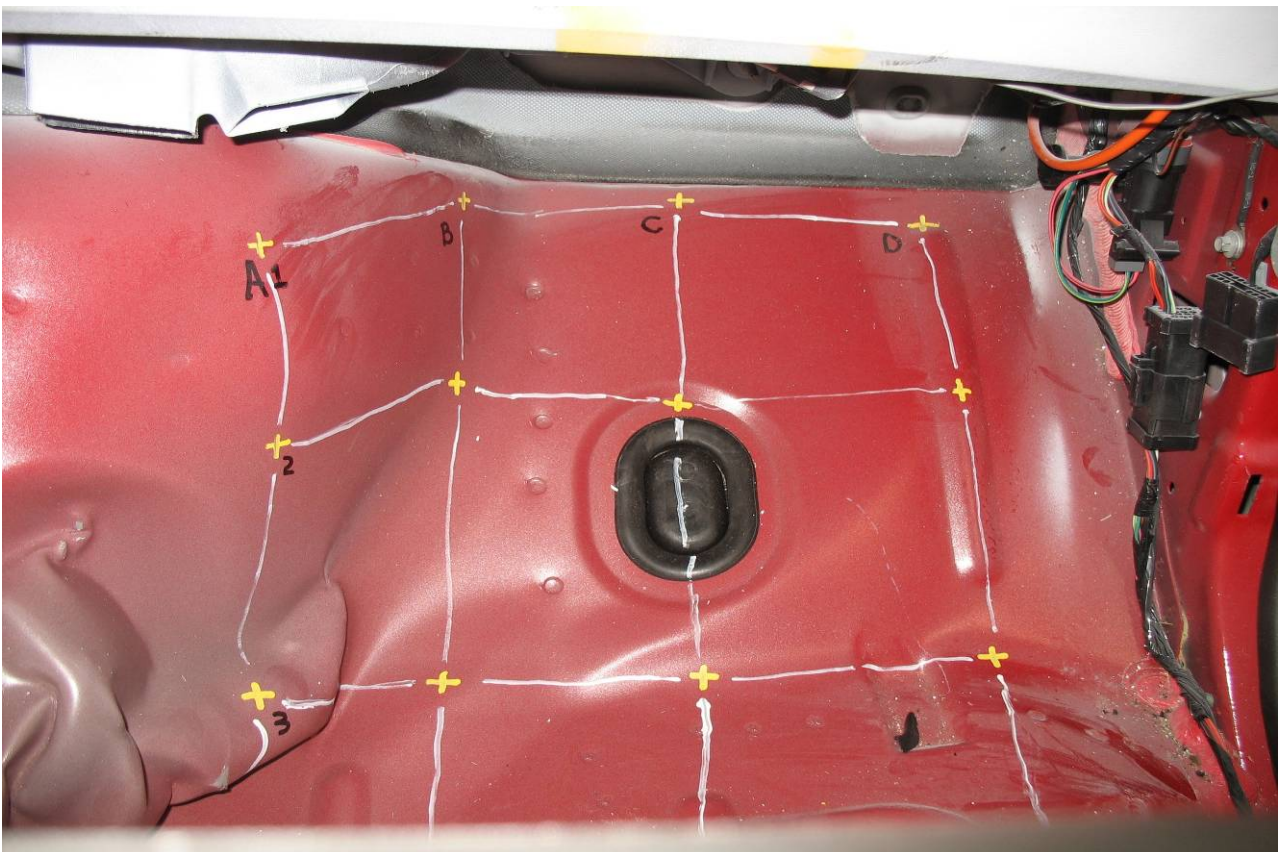


Figure A-130 Post-Test Passenger Floorpan – View 7

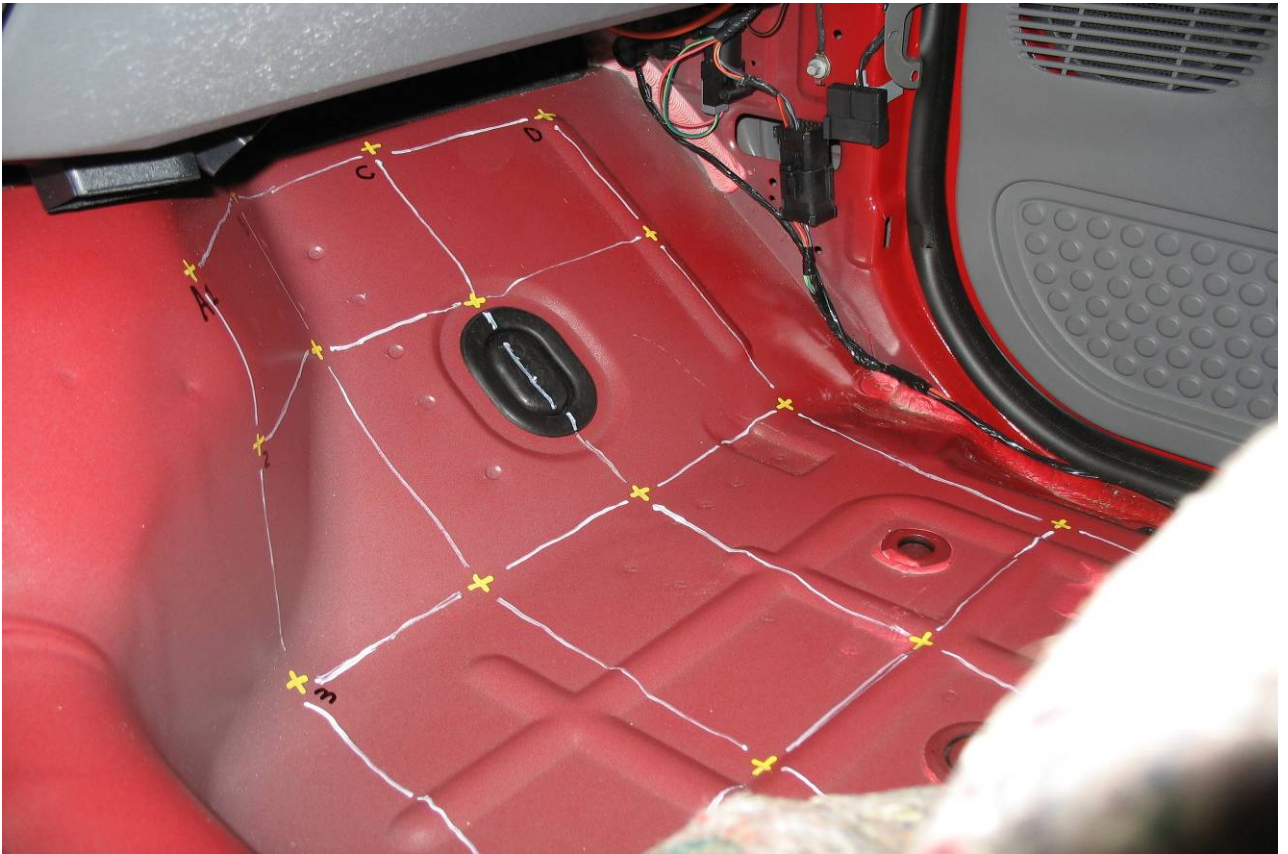


Figure A-131 Pre-Test Passenger Floorpan – View 8



Figure A-132 Post-Test Passenger Floorpan – View 8

Appendix B

Dummy, Vehicle, and Load Cell Barrier Data Plots

Table of Data Plots
Curve Number Corresponds to NHTSA Database Sequence

<u>Curve No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head Y-Axis Acceleration	B-11
3	Driver Head Z-Axis Acceleration	B-12
--- ¹	Driver Head Resultant Acceleration	B-13
4	Driver Head X-Axis Acceleration Redundant	B-14
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¹ Curve is not included in NHTSA database.



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

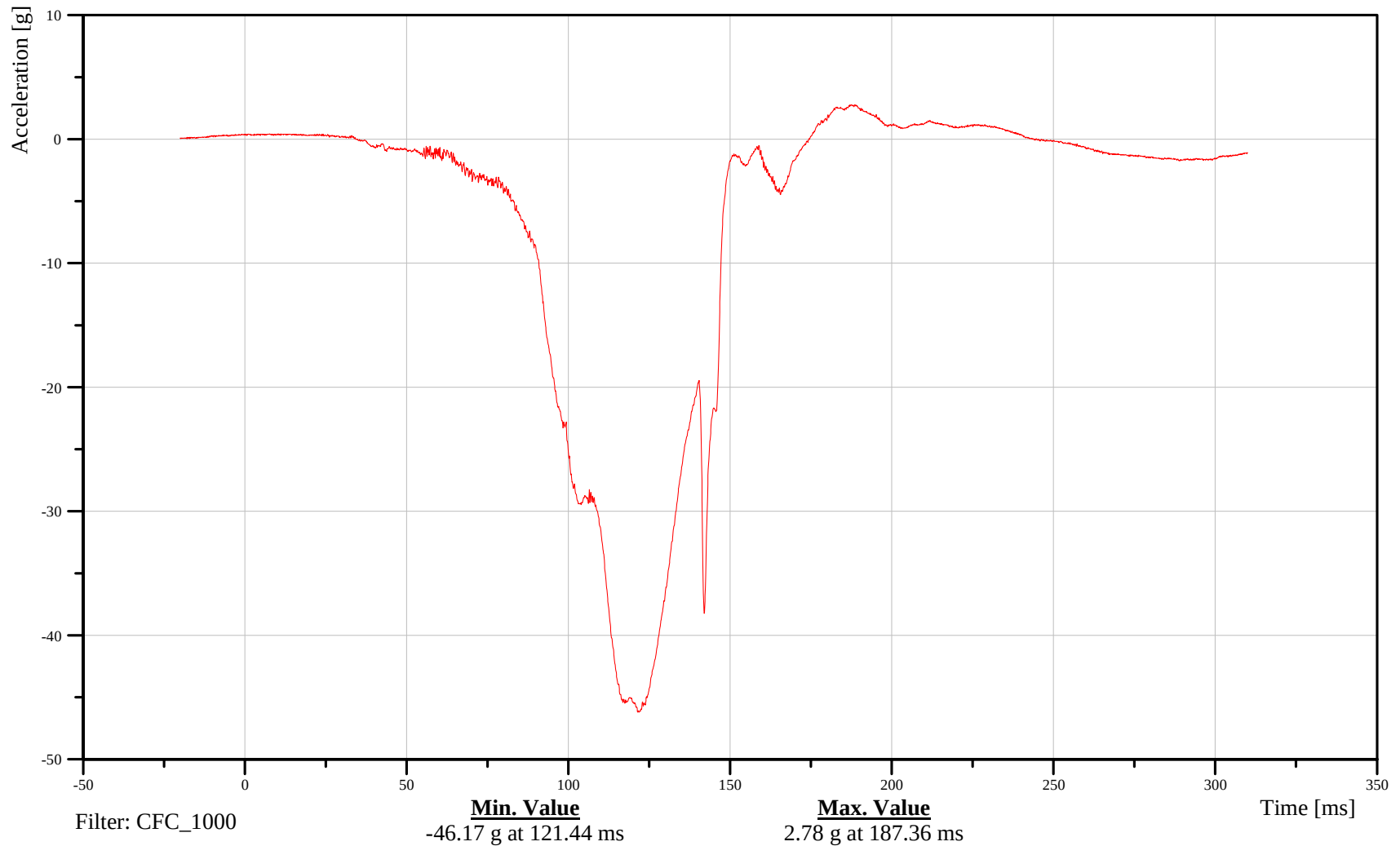
Driver Head X-Axis Acceleration

Customer: VRTC

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-10

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

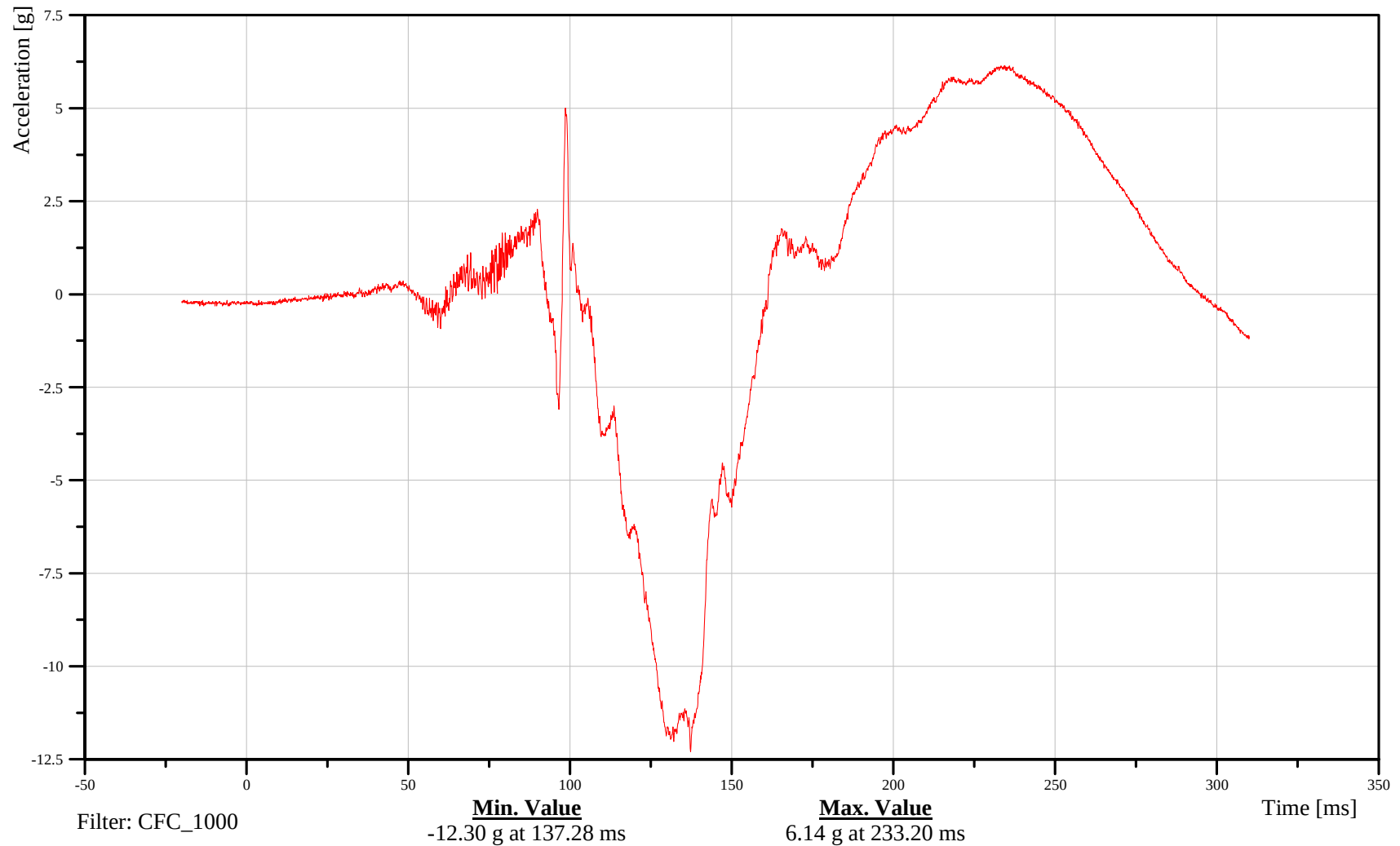
Driver Head Y-Axis Acceleration

Customer: VRTC

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-11

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

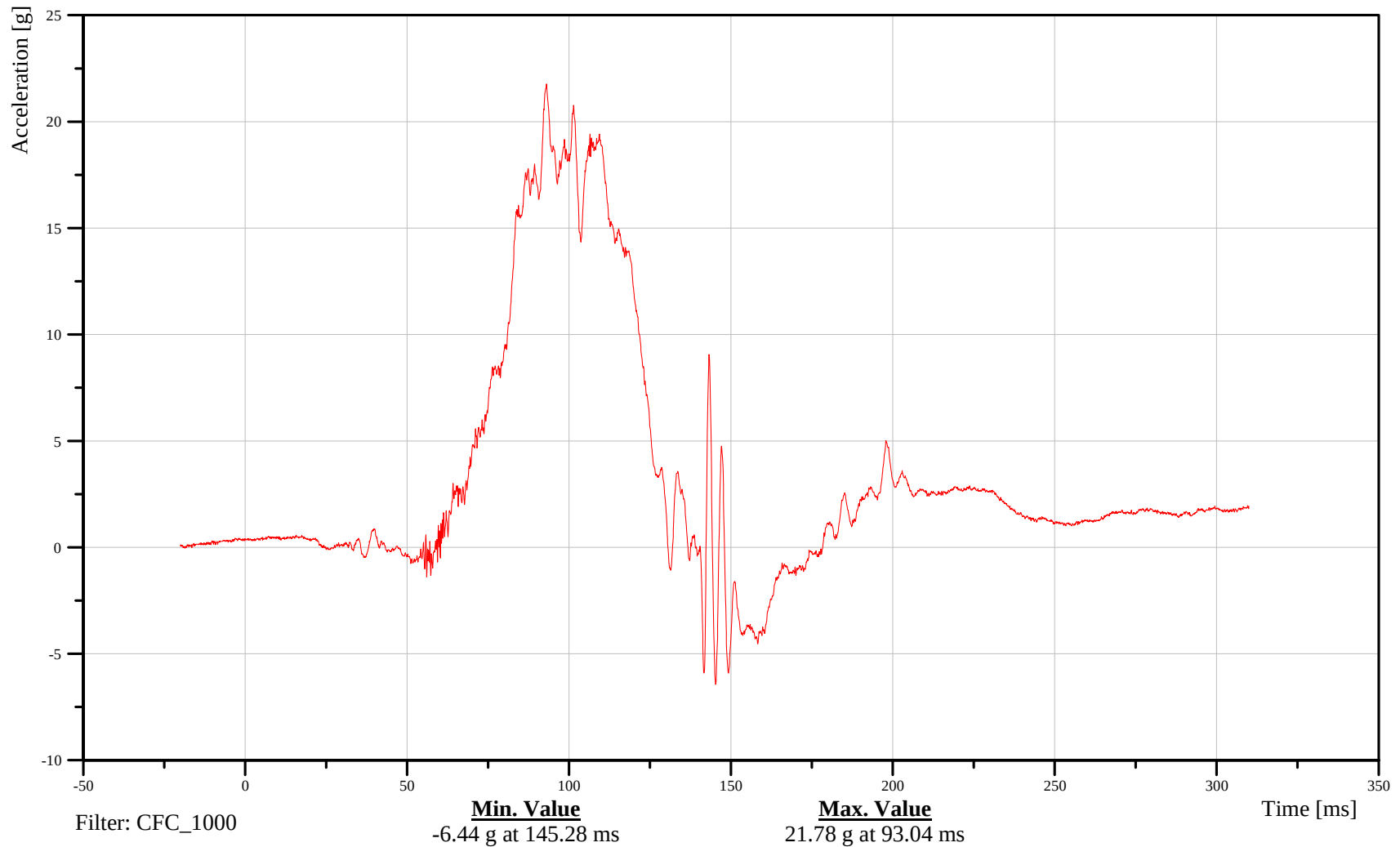
Driver Head Z-Axis Acceleration

Customer: VRTC

11HEADCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-12

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

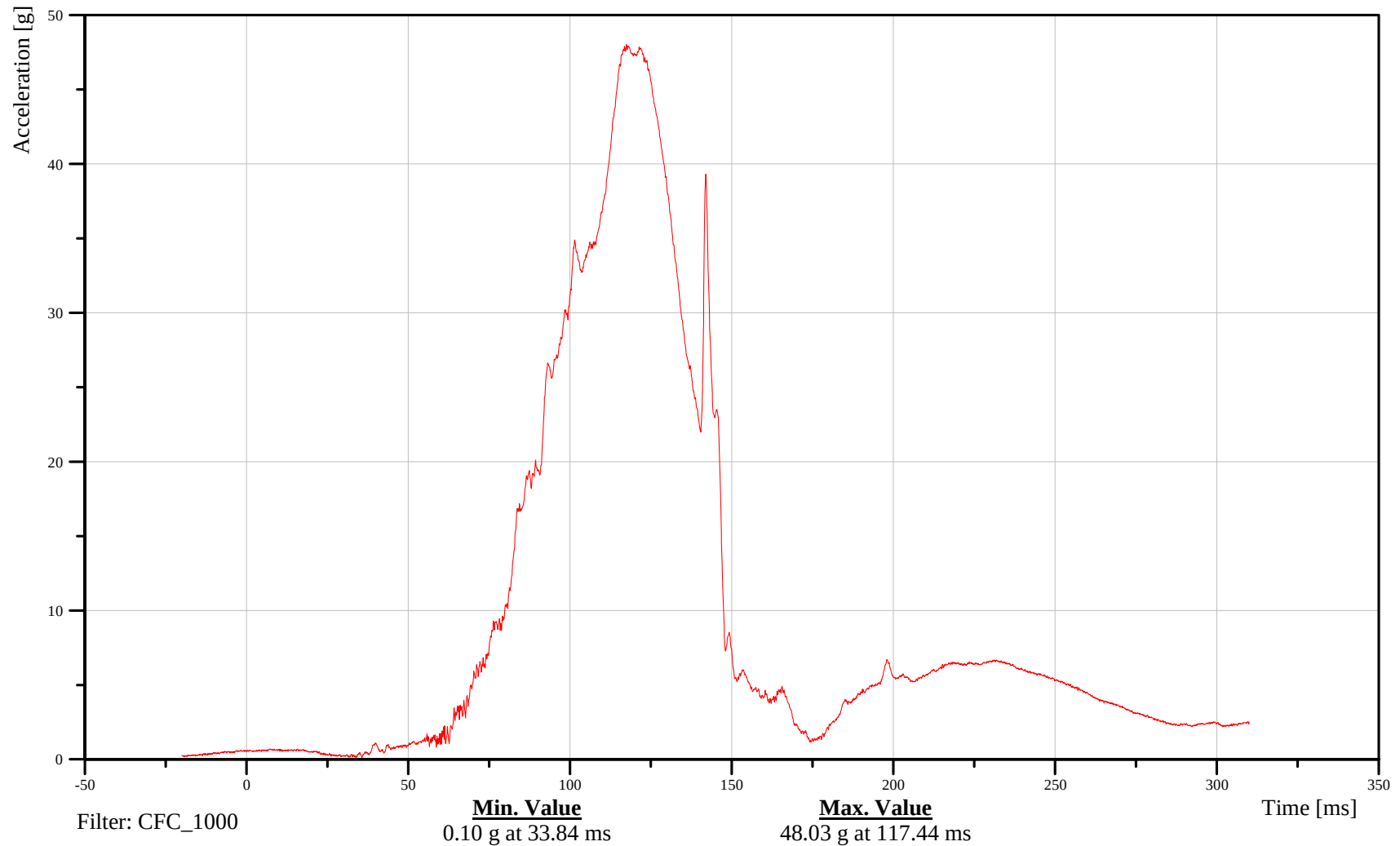
Driver Head Resultant Acceleration

Customer: VRTC

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-13

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

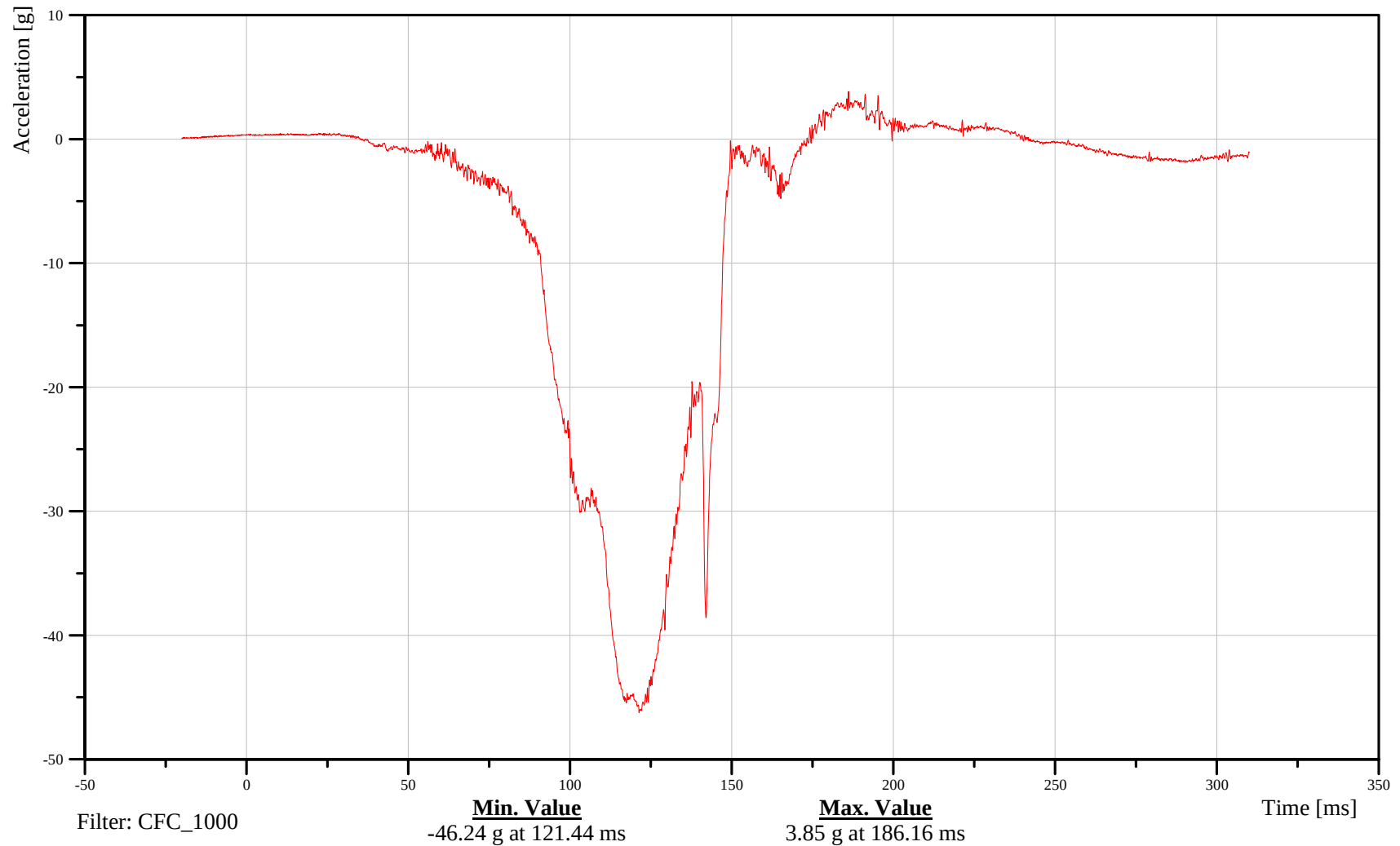
Driver Head X-Axis Redundant Acceleration

Customer: VRTC

11HEADCGRDH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-14

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

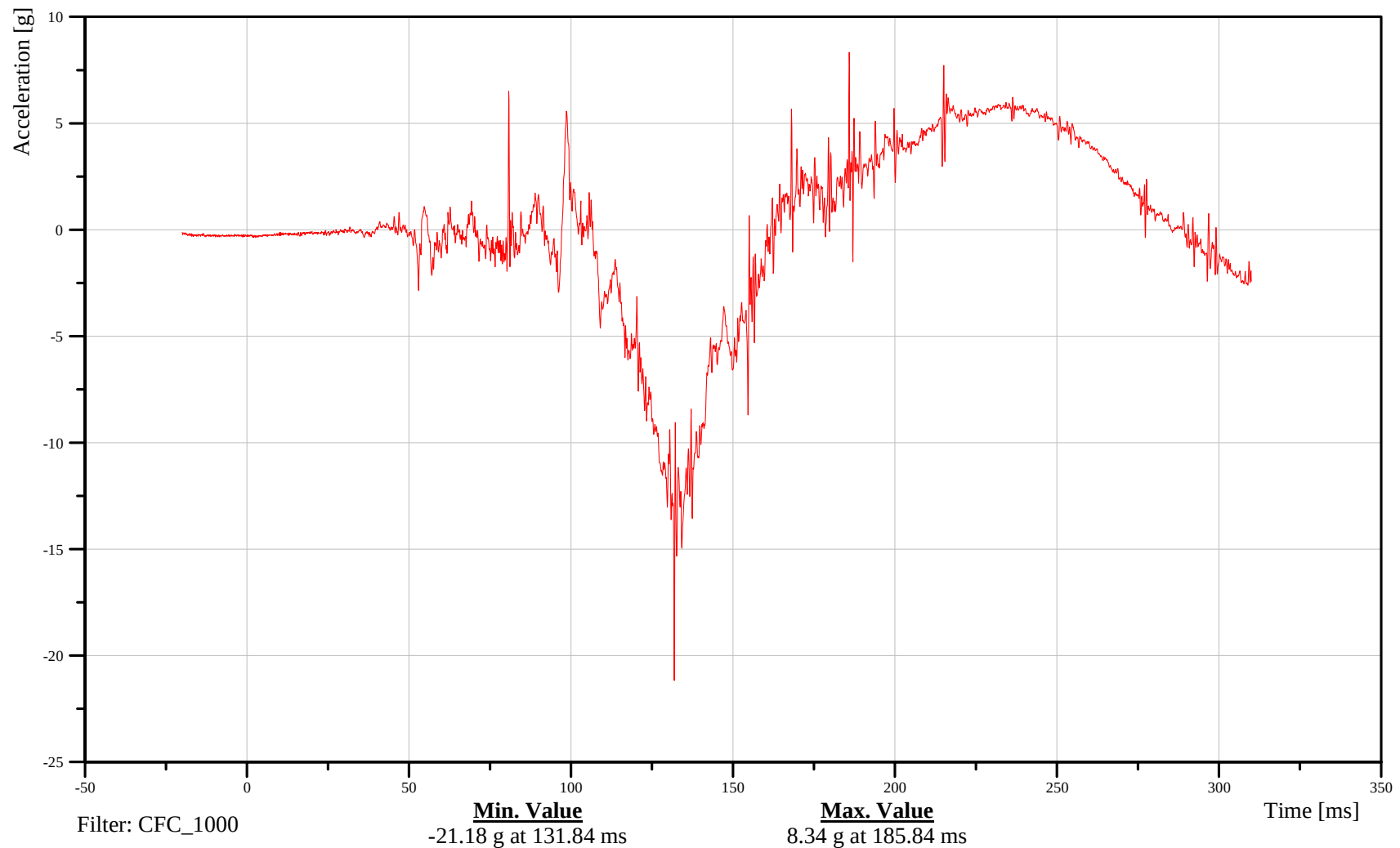
Driver Head Y-Axis Redundant Acceleration

Customer: VRTC

11HEADCGRDH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-15

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

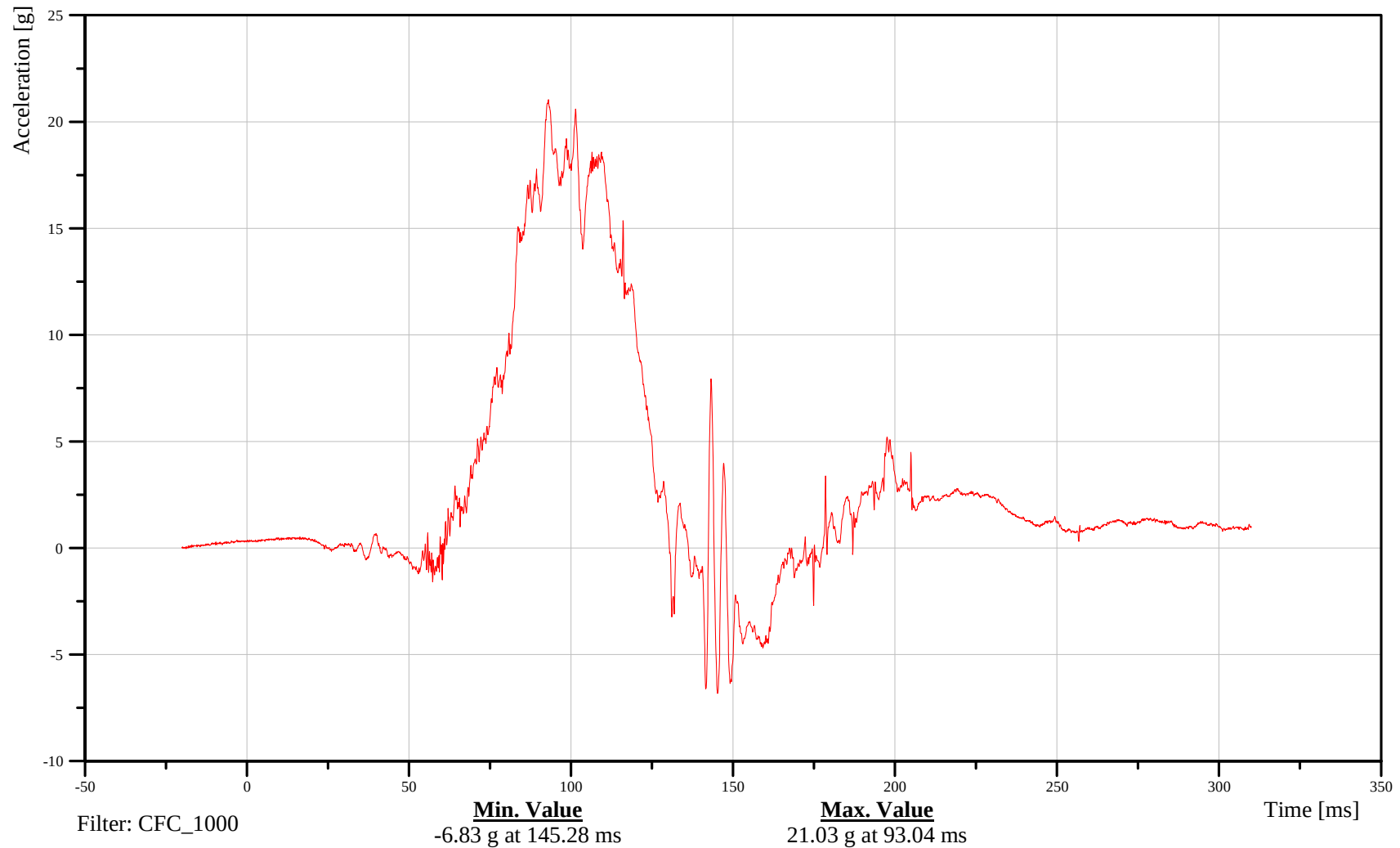
Driver Head Z-Axis Redundant Acceleration

Customer: VRTC

11HEADCGRDH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-16

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

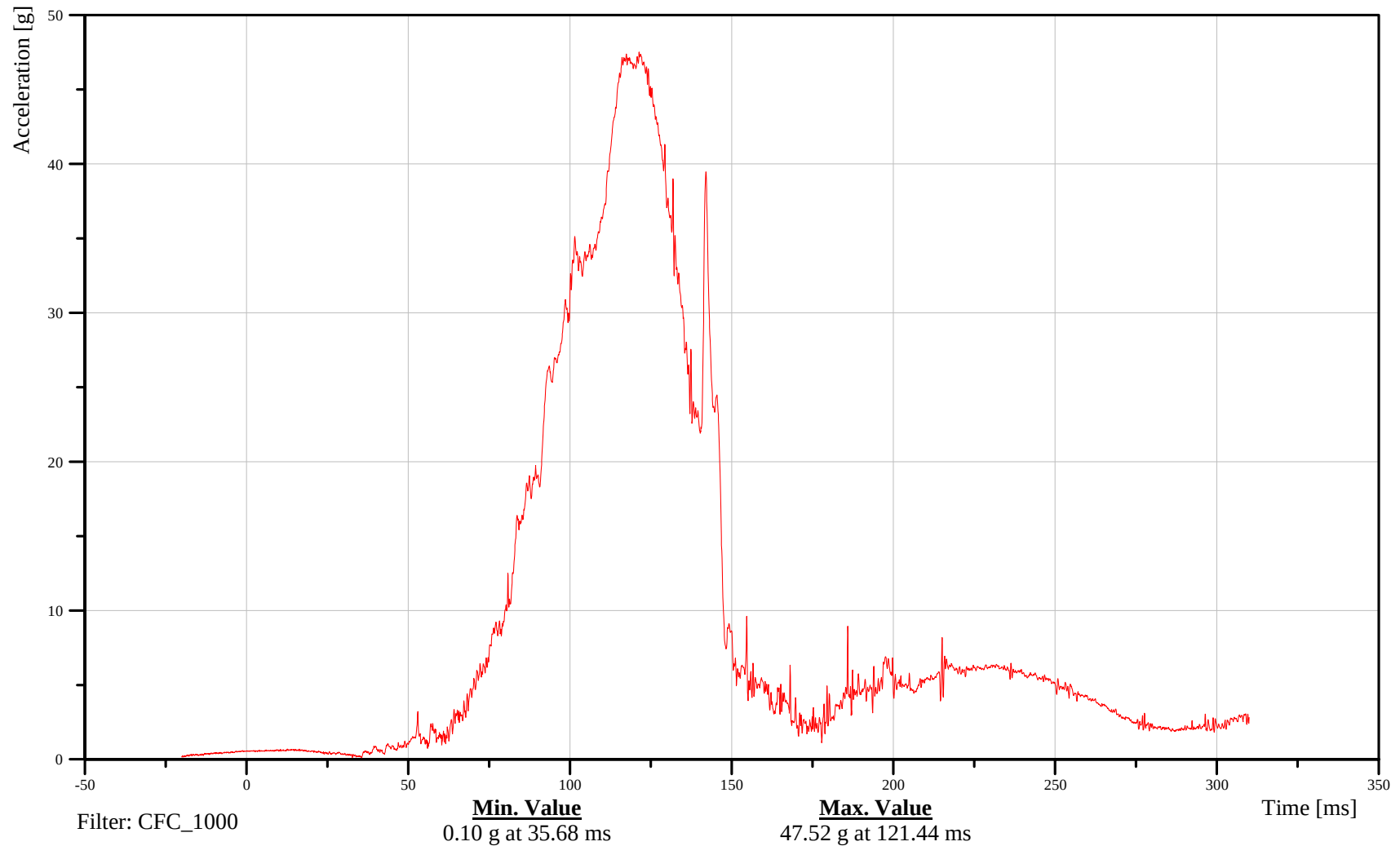
Driver Head Redundant Resultant Acceleration

Customer: VRTC

11HEADCGRDH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-17

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

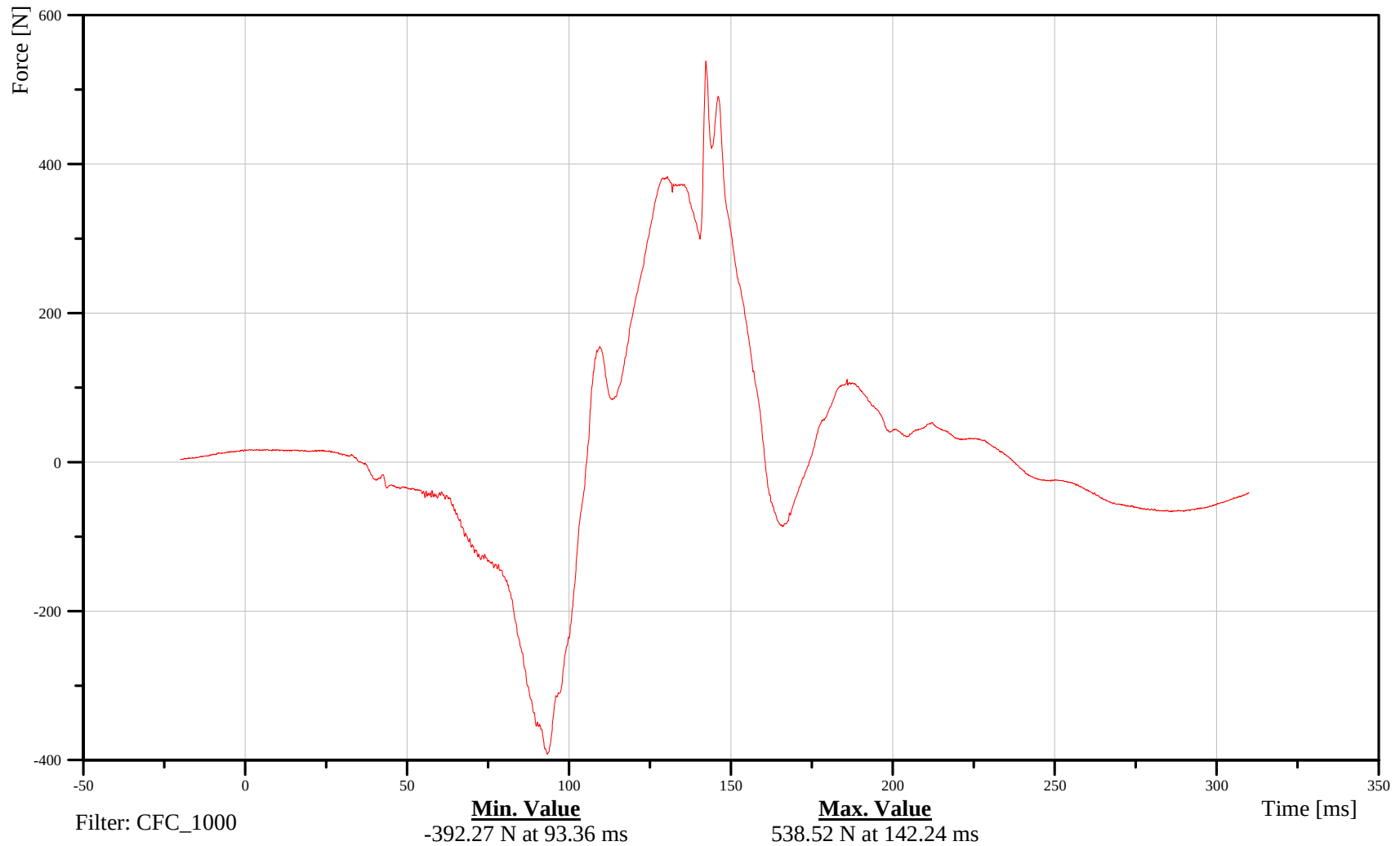
Driver Upper Neck X-Axis Force

Customer: VRTC

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-18

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

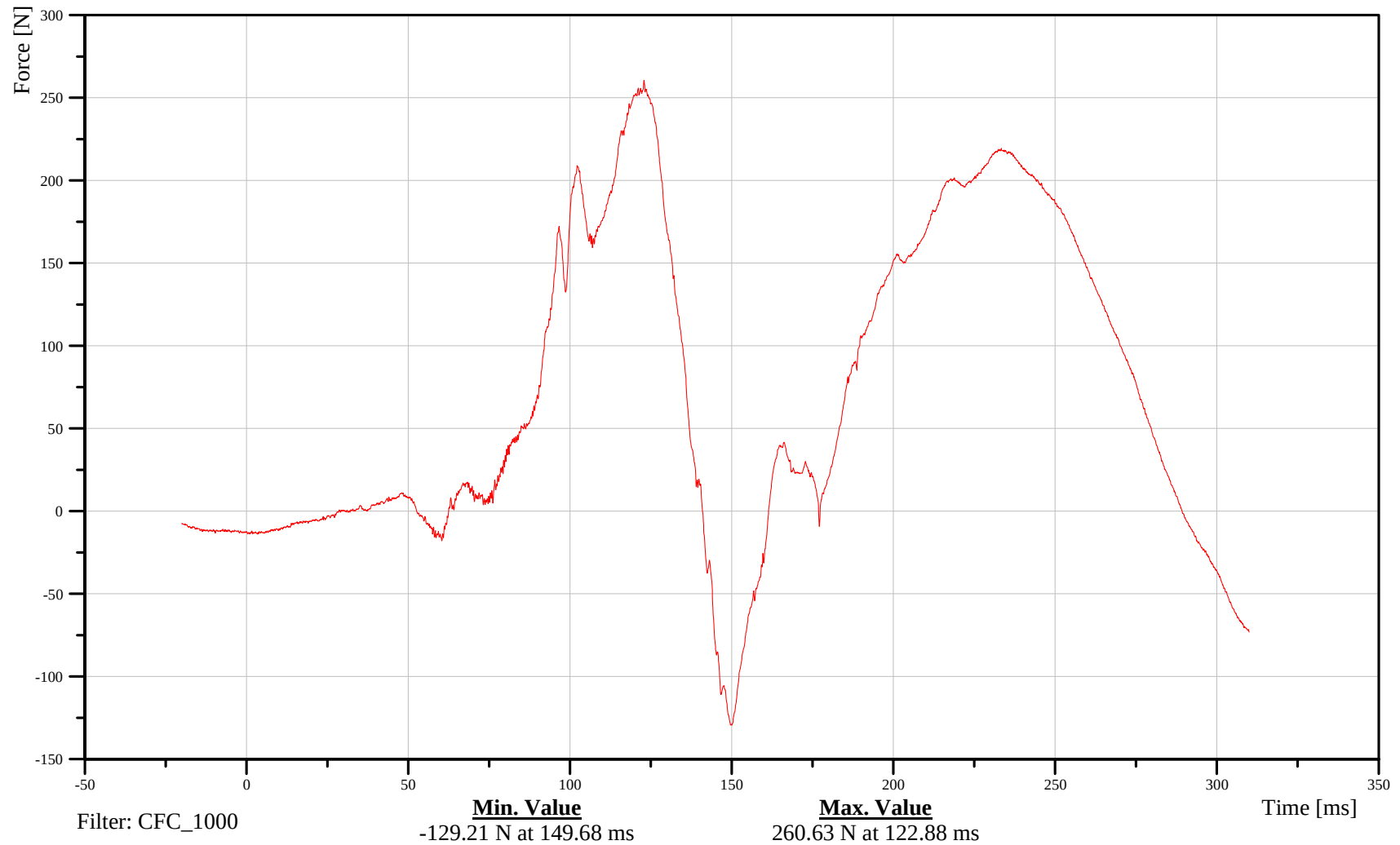
Driver Upper Neck Y-Axis Force

Customer: VRTC

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF

Test Number: 071108





2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

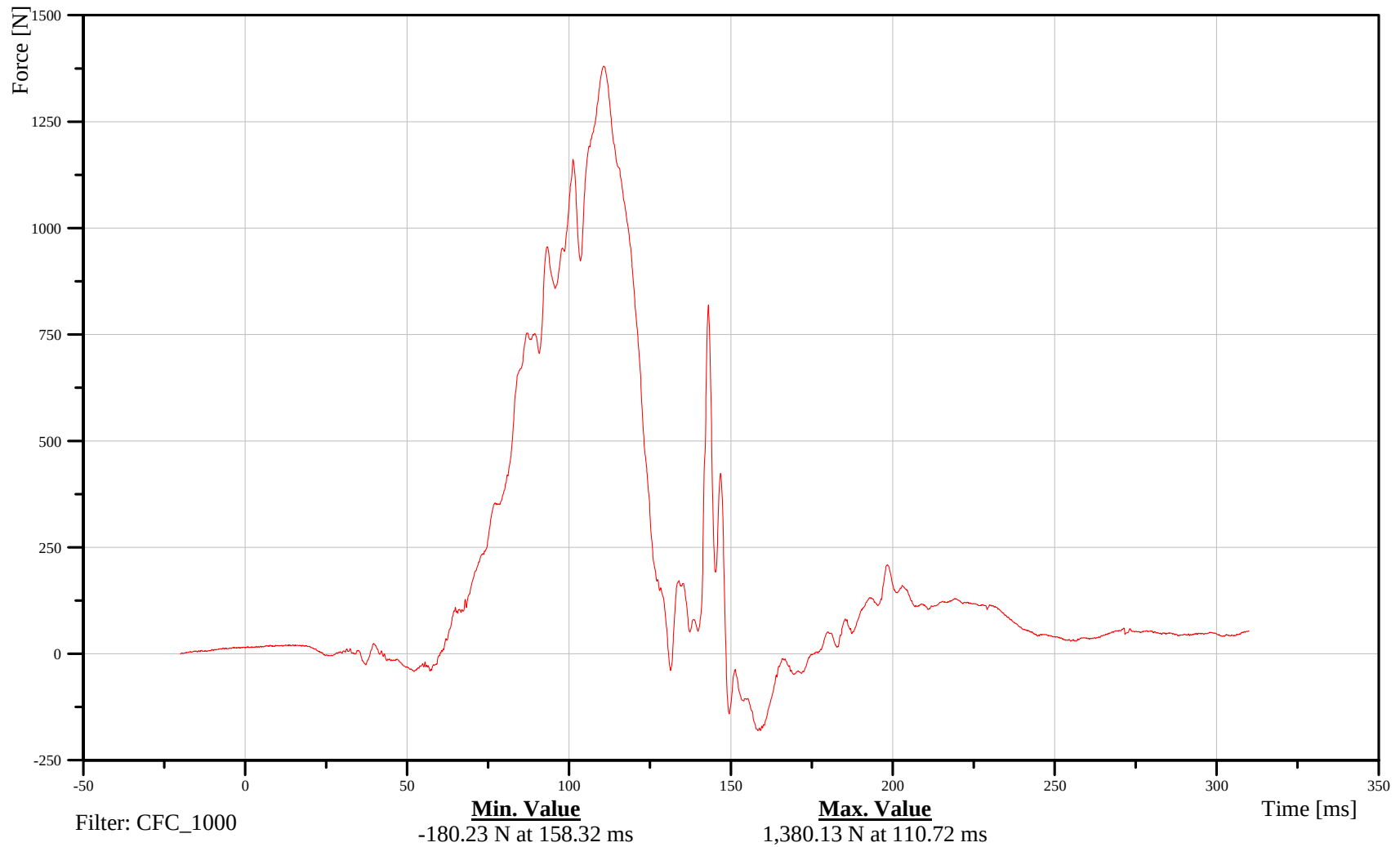
Driver Upper Neck Z-Axis Force

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-20

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

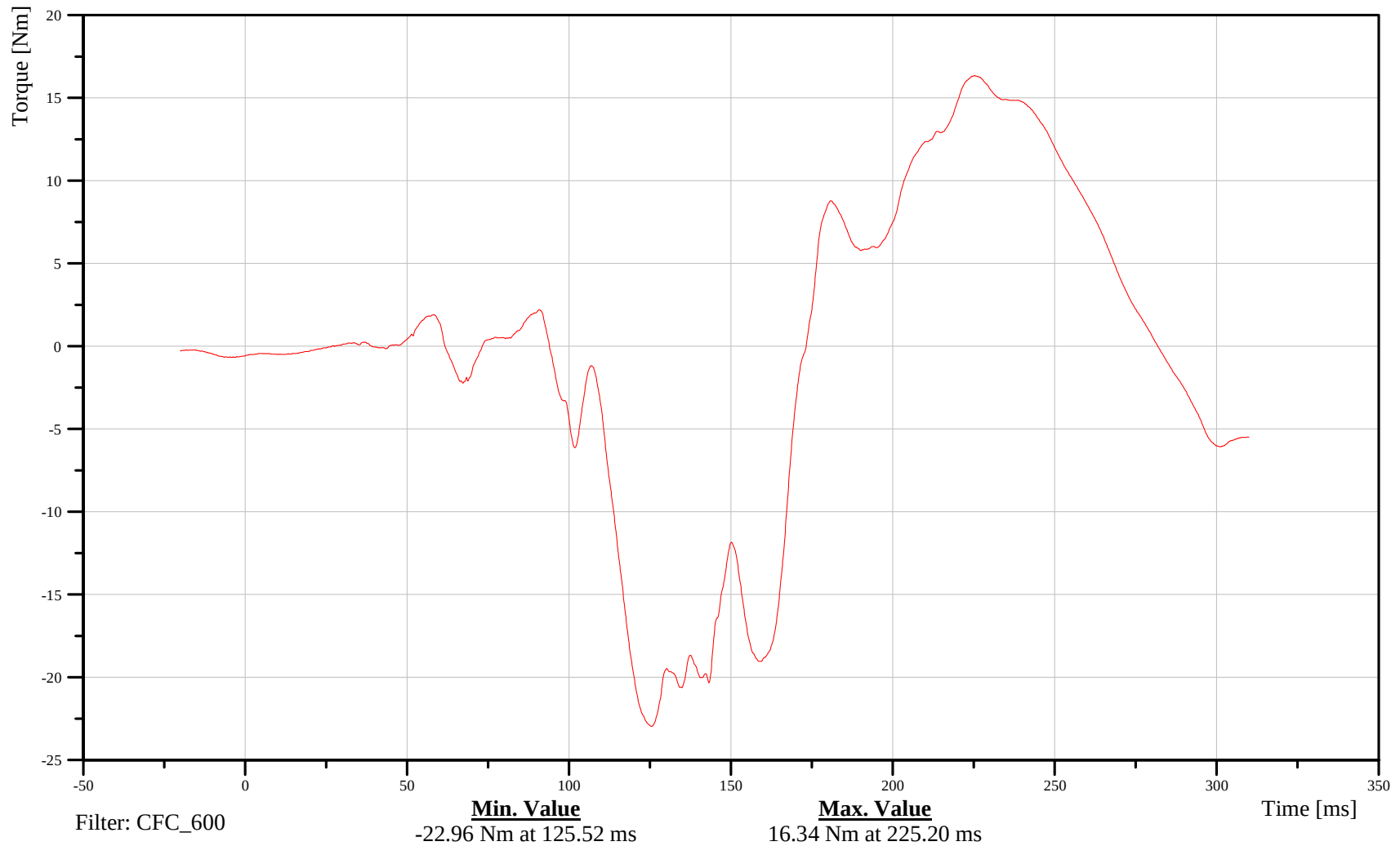
Driver Upper Neck Moment About X Axis

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-21

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

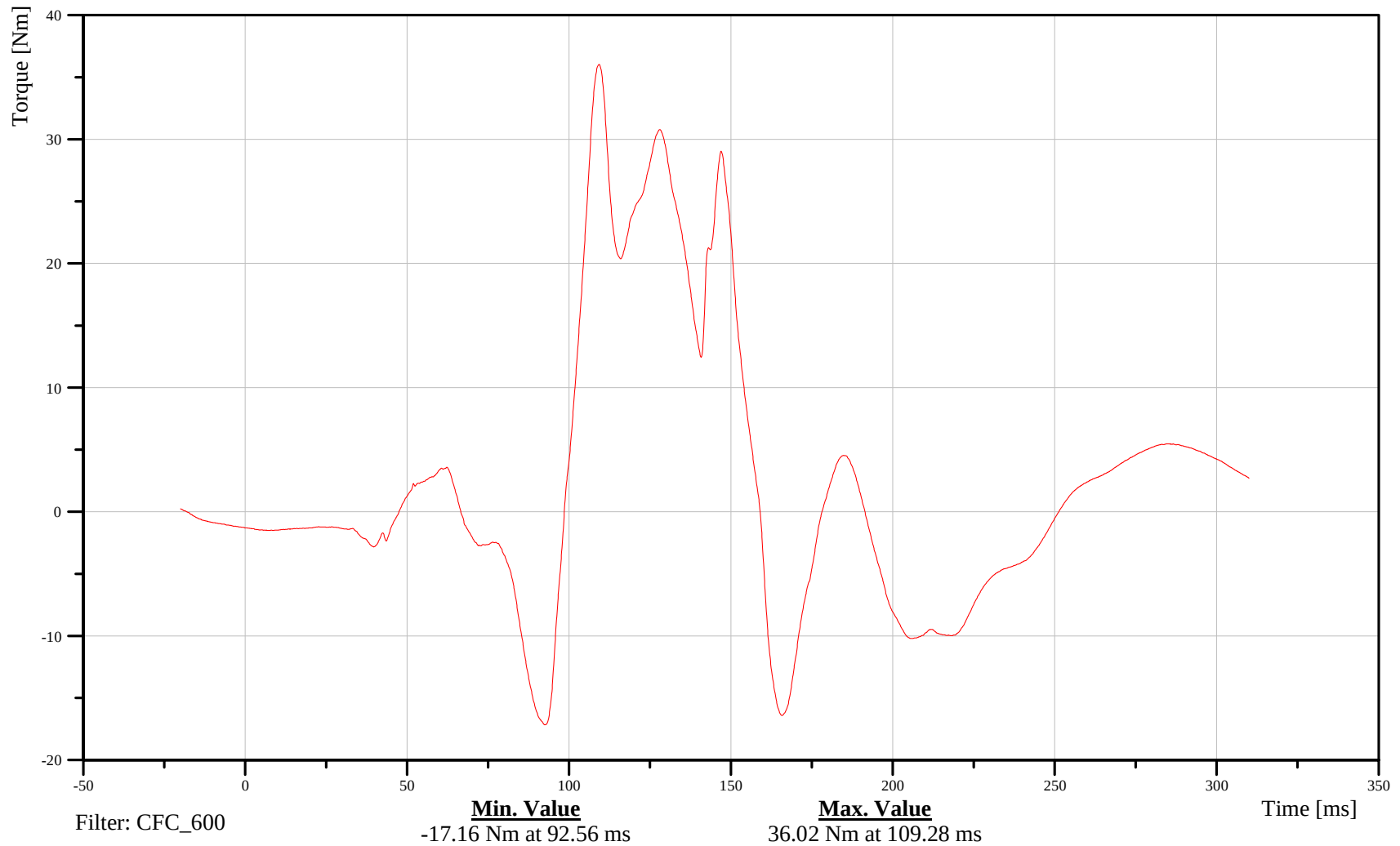
Driver Upper Neck Moment About Y Axis

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-22

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

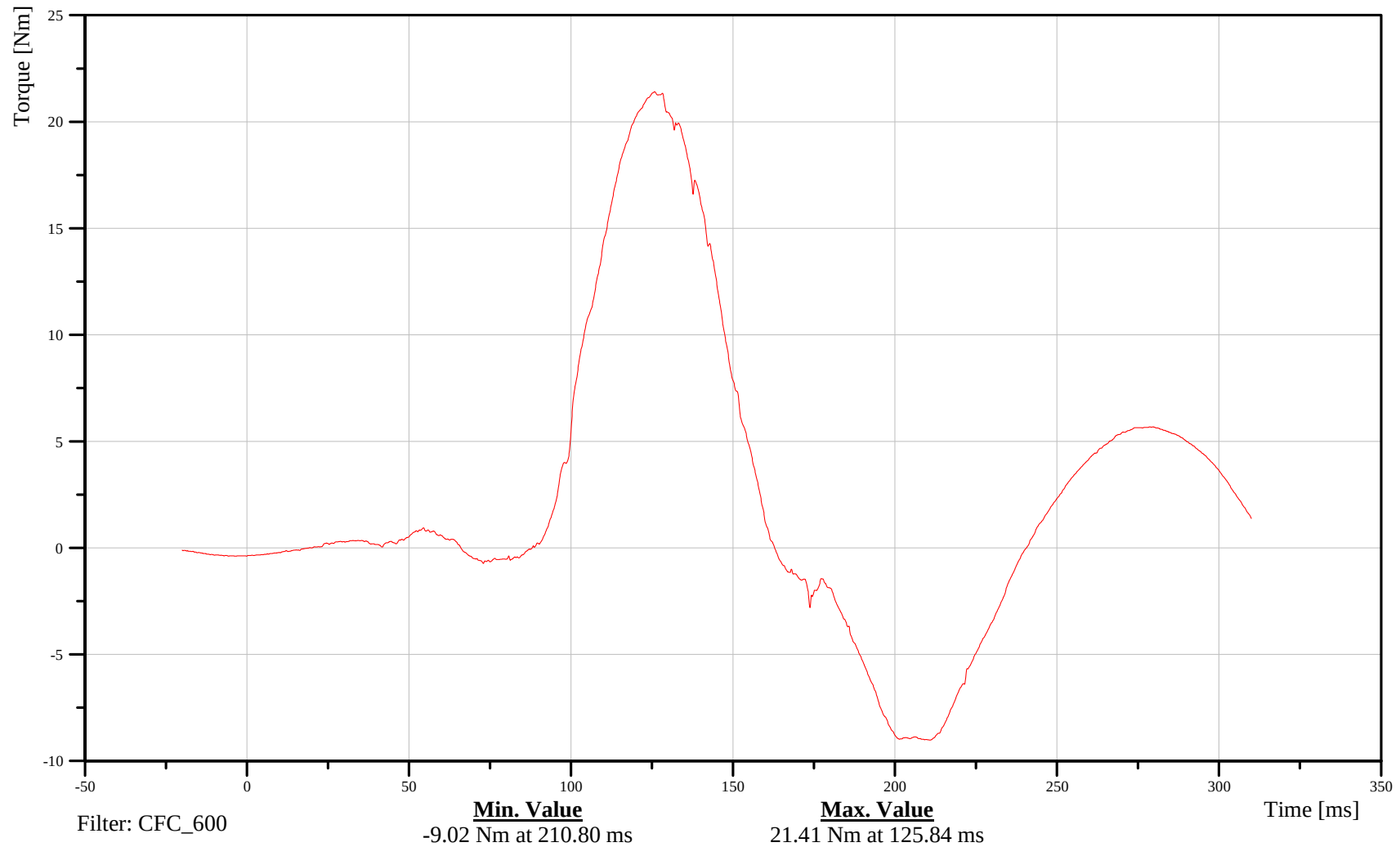
Driver Upper Neck Moment About Z Axis

Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-23

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

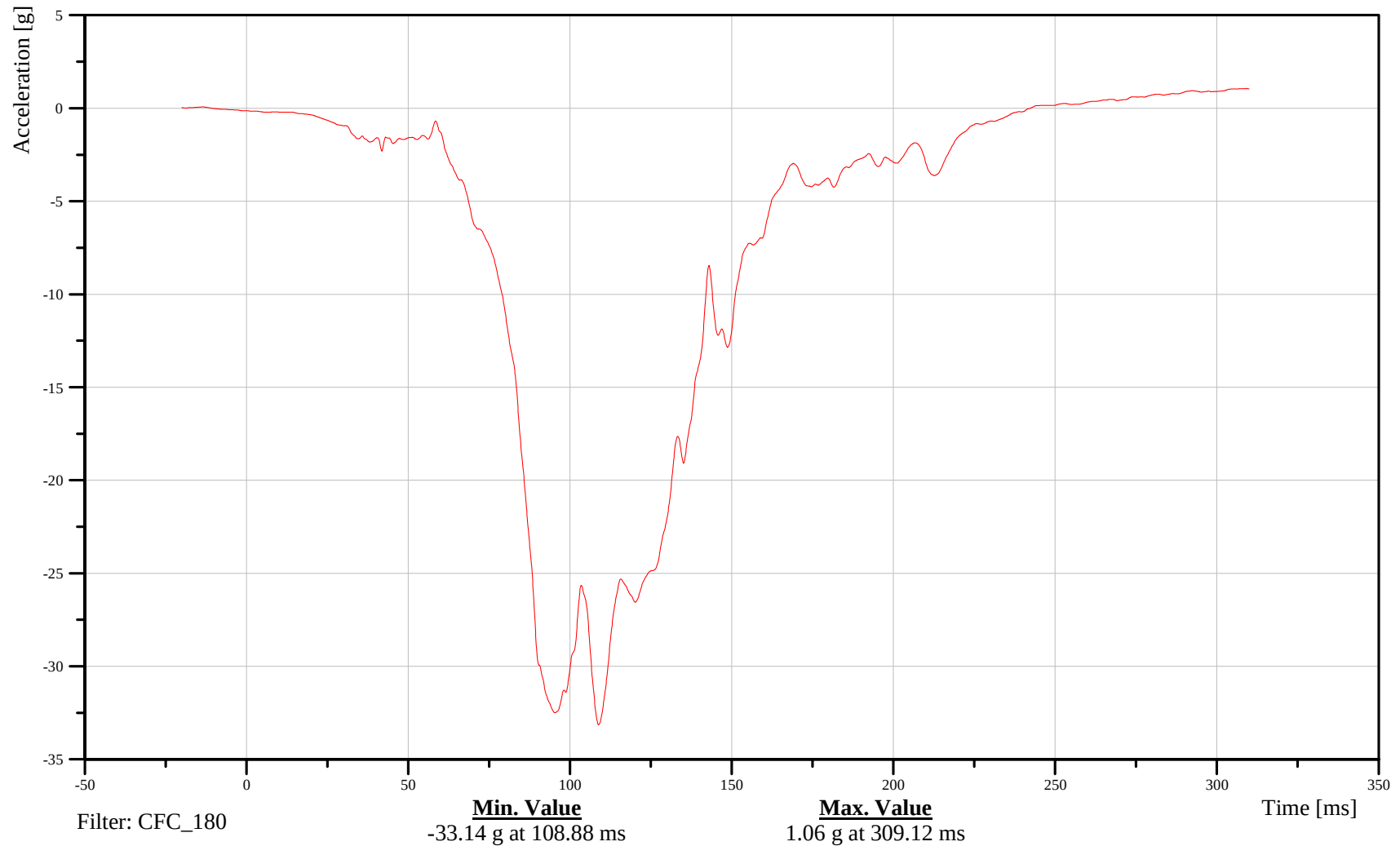
Driver Chest X-Axis Acceleration

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-24

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

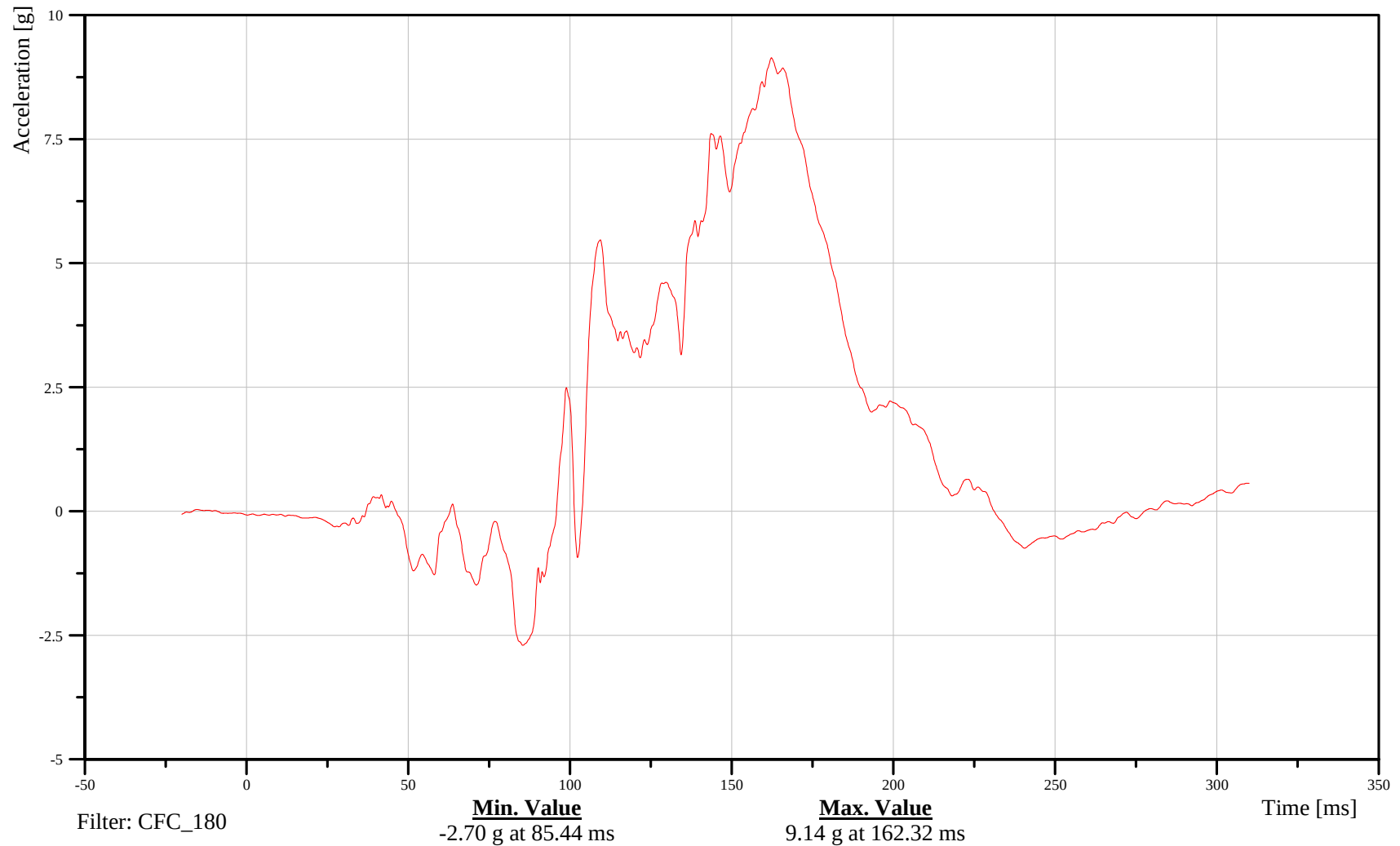
Driver Chest Y-Axis Acceleration

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-25

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

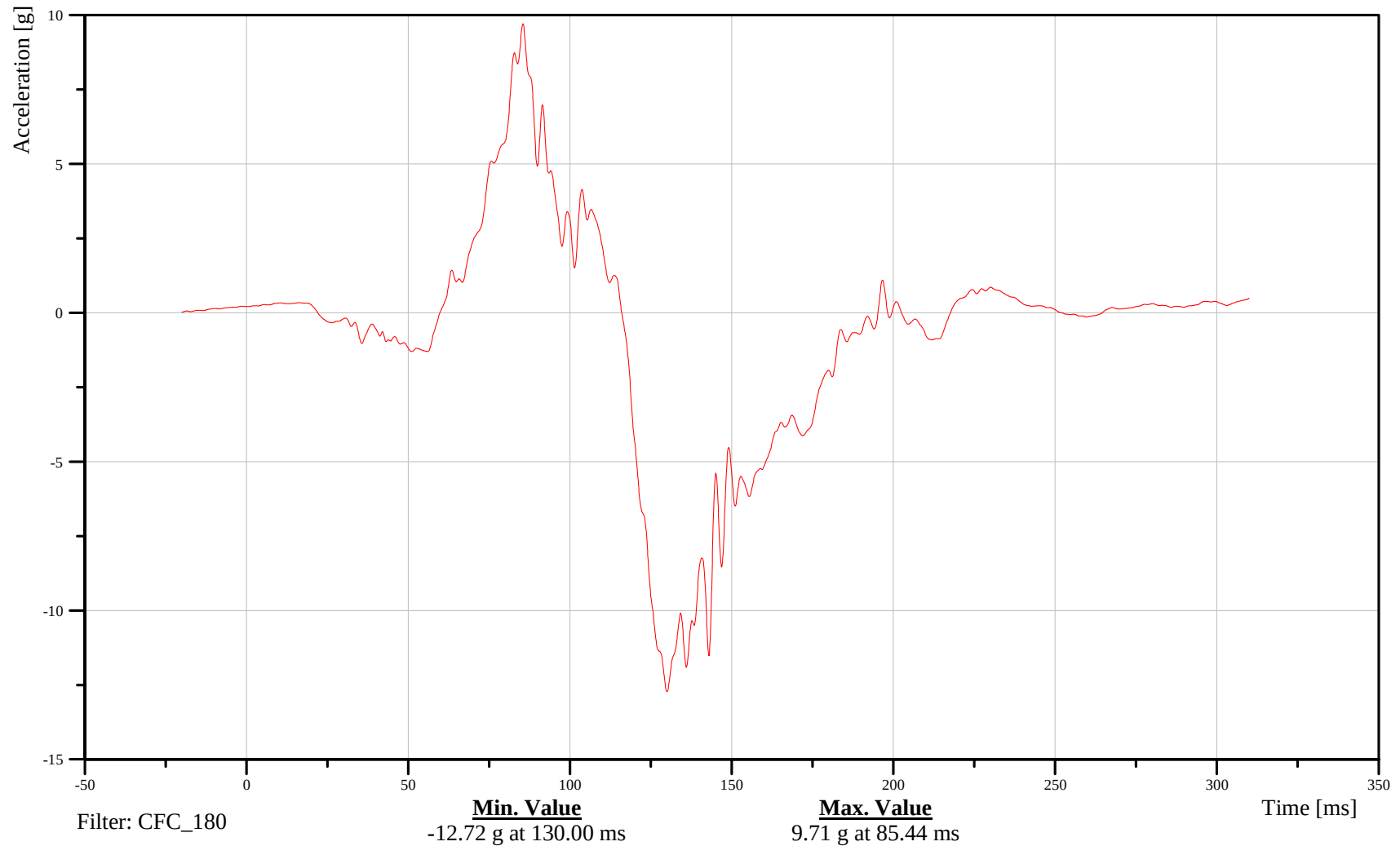
Driver Chest Z-Axis Acceleration

Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-26

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

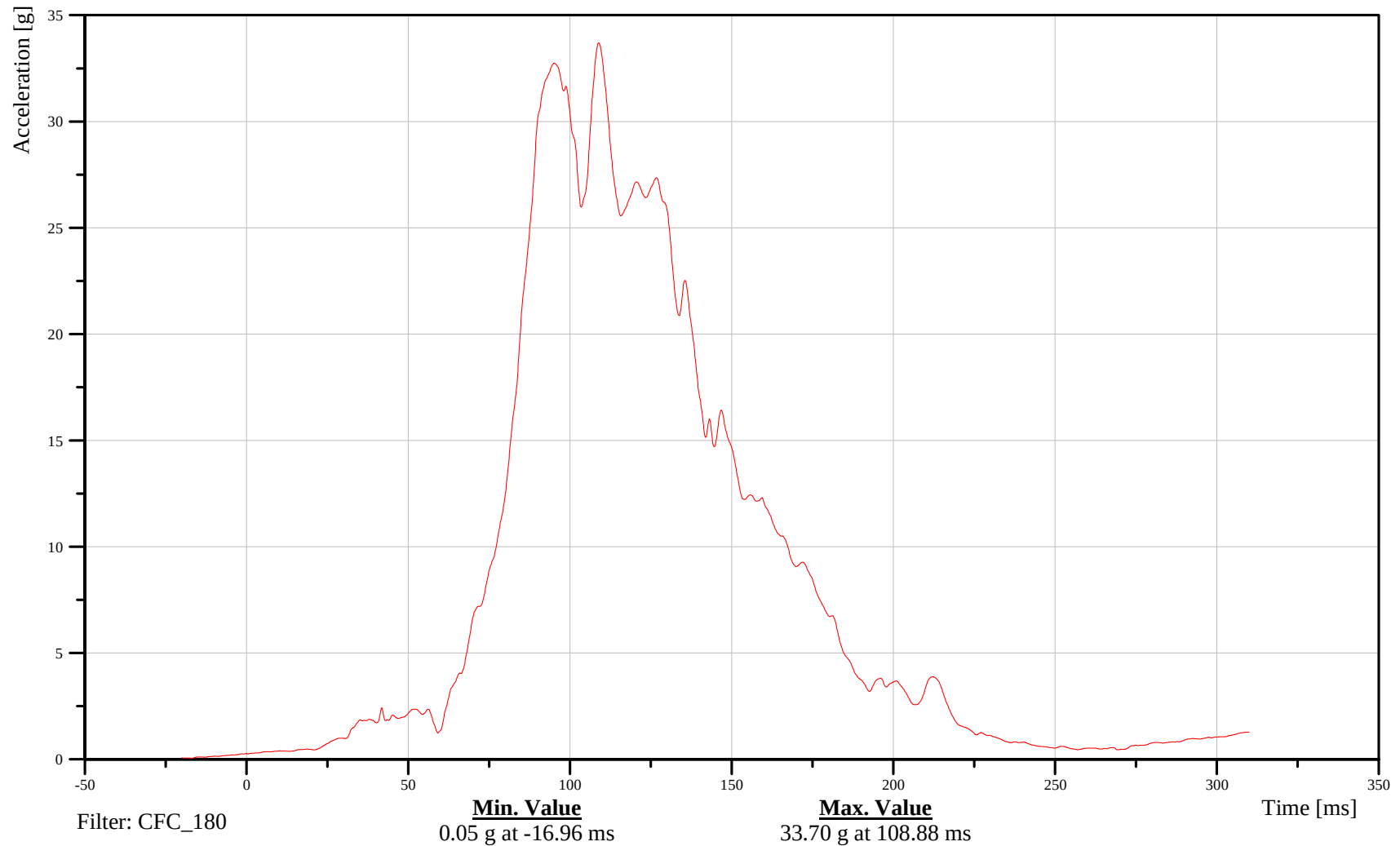
Driver Chest Resultant Acceleration

Customer: VRTC

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-27

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

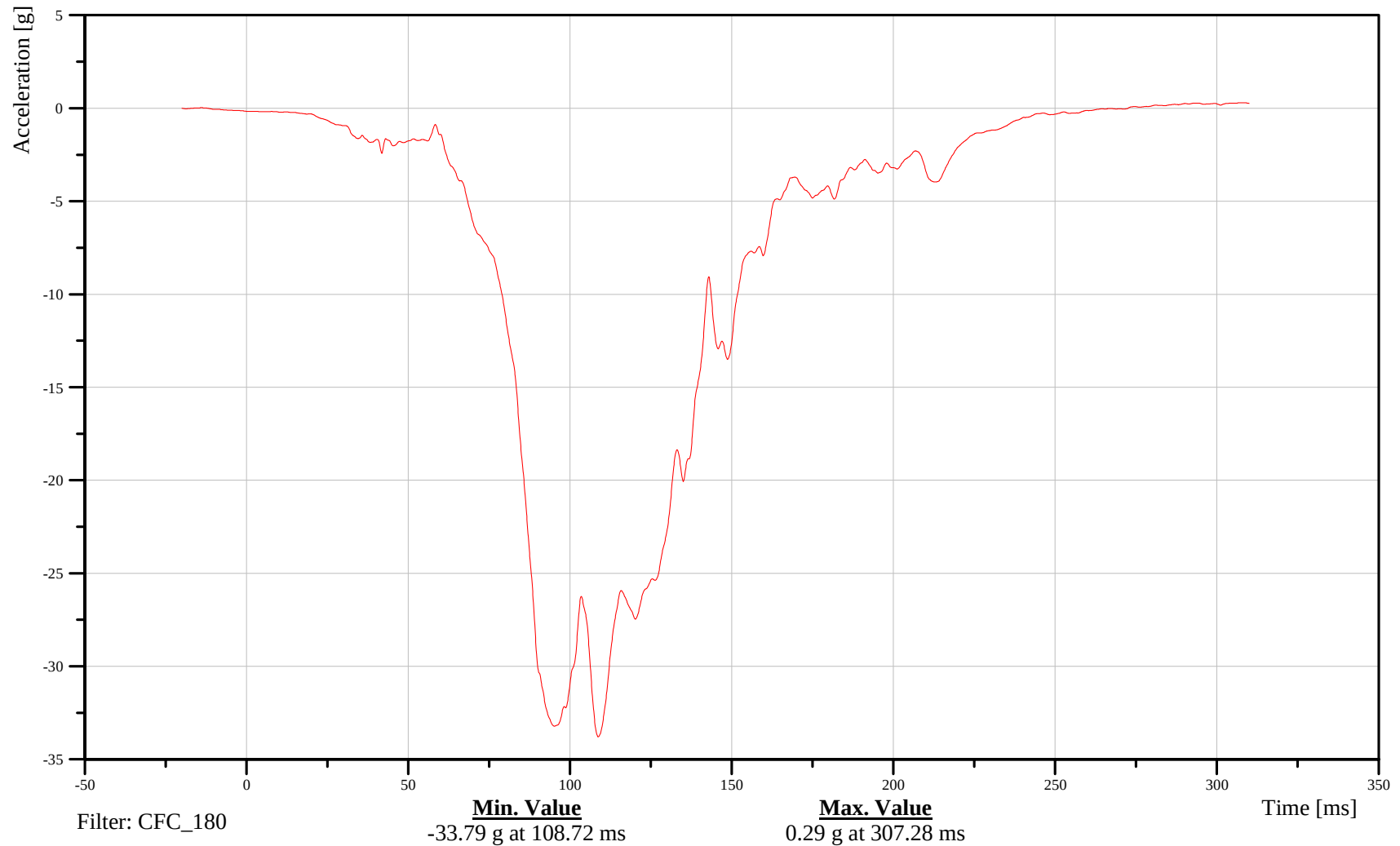
Driver Chest X-Axis Redundant Acceleration

Customer: VRTC

11CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-28

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

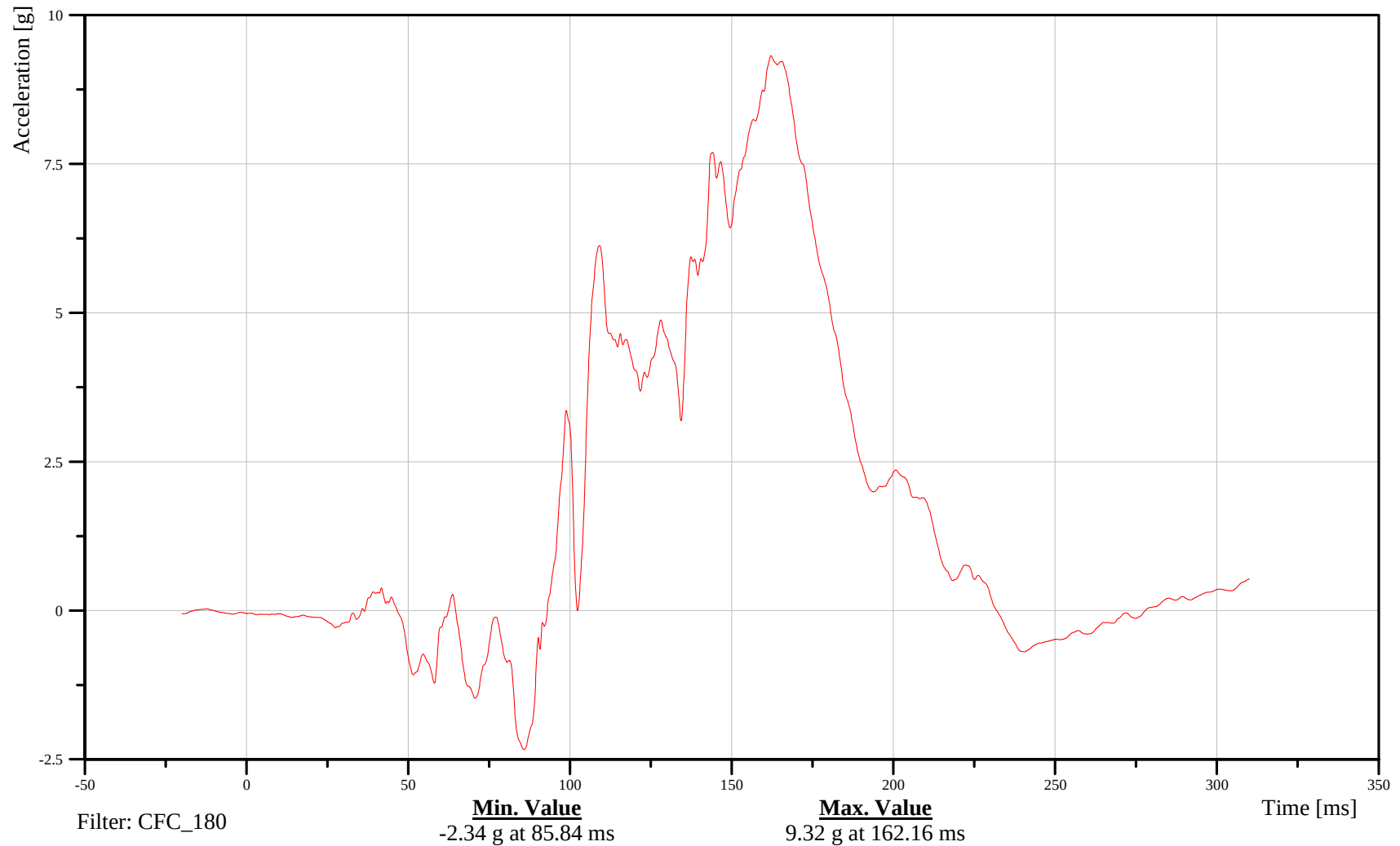
Driver Chest Y-Axis Redundant Acceleration

Customer: VRTC

11CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-29

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

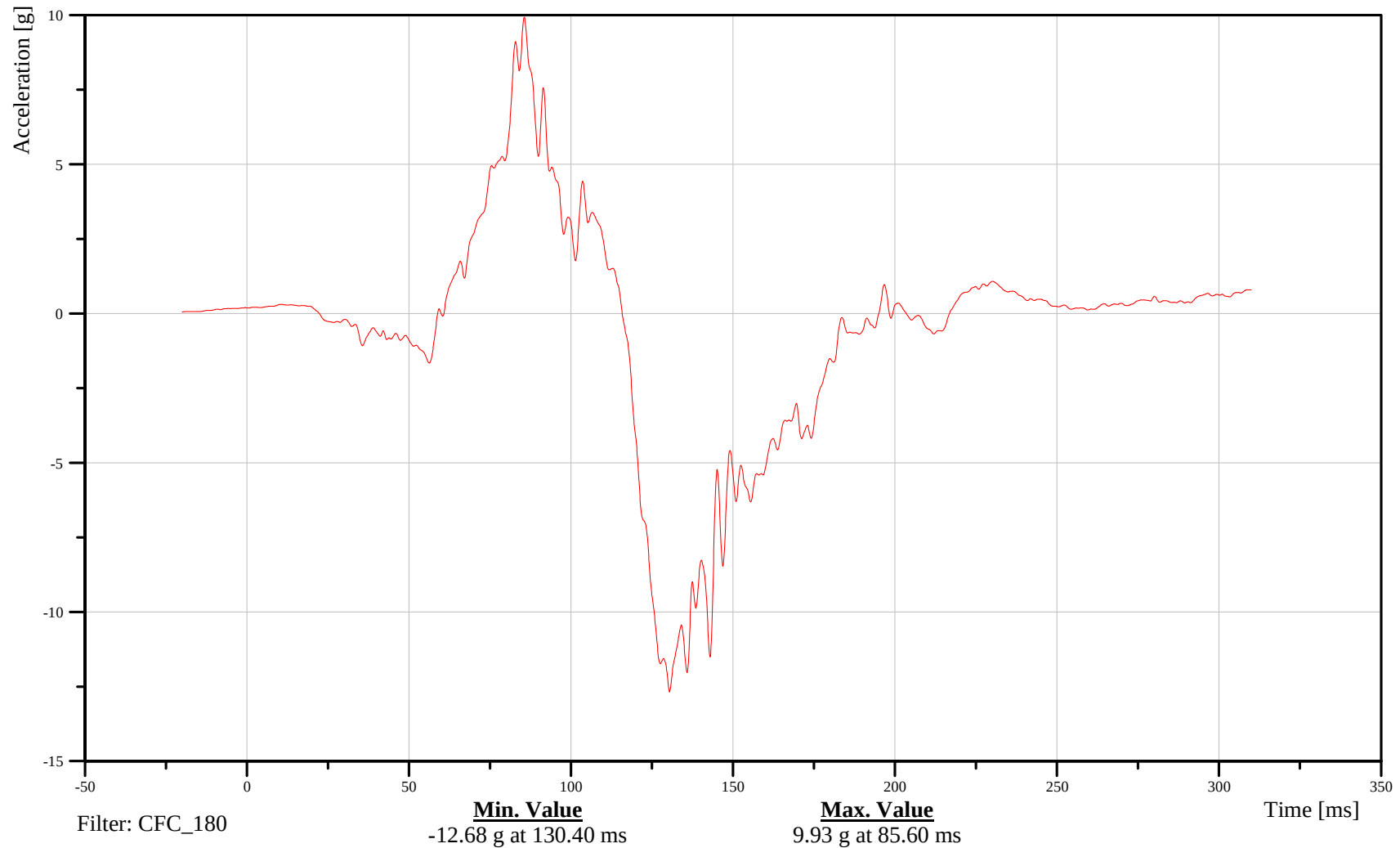
Driver Chest Z-Axis Redundant Acceleration

Customer: VRTC

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-30

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

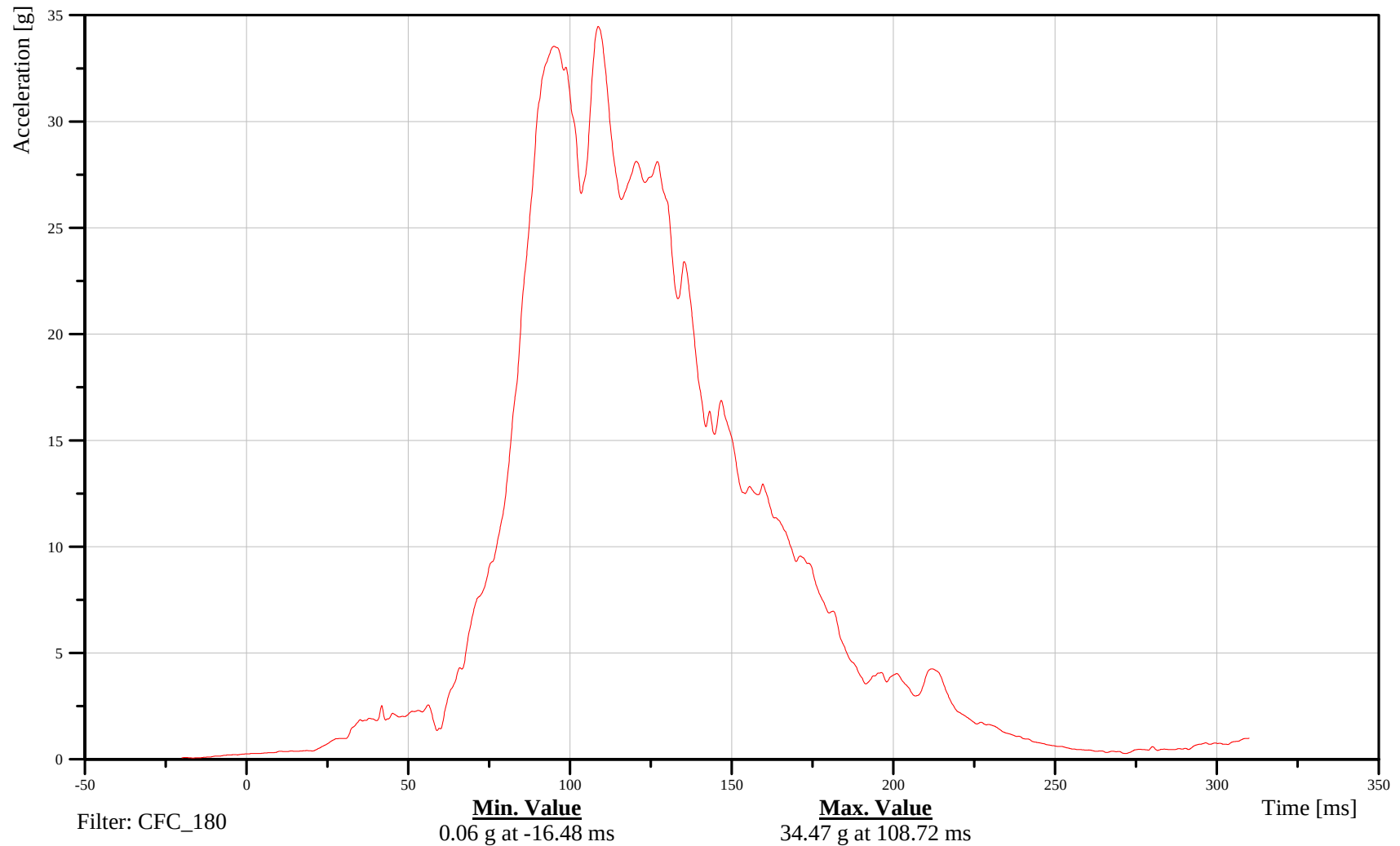
Driver Chest Redundant Resultant Acceleration

Customer: VRTC

11CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-31

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

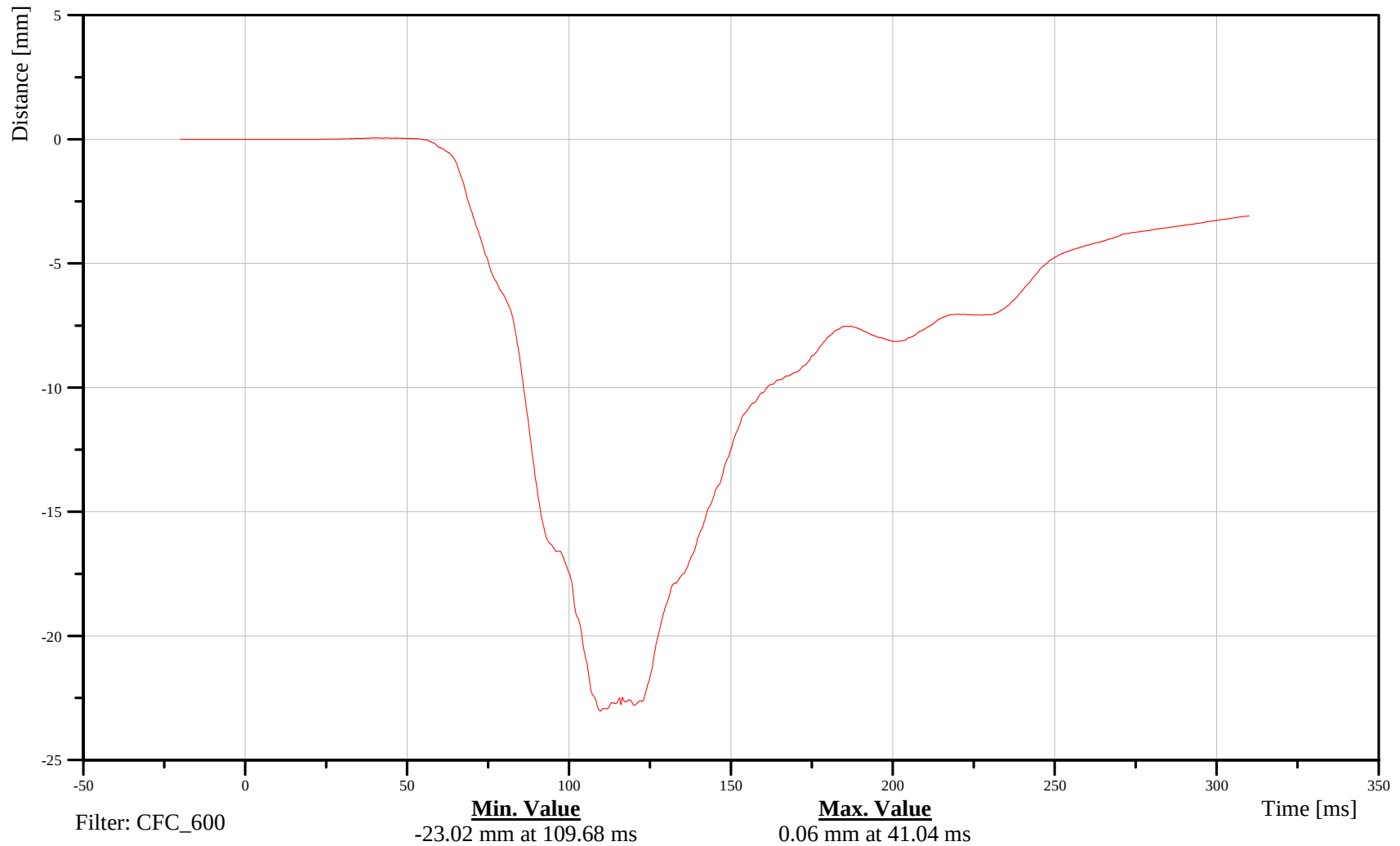
Driver Chest Displacement

Customer: VRTC

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-32

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

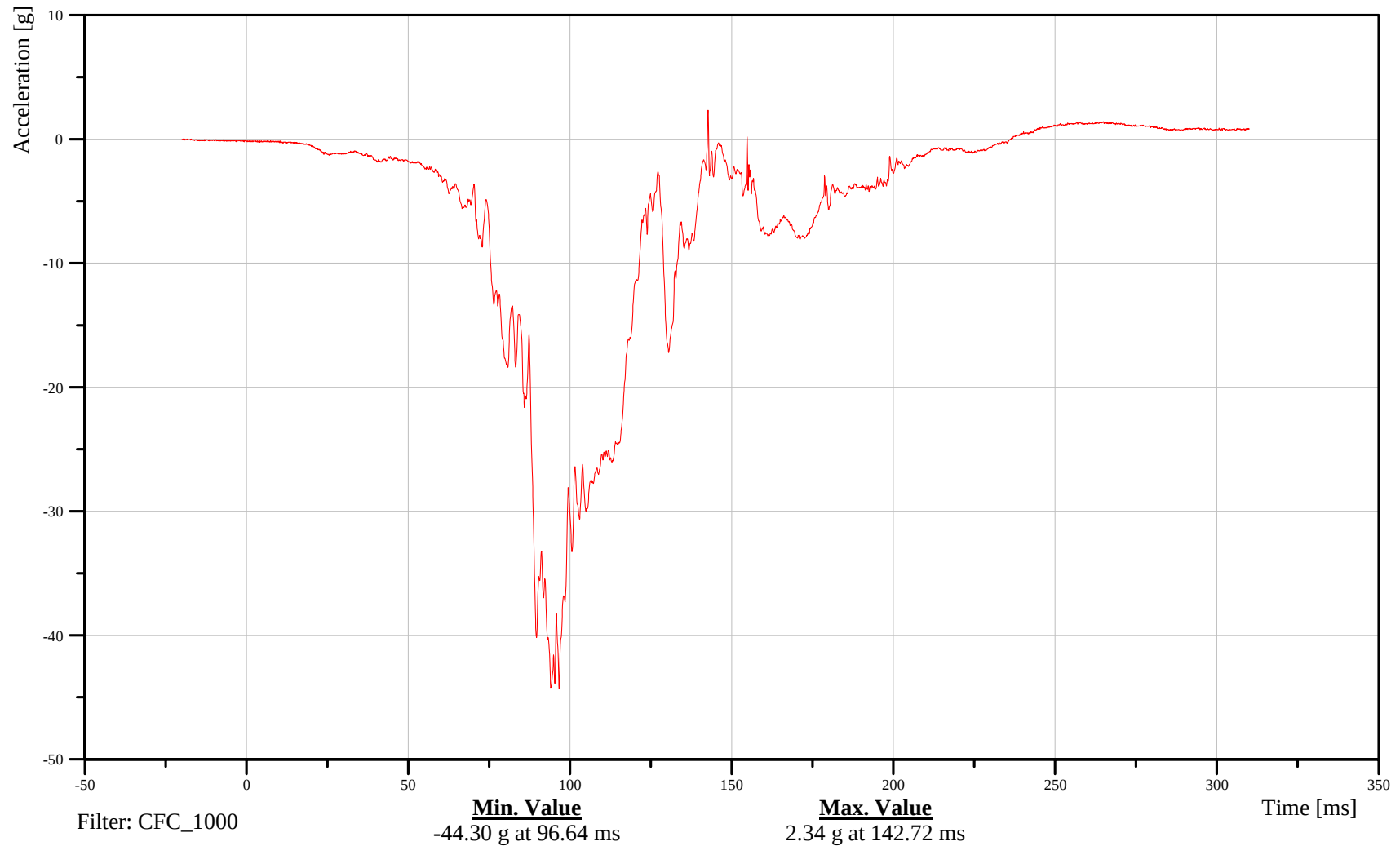
Driver Pelvis X-Axis Acceleration

Customer: VRTC

11PELVCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-33

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

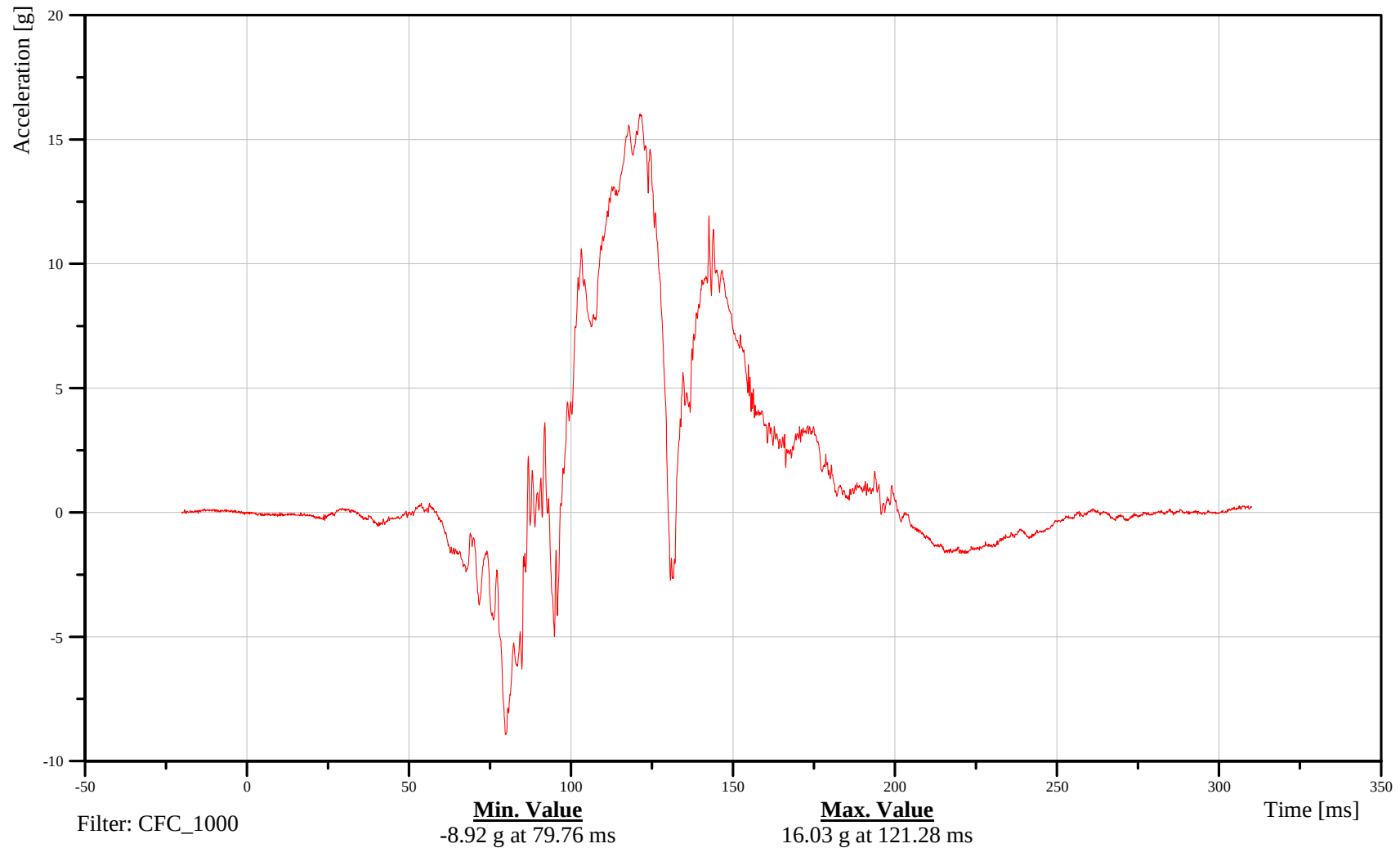
Driver Pelvis Y-Axis Acceleration

Customer: VRTC

11PELVCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-34

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

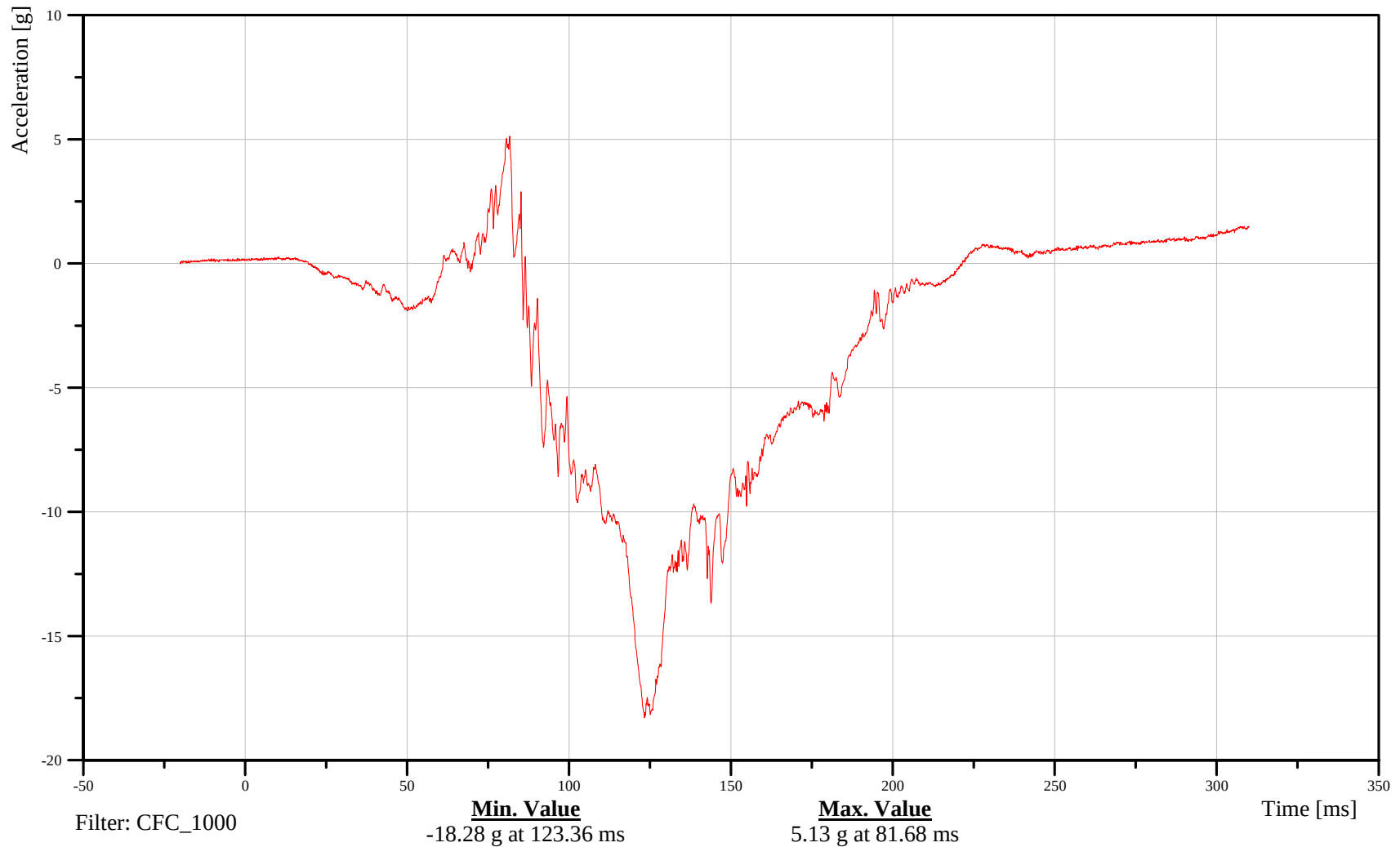
Driver Pelvis Z-Axis Acceleration

Customer: VRTC

11PELVCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-35

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

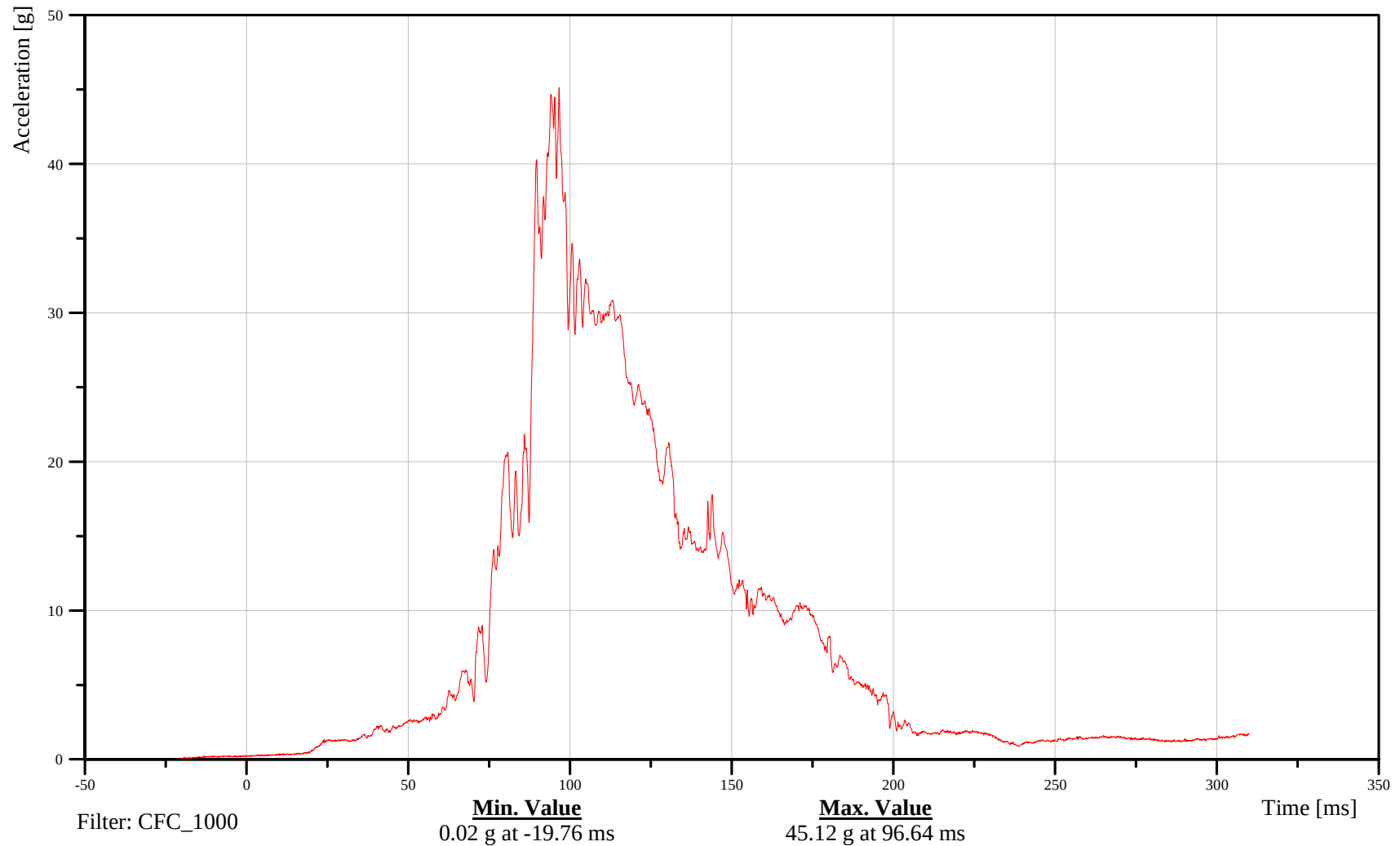
Driver Pelvis Resultant Acceleration

Customer: VRTC

11PELVCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-36

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

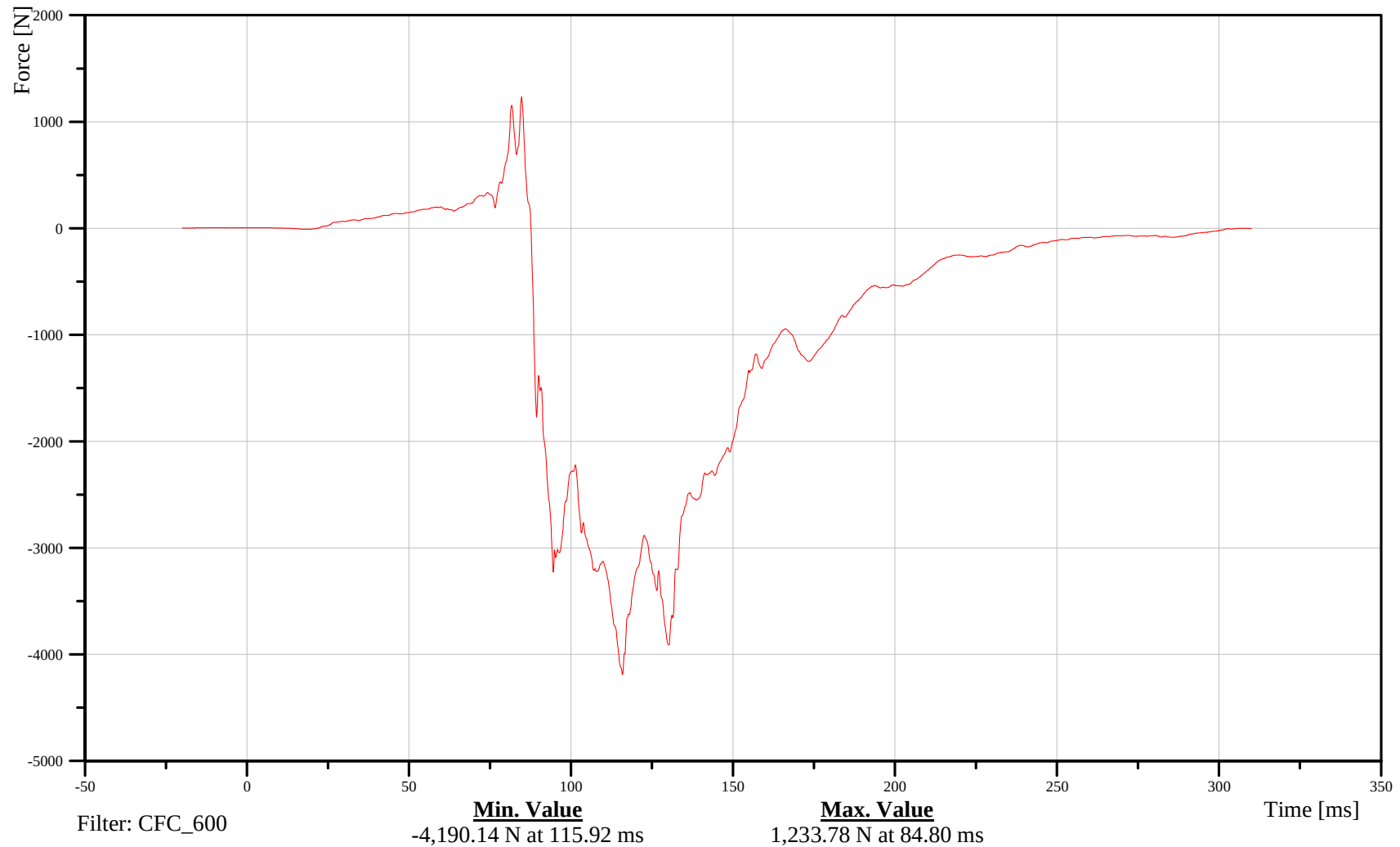
Driver Left Femur Z-Axis Force

Customer: VRTC

11FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-37

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

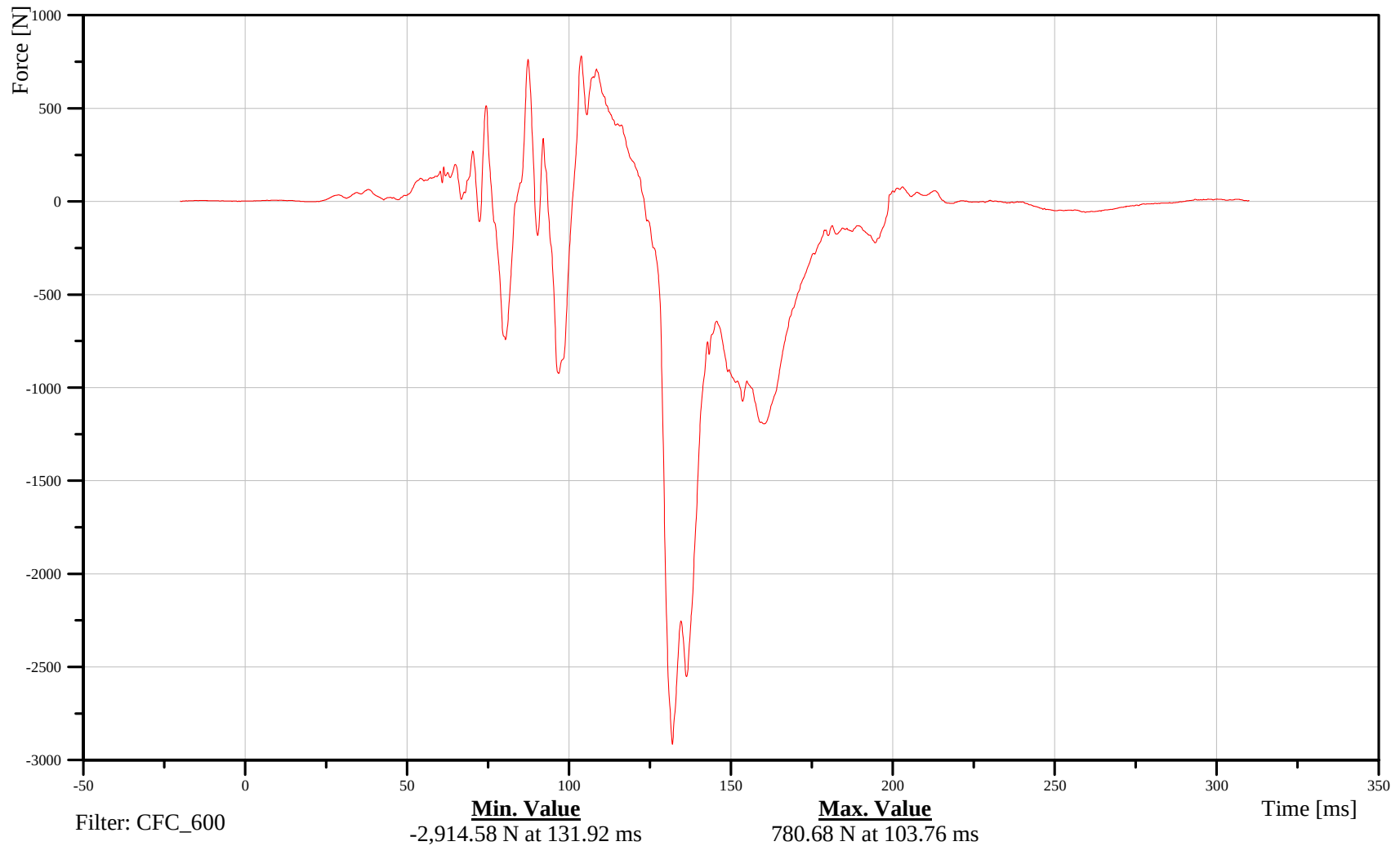
Driver Right Femur Z-Axis Force

Customer: VRTC

11FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-38

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

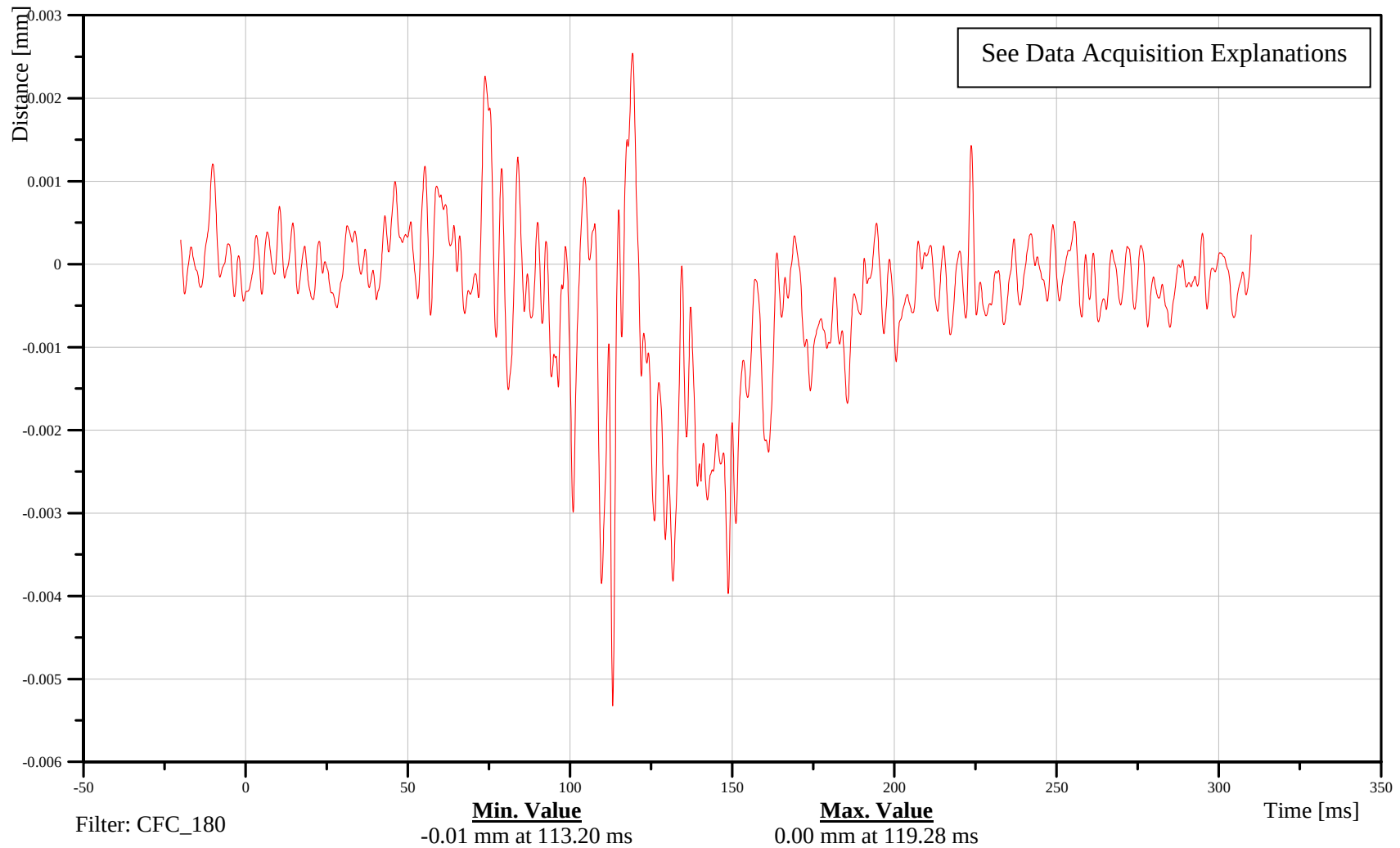
Driver Left Knee Displacement

Customer: VRTC

11KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-39

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

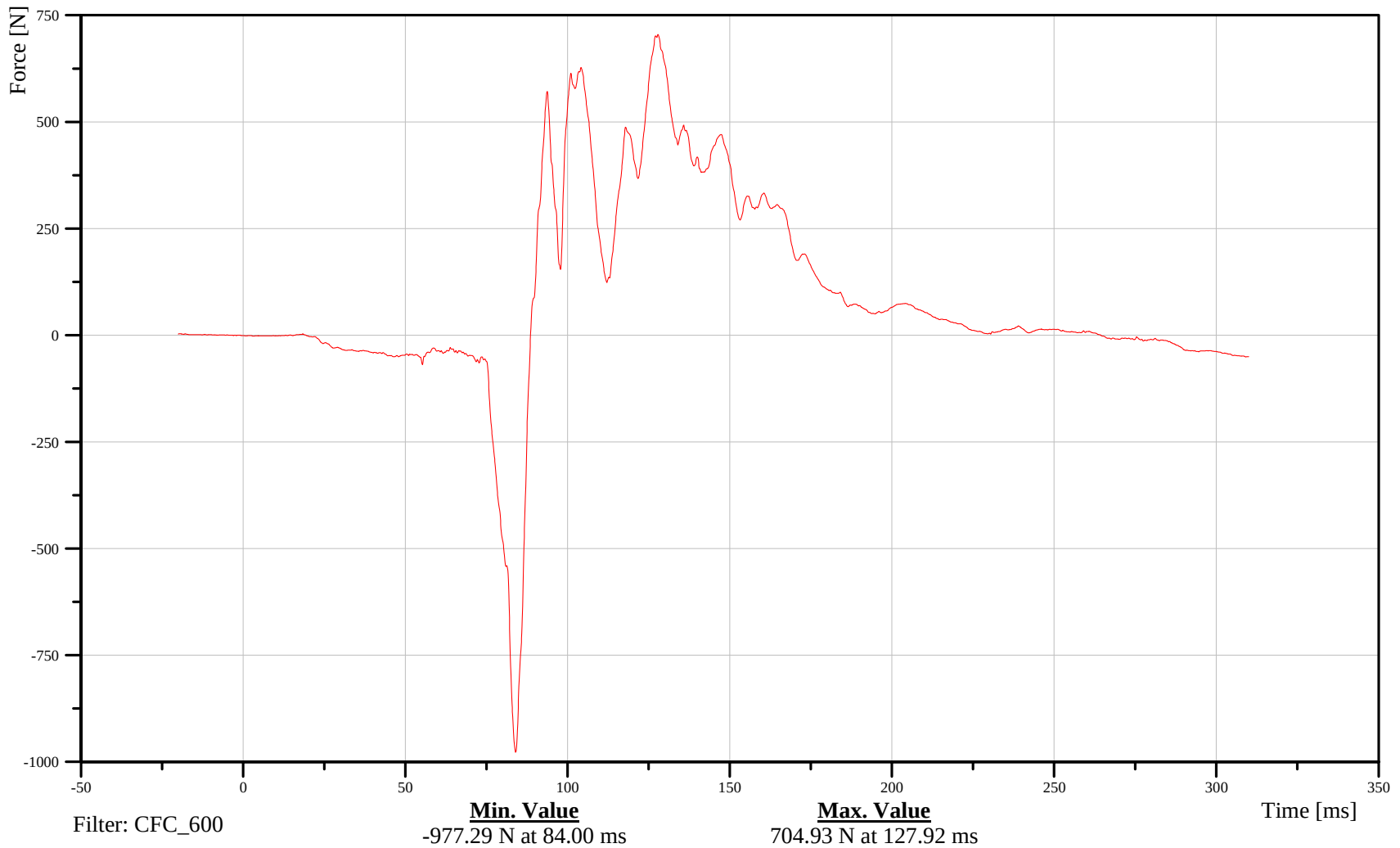
Driver Left Upper Tibia X-Axis Force

Customer: VRTC

11TIBILULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-40

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

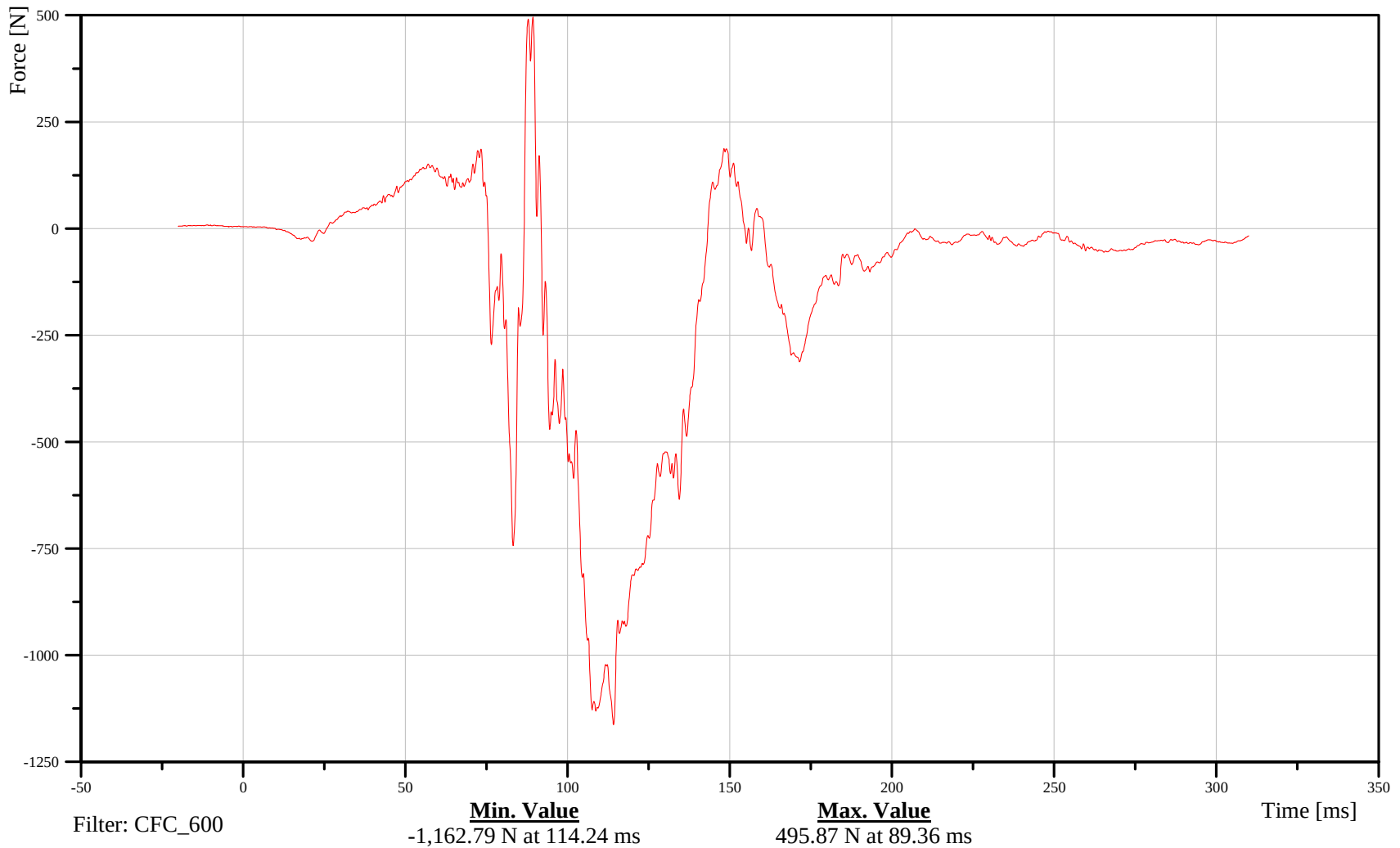
Driver Left Upper Tibia Z-Axis Force

Customer: VRTC

11TIBILULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-41

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

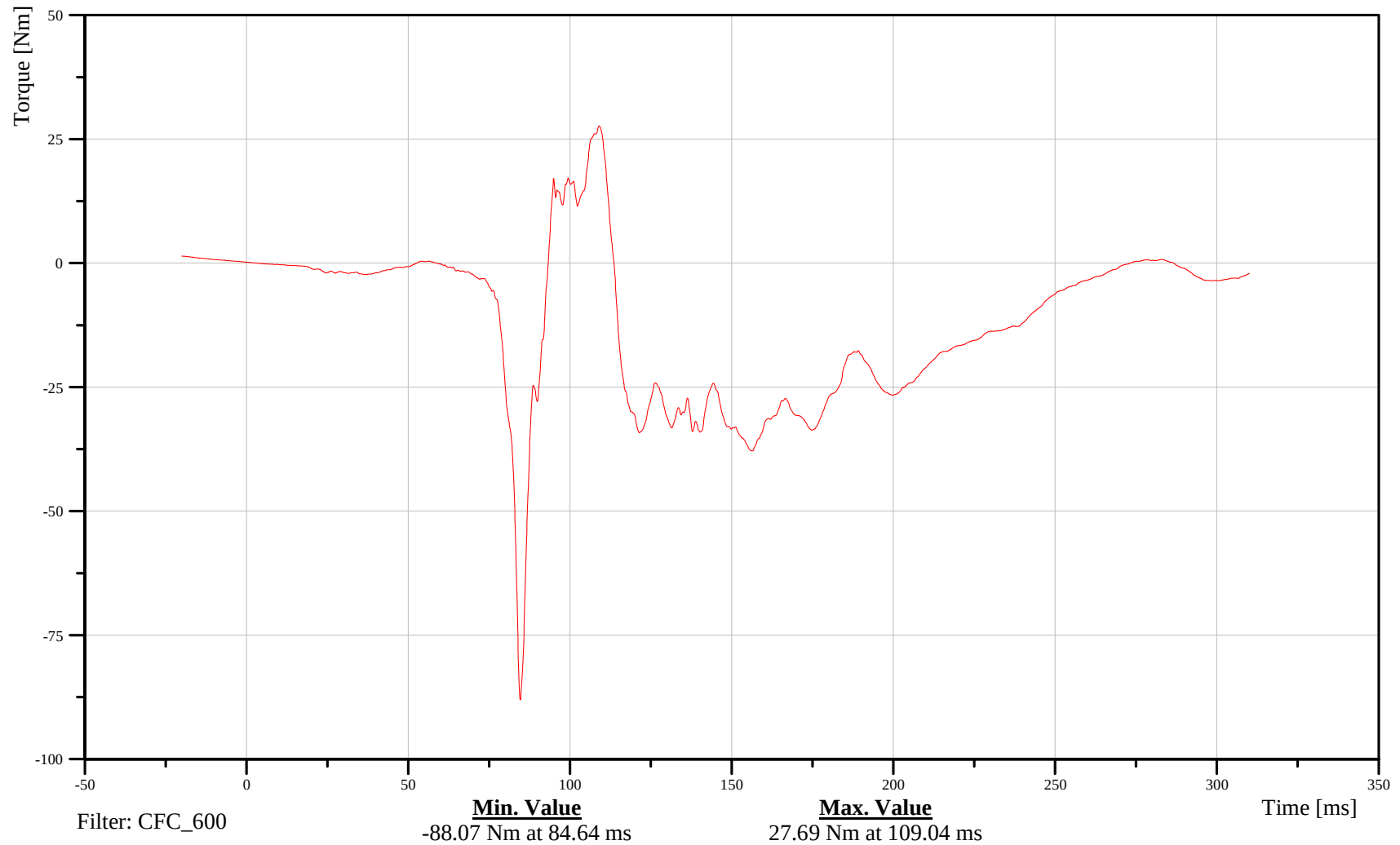
Driver Left Upper Tibia Moment About X Axis

Customer: VRTC

11TIBILULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-42

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

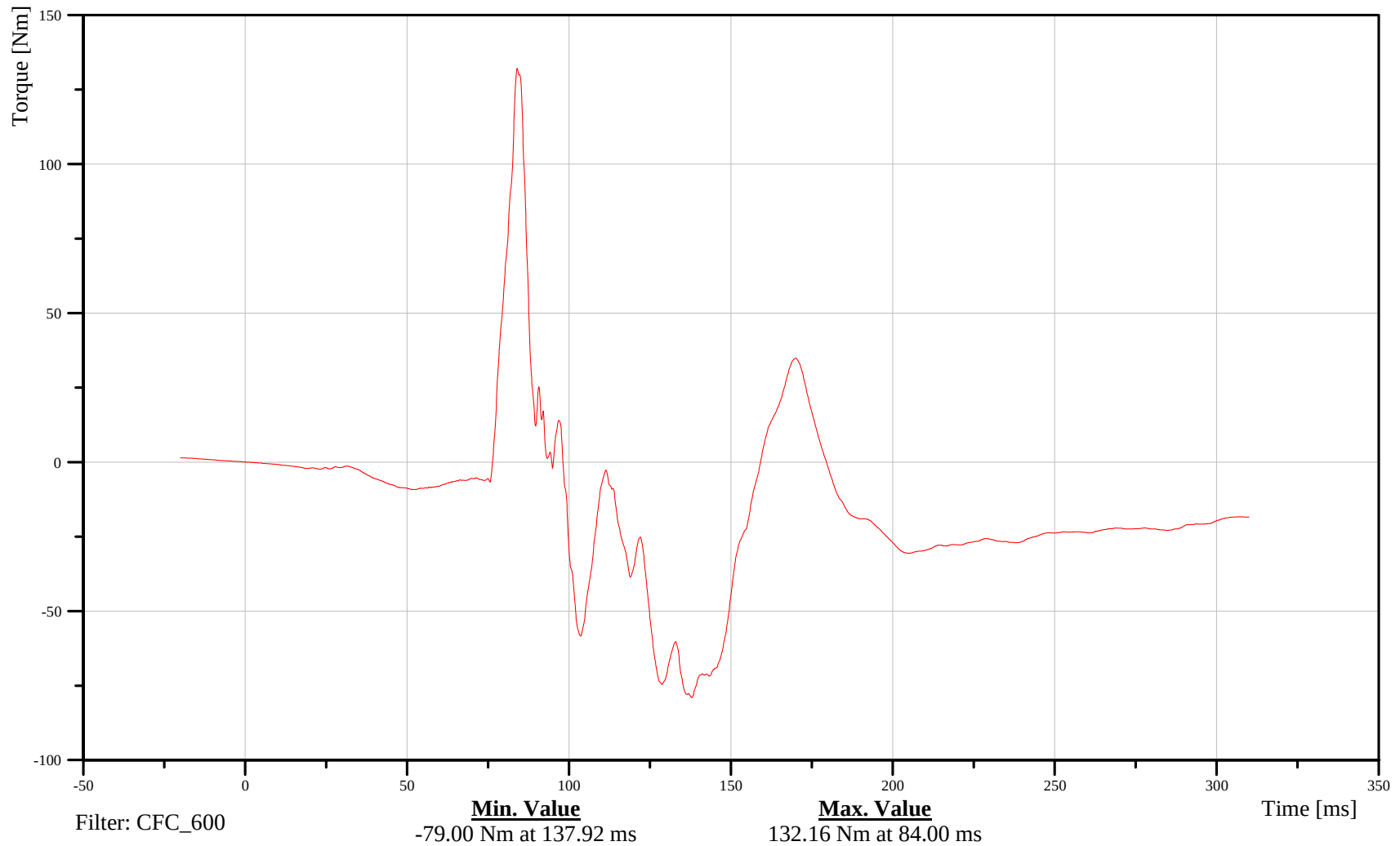
Driver Left Upper Tibia Moment About Y Axis

Customer: VRTC

11TIBILULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-43

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

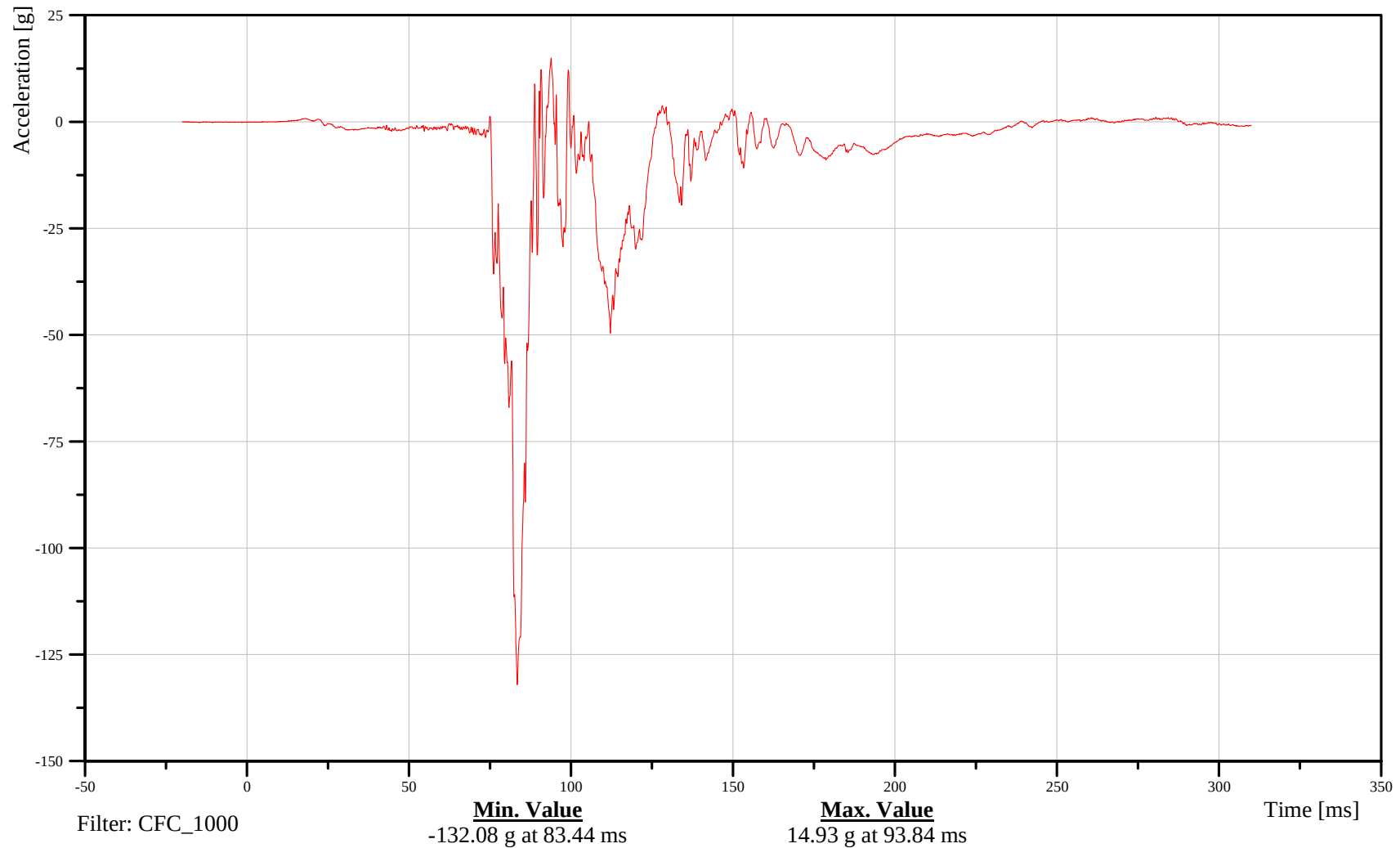
Driver Left Tibia X-Axis Acceleration

Customer: VRTC

11TIBILELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-44

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

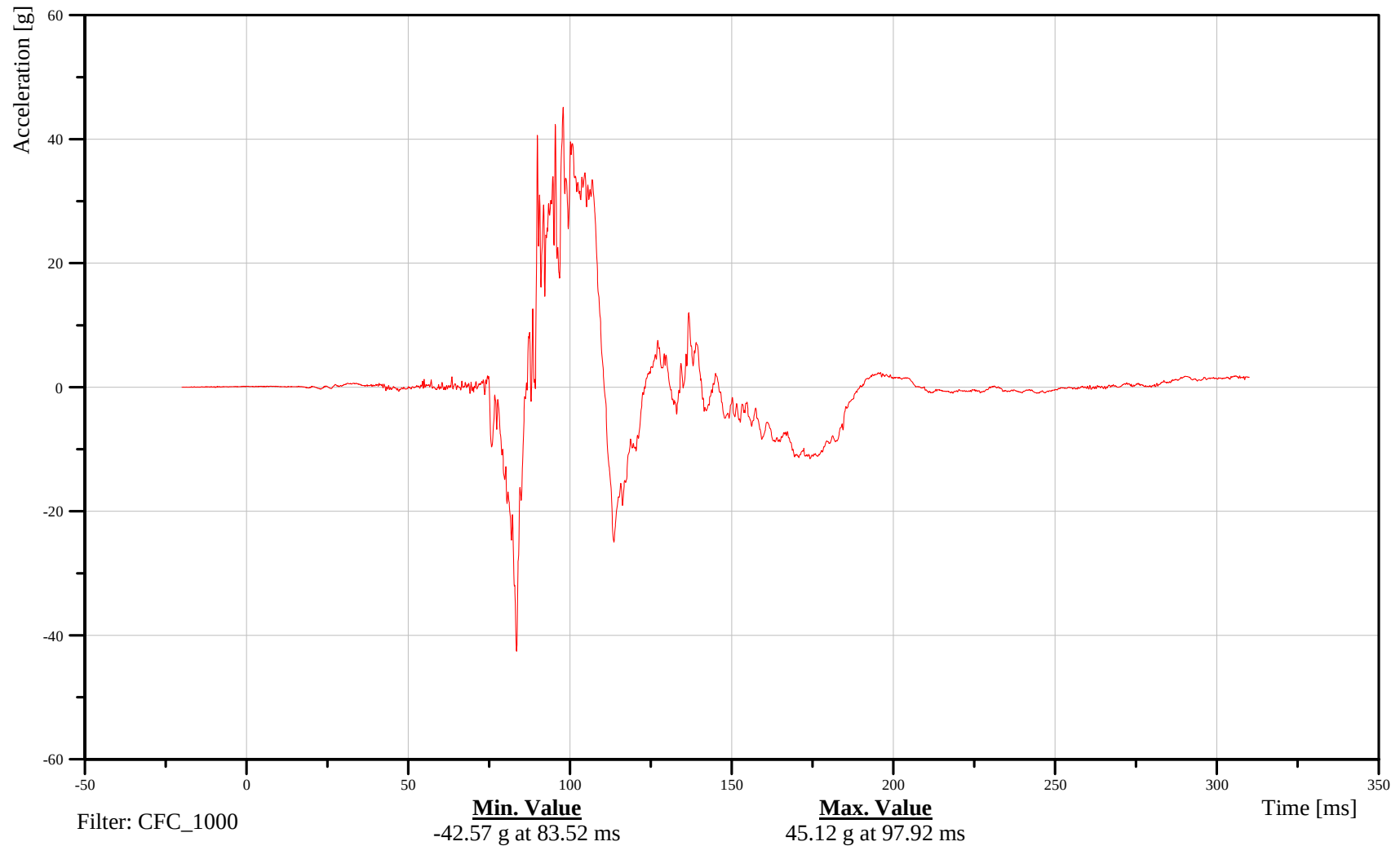
Driver Left Tibia Y-Axis Acceleration

Customer: VRTC

11TIBILELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-45

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

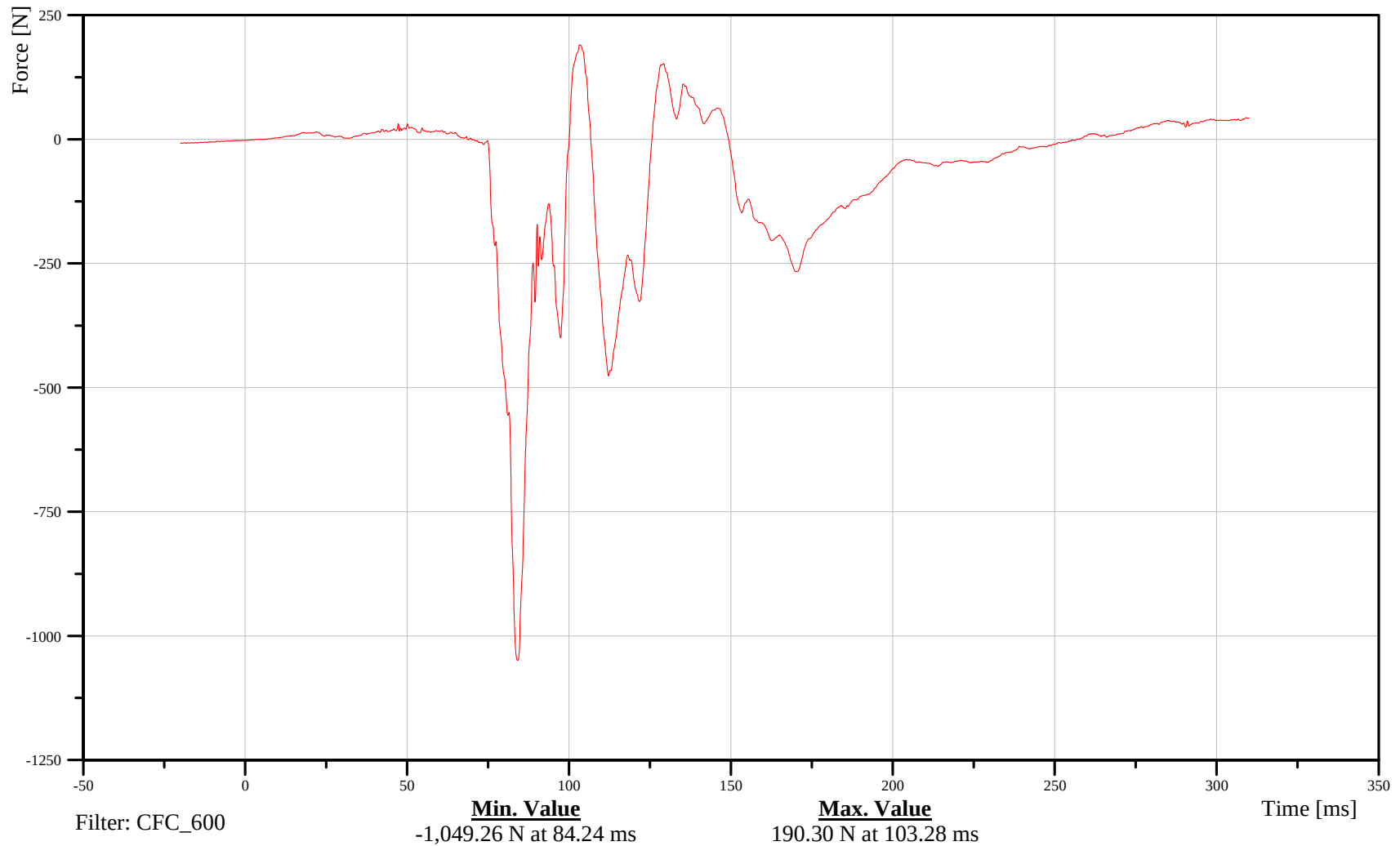
Driver Left Lower Tibia X-Axis Force

Customer: VRTC

11TIBILLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-46

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

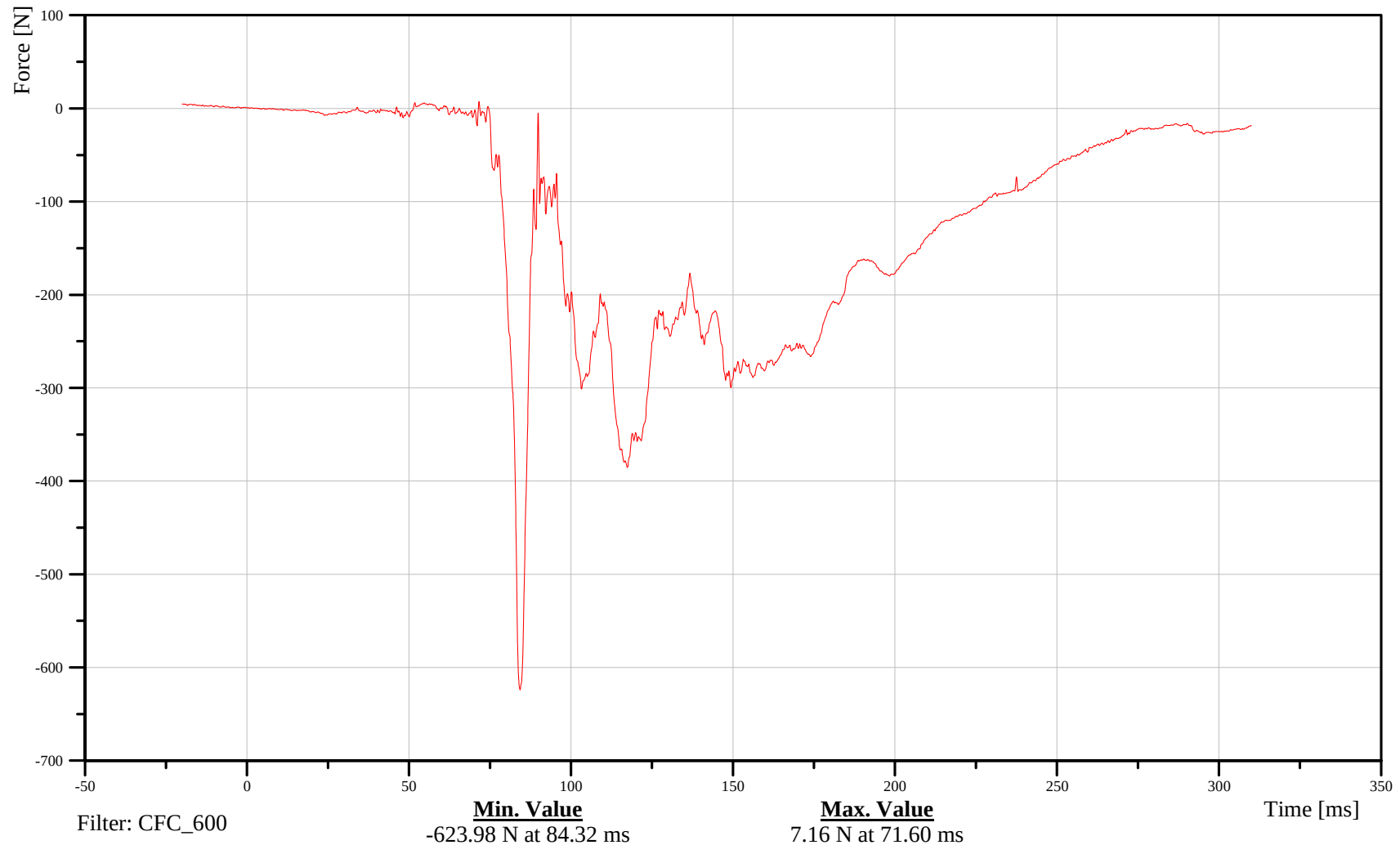
Driver Left Lower Tibia Y-Axis Force

Customer: VRTC

11TIBILLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-47

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

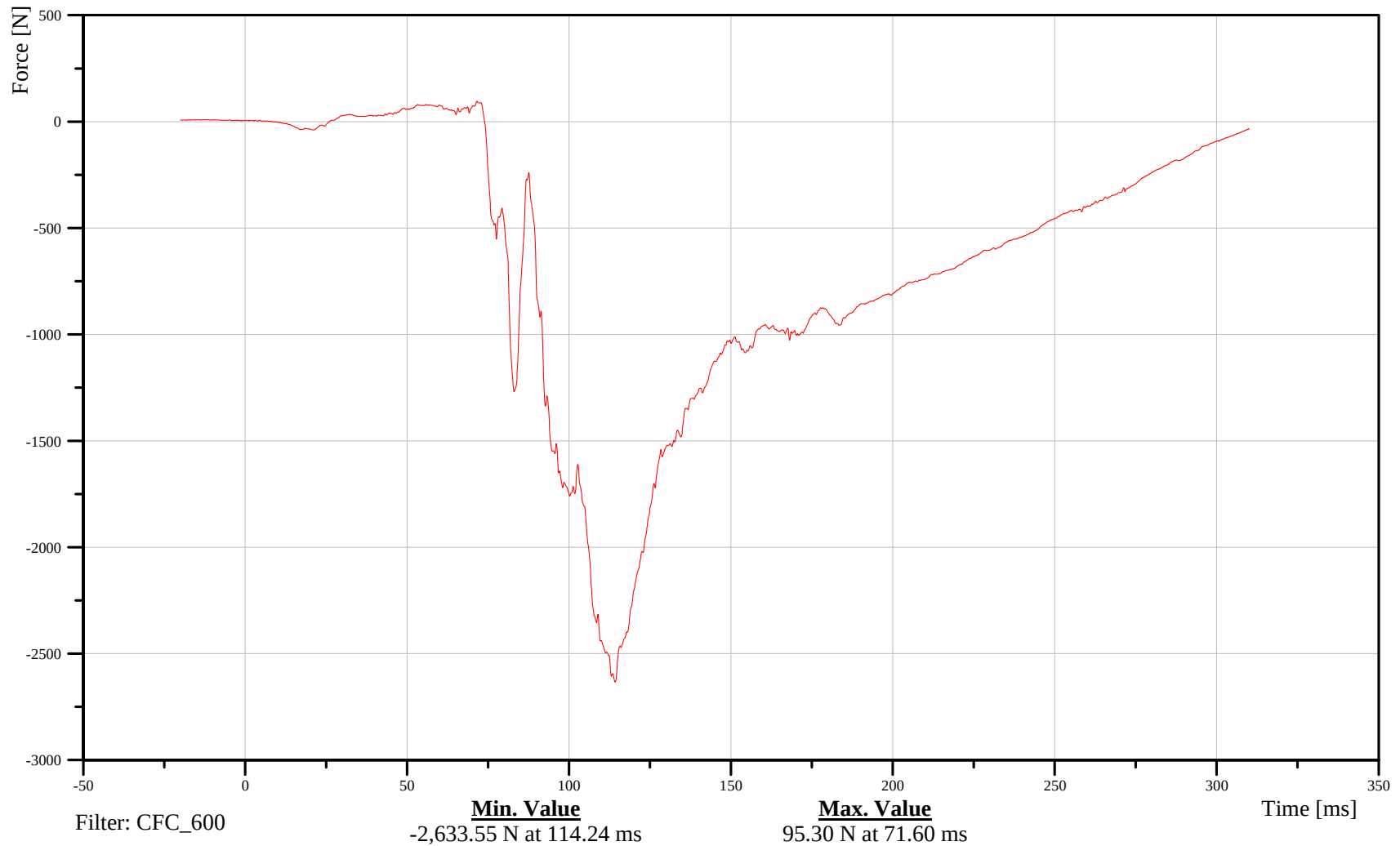
Driver Left Lower Tibia Z-Axis Force

Customer: VRTC

11TIBILLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-48

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

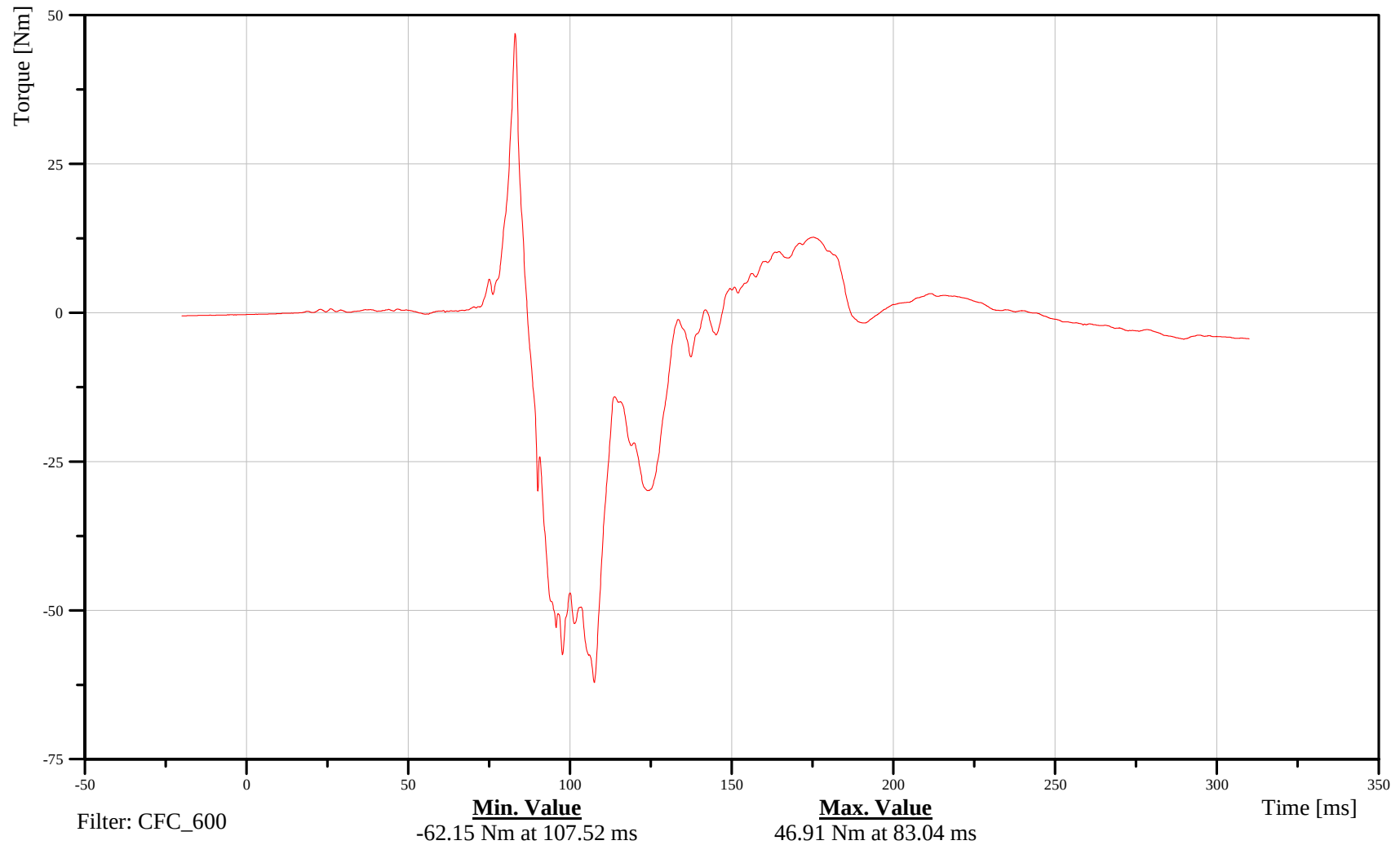
Driver Left Lower Tibia Moment About X Axis

Customer: VRTC

11TIBILLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-49

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

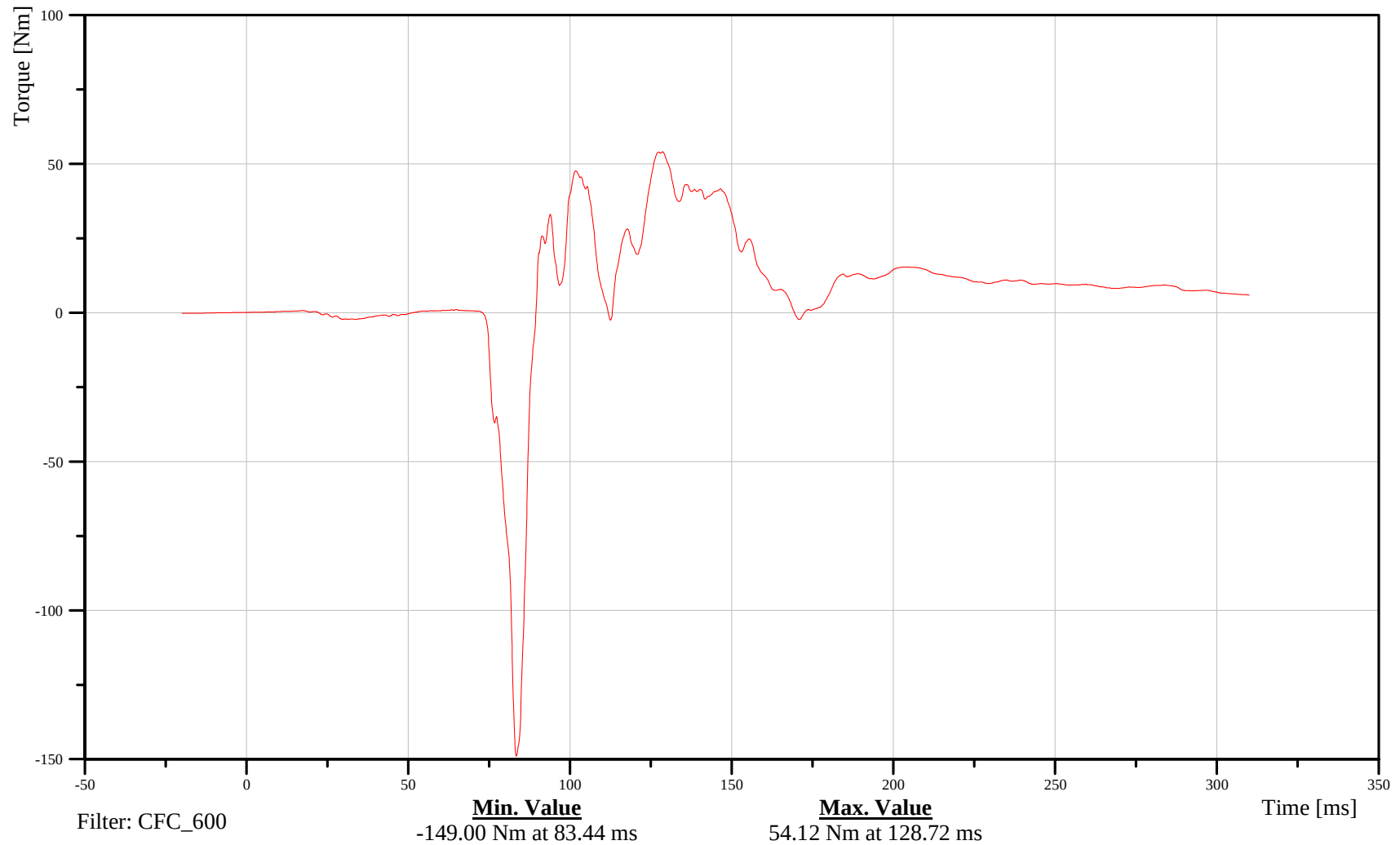
Driver Left Lower Tibia Moment About Y Axis

Customer: VRTC

11TIBILLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-50

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

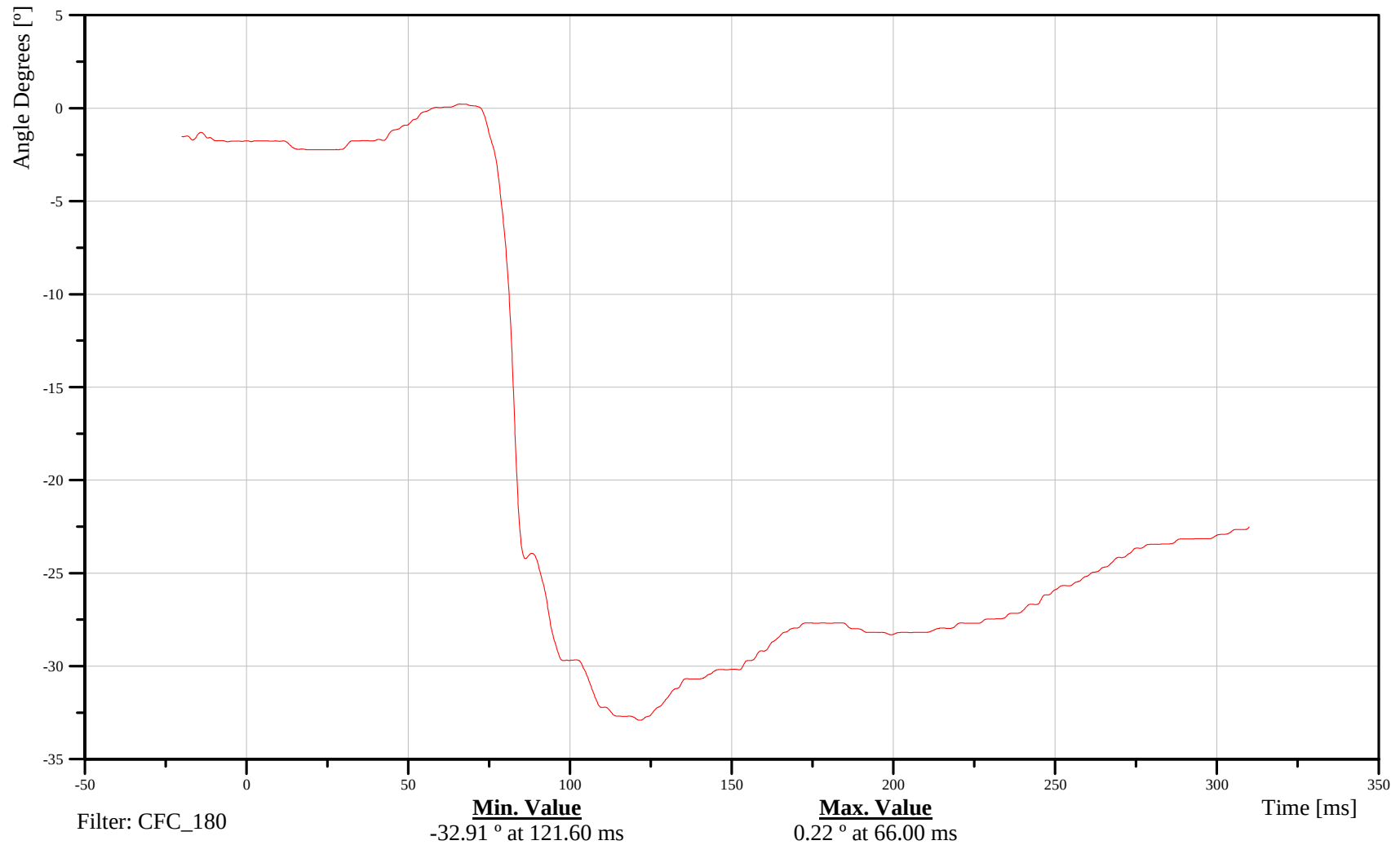
Driver Left Foot X-Axis Rotation

Customer: VRTC

11FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-51

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

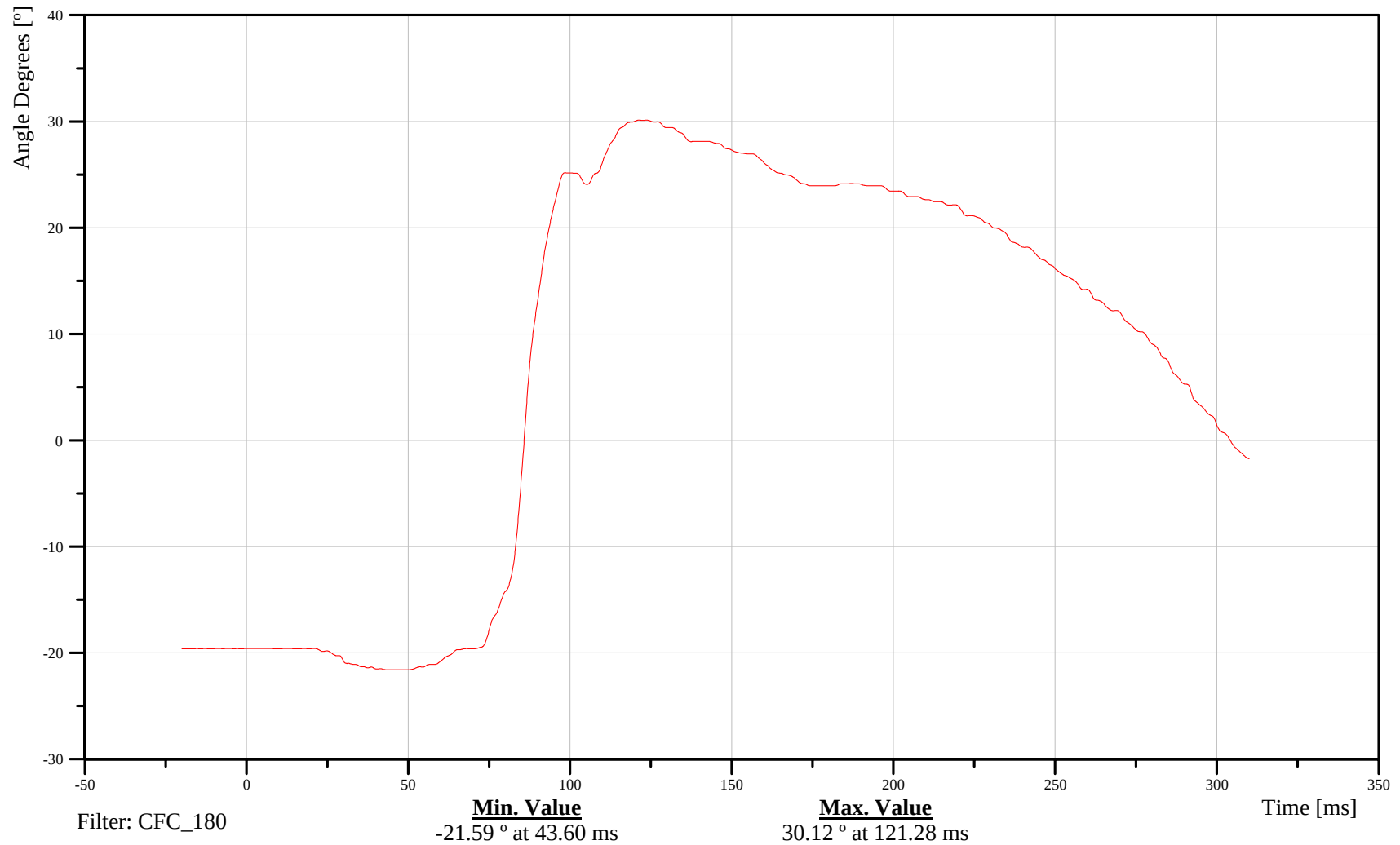
Driver Left Foot Y-Axis Rotation

Customer: VRTC

11FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-52

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

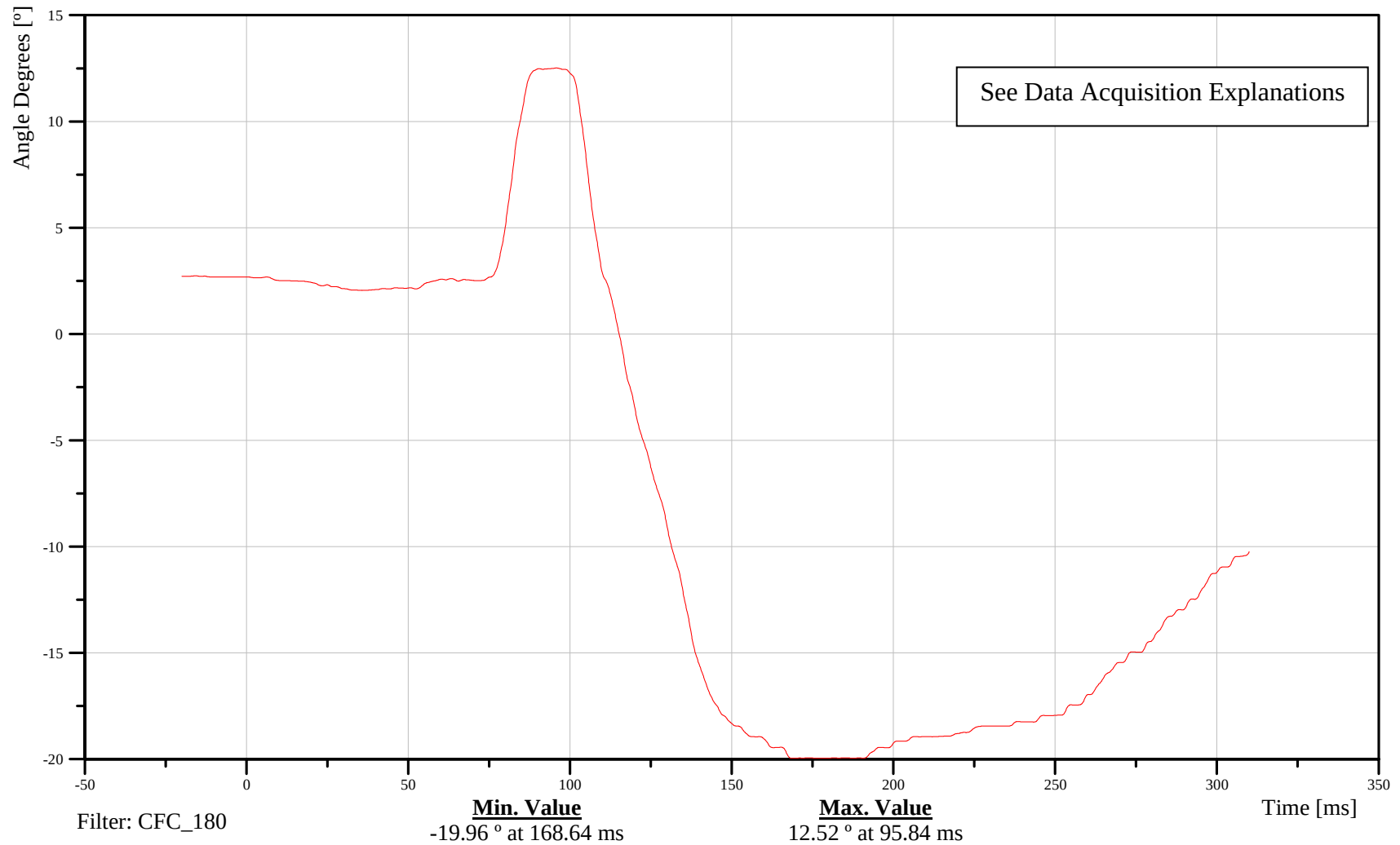
Driver Left Foot Z-Axis Rotation

Customer: VRTC

11FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-53

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

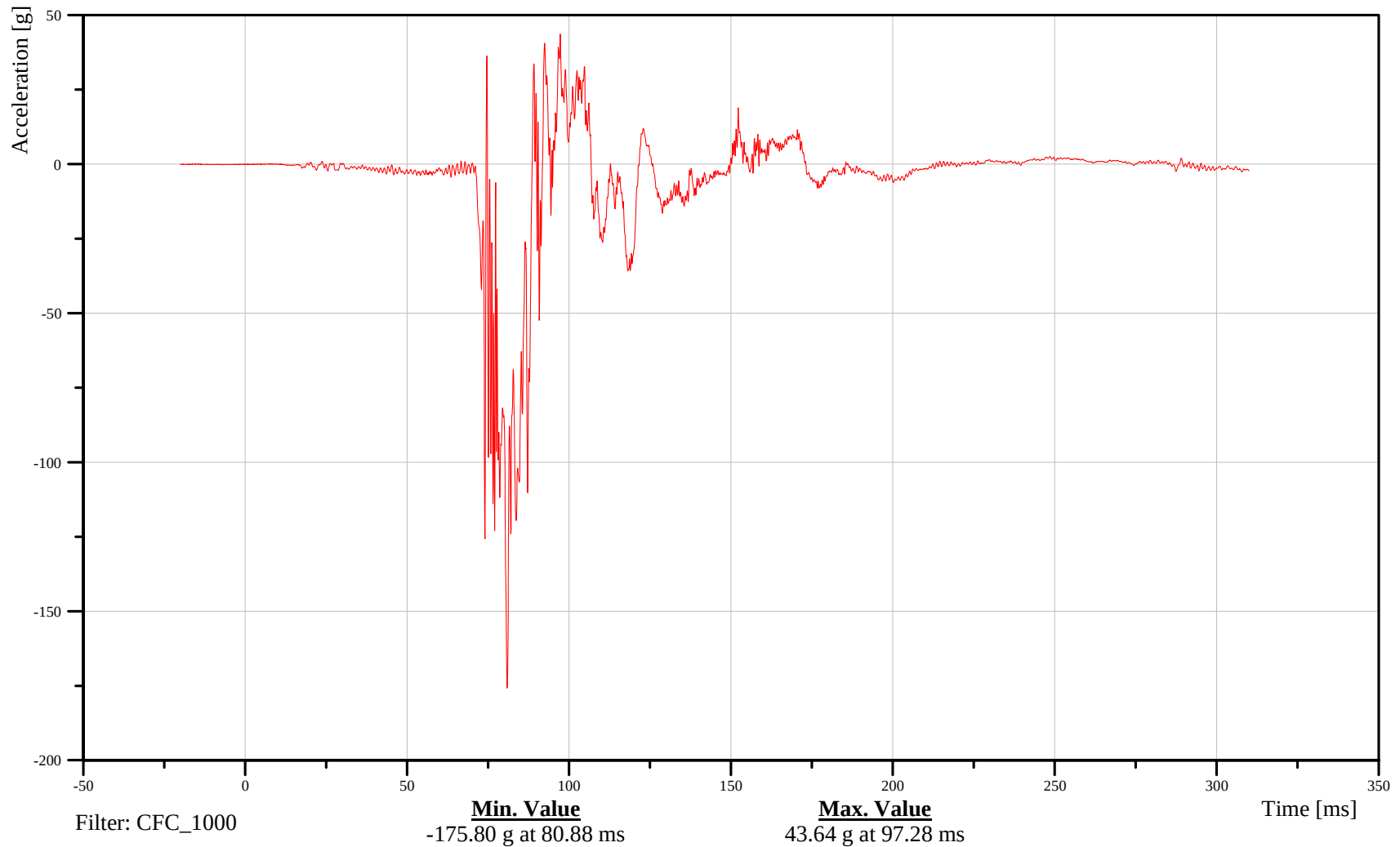
Driver Left Foot X-Axis Acceleration

Customer: VRTC

11FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-54

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

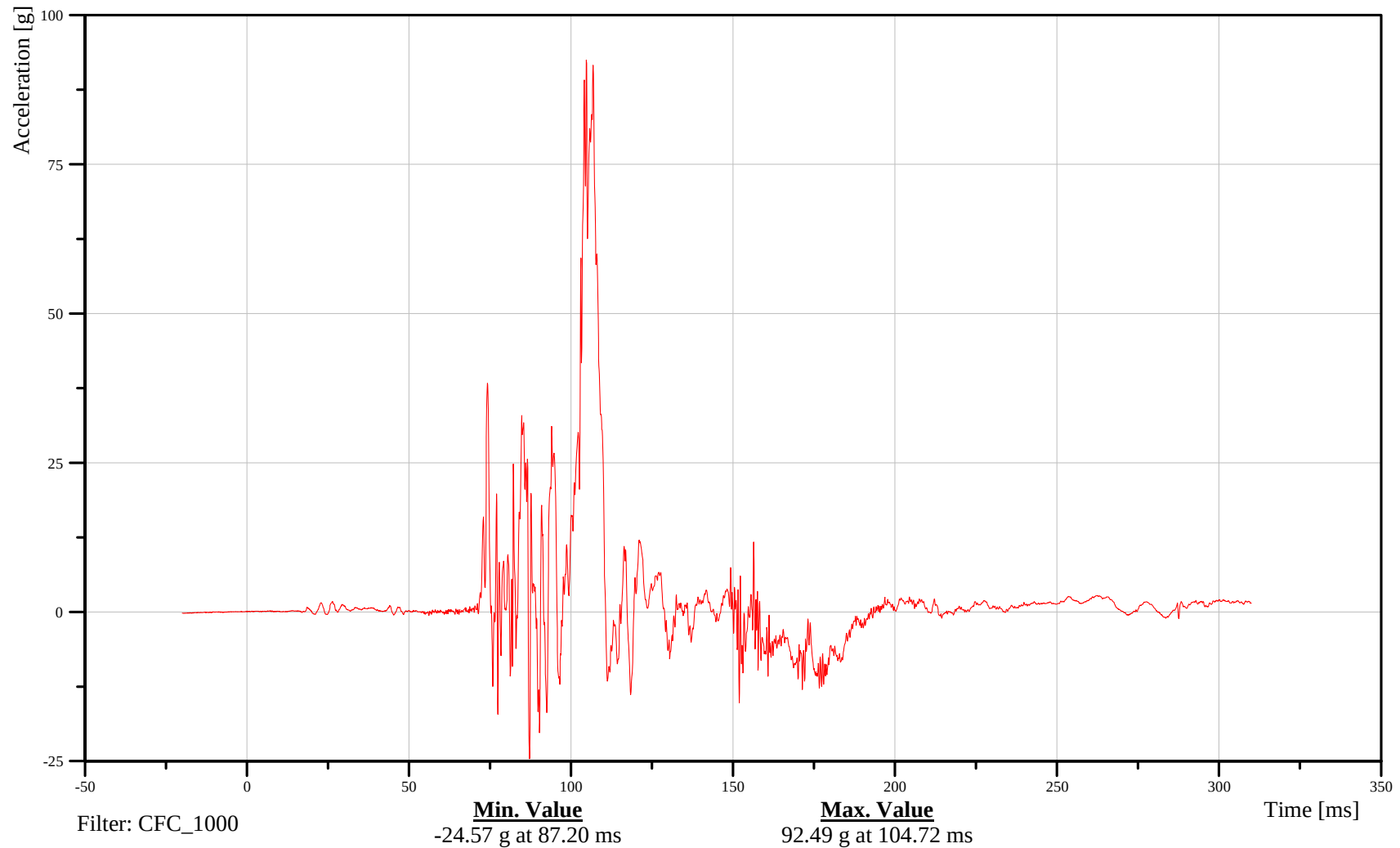
Driver Left Foot Y-Axis Acceleration

Customer: VRTC

11FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-55

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

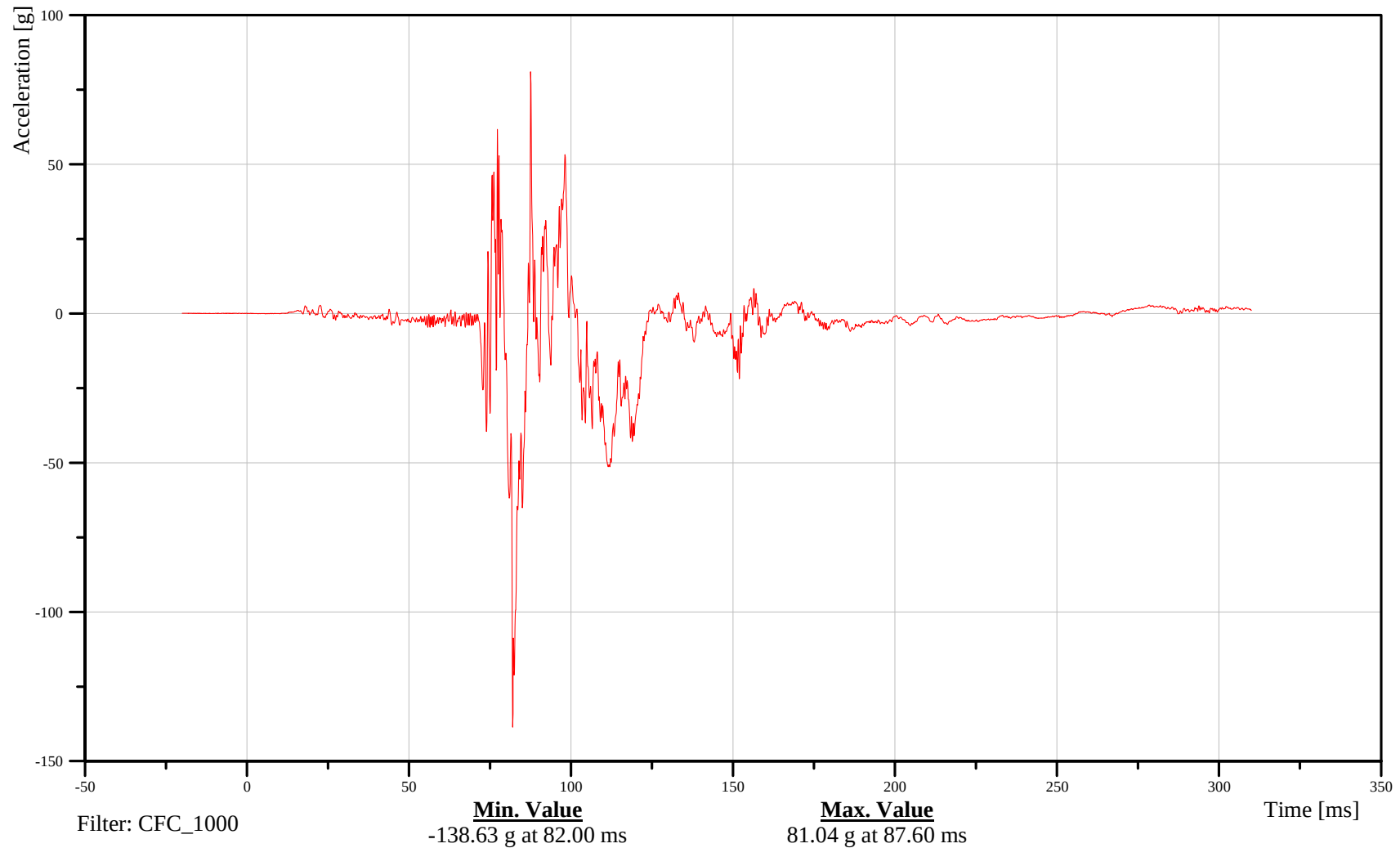
Driver Left Foot Z-Axis Acceleration

Customer: VRTC

11FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-56

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

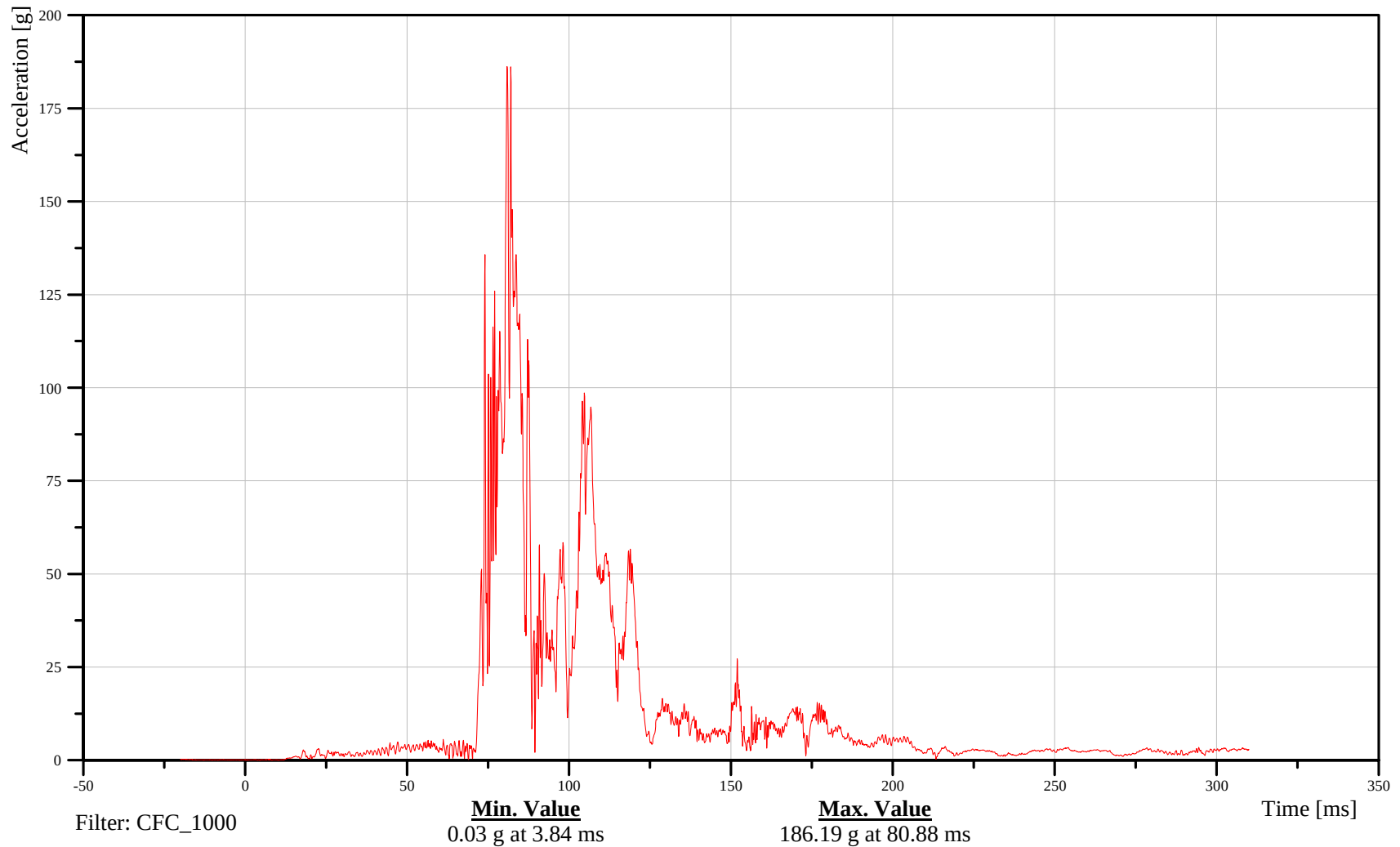
Driver Left Foot Resultant Acceleration

Customer: VRTC

11FOOTLELXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-57

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

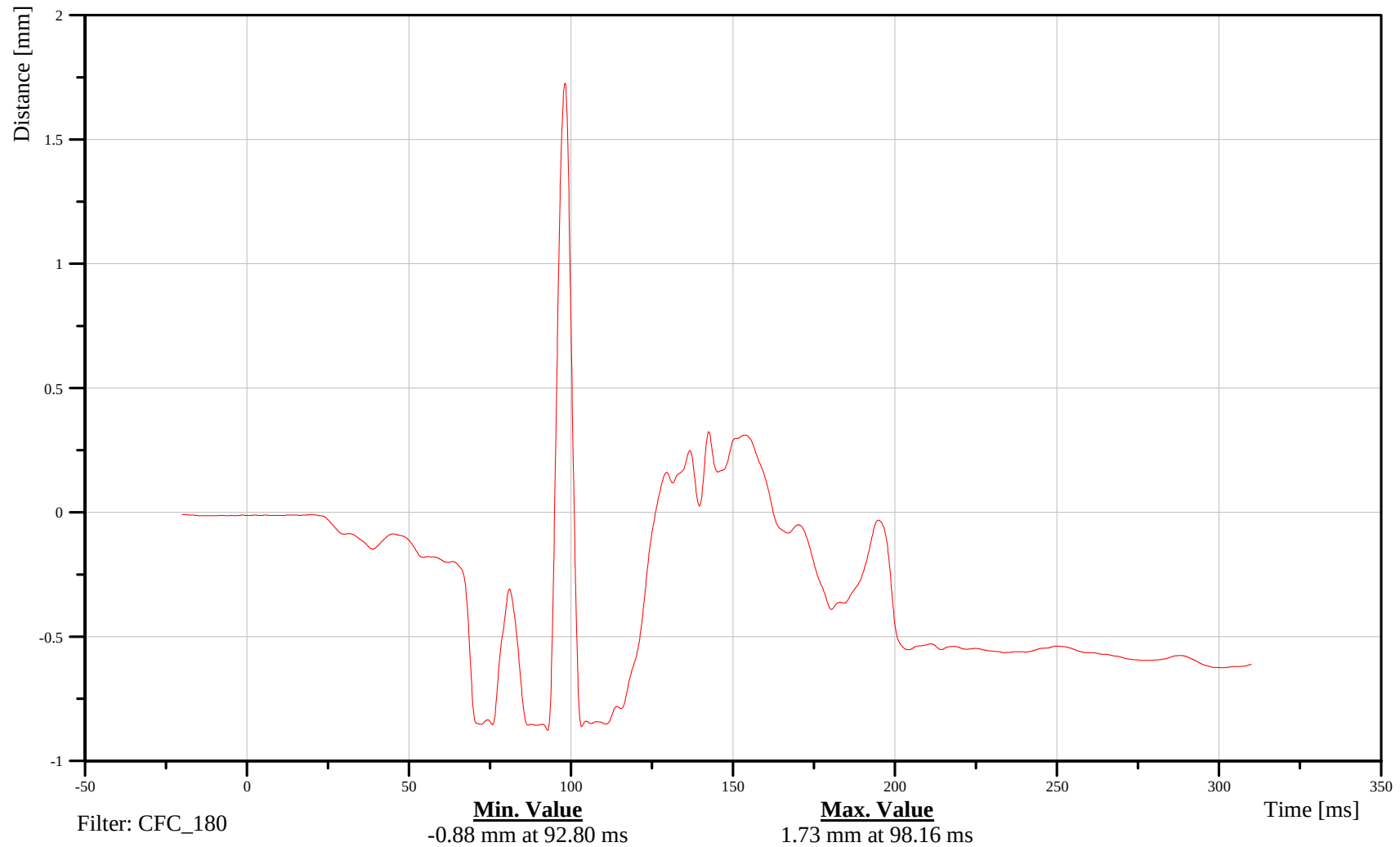
Driver Right Knee Displacement

Customer: VRTC

11KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-58

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

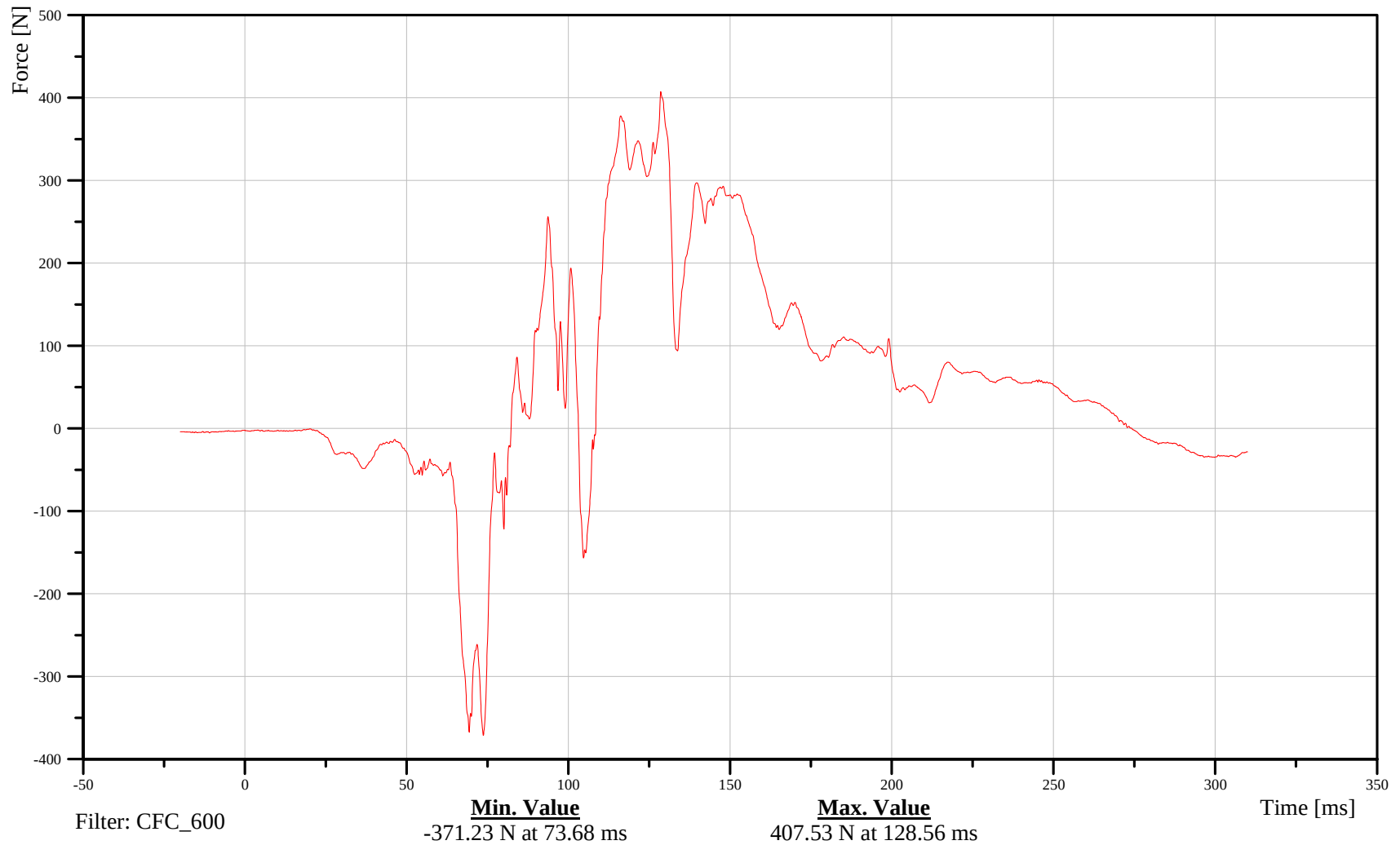
Driver Right Upper Tibia X-Axis Force

Customer: VRTC

11TIBIRULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-59

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

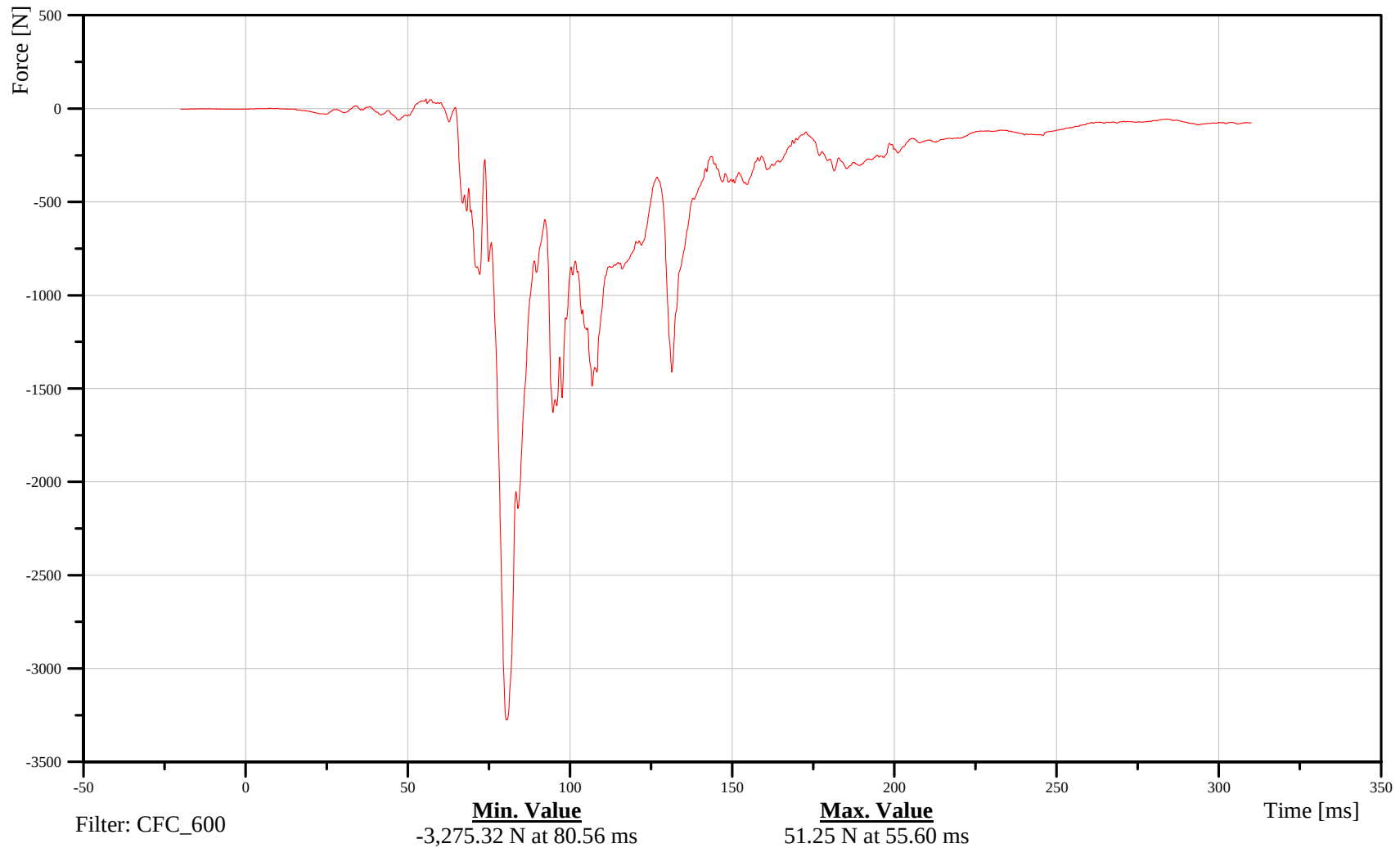
Driver Right Upper Tibia Z-Axis Force

Customer: VRTC

11TIBIRULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-60

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

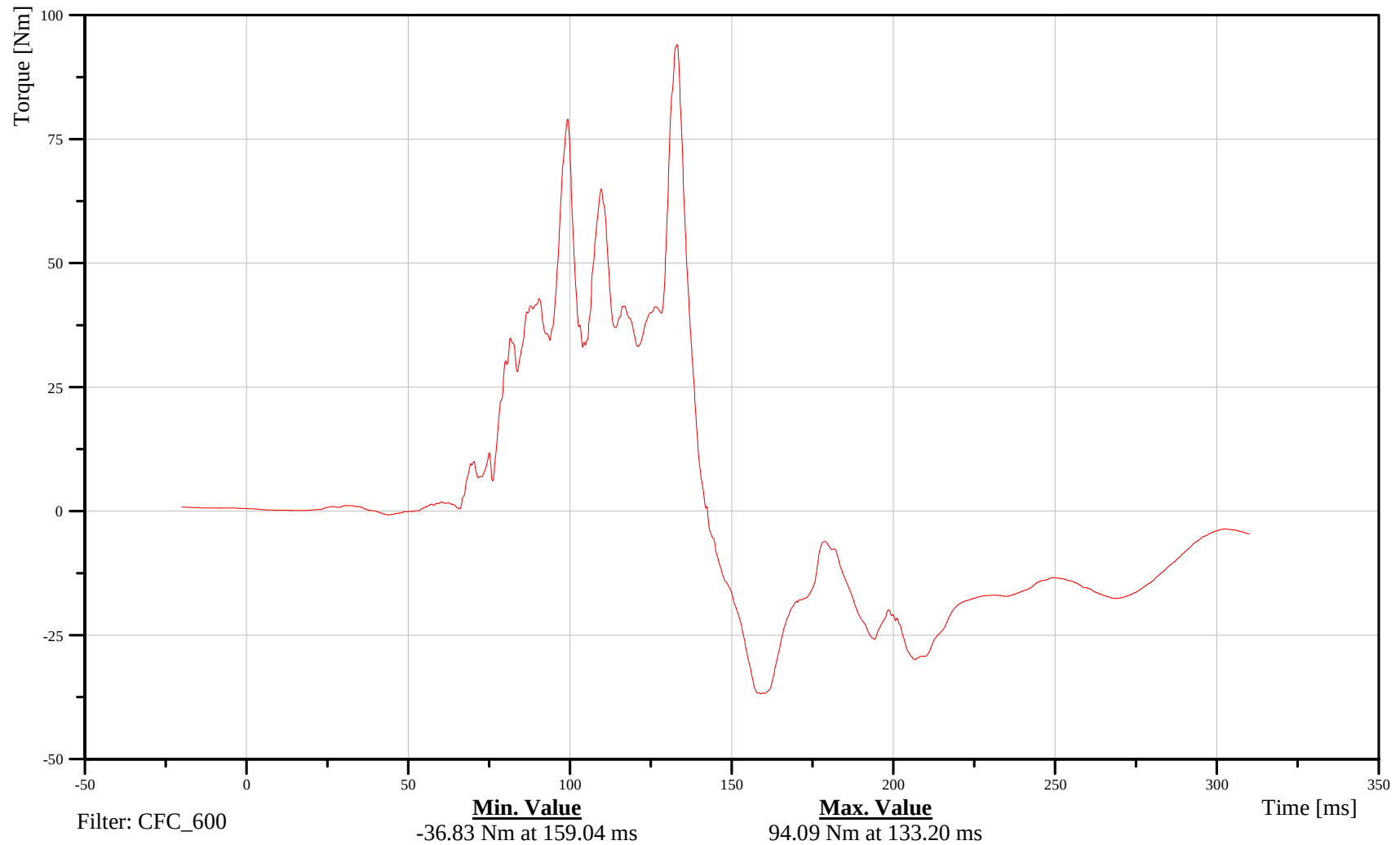
Driver Right Upper Tibia Moment About X Axis

Customer: VRTC

11TIBIRULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-61

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

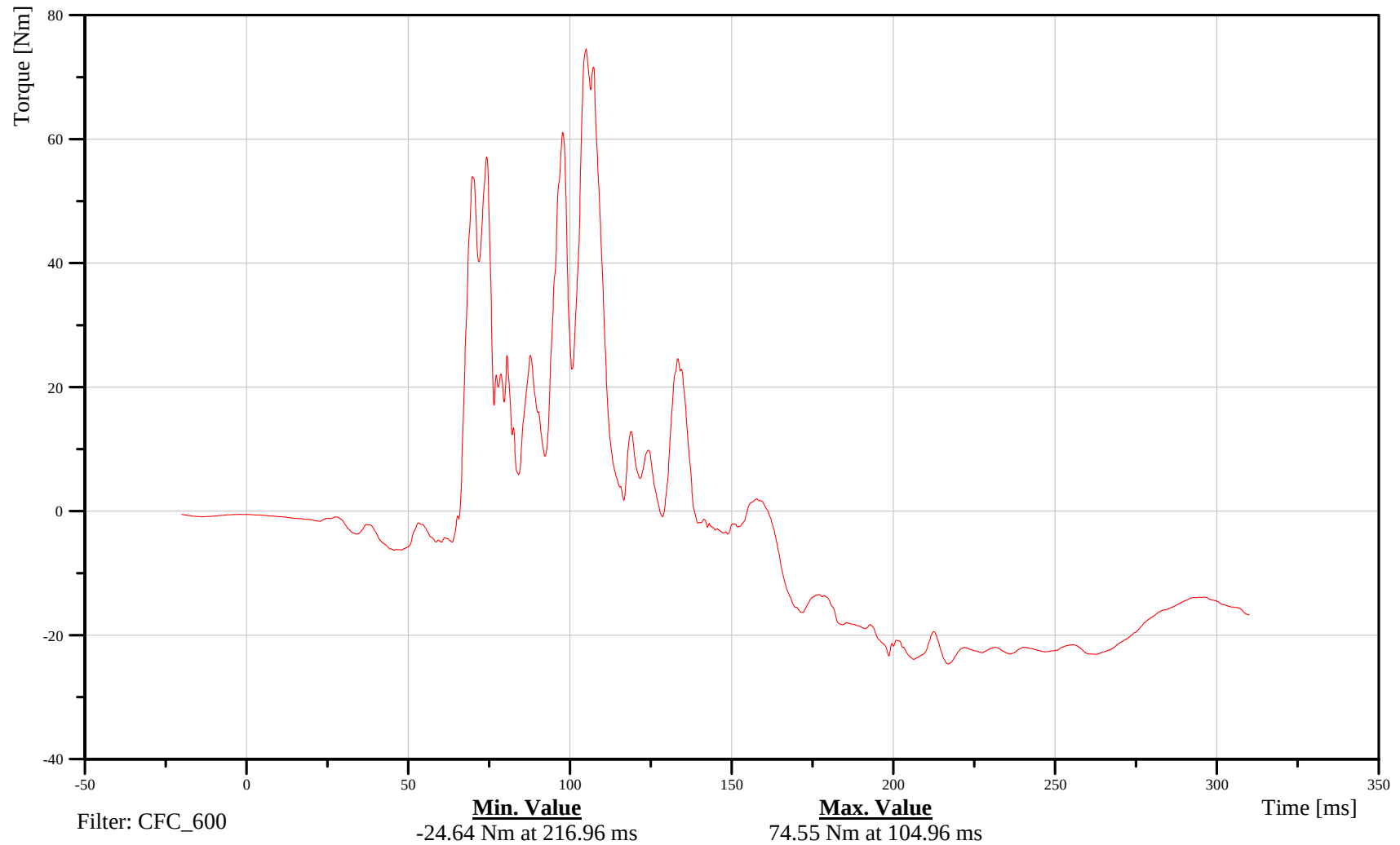
Driver Right Upper Tibia Moment About Y Axis

Customer: VRTC

11TIBIRULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-62

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

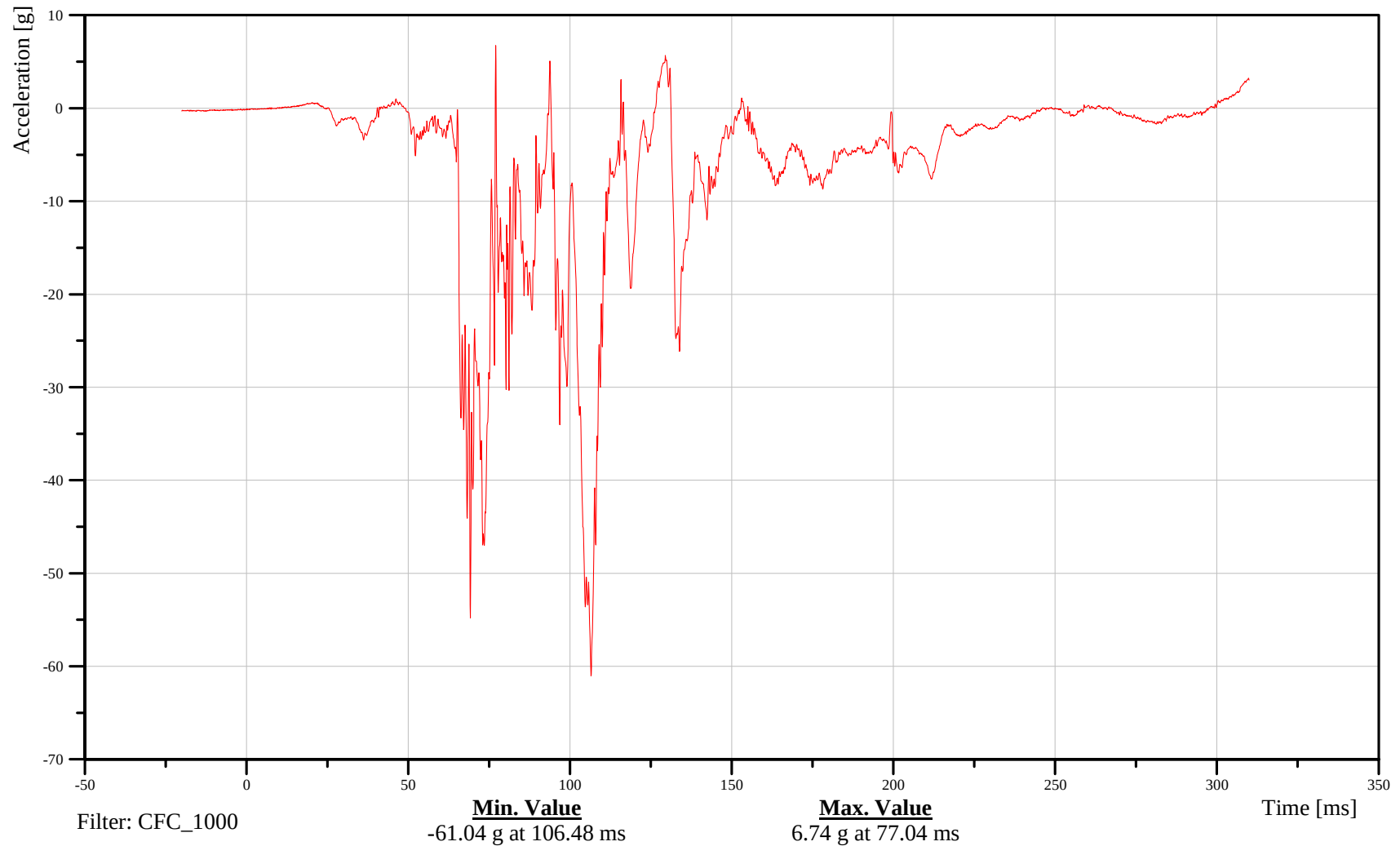
Driver Right Tibia X-Axis Acceleration

Customer: VRTC

11TIBIRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-63

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

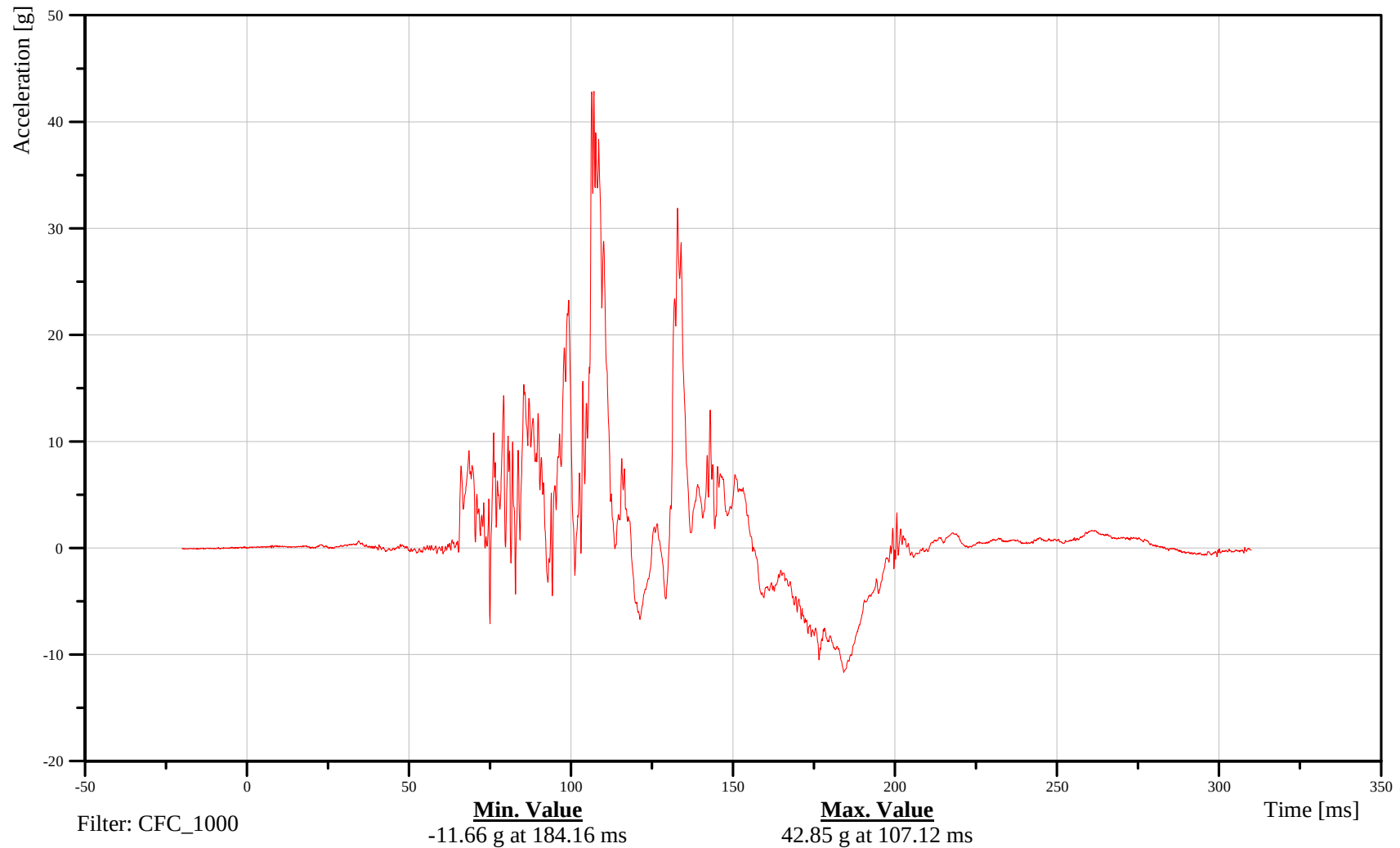
Driver Right Tibia Y-Axis Acceleration

Customer: VRTC

11TIBIRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-64

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

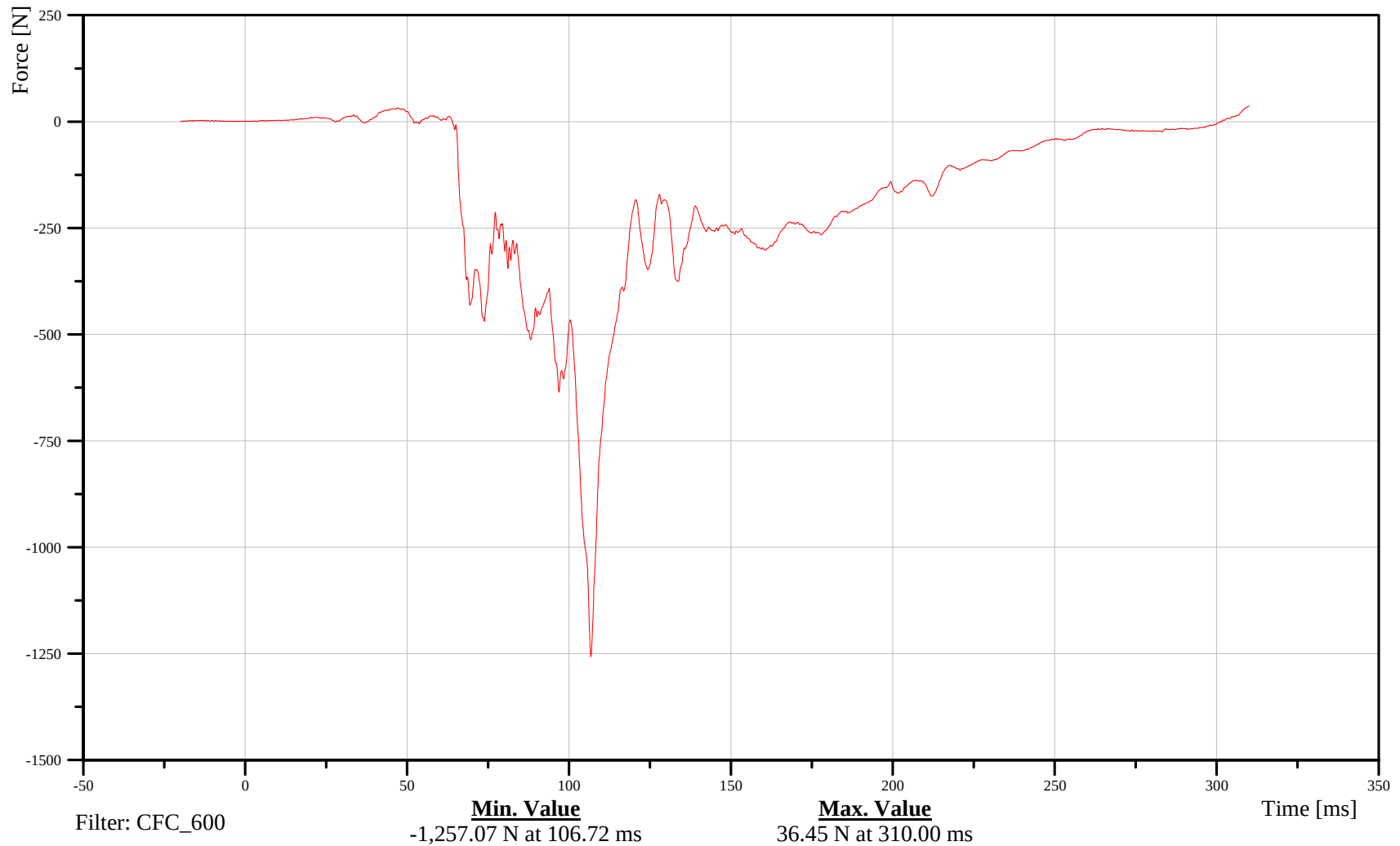
Driver Right Lower Tibia X-Axis Force

Customer: VRTC

11TIBIRLLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-65

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

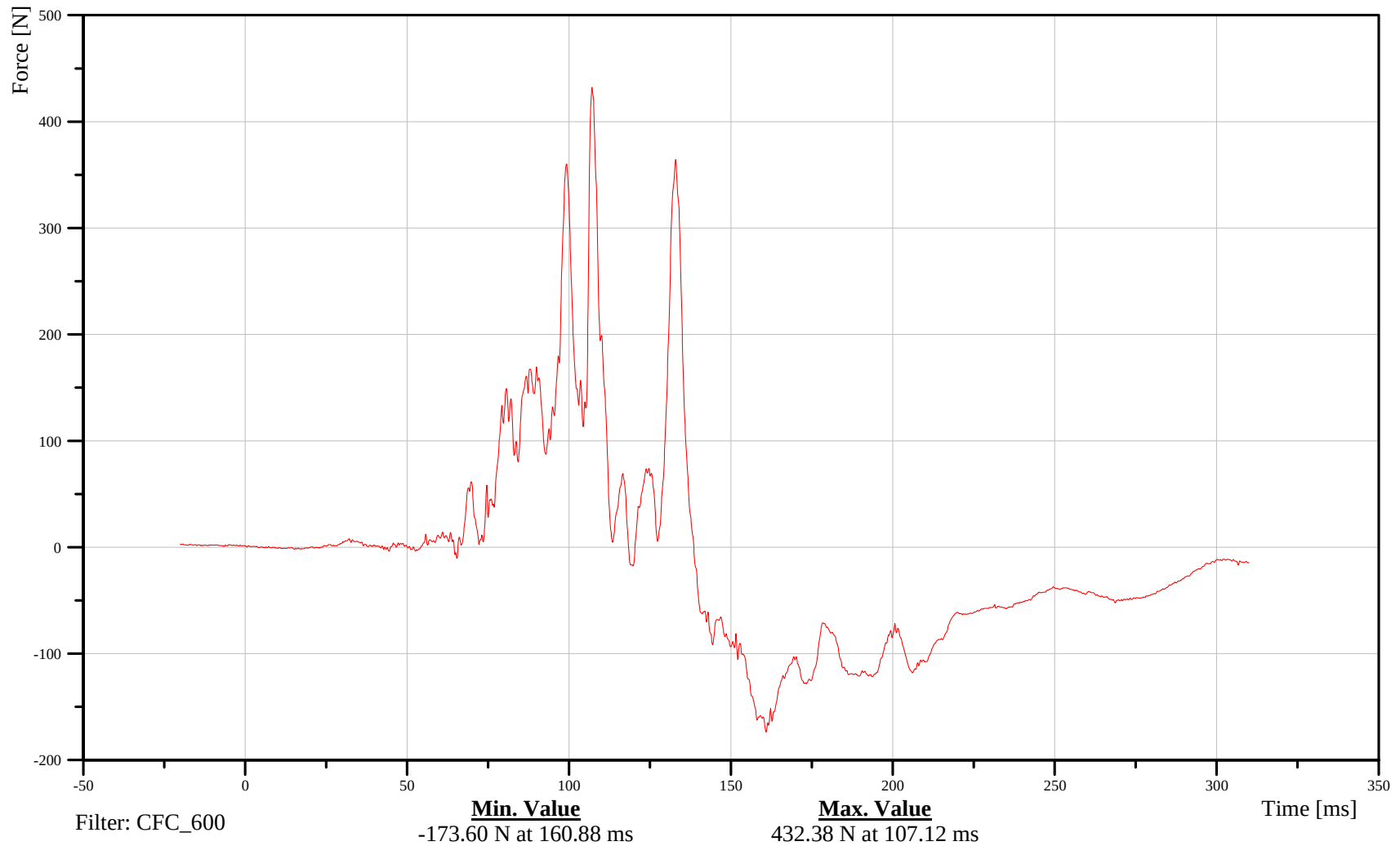
Driver Right Lower Tibia Y-Axis Force

Customer: VRTC

11TIBIRLLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-66

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

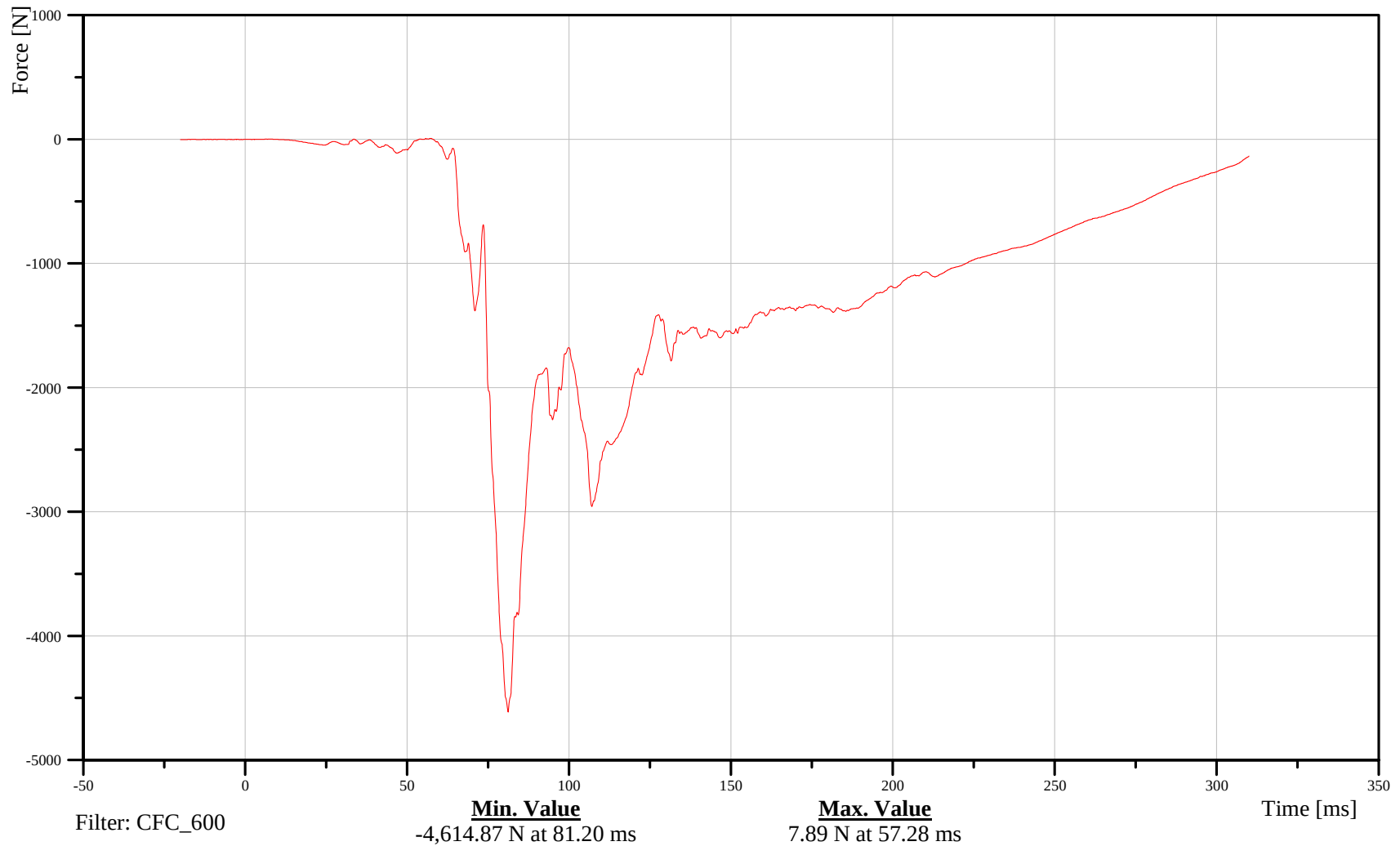
Driver Right Lower Tibia Z-Axis Force

Customer: VRTC

11TIBIRLLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-67

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

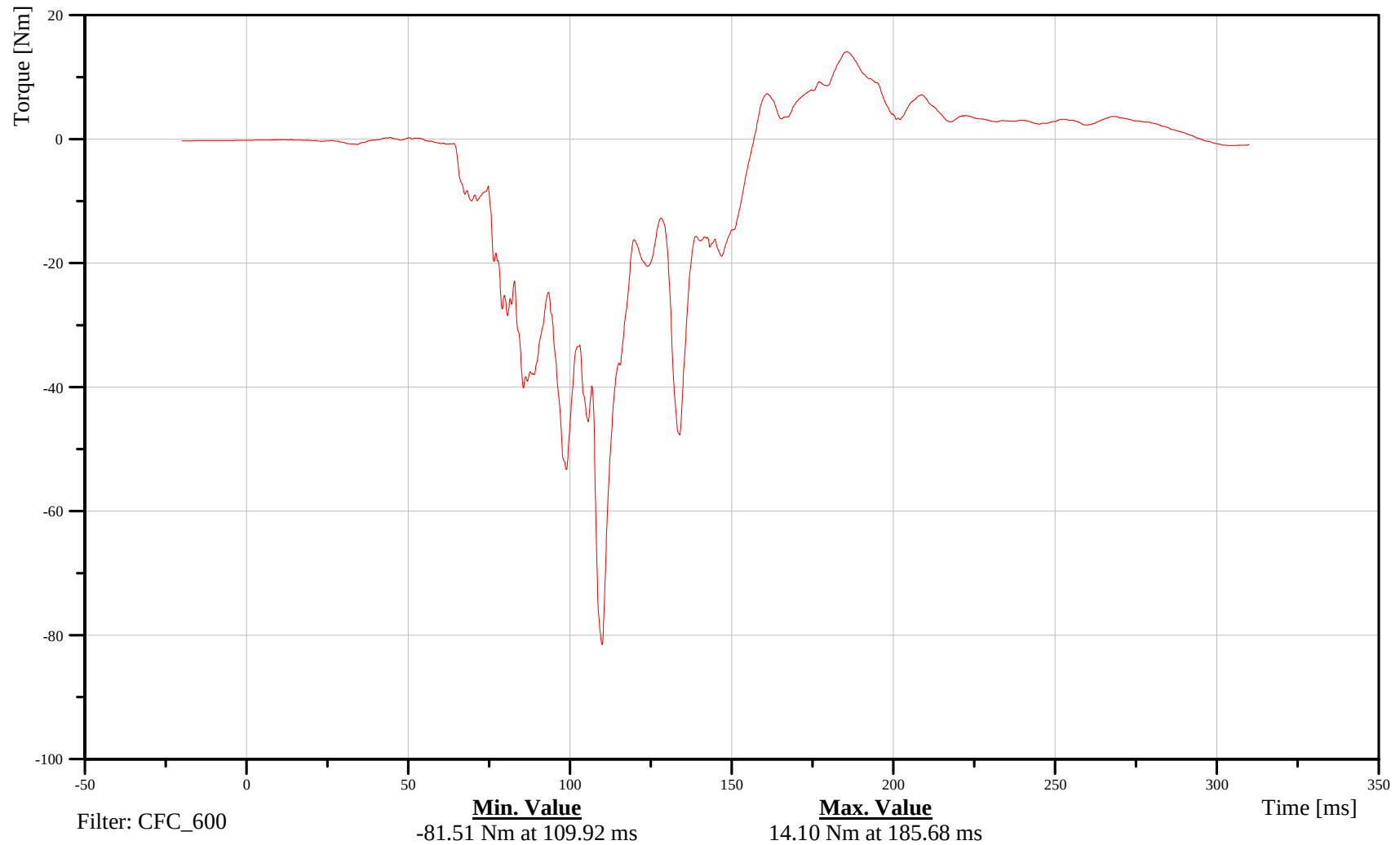
Driver Right Lower Tibia Moment About X Axis

Customer: VRTC

11TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-68

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

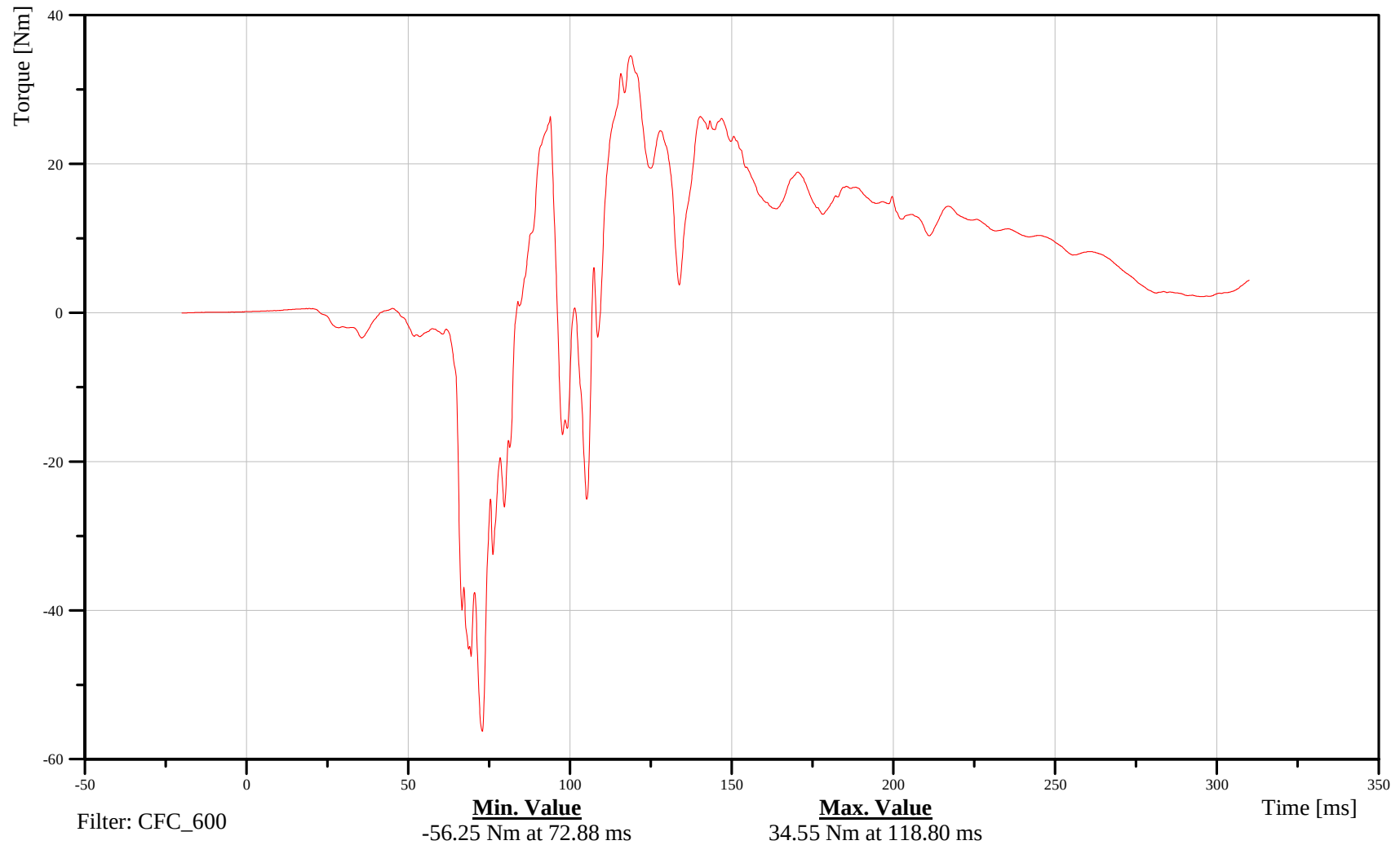
Driver Right Lower Tibia Moment About Y Axis

Customer: VRTC

11TIBIRLLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-69

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

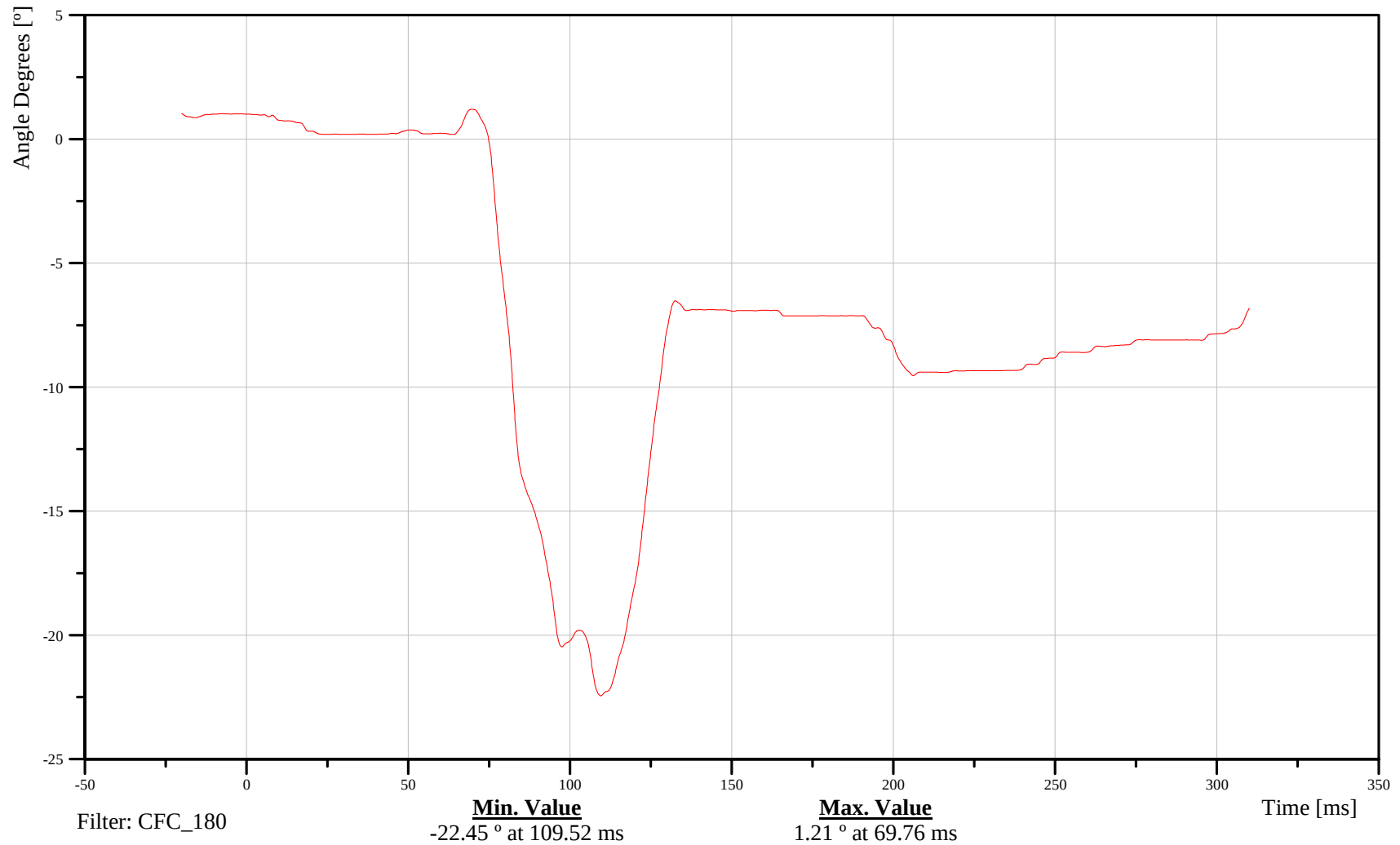
Driver Right Foot X-Axis Rotation

Customer: VRTC

11FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-70

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

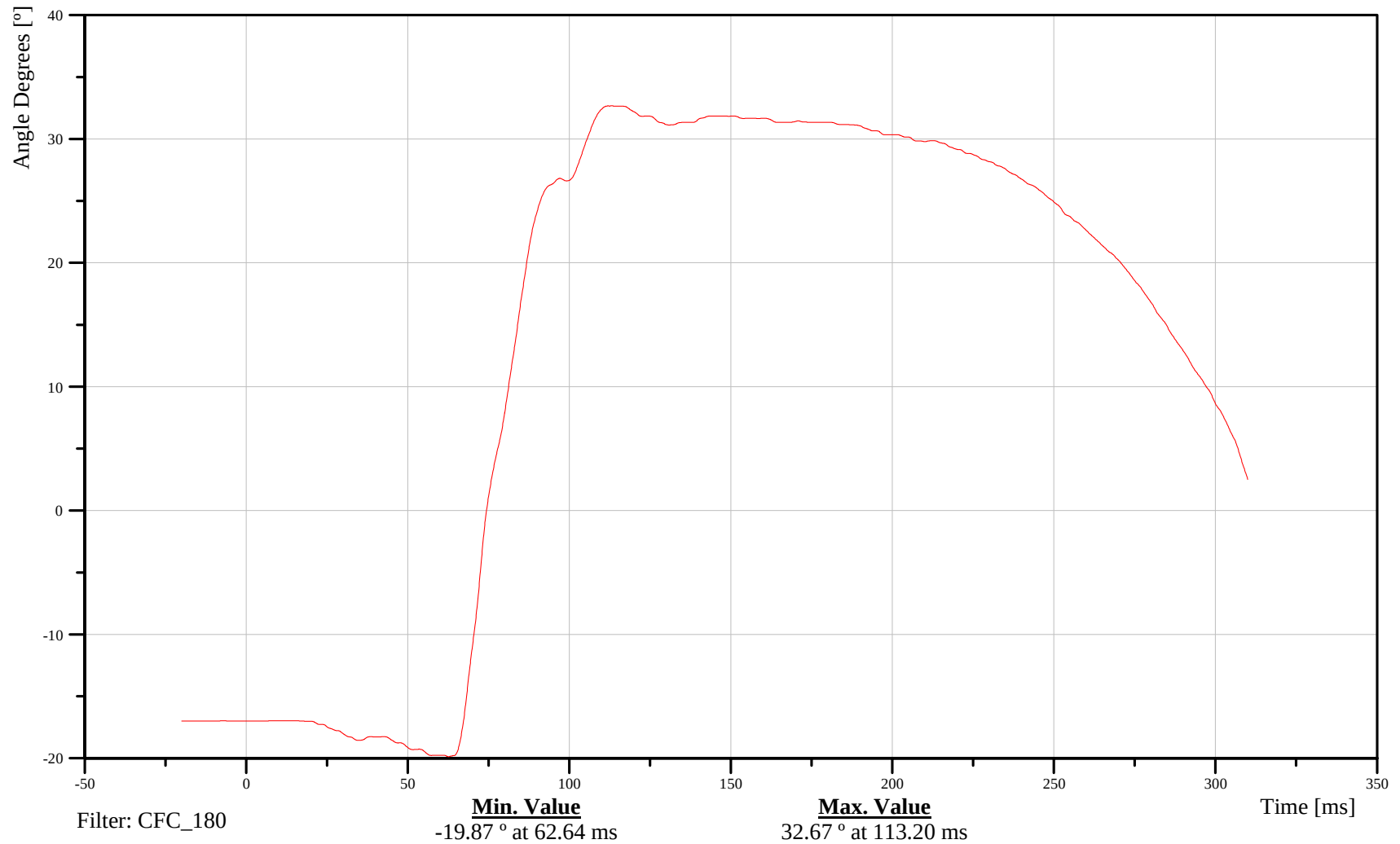
Driver Right Foot Y-Axis Rotation

Customer: VRTC

11FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-71

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

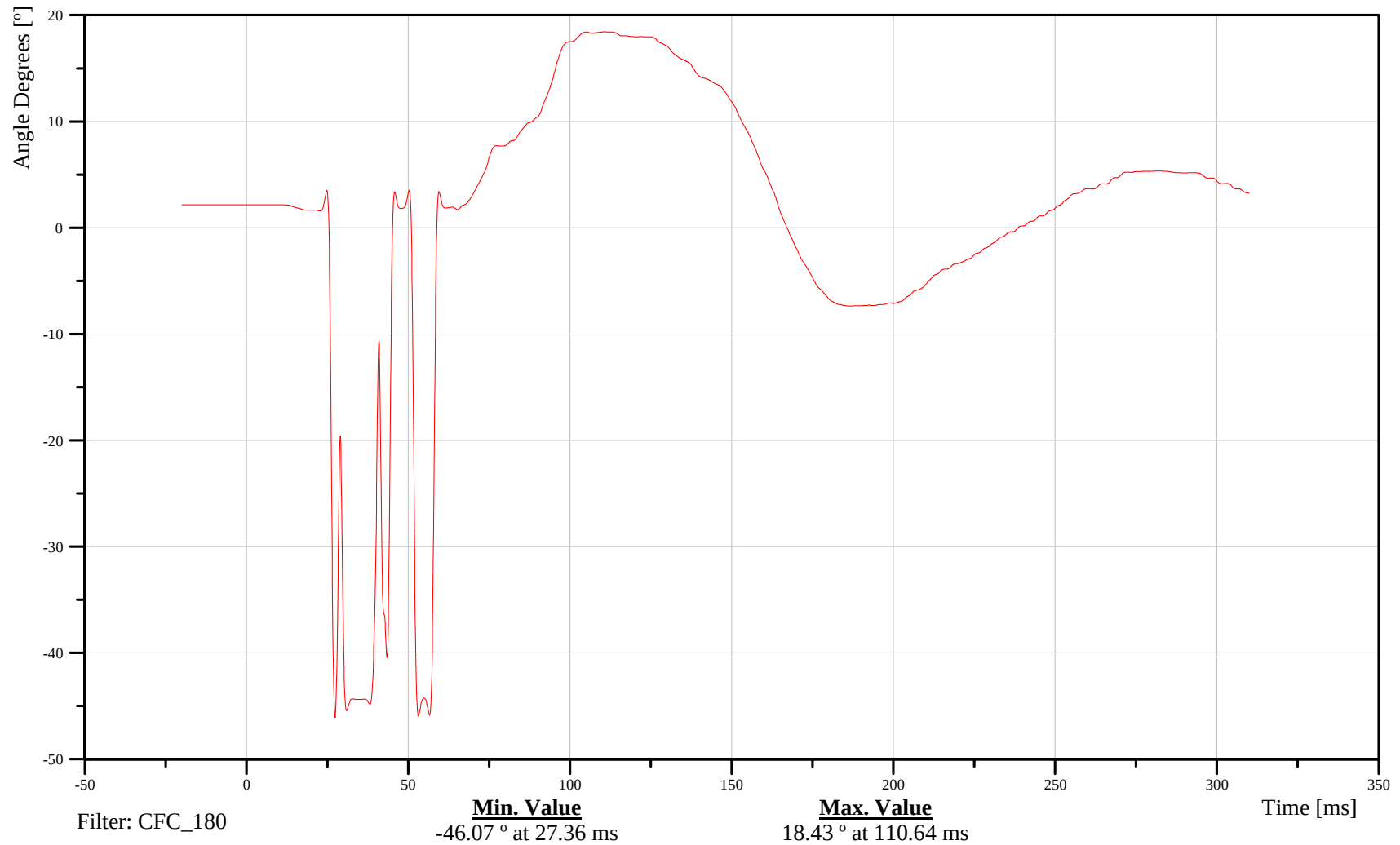
Driver Right Foot Z-Axis Rotation

Customer: VRTC

11FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-72

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

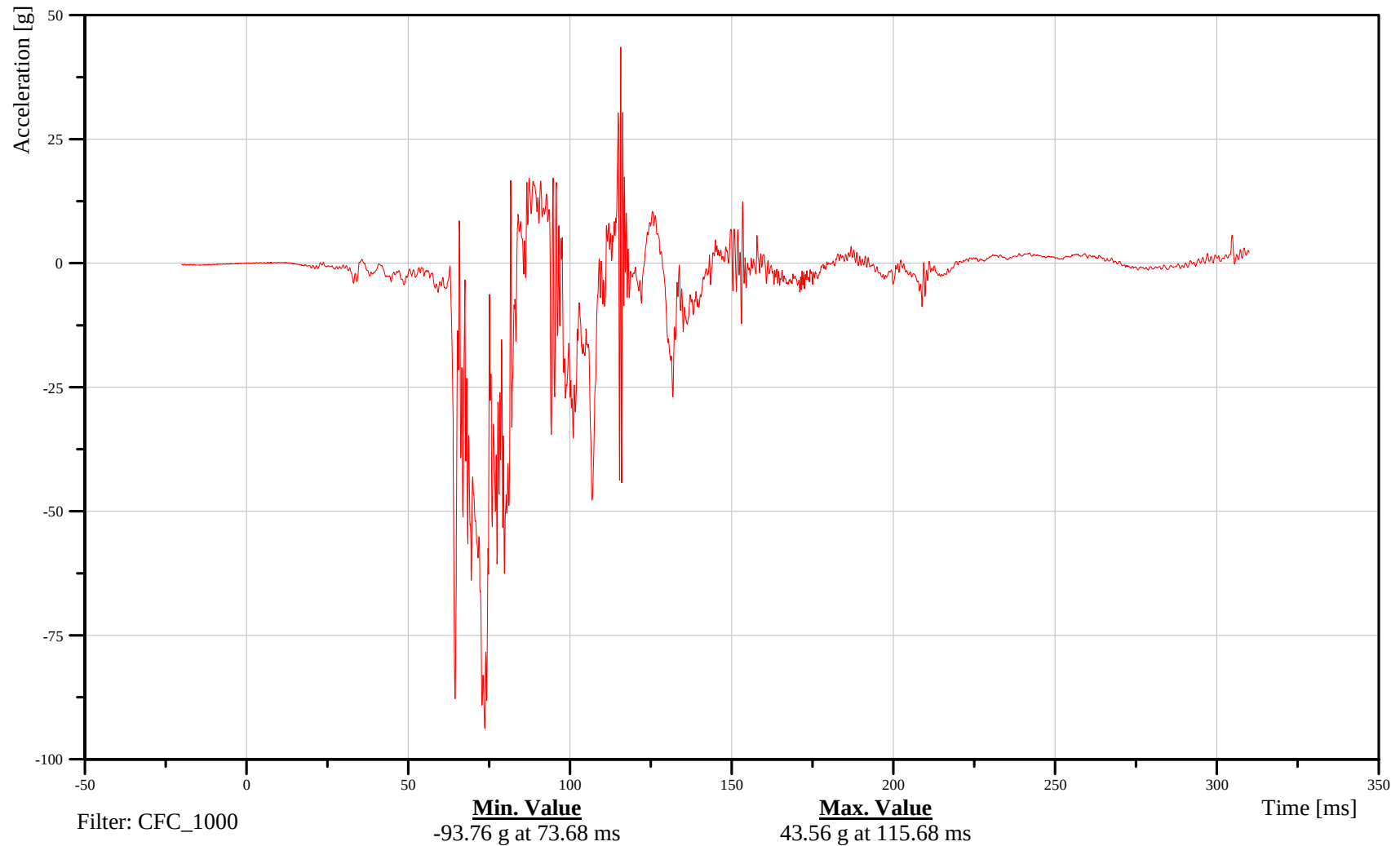
Driver Right Foot X-Axis Acceleration

Customer: VRTC

11FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-73

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

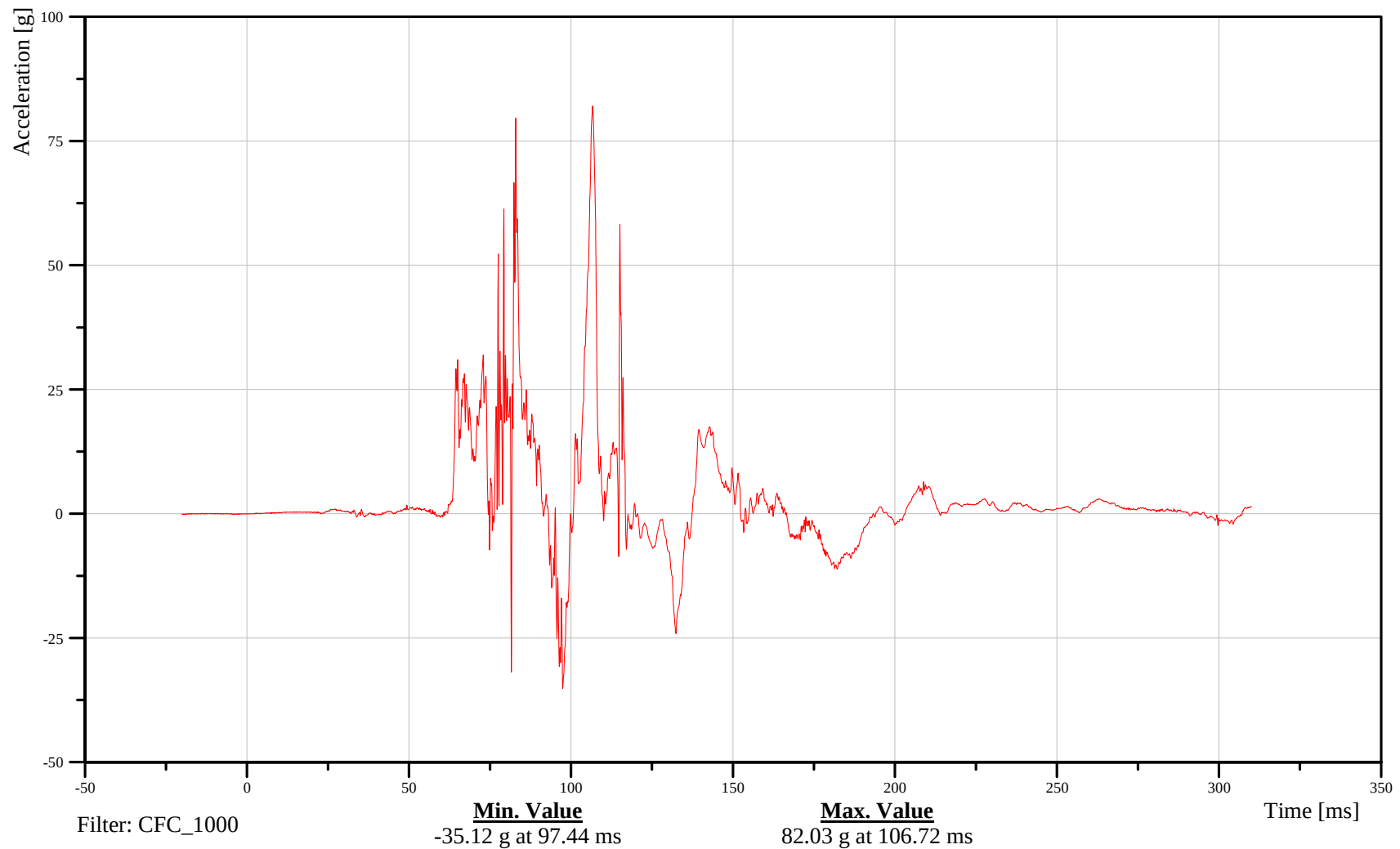
Driver Right Foot Y-Axis Acceleration

Customer: VRTC

11FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-74

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

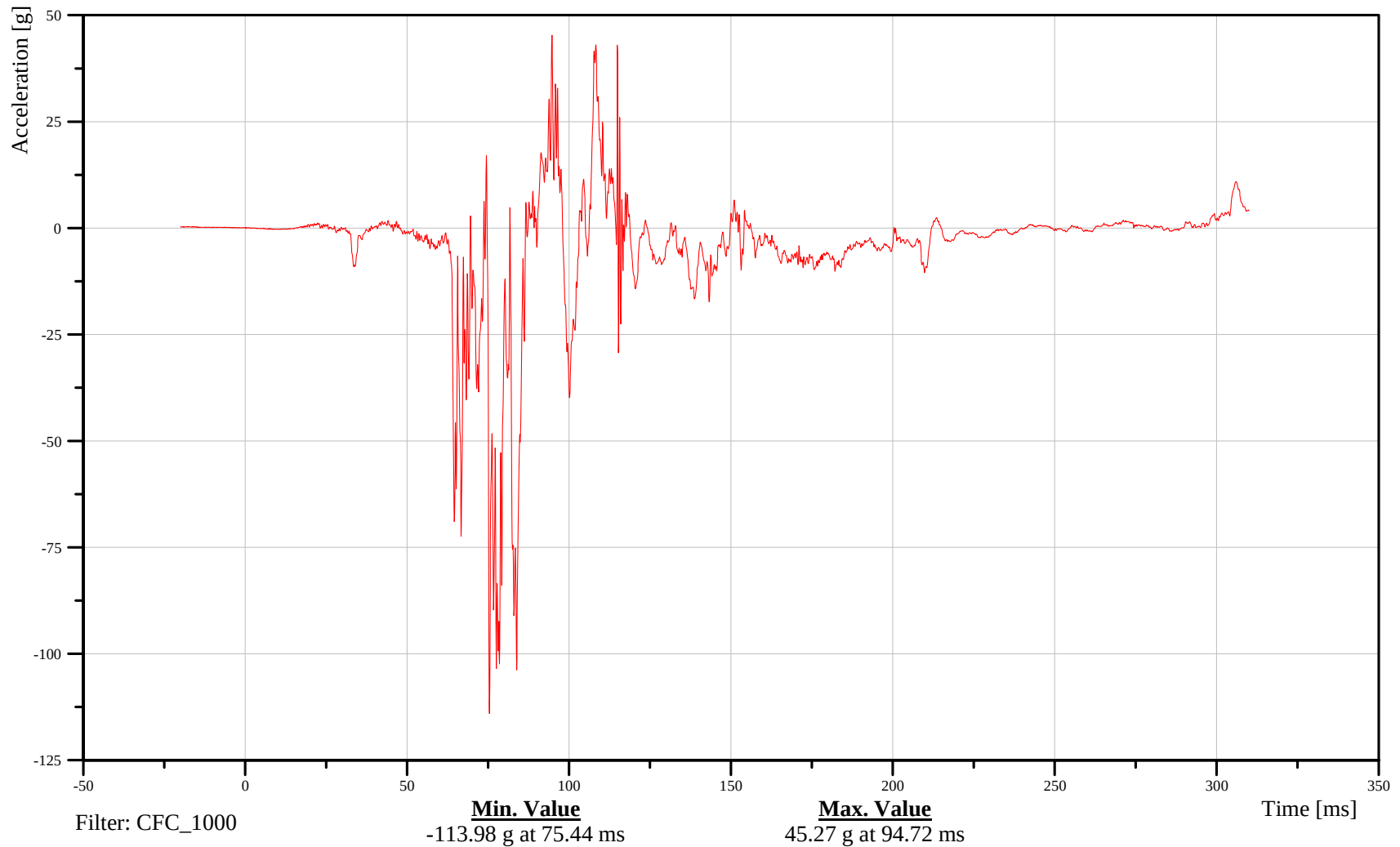
Driver Right Foot Z-Axis Acceleration

Customer: VRTC

11FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-75

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

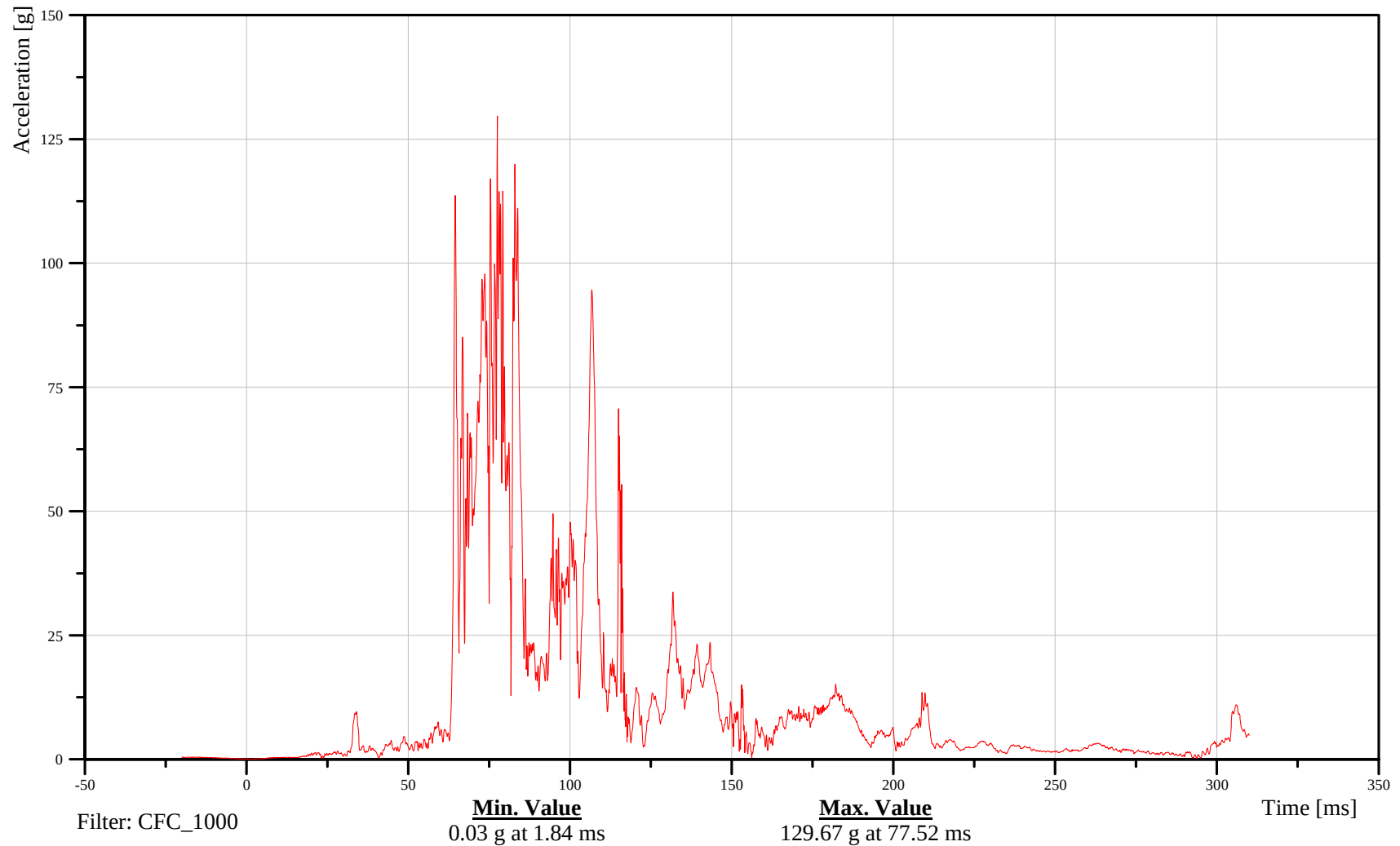
Driver Right Foot Resultant Acceleration

Customer: VRTC

11FOOTRILXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-76

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

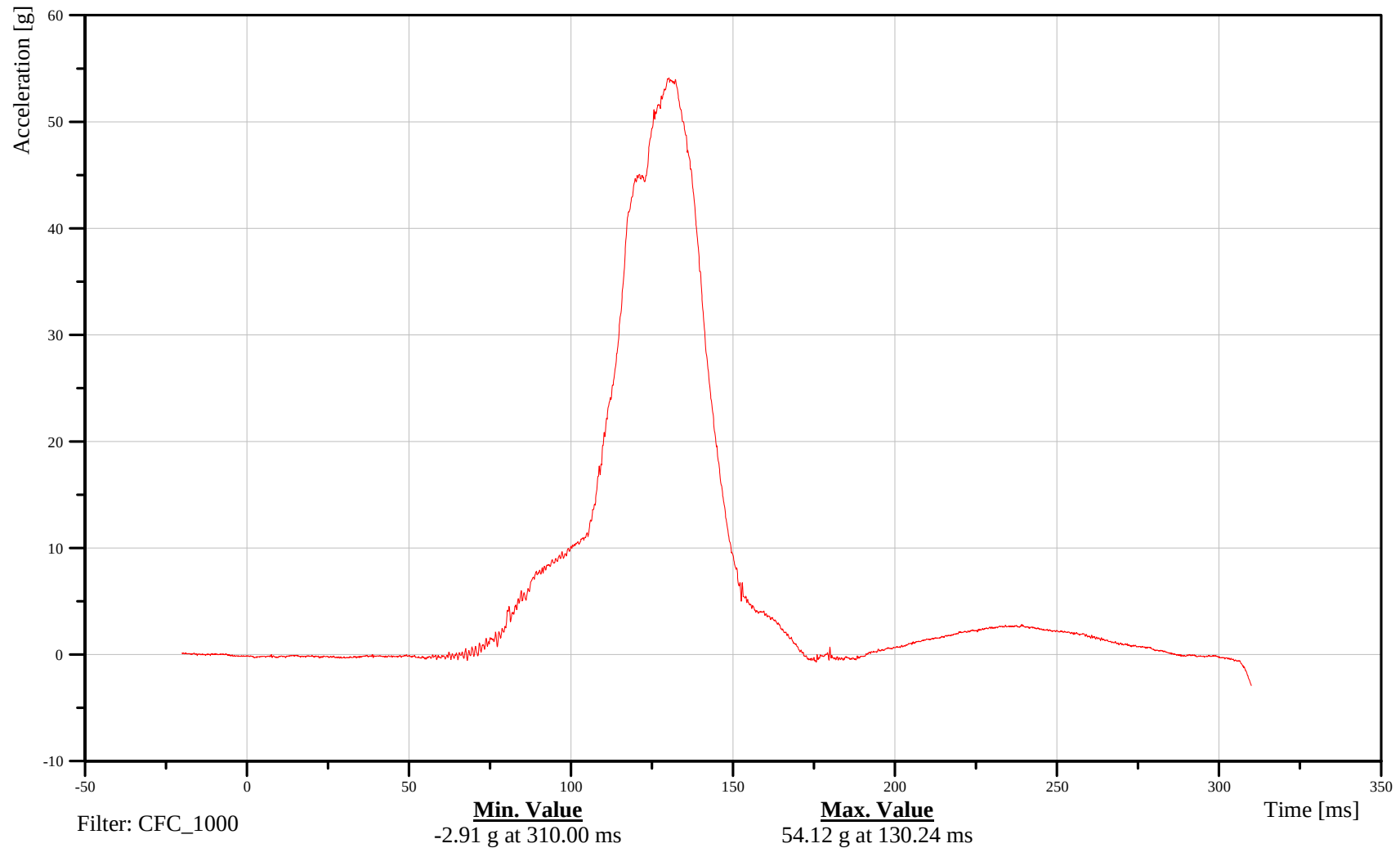
Passenger Head X-Axis Acceleration

Customer: VRTC

13HEADCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-77

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

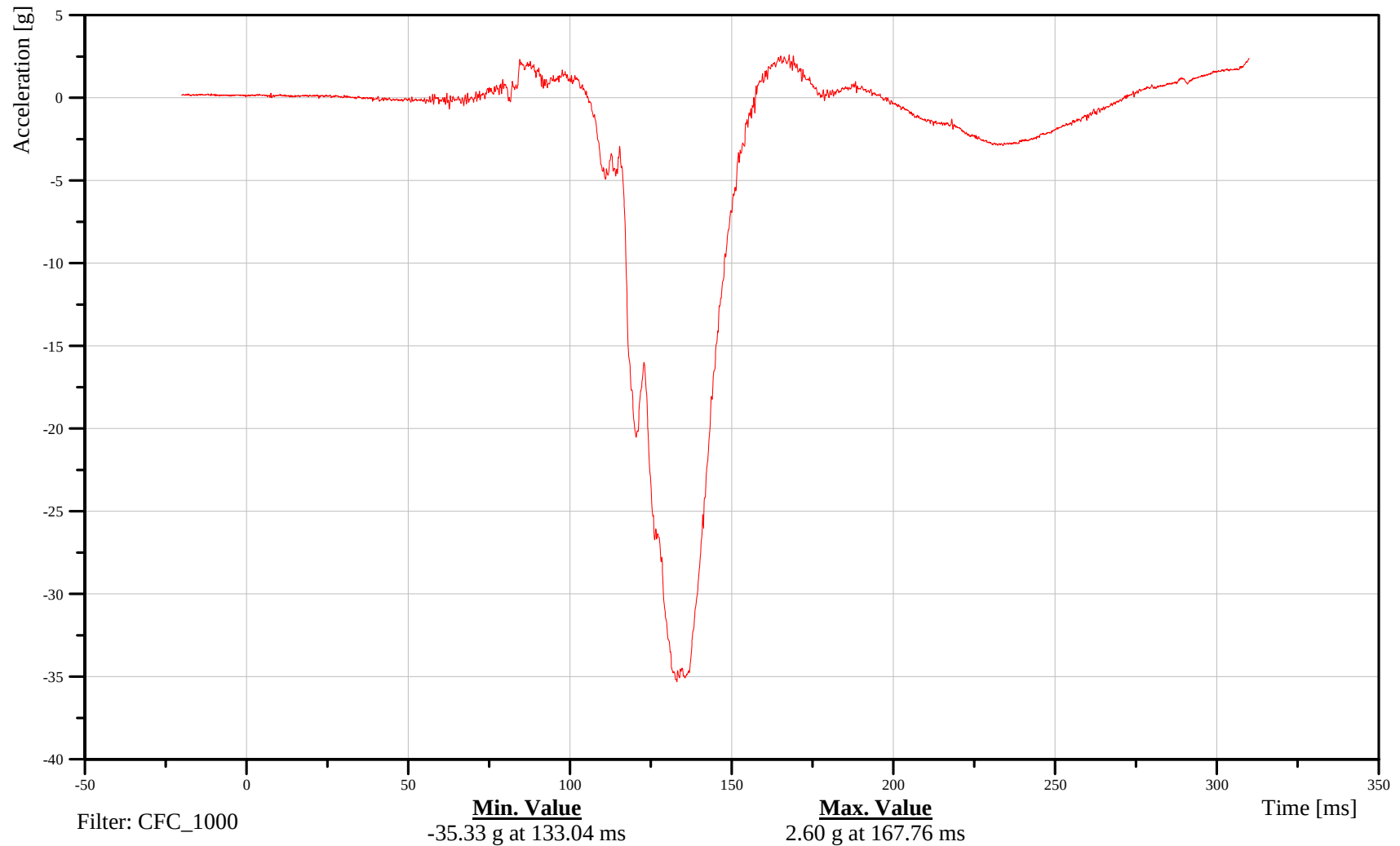
Passenger Head Y-Axis Acceleration

Customer: VRTC

13HEADCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-78

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

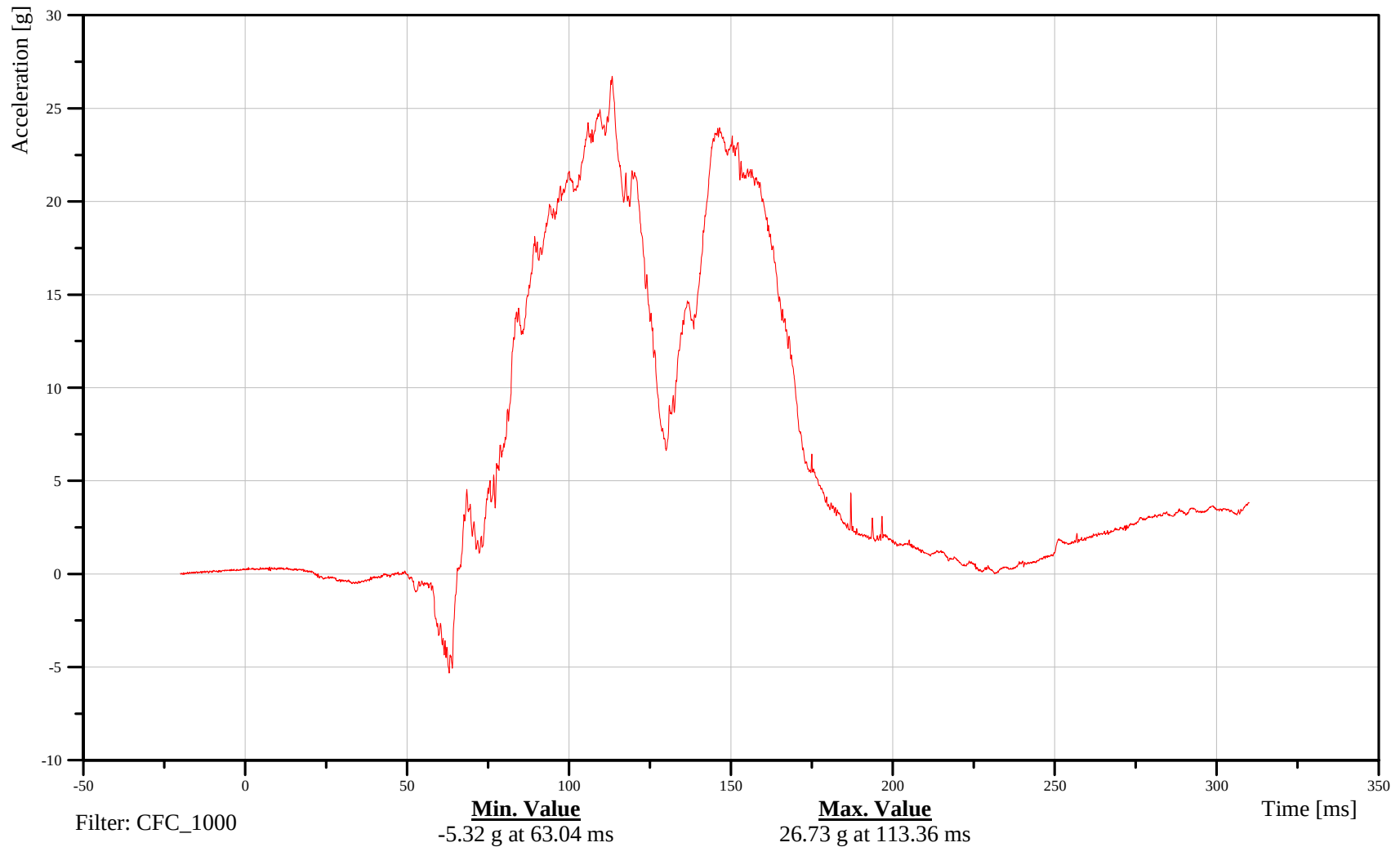
Passenger Head Z-Axis Acceleration

Customer: VRTC

13HEADCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-79

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

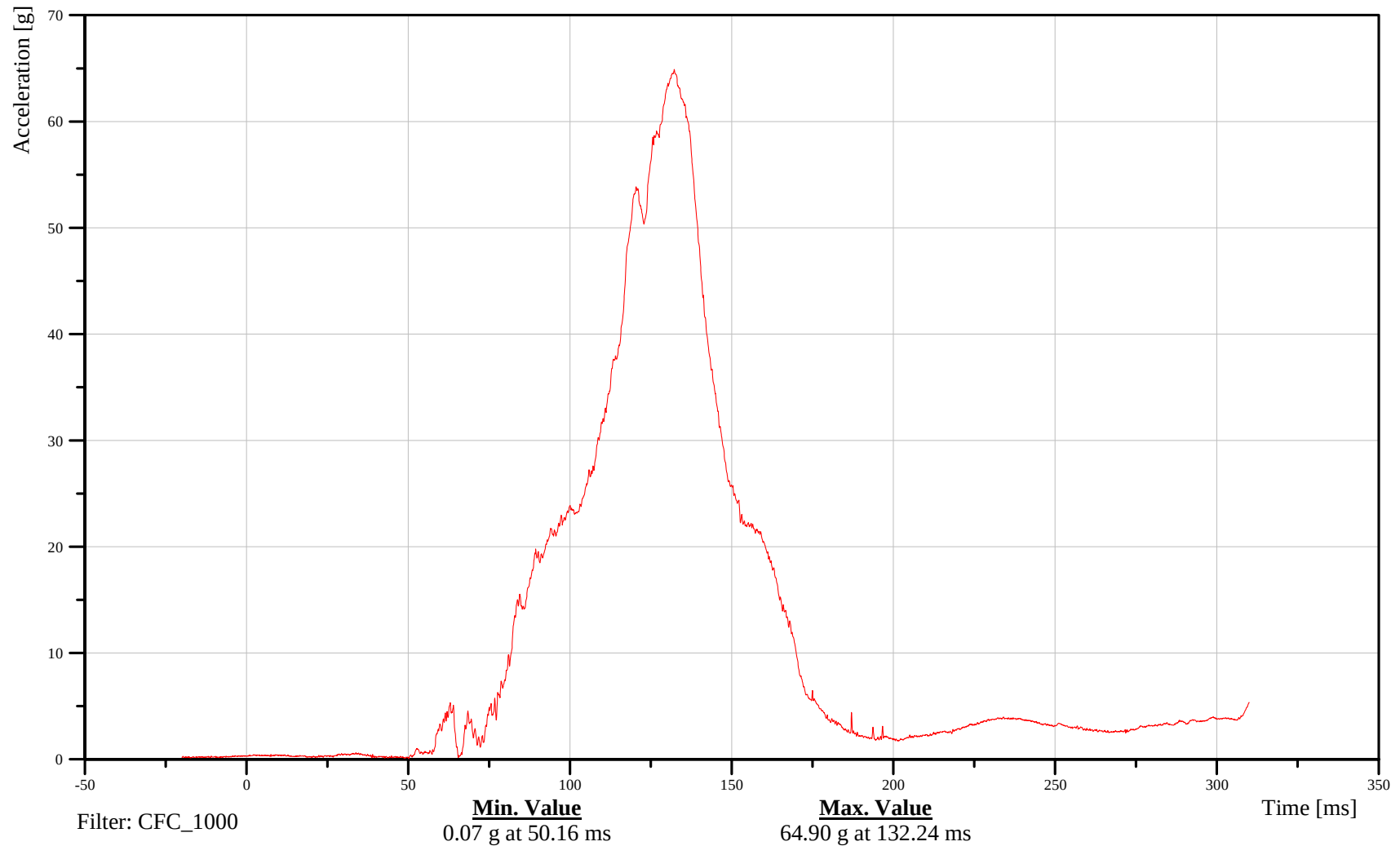
Passenger Head Resultant Acceleration

Customer: VRTC

13HEADCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-80

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

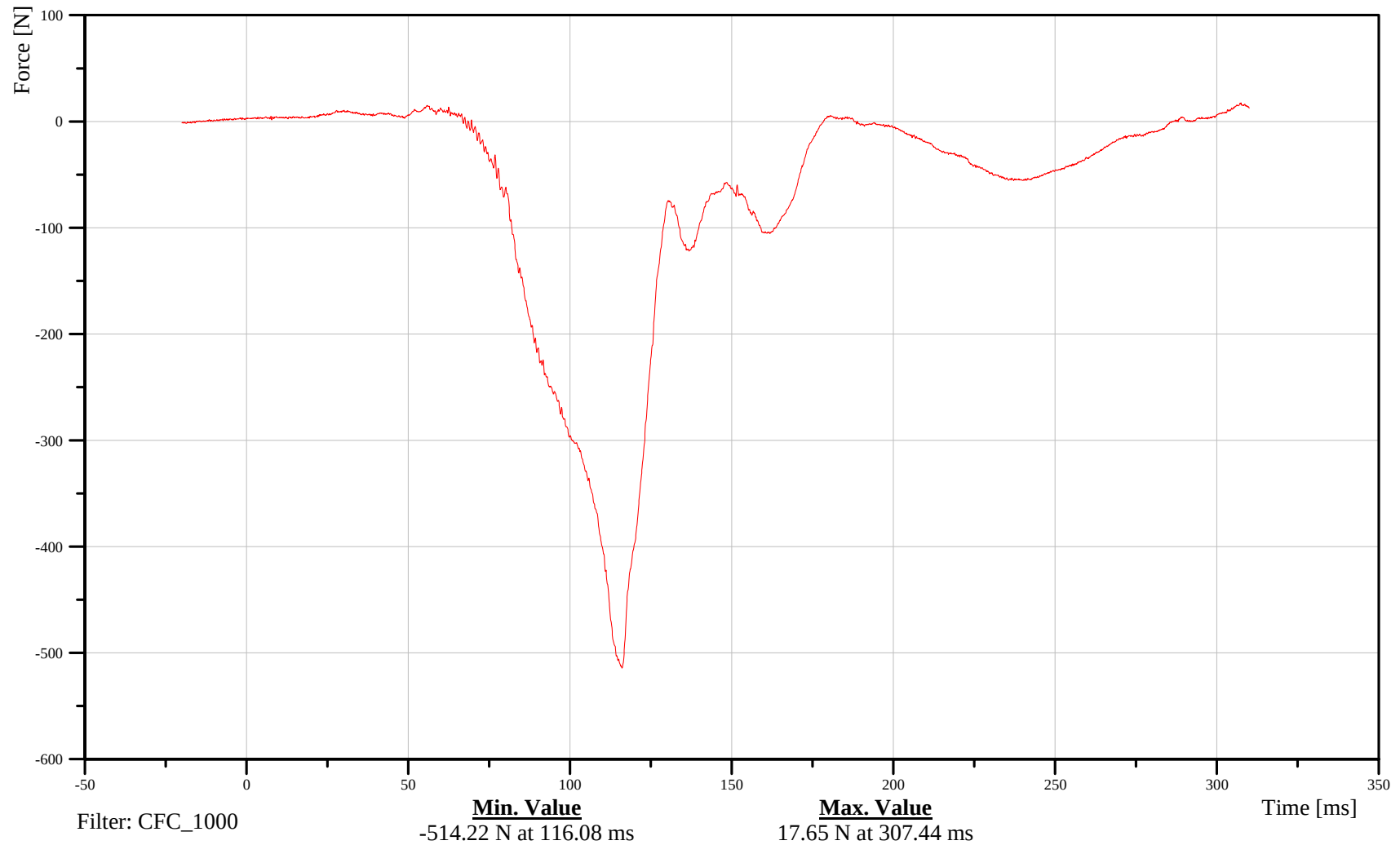
Passenger Upper Neck X-Axis Force

Customer: VRTC

13NECKUP00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-81

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

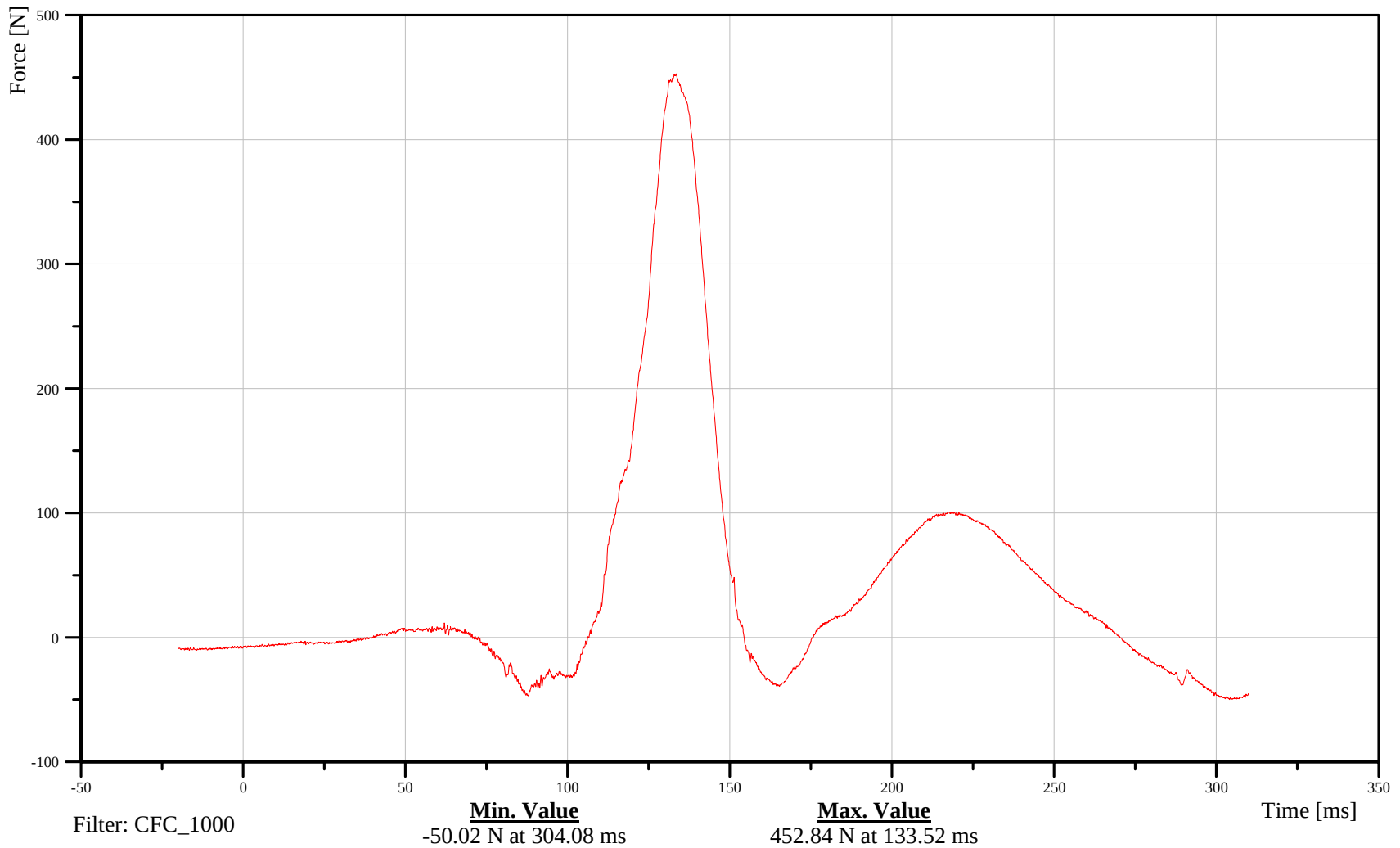
Passenger Upper Neck Y-Axis Force

Customer: VRTC

13NECKUP00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-82

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

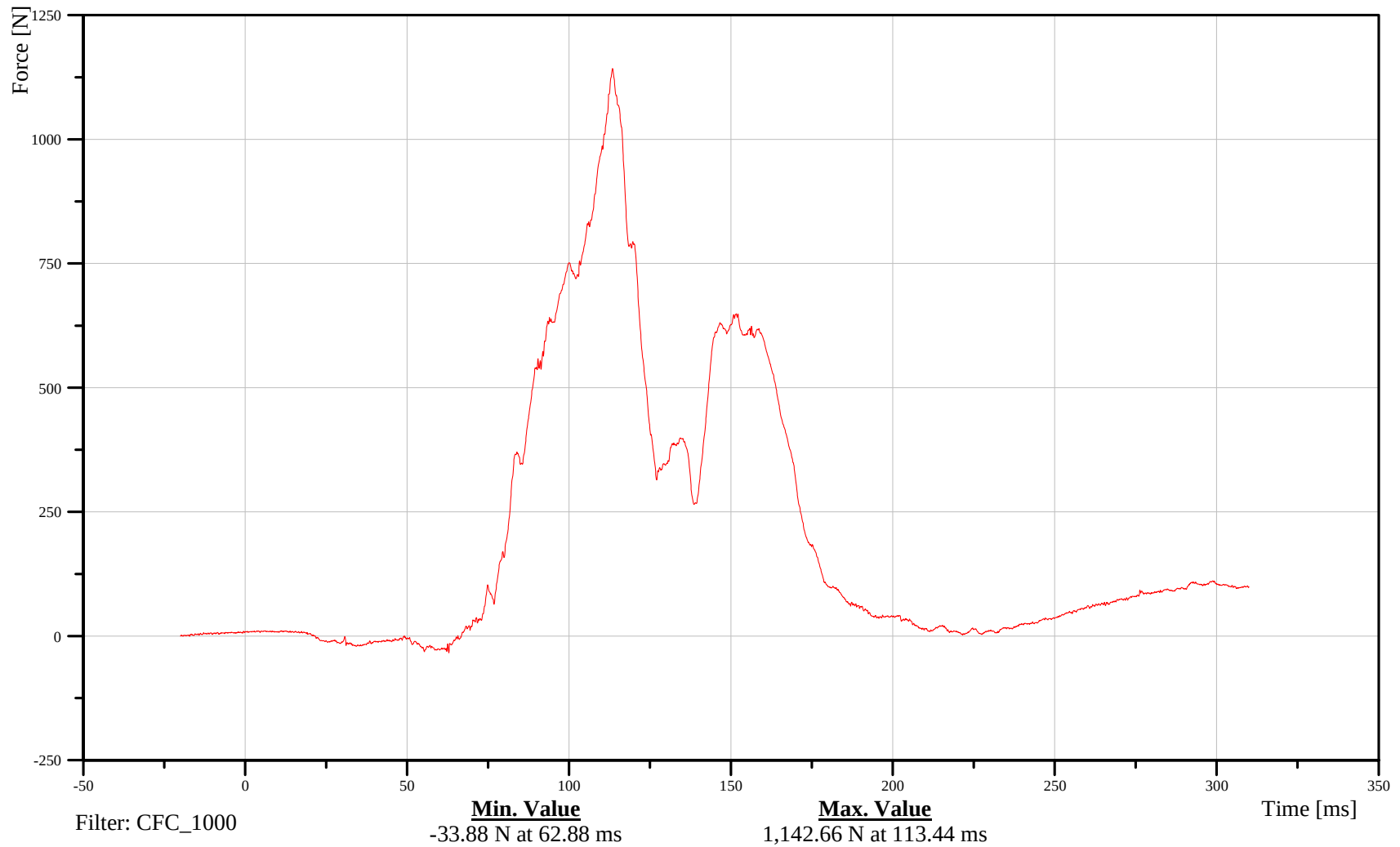
Passenger Upper Neck Z-Axis Force

Customer: VRTC

13NECKUP00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-83

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

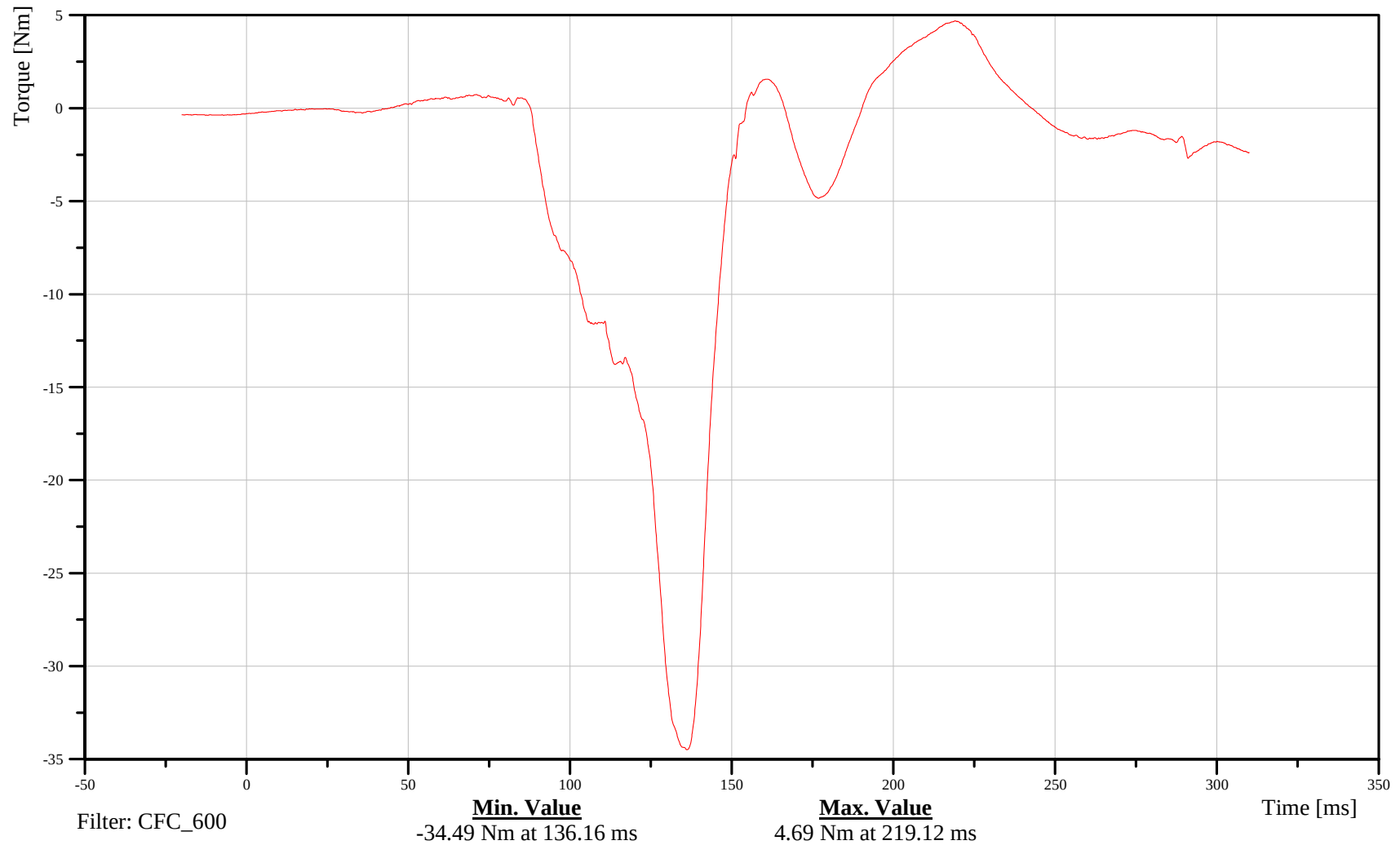
Passenger Upper Neck Moment About X Axis

Customer: VRTC

13NECKUP00HFM0XB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-84

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

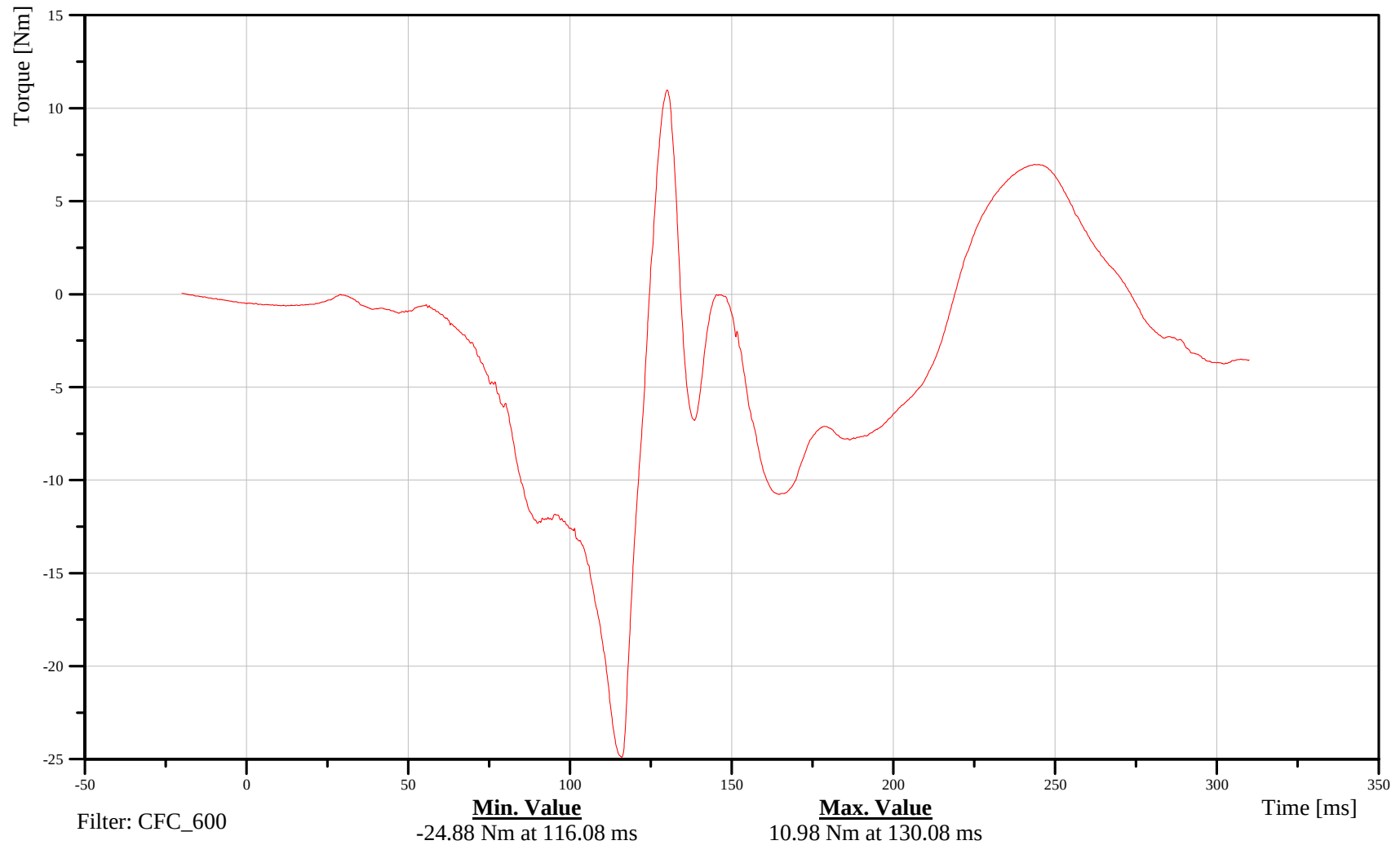
Passenger Upper Neck Moment About Y Axis

Customer: VRTC

13NECKUP00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-85

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

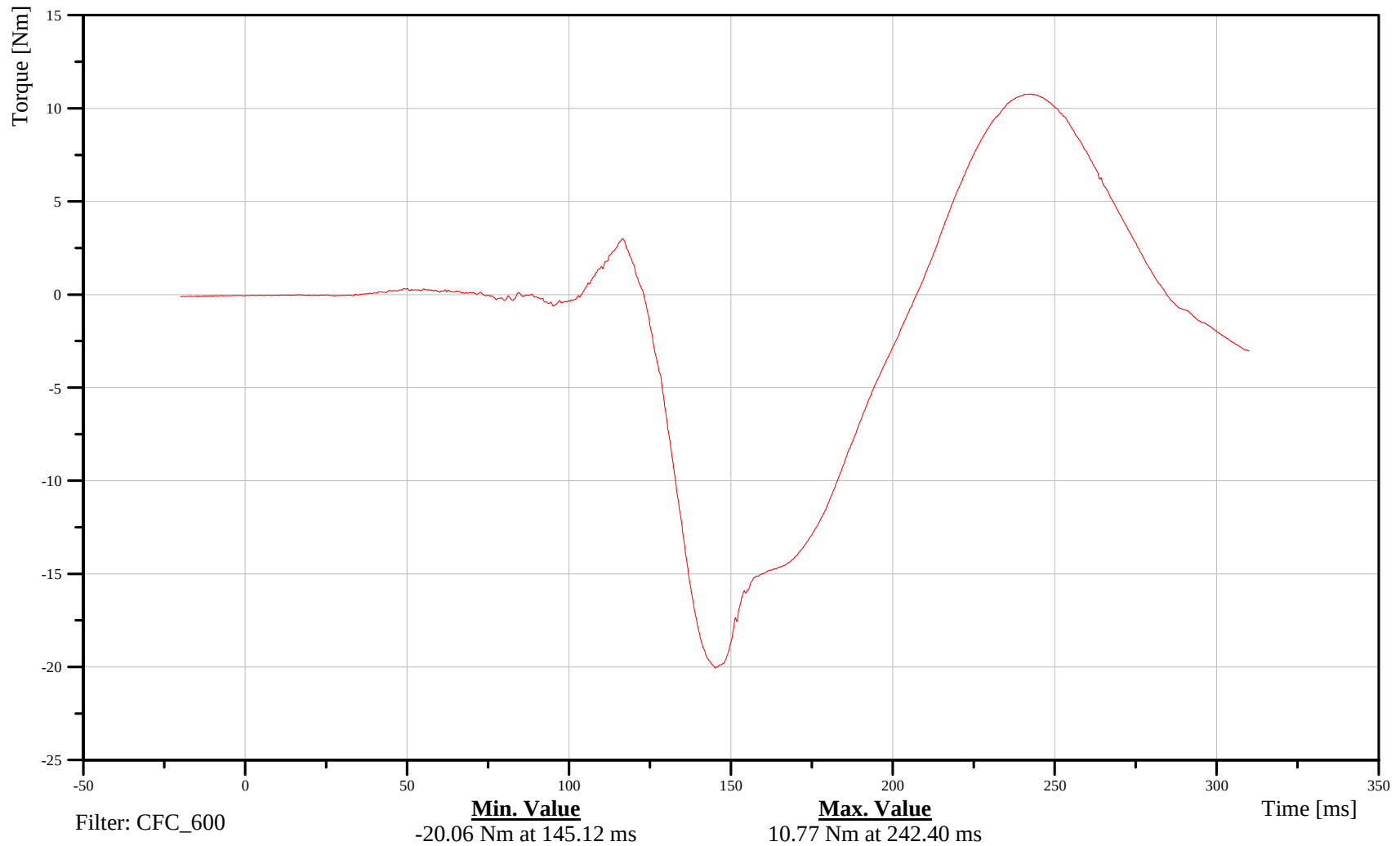
Passenger Upper Neck Moment About Z Axis

Customer: VRTC

13NECKUP00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-86

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

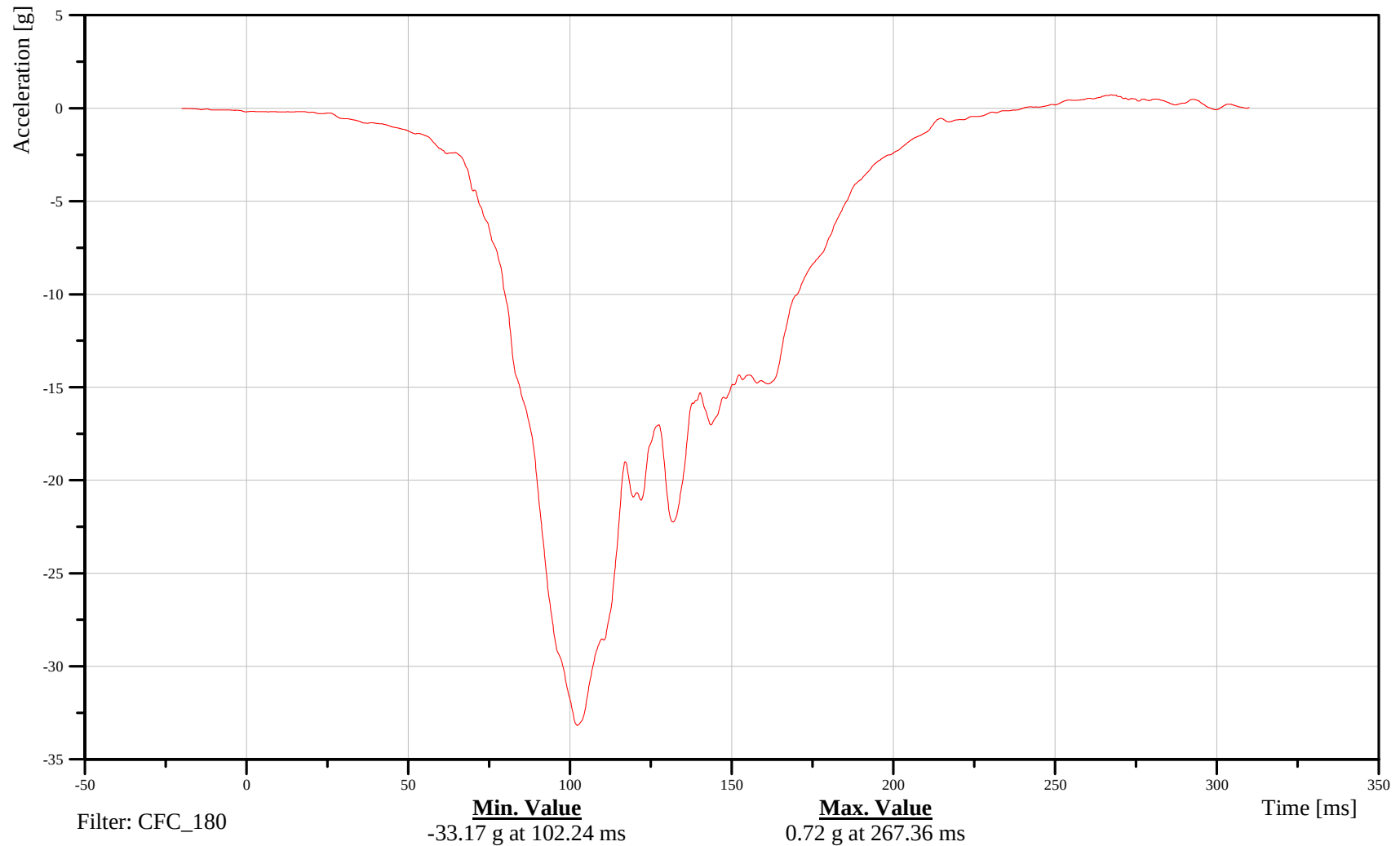
Passenger Chest X-Axis Acceleration

Customer: VRTC

13CHSTCG00HFACXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-87

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

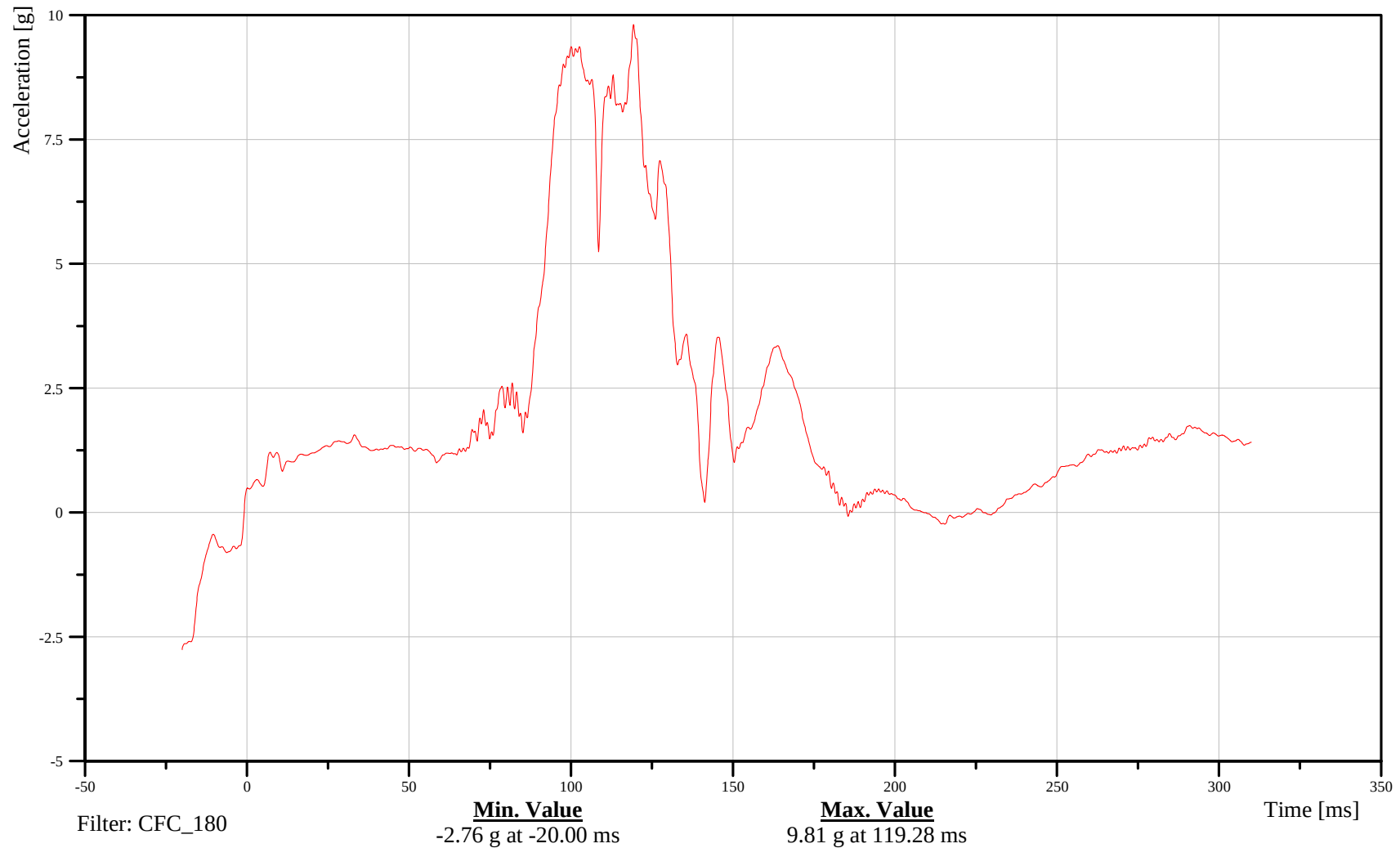
Passenger Chest Y-Axis Acceleration

Customer: VRTC

13CHSTCG00HFACYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-88

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

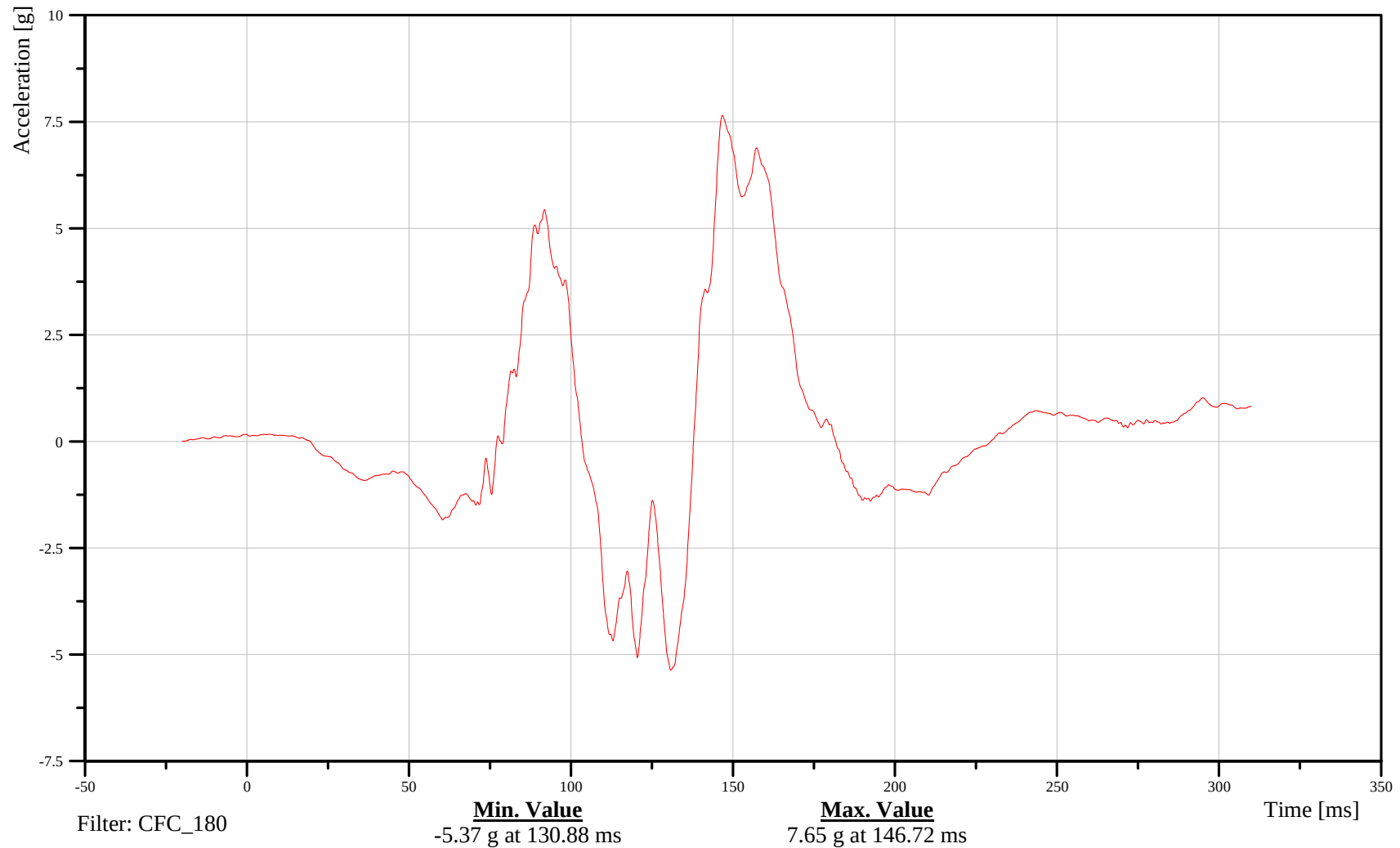
Passenger Chest Z-Axis Acceleration

Customer: VRTC

13CHSTCG00HFACZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-89

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

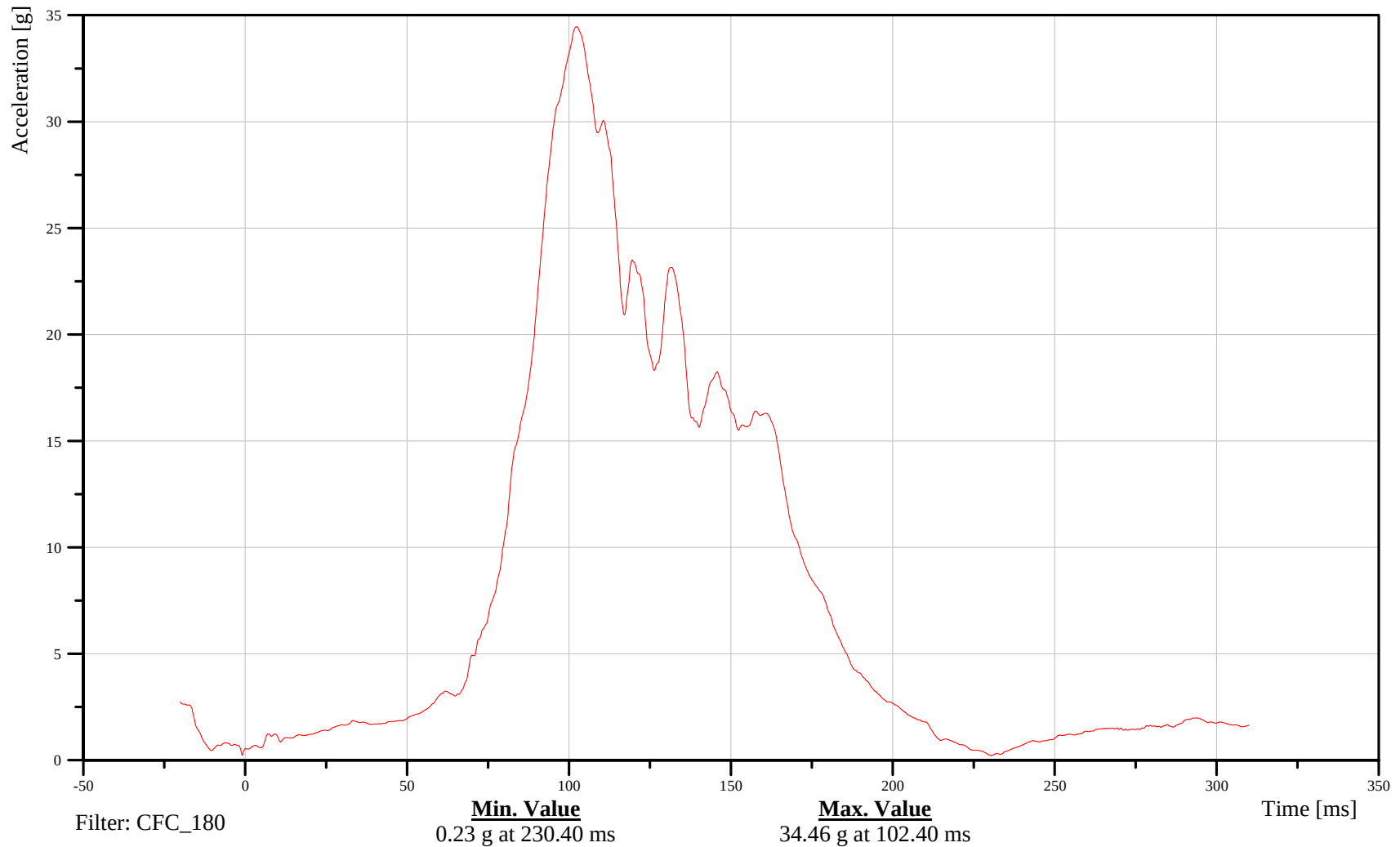
Passenger Chest Resultant Acceleration

Customer: VRTC

13CHSTCG00HFACRC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-90

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

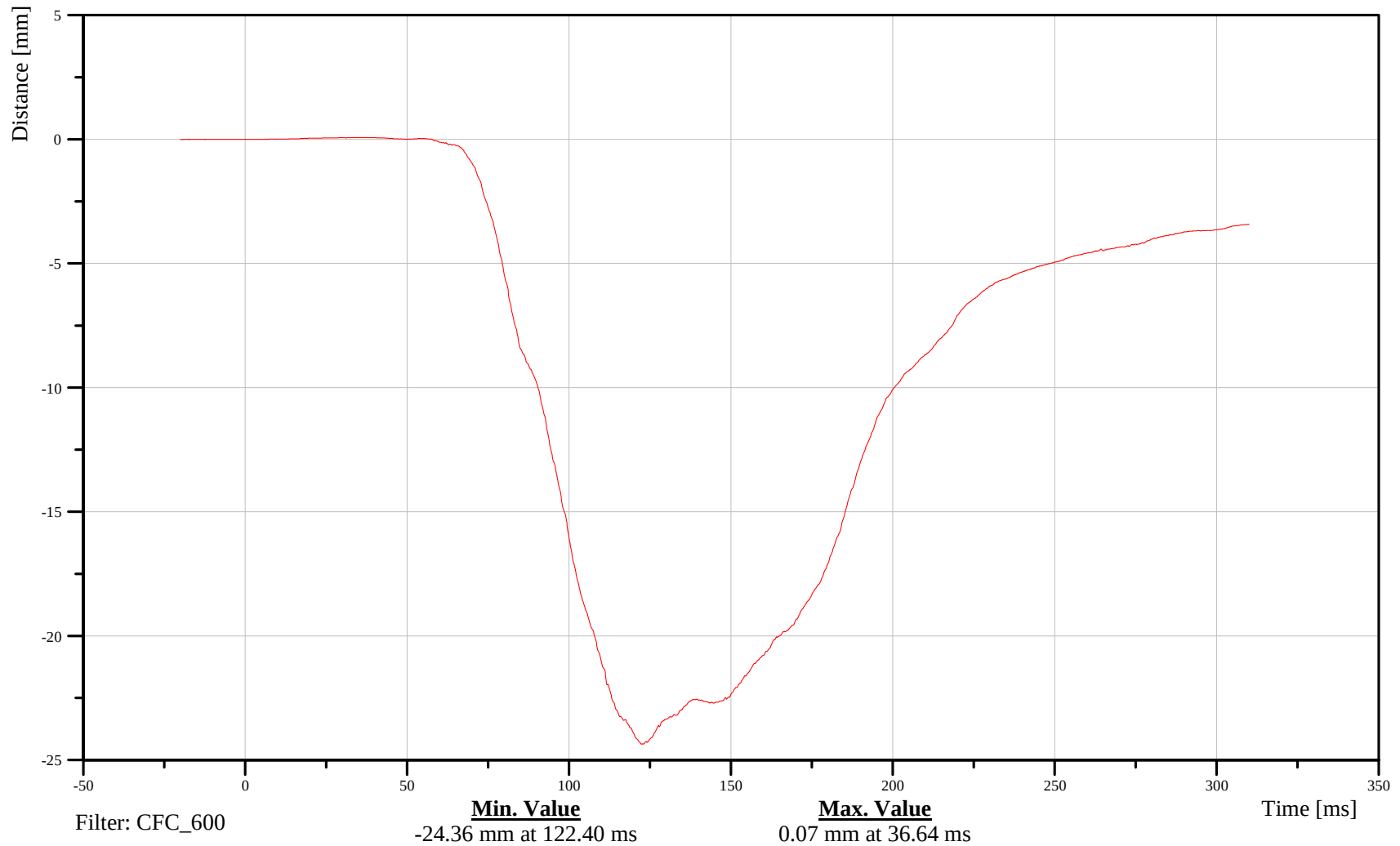
Passenger Chest Displacement

Customer: VRTC

13CHST0000HFDSXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-91

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

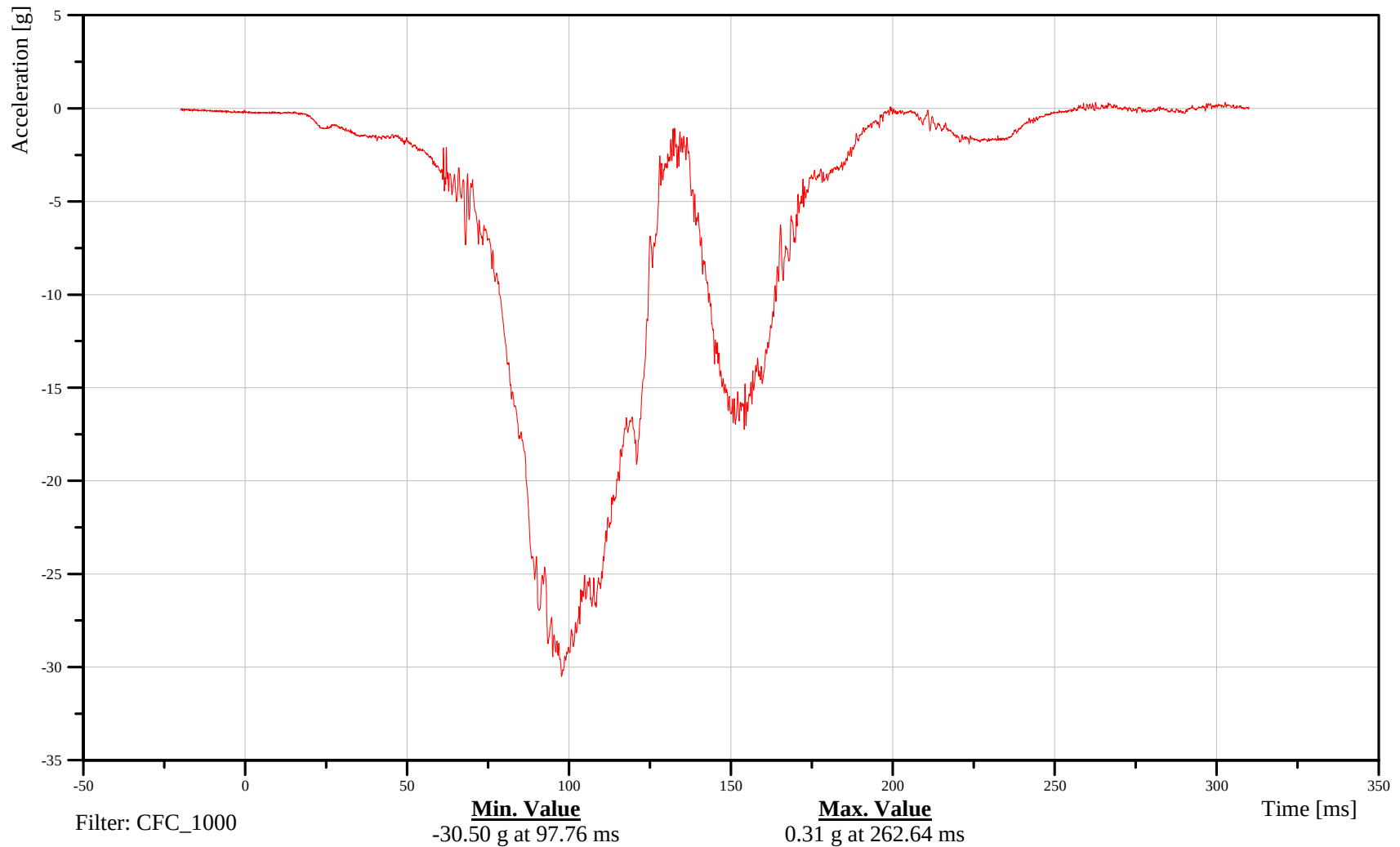
Passenger Pelvis X-Axis Acceleration

Customer: VRTC

13PELVCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-92

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

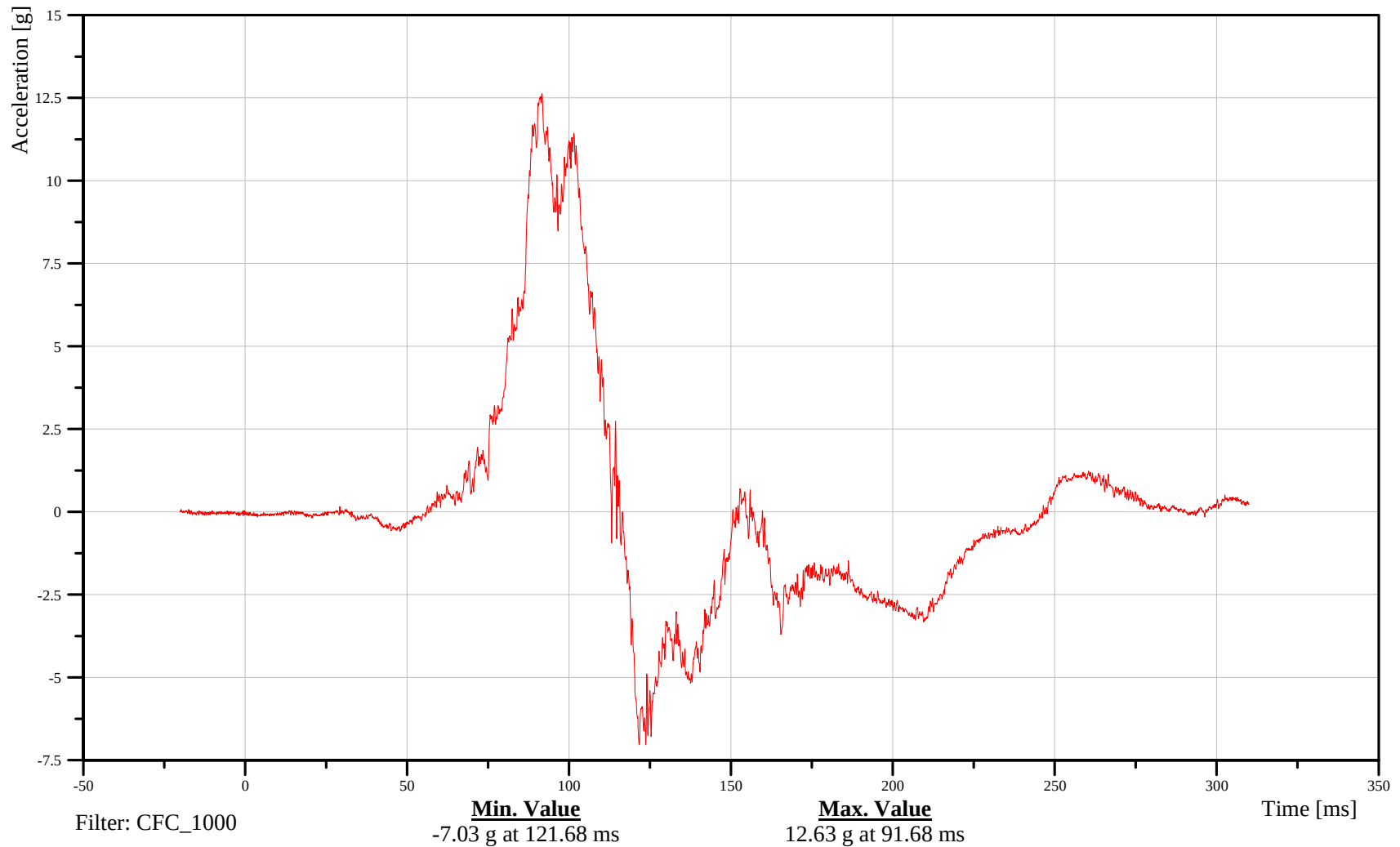
Passenger Pelvis Y-Axis Acceleration

Customer: VRTC

13PELVCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-93

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

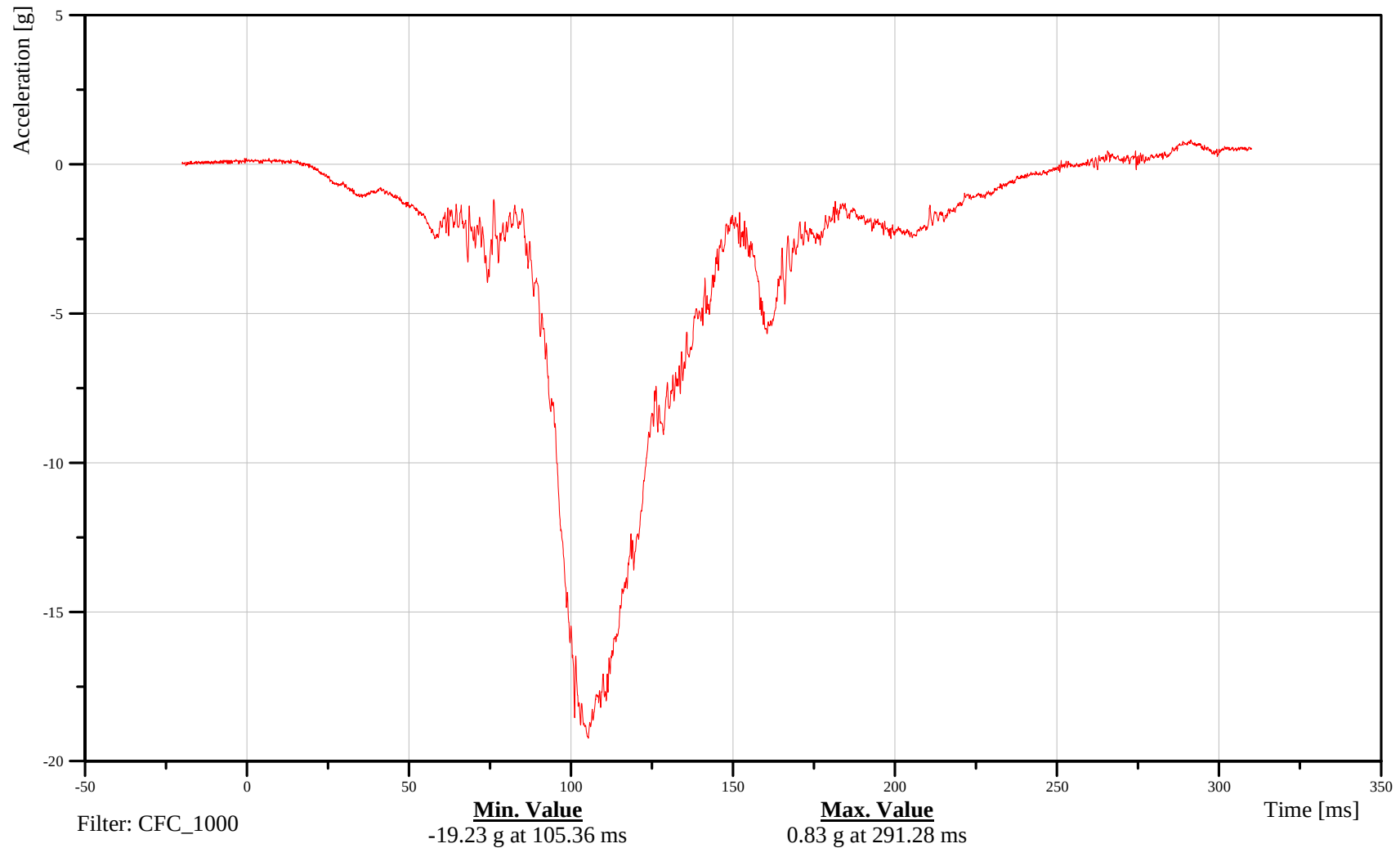
Passenger Pelvis Z-Axis Acceleration

Customer: VRTC

13PELVCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-94

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

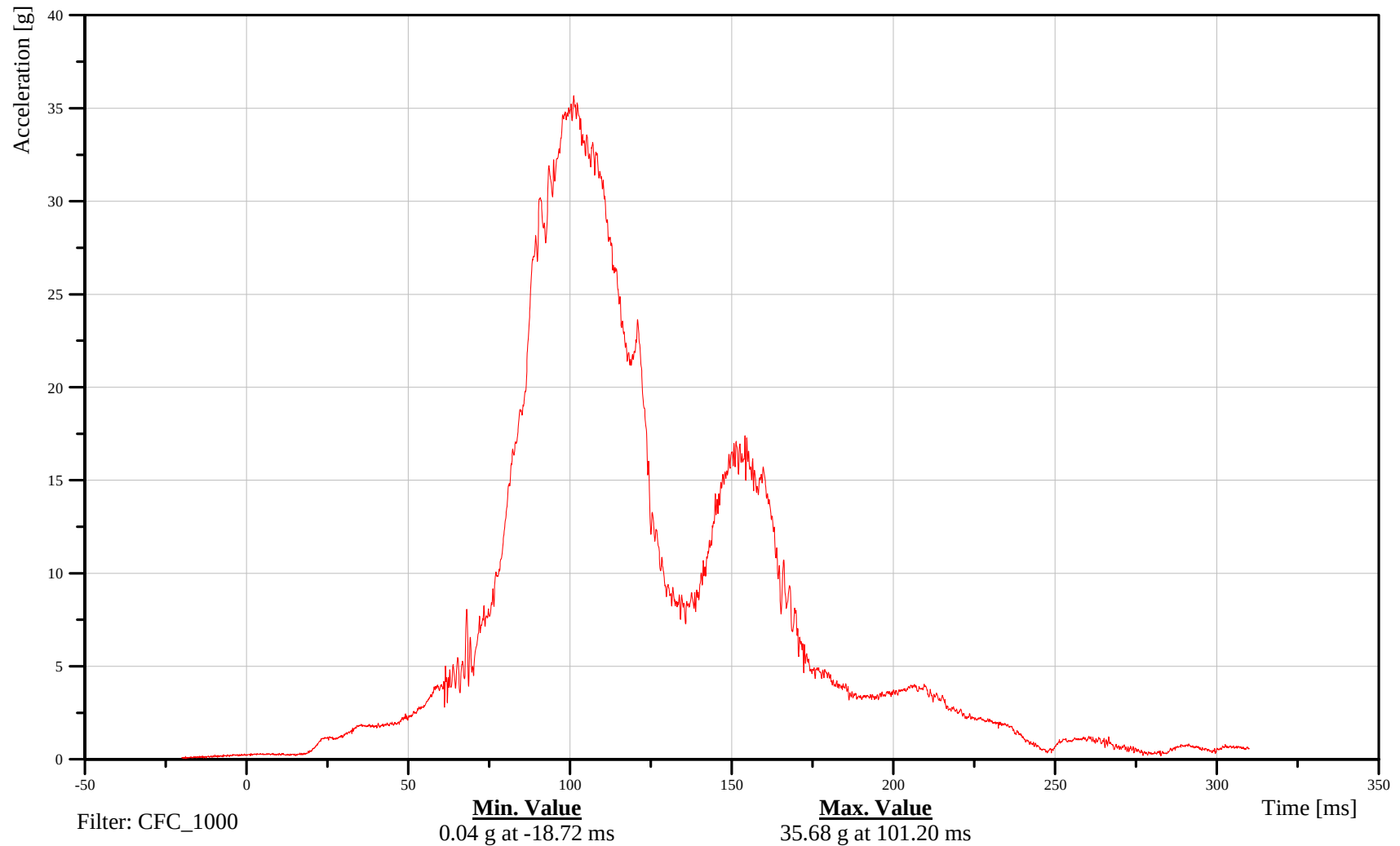
Passenger Pelvis Resultant Acceleration

Customer: VRTC

13PELVCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-95

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

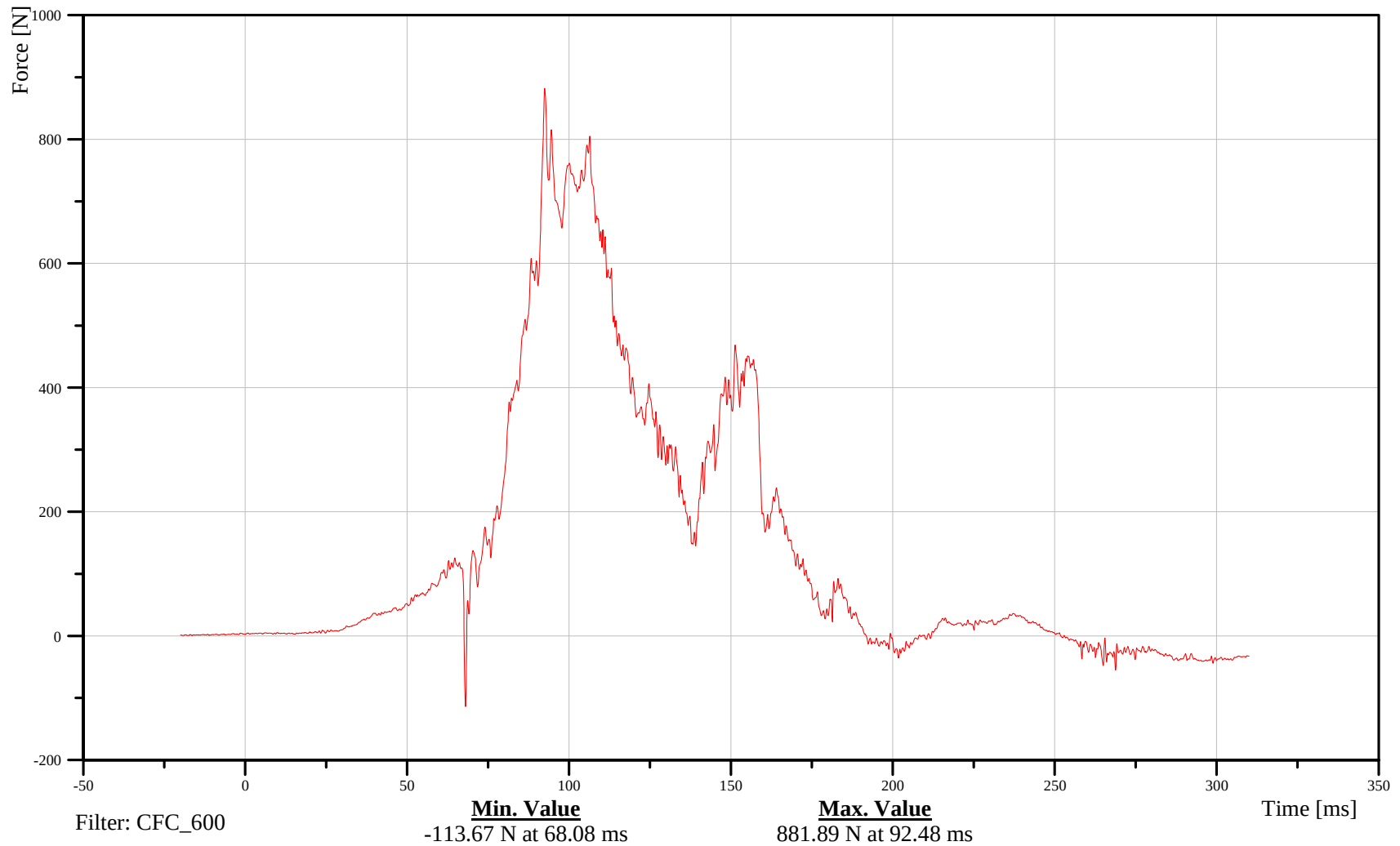
Passenger Left Femur Z-Axis Force

Customer: VRTC

13FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-96

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

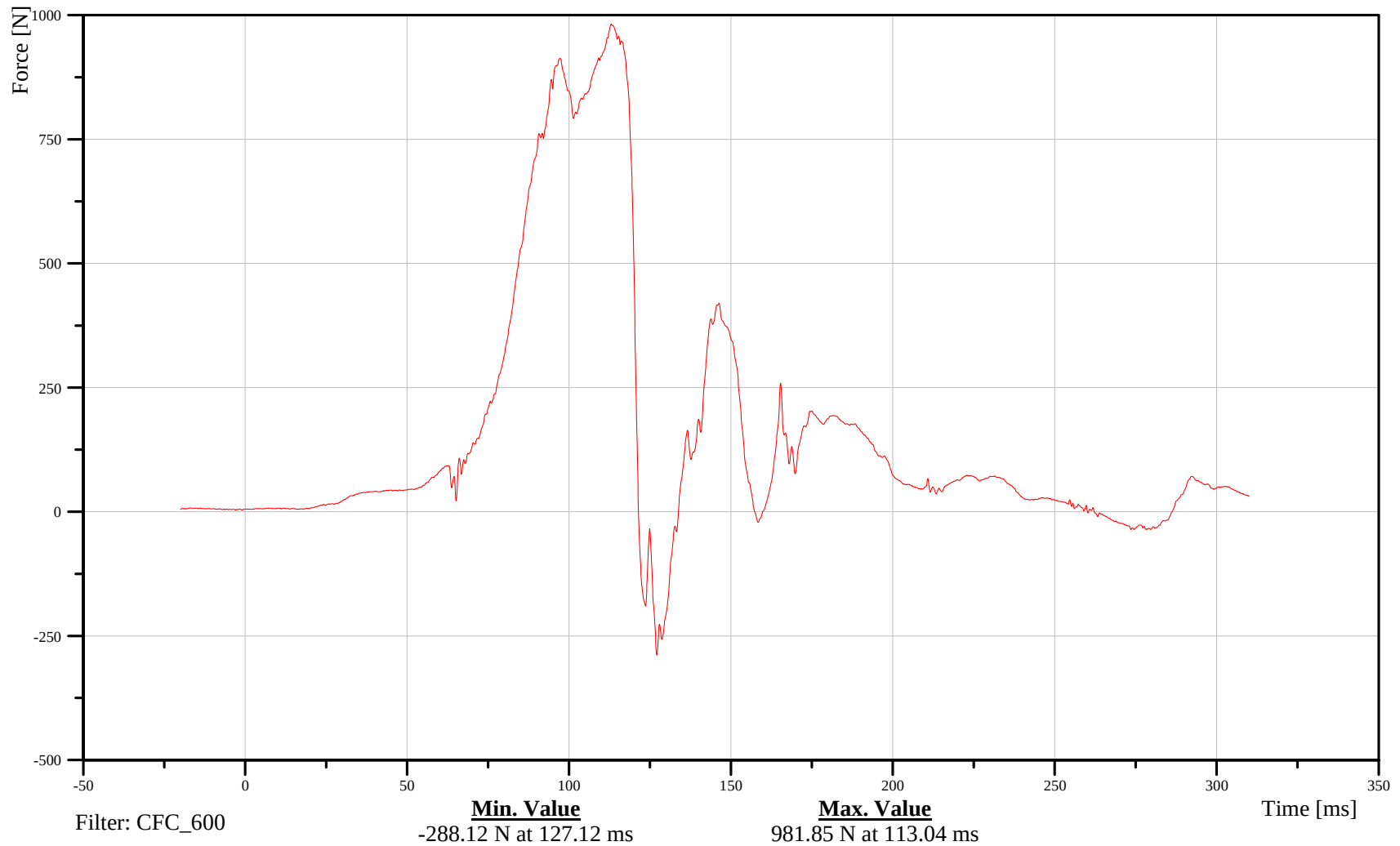
Passenger Right Femur Z-Axis Force

Customer: VRTC

13FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-97

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

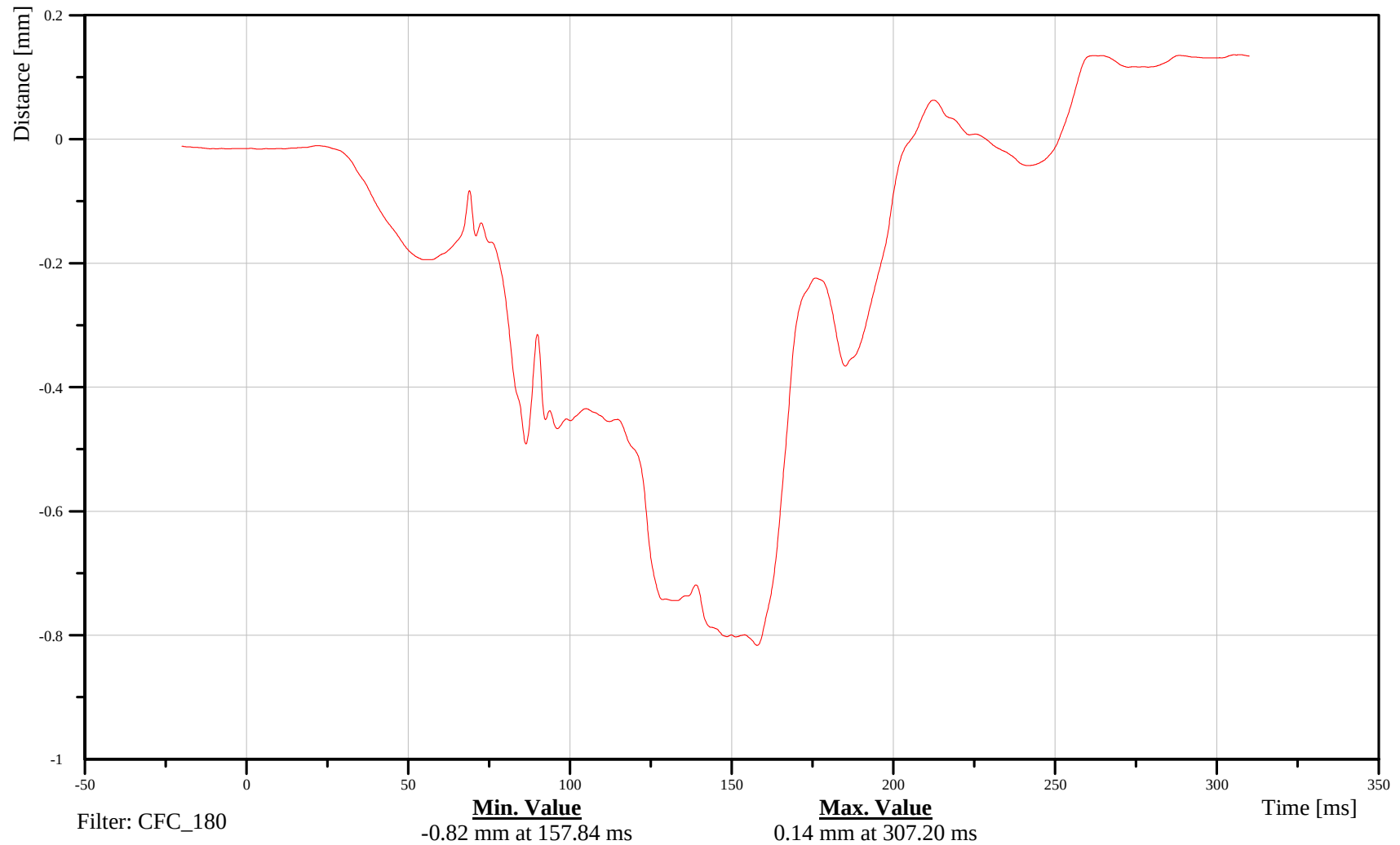
Passenger Left Knee Displacement

Customer: VRTC

13KNSLLE00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-98

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

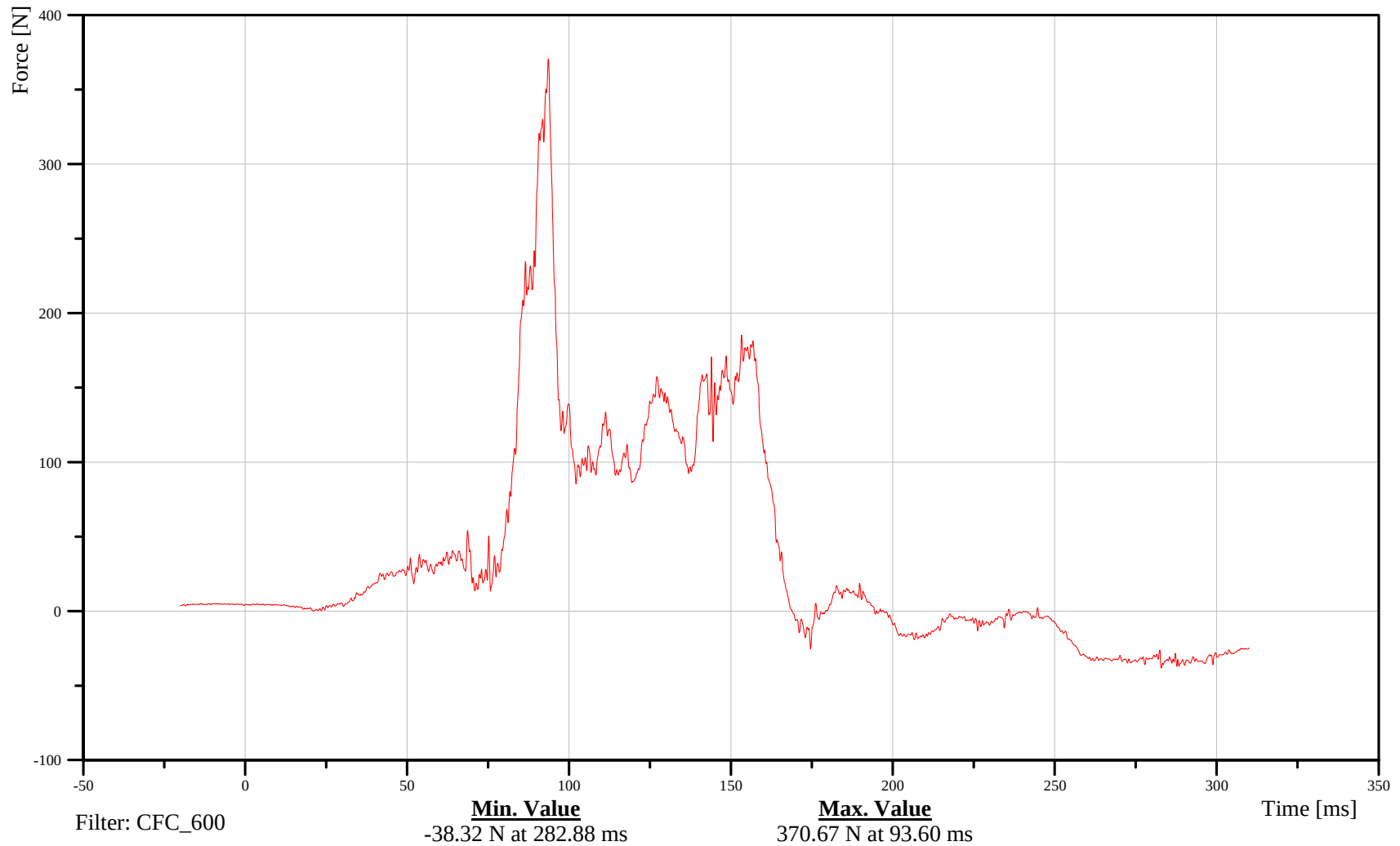
Passenger Left Upper Tibia X-Axis Force

Customer: VRTC

13TIBILULXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-99

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

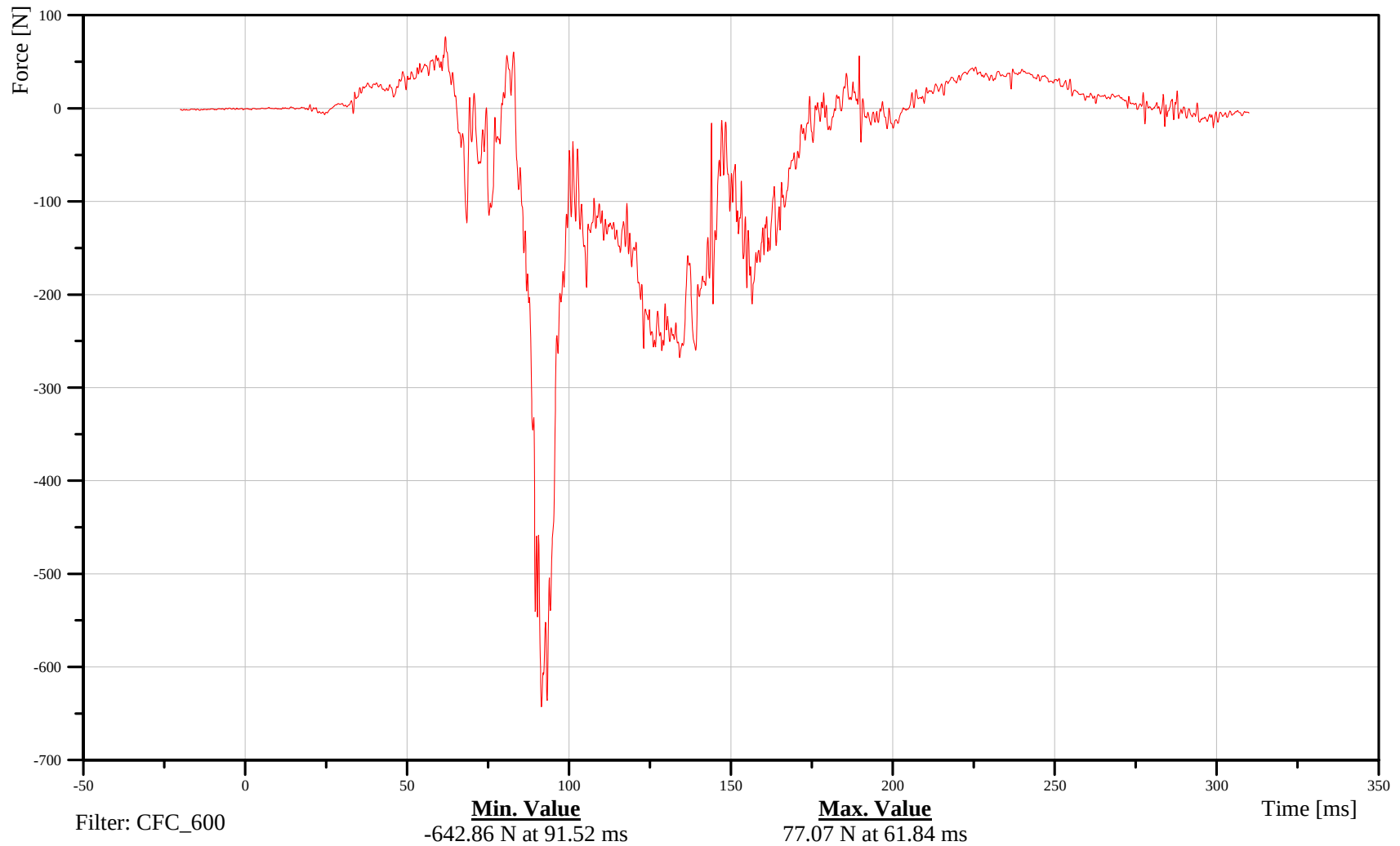
Passenger Left Upper Tibia Z-Axis Force

Customer: VRTC

13TIBILULXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-100

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

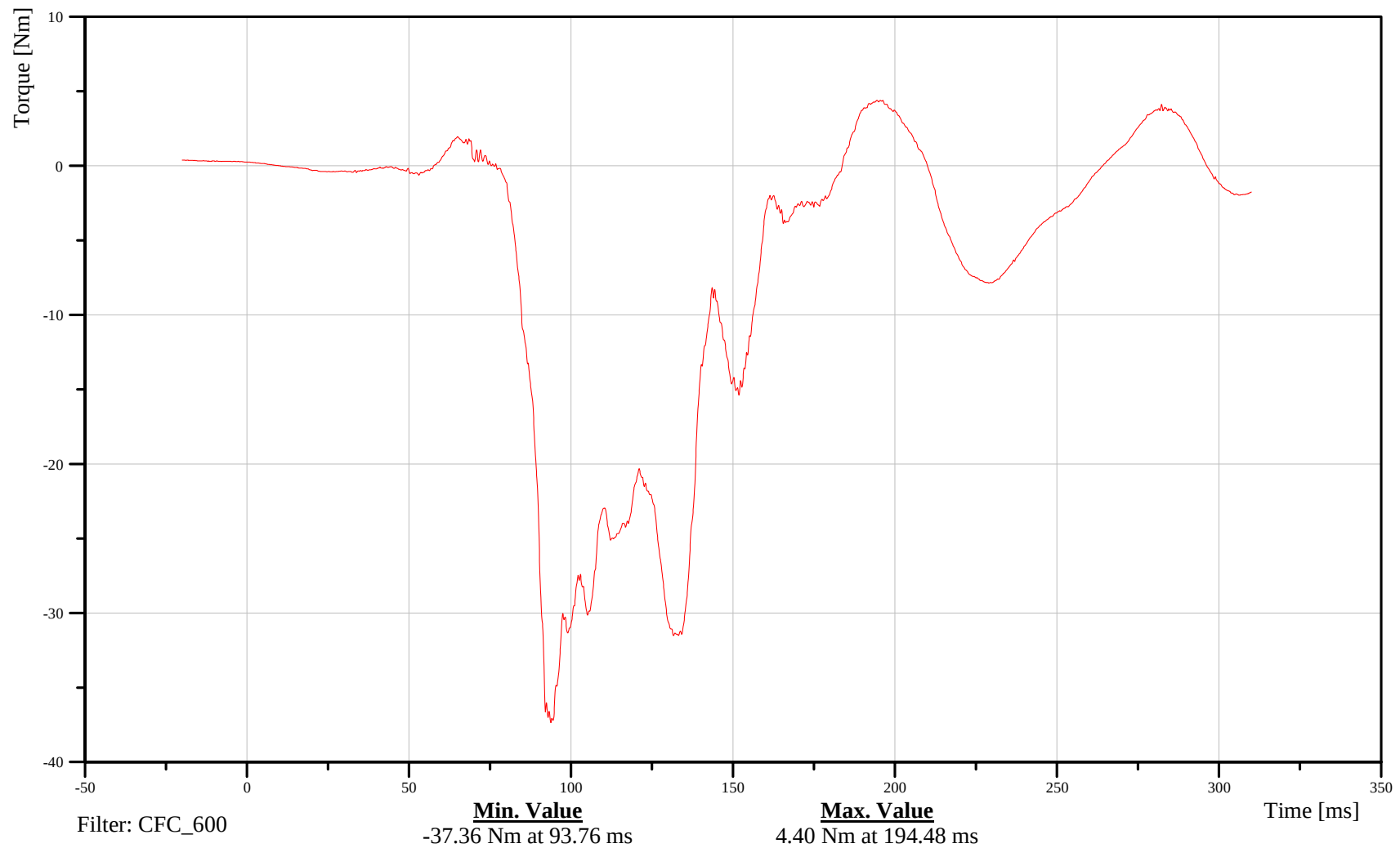
Passenger Left Upper Tibia Moment About X Axis

Customer: VRTC

13TIBILULXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-101

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

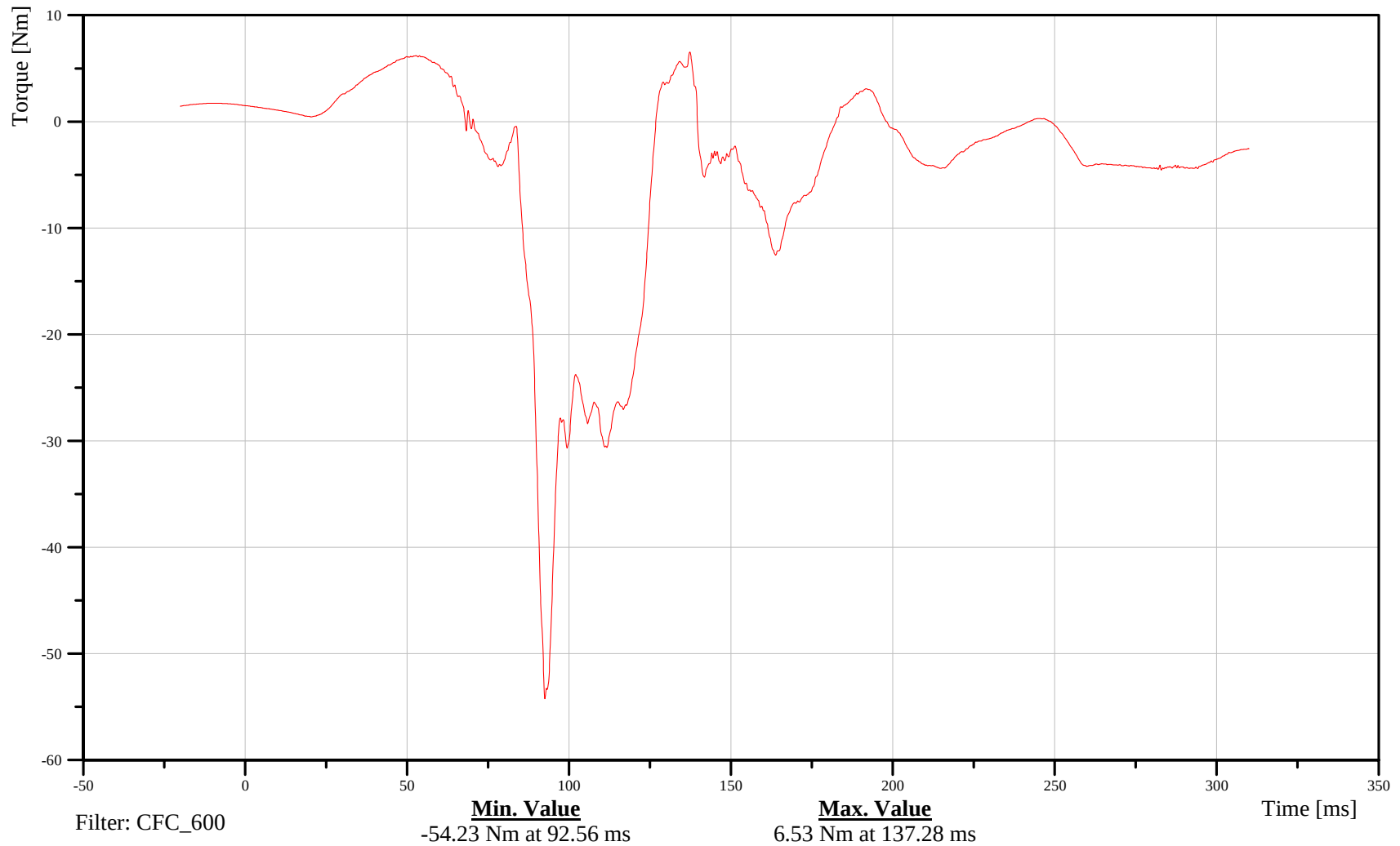
Passenger Left Upper Tibia Moment About Y Axis

Customer: VRTC

13TIBILULXHFM0YB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-102

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

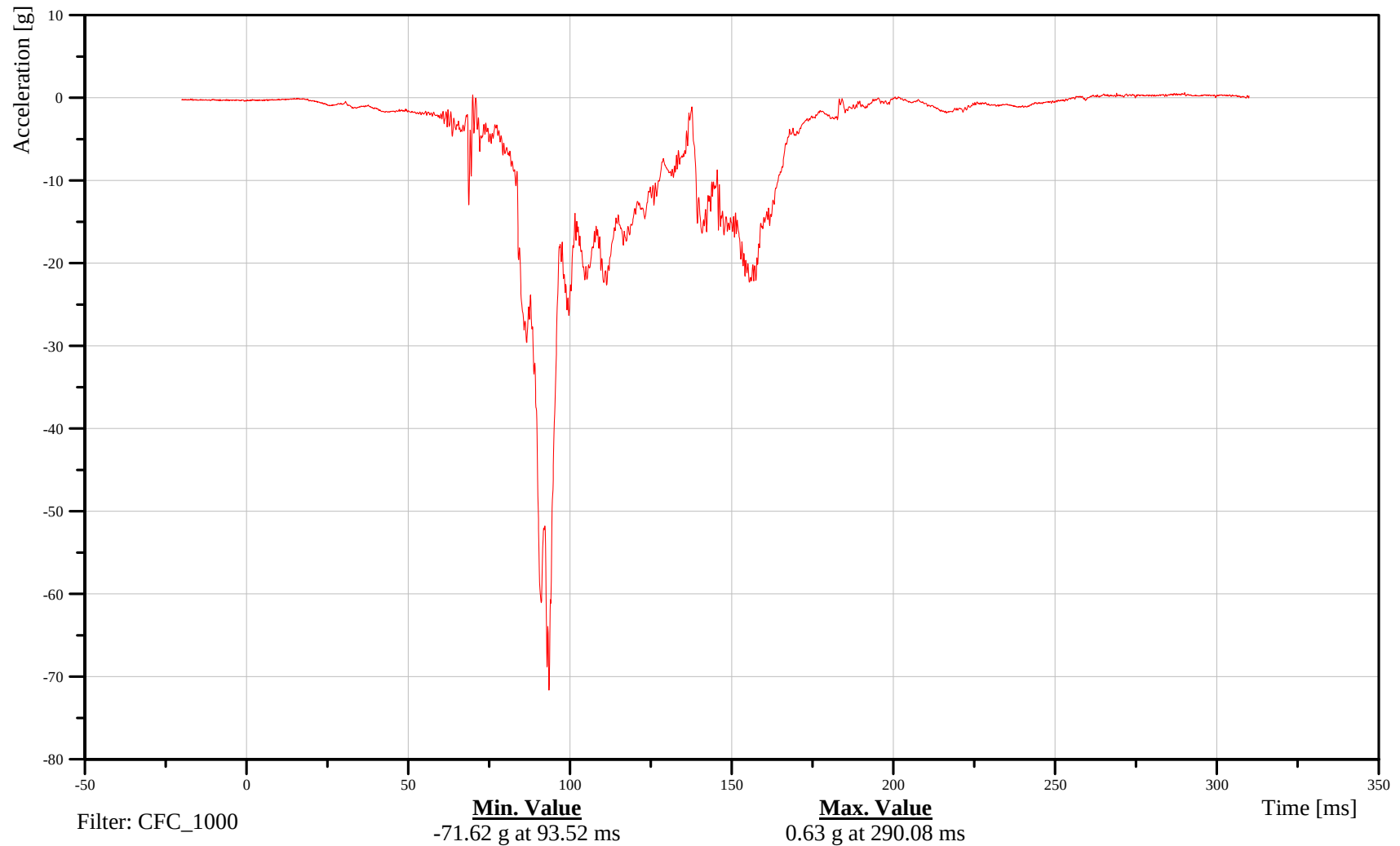
Passenger Left Tibia X-Axis Acceleration

Customer: VRTC

13TIBILELXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-103

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

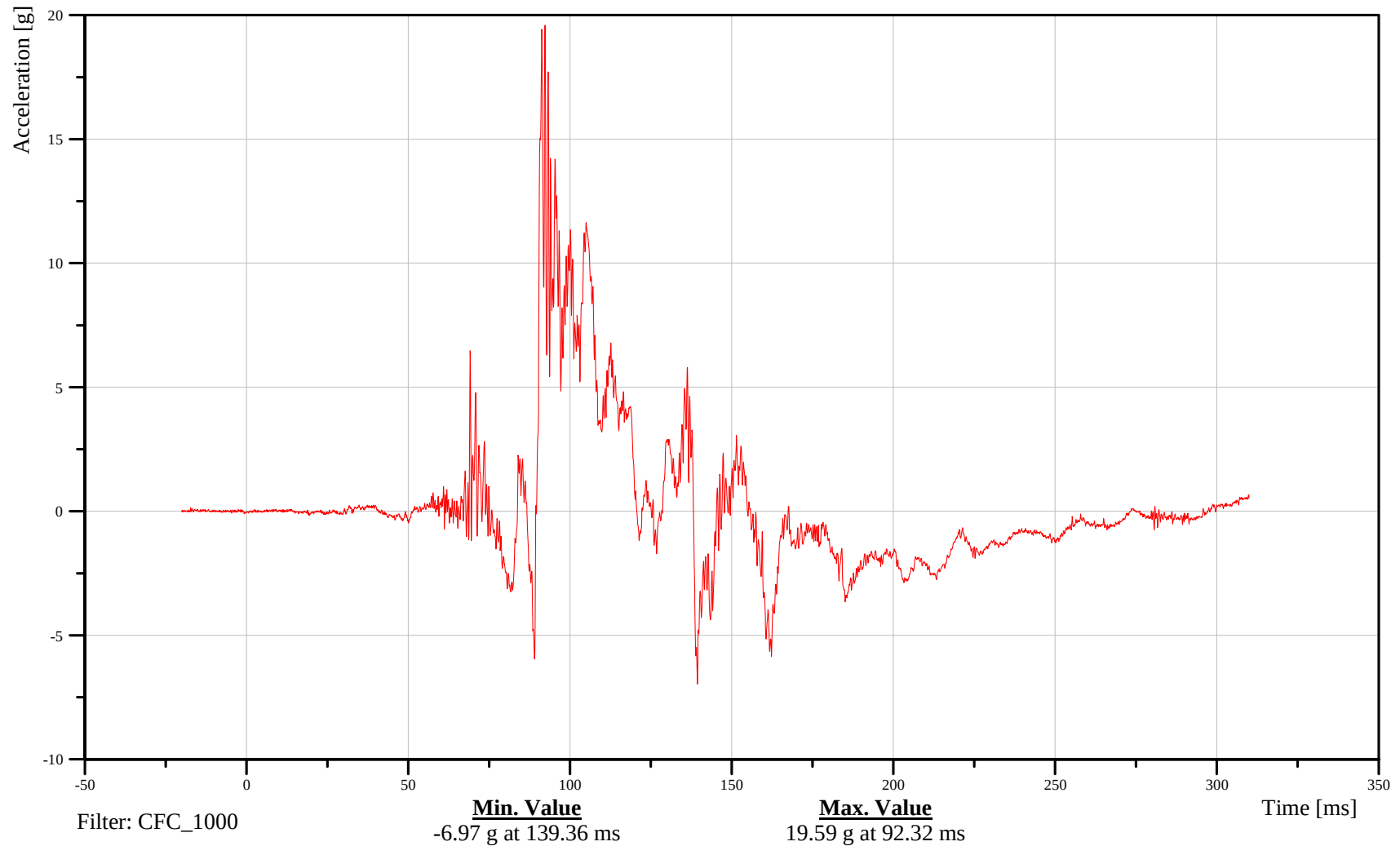
Passenger Left Tibia Y-Axis Acceleration

Customer: VRTC

13TIBILELXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-104

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

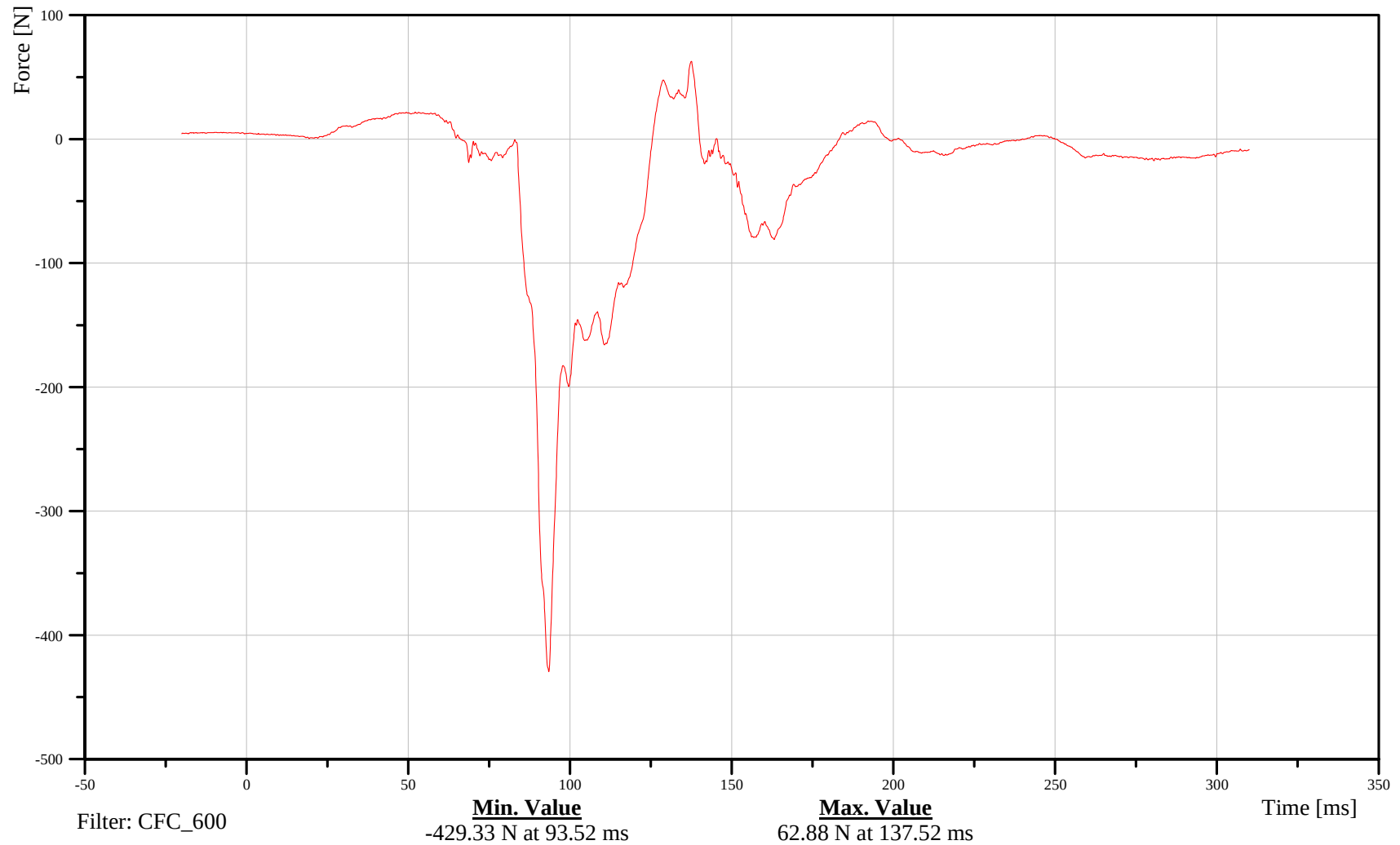
Passenger Left Lower Tibia X-Axis Force

Customer: VRTC

13TIBILLXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-105

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

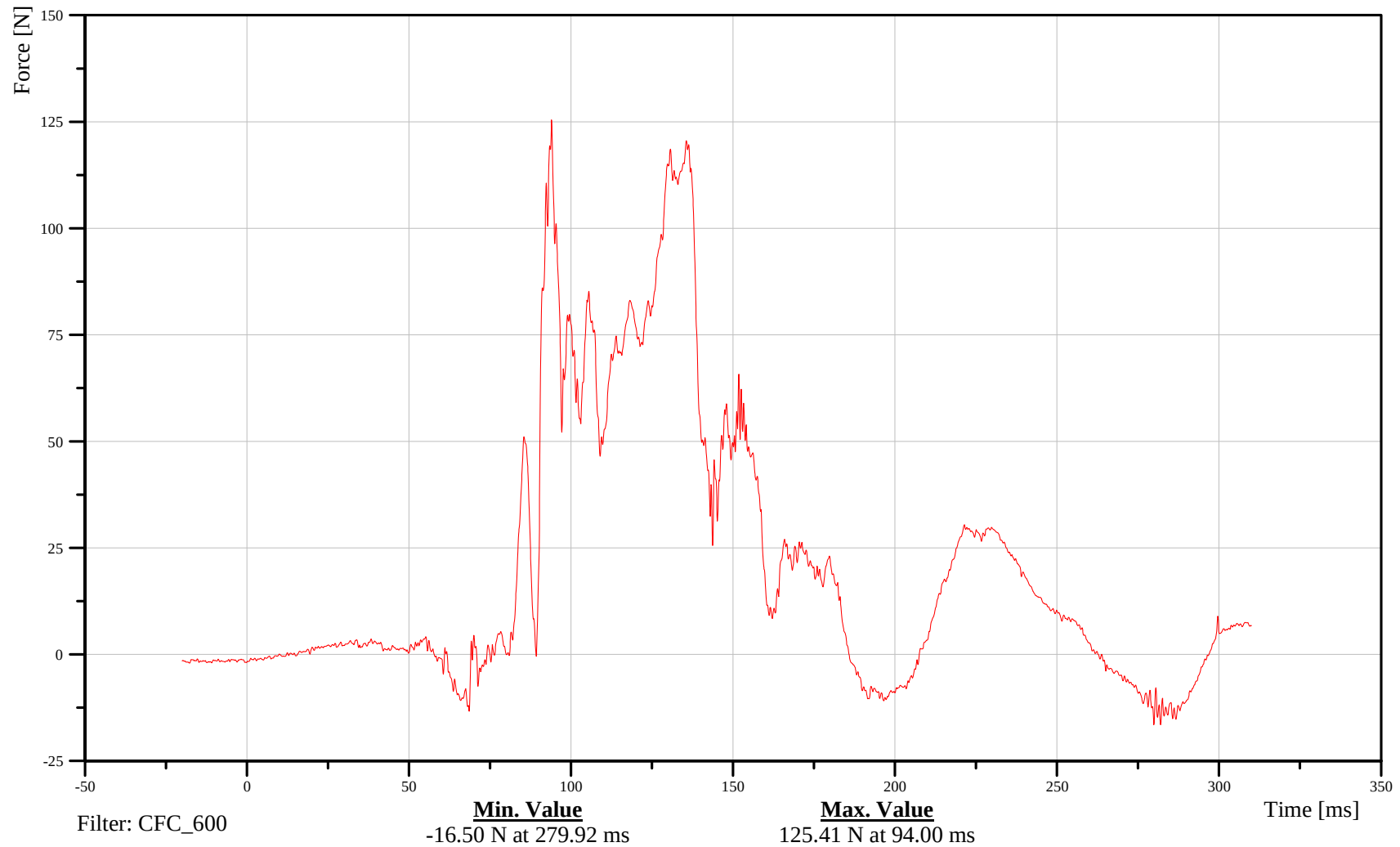
Passenger Left Lower Tibia Y-Axis Force

Customer: VRTC

13TIBILLXHFFOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-106

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

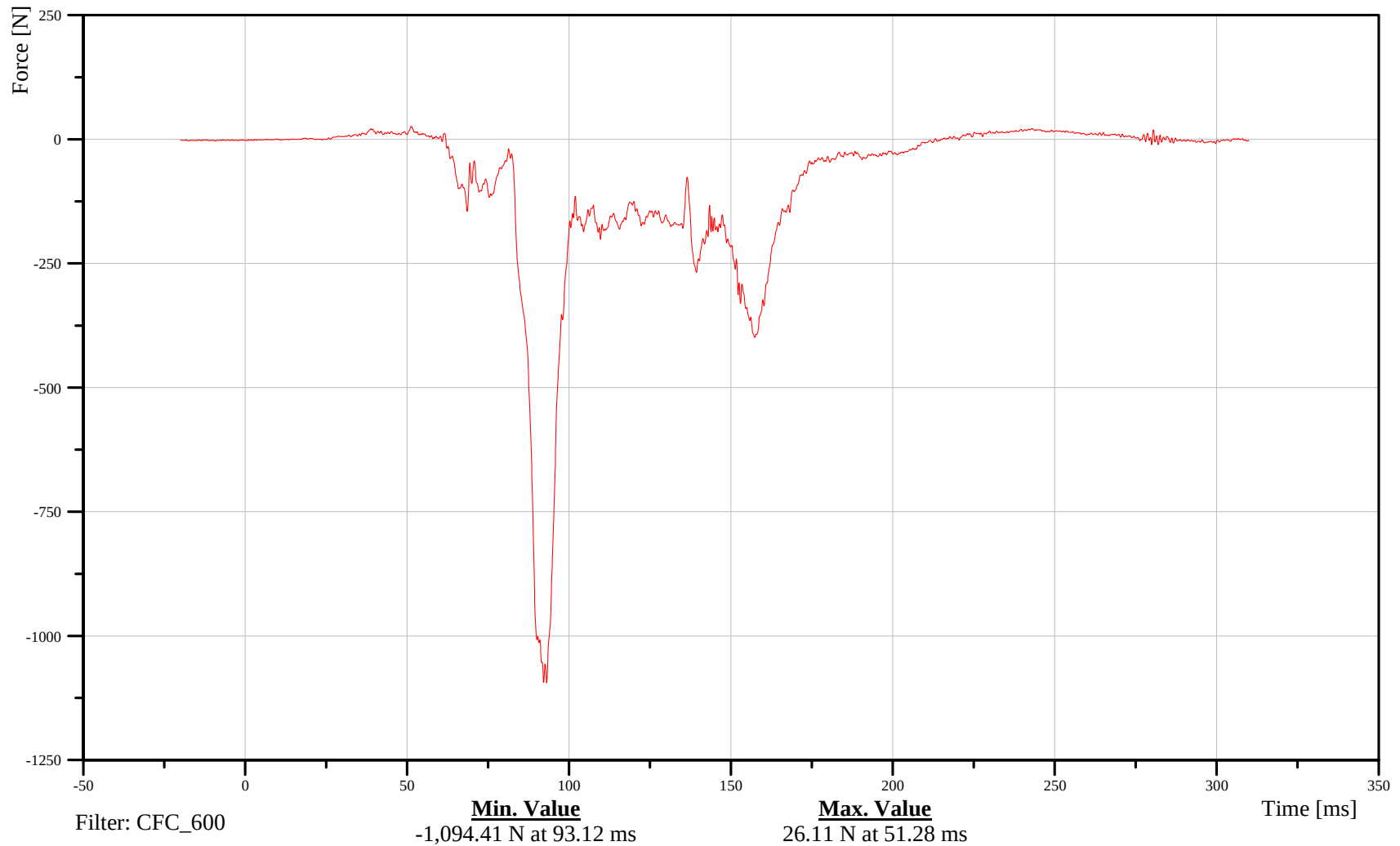
Passenger Left Lower Tibia Z-Axis Force

Customer: VRTC

13TIBILLXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-107

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

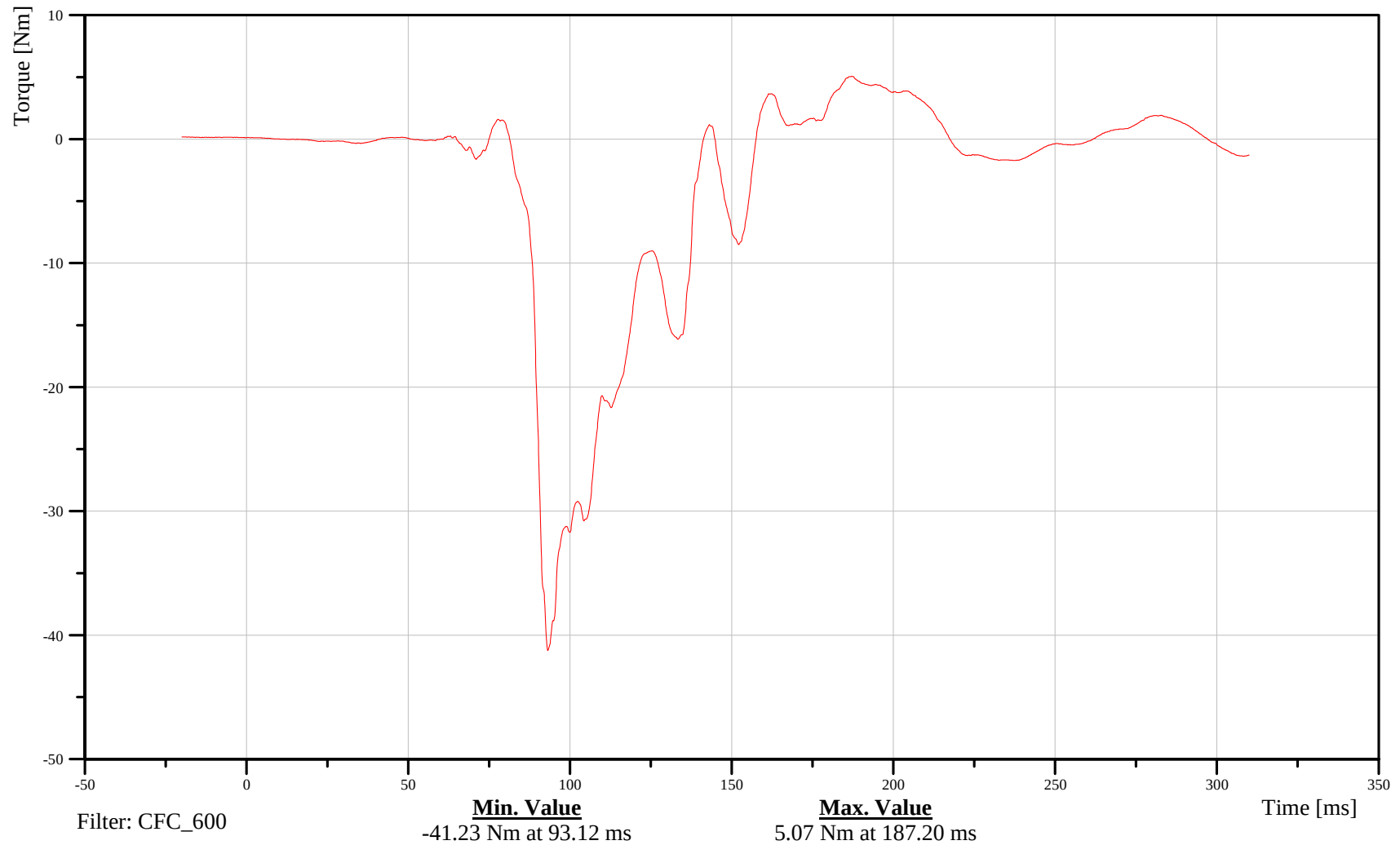
Passenger Left Lower Tibia Moment About X Axis

Customer: VRTC

13TIBILLXHFMOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-108

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

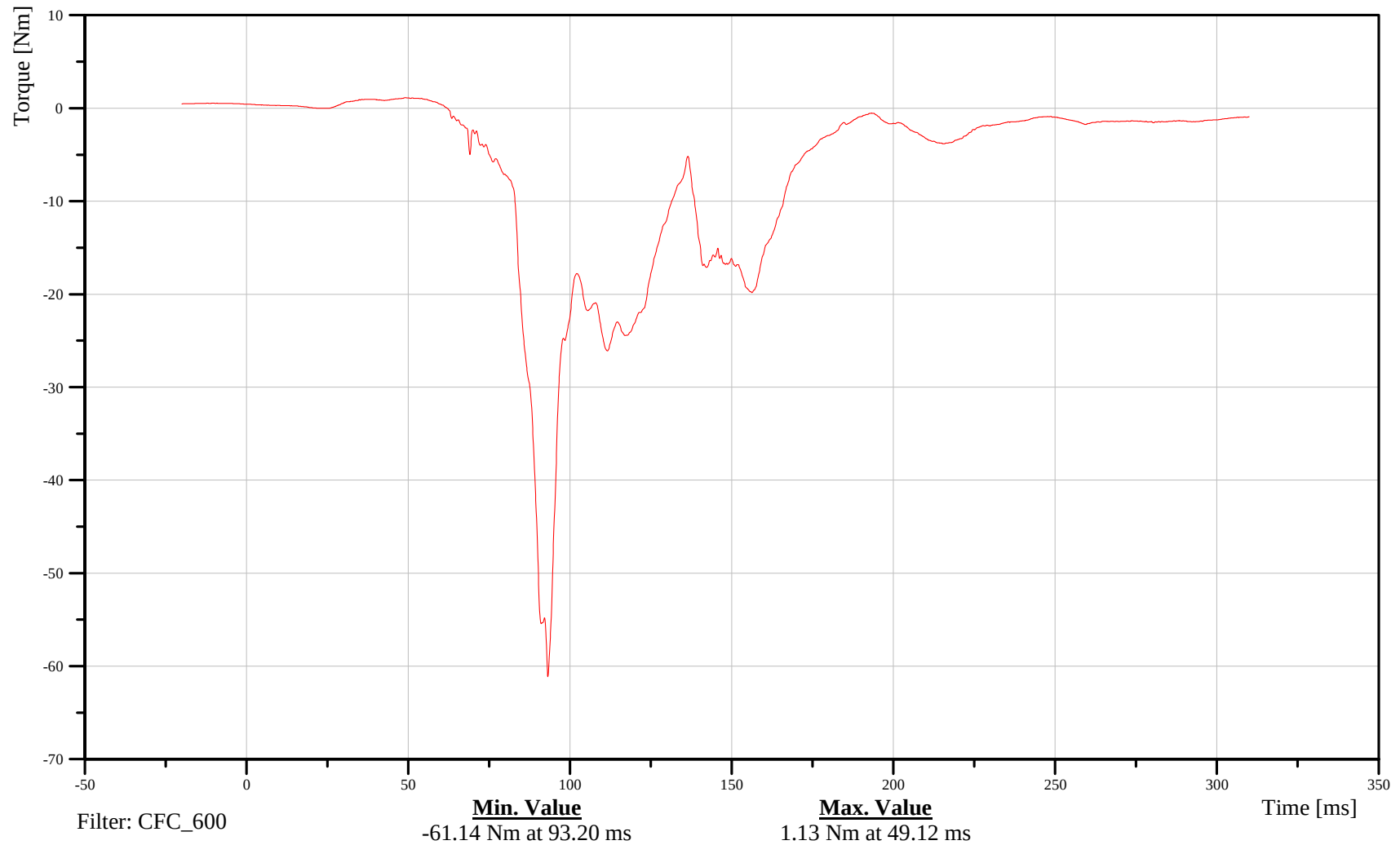
Passenger Left Lower Tibia Moment About Y Axis

Customer: VRTC

13TIBILLXHFMOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-109

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

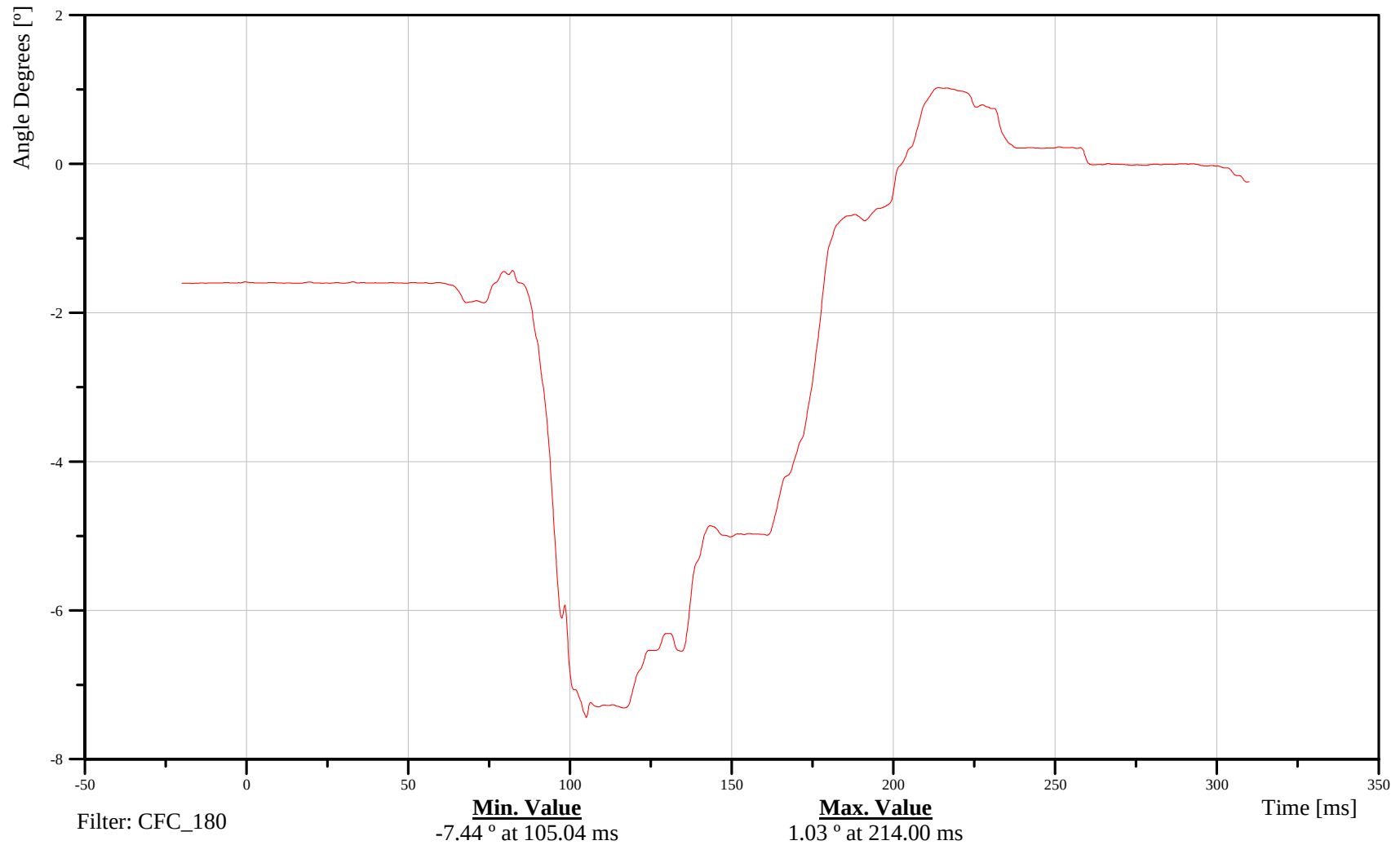
Passenger Left Foot X-Axis Rotation

Customer: VRTC

13FOOTLELXHFXNC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-110

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

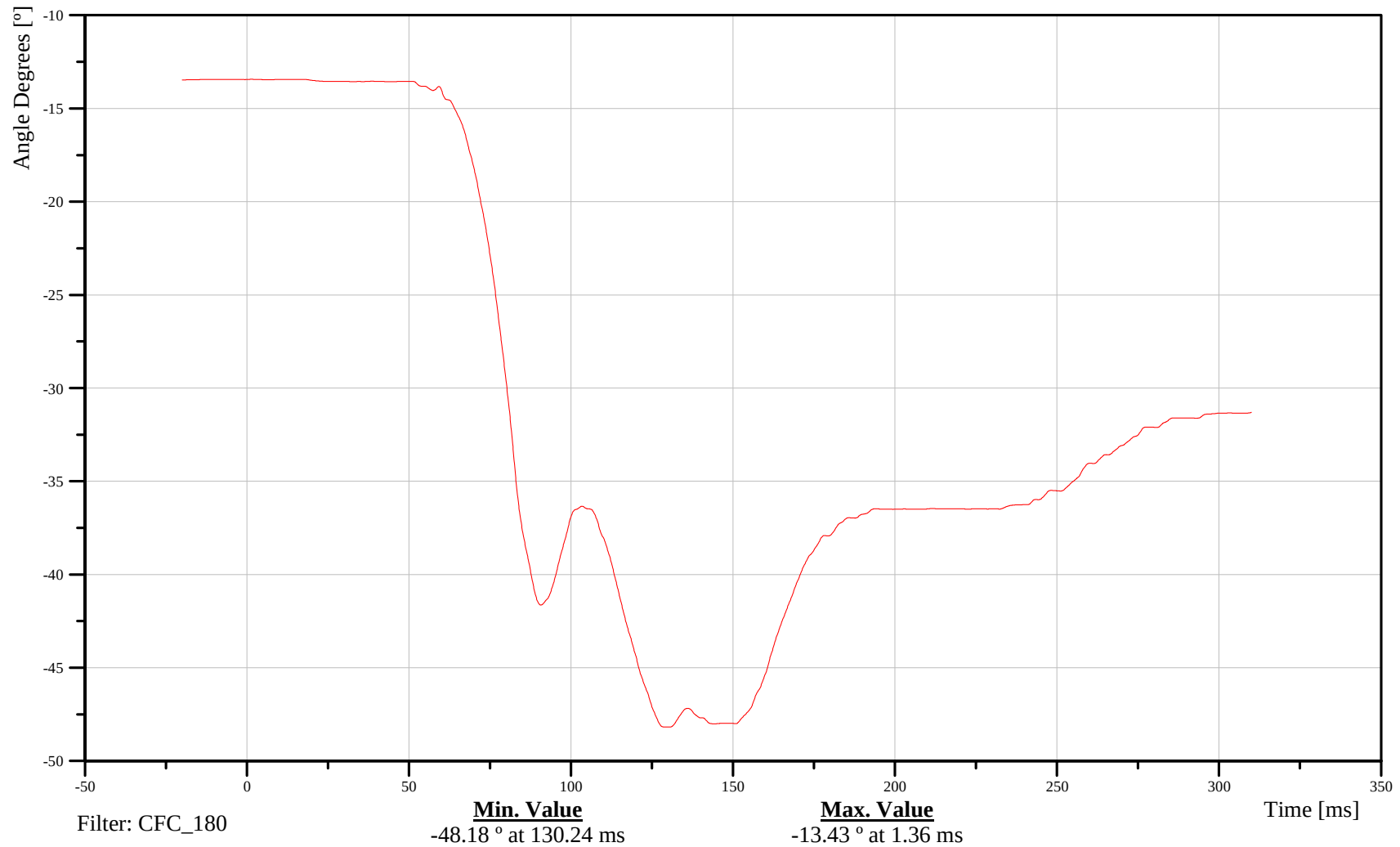
Passenger Left Foot Y-Axis Rotation

Customer: VRTC

13FOOTLELXHFANYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-111

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

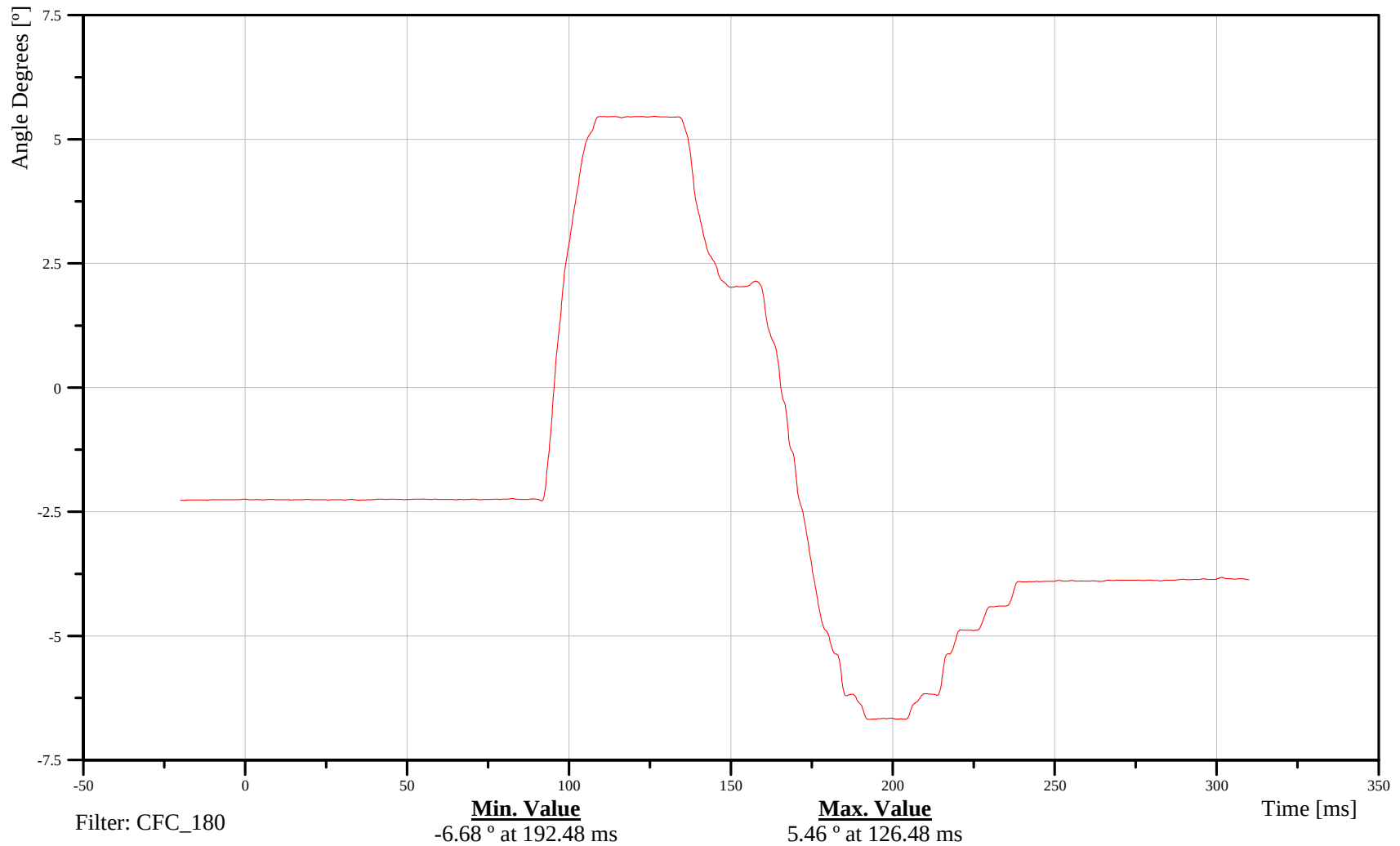
Passenger Left Foot Z-Axis Rotation

Customer: VRTC

13FOOTLELXHFANZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-112

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

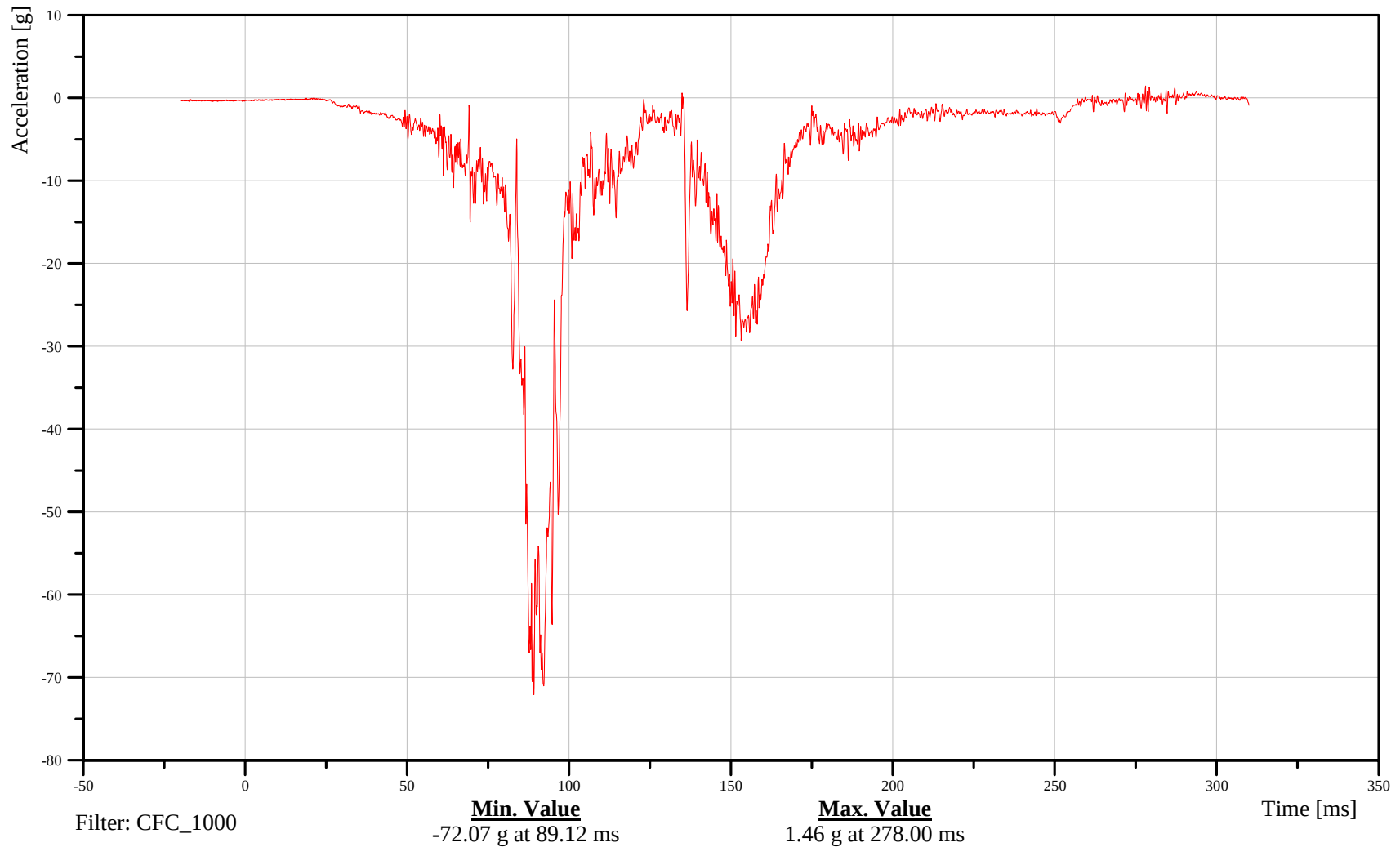
Passenger Left Foot X-Axis Acceleration

Customer: VRTC

13FOOTLELXHFA C XA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-113

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

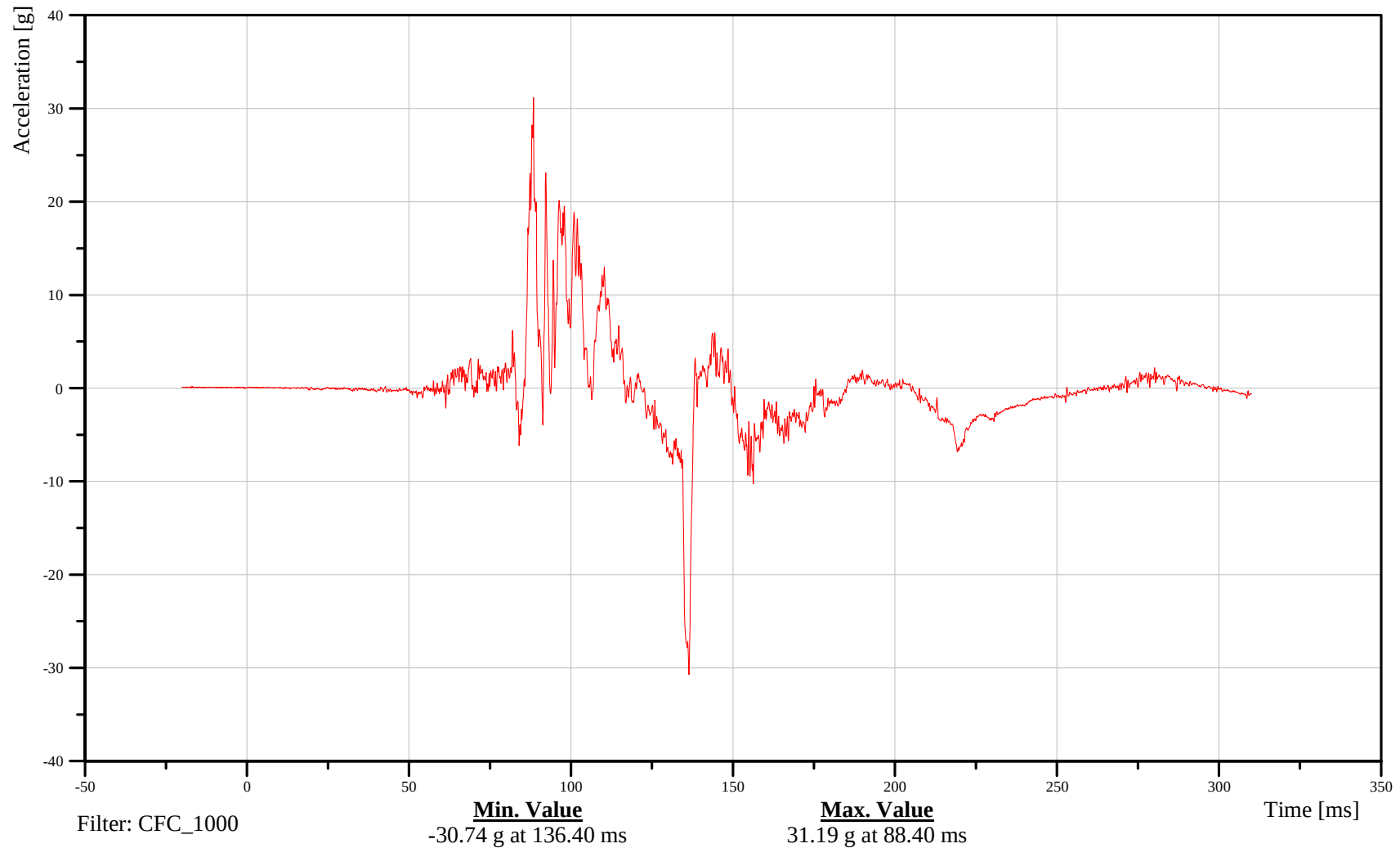
Passenger Left Foot Y-Axis Acceleration

Customer: VRTC

13FOOTLELXHFCYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-114

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

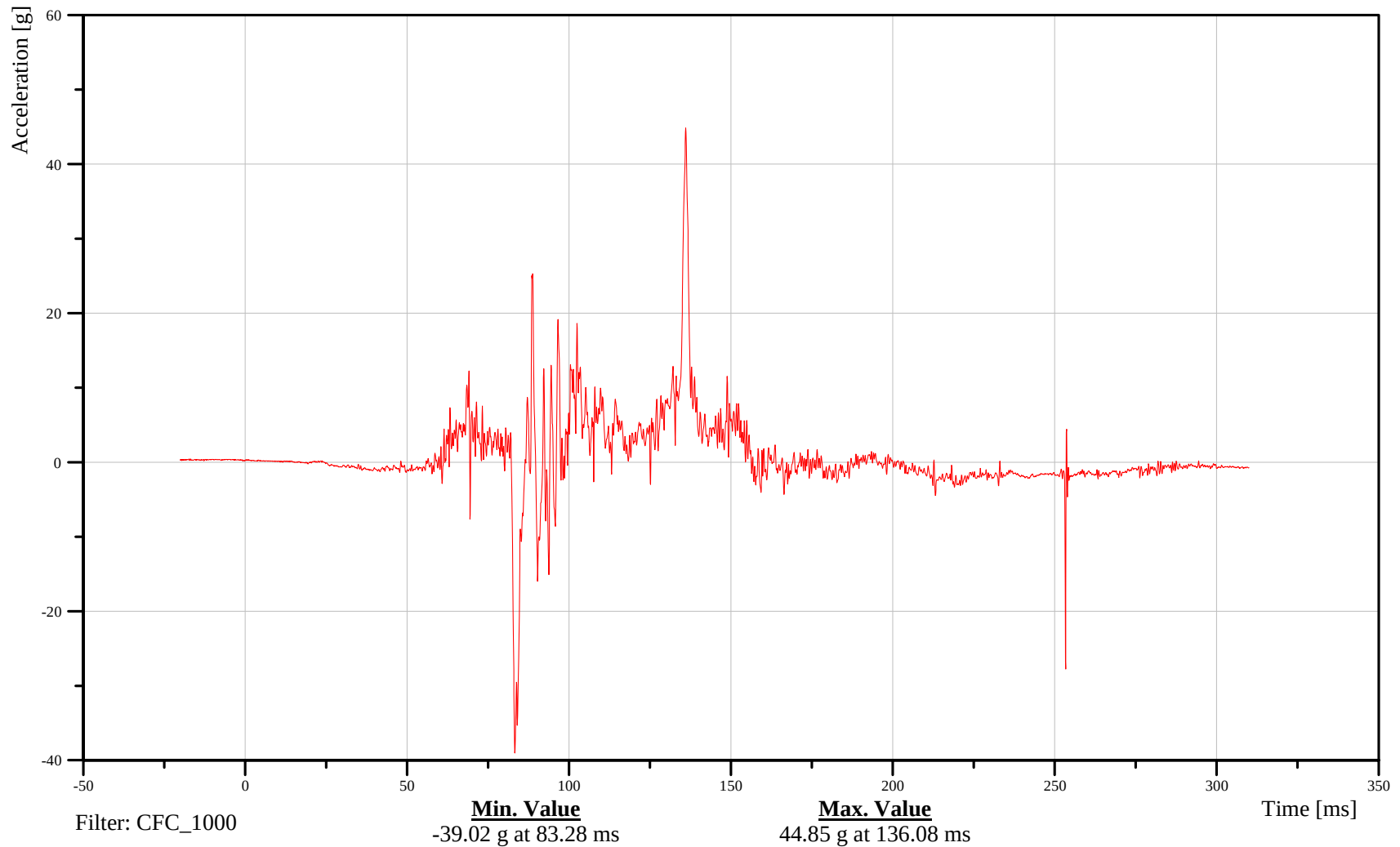
Passenger Left Foot Z-Axis Acceleration

Customer: VRTC

13FOOTLELXHFACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-115

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

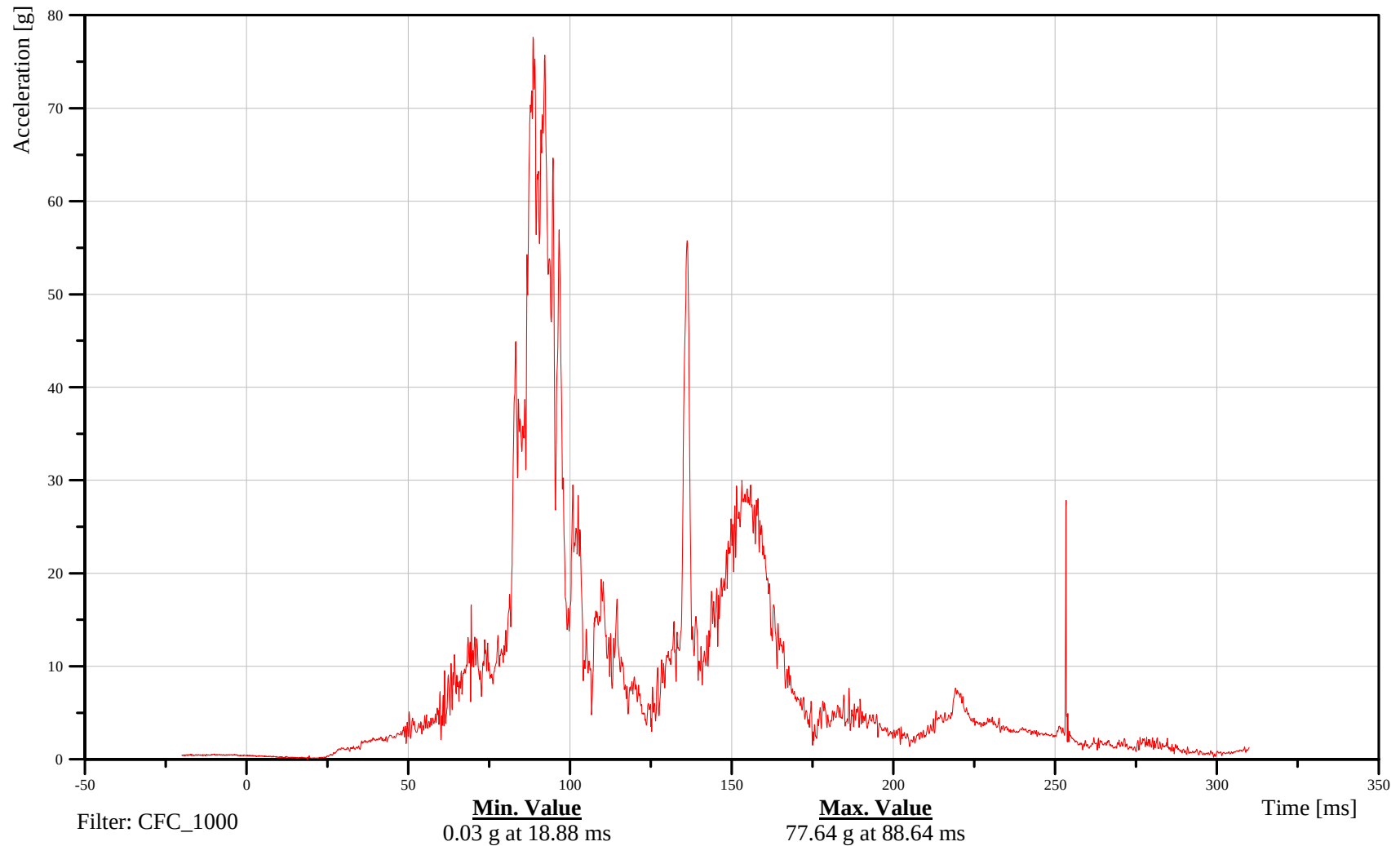
Passenger Left Foot Resultant Acceleration

Customer: VRTC

13FOOTLELXHFA CRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-116

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

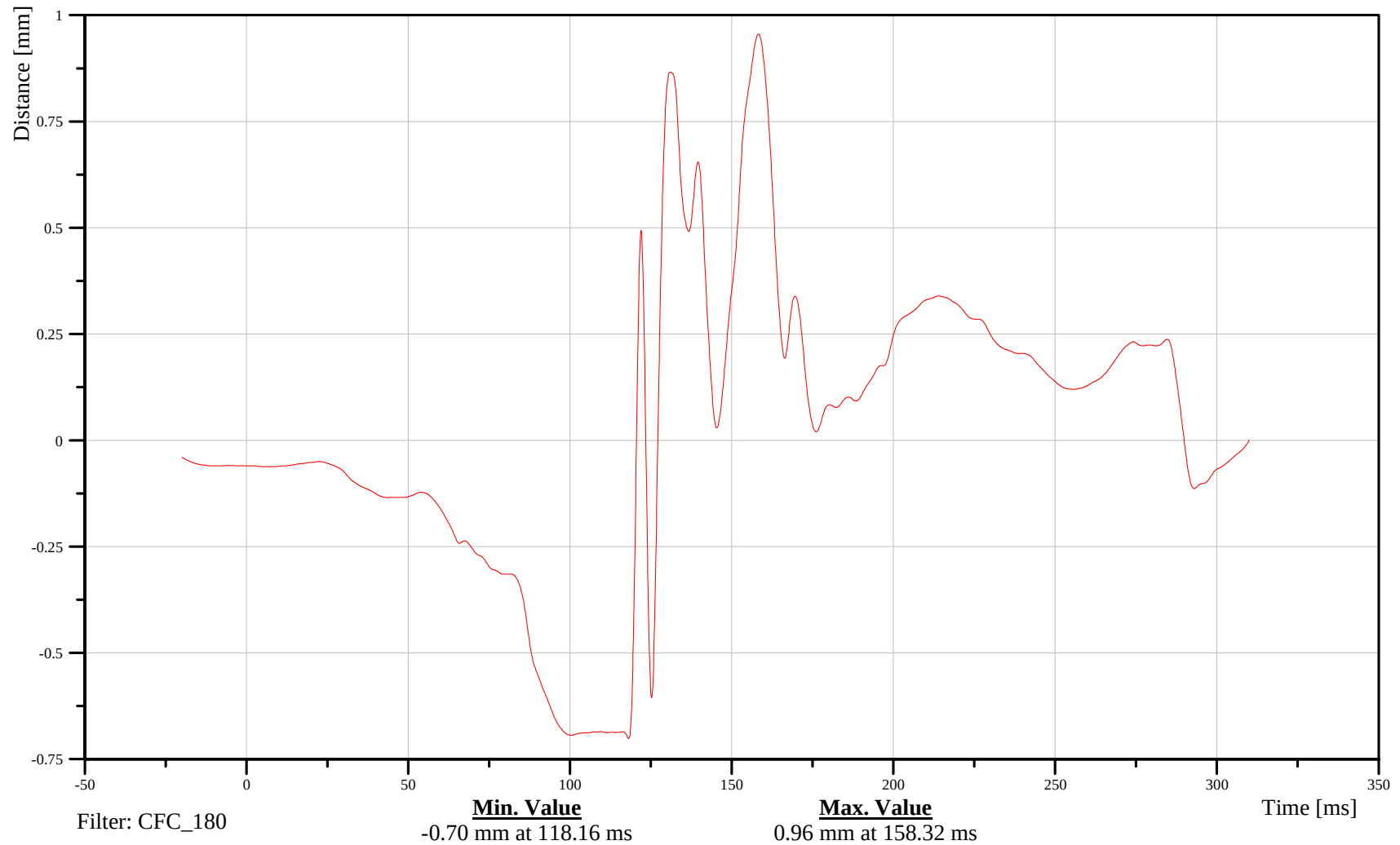
Passenger Right Knee Displacement

Customer: VRTC

13KNSLRI00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-117

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

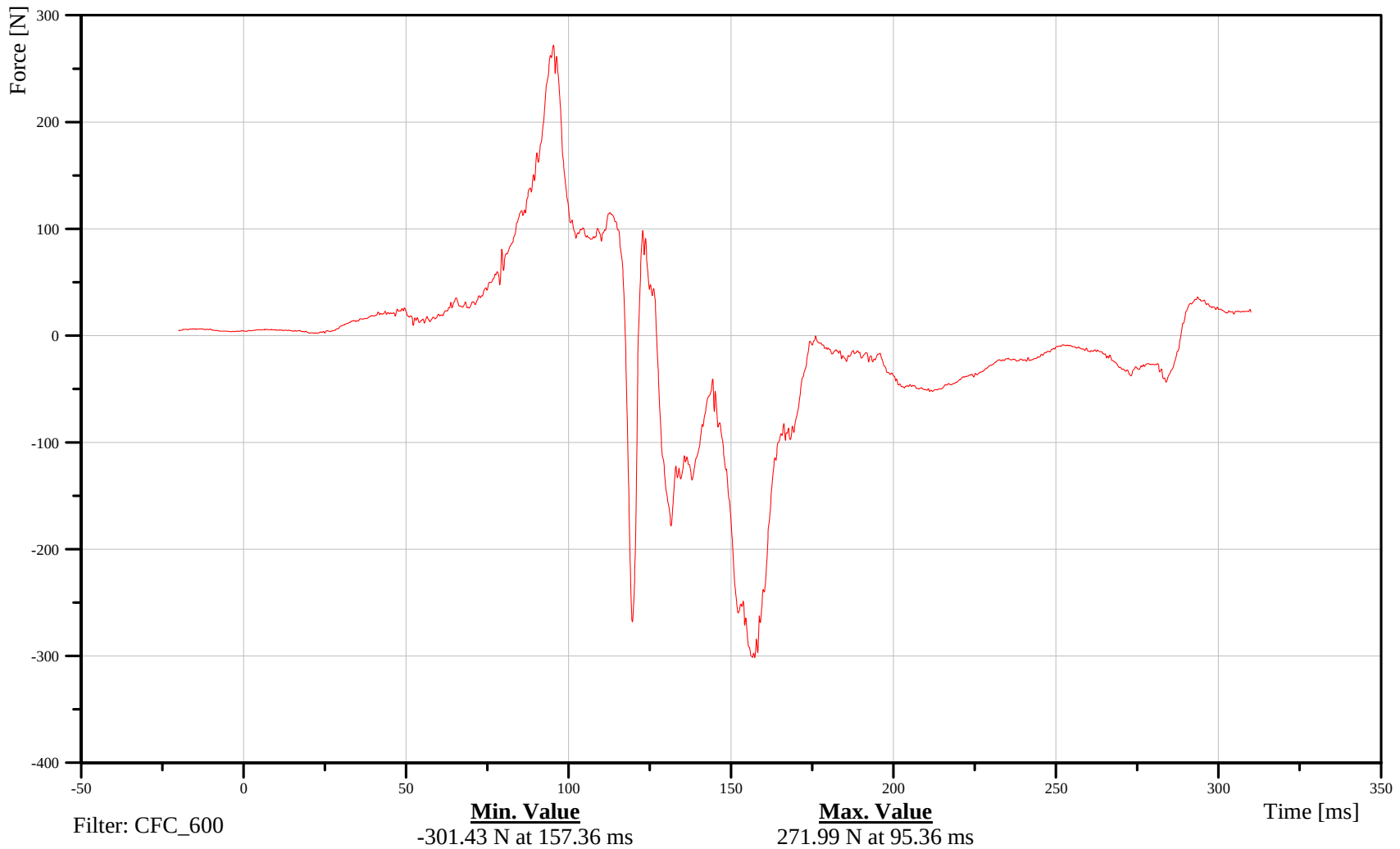
Passenger Right Upper Tibia X-Axis Force

Customer: VRTC

13TIBIRULXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-118

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

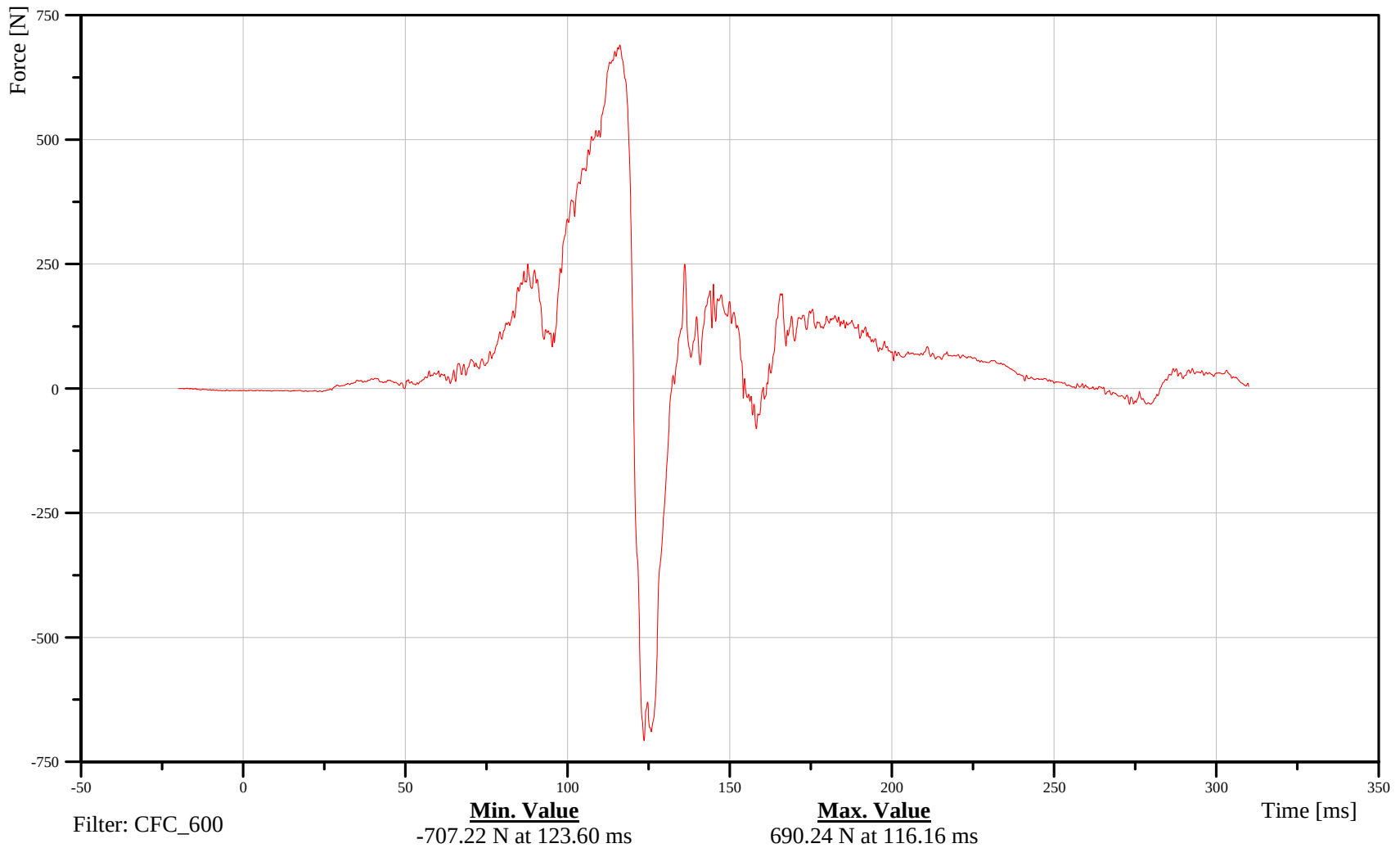
Passenger Right Upper Tibia Z-Axis Force

Customer: VRTC

13TIBIRULXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-119

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

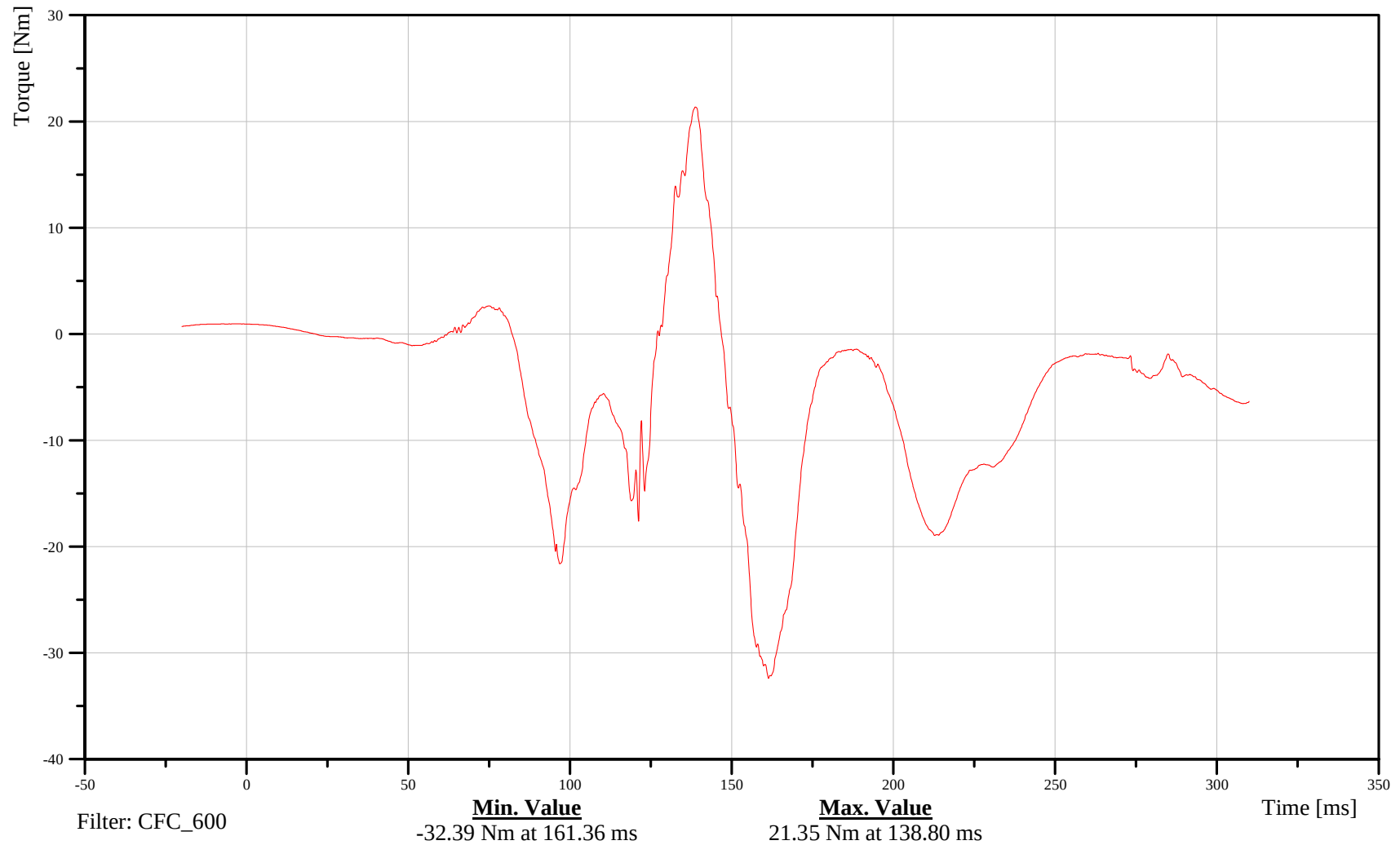
Passenger Right Upper Tibia Moment About X Axis

Customer: VRTC

13TIBIRULXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-120

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

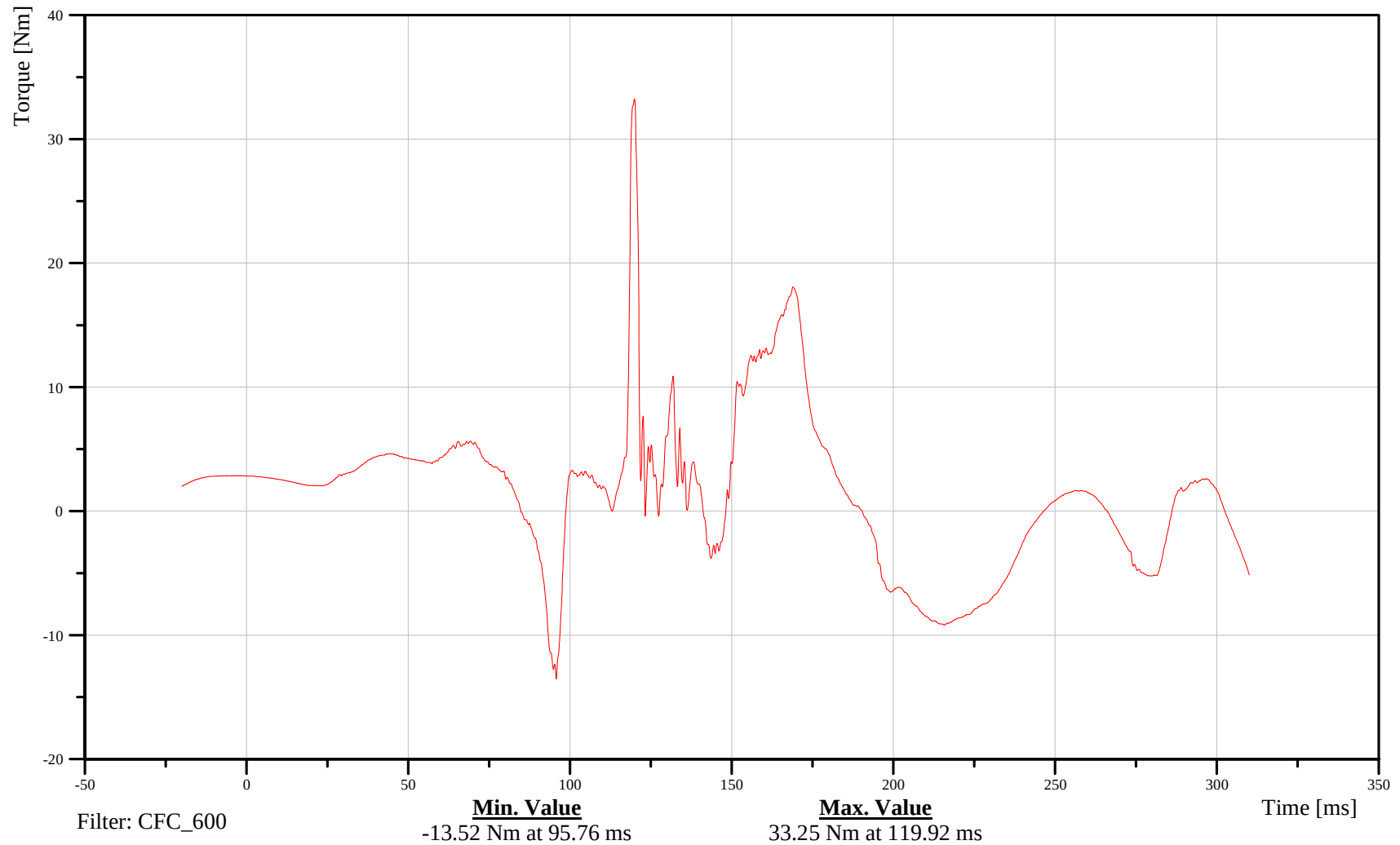
Passenger Right Upper Tibia Moment About Y Axis

Customer: VRTC

13TIBIRULXHFM0YB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-121

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

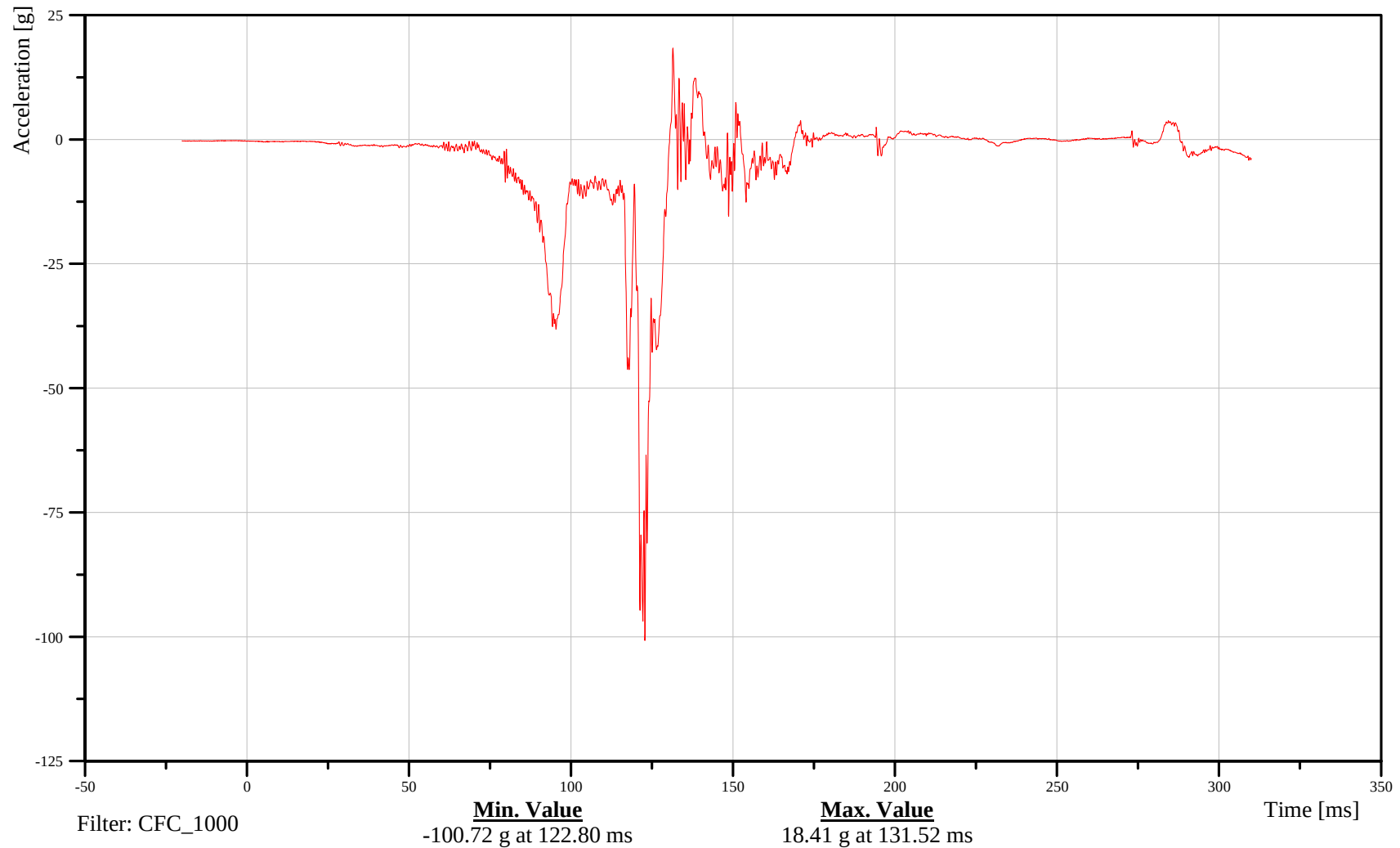
Passenger Right Tibia X-Axis Acceleration

Customer: VRTC

13TIBIRILXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-122

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

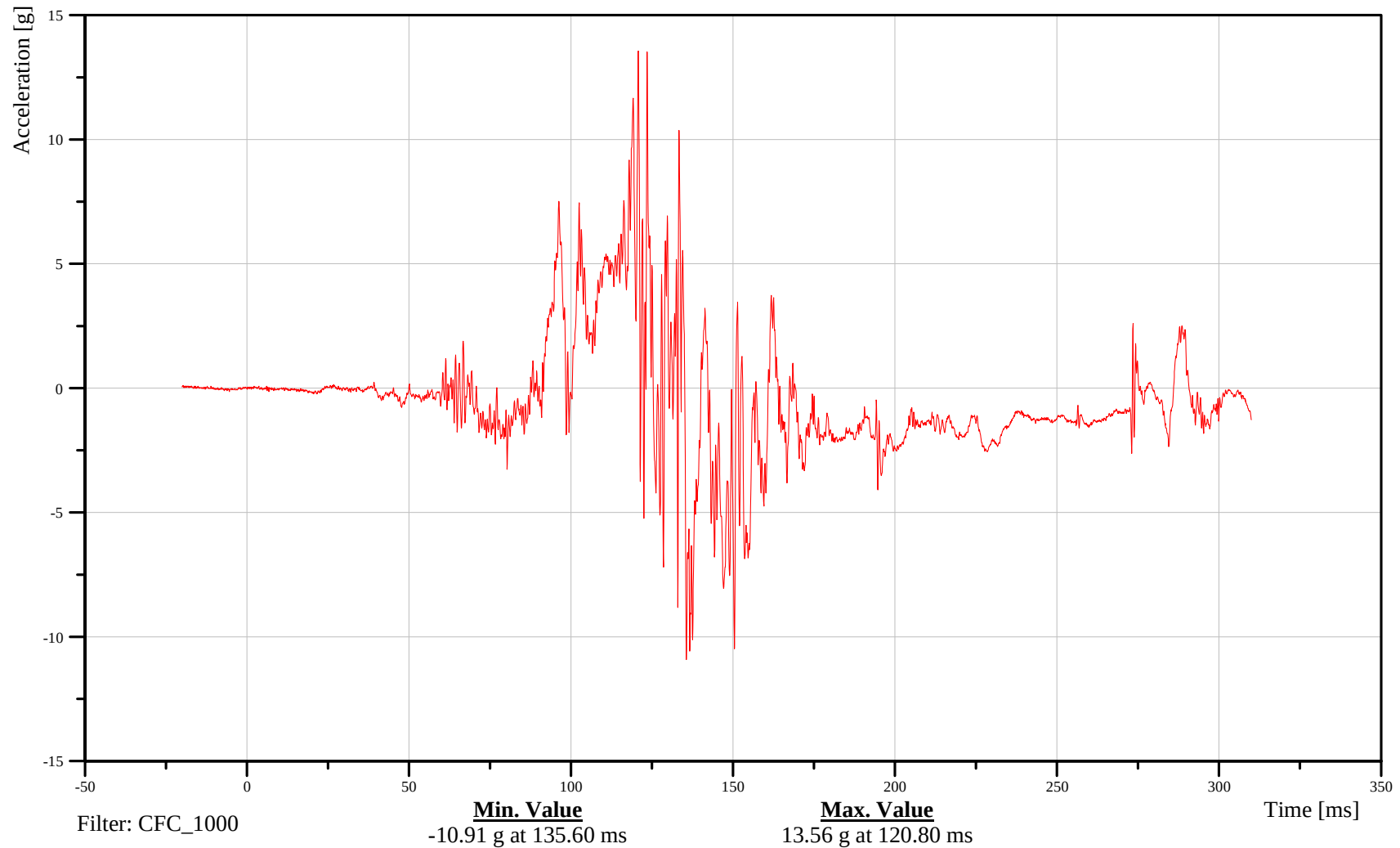
Passenger Right Tibia Y-Axis Acceleration

Customer: VRTC

13TIBIRILXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-123

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

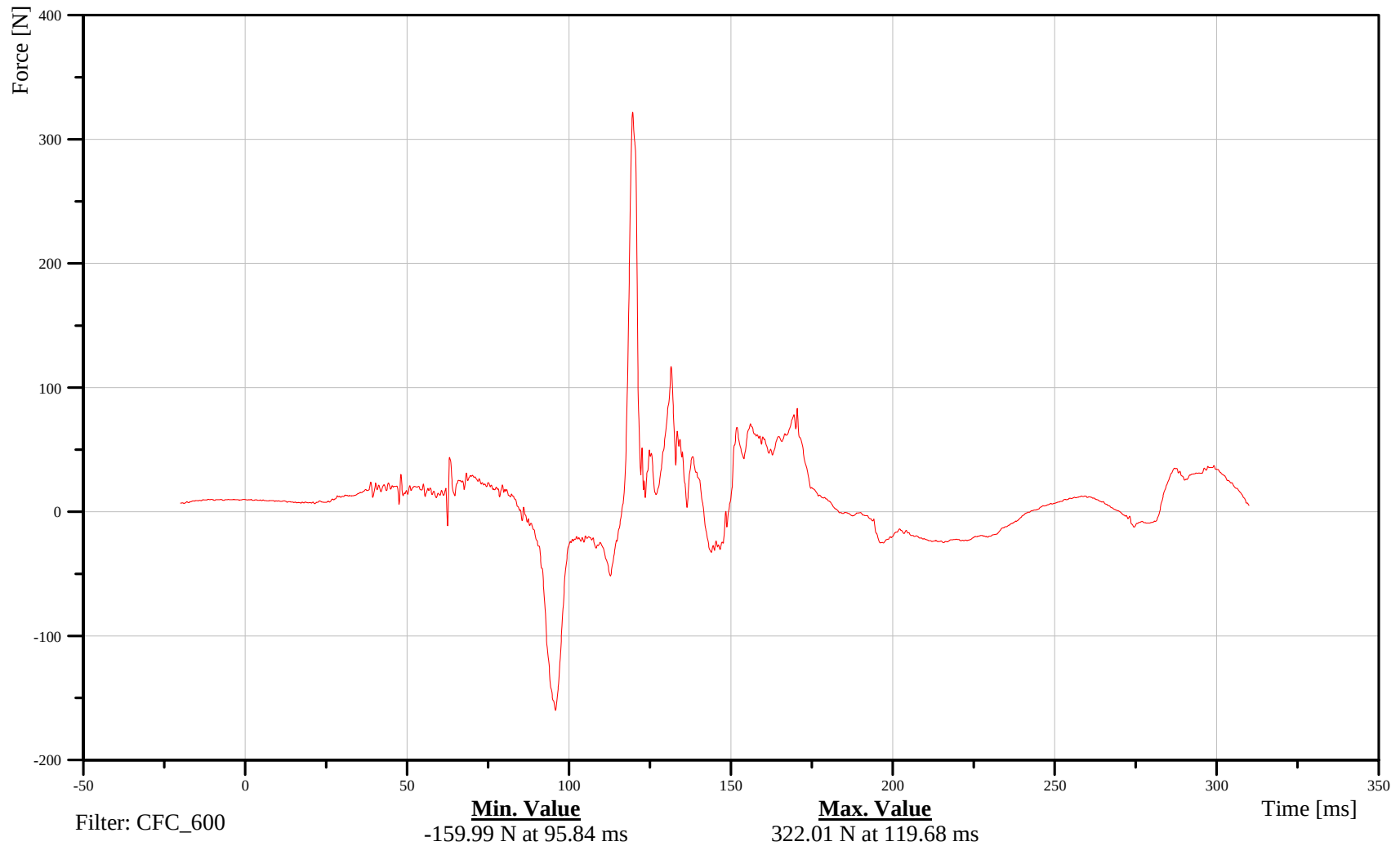
Passenger Right Lower Tibia X-Axis Force

Customer: VRTC

13TIBIRLLXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-124

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

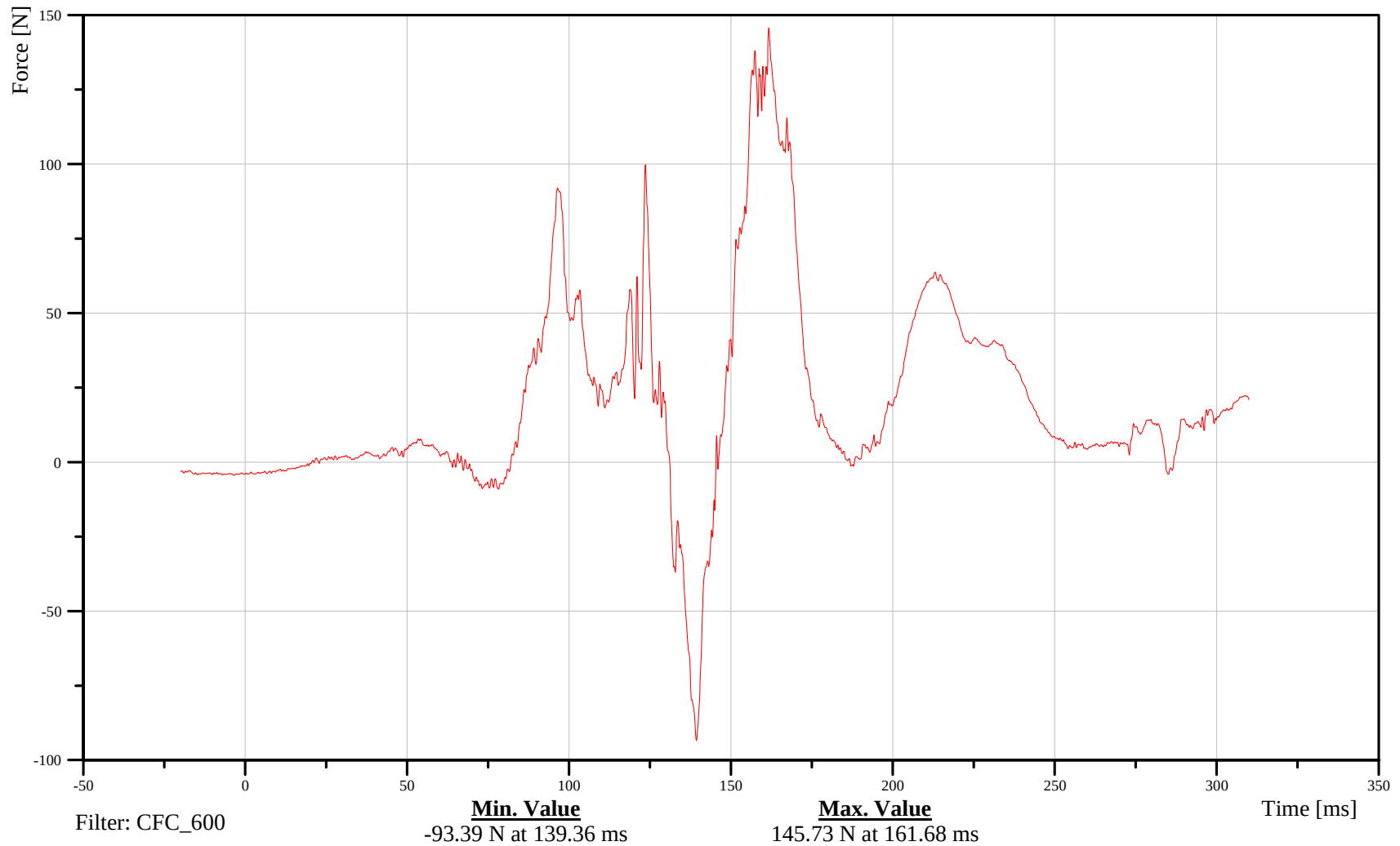
Passenger Right Lower Tibia Y-Axis Force

Customer: VRTC

13TIBIRLLXHFFOYB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-125

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

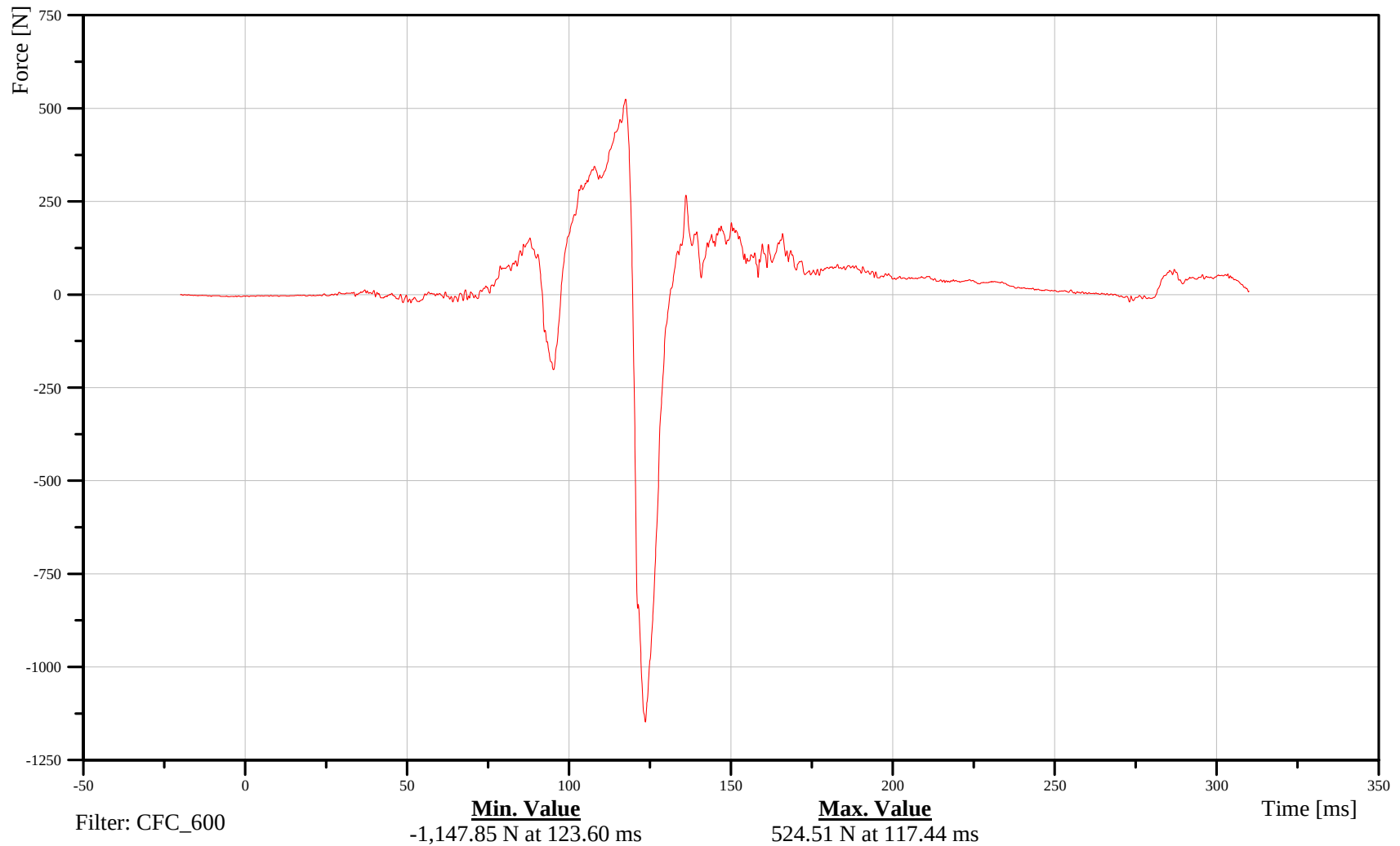
Passenger Right Lower Tibia Z-Axis Force

Customer: VRTC

13TIBIRLLXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-126

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

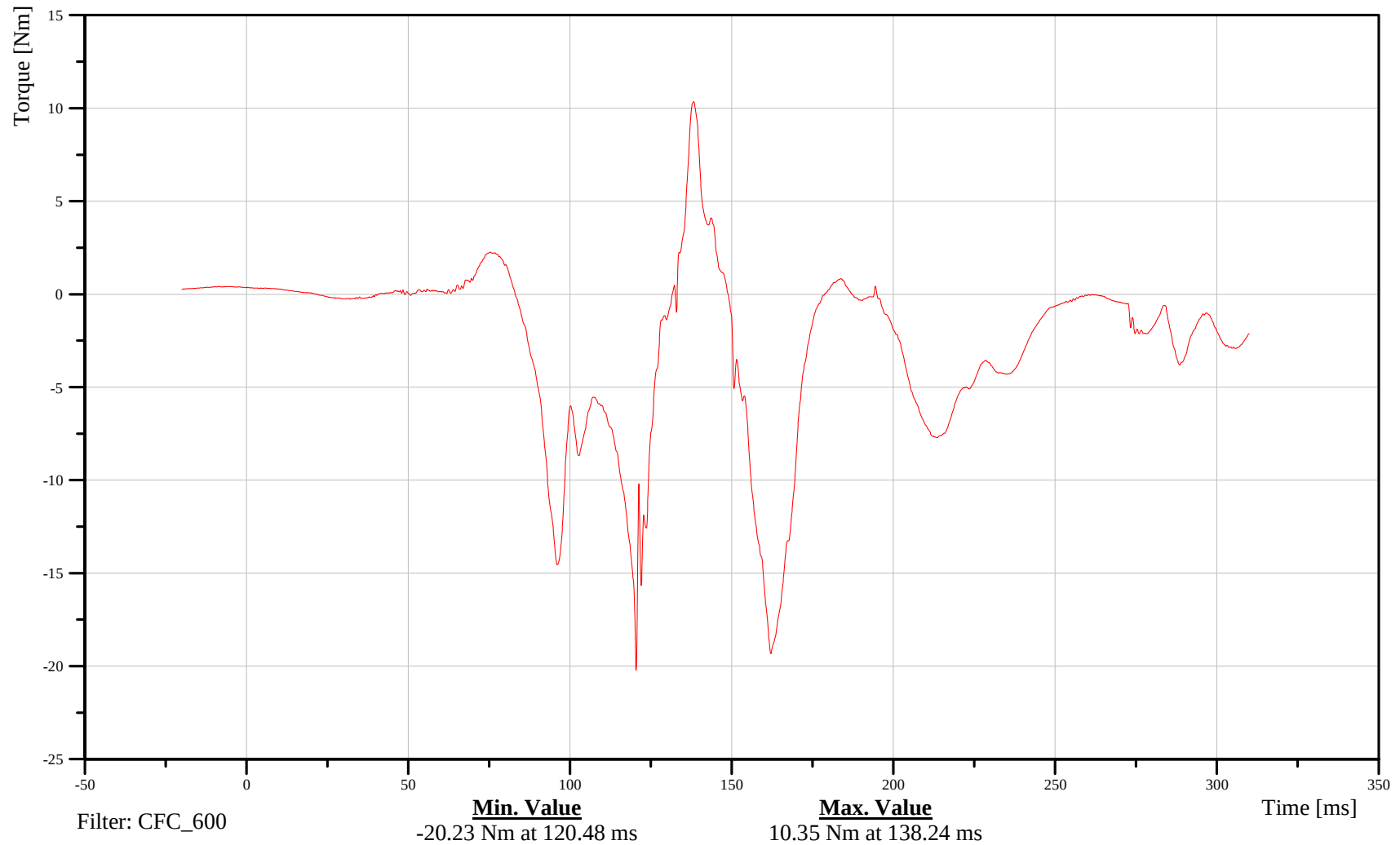
Passenger Right Lower Tibia Moment About X Axis

Customer: VRTC

13TIBIRLLXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-127

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

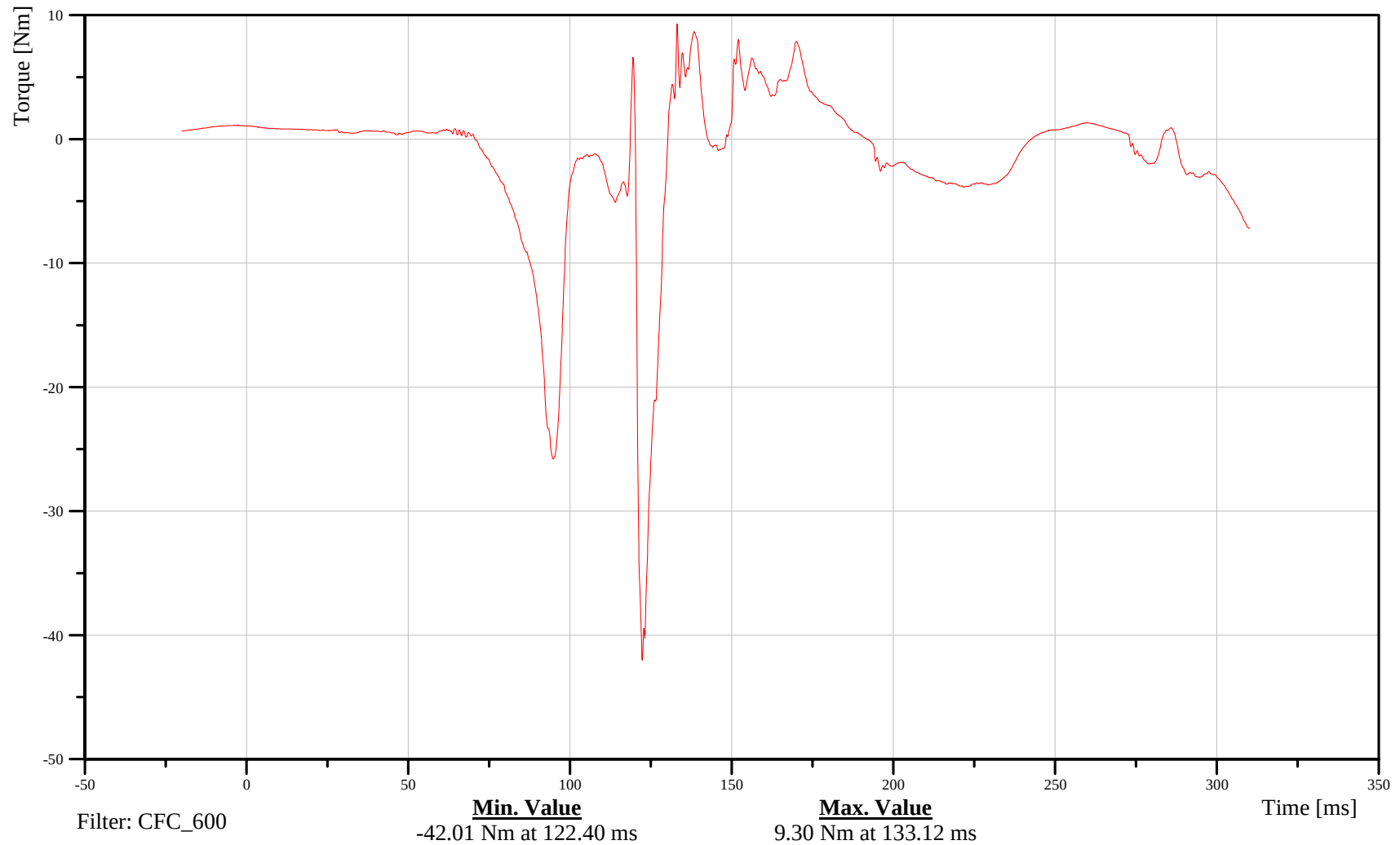
Passenger Right Lower Tibia Moment About Y Axis

Customer: VRTC

13TIBIRLLXHFM0YB

TRC Inc. Test Lab: CTF

Test Number: 071108



B-128

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

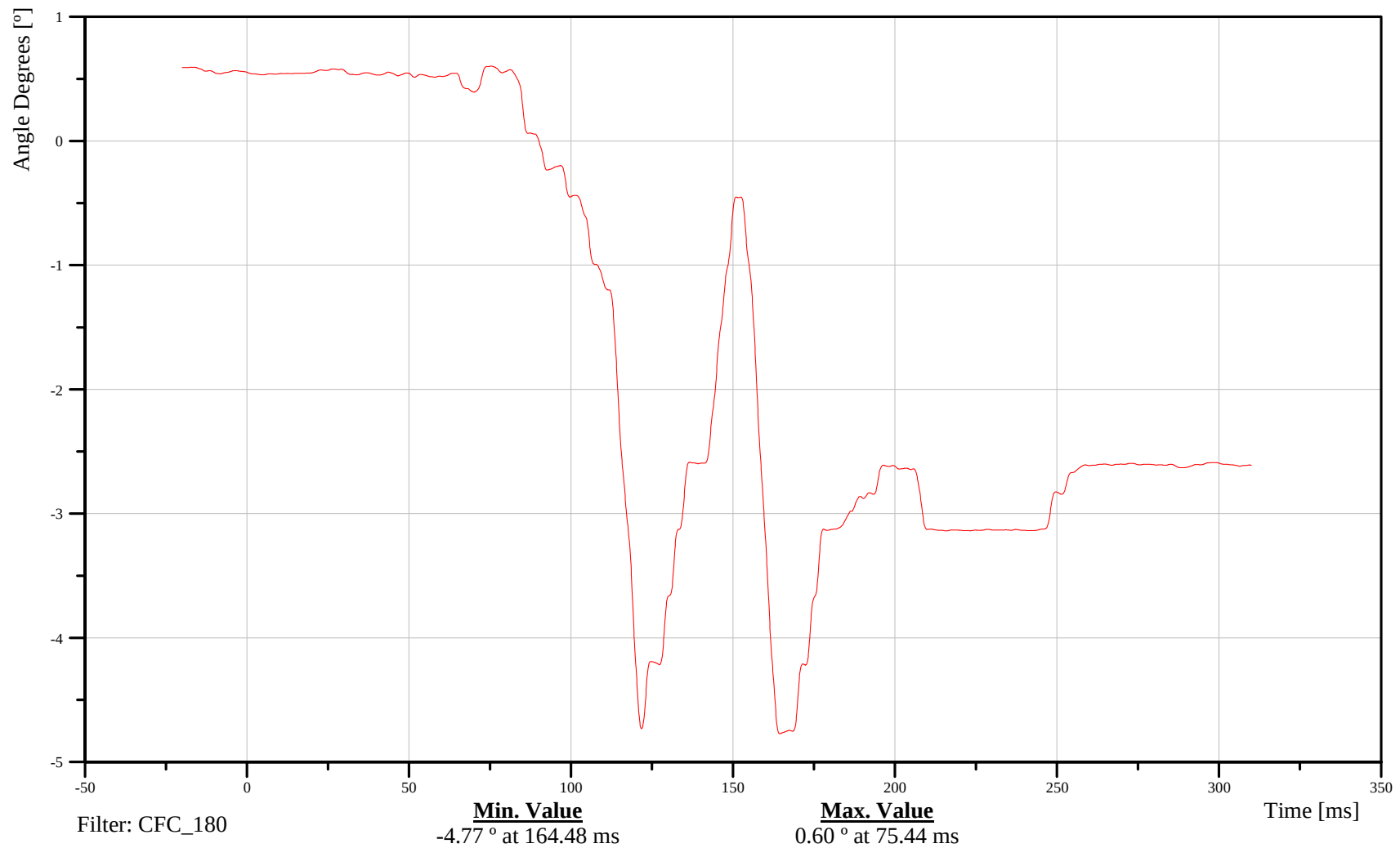
Passenger Right Foot X-Axis Rotation

Customer: VRTC

13FOOTRILXHFANXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-129

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

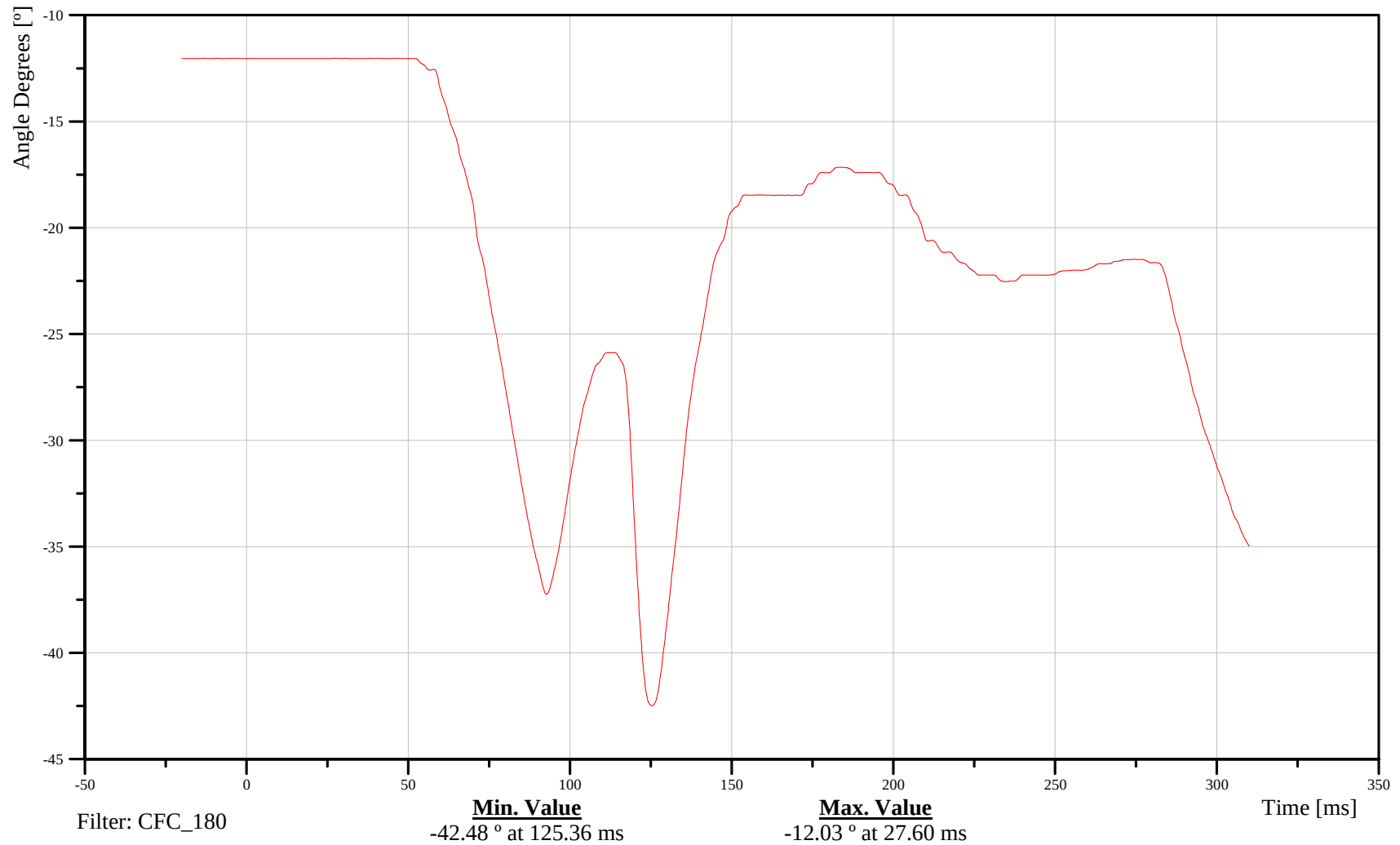
Passenger Right Foot Y-Axis Rotation

Customer: VRTC

13FOOTRILXHFANYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-130

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

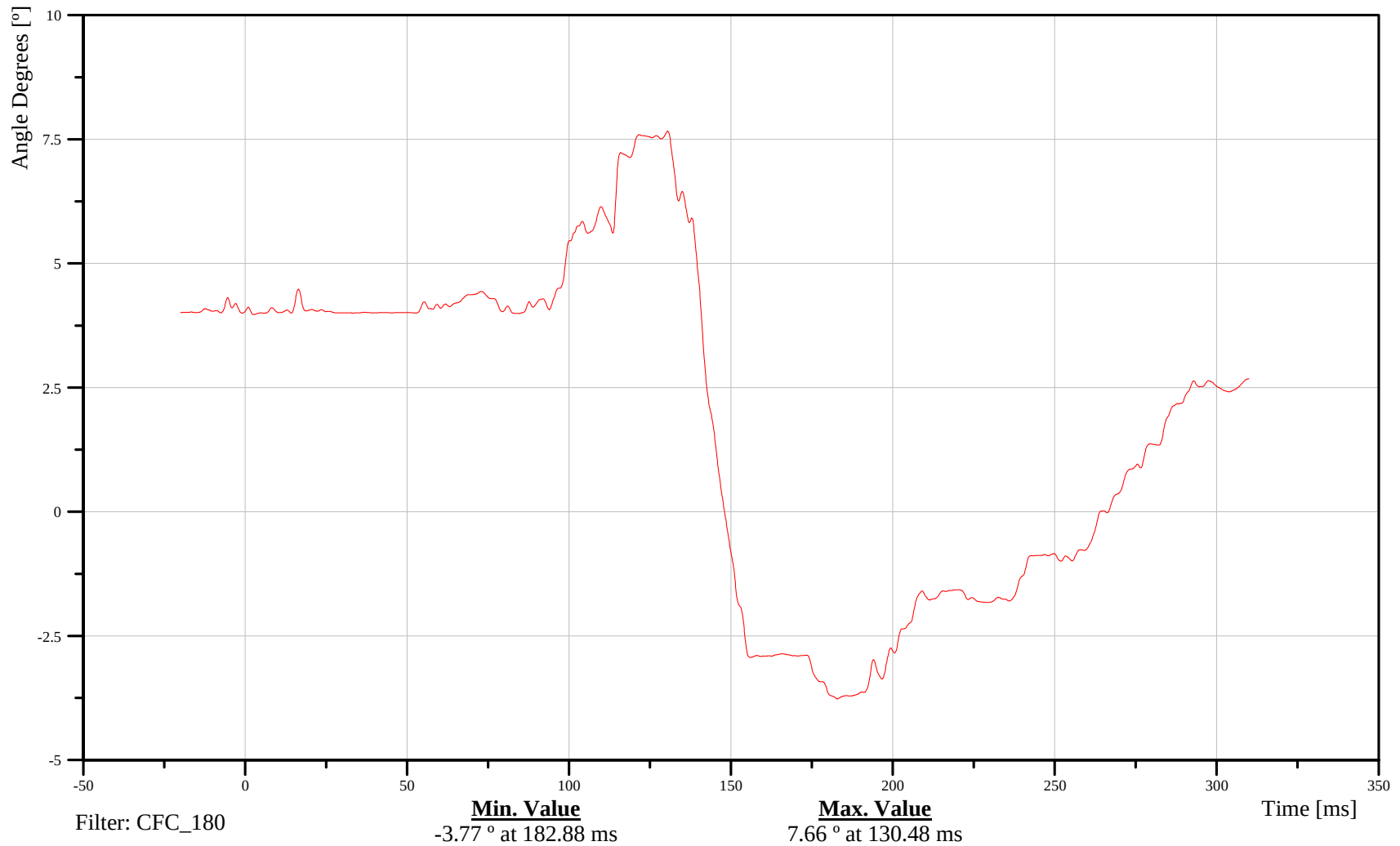
Passenger Right Foot Z-Axis Rotation

Customer: VRTC

13FOOTRILXHFANZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-131

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

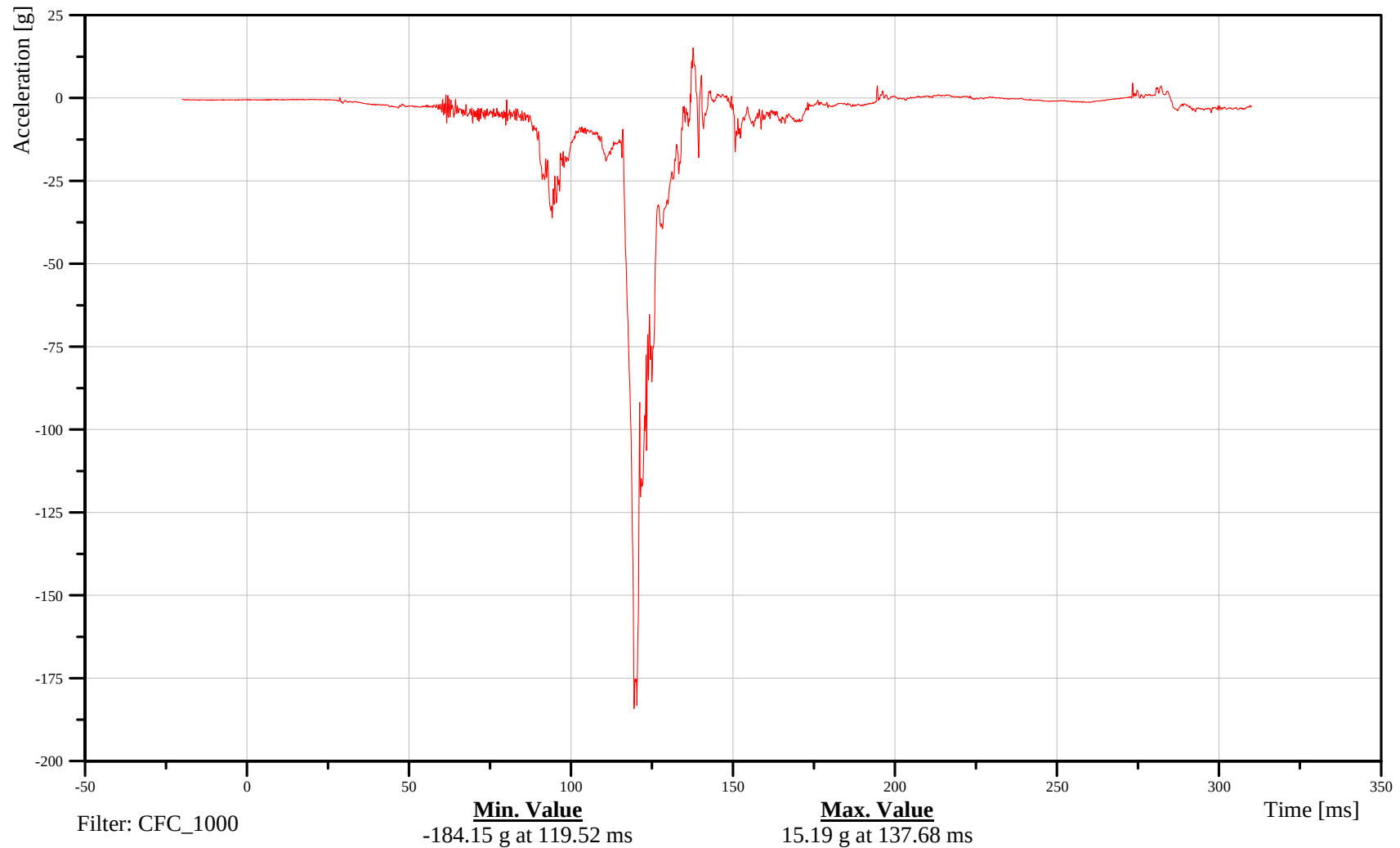
Passenger Right Foot X-Axis Acceleration

Customer: VRTC

13FOOTRILXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-132

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

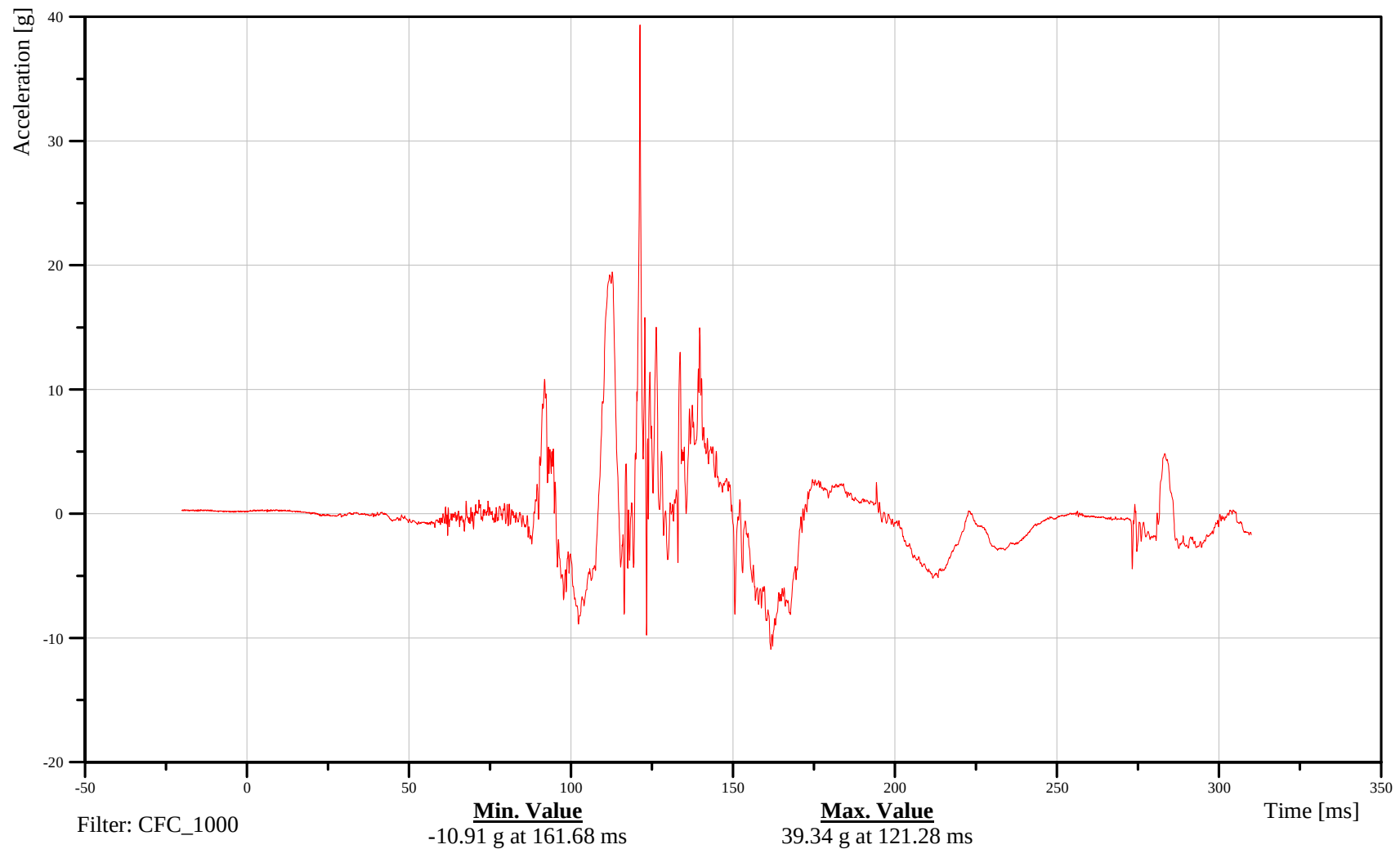
Passenger Right Foot Y-Axis Acceleration

Customer: VRTC

13FOOTRILXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-133

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

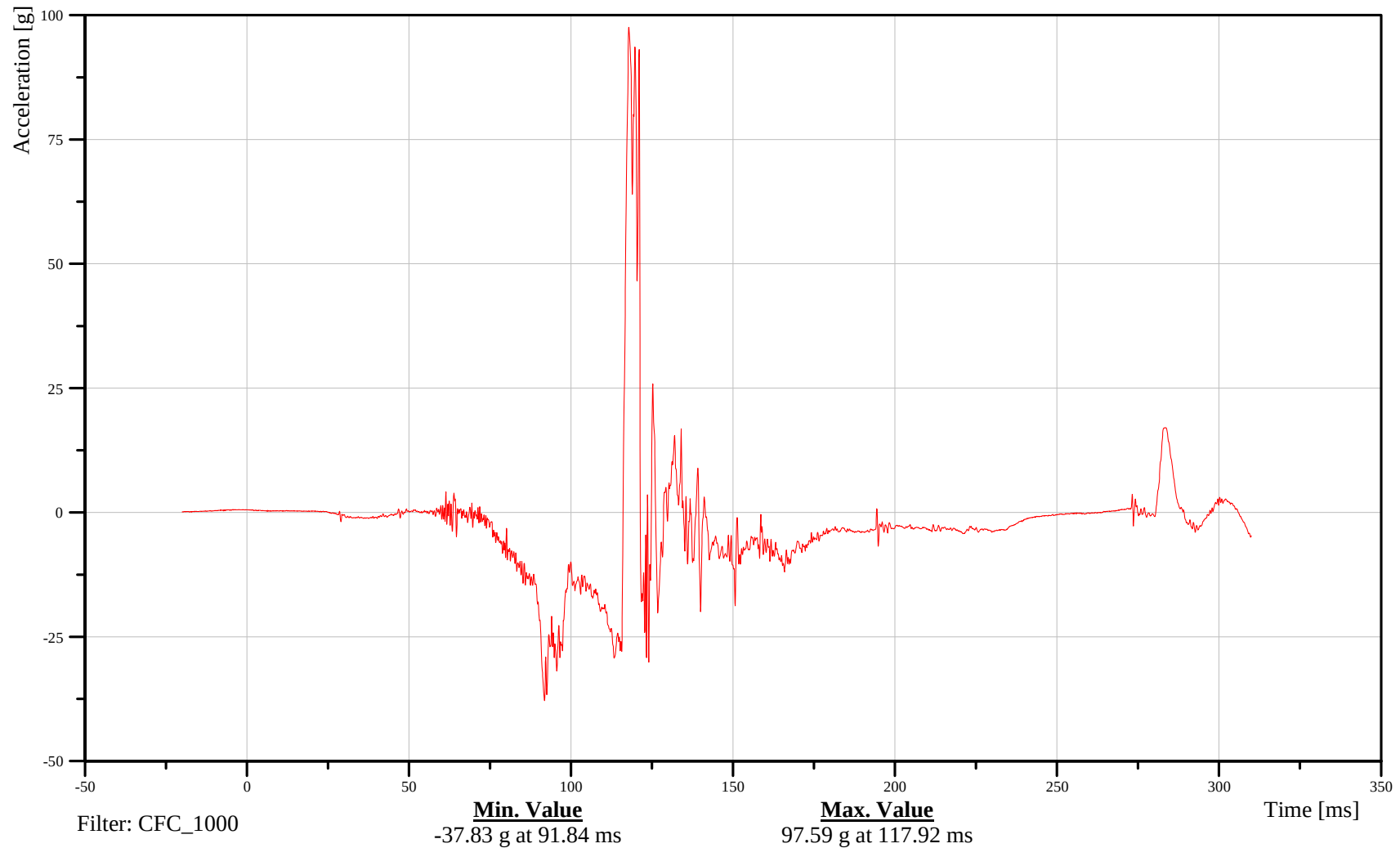
Passenger Right Foot Z-Axis Acceleration

Customer: VRTC

13FOOTRILXHFACZA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-134

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

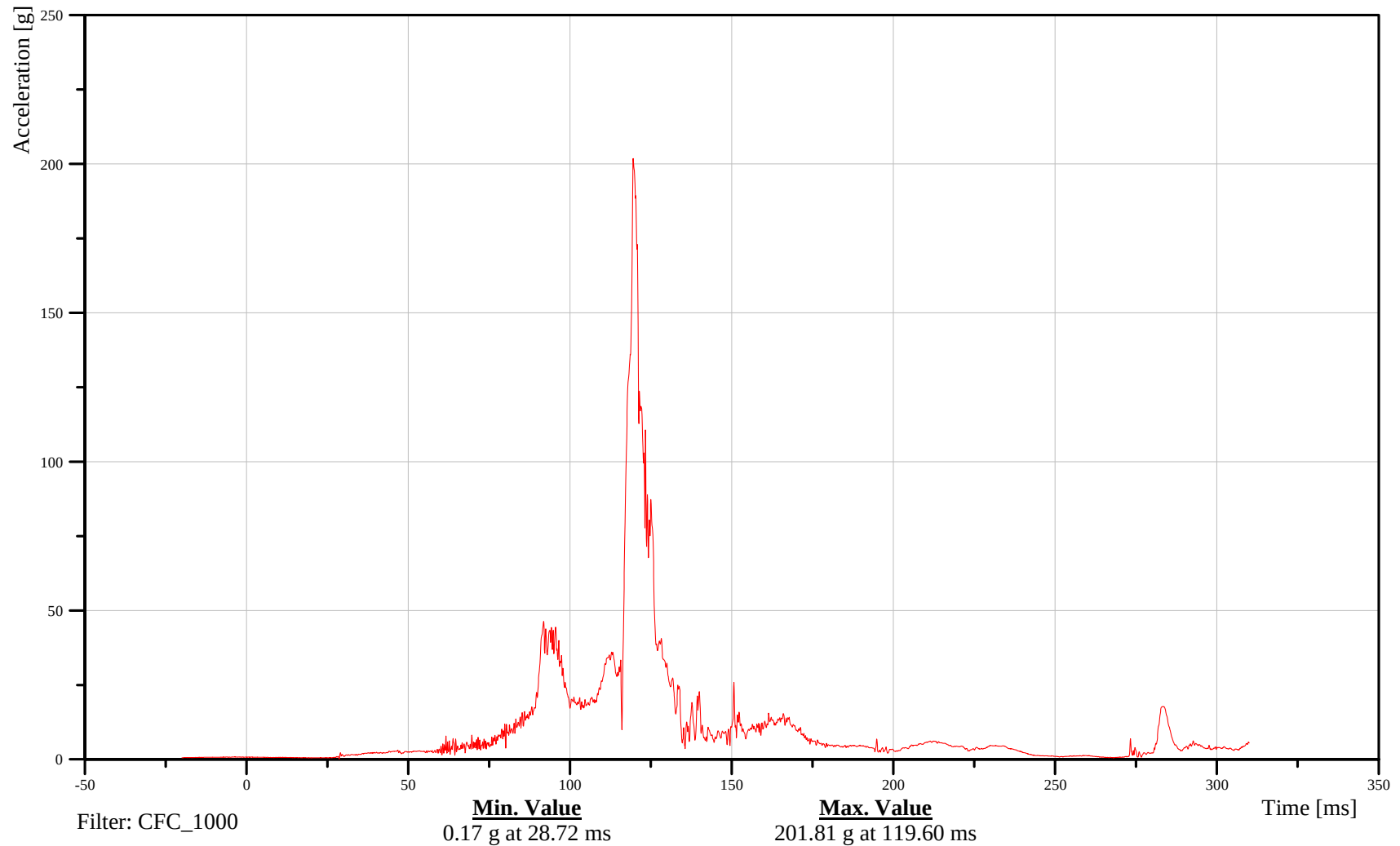
Driver Right Foot Resultant Acceleration

Customer: VRTC

13FOOTRILXHFACRA

TRC Inc. Test Lab: CTF

Test Number: 071108



B-135

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

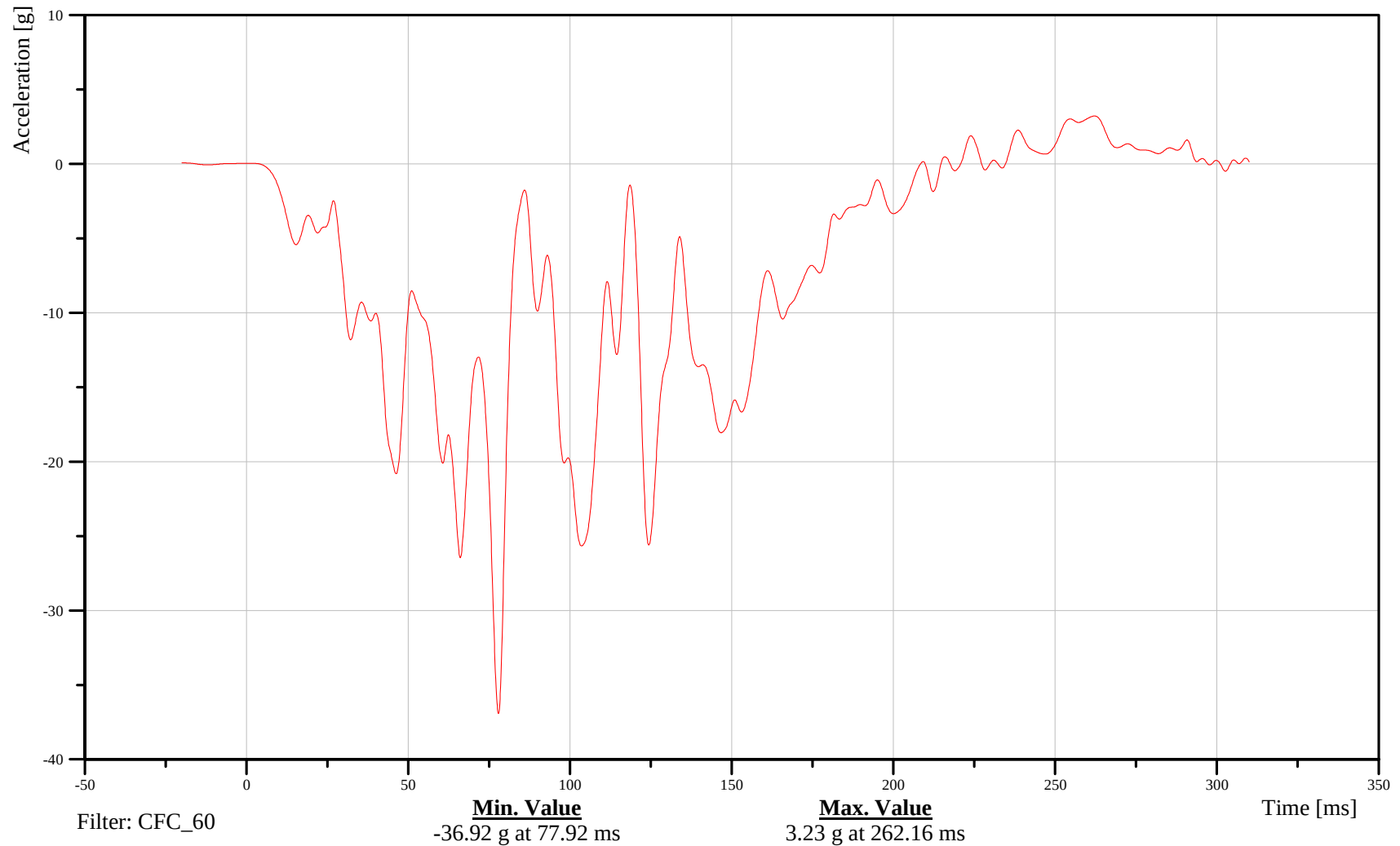
Left Rear Seat Cross-Member X-Axis Acceleration

Customer: VRTC

14CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-136

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

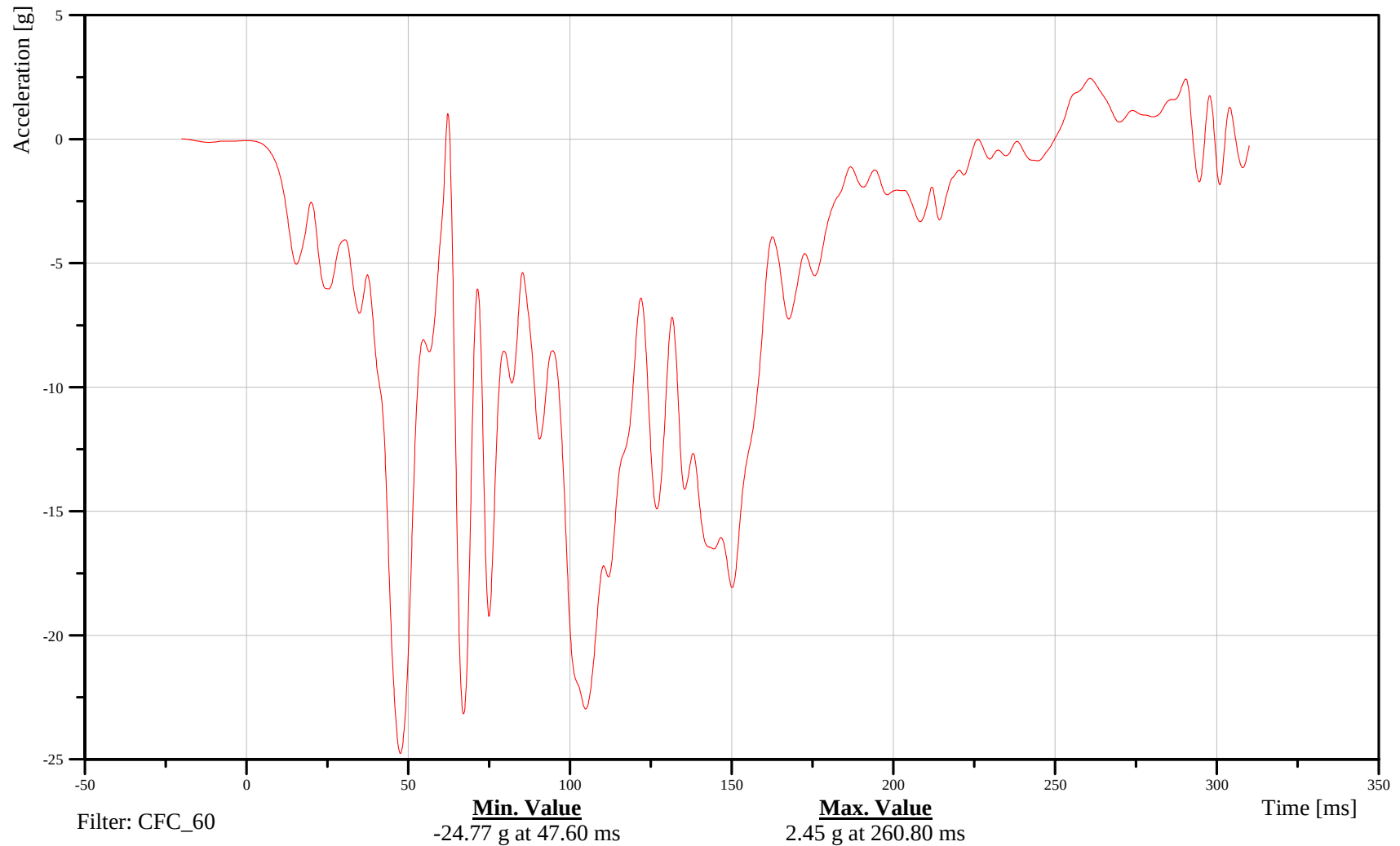
Right Rear Seat Cross-Member X-Axis Acceleration

Customer: VRTC

16CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-137

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

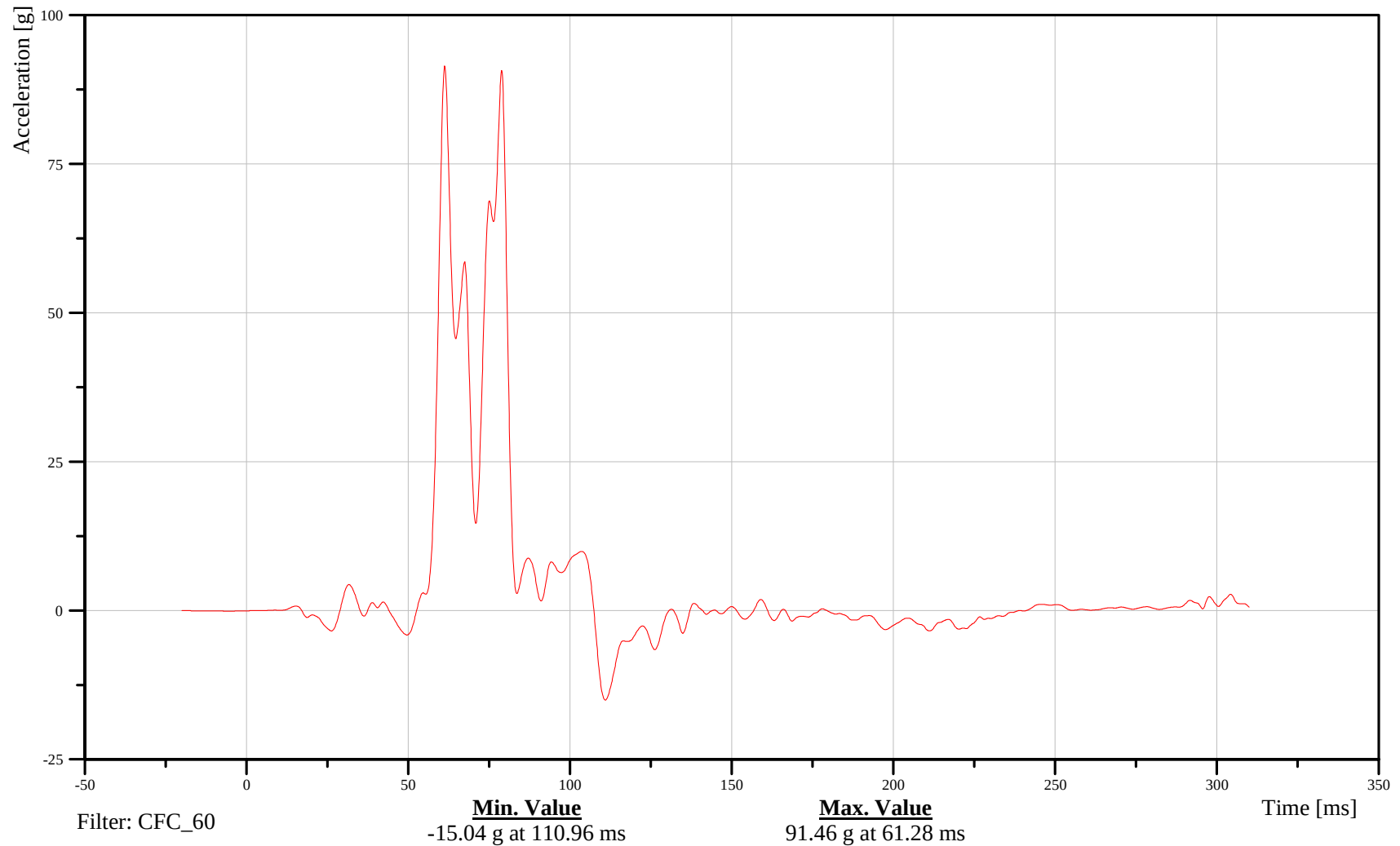
Left Rear Seat Cross-Member Y-Axis Acceleration

Customer: VRTC

14CRME000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-138

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

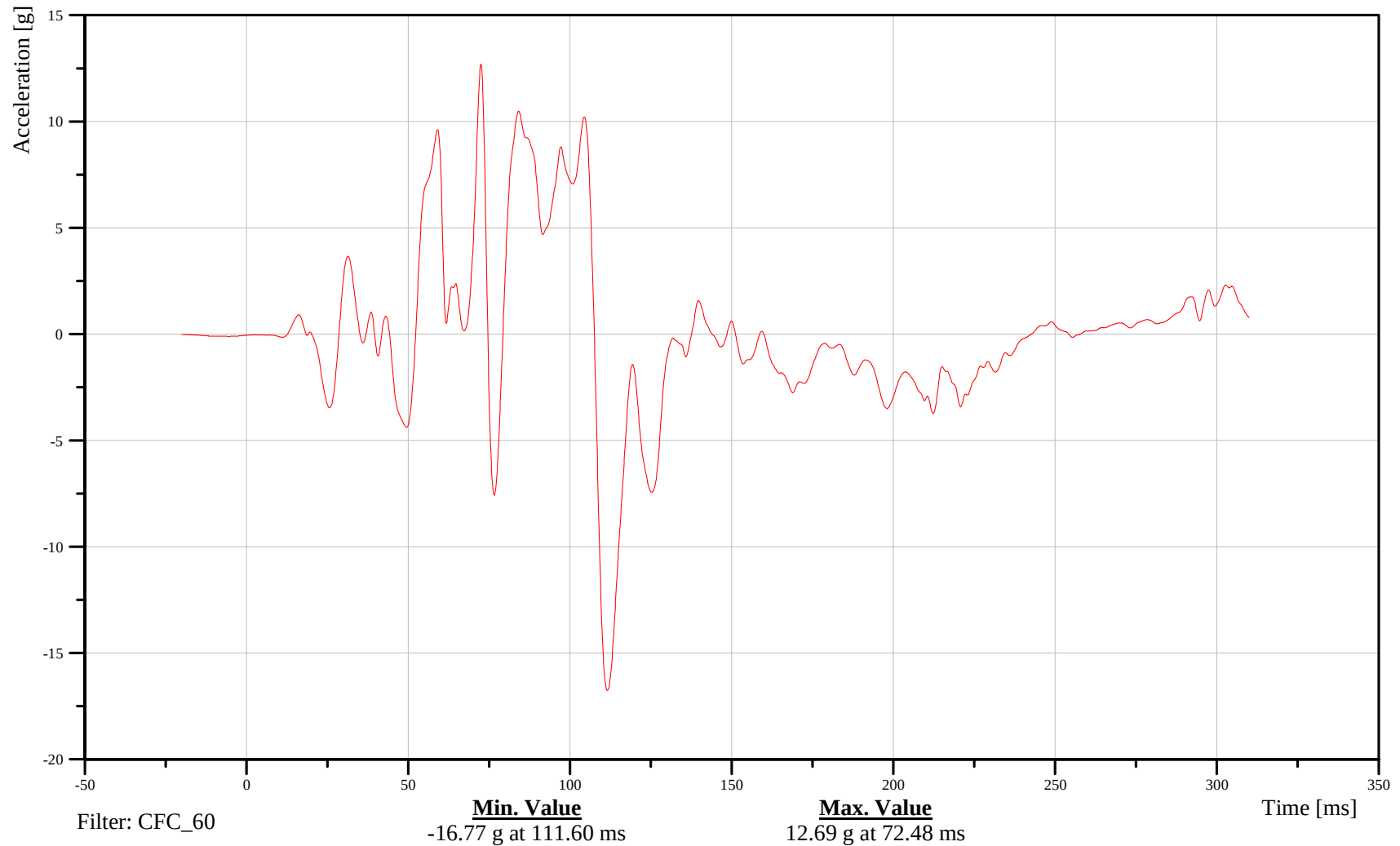
Right Rear Seat Cross-Member Y-Axis Acceleration

Customer: VRTC

16CRME000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-139

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

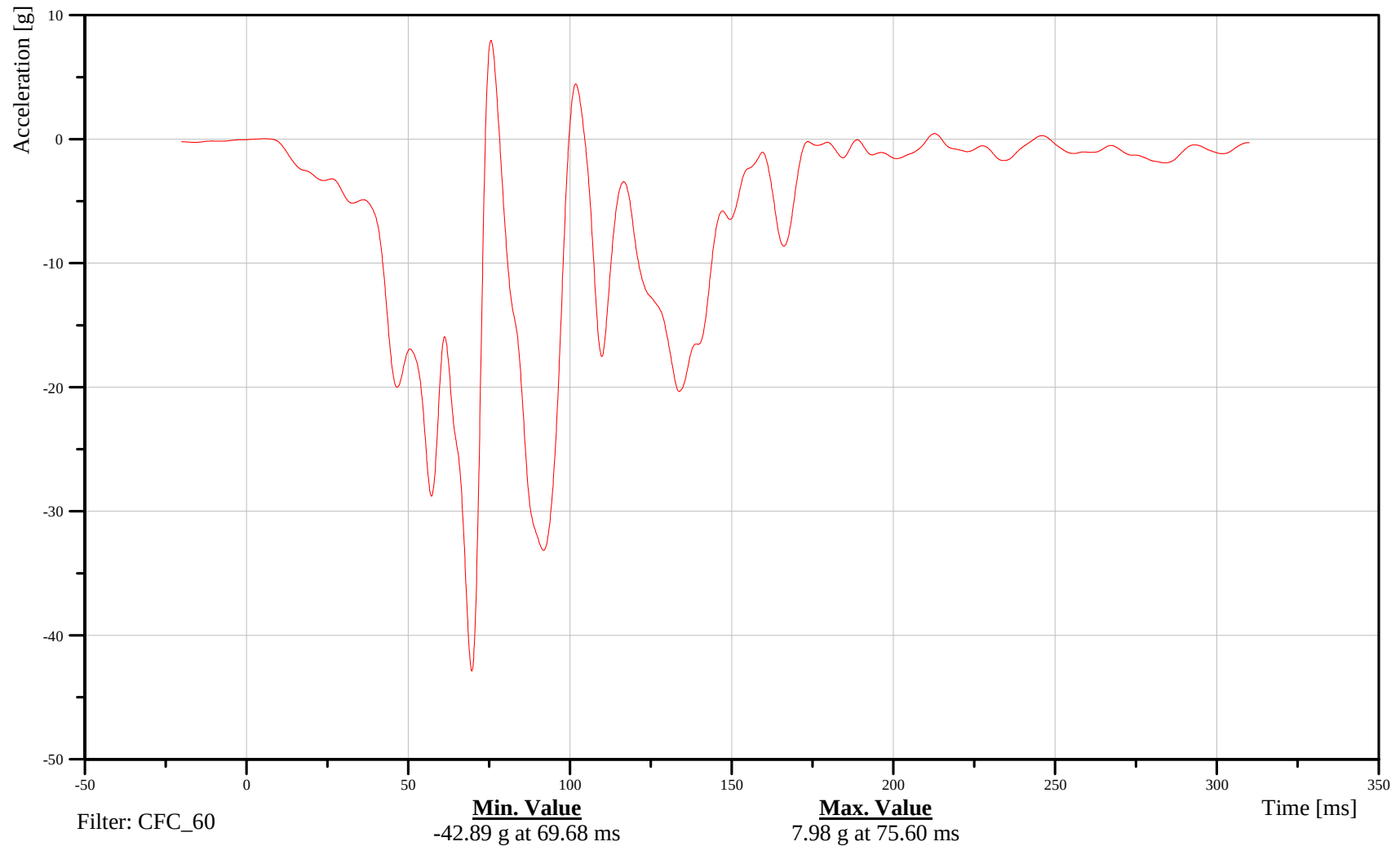
Top of Engine Block X-Axis Acceleration

Customer: VRTC

12ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-140

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

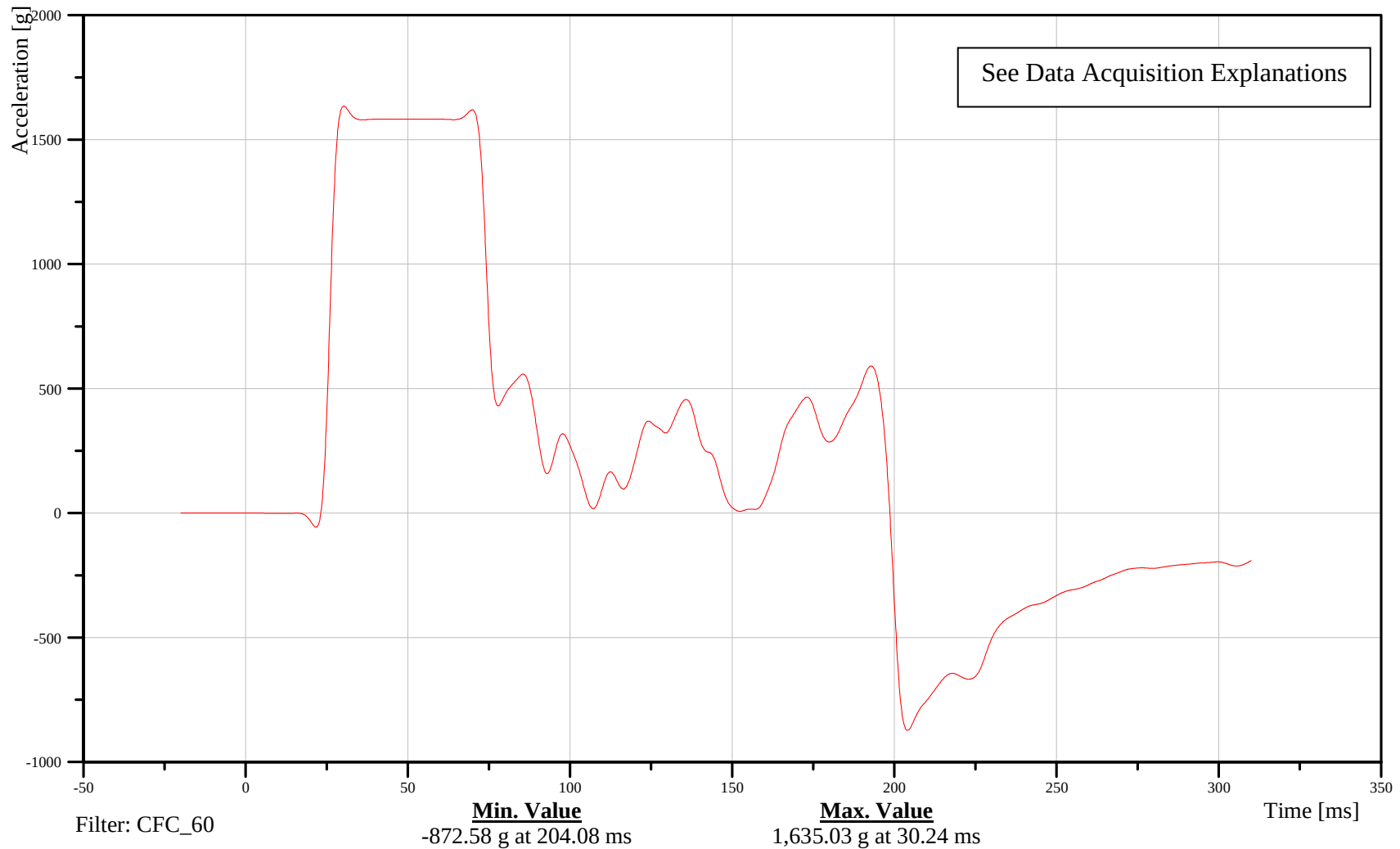
Bottom of Engine Block X-Axis Acceleration

Customer: VRTC

12ENGNB00000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-141

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

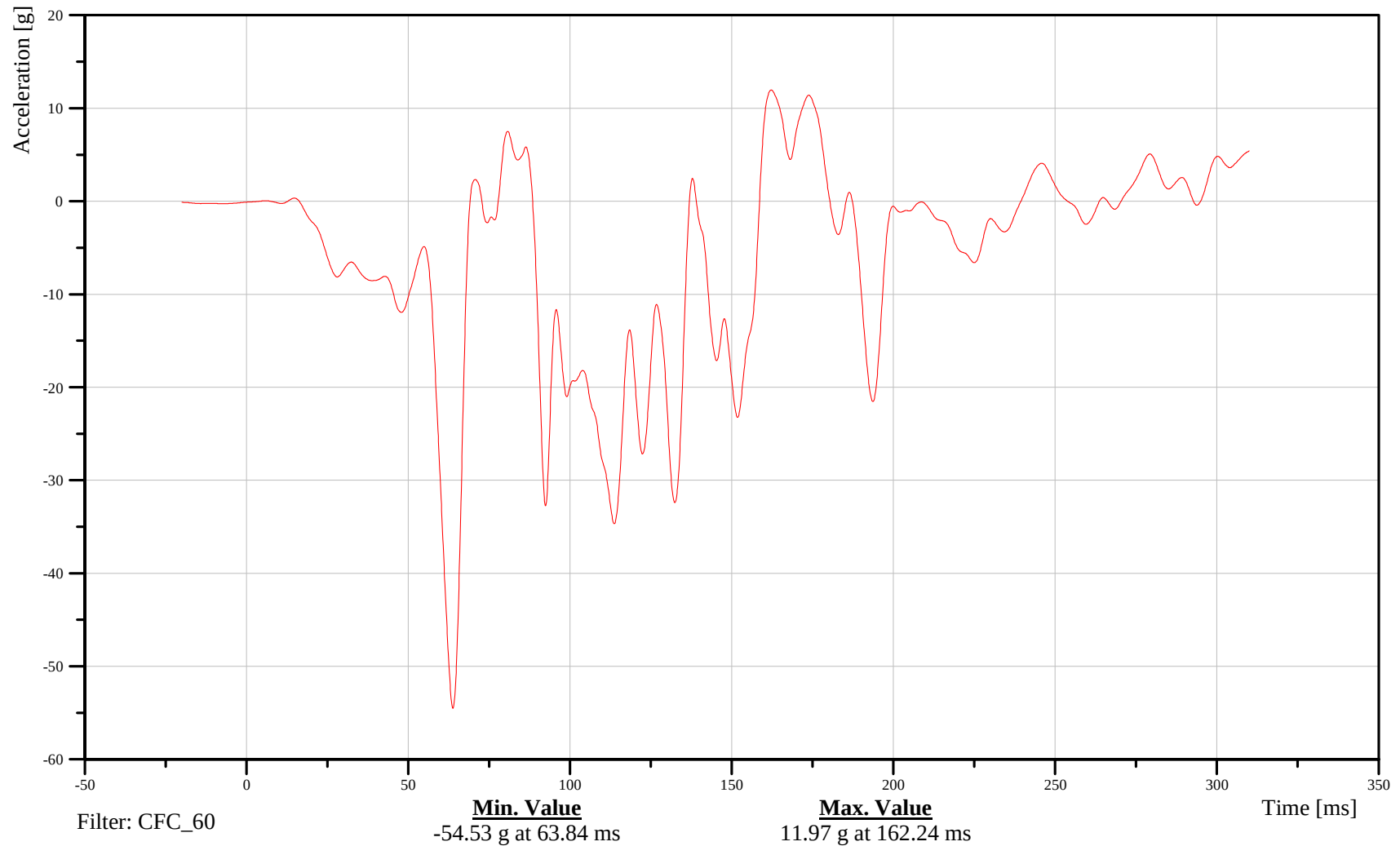
Instrument Panel X-Axis Acceleration

Customer: VRTC

12DASH000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-142

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

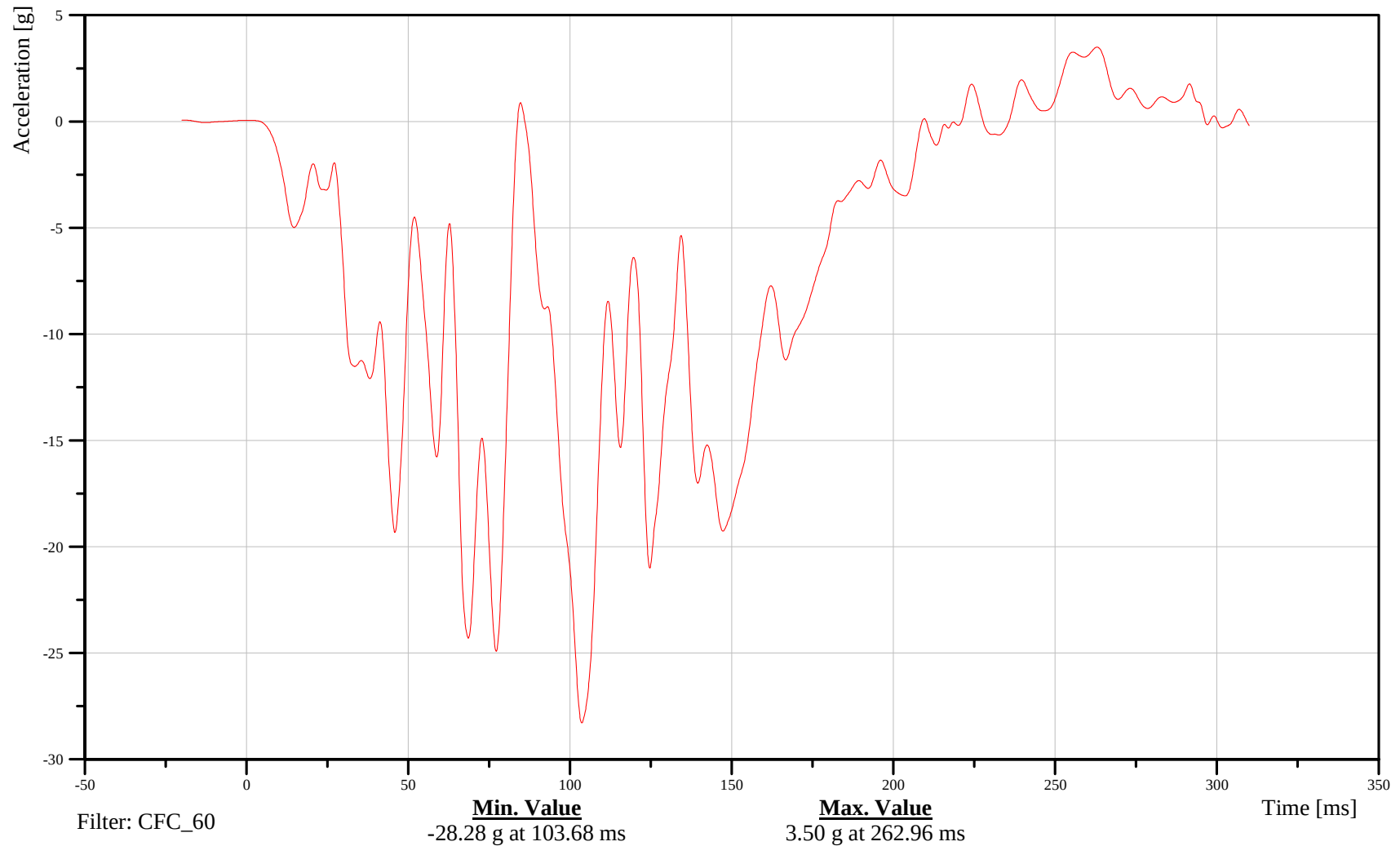
Left Side Driver Mid Seat Track X-Axis Acceleration

Customer: VRTC

11SETR000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-143

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

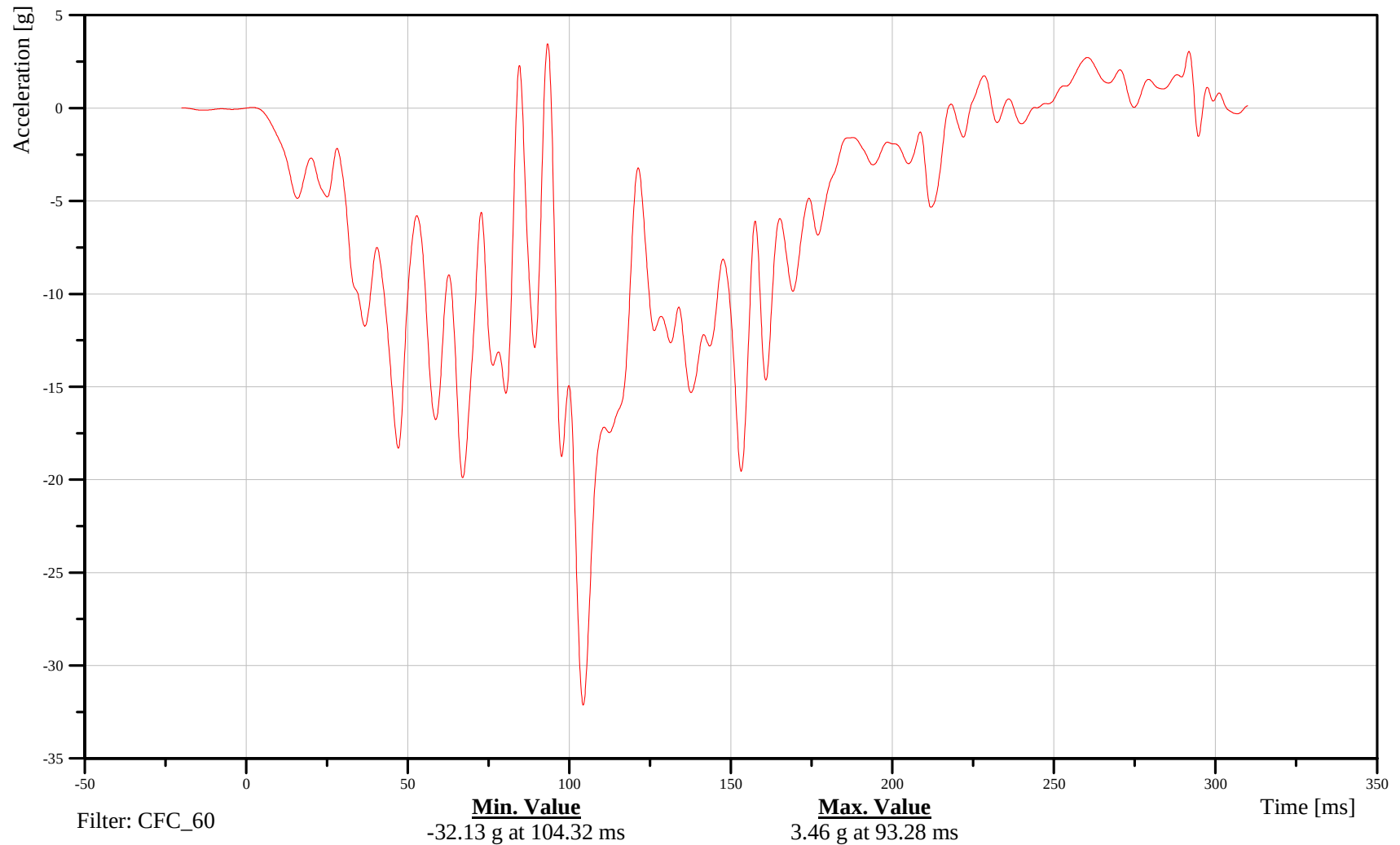
Vehicle CG X-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-144

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

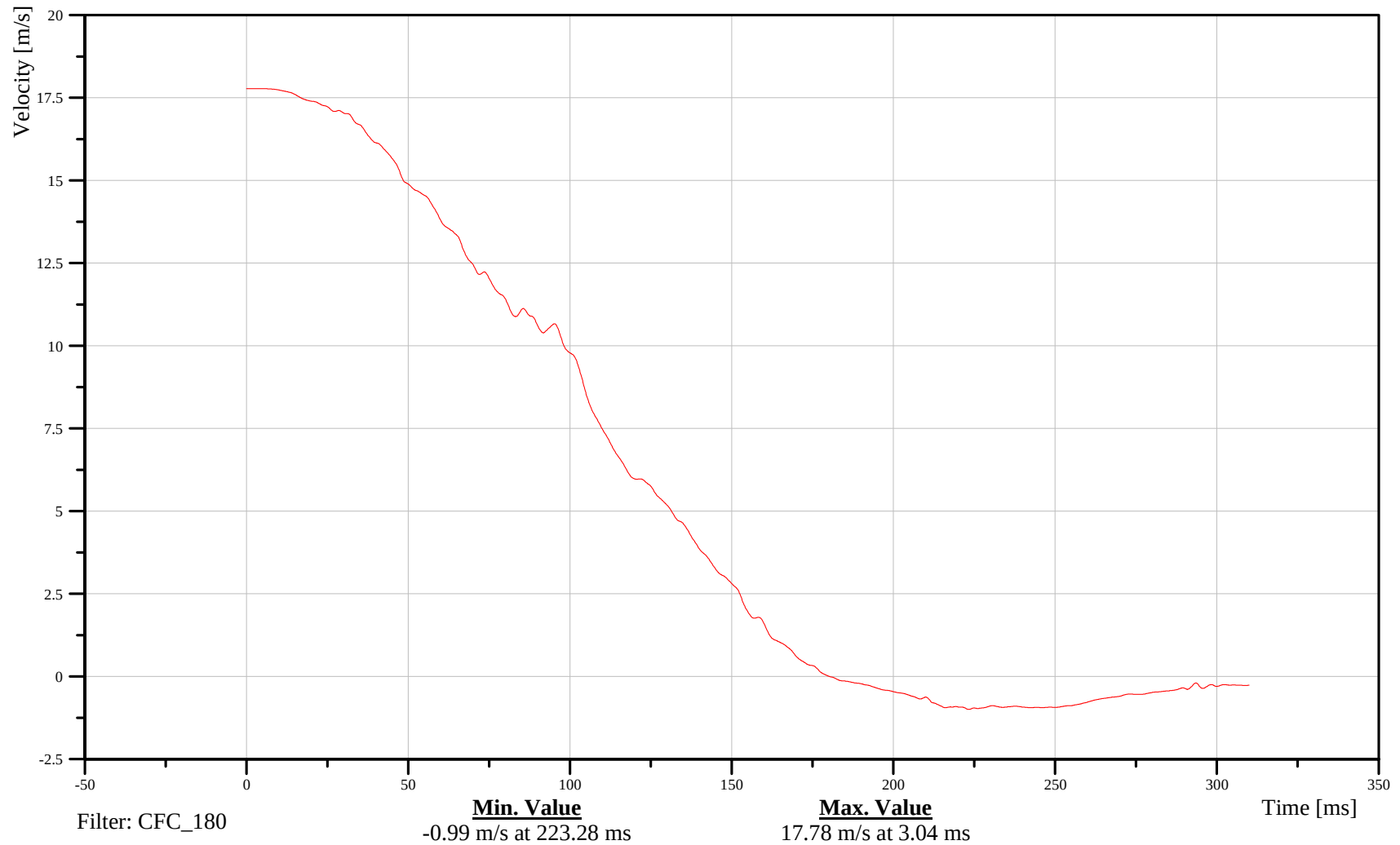
Vehicle CG X-Axis Velocity

Customer: VRTC

10VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-145

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

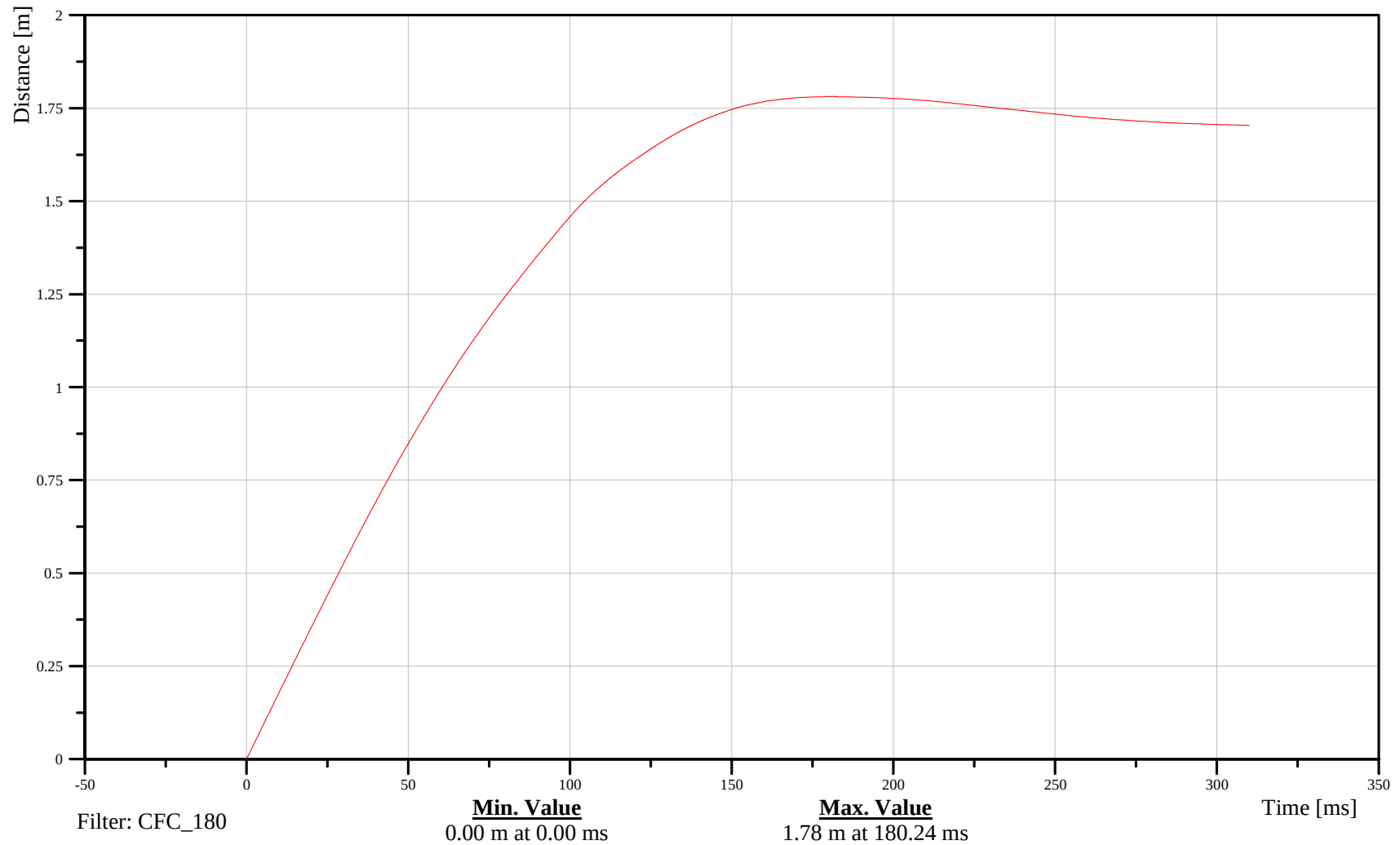
Vehicle CG X-Axis Displacement

Customer: VRTC

10VEHCCG0000DCXC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-146

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

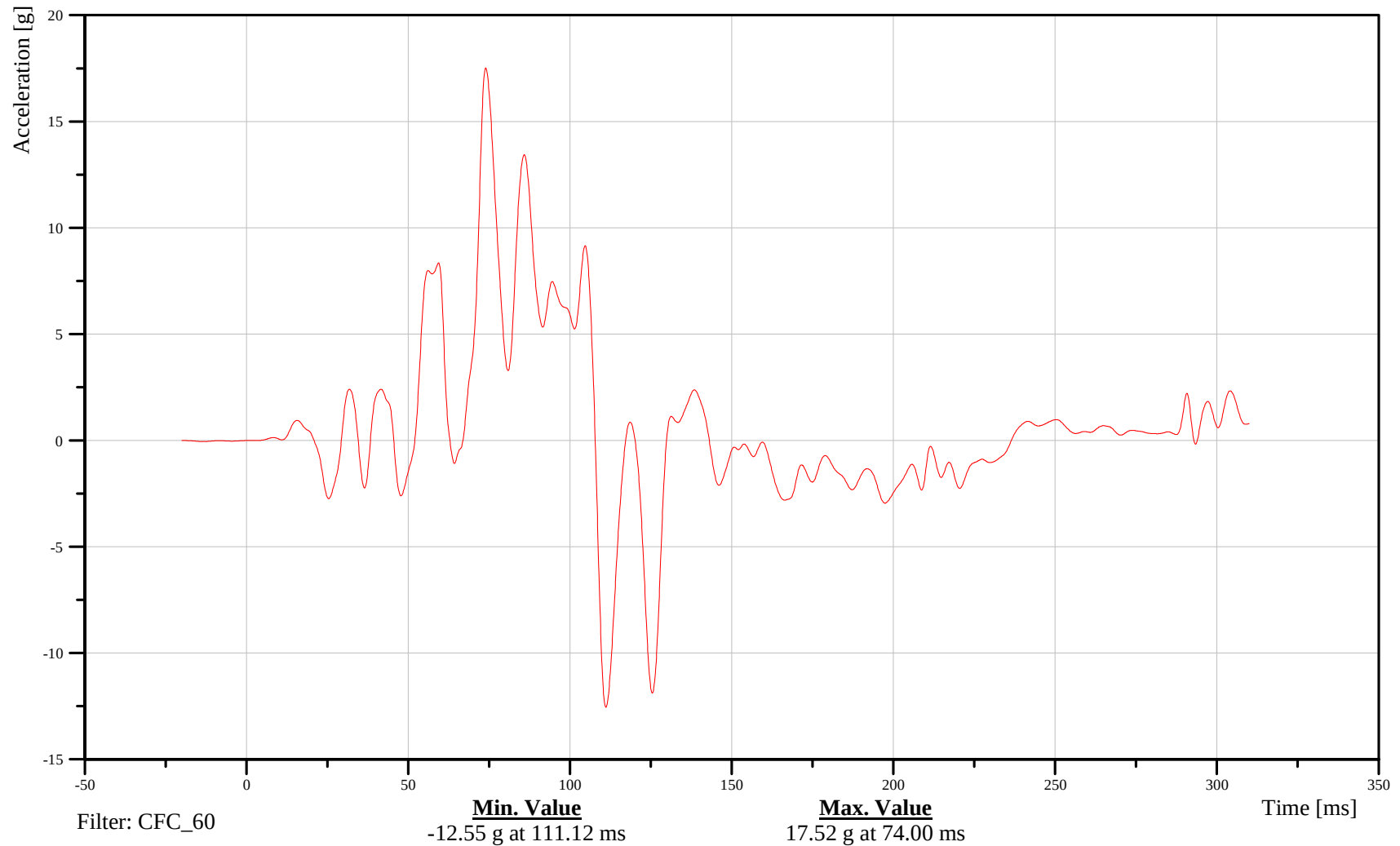
Vehicle CG Y-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-147

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

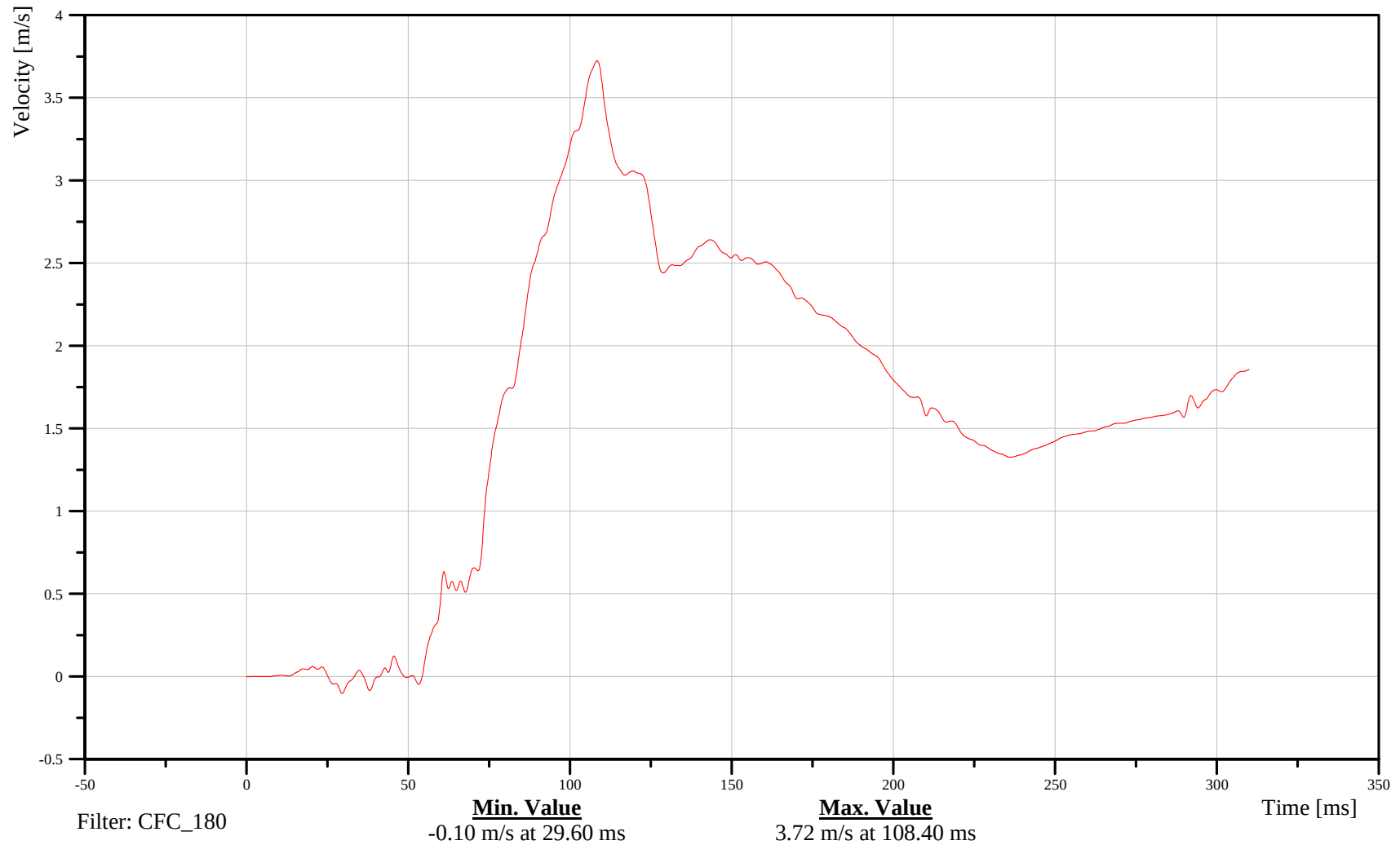
Vehicle CG Y-Axis Velocity

Customer: VRTC

10VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-148

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

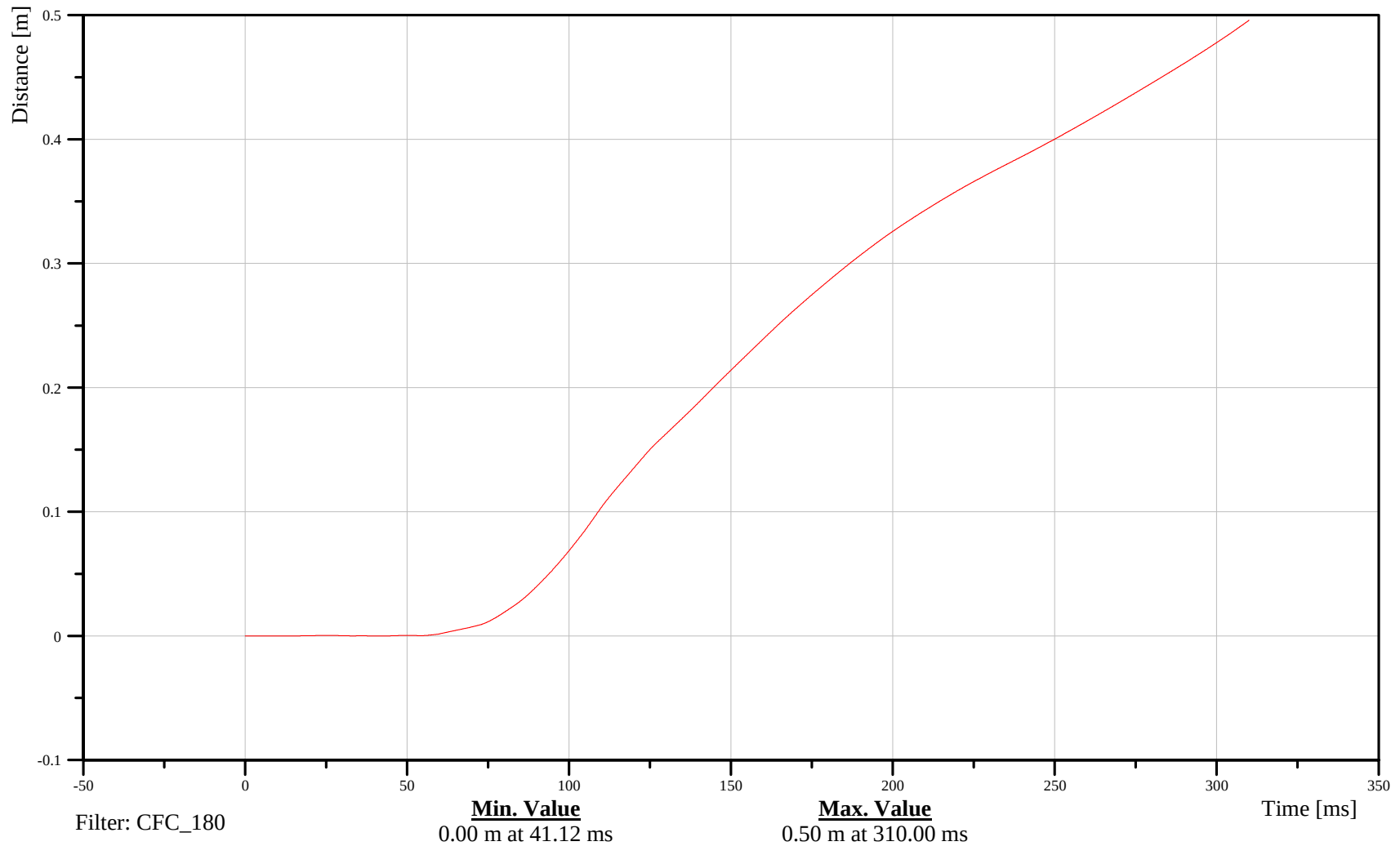
Vehicle CG Y-Axis Displacement

Customer: VRTC

10VEHCCG0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-149

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

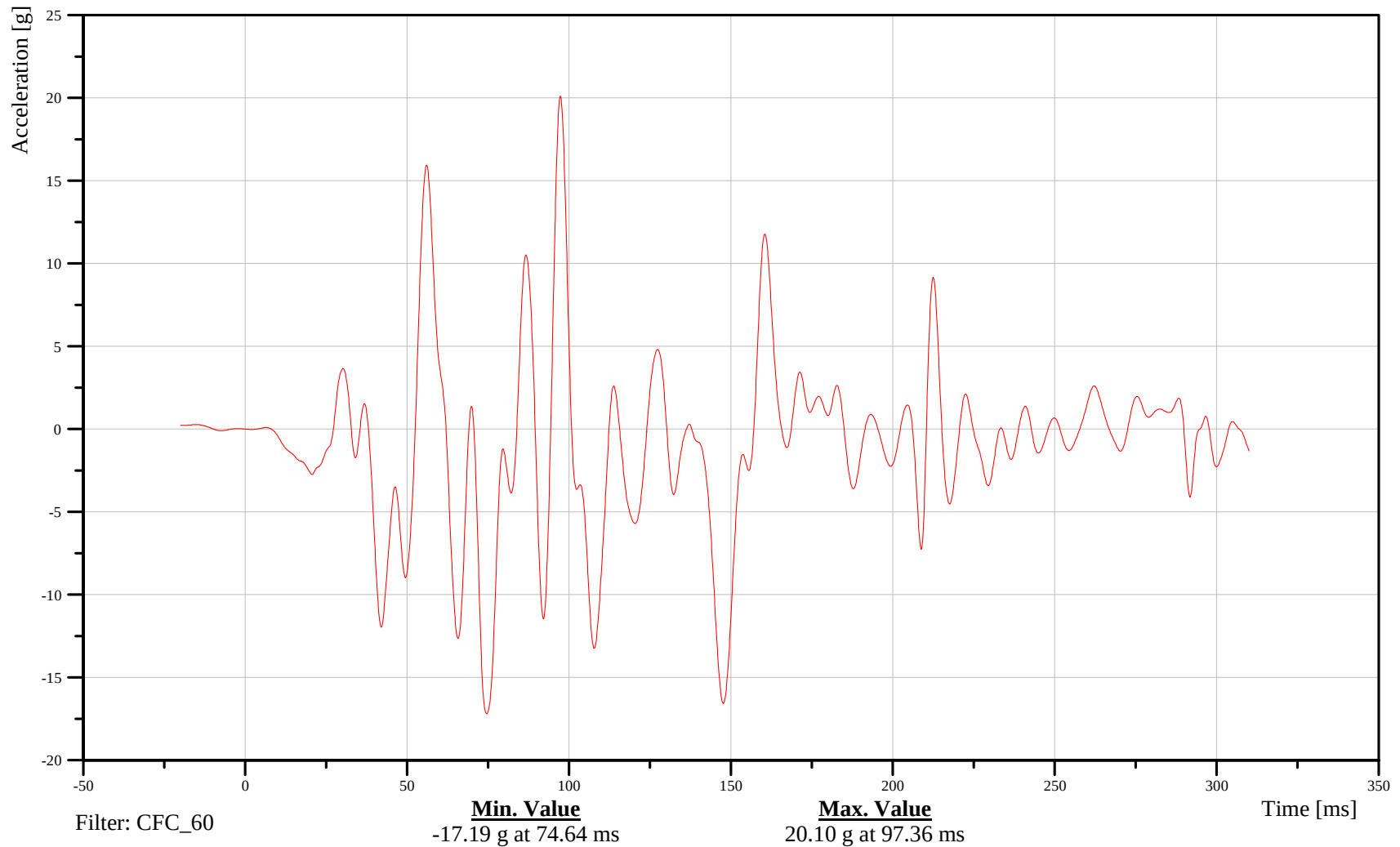
Vehicle CG Z-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-150

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

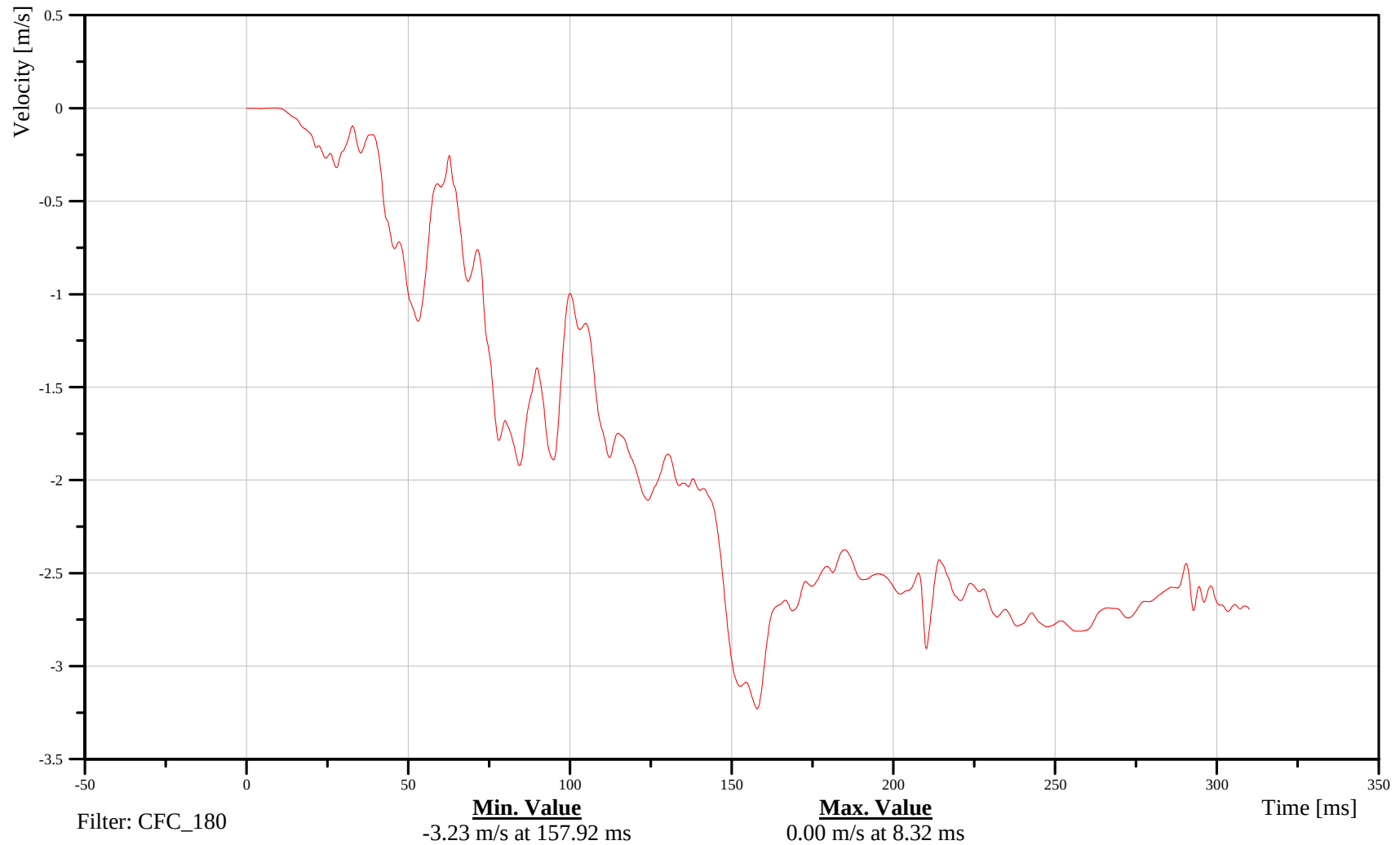
Vehicle CG Z-Axis Velocity

Customer: VRTC

10VEHCCG0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-151

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

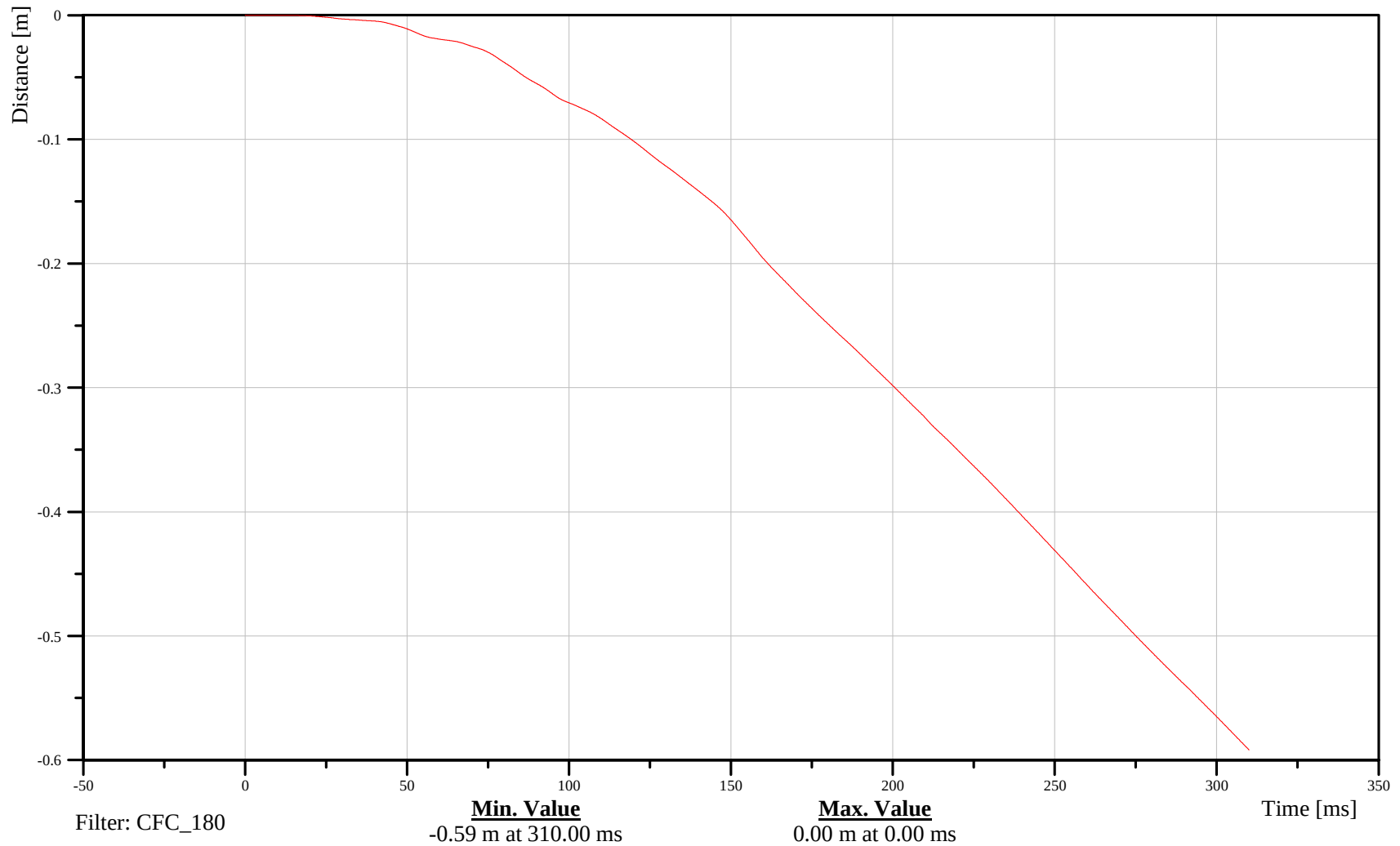
Vehicle CG Z-Axis Displacement

Customer: VRTC

10VEHCCG0000DCZC

TRC Inc. Test Lab: CTF

Test Number: 071108



B-152

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

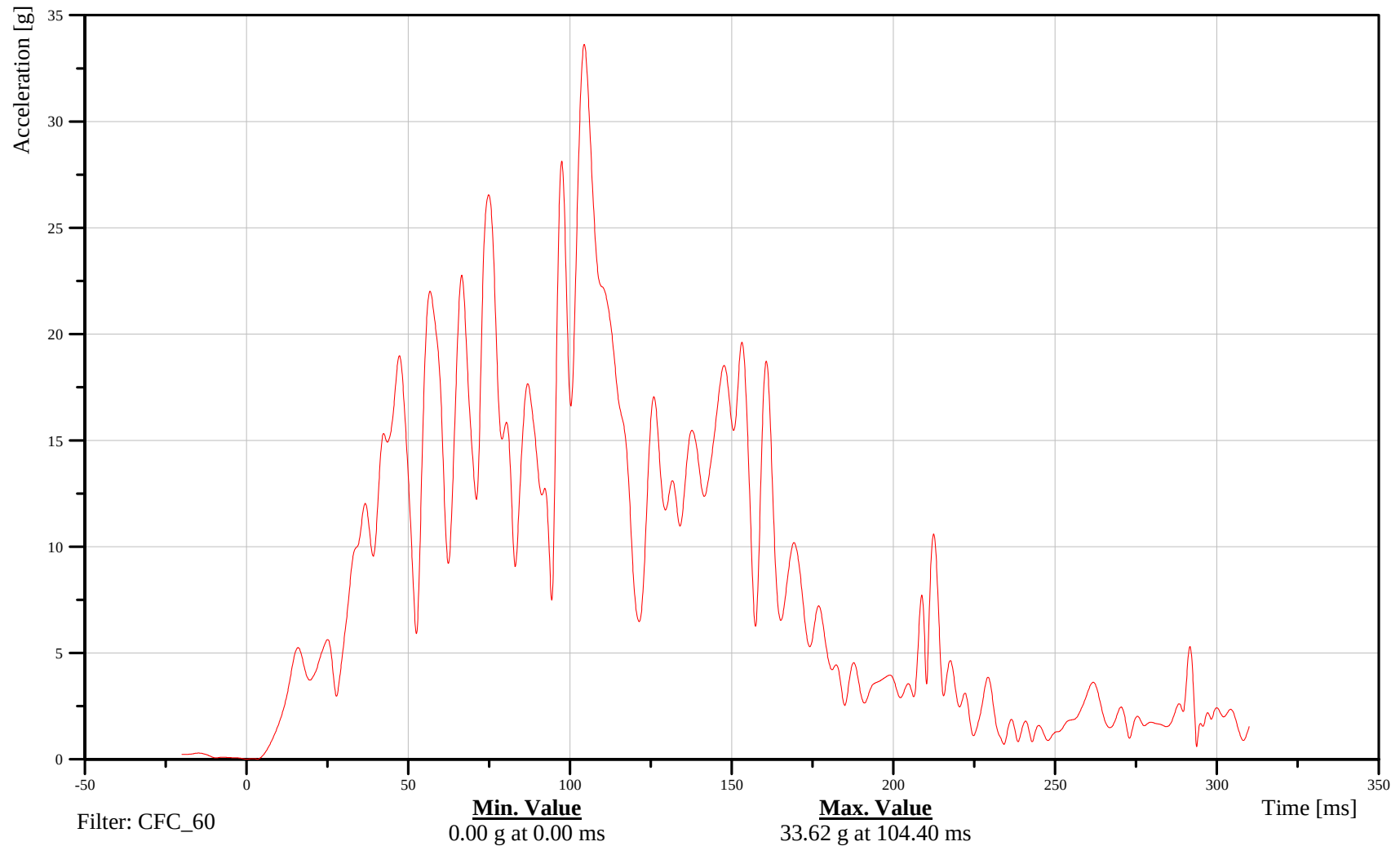
Vehicle CG Resultant Acceleration

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-153

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

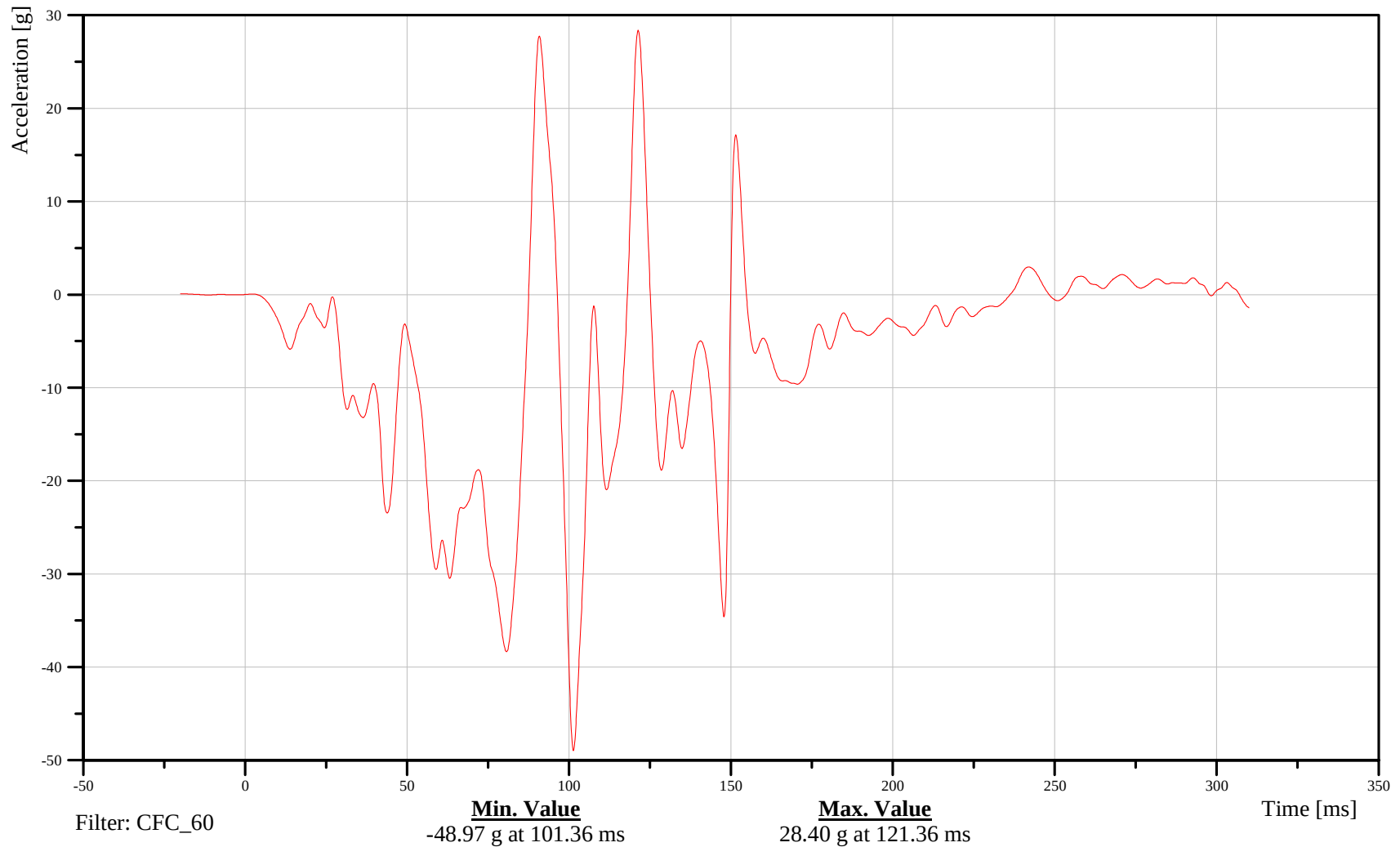
Under Accel Pedal X-Axis Acceleration

Customer: VRTC

11PEAC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-154

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

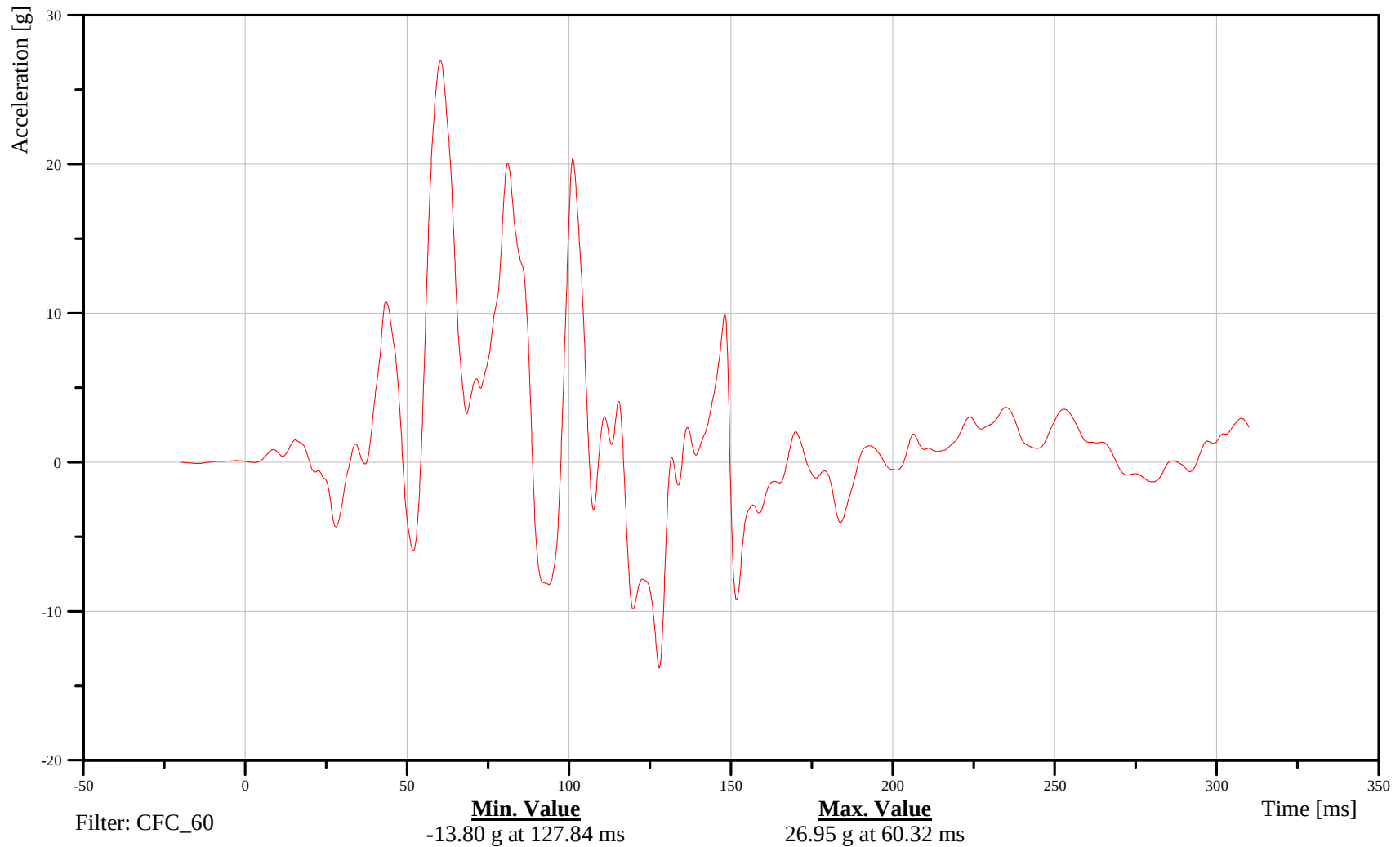
Under Accel Pedal Y-Axis Acceleration

Customer: VRTC

11PEAC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-155

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

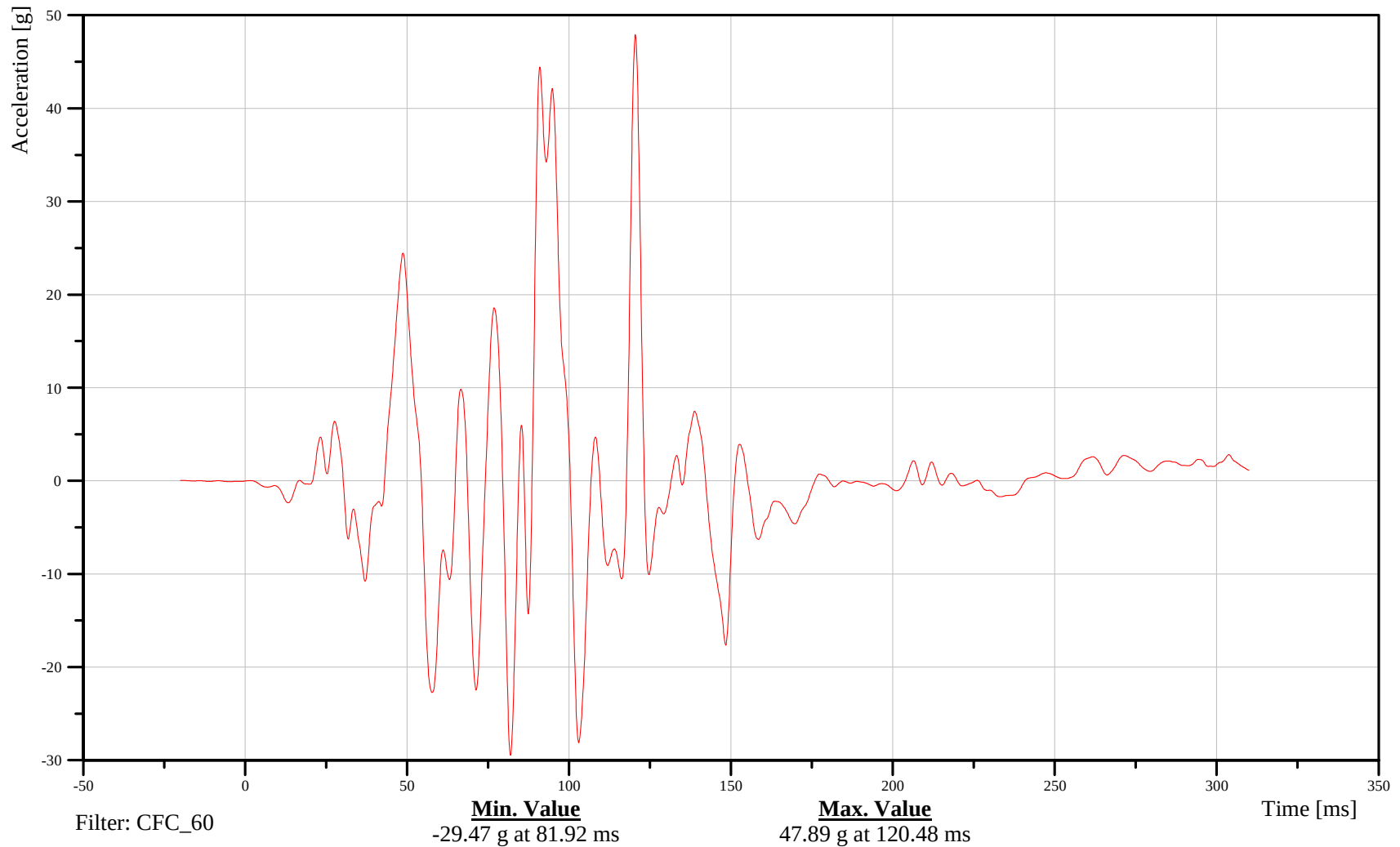
Under Accel Pedal Z-Axis Acceleration

Customer: VRTC

11PEAC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-156

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

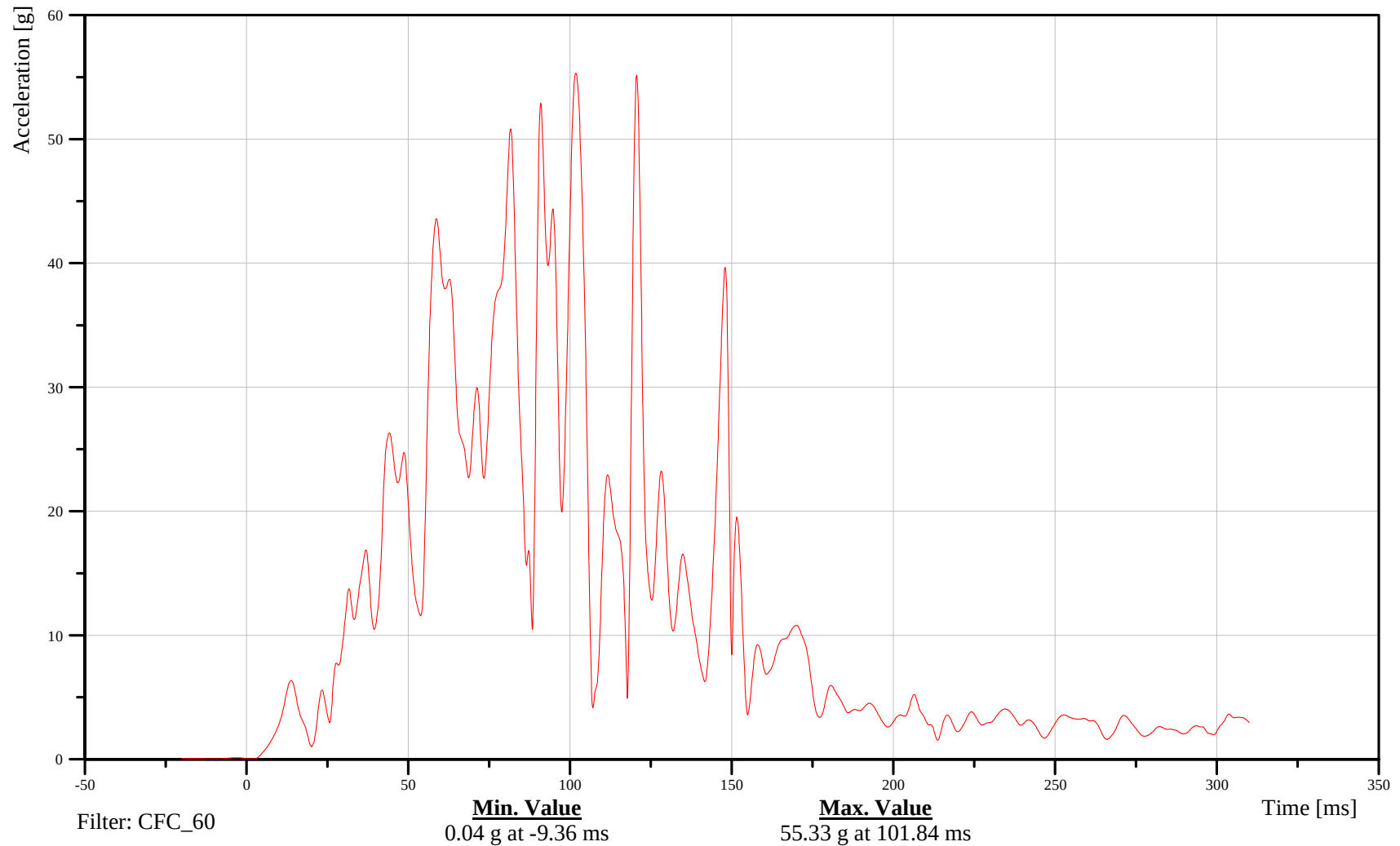
Under Accel Pedal Resultant Acceleration

Customer: VRTC

11PEAC000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-157

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

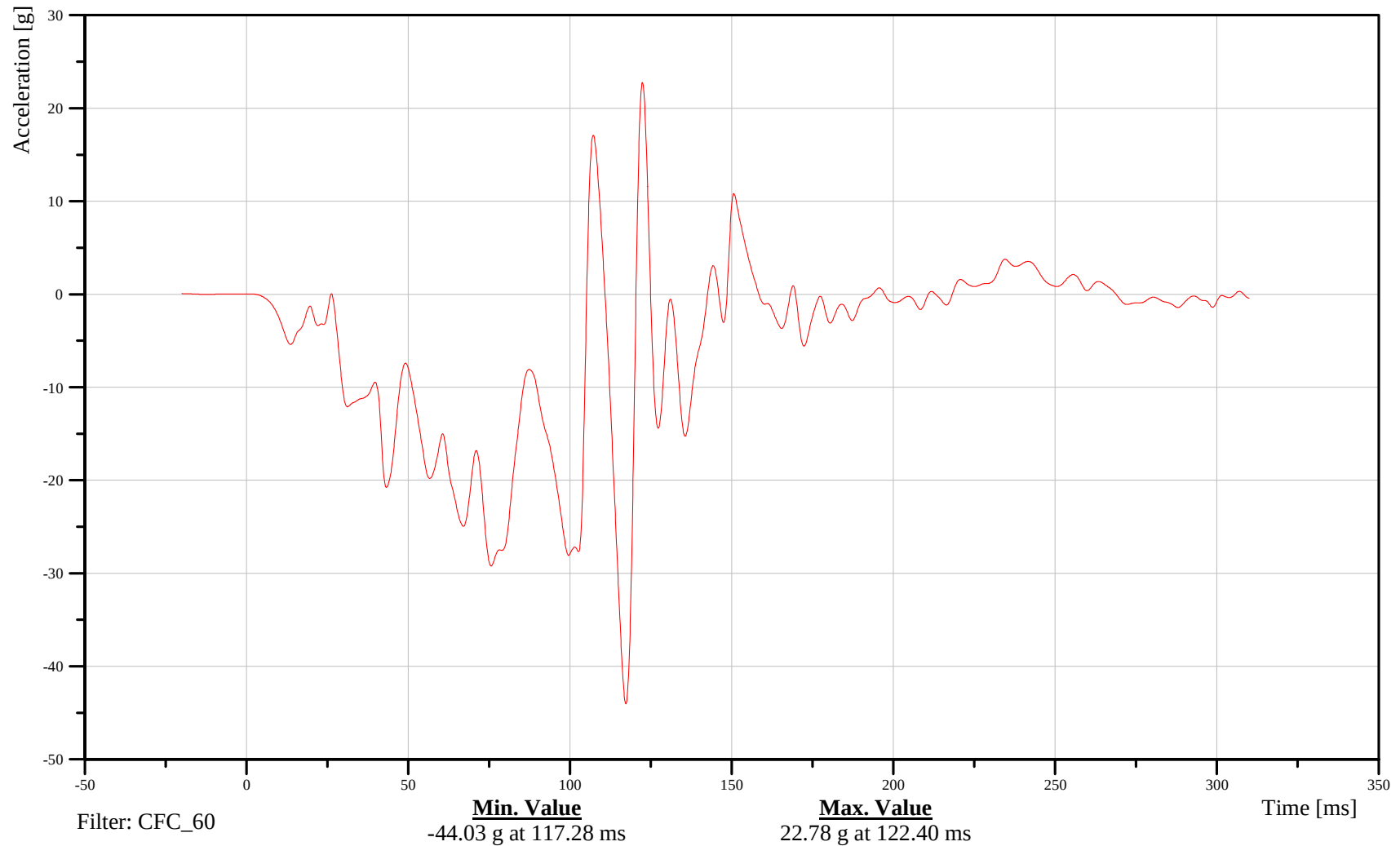
Under Brake Pedal X-Axis Acceleration

Customer: VRTC

11PEBR000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-158

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

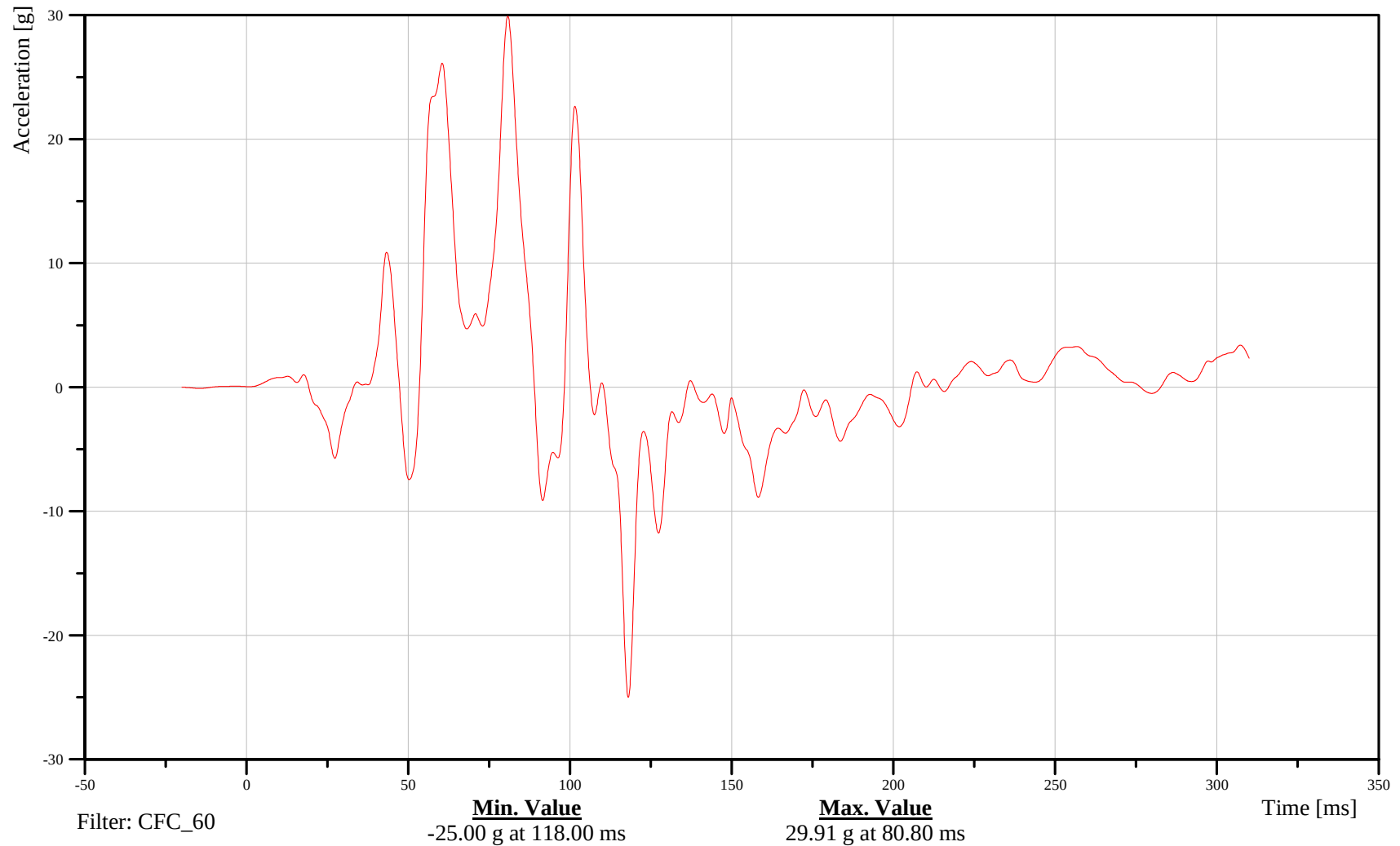
Under Brake Pedal Y-Axis Acceleration

Customer: VRTC

11PEBR000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-159

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

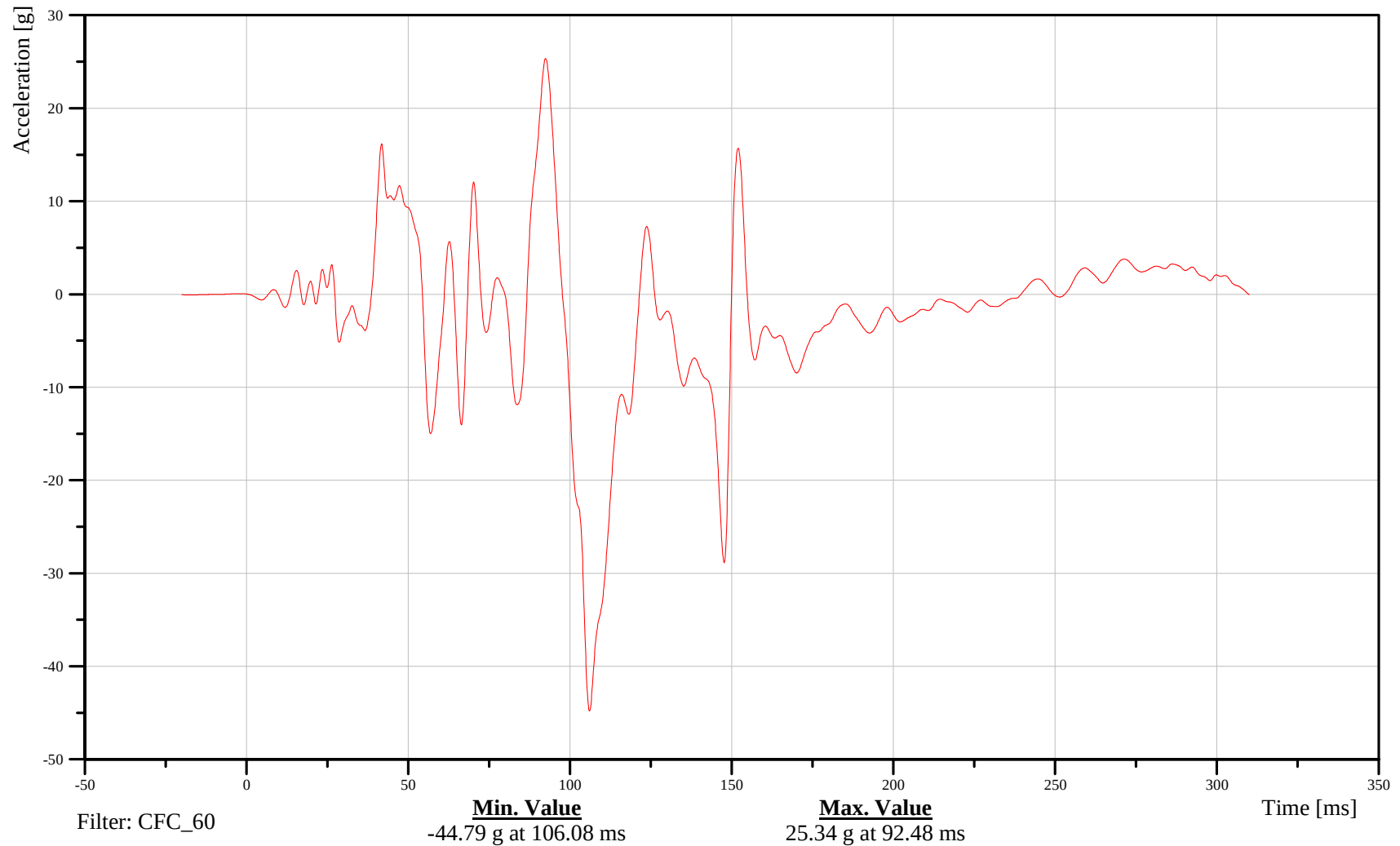
Under Brake Pedal Z-Axis Acceleration

Customer: VRTC

11PEBR000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-160

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

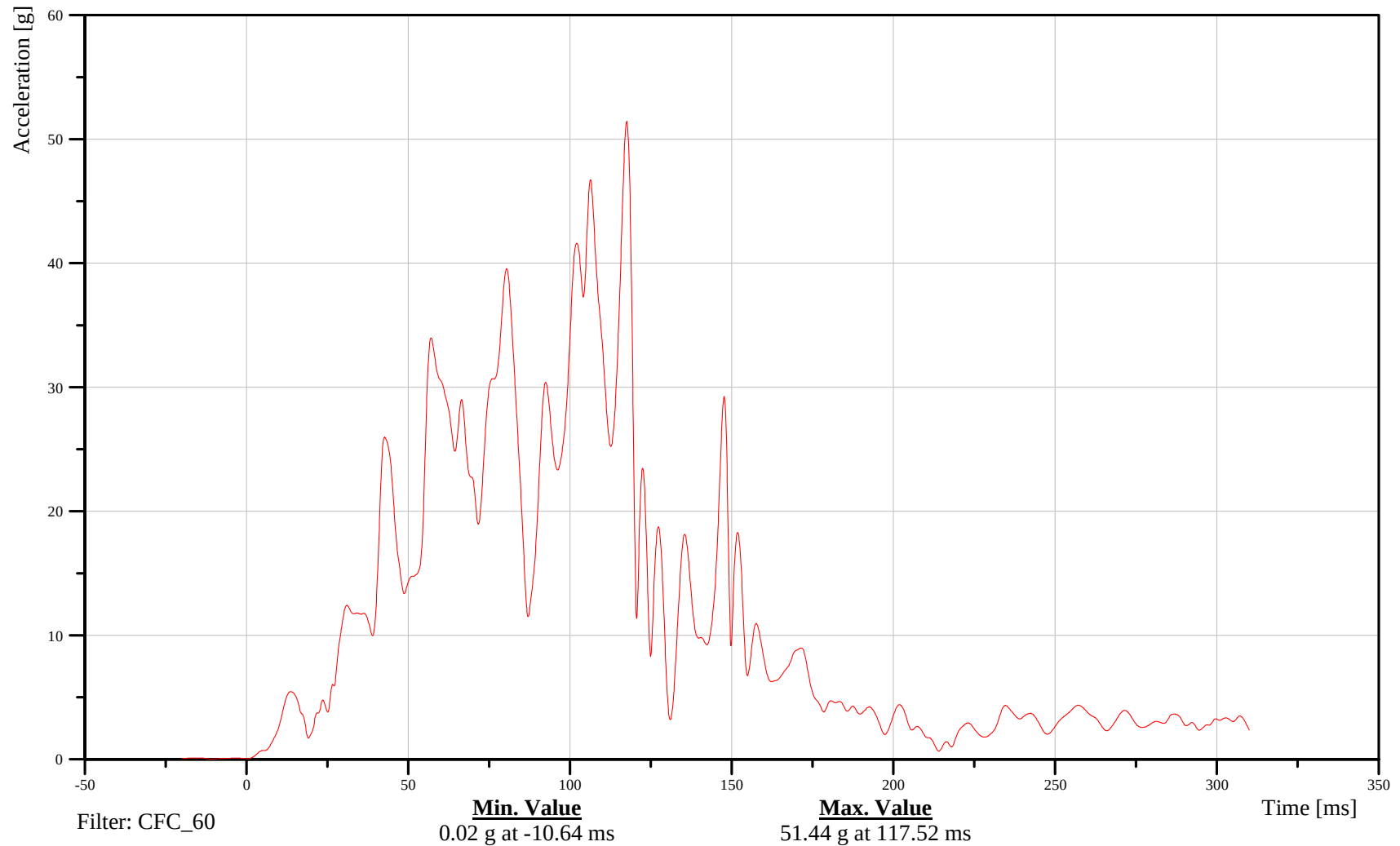
Under Brake Pedal Resultant Acceleration

Customer: VRTC

11PEBR000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-161

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

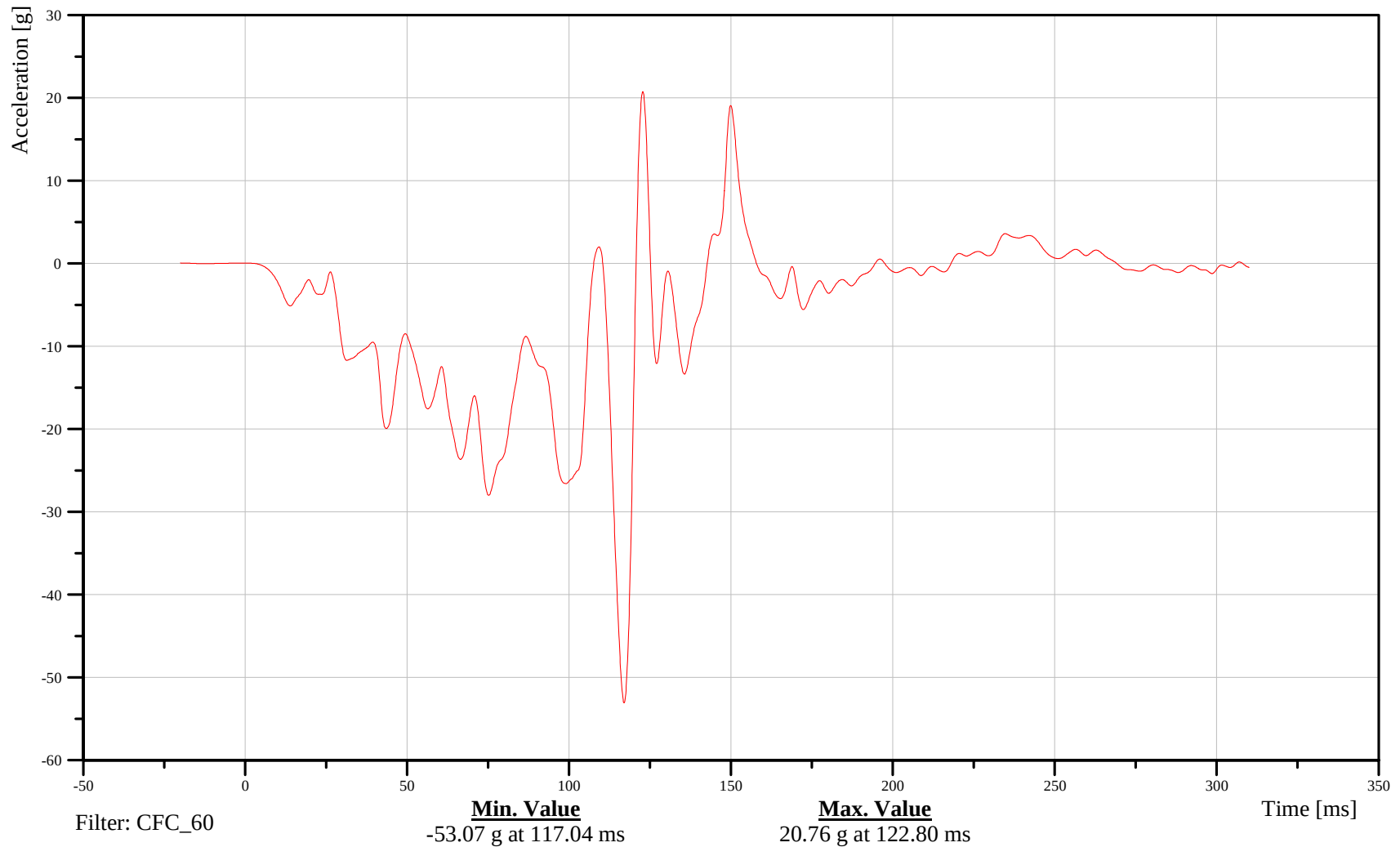
Outside Footrest X-Axis Acceleration

Customer: VRTC

11VEHC000001ACXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-162

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

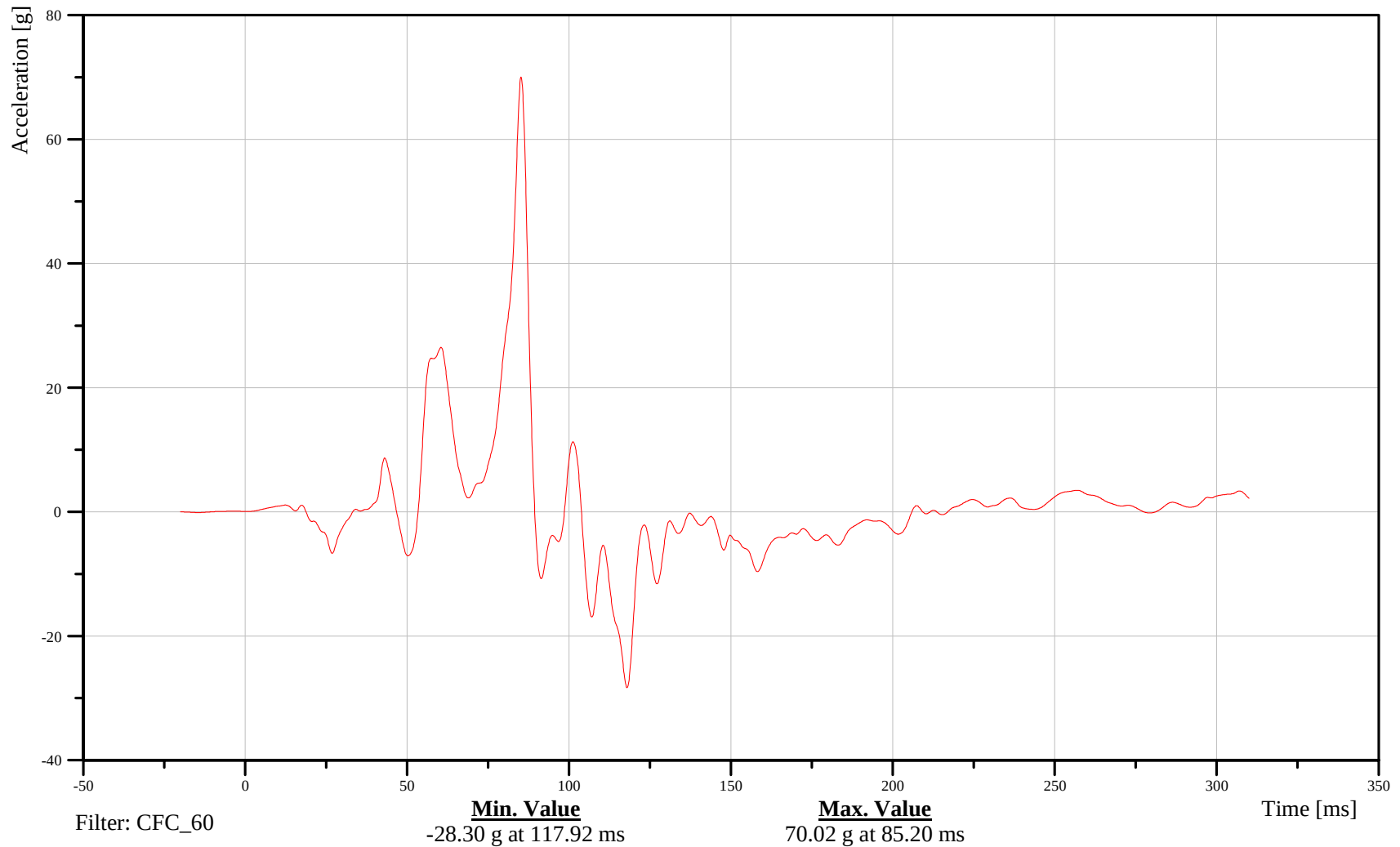
Outside Footrest Y-Axis Acceleration

Customer: VRTC

11VEHC000001ACYD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-163

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

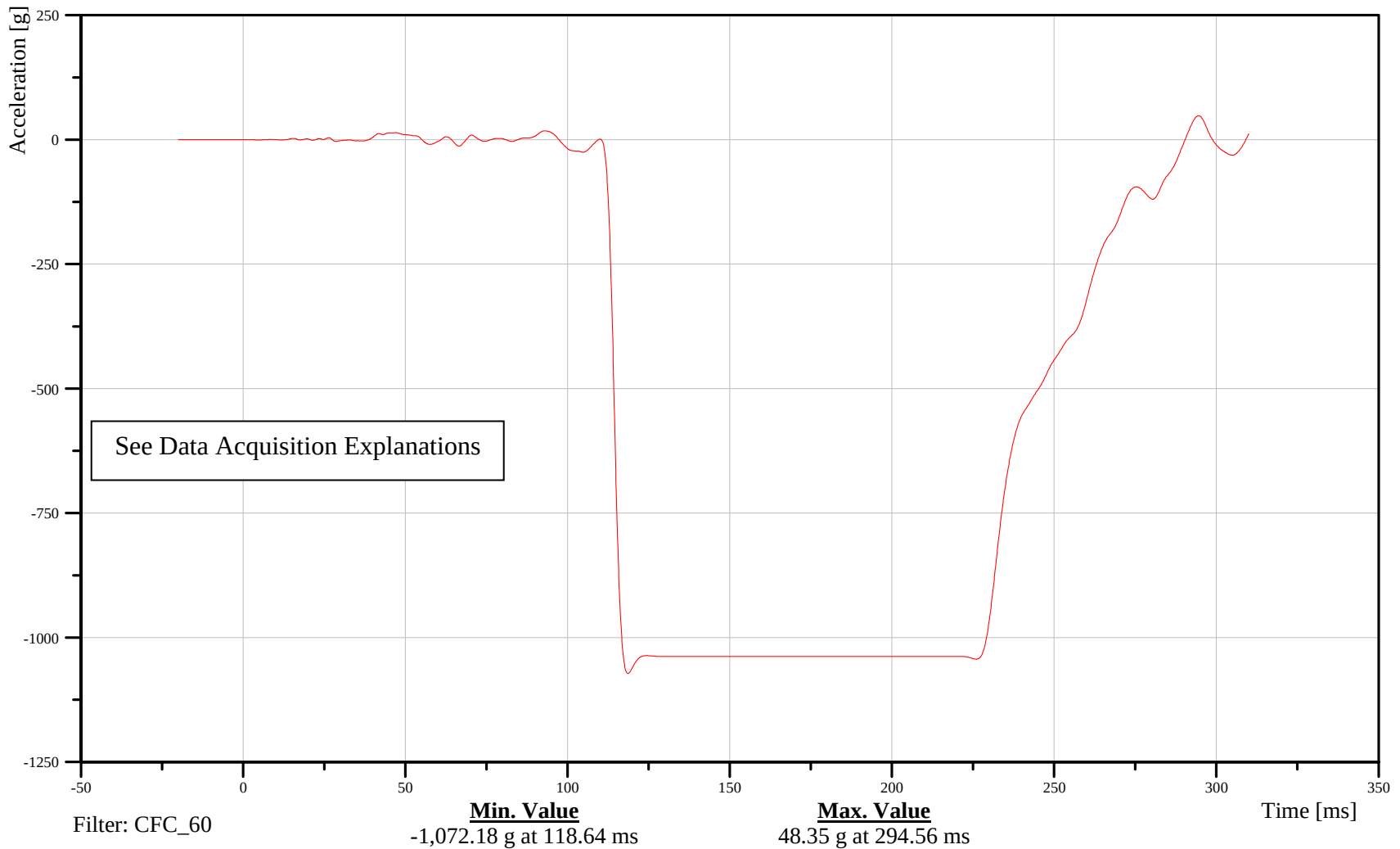
Outside Footrest Z-Axis Acceleration

Customer: VRTC

11VEHC000001ACZD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-164

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

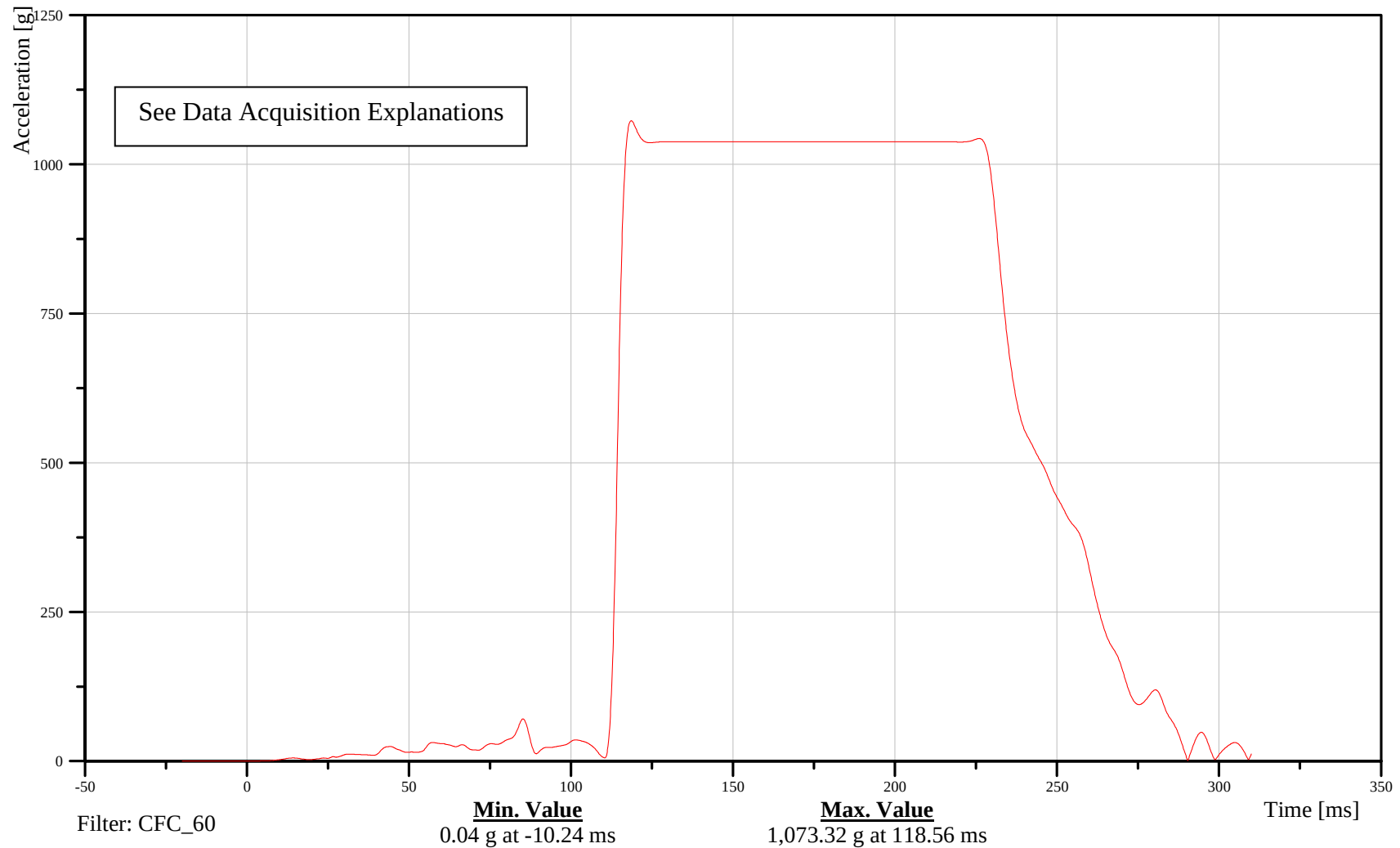
Outside Footrest Resultant Acceleration

Customer: VRTC

11VEHC000001ACRD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-165

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

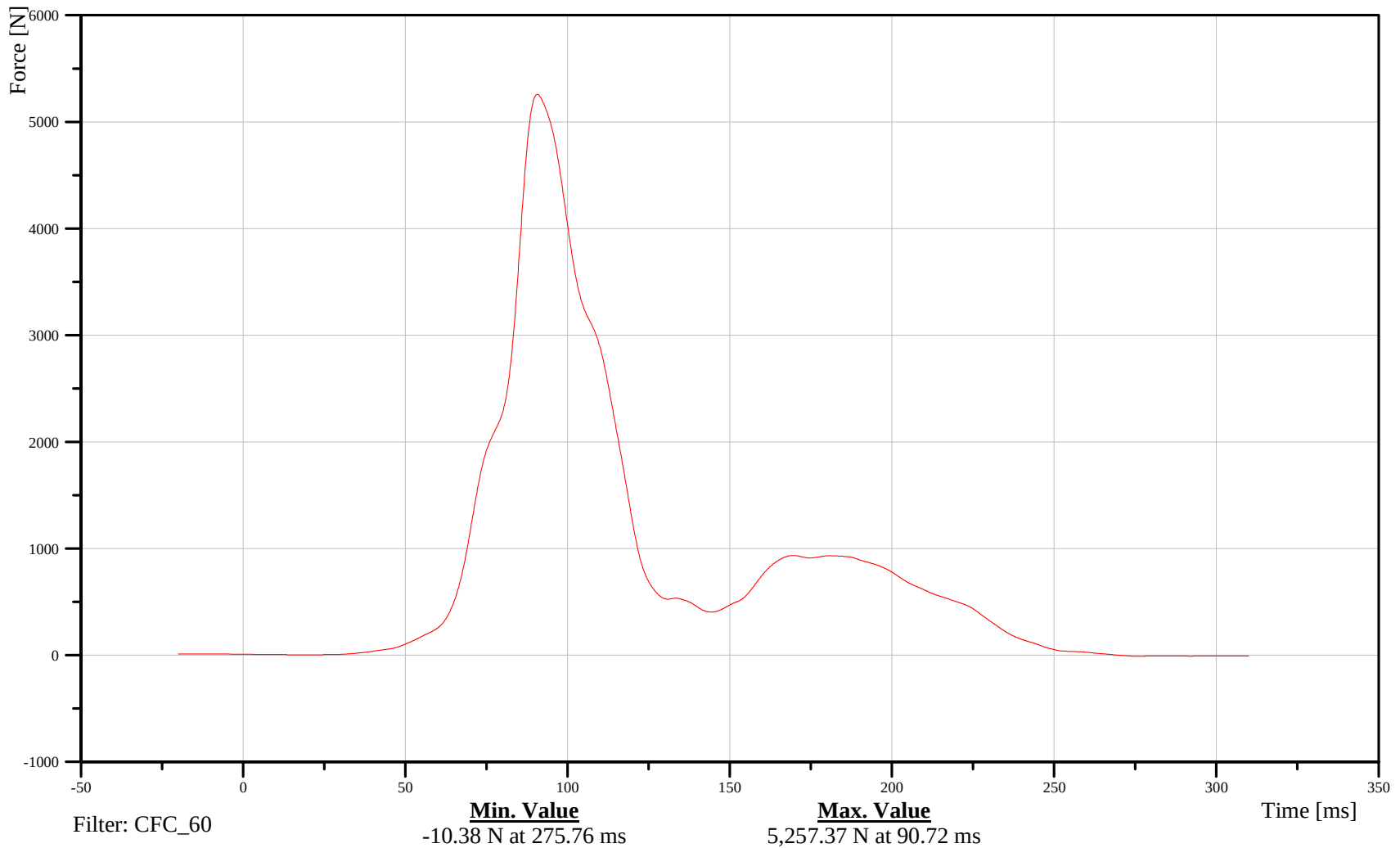
Driver Lap Belt Force

Customer: VRTC

11SEBE0000B5FOOD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-166

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

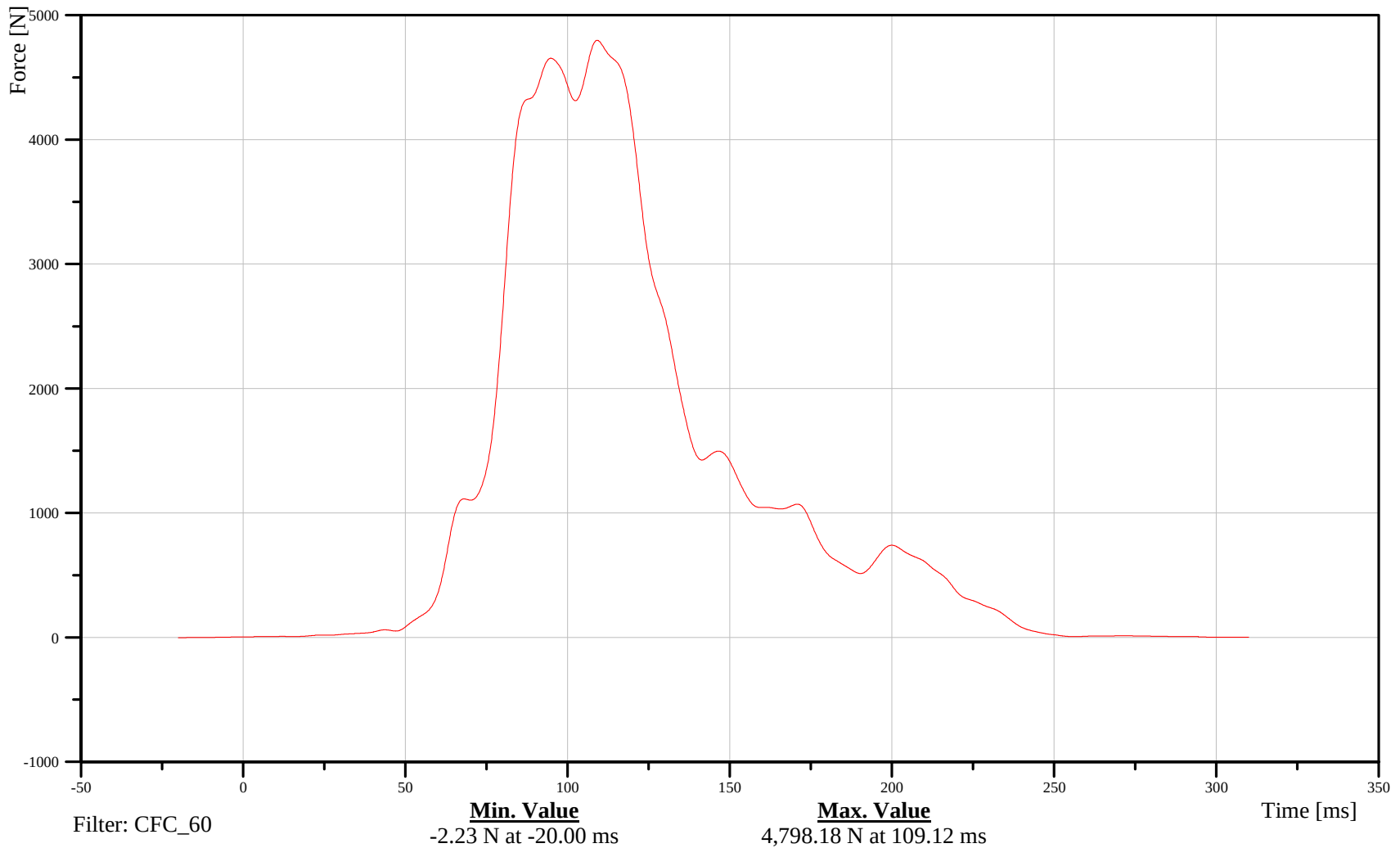
Driver Shoulder Belt Force

Customer: VRTC

11SEBE0000B3FOOD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-167

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

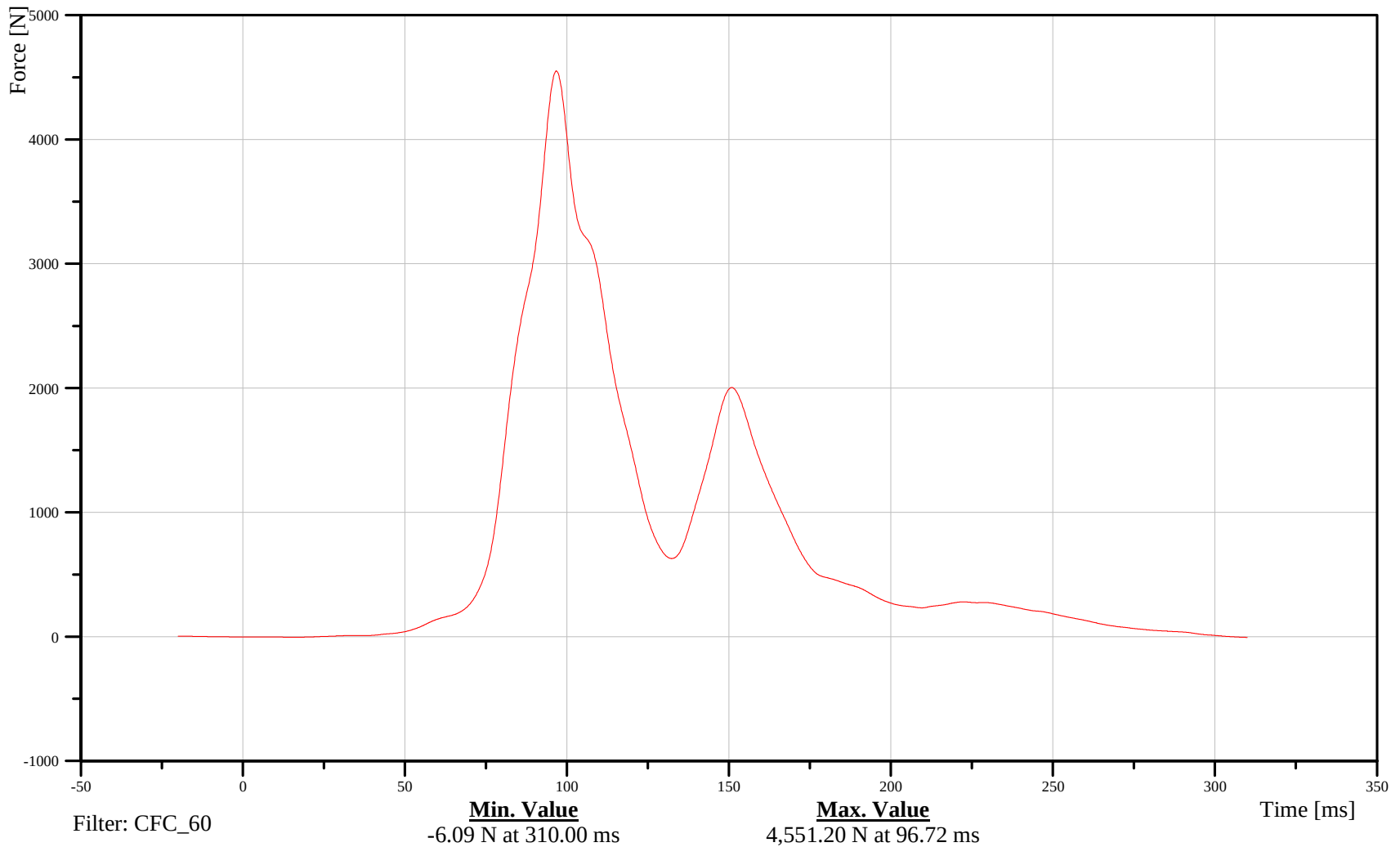
Passenger Lap Belt Force

Customer: VRTC

13SEBE0000B5FOOD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-168

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

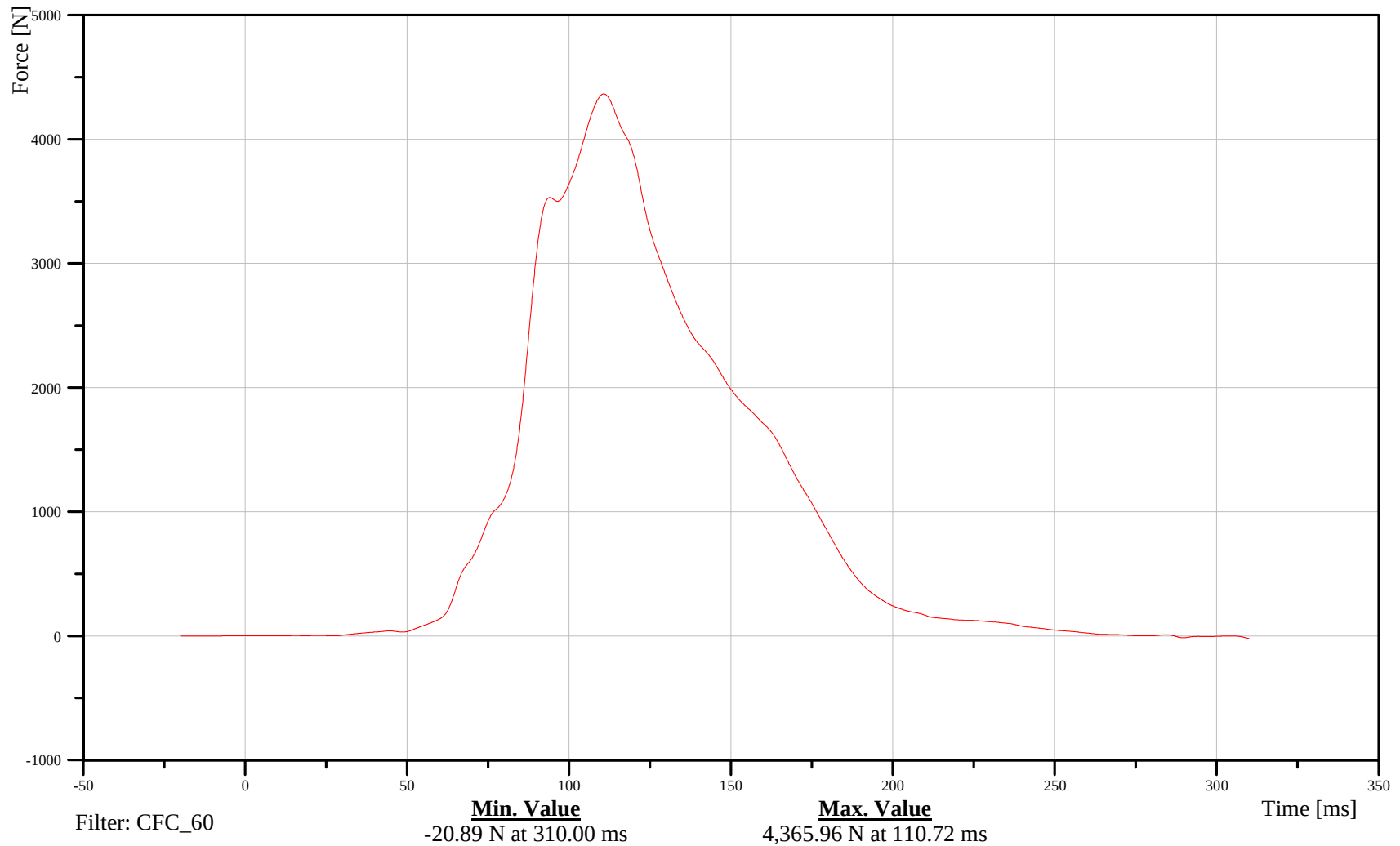
Passenger Shoulder Belt Force

Customer: VRTC

13SEBE0000B3FOOD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-169

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

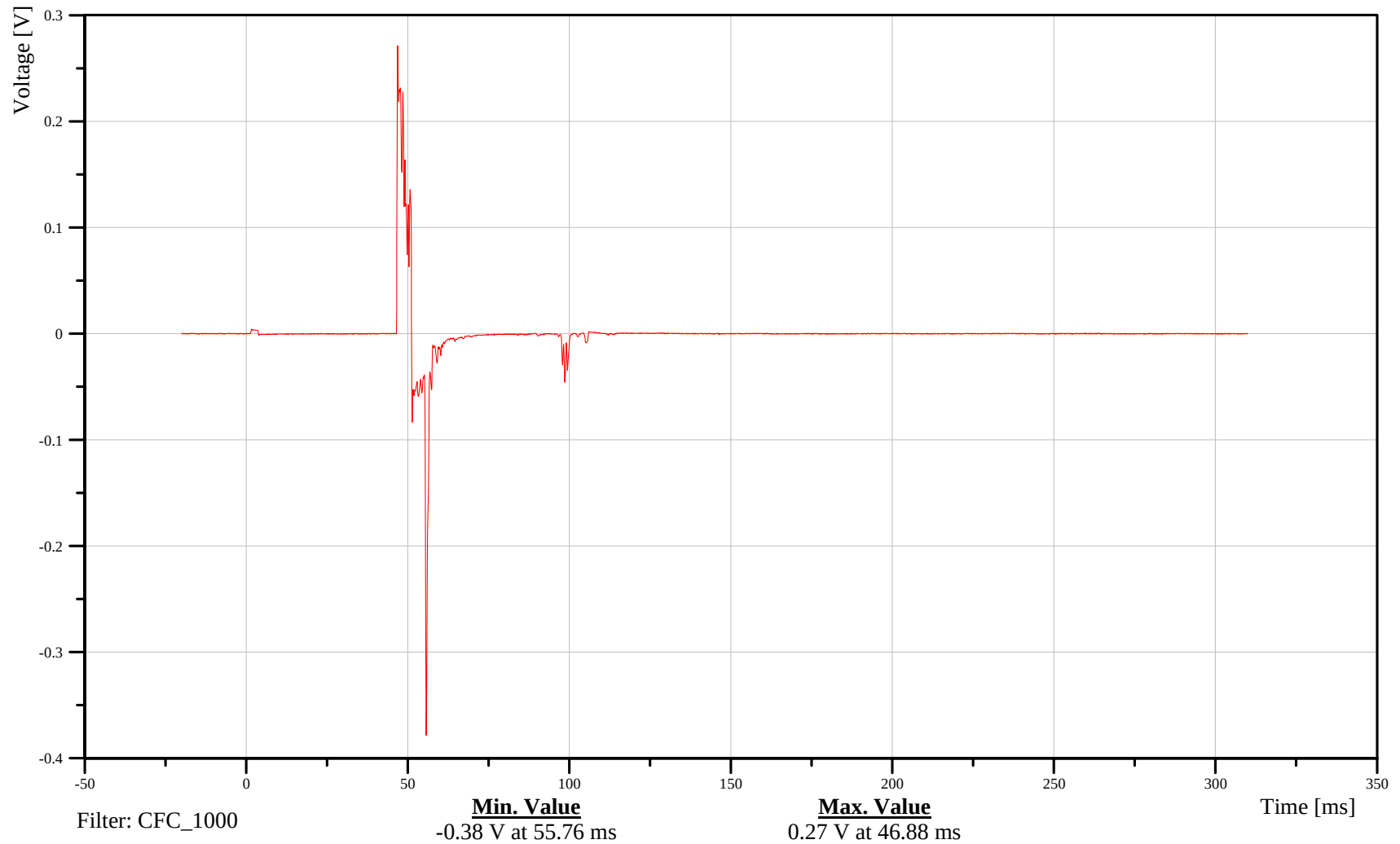
Driver Front Airbag

Customer: VRTC

11AIRBFR0100EV0A

TRC Inc. Test Lab: CTF

Test Number: 071108



B-170

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

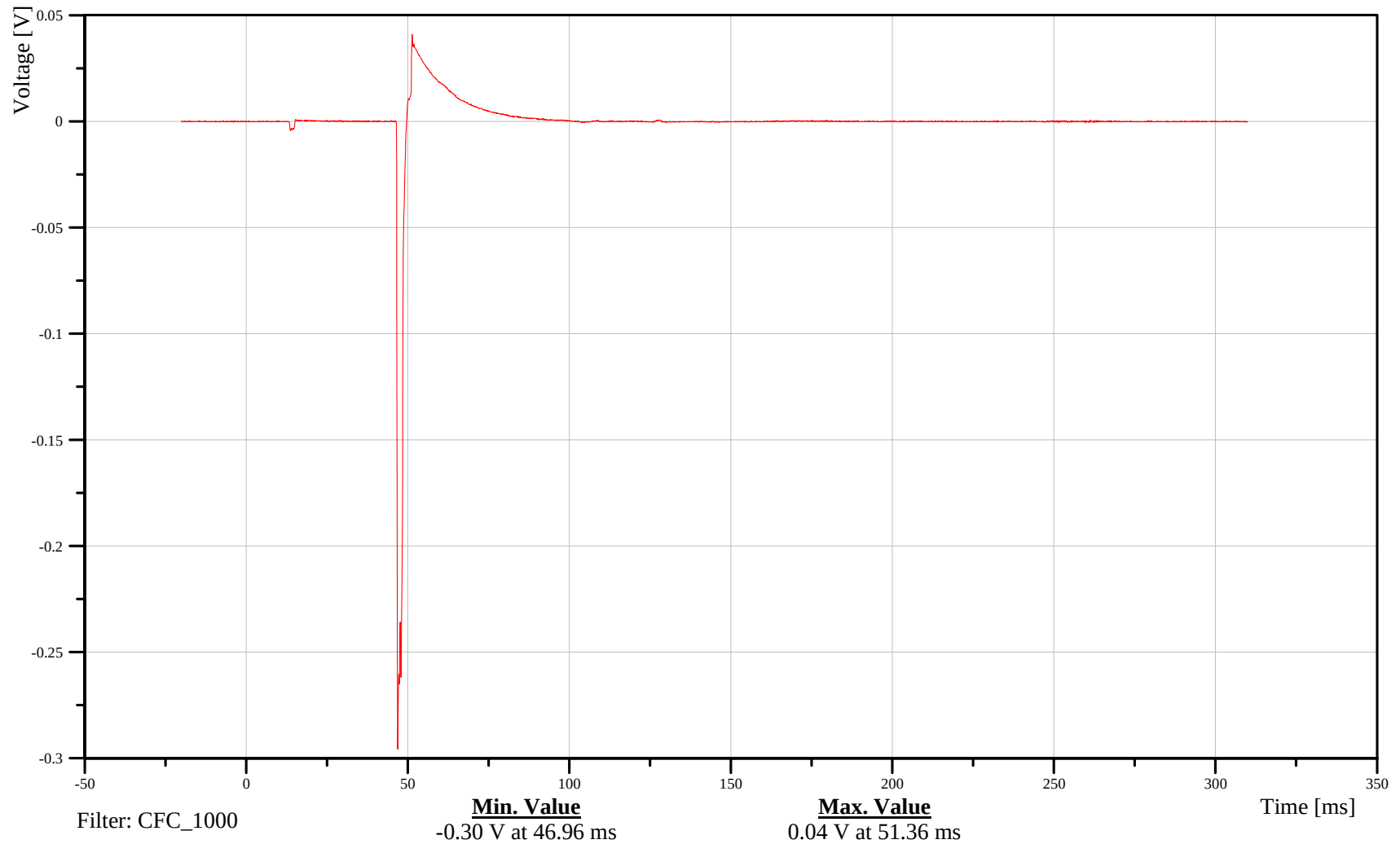
Passenger Front Airbag

Customer: VRTC

13AIRBFR0100EV0A

TRC Inc. Test Lab: CTF

Test Number: 071108



B-171

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

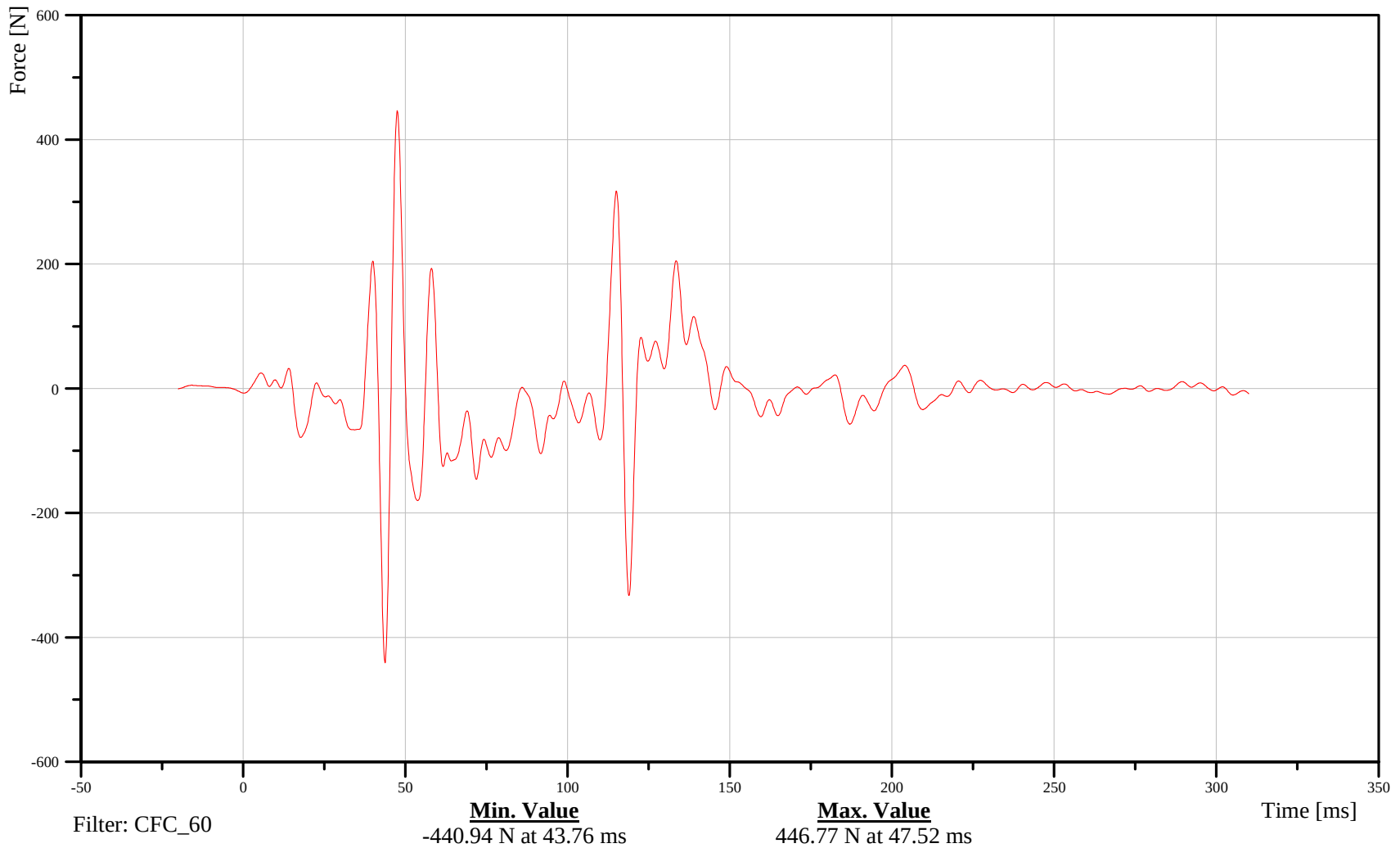
Load Cell Row 1 Column 1

Customer: VRTC

L0FBAR000001FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-172

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

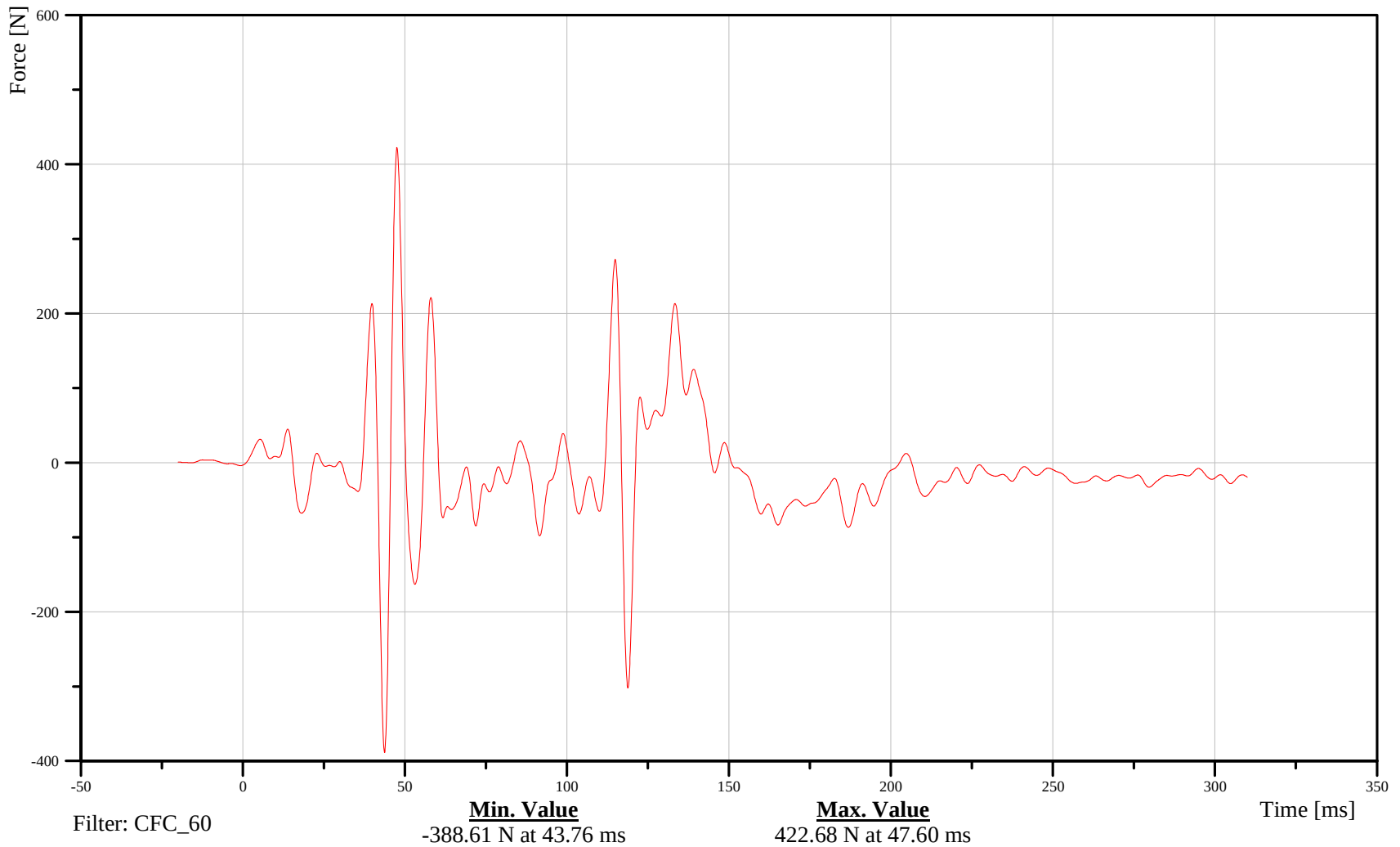
Load Cell Row 2 Column 1

Customer: VRTC

L0FBAR000002FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-173

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

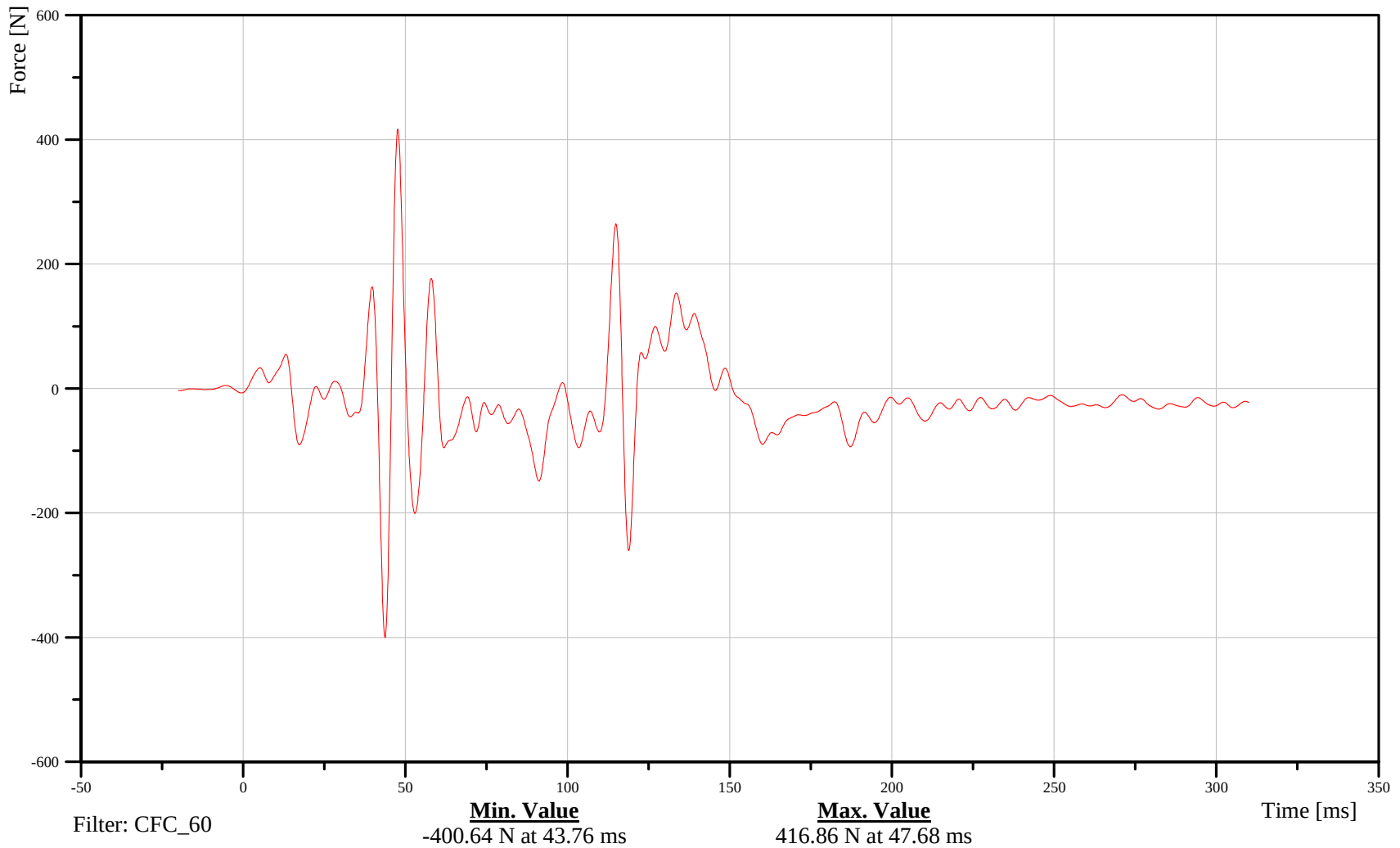
Load Cell Row 3 Column 1

Customer: VRTC

L0FBAR000003FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-174

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

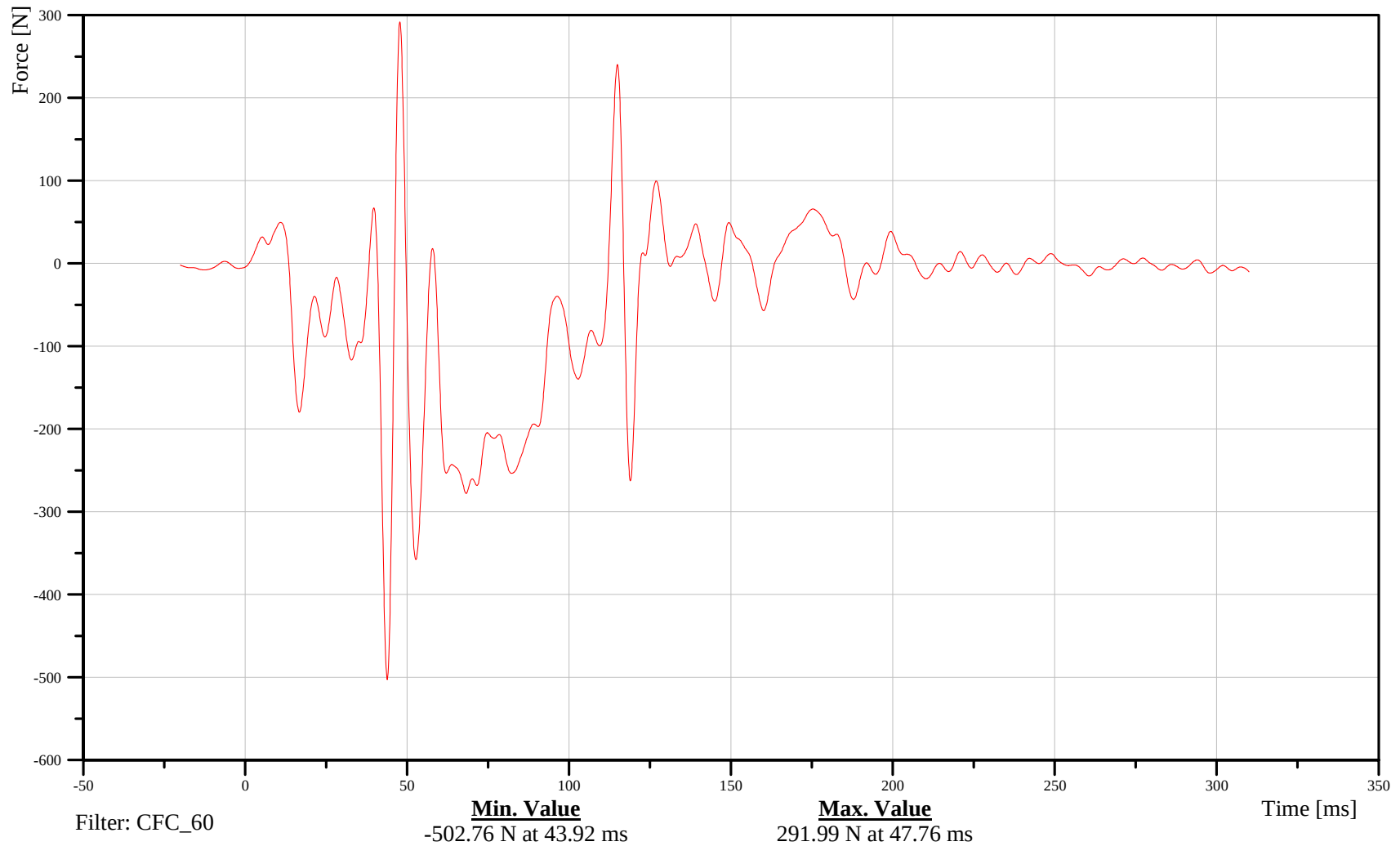
Load Cell Row 4 Column 1

Customer: VRTC

L0FBAR000004FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-175

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

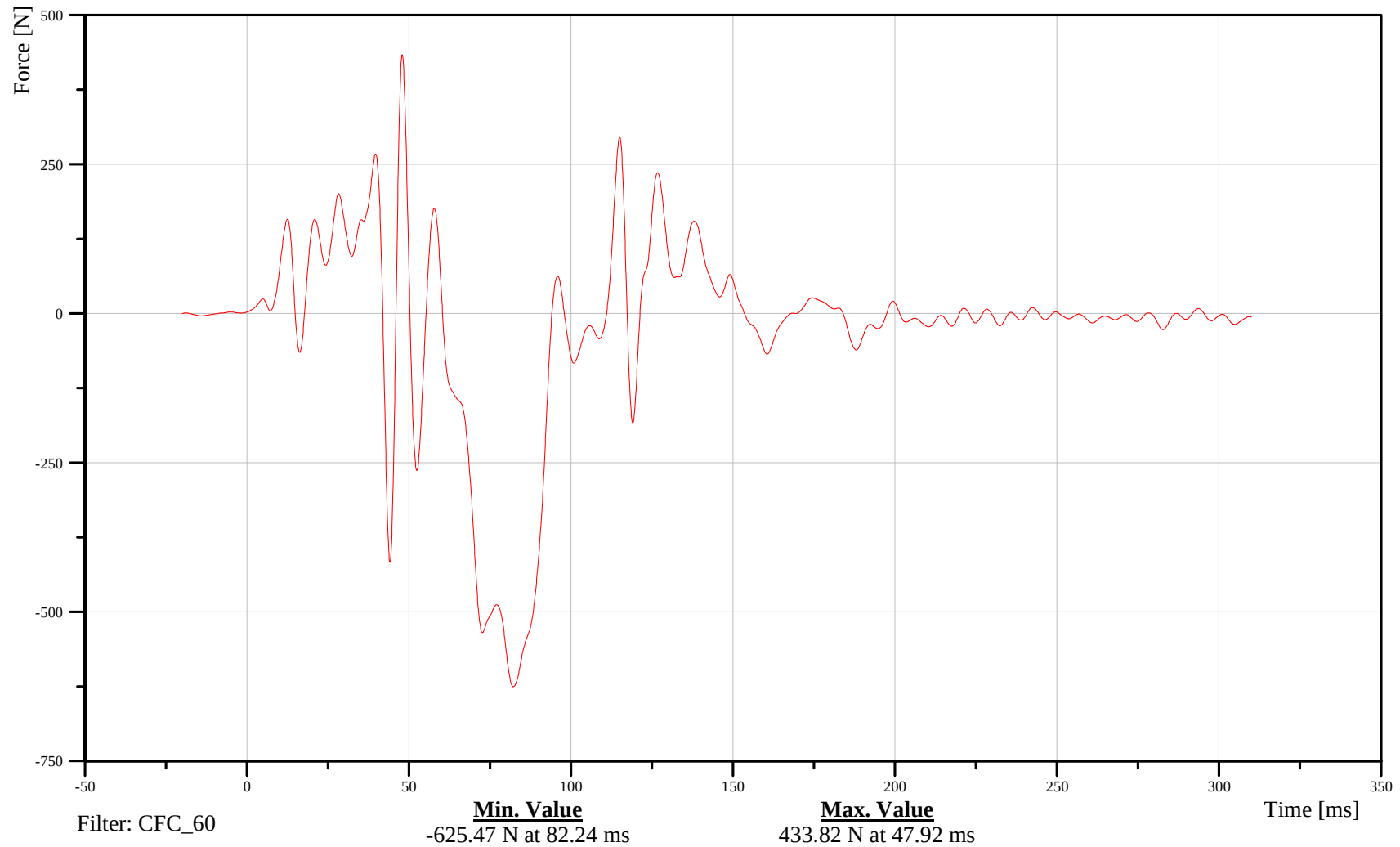
Load Cell Row 5 Column 1

Customer: VRTC

L0FBAR000005FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-176

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

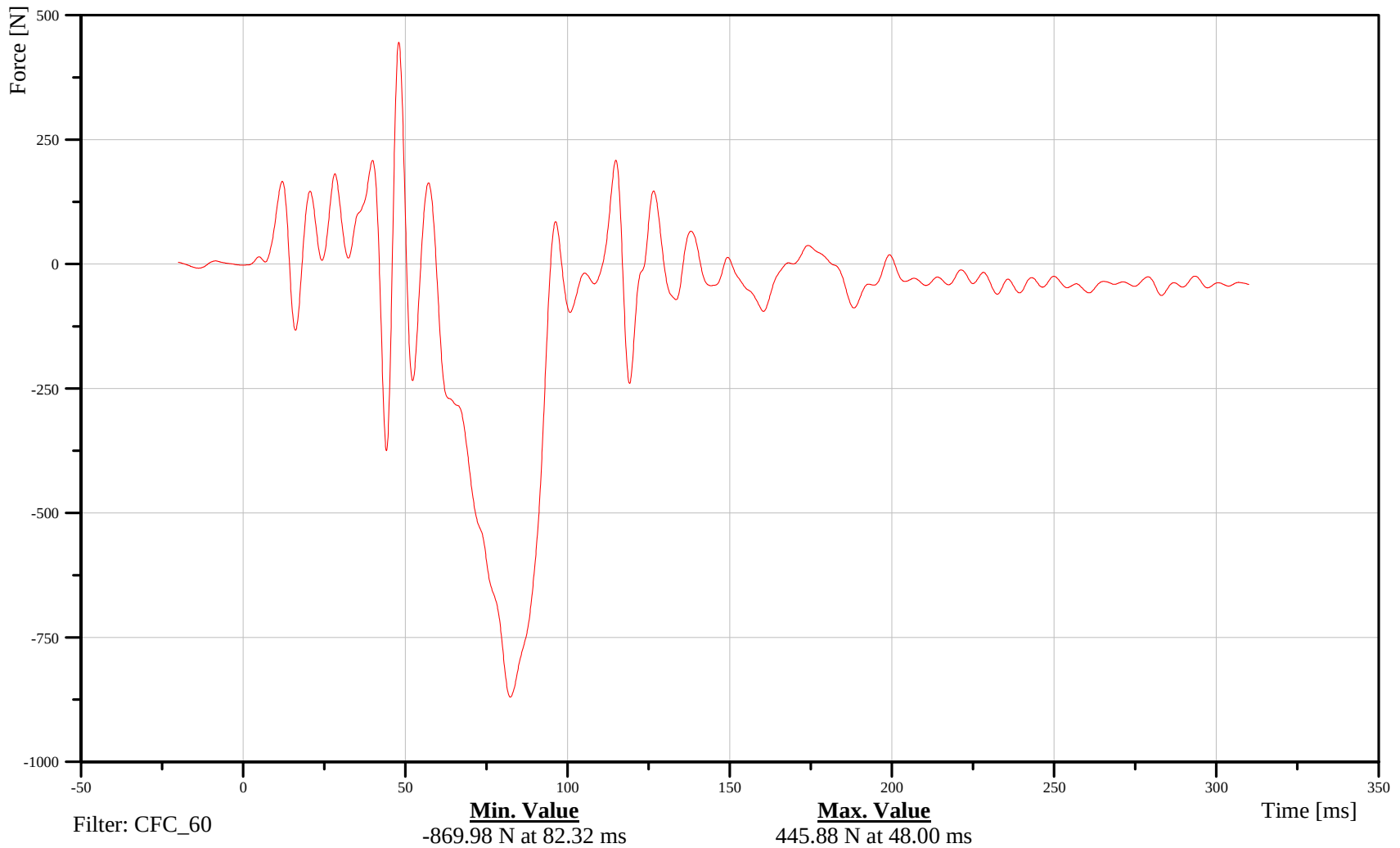
Load Cell Row 6 Column 1

Customer: VRTC

L0FBAR000006FOX

TRC Inc. Test Lab: CTF

Test Number: 071108



B-177

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

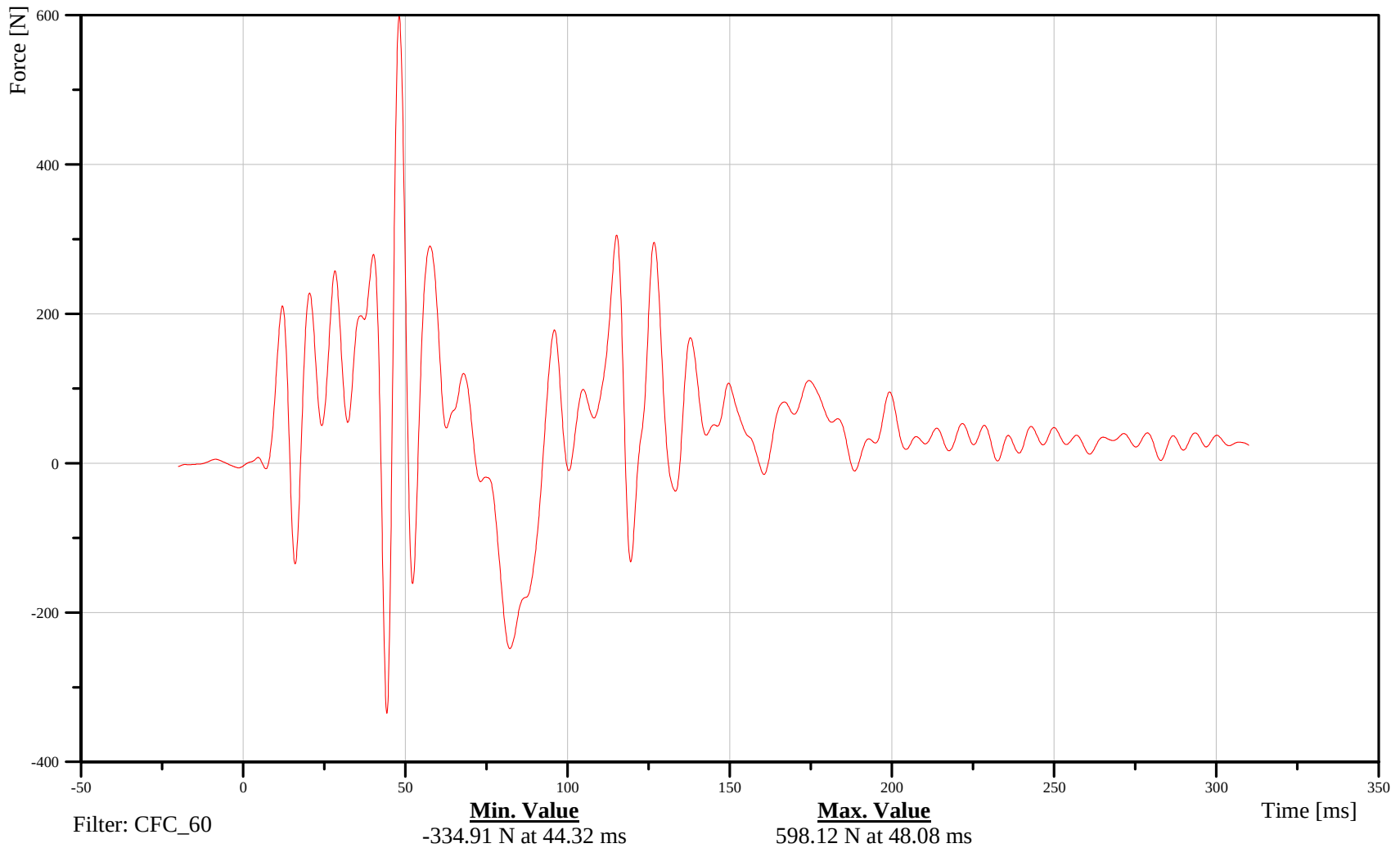
Load Cell Row 7 Column 1

Customer: VRTC

L0FBAR000007FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-178

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

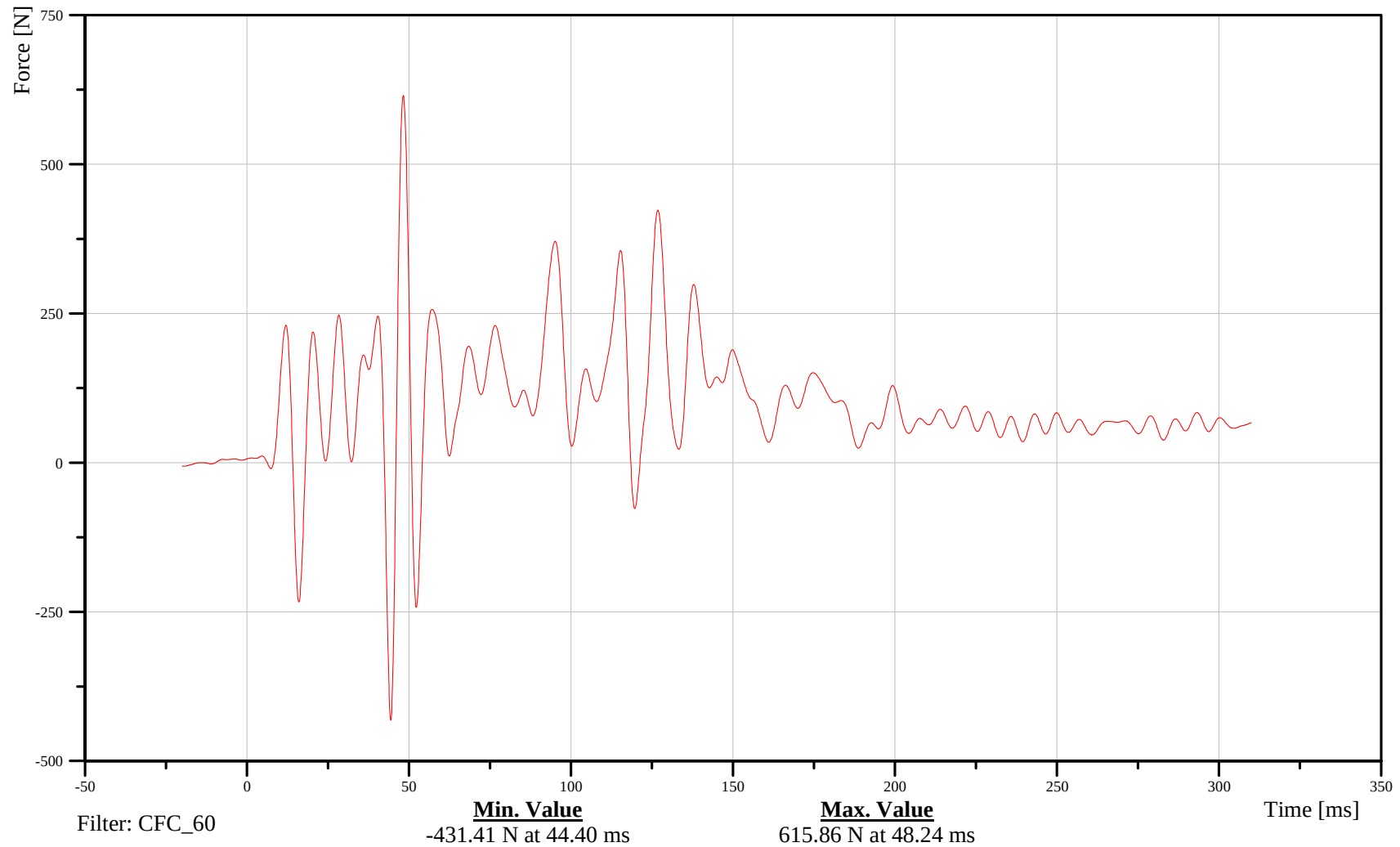
Load Cell Row 8 Column 1

Customer: VRTC

L0FBAR000008FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-179

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

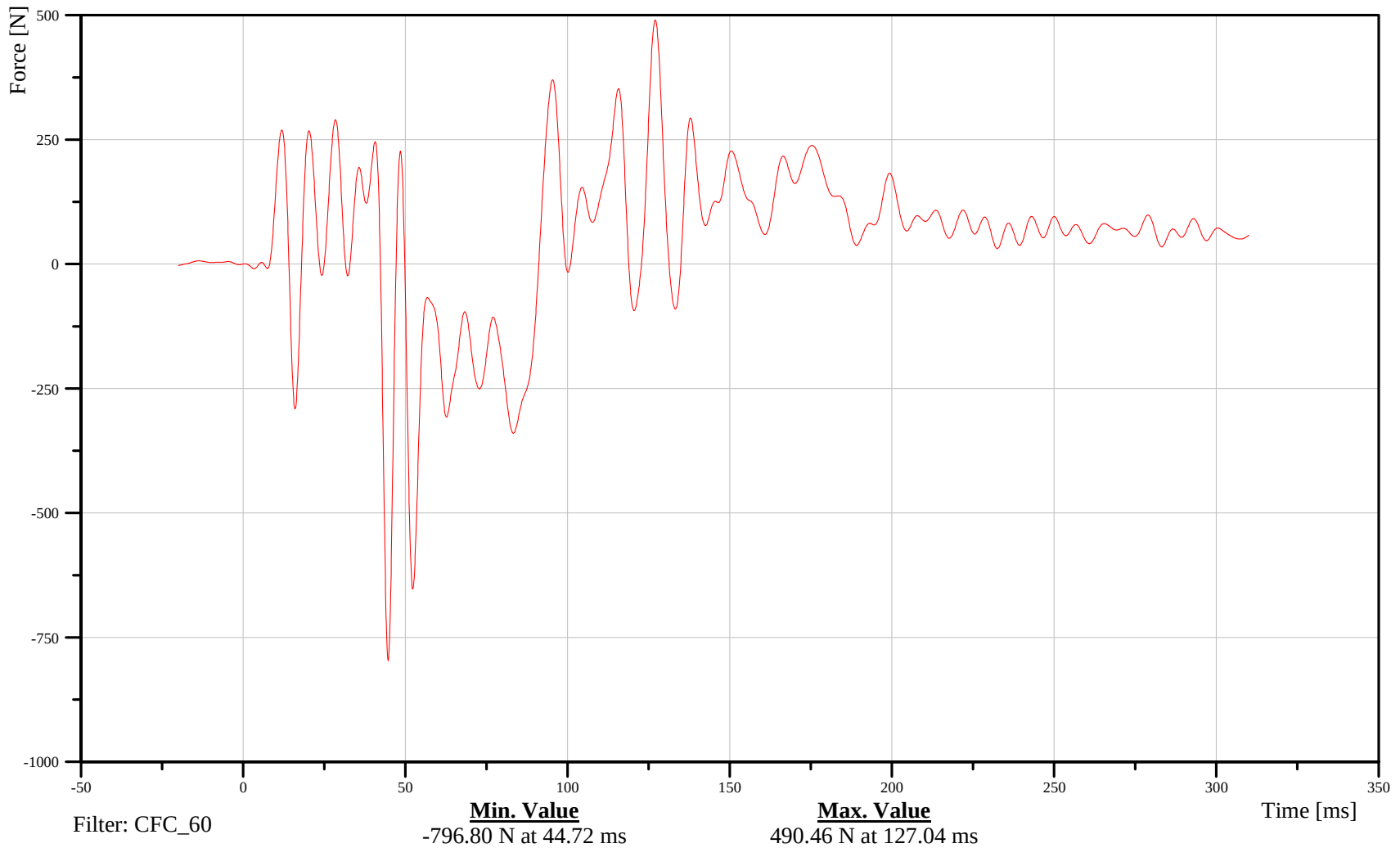
Load Cell Row 9 Column 1

Customer: VRTC

L0FBAR000009FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-180

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

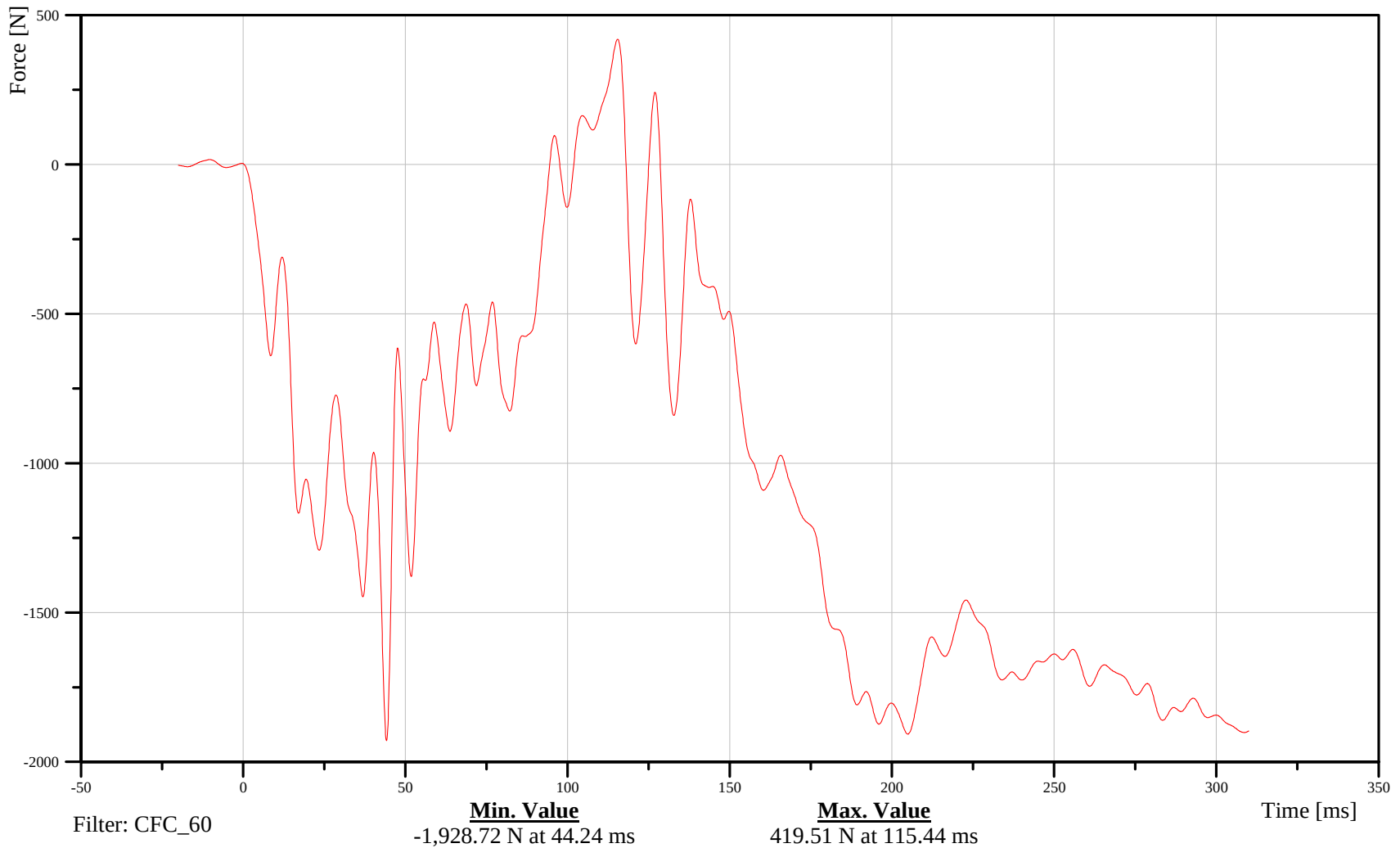
Load Cell Row 10 Column 1

Customer: VRTC

L0FBAR000010FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-181

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

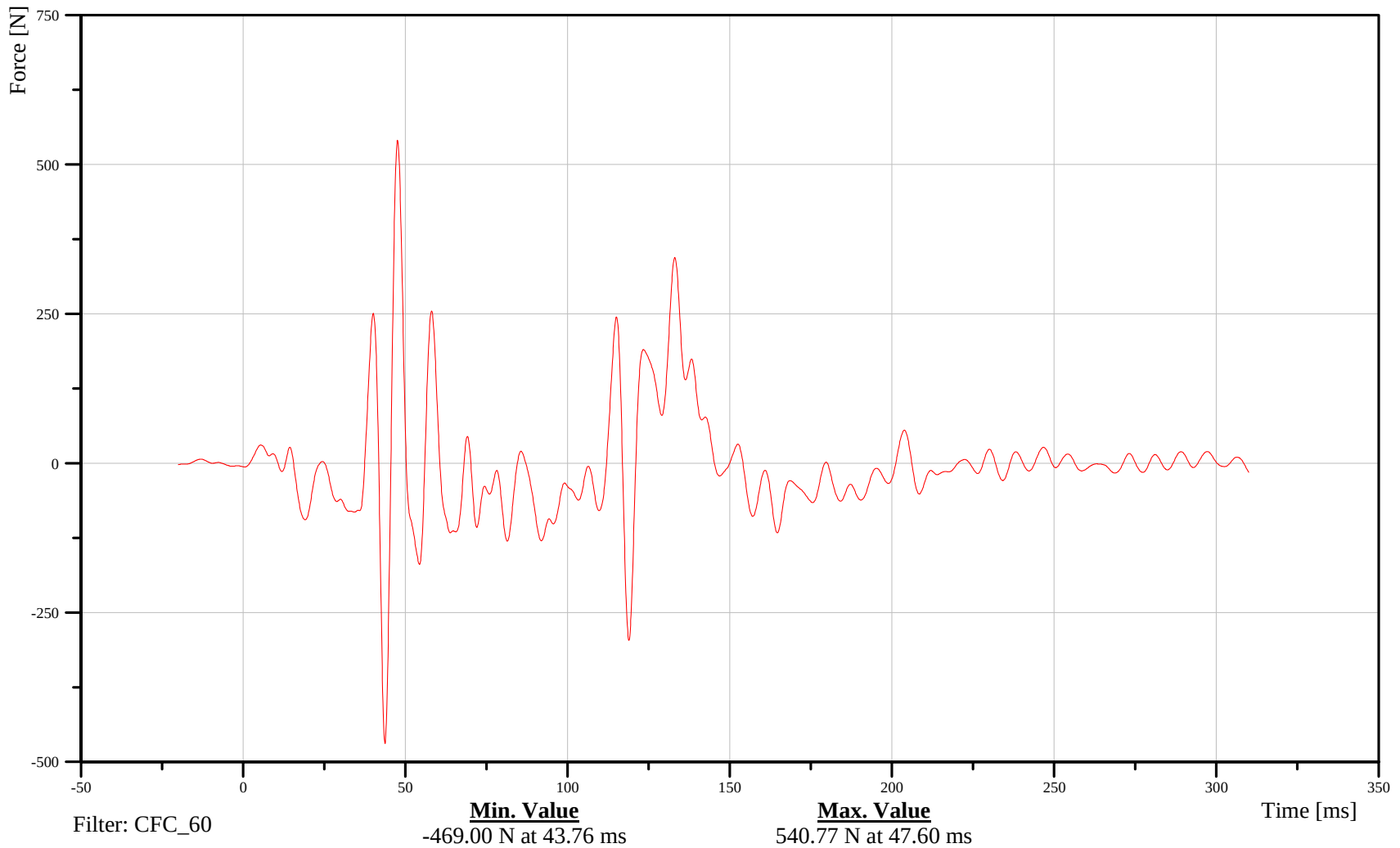
Load Cell Row 1 Column 2

Customer: VRTC

L0FBAR000011FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-182

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

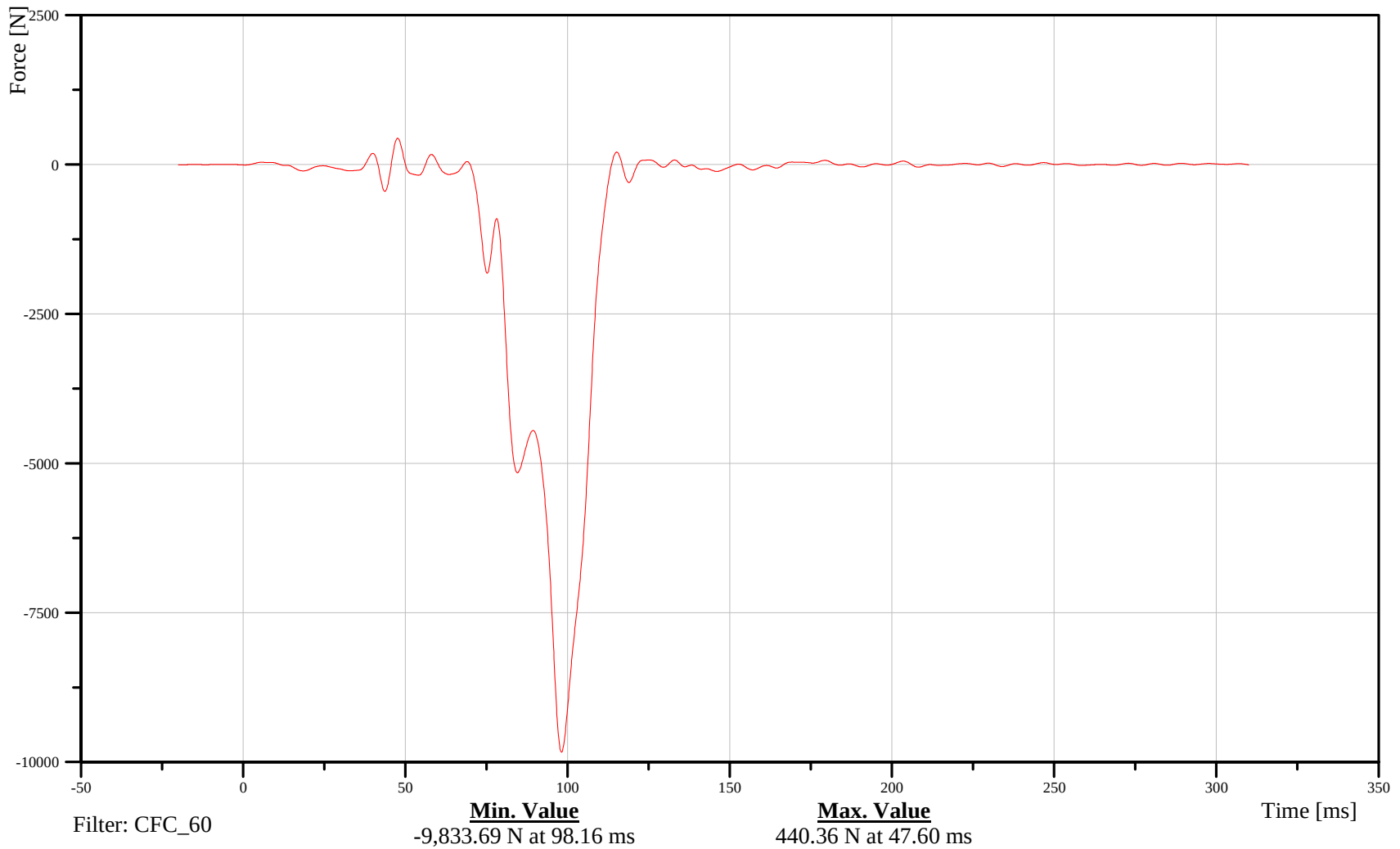
Load Cell Row 2 Column 2

Customer: VRTC

L0FBAR000012FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-183

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

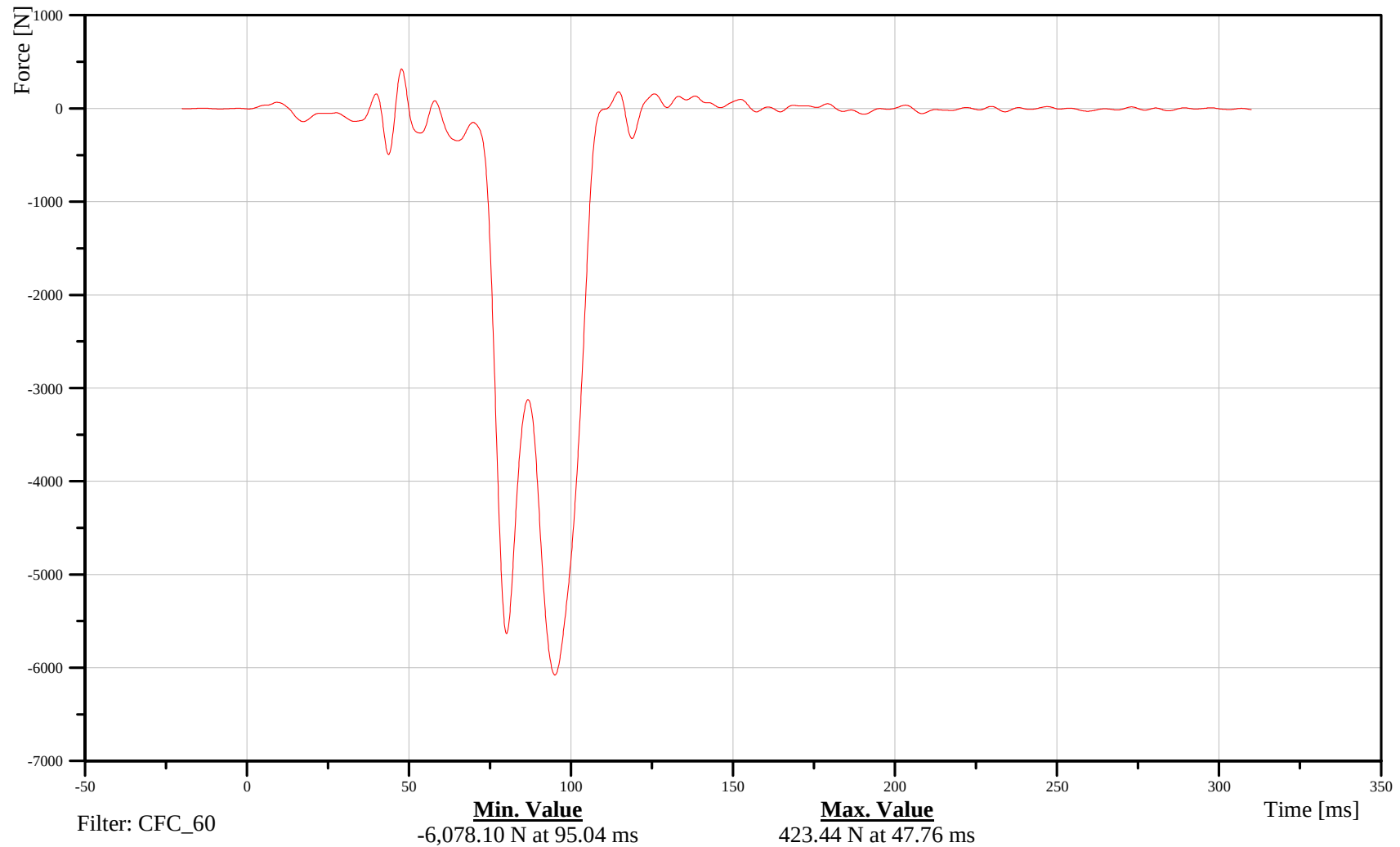
Load Cell Row 3 Column 2

Customer: VRTC

L0FBAR000013FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-184

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

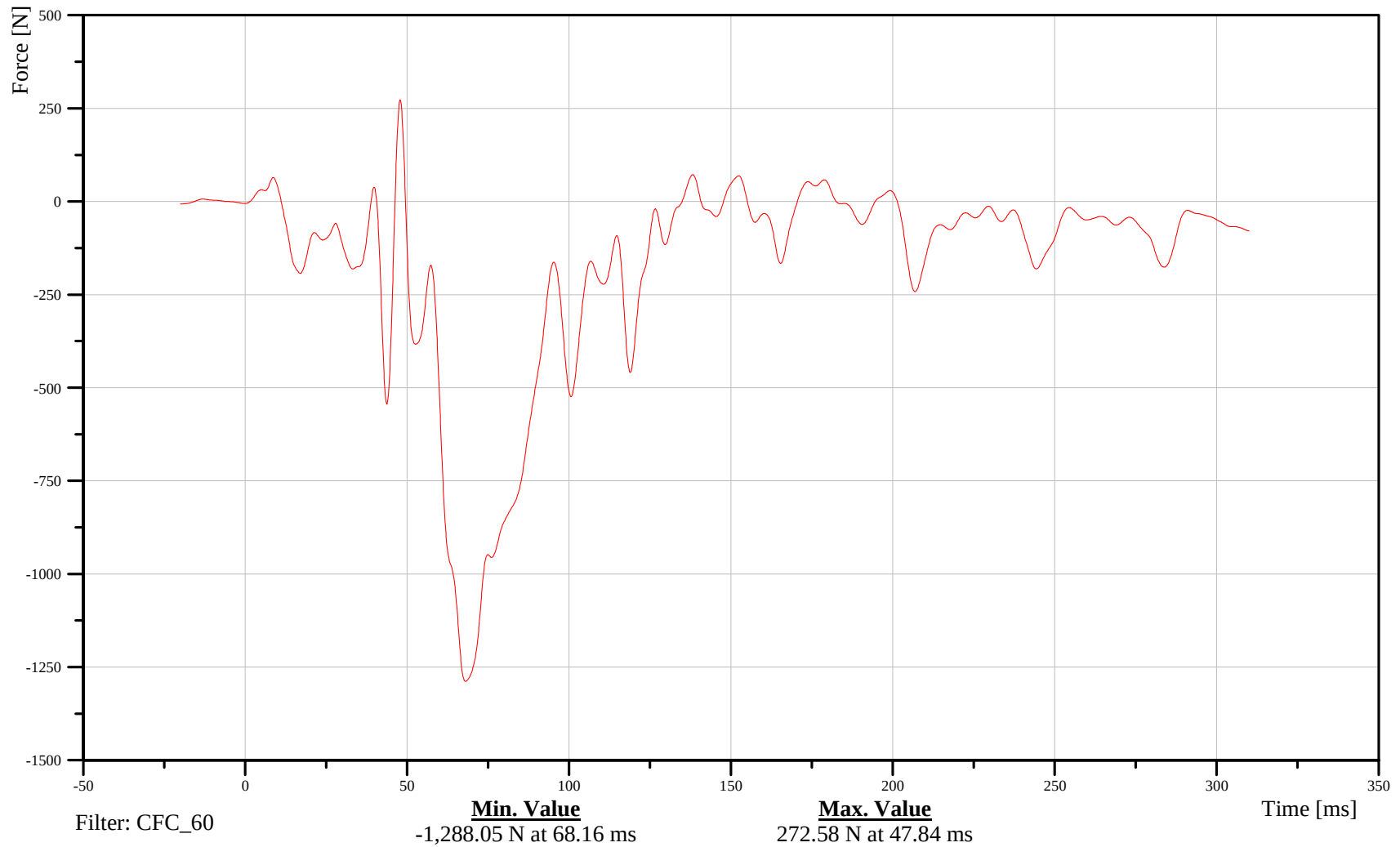
Load Cell Row 4 Column 2

Customer: VRTC

L0FBAR000014FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-185

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

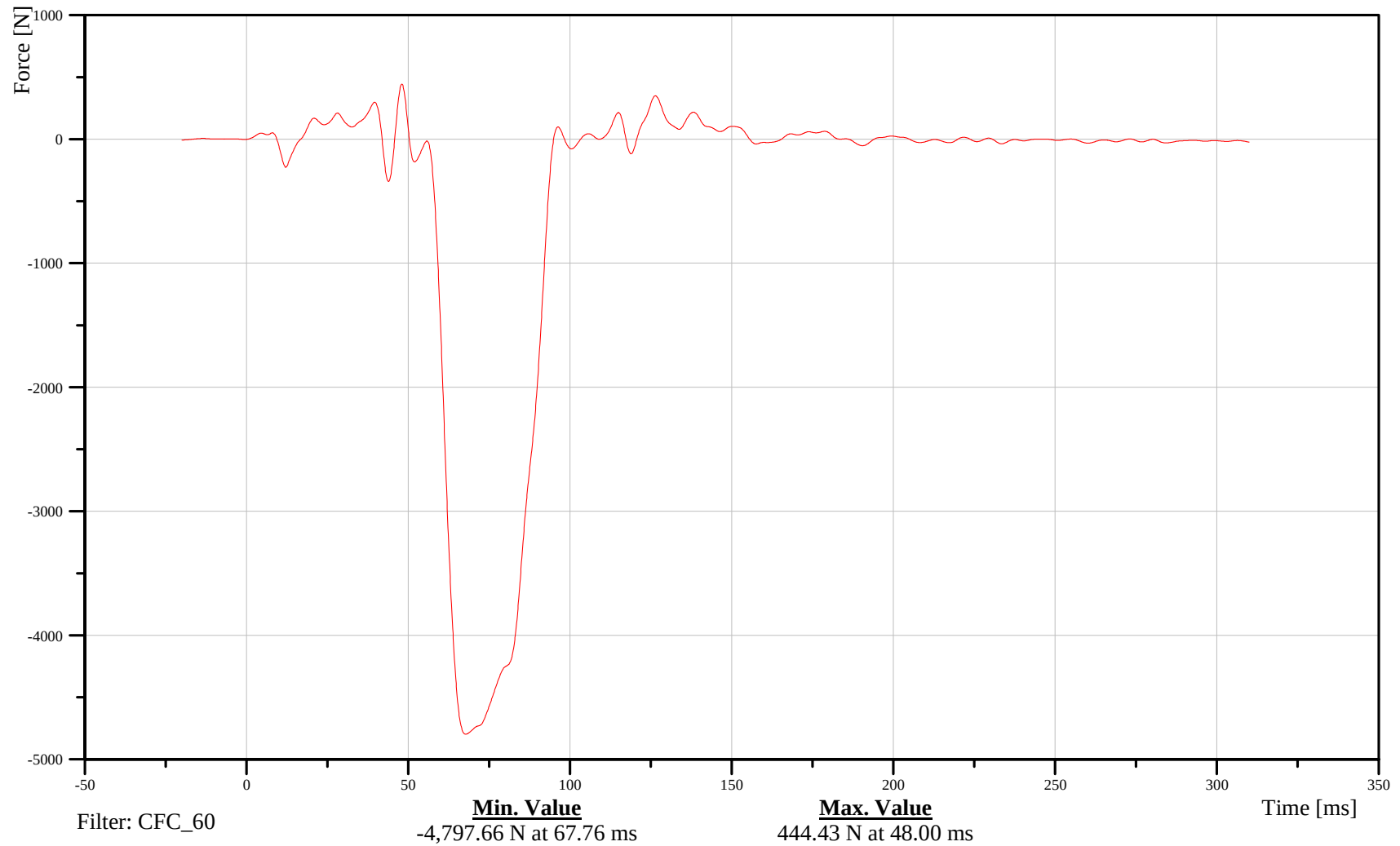
Load Cell Row 5 Column 2

Customer: VRTC

L0FBAR000015FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-186

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

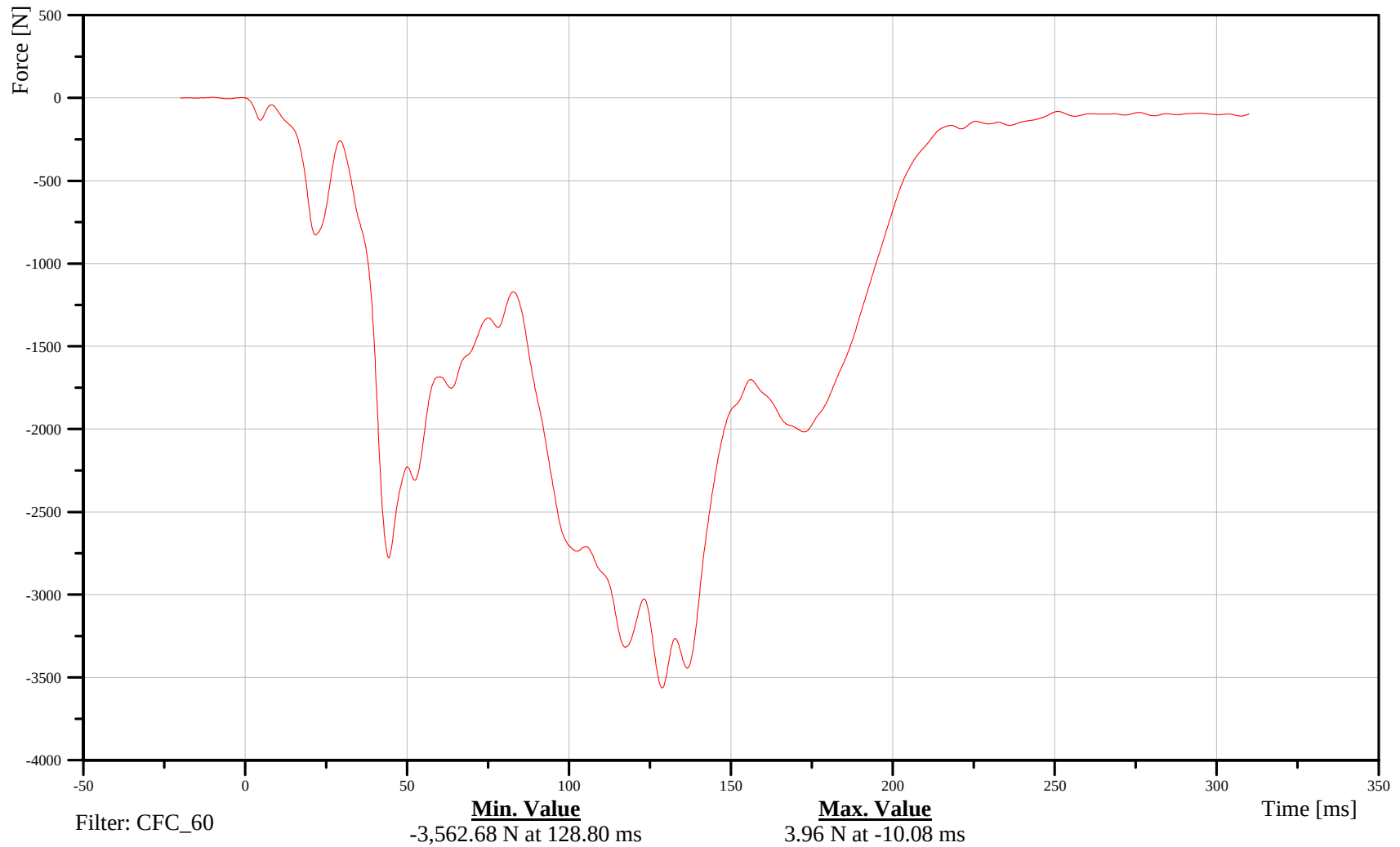
Load Cell Row 6 Column 2

Customer: VRTC

L0FBAR000016FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-187

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

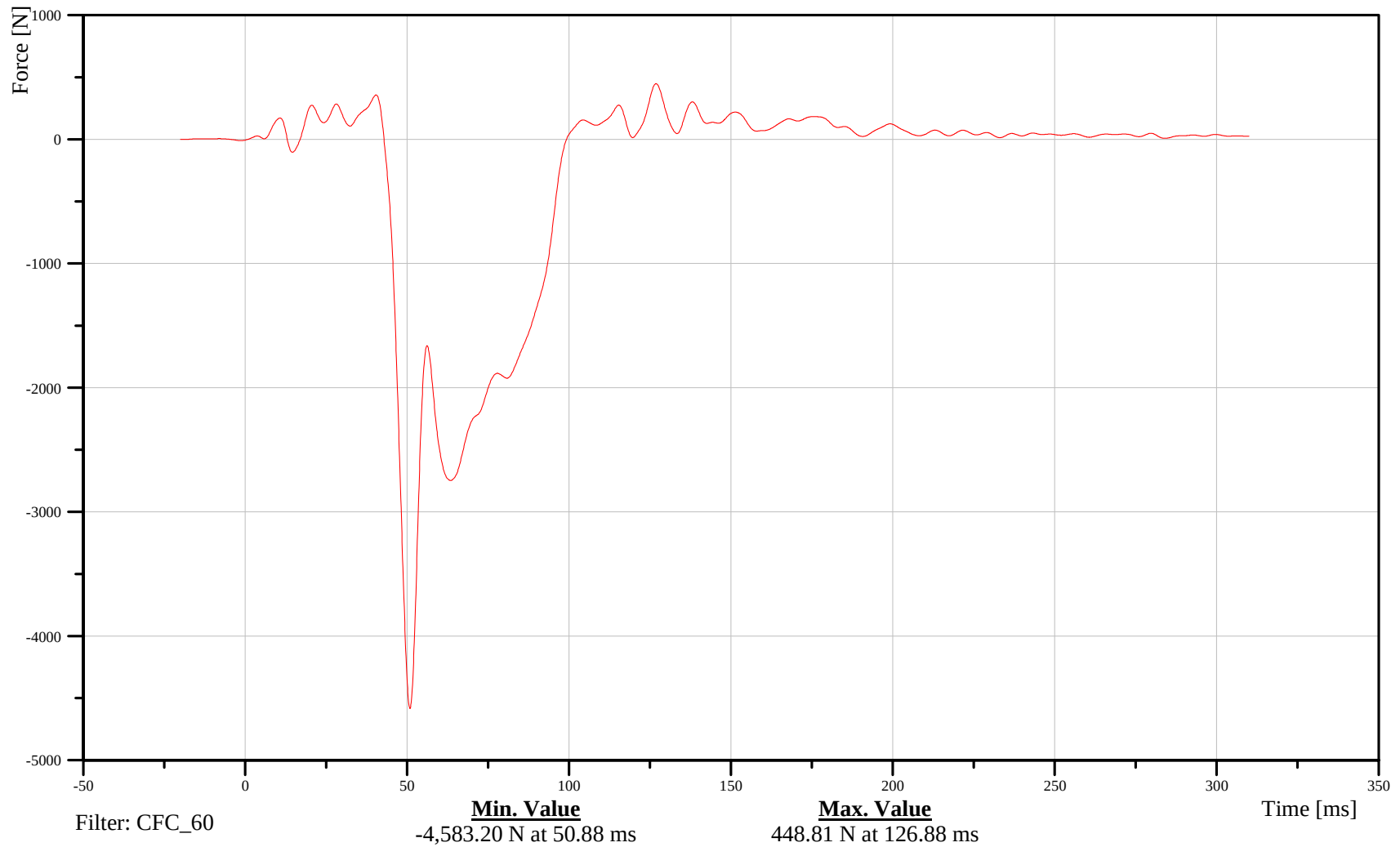
Load Cell Row 7 Column 2

Customer: VRTC

L0FBAR000017FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-188

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

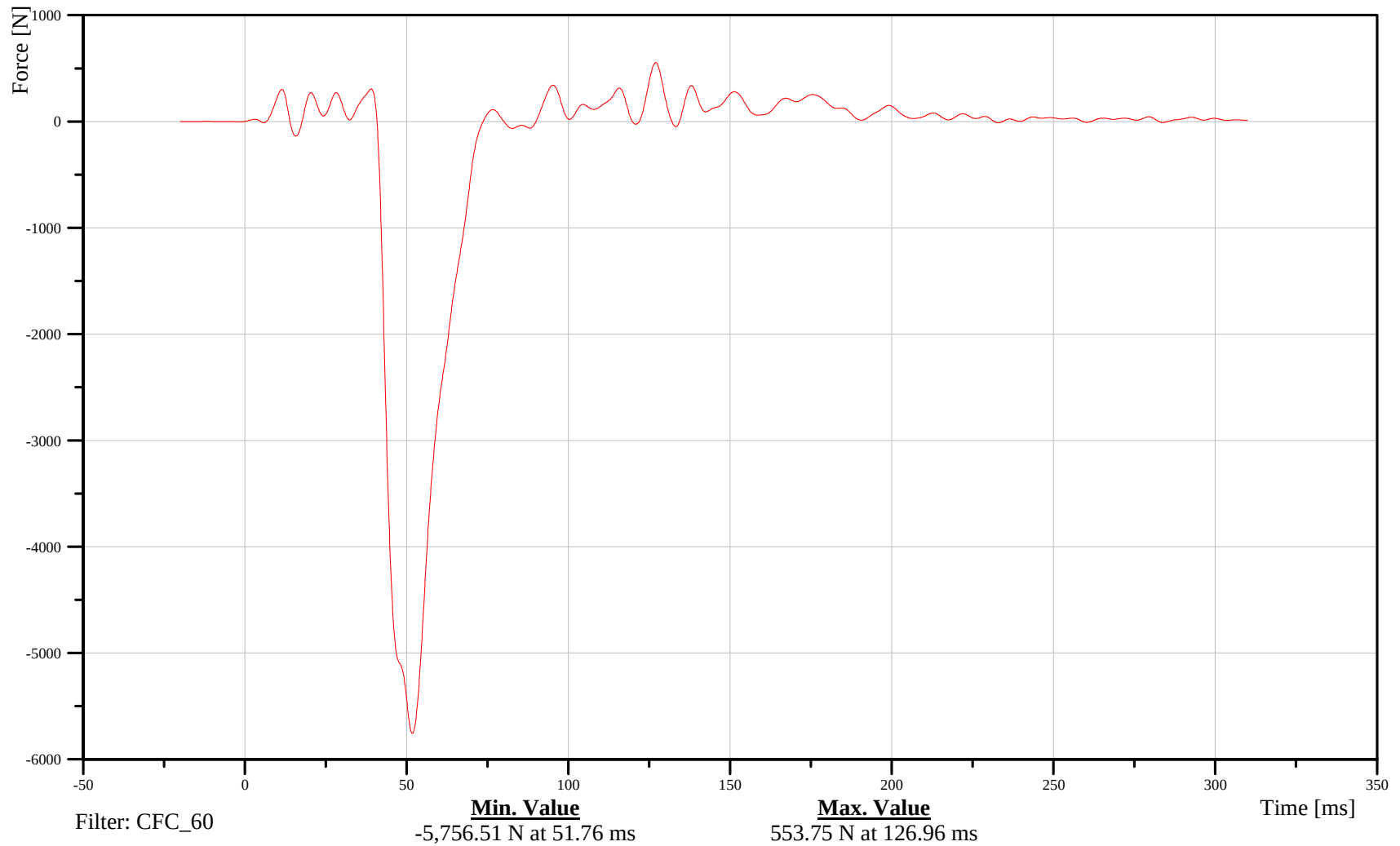
Load Cell Row 8 Column 2

Customer: VRTC

L0FBAR000018FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-189

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

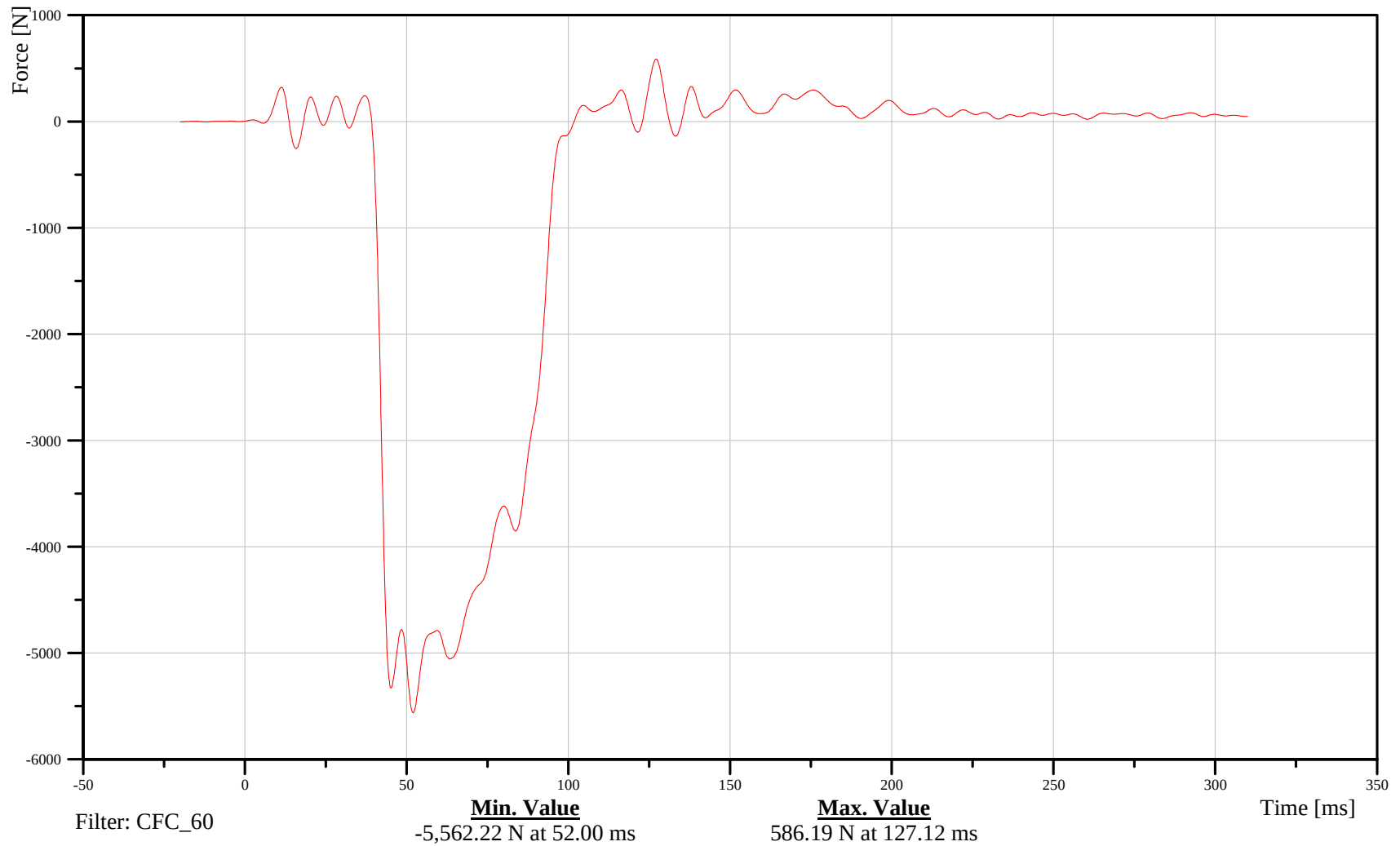
Load Cell Row 9 Column 2

Customer: VRTC

L0FBAR000019FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-190

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

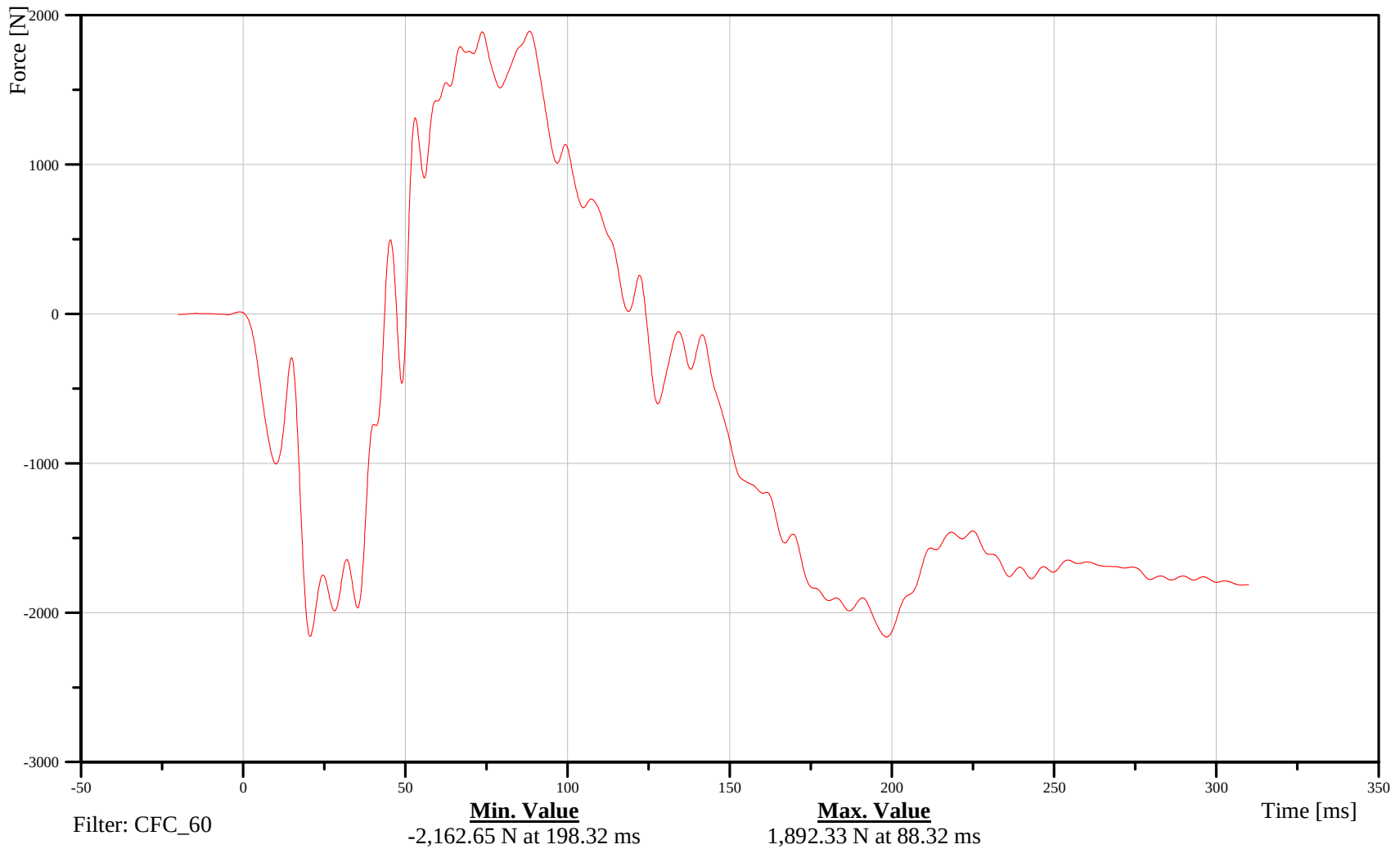
Load Cell Row 10 Column 2

Customer: VRTC

L0FBAR000020FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-191

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

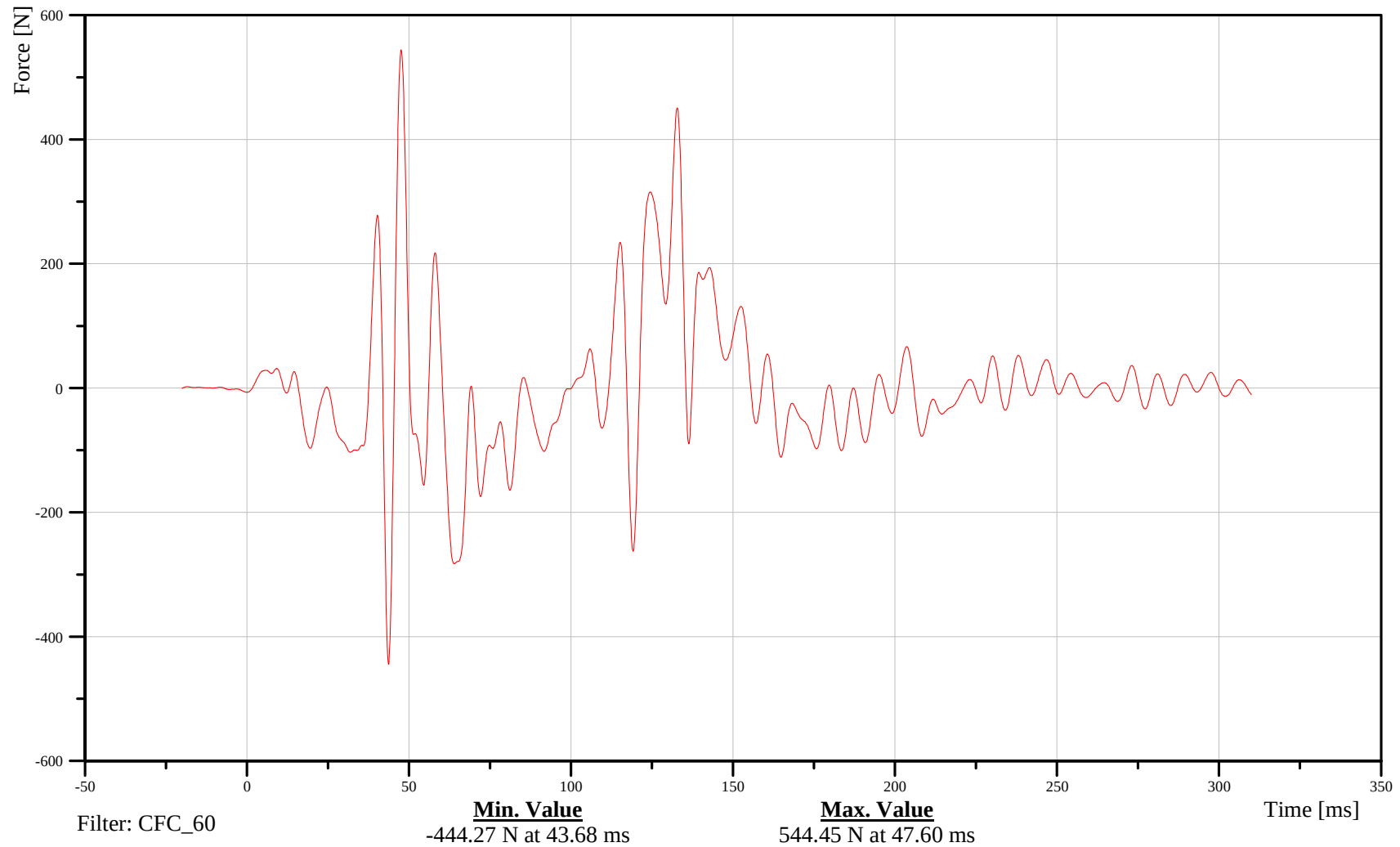
Load Cell Row 1 Column 3

Customer: VRTC

L0FBAR000021FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-192

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

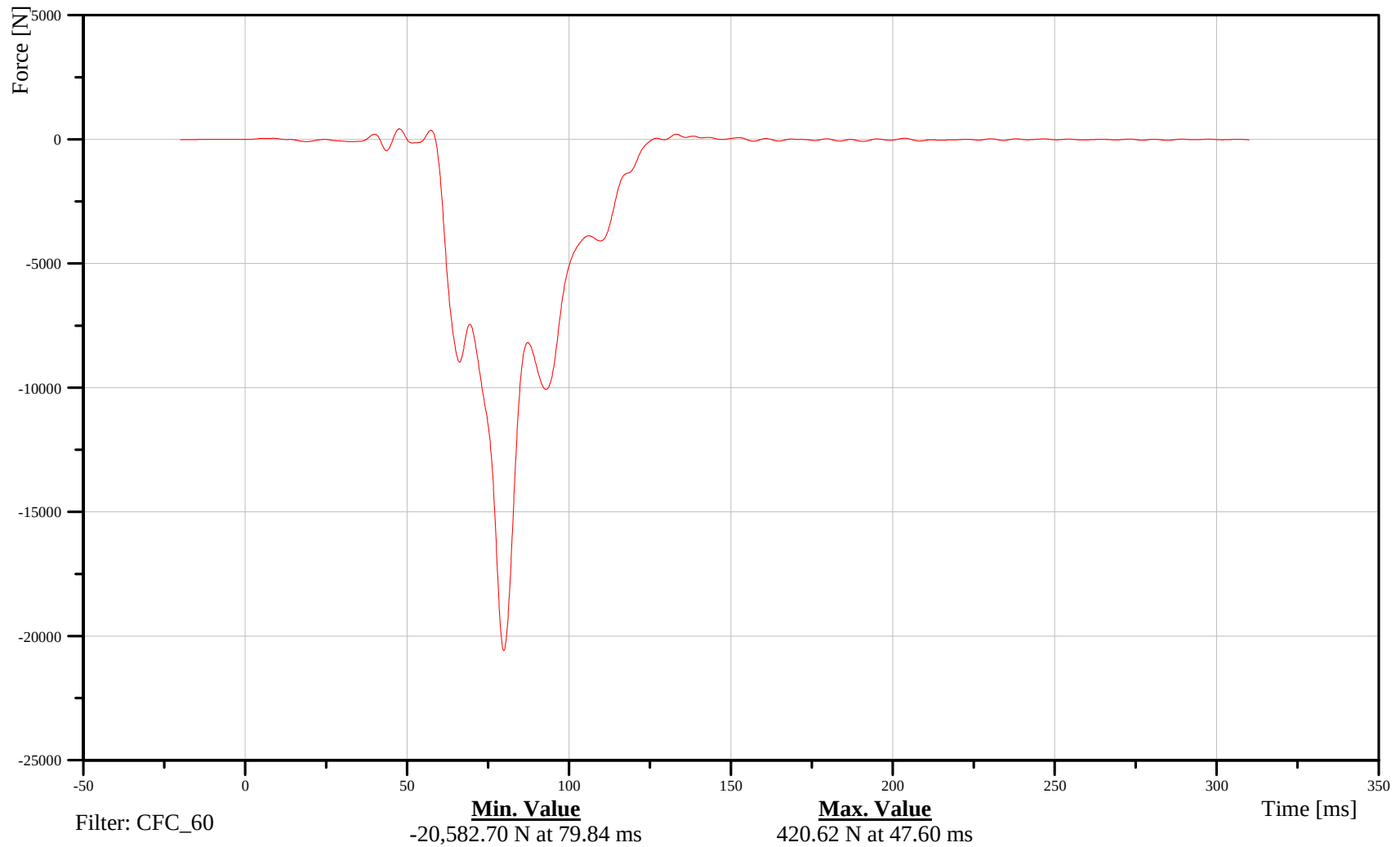
Load Cell Row 2 Column 3

Customer: VRTC

L0FBAR000022FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-193

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

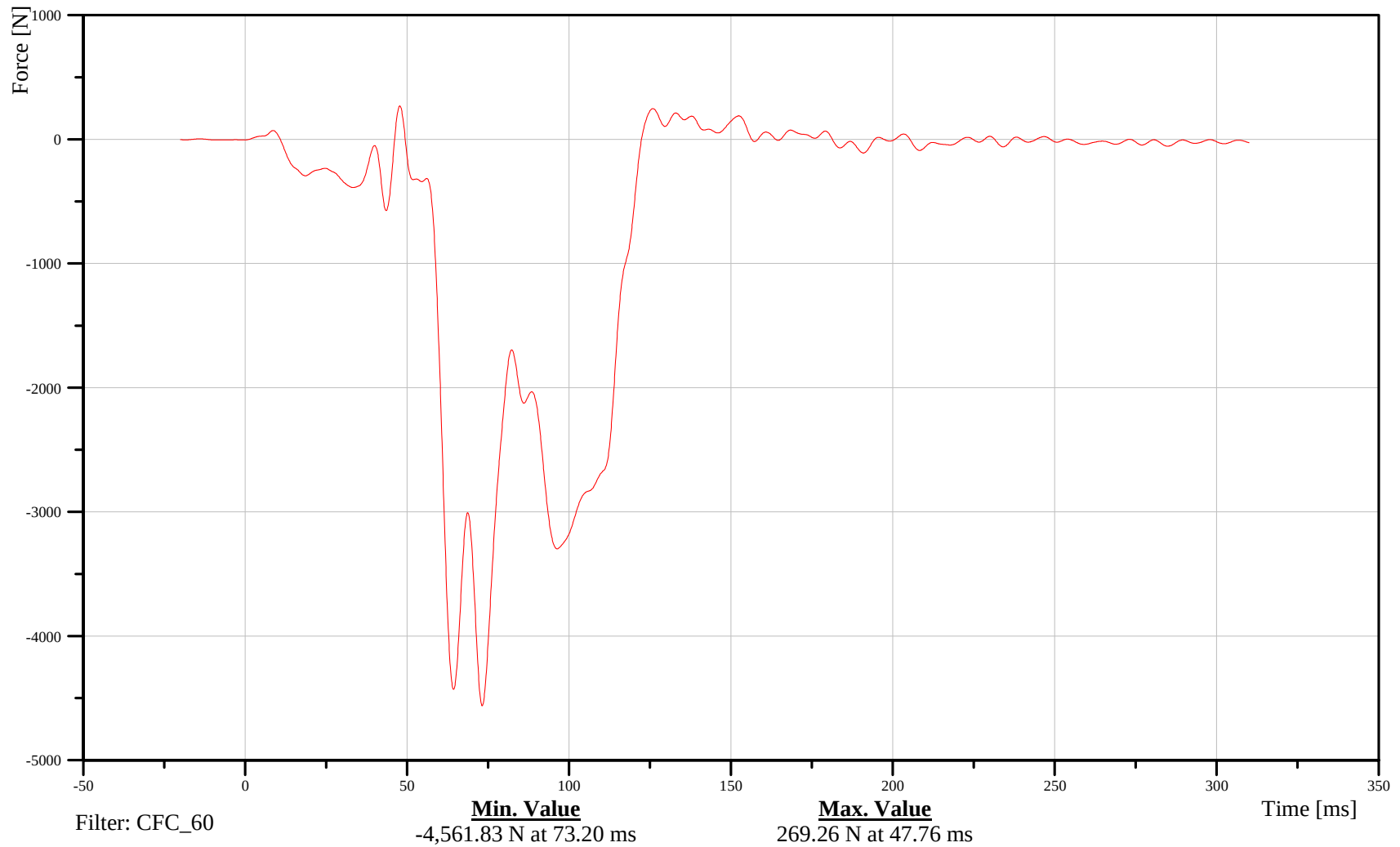
Load Cell Row 3 Column 3

Customer: VRTC

L0FBAR000023FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-194

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

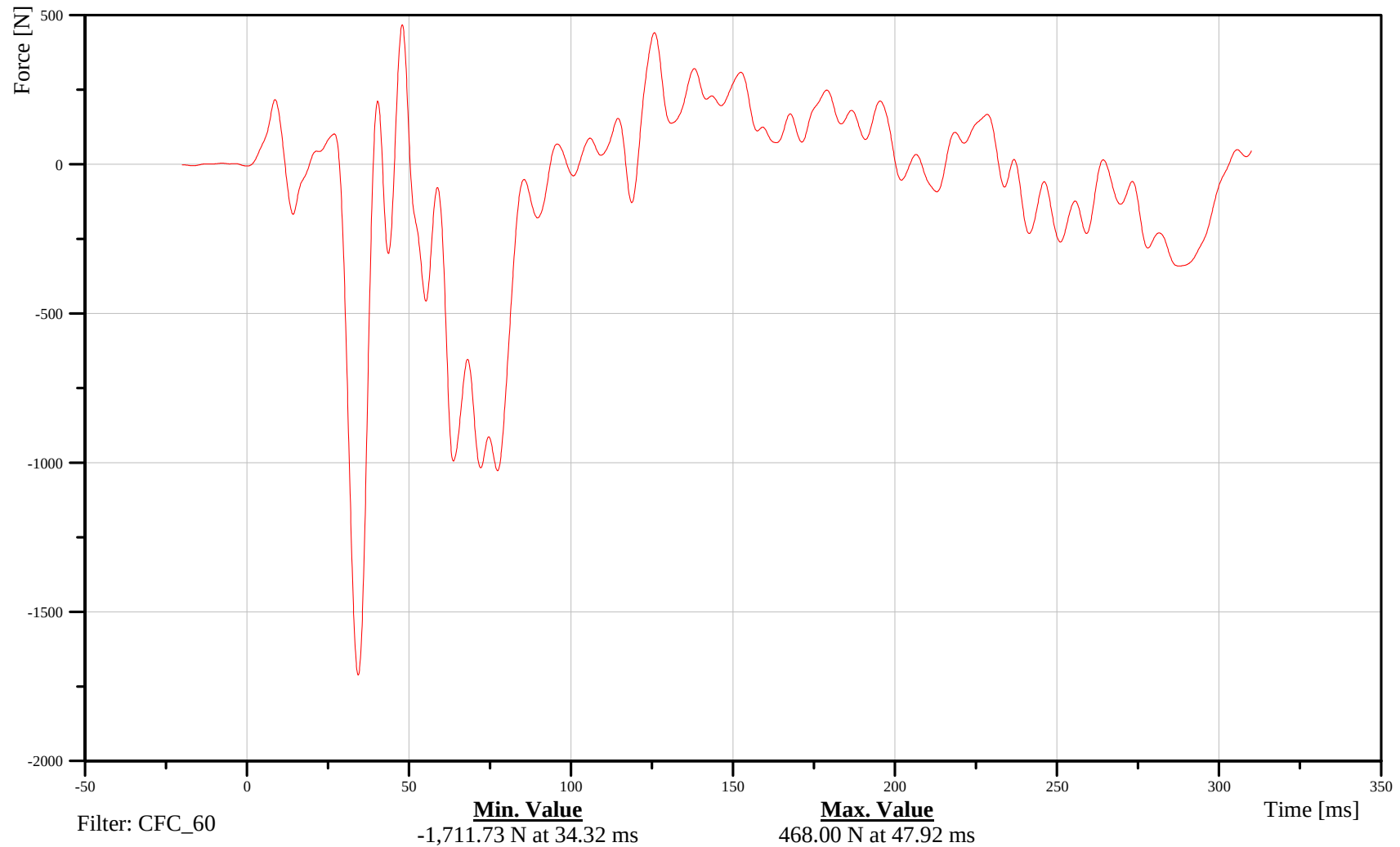
Load Cell Row 4 Column 3

Customer: VRTC

L0FBAR000024FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-195

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

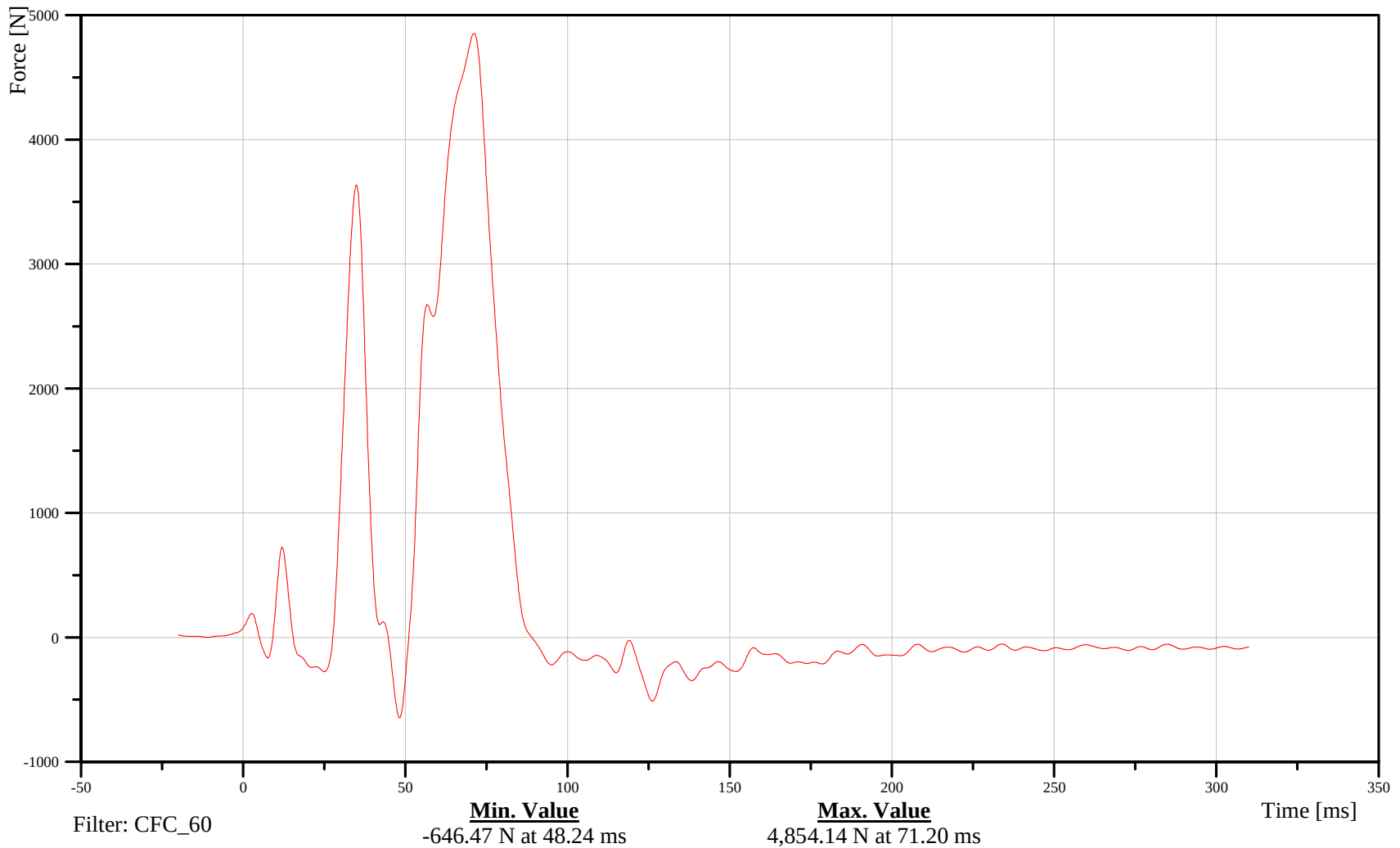
Load Cell Row 5 Column 3

Customer: VRTC

L0FBAR000025FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-196

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

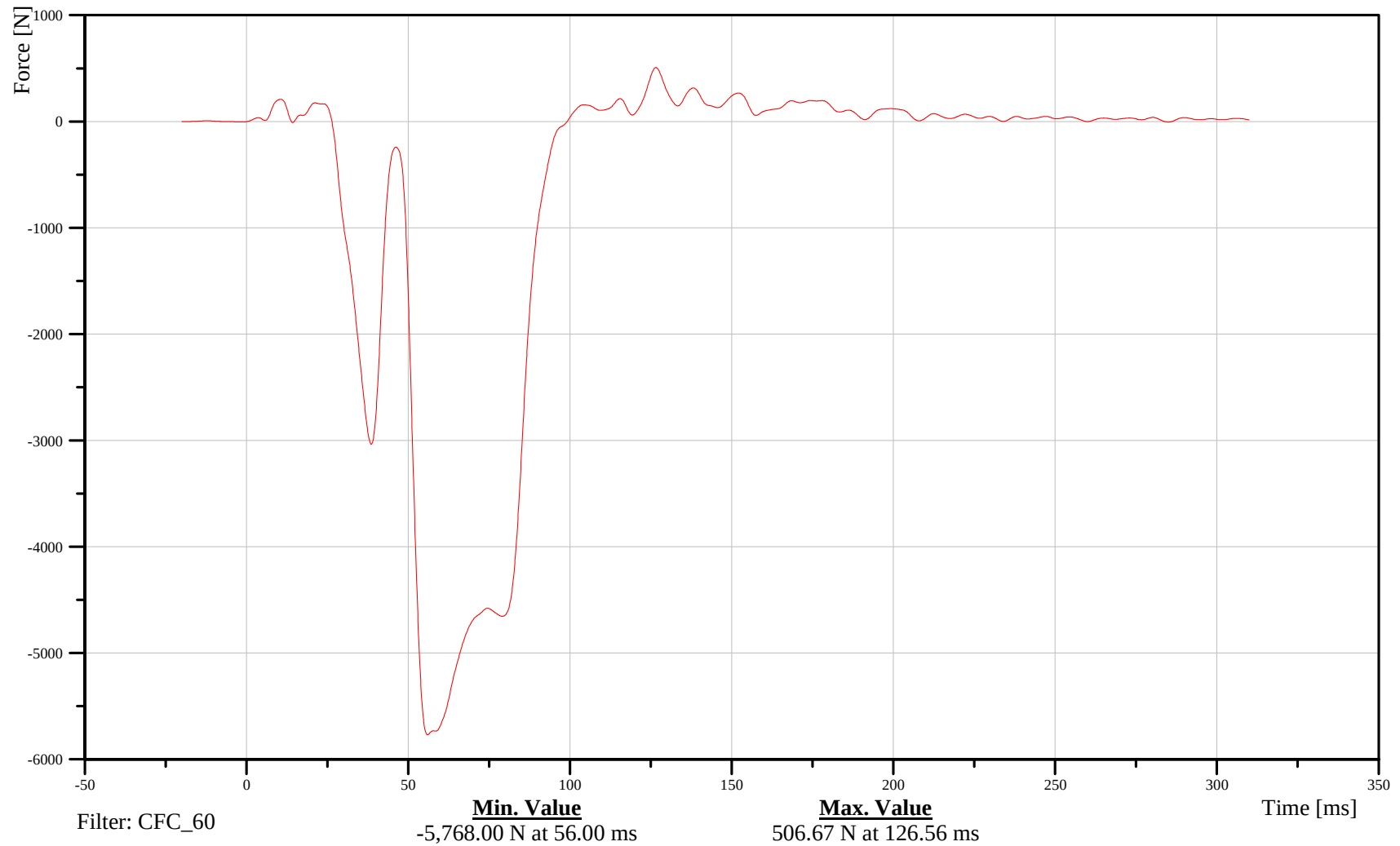
Load Cell Row 6 Column 3

Customer: VRTC

L0FBAR000026FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-197

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

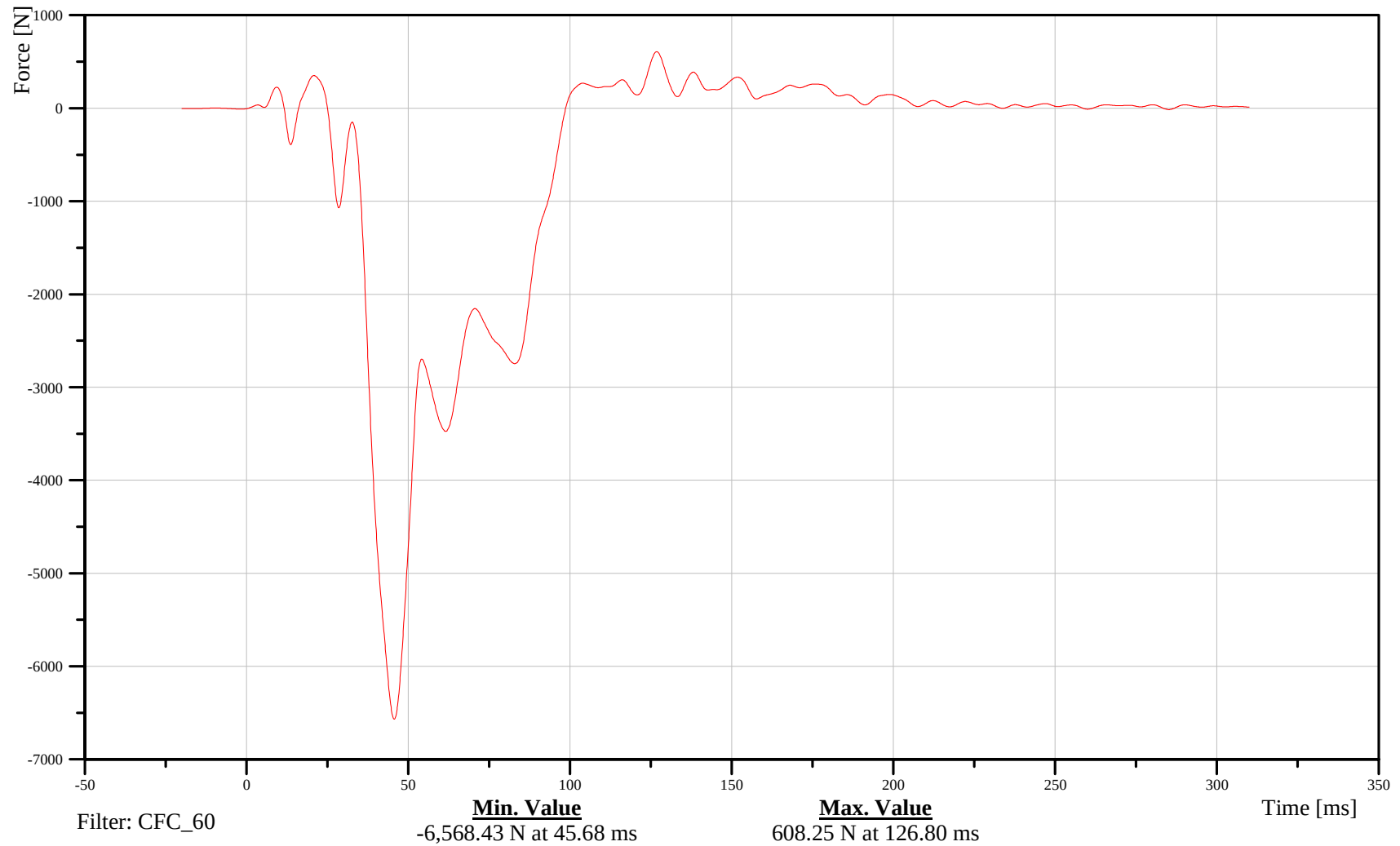
Load Cell Row 7 Column 3

Customer: VRTC

L0FBAR000027FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-198

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

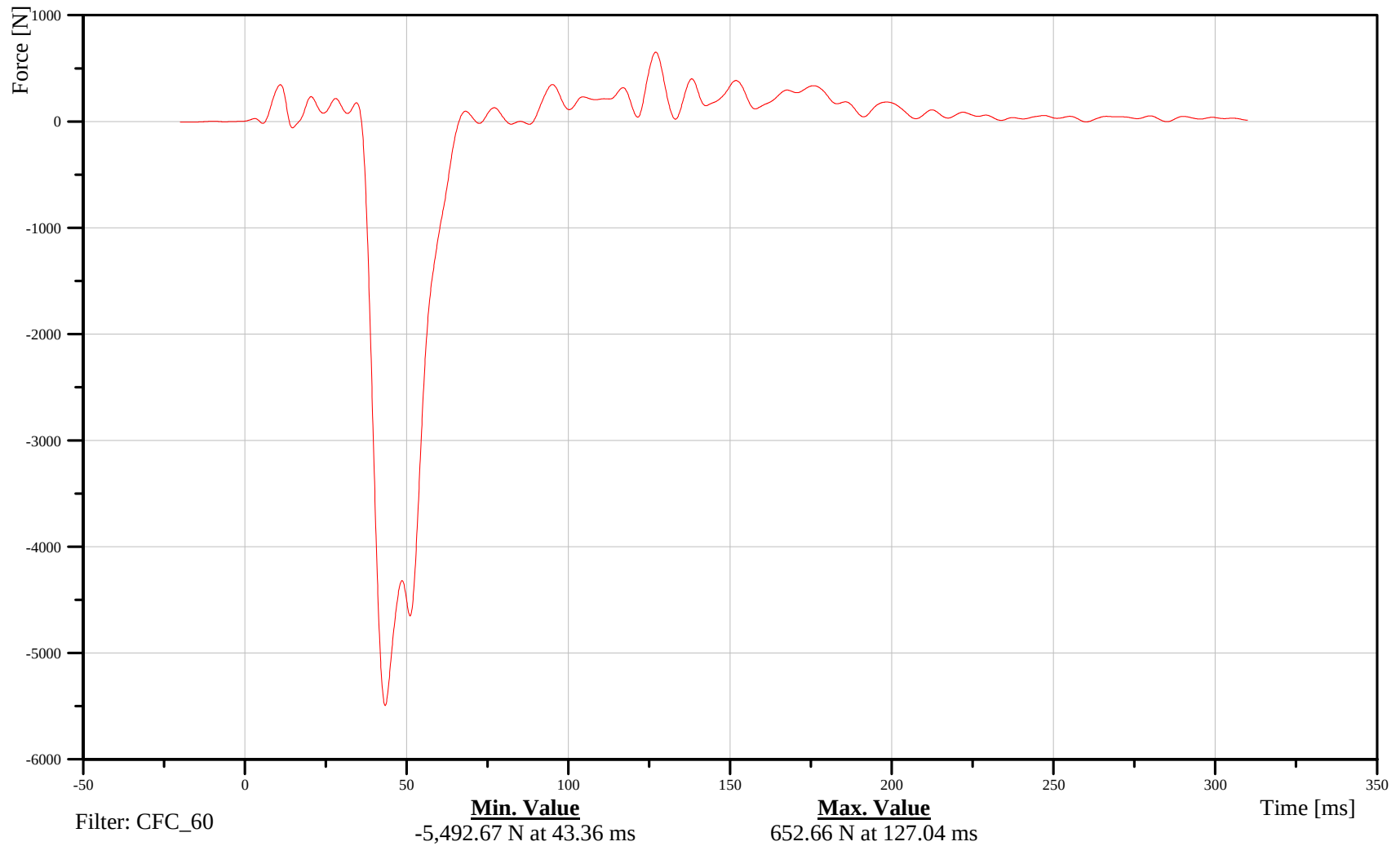
Load Cell Row 8 Column 3

Customer: VRTC

L0FBAR000028FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-199

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

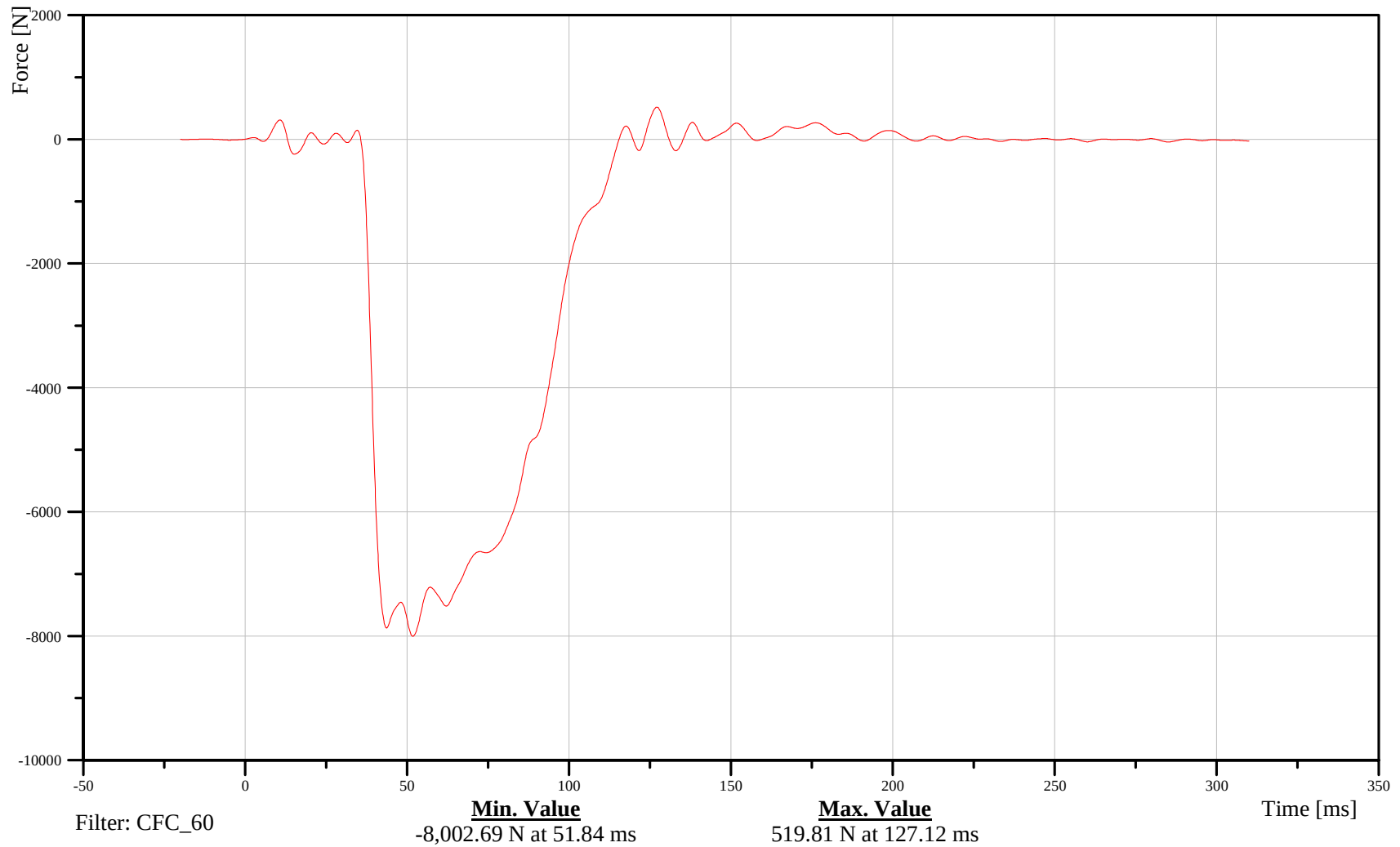
Load Cell Row 9 Column 3

Customer: VRTC

L0FBAR000029FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-200

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

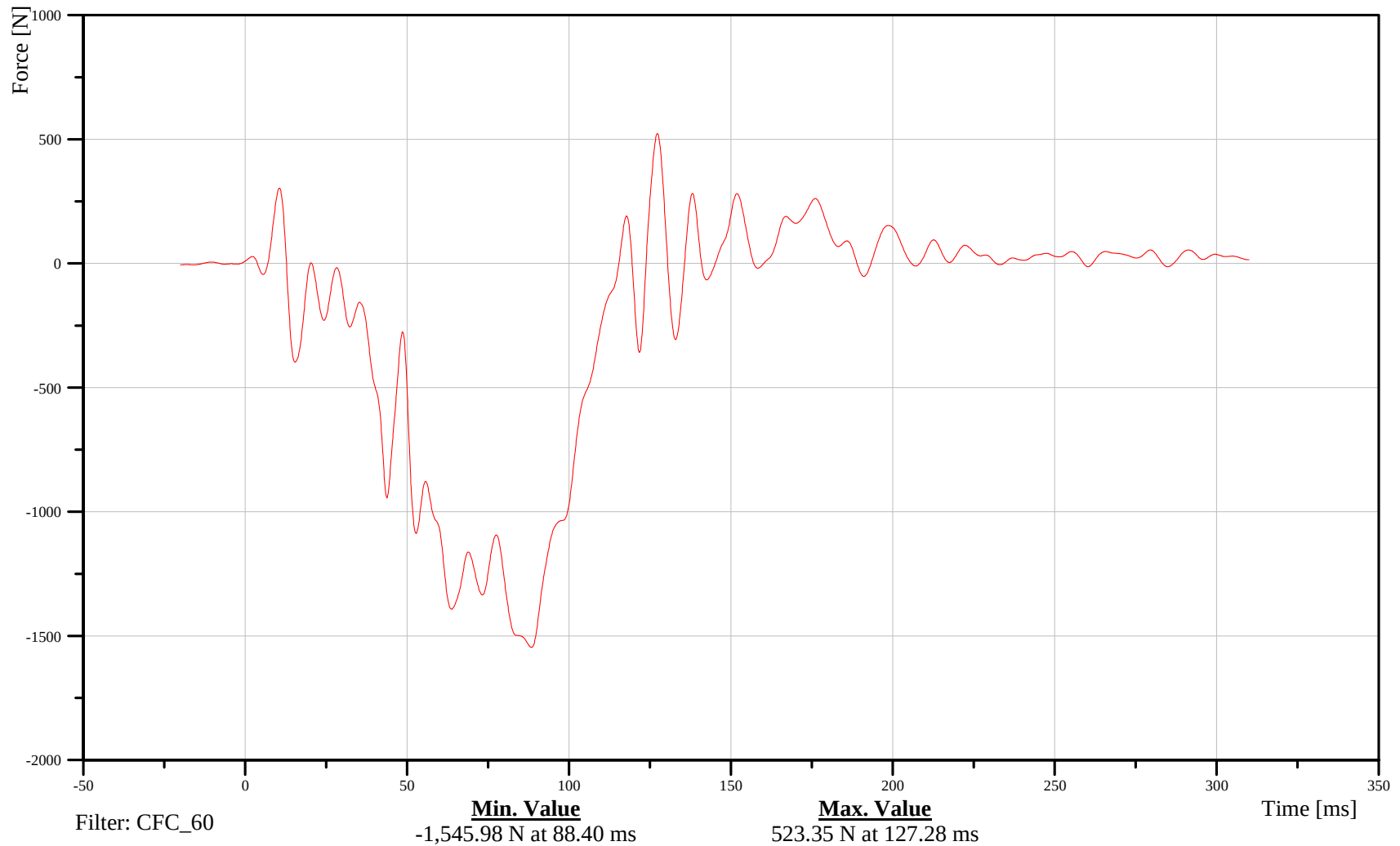
Load Cell Row 10 Column 3

Customer: VRTC

L0FBAR000030FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-201

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

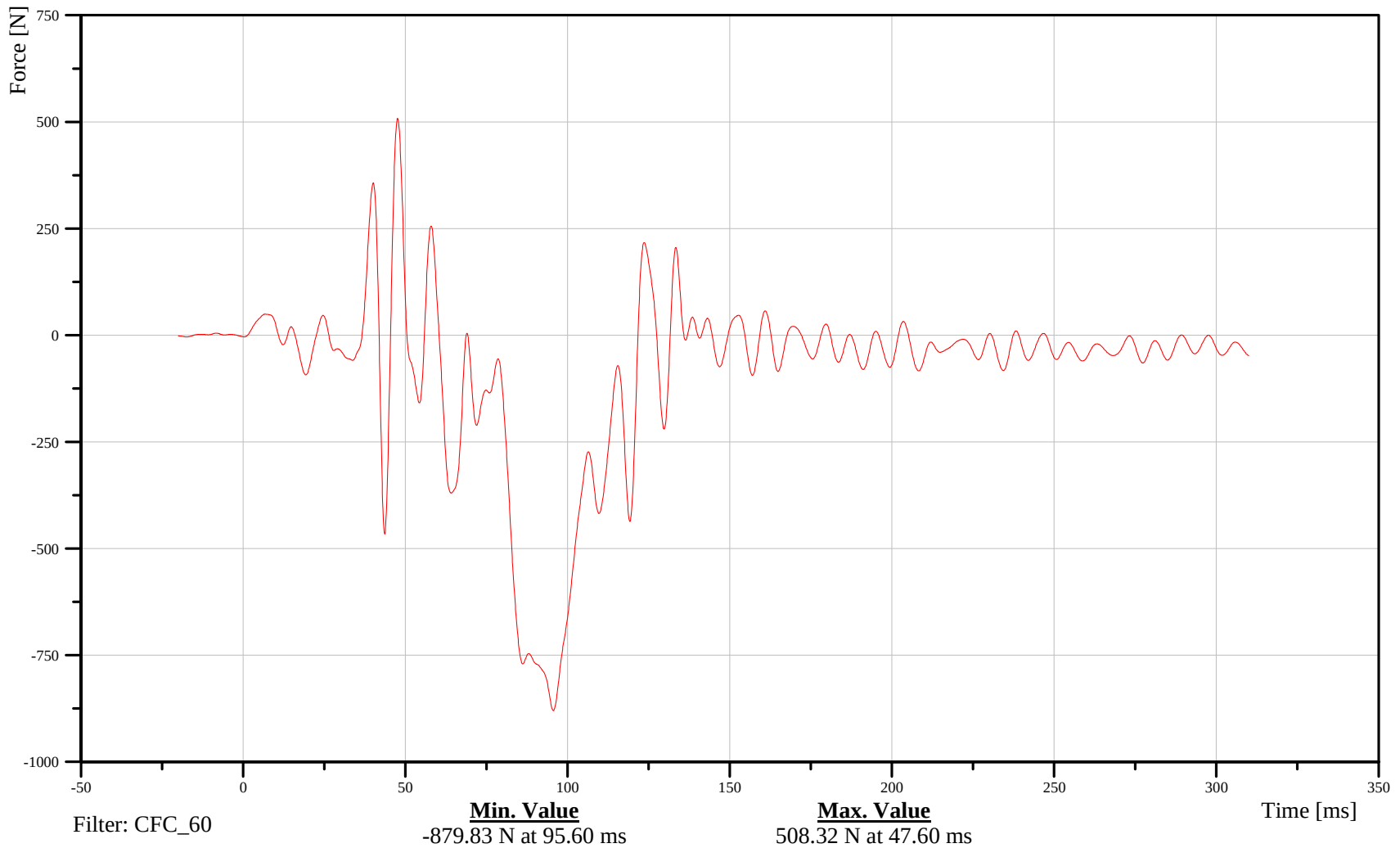
Load Cell Row 1 Column 4

Customer: VRTC

L0FBAR000031FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-202

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

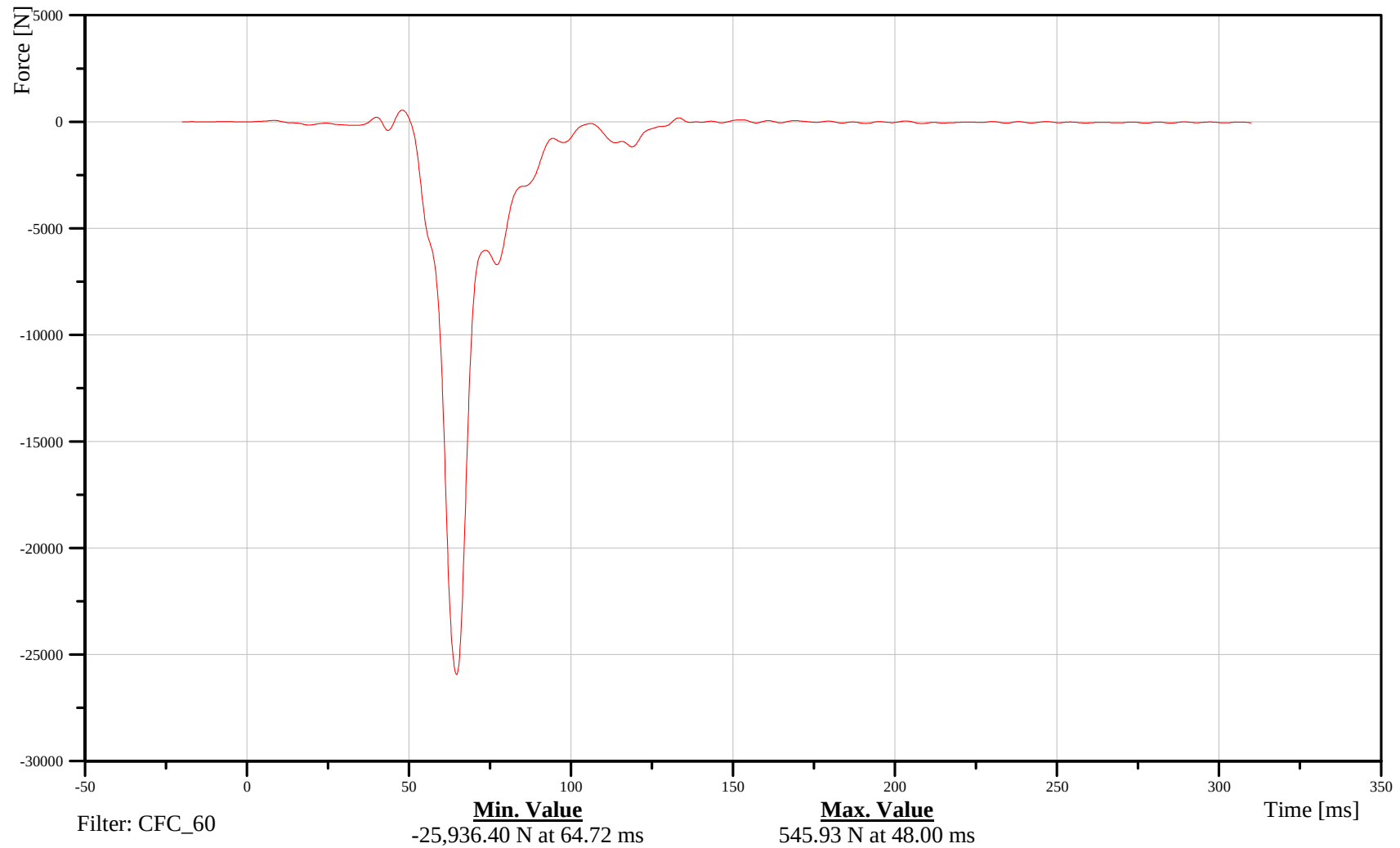
Load Cell Row 2 Column 4

Customer: VRTC

L0FBAR000032FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-203

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

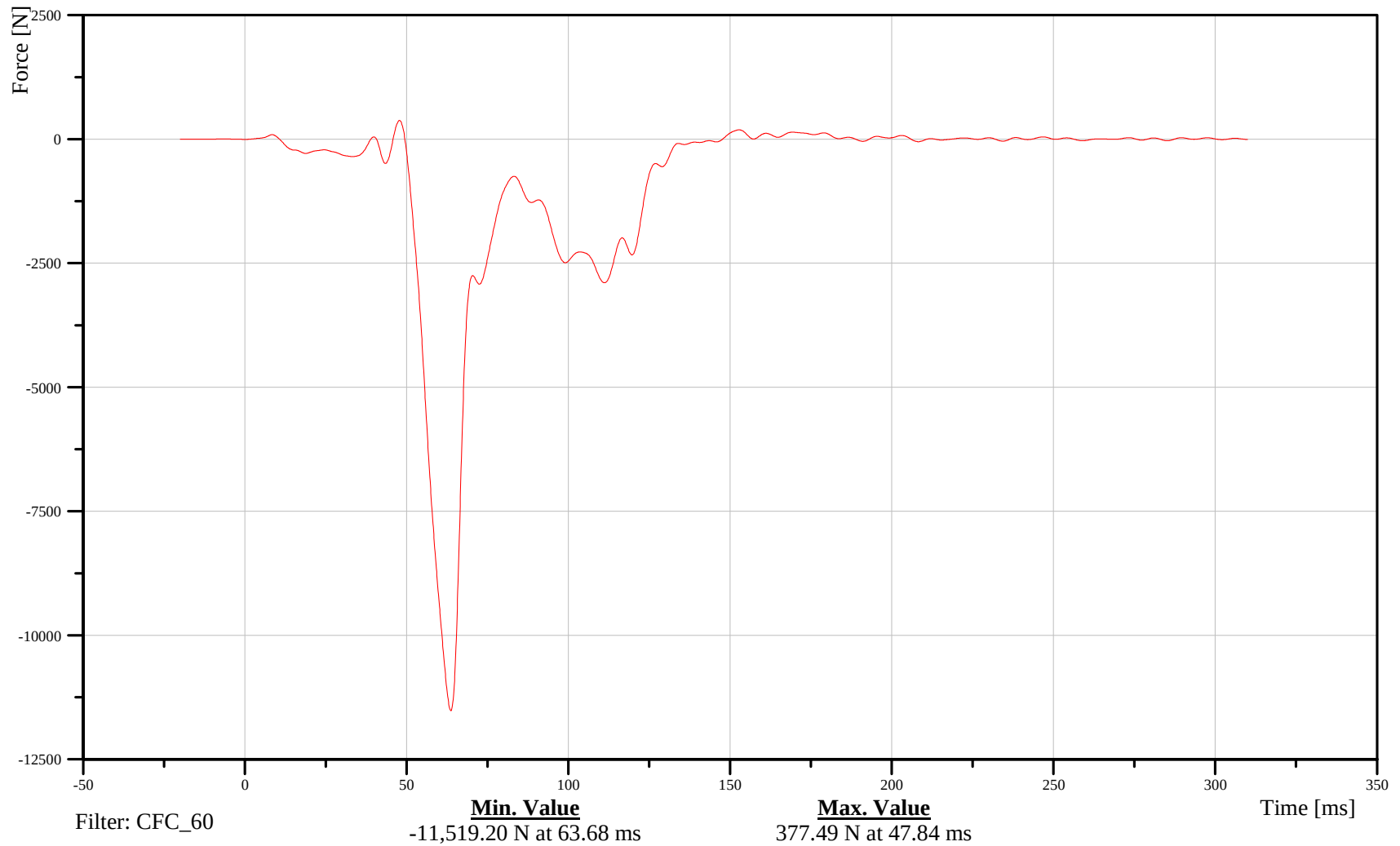
Load Cell Row 3 Column 4

Customer: VRTC

L0FBAR000033FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-204

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

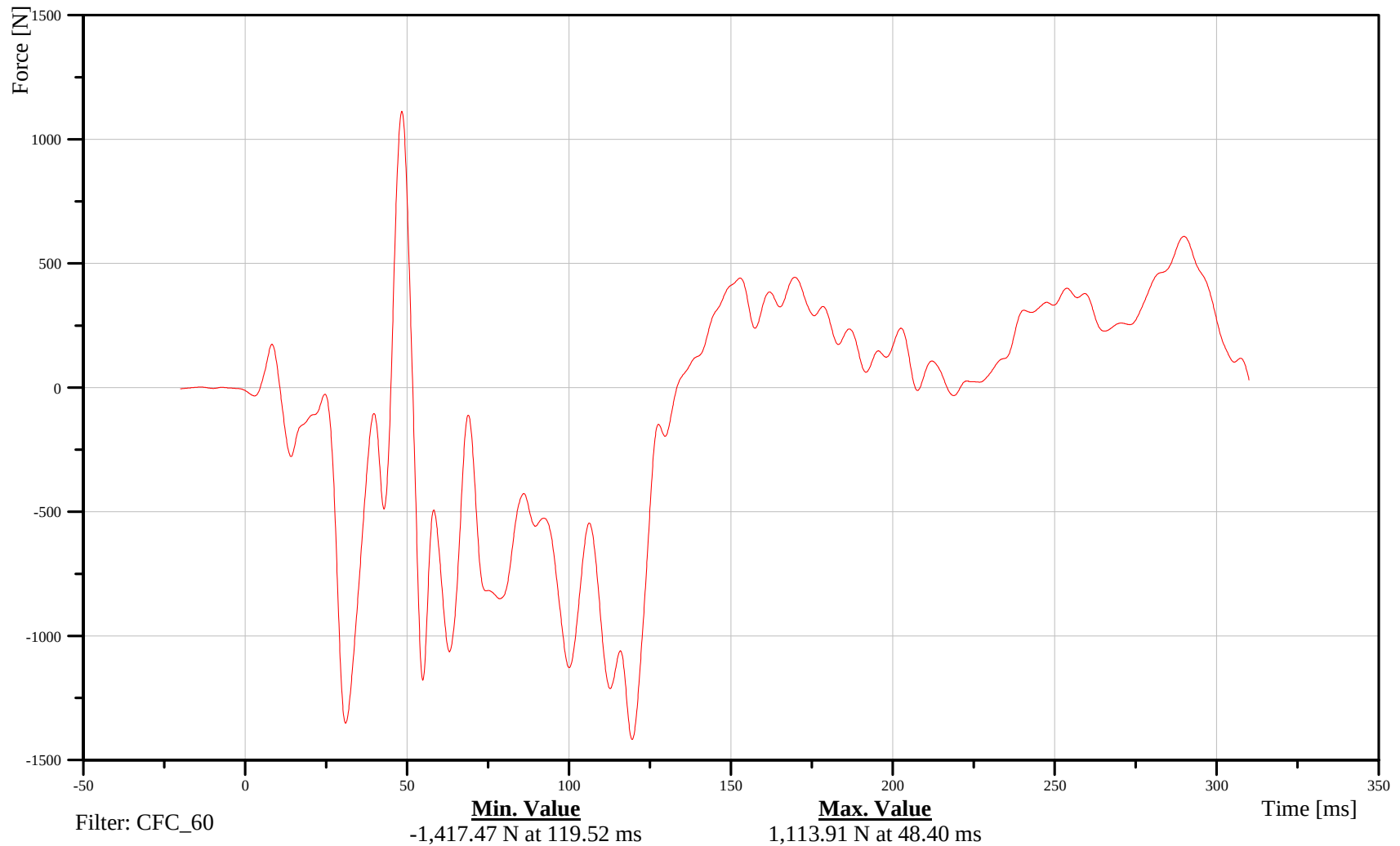
Load Cell Row 4 Column 4

Customer: VRTC

L0FBAR000034FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-205

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

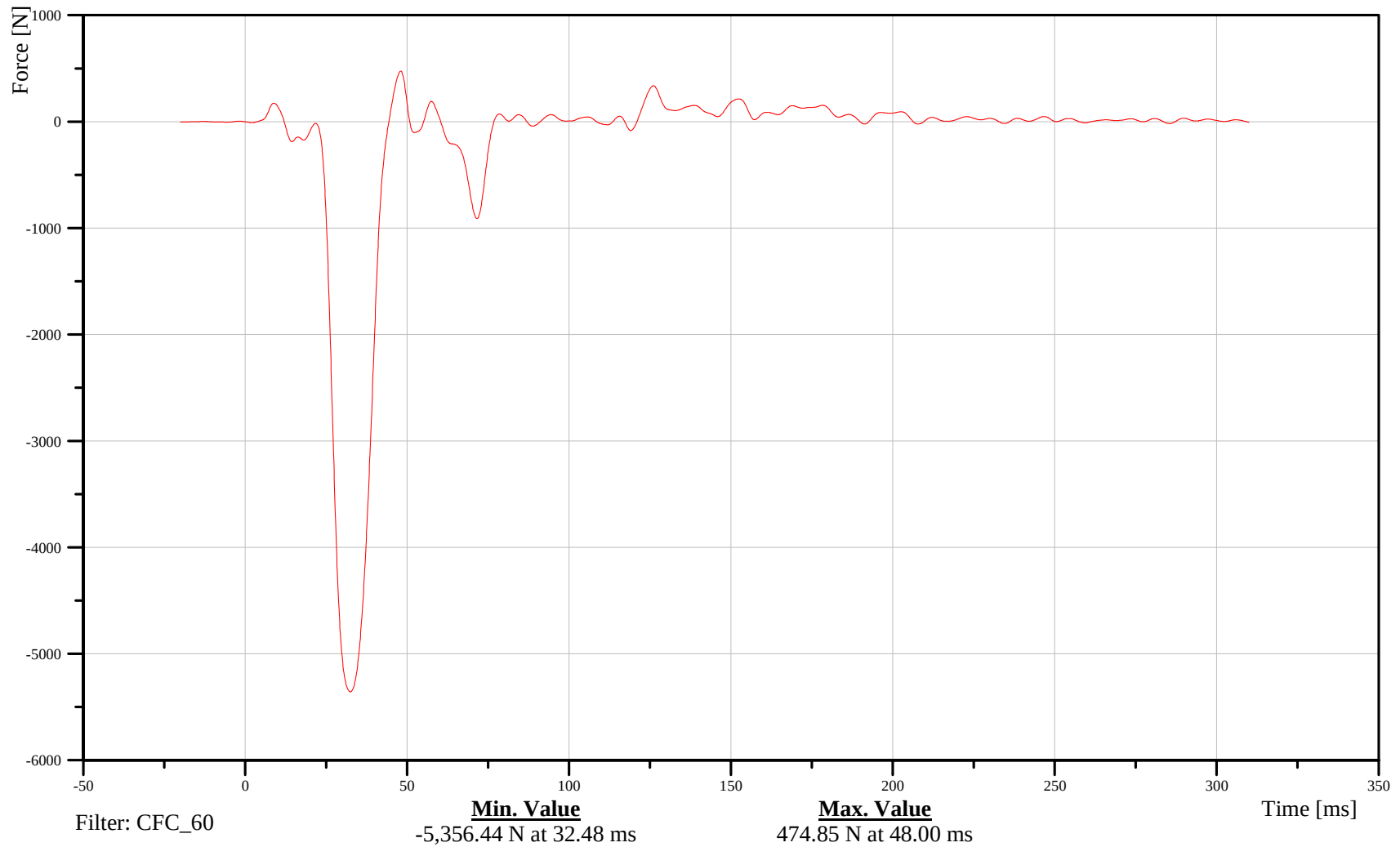
Load Cell Row 5 Column 4

Customer: VRTC

L0FBAR000035FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-206

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

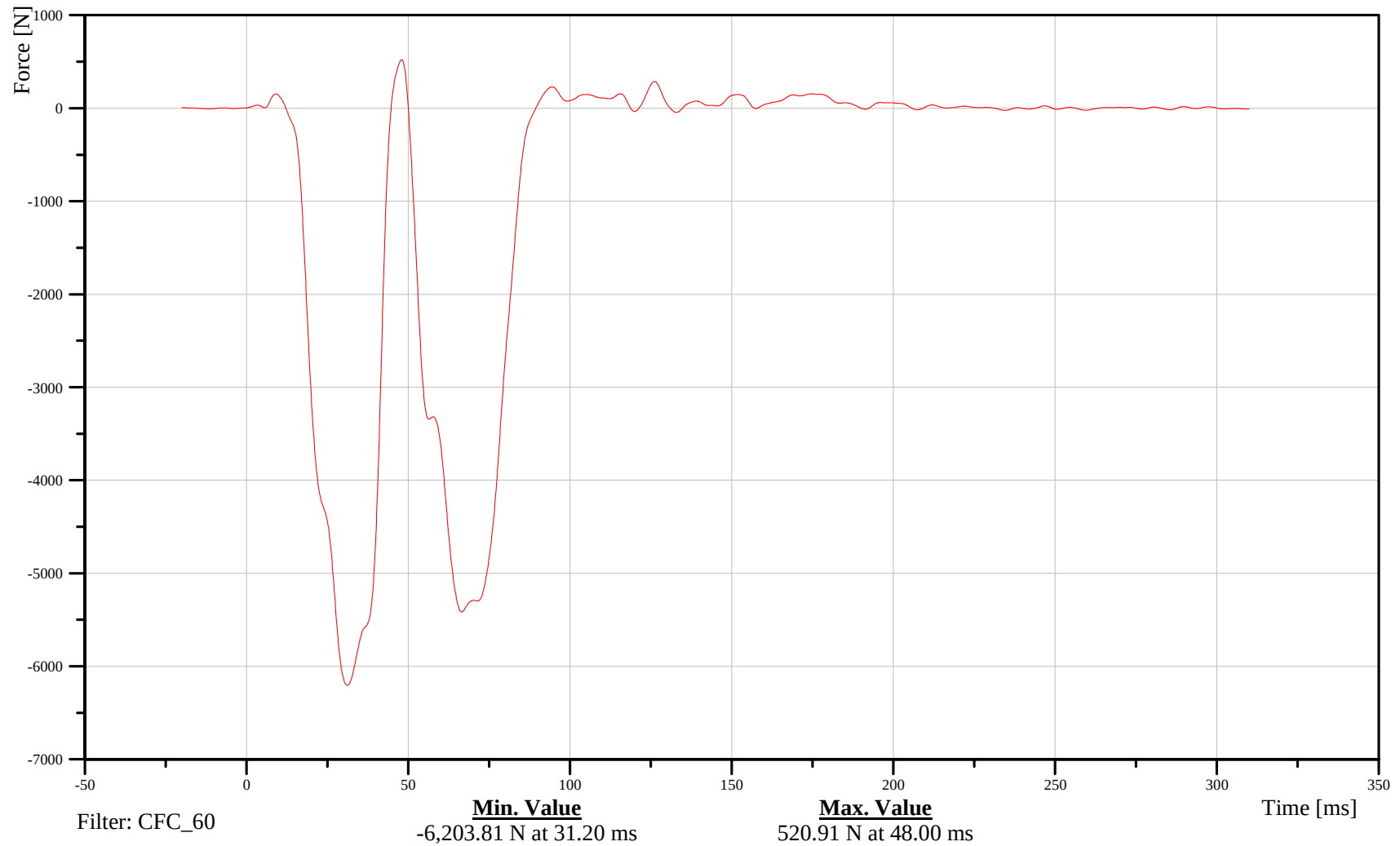
Load Cell Row 6 Column 4

Customer: VRTC

L0FBAR000036FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-207

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

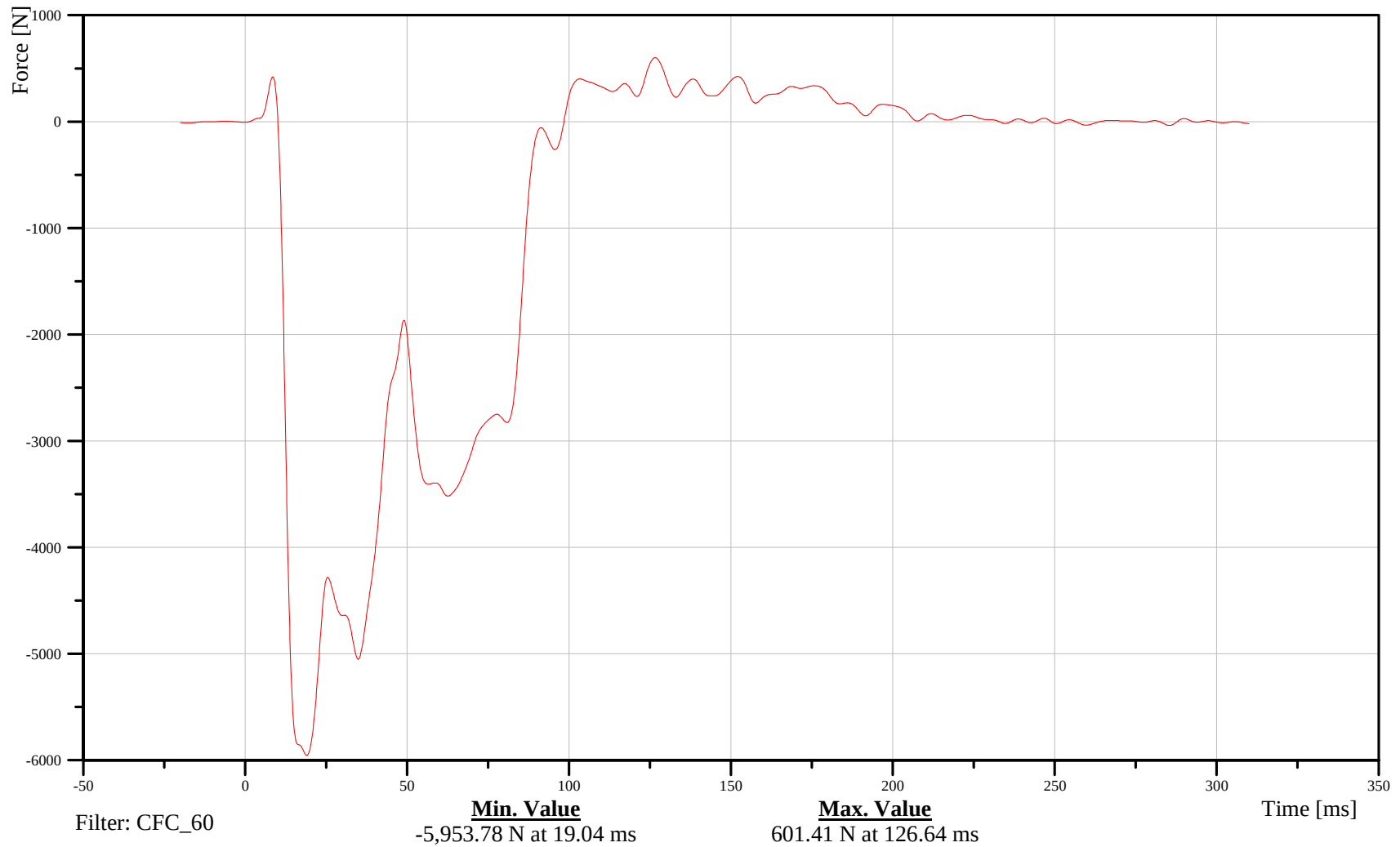
Load Cell Row 7 Column 4

Customer: VRTC

L0FBAR000037FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-208

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

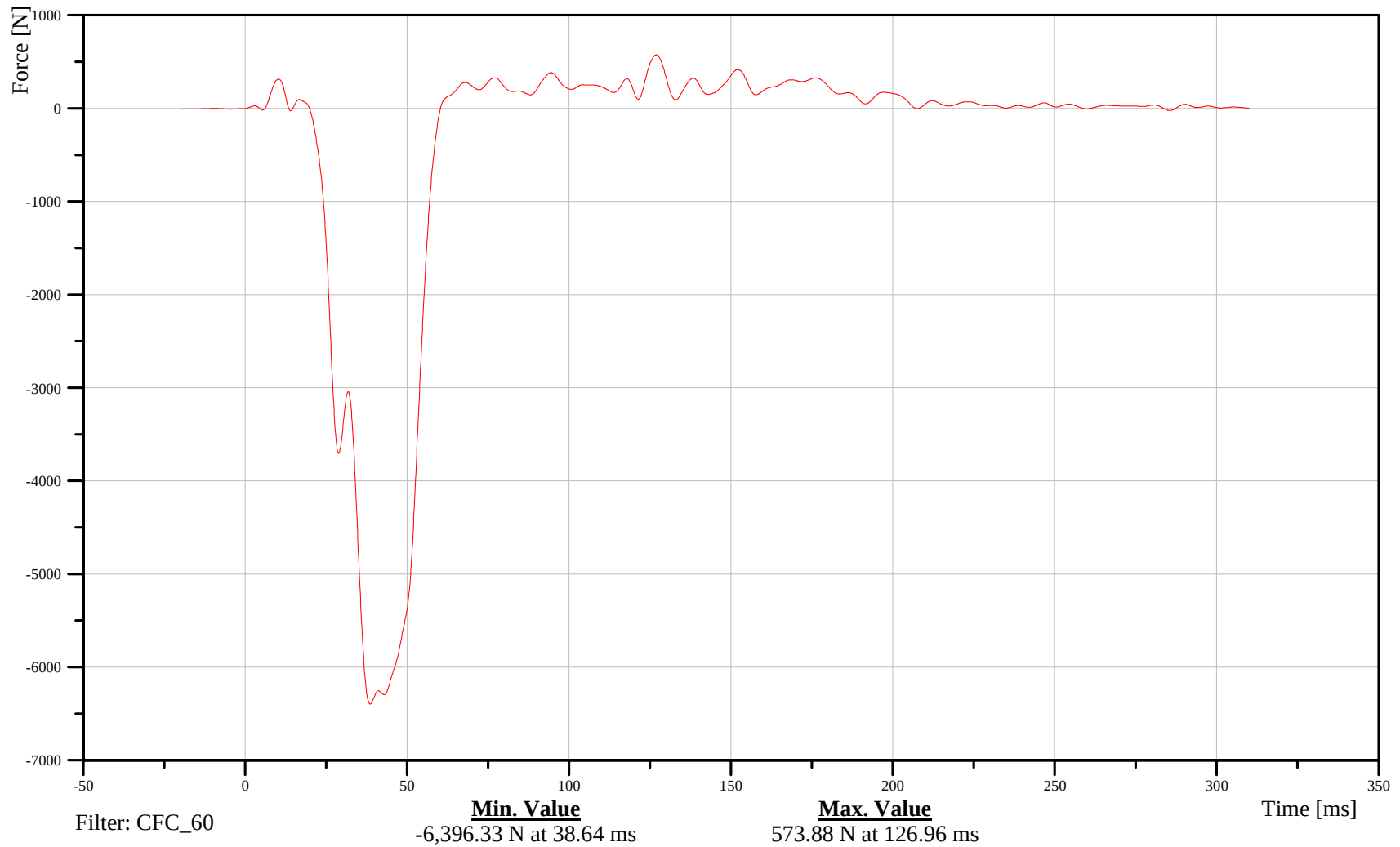
Load Cell Row 8 Column 4

Customer: VRTC

L0FBAR000038FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-209

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

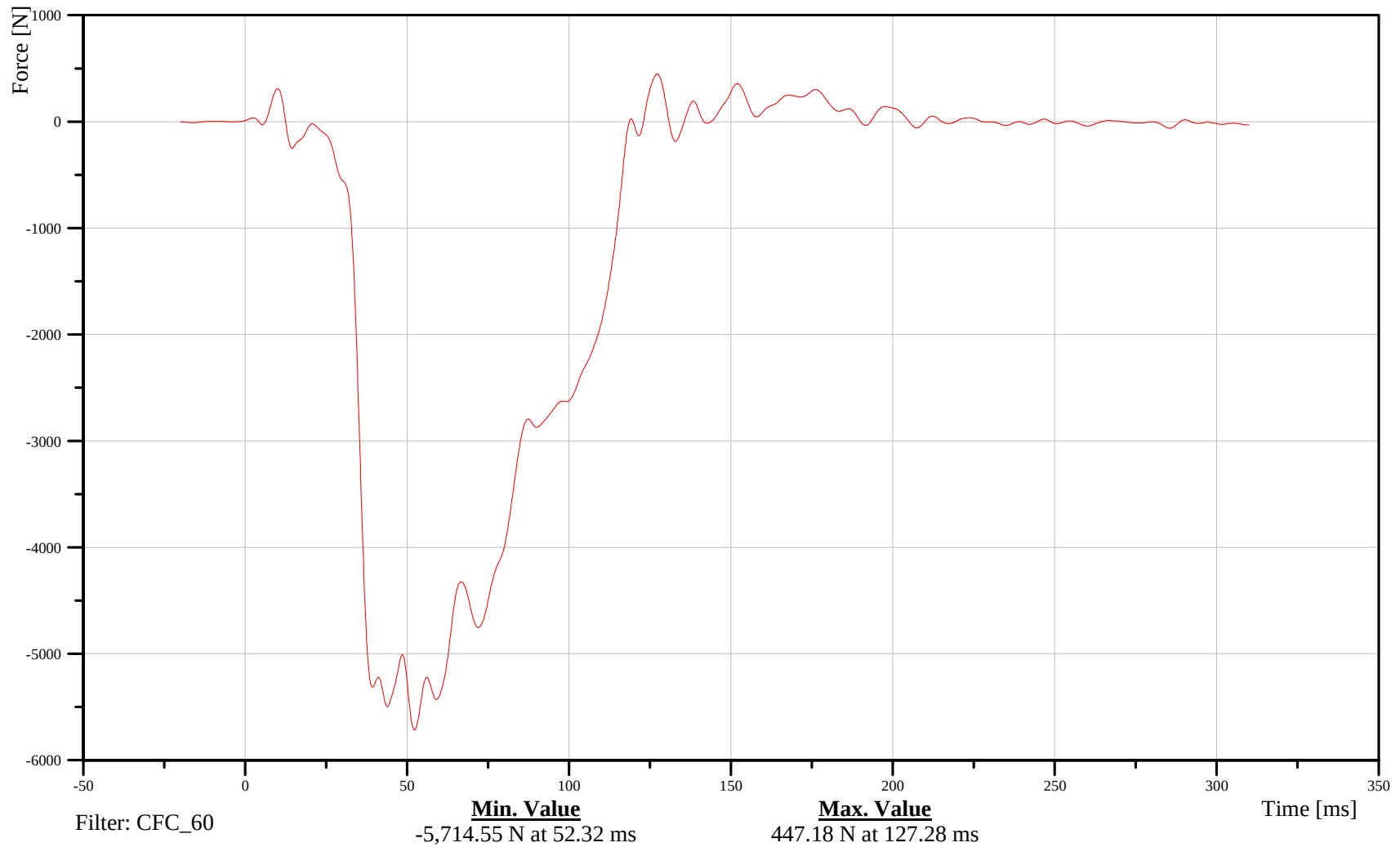
Load Cell Row 9 Column 4

Customer: VRTC

L0FBAR000039FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-210

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

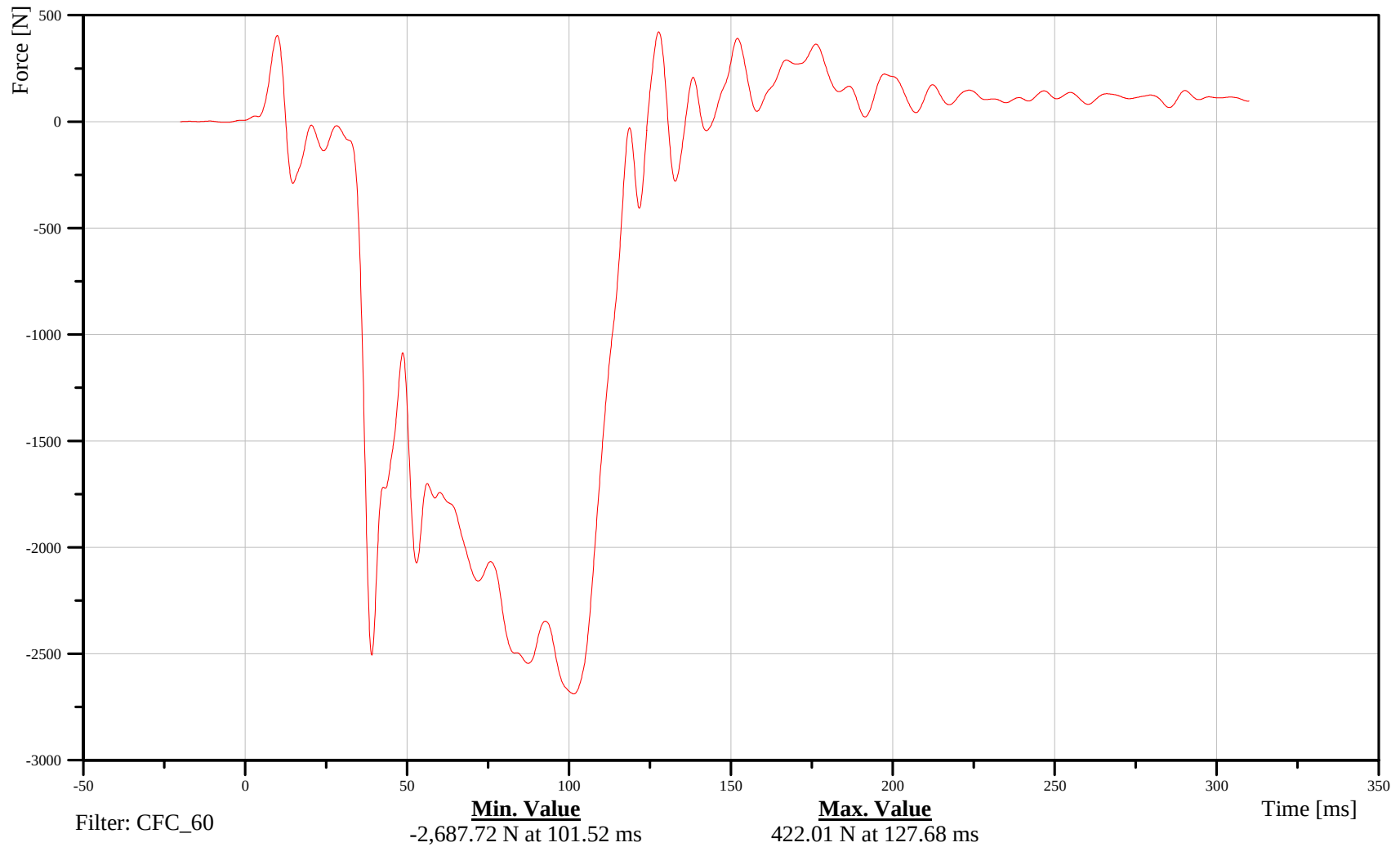
Load Cell Row 10 Column 4

Customer: VRTC

L0FBAR000040FOX

TRC Inc. Test Lab: CTF

Test Number: 071108



B-211

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

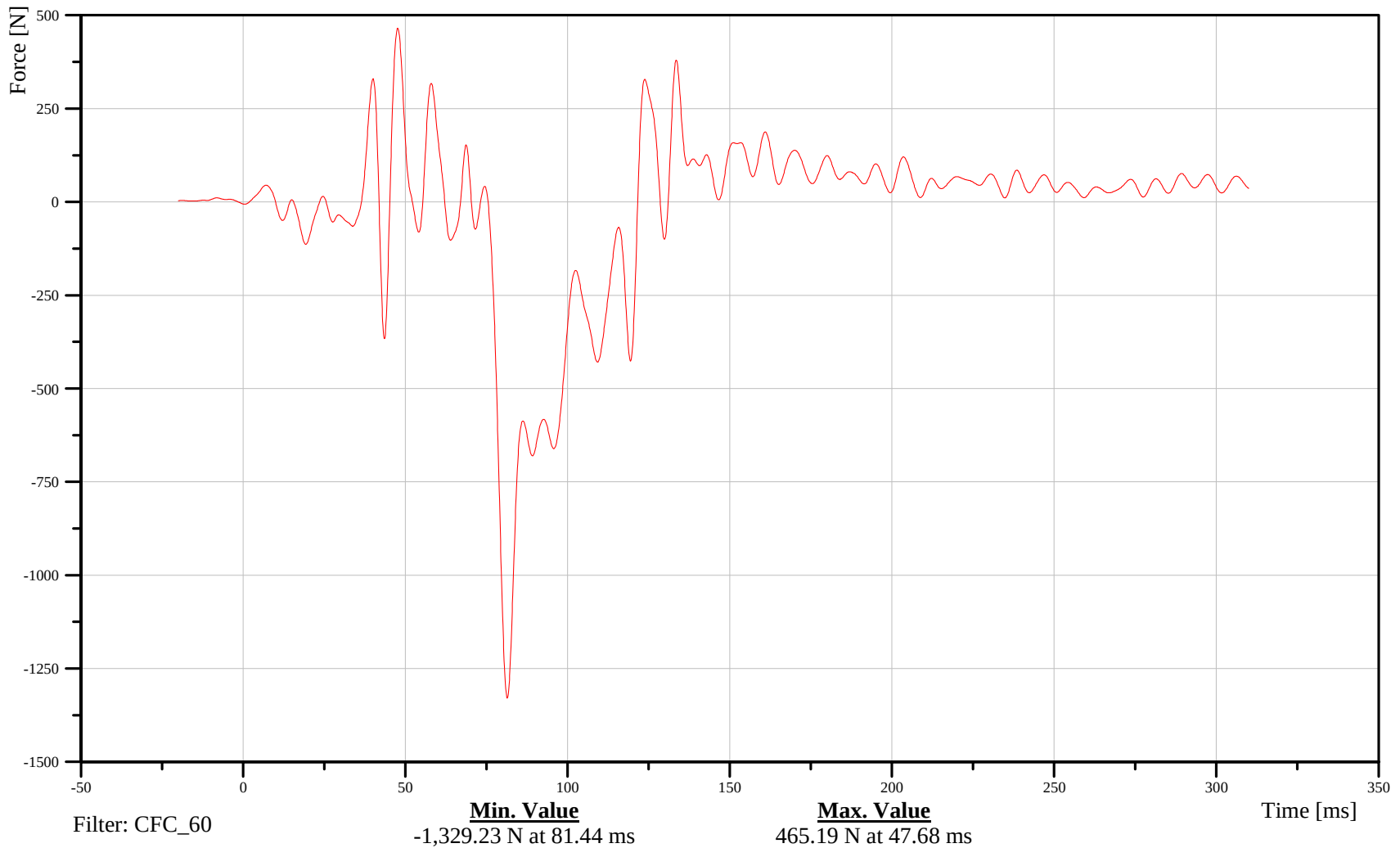
Load Cell Row 1 Column 5

Customer: VRTC

L0FBAR000041FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-212

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

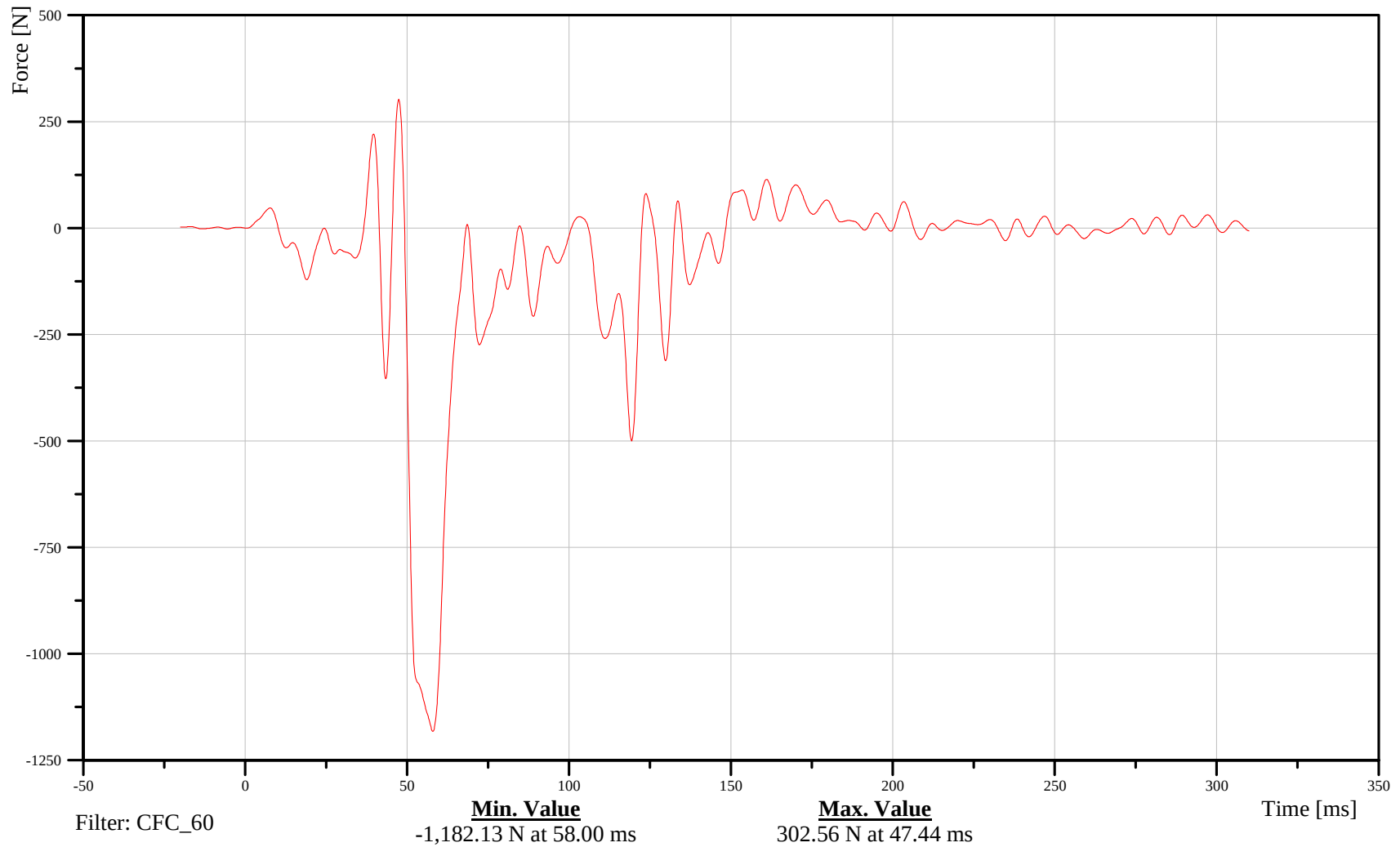
Load Cell Row 2 Column 5

Customer: VRTC

L0FBAR000042FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-213

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

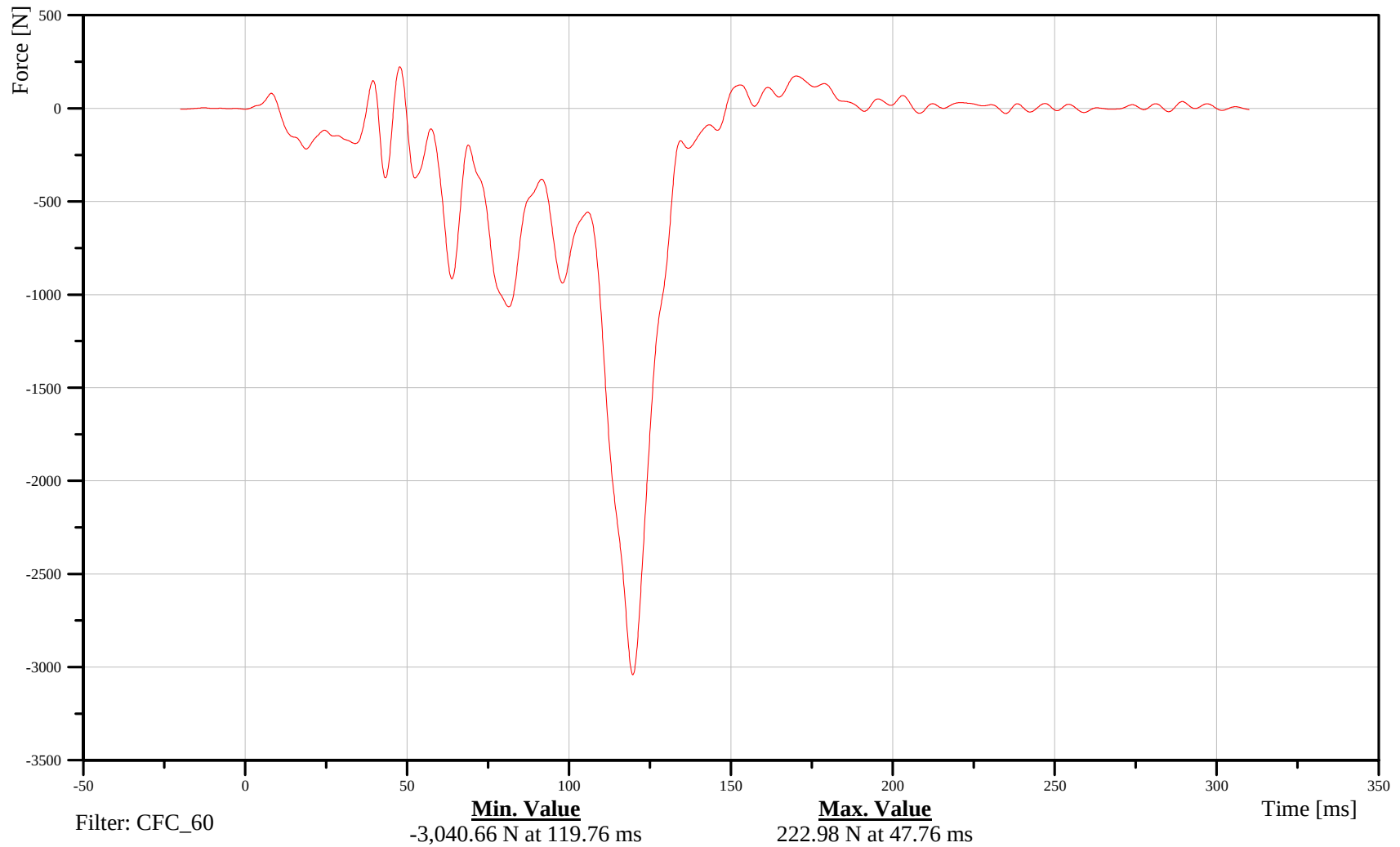
Load Cell Row 3 Column 5

Customer: VRTC

L0FBAR000043FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-214

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

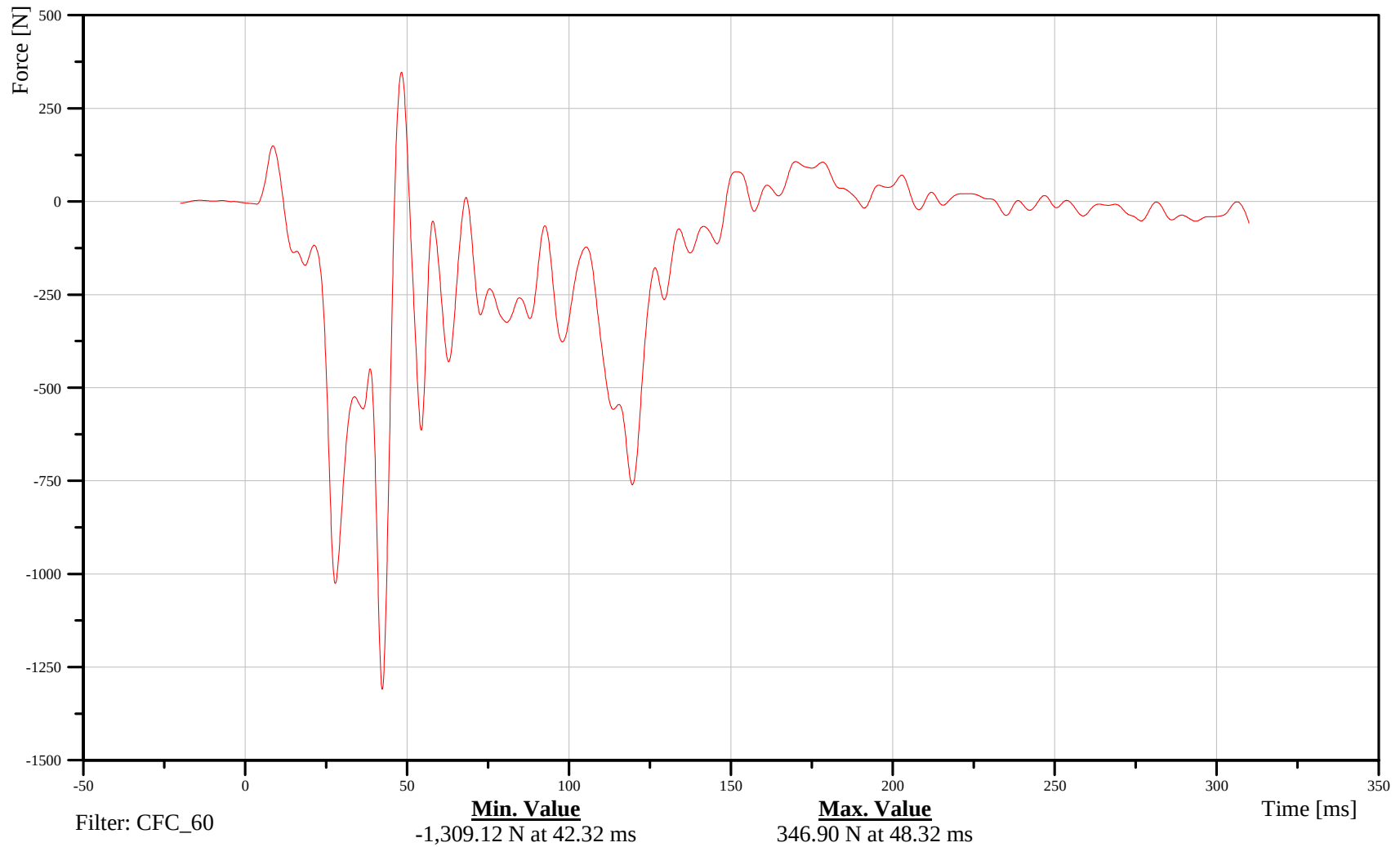
Load Cell Row 4 Column 5

Customer: VRTC

L0FBAR000044FOX

TRC Inc. Test Lab: CTF

Test Number: 071108



B-215

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

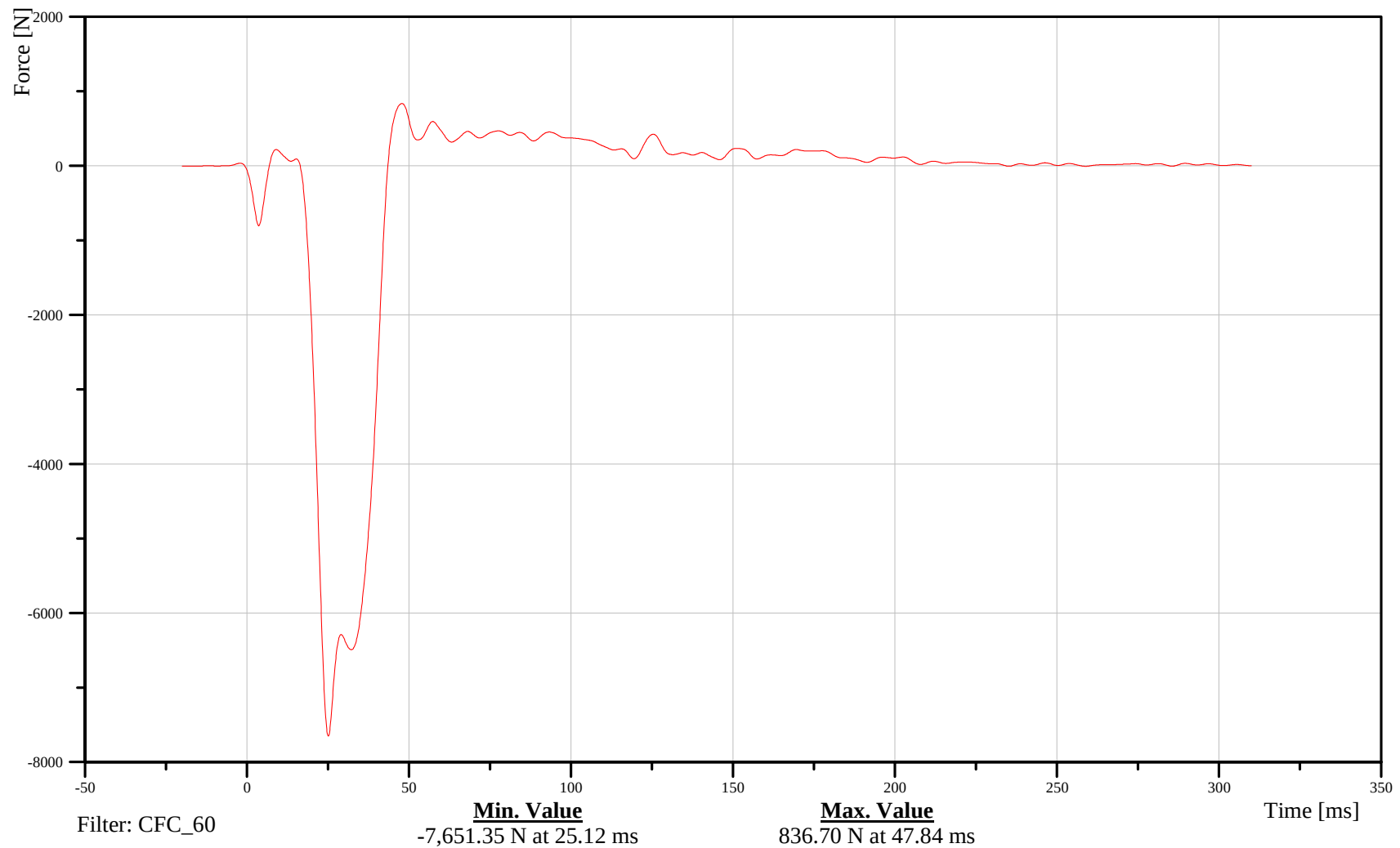
Load Cell Row 5 Column 5

Customer: VRTC

L0FBAR000045FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-216

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

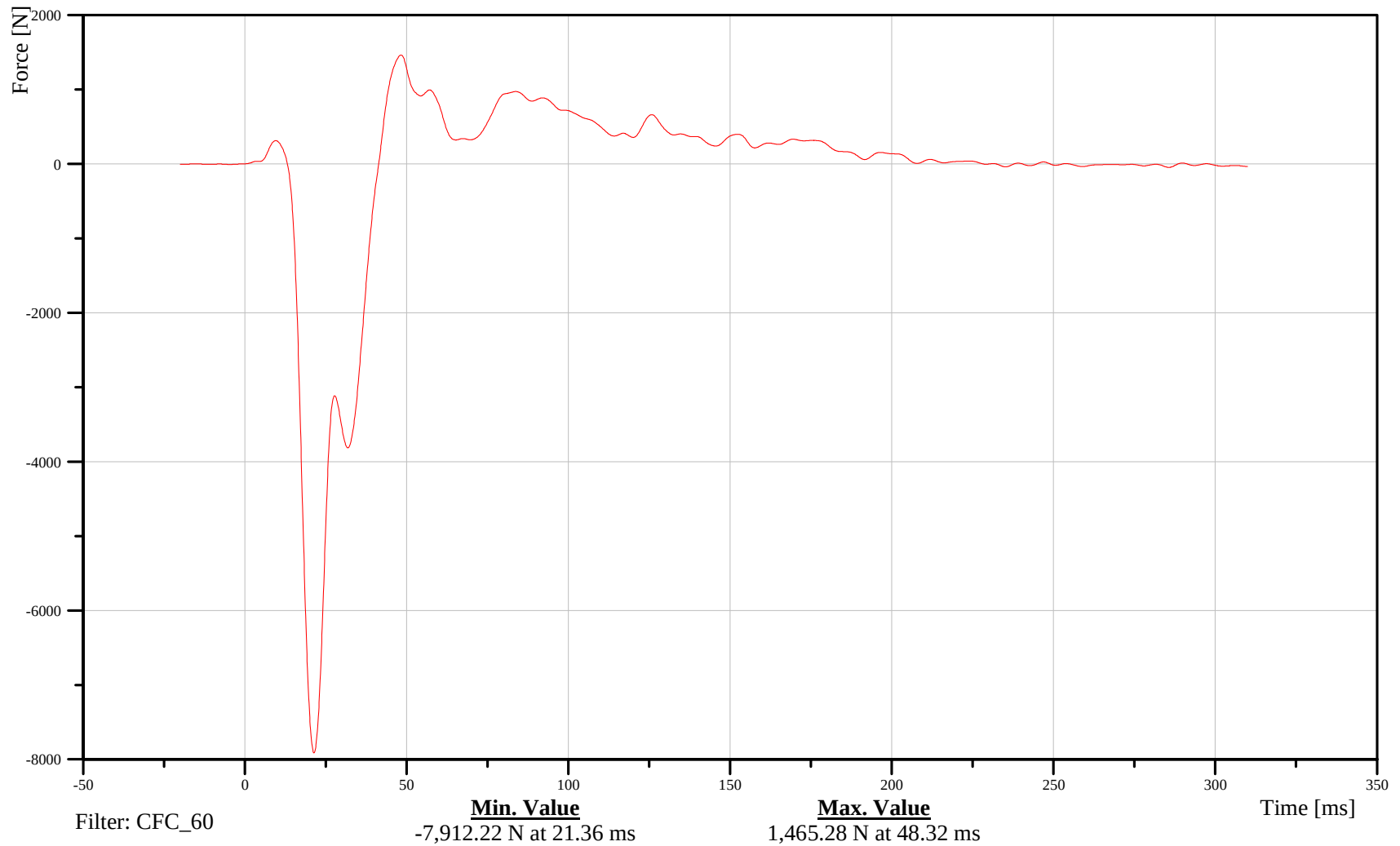
Load Cell Row 6 Column 5

Customer: VRTC

L0FBAR000046FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-217

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

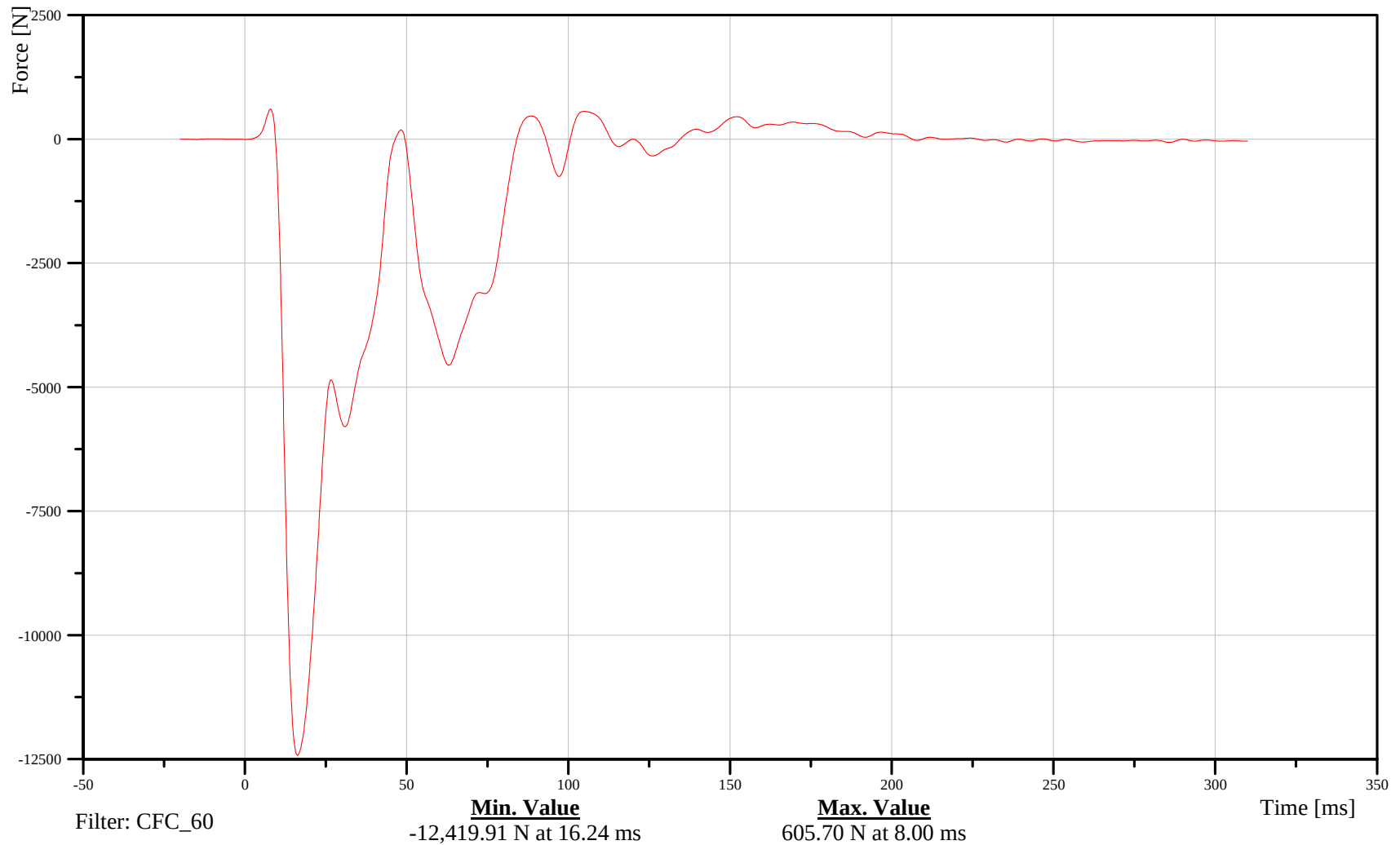
Load Cell Row 7 Column 5

Customer: VRTC

L0FBAR000047FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-218

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

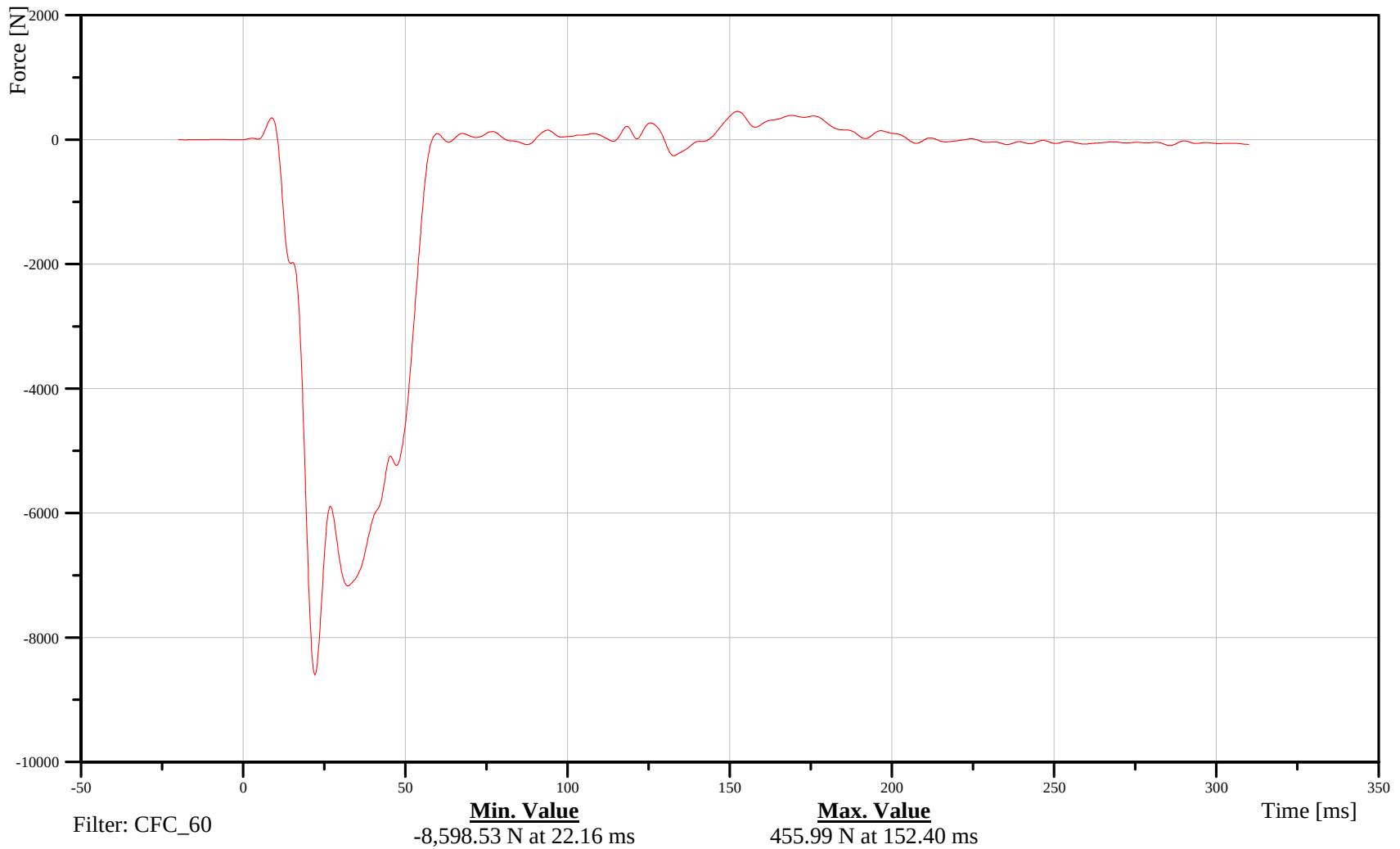
Load Cell Row 8 Column 5

Customer: VRTC

L0FBAR000048FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-219

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

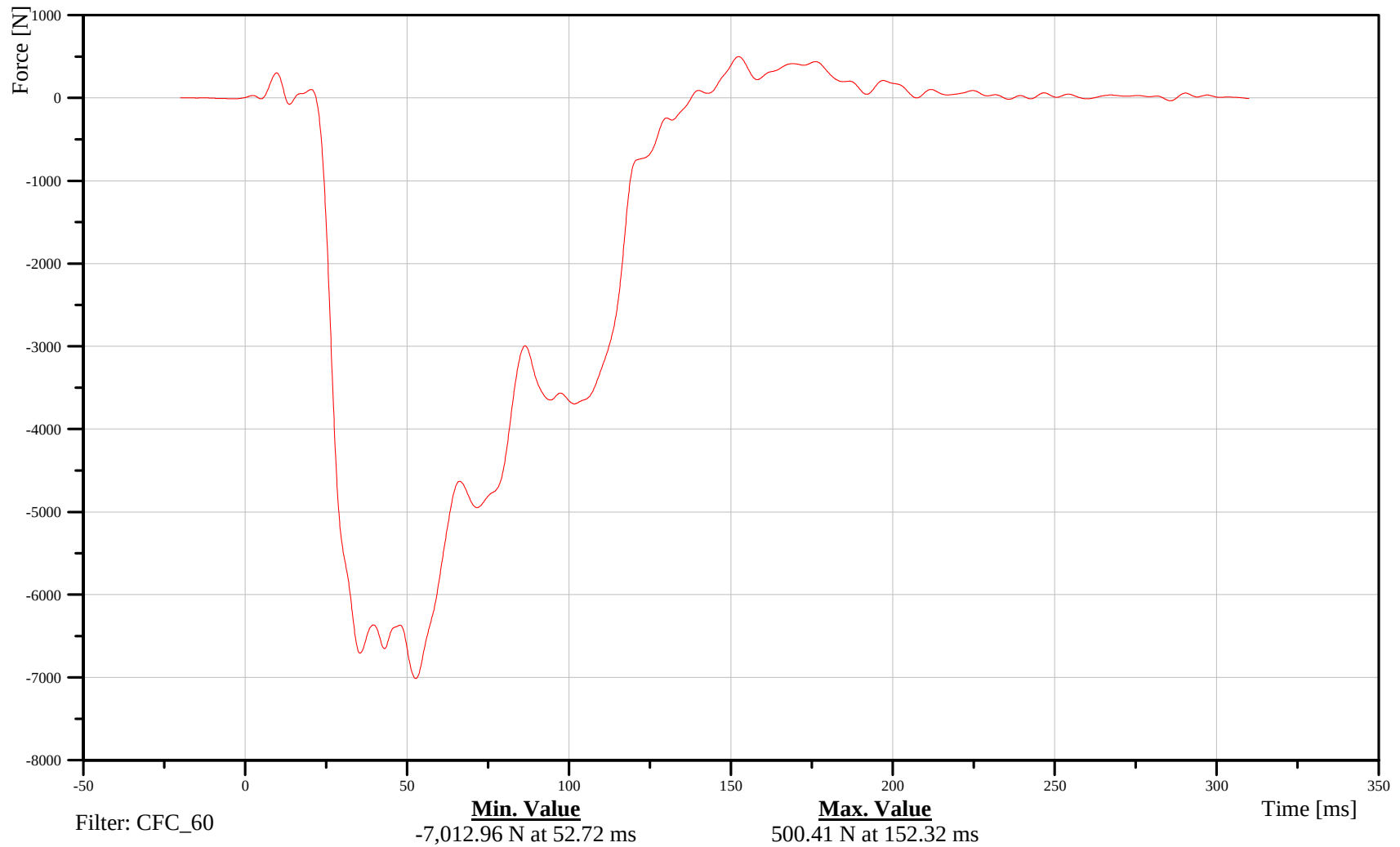
Load Cell Row 9 Column 5

Customer: VRTC

L0FBAR000049FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-220

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

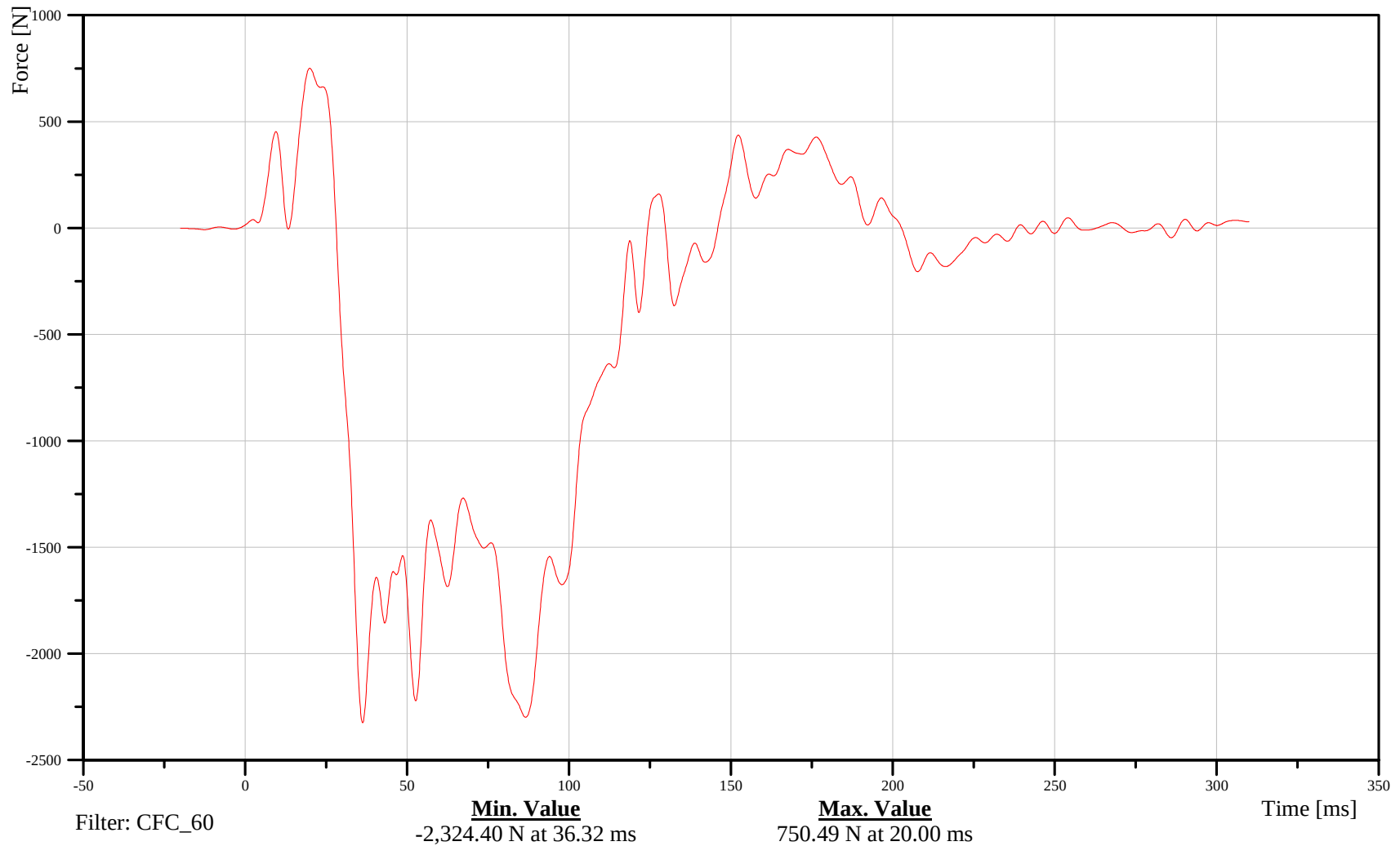
Load Cell Row 10 Column 5

Customer: VRTC

L0FBAR000050FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-221

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

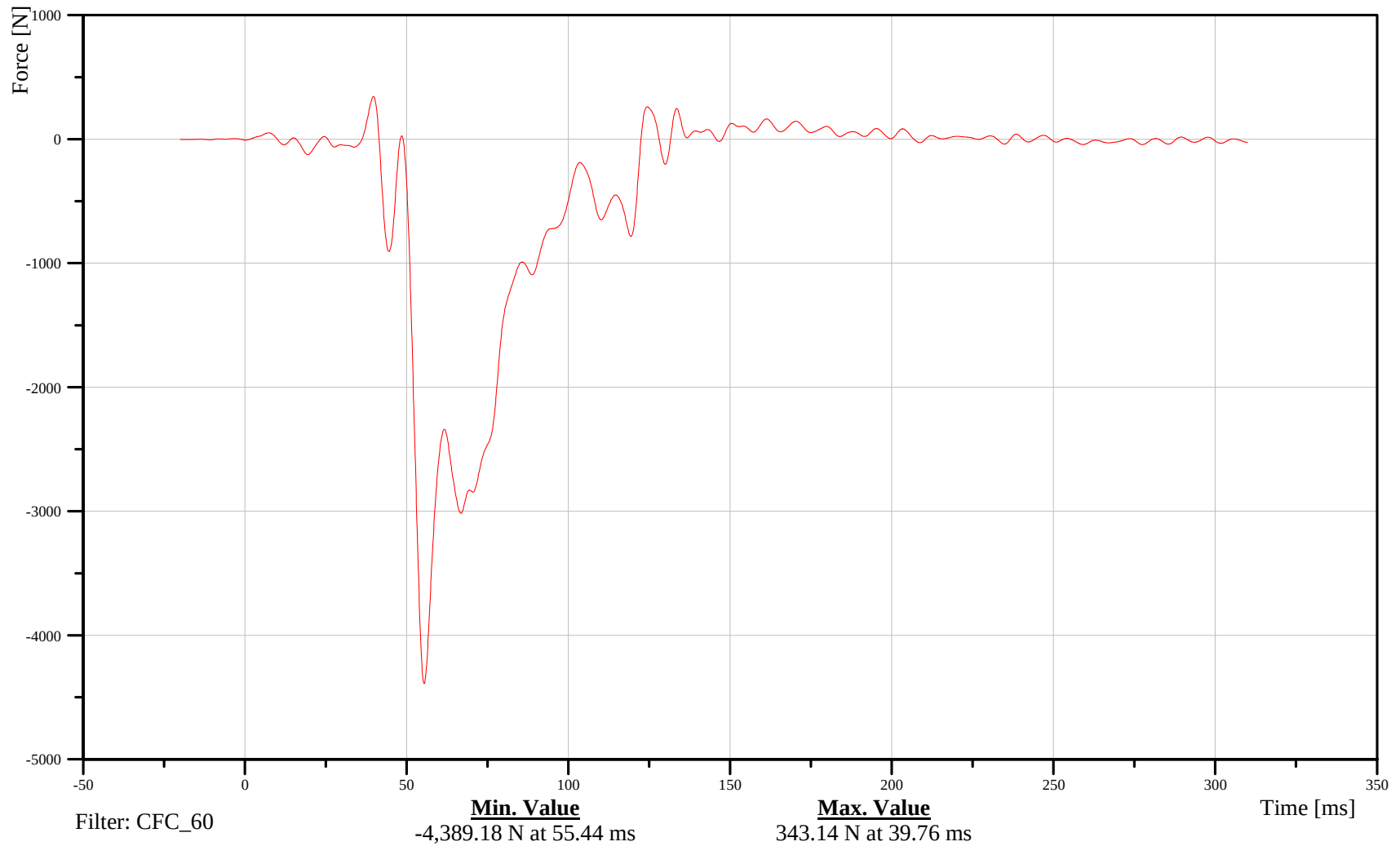
Load Cell Row 1 Column 6

Customer: VRTC

L0FBAR000051FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-222

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

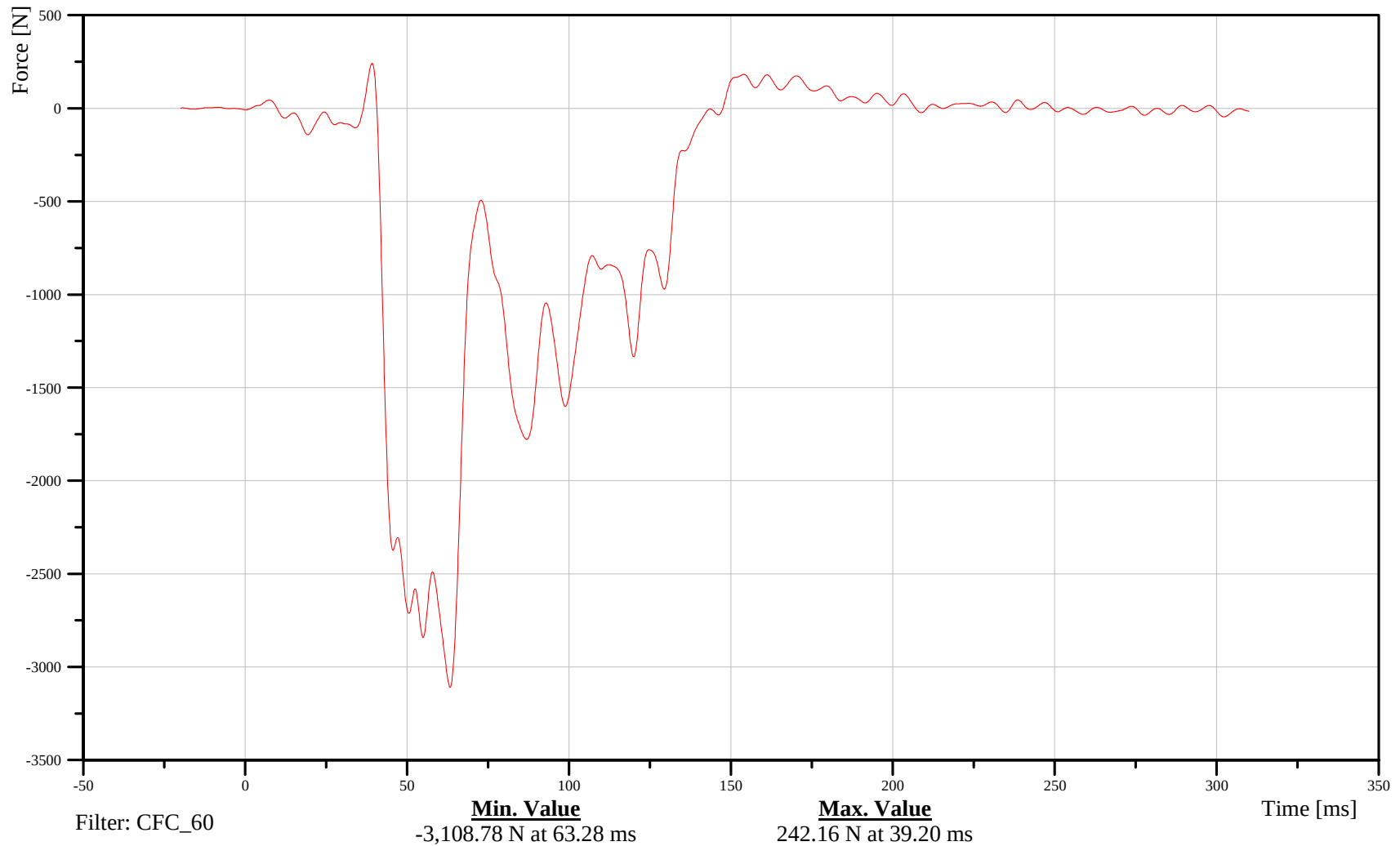
Load Cell Row 2 Column 6

Customer: VRTC

L0FBAR000052FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-223

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

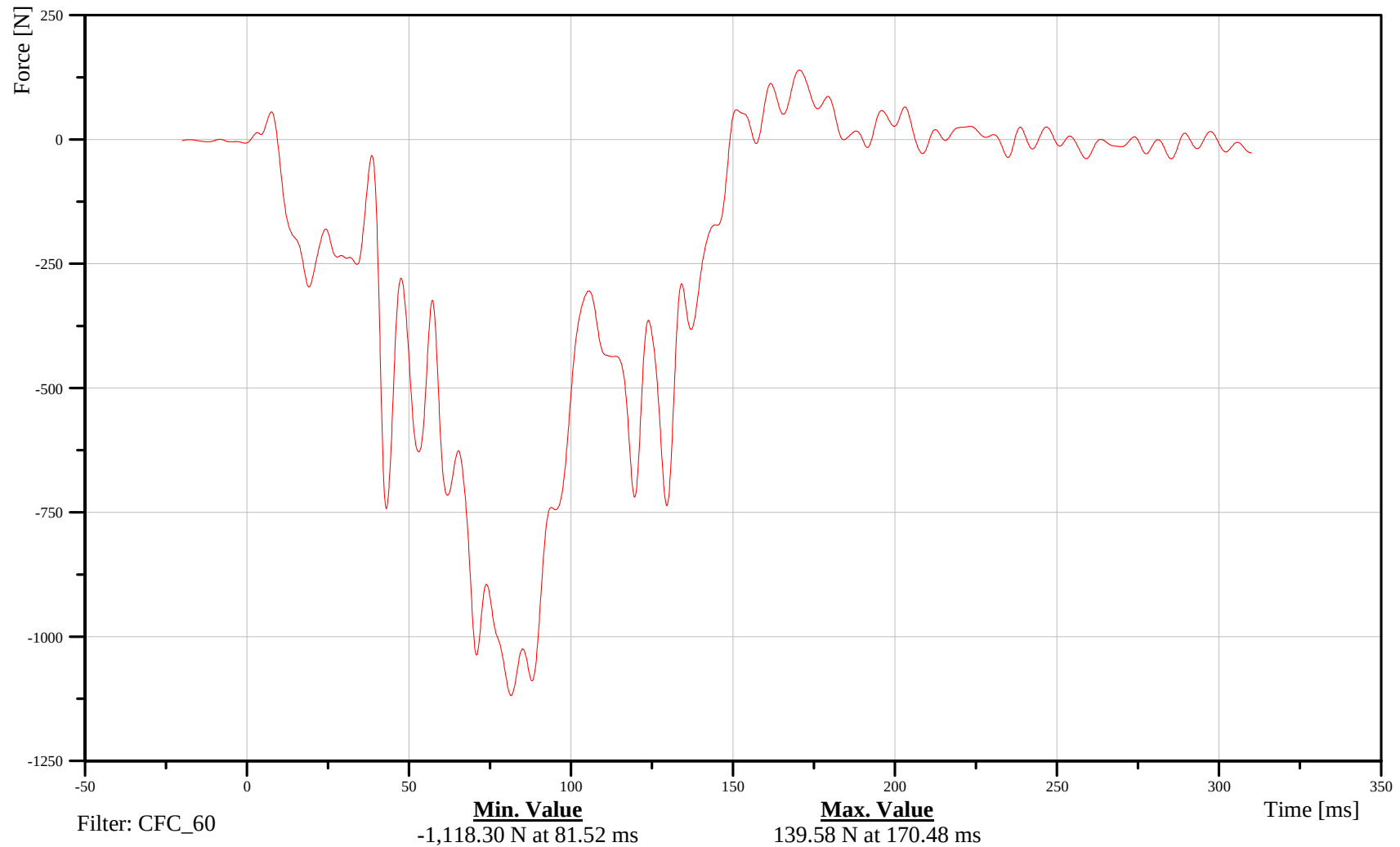
Load Cell Row 3 Column 6

Customer: VRTC

L0FBAR000053FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-224

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

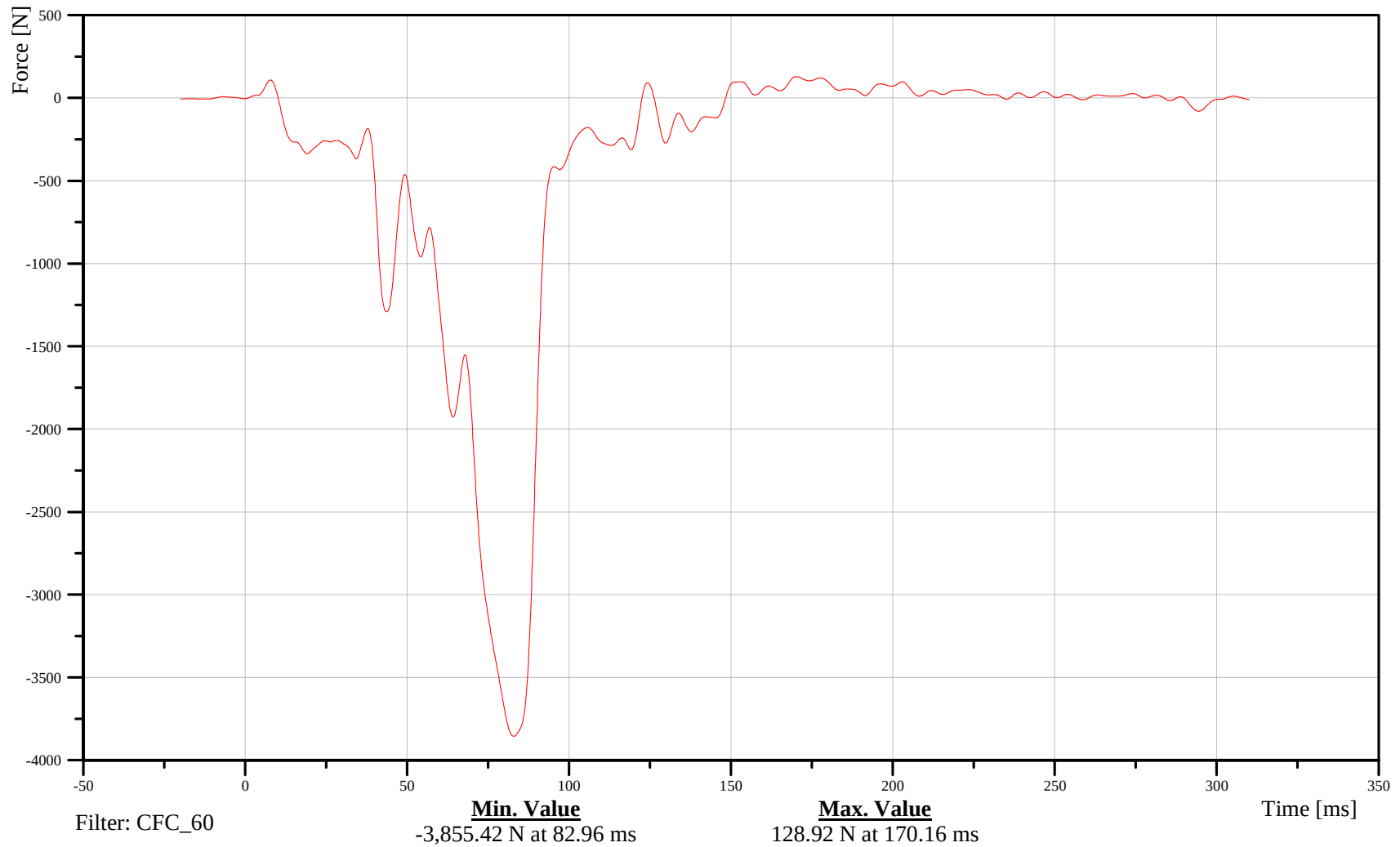
Load Cell Row 4 Column 6

Customer: VRTC

L0FBAR000054FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-225

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

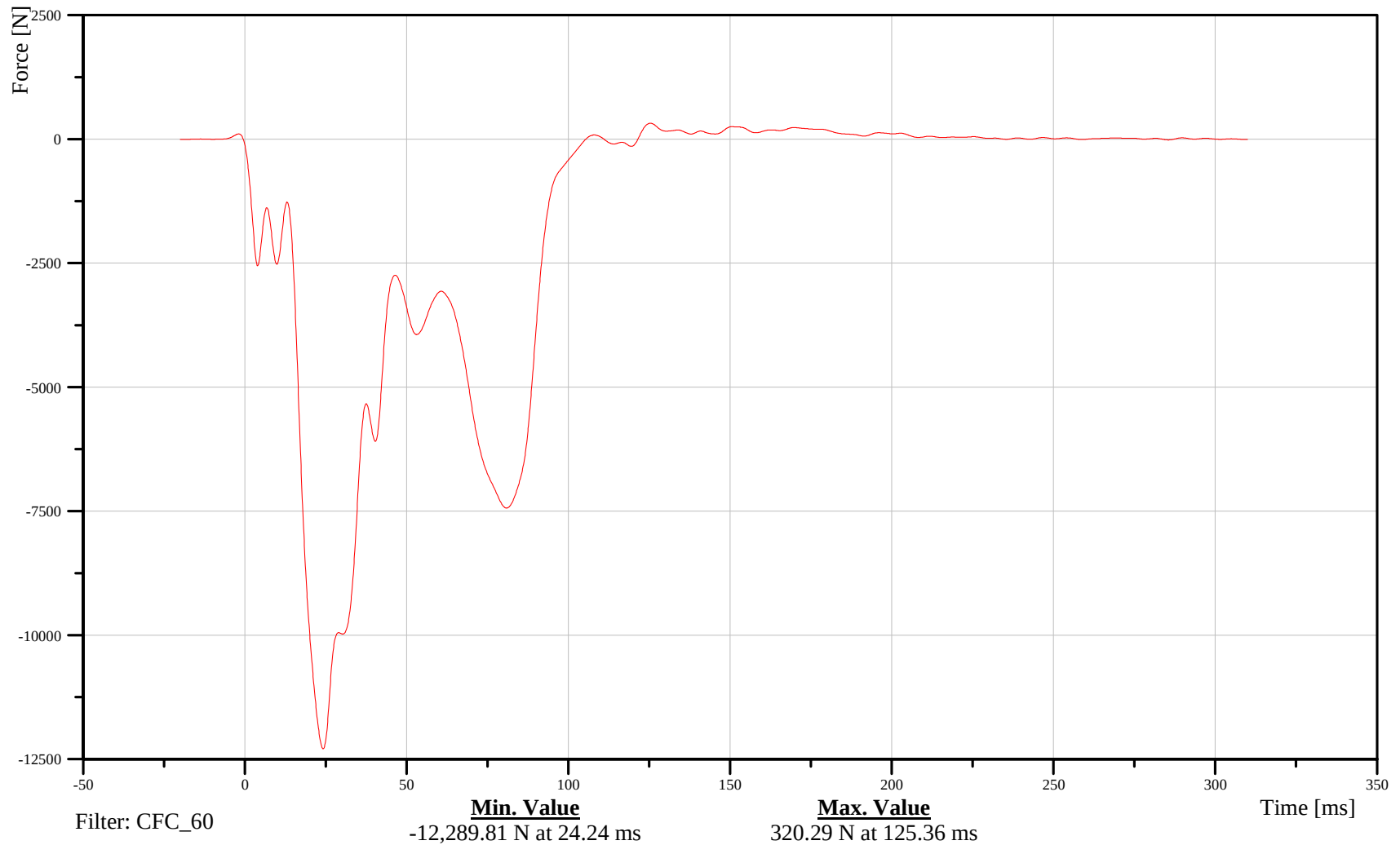
Load Cell Row 5 Column 6

Customer: VRTC

L0FBAR000055FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-226

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

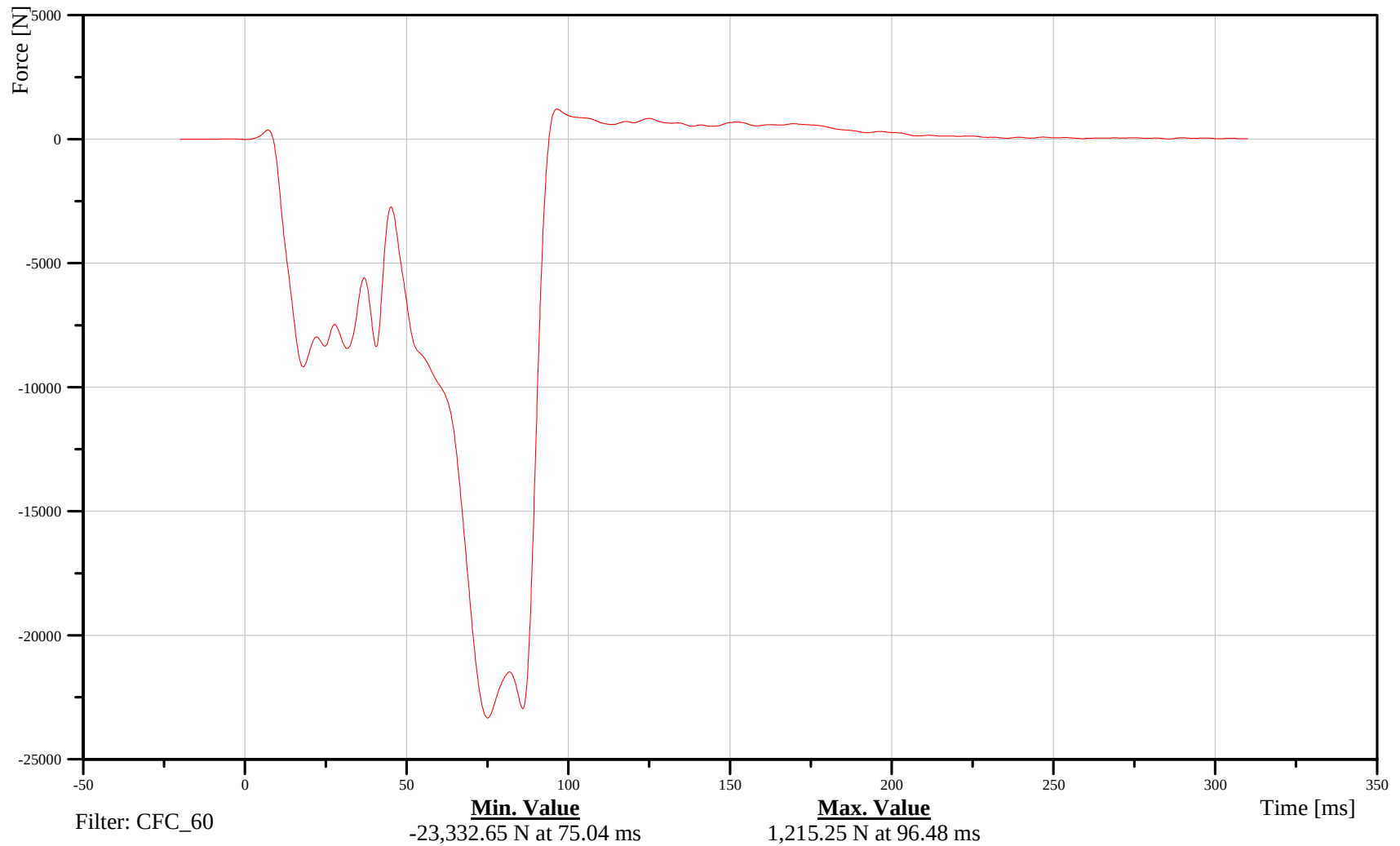
Load Cell Row 6 Column 6

Customer: VRTC

L0FBAR000056FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-227

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

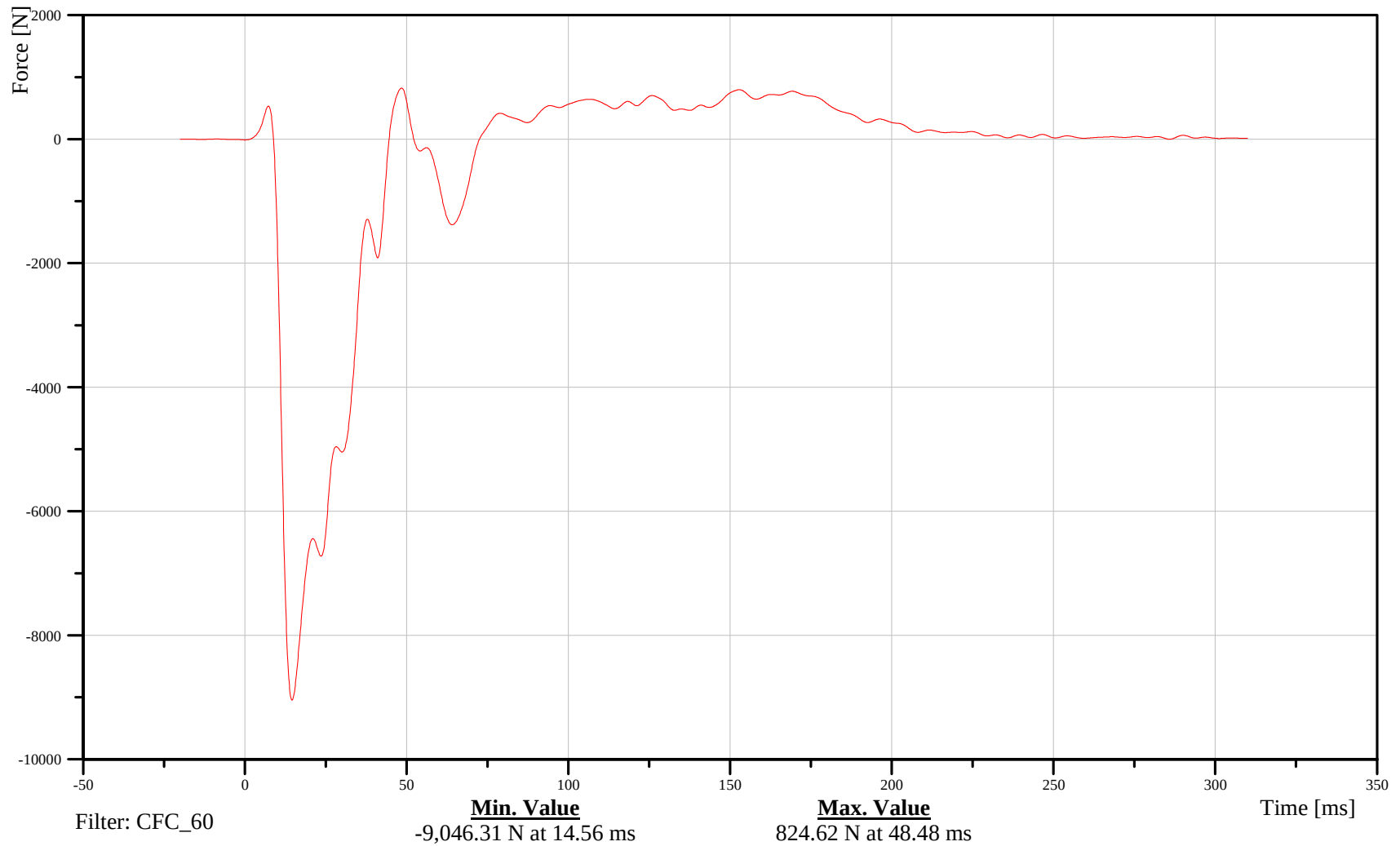
Load Cell Row 7 Column 6

Customer: VRTC

L0FBAR000057FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-228

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

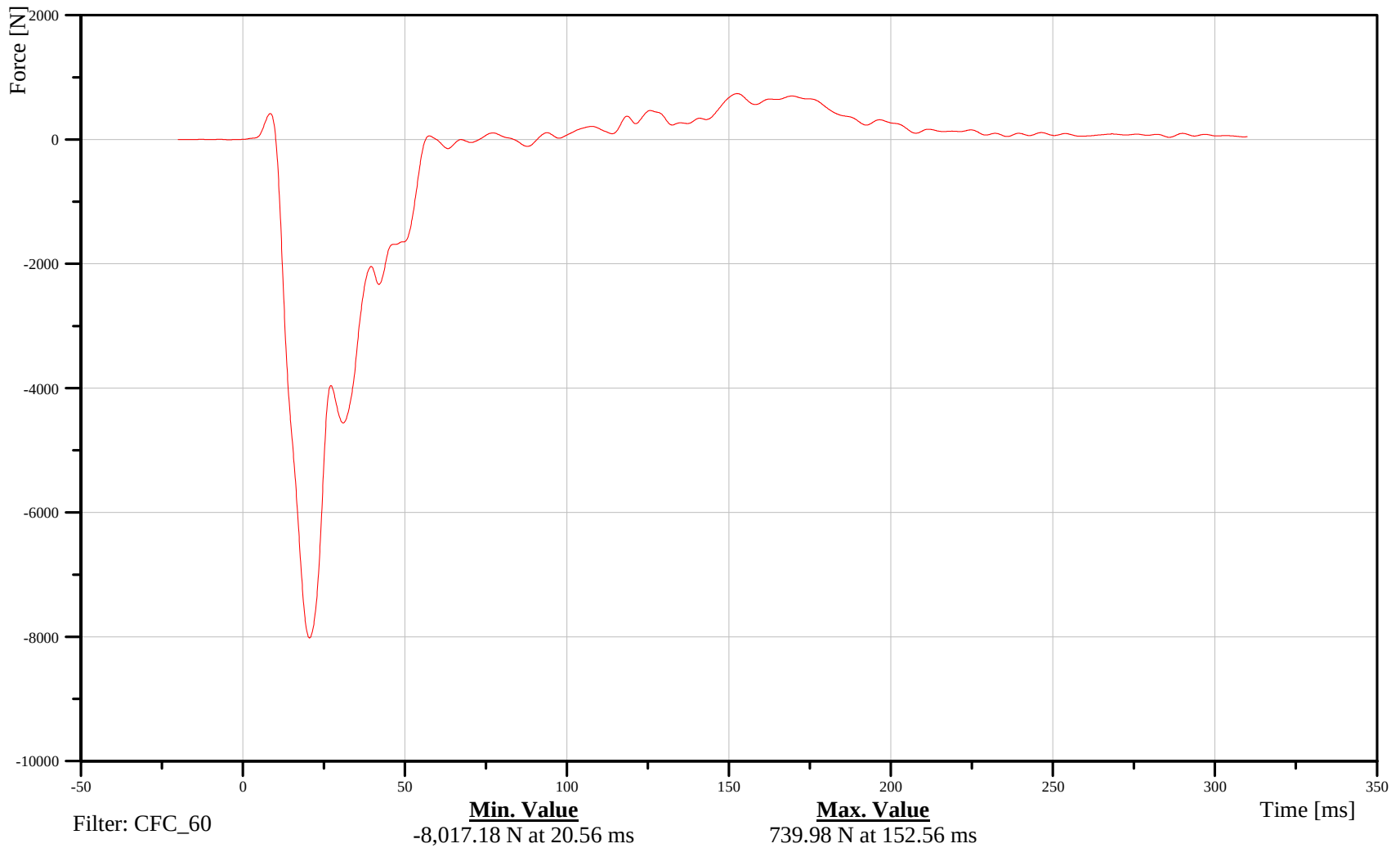
Load Cell Row 8 Column 6

Customer: VRTC

L0FBAR000058FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-229

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

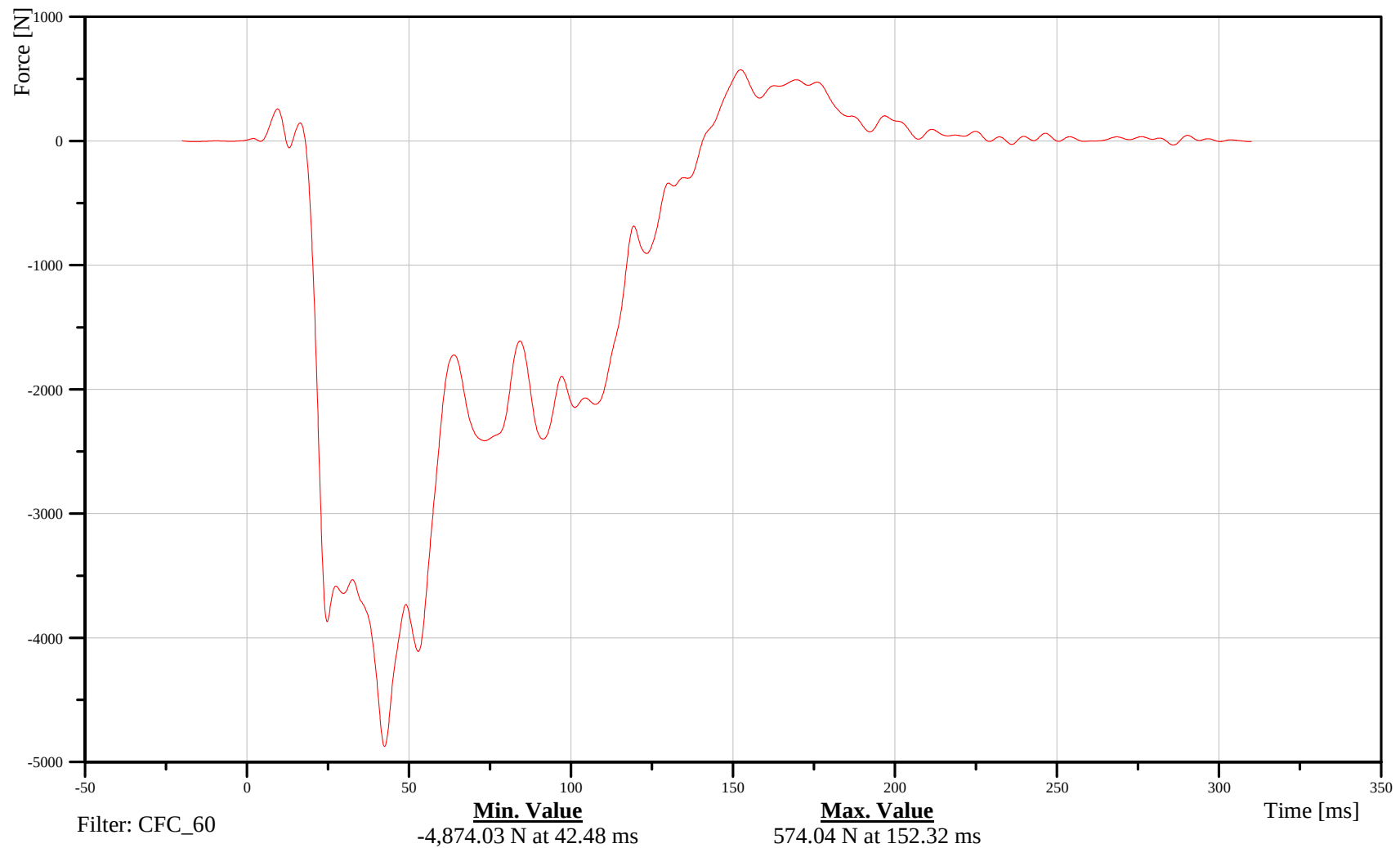
Load Cell Row 9 Column 6

Customer: VRTC

L0FBAR000059FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-230

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

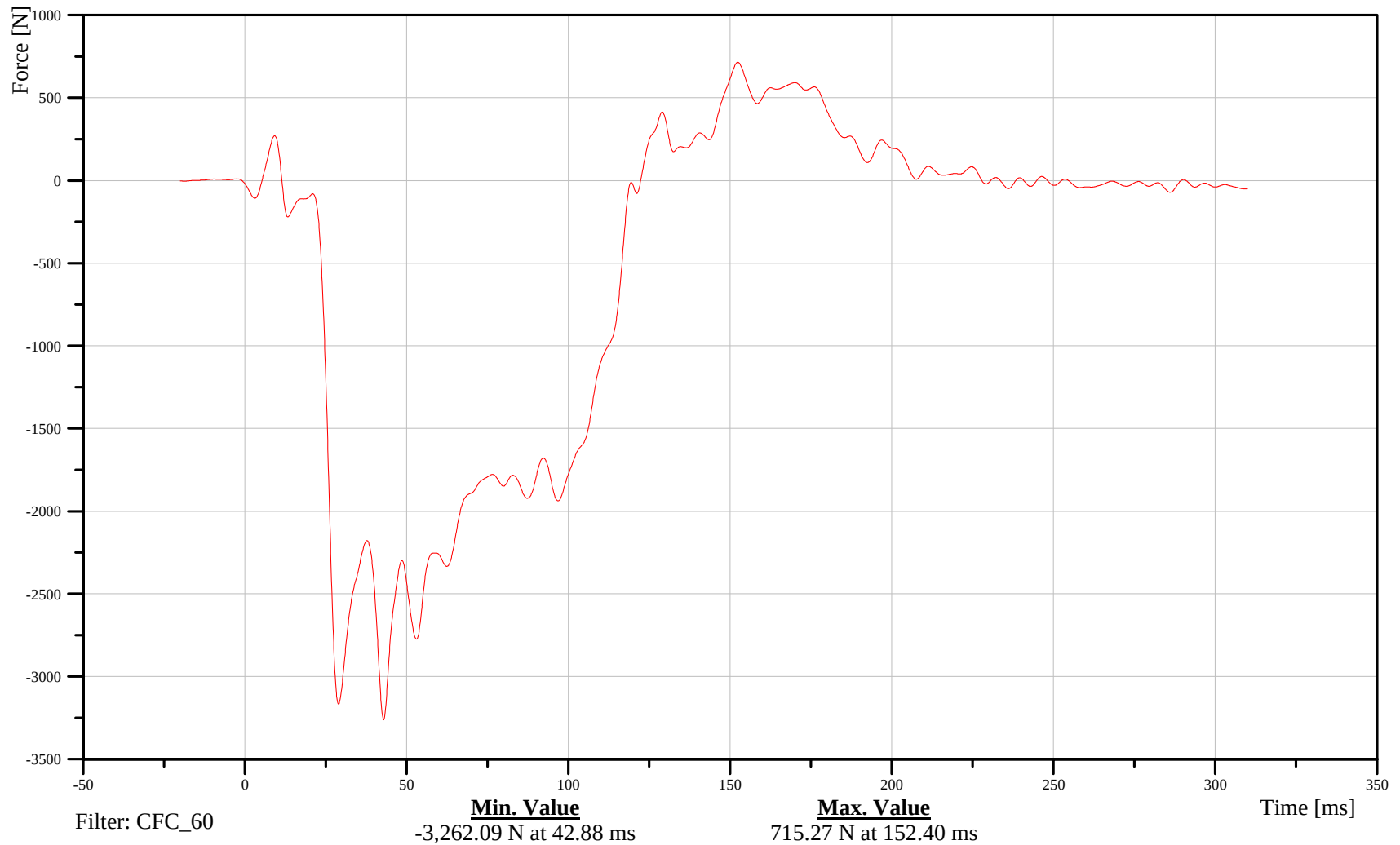
Load Cell Row 10 Column 6

Customer: VRTC

L0FBAR000060FOX

TRC Inc. Test Lab: CTF

Test Number: 071108



B-231

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

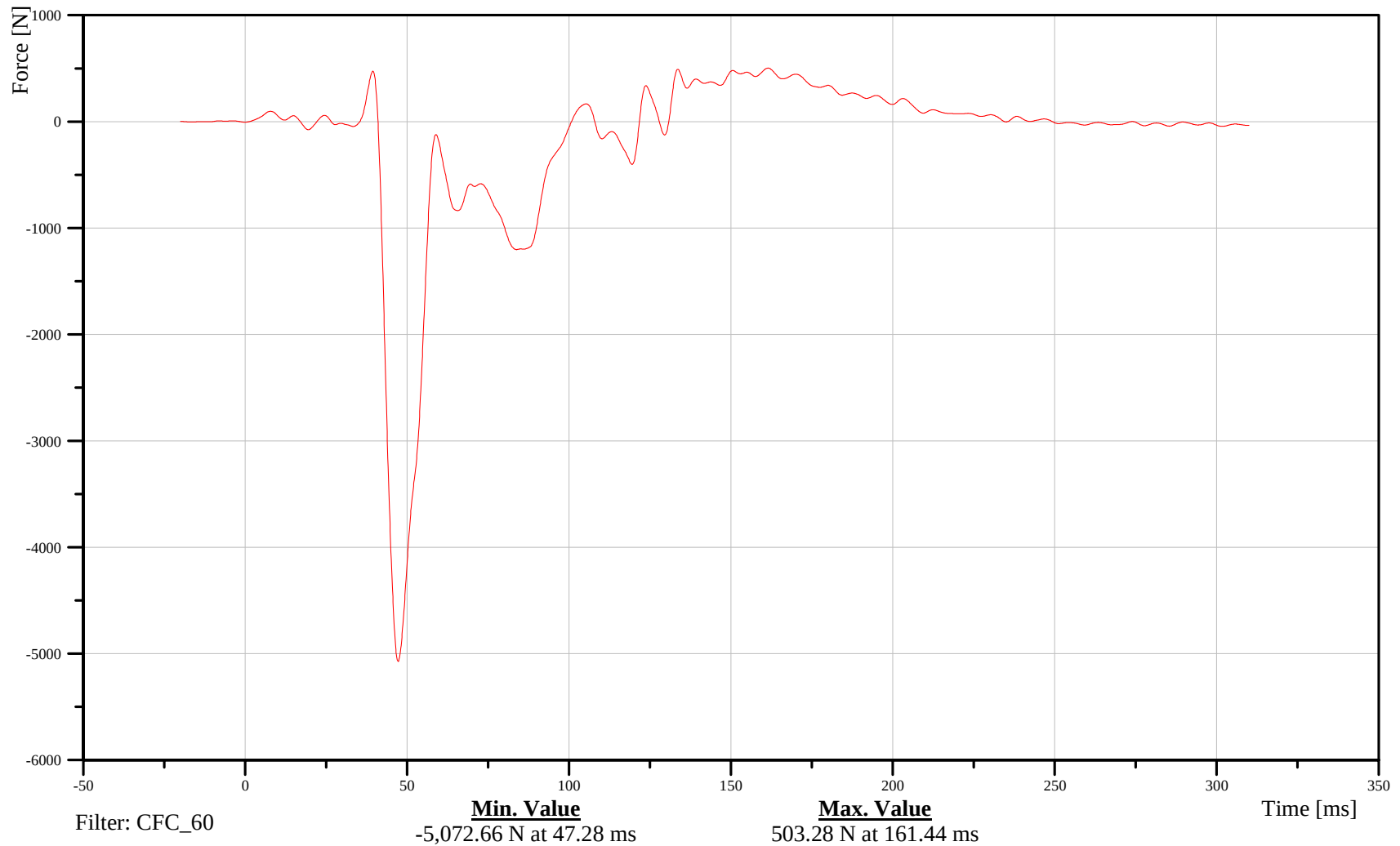
Load Cell Row 1 Column 7

Customer: VRTC

L0FBAR000061FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-232

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

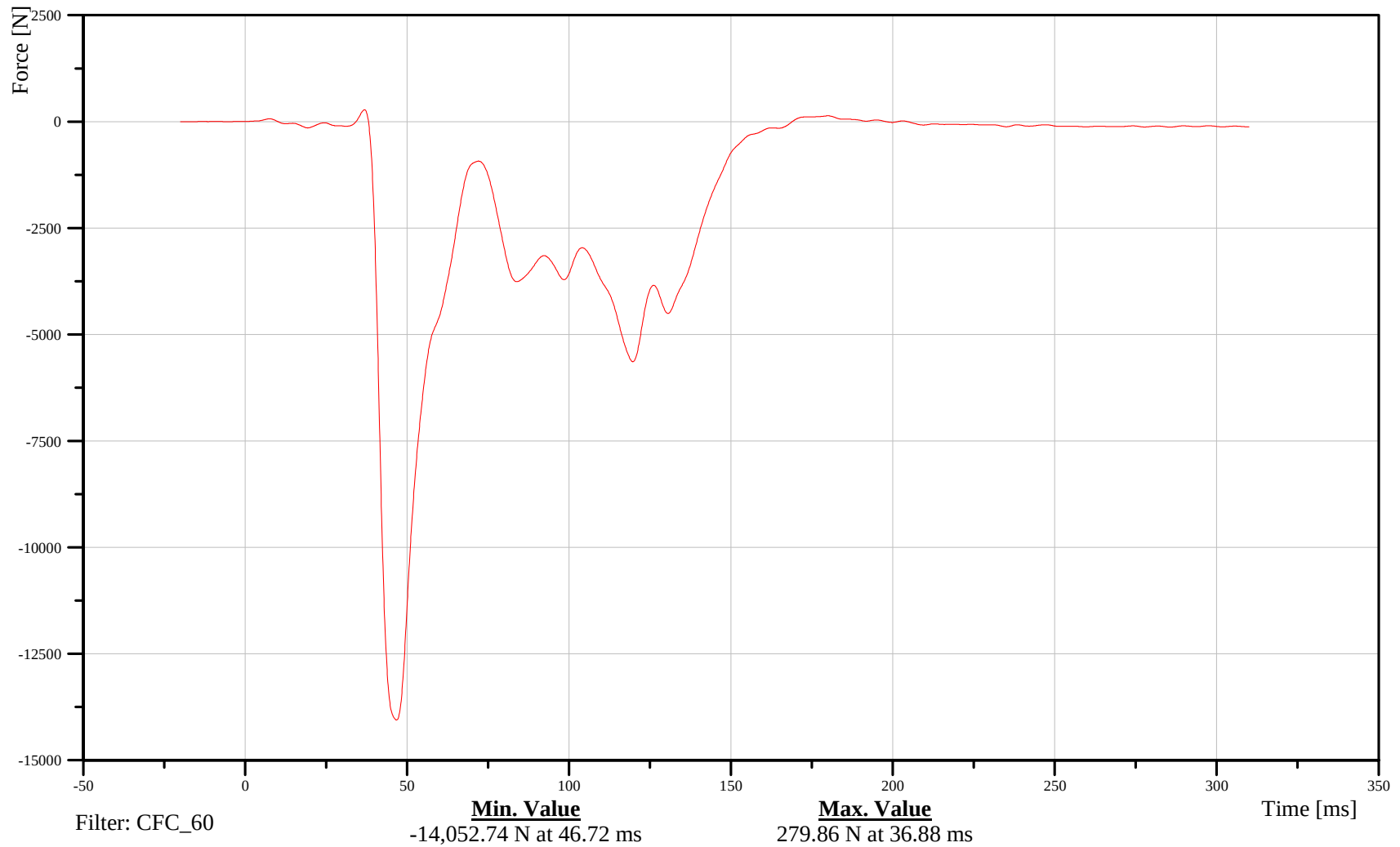
Load Cell Row 2 Column 7

Customer: VRTC

L0FBAR000062FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-233

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

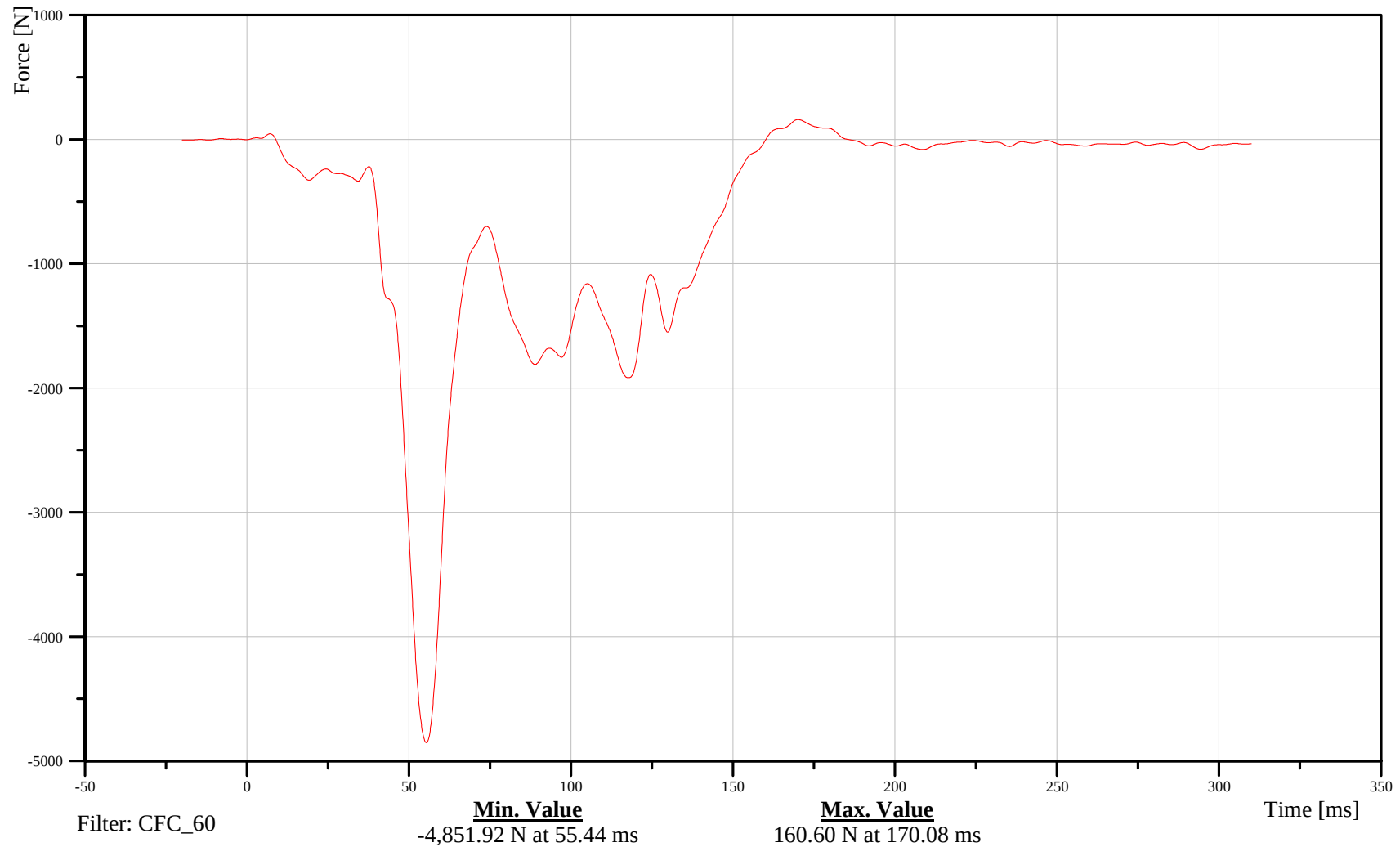
Load Cell Row 3 Column 7

Customer: VRTC

L0FBAR000063FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-234

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

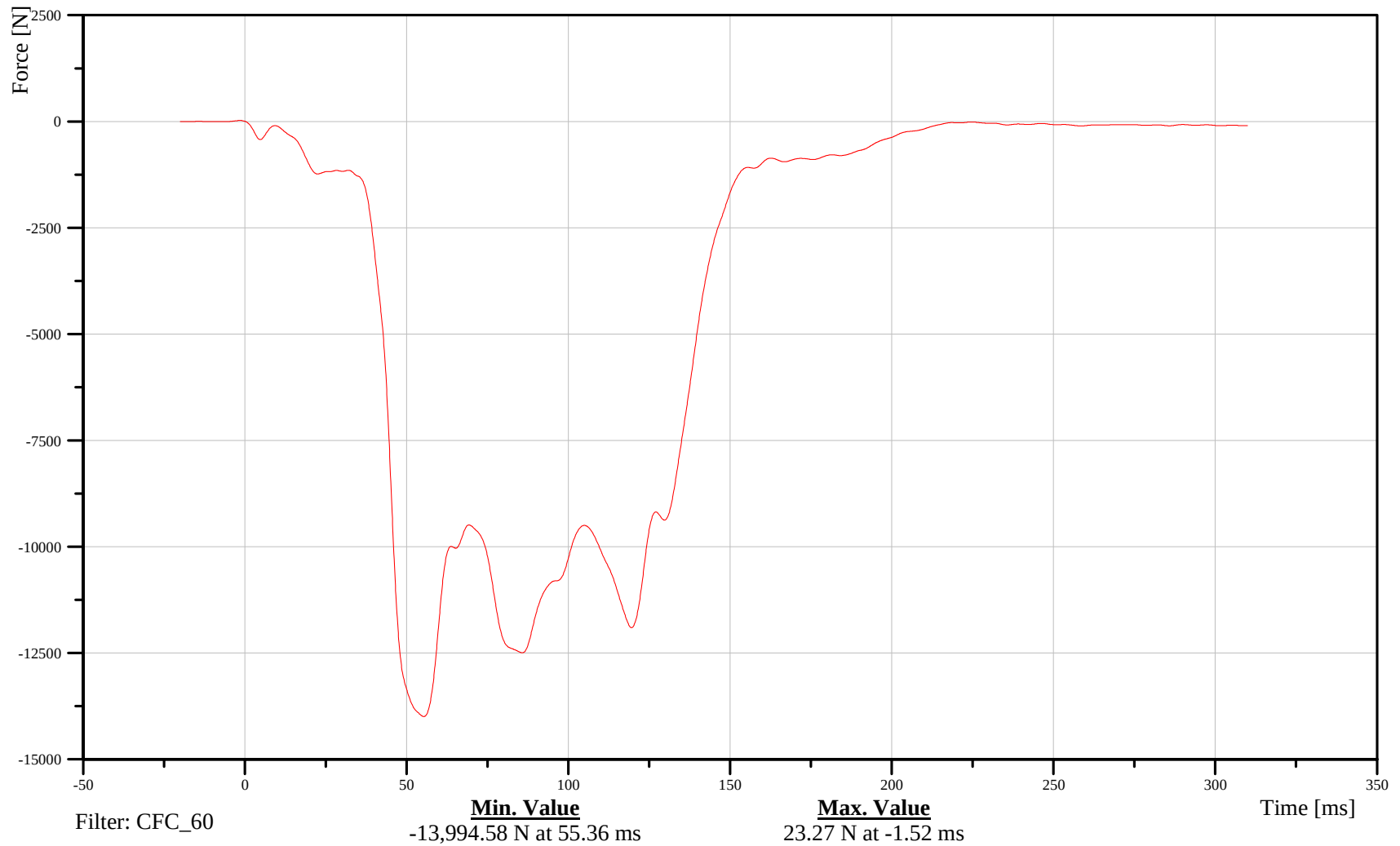
Load Cell Row 4 Column 7

Customer: VRTC

L0FBAR000064FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-235

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

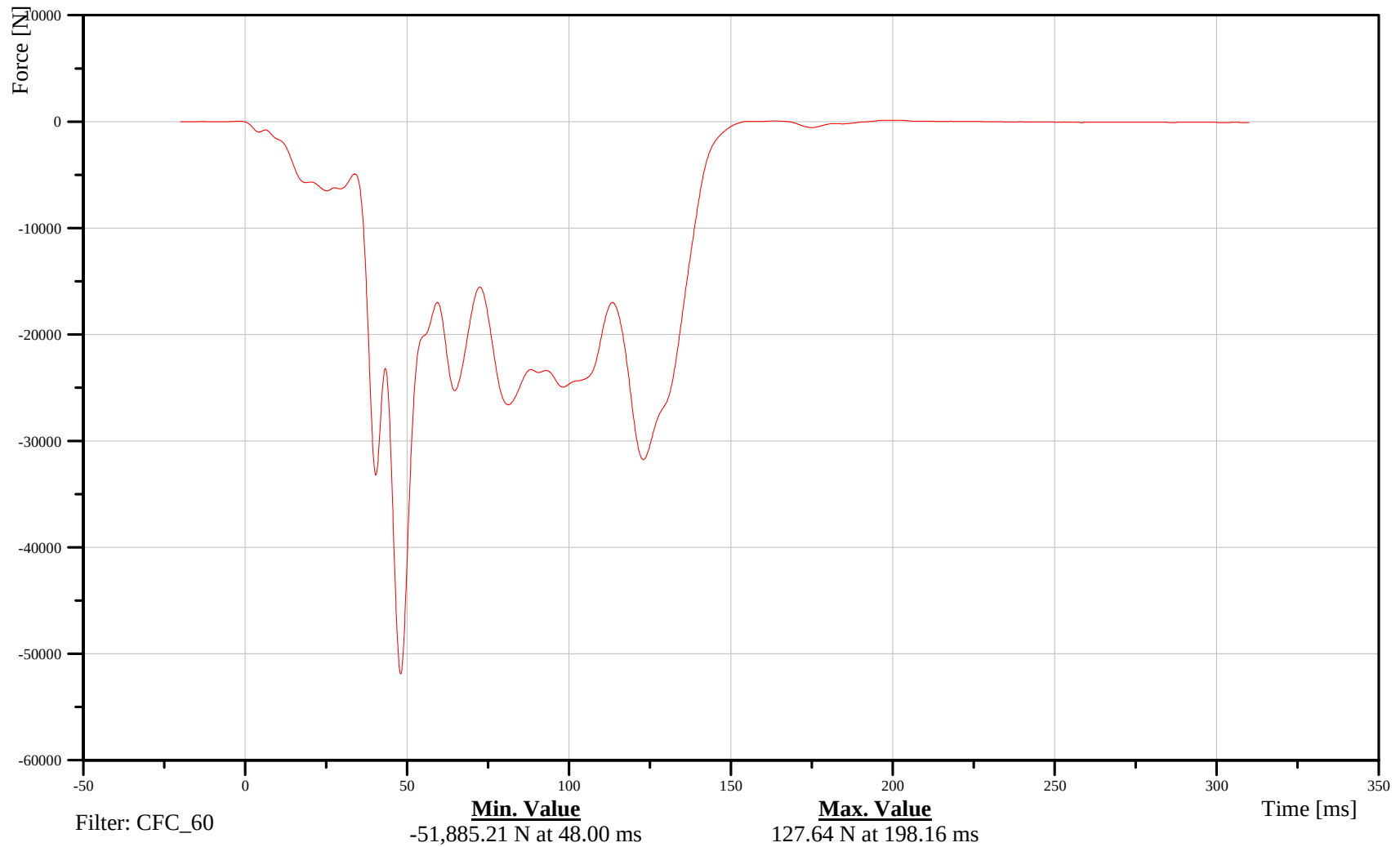
Load Cell Row 5 Column 7

Customer: VRTC

L0FBAR000065FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-236

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

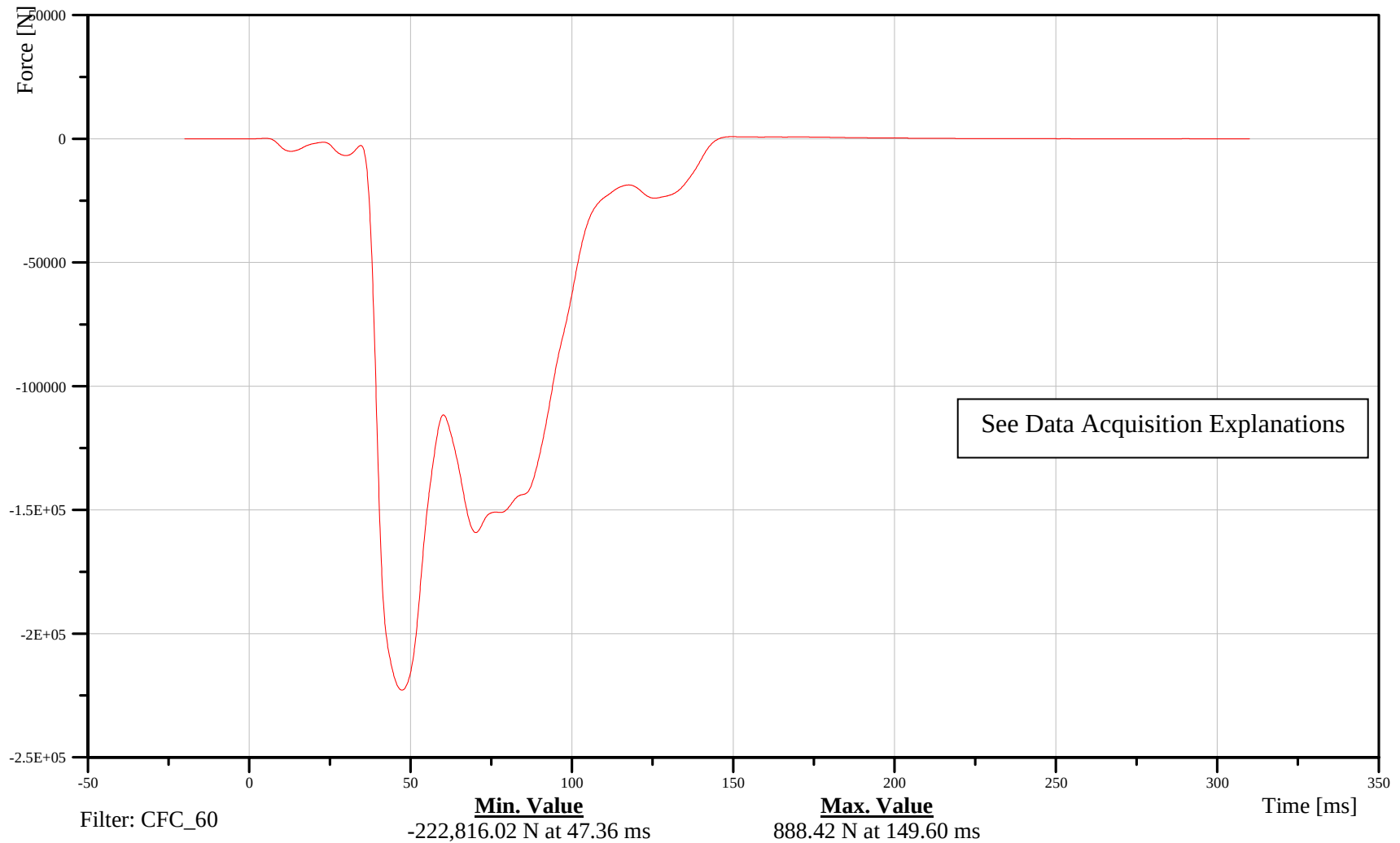
Load Cell Row 6 Column 7

Customer: VRTC

L0FBAR000066FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-237

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

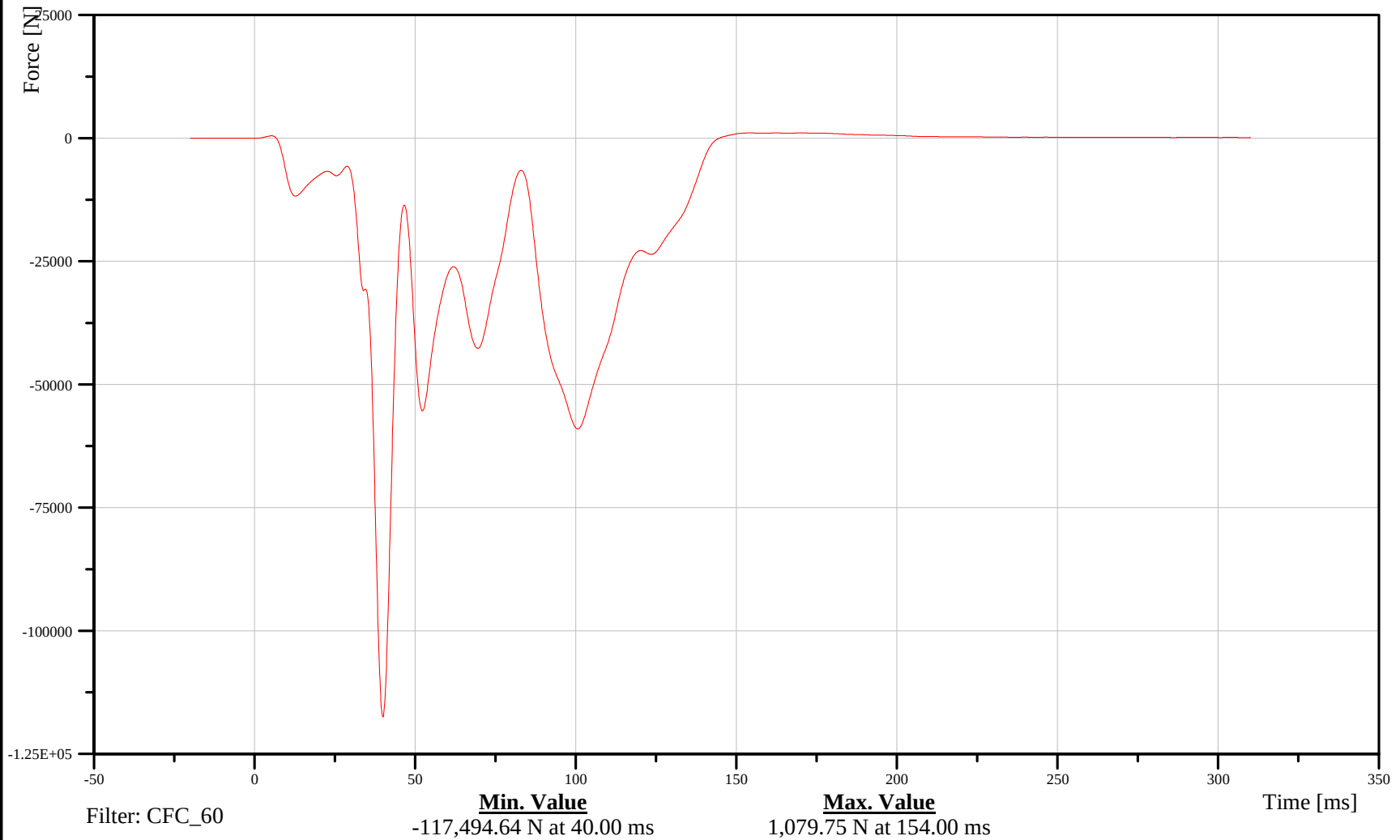
Load Cell Row 7 Column 7

Customer: VRTC

L0FBAR000067FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-238

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Load Cell Row 8 Column 7

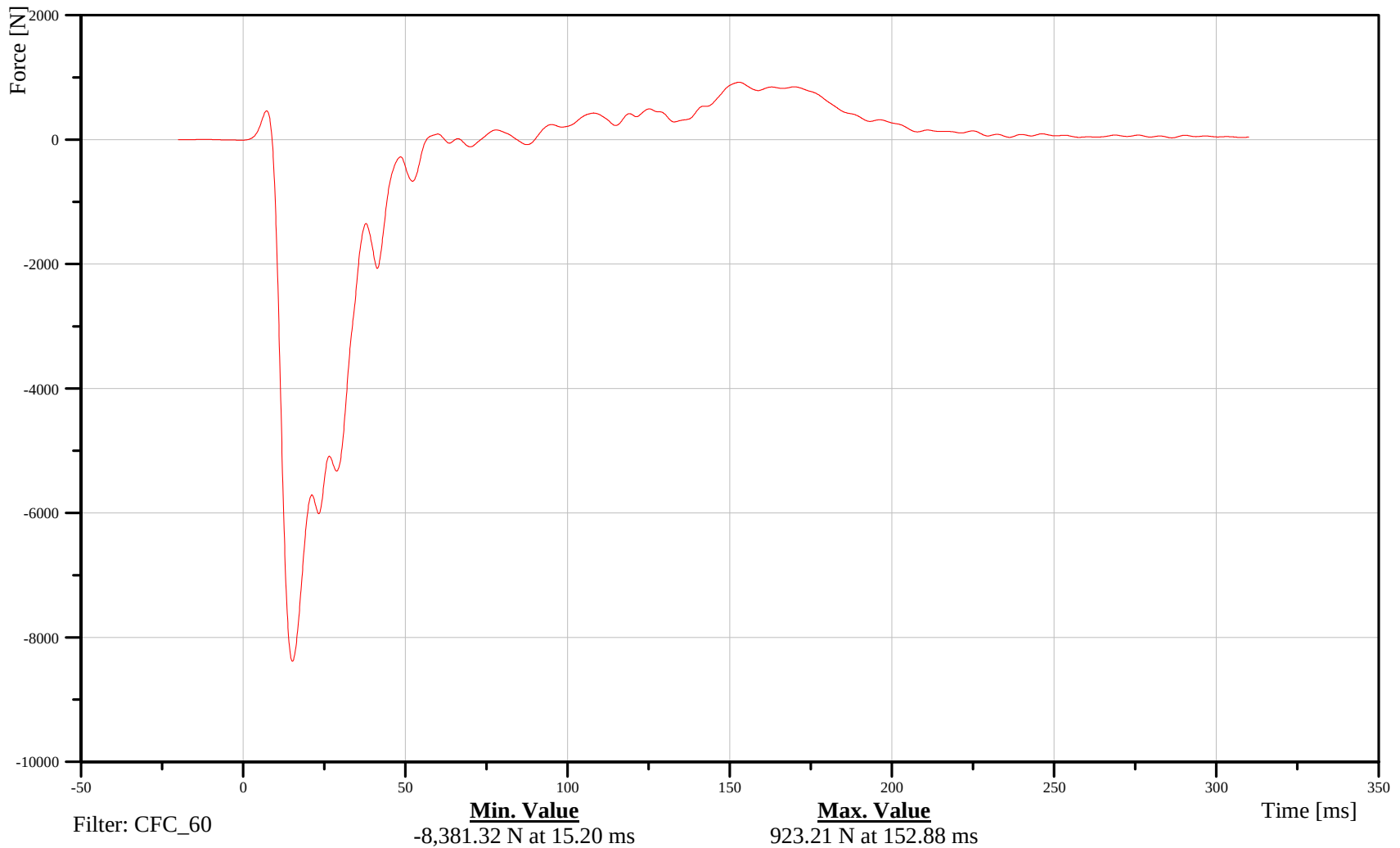
Date: 11/08/2007
Time: 13:40

Customer: VRTC

L0FBAR000068FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-239

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

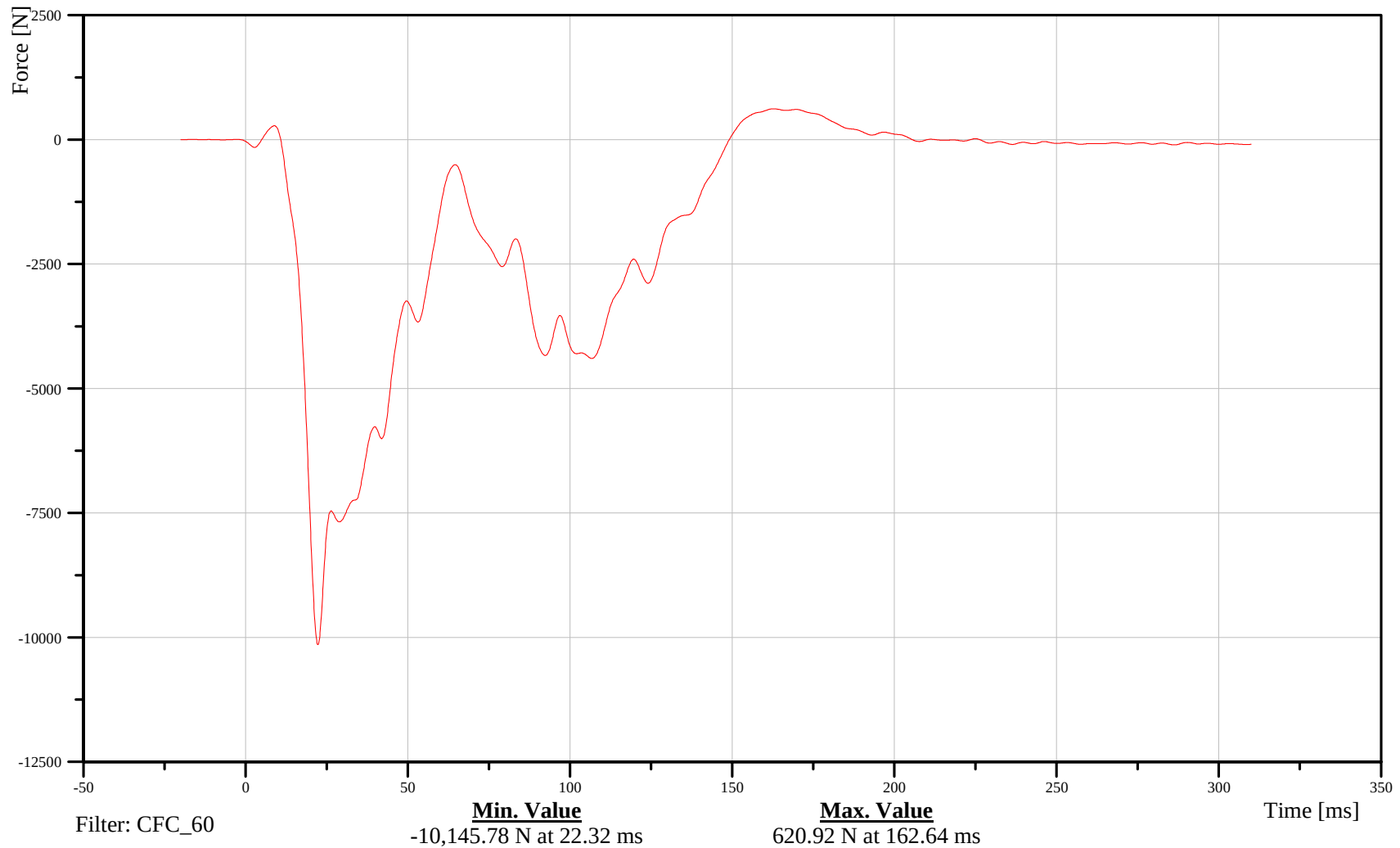
Load Cell Row 9 Column 7

Customer: VRTC

L0FBAR000069FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-240

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

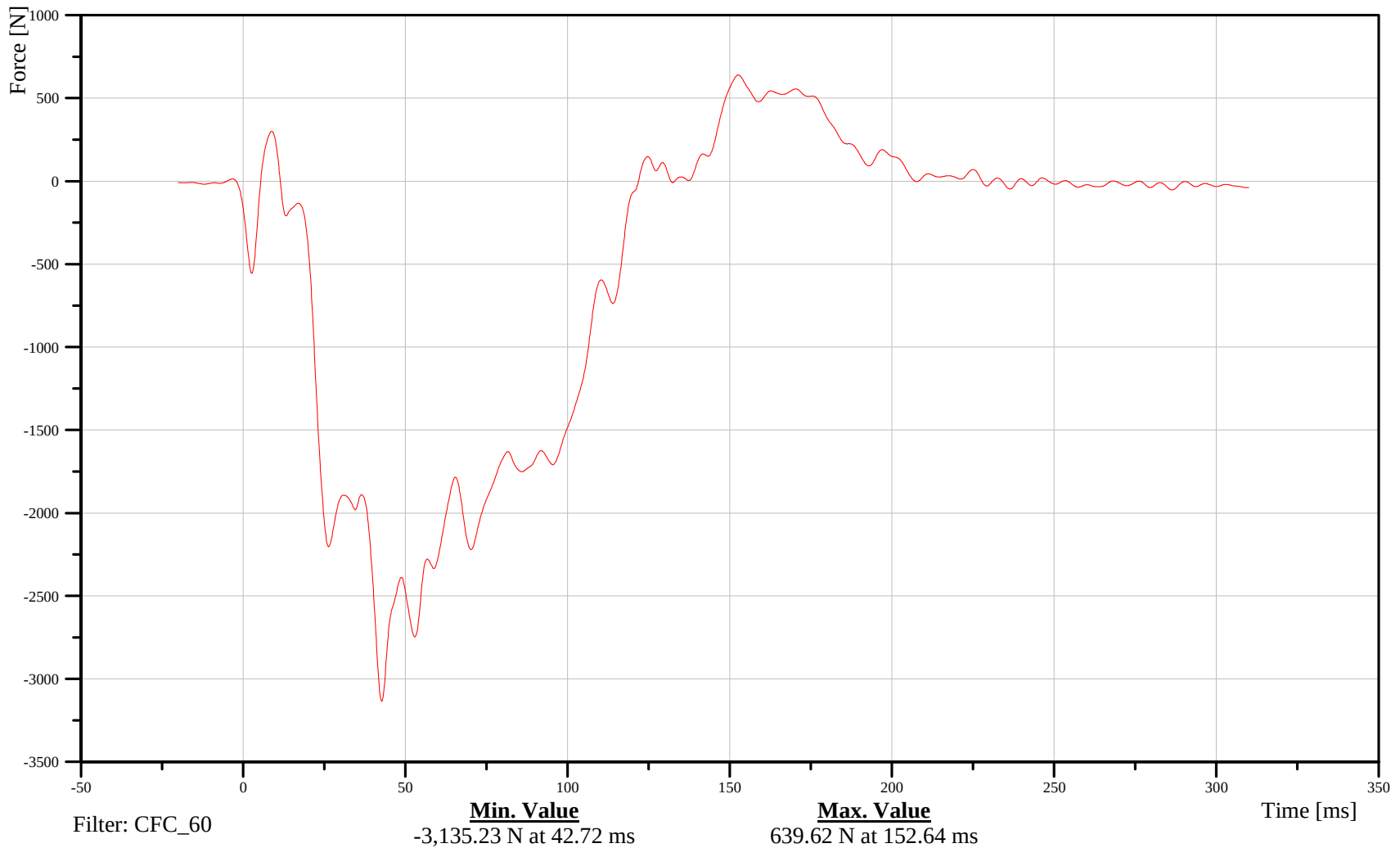
Load Cell Row 10 Column 7

Customer: VRTC

L0FBAR000070FOX

TRC Inc. Test Lab: CTF

Test Number: 071108



B-241

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

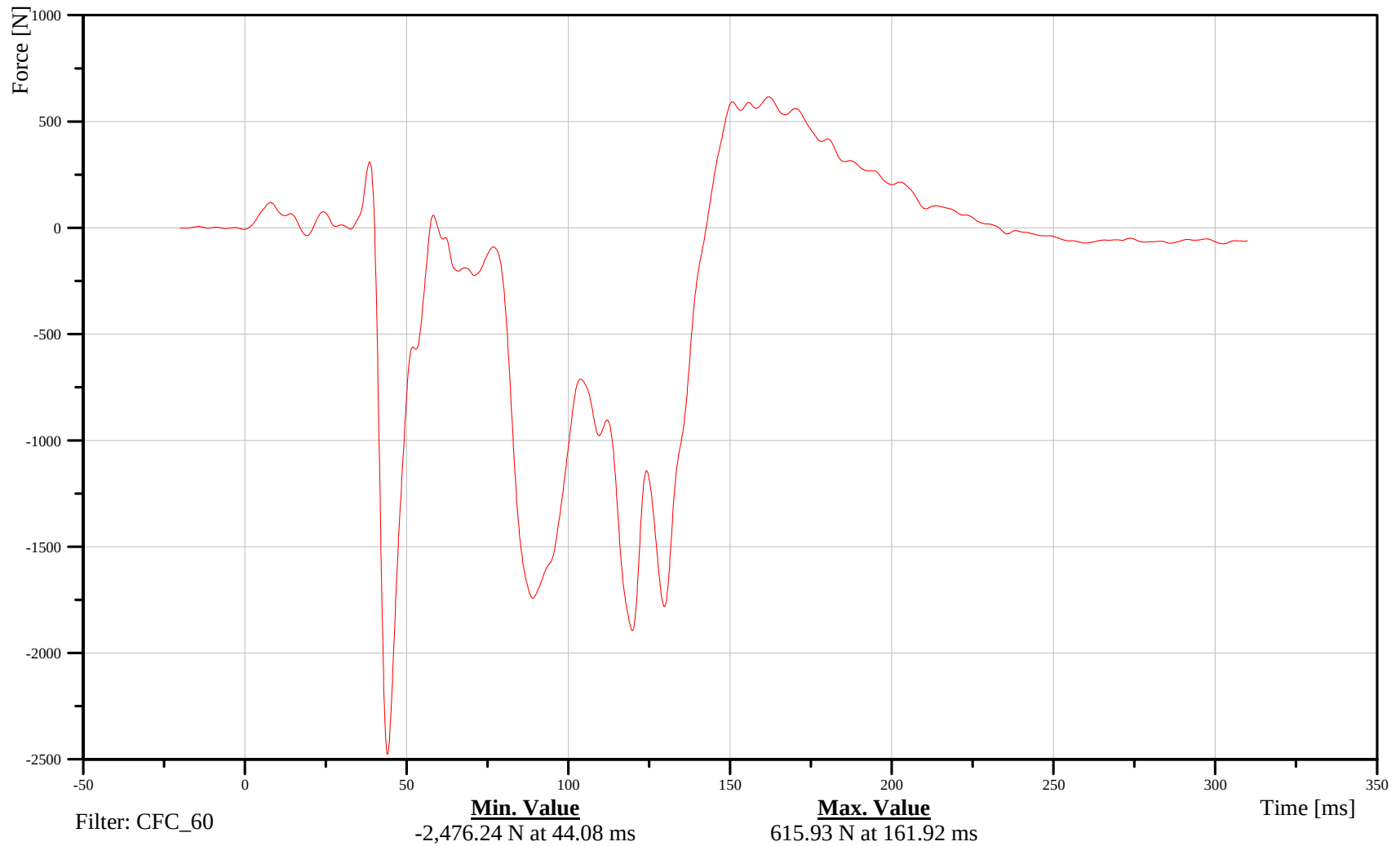
Load Cell Row 1 Column 8

Customer: VRTC

L0FBAR000071FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-242

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

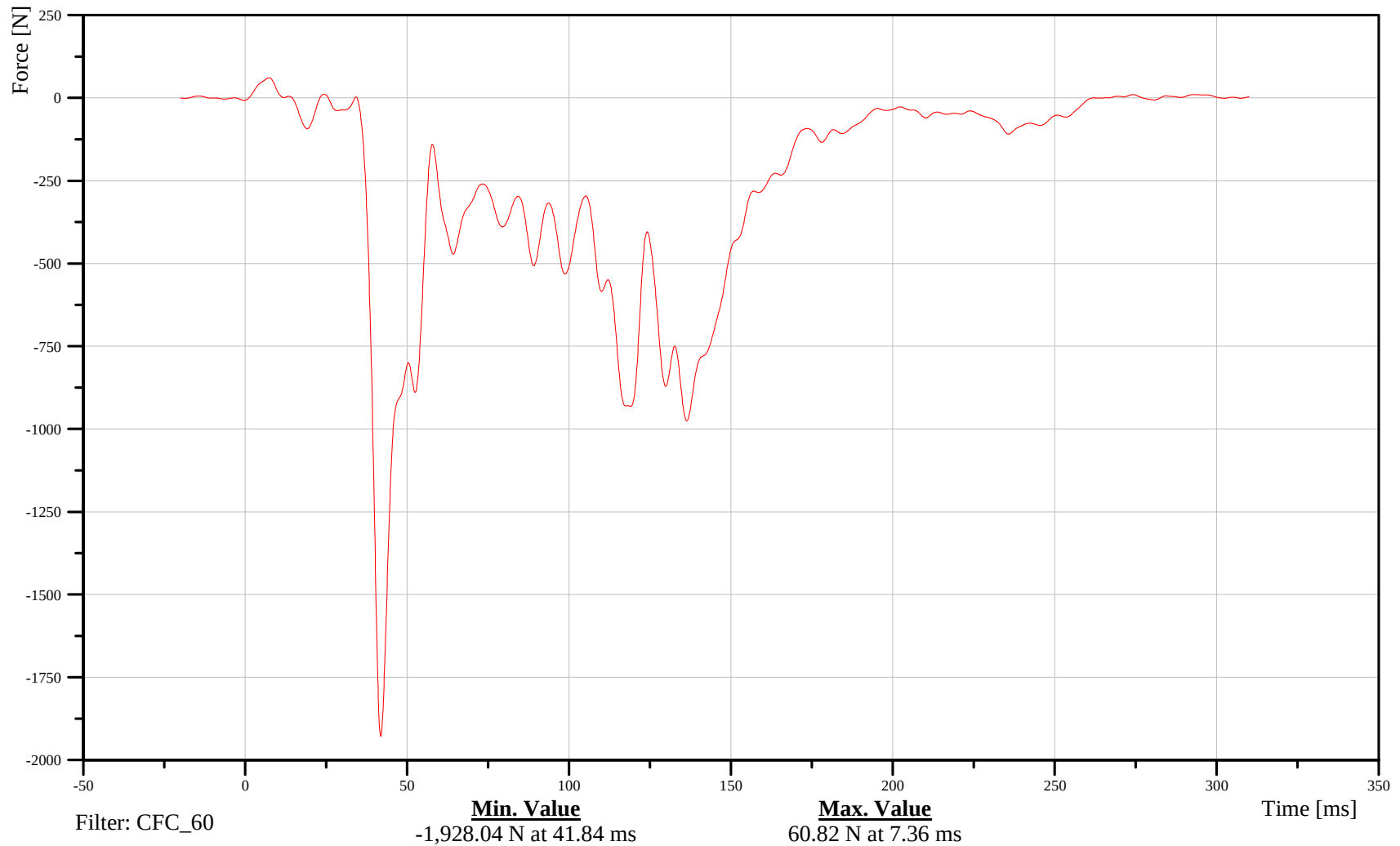
Load Cell Row 2 Column 8

Customer: VRTC

L0FBAR000072FOX

TRC Inc. Test Lab: CTF

Test Number: 071108



B-243

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

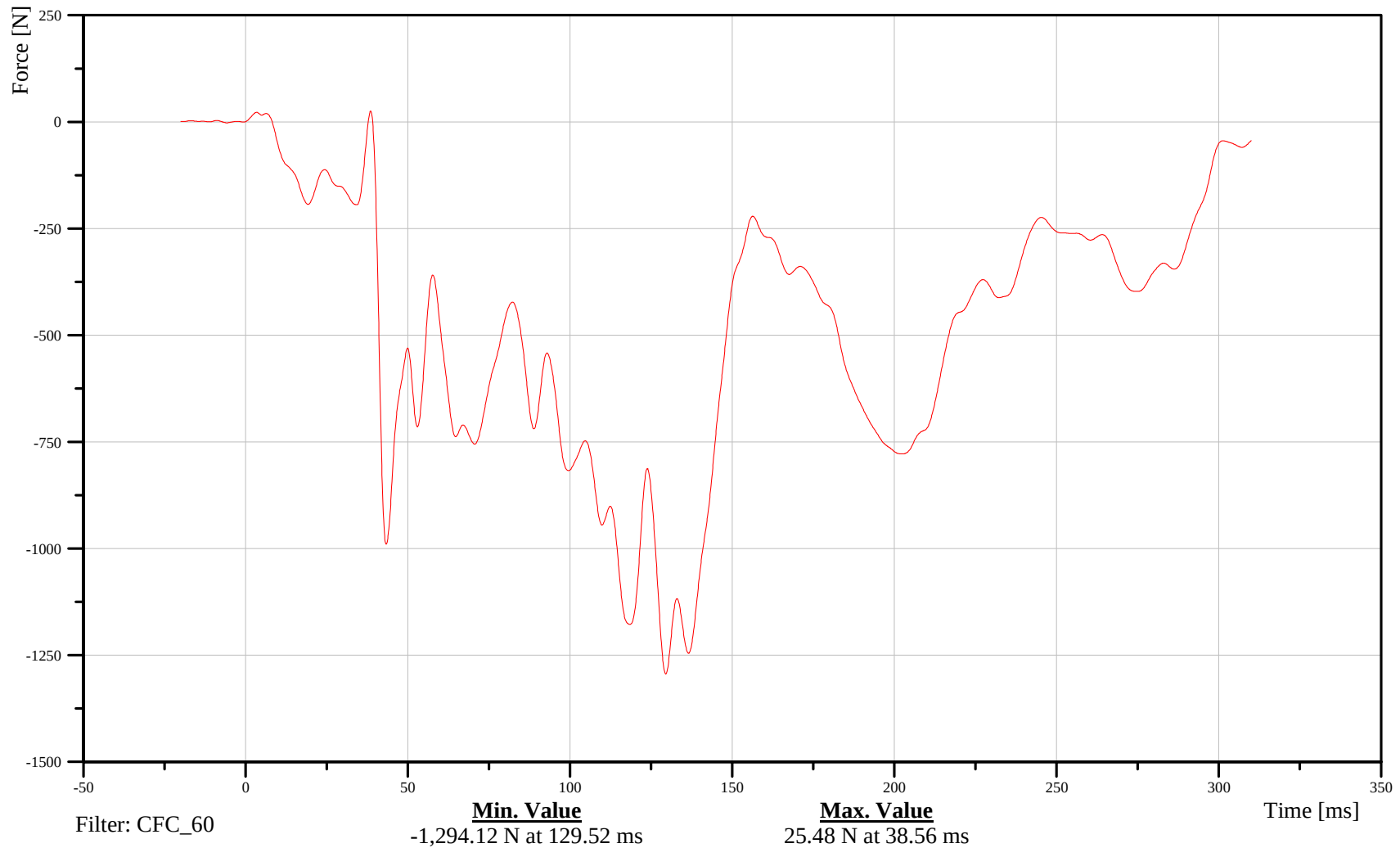
Load Cell Row 3 Column 8

Customer: VRTC

L0FBAR000073FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-244

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

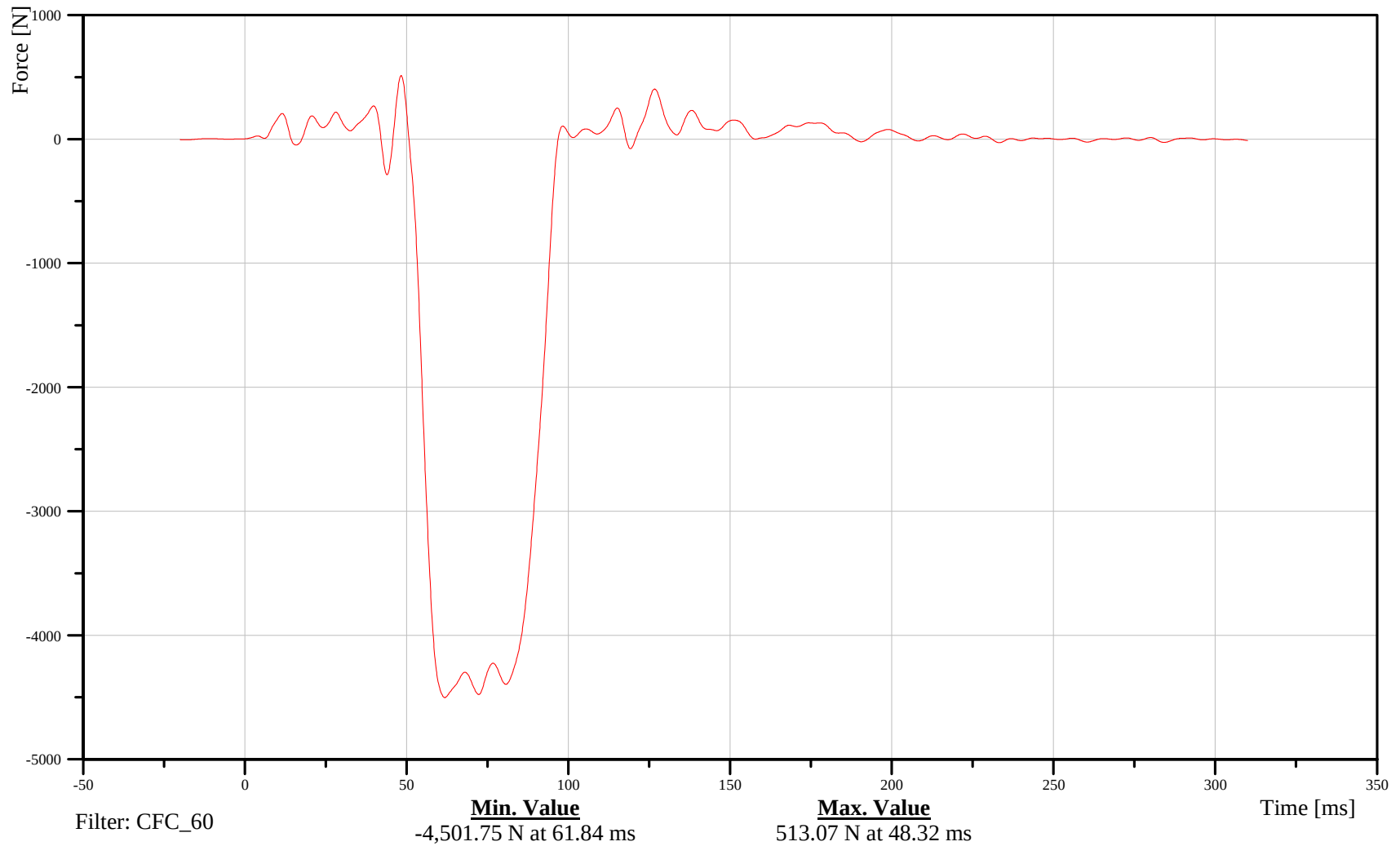
Load Cell Row 4 Column 8

Customer: VRTC

L0FBAR000074FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-245

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

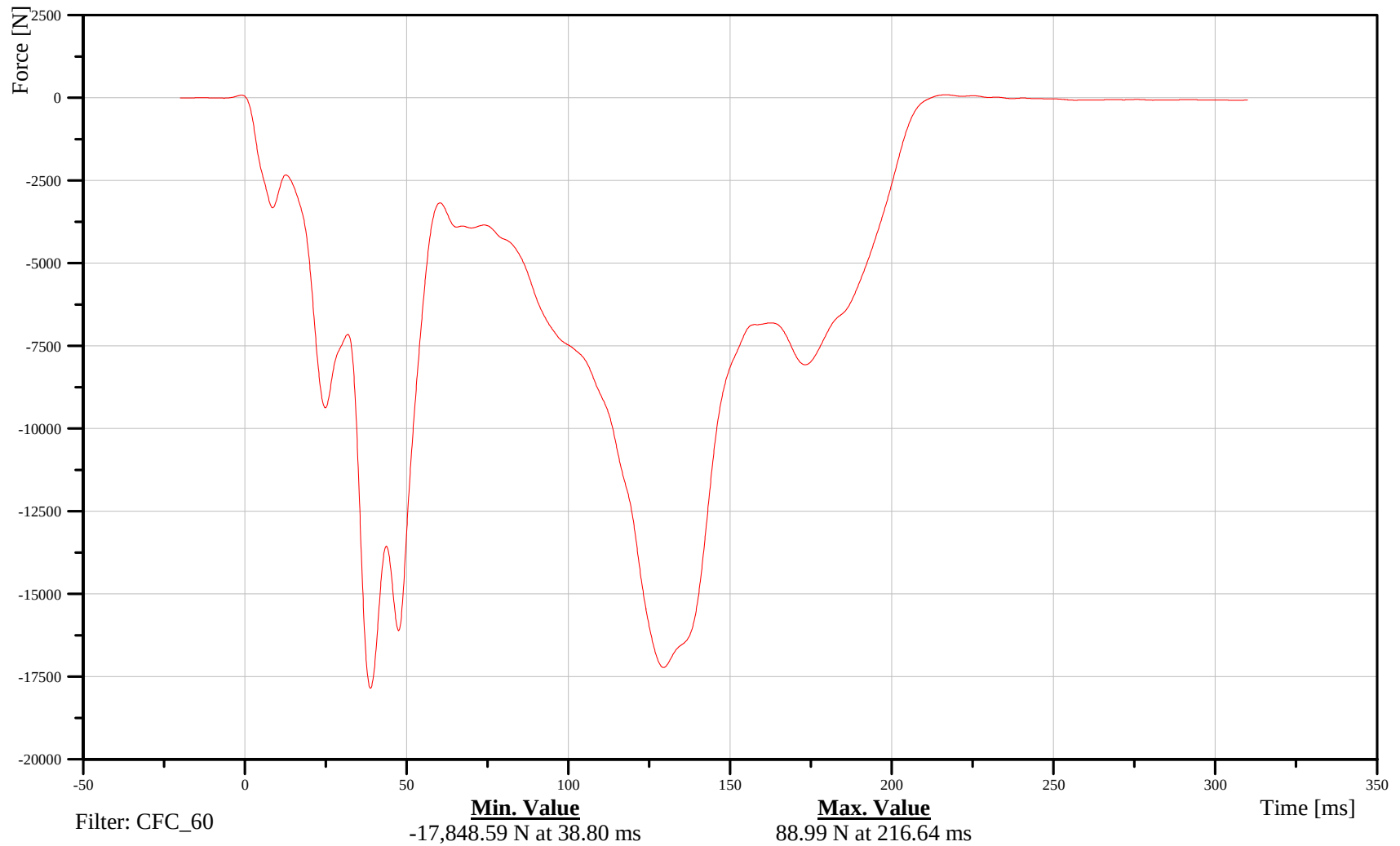
Load Cell Row 5 Column 8

Customer: VRTC

L0FBAR000075FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-246

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

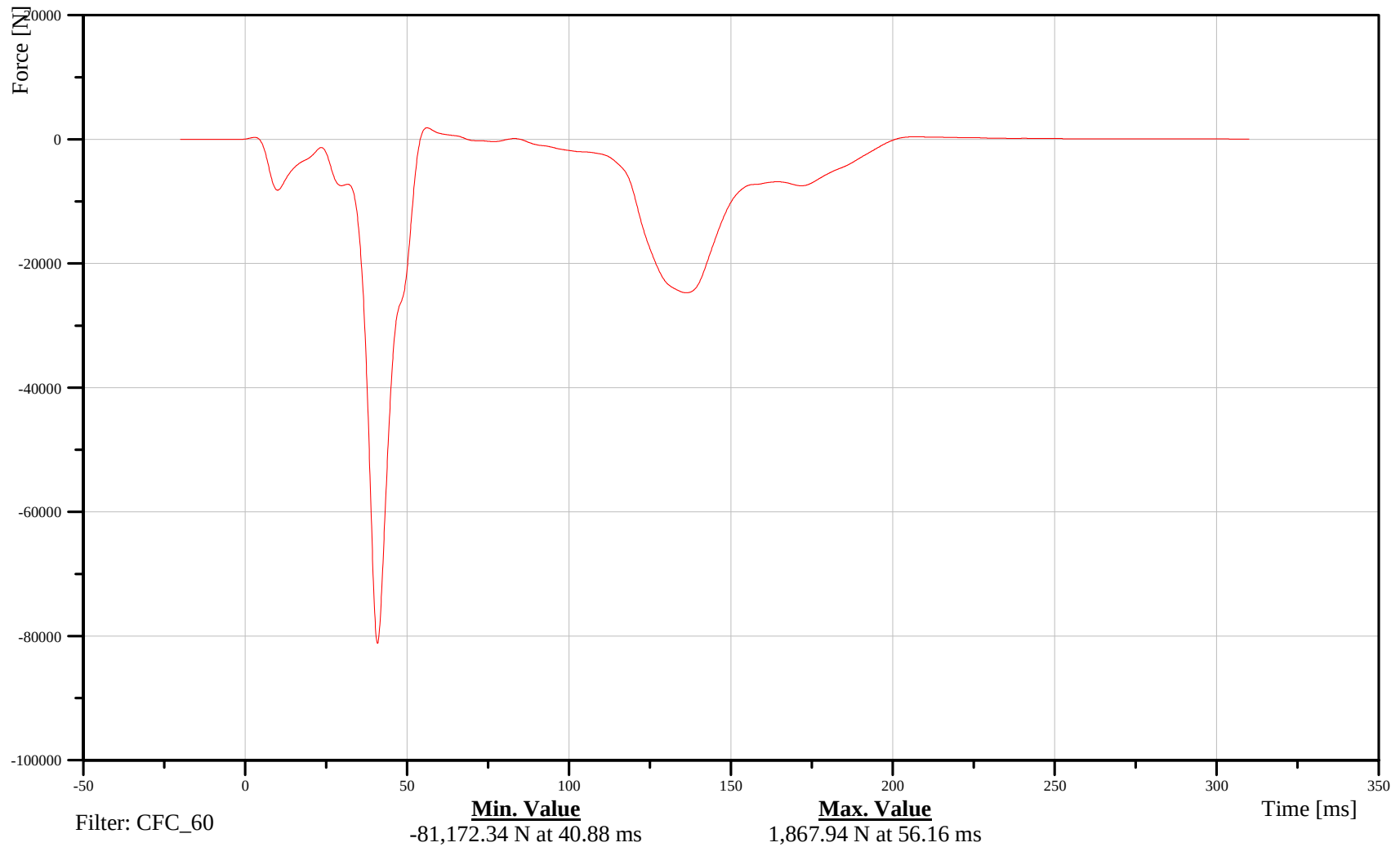
Load Cell Row 6 Column 8

Customer: VRTC

L0FBAR000076FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-247

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

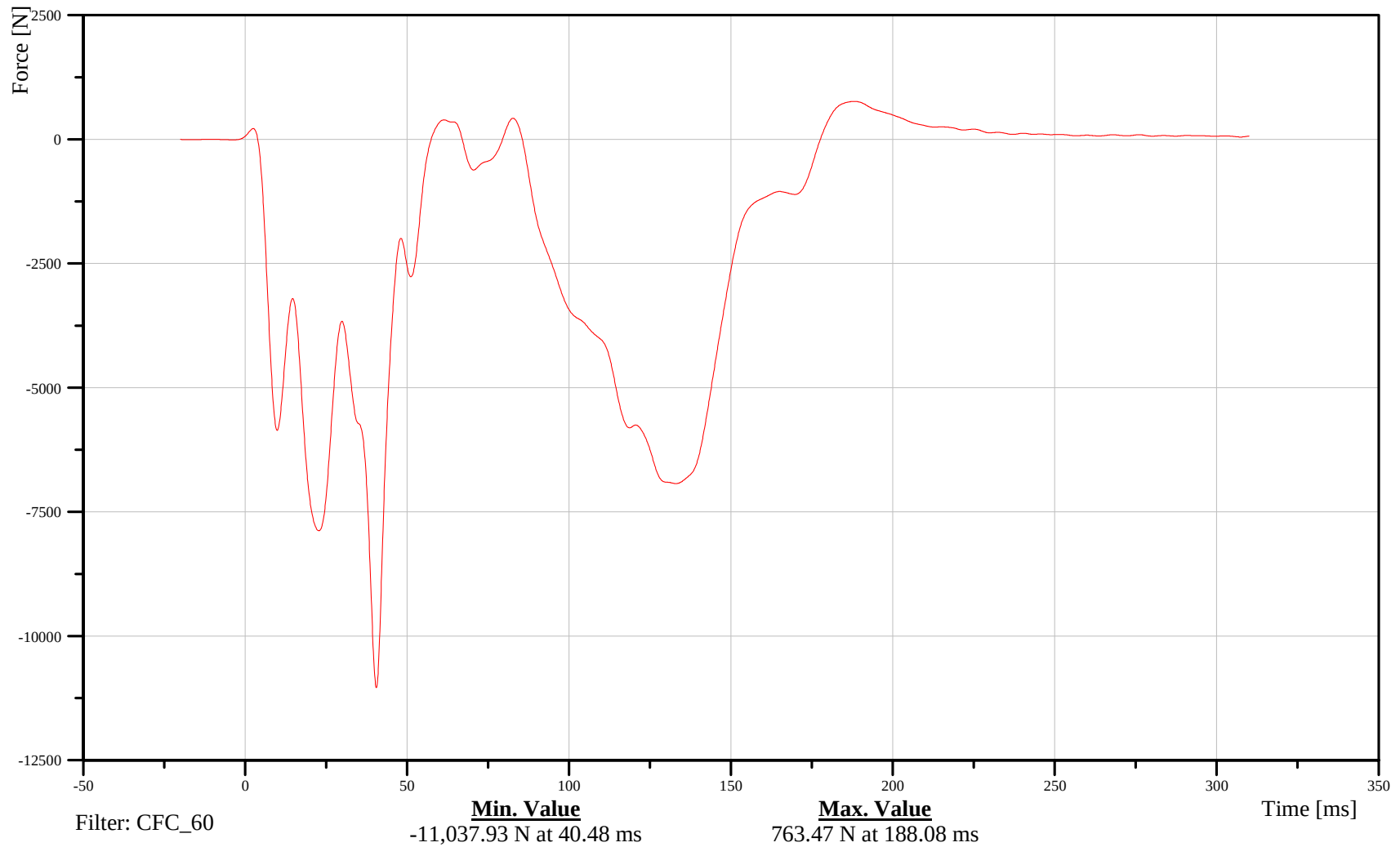
Load Cell Row 7 Column 8

Customer: VRTC

L0FBAR000077FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-248

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

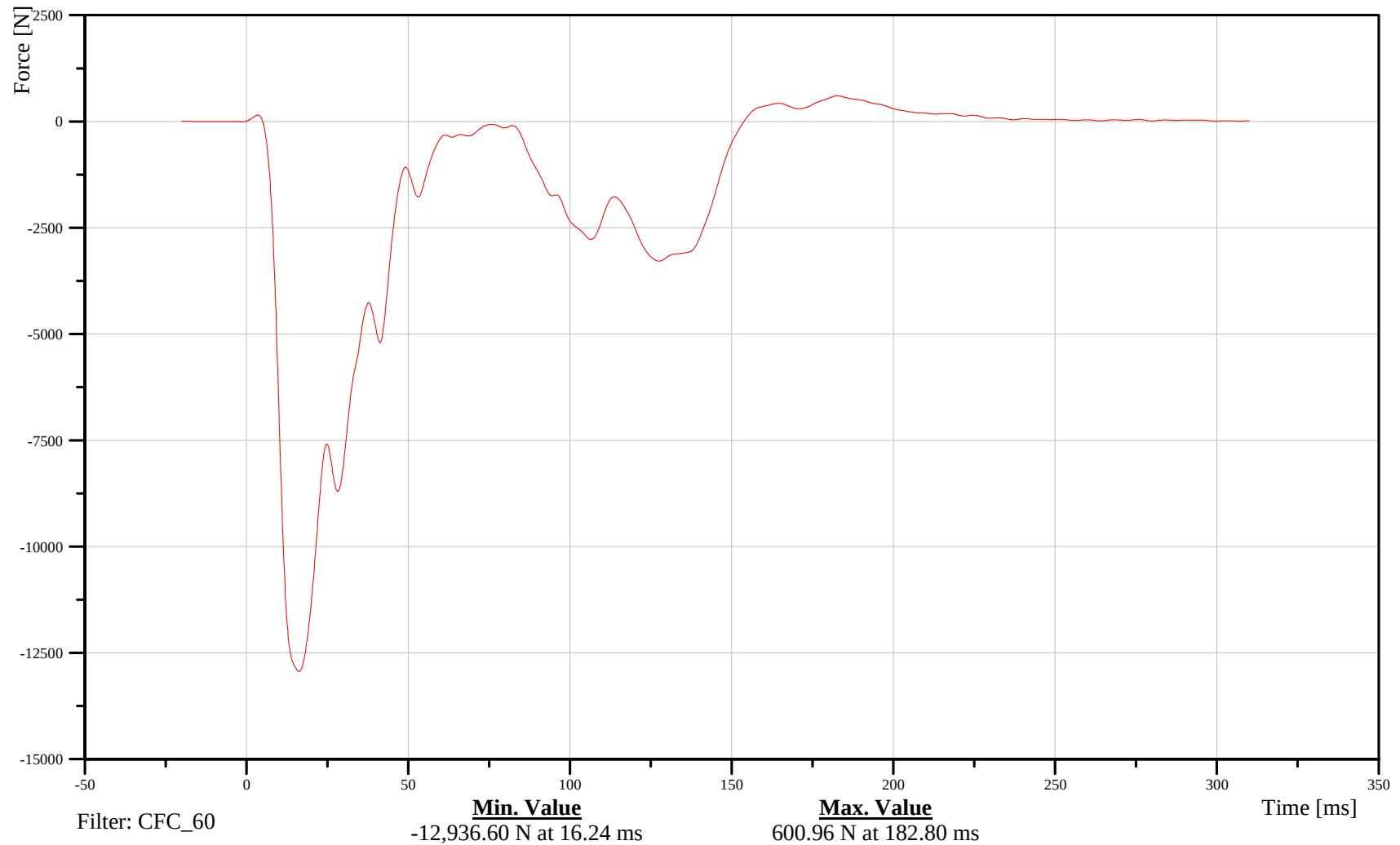
Load Cell Row 8 Column 8

Customer: VRTC

L0FBAR000078FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-249

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

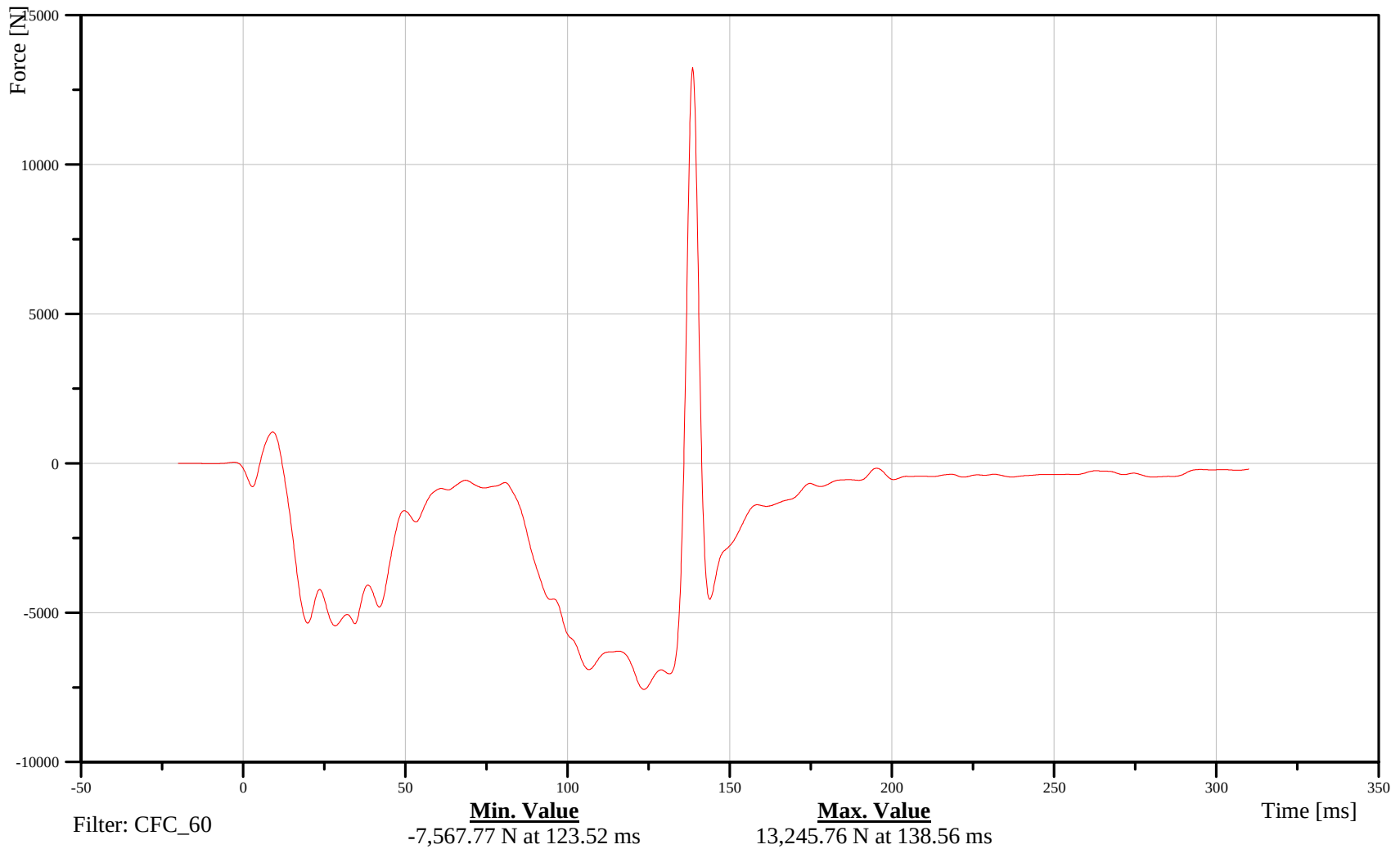
Load Cell Row 9 Column 8

Customer: VRTC

L0FBAR000079FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-250

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

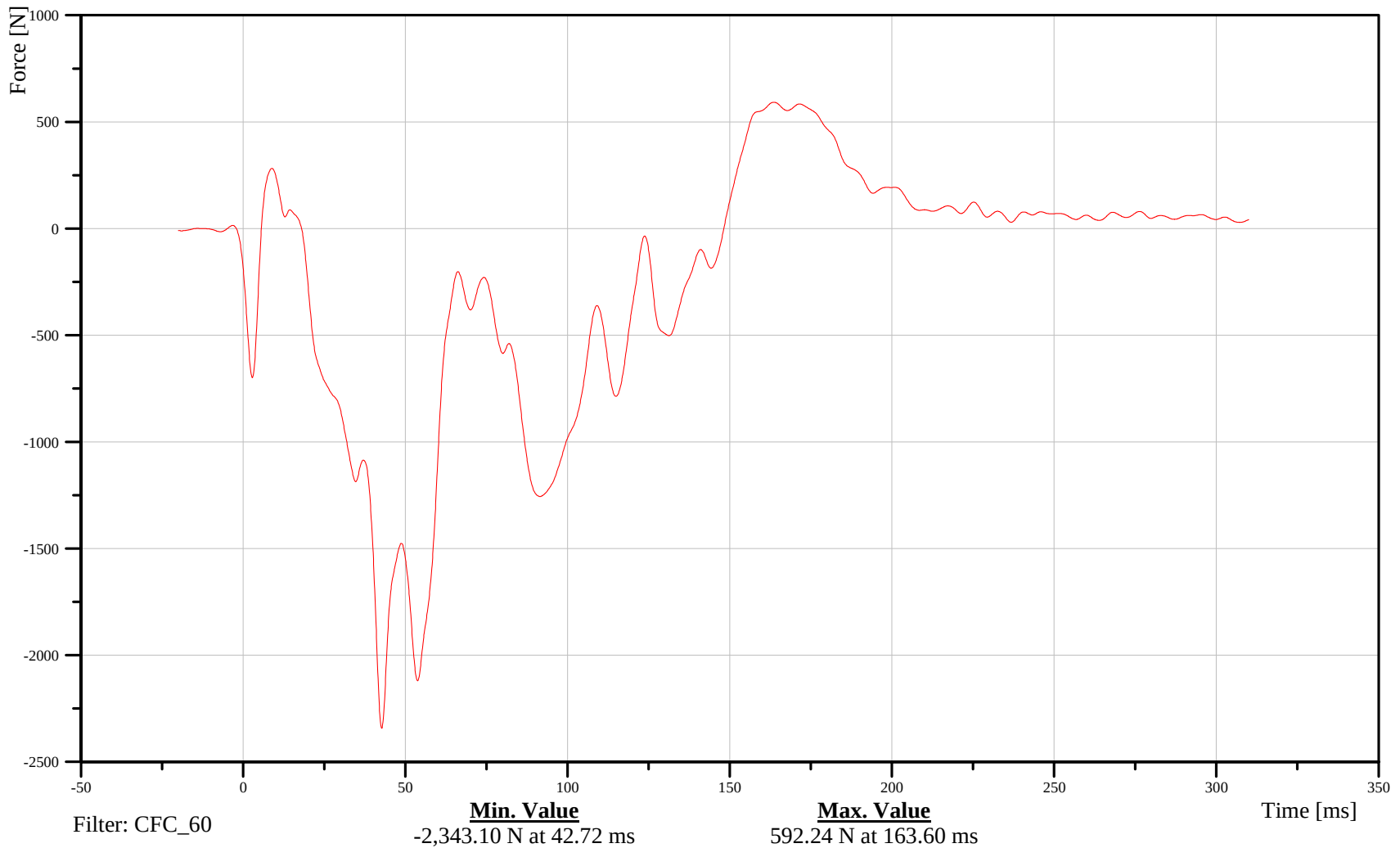
Load Cell Row 10 Column 8

Customer: VRTC

L0FBAR000080FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-251

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

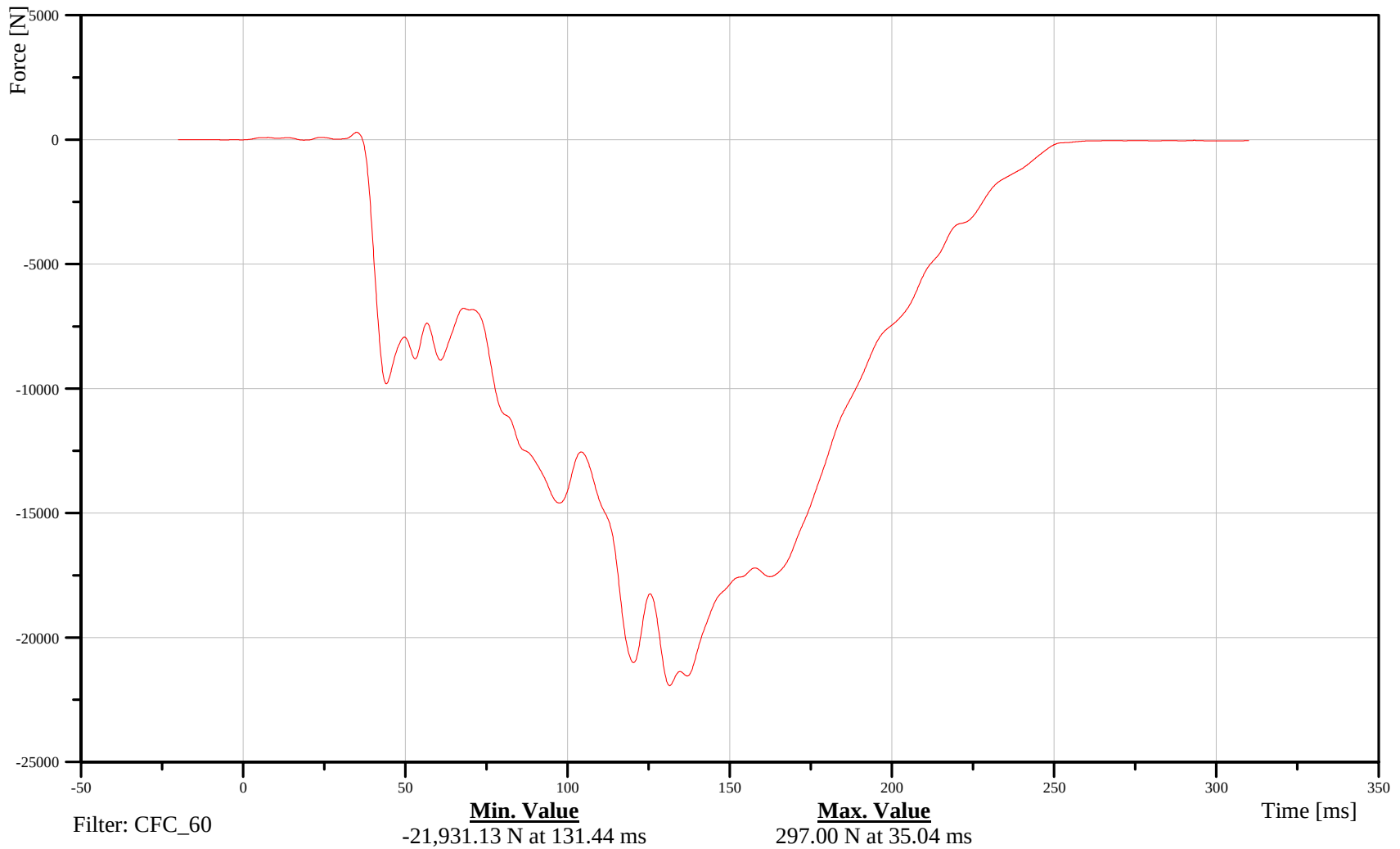
Load Cell Row 1 Column 9

Customer: VRTC

L0FBAR000081FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-252

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

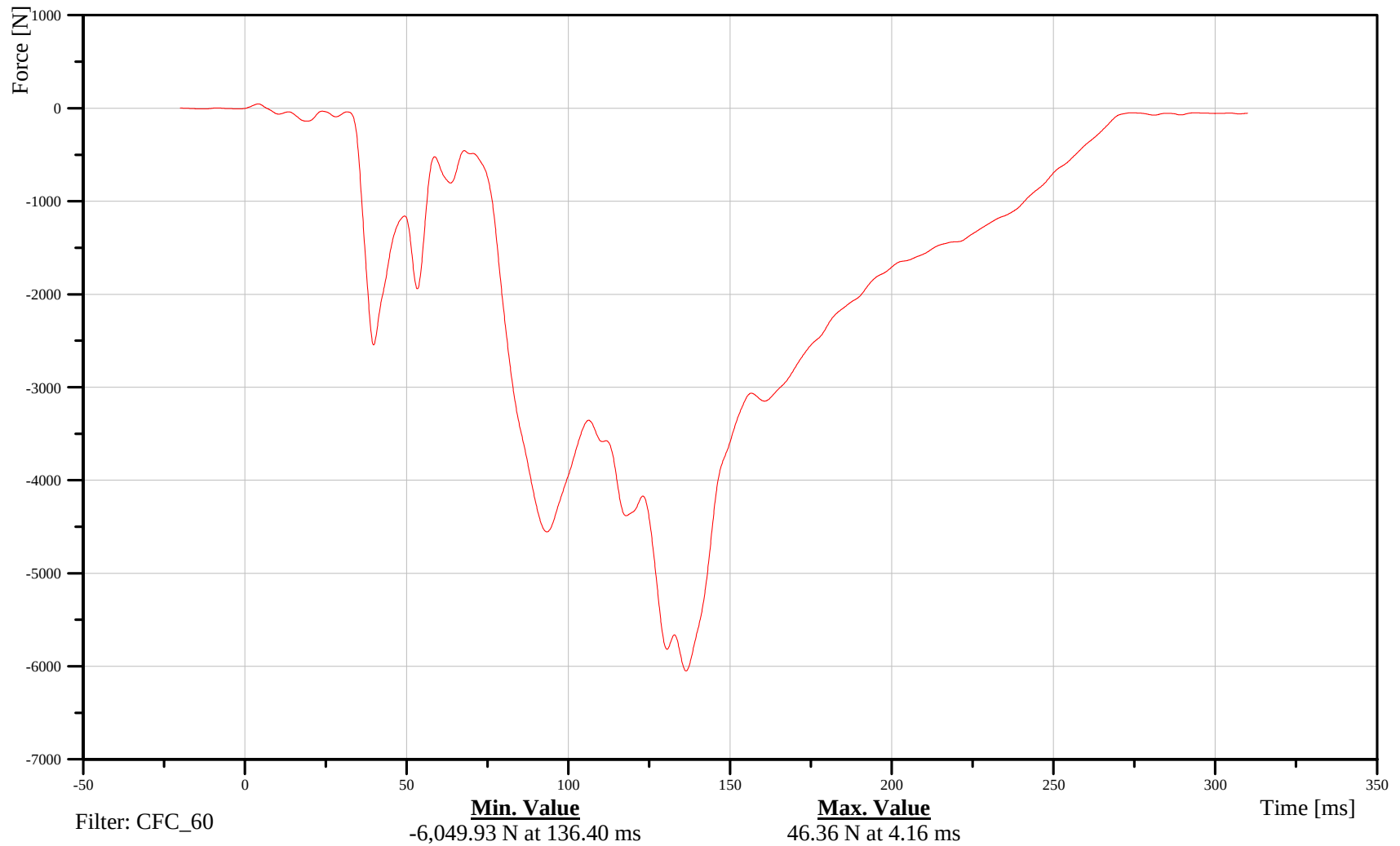
Load Cell Row 2 Column 9

Customer: VRTC

L0FBAR000082FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-253

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

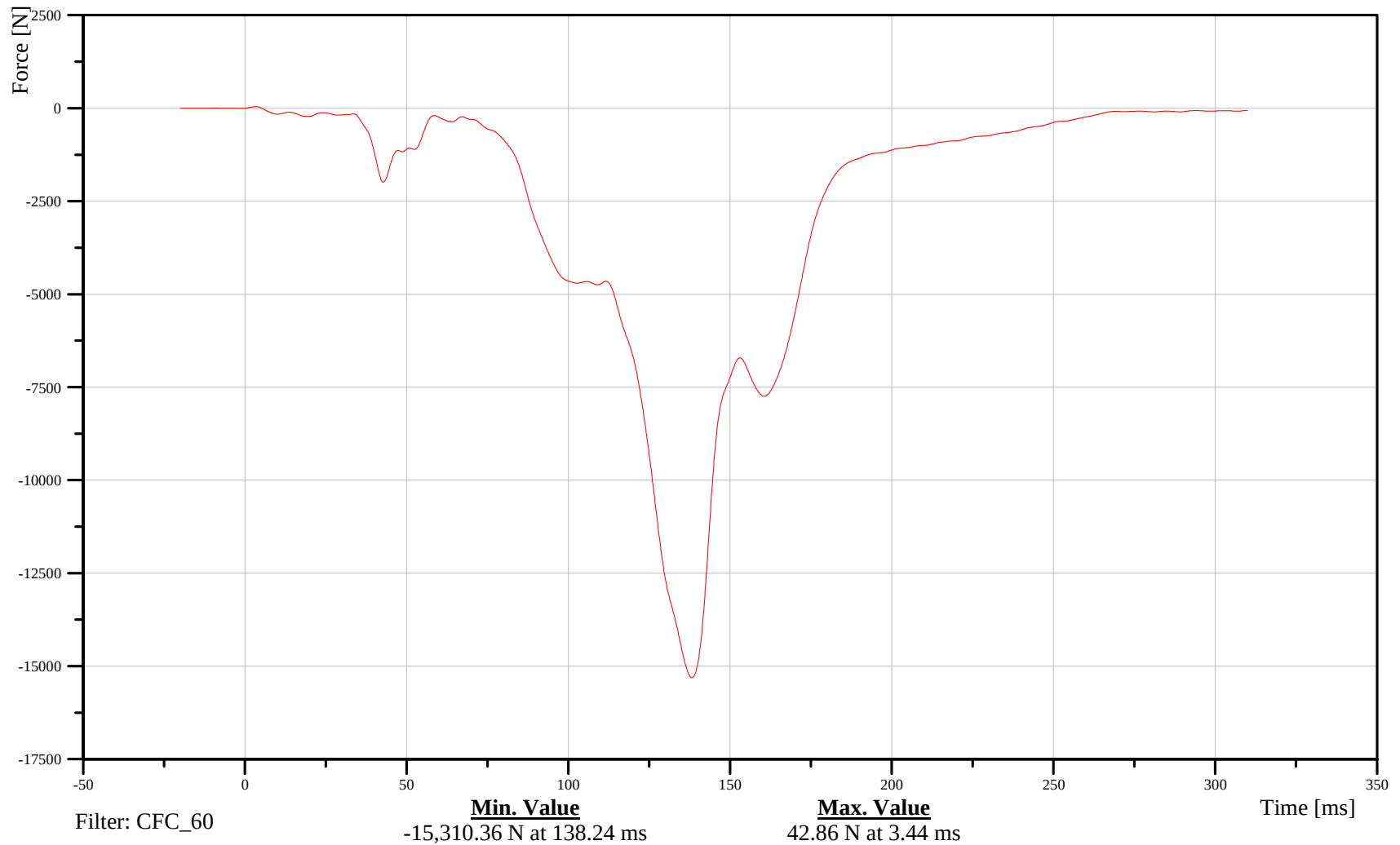
Load Cell Row 3 Column 9

Customer: VRTC

L0FBAR000083FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-254

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

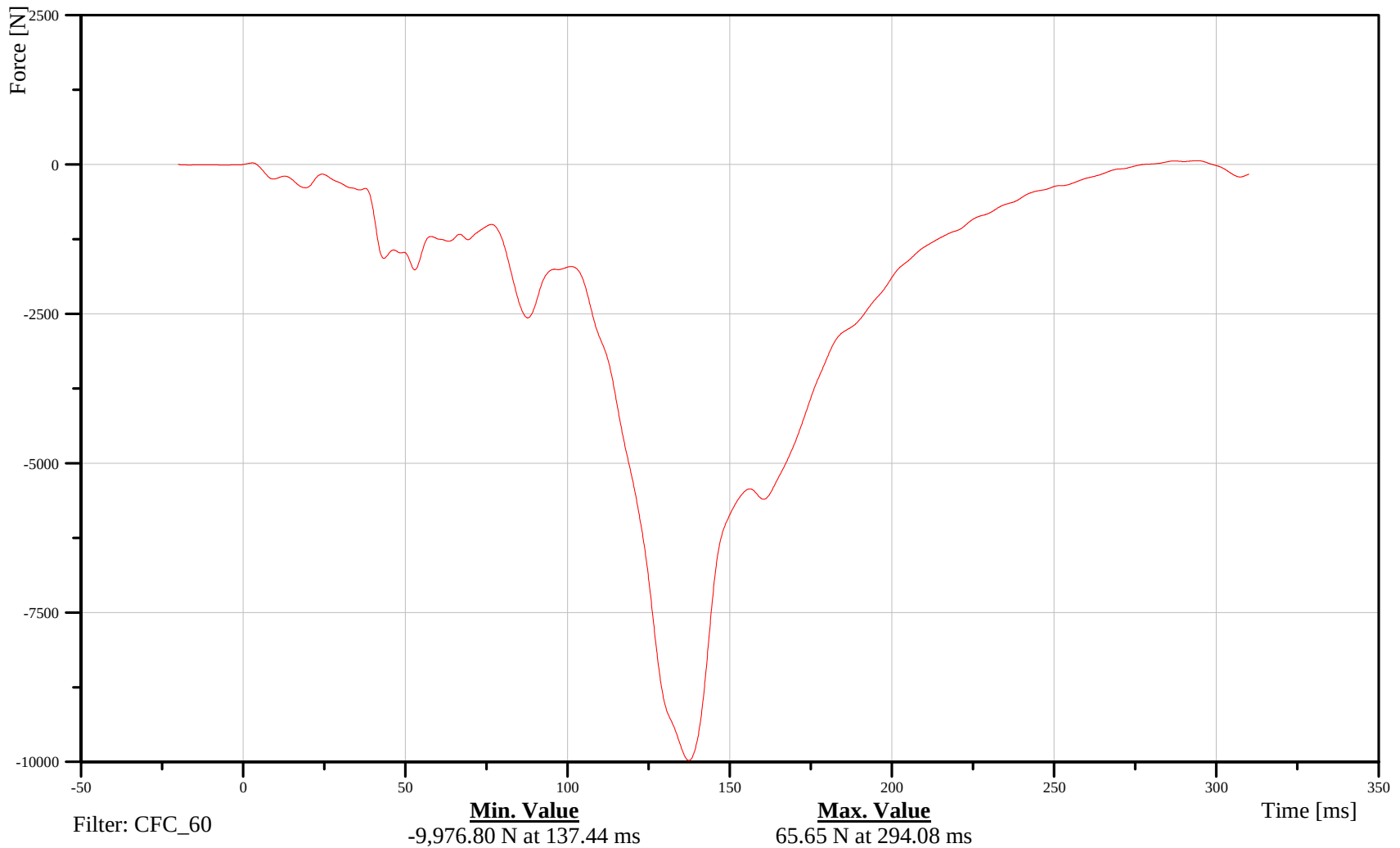
Load Cell Row 4 Column 9

Customer: VRTC

L0FBAR000084FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-255

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

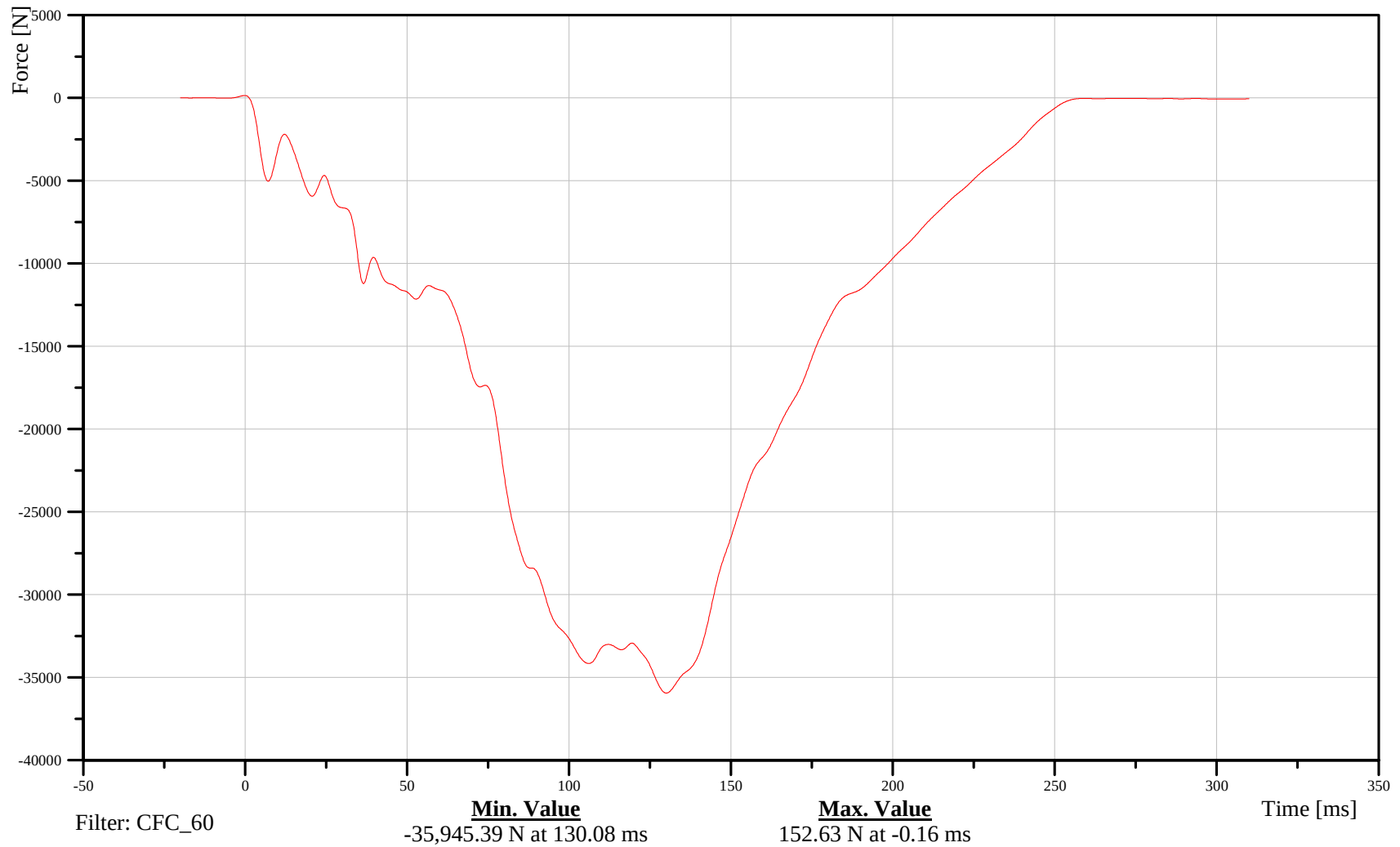
Load Cell Row 5 Column 9

Customer: VRTC

L0FBAR000085FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-256

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

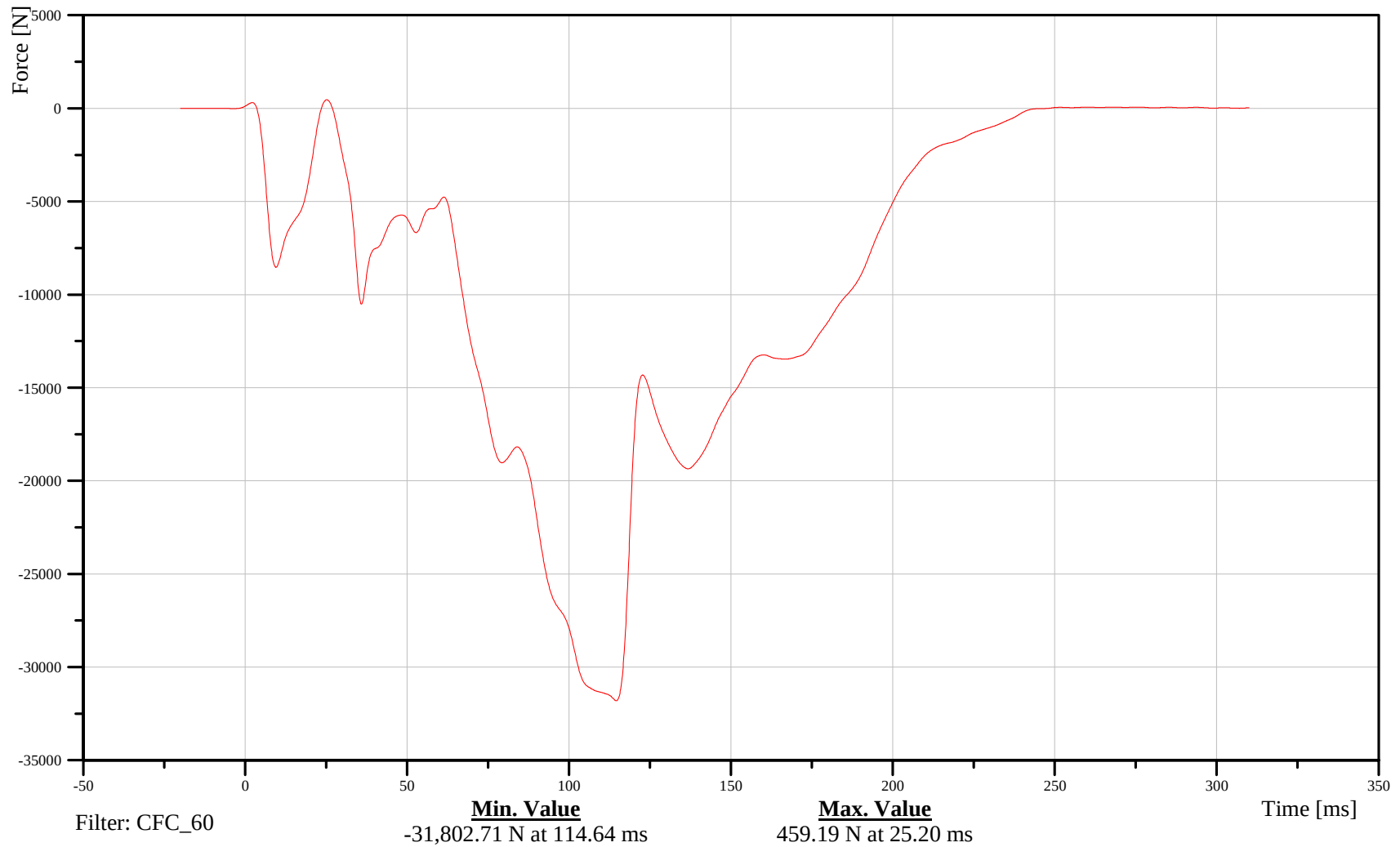
Load Cell Row 6 Column 9

Customer: VRTC

L0FBAR000086FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-257

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

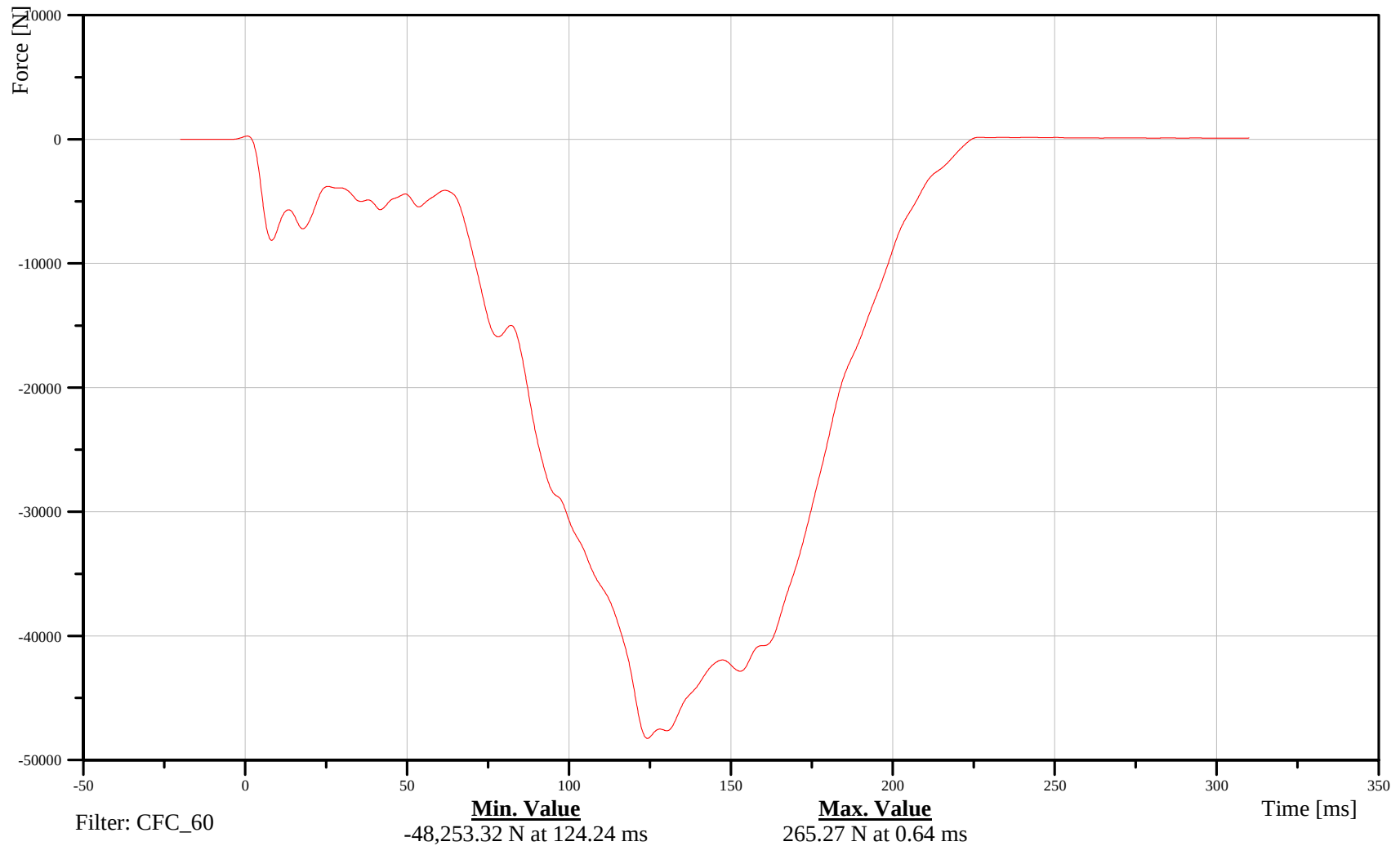
Load Cell Row 7 Column 9

Customer: VRTC

L0FBAR000087FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-258

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

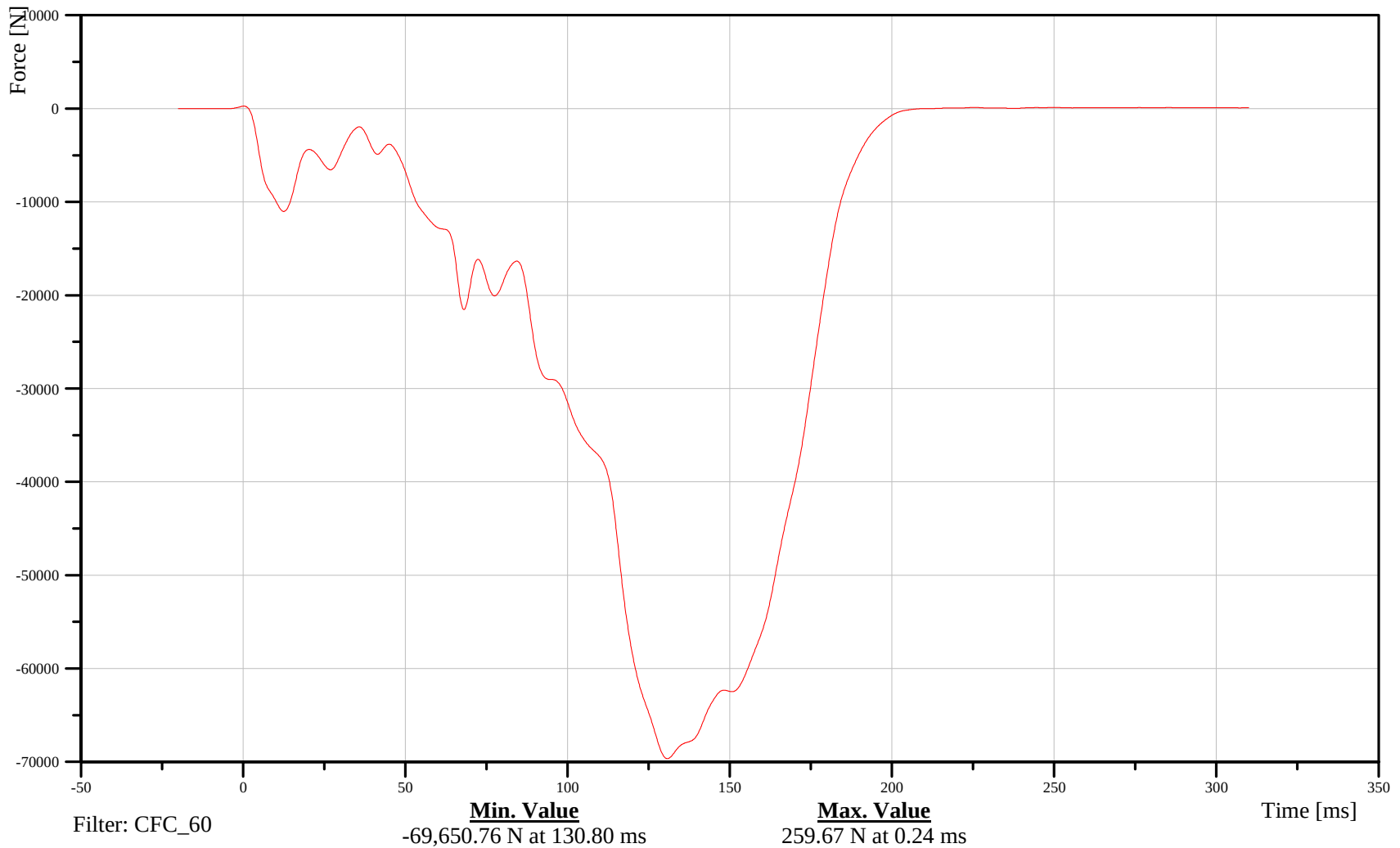
Load Cell Row 8 Column 9

Customer: VRTC

L0FBAR000088FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-259

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

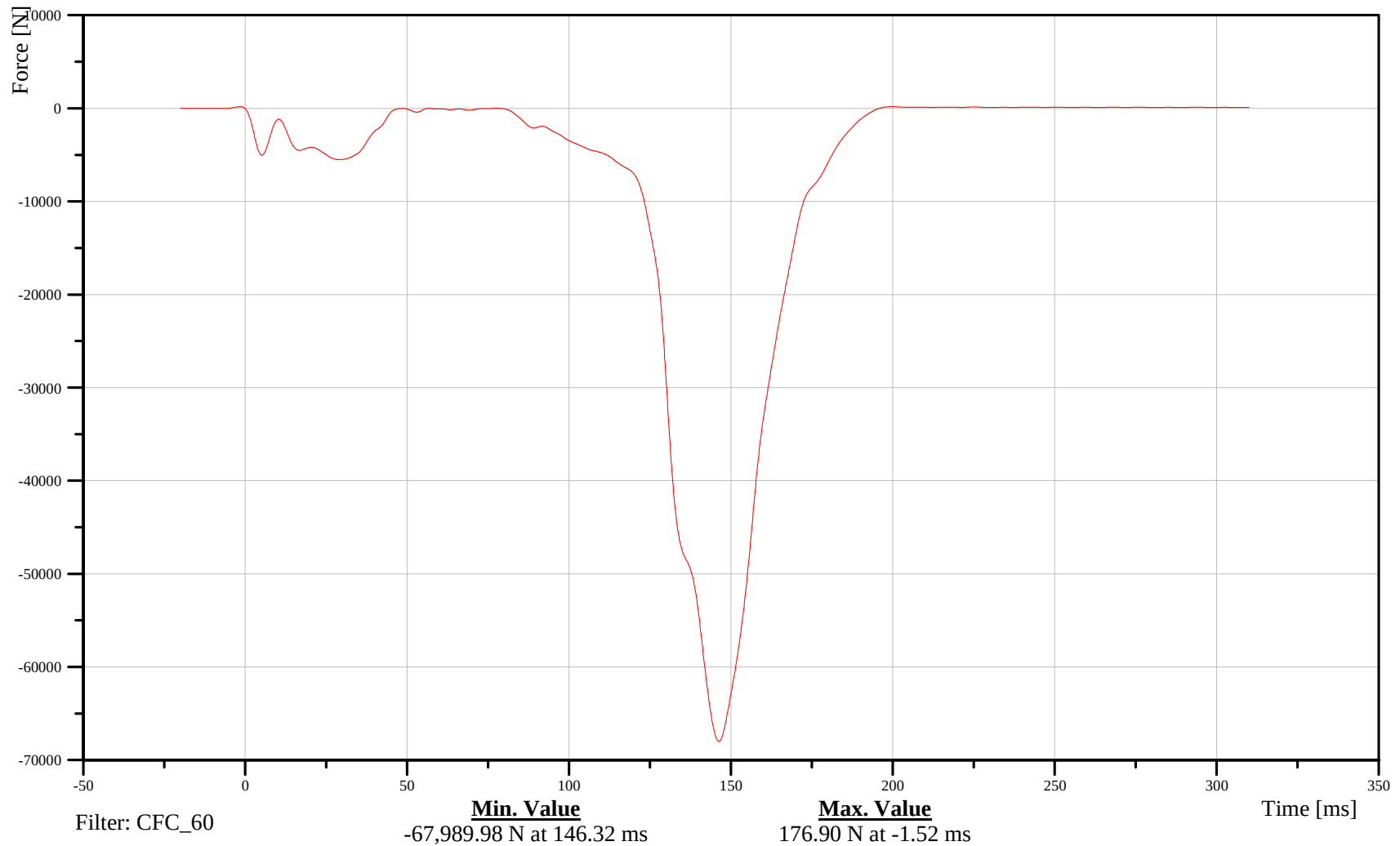
Load Cell Row 9 Column 9

Customer: VRTC

L0FBAR000089FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-260

071108



2006 Ford F250 into Left 40% Offset Deformable LCB at 64 kph

Date: 11/08/2007
Time: 13:40

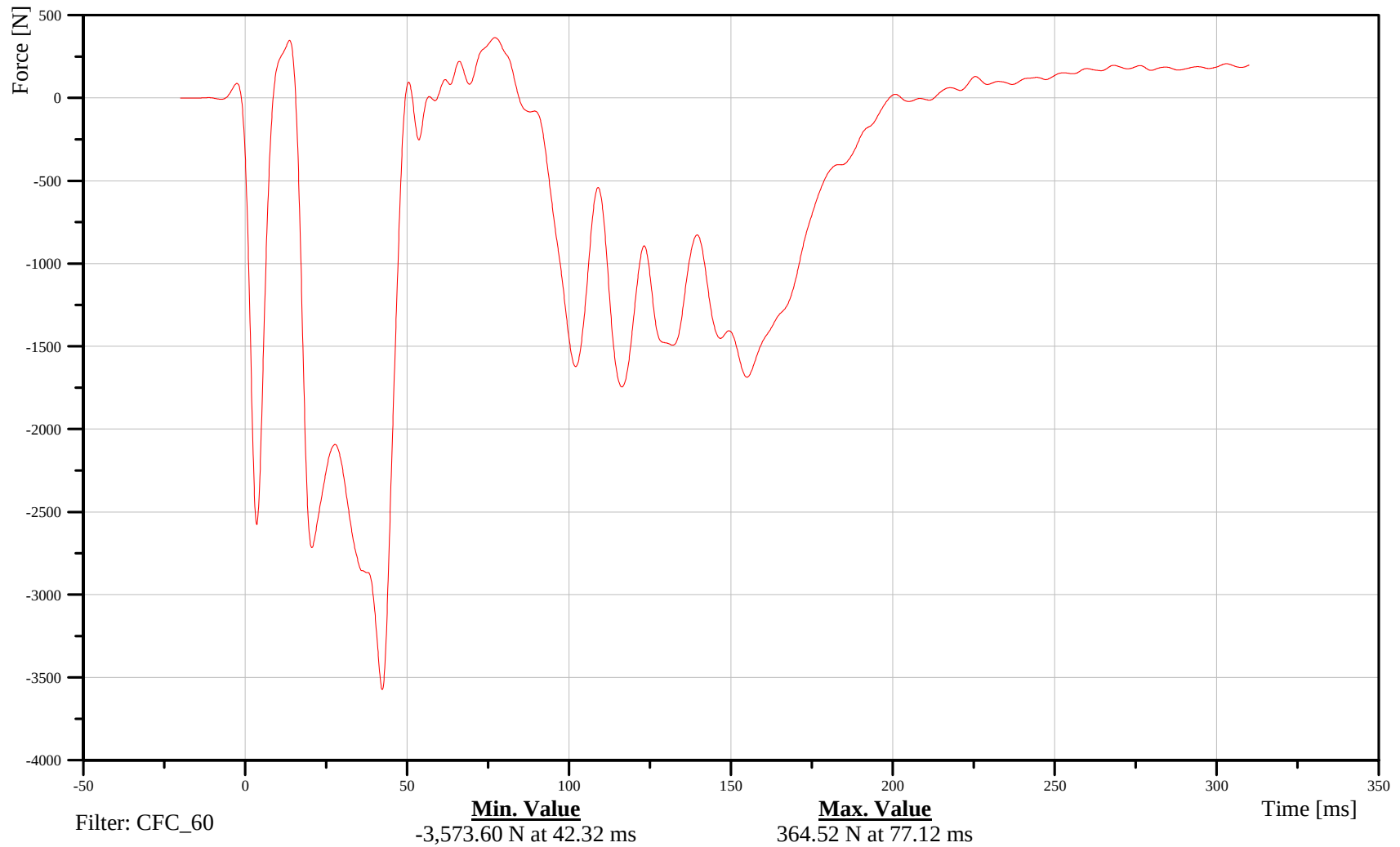
Load Cell Row 10 Column 9

Customer: VRTC

L0FBAR000090FOXD

TRC Inc. Test Lab: CTF

Test Number: 071108



B-261

071108

Appendix C

Dummy Certification Data

Pre-test Dummy Configuration and Performance Verification Data

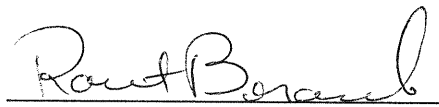
Driver Dummy S/N: 855

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 855
Calibration No. 08

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	886	Yes
B	Shoulder Pivot Height	505.5 - 520.7	506	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	88	Yes
F	Thigh Clearance	139.7 - 154.9	151	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	298	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	333	Yes
J	Elbow Rest Height	190.5 - 210.8	195	Yes
K	Buttock Knee Length	579.1 - 604.5	599	Yes
L	Popliteal Height	429.3 - 454.7	432	Yes
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	476	Yes
O	Chest Depth	213.4 - 228.6	225	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	95	Yes
Y	Chest Circumference	970.3 - 1000.8	995	Yes
Z	Waist Circumference	835.7 - 866.1	847	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comment:

Technician



Approved



Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 855 Certification No. 8-1

Test Date: 10/23/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	254.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-7.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Randall B. Boudle

Approved

Ron Stoner

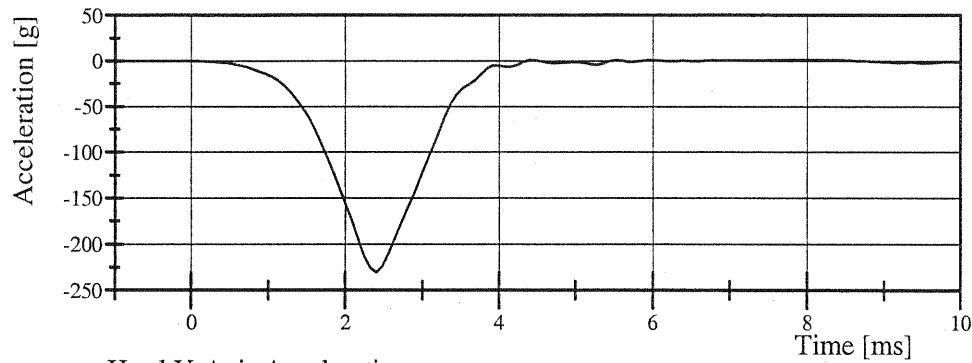
Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 855 Certification No. 8-1

Test Date: 10/23/2007

Head X-Axis Acceleration

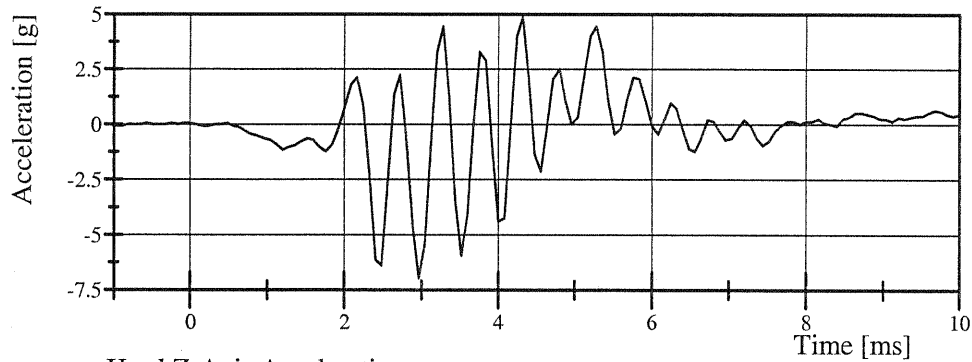


Filter Class: CFC_1000

Max: 1.4 g at 7.9 ms

Min: -230.4 g at 2.4 ms

Head Y-Axis Acceleration

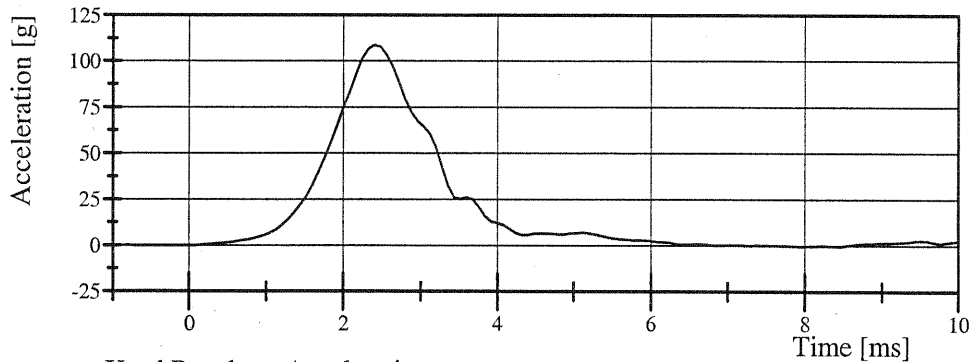


Filter Class: CFC_1000

Max: 4.9 g at 4.3 ms

Min: -7.0 g at 3.0 ms

Head Z-Axis Acceleration

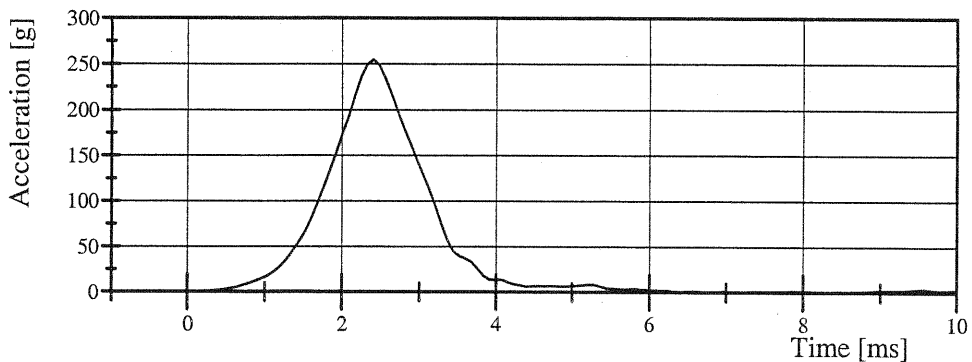


Filter Class: CFC_1000

Max: 108.8 g at 2.4 ms

Min: -0.4 g at 8.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 254.9 g at 2.4 ms

Min: 0.0 g at -0.5 ms

Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 855 Certification No. 8-5

Test Date: 10/24/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.9 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.991 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	39.5 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-24.32 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.91 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.82 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.82 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-64.6 °	Yes
Time of Peak	57 - 64 ms	60.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	121.0 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	93.1 N·m	Yes
Time of Peak	47 - 58 ms	53.2 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	102.6 ms	Yes

Test meets specifications.

Comments:

Technician

Rand Brand

Approved

Ron Stover

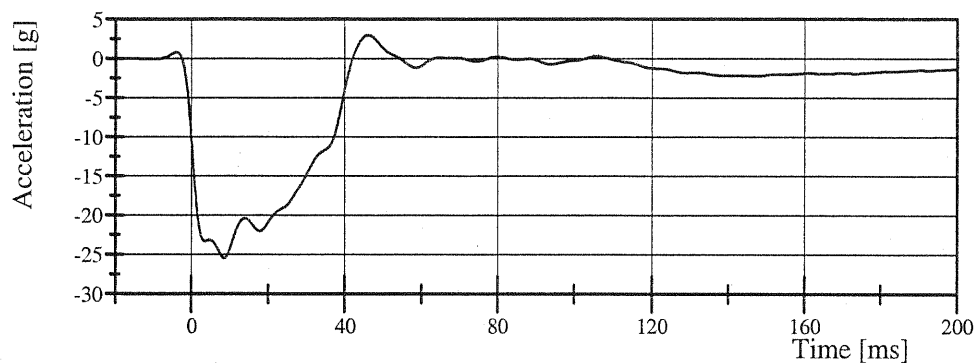
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 855 Certification No. 8-5

Test Date: 10/24/2007

Pendulum Acceleration

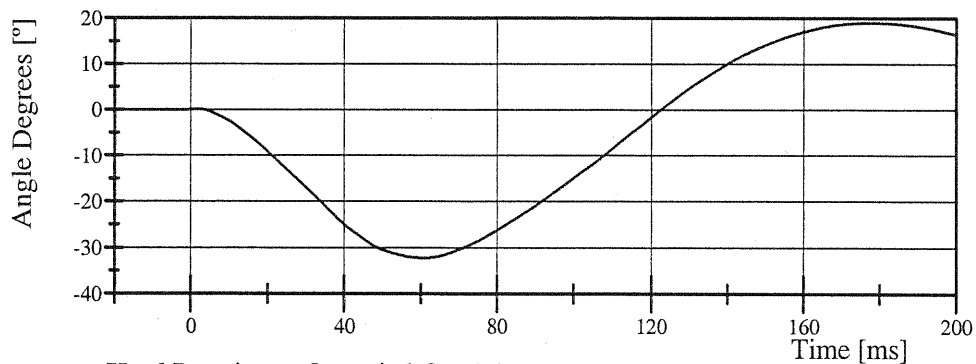


Filter Class: CFC_60

Max: 3.0 g at 46.1 ms

Min: -25.5 g at 8.6 ms

Pot Rotation at the Base of Neck

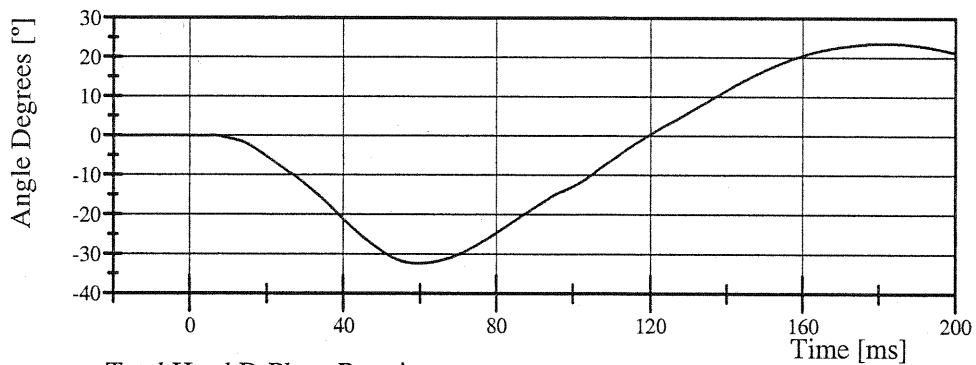


Filter Class: CFC_60

Max: 19.0 ° at 177.9 ms

Min: -32.2 ° at 61.0 ms

Head Rotation at Occipital Condyles

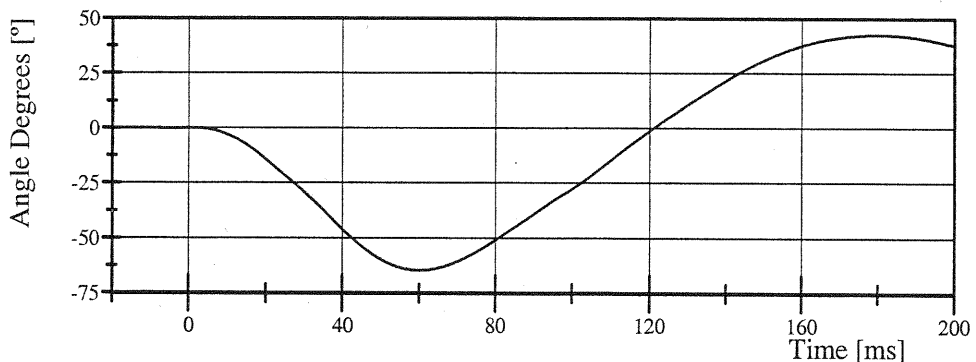


Filter Class: CFC_60

Max: 23.6 ° at 181.7 ms

Min: -32.3 ° at 59.7 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 42.6 ° at 179.8 ms

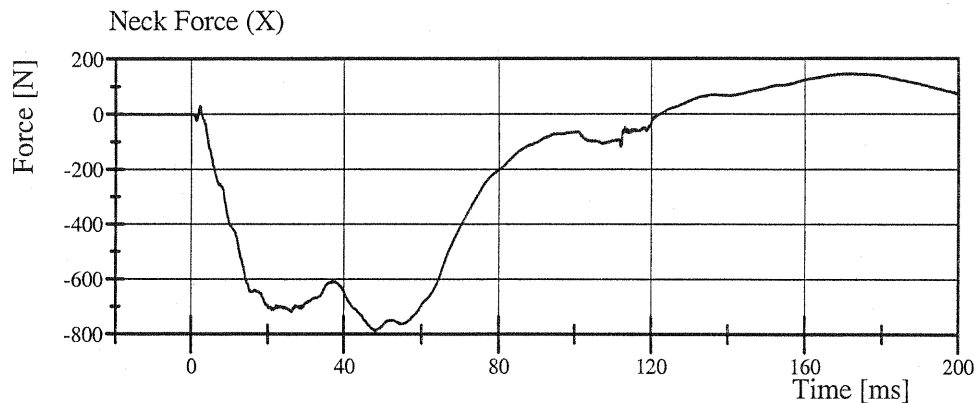
Min: -64.6 ° at 60.2 ms

Transportation Research Center Inc.

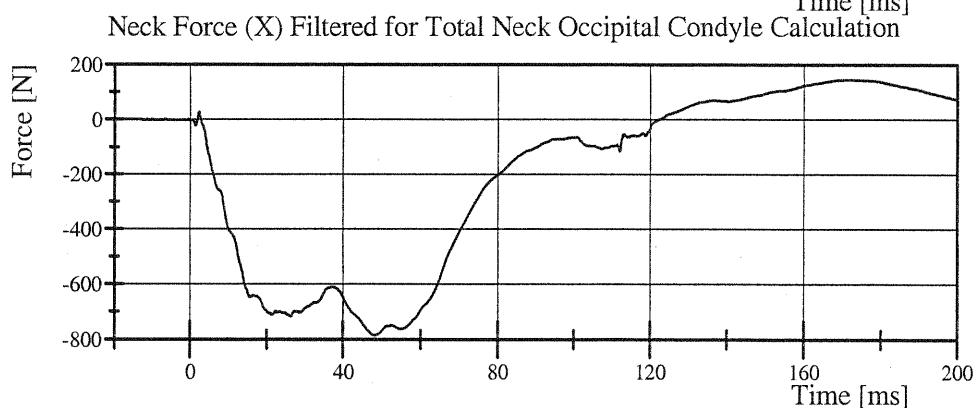
Neck Flexion

HIH 50th Serial No. 855 Certification No. 8-5

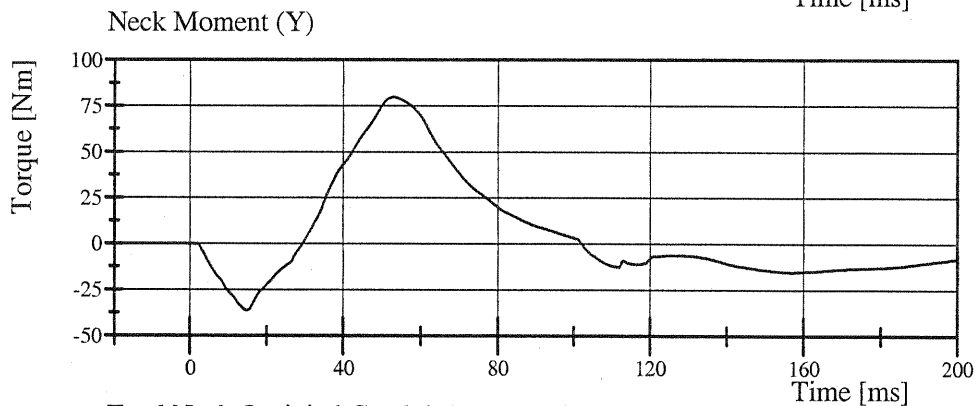
Test Date: 10/24/2007



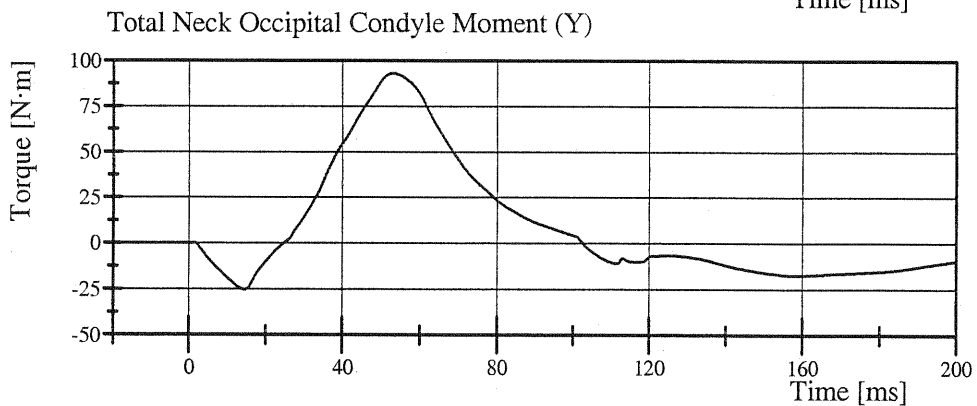
Filter Class: CFC_1000
Max: 146.8 N at 172.1 ms
Min: -785.9 N at 48.2 ms



Filter Class: CFC_600
Max: 146.3 N at 172.2 ms
Min: -785.0 N at 48.2 ms



Filter Class: CFC_600
Max: 79.9 Nm at 53.0 ms
Min: -36.1 Nm at 14.7 ms



Filter Class: CFC_600
Max: 93.1 N·m at 53.2 ms
Min: -25.2 N·m at 14.5 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 855 Certification No. 8-2

Test Date: 10/24/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.011 m/s	Yes
Pendulum Acceleration Decay			
Crossing 5g	38 - 46 ms	40.3 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	19.76 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.48 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	14.45 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	14.45 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	90.5 °	Yes
Time of Peak	72 - 82 ms	77.5 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	147 - 174 ms	157.9 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-69.0 N·m	Yes
Time of Peak	65 - 79 ms	70.8 ms	Yes
Total Neck Occipital Condyles Moment			
Decay to 0 N·m	120 - 148 ms	141.8 ms	Yes

Test meets specifications.

Comments:

Technician

Rand B. Bensch

Approved

Ron Stoner

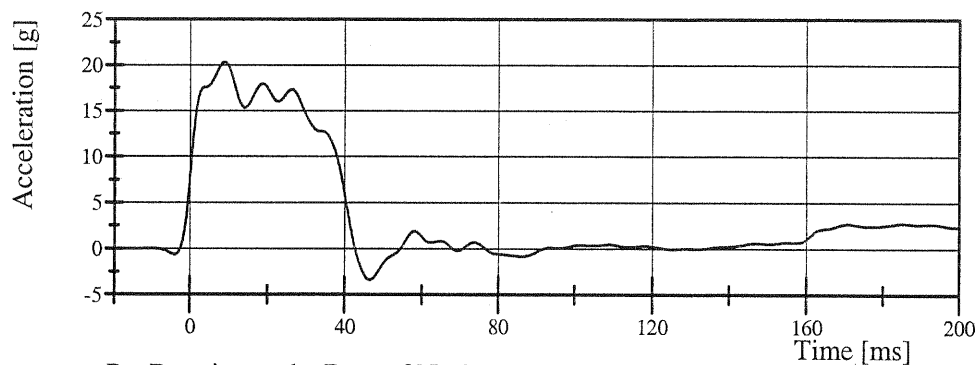
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 855 Certification No. 8-2

Test Date: 10/24/2007

Pendulum Acceleration

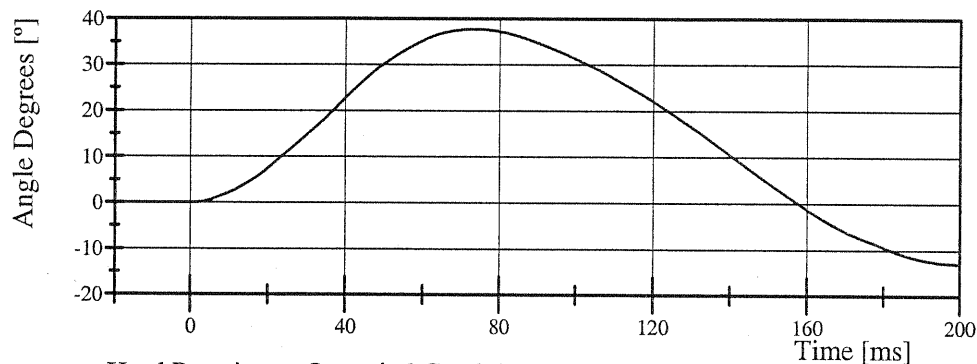


Filter Class: CFC_60

Max: 20.3 g at 8.8 ms

Min: -3.4 g at 46.4 ms

Pot Rotation at the Base of Neck

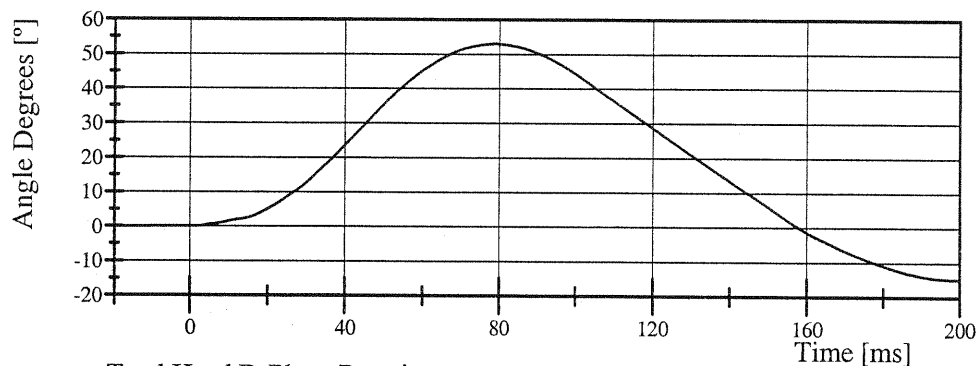


Filter Class: CFC_60

Max: 37.7 ° at 73.7 ms

Min: -13.0 ° at 200.0 ms

Head Rotation at Occipital Condyles

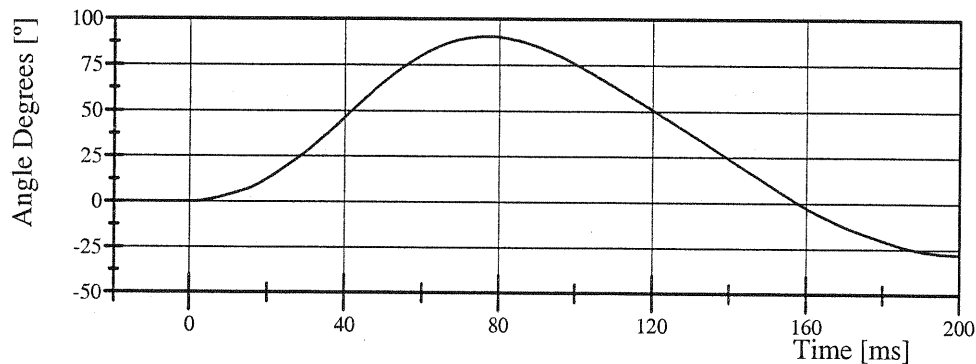


Filter Class: CFC_60

Max: 53.0 ° at 79.0 ms

Min: -14.9 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 90.5 ° at 77.5 ms

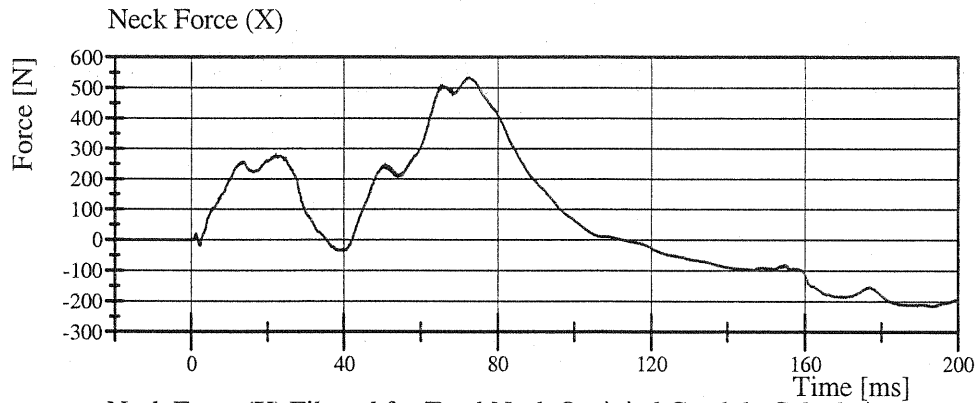
Min: -27.9 ° at 200.0 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 855 Certification No. 8-2

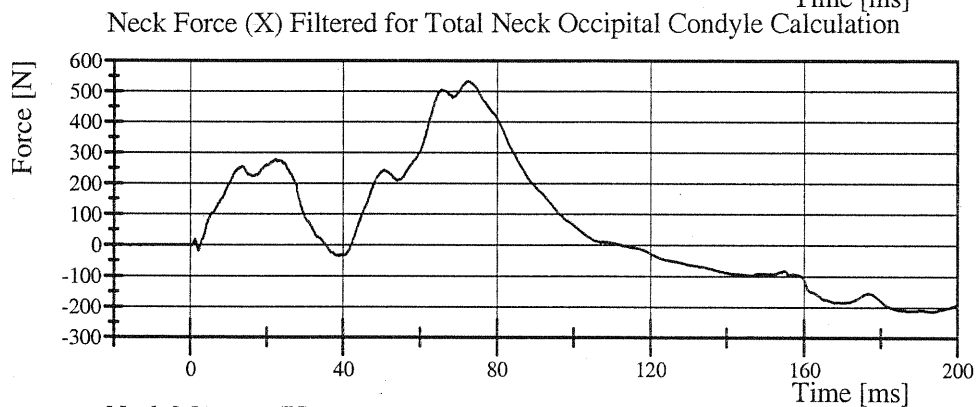
Test Date: 10/24/2007



Filter Class: CFC_1000

Max: 533.2 N at 72.6 ms

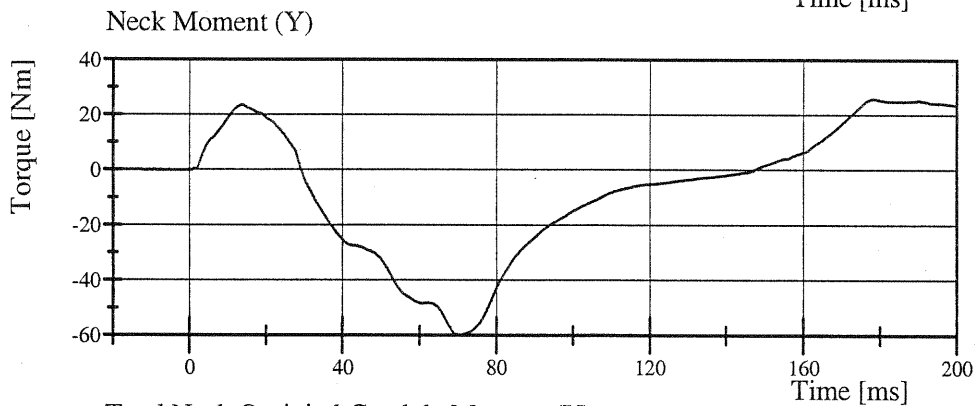
Min: -214.7 N at 193.1 ms



Filter Class: CFC_600

Max: 532.9 N at 72.6 ms

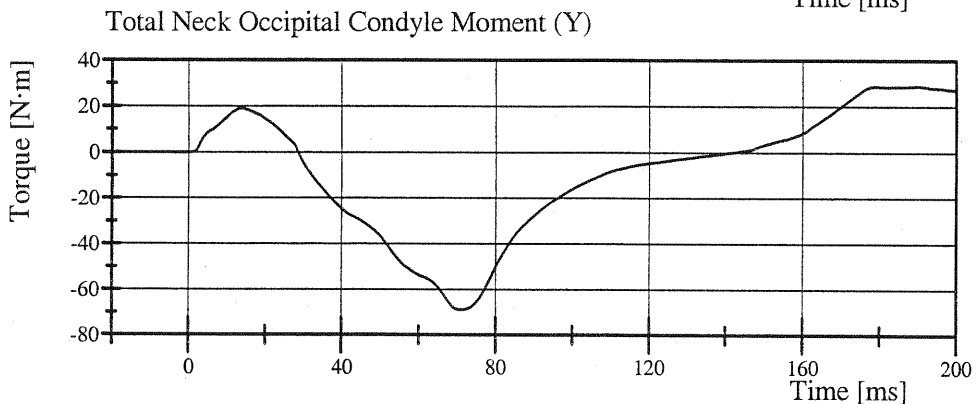
Min: -214.4 N at 193.1 ms



Filter Class: CFC_600

Max: 25.8 Nm at 178.6 ms

Min: -60.0 Nm at 70.6 ms



Filter Class: CFC_600

Max: 28.9 N·m at 189.9 ms

Min: -69.0 N·m at 70.8 ms

Transportation Research Center Inc.

Front Thorax

HHH 50th Serial No. 855 Certification No. 8-1

Test Date: 10/24/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.711 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,683.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-65.38 mm	Yes
Internal Hysteresis	65 - 85 %	75.2 %	Yes

Test meets specifications.

Comments:

Technician

Raul Bernal

Approved

Ron Stoner

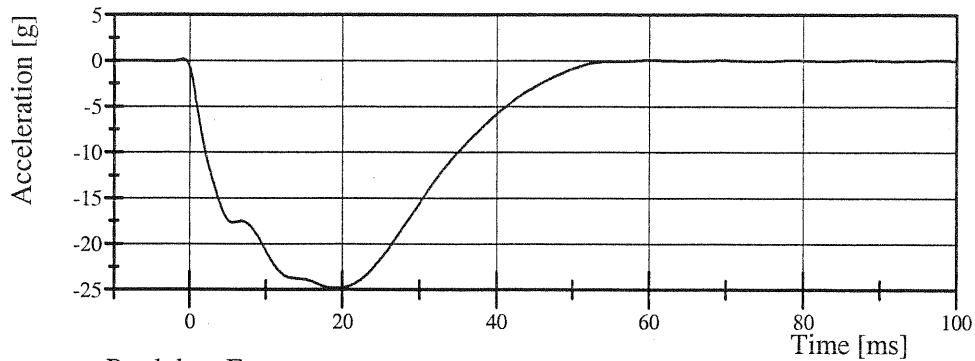
Transportation Research Center Inc.

Front Thorax

HHH 50th Serial No. 855 Certification No. 8-1

Test Date: 10/24/2007

Pendulum Acceleration

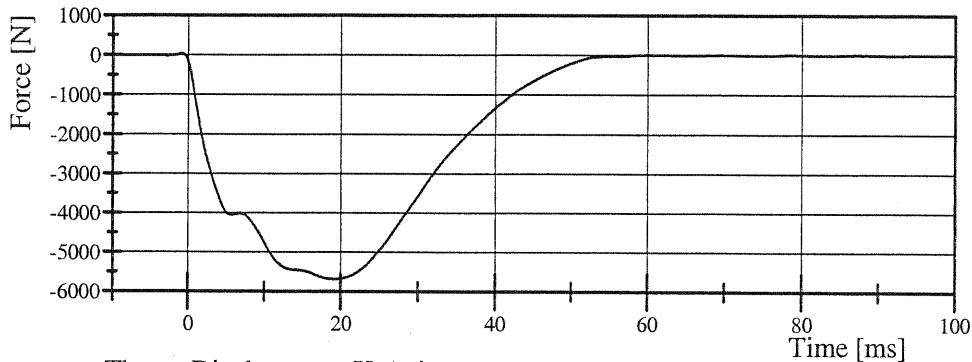


Filter Class: CFC_180

Max: 0.2 g at -0.9 ms

Min: -24.8 g at 19.2 ms

Pendulum Force

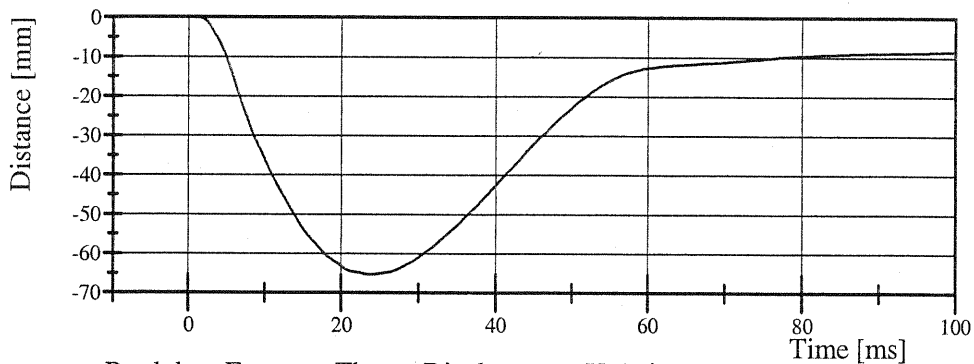


Filter Class: CFC_180

Max: 37.1 N at -0.9 ms

Min: -5,683.5 N at 19.2 ms

Thorax Displacement X-Axis

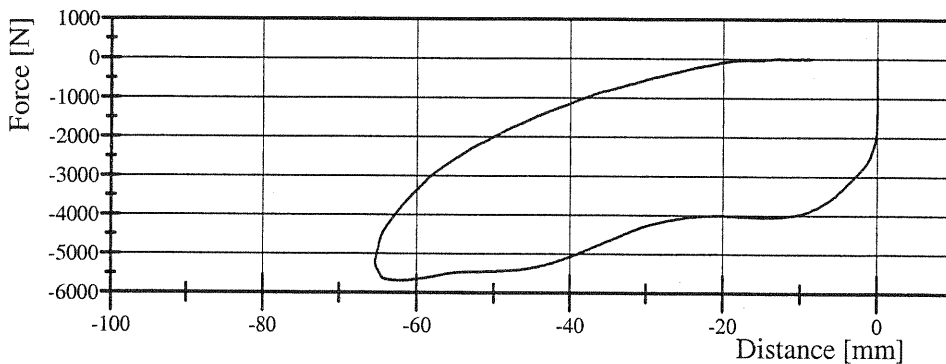


Filter Class: CFC_600

Max: 0.0 mm at -3.1 ms

Min: -65.4 mm at 23.8 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180

Max: 37.1 N at -0.0 mm

Min: -5,683.5 N at -62.0 mm

Applied Safety Technologies Corp.

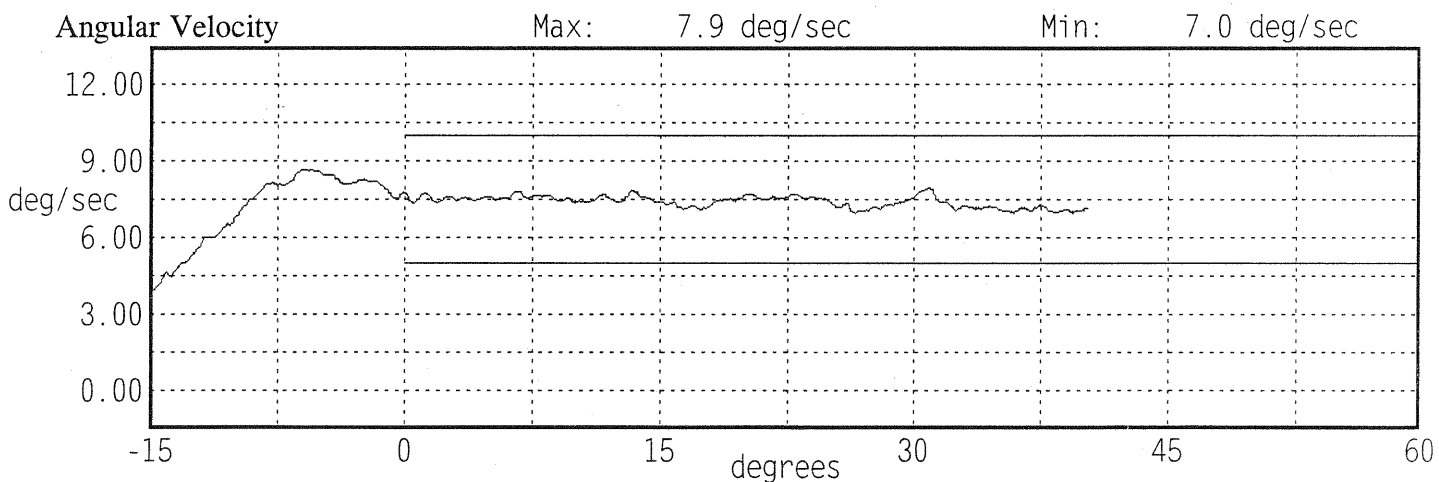
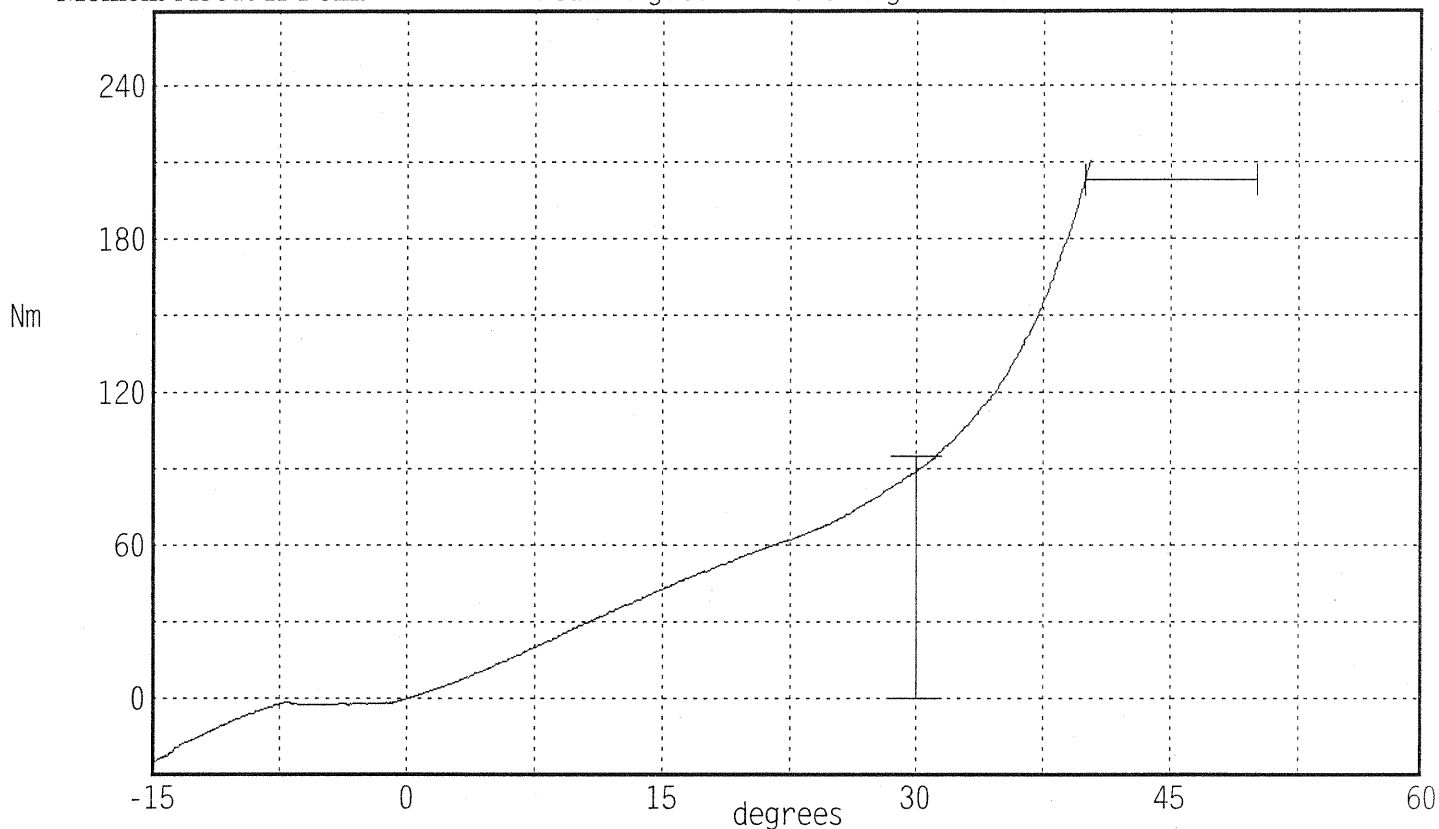
Hybrid III Hip Range of Motion

Serial Number: 855L
Test Number: 855C08
Comments:

Date: 10/23/2007
Time: 14:47

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.2 °C	Pass
Humidity	10 - 70	50 %	Pass
Moment at 30 deg	<= 94.9	89.0 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.0 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Moment About H-Point
Peak Moment: 210.4 Nm at 40.3 deg
Peak Angle: 40.3 deg at 210.4 Nm



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

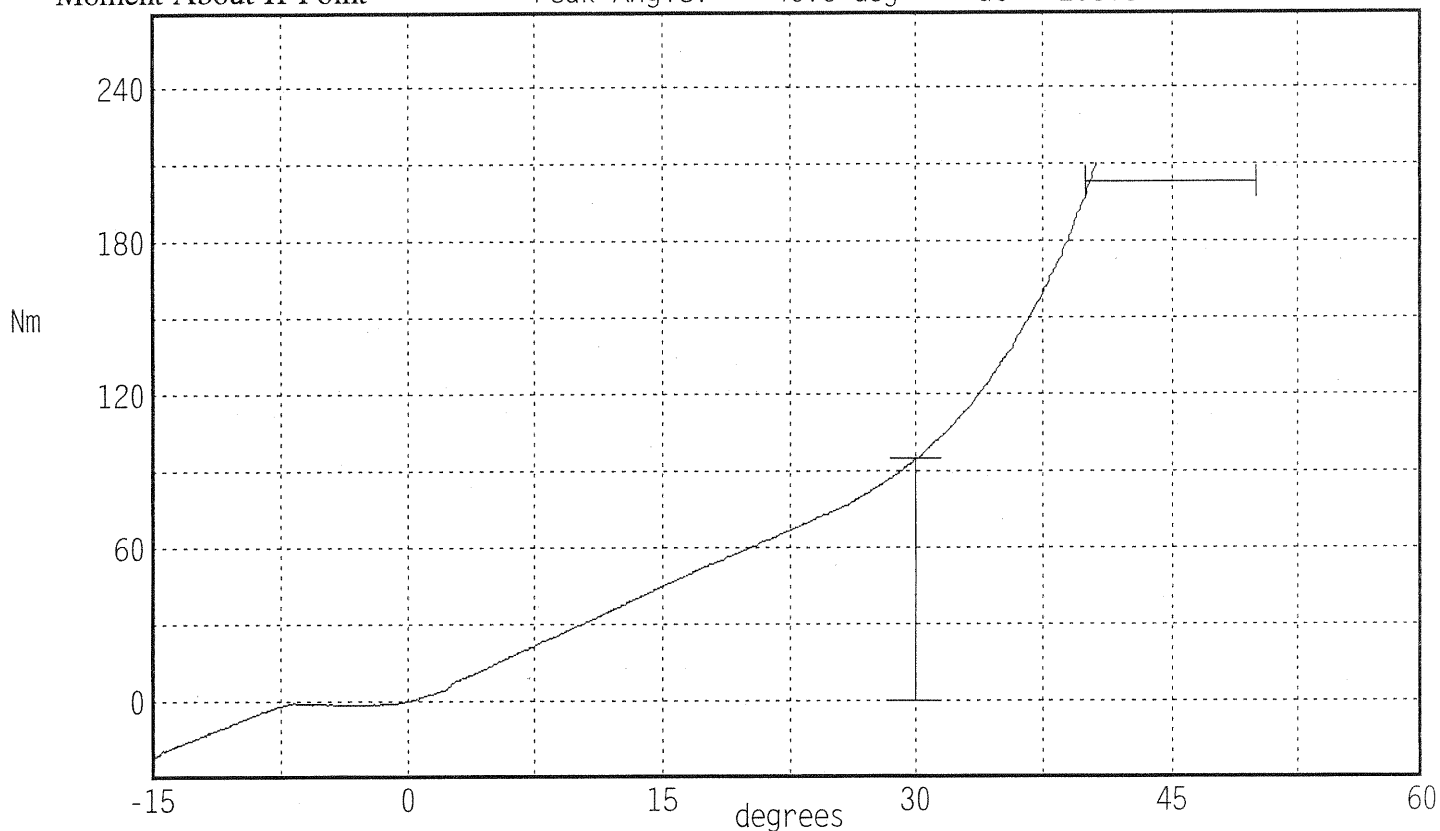
Serial Number: 855R
Test Number: 855C08
Comments:

Date: 10/23/2007
Time: 14:59

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.2 °C Pass
Humidity	10 - 70	45 % Pass
Moment at 30 deg	<= 94.9	94.8 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.3 deg Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec Pass

Peak Moment: 210.2 Nm at 40.6 deg
Peak Angle: 40.6 deg at 208.8 Nm

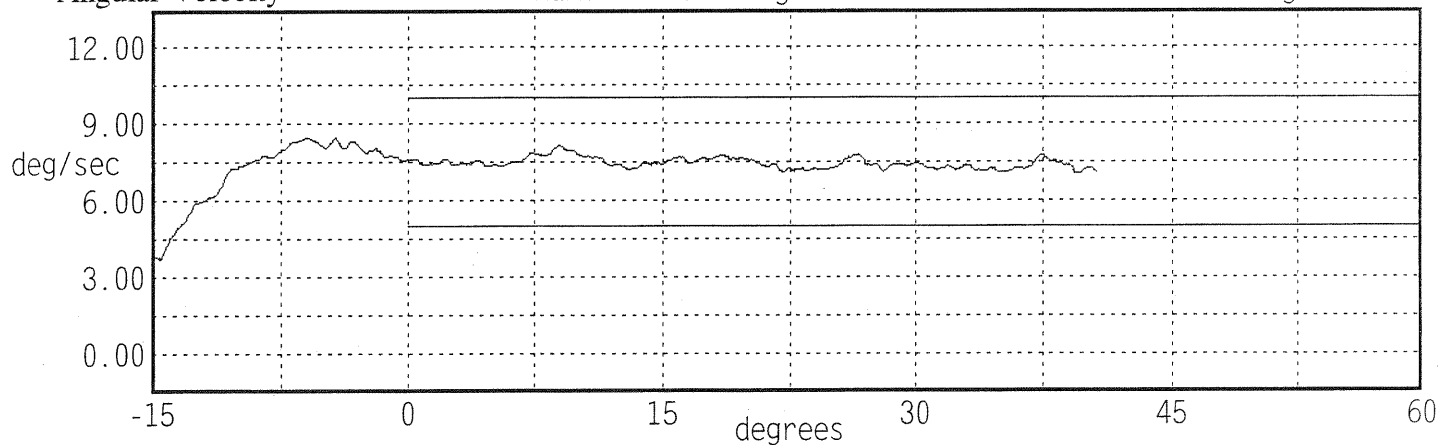
Moment About H-Point



Angular Velocity

Max: 8.1 deg/sec

Min: 7.0 deg/sec



Post-test Dummy Configuration and Performance Verification Data

Driver Dummy S/N: 855

Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 855
Calibration No. 09

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	885	Yes
B	Shoulder Pivot Height	505.5 - 520.7	507	Yes
C	H-Point Height	83.8 - 88.9	87	Yes
D	H-Point From Seatback	134.6 - 139.7	139	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	88	Yes
F	Thigh Clearance	139.7 - 154.9	150	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	298	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	333	Yes
J	Elbow Rest Height	190.5 - 210.8	195	Yes
K	Buttock Knee Length	579.1 - 604.5	599	Yes
L	Popliteal Height	429.3 - 454.7	432	Yes
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	476	Yes
O	Chest Depth	213.4 - 228.6	226	Yes
P	Foot Length	251.5 - 266.7	260	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	95	Yes
Y	Chest Circumference	970.3 - 1000.8	996	Yes
Z	Waist Circumference	835.7 - 866.1	846	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Comment:

Technician



Approved



Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	227.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-6.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Ron Stoner

Approved

Ron Stoner

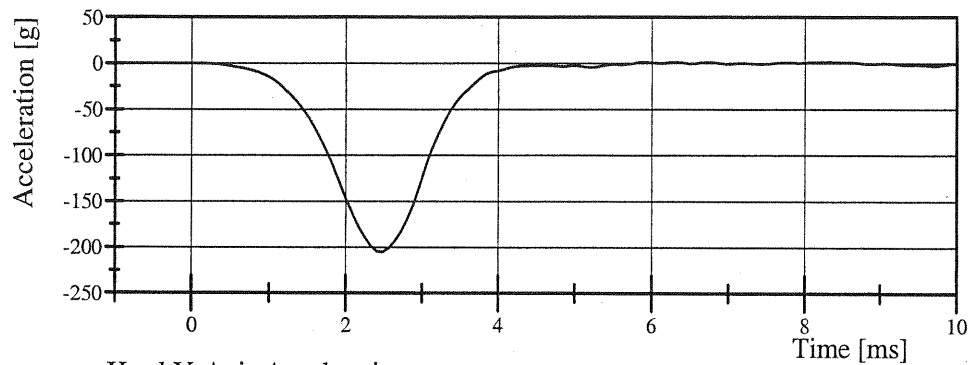
Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Head X-Axis Acceleration

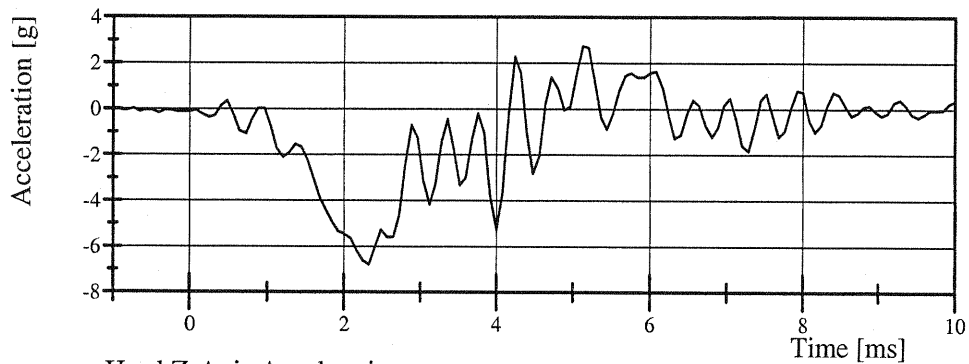


Filter Class: CFC_1000

Max: 1.4 g at 8.3 ms

Min: -205.3 g at 2.5 ms

Head Y-Axis Acceleration

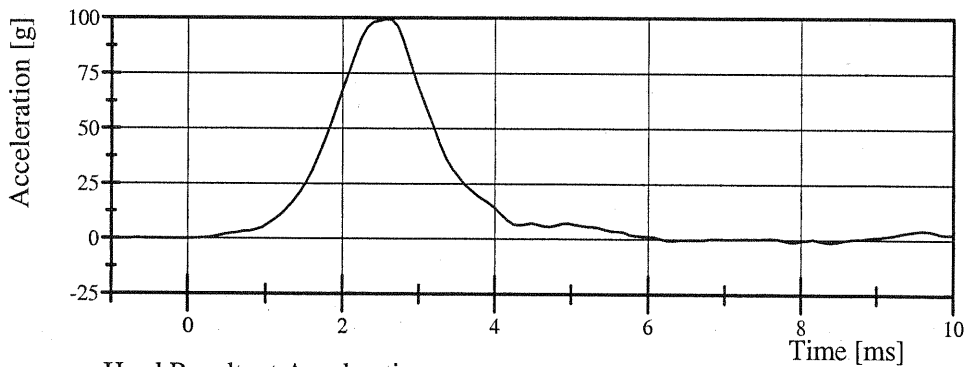


Filter Class: CFC_1000

Max: 2.7 g at 5.1 ms

Min: -6.8 g at 2.3 ms

Head Z-Axis Acceleration

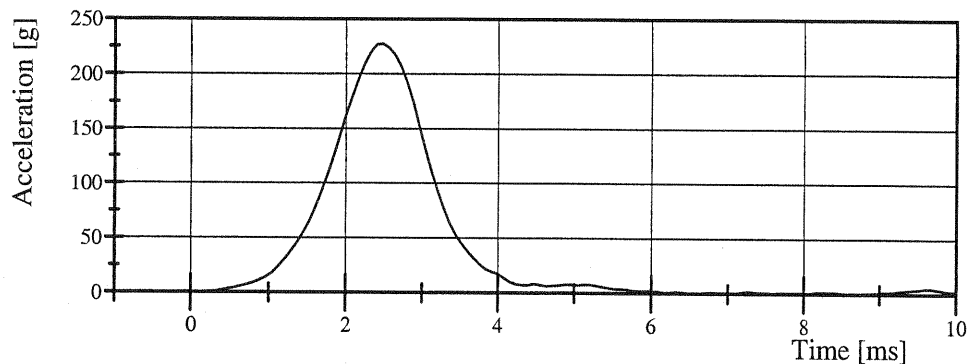


Filter Class: CFC_1000

Max: 99.3 g at 2.6 ms

Min: -1.1 g at 8.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 227.9 g at 2.5 ms

Min: 0.1 g at -0.5 ms

Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 855 Certification No. 9-2

Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.012 m/s	Yes
Pendulum Acceleration Decay			
Crossing -5g	34 - 42 ms	39.1 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-26.59 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-21.50 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-15.11 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-15.11 g	Yes
Total Head D-Plane Rotation			
Peak	(-64) - (-78) °	-68.8 °	Yes
Time of Peak	57 - 64 ms	59.9 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	113 - 128 ms	120.6 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	88 - 108 N·m	97.8 N·m	Yes
Time of Peak	47 - 58 ms	52.1 ms	Yes
Total Neck Occipital Condyles Moment			
Decay to 0 N·m	97 - 107 ms	101.4 ms	Yes

Test meets specifications.

Comments:

Technician

Rant Barand

Approved

Ron Stoner

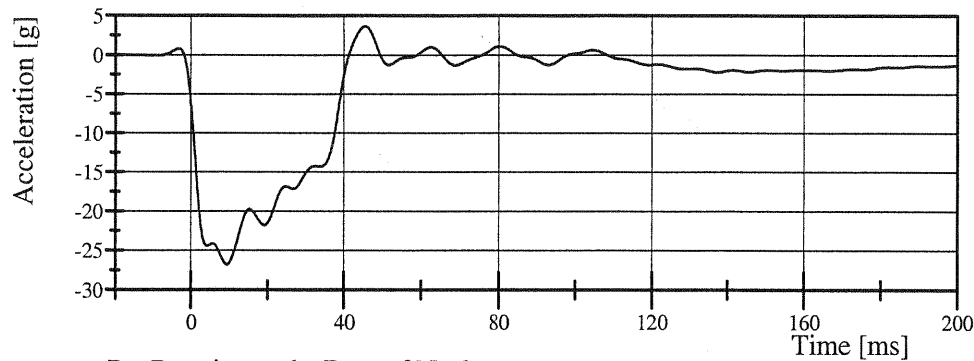
Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 855 Certification No. 9-2

Test Date: 11/15/2007

Pendulum Acceleration

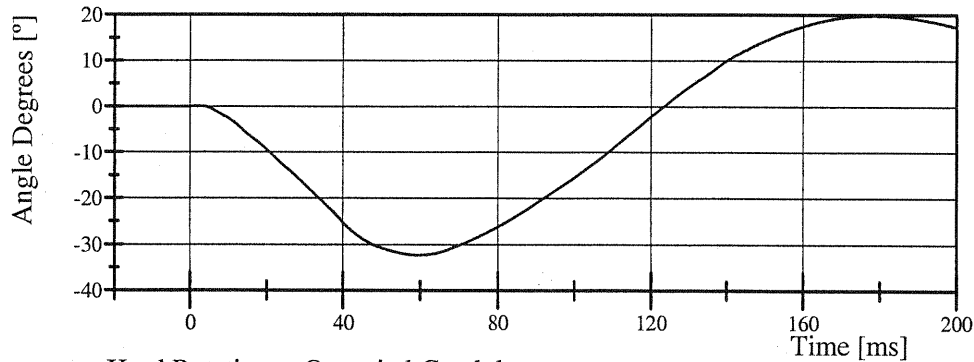


Filter Class: CFC_60

Max: 3.7 g at 45.4 ms

Min: -26.8 g at 9.4 ms

Pot Rotation at the Base of Neck

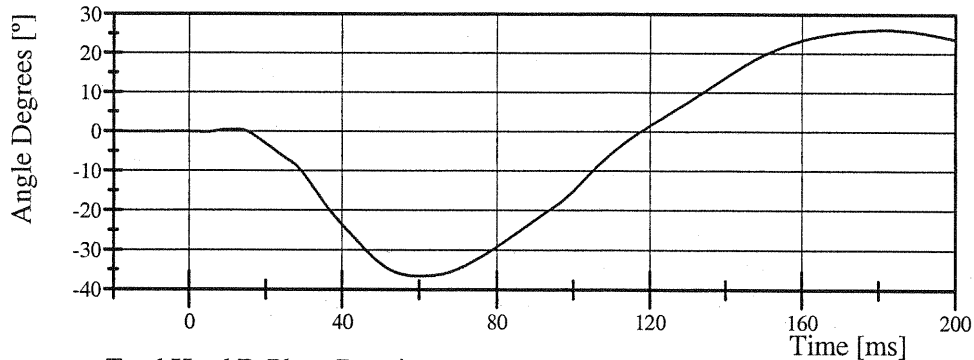


Filter Class: CFC_60

Max: 19.8 ° at 178.6 ms

Min: -32.3 ° at 59.4 ms

Head Rotation at Occipital Condyles

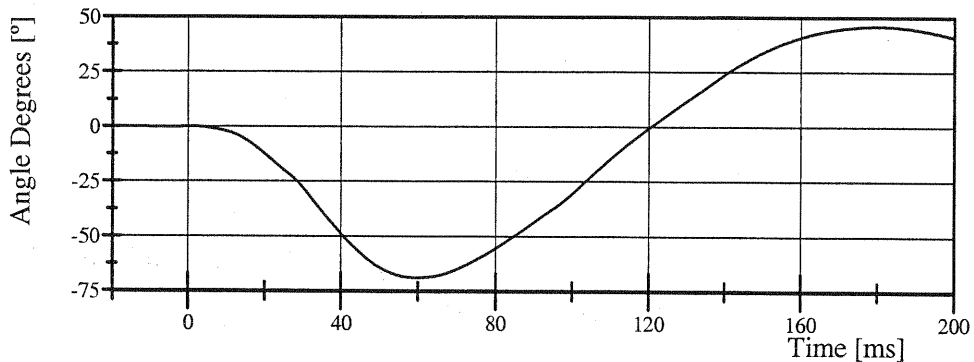


Filter Class: CFC_60

Max: 26.1 ° at 181.9 ms

Min: -36.5 ° at 60.2 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 45.9 ° at 180.2 ms

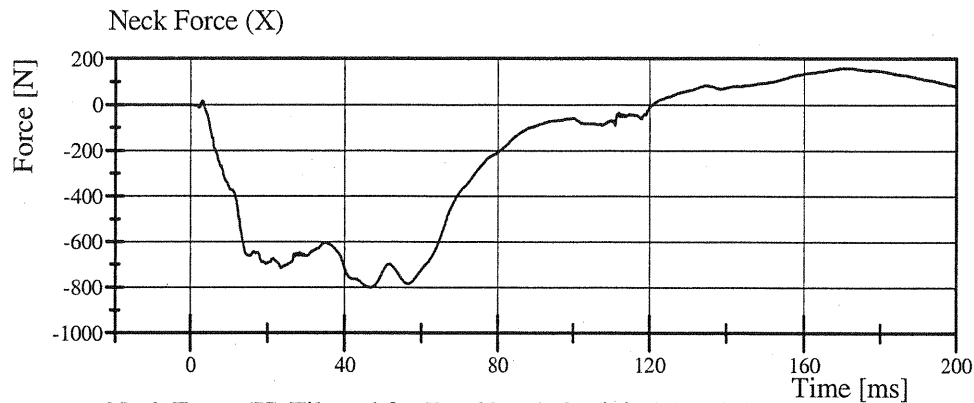
Min: -68.8 ° at 59.9 ms

Transportation Research Center Inc.

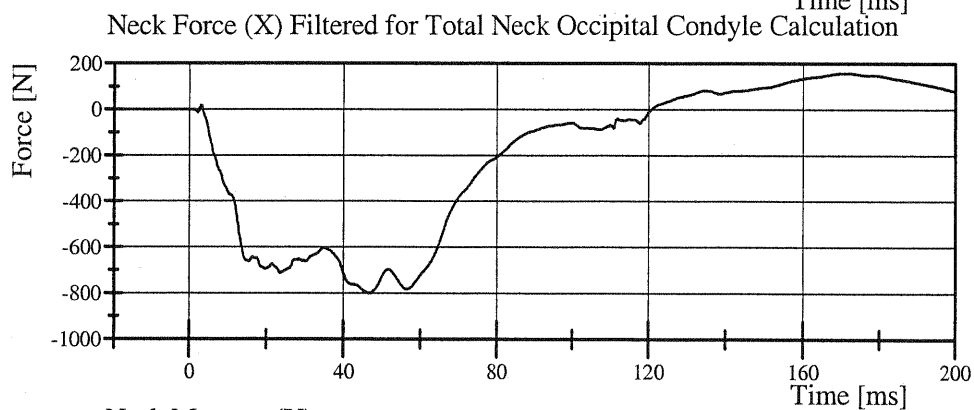
Neck Flexion

HIII 50th Serial No. 855 Certification No. 9-2

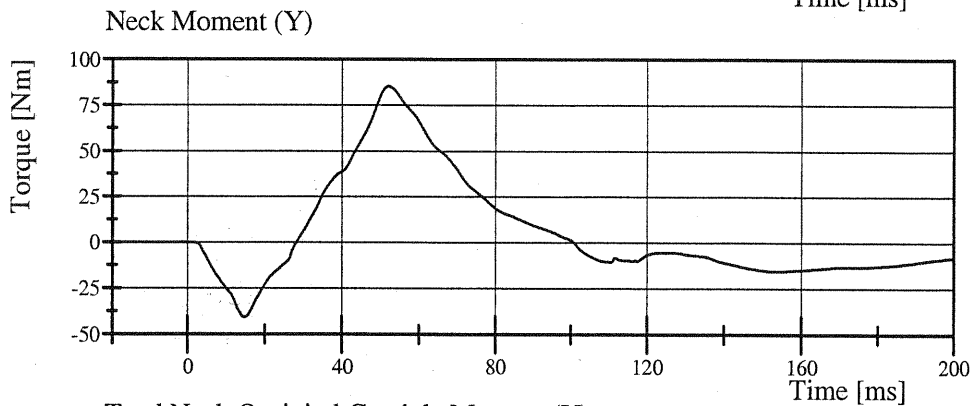
Test Date: 11/15/2007



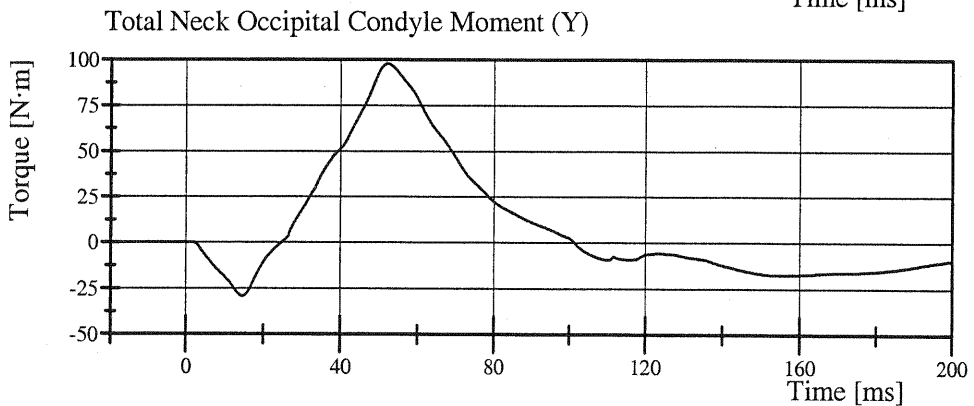
Filter Class: CFC_1000
Max: 158.9 N at 170.2 ms
Min: -801.0 N at 46.6 ms



Filter Class: CFC_600
Max: 158.7 N at 170.3 ms
Min: -801.0 N at 46.7 ms



Filter Class: CFC_600
Max: 85.5 Nm at 52.0 ms
Min: -40.7 Nm at 14.6 ms



Filter Class: CFC_600
Max: 97.8 N·m at 52.1 ms
Min: -29.1 N·m at 14.6 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	35 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-6.011 m/s	Yes
Pendulum Acceleration Decay			
Crossing 5g	38 - 46 ms	45.8 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	17.69 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	14.66 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	12.59 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	12.59 g	Yes
Total Head D-Plane Rotation			
Peak	81 - 106 °	93.1 °	Yes
Time of Peak	72 - 82 ms	79.8 ms	Yes
Total Head D-Plane Rotation			
Decay to 0°	147 - 174 ms	166.3 ms	Yes
Total Neck Occipital Condyles Moment			
Peak	(-53) - (-80) N·m	-58.9 N·m	Yes
Time of Peak	65 - 79 ms	74.8 ms	Yes
Total Neck Occipital Condyles Moment			
Decay to 0 N·m	120 - 148 ms	145.3 ms	Yes

Test meets specifications.

Comments:

Technician

Rout Beraul

Approved

Ron Stoner

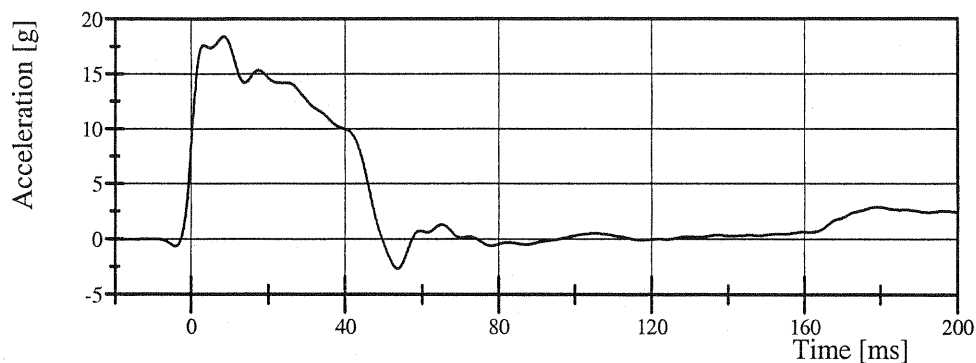
Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Pendulum Acceleration

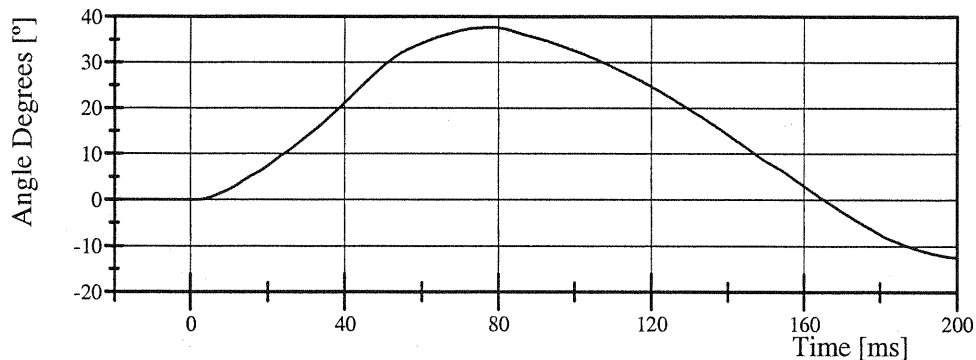


Filter Class: CFC_60

Max: 18.4 g at 8.5 ms

Min: -2.7 g at 53.6 ms

Pot Rotation at the Base of Neck

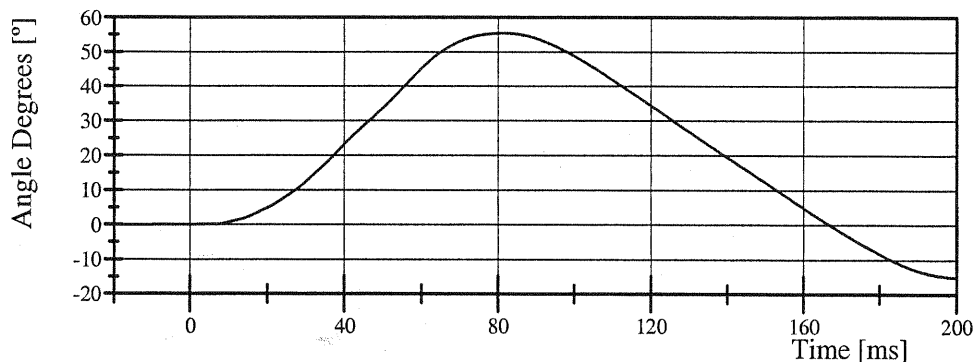


Filter Class: CFC_60

Max: 37.7 ° at 78.4 ms

Min: -12.5 ° at 200.0 ms

Head Rotation at Occipital Condyles

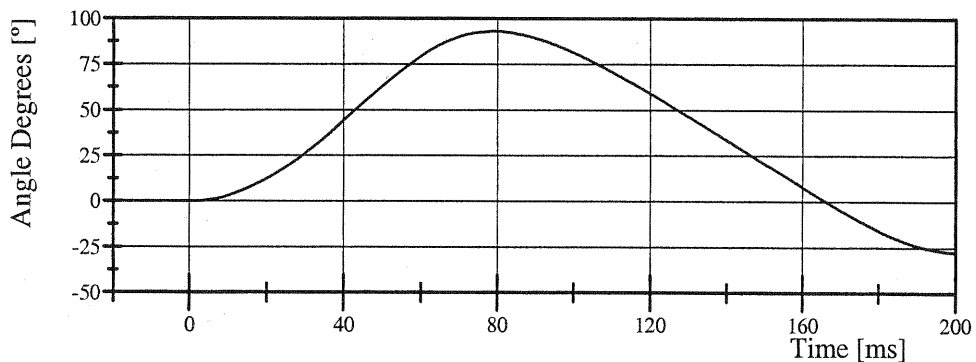


Filter Class: CFC_60

Max: 55.5 ° at 81.6 ms

Min: -15.1 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 93.1 ° at 79.8 ms

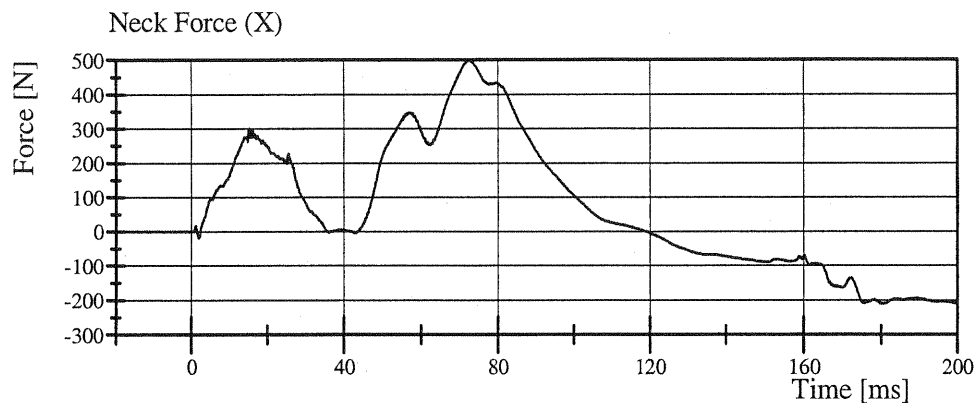
Min: -27.6 ° at 200.0 ms

Transportation Research Center Inc.

Neck Extension

HIH 50th Serial No. 855 Certification No. 9-1

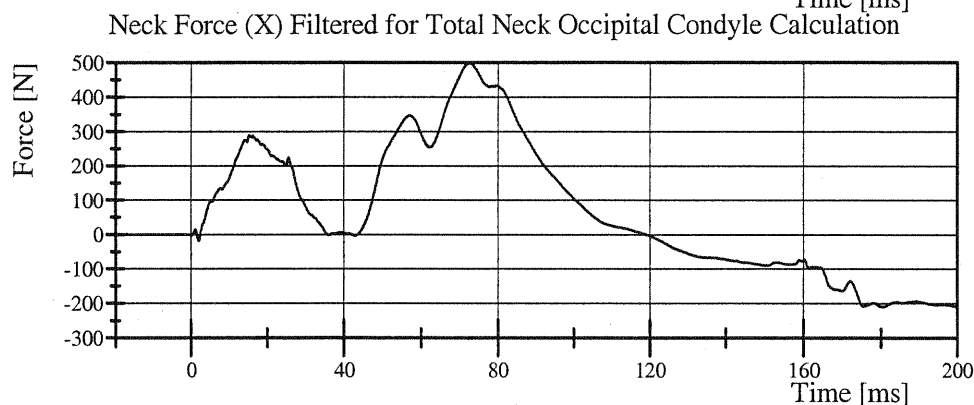
Test Date: 11/15/2007



Filter Class: CFC_1000

Max: 499.4 N at 72.6 ms

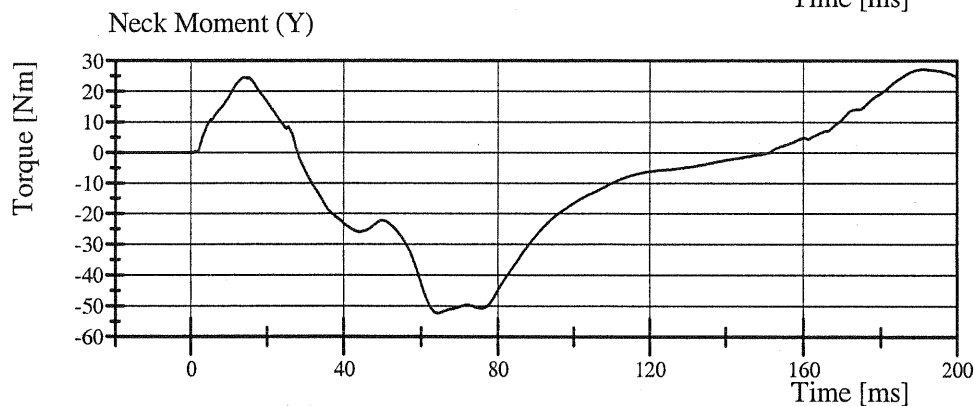
Min: -210.5 N at 180.4 ms



Filter Class: CFC_600

Max: 498.9 N at 72.6 ms

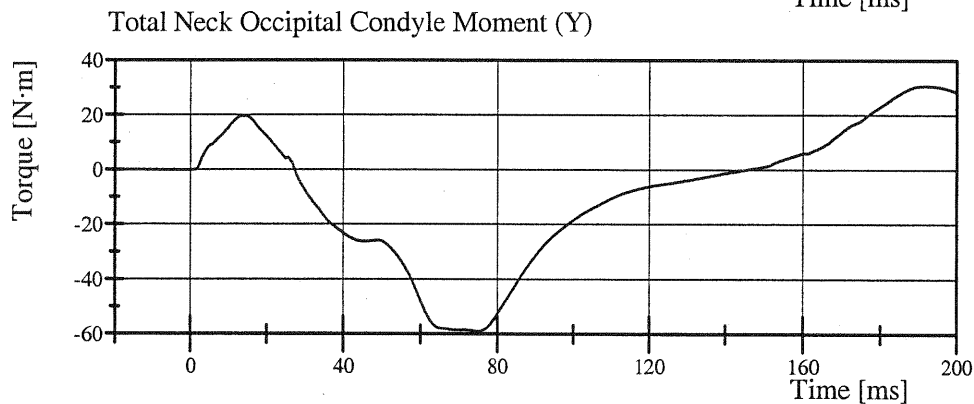
Min: -210.2 N at 180.5 ms



Filter Class: CFC_600

Max: 27.2 Nm at 191.3 ms

Min: -52.4 Nm at 64.4 ms



Filter Class: CFC_600

Max: 30.7 N·m at 191.8 ms

Min: -58.9 N·m at 74.8 ms

Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.725 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,885.5 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-64.93 mm	Yes
Internal Hysteresis	65 - 85 %	76.0 %	Yes

Test meets specifications.

Comments:

Technician

Raut Bora

Approved

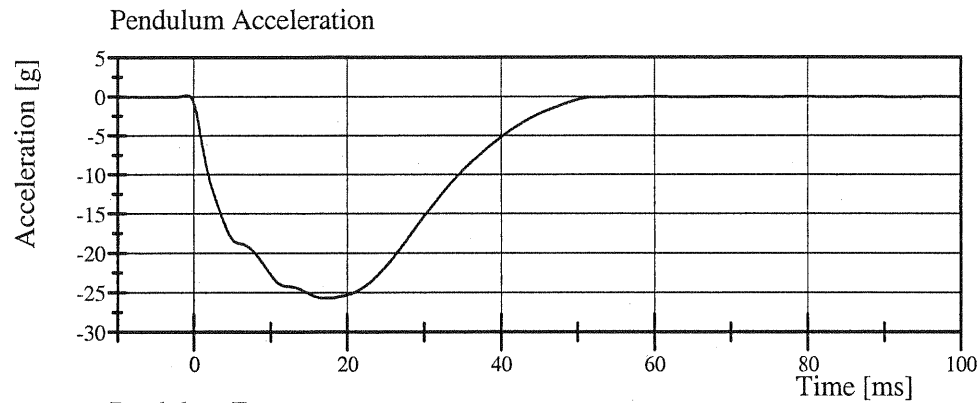
Ron Stoner

Transportation Research Center Inc.

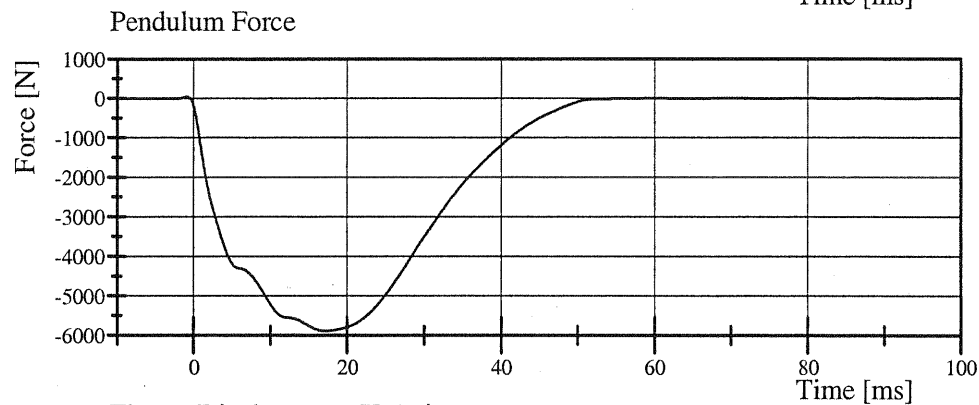
Front Thorax

HIII 50th Serial No. 855 Certification No. 9-1

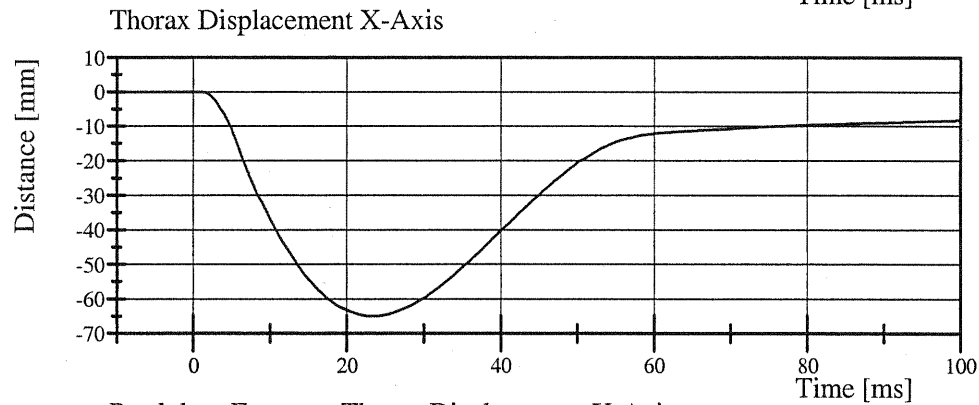
Test Date: 11/15/2007



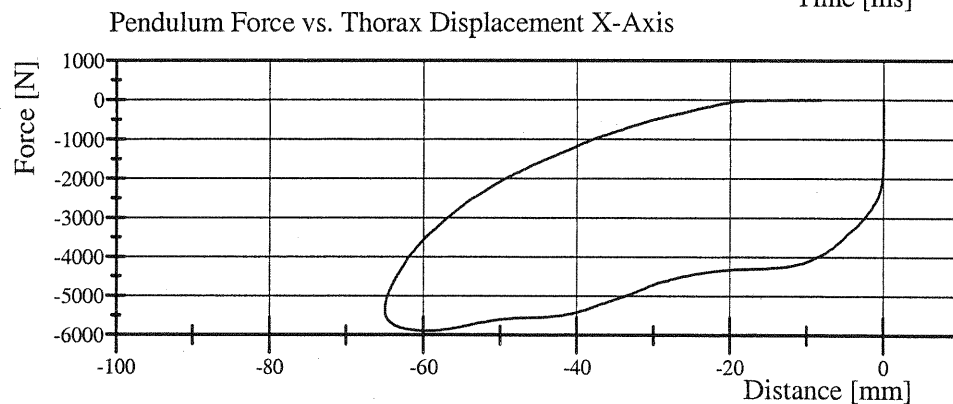
Filter Class: CFC_180
Max: 0.2 g at -0.9 ms
Min: -25.7 g at 17.3 ms



Filter Class: CFC_180
Max: 43.7 N at -0.9 ms
Min: -5,885.5 N at 17.3 ms



Filter Class: CFC_600
Max: 0.0 mm at -4.0 ms
Min: -64.9 mm at 23.3 ms



Filter Class: CFC_180
Max: 43.7 N at -0.0 mm
Min: -5,885.5 N at -59.4 mm

Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

Serial Number: 855L

Date: 11/15/2007

Test Number: 855C09

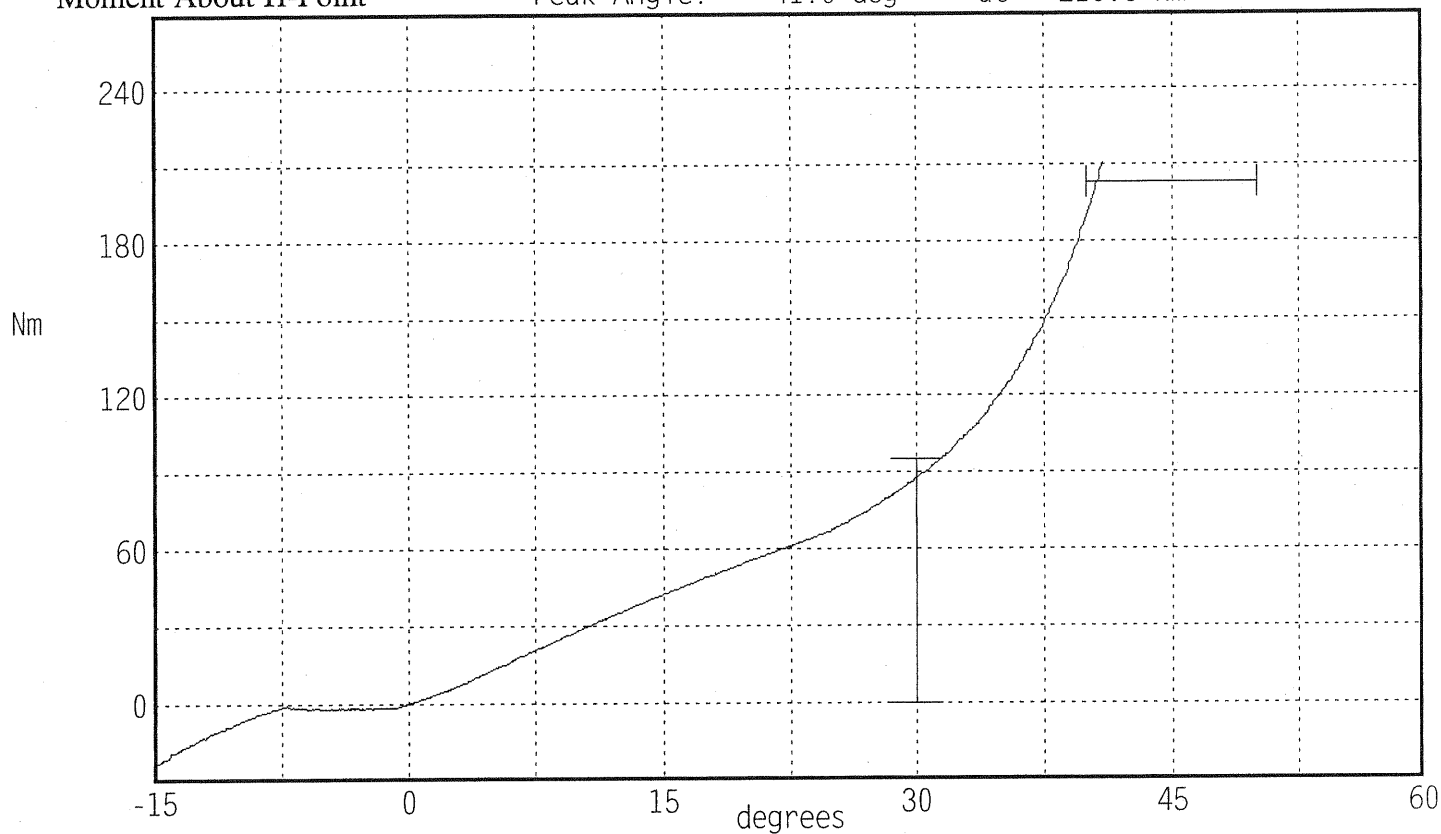
Time: 09:52

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	20.9 °C	Pass
Humidity	10 - 70	36 %	Pass
Moment at 30 deg	<= 94.9	87.9 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.6 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

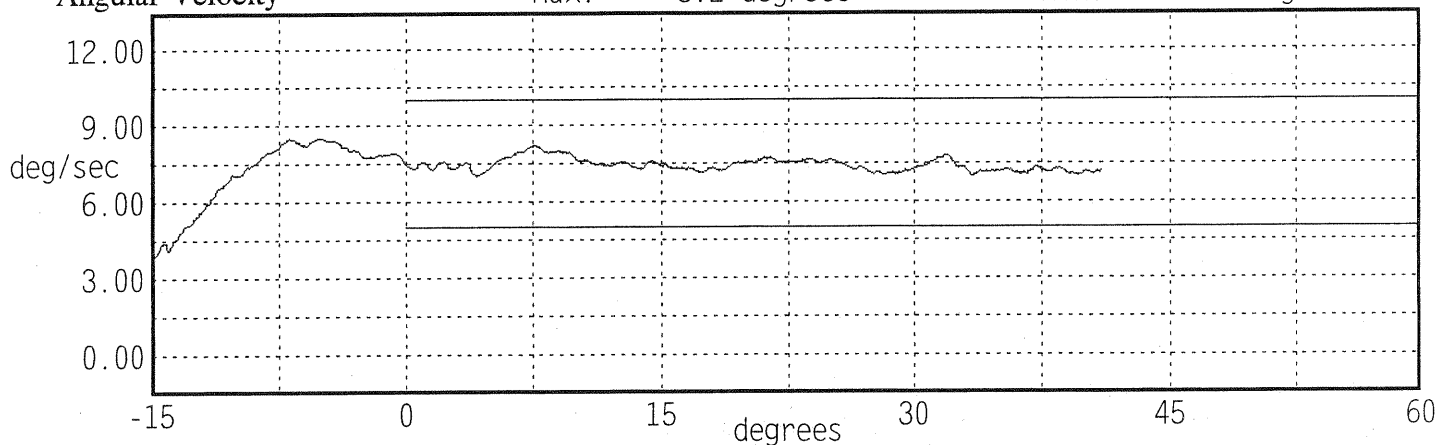
Moment About H-Point

Peak Moment: 210.6 Nm at 41.0 deg
Peak Angle: 41.0 deg at 210.6 Nm



Angular Velocity

Max: 8.2 deg/sec Min: 7.0 deg/sec



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

Serial Number: 855R

Date: 11/15/2007

Test Number: 855C09

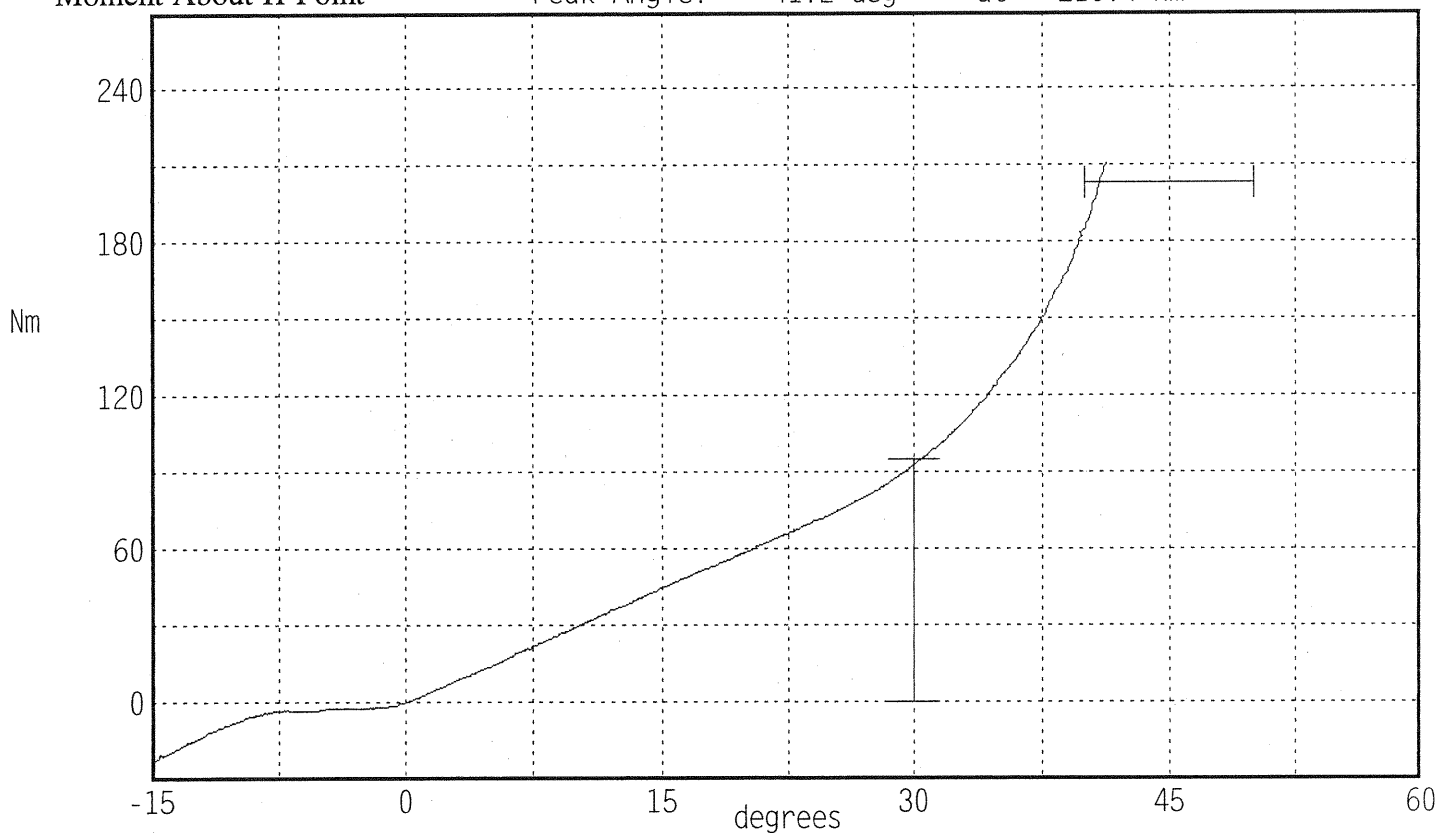
Time: 10:10

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.8 °C Pass
Humidity	10 - 70	34 % Pass
Moment at 30 deg	<= 94.9	92.6 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.9 deg Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec Pass

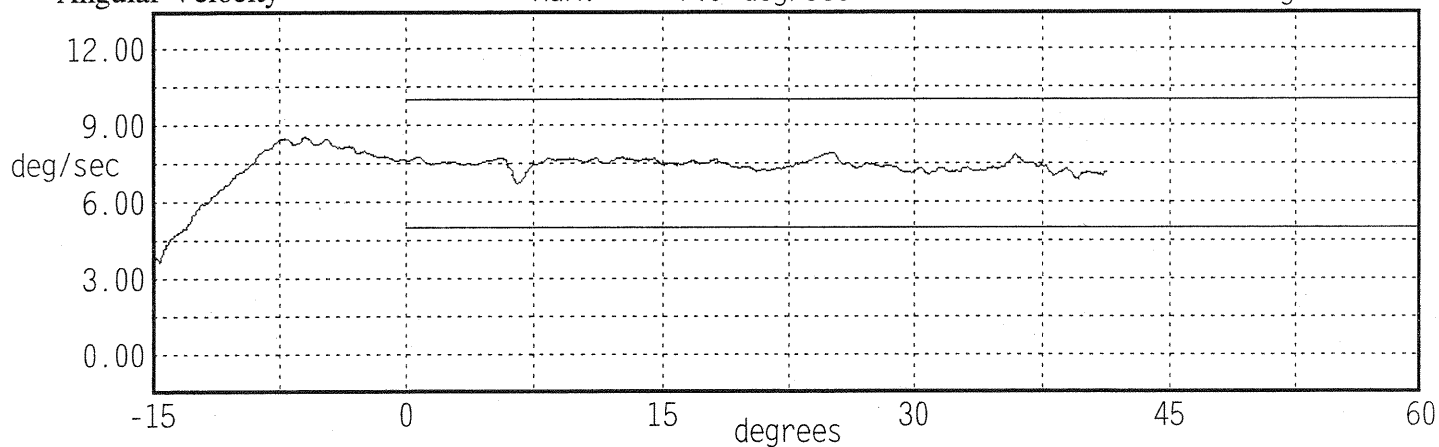
Moment About H-Point

Peak Moment: 210.4 Nm at 41.2 deg
Peak Angle: 41.2 deg at 210.4 Nm



Angular Velocity

Max: 7.9 deg/sec Min: 6.7 deg/sec



Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 50th Serial No. 855 Certification No. 9-3

Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,254.44 N	Yes

Test meets specifications.

Comments:

Technician

Rant Baranick

Approved

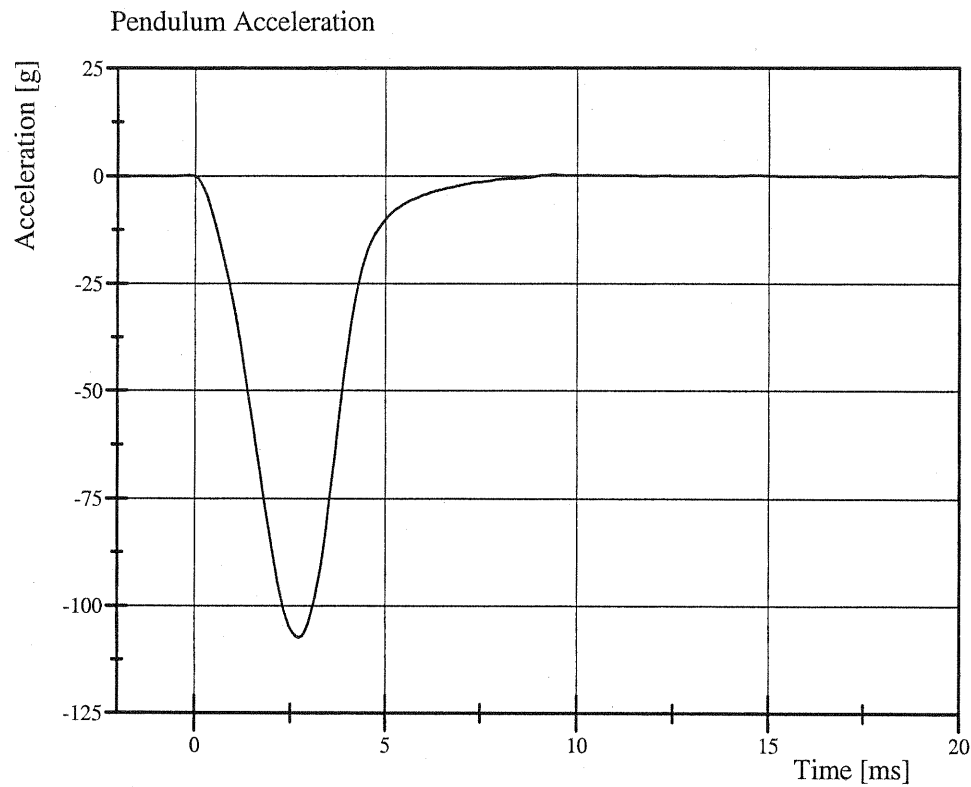
Ron Stoner

Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 50th Serial No. 855 Certification No. 9-3

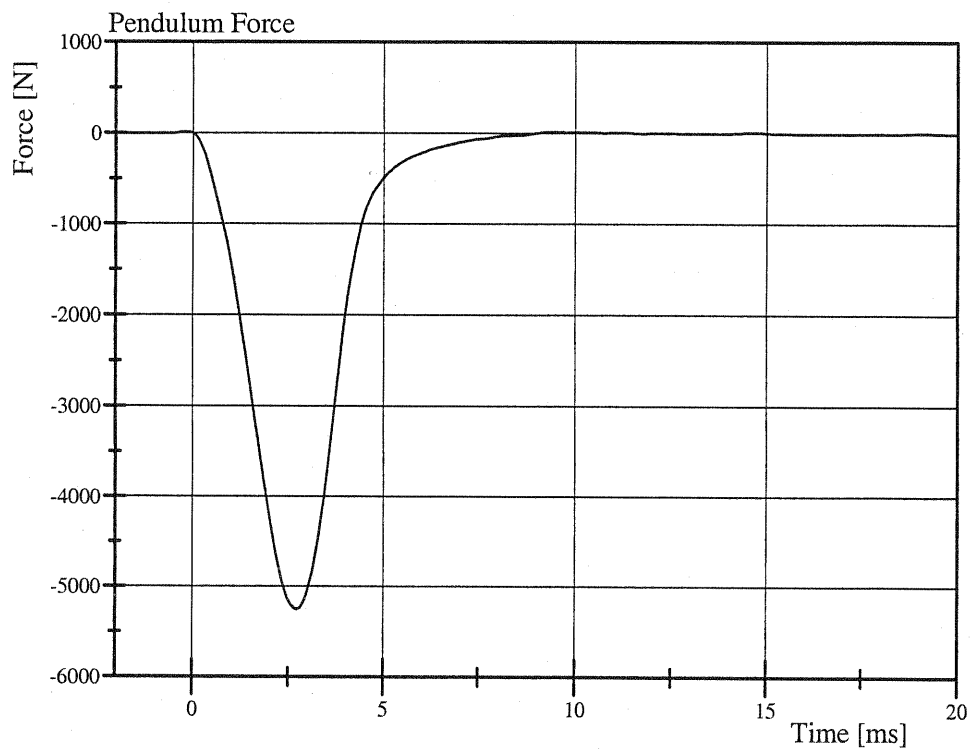
Test Date: 11/15/2007



Filter Class: CFC_600

Max: 0.3 g at 9.4 ms

Min: -107.4 g at 2.7 ms



Filter Class: CFC_600

Max: 14.9 N at 9.4 ms

Min: -5,254.4 N at 2.7 ms

Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.114 m/s	Yes
Peak Femur Force	(-4,715.2) - (-5,782.6) N	-5,467.98 N	Yes

Test meets specifications.

Comments:

Technician

Rent Barasol

Approved

Ron Stoner

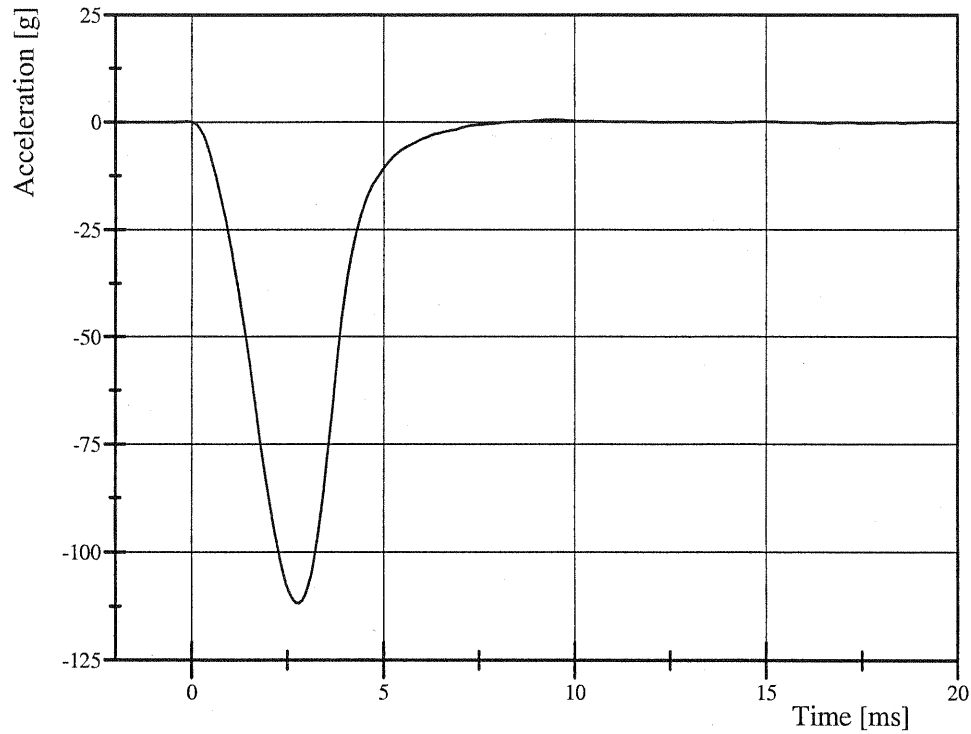
Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 50th Serial No. 855 Certification No. 9-1

Test Date: 11/15/2007

Pendulum Acceleration

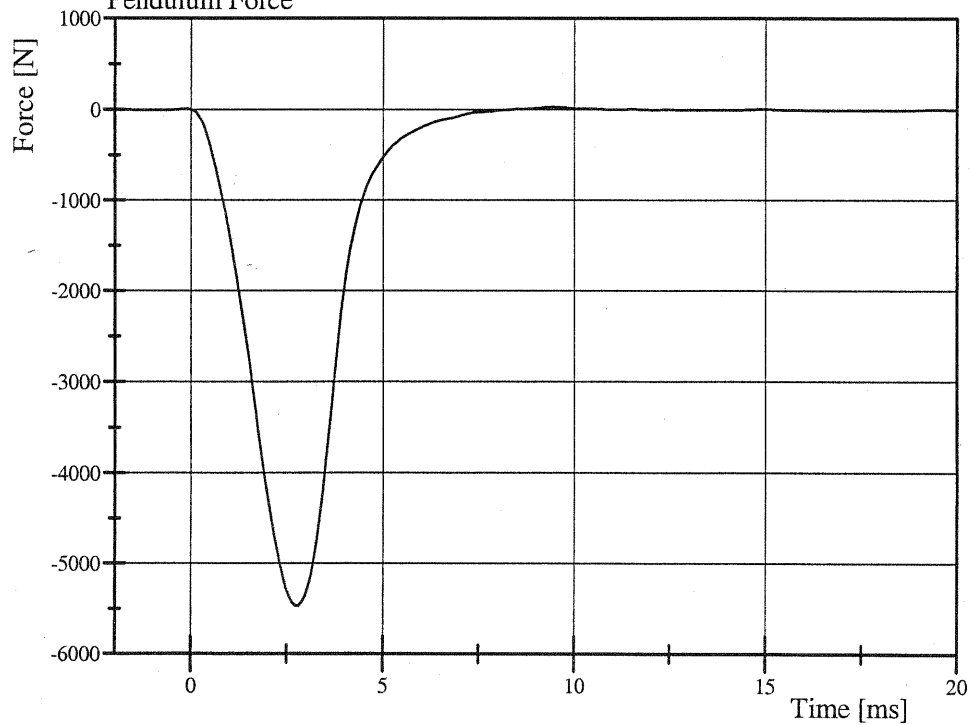


Filter Class: CFC_600

Max: 0.6 g at 9.4 ms

Min: -111.8 g at 2.8 ms

Pendulum Force



Filter Class: CFC_600

Max: 30.9 N at 9.4 ms

Min: -5,468.0 N at 2.8 ms

Pre-test Dummy Configuration and Performance Verification Data

Right Front Passenger Dummy S/N: 324

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 324 Calibration No. 09
With Thor FLX Legs

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	776	Yes
B	Shoulder Pivot Height	431.8 - 457.2	444	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	80	Yes
F	Thigh Clearance	119.4 - 134.6	127	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	245	Yes
H	Head Back to Backline	43.2 - 48.2	47	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	287	Yes
J	Elbow Rest Height	182.8 - 203.2	183	Yes
K	Buttock Knee Length	520.7 - 546.1	535	Yes
L	Popliteal Height	355.6 - 376.0	370	Yes
M	Knee Pivot Height	393.7 - 419.1	396	Yes
N	Buttock Popliteal Height	414.0 - 439.4	438	Yes
O	Chest Depth without Jacket	175.3 - 190.5	179	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	480	Yes
S	Head Breadth	137.1 - 147.3	142	Yes
T	Head Depth	177.8 - 188.0	181	Yes
U	Hip Breadth	299.7 - 314.9	300	Yes
V	Shoulder Breadth	350.5 - 365.7	360	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	532	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	870	Yes
Z	Waist Circumference	759.5 - 789.9	780	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	357	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	161	Yes

Technician



Approved



Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 324 Certification No. 9-1

Test Date: 10/24/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	270.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-3.4 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Dan Baranick

Approved

Ron Stoner

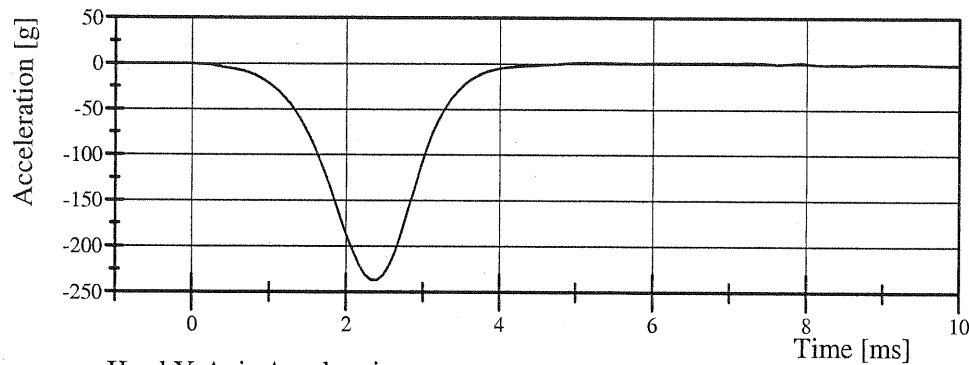
Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 324 Certification No. 9-1

Test Date: 10/24/2007

Head X-Axis Acceleration

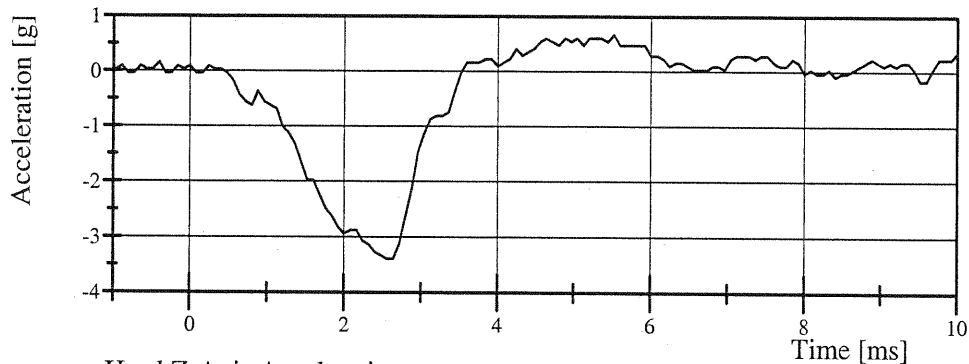


Filter Class: CFC_1000

Max: 1.6 g at 7.2 ms

Min: -236.9 g at 2.4 ms

Head Y-Axis Acceleration

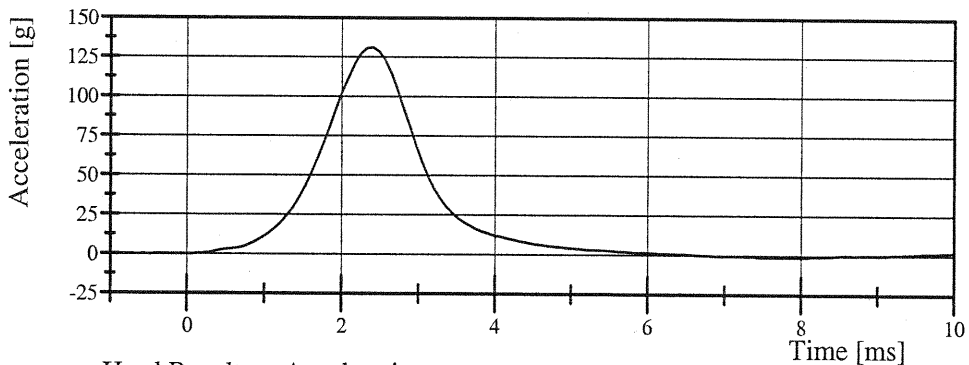


Filter Class: CFC_1000

Max: 0.7 g at 5.5 ms

Min: -3.4 g at 2.6 ms

Head Z-Axis Acceleration

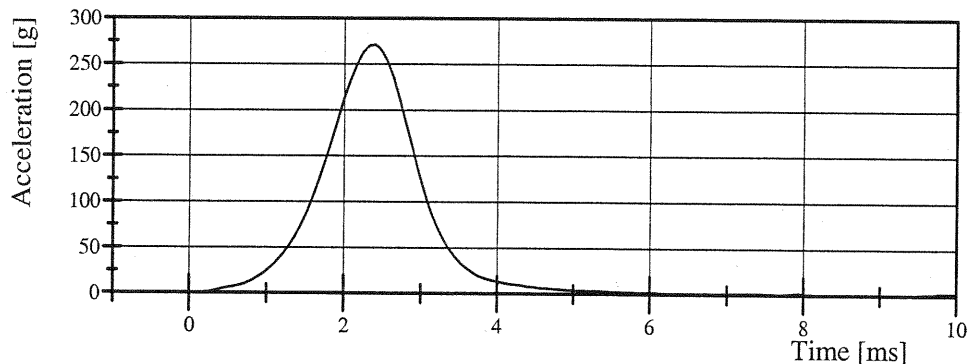


Filter Class: CFC_1000

Max: 131.3 g at 2.4 ms

Min: -0.9 g at 7.5 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 270.9 g at 2.4 ms

Min: 0.0 g at -1.0 ms

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 9-3

Test Date: 10/24/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.022 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.40 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.66 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.77 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-84.2 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	70.3 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	89.0 ms	Yes

Test meets specifications.

Comments:

Technician

Paul Bernal

Approved

Ron Stenard

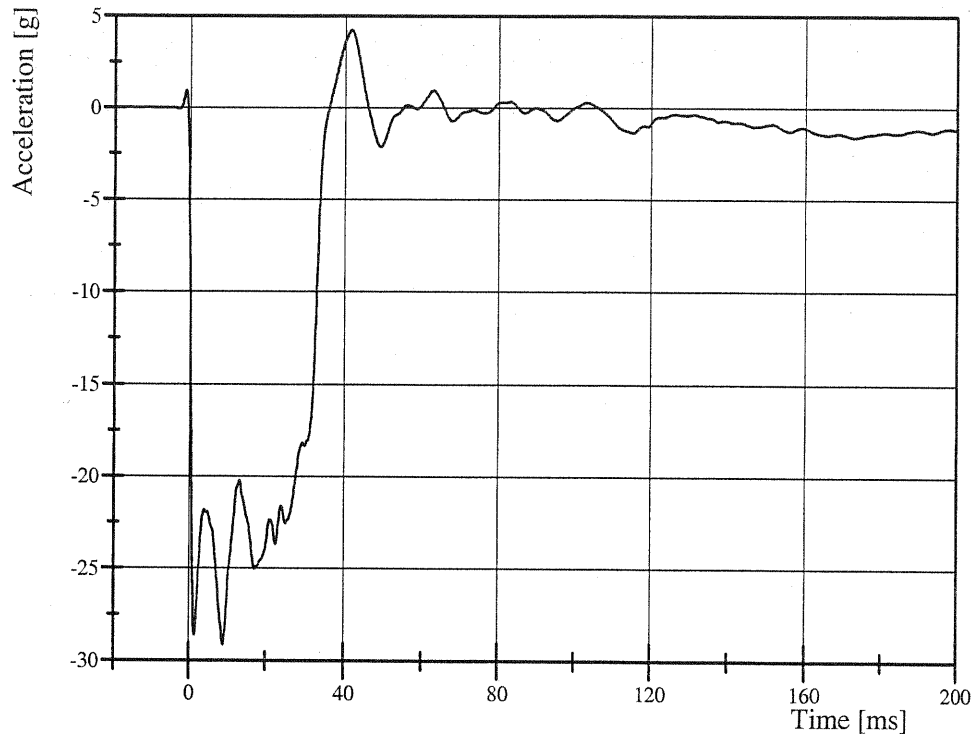
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 9-3

Test Date: 10/24/2007

Pendulum Acceleration

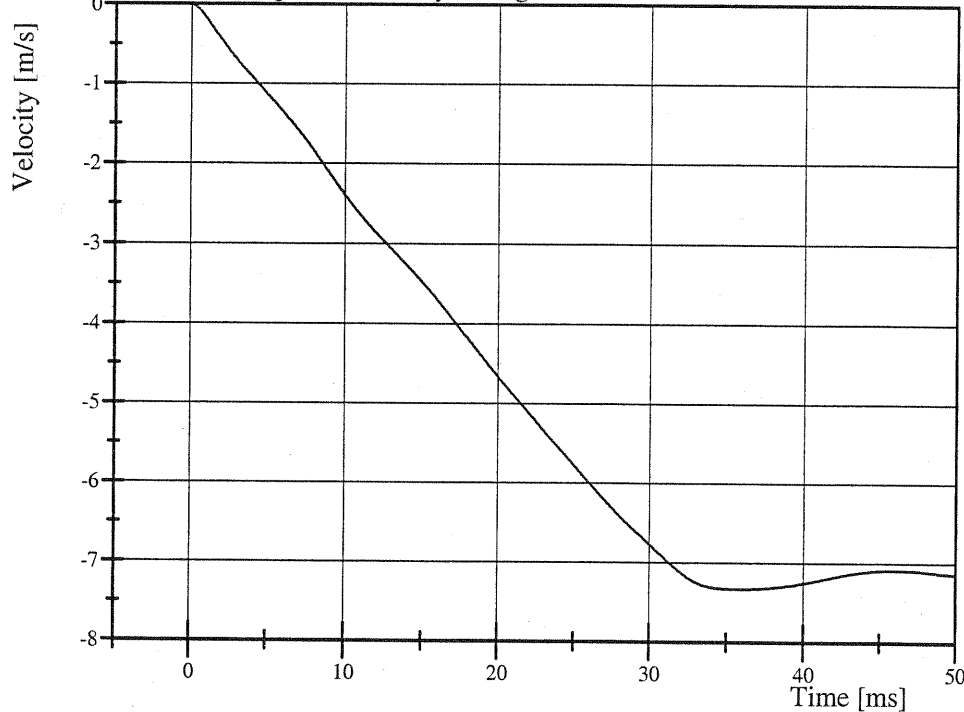


Filter Class: CFC_180

Max: 4.2 g at 41.7 ms

Min: -29.1 g at 8.9 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180

Max: 0.0 m/s at 0.0 ms

Min: -7.3 m/s at 35.9 ms

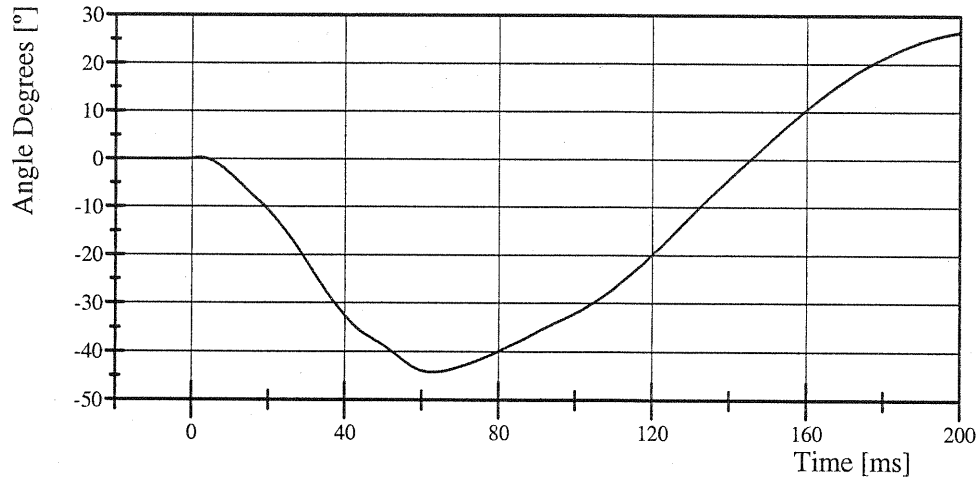
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 9-3

Test Date: 10/24/2007

Pot Rotation at the Base of Neck

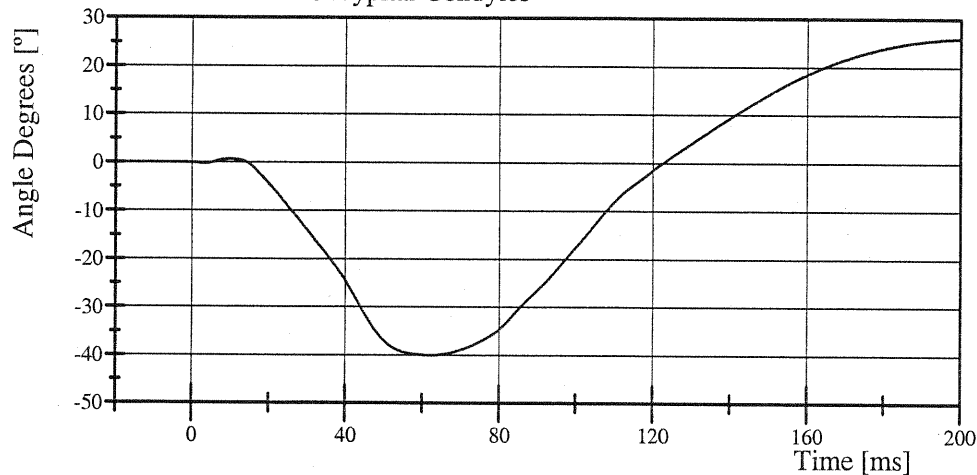


Filter Class: CFC_60

Max: 26.7 ° at 200.0 ms

Min: -44.2 ° at 63.0 ms

Head Rotation at Occypital Condyles

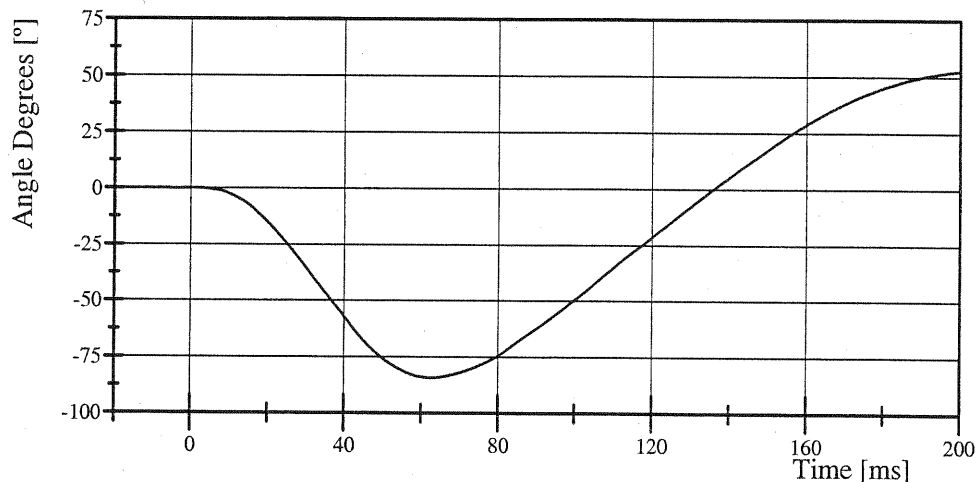


Filter Class: CFC_60

Max: 26.0 ° at 200.0 ms

Min: -40.0 ° at 62.5 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 52.6 ° at 200.0 ms

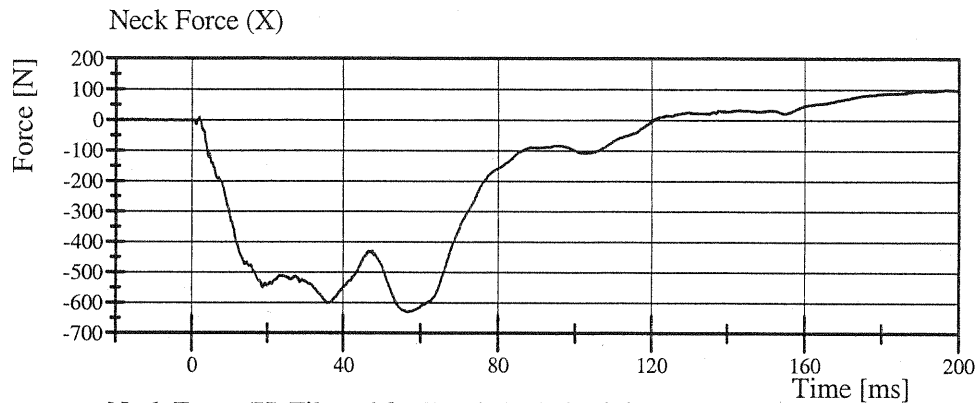
Min: -84.2 ° at 62.8 ms

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 9-3

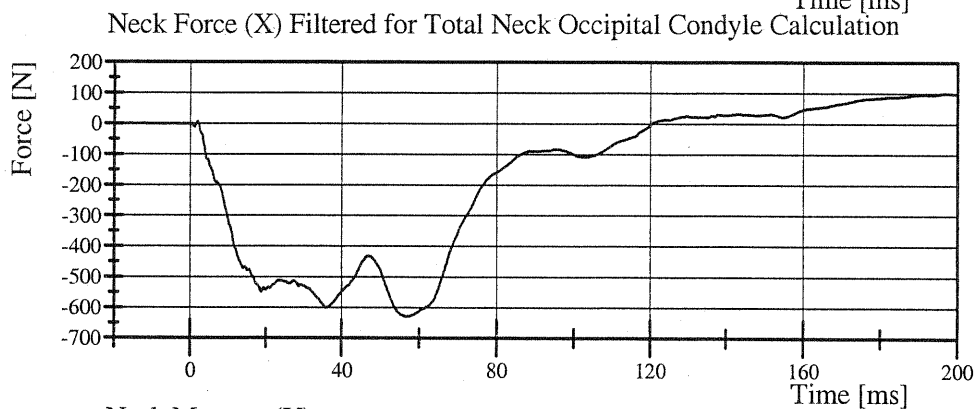
Test Date: 10/24/2007



Filter Class: CFC_1000

Max: 100.7 N at 196.6 ms

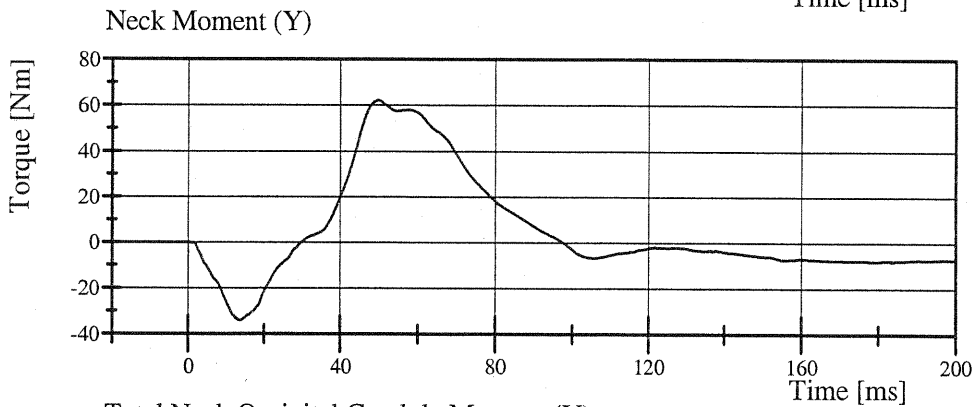
Min: -630.5 N at 56.7 ms



Filter Class: CFC_600

Max: 100.4 N at 196.6 ms

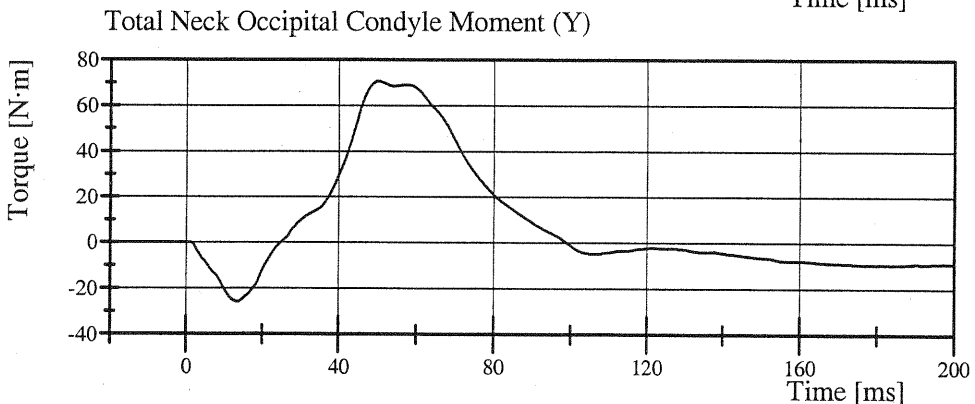
Min: -630.2 N at 56.6 ms



Filter Class: CFC_600

Max: 62.3 Nm at 49.7 ms

Min: -34.1 Nm at 13.8 ms



Filter Class: CFC_600

Max: 70.7 N·m at 50.1 ms

Min: -25.8 N·m at 13.4 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 9-2

Test Date: 10/24/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-5.968 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.85 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.48 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.02 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	107.8 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-55.6 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	102.3 ms	Yes

Test meets specifications.

Comments:

Technician



Approved



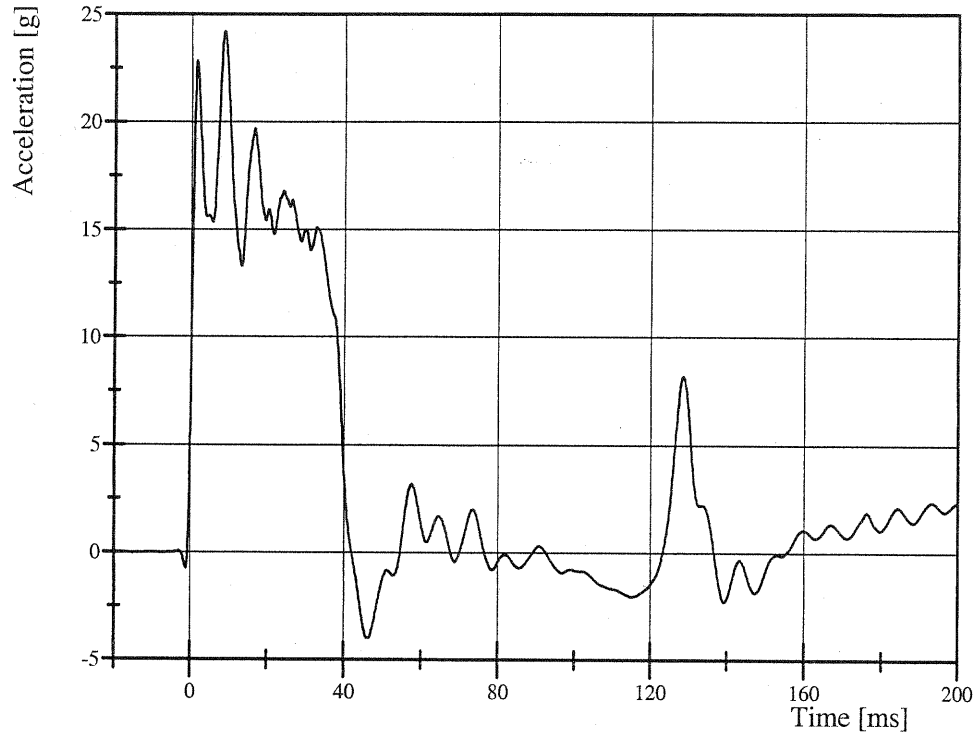
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 9-2

Test Date: 10/24/2007

Pendulum Acceleration

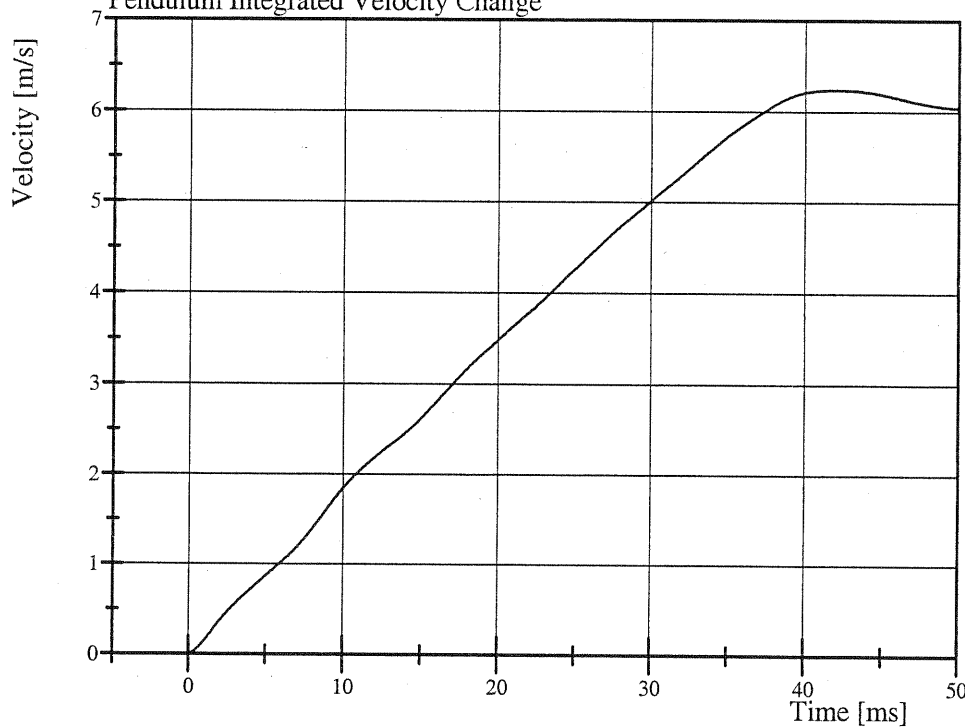


Filter Class: CFC_180

Max: 24.2 g at 8.6 ms

Min: -4.0 g at 46.4 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180

Max: 6.2 m/s at 42.0 ms

Min: 0.0 m/s at 0.0 ms

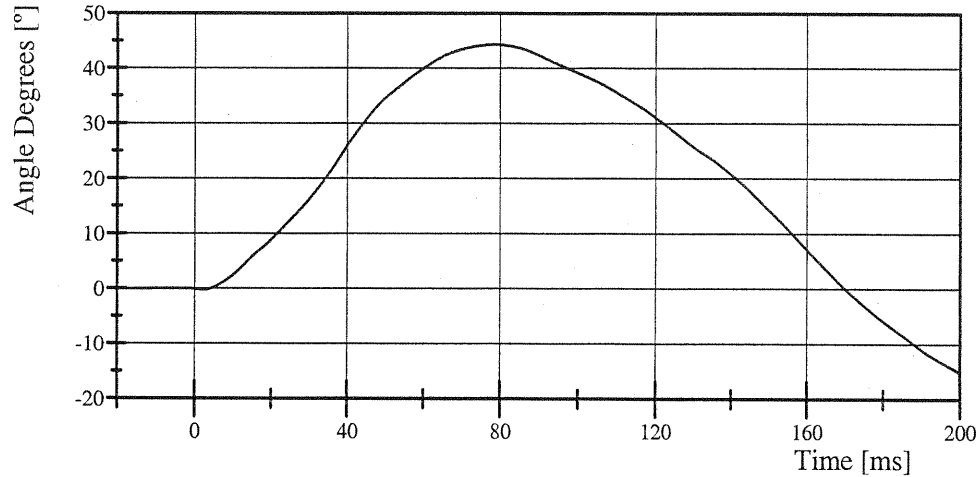
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 9-2

Test Date: 10/24/2007

Pot Rotation at the Base of Neck

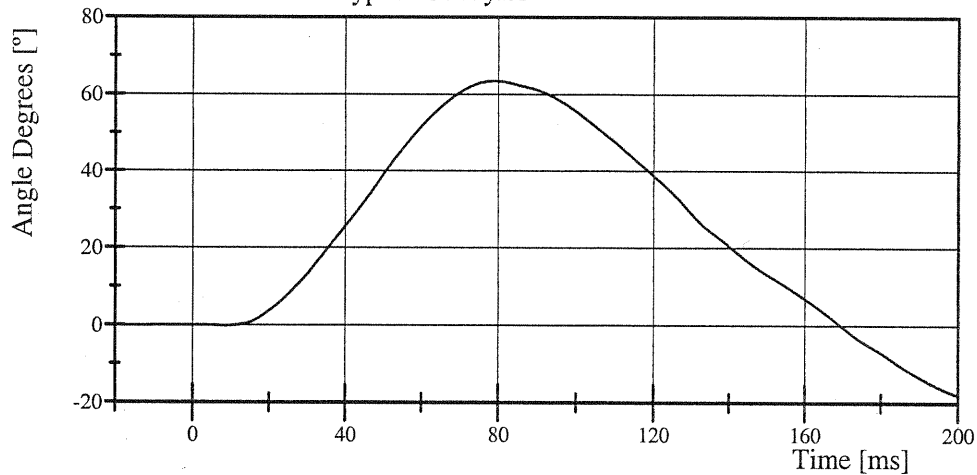


Filter Class: CFC_60

Max: 44.3 ° at 78.7 ms

Min: -15.1 ° at 200.0 ms

Head Rotation at Occypital Condyles

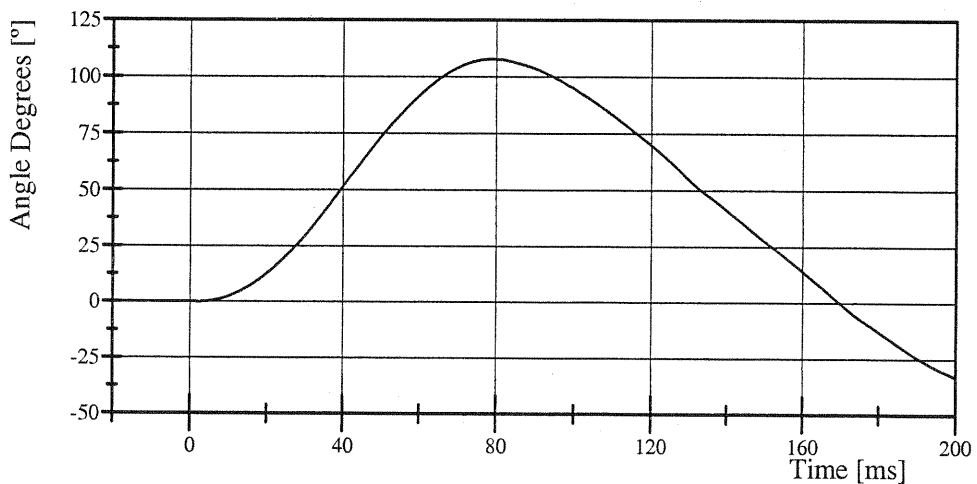


Filter Class: CFC_60

Max: 63.5 ° at 79.0 ms

Min: -18.0 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 107.8 ° at 78.9 ms

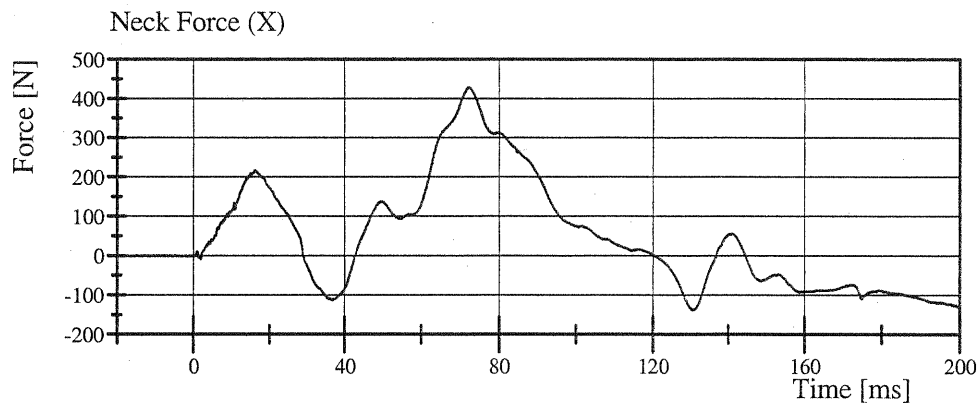
Min: -33.1 ° at 200.0 ms

Transportation Research Center Inc.

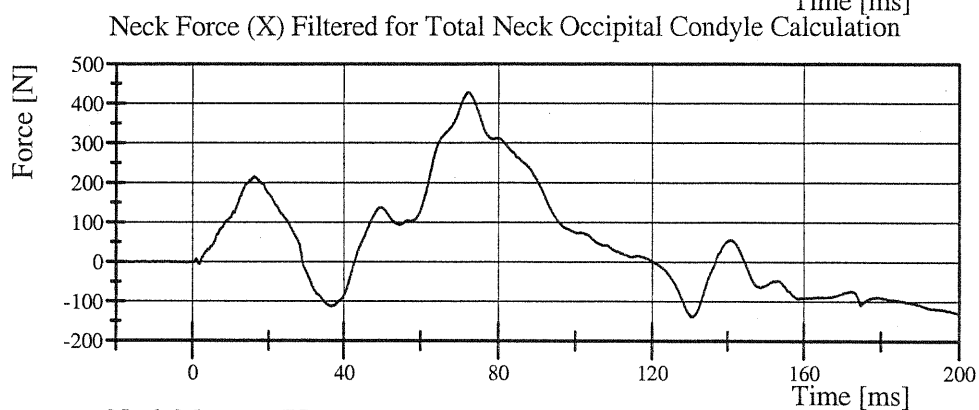
Neck Extension

HIII 5th Serial No. 324 Certification No. 9-2

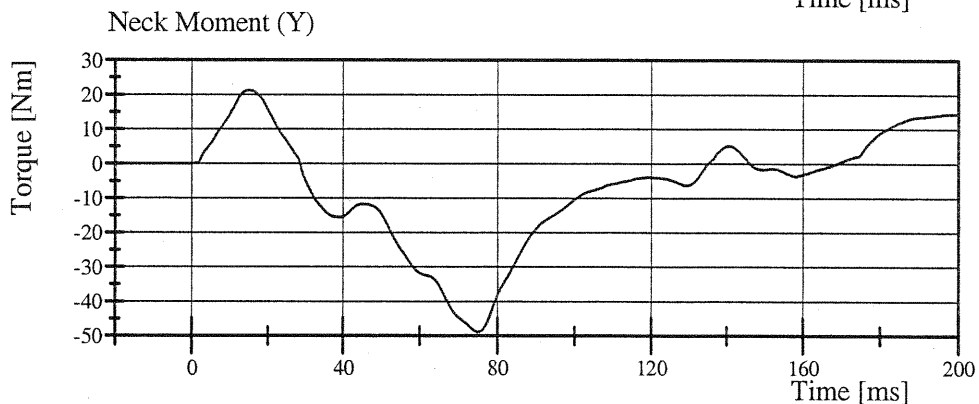
Test Date: 10/24/2007



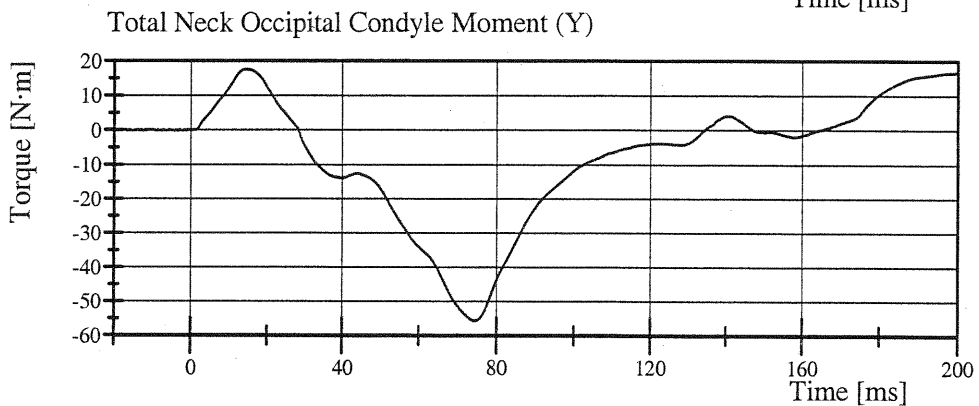
Filter Class: CFC_1000
Max: 428.7 N at 72.3 ms
Min: -137.8 N at 130.3 ms



Filter Class: CFC_600
Max: 428.4 N at 72.3 ms
Min: -137.5 N at 130.5 ms



Filter Class: CFC_600
Max: 21.2 Nm at 14.9 ms
Min: -48.8 Nm at 75.1 ms



Filter Class: CFC_600
Max: 17.6 N·m at 14.3 ms
Min: -55.6 N·m at 74.4 ms

Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 324 Certification No. 9-1

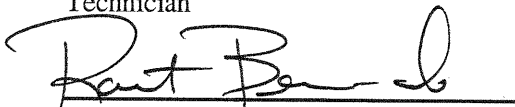
Test Date: 10/19/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.607 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,063.5 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	$\geq$ (-4,600) N	-3,935.8 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-55.3 mm	Yes
Internal Hysteresis	69 - 85 %	72.0 %	Yes

Test meets specifications.

Comments:

Technician



Approved

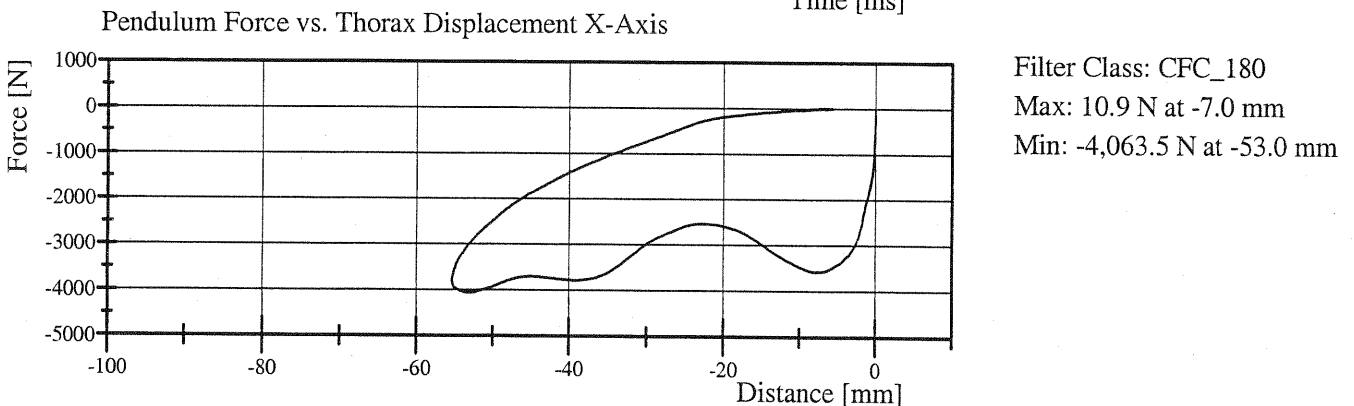
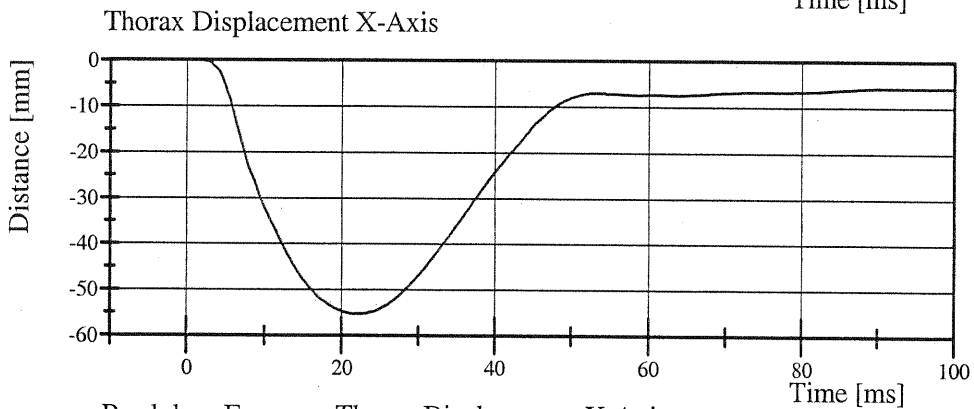
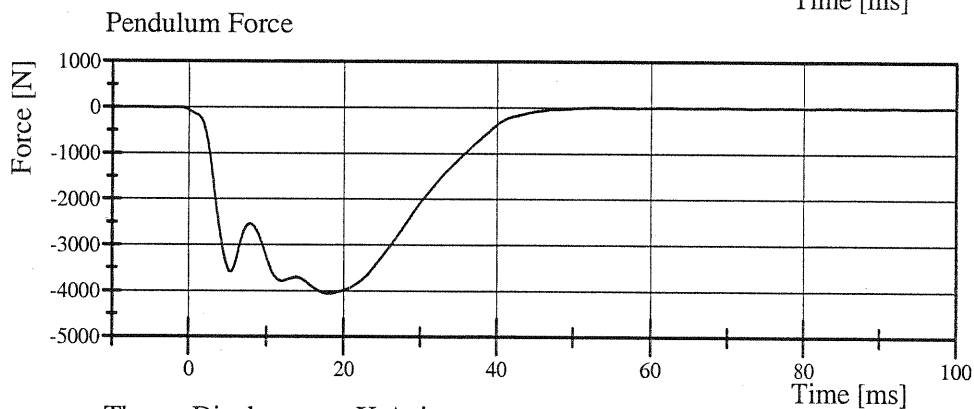
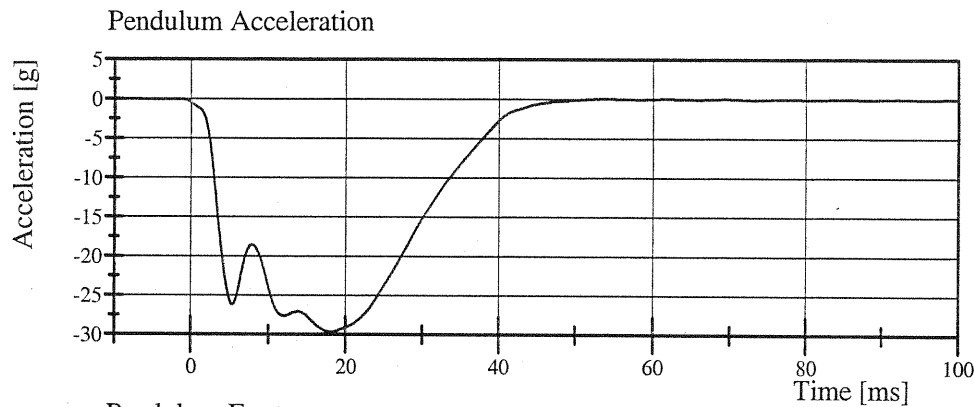


Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 324 Certification No. 9-1

Test Date: 10/19/2007



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 23-Oct-07

TRC, INC.

TEST NO: TOFL-01

572 O SN 324 TORSO FLEX CAL 01

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.1 ° C P
RELATIVE HUMIDITY	10 – 70 %	51 % P
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20° REFERENCED TO VERTICAL	16.6 ° P
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	379.4 N P
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	4.6 ° P
RATE	0.5° - 1.5 °/sec	.97°/sec P

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN Ron Stoner

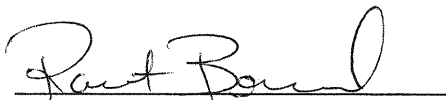
Post-test Dummy Configuration and Performance Verification Data

Right Front Passenger Dummy S/N: 324

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 324 Calibration No. 10
With Thor FLX Legs

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	775	Yes
B	Shoulder Pivot Height	431.8 - 457.2	445	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	79	Yes
F	Thigh Clearance	119.4 - 134.6	130	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	245	Yes
H	Head Back to Backline	43.2 - 48.2	44	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	287	Yes
J	Elbow Rest Height	182.8 - 203.2	184	Yes
K	Buttock Knee Length	520.7 - 546.1	535	Yes
L	Popliteal Height	355.6 - 376.0	370	Yes
M	Knee Pivot Height	393.7 - 419.1	396	Yes
N	Buttock Popliteal Height	414.0 - 439.4	438	Yes
O	Chest Depth without Jacket	175.3 - 190.5	178	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	480	Yes
S	Head Breadth	137.1 - 147.3	142	Yes
T	Head Depth	177.8 - 188.0	181	Yes
U	Hip Breadth	299.7 - 314.9	300	Yes
V	Shoulder Breadth	350.5 - 365.7	362	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	532	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	875	Yes
Z	Waist Circumference	759.5 - 789.9	780	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	357	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	161	Yes

Technician



Approved



Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 324 Certification No. 10-1

Test Date: 11/27/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	20.8 °C	Yes
Relative Humidity	10 - 70 %	36 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	275.4 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	3.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Rant B. [Signature]

Approved

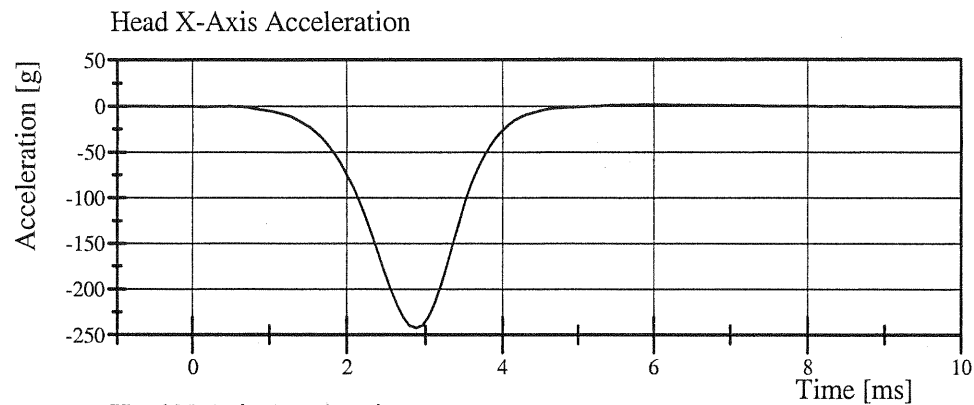
Ron Stoner [Signature]

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 324 Certification No. 10-1

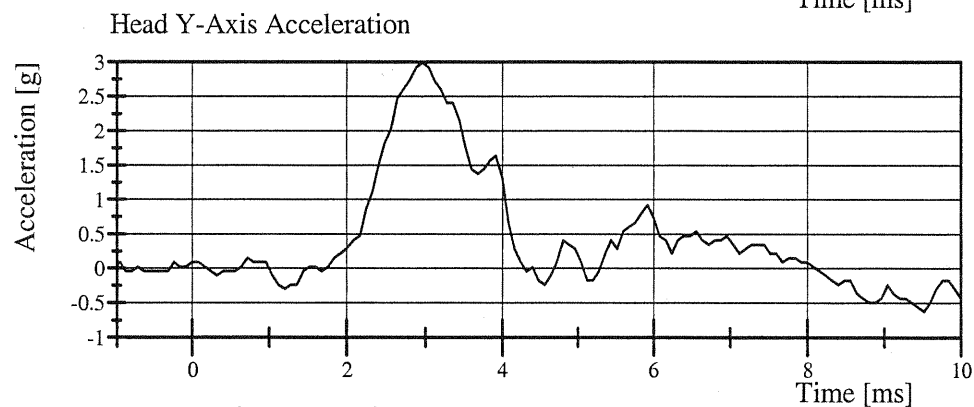
Test Date: 11/27/2007



Filter Class: CFC_1000

Max: 1.8 g at 6.1 ms

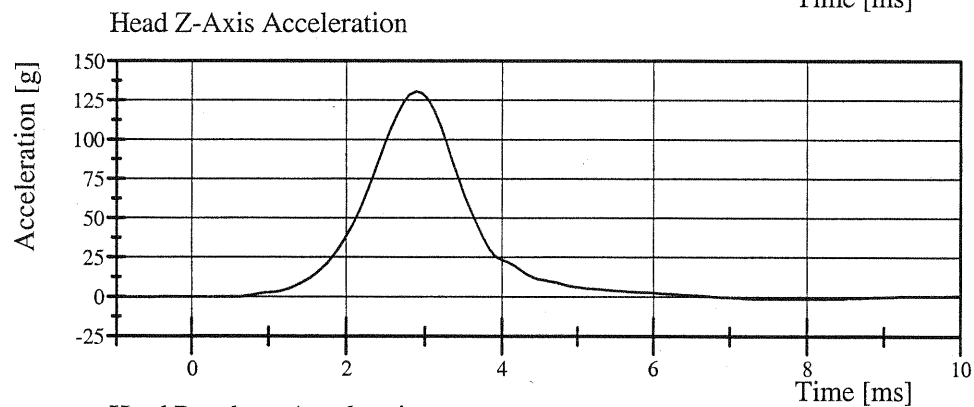
Min: -242.4 g at 2.9 ms



Filter Class: CFC_1000

Max: 3.0 g at 3.0 ms

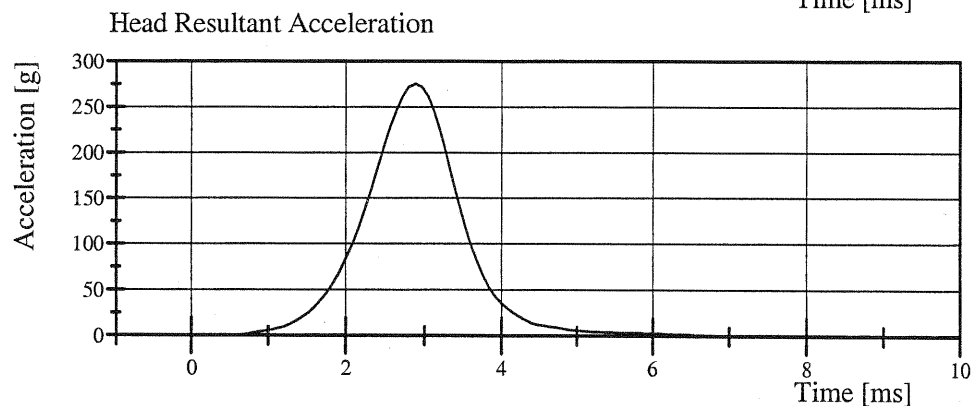
Min: -0.6 g at 9.5 ms



Filter Class: CFC_1000

Max: 130.6 g at 2.9 ms

Min: -1.2 g at 7.4 ms



Filter Class: CFC_1000

Max: 275.4 g at 2.9 ms

Min: 0.0 g at -1.0 ms

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

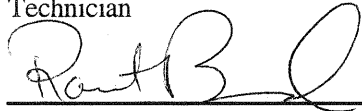
Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	39 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.051 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.23 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.31 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.08 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-85.0 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	71.7 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	90.2 ms	Yes

Test meets specifications.

Comments:

Technician



Approved

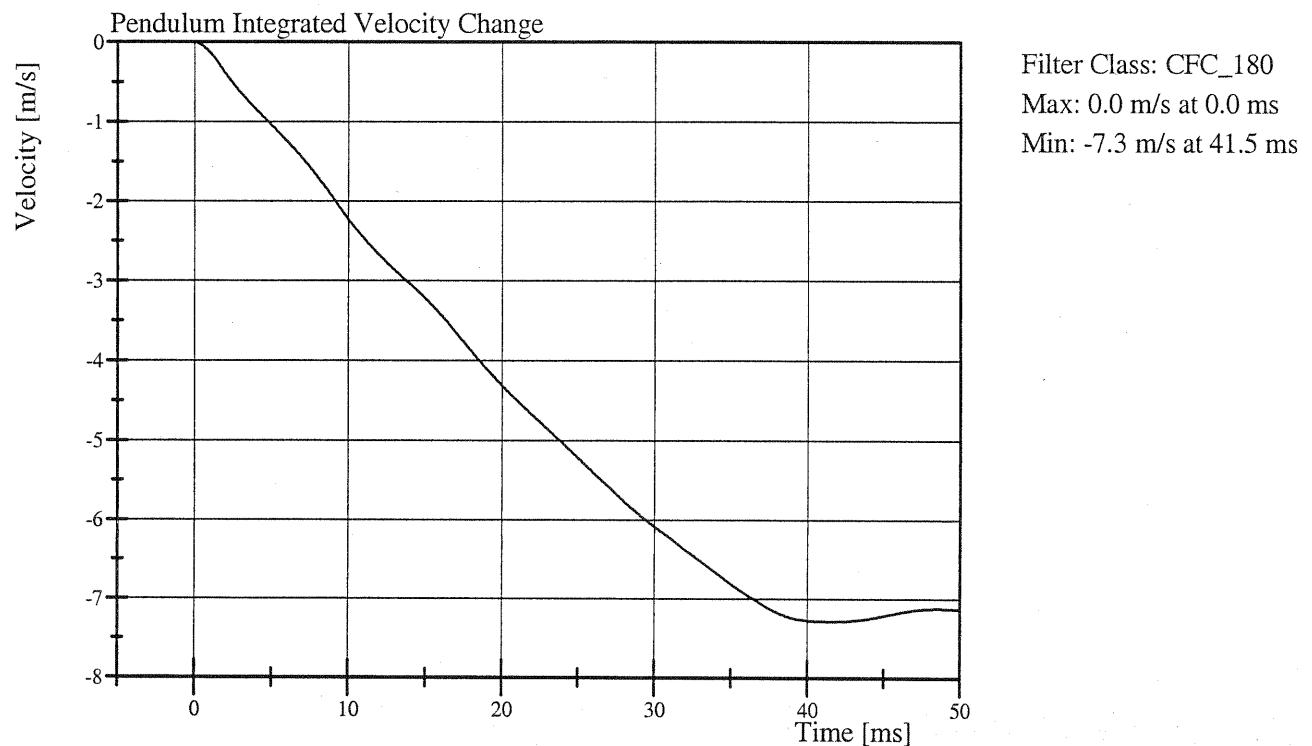
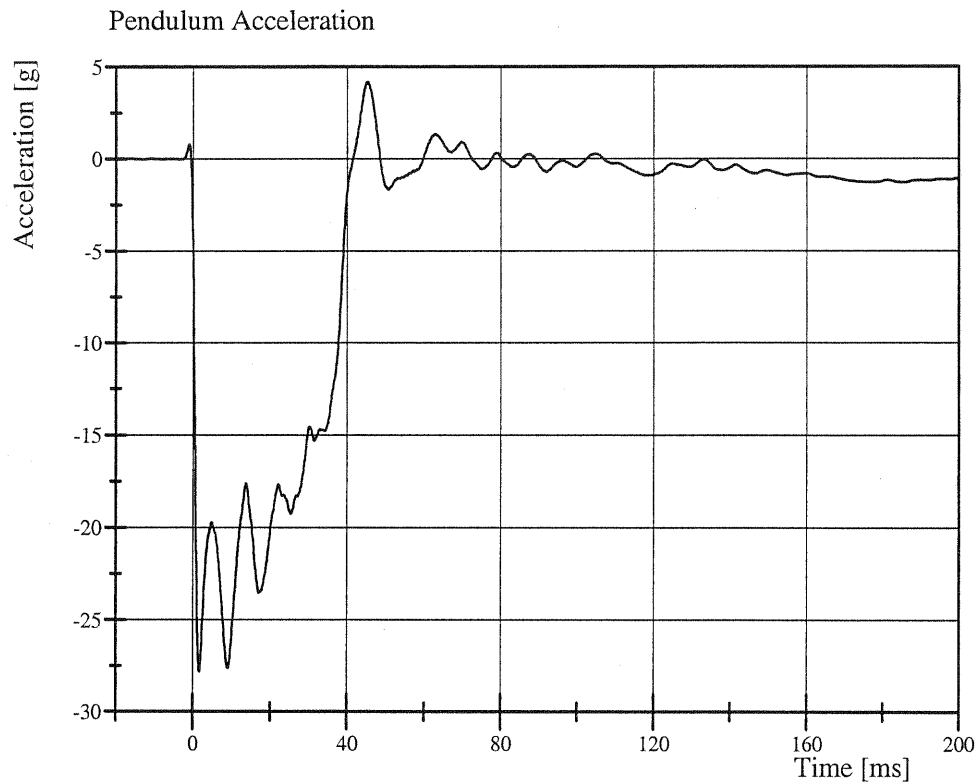


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

Test Date: 11/28/2007



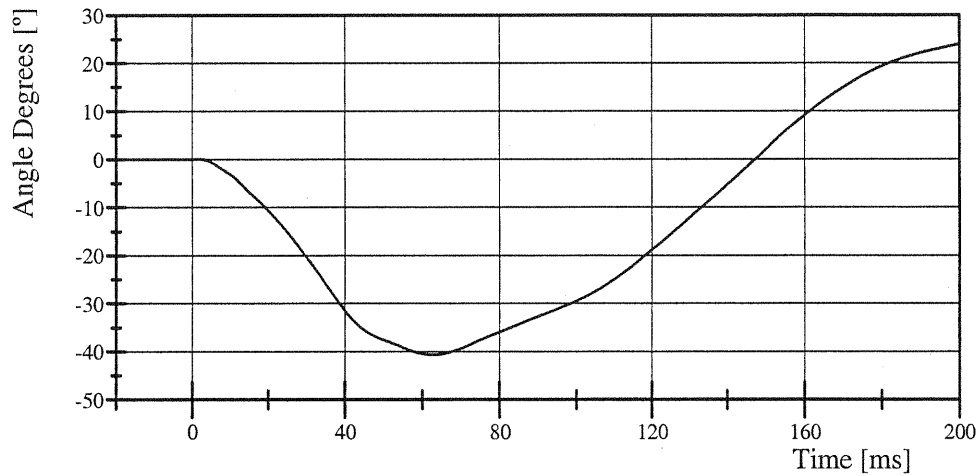
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

Test Date: 11/28/2007

Pot Rotation at the Base of Neck

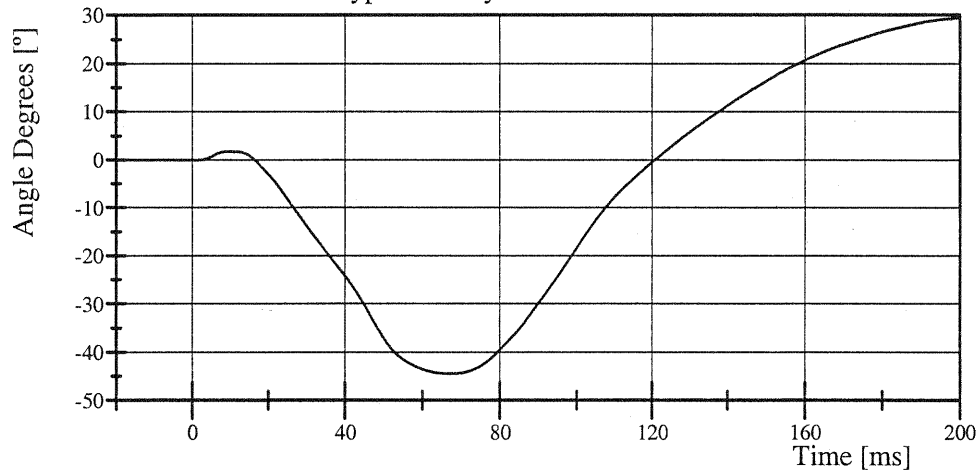


Filter Class: CFC_60

Max: 23.9 ° at 200.0 ms

Min: -40.7 ° at 62.9 ms

Head Rotation at Occypital Condyles

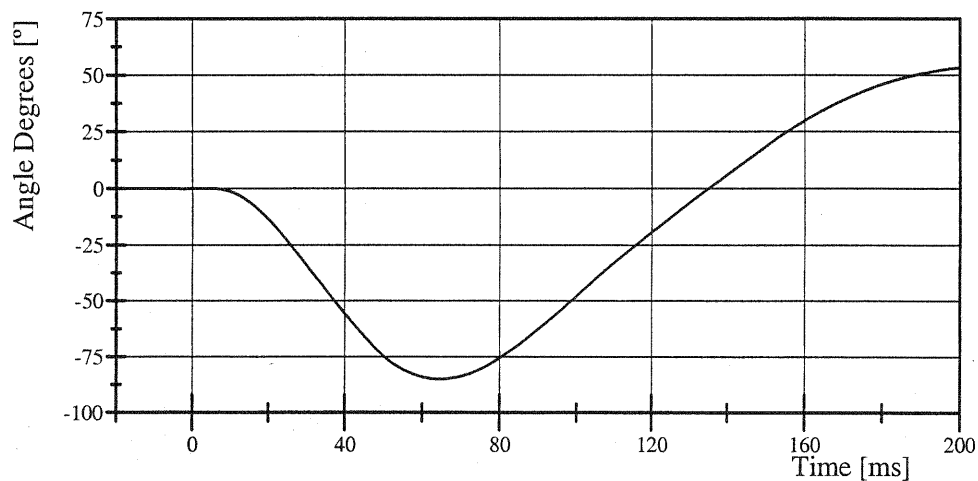


Filter Class: CFC_60

Max: 29.4 ° at 200.0 ms

Min: -44.5 ° at 67.4 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 53.3 ° at 200.0 ms

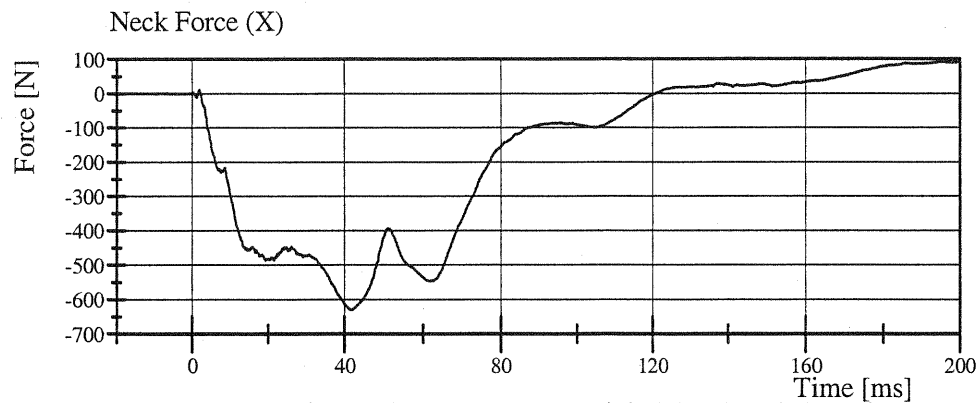
Min: -85.0 ° at 64.6 ms

Transportation Research Center Inc.

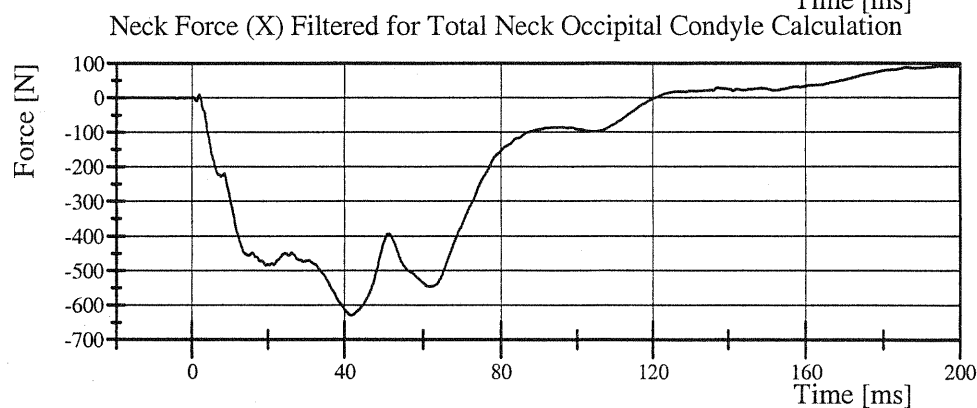
Neck Flexion

HIII 5th Serial No. 324 Certification No. 10-2

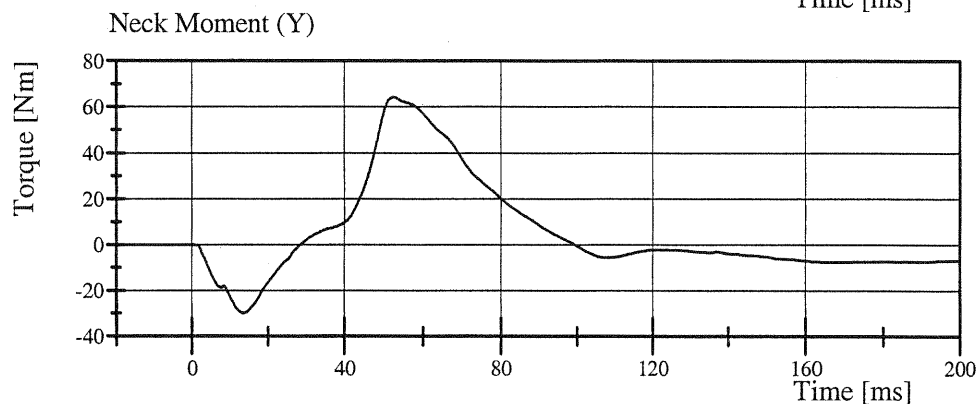
Test Date: 11/28/2007



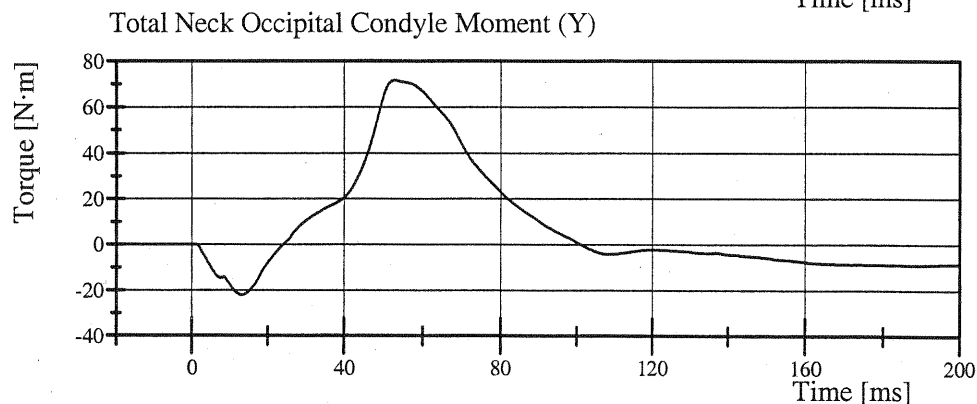
Filter Class: CFC_1000
Max: 92.5 N at 195.2 ms
Min: -630.2 N at 41.7 ms



Filter Class: CFC_600
Max: 92.0 N at 195.2 ms
Min: -629.8 N at 41.7 ms



Filter Class: CFC_600
Max: 64.3 Nm at 52.6 ms
Min: -29.9 Nm at 13.4 ms



Filter Class: CFC_600
Max: 71.7 N·m at 52.8 ms
Min: -22.1 N·m at 13.2 ms



Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

Test Date: 11/29/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.082 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.75 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.39 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	4.82 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	111.6 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-55.8 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	104.5 ms	Yes

Test meets specifications.

Comments:

Technician

Rant Baran

Approved

Ron Stoner

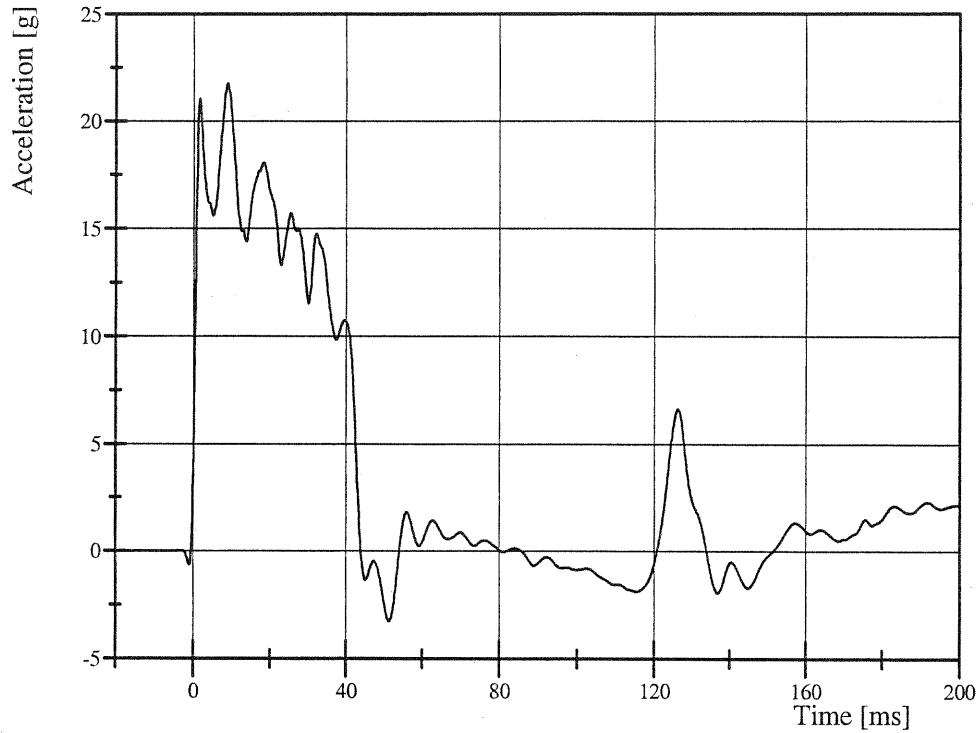
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

Test Date: 11/29/2007

Pendulum Acceleration

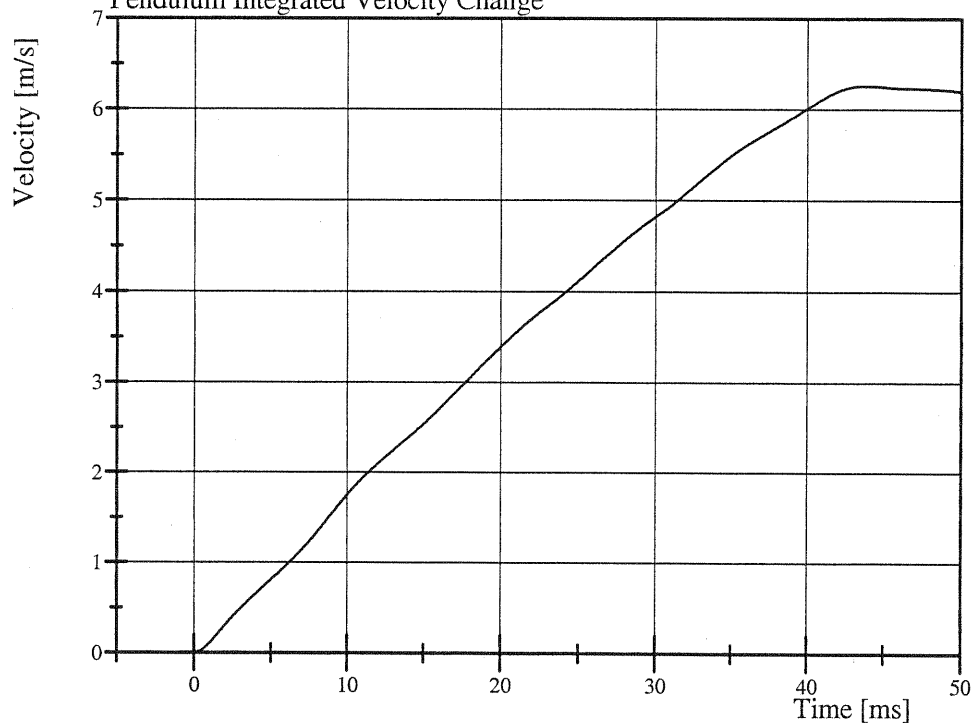


Filter Class: CFC_180

Max: 21.8 g at 8.8 ms

Min: -3.3 g at 51.4 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180

Max: 6.3 m/s at 43.8 ms

Min: 0.0 m/s at 0.0 ms

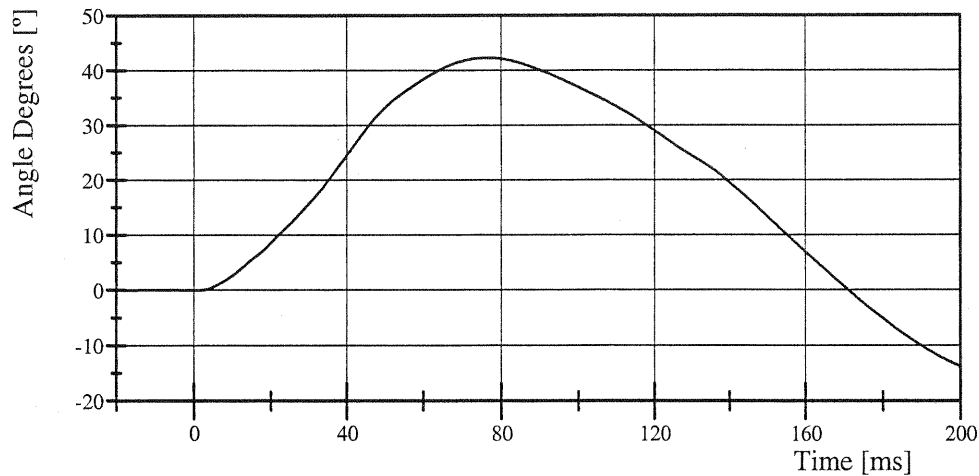
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

Test Date: 11/29/2007

Pot Rotation at the Base of Neck

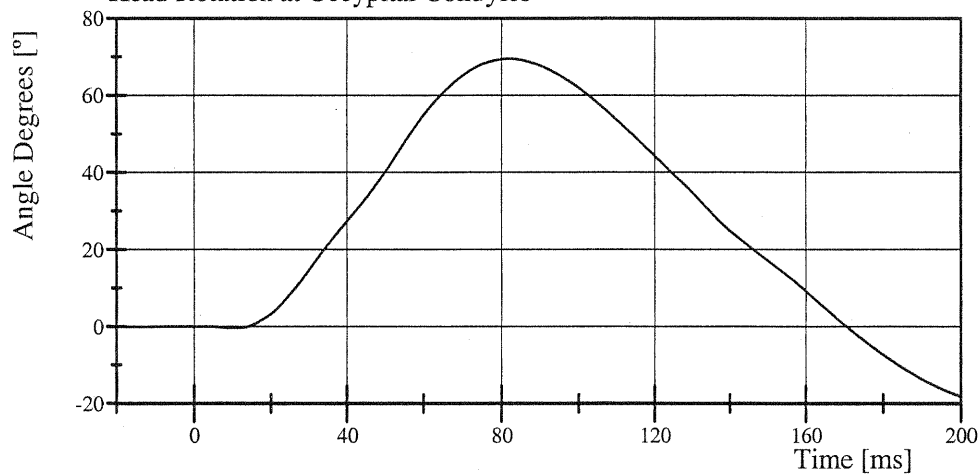


Filter Class: CFC_60

Max: 42.3 ° at 77.0 ms

Min: -13.7 ° at 200.0 ms

Head Rotation at Occypital Condyles

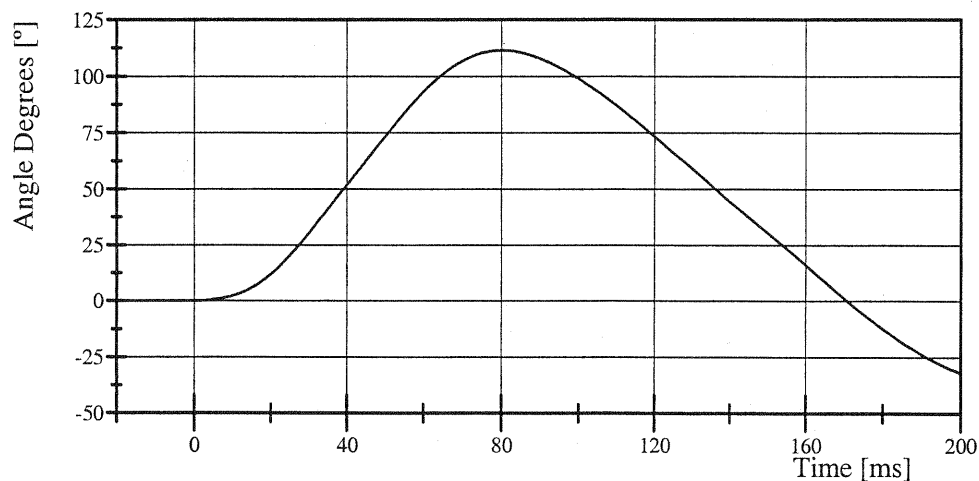


Filter Class: CFC_60

Max: 69.5 ° at 82.2 ms

Min: -18.2 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 111.6 ° at 80.3 ms

Min: -31.9 ° at 200.0 ms

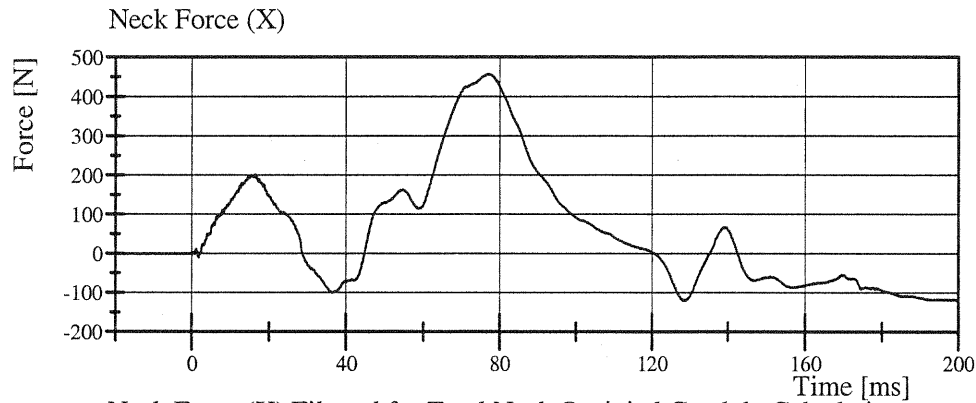


Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 324 Certification No. 10-4

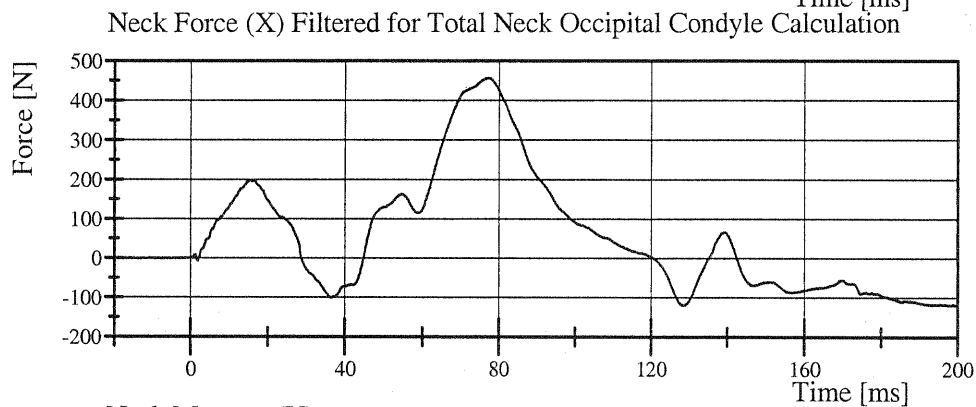
Test Date: 11/29/2007



Filter Class: CFC_1000

Max: 457.5 N at 77.0 ms

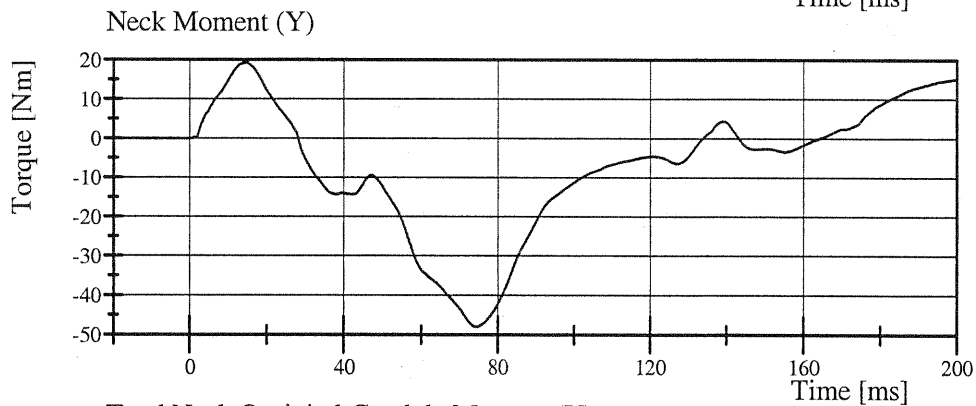
Min: -119.8 N at 128.2 ms



Filter Class: CFC_600

Max: 457.2 N at 77.1 ms

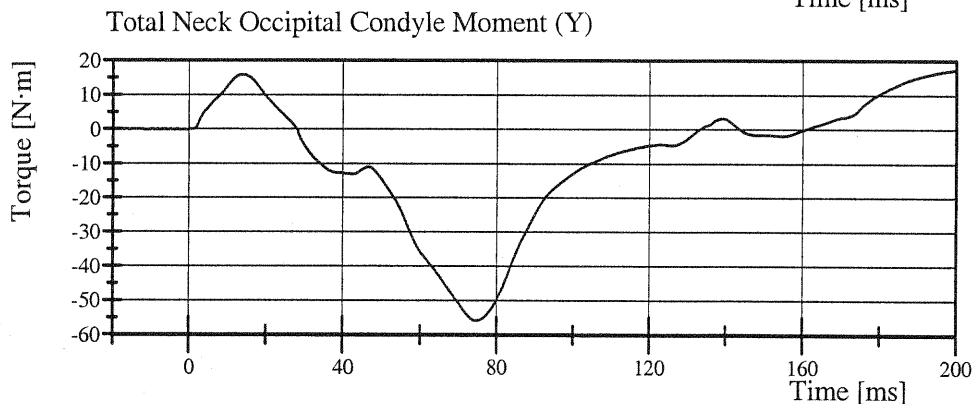
Min: -119.5 N at 128.3 ms



Filter Class: CFC_600

Max: 19.2 Nm at 14.6 ms

Min: -48.0 Nm at 74.4 ms



Filter Class: CFC_600

Max: 17.3 N·m at 200.0 ms

Min: -55.8 N·m at 74.6 ms

Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 324 Certification No. 10-2

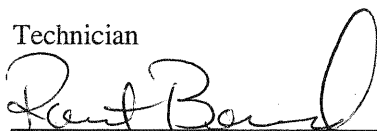
Test Date: 12/3/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.627 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,046.9 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	$\geq$ (-4,600) N	-3,950.1 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-55.9 mm	Yes
Internal Hysteresis	69 - 85 %	71.3 %	Yes

Test meets specifications.

Comments:

Technician



Approved

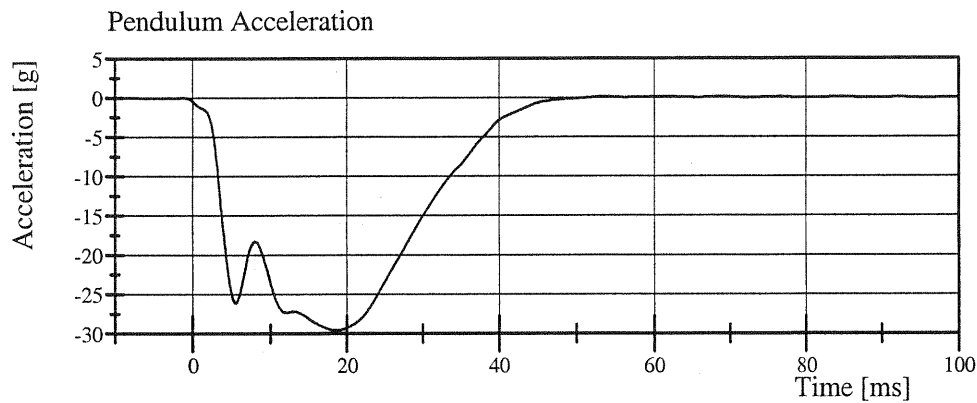


Transportation Research Center Inc.

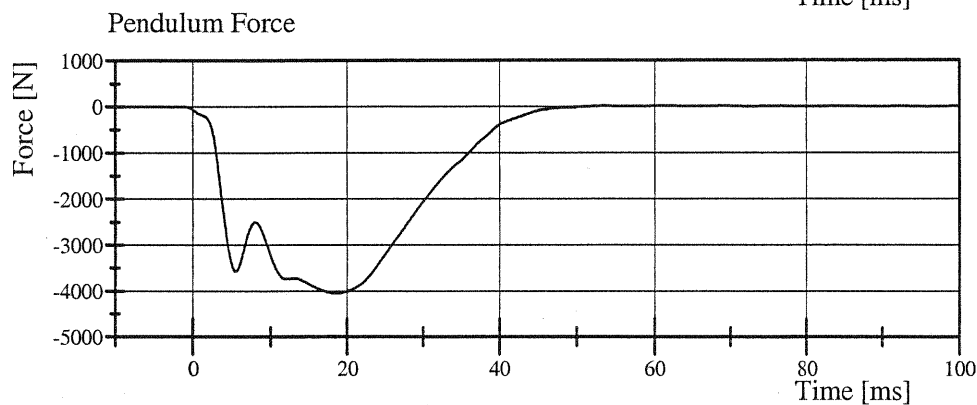
Front Thorax

HIII 5th Serial No. 324 Certification No. 10-2

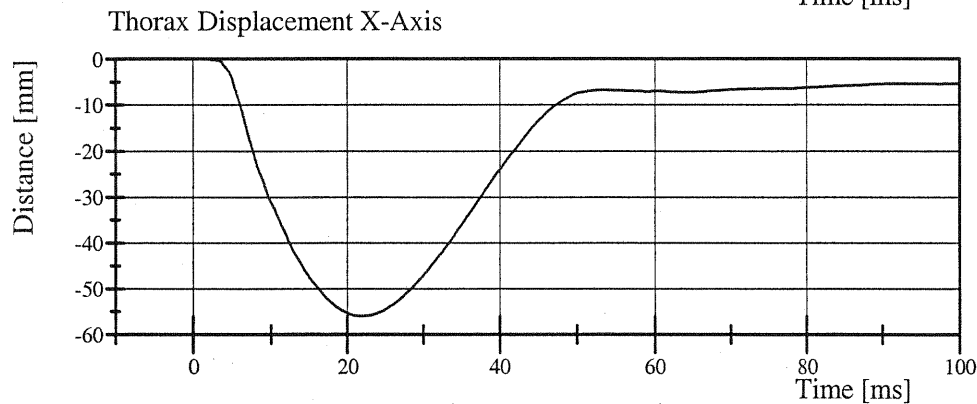
Test Date: 12/3/2007



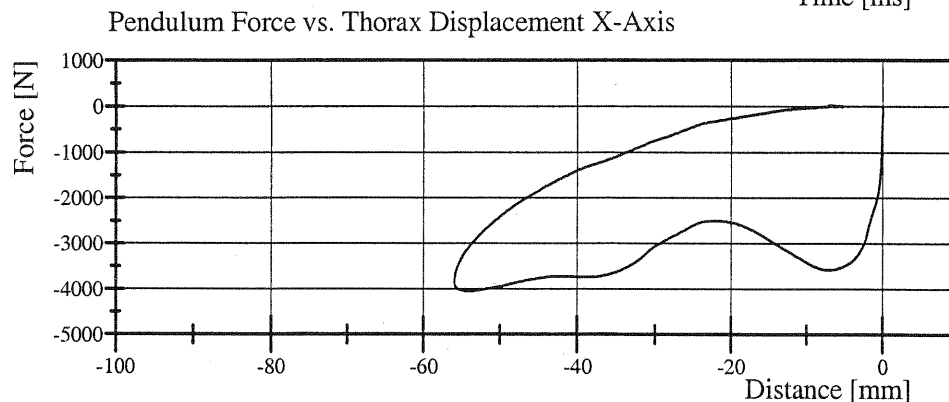
Filter Class: CFC_180
Max: 0.1 g at 61.0 ms
Min: -29.5 g at 18.6 ms



Filter Class: CFC_180
Max: 20.0 N at 61.0 ms
Min: -4,046.9 N at 18.6 ms



Filter Class: CFC_600
Max: 0.0 mm at -8.0 ms
Min: -55.9 mm at 21.9 ms



Filter Class: CFC_180
Max: 20.0 N at -7.0 mm
Min: -4,046.9 N at -54.1 mm

HYBRID III SMALL FEMALE

TRC, INC. TEST NO: TOFL-01 572 O SN 324 TORSO FLEX CAL 10

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.5 ° C P
RELATIVE HUMIDITY	10 – 70 %	32 % P
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20° REFERENCED TO VERTICAL	17.2 ° P
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	352.6 N P
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	5.2 ° P
RATE	0.5° - 1.5 °/sec	.98°/sec P

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN Rand Bernal

Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 5th Serial No. 324 Certification No. 10-2

Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	31 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,791.8 N	Yes

Test meets specifications.

Comments:

Technician

Rant Bernal

Approved

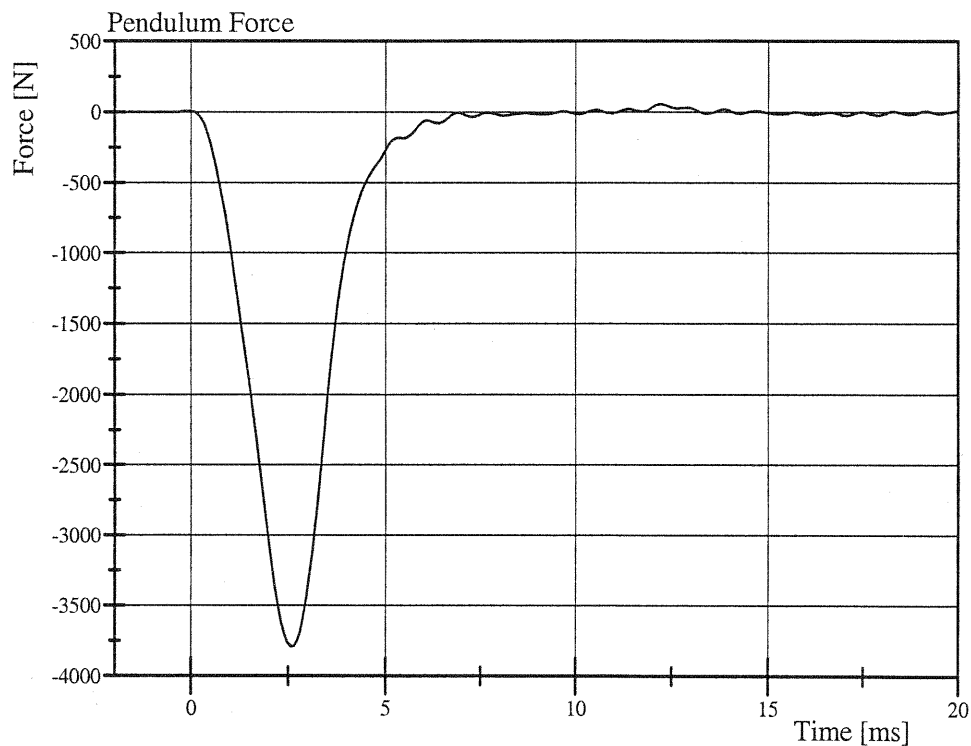
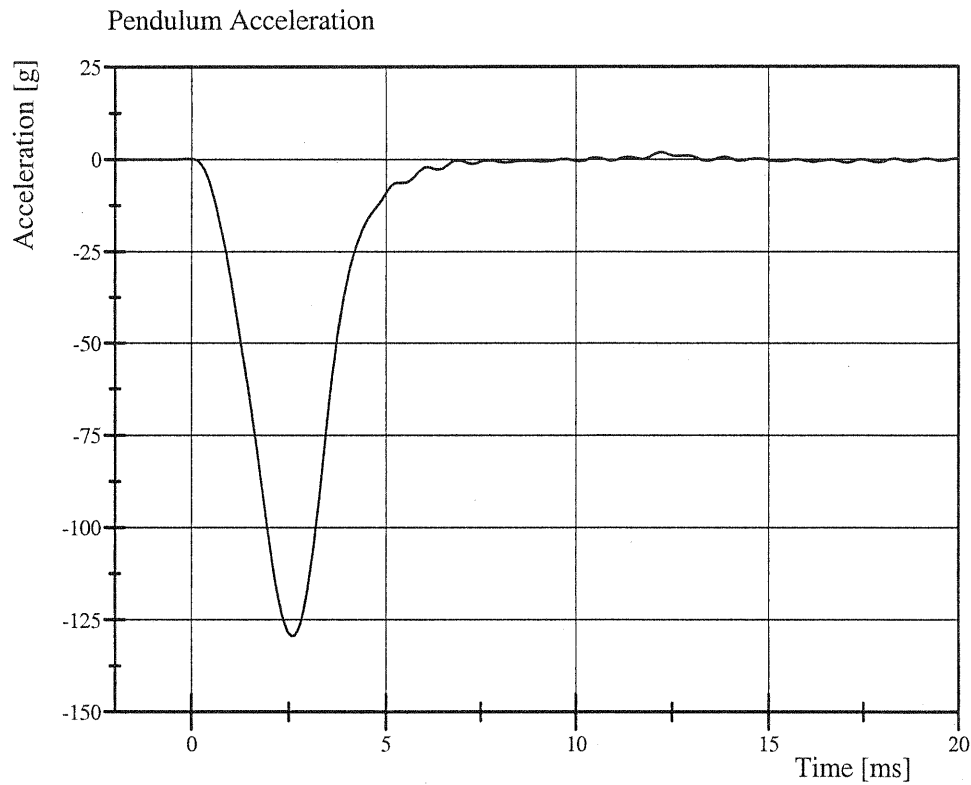
Ron Stoner

Transportation Research Center Inc.

Left Knee Femur Response Test

HIII 5th Serial No. 324 Certification No. 10-2

Test Date: 11/28/2007



Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 324 Certification No. 10-3
Test Date: 11/28/2007

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	20.7 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,651.4 N	Yes

Test meets specifications.

Comments:

Technician

Charles W. Ball

Approved

Ron Stoner

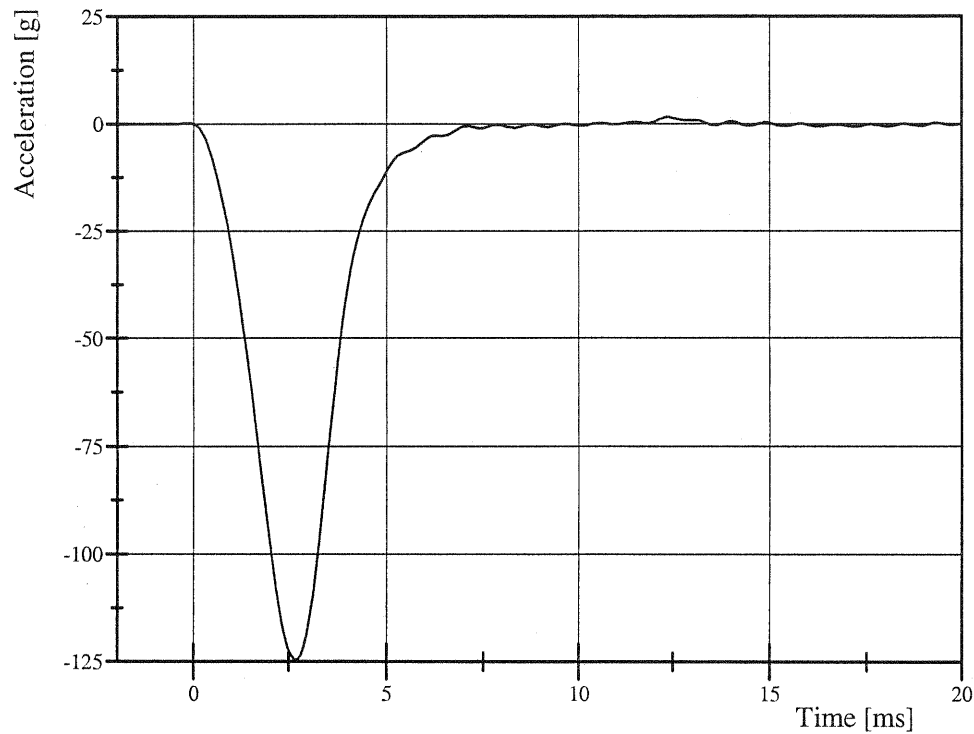
Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 5th Serial No. 324 Certification No. 10-3

Test Date: 11/28/2007

Pendulum Acceleration

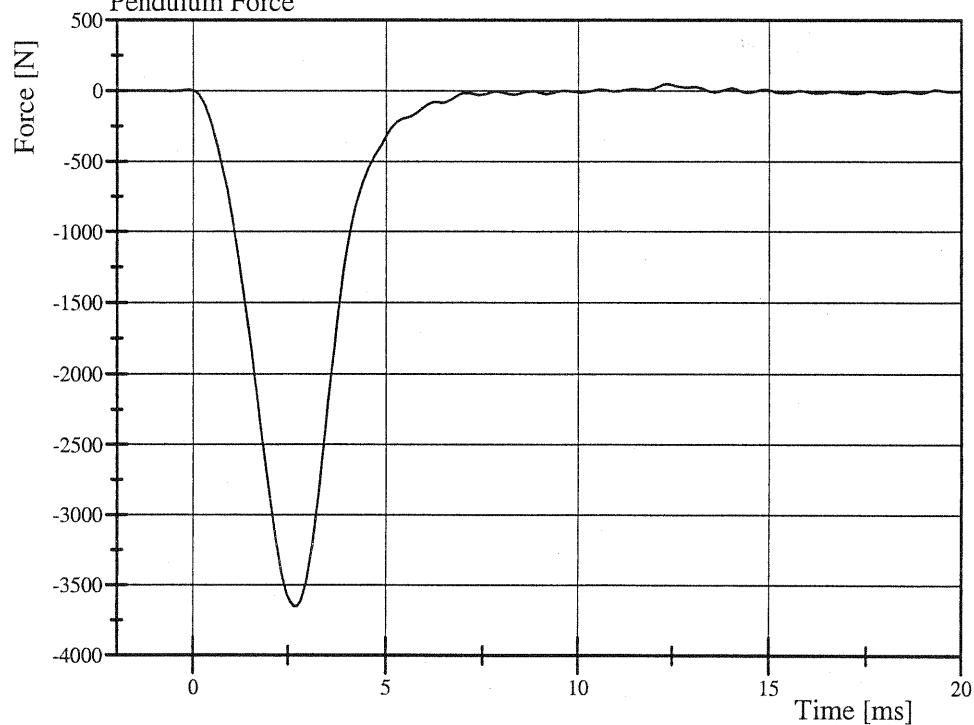


Filter Class: CFC_600

Max: 1.6 g at 12.4 ms

Min: -124.5 g at 2.6 ms

Pendulum Force



Filter Class: CFC_600

Max: 47.6 N at 12.4 ms

Min: -3,651.4 N at 2.6 ms

Appendix D

Customer Provided Seating Procedure

A.2 Driver side (with Brake and clutch pedals in place while avoiding pedal interaction)

- ☐ 1. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment positions. (S16.2.10.1, S20.1.9.1, S20.4.1, S22.1.7.1)
☐ N/A – No lumbar adjustment
- ☐ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2, S20.1.9.2, S20.4.1, S22.1.7.1, S22.4.2.1, S22.4.3.1, S24.4.2.1, S26.2.3, S26.3.1)
☐ N/A – No additional support adjustment
- ☐ 3. Position an adjustable leg support system in its rearmost position. (8/27/04 interpretation to Toyota)
☐ N/A – No adjustable leg support system
- ☐ 4. Mark a point (seat cushion reference point) on the side of the seat cushion that is between 150 mm and 250 mm from the front edge of the seat cushion. (S16.3.1.12)
- ☐ 5. Draw a line (seat cushion reference line) through the seat cushion reference point. (S16.3.1.13)
- ☐ 6. Use only the controls that primarily move the seat in the fore-aft direction to move the seat cushion reference point to the rearmost position. (S16.2.10.3.1, S22.1.7.3)
- ☐ 7. If the seat cushion adjusts fore-aft, independent of the seat back, use only the controls that primarily move the seat cushion in the fore-aft direction to move the seat cushion reference point to the rearmost position. (S16.2.10.3.1, S20.1.9.3)
☐ N/A – No independent fore-aft seat cushion adjustment
- ☐ 8. Use any part of any control, other than the parts just used for fore-aft positioning, to determine the range of angles of the seat cushion reference line and to set the seat cushion reference line at the mid-angle. (S16.2.10.3.1)
Maximum angle _____
Minimum angle _____
Mid-angle _____
- ☐ 9. If the seat and/or seat cushion height is adjustable, use any part of any control other than the parts which primarily move the seat or seat cushion fore-aft, to put the seat cushion reference point in its lowest position with the seat cushion reference line angle at the mid-angle found in 8. (S16.2.10.3.1)
☐ N/A – No seat height adjustment
- ☐ 10. Use only the controls that primarily move the seat in the fore-aft direction to verify the seat is in the rearmost position.
- ☐ 12. Use only the controls that primarily move the seat in the fore-aft direction to place the seat in the rearmost position.
- ☐ 14. Visually mark for future reference the seat back angle at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer for the rearmost seat position. (S20.1.9.5, S22.1.7.5, S22.4.2.1, S22.4.3.1, S24.1.2, S24.4.2.1, S26.2.3, S26.3.1)
☐ N/A – No seat back angle adjustment
Manufacturer's design seat back angle _____
- ☐ 15. Is the seat a bucket seat?
☐ Yes, go to 16 and skip 17
☐ No, go to 17 and skip 16
- ☐ 16. Bucket seats:
Locate and mark for future reference the longitudinal centerline of the seat cushion. The intersection of the vertical longitudinal plane that passes through the SgRP and the seat cushion upper surface determines the longitudinal centerline of a bucket seat cushion. (S16.3.1.10 & S20.1.10)
- ☐ 17. Bench seats
Locate and mark for future reference the longitudinal line on the seat cushion that marks the intersection of the vertical longitudinal plane through the centerline of the steering wheel and the seat cushion upper surface.
- ☐ 18. Head Restraint Position
☐ N/A Vehicle contains automatic head restraints.
☐ N/A, there is no head restraint adjustment
☐ Adjust the head restraint to its highest position. (S8.1.3)

- ___19. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
___N/A – No adjustable upper seat belt anchorage
Manufacturer's specified anchorage position. _____
Tested anchorage position _____
- ___20. Place adjustable pedals in the full forward position (towards the front of the vehicle.)
___N/A – the pedals are not adjustable.
- ___21. Locate and mark the right heel point (RHP) on the carpet.
Flat accelerator pedals: Extend a line through the axis of symmetry (that is closest to the vertical plane) of the accelerator pedal. The RHP is the intersection of that line with the floorpan.
Curved accelerator pedals: Construct a line in the side view tangent to the accelerator pedal such that the distance from the contact point on the pedal to the floorpan, along the tangent line, is 200 mm. The RHP is at the intersection of this tangent line and the floorpan
- ___22. Locate a longitudinal line L1 and a transverse line T1 on the floorpan through the RHP. Locate a Left Heel Point (LHP) point on the line T1 that is to the left of the seat centerline at the same distance from the seat centerline as the RHP. Locate a longitudinal line L2 through the LHP.
- ___23. Set the steering wheel hub at the geometric center of the full range of driving positions including any telescoping positions as determined in data sheet 14.3.
- ___24. Verify that the seat is in the rearmost seat track position and full down height adjustment with the seat cushion at the mid-angle with the seat back at the manufacturer's nominal seat back angle.
- ___25. With the seat in the rearmost, full down, mid-angle position, determine the H-point using SAE J826 and the FMVSS 208 leg and thigh dimensions.
- ___26. Place the dummy in the seat such that the midsagittal plane is coincident with the longitudinal seat cushion markings and the upper torso resting against the seat back. (S10.4.1.1 & S10.4.1.2)
- ___27. Rest the thighs on the seat cushion. (S10.5)
- ___28. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.
___measured distance (10.6 inches) (S10.5)
- ___29. Set the heels of the feet on the floor pan.
- ___30. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined in Data Sheet 15. (S10.4.2.1)
Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
___horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
___vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
___pelvic angle (20° to 25°)
The H-point and pelvic angle are not adjusted after this step.
- ___31. Set the left and right feet in the neutral position (longitudinal centerline of foot in the same plane as the lower leg/thigh, foot at -15 degrees +/- 2 degrees to lower leg), as determined by the output of the potentiometers at the ankle.
- ___32. Without moving the seat, and while keeping the right thigh and leg in the same vertical plane, set the right foot heel on Line L1. If the vehicle interior prevents the heel from reaching L1, place the heel as close to L1 as possible, while maintaining a clearance of 0.25" from the vehicle interior.
- ___32.1. Without moving the seat, and while keeping the left thigh and leg in the same vertical plane, move the left foot laterally to the left until any of the following occurs first:
- The right edge of the foot is clear of the brake or clutch pedal by 0.25" laterally
- The left heel is on Line L2
- The left edge of the shoe contacts the vehicle interior
- ___33. Place a 100 N +0, -5N weight (e.g. 100 N shot bag), no larger than 4" x 4", on each knee-thigh area. The weight should be centered on the assembly-hole on the top of the knee.
- ___34. Raise the heels off the floor pan so that the seat can be moved forward.

- ___35. Using only the control that primarily moves the seat in the fore-aft direction, move the seat forward and rest the rearmost point of the right foot heel on the floor pan such that:
- the heel is on the line L1
 - the foot is in the same plane as the lower leg/thigh, foot at -15 degrees +/- 2 degrees (about the Y-axis) to lower leg,
 - foot is contacting the accelerator pedal
 - the thighs are resting on the seat cushion
 - the thigh, leg and foot are in the same vertical plane
- If the heel is unable to reach line L1 because the foot contacts the vehicle interior, place the foot as close to the line L1 as possible while maintaining a gap of no more than 5 mm between the shoe and the vehicle interior.
- If the left foot contacts the brake or clutch pedals or the vehicle interior, then stop the forward movement of the left foot, raising the left knee off the seat cushion if needed. The pedals should not be depressed.
- ___36. If the right foot does not reach the accelerator pedal, move the adjustable pedal until it contacts the foot. Locate a new heel point. Repeat steps 21 – 35 to re-position the seat. If the pedals are not adjustable, place the heel at the point closest to the pedal, in the same longitudinal vertical plane as the line L1.
- ___N/A – the accelerator pedal is not adjustable
- ___N/A – the accelerator pedal did not need to be moved.
- ___37. Verify that the left thigh and leg are in a vertical longitudinal plane, the foot in the neutral position (longitudinal centerline of foot in the same plane as the lower leg/thigh, foot at -15 degrees +/- 2 degrees (Y-axis) to lower leg), the heel on the floor pan. Place the heel on the line L2, unless the left edge of the shoe contacts the vehicle, preventing the heel from reaching Line L2.
- ___38. Remove the leg weights.
- ___39. Verify that the right foot is in the neutral position, at the lateral location determined in step 32, and is contacting the accelerator pedal. If the foot is not contacting the accelerator pedal, move the seat forward to rest the right foot on the accelerator pedal, keeping the foot in the neutral position
- ___40. While holding the thighs in place, push with a 50 lb force on a 3 inch diameter area of the chest that is centered 5" (127mm) vertically below the chin on the midsagittal plane of the dummy.
- ___41.1 Fasten the seat belt around the dummy.
- ___41.2 Remove all slack from the lap belt portion. (S10.9)
- ___41.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ___41.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
- ___pound load applied
- ___41.5 Is the belt system equipped with a tension-relieving device?
- ___Yes, continue
- ___No, go to 42
- ___41.6 Introduce the maximum amount of slack into the upper torso belt that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
- ___42. Place the upper arms adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1)
- ___43. Adjust the head level within ± 0.5 degrees using the seat back adjustment. Check the head angle after pushing on the chest with a 50 lb force on a 3 inch diameter area of the chest that is centered 5" (127mm) vertically below the chin on the midsagittal plane of the dummy, while holding the thighs in place, and releasing.
- ___43.1 No seat back adjustment. Adjust the neck bracket to achieve head level within ± 0.5 degrees Record neck bracket setting. _____
- ___44. Maintaining the head alignment as determined above, place the right hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- ___45. Maintaining the head alignment as determined above place the left hand with the palm in contact with the steering wheel at the rim's horizontal centerline and with the thumb over the steering wheel. (S10.3.1)
- ___46. If the hands don't reach the steering wheel at the horizontal centerline, maintaining the head alignment place them at symmetric location on the wheel, below the horizontal centerline.

- ___47. Tape the thumb of each hand to the steering wheel by using masking tape with a width of 0.25 inch. The length of the tape shall only be enough to go around the thumb and steering wheel one time.
- ___48 Verify that the feet are in the neutral position (± 2 deg), and at lateral locations determined in step 32 (right foot) and step 37 (left foot), and the head is level (± 0.5 deg). Adjust and repeat until the feet position and angles and head angles are within this range.

A.4 Passenger Side

- ___1. The seat is a bench seat for which the adjustments have already been made for the driver and there are no independent adjustments that can be made for the passenger. Go to 16.
___ N/A- the passenger seat adjusts independently of the driver seat.
- ___2. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment positions. (S16.2.10.1, S20.1.9.1, S20.4.1, S22.1.7.1)
___ N/A – No lumbar adjustment
- ___3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2, S20.1.9.2, S20.4.1, S22.1.7.1, S22.4.2.1, S22.4.3.1, S24.4.2.1, S26.2.3, S26.3.1)
___ N/A – No additional support adjustment
- ___4. Position an adjustable leg support system in its rearmost position. (8/27/04 interpretation to Toyota)
___ N/A – No adjustable leg support system
- ___5. **Mark** a point (seat cushion reference point) on the side of the seat cushion that is between 150 mm and 250 mm from the front edge of the seat cushion. (S16.3.1.12)
- ___6. Draw a line (seat cushion reference line) through the seat cushion reference point. (S16.3.1.13)
- ___7. Use only the controls that primarily move the seat in the fore-aft direction to move the seat cushion reference point to the rearmost position. (S16.2.10.3.1, S22.1.7.3)
- ___8. If the seat cushion adjusts fore-aft, independent of the seat back, use only the controls that primarily move the seat cushion in the fore-aft direction to move the seat cushion reference point to the rearmost position. (S16.2.10.3.1, S20.1.9.3)
___ N/A – No independent fore-aft seat cushion adjustment
- ___9. Use any part of any control, other than the parts just used for fore-aft positioning, to determine the range of angles of the seat cushion reference line and to set the seat cushion reference line at the mid-angle. (S16.2.10.3.1)
Maximum angle _____
Minimum angle _____
Mid-angle _____
- ___10. If the seat and/or seat cushion height is adjustable, use any part of any control other than the parts which primarily move the seat or seat cushion fore-aft, to put the seat cushion reference point in its lowest position with the seat cushion reference line angle at the mid angle found in 9. (S16.2.10.3.1)
___ N/A – No seat height adjustment
- ___11. Use only the controls that primarily move the seat in the fore-aft direction to verify the seat is in the rearmost position.
- ___13. Use only the controls that primarily move the seat in the fore-aft direction to place the seat in the rearmost position.
- ___14. ___ N/A – No seat height adjustment. Go to 14
- ___15. Visually **mark** for future reference the seat back angle at the manufacturer's nominal design riding position for a **50th percentile adult male** in the manner specified by the manufacturer for the rearmost seat position. (S20.1.9.5, S22.1.7.5, S22.4.2.1, S22.4.3.1, S24.1.2, S24.4.2.1, S26.2.3, S26.3.1)
___ N/A – No seat back angle adjustment
Manufacturer's design seat back angle _____
- ___16. Is the seat a bucket seat?
___ Yes, go to 16 and skip 17
___ No, go to 17 and skip 16

- ___17. Bucket seats:
Locate and **mark** for future reference the longitudinal centerline of the seat cushion. The intersection of the vertical longitudinal plane that passes through the SgRP and the seat cushion upper surface determines the longitudinal centerline of a bucket seat cushion. (S16.3.1.10 & S20.1.10)
- ___18. Bench seats:
Locate and **mark** for future reference the longitudinal centerline of the passenger seat cushion. The longitudinal centerline is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel. (S20.2.1.3, S22.2.1.3, S24.2.3, S20.4.4, S22.2.2.1(b), S22.2.2.3(b), S22.2.2.4(a), S22.2.2.5(a), S22.2.2.6(a), S22.2.2.7(a), S24.2.3(a))
Record the distance from the longitudinal centerline of the vehicle to the center of the steering wheel.

Record the distance from the longitudinal centerline of the vehicle to the longitudinal centerline of the seat cushion. (The vertical plane through this longitudinal centerline is Plane B for suppression.)
- ___19. Head Restraint Position
___N/A Vehicle contains automatic head restraints.
___N/A, there is no head restraint adjustment
___Adjust the head restraint to its highest position. (S8.1.3)
- ___20. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)
___N/A – No adjustable upper seat belt anchorage
Manufacturer's specified anchorage position. _____
Tested anchorage position _____
- ___21. Verify that the seat is in the rearmost seat track position and full down height adjustment with the seat cushion at the mid-angle, the seat back is at the manufacturer's nominal design position for the 50th male.
- ___21.1 With the seat in the rearmost, full down, mid-angle position, seat back at the manufacturer's nominal design position for the 50th male, determine the H-point using SAE J826 and the FMVSS 208 leg and thigh dimensions.
- ___22. Place the dummy in the seat such that the midsagittal plane is coincident with the longitudinal seat cushion markings and the upper torso resting against the seat back. (S10.4.1.1 & S10.4.1.2)
- ___23. Rest the thighs on the seat cushion. (S10.5)
- ___24. Set the distance between the outboard knee clevis flange surfaces at 9 ¼ inches, with the leg-knee-thigh in the same vertical plane.
___measured distance (8 inches) (S10.5)
- ___25. Set the heels of the feet on the floor pan.
- ___26. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined in Step 21.1 as per Data Sheet 15. (S10.4.2.1)
Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)
___horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
___vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)
___pelvic angle (20° to 25°)
The H-point and pelvic angle are not adjusted again after this step.
- ___27. Place a 100 N +0, -5N weight (e.g. 100 N shot bag), no larger than 4" x 4", on each knee-thigh area. The weight should be centered on the assembly-hole on the top of the knee.
- ___28. Set the left and right feet such that the following conditions are met after the feet are placed:
___ The foot is in neutral position.
___ The leg and thigh are in the same plane.
___ The thighs are resting on the seat cushion.
___ The heel is in contact with the floor pan.

- ___29 Lift the feet off the floor and set the toe towards the floorpan (Y angle = -25 +/- 2 deg). Using controls that move the seat fore-aft, move the seat forward until either foot contacts vehicle interior. Position the feet at that seat location with the heels on the floor and the feet in neutral position. If the vehicle interior prevents the feet from reaching the neutral position, place the feet as close as possible to the neutral position while maintaining a distance of 5 mm from the vehicle interior.
- ___30 Move the seat forward while maintaining the foot orientations (+/-2 deg) until either foot contacts the vehicle interior.
- ___31 Keeping the thigh-leg in the same vertical plane, move the feet apart symmetrically about the dummy mid-sagittal plane until the either foot contacts the vehicle interior or the knee spacing of 10.6 inches is attained, whichever comes first. Place the feet in neutral position unless contact with the vehicle interior prevents the feet from reaching the neutral position.
- Check all that applies:
- ___ The right foot contacted a flat part of the toe board.
 - ___ The right foot contacted the right side of vehicle interior.
 - ___ The right foot contacted is at neutral position
 - ___ The left foot contacted a flat part of the toe board.
 - ___ The left foot contacted the left side if the vehicle interior.
 - ___ The left foot contacted is at neutral position
- ___32. Remove the leg weights.
- ___33. While holding the thighs in place, push with a 50 lb force on a 3 inch diameter area of the chest that is centered 5" (127mm) vertically below the chin on the midsagittal plane of the dummy.
- ___34. Seat belt
- ___34.1 Fasten the seat belt around the dummy.
- ___34.2 Remove all slack from the lap belt portion. (S10.9)
- ___34.3 Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)
- ___34.4 Apply a 2 to 4 pound tension load to the lap belt. (S10.9)
- ___ pound load applied
- ___34.5 Is the belt system equipped with a tension-relieving device?
- ___Yes, continue
 - ___No, go to 36
- ___34.6 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).
- ___35. Place the upper arms adjacent to the torso with the centerline as close to a vertical plane as possible. (S10.2.1) ___
- ___36. Place the right upper arm in contact with the seat back and side of the torso. (S10.2.2)
- ___37. Place the left hand palm in contact with the outside of the left thigh and the little finger in contact with the seat cushion. (S10.3.2)
- ___38. Place the right hand palm in contact with the outside of the right thigh and the little finger in contact with the seat cushion. (S10.3.2)
- ___39. Adjust the head level within ± 0.5 degrees using the seat back adjustment. Check the head angle after pushing on the chest with a 50 lb force on a 3 inch diameter area of the chest that is centered 5" (127mm) vertically below the chin on the midsagittal plane of the dummy, while holding the thighs in place, and releasing.
- ___40.1 No seat back adjustment. Adjust the neck bracket to achieve head level within ± 0.5 degrees Record neck bracket setting. _____

Appendix E

Test Equipment and Instrumentation 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

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 071108

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
1	Trig D1	10ZERO000000VO0A	Event		1 Logic	+	Bipolar	
2	05H06-L26	11HEADCG00H3ACXA	Head Accel X	1000	g	-	Rearward	1-855 HIII 50th FTSS.001
3	05G20-L20	11HEADCG00H3ACYA	Head Accel Y	1000	g	-	Leftward	1-855 HIII 50th FTSS.002
4	05G15-L02	11HEADCG00H3ACZA	Head Accel Z	1000	g	-	Upward	1-855 HIII 50th FTSS.003
5	J23772	11HEADCGRDH3ACXA	Head Accel X Redundant	1000	g	-	Rearward	1-855 HIII 50th FTSS.004
6	J14668	11HEADCGRDH3ACYA	Head Accel Y Redundant	1000	g	-	Leftward	1-855 HIII 50th FTSS.005
7	BD88J	11HEADCGRDH3ACZA	Head Accel Z Redundant	1000	g	-	Upward	1-855 HIII 50th FTSS.006
8	1716A-1037-FX	11NECKUP00H3FOXA	Neck Force X	8896	N	-	Head forward, chest rearward	1-855 HIII 50th FTSS.007
9	1716A-1037-FY	11NECKUP00H3FOYA	Neck Force Y	8896	N	+	Head leftward, chest rightward	1-855 HIII 50th FTSS.008
10	1716A-1037-FZ	11NECKUP00H3FOZA	Neck Force Z	13344	N	+	Head upward, chest downward	1-855 HIII 50th FTSS.009
11	1716A-1037-MX	11NECKUP00H3MOXA	Neck Moment X	282.5	Nm	-	Right ear toward right shoulder	1-855 HIII 50th FTSS.010
12	1716A-1037-MY	11NECKUP00H3MOYA	Neck Moment Y	282.5	Nm	+	Chin toward sternum	1-855 HIII 50th FTSS.011
13	1716A-1037-MZ	11NECKUP00H3MOZA	Neck Moment Z	282.5	Nm	+	Chin toward left shoulder	1-855 HIII 50th FTSS.012
14	01G19-F02	11CHSTCG00H3ACXA	Chest Accel X	1000	g	+	Forward	1-855 HIII 50th FTSS.013
15	01G25-N10	11CHSTCG00H3ACYA	Chest Accel Y	1000	g	-	Leftward	1-855 HIII 50th FTSS.014
16	01H02-N07	11CHSTCG00H3ACZA	Chest Accel Z	1000	g	-	Upward	1-855 HIII 50th FTSS.015
17	J14189	11CHSTCGRDH3ACXA	Chest Accel X Redundant	1000	g	+	Forward	1-855 HIII 50th FTSS.016
18	BR34J	11CHSTCGRDH3ACYA	Chest Accel Y Redundant	1000	g	-	Leftward	1-855 HIII 50th FTSS.017
19	J19611	11CHSTCGRDH3ACZA	Chest Accel Z Redundant	1000	g	-	Upward	1-855 HIII 50th FTSS.018
20	CST855	11CHST0000H3DSXA	Chest Deflection X	100	mm	+	Forward	1-855 HIII 50th FTSS.019
21	05G20-L21	11PELVCG00H3ACXA	Pelvis Accel X	1000	g	-	Rearward	1-855 HIII 50th FTSS.020
22	02I02I10-N24	11PELVCG00H3ACYA	Pelvis Accel Y	1000	g	-	Leftward	1-855 HIII 50th FTSS.021
23	05G11-X33	11PELVCG00H3ACZA	Pelvis Accel Z	1000	g	-	Upward	1-855 HIII 50th FTSS.022
24	2121A-1394-FZ	11FEMRL00H3FOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-855 HIII 50th FTSS.023
25	2121A-1396	11FEMRRL00H3FOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	1-855 HIII 50th FTSS.024
26	150-0121VR-023174	11KNSLLE00H3DSXA	Left Knee Displacement X	40	mm	-	Hold femur in place, tibia rearward	1-LX0036 &0037 VRTC.001
27	4509-104-FX	11TIBILULXH3FOXA	Left Upper Tibia Force X	11120.5	N	+	Tibia forward, knee rearward	1-LX0036 &0037 VRTC.002
28	4509-104-FZ	11TIBILULXH3FOZA	Left Upper Tibia Force Z	11120.5	N	+	Tibia downward, femur upward	1-LX0036 &0037 VRTC.004
29	4509-104-MX	11TIBILULXH3MOXA	Left Upper Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-LX0036 &0037 VRTC.005

Channel Report Test Number 071108

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
30	4509-104-MY	11TIBILULXH3MOYA	Left Upper Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-LX0036 &0037 VRTC.006
31	01G18-F13	11TIBILELXH3ACXA	Left Tibia Accel X	1000	g	+	Tibia forward	1-LX0036 &0037 VRTC.007
32	P52020	11TIBILELXH3ACYA	Left Tibia Accel Y	1000	g	+	Tibia right	1-LX0036 &0037 VRTC.008
33	4929J-140-FX	11TIBILLXH3FOXA	Left Lower Tibia Force X	11120.5	N	+	Ankle forward, knee rearward	1-LX0036 &0037 VRTC.009
34	4929J-140-FY	11TIBILLXH3FOYA	Left Lower Tibia Force Y	11120.5	N	+	Ankle rightward, knee leftward	1-LX0036 &0037 VRTC.010
35	4929J-140-FZ	11TIBILLXH3FOZA	Left Lower Tibia Force Z	11120.5	N	+	Ankle downward, knee upward	1-LX0036 &0037 VRTC.011
36	4929J-140-MX	11TIBILLXH3MOXA	Left Lower Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-LX0036 &0037 VRTC.012
37	4929J-140-MY	11TIBILLXH3MOYA	Left Lower Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-LX0036 &0037 VRTC.013
38	PD210-4B-0371	11FOOTLELXH3ANXA	Left Foot Angular Dis. X LX104X	318	°	-	Inversion	1-LX0036 &0037 VRTC.014
39	PD210-4B-0367	11FOOTLELXH3ANYA	Left Foot Angular Dis. Y LX104Y	318	°	+	Dorsiflexion	1-LX0036 &0037 VRTC.015
40	PD210-4B-0365	11FOOTLELXH3ANZA	Left Foot Angular Dis. Z LX104Z	318	°	-	External rotation	1-LX0036 &0037 VRTC.016
41	04J04I20-Z24	11FOOTLELXH3ACXA	Left Foot Accel X	1000	g	+	Foot forward	1-LX0036 &0037 VRTC.017
42	05G20-L03	11FOOTLELXH3ACYA	Left Foot Accel Y	1000	g	+	Foot rightward	1-LX0036 &0037 VRTC.018
43	05G20-L24	11FOOTLELXH3ACZA	Left Foot Accel Z	1000	g	+	Foot down	1-LX0036 &0037 VRTC.019
44	150-0121VL-028868	11KNSLRIO0H3DSXA	Right Knee Displacement X	40	mm	-	Hold femur in place, tibia rearward	1-LX0036 &0037 VRTC.020
45	4509-111-FX	11TIBIRULXH3FOXA	Right Upper Tibia Force X	11120.5	N	+	Tibia forward, knee rearward	1-LX0036 &0037 VRTC.021
46	4509-111-FZ	11TIBIRULXH3FOZA	Right Upper Tibia Force Z	11120.5	N	+	Tibia downward, femur upward	1-LX0036 &0037 VRTC.023
47	4509-111-MX	11TIBIRULXH3MOXA	Right Upper Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-LX0036 &0037 VRTC.024
48	4509-111-MY	11TIBIRULXH3MOYA	Right Upper Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-LX0036 &0037 VRTC.025
49	01G18-F15	11TIBIRILXH3ACXA	Right Tibia Accel X	1000	g	+	Tibia forward	1-LX0036 &0037 VRTC.026
50	05I07-Z25	11TIBIRILXH3ACYA	Right Tibia Accel Y	1000	g	+	Tibia right	1-LX0036 &0037 VRTC.027
51	4929J-142-FX	11TIBIRLLXH3FOXA	Right Lower Tibia Force X	11120.5	N	+	Ankle forward, knee rearward	1-LX0036 &0037 VRTC.028
52	4929J-142-FY	11TIBIRLLXH3FOYA	Right Lower Tibia Force Y	11120.5	N	+	Ankle rightward, knee leftward	1-LX0036 &0037 VRTC.029

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
53	4929J-142-FZ	11TIBIRLLXH3FOZA	Right Lower Tibia Force Z	11120.5	N	+	Ankle downward, knee upward	1-LX0036 &0037 VRTC.030
54	4929J-142-MX	11TIBIRLLXH3MOXA	Right Lower Tibia Moment X	395.4	Nm	+	Ankle leftward, hold knee in place	1-LX0036 &0037 VRTC.031
55	4929J-142-MY	11TIBIRLLXH3MOYA	Right Lower Tibia Moment Y	395.4	Nm	+	Ankle forward, hold knee in place	1-LX0036 &0037 VRTC.032
56	PD210-4B-7921-0368	11FOOTRILXH3ANXA	Right Foot Angular Dis. X AK037X	318	°	-	Eversion	1-LX0036 &0037 VRTC.033
57	PD210-4B-7921-0369	11FOOTRILXH3ANYA	Right Foot Angular Dis. Y AK225Y	318	°	+	Dorsiflexion	1-LX0036 &0037 VRTC.034
58	PD210-4B-7921-0370	11FOOTRILXH3ANZA	Right Foot Angular Dis. Z AK039Z	318	°	-	Internal rotation	1-LX0036 &0037 VRTC.035
59	01J02-F16	11FOOTRILXH3ACXA	Right Foot Accel X	1000	g	+	Foot forward	1-LX0036 &0037 VRTC.036
60	98H10-F13	11FOOTRILXH3ACYA	Right Foot Accel Y	1000	g	+	Foot rightward	1-LX0036 &0037 VRTC.037
61	98H10-F10	11FOOTRILXH3ACZA	Right Foot Accel Z	1000	g	+	Foot down	1-LX0036 &0037 VRTC.038
62	05G20-L18	13HEADCG00HFACXA	Head Accel X	1000	g	-	Rearward	3-324 HIII 5th FTSS.001
63	00L20-A20	13HEADCG00HFACYA	Head Accel Y	1000	g	-	Leftward	3-324 HIII 5th FTSS.002
64	03D03C27-N07	13HEADCG00HFACZA	Head Accel Z	1000	g	-	Upward	3-324 HIII 5th FTSS.003
65	IF-205-287-FX	13NECKUP00HFFOXA	Upper Neck Force X	8896	N	-	Head forward, chest rearward	3-324 HIII 5th FTSS.004
66	IF-205-287-FY	13NECKUP00HFFOYA	Upper Neck Force Y	8896	N	+	Head leftward, chest rightward	3-324 HIII 5th FTSS.005
67	IF-205-287-FZ	13NECKUP00HFFOZA	Upper Neck Force Z	13344	N	+	Head upward, chest downward	3-324 HIII 5th FTSS.006
68	IF-205-287-MX	13NECKUP00HFMOXA	Upper Neck Moment X	282.5	Nm	-	Right ear toward right shoulder	3-324 HIII 5th FTSS.007
69	IF-205-287-MY	13NECKUP00HFMOYA	Upper Neck Moment Y	282.5	Nm	+	Chin toward sternum	3-324 HIII 5th FTSS.008
70	IF-205-287-MZ	13NECKUP00HFMOZA	Upper Neck Moment Z	282.5	Nm	+	Chin toward left shoulder	3-324 HIII 5th FTSS.009
71	05G20-L01	13CHSTCG00HFACXA	Chest Accel X	1000	g	+	Forward	3-324 HIII 5th FTSS.010
72	05I07-Z12	13CHSTCG00HFACYA	Chest Accel Y	1000	g	-	Leftward	3-324 HIII 5th FTSS.011
73	05G15-L04	13CHSTCG00HFACZA	Chest Accel Z	1000	g	-	Upward	3-324 HIII 5th FTSS.012
74	CST324	13CHST0000HFDSXA	Chest Deflection X	100	mm	+	Forward	3-324 HIII 5th FTSS.013
75	P52157	13PELVCG00HFACXA	Pelvis Accel X	1000	g	-	Rearward	3-324 HIII 5th FTSS.014
76	P52010	13PELVCG00HFACYA	Pelvis Accel Y	1000	g	-	Leftward	3-324 HIII 5th FTSS.015
77	03E03E20-N13	13PELVCG00HFACZA	Pelvis Accel Z	1000	g	-	Upward	3-324 HIII 5th FTSS.016
78	2121AJ-1520	13FEMRLL00HFFOZA	Left Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-324 HIII 5th FTSS.017
79	2121AJ-1521	13FEMRRL00HFFOZA	Right Femur Force Z	13344	N	+	Knee forward, pelvis rearward	3-324 HIII 5th FTSS.018
80	150-0121VL-028847	13KNSLLE00HFDSXA	Left Knee Displacement X	33	mm	-	Hold femur in place, tibia rearward	3-FLX015 & FLX016 VRTC.001

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
81	4825J-95-FX	13TIBILULXHFFOXA	Left Upper Tibia Force X	8896	N	+	Tibia forward, knee rearward	3-FLX015 & FLX016 VRTC.002
82	4825J-95-FZ	13TIBILULXHFFOZA	Left Upper Tibia Force Z	8896	N	+	Tibia downward, femur upward	3-FLX015 & FLX016 VRTC.003
83	4825J-95-MX	13TIBILULXHFMOMA	Left Upper Tibia Moment X	282.5	Nm	+	Ankle leftward, hold knee in place	3-FLX015 & FLX016 VRTC.004
84	4825J-95-MY	13TIBILULXHFMOMA	Left Upper Tibia Moment Y	282.5	Nm	+	Ankle forward, hold knee in place	3-FLX015 & FLX016 VRTC.005
85	05H06-L14	13TIBILELXHFFACXA	Left Tibia Accel X	1000	g	+	Tibia forward	3-FLX015 & FLX016 VRTC.006
86	02102110-N25	13TIBILELXHFFACYA	Left Tibia Accel Y	1000	g	+	Tibia right	3-FLX015 & FLX016 VRTC.007
87	4826J-89-FX	13TIBILLXHHFFOXA	Left Lower Tibia Force X	8896	N	+	Ankle forward, knee rearward	3-FLX015 & FLX016 VRTC.008
88	4826J-89-FY	13TIBILLXHHFFOYA	Left Lower Tibia Force Y	8896	N	+	Ankle rightward, knee leftward	3-FLX015 & FLX016 VRTC.009
89	4826J-89-FZ	13TIBILLXHHFFOZA	Left Lower Tibia Force Z	8896	N	+	Ankle downward, knee upward	3-FLX015 & FLX016 VRTC.010
90	4826J-89-MX	13TIBILLXHHFMOMA	Left Lower Tibia Moment X	282.5	Nm	+	Ankle leftward, hold knee in place	3-FLX015 & FLX016 VRTC.011
91	4826J-89-MY	13TIBILLXHHFMOMA	Left Lower Tibia Moment Y	282.5	Nm	+	Ankle forward, hold knee in place	3-FLX015 & FLX016 VRTC.012
92	PD210-4B-7921-0404	13FOOTLELXHFFANXA	Left Foot Angular Dis. X	318	°	-	Inversion	3-FLX015 & FLX016 VRTC.013
93	PD210-4B-7921-0405	13FOOTLELXHFFANYA	Left Foot Angular Dis. Y	318	°	+	Dorsiflexion	3-FLX015 & FLX016 VRTC.014
94	PD210-4B-7921-0406	13FOOTLELXHFFANZA	Left Foot Angular Dis. Z	318	°	-	External rotation	3-FLX015 & FLX016 VRTC.015
95	AJ452	13FOOTLELXHFFACXA	Left Foot Accel X	1000	g	+	Foot forward	3-FLX015 & FLX016 VRTC.016
96	J19934	13FOOTLELXHFFACYA	Left Foot Accel Y	1000	g	+	Foot rightward	3-FLX015 & FLX016 VRTC.017
97	AJ4J6	13FOOTLELXHFFACZA	Left Foot Accel Z	1000	g	+	Foot down	3-FLX015 & FLX016 VRTC.018
98	150-0121VL-028834	13KNSLR100HFFDSXA	Right Knee Displacement X	33	mm	-	Hold femur in place, tibia rearward	3-FLX015 & FLX016 VRTC.019
99	4825J-98-FX	13TIBIRULXHFFOXA	Right Upper Tibia Force X	8896	N	+	Tibia forward, knee rearward	3-FLX015 & FLX016 VRTC.020
100	4825J-98-FZ	13TIBIRULXHFFOZA	Right Upper Tibia Force Z	8896	N	+	Tibia downward, femur upward	3-FLX015 & FLX016 VRTC.021
101	4825J-98-MX	13TIBIRULXHFMOMA	Right Upper Tibia Moment X	282.5	Nm	+	Ankle leftward, hold knee in place	3-FLX015 & FLX016 VRTC.022
102	4825J-98-MY	13TIBIRULXHFMOMA	Right Upper Tibia Moment Y	282.5	Nm	+	Ankle forward, hold knee in place	3-FLX015 & FLX016 VRTC.023

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
103	01H02-N02	13TIBIRILXHFACXA	Right Tibia Accel X	1000	g	+	Tibia forward	3-FLX015 & FLX016 VRTC.024
104	02I02I10-N12	13TIBIRILXHFACYA	Right Tibia Accel Y	1000	g	+	Tibia right	3-FLX015 & FLX016 VRTC.025
105	4826J-108-FX	13TIBIRLLXHFFOXA	Right Lower Tibia Force X	8896	N	+	Ankle forward, knee rearward	3-FLX015 & FLX016 VRTC.026
106	4826J-108-FY	13TIBIRLLXHFFOYA	Right Lower Tibia Force Y	8896	N	+	Ankle rightward, knee leftward	3-FLX015 & FLX016 VRTC.027
107	4826J-108-FZ	13TIBIRLLXHFFOZA	Right Lower Tibia Force Z	8896	N	+	Ankle downward, knee upward	3-FLX015 & FLX016 VRTC.028
108	4826J-108-MX	13TIBIRLLXHFM0XA	Right Lower Tibia Moment X	282.5	Nm	+	Ankle leftward, hold knee in place	3-FLX015 & FLX016 VRTC.029
109	4826J-108-MY	13TIBIRLLXHFM0YA	Right Lower Tibia Moment Y	282.5	Nm	+	Ankle forward, hold knee in place	3-FLX015 & FLX016 VRTC.030
110	PD210-4B-7921-0396	13FOOTRILXHFANXA	Right Foot Angular Dis. X	318	°	-	Eversion	3-FLX015 & FLX016 VRTC.031
111	PD210-4B-7921-0397	13FOOTRILXHFANYA	Right Foot Angular Dis. Y	317	°	+	Dorsiflexion	3-FLX015 & FLX016 VRTC.032
112	PD210-4B-7921-0403	13FOOTRILXHFANZA	Right Foot Angular Dis. Z	318	°	-	Internal rotation	3-FLX015 & FLX016 VRTC.033
113	00L20-A14	13FOOTRILXHFACXA	Right Foot Accel X	1000	g	+	Foot forward	3-FLX015 & FLX016 VRTC.034
114	03F03F09-N20	13FOOTRILXHFACYA	Right Foot Accel Y	1000	g	+	Foot rightward	3-FLX015 & FLX016 VRTC.035
115	03D03D16-F18	13FOOTRILXHFACZA	Right Foot Accel Z	1000	g	+	Foot down	3-FLX015 & FLX016 VRTC.036
116	P57191	14CRME000000ACXA	Left Rear Seat Cross-member X-axis Acceleration	1000	g	+	Forward	
117	P57194	16CRME000000ACXA	Right Rear Seat Cross-member X-axis Acceleration	1000	g	+	Forward	
118	P57138	14CRME000000ACYA	Left Rear Seat Cross-member Y-axis Acceleration	1000	g	+	Rightward	
119	P57209	16CRME000000ACYA	Right Rear Seat Cross-member Y-axis Acceleration	1000	g	+	Rightward	
120	P42293	12ENGNT000000ACXA	Top of Engine Block X-axis acceleration	1500	g	+	Forward	
121	P28766	12ENGNB000000ACXA	Bottom of Engine Block X-axis acceleration	1500	g	+	Forward	
122	P54828	12DASH000000ACXA	Instrumnet Pannel X-axis Acceleration	1500	g	+	Forward	
123	P48544	11SETR000000ACXA	Left Side Driver Mid Seat Track X-axis Acceleration	1000	g	+	Forward	
124	P54196	10VEHCCG000000ACXA	Vehicle CG X-axis acceleration	1000	g	+	Forward	
125	P42066	10VEHCCG000000ACYA	Vehicle CG Y-axis acceleration	1000	g	-	Leftward	
126	P56981	10VEHCCG000000ACZA	Vehicle CG Z-axis acceleration	1000	g	-	Upward	
127	P47730	11PEAC000000ACXA	Under Accel Pedal X-axis Acceleration	1000	g	-	Rearward	
128	P56944	11PEAC000000ACYA	Under Accel Pedal Y-axis Acceleration	1000	g	+	Rightward	
129	P54872	11PEAC000000ACZA	Under Accel Pedal Z-axis Acceleration	1000	g	+	Downward	
130	P57204	11PEBR000000ACXA	Under Brake Pedal X-axis Acceleration	1000	g	+	Forward	
131	P57190	11PEBR000000ACYA	Under Brake Pedal Y-axis Acceleration	1000	g	+	Rightward	
132	P56924	11PEBR000000ACZA	Under Brake Pedal Z-axis Acceleration	1000	g	+	Downward	
133	P48074	11VEHC000001ACXA	Outside Footrest X-axis Acceleration	1000	g	+	Forward	
134	P57001	11VEHC000001ACYA	Outside Footrest Y-axis Acceleration	1000	g	+	Rightward	
135	P54521	11VEHC000001ACZA	Outside Footrest Z-axis Acceleration	1000	g	+	Downward	
136	3419T-828	11SEBE0000B5FOOA	Driver lap belt	13500	N	+	Tension	
137	3419-829	11SEBE0000B3FOOA	Driver shoulder belt	13500	N	+	Tension	
138	3419T-739	13SEBE0000B5FOOA	Passenger lap belt	13500	N	+	Tension	

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
139	3419T-842	13SEBE0000B3FOOA	Passenger shoulder belt	13500	N	+	Tension	
140	ABFire1	11AIRBFR0100EV0A	DRIV. FRONT AIRBAG1 IND (IP 2)	5	V	+	Bipolar	
141	ABFire2	13AIRBFR0100EV0A	PASS. FRONT AIRBAG1 IND (IP 11)	5	V	+	Bipolar	
142	476830002	L0FBAR000001FOXA	Load Cell Row 1 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.001
143	476830015	L0FBAR000002FOXA	Load Cell Row 2 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.002
144	476830082	L0FBAR000003FOXA	Load Cell Row 3 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.003
145	476830086	L0FBAR000004FOXA	Load Cell Row 4 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.004
146	476830023	L0FBAR000005FOXA	Load Cell Row 5 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.005
147	476830017	L0FBAR000006FOXA	Load Cell Row 6 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.006
148	476830043	L0FBAR000007FOXA	Load Cell Row 7 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.007
149	476830080	L0FBAR000008FOXA	Load Cell Row 8 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.008
150	476830007	L0FBAR000009FOXA	Load Cell Row 9 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.009
151	476830069	L0FBAR000010FOXA	Load Cell Row 10 Column 1	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.010
152	476830044	L0FBAR000011FOXA	Load Cell Row 1 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.011
153	476830006	L0FBAR000012FOXA	Load Cell Row 2 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.012
154	476830014	L0FBAR000013FOXA	Load Cell Row 3 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.013
155	476830001	L0FBAR000014FOXA	Load Cell Row 4 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.014
156	476830048	L0FBAR000015FOXA	Load Cell Row 5 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.015
157	476830059	L0FBAR000016FOXA	Load Cell Row 6 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.016
158	476830049	L0FBAR000017FOXA	Load Cell Row 7 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.017
159	476830076	L0FBAR000018FOXA	Load Cell Row 8 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.018
160	476830028	L0FBAR000019FOXA	Load Cell Row 9 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.019
161	476830053	L0FBAR000020FOXA	Load Cell Row 10 Column 2	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.020
162	476830034	L0FBAR000021FOXA	Load Cell Row 1 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.021
163	476830060	L0FBAR000022FOXA	Load Cell Row 2 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.022
164	476830022	L0FBAR000023FOXA	Load Cell Row 3 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.023
165	476830062	L0FBAR000024FOXA	Load Cell Row 4 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.024
166	476830092	L0FBAR000025FOXA	Load Cell Row 5 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.025
167	476830020	L0FBAR000026FOXA	Load Cell Row 6 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.026
168	476830088	L0FBAR000027FOXA	Load Cell Row 7 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.027
169	476830012	L0FBAR000028FOXA	Load Cell Row 8 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.028
170	476830077	L0FBAR000029FOXA	Load Cell Row 9 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.029
171	476830011	L0FBAR000030FOXA	Load Cell Row 10 Column 3	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.030
172	476830065	L0FBAR000031FOXA	Load Cell Row 1 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.031
173	476830078	L0FBAR000032FOXA	Load Cell Row 2 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.032
174	476830035	L0FBAR000033FOXA	Load Cell Row 3 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.033
175	476830031	L0FBAR000034FOXA	Load Cell Row 4 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.034
176	476830046	L0FBAR000035FOXA	Load Cell Row 5 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.035
177	476830033	L0FBAR000036FOXA	Load Cell Row 6 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.036
178	476830019	L0FBAR000037FOXA	Load Cell Row 7 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.037
179	476830093	L0FBAR000038FOXA	Load Cell Row 8 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.038
180	476830074	L0FBAR000039FOXA	Load Cell Row 9 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.039
181	476830030	L0FBAR000040FOXA	Load Cell Row 10 Column 4	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.040
182	476830036	L0FBAR000041FOXA	Load Cell Row 1 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.041

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
183	476830010	L0FBAR000042FOXA	Load Cell Row 2 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.042
184	476830079	L0FBAR000043FOXA	Load Cell Row 3 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.043
185	476830045	L0FBAR000044FOXA	Load Cell Row 4 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.044
186	476830025	L0FBAR000045FOXA	Load Cell Row 5 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.045
187	476830039	L0FBAR000046FOXA	Load Cell Row 6 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.046
188	476830047	L0FBAR000047FOXA	Load Cell Row 7 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.047
189	476830057	L0FBAR000048FOXA	Load Cell Row 8 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.048
190	476830032	L0FBAR000049FOXA	Load Cell Row 9 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.049
191	476830037	L0FBAR000050FOXA	Load Cell Row 10 Column 5	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.050
192	476830038	L0FBAR000051FOXA	Load Cell Row 1 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.051
193	476830054	L0FBAR000052FOXA	Load Cell Row 2 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.052
194	476830024	L0FBAR000053FOXA	Load Cell Row 3 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.053
195	476830041	L0FBAR000054FOXA	Load Cell Row 4 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.054
196	476830004	L0FBAR000055FOXA	Load Cell Row 5 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.055
197	476830091	L0FBAR000056FOXA	Load Cell Row 6 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.056
198	476830087	L0FBAR000057FOXA	Load Cell Row 7 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.057
199	476830064	L0FBAR000058FOXA	Load Cell Row 8 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.058
200	476830083	L0FBAR000059FOXA	Load Cell Row 9 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.059
201	476830018	L0FBAR000060FOXA	Load Cell Row 10 Column 6	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.060
202	476830008	L0FBAR000061FOXA	Load Cell Row 1 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.061
203	476830013	L0FBAR000062FOXA	Load Cell Row 2 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.062
204	476830021	L0FBAR000063FOXA	Load Cell Row 3 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.063
205	476830003	L0FBAR000064FOXA	Load Cell Row 4 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.064
206	476830051	L0FBAR000065FOXA	Load Cell Row 5 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.065
207	476830067	L0FBAR000066FOXA	Load Cell Row 6 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.066
208	476830009	L0FBAR000067FOXA	Load Cell Row 7 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.067
209	476830026	L0FBAR000068FOXA	Load Cell Row 8 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.068
210	476830089	L0FBAR000069FOXA	Load Cell Row 9 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.069
211	476830016	L0FBAR000070FOXA	Load Cell Row 10 Column 7	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.070
212	476830071	L0FBAR000071FOXA	Load Cell Row 1 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.071
213	476830072	L0FBAR000072FOXA	Load Cell Row 2 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.072
214	476830029	L0FBAR000073FOXA	Load Cell Row 3 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.073
215	476830058	L0FBAR000074FOXA	Load Cell Row 4 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.074
216	476830027	L0FBAR000075FOXA	Load Cell Row 5 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.075
217	476830052	L0FBAR000076FOXA	Load Cell Row 6 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.076
218	476830063	L0FBAR000077FOXA	Load Cell Row 7 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.077
219	476830075	L0FBAR000078FOXA	Load Cell Row 8 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.078
220	476830070	L0FBAR000079FOXA	Load Cell Row 9 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.079
221	476830042	L0FBAR000080FOXA	Load Cell Row 10 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.080
222	476830068	L0FBAR000081FOXA	Load Cell Row 1 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.081
223	476830084	L0FBAR000082FOXA	Load Cell Row 2 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.082
224	476830056	L0FBAR000083FOXA	Load Cell Row 3 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.083
225	476830085	L0FBAR000084FOXA	Load Cell Row 4 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.084
226	476830073	L0FBAR000085FOXA	Load Cell Row 5 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.085

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS		Assembly
						Flip	Positive Polarity	
227	476830055	L0FBAR000086FOXA	Load Cell Row 6 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.086
228	476830090	L0FBAR000087FOXA	Load Cell Row 7 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.087
229	476830061	L0FBAR000088FOXA	Load Cell Row 8 Column 8	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.088
230	476830005	L0FBAR000089FOXA	Load Cell Row 9 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.089
231	476830050	L0FBAR000090FOXA	Load Cell Row 10 Column 9	222411	N	+	Tension force	0-Barrier VRTC 90 channel Offset.090

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00H3ACXA	Driver Head X-Axis Acceleration	1000	+	yes	1000
2	11HEADCG00H3ACYA	Driver Head Y-Axis Acceleration	1000	+	yes	1000
3	11HEADCG00H3ACZA	Driver Head Z-Axis Acceleration	1000	+	yes	1000
3A	11HEADCG00H3ACRA	Driver Head Resultant Acceleration	1000			
4	11HEADCGRDH3ACXA	Driver Head X-Axis Redundant Acceleration	1000	+	yes	1000
5	11HEADCGRDH3ACYA	Driver Head Y-Axis Redundant Acceleration	1000	+	yes	1000
6	11HEADCGRDH3ACZA	Driver Head Z-Axis Redundant Acceleration	1000	+	yes	1000
6A	11HEADCGRDH3ACRA	Driver Head Redundant Resultant Acceleration	1000			
7	11NECKUP00H3FOXA	Driver Upper Neck X-Axis Force	1000	+	yes	8896
8	11NECKUP00H3FOYA	Driver Upper Neck Y-Axis Force	1000	+	yes	8896
9	11NECKUP00H3FOZA	Driver Upper Neck Z-Axis Force	1000	+	yes	13344
10	11NECKUP00H3MOXA	Driver Upper Neck Moment About X Axis	600	+	yes	282.5
11	11NECKUP00H3MOYA	Driver Upper Neck Moment About Y Axis	600	+	yes	282.5
12	11NECKUP00H3MOZA	Driver Upper Neck Moment About Z Axis	600	+	yes	282.5
13	11CHSTCG00H3ACXA	Driver Chest X-Axis Acceleration	180	+	yes	1000
14	11CHSTCG00H3ACYA	Driver Chest Y-Axis Acceleration	180	+	yes	1000
15	11CHSTCG00H3ACZA	Driver Chest Z-Axis Acceleration	180	+	yes	1000
15A	11CHSTCG00H3ACRA	Driver Chest Resultant Acceleration	180			
16	11CHSTCGRDH3ACXA	Driver Chest X-Axis Redundant Acceleration	180	+	yes	1000
17	11CHSTCGRDH3ACYA	Driver Chest Y-Axis Redundant Acceleration	180	+	yes	1000
18	11CHSTCGRDH3ACZA	Driver Chest Z-Axis Redundant Acceleration	180	+	yes	1000
18A	11CHSTCGRDH3ACRA	Driver Chest Redundant Resultant Acceleration	180			
19	11CHST0000H3DSXA	Driver Chest Displacement	600	+	yes	100
20	11PELVCG00H3ACXA	Driver Pelvis X-Axis Acceleration	1000	+	yes	1000
21	11PELVCG00H3ACYA	Driver Pelvis Y-Axis Acceleration	1000	+	yes	1000
22	11PELVCG00H3ACZA	Driver Pelvis Z-Axis Acceleration	1000	+	yes	1000
22A	11PELVCG00H3ACRA	Driver Pelvis Resultant Acceleration	1000			
23	11FEMRLL00H3FOZA	Driver Left Femur Z-Axis Force	600	+	yes	13344
24	11FEMRRL00H3FOZA	Driver Right Femur Z-Axis Force	600	+	yes	13344
25	11KNSLLE00H3DSXA	Driver Left Knee Displacement	180	+	yes	40
26	11TIBILULXH3FOXA	Driver Left Upper Tibia X-Axis Force	600	+	yes	11120.5
27	11TIBILULXH3FOZA	Driver Left Upper Tibia Z-Axis Force	600	+	yes	11120.5
28	11TIBILULXH3MOXA	Driver Left Upper Tibia Moment About X Axis	600	+	yes	395.4
29	11TIBILULXH3MOYA	Driver Left Upper Tibia Moment About Y Axis	600	+	yes	395.4
30	11TIBILELXH3ACXA	Driver Left Tibia X-Axis Acceleration	1000	+	yes	1000
31	11TIBILELXH3ACYA	Driver Left Tibia Y-Axis Acceleration	1000	+	yes	1000
32	11TIBILLXH3FOXA	Driver Left Lower Tibia X-Axis Force	600	+	yes	11120.5

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
33	11TIBILLXH3FOYA	Driver Left Lower Tibia Y-Axis Force	600	+	yes	11120.5
34	11TIBILLXH3FOZA	Driver Left Lower Tibia Z-Axis Force	600	+	yes	11120.5
35	11TIBILLXH3MOXA	Driver Left Lower Tibia Moment About X Axis	600	+	yes	395.4
36	11TIBILLXH3MOYA	Driver Left Lower Tibia Moment About Y Axis	600	+	yes	395.4
37	11FOOTLELXH3ANXA	Driver Left Foot X-Axis Rotation	180	+	no	318
38	11FOOTLELXH3ANYA	Driver Left Foot Y-Axis Rotation	180	+	no	318
39	11FOOTLELXH3ANZA	Driver Left Foot Z-Axis Rotation	180	+	no	318
40	11FOOTLELXH3ACXA	Driver Left Foot X-Axis Acceleration	1000	+	yes	1000
41	11FOOTLELXH3ACYA	Driver Left Foot Y-Axis Acceleration	1000	+	yes	1000
42	11FOOTLELXH3ACZA	Driver Left Foot Z-Axis Acceleration	1000	+	yes	1000
42A	11FOOTLELXH3ACRA	Driver Left Foot Resultant Acceleration	1000			
43	11KNSLRI00H3DSXA	Driver Right Knee Displacement	180	+	yes	40
44	11TIBIRULXH3FOXA	Driver Right Upper Tibia X-Axis Force	600	+	yes	11120.5
45	11TIBIRULXH3FOZA	Driver Right Upper Tibia Z-Axis Force	600	+	yes	11120.5
46	11TIBIRULXH3MOXA	Driver Right Upper Tibia Moment About X Axis	600	+	yes	395.4
47	11TIBIRULXH3MOYA	Driver Right Upper Tibia Moment About Y Axis	600	+	yes	395.4
48	11TIBIRILXH3ACXA	Driver Right Tibia X-Axis Acceleration	1000	+	yes	1000
49	11TIBIRILXH3ACYA	Driver Right Tibia Y-Axis Acceleration	1000	+	yes	1000
50	11TIBIRLLXH3FOXA	Driver Right Lower Tibia X-Axis Force	600	+	yes	11120.5
51	11TIBIRLLXH3FOYA	Driver Right Lower Tibia Y-Axis Force	600	+	yes	11120.5
52	11TIBIRLLXH3FOZA	Driver Right Lower Tibia Z-Axis Force	600	+	yes	11120.5
53	11TIBIRLLXH3MOXA	Driver Right Lower Tibia Moment About X Axis	600	+	yes	395.4
54	11TIBIRLLXH3MOYA	Driver Right Lower Tibia Moment About Y Axis	600	+	yes	395.4
55	11FOOTRILXH3ANXA	Driver Right Foot X-Axis Rotation	180	+	no	318
56	11FOOTRILXH3ANYA	Driver Right Foot Y-Axis Rotation	180	+	no	318
57	11FOOTRILXH3ANZA	Driver Right Foot Z-Axis Rotation	180	+	no	318
58	11FOOTRILXH3ACXA	Driver Right Foot X-Axis Acceleration	1000	+	yes	1000
59	11FOOTRILXH3ACYA	Driver Right Foot Y-Axis Acceleration	1000	+	yes	1000
60	11FOOTRILXH3ACZA	Driver Right Foot Z-Axis Acceleration	1000	+	yes	1000
60A	11FOOTRILXH3ACRA	Driver Right Foot Resultant Acceleration	1000			
61	13HEADCG00HFACXA	Passenger Head X-Axis Acceleration	1000	+	yes	1000
62	13HEADCG00HFACYA	Passenger Head Y-Axis Acceleration	1000	+	yes	1000
63	13HEADCG00HFACZA	Passenger Head Z-Axis Acceleration	1000	+	yes	1000
63A	13HEADCG00HFACRA	Passenger Head Resultant Acceleration	1000			
64	13NECKUP00HFFOXA	Passenger Upper Neck X-Axis Force	1000	+	yes	8896
65	13NECKUP00HFFOYA	Passenger Upper Neck Y-Axis Force	1000	+	yes	8896
66	13NECKUP00HFFOZA	Passenger Upper Neck Z-Axis Force	1000	+	yes	13344

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
67	13NECKUP00HFMOXA	Passenger Upper Neck Moment About X Axis	600	+	yes	282.5
68	13NECKUP00HFMOYA	Passenger Upper Neck Moment About Y Axis	600	+	yes	282.5
69	13NECKUP00HFMOZA	Passenger Upper Neck Moment About Z Axis	600	+	yes	282.5
70	13CHSTCG00HFACXA	Passenger Chest X-Axis Acceleration	180	+	yes	1000
71	13CHSTCG00HFACYA	Passenger Chest Y-Axis Acceleration	180	+	yes	1000
72	13CHSTCG00HFACZA	Passenger Chest Z-Axis Acceleration	180	+	yes	1000
72A	13CHSTCG00HFACRA	Passenger Chest Resultant Acceleration	180			
73	13CHST0000HFDSXA	Passenger Chest Displacement	600	+	yes	100
74	13PELVCG00HFACXA	Passenger Pelvis X-Axis Acceleration	1000	+	yes	1000
75	13PELVCG00HFACYA	Passenger Pelvis Y-Axis Acceleration	1000	+	yes	1000
76	13PELVCG00HFACZA	Passenger Pelvis Z-Axis Acceleration	1000	+	yes	1000
76A	13PELVCG00HFACRA	Passenger Pelvis Resultant Acceleration	1000			
77	13FEMRLL00HFFOZA	Passenger Left Femur Z-Axis Force	600	+	yes	13344
78	13FEMRRL00HFFOZA	Passenger Right Femur Z-Axis Force	600	+	yes	13344
79	13KNSLLE00HFDSXA	Passenger Left Knee Displacement	180	+	yes	33
80	13TIBILULXHFFOXA	Passenger Left Upper Tibia X-Axis Force	600	+	yes	8896
81	13TIBILULXHFFOZA	Passenger Left Upper Tibia Z-Axis Force	600	+	yes	8896
82	13TIBILULXHFMOMA	Passenger Left Upper Tibia Moment About X Axis	600	+	yes	282.5
83	13TIBILULXHFMOMA	Passenger Left Upper Tibia Moment About Y Axis	600	+	yes	282.5
84	13TIBILELXHFMOMA	Passenger Left Tibia X-Axis Acceleration	1000	+	yes	1000
85	13TIBILELXHFMOMA	Passenger Left Tibia Y-Axis Acceleration	1000	+	yes	1000
86	13TIBILLLXHFFOXA	Passenger Left Lower Tibia X-Axis Force	600	+	yes	8896
87	13TIBILLLXHFFOYA	Passenger Left Lower Tibia Y-Axis Force	600	+	yes	8896
88	13TIBILLLXHFFOZA	Passenger Left Lower Tibia Z-Axis Force	600	+	yes	8896
89	13TIBILLLXHFMOMA	Passenger Left Lower Tibia Moment About X Axis	600	+	yes	282.5
90	13TIBILLLXHFMOMA	Passenger Left Lower Tibia Moment About Y Axis	600	+	yes	282.5
91	13FOOTLELXHFANXA	Passenger Left Foot X-Axis Rotation	180	+	no	318
92	13FOOTLELXHFANYA	Passenger Left Foot Y-Axis Rotation	180	+	no	318
93	13FOOTLELXHFANZA	Passenger Left Foot Z-Axis Rotation	180	+	no	318
94	13FOOTLELXHFMOMA	Passenger Left Foot X-Axis Acceleration	1000	+	yes	1000
95	13FOOTLELXHFMOMA	Passenger Left Foot Y-Axis Acceleration	1000	+	yes	1000
96	13FOOTLELXHFMOMA	Passenger Left Foot Z-Axis Acceleration	1000	+	yes	1000
96A	13FOOTLELXHFMOMA	Passenger Left Foot Resultant Acceleration	1000			
97	13KNSLRI00HFDSXA	Passenger Right Knee Displacement	180	+	yes	33
98	13TIBIRULXHFFOXA	Passenger Right Upper Tibia X-Axis Force	600	+	yes	8896
99	13TIBIRULXHFFOZA	Passenger Right Upper Tibia Z-Axis Force	600	+	yes	8896
100	13TIBIRULXHFMOMA	Passenger Right Upper Tibia Moment About X Axis	600	+	yes	282.5

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
101	13TIBIRULXHFMoya	Passenger Right Upper Tibia Moment About Y Axis	600	+	yes	282.5
102	13TIBIRILXHFACXA	Passenger Right Tibia X-Axis Acceleration	1000	+	yes	1000
103	13TIBIRILXHFACYA	Passenger Right Tibia Y-Axis Acceleration	1000	+	yes	1000
104	13TIBIRLLXHFFOXA	Passenger Right Lower Tibia X-Axis Force	600	+	yes	8896
105	13TIBIRLLXHFFOYA	Passenger Right Lower Tibia Y-Axis Force	600	+	yes	8896
106	13TIBIRLLXHFFOZA	Passenger Right Lower Tibia Z-Axis Force	600	+	yes	8896
107	13TIBIRLLXHFMoXA	Passenger Right Lower Tibia Moment About X Axis	600	+	yes	282.5
108	13TIBIRLLXHFMoya	Passenger Right Lower Tibia Moment About Y Axis	600	+	yes	282.5
109	13FOOTRILXHFANXA	Passenger Right Foot X-Axis Rotation	180	+	no	318
110	13FOOTRILXHFANYA	Passenger Right Foot Y-Axis Rotation	180	+	no	317
111	13FOOTRILXHFANZA	Passenger Right Foot Z-Axis Rotation	180	+	no	318
112	13FOOTRILXHFACXA	Passenger Right Foot X-Axis Acceleration	1000	+	yes	1000
113	13FOOTRILXHFACYA	Passenger Right Foot Y-Axis Acceleration	1000	+	yes	1000
114	13FOOTRILXHFACZA	Passenger Right Foot Z-Axis Acceleration	1000	+	yes	1000
114A	13FOOTRILXHFACRA	Driver Right Foot Resultant Acceleration	1000			
115	14CRME000000ACXA	Left Rear Seat Cross-Member X-Axis Acceleration	60	+	yes	1000
116	16CRME000000ACXA	Right Rear Seat Cross-Member X-Axis Acceleration	60	+	yes	1000
117	14CRME000000ACYA	Left Rear Seat Cross-Member Y-Axis Acceleration	60	+	yes	1000
118	16CRME000000ACYA	Right Rear Seat Cross-Member Y-Axis Acceleration	60	+	yes	1000
119	12ENGNTPO0000ACXA	Top of Engine Block X-Axis Acceleration	60	+	yes	1500
120	12ENGNBO0000ACXA	Bottom of Engine Block X-Axis Acceleration	60	+	yes	1500
121	12DASH000000ACXA	Instrument Panel X-Axis Acceleration	60	+	yes	1500
122	11SETR000000ACXA	Left Side Driver Mid Seat Track X-Axis Acceleration	60	+	yes	1000
123	10VEHCCG0000ACXA	Vehicle CG X-Axis Acceleration	60	+	yes	1000
123A	10VEHCCG0000VEXA	Vehicle CG X-Axis Velocity	180			
123B	10VEHCCG0000DCXA	Vehicle CG X-Axis Displacement	180			
124	10VEHCCG0000ACYA	Vehicle CG Y-Axis Acceleration	60	+	yes	1000
124A	10VEHCCG0000VEYA	Vehicle CG Y-Axis Velocity	180			
124B	10VEHCCG0000DCYA	Vehicle CG Y-Axis Displacement	180			
125	10VEHCCG0000ACZA	Vehicle CG Z-Axis Acceleration	60	+	yes	1000
125A	10VEHCCG0000VEZA	Vehicle CG Z-Axis Velocity	180			
125B	10VEHCCG0000DCZA	Vehicle CG Z-Axis Displacement	180			
125C	10VEHCCG0000ACRA	Vehicle CG Resultant Acceleration	60			
126	11PEAC000000ACXA	Under Accel Pedal X-Axis Acceleration	60	+	yes	1000
127	11PEAC000000ACYA	Under Accel Pedal Y-Axis Acceleration	60	+	yes	1000
128	11PEAC000000ACZA	Under Accel Pedal Z-Axis Acceleration	60	+	yes	1000
128A	11PEAC000000ACRA	Under Accel Pedal Resultant Acceleration	60			

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
129	11PEBR000000ACXA	Under Brake Pedal X-Axis Acceleration	60	+	yes	1000
130	11PEBR000000ACYA	Under Brake Pedal Y-Axis Acceleration	60	+	yes	1000
131	11PEBR000000ACZA	Under Brake Pedal Z-Axis Acceleration	60	+	yes	1000
131A	11PEBR000000ACRA	Under Brake Pedal Resultant Acceleration	60			
132	11VEHC000001ACXA	Outside Footrest X-Axis Acceleration	60	+	yes	1000
133	11VEHC000001ACYA	Outside Footrest Y-Axis Acceleration	60	+	yes	1000
134	11VEHC000001ACZA	Outside Footrest Z-Axis Acceleration	60	+	yes	1000
134A	11VEHC000001ACRA	Outside Footrest Resultant Acceleration	60			
135	11SEBE0000B5FOOA	Driver Lap Belt Force	60	+	yes	13500
136	11SEBE0000B3FOOA	Driver Shoulder Belt Force	60	+	yes	13500
137	13SEBE0000B5FOOA	Passenger Lap Belt Force	60	+	yes	13500
138	13SEBE0000B3FOOA	Passenger Shoulder Belt Force	60	+	yes	13500
139	11AIRBFR0100EV0A	Driver Front Airbag	1000	+	no	5
140	13AIRBFR0100EV0A	Passenger Front Airbag	1000	+	no	5
141	L0FBAR000001FOXA	Load Cell Row 1 Column 1	60	-	yes	222411
142	L0FBAR000002FOXA	Load Cell Row 2 Column 1	60	-	yes	222411
143	L0FBAR000003FOXA	Load Cell Row 3 Column 1	60	-	yes	222411
144	L0FBAR000004FOXA	Load Cell Row 4 Column 1	60	-	yes	222411
145	L0FBAR000005FOXA	Load Cell Row 5 Column 1	60	-	yes	222411
146	L0FBAR000006FOXA	Load Cell Row 6 Column 1	60	-	yes	222411
147	L0FBAR000007FOXA	Load Cell Row 7 Column 1	60	-	yes	222411
148	L0FBAR000008FOXA	Load Cell Row 8 Column 1	60	-	yes	222411
149	L0FBAR000009FOXA	Load Cell Row 9 Column 1	60	-	yes	222411
150	L0FBAR000010FOXA	Load Cell Row 10 Column 1	60	-	yes	222411
151	L0FBAR000011FOXA	Load Cell Row 1 Column 2	60	-	yes	222411
152	L0FBAR000012FOXA	Load Cell Row 2 Column 2	60	-	yes	222411
153	L0FBAR000013FOXA	Load Cell Row 3 Column 2	60	-	yes	222411
154	L0FBAR000014FOXA	Load Cell Row 4 Column 2	60	-	yes	222411
155	L0FBAR000015FOXA	Load Cell Row 5 Column 2	60	-	yes	222411
156	L0FBAR000016FOXA	Load Cell Row 6 Column 2	60	-	yes	222411
157	L0FBAR000017FOXA	Load Cell Row 7 Column 2	60	-	yes	222411
158	L0FBAR000018FOXA	Load Cell Row 8 Column 2	60	-	yes	222411
159	L0FBAR000019FOXA	Load Cell Row 9 Column 2	60	-	yes	222411
160	L0FBAR000020FOXA	Load Cell Row 10 Column 2	60	-	yes	222411
161	L0FBAR000021FOXA	Load Cell Row 1 Column 3	60	-	yes	222411
162	L0FBAR000022FOXA	Load Cell Row 2 Column 3	60	-	yes	222411
163	L0FBAR000023FOXA	Load Cell Row 3 Column 3	60	-	yes	222411

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
164	L0FBAR000024FOXA	Load Cell Row 4 Column 3	60	-	yes	222411
165	L0FBAR000025FOXA	Load Cell Row 5 Column 3	60	-	yes	222411
166	L0FBAR000026FOXA	Load Cell Row 6 Column 3	60	-	yes	222411
167	L0FBAR000027FOXA	Load Cell Row 7 Column 3	60	-	yes	222411
168	L0FBAR000028FOXA	Load Cell Row 8 Column 3	60	-	yes	222411
169	L0FBAR000029FOXA	Load Cell Row 9 Column 3	60	-	yes	222411
170	L0FBAR000030FOXA	Load Cell Row 10 Column 3	60	-	yes	222411
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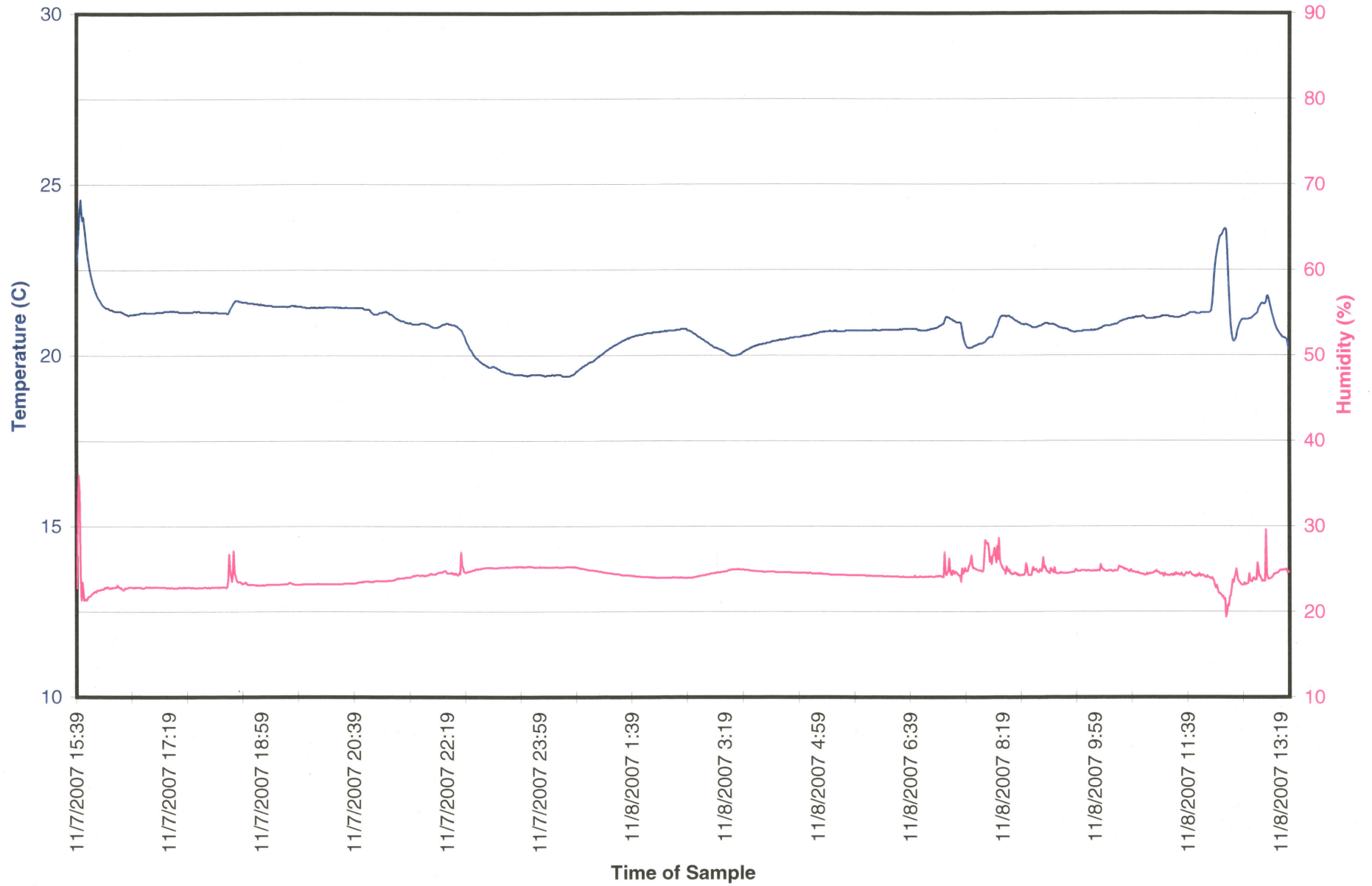
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2006 FORD F250 INTO LEFT 40% OFFSET DEFORMABLE LCB AT 64 KPH

E-20

071108



CERTIFICATE OF CONFORMITY

Serial No. **HF034**

Certificate No. **32513**

Description	Frontal ODB painted grey
Cellbond Part No.	70EEVCFIUS

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

T: +44 (0)1480 435302
F: +44 (0)1480 450181
E: sales@cellbond.com
www.cellbond.com

	Test Results	GR No.	Blk No.
1	32894-8	CHC0303345HE	N/A
2	29172-8	CHC0511071HC	N/A

Declaration.

The above moving deformable barrier has been manufactured in accordance with the provisions of the European Parliament and Council No 96/79/EC Directive (Regulation ECE R94)

Additional Information...

Company Registration
England 1944904

Registered Office
5 Stukeley Business Centre
Blackstone Road
Huntingdon
Cambridgeshire
PE29 6EF

Cellbond Offices
United Kingdom
United States of America
Spain





EEVC DEFORMABLE FRONTAL BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

MAIN BLOCK
Core: 1.8 3/4 3003

Required Crush Strength
0.308 MPa to 0.342 MPa

Test No: 32894-8

GR No : CHC0303345HE

Block No: N/A

	Crush Strength (MPa)			RESULT
	6.4 to 9.7 mm	9.7 to 13.2 mm	13.2 to 16.5 mm	
Sample* 1	0.3188	0.3077	0.3146	FAIL
Sample 2	0.3202	0.3122	0.3247	PASS
Sample 3	0.3147	0.3177	0.3133	PASS
Sample 4	0.3264	0.3292	0.3139	PASS
Sample 5	0.3271	0.3230	0.3285	PASS
Sample 6	0.3194	0.3158	0.3223	PASS
Sample 7	0.3230	0.3154	0.3105	PASS
Sample 8	0.3112	0.3178	0.3157	PASS

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

*Sample size and location as per R94.

RESULT: PASSED

EEVC DEFORMABLE FRONTAL BARRIER MAIN BLOCK

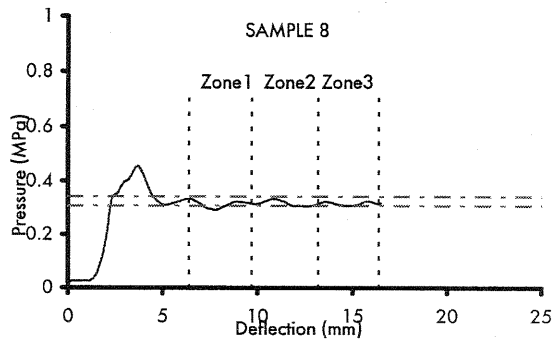
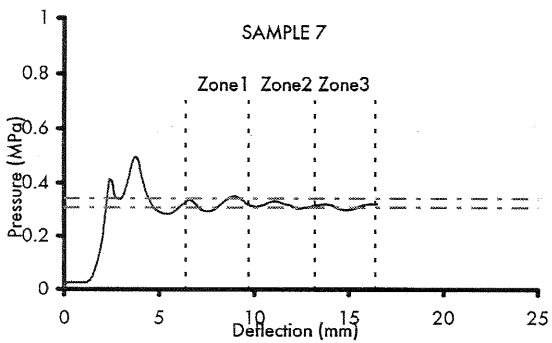
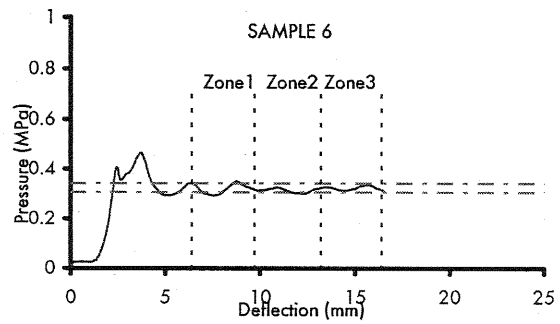
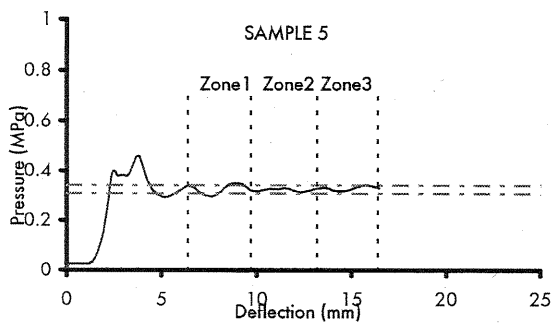
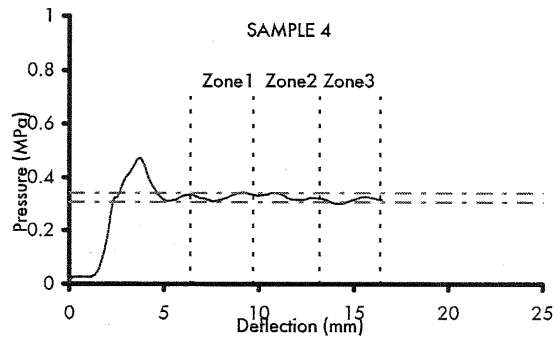
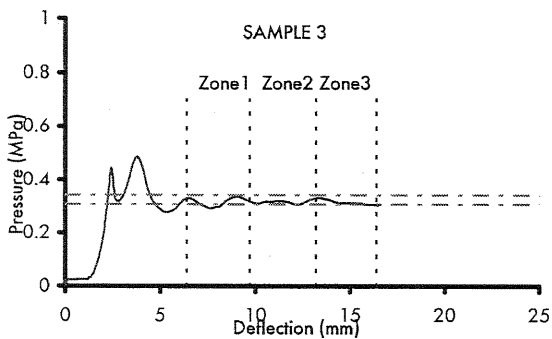
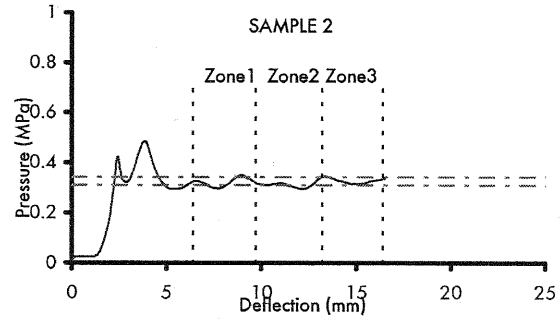
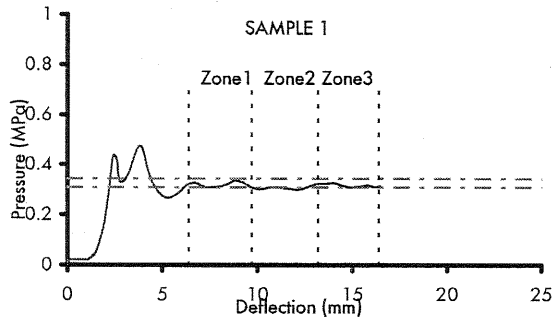
Honeycomb Type: 1.8 3/4 3003
Higher Acceptable Crush Strength Limit: 0.342 MPa
Lower Acceptable Crush Strength Limit: 0.308 MPa

Section 1: 6.4 - 9.7mm
Section 2: 9.7 - 13.2mm
Section 3: 13.2 - 16.5mm
Speed: 6.35 mm/min

Test No: 32894-8

GR No: CHC0303345HE

Block No: N/A





EEVC DEFORMABLE FRONTAL BARRIER
ALUMINIUM HONEYCOMB CERTIFICATION
STATIC TEST RESULTS

BUMPER

Core: 5.2 1/4 3003

Required Crush Strength
1.540 MPa to 1.711 MPa

Test No: 29172-8

GR No: CHC0511071HC

Block No: N/A

	Crush Strength (MPa)			RESULT
	6.4 to 9.7 mm	9.7 to 13.2 mm	13.2 to 16.5 mm	
Sample* 1	1.596	1.619	1.631	PASS
Sample 2	1.637	1.652	1.654	PASS
Sample 3	1.601	1.585	1.605	PASS
Sample 4	1.596	1.612	1.608	PASS
Sample 5	1.595	1.639	1.633	PASS
Sample 6	1.604	1.586	1.610	PASS
Sample 7	1.611	1.606	1.624	PASS
Sample 8	1.550	1.543	1.556	PASS

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

*Sample size and location as per R94.

RESULT: PASSED

EEVC DEFORMABLE FRONTAL BARRIER BUMPER

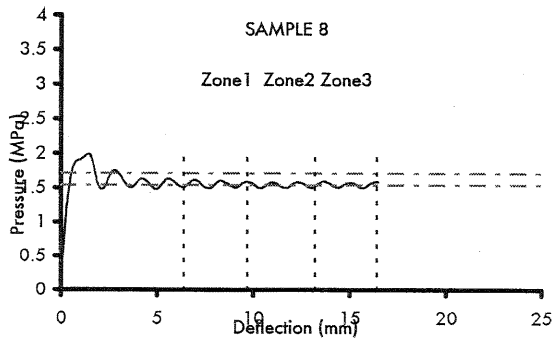
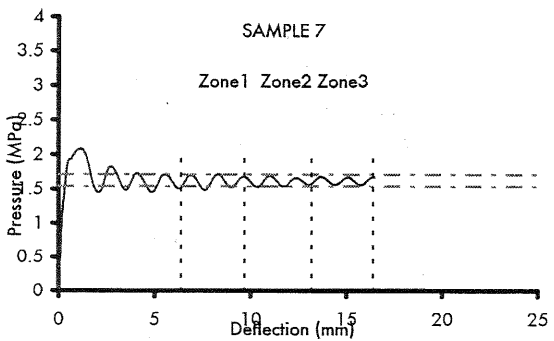
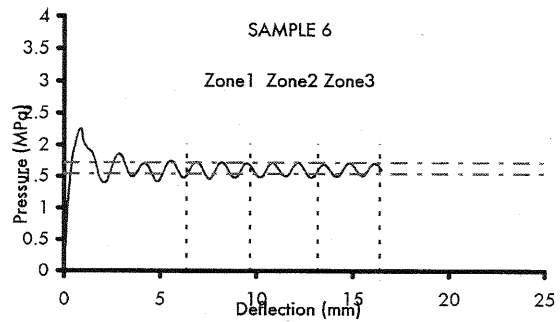
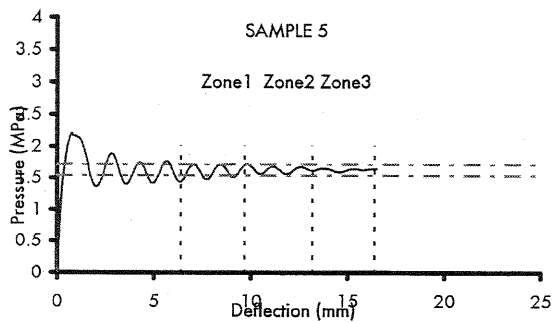
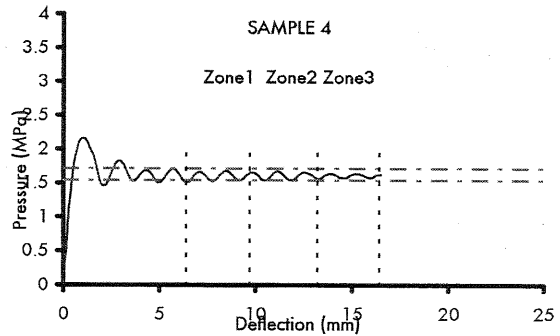
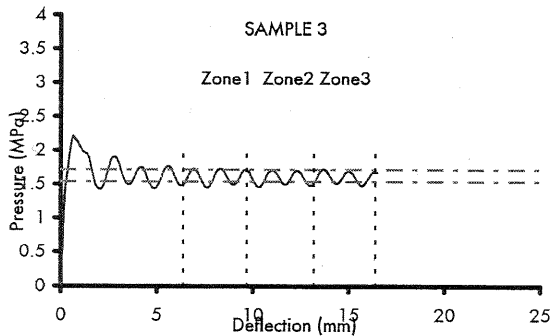
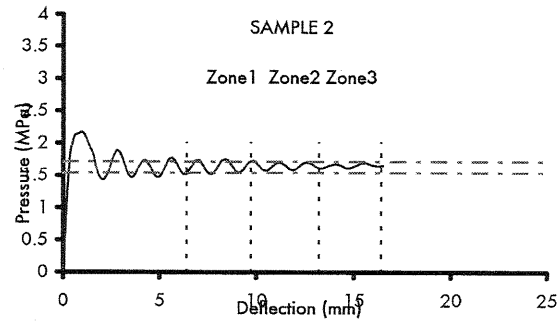
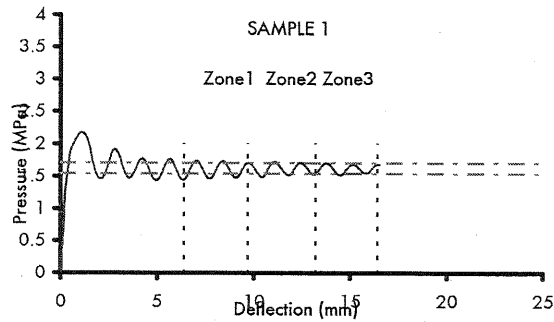
Honeycomb Type: 5.2 1/4 3003
Higher Acceptable Crush Strength Limit: 1.711 MPa
Lower Acceptable Crush Strength Limit: 1.540 MPa

Section 1: 6.4 - 9.7mm
Section 2: 9.7 - 13.2mm
Section 3: 13.2 - 16.5mm
Speed: 6.35 mm/min

Test No: 29172-8

GR No: CHC0511071HC

Block No: N/A



Appendix F

INSIA Report on Structural Measurements



STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

**APARICIO IZQUIERDO, FRANCISCO
PÁEZ AYUSO, FRANCISCO JAVIER**

**INSIA
Carretera de Valencia, km. 7
Campus Sur de la Universidad Politécnica de Madrid
28031 – MADRID – (SPAIN)**

March, 1999

REPORT DOCUMENTATION PAGE	
Title:	<i>STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY</i>
Author(s):	Aparicio Izquierdo, Francisco Páez Ayuso, Francisco Javier
Performing Organisation name and address:	INSIA – University Institute for Automobile Research Carretera de Valencia, Km. 7 – Campus Sur de la Universidad Politécnica de Madrid 28031 – Madrid – Spain
Supplementary notes:	Under contract to: THE EUROPEAN COMMUNITY Project: “Improvement of Crash Compatibility between Cars” Contract N°: RO – 97 – SC.1064
Abstract:	The main aim of this working package -<i>Structural Survey of Cars</i>- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet. Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts. Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined. This report shows the methodology followed to get these measurements.
Subject terms:	Crash compatibility, geometric compatibility, resistant elements, measure methodology
Date:	March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

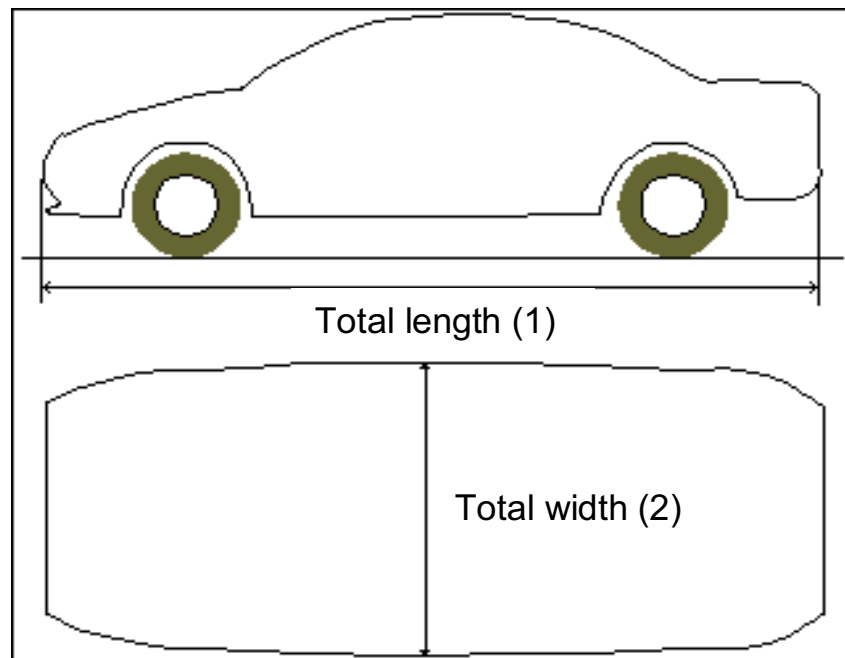


Figure 1.- Definition of the main resistant elements. General dimensions.

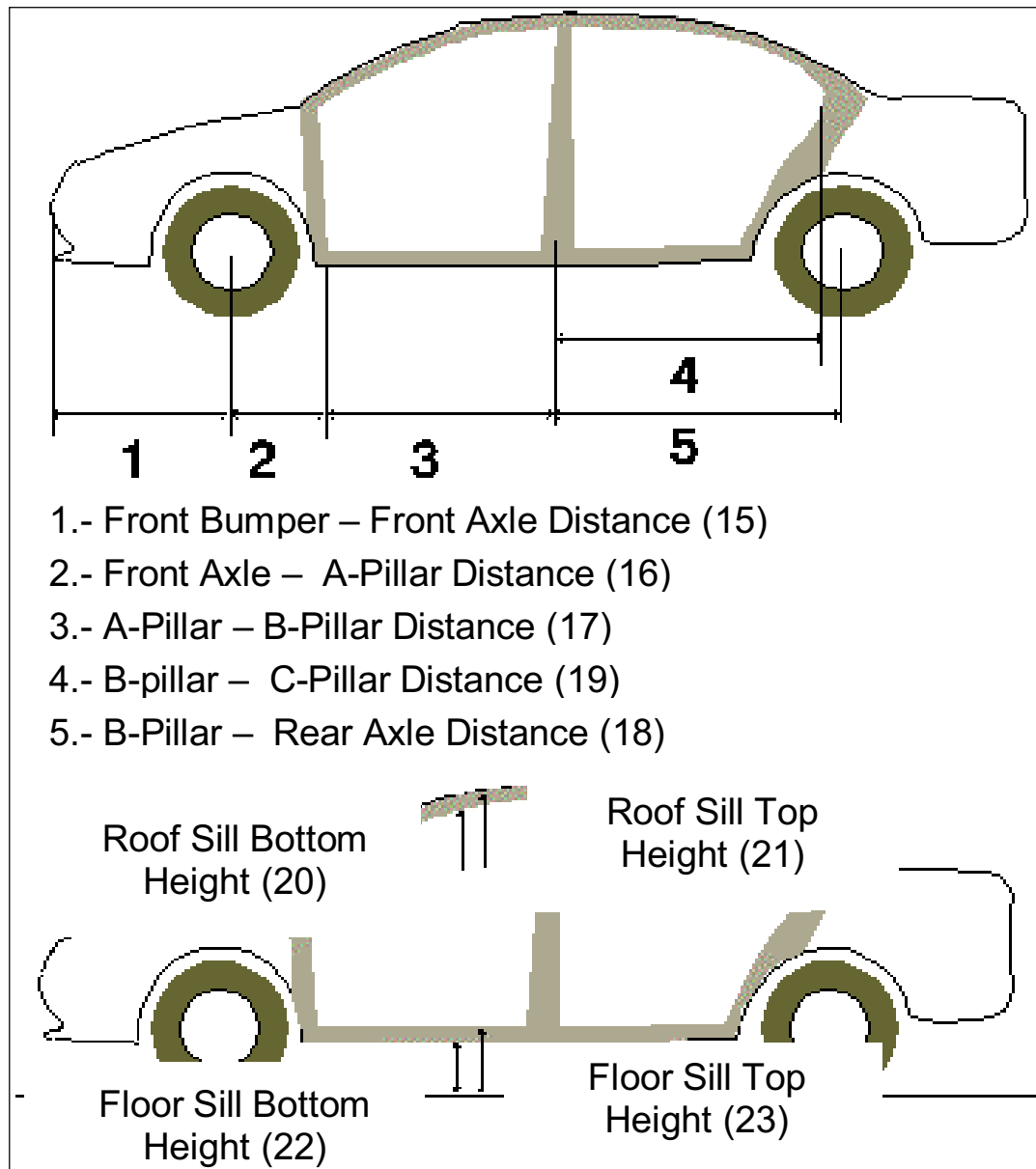


Figure 2.- Definition of the main resistant elements. Side elements.

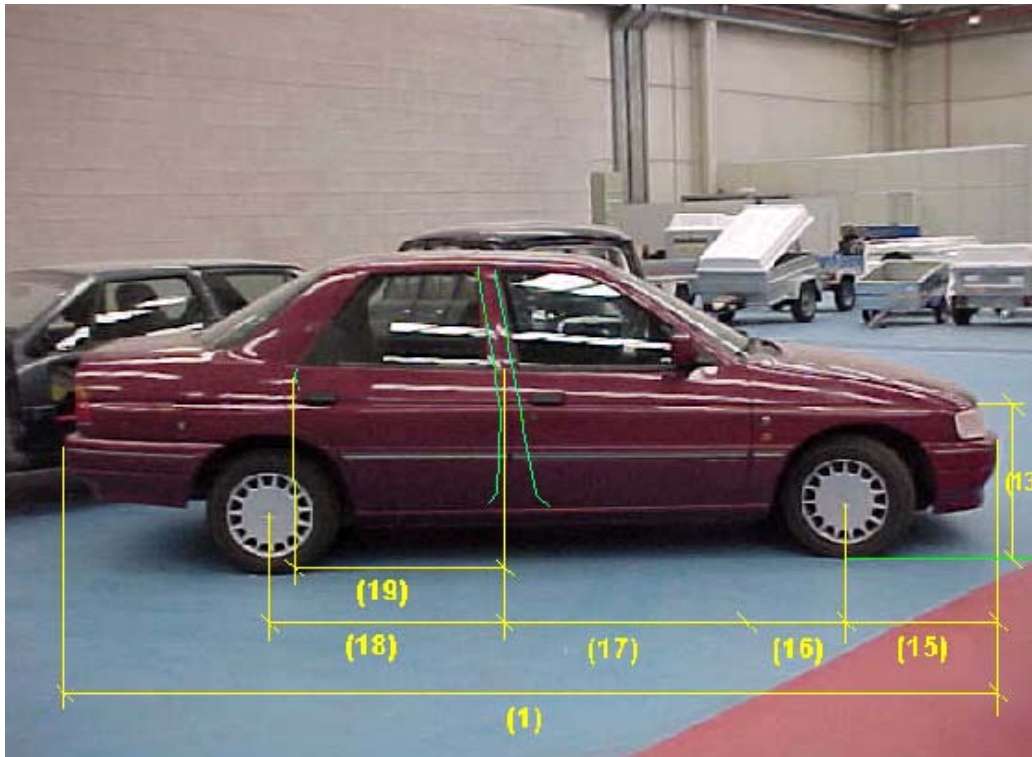


Figure 3.-
Measurements of
the side resistant
elements (outer).

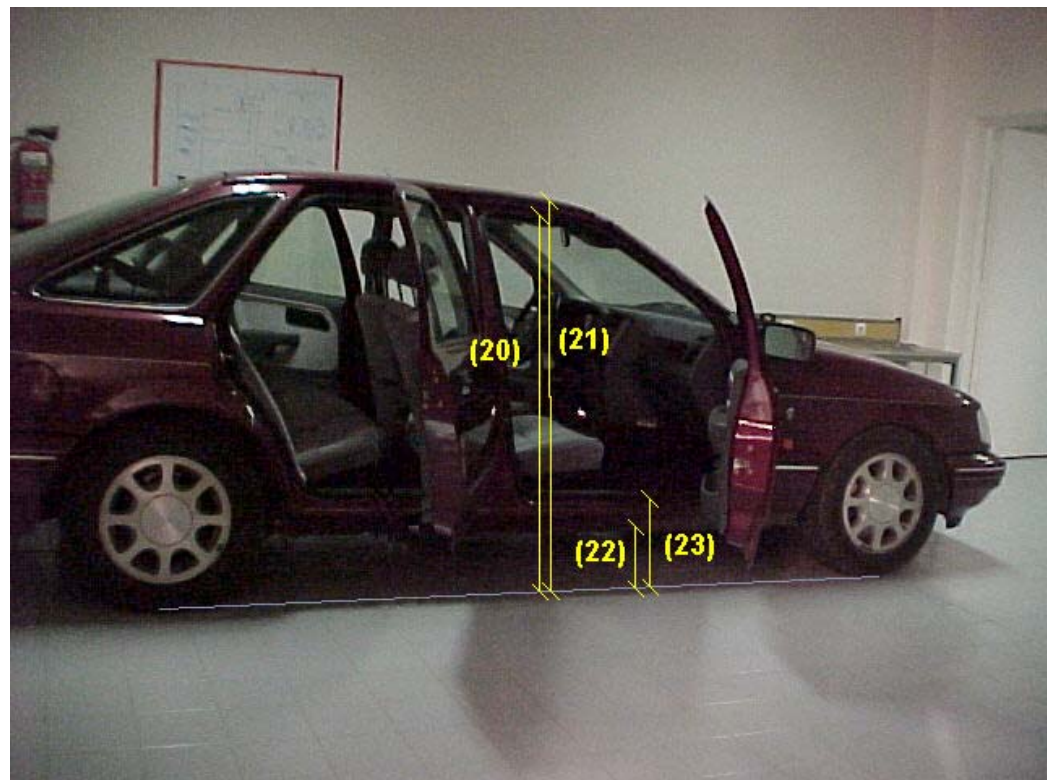


Figure 4.- Measurements
of the side resistant
elements (inner).

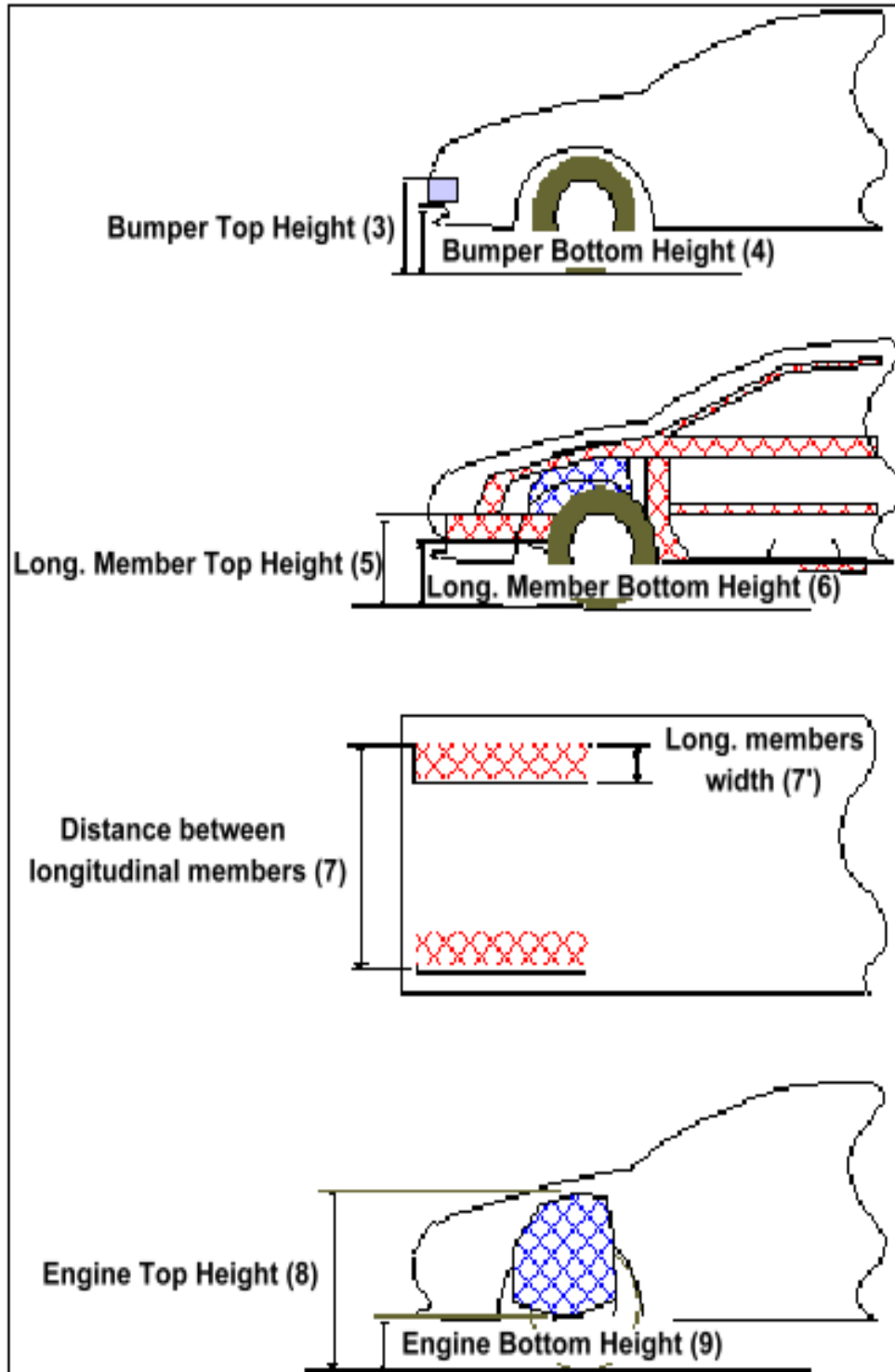


Figure 5.- Definition of the main resistant elements. Front elements.

Figure 6.-
Measurements of the
main resistant elements.
Front elements 1.

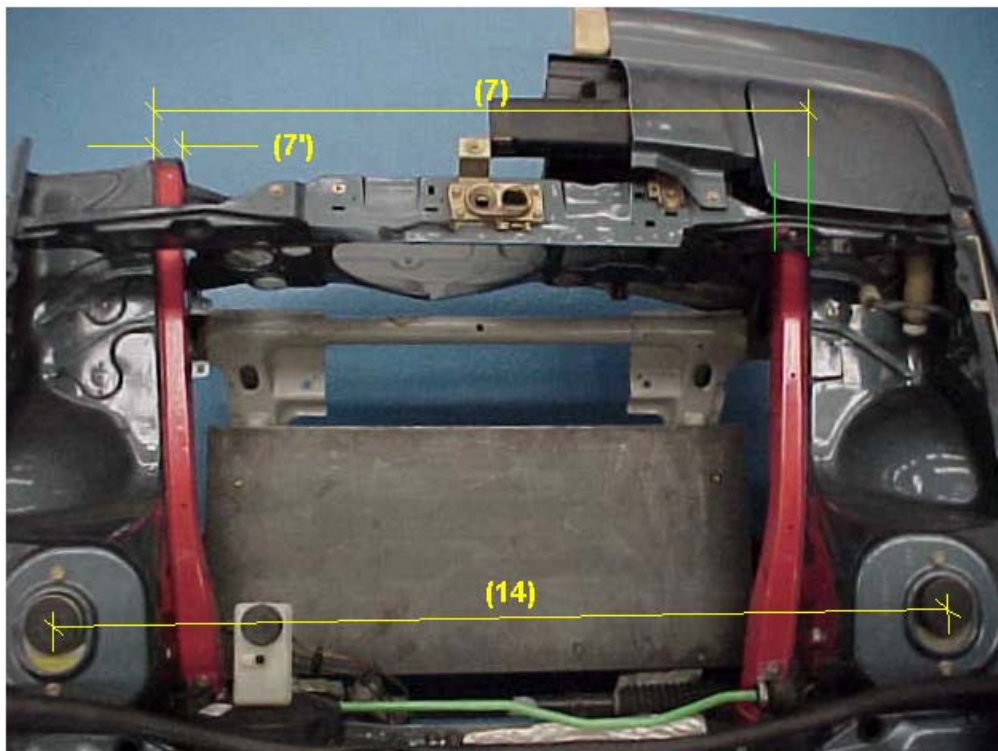
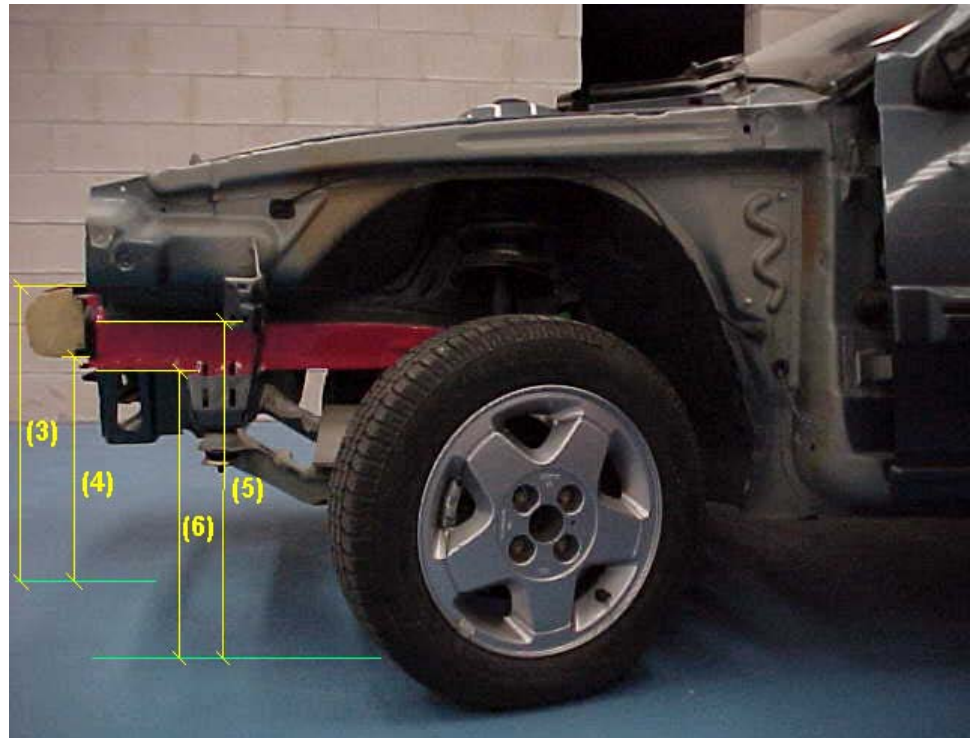


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

Figure 8.-
Measurements of
the main resistant
elements. Front
elements 3.

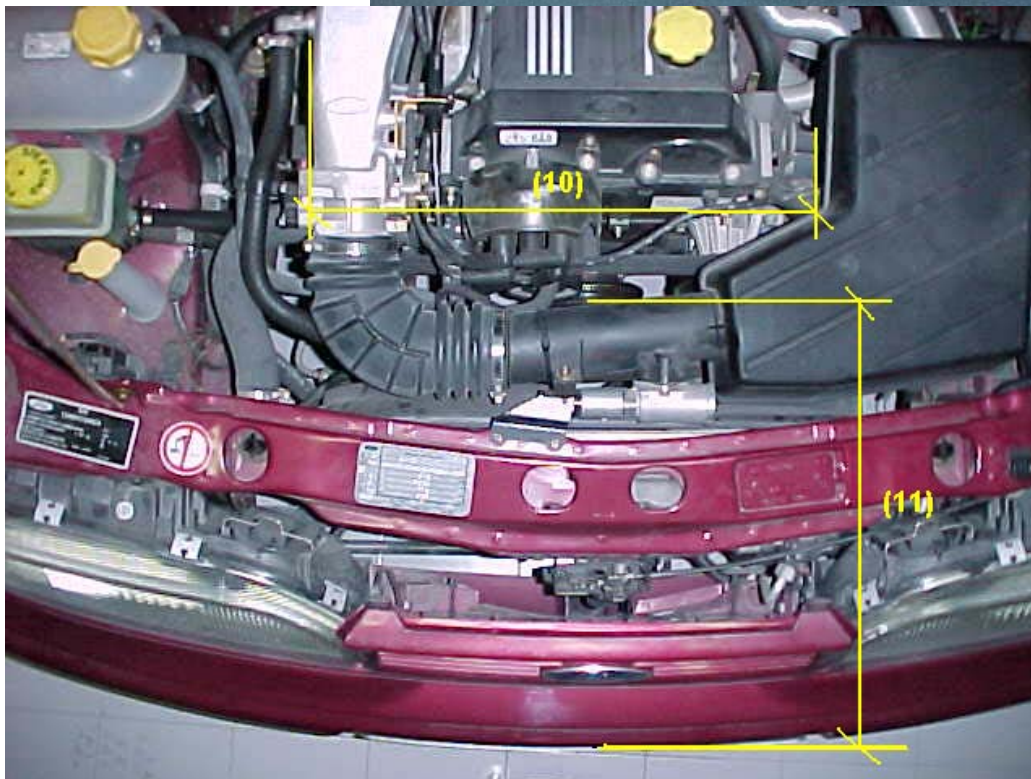
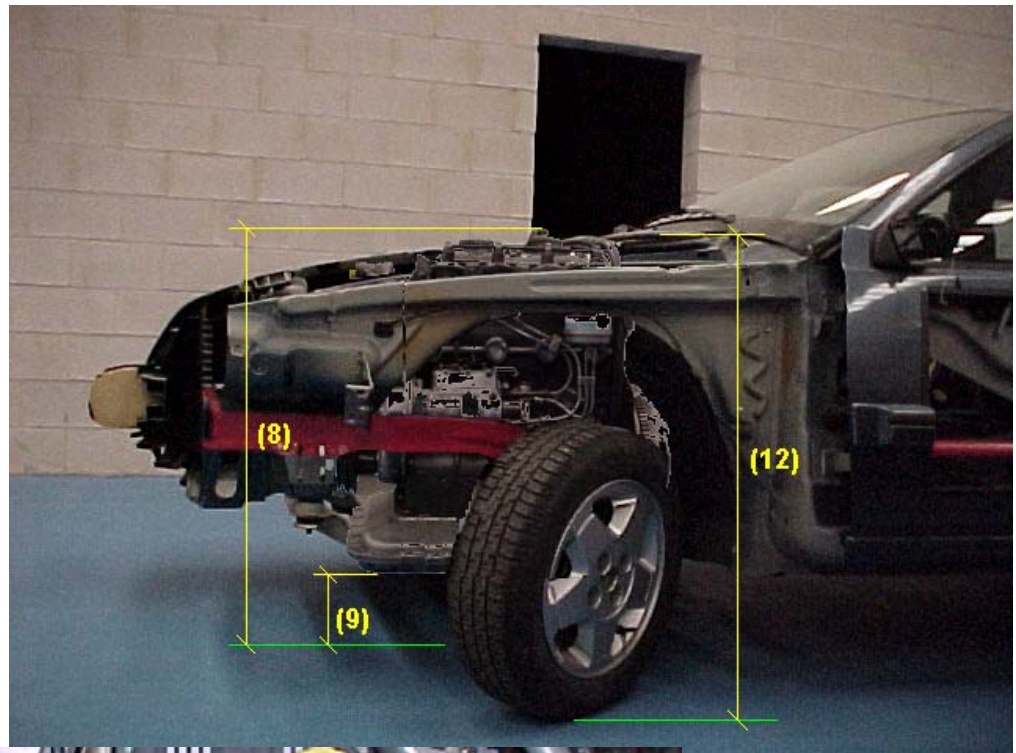


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).



The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

- **Total Length –(1)- (Side & Front Sheets - C column):** distance between the point in the front bumper further on and the point in the rear bumper further back.
- **Weight (Side & Front Sheets - D column):** mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).
- **Total Width –(2)- (Side & Front Sheets - E column):** distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).
- **Bumper bottom height –(4)- (Front Sheet G column):** distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).
- **Bumper top height –(3)- (Front Sheet H column):** distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).
- **Longitudinal member top height –(5)- (Front Sheet I column):** distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).
- **Longitudinal member bottom height –(6)- (Front Sheet J column):** distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.
- **Distance between longitudinal members (Front Sheet K column):** transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

- **Longitudinal member width -7'- (Front Sheet L column):** width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.



- **Engine top height (8) (Front Sheet N column):** distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).
- **Engine bottom height (9) (Front Sheet M column):** distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).
- **Engine and Gearbox width (10) (Front Sheet O & P columns):**
 - *Transverse configuration engine:* distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).
 - *Longitudinal configuration engine:* distance between extreme points in the cylinder block unit (from a front point of view).
- **Front bumper - Engine distance (11) (Front Sheet Q column):** distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.
- **Front shock absorber fixing width (14) (Front Sheet R column):** transverse distance between the front shock absorber - body car joints.
- **Front shock absorber fixing height (12) (Front Sheet S column):** distance between the ground and the front shock absorber-body car joint.
- **Bonnet leading edge height (Front Sheet T column):** distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

- **Front bumper - Front axle distance (15) (Side Sheet G column):** distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.
- **Front axle - A Pillar distance (16) (Side Sheet H column):** distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.
- **A Pillar - B Pillar distance (17) (Side Sheet I column):** distance between the point in the A-pillar further back and the middle point in the B-pillar.
- **B Pillar - C Pillar distance (19) (Side Sheet J column):** distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).
- **B Pillar - Rear axle distance (18) (Side Sheet K column):** distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.
- **Roof sill bottom height (20) (Side Sheet L column):** distance between the ground and the lowest point on the roof sill, measured in the front door middle point.
- **Roof sill top height (21) (Side Sheet M column):** distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.
- **Floor sill bottom height (22) (Side Sheet N column):** distance between the ground and the lowest point on the floor sill, measured in the front door middle point.
- **Floor sill top height (23) (Side Sheet O column):** distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.