

**Vehicle Research and Test Center
Oblique Side Pole Impact
World SID
2005 Subaru Forester 4-door
TRC Inc. Test Number: 070712**

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**Final Report
July - August 2007**

**Prepared For
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Section 1.0

Purpose and Test Procedure

Purpose

This side impact test is part of the proposed FMVSS 214 Side Impact Protection. It was conducted for the National Highway Traffic Safety Administration (NHTSA) and Vehicle Research and Test Center (VRTC) by Transportation research Center Inc. (TRC Inc.). The purpose of this test was to evaluate side impact protection of a 2005 Subaru Forester 4-door with the rigid pole. The test was conducted in accordance with the National Highway Traffic Safety Administration's Notice of Proposed Rulemaking (Docket No. NHTSA-2004-17694, May 17, 2004).

Section 2.0

Side Impact Test

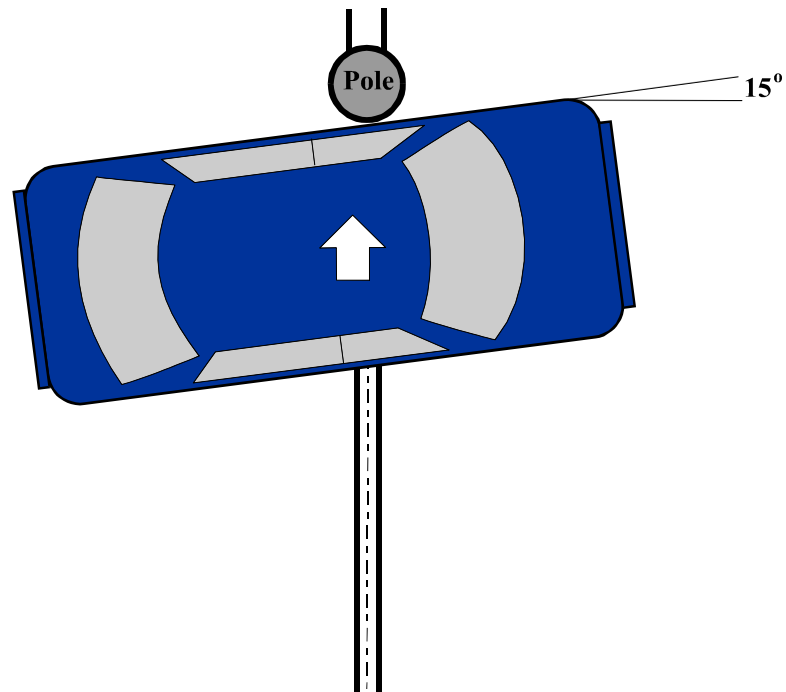
Summary of Side Impact Test

A 2005 Subaru Forester 4-door impacted an oblique rigid pole barrier at an angle of 285°, at a velocity of 32.2 km/h (20.0 mph). The pole was aligned with the dummy's head center of gravity. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on July 12, 2007. Pre-test and post-test photographs of the test vehicle, the rigid pole barrier, and the side impact dummy (World SID) are included in Appendix A.

One restrained Side Impact Dummy (World SID) was placed in the driver (Pos. #1) designated seating position according to the instructions specified in the World SID Seating Procedure Draft 1.0. The World SID was calibrated prior to this test. The side impact test was documented by one (1) real-time camera and nine (9) high-speed digital cameras. Camera locations and other pertinent camera information are included in this report.

The World SID instrumentation is detailed in Table 4. Ninety-two (92) channels of acceleration, force, moment, and displacement data were collected for this test.

A summary of the side impact dummy (World SID) configuration and verification test data can be found in Appendix C. A total of 141 channels of data were recorded. Appendix B contains the vehicle, barrier, and dummy response data traces.



	Front World SID (#016)
HIC36 (g) CFC 1000	1463
Upper Rib Deflection (mm) CFC 180	
Rib 1	61 mm
Rib 2	39 mm
Rib 3	31 mm
Lower Rib Deflection (mm) CFC 180	
Rib 1	37 mm
Rib 2	28 mm
Lower Spine Resultant (g) CFC 180	79 g
Pubic Symph. Force (N) CFC 1000	1227 N

	2005 Subaru Forester
Vehicle Test Weight	1595.8 kg (3518 lbs)
Impact Point (Horizontal)-behind center of front axle	1270 mm
Maximum Crush	381 mm Level 2
Impact Speed	20.0 mph

Data Acquisition Explanations

The vehicle's rear floor pan above axle Z-axis acceleration data channel, 18FORA000000ACZA, recorded questionable data after approximately 33 milliseconds. This affected the resultant calculation.

Section 3

Summary of Test Results

Table 1 General Test Vehicle Parameter Data

Test Vehicle: 2005 Subaru Forester 4-door

Test Date: 07/12/07

TEST VEHICLE INFORMATION

Make	Subaru
Model	Forester
Body Style	4-door
VIN	JF1SG63615H729680
Color	Blue
Odometer Reading	23,614 miles
Transmission	4-Speed Automatic
Final Drive	All-wheel drive
Number of Cylinders	4
Engine Displacement	2.5 L
Engine Placement	Lateral
Air Conditioning	Yes
Power Windows	Yes
Power Seats	No
Cruise Control	Yes
Tinted Glass	Yes
Keyless Entry	Yes

TEST VEHICLE OPTIONS

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

DATA FROM CERTIFICATION LABEL

Manufactured By	Fuji Heavy Ind. LTD.
Date of Manufacture	09/04

GVWR (kg)	1880
GAWR Front (kg)	930
GAWR Rear (kg)	1000

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	Split Bench	Split Bench	
Number Of Occupants	2	N/A	3	5
Capacity Wt. (VCW)				408
Cargo Wt. (RCLW) (kg)				68

Table 1 General Test Vehicle Parameter Data, Continued

Test Vehicle: 2005 Subaru Forester 4-door

Test Date 07/12/07

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW) (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	409.4	322.2		438.2	362.8	
Right	kg	413.2	306.0		435.8	359.0	
Ratio	%	56.7	43.3		54.8	45.2	
Totals	kg	822.6	628.2	1450.8	874.0	721.8	1595.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight (UVW)	kg	1450.8
Weight of World SID ATD	kg	81.6
Rated Cargo/Luggage Weight (RCLW)	kg	68.0
Calculated Vehicle Target Weight (TVTW)	kg	1600.4

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG(aft of front axle)
As Delivered	mm	739	742	730	742	1094
As Tested	mm	750	775	770	760	1143
Fully Loaded	mm	732	745	710	729	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2526
Total Vehicle Length at Left Side	mm	4262
Total Vehicle Length at Centerline	mm	4442
Total Vehicle Length at Right Side	mm	4260
Weight of Ballast behind Passenger Seat	kg	58.1
Amount of Stoddard Solvent in Fuel Tank	liters	56.0

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Impact Reference Line From Front Axle	mm	1270
Impact Point	mm	1270
Impact Point Difference	mm	0 mm

¹ Wheel dollies were used for this test.

Table 1 General Test Vehicle Parameter Data, Continued

Test Vehicle: 2005 Subaru Forester 4-door

Test Date 07/12/07

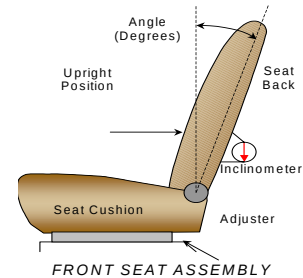
WORLD SID RIDING POSITION

The driver and passenger seat back is positioned to the manufacturer's designated angle.

Driver: Total Number of detents: 17

Test detent (with the forward-most detent defined as 0): 9

Driver seat back angle: The back was adjusted to 8.3° forward of vertical measured at the head restraint.

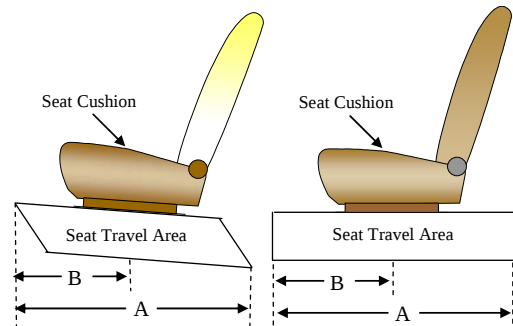


SEAT FORE/AFT POSITIONS

The total seat travel was measured from forward most position to rearmost position, irrespective of vertical seat height in those positions. The seat was set at the longitudinal mid position with vertical adjustment at the lowest position obtainable for both the driver and passenger.

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	215 mm	mm
Rear Seat	Fixed	Fixed



SEAT BELT UPPER ANCHORAGE

	Total No. of Positions	Placed in Position No.
Driver Seat	4	Full up
Rear Seat	N/A	N/A

Position number one is the uppermost adjustment position.

Table 1 General Test Vehicle Parameter Data, Continued

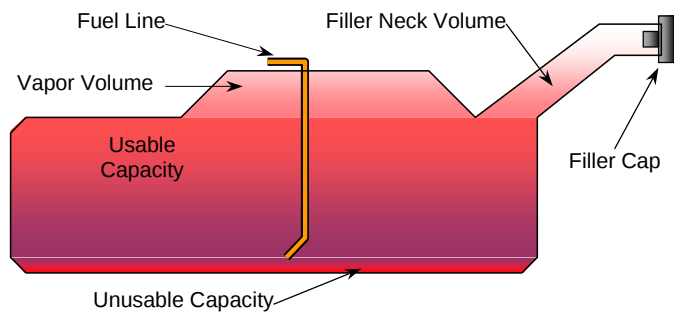
Test Vehicle: 2005 Subaru Forester 4-door

Test Date 07/12/07

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	60.2
Usable Capacity used for FMVSS301	60.2
Actual Amount of Solvent used	56.0

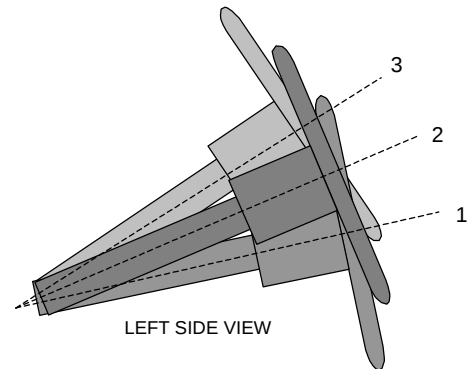
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies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



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

STEERING WHEEL/COLUMN POSITIONS

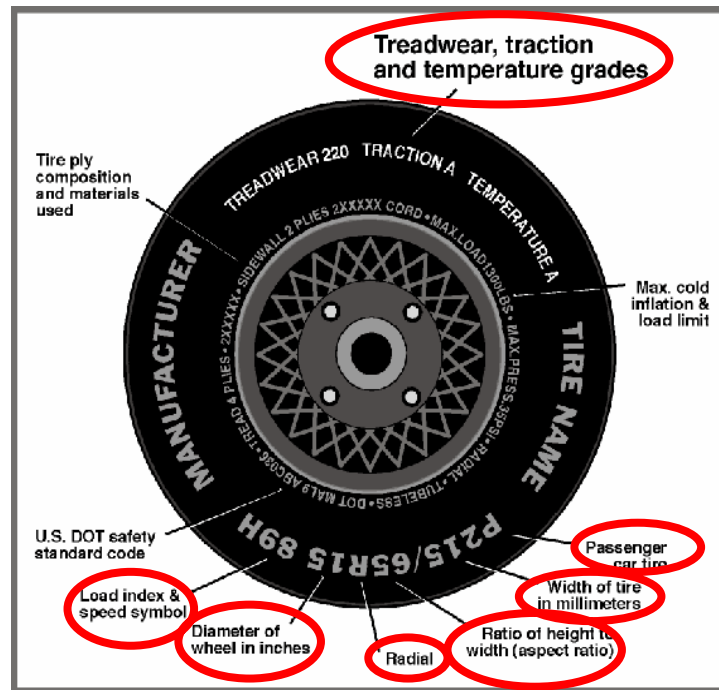
	Degrees	Fore/Aft Position, mm
Lowermost Position	N/A	N/A
Geometric Center Position	N/A	N/A
Uppermost Position	N/A	N/A

Table 2 Test Vehicle Tire Information

Test Vehicle: 2005 Subaru Forester 4-door

Test Date

07/12/07



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	200	190
Recommended Tire Size	P215/60R16	P215/60R16
Tire Size on Vehicle	P215/60R16	P205/60R16
Tire Manufacturer	Yokohama	Yokohama
Tire Name	Geolander	Geolander
Radial	R	R
Wheel Diameter	16	16
Load Index & Speed Symbol	94H	94H
Treadwear	320	320
Traction Grade	B	B
Temperature Grade	A	A

Table 3 Post-Test Observations

Test Vehicle: 2005 Subaru Forester 4-door

Test Date 07/12/07

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat World SID
Dummy Type / Serial No.	World SID / 016
Head Contact	Pole, head restraint
Upper Torso Contact	Door panel
Lower Torso Contact	Door panel
Left Knee Contact	Door panel
Right Knee Contact	None

POST TEST door OPENING AND SEAT TRACK INFORMATION

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

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	Did not separate from vehicle
Sill Separation	Did not separate from vehicle
Windshield Damage	Broken
Window Damage	Broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01	
	Installed	Operation
Front Airbag	Yes	No
Side Airbag	Yes	Yes
Head Airbag	No	N/A
Curtain Airbag	No	N/A
Seat Belt Pretensioner	Yes	Unknown
Seat Belt Load Limiter	No	N/A

Section 4

Occupant and Vehicle Information

Table 4 World SID Instrumentation Data

Vehicle: 2005 Subaru Forester 4-door

Test Number: 070712

Driver Dummy Serial Number: 016

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Head Acceleration	X	12.1	64.6	112.1	57.6
	Y	179.5	57.4	5.8	162.8
	Z	172.6	57.3	46.7	60.8
	R	270.8	57.4		
Head Angular Displacement	X	21768.1	57.4	9416.7	64.9
	Y	11038.1	65.0	8138.1	65.3
	Z	11058.5	57.6	13031.4	65.7
Upper Neck Force	X	158.8	57.6	343.4	55.0
	Y	954.7	59.8	222.4	169.6
	Z	1517.9	66.4	1953.8	60.2
Upper Neck Moment	X	26.0	74.9	54.8	33.8
	Y	24.5	86.7	18.6	35.6
	Z	7.6	55.1	7.9	190.6
Lower Neck Force	X	202.3	60.2	580.5	55.7
	Y	1338.4	67.0	404.5	60.8
	Z	1073.7	45.6	2252.1	60.6
Lower Neck Moment	X	141.7	65.5	53.2	160.6
	Y	64.8	56.2	37.6	142.2
	Z	6.6	62.1	10.7	192.9
Shoulder Force	X	264.9	29.2	722.8	20.7
	Y	2.8	15.0	2721.3	29.1
	Z	606.8	21.1	9.0	22.8
Shoulder Displacement	Y	64.6	30.0	0.5	2.6
Shoulder Acceleration	X	176.0	20.5	130.6	28.8
	Y	328.9	21.6	183.2	29.0
	Z	158.4	22.7	271.3	21.0
	R	347.2	20.0		

Table 4 World SID Instrumentation Data, Continued

Vehicle: 2005 Subaru Forester 4-door

Test Number: 070712

Driver Dummy Serial Number: 016

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
T1 Acceleration	X	8.7	65.4	30.1	61.0
	Y	59.9	28.1	35.4	65.4
	Z	25.5	59.6	8.4	76.8
	R	60.1	28.1		
T4 Acceleration	X	12.7	31.4	15.7	60.3
	Y	46.5	29.6	19.5	89.4
	Z	25.9	59.8	10.1	77.8
	R	46.9	29.5		
T12 Acceleration	X	11.4	60.3	16.6	34.0
	Y	77.4	33.8	28.1	73.4
	Z	21.6	60.9	10.4	67.5
	R	79.3	33.8		
Thorax Rib 1 Displacement	Y	60.8	33.5	0.3	2.5
Thorax Rib 1 Acceleration	X	100.1	23.2	115.9	22.0
	Y	215.9	21.5	197.7	27.8
	Z	231.8	27.8	230.5	28.1
	R	305.0	27.8		
Thorax Rib 2 Displacement	Y	39.2	33.7	1.0	301.8
Thorax Rib 2 Acceleration	X	324.1	19.0	118.4	21.4
	Y	251.0	19.3	189.8	26.5
	Z	74.6	26.4	128.5	26.7
	R	376.0	19.0		
Thorax Rib 3 Displacement	Y	30.9	39.0	1.4	19.8
Thorax Rib 3 Acceleration	X	360.1	19.2	135.5	20.0
	Y	434.1	19.4	110.1	29.1
	Z	80.4	20.0	96.9	19.6
	R	555.9	19.3		

Table 4 World SID Instrumentation Data, Continued

Vehicle: 2005 Subaru Forester 4-door

Test Number: 070712

Driver Dummy Serial Number: 016

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Abdominal Rib 1 Displacement	Y	36.6	42.6	0.2	20.1
Abdominal Rib 1 Acceleration	X	137.5	19.6	187.3	22.2
	Y	190.9	22.5	71.8	25.6
	Z	49.9	22.7	59.9	39.3
	R	241.6	22.3		
Abdominal Rib 2 Displacement	Y	27.5	42.6	0.1	16.0
Abdominal Rib 2 Acceleration	X	32.3	29.8	72.3	22.4
	Y	122.5	22.3	65.2	33.0
	Z	47.9	32.8	42.0	33.1
	R	145.6	22.3		
Lumbar Force	X	407.6	56.9	207.5	32.2
	Y	484.9	35.6	615.4	78.7
	Z	976.8	58.7	217.9	83.5
Lumbar Moment	X	23.1	54.6	62.2	81.0
	Y	4.4	25.0	23.0	64.2
	Z	12.8	35.9	11.3	76.6
Pelvis Acceleration	X	8.2	53.8	15.0	32.0
	Y	76.8	40.2	37.5	67.7
	Z	12.0	79.9	18.7	62.6
	R	77.0	40.2		
Sacro-Iliac Left Force	X	394.5	84.6	512.7	48.6
	Y	2.3	13.2	3232.4	41.6
	Z	3.0	11.8	680.5	72.4
Sacro-Iliac Left Moment	X	21.4	77.0	63.3	41.0
	Y	17.6	56.8	23.2	69.8
	Z	62.5	40.5	23.2	55.0

Table 4 World SID Instrumentation Data, Continued

Vehicle: 2005 Subaru Forester 4-door

Test Number: 070712

Driver Dummy Serial Number: 016

		Positive Direction		Negative Direction	
		Max.	Time	Max.	Time
Location		(g)	(ms)	(g)	(ms)
Sacro-Iliac Right Force	X	672.0	116.9	177.6	44.0
	Y	2370.8	40.9	11.5	19.9
	Z	500.2	57.6	594.6	85.5
Sacro-Iliac Right Moment	X	20.2	58.2	37.7	85.5
	Y	4.7	24.9	38.6	69.8
	Z	29.0	53.5	38.6	41.8
Pubic Force	Y	1227.4	41.3	11.0	14.2
Left Femur Force	X	692.8	115.1	17.4	30.9
	Y	13.2	20.1	1949.3	39.1
	Z	11.6	3.9	1551.5	45.3
Left Mid Femur Force	X	162.6	100.4	57.1	69.2
	Y	11.7	14.2	613.7	38.0
	Z	770.0	45.6	239.6	74.2
Left Mid Femur Moment	X	185.2	105.4	0.8	19.9
	Y	82.9	111.1	0.4	8.7
	Z	50.3	117.0	15.5	31.4
Left Knee Outboard Force	Y	1464.4	66.4	65.6	35.0
Right Mid Femur Force	X	53.6	95.4	82.9	67.2
	Y	52.0	53.8	405.8	70.4
	Z	979.5	56.0	644.7	89.7
Right Mid Femur Moment	X	78.9	69.1	124.1	47.1
	Y	62.9	68.2	35.3	95.0
	Z	5.9	95.5	82.3	65.8

Positive Direction

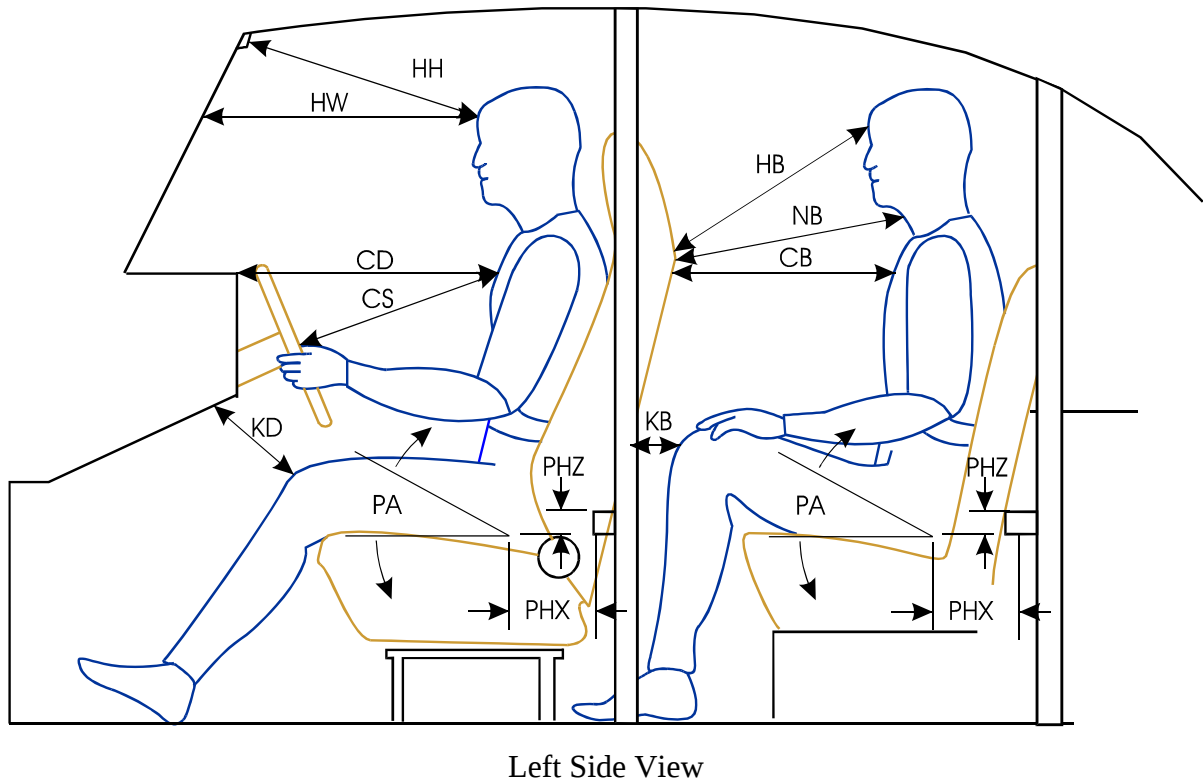
Longitudinal: Forward
 Lateral: Rightward
 Vertical: Downward

Negative Direction

Longitudinal: Rearward
 Lateral: Leftward
 Vertical: Upward

Figure 1 World SID Longitudinal Clearance Dimensions

Vehicle: 2005 Subaru Forester 4-door



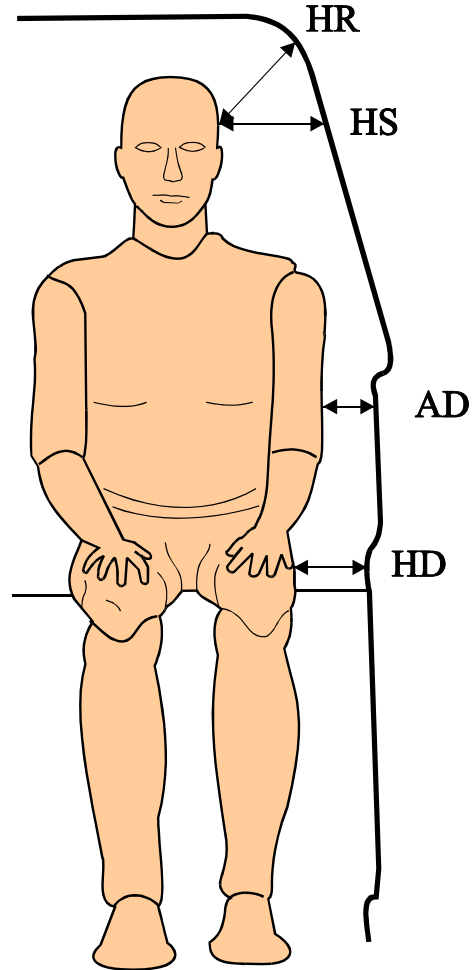
Note: All measurements are in millimeters with tolerance of ± 0.1 mm

Measurement	Driver World SID # 016
HH	408
HW	616
HZ	205
NR	461
CD	575
CS	367
KDL(KDA°)	115/(13.8°)
KDR(KDA°)	80/(7.0°)
PA°	N/A
PHX	161
PHZ	76

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

Figure 2 World SID Lateral Clearance Dimensions

Vehicle: 2005 Subaru Forester 4-door

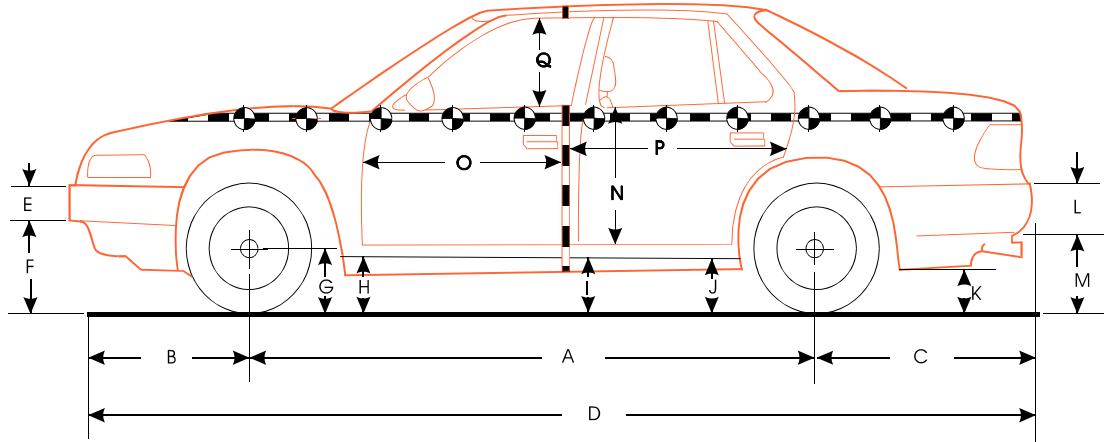


Note: All measurements are in millimeters with tolerance of ± 0.1 mm

Measurement	Driver World SID # 016
HR	232
HS	320
AD	Lower: 123 Upper: 135
HD	79

Figure 3 Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2005 Subaru Forester 4-door



Left Side View

Note: All dimensions are in millimeters with tolerance of ± 0.1 mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2526	2526	2346	180
B	923	923	891	32
C	1019	1019	1010	9
D	4442	4442	4431	11
E	195	195	195	0
F	395	414	440	-26
G	311	353	305	48
H	278	307	304	3
I	287	305	280	25
J1	310	270	278	-8
J2	256	323	335	-12
K	342	365	350	15
L	195	195	195	0
M	404	424	390	34
N	716	716	704	12
O	760	760	624	136
P	1210	1210	1092	118
Q	485	485	446	39
R	4260	4260	4278	-18
S	4262	4262	4241	21
T	1294	1294	1046	248

D = Length at centerline

E and L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-pillar

J1 = To Pinch Weld

J2 = To Sill

Table 5 Vehicle Structural Measurements^{1,2}

	Elements	Pre-Test
1	Total Length	4442
2	Total Width	1780
3	Bumper Top Height	581
4	Bumper Bottom Height	474
5	Longitudinal Member Top Height	562
6	Longitudinal Member Bottom Height	332
7	Distance Between Longitudinal Members	1072
7'	Longitudinal Member Width	150
8	Engine Top Height	872
9	Engine Bottom Height	231
10	Engine and Gearbox Width	1285
11	Front Bumper - Engine Distance	616
12	Front Shock Absorber Fixing Height	919
13	Bonnet Leading Edge Height	817
14	Front Shock Absorber Fixing Width	1074
15	Front Bumper - Front Axle Distance	923
16	Front Axle - A Pillar Distance	553
17	A Pillar - B Pillar Distance	1065
18	B Pillar - Rear Axle Distance	1001
19	B Pillar - C Pillar Distance	840
20	Roof Sill Bottom Height	1409
21	Roof Sill Top Height	1467
22	Floor Sill Bottom Height	399
23	Floor Sill Top Height	436

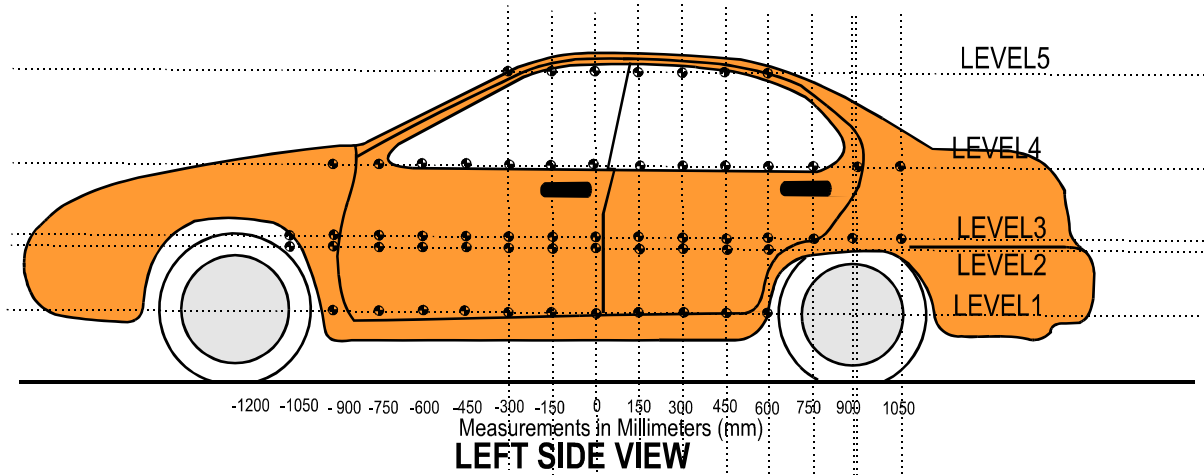
All distance measurements are in millimeters.

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 E.

² The vertical measurements from the ground are adjusted based on the test vehicle’s pre-test attitude measurements.

Figure 4 Vehicle Side Measurements

Vehicle: 2005 Subaru Forester 4-door



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

Measurements along the vertical 750 mm line shown above.

Measurements vehicle forward of the impact line are negative.

All measurements below in mm.

Level	Measurement Description	Height Above Ground
5	Window	1475
4	Window Sill	970
3	Mid Door	675
2	Occupant H-Point	620
1	Sill Top	305

Table 6 Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2005 Subaru Forester 4-door

Location	Height		(mm) From Impact Point													
			-1255	-1105	-955	-805	-655	-505	-355	-205	-55	95	245	395	545	695
Level 1 Side Sill	305	Pre				803	779	777	776	776	776	776	776	776	776	781
		Post				842	775	715	649	580	497	525	655	714	741	768
		Crush				-39	4	62	127	196	279	251	121	62	35	13
Level 2 H-Point	620	Pre				862	852	854	856	857	858	860	861	861	862	861
		Post				918	834	753	662	570	477	482	620	679	734	788
		Crush				-56	18	101	194	287	381	378	241	182	128	73
Level 3 Mid-Door	675	Pre			872	859	856	857	858	858	858	858	857	856	854	852
		Post			938	918	839	756	666	575	484	478	615	658	710	763
		Crush			-66	-59	17	101	192	283	374	380	242	198	144	89
Level 4 Window Sill	970	Pre		777	795	802	808	811	816	818	820	822	823	824	824	824
		Post		872	871	858	849	760	668	574	476	481	590	640	681	722
		Crush		-95	-76	-56	-41	51	148	244	344	341	233	184	143	102
Level 5 Window Top	1475	Pre				776	739	699	656	614	598	592	589	587	585	584
		Post				830	775	716	642	552	464	435	484	521	548	560
		Crush				-54	-36	-17	14	62	134	157	105	66	37	24

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

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

The crush profile grid is established prior to test day based on an estimated impact point. The final distance to impact is determined after final dummy positioning. The pole is aligned with the center of gravity of the head.

Table 6 Vehicle Exterior Crush Profiles - All Levels, Continued

Vehicle: 2005 Subaru Forester 4-door

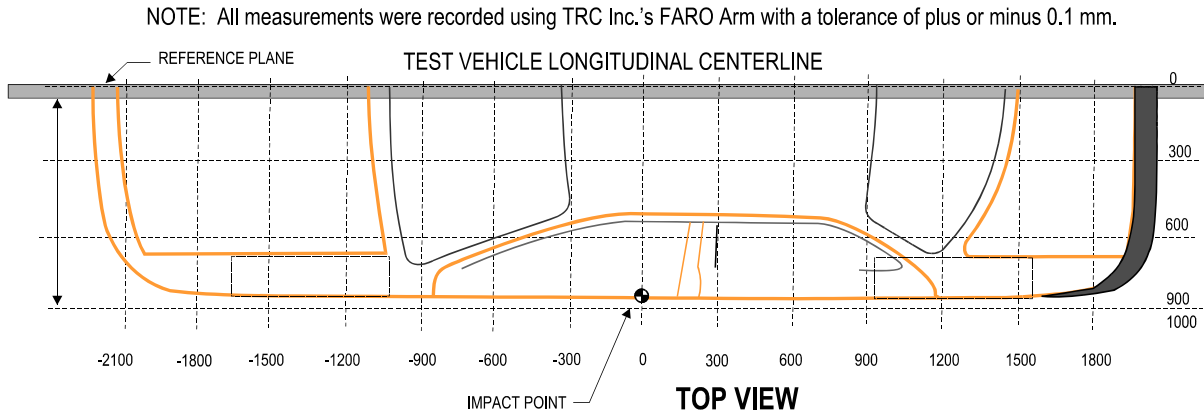
			(mm) From Impact Point												
			845	995	1145	1295	1445	1595	1745	1895	2045	2195	2345	2495	2645
Location	Height														
Level 1 Side Sill	305	Pre	801												
		Post	811												
		Crush	-10												
Level 2 H-Point	620	Pre	863												
		Post	842												
		Crush	21												
Level 3 Mid-Door	675	Pre	856	869											
		Post	825	859											
		Crush	31	10											
Level 4 Window Sill	970	Pre	823	811	821										
		Post	761	789	810										
		Crush	62	22	11										
Level 5 Window Top	1475	Pre	582	581	579										
		Post	565	571	574										
		Crush	17	10	5										

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

Figure 5 Vehicle Damage Profile Distances

Test Vehicle: 2005 Subaru Forester 4-door

Test Date: 07/12/07



MEASUREMENT CONVENTIONS:

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

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

DAMAGE PROFILE DISTANCES

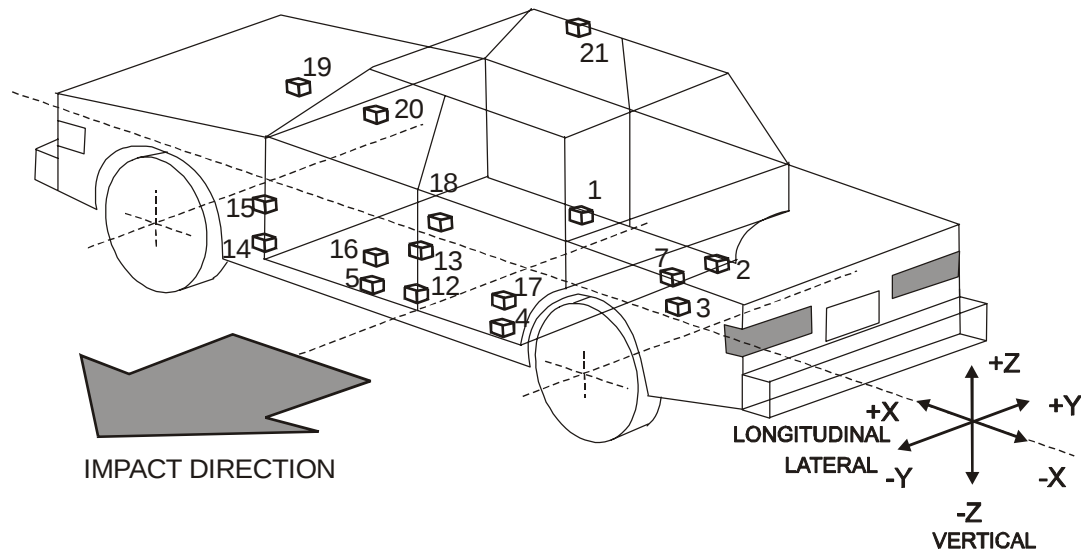
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max. Static Crush (mm)
1	845 mm	4	823	761	62
2	545 mm	3	854	710	144
3	95 mm	3	858	478	380
4	-205 mm	2	857	570	287
5	-505 mm	4	823	761	62
6	-805 mm	3	859	918	-59

Reference plane is parallel to test vehicle longitudinal centerline.

Given dimensions = Reference plane to car body.

Figure 6 Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2005 Subaru Forester 4-door



- 1-Right Front Side Sill
- 2-Right Side Sill at Rear Seat
- 3-Rear Floorpan above Axle
- 4-Left Side Sill at Rear Seat
- 5-Left Front Side Sill
- 6-Left Front Door on Centerline
- 7-Right Rear Occupant Compartment
- 8-Left Front Door Mid Rear
- 9-Left Front Door Upper Centerline
- 10-Left Rear Door Mid Rear
- 11-Left Rear Door Upper Centerline

- 12-Left Side Lower B-pillar
- 13-Left Side Middle B-pillar
- 14-Left Side Lower A-pillar
- 15-Left Side Middle A-pillar
- 16-Left Side Front Seat Track at H-point
- 17-Left Rear Seat Track at H-point
- 18-Vehicle Center of Gravity
- 19-Top of Engine
- 20-Firewall
- 21-Right Side Roof Rail

Table 7 Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2005 Subaru Forester 4-door

Location	Coordinates (millimeters)			Positive Direction Max. Time (g) (ms)		Negative Direction Max. Time (g) (ms)	
	X	Y	Z				
1 Right Side Sill at Front Seat	2900	660	371				
Longitudinal				1.9	116.0	4.1	53.4
Lateral				16.2	30.8	1.0	279.4
Vertical				2.8	67.1	3.1	26.9
Resultant				16.5	30.7		
2 Right Side Sill at Rear Seat	2080	655	371				
Longitudinal				2.4	116.2	3.4	53.7
Lateral				14.6	31.4	1.1	265.5
Vertical				3.8	70.2	4.3	28.3
Resultant				14.9	31.3		
3 Rear Floorpan Above Axle	1363	0	586				
Longitudinal				2.2	136.0	5.5	70.8
Lateral				12.3	43.2	1.1	193.7
Vertical ¹				3.0	16.3	36.3	59.8
Resultant				38.0	60.2		
4 Left Side Sill at Rear Seat	2095	660	382				
Longitudinal							
Lateral				57.6	15.7	0.9	267.1
Vertical							
Resultant							
5 Left Side Sill at Front Seat	2945	660	395				
Longitudinal							
Lateral				65.4	16.1	15.1	55.4
Vertical							
Resultant							

Table 7 Test Vehicle Accelerometer Locations and Data Summary, Continued

Vehicle: 2005 Subaru Forester 4-door

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
6 Left Front Door on Centerline	2790	723	732				
Longitudinal							
Lateral				104.1	12.4	87.6	21.4
Vertical							
Resultant							
7 Right Rear Occupant Compartment	2030	510	454				
Longitudinal							
Lateral				13.1	27.4	1.2	265.4
Vertical							
Resultant							
8 Left Front Door Mid-Rear	2455	727	732				
Longitudinal							
Lateral				101.0	12.8	30.2	30.1
Vertical							
Resultant							
9 Left Front Door Upper Centerline	2790	719	975				
Longitudinal							
Lateral				107.2	9.0	31.6	21.1
Vertical							
Resultant							
10 Left Rear Door Mid Rear	1640	720	747				
Longitudinal							
Lateral				28.6	17.2	8.1	9.1
Vertical							
Resultant							

Table 7 Test Vehicle Accelerometer Locations and Data Summary, Continued

Vehicle: 2005 Subaru Forester 4-door

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
11 Left Rear Door Upper Centerline	1855	700	1021				
Longitudinal							
Lateral				80.2	30.4	26.8	22.5
Vertical							
Resultant							
12 Left Lower B-Pillar	2305	790	586				
Longitudinal							
Lateral				68.9	15.4	4.2	29.0
Vertical							
Resultant							
13 Left Middle B-Pillar	2280	790	878				
Longitudinal							
Lateral				95.5	18.3	7.3	28.6
Vertical							
Resultant							
14 Left Lower A-Pillar	3290	775	554				
Longitudinal							
Lateral				20.7	6.1	15.4	9.4
Vertical							
Resultant							
15 Left Middle A-Pillar	3285	765	884				
Longitudinal							
Lateral				21.3	6.3	6.2	9.5
Vertical							
Resultant							

Table 7 Test Vehicle Accelerometer Locations and Data Summary, Continued

Vehicle: 2005 Subaru Forester 4-door

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
16 Left Front Seat Track	2480	510	385				
Longitudinal Lateral Vertical Resultant							
				81.8	20.5	4.2	10.5
17 Left Rear Seat Track	1695	590	435				
Longitudinal Lateral Vertical Resultant							
				13.2	26.8	0.7	279.0
18 Vehicle CG		478	620				
Longitudinal Lateral Vertical Resultant				19.9	35.3	39.7	30.8
				70.0	30.6	38.5	37.8
				26.8	30.5	13.4	36.5
				84.7	30.6		
19 Top of Engine	4232	10	922				
Longitudinal Lateral Vertical Resultant				5.3	78.4	11.1	46.0
				12.5	69.1	4.8	210.9
20 Firewall	4052	0	931				
Longitudinal Lateral Vertical Resultant				3.5	124.4	11.1	34.6
				13.1	40.6	1.4	4.2

Table 7 Test Vehicle Accelerometer Locations and Data Summary, Continued

Vehicle: 2005 Subaru Forester 4-door

Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
	X	Y	Z	Max. (g)	Time (ms)	Max. (g)	Time (ms)
21 Right Side Roof Rail	2640	525	1432				
Longitudinal				3.6	41.1	7.2	35.2
Lateral				24.6	37.3	5.4	18.9
Vertical							
Resultant							
22 Right Side Sill	2962	722	625				
Longitudinal							
Lateral				16.0	30.9	1.1	279.4
Vertical							
Resultant							
23 Rear Deck Behind Rear Axle	461	0	625				
Longitudinal				3.9	19.6	5.5	56.2
Lateral				17.4	53.9	2.7	203.4
Vertical				4.3	30.0	4.7	49.8
Resultant				17.9	54.2		

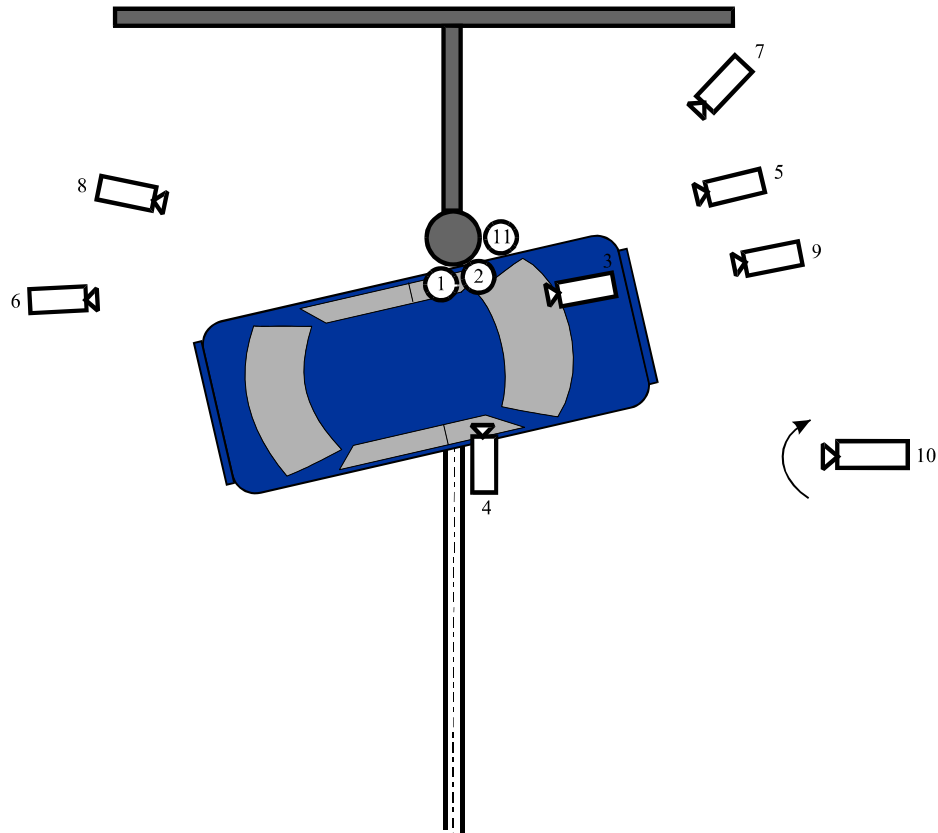
Reference: X: + Forward from rear bumper
 Y: + Rightward from vehicle centerline
 Z: + Downward from ground level

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

¹ See Data Acquisition Explanations

Figure 7 High-Speed Camera Locations and Data Summary

Vehicle: 2005 Subaru Forester 4-door



No.	Camera View	Location (mm)			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead Wide	0	0	N/A	90.0	6.5	1000
2	Overhead Tight	0	0	N/A	90.0	25	1000
3	Onboard Front - Driver	260	1500	-1240	0.5	12.5	1000
4	Onboard Side Front	1670	700	-1230	6.1	6.5	1000
5	Front Vehicle to Pole	1410	5070	-1000	0.7	12.5	1000
6	Rear Vehicle to Pole	1670	5300	-1000	3.2	12.5	1000
7	Left Front Angled	1760	3800	-1010	2.5	25	1000
8	Left Rear Angled	1350	3850	-975	0.3	25	1000
9	Vehicle Front on Driver	990	4020	-2230	1.7	50	1000
10	Panning	N/A	N/A	N/A	N/A	Zoom	30
11	Underbody	N/A	N/A	N/A	N/A	25	1000

+X: Forward (referenced to Pole) from impact point
+Y: Rightward (referenced to Pole) from impact point
+Z: Downward from ground level
Vehicle was at a 15° angle to the rigid pole.

Appendix A

Photographs



Figure A-1 Pre-Test Front View



Figure A-2 Post-Test Front View



Figure A-3 Pre-Test Left Front View



Figure A-4 Post-Test Left Front View



Figure A-5 Pre-Test Left Side View



Figure A-6 Post-Test Left Side View



Figure A-7 Pre-Test Left Rear View

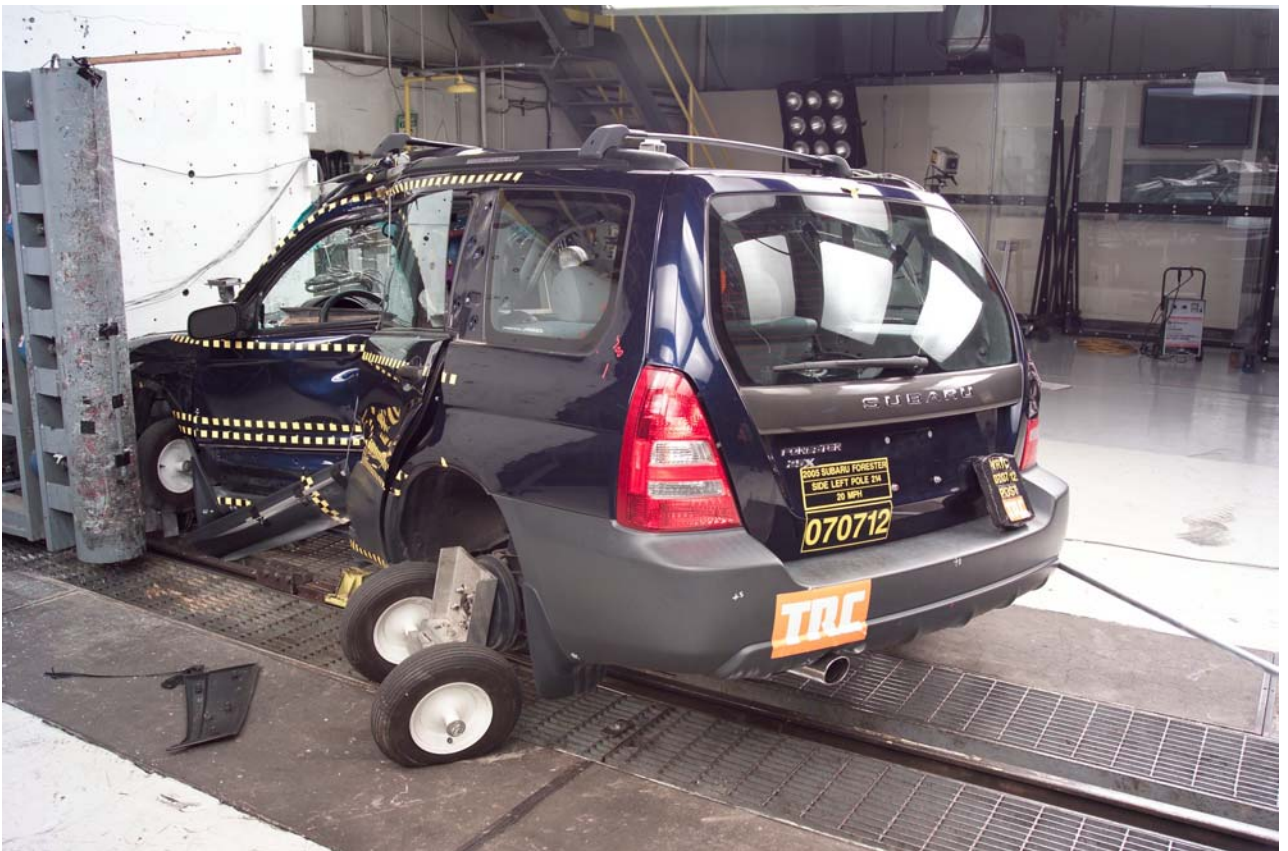


Figure A-8 Post-Test Left Rear View



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

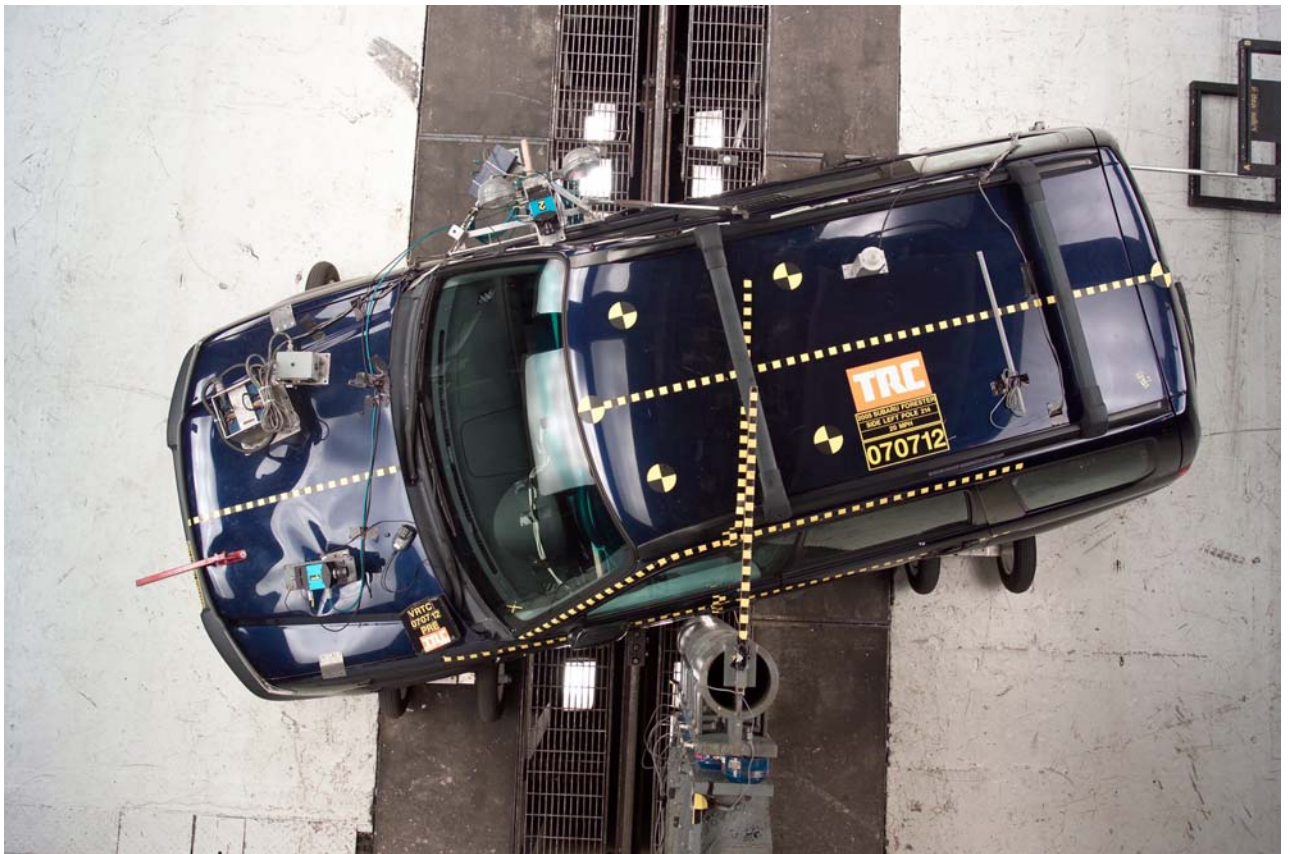


Figure A-17 Pre-Test Overhead View



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 Fuel Filler Cap View



Figure A-22 Post-Test Fuel Filler Cap View



Figure A-23 Pre-Test Pole Barrier Front View



Figure A-24 Post-Test Pole Barrier Front View



Figure A-25 Pre-Test Driver Dummy Side View



Figure A-26 Post-Test Driver Dummy Side View



Figure A-27 Pre-Test Right Side Dummy Occupant Compartment View



Figure A-28 Post-Test Right Side Dummy Occupant Compartment View



Figure A-29 Pre-Test Driver Dummy and Door Clearance View



Figure A-30 Post-Test Driver Dummy and Door Clearance View



Figure A-31 Pre-Test Driver Dummy Showing Belts, Chalking, and Contact Switches

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Figure A-32 Pre-Test Driver Door Panel View

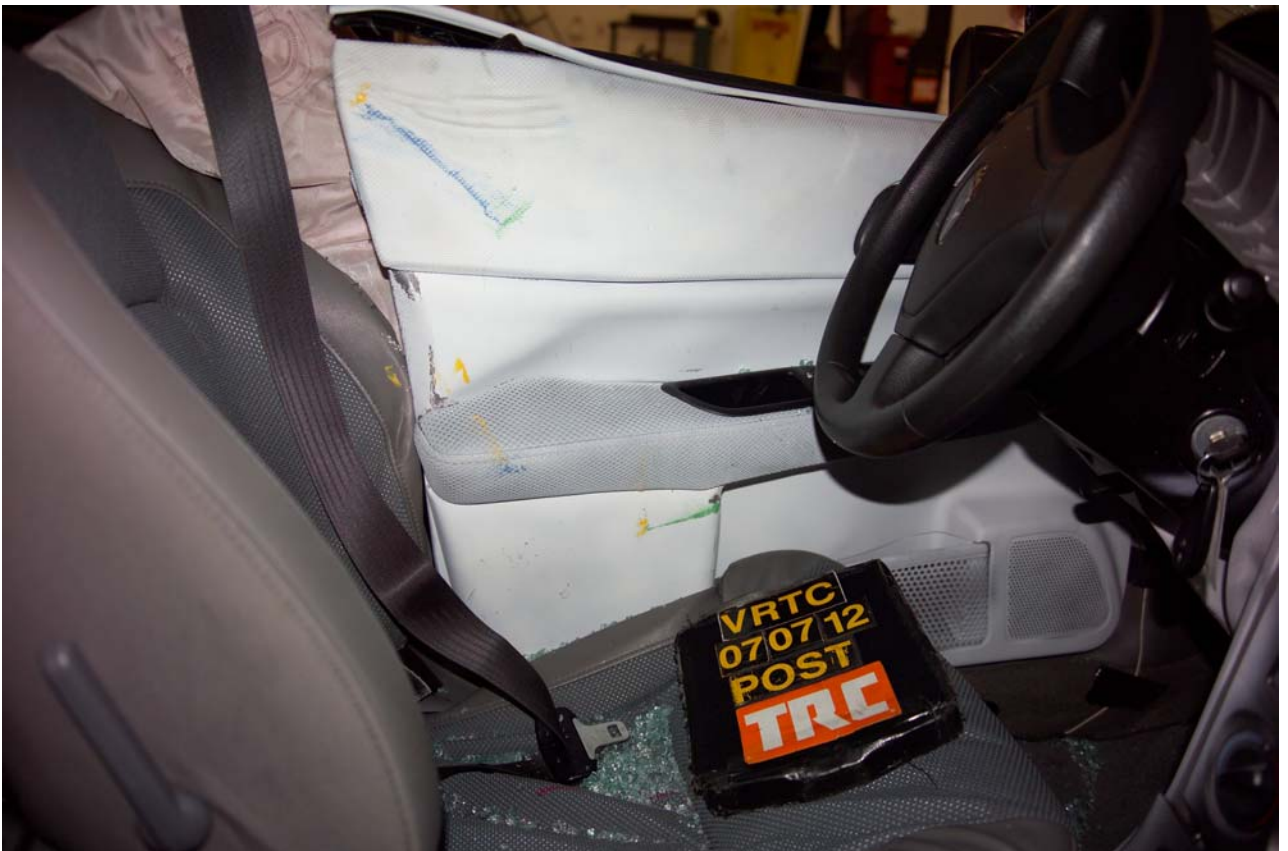


Figure A-33 Post-Test Driver Door Panel View



Figure A-34 Post-Test Driver Dummy Head Contact View

Intentionally Left Blank



Figure A-35 Post-Test Driver Dummy Door Contact - View 1



Figure A-36 Post-Test Driver Dummy Door Contact - View 2

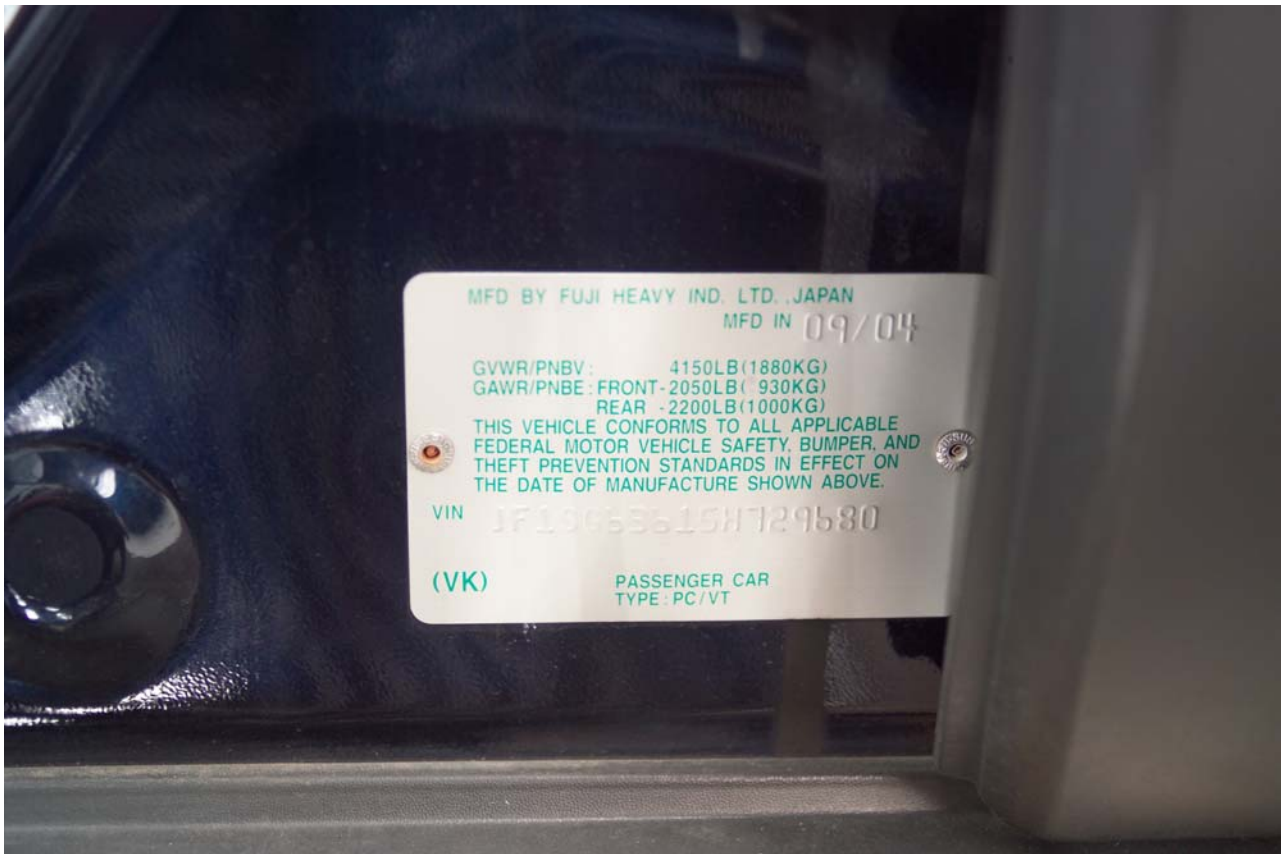


Figure A-37 Certification Label View



Figure A-38 Recommended Tire Pressure Label View



Figure A-39 Pre-Test Ballast View

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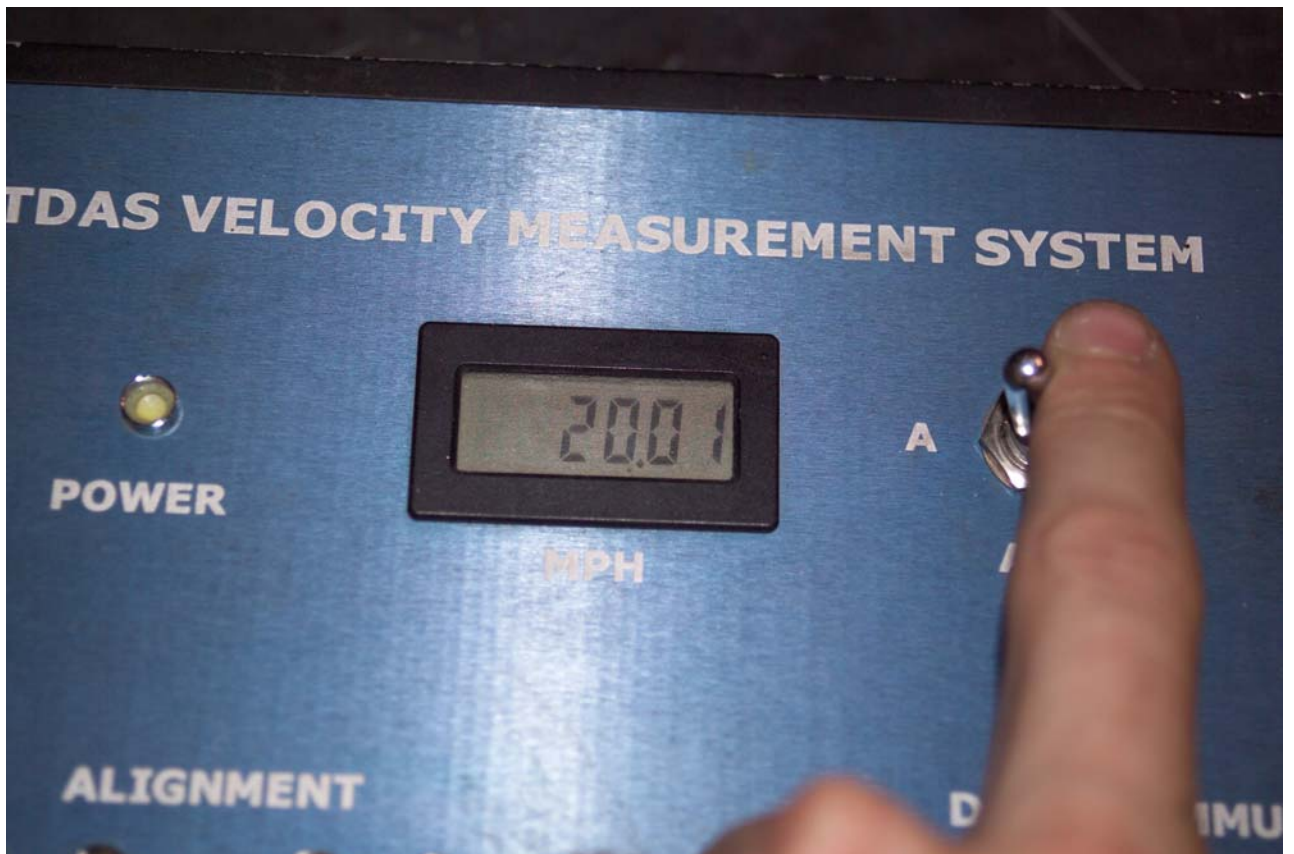


Figure A-40 Post-Test Digital Light Trap Read-Out - View 1

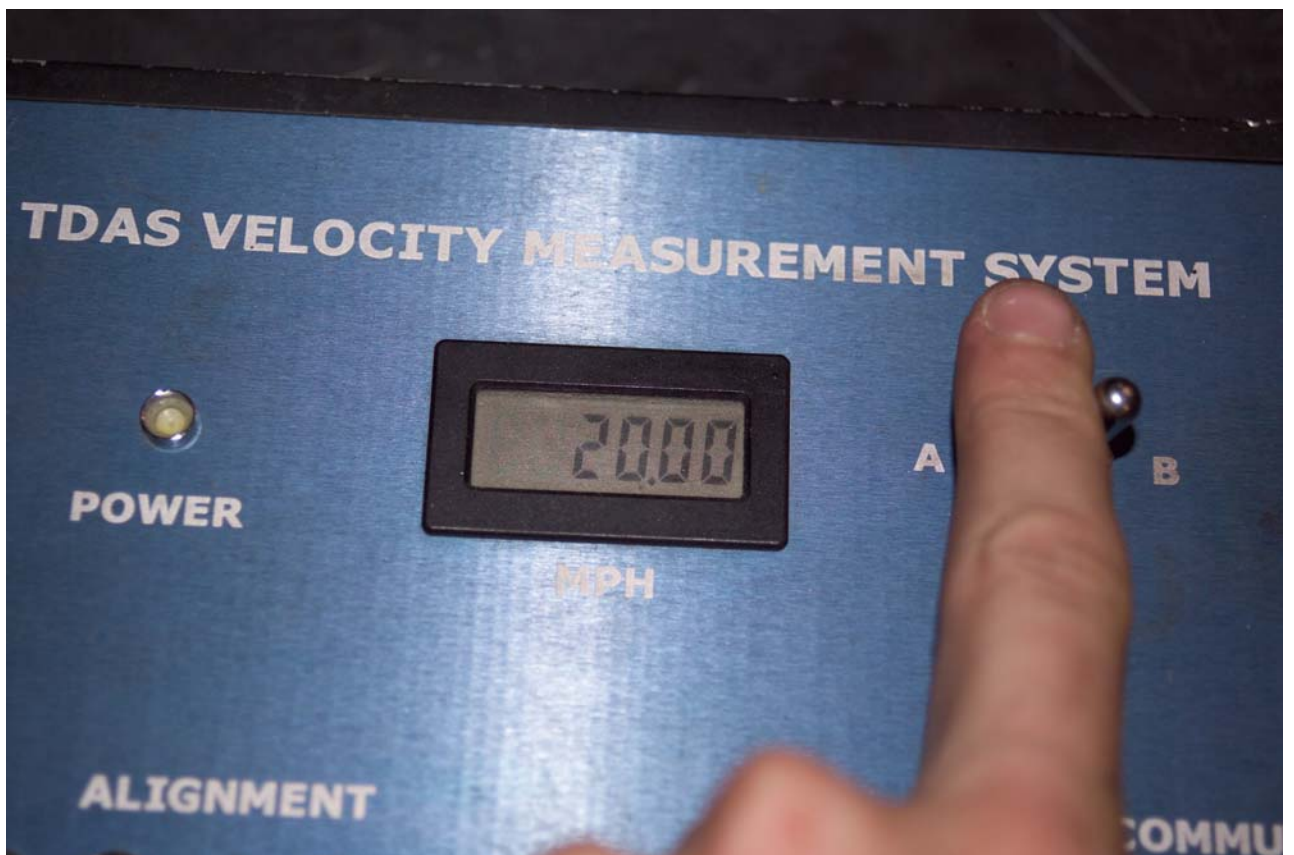


Figure A-41 Post-Test Digital Light Trap Read-Out - View 2

Appendix B

Data Plots



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

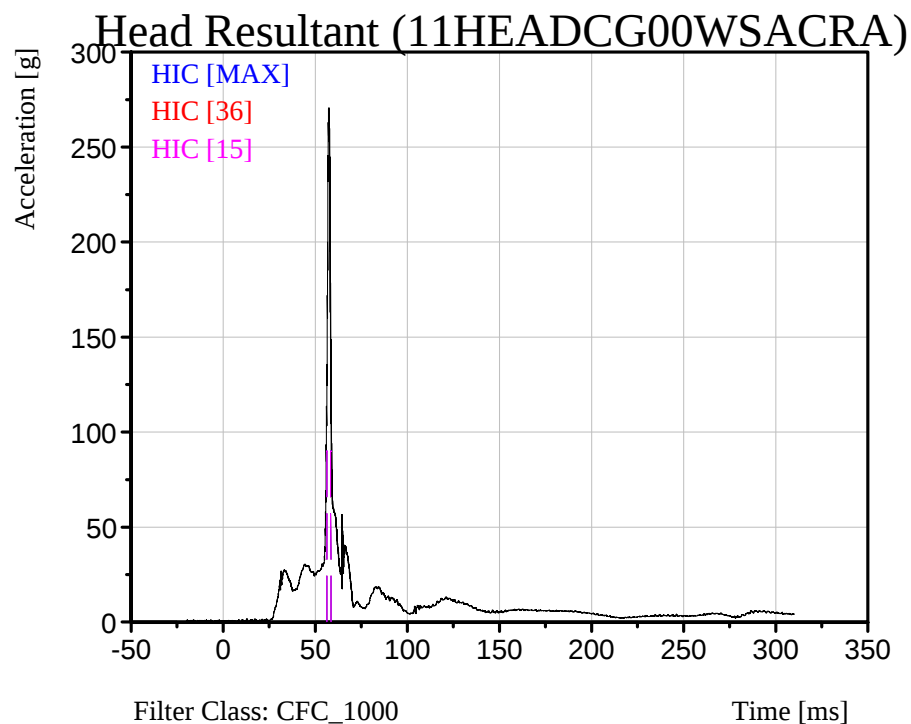
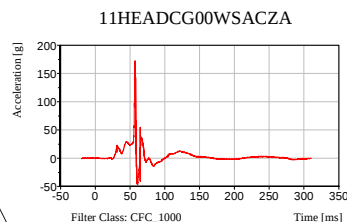
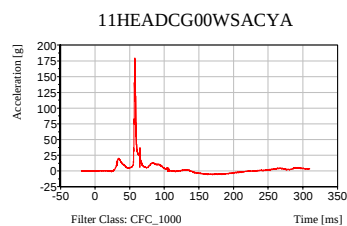
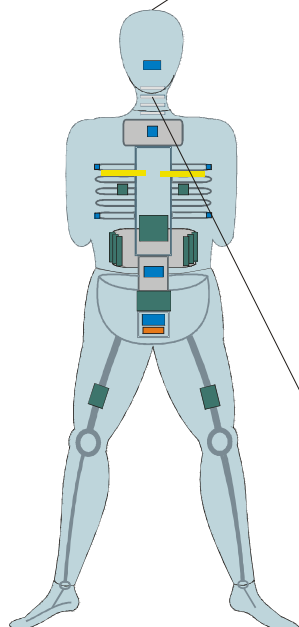
Head Injury Criterion (HIC)

Date: 07/12/2007
Time: 15:12

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 070712



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 1,463.42	56.32 ms	58.56 ms	208.86 g
HIC [36] = 1,463.42	56.32 ms	58.56 ms	208.86 g
HIC [15] = 1,463.42	56.32 ms	58.56 ms	208.86 g

Dummy:
Seating Position:
Driver

HIC Source Code: SAE J2052 ISO/TC22/SC12/WG3 N 282 (Issued 1990-03-16)

B-2

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

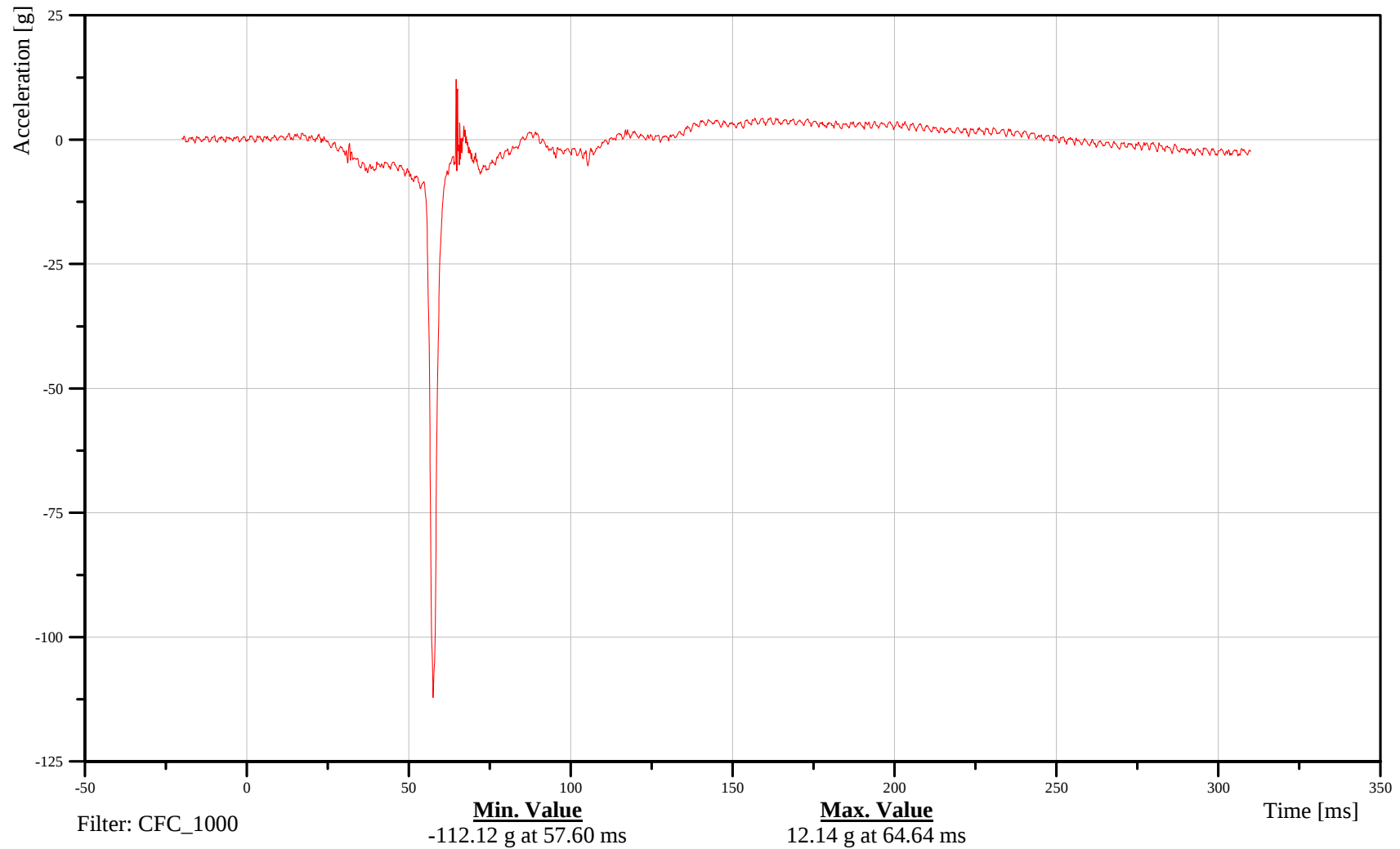
Head X-Axis Acceleration

Customer: VRTC

11HEADCG00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-3

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

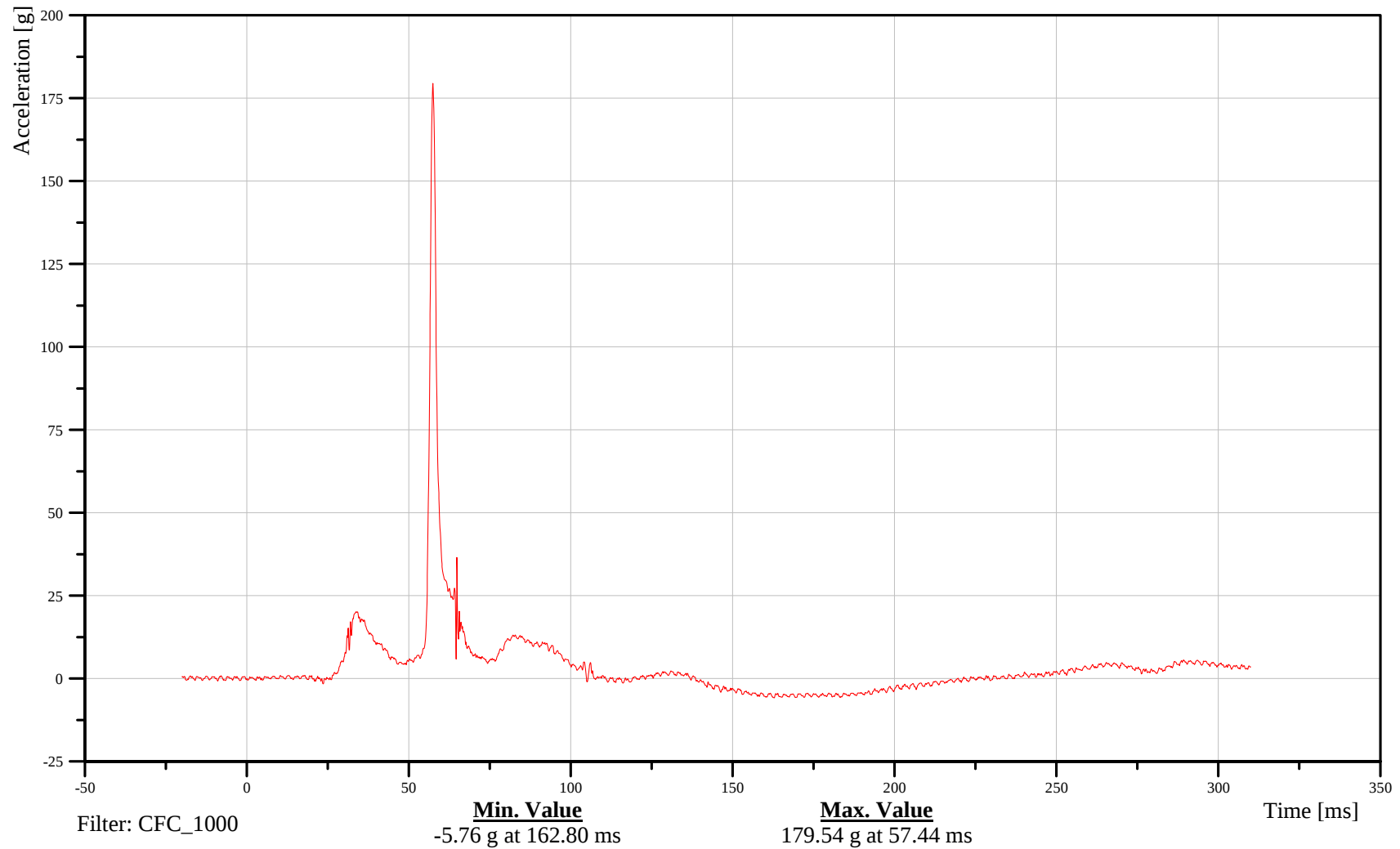
Head Y-Axis Acceleration

Customer: VRTC

11HEADCG00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-4

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

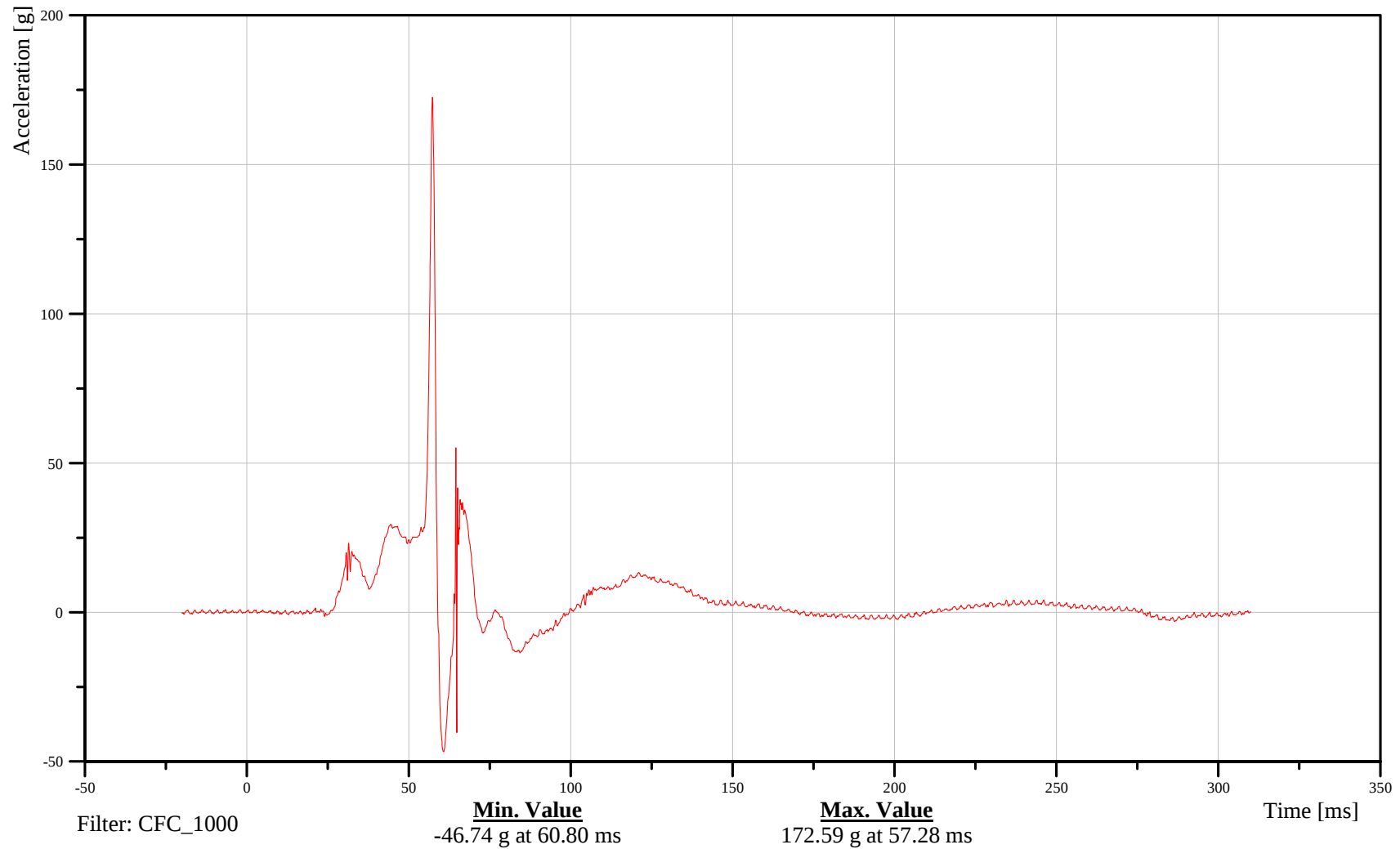
Head Z-Axis Acceleration

Customer: VRTC

11HEADCG00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-5

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

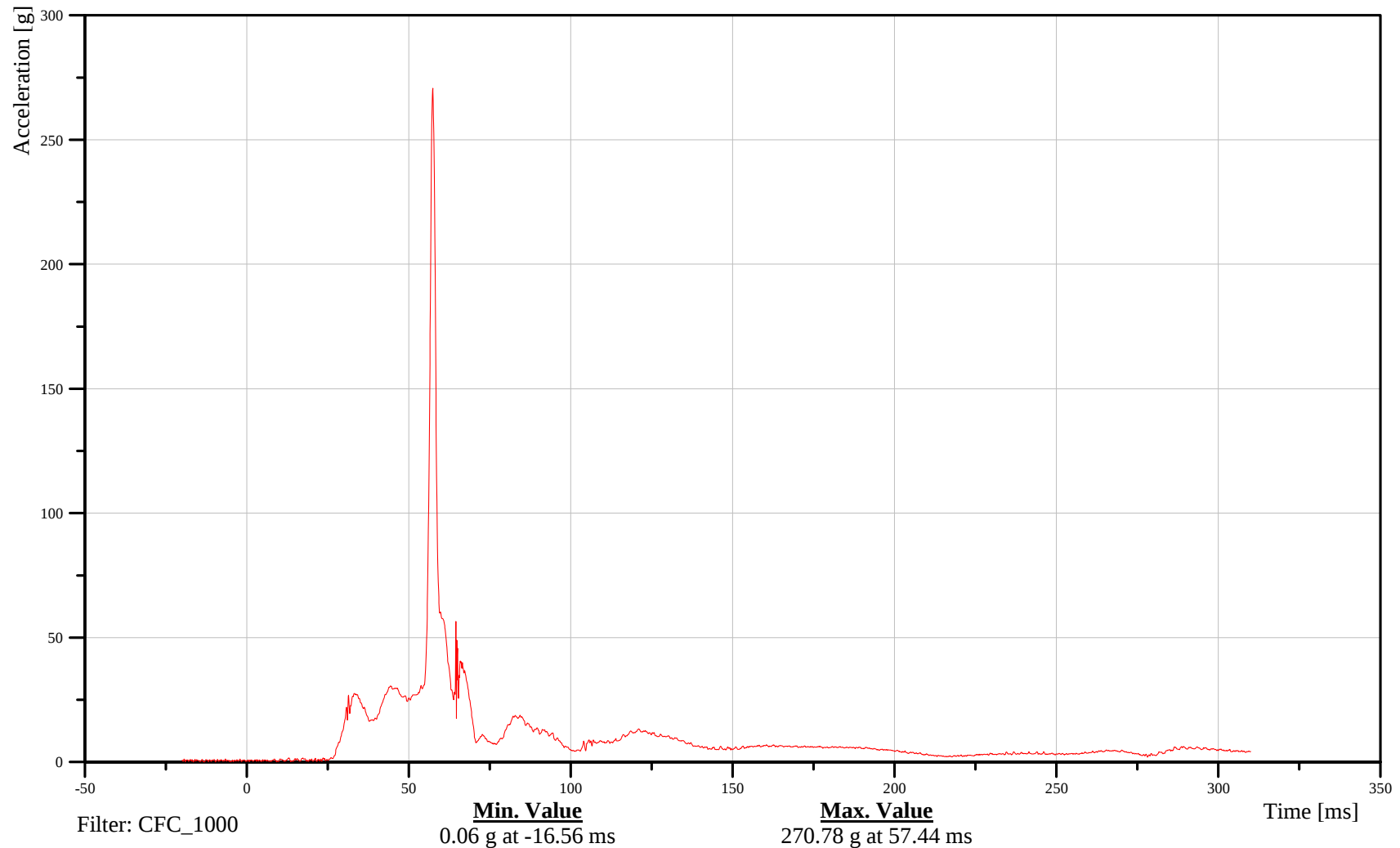
Head Resultant Acceleration

Customer: VRTC

11HEADCG00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-6

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 7/12/2007
Time: 15:12

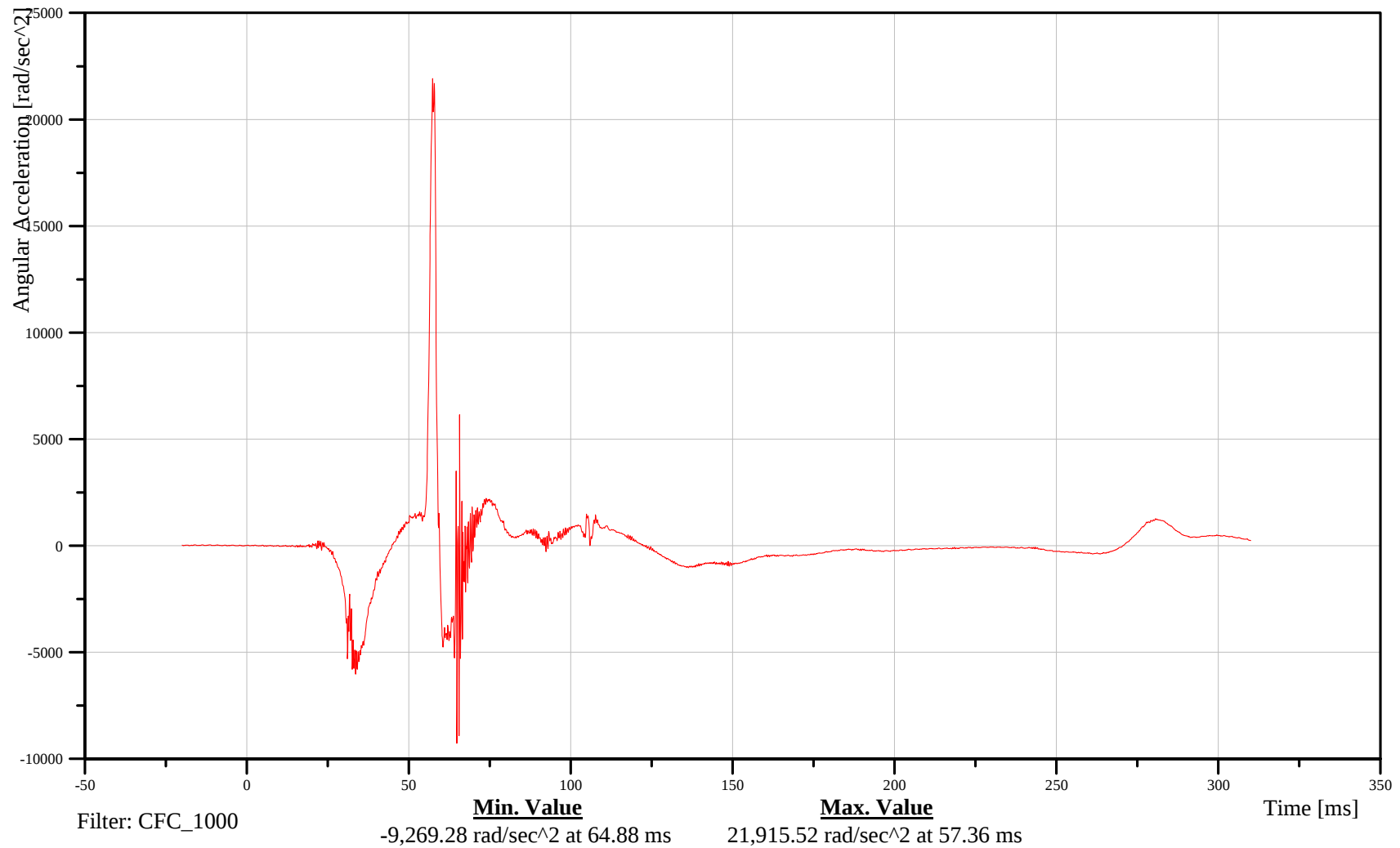
Head X-Axis Angular Displacement

Customer: VRTC

11HEADCG00WSANXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-7

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 7/12/2007
Time: 15:12

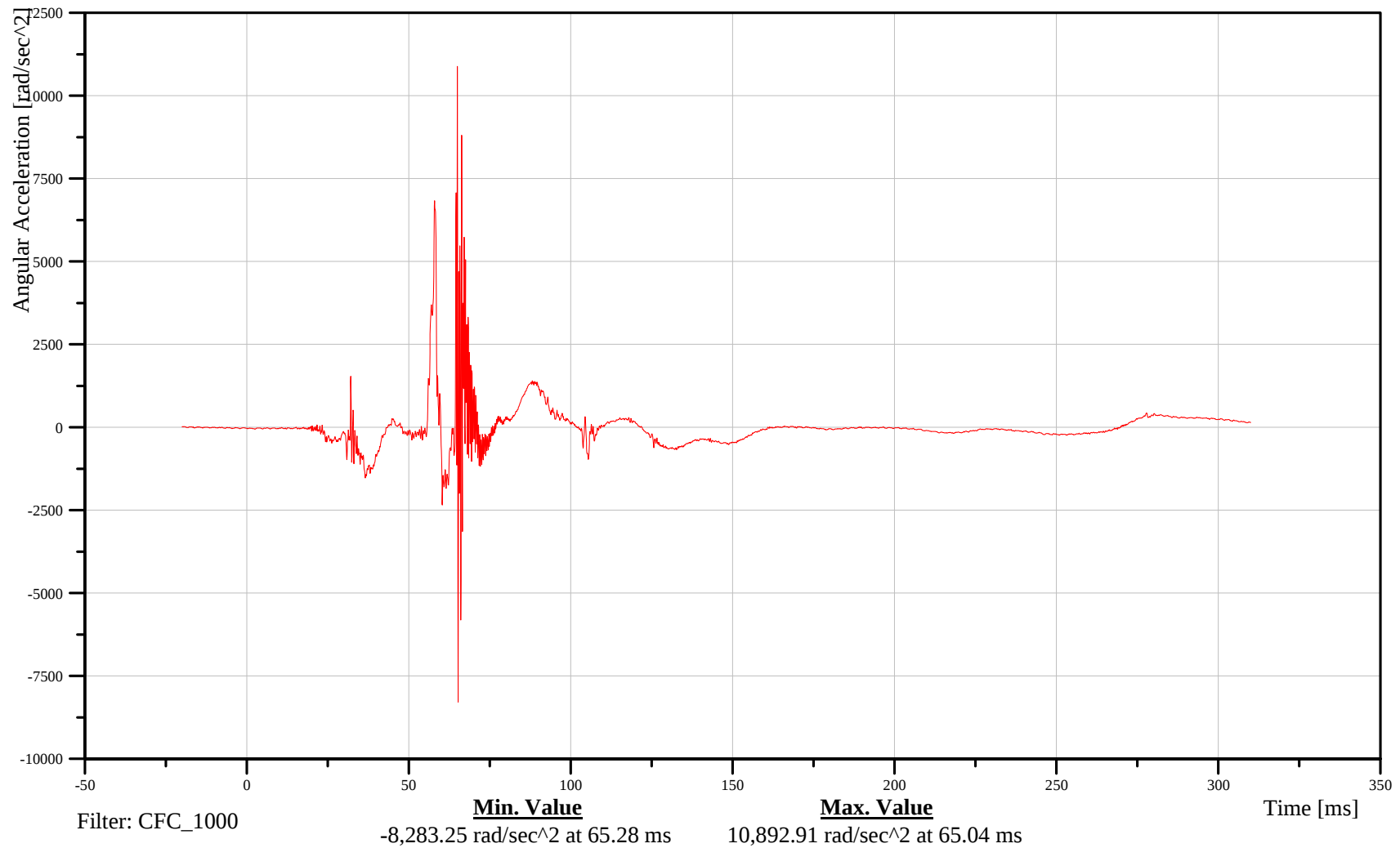
Head Y-Axis Angular Displacement

Customer: VRTC

11HEADC00WSANYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-8

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 7/12/2007
Time: 15:12

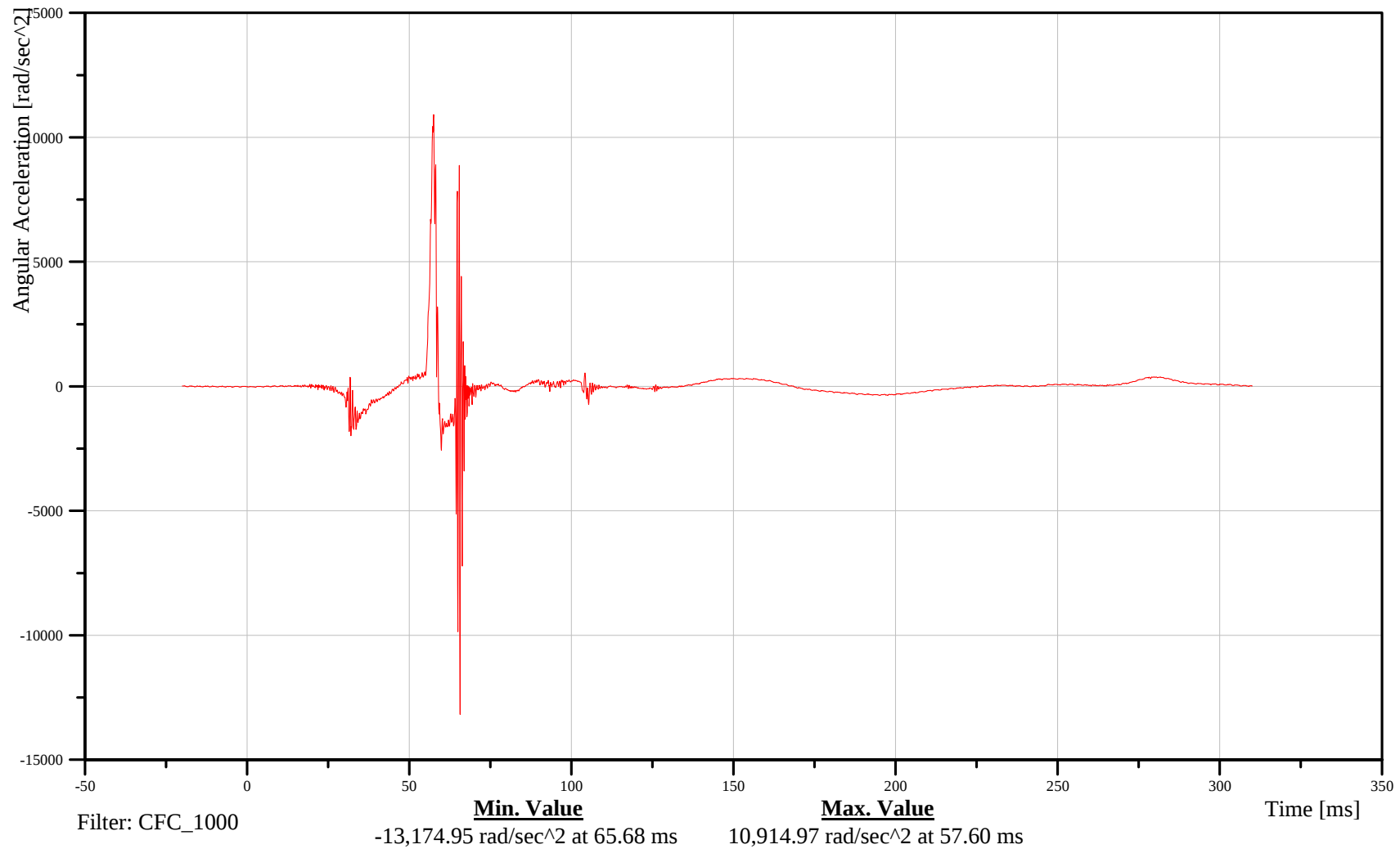
Head Z-Axis Angular Displacement

Customer: VRTC

11HEADCG00WSANZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-9

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

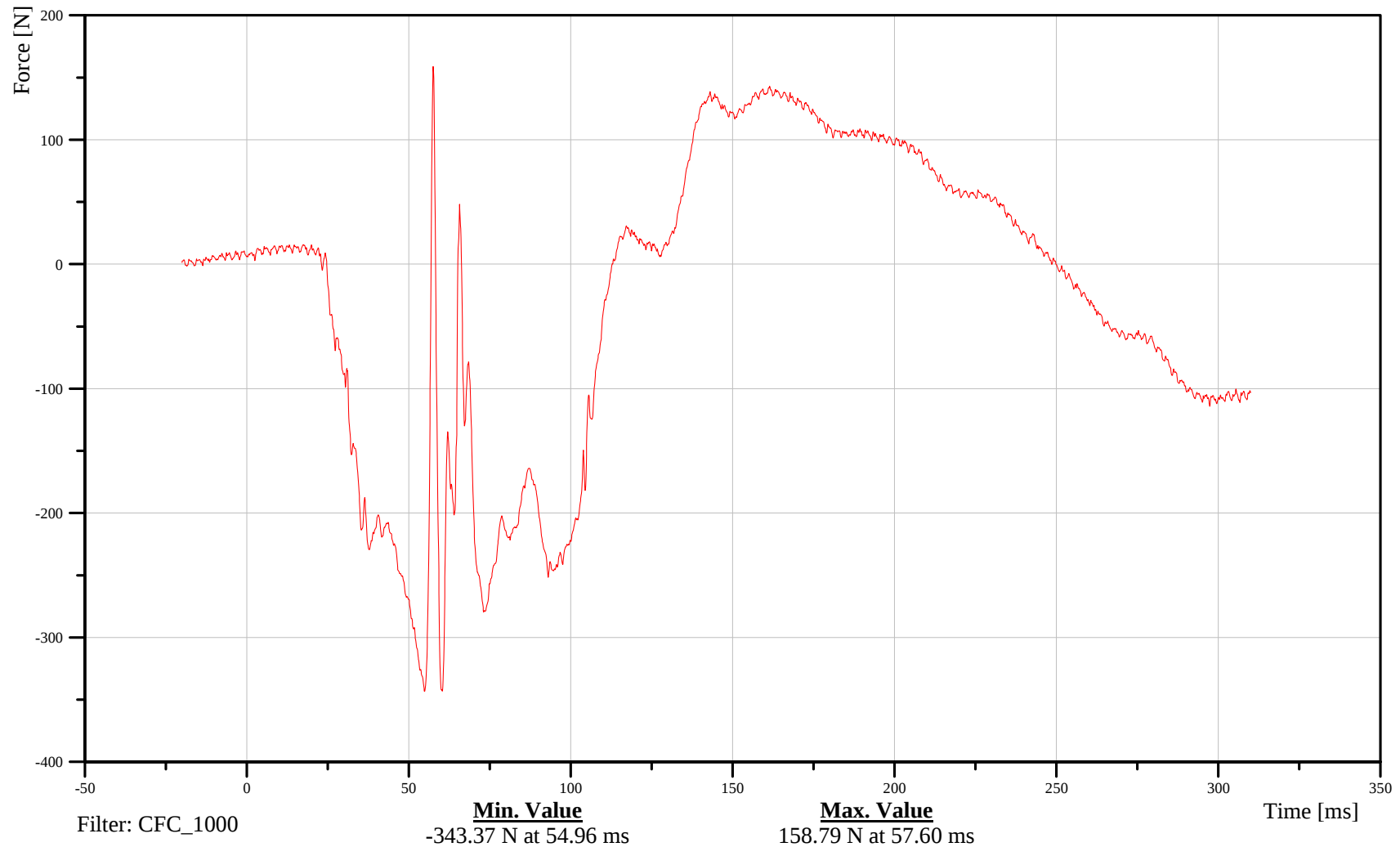
Upper Neck X-Axis Force

Customer: VRTC

11NECKUP00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-10

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

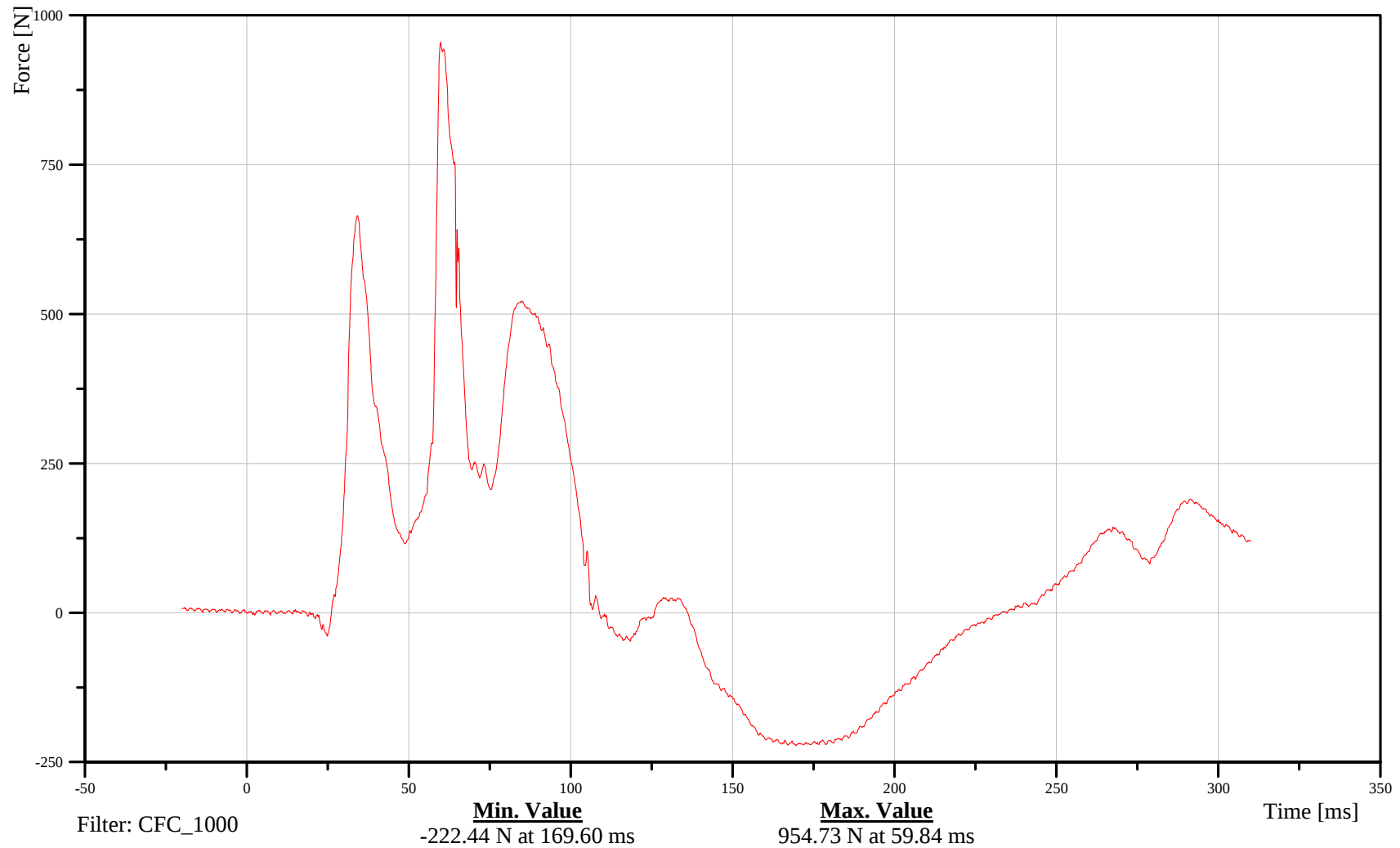
Upper Neck Y-Axis Force

Customer: VRTC

11NECKUP00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-11

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

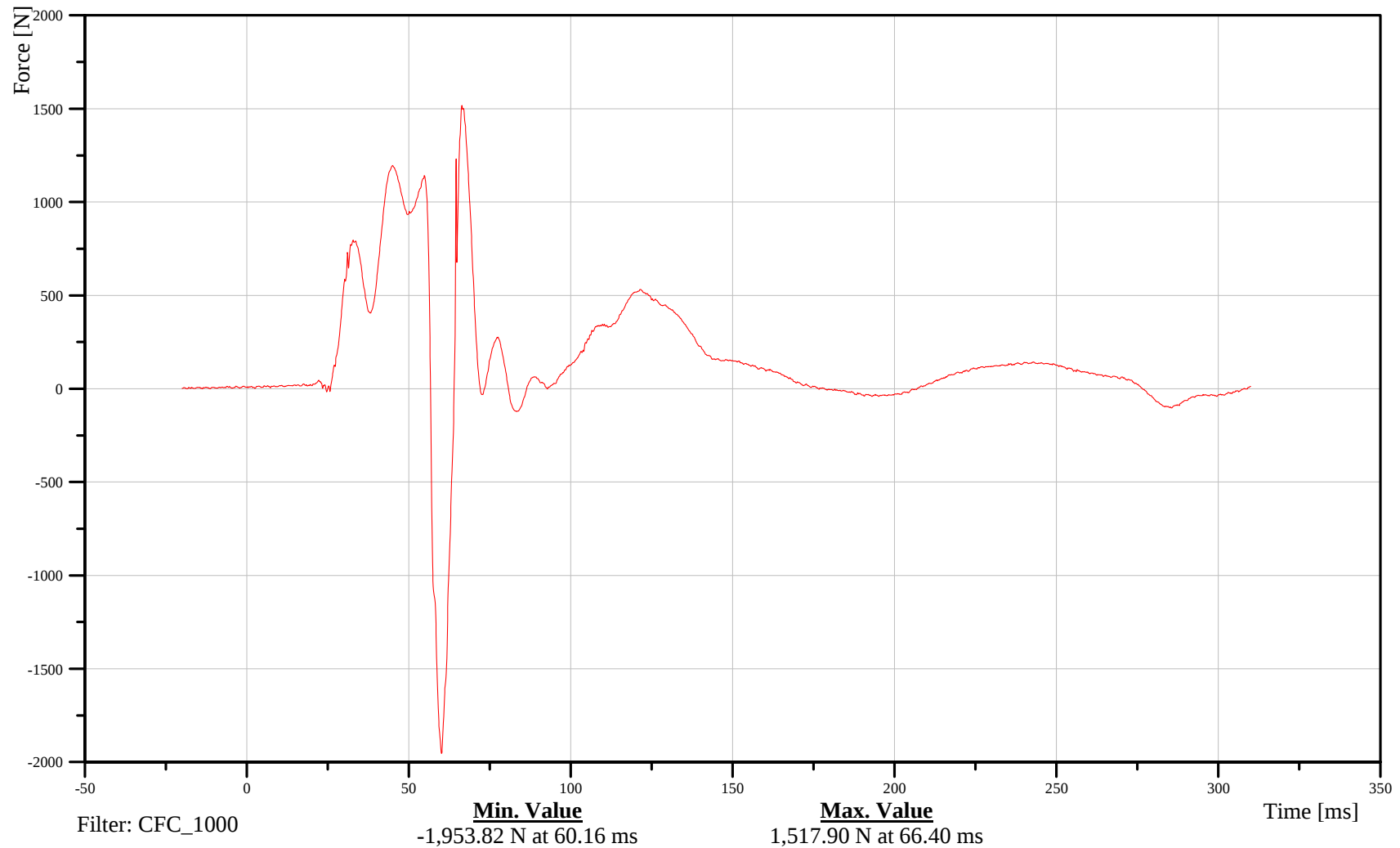
Upper Neck Z-Axis Force

Customer: VRTC

11NECKUP00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-12

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

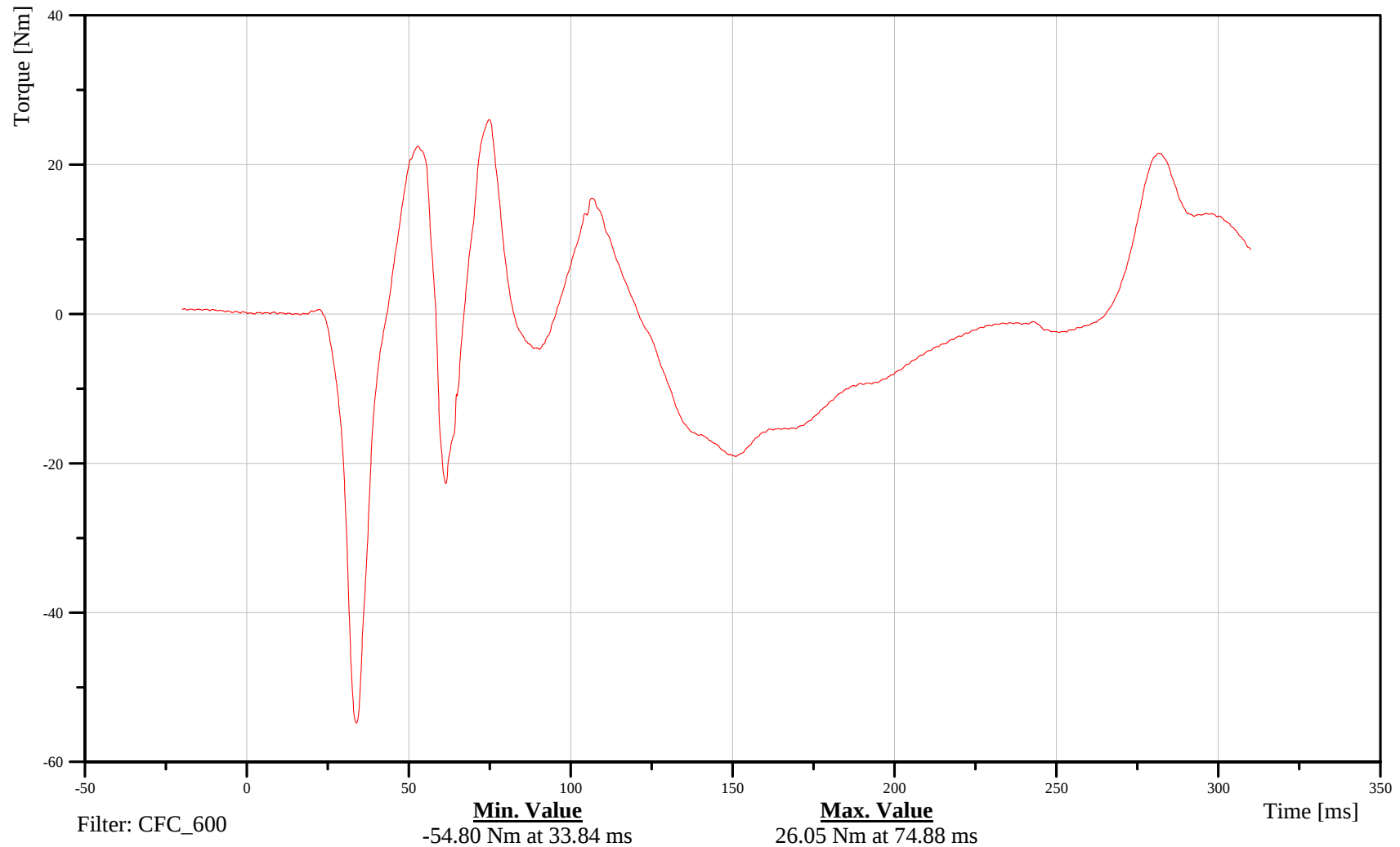
Upper Neck Moment About X Axis

Customer: VRTC

11NECKUP00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-13

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

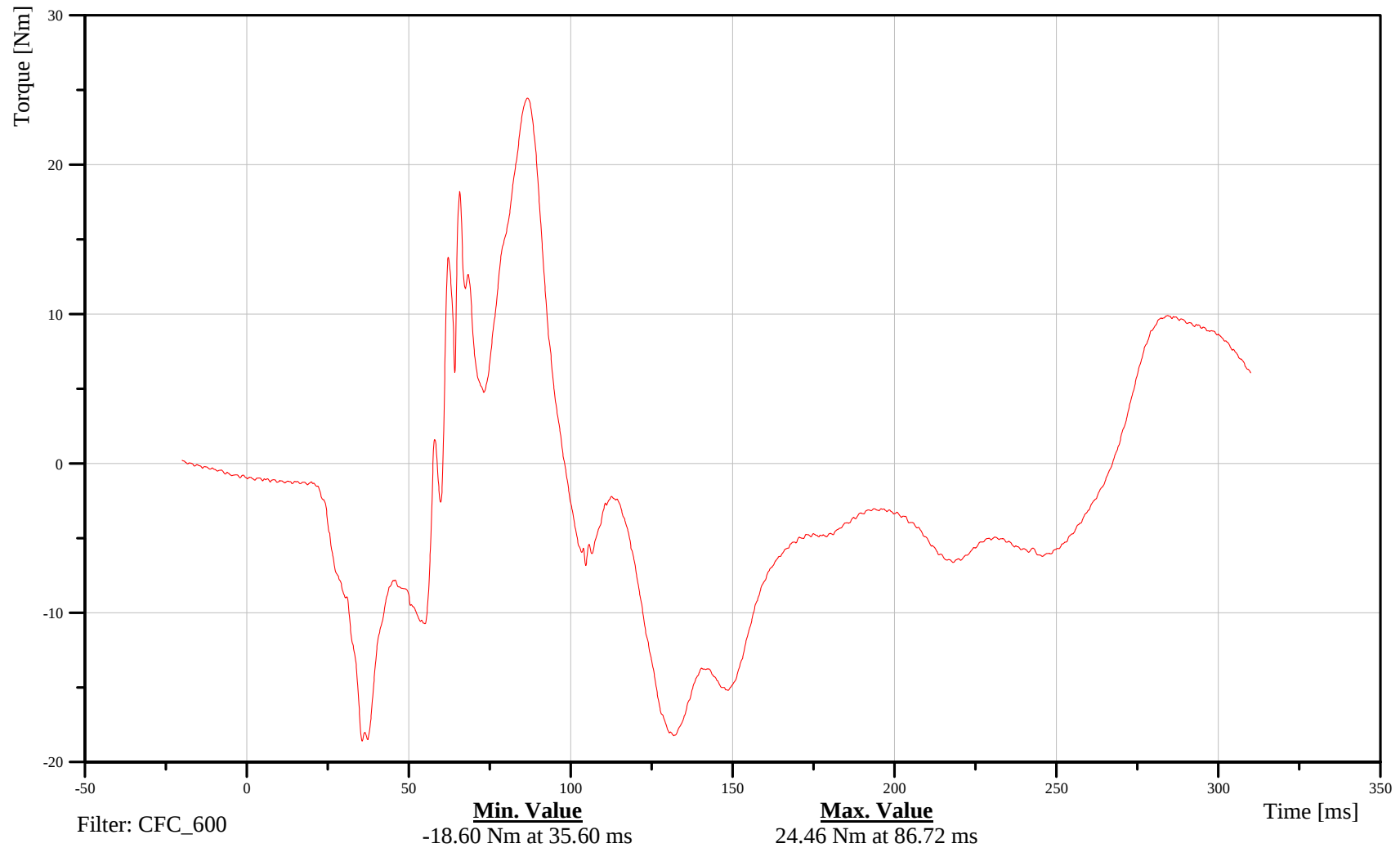
Upper Neck Moment About Y Axis

Customer: VRTC

11NECKUP00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-14

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

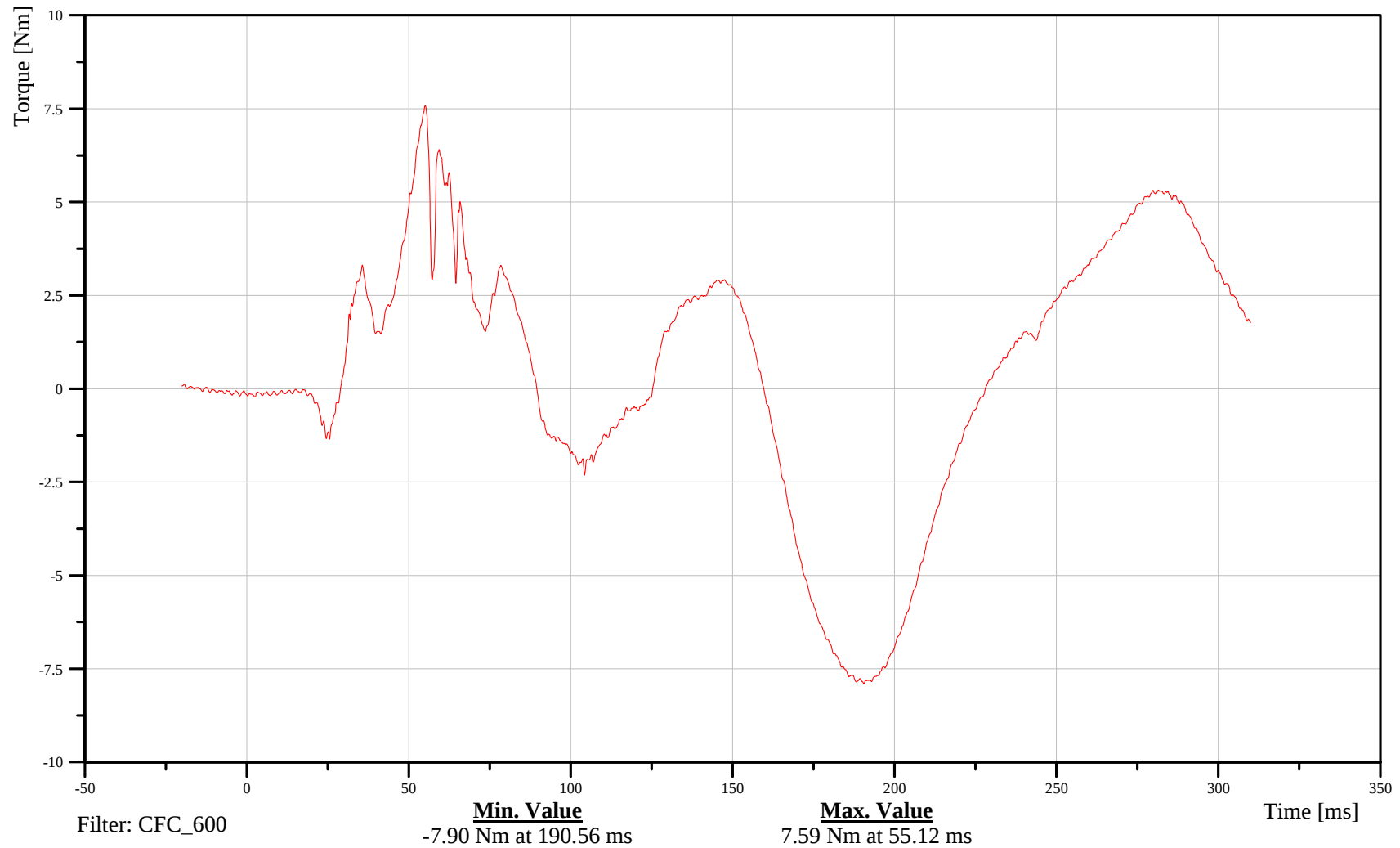
Upper Neck Moment About Z Axis

Customer: VRTC

11NECKUP00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-15

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

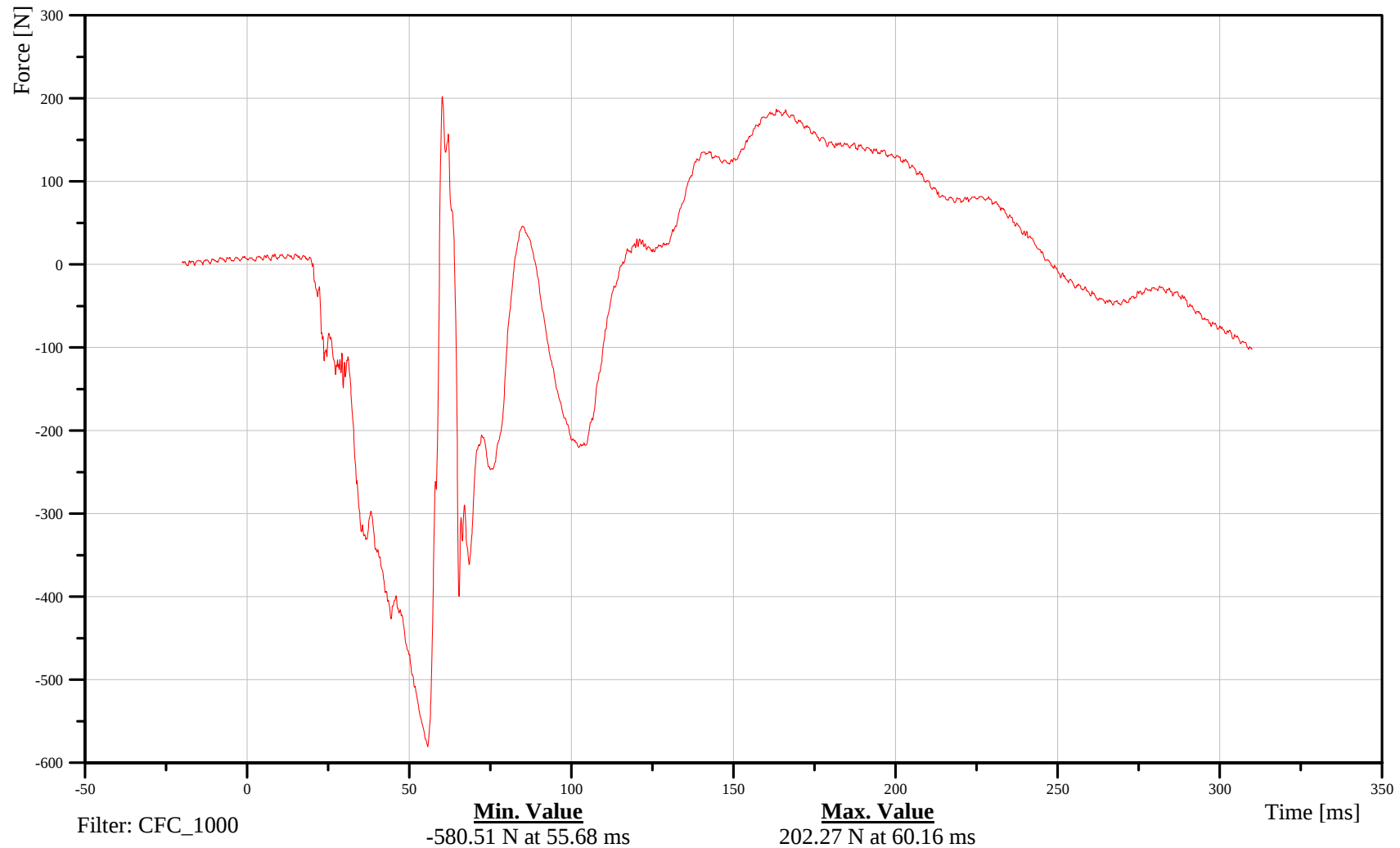
Lower Neck X-Axis Force

Customer: VRTC

11NECKLO00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-16

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

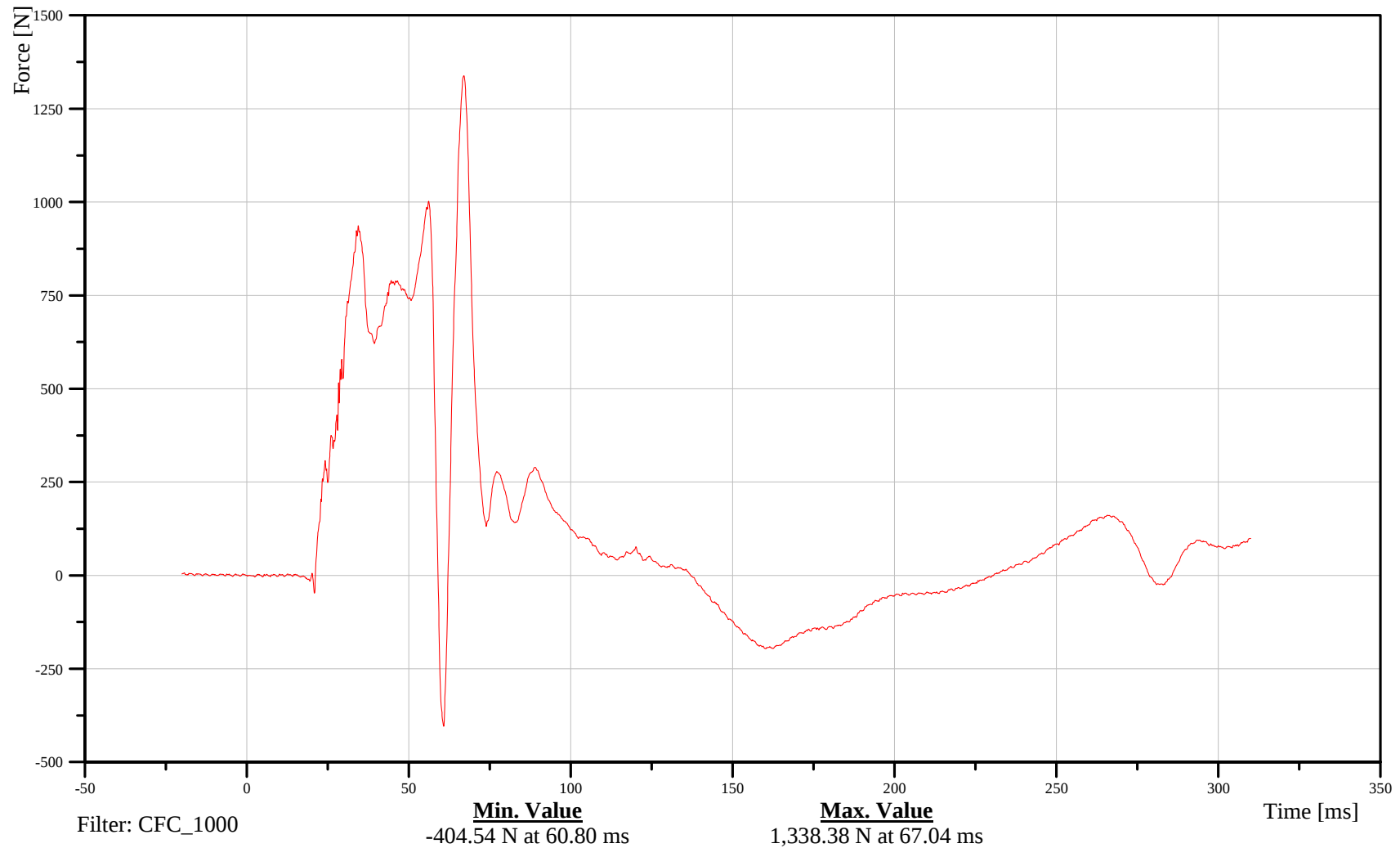
Lower Neck Y-Axis Force

Customer: VRTC

11NECKLO00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-17

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

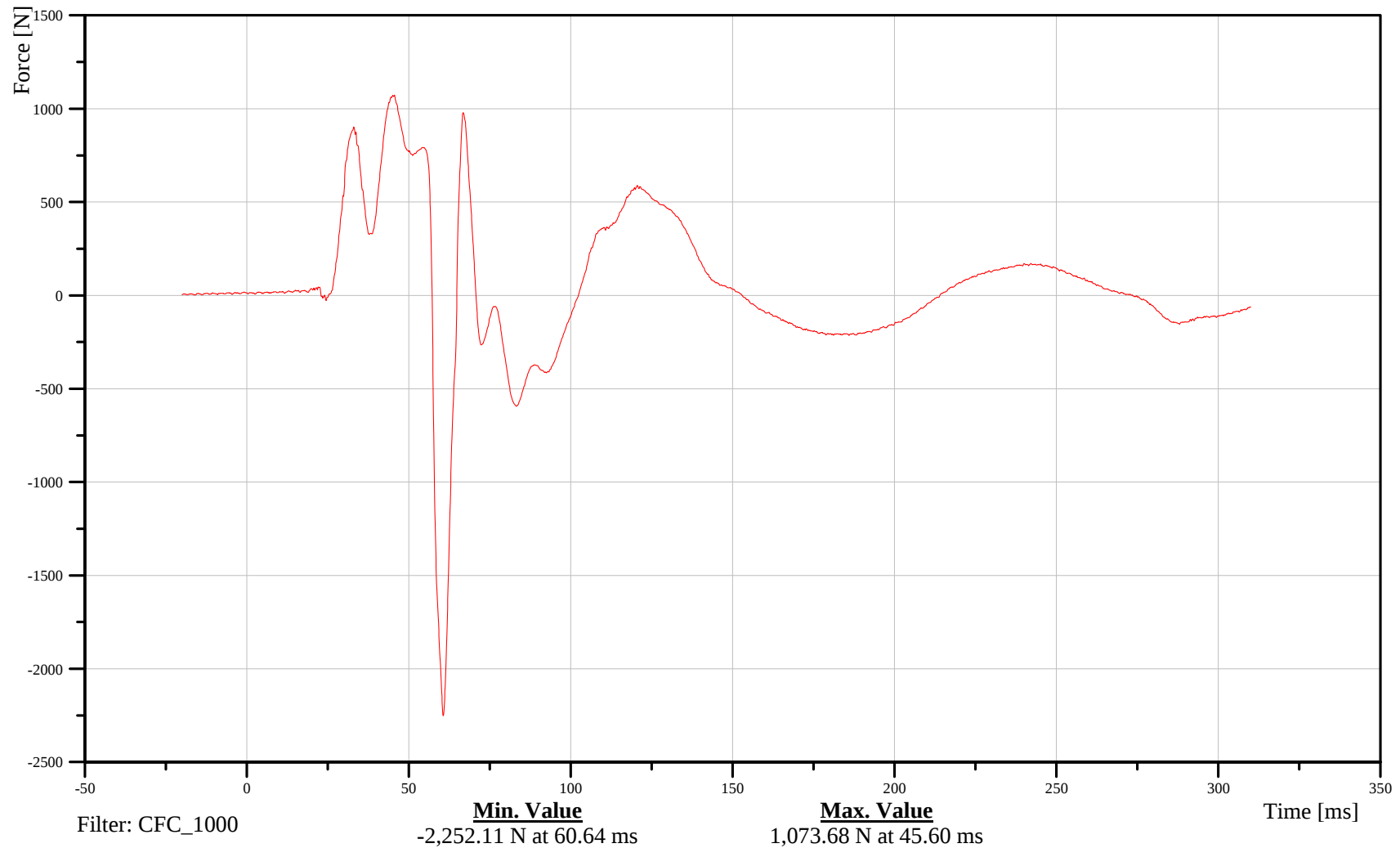
Lower Neck Z-Axis Force

Customer: VRTC

11NECKLO00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-18

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

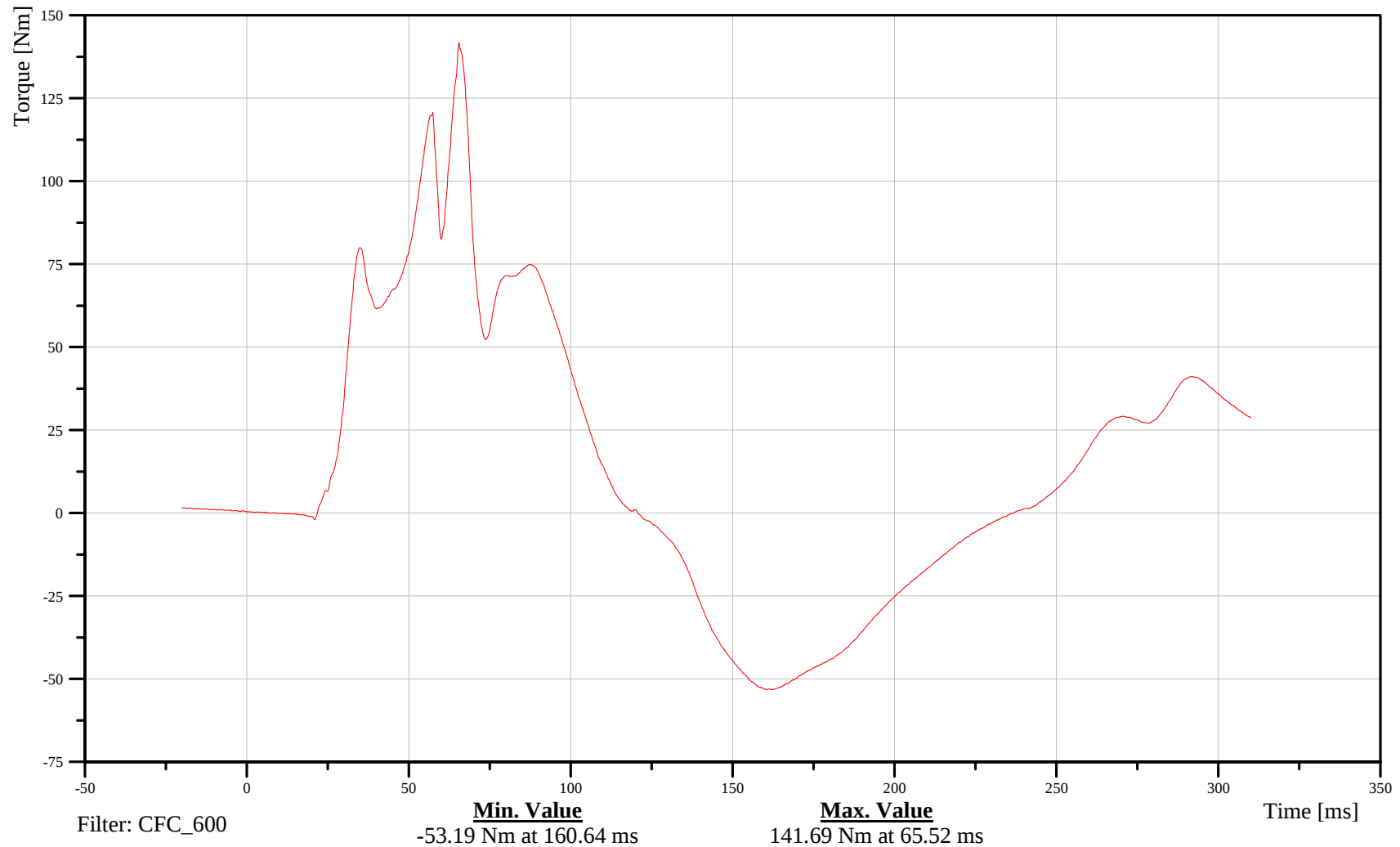
Lower Neck Moment About X Axis

Customer: VRTC

11NECKLO00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-19

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

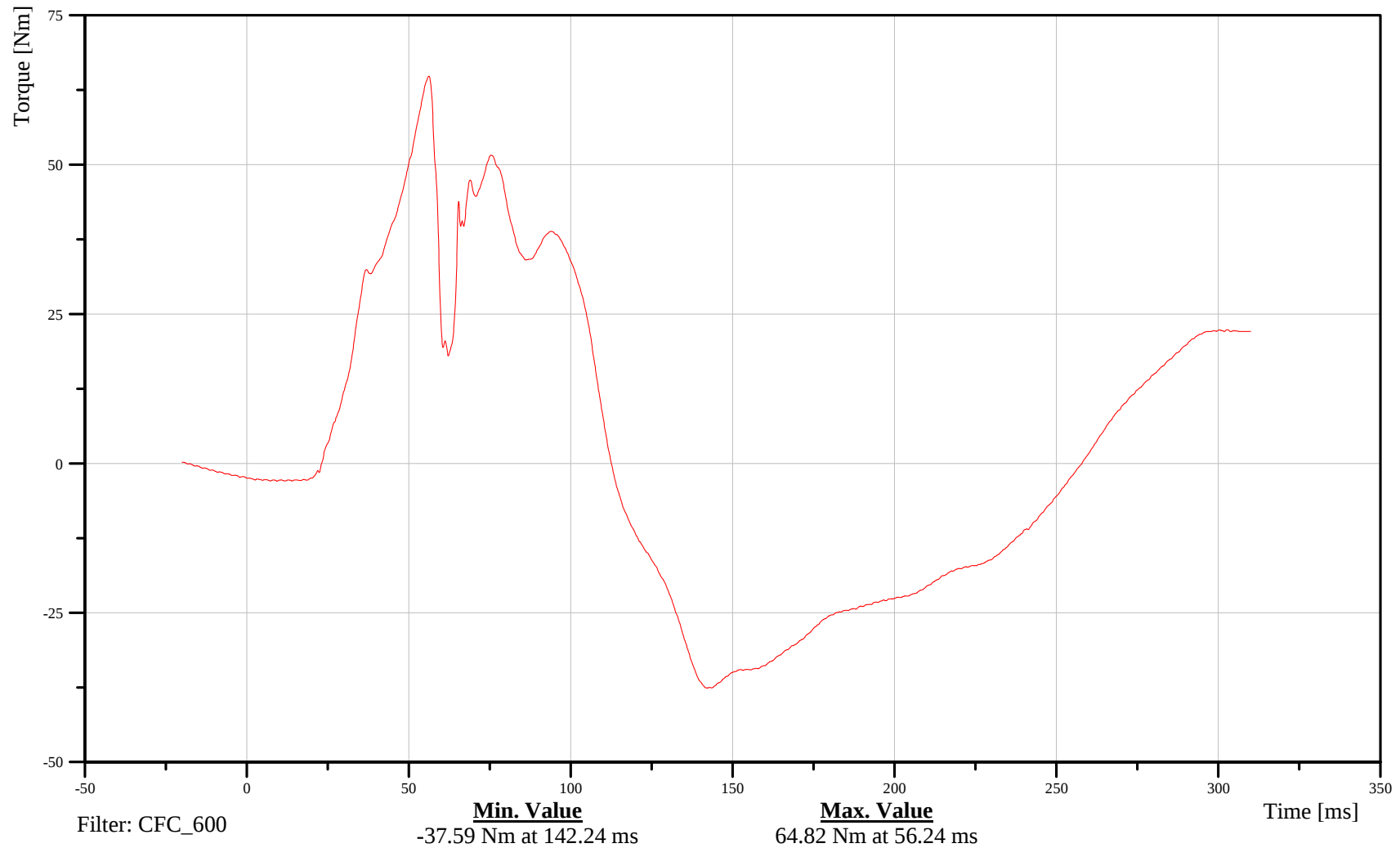
Lower Neck Moment About Y Axis

Customer: VRTC

11NECKLO00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-20

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

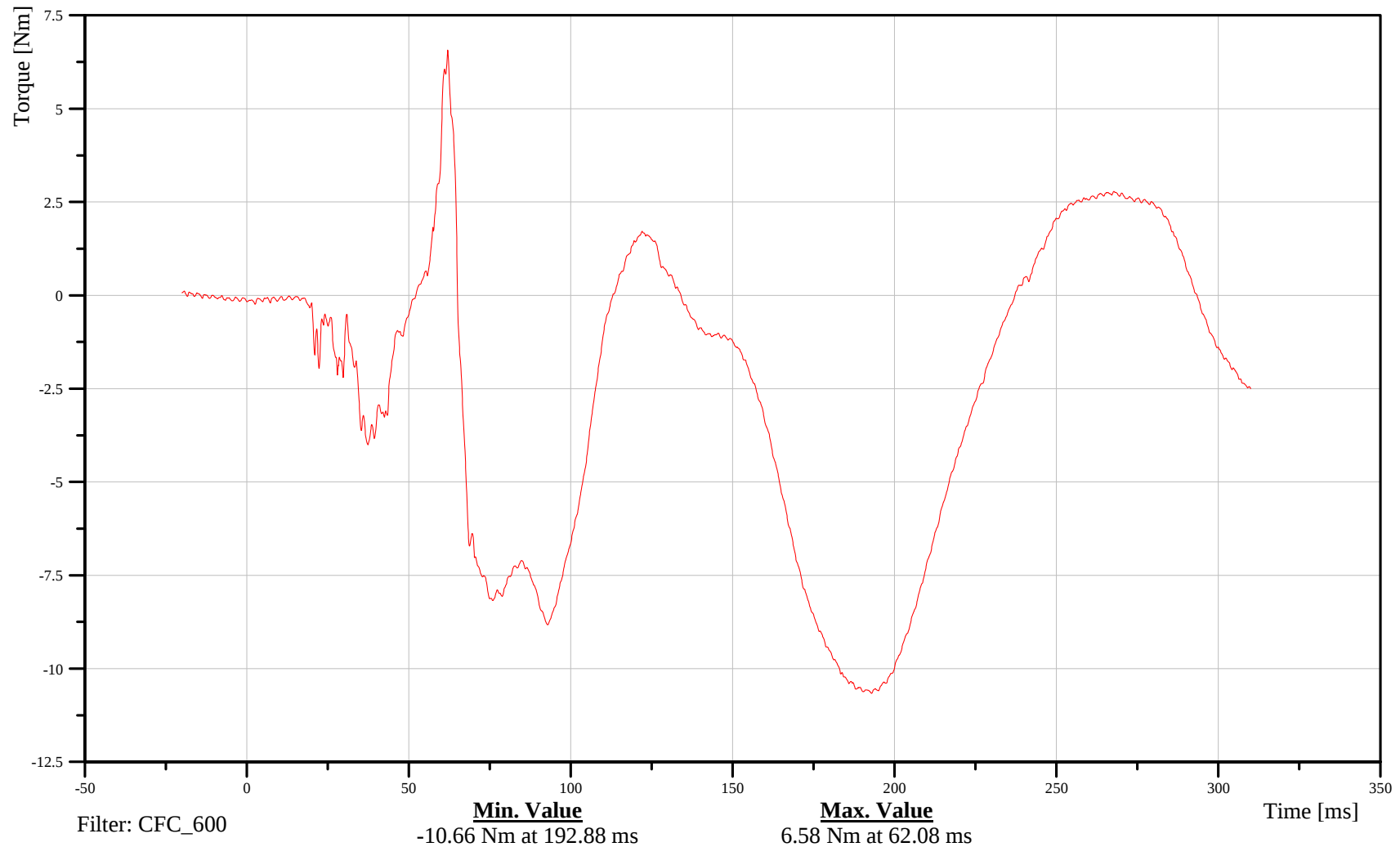
Lower Neck Moment About Z Axis

Customer: VRTC

11NECKLO00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-21

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

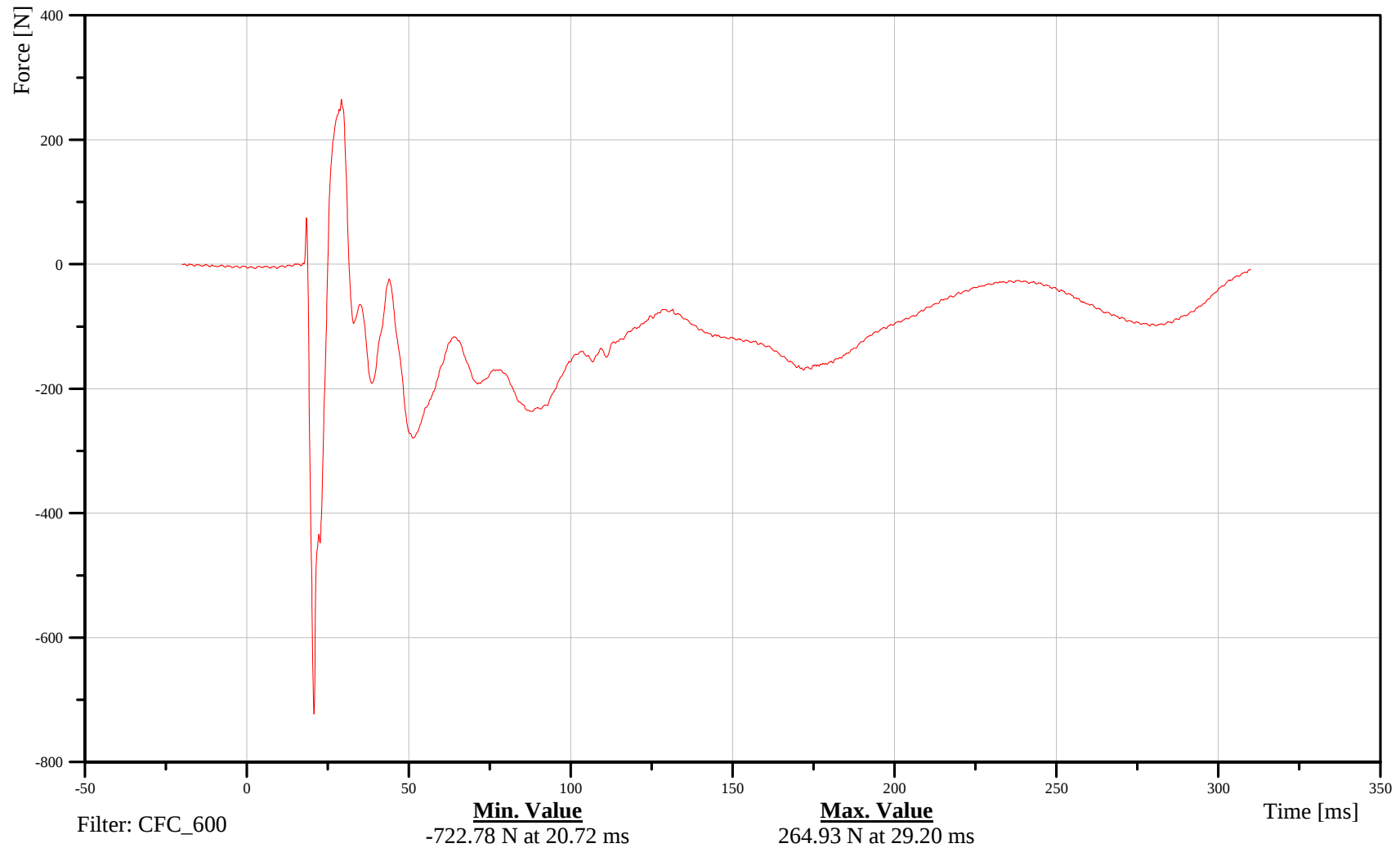
Shoulder X-Axis Force

Customer: VRTC

11SHLDLE00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-22

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

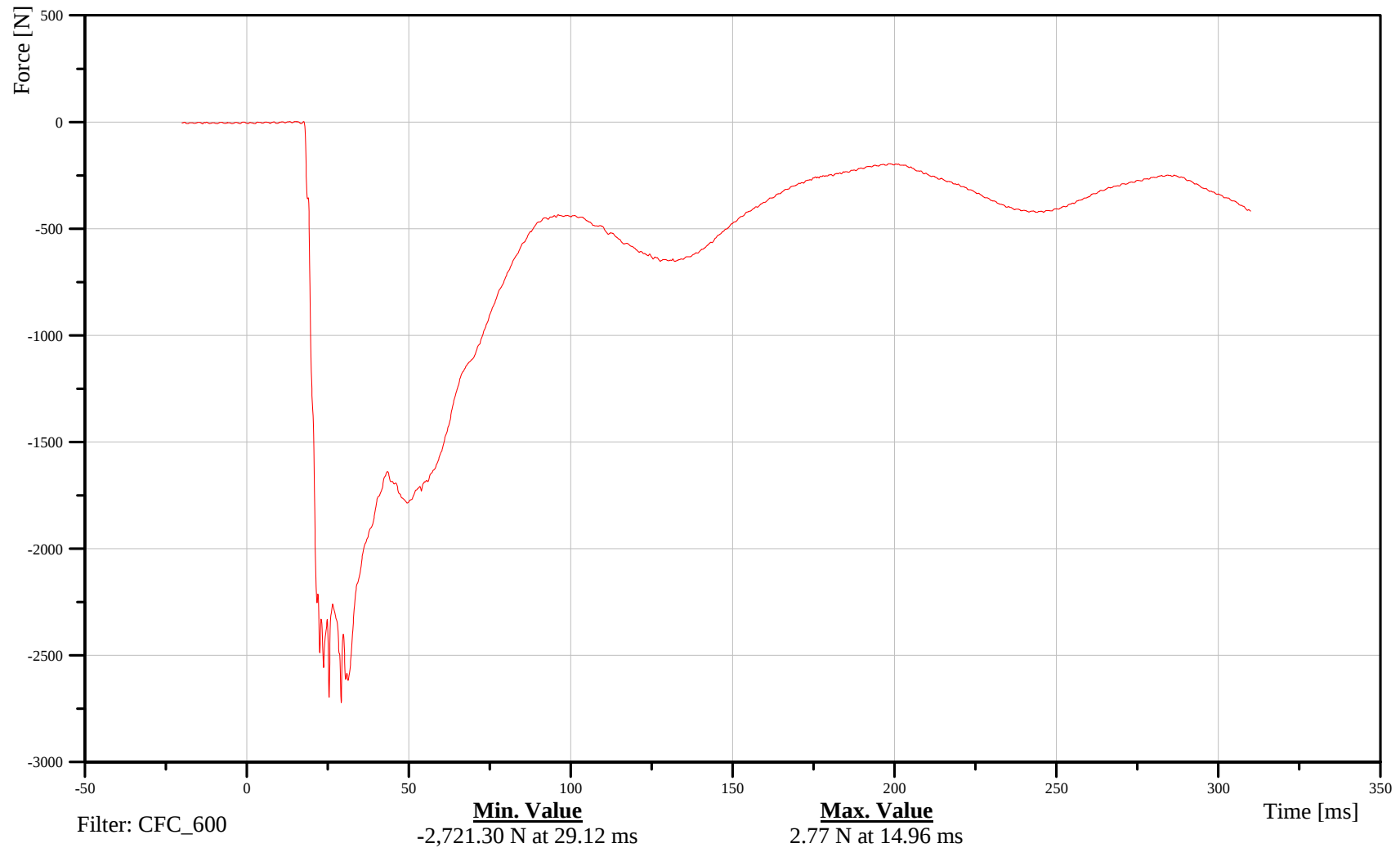
Shoulder Y-Axis Force

Customer: VRTC

11SHLDLE00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-23

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

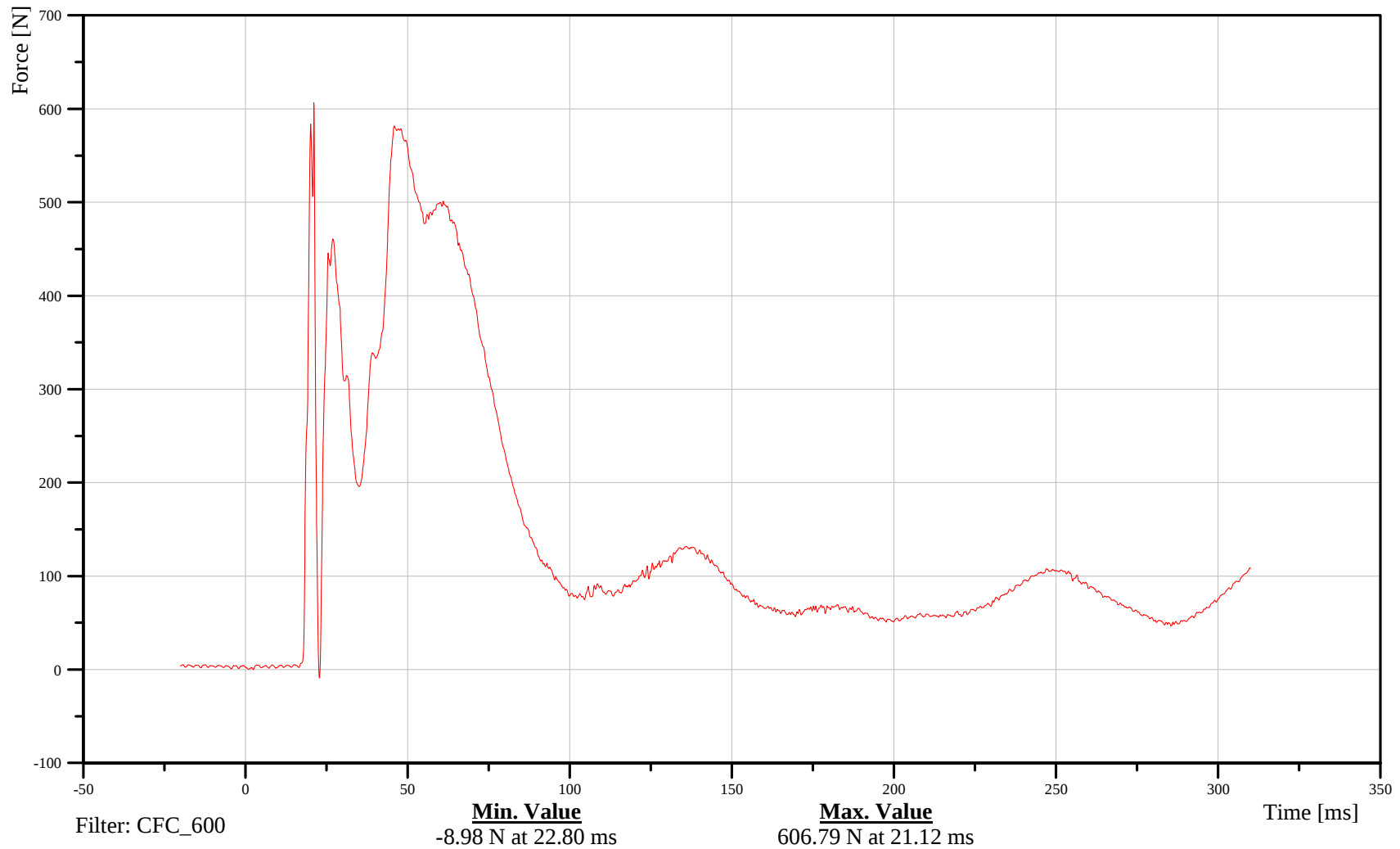
Shoulder Z-Axis Force

Customer: VRTC

11SHLDLE00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-24

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

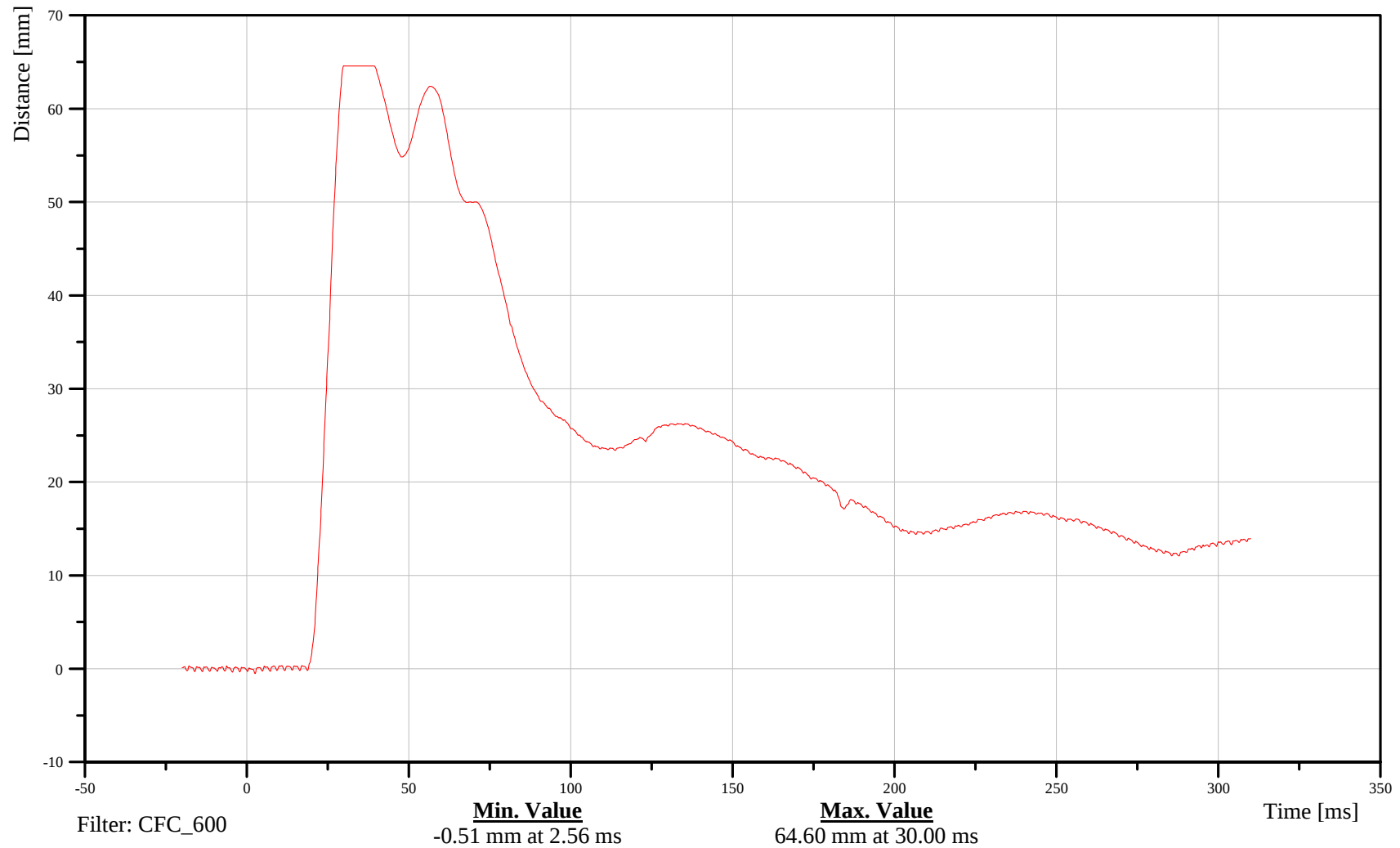
Shoulder Y-Axis Displacement

Customer: VRTC

11SHLDLE00WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-25

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

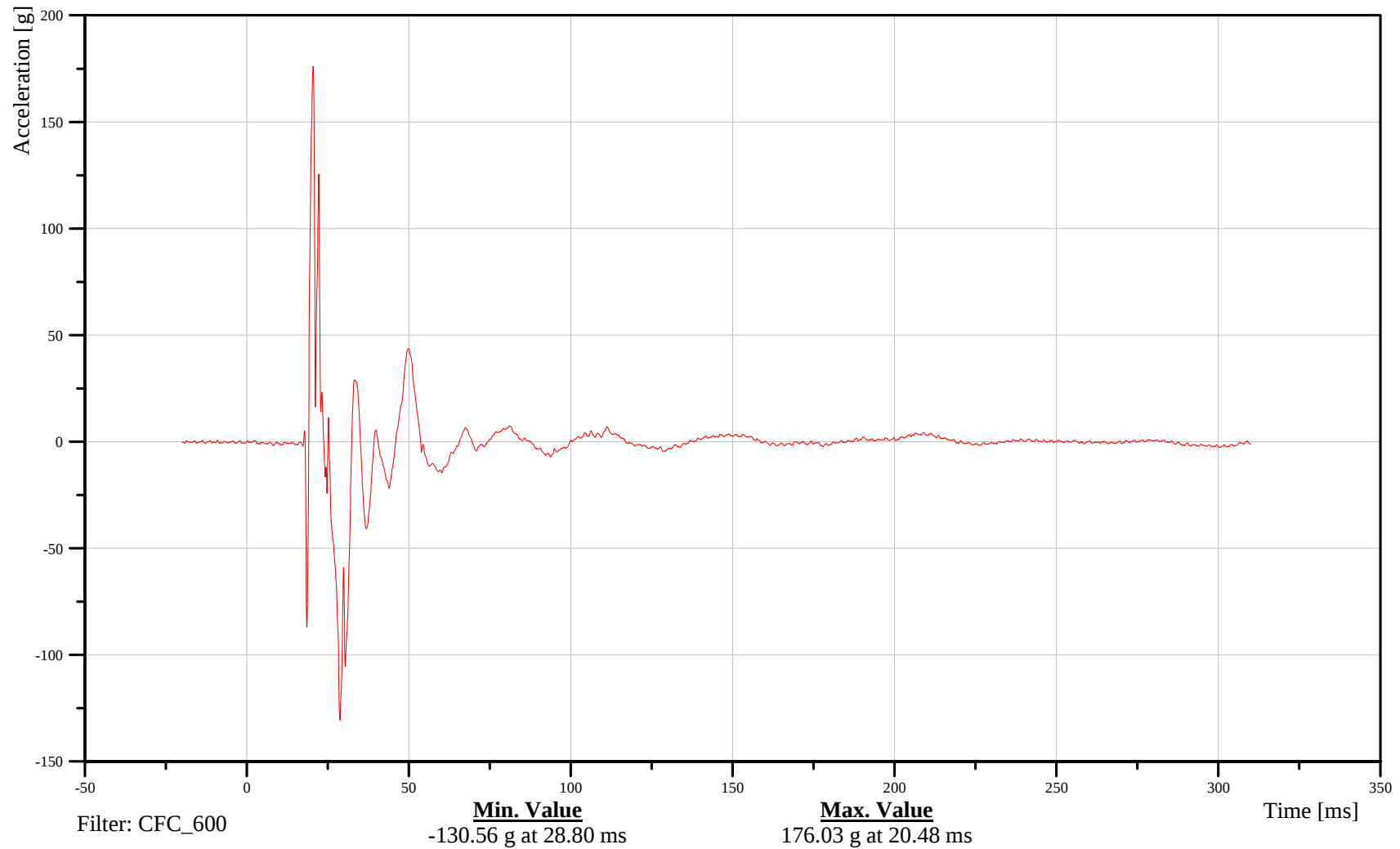
Shoulder X-Axis Acceleration

Customer: VRTC

11SHLDLE00WSACXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-26

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

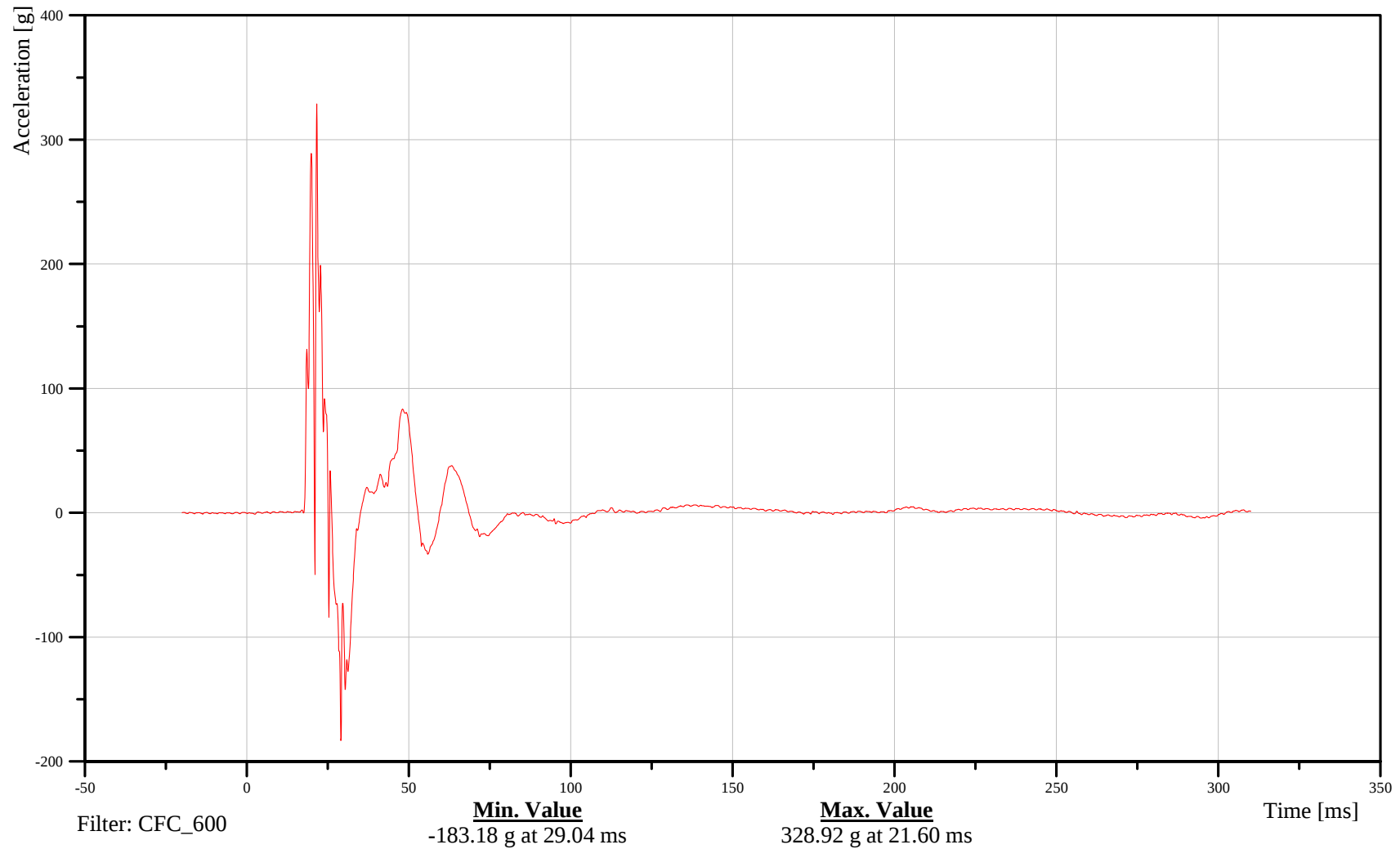
Shoulder Y-Axis Acceleration

Customer: VRTC

11SHLDLE00WSACYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-27

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

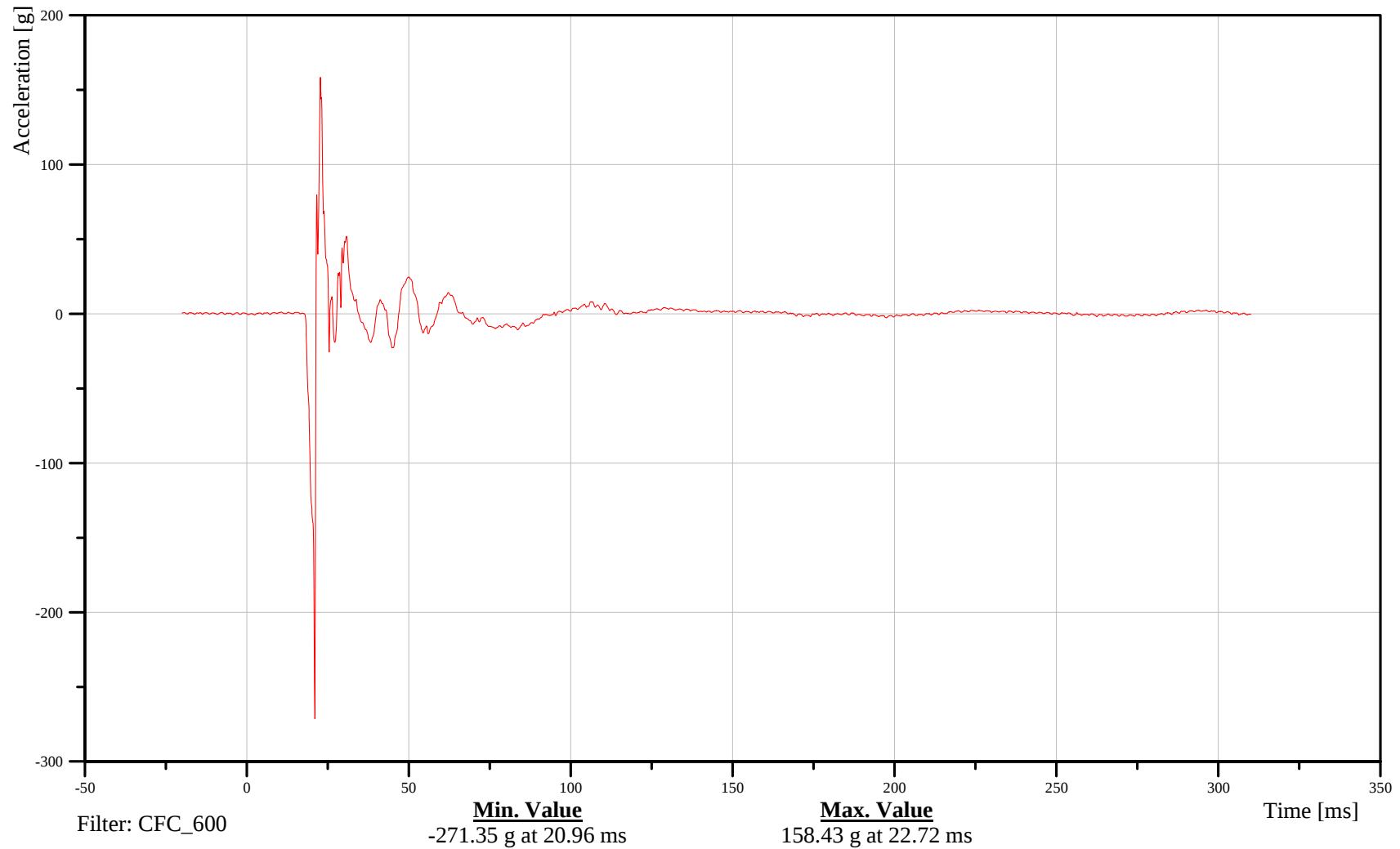
Shoulder Z-Axis Acceleration

Customer: VRTC

11SHLDLE00WSACZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-28

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

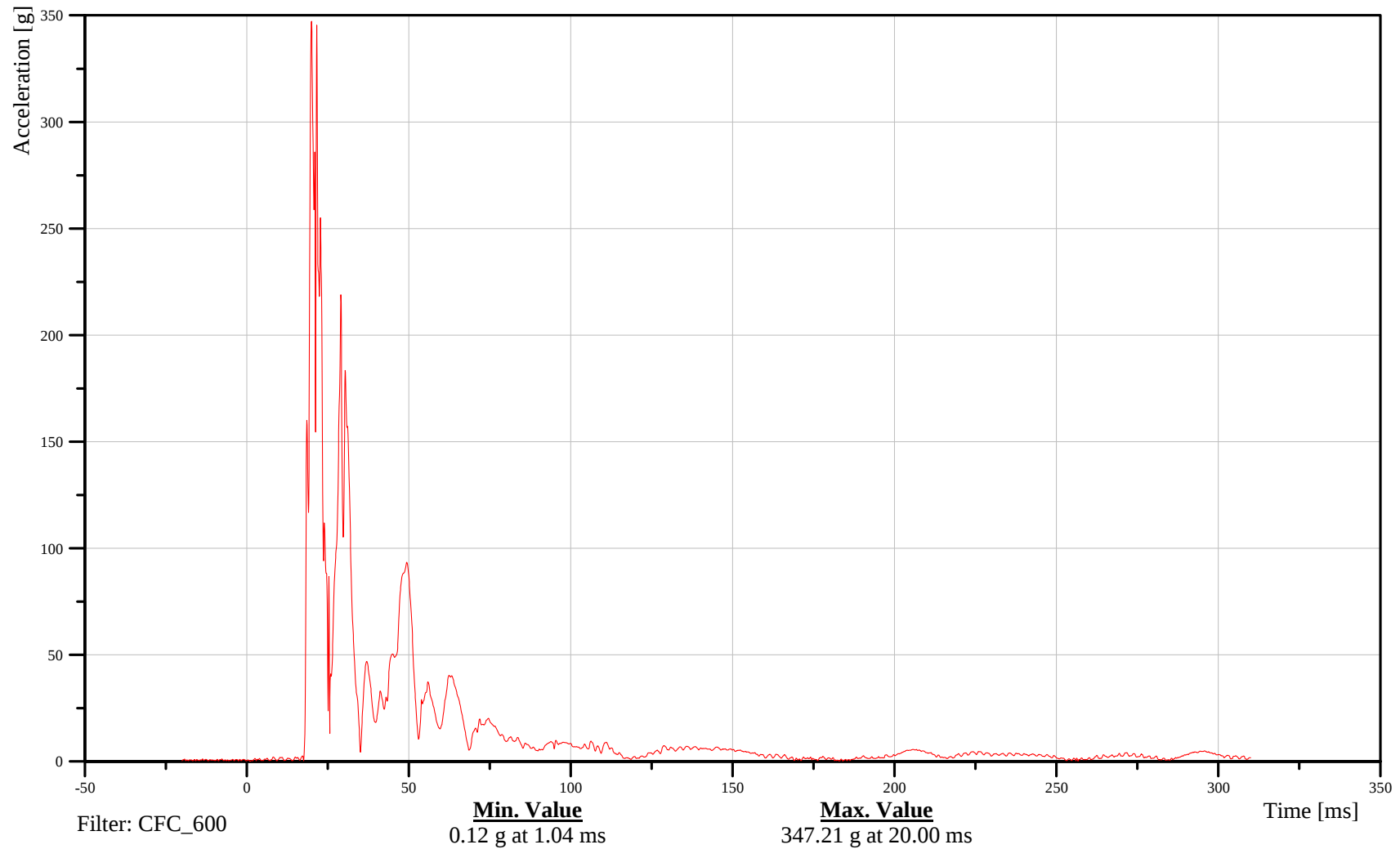
Shoulder Resultant Acceleration

Customer: VRTC

11SHLDLE00WSACRB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-29

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

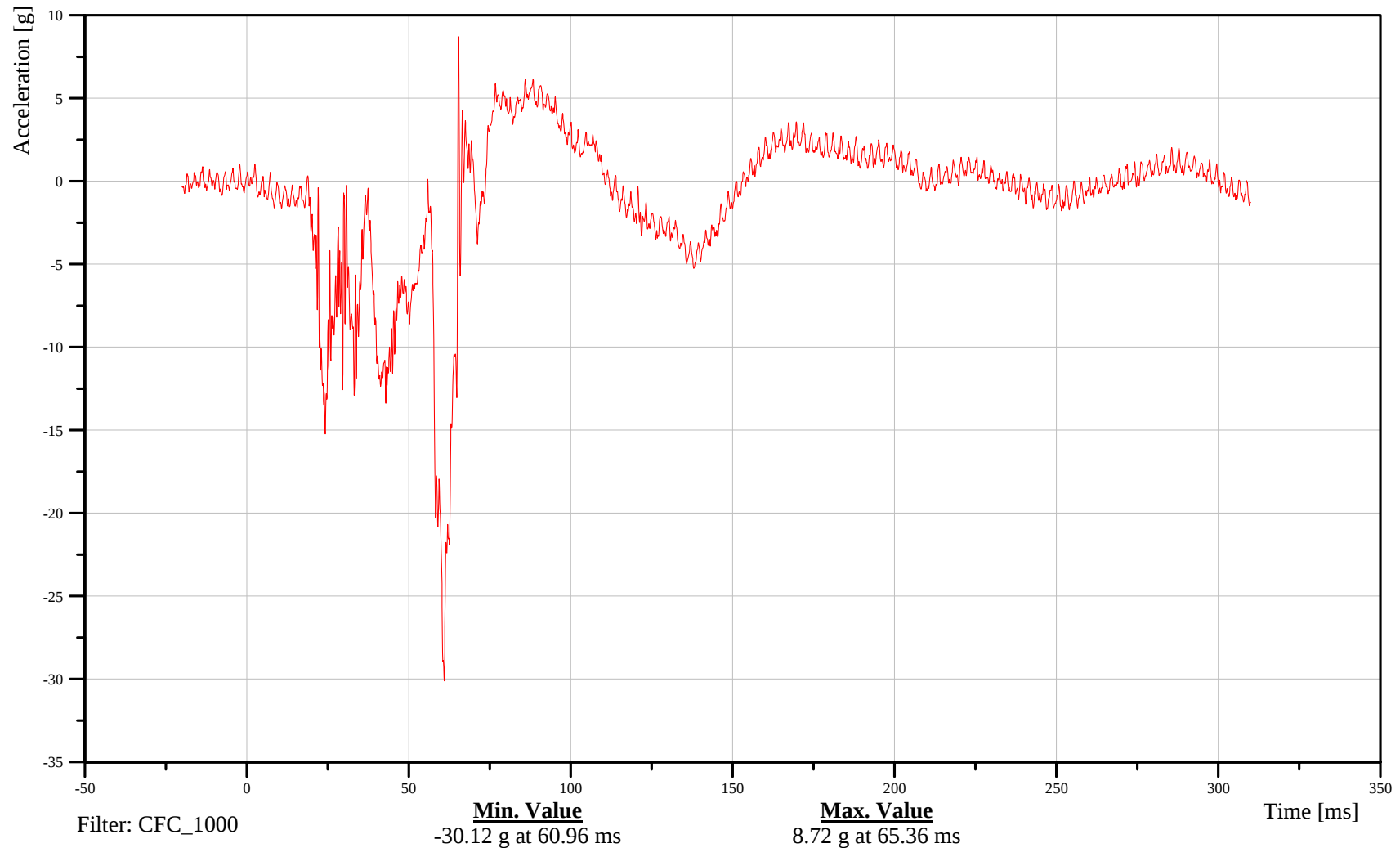
T1 X-Axis Acceleration

Customer: VRTC

11THSP0100WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-30

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

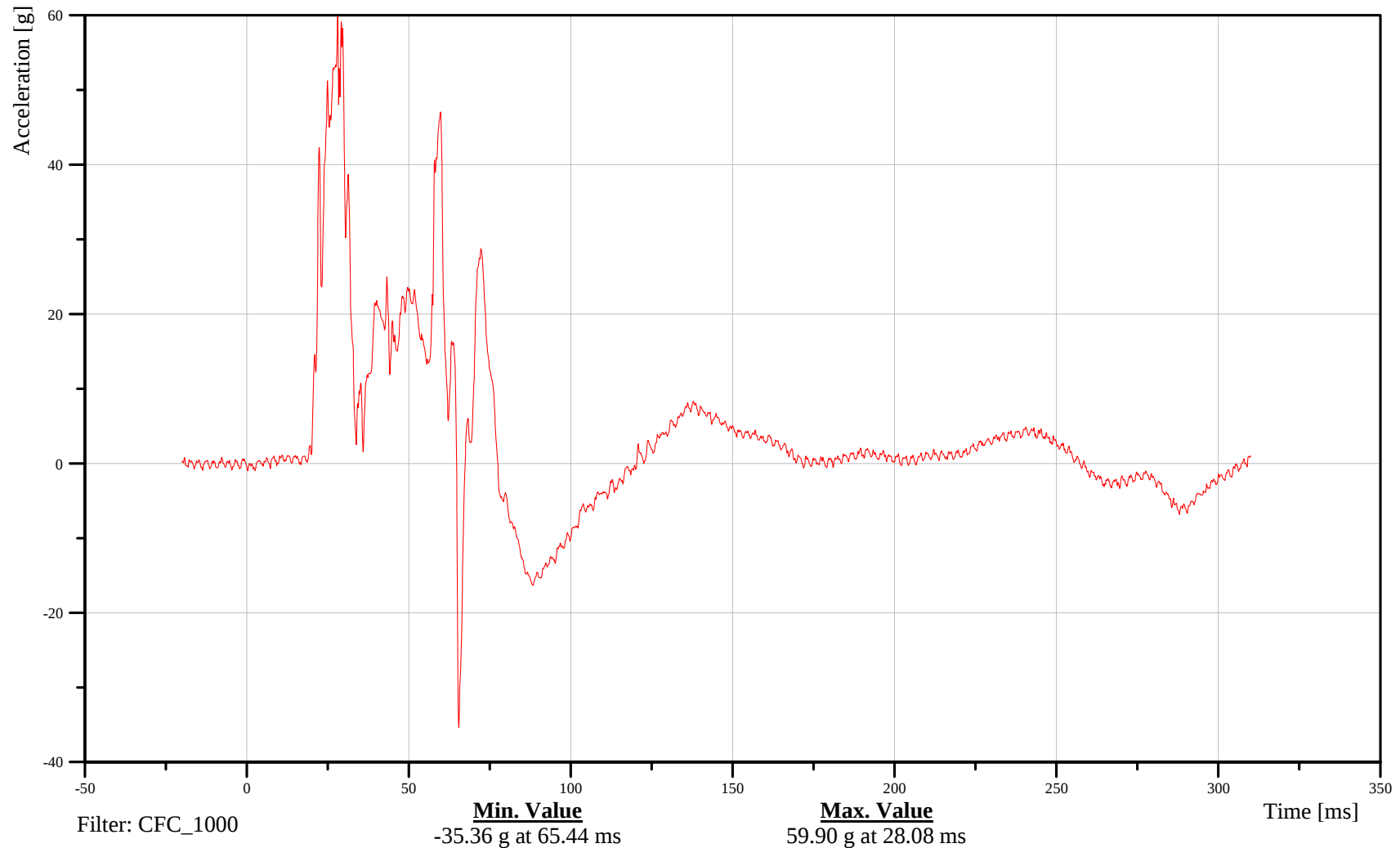
T1 Y-Axis Acceleration

Customer: VRTC

11THSP0100WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-31

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

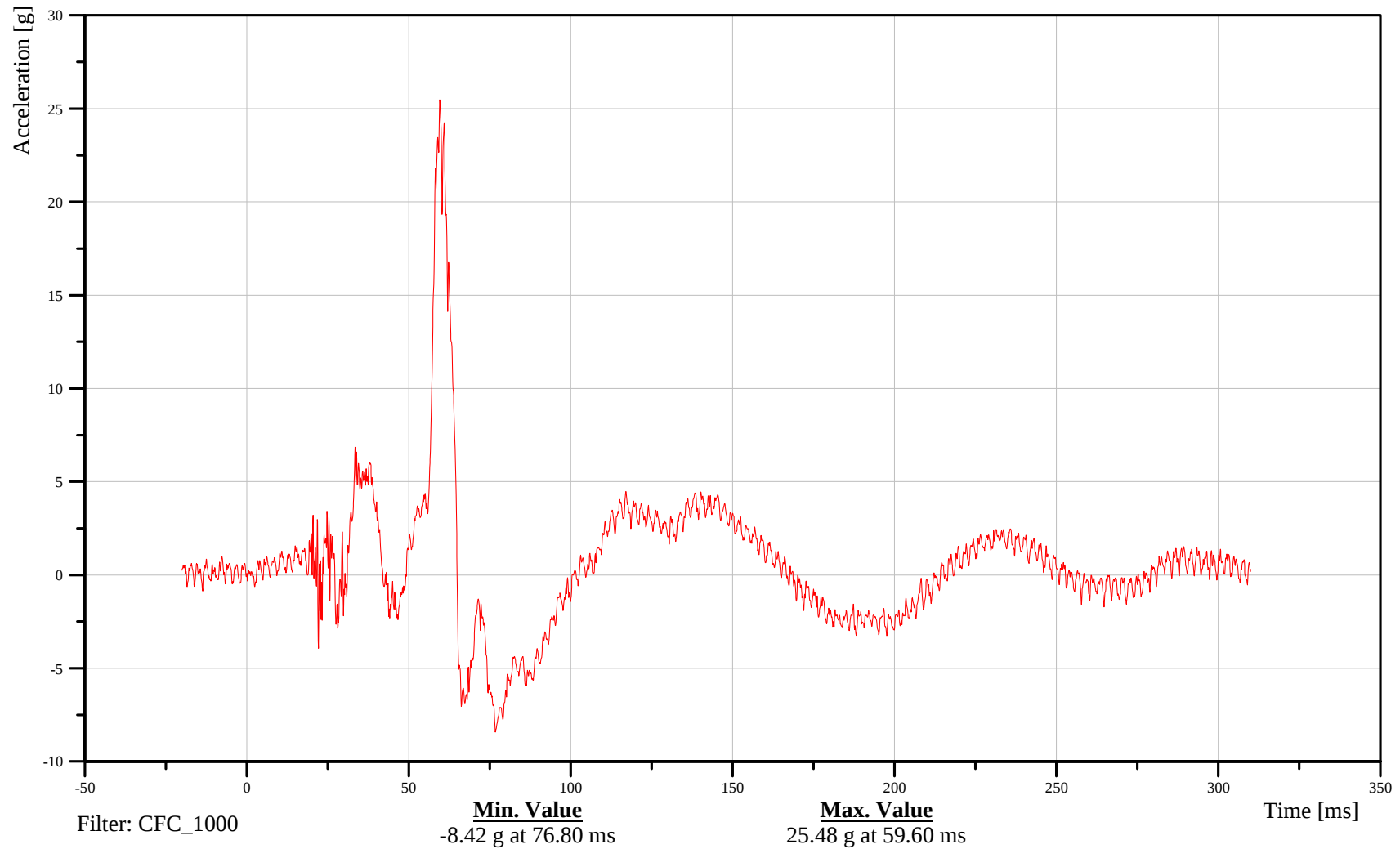
T1 Z-Axis Acceleration

Customer: VRTC

11THSP0100WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-32

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

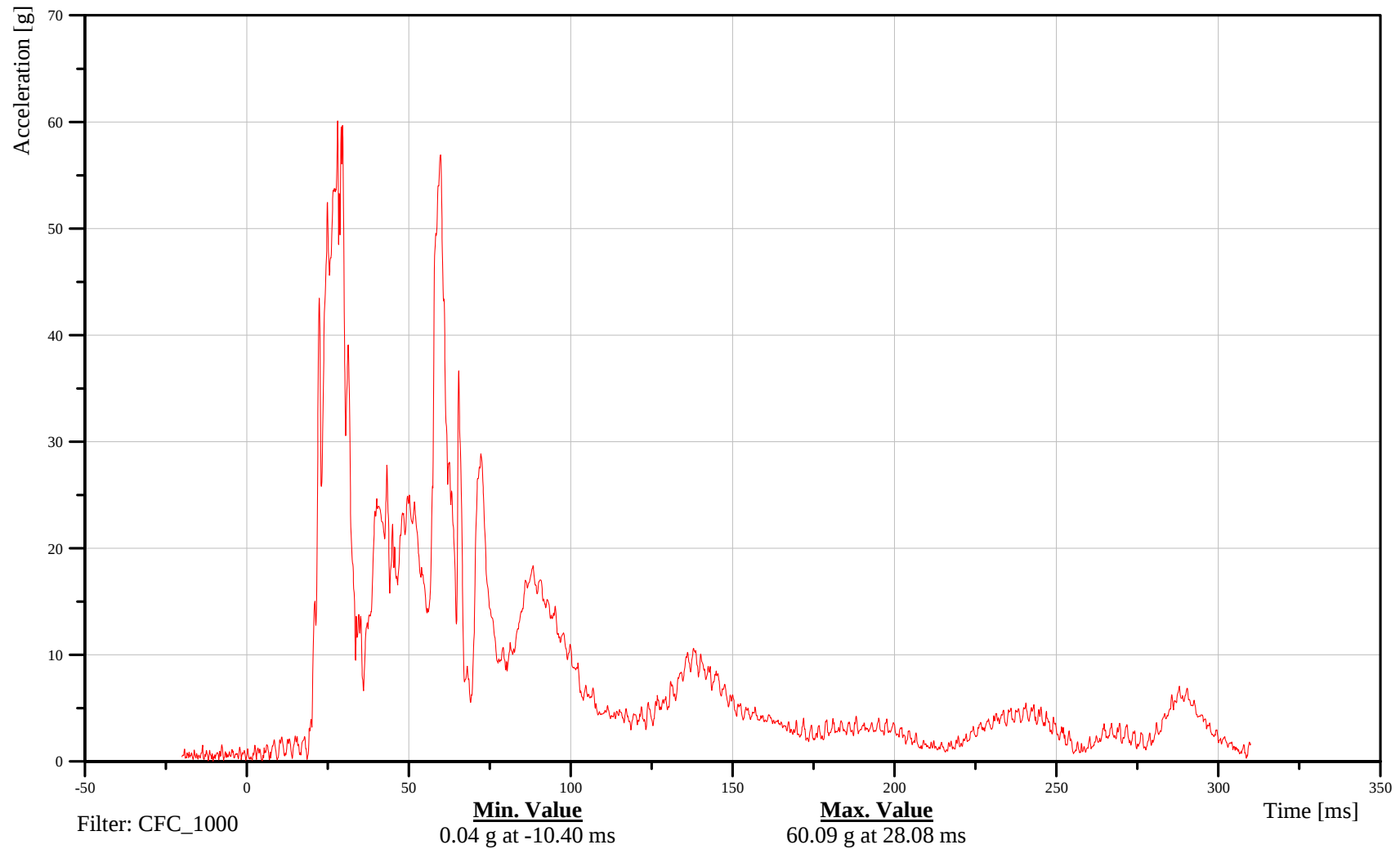
T1 Resultant Acceleration

Customer: VRTC

11THSP0100WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-33

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

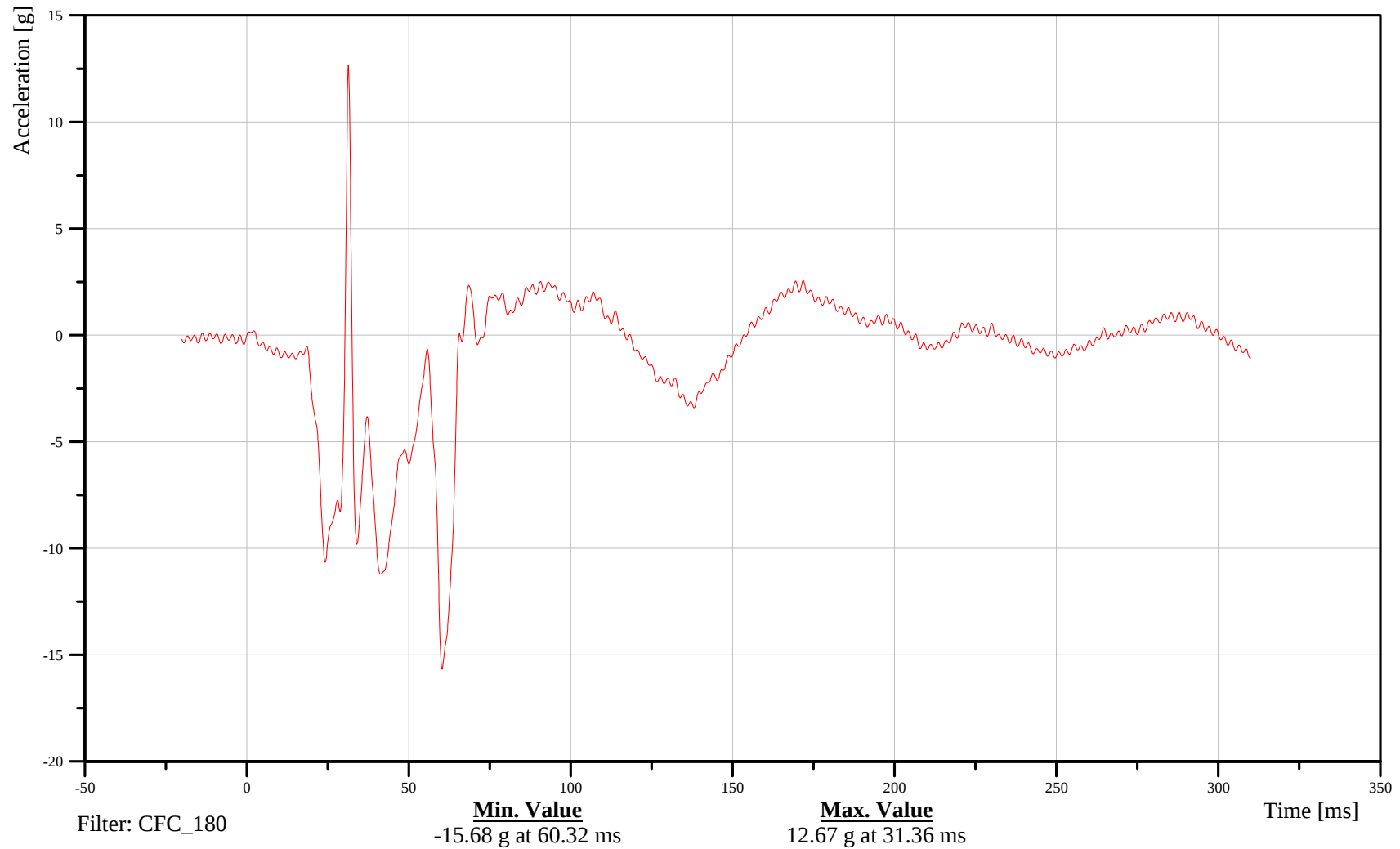
T4 X-Axis Acceleration

Customer: VRTC

11THSP0400WSACXC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-34

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

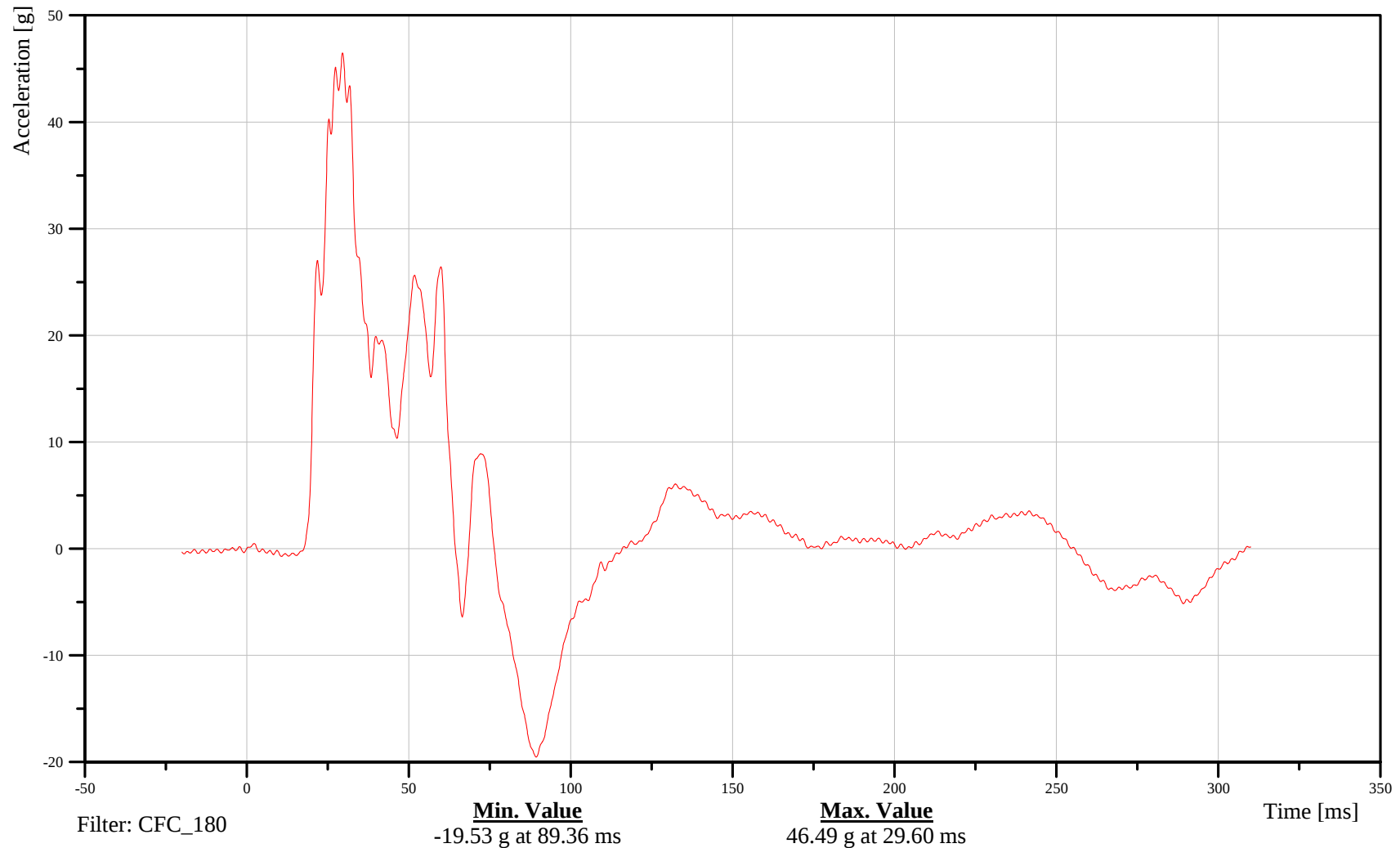
T4 Y-Axis Acceleration

Customer: VRTC

11THSP0400WSACYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-35

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

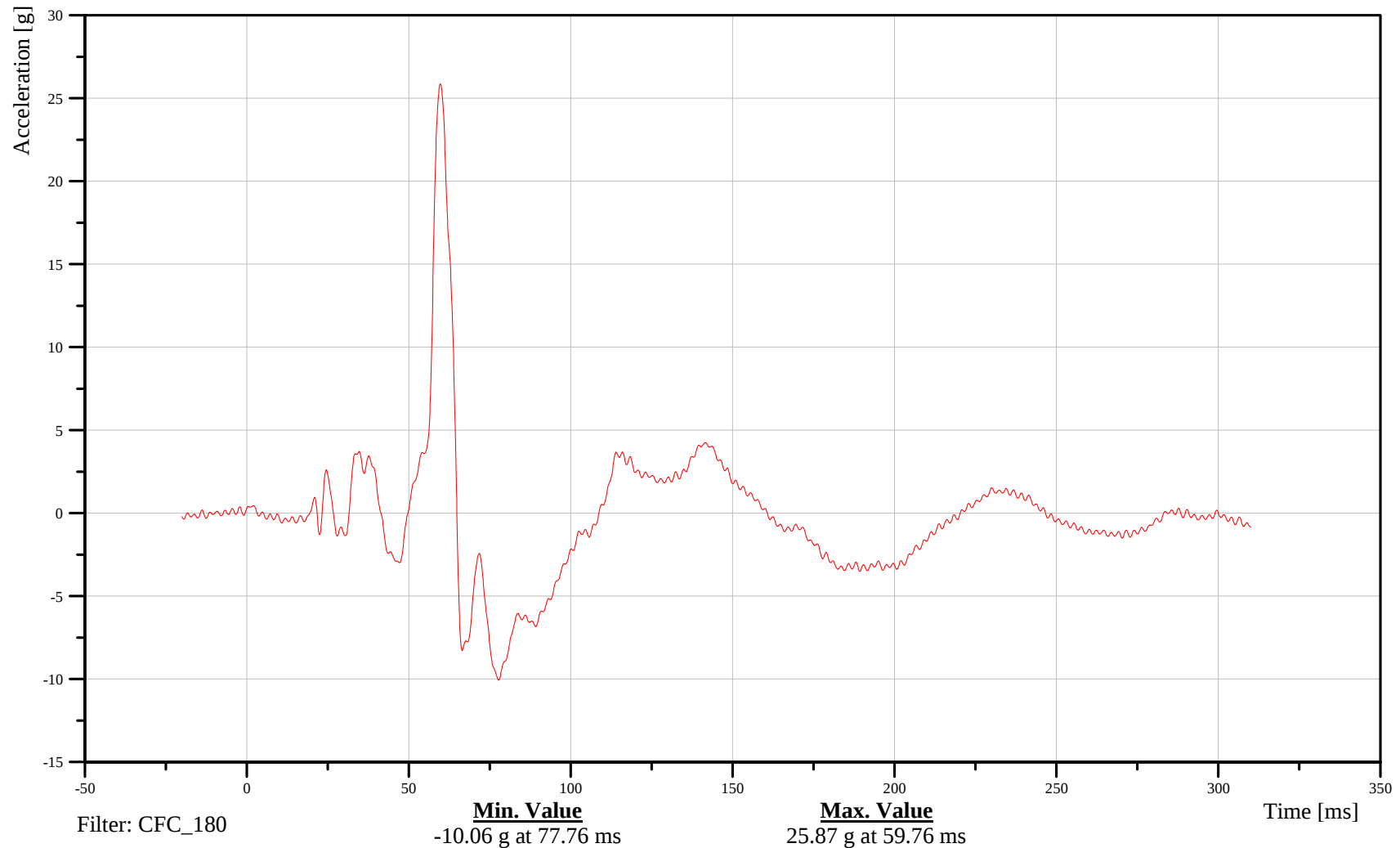
T4 Z-Axis Acceleration

Customer: VRTC

11THSP0400WSACZC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-36

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

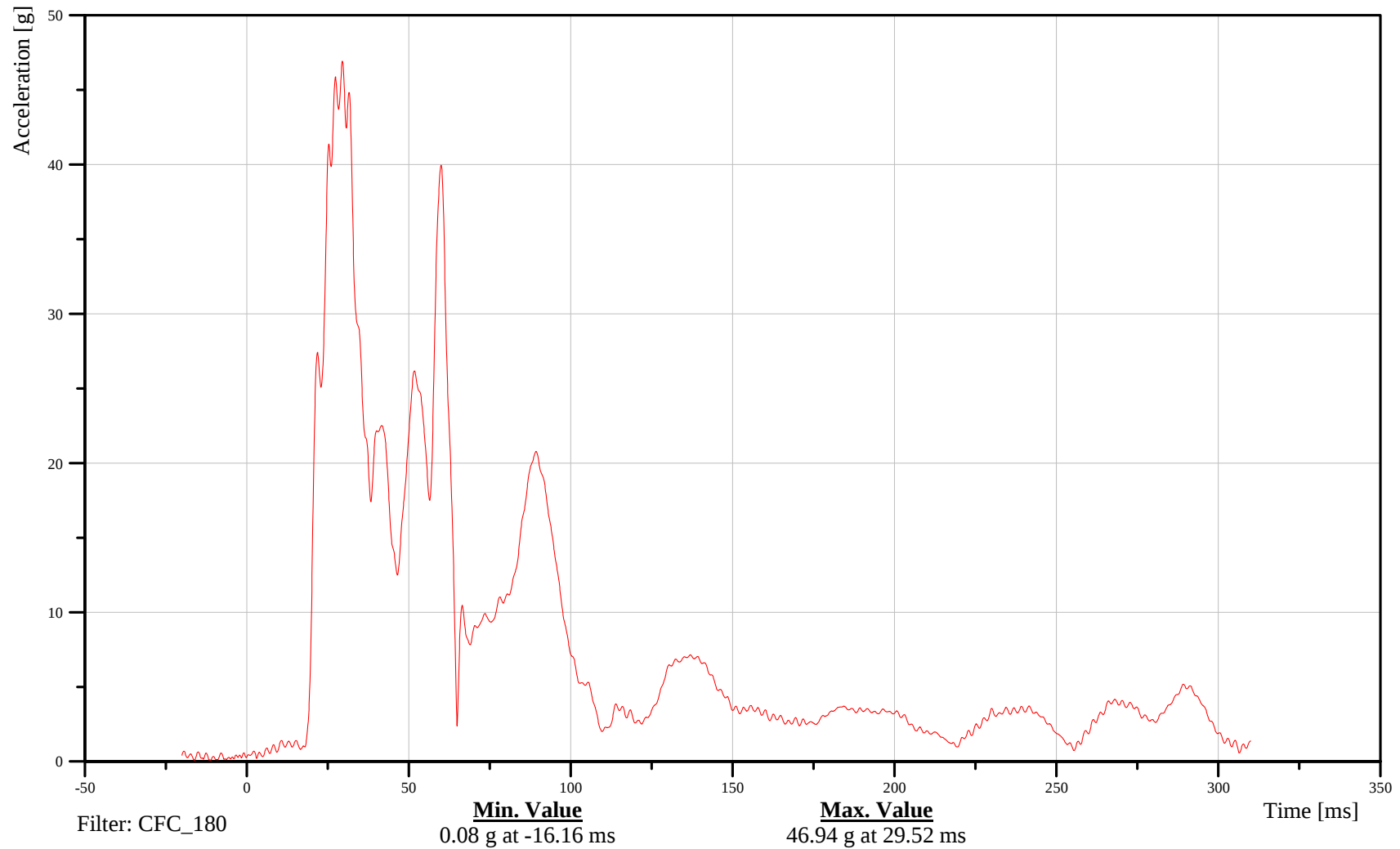
T4 Resultant Acceleration

Customer: VRTC

11THSP0400WSACRC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-37

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

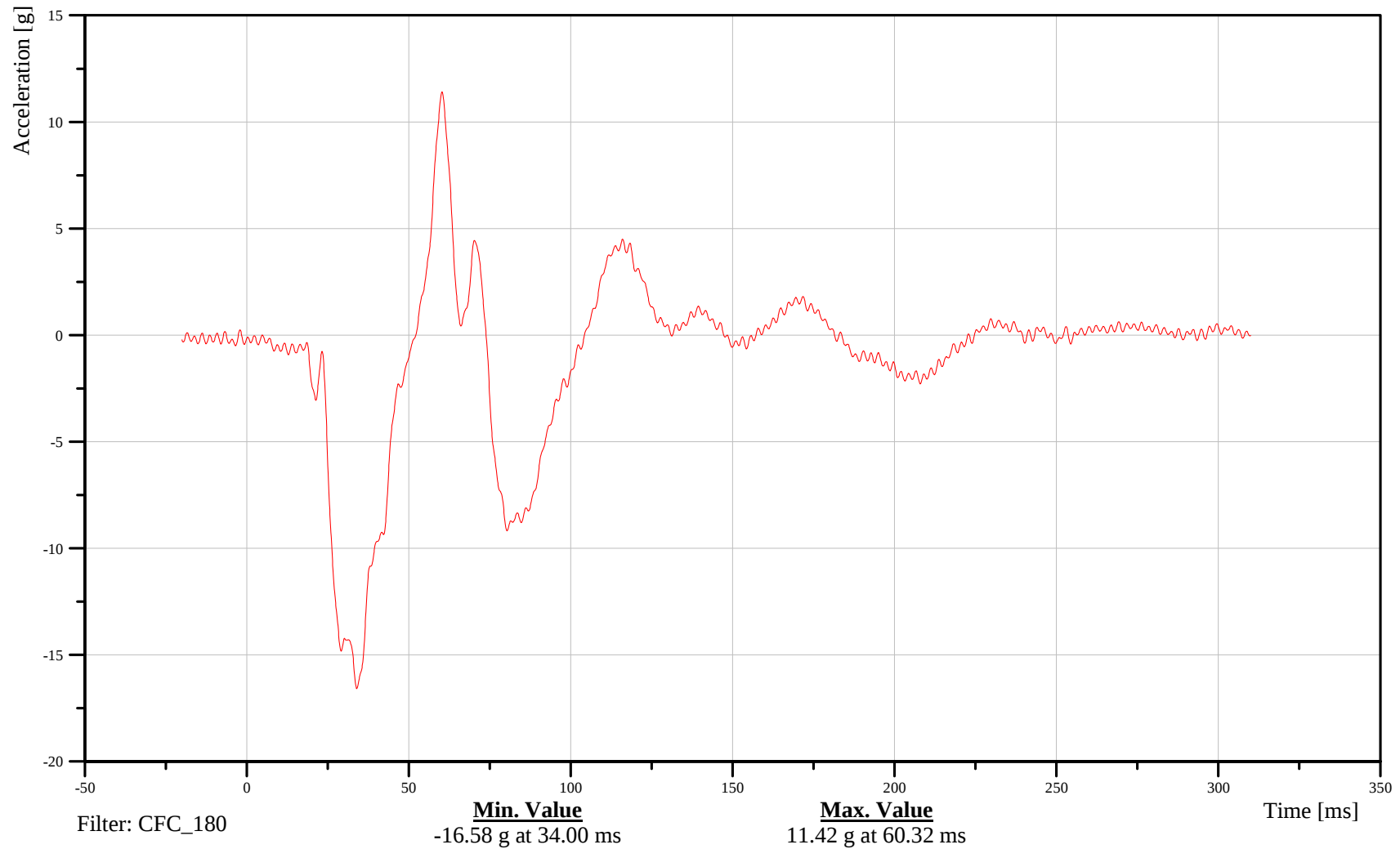
T12 X-Axis Acceleration

Customer: VRTC

11THSP1200WSACXC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-38

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

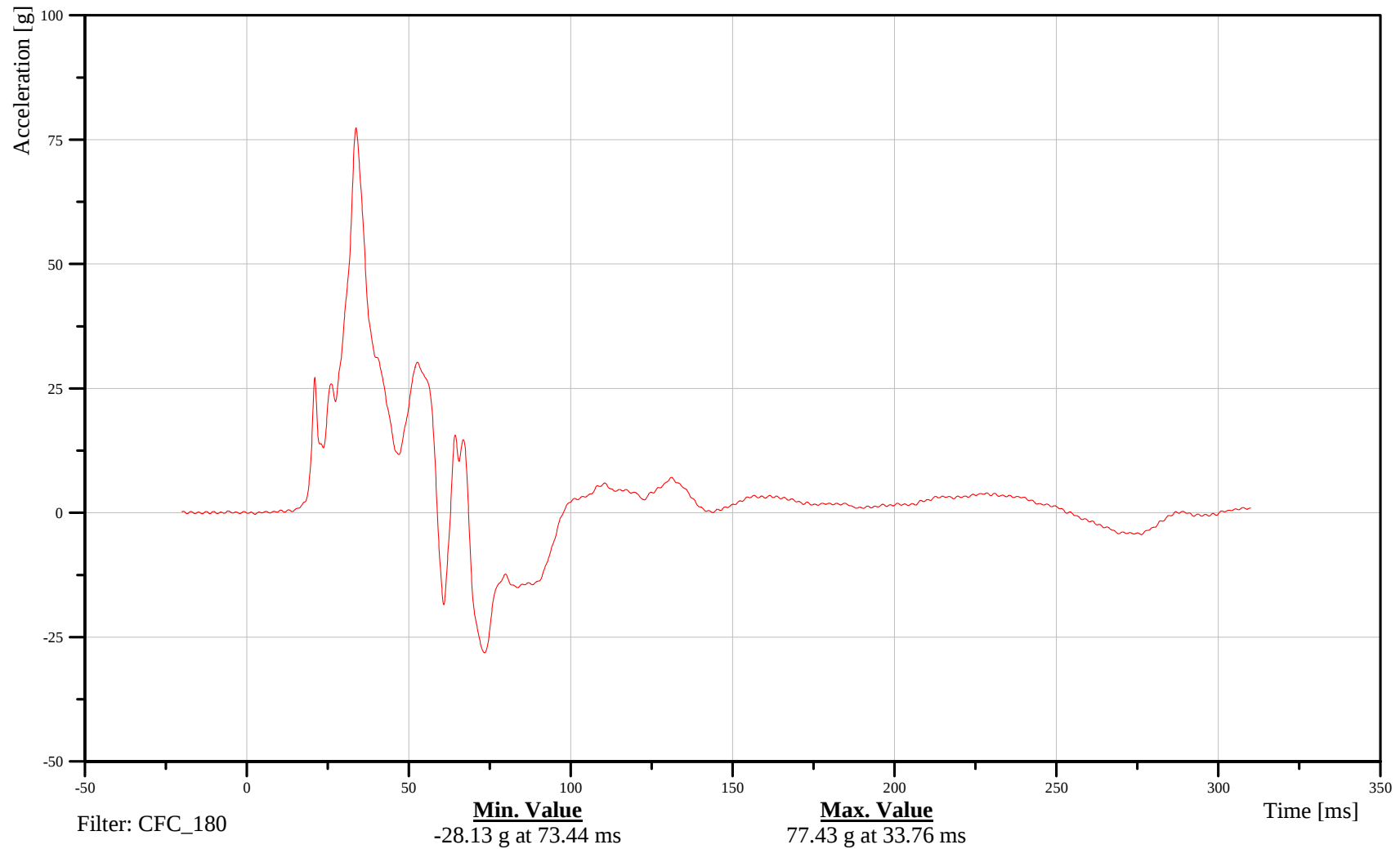
T12 Y-Axis Acceleration

Customer: VRTC

11THSP1200WSACYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-39

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

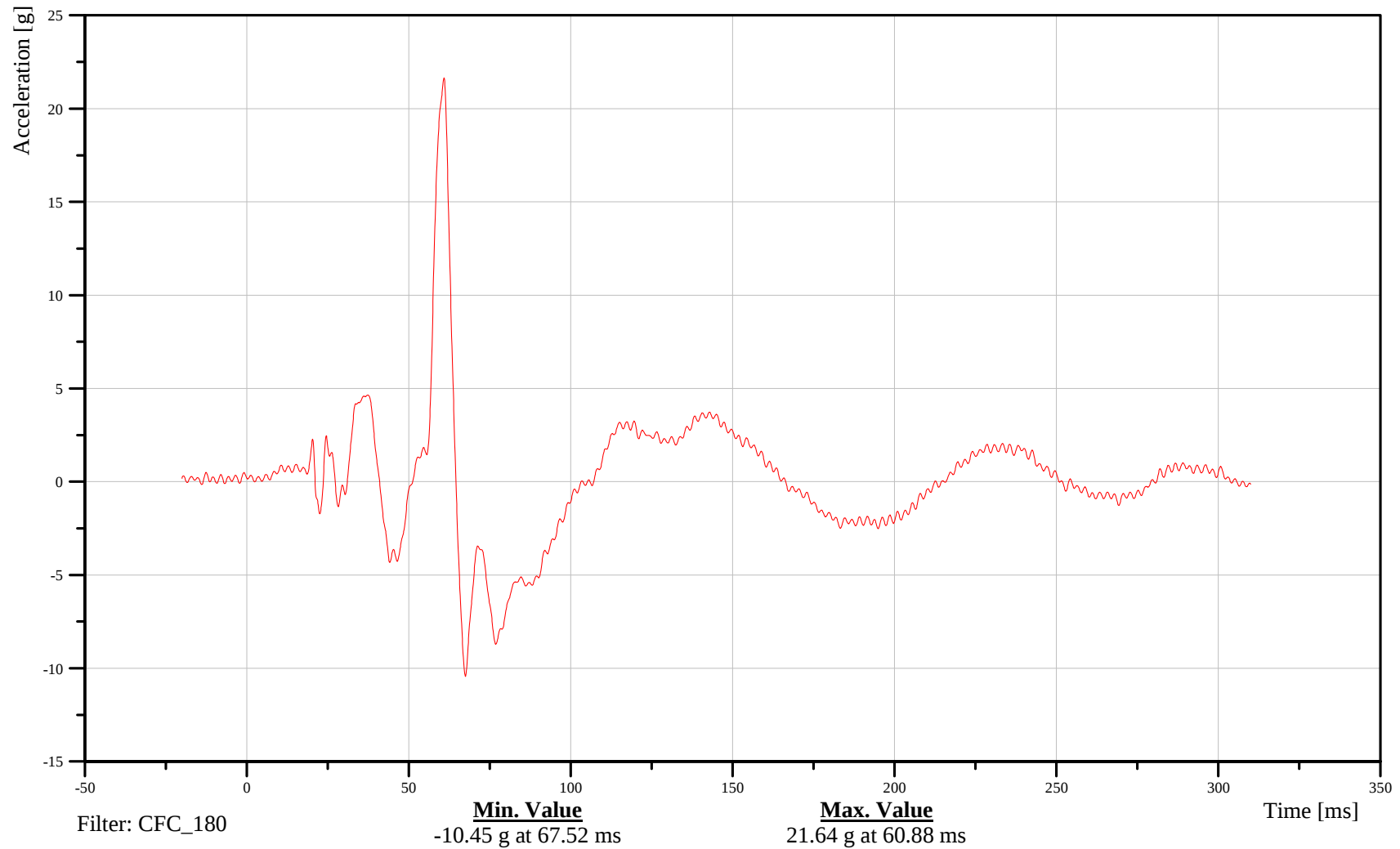
T12 Z-Axis Acceleration

Customer: VRTC

11THSP1200WSACZC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-40

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 7/12/2007
Time: 15:12

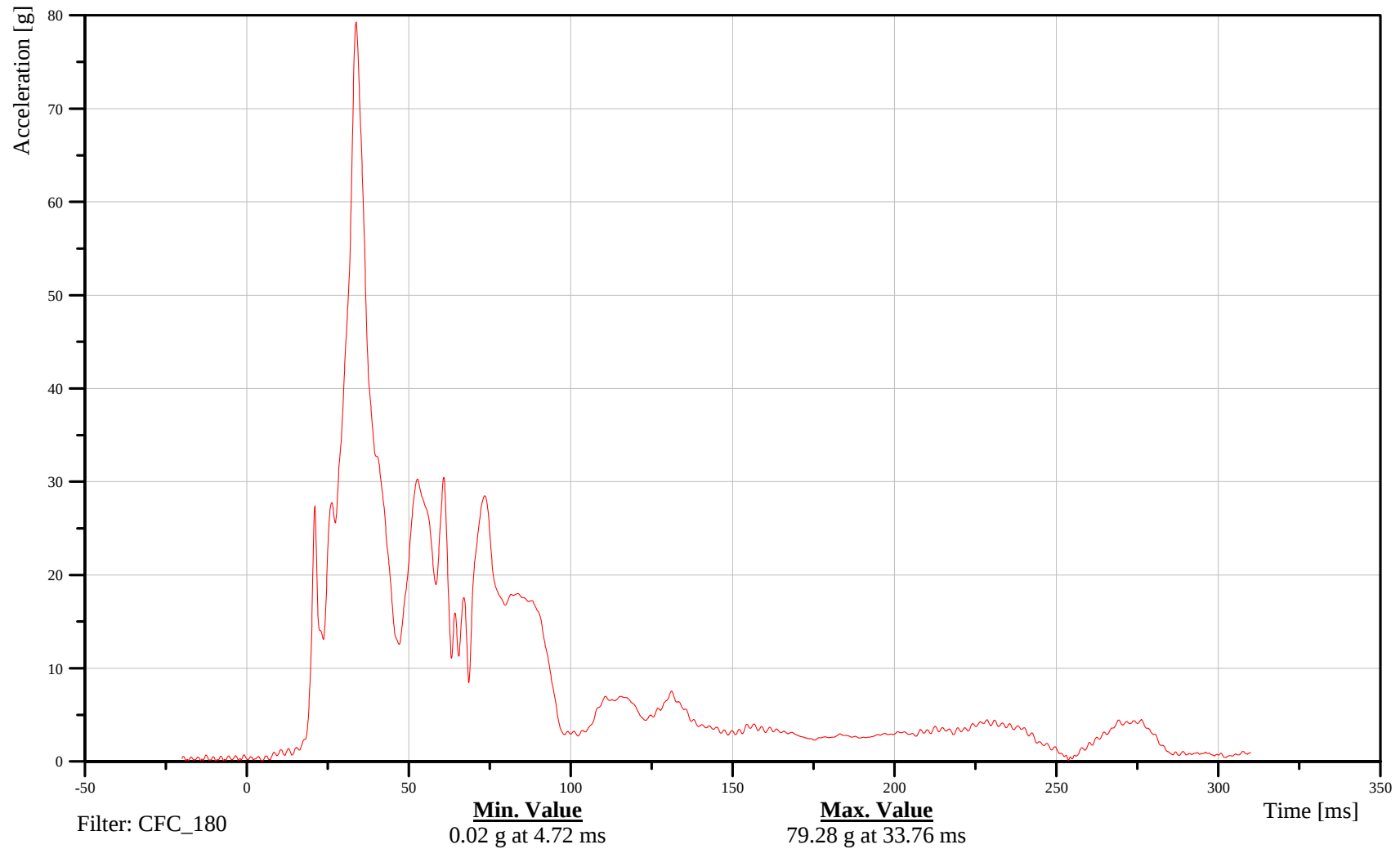
T12 Resultant Acceleration

Customer: VRTC

11THSP1200WSACRC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-41

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

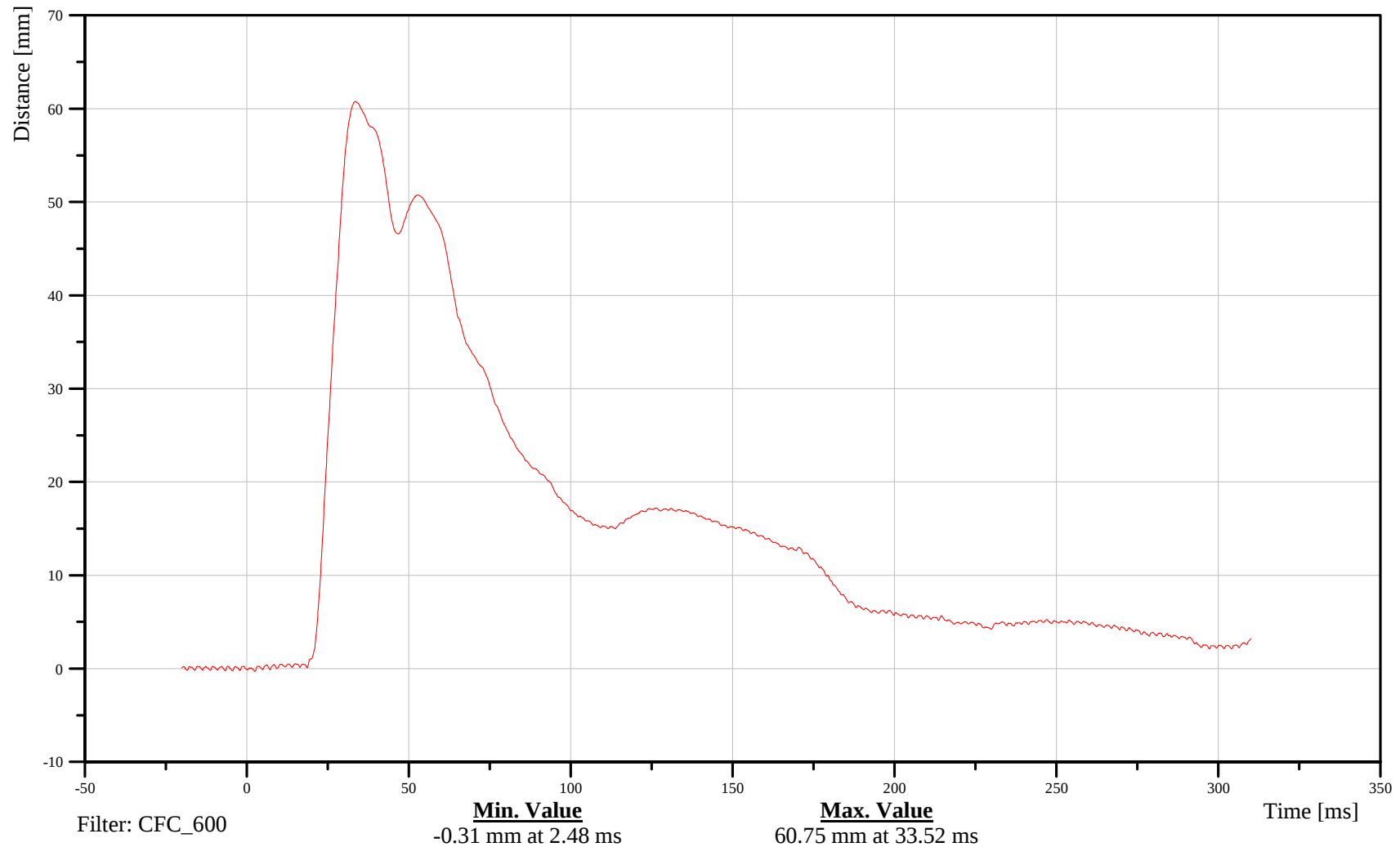
Thorax Rib 1 Y-Axis Displacement

Customer: VRTC

11TRRILE01WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-42

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

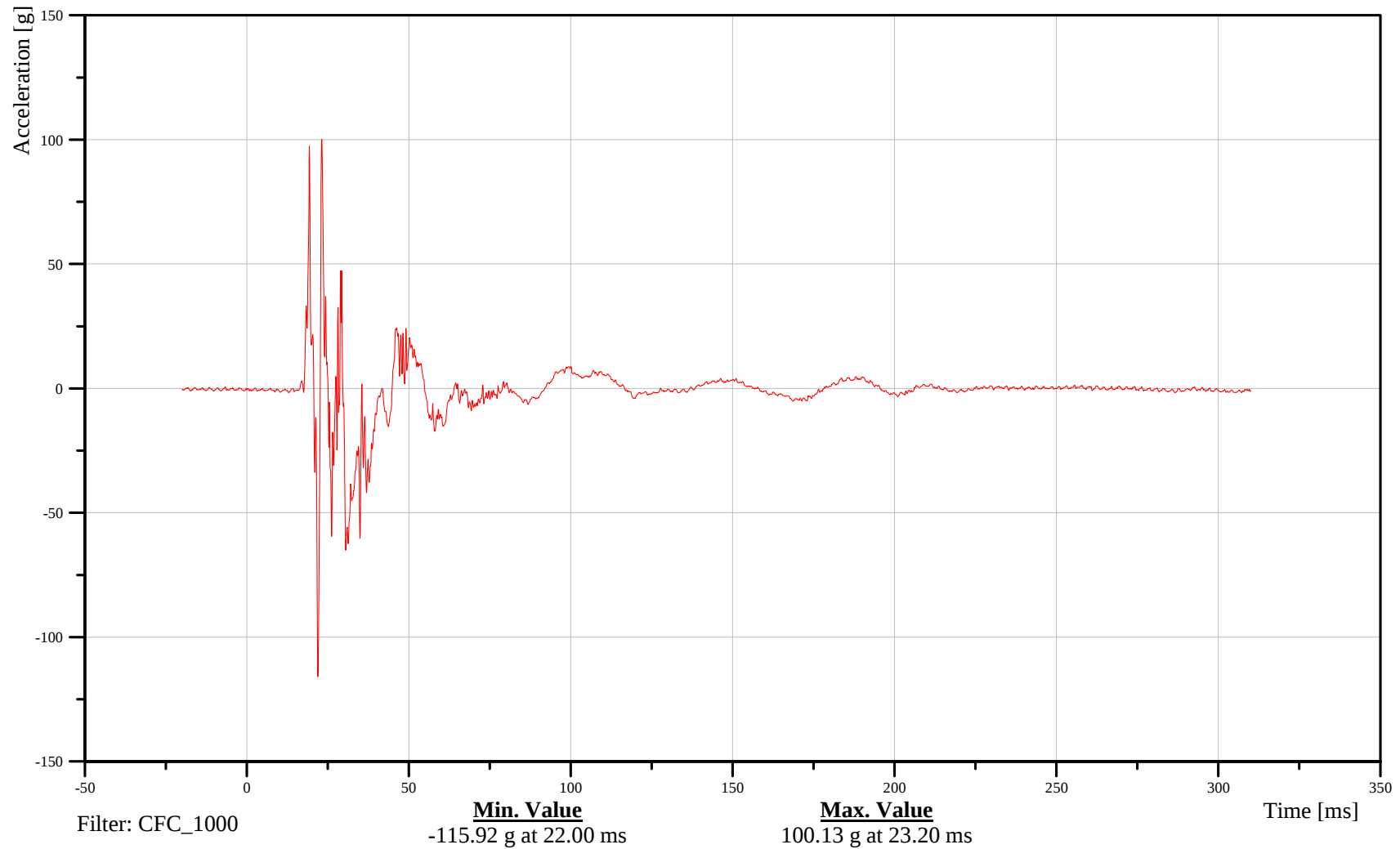
Thorax Rib 1 X-Axis Acceleration

Customer: VRTC

11TRRILE01WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-43

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

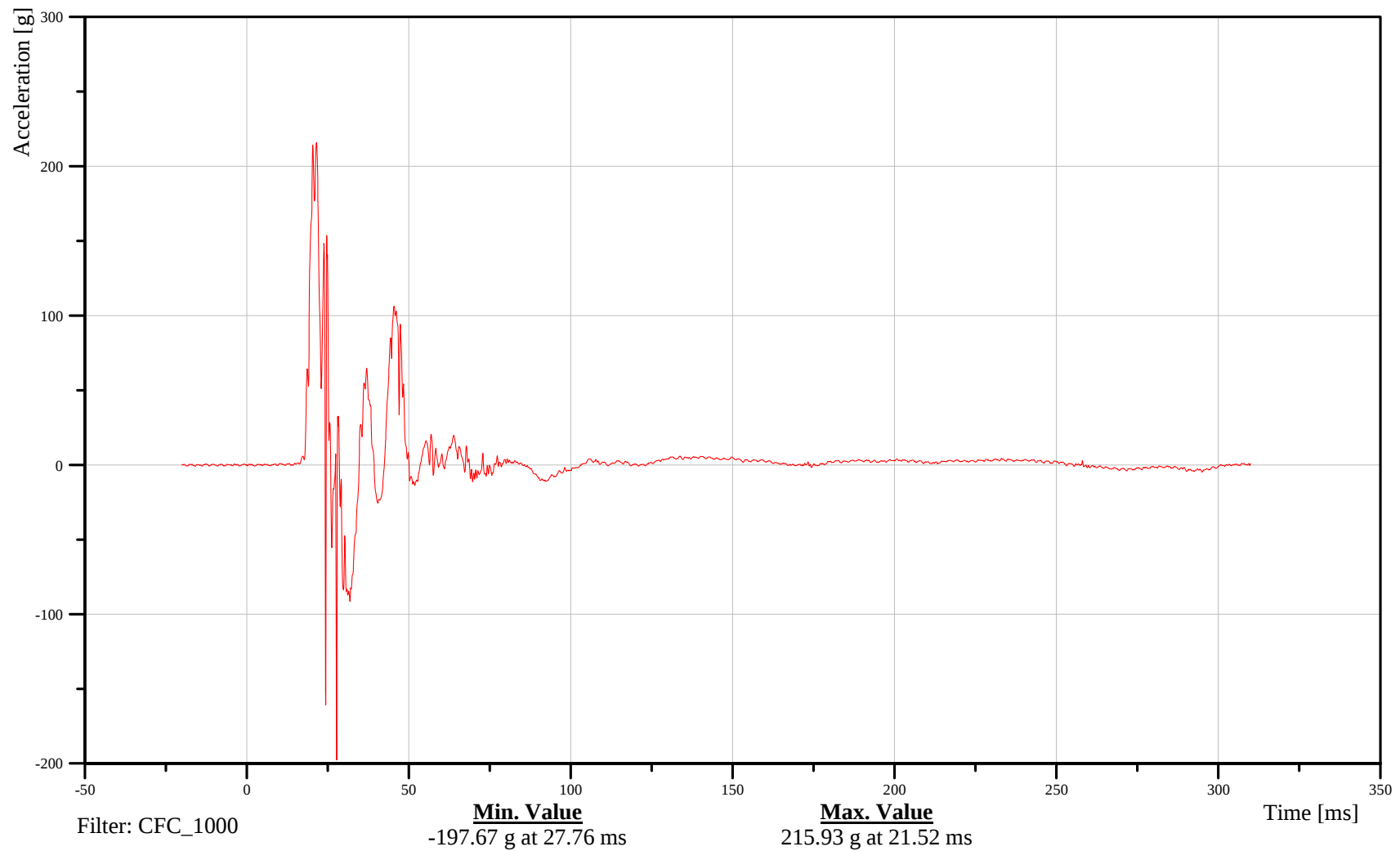
Thorax Rib 1 Y-Axis Acceleration

Customer: VRTC

11TRRILE01WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-44

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

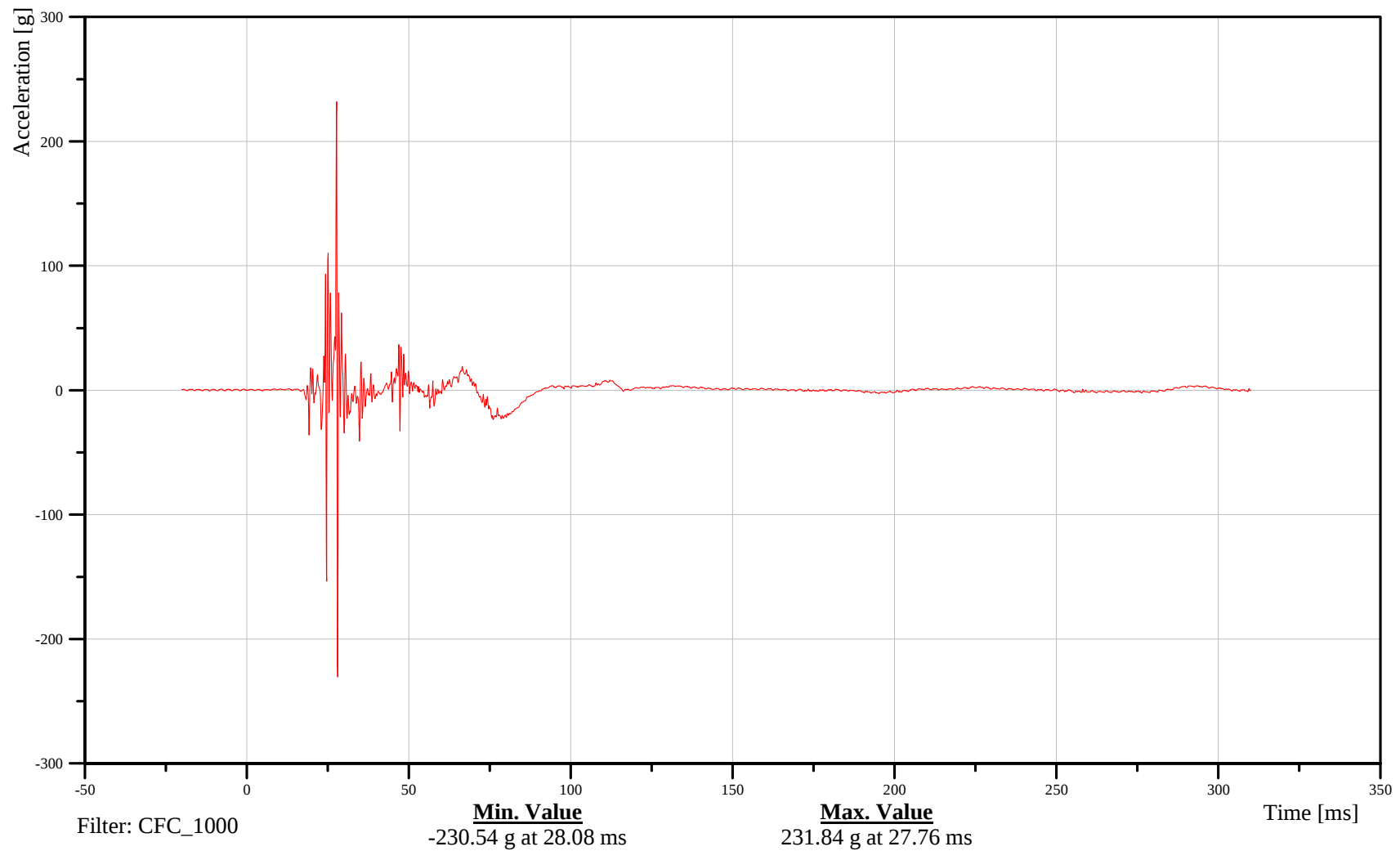
Thorax Rib 1 Z-Axis Acceleration

Customer: VRTC

11TRRILE01WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-45

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

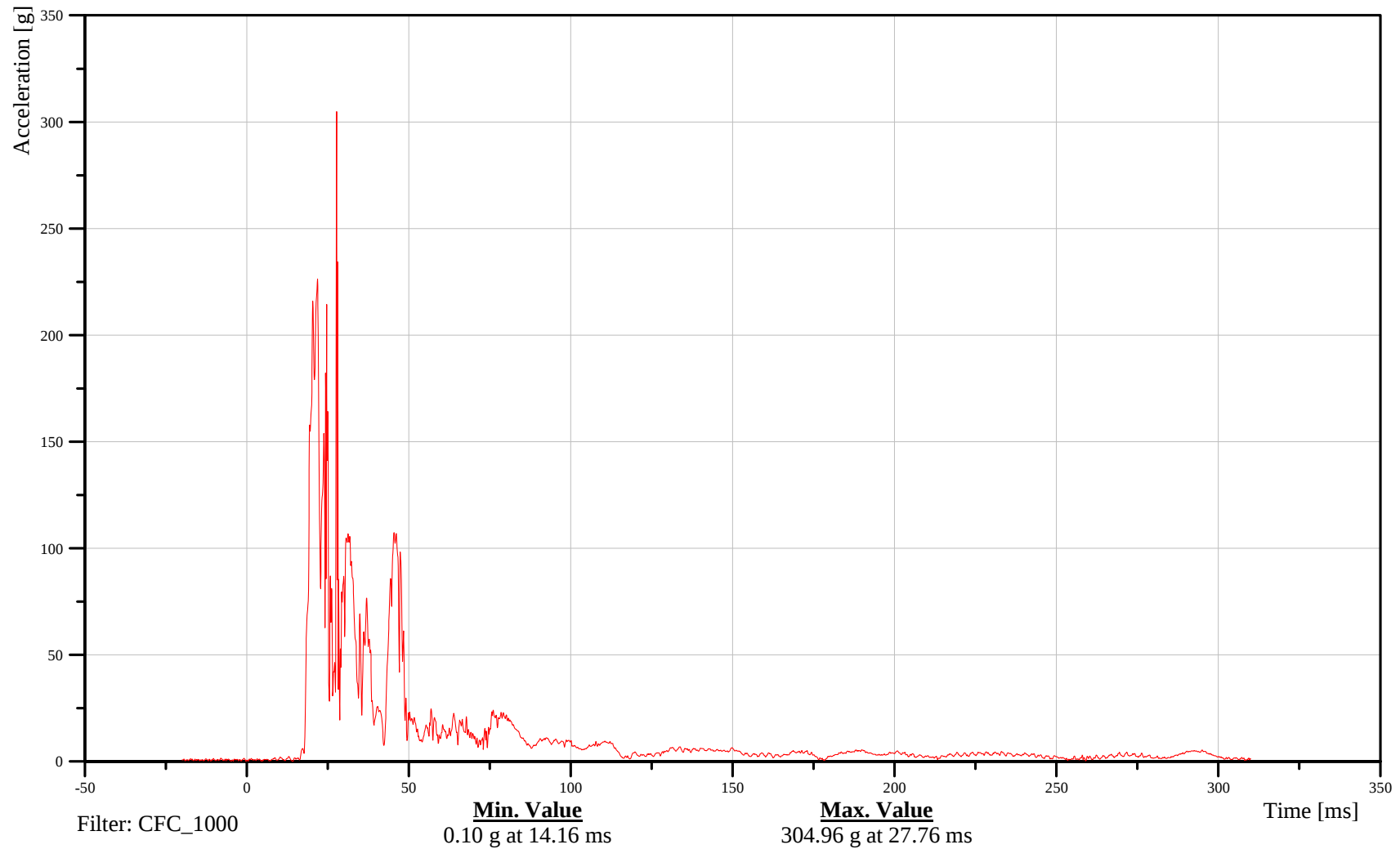
Thorax Rib 1 Resultant Acceleration

Customer: VRTC

11TRRILE01WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-46

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

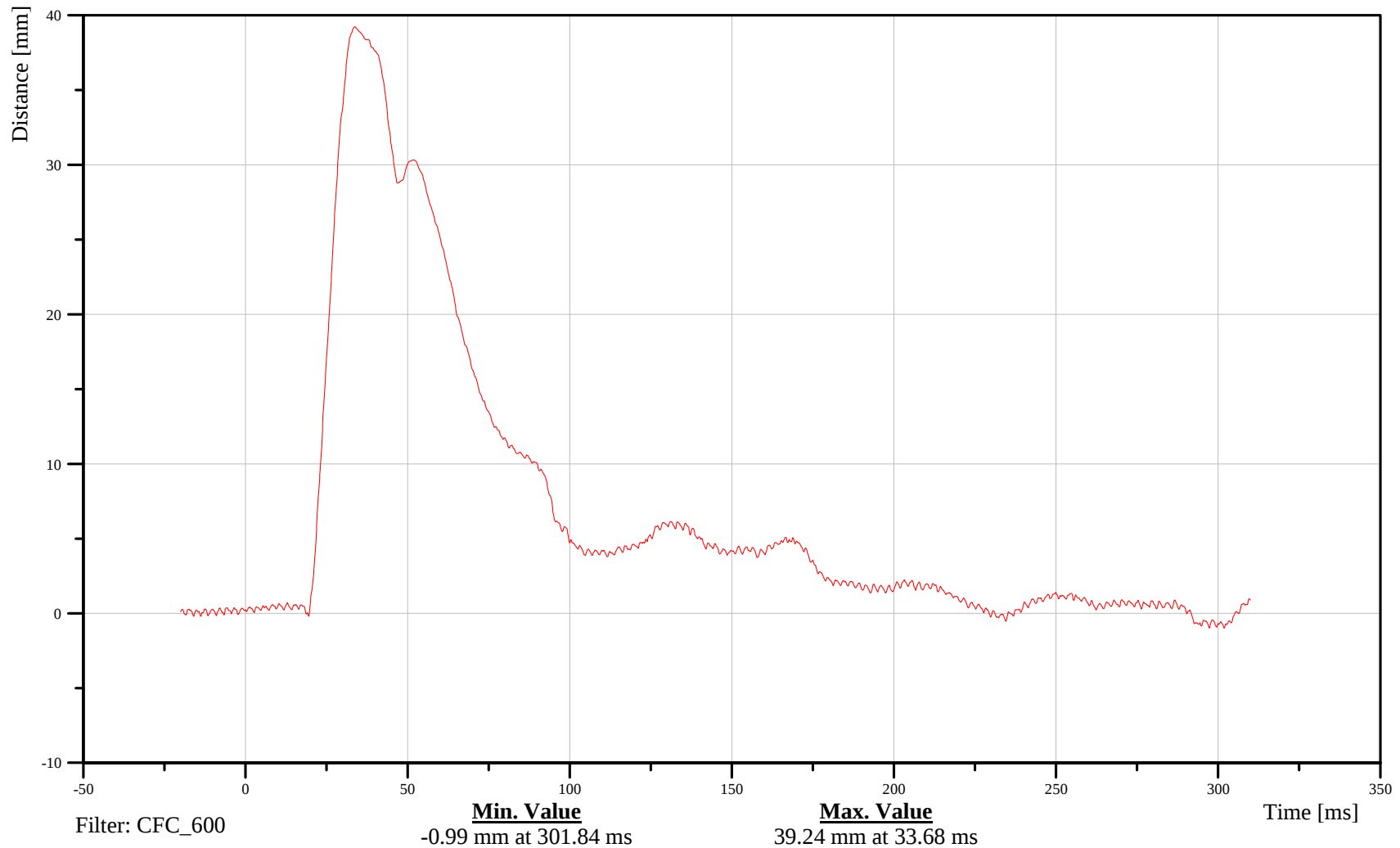
Thorax Rib 2 Y-Axis Displacement

Customer: VRTC

11TRRILE02WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-47

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

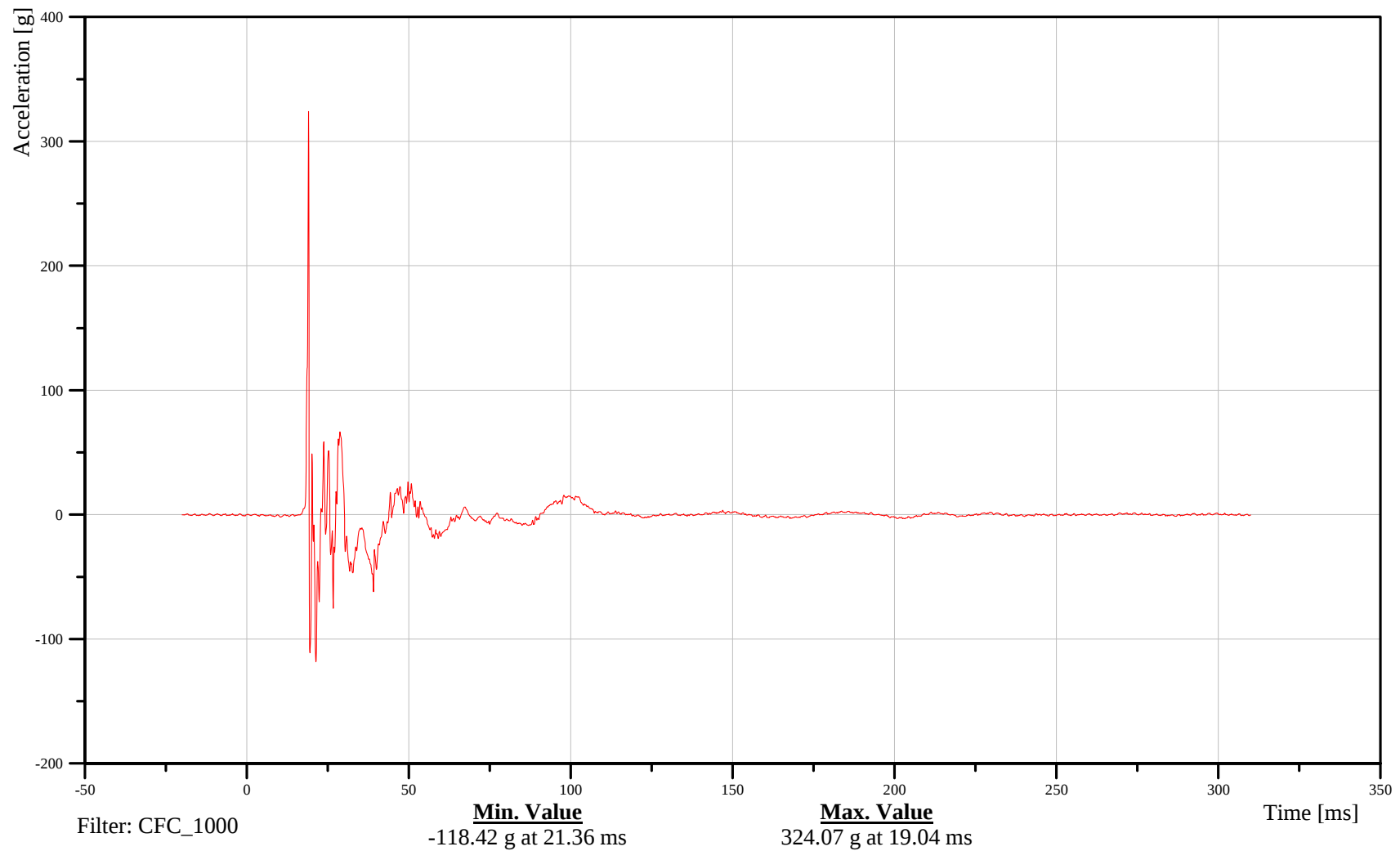
Thorax Rib 2 X-Axis Acceleration

Customer: VRTC

11TRRILE02WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-48

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

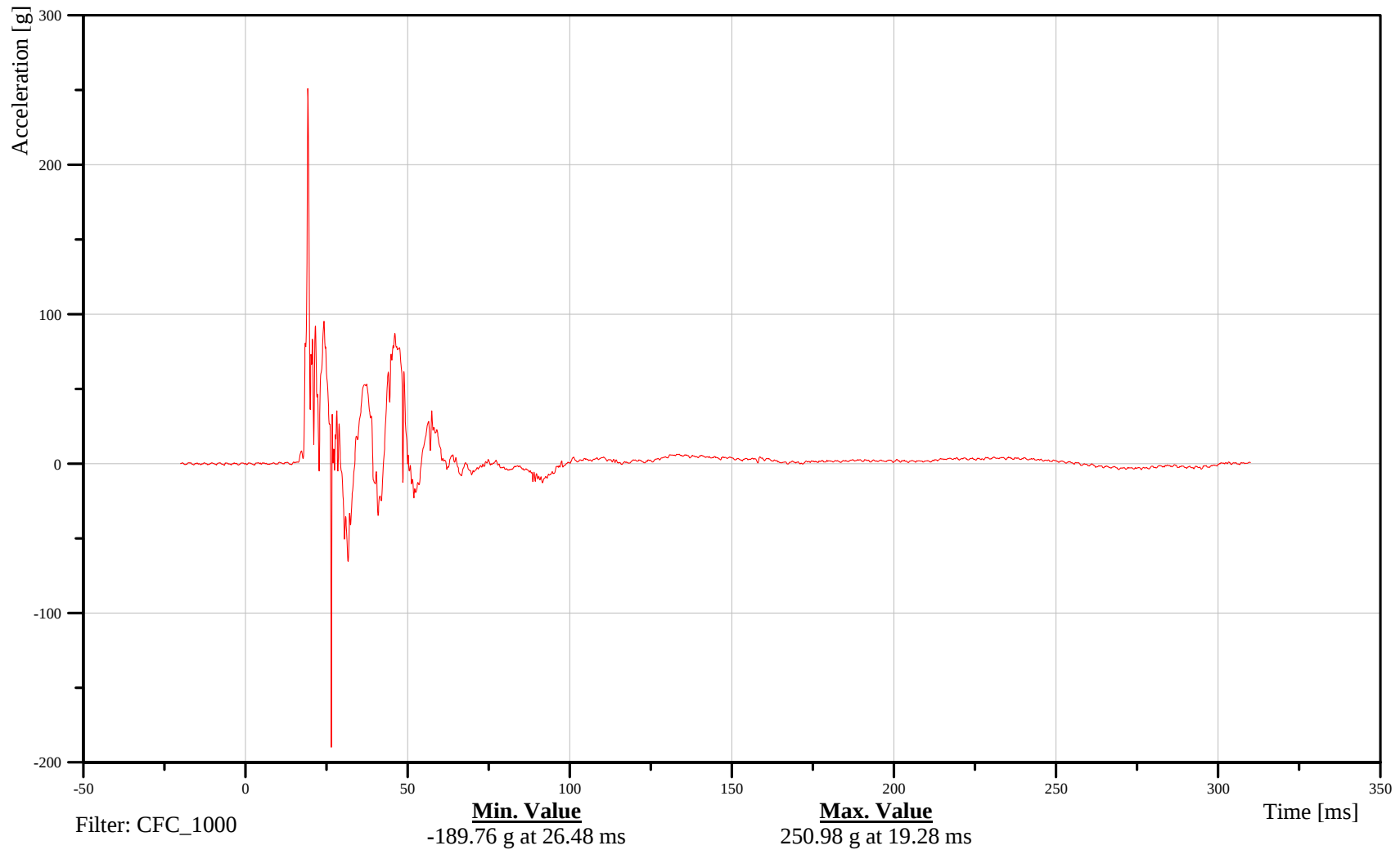
Thorax Rib 2 Y-Axis Acceleration

Customer: VRTC

11TRRILE02WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-49

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

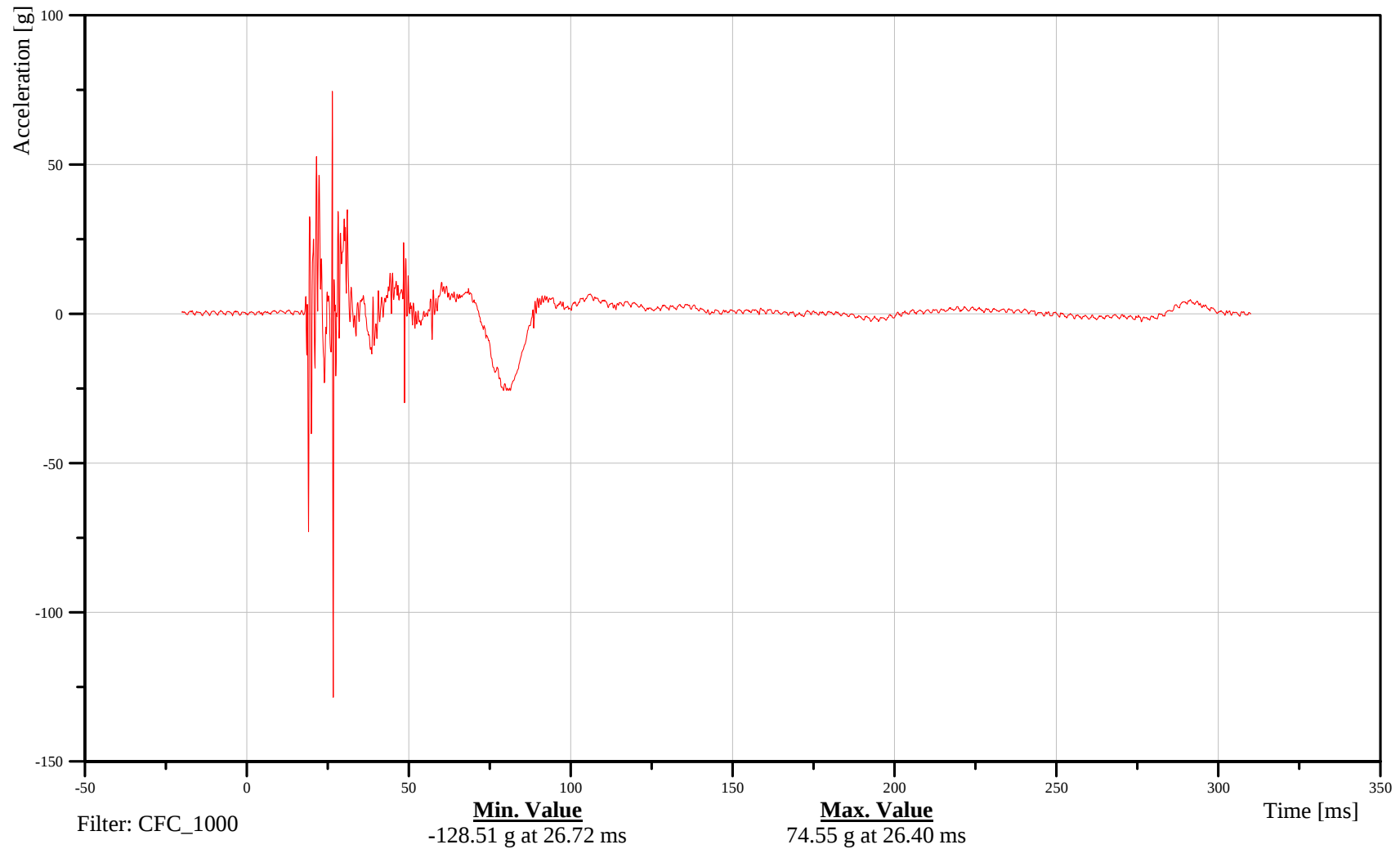
Thorax Rib 2 Z-Axis Acceleration

Customer: VRTC

11TRRILE02WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-50

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

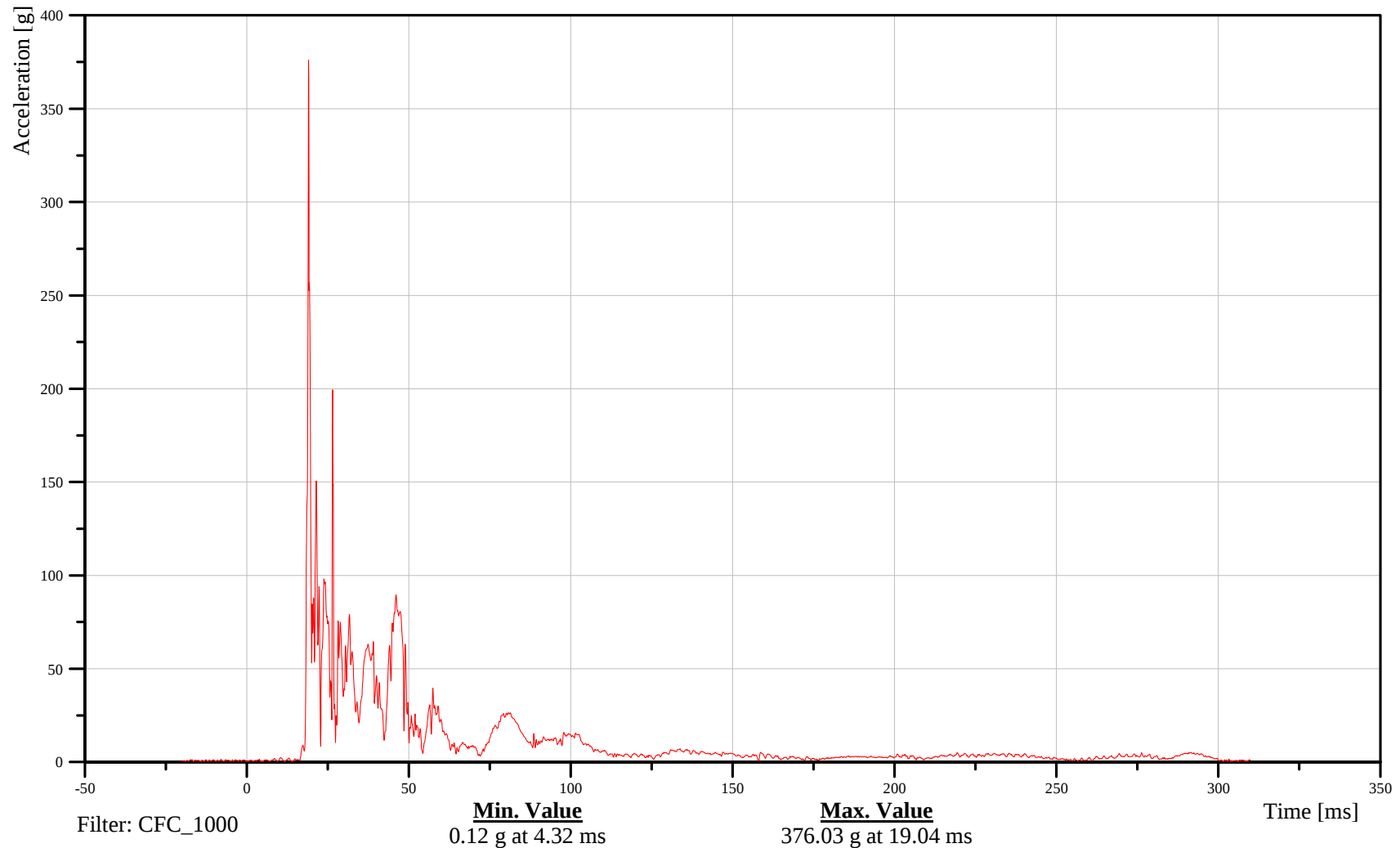
Thorax Rib 2 Resultant Acceleration

Customer: VRTC

11TRRILE02WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-51

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

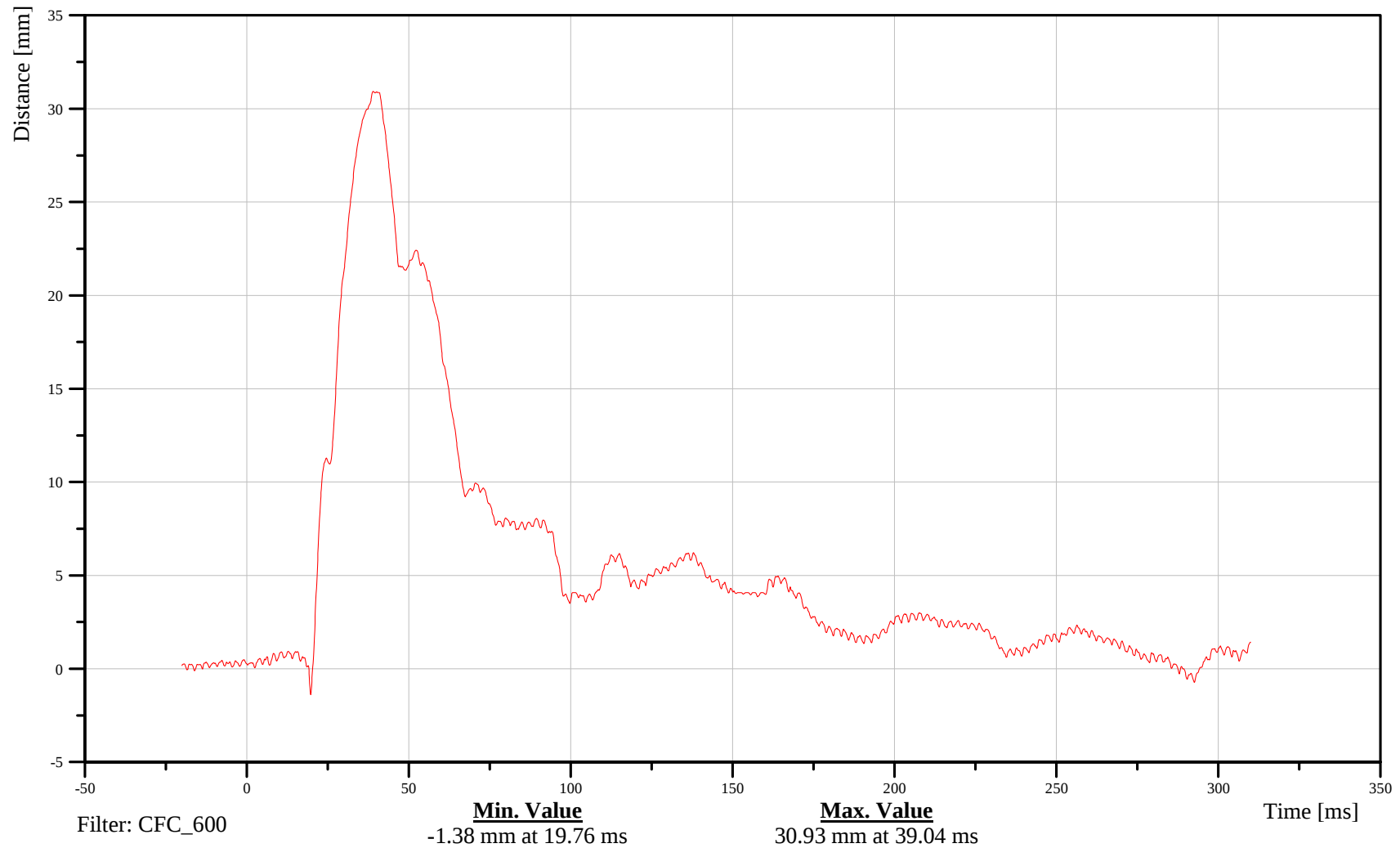
Thorax Rib 3 Y-Axis Displacement

Customer: VRTC

11TRRILE03WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-52

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

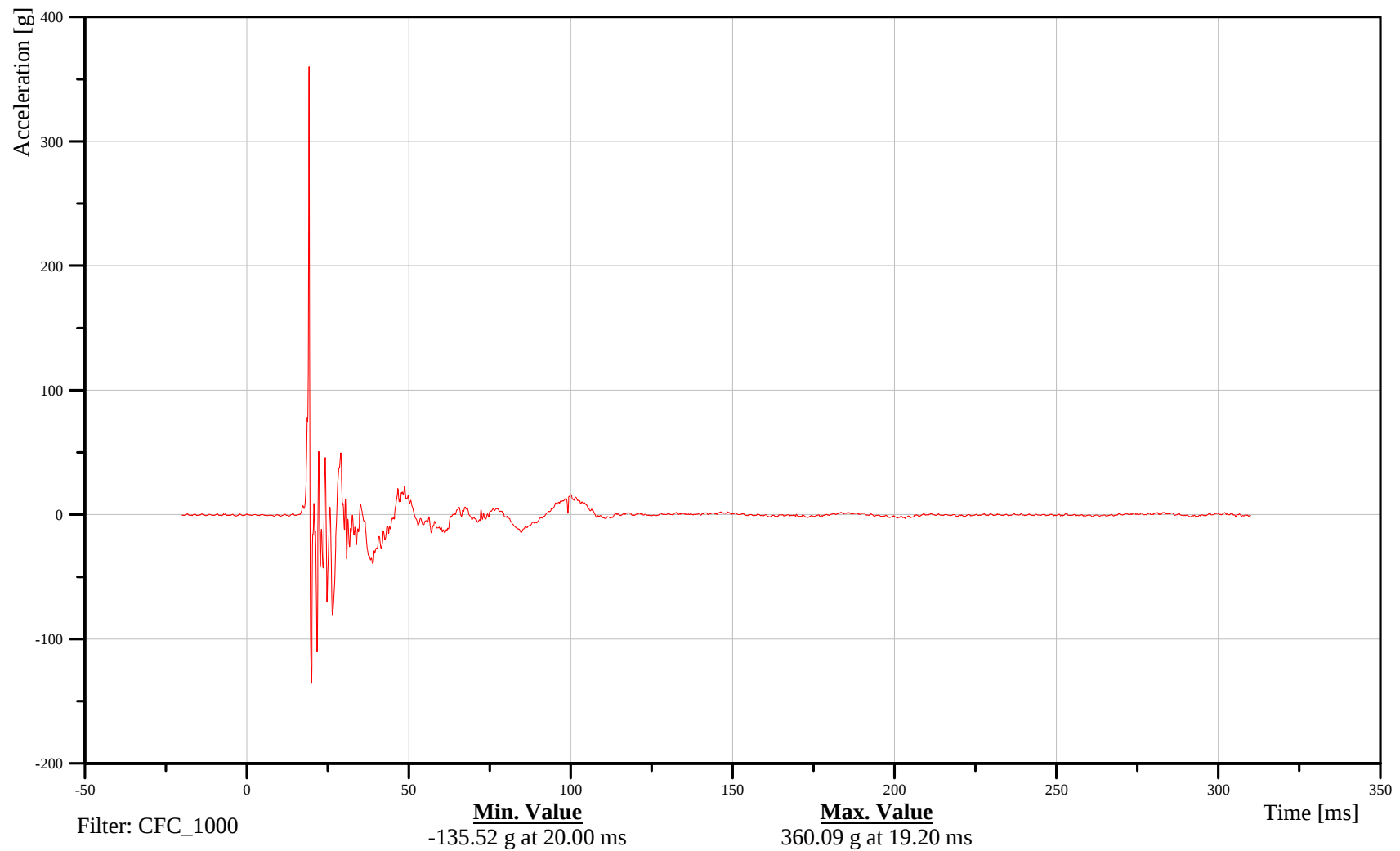
Thorax Rib 3 X-Axis Acceleration

Customer: VRTC

11TRRILE03WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-53

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

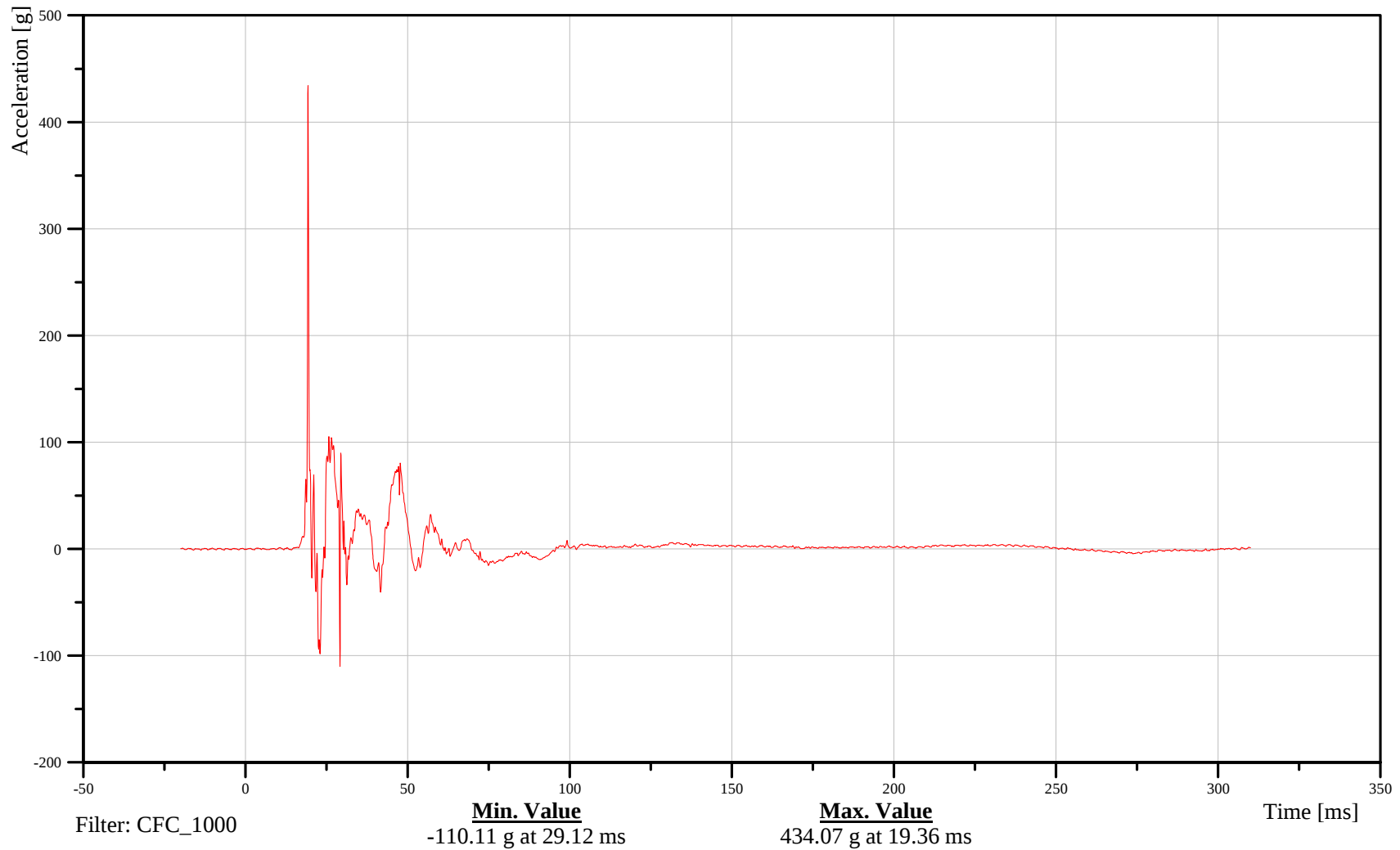
Thorax Rib 3 Y-Axis Acceleration

Customer: VRTC

11TRRILE03WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-54

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

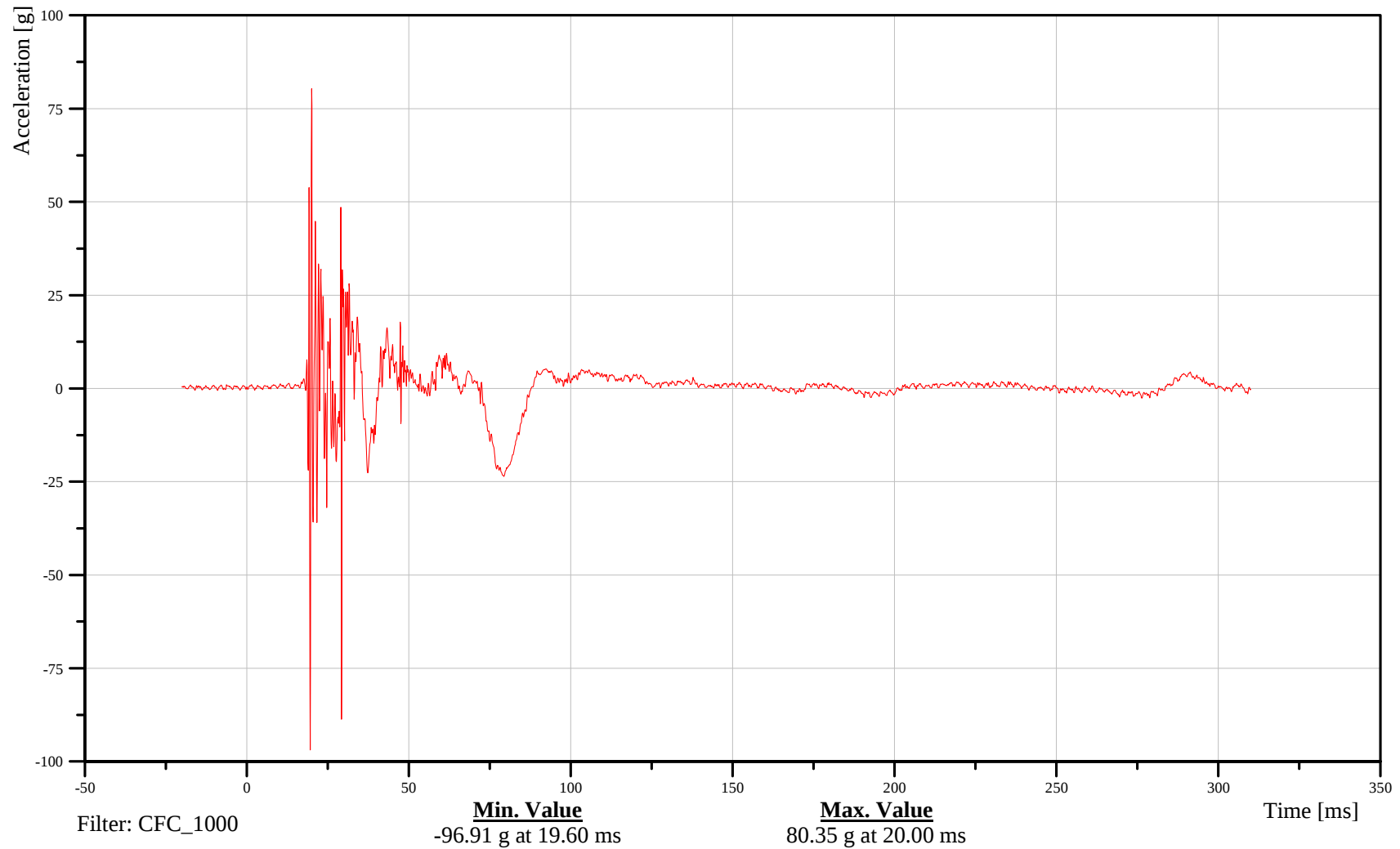
Thorax Rib 3 Z-Axis Acceleration

Customer: VRTC

11TRRILE03WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-55

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

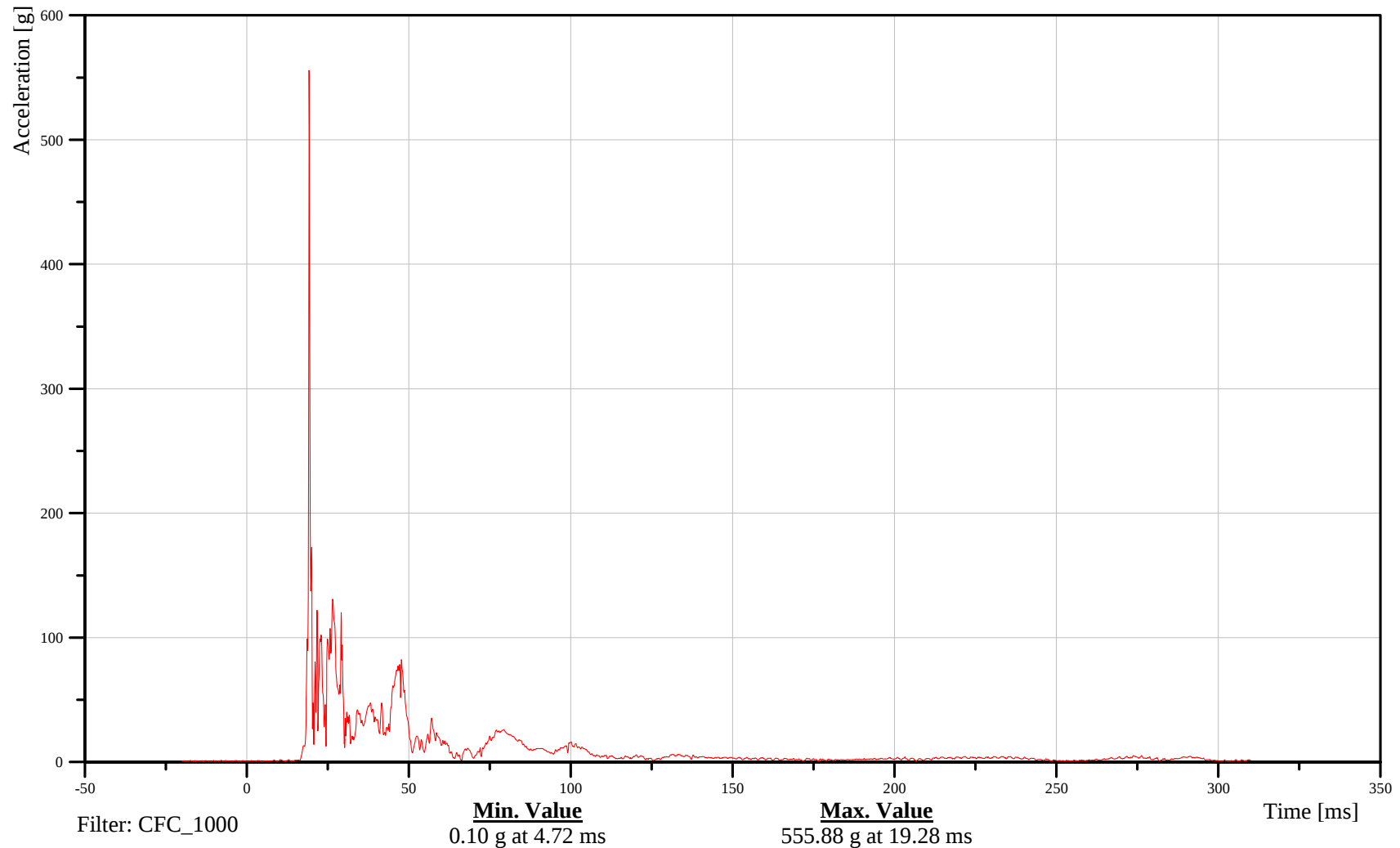
Thorax Rib 3 Resultant Acceleration

Customer: VRTC

11TRRILE03WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-56

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

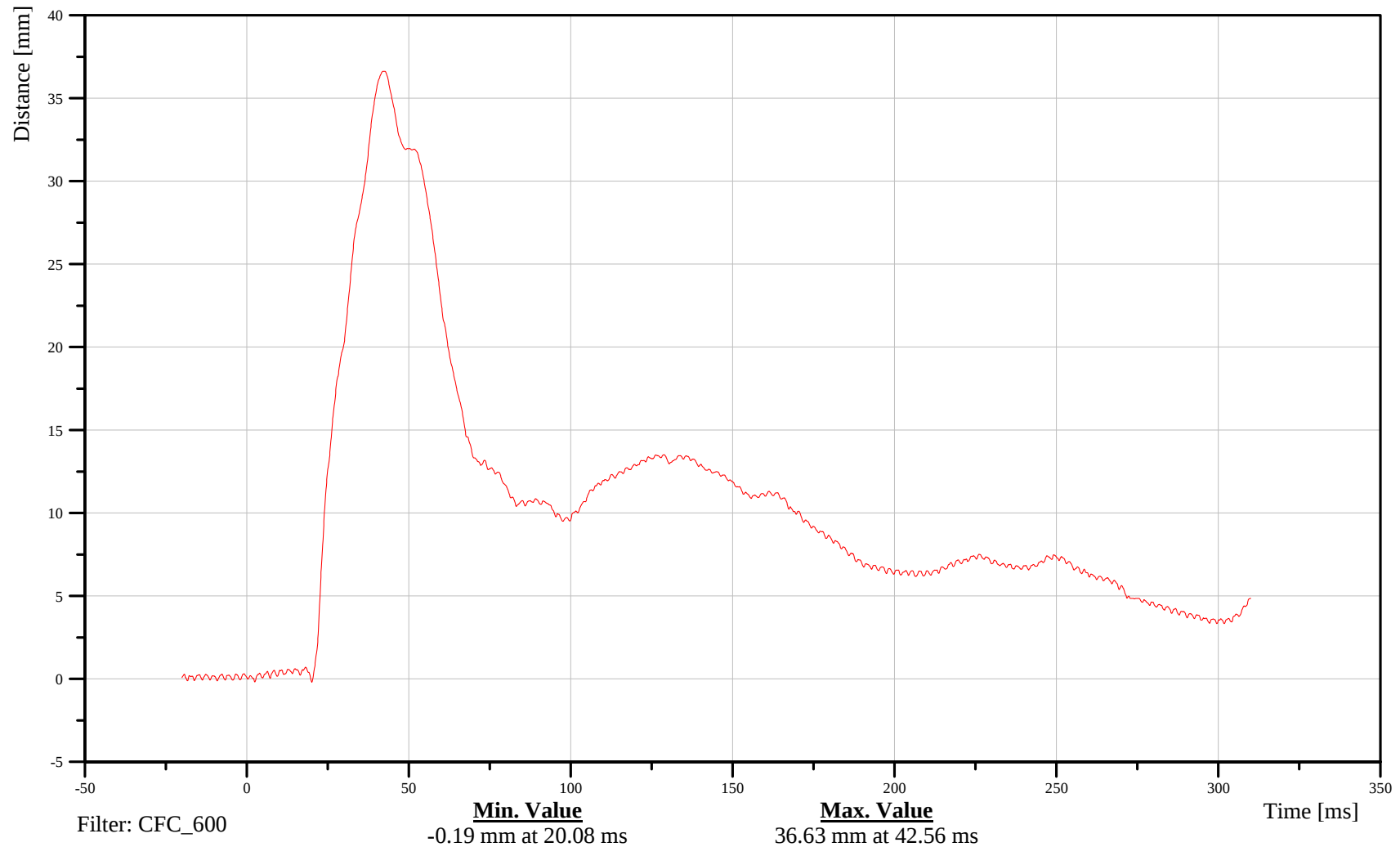
Abdominal Rib 1 Y-Axis Displacement

Customer: VRTC

11ABRILE01WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-57

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

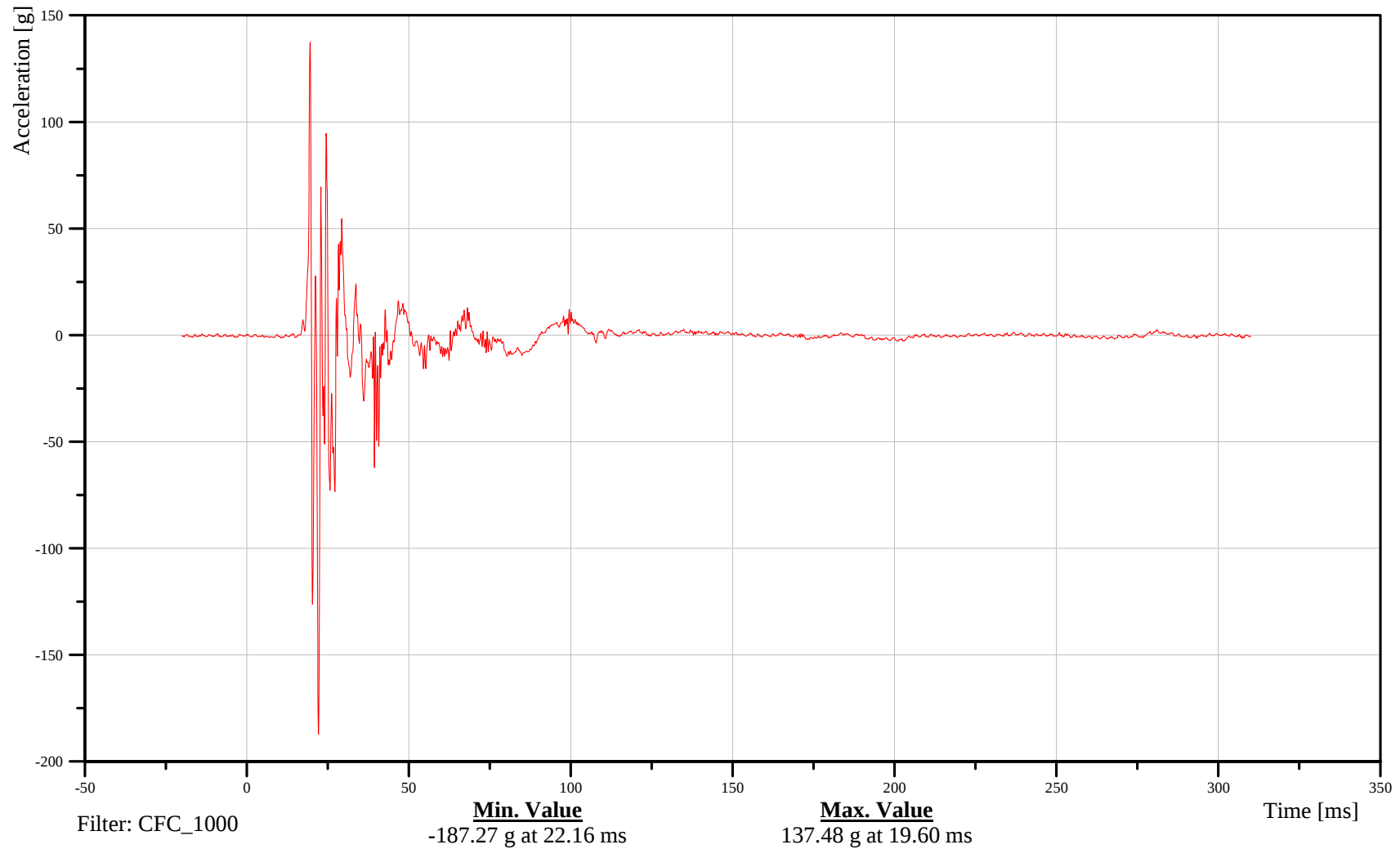
Abdominal Rib 1 X-Axis Acceleration

Customer: VRTC

11ABRILE01WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-58

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

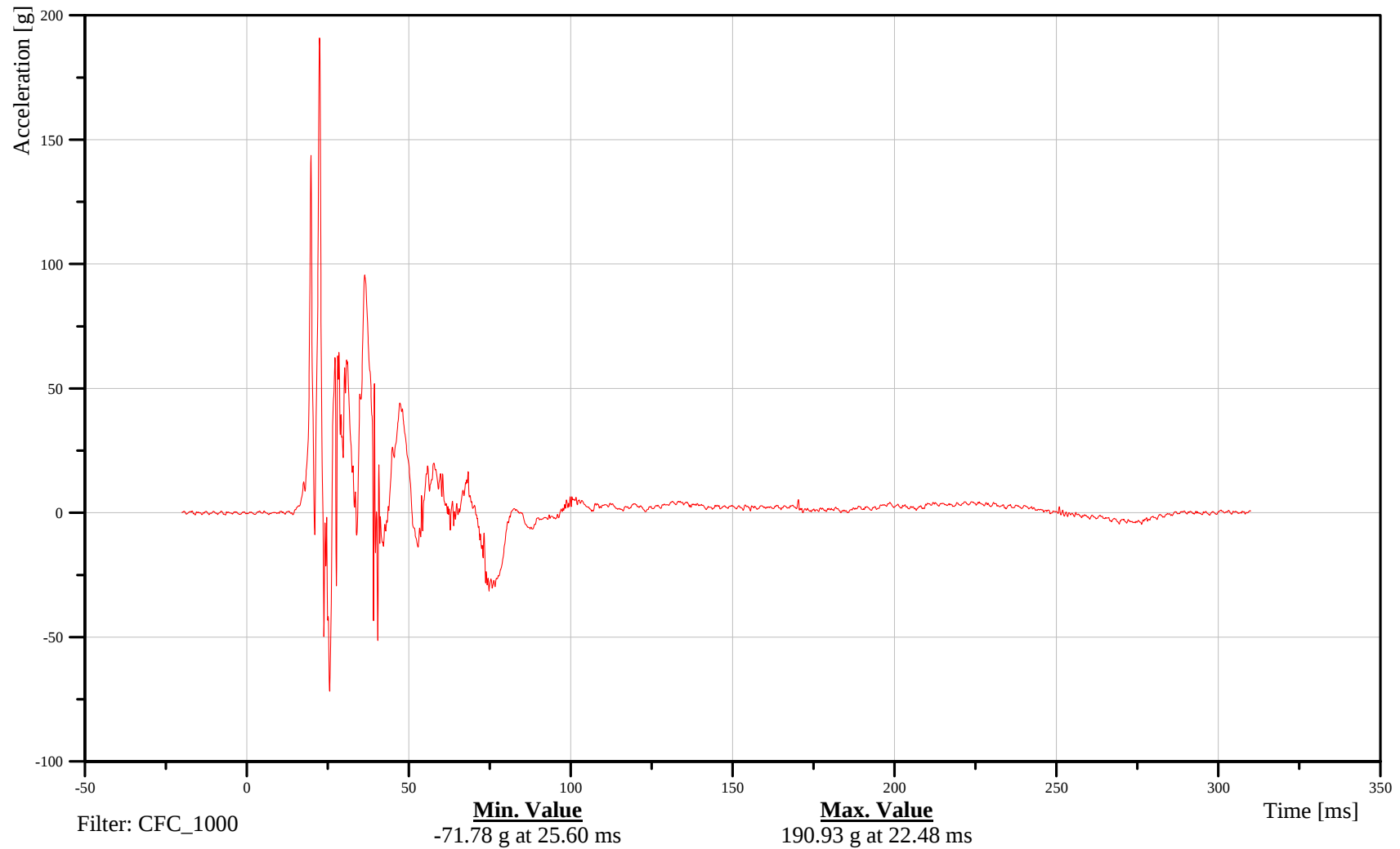
Abdominal Rib 1 Y-Axis Acceleration

Customer: VRTC

11ABRILE01WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-59

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

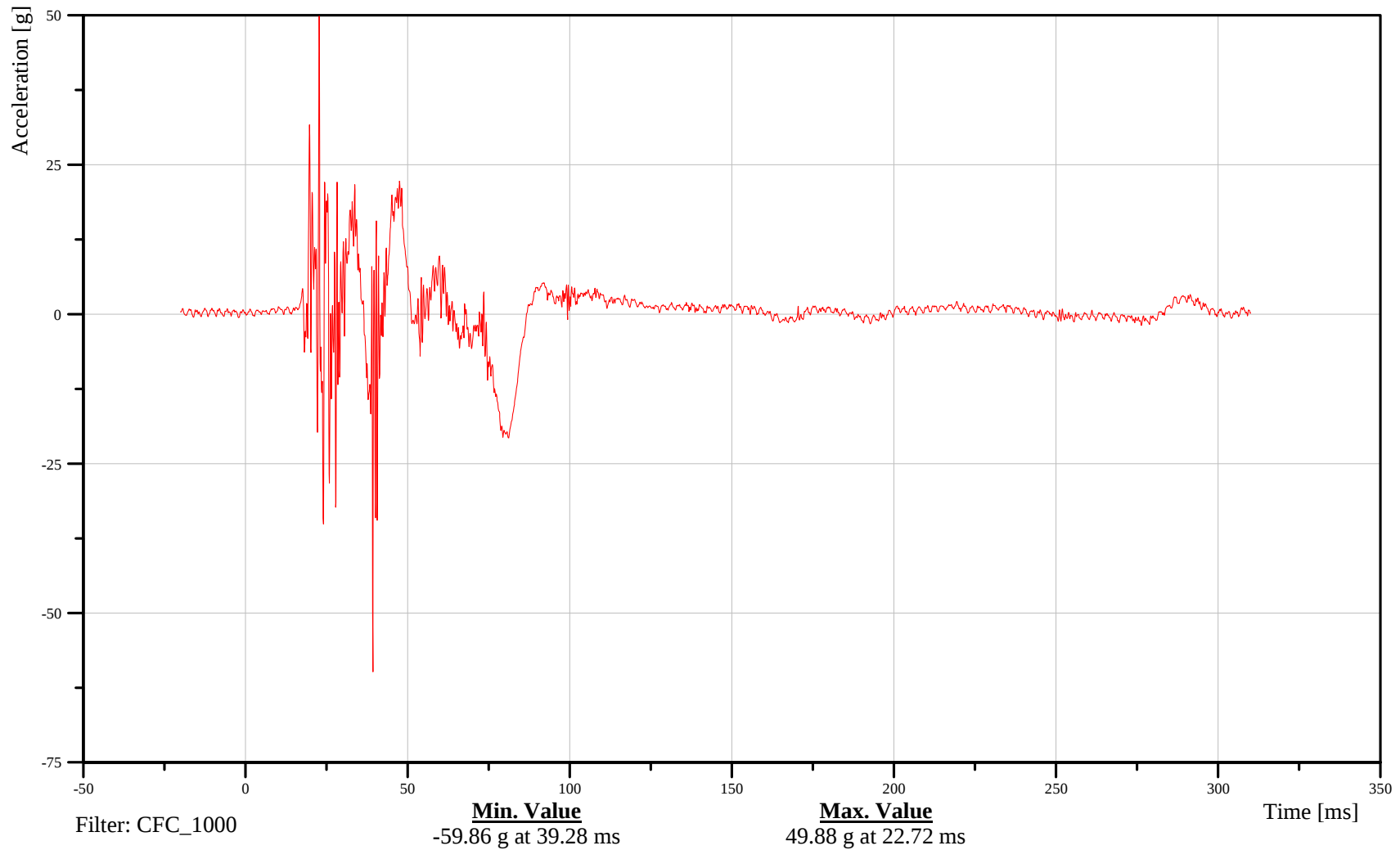
Abdominal Rib 1 Z-Axis Acceleration

Customer: VRTC

11ABRILE01WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-60

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

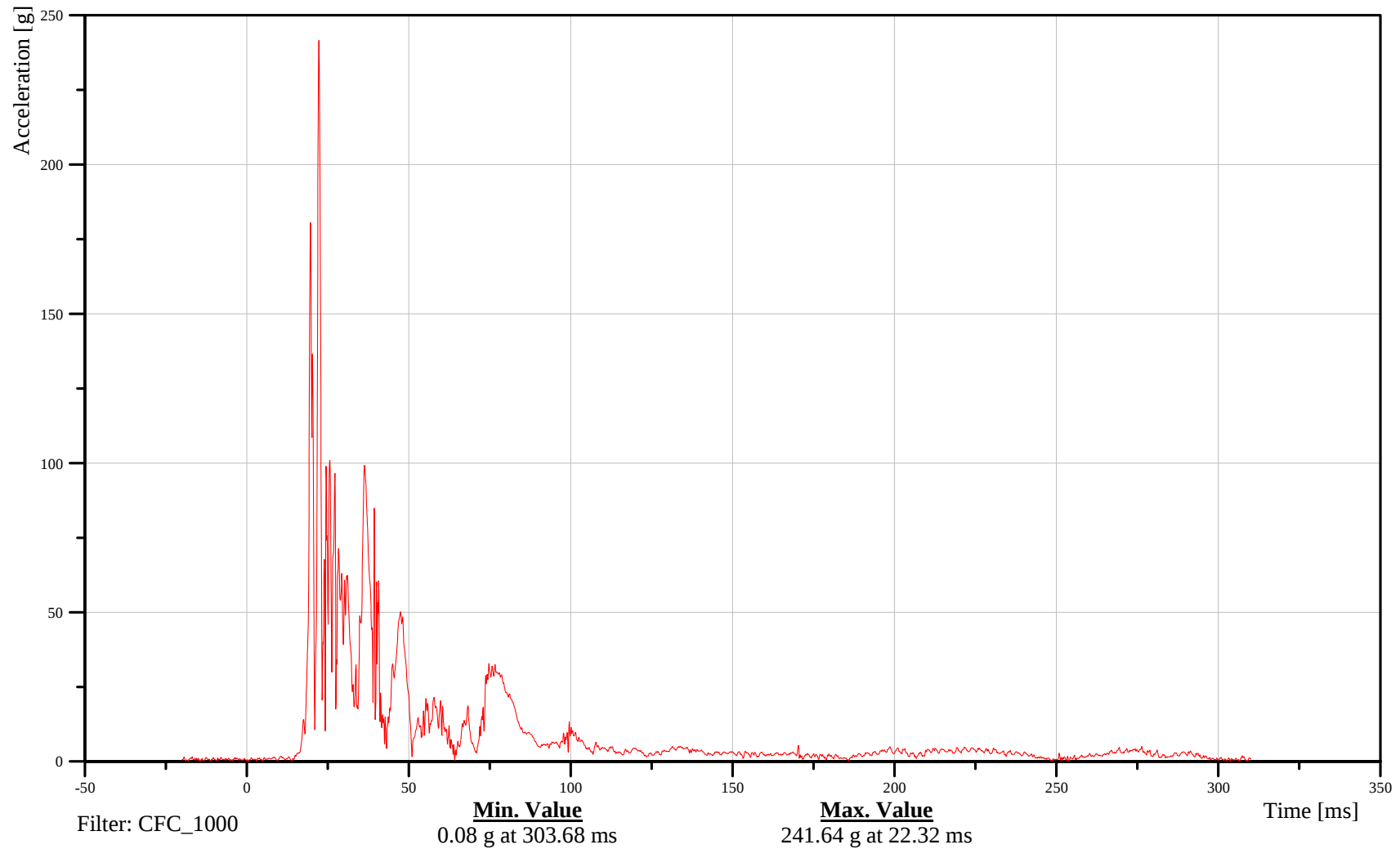
Abdominal Rib 1 Resultant Acceleration

Customer: VRTC

11ABRILE01WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-61

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

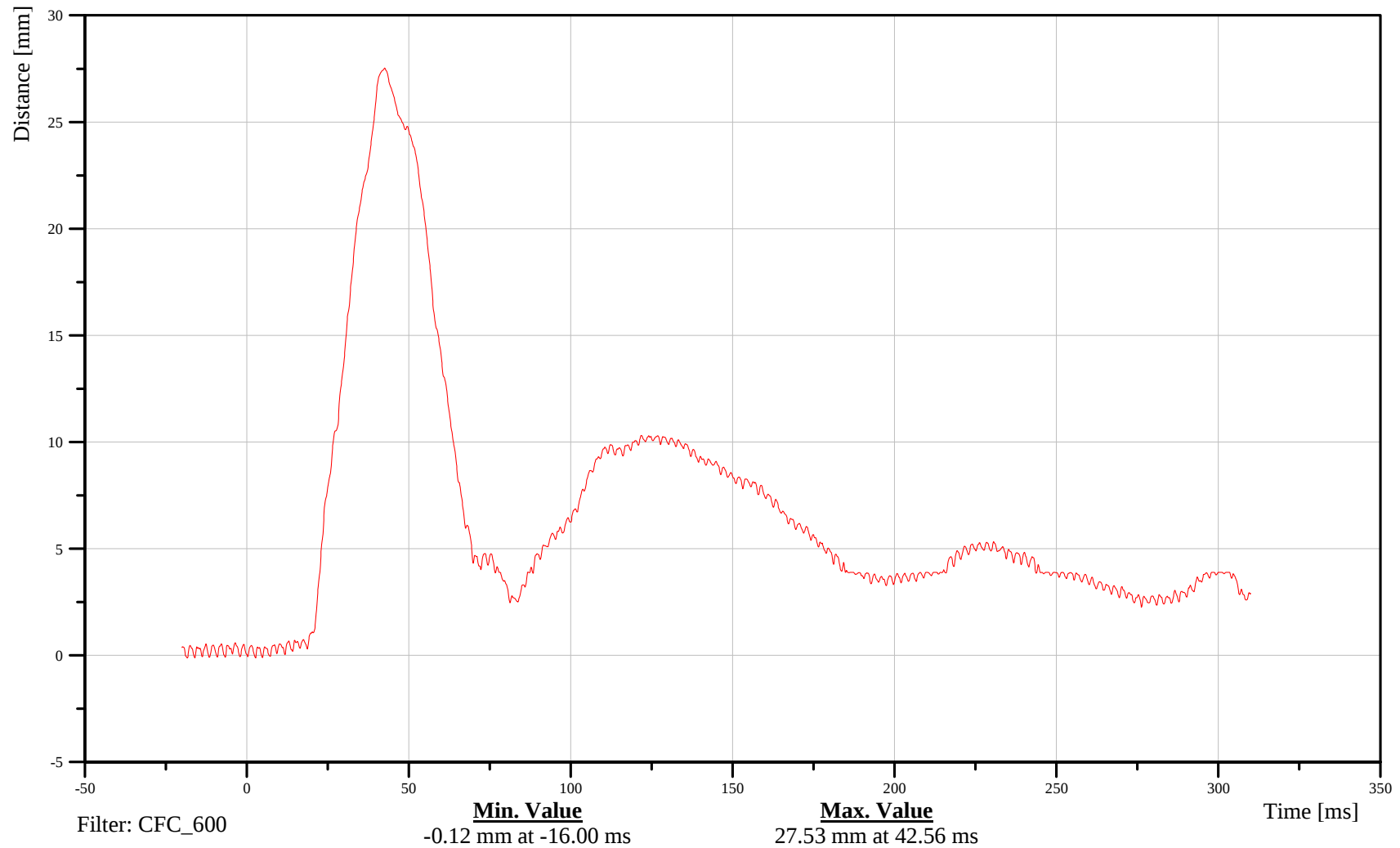
Abdominal Rib 2 Y-Axis Displacement

Customer: VRTC

11ABRILE02WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-62

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

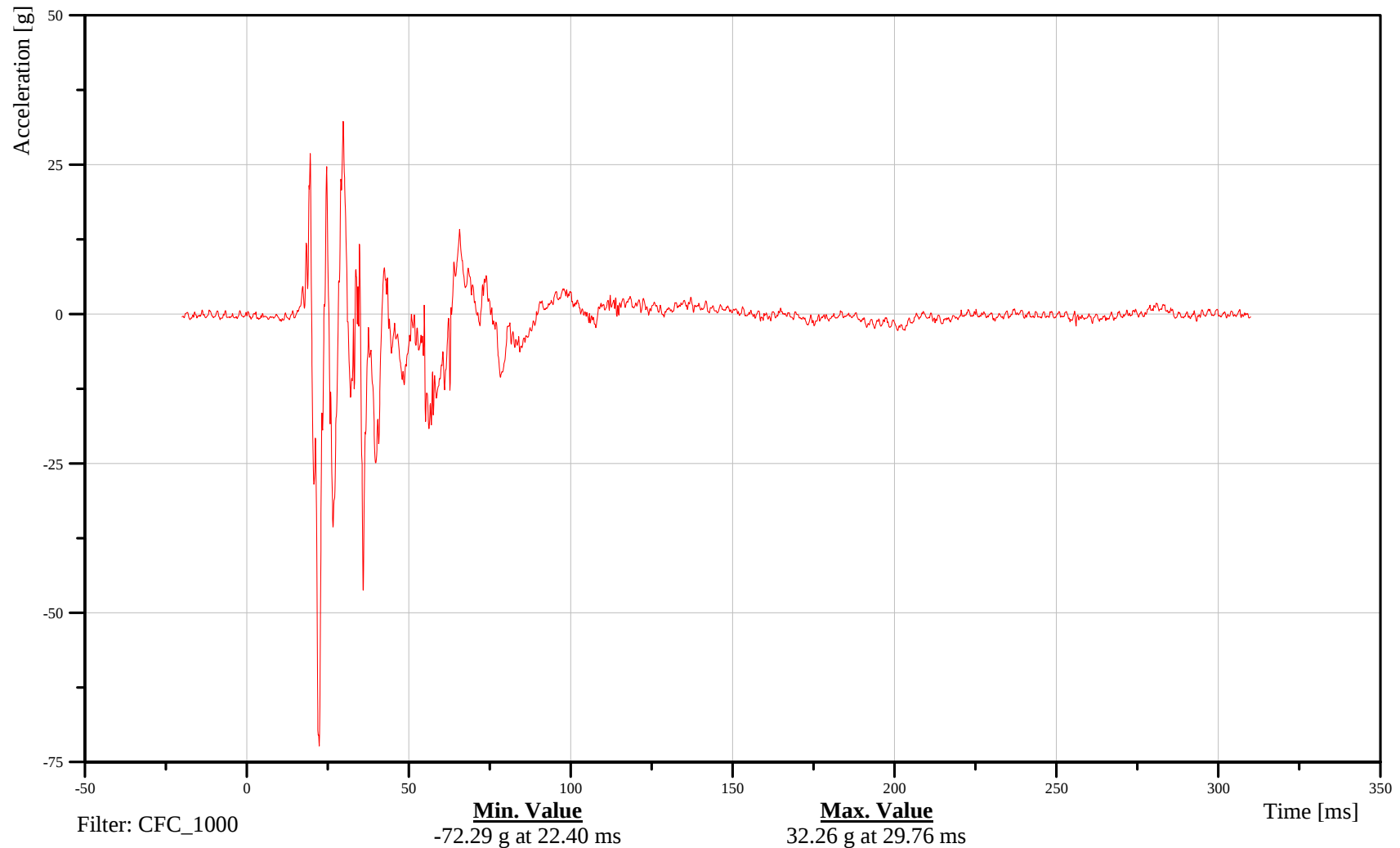
Abdominal Rib 2 X-Axis Acceleration

Customer: VRTC

11ABRILE02WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-63

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

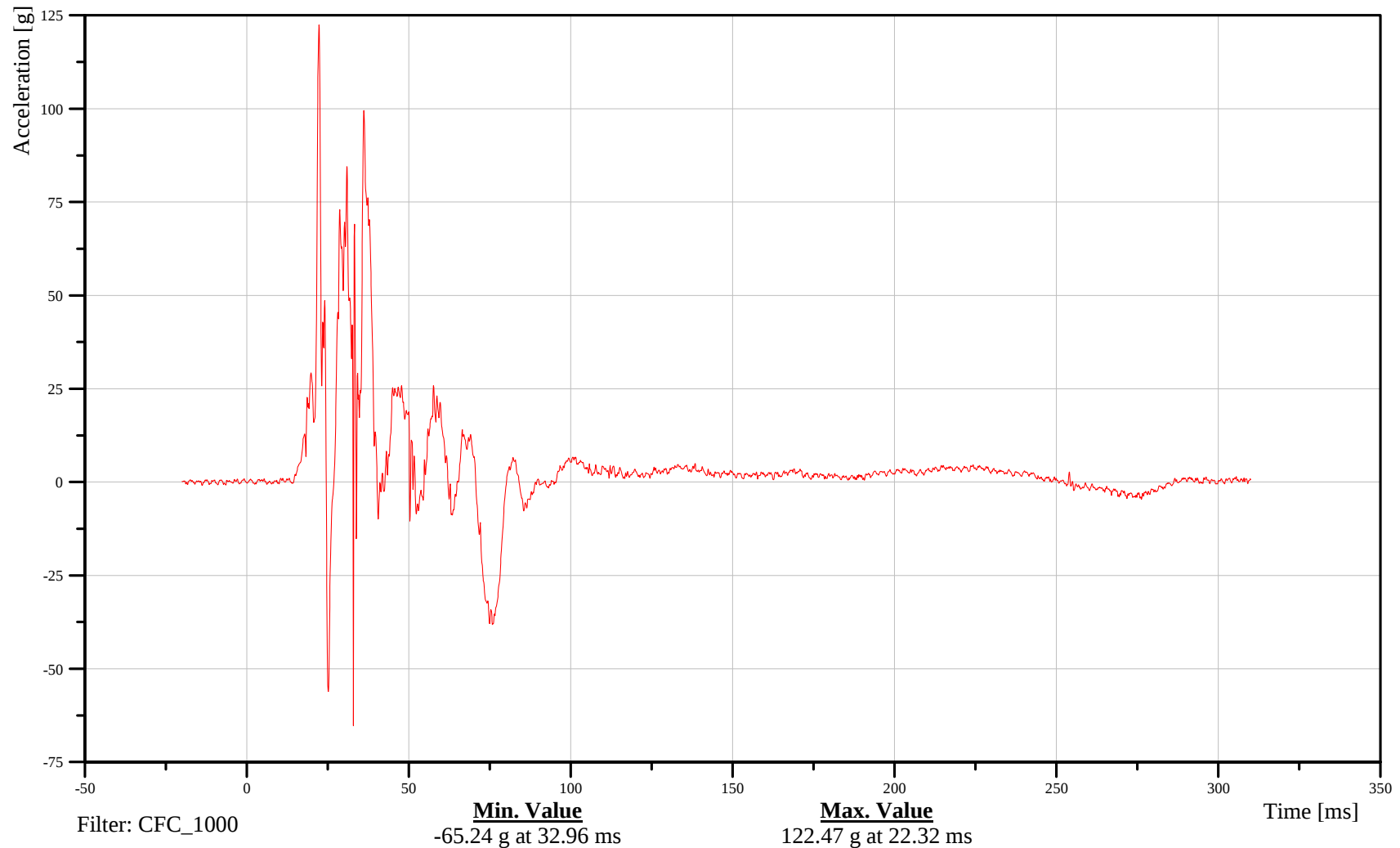
Abdominal Rib 2 Y-Axis Acceleration

Customer: VRTC

11ABRILE02WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-64

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

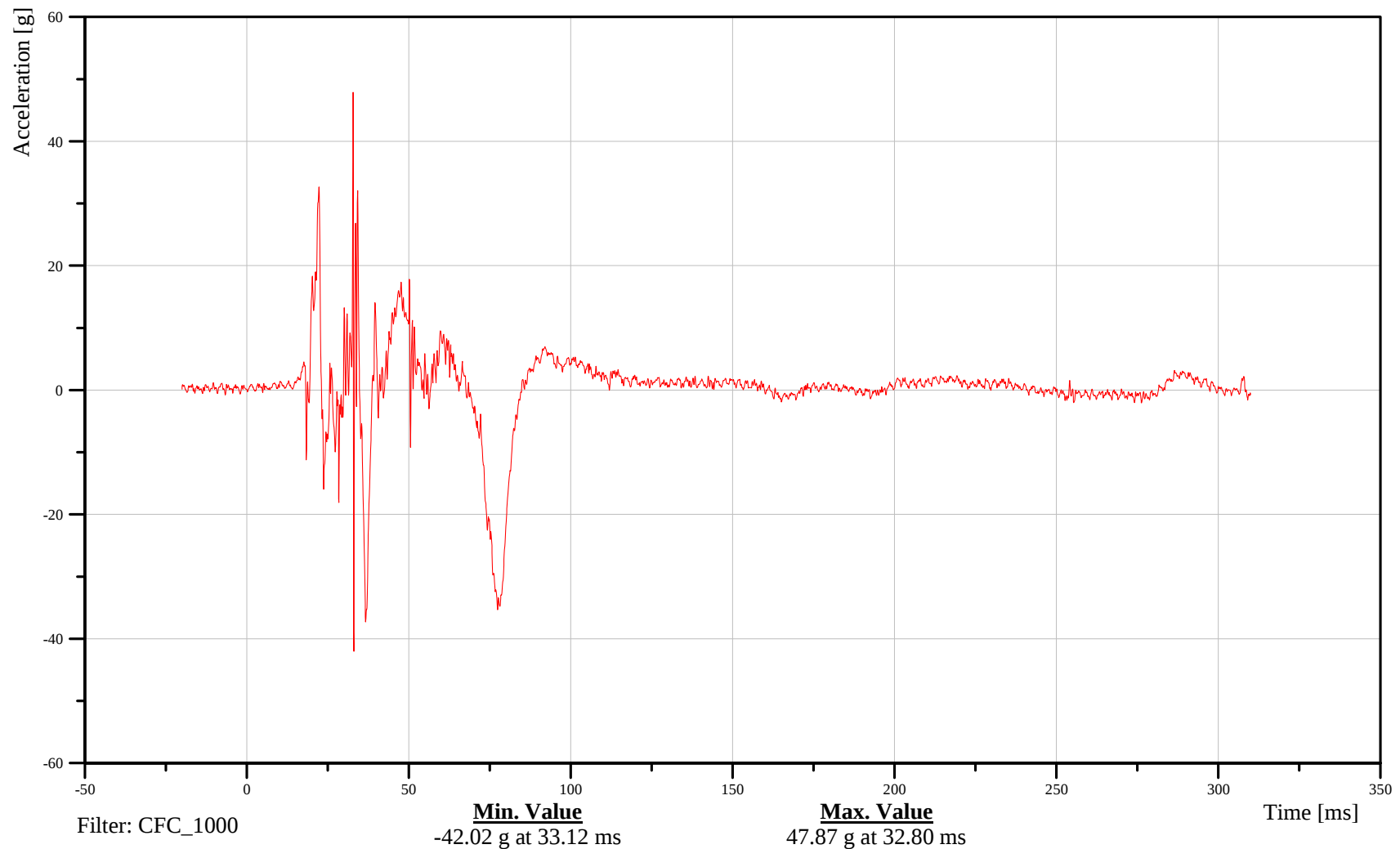
Abdominal Rib 2 Z-Axis Acceleration

Customer: VRTC

11ABRILE02WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-65

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

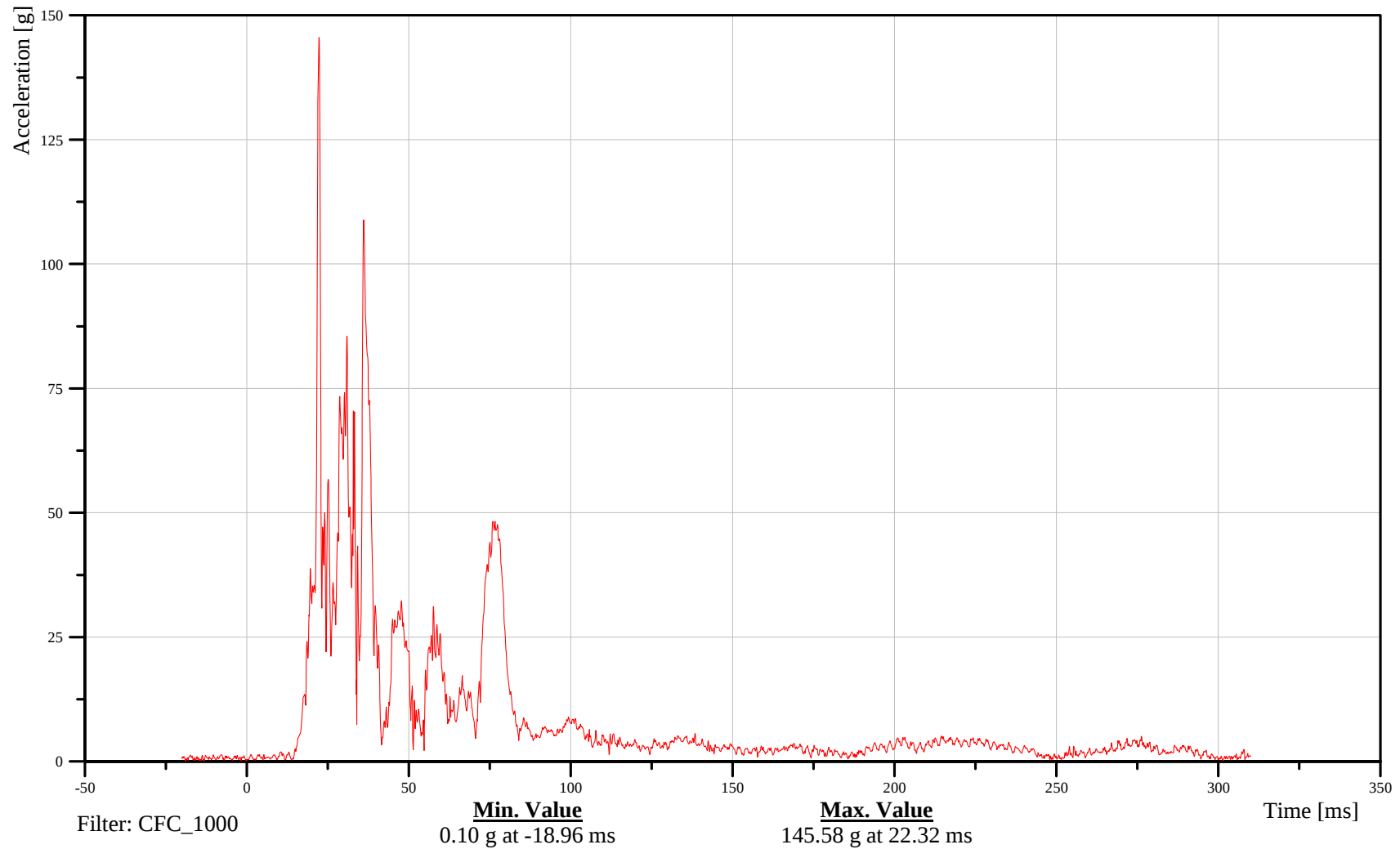
Abdominal Rib 2 Resultant Acceleration

Customer: VRTC

11ABRILE02WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-66

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

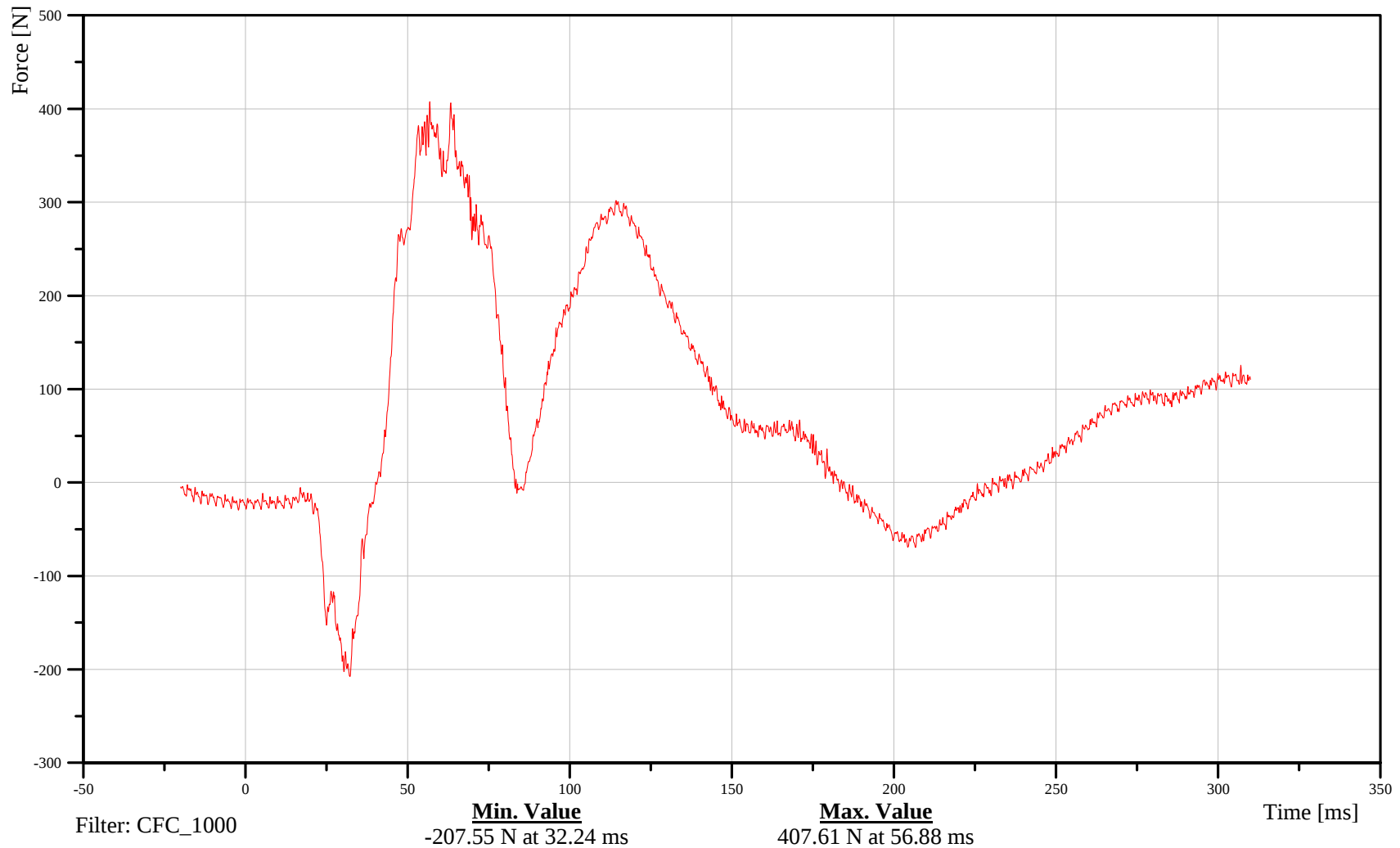
Lumbar X-Axis Force

Customer: VRTC

11LUSP0000WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-67

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

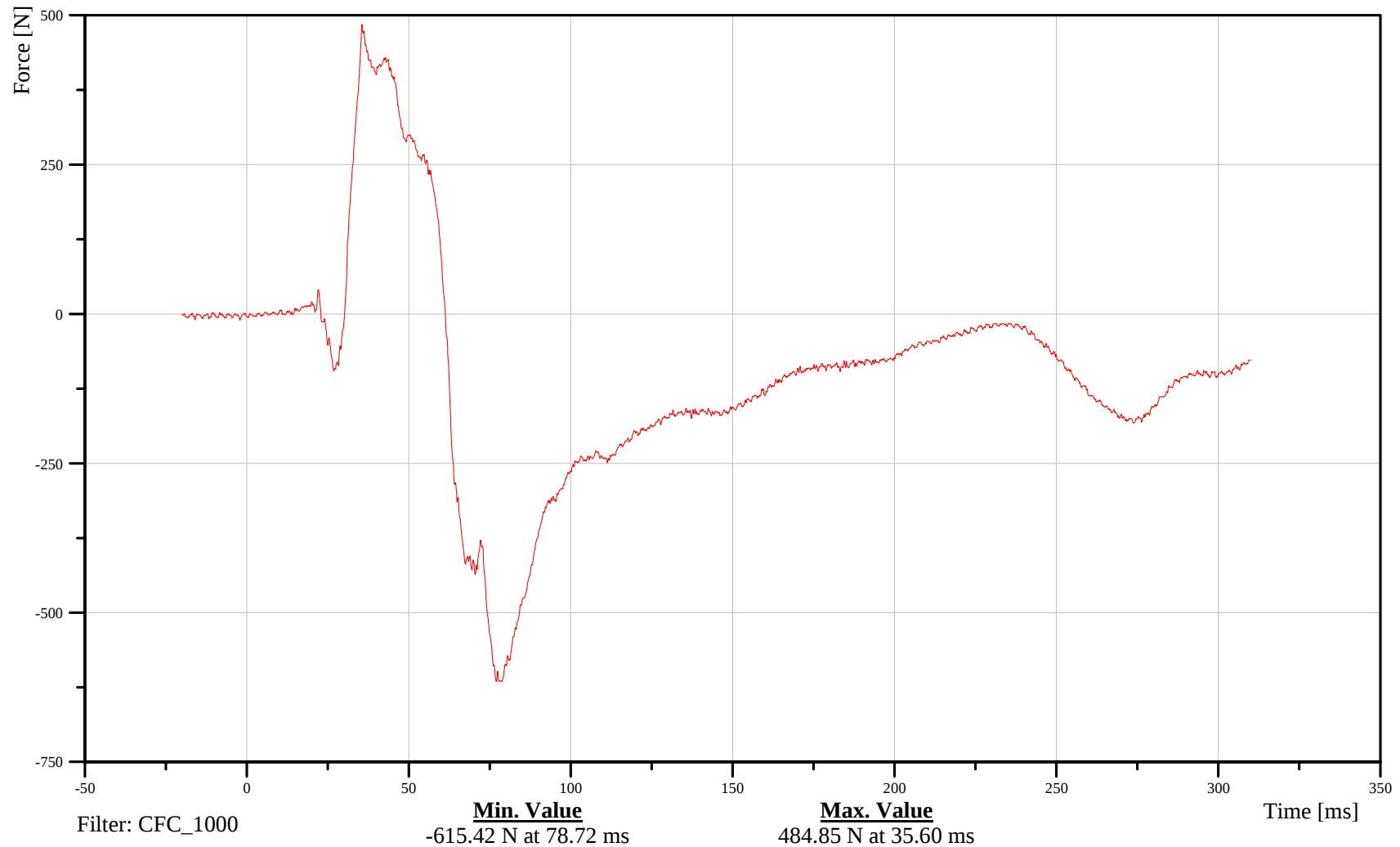
Lumbar Y-Axis Force

Customer: VRTC

11LUSP0000WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-68

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

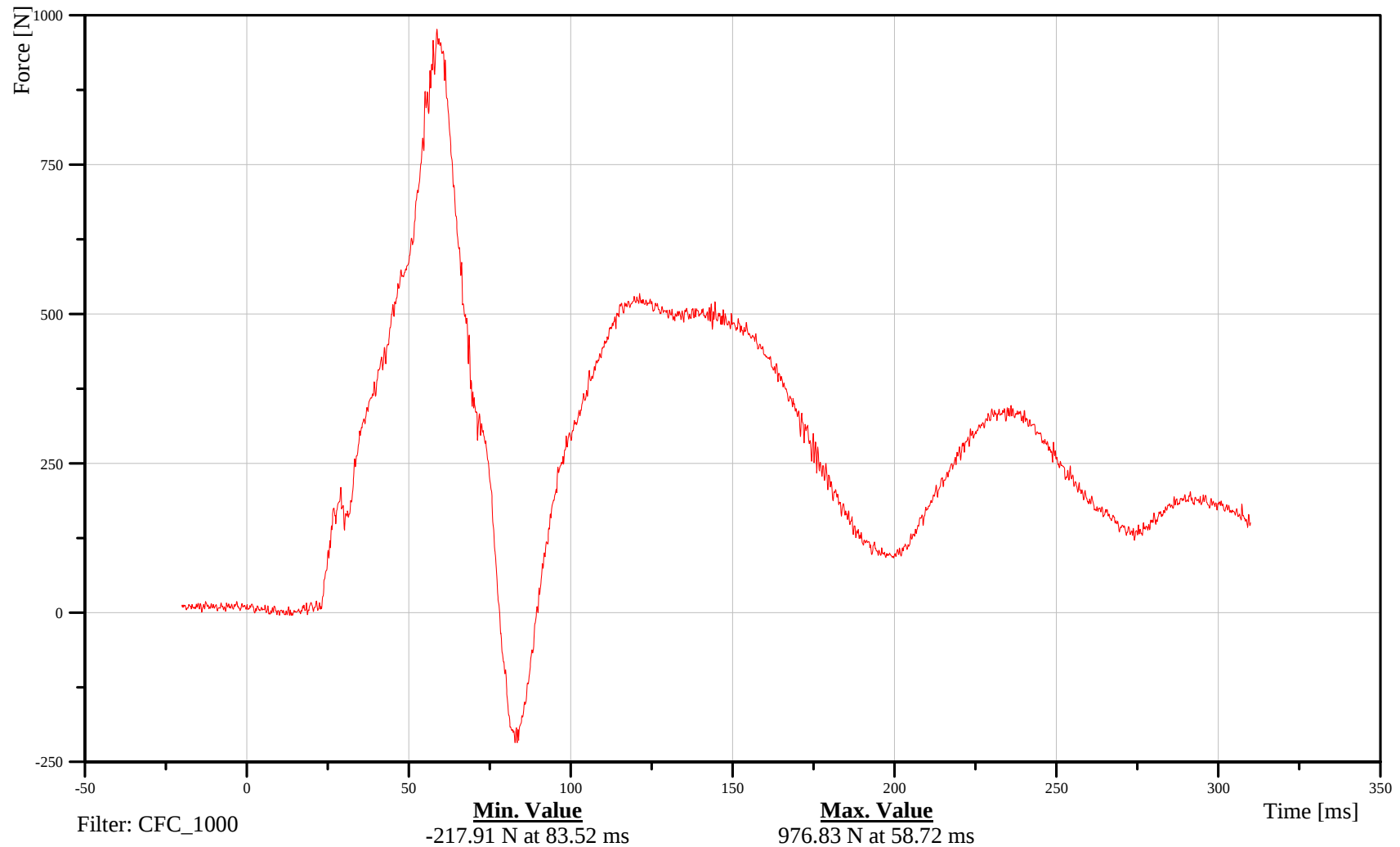
Lumbar Z-Axis Force

Customer: VRTC

11LUSP0000WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-69

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

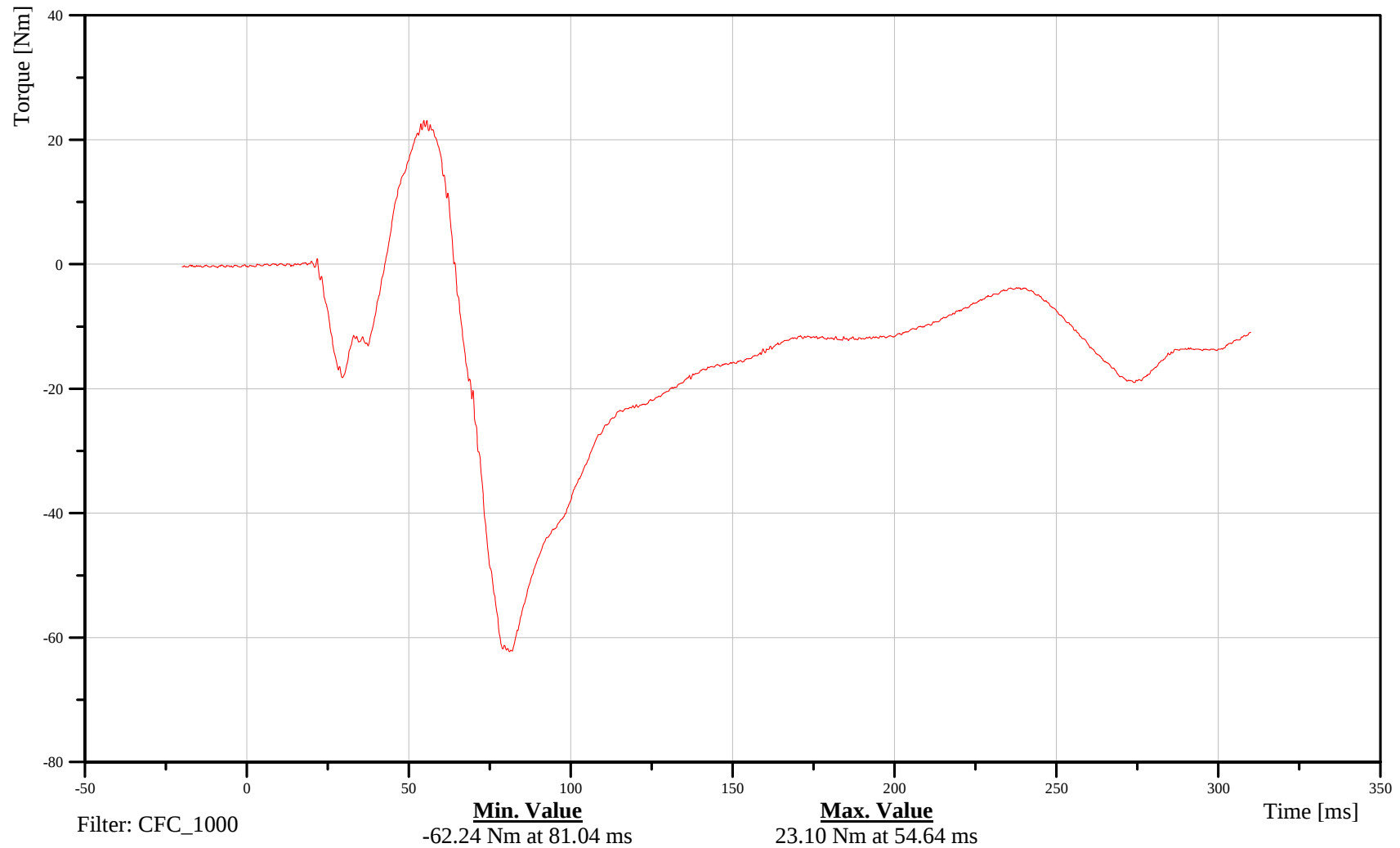
Lumbar Moment About X Axis

Customer: VRTC

11LUSP0000WSMOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-70

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

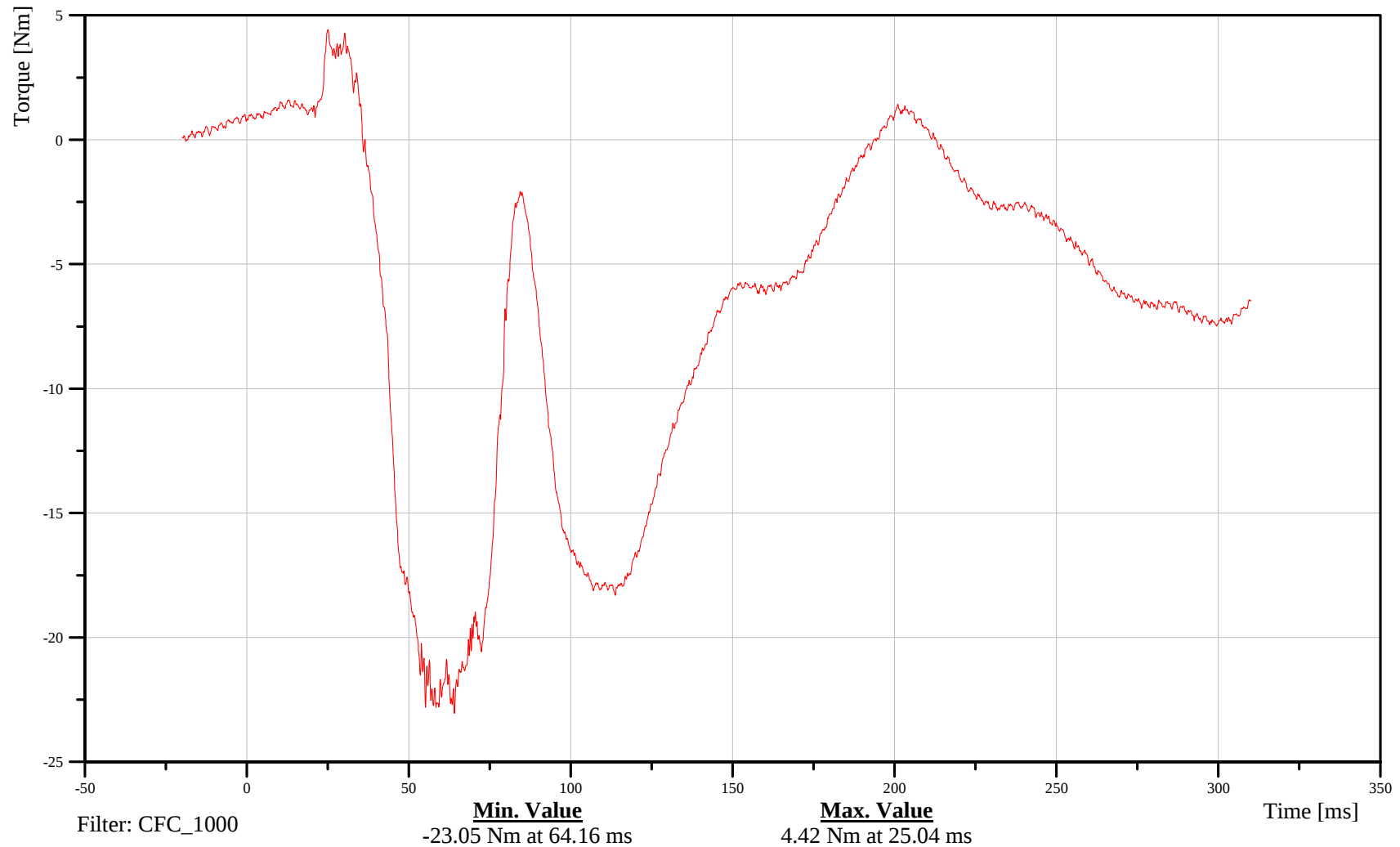
Lumbar Moment About Y Axis

Customer: VRTC

11LUSP0000WSMOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-71

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

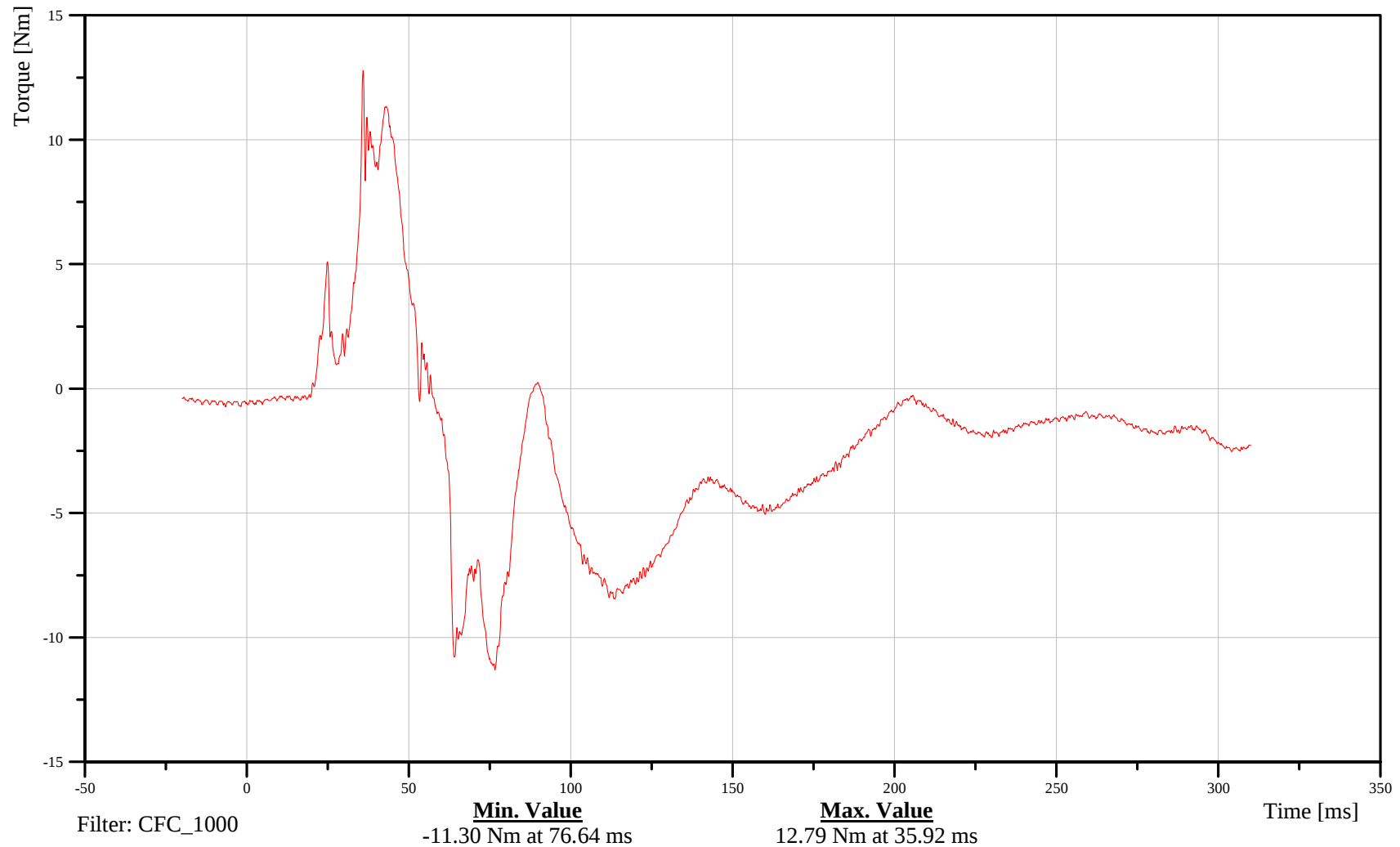
Lumbar Moment About Z Axis

Customer: VRTC

11LUSP0000WSMOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-72

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

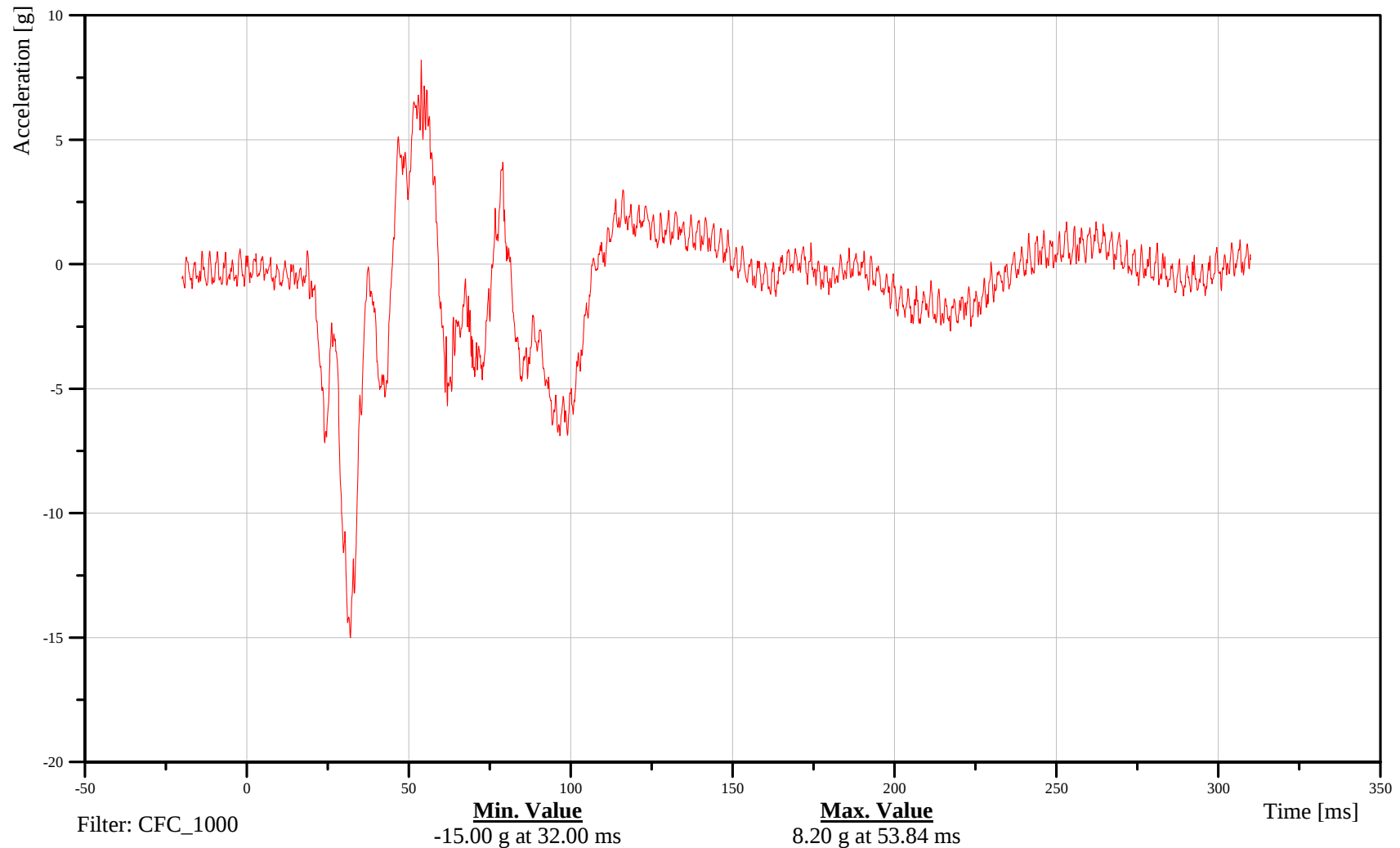
Pelvis X-Axis Acceleration

Customer: VRTC

11PELVCG00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-73

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

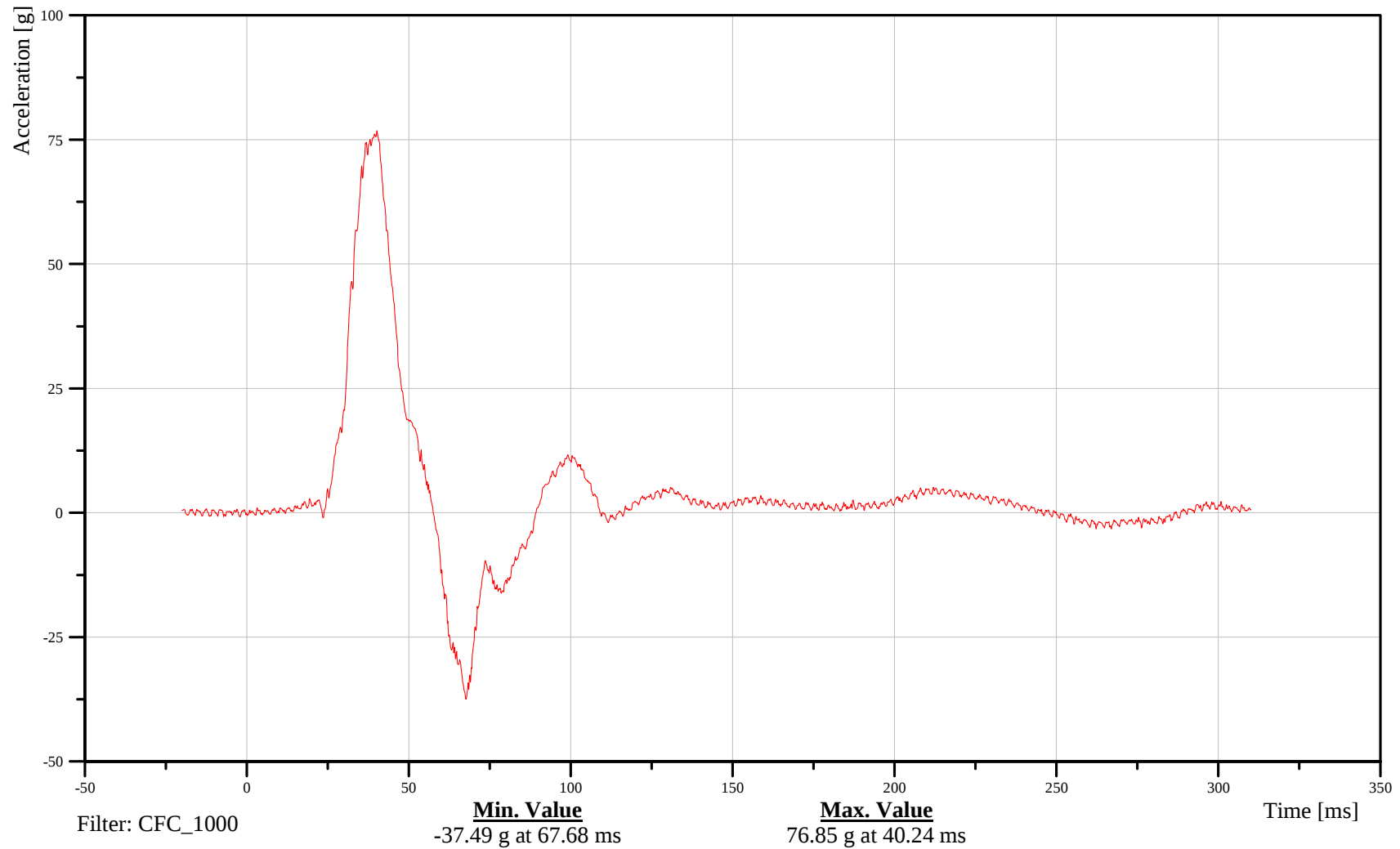
Pelvis Y-Axis Acceleration

Customer: VRTC

11PELVCG00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-74

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

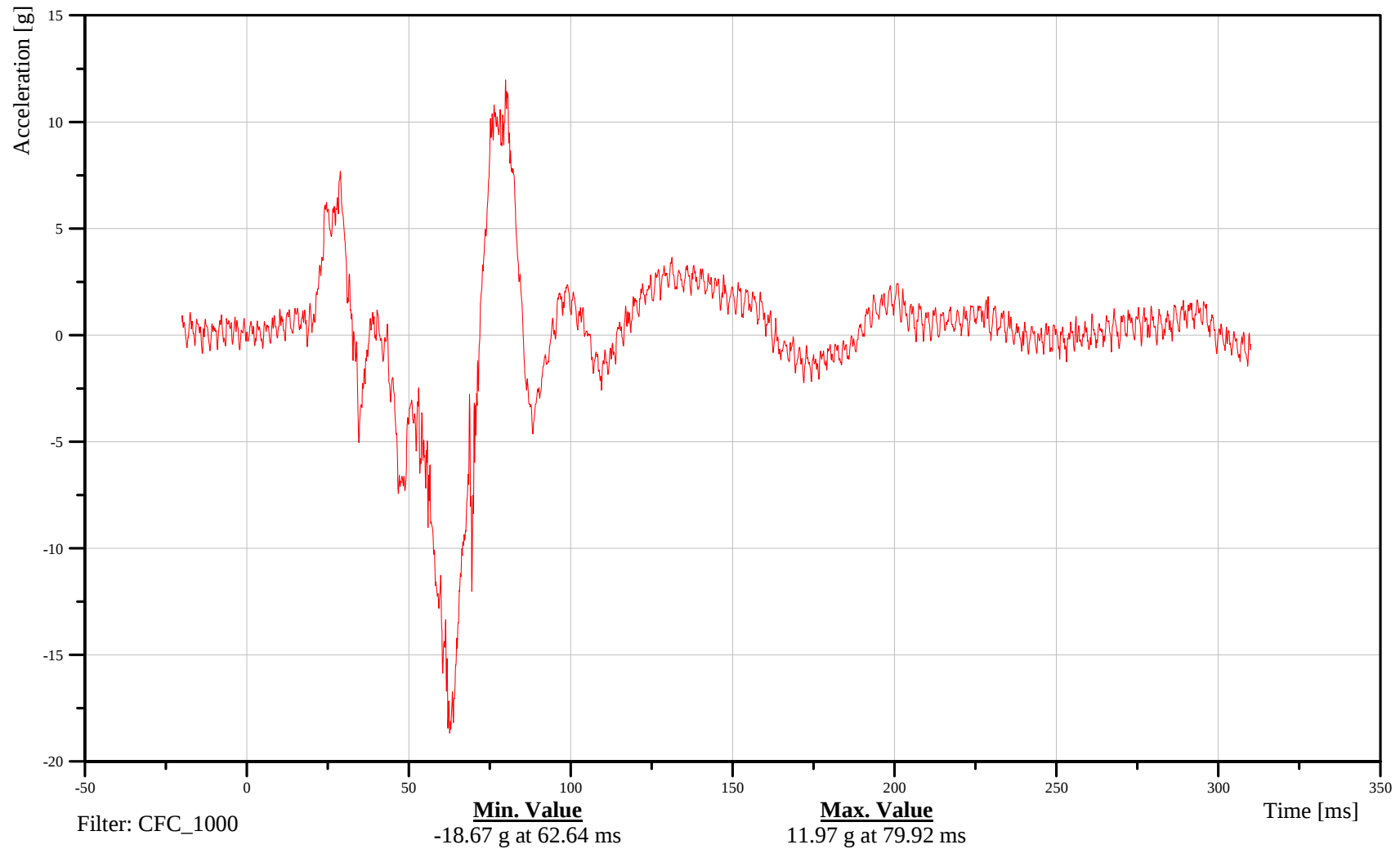
Pelvis Z-Axis Acceleration

Customer: VRTC

11PELVCG00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-75

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

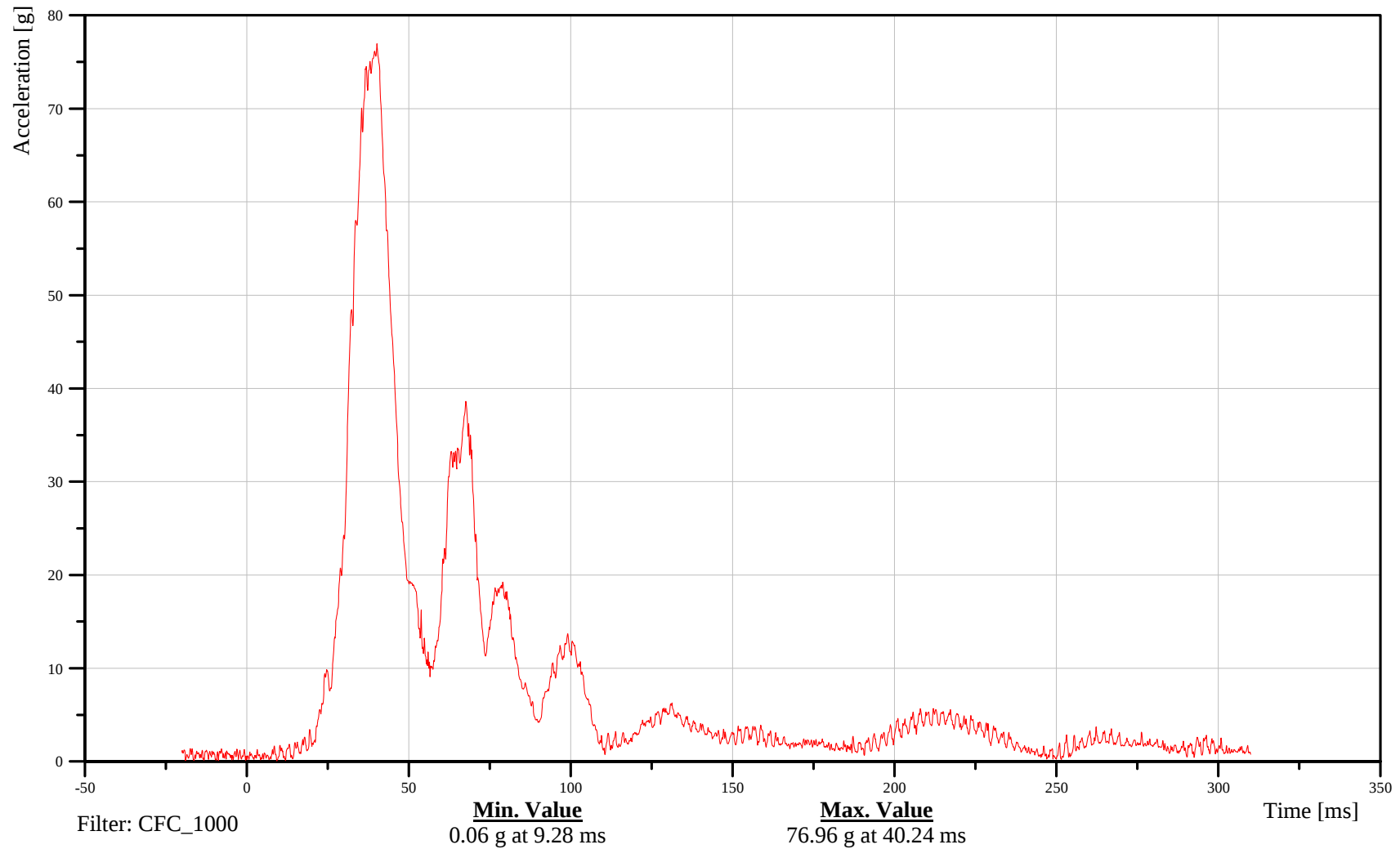
Pelvis Resultant Acceleration

Customer: VRTC

11PELVCG00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-76

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

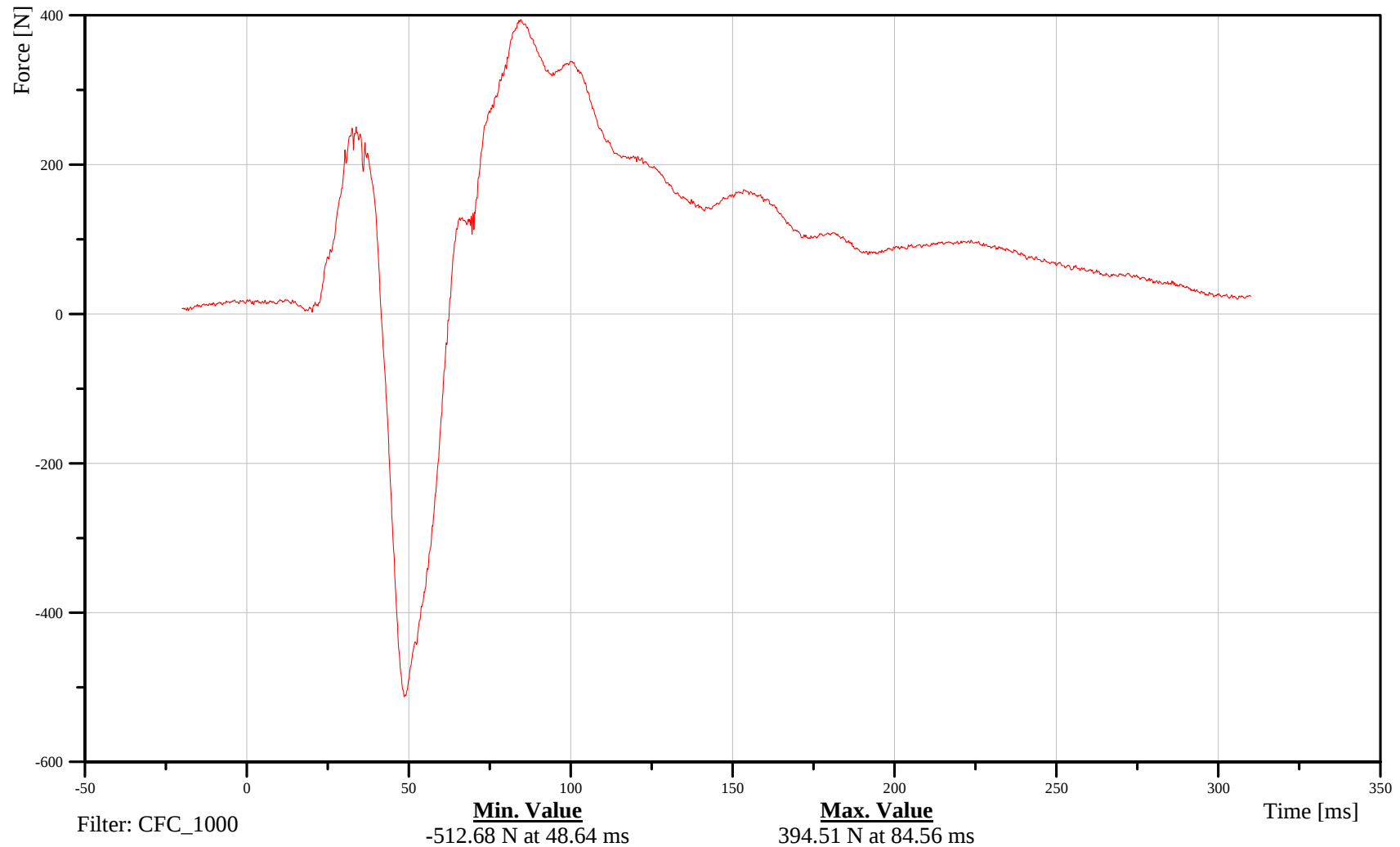
Sacro-Iliac Left X-Axis Force

Customer: VRTC

11SACRLE00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-77

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

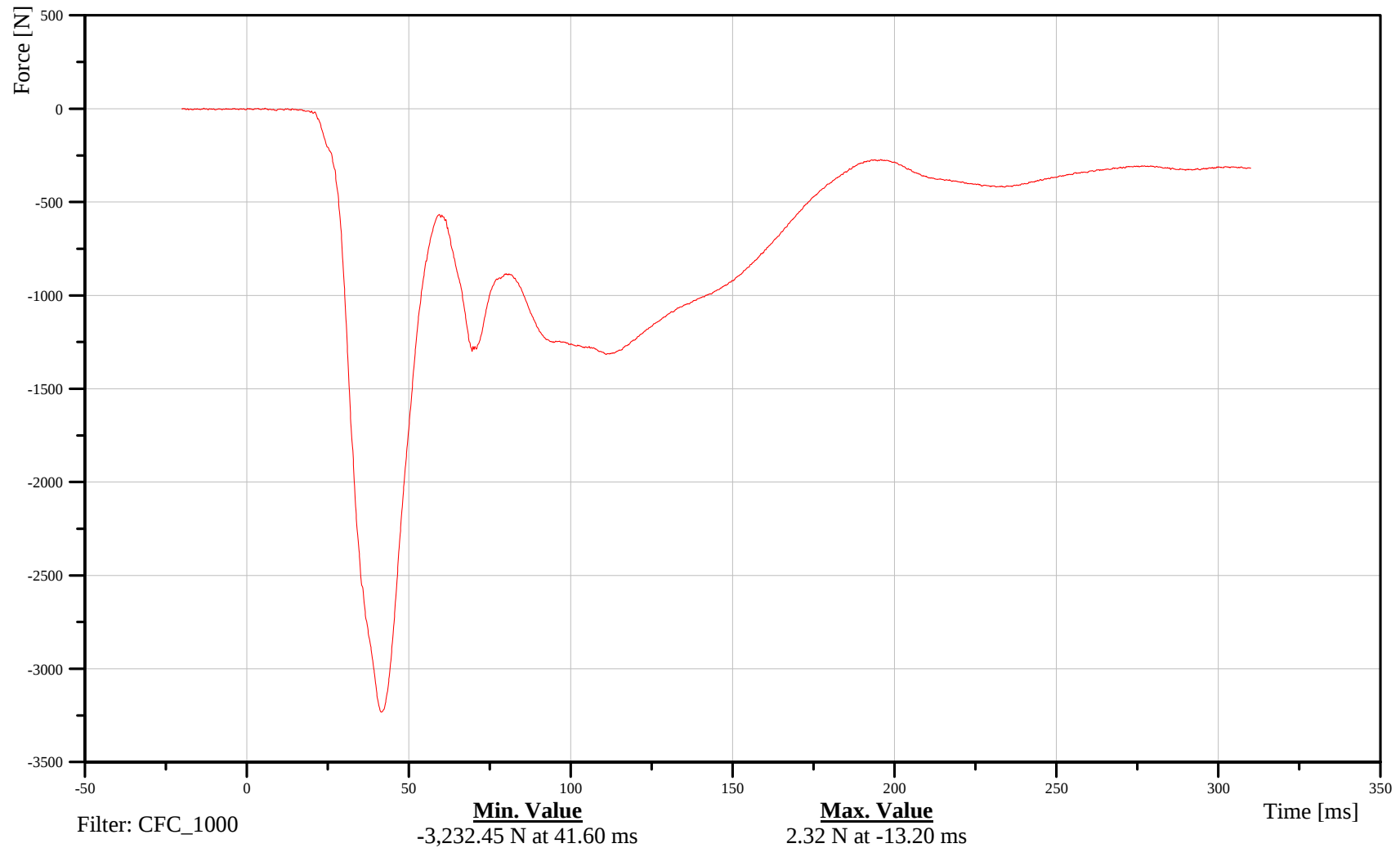
Sacro-Iliac Left Y-Axis Force

Customer: VRTC

11SACRLE00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-78

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

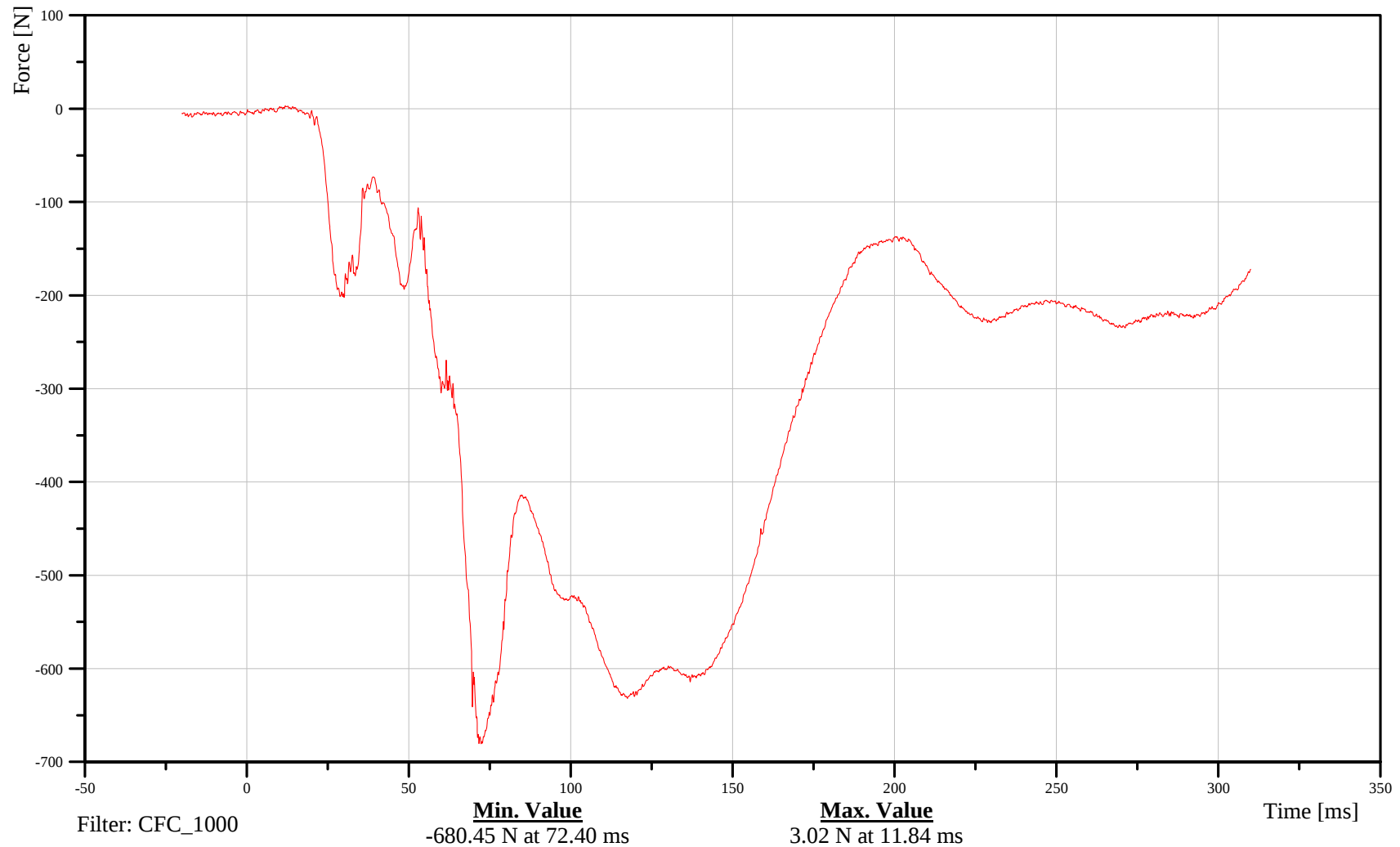
Sacro-Iliac Left Z-Axis Force

Customer: VRTC

11SACRLE00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-79

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

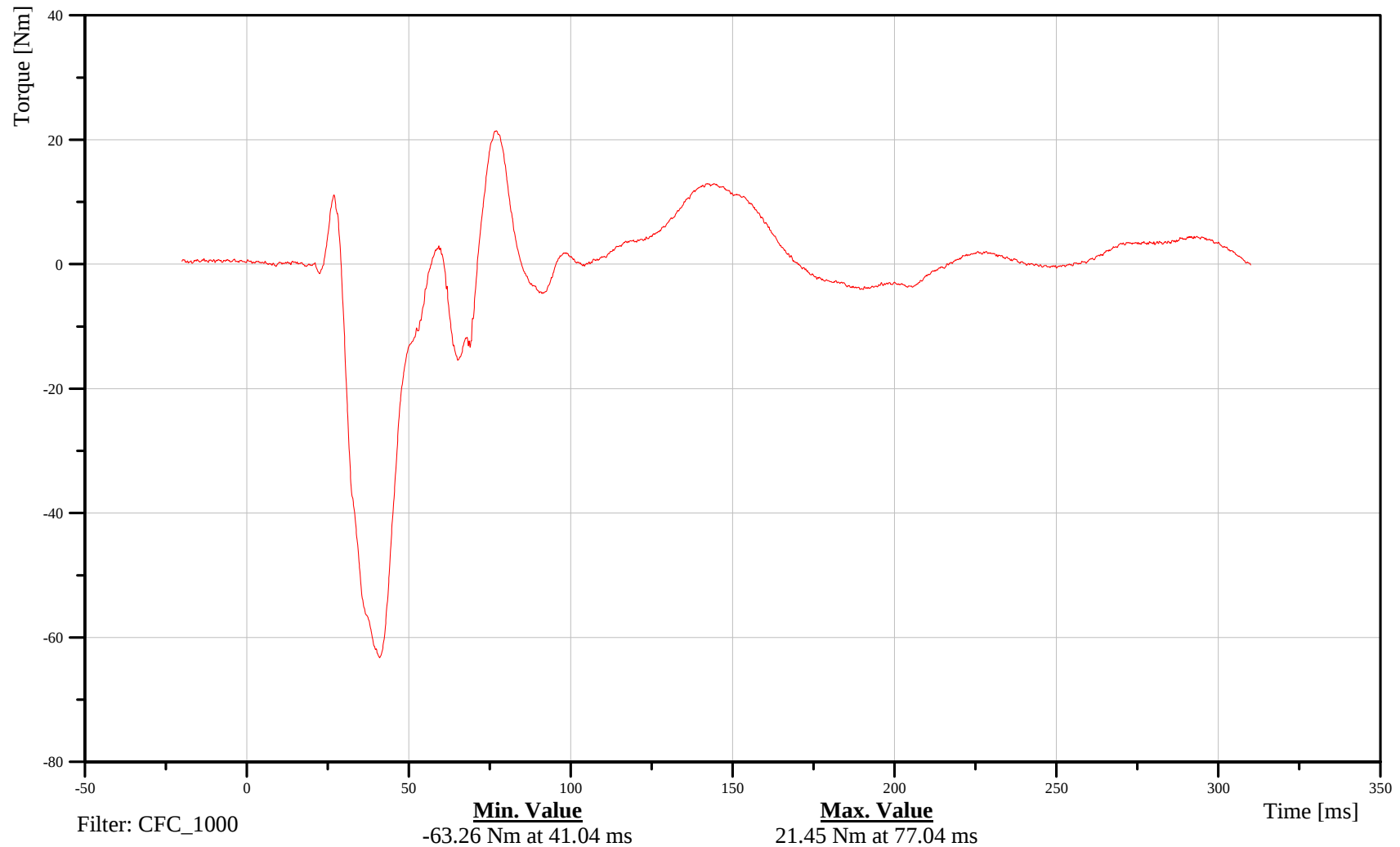
Sacro-Iliac Left Moment About X Axis

Customer: VRTC

11SACRLE00WSMOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-80

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

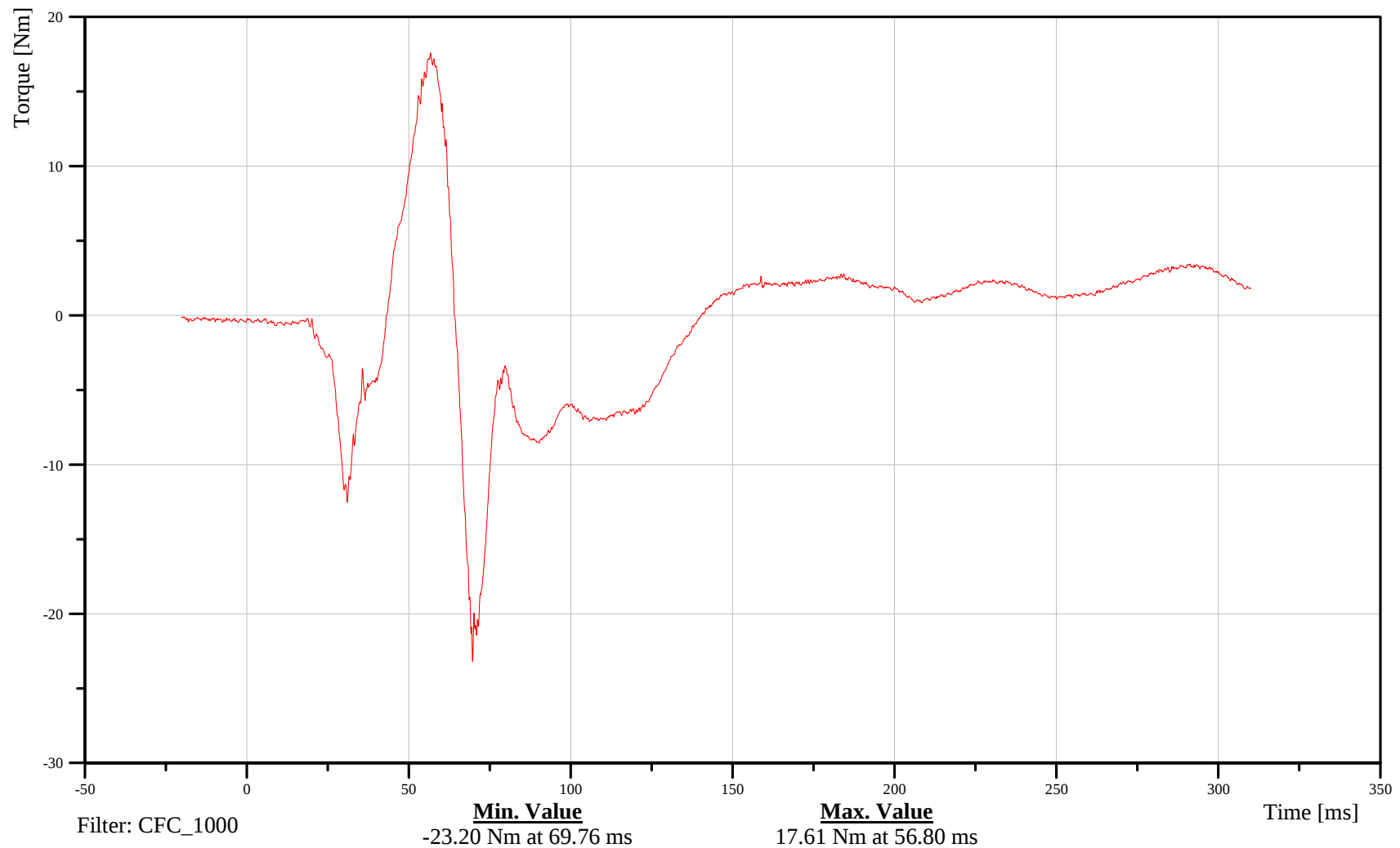
Sacro-Iliac Left Moment About Y Axis

Customer: VRTC

11SACRLE00WSMOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-81

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

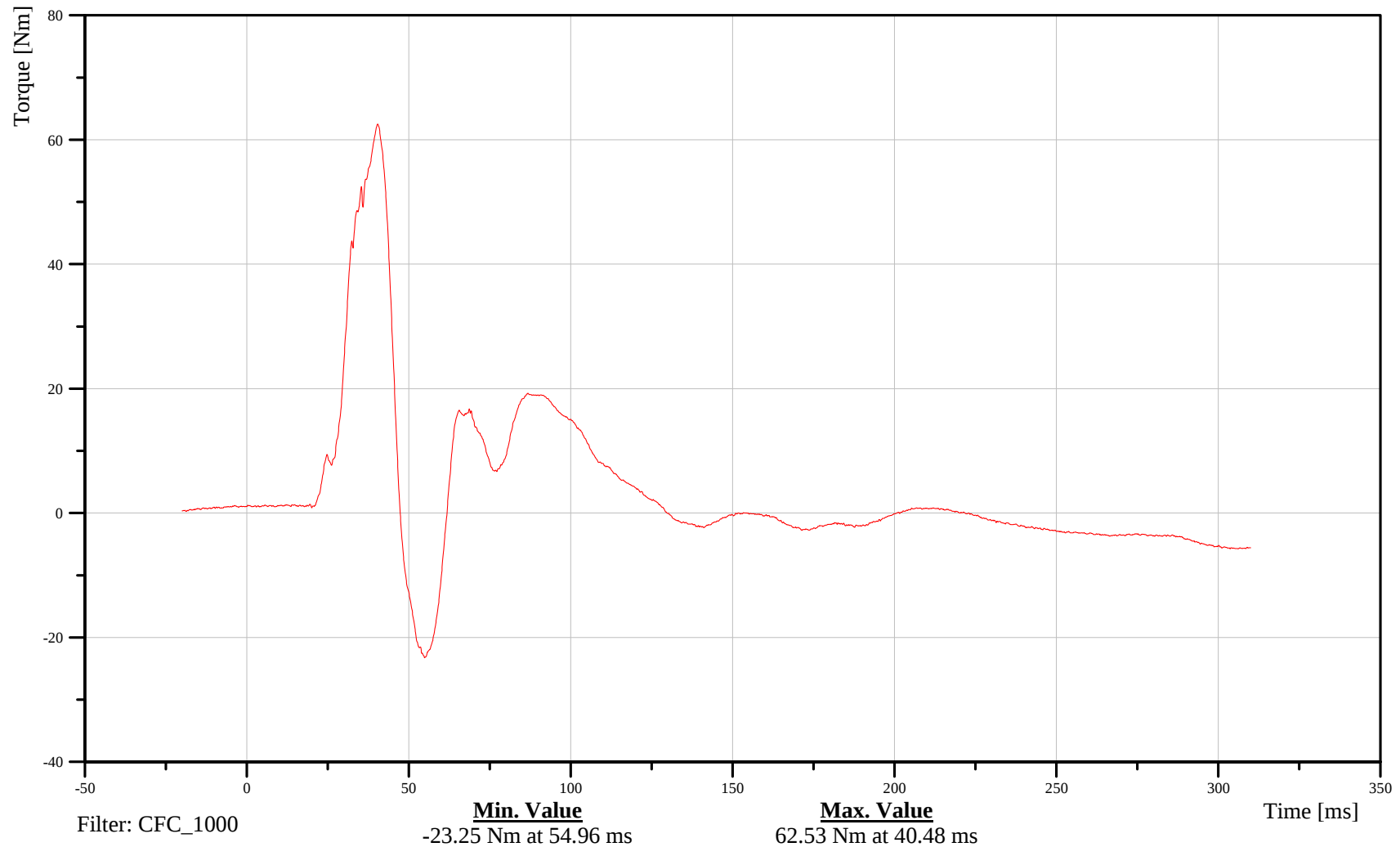
Sacro-Iliac Left Moment About Z Axis

Customer: VRTC

11SACRLE00WSMOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-82

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

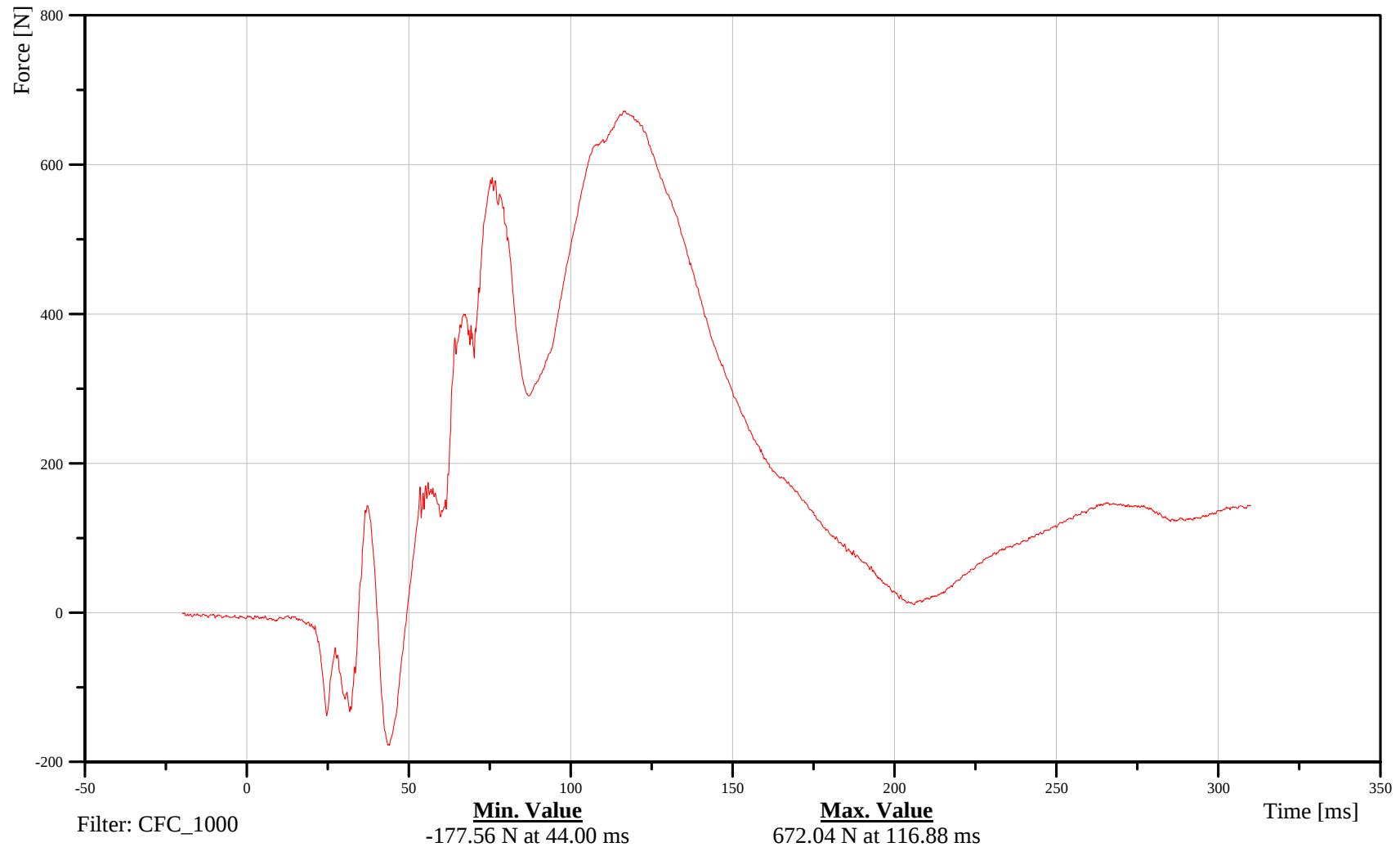
Sacro-Iliac Right X-Axis Force

Customer: VRTC

11SACRRI00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-83

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

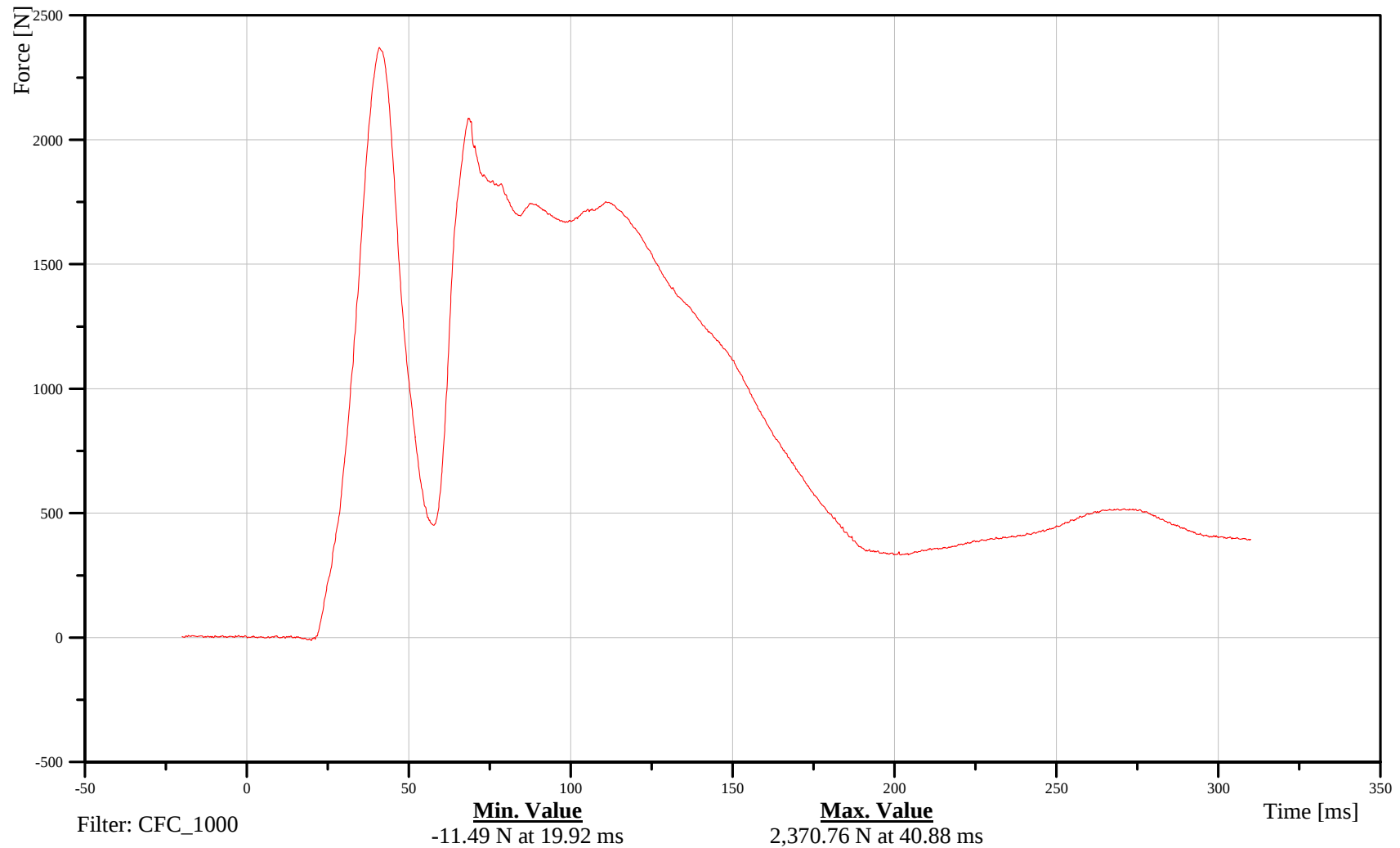
Sacro-Iliac Right Y-Axis Force

Customer: VRTC

11SACRRI00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-84

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

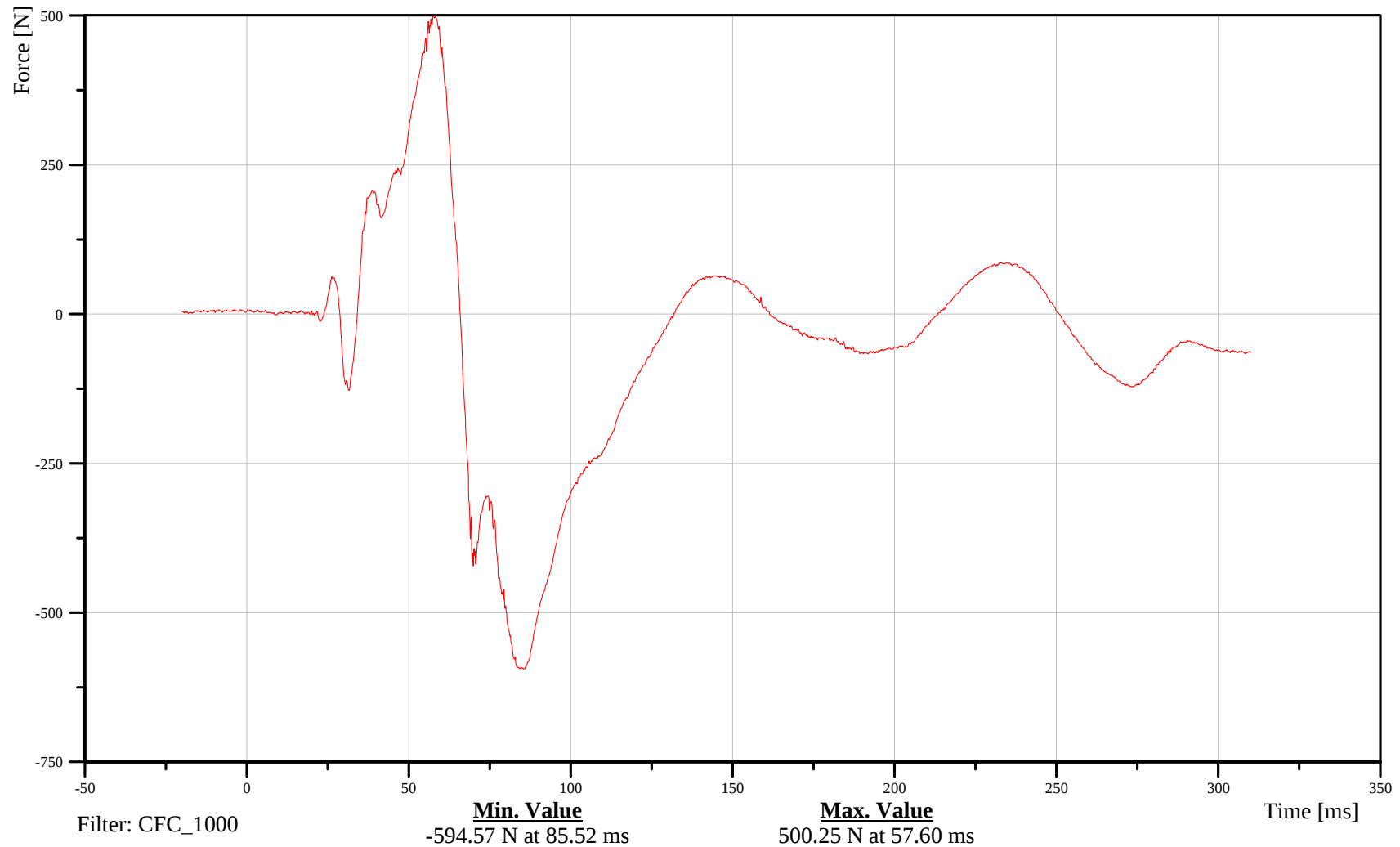
Sacro-Iliac Right Z-Axis Force

Customer: VRTC

11SACRRI00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-85

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

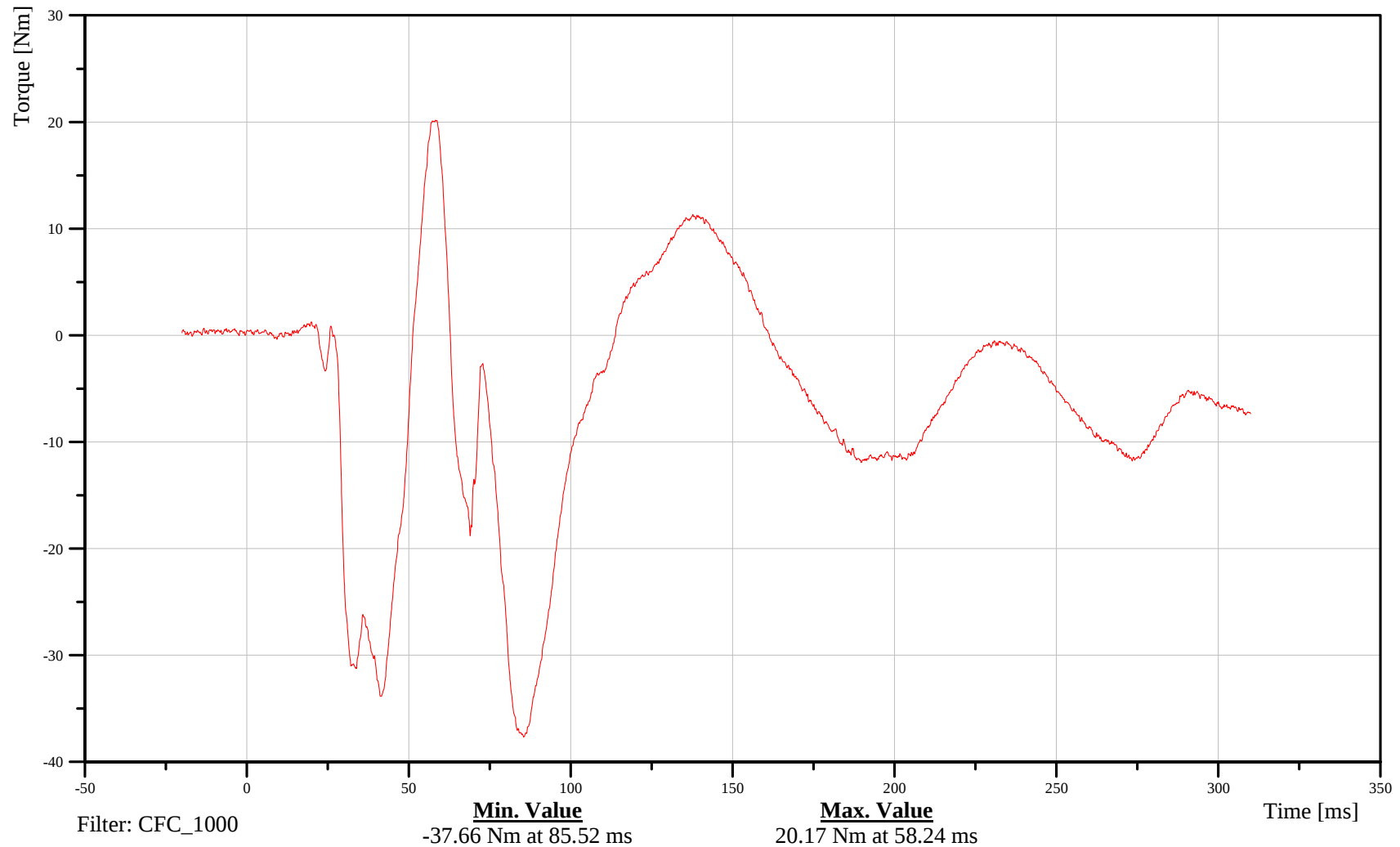
Sacro-Iliac Right Moment About X Axis

Customer: VRTC

11SACRRI00WSMOXA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-86

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

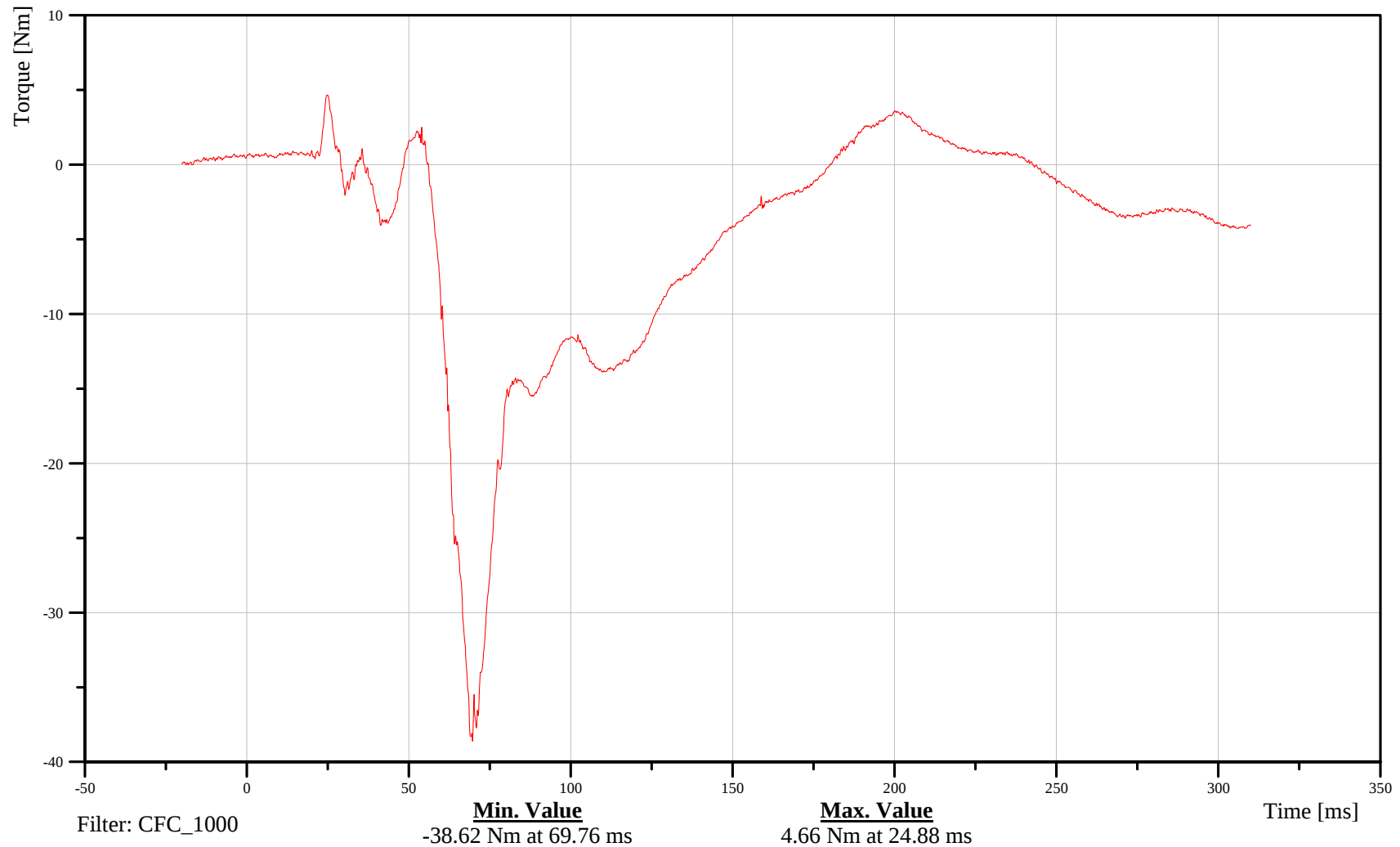
Sacro-Iliac Right Moment About Y Axis

Customer: VRTC

11SACRRI00WSMOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-87

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

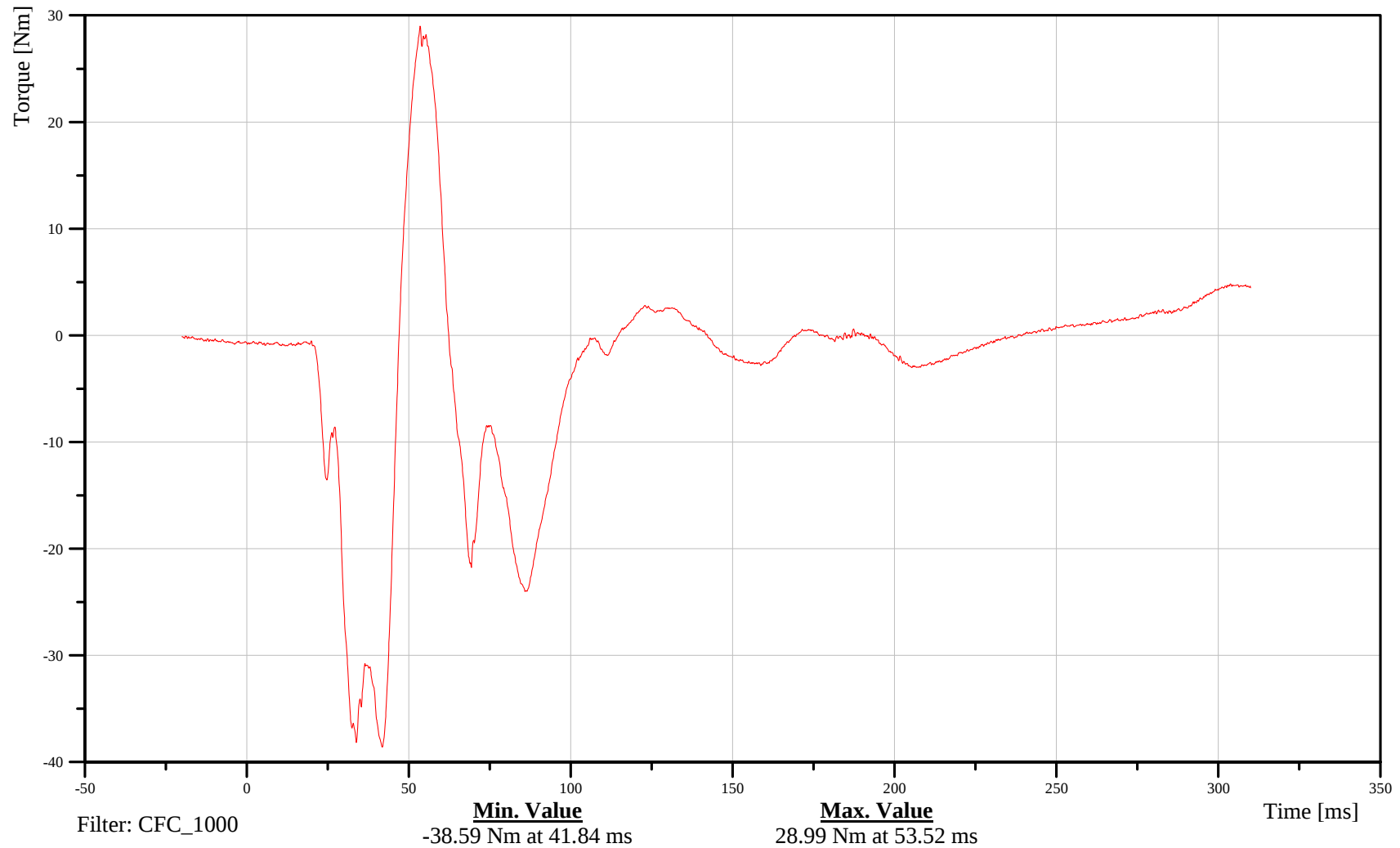
Sacro-Iliac Right Moment About Z Axis

Customer: VRTC

11SACRRI00WSMOZA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-88

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

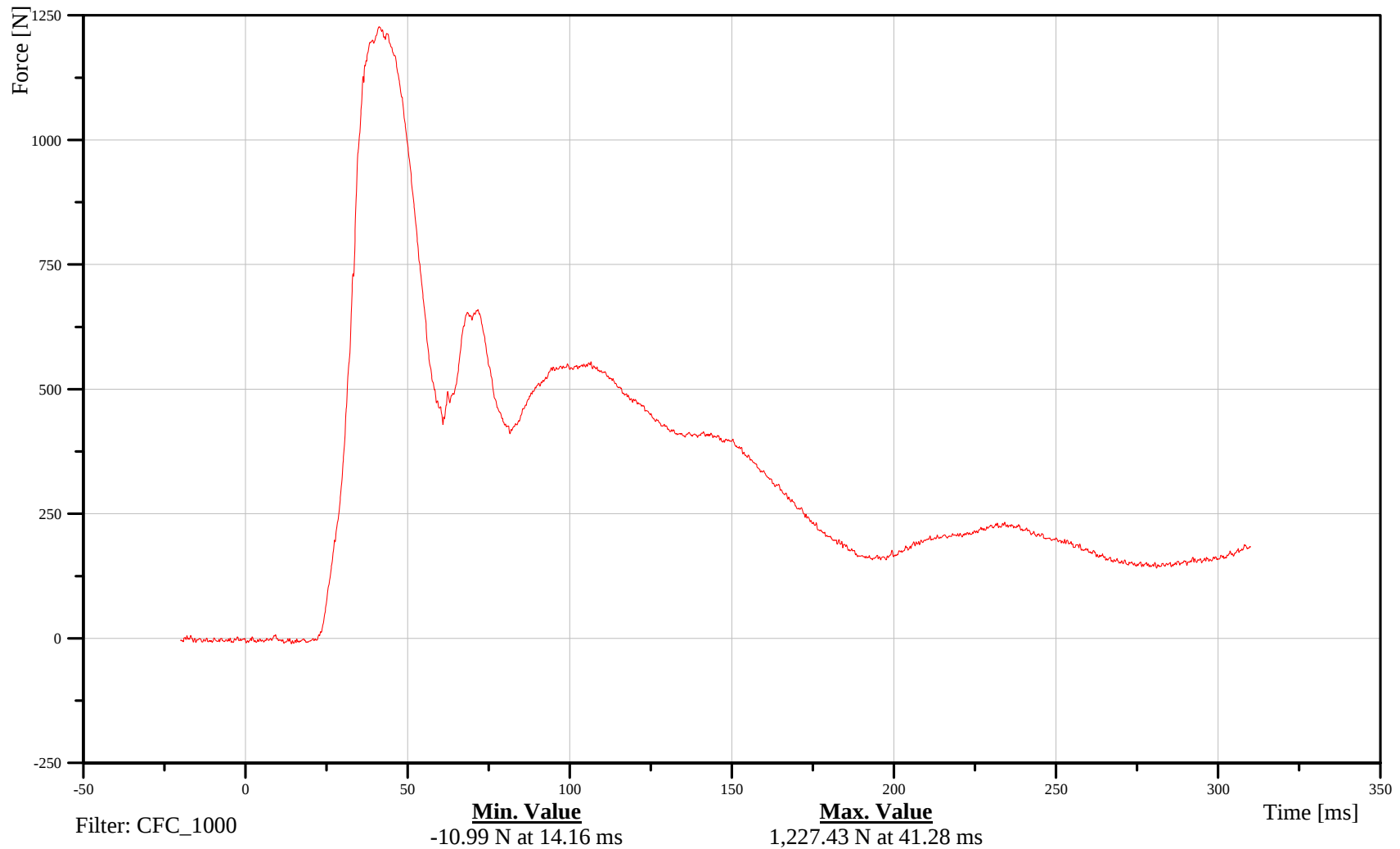
Pubic Y-Axis Force

Customer: VRTC

11PUBC0000WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-89

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

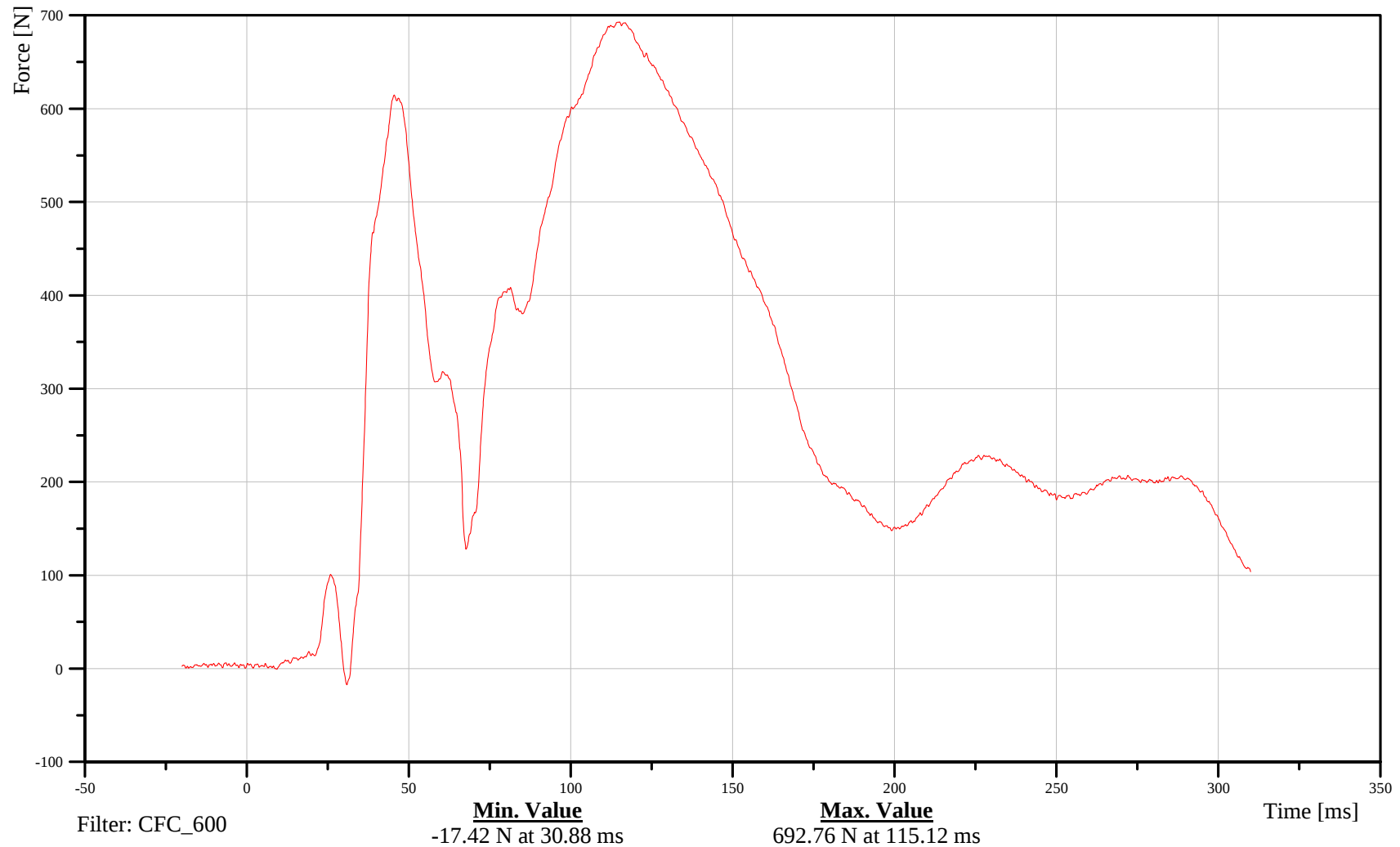
Left Femur X-Axis Force

Customer: VRTC

11FEMRLL00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-90

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

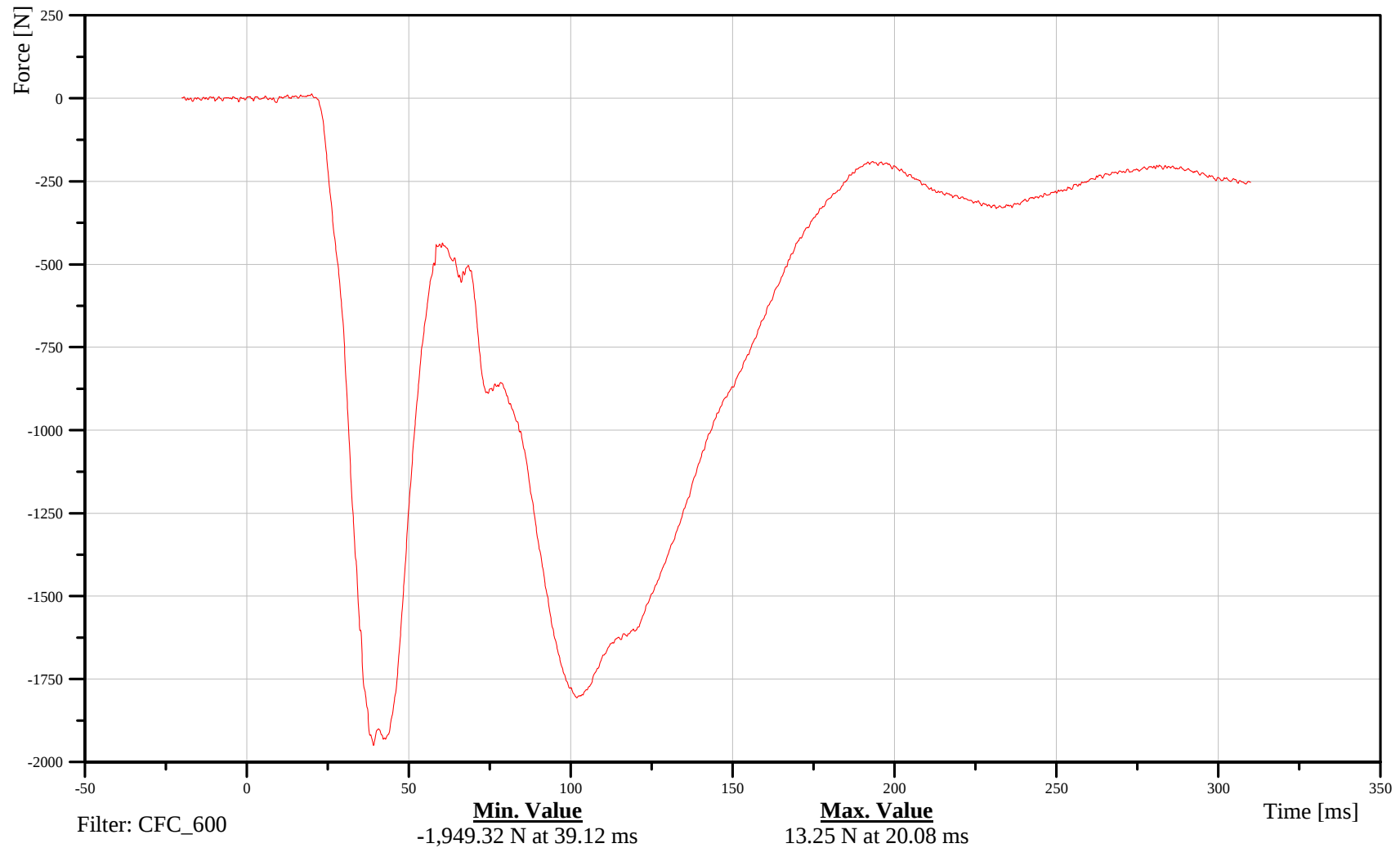
Left Femur Y-Axis Force

Customer: VRTC

11FEMRLL00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-91

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

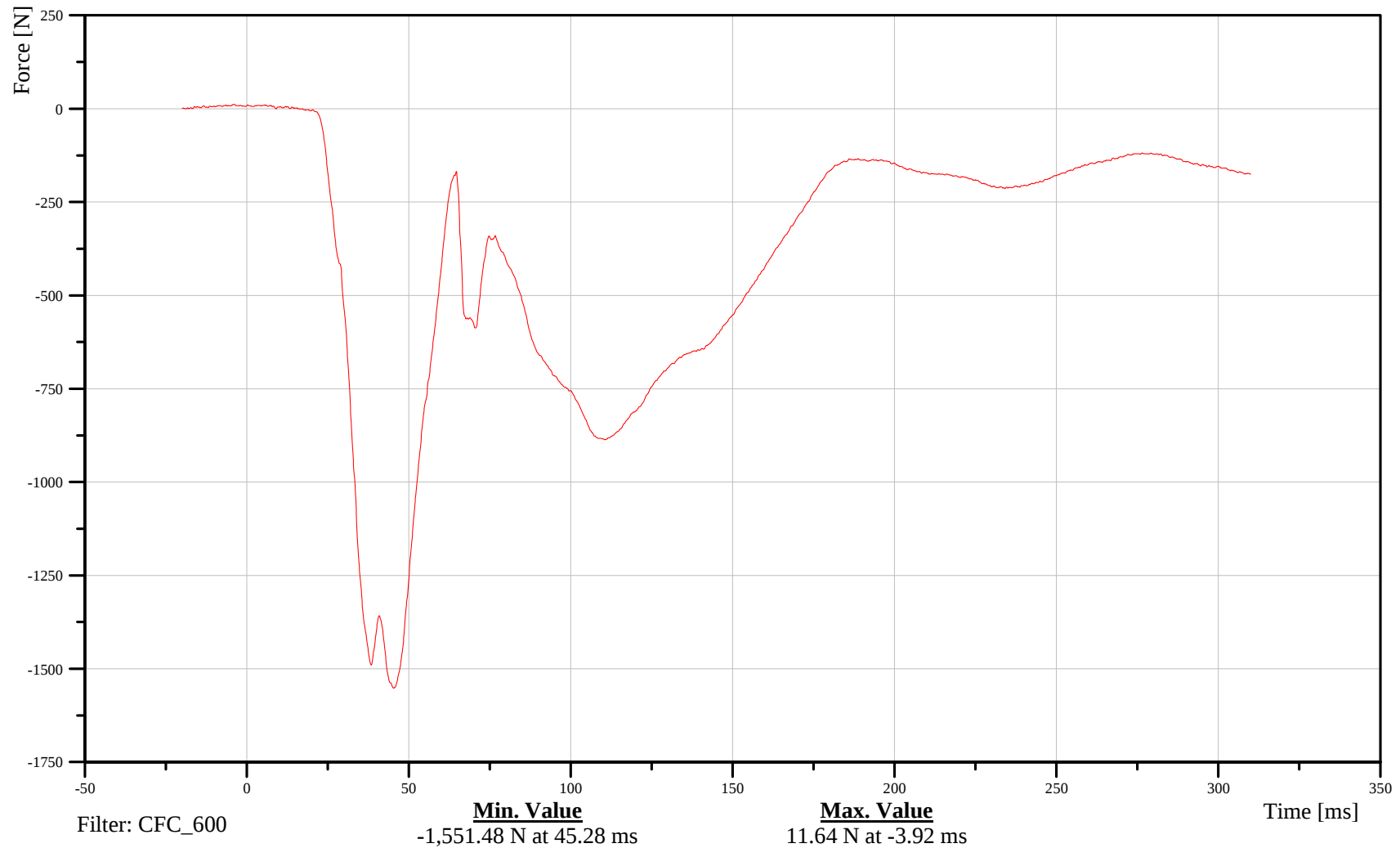
Left Femur Z-Axis Force

Customer: VRTC

11FEMRLL00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-92

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

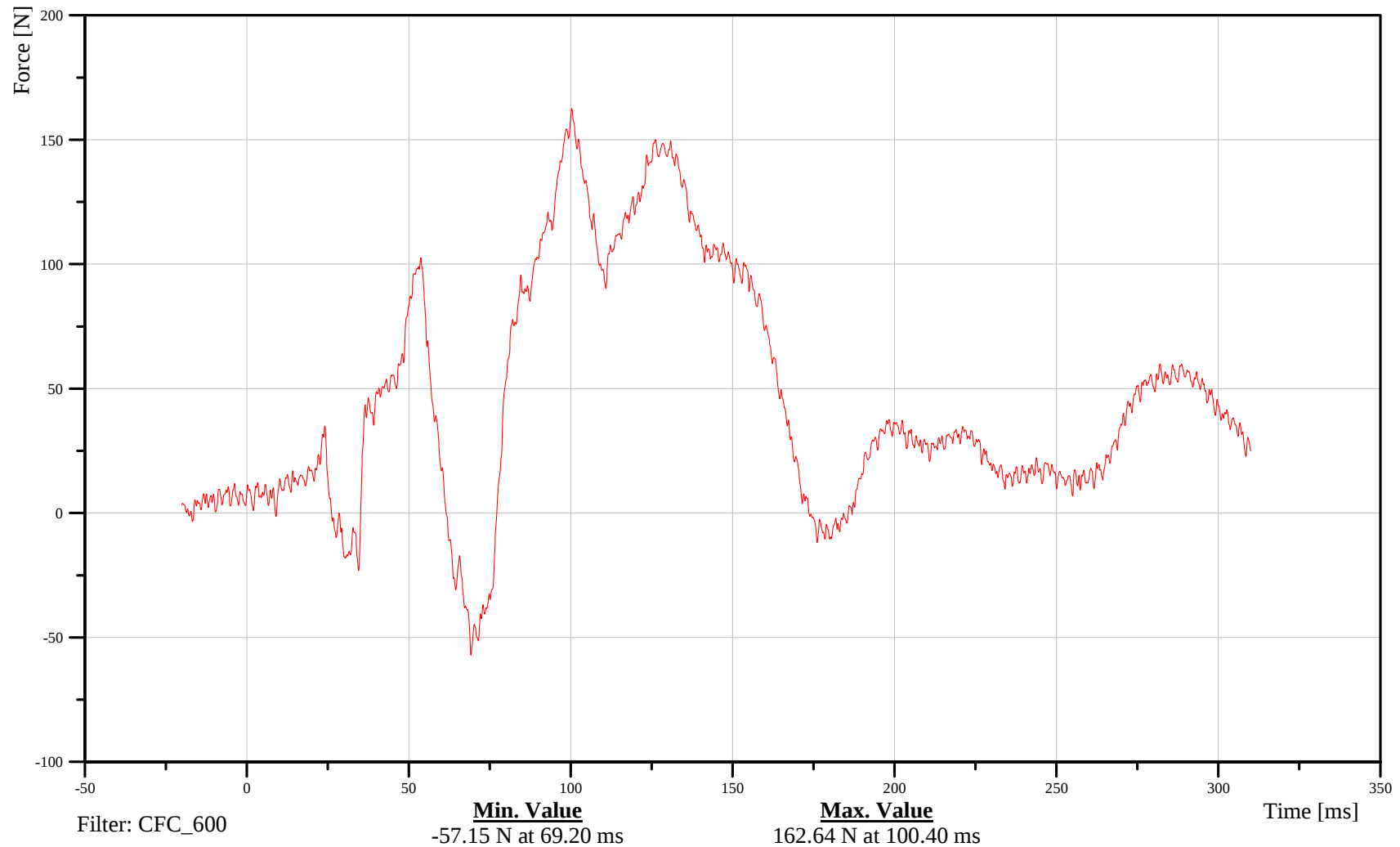
Left Mid Femur X-Axis Force

Customer: VRTC

11FEMRLEMIWSFOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-93

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

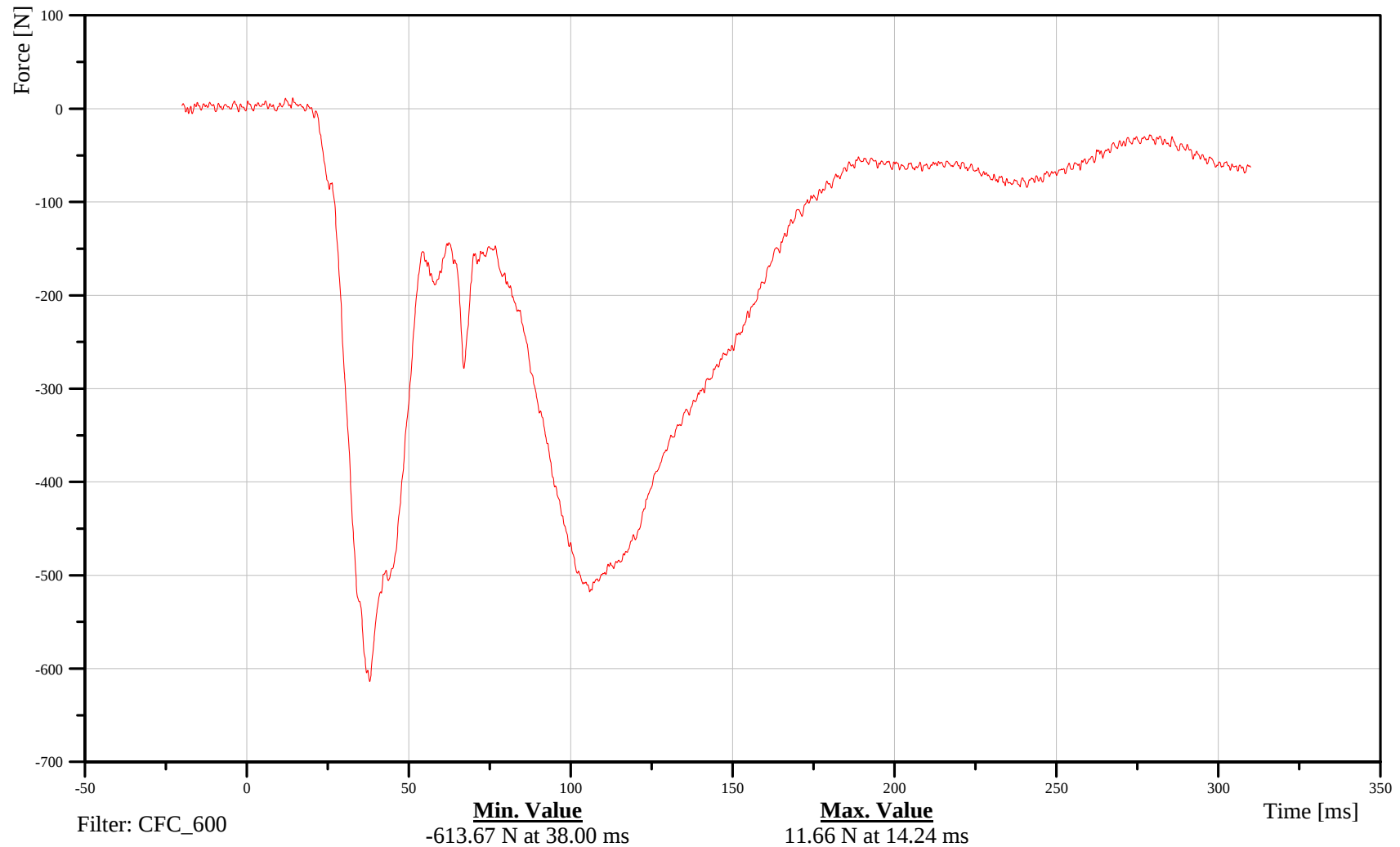
Left Mid Femur Y-Axis Force

Customer: VRTC

11FEMRLEMIWSFOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-94

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

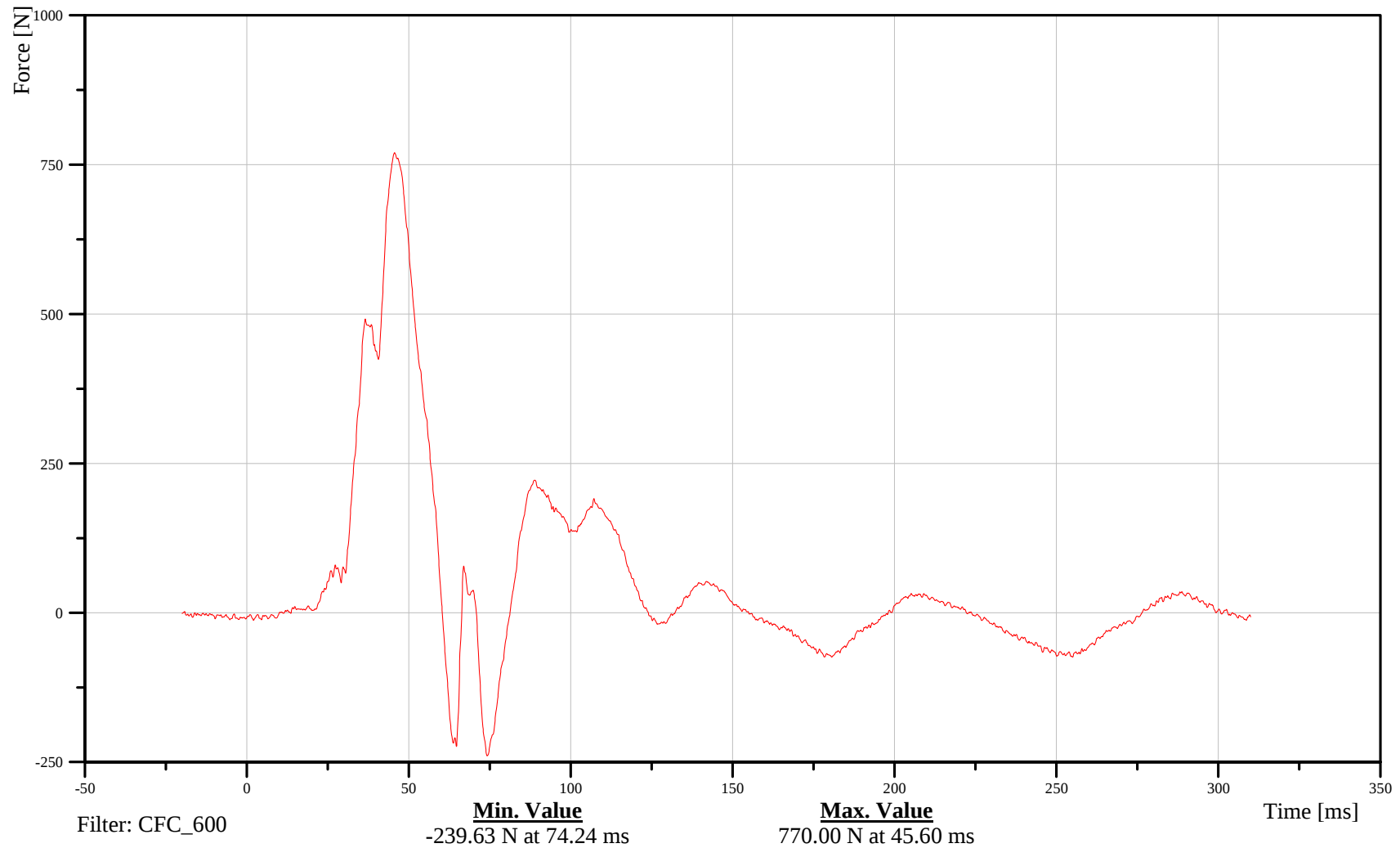
Left Mid Femur Z-Axis Force

Customer: VRTC

11FEMRLEMIWSFOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-95

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

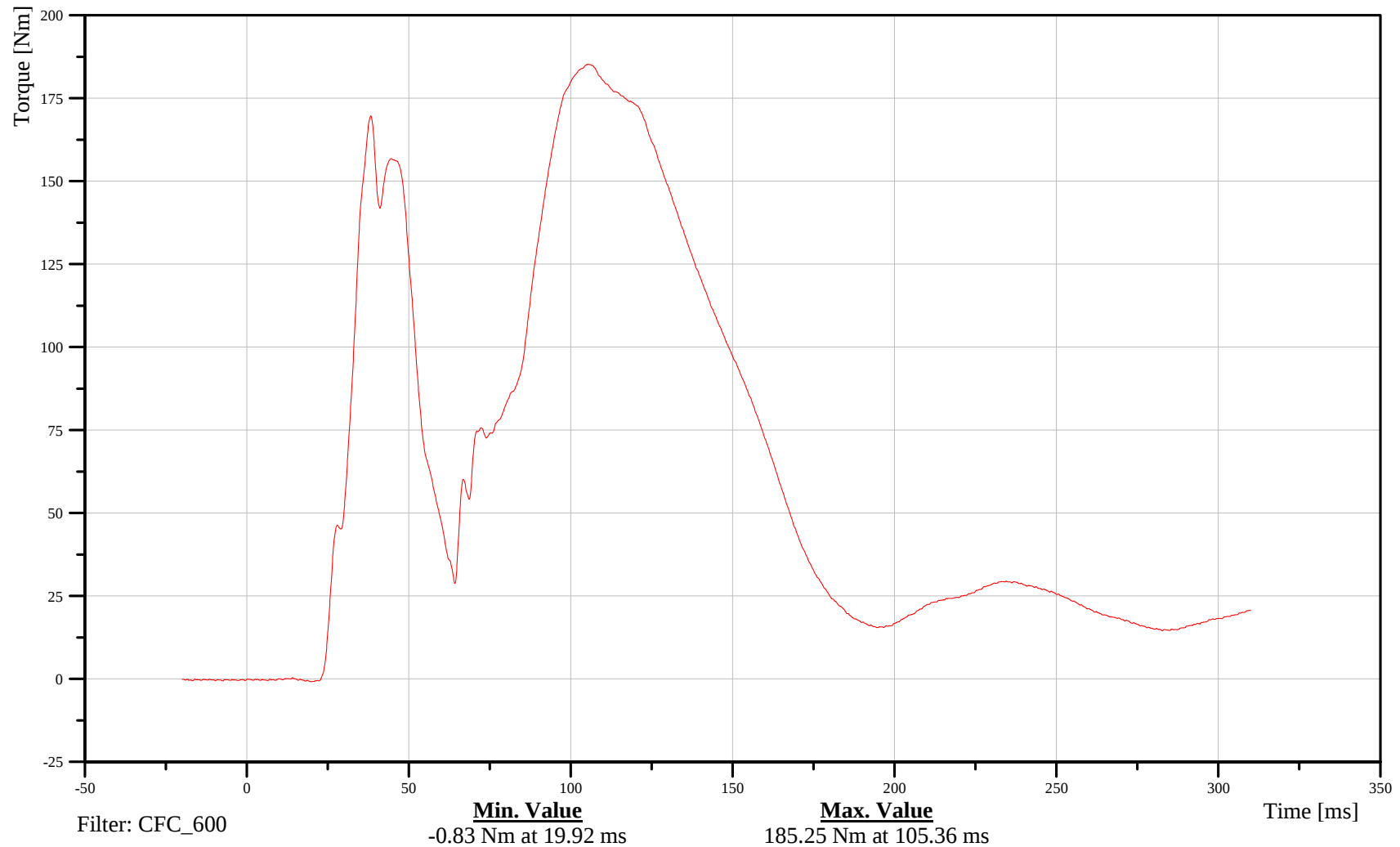
Left Mid Femur Moment About X Axis

Customer: VRTC

11FEMRLEMIWSMOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-96

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

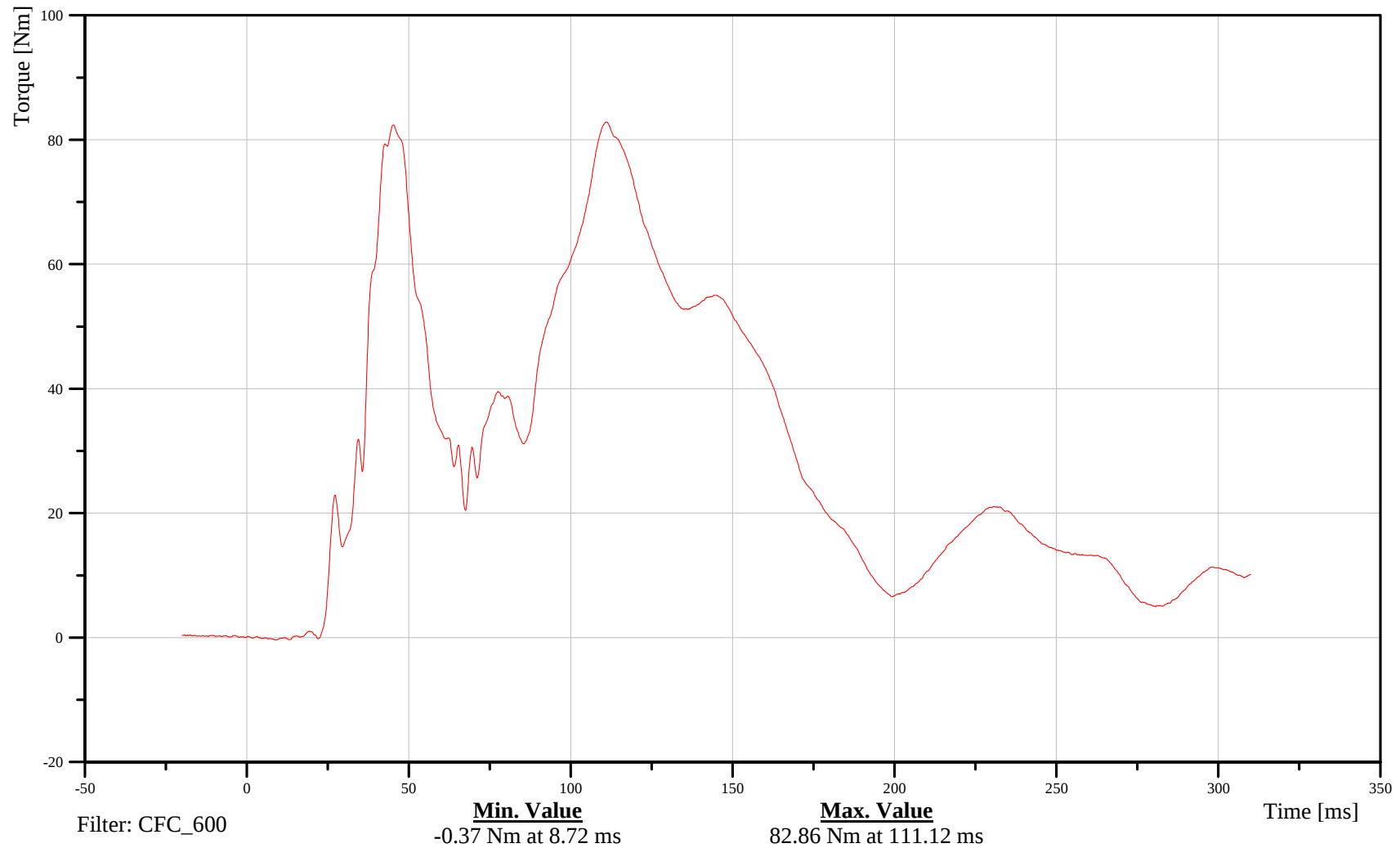
Left Mid Femur Moment About Y Axis

Customer: VRTC

11FEMRLEMIWSMOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-97

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

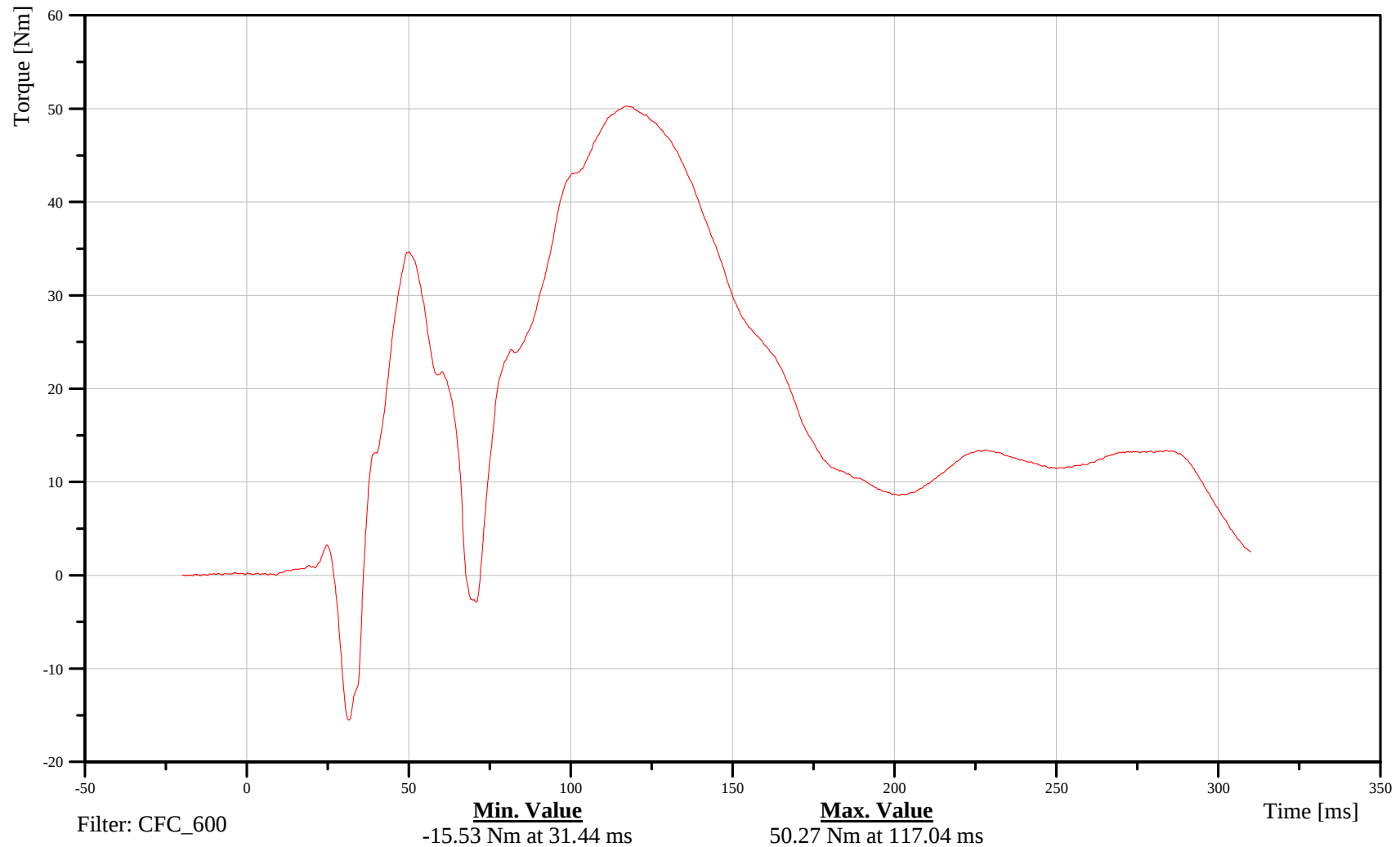
Left Mid Femur Moment About Z Axis

Customer: VRTC

11FEMRLEMIWSMOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-98

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

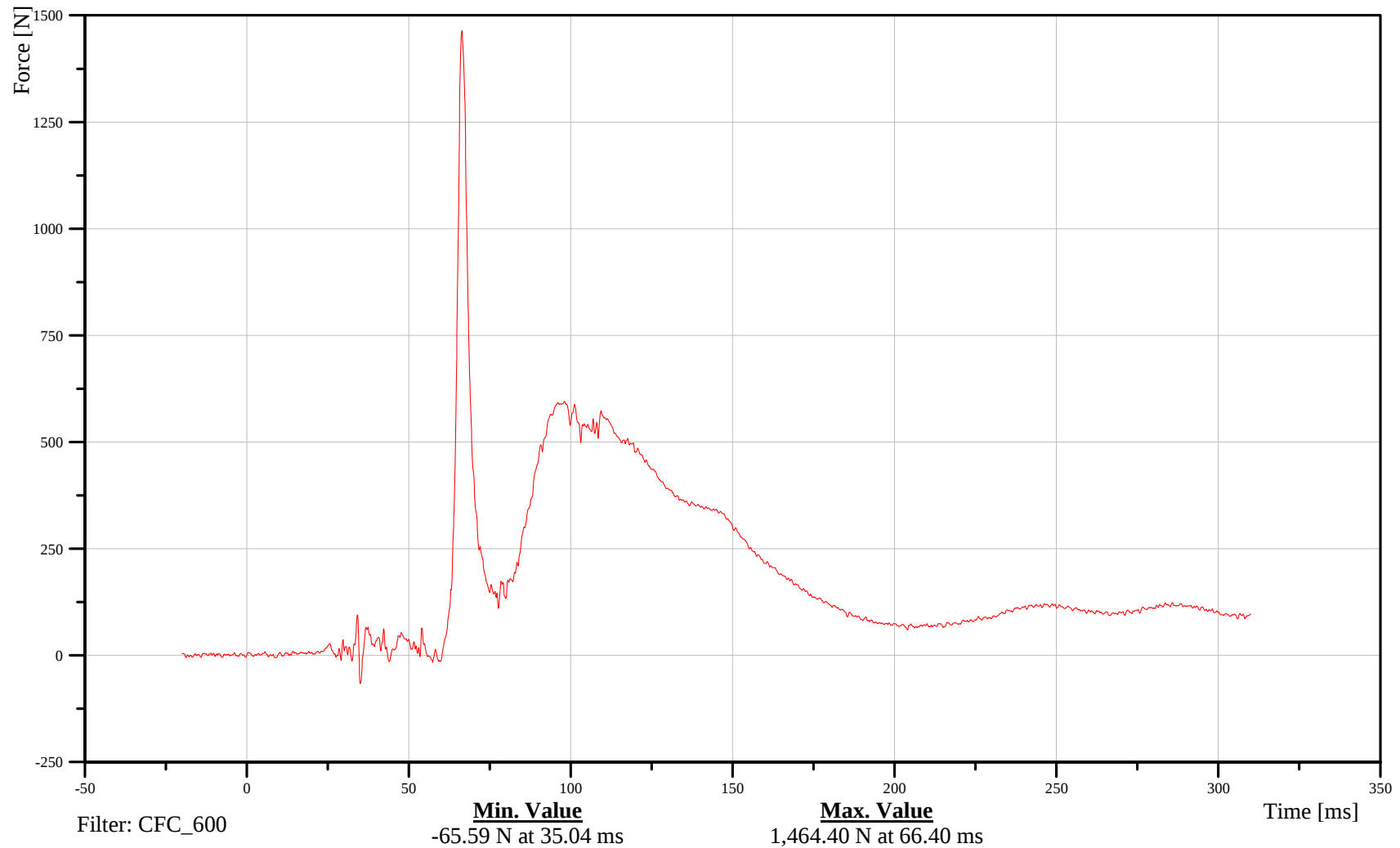
Left Knee Outboard Y-Axis Force

Customer: VRTC

11KNEELEOUWSFOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-99

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

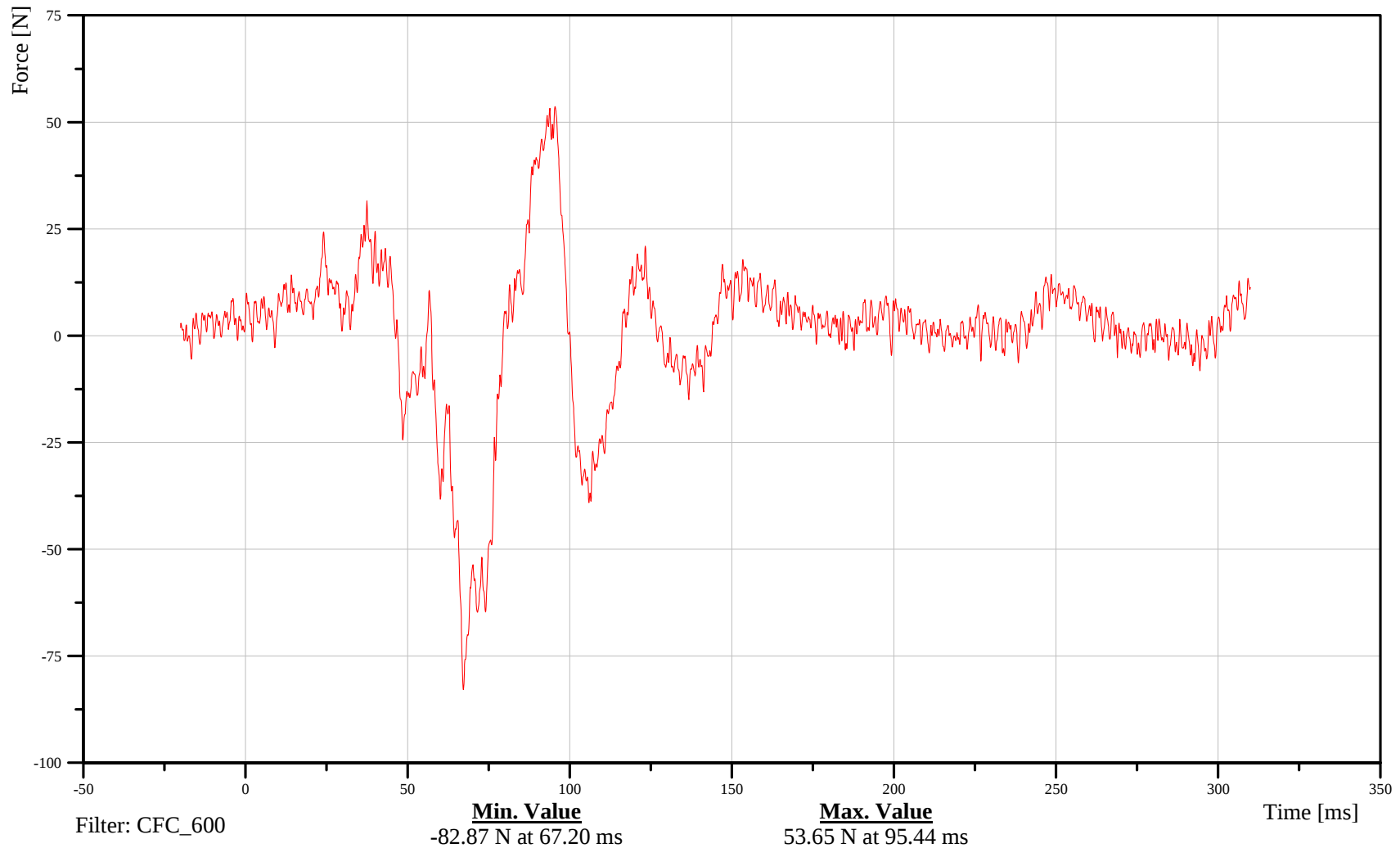
Right Mid Femur X-Axis Force

Customer: VRTC

11FEMRRIMIWSFOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-100

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

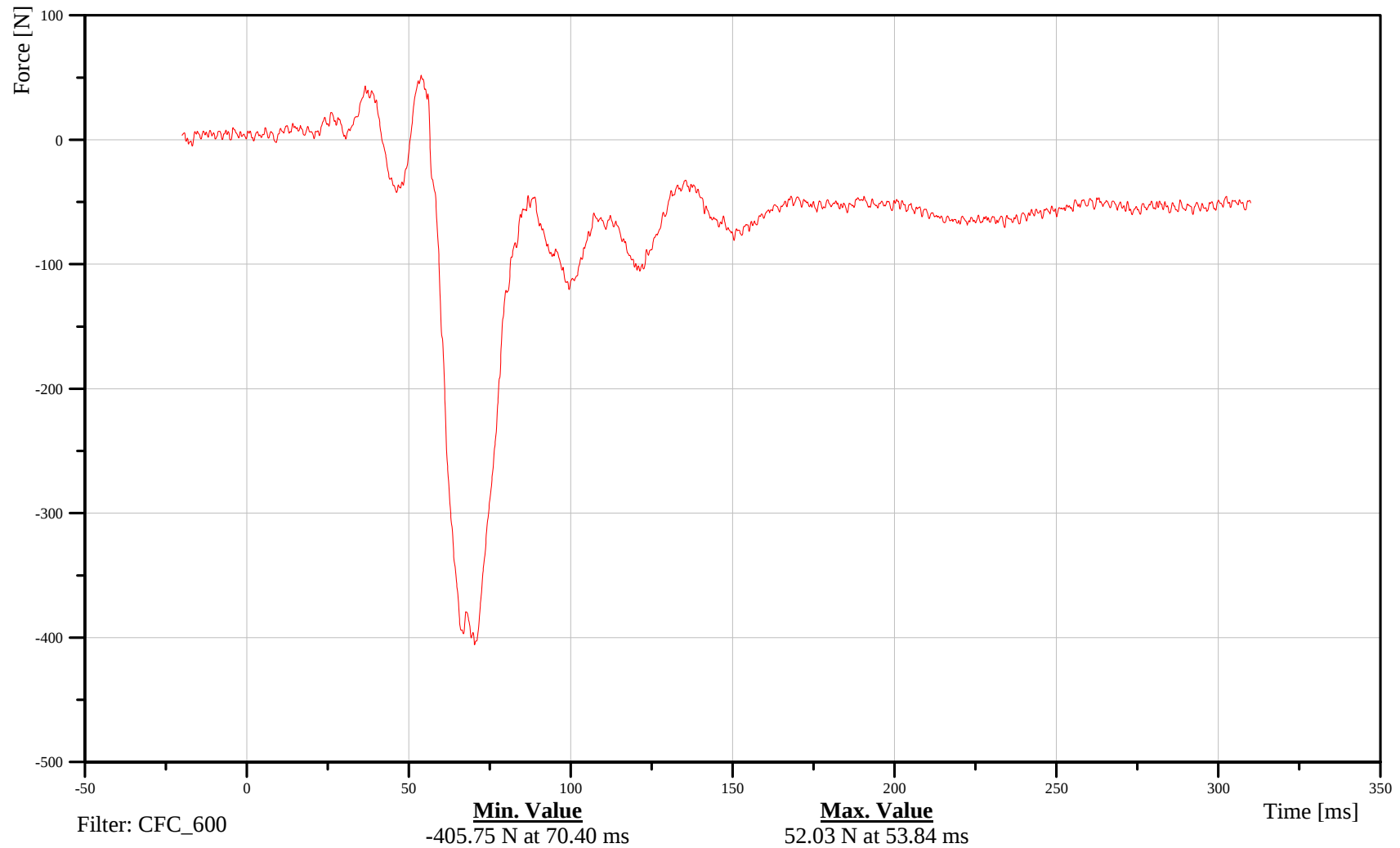
Right Mid Femur Y-Axis Force

Customer: VRTC

11FEMRRIMIWSFOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-101

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

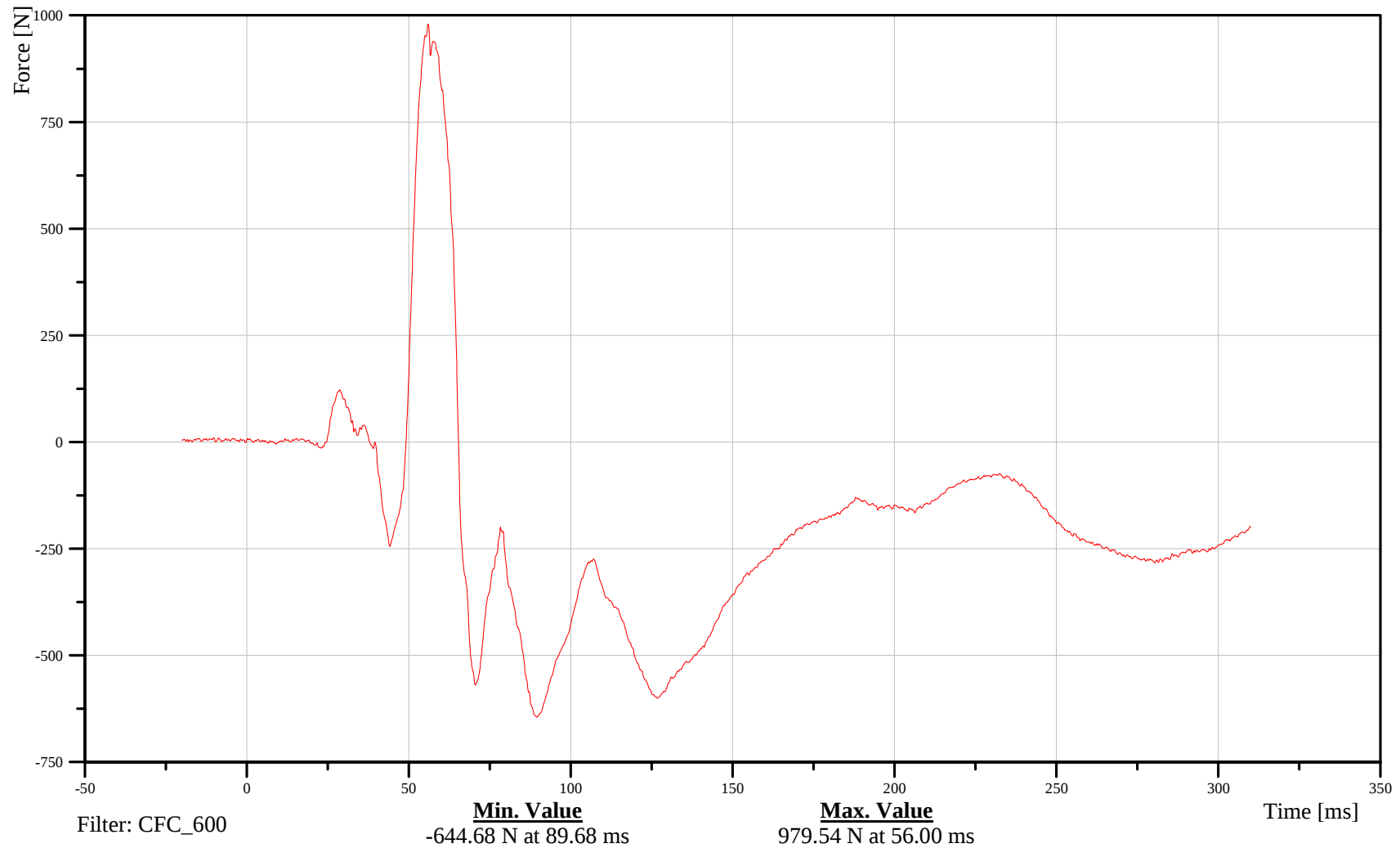
Right Mid Femur Z-Axis Force

Customer: VRTC

11FEMRRIMIWSFOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-102

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

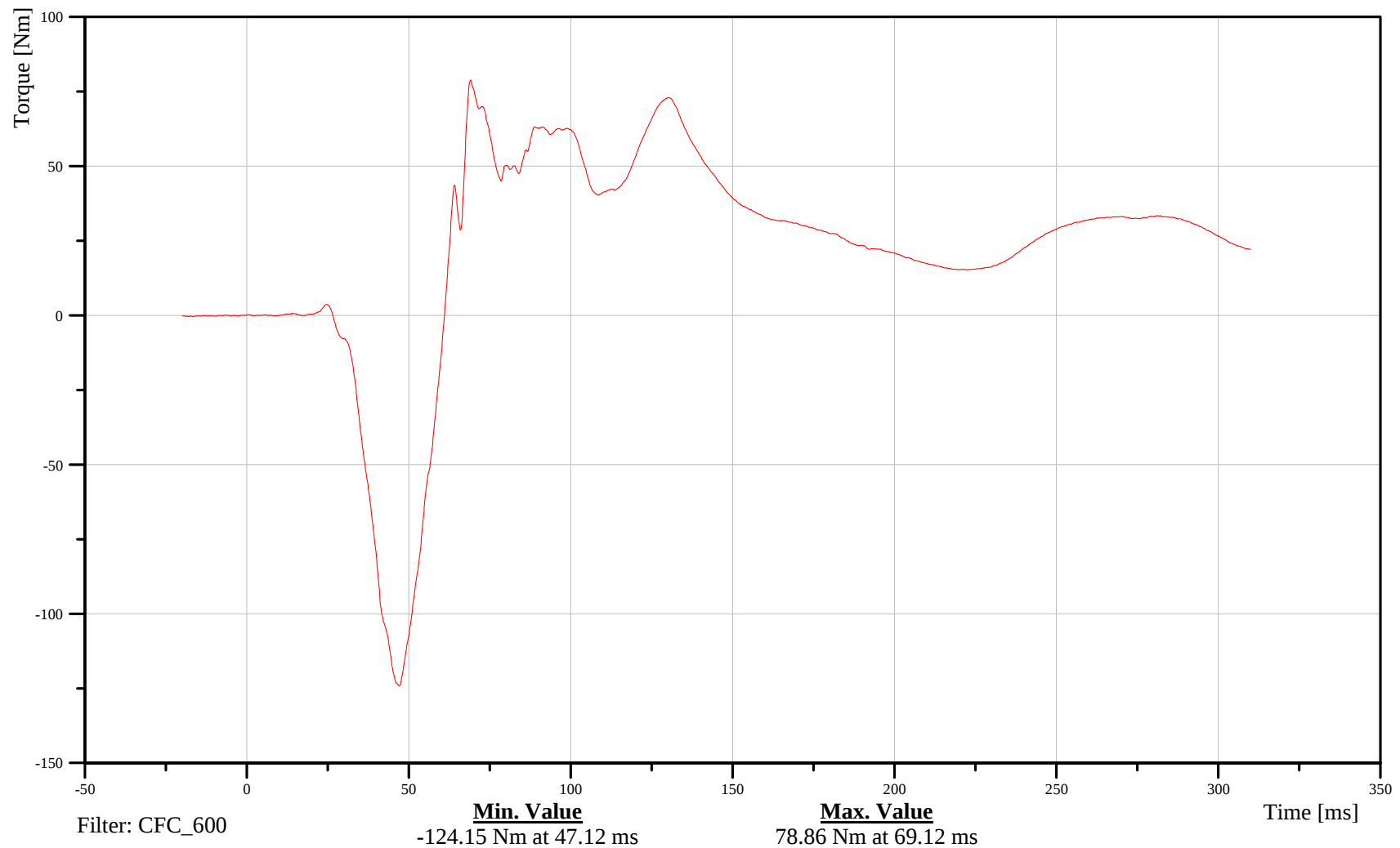
Right Mid Femur Moment About X Axis

Customer: VRTC

11FEMRRIMIWSMOXB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-103

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

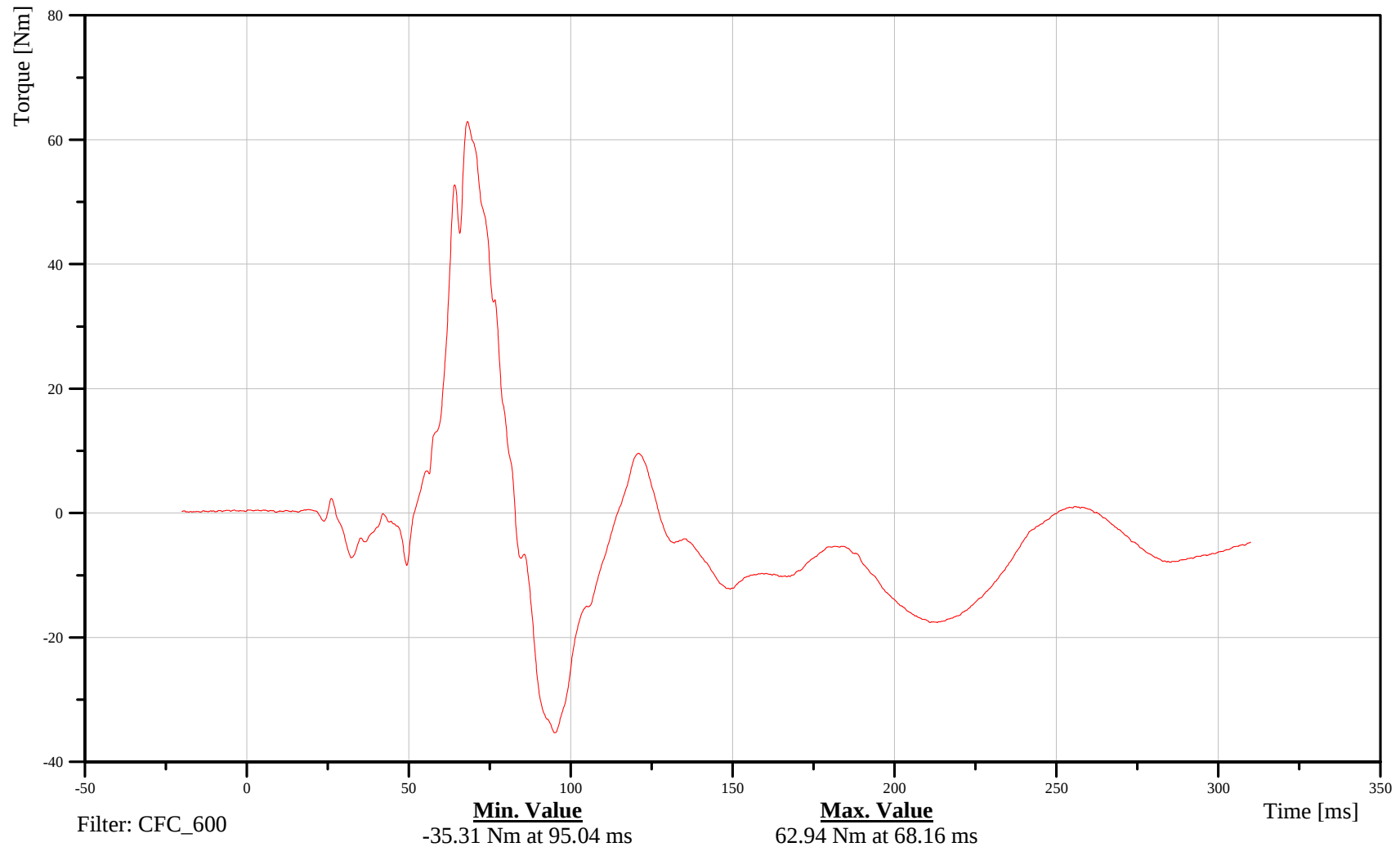
Right Mid Femur Moment About Y Axis

Customer: VRTC

11FEMRRIMIWSMOYB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-104

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

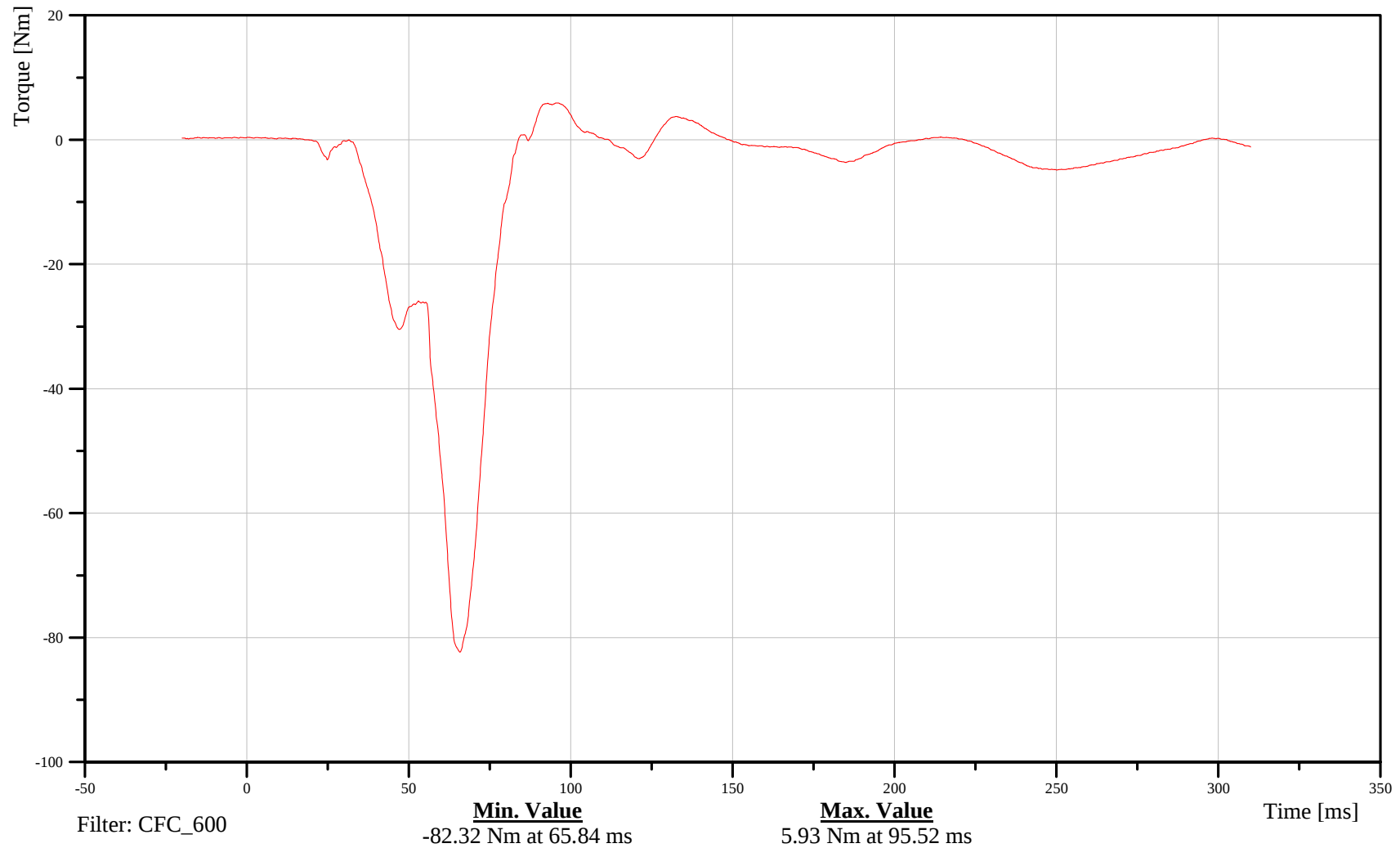
Right Mid Femur Moment About Z Axis

Customer: VRTC

11FEMRRIMIWSMOZB

TRC Inc. Test Lab: CTF

Test Number: 070712



B-105

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

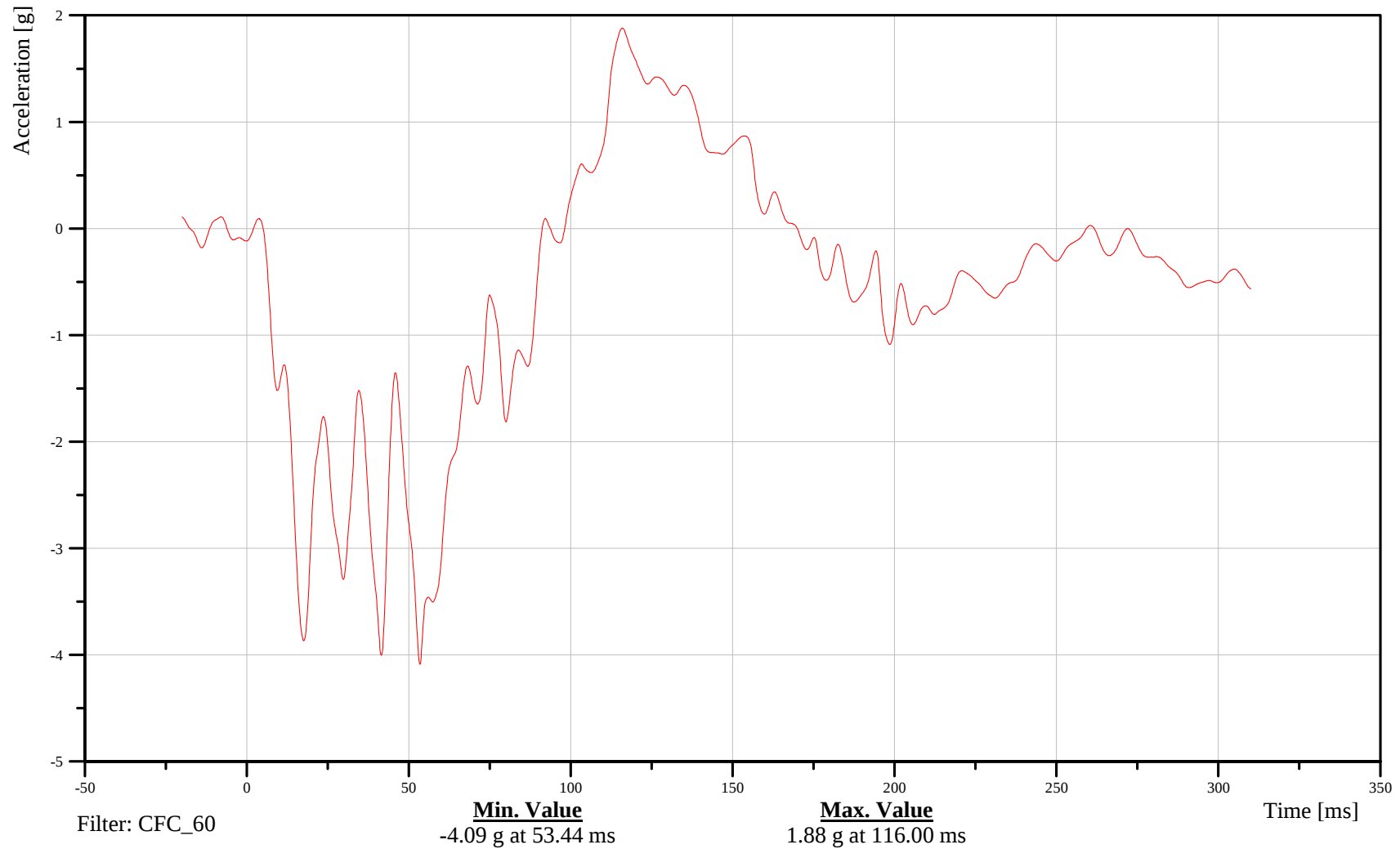
Right Side Sill at Front Seat X-Axis Acceleration

Customer: VRTC

16SILBFR0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-106

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

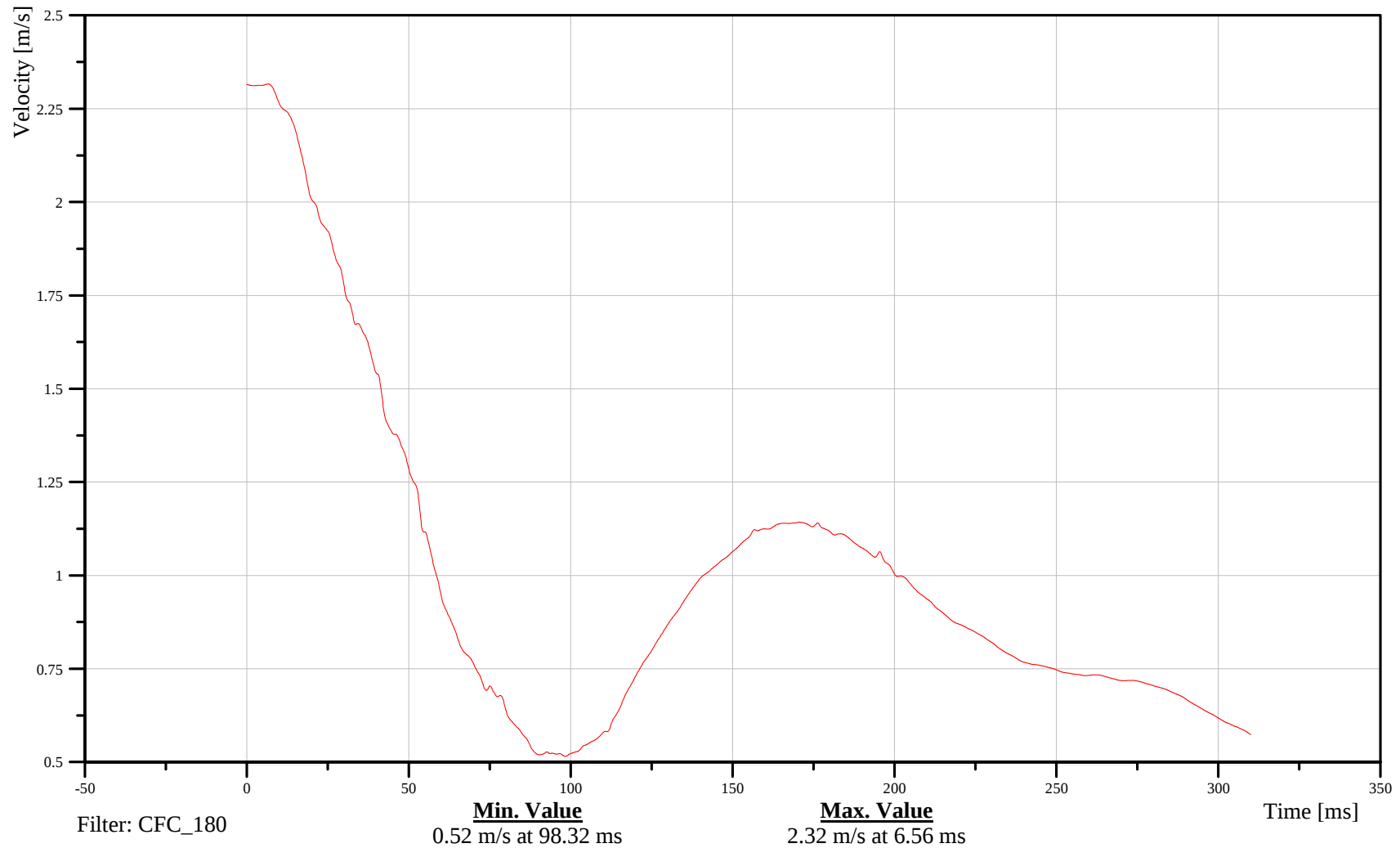
Right Side Sill at Front Seat X-Axis Velocity

Customer: VRTC

16SILBFR0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-107

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

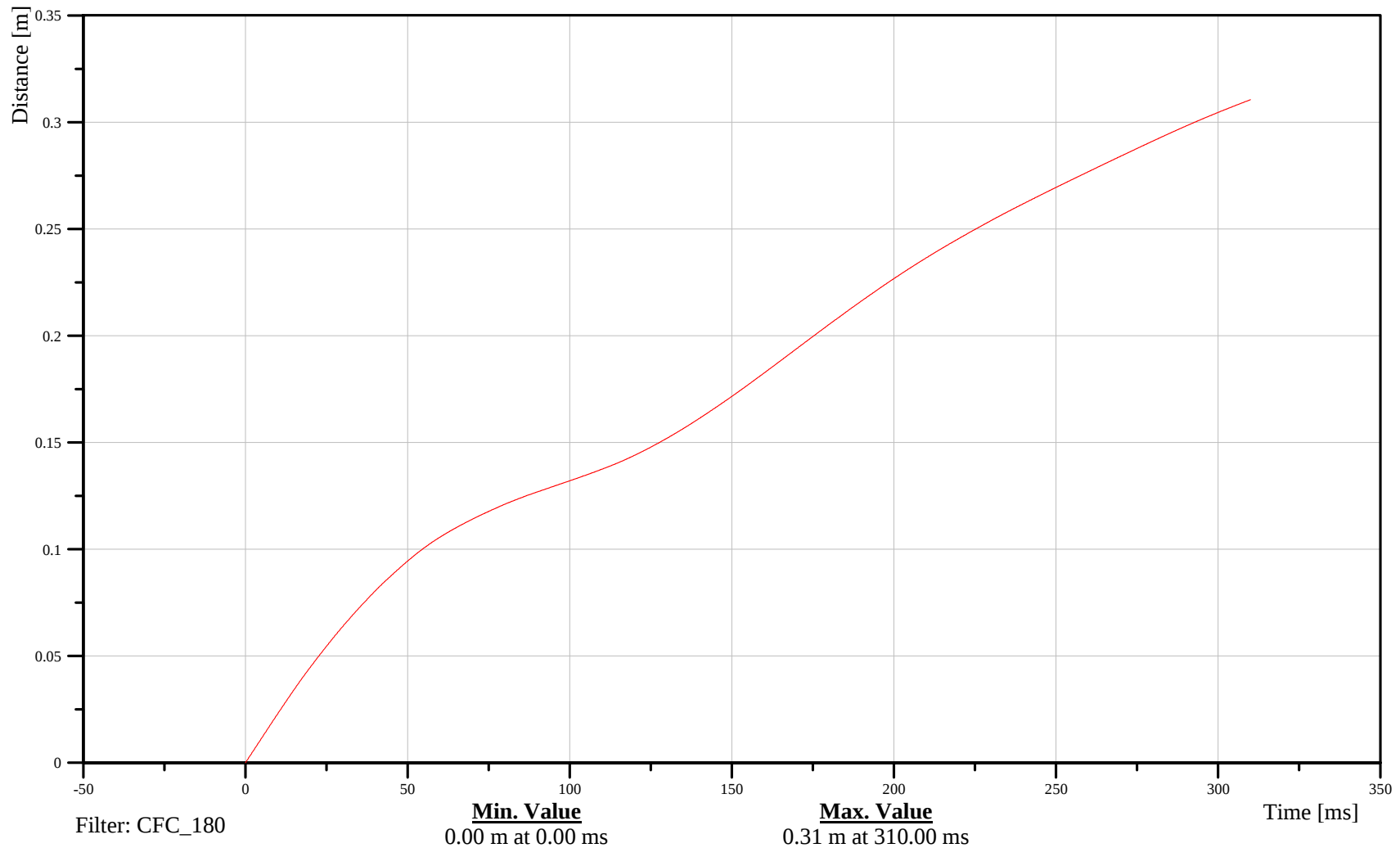
Right Side Sill at Front Seat X-Axis Displacement

Customer: VRTC

16SILBFR0000DCXC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-108

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

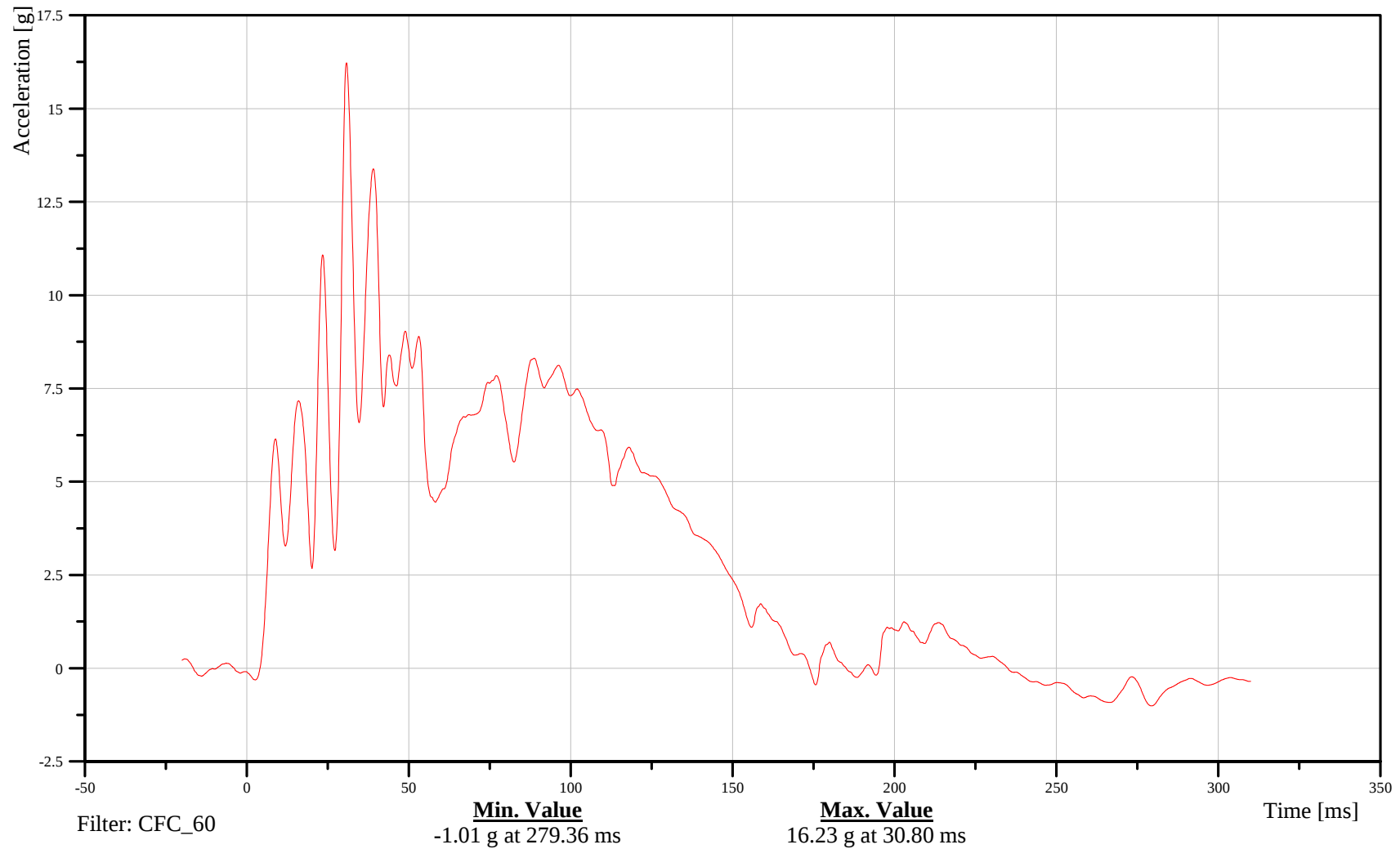
Right Side Sill at Front Seat Y-Axis Acceleration

Customer: VRTC

16SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-109

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

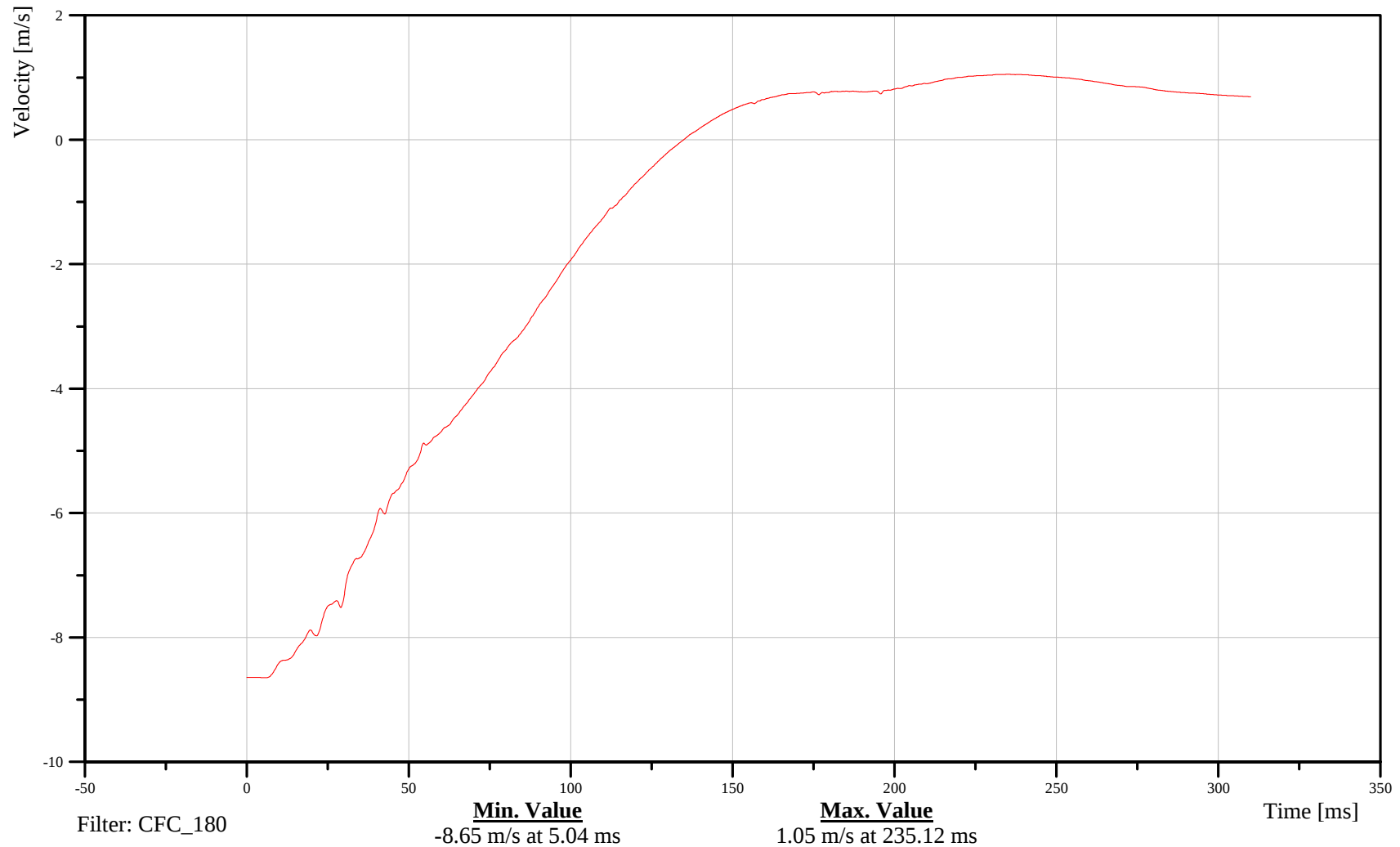
Right Side Sill at Front Seat Y-Axis Velocity

Customer: VRTC

16SILBFR0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-110

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

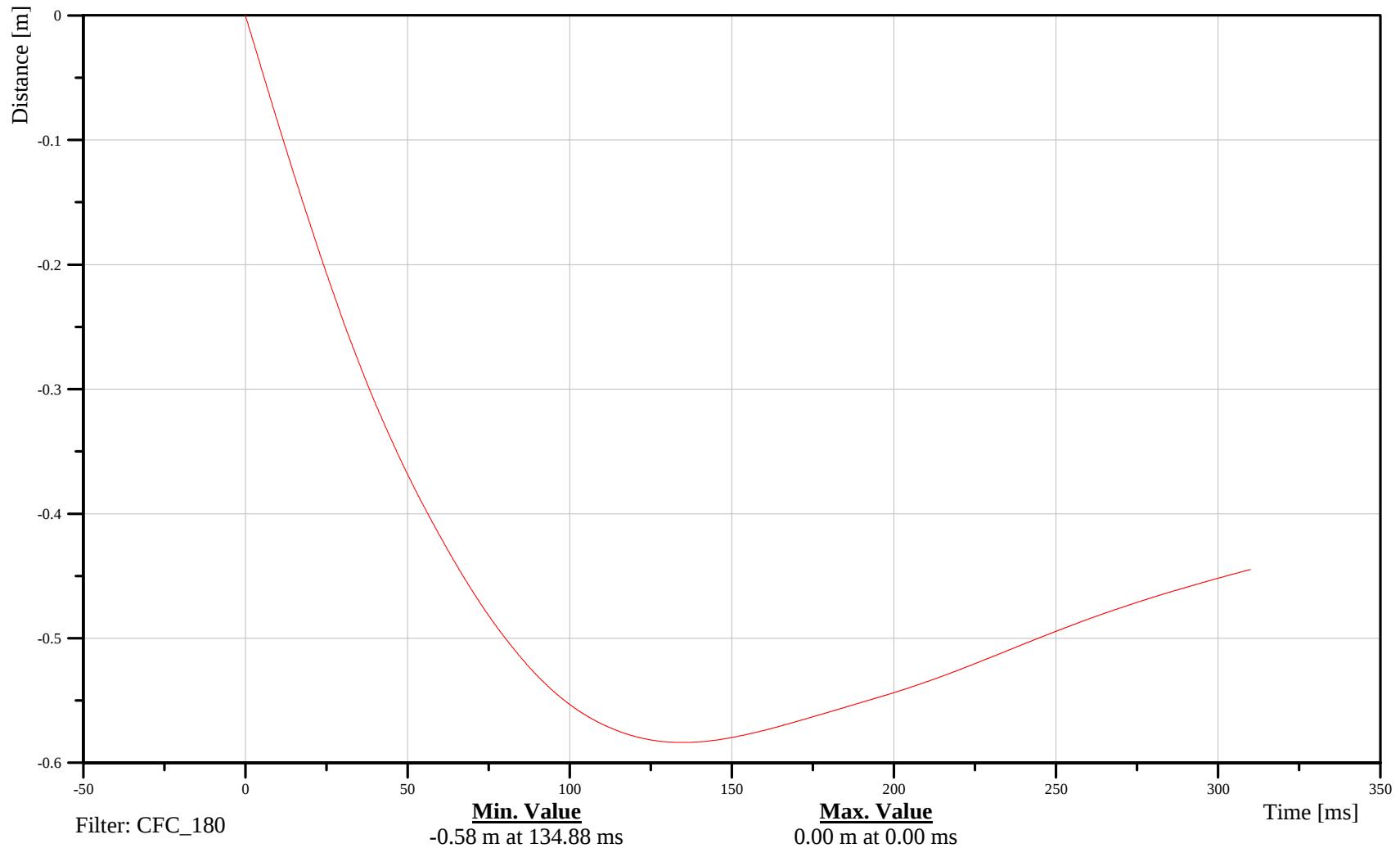
Right Side Sill at Front Seat Y-Axis Displacement

Customer: VRTC

16SILBFR0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-111

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

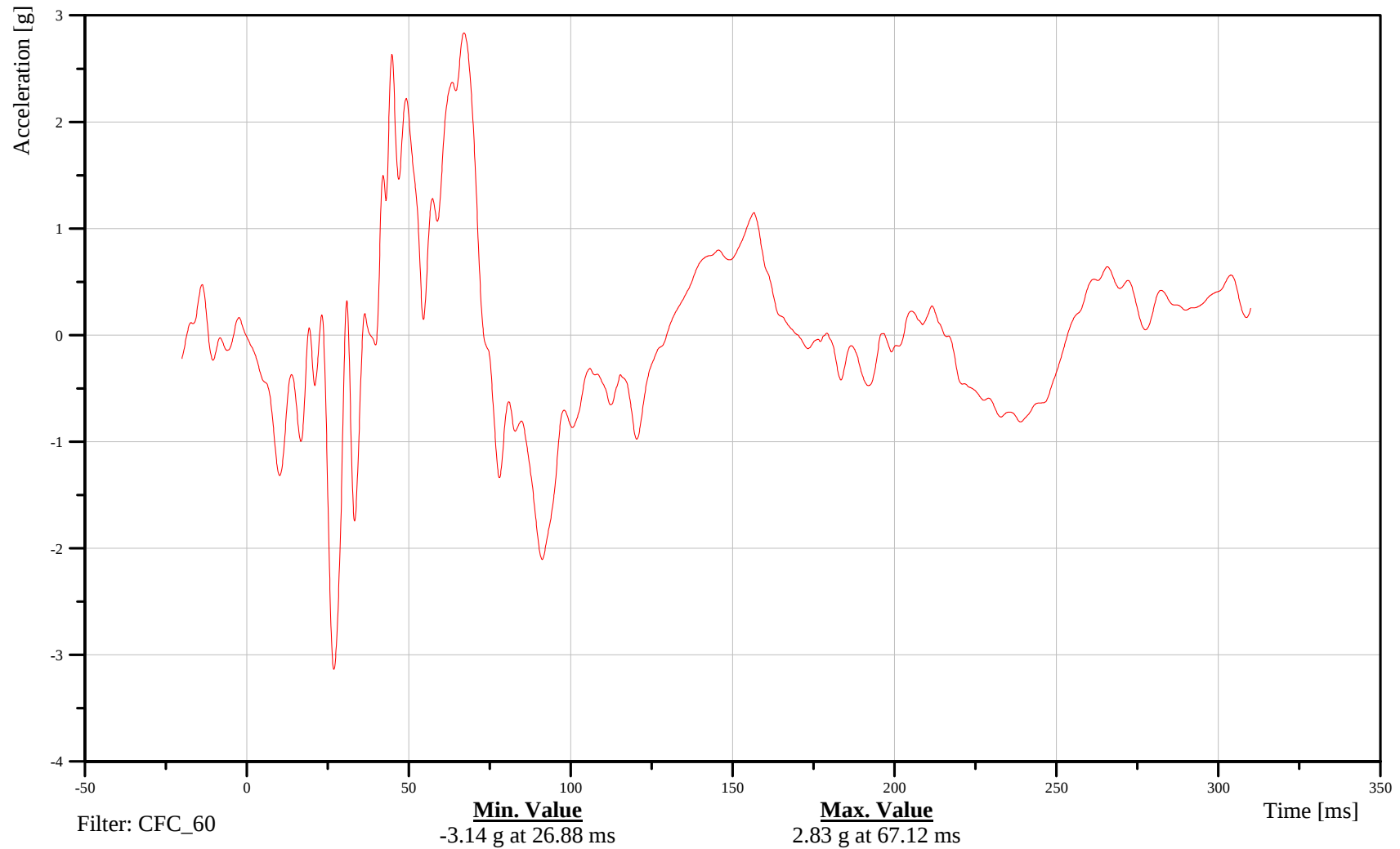
Right Side Sill at Front Seat Z-Axis Acceleration

Customer: VRTC

16SILBFR0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-112

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

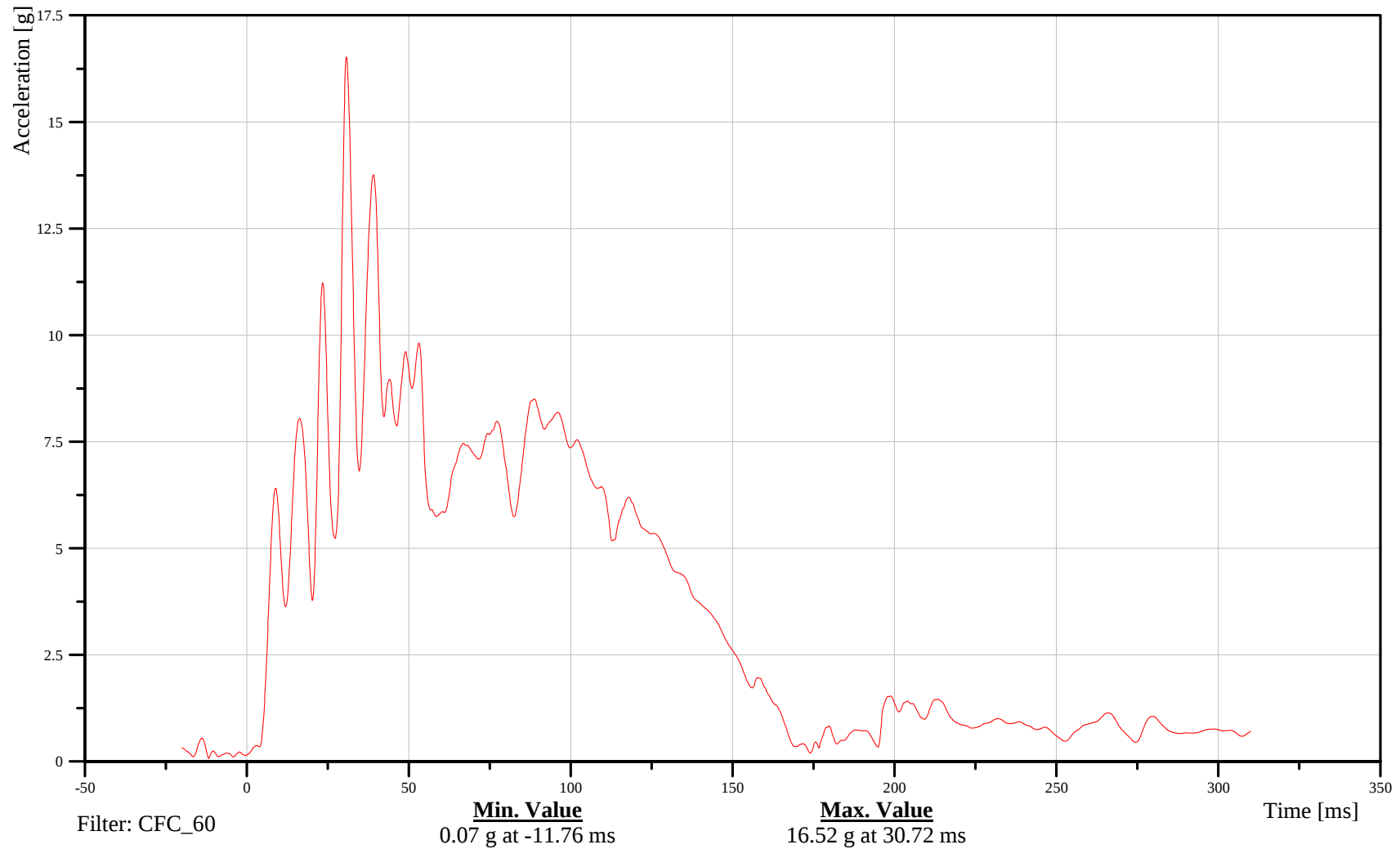
Right Side Sill at Front Seat Resultant Acceleration

Customer: VRTC

16SILBFR0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-113

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

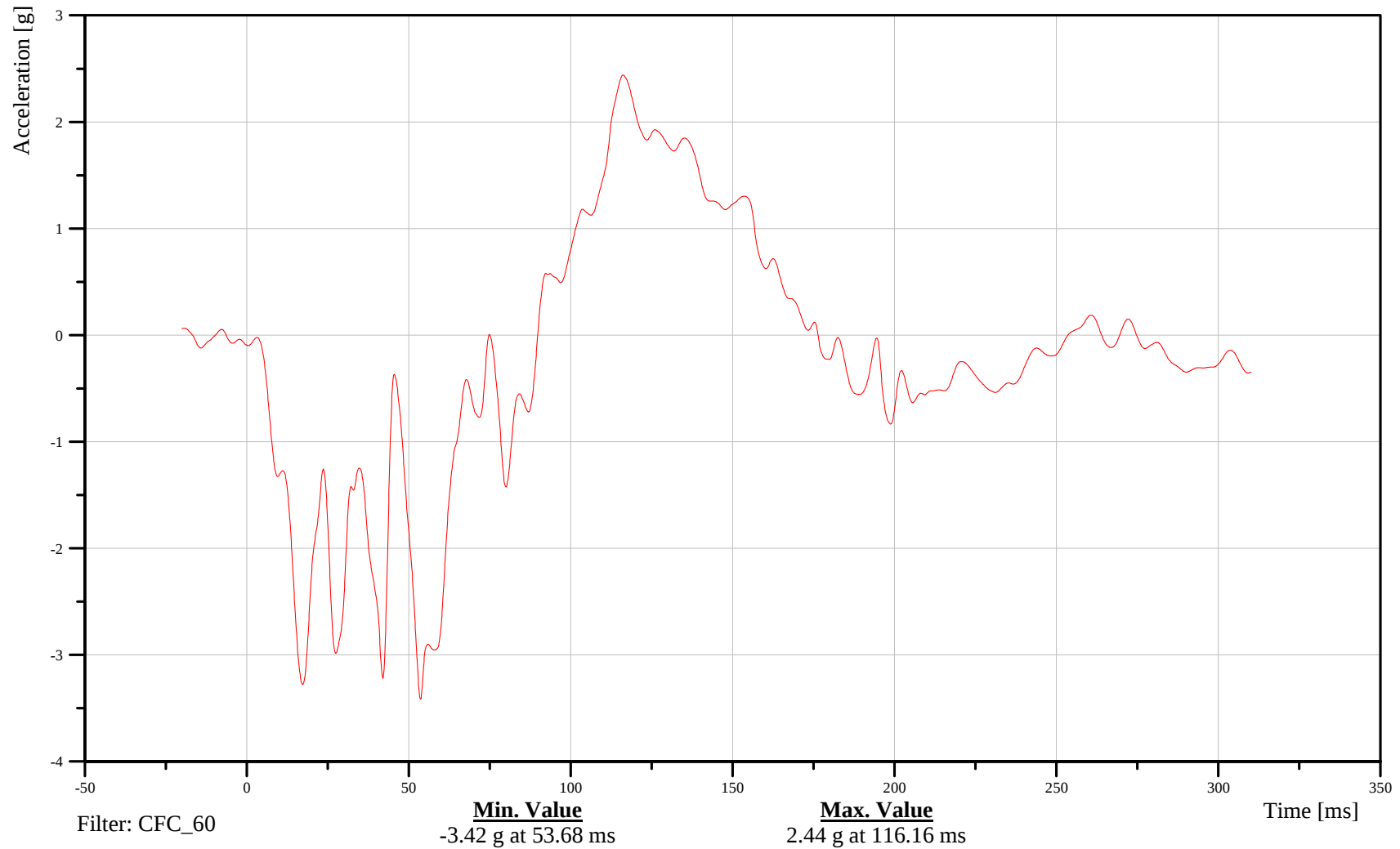
Right Side Sill at Rear Seat X-Axis Acceleration

Customer: VRTC

16SILBRE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-114

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

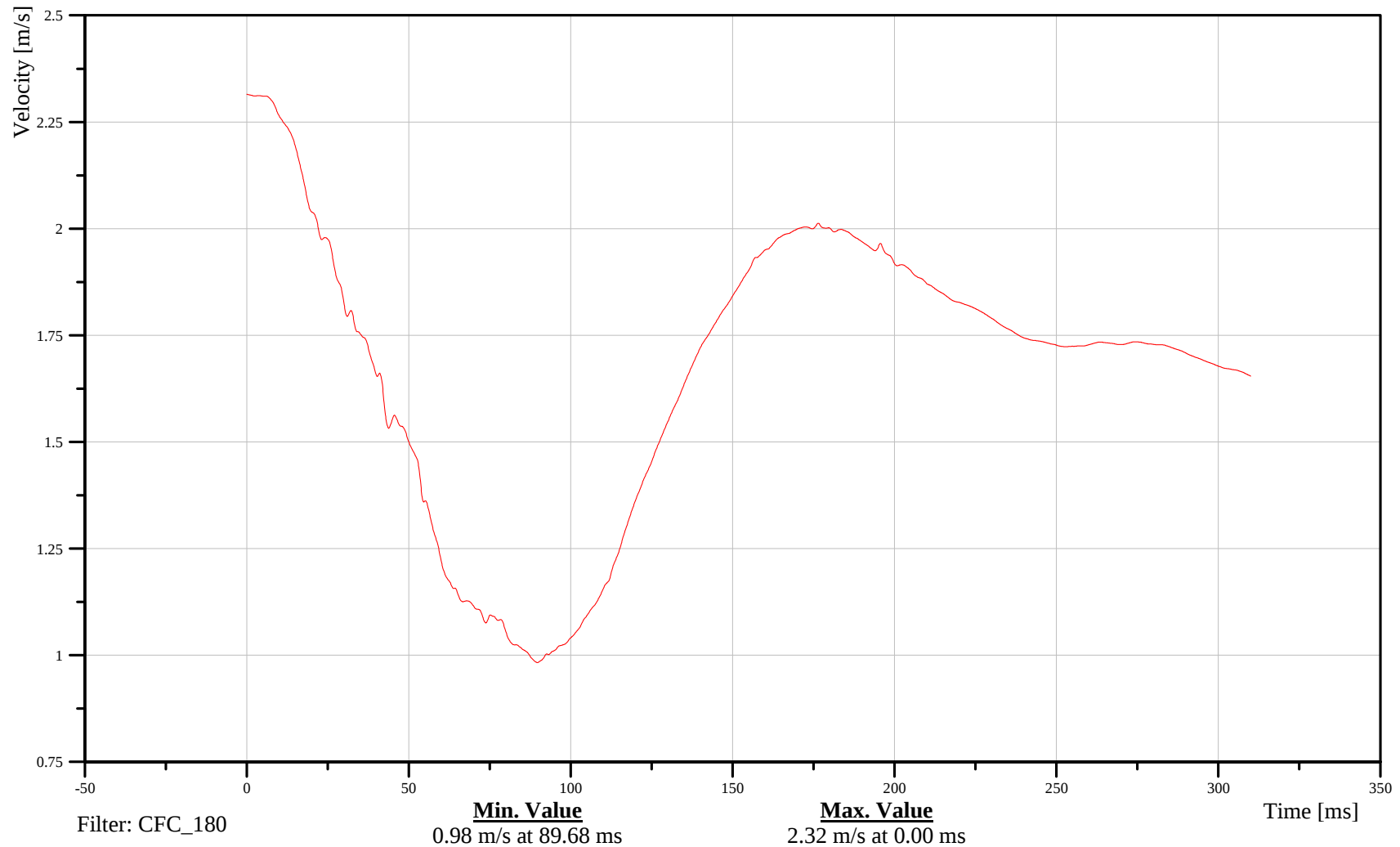
Right Side Sill at Rear Seat X-Axis Velocity

Customer: VRTC

16SILBRE0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-115

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

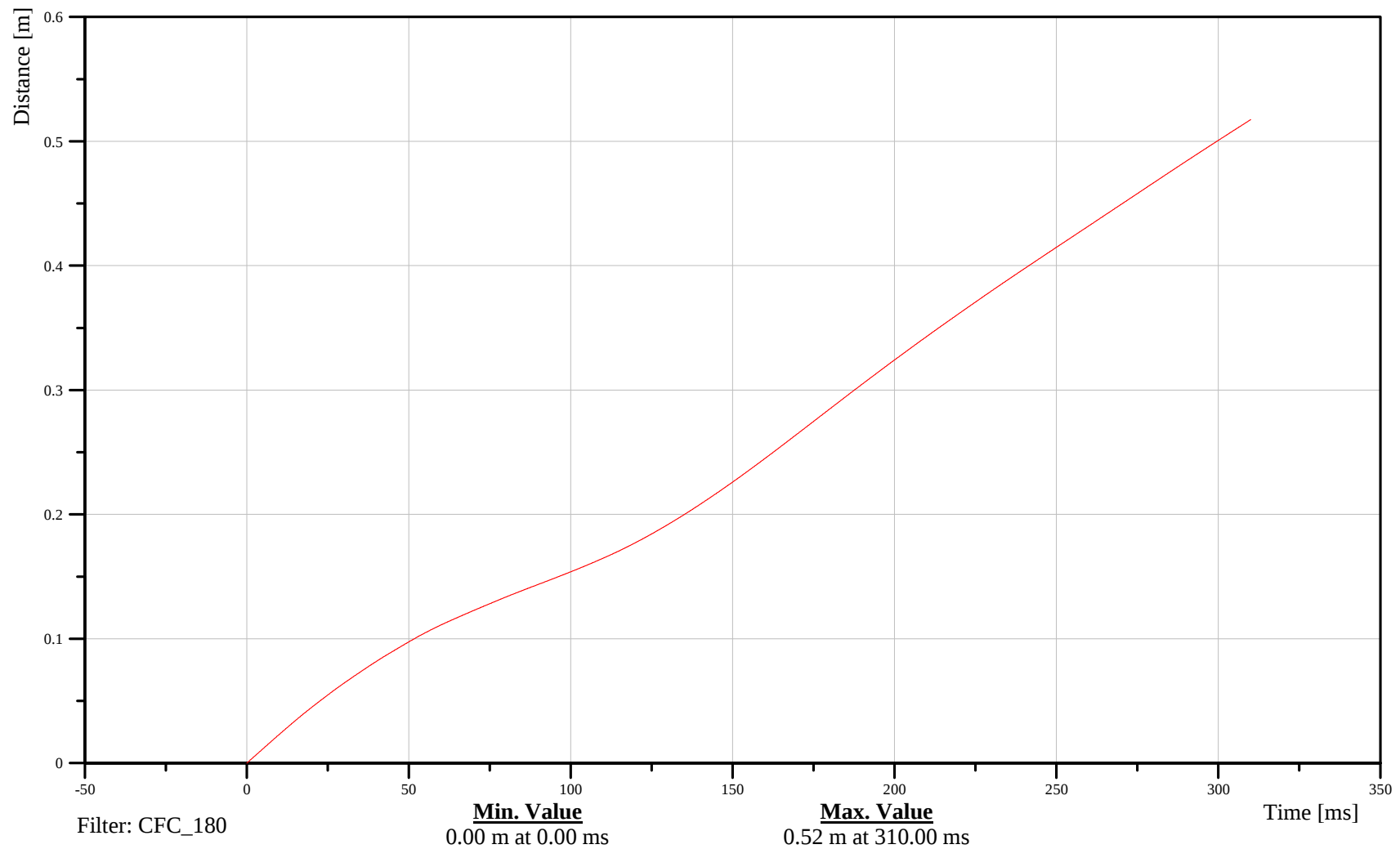
Right Side Sill at Rear Seat X-Axis Displacement

Customer: VRTC

16SILBRE0000DCXC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-116

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

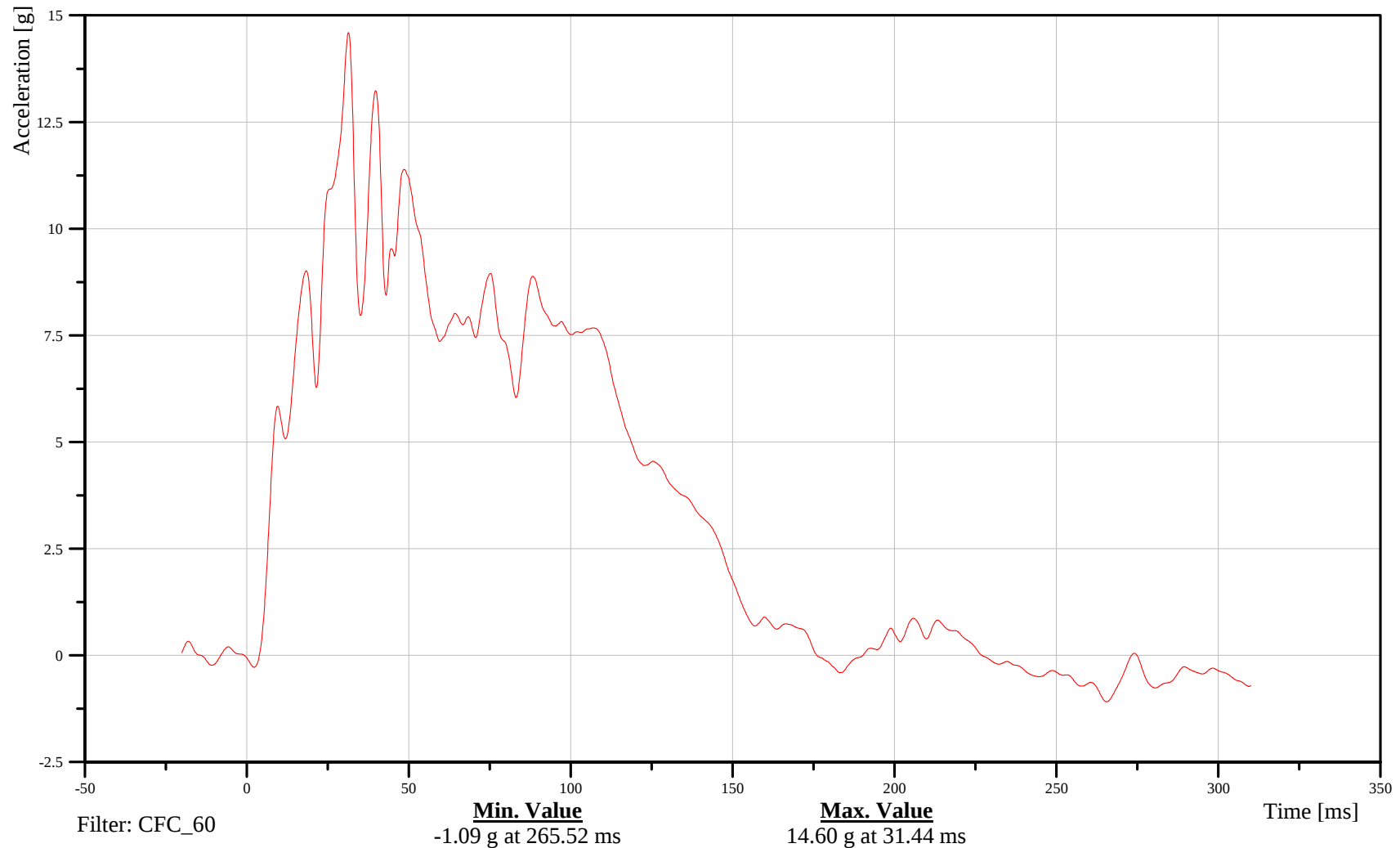
Right Side Sill at Rear Seat Y-Axis Acceleration

Customer: VRTC

16SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-117

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

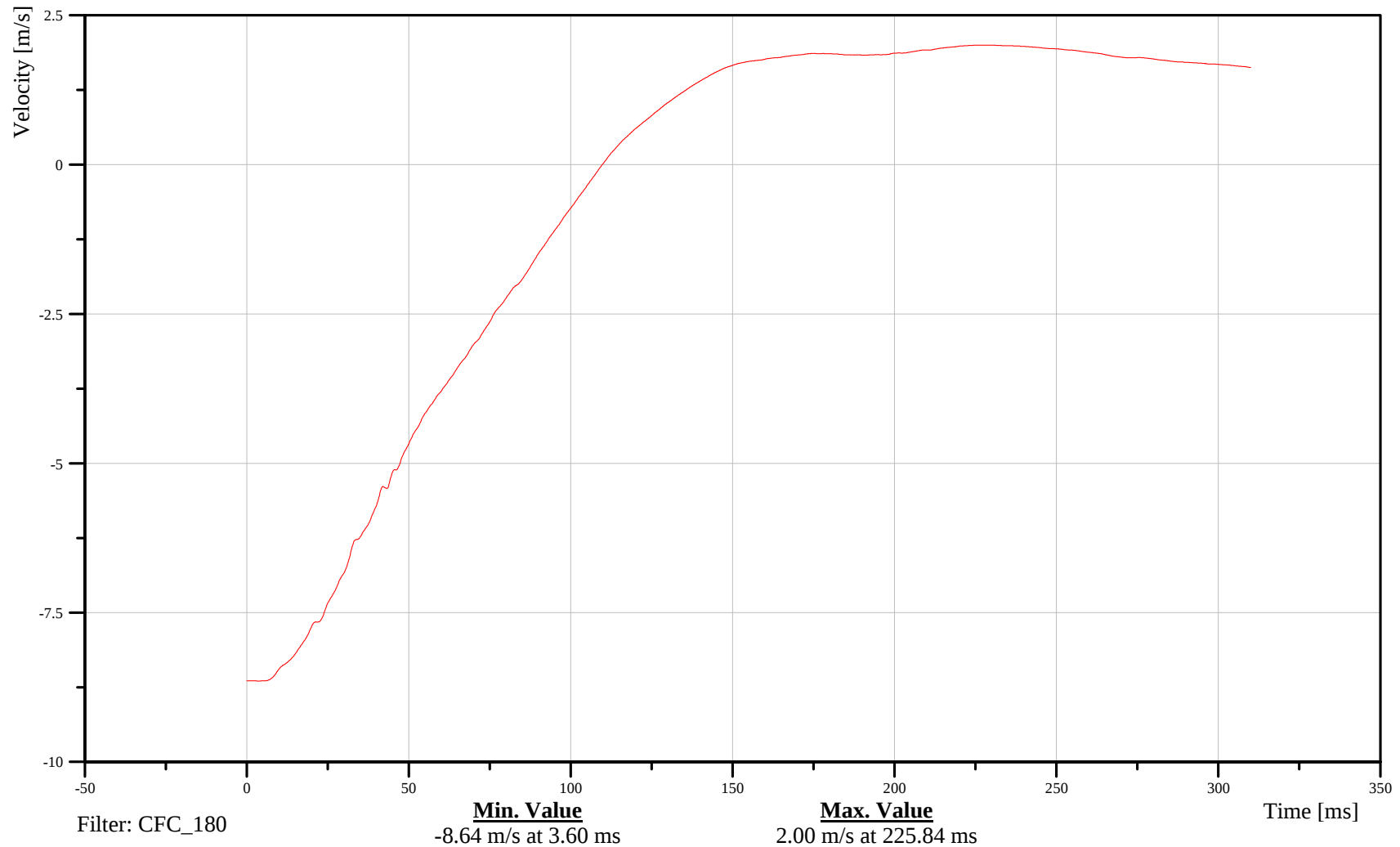
Right Side Sill at Rear Seat Y-Axis Velocity

Customer: VRTC

16SILBRE0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-118

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

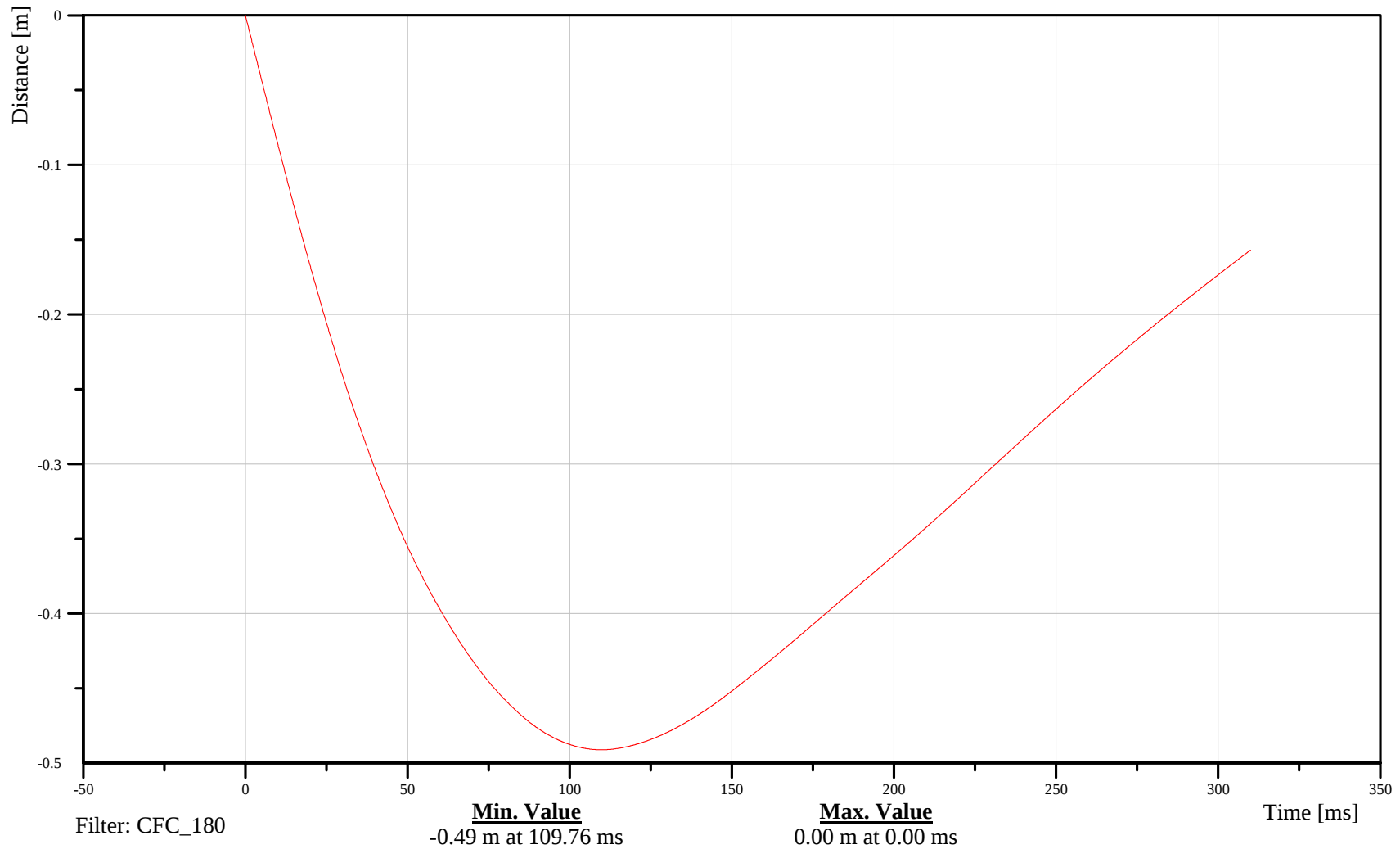
Right Side Sill at Rear Seat Y-Axis Displacement

Customer: VRTC

16SILBRE0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-119

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

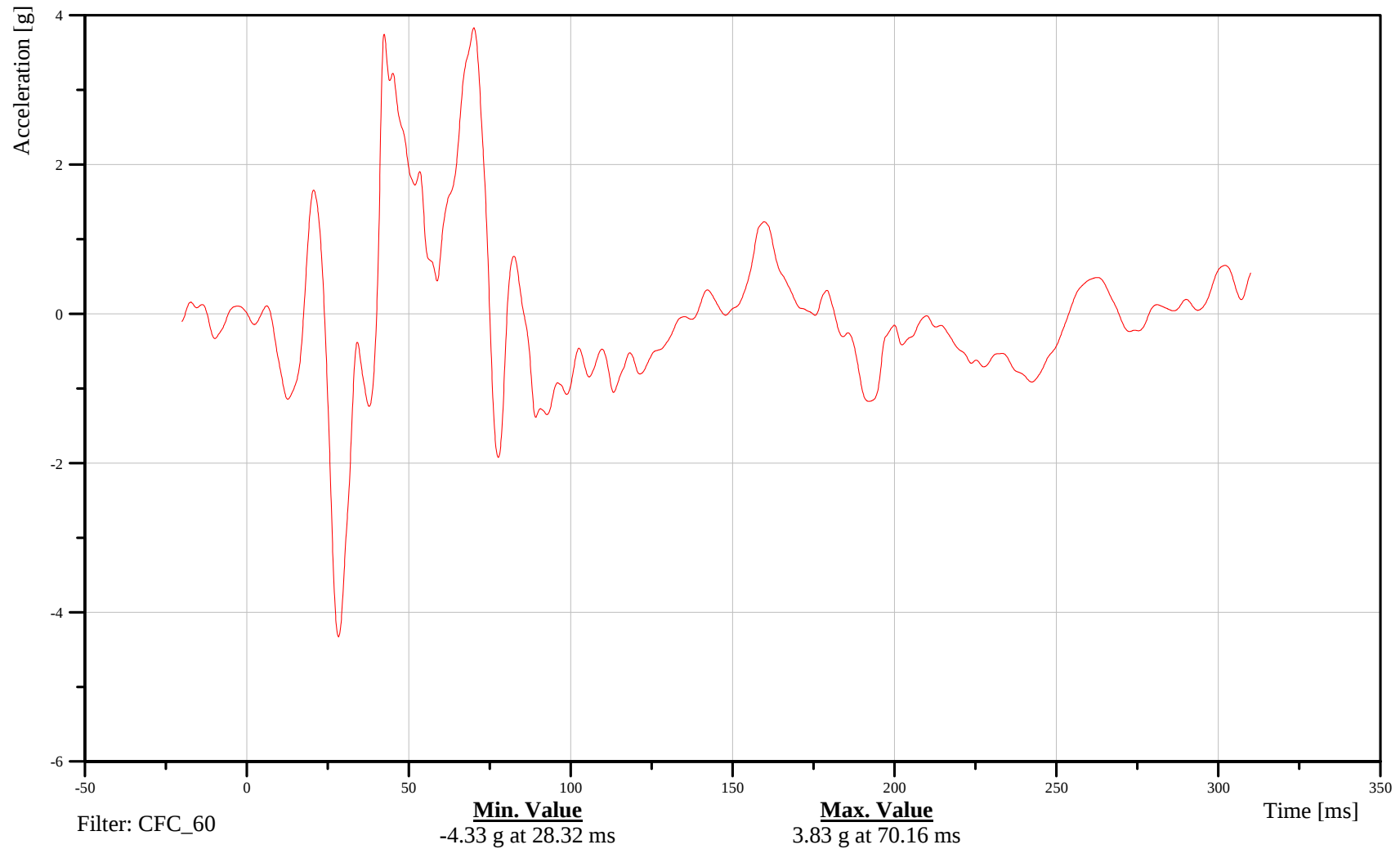
Right Side Sill at Rear Seat Z-Axis Acceleration

Customer: VRTC

16SILBRE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-120

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

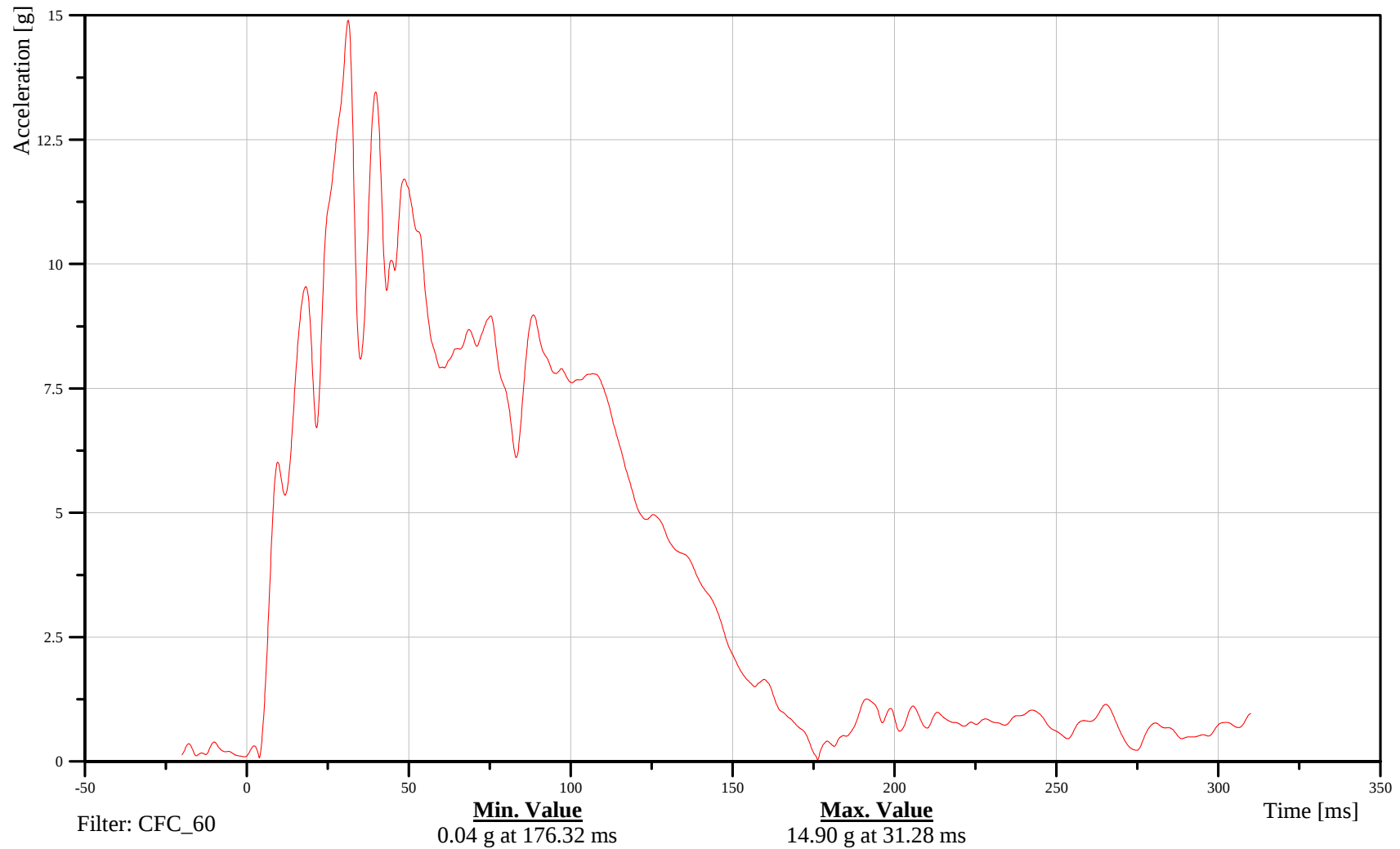
Right Side Sill at Rear Seat Resultant Acceleration

Customer: VRTC

16SILBRE0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-121

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

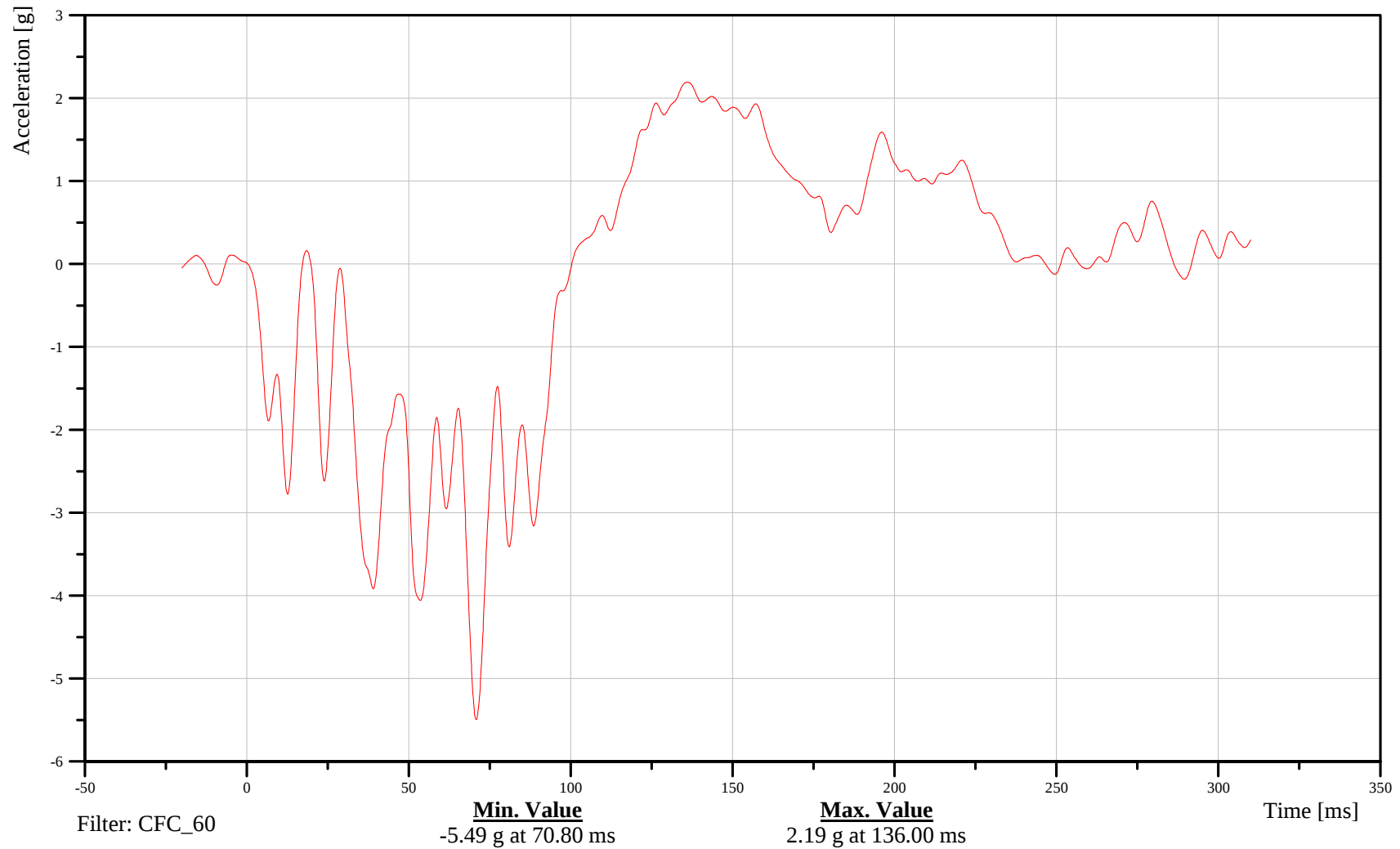
Rear Floorpan Above Axle X-Axis Acceleration

Customer: VRTC

18FORA000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-122

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

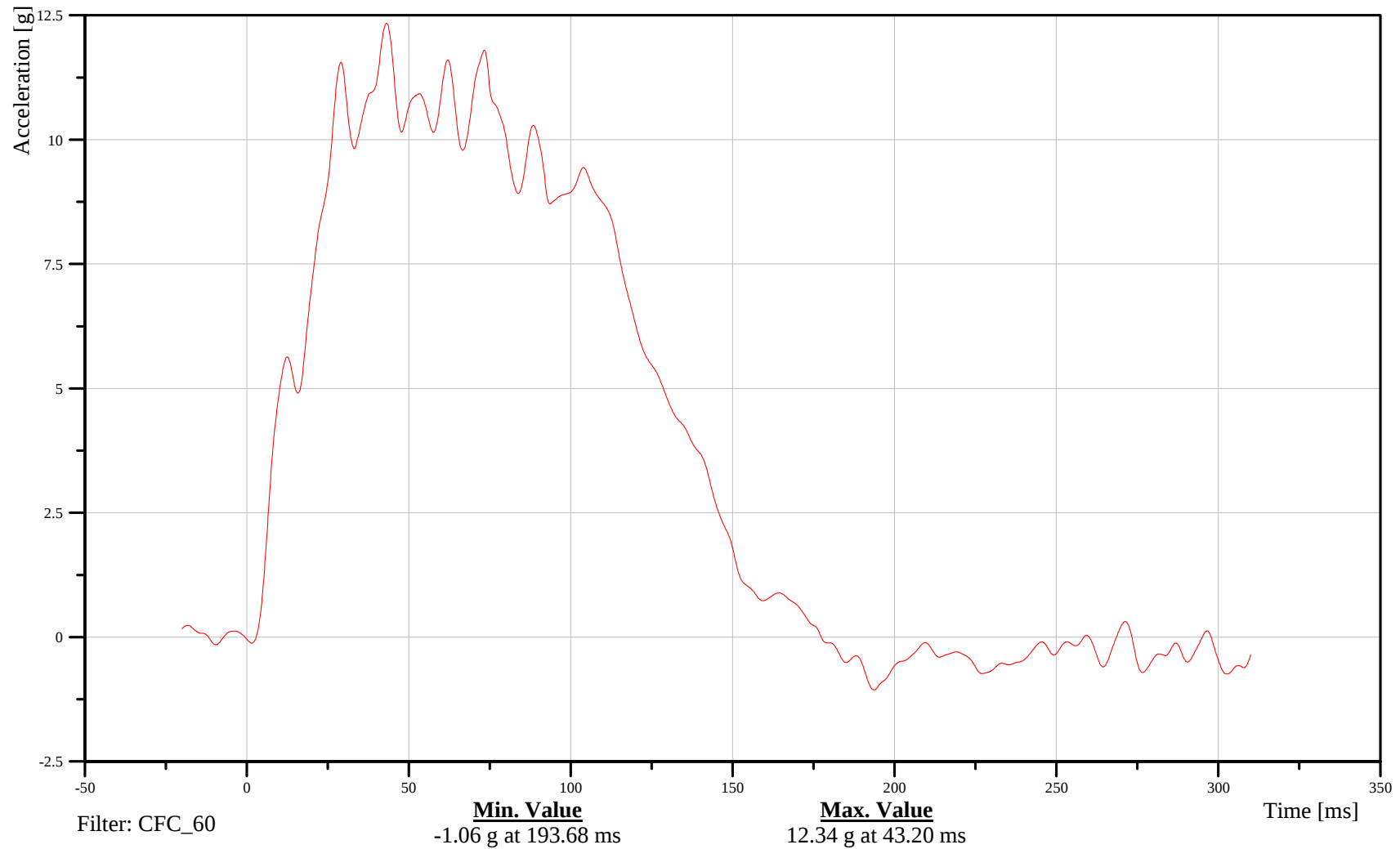
Rear Floorpan Above Axle Y-Axis Acceleration

Customer: VRTC

18FORA000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-123

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

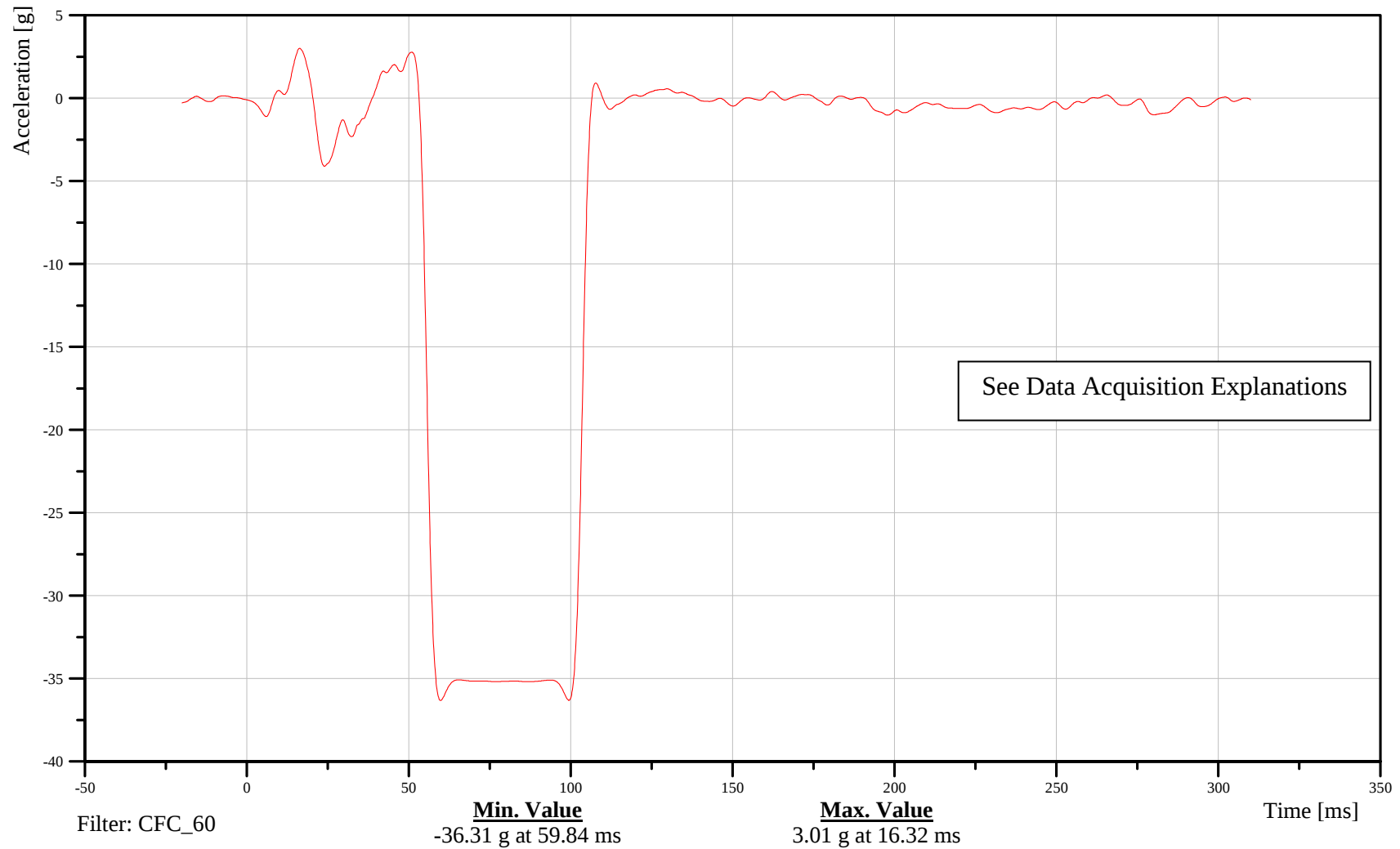
Rear Floorpan Above Axle Z-Axis Acceleration

Customer: VRTC

18FORA000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-124

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

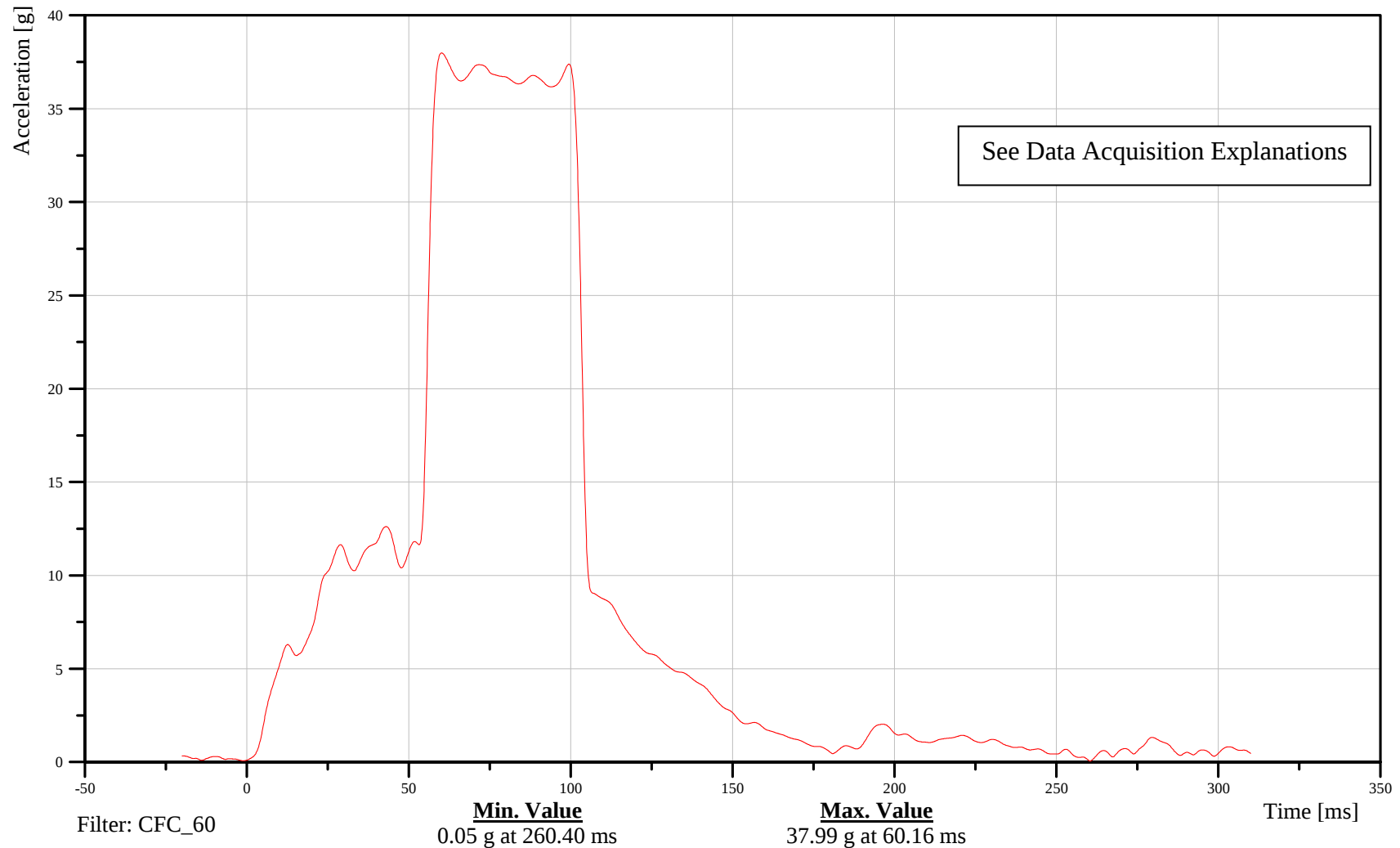
Rear Floorpan Above Axle Resultant Acceleration

Customer: VRTC

18FORA000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-125

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

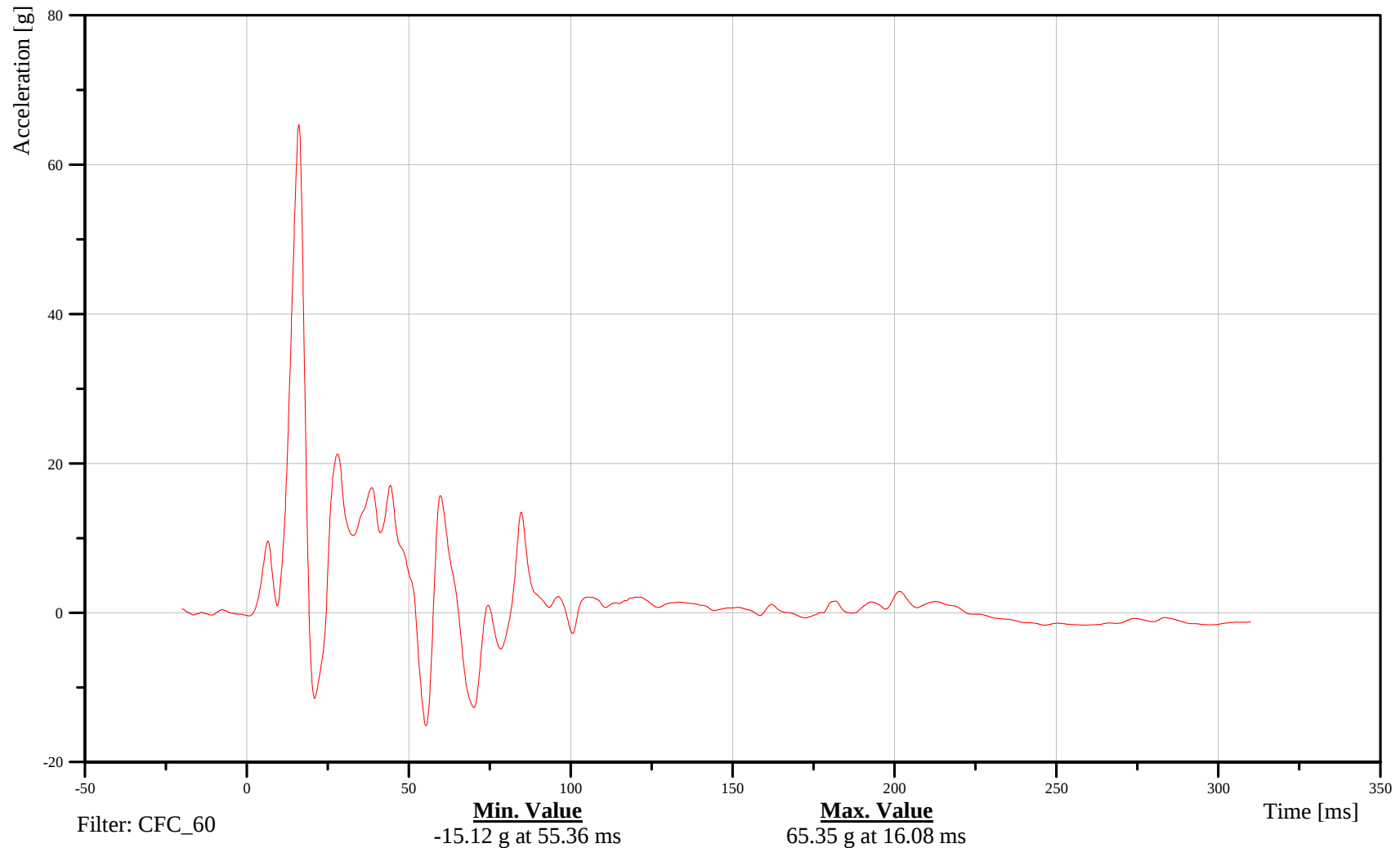
Left Side Sill at Front Seat Y-Axis Acceleration

Customer: VRTC

14SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-126

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

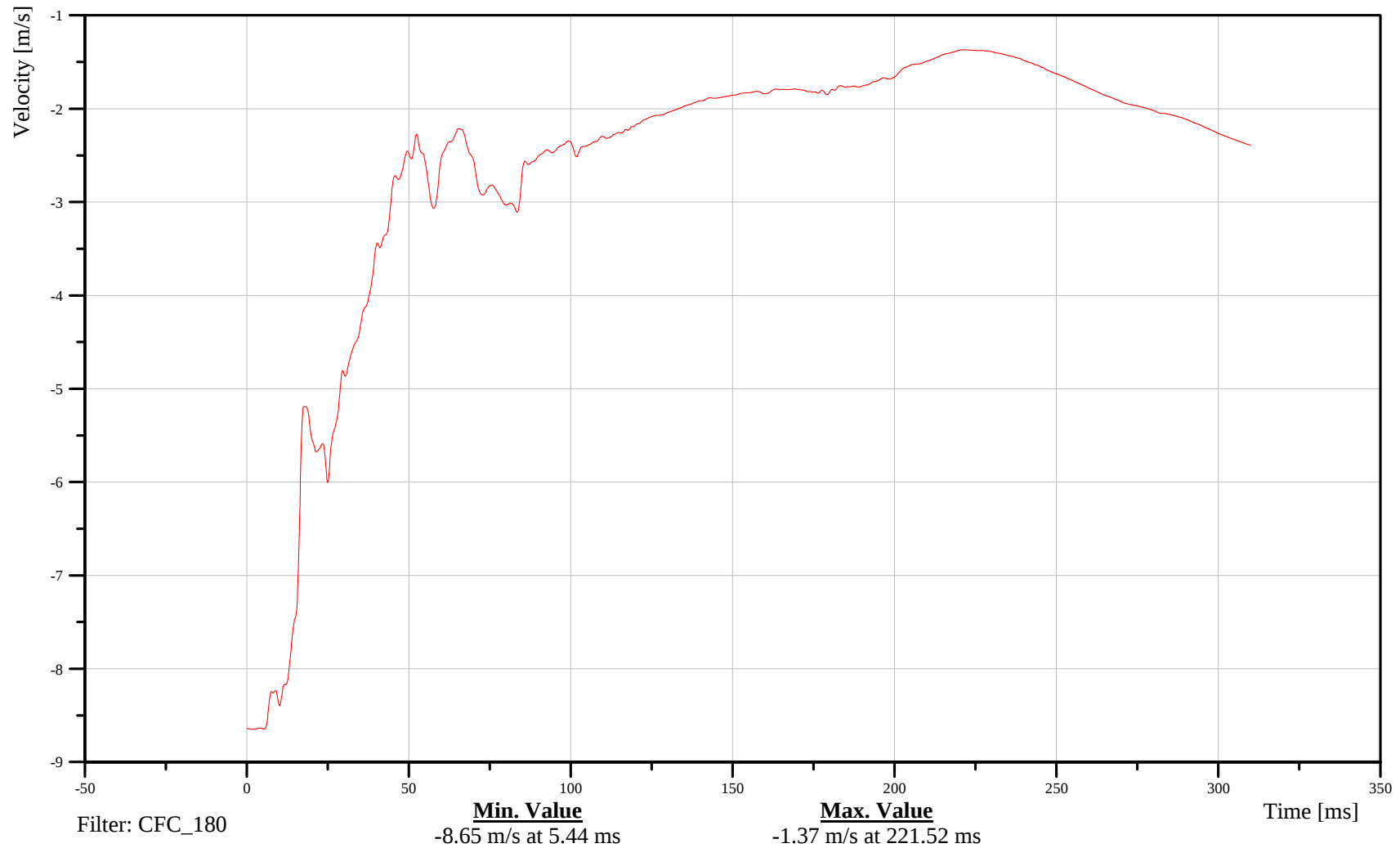
Left Side Sill at Front Seat Y-Axis Velocity

Customer: VRTC

14SILBFR0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-127

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

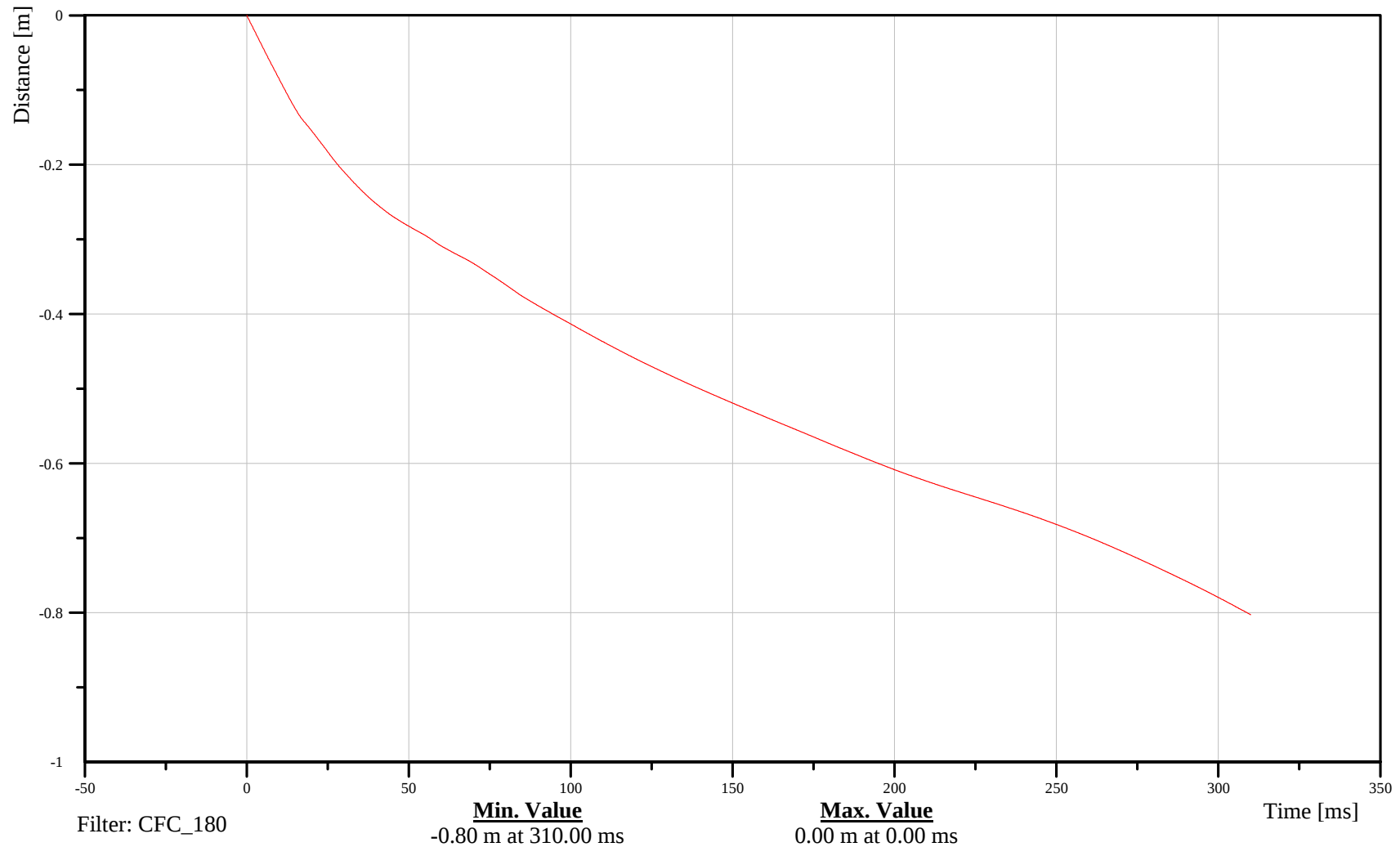
Left Side Sill at Front Seat Y-Axis Displacement

Customer: VRTC

14SILBFR0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-128

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

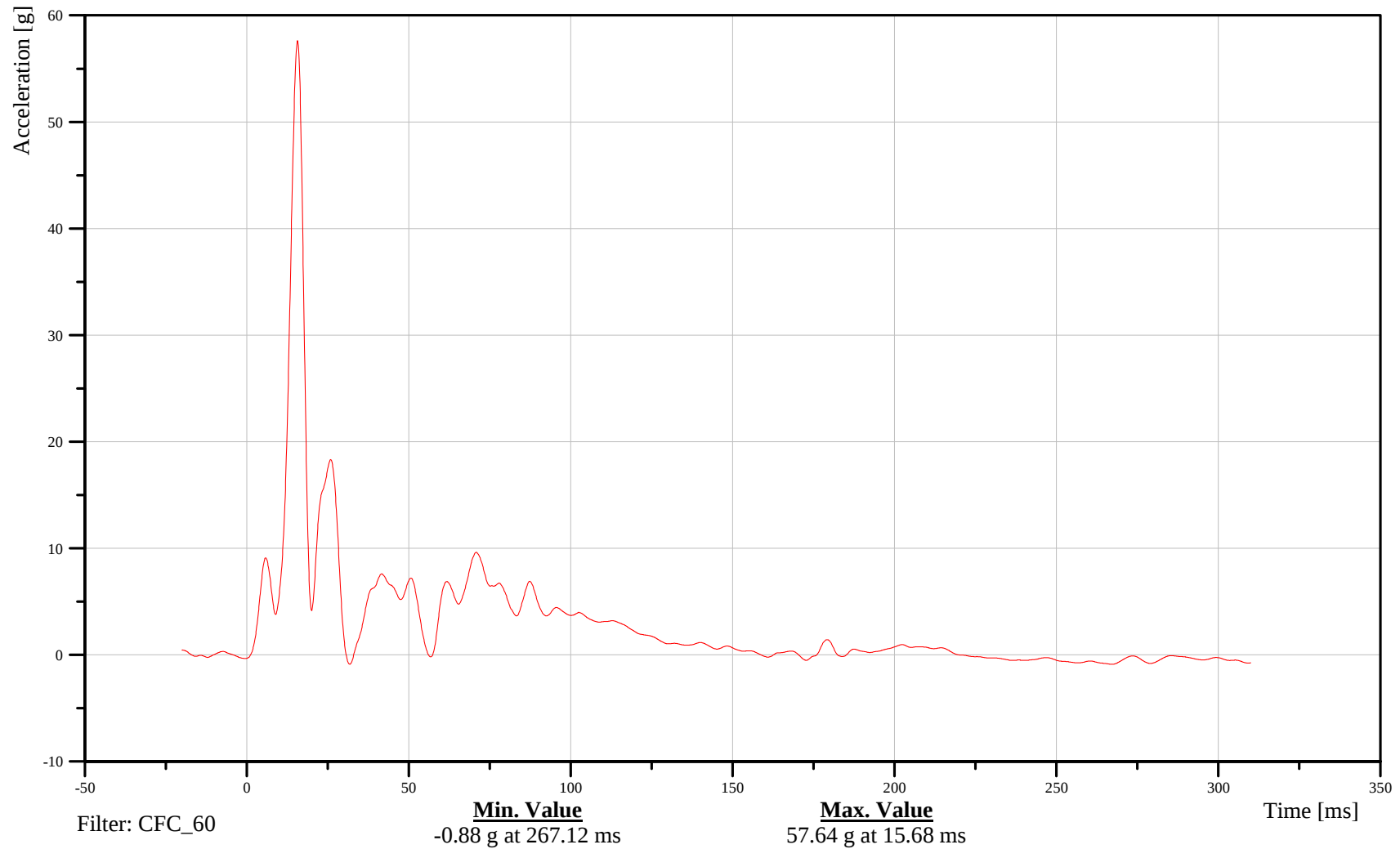
Left Side Sill at Rear Seat Y-Axis Acceleration

Customer: VRTC

14SILBRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-129

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

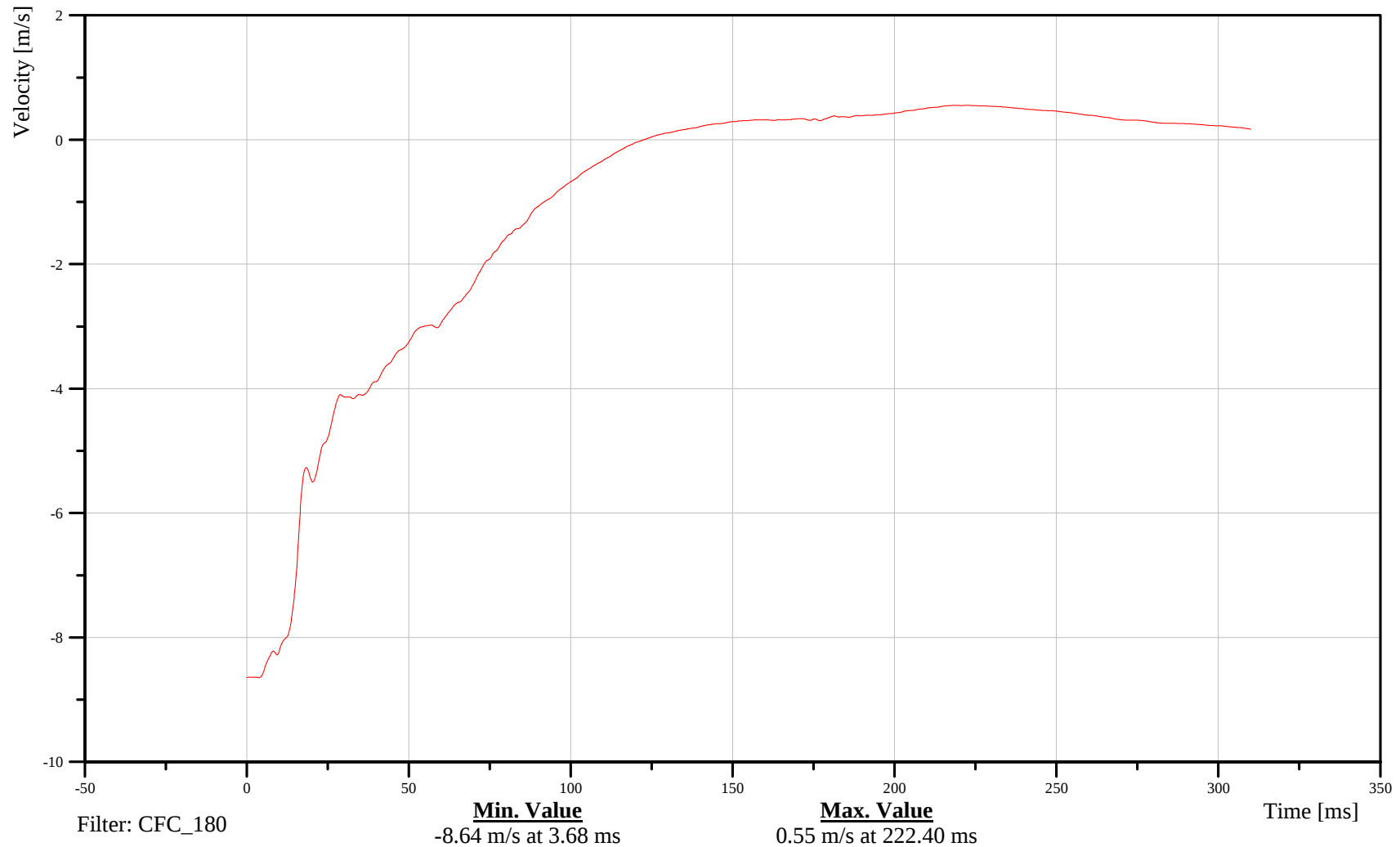
Left Side Sill at Rear Seat Y-Axis Velocity

Customer: VRTC

14SILBRE0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-130

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

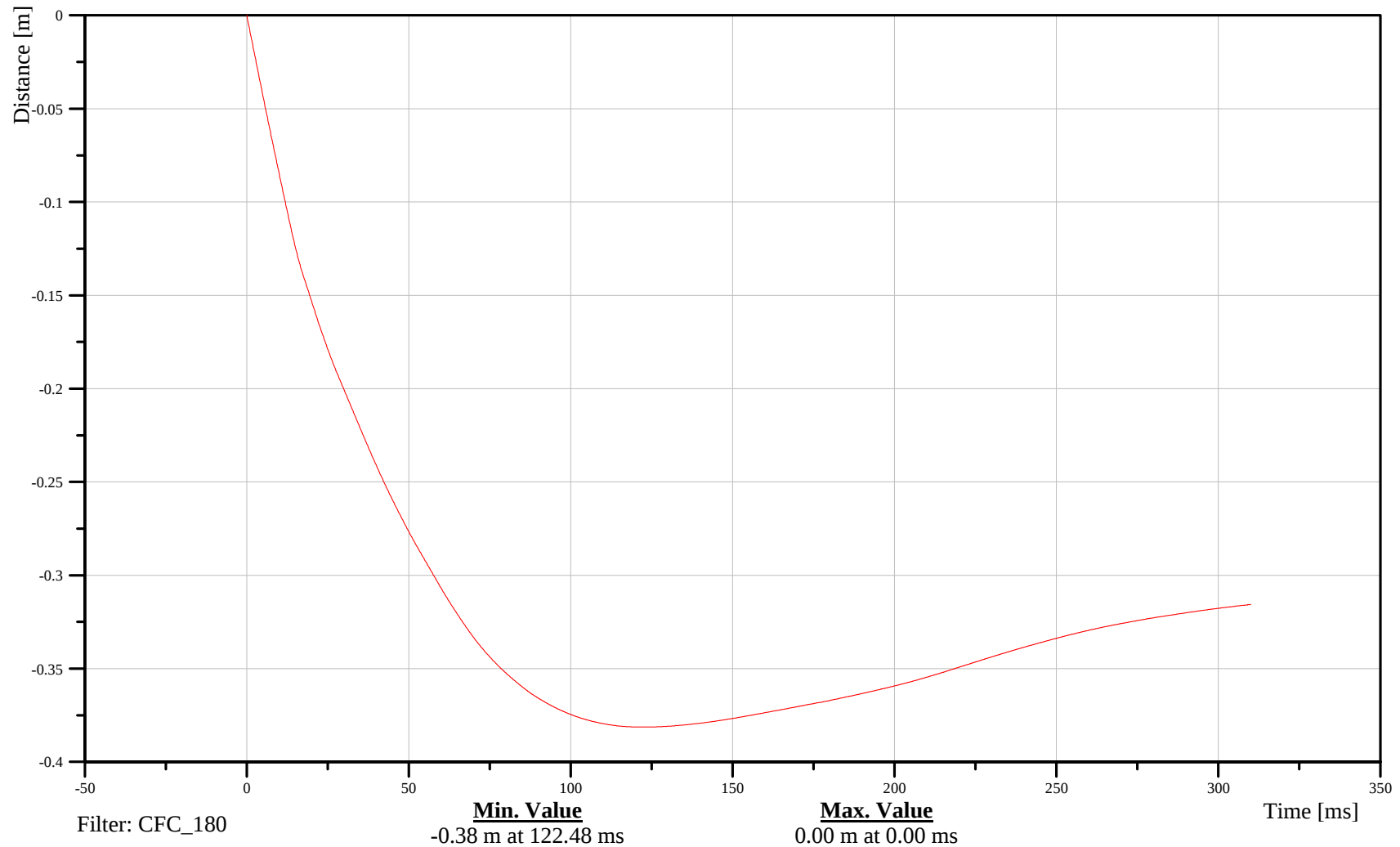
Left Side Sill at Rear Seat Y-Axis Displacement

Customer: VRTC

14SILBRE0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 070712



B-131

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

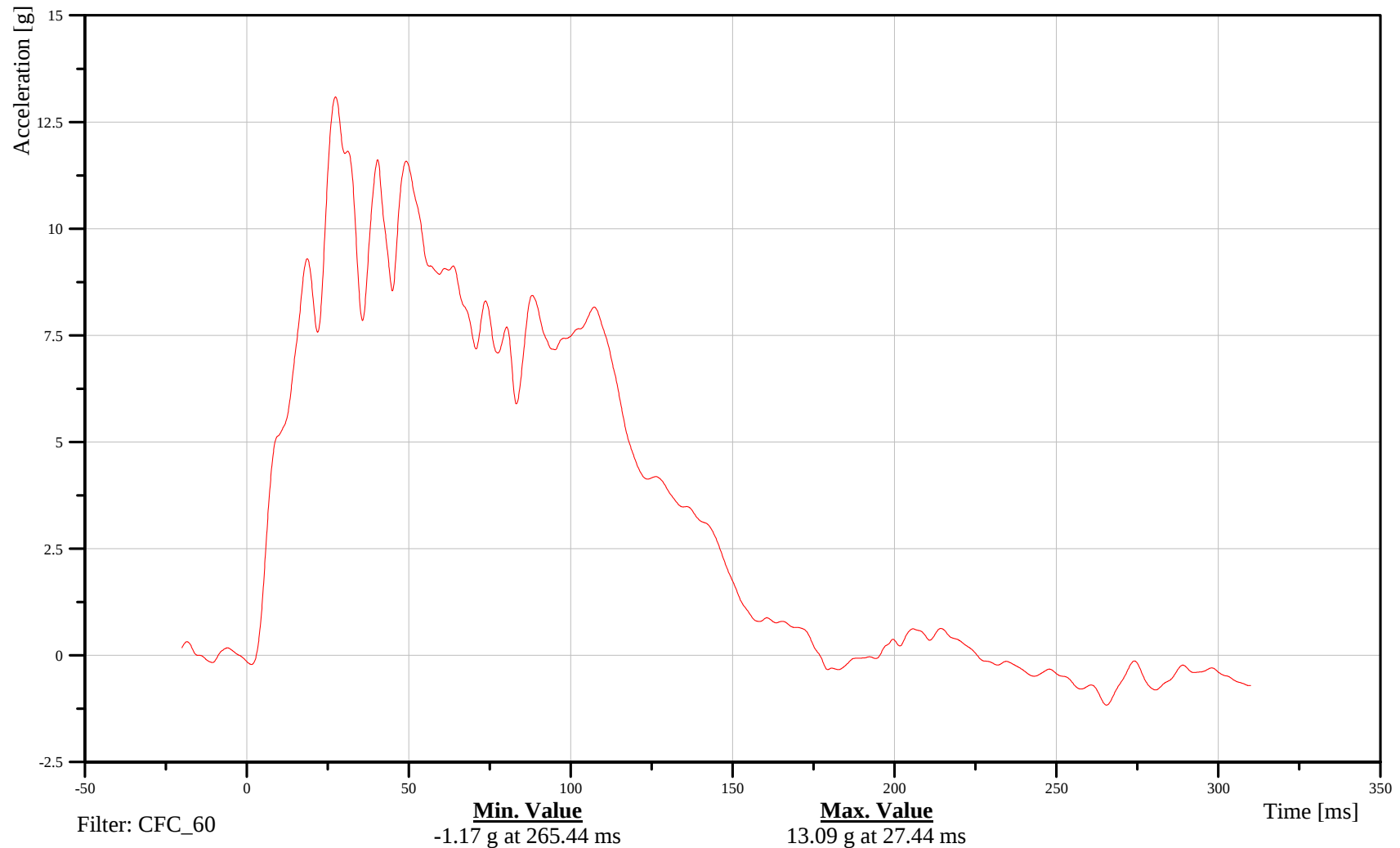
Right Rear Occupant Compartment Y-Axis Acceleration

Customer: VRTC

16VEHCRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-132

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

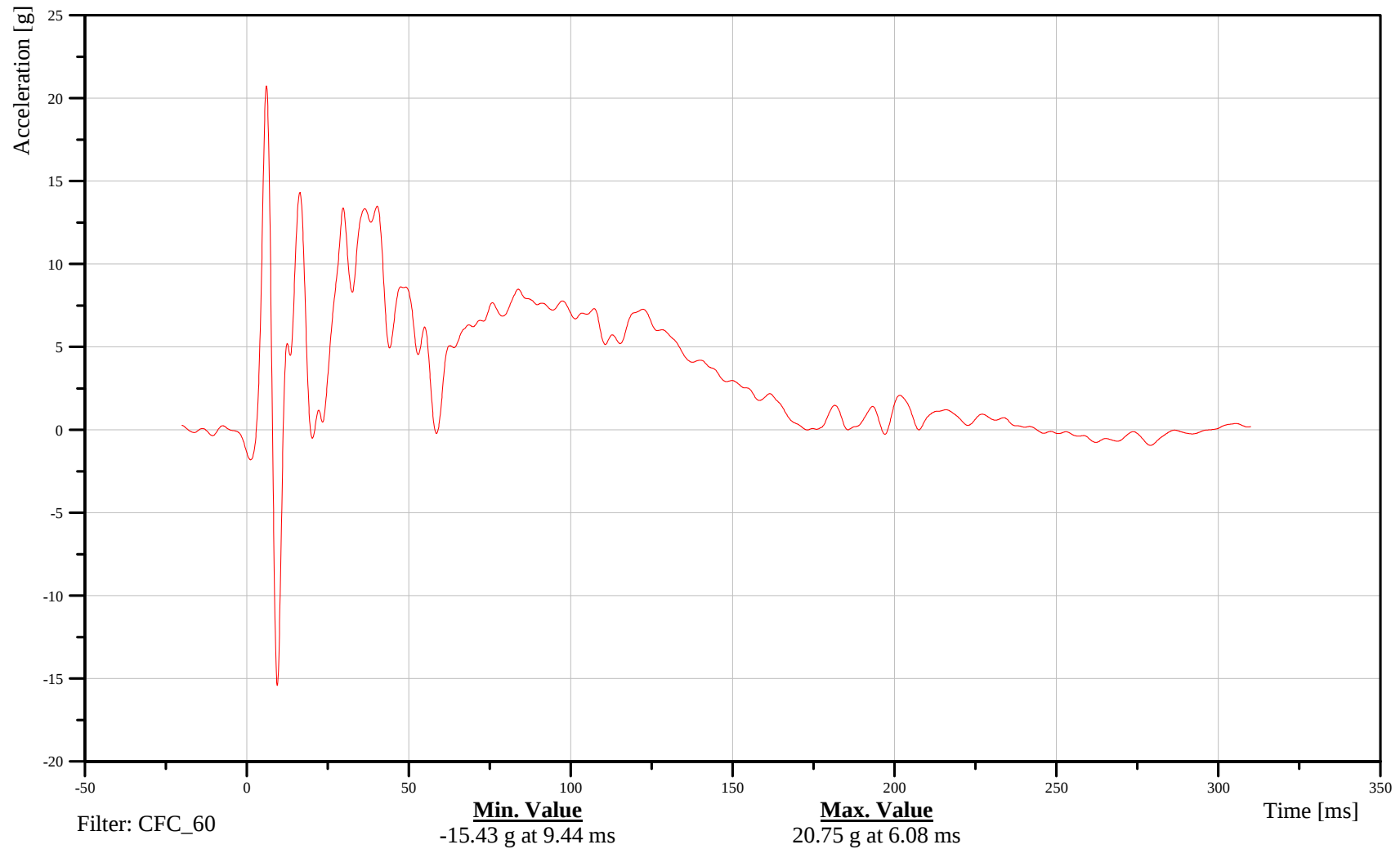
Left Lower A-Post Y-Axis Acceleration

Customer: VRTC

11APILO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-133

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

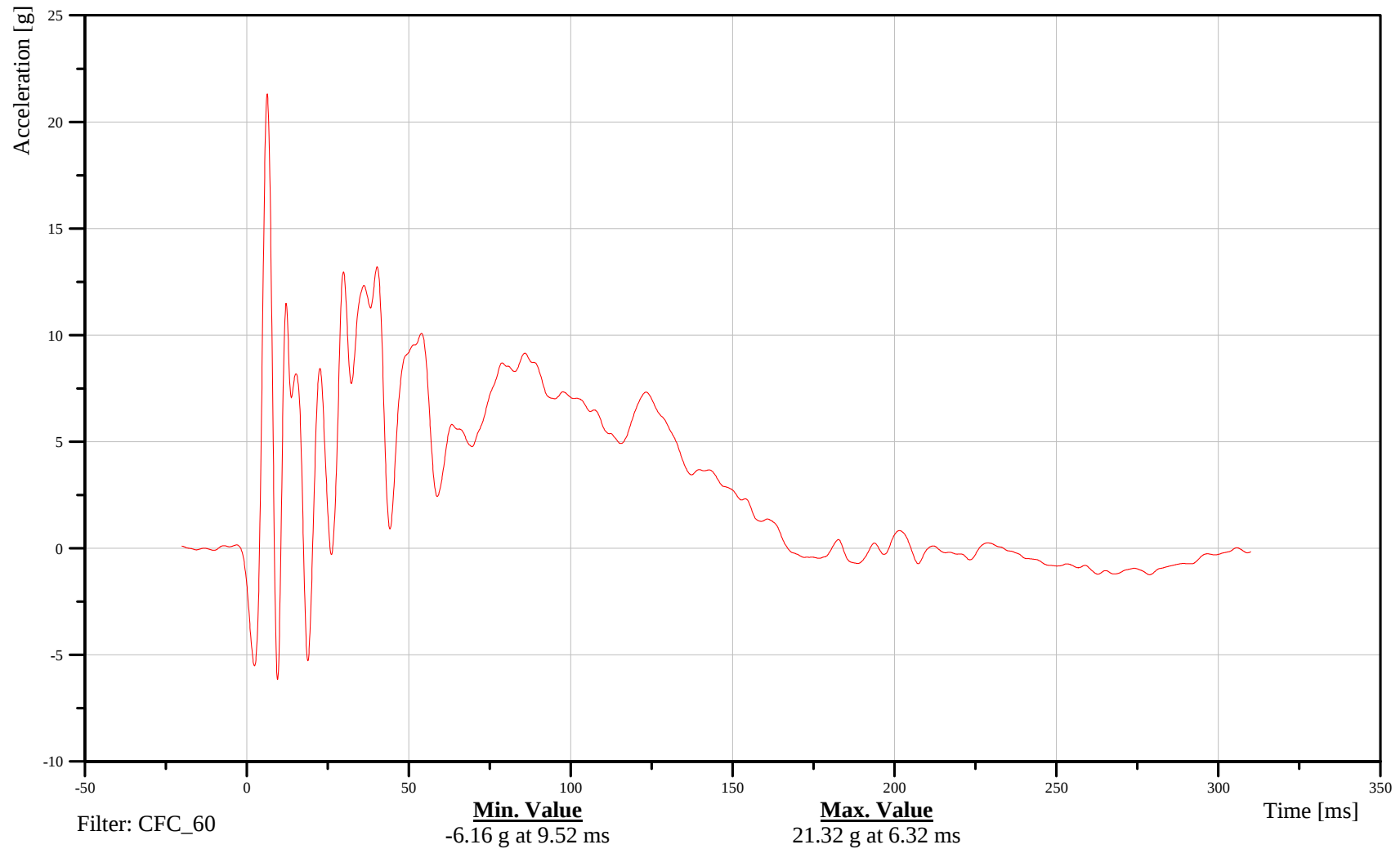
Left Mid A-Post Y-Axis Acceleration

Customer: VRTC

11APILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-134

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

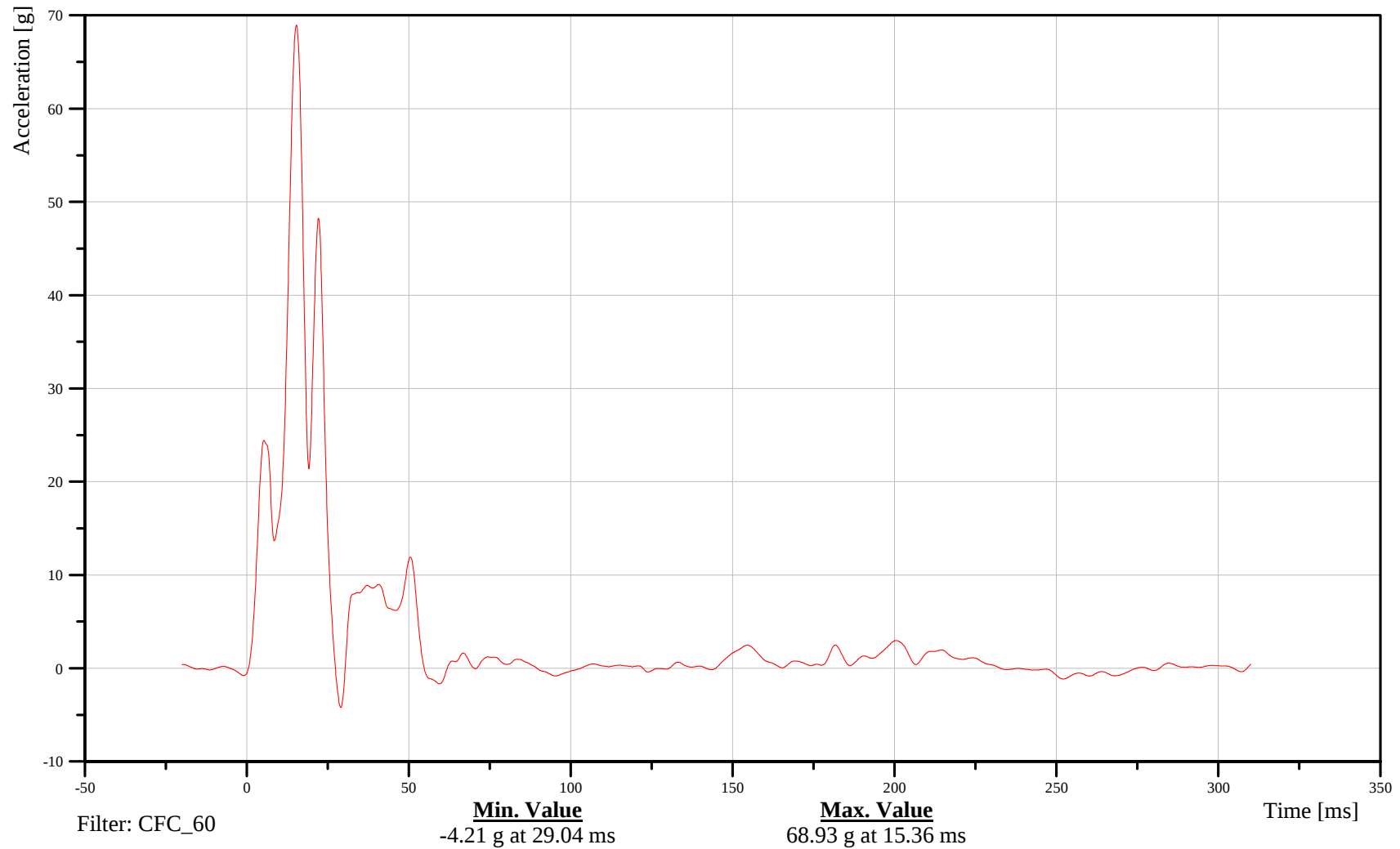
Left Lower B-Post Y-Axis Acceleration

Customer: VRTC

14BPILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-135

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

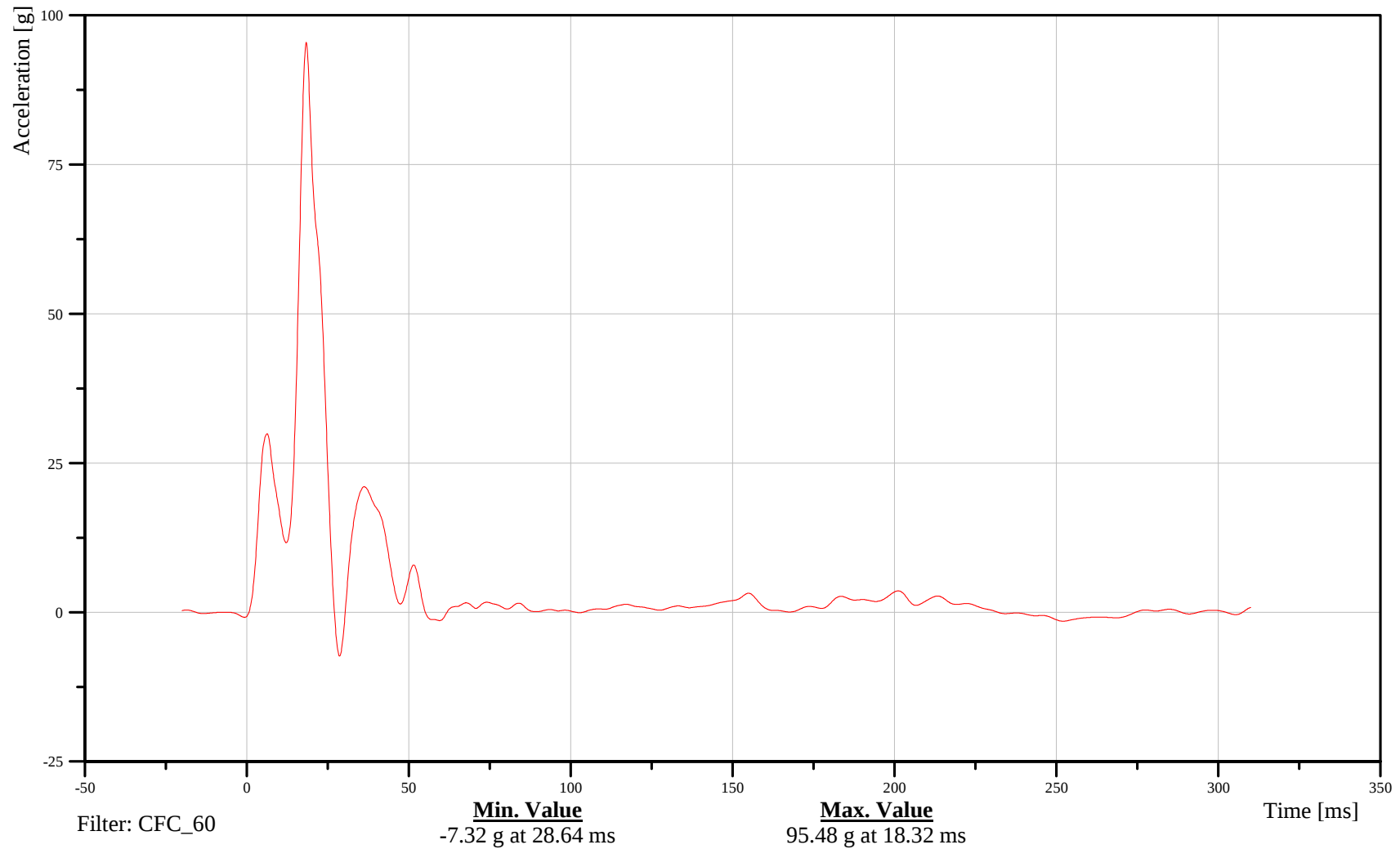
Left Mid B-Post Y-Axis Acceleration

Customer: VRTC

14BPILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-136

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

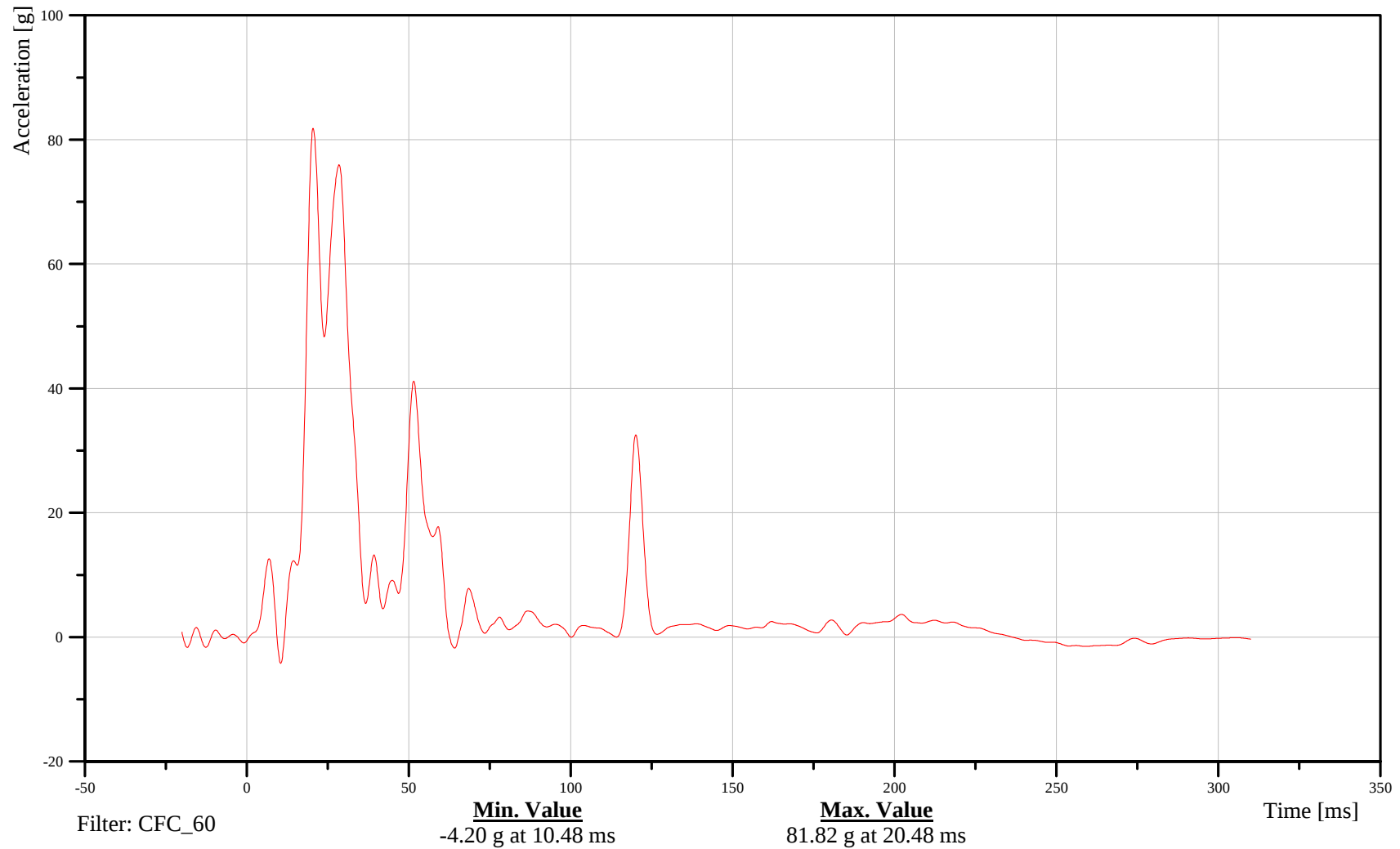
Left Front Seat Track Y-Axis Acceleration

Customer: VRTC

11SETRFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-137

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

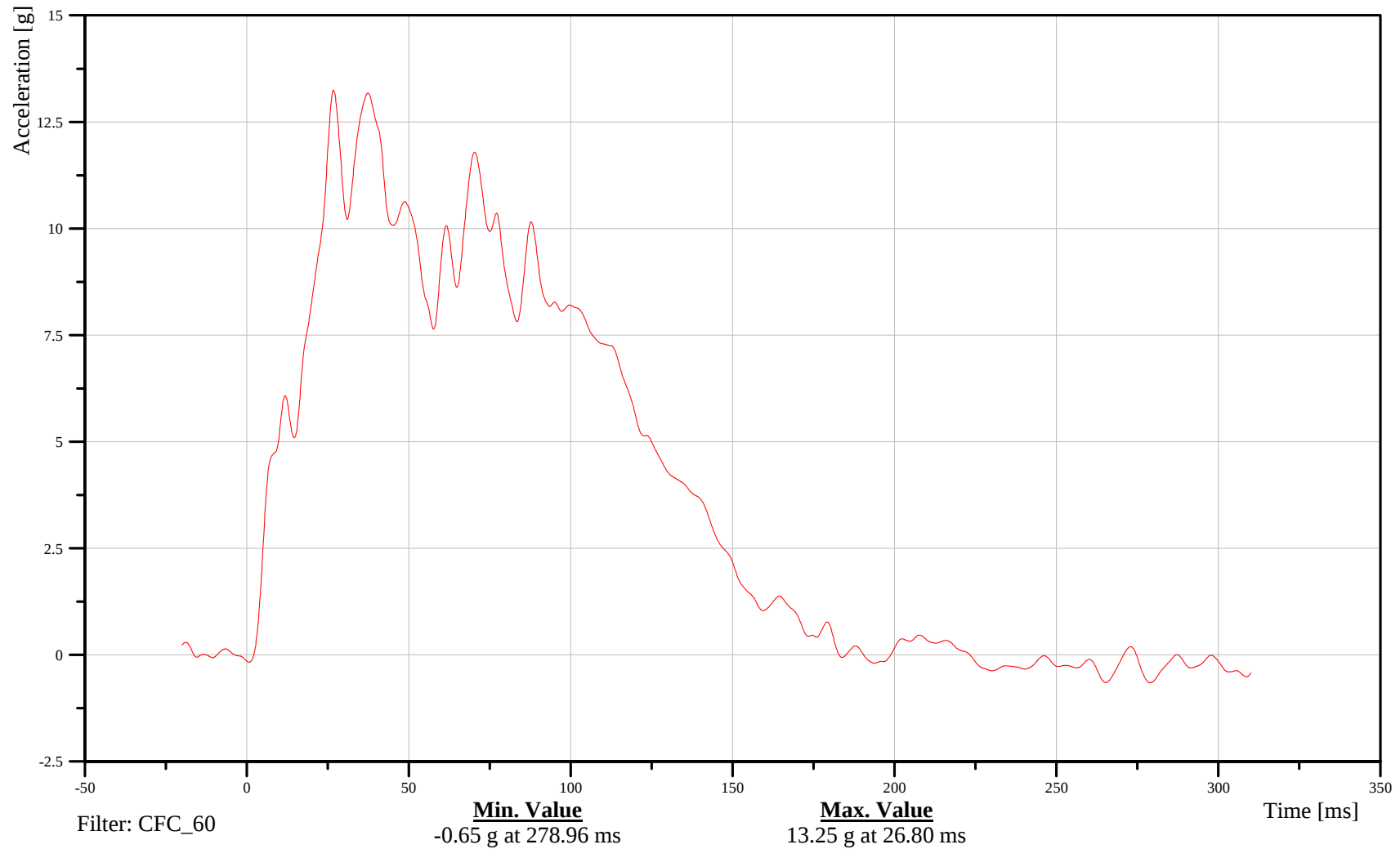
Left Rear Seat Track Y-Axis Acceleration

Customer: VRTC

14SETRLERE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-138

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

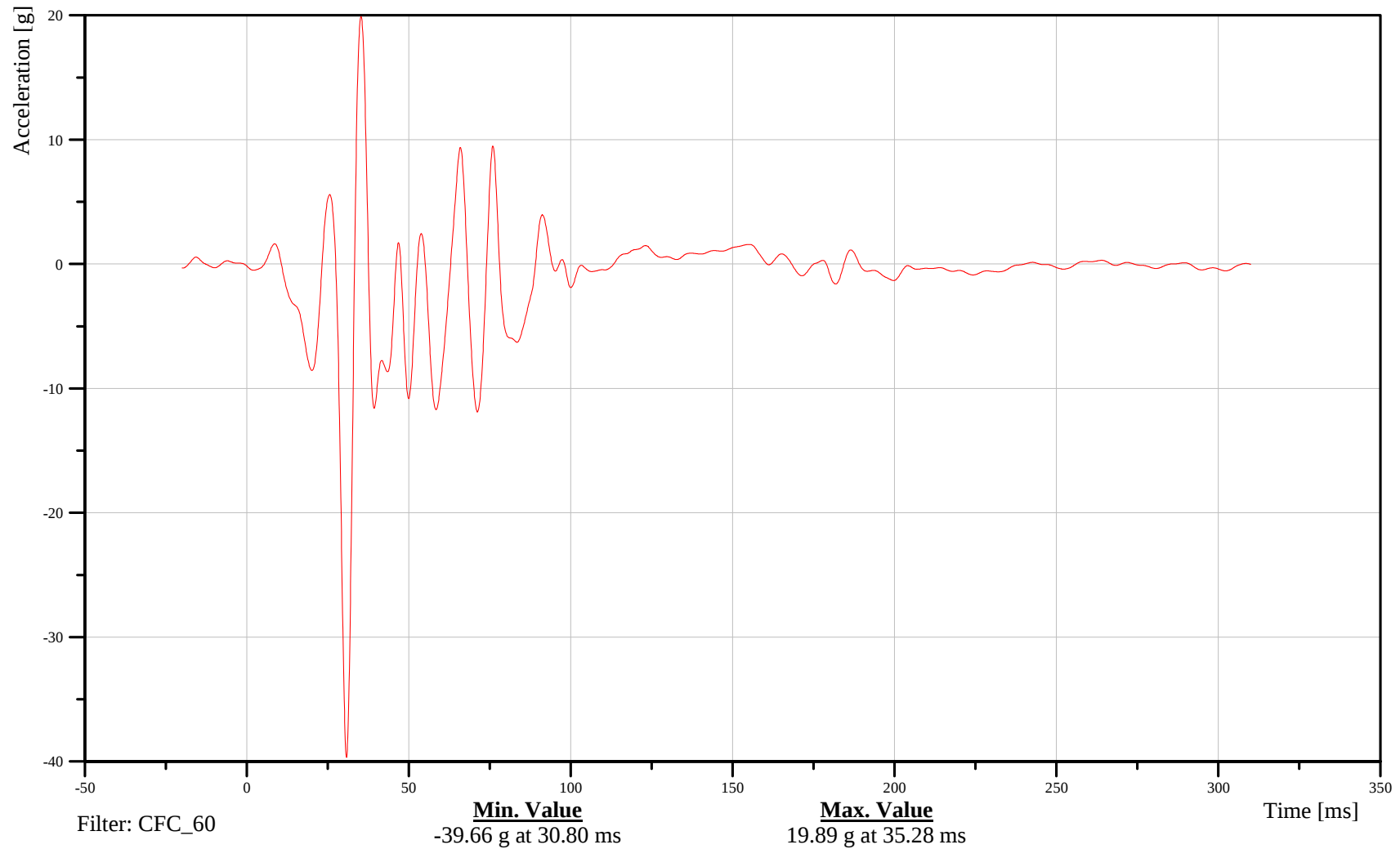
Vehicle Center of Gravity X-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-139

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

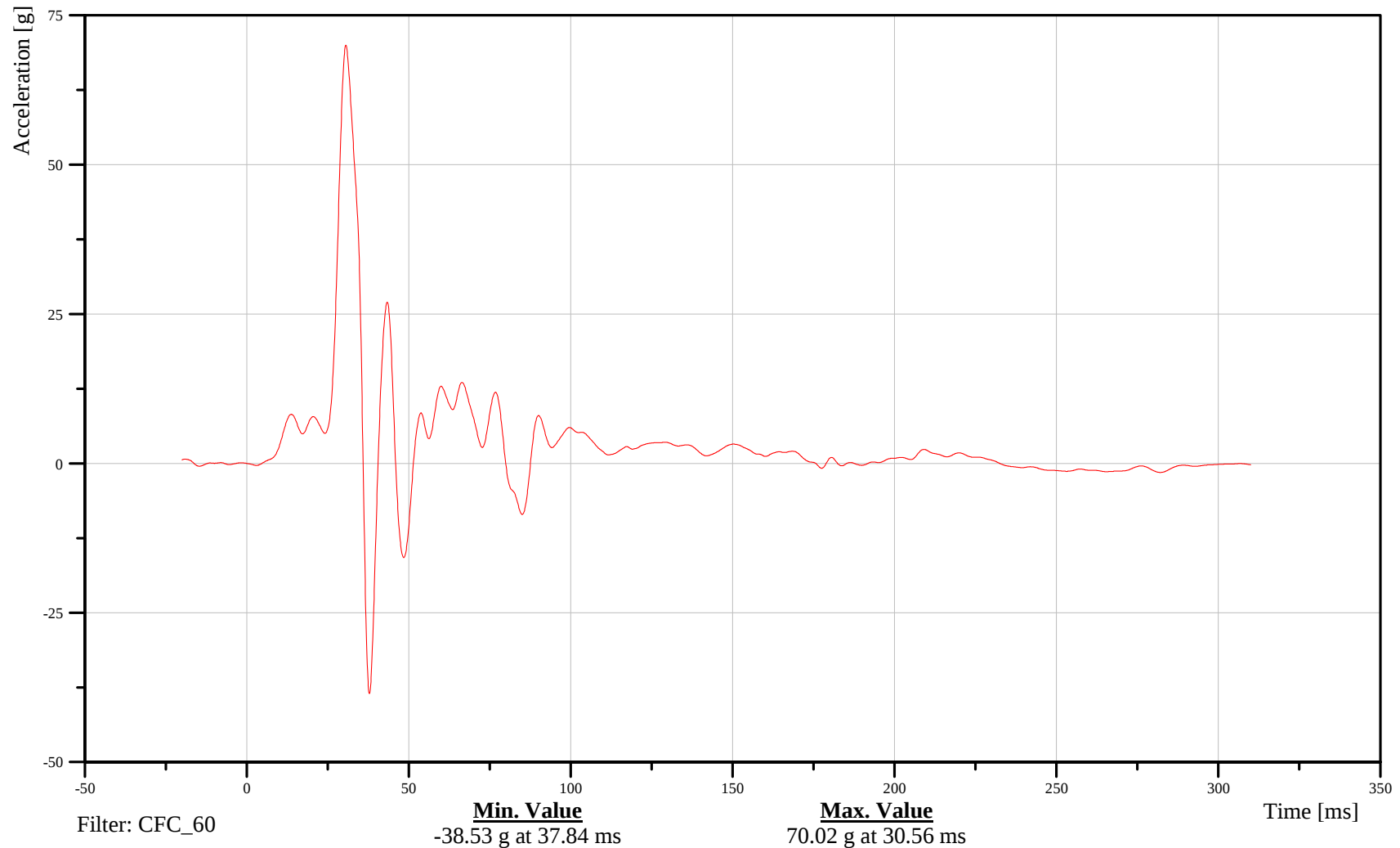
Vehicle Center of Gravity Y-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-140

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

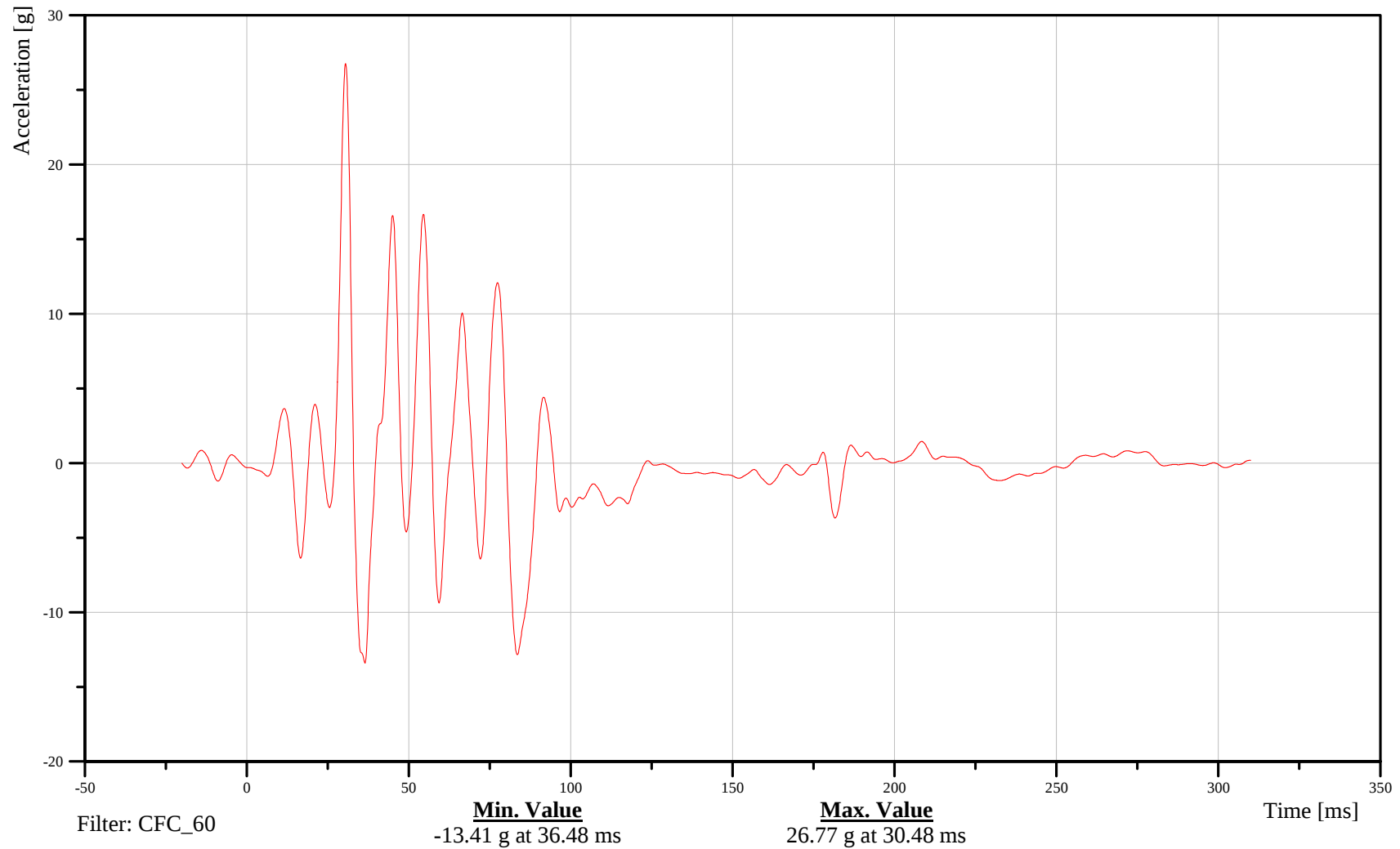
Vehicle Center of Gravity Z-Axis Acceleration

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-141

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

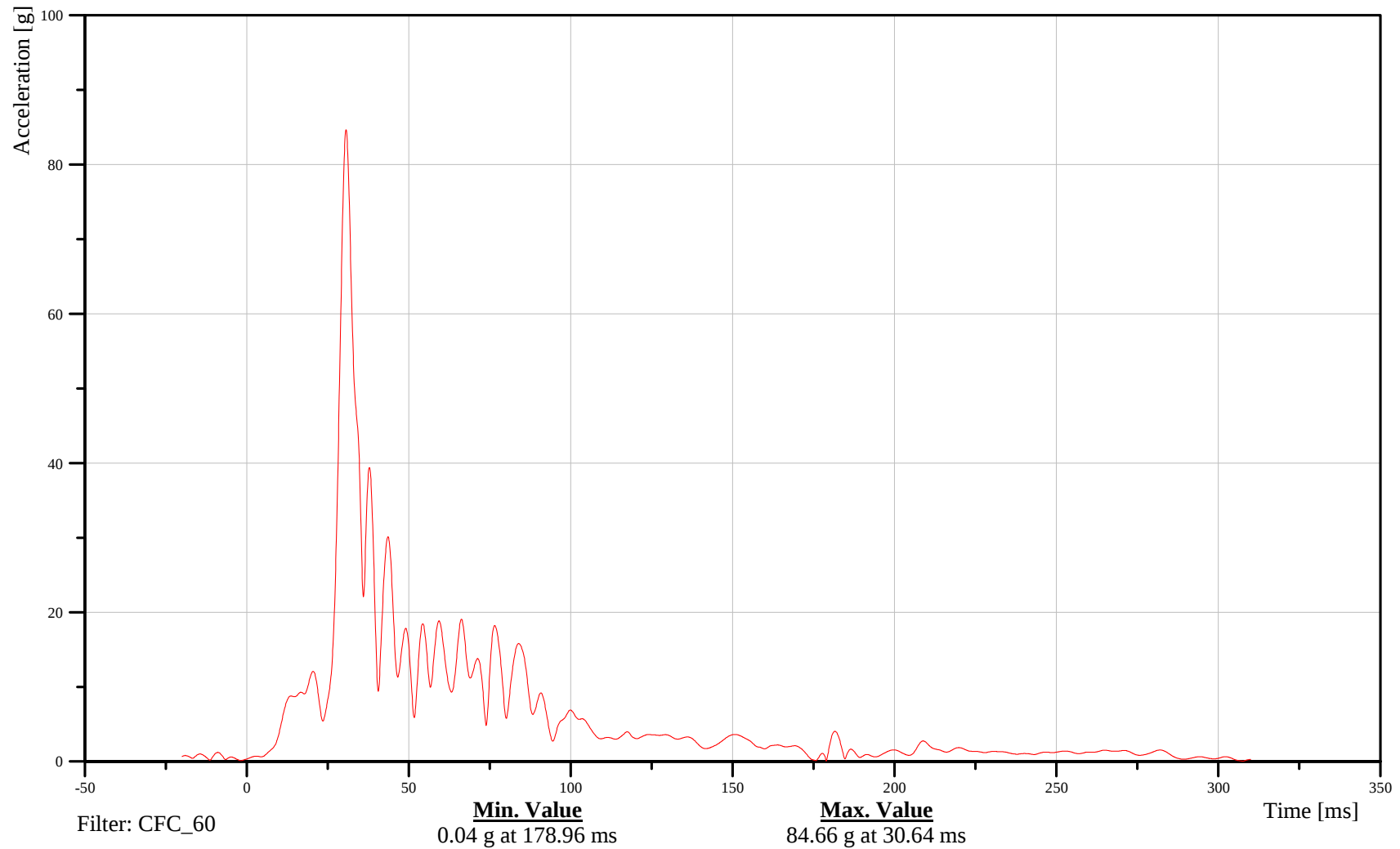
Vehicle Center of Gravity Resultant Acceleration

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-142

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

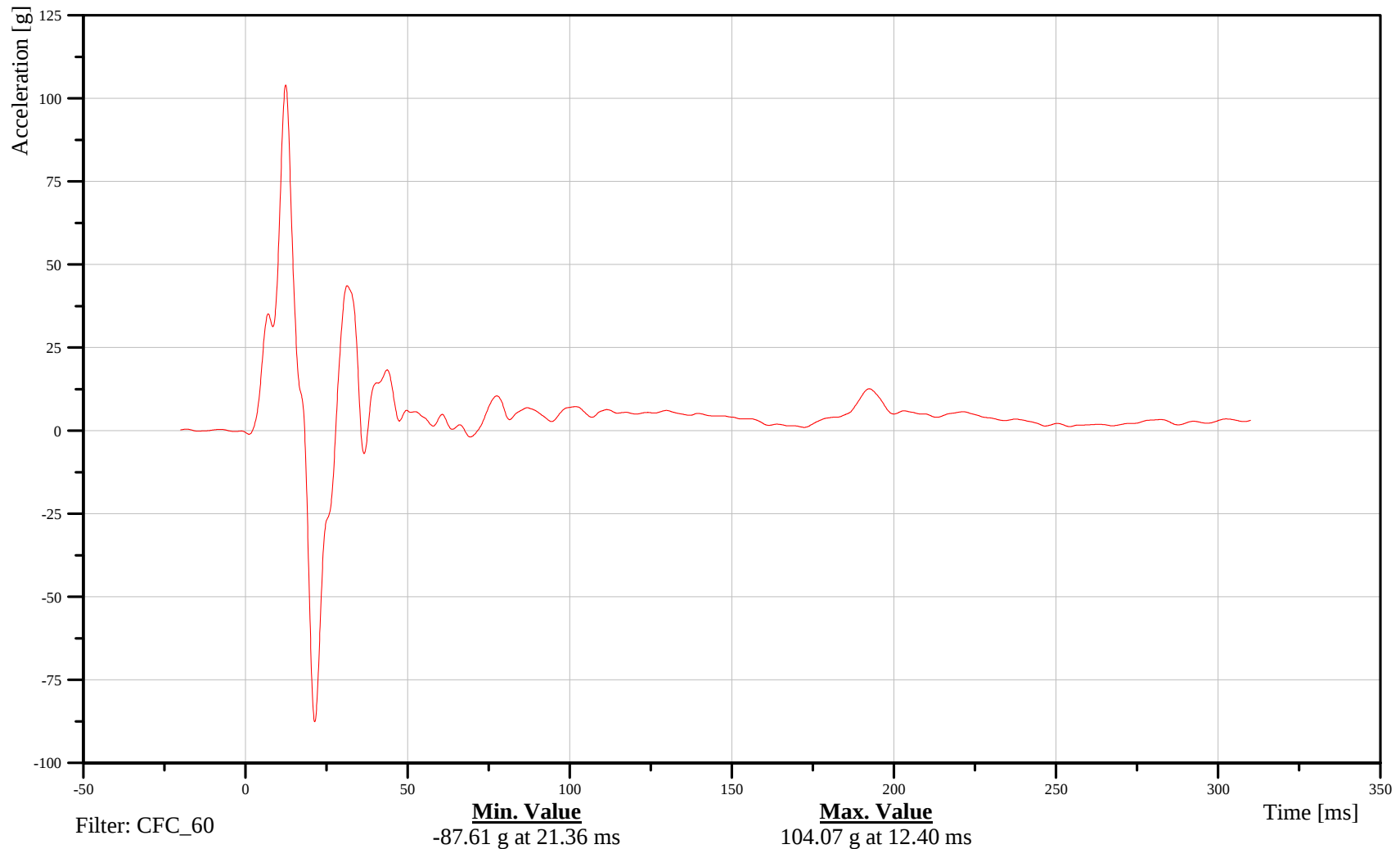
Vehicle Front Door Centerline 430 mm Above Ground Y-Axis Acceleration

Customer: VRTC

14DOOR000001ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-143

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

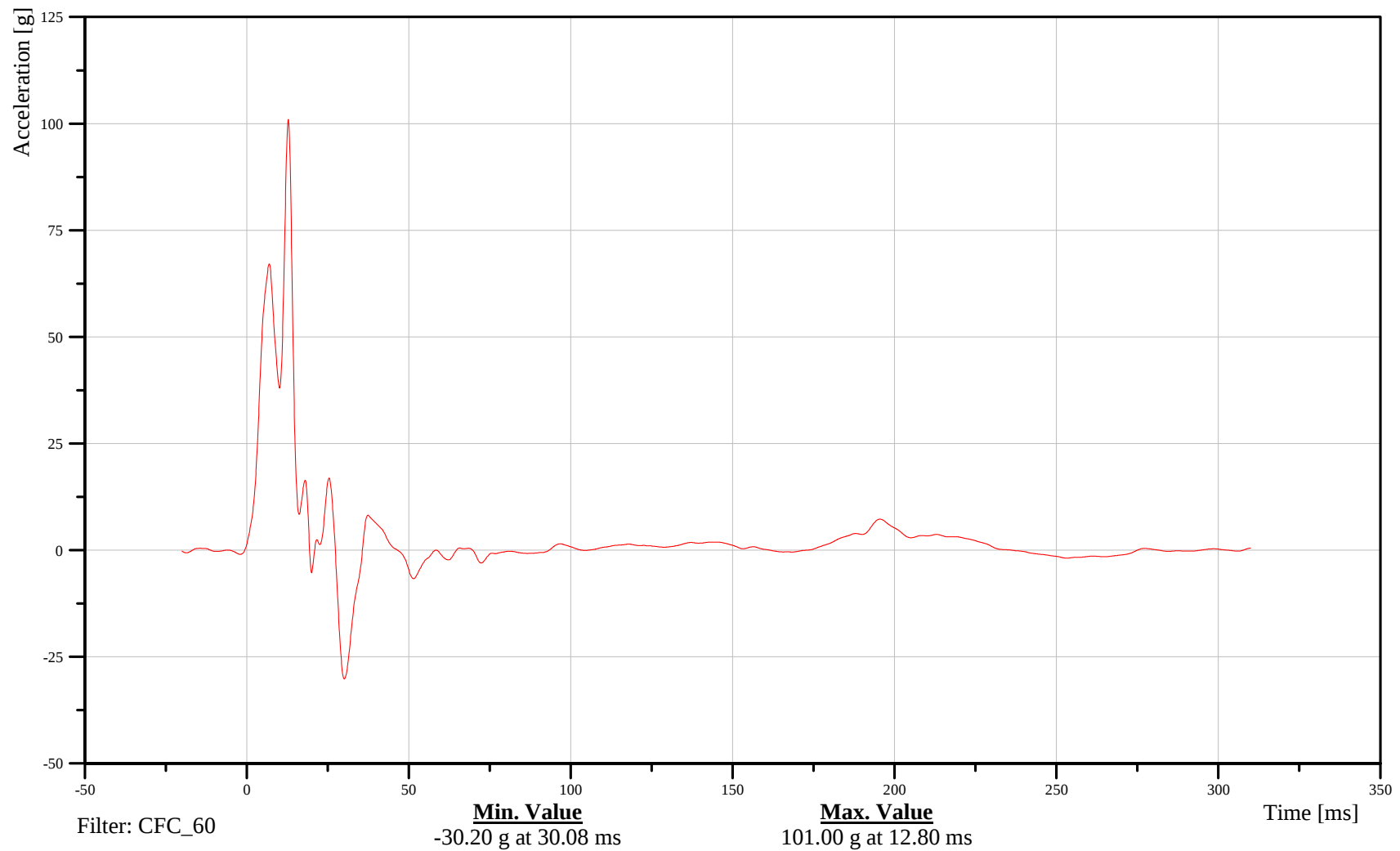
Vehicle Front Door Mid-Rear 430 mm Above Ground Y-Axis Acceleration

Customer: VRTC

14DOOR000002ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-144

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph
Vehicle Front Door Upper Centerline 685 mm Above Ground Y-Axis Acceleration

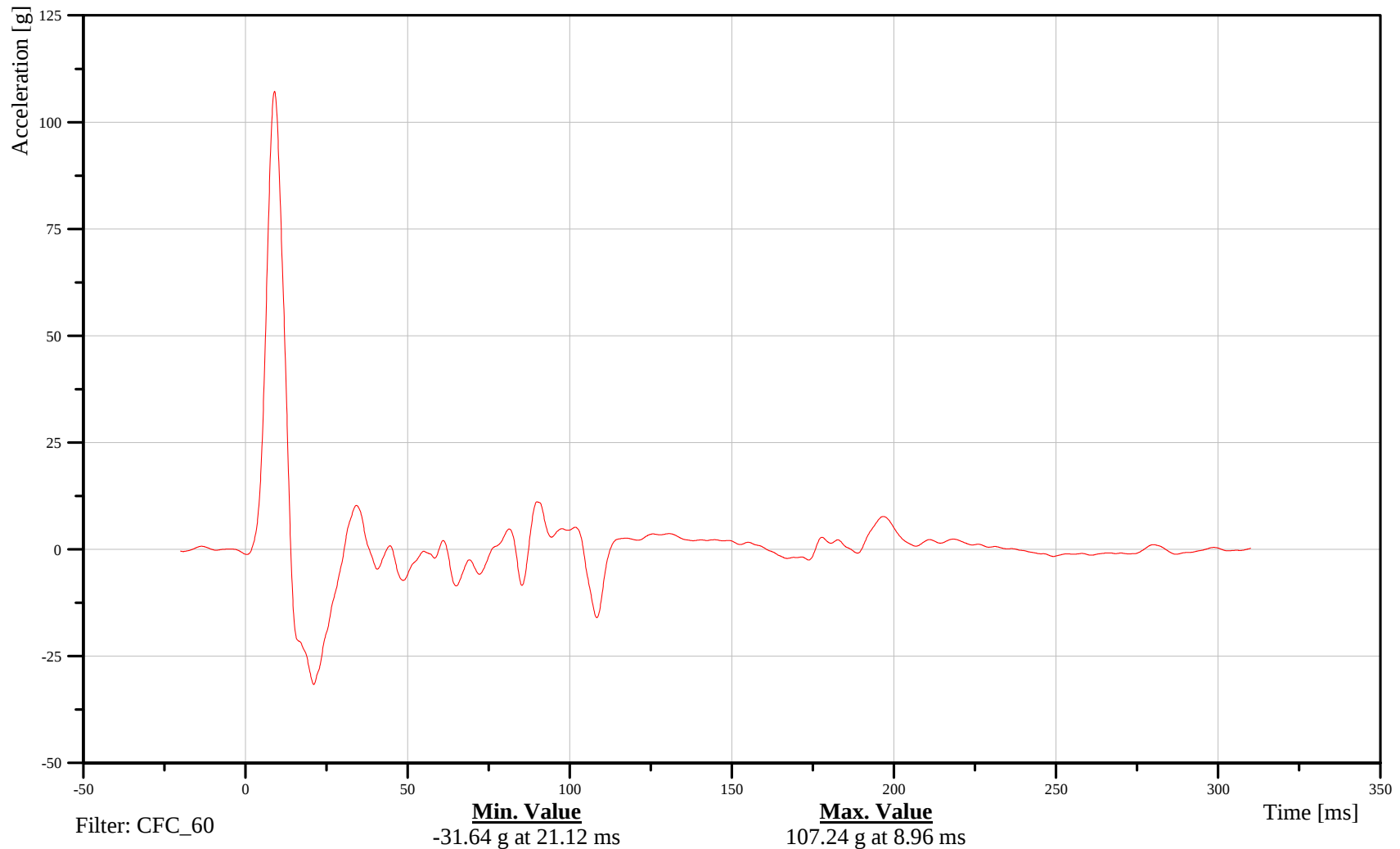
Date: 07/12/2007
Time: 15:12

Customer: VRTC

14DOOR000003ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-145

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

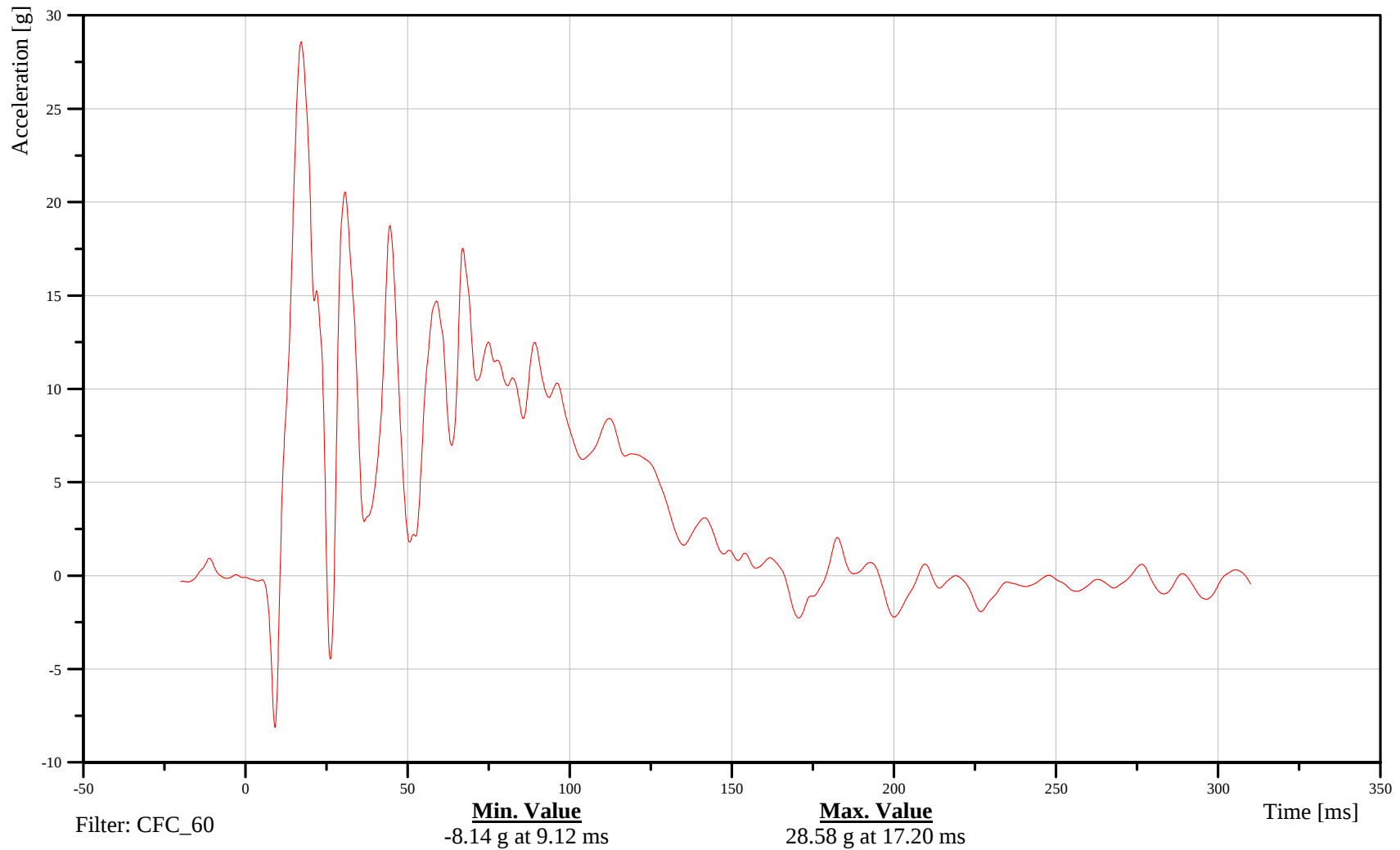
Vehicle Rear Door Mid-Rear 430 mm Above Ground Y-Axis Acceleration

Customer: VRTC

16DOOR000002ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-146

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

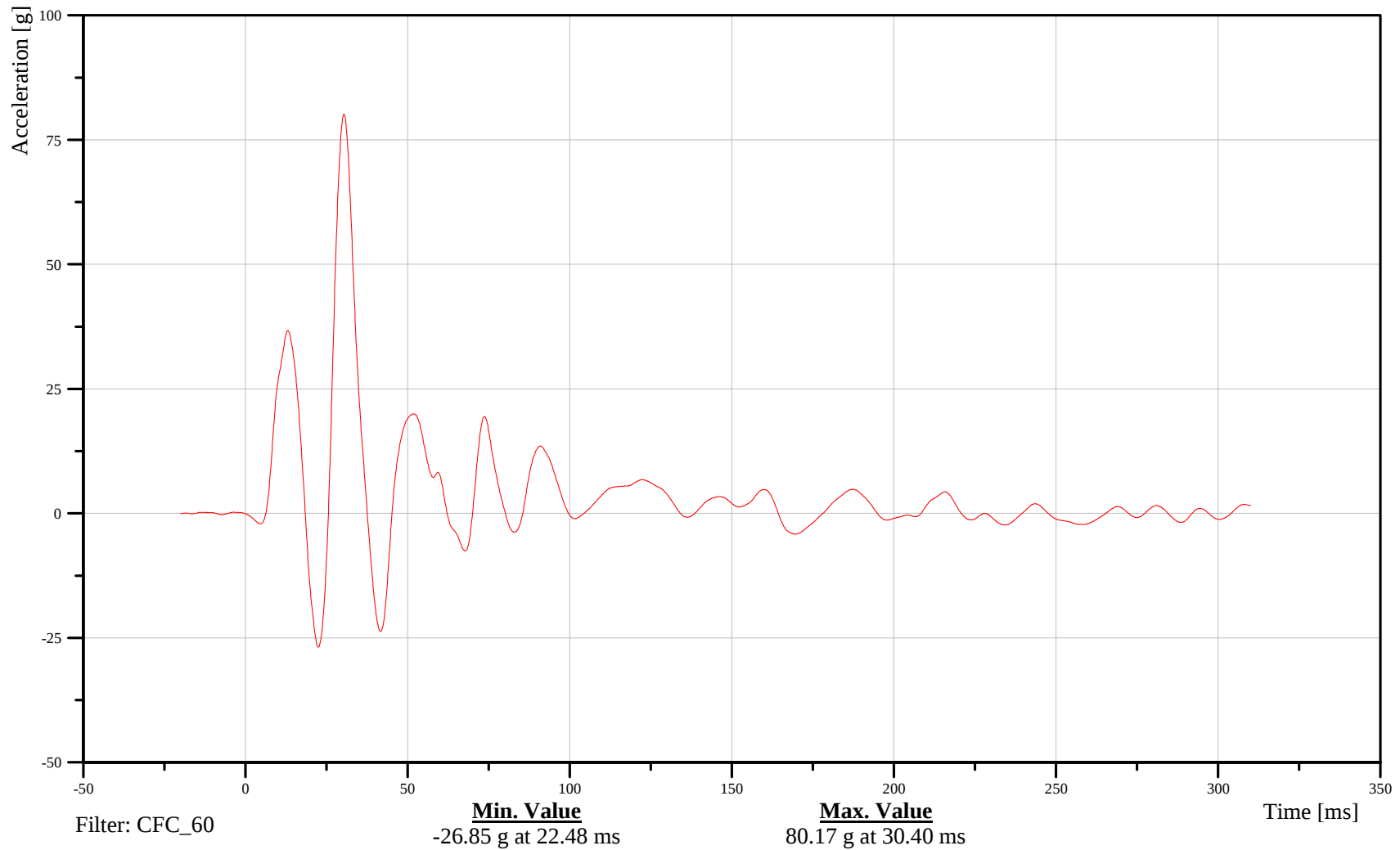
Vehicle Rear Door Upper Centerline 685 mm Above Ground Y-Axis Acceleration

Customer: VRTC

16DOOR000003ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-147

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

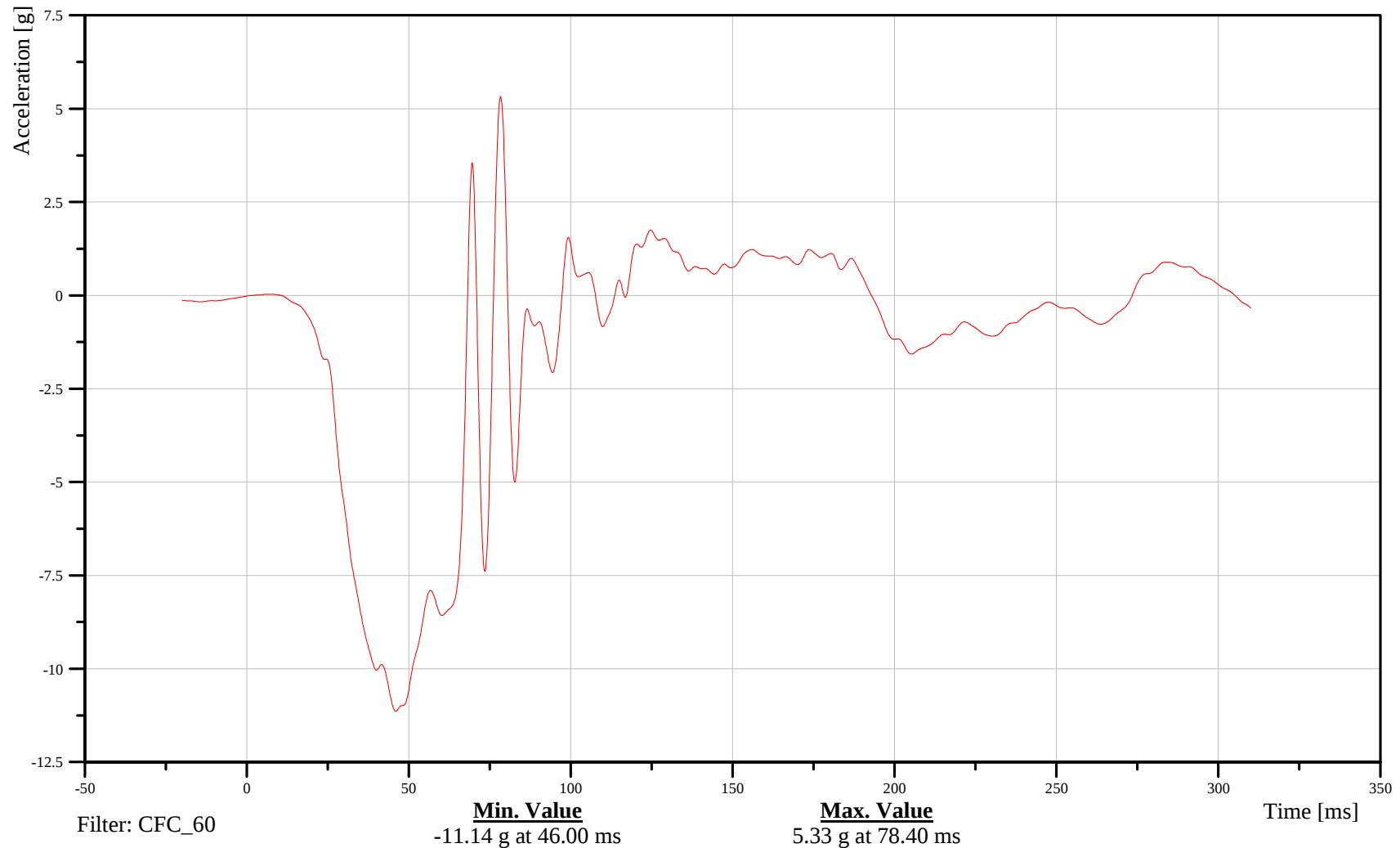
Top of Engine X-Axis Acceleration

Customer: VRTC

12ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-148

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

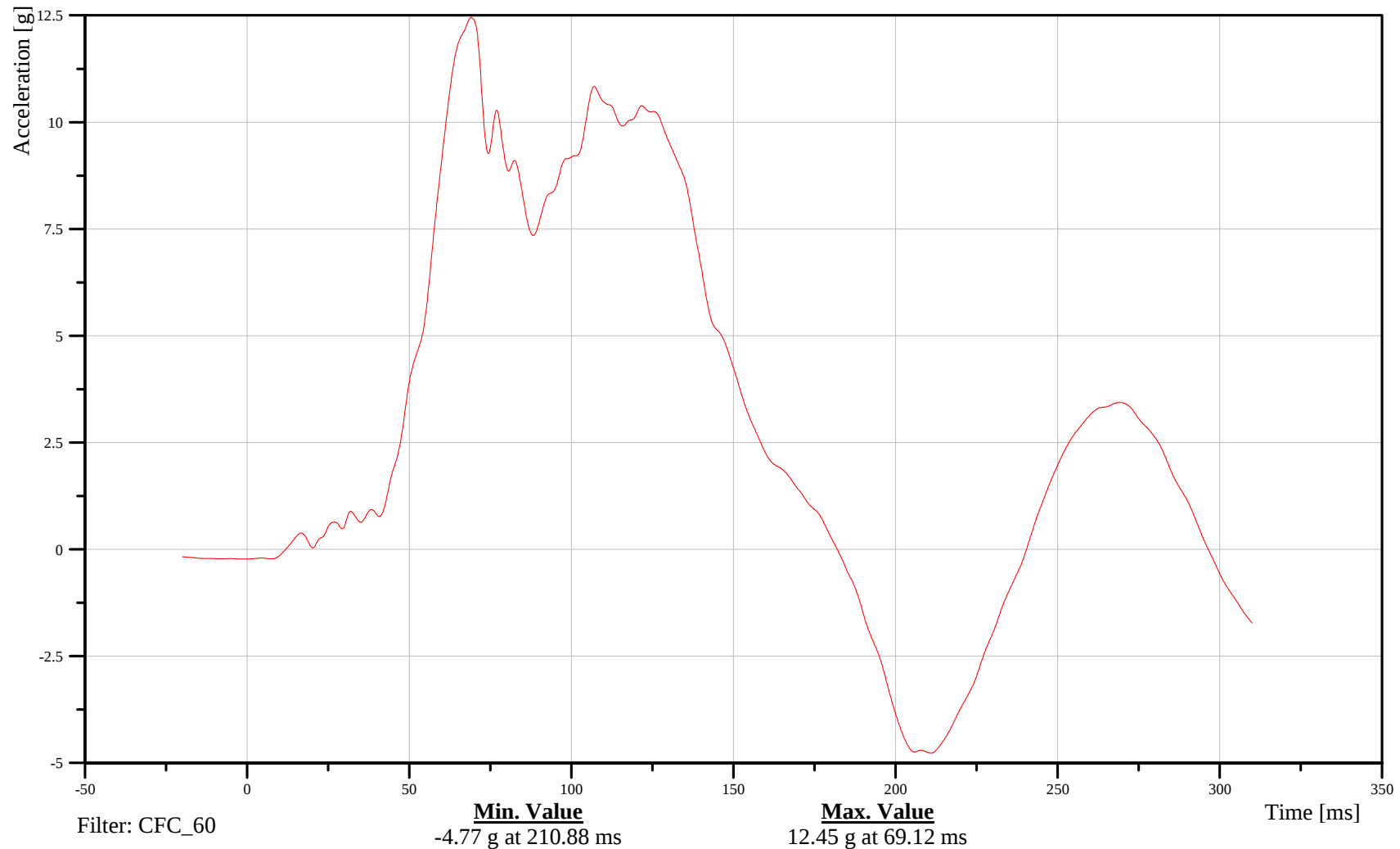
Top of Engine Y-Axis Acceleration

Customer: VRTC

12ENGNTTP0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-149

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

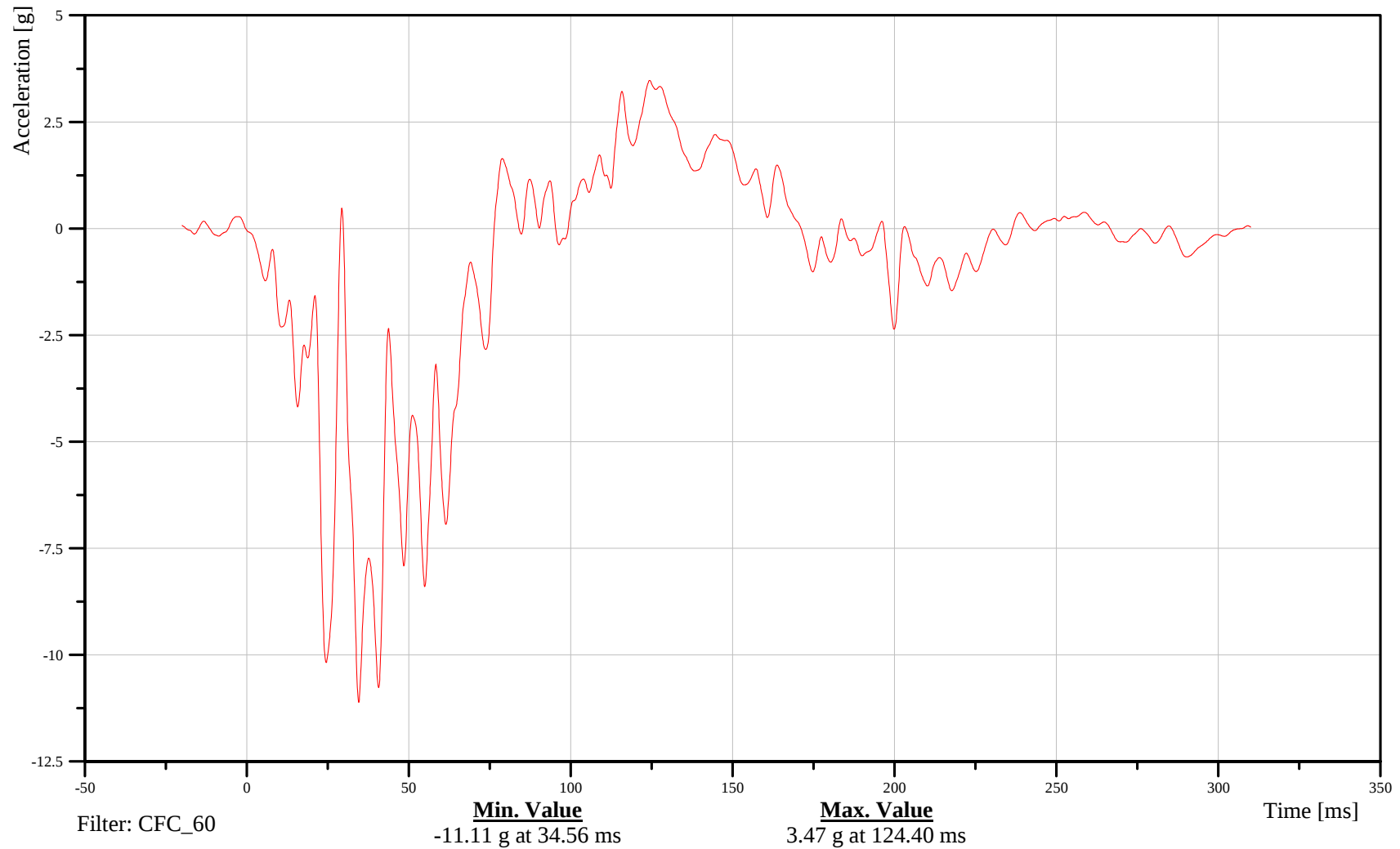
Firewall X-Axis Acceleration

Customer: VRTC

12VEHC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-150

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

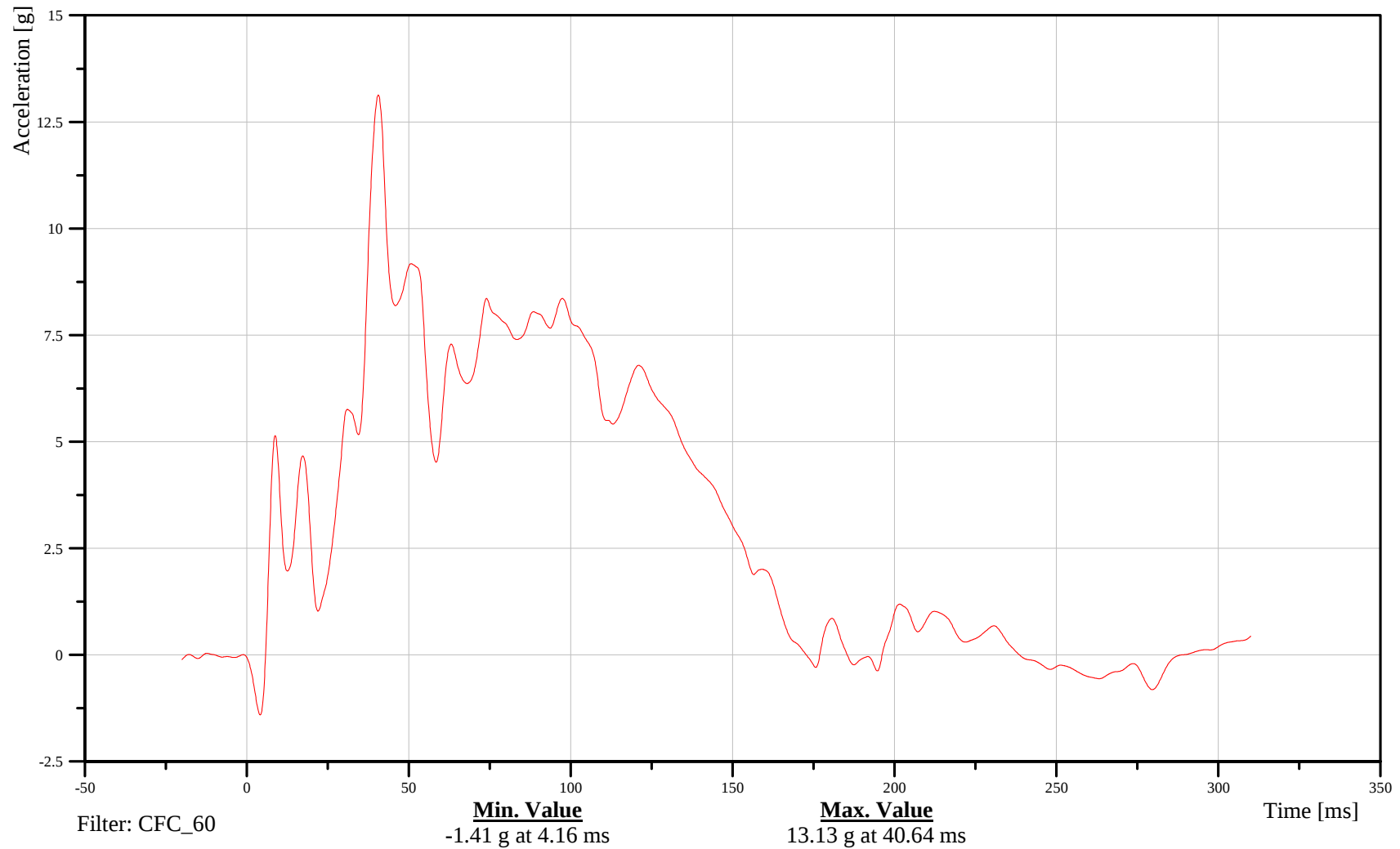
Firewall Y-Axis Acceleration

Customer: VRTC

12VEHC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-151

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

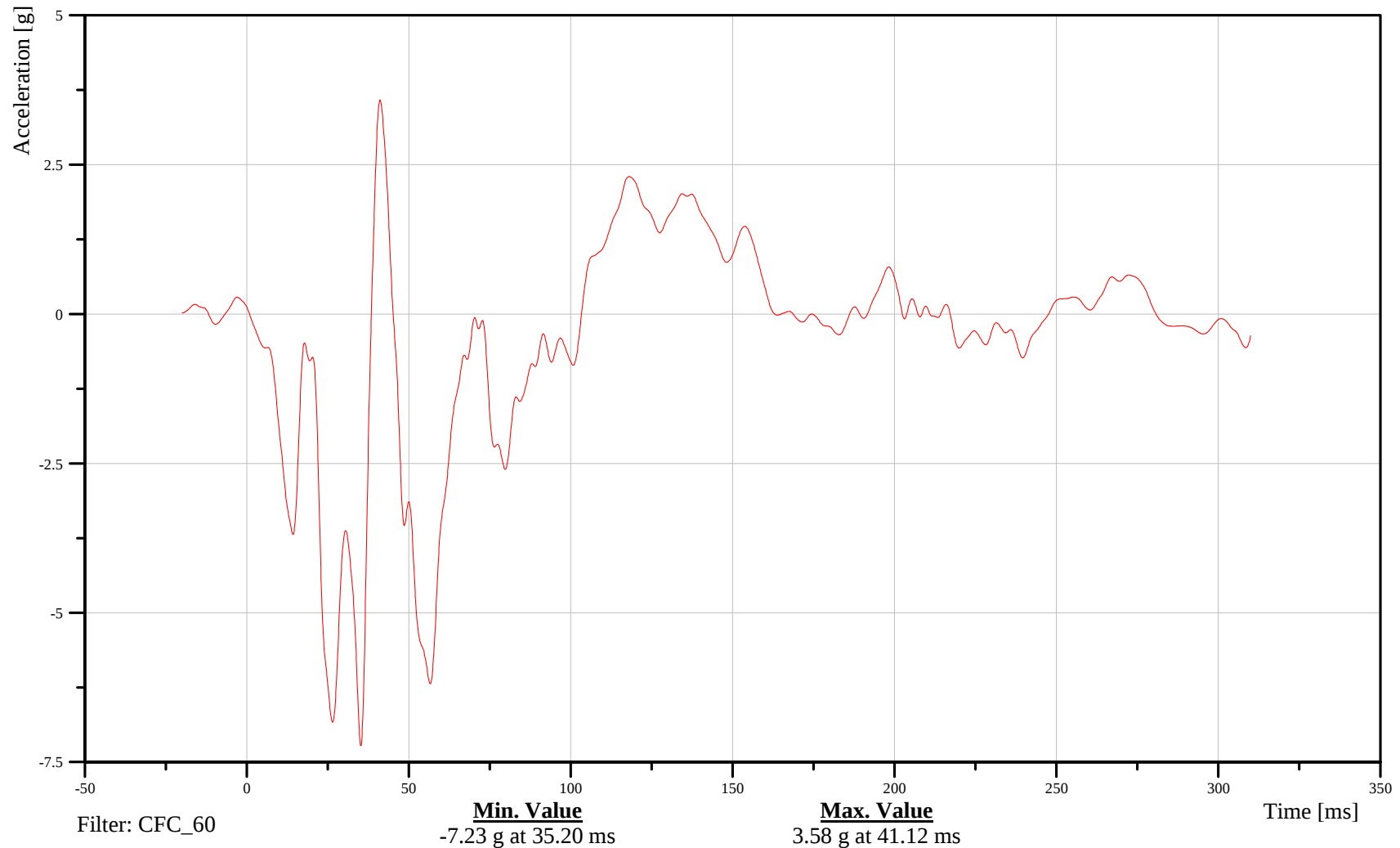
Right Side Roof Rail (in line with impact point) X-Axis Acceleration

Customer: VRTC

13ROOF000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-152

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

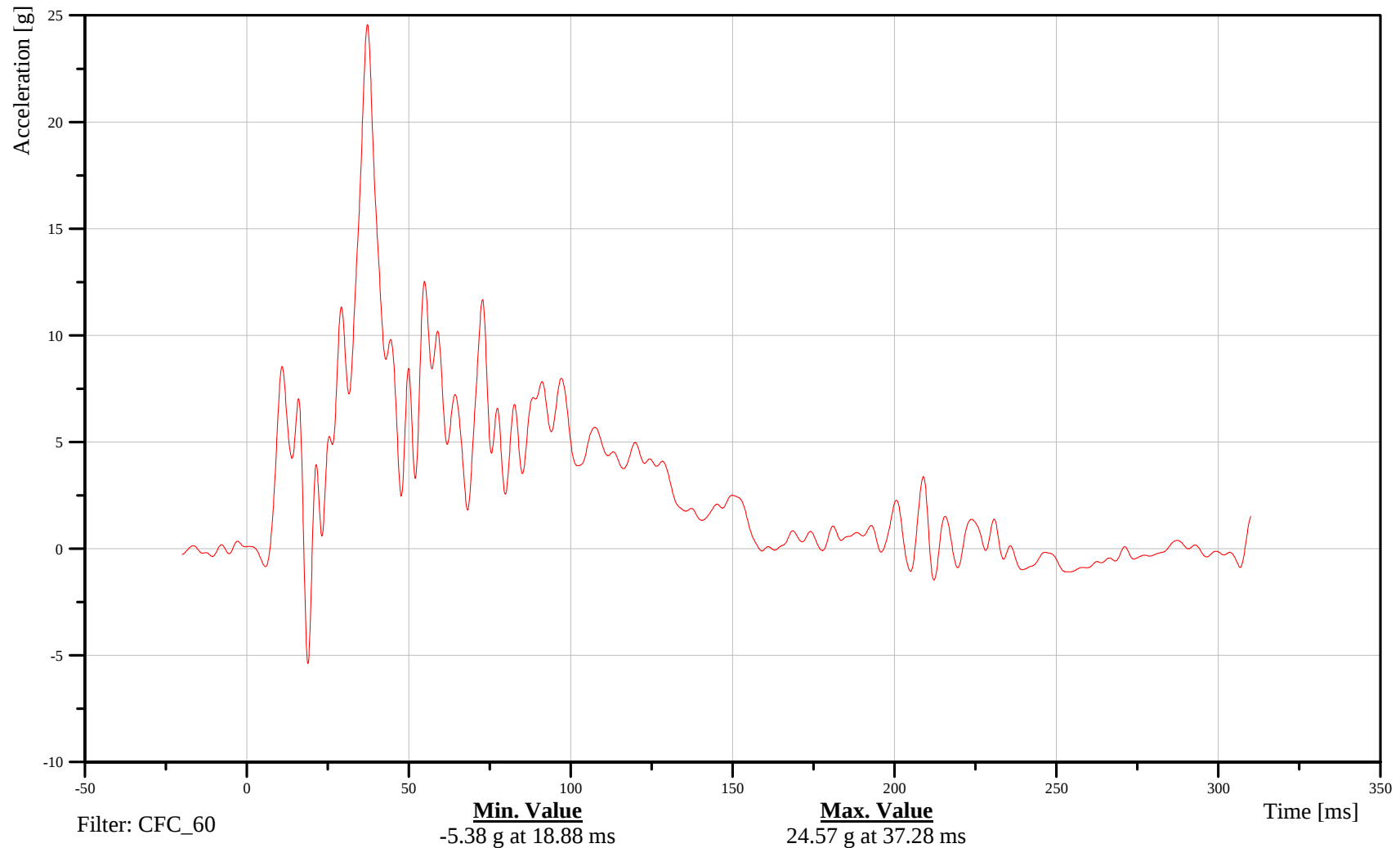
Right Side Roof Rail (in line with impact point) Y-Axis Acceleration

Customer: VRTC

13ROOF000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-153

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

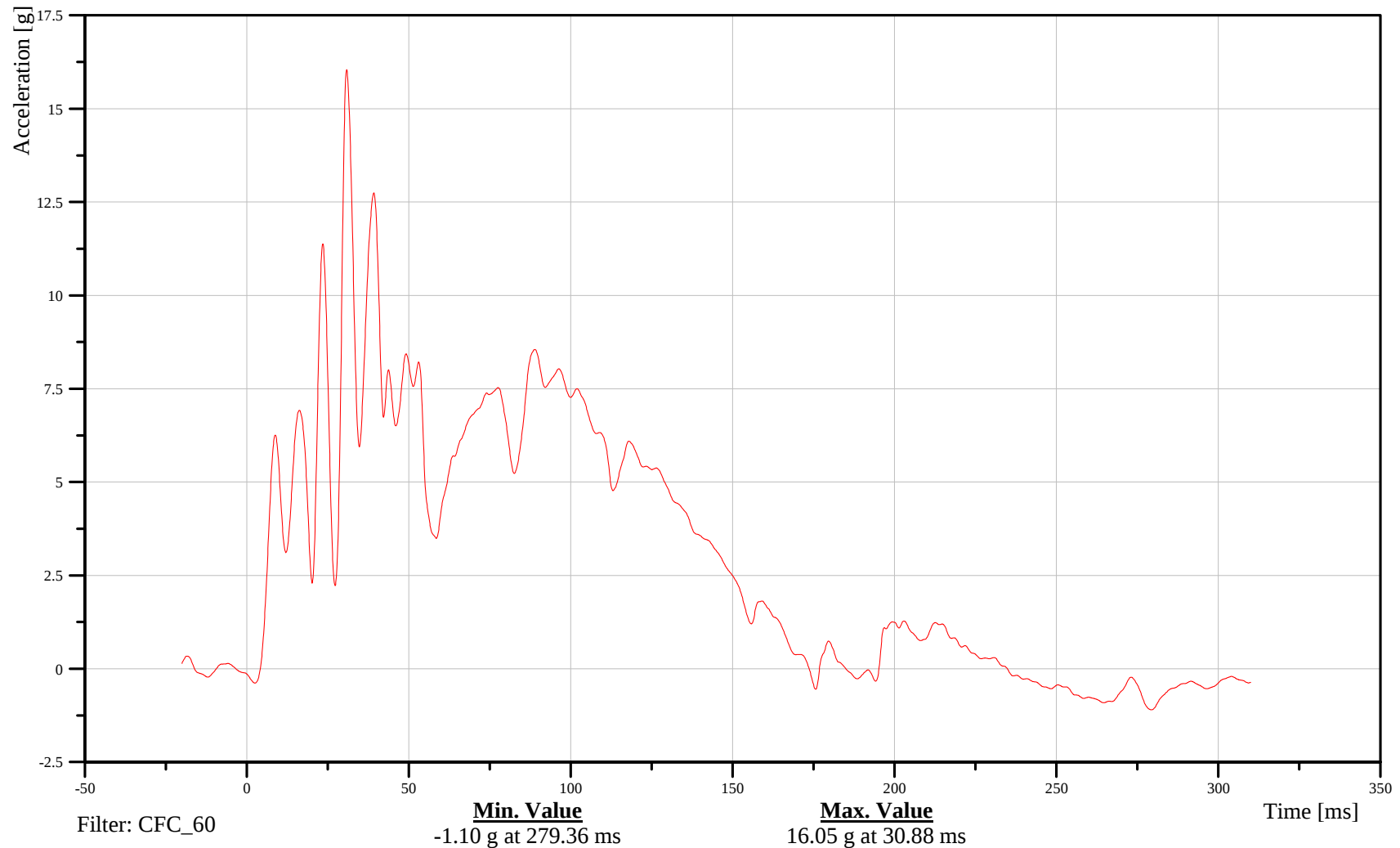
Right Side Sill (in-line with impact location) Y-Axis Acceleration

Customer: VRTC

13SILBFR0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-154

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

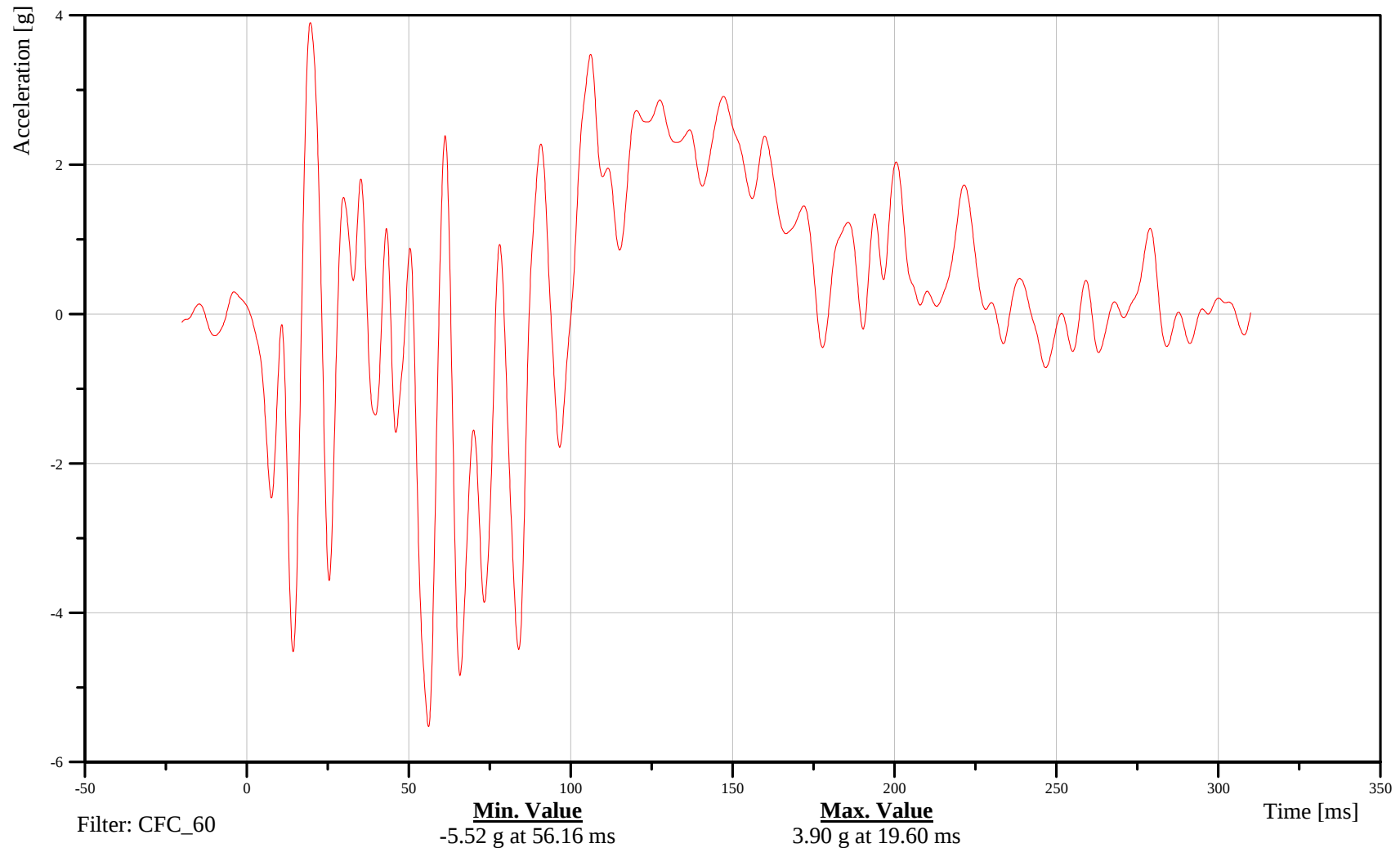
Rear Deck Behind Rear Axle X-Axis Acceleration

Customer: VRTC

18DECK000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-155

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

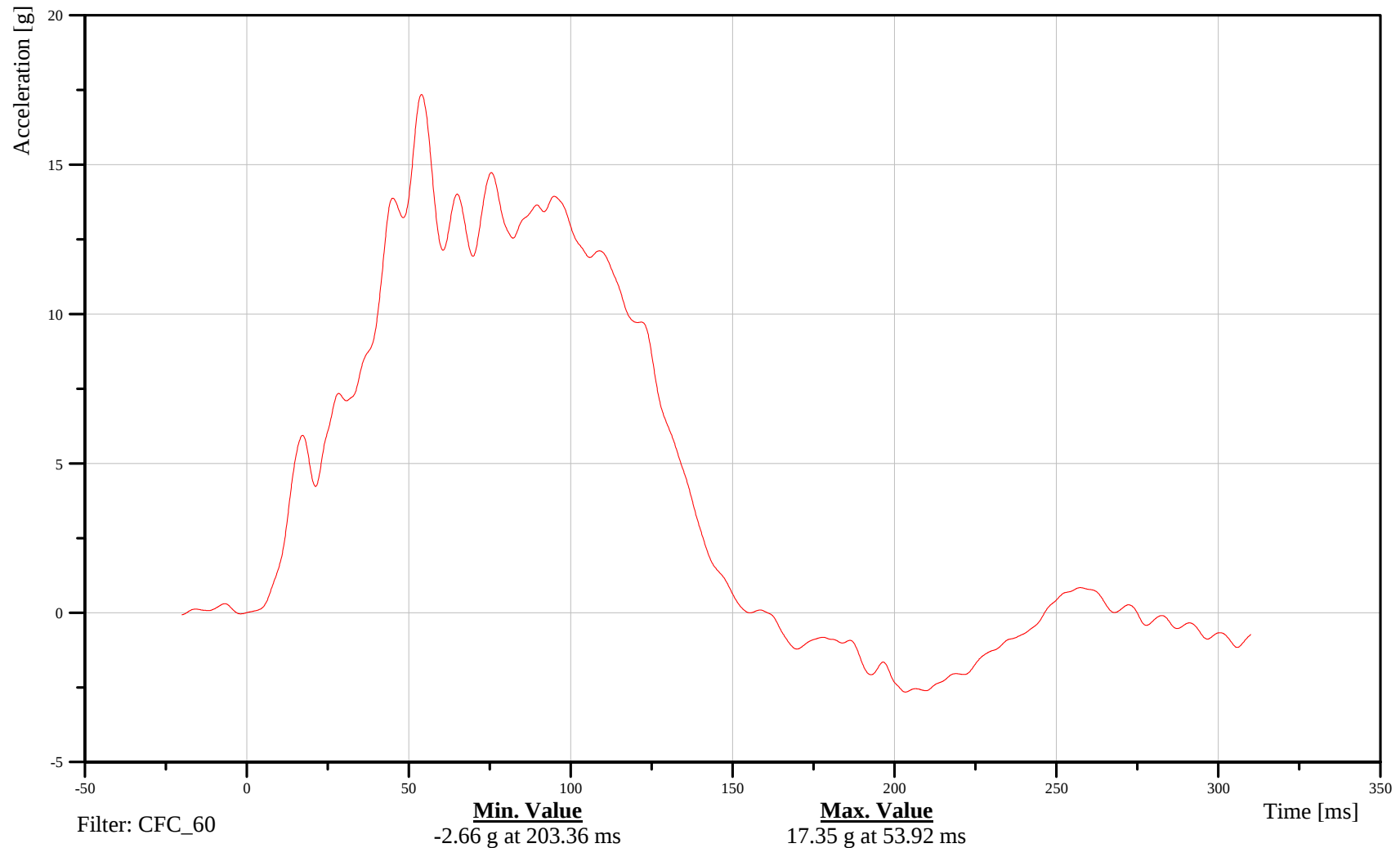
Rear Deck Behind Rear Axle Y-Axis Acceleration

Customer: VRTC

18DECK000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-156

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

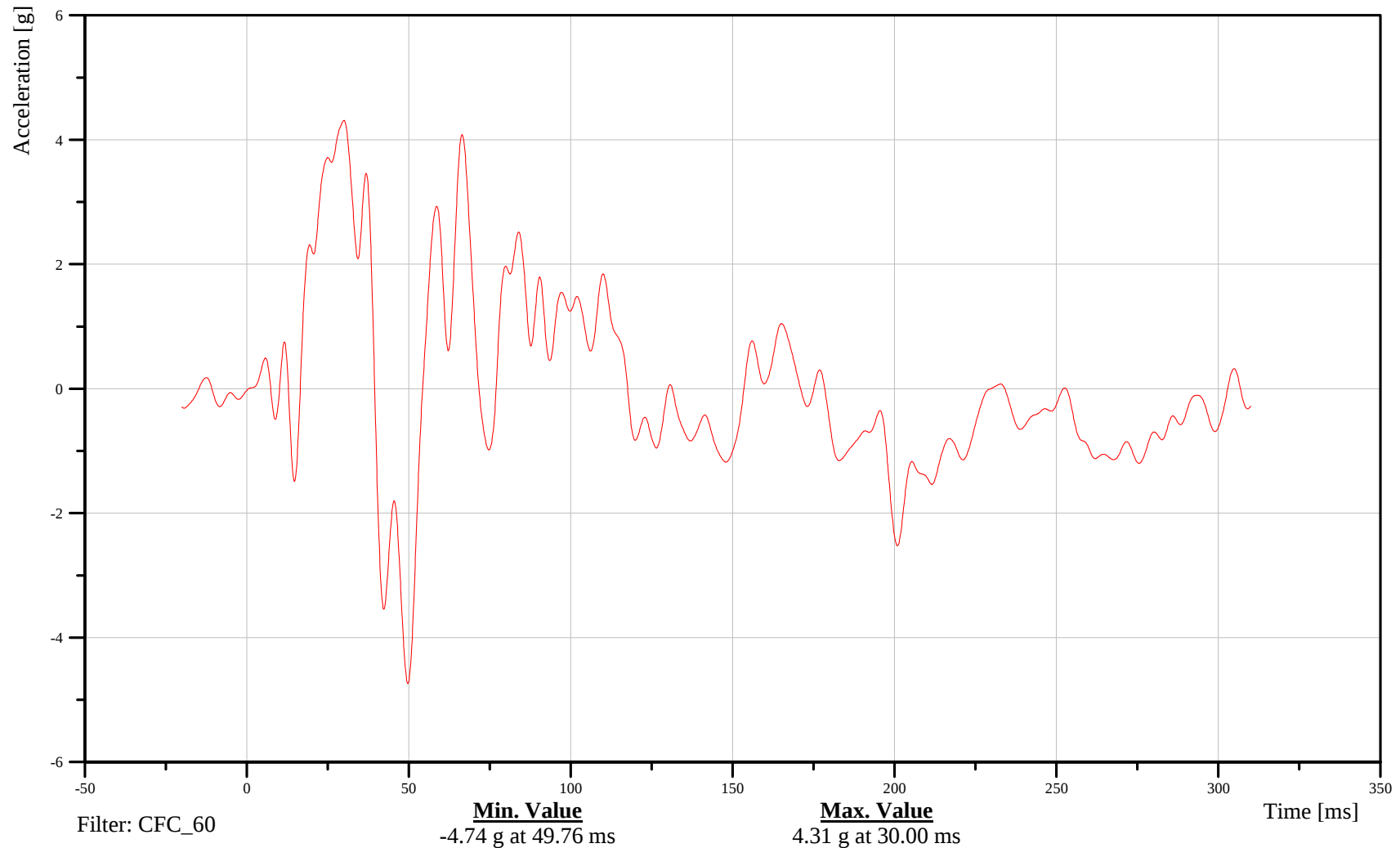
Rear Deck Behind Rear Axle Z-Axis Acceleration

Customer: VRTC

18DECK000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-157

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

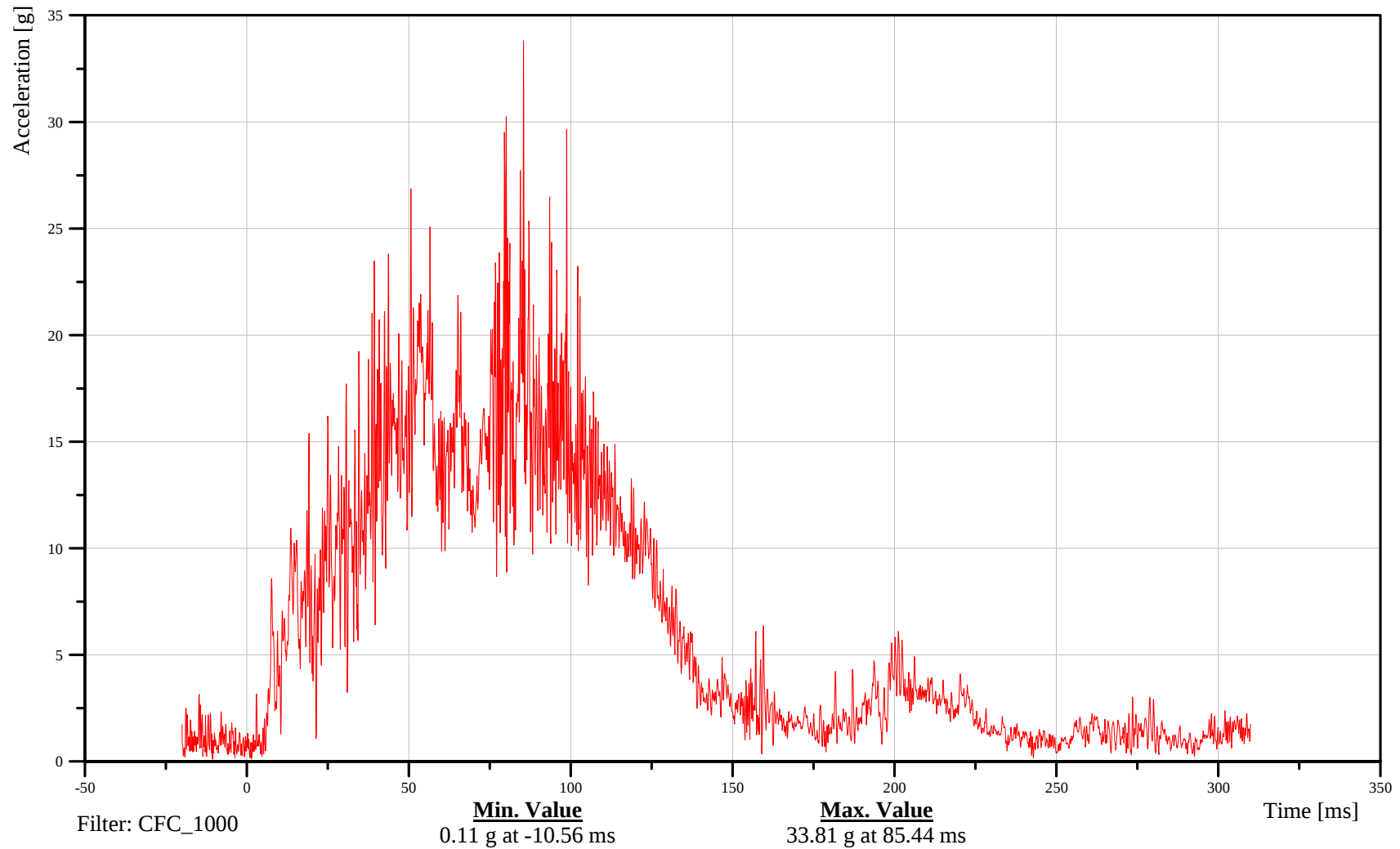
Rear Deck Behind Rear Axle Resultant Acceleration

Customer: VRTC

18DECK000000ACRA

TRC Inc. Test Lab: CTF

Test Number: 070712



B-158

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

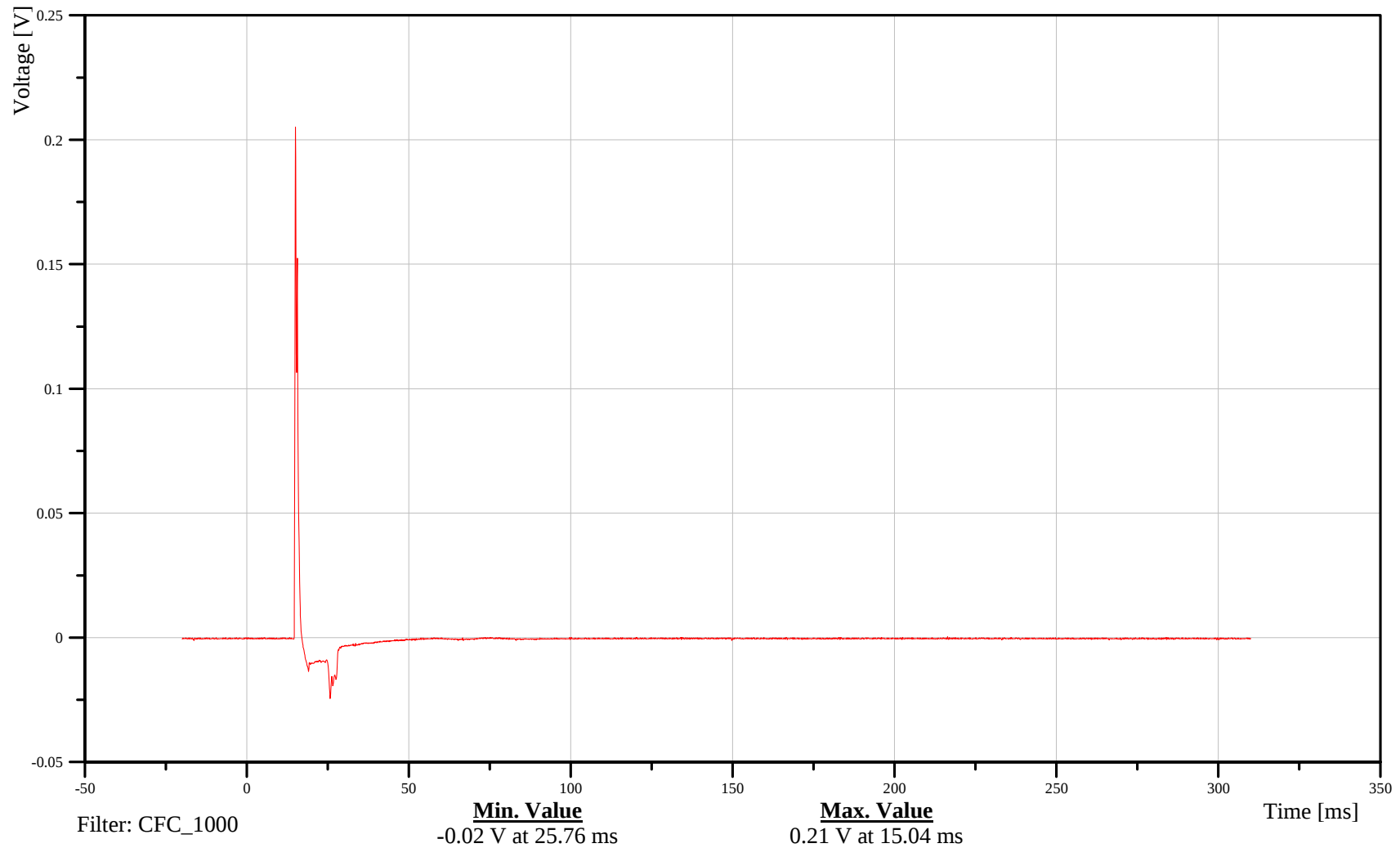
Driver Side Airbag Inductor

Customer: VRTC

11AIRBMILE00EV0A

TRC Inc. Test Lab: CTF

Test Number: 070712



B-159

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

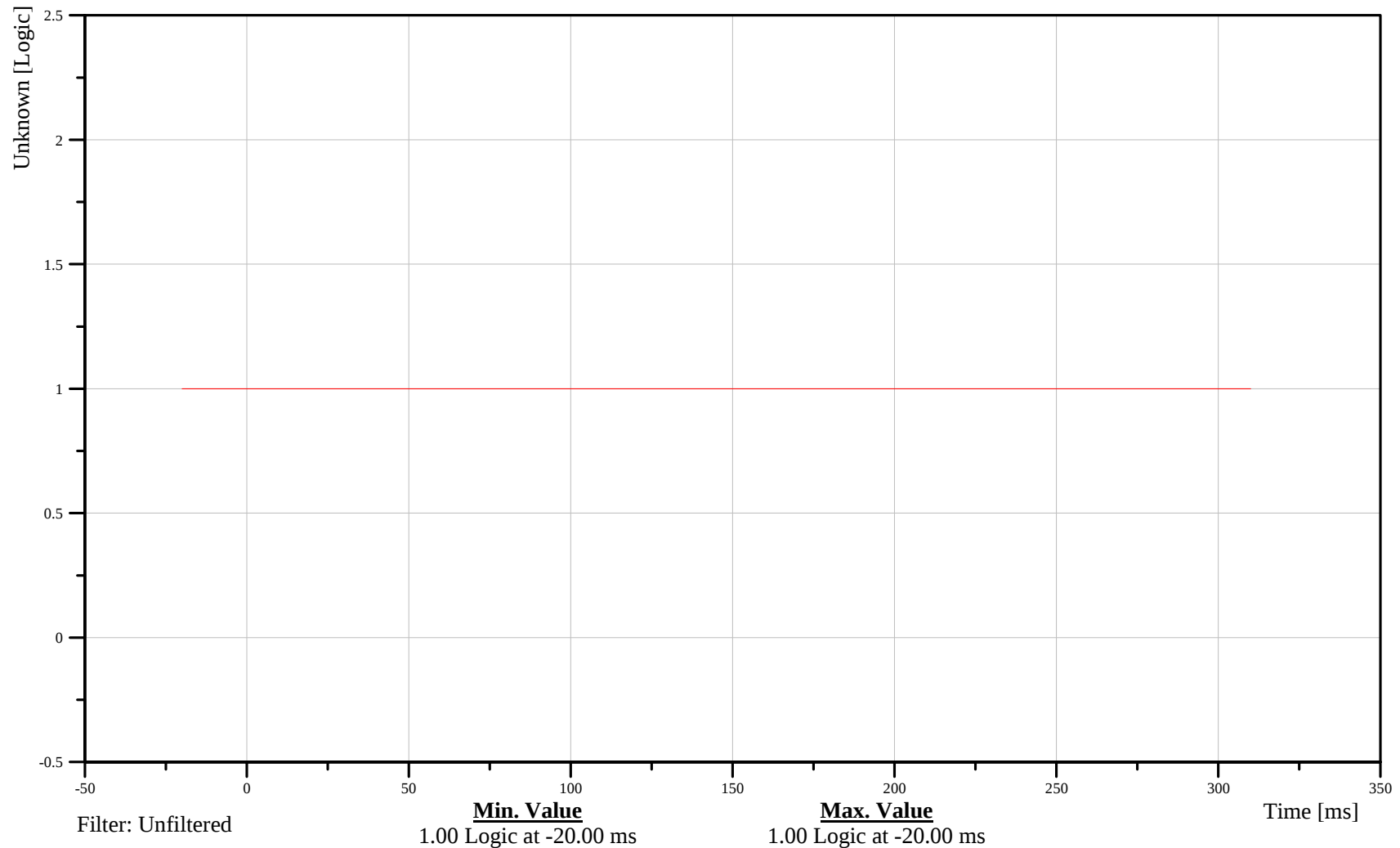
Head Contact Switch

Customer: VRTC

11CONT000001VO00

TRC Inc. Test Lab: CTF

Test Number: 070712



B-160

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

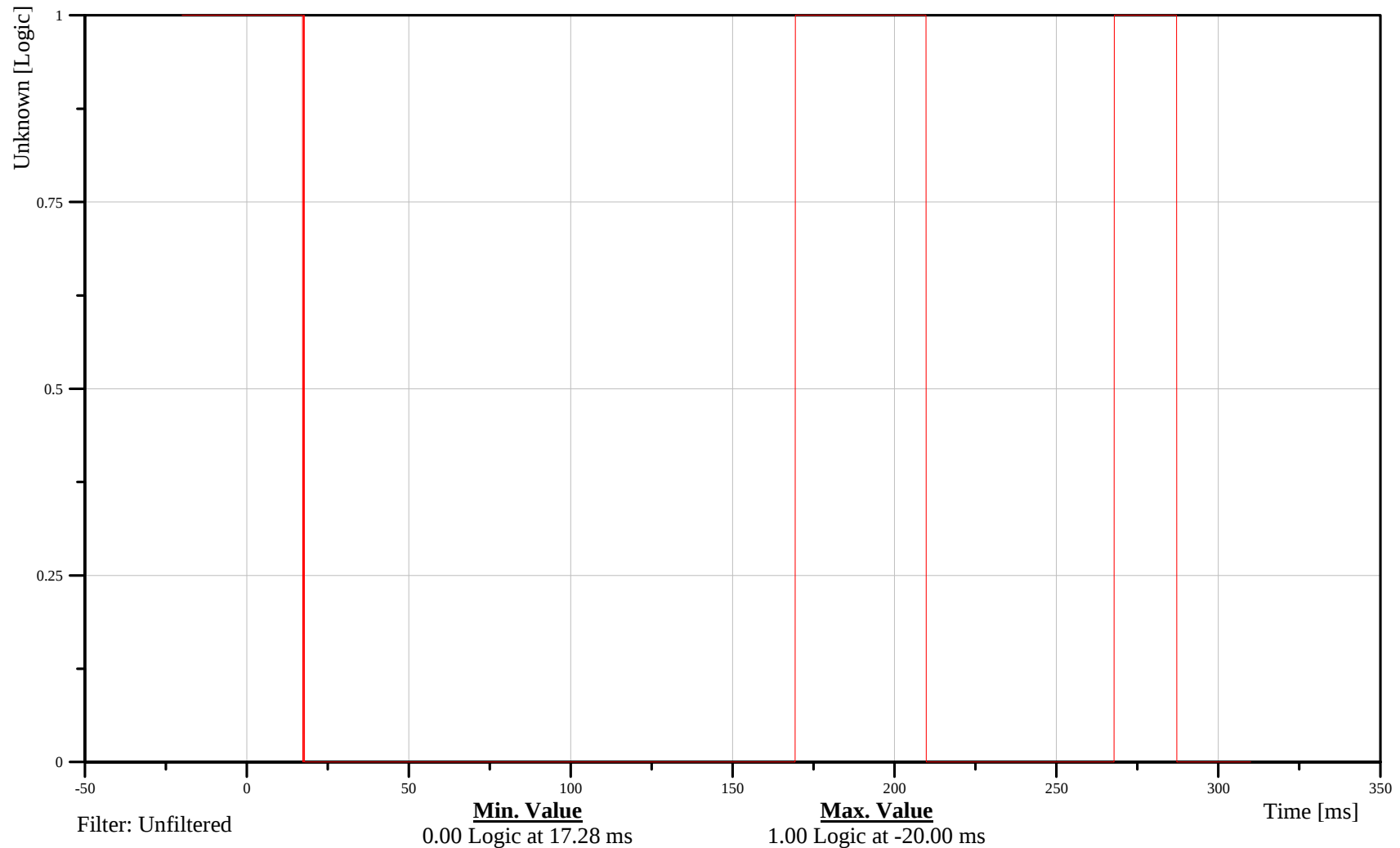
Shoulder Contact Switch

Customer: VRTC

11CONT000002VO00

TRC Inc. Test Lab: CTF

Test Number: 070712



B-161

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

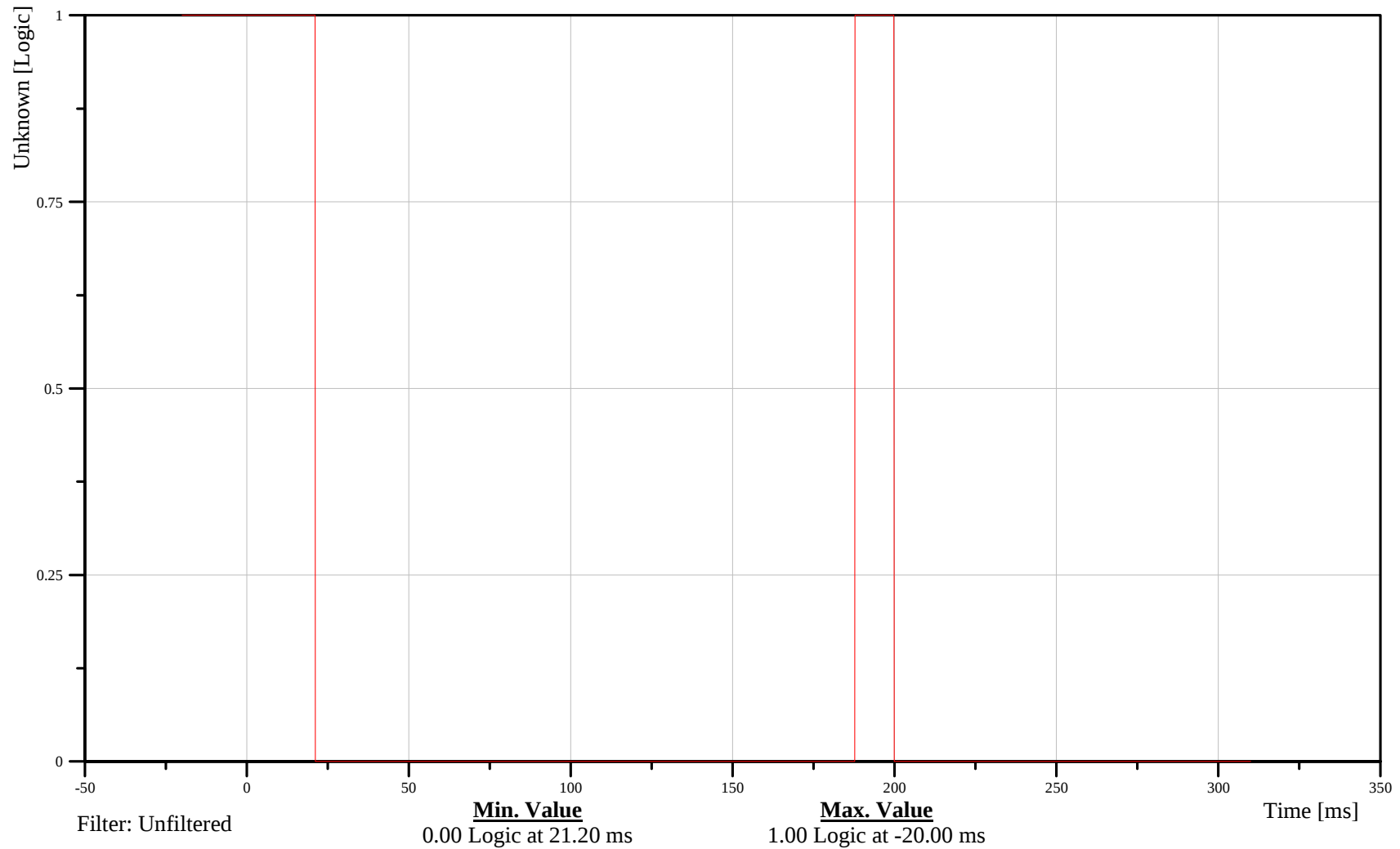
Torso Contact Switch

Customer: VRTC

11CONT000003VO00

TRC Inc. Test Lab: CTF

Test Number: 070712



B-162

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

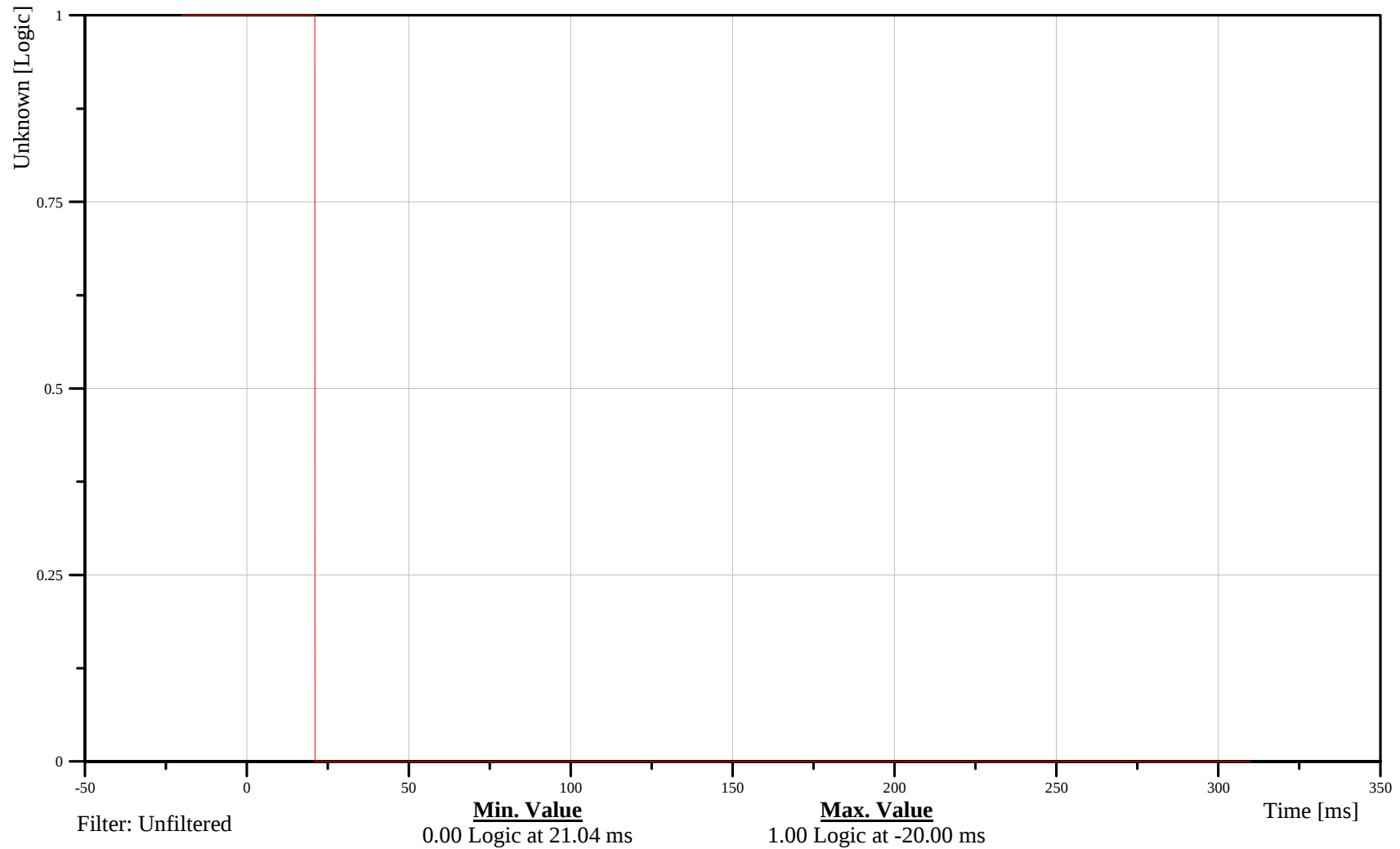
Left Contact Switch

Customer: VRTC

11CONT000004VO00

TRC Inc. Test Lab: CTF

Test Number: 070712



B-163

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

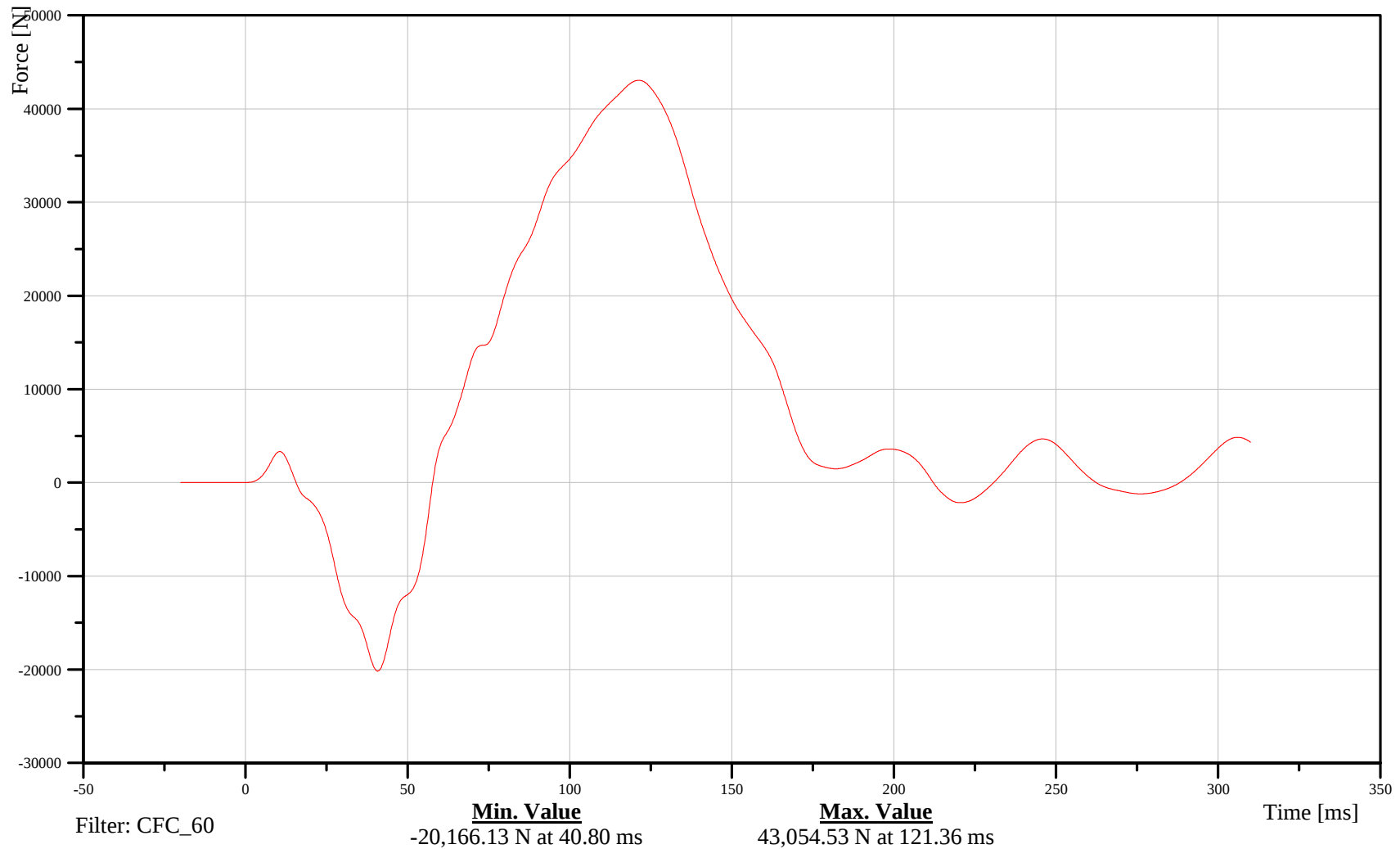
Pole Load Cell 1

Customer: VRTC

K0FBAR010000FOXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-164

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

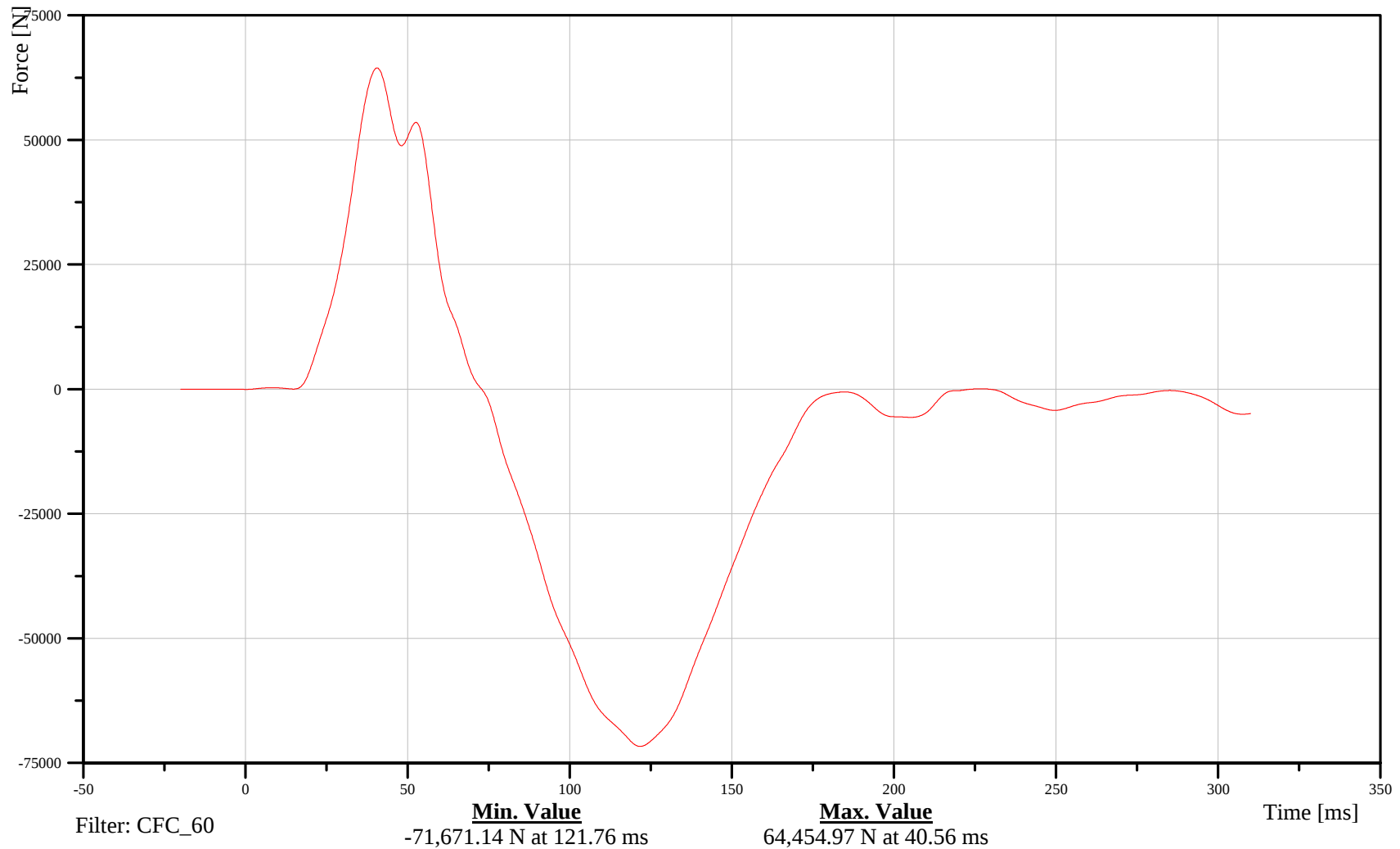
Pole Load Cell 2

Customer: VRTC

K0FBAR020000FOXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-165

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

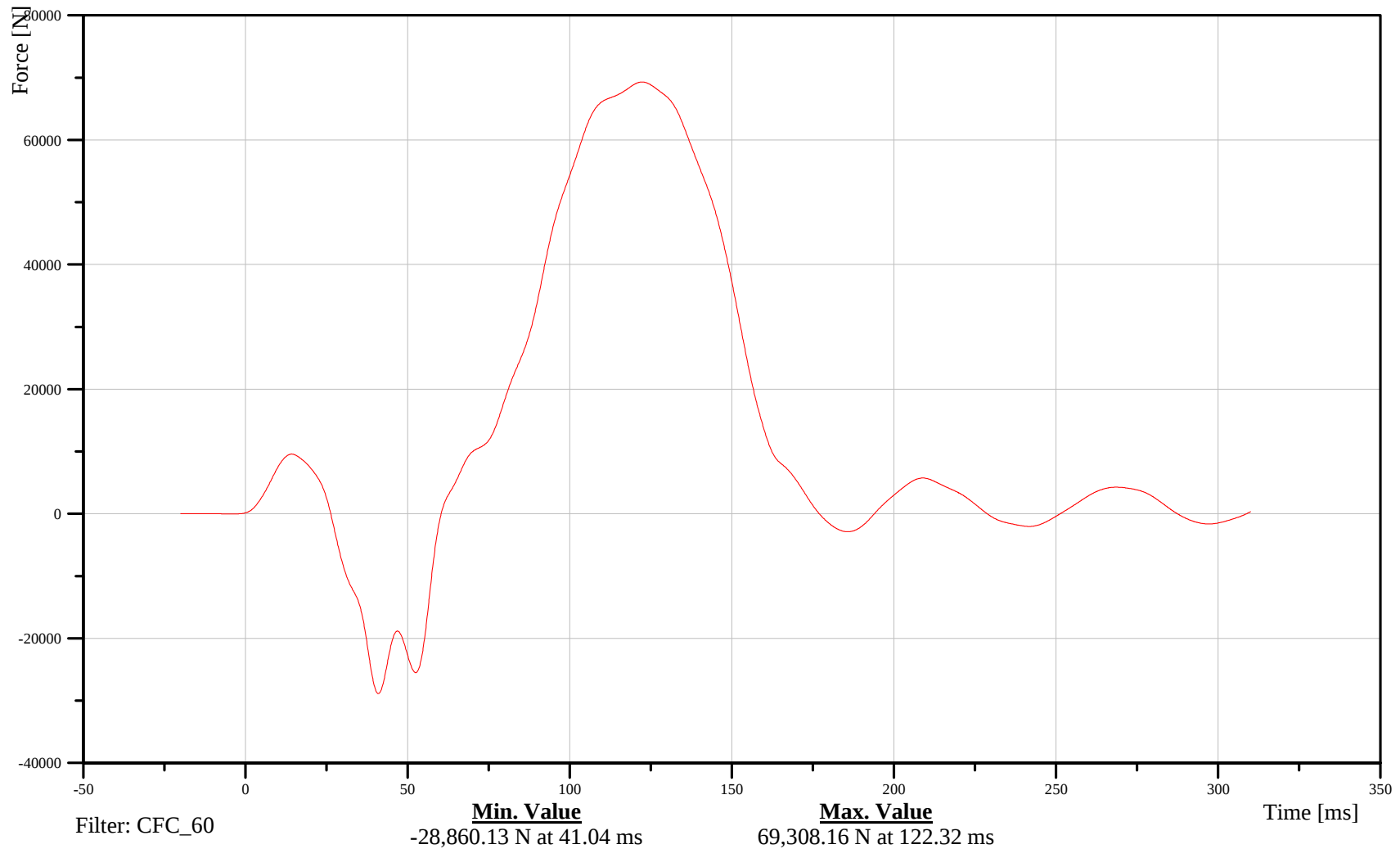
Pole Load Cell 3

Customer: VRTC

K0FBAR030000FOX

TRC Inc. Test Lab: CTF

Test Number: 070712



B-166

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

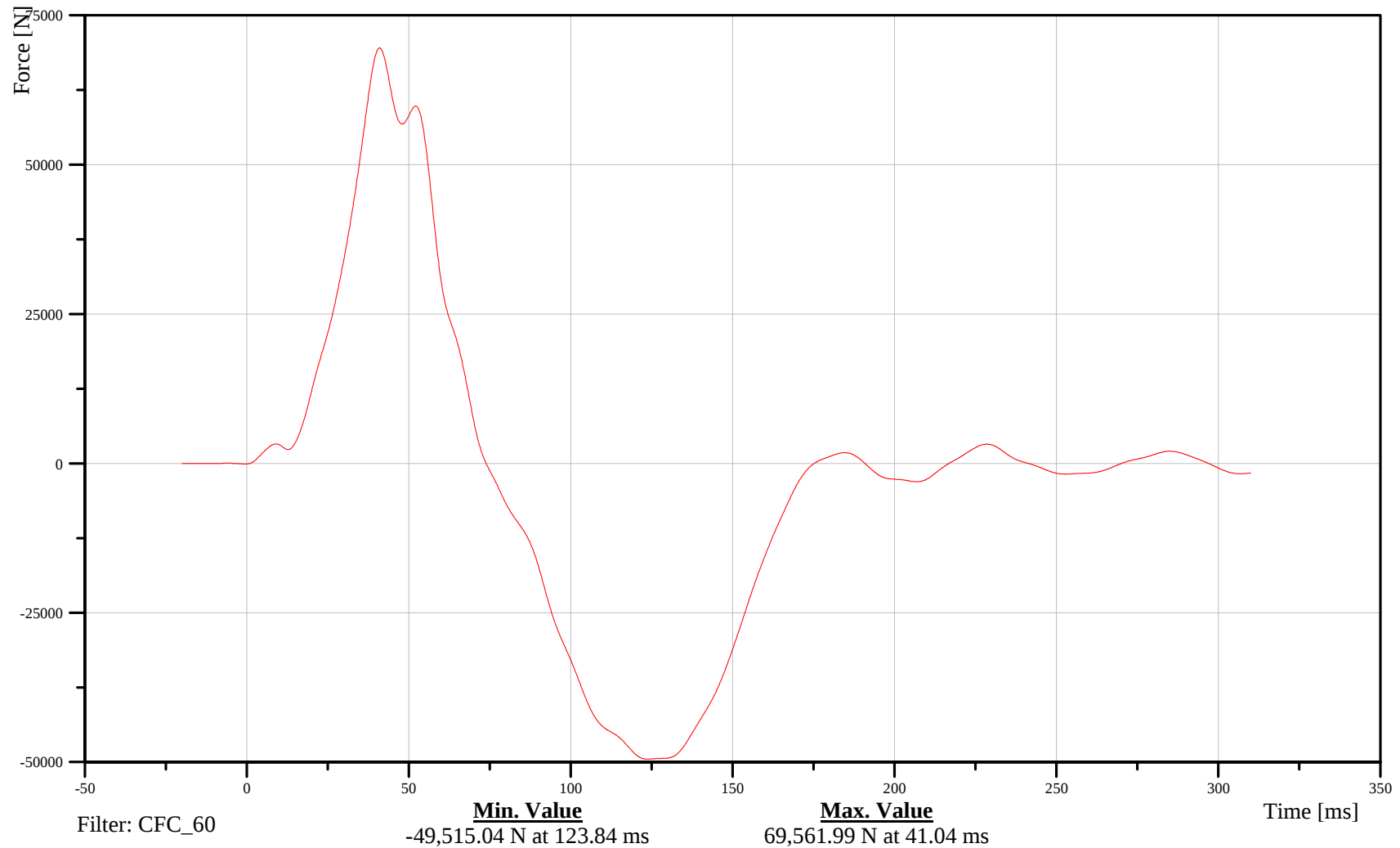
Pole Load Cell 4

Customer: VRTC

K0FBAR040000FOXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-167

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

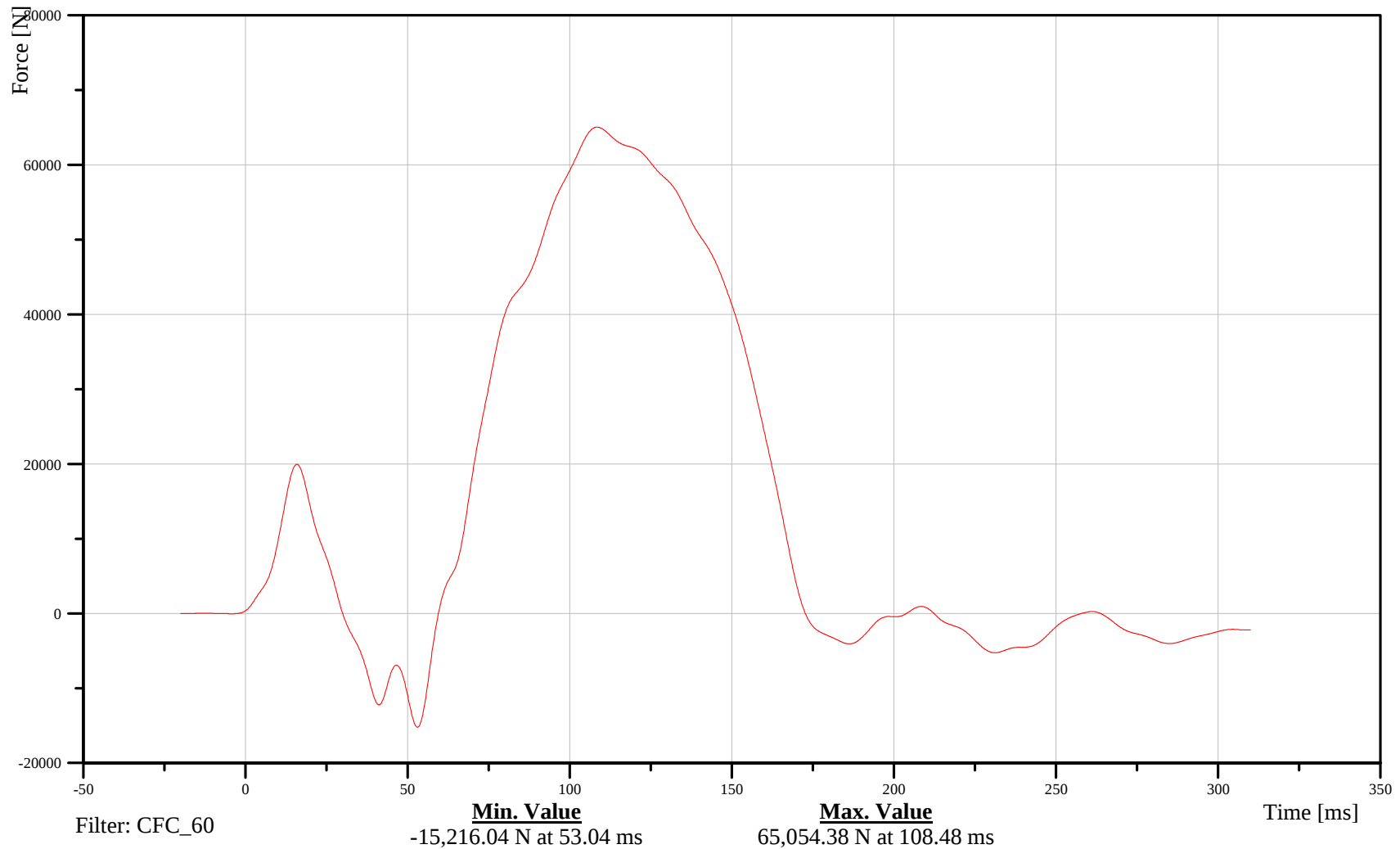
Pole Load Cell 5

Customer: VRTC

K0FBAR050000FOXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-168

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

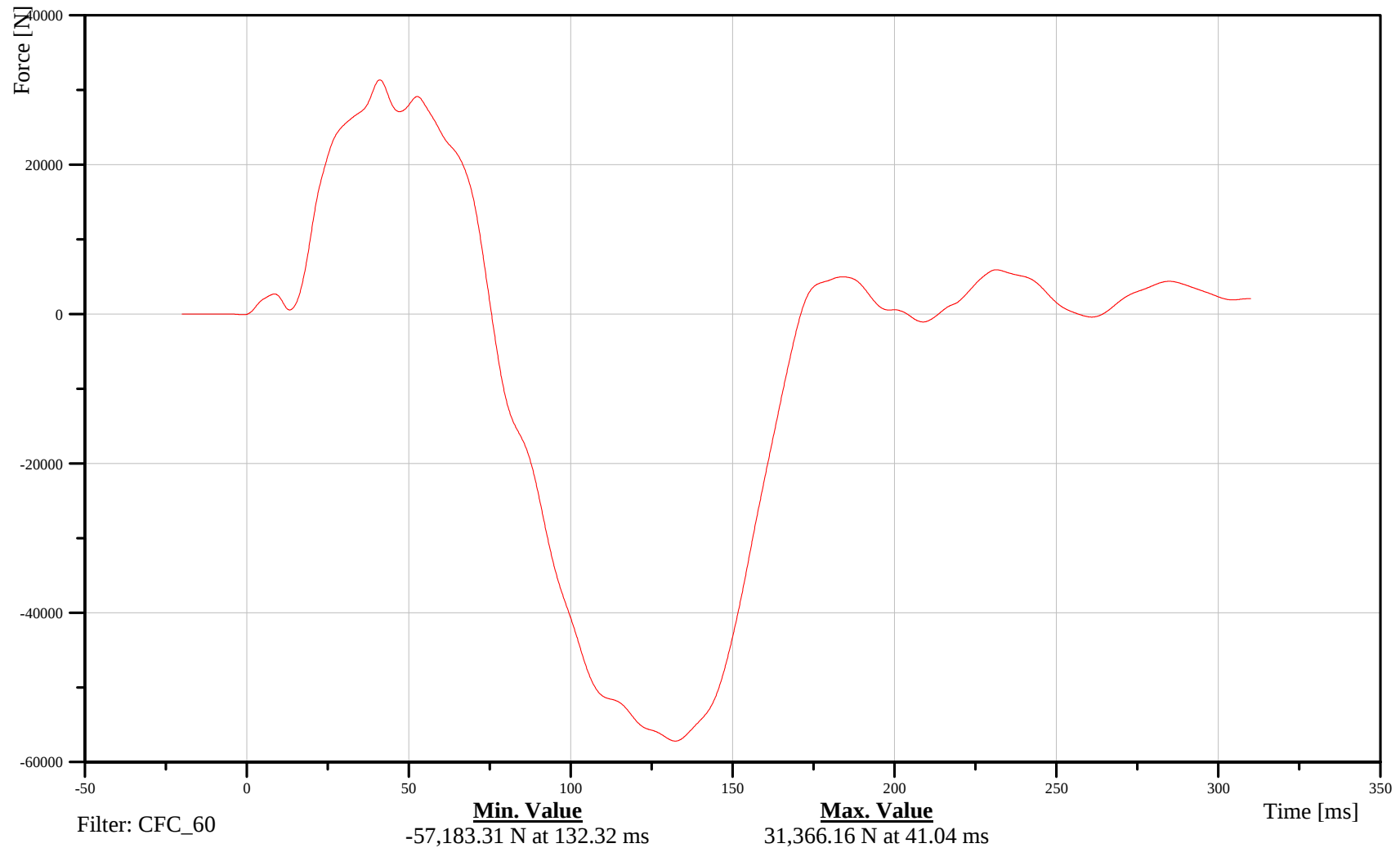
Pole Load Cell 6

Customer: VRTC

K0FBAR060000FOX

TRC Inc. Test Lab: CTF

Test Number: 070712



B-169

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

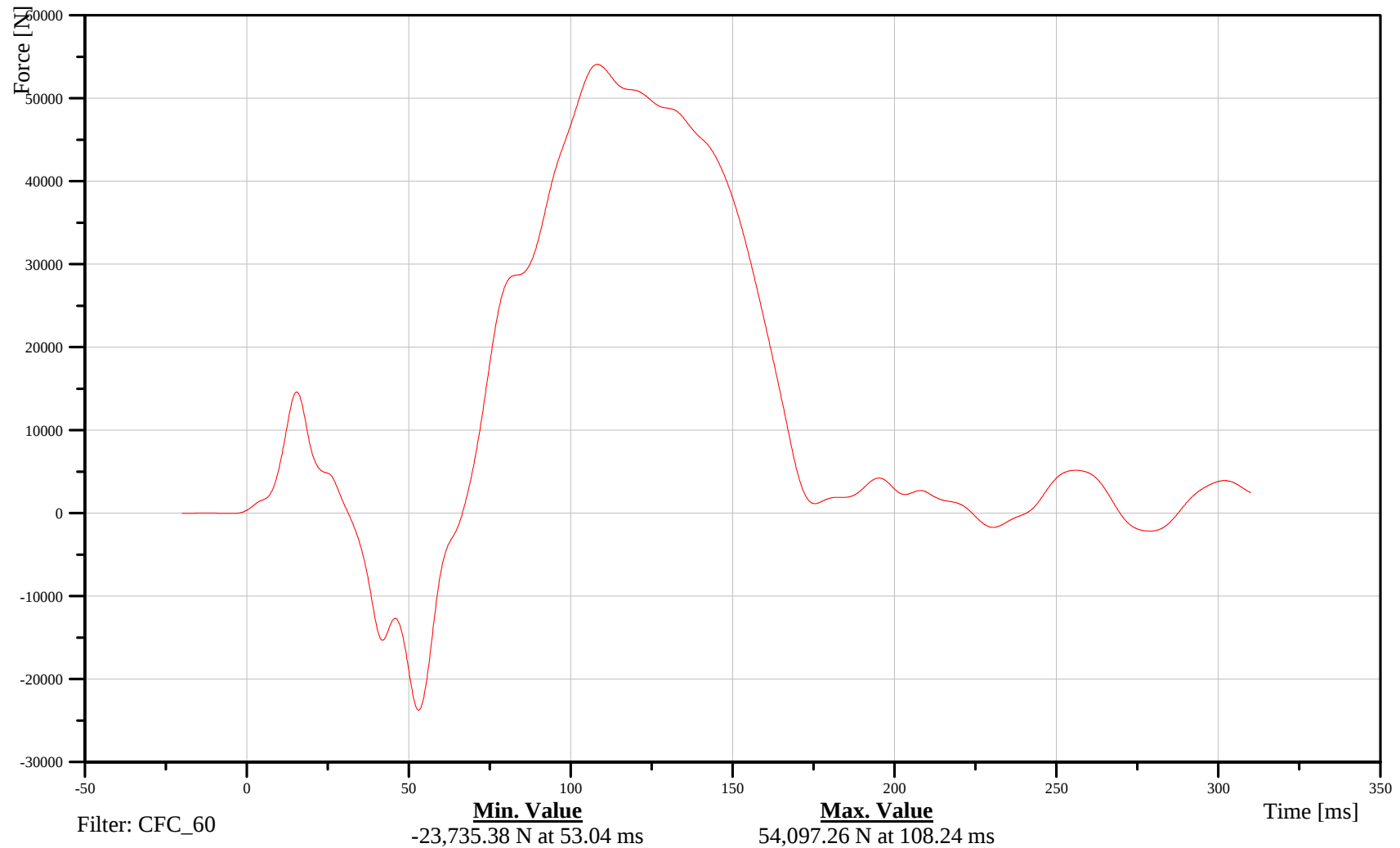
Pole Load Cell 7

Customer: VRTC

K0FBAR070000FOXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-170

070712



2005 Subaru Forester Left Side FMVSS 214 Pole Impact at 32 kph

Date: 07/12/2007
Time: 15:12

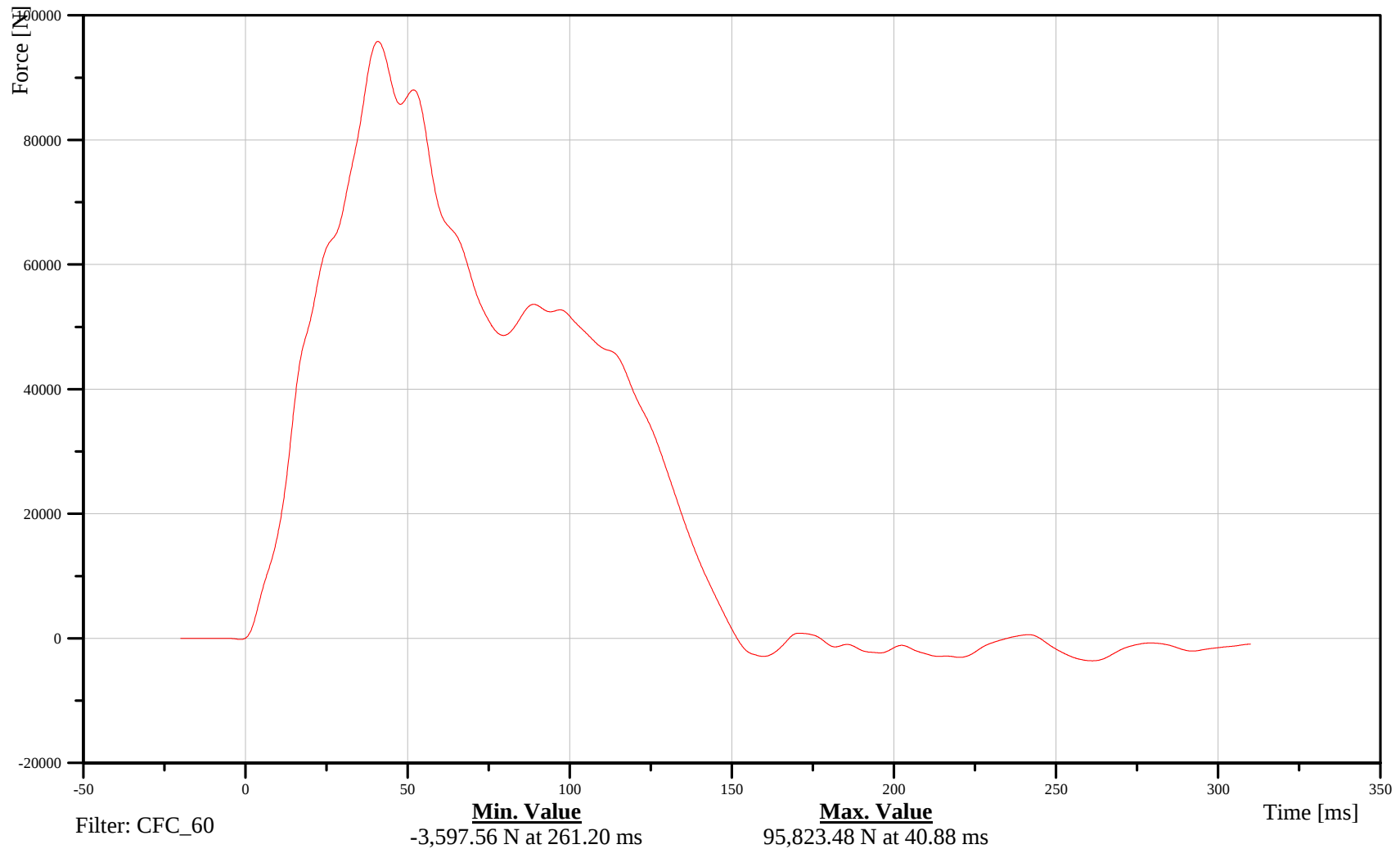
Pole Load Cell 8

Customer: VRTC

K0FBAR080000FOXD

TRC Inc. Test Lab: CTF

Test Number: 070712



B-171

070712

Appendix C

World SID Configuration and Performance Verification Data

Calibration Test Results

Pre-Test

World SID: 016

Configured for Left Side Impact

Transportation Research Center Inc.

Front

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

Test Date: 6/22/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	230.8 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	5.7 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

Ron Stoner

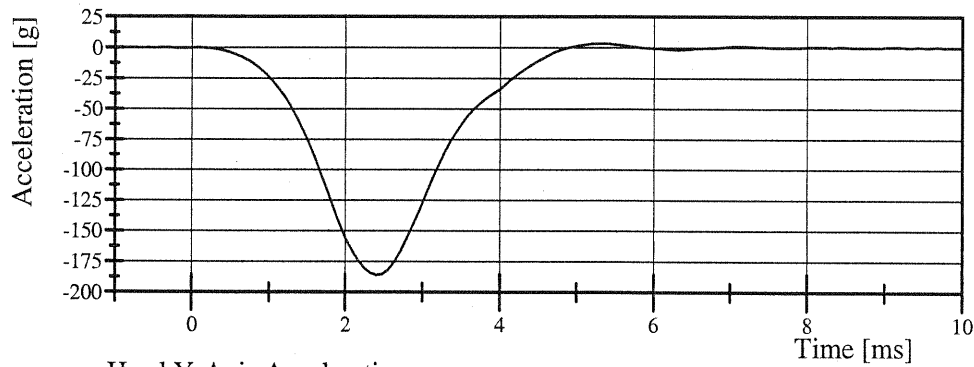
Transportation Research Center Inc.

Front

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

Test Date: 6/22/2007

Head X-Axis Acceleration

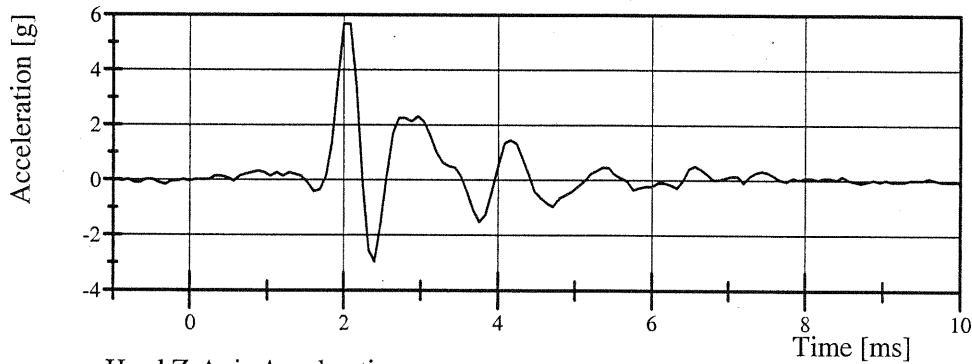


Filter Class: CFC_1000

Max: 3.4 g at 5.3 ms

Min: -186.1 g at 2.4 ms

Head Y-Axis Acceleration

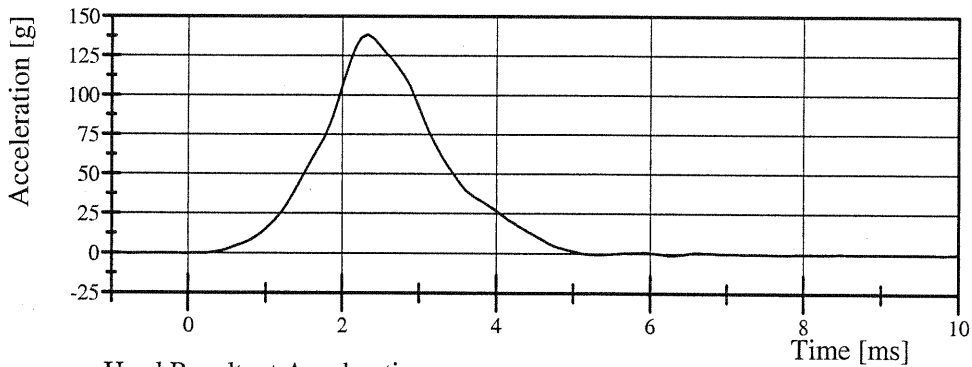


Filter Class: CFC_1000

Max: 5.7 g at 2.0 ms

Min: -3.0 g at 2.4 ms

Head Z-Axis Acceleration

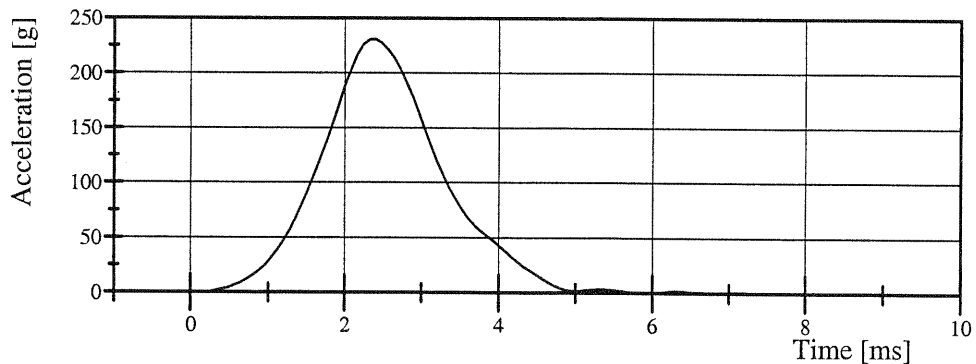


Filter Class: CFC_1000

Max: 138.6 g at 2.3 ms

Min: -1.0 g at 6.3 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 230.8 g at 2.4 ms

Min: 0.0 g at -1.0 ms

Transportation Research Center Inc.

Left Lateral

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

Test Date: 6/22/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	51 %	Yes
Peak Head Resultant Acceleration	99 - 121 g	110.5 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-4.2 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Charles W. Bell

Approved

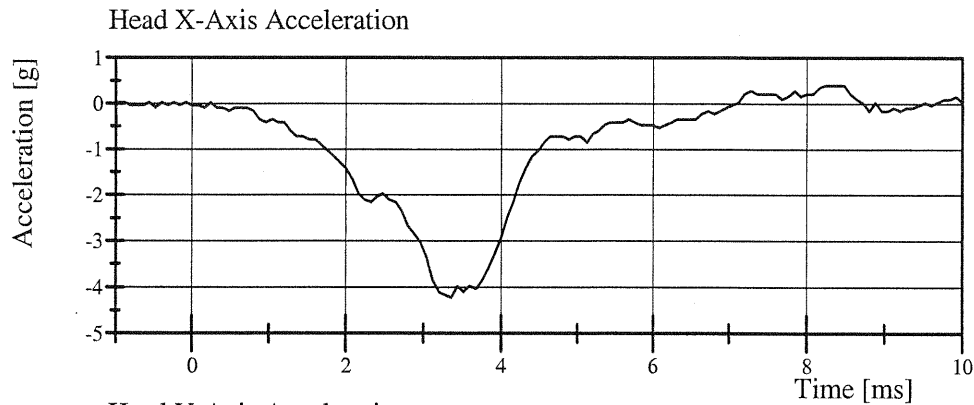
Ron Storus

Transportation Research Center Inc.

Left Lateral

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

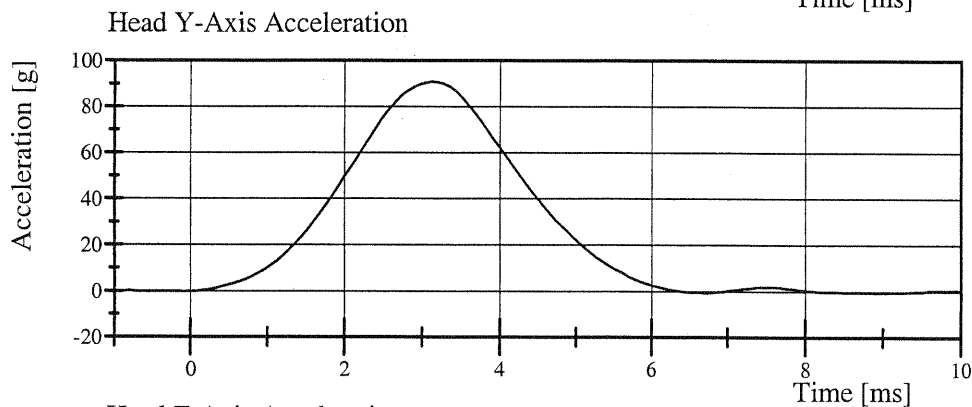
Test Date: 6/22/2007



Filter Class: CFC_1000

Max: 0.4 g at 8.2 ms

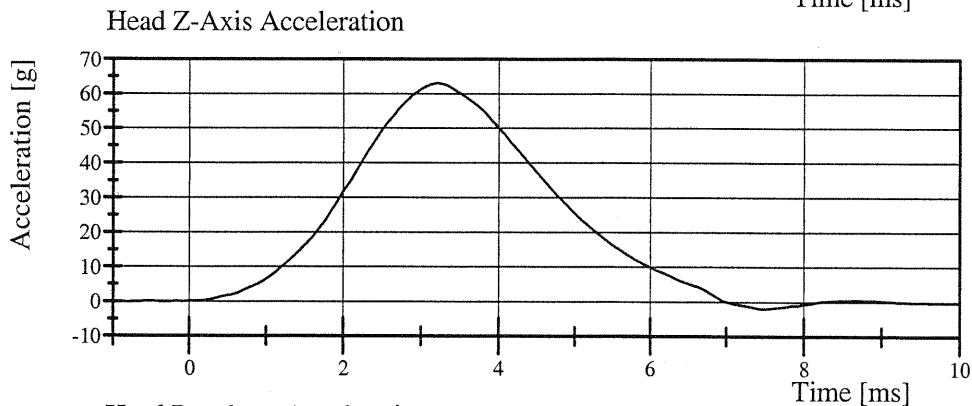
Min: -4.2 g at 3.4 ms



Filter Class: CFC_1000

Max: 90.9 g at 3.1 ms

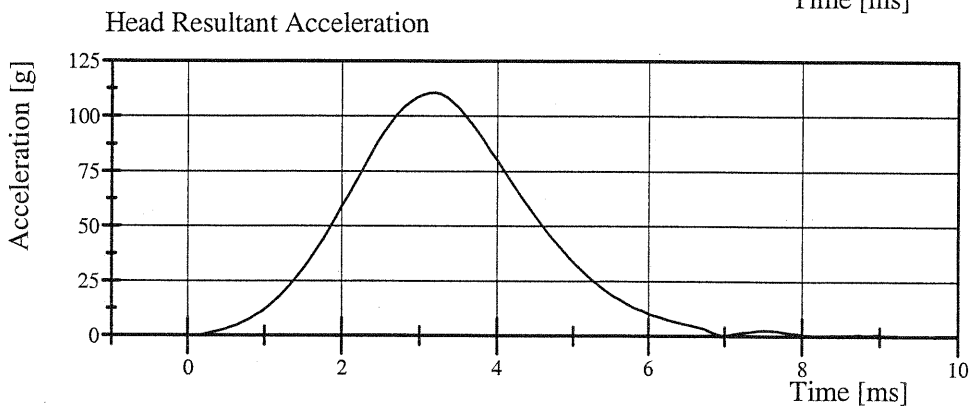
Min: -0.7 g at 6.7 ms



Filter Class: CFC_1000

Max: 63.1 g at 3.2 ms

Min: -1.9 g at 7.4 ms



Filter Class: CFC_1000

Max: 110.5 g at 3.2 ms

Min: 0.0 g at -0.9 ms

Transportation Research Center Inc.

Right Lateral

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

Test Date: 6/22/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	20.7 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Peak Head Resultant Acceleration	99 - 121 g	110.3 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	5.0 g	Yes
Is Head Resultant Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Charles W. Beal

Approved

Ron. Stover



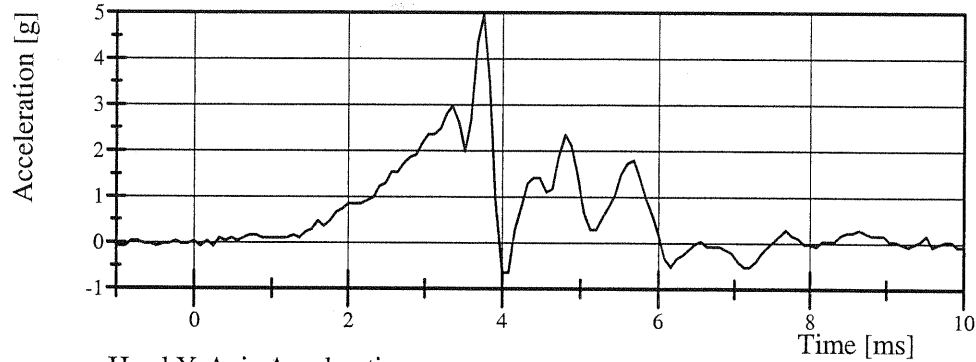
Transportation Research Center Inc.

Right Lateral

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

Test Date: 6/22/2007

Head X-Axis Acceleration

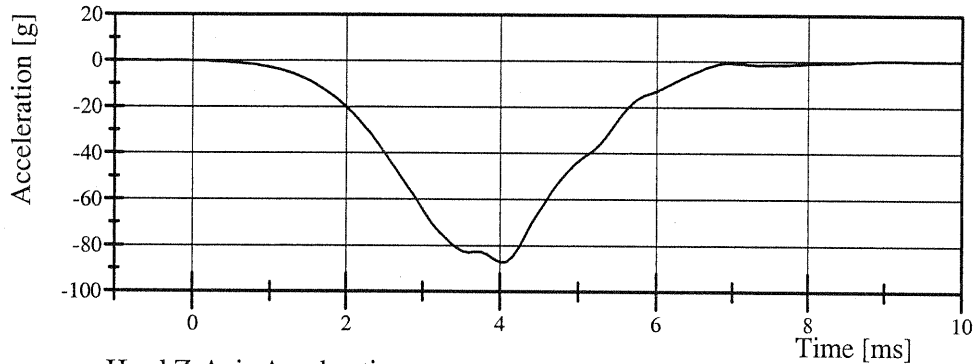


Filter Class: CFC_1000

Max: 5.0 g at 3.8 ms

Min: -0.6 g at 4.0 ms

Head Y-Axis Acceleration

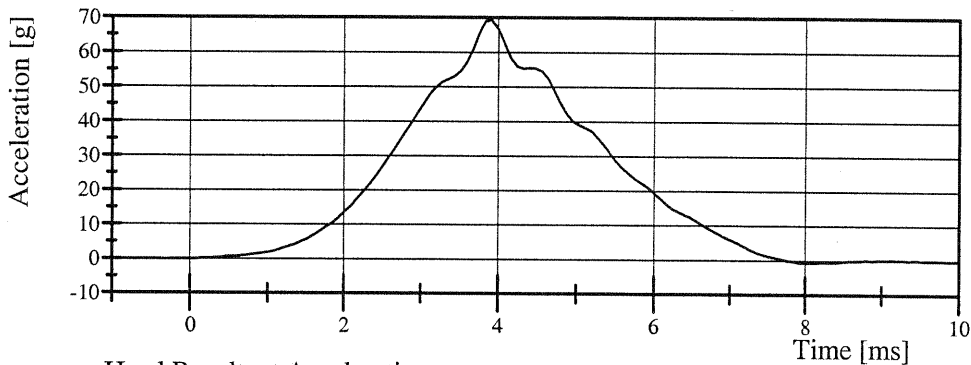


Filter Class: CFC_1000

Max: 0.4 g at 9.3 ms

Min: -87.2 g at 4.0 ms

Head Z-Axis Acceleration

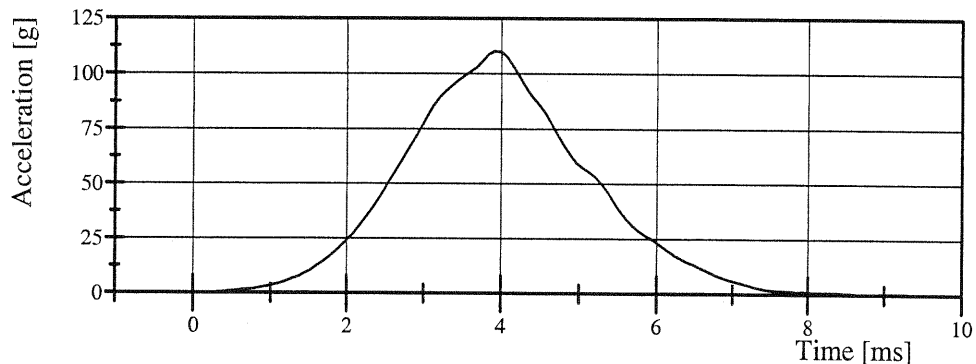


Filter Class: CFC_1000

Max: 69.4 g at 3.9 ms

Min: -0.6 g at 8.0 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 110.3 g at 3.9 ms

Min: 0.0 g at -1.0 ms

Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

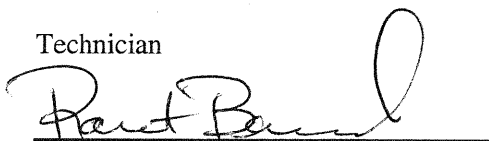
Test Date: 6/25/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.33 m/s	Yes
Pendulum Integrated Velocity			
Change at 4 ms	0.77 - 1.04 m/s	0.826 m/s	Yes
Change at 8 ms	1.6 - 2.16 m/s	1.796 m/s	Yes
Change at 12 ms	2.43 - 3.29 m/s	2.849 m/s	Yes
Maximum Headform Flexion	(-50) - (-61) deg	-53.5 deg	Yes
Headform Flexion Decay			
- from Peak to Zero Degrees	58 - 72 ms	61.8 ms	Yes
Total Neck Occipital Condyles Moment	55 - 68 N·m	58.3 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	71 - 87 ms	79.0 ms	Yes
Maximum Forward Pot Rotation			
Peak	(-32) - (-39) °	-34.5 °	Yes
Time of Peak	56 - 68 ms	63.8 ms	Yes
Maximum Rear Pot Rotation			
Peak	(-30) - (-37) °	-31.4 °	Yes
Time of Peak	56 - 68 ms	62.5 ms	Yes

Test meets specifications.

Comments:

Technician



Approved



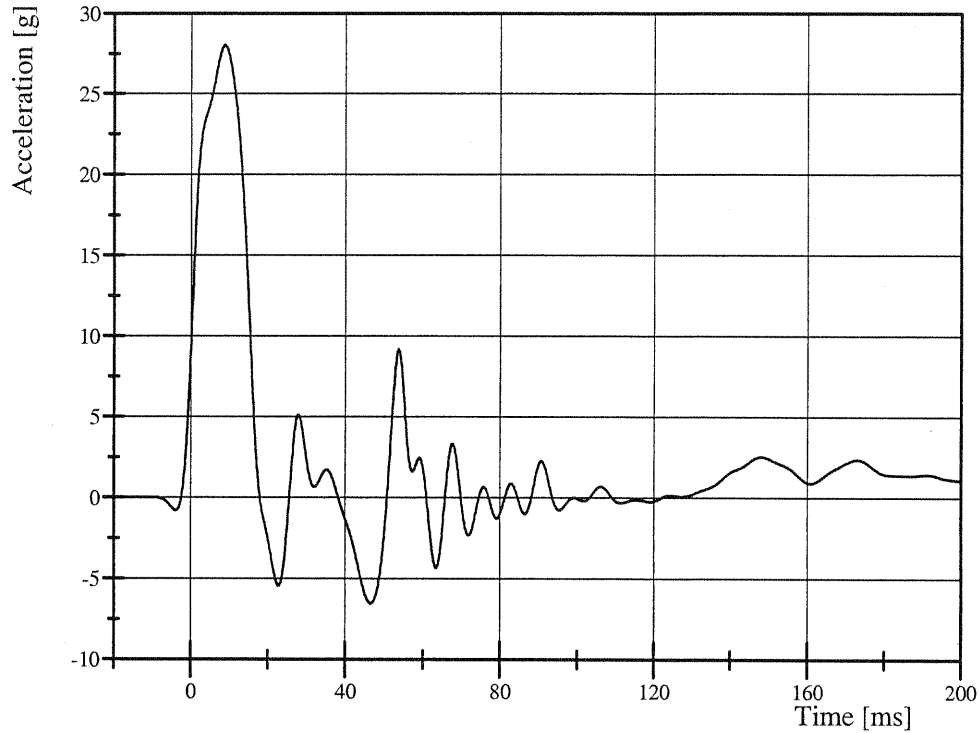
Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

Test Date: 6/25/2007

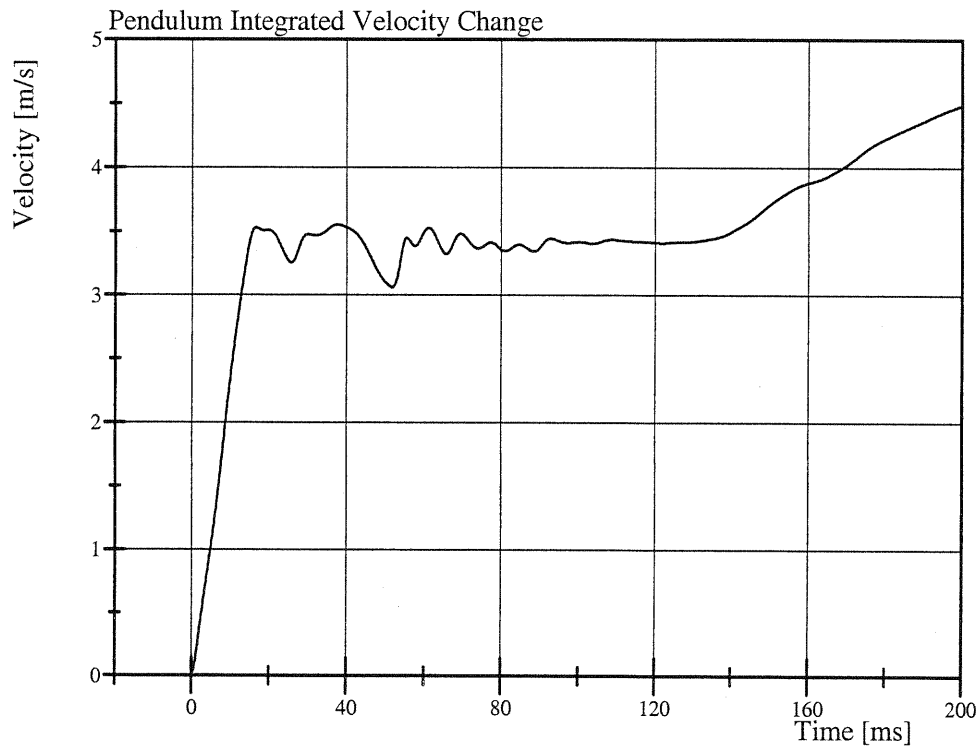
Pendulum Acceleration



Filter Class: CFC₆₀

Max: 28.0 g at 8.7 ms

Min: -6.5 g at 46.5 ms



Filter Class: CFC₁₈₀

Max: 4.5 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

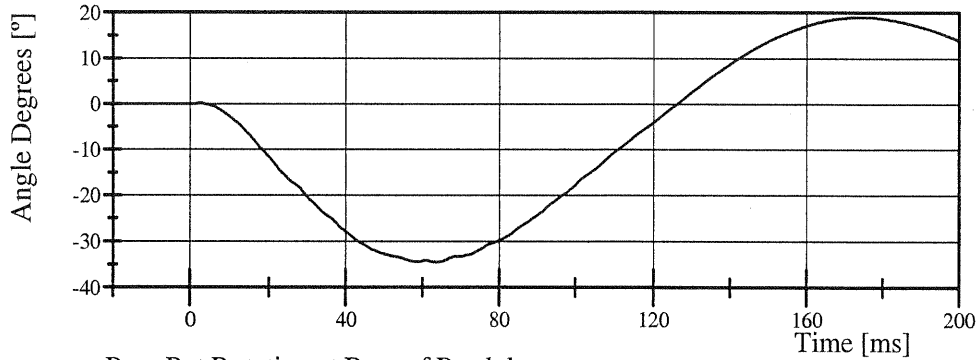
Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

Test Date: 6/25/2007

Forward Pot Rotation at Base of Pendulum

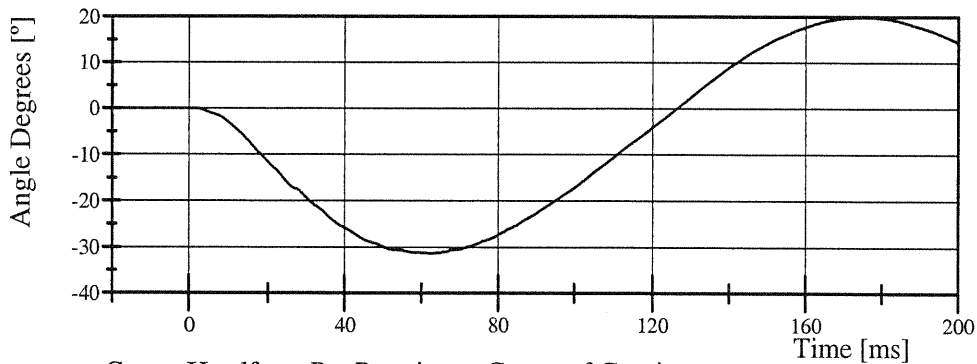


Filter Class: CFC_1000

Max: 19.0 ° at 175.0 ms

Min: -34.5 ° at 63.8 ms

Rear Pot Rotation at Base of Pendulum

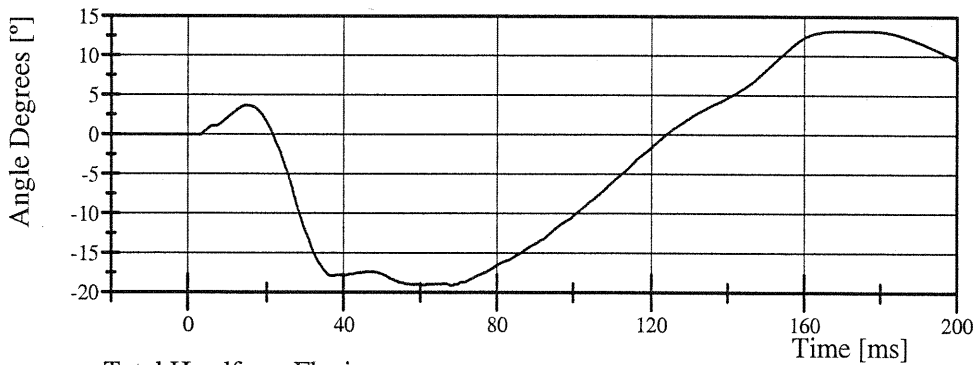


Filter Class: CFC_1000

Max: 19.9 ° at 175.0 ms

Min: -31.4 ° at 62.5 ms

Center Headform Pot Rotation at Center of Gravity

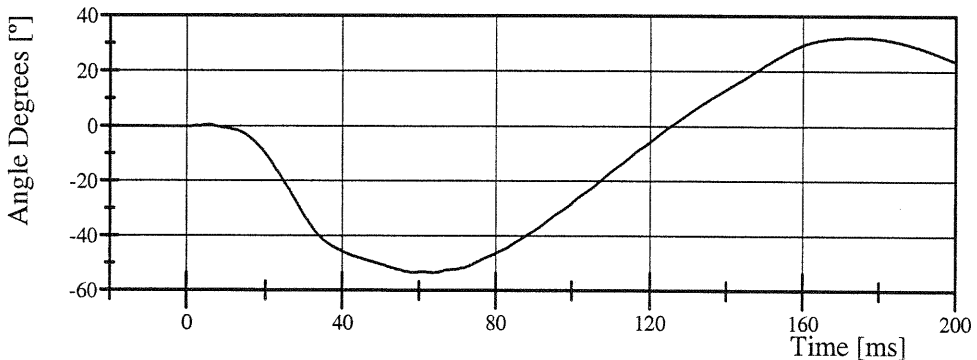


Filter Class: CFC_1000

Max: 13.2 ° at 170.2 ms

Min: -19.1 ° at 68.3 ms

Total Headform Flexion



Filter Class: CFC_1000

Max: 32.3 ° at 175.0 ms

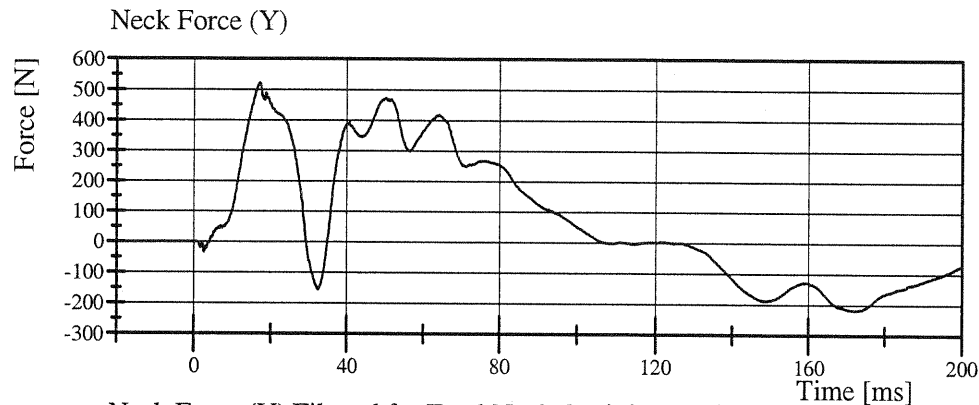
Min: -53.5 ° at 63.5 ms

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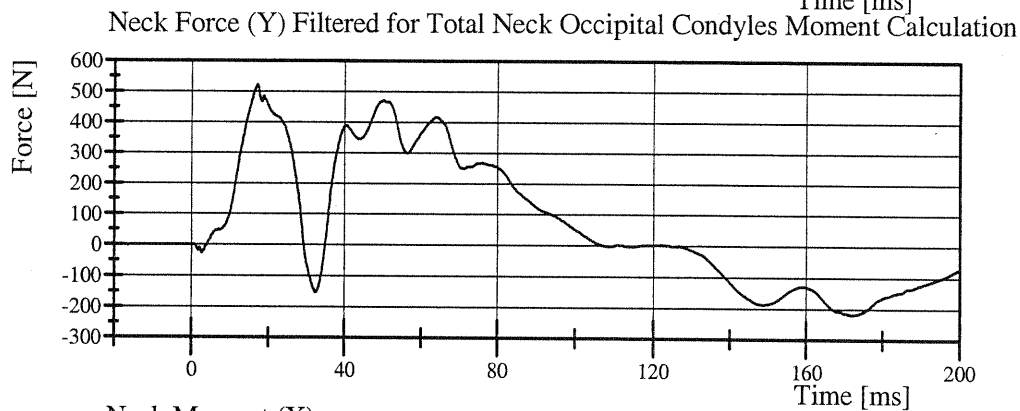
Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

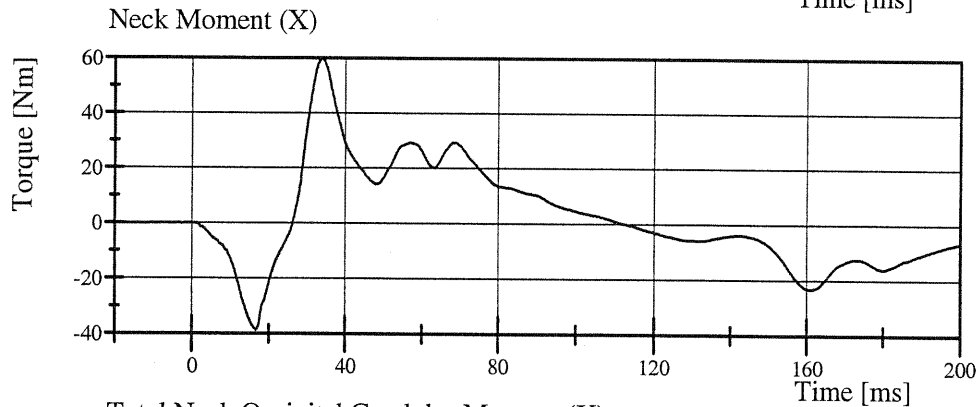
Test Date: 6/25/2007



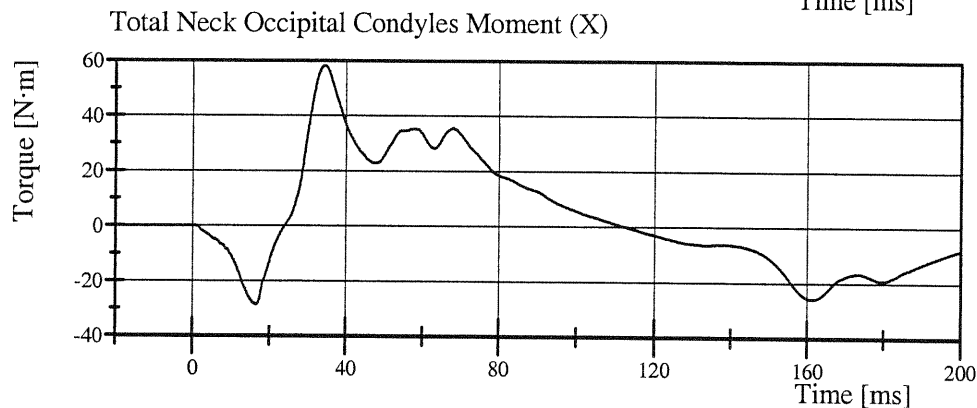
Filter Class: CFC_1000
Max: 522.4 N at 17.0 ms
Min: -218.8 N at 171.9 ms



Filter Class: CFC_600
Max: 522.1 N at 17.0 ms
Min: -218.3 N at 172.0 ms



Filter Class: CFC_600
Max: 59.8 Nm at 33.6 ms
Min: -38.5 Nm at 16.6 ms



Filter Class: CFC_600
Max: 58.3 N·m at 34.3 ms
Min: -28.5 N·m at 16.5 ms

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Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

Test Date: 6/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	55 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Force	(-2,600) - (-3,300) N	-2,877.3 N	Yes
Upper Abdominal Rib Displacement	33 - 41 mm	36.2 mm	Yes
Lower Abdominal Rib Displacement	31 - 39 mm	32.8 mm	Yes
Lower Spine Lateral Acceleration	15 - 20 g	16.1 g	Yes

Test meets specifications.

Comments:

Technician

Charles W. Hall

Approved

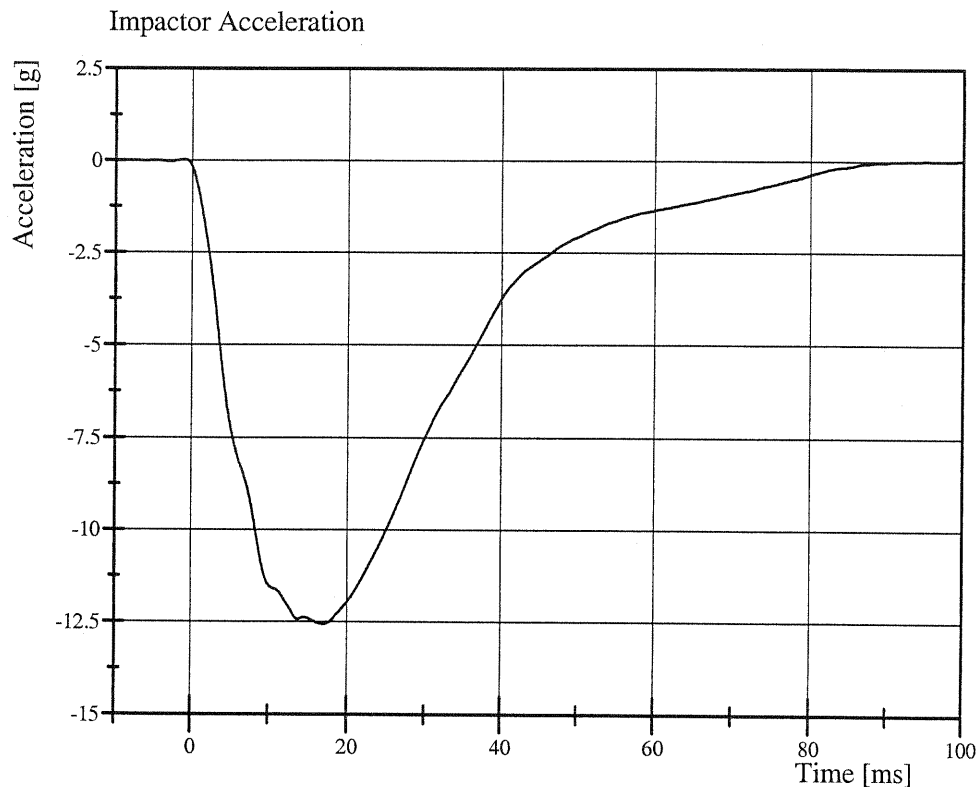
Ron Stokes

Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

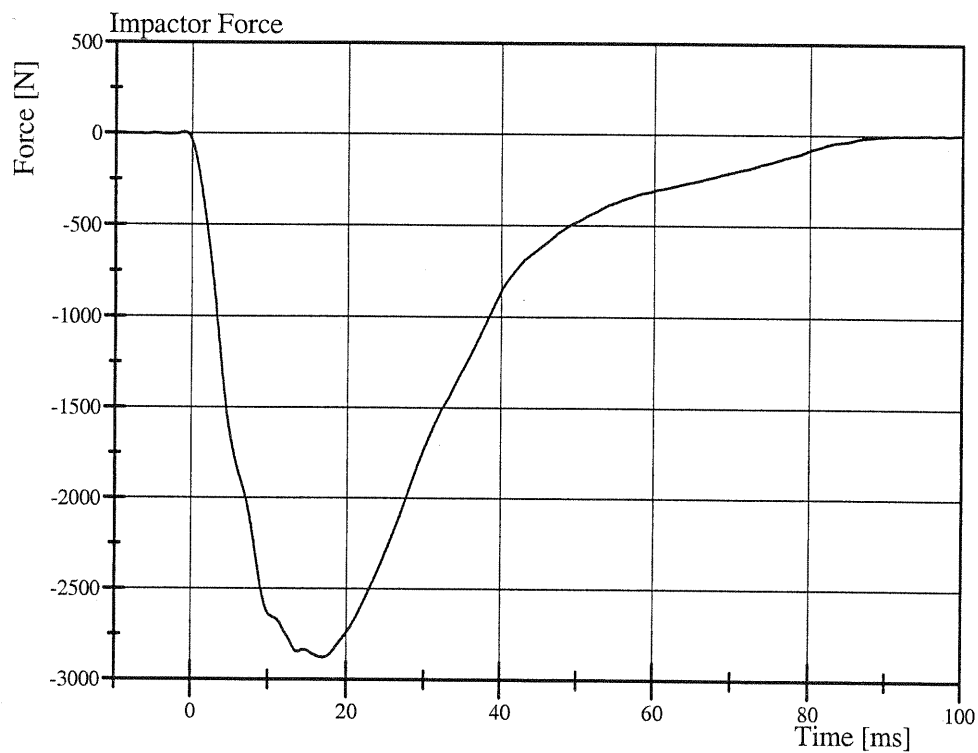
Test Date: 6/8/2007



Filter Class: CFC_180

Max: 0.0 g at -1.0 ms

Min: -12.6 g at 17.0 ms



Filter Class: CFC_180

Max: 5.2 N at -1.0 ms

Min: -2,877.3 N at 17.0 ms

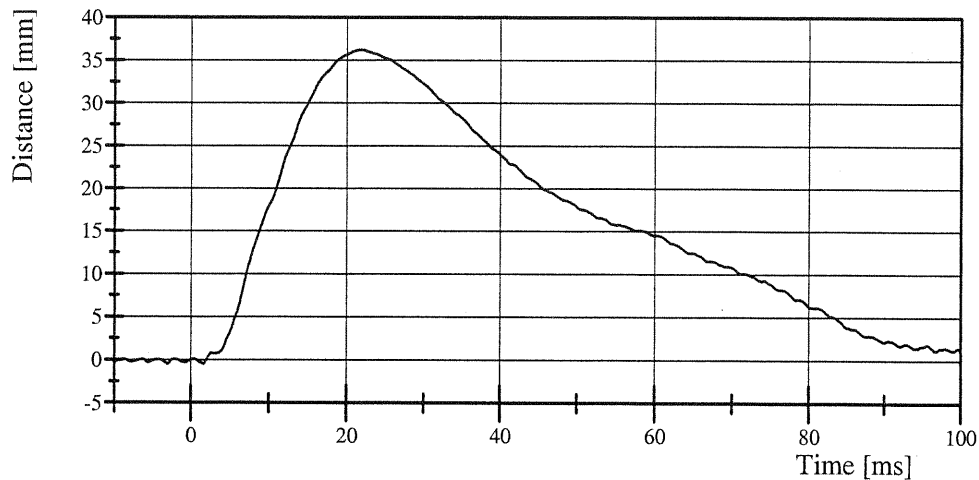
Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-1

Test Date: 6/8/2007

Upper Abdominal Rib Displacement

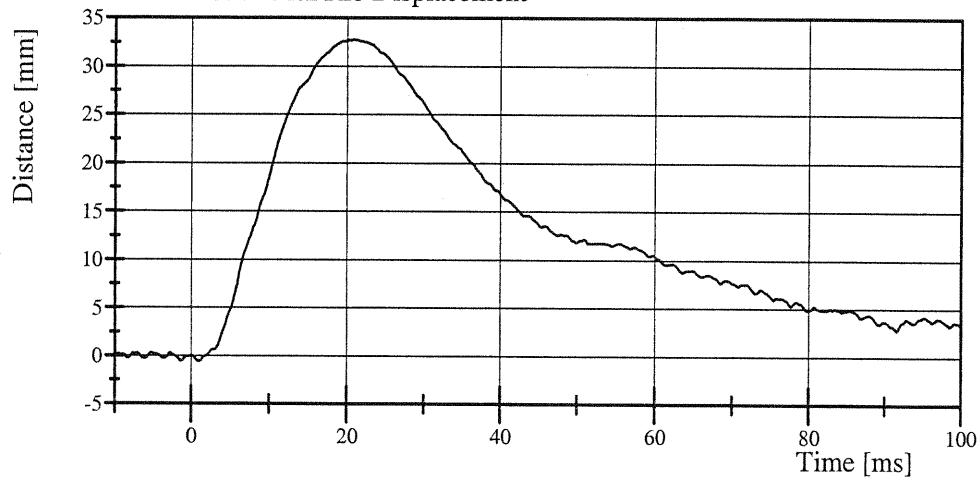


Filter Class: CFC_600

Max: 36.2 mm at 21.8 ms

Min: -0.5 mm at -3.0 ms

Lower Abdominal Rib Displacement

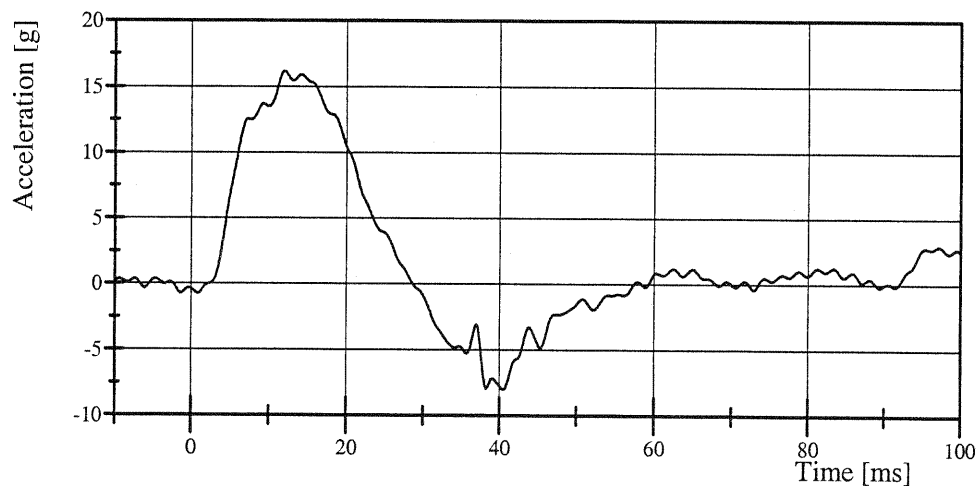


Filter Class: CFC_600

Max: 32.8 mm at 20.9 ms

Min: -0.6 mm at 1.0 ms

Lower Spine Acceleration (Y)



Filter Class: CFC_180

Max: 16.1 g at 11.9 ms

Min: -8.0 g at 40.5 ms

Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

Test Date: 6/8/2007

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	57 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.69 m/s	Yes
Impactor Force	(-6,300) - (-7,800) N	-7,238.5 N	Yes
Pelvis Lateral Acceleration	41 - 51 g	44.1 g	Yes
Lower Spine Lateral Acceleration	10 - 14 g	13.3 g	Yes

Test meets specifications.

Comments:

Technician

Charles W. Ball

Approved

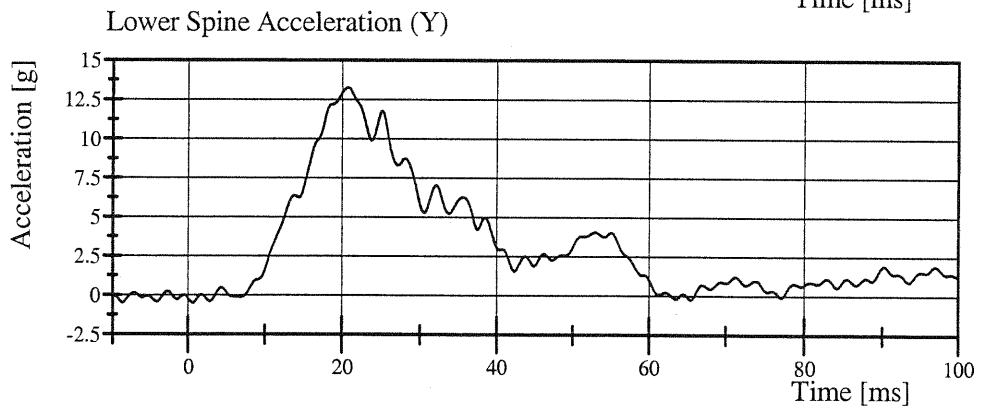
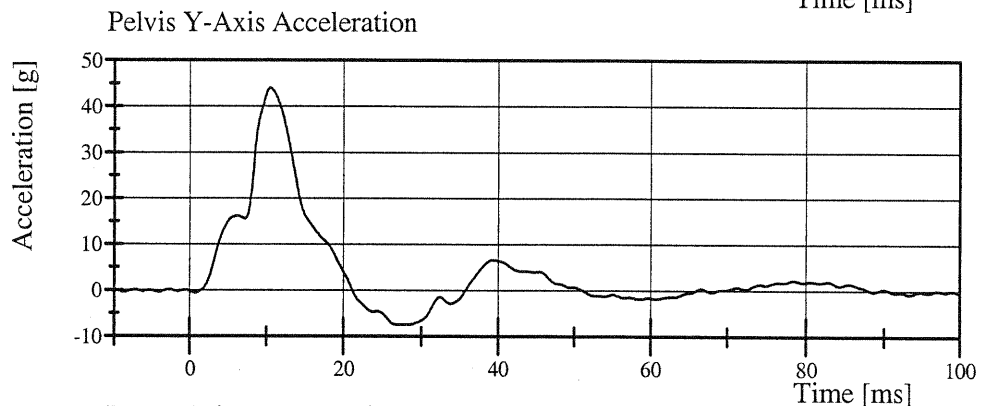
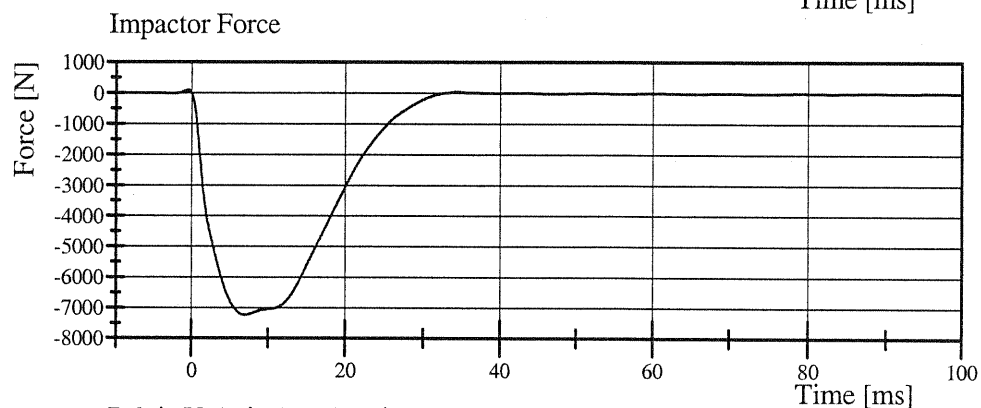
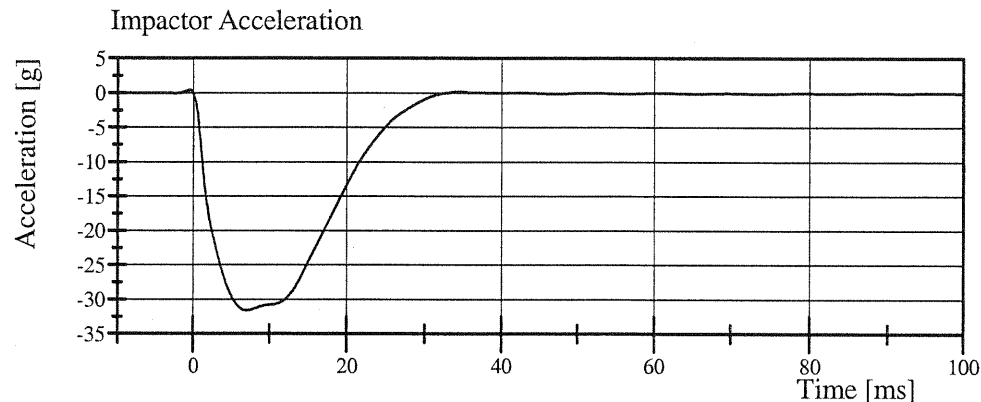
Ron Stover

Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID ISO 15830-2 Serial No. 016 Certification No. 1-2

Test Date: 6/8/2007



Appendix D

Test Equipment List and Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

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

Potentiometers:

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

Rotation potentiometers:

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

Load cells:

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

Neck load cells:

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

Tibia load cells:

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

Sign Convention (Continued)
SAE J211 MAR95

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

Frequency Response Classes
SAE J211 MAR95

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

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

Channel Report Test Number 070712

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	DAS Flip	Positive Polarity	Assembly
1	Trig D1	10ZERO00000VO0A	EVENT		1 Logic	+	Bipolar	
2	P49302	16SILBFR0000ACXA	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME (#1)	400	g	+	Forward	
3	P49336	16SILBFR0000ACYA	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#1)	1000	g	-	Leftward	
4	P49566	16SILBFR0000ACZA	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME (#1)	400	g	-	Upward	
5	P47386	16SILBRE0000ACXA	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME (#2)	400	g	+	Forward	
6	P54843	16SILBRE0000ACYA	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME (#2)	1000	g	-	Leftward	
7	P47556	16SILBRE0000ACZA	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME (#2)	400	g	-	Upward	
8	P54573	18FORA000000ACXA	REAR FLOOR PAN ABOVE AXLE (X) ACCELERATION VS TIME (#3)	1000	g	+	Forward	
9	P54566	18FORA000000ACYA	REAR FLOOR PAN ABOVE AXLE (Y) ACCELERATION VS TIME (#3)	1000	g	+	Rightward	
10	P54574	18FORA000000ACZA	REAR FLOOR PAN ABOVE AXLE (Z) ACCELERATION VS TIME (#3)	1000	g	-	Upward	
11	P50277	14SILBFR0000ACYA	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME (#5)	1000	g	+	Rightward	
12	P50578	14SILBRE0000ACYA	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME (#4)	1000	g	+	Rightward	
13	P47508	16VEHCRE0000ACYA	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME (#7)	1500	g	+	Rightward	
14	P45609	11APILLO0000ACYA	LEFT LOWER A-POST (Y) ACCELERATION VS TIME (#14)	1500	g	-	Leftward	
15	p54561	11APILMI0000ACYA	LEFT MID A-POST (Y) ACCELERATION VS TIME (#15)	1500	g	-	Leftward	
16	P46801	14BPILLO0000ACYA	LEFT LOWER B-POST (Y) ACCELERATION VS TIME (#12)	1500	g	-	Leftward	
17	P48537	14BPILMI0000ACYA	LEFT MID B-POST (Y) ACCELERATION VS TIME (#13)	1500	g	-	Leftward	
18	P54813	11SETRFR0000ACYA	LEFT FRONT SEAT TRACK (Y) ACCELERATION VS TIME (#16) - align with h-point	1500	g	-	Leftward	
19	P54820	14SETRLERE00ACYA	LEFT REAR SEAT TRACK (Y) ACCELERATION VS TIME (#17)	1500	g	-	Leftward	
20	P40578	10VEHCCG0000ACXA	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME (#18)	1000	g	+	Forward	
21	P54519	10VEHCCG0000ACYA	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME (#18)	1000	g	-	Leftward	
22	P54433	10VEHCCG0000ACZA	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME (#18)	1000	g	-	Upward	
23	P54532	14DOOR000001ACYA	Vehicle Front Door centerline 430 mm above ground Y acceleration	1500	g	+	Rightward	
24	P54546	14DOOR000002ACYA	Vehicle Front Door mid-rear 430 mm above ground Y acceleration	1500	g	+	Rightward	
25	P54534	14DOOR000003ACYA	Vehicle Front Door upper centerline 685 mm above ground Y acceleration	1500	g	+	Rightward	
26	P54487	16DOOR000002ACYA	Vehicle Rear Door mid-rear 430 mm above ground Y acceleration	1500	g	+	Rightward	
27	P54540	16DOOR000003ACYA	Vehicle Rear Door upper centerline 685 mm above ground Y acceleration	1500	g	+	Rightward	
28	P47730	12ENGNTTP0000ACXA	Top of Engine X acceleration	1000	g	+	Forward	
29	P50852	12ENGNTTP0000ACYA	Top of Engine Y acceleration	1000	g	-	Leftward	
30	P45727	12VEHC000000ACXA	Firewall X acceleration	1000	g	+	Forward	
31	P50799	12VEHC000000ACYA	Firewall Y acceleration	1000	g	-	Leftward	
32	P54421	13ROOF000000ACXA	Right side Roof Rail (in line with impact point) X acceleration	1000	g	+	Forward	
33	P54329	13ROOF000000ACYA	Right side Roof Rail (in line with impact point) Y acceleration	1000	g	-	Leftward	
34	P46616	13SILBFR0000ACYA	Right side sill in-line with impact location Y-axis acceleration	1000	g	+	Rightward	
35	P54768	18DECK000000ACXA	Rear deck behind rear axel X-axis Accel	1000	g	+	Forward	
36	P54422	18DECK000000ACYA	Rear deck behind rear axel Y-axis Accel	1000	g	-	Leftward	
37	P54531	18DECK000000ACZA	Rear deck behind rear axel Z-axis Accel	1000	g	+	Downward	
38	ABFire1	11AIRBMILE00EV0A	DRIV. SIDE AIRBAG IND (IP 30)	5	V	+	Bipolar	
39	Bit.00	11CONT000001VO00	Head contact switch	1	Logic	+	Bipolar	
40	Bit.01	11CONT000002VO00	shoulder contact switch	1	Logic	+	Bipolar	
41	Bit.02	11CONT000003VO00	torso contact switch	1	Logic	+	Bipolar	
42	Bit.03	11CONT000004VO00	leg contact switch	1	Logic	+	Bipolar	
43	68032	K0FBAR010000FOXA	POLE LOAD CELL 1	222400	N	-	Compression force	0-Barrier 201 Pole.001
44	68051	K0FBAR020000FOXA	POLE LOAD CELL 2	222400	N	-	Compression force	0-Barrier 201 Pole.002
45	1220BZY-50K-122067A	K0FBAR030000FOXA	POLE LOAD CELL 3	222400	N	-	Compression force	0-Barrier 201 Pole.003
46	1220BZY-50K-122027A	K0FBAR040000FOXA	POLE LOAD CELL 4	222400	N	-	Compression force	0-Barrier 201 Pole.004
47	1220BZY-50K-122061A	K0FBAR050000FOXA	POLE LOAD CELL 5	222400	N	-	Compression force	0-Barrier 201 Pole.005

Channel Report Test Number 070712

Ref	Transducer ID	ISO Signal Identifier	Description	DAS			
				FScale	Units	Flip	Positive Polarity Assembly
48	1220BZY-50K-114016A	K0FBAR060000FOXA	POLE LOAD CELL 6	222400	N	-	Compression force 0-Barrier 201 Pole.006
49	1220TX-50K-68056A	K0FBAR070000FOXA	POLE LOAD CELL 7	222400	N	-	Compression force 0-Barrier 201 Pole.007
50	1220TX-50K-68022A	K0FBAR080000FOXA	POLE LOAD CELL 8	222400	N	-	Compression force 0-Barrier 201 Pole.008

Command File Test Number 070712

Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
1	11HEADCG00WSACXA	Head X-Axis Acceleration	1000	+	yes	2000
2	11HEADCG00WSACYA	Head Y-Axis Acceleration	1000	+	yes	2000
3	11HEADCG00WSACZA	Head Z-Axis Acceleration	1000	+	yes	2000
3A	11HEADCG00WSACRA	Head Resultant Acceleration	1000			
4	11HEADCG00WSANXA	Head X-Axis Angular Displacement	1000	+	no	50000
5	11HEADCG00WSANYA	Head Y-Axis Angular Displacement	1000	+	no	50000
6	11HEADCG00WSANZA	Head Z-Axis Angular Displacement	1000	+	no	50000
7	11NECKUP00WSFOXA	Upper Neck X-Axis Force	1000	+	yes	10000
8	11NECKUP00WSFOYA	Upper Neck Y-Axis Force	1000	+	yes	10000
9	11NECKUP00WSFOZA	Upper Neck Z-Axis Force	1000	+	yes	12000
10	11NECKUP00WSMOXA	Upper Neck Moment About X Axis	600	+	yes	300
11	11NECKUP00WSMOYA	Upper Neck Moment About Y Axis	600	+	yes	300
12	11NECKUP00WSMOZA	Upper Neck Moment About Z Axis	600	+	yes	200
13	11NECKLO00WSFOXA	Lower Neck X-Axis Force	1000	+	yes	10000
14	11NECKLO00WSFOYA	Lower Neck Y-Axis Force	1000	+	yes	10000
15	11NECKLO00WSFOZA	Lower Neck Z-Axis Force	1000	+	yes	12000
16	11NECKLO00WSMOXA	Lower Neck Moment About X Axis	600	+	yes	300
17	11NECKLO00WSMOYA	Lower Neck Moment About Y Axis	600	+	yes	300
18	11NECKLO00WSMOZA	Lower Neck Moment About Z Axis	600	+	yes	200
19	11SHLDLE00WSFOXA	Shoulder X-Axis Force	600	+	yes	5000
20	11SHLDLE00WSFOYA	Shoulder Y-Axis Force	600	+	yes	10000
21	11SHLDLE00WSFOZA	Shoulder Z-Axis Force	600	+	yes	5000
22	11SHLDLE00WSDSYA	Shoulder Y-Axis Displacement	600	+	yes	90
23	11SHLDLE00WSACXA	Shoulder X-Axis Acceleration	600	+	yes	2000
24	11SHLDLE00WSACYA	Shoulder Y-Axis Acceleration	600	+	yes	2000
25	11SHLDLE00WSACZA	Shoulder Z-Axis Acceleration	600	+	yes	2000
25A	11SHLDLE00WSACRA	Shoulder Resultant Acceleration	600			
26	11THSP0100WSACXA	T1 X-Axis Acceleration	1000	+	yes	2000
27	11THSP0100WSACYA	T1 Y-Axis Acceleration	1000	+	yes	2000
28	11THSP0100WSACZA	T1 Z-Axis Acceleration	1000	+	yes	2000
28A	11THSP0100WSACRA	T1 Resultant Acceleration	1000			
29	11THSP0400WSACXA	T4 X-Axis Acceleration	180	+	yes	2000
30	11THSP0400WSACYA	T4 Y-Axis Acceleration	180	+	yes	2000
31	11THSP0400WSACZA	T4 Z-Axis Acceleration	180	+	yes	2000
31A	11THSP0400WSACRA	T4 Resultant Acceleration	180			
32	11THSP1200WSACXA	T12 X-Axis Acceleration	180	+	yes	2000
33	11THSP1200WSACYA	T12 Y-Axis Acceleration	180	+	yes	2000

Command File Test Number 070712

Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
34	11THSP1200WSACZA	T12 Z-Axis Acceleration	180	+	yes	2000
34A	11THSP1200WSACRA	T12 Resultant Acceleration	180			
35	11TRRILE01WSDSYA	Thorax Rib 1 Y-Axis Displacement	600	+	yes	90
36	11TRRILE01WSACXA	Thorax Rib 1 X-Axis Acceleration	1000	+	yes	2000
37	11TRRILE01WSACYA	Thorax Rib 1 Y-Axis Acceleration	1000	+	yes	2000
38	11TRRILE01WSACZA	Thorax Rib 1 Z-Axis Acceleration	1000	+	yes	2000
38A	11TRRILE01WSACRA	Thorax Rib 1 Resultant Acceleration	1000			
39	11TRRILE02WSDSYA	Thorax Rib 2 Y-Axis Displacement	600	+	yes	90
40	11TRRILE02WSACXA	Thorax Rib 2 X-Axis Acceleration	1000	+	yes	2000
41	11TRRILE02WSACYA	Thorax Rib 2 Y-Axis Acceleration	1000	+	yes	2000
42	11TRRILE02WSACZA	Thorax Rib 2 Z-Axis Acceleration	1000	+	yes	2000
42A	11TRRILE02WSACRA	Thorax Rib 2 Resultant Acceleration	1000			
43	11TRRILE03WSDSYA	Thorax Rib 3 Y-Axis Displacement	600	+	yes	90
44	11TRRILE03WSACXA	Thorax Rib 3 X-Axis Acceleration	1000	+	yes	2000
45	11TRRILE03WSACYA	Thorax Rib 3 Y-Axis Acceleration	1000	+	yes	2000
46	11TRRILE03WSACZA	Thorax Rib 3 Z-Axis Acceleration	1000	+	yes	2000
46A	11TRRILE03WSACRA	Thorax Rib 3 Resultant Acceleration	1000			
47	11ABRILE01WSDSYA	Abdominal Rib 1 Y-Axis Displacement	600	+	yes	90
48	11ABRILE01WSACXA	Abdominal Rib 1 X-Axis Acceleration	1000	+	yes	2000
49	11ABRILE01WSACYA	Abdominal Rib 1 Y-Axis Acceleration	1000	+	yes	2000
50	11ABRILE01WSACZA	Abdominal Rib 1 Z-Axis Acceleration	1000	+	yes	2000
50A	11ABRILE01WSACRA	Abdominal Rib 1 Resultant Acceleration	1000			
51	11ABRILE02WSDSYA	Abdominal Rib 2 Y-Axis Displacement	600	+	yes	90
52	11ABRILE02WSACXA	Abdominal Rib 2 X-Axis Acceleration	1000	+	yes	2000
53	11ABRILE02WSACYA	Abdominal Rib 2 Y-Axis Acceleration	1000	+	yes	2000
54	11ABRILE02WSACZA	Abdominal Rib 2 Z-Axis Acceleration	1000	+	yes	2000
54A	11ABRILE02WSACRA	Abdominal Rib 2 Resultant Acceleration	1000			
55	11LUSP0000WSFOXA	Lumbar X-Axis Force	1000	+	yes	10000
56	11LUSP0000WSFOYA	Lumbar Y-Axis Force	1000	+	yes	10000
57	11LUSP0000WSFOZA	Lumbar Z-Axis Force	1000	+	yes	12000
58	11LUSP0000WSMOXA	Lumbar Moment About X Axis	1000	+	yes	300
59	11LUSP0000WSMOYA	Lumbar Moment About Y Axis	1000	+	yes	300
60	11LUSP0000WSMOZA	Lumbar Moment About Z Axis	1000	+	yes	200
61	11PELVCG00WSACXA	Pelvis X-Axis Acceleration	1000	+	yes	2000
62	11PELVCG00WSACYA	Pelvis Y-Axis Acceleration	1000	+	yes	2000
63	11PELVCG00WSACZA	Pelvis Z-Axis Acceleration	1000	+	yes	2000
63A	11PELVCG00WSACRA	Pelvis Resultant Acceleration	1000			

Command File Test Number 070712

Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
64	11SACRLE00WSFOXA	Sacro-Iliac Left X-Axis Force	1000	+	yes	6000
65	11SACRLE00WSFOYA	Sacro-Iliac Left Y-Axis Force	1000	+	yes	12000
66	11SACRLE00WSFOZA	Sacro-Iliac Left Z-Axis Force	1000	+	yes	6000
67	11SACRLE00WSMOXA	Sacro-Iliac Left Moment About X Axis	1000	+	yes	1000
68	11SACRLE00WSMOYA	Sacro-Iliac Left Moment About Y Axis	1000	+	yes	400
69	11SACRLE00WSMOZA	Sacro-Iliac Left Moment About Z Axis	1000	+	yes	400
70	11SACRRI00WSFOXA	Sacro-Iliac Right X-Axis Force	1000	+	yes	6000
71	11SACRRI00WSFOYA	Sacro-Iliac Right Y-Axis Force	1000	+	yes	12000
72	11SACRRI00WSFOZA	Sacro-Iliac Right Z-Axis Force	1000	+	yes	6000
73	11SACRRI00WSMOXA	Sacro-Iliac Right Moment About X Axis	1000	+	yes	1000
74	11SACRRI00WSMOYA	Sacro-Iliac Right Moment About Y Axis	1000	+	yes	400
75	11SACRRI00WSMOZA	Sacro-Iliac Right Moment About Z Axis	1000	+	yes	400
76	11PUBC0000WSFOYA	Pubic Y-Axis Force	1000	+	yes	12000
77	11FEMRLL00WSFOXA	Left Femur X-Axis Force	600	+	yes	10000
78	11FEMRLL00WSFOYA	Left Femur Y-Axis Force	600	+	yes	25000
79	11FEMRLL00WSFOZA	Left Femur Z-Axis Force	600	+	yes	10000
80	11FEMRLEMIWSFOXA	Left Mid Femur X-Axis Force	600	+	yes	15000
81	11FEMRLEMIWSFOYA	Left Mid Femur Y-Axis Force	600	+	yes	15000
82	11FEMRLEMIWSFOZA	Left Mid Femur Z-Axis Force	600	+	yes	15000
83	11FEMRLEMIWSMOXA	Left Mid Femur Moment About X Axis	600	+	yes	350
84	11FEMRLEMIWSMOYA	Left Mid Femur Moment About Y Axis	600	+	yes	350
85	11FEMRLEMIWSMOZA	Left Mid Femur Moment About Z Axis	600	+	yes	300
86	11KNEERIOUWSFOYA	Left Knee Outboard Y-Axis Force	600	+	yes	20000
87	11FEMRRIMIWSFOXA	Right Mid Femur X-Axis Force	600	+	yes	15000
88	11FEMRRIMIWSFOYA	Right Mid Femur Y-Axis Force	600	+	yes	15000
89	11FEMRRIMIWSFOZA	Right Mid Femur Z-Axis Force	600	+	yes	15000
90	11FEMRRIMIWSMOXA	Right Mid Femur Moment About X Axis	600	+	yes	350
91	11FEMRRIMIWSMOYA	Right Mid Femur Moment About Y Axis	600	+	yes	350
92	11FEMRRIMIWSMOZA	Right Mid Femur Moment About Z Axis	600	+	yes	300
93	16SILBFR0000ACXA	Right Side Sill at Front Seat X-Axis Acceleration	60	+	yes	400
93A	16SILBFR0000VEXC	Right Side Sill at Front Seat X-Axis Velocity	180			
93B	16SILBFR0000DCXC	Right Side Sill at Front Seat X-Axis Displacement	180			
94	16SILBFR0000ACYA	Right Side Sill at Front Seat Y-Axis Acceleration	60	+	yes	1000
94A	16SILBFR0000VEYC	Right Side Sill at Front Seat Y-Axis Velocity	180			
94B	16SILBFR0000DCYC	Right Side Sill at Front Seat Y-Axis Displacement	180			
95	16SILBFR0000ACZA	Right Side Sill at Front Seat Z-Axis Acceleration	60	+	yes	400
95A	16SILBFR0000ACRA	Right Side Sill at Front Seat Resultant Acceleration	60			

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
96	16SILBRE0000ACXA	Right Side Sill at Rear Seat X-Axis Acceleration	60 +		yes	400
96A	16SILBRE0000VEXC	Right Side Sill at Rear Seat X-Axis Velocity	180			
96B	16SILBRE0000DCXC	Right Side Sill at Rear Seat X-Axis Displacement	180			
97	16SILBRE0000ACYA	Right Side Sill at Rear Seat Y-Axis Acceleration	60 +		yes	1000
97A	16SILBRE0000VEYC	Right Side Sill at Rear Seat Y-Axis Velocity	180			
97B	16SILBRE0000DCYC	Right Side Sill at Rear Seat Y-Axis Displacement	180			
98	16SILBRE0000ACZA	Right Side Sill at Rear Seat Z-Axis Acceleration	60 +		yes	400
98A	16SILBRE0000ACRA	Right Side Sill at Rear Seat Resultant Acceleration	60			
99	18FORA000000ACXA	Rear Floorpan Above Axle X-Axis Acceleration	60 +		yes	1000
100	18FORA000000ACYA	Rear Floorpan Above Axle Y-Axis Acceleration	60 +		yes	1000
101	18FORA000000ACZA	Rear Floorpan Above Axle Z-Axis Acceleration	60 +		yes	1000
101A	18FORA000000ACRA	Rear Floorpan Above Axle Resultant Acceleration	60			
102	14SILBFR0000ACYA	Left Side Sill at Front Seat Y-Axis Acceleration	60 +		yes	1000
102A	14SILBFR0000VEYC	Left Side Sill at Front Seat Y-Axis Velocity	180			
102B	14SILBFR0000DCYC	Left Side Sill at Front Seat Y-Axis Displacement	180			
103	14SILBRE0000ACYA	Left Side Sill at Rear Seat Y-Axis Acceleration	60 +		yes	1000
103A	14SILBRE0000VEYC	Left Side Sill at Rear Seat Y-Axis Velocity	180			
103B	14SILBRE0000DCYC	Left Side Sill at Rear Seat Y-Axis Displacement	180			
104	16VEHCRE0000ACYA	Right Rear Occupant Compartment Y-Axis Acceleration	60 +		yes	1500
105	11APILLO0000ACYA	Left Lower A-Post Y-Axis Acceleration	60 +		yes	1500
106	11APILMI0000ACYA	Left Mid A-Post Y-Axis Acceleration	60 +		yes	1500
107	14BPILLO0000ACYA	Left Lower B-Post Y-Axis Acceleration	60 +		yes	1500
108	14BPILMI0000ACYA	Left Mid B-Post Y-Axis Acceleration	60 +		yes	1500
109	11SETRFR0000ACYA	Left Front Seat Track Y-Axis Acceleration	60 +		yes	1500
110	14SETRLERE00ACYA	Left Rear Seat Track Y-Axis Acceleration	60 +		yes	1500
111	10VEHCCG0000ACXA	Vehicle Center of Gravity X-Axis Acceleration	60 +		yes	1000
112	10VEHCCG0000ACYA	Vehicle Center of Gravity Y-Axis Acceleration	60 +		yes	1000
113	10VEHCCG0000ACZA	Vehicle Center of Gravity Z-Axis Acceleration	60 +		yes	1000
113A	10VEHCCG0000ACRA	Vehicle Center of Gravity Resultant Acceleration	60			
114	14DOOR000001ACYA	Vehicle Front Door Centerline 430 mm Above Ground Y-Axis Acceleration	60 +		yes	1500
115	14DOOR000002ACYA	Vehicle Front Door Mid-Rear 430 mm Above Ground Y-Axis Acceleration	60 +		yes	1500
116	14DOOR000003ACYA	Vehicle Front Door Upper Centerline 685 mm Above Ground Y-Axis Acceleration	60 +		yes	1500
117	16DOOR000002ACYA	Vehicle Rear Door Mid-Rear 430 mm Above Ground Y-Axis Acceleration	60 +		yes	1500
118	16DOOR000003ACYA	Vehicle Rear Door Upper Centerline 685 mm Above Ground Y-Axis Acceleration	60 +		yes	1500
119	12ENGNTPO000ACXA	Top of Engine X-Axis Acceleration	60 +		yes	1000
120	12ENGNTPO000ACYA	Top of Engine Y-Axis Acceleration	60 +		yes	1000
121	12VEHC000000ACXA	Firewall X-Axis Acceleration	60 +		yes	1000

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Channel	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
122	12VEHC000000ACYA	Firewall Y-Axis Acceleration	60	+	yes	1000
123	13ROOF000000ACXA	Right Side Roof Rail (in line with impact point) X-Axis Acceleration	60	+	yes	1000
124	13ROOF000000ACYA	Right Side Roof Rail (in line with impact point) Y-Axis Acceleration	60	+	yes	1000
125	13SILBFR00000ACYA	Right Side Sill (in-line with impact location) Y-Axis Acceleration	60	+	yes	1000
126	18DECK000000ACXA	Rear Deck Behind Rear Axle X-Axis Acceleration	60	+	yes	1000
127	18DECK000000ACYA	Rear Deck Behind Rear Axle Y-Axis Acceleration	60	+	yes	1000
128	18DECK000000ACZA	Rear Deck Behind Rear Axle Z-Axis Acceleration	60	+	yes	1000
128A	18DECK000000ACRA	Rear Deck Behind Rear Axle Resultant Acceleration	60			
129	11AIRBMILE00EV0A	Driver Side Airbag Inductor	1000	+	no	5
130	11CONT000001VO00	Head Contact Switch	0	+	no	1
131	11CONT000002VO00	Shoulder Contact Switch	0	+	no	1
132	11CONT000003VO00	Torso Contact Switch	0	+	no	1
133	11CONT000004VO00	Left Contact Switch	0	+	no	1
134	K0FBAR010000FOXA	Pole Load Cell 1	60	+	yes	222400
135	K0FBAR020000FOXA	Pole Load Cell 2	60	+	yes	222400
136	K0FBAR030000FOXA	Pole Load Cell 3	60	+	yes	222400
137	K0FBAR040000FOXA	Pole Load Cell 4	60	+	yes	222400
138	K0FBAR050000FOXA	Pole Load Cell 5	60	+	yes	222400
139	K0FBAR060000FOXA	Pole Load Cell 6	60	+	yes	222400
140	K0FBAR070000FOXA	Pole Load Cell 7	60	+	yes	222400
141	K0FBAR080000FOXA	Pole Load Cell 8	60	+	yes	222400

2005 SUBARU FORESTER LEFT SIDE FMVSS 214 POLE IMPACT AT 32 KPH

