

**Vehicle Research and Test Center
Left Crabbed Moving Barrier Impact
WorldSID
2011 Cadillac CTS
TRC Inc. Test Number: 120920**

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**Prepared For
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TRC TEST NUMBER: 120920

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Section 1

Purpose and Test Procedure

Purpose

This moving deformable barrier side impact test is part of Federal Motor Vehicle Safety Standard 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 refine the seating procedure for the 50th male and 5th female WorldSID dummies and to begin to evaluate the performance of the post-FMVSS 214 fleet. The test was conducted in accordance with the National Highway Traffic Safety Administration's modified test procedures FMVSS 214/NCAP side impact moving deformable barrier (January, 2010) along with VRTC seating procedure for the WorldSID dummies.

Section 2

Side Impact Test Results

Summary of Side Impact Test

A 2011 Cadillac CTS was impacted on the left side by a crabbed moving deformable barrier, at a velocity of 61.0 km/h (37.9 mph). The target vehicle was stationary and was positioned at an angle of 63.5° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on September 20, 2012. Pre-test and post-test photographs of the test vehicle, the moving barrier, and the side impact dummies (WorldSID) are included in Appendix A.

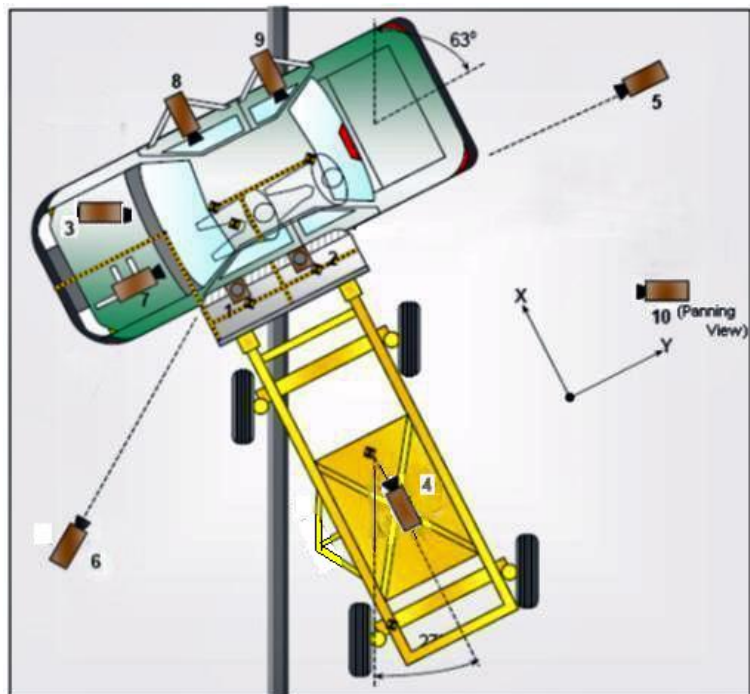
One restrained Side Impact Dummy, (WorldSID) S/N 016, was placed in the driver (Position #1) designated seating position and one restrained Side Impact Dummy, (WorldSID) S/N DG 236, was placed in the left rear passenger (Position #4) designated seating position according to the instructions specified in the VRTC WorldSID Seating Procedures. The WorldSID's were calibrated prior to this test. The side impact test was documented by one (1) real-time camera and nine (9) high-speed digital cameras. Camera locations and other pertinent camera information are included in this report.

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

The WorldSID's instrumentation is detailed in Table 4. The 50th male and 5th female WorldSID dummies each had a chest band recording rib movement and each contained 2D IRTAC data channels. The results of the chest band can be found in Appendix E. One Hundred Seventy (170) dummy channels of acceleration, force, moment, and displacement data were collected for this test. Eighty Eight (86) chest band channels were recorded.

A summary of the side impact dummies (WorldSID) configuration and verification test data can be found in Appendix C. A total of three hundred and fifteen (315) channels of data were recorded. Appendix B contains the vehicle, barrier, and dummy response data traces.

Test Results Summary



	Front WorldSID (#16)	Left Rear WorldSID (#236)
HIC36 (g) CFC 1000	100	192
Upper Rib Deflection (mm) CFC 600	See Table 4	See Table 4
Lower Rib Deflection (mm) CFC 600	See Table 4	See Table 4
Lower Spine Resultant (g) CFC 180	39.1 g	65.1 g
Pubic Symphysis Force (N) CFC 600	-851.1 N	-1026.6 N

	2011 Cadillac CTS
Vehicle Test Weight	1914.8 kg (lbs)
Impact Point (Horizontal) rearward of front axle	495 mm
Impact Angle	63.5
Maximum Crush	169 mm Level 2
Impact Speed	61.0 km/h

Data Acquisition Explanations

The Driver Dummy Lumbar Spine z-axis torque data channel recorded questionable data throughout the event.

The Left Lower A Post y-axis acceleration data channel exceeded the full scale at approximately 37 milliseconds and recorded no valid data thereafter.

The Rear Floor Pan Above Axle z-axis acceleration data channel recorded questionable data throughout the event.

The Vehicle at EDR Roll Rate angular rate gyro data channel exceeded the full scale at approximately 34 milliseconds.

The Vehicle at EDR Yaw Rate angular rate gyro data channel exceeded the full scale at approximately 34 milliseconds.

The Rear Deck Yaw Rate angular rate gyro data channel exceeded the full scale at approximately 11 milliseconds.

The Chest Band gage 34 data channel recorded no data throughout the event.

Section 3

Summary of Test Results

Table 1 General Test Vehicle Parameter Data

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

TEST VEHICLE INFORMATION

Make	Cadillac
Model	CTS
Body Style	Pass
VIN	1G6DA5EY7B0166175
Color	Black
Odometer Reading	151
Transmission	Automatic
Final Drive	Rear
Number of Cylinders	6
Engine Displacement	3.0
Engine Placement	V
Air Conditioning	Yes
Power Windows	Yes
Power Seats	Yes
Cruise Control	Yes
Tinted Glass	Yes
Keyless Entry	Yes

TEST VEHICLE OPTIONS

Driver Front Airbag	Yes ¹
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
4-Door	Yes
AM/FM Radio	Yes
CD Player	Yes
Sun Roof	No
Telescoping Steering Wheel/Column	Yes

DATA FROM CERTIFICATION LABEL

Manufactured By	General Motors
Date of Manufacture	5/11

GVWR (kg)	2176
GAWR Front (kg)	1015
GAWR Rear (kg)	1161

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	N/A	Bench	
Number Of Occupants	2	0	3	5
Capacity Wt. (VCW) (kg)				404

¹ Airbags were disabled prior to the test performance

Table 1 General Test Vehicle Parameter Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

TEST VEHICLE WEIGHTS

	Units	As Delivered (Axle)			As Tested (ATW) (Axle)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	454.4	413.6		502	492.6	
Right	kg	463.8	400.2		466.8	453.4	
Ratio	%	53.0	47.0		50.6	49.4	
Totals	kg	918.2	813.8	1732	968.8	946	1914.8

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Total Delivered Weight	kg	1732
Weight of WorldSID ATD	kg	125
Rated Cargo/Luggage Weight (RCLW)	kg	64.00
Calculated Vehicle Target Weight (TVTW)	kg	1921

TEST VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG(aft of front axle)
As Delivered	mm	720	720	735	738	1358
As Tested	mm	707	707	713	717	1428
Fully Loaded	mm	710	717	708	718	1457

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2890
Total Vehicle Length at Left Side	mm	4610
Total Vehicle Length at Centerline	mm	4830
Total Vehicle Length at Right Side	mm	4610
Weight of Ballast	kg	0
Amount of Stoddard Solvent in Fuel Tank	liters	0.0

TEST VEHICLE IMPACT ACCURACY DATA

Measurement Description	Units	Intended	Actual	Difference
Impact Reference Line From Front Axle	mm	499	495	4 Left
Impact Point Angle	Degrees	63	63.5	0.5

Table 1 General Test Vehicle Parameter Data, Continued

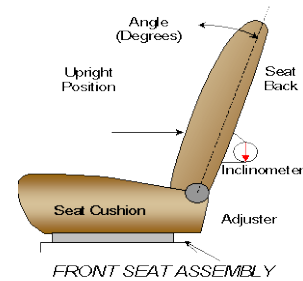
Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

WORLD SID RIDING POSITION

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

Driver seat back angle: The back was adjusted to 9.5° as measured at torso angle with Oscar.

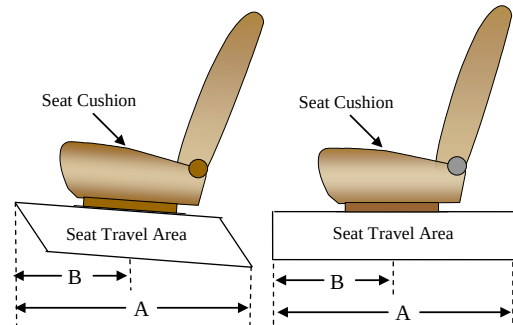


SEAT FORE/AFT POSITIONS

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

SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	103.5 of 247 mm	20 mm rear of mid
Rear Seat	N/A	N/A



SEAT BELT UPPER ANCHORAGE

	Total No. of Positions	Placed in Position No.
Driver Seat	5	1
Rear Seat	N/A	N/A

Position number one is the uppermost adjustment position.

Table 1 General Test Vehicle Parameter Data, Continued

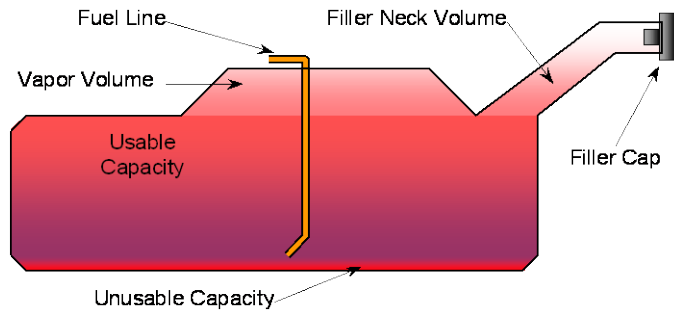
Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

FUEL TANK CAPACITY

	Liters
Usable Capacity of "Standard Tank"	68.1
Usable Capacity used for FMVSS 301	62.7-64.0
Actual Amount of Solvent used	0.0

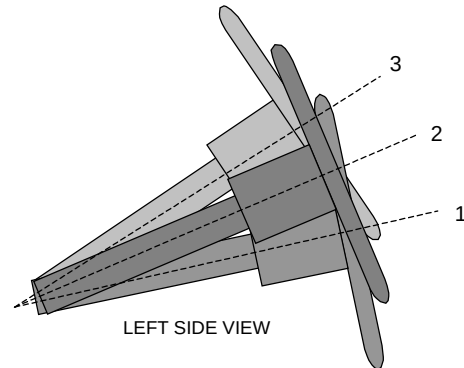
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies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

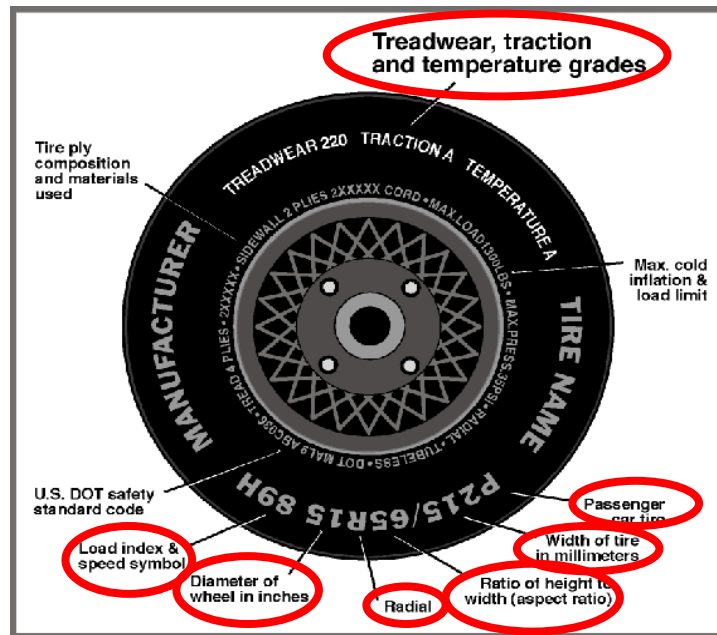
Steering Column Tilt Position	Degrees
Lowermost Position	N/A
Geometric Center Position	N/A
Uppermost Position	N/A

Steering Column Telescoping Position	(mm)
Full In Position	N/A
Full Out Position	N/A
Test Position	N/A

Table 2 Test Vehicle Tire Information

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300	300
Cold / Test Pressure (kPa)	240	240
Recommended Tire Size	P235/55R17	P235/55R17
Tire Size on Vehicle	P235/55R17	P235/55R17
Tire Manufacturer	Michelin	Michelin
Tire Name	Pilot HX MXM4	Pilot HX MXM4
Radial	Yes	Yes
Wheel Diameter	17	17
Load Index & Speed Symbol	98H	98H
Tread wear	300	300
Traction Grade	A	A
Temperature Grade	A	A

Table 3 Post-Test Observations

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Front Seat WorldSID	Left Rear Seat WorldSID
Dummy Type / Serial No.	WorldSID / 16	WorldSID / 236
Head Contact	SCAB, B Pillar, Headliner	SCAB, Headliner
Upper Torso Contact	Door Panel	Door panel
Lower Torso Contact	N/A	N/A
Left Knee Contact	Door Panel	Door Panel
Right Knee Contact	N/A	N/A

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

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

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No
Sill Separation	No
Windshield Damage	None
Window Damage	Broken
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Left Front (Driver) Occupant Location 01		Left Rear (Passenger) Occupant Location 04	
	Installed	Operation	Installed	Operation
Front Airbag	Yes	No ¹	N/A	N/A
Torso Airbag	N/A	N/A	N/A	N/A
Head Airbag	N/A	N/A	N/A	N/A
Curtain Airbag	Yes	Yes	Yes	Yes
Seat Belt Pre-tensioner	N/A	N/A	N/A	N/A
Seat Belt Load Limiter	N/A	N/A	N/A	N/A

¹ The driver front airbag was disabled for this test.

Section 4

Occupant, Vehicle and MDB Information

Table 4 WorldSID Instrumentation Data

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Driver Dummy Serial Number: 16

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Head Acceleration (g)	X	8.2	168.9	-12.6	54.5
	Y	36.3	36.2	-3.9	163.7
	Z	16.4	30.4	-6.8	82.8
	R	36.6	36.2	---	---
Head Rotational Acceleration (rad/sec ²)	X	3873.7	21.3	-2288.1	32.7
	Y	1135.1	68.0	-1272.0	36.4
	Z	1495.6	66.9	-2109.4	32.7
Head Angular Velocity (°/sec)	X	558.3	46.2	-796.1	126.5
	Y	567.3	163.3	-1013.2	61.2
	Z	869.1	90.6	-1275.6	49.1
Upper Neck Force (N)	X	83.7	176.1	-331.6	53.4
	Y	253.9	31.3	-76.9	308.9
	Z	449.9	29.9	-289.5	82.2
Upper Neck Moment (N-m)	X	12.2	109.9	-54.2	36.3
	Y	29.5	81.9	-14.7	49.5
	Z	20.5	63.1	-8.3	119.7
Lower Neck Force (N)	X	139.7	176.1	-208.8	115.7
	Y	421.2	33.6	-223.7	17.3
	Z	681.9	30.6	-437.0	78.4
Lower Neck Moment (N-m)	X	25.3	67.1	-18.4	307.3
	Y	63.3	74.5	-16.7	177.4
	Z	20.9	65.1	-10.2	118.4
Shoulder Acceleration (g)	X	49.7	22.8	-38.2	26.0
	Y	215.5	19.6	-78.2	23.8
	Z	73.6	22.0	-121.2	20.2
	R	216.3	19.6	---	---
Shoulder Force (N)	X	334.9	33.3	-194.1	77.7
	Y	170.9	108.9	-2259.3	39.1
	Z	135.5	55.3	-141.3	22.0
Shoulder Displacement (mm)	Y	1.9	139.6	-58.3	43.3

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Driver Dummy Serial Number: 16

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
T1 Acceleration (g)	X	3.6	76.3	-8.6	45.2
	Y	41.9	25.4	-8.0	17.8
	Z	4.4	76.0	-13.4	36.1
	R	42.2	25.4	---	---
Thorax Rib 1 Acceleration (g)	X	35.4	76.8	-35.5	33.8
	Y	165.2	22.7	-42.6	29.1
	Z	44.6	22.9	-21.4	22.5
	R	166.7	22.8	---	---
Thorax Rib 1 Displacement (mm)	Y	4.1	73.6	-33.0	43.1
Thorax Rib 2 Acceleration (g)	X	142.9	15.8	-136.8	17.1
	Y	219.9	17.1	-177.8	20.1
	Z	64.3	23.6	-54.0	15.9
	R	263.2	17.1	---	---
Thorax Rib 2 IRTAC Compression. (mm)	Y	16.3	29.3	-2.1	261.4
Thorax Rib 2 Rotational Pot (deg)	Z	9.5	48.8	---	123.7
Thorax Rib 2 IRTAC Deflection (mm)	X	17.5	49.9	---	123.7
Thorax Rib 2 IRTAC Deflection (mm)	Y	16.9	29.3	-2.1	261.4
Thorax Rib 3 Acceleration (g)	X	224.1	15.4	-191.3	18.1
	Y	289.3	16.0	-104.2	17.2
	Z	72.4	19.2	-59.3	15.3
	R	297.1	15.5	---	---
Thorax Rib 3 IRTAC Compression. (mm)	Y	16.2	26.6	-1.2	15.1
Thorax Rib 3 Rotational Pot (deg)	Z	11.5	47.0	---	15.2
Thorax Rib 3 IRTAC Deflection (mm)	X	21.3	50.4	---	14.0
Thorax Rib 3 IRTAC Deflection (mm)	Y	17.6	26.6	-1.2	15.1
Abdominal Rib 1 Acceleration (g)	X	285.9	14.4	-126.3	16.1
	Y	337.2	15.5	-134.4	18.3
	Z	63.4	23.0	-93.0	15.0
	R	404.0	15.3	---	---
Abdominal Rib 1 IRTAC Compression. (mm)	Y	15.9	22.3	-1.3	14.8
Abdominal Rib 1 Rotational Pot (deg)	Z	13.0	47.0	---	-7.0
Abdominal Rib 1 IRTAC Deflection (mm)	X	23.3	49.3	---	-7.0

¹ No Negative Value

² No Positive Value

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Driver Dummy Serial Number: 16

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Abdominal Rib 1 IRTRAC Deflection (mm)	Y	17.9	22.4	-1.3	14.8
Abdominal Rib 2 Acceleration (g)	X	379.8	14.3	-209.5	16.2
	Y	360.9	16.4	-245.5	17.7
	Z	102.1	16.5	-115.8	14.7
	R	451.7	14.3	---	---
Abdominal Rib 2 Displacement (mm)	Y	0.7	14.7	-18.9	29.2
T4 Acceleration (g)	X	2.6	159.4	-6.4	44.7
	Y	33.5	25.7	-7.1	80.0
	Z	12.8	36.0	-5.0	76.3
	R	34.0	25.6	---	---
T12 Acceleration (g)	X	2.9	98.0	-11.2	26.6
	Y	38.1	28.7	-7.0	82.6
	Z	12.5	36.0	-3.9	77.6
	R	39.1	28.7	---	---
Pelvis Acceleration (g)	X	19.2	23.6	-23.7	30.8
	Y	42.7	19.0	-9.5	43.7
	Z	20.8	25.1	-19.8	45.6
	R	42.7	19.0	---	---
Pubic Force (N)	Y	46.9	178.8	-851.1	33.9
Lumbar Force (N)	X	306.5	56.5	-97.9	193.2
	Y	925.7	20.6	-210.1	90.0
	Z	1104.9	42.6	-223.3	18.4
	R	58.0	22.5	-18.5	89.8
Lumbar Moment (N-m)	Y	7.7	19.7	-19.4	56.7
	Z	17.5	20.7	-9.0	272.3
	X	19.6	50.3	-44.5	17.7
	Y	21.4	33.3	-12.3	90.1
Sacro-Iliac Right Moment (N-m)	Z	47.9	19.5	-17.9	98.8
	X	253.1	99.2	-794.5	30.4
	Y	2.3	-13.5	-1988.9	26.3
	Z	403.0	42.5	-306.6	17.6

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Driver Dummy Serial Number: 16

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Sacro-Iliac Left Moment (N-m)	X	11.0	201.8	-97.0	18.1
	Y	37.9	32.5	-5.1	14.6
	Z	49.6	19.2	-16.2	56.0
Sacro-Iliac Left Force (N)	X	64.4	195.1	-728.2	26.1
	Y	49.5	97.0	-2923.9	23.8
	Z	52.0	114.1	-405.2	44.5
Left Femoral Neck Force (N)	X	520.7	40.4	-73.1	124.5
	Y	249.8	17.4	-1283.8	29.9
	Z	224.3	17.9	-1420.8	42.9
Right Femoral Neck Force (N)	X	474.6	42.5	-241.5	25.2
	Y	234.7	59.3	-840.1	42.3
	Z	693.1	40.5	-73.0	17.9

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

Lateral: Leftward

Vertical: Upward

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Left Rear Passenger Dummy Serial Number: DG-236

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Head Acceleration (g)	X	8.6	18.9	-12.3	67.9
	Y	39.1	59.9	-8.5	182.0
	Z	4.6	17.9	-26.8	65.5
	R	43.5	61.9	---	---
Head Rotational Acceleration (rad/sec ²)	X	2463.5	47.5	-2221.0	62.4
	Y	839.8	29.9	-1361.0	18.6
	Z	2812.8	19.1	-1441.9	44.5
Head Angular Velocity (°/sec)	X	1479.1	56.7	-691.4	117.7
	Y	399.7	158.9	-475.2	241.7
	Z	630.0	188.9	-1053.2	231.2
Upper Neck Force (N)	X	125.4	79.9	-37.3	34.2
	Y	13.9	19.0	-749.6	78.1
	Z	137.8	174.4	-1048.6	65.3
Upper Neck Moment (N-m)	X	7.3	142.4	-17.7	62.7
	Y	2.8	141.1	-10.0	69.0
	Z	5.0	263.5	-12.5	199.7
Lower Neck Force (N)	X	115.7	176.8	-177.3	70.3
	Y	638.9	63.7	-115.1	180.2
	Z	128.1	174.3	-1177.2	67.9
Lower Neck Moment (N-m)	X	0.2	0.6	-60.4	78.2
	Y	4.8	302.5	-19.0	181.4
	Z	5.6	266.5	-13.7	198.5
Shoulder Acceleration (g)	X	76.3	36.2	-33.2	48.7
	Y	101.4	40.4	-47.5	58.5
	Z	47.2	35.3	-35.7	38.8
	R	104.8	40.4	---	---
Shoulder Force (N)	X	366.1	65.0	-58.4	112.5
	Y	82.1	109.9	-1189.3	55.4
	Z	141.6	45.0	-186.5	62.5
Shoulder Displacement (mm)	Y	25.2	59.4	-2.1	247.8

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Left Rear Passenger Dummy Serial Number: DG-236

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
T1 Acceleration (g)	X	4.5	90.4	-8.3	57.4
	Y	51.6	58.0	-6.6	169.4
	Z	8.0	62.4	-2.1	38.3
	R	52.6	57.9	---	---
Thorax Rib 1 Acceleration (g)	X	30.5	46.3	-82.0	43.9
	Y	91.4	44.0	-32.5	47.7
	Z	30.8	52.0	-22.7	70.6
	R	125.1	44.0	---	---
Thorax Rib 1 IRTRAC Compression (mm)	Y	11.0	58.7	-0.4	249.7
Thorax Rib 1 Rotational Pot (deg)	Z	4.1	91.7	-5.6	56.2
Thorax Rib 1 IRTRAC Deflection (mm)	X	6.2	91.7	-7.4	56.1
Thorax Rib 1 IRTRAC Deflection (mm)	Y	11.3	58.7	-0.3	249.7
Thorax Rib 2 Acceleration (g)	X	21.5	73.1	-30.1	44.8
	Y	61.1	53.6	-12.0	76.3
	Z	28.7	58.6	-40.4	75.8
	R	62.9	53.6	---	---
Thorax Rib 2 IRTRAC Compression (mm)	Y	2.7	58.7	-0.5	76.2
Thorax Rib 2 Rotational Pot (deg)	Z	4.2	87.9	--- ¹	59.1
Thorax Rib 2 IRTRAC Deflection (mm)	X	6.3	87.7	--- ¹	59.1
Thorax Rib 2 IRTRAC Deflection (mm)	Y	2.8	58.7	-0.4	76.2
Thorax Rib 3 Acceleration (g)	X	133.2	46.9	-63.1	42.7
	Y	139.9	51.1	-89.7	47.8
	Z	79.0	48.8	-35.4	76.3
	R	161.1	47.0	---	---
Thorax Rib 3 IRTRAC Compression (mm)	Y	14.5	57.7	-0.2	8.9
Thorax Rib 3 Rotational Pot (deg)	Z	1.6	93.1	-2.8	56.0
Thorax Rib 3 IRTRAC Deflection (mm)	X	2.4	93.1	-3.5	55.9
Thorax Rib 3 IRTRAC Deflection (mm)	Y	14.6	57.7	-0.2	8.9
Abdominal Rib 1 Acceleration (g)	X	157.5	46.6	-114.4	39.3
	Y	144.8	51.1	-64.6	43.6
	Z	131.6	42.0	-117.5	72.2
	R	160.6	46.6	---	---
Abdominal Rib 1 IRTRAC Compression (mm)	Y	21.0	56.9	-0.2	23.0

¹ No Negative Value

Table 4 WorldSID Instrumentation Data, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Left Rear Passenger Dummy Serial Number: DG-236

Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
Abdominal Rib 1 Rotational Pot (deg)	Z	1.7	93.0	-10.4	57.6
Abdominal Rib 1 IRTRAC Deflection (mm)	X	2.6	93.0	-12.2	57.6
Abdominal Rib 1 IRTRAC Deflection (mm)	Y	22.1	56.9	-0.2	23.0
Abdominal Rib 2 Acceleration (g)	X	69.1	47.3	-105.1	47.7
	Y	275.3	48.0	-116.0	50.5
	Z	103.0	48.7	-45.8	52.4
	R	278.5	48.0	---	---
Abdominal Rib 2 IRTRAC Compression (mm)	Y	18.5	56.2	-0.2	-10.6
Abdominal Rib 2 Rotational Pot (deg)	Z	4.4	70.4	-8.2	55.7
Abdominal Rib 2 IRTRAC Deflection (mm)	X	6.2	70.4	-9.8	55.6
Abdominal Rib 2 IRTRAC Deflection (mm)	Y	19.2	56.2	-0.2	-10.6
T4 Acceleration (g)	X	3.6	89.7	-10.1	56.2
	Y	51.6	57.9	-5.8	173.7
	Z	7.3	79.5	-2.2	42.1
	R	52.5	57.8	---	---
T12 Acceleration (g)	X	6.8	67.4	-17.1	54.6
	Y	63.4	51.4	-5.8	75.8
	Z	6.4	79.7	-3.0	102.2
	R	65.1	51.4	---	---
Pelvis Acceleration (g)	X	4.1	113.8	-22.6	40.9
	Y	55.4	44.3	-7.0	83.6
	Z	13.6	46.5	-19.7	40.6
	R	59.3	44.1	---	---
Pubic Force (N)	Y	30.2	72.9	-1026.6	45.2

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

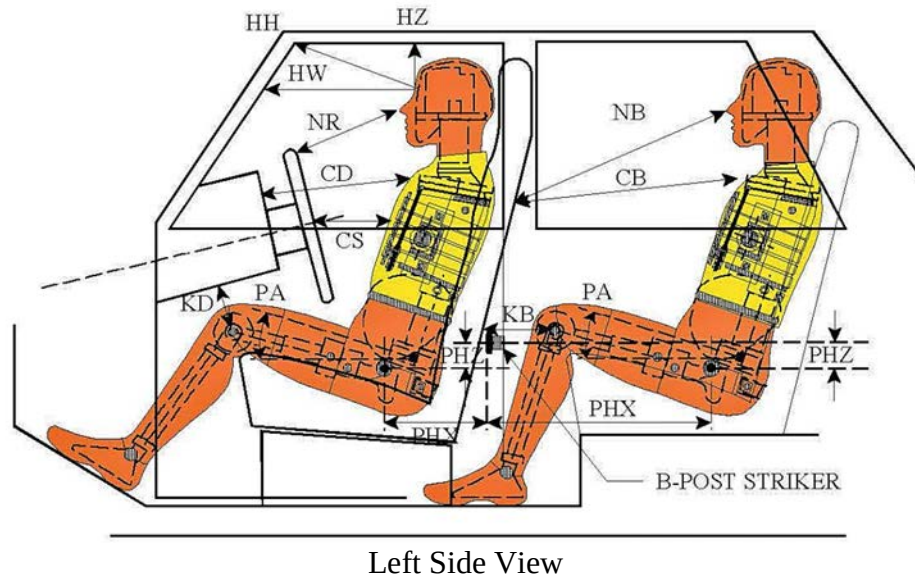
Lateral: Leftward

Vertical: Upward

Figure 1 WorldSID Longitudinal Clearance Dimensions

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



Measurement	Measurement Description	Driver WorldSID #016		Passenger WorldSID #236	
		Length (mm)	Angle	Length (mm)	Angle
HH	Header to Header	444			
HW	Header to Windshield	777			
HZ	Head to Roof Liner	219		262	
NR	Nose to Rim/Seat Back	518			
CD	Chest to Dash/Seat Back	639			
CS	Chest to Steering Wheel	458			
KD(L)/KDA(L)°	Left Knee to Dash/Seat Back	171	20.3		
KD(R)/KDA(R)°	Right Knee to Dash/Seat Back	188	21.4		
PAX°	Pelvic Tilt Angle X		-1.2		1.6
PAY°	Pelvic Tilt Angle Y		1.6		-8.6
PHX	Hip Point to Striker (X-Axis)	122		176	
PHZ	Hip Point to Striker (Z-Axis)	109		224	
HAX°	Head Tilt Angle X		-1.7		-0.4
HAY ¹ °	Head Tilt Angle Y		-1.6		1.5
TAX°	Thorax Tilt Angle X		-0.1		-1.7
TAY°	Thorax Tilt Angle Y		0.3		-0.9

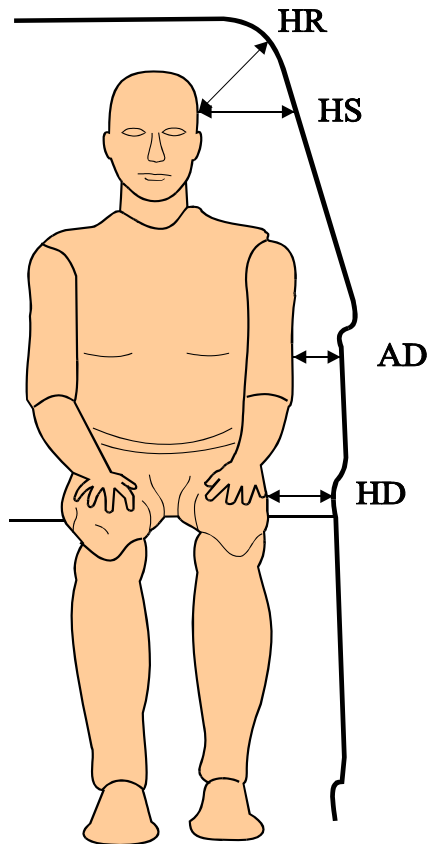
Note: All measurements are in millimeters.

¹NR was measured from bridge of nose

Figure 2 WorldSID Lateral Clearance Dimensions

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



Measurement	Driver WorldSID # 16	Passenger WorldSID # 236
HR	204	243
HS	310	366
AD	Lower: 81 Upper: 124	Lower: 158 Upper: 132
HD	121	136

Note: All measurements are in millimeters.

Table 5 WorldSID Position Relative to Striker

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Location	Driver Dummy Serial Number: 16		Passenger Dummy Serial Number: 236	
	Longitudinal X (mm)	Vertical Z (mm)	Longitudinal X (mm)	Vertical Z (mm)
M_HEAD CG	2234	-667	1382	-585
M_H POINT	2427	-1	1588	-26
M_KNEE	2840	-164	1949	-122
M_ANKLE	3146	111	2092	207
M_RIB 1	2288	-444	1450	-370
M_RIB 2	2328	-369	1480	-311
M_RIB 3	2365	-306	1498	-275
M_RIB 4	2387	-257		
M_RIB 5	2410	-205	1560	-132
M_RIB 6				

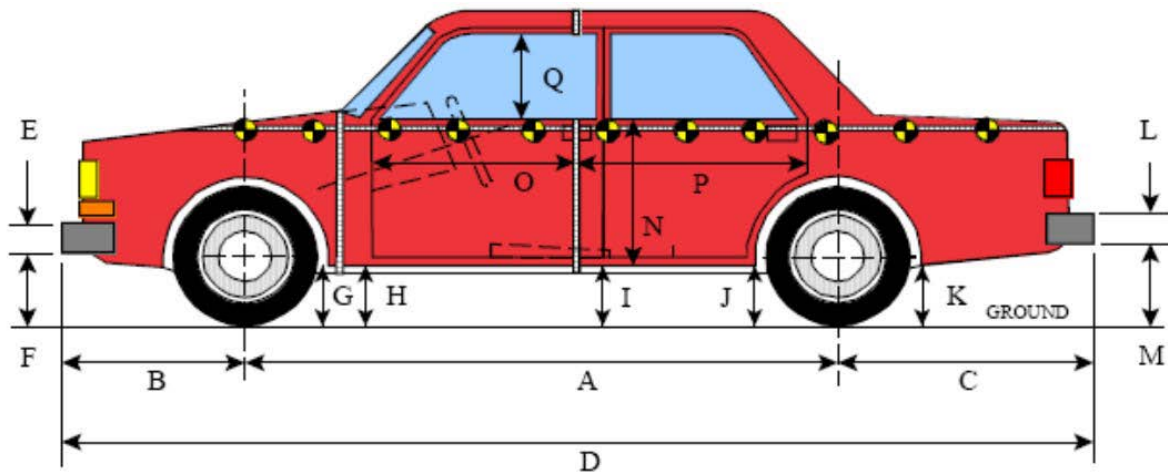
Note: All measurements are in millimeters

Positive values are forward and down relative to the striker.

Figure 3 Vehicle Pre-Test And Post-Test Measurements

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



Left Side View

Note: Measurements were achieved by using a tape measure.

All dimensions are in millimeters.

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2890	2890	2880	10
B	855	855	855	0
C	1085	1085	1085	0
D	4830	4830	4830	0
E	155	155	155	0
F	373	370	404	-34
G	335	332	335	-3
G1	240	236	268	-32
H	253	240	280	-40
I	280	257	295	-38
J1	192	167	201	-34
J2	292	272	300	-28
K	340	308	348	-40
L	152	152	152	0
M	544	512	550	-38
N	752	752	730	22
O	730	730	720	10
P	1472	1472	1386	86
Q	380	380	365	15
R	4610	4610	4630	-20
S	4610	4610	4610	0
T	1320	1320	1238	82

D = Length at centerline

E and L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-pillar

J1 = To Pinch Weld

J2 = To Sill

Table 6 Vehicle Structural Measurements^{1,2}

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

	Elements	Pre-Test
1	Total Length	4830
2	Total Width	1840
3	Bumper Top Height	N/A ³
4	Bumper Bottom Height	N/A ³
5	Longitudinal Member Top Height	N/A ³
6	Longitudinal Member Bottom Height	N/A ³
7	Distance Between Longitudinal Members	N/A ³
7'	Longitudinal Member Width	N/A ³
8	Engine Top Height	N/A ³
9	Engine Bottom Height	N/A ³
10	Engine and Gearbox Width	N/A ³
11	Front Bumper - Engine Distance	N/A ³
12	Front Shock Absorber Fixing Height	N/A ³
13	Bonnet Leading Edge Height	N/A ³
14	Front Shock Absorber Fixing Width	N/A ³
15	Front Bumper - Front Axle Distance	N/A ³
16	Front Axle - A Pillar Distance	N/A ³
17	A Pillar - B Pillar Distance	N/A ³
18	B Pillar - Rear Axle Distance	N/A ³
19	B Pillar - C Pillar Distance	N/A ³
20	Roof Sill Bottom Height	N/A ³
21	Roof Sill Top Height	N/A ³
22	Floor Sill Bottom Height	N/A ³
23	Floor Sill Top Height	N/A ³

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

¹ Taken from INSIA report, “Structural Survey of Cars, Methodology of the Main Resistant Elements in the Car Body”, March 1999.

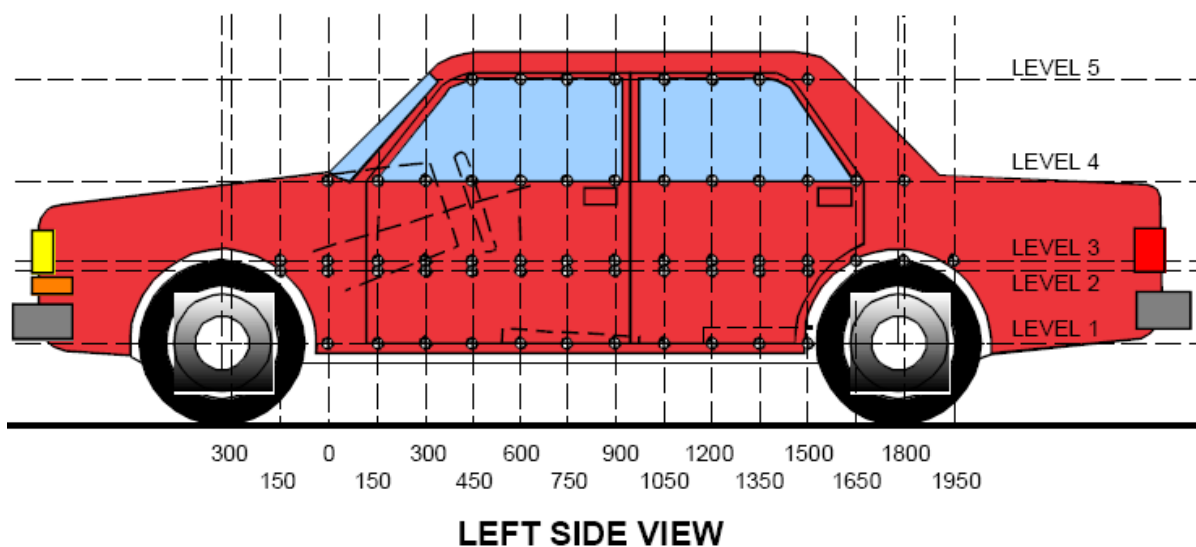
² The vertical measurements from the ground are adjusted based on the test vehicle’s pre-test attitude measurements.

³ Measurement not recorded.

Figure 4 Vehicle Side Measurements

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



MAXIMUM EXTERIOR CRUSH MEASUREMENTS

Level	Measurement Description	Height Above Ground	Maximum Exterior Crush	Distance from Impact
5	Window Top	1404	-10	900
4	Window Sill	937	166	1650
3	Mid Door	668	194	750
2	Occupant H-Point	548	192	1650
1	Side Sill	374	113	900

Note: Measurements were taken using a FARO arm at crush grid zero vertical line.
 Measurements are taken when the vehicle is in the "As Tested" configuration.
 Measurements forward of the vehicle impact reference line are negative.
 All measurements are in mm.

Table 7 Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2011 Cadillac CTS

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1	374	Pre									857	851	854	854	856	861
		Post									851	773	756	753	750	750
		Crush									6	78	98	101	106	111
Level 2	548	Pre								888	865	865	868	870	872	873
		Post								899	846	736	711	703	702	704
		Crush								-11	19	129	157	167	170	169
Level 3	668	Pre							891	870	862	865	869	872	875	876
		Post							909	883	847	789	735	705	695	682
		Crush							-18	-13	15	76	134	167	180	194
Level 4	937	Pre							777	787	797	798	807	815	824	830
		Post							799	808	813	813	800	786	764	738
		Crush							-22	-21	-16	-15	7	29	60	92
Level 5	1404	Pre														
		Post														
		Crush														

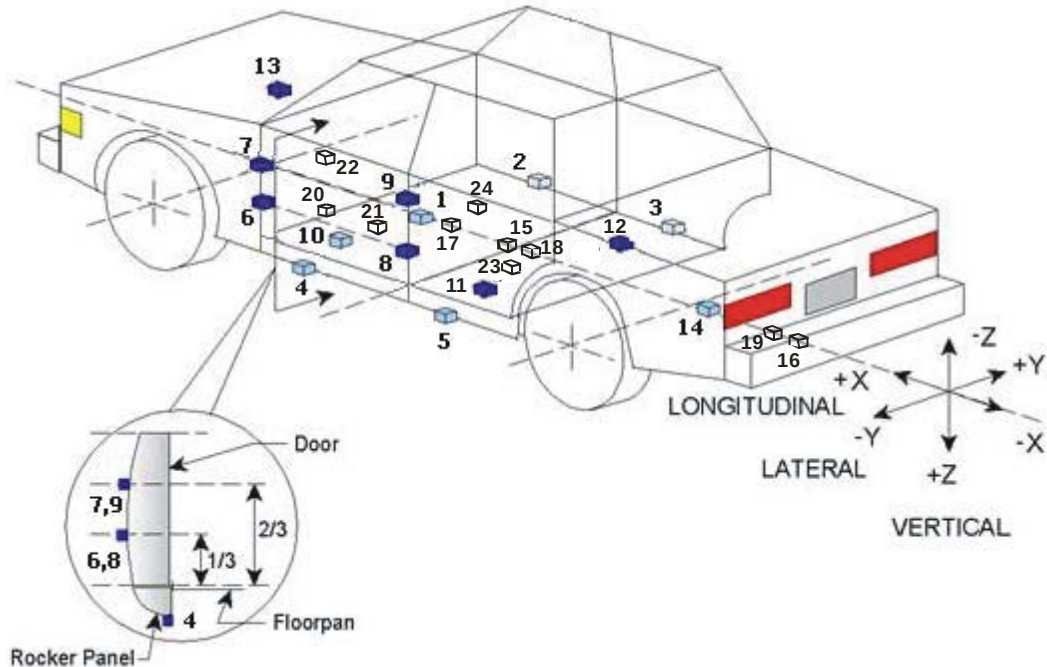
Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1	374	Pre	862	862	860	859	858	856	862	885					
		Post	749	750	755	760	757	756	789	881					
		Crush	113	112	105	99	101	100	73	4					
Level 2	548	Pre	874	875	875	873	872	870	873	896					
		Post	702	689	703	697	689	678	697	824					
		Crush	172	186	172	176	183	192	176	72					
Level 3	668	Pre	877	878	879	877	874	872	871	883	908				
		Post	682	684	709	674	662	657	667	757	883				
		Crush	195	194	170	203	212	215	204	126	25				
Level 4	937	Pre	834	837	840	842	843	843	842	826	837	832	827	821	
		Post	708	704	744	733	689	677	702	801	914	983	820	816	
		Crush	126	133	96	109	154	166	140	25	-77	-151	7	5	
Level 5	1404	Pre	572	580	582	582	581	578	569	554					
		Post	582	581	581	577	575	574	569	553					
		Crush	-10	-1	1	5	6	4	0	1					

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

Figure 5 Test Vehicle Accelerometer Locations and Data Summary

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



- | | |
|-------------------------------------|--------------------------------------|
| 1-Vehicle CG | 13-Engine Block |
| 2-Right Side Sill Front | 14-Rear Floorpan |
| 3-Right Side Sill Rear | 15-Vehicle at EDR ¹ |
| 4-Left Side Sill Front | 16-Rear Deck |
| 5-Left Side Sill Rear | 17-Vehicle CG Gyros |
| 6-Left Side Lower A-Pillar | 18-Vehicle at EDR Gyros ¹ |
| 7-Left Side Middle A-Pillar | 19-Rear Deck Gyros |
| 8-Left Side Lower B-Pillar | 20-Left Front Door Mid Centerline |
| 9-Left Side Middle B-Pillar | 21-Left Front Door Mid Rear |
| 10-Left Front Seat Track | 22-Left Front Door Upper Centerline |
| 11-Left Rear Seat Track | 23-Left Rear Door Mid Rear |
| 12- Right Rear Occupant Compartment | 24-Left Rear Door Upper Centerline |

¹Location of accelerometer may change depending on vehicle EDR location.

Table 8 Test Vehicle Transducer Locations and Data Summary

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Location		Coordinates (mm)			Positive Direction		Negative Direction	
		X	Y	Z	Max	Time (ms)	Max	Time (ms)
1	Vehicle CG	2770	-25	457				
	Longitudinal (g)				1.1	59.0	-6.1	8.4
	Lateral (g)				31.7	7.4	-1.4	185.5
	Vertical (g)				22.5	14.4	-14.7	8.2
	Resultant				34.9	7.7		
2	Right Side Sill Front	3225	700	345				
	Longitudinal (g)				2.5	62.3	-5.0	16.2
	Lateral (g)				25.1	10.6	-1.9	89.5
	Vertical (g)				88.0	49.5	-80.8	61.2
	Resultant				88.8	49.5	0.0	-15.1
3	Right Side Sill Rear	2285	700	347				
	Longitudinal (g)				2.7	62.5	-5.3	16.5
	Lateral (g)				23.1	8.3	-1.5	146.7
	Vertical (g)				3.3	63.6	-6.2	11.5
	Resultant				23.4	8.3	0.0	-17.3
4	Left Side Sill Front	3190	-700	340				
	Lateral (g)				109.6	4.4	-45.1	10.0
5	Left Side Sill Rear	2310	-700	334				
	Lateral (g)				77.8	4.1	-31.9	12.2
6	Left Side Lower A-Pillar	3640	-805	490				
	Lateral (g)				2024.0	55.6	-43.8	9.8
7	Left Side Middle A-Pillar	3620	-805	845				
	Lateral (g)				50.2	3.3	-15.6	29.3
8	Left Side Lower B-Pillar	2505	-850	530				
	Lateral (g)				163.2	2.7	-54.9	11.9
9	Left Side Middle B-Pillar	2480	-840	869				
	Lateral (g)				116.5	3.7	-39.7	27.3
10	Left Front Seat Track	2660	-615	357				
	Lateral (g)				58.7	18.1	-3.6	57.6

Table 8 Test Vehicle Transducer Locations and Data Summary, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Location		Coordinates (mm)			Positive Direction		Negative Direction	
		X	Y	Z	Max	Time (ms)	Max	Time (ms)
11	Left Rear Seat Track	1868	-550	423				
	Lateral (g)				21.4	5.6	-8.4	15.3
12	Right Rear Occupant Compartment	2160	640	395				
	Lateral (g)				23.6	8.0	-1.3	146.7
13	Engine Block	4124	80	904				
	Longitudinal (g)				4.6	14.2	-10.4	30.4
	Lateral (g)				25.3	30.9	-6.1	136.1
14	Rear Floorpan	1545	0	530				
	Longitudinal (g)				2.5	96.8	-18.1	38.3
	Lateral (g)				24.5	39.8	-2.6	96.3
	Vertical (g)				2.1	94.7	-55.4	88.1
	Resultant				55.4	88.1		
15	Vehicle at EDR	2610	25	480				
	Longitudinal (g)				2.3	3.9	-9.1	8.5
	Lateral (g)				28.3	7.2	-1.2	185.0
	Vertical (g)				23.6	14.1	-14.6	20.6
	Resultant				32.6	7.4		
16	Rear Deck	545	120	680				
	Longitudinal (g)				10.3	67.5	-8.7	59.0
	Lateral (g)				22.9	35.7	-2.3	133.4
	Vertical (g)				8.8	25.6	-6.5	8.0
	Resultant				23.0	35.7		
17	Vehicle CG	2770	40	457				
	Roll (°/sec)				243.7	28.4	-65.5	154.3
	Pitch (°/sec)				51.7	13.3	-81.9	41.7
	Yaw (°/sec)				60.7	6.3	-94.0	9.9
18	Vehicle at EDR	2645	25	480				
	Roll (°/sec)				430.9	35.1	-83.5	155.1
	Pitch (°/sec)				97.6	16.5	-199.8	32.7
	Yaw (°/sec)				104.9	34.5	-85.1	23.1
19	Rear Deck	545	-155	680				
	Roll (°/sec)				1.3	82.1	-4.6	38.0
	Pitch (°/sec)				231.3	52.7	-157.5	30.2
	Yaw (°/sec)				753.5	87.4	-241.4	11.9

Table 8 Test Vehicle Transducer Locations and Data Summary, Continued

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12

Location		Coordinates (mm)			Positive Direction		Negative Direction	
		X	Y	Z	Max	Time (ms)	Max	Time (ms)
20	Left Front Door Mid Centerline	2980	-787	677				
	Lateral (g)				140.2	7.1	-115.1	13.2
21	Left Front Door Mid Rear	2645	-760	677				
	Lateral (g)				127.2	5.4	-76.2	13.2
22	Left Front Door Upper Centerline	3045	-752	917				
	Lateral (g)				162.6	15.3	-78.7	21.8
23	Left Rear Door Mid Rear	1823	-770	676				
	Lateral (g)				135.6	23.4	-89.9	11.2
24	Left Rear Door Upper Centerline	2042	-735	935				
	Lateral (g)				76.9	16.1	-36.9	30.5

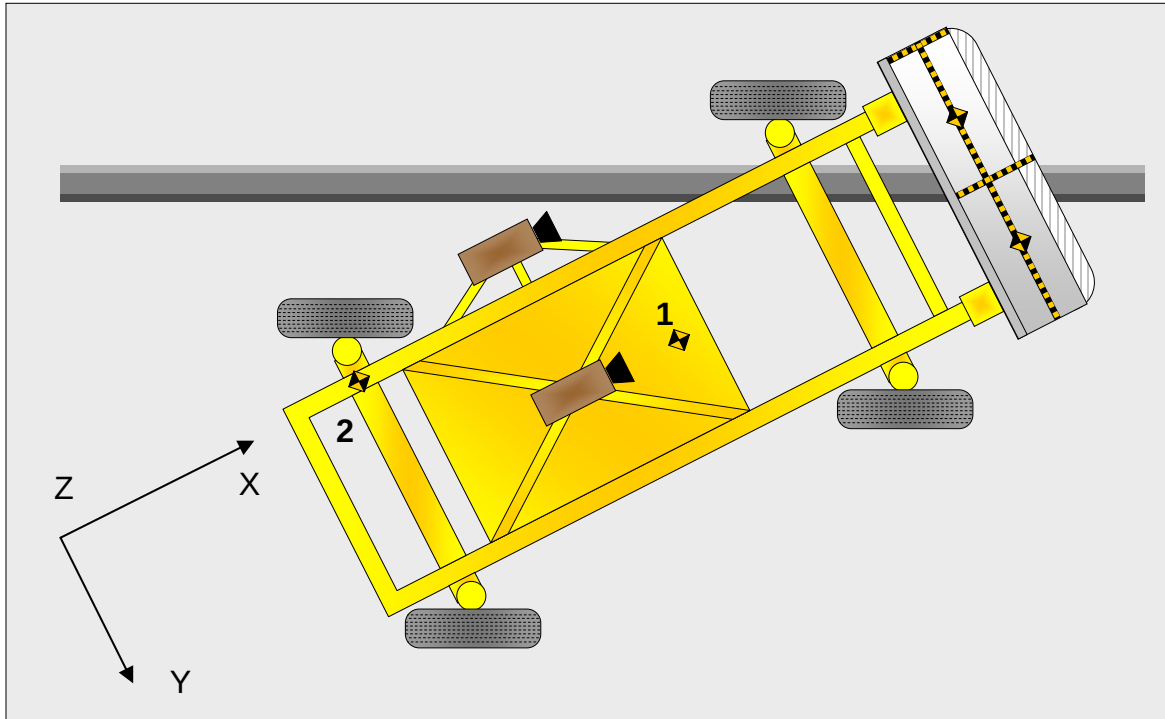
Reference: X: + Forward from rear bumper
Y: + Rightward from vehicle centerline
Z: + Upward from ground level

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

Table 9 MDB Test Data Summary

Test Vehicle: 2011 Cadillac CTS

Test Date: 09/20/12



Location		Positive Direction		Negative Direction	
		Max.	Time (ms)	Max.	Time (ms)
1	MDB CG				
	Longitudinal (g)	1.7	14.4	-21.2	14.4
	Lateral (g)	1.2	127.6	-8.7	31.2
	Vertical (g)	4.6	35.4	-7.1	17.7
	Resultant	22.0	41.1		
2	MDB Rear Frame				
	Longitudinal (g)	2.2	94.8	-23.2	36.0
	Lateral (g)	4.0	31.0	-2.2	63.6

Reference : X - Face of MDB (+ forward)
Y - MDB Centerline (+ to right)
Z - Ground Plane (+ down)

Table 9 MDB Test Data Summary, Continued

MDB WEIGHTS

	Units	Front Axle	Rear Axle	Total
Left	kg	406.8	275.2	
Right	kg	369.6	316	
Ratio	%	56.8	43.2	
Totals	kg	776.4	591.2	1367.6

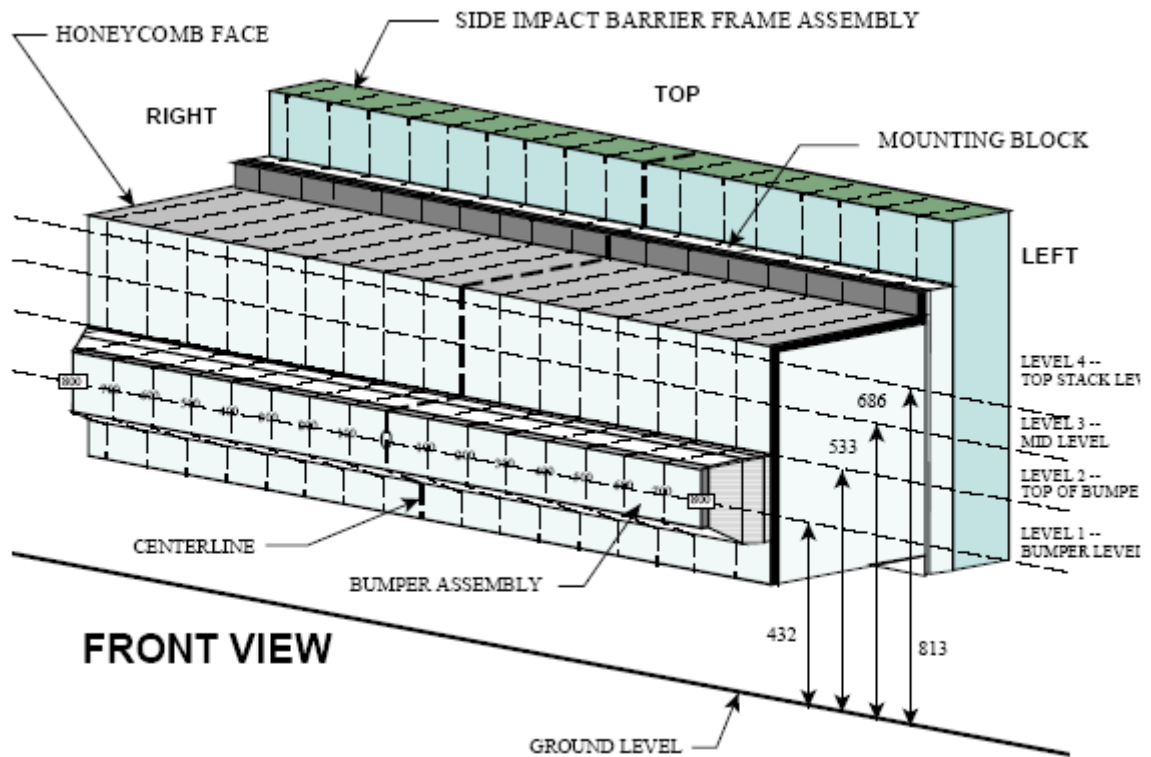
SPEED AND IMPACT ANGLE DATA

Measured Parameter	Units	Requirement	Value
Trap No. 1 Velocity (Primary)	km/h	61.1 to 62.7	61.0
Trap No. 2 Velocity (Redundant)	km/h	61.1 to 62.7	61.0
MDB CL to Target Vehicle CL	degrees	88.5 to 91.5	89.0
MDB Forward Line of Motion to Target Vehicle CL	degrees	62.5 to 63.5	63.5
MDB Crabbed Angle to MDB Forward Line of Motion	degrees	26 to 28	27.5

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

Vertical Location			From Centerline		Maximum Crush
Row	Description	Height	Distance	Direction	
A	Center of Bumper	432	400	Right	229
B	Top of Bumper	533	800	Left	144
C	Mid-Level	686	800	Left	167
D	Top of Stack	813	800	Left	187

Table 9 MDB Test Data Summary, Continued



NOTE: Dimensions are shown in millimeters, mm

DEFORMABLE BARRIER STATIC CRUSH

Stack Level	Distance Right of Center								C/L	Distance Left of Center							
	800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
4	-29	-18	-25	-41	-76	-112	-70	-62	-60	-60	-57	-62	-80	-100	-125	-144	-187
3	-37	-33	-36	-42	-51	-74	-85	-56	-42	-36	-36	-44	-55	-69	-90	-123	-167
2	-109	-113	-111	-112	-117	-372	-372	-372	-106	-103	-102	-102	-103	-105	-107	-114	-144
1	-211	-214	-215	-217	-229	-223	-212	-210	-210	-209	-210	-210	-211	-211	-212	-220	-225

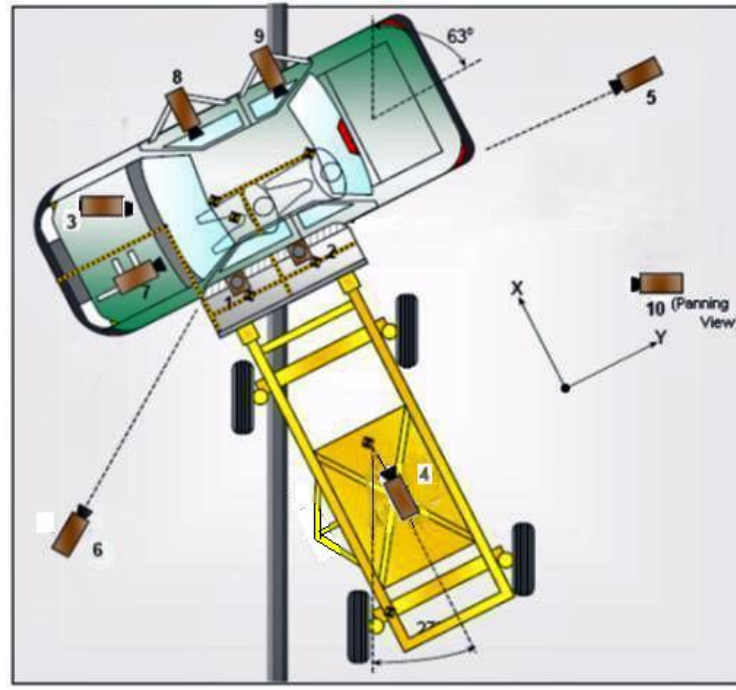
Figure 6 High-Speed Camera Locations and Data Summary

Test Vehicle:

2011 Cadillac CTS

Test Date:

09/20/12



No.	Camera View	Lens (mm)	Speed (fps)
1	Overhead wide view	8.5	1000
2	Overhead tight	25	1000
3	Onboard driver oblique	16	1000
4	Struck side at impact	8.5	1000
5	Rear view	12.5	1000
6	Front oblique	12.5	1000
7	Onboard driver front	12.5	1000
8	Rear passenger side	8.5	1000
9	Onboard driver side	8.5	1000
10	Real-time	Zoom	30

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 Side View



Figure A-12 Post-Test Right Side View



Figure A-13 Pre-Test Overhead View

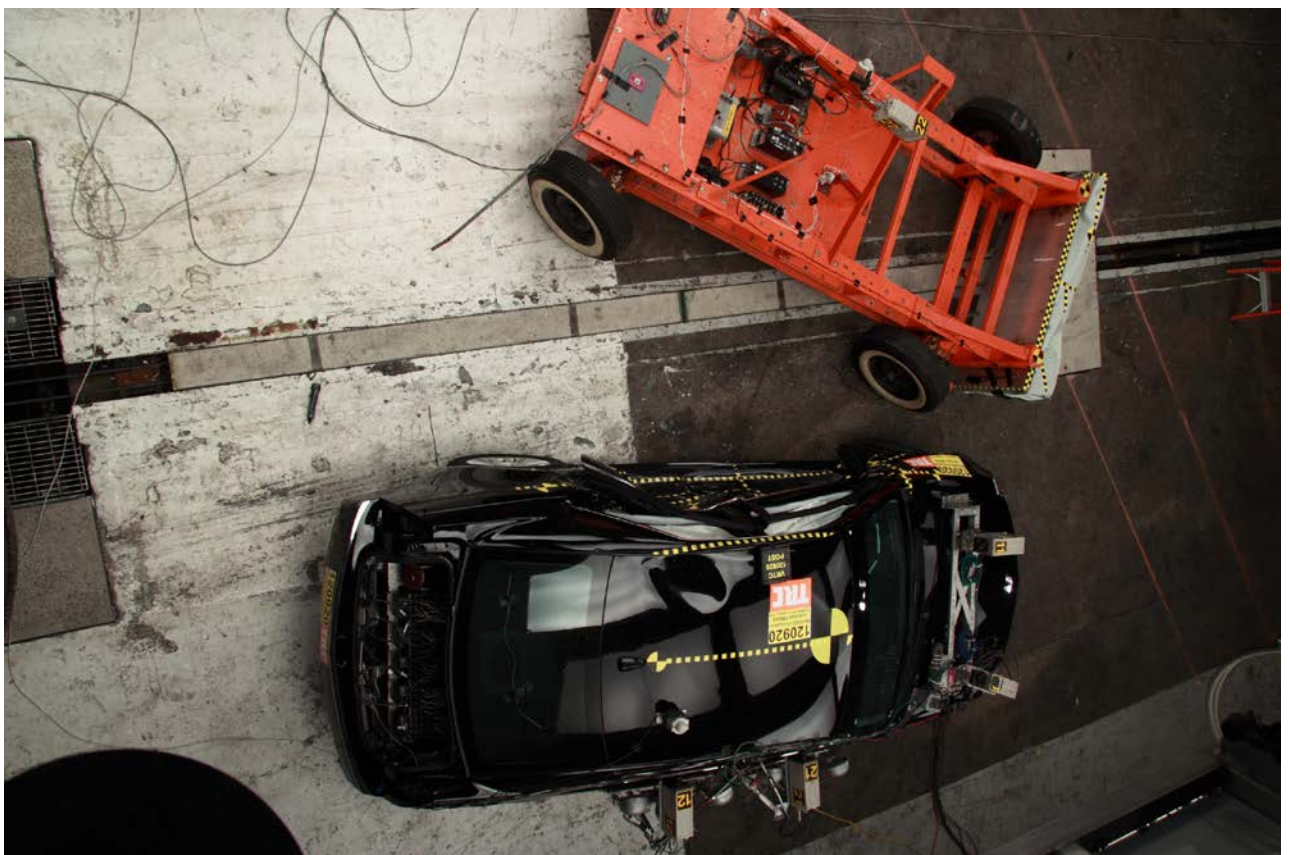


Figure A-14 Post-Test Overhead View



Figure A-15 Pre-Test Overhead Close-up View

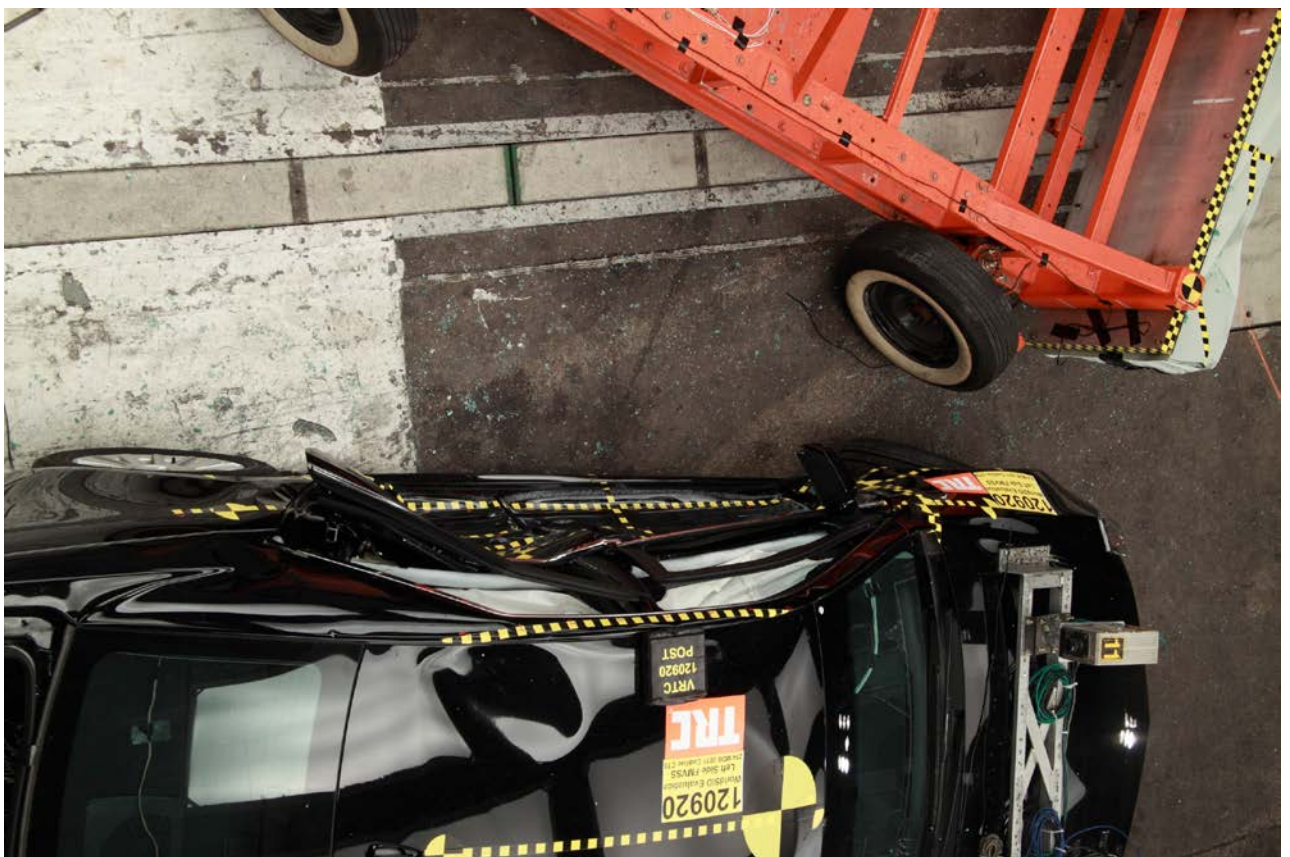


Figure A-16 Post-Test Overhead Close-up View



Figure A-17 Pre-Test Primary Impact Point View



Figure A-18 Post-Test Primary Impact Point View



Figure A-19 Pre-Test Secondary Impact Point View



Figure A-20 Post-Test Secondary Impact Point View



Figure A-21 Pre-Test Driver Dummy - View 1



Figure A-22 Post-Test Driver Dummy - View 1



Figure A-23 Pre-Test Driver Dummy - View 2

Photo Not Taken

Figure A-24 Post-Test Driver Dummy - View 2

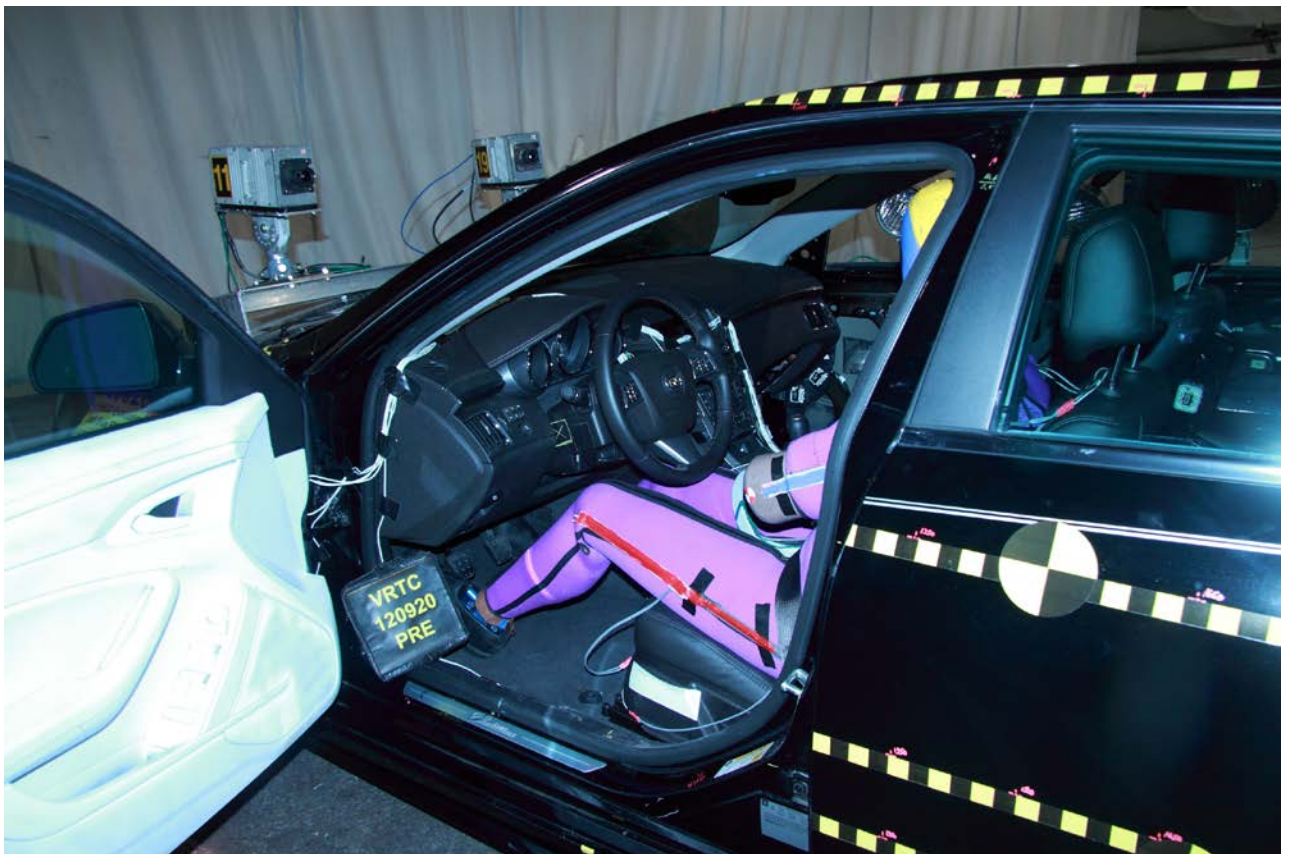


Figure A-25 Pre-Test Driver Dummy - View 3

Photo Not Taken

Figure A-26 Post-Test Driver Dummy - View 3



Figure A-27 Pre-Test Driver Dummy - View 4



Figure A-28 Post-Test Driver Dummy - View 4



Figure A-29 Pre-Test Driver Dummy - View 5



Figure A-30 Post-Test Driver Dummy - View 5



Figure A-31 Pre-Test Driver Door Panel View



Figure A-32 Post-Test Driver Door Panel View



Figure A-33 Post-Test Driver Dummy Contact View



Figure A-34 Pre-Test Driver Dummy Overall View



Figure A-35 Pre-Test Rear Passenger Dummy - View 1

Photo Not Taken

Figure A-36 Post-Test Rear Passenger Dummy - View 1



Figure A-37 Pre-Test Rear Passenger Dummy - View 2



Figure A-38 Post-Test Rear Passenger Dummy - View 2



Figure A-39 Pre-Test Rear Passenger Door Panel View



Figure A-40 Post-Test Rear Passenger Door Panel View



Figure A-41 Post-Test Rear Passenger Dummy Contact View



Figure A-42 Post-Test Passenger Dummy Overall View



Figure A-43 Pre-Test MDB Face Front View



Figure A-44 Post-Test MDB Face Front View



Figure A-45 Pre-Test MDB Face Top View



Figure A-46 Post-Test MDB Face Top View



Figure A-47 Pre-Test MDB Face Left Side View



Figure A-48 Pre-Test MDB Face Right Side View



Figure A-49 Pre-Test MDB Face Left Front View



Figure A-50 Post-Test MDB Face Left Front View



Figure A-51 Pre-Test MDB Face Right Front View



Figure A-52 Pre-Test Instrumentation Location View



Figure A-53 Pre-Test Vehicle Certification Label View



Figure A-54 Pre-Test Tire Pressure Label View

Appendix B

Data Plots



FMVSS 214 Side Impact 2011 Cadillac CTS

Head Longitudinal Ax

Date: 06/17/2013

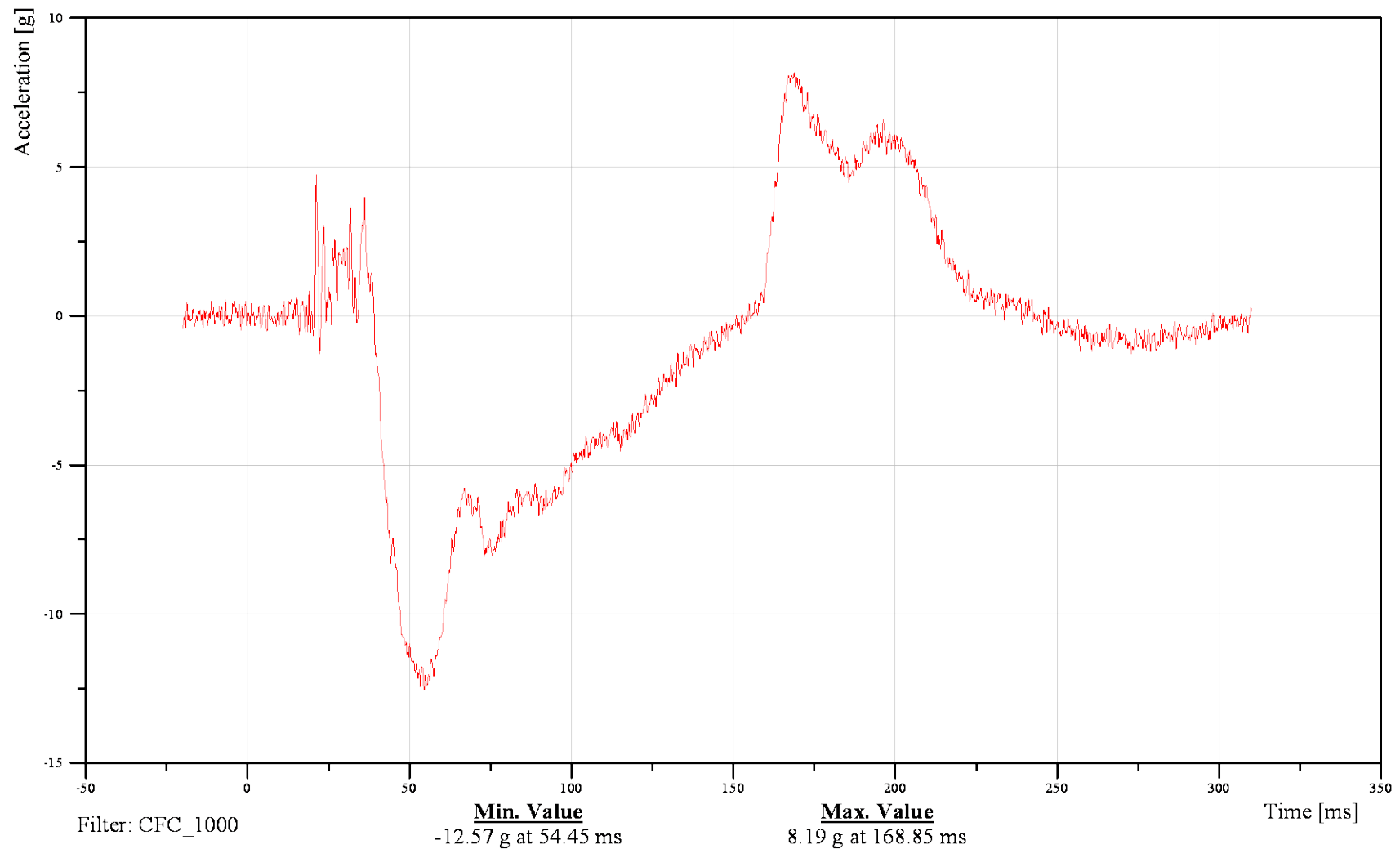
Time: 12:36

Customer: VRTC

11HEADCG00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Lateral Ay

Date: 06/17/2013

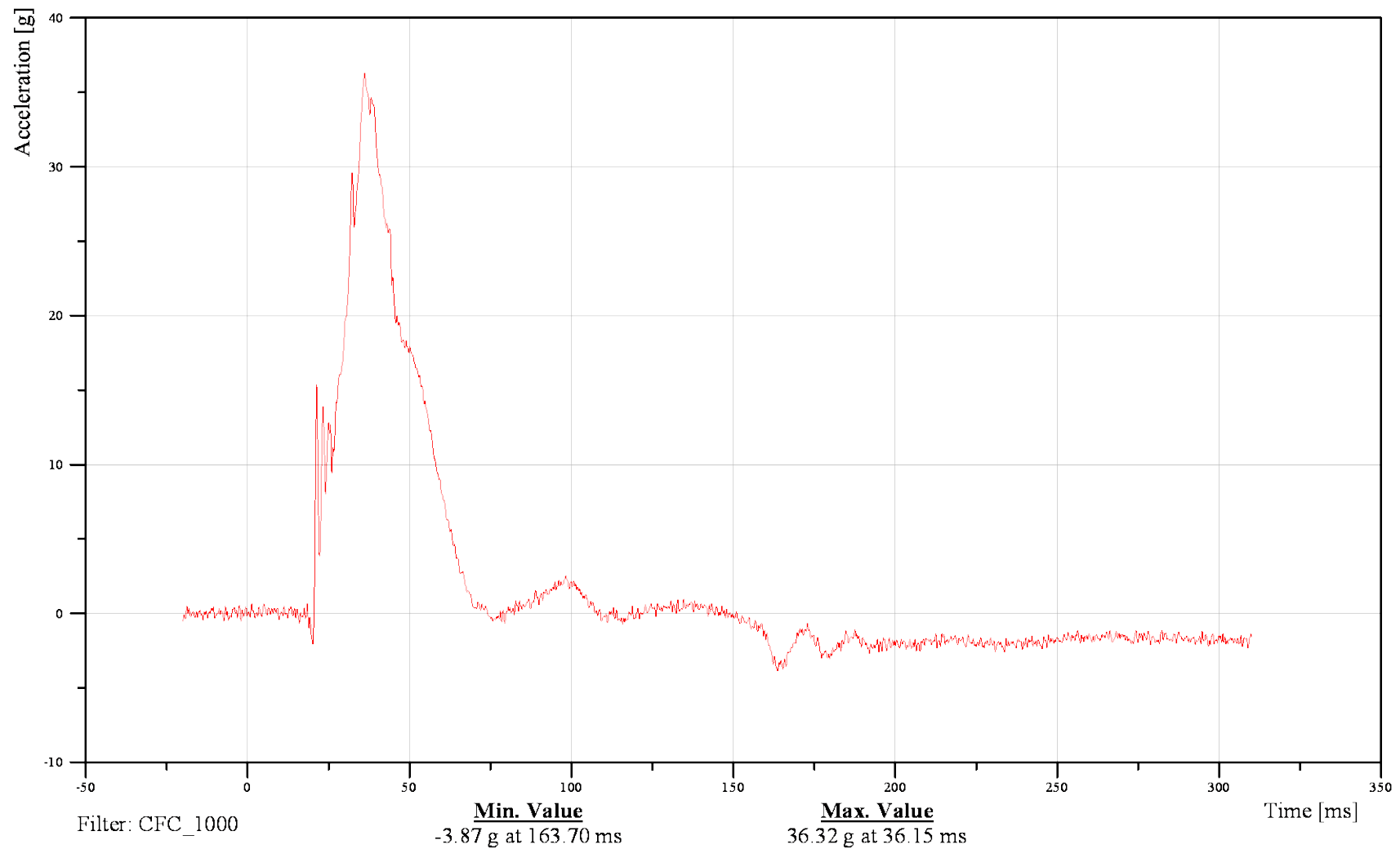
Time: 12:36

Customer: VRTC

11HEADCG00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Vertical Az

Date: 06/17/2013

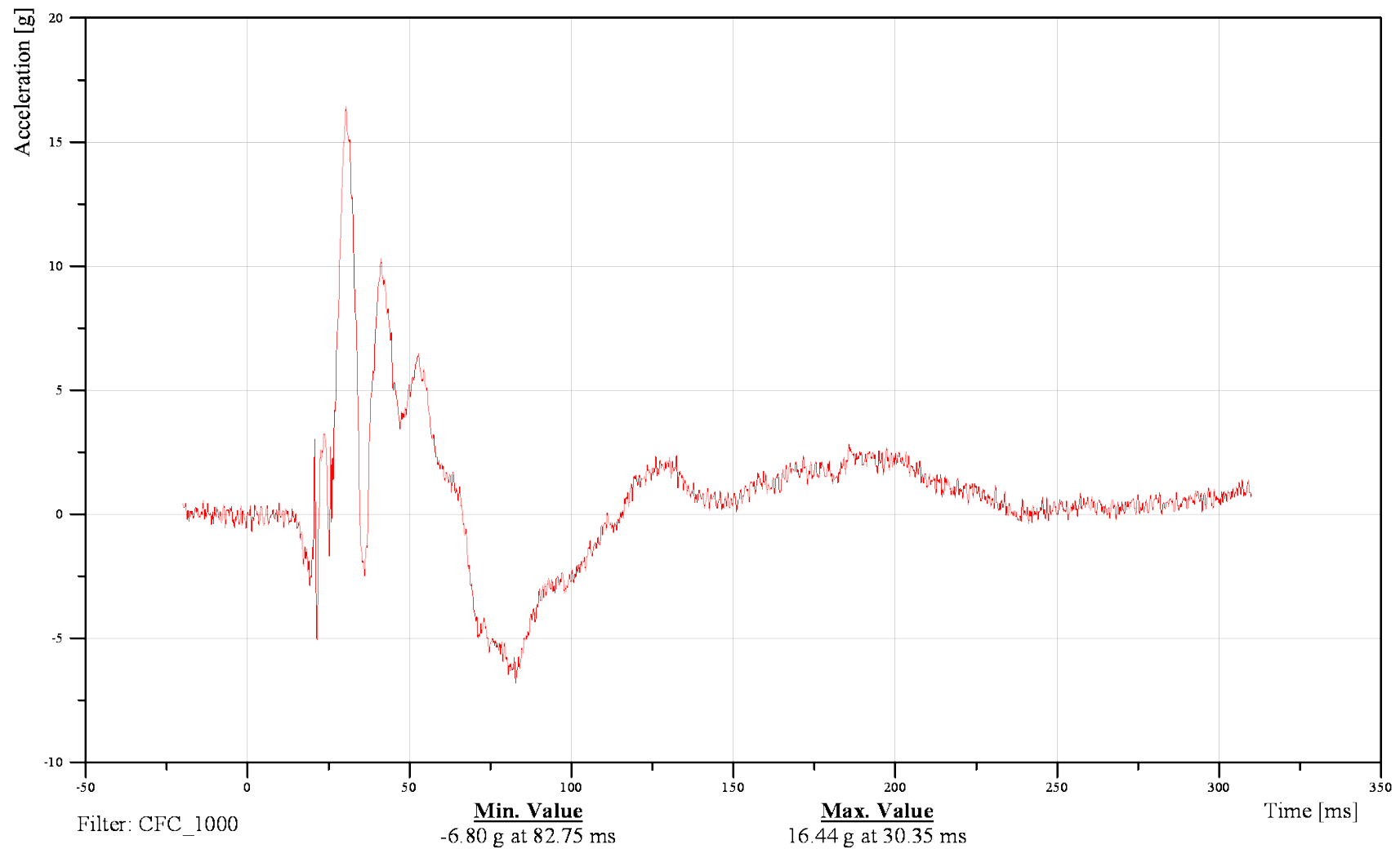
Time: 12:36

Customer: VRTC

11HEADCG00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head A Resultant

Date: 06/17/2013

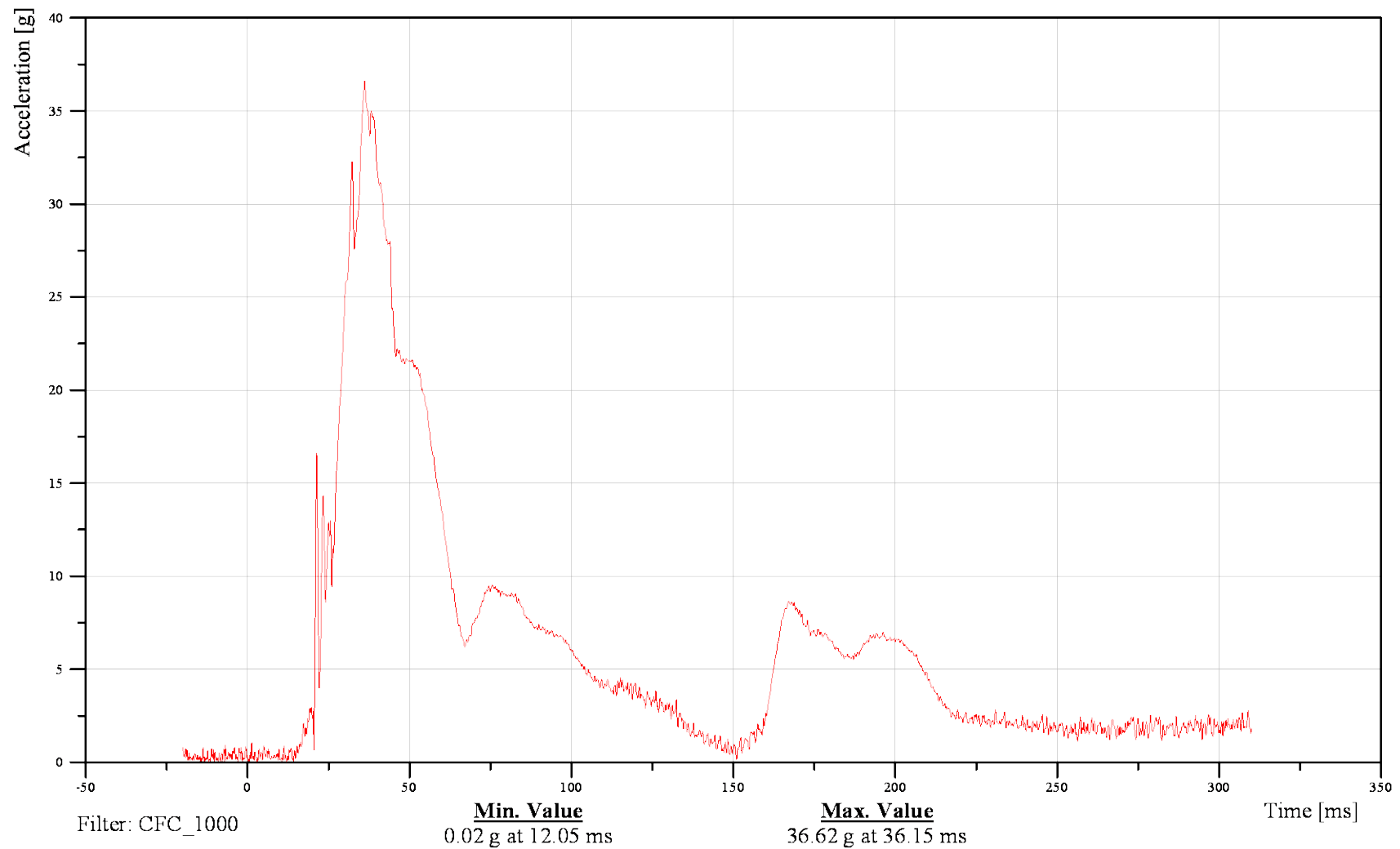
Time: 12:36

Customer: VRTC

11HEADCG00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Rotational Acceleration Rx

Date: 06/17/2013

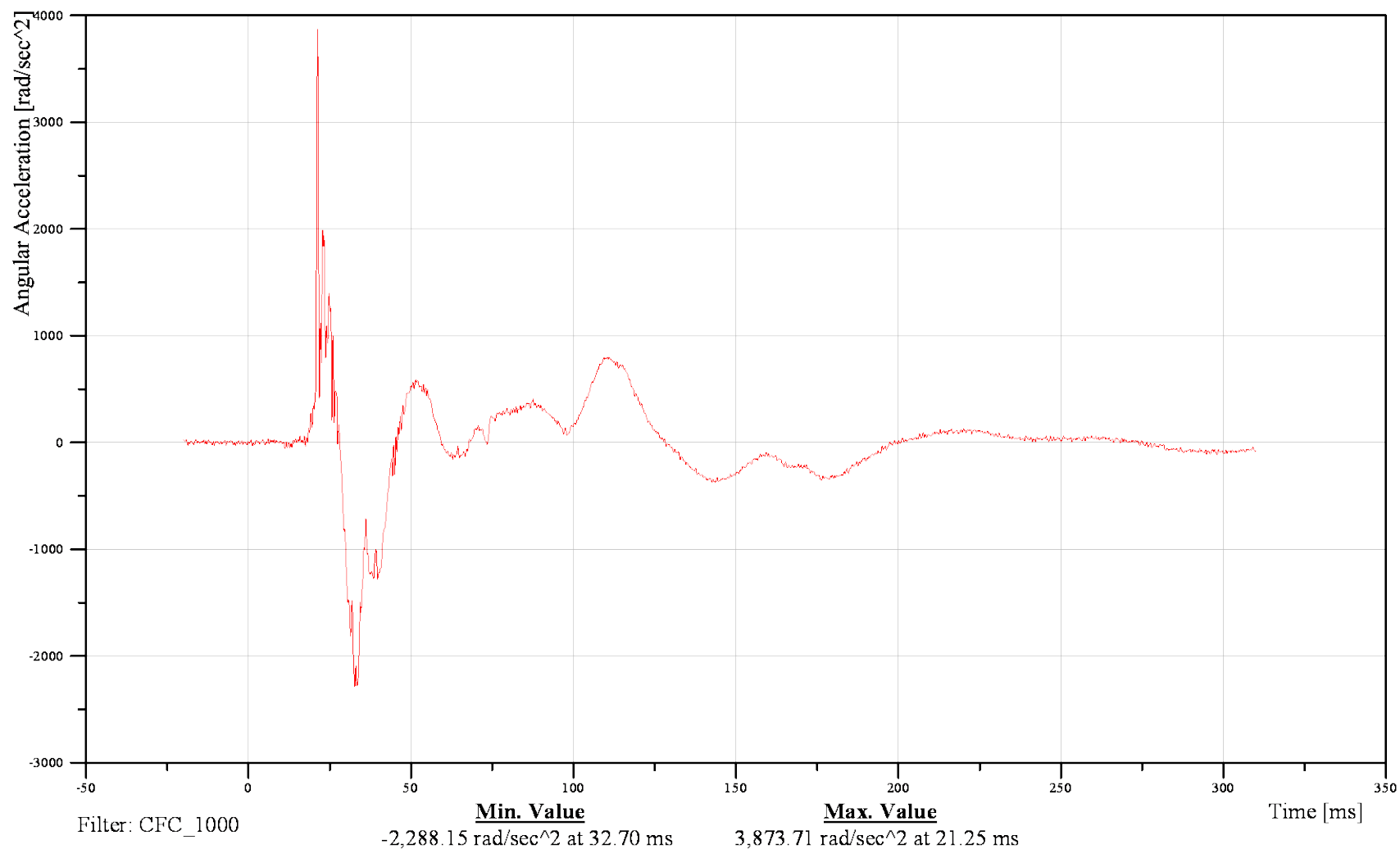
Time: 12:36

Customer: VRTC

11HEAD0000WSAAXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Rotational Acceleration Ry

Date: 06/17/2013

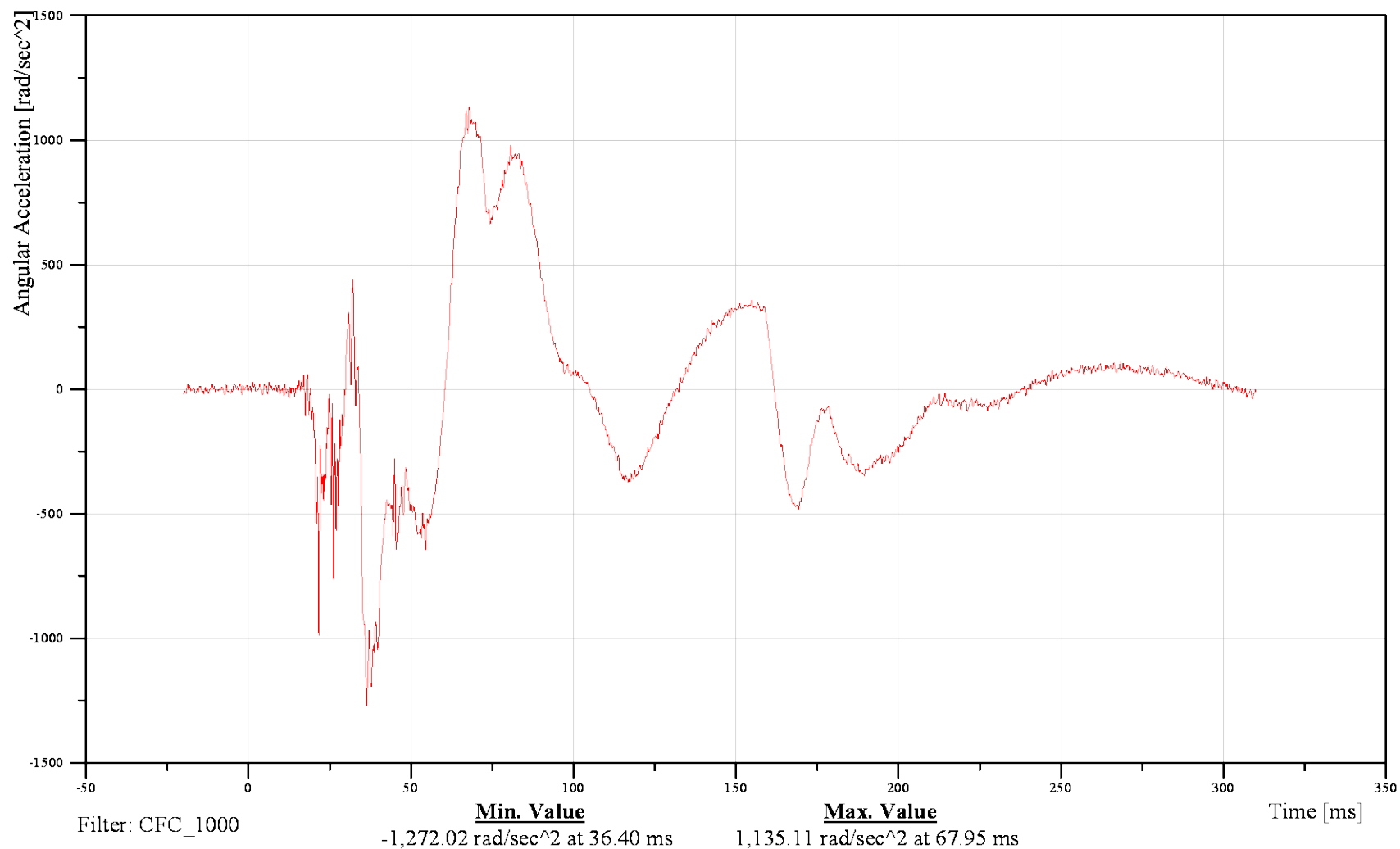
Time: 12:36

Customer: VRTC

11HEAD0000WSAAYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Rotational Acceleration Rz

Date: 06/17/2013

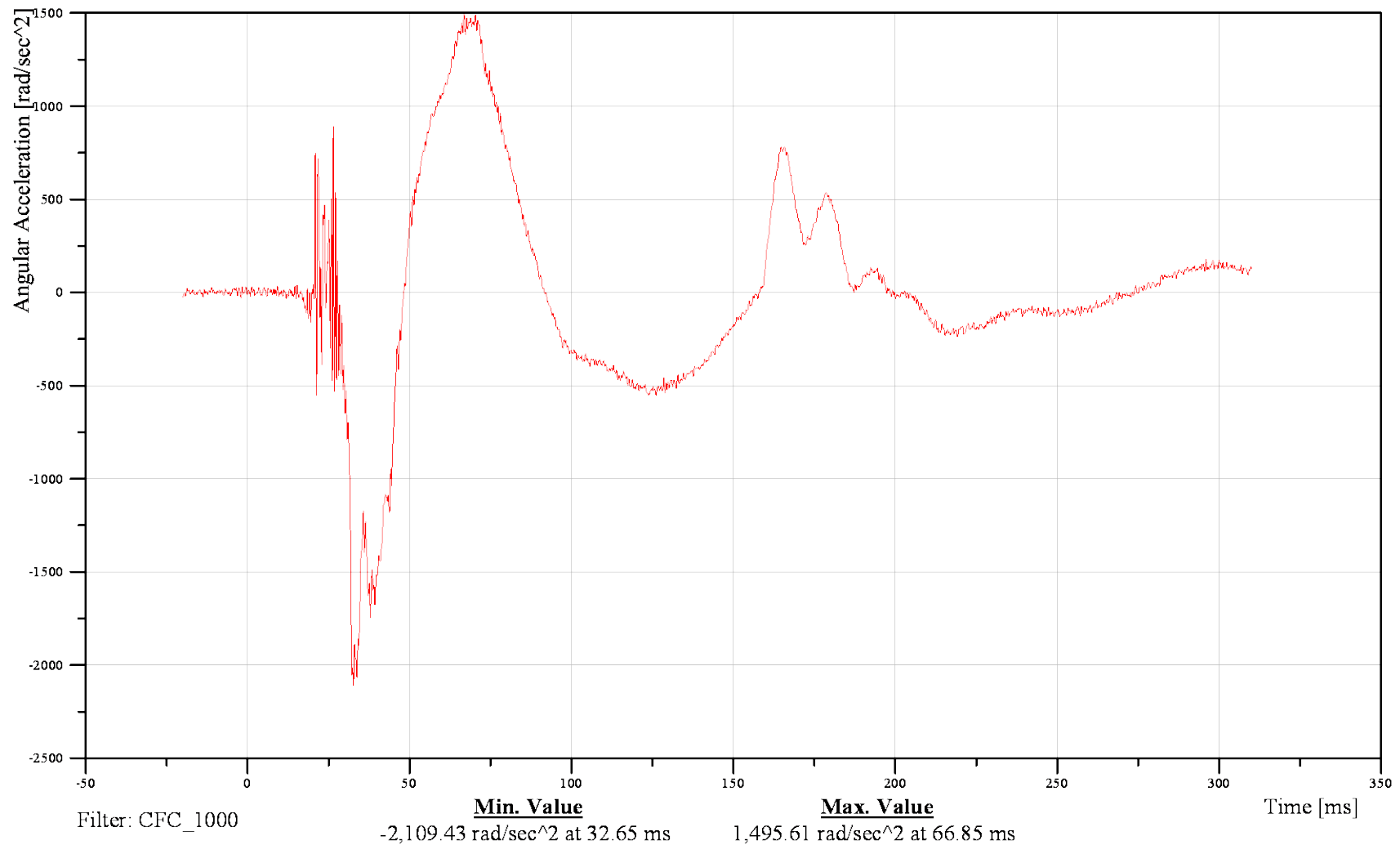
Time: 12:36

Customer: VRTC

11HEAD0000WSAAZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head X-Axis Angular Velocity

Date: 06/17/2013

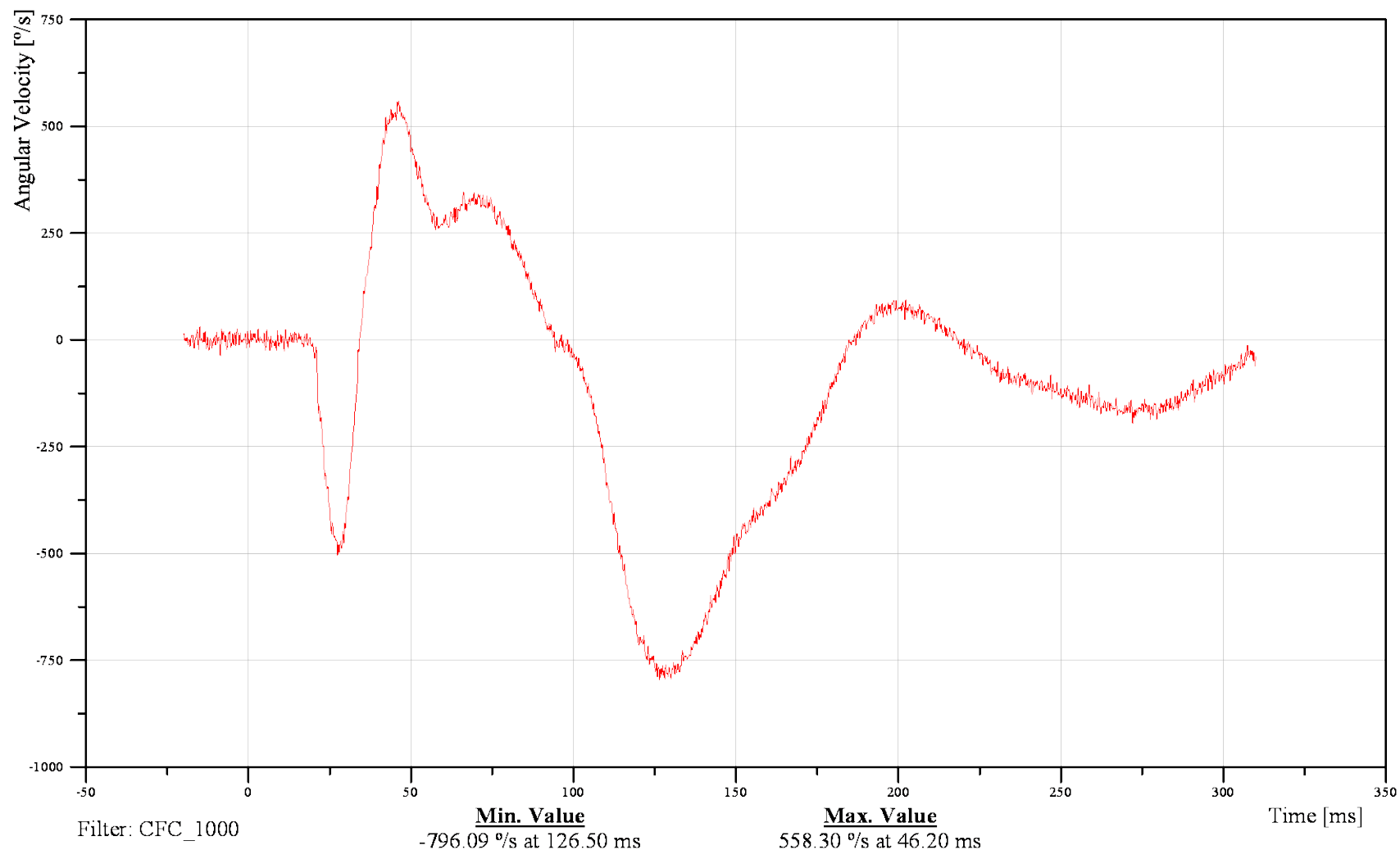
Time: 12:36

Customer: VRTC

11HEADCG00WSA VXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Y-Axis Angular Velocity

Date: 06/17/2013

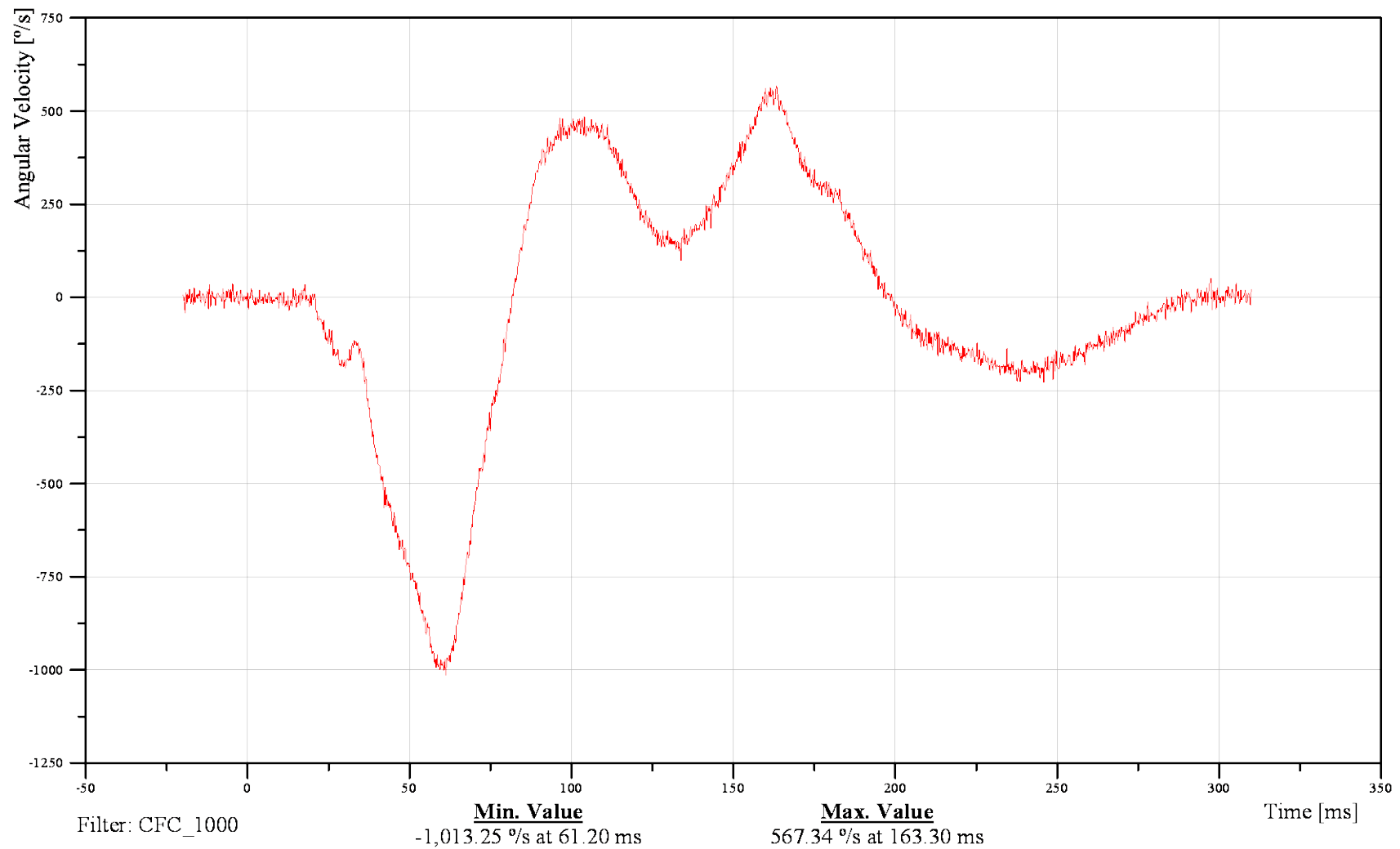
Time: 12:36

Customer: VRTC

11HEADCG00WSAVYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Z-Axis Angular Velocity

Date: 06/17/2013

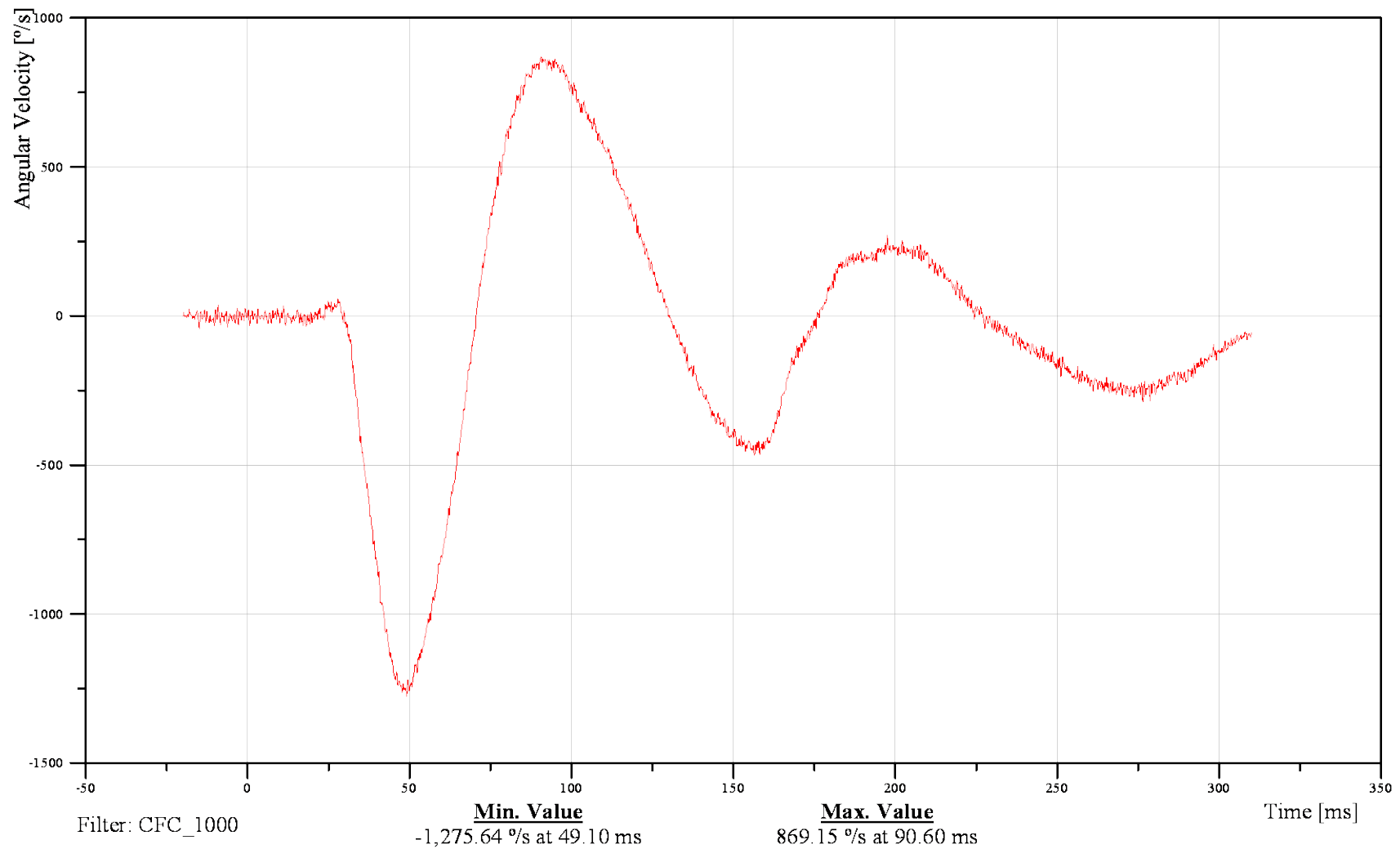
Time: 12:36

Customer: VRTC

11HEADCG00WSAVZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Force Fx

Date: 06/17/2013

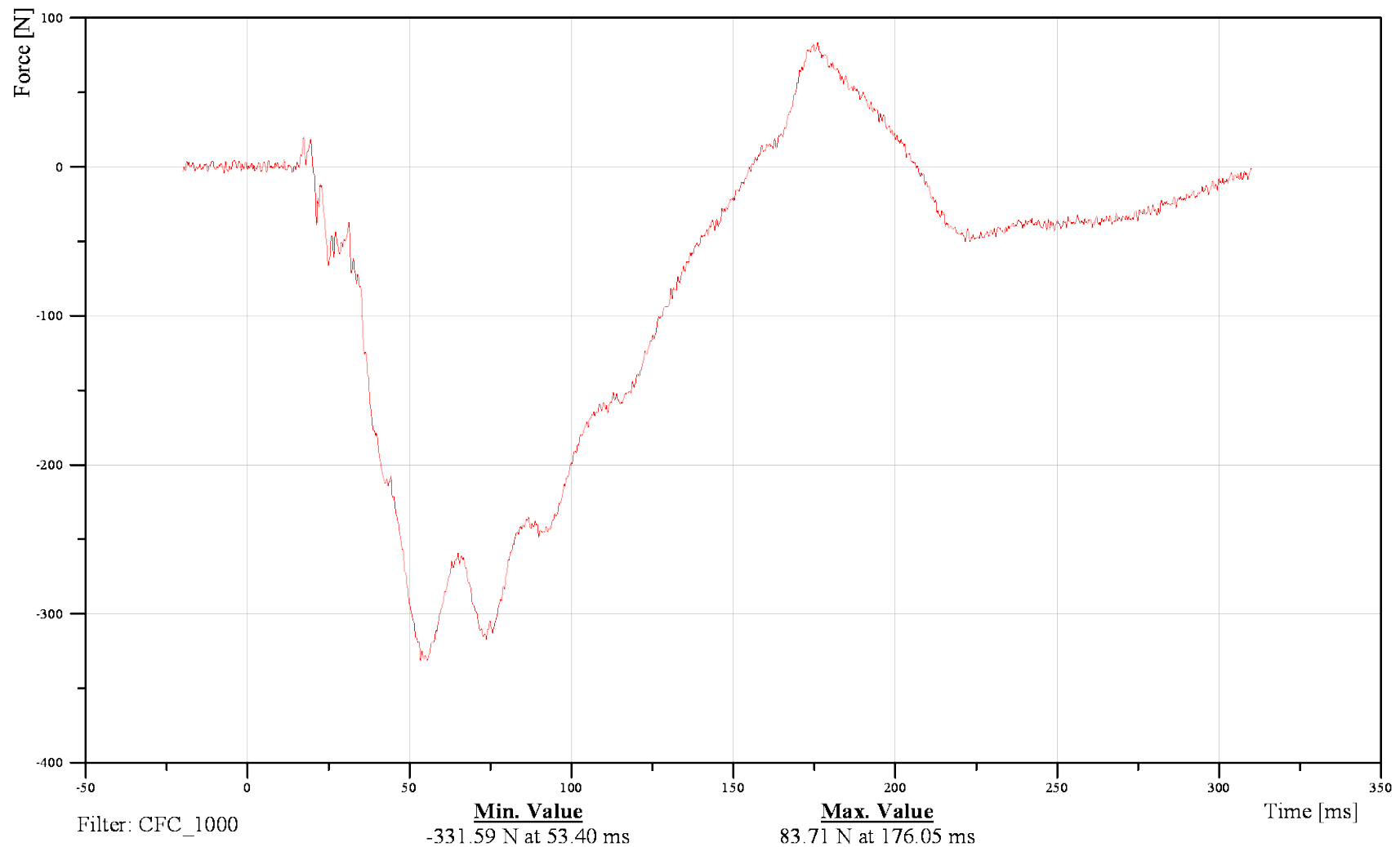
Time: 12:36

Customer: VRTC

11NECKUP00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Force Fy

Date: 06/17/2013

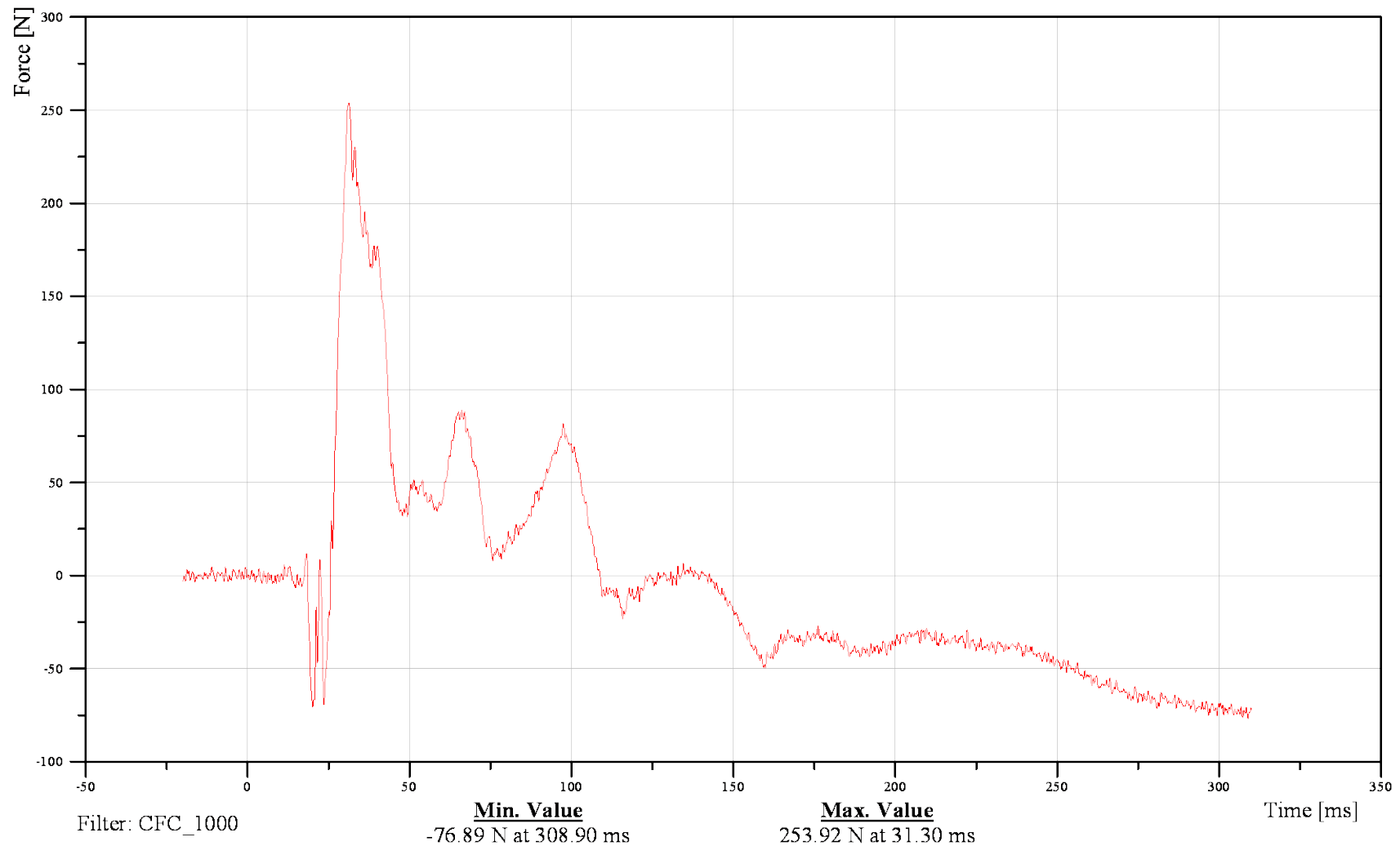
Time: 12:36

Customer: VRTC

11NECKUP00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Force Fz

Date: 06/17/2013

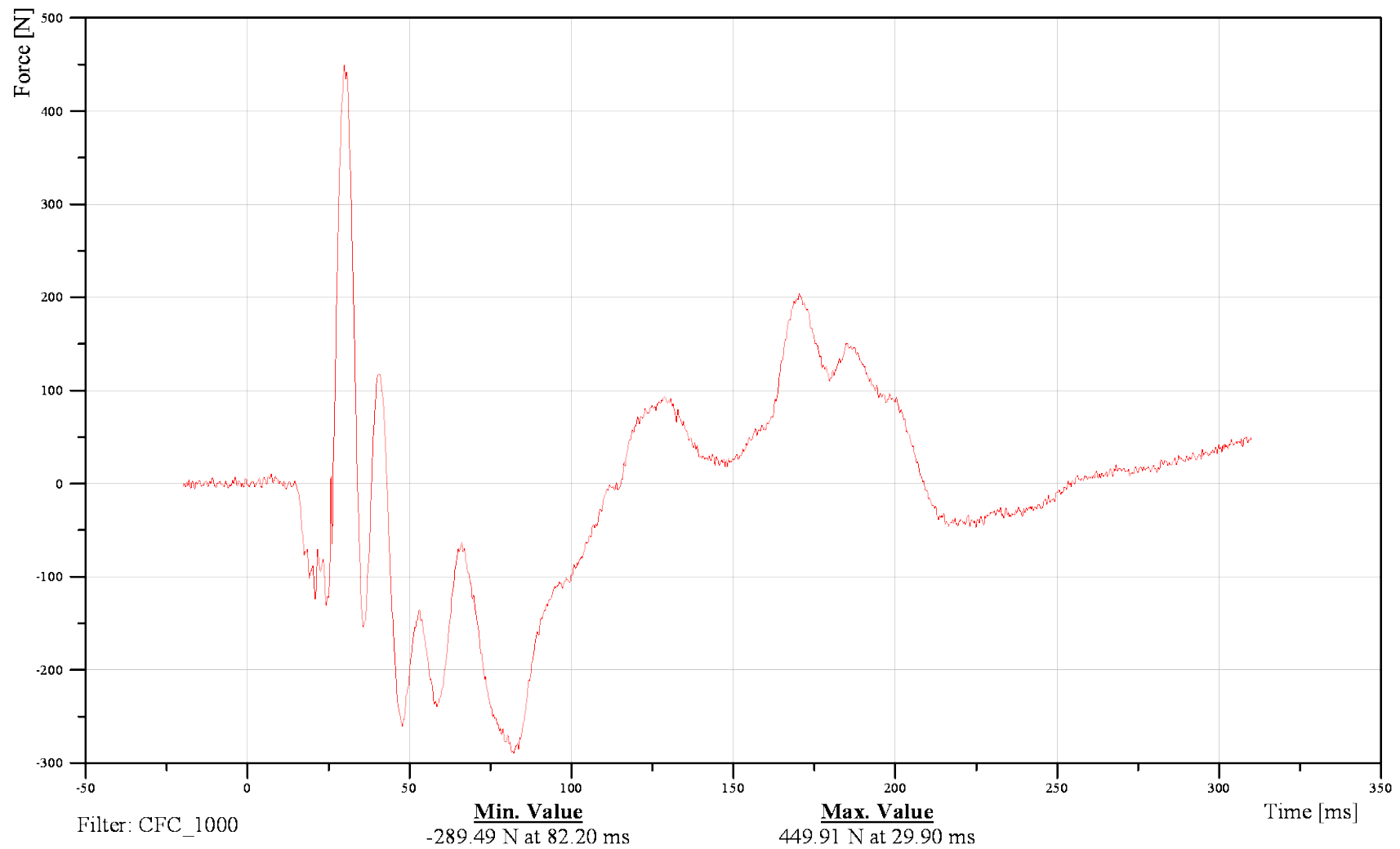
Time: 12:36

Customer: VRTC

11NECKUP00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Moment Mx

Date: 06/17/2013

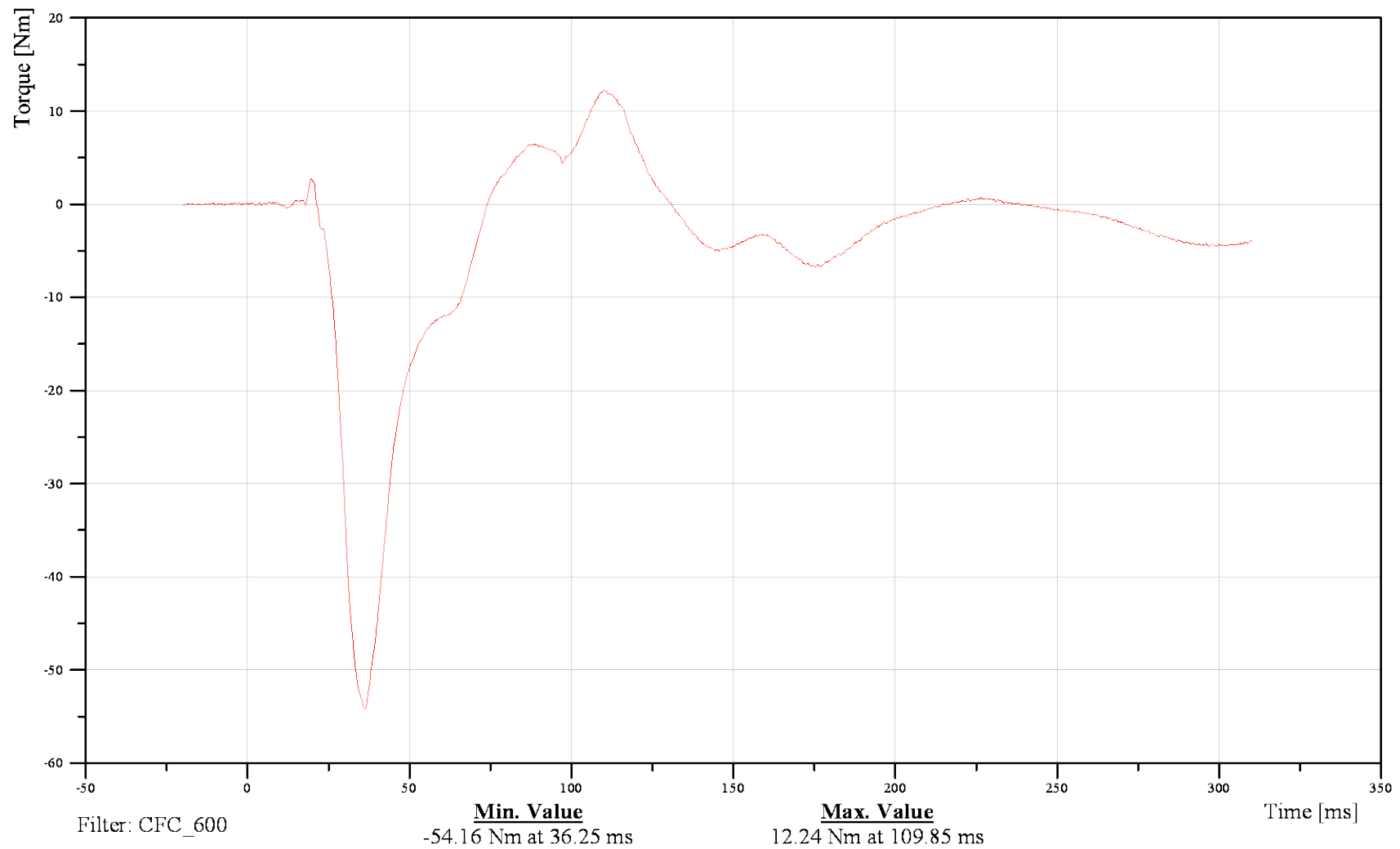
Time: 12:36

Customer: VRTC

11NECKUP00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Moment My

Date: 06/17/2013

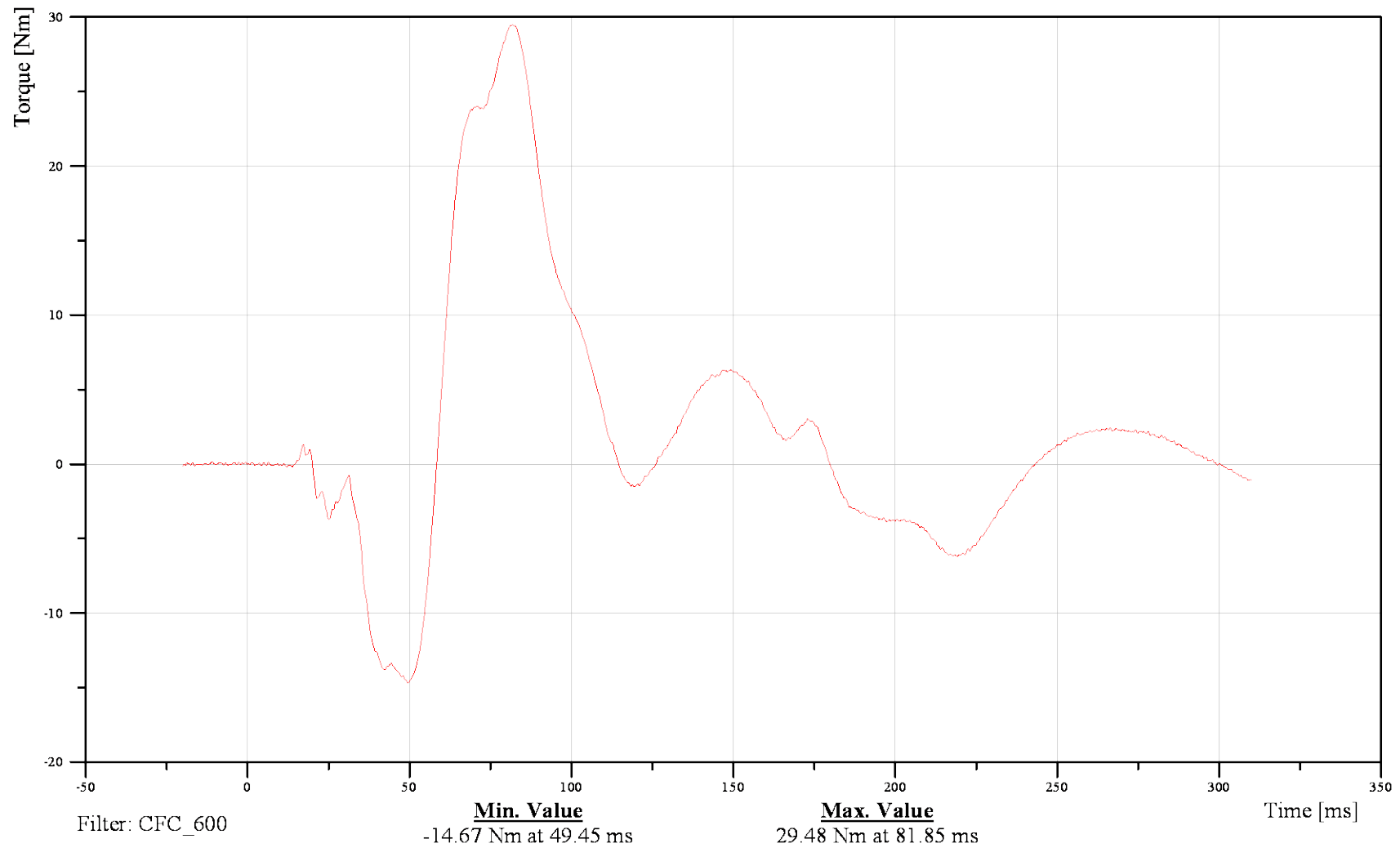
Time: 12:36

Customer: VRTC

11NECKUP00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Moment Mz

Date: 06/17/2013

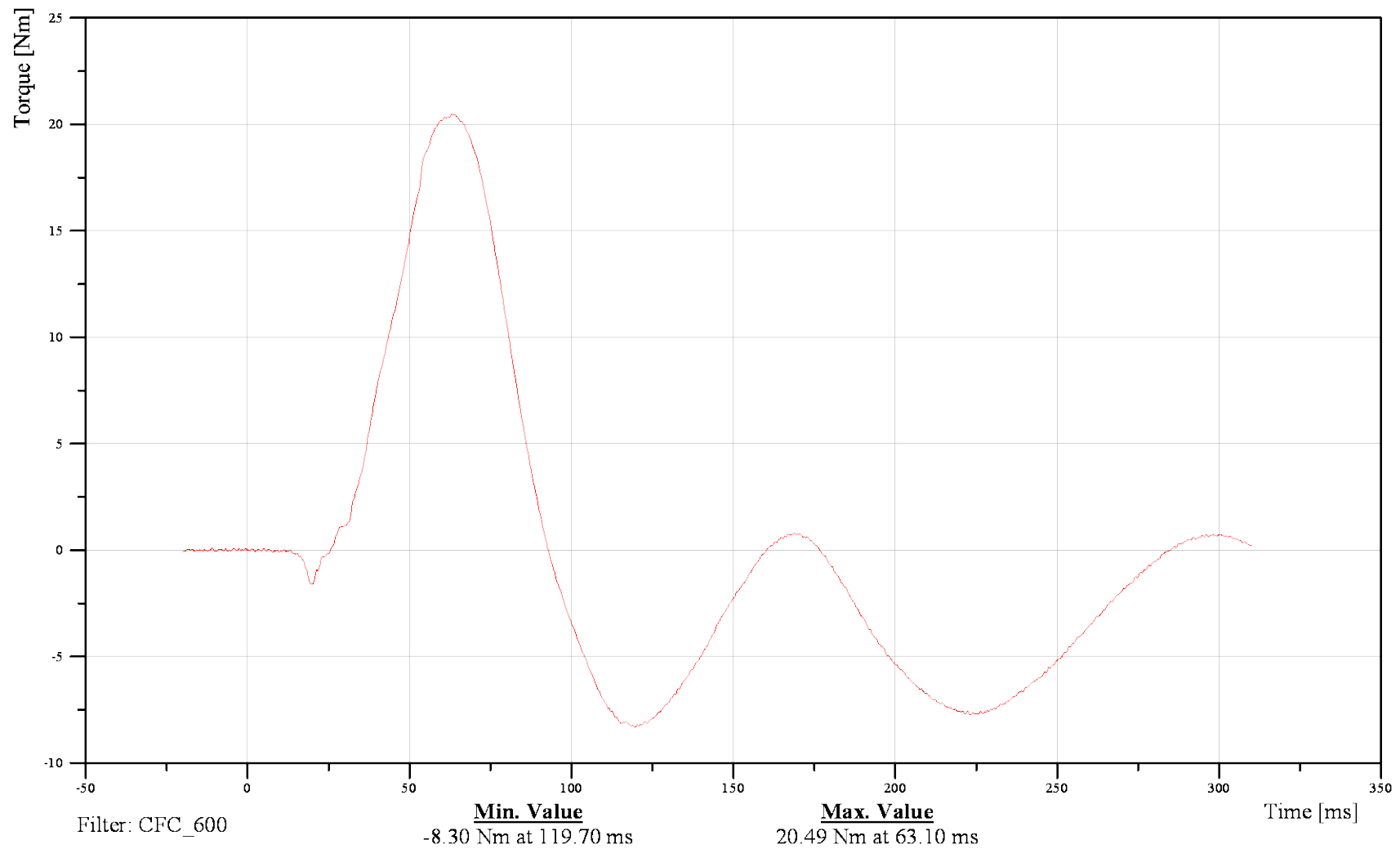
Time: 12:36

Customer: VRTC

11NECKUP00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Force Fx

Date: 06/17/2013

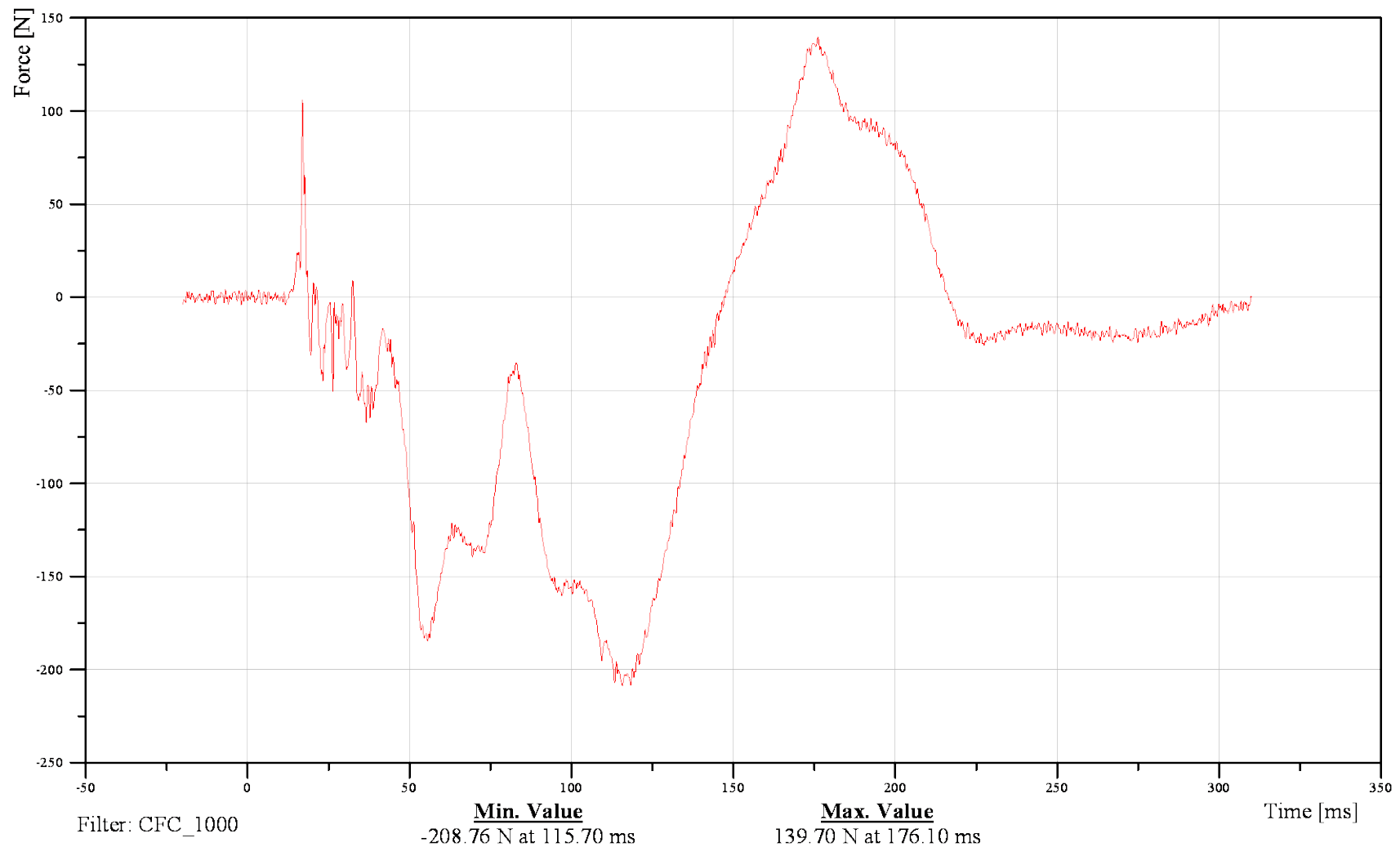
Time: 12:36

Customer: VRTC

11NECKLO00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Force Fy

Date: 06/17/2013

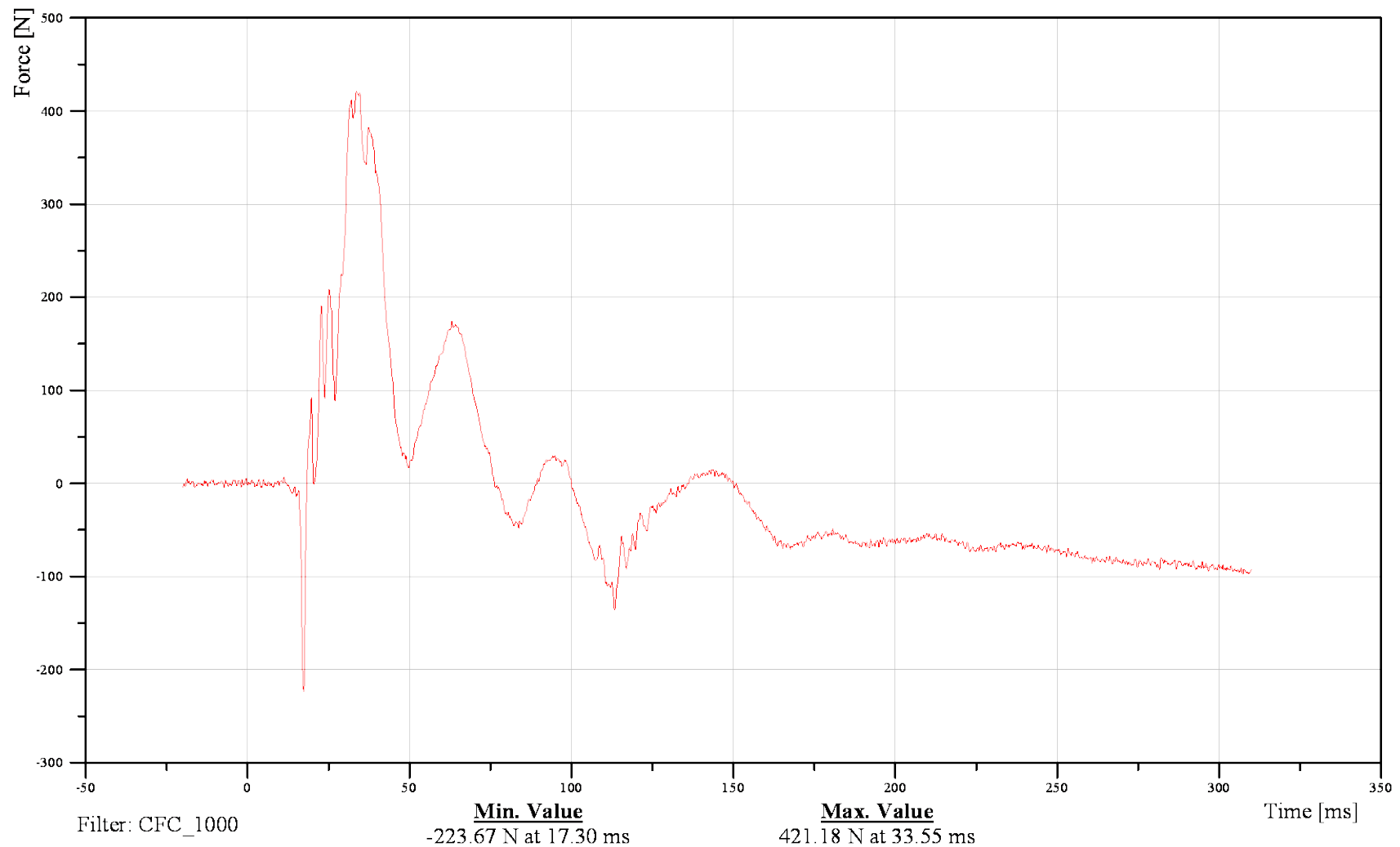
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Force Fz

Date: 06/17/2013

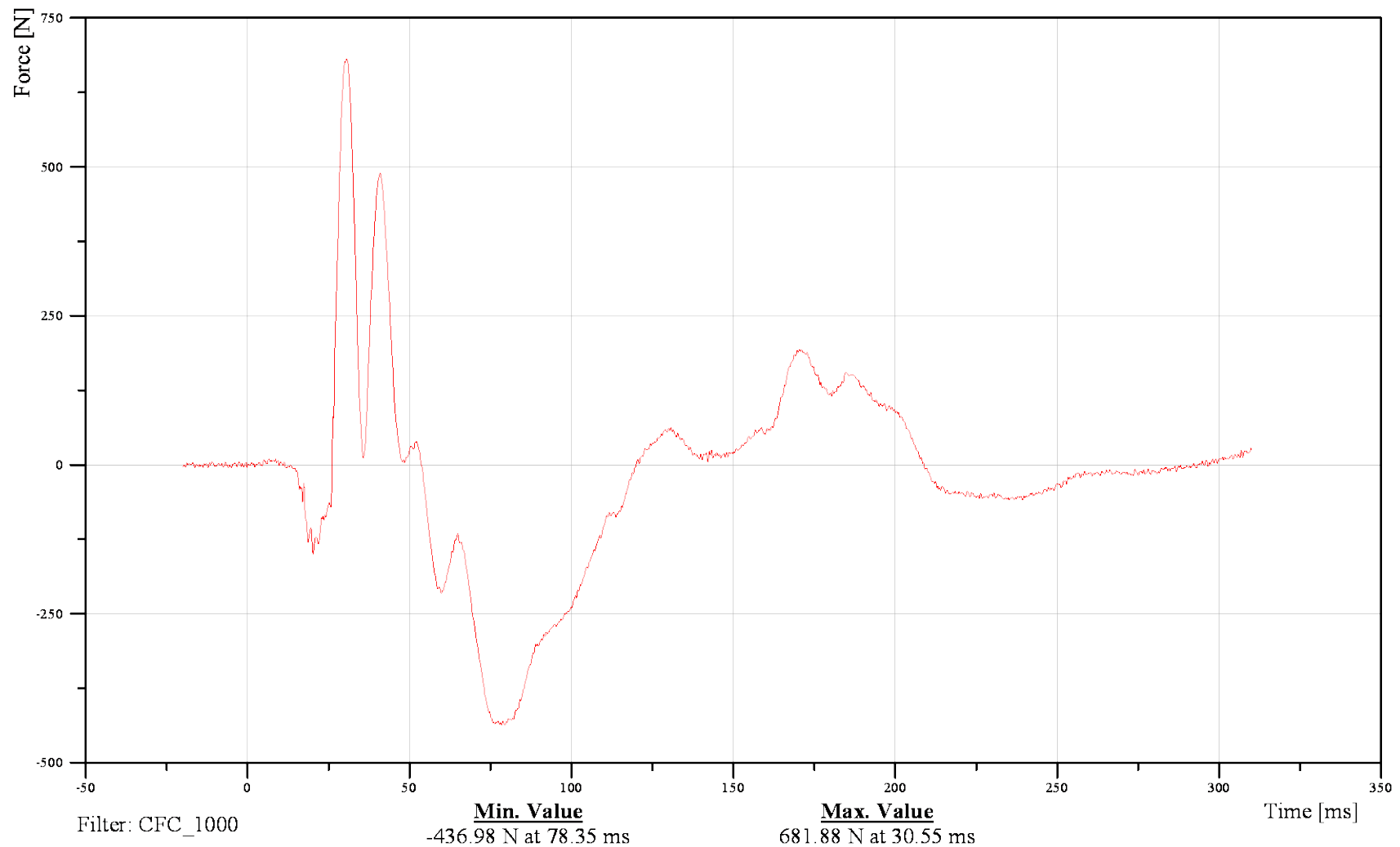
Time: 12:36

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Moment Mx

Date: 06/17/2013

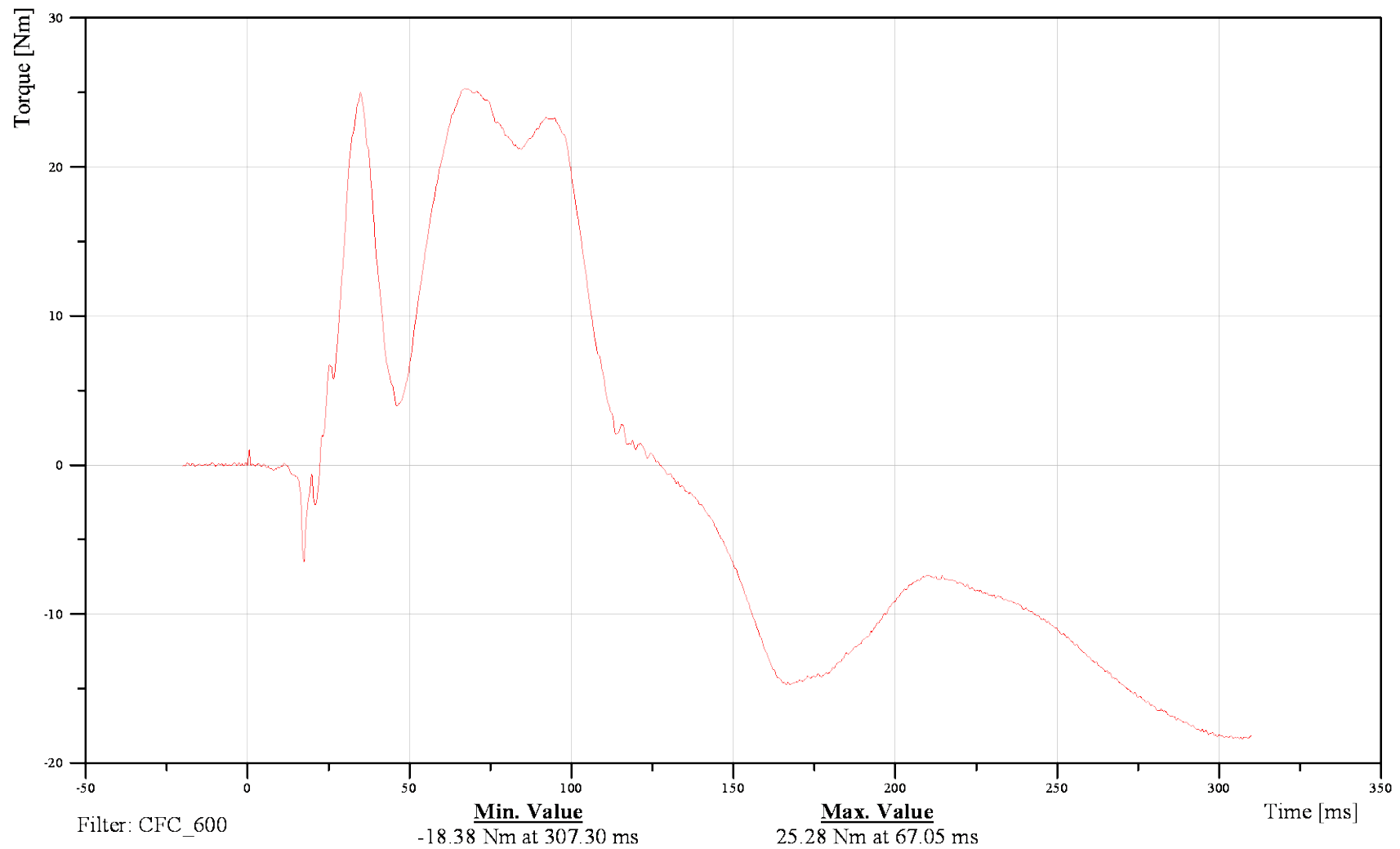
Time: 12:36

Customer: VRTC

11NECKLO00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Moment My

Date: 06/17/2013

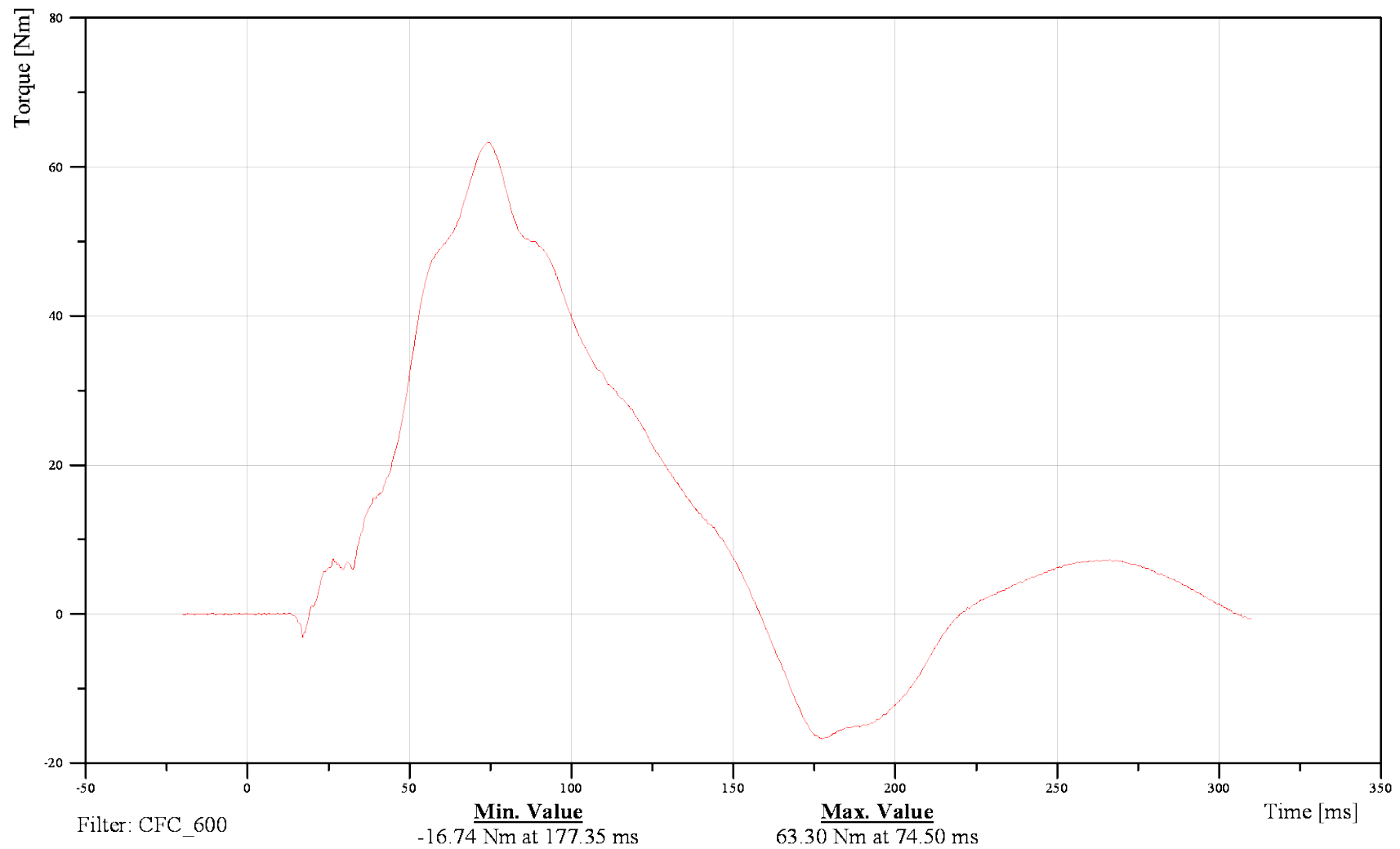
Time: 12:36

Customer: VRTC

11NECKLO00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Moment Mz

Date: 06/17/2013

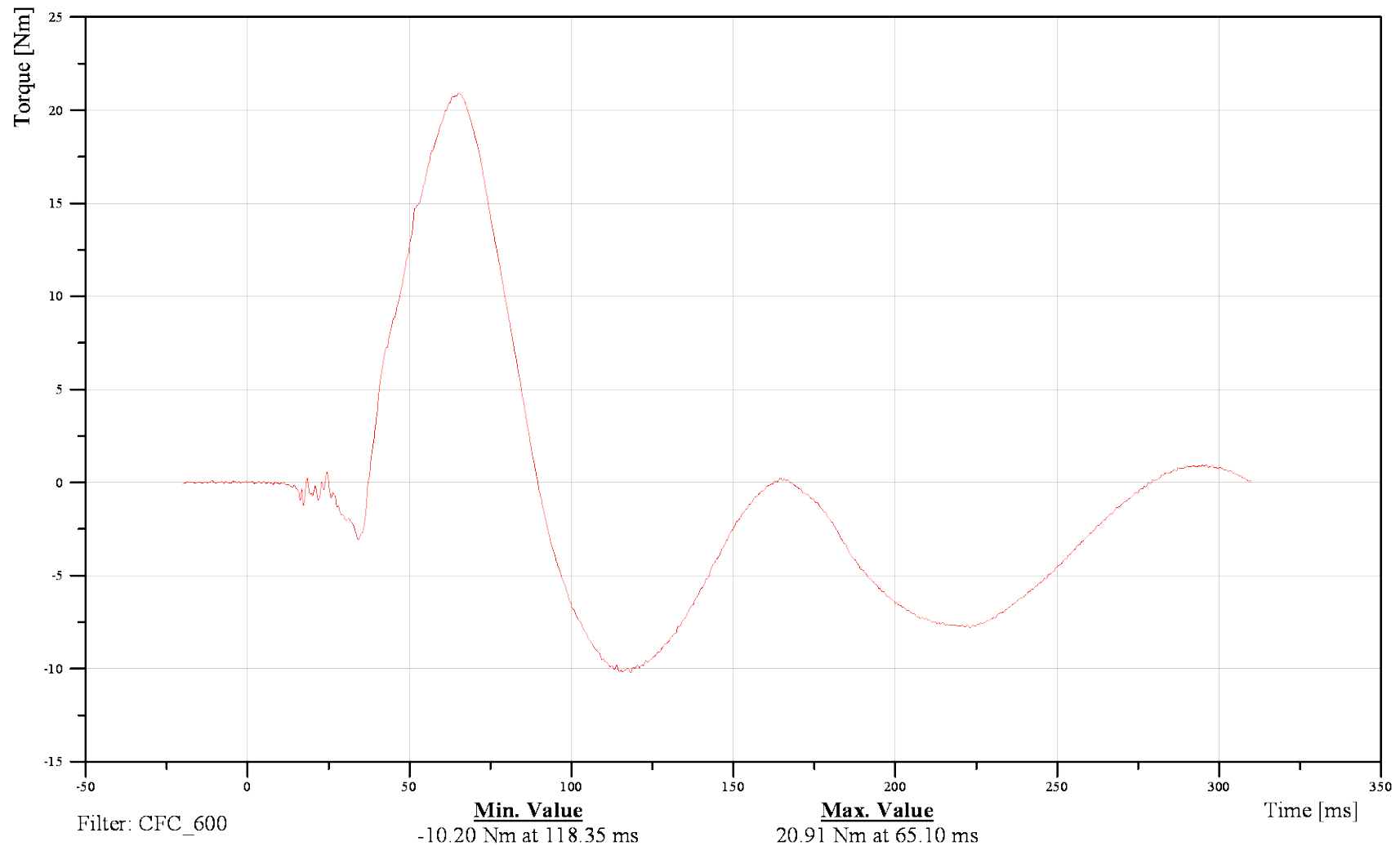
Time: 12:36

Customer: VRTC

11NECKLO00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Longitudinal Ax

Date: 06/17/2013

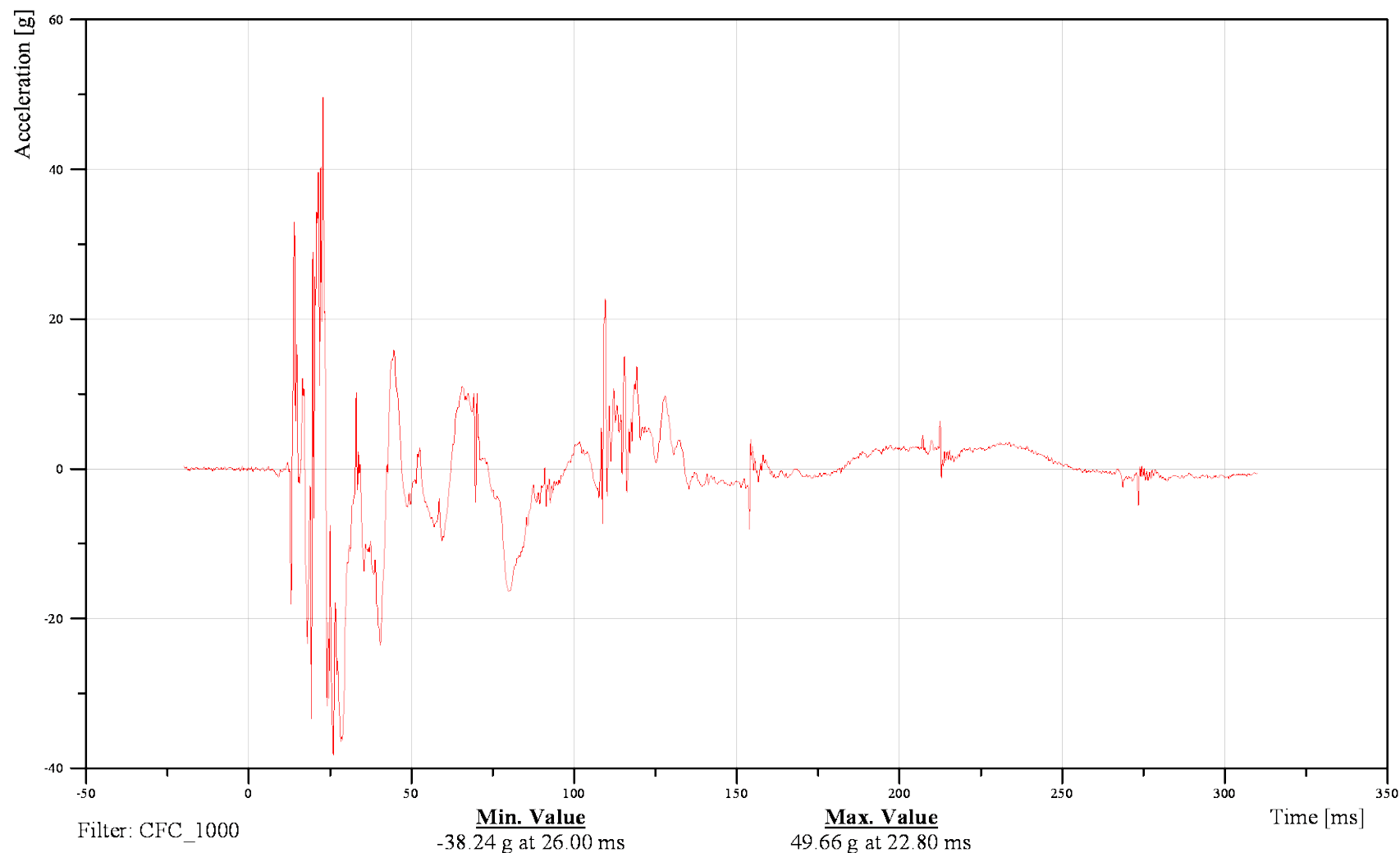
Time: 12:36

Customer: VRTC

11SHLDLE00WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Lateral Ay

Date: 06/17/2013

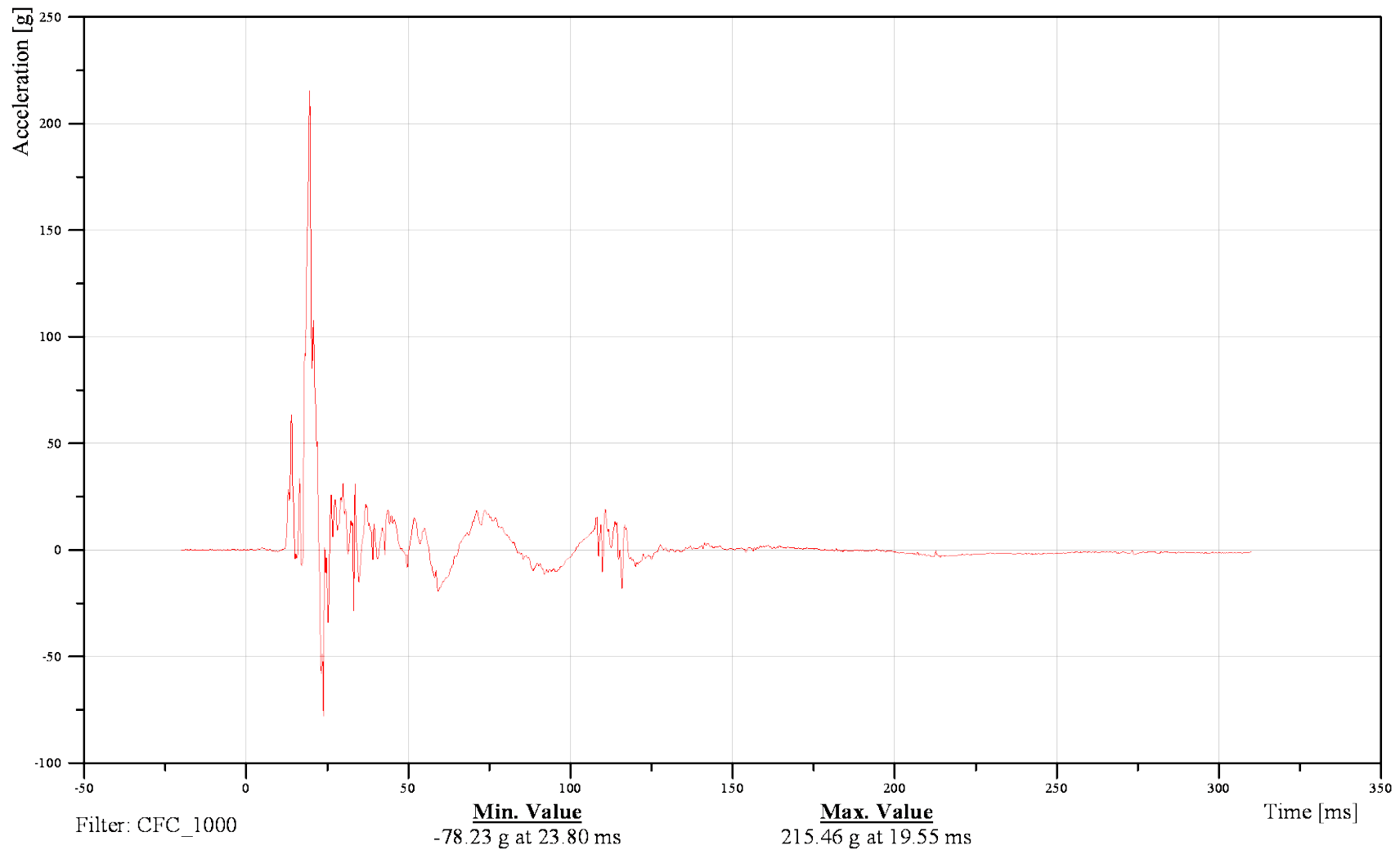
Time: 12:36

Customer: VRTC

11SHLDLE00WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Vertical Az

Date: 06/17/2013

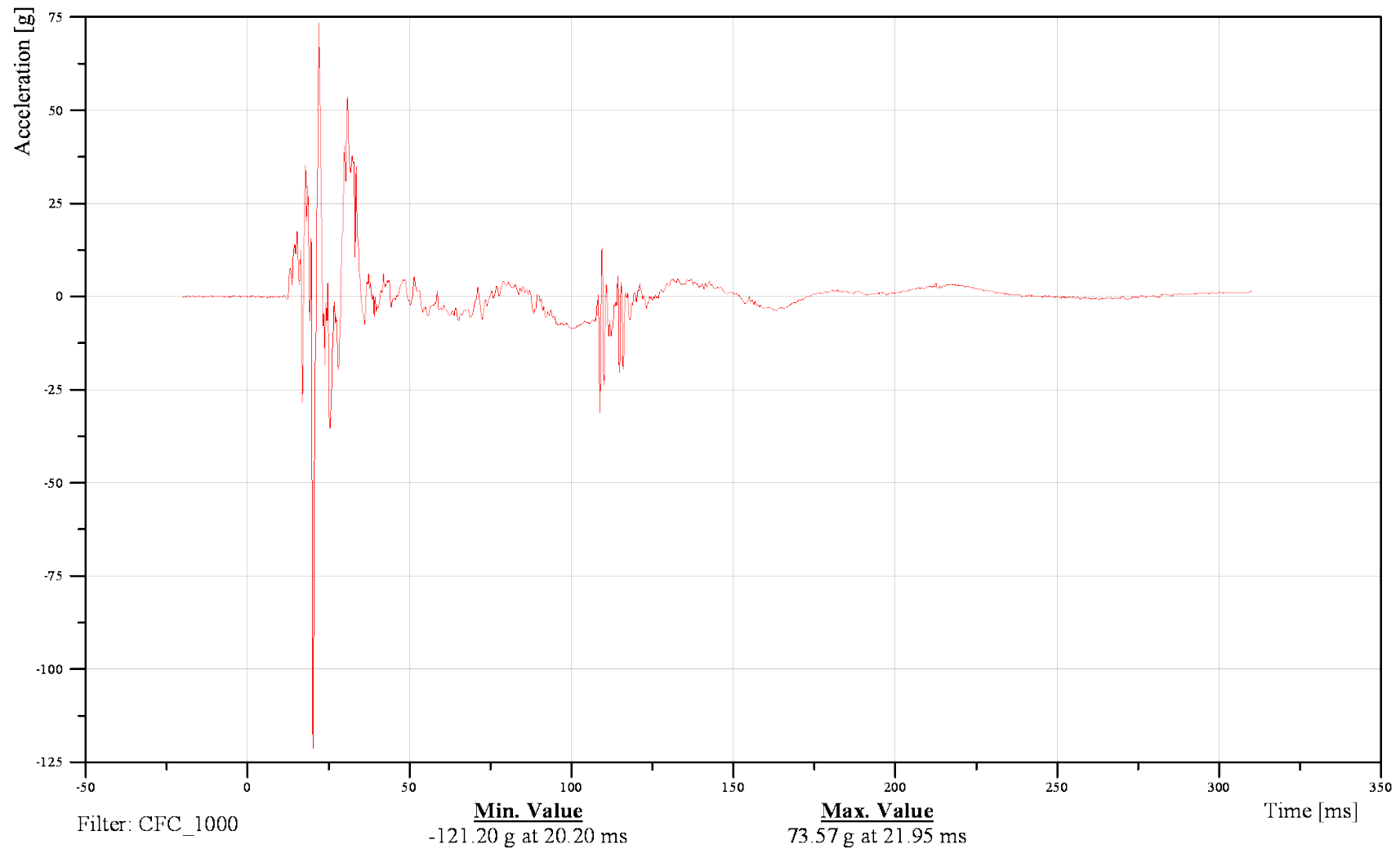
Time: 12:36

Customer: VRTC

11SHLDLE00WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder A Resultant

Date: 06/17/2013

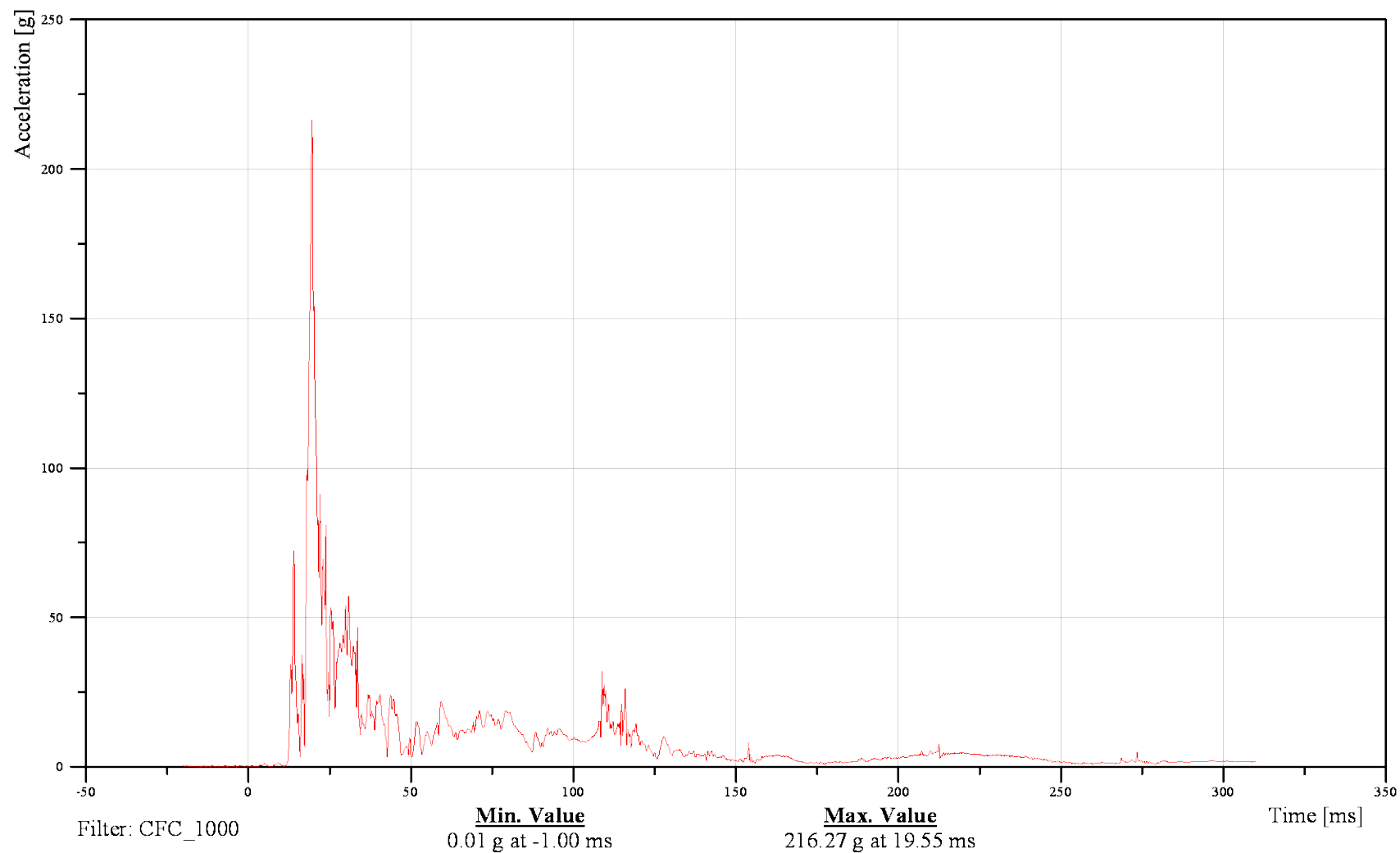
Time: 12:36

Customer: VRTC

11SHLDLE00WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Force Fx

Date: 06/17/2013

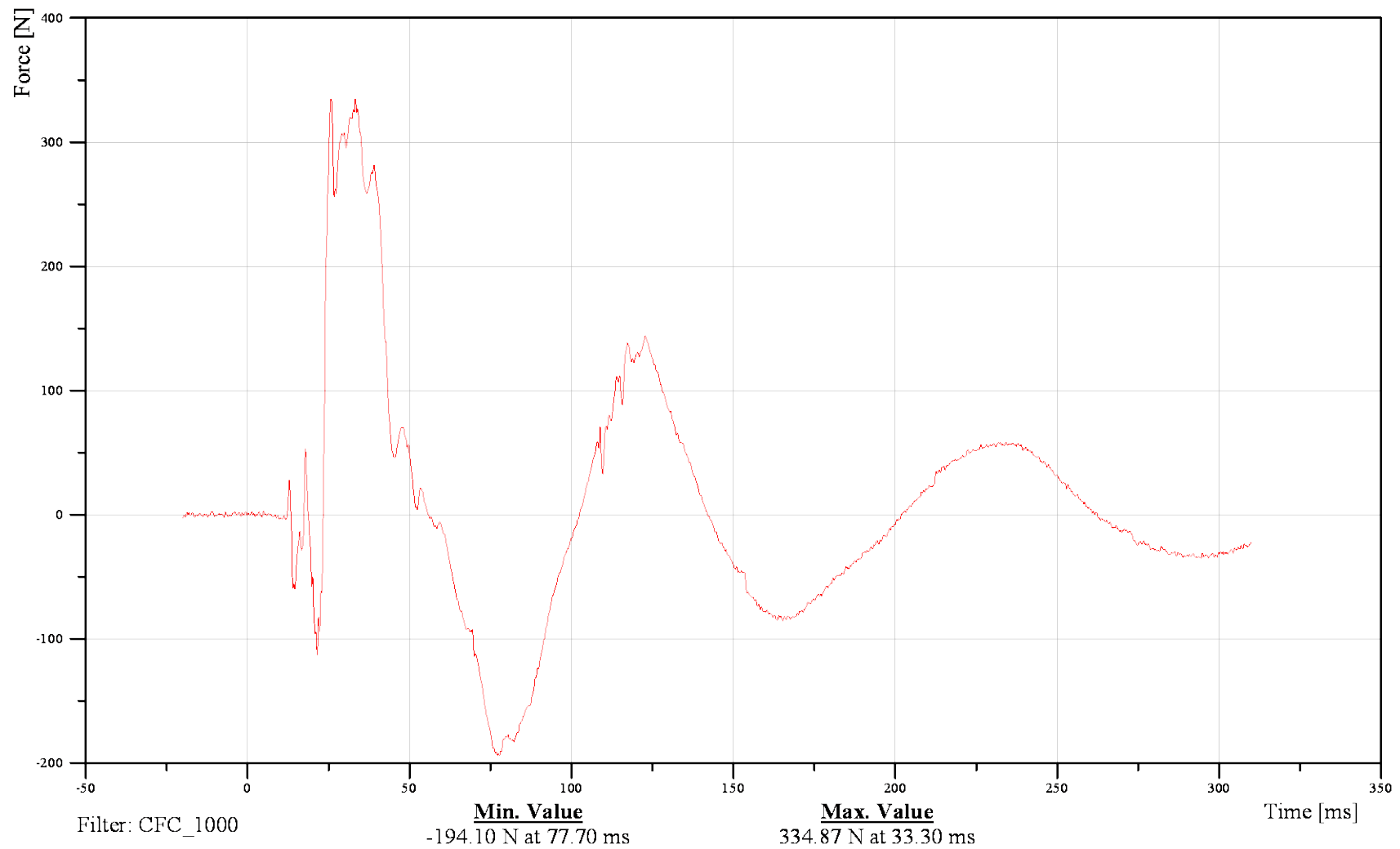
Time: 12:36

Customer: VRTC

11SHLDLE00WSFOXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Force Fy

Date: 06/17/2013

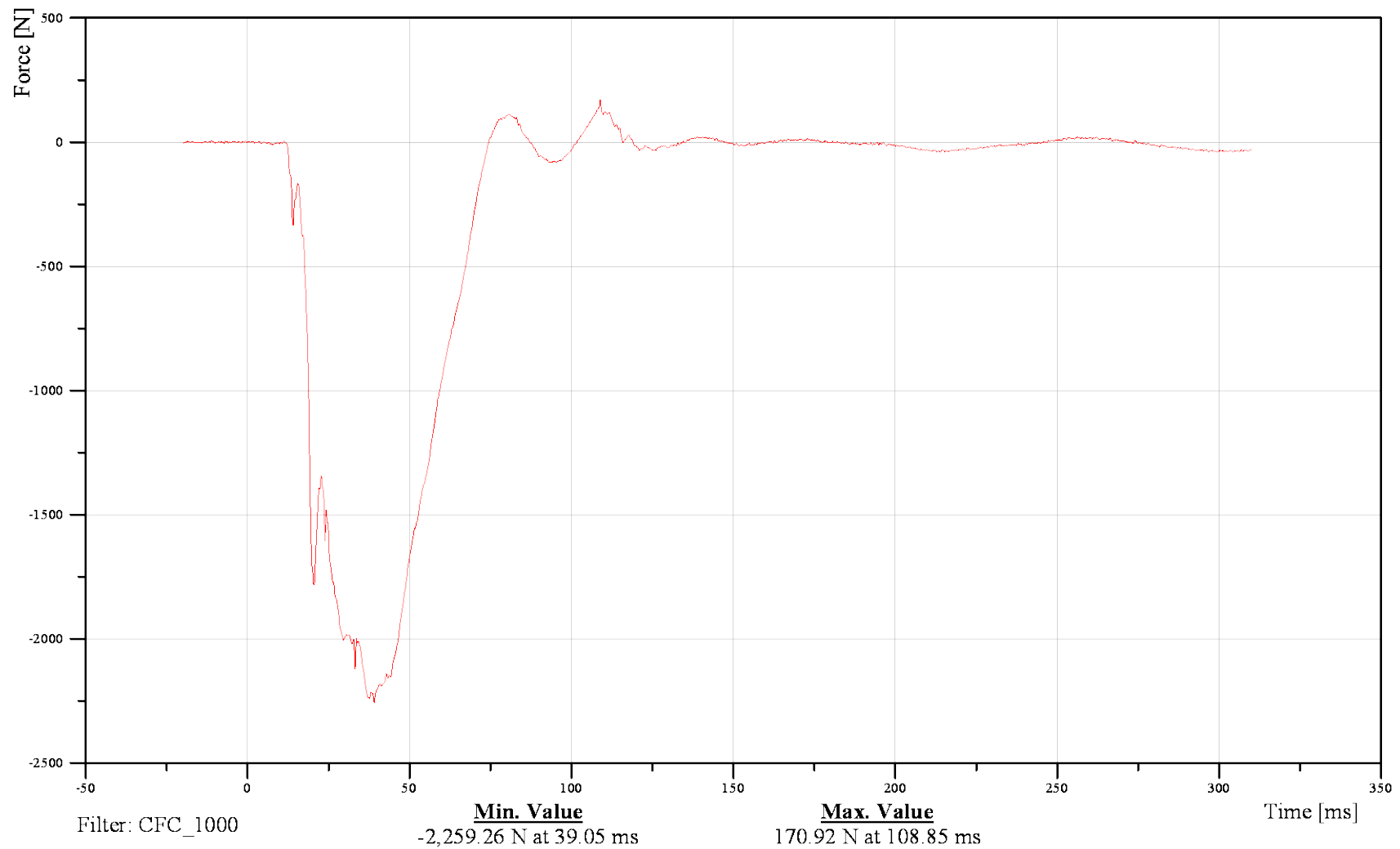
Time: 12:36

Customer: VRTC

11SHLDLE00WSFOYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Force Fz

Date: 06/17/2013

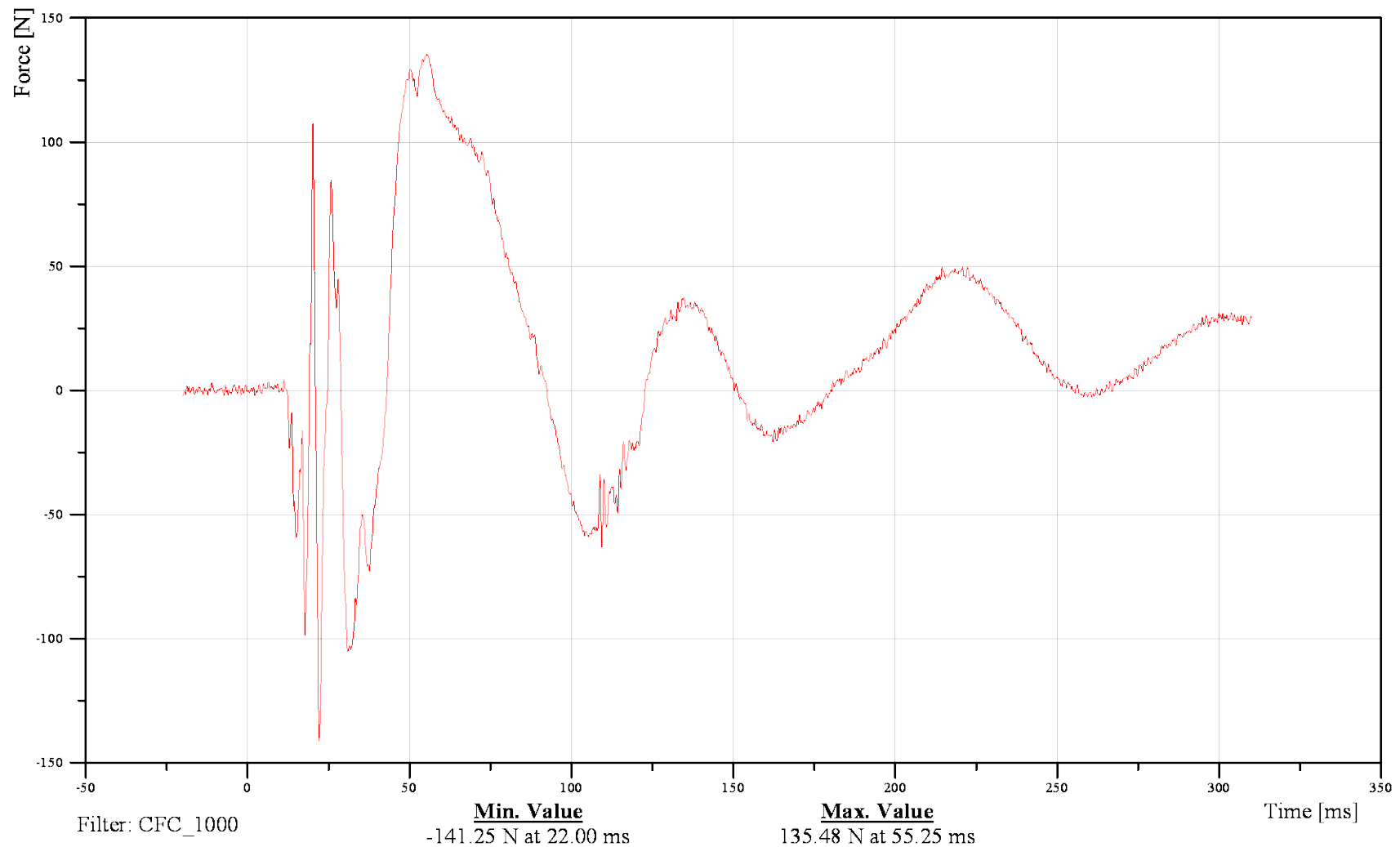
Time: 12:36

Customer: VRTC

11SHLDLE00WSFOZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Y Disp

Date: 06/17/2013

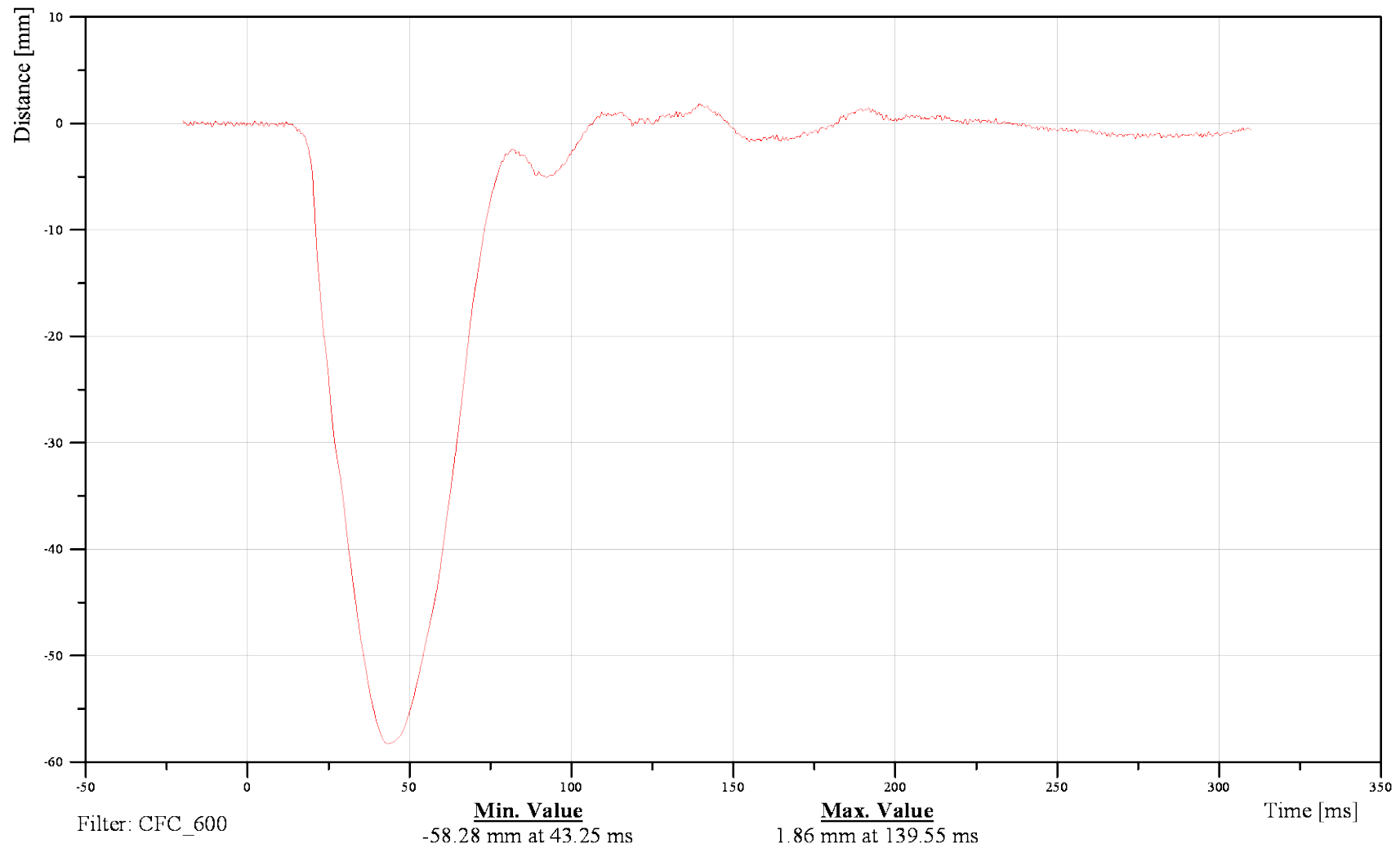
Time: 12:36

Customer: VRTC

11SHRILE00WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 Longitudinal Ax

Date: 06/17/2013

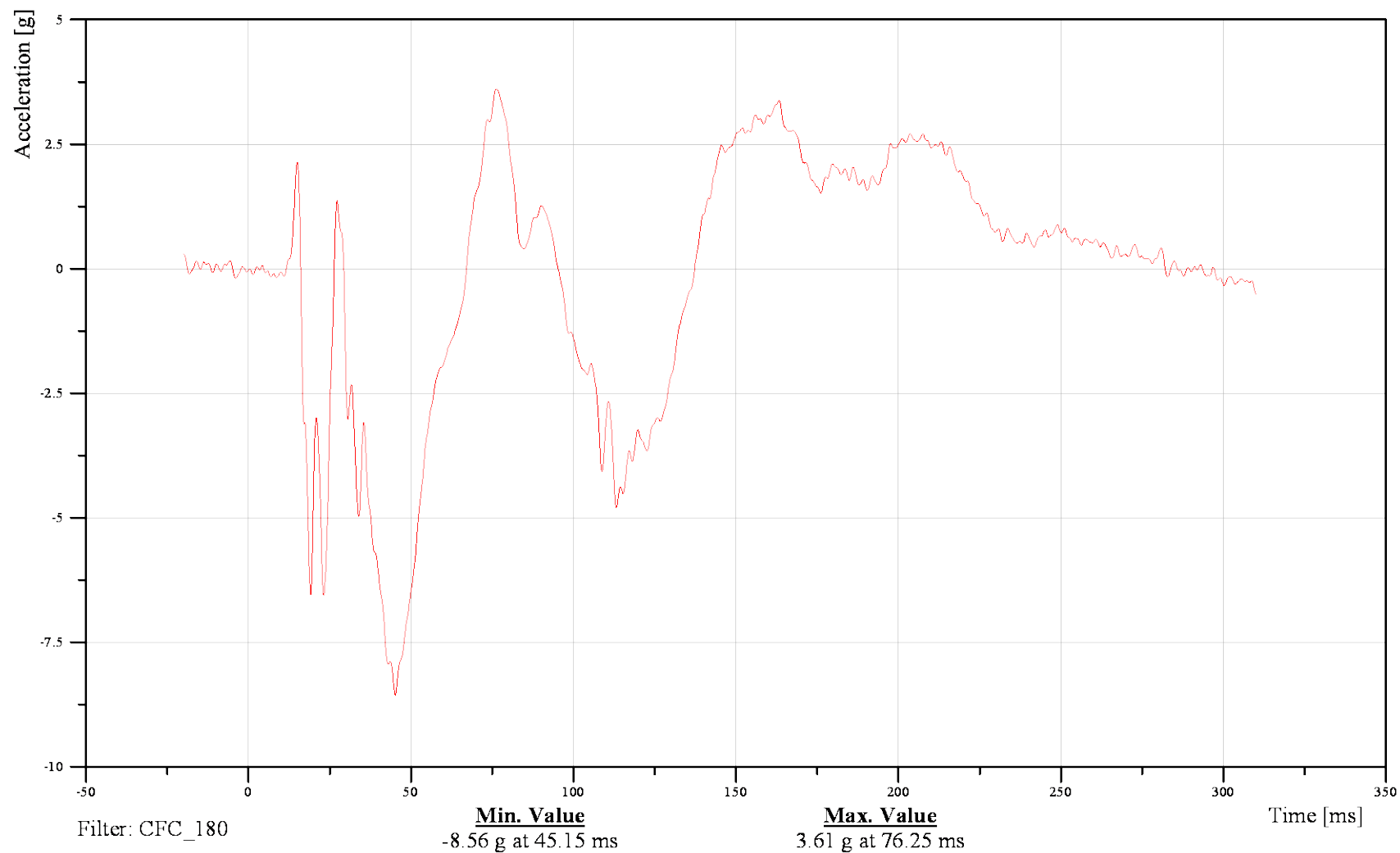
Time: 12:36

Customer: VRTC

11THSP0100WSACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 Lateral Ay

Date: 06/17/2013

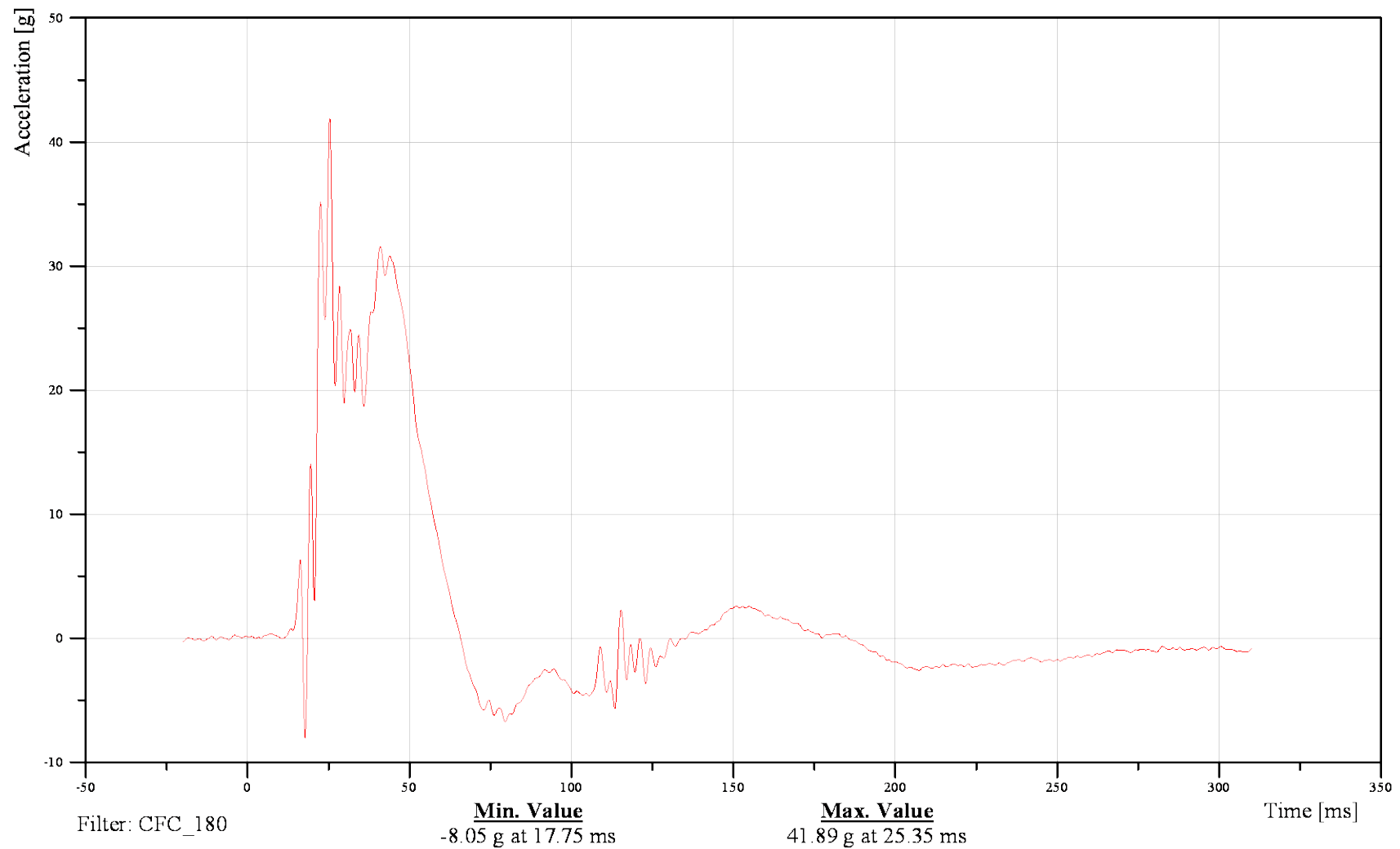
Time: 12:36

Customer: VRTC

11THSP0100WSACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 Vertical Az

Date: 06/17/2013

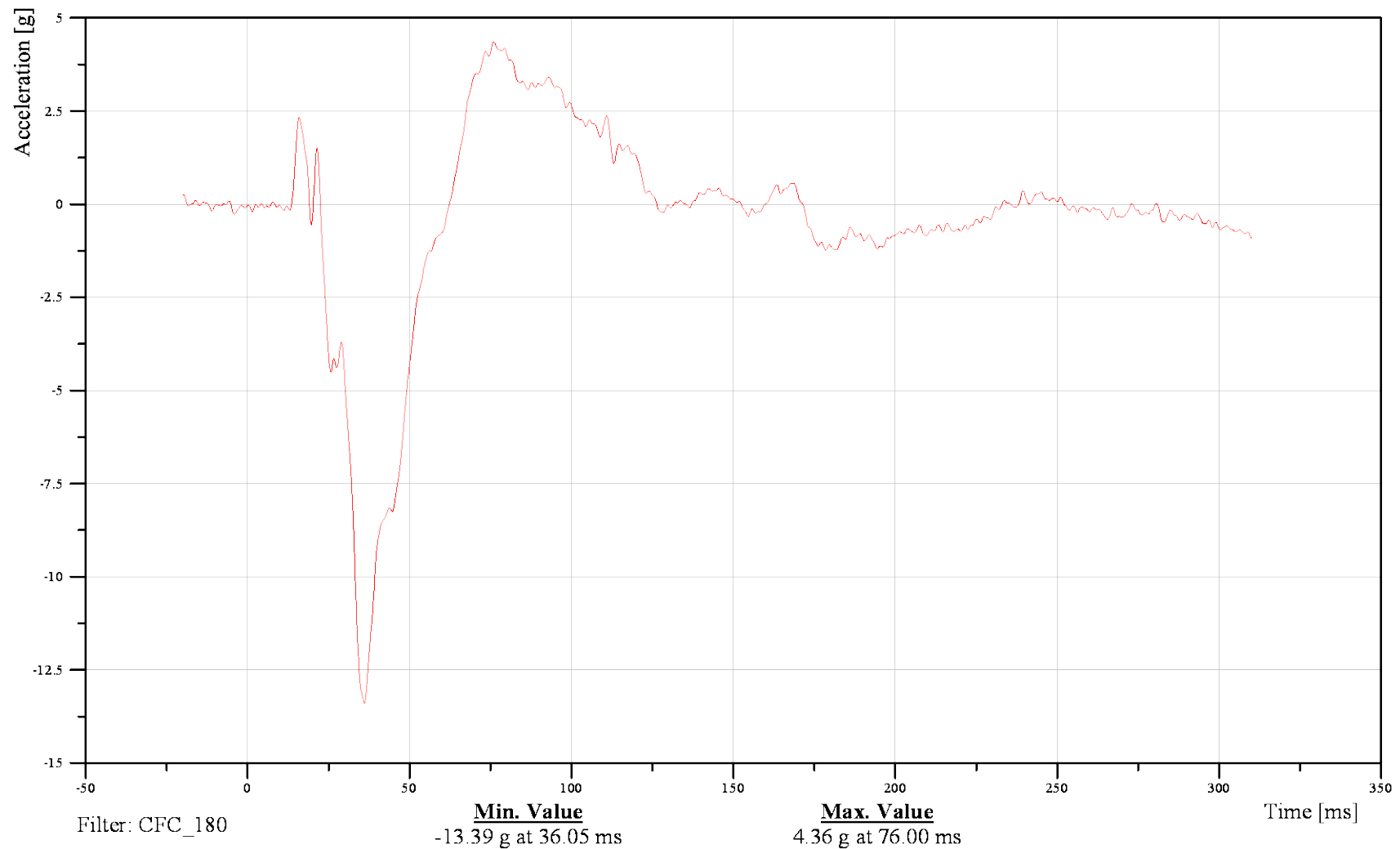
Time: 12:36

Customer: VRTC

11THSP0100WSACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 A Resultant

Date: 06/17/2013

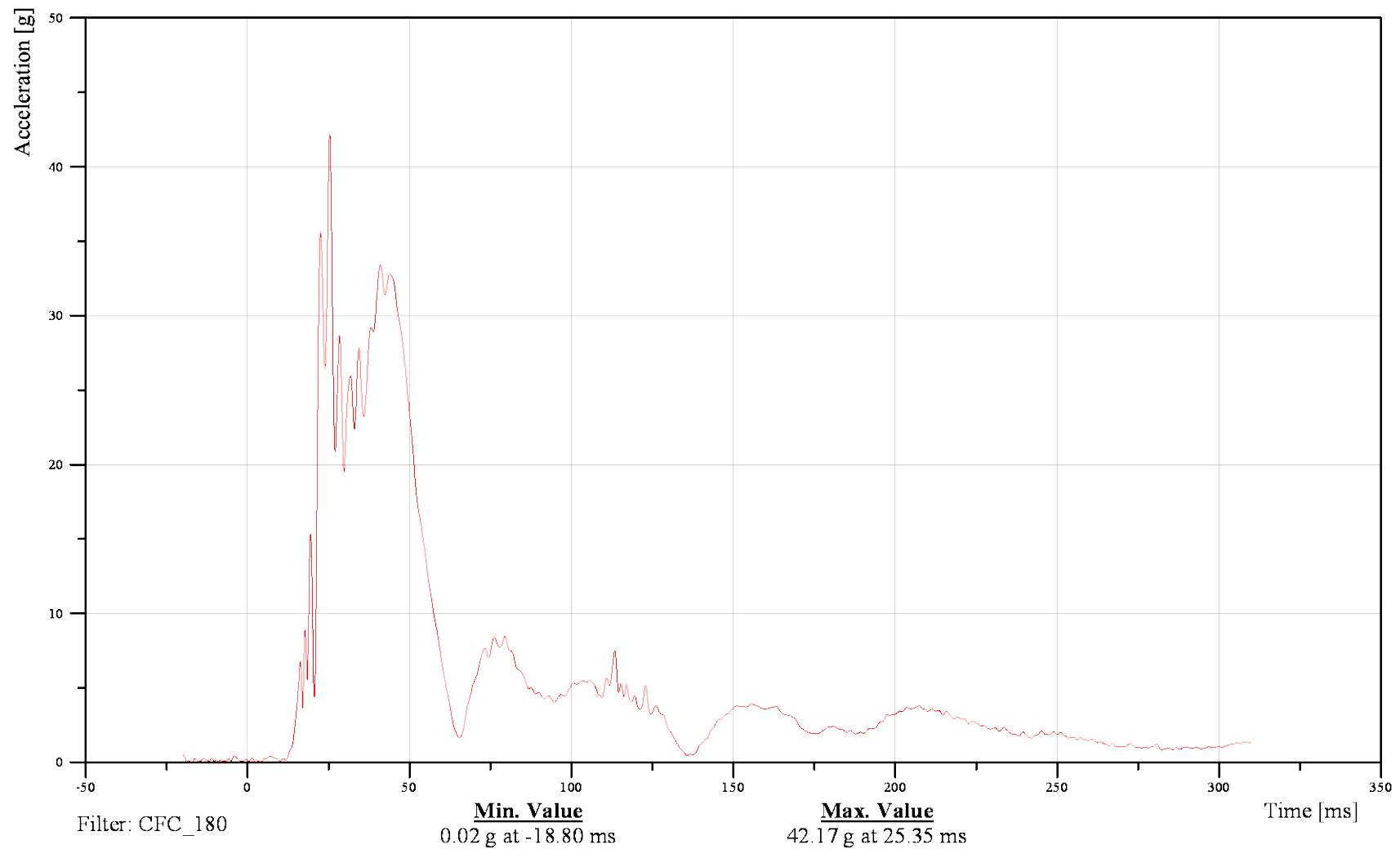
Time: 12:36

Customer: VRTC

11THSP0100WSACRC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Longitudinal Ax

Date: 06/17/2013

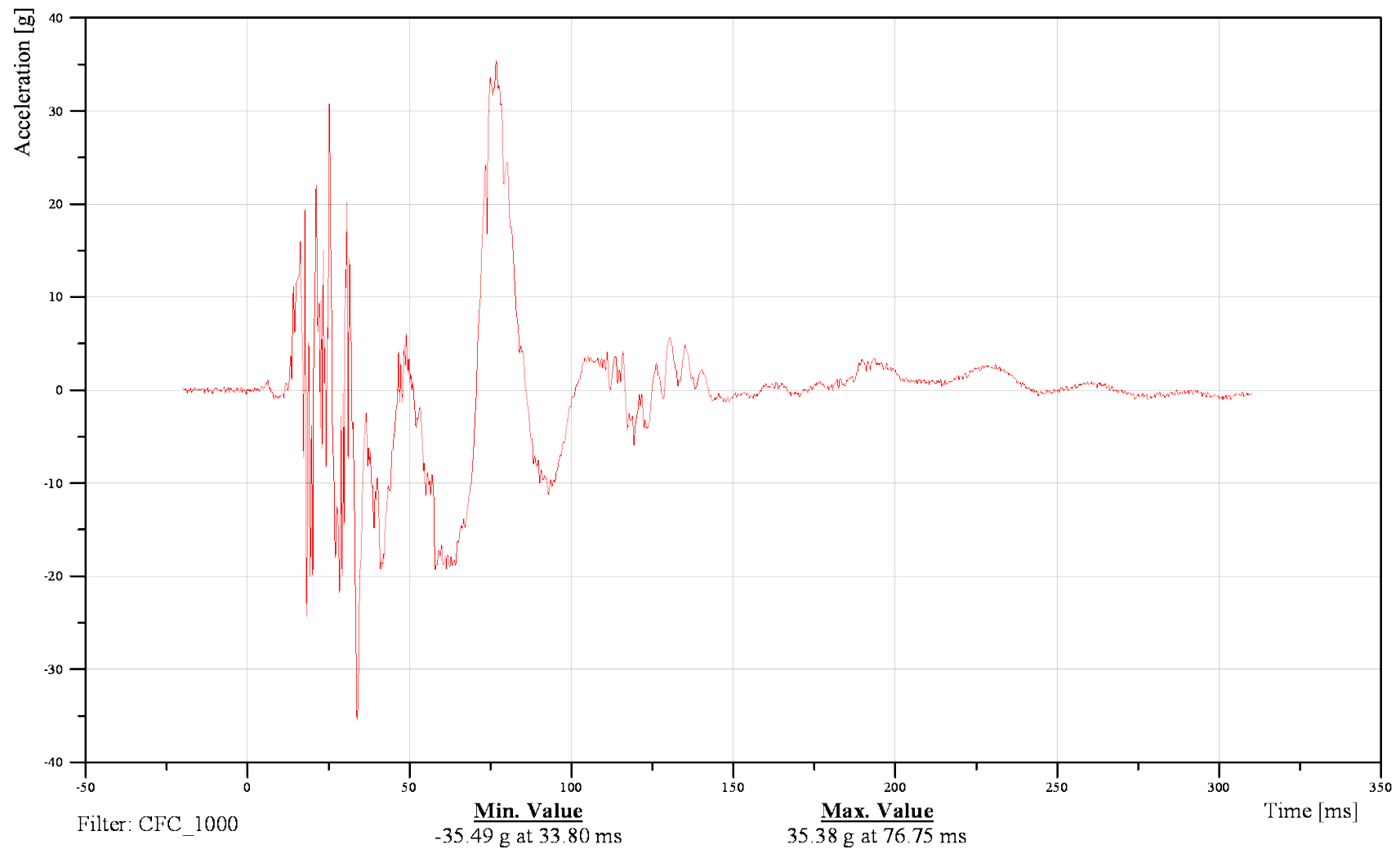
Time: 12:36

Customer: VRTC

11TRRILE01WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Lateral Ay

Date: 06/17/2013

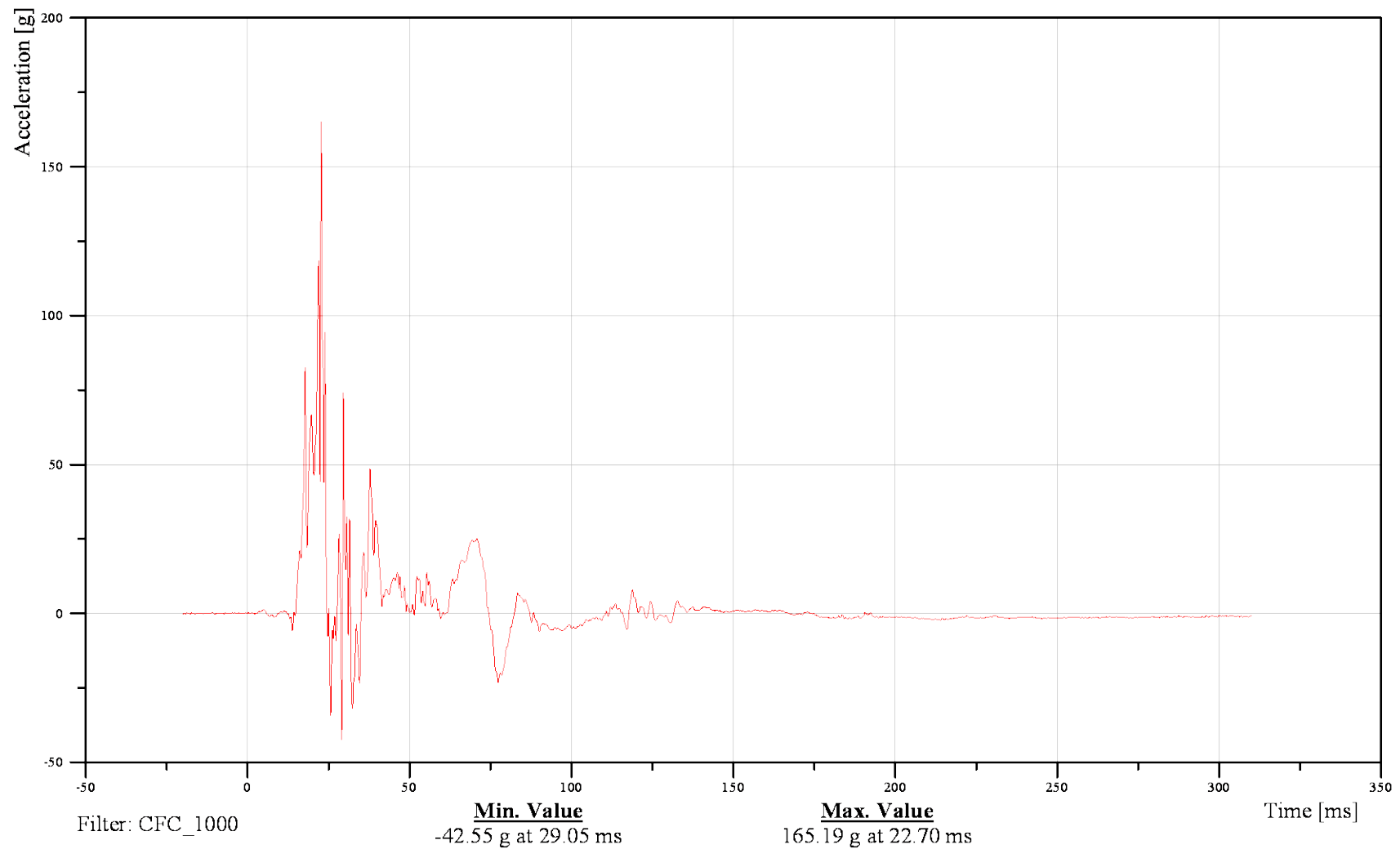
Time: 12:36

Customer: VRTC

11TRRILE01WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Vertical Az

Date: 06/17/2013

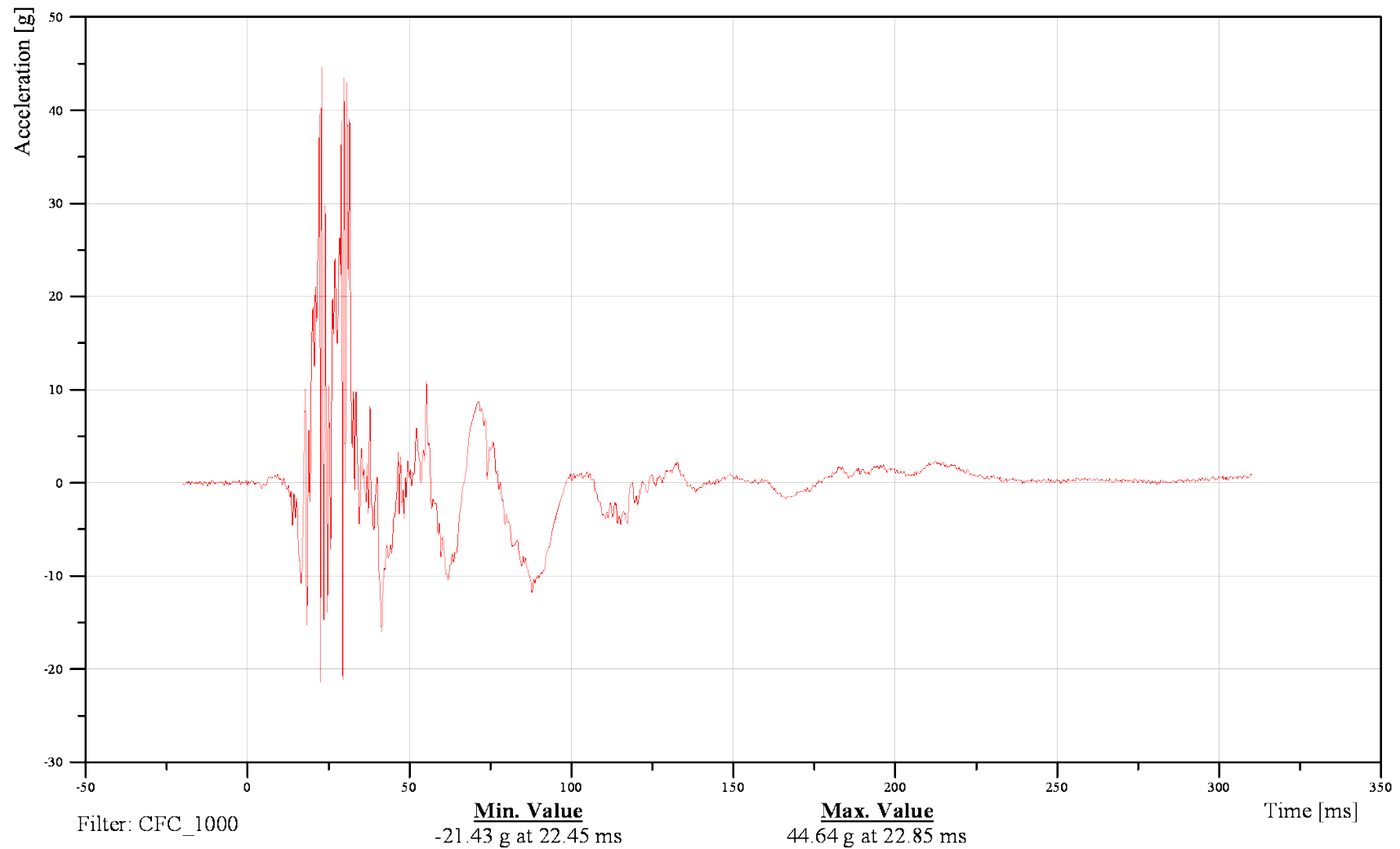
Time: 12:36

Customer: VRTC

11TRRILE01WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 A Resultant

Date: 06/17/2013

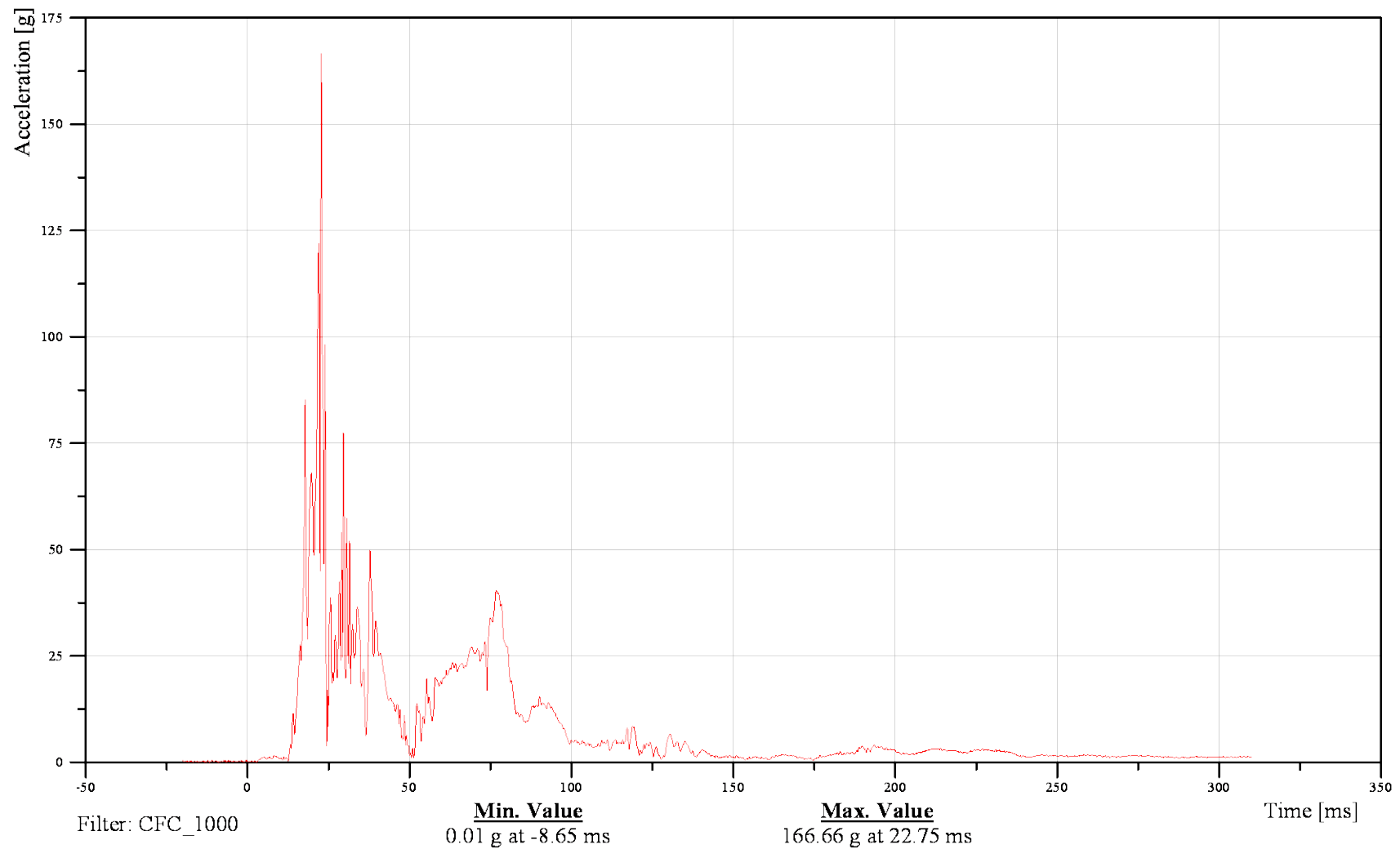
Time: 12:36

Customer: VRTC

11TRRILE01WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Lateral Disp

Date: 06/17/2013

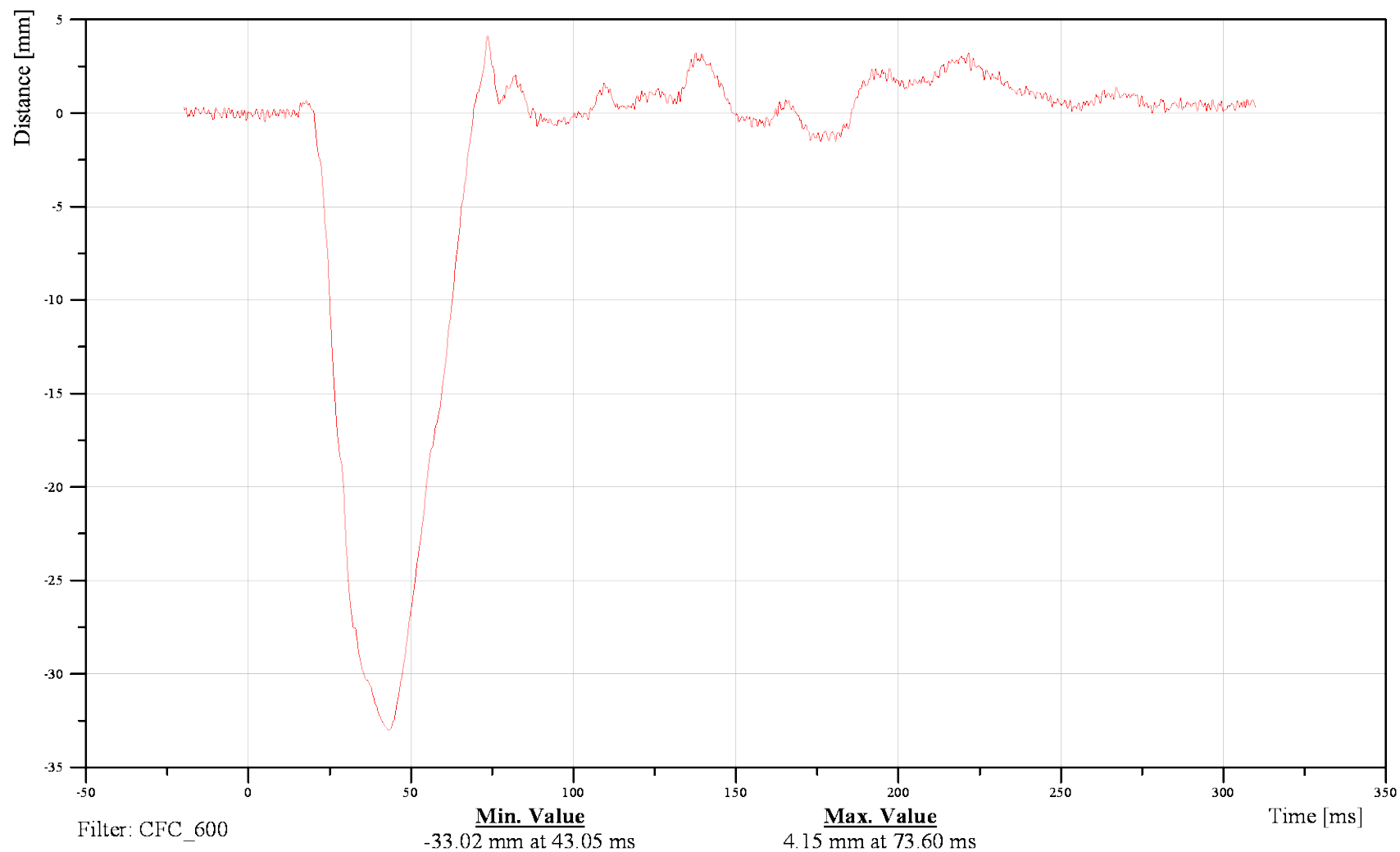
Time: 12:36

Customer: VRTC

11TRRILE01WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 Longitudinal Ax

Date: 06/17/2013

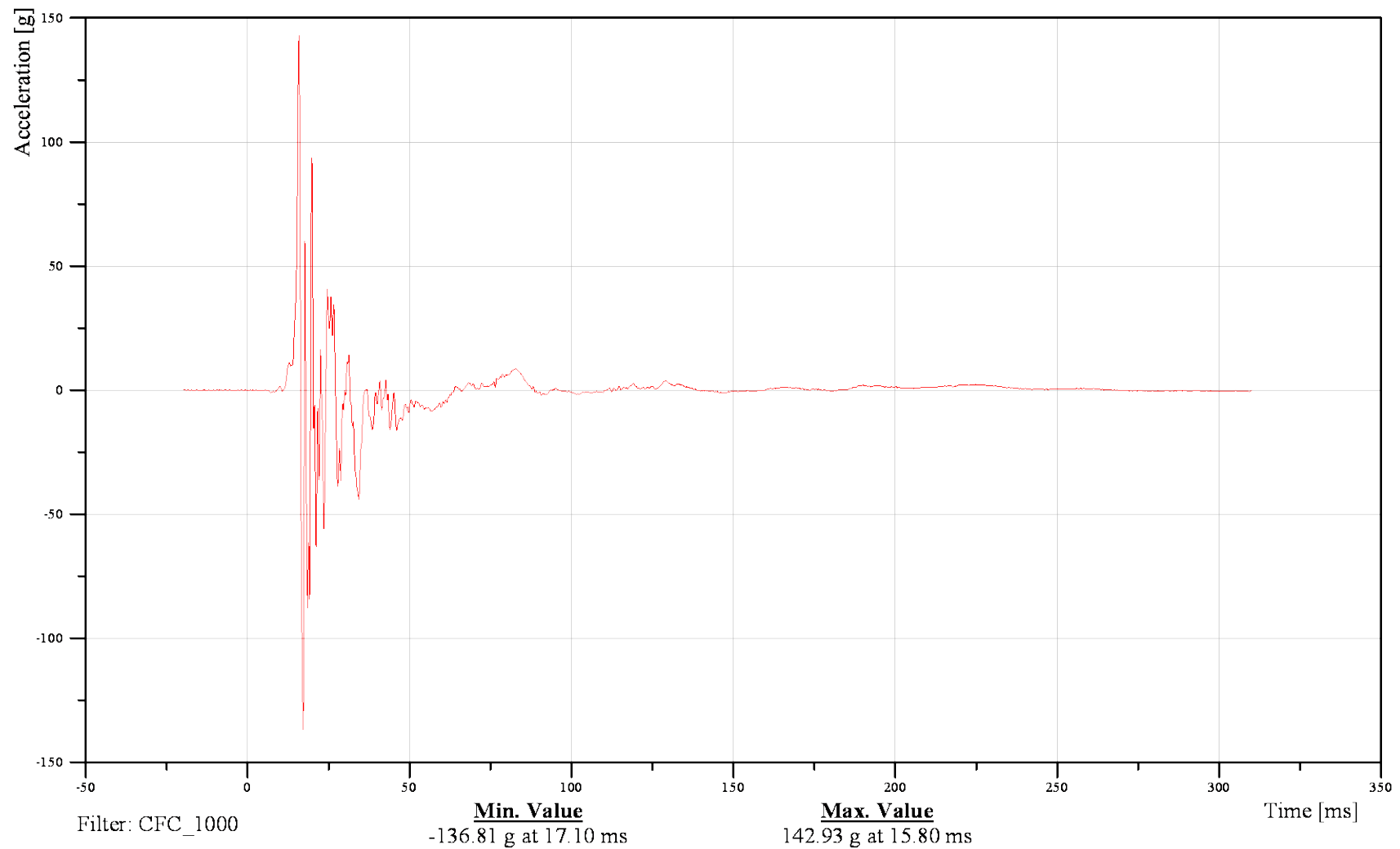
Time: 12:36

Customer: VRTC

11TRRILE02WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 Lateral Ay

Date: 06/17/2013

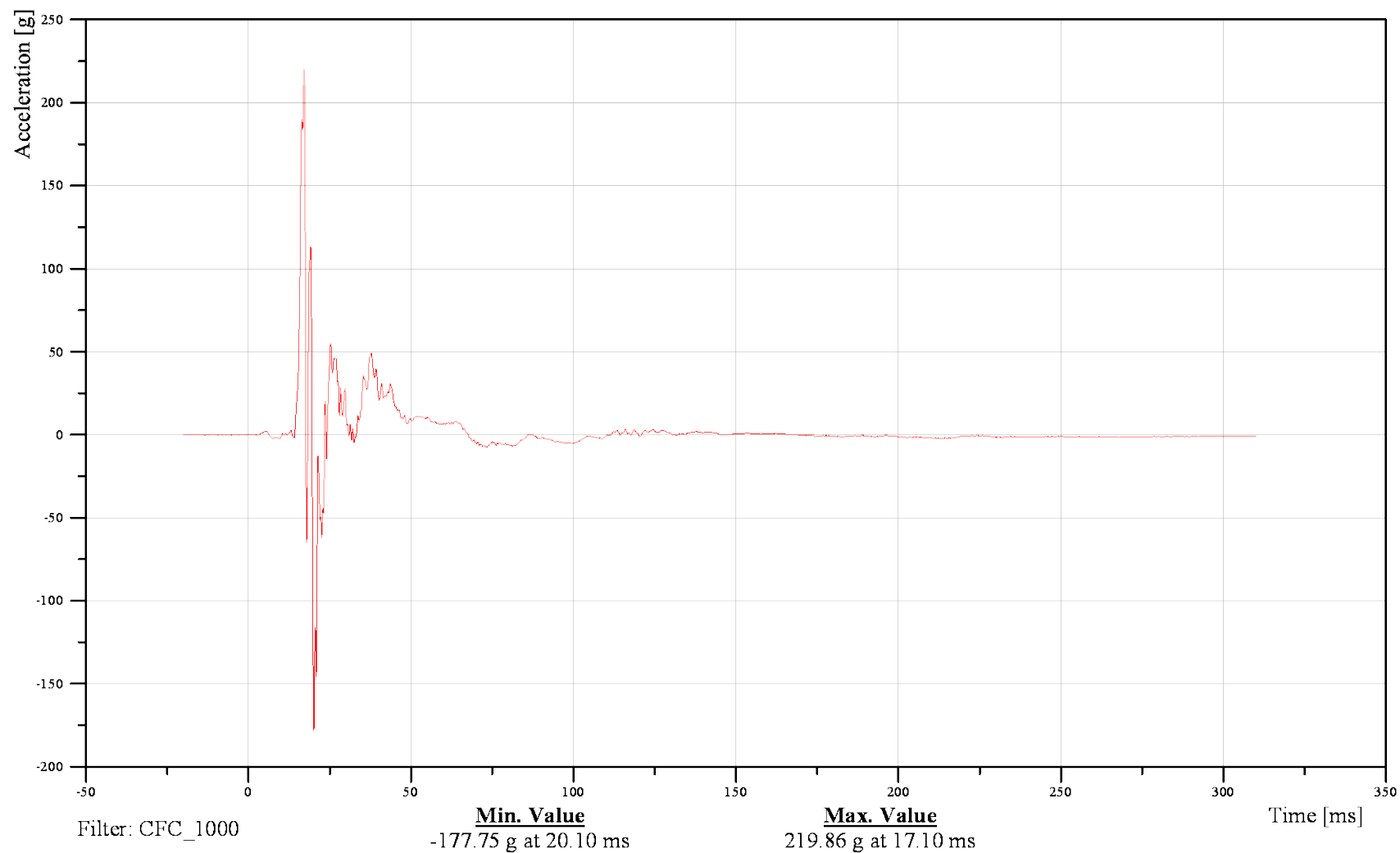
Time: 12:36

Customer: VRTC

11TRRILE02WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 Vertical Az

Date: 06/17/2013

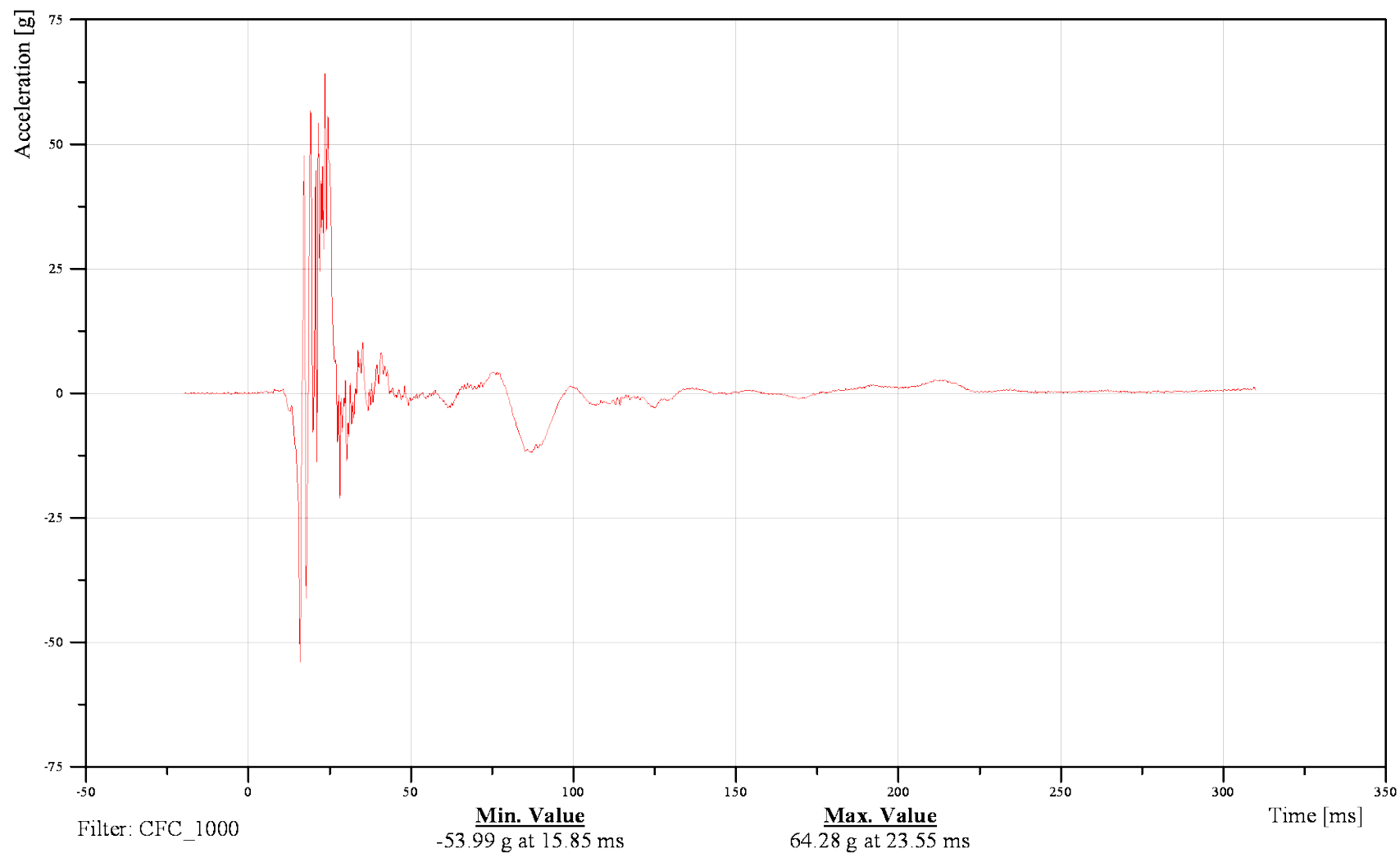
Time: 12:36

Customer: VRTC

11TRRILE02WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 A Resultant

Date: 06/17/2013

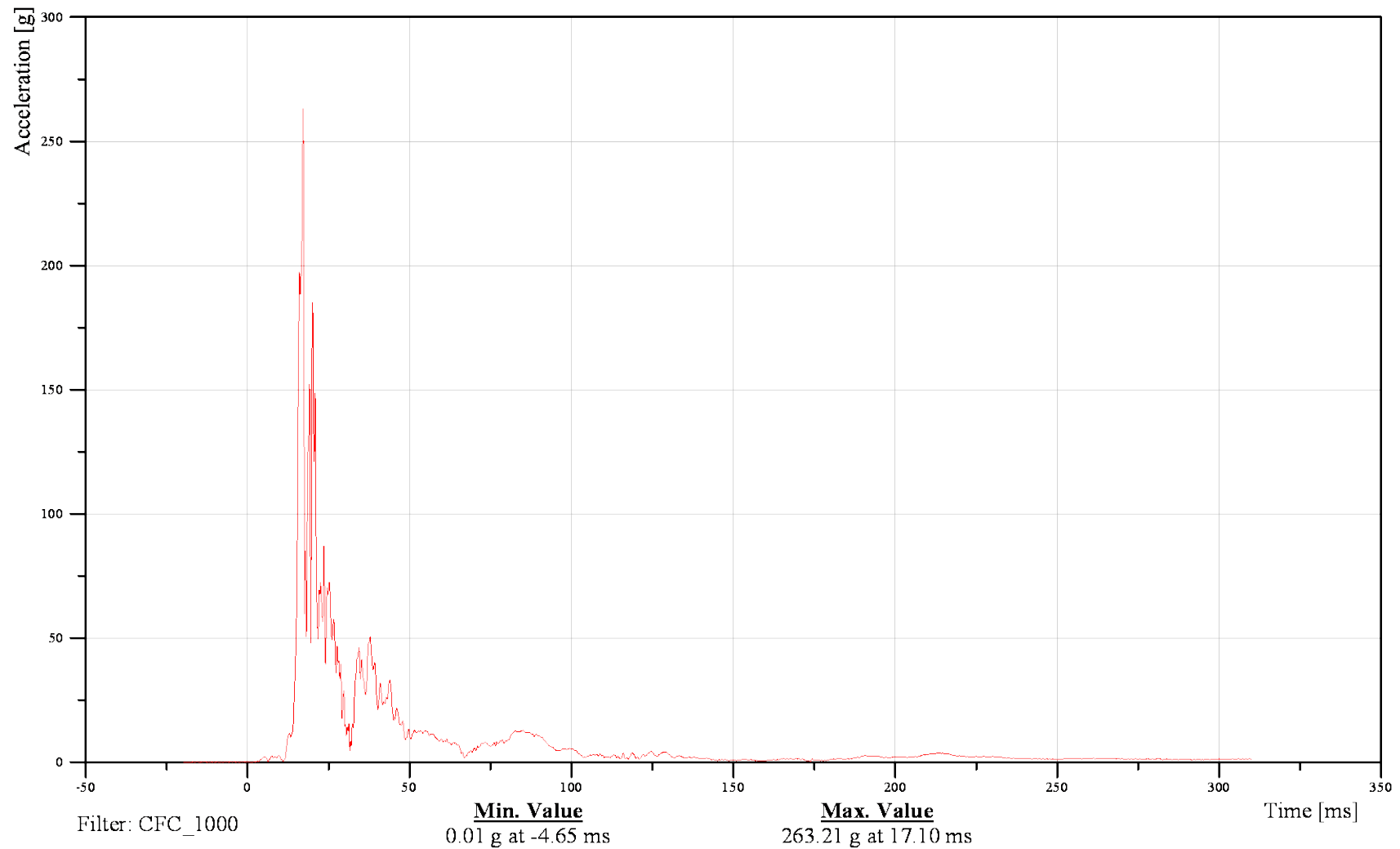
Time: 12:36

Customer: VRTC

11TRRILE02WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 2 IRTRAC Compression

Date: 06/17/2013

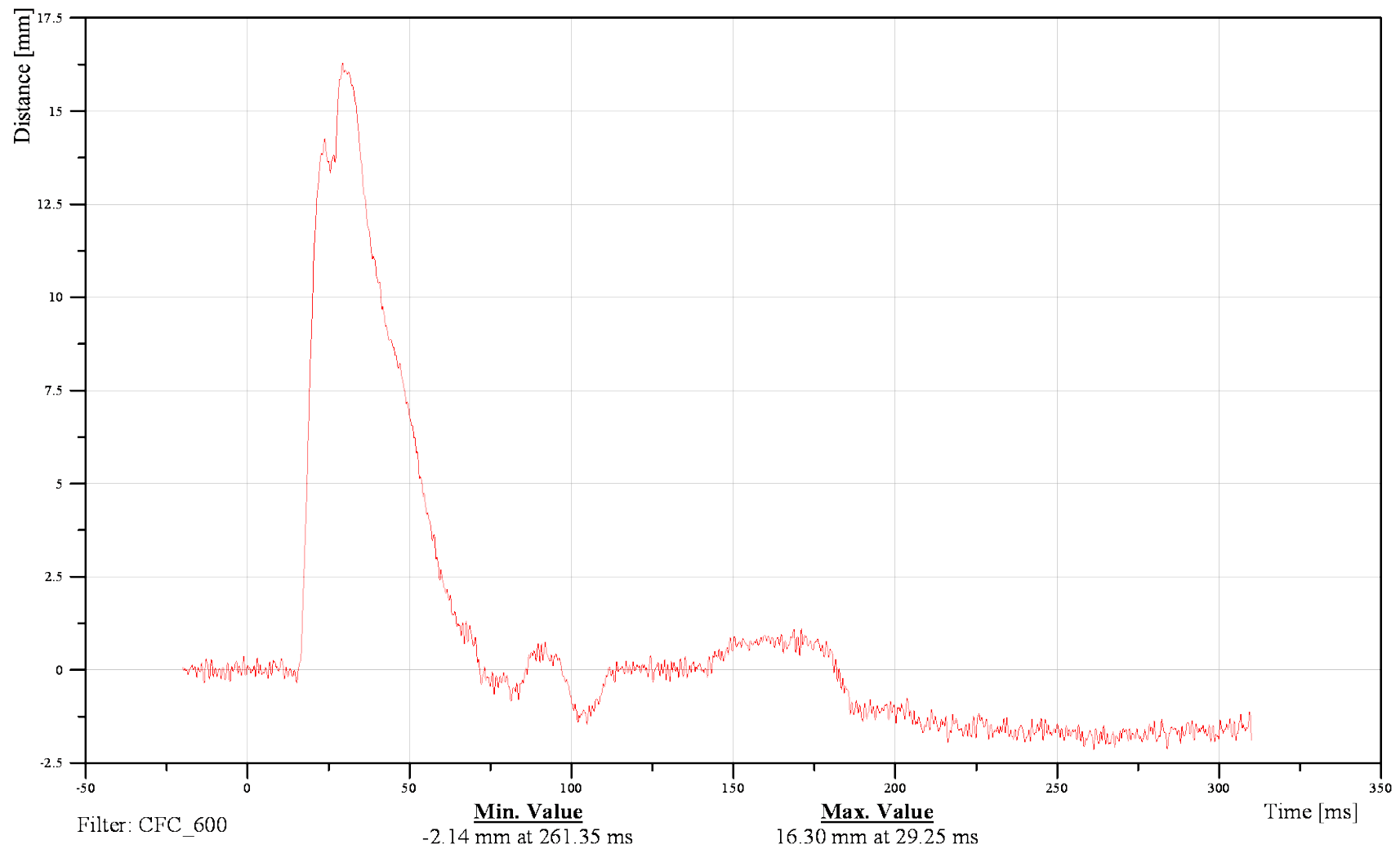
Time: 12:36

Customer: VRTC

11TRRILE02WSDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB2 Rotational Angle

Date: 06/17/2013

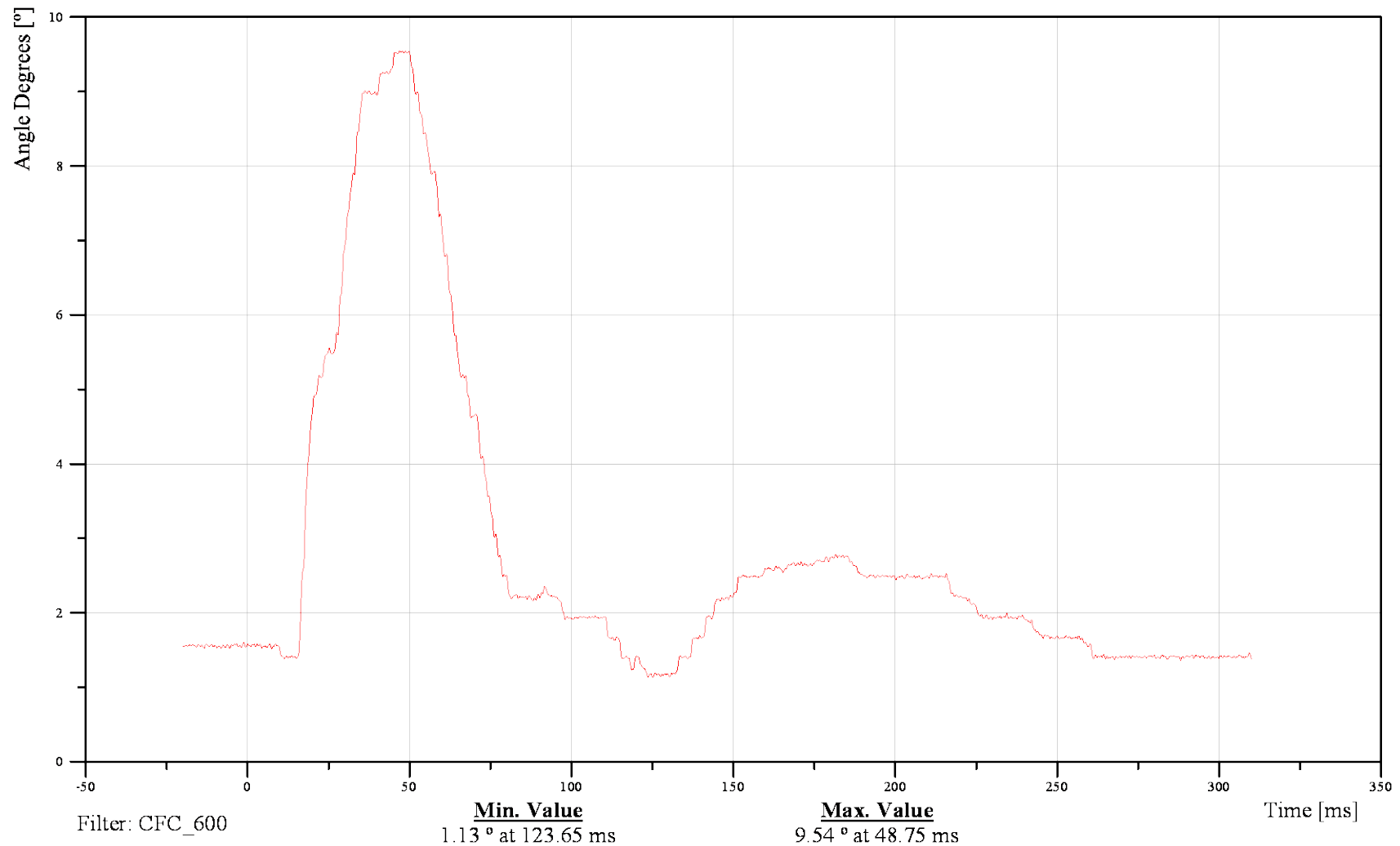
Time: 12:36

Customer: VRTC

11TRRILE02WSANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 2 IRTRAC X Deflection

Date: 06/17/2013

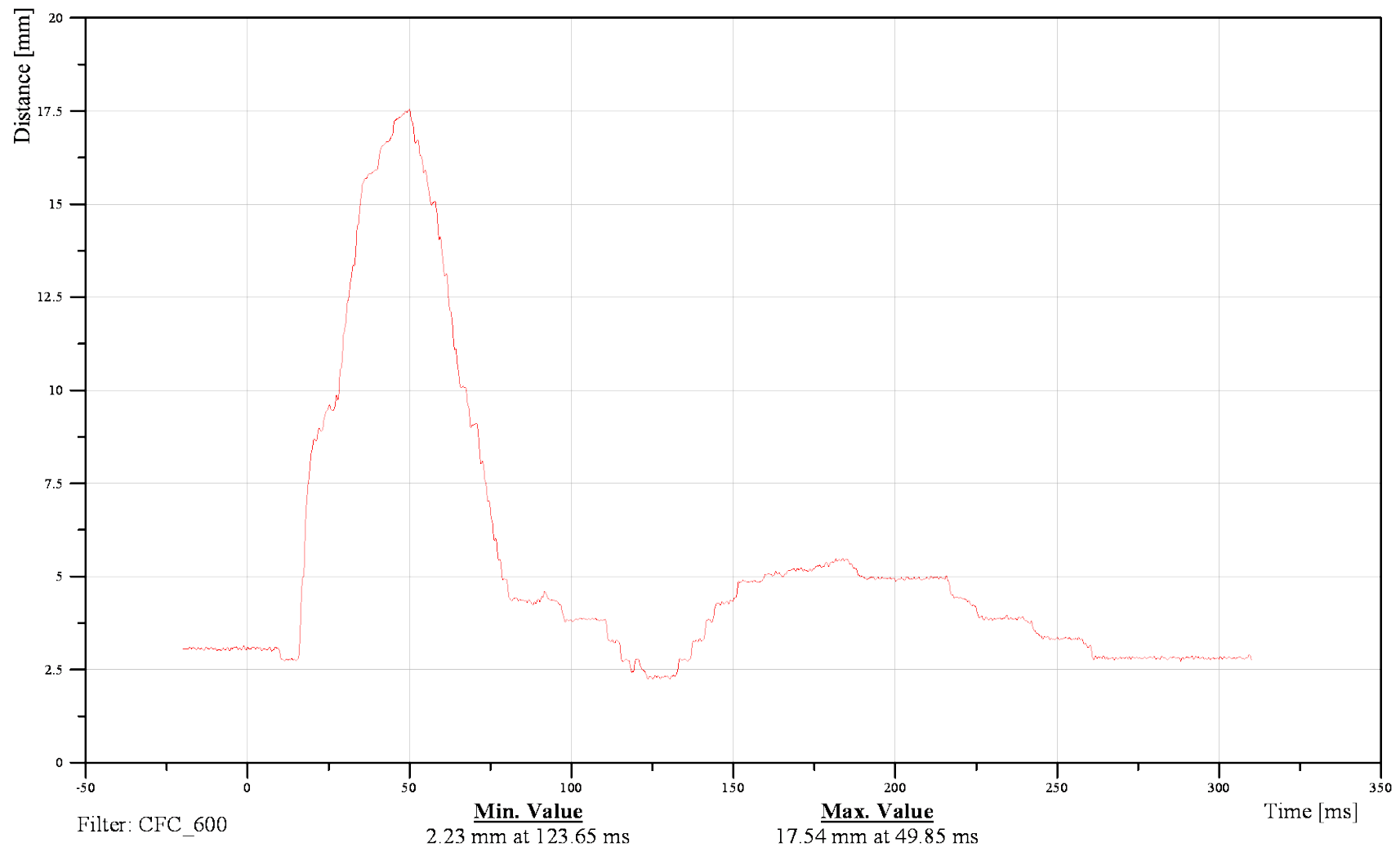
Time: 12:36

Customer: VRTC

11TRRILE02WSDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 2 IRTRAC Y Deflection

Date: 06/17/2013

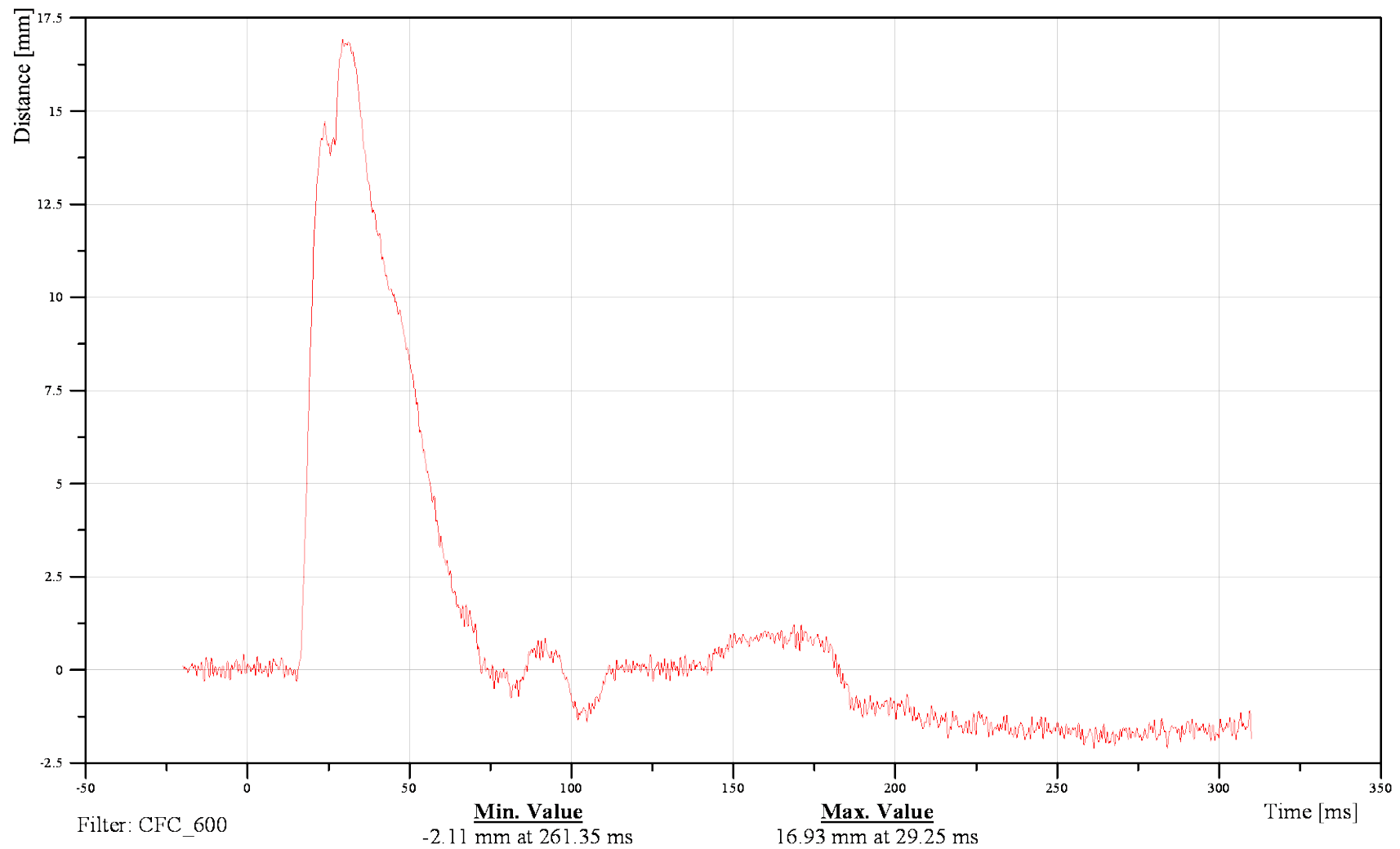
Time: 12:36

Customer: VRTC

11TRRILE02WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 Longitudinal Ax

Date: 06/17/2013

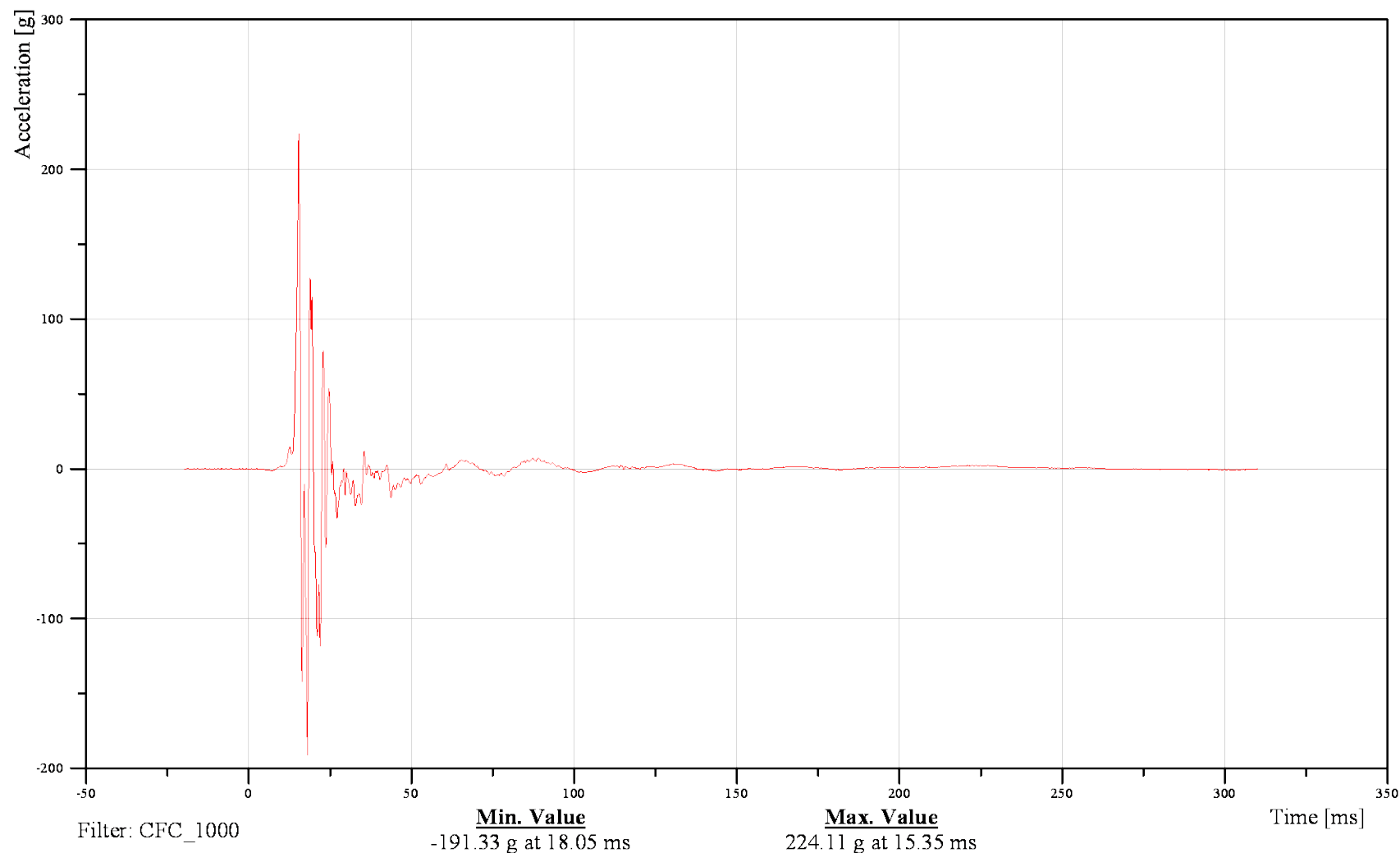
Time: 12:36

Customer: VRTC

11TRRILE03WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 Lateral Ay

Date: 06/17/2013

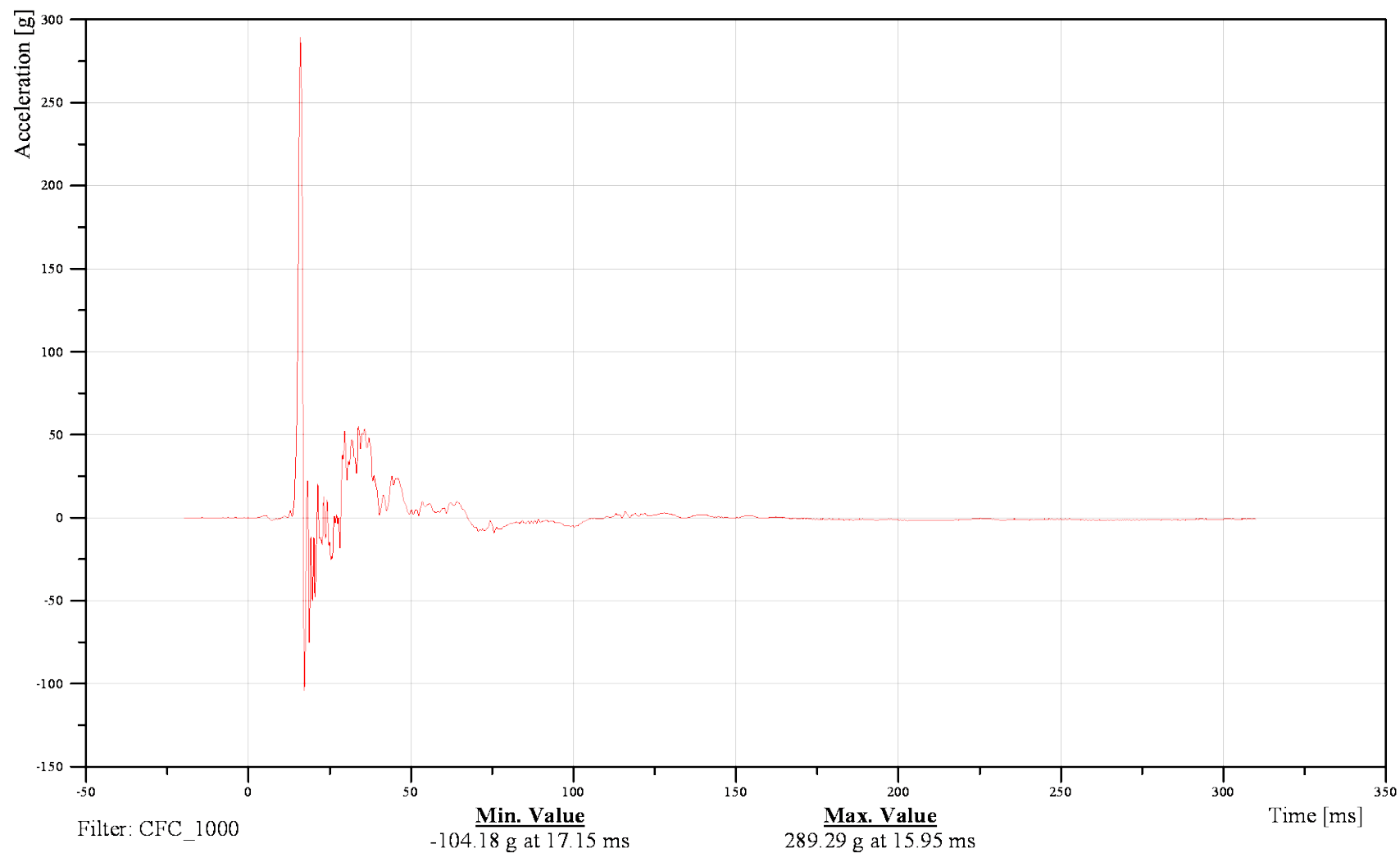
Time: 12:36

Customer: VRTC

11TRRILE03WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 Vertical Az

Date: 06/17/2013

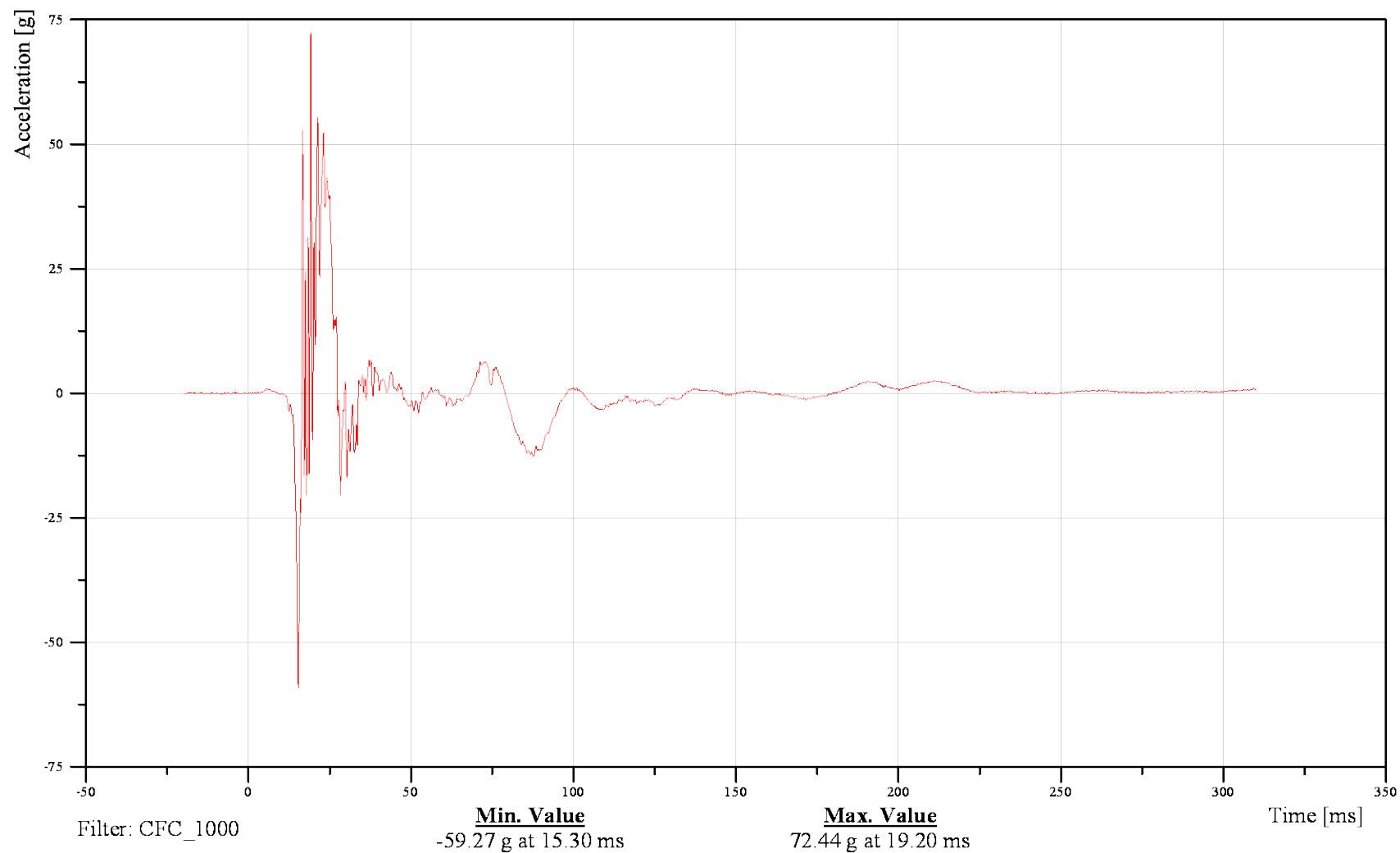
Time: 12:36

Customer: VRTC

11TRRILE03WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 A Resultant

Date: 06/17/2013

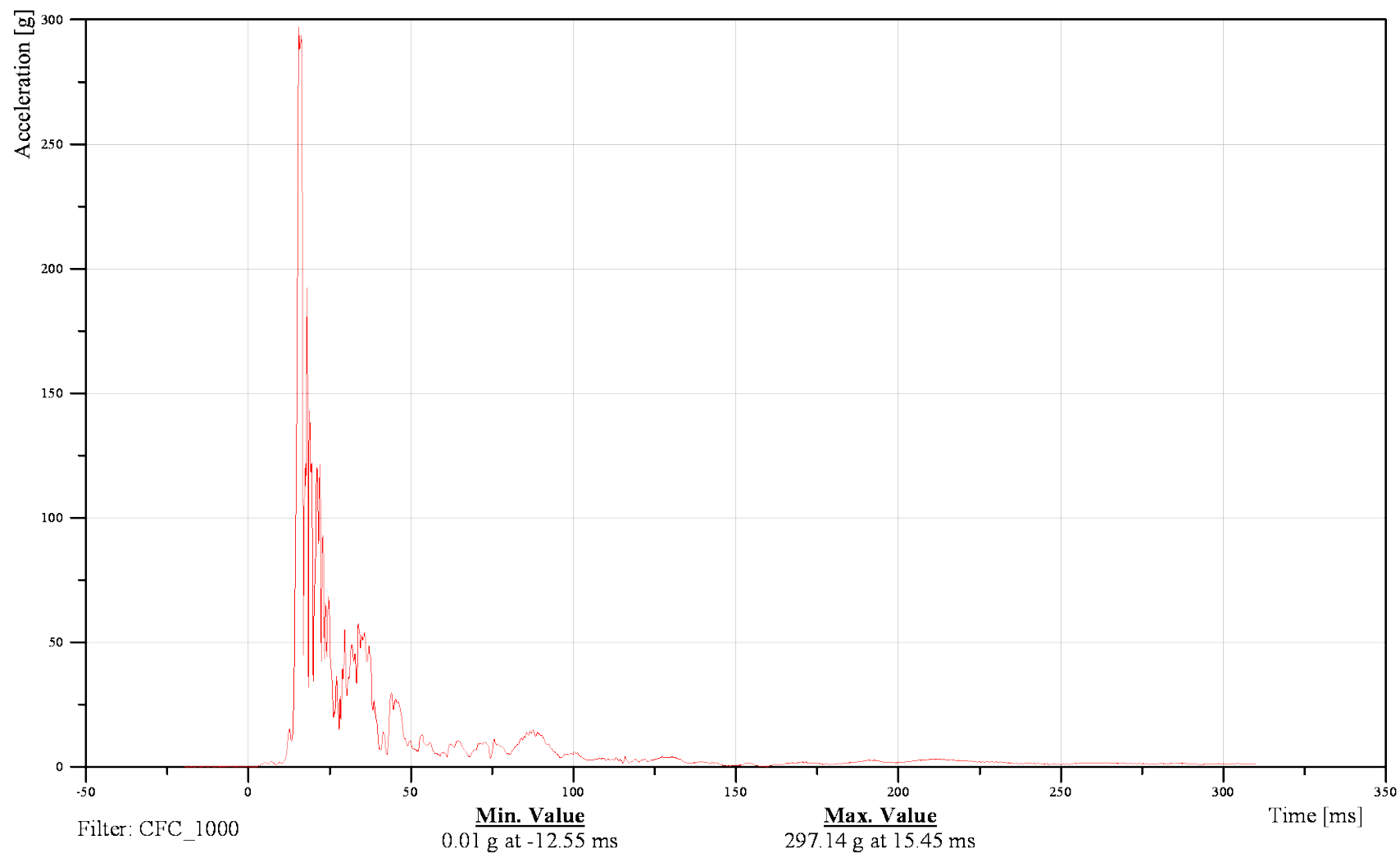
Time: 12:36

Customer: VRTC

11TRRILE03WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 3 IRTRAC Compression

Date: 06/17/2013

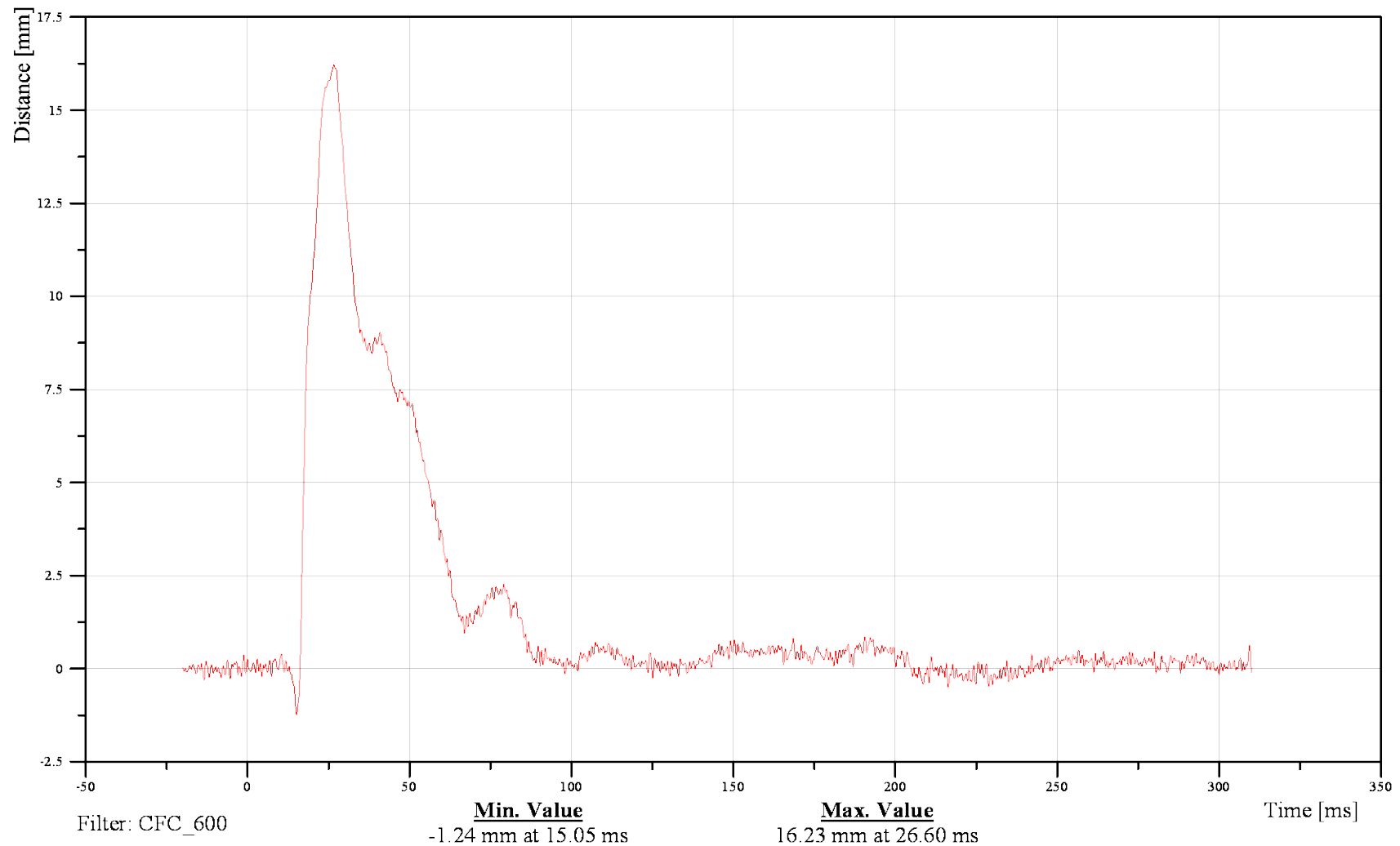
Time: 12:36

Customer: VRTC

11TRRILE03WSDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB3 Rotational Angle

Date: 06/17/2013

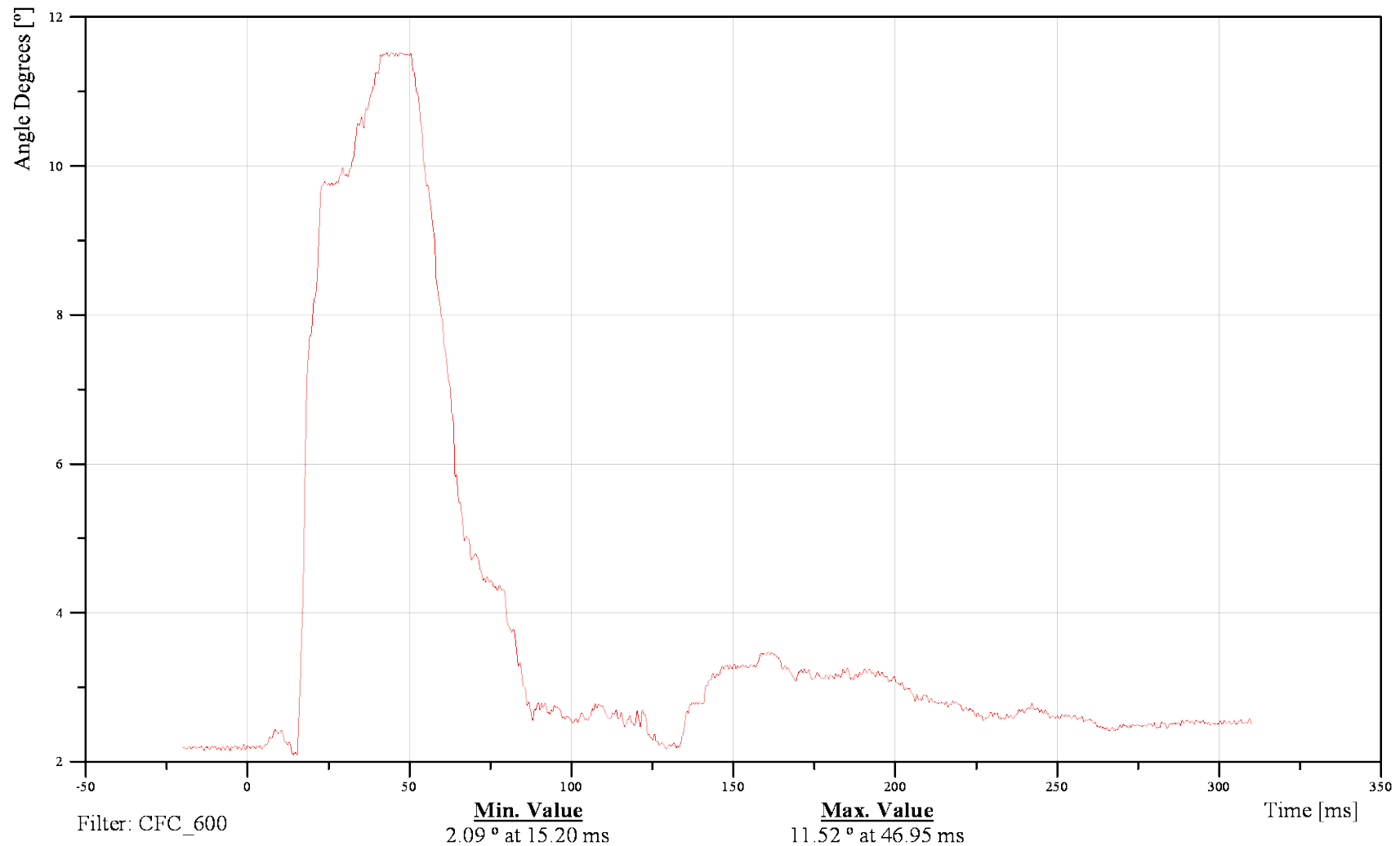
Time: 12:36

Customer: VRTC

11TRRILE03WSANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 3 IRTRAC X Deflection

Date: 06/17/2013

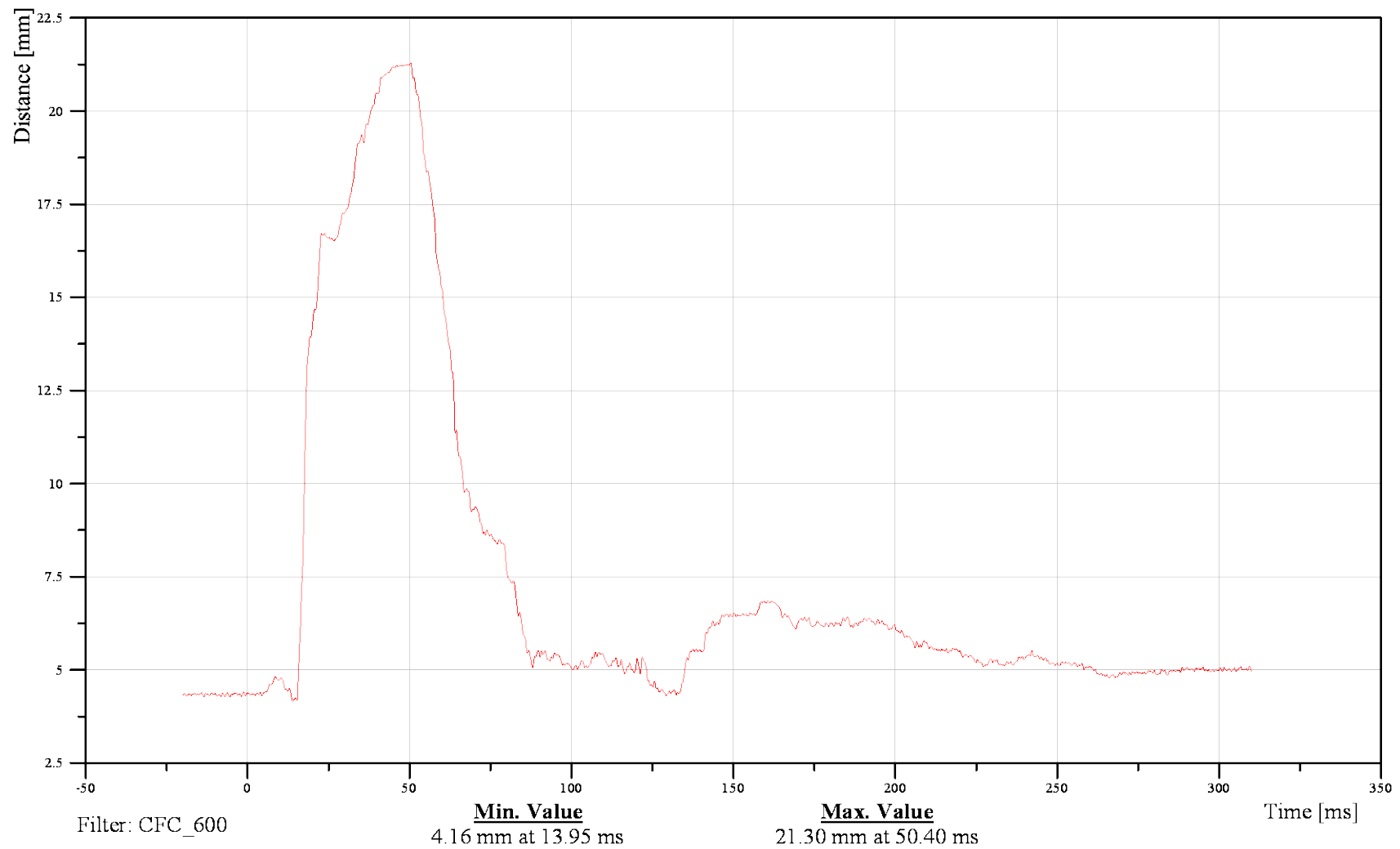
Time: 12:36

Customer: VRTC

11TRRILE03WSDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 3 IRTRAC Y Deflection

Date: 06/17/2013

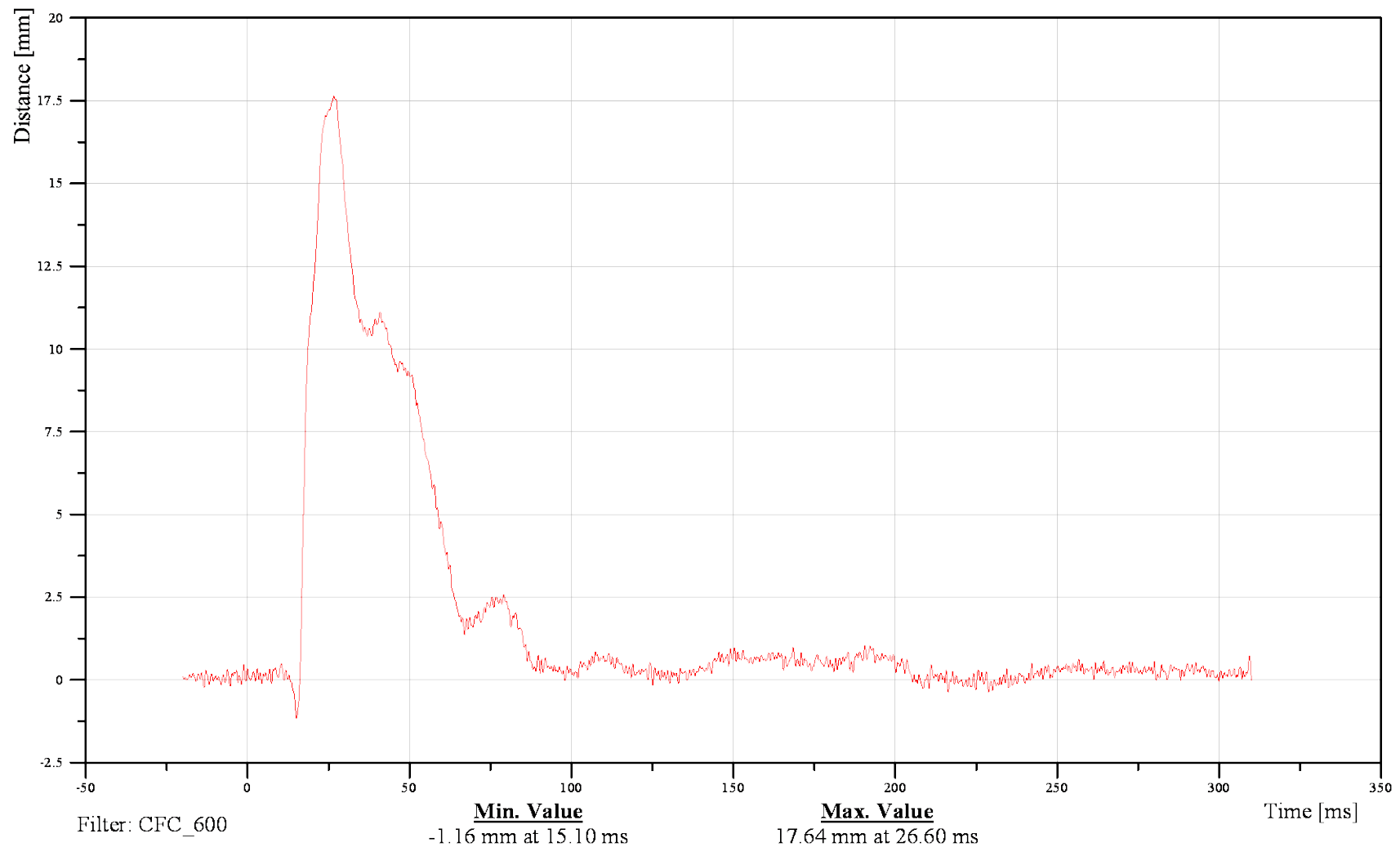
Time: 12:36

Customer: VRTC

11TRRILE03WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 Longitudinal Ax

Date: 06/17/2013

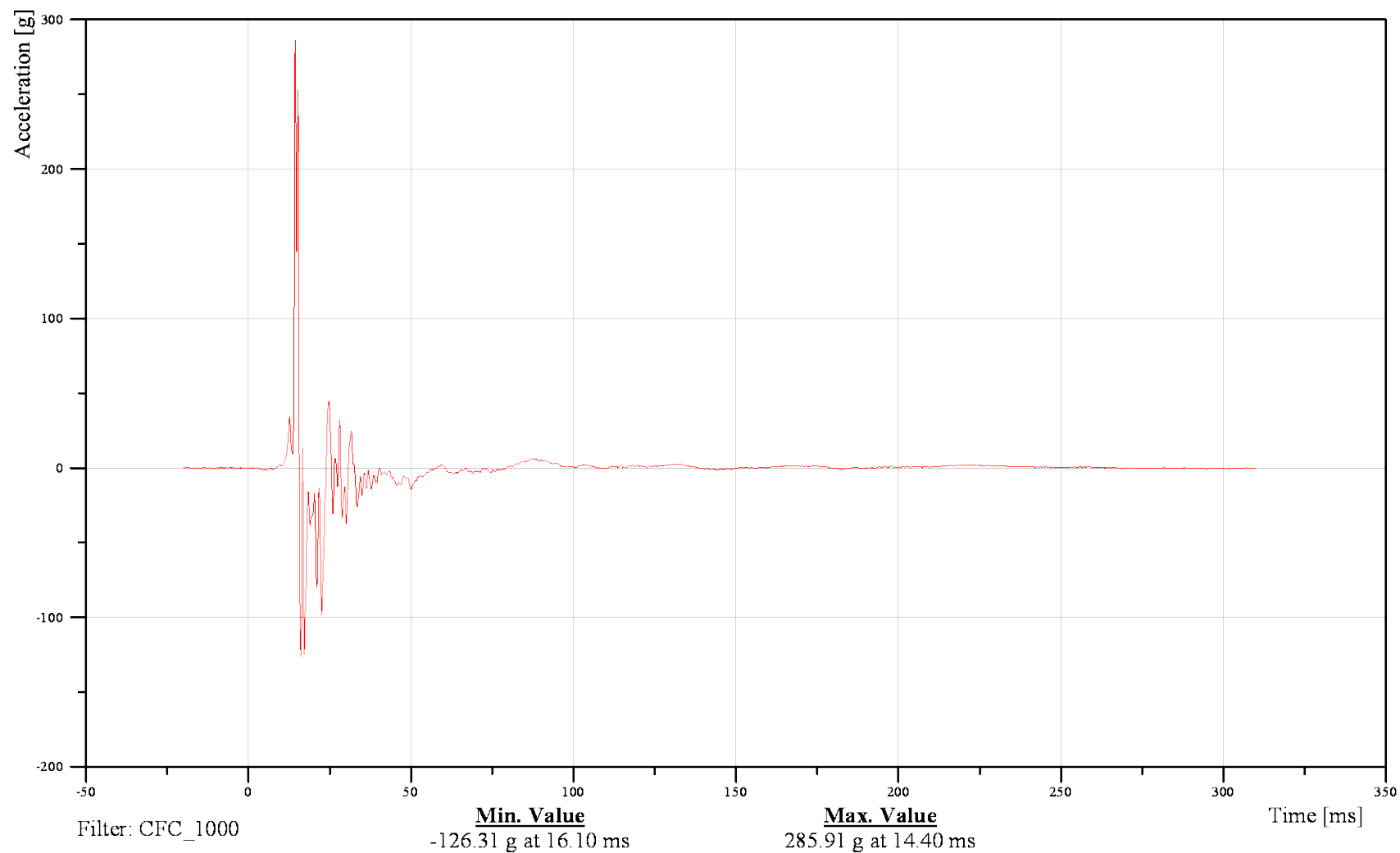
Time: 12:36

Customer: VRTC

11ABRILE01WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 Lateral Ay

Date: 06/17/2013

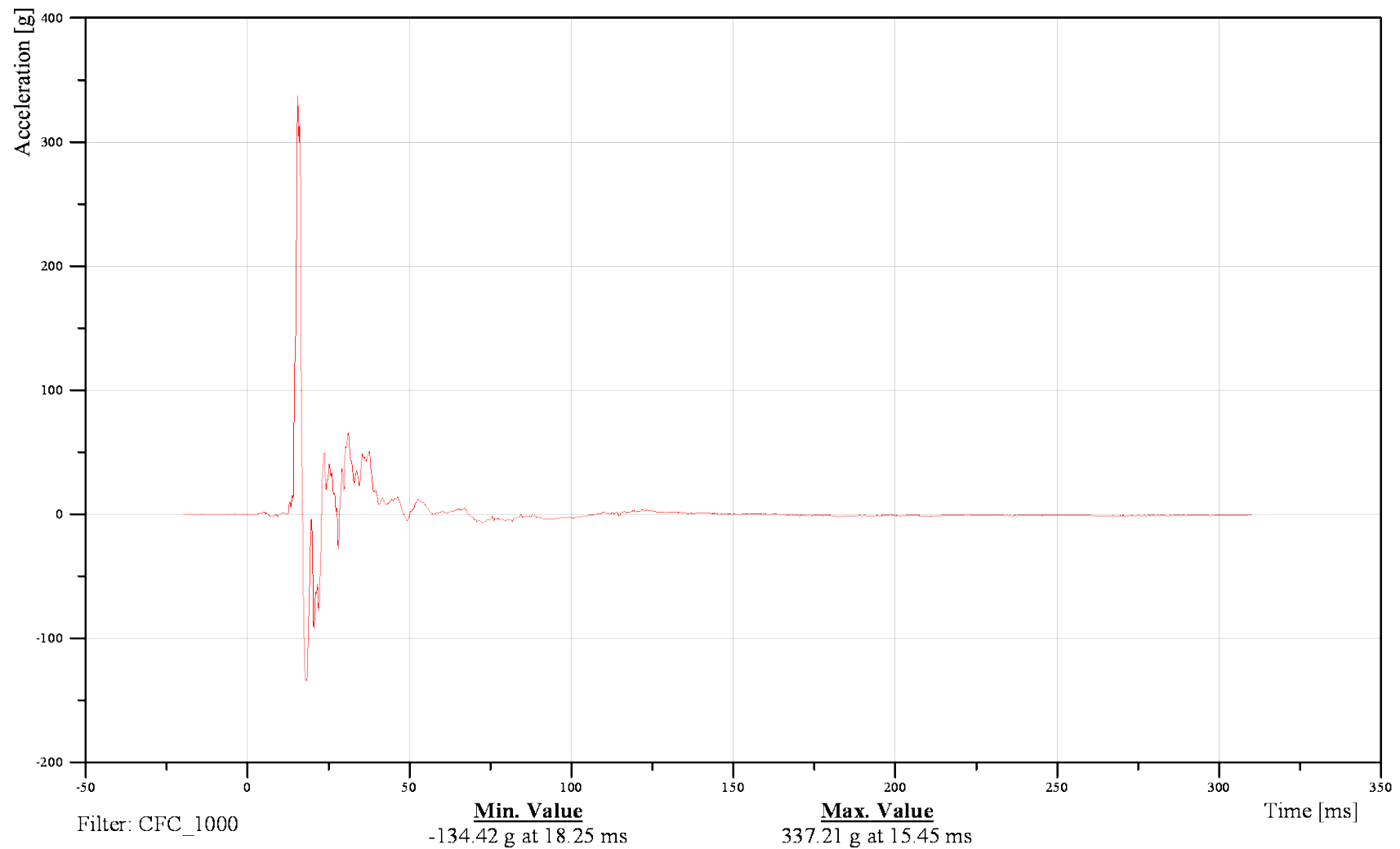
Time: 12:36

Customer: VRTC

11ABRILE01WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 Vertical Az

Date: 06/17/2013

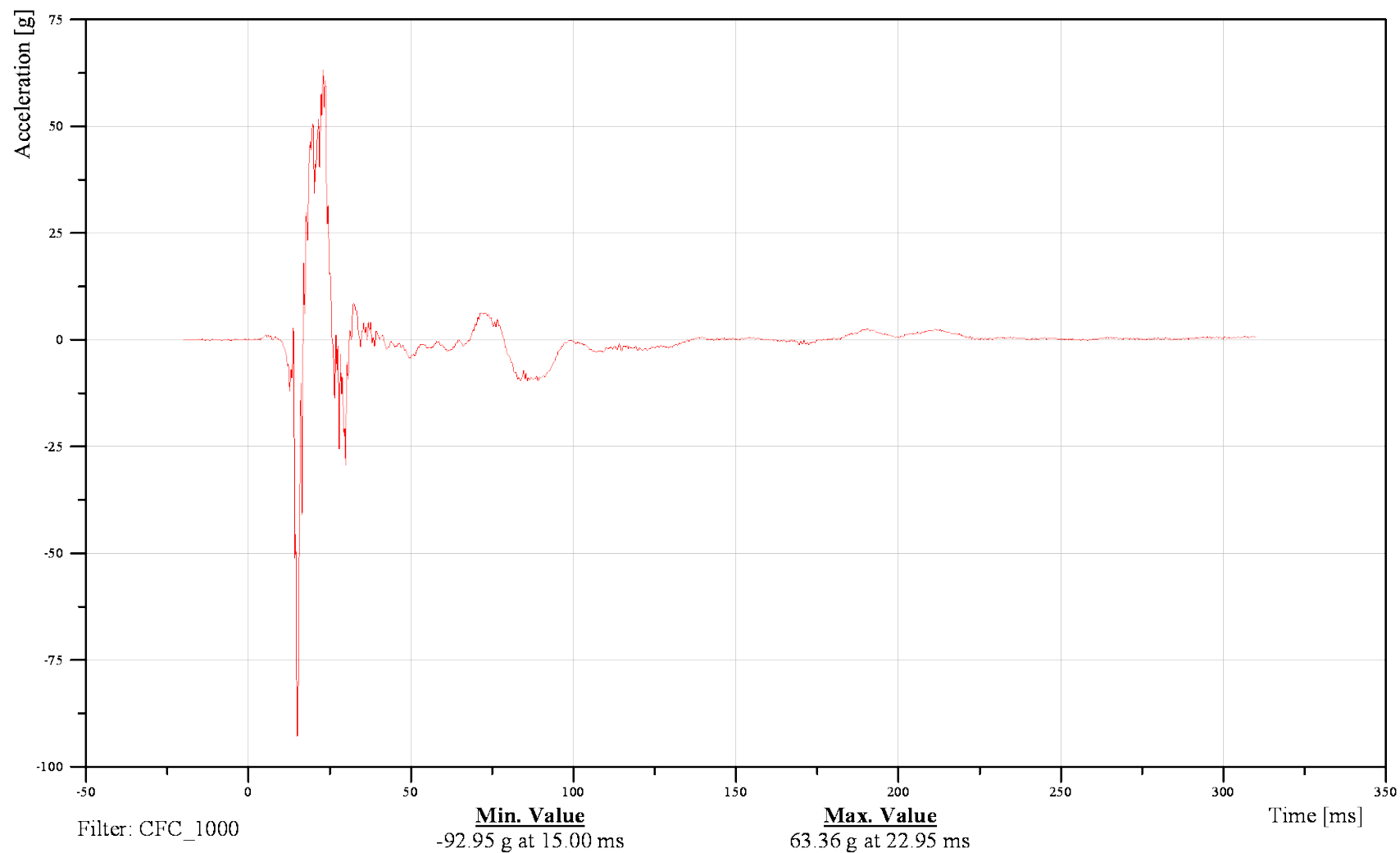
Time: 12:36

Customer: VRTC

11ABRILE01WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 A Resultant

Date: 06/17/2013

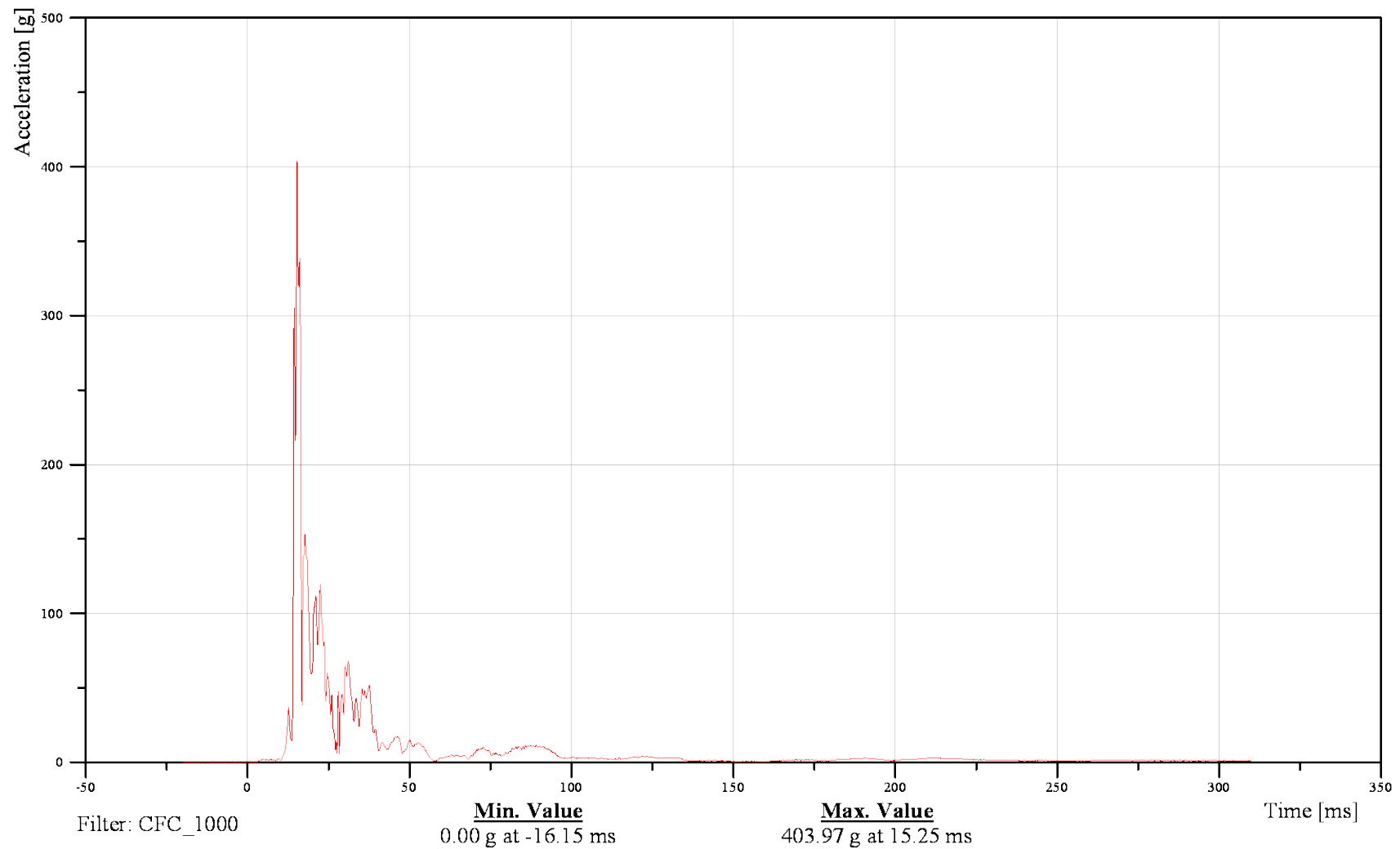
Time: 12:36

Customer: VRTC

11ABRILE01WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 1 IRTRAC Compression

Date: 06/17/2013

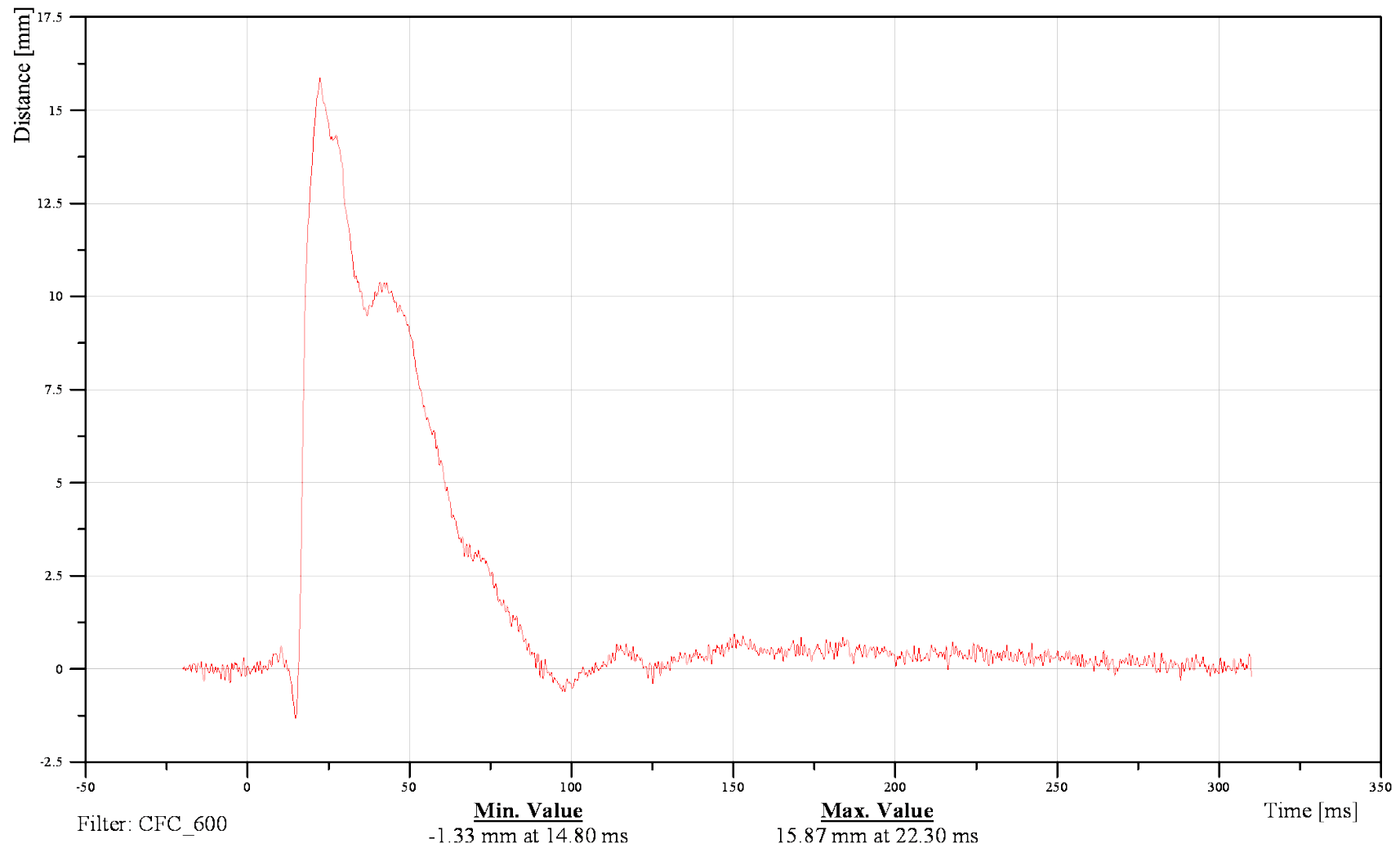
Time: 12:36

Customer: VRTC

11ABRILE01WSDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB1 Rotational Angle

Date: 06/17/2013

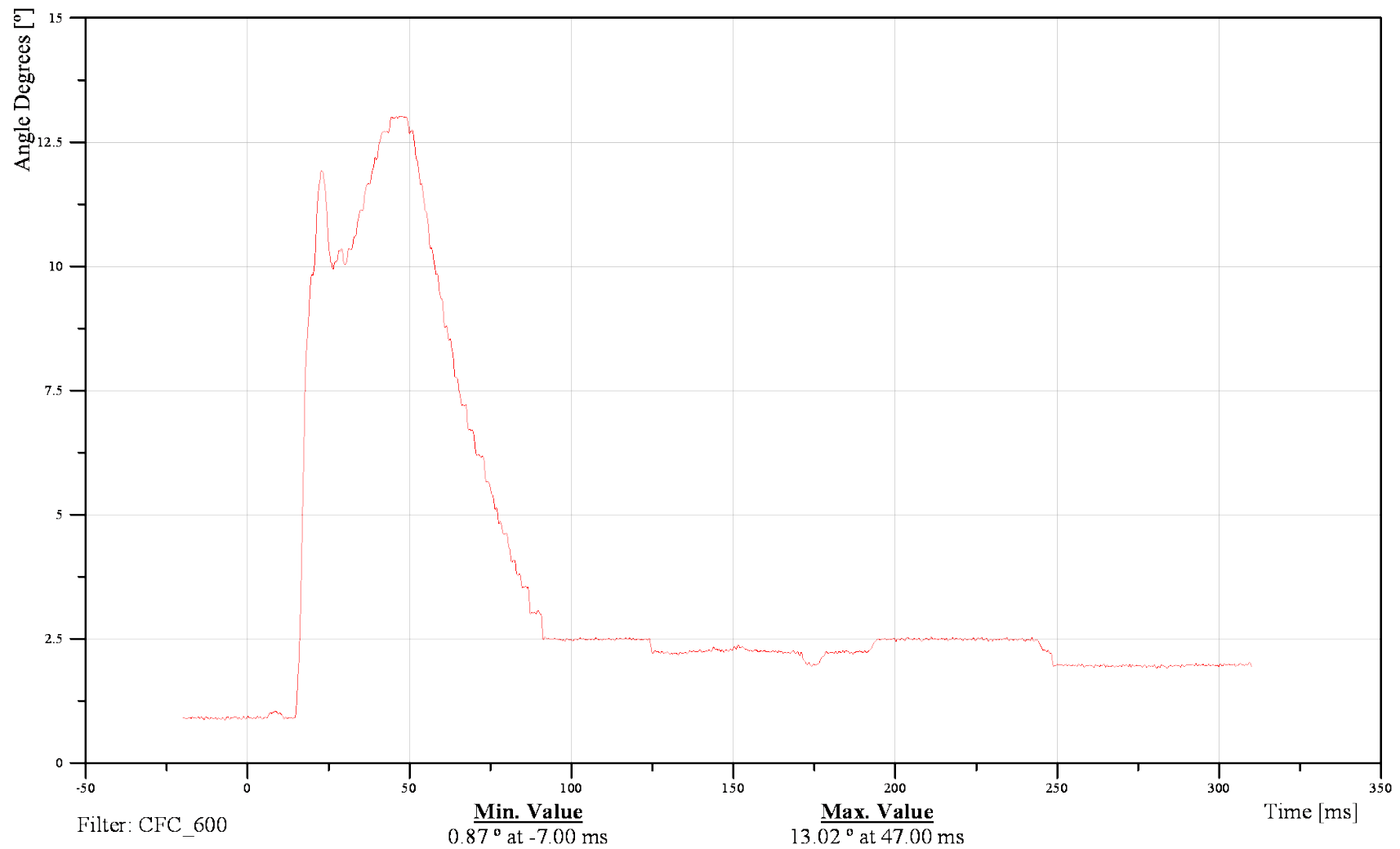
Time: 12:36

Customer: VRTC

11ABRILE01WSANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 1 IRTRAC X Deflection

Date: 06/17/2013

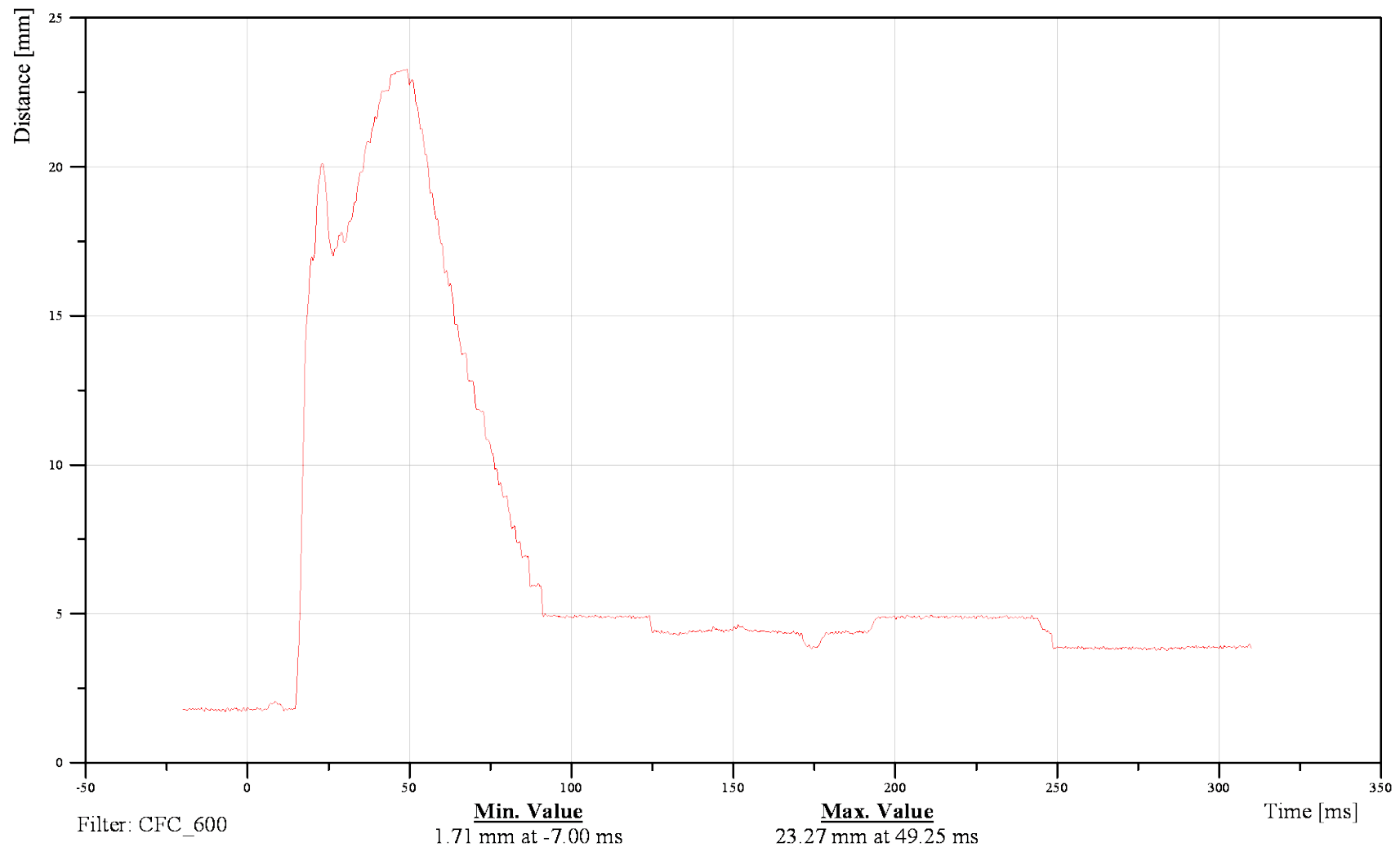
Time: 12:36

Customer: VRTC

11ABRILE01WSDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 1 IRTRAC Y Deflection

Date: 06/17/2013

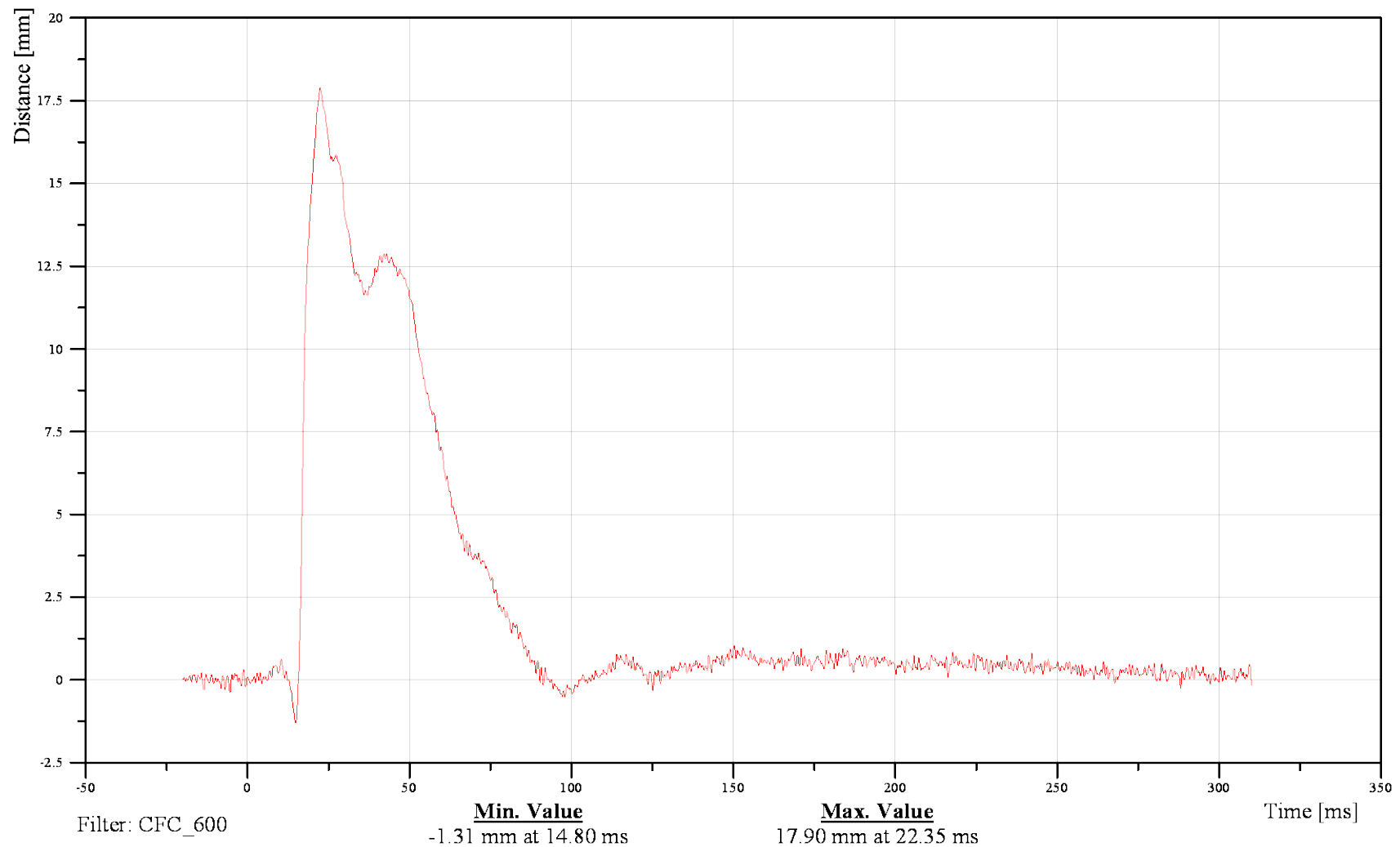
Time: 12:36

Customer: VRTC

11ABRILE01WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Longitudinal Ax

Date: 06/17/2013

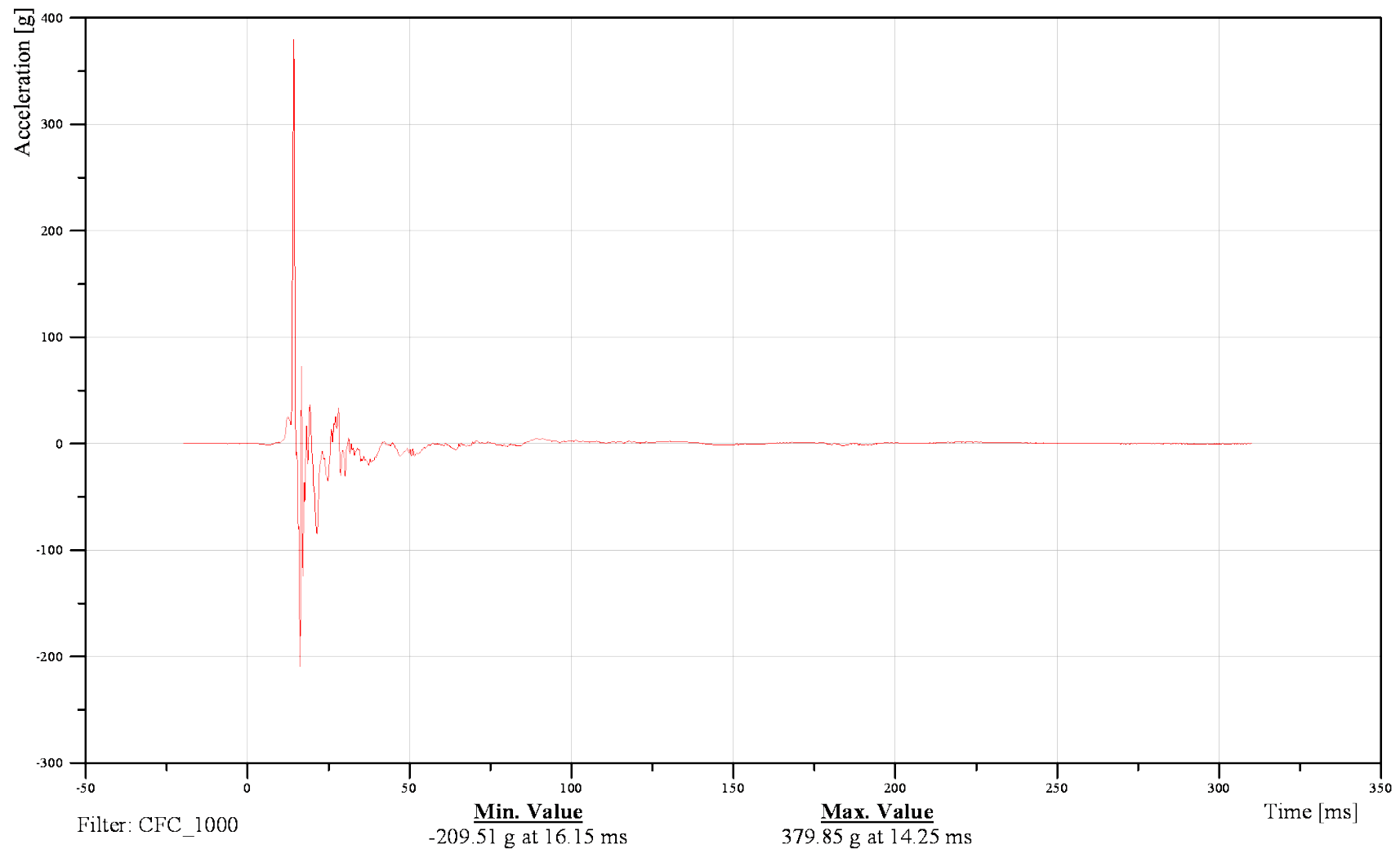
Time: 12:36

Customer: VRTC

11ABRILE02WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Lateral Ay

Date: 06/17/2013

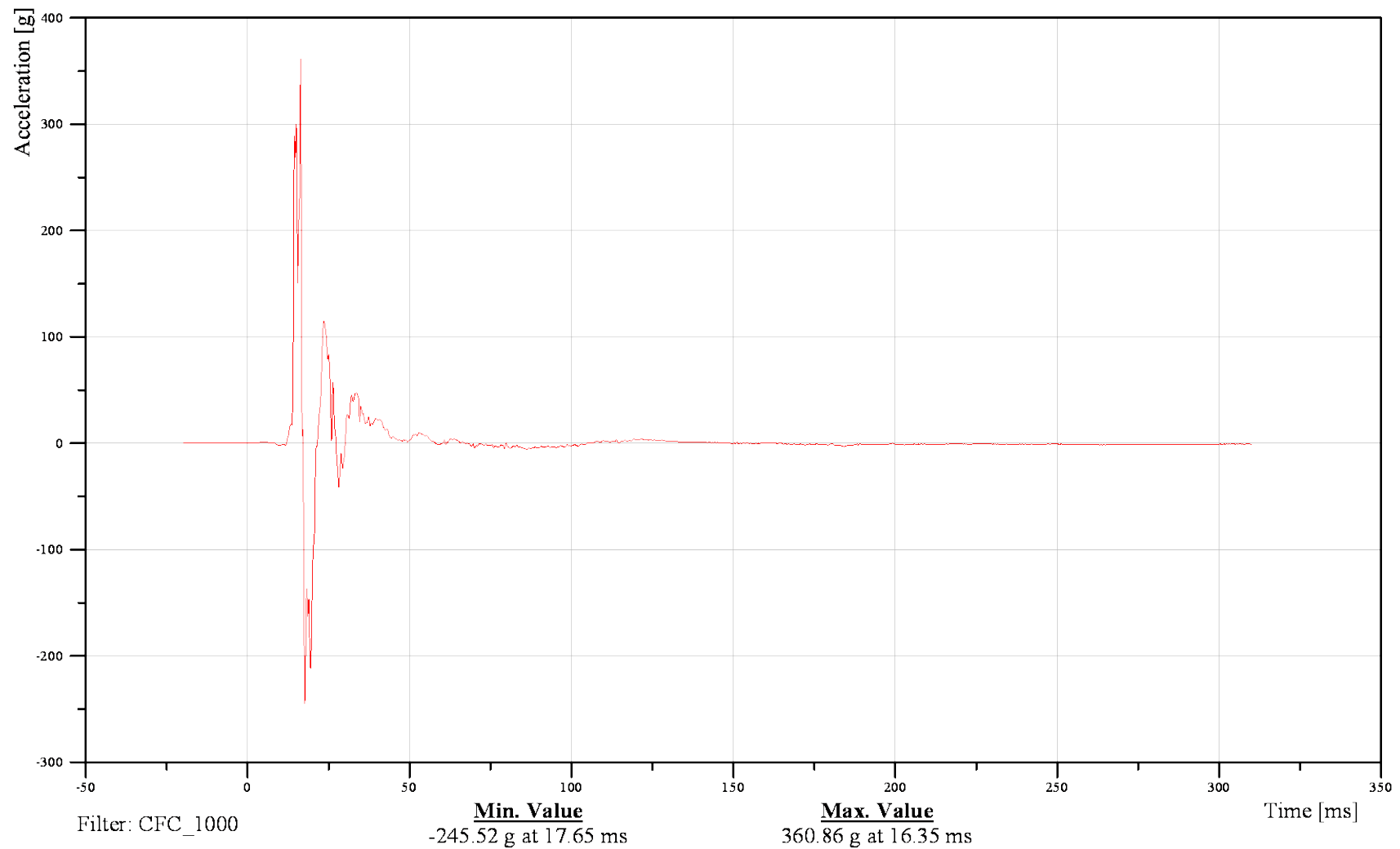
Time: 12:36

Customer: VRTC

11ABRILE02WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Vertical Az

Date: 06/17/2013

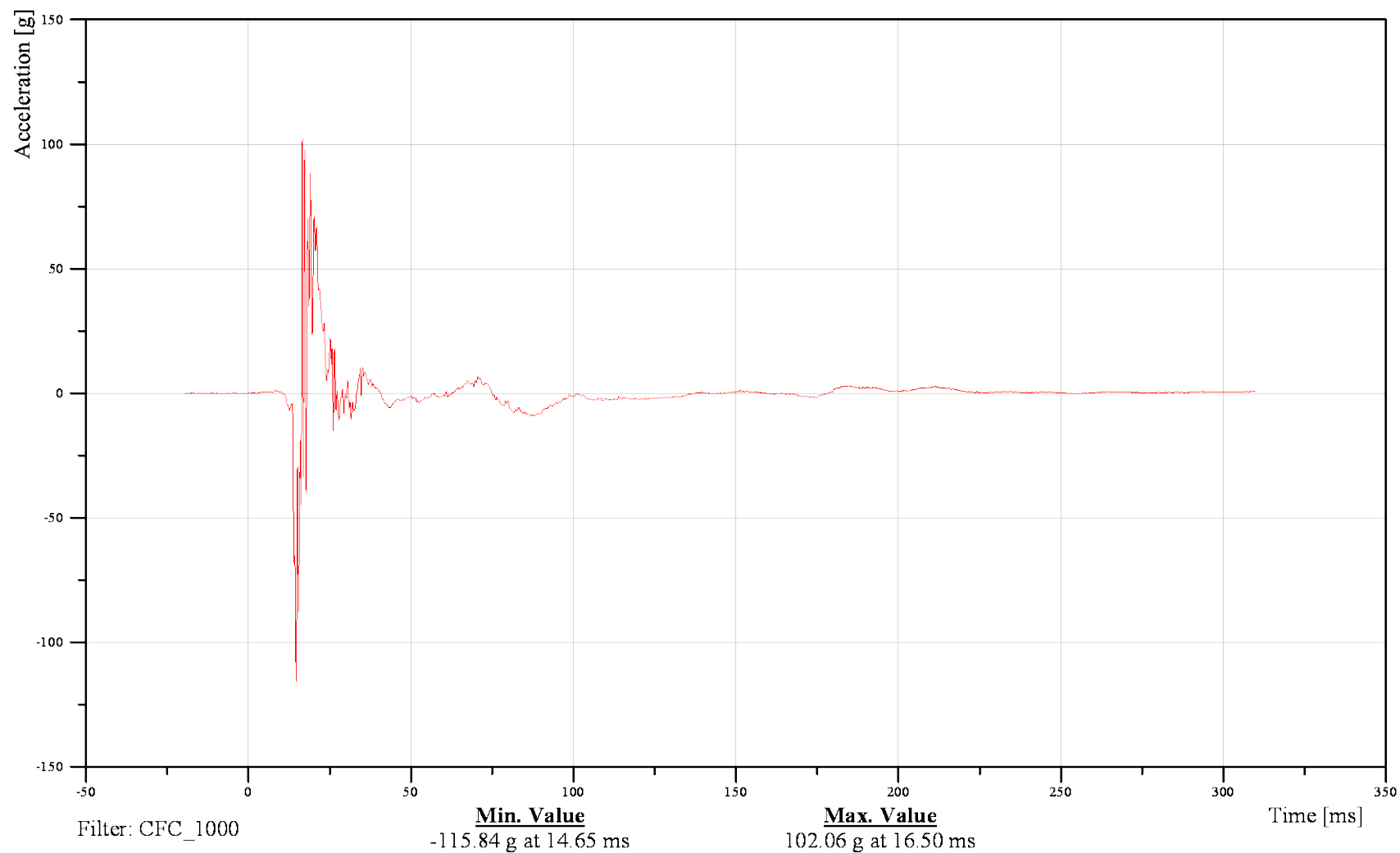
Time: 12:36

Customer: VRTC

11ABRILE02WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 A Resultant

Date: 06/17/2013

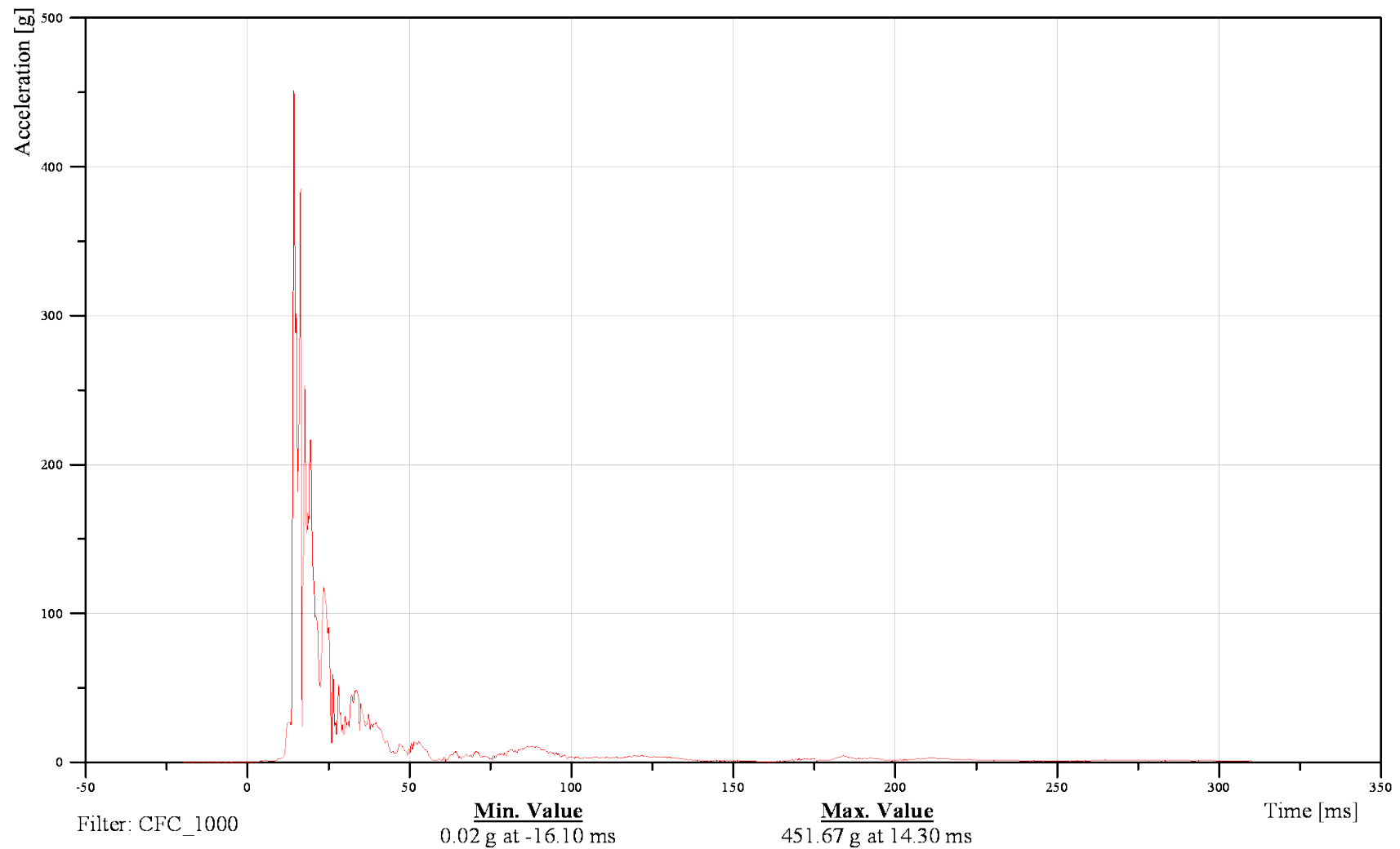
Time: 12:36

Customer: VRTC

11ABRILE02WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Lateral Disp

Date: 06/17/2013

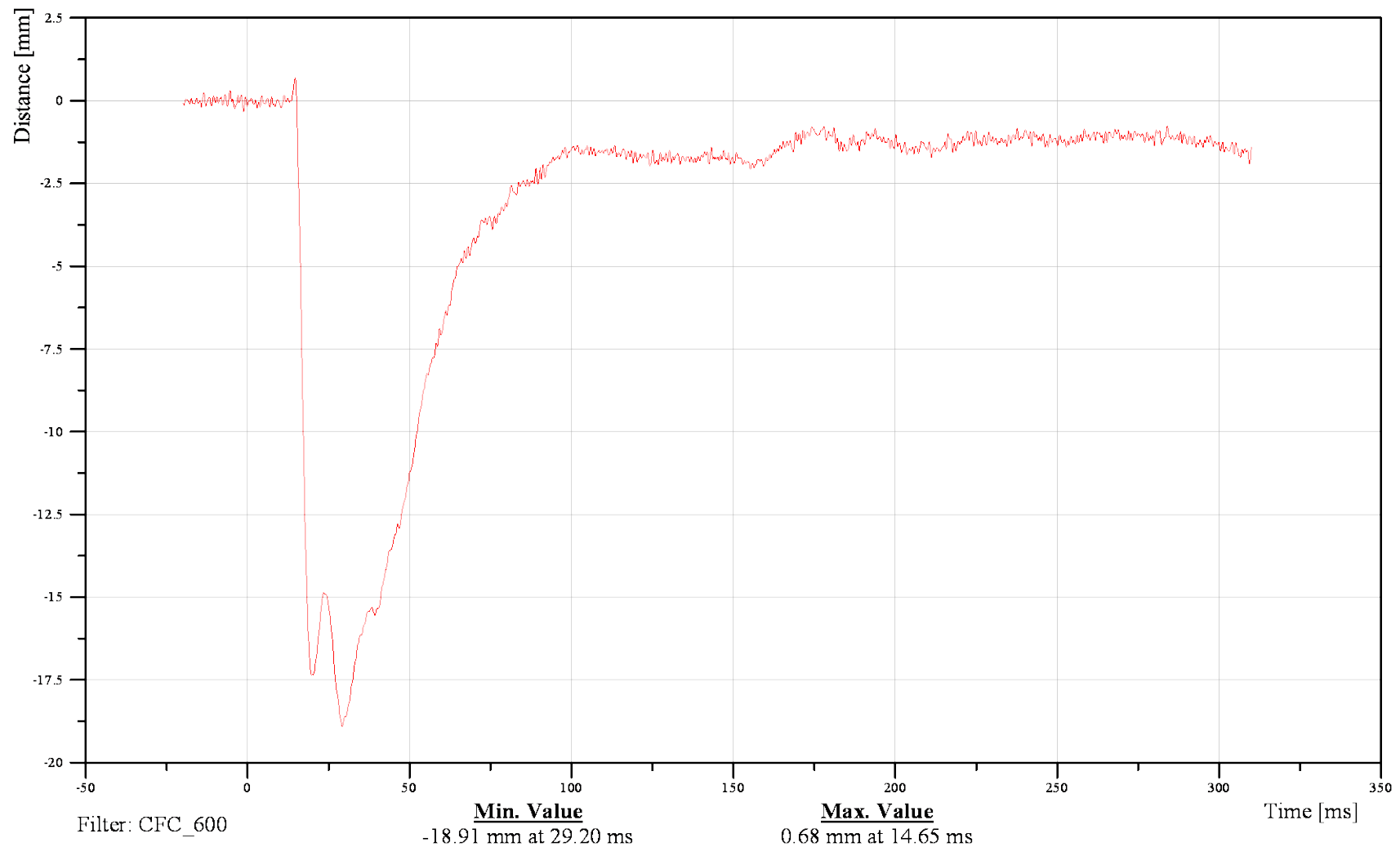
Time: 12:36

Customer: VRTC

11ABRILE02WSDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 Longitudinal Ax

Date: 06/17/2013

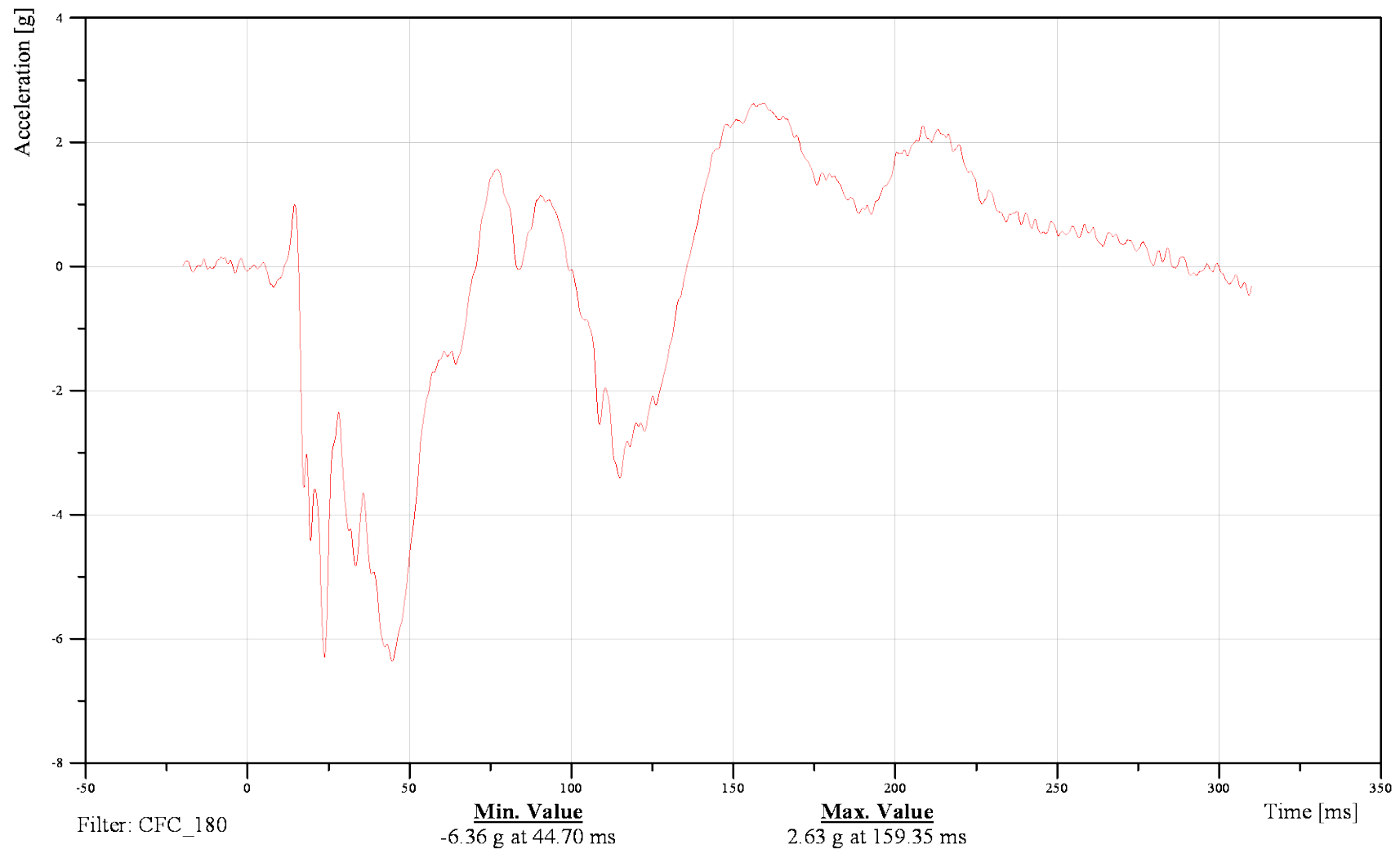
Time: 12:36

Customer: VRTC

11THSP0400WSACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 Lateral Ay

Date: 06/17/2013

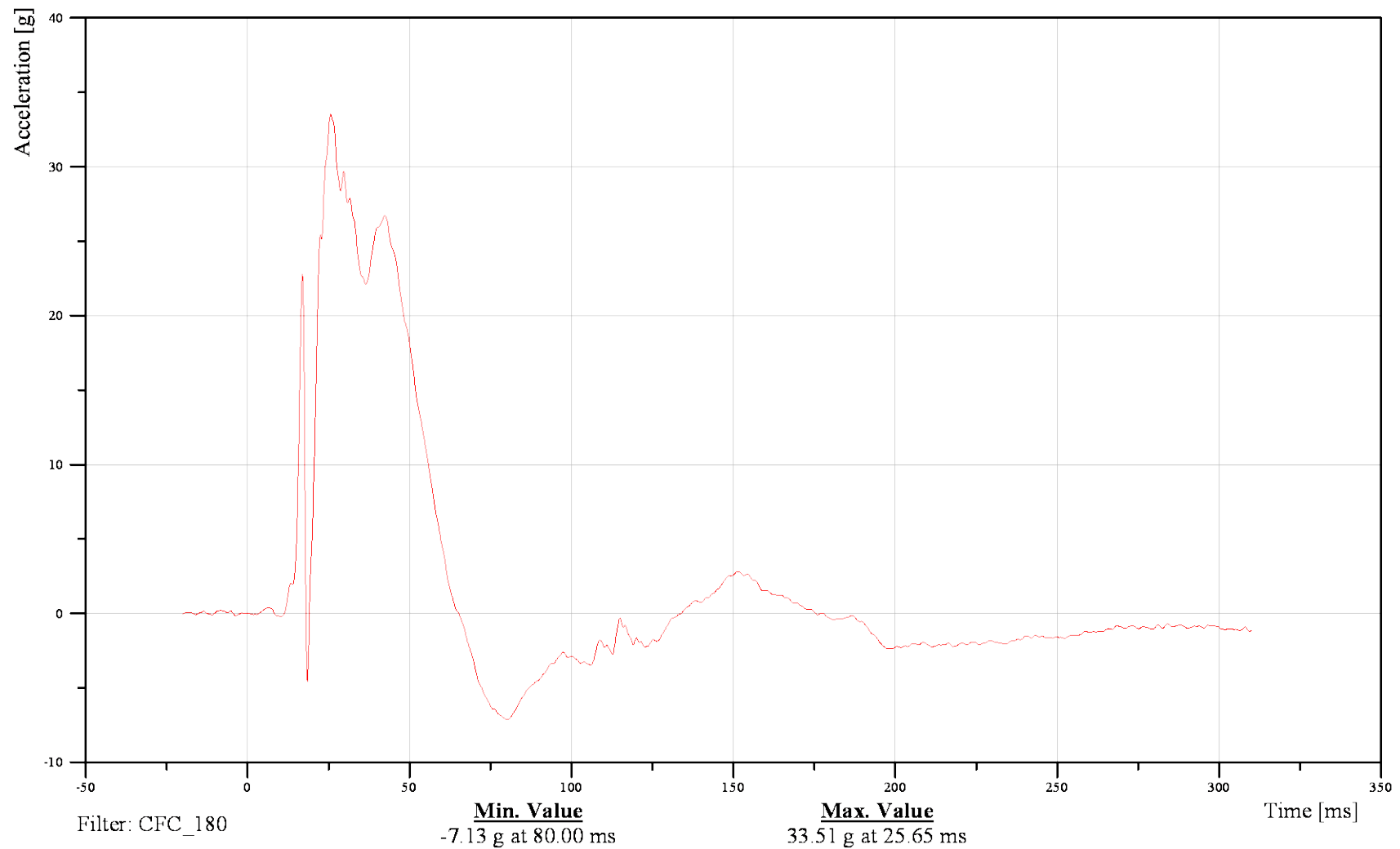
Time: 12:36

Customer: VRTC

11THSP0400WSACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 Vertical Az

Date: 06/17/2013

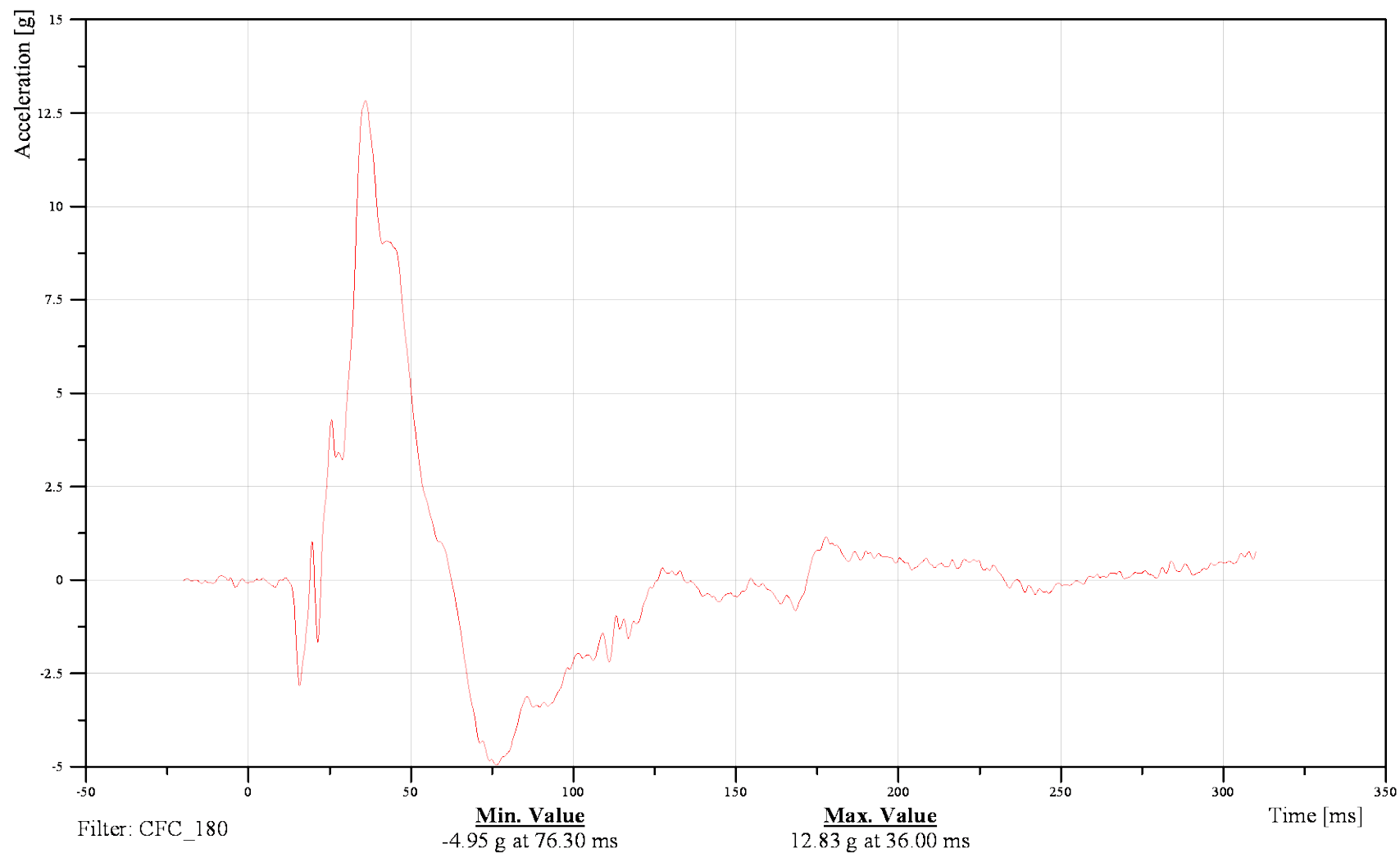
Time: 12:36

Customer: VRTC

11THSP0400WSACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 A Resultant

Date: 06/17/2013

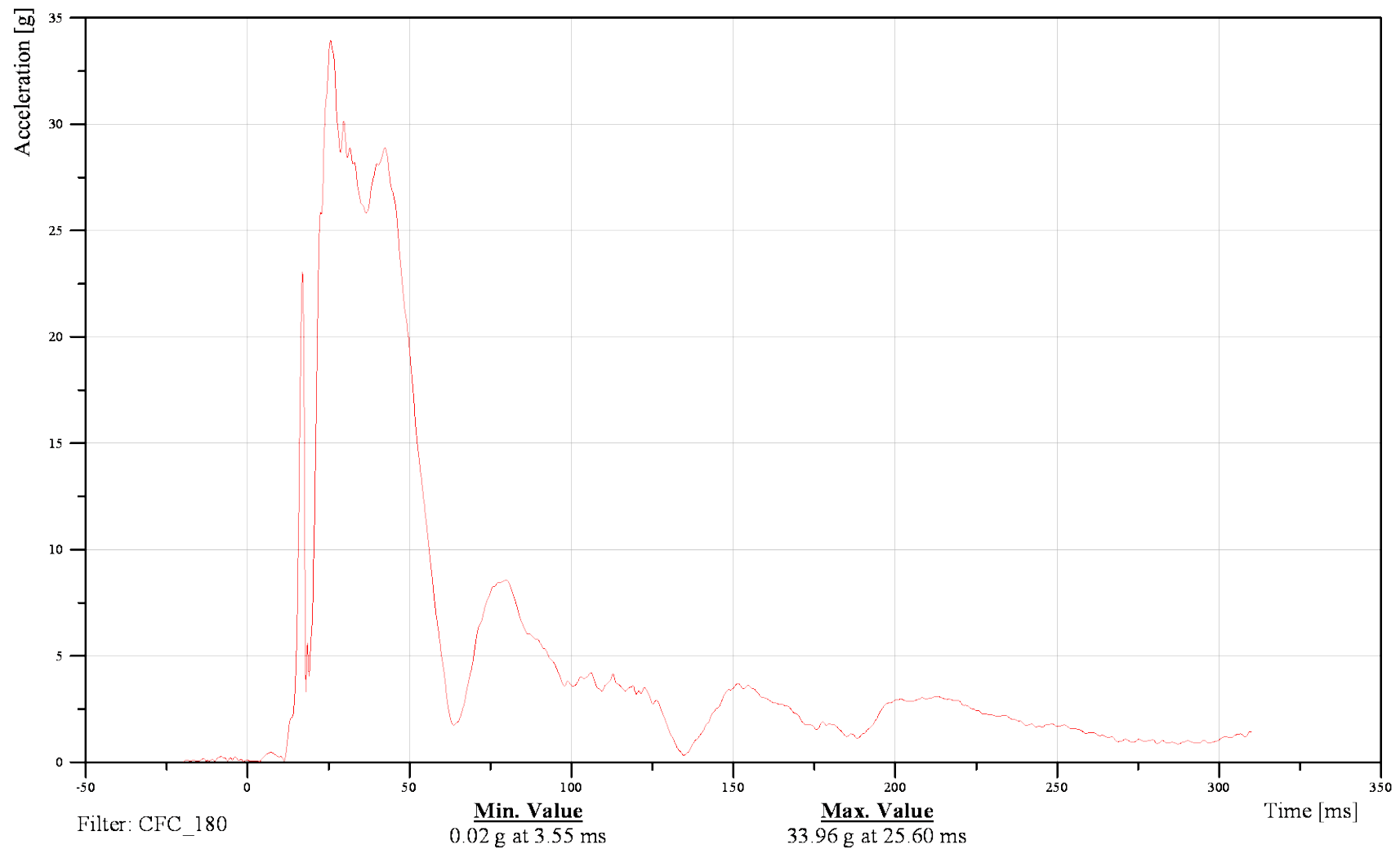
Time: 12:36

Customer: VRTC

11THSP0400WSACRC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 Longitudinal Ax

Date: 06/17/2013

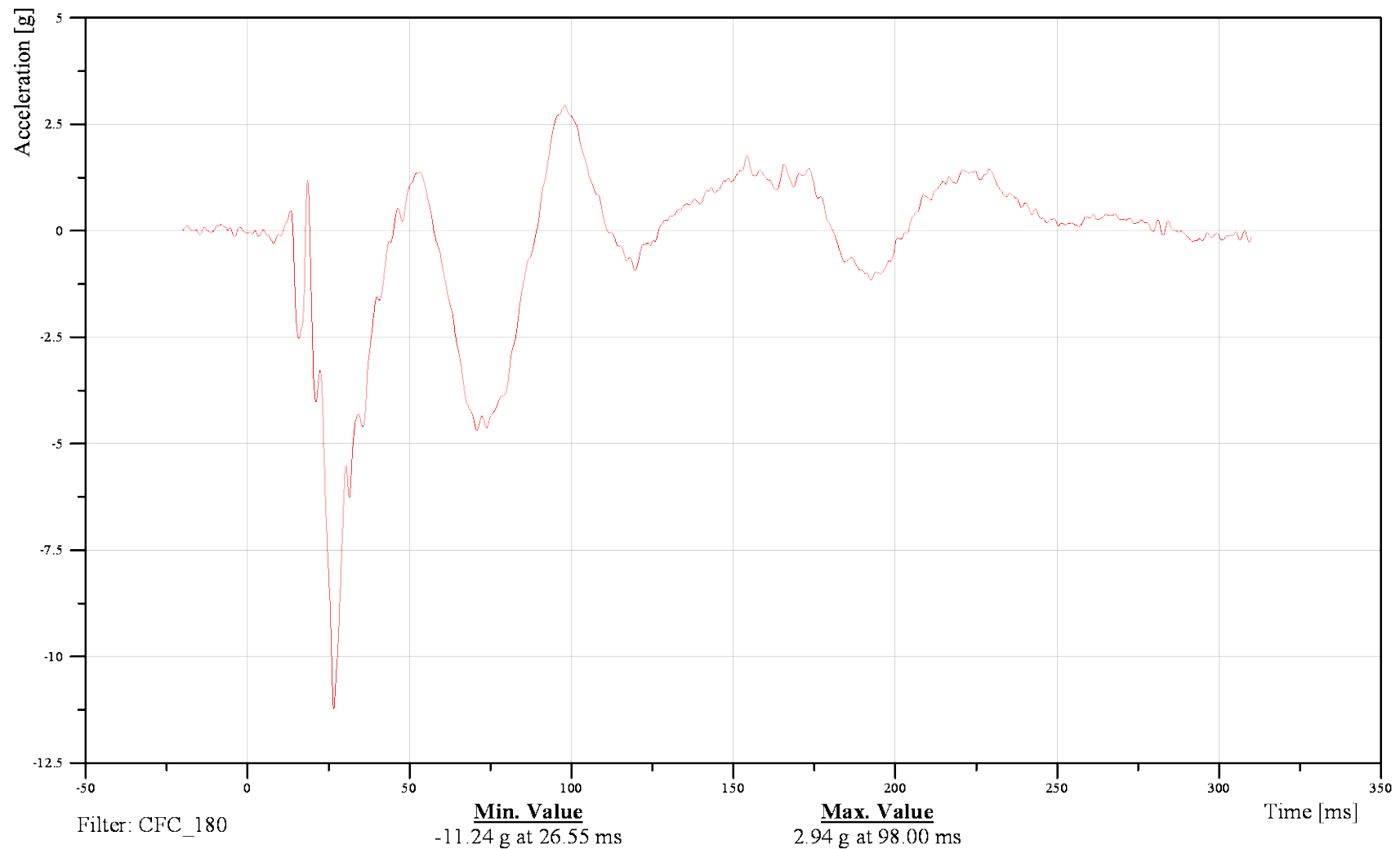
Time: 12:36

Customer: VRTC

11THSP1200WSACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 Lateral Ay

Date: 06/17/2013

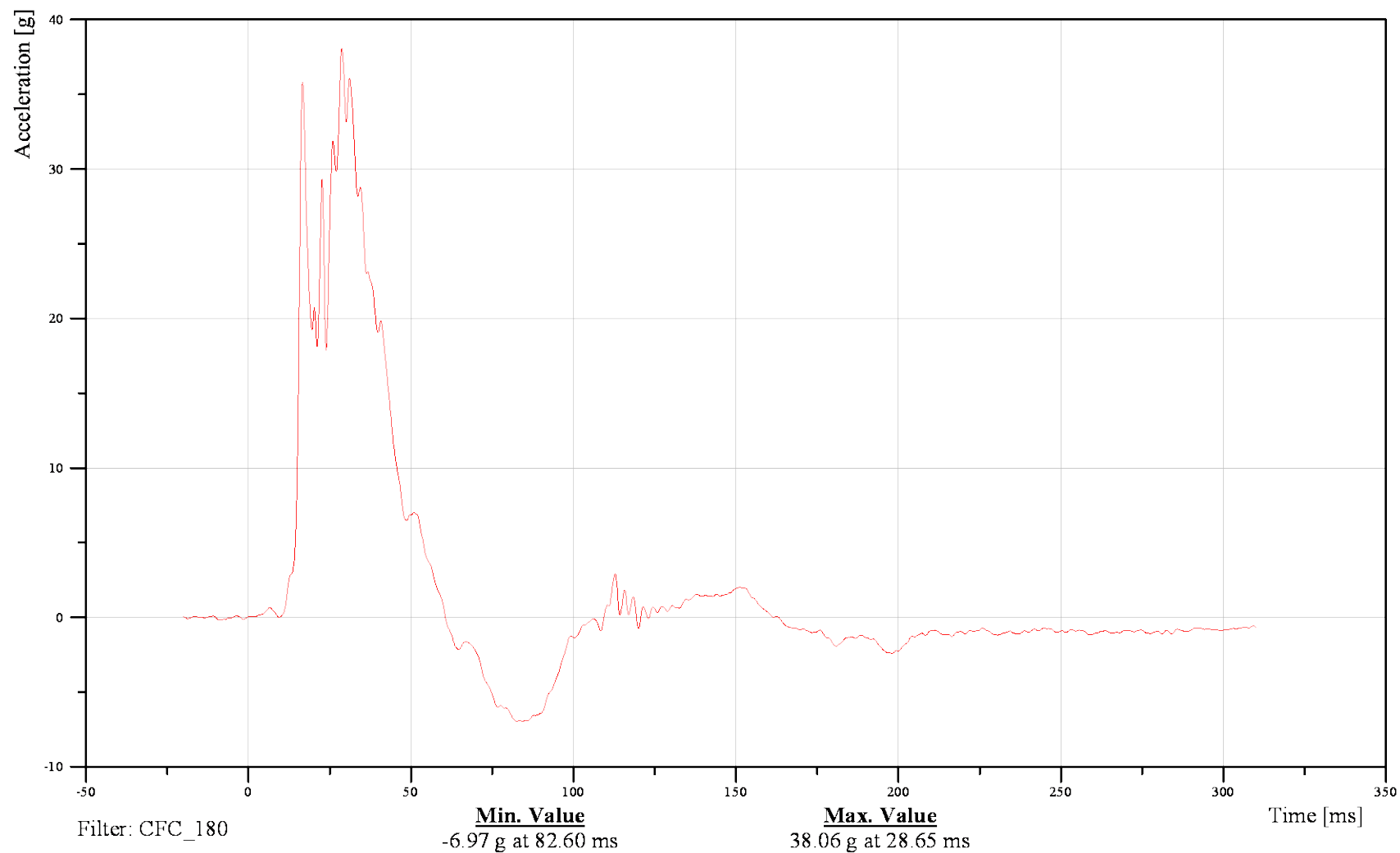
Time: 12:36

Customer: VRTC

11THSP1200WSACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 Vertical Az

Date: 06/17/2013

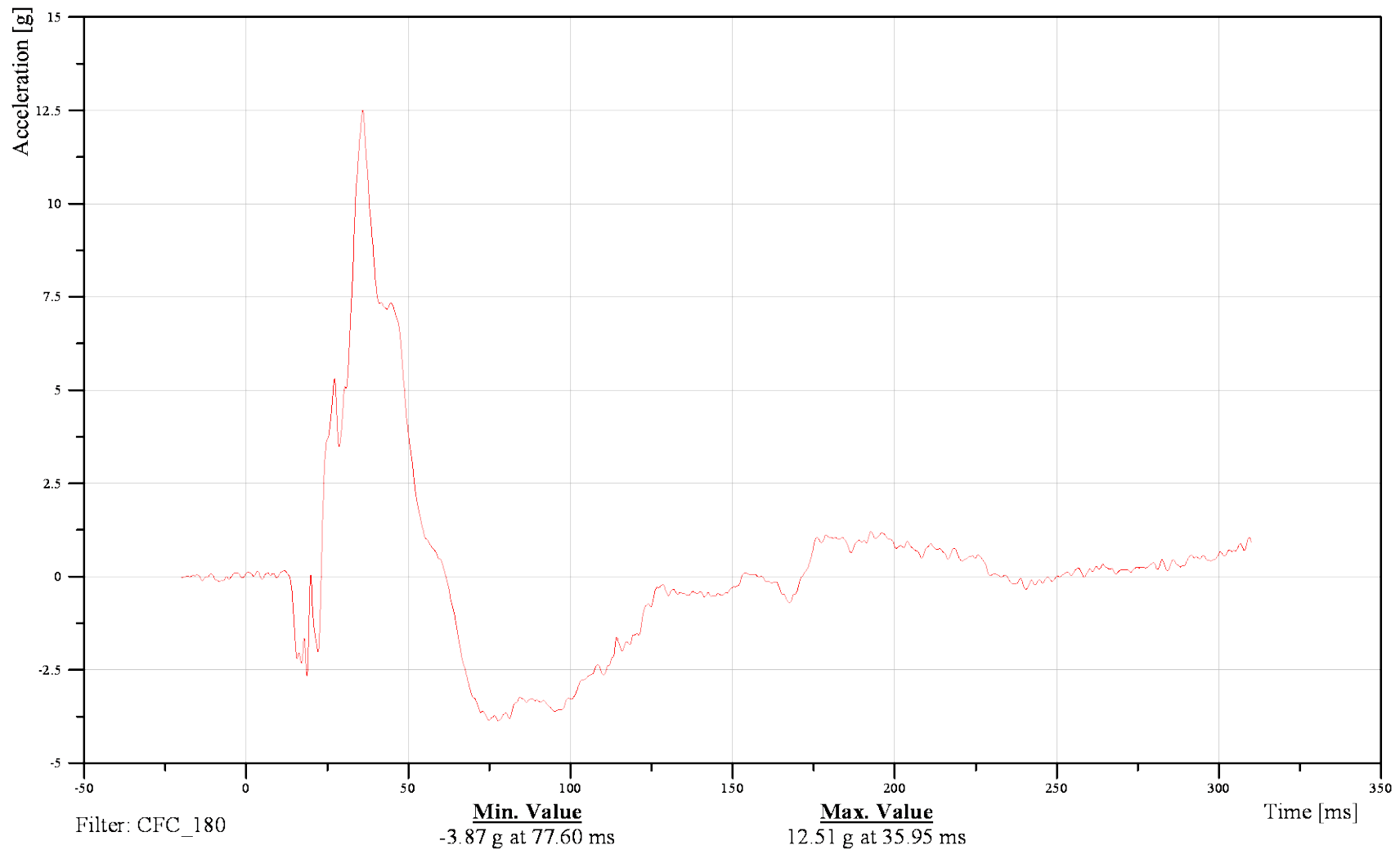
Time: 12:36

Customer: VRTC

11THSP1200WSACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 A Resultant

Date: 06/17/2013

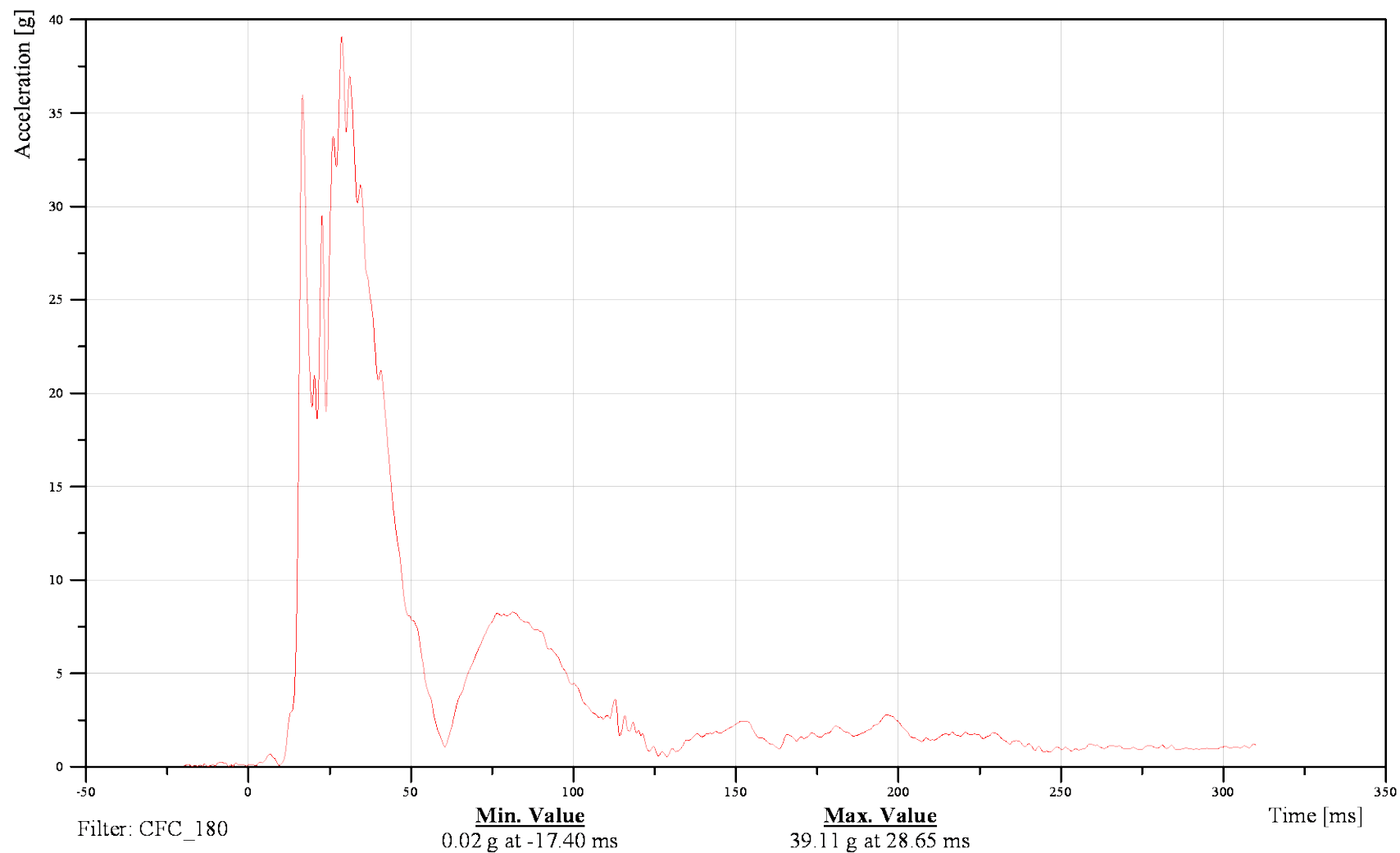
Time: 12:36

Customer: VRTC

11THSP1200WSACRC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis Longitudinal Ax

Date: 06/17/2013

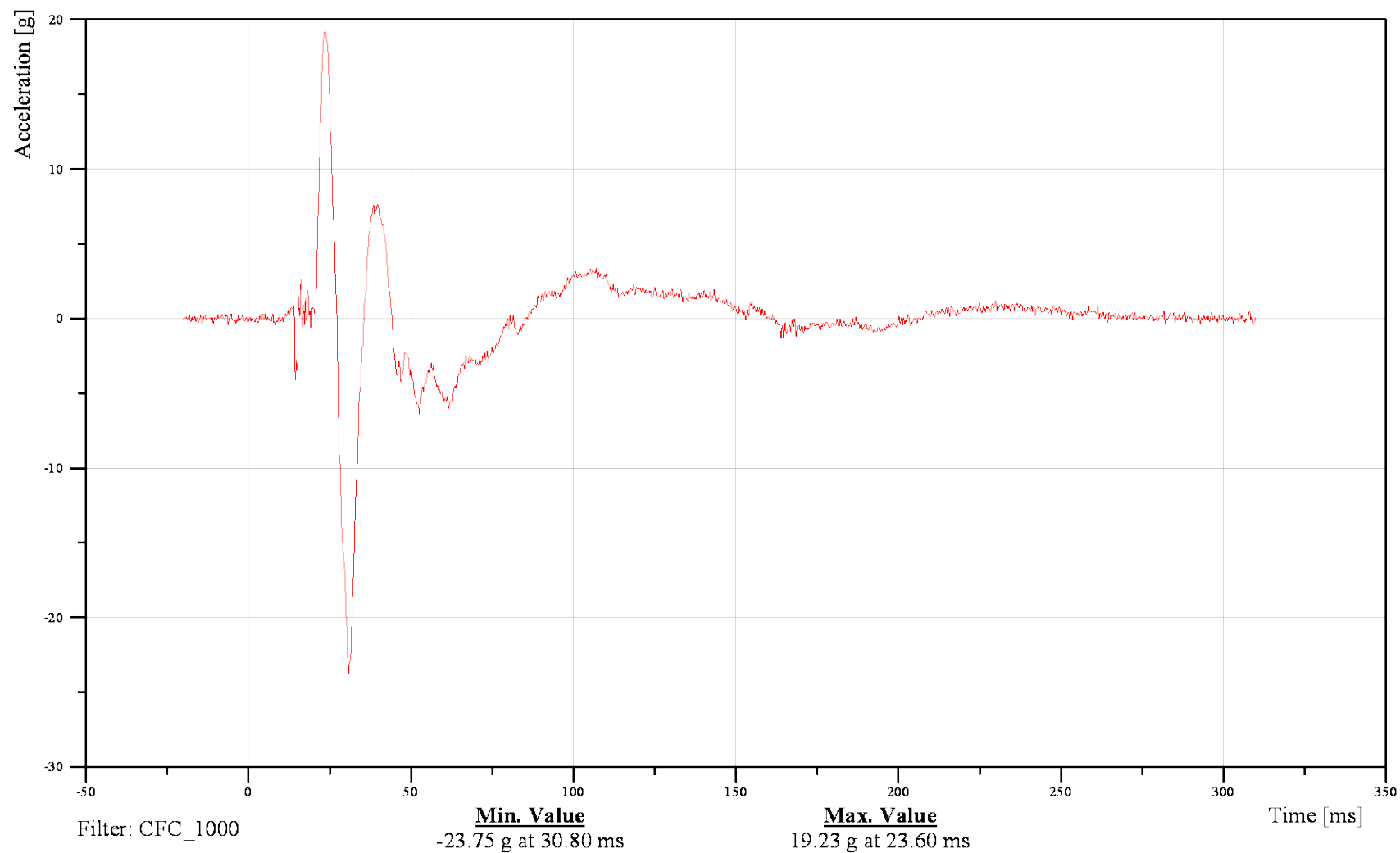
Time: 12:36

Customer: VRTC

11PELV0000WSACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis Lateral Ay

Date: 06/17/2013

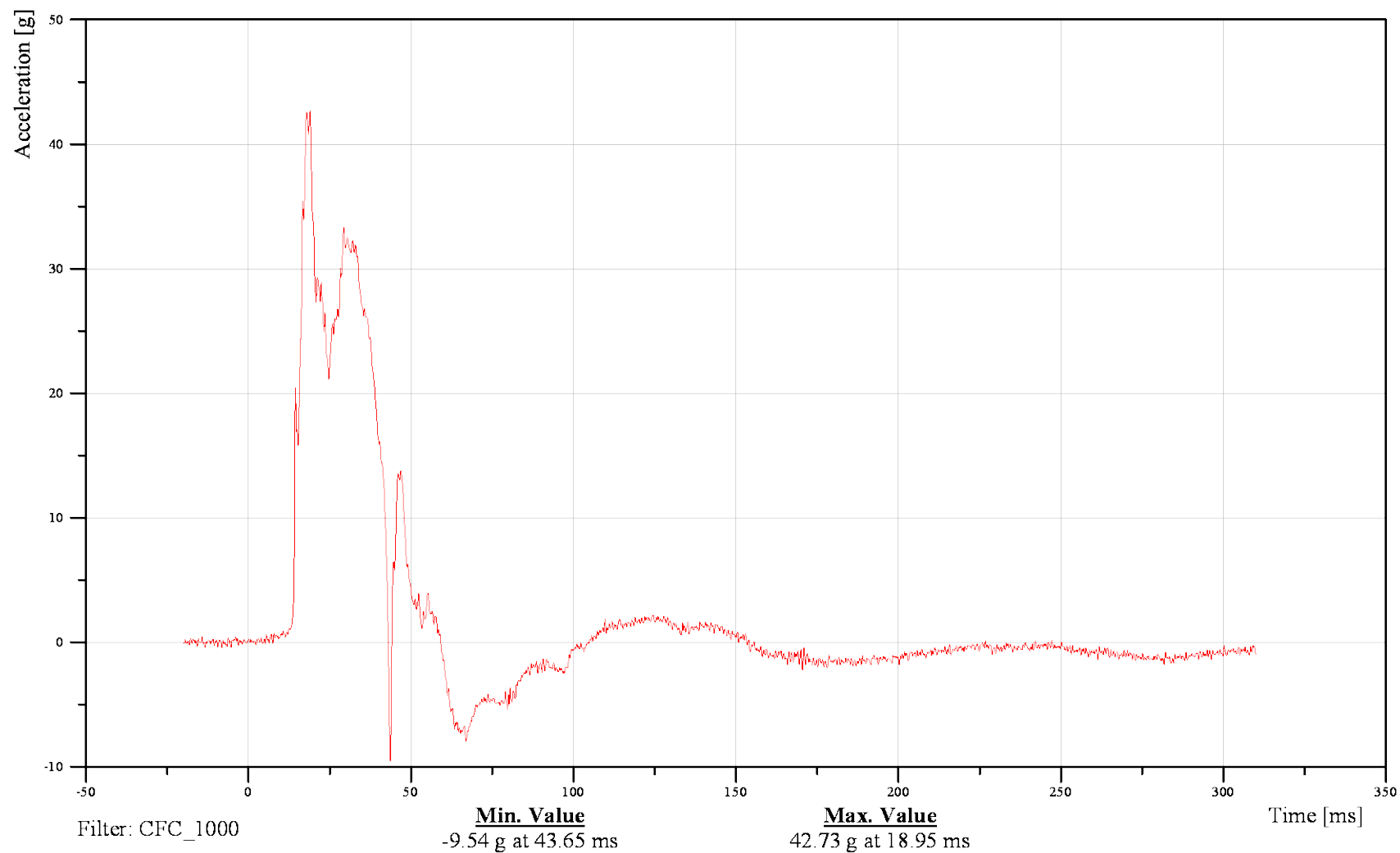
Time: 12:36

Customer: VRTC

11PELV0000WSACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis Vertical Az

Date: 06/17/2013

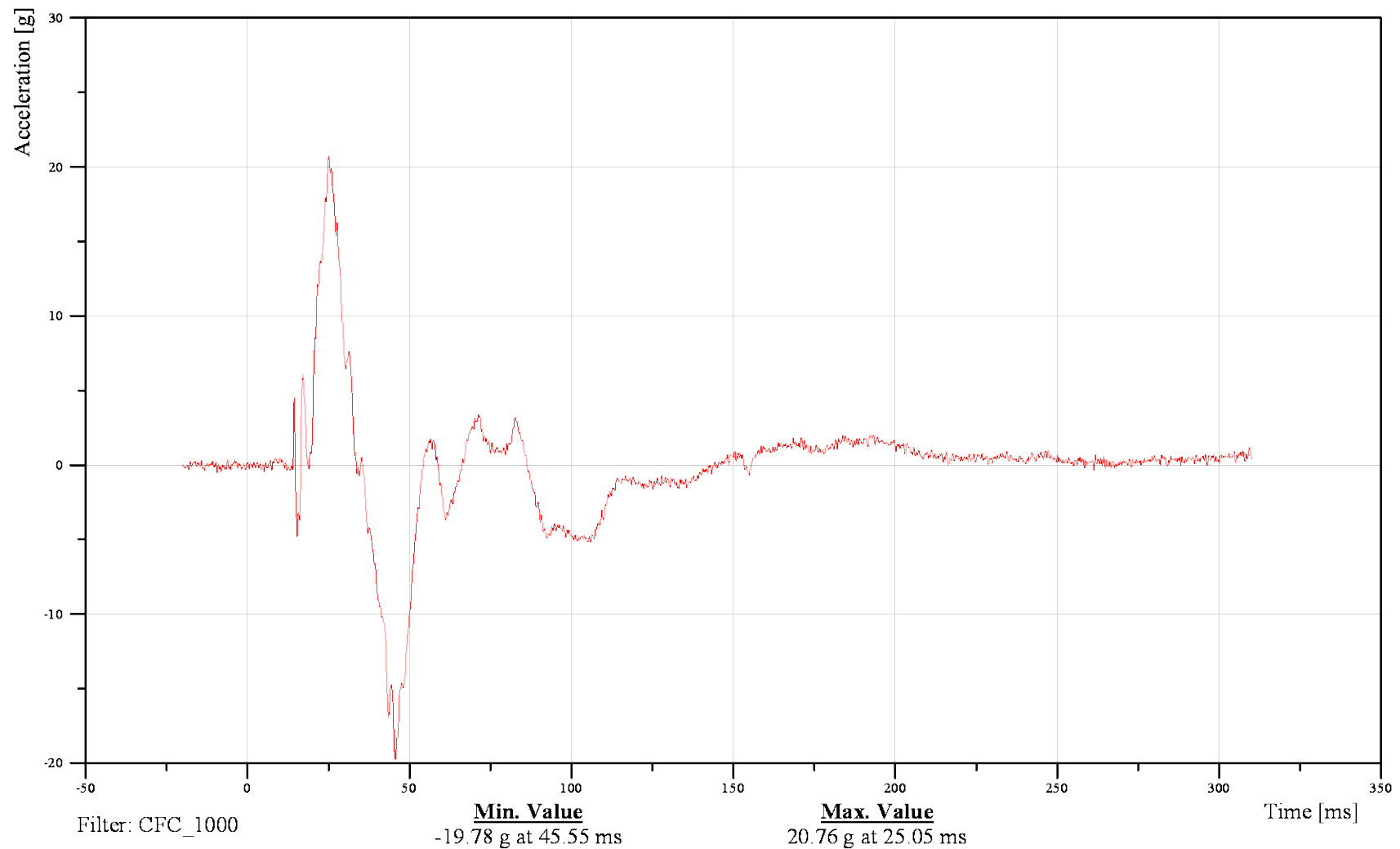
Time: 12:36

Customer: VRTC

11PELV0000WSACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis A Resultant

Date: 06/17/2013

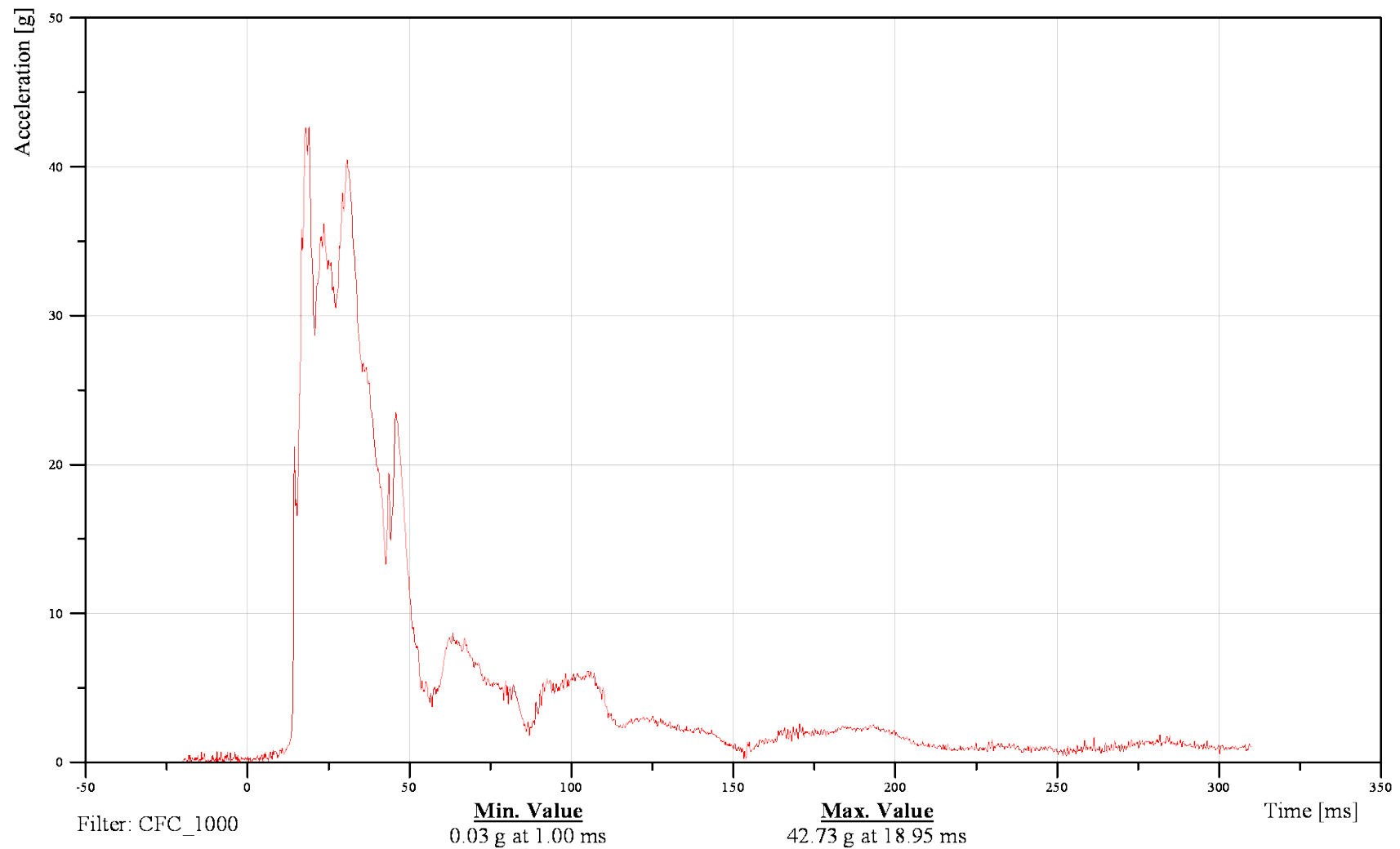
Time: 12:36

Customer: VRTC

11PELV0000WSACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Date: 06/17/2013

Time: 12:36

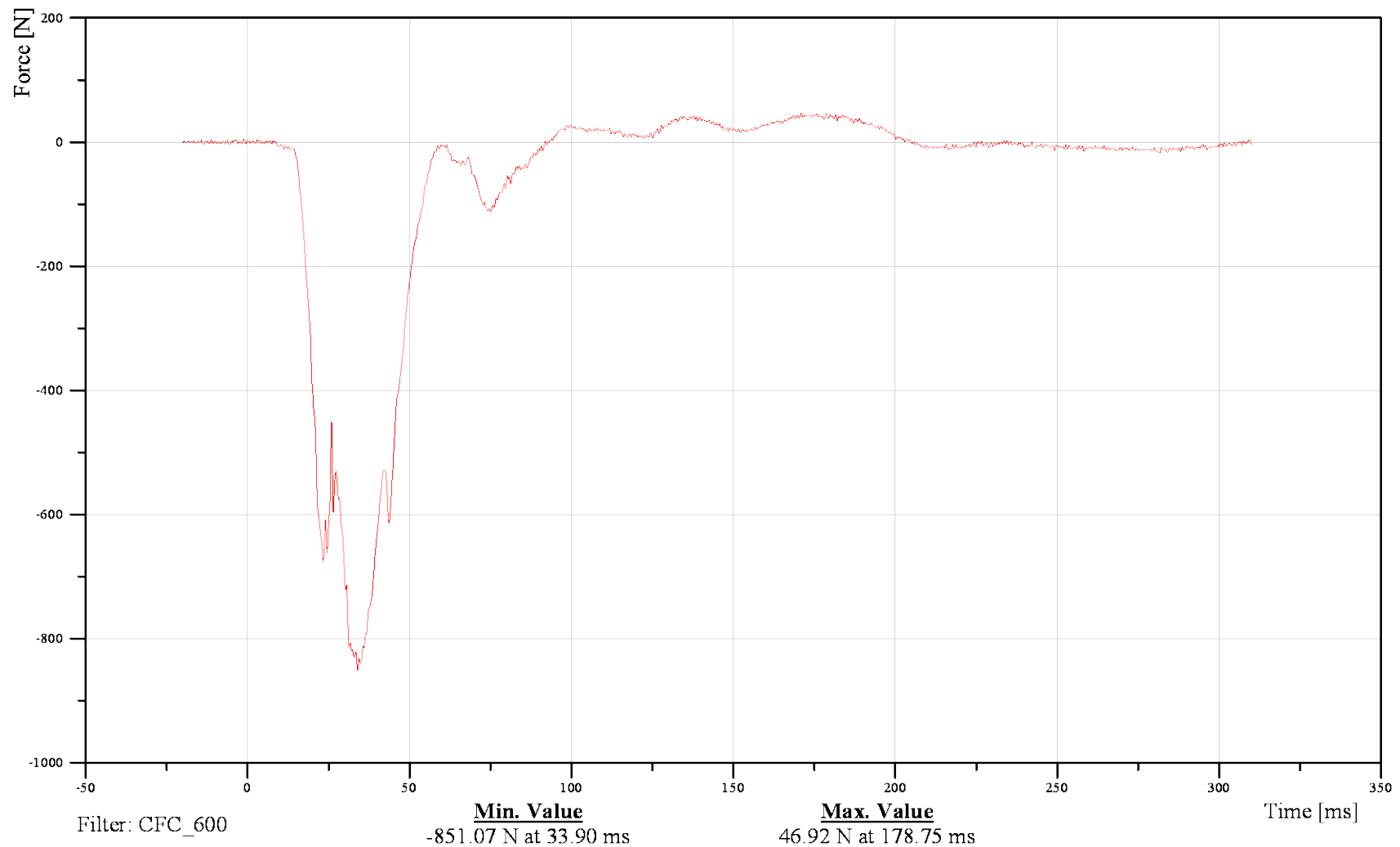
Pubic Force Fy

Customer: VRTC

11PUBC0000WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Lumbar Force Fx

Date: 06/17/2013

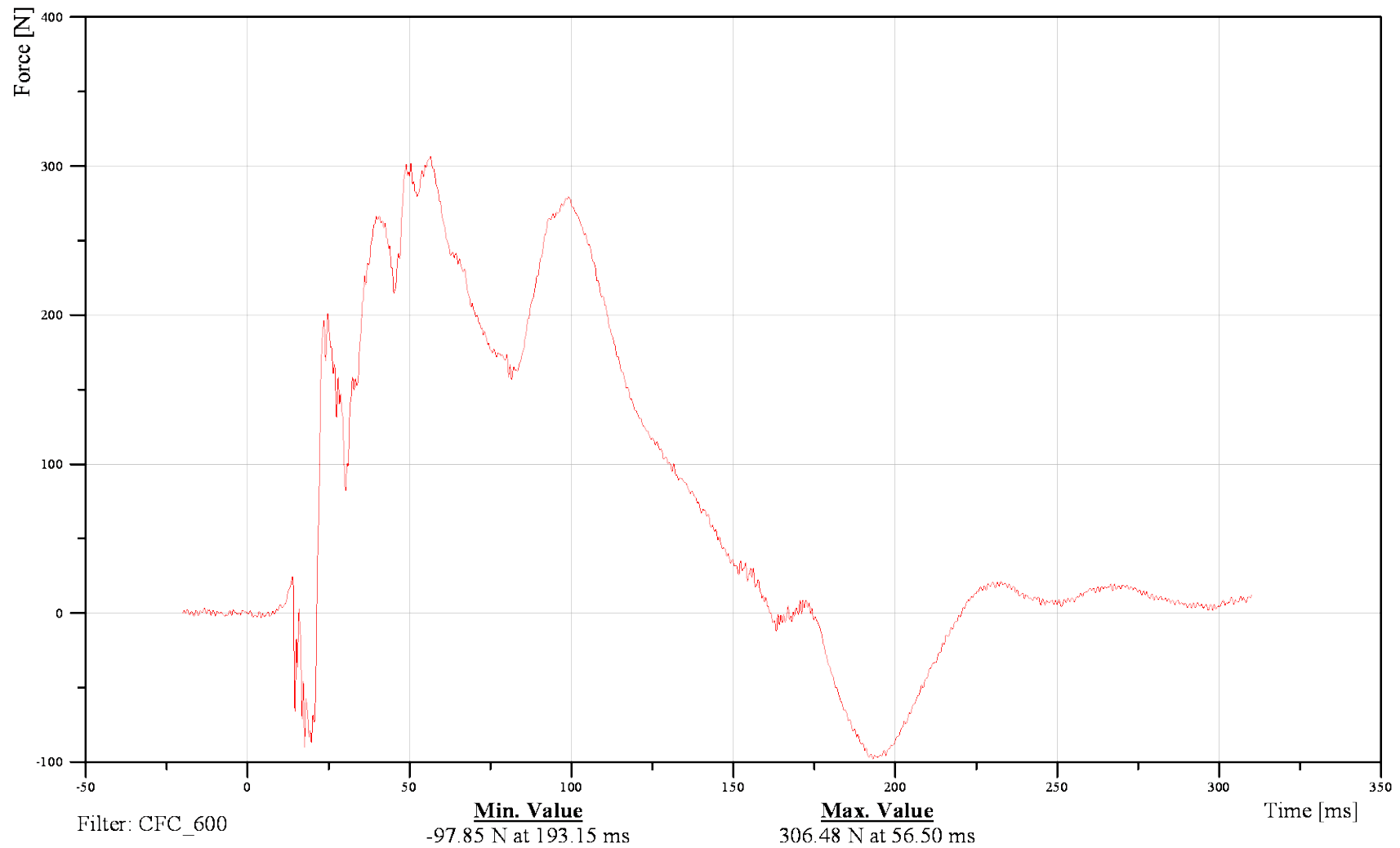
Time: 12:36

Customer: VRTC

11LUSP0000WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Lumbar Force Fy

Date: 06/17/2013

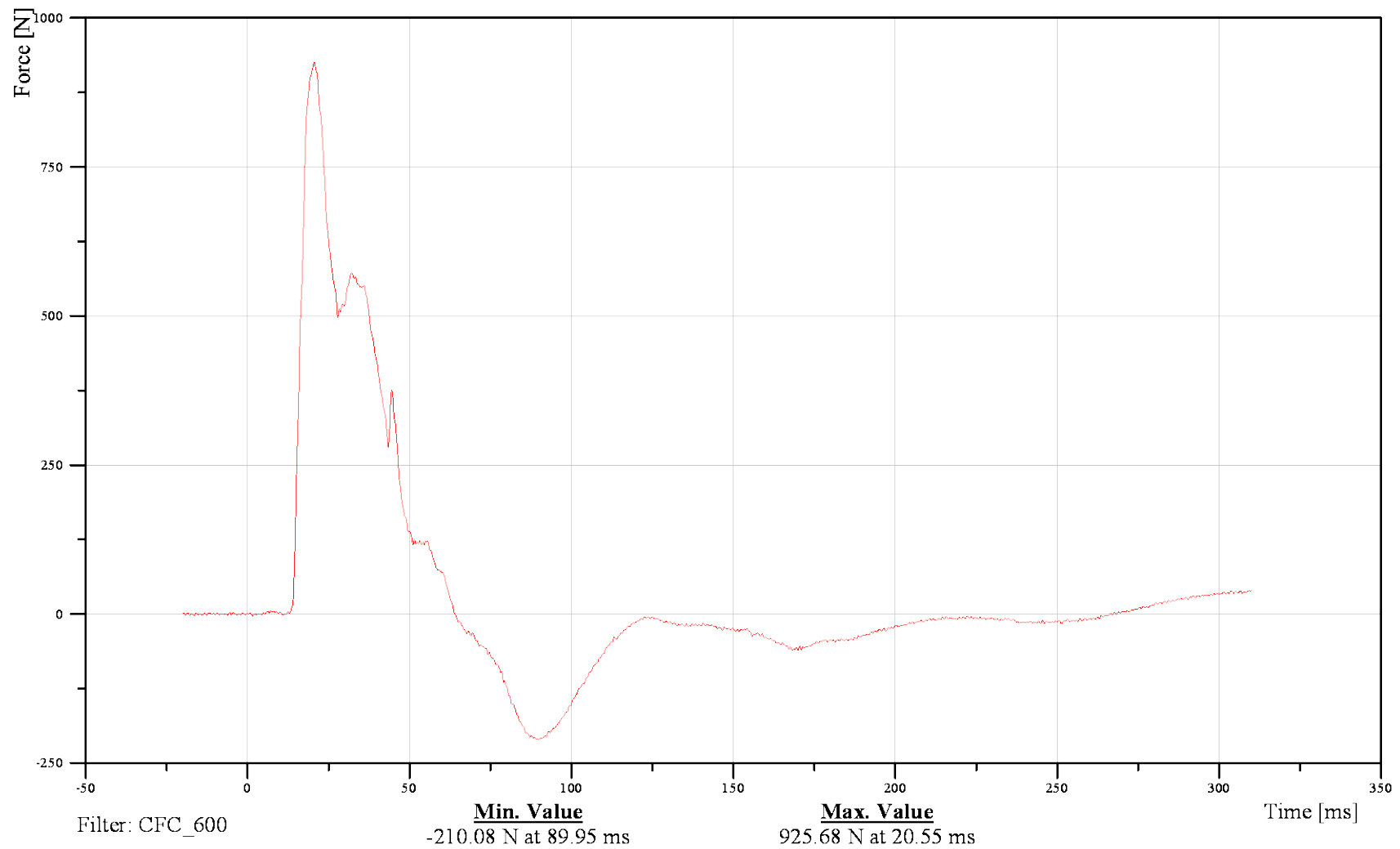
Time: 12:36

Customer: VRTC

11LUSP0000WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Lumbar Force Fz

Date: 06/17/2013

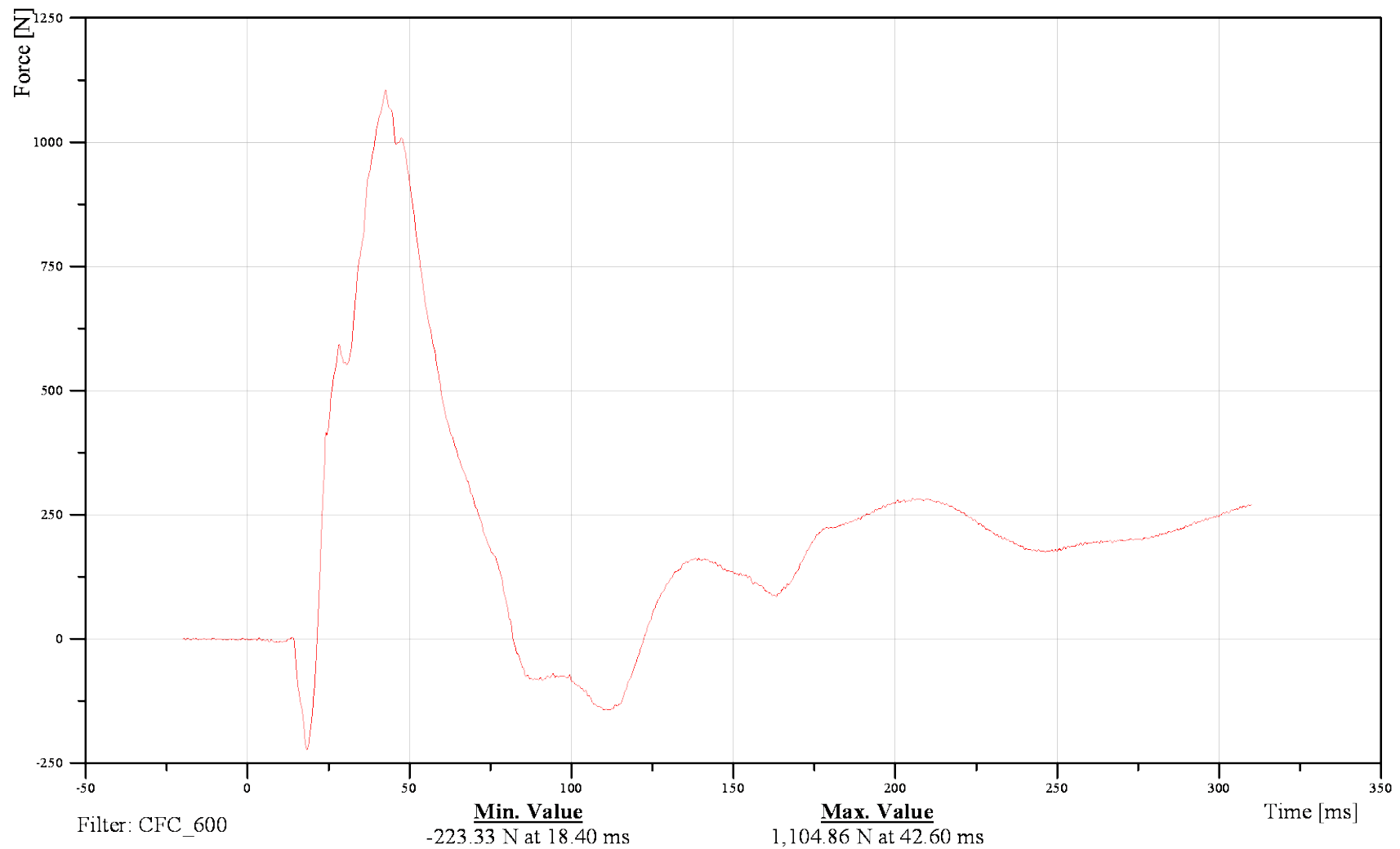
Time: 12:36

Customer: VRTC

11LUSP0000WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Lumbar Moment Mx

Date: 06/17/2013

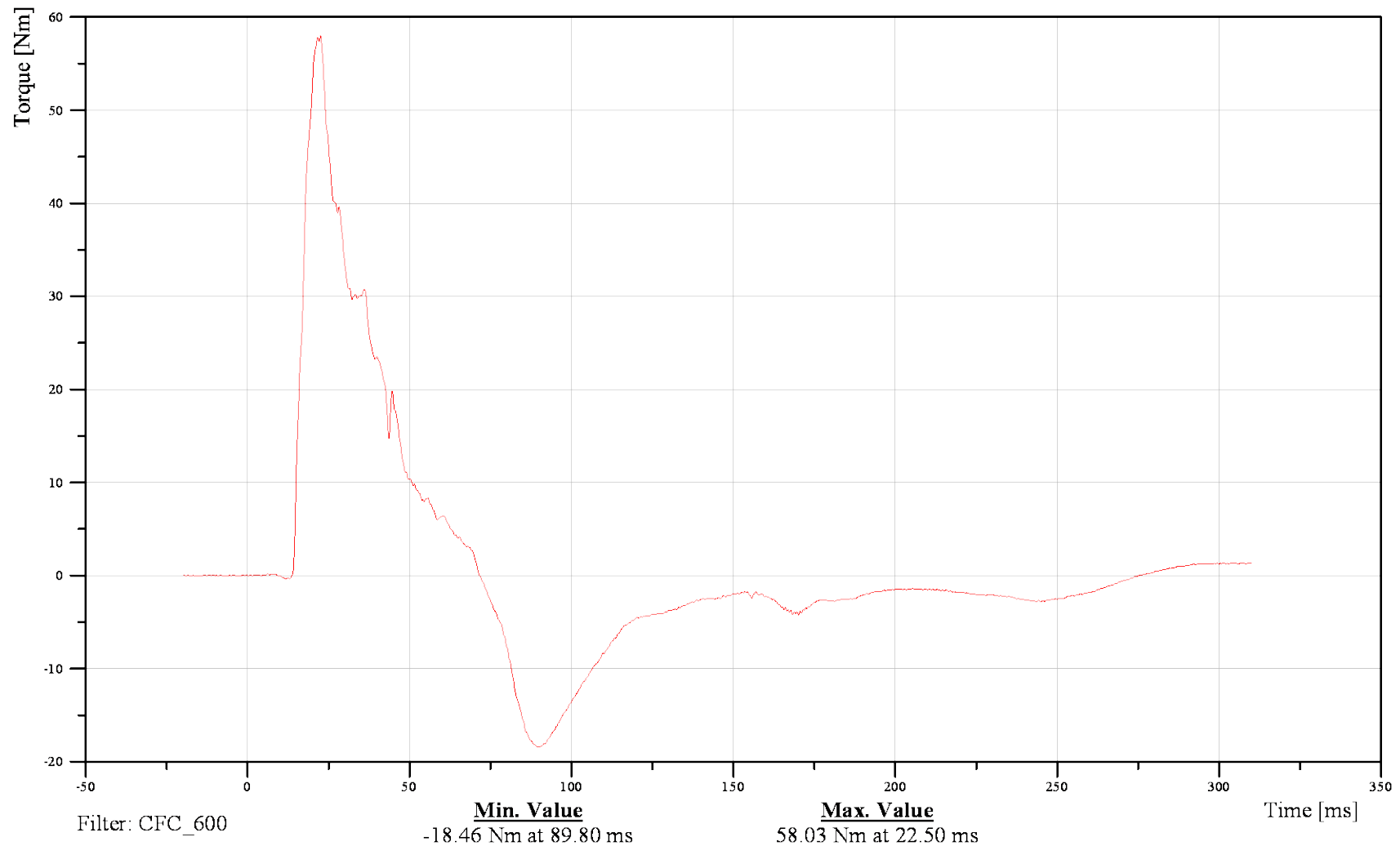
Time: 12:36

Customer: VRTC

11LUSP0000WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Lumbar Moment My

Date: 06/17/2013

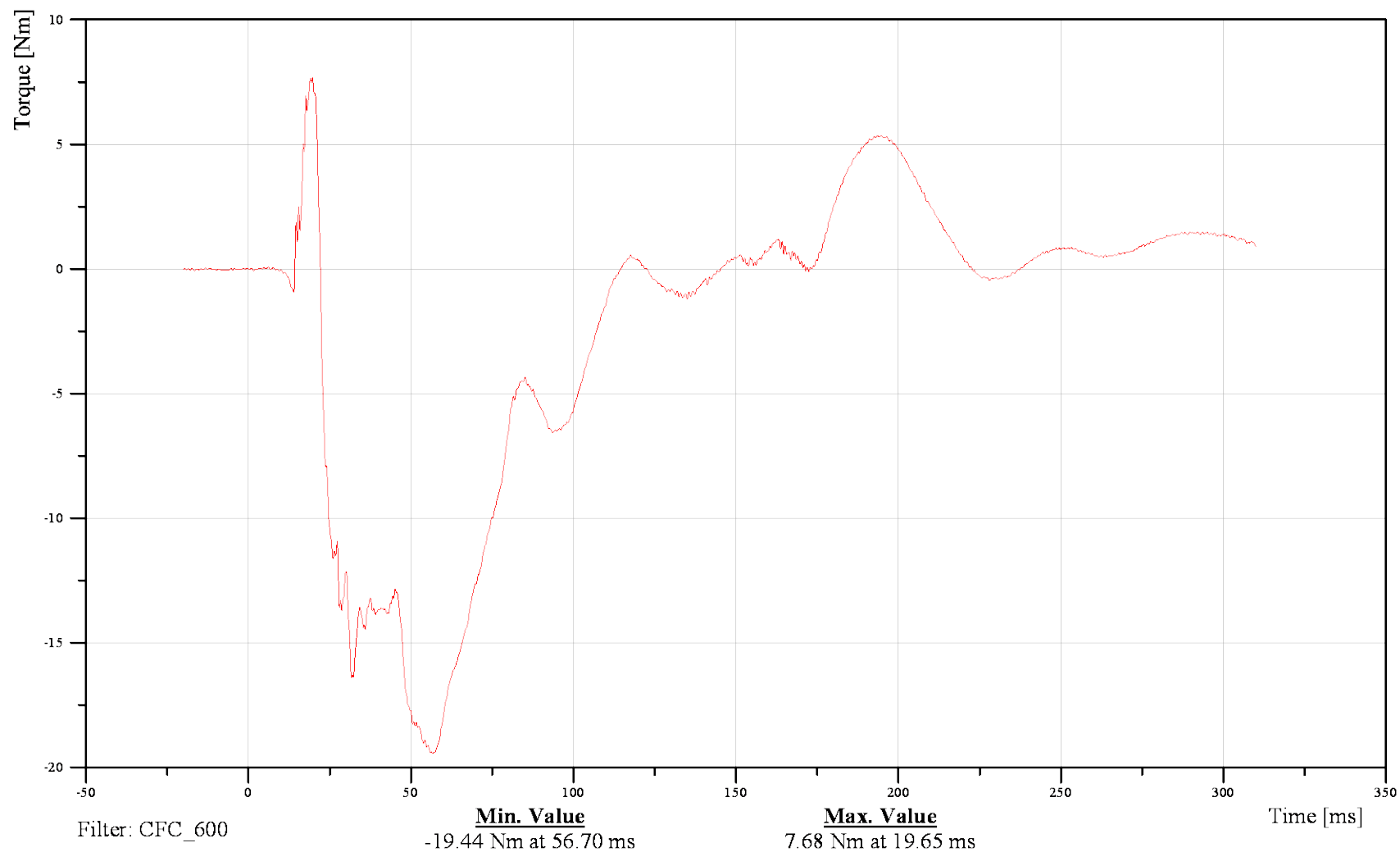
Time: 12:36

Customer: VRTC

11LUSP0000WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Lumbar Moment Mz

Date: 06/17/2013

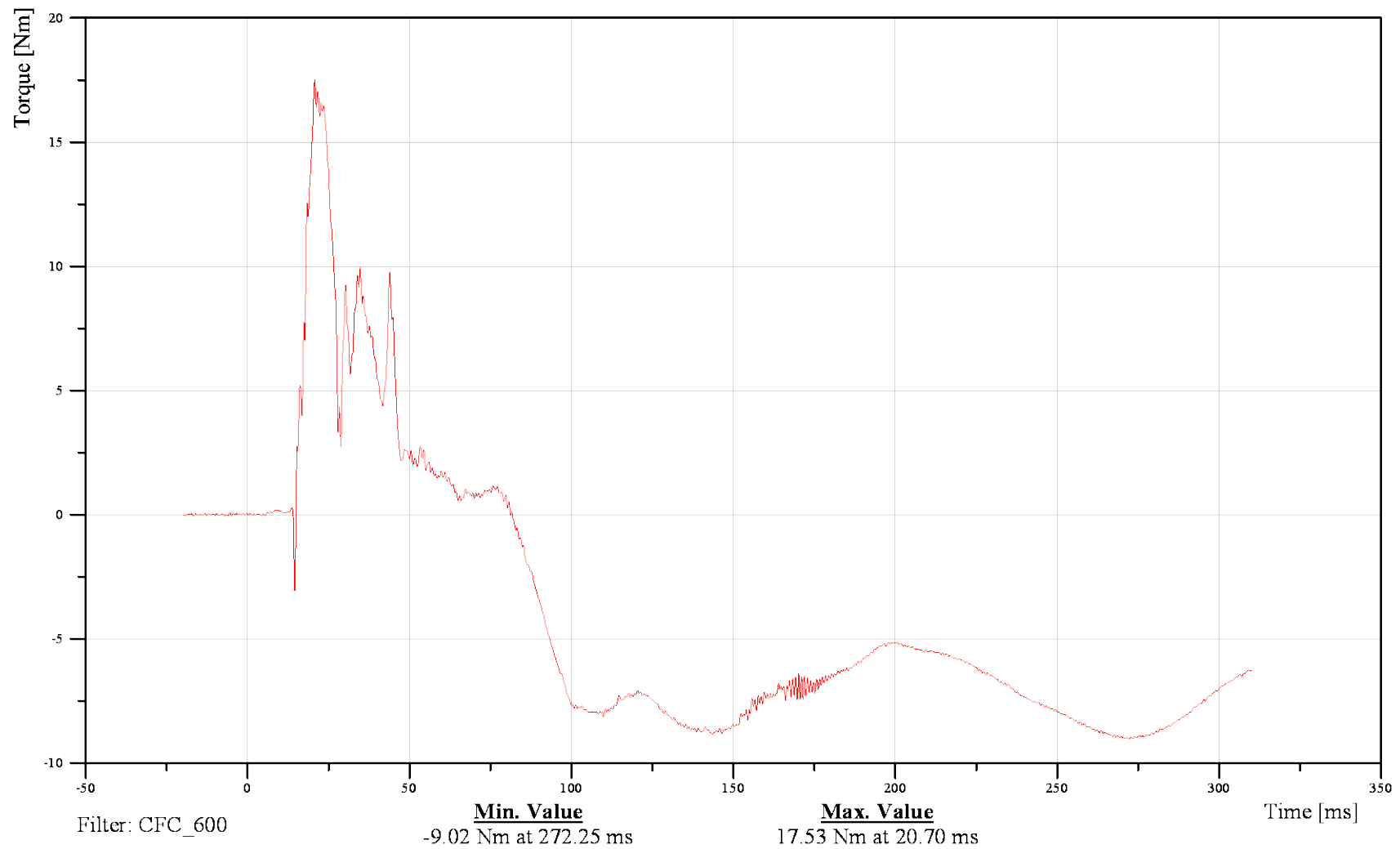
Time: 12:36

Customer: VRTC

11LUSP0000WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Right Moment Mx

Date: 06/17/2013

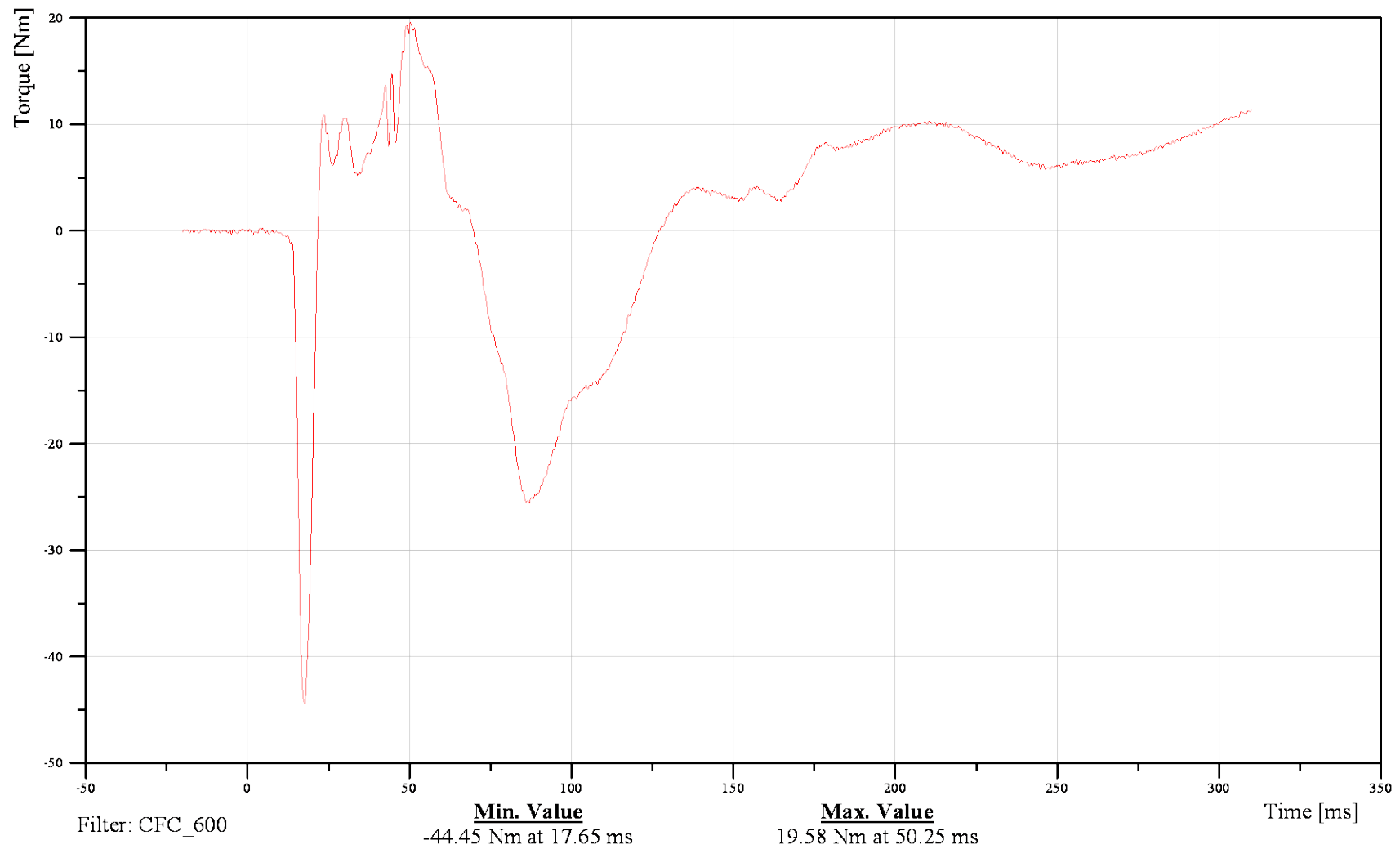
Time: 12:36

Customer: VRTC

11SACRRI00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Right Moment My

Date: 06/17/2013

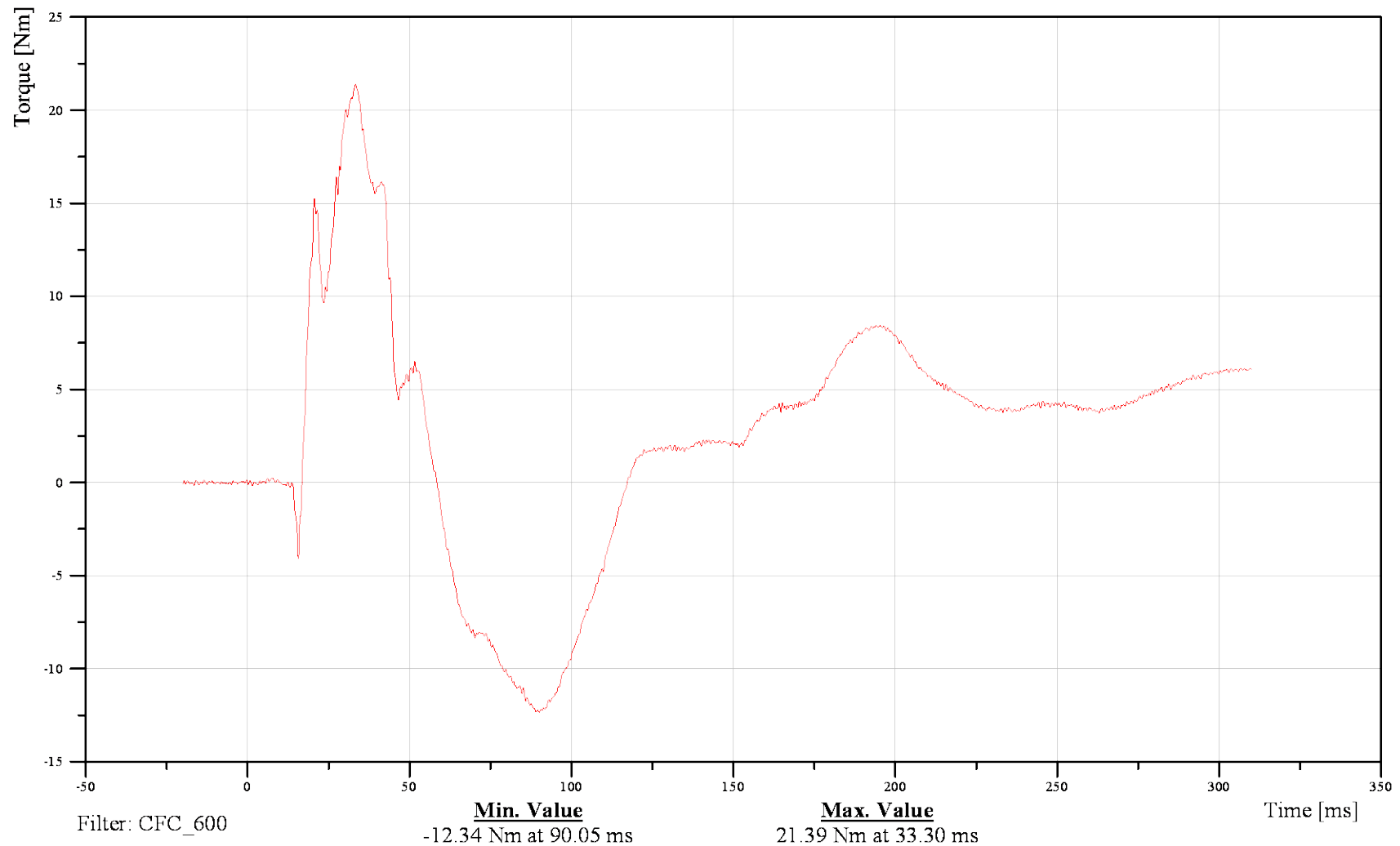
Time: 12:36

Customer: VRTC

11SACRRI00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Right Moment Mz

Date: 06/17/2013

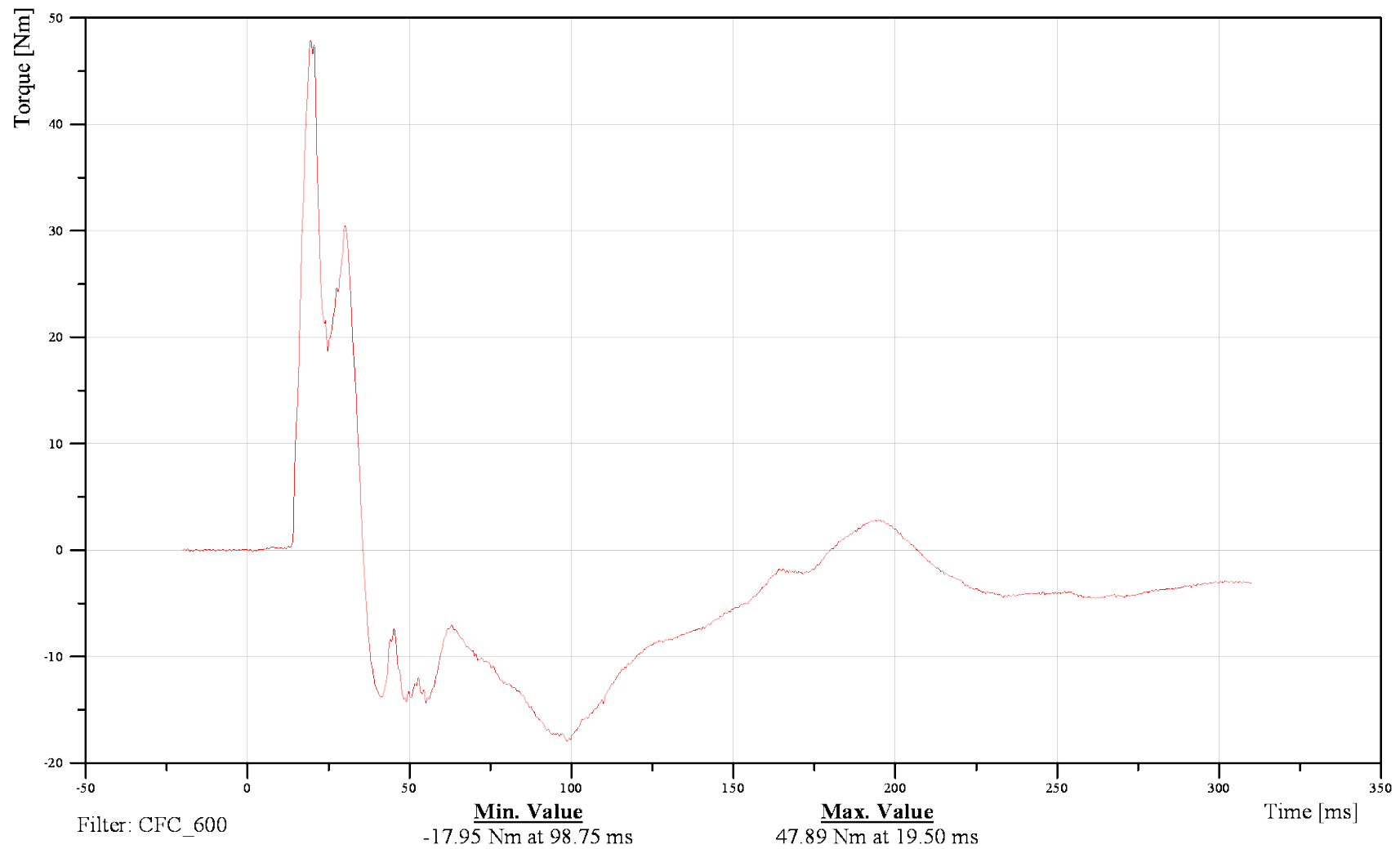
Time: 12:36

Customer: VRTC

11SACRRI00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Right Force Fx

Date: 06/17/2013

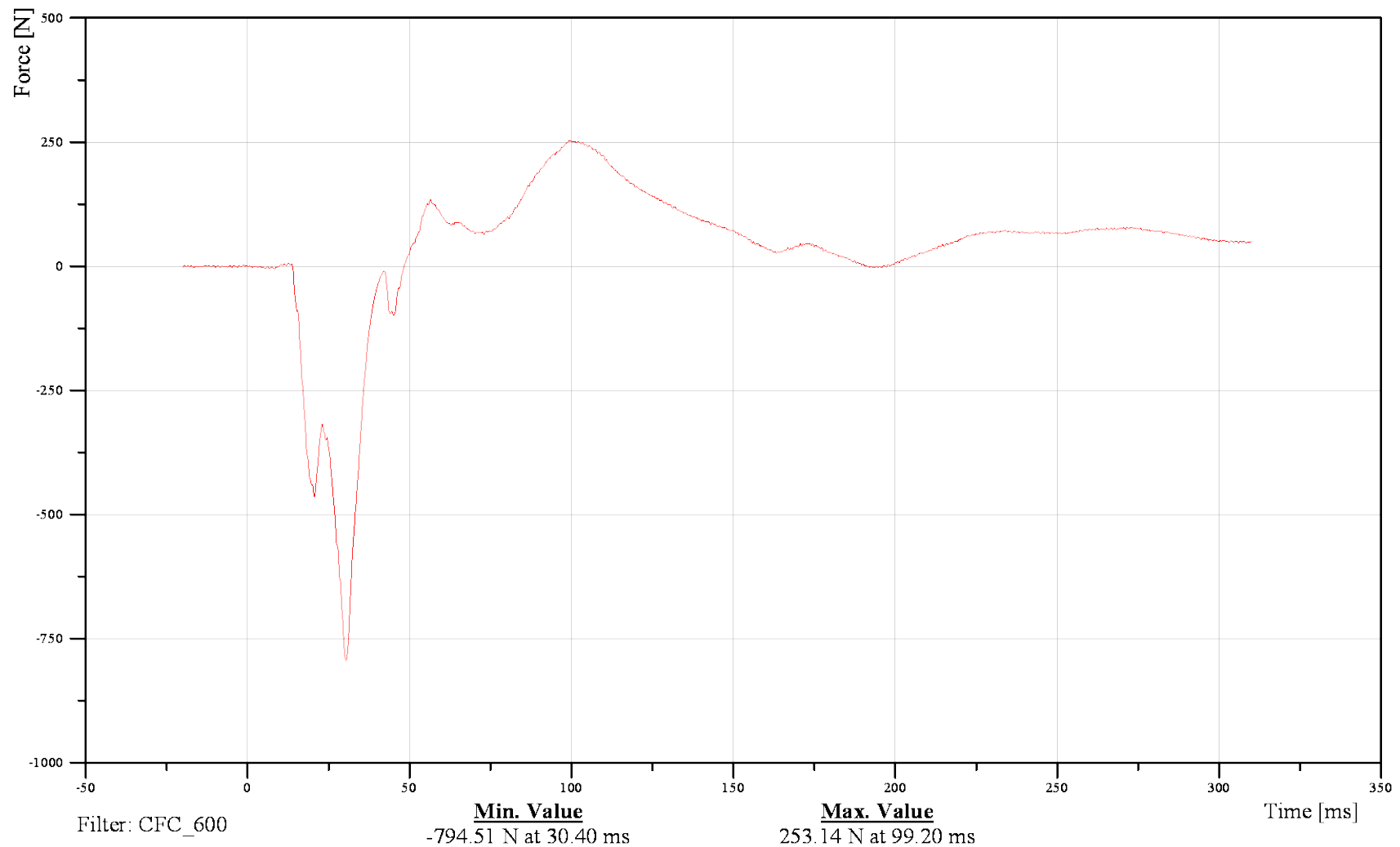
Time: 12:36

Customer: VRTC

11SACRRI00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Right Force Fy

Date: 06/17/2013

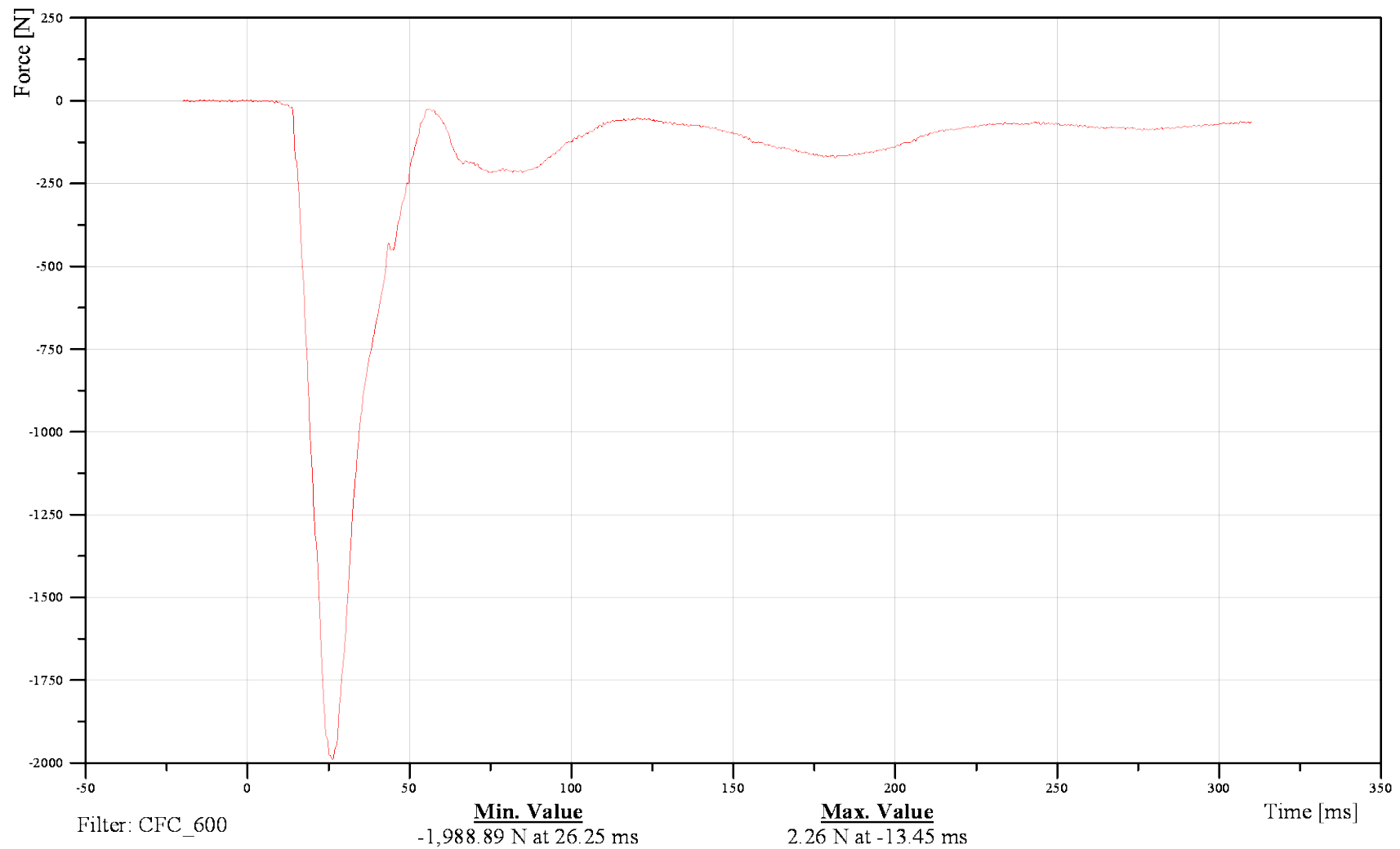
Time: 12:36

Customer: VRTC

11SACRRI00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Right Force Fz

Date: 06/17/2013

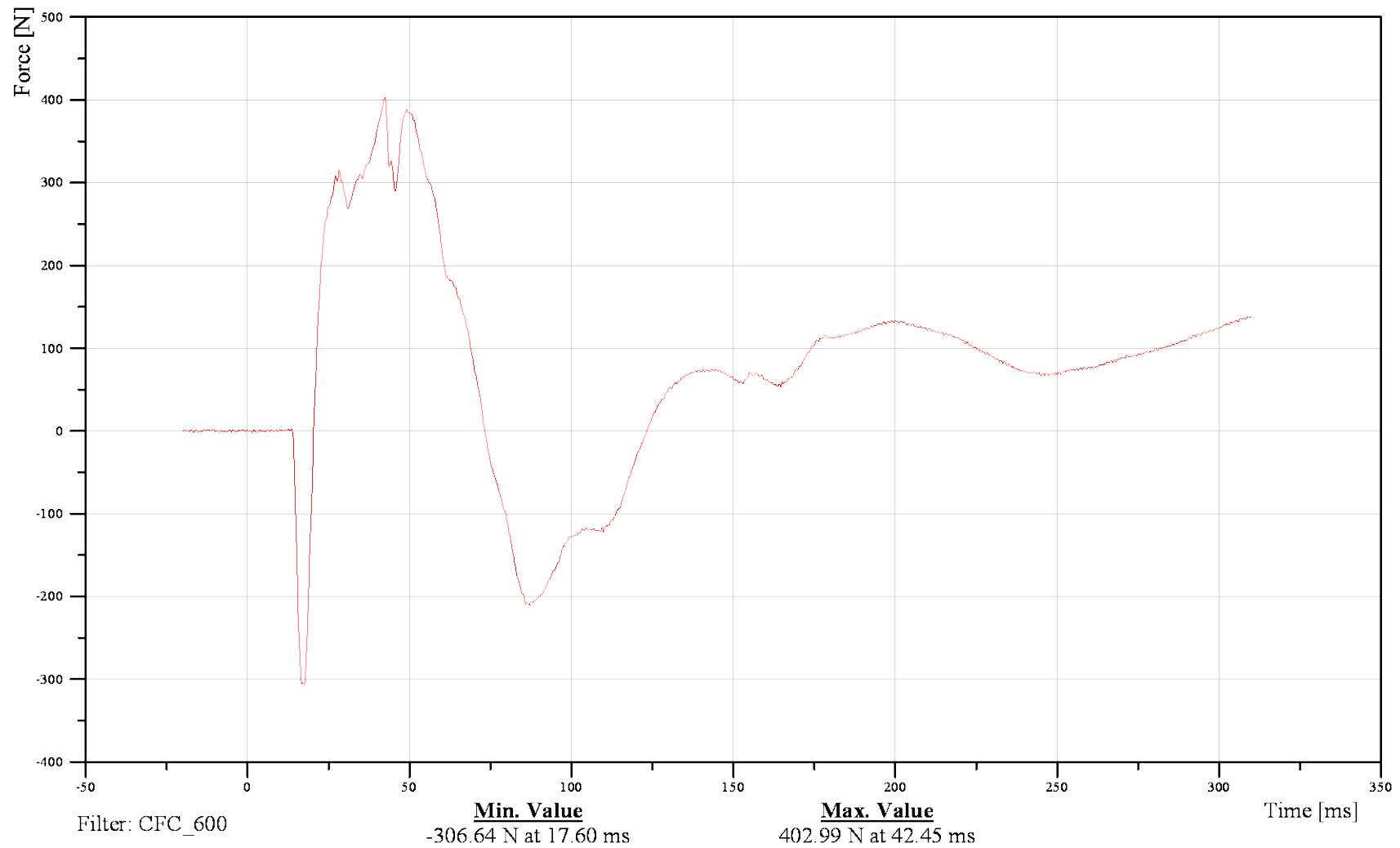
Time: 12:36

Customer: VRTC

11SACRRI00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Left Moment Mx

Date: 06/17/2013

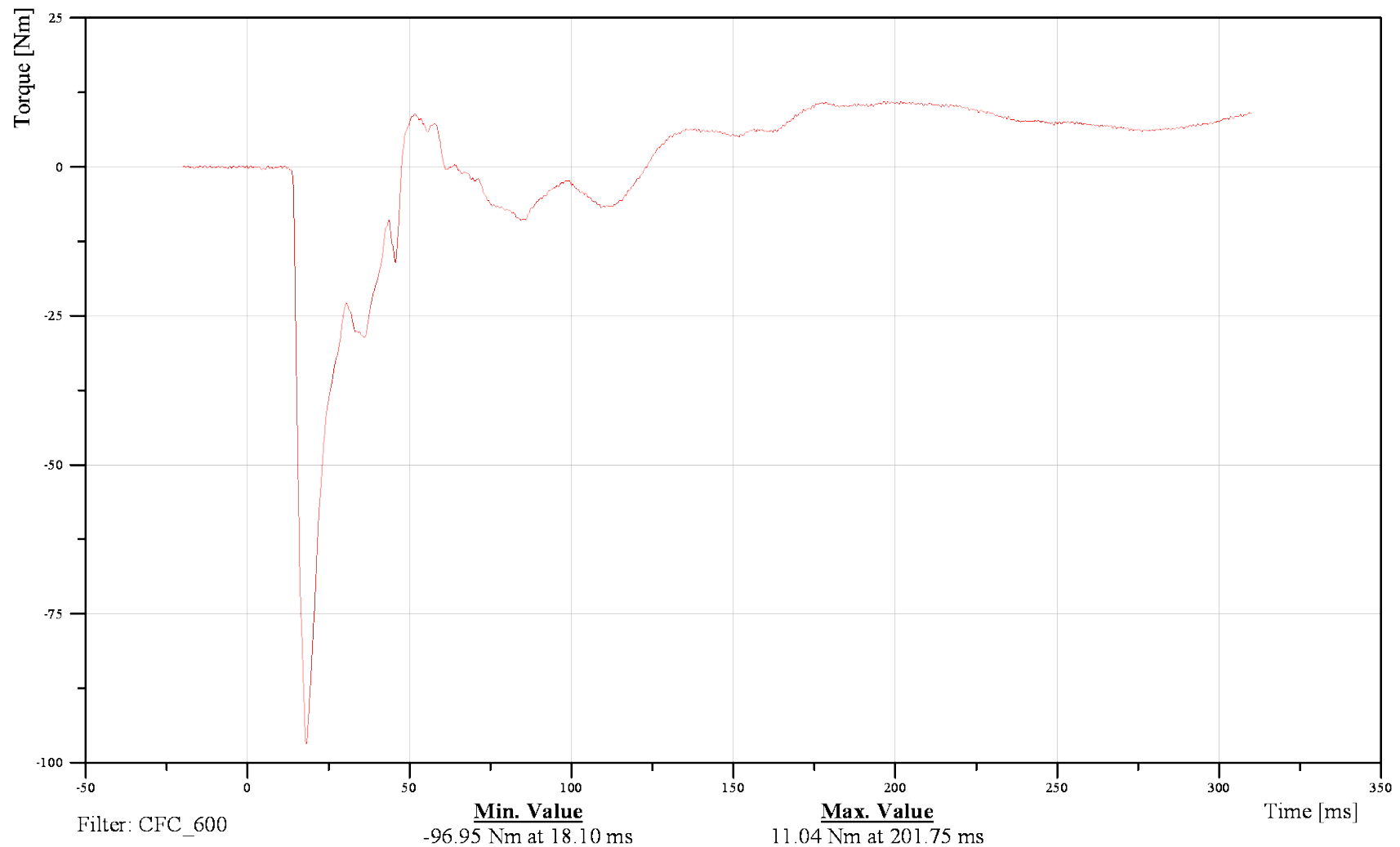
Time: 12:36

Customer: VRTC

11SACRLE00WSMOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Left Moment My

Date: 06/17/2013

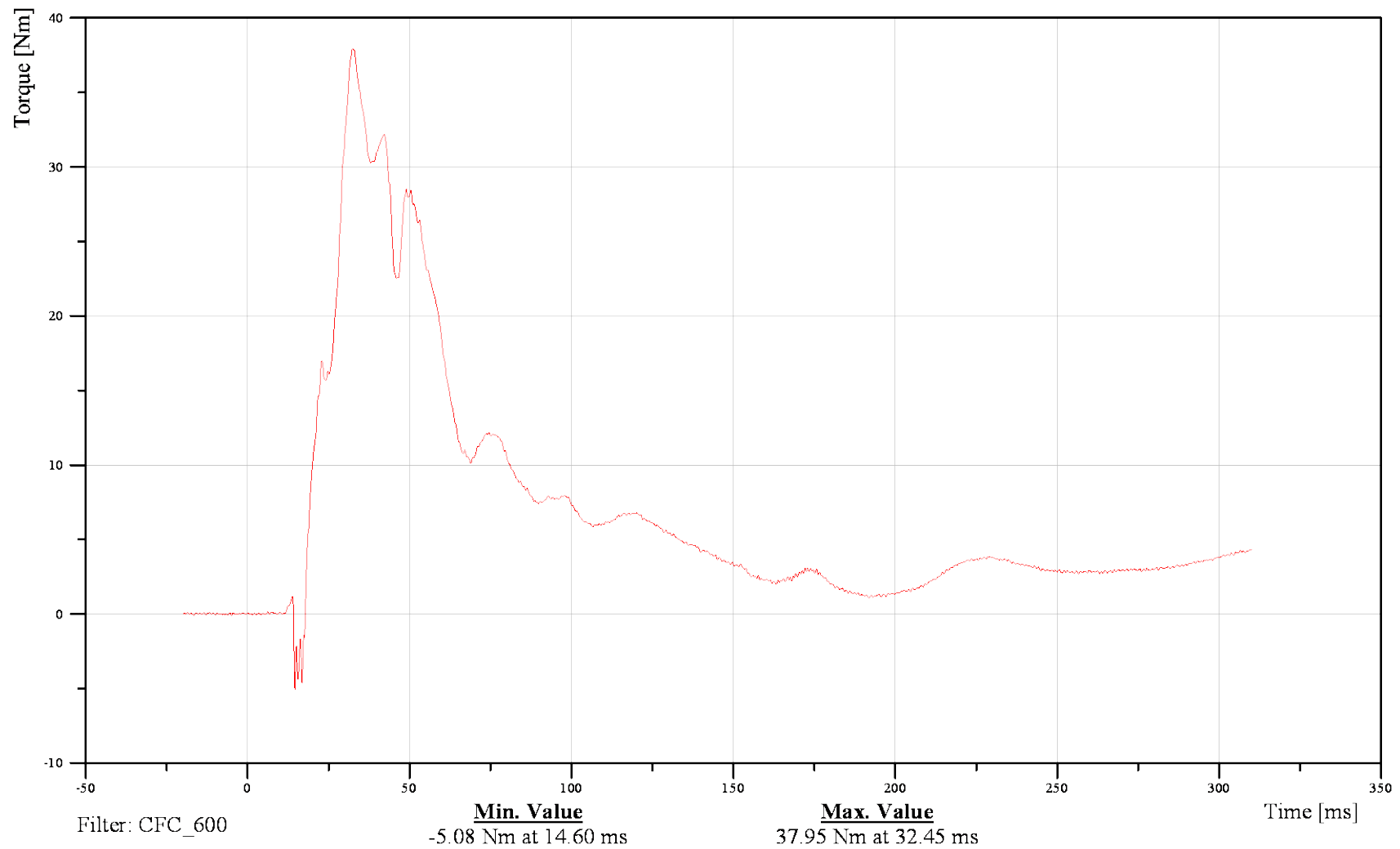
Time: 12:36

Customer: VRTC

11SACRLE00WSMOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Left Moment Mz

Date: 06/17/2013

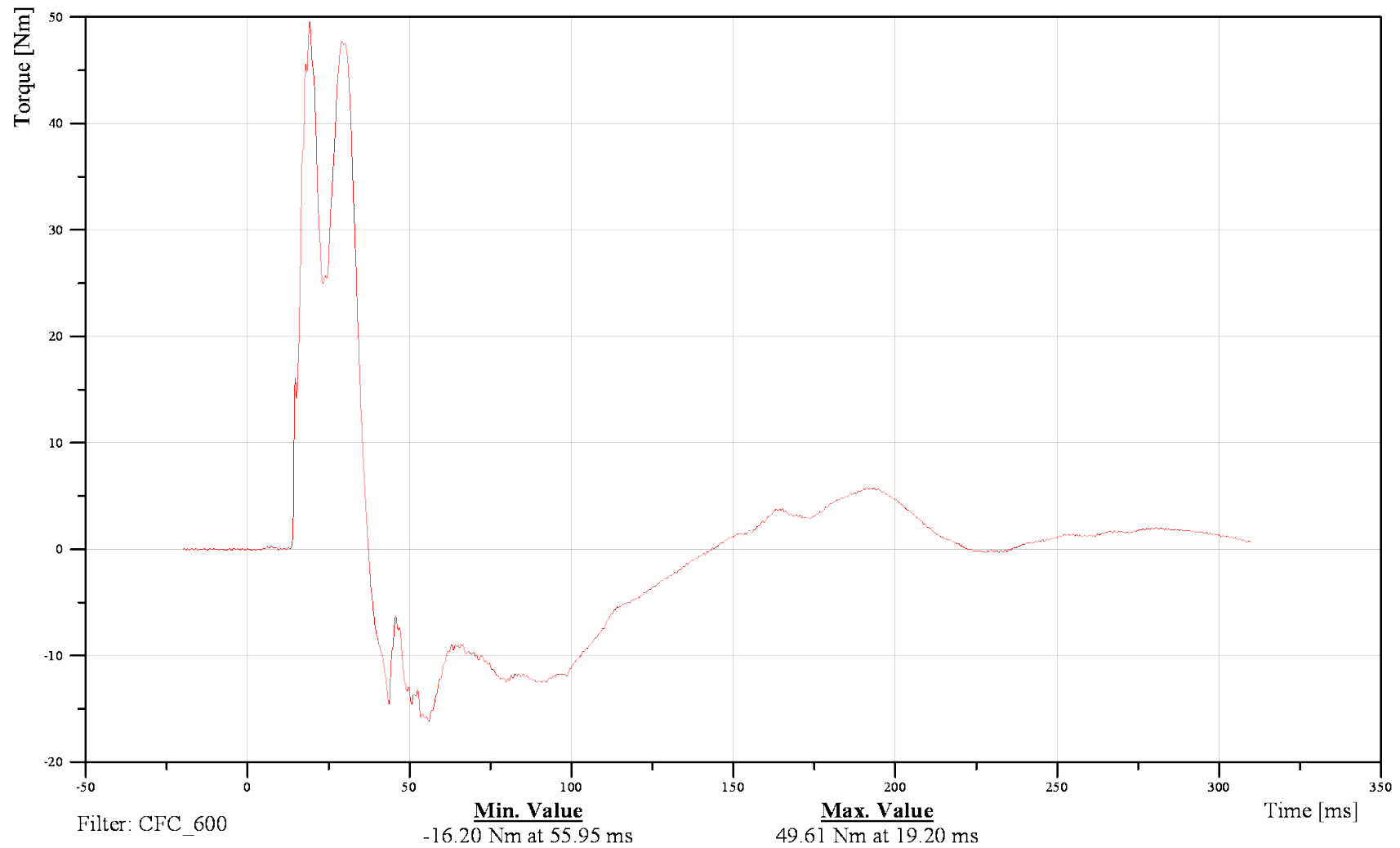
Time: 12:36

Customer: VRTC

11SACRLE00WSMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Left Force Fx

Date: 06/17/2013

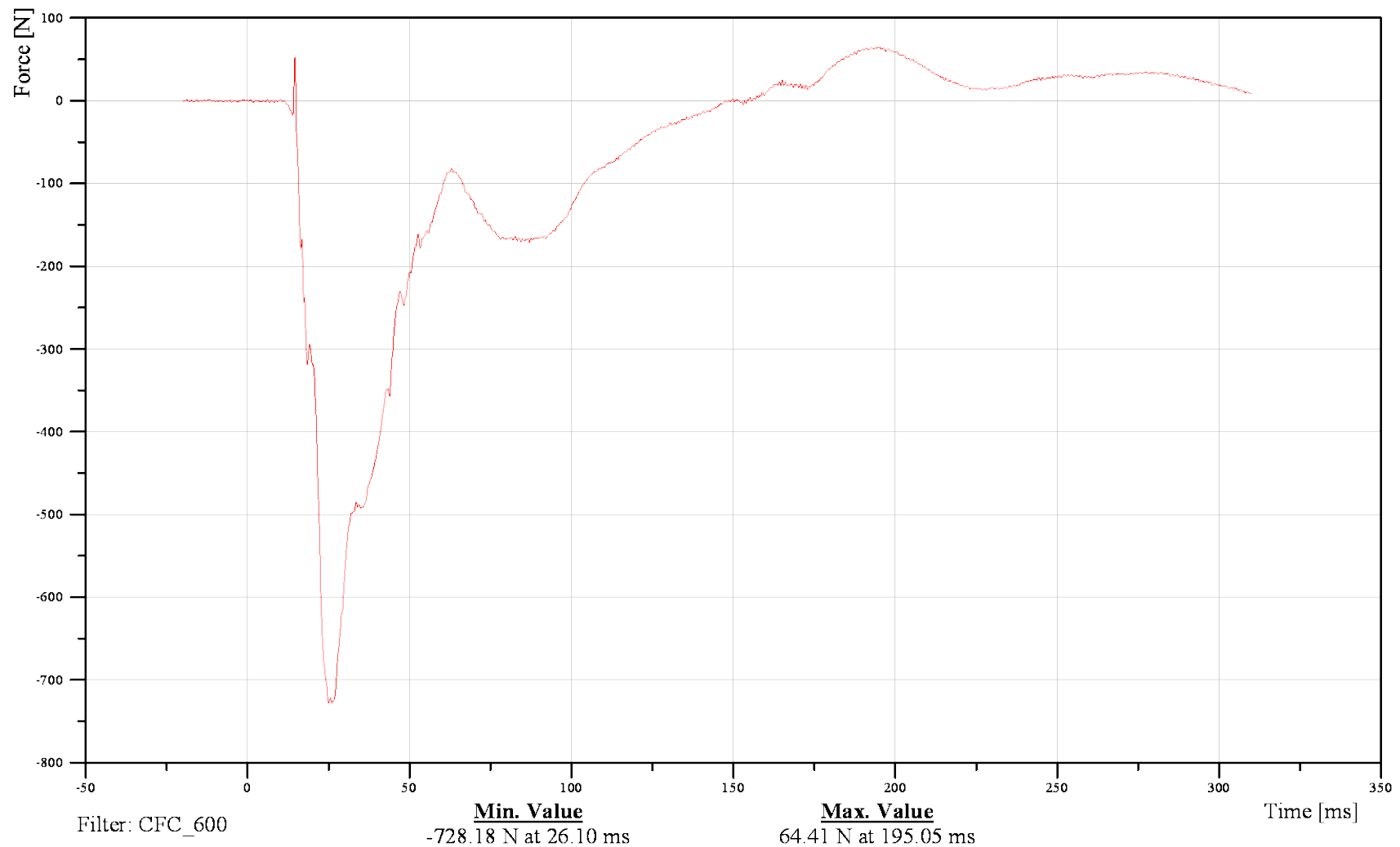
Time: 12:36

Customer: VRTC

11SACRLE00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Left Force Fy

Date: 06/17/2013

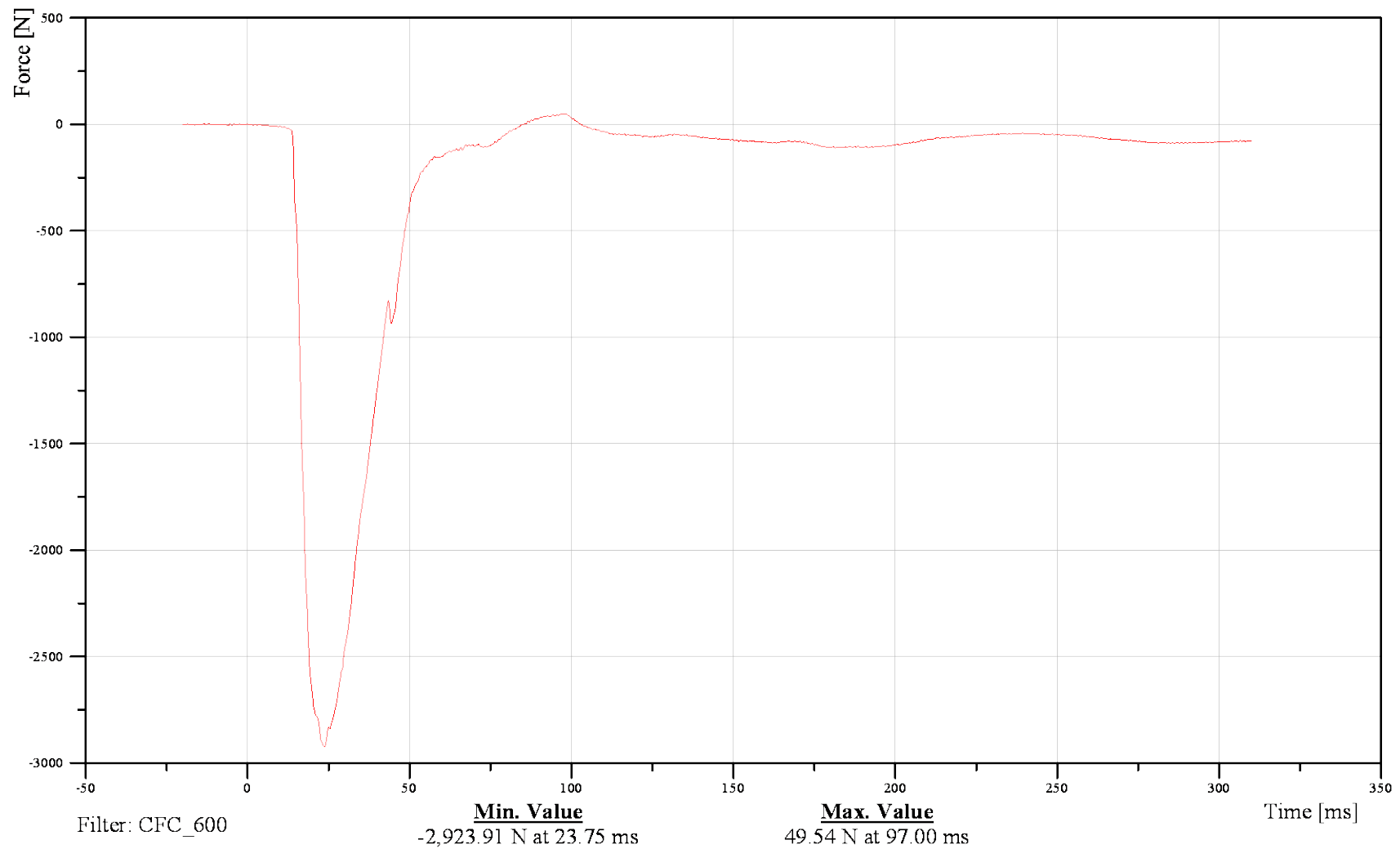
Time: 12:36

Customer: VRTC

11SACRLE00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Sacro-Iliac Left Force Fz

Date: 06/17/2013

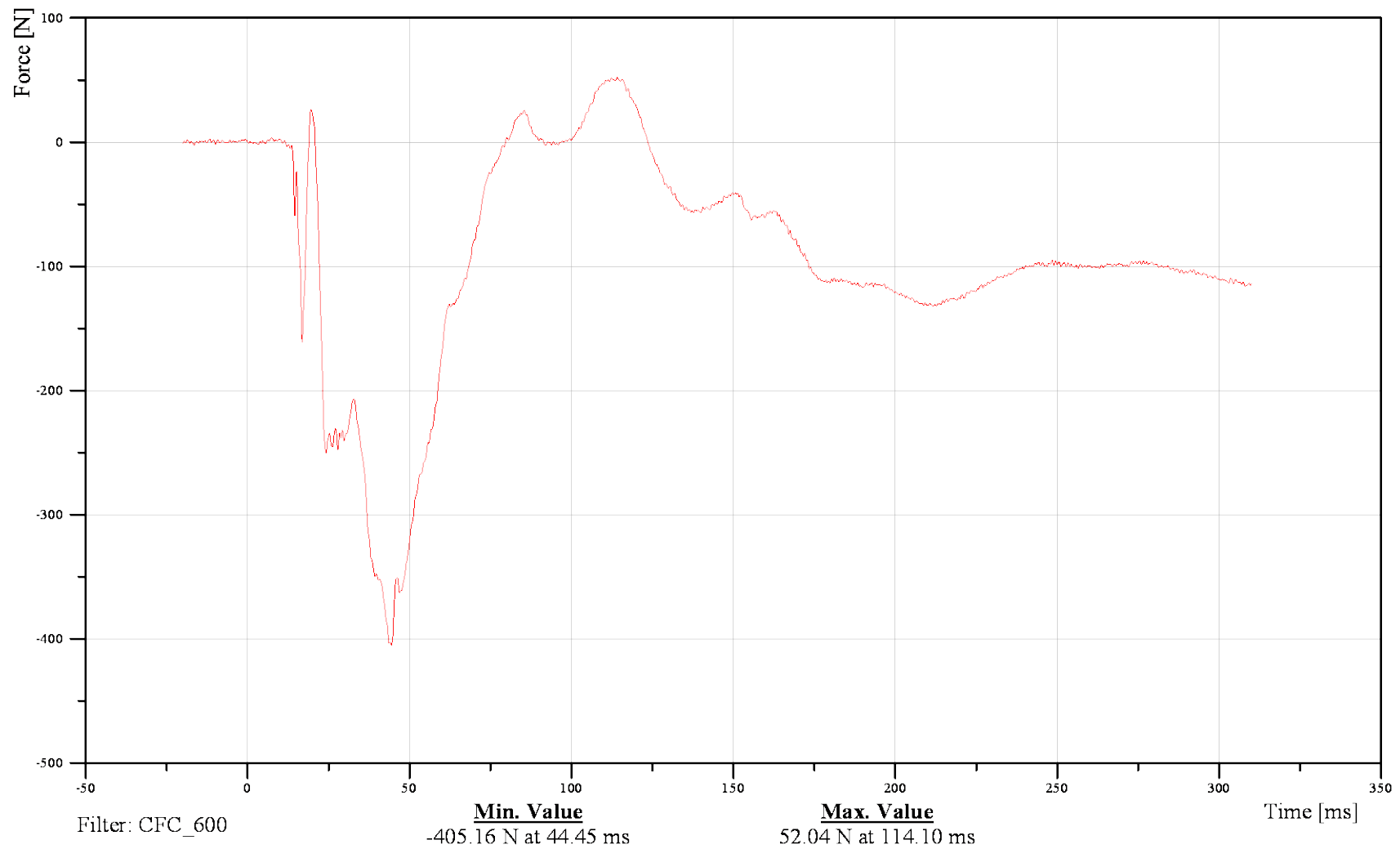
Time: 12:36

Customer: VRTC

11SACRLE00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Femoral Neck Force Fx

Date: 06/17/2013

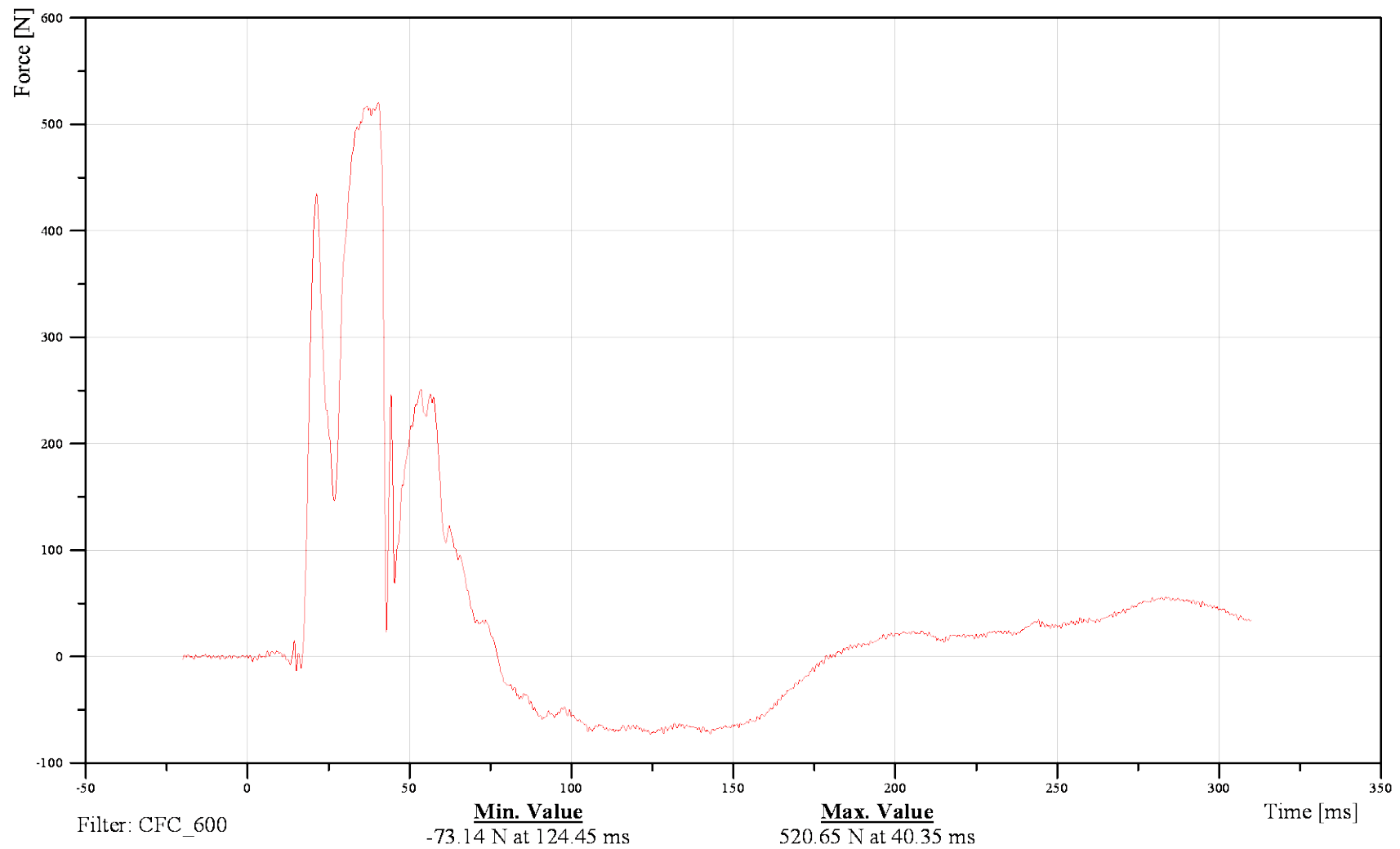
Time: 12:36

Customer: VRTC

11FEACLE00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Femoral Neck Force Fy

Date: 06/17/2013

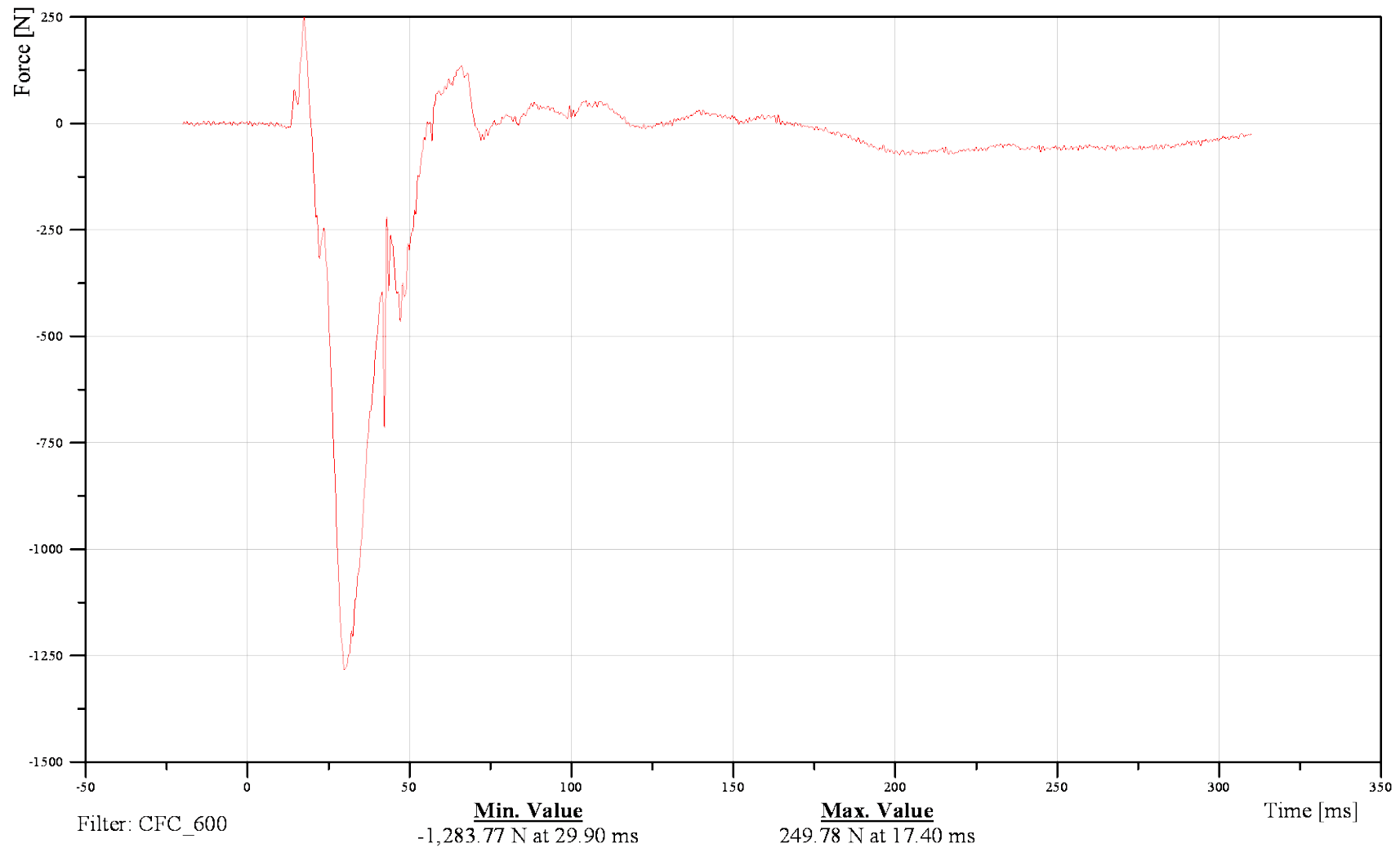
Time: 12:36

Customer: VRTC

11FEACLE00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Femoral Neck Force Fz

Date: 06/17/2013

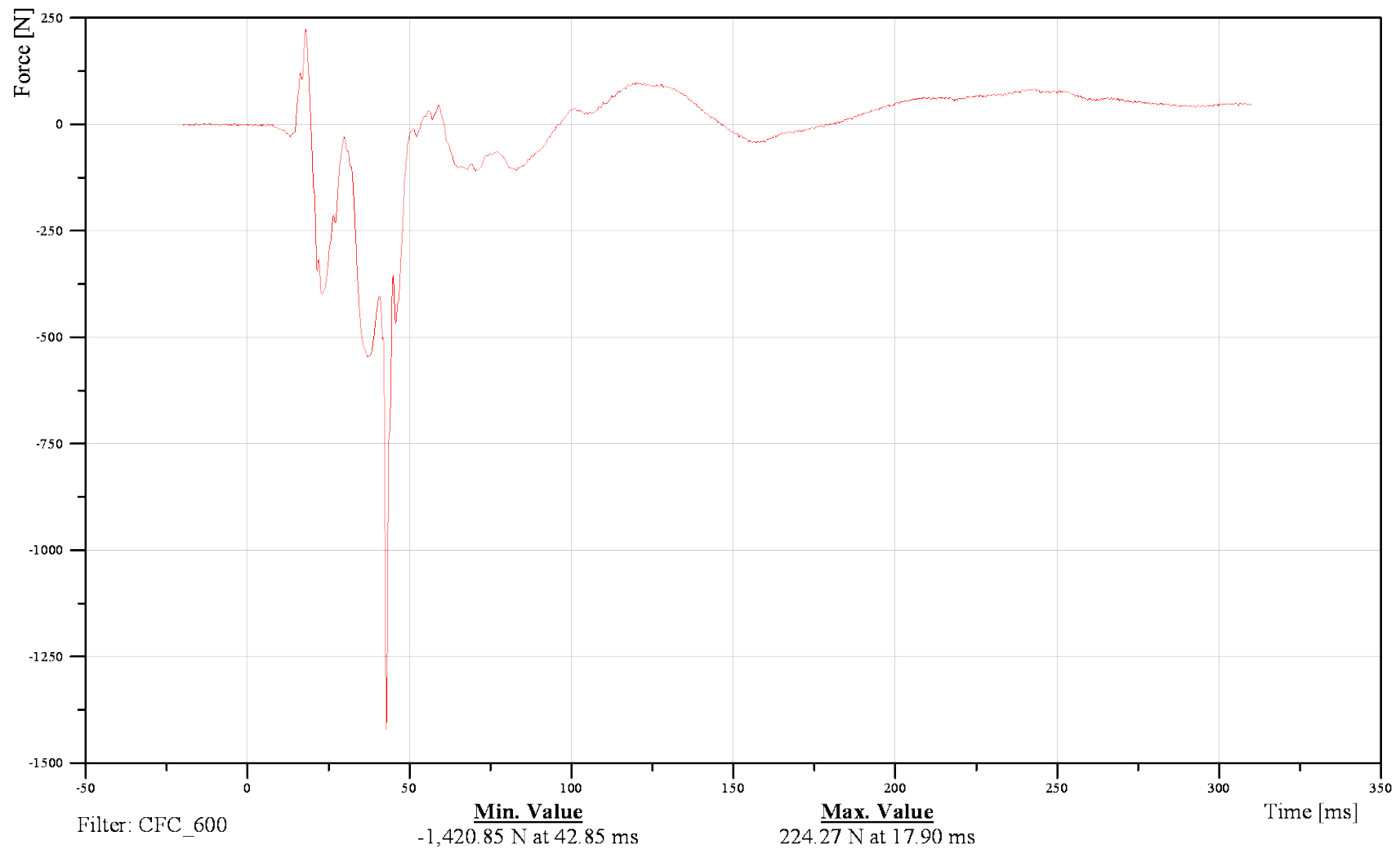
Time: 12:36

Customer: VRTC

11FEACLE00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Femoral Neck Force Fx

Date: 06/17/2013

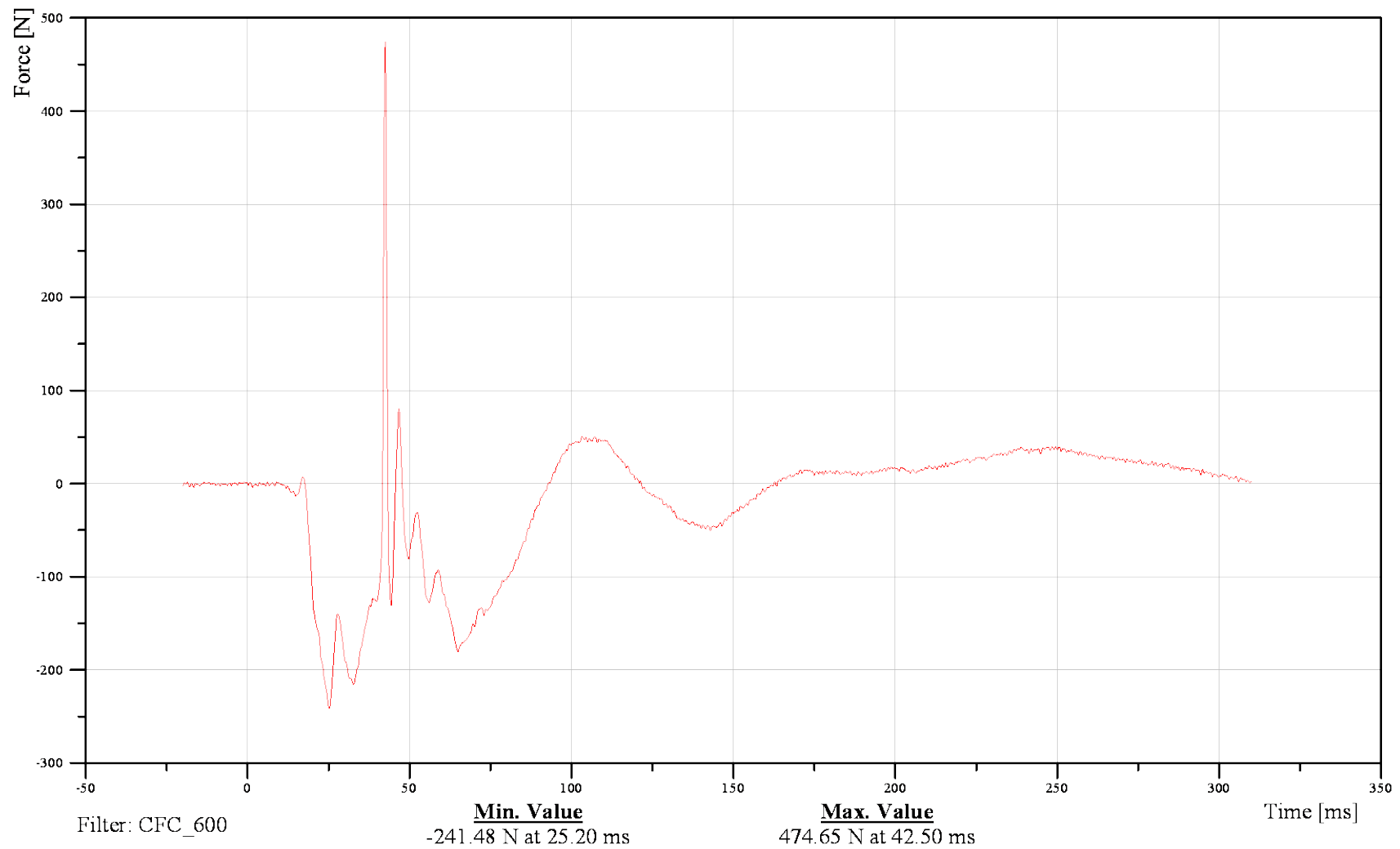
Time: 12:36

Customer: VRTC

11FEACRI00WSFOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Femoral Neck Force Fy

Date: 06/17/2013

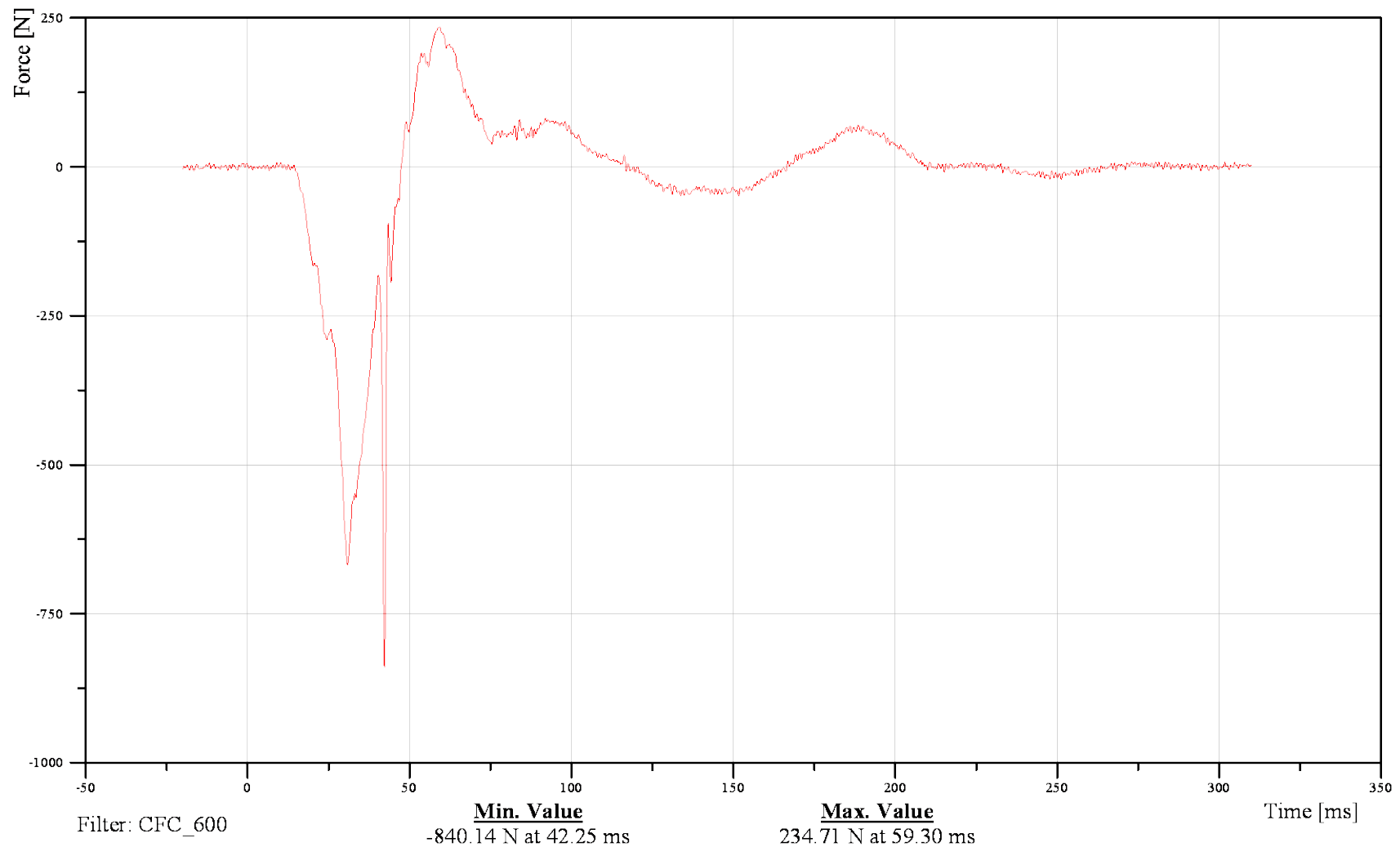
Time: 12:36

Customer: VRTC

11FEACRI00WSFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Femoral Neck Force Fz

Date: 06/17/2013

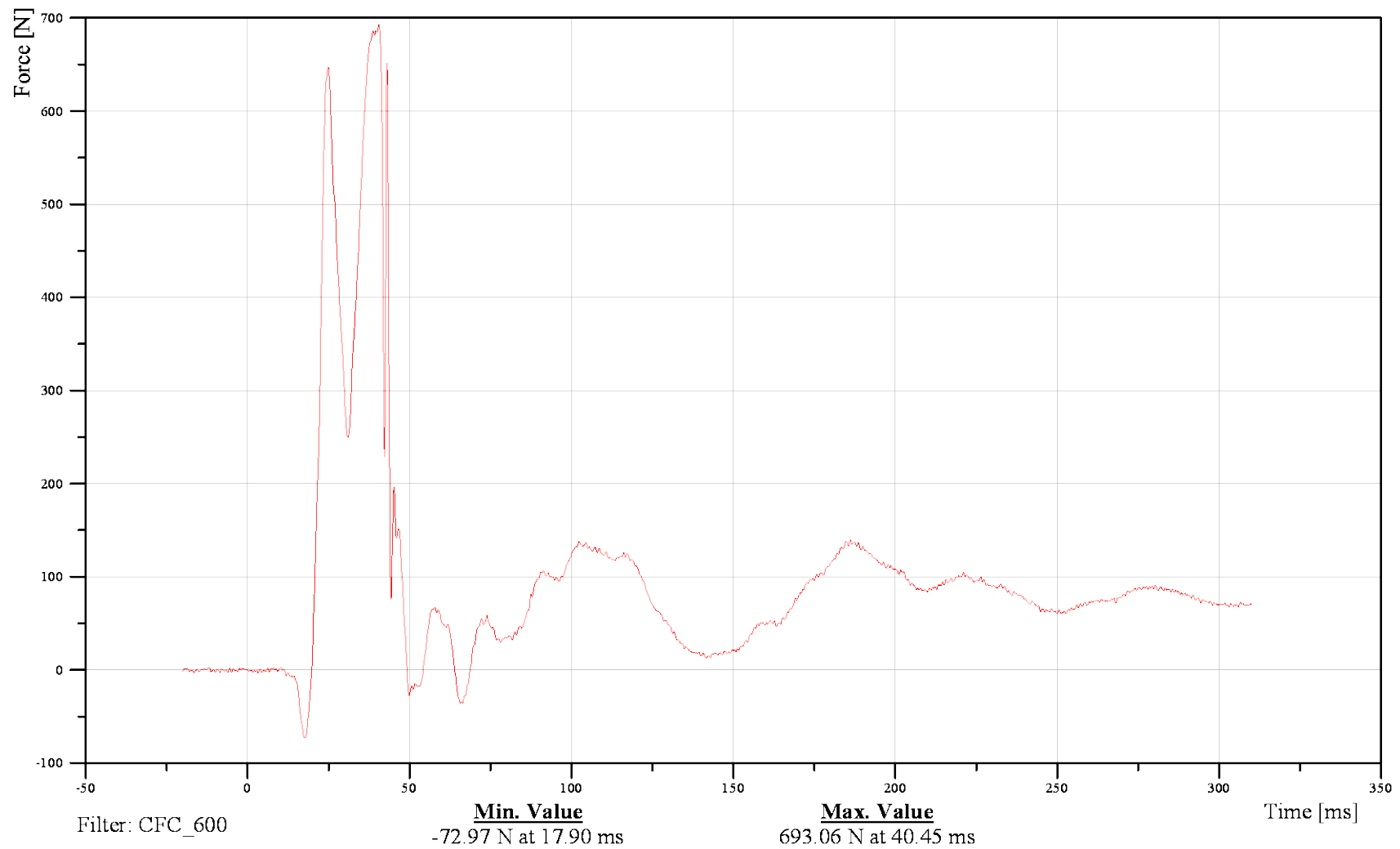
Time: 12:36

Customer: VRTC

11FEACRI00WSFOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Longitudinal Ax

Date: 06/17/2013

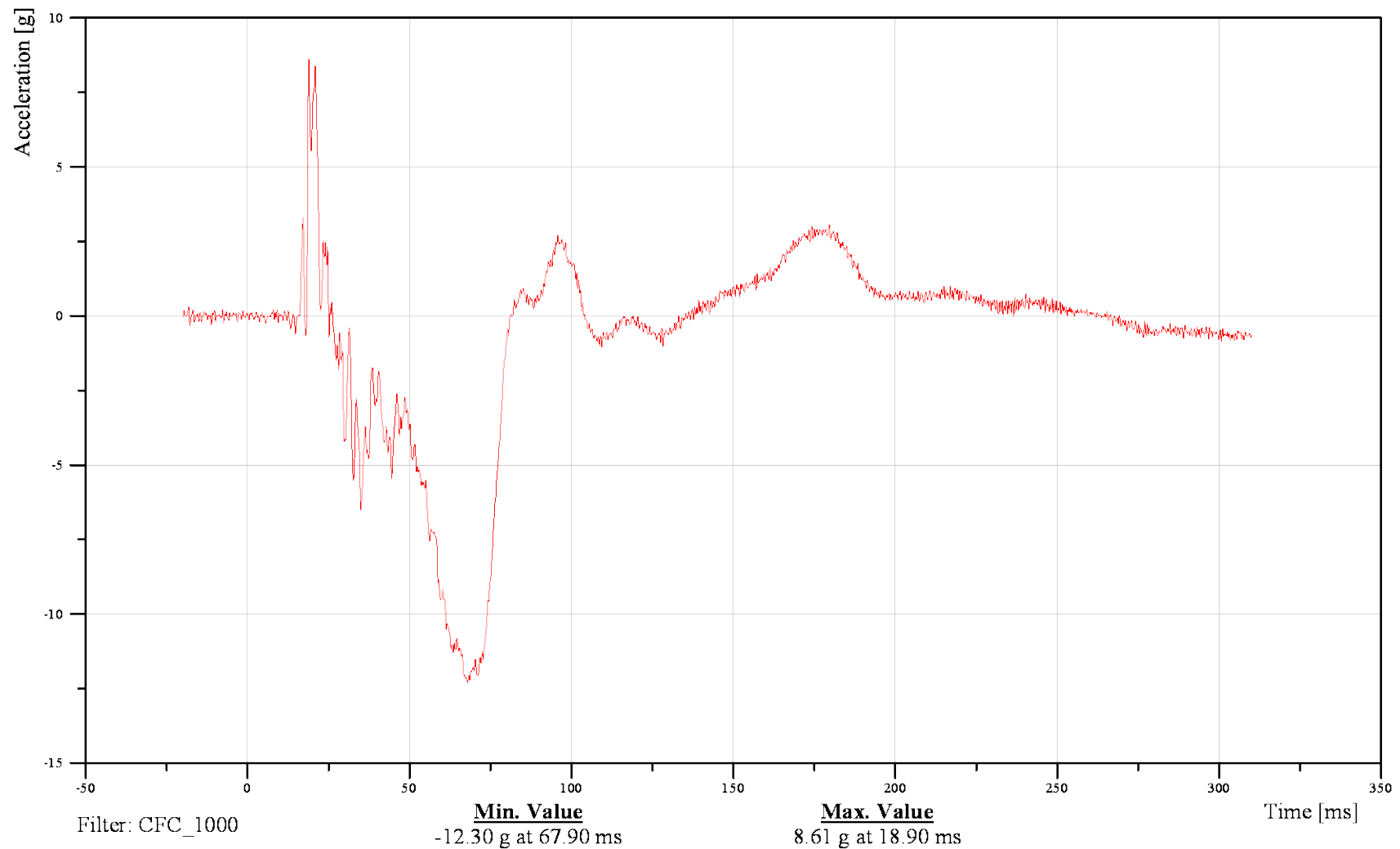
Time: 12:36

Customer: VRTC

14HEADCG00WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Lateral Ay

Date: 06/17/2013

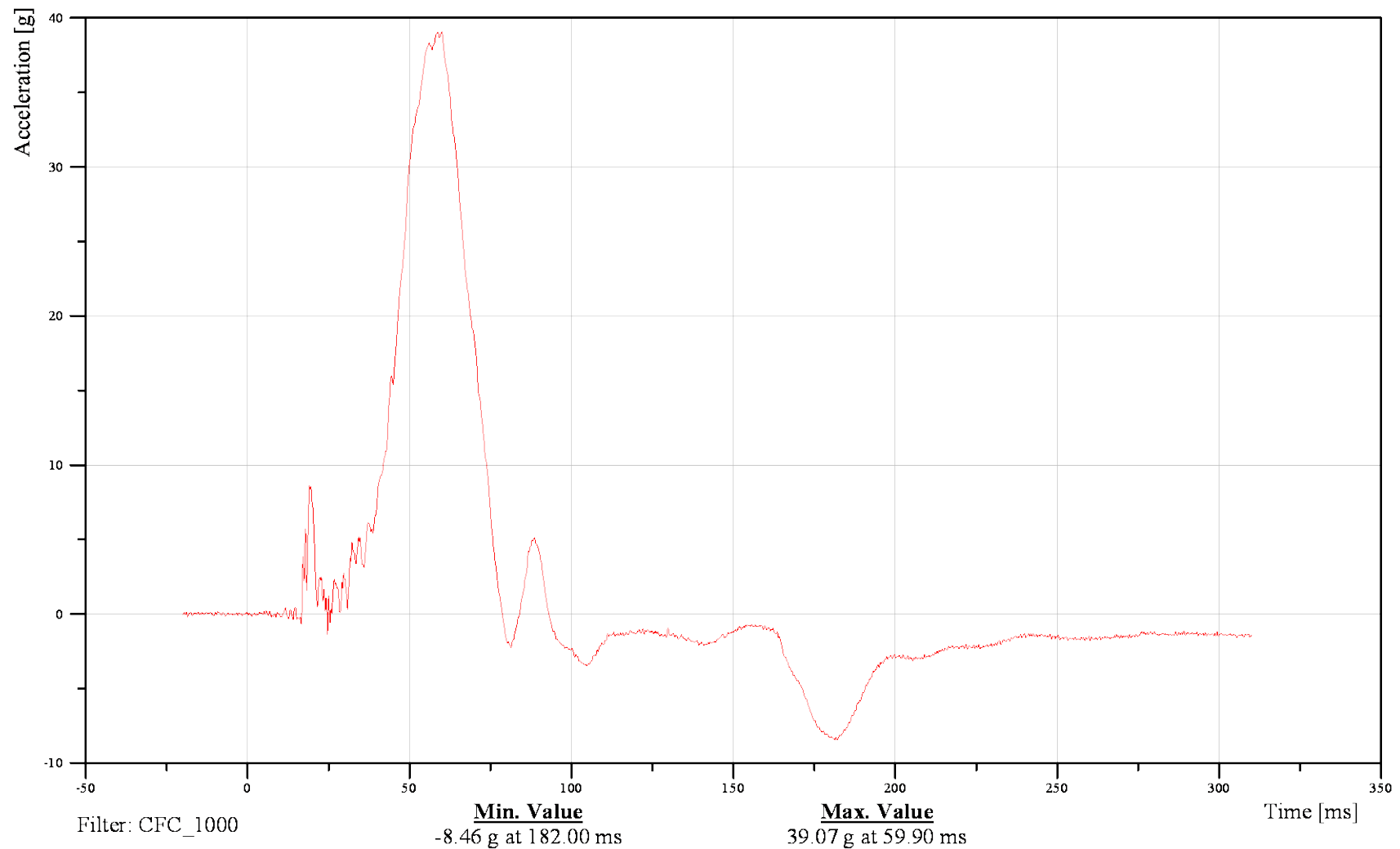
Time: 12:36

Customer: VRTC

14HEADCG00WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Vertical Az

Date: 06/17/2013

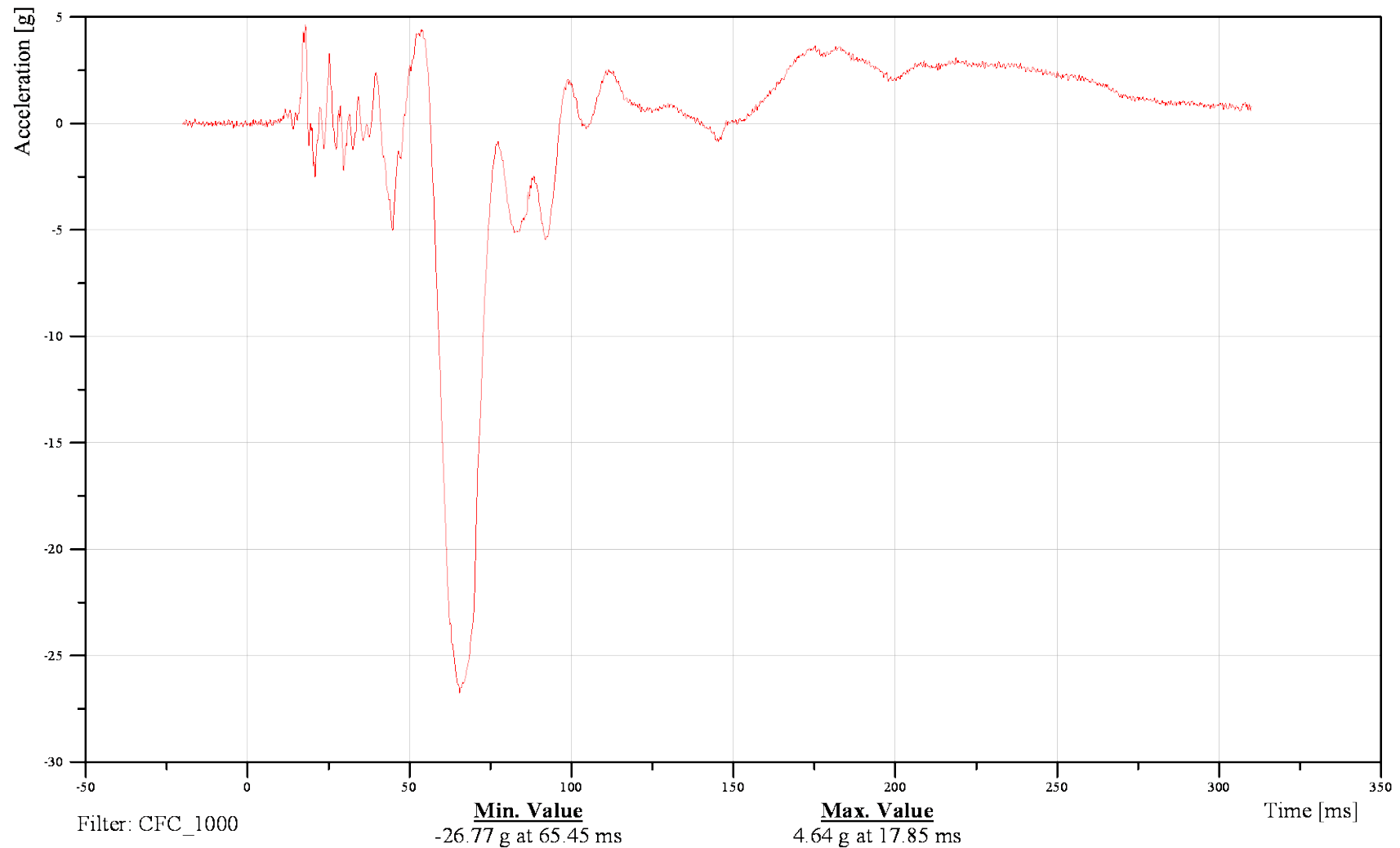
Time: 12:36

Customer: VRTC

14HEADCG00WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head A Resultant

Date: 06/17/2013

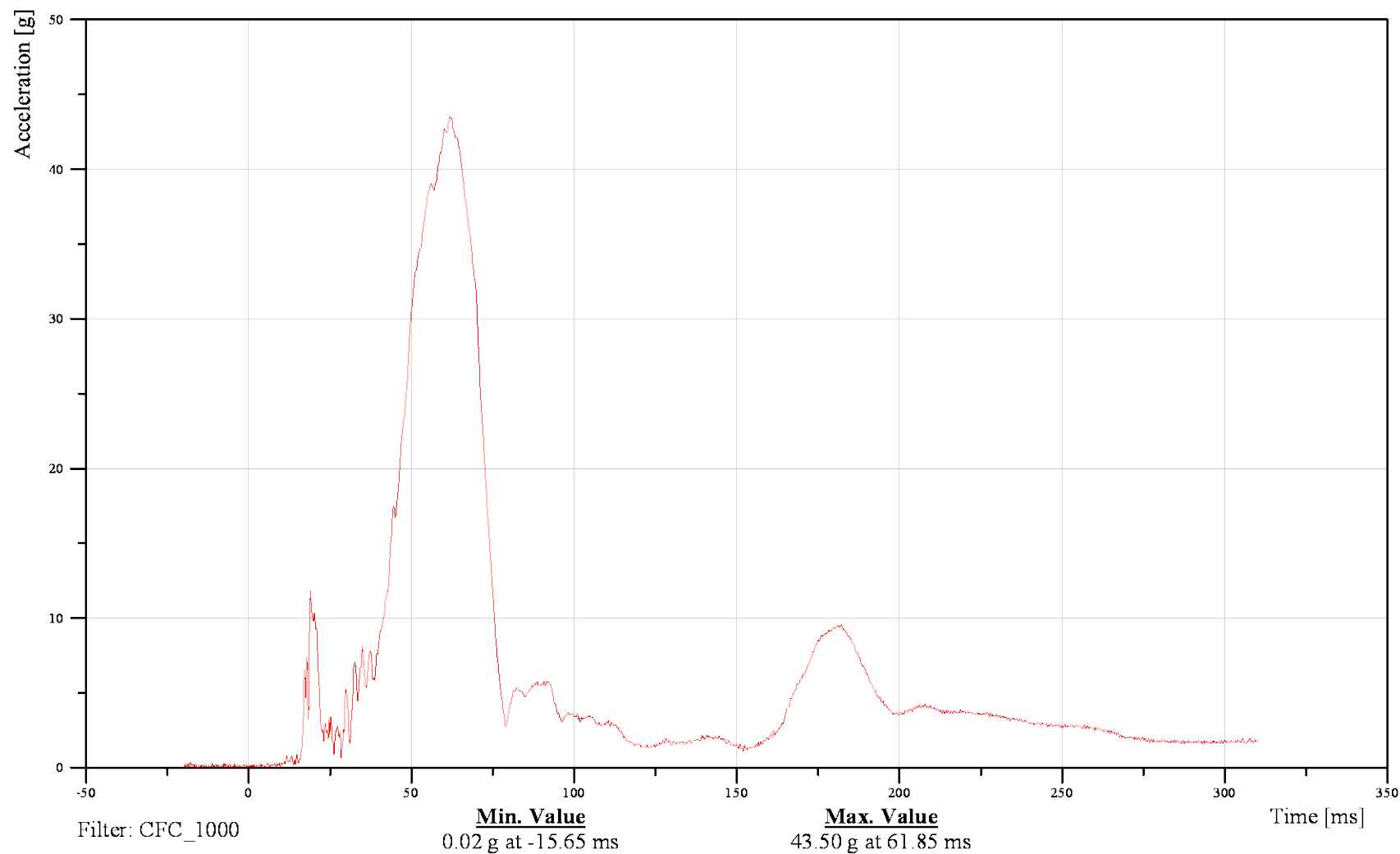
Time: 12:36

Customer: VRTC

14HEADCG00WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Rotational Acceleration Rx

Date: 06/17/2013

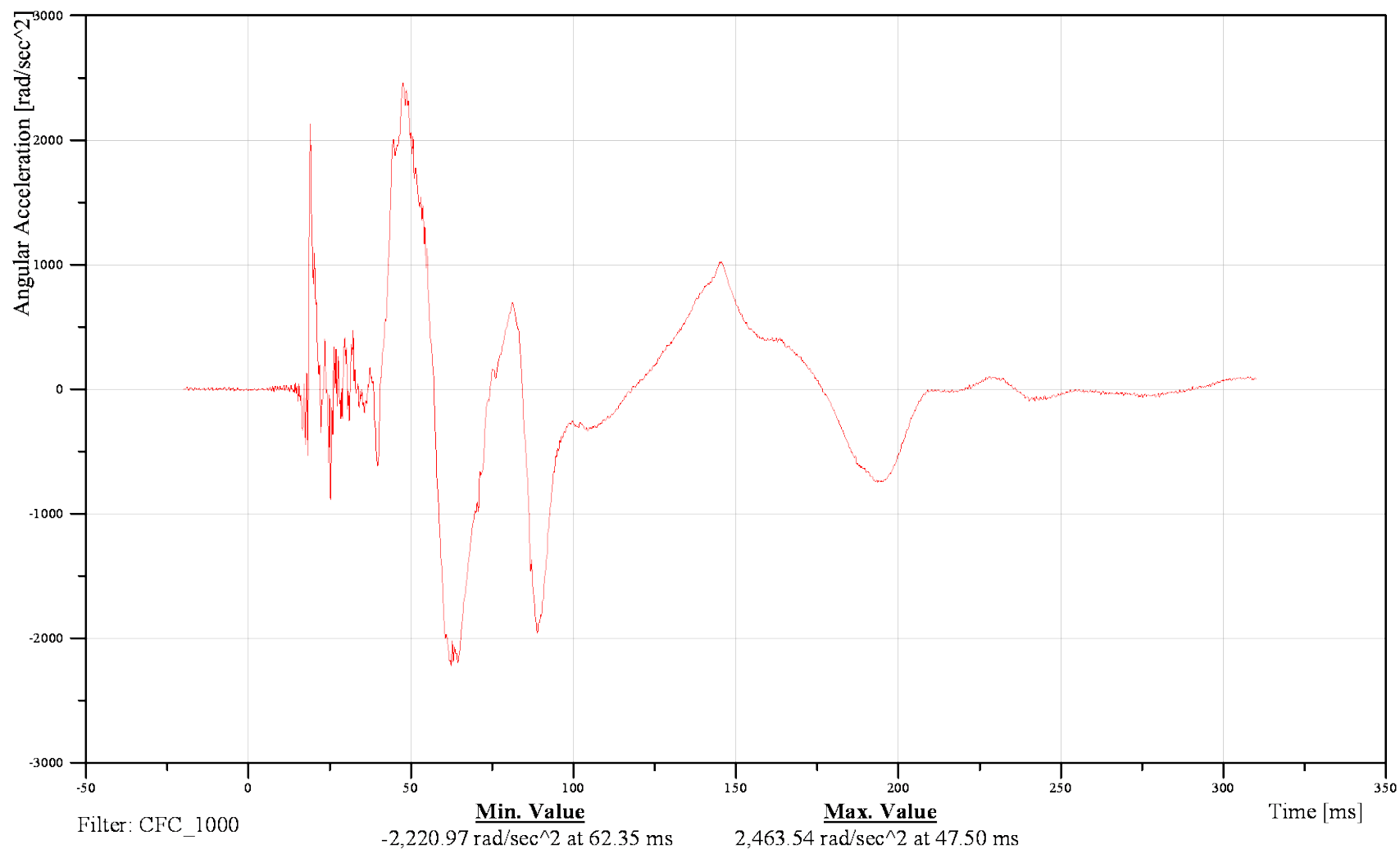
Time: 12:36

Customer: VRTC

14HEAD0000WFAAXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Rotational Acceleration Ry

Date: 06/17/2013

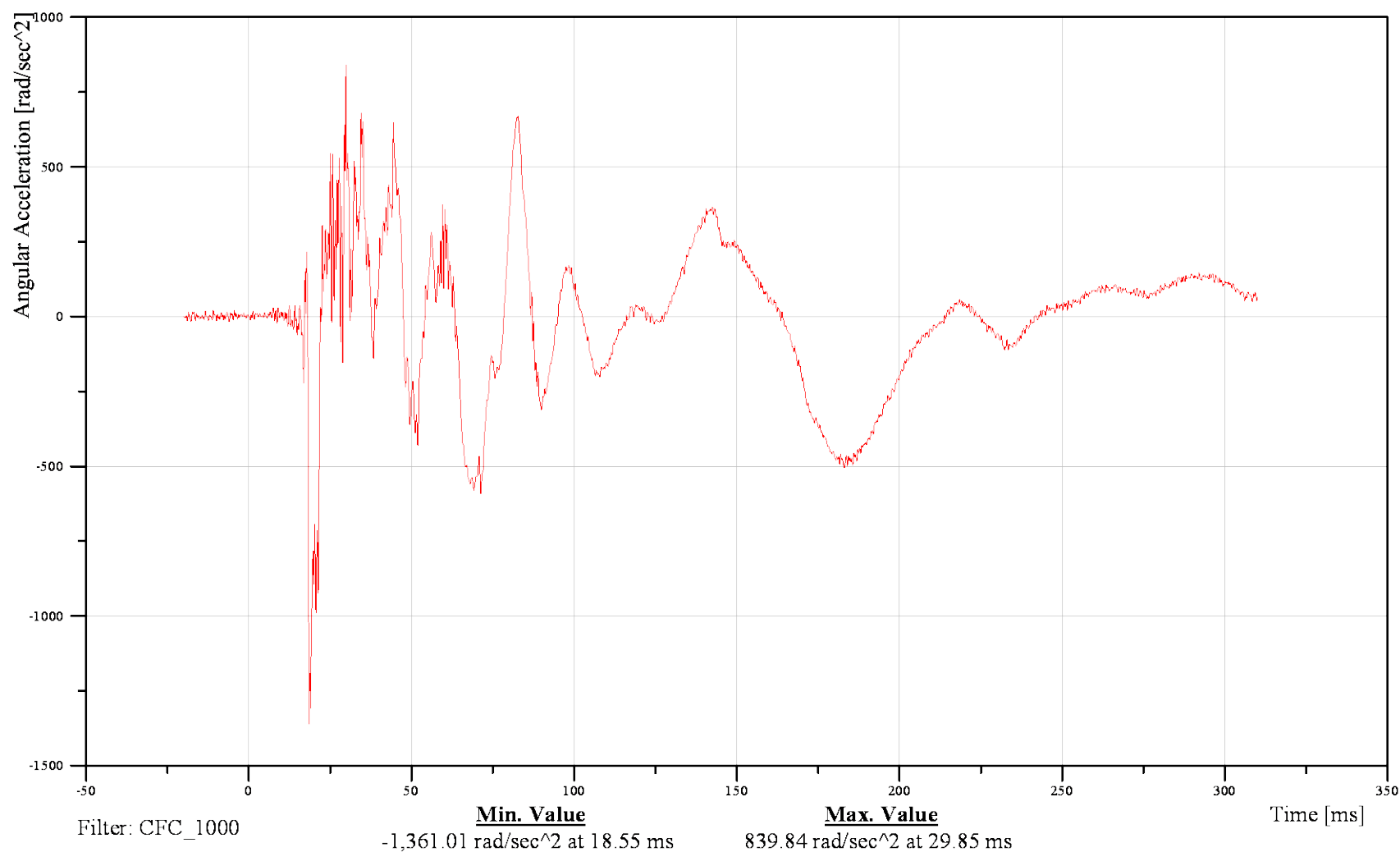
Time: 12:36

Customer: VRTC

14HEAD0000WFAAYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Rotational Acceleration Rz

Date: 06/17/2013

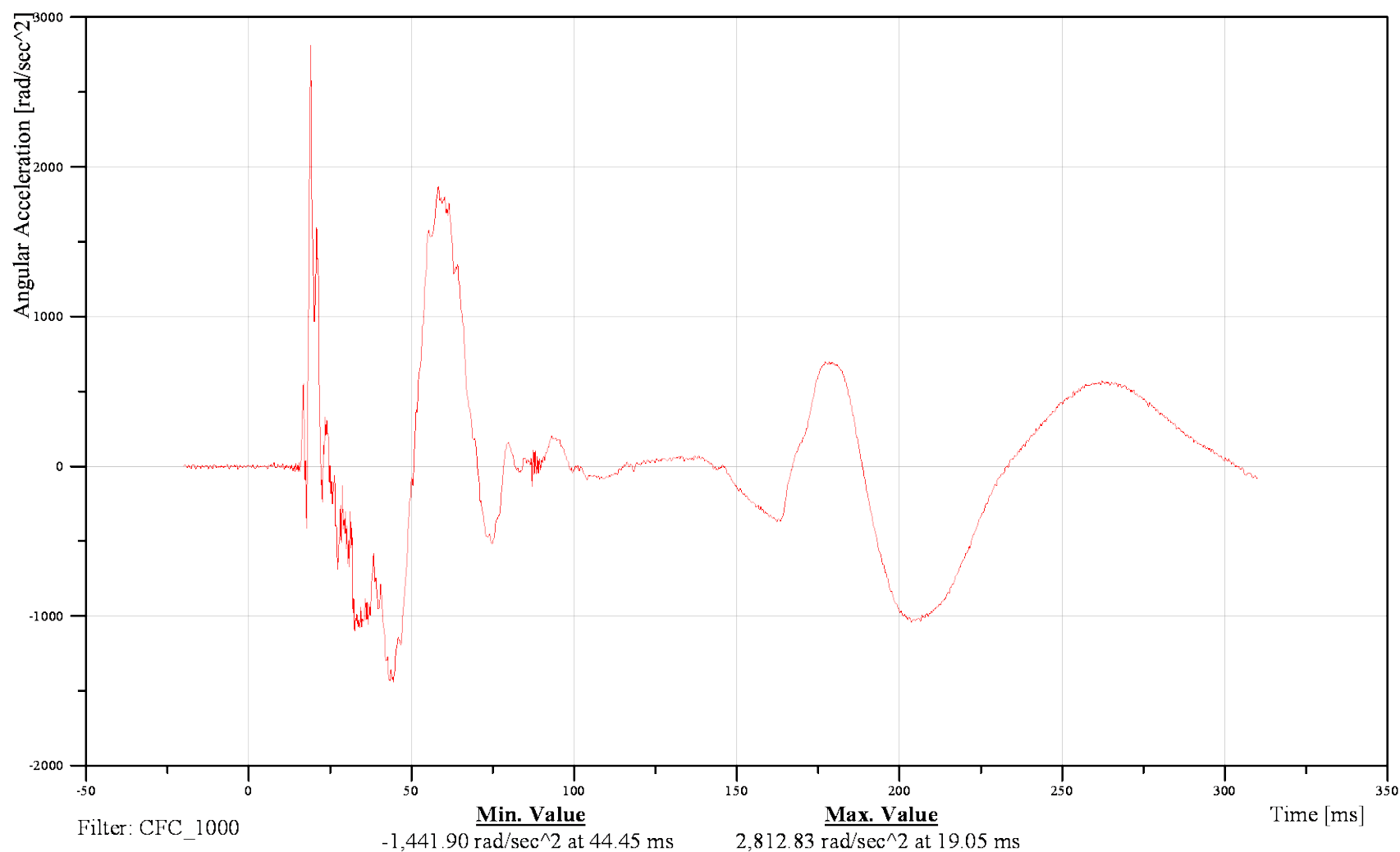
Time: 12:36

Customer: VRTC

14HEAD0000WFAAZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head X-Axis Angular Velocity

Date: 06/17/2013

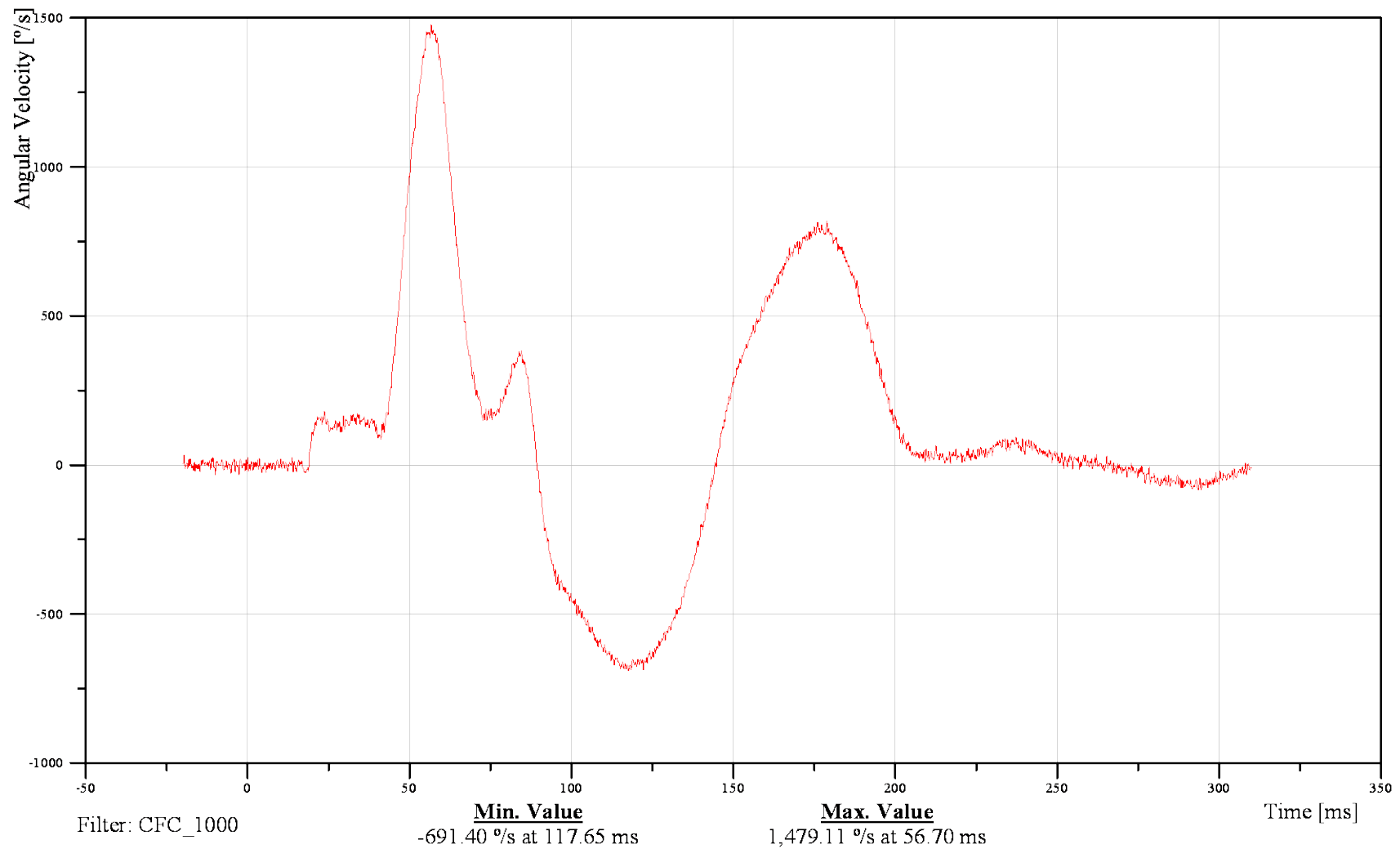
Time: 12:36

Customer: VRTC

14HEADCG00WFAVXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Y-Axis Angular Velocity

Date: 06/17/2013

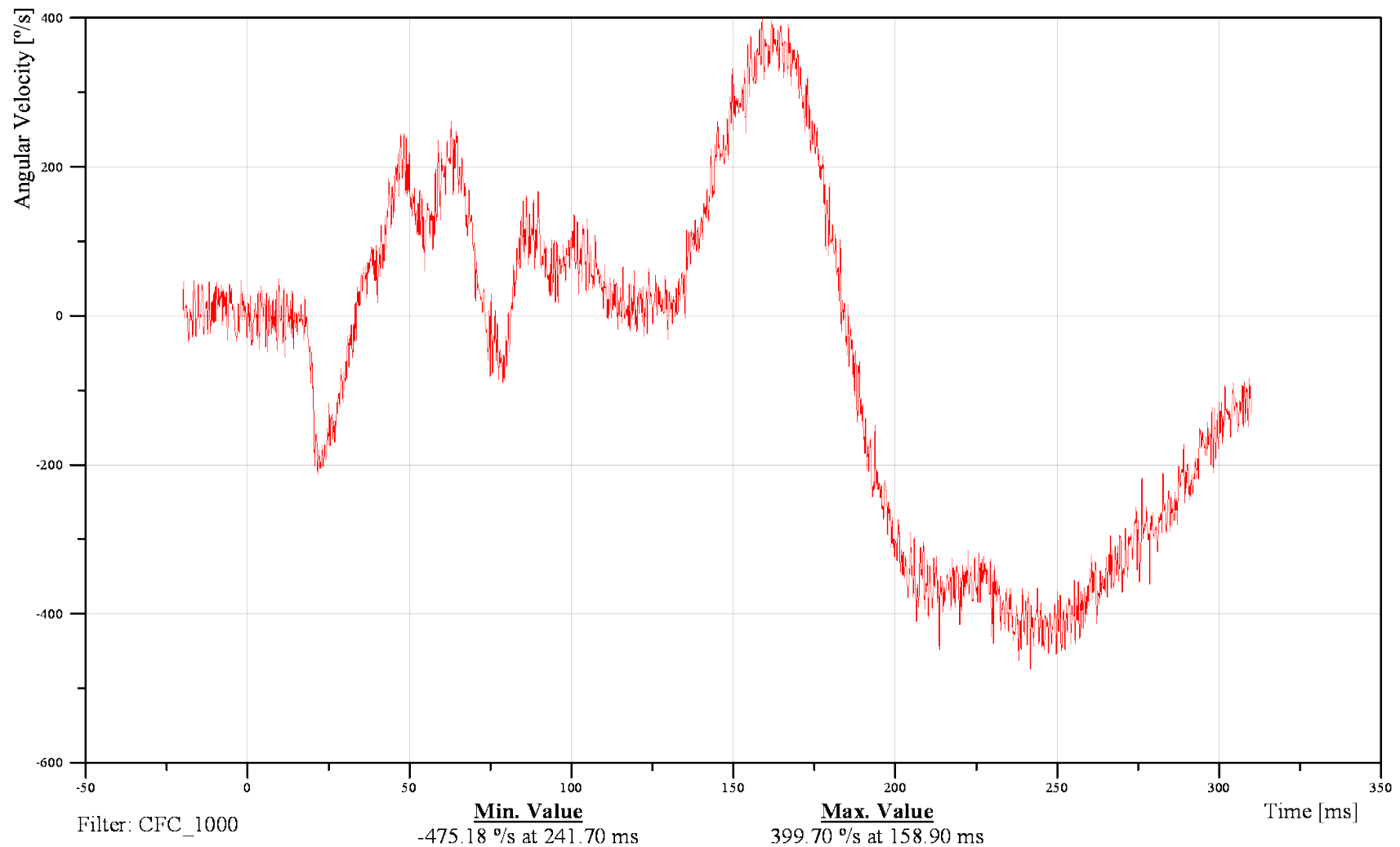
Time: 12:36

Customer: VRTC

14HEADCG00WFAVYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Z-Axis Angular Velocity

Date: 06/17/2013

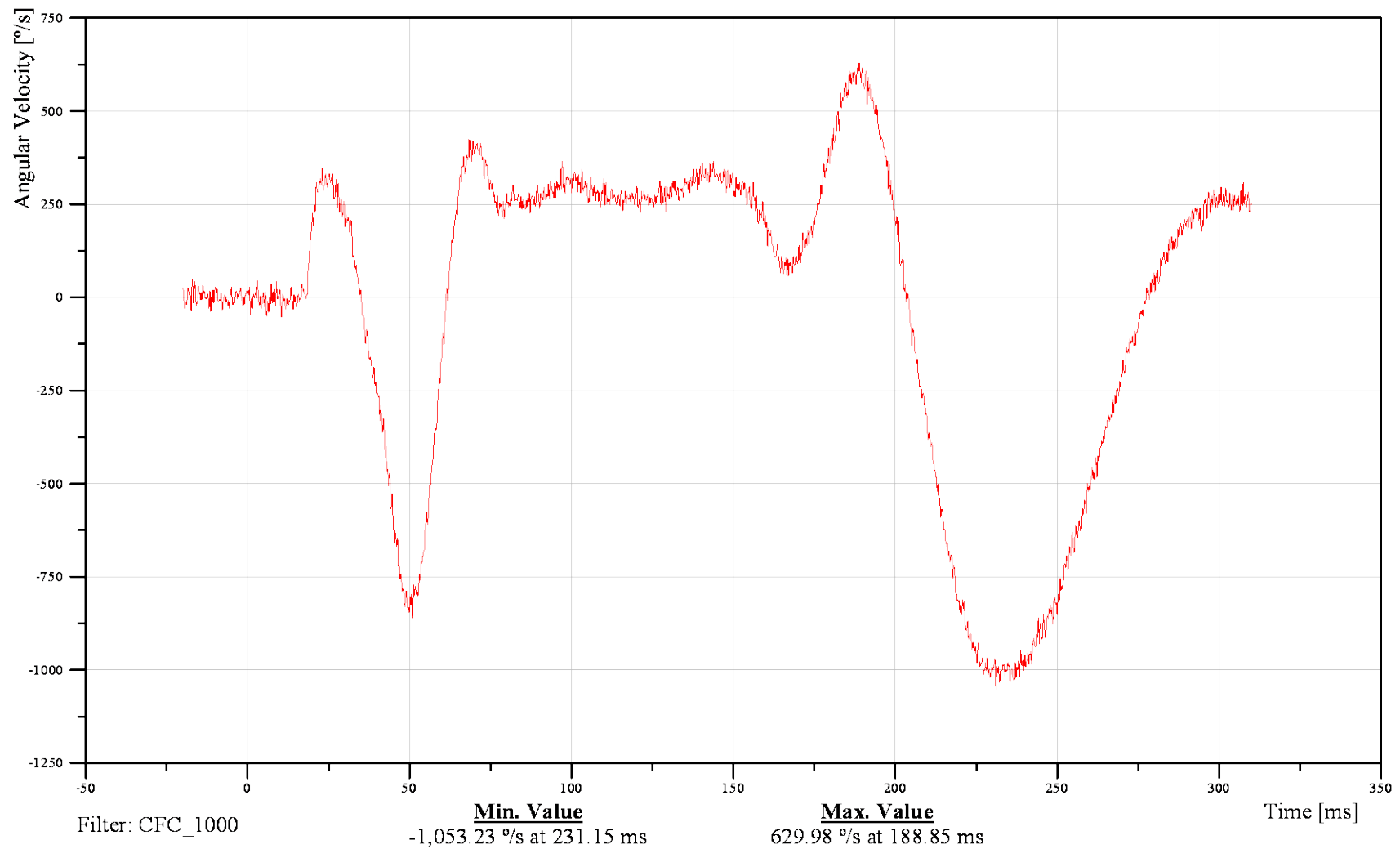
Time: 12:36

Customer: VRTC

14HEADCG00WFAVZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Force Fx

Date: 06/17/2013

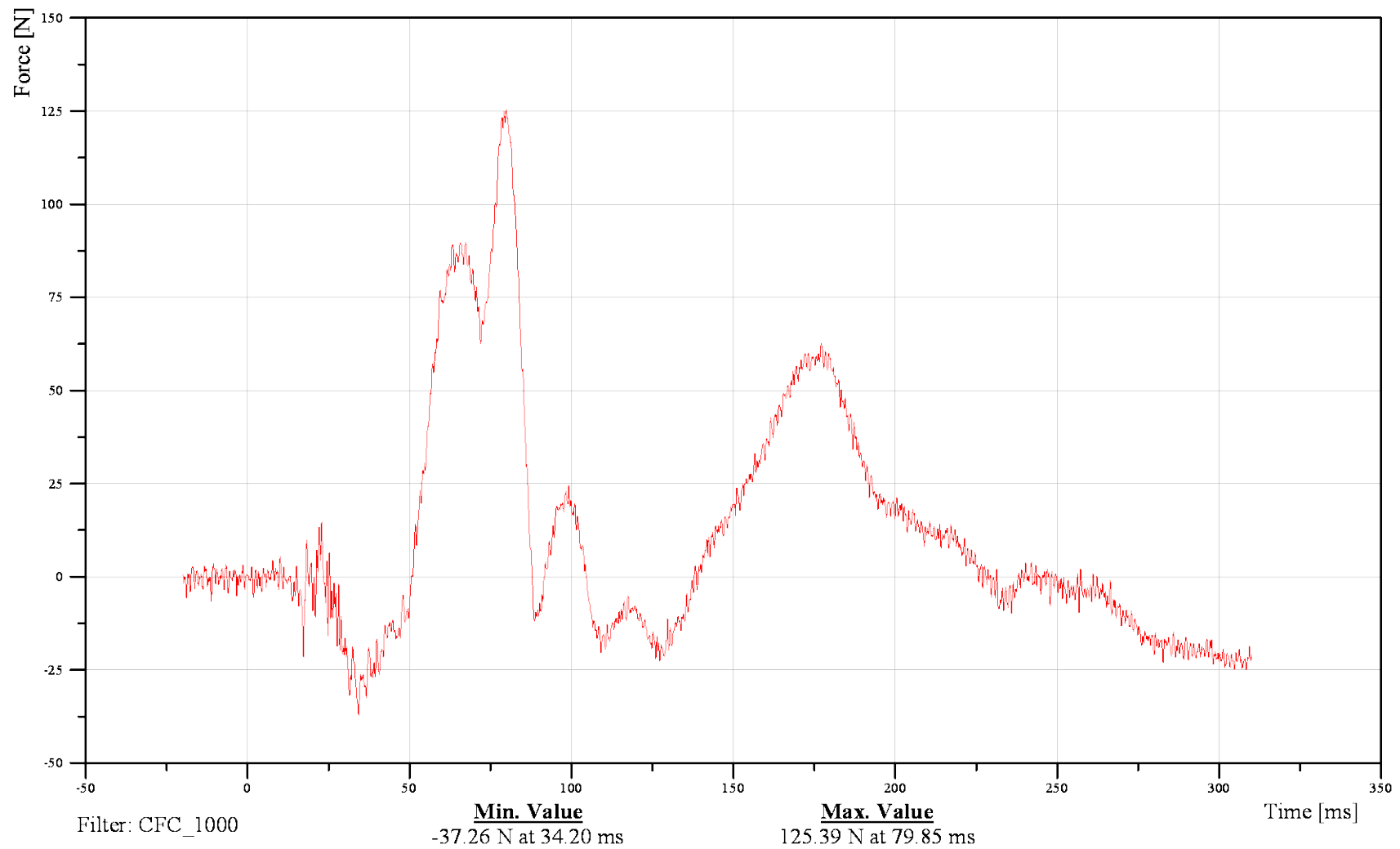
Time: 12:36

Customer: VRTC

14NECKUP00WFFOXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Force Fy

Date: 06/17/2013

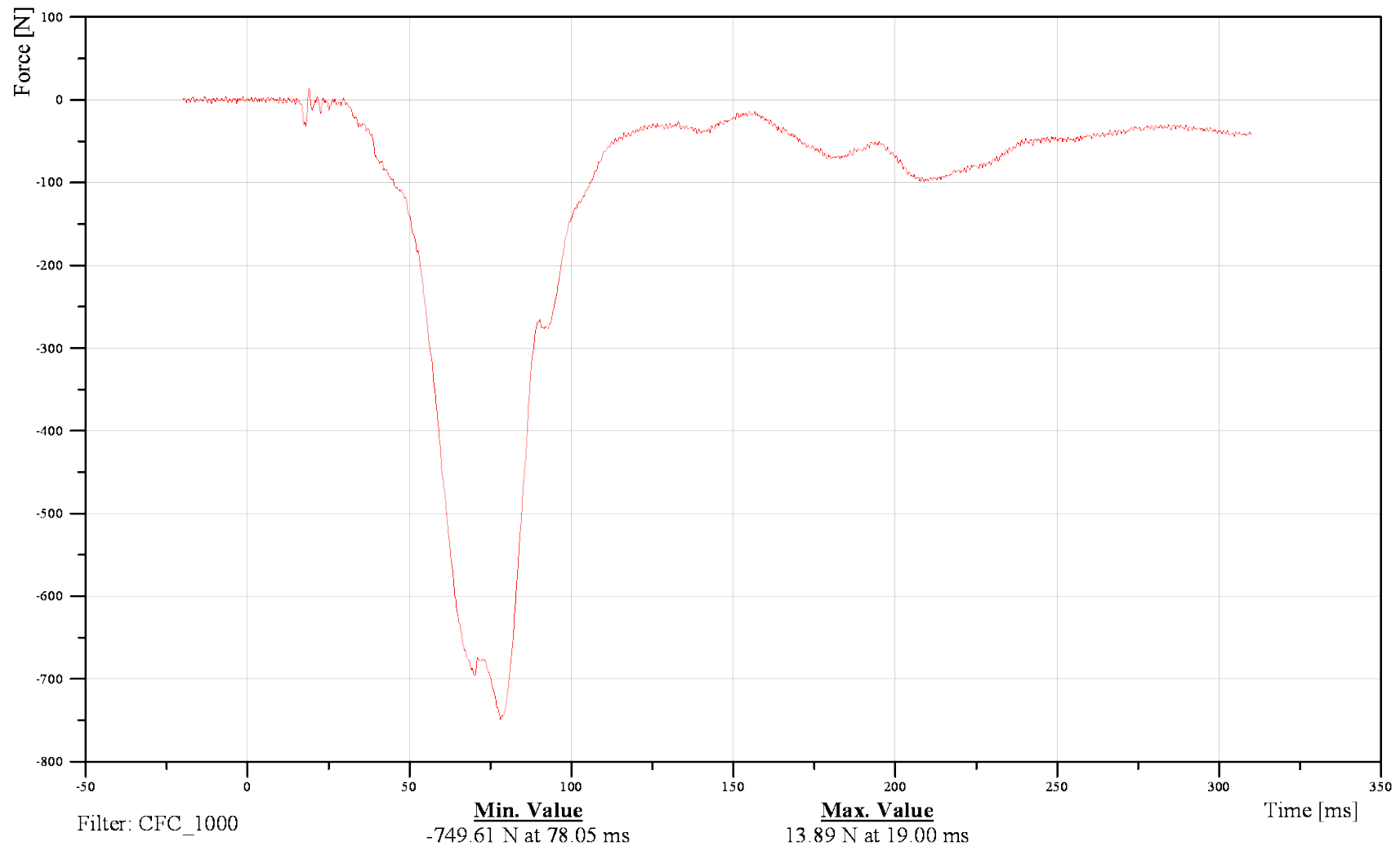
Time: 12:36

Customer: VRTC

14NECKUP00WFFOYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Force Fz

Date: 06/17/2013

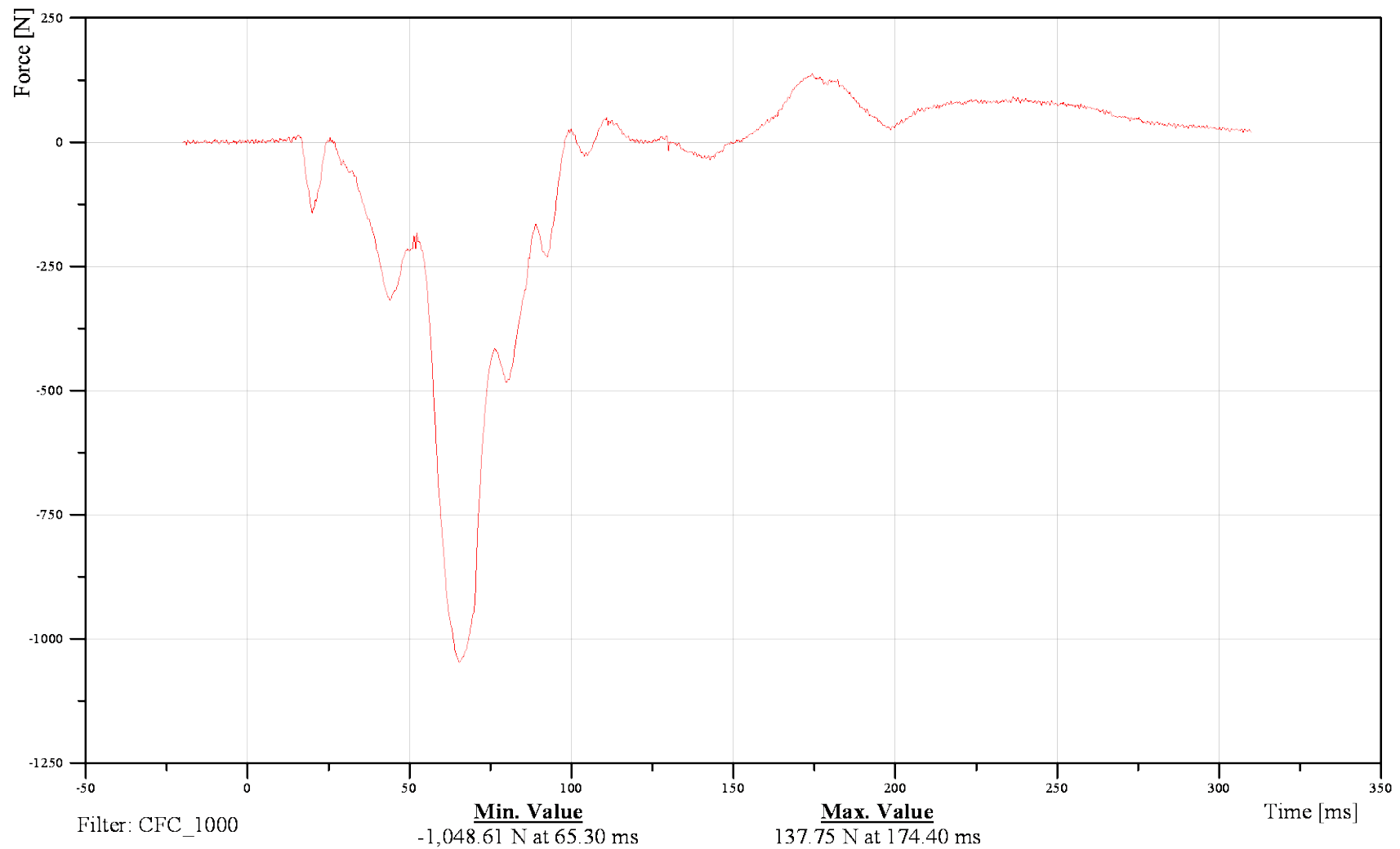
Time: 12:36

Customer: VRTC

14NECKUP00WFFOZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Moment Mx

Date: 06/17/2013

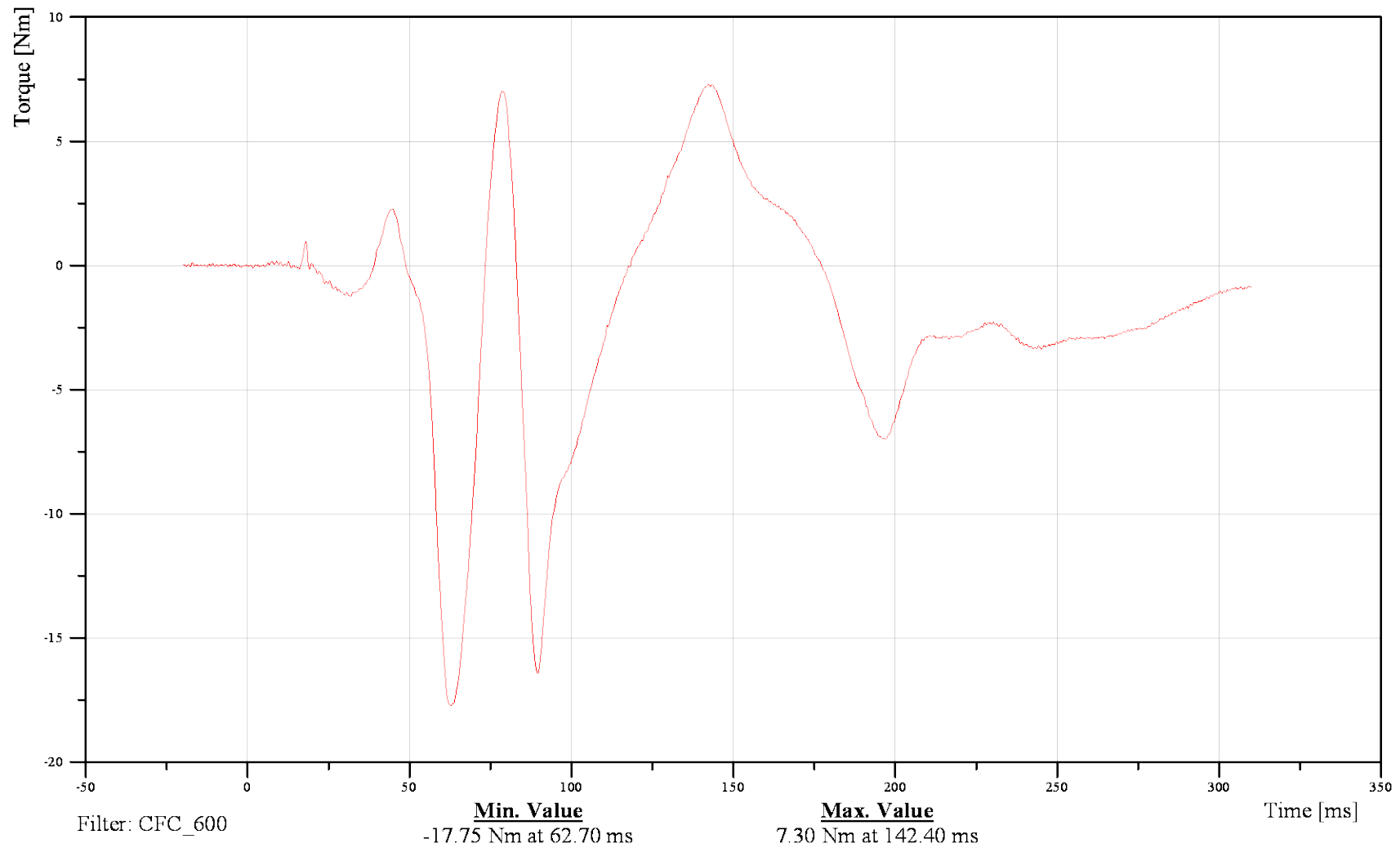
Time: 12:36

Customer: VRTC

14NECKUP00WFM0XB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Moment My

Date: 06/17/2013

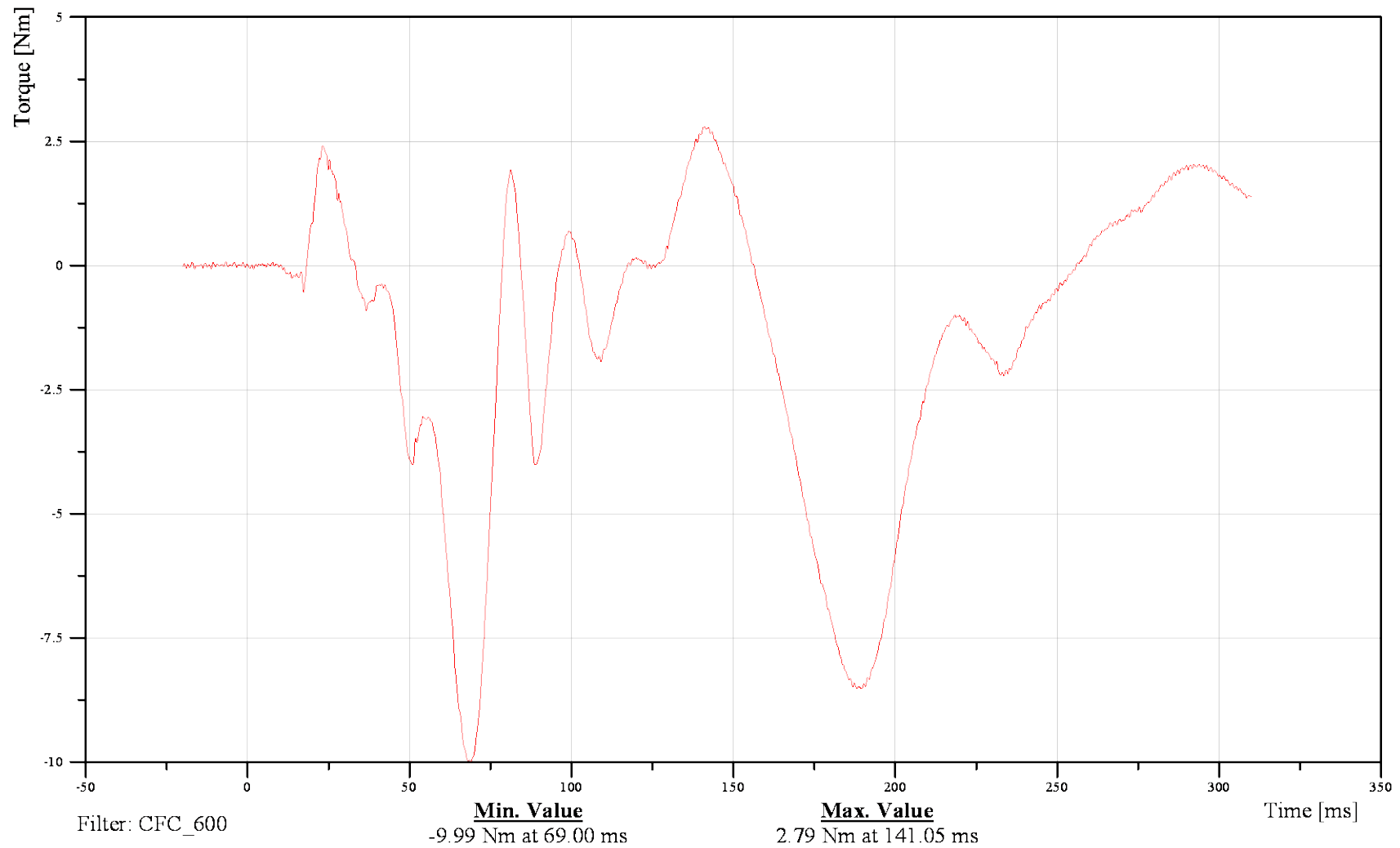
Time: 12:36

Customer: VRTC

14NECKUP00WFM0YB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Upper Moment Mz

Date: 06/17/2013

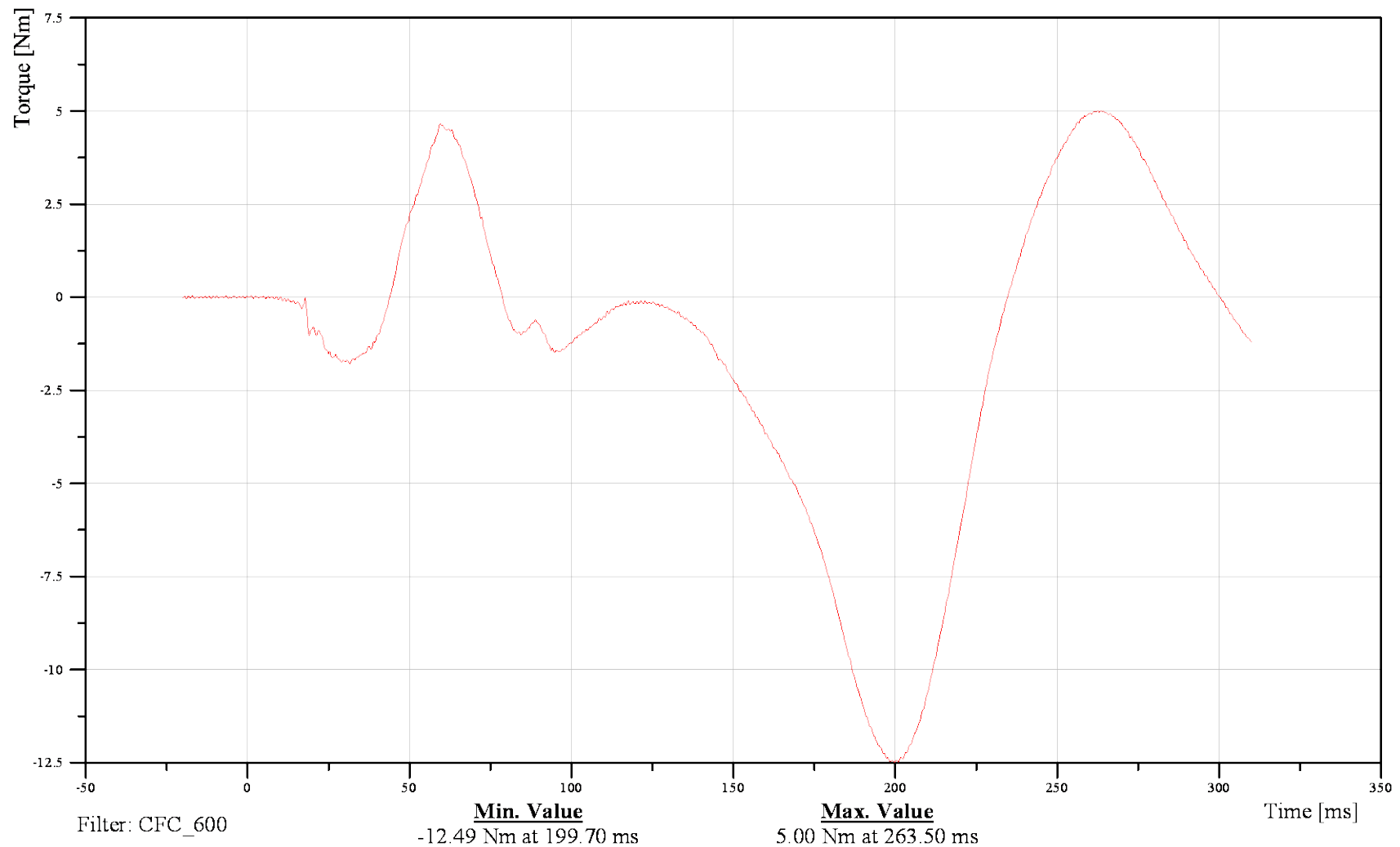
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Customer: VRTC

14NECKUP00WFMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Force Fx

Date: 06/17/2013

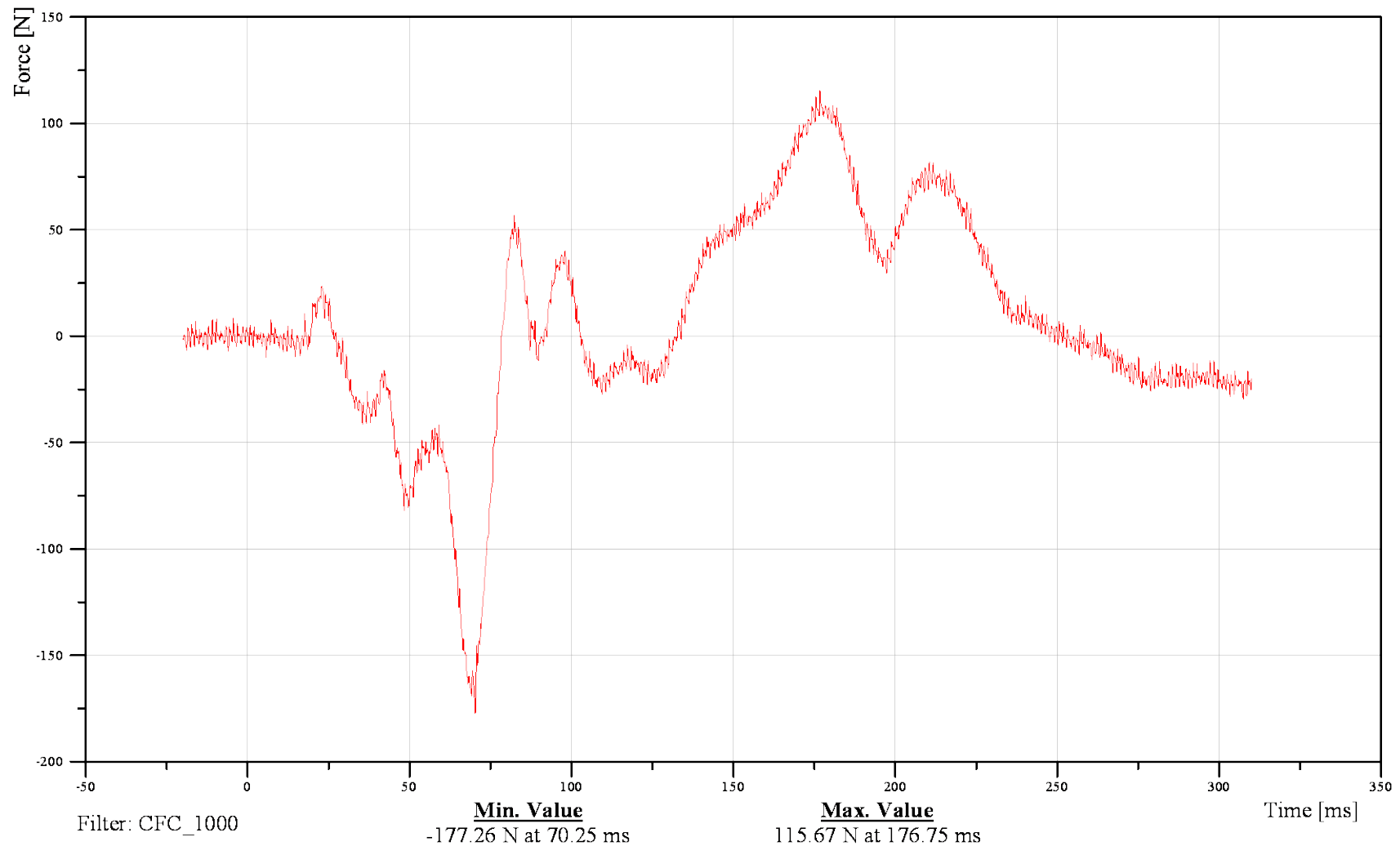
Time: 12:36

Customer: VRTC

14NECKLO00WFFOXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Force Fy

Date: 06/17/2013

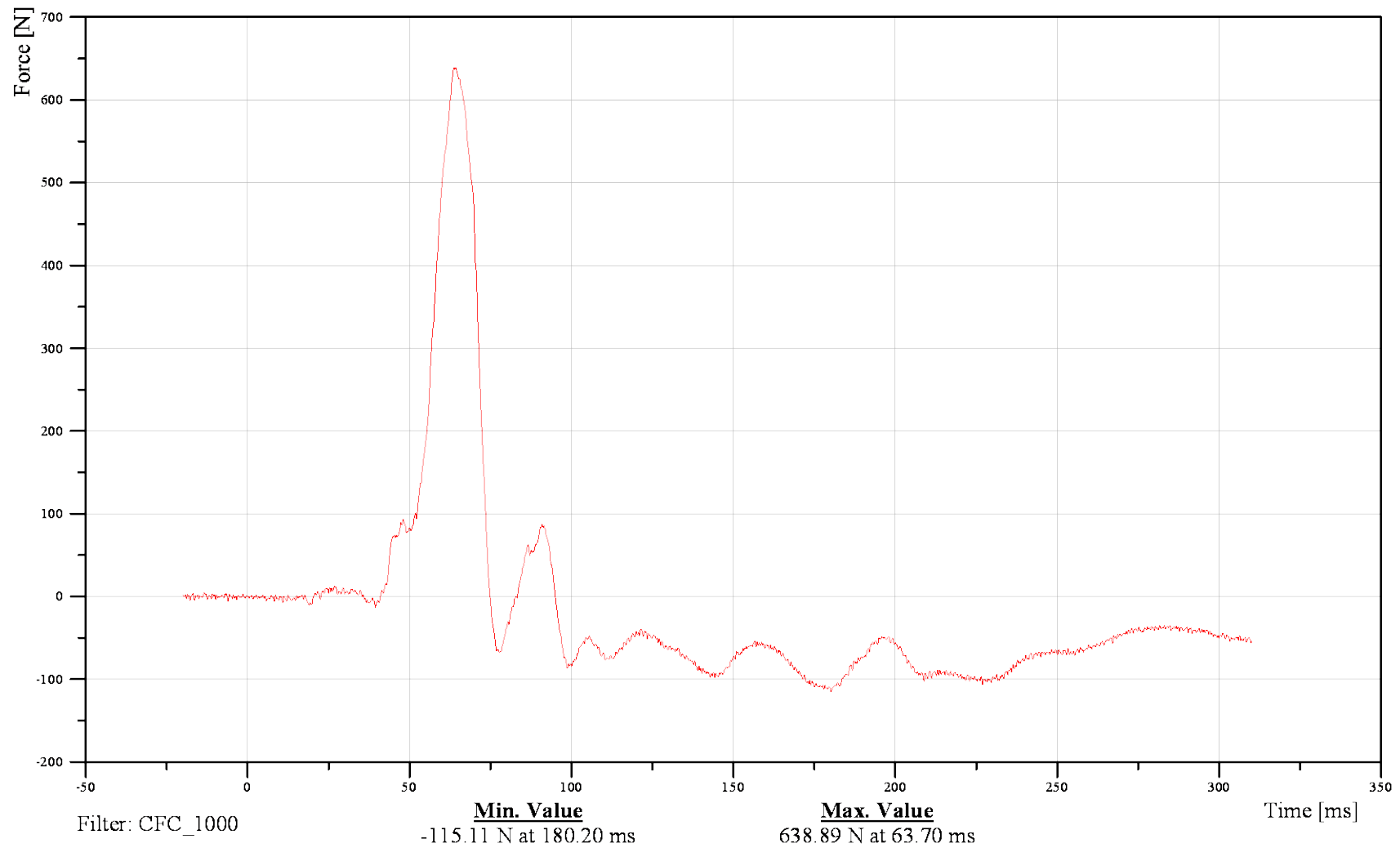
Time: 12:36

Customer: VRTC

14NECKLO00WFFOYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Force Fz

Date: 06/17/2013

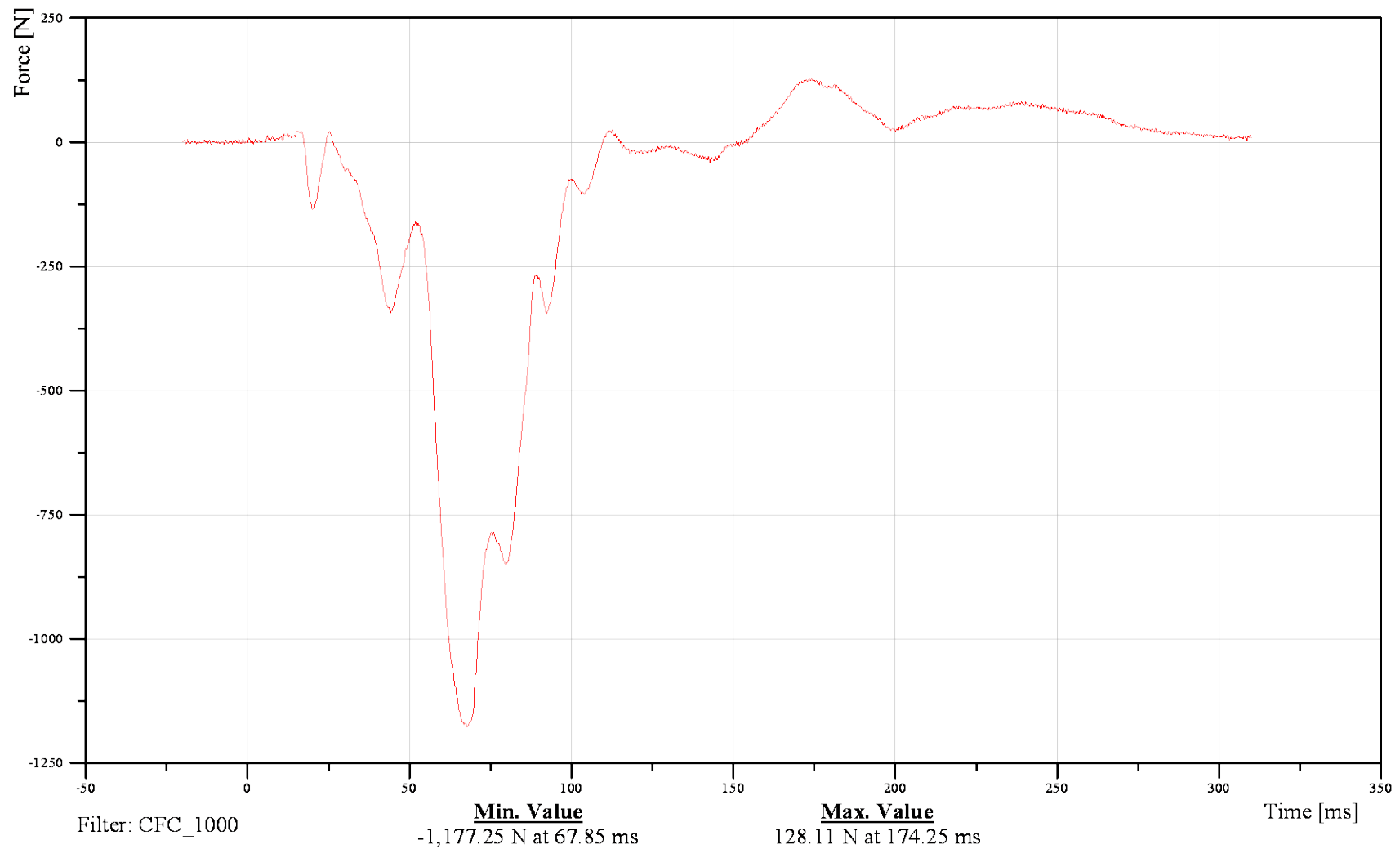
Time: 12:36

Customer: VRTC

14NECKLO00WFFOZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Moment Mx

Date: 06/17/2013

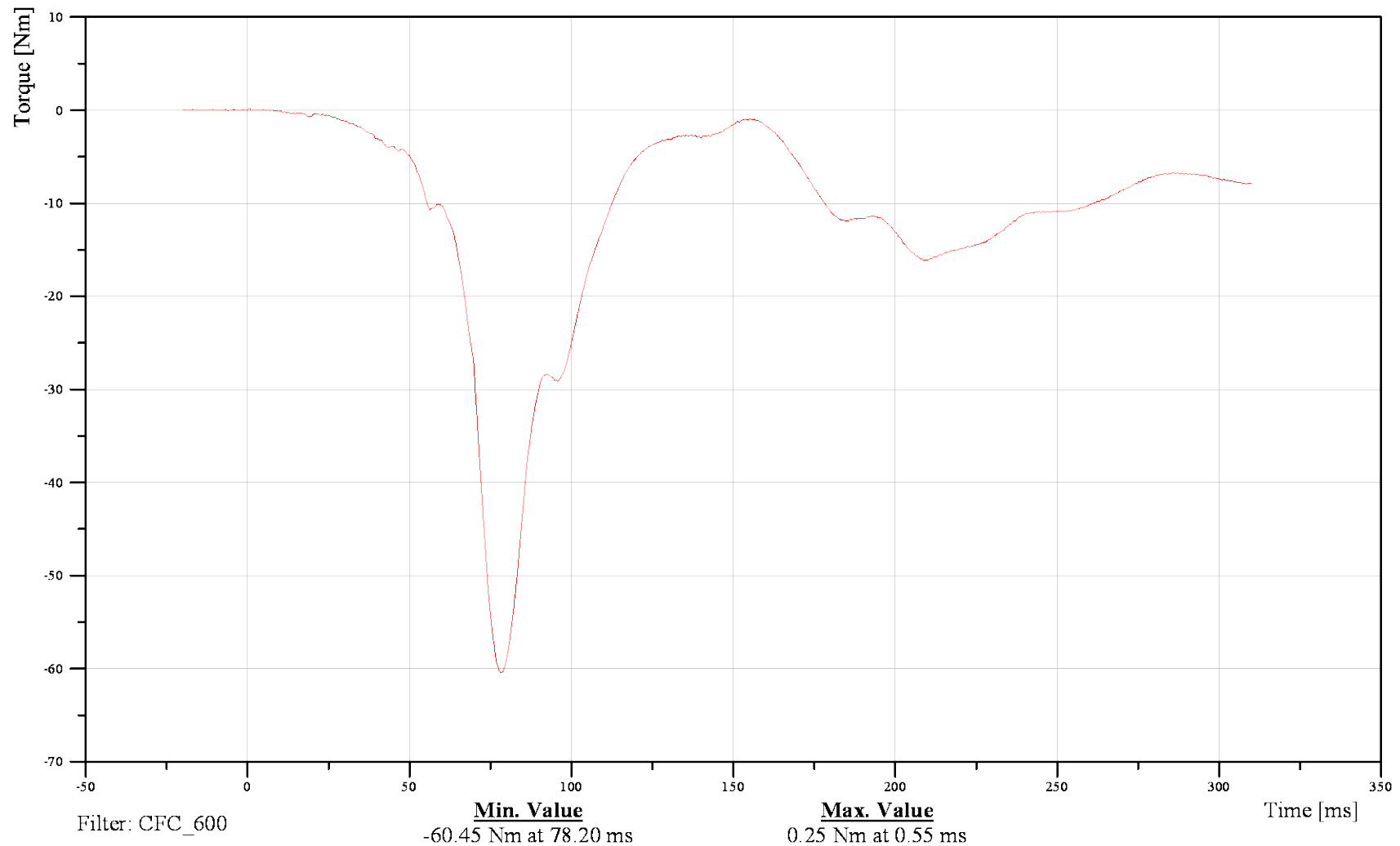
Time: 12:36

Customer: VRTC

14NECKLO00WFM0XB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Moment My

Date: 06/17/2013

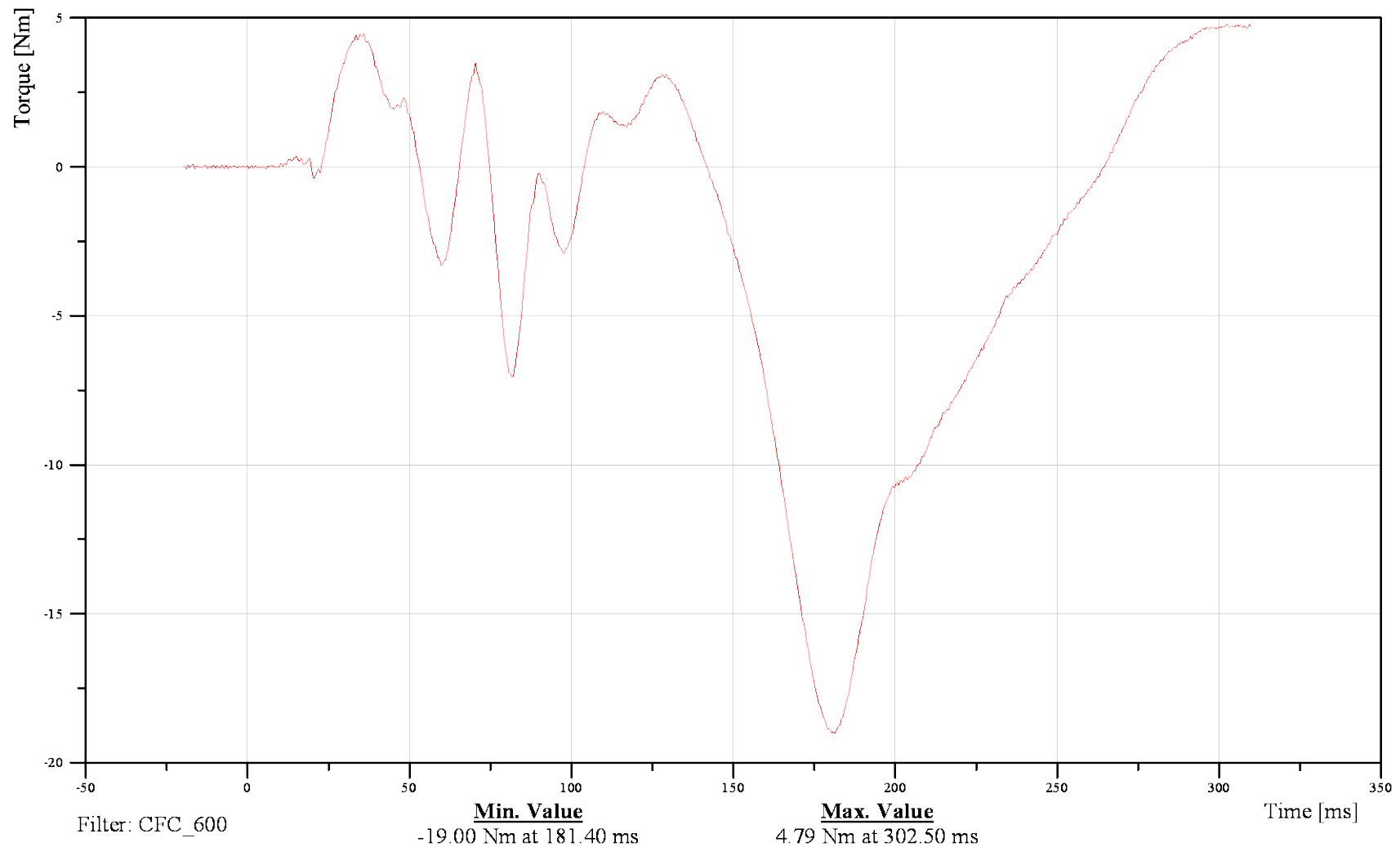
Time: 12:36

Customer: VRTC

14NECKLO00WFM0YB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Neck Lower Moment Mz

Date: 06/17/2013

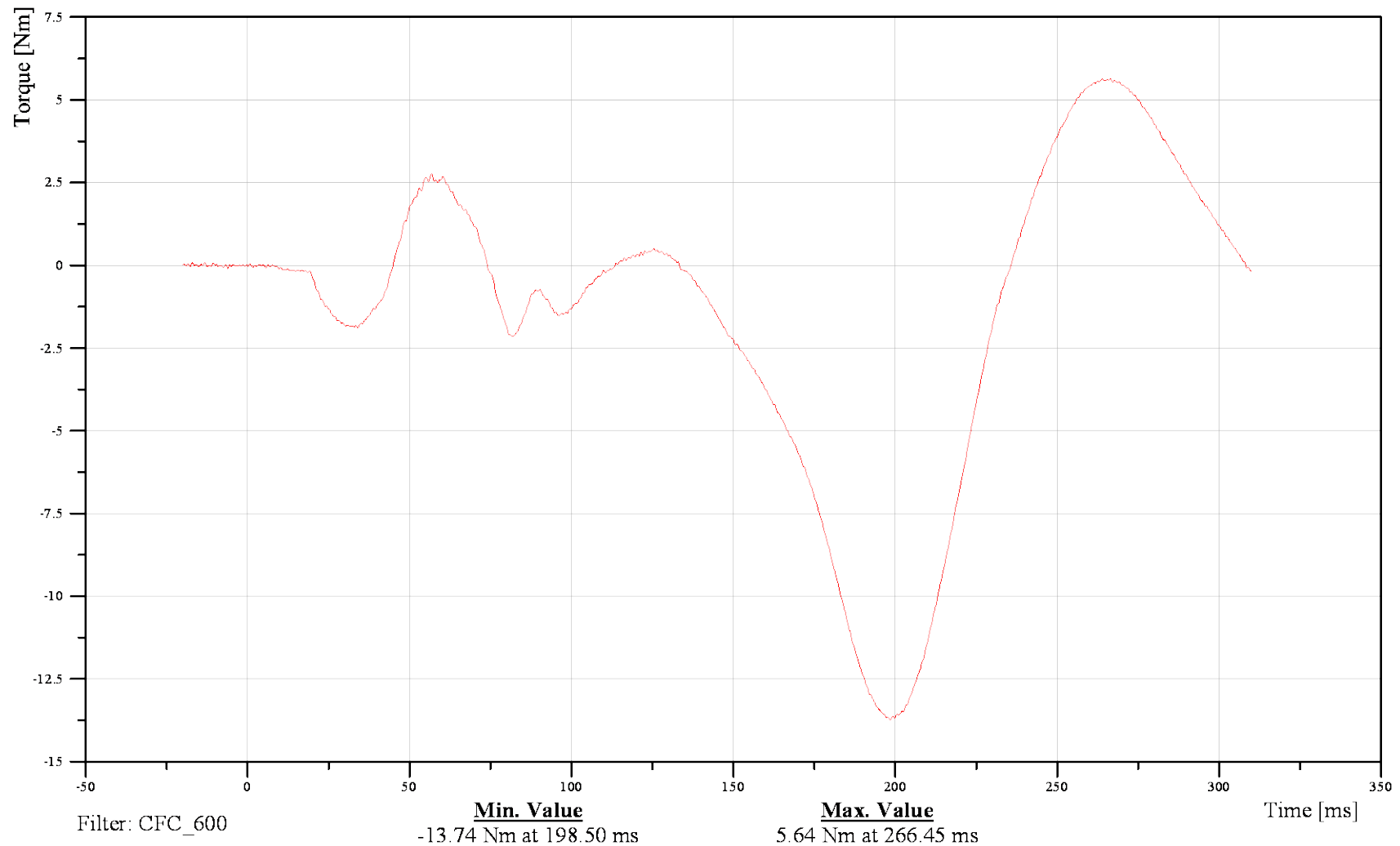
Time: 12:36

Customer: VRTC

14NECKLO00WFMOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Longitudinal Ax

Date: 06/17/2013

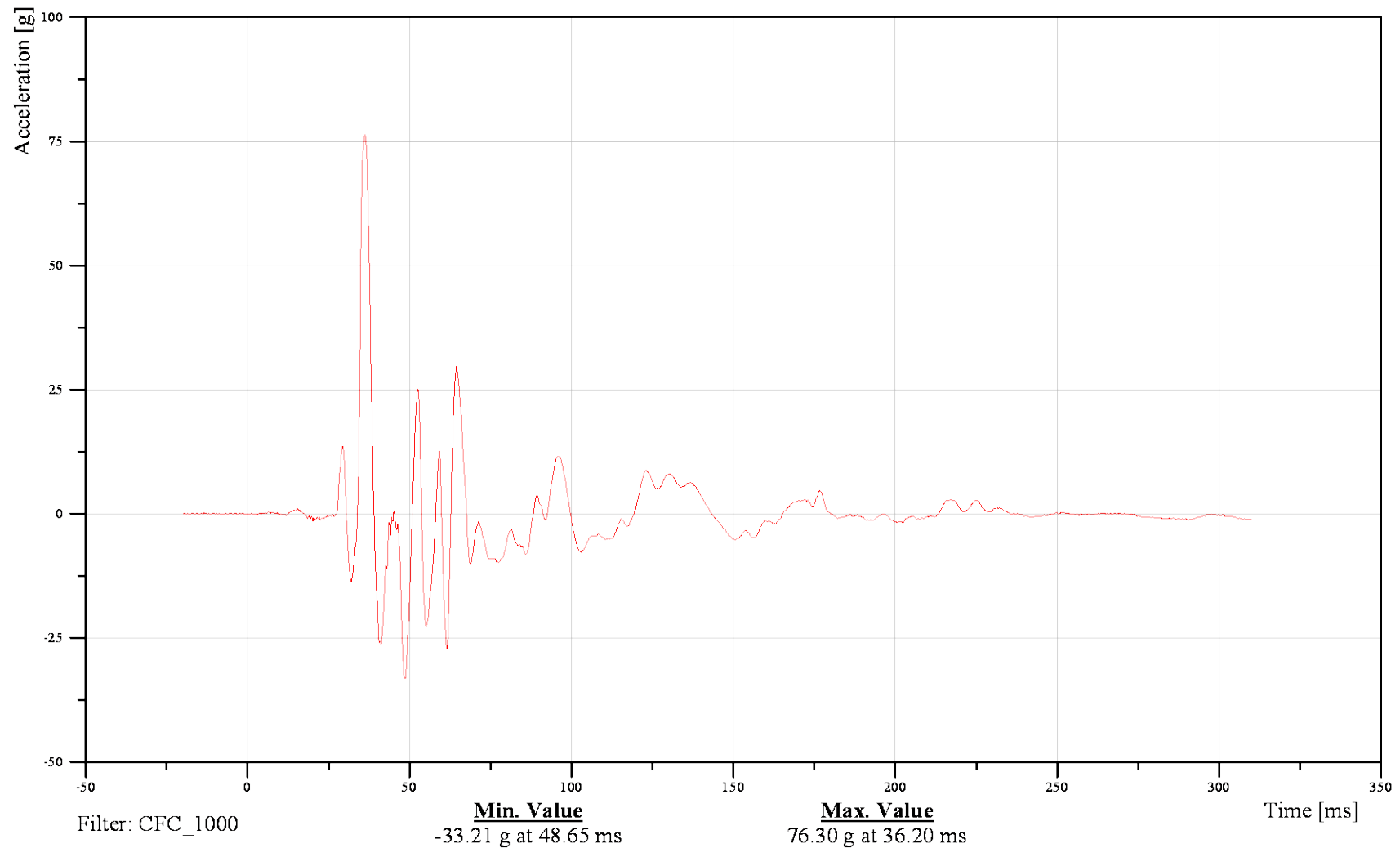
Time: 12:36

Customer: VRTC

14SHLDLE00WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Lateral Ay

Date: 06/17/2013

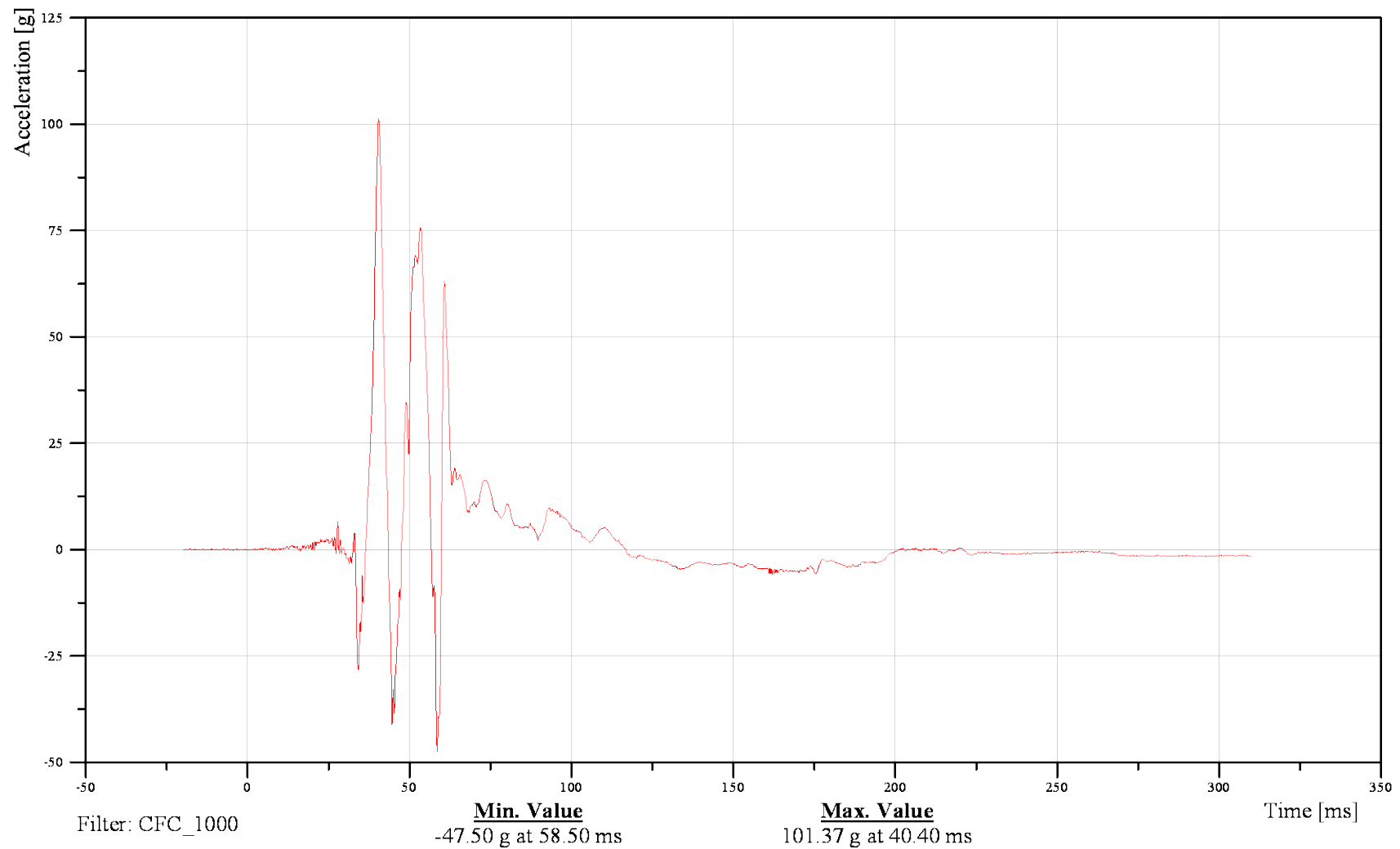
Time: 12:36

Customer: VRTC

14SHLDLE00WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Vertical Az

Date: 06/17/2013

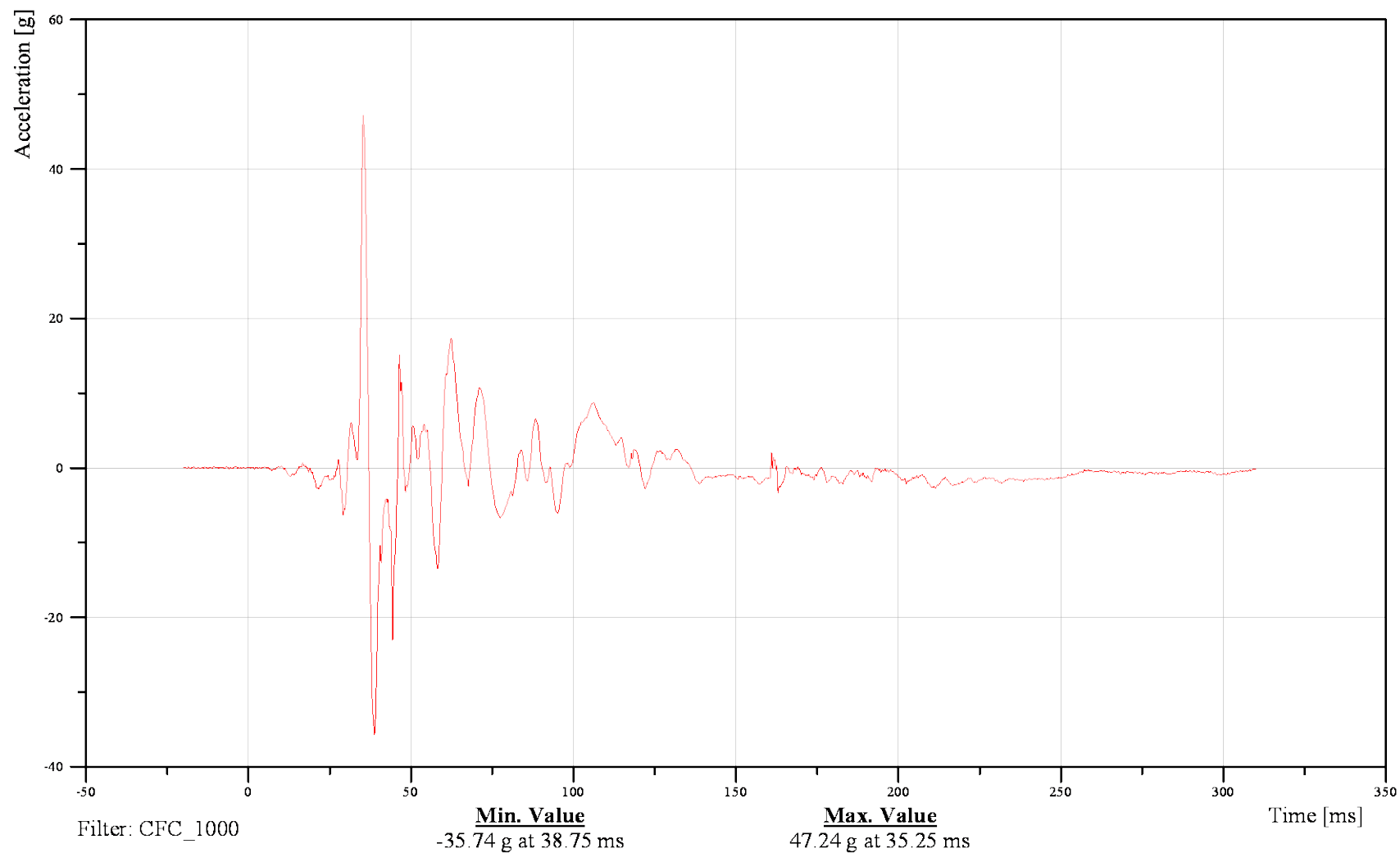
Time: 12:36

Customer: VRTC

14SHLDLE00WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder A Resultant

Date: 06/17/2013

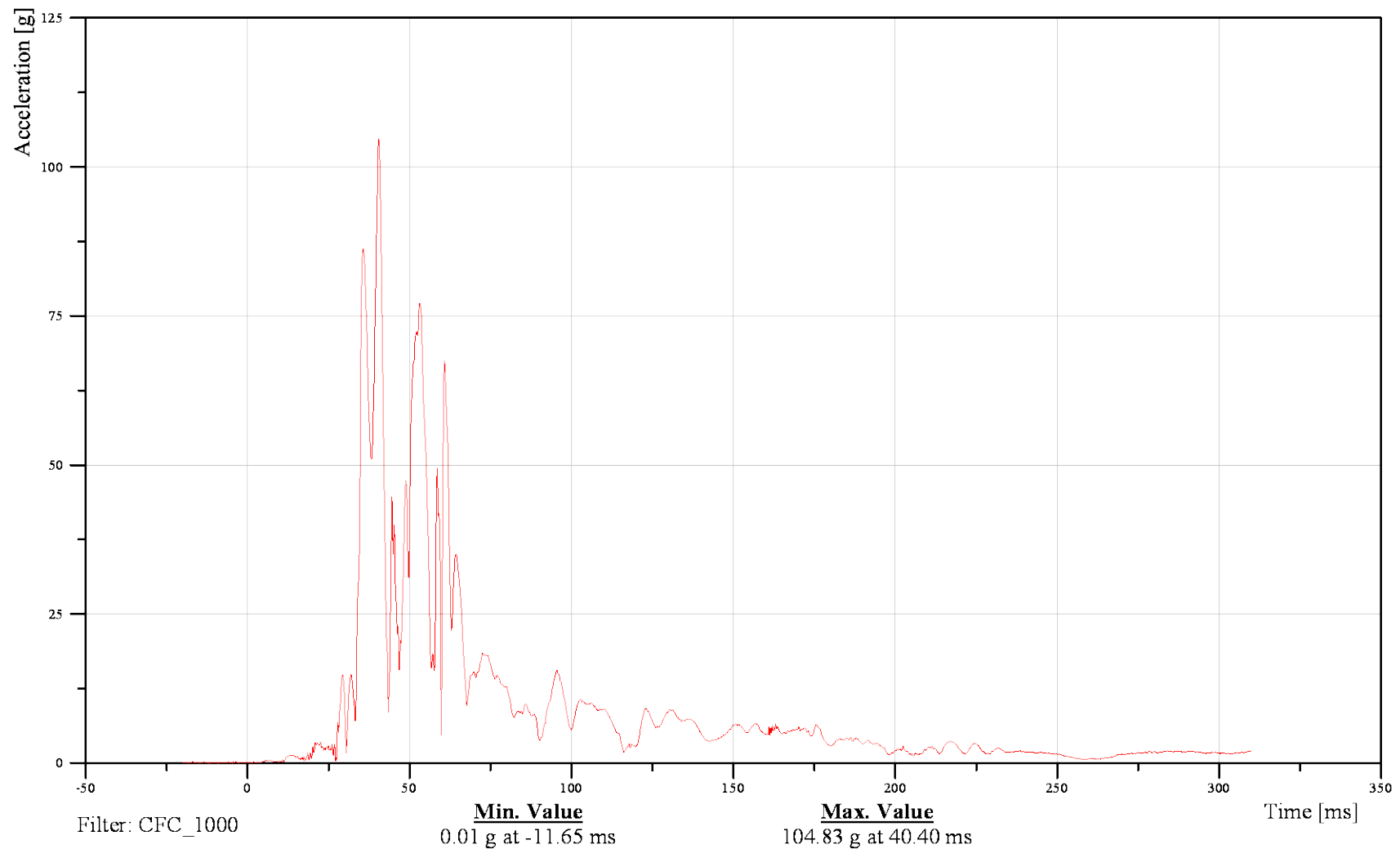
Time: 12:36

Customer: VRTC

14SHLDLE00WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Force Fz

Date: 06/17/2013

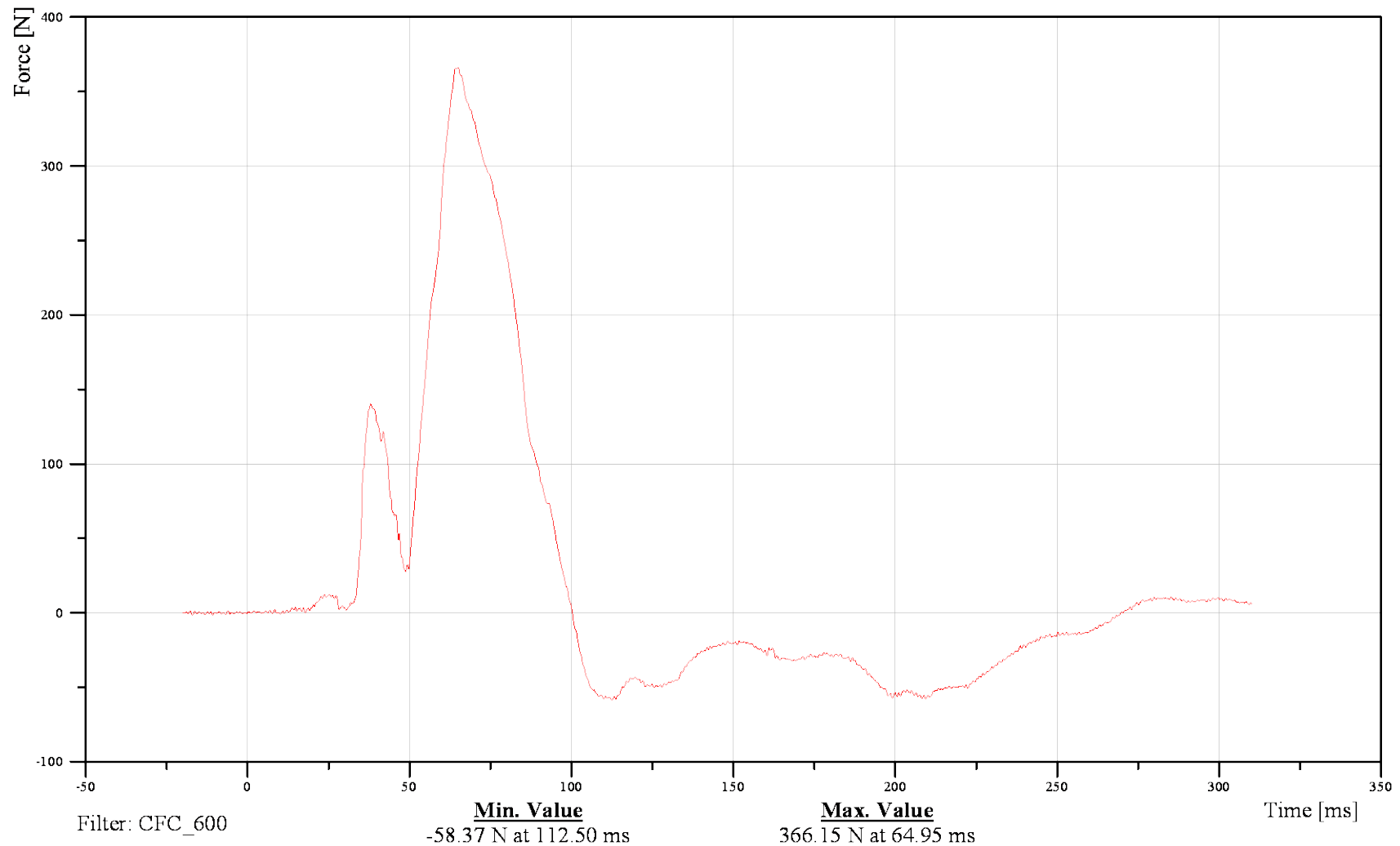
Time: 12:36

Customer: VRTC

14SHLDLE00WFFOZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Force Fy

Date: 06/17/2013

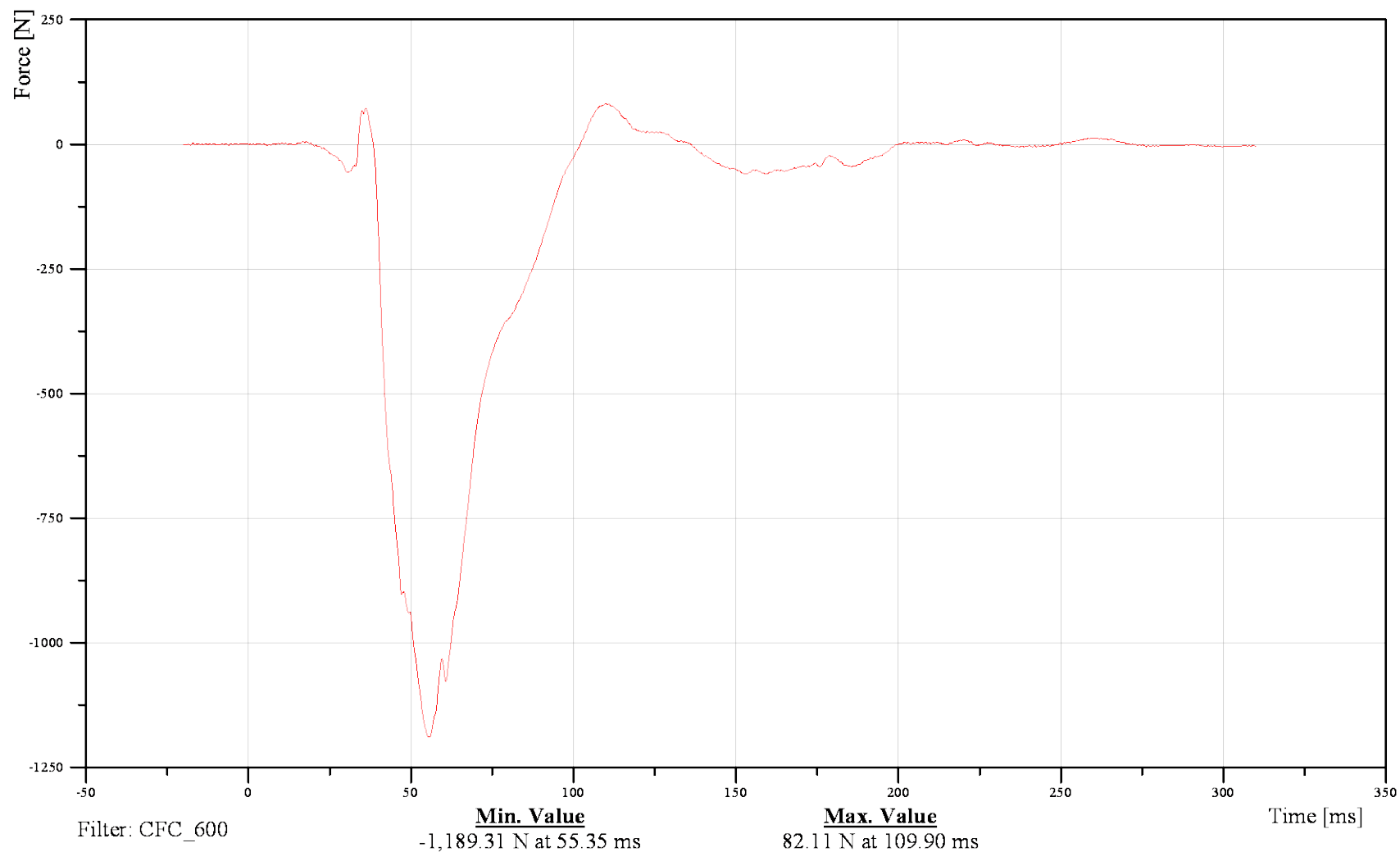
Time: 12:36

Customer: VRTC

14SHLDLE00WFFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Force Fx

Date: 06/17/2013

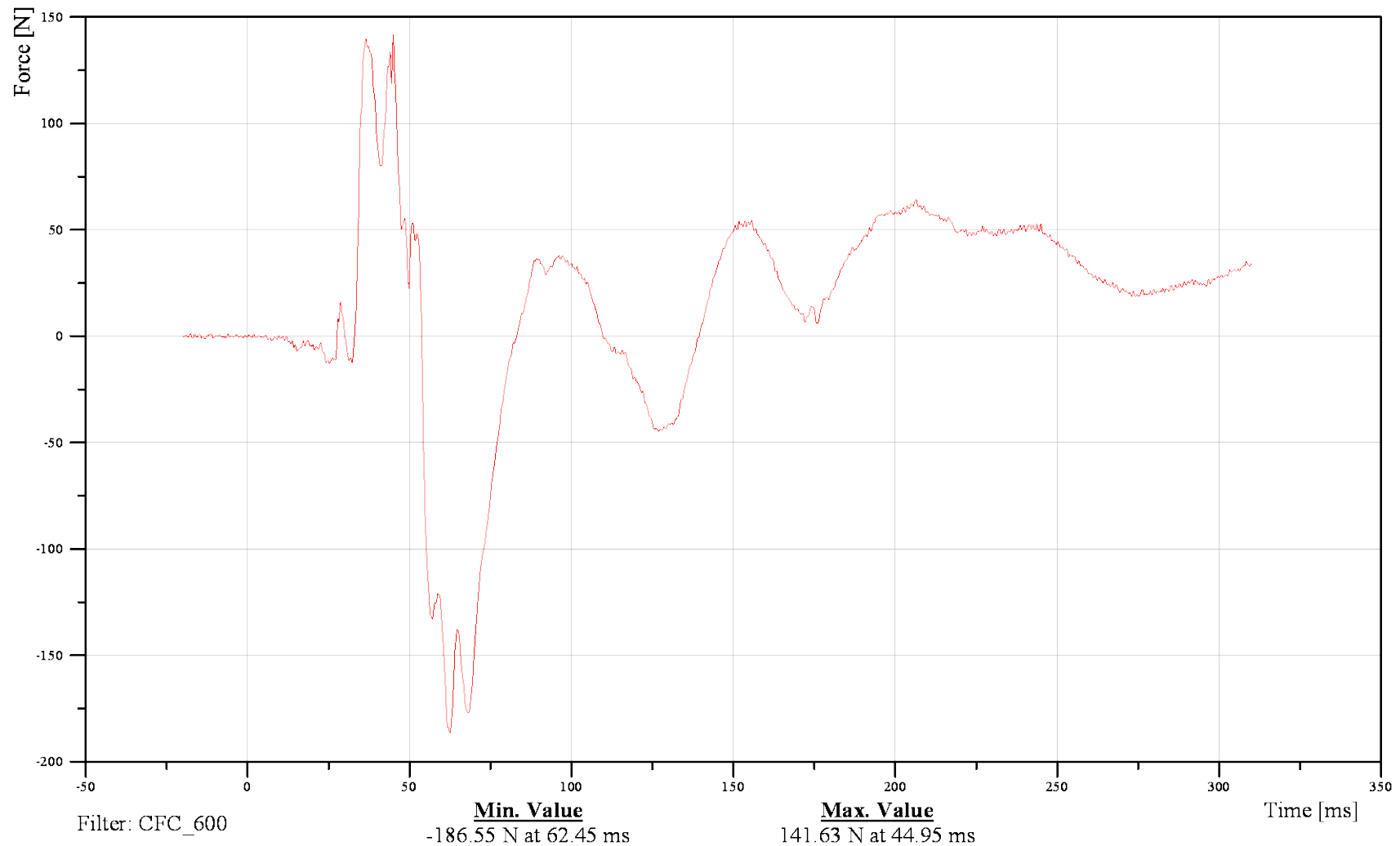
Time: 12:36

Customer: VRTC

14SHLDLE00WFFOXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Displacement Dy

Date: 06/17/2013

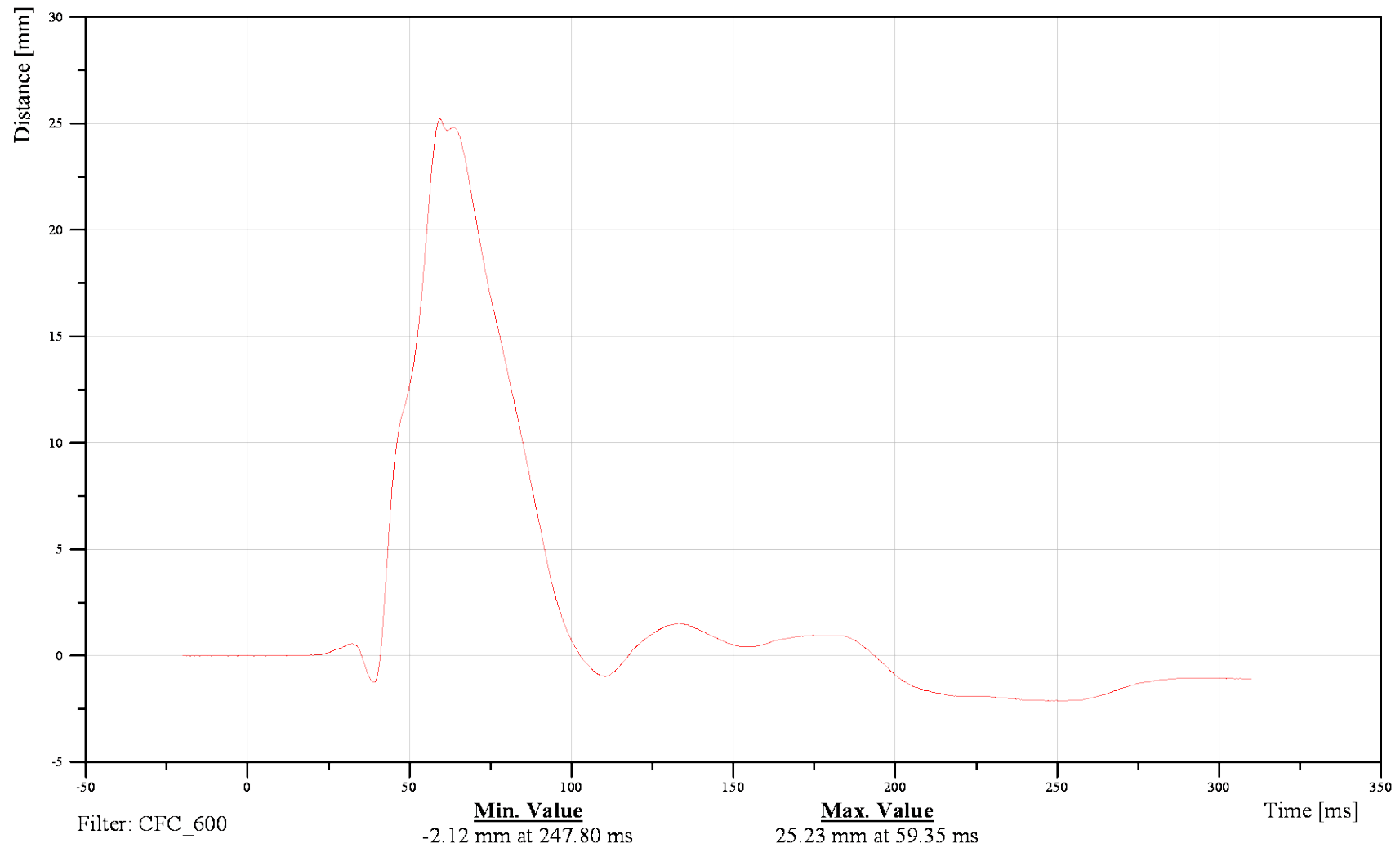
Time: 12:36

Customer: VRTC

14SHLDLE00WFDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 Longitudinal Ax

Date: 06/17/2013

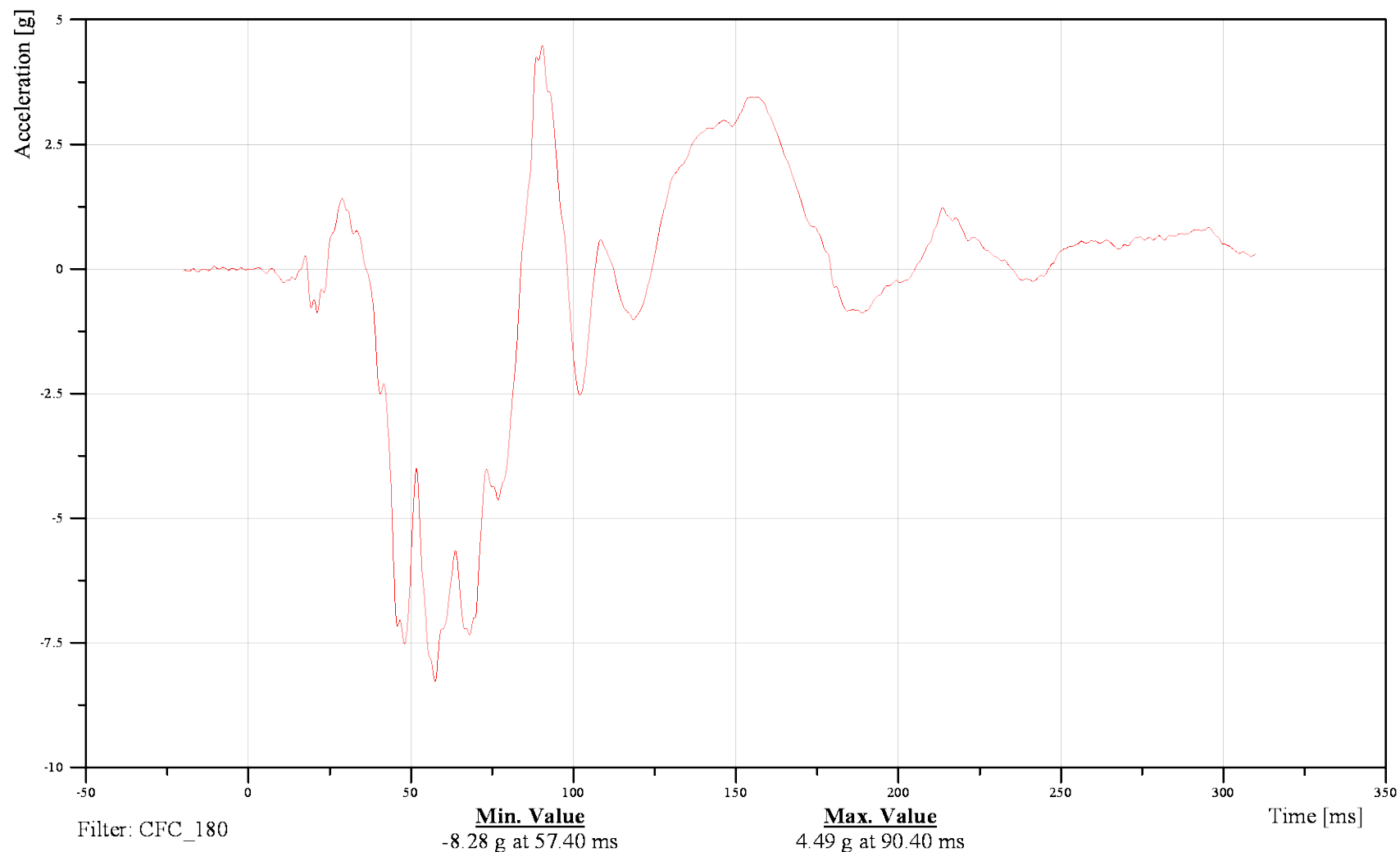
Time: 12:36

Customer: VRTC

14THSP0100WFACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 Lateral Ay

Date: 06/17/2013

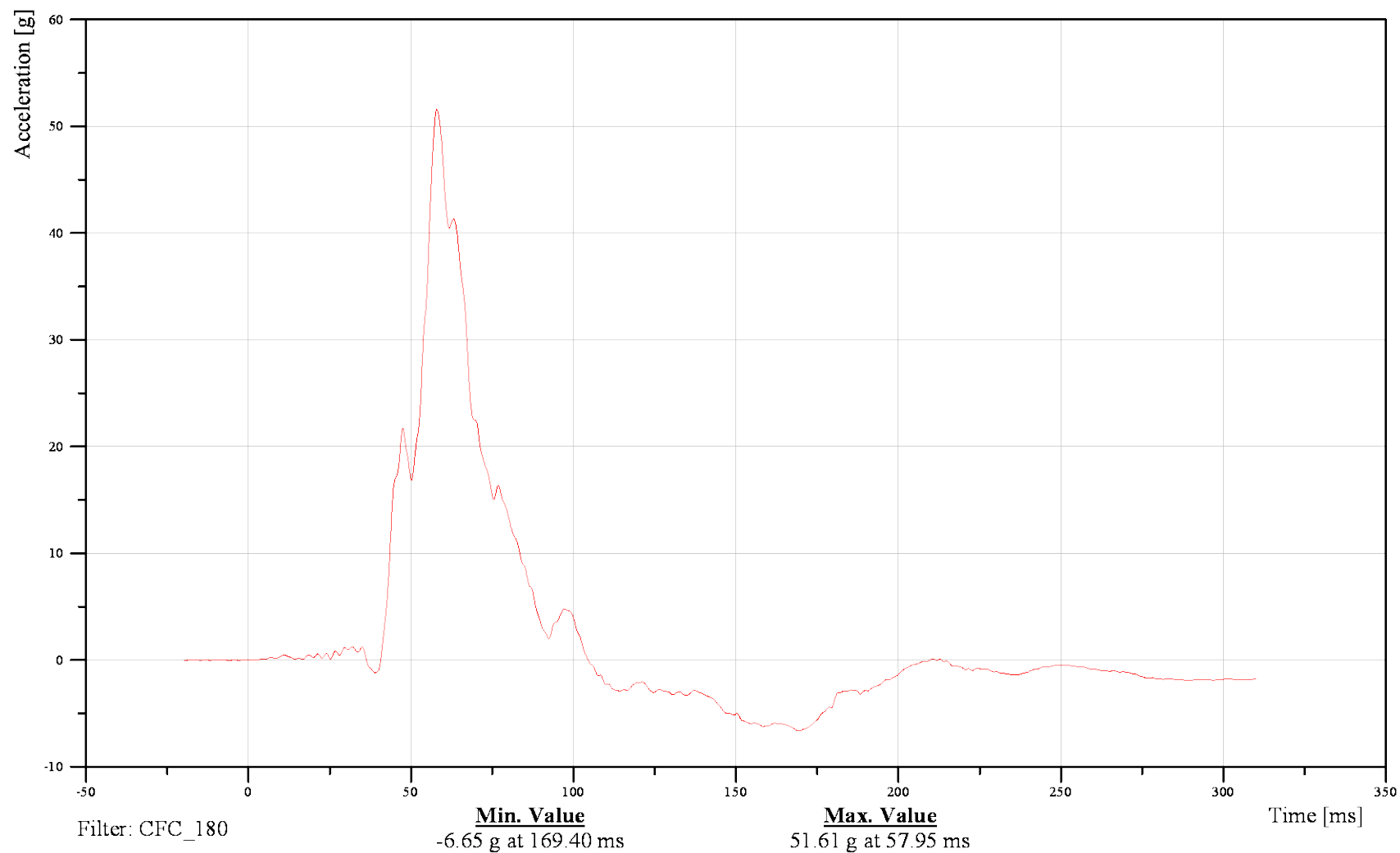
Time: 12:36

Customer: VRTC

14THSP0100WFACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 Vertical Az

Date: 06/17/2013

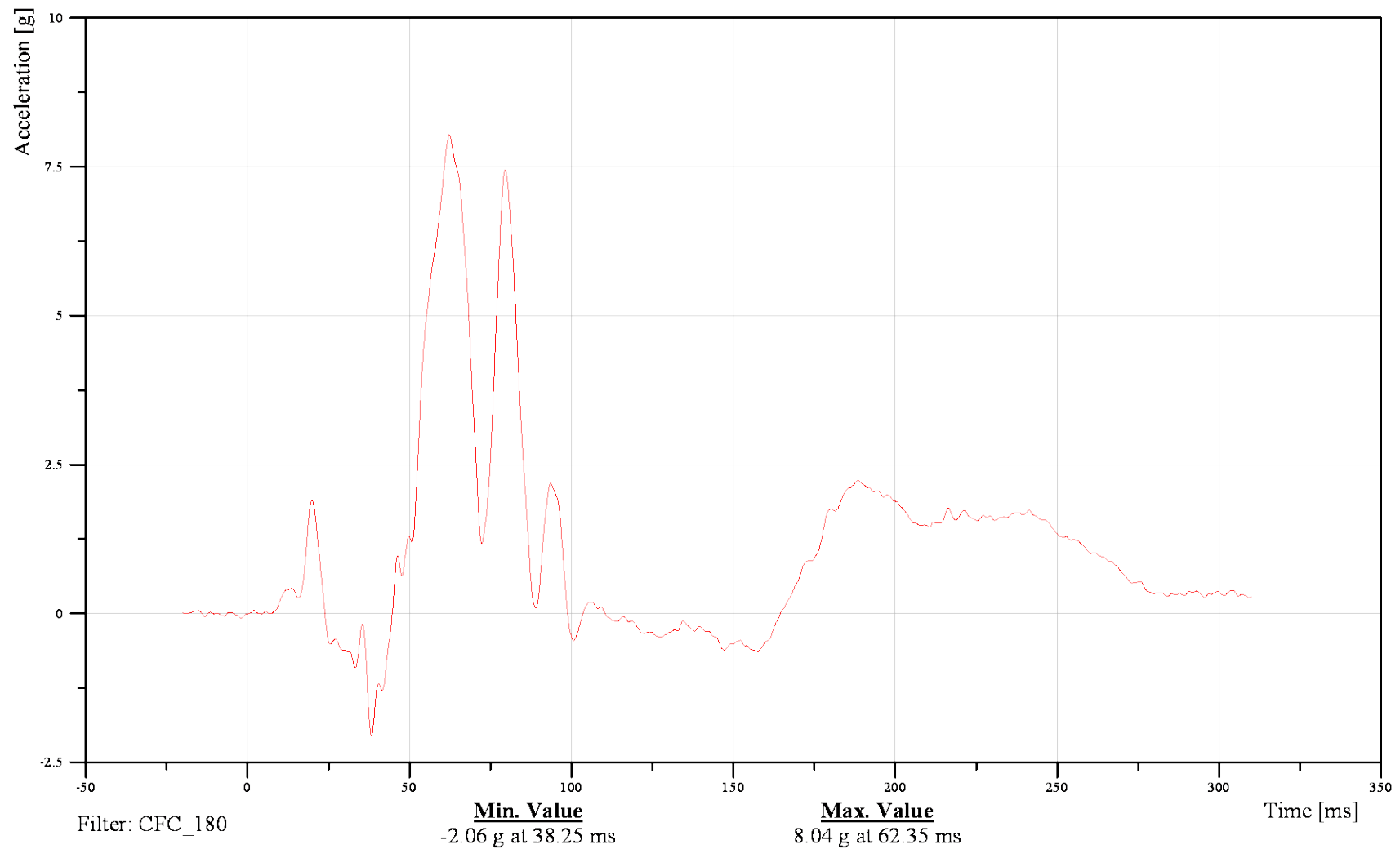
Time: 12:36

Customer: VRTC

14THSP0100WFACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T1 A Resultant

Date: 06/17/2013

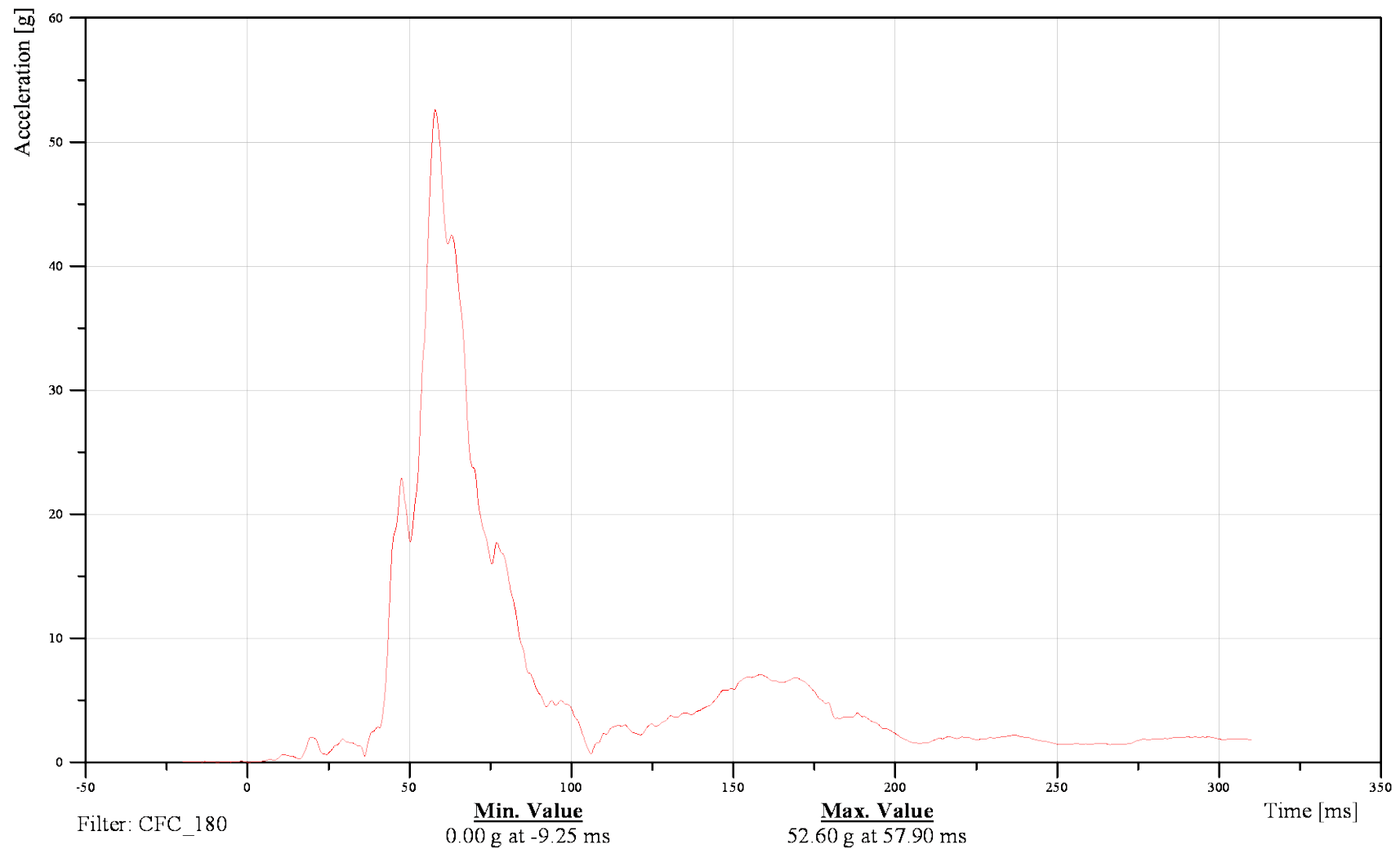
Time: 12:36

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Longitudinal Ax

Date: 06/17/2013

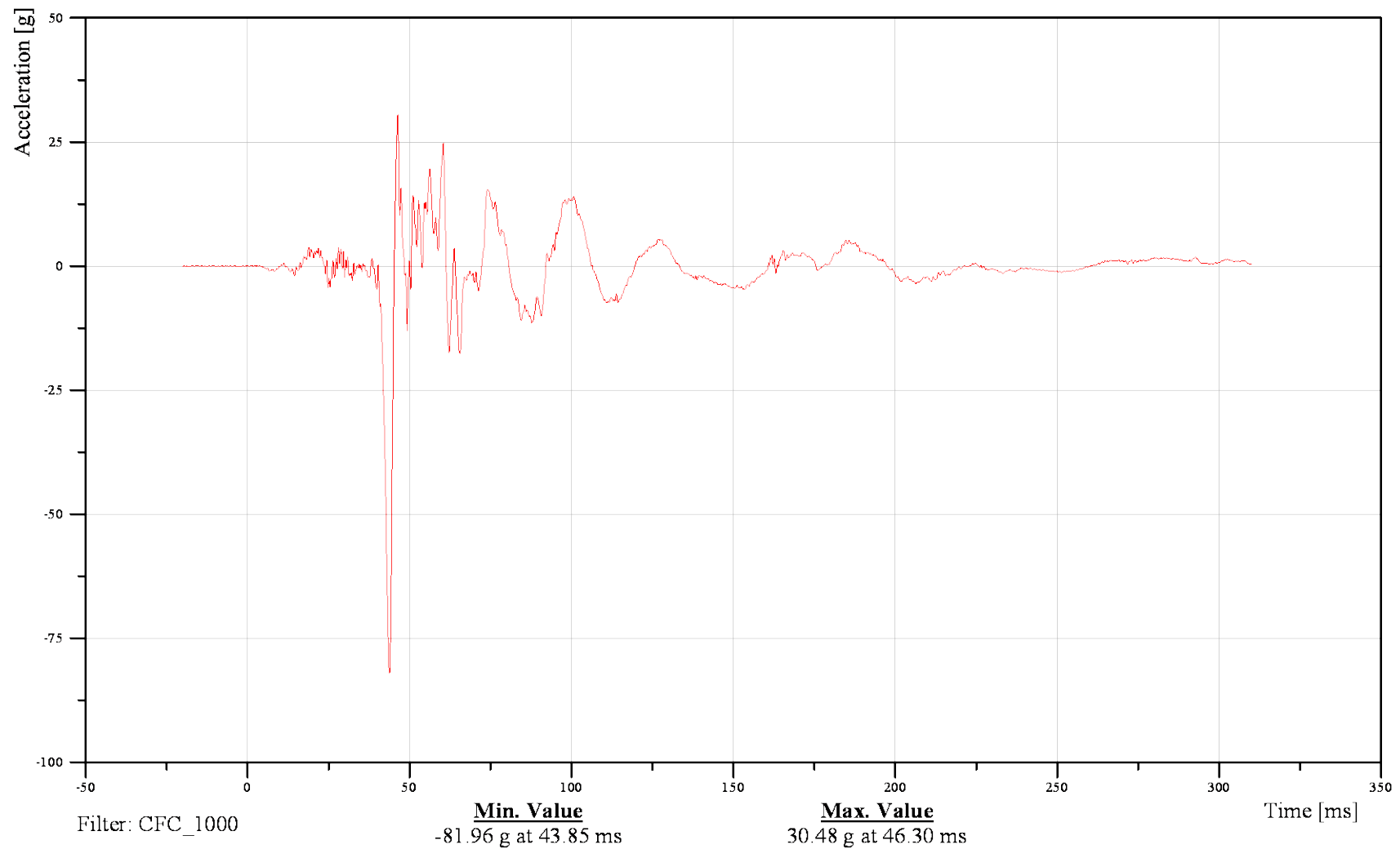
Time: 12:36

Customer: VRTC

14TRRILE01WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Lateral Ay

Date: 06/17/2013

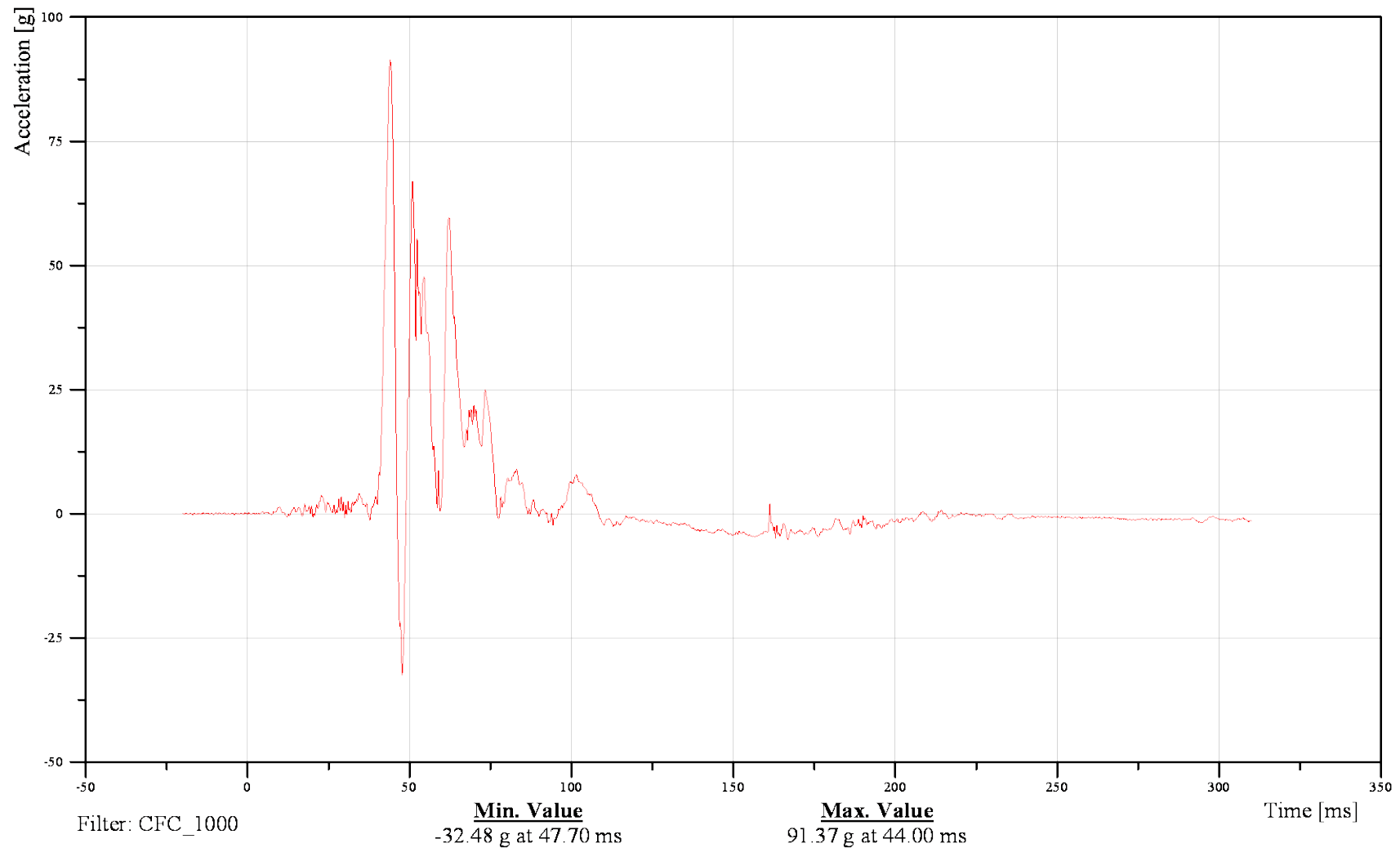
Time: 12:36

Customer: VRTC

14TRRILE01WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 Vertical Az

Date: 06/17/2013

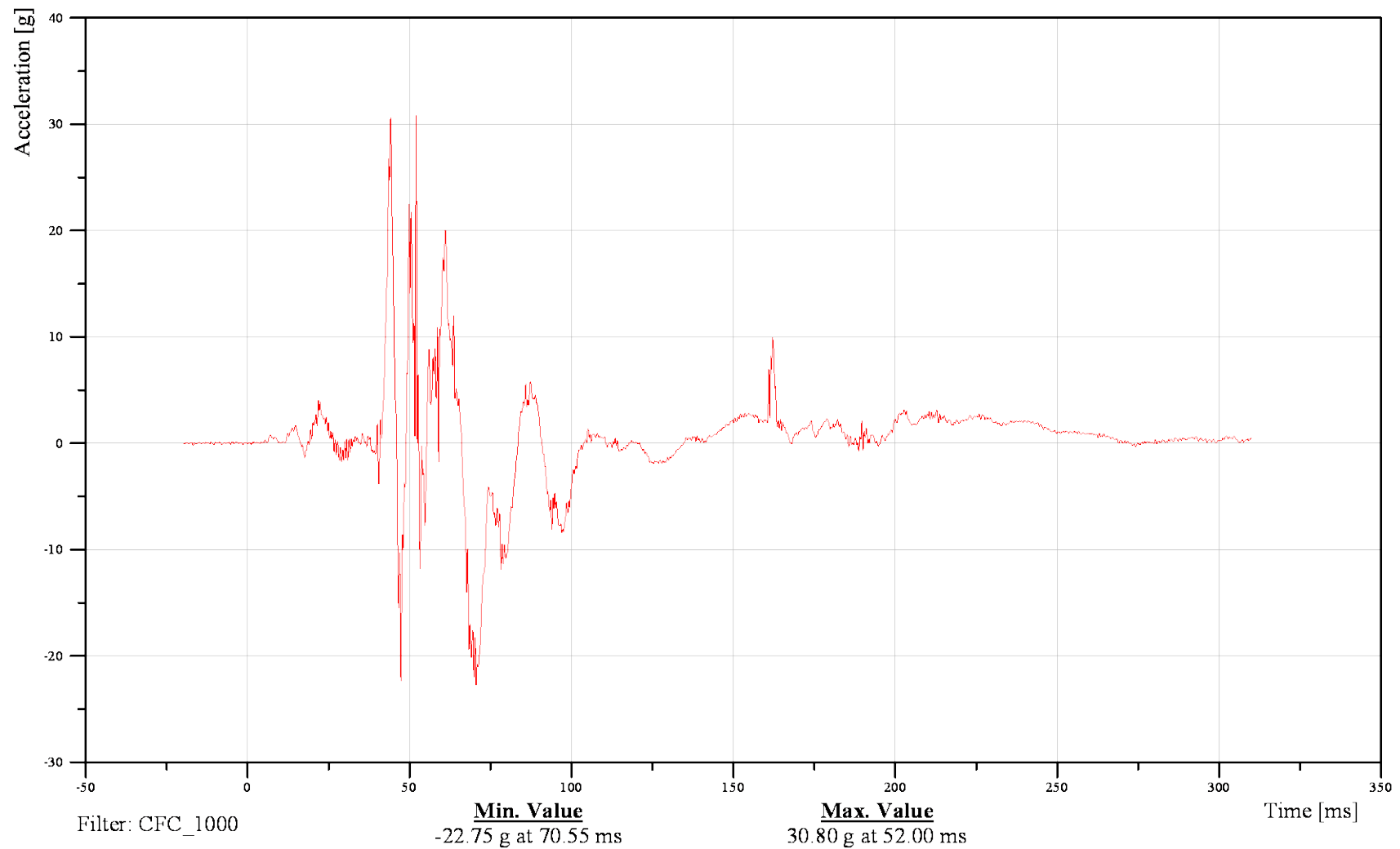
Time: 12:36

Customer: VRTC

14TRRILE01WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 1 A Resultant

Date: 06/17/2013

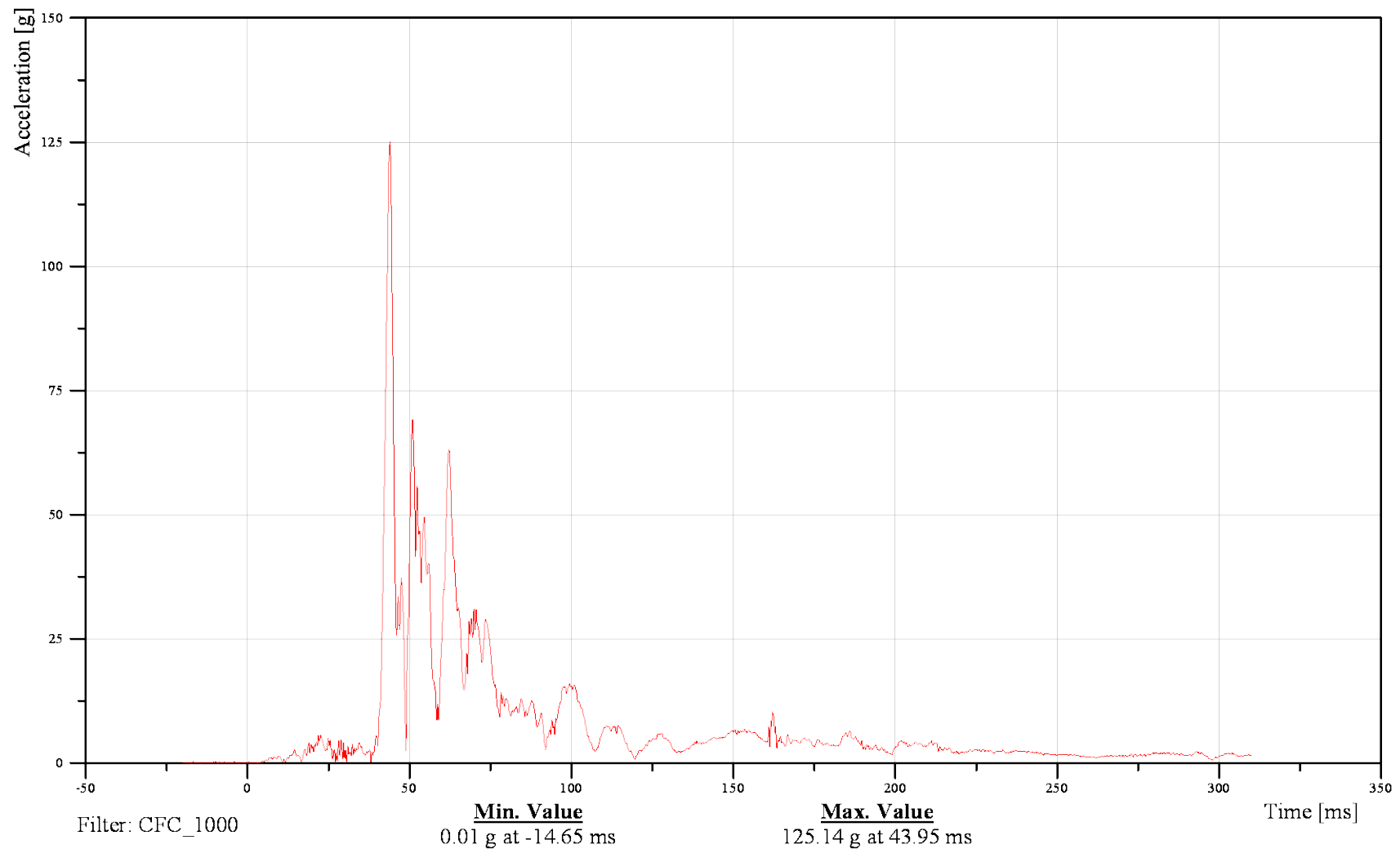
Time: 12:36

Customer: VRTC

14TRRILE01WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 1 IRTRAC Compression

Date: 06/17/2013

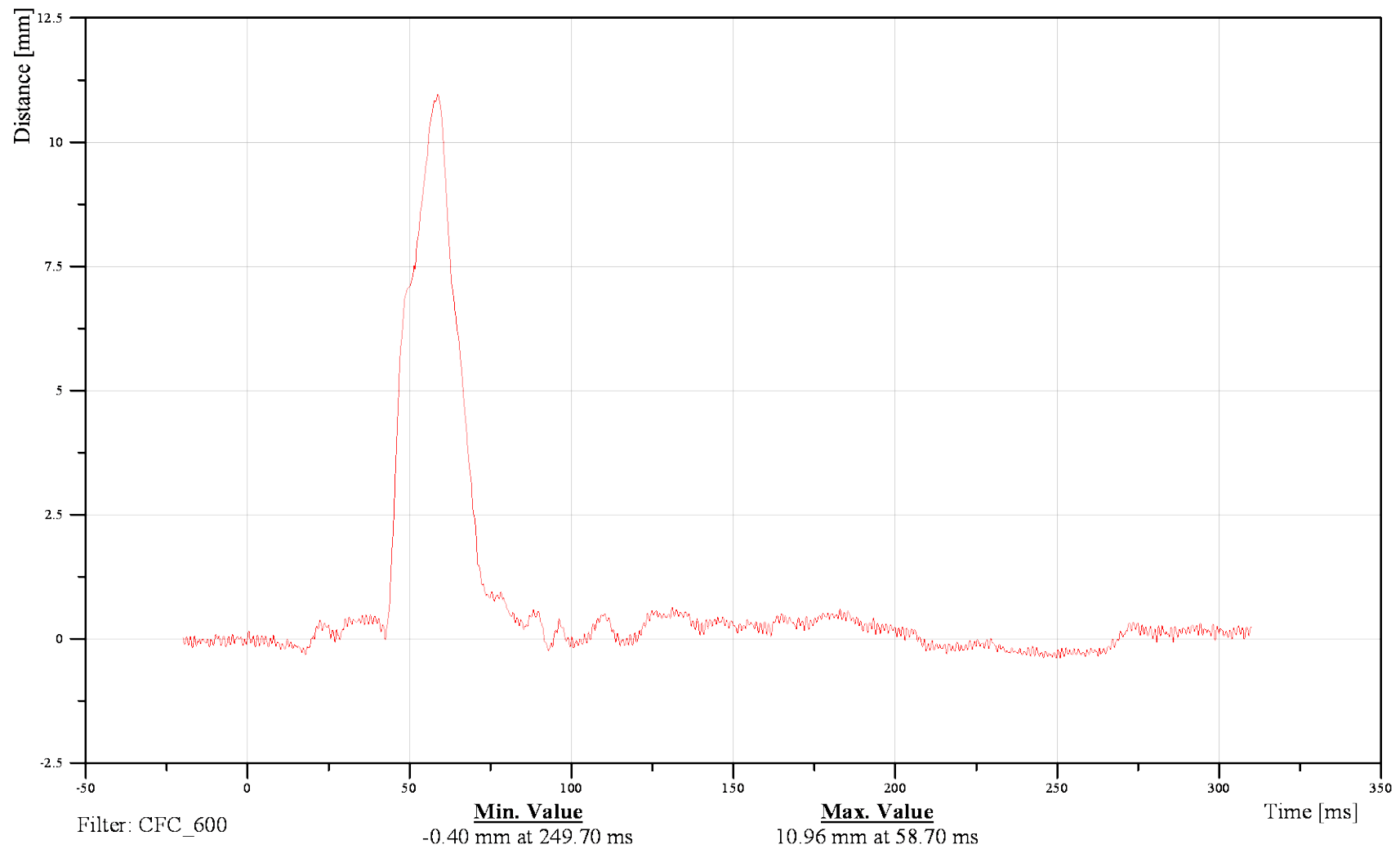
Time: 12:36

Customer: VRTC

14TRRILE01WFDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB1 Rotational Angle

Date: 06/17/2013

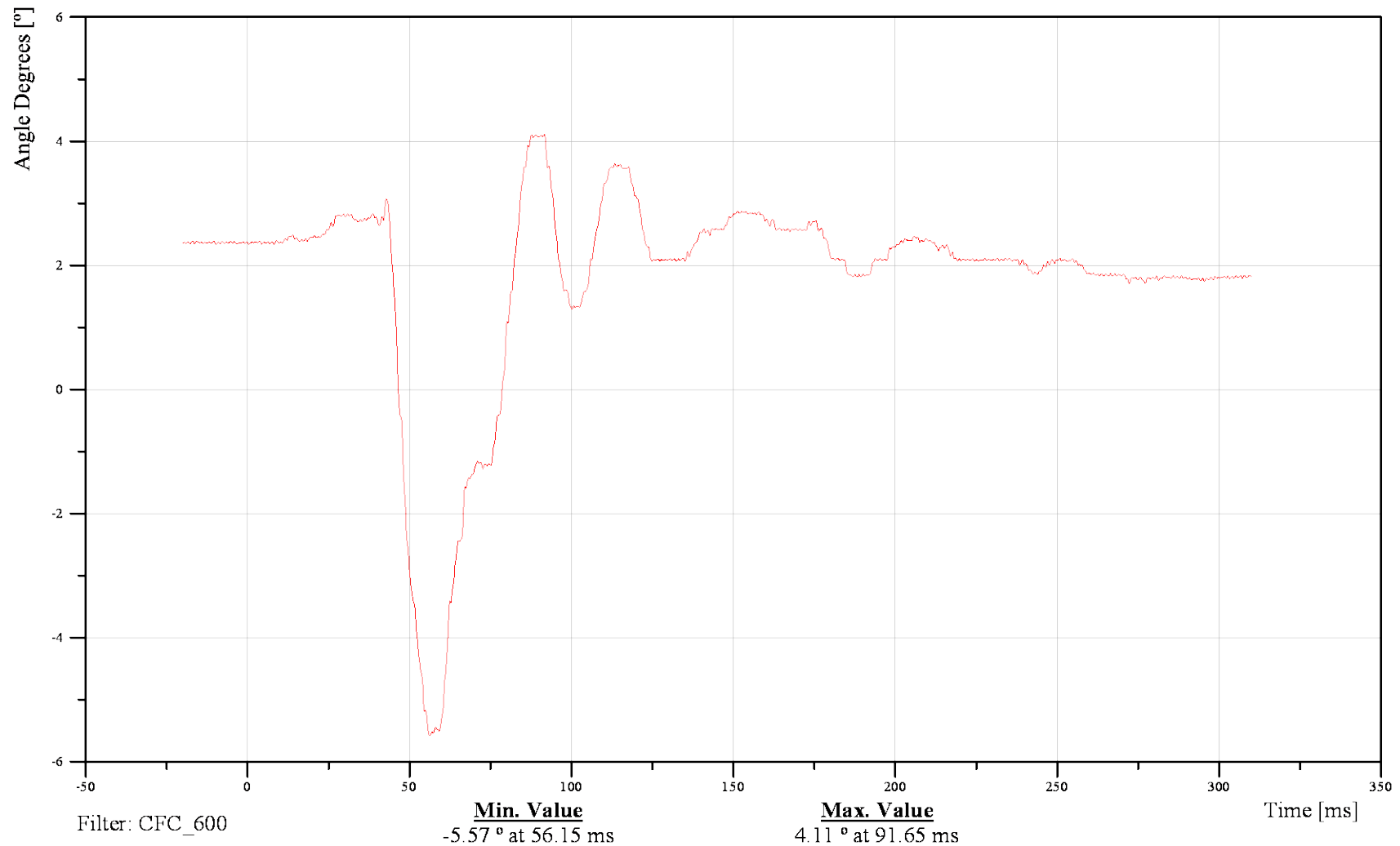
Time: 12:36

Customer: VRTC

14TRRILE01WFANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 1 IRTRAC X Deflection

Date: 06/17/2013

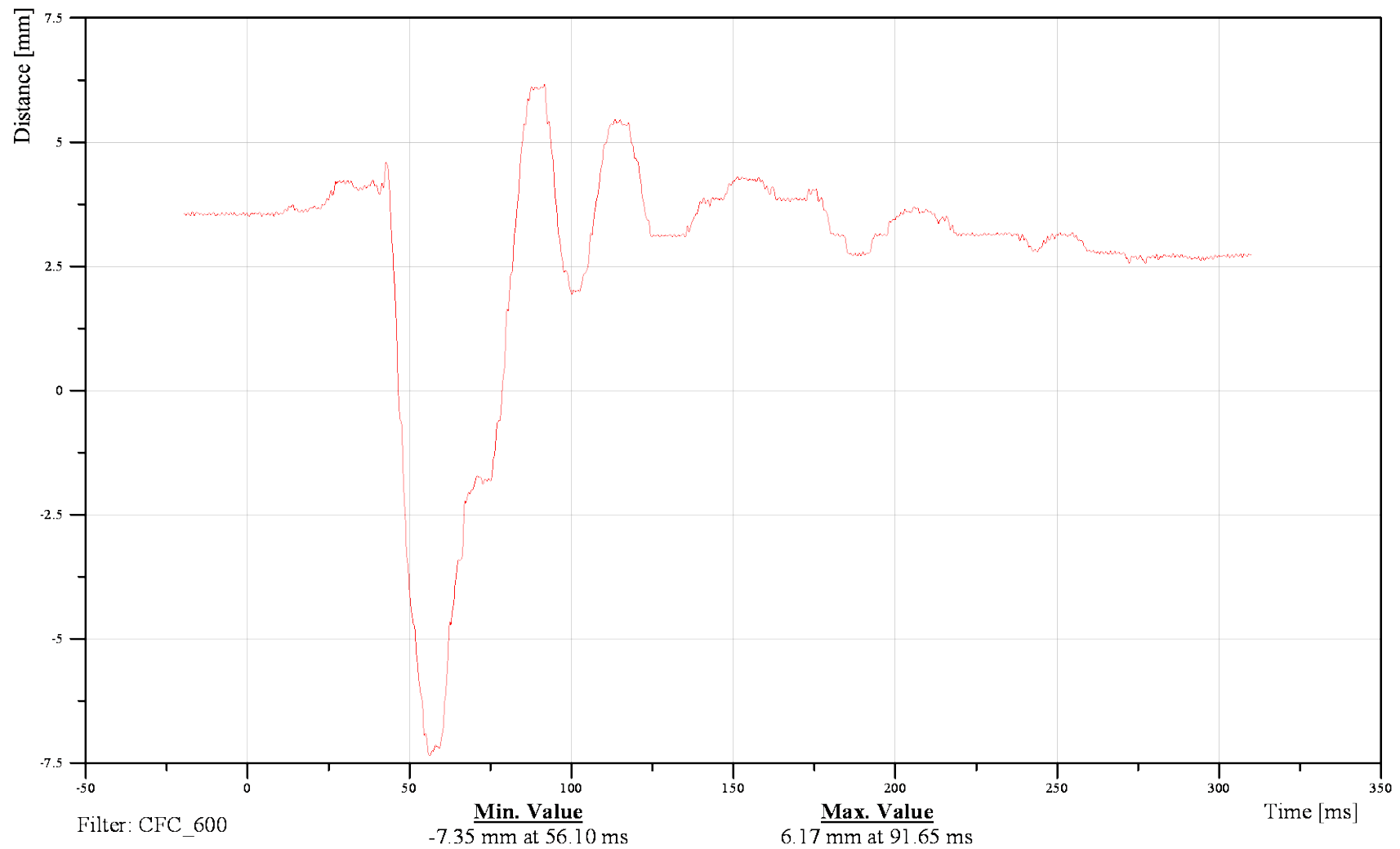
Time: 12:36

Customer: VRTC

14TRRILE01WFDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 1 IRTRAC Y Deflection

Date: 06/17/2013

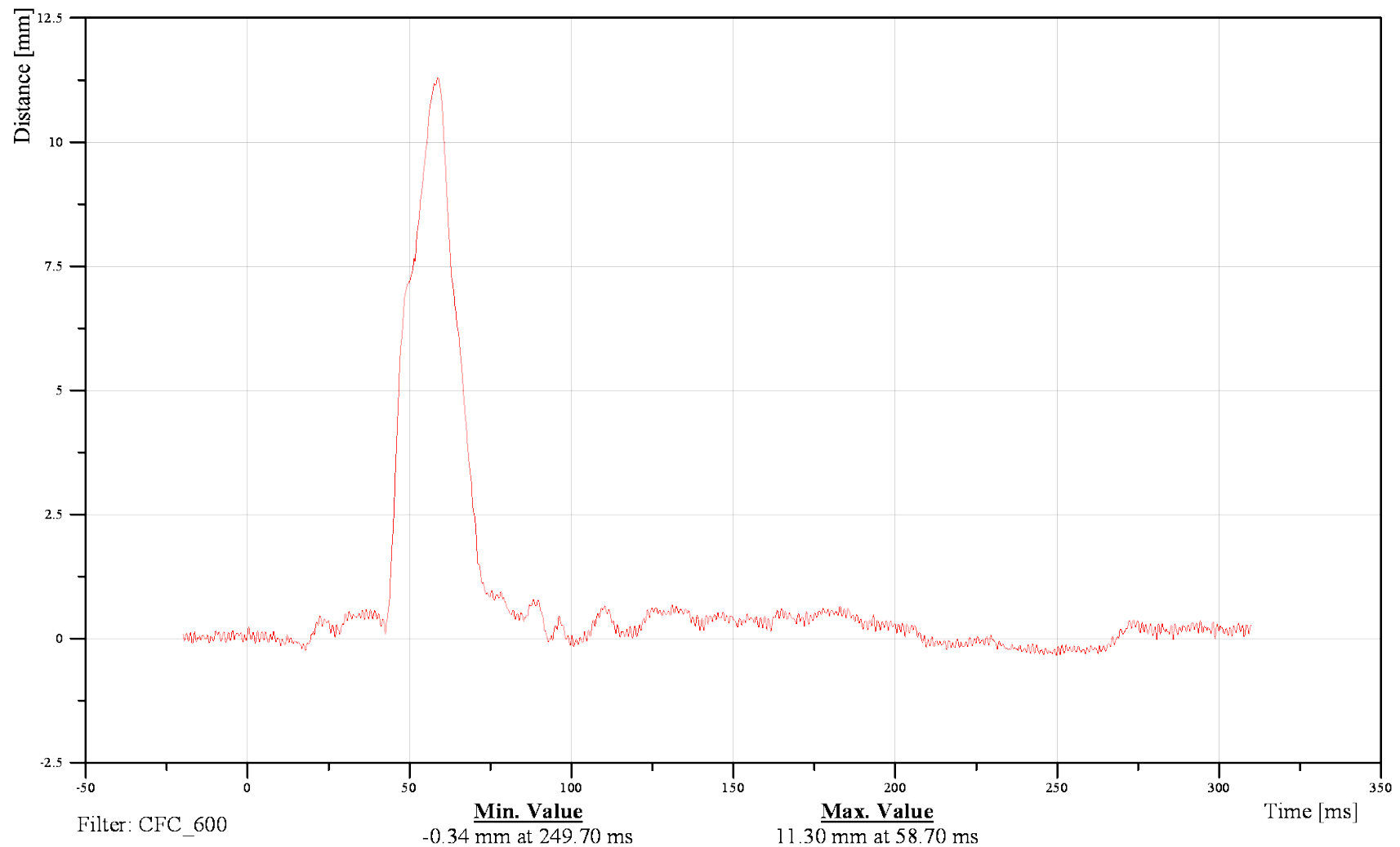
Time: 12:36

Customer: VRTC

14TRRILE01WFDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 Longitudinal Ax

Date: 06/17/2013

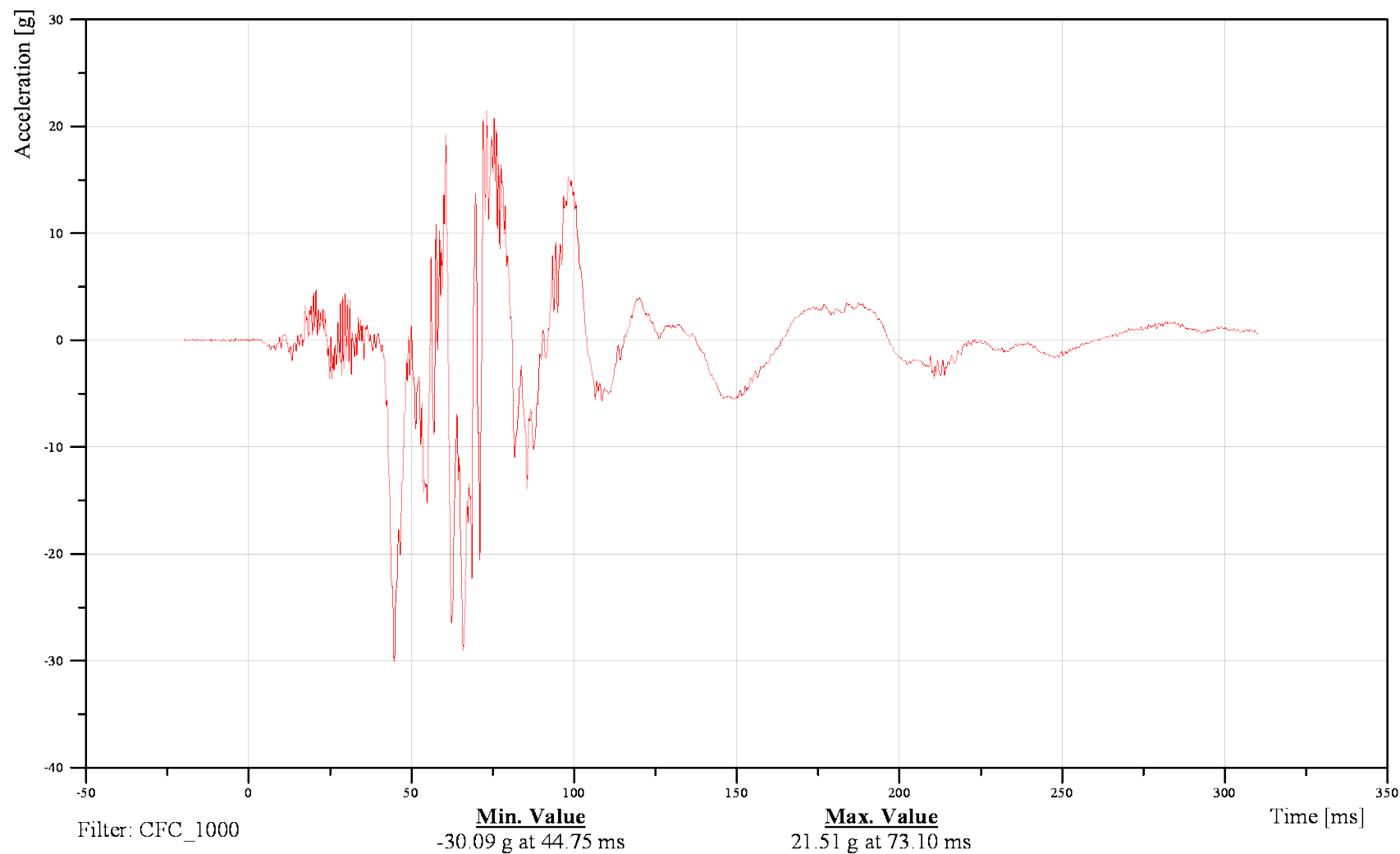
Time: 12:36

Customer: VRTC

14TRRILE02WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 Lateral Ay

Date: 06/17/2013

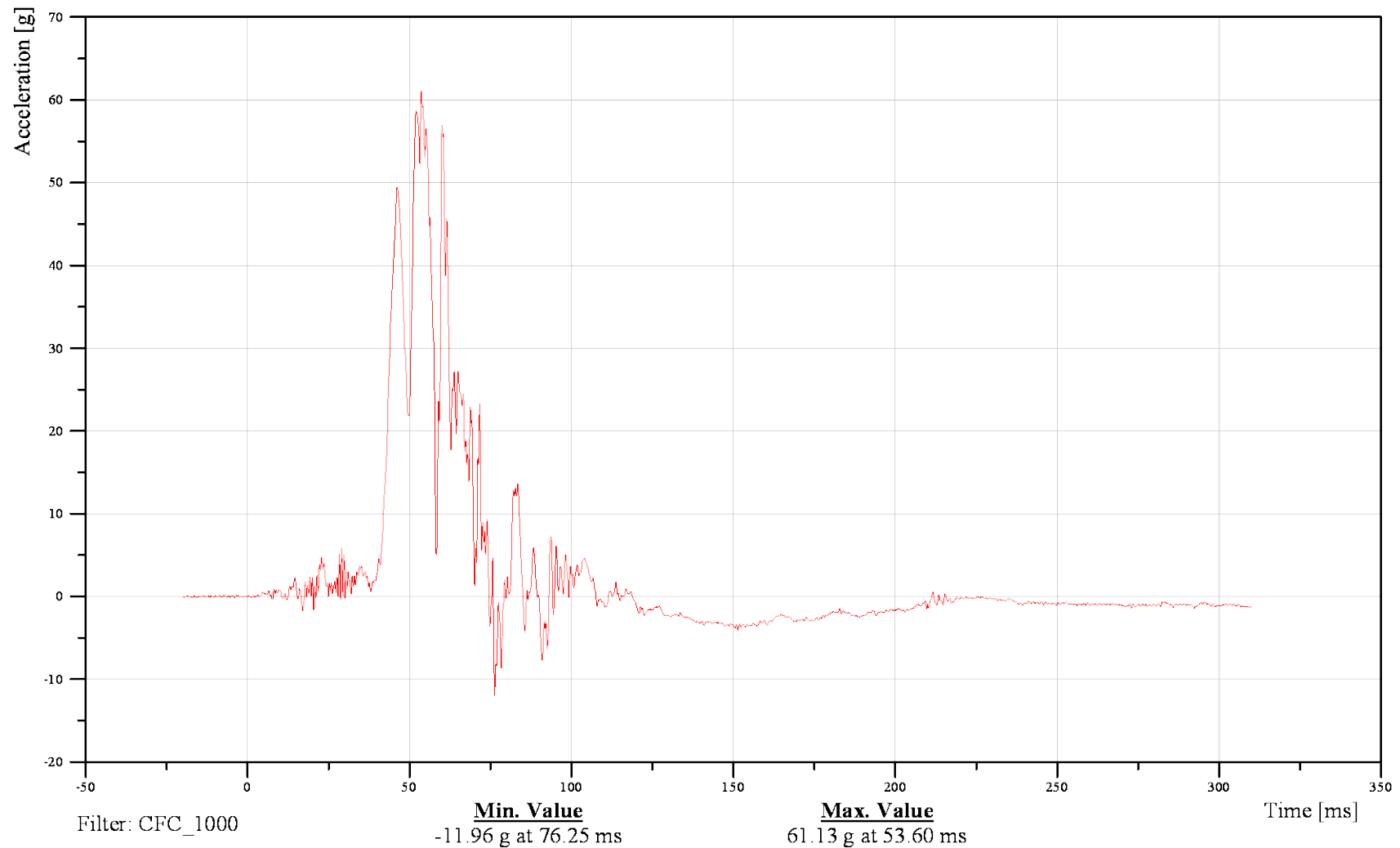
Time: 12:36

Customer: VRTC

14TRRILE02WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 Vertical Az

Date: 06/17/2013

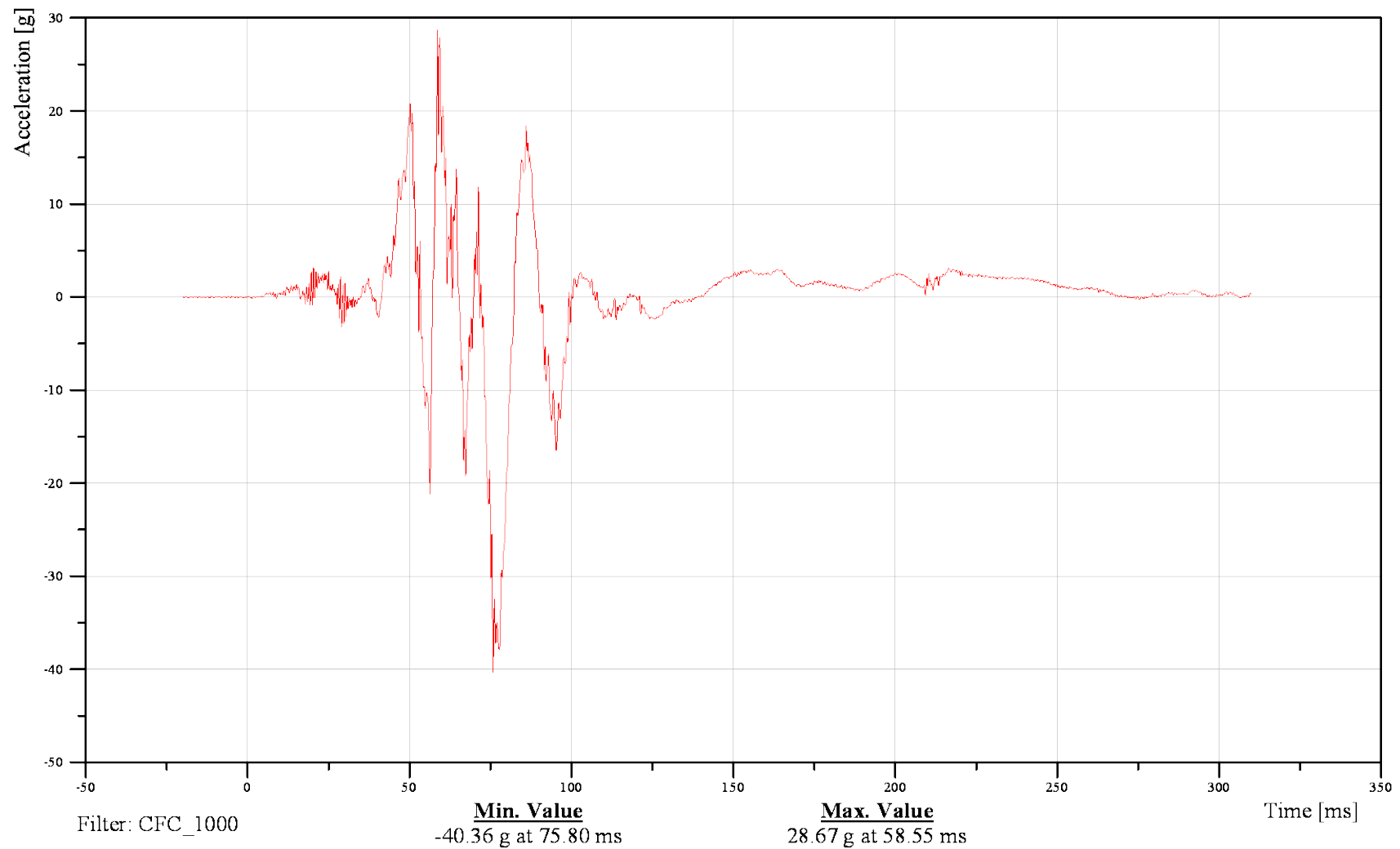
Time: 12:36

Customer: VRTC

14TRRILE02WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 2 A Resultant

Date: 06/17/2013

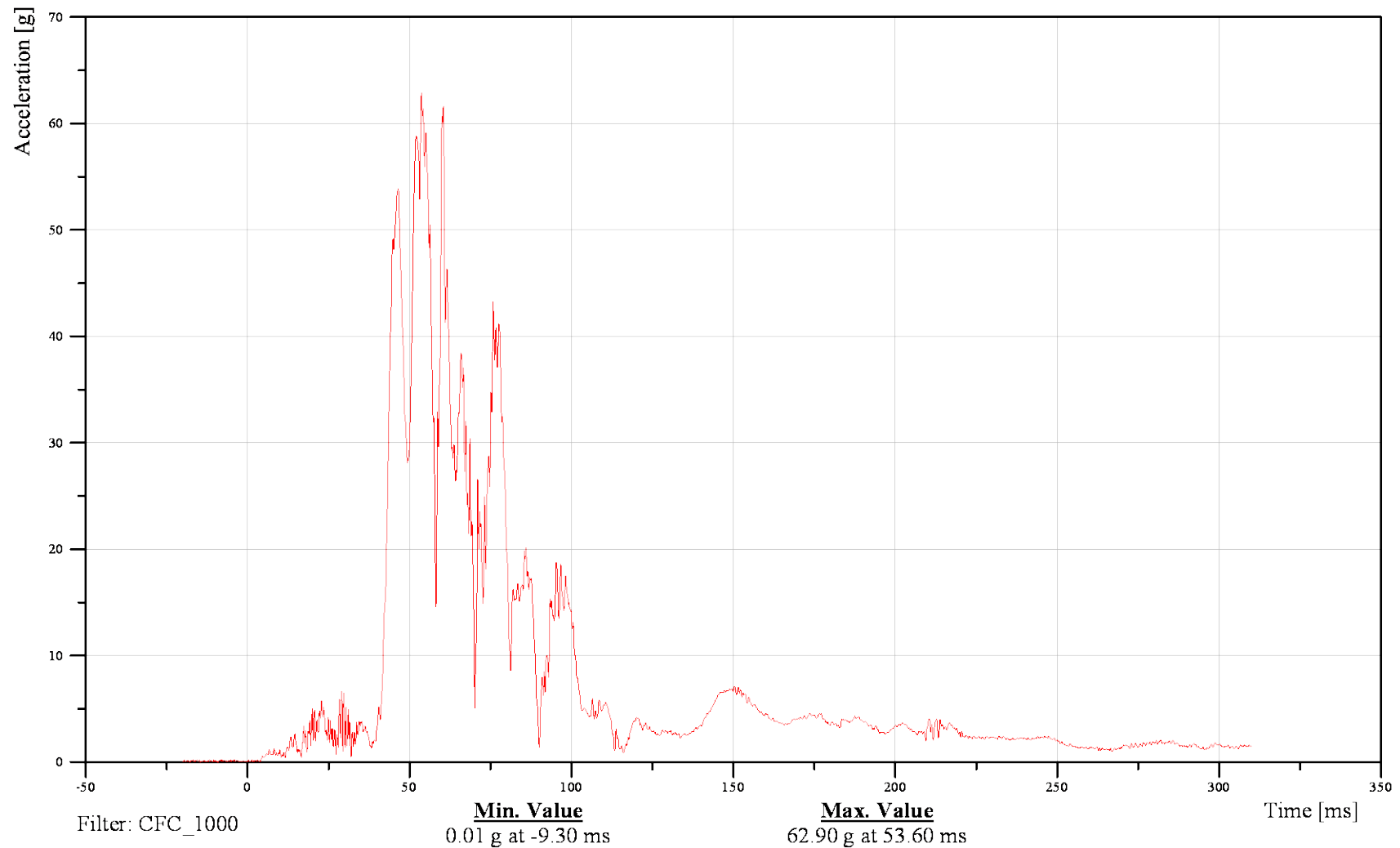
Time: 12:36

Customer: VRTC

14TRRILE02WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 2 IRTRAC Compression

Date: 06/17/2013

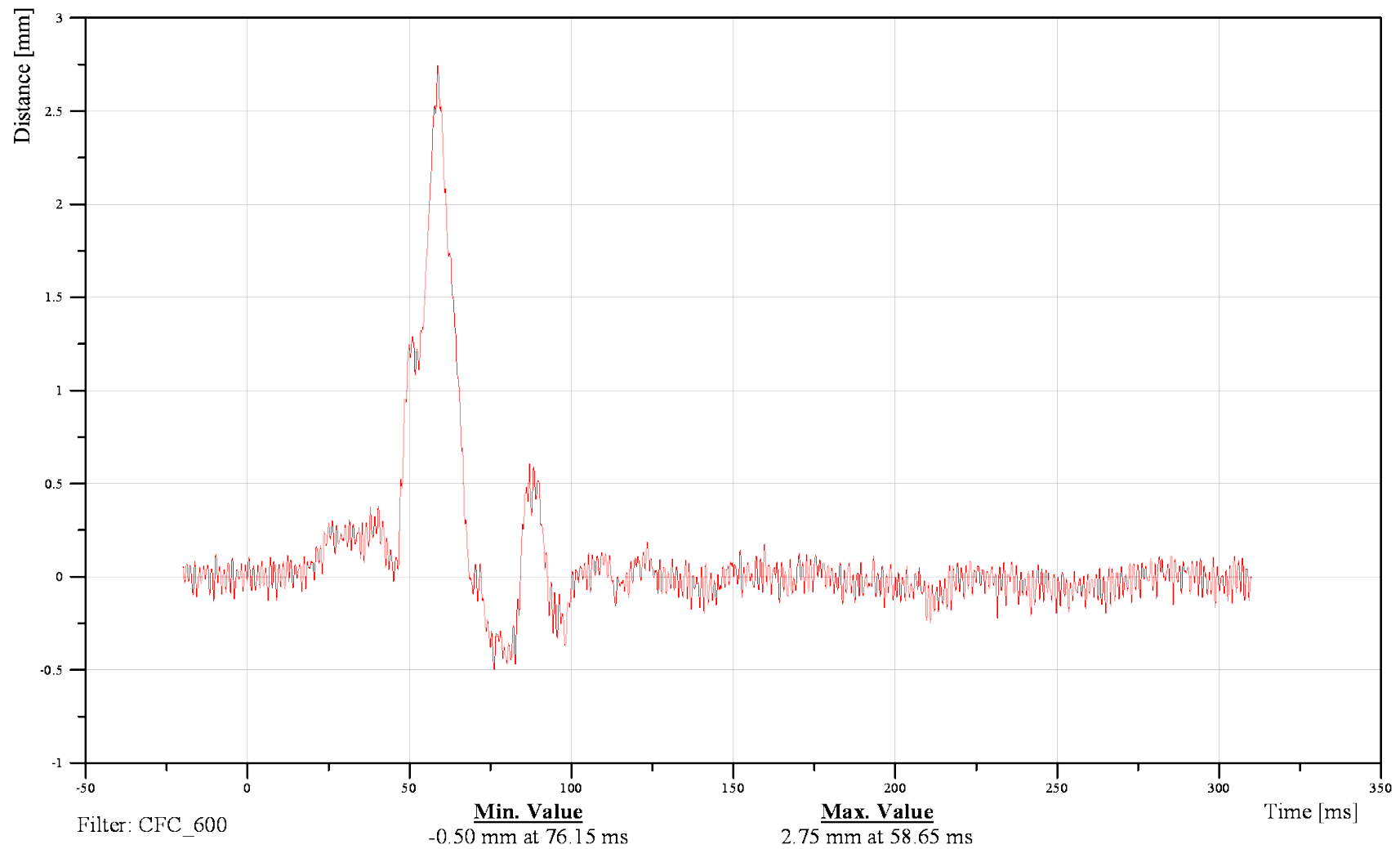
Time: 12:36

Customer: VRTC

14TRRILE02WFDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB2 Rotational Angle

Date: 06/17/2013

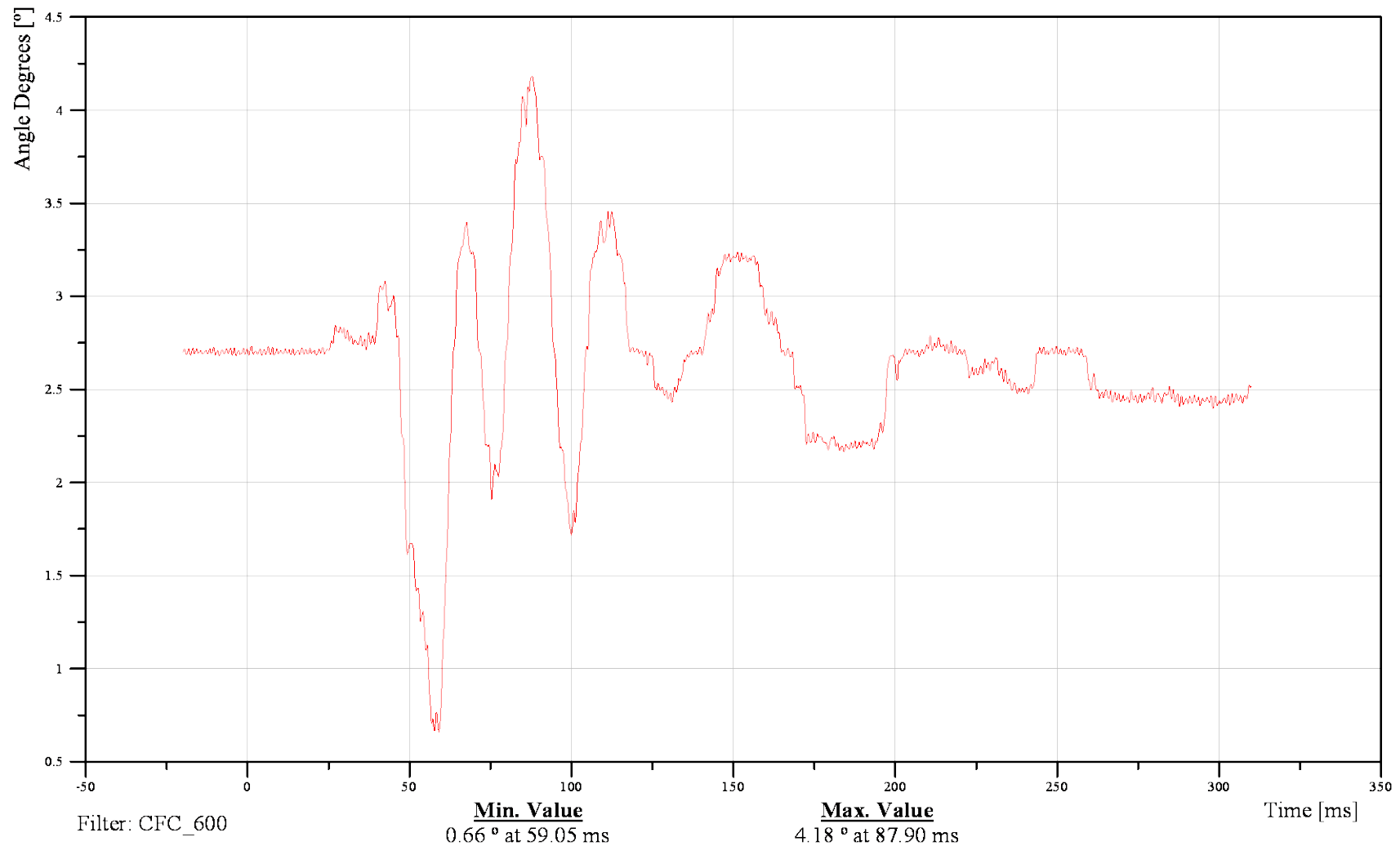
Time: 12:36

Customer: VRTC

14TRRILE02WFANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 2 IRTRAC X Deflection

Date: 06/17/2013

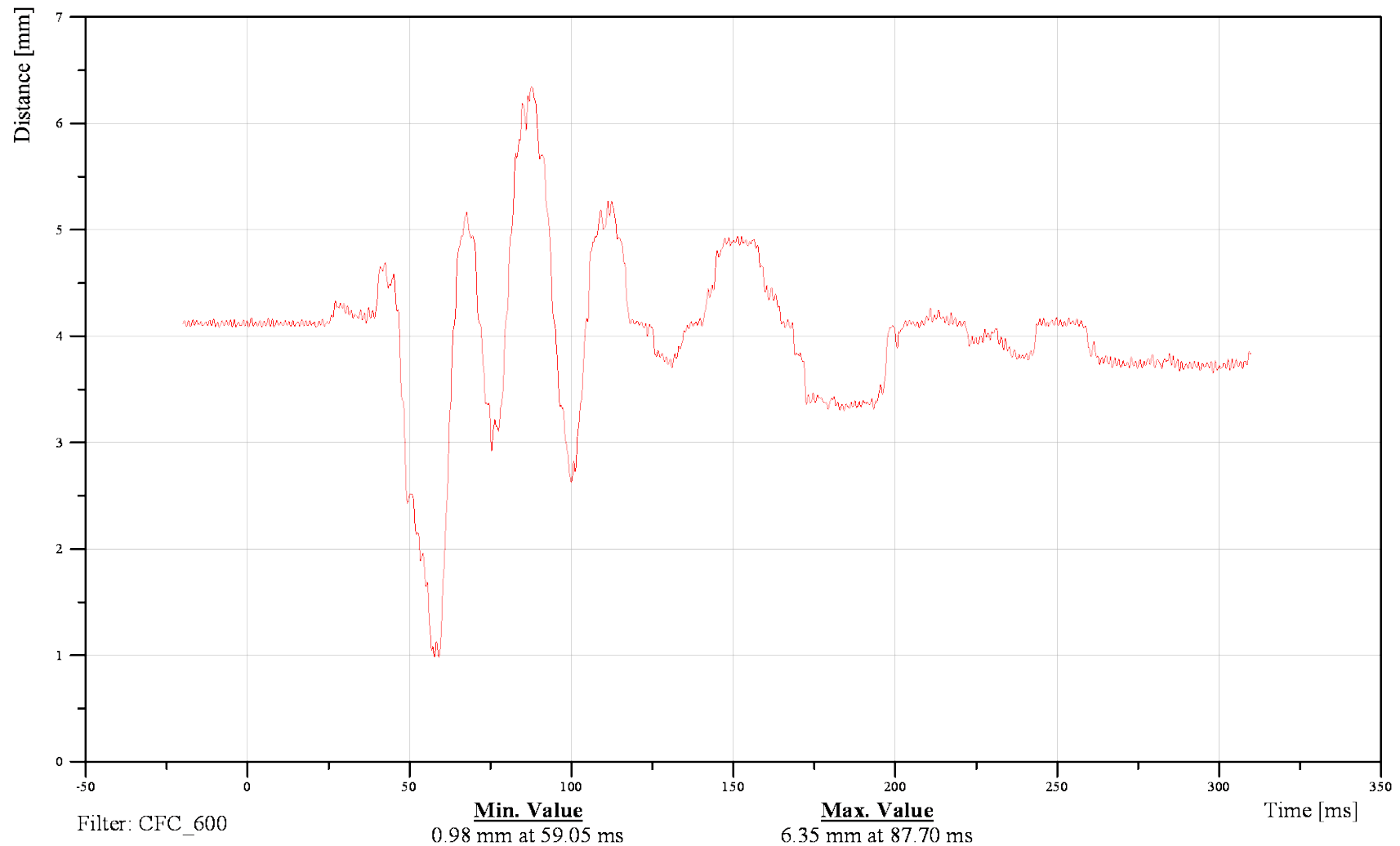
Time: 12:36

Customer: VRTC

14TRRILE02WFDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 2 IRTRAC Y Deflection

Date: 06/17/2013

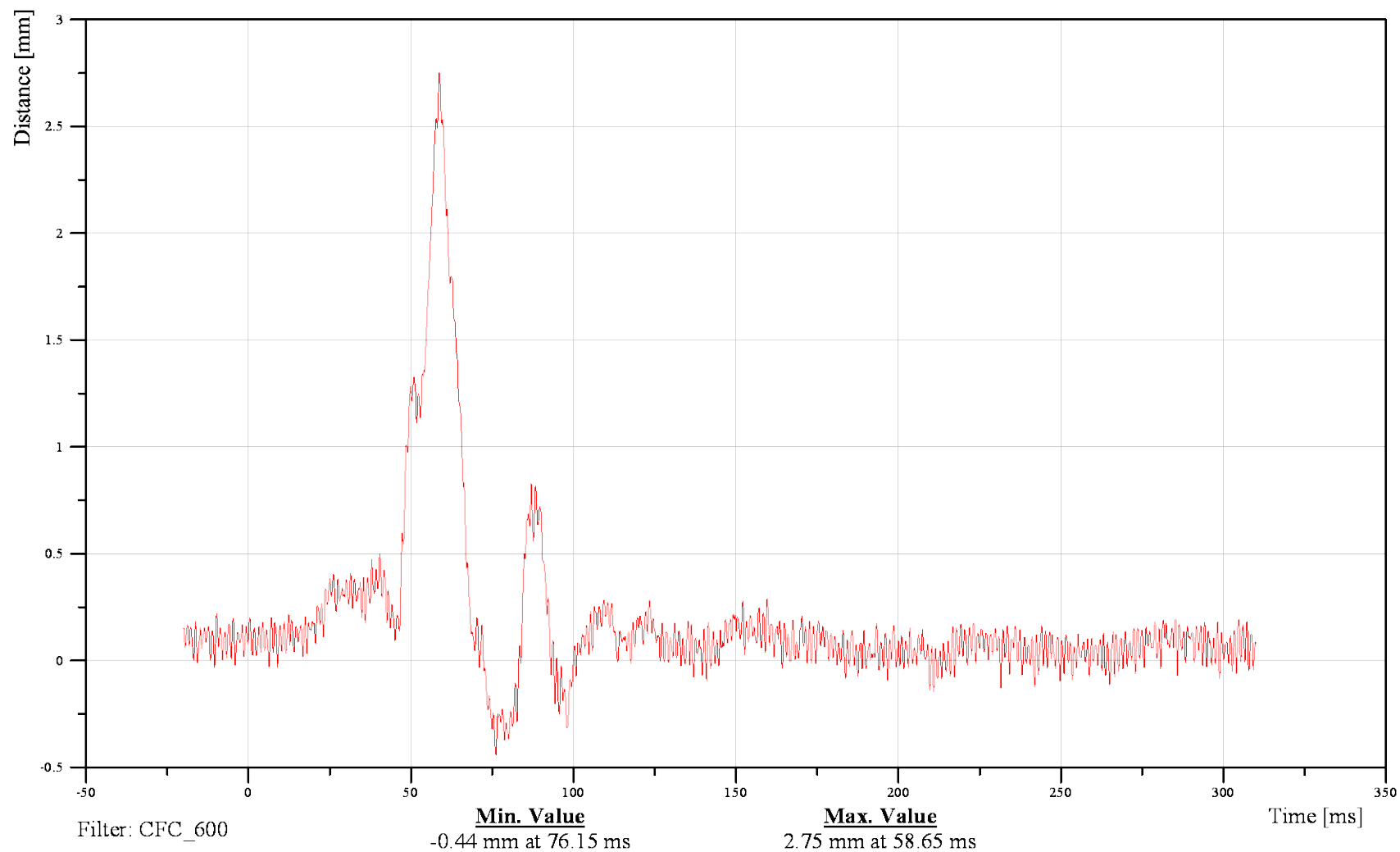
Time: 12:36

Customer: VRTC

14TRRILE02WFDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 Longitudinal Ax

Date: 06/17/2013

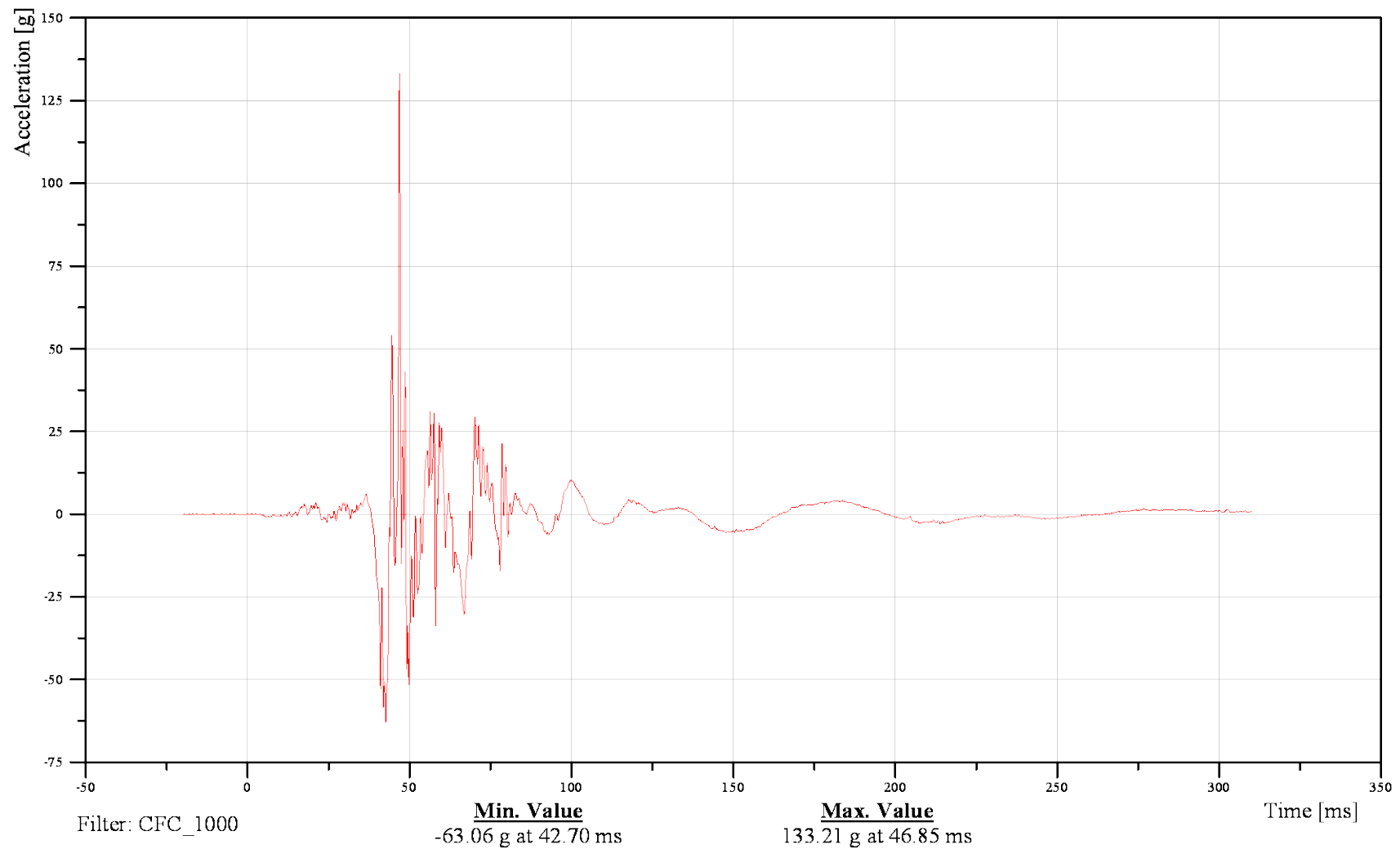
Time: 12:36

Customer: VRTC

14TRRILE03WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 Lateral Ay

Date: 06/17/2013

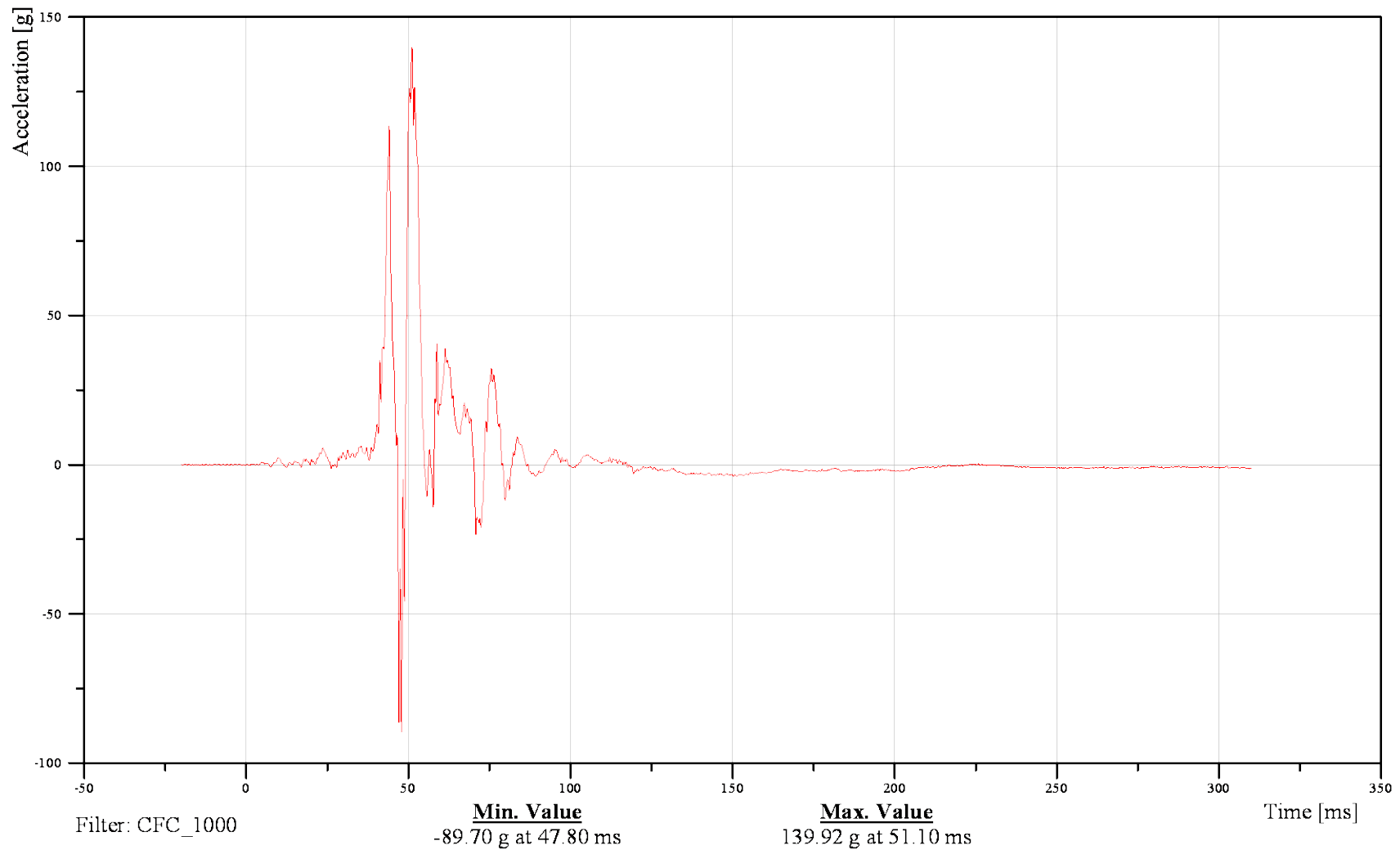
Time: 12:36

Customer: VRTC

14TRRILE03WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 Vertical Az

Date: 06/17/2013

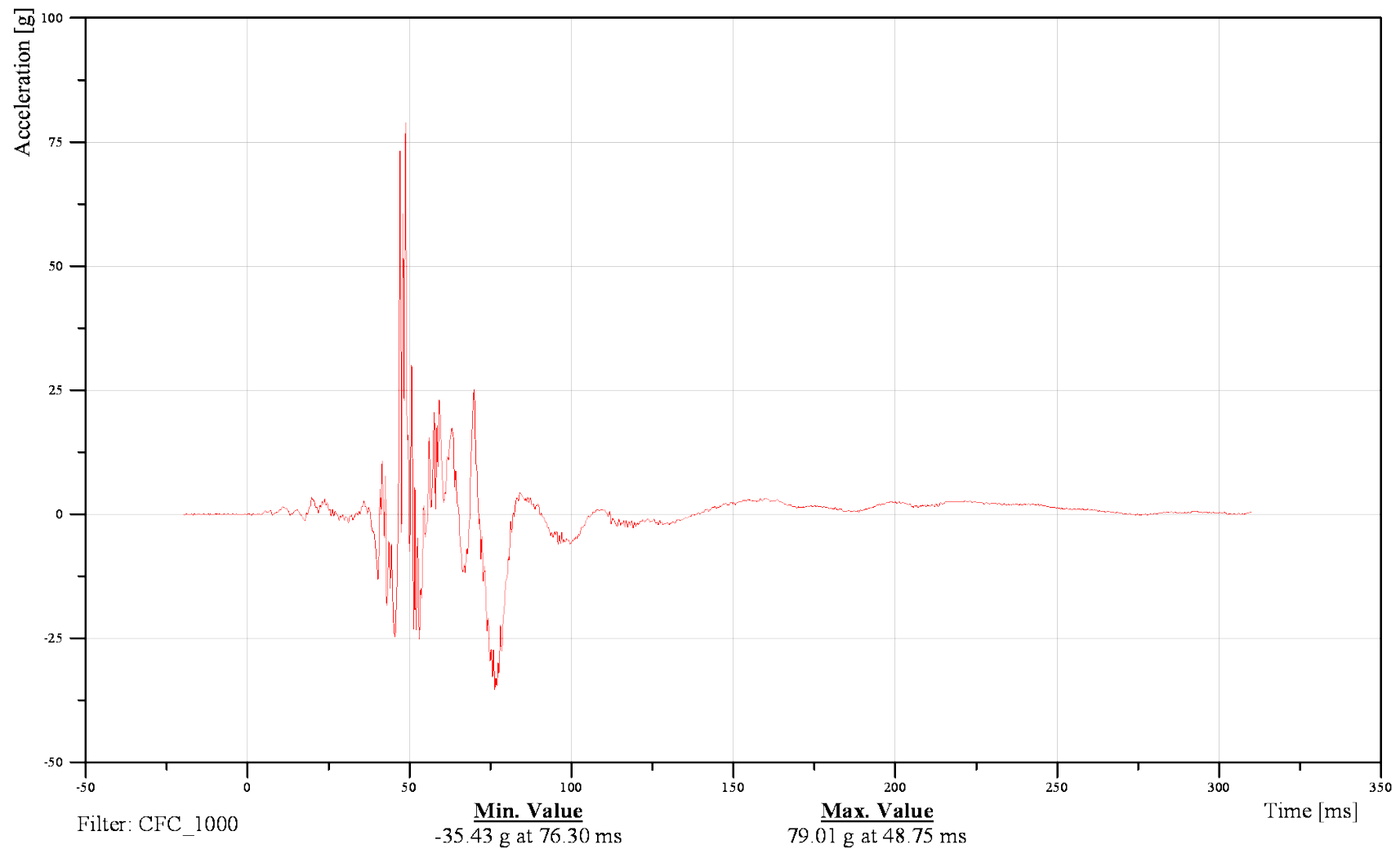
Time: 12:36

Customer: VRTC

14TRRILE03WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Rib 3 A Resultant

Date: 06/17/2013

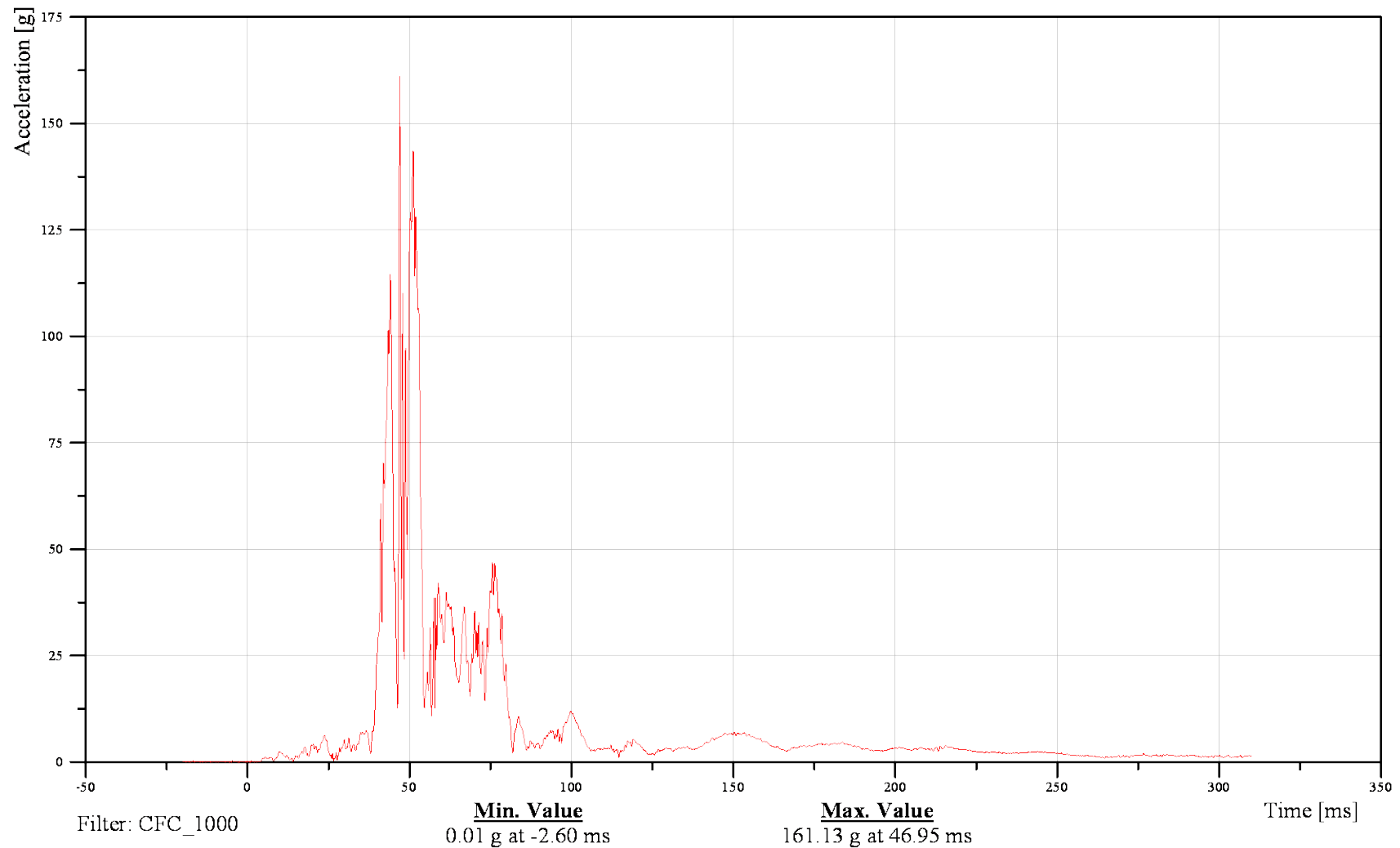
Time: 12:36

Customer: VRTC

14TRRILE03WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 3 IRTRAC Compression

Date: 06/17/2013

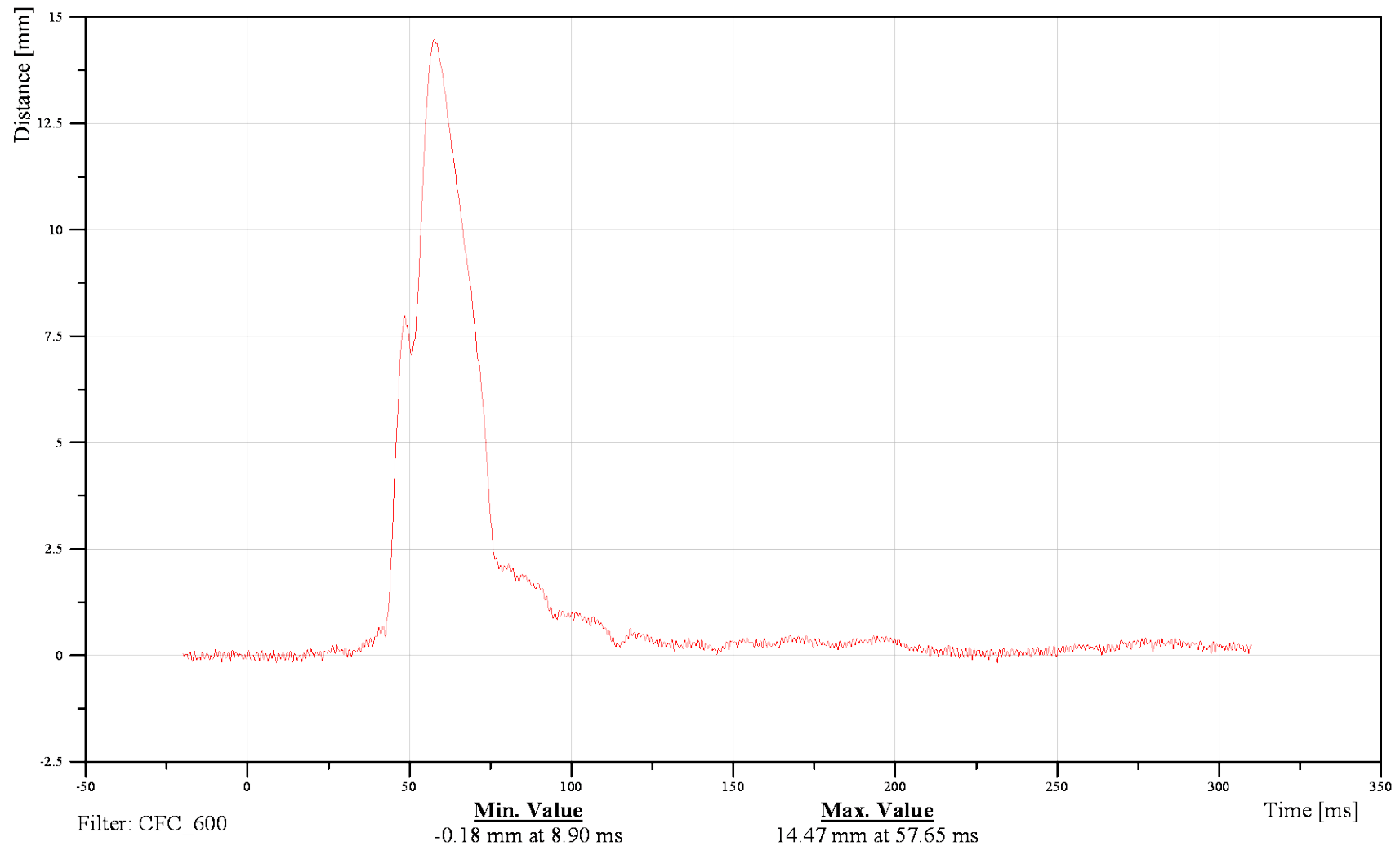
Time: 12:36

Customer: VRTC

14TRRILE03WFDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB3 Rotational Angle

Date: 06/17/2013

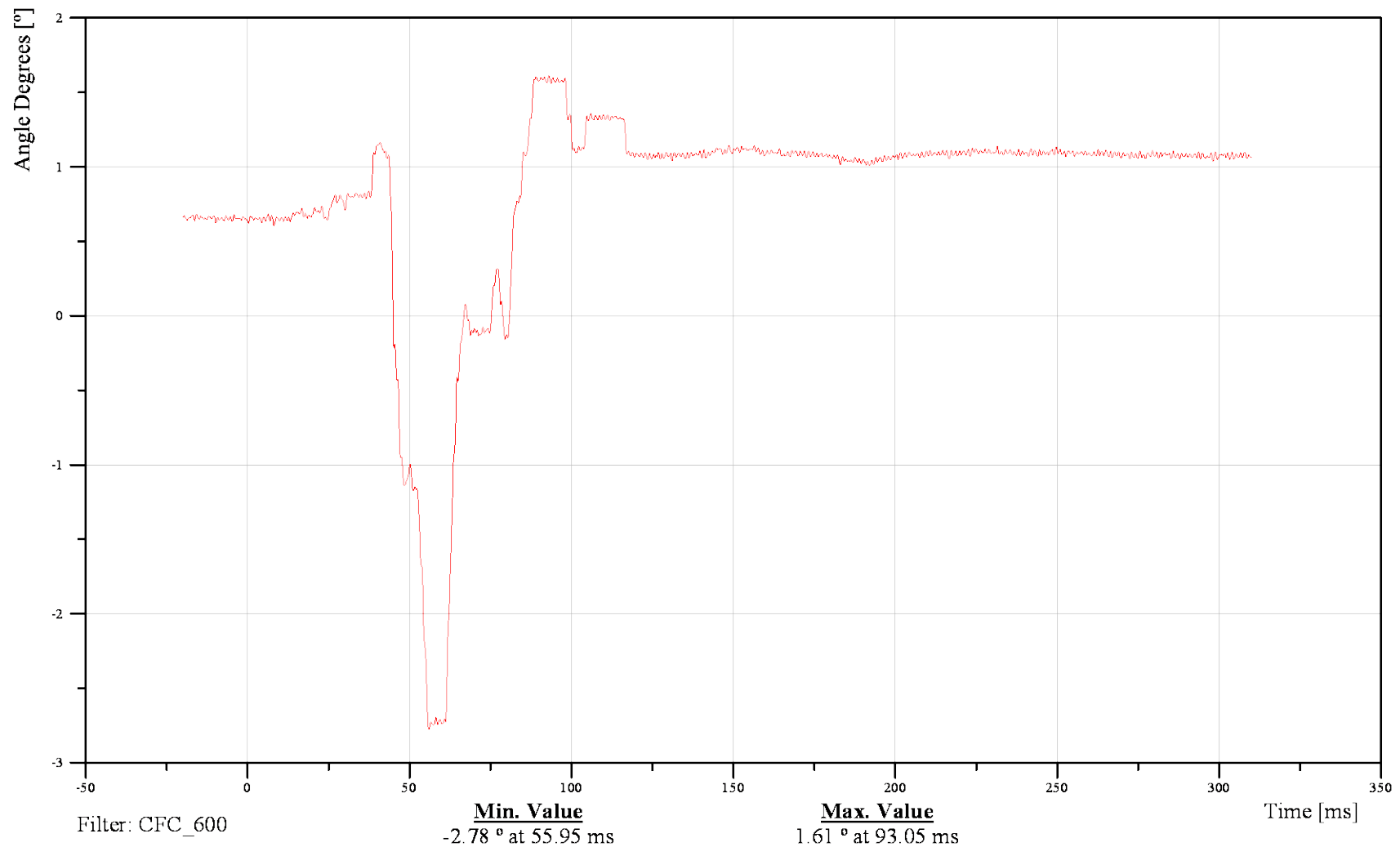
Time: 12:36

Customer: VRTC

14TRRILE03WFANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 3 IRTRAC X Deflection

Date: 06/17/2013

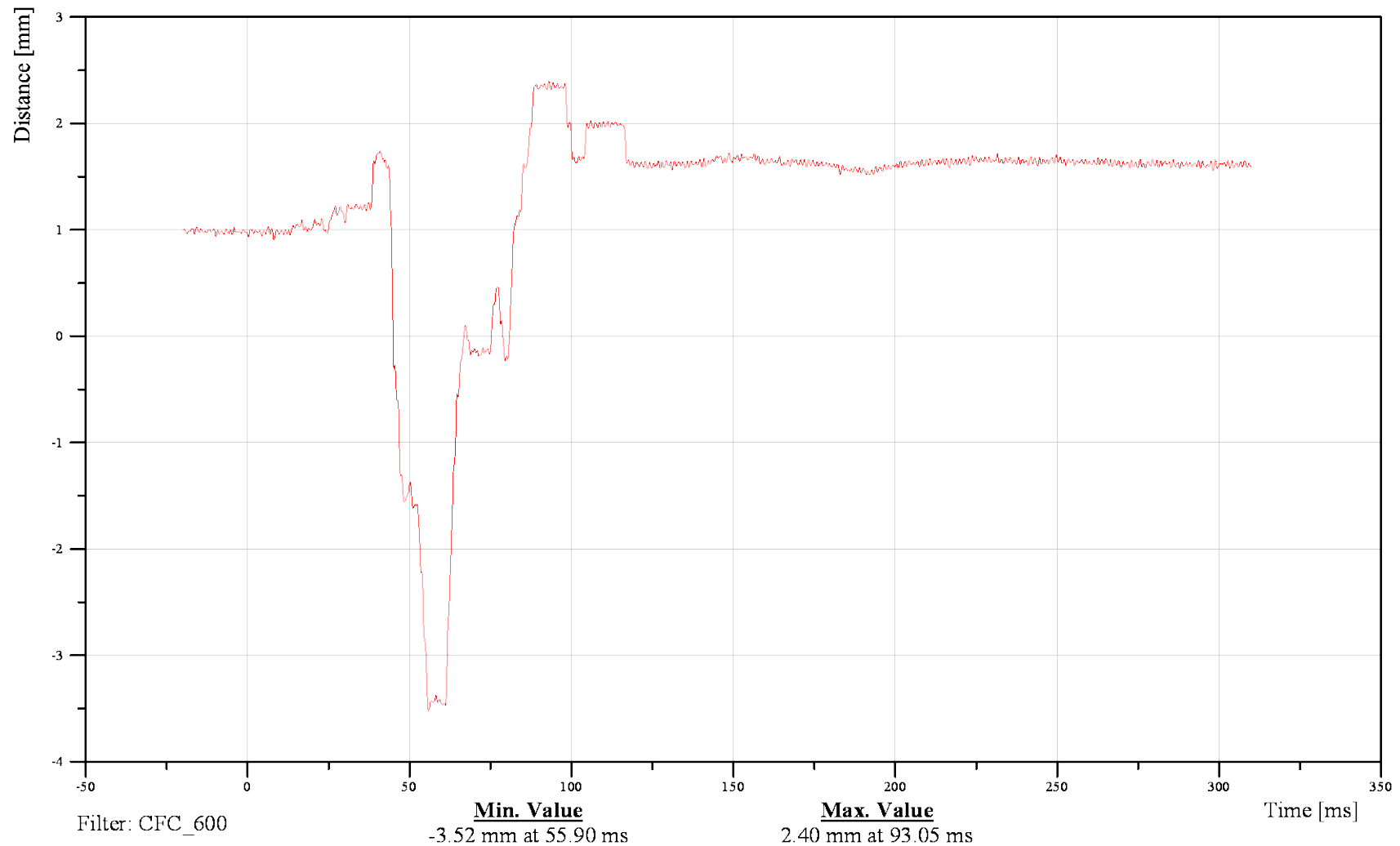
Time: 12:36

Customer: VRTC

14TRRILE03WFDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

THX RIB 3 IRTRAC Y Deflection

Date: 06/17/2013

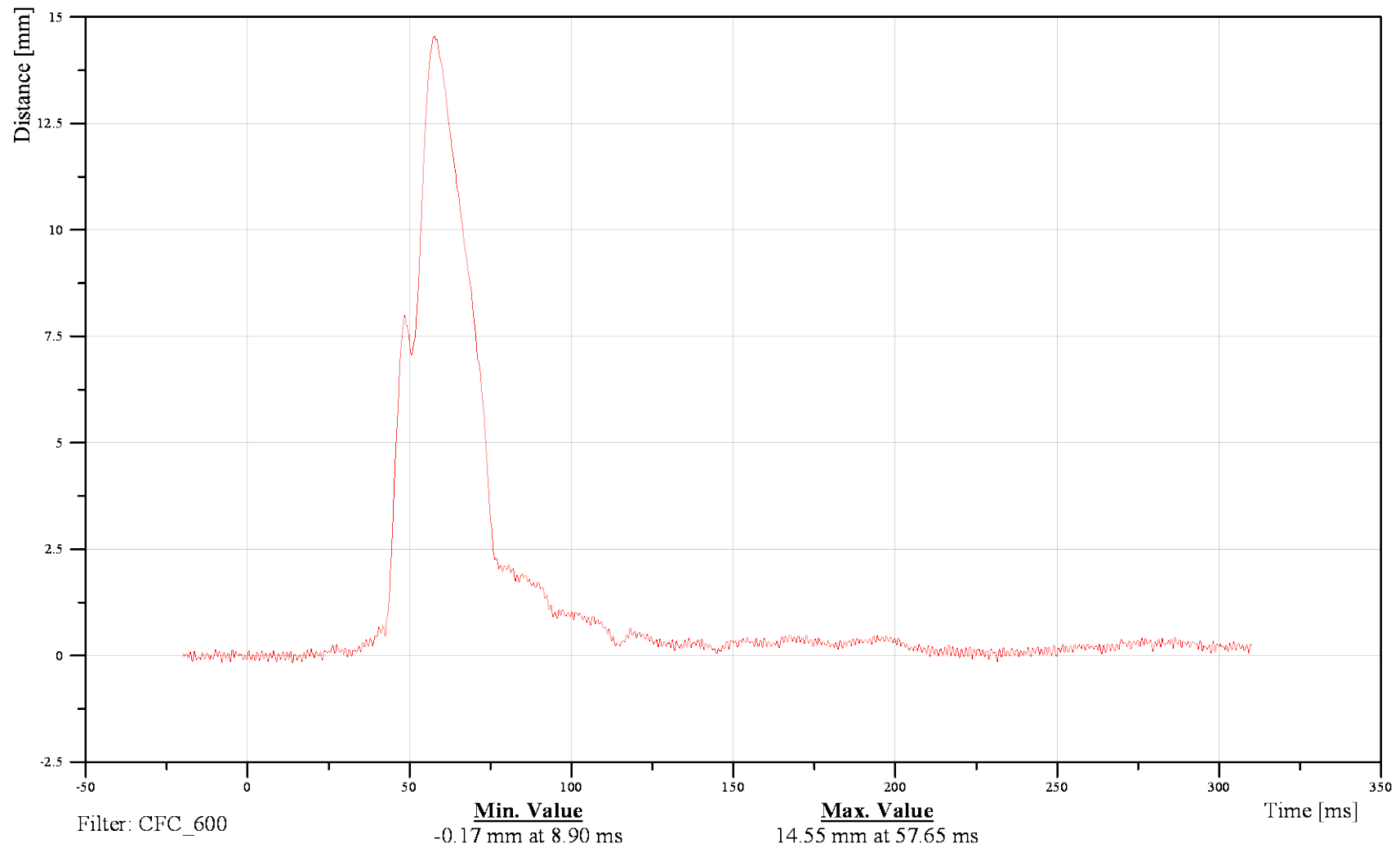
Time: 12:36

Customer: VRTC

14TRRILE03WFDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 Longitudinal Ax

Date: 06/17/2013

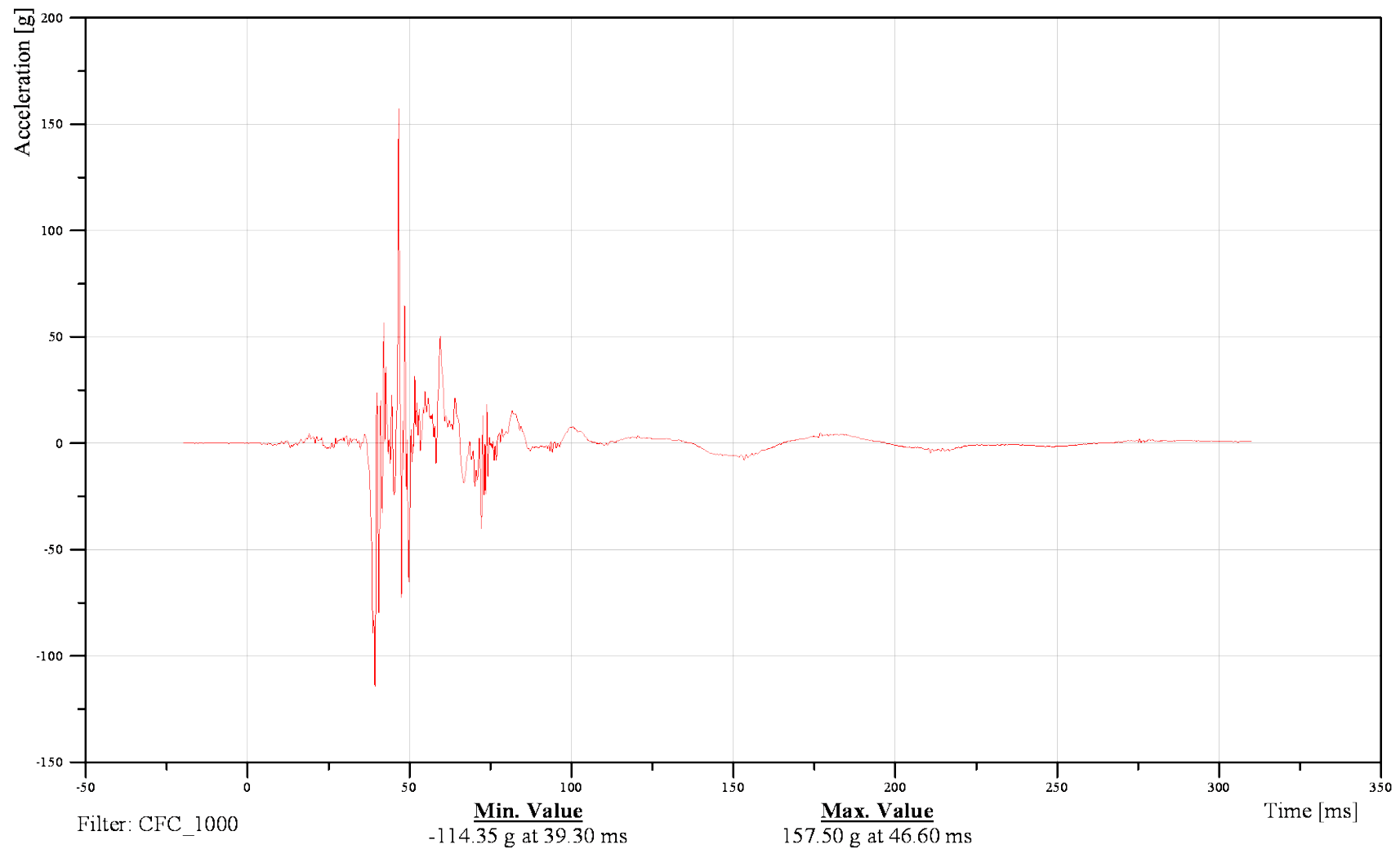
Time: 12:36

Customer: VRTC

14ABRILE01WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 Lateral Ay

Date: 06/17/2013

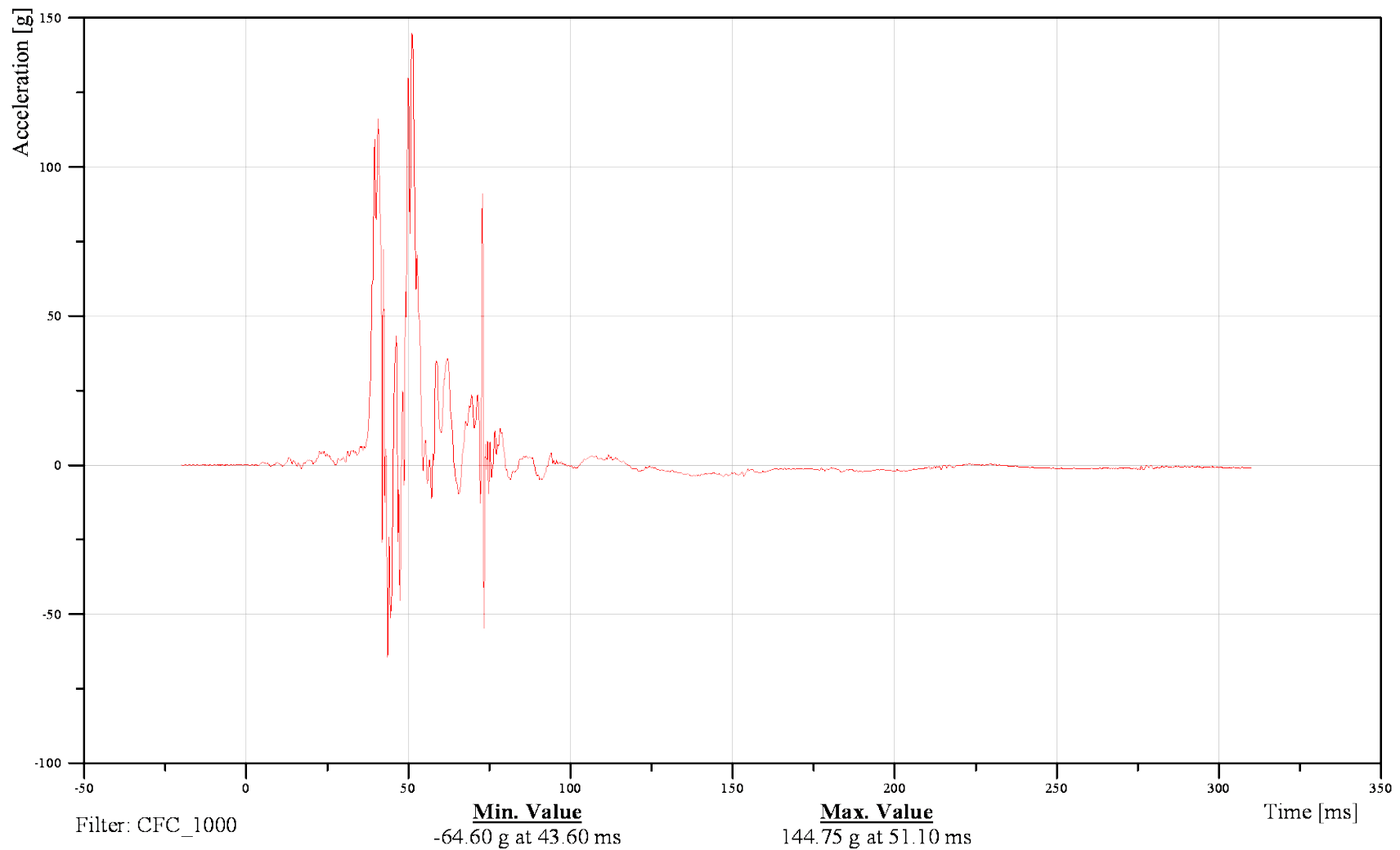
Time: 12:36

Customer: VRTC

14ABRILE01WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 Vertical Az

Date: 06/17/2013

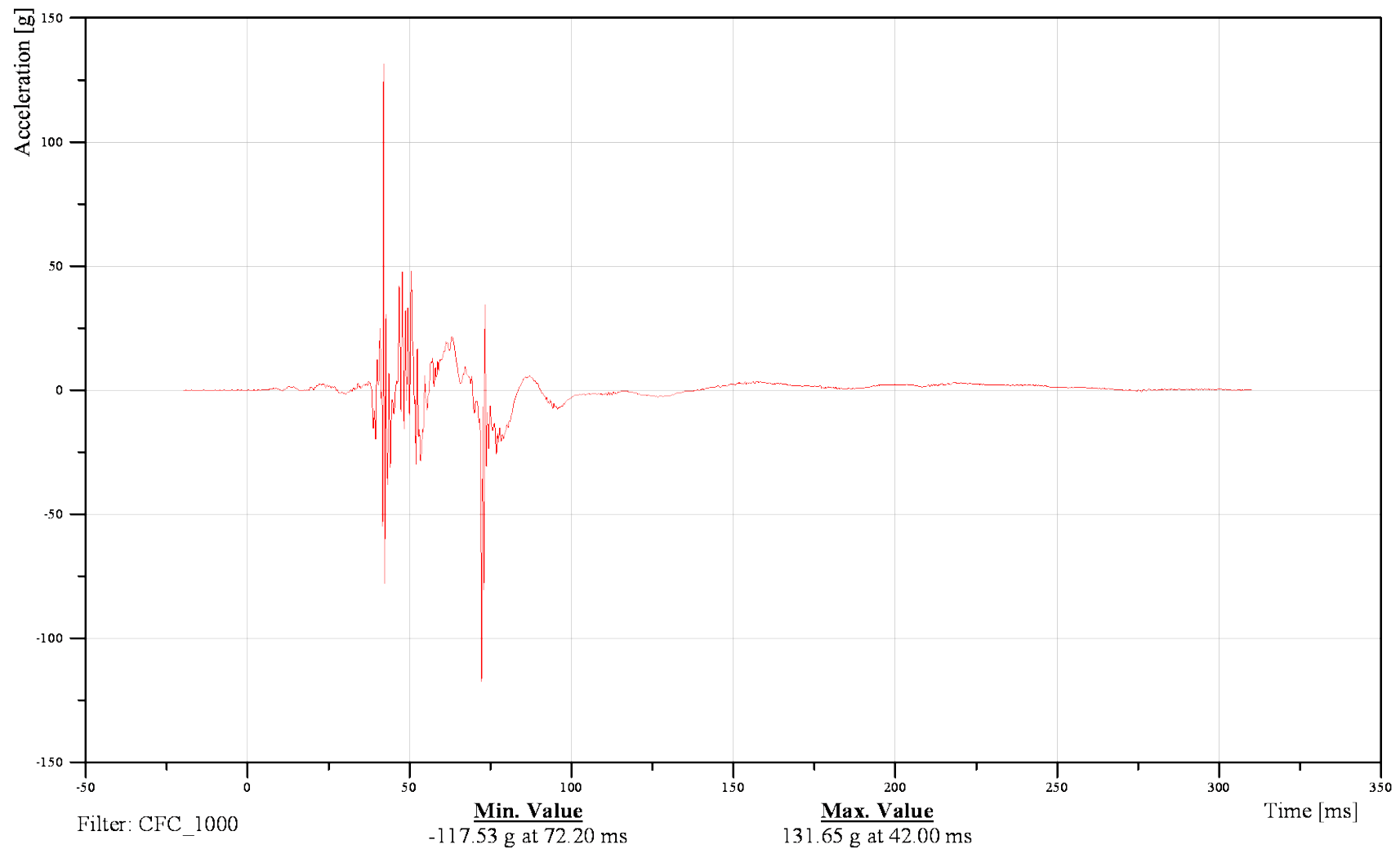
Time: 12:36

Customer: VRTC

14ABRILE01WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 1 A Resultant

Date: 06/17/2013

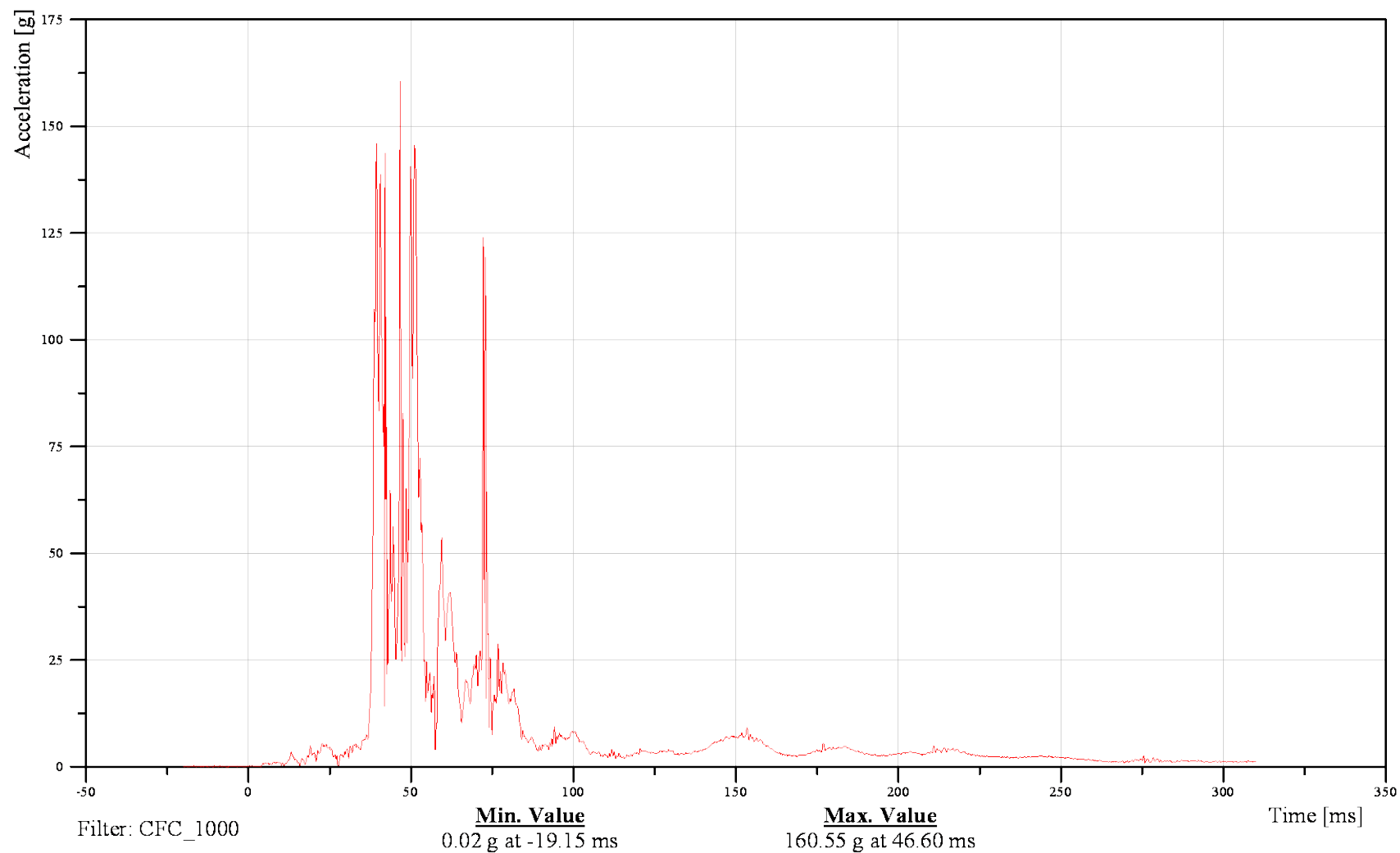
Time: 12:36

Customer: VRTC

14ABRILE01WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 1 IRTRAC Compression

Date: 06/17/2013

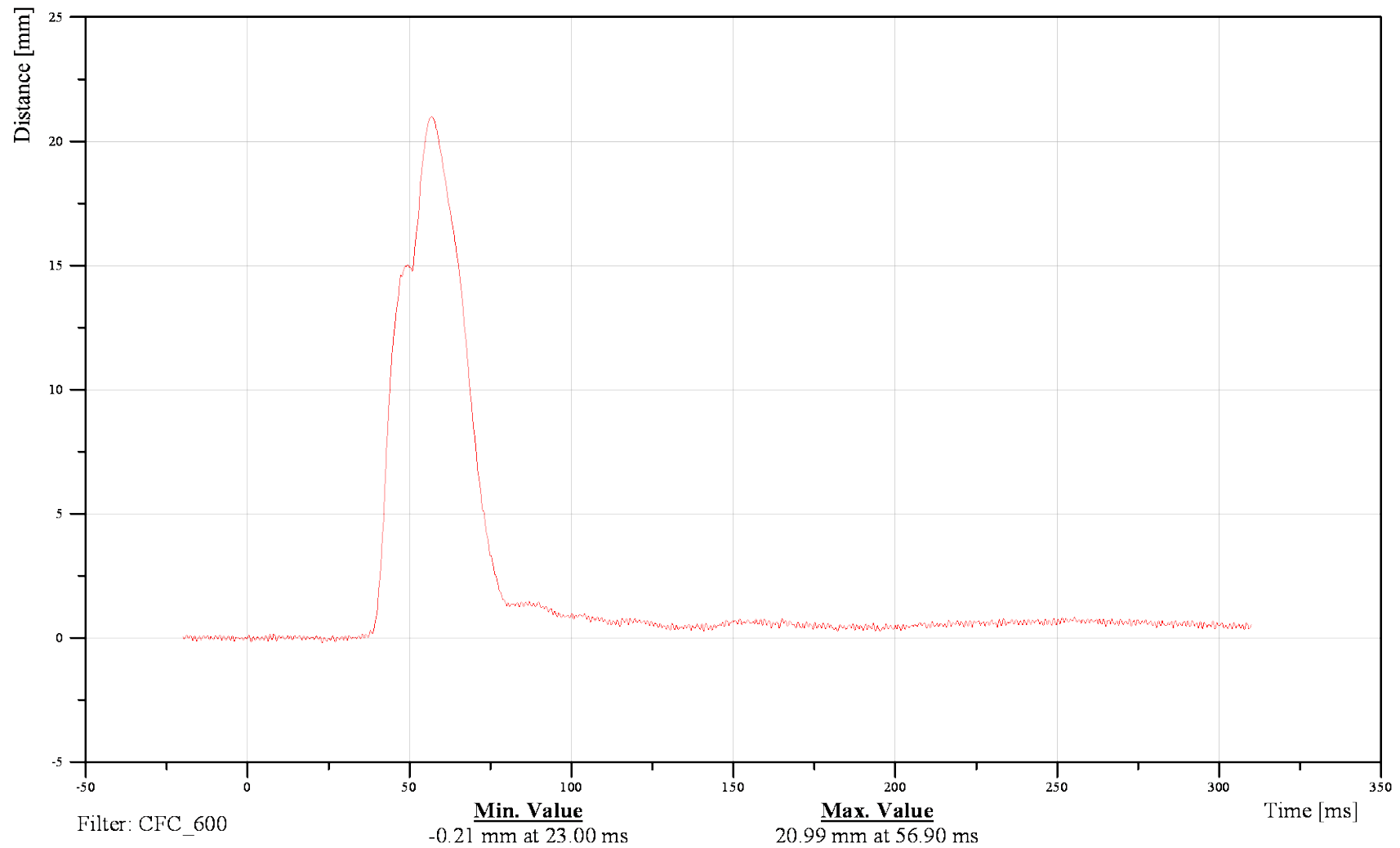
Time: 12:36

Customer: VRTC

14ABRILE01WFDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB1 Rotational Angle

Date: 06/17/2013

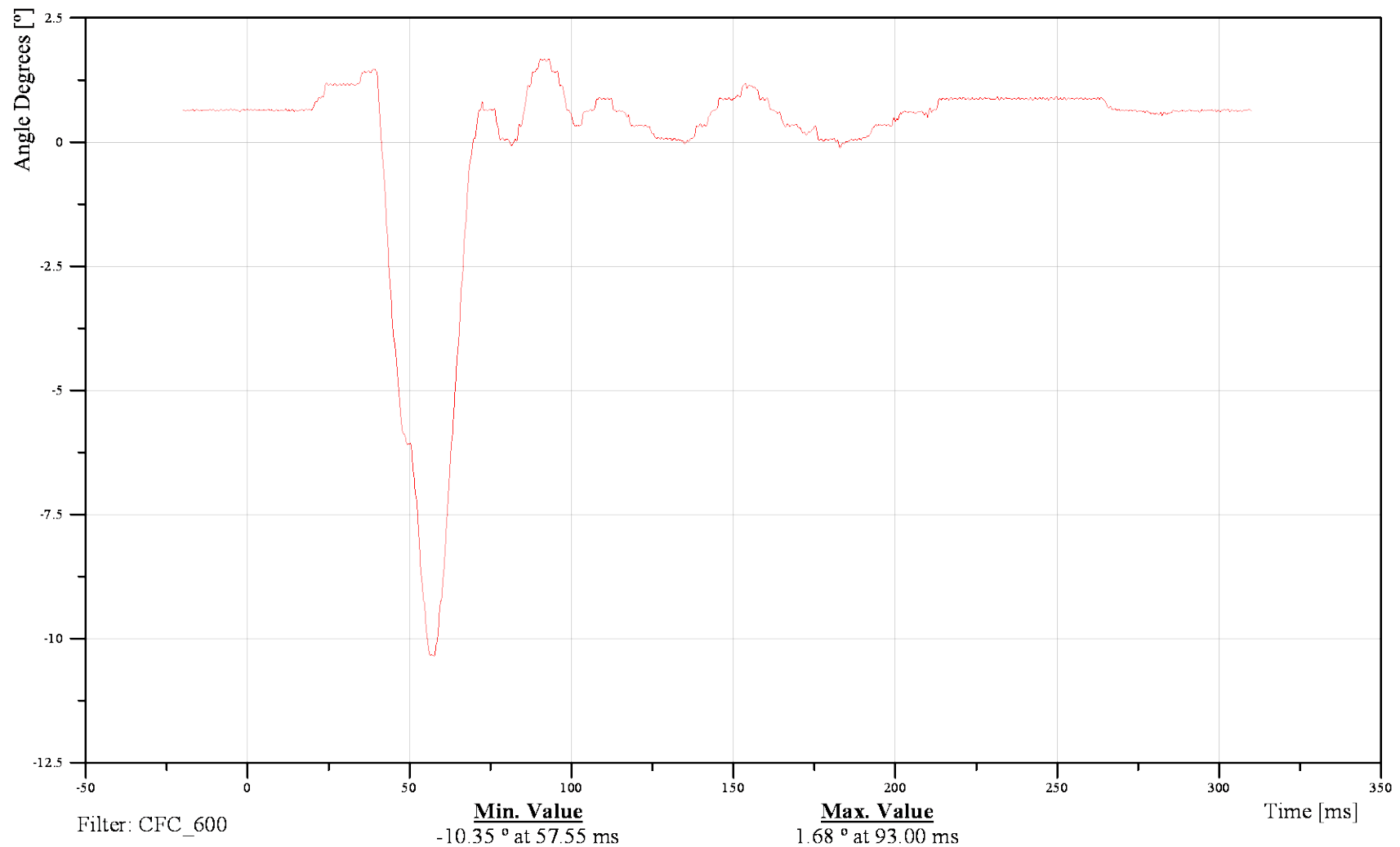
Time: 12:36

Customer: VRTC

14ABRILE01WFANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 1 IRTRAC X Deflection

Date: 06/17/2013

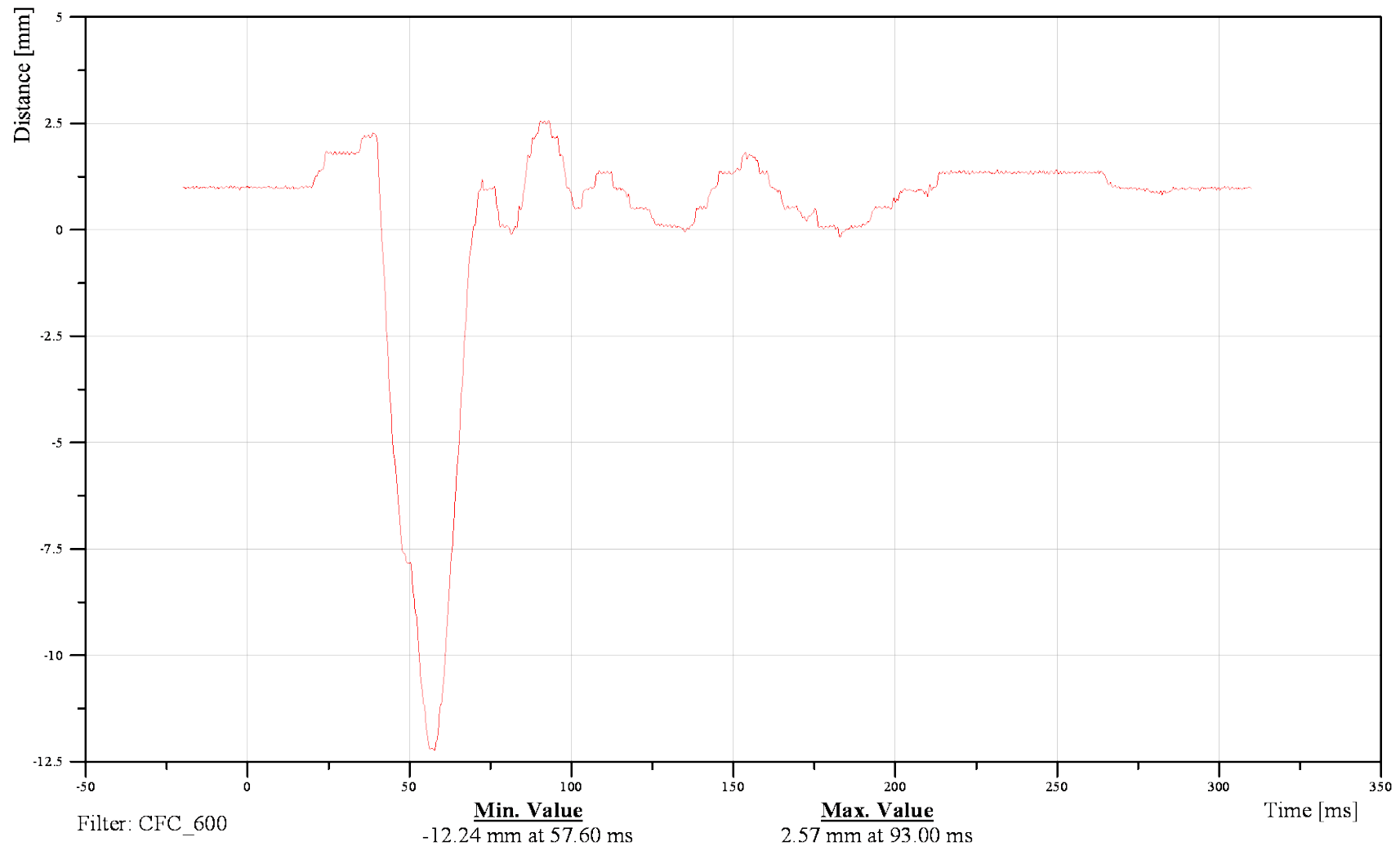
Time: 12:36

Customer: VRTC

14ABRILE01WFDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 1 IRTRAC Y Deflection

Date: 06/17/2013

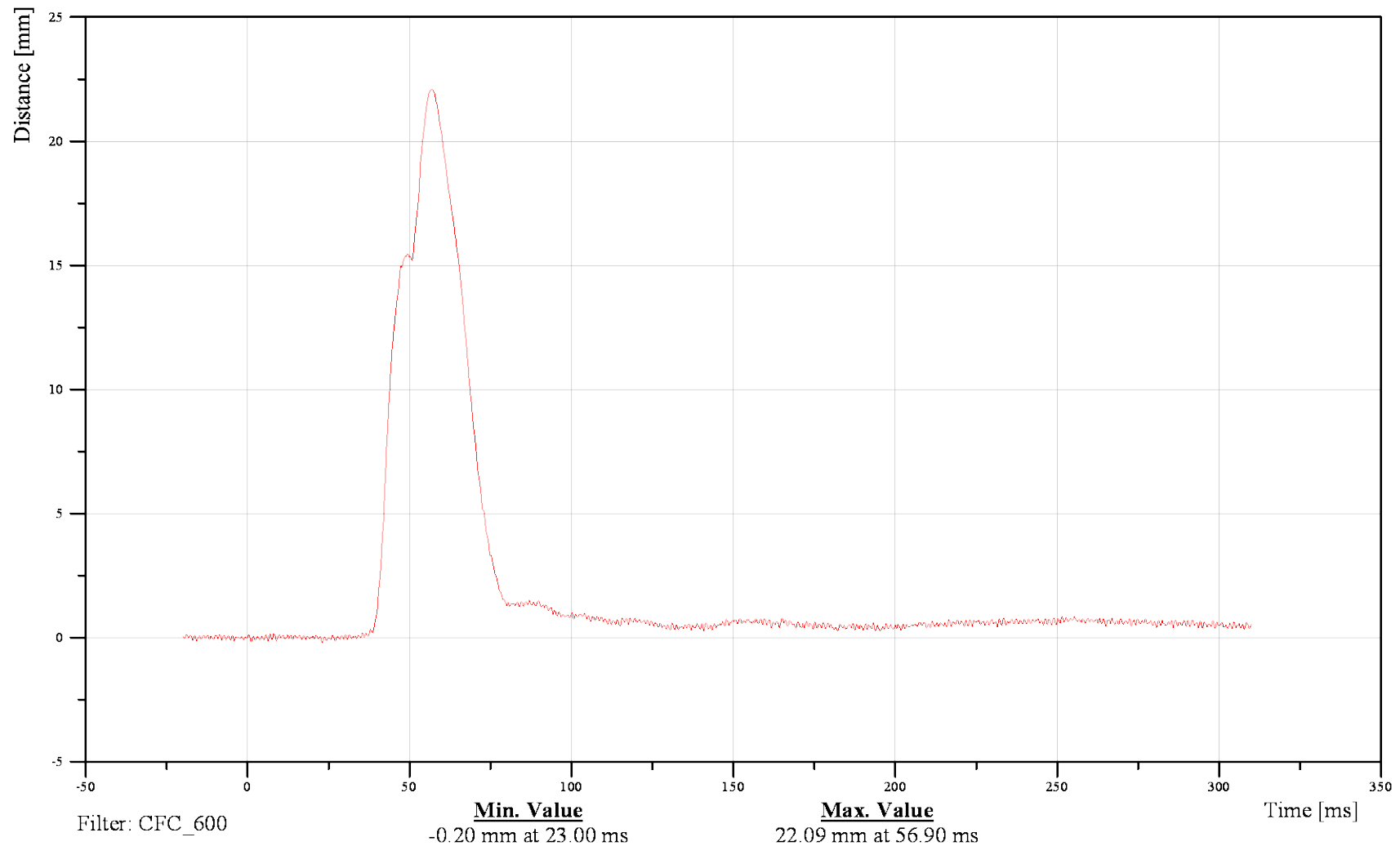
Time: 12:36

Customer: VRTC

14ABRILE01WFDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Longitudinal Ax

Date: 06/17/2013

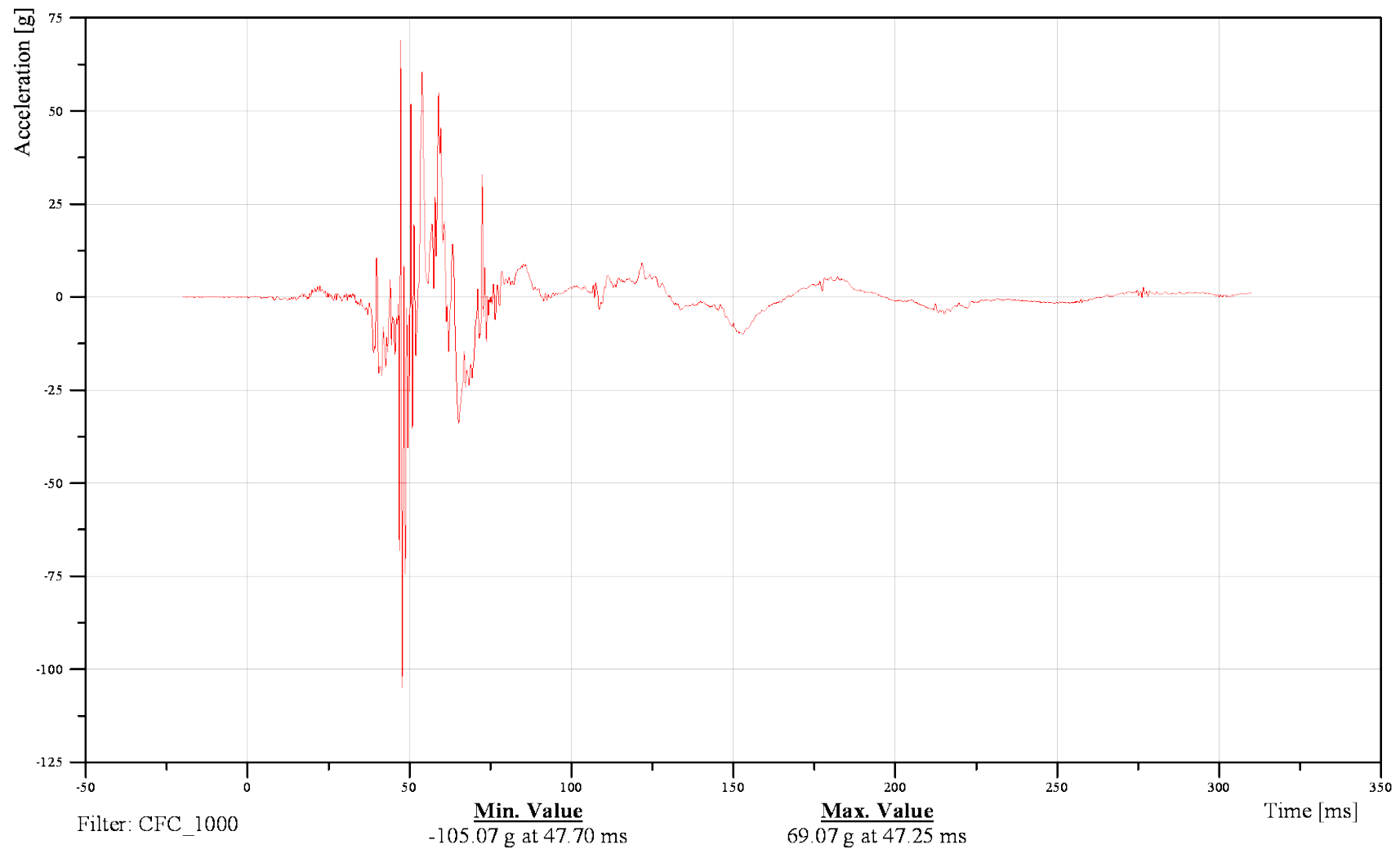
Time: 12:36

Customer: VRTC

14ABRILE02WFACXA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Lateral Ay

Date: 06/17/2013

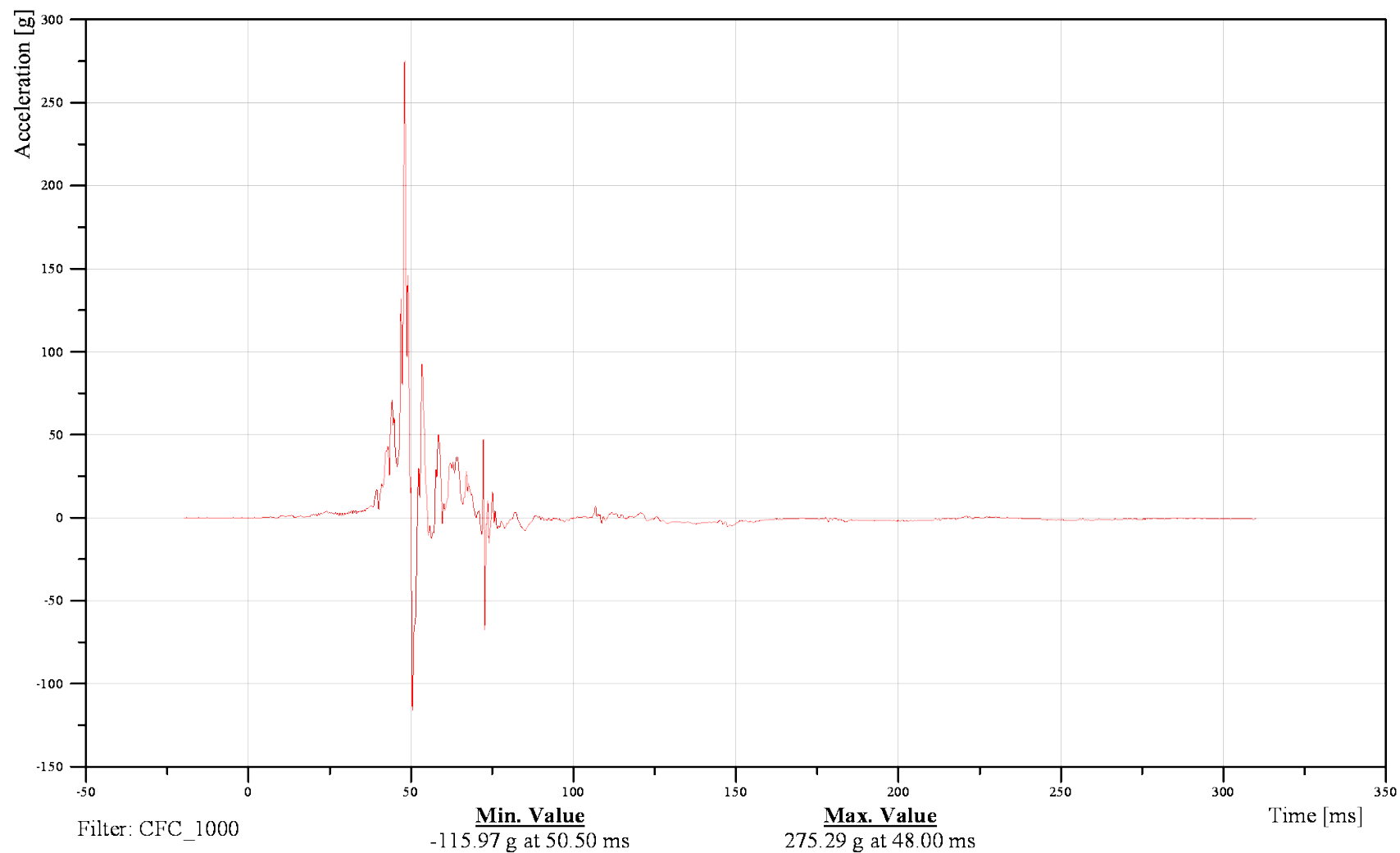
Time: 12:36

Customer: VRTC

14ABRILE02WFACYA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 Vertical Az

Date: 06/17/2013

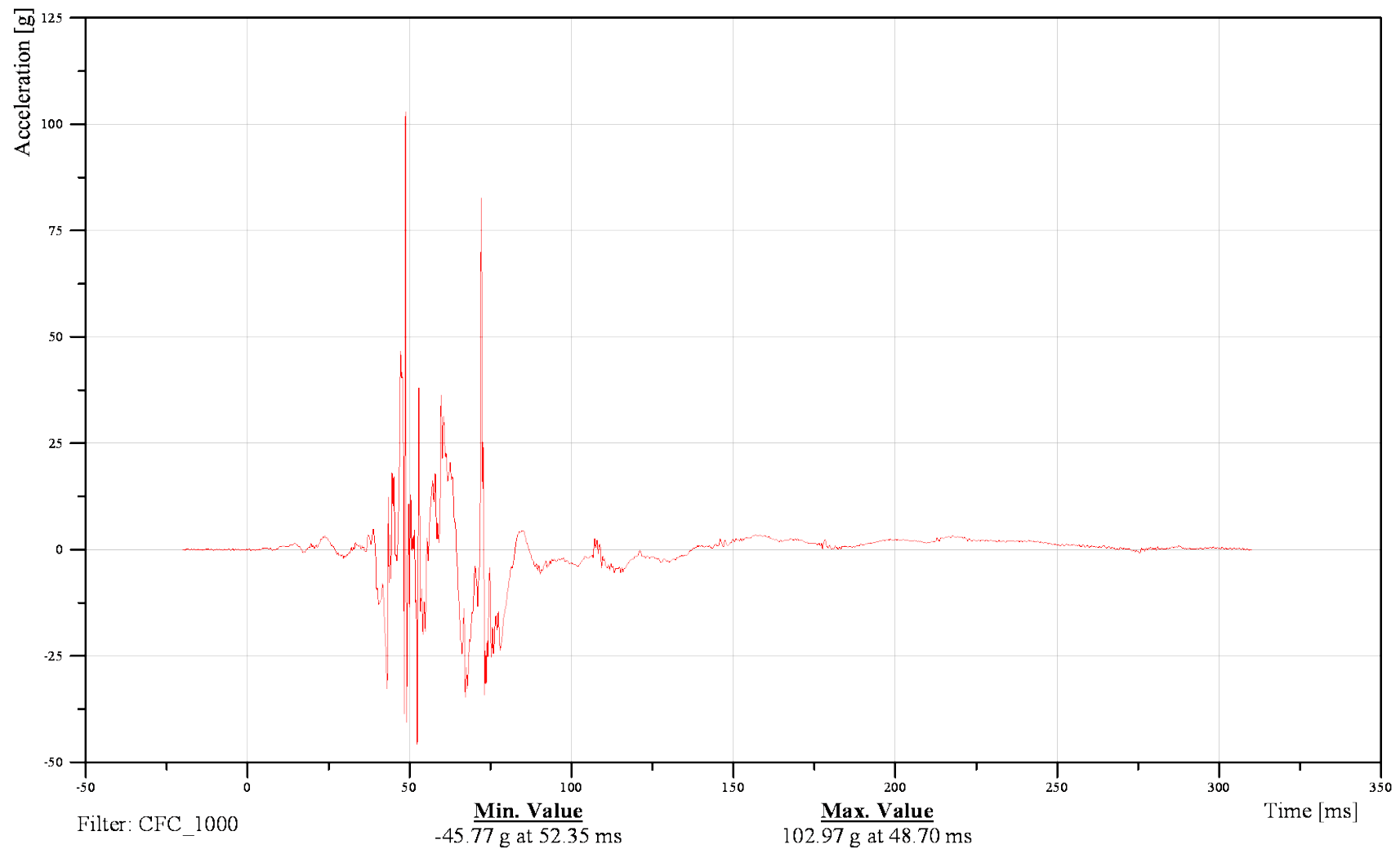
Time: 12:36

Customer: VRTC

14ABRILE02WFACZA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Abdominal Rib 2 A Resultant

Date: 06/17/2013

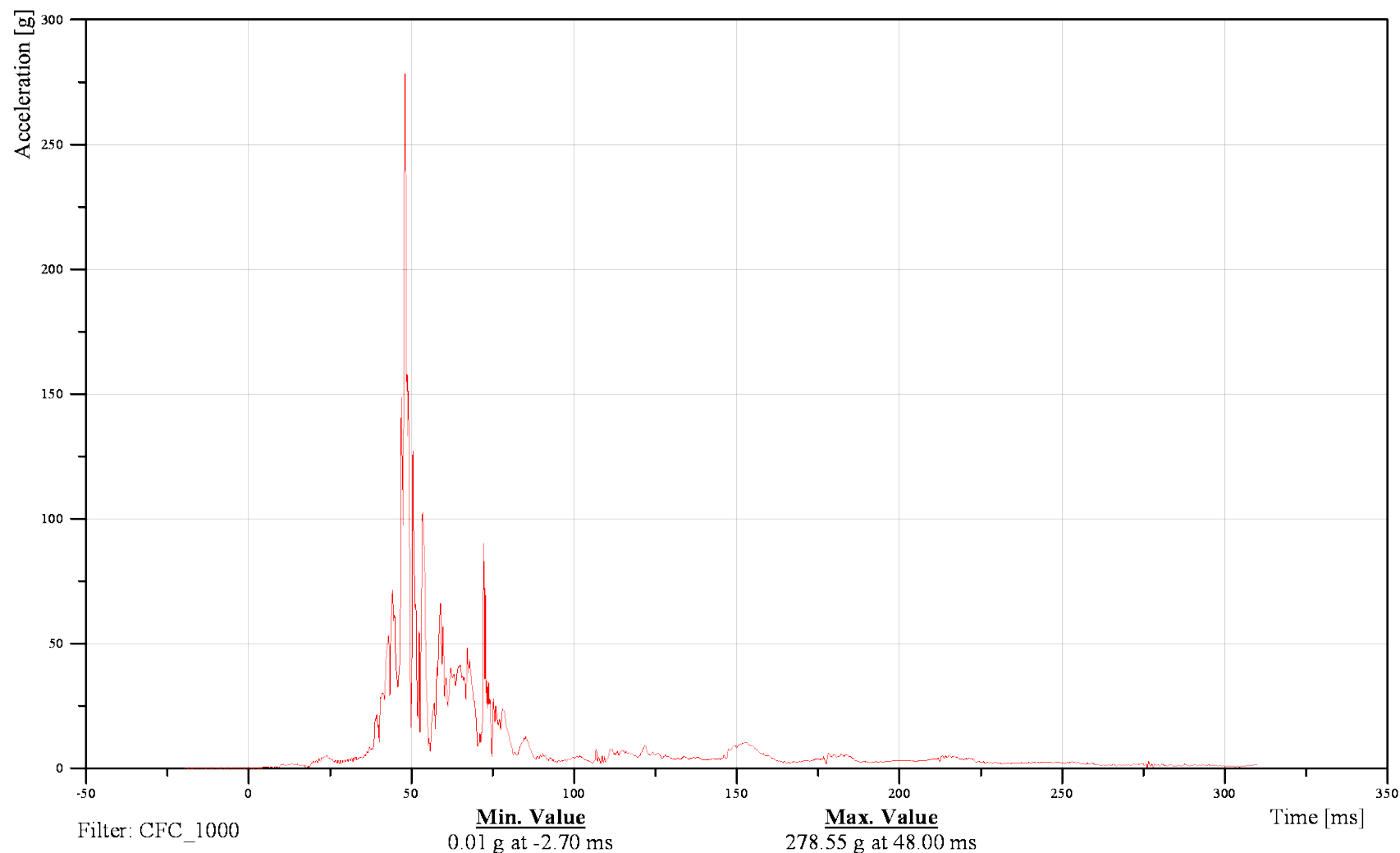
Time: 12:36

Customer: VRTC

14ABRILE02WFACRA

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 2 IRTRAC Compression

Date: 06/17/2013

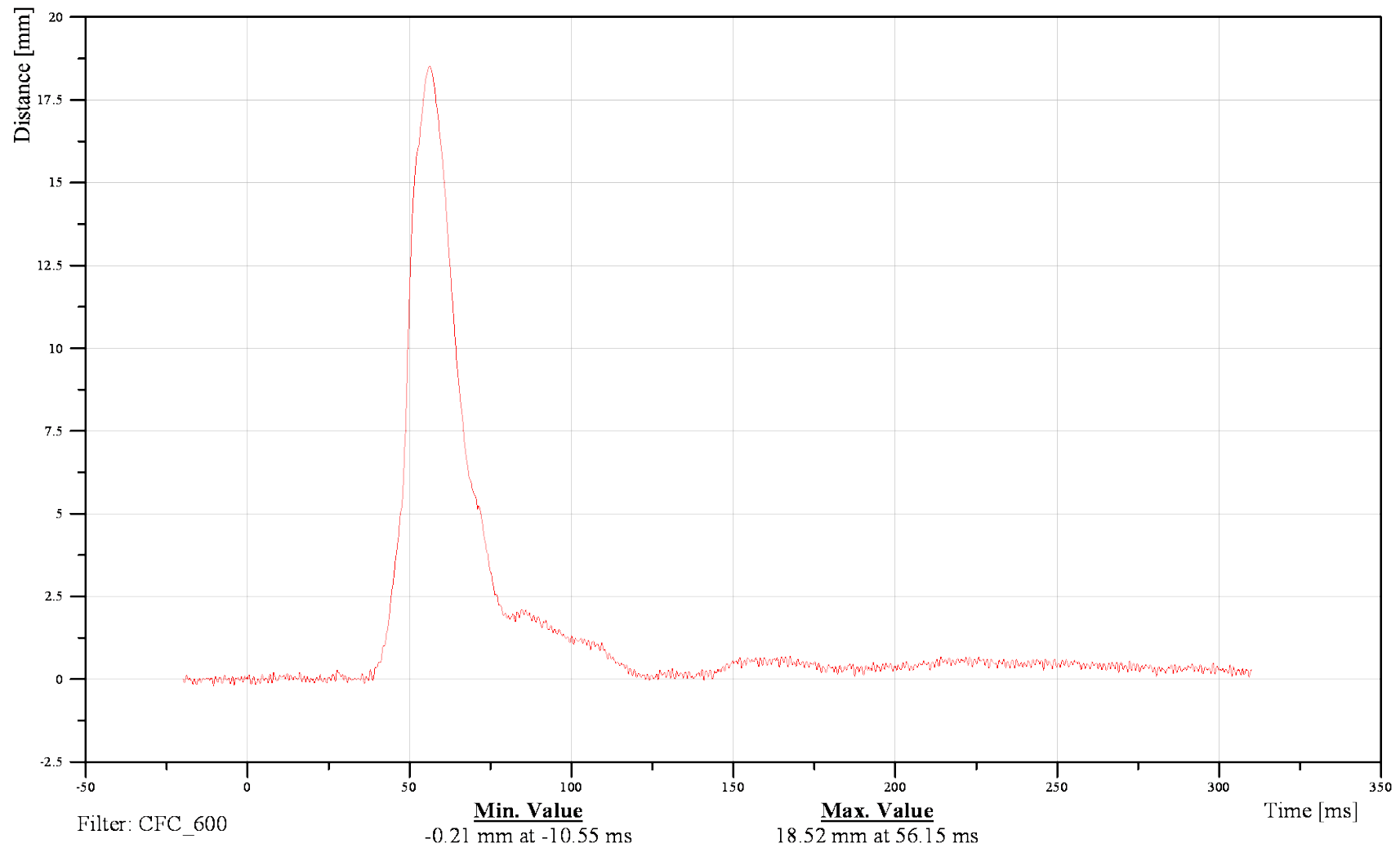
Time: 12:36

Customer: VRTC

14ABRILE02WFDC0B

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB2 Rotational Angle

Date: 06/17/2013

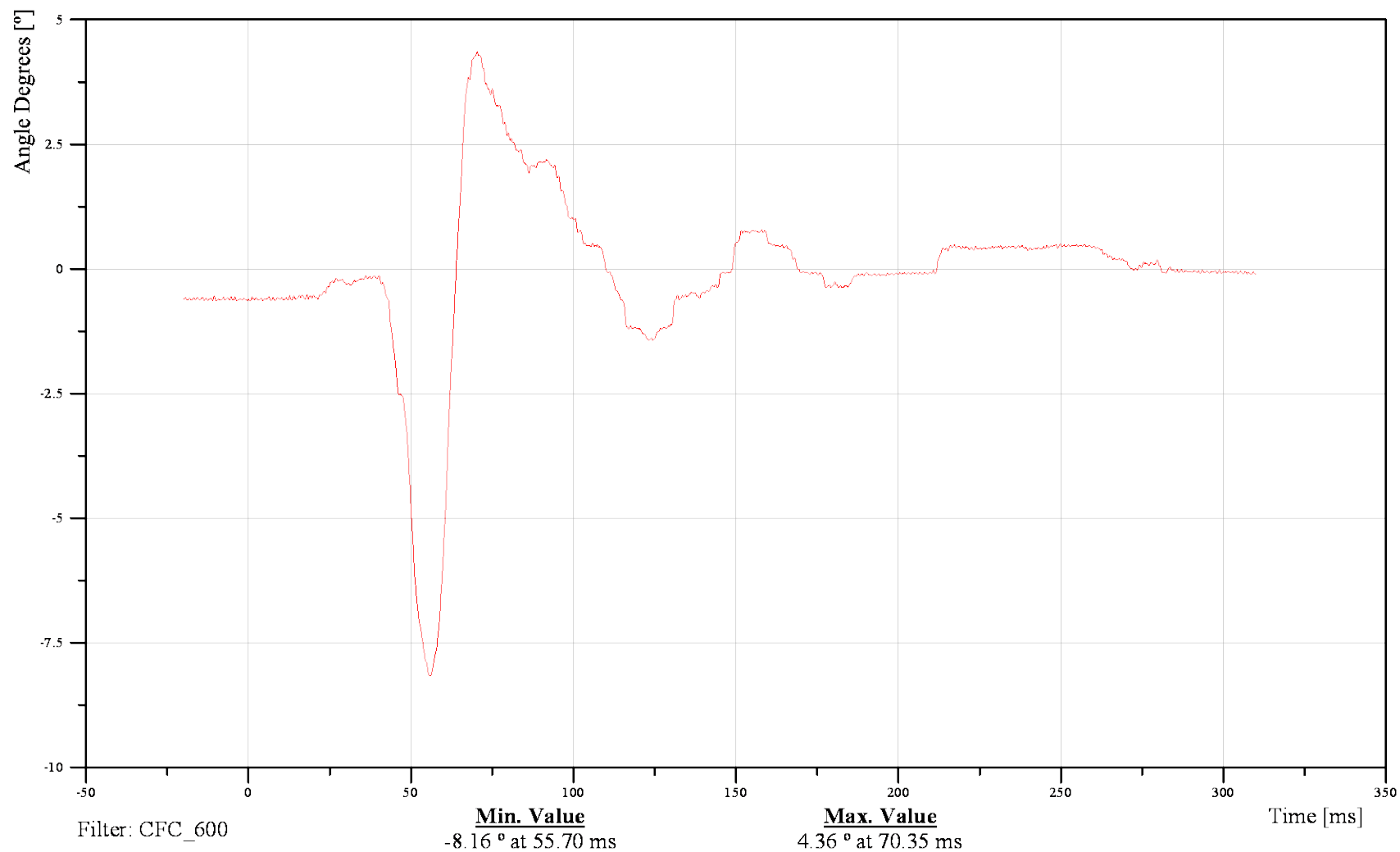
Time: 12:36

Customer: VRTC

14ABRILE02WFANZB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 2 IRTRAC X Deflection

Date: 06/17/2013

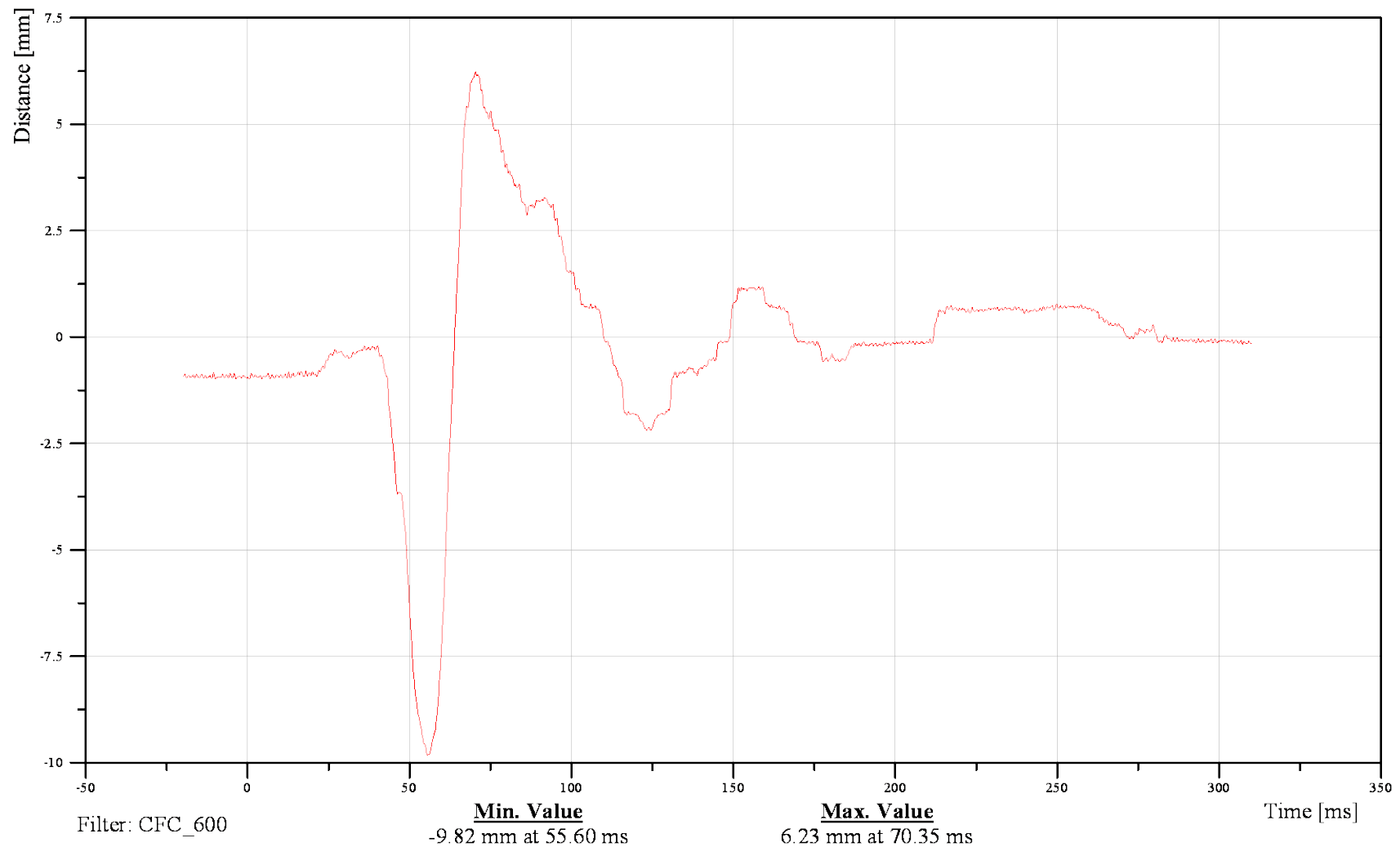
Time: 12:36

Customer: VRTC

14ABRILE02WFDSXB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ABD RIB 2 IRTRAC Y Deflection

Date: 06/17/2013

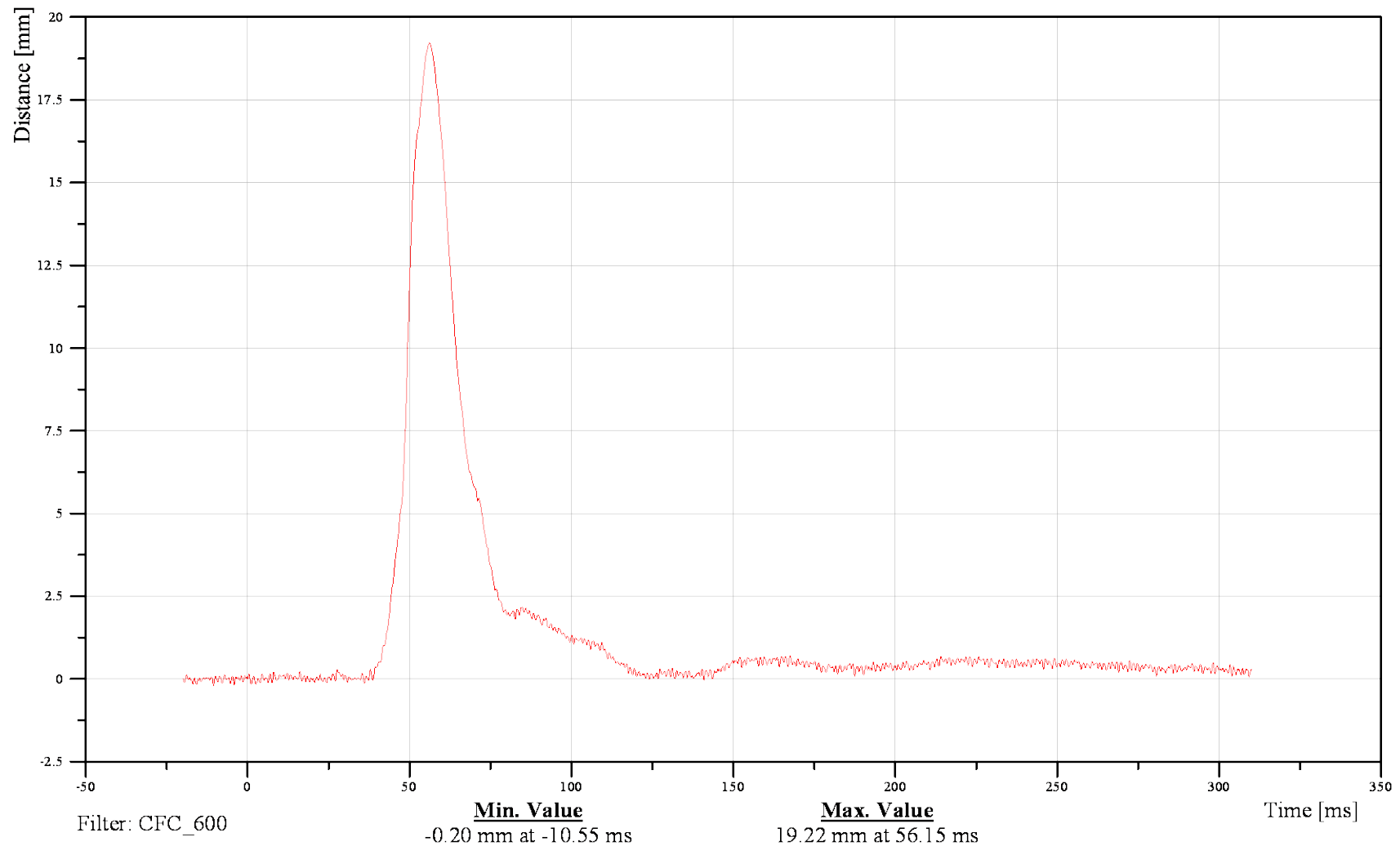
Time: 12:36

Customer: VRTC

14ABRILE02WFDSYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 Longitudinal Ax

Date: 06/17/2013

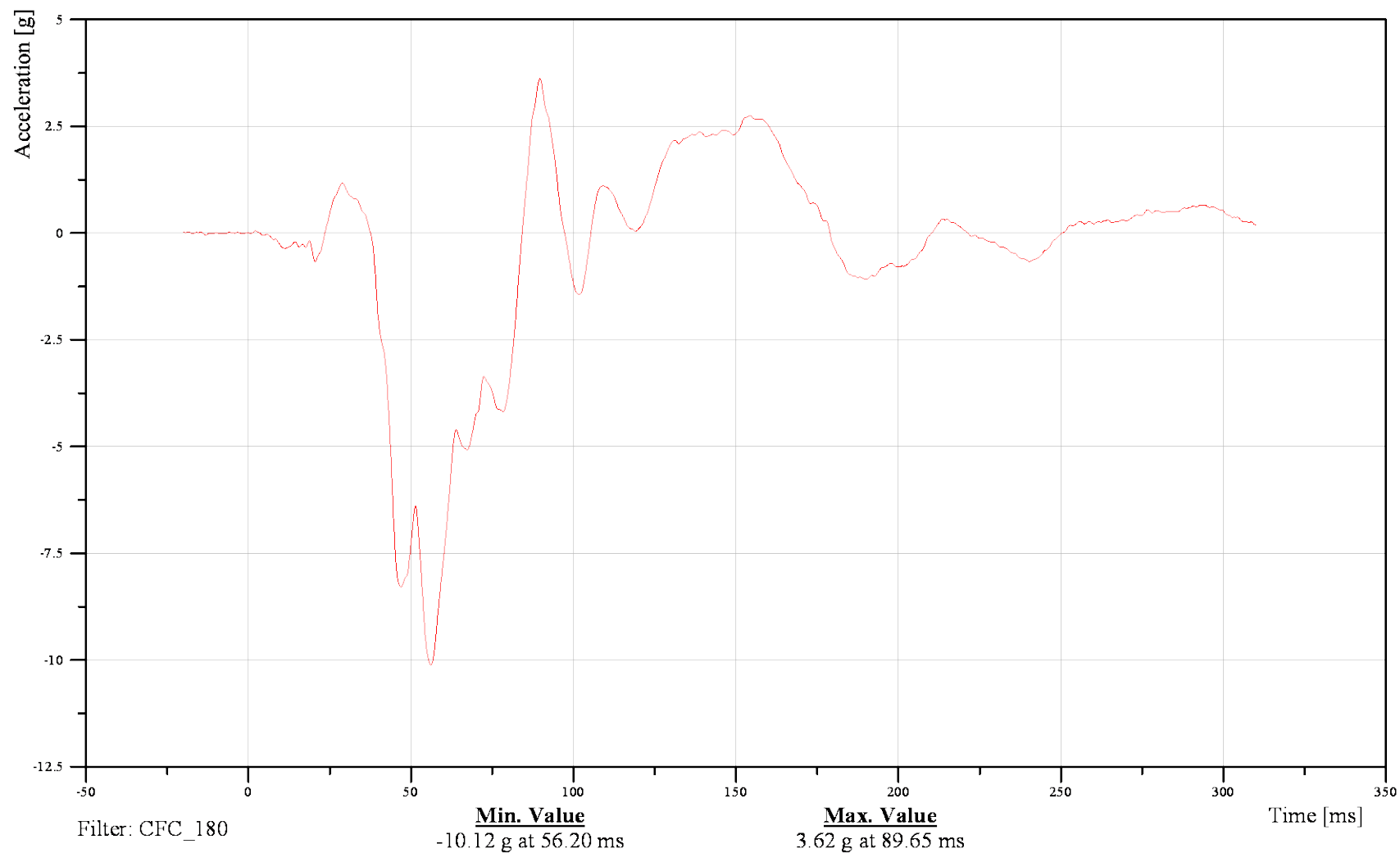
Time: 12:36

Customer: VRTC

14THSP0400WFACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 Lateral Ay

Date: 06/17/2013

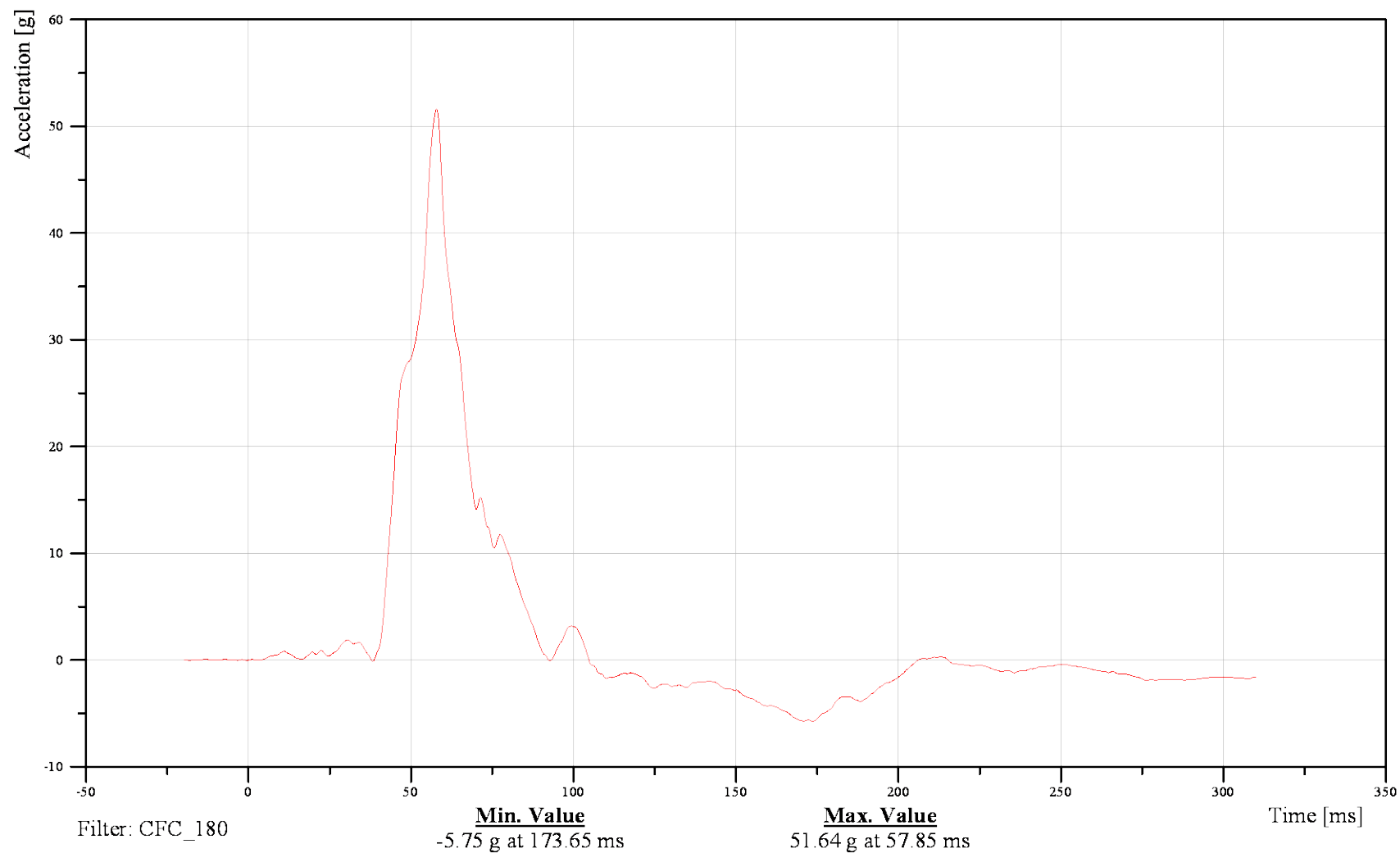
Time: 12:36

Customer: VRTC

14THSP0400WFACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 Vertical Az

Date: 06/17/2013

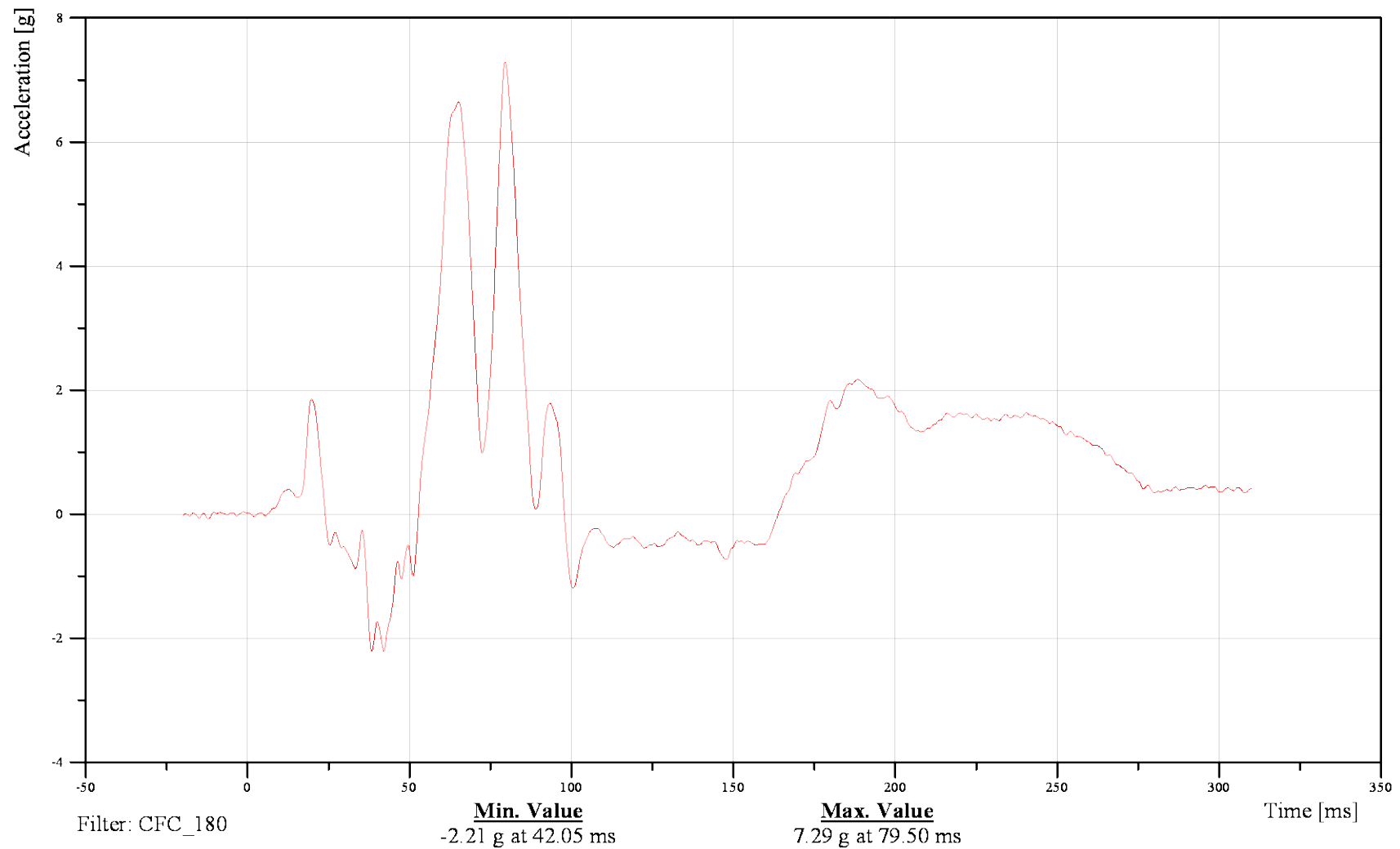
Time: 12:36

Customer: VRTC

14THSP0400WFACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T4 A Resultant

Date: 06/17/2013

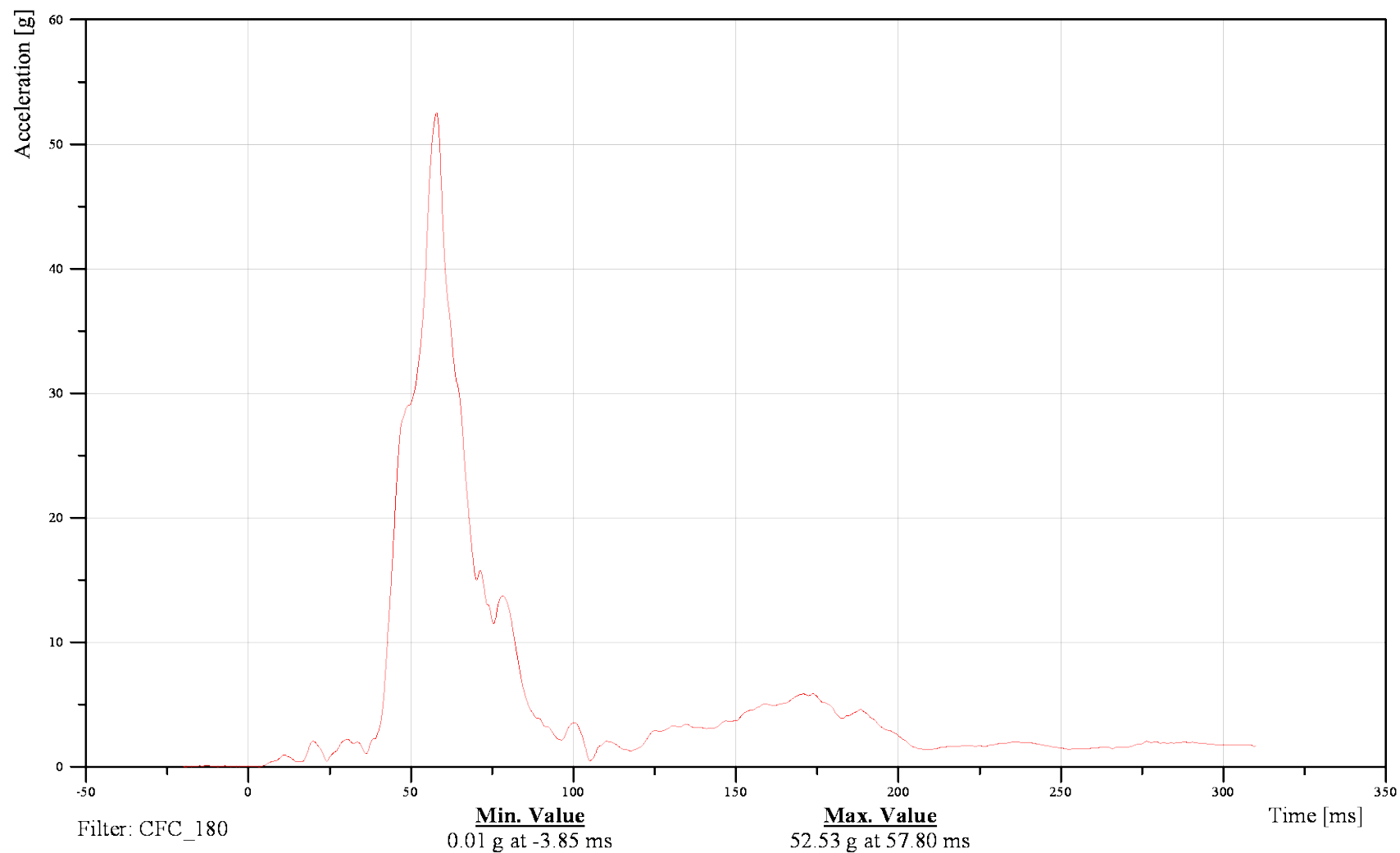
Time: 12:36

Customer: VRTC

14THSP0400WFACRC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 Longitudinal Ax

Date: 06/17/2013

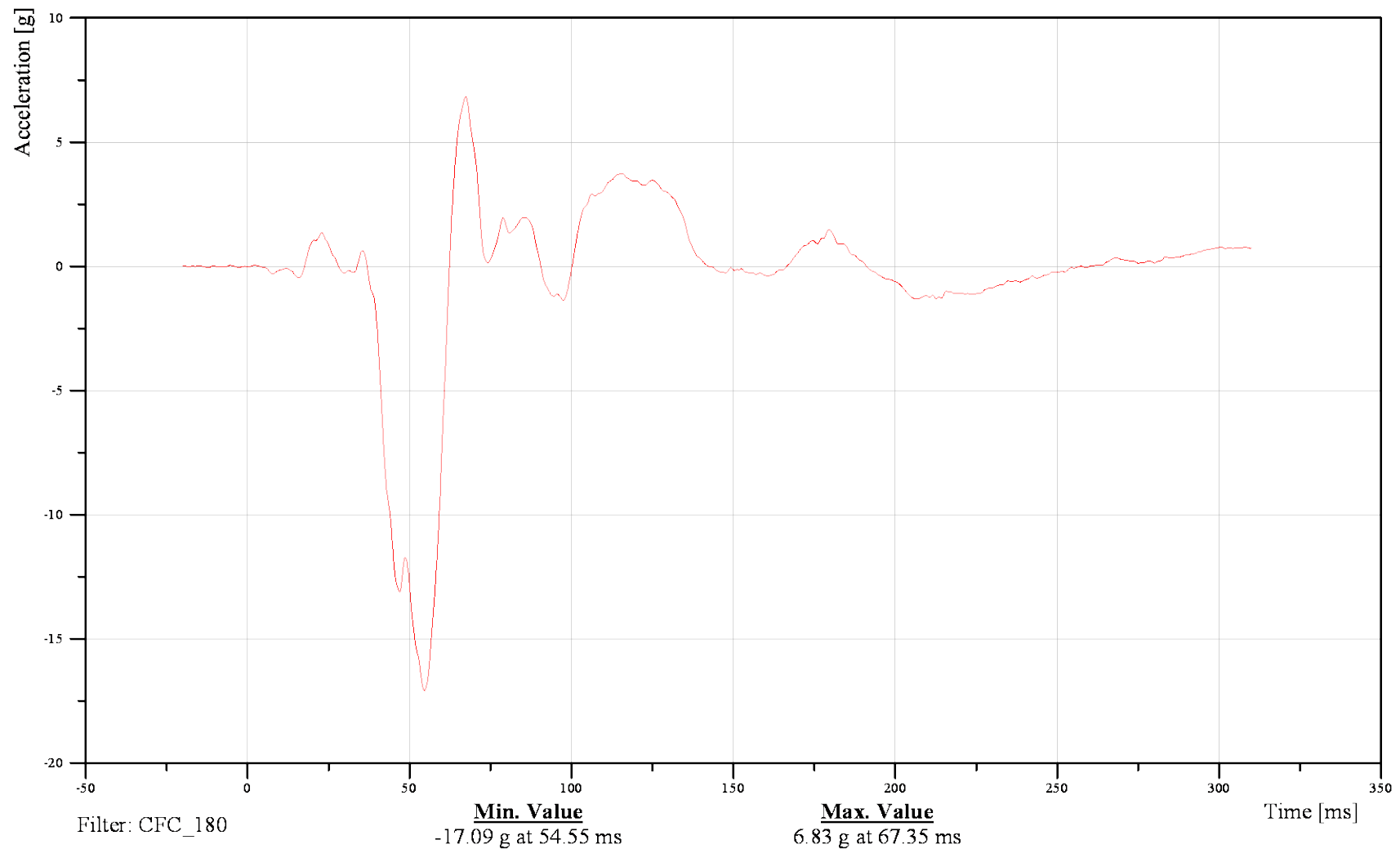
Time: 12:36

Customer: VRTC

14THSP1200WFACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 Lateral Ay

Date: 06/17/2013

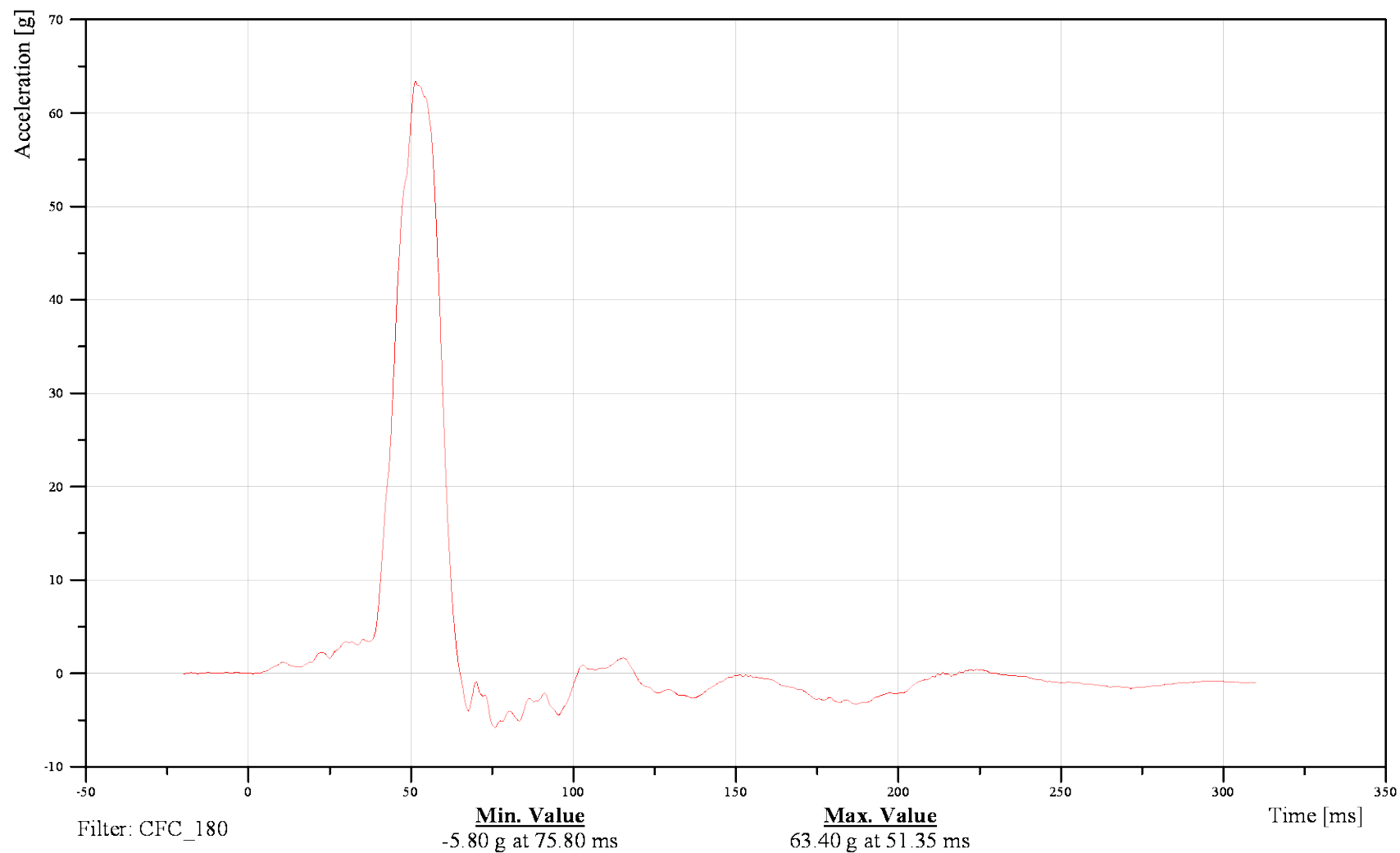
Time: 12:36

Customer: VRTC

14THSP1200WFACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 Vertical Az

Date: 06/17/2013

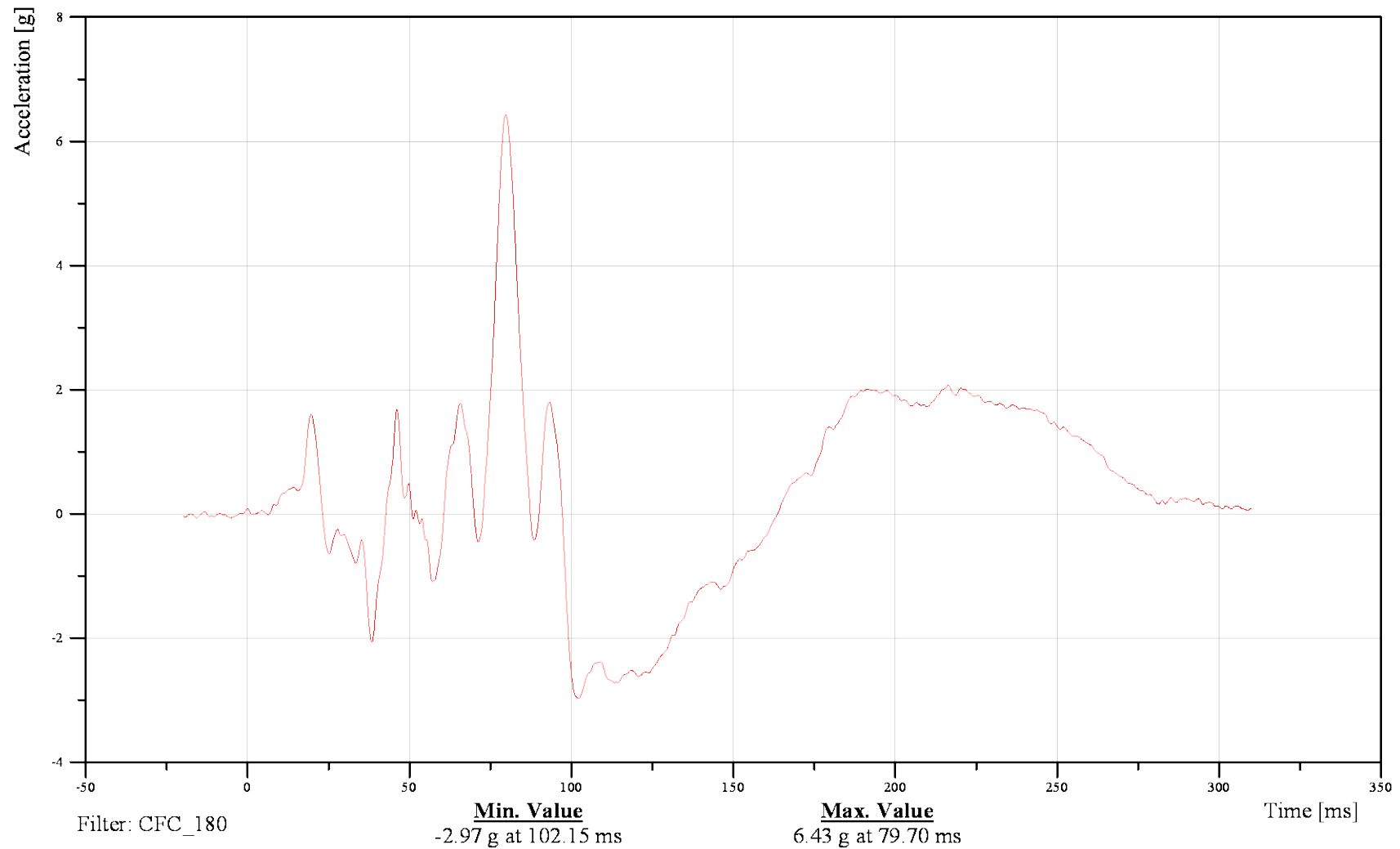
Time: 12:36

Customer: VRTC

14THSP1200WFACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

T12 A Resultant

Date: 06/17/2013

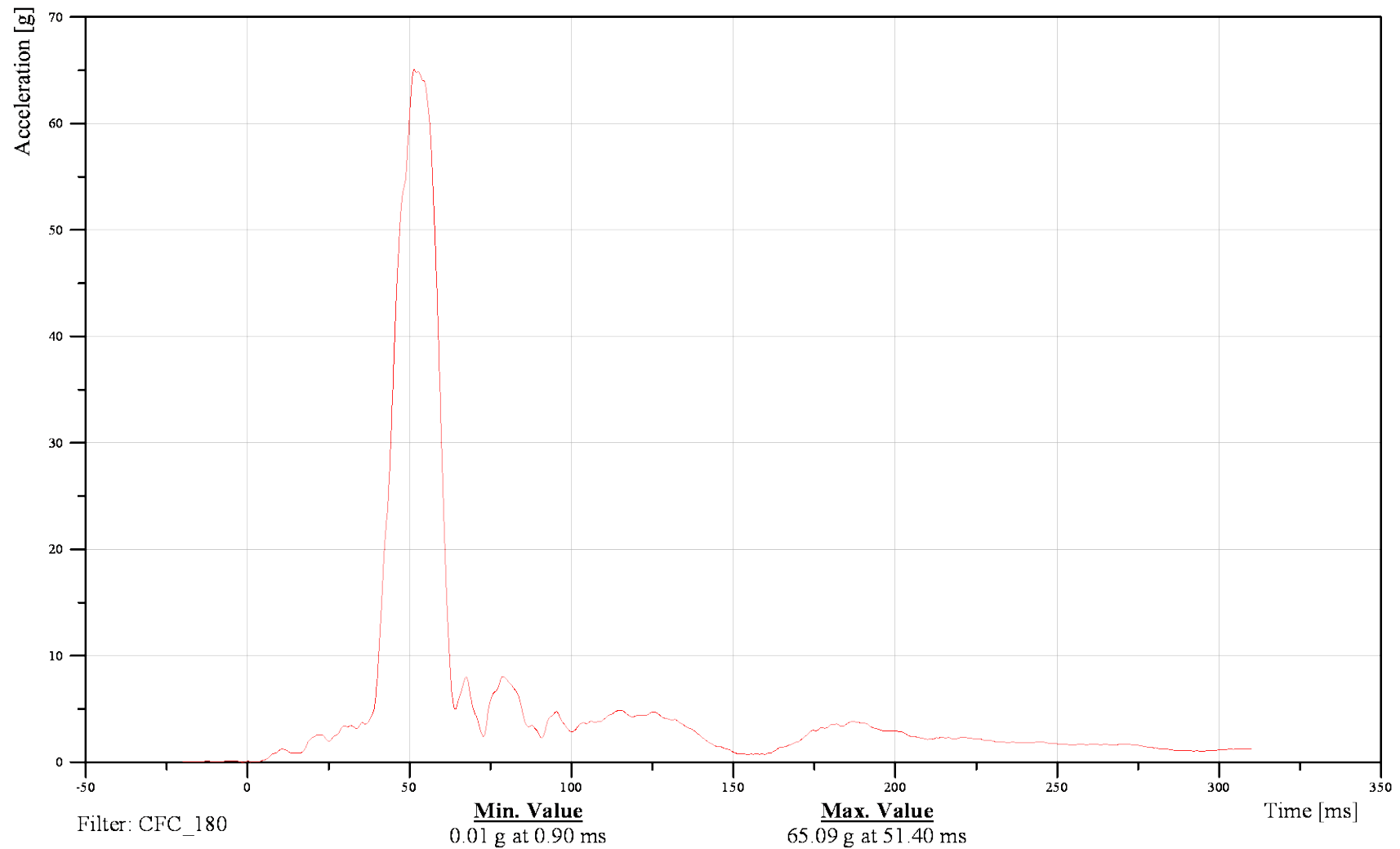
Time: 12:36

Customer: VRTC

14THSP1200WFACRC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis Longitudinal Ax

Date: 06/17/2013

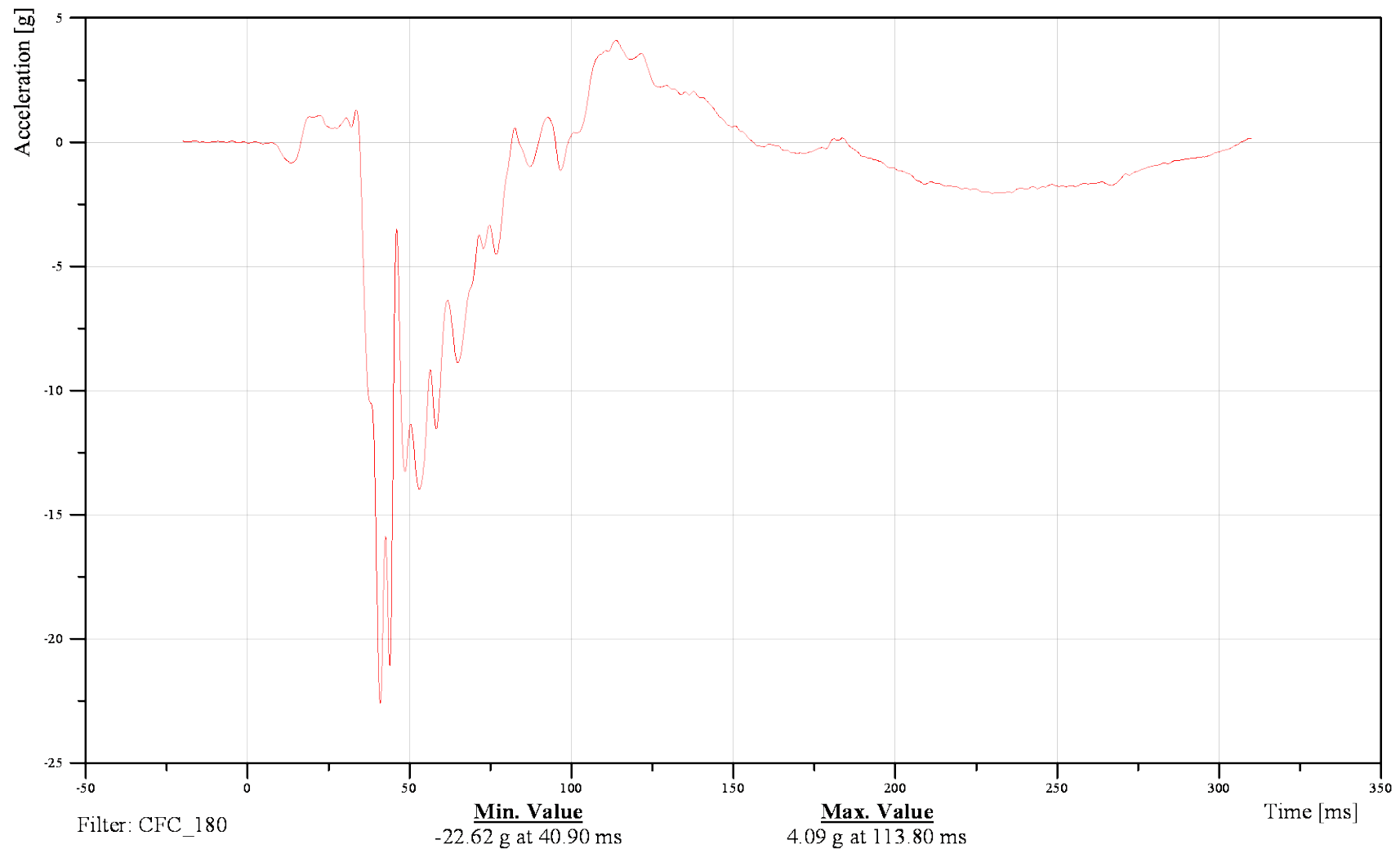
Time: 12:36

Customer: VRTC

14PELV0000WFACXC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis Lateral Ay

Date: 06/17/2013

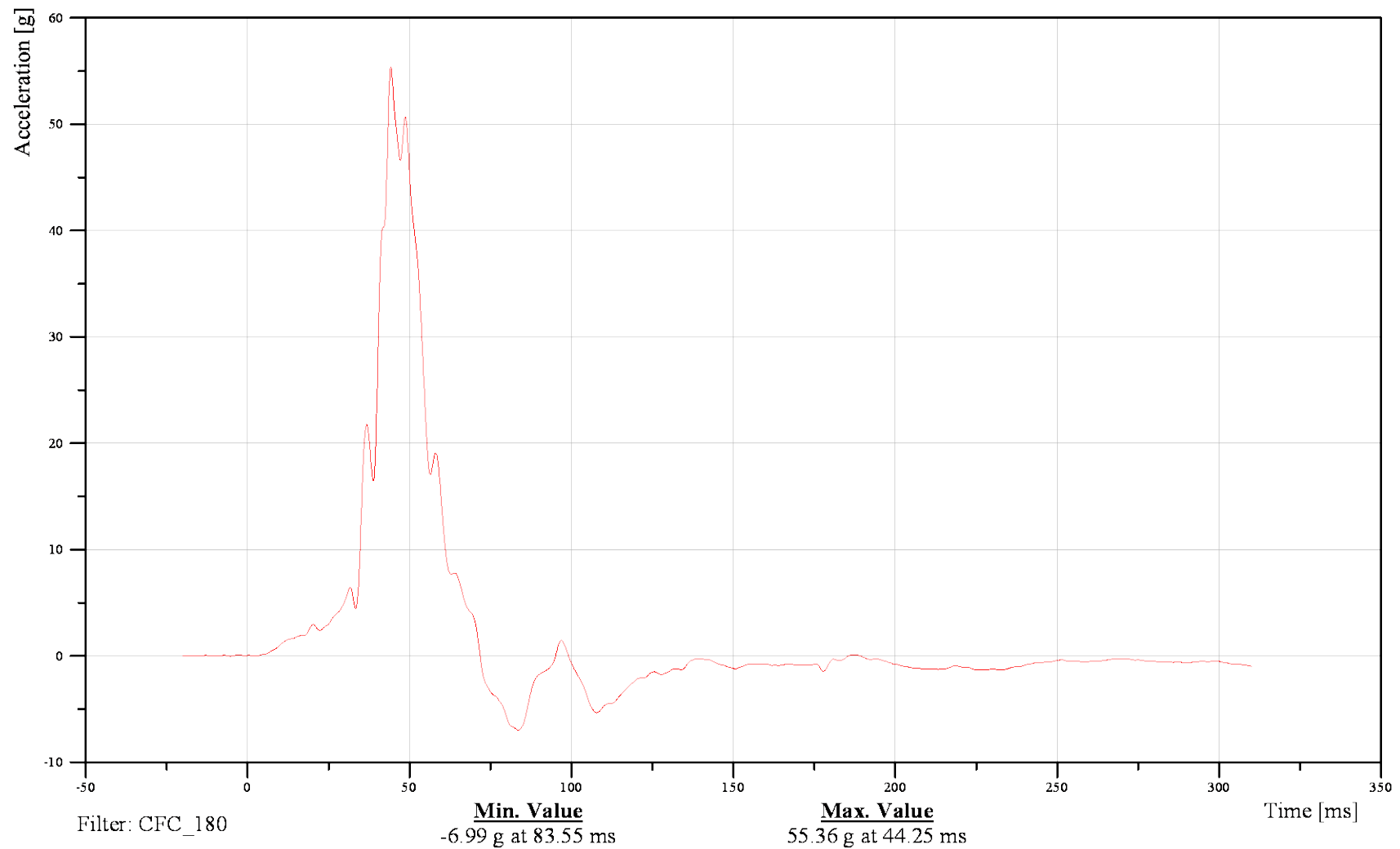
Time: 12:36

Customer: VRTC

14PELV0000WFACYC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis Vertical Az

Date: 06/17/2013

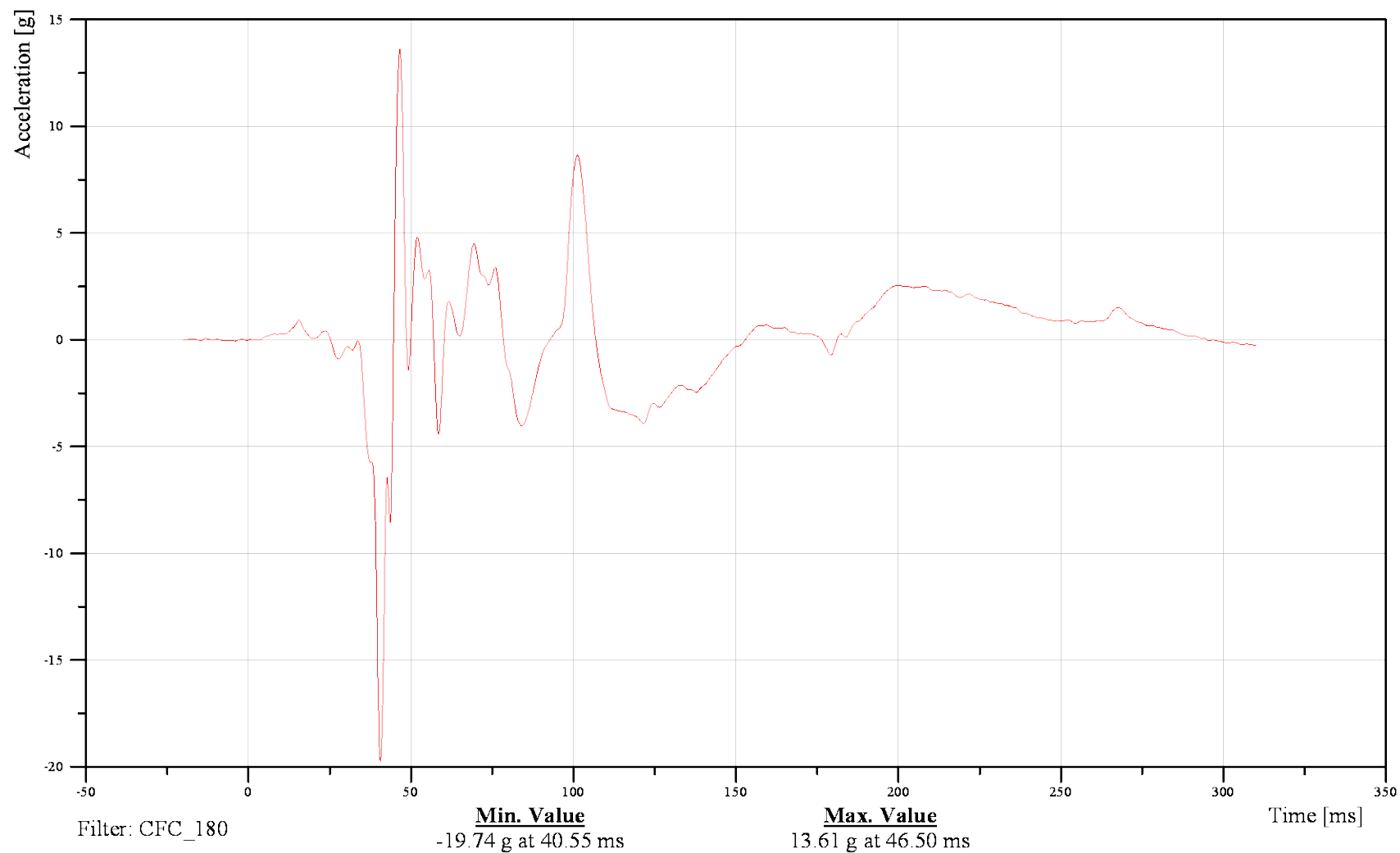
Time: 12:36

Customer: VRTC

14PELV0000WFACZC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Pelvis A Resultant

Date: 06/17/2013

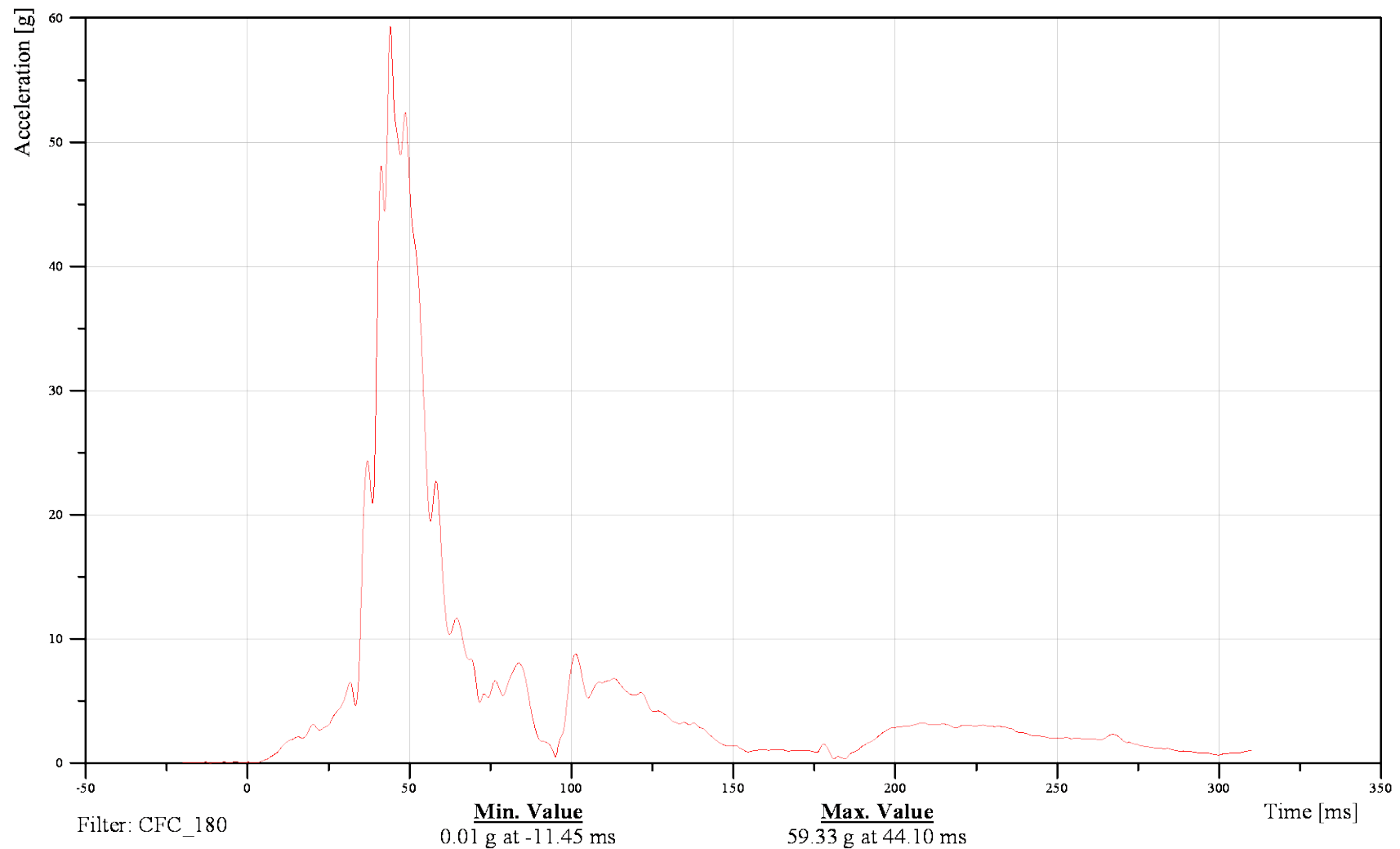
Time: 12:36

Customer: VRTC

14PELV0000WFACRC

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Date: 06/17/2013

Time: 12:36

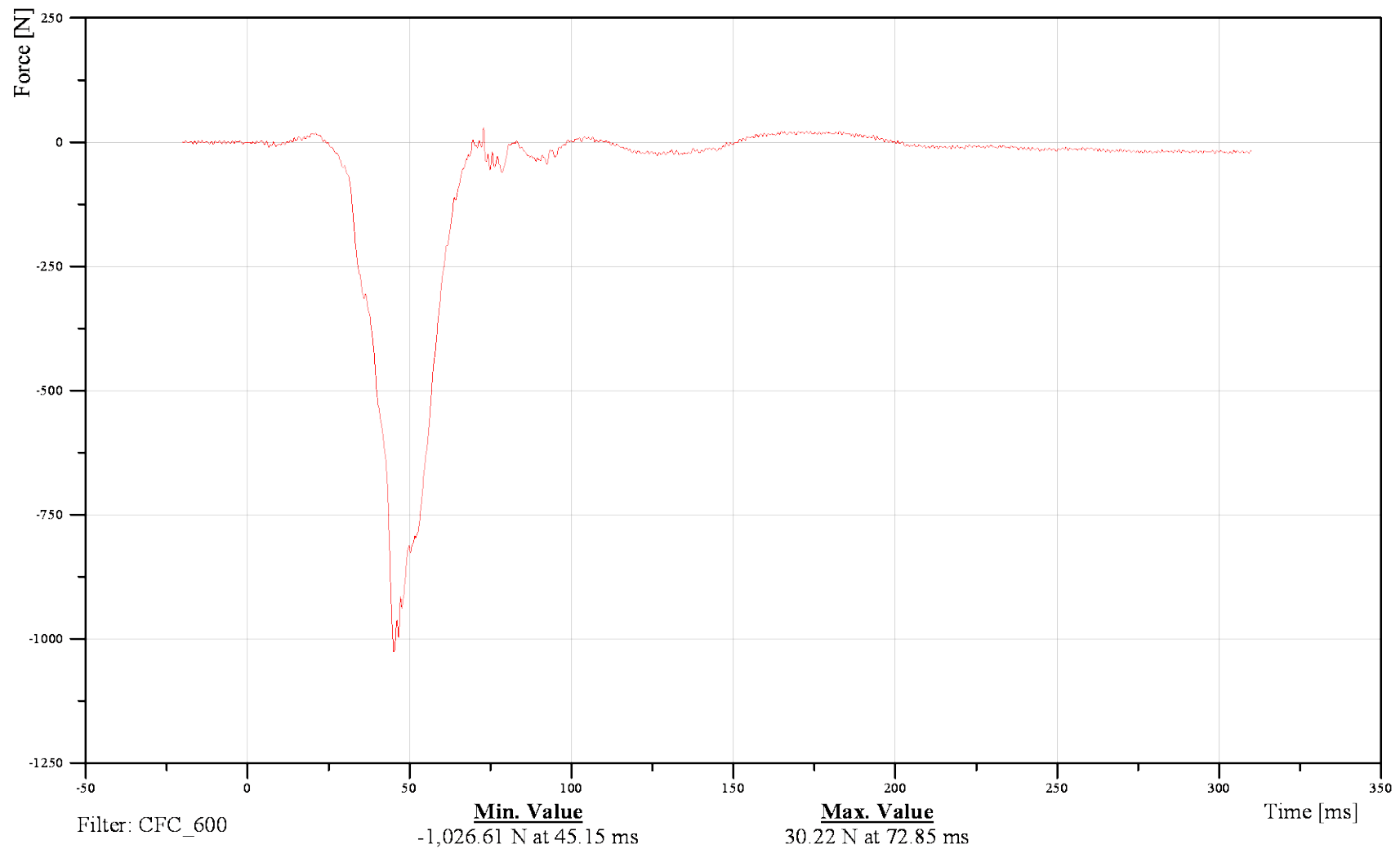
Pubic Force Fy

Customer: VRTC

14PUBC0000WFFOYB

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle CG (X)

Date: 06/17/2013

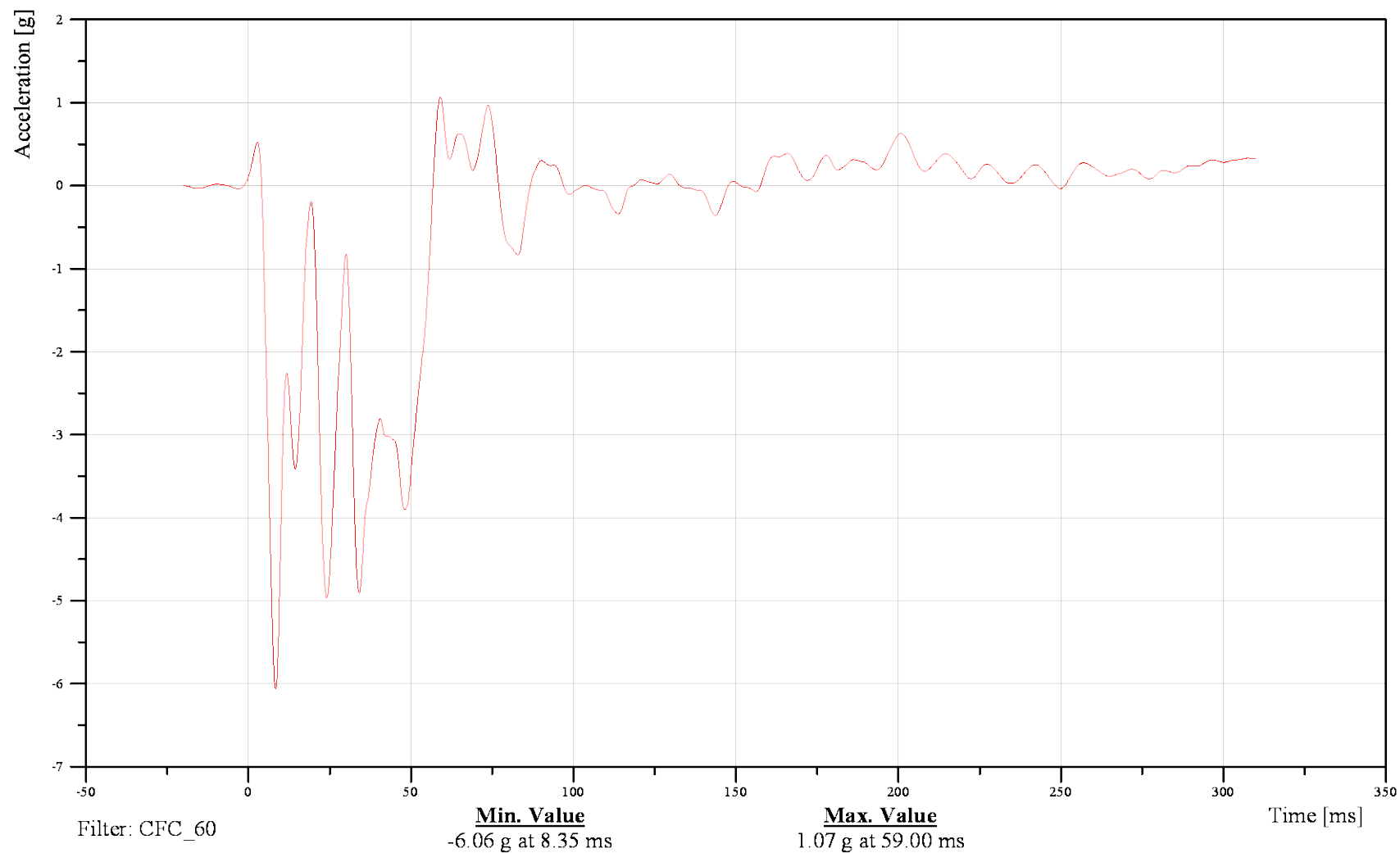
Time: 12:36

Customer: VRTC

11VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle CG (Y)

Date: 06/17/2013

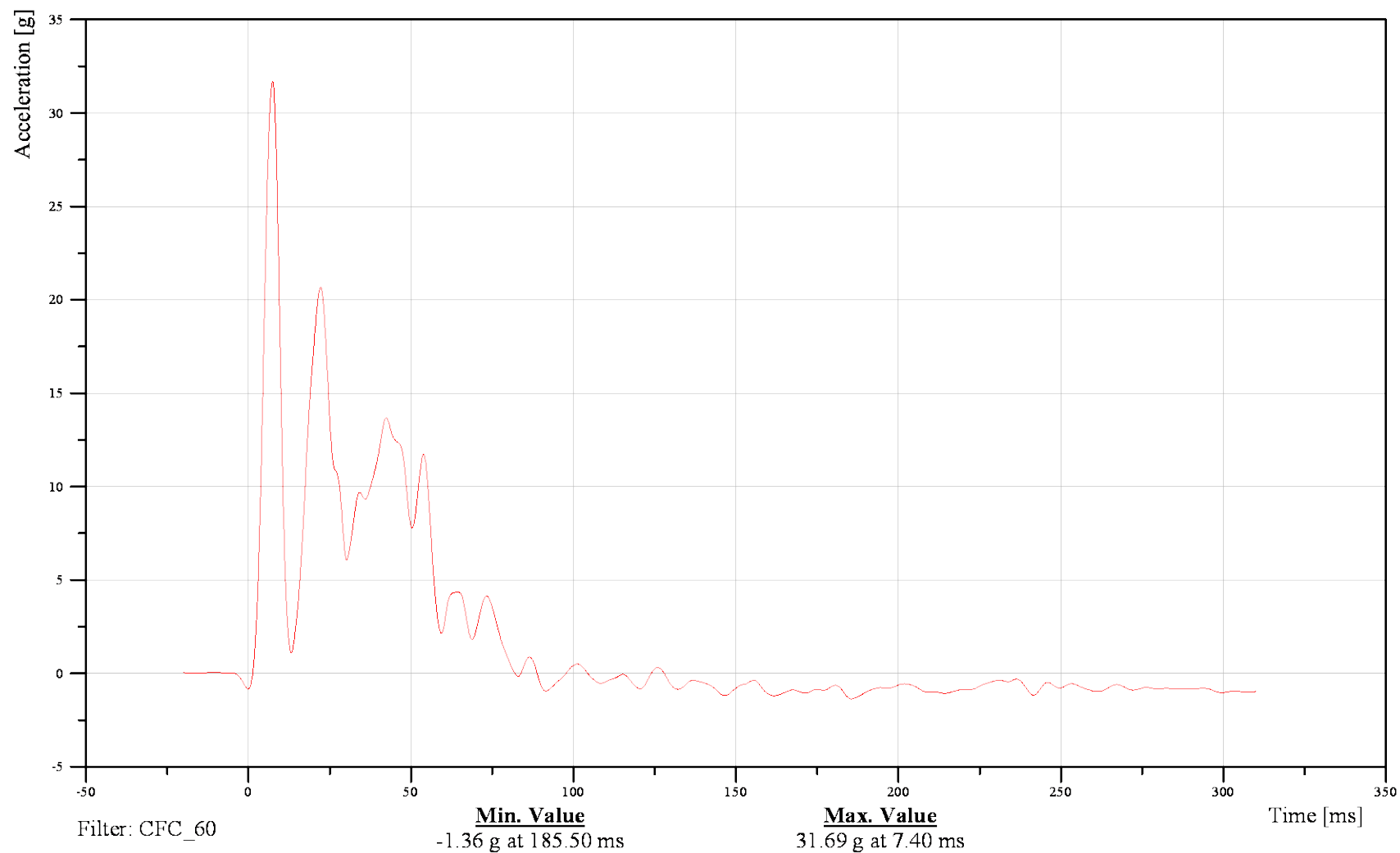
Time: 12:36

Customer: VRTC

11VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle CG (Z)

Date: 06/17/2013

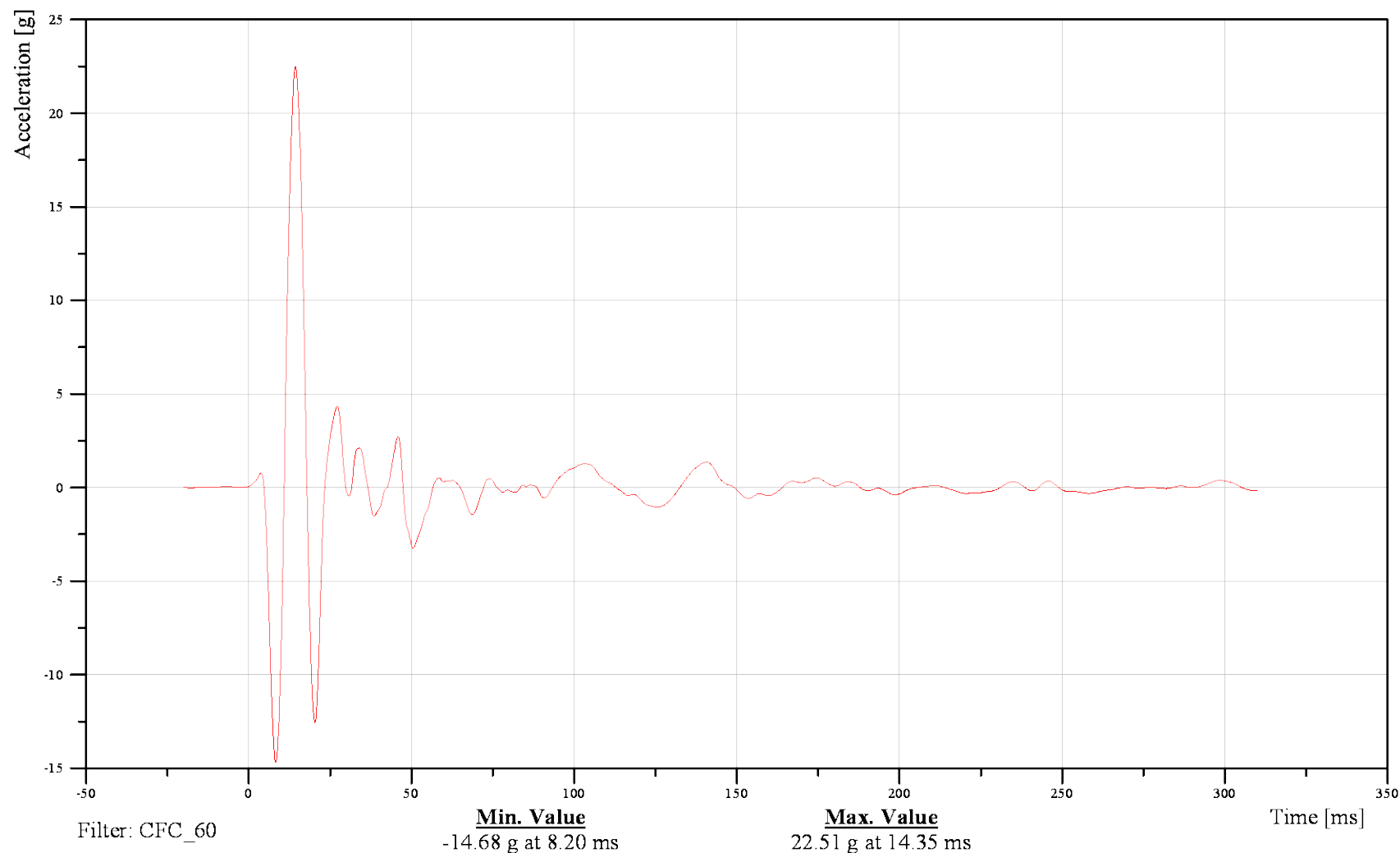
Time: 12:36

Customer: VRTC

11VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle CG Resultant

Date: 06/17/2013

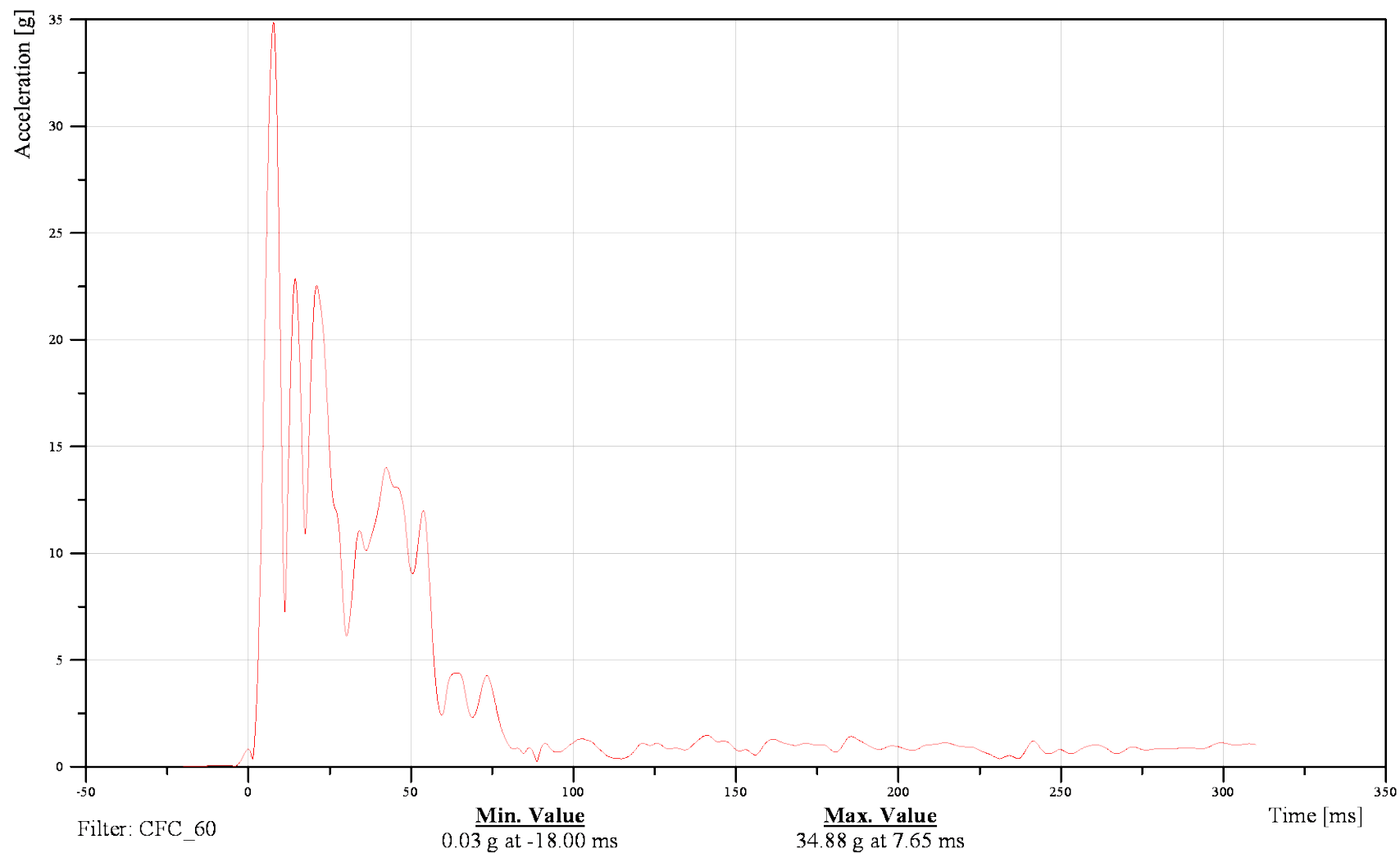
Time: 12:36

Customer: VRTC

11VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Front Sill at Front Seat (X)

Date: 06/17/2013

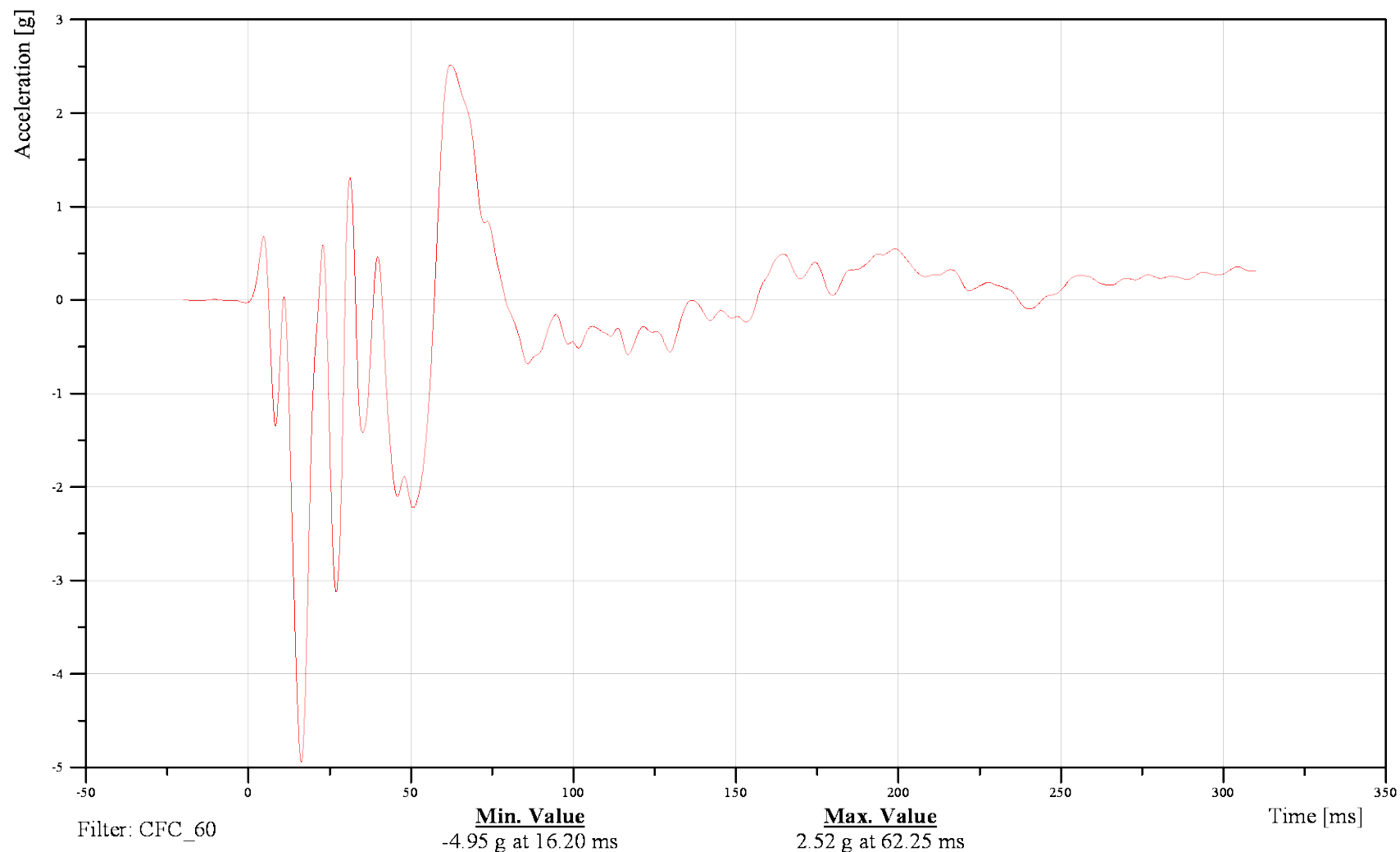
Time: 12:36

Customer: VRTC

11SILBRIFR00ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Front Sill at Front Seat (Y)

Date: 06/17/2013

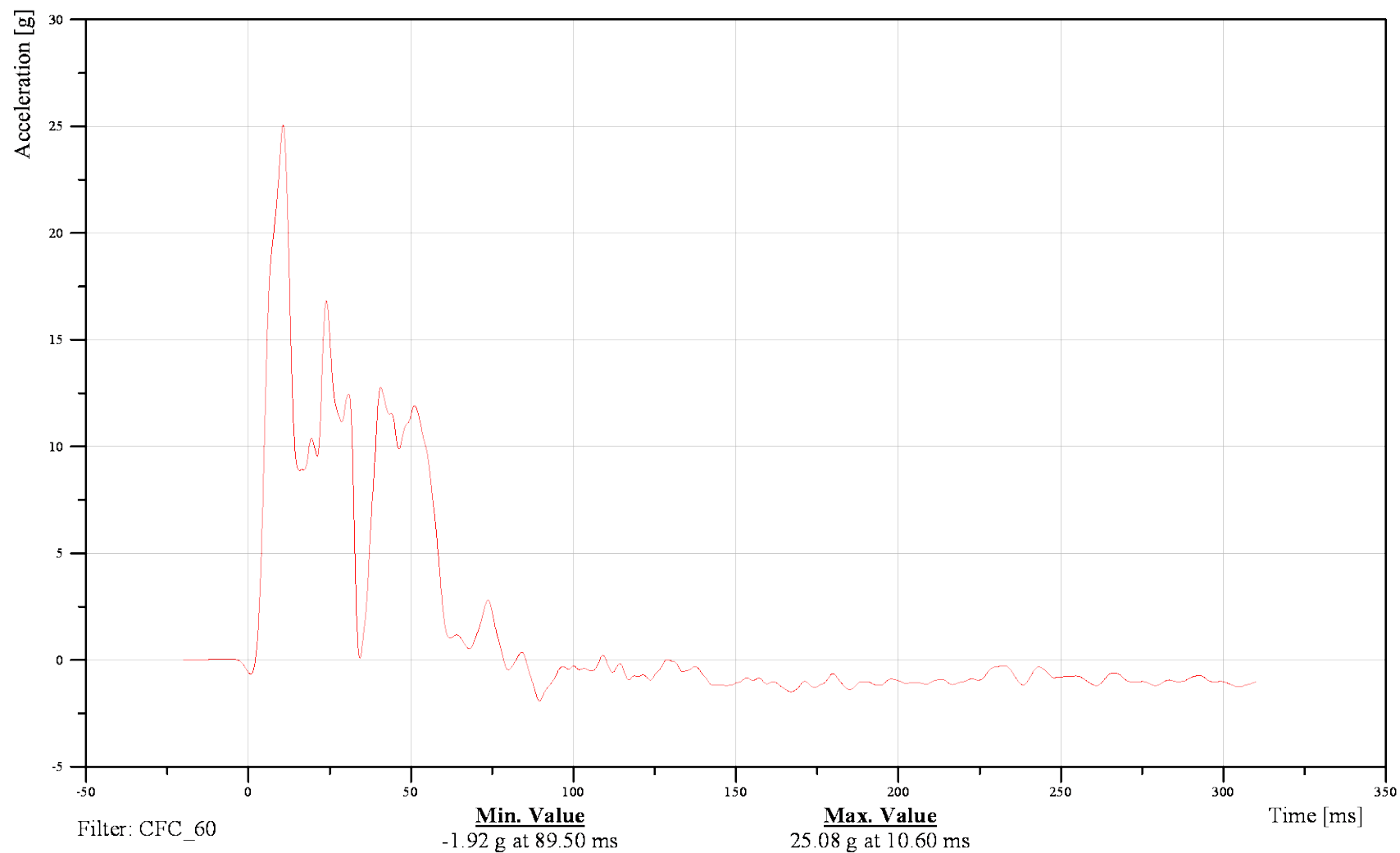
Time: 12:36

Customer: VRTC

11SILBRIFR00ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Front Sill at Front Seat (Z)

Date: 06/17/2013

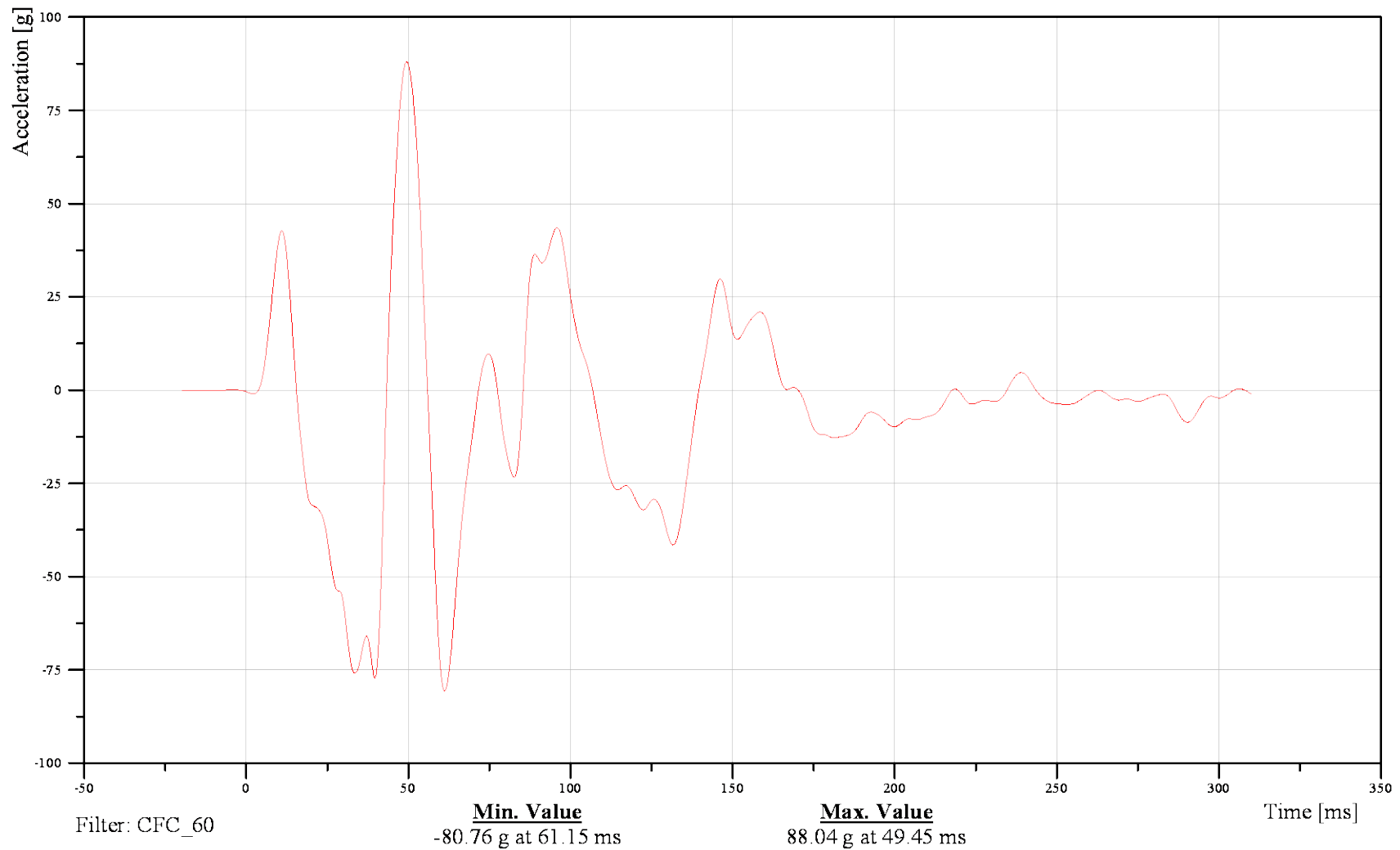
Time: 12:36

Customer: VRTC

11SILBRIFR00ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Front Sill at Front Seat Resultant

Date: 06/17/2013

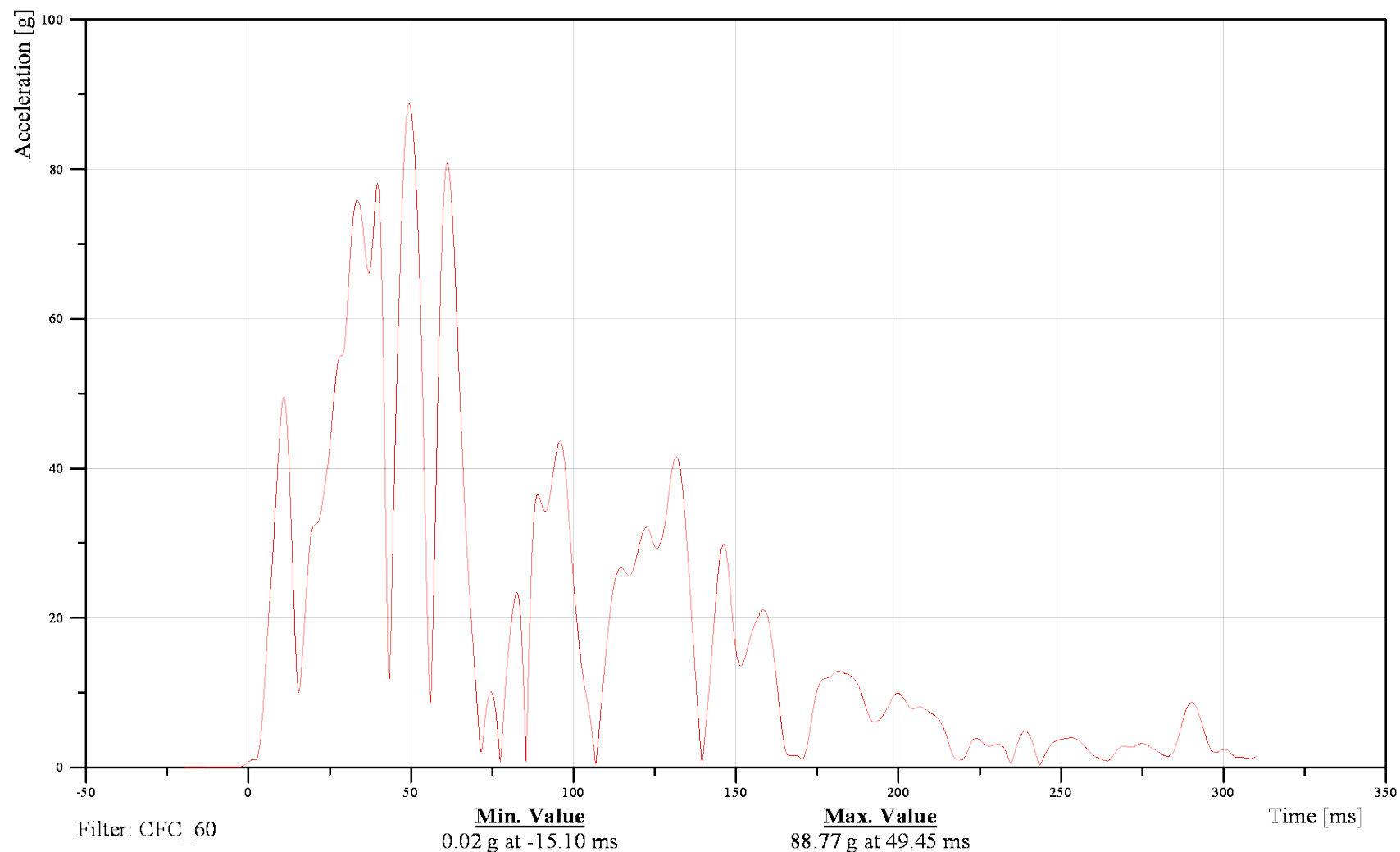
Time: 12:36

Customer: VRTC

11SILBRIFR00ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Rear Sill at Rear Seat (X)

Date: 06/17/2013

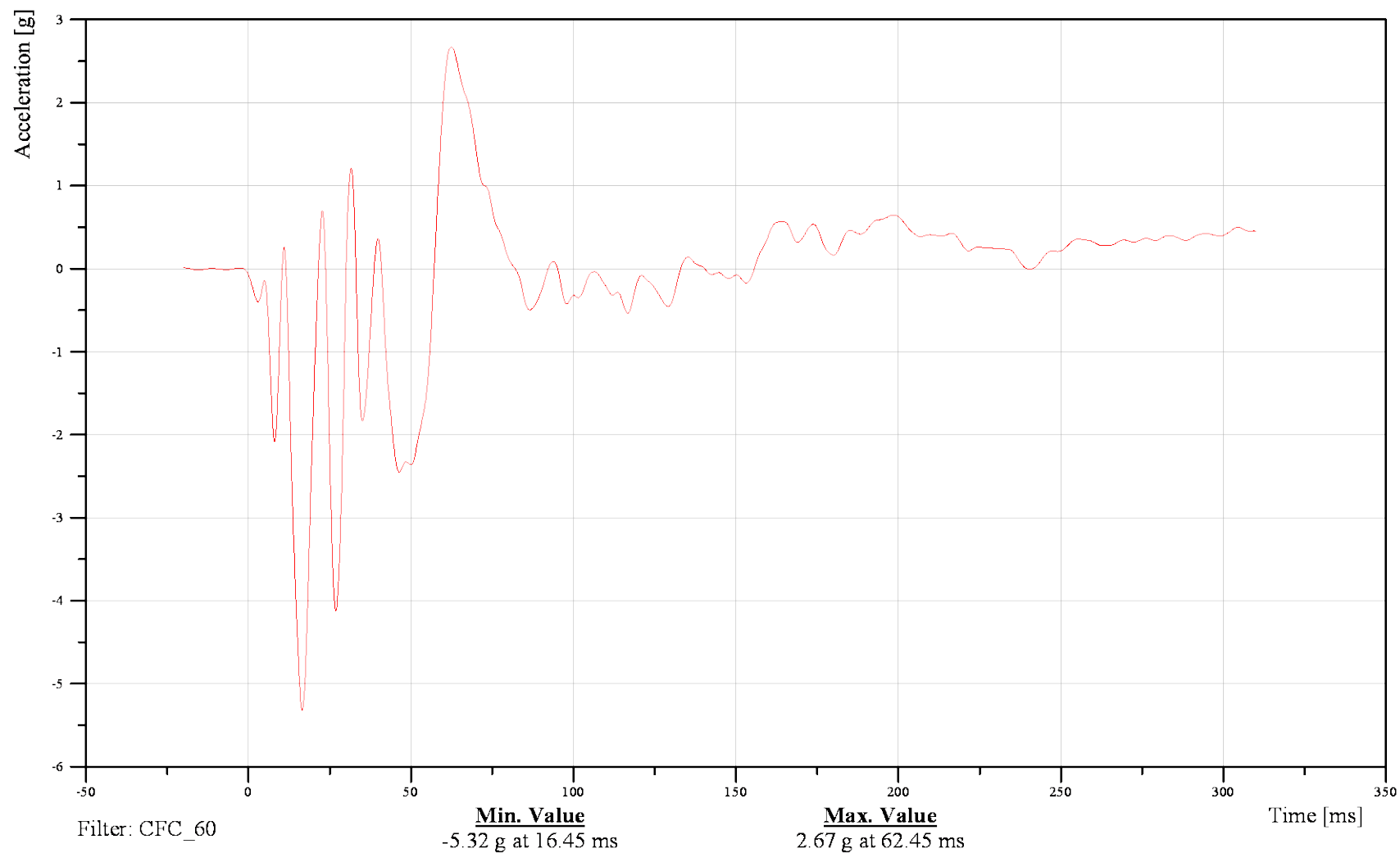
Time: 12:36

Customer: VRTC

11SILBRIRE00ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Rear Sill at Rear Seat (Y)

Date: 06/17/2013

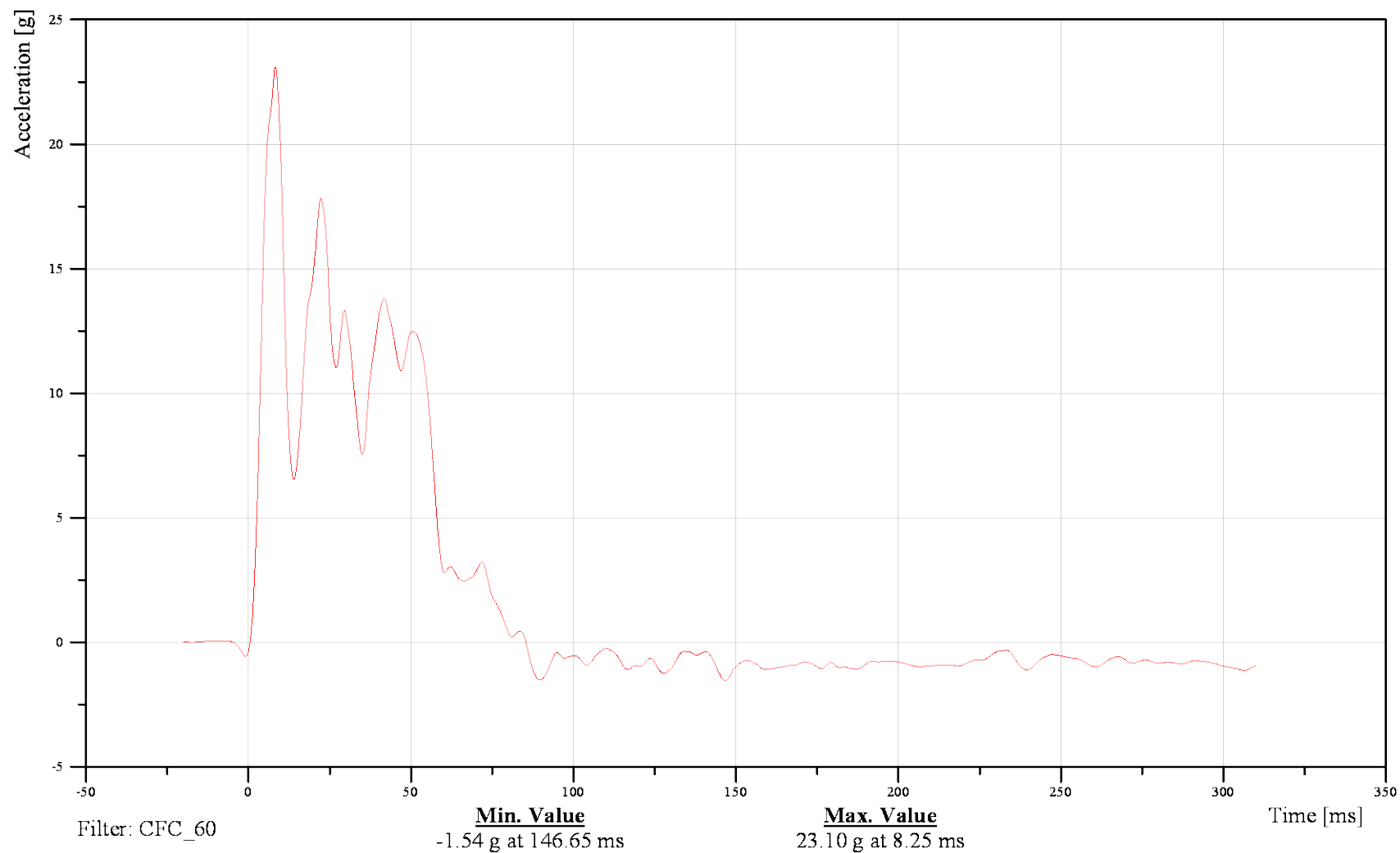
Time: 12:36

Customer: VRTC

11SILBRIRE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Rear Sill at Rear Seat (Z)

Date: 06/17/2013

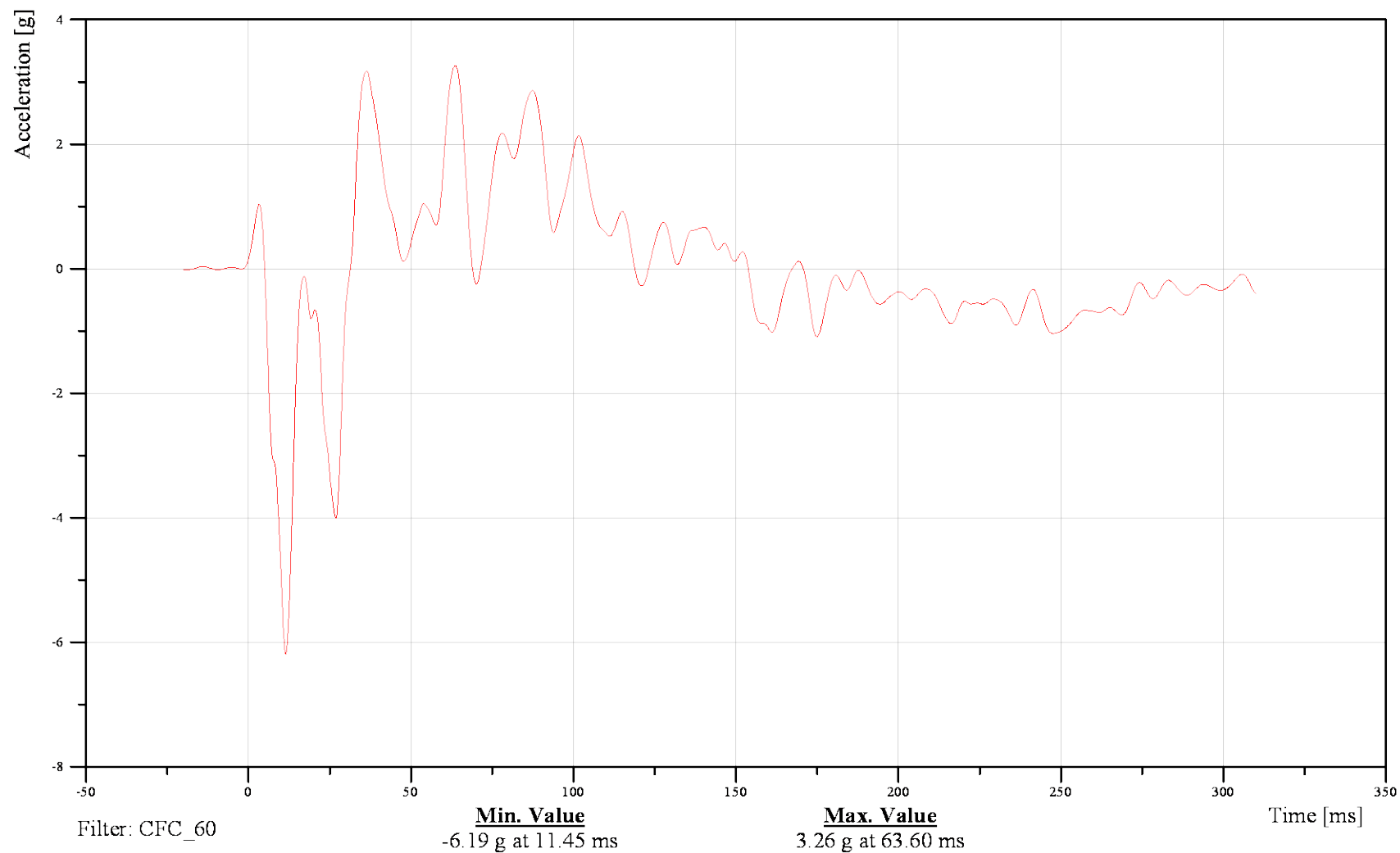
Time: 12:36

Customer: VRTC

11SILBRIRE00ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Right Rear Sill at Rear Seat Resultant

Date: 06/17/2013

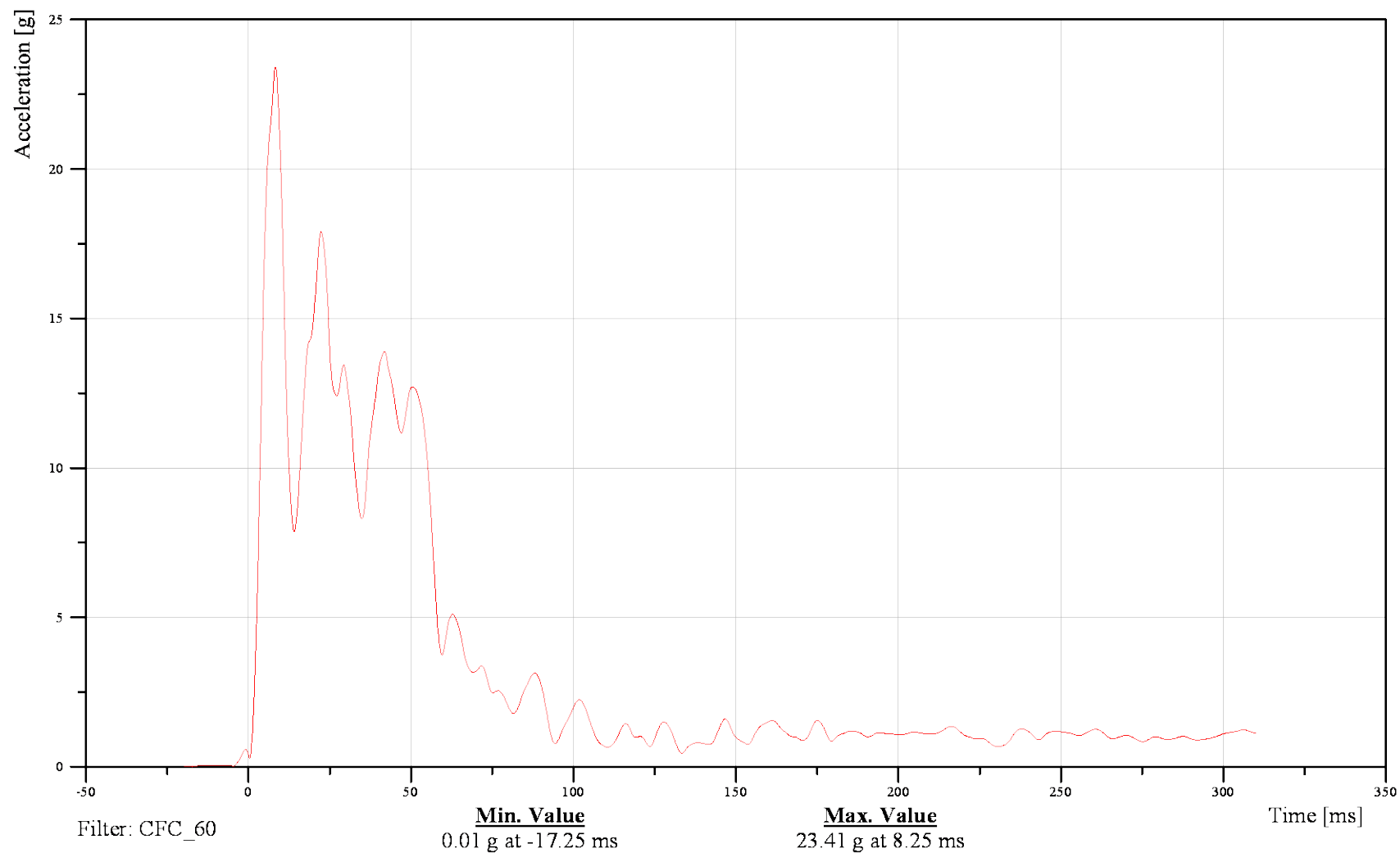
Time: 12:36

Customer: VRTC

11SILBRIRE00ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Side Sill at Front Seat (Y)

Date: 06/17/2013

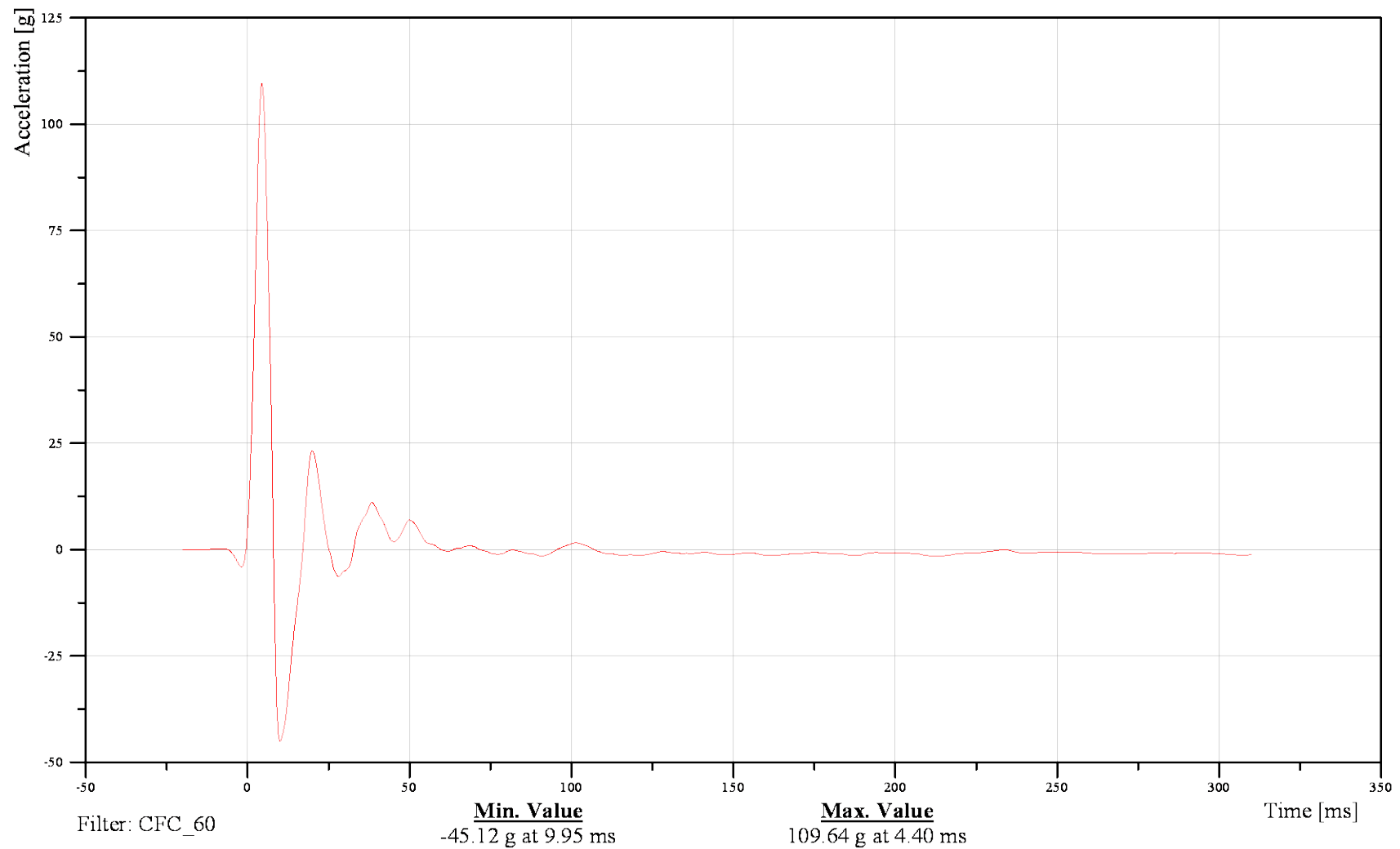
Time: 12:36

Customer: VRTC

11SILBLEFR00ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Side Sill at Rear Seat (Y)

Date: 06/17/2013

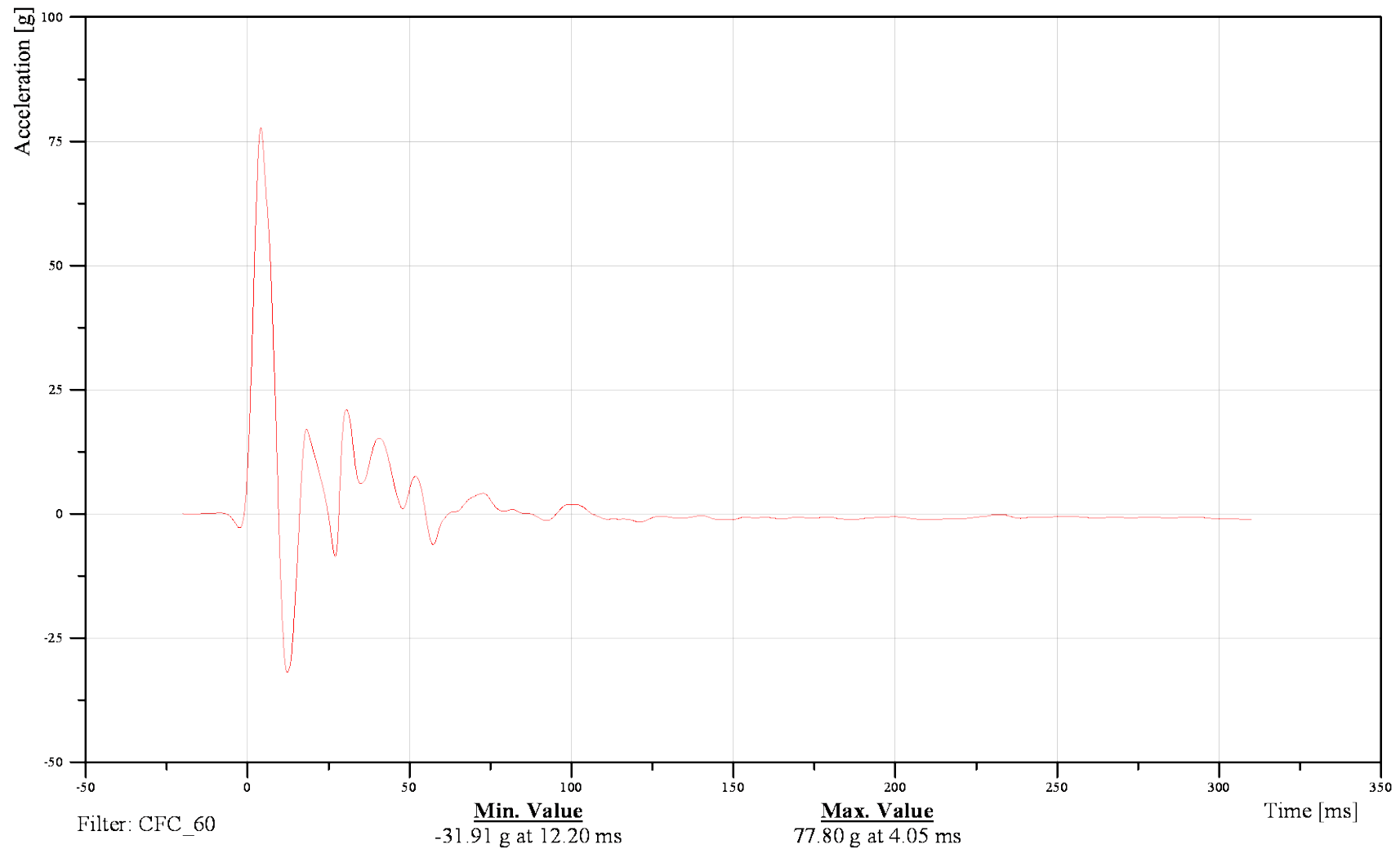
Time: 12:36

Customer: VRTC

11SILBLERE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Lower A Post (Y)

Date: 06/17/2013

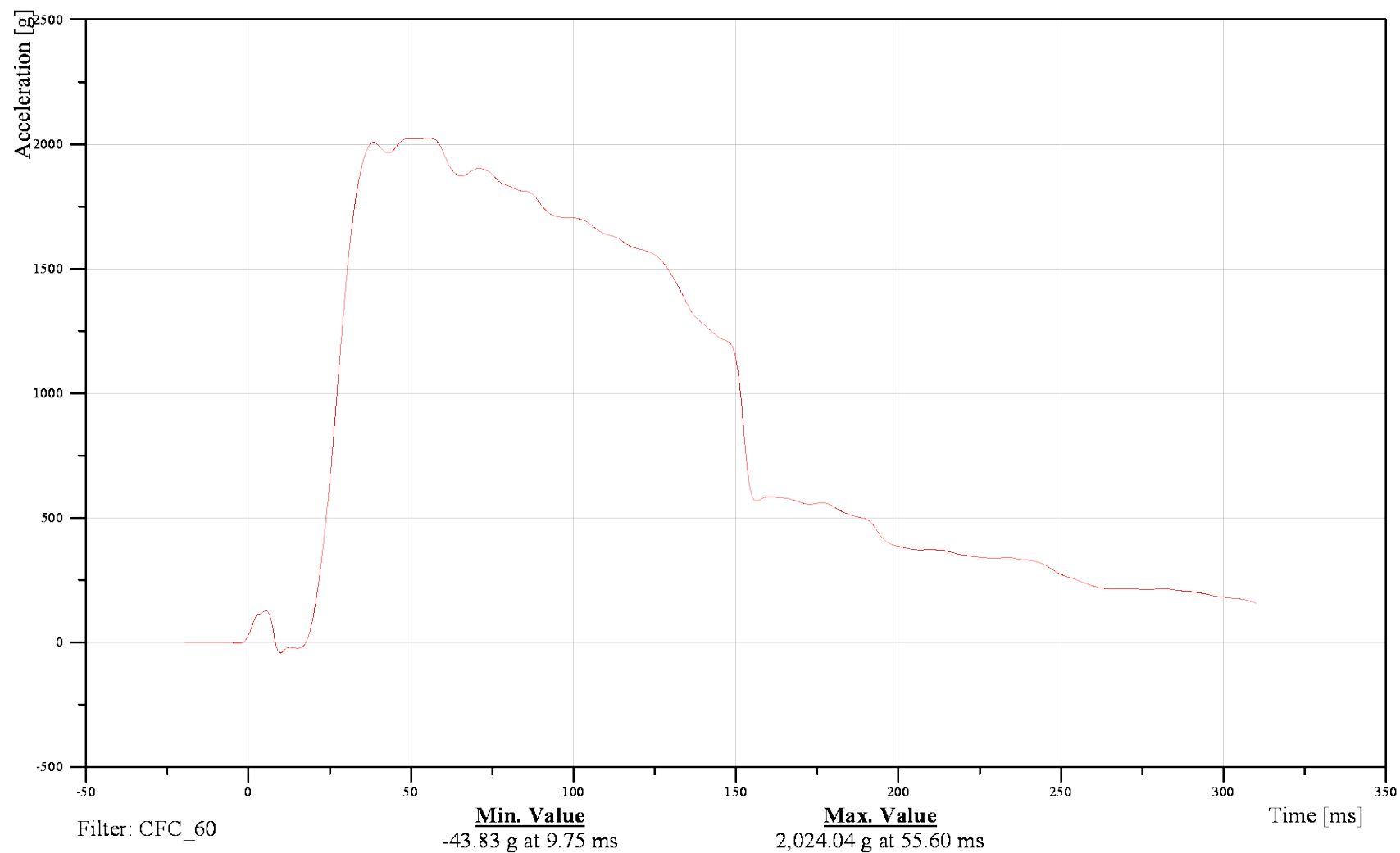
Time: 12:36

Customer: VRTC

11APILO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Middle A-Post (Y)

Date: 06/17/2013

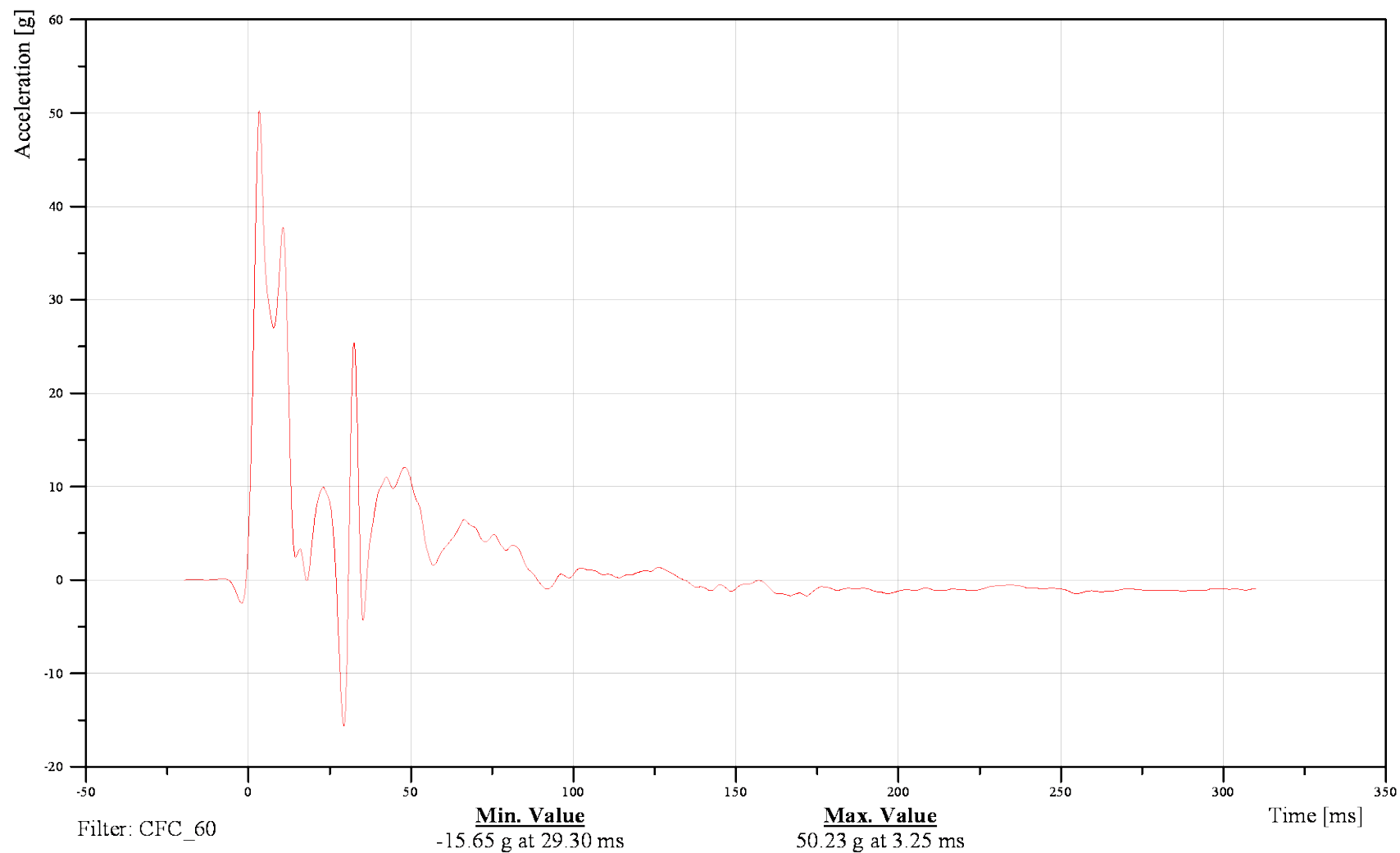
Time: 12:36

Customer: VRTC

11APILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Lower B Post (Y)

Date: 06/17/2013

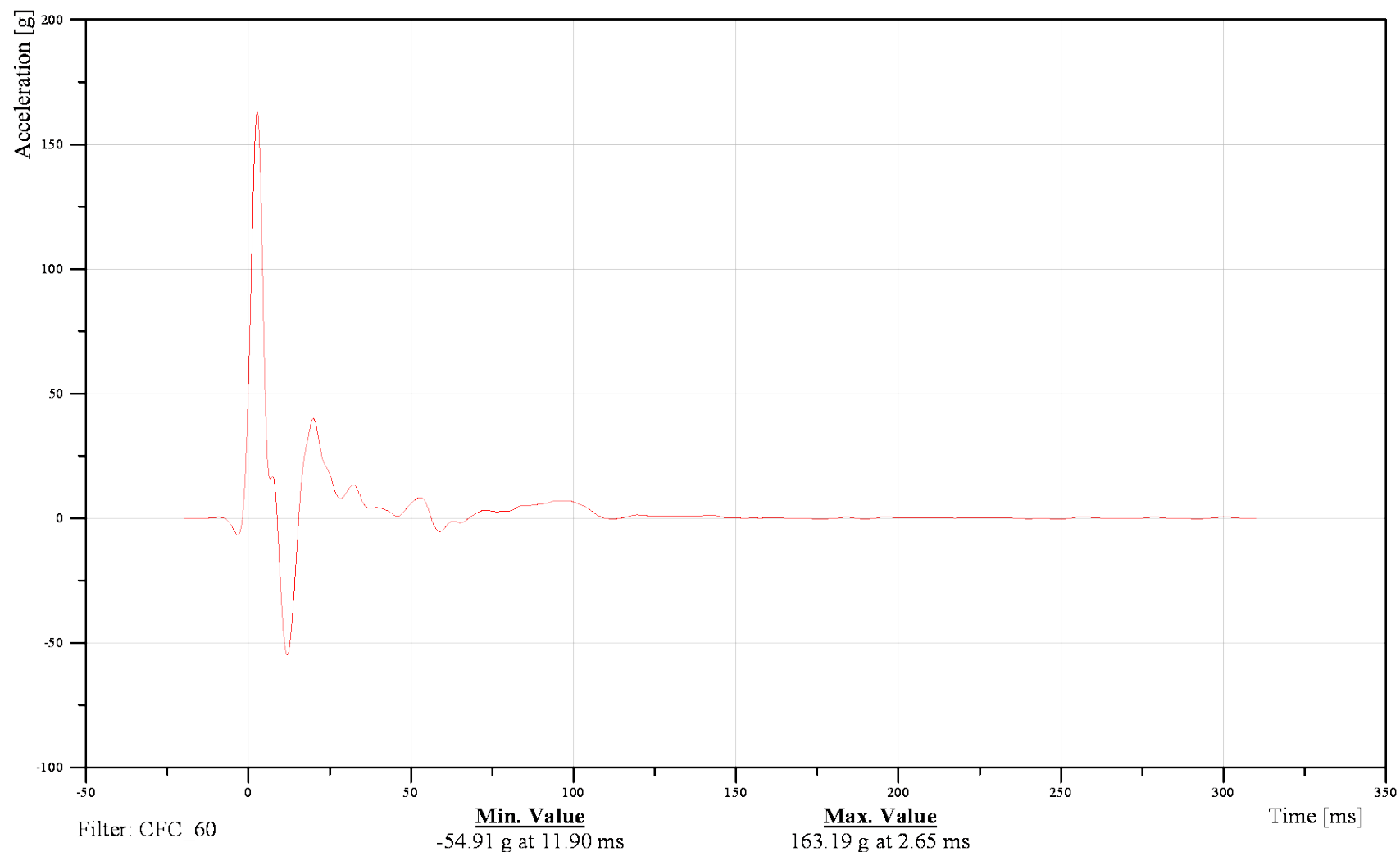
Time: 12:36

Customer: VRTC

11BPILLO0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Middle B Post (Y)

Date: 06/17/2013

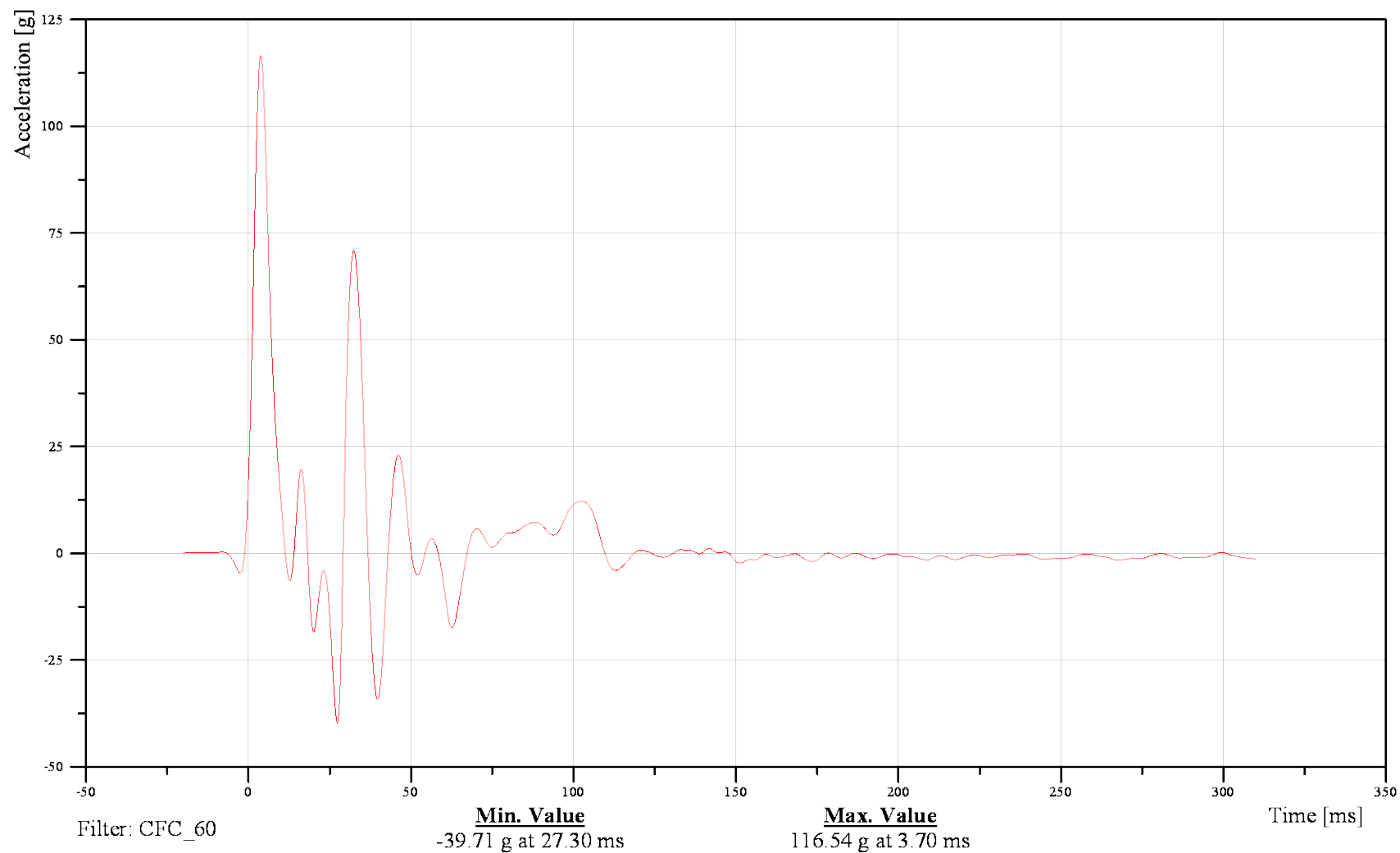
Time: 12:36

Customer: VRTC

11BPILMI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Front Seat Track (Y)

Date: 06/17/2013

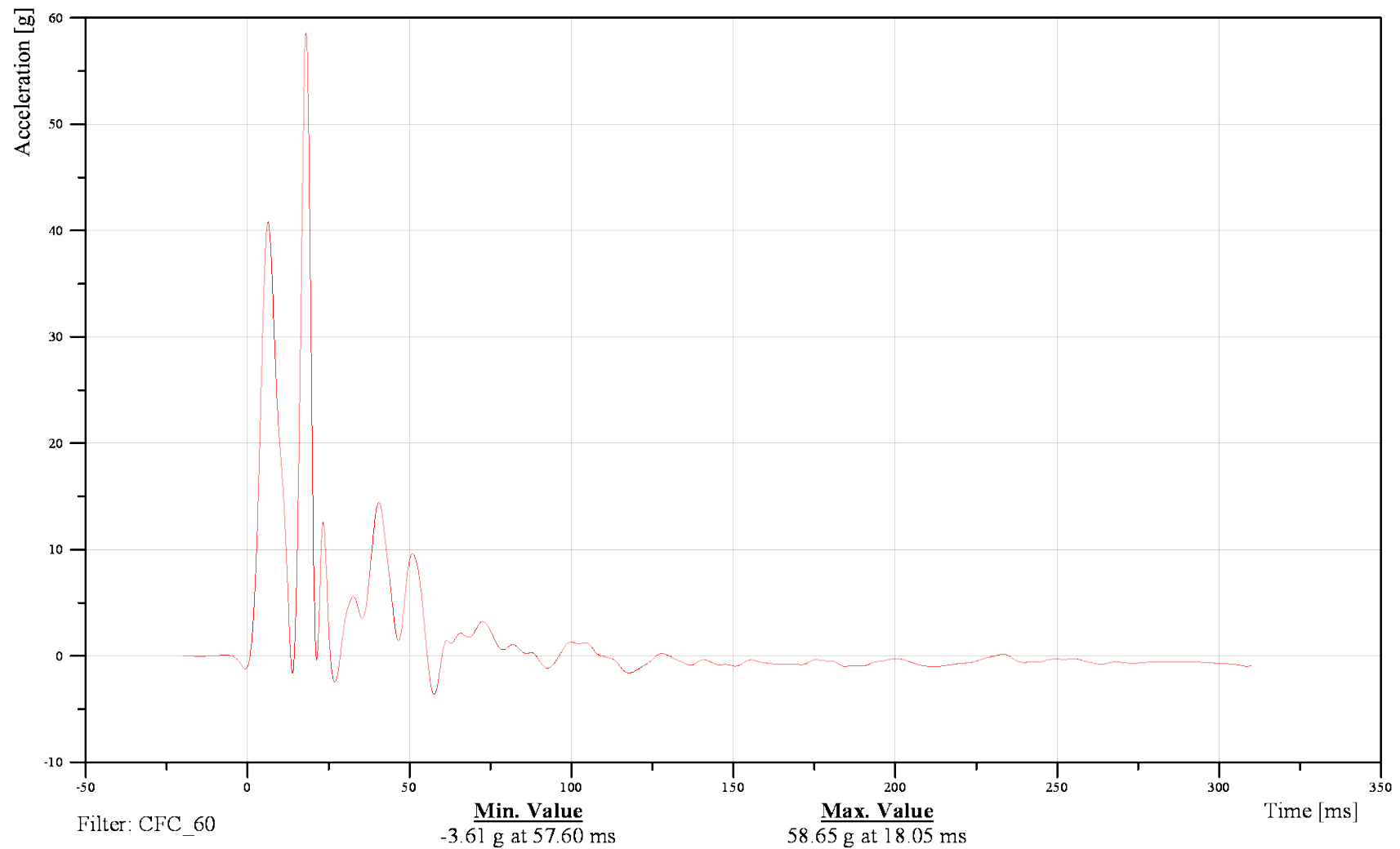
Time: 12:36

Customer: VRTC

11SETR000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

LEFT REAR SEAT STRUCTURE AY

Date: 06/17/2013

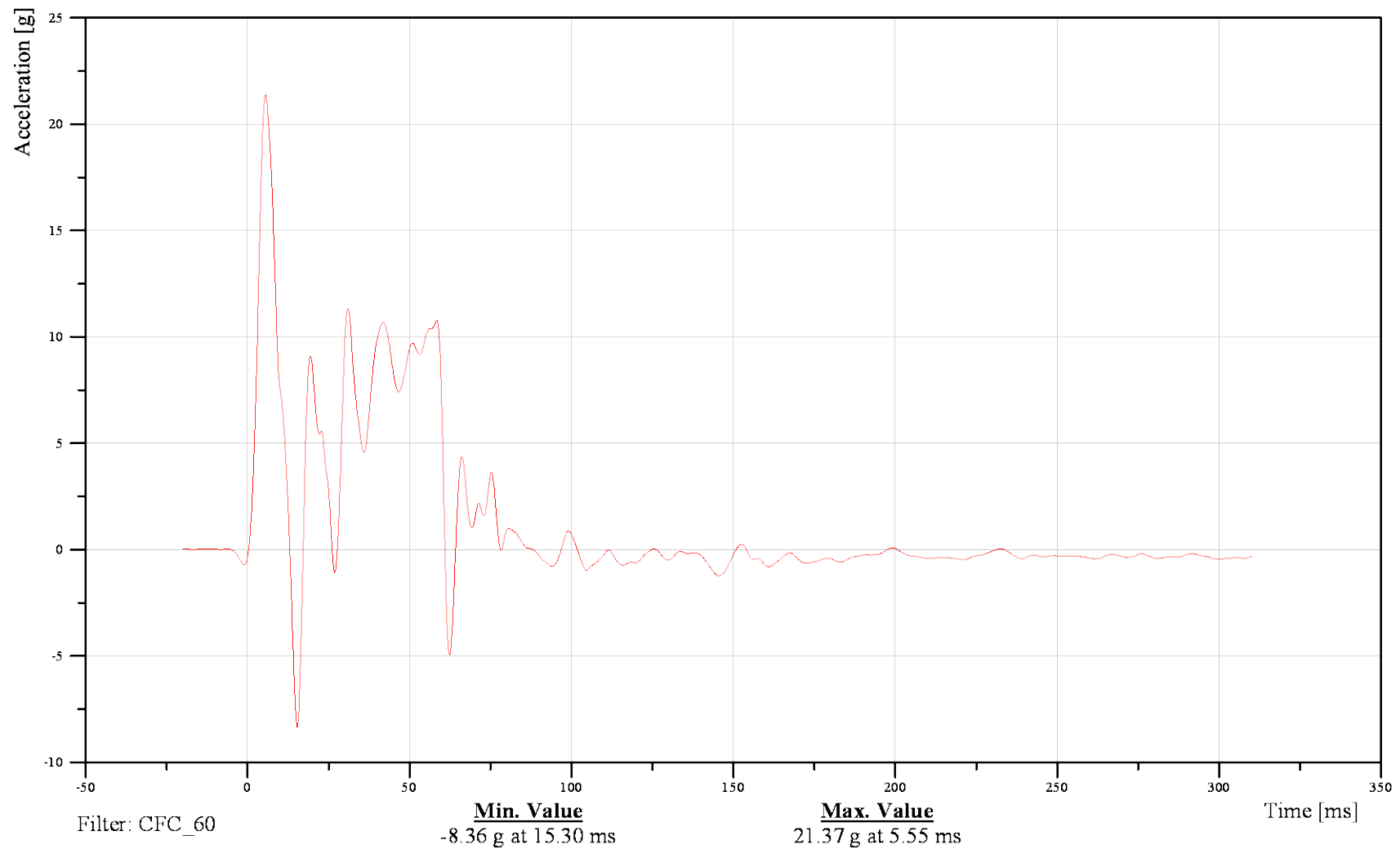
Time: 12:36

Customer: VRTC

11SETRLERE00ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





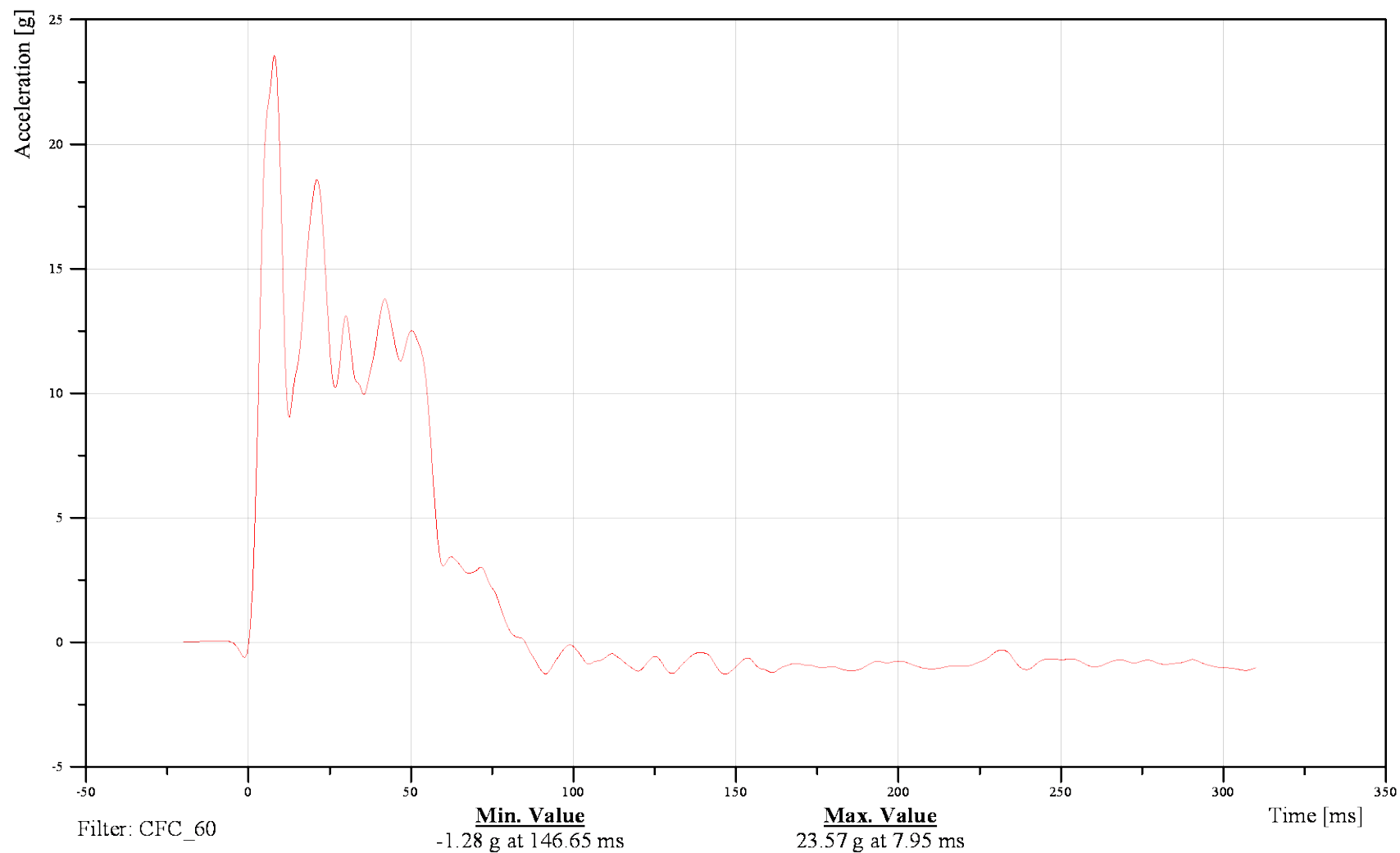
FMVSS 214 Side Impact 2011 Cadillac CTS
RIGHT REAR OCCUPANT COMPARTMENT AY

Date: 06/17/2013
Time: 12:36

Customer: VRTC

11VEHCRIRE00ACYD

TRC Inc. Test Lab: CTF
Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ENGINE BLOCK AX

Date: 06/17/2013

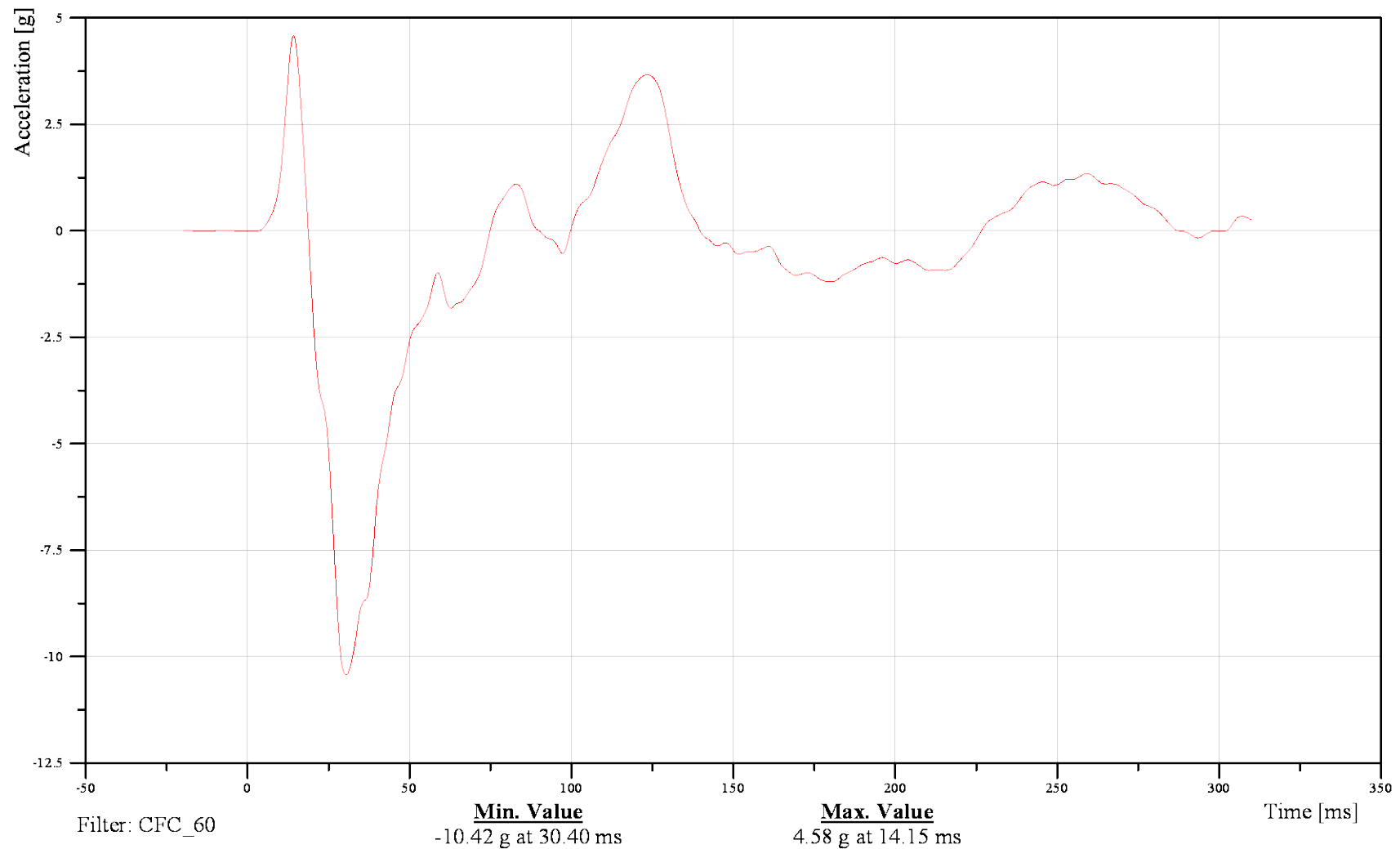
Time: 12:36

Customer: VRTC

11ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

ENGINE BLOCK AY

Date: 06/17/2013

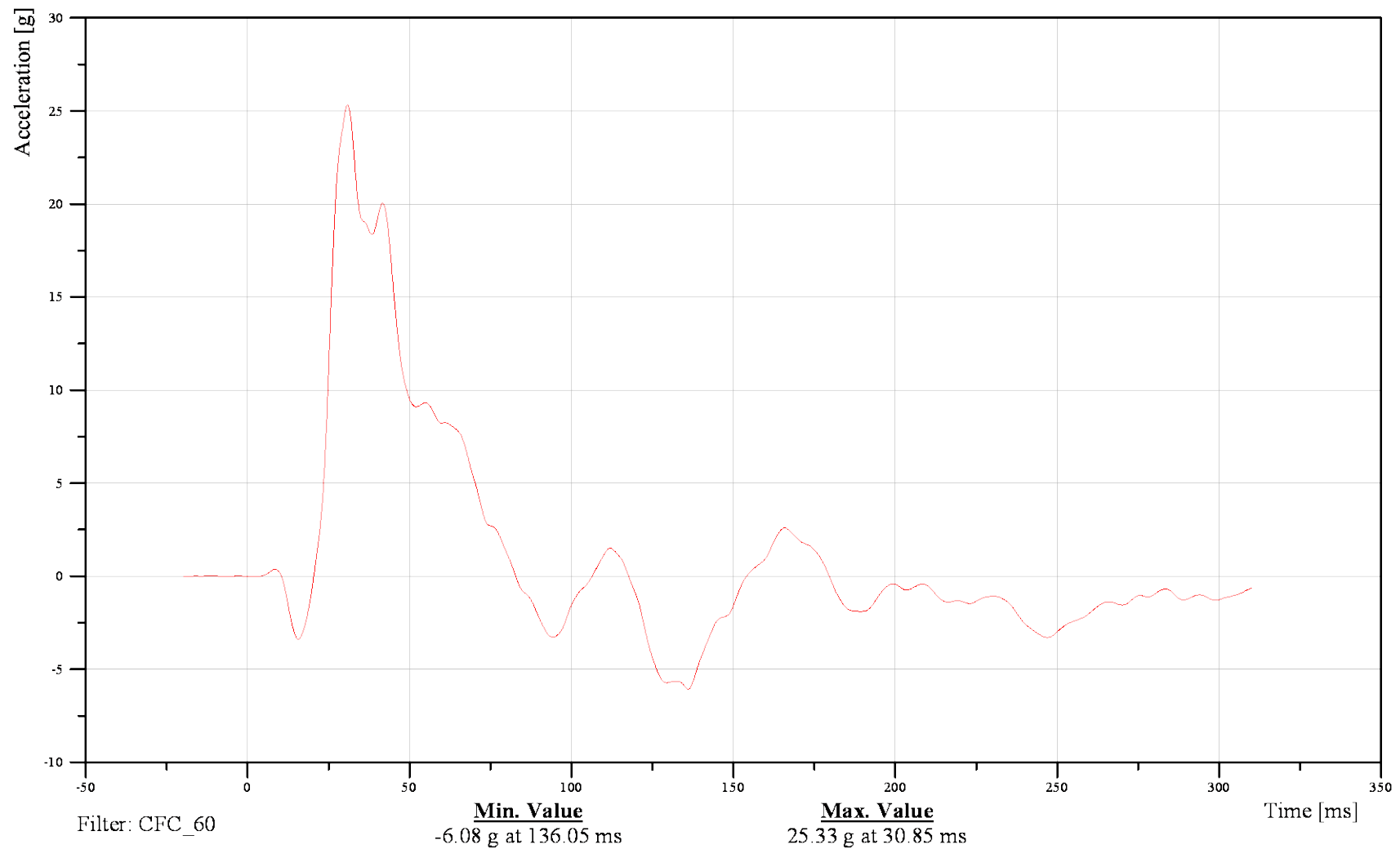
Time: 12:36

Customer: VRTC

11ENGNTTP0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Rear Floor Pan Above Axle (X)

Date: 06/17/2013

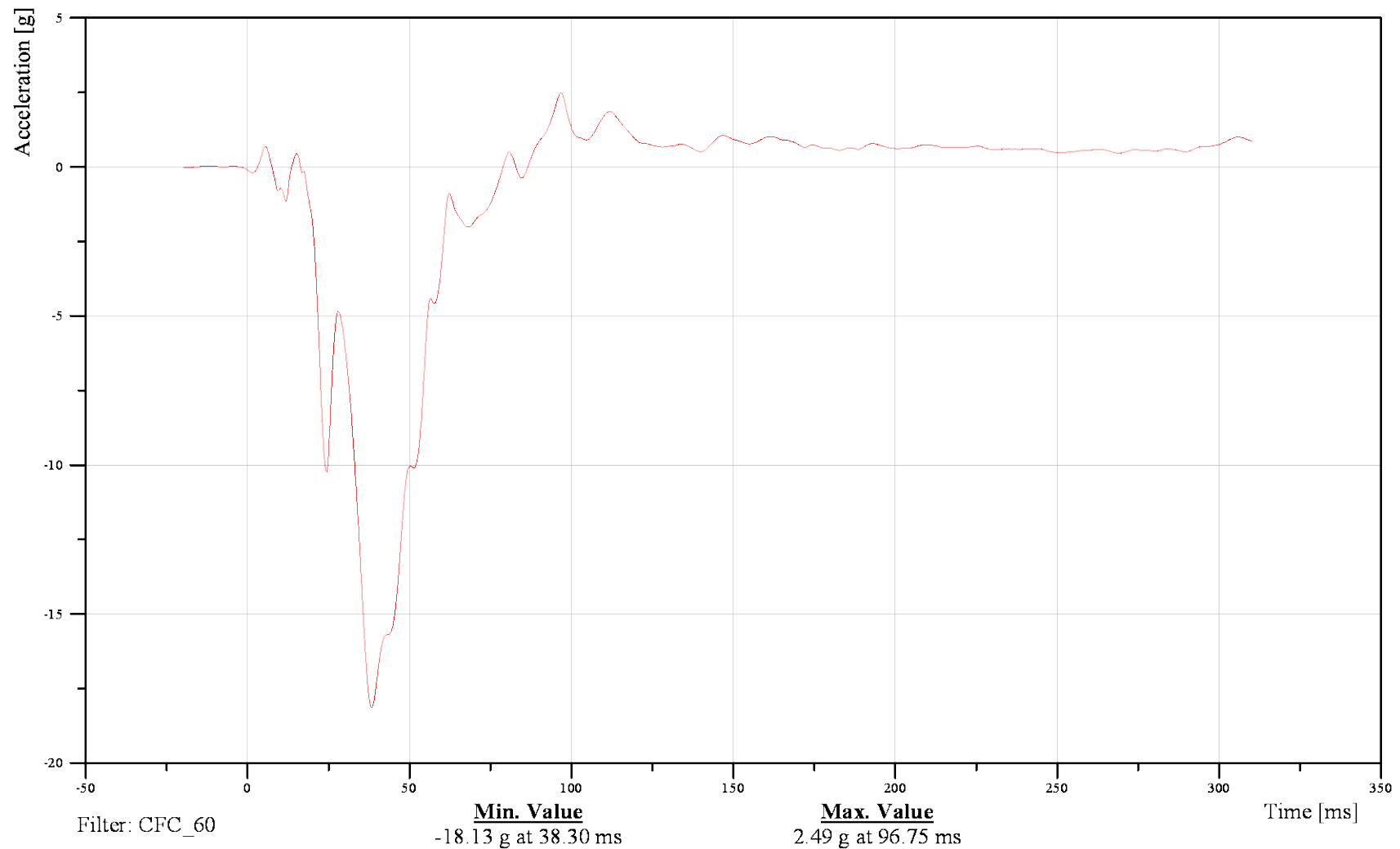
Time: 12:36

Customer: VRTC

11FORA000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Rear Floor Pan Above Axle (Y)

Date: 06/17/2013

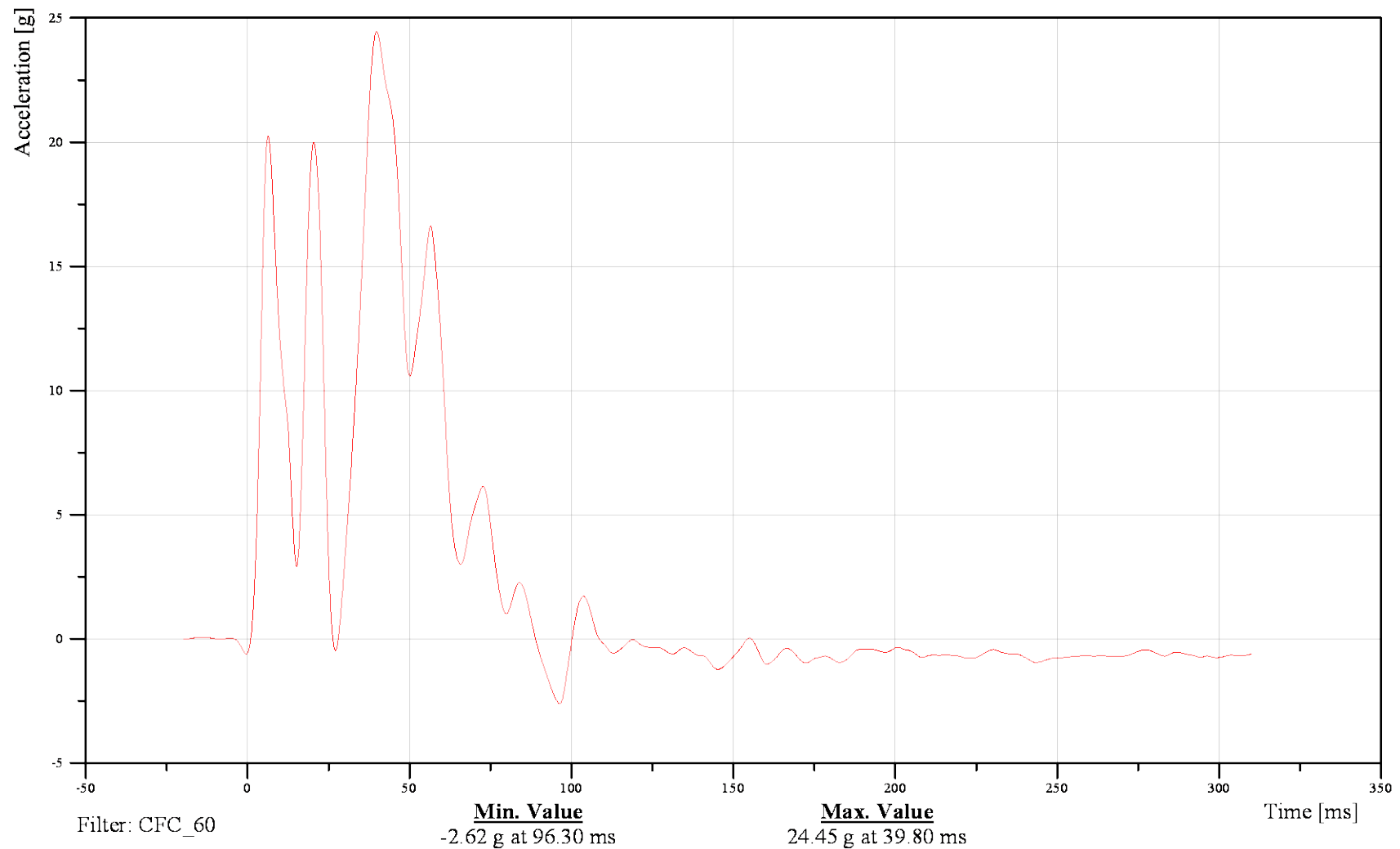
Time: 12:36

Customer: VRTC

11FORA000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Rear Floor Pan Above Axle (Z)

Date: 06/17/2013

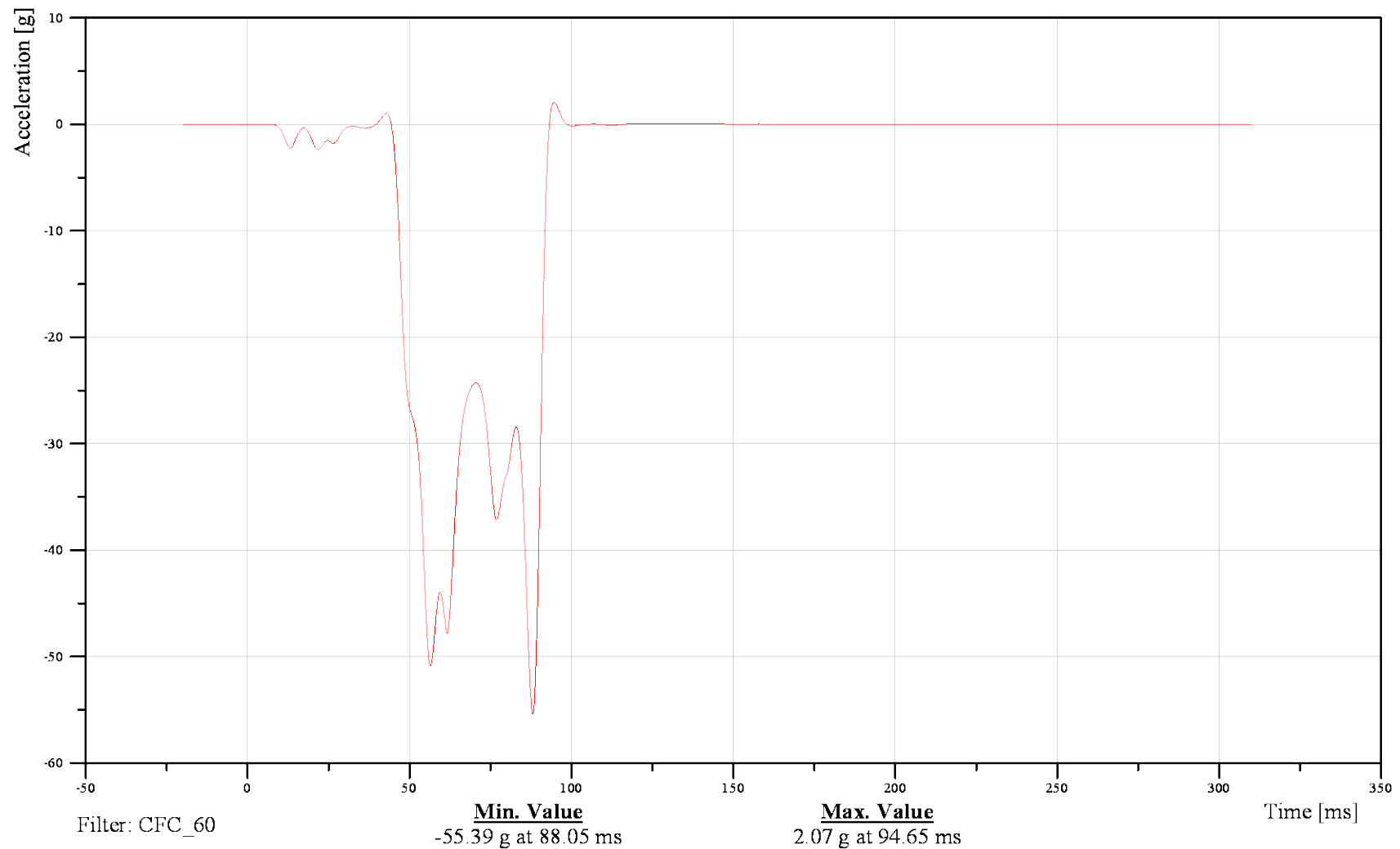
Time: 12:36

Customer: VRTC

11FORA000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Rear Floor Pan Above Axle Resultant

Date: 06/17/2013

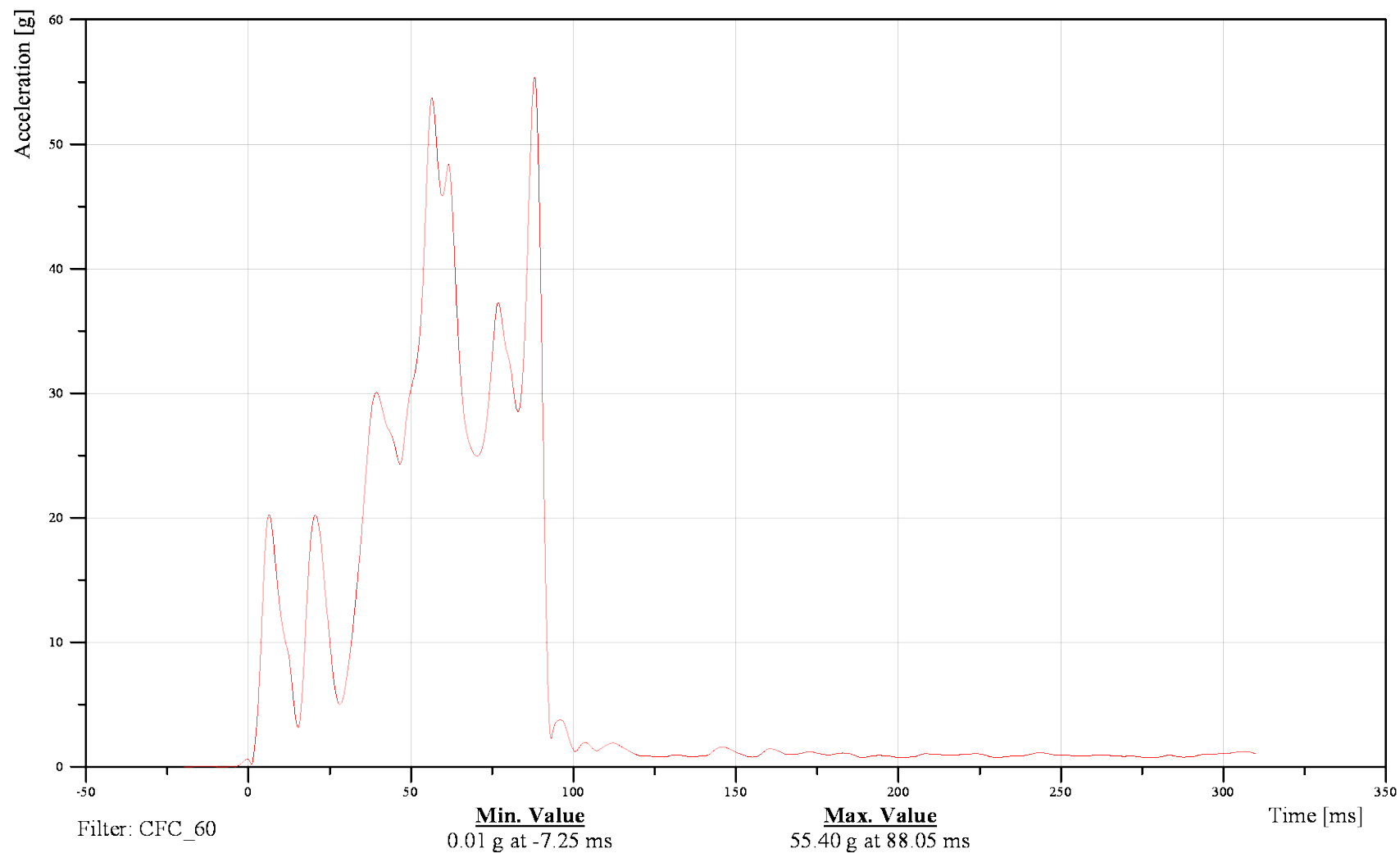
Time: 12:36

Customer: VRTC

11FORA000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle at EDR (X)

Date: 06/17/2013

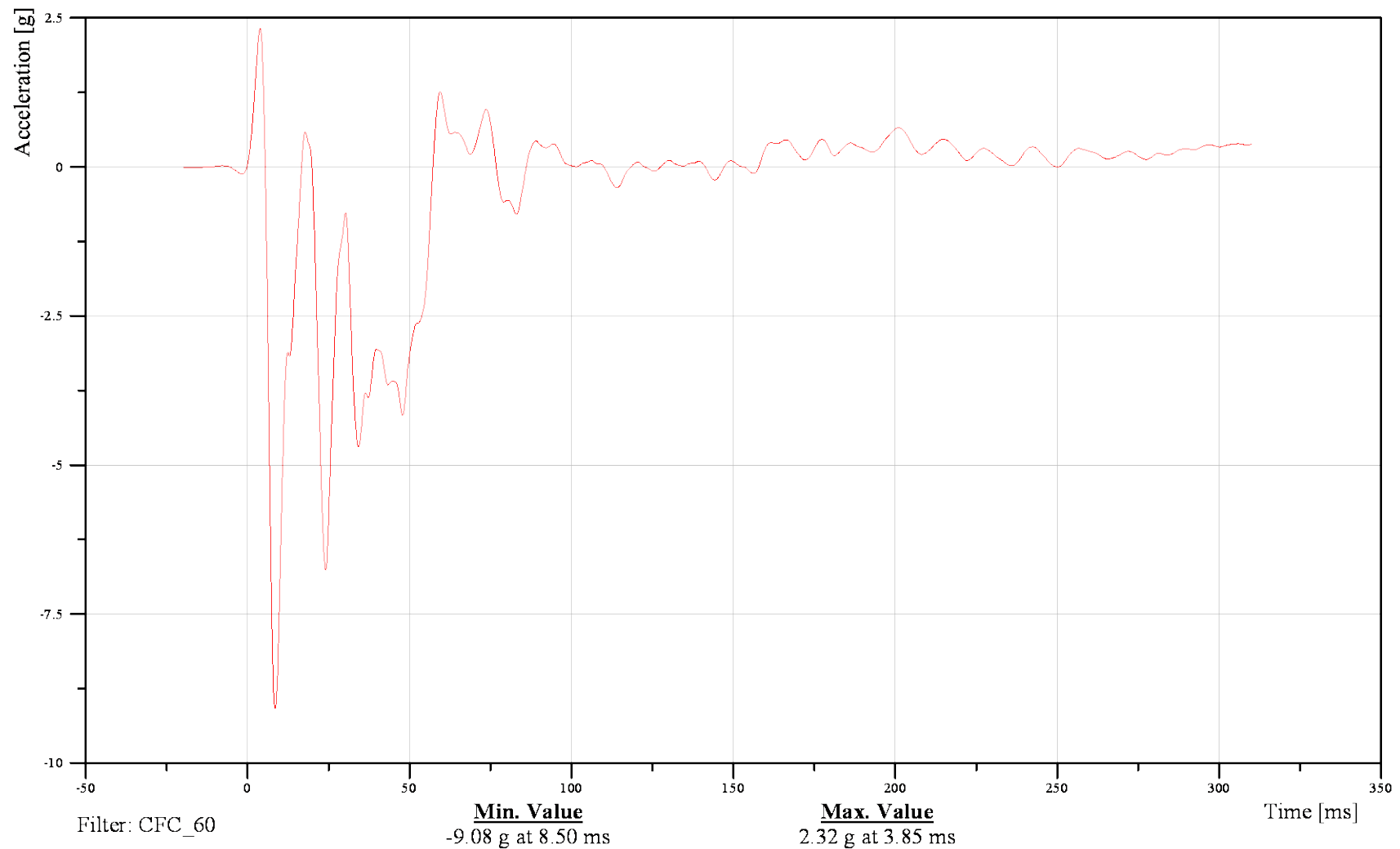
Time: 12:36

Customer: VRTC

11VEHCEDR000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle at EDR (Y)

Date: 06/17/2013

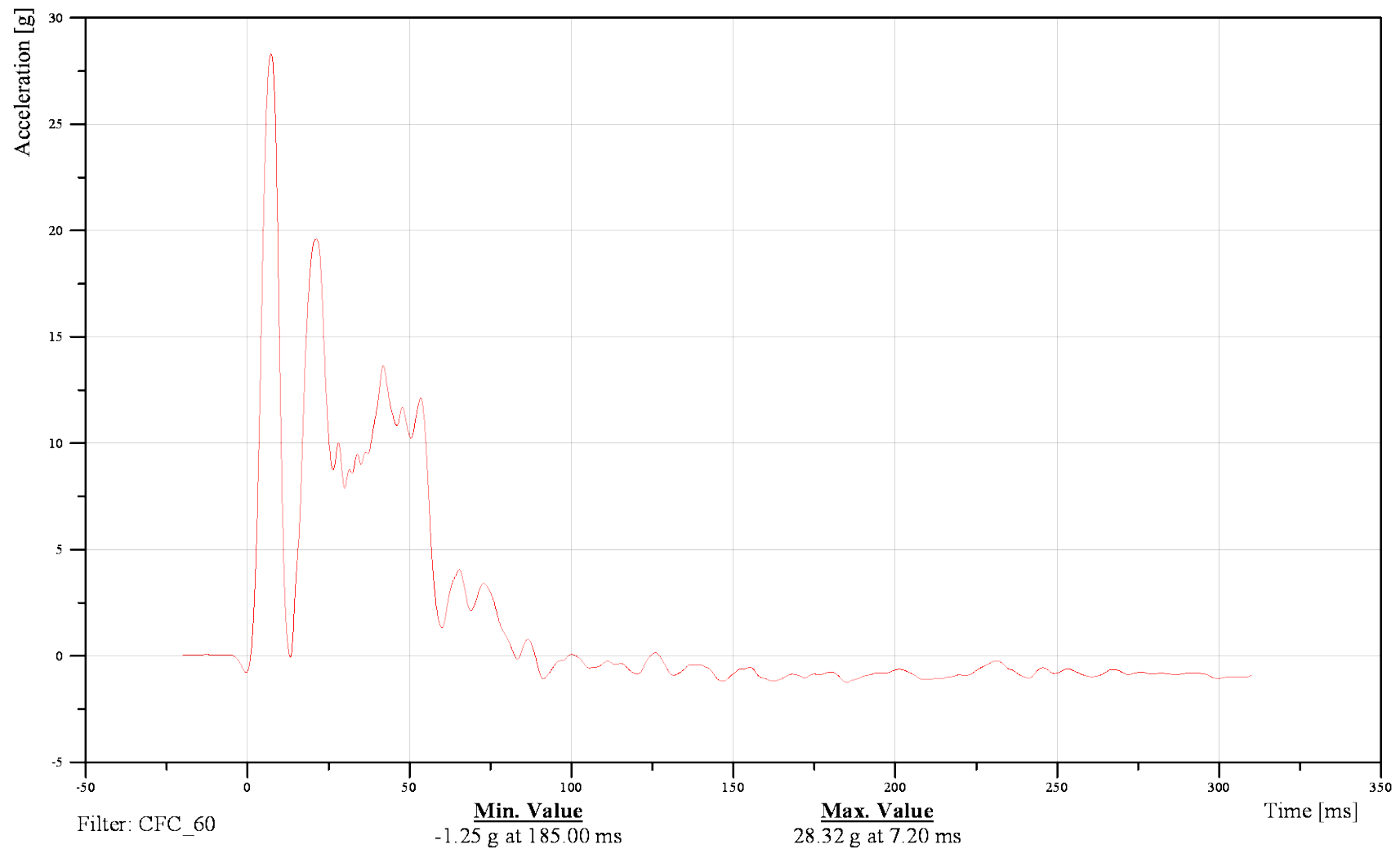
Time: 12:36

Customer: VRTC

11VEHCEDR000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle at EDR (Z)

Date: 06/17/2013

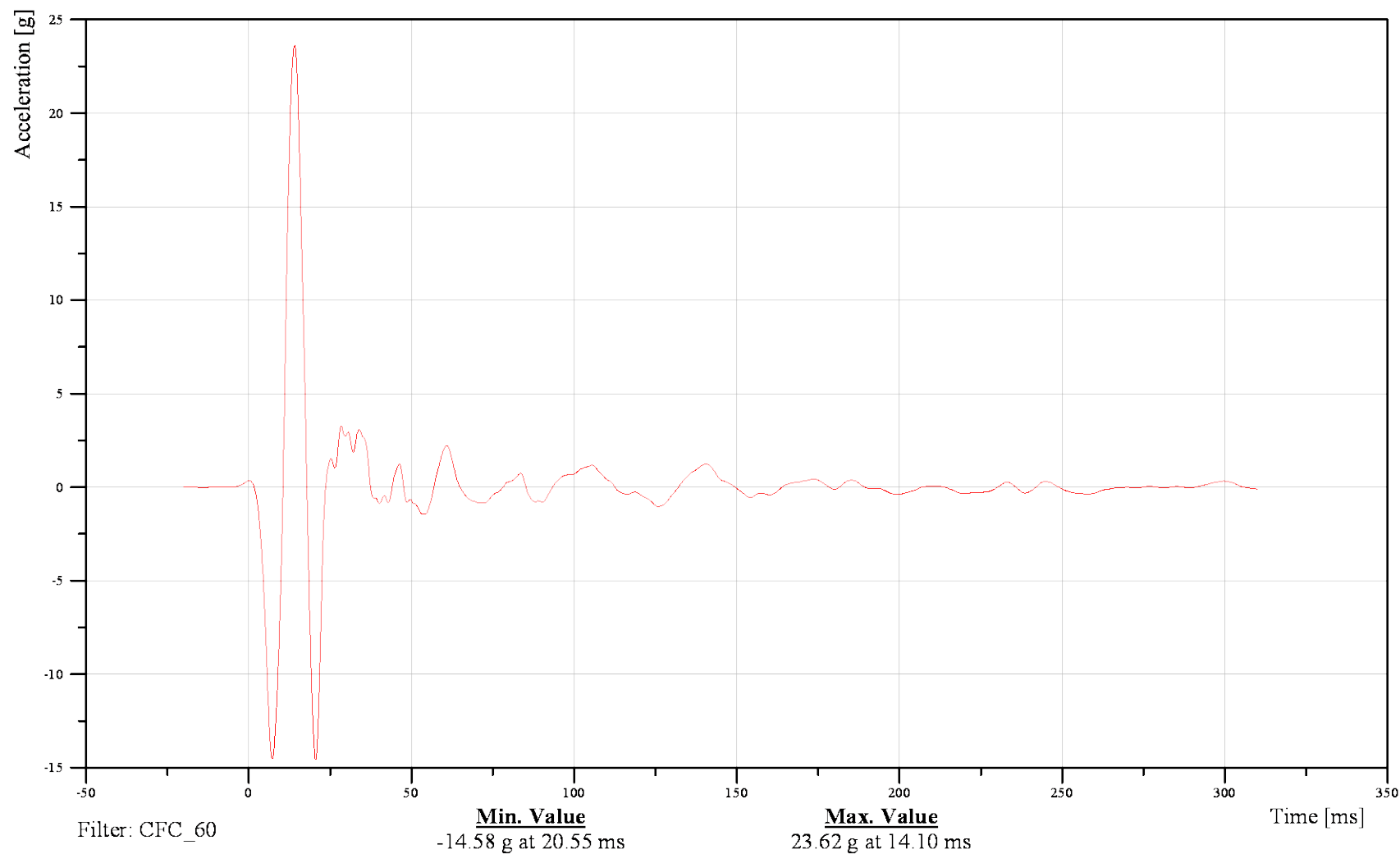
Time: 12:36

Customer: VRTC

11VEHCEDR000ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Vehicle at EDR Resultant

Date: 06/17/2013

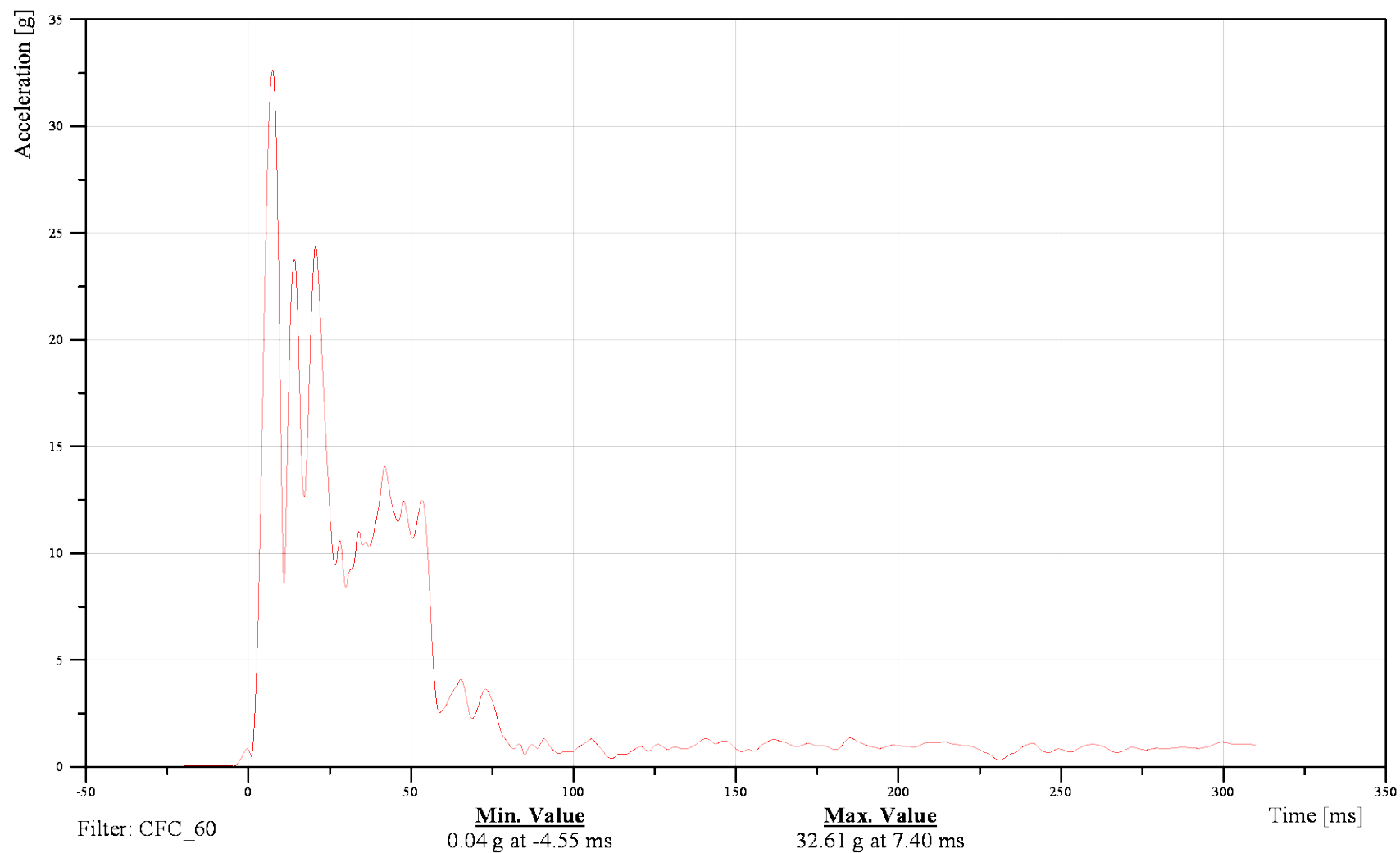
Time: 12:36

Customer: VRTC

11VEHCEDR000ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK AX

Date: 06/17/2013

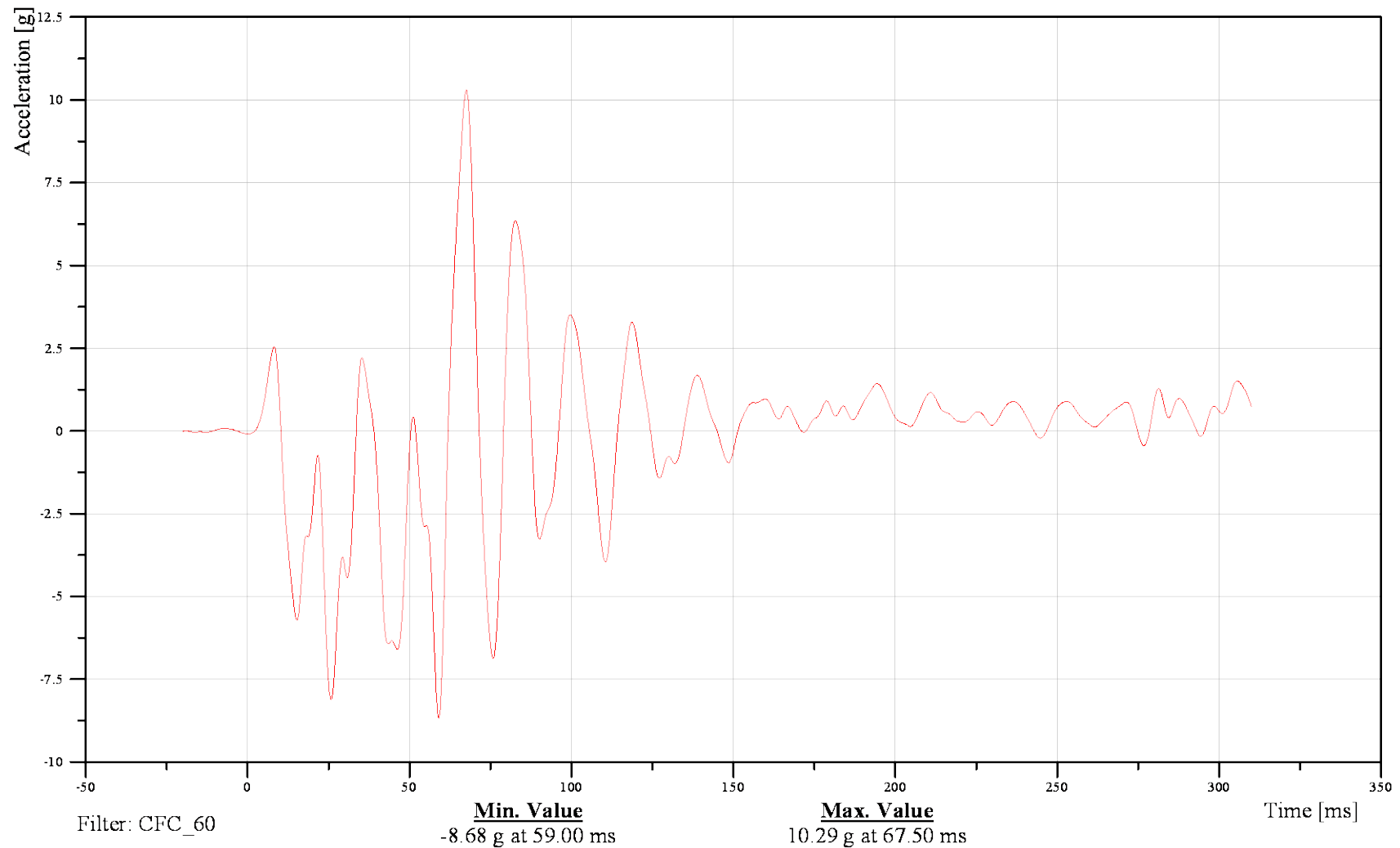
Time: 12:36

Customer: VRTC

10FORARD0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK AY

Date: 06/17/2013

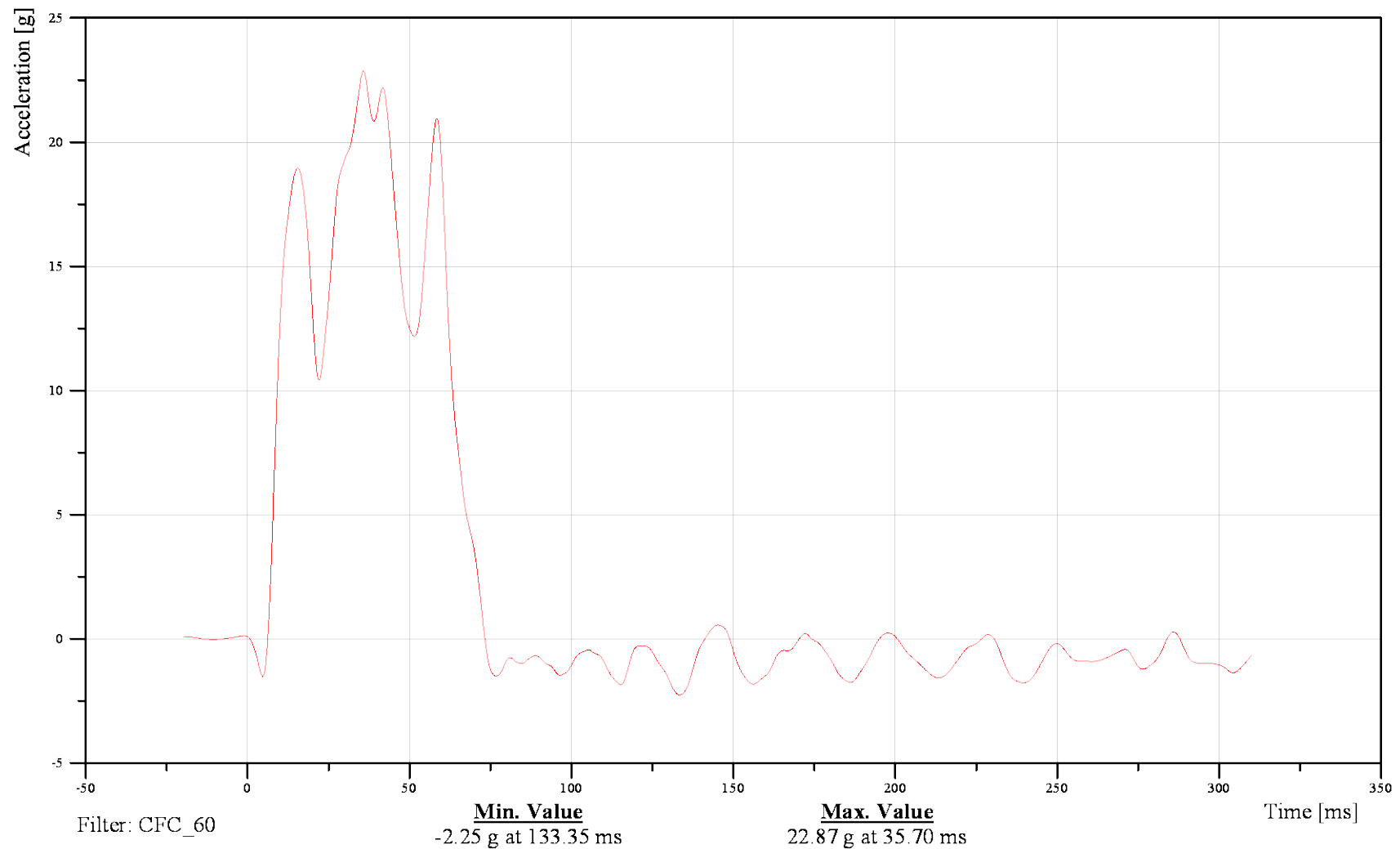
Time: 12:36

Customer: VRTC

10FORARD0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK AZ

Date: 06/17/2013

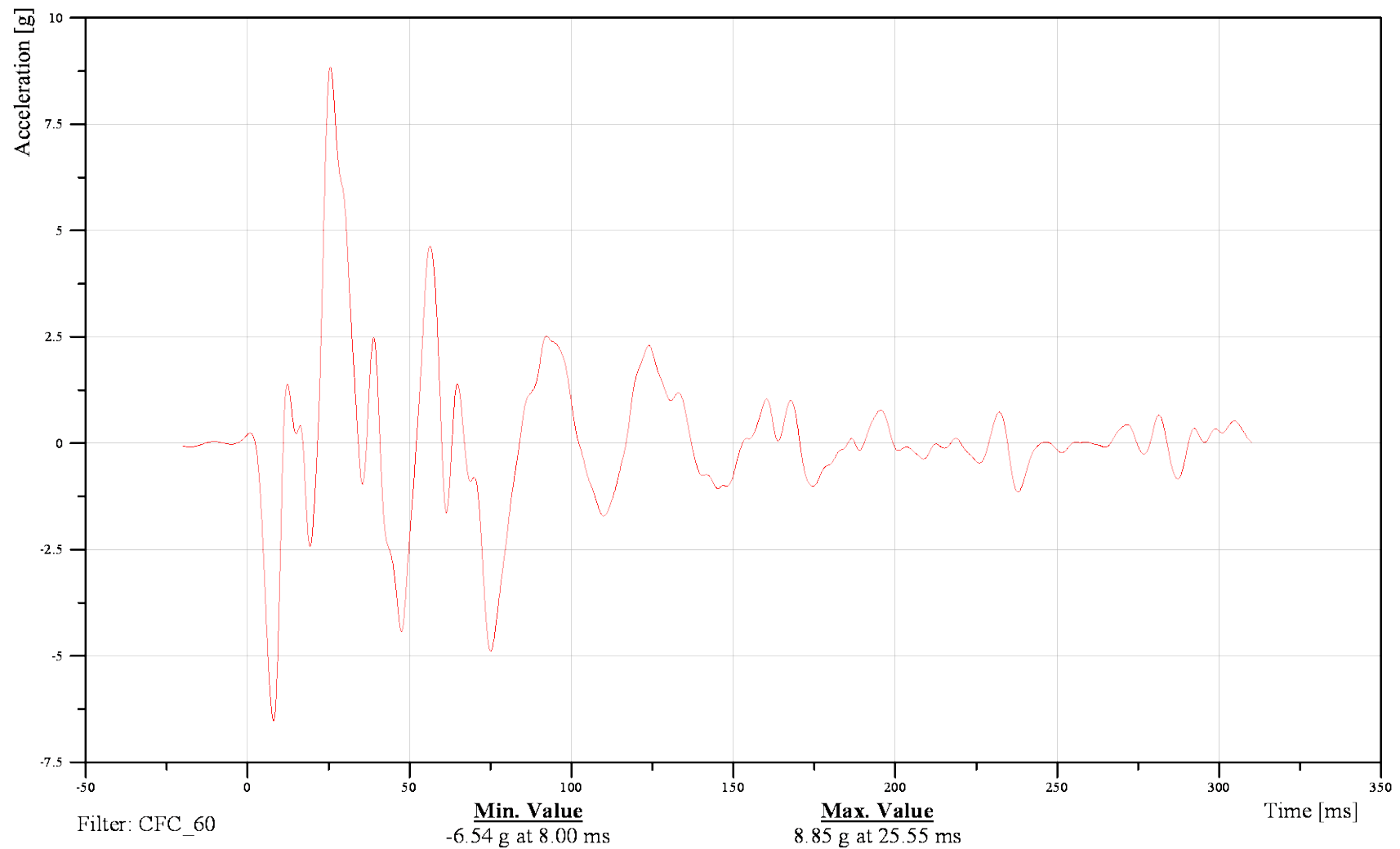
Time: 12:36

Customer: VRTC

10FORARD0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK A Resultant

Date: 06/17/2013

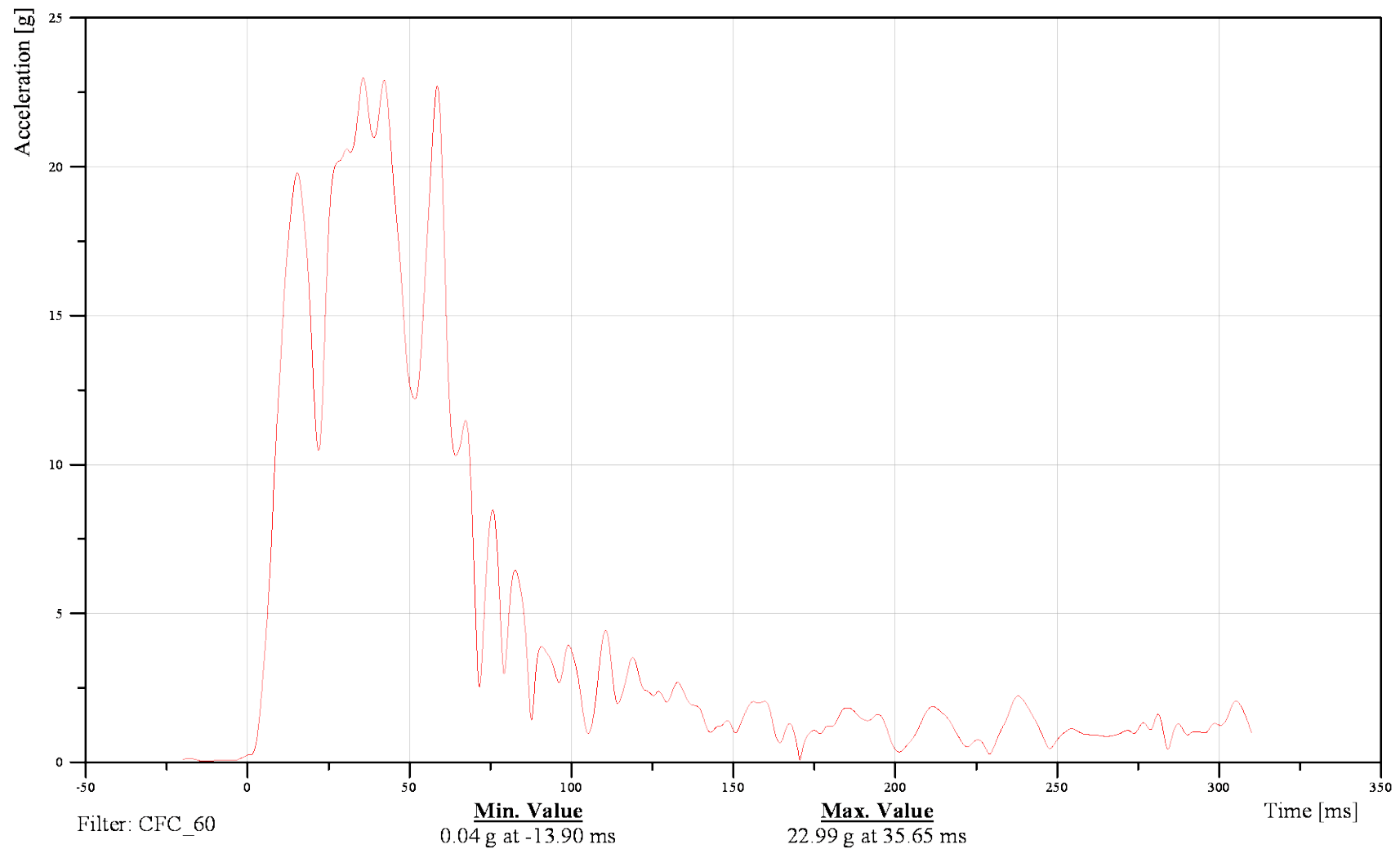
Time: 12:36

Customer: VRTC

10FORARD0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





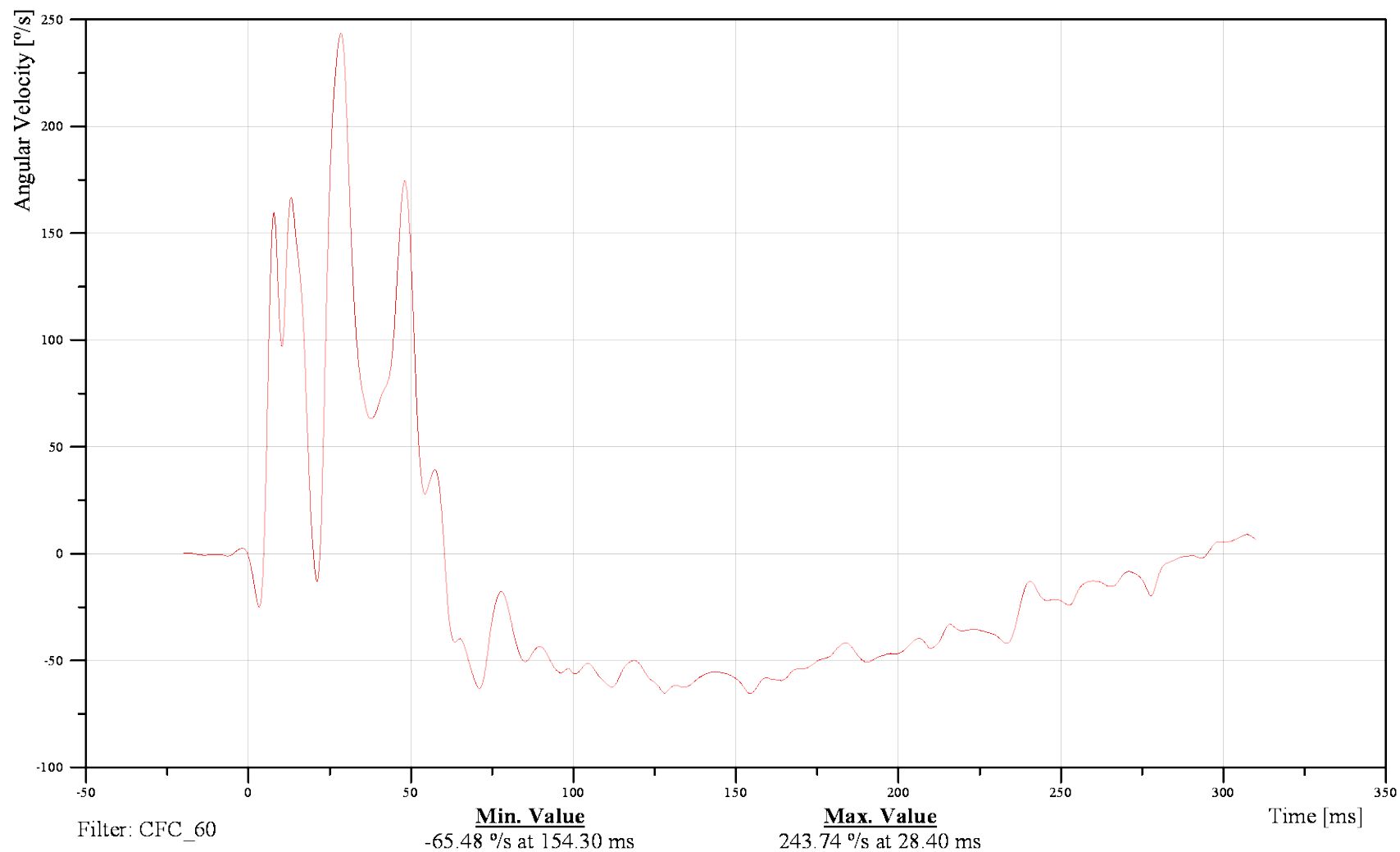
FMVSS 214 Side Impact 2011 Cadillac CTS
VEHICLE CENTER OF GRAVITY (X) ROLL RATE GYRO

Date: 06/17/2013
Time: 12:36

Customer: VRTC

10VEHCCG0000AVXD

TRC Inc. Test Lab: CTF
Test Number: 120920





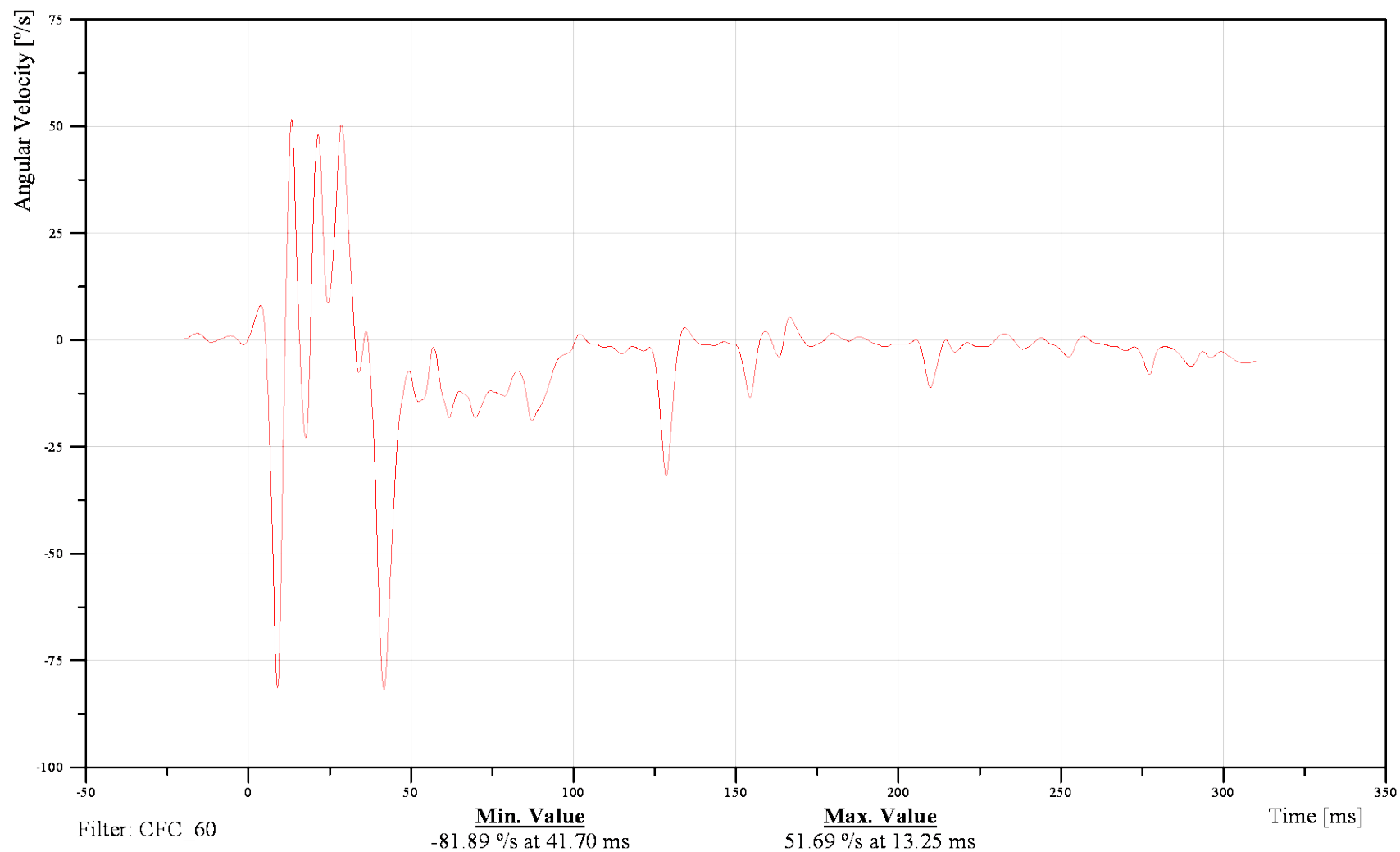
FMVSS 214 Side Impact 2011 Cadillac CTS
VEHICLE CENTER OF GRAVITY (Y) PITCH RATE GYRO

Date: 06/17/2013
Time: 12:36

Customer: VRTC

10VEHCCG0000AVYD

TRC Inc. Test Lab: CTF
Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS
VEHICLE CENTER OF GRAVITY (Z) YAW RATE GYRO

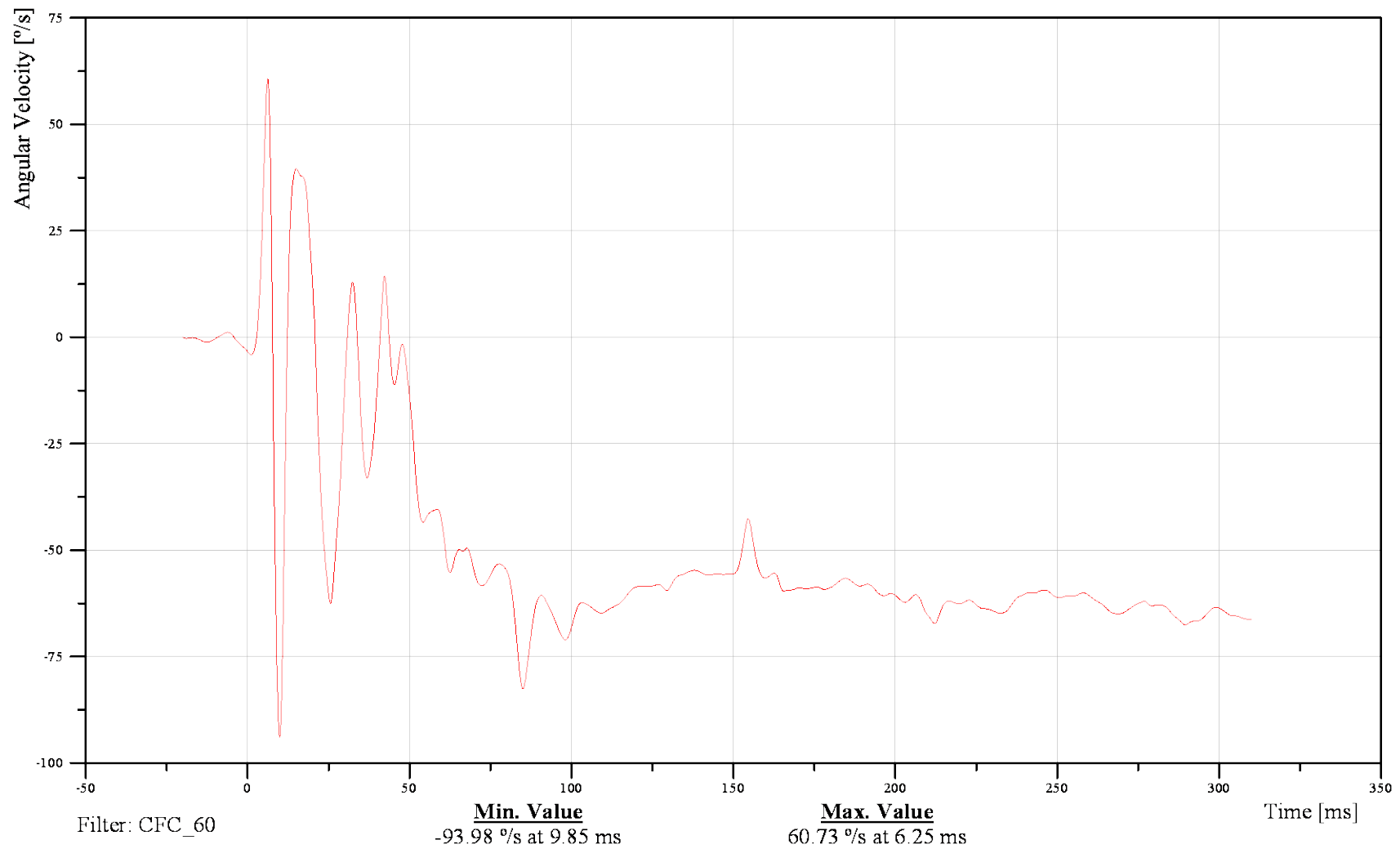
Date: 06/17/2013
Time: 12:36

Customer: VRTC

10VEHCCG0000AVZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

VEHICLE AT EDR (X) ROLL RATE GYRO

Date: 06/17/2013

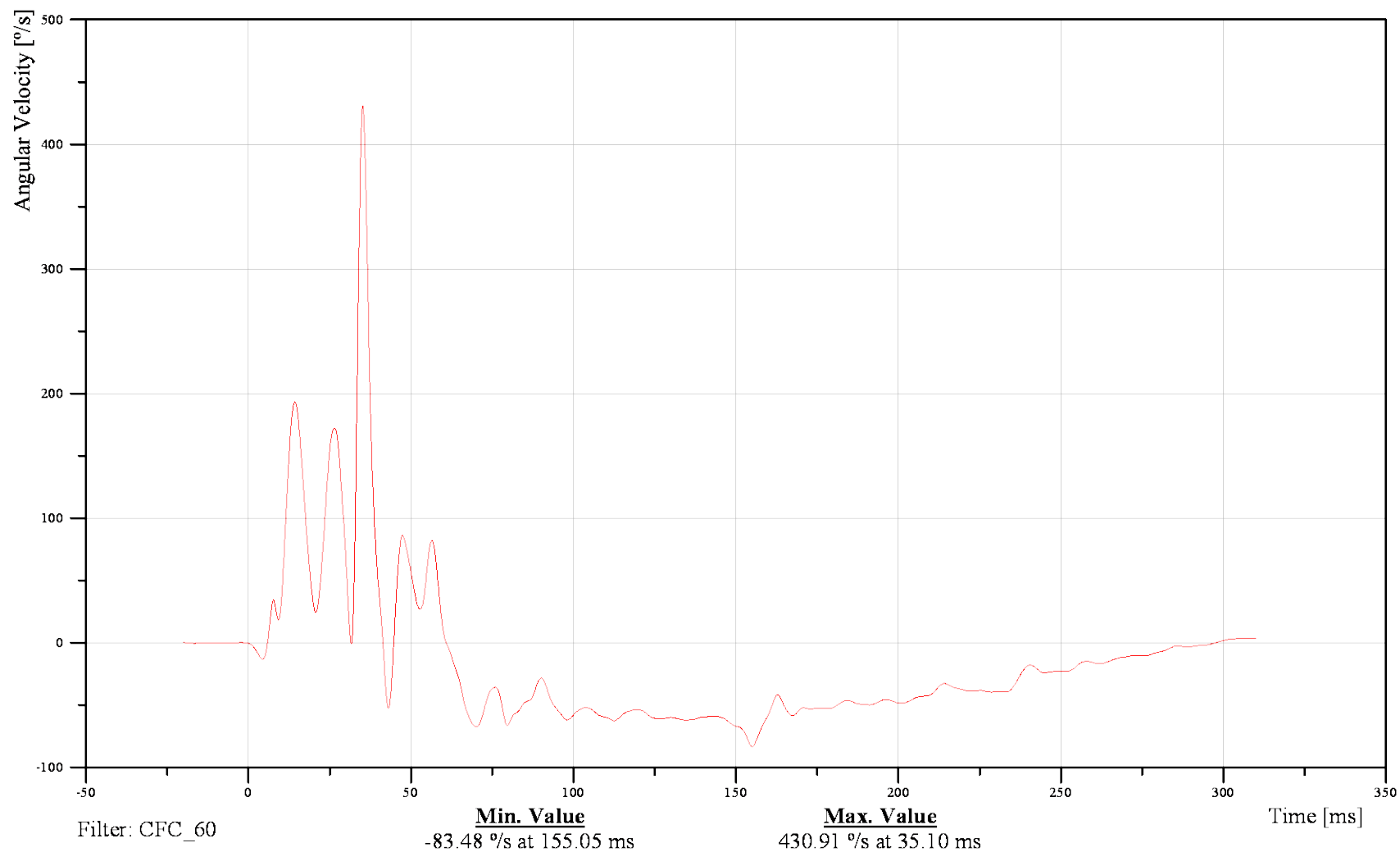
Time: 12:36

Customer: VRTC

10VEHCEDR000AVXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

VEHICLE AT EDR (Y) PITCH RATE GYRO

Date: 06/17/2013

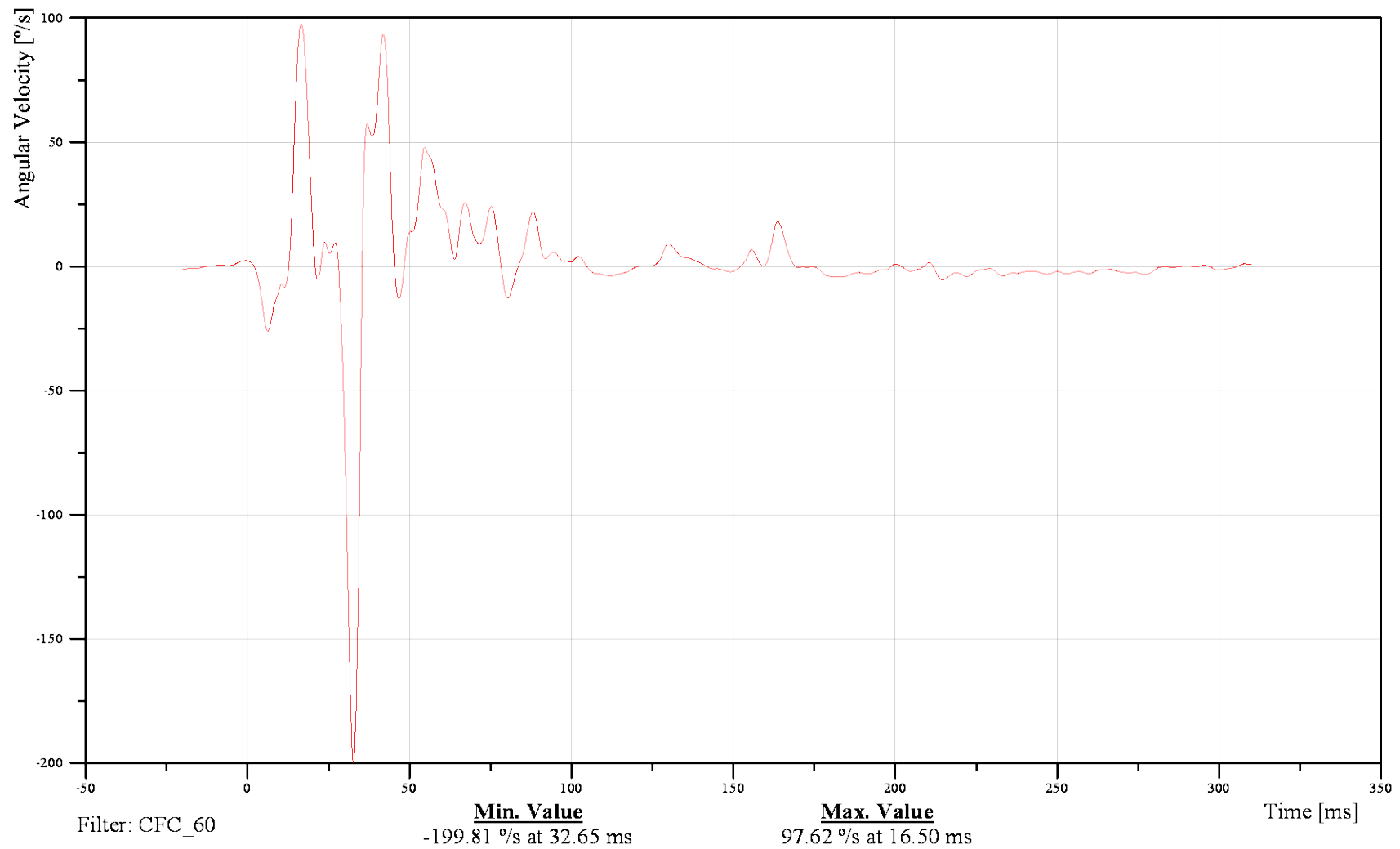
Time: 12:36

Customer: VRTC

10VEHCEDR000AVYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

VEHICLE AT EDR (Z) YAW RATE GYRO

Date: 06/17/2013

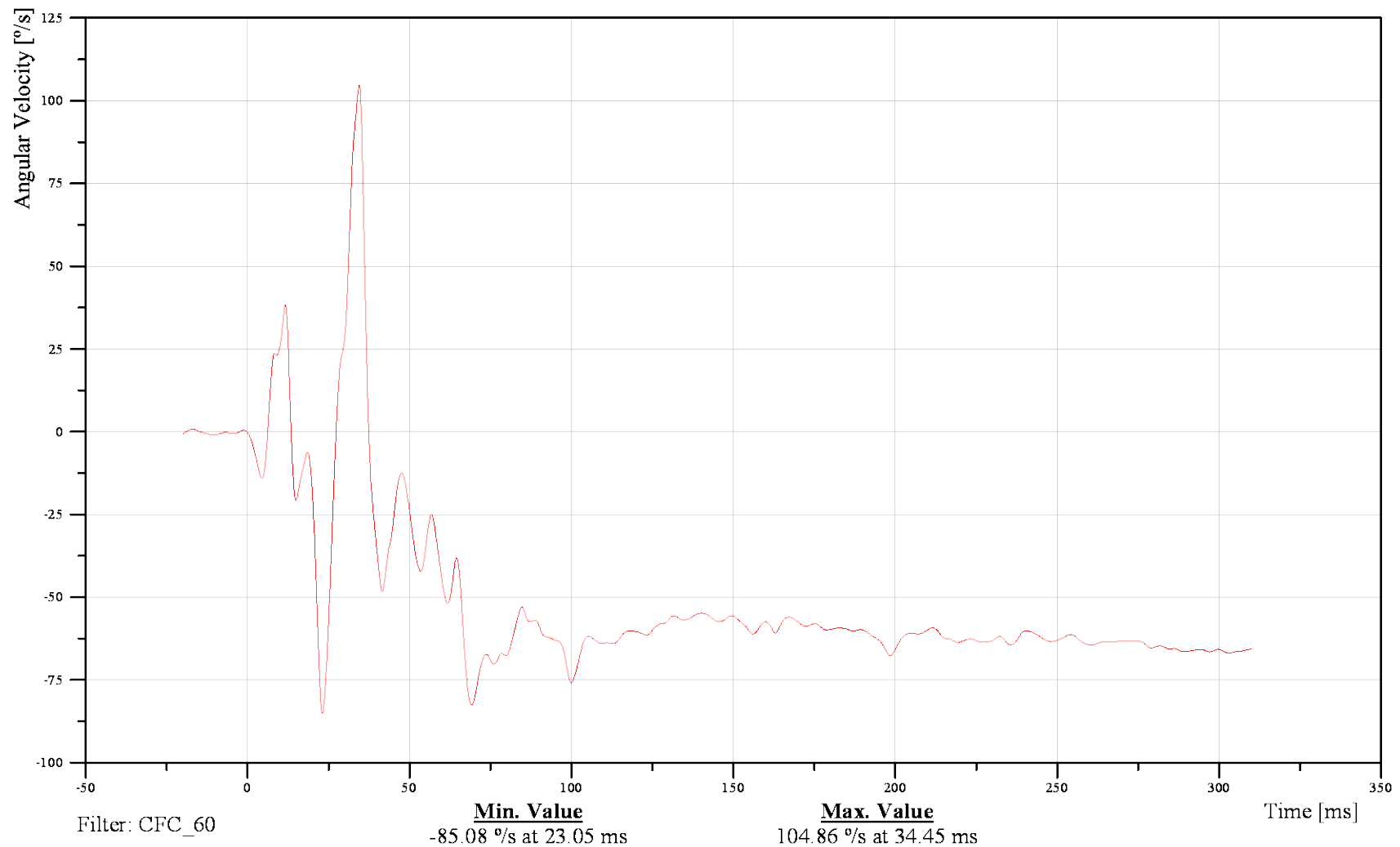
Time: 12:36

Customer: VRTC

10VEHCEDR000AVZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK (X) ROLL RATE GYRO

Date: 06/17/2013

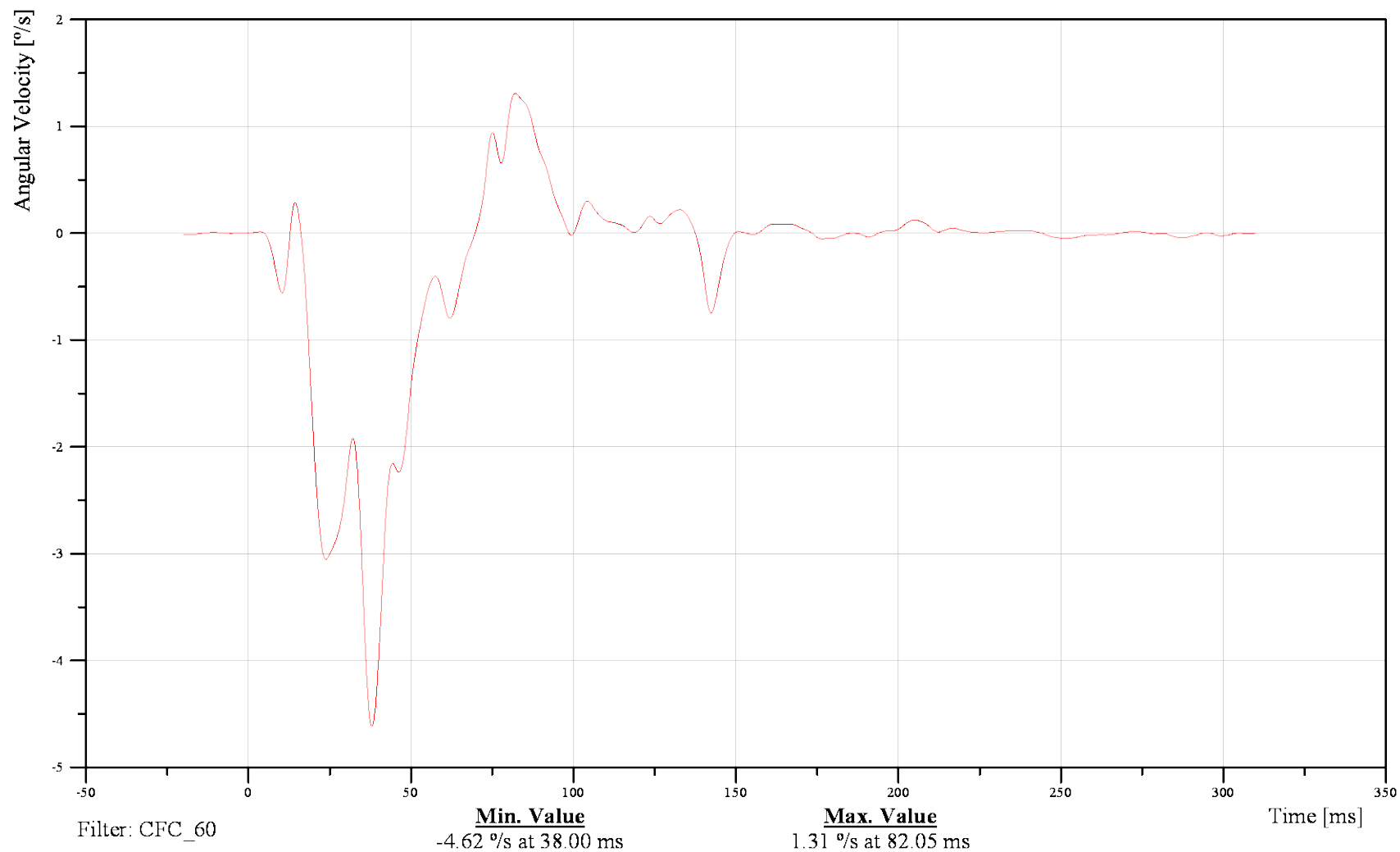
Time: 12:36

Customer: VRTC

10FORARD0000AVXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK (Y) PITCH RATE GYRO

Date: 06/17/2013

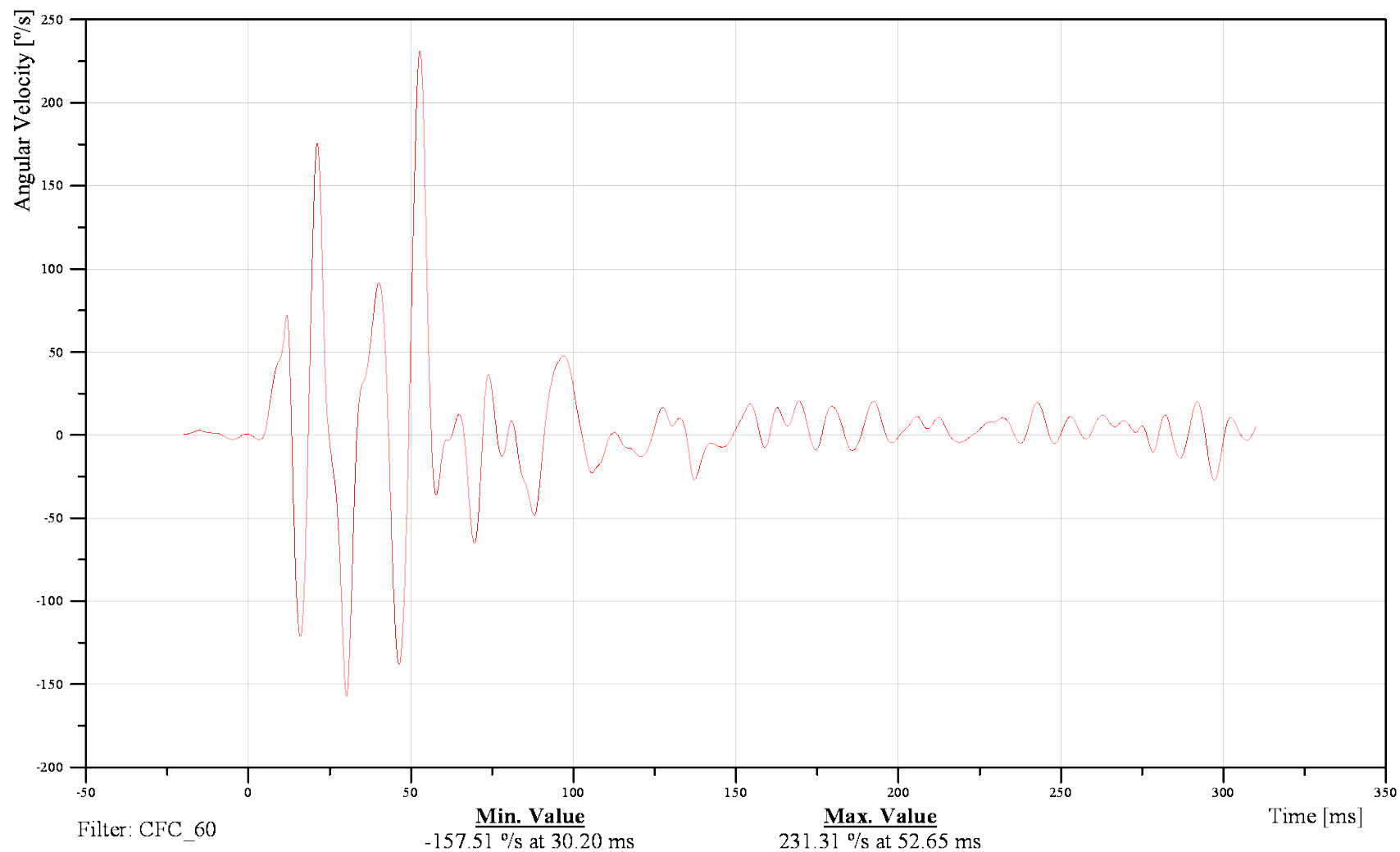
Time: 12:36

Customer: VRTC

10FORARD0000AVYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

REAR DECK (Z) YAW RATE GYRO

Date: 06/17/2013

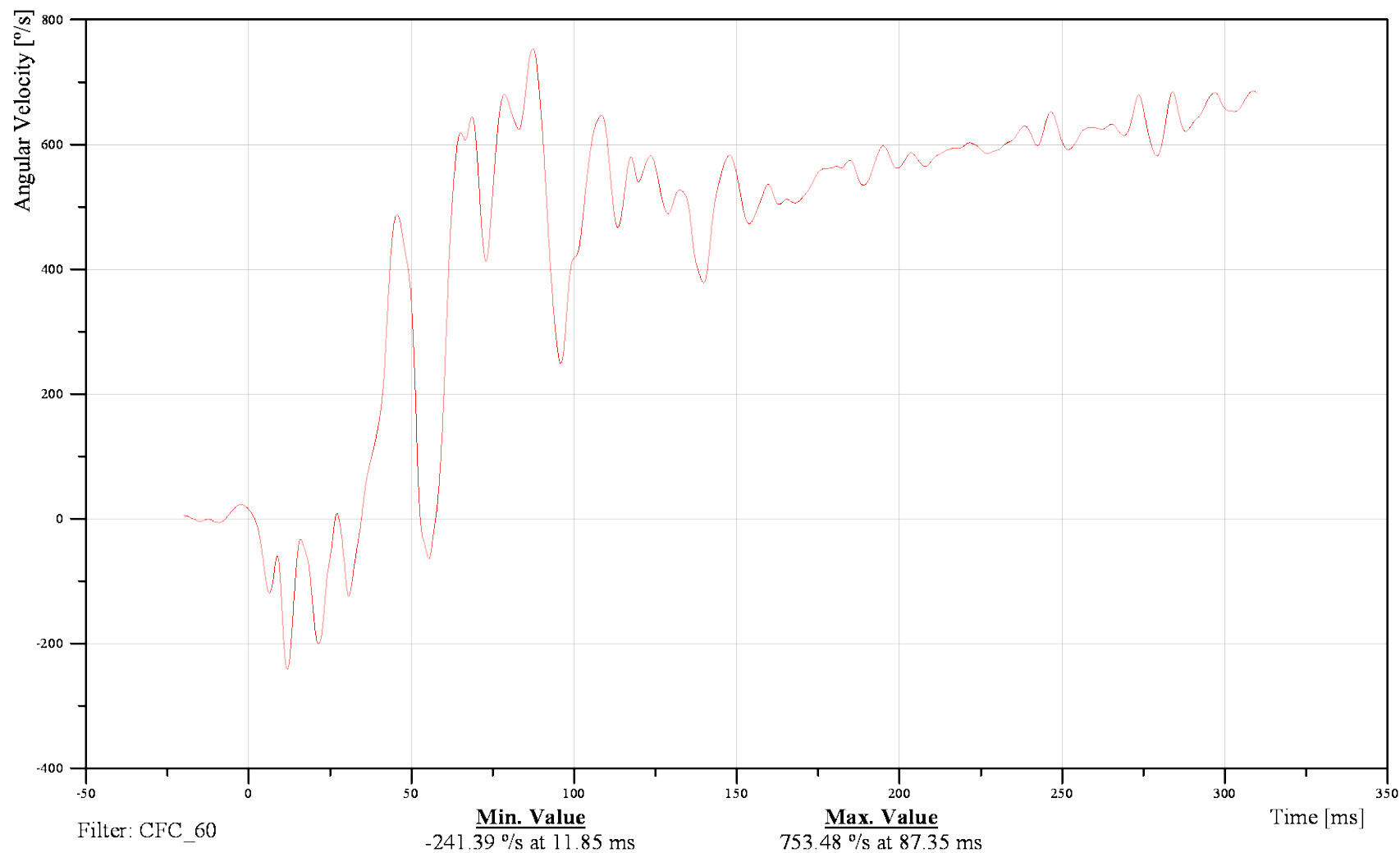
Time: 12:36

Customer: VRTC

10FORARD0000AVZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Front Door Mid Centerline (Y)

Date: 06/17/2013

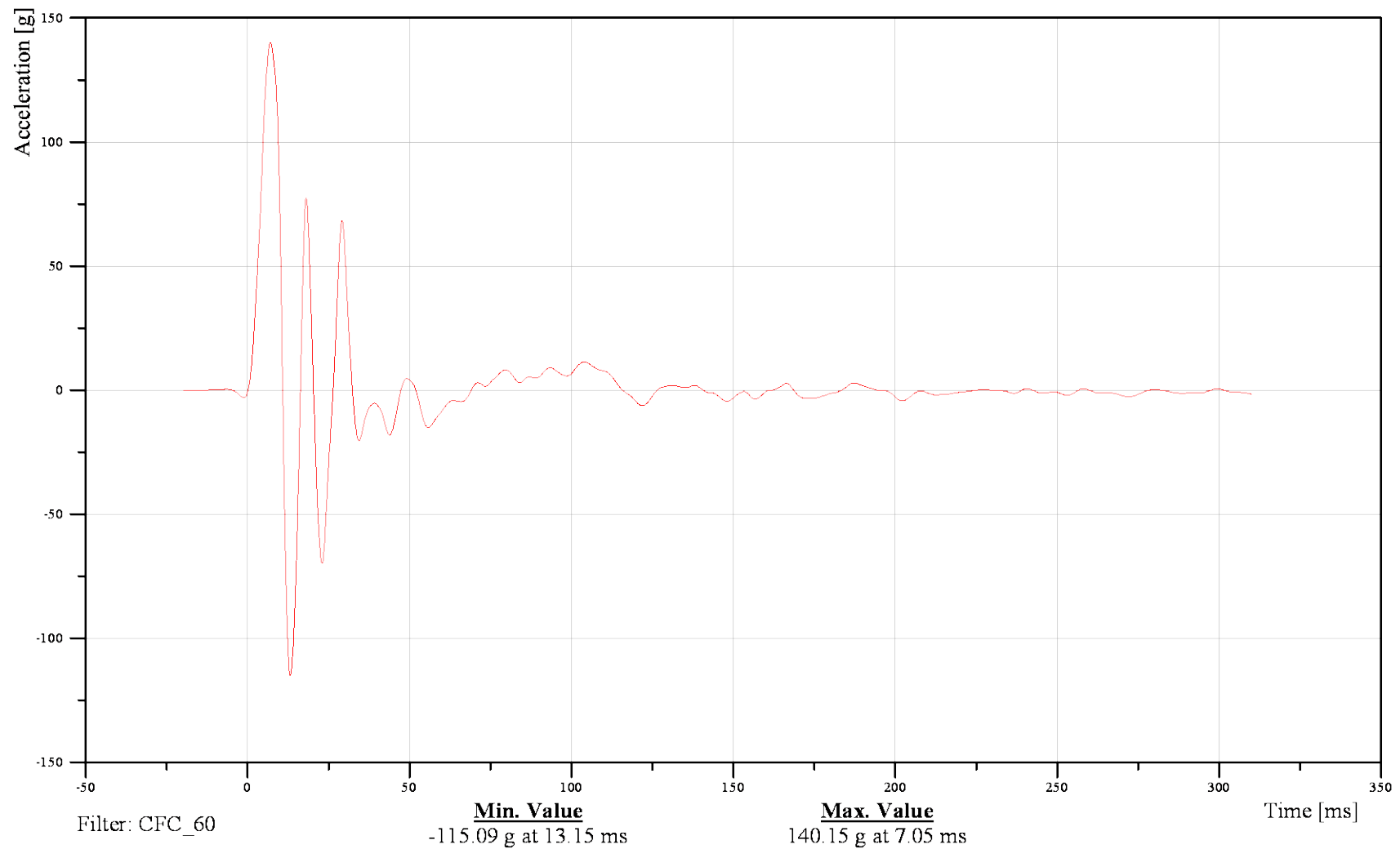
Time: 12:36

Customer: VRTC

11DOORMIMI71ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Front Door Mid Rear (Y)

Date: 06/17/2013

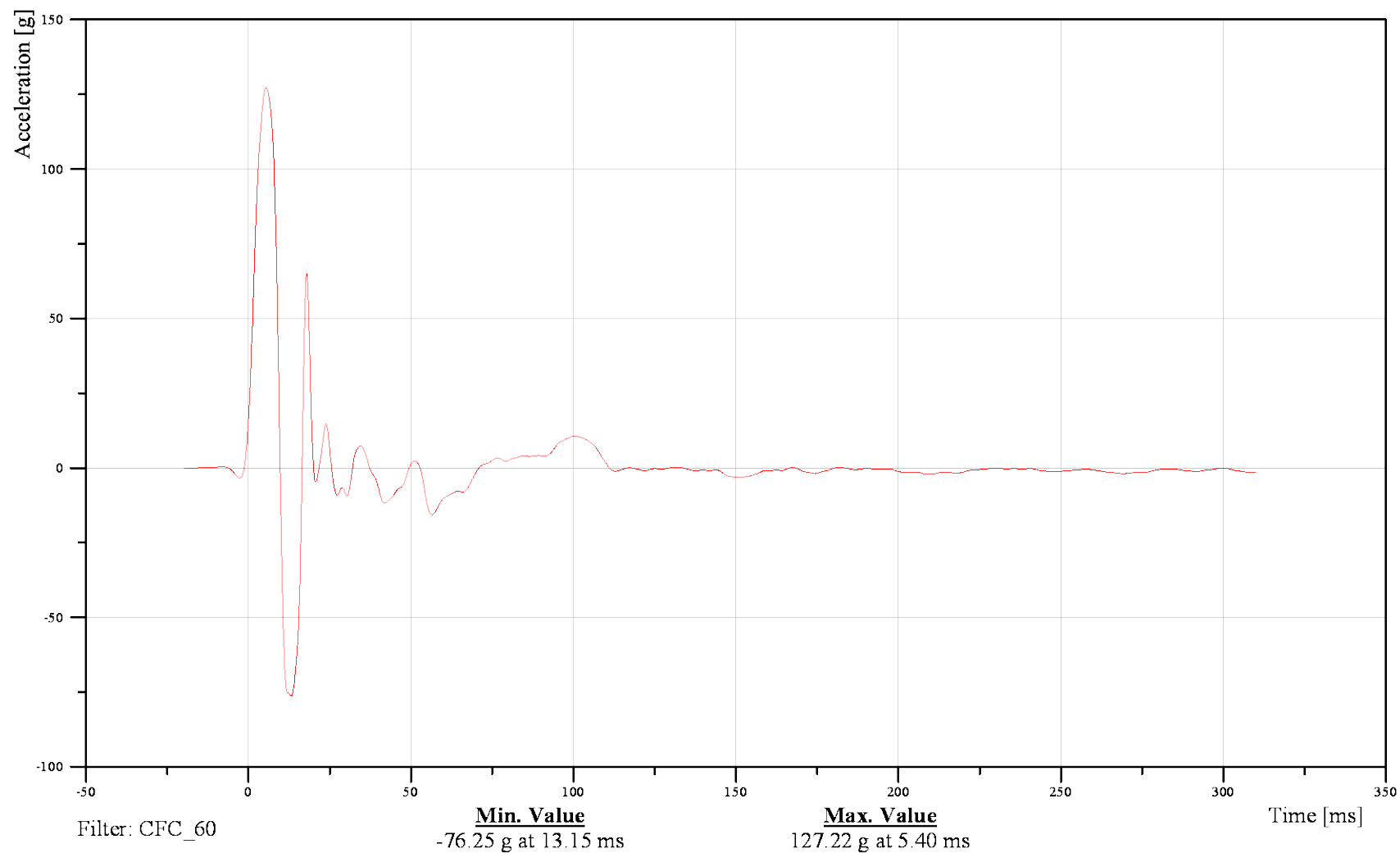
Time: 12:36

Customer: VRTC

11DOORMIRE71ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Front Door Upper Centerline (Y)

Date: 06/17/2013

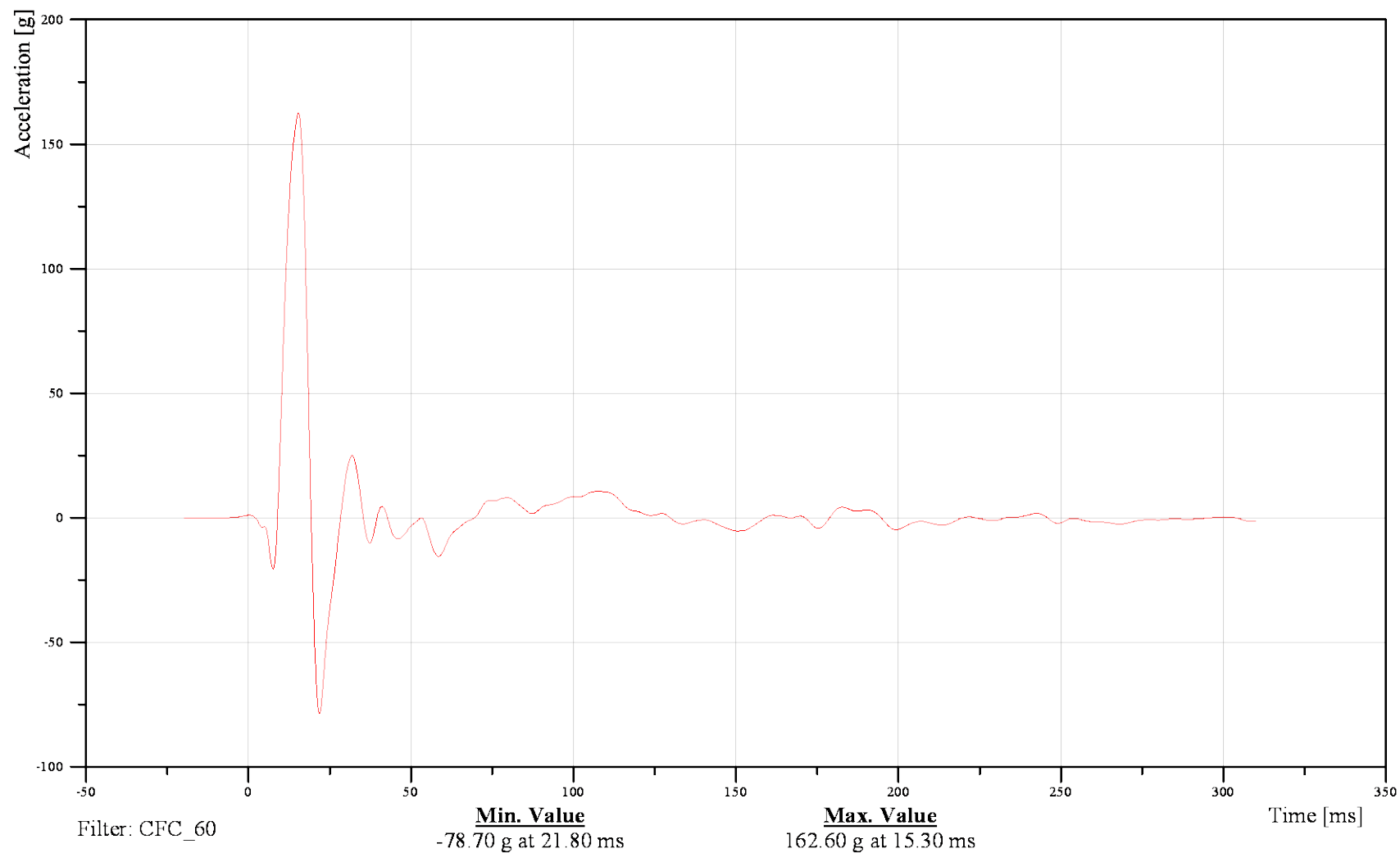
Time: 12:36

Customer: VRTC

11DOORMIUP71ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Rear Door Mid Rear (Y)

Date: 06/17/2013

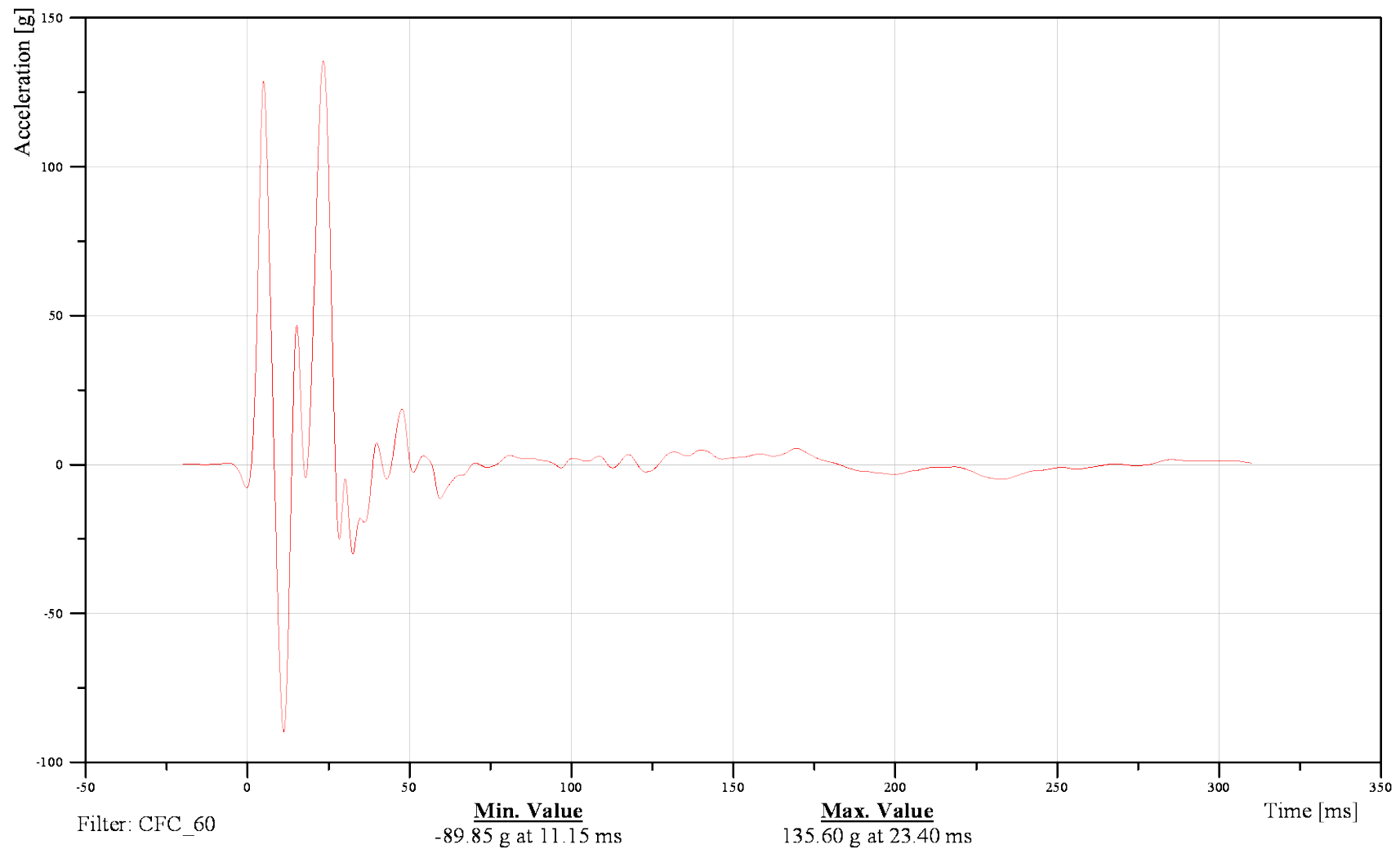
Time: 12:36

Customer: VRTC

14DOORMIRE71ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Left Rear Door Upper Centerline (Y)

Date: 06/17/2013

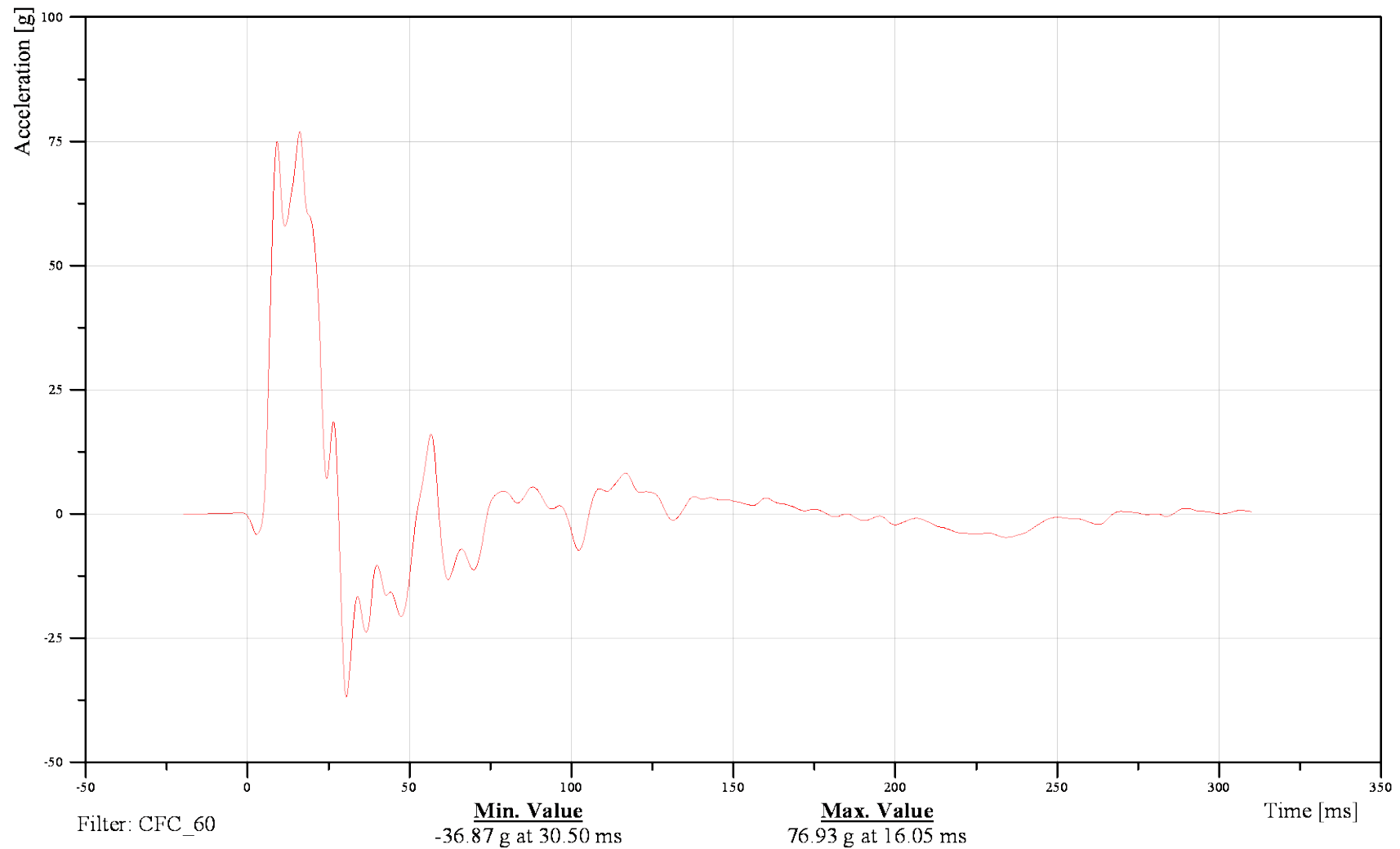
Time: 12:36

Customer: VRTC

14DOORMIUP71ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Driver primary

Date: 06/17/2013

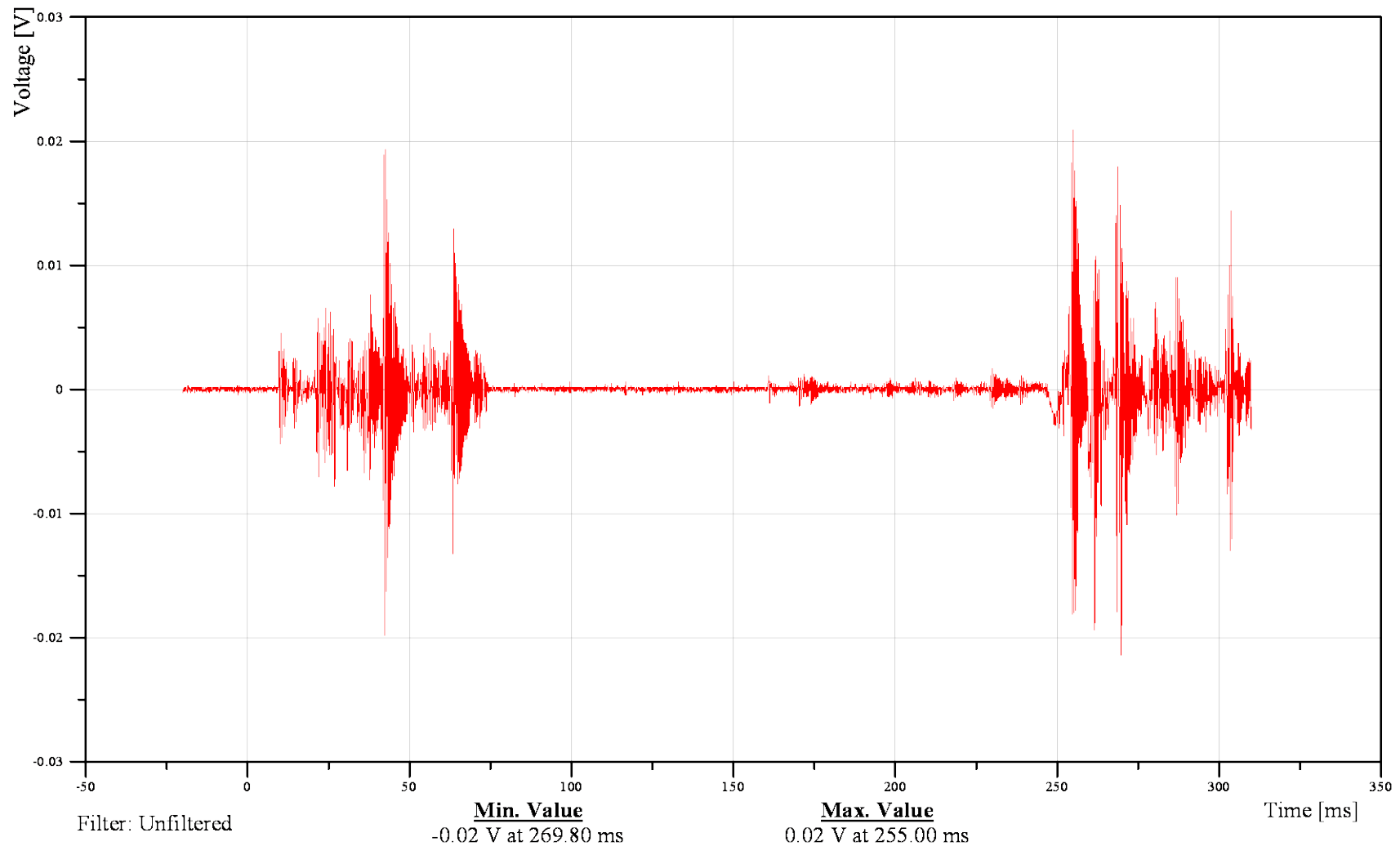
Time: 12:36

Customer: VRTC

11SENS000000VO00

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

SAB TIMING IND

Date: 06/17/2013

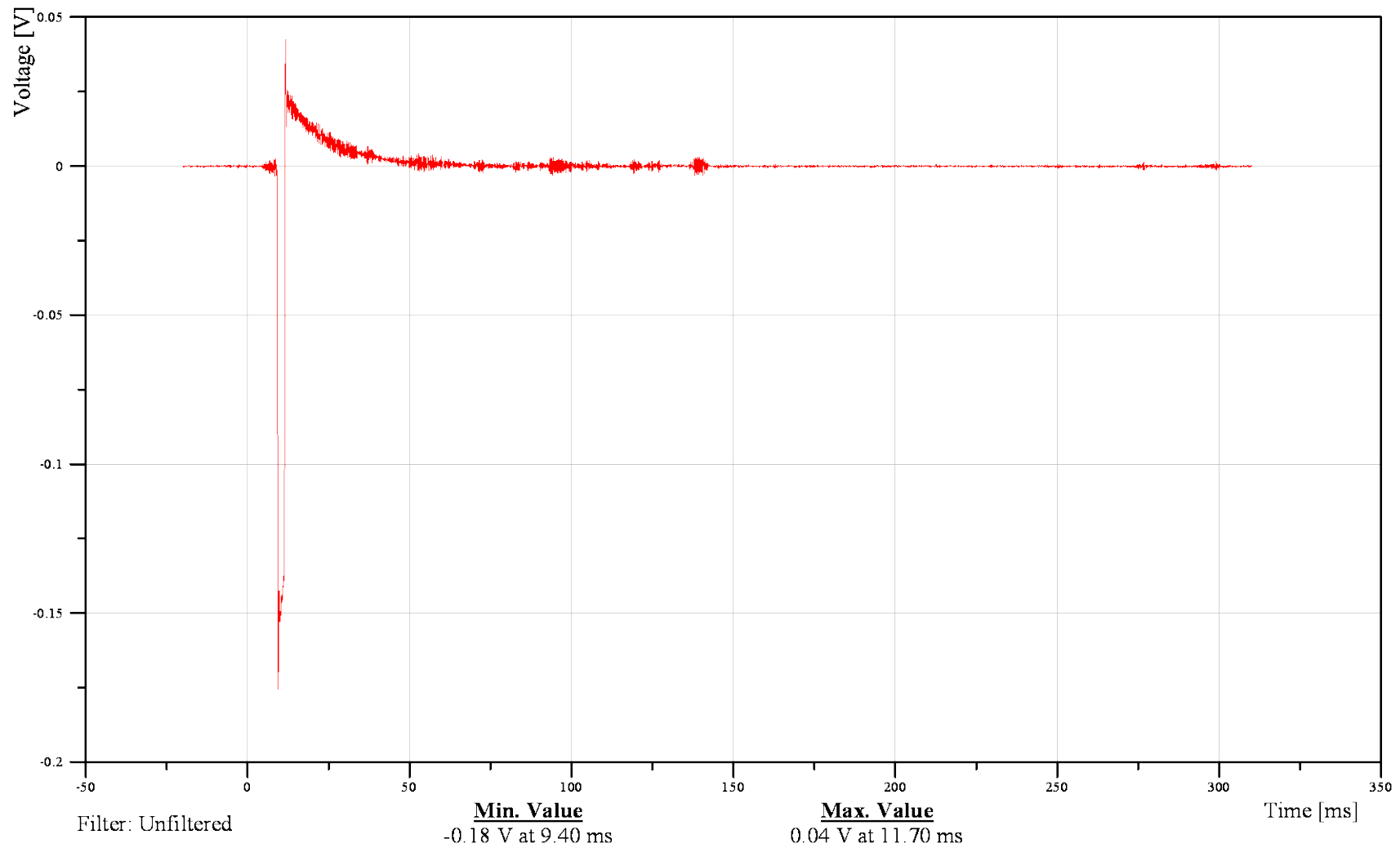
Time: 12:36

Customer: VRTC

11SENS010000VO00

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

SCAB TIMING IND

Date: 06/17/2013

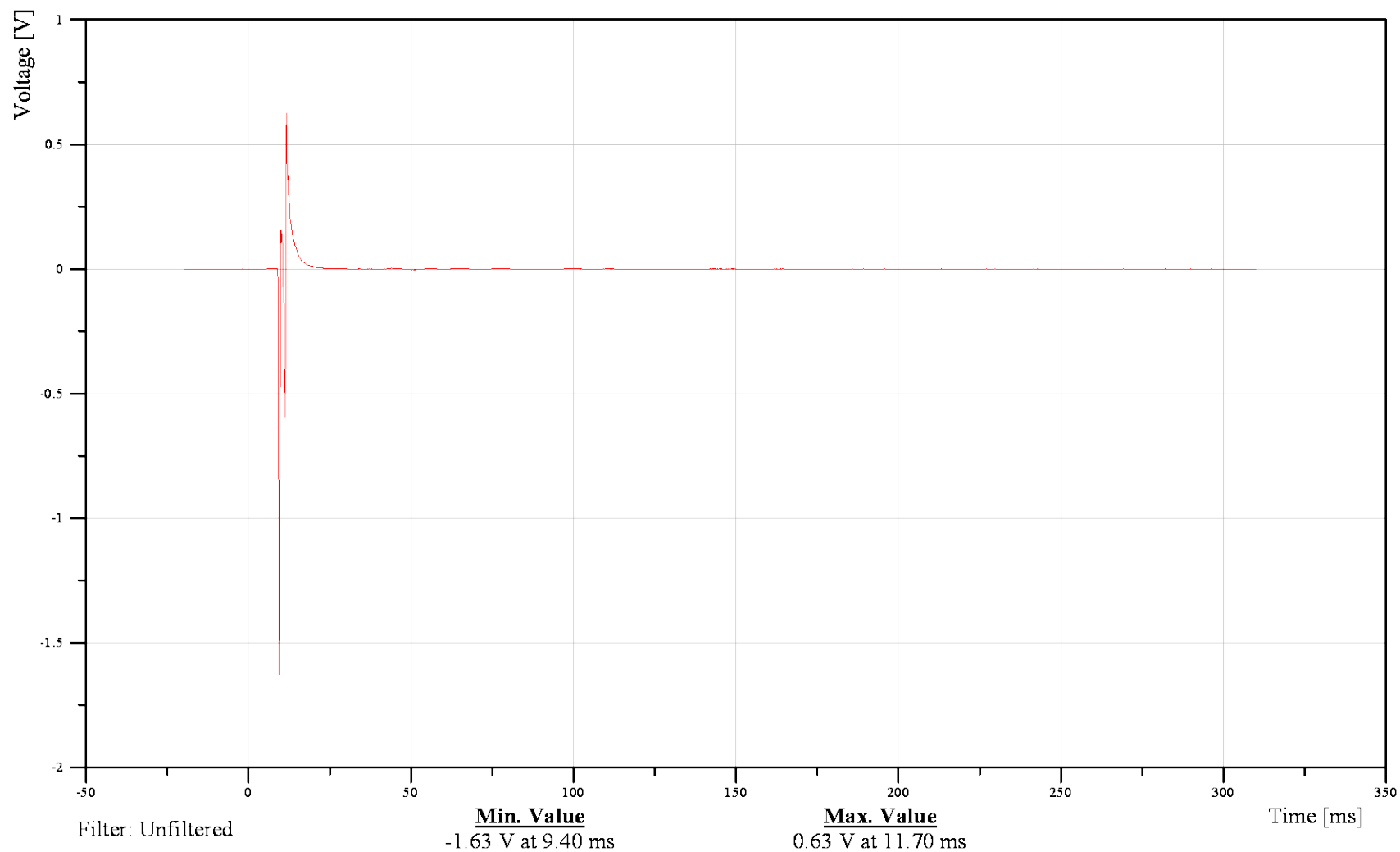
Time: 12:36

Customer: VRTC

11SENS020000VO00

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Contact

Date: 06/17/2013

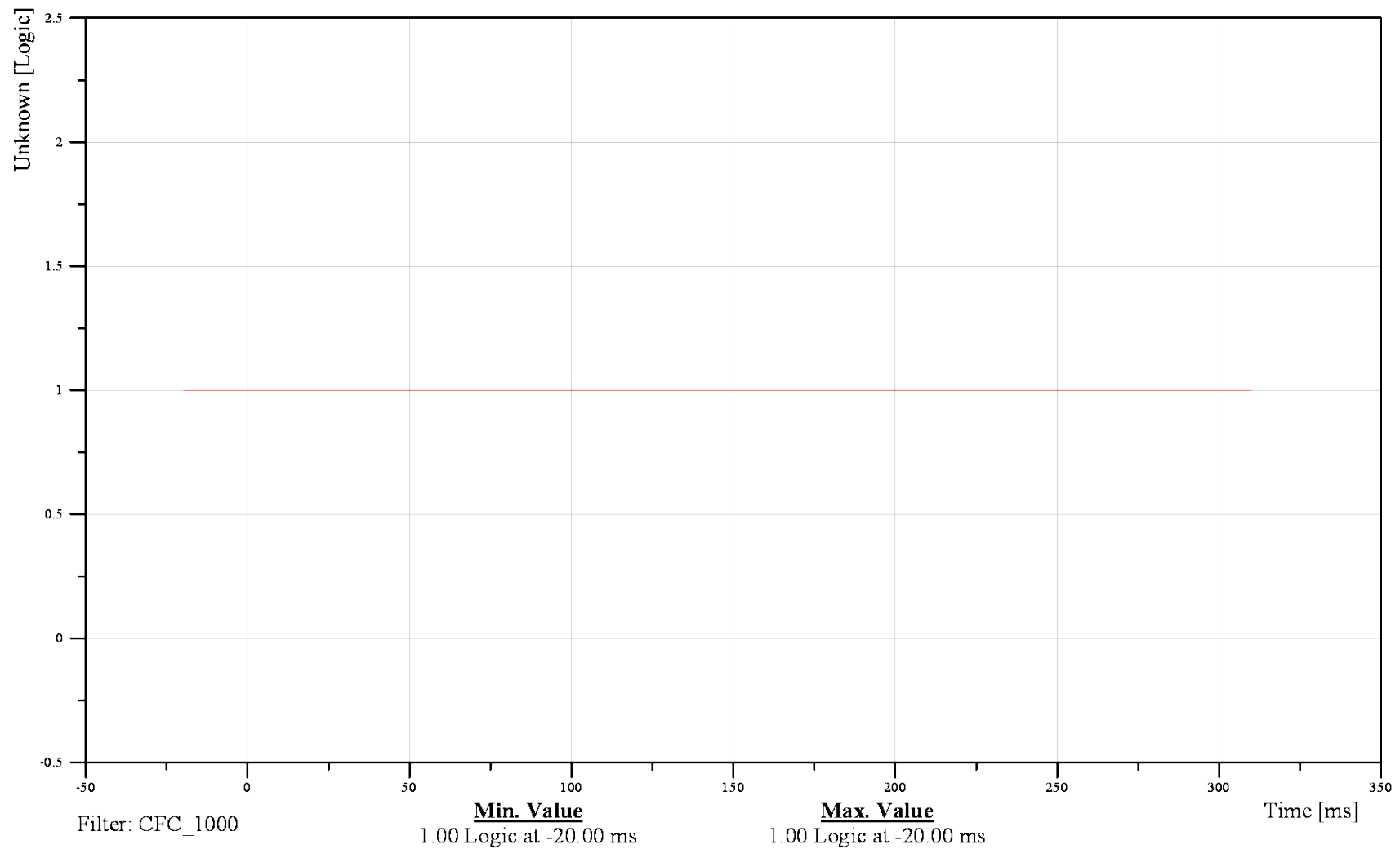
Time: 12:36

Customer: VRTC

11HEADCONT00VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Contact

Date: 06/17/2013

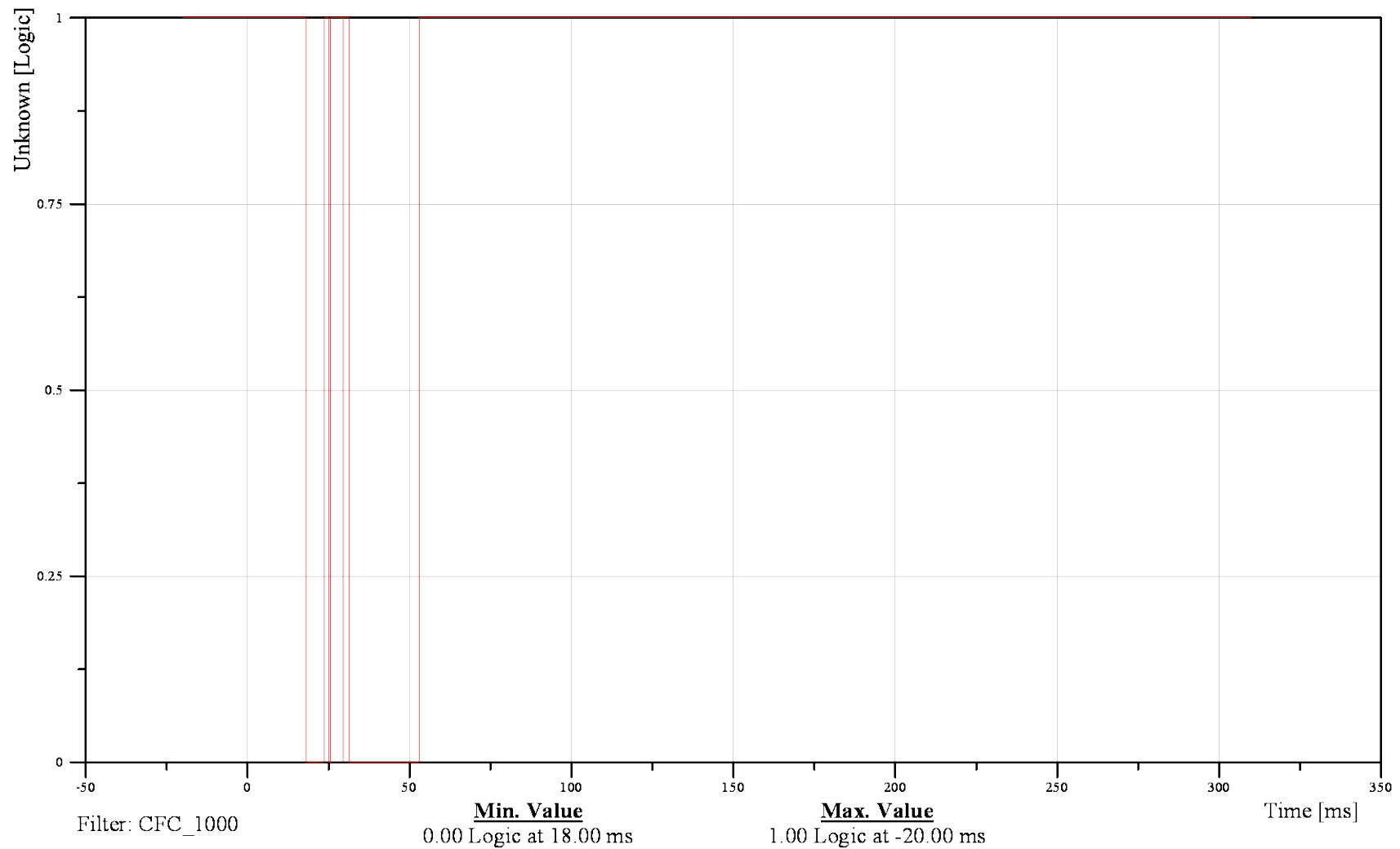
Time: 12:36

Customer: VRTC

11SHLDCONT00VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Contact

Date: 06/17/2013

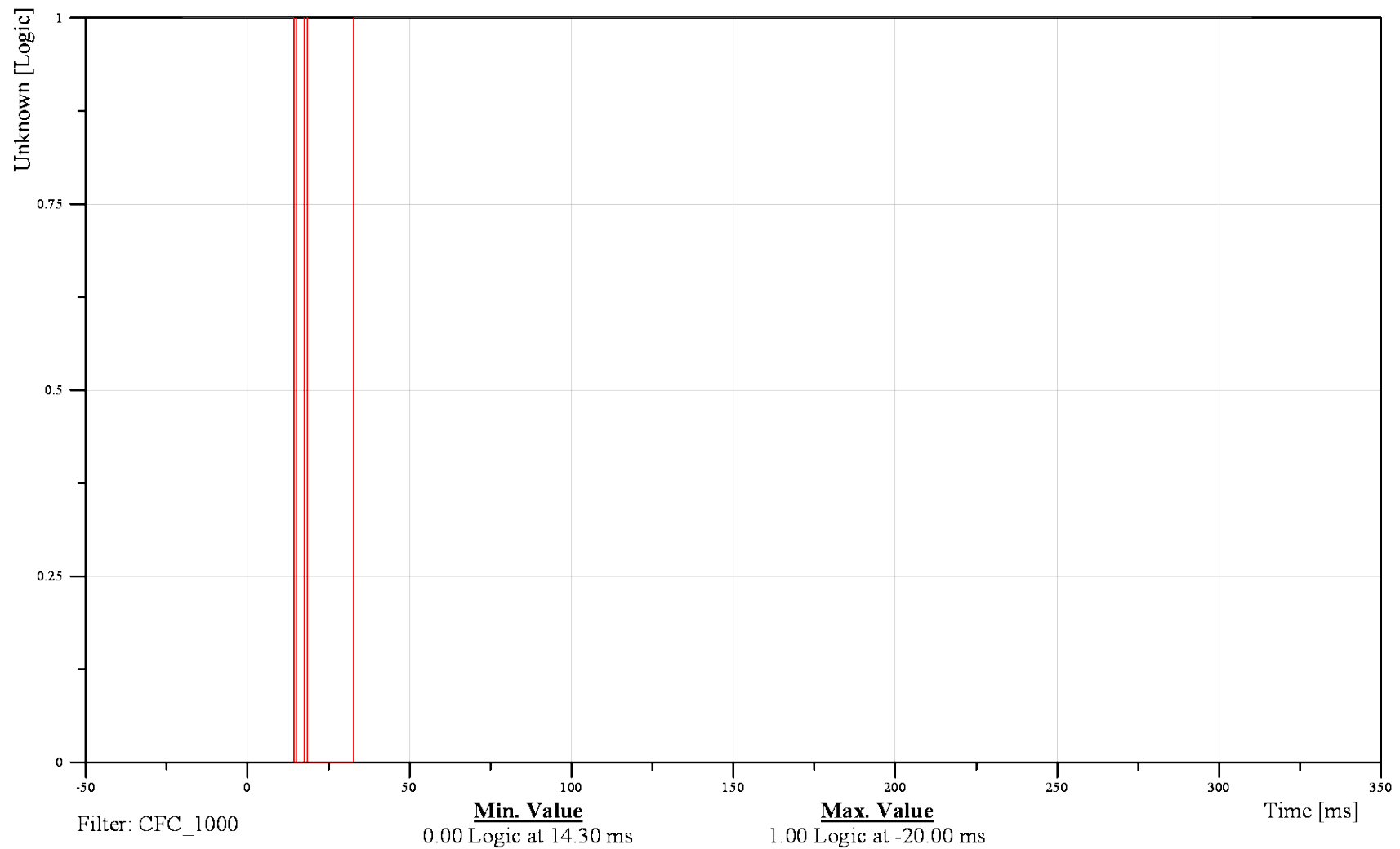
Time: 12:36

Customer: VRTC

11THORCONT00VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Date: 06/17/2013

Time: 12:36

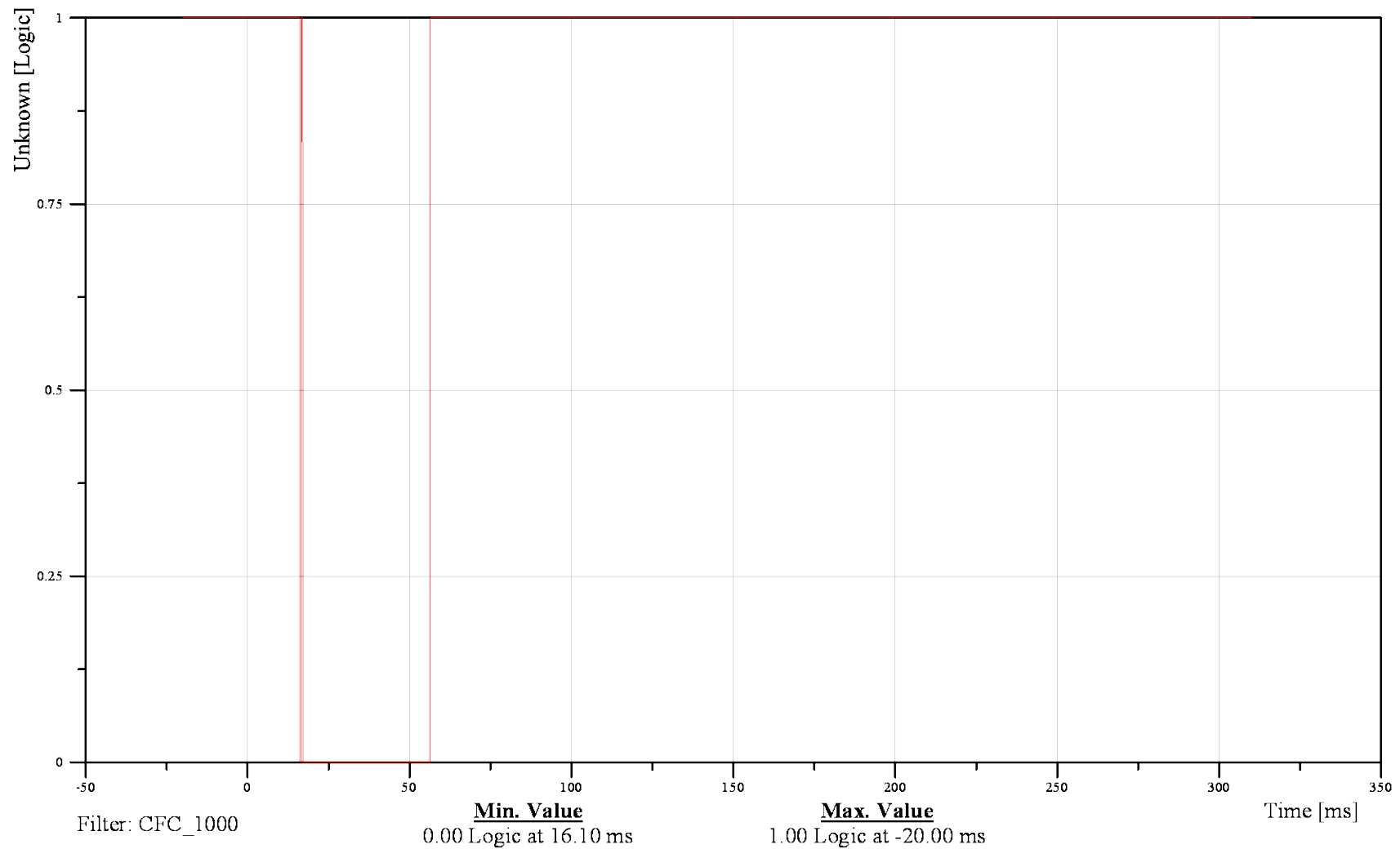
Leg Contact

Customer: VRTC

11LEGCONT000VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 1

Date: 06/17/2013

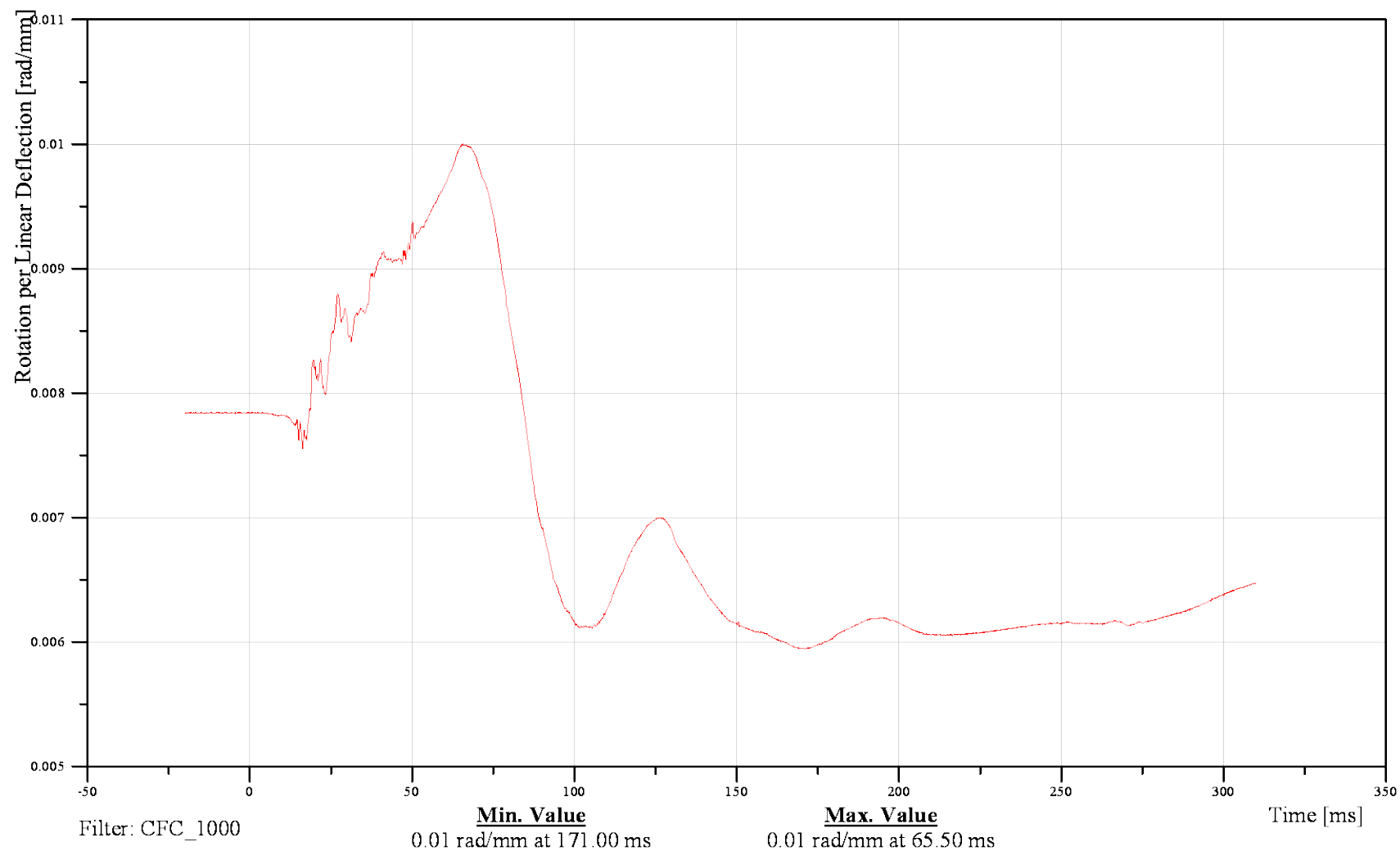
Time: 12:36

Customer: VRTC

11CHBA5901WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 2

Date: 06/17/2013

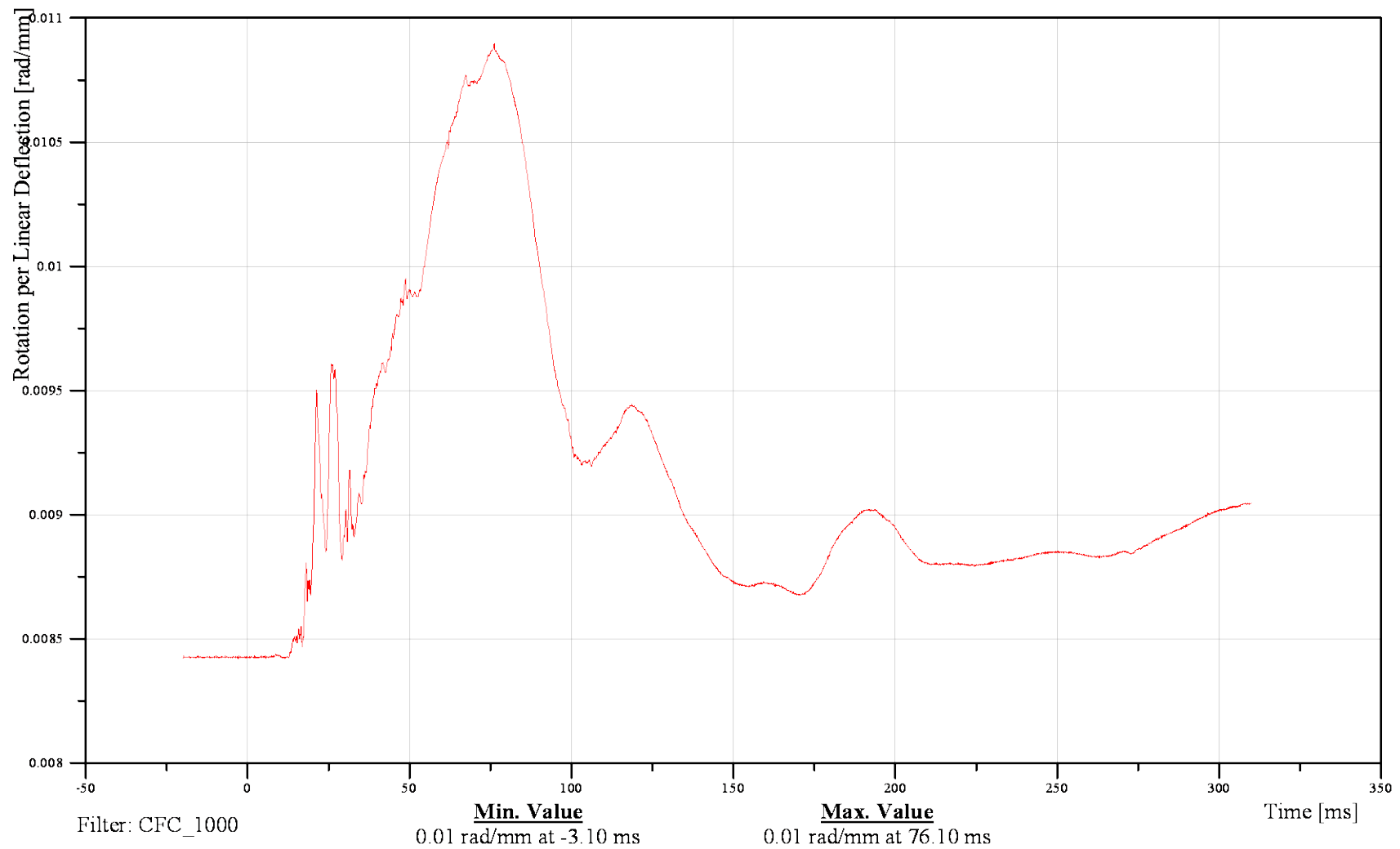
Time: 12:36

Customer: VRTC

11CHBA5902WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 3

Date: 06/17/2013

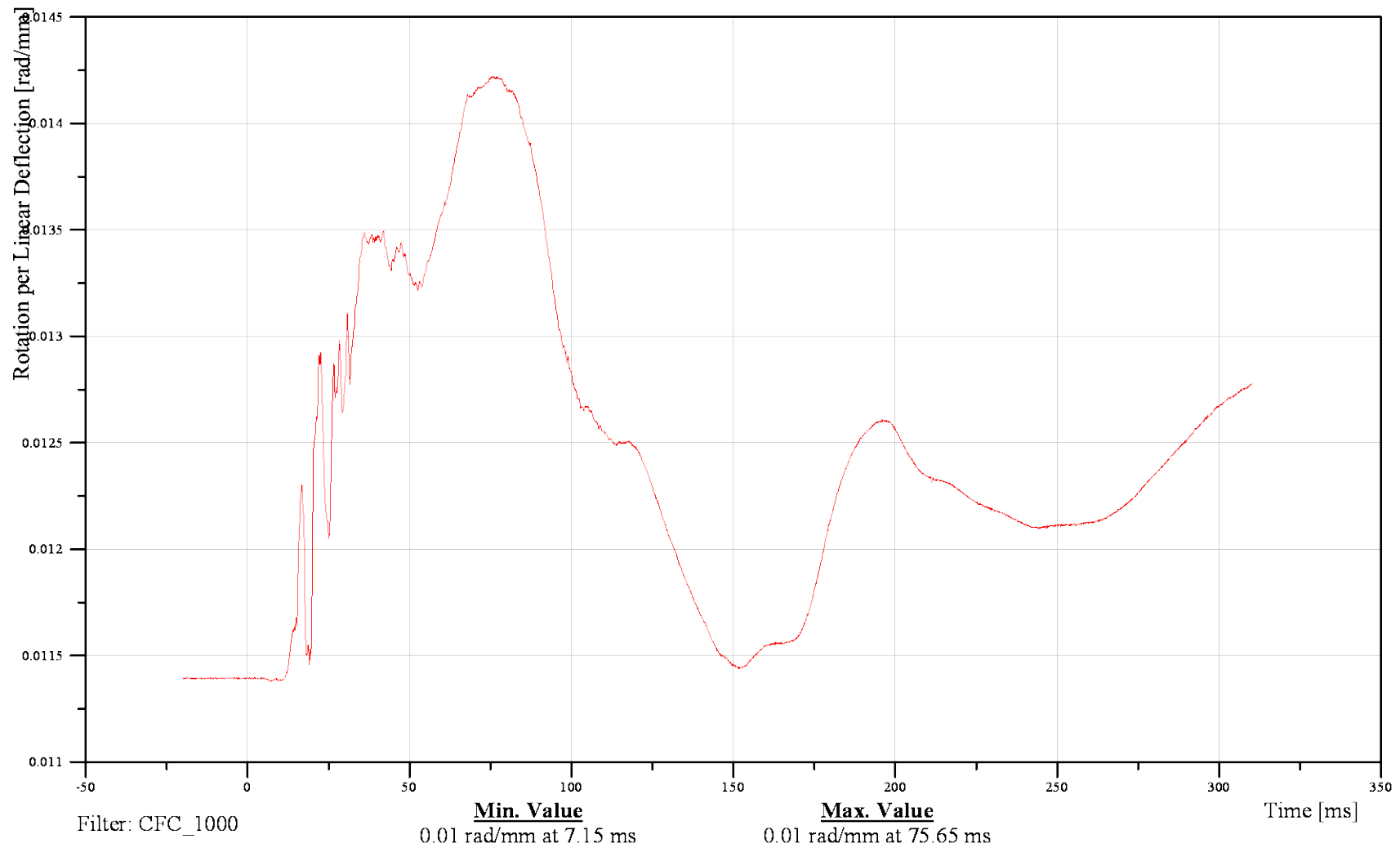
Time: 12:36

Customer: VRTC

11CHBA5903WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 4

Date: 06/17/2013

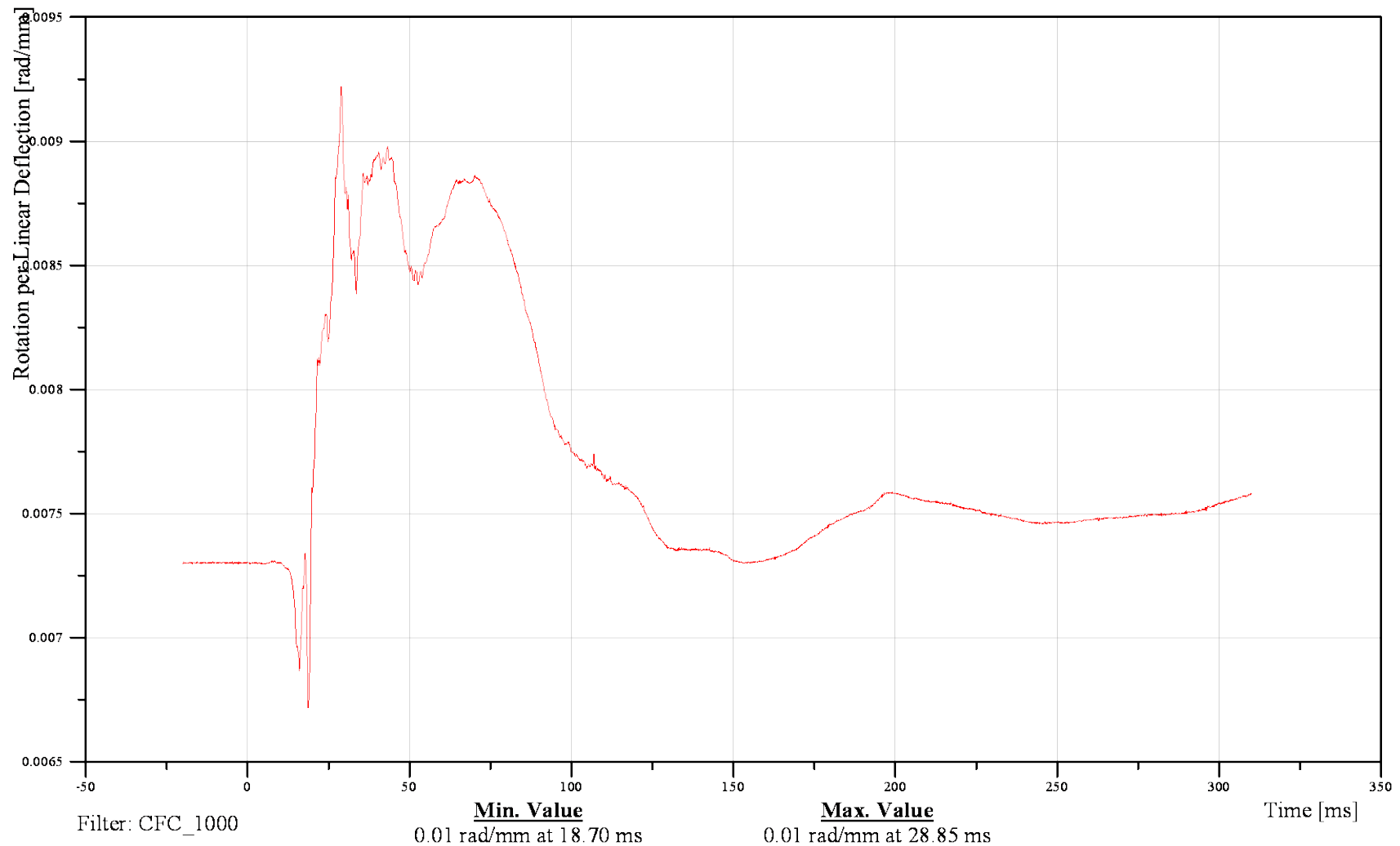
Time: 12:36

Customer: VRTC

11CHBA5904WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 5

Date: 06/17/2013

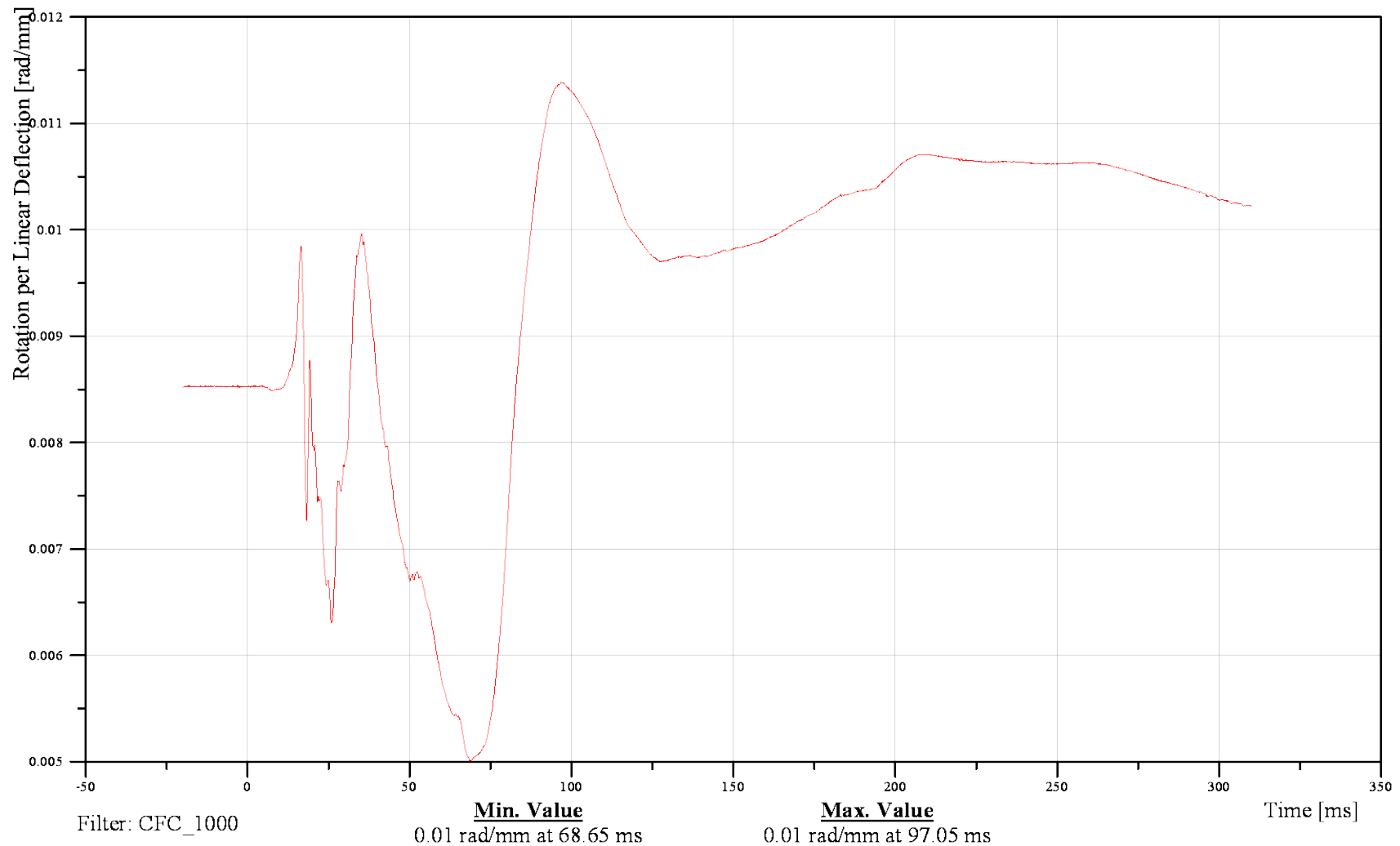
Time: 12:36

Customer: VRTC

11CHBA5905WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 6

Date: 06/17/2013

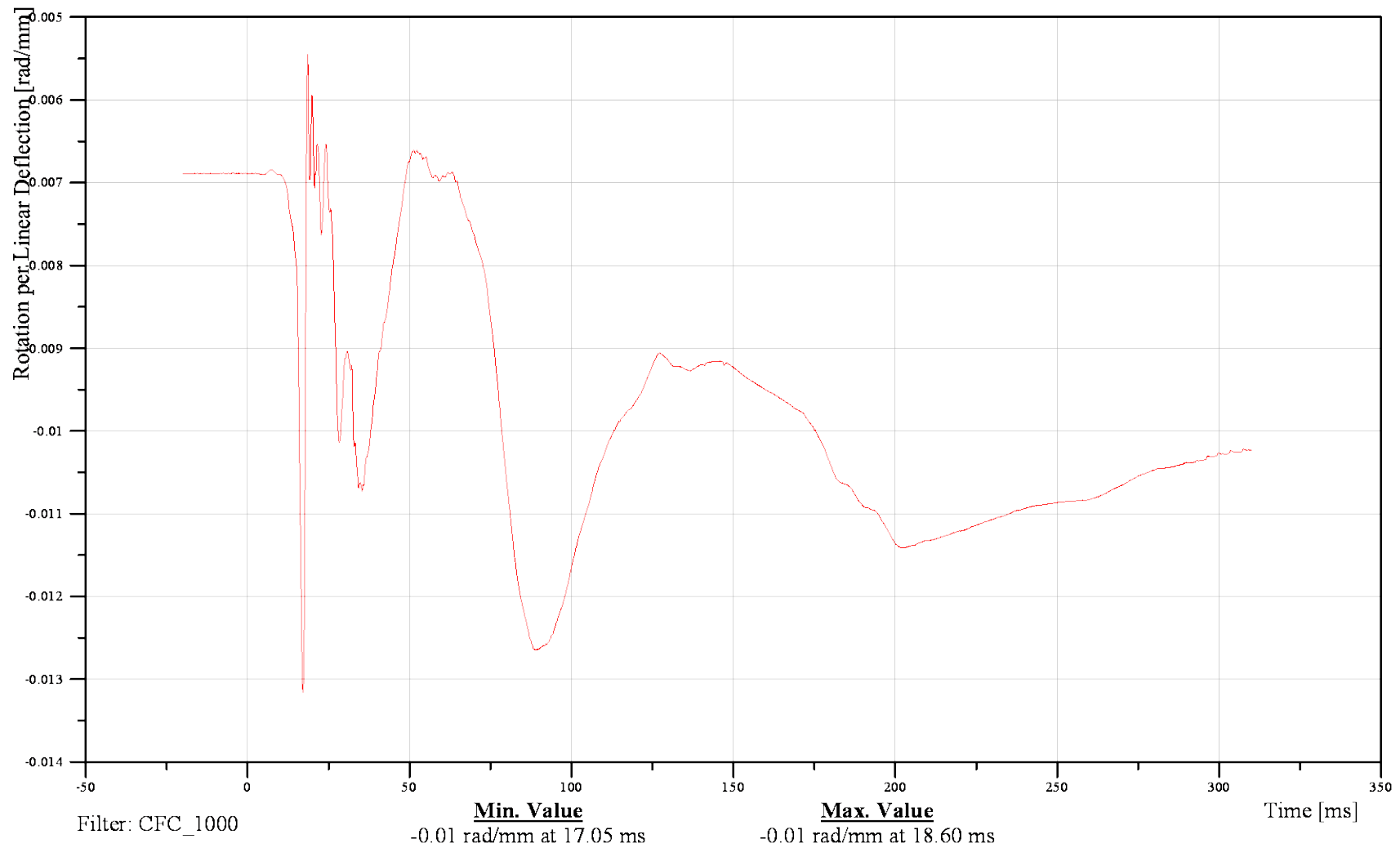
Time: 12:36

Customer: VRTC

11CHBA5906WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 7

Date: 06/17/2013

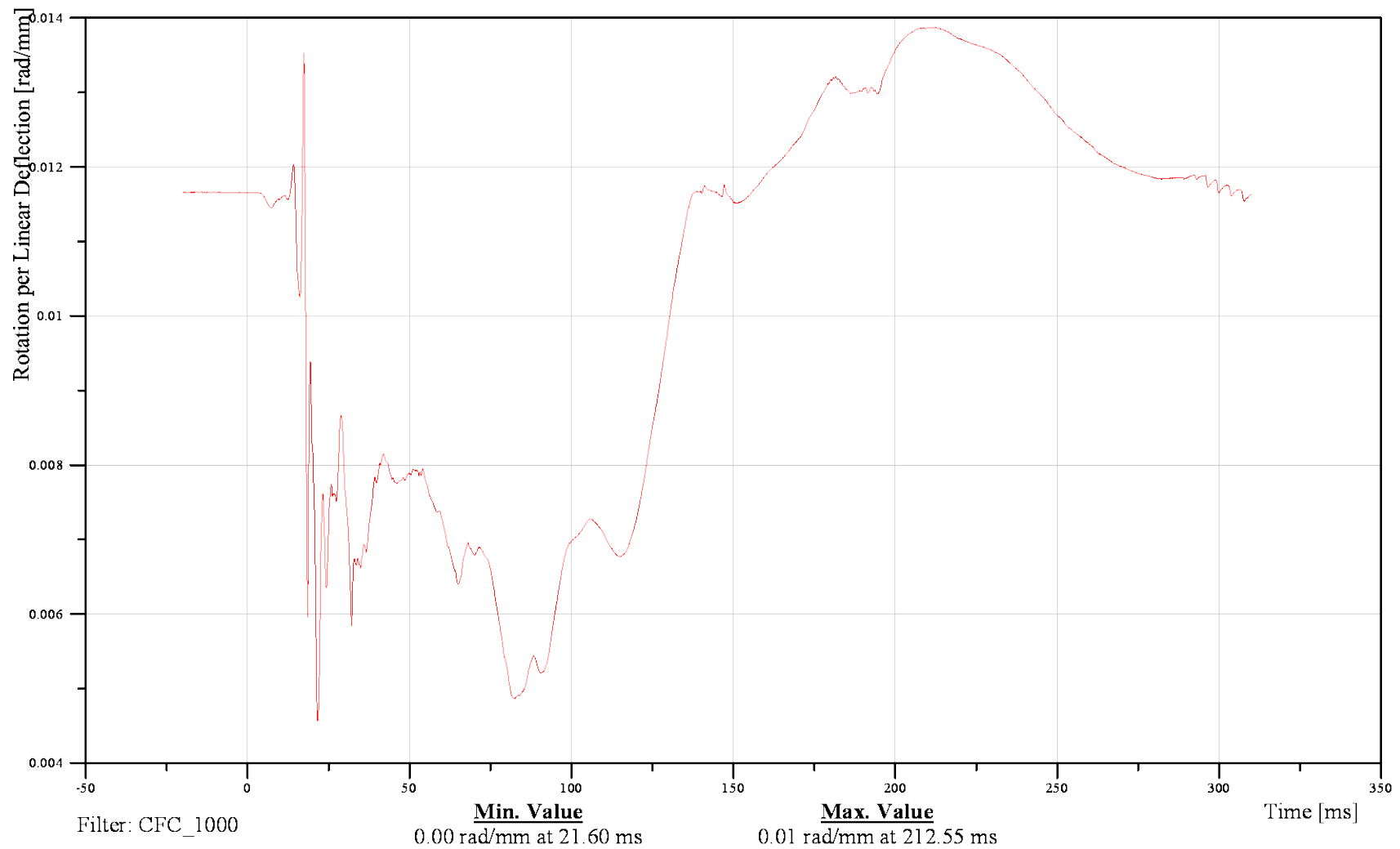
Time: 12:36

Customer: VRTC

11CHBA5907WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 8

Date: 06/17/2013

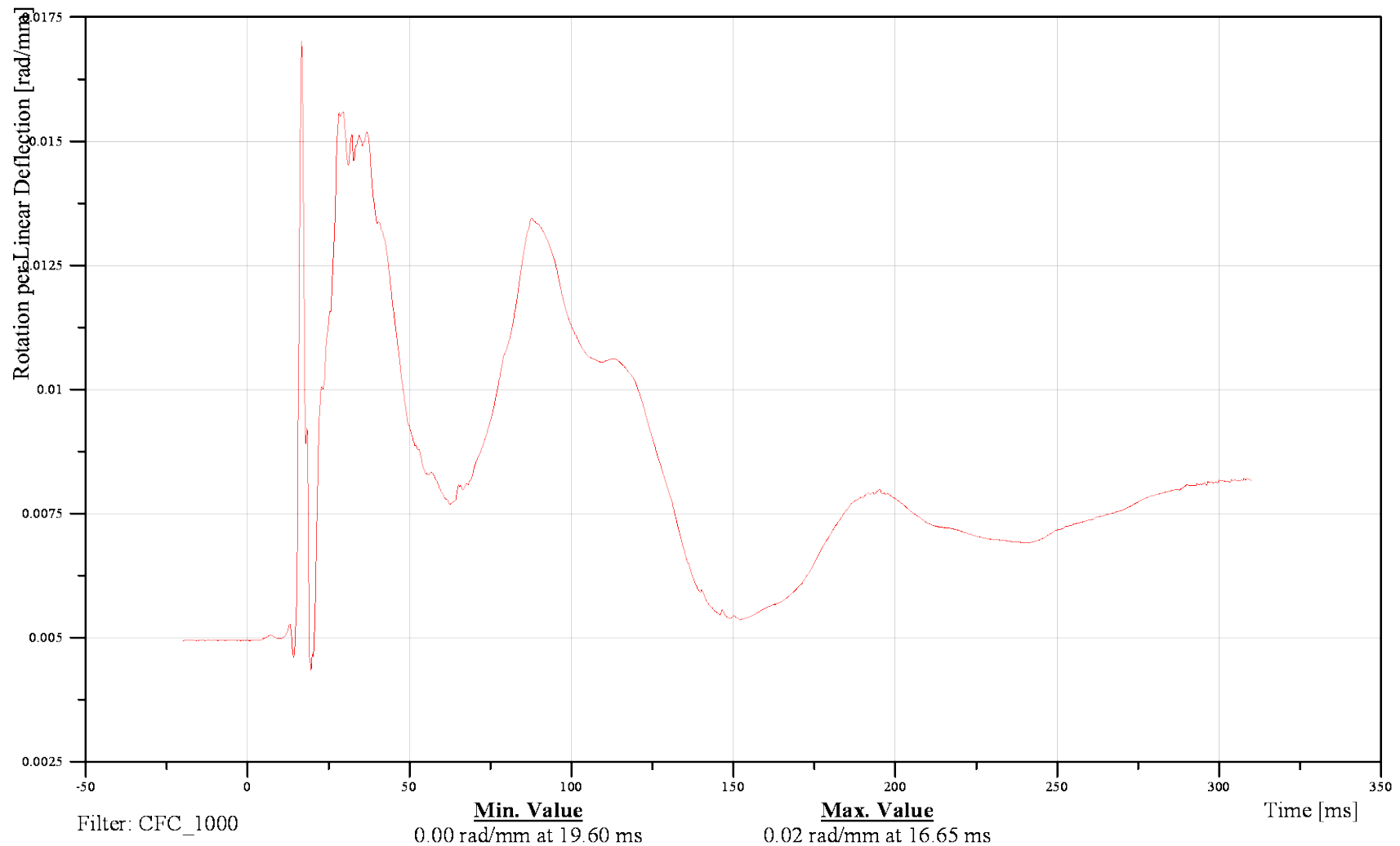
Time: 12:36

Customer: VRTC

11CHBA5908WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 9

Date: 06/17/2013

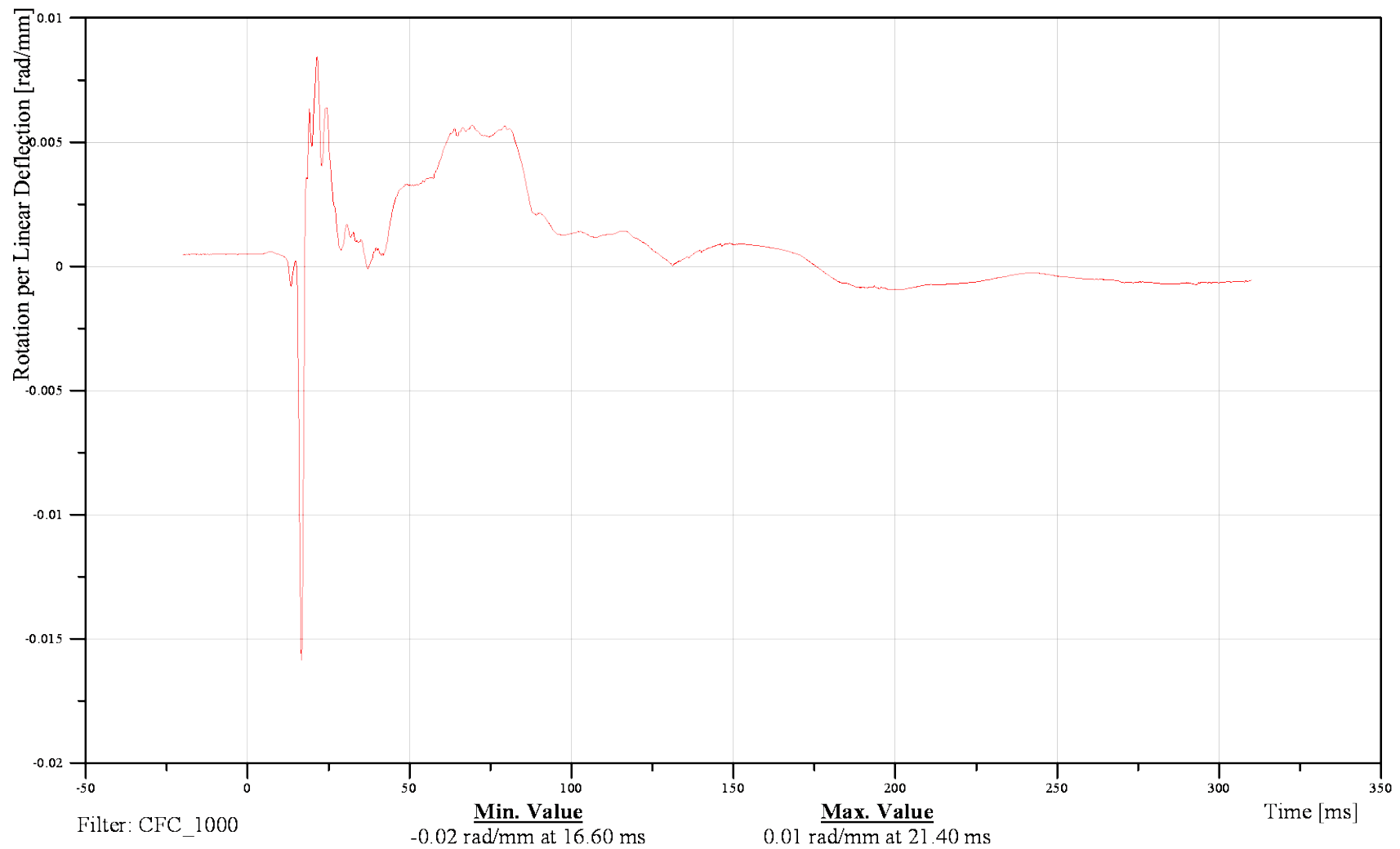
Time: 12:36

Customer: VRTC

11CHBA5909WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 10

Date: 06/17/2013

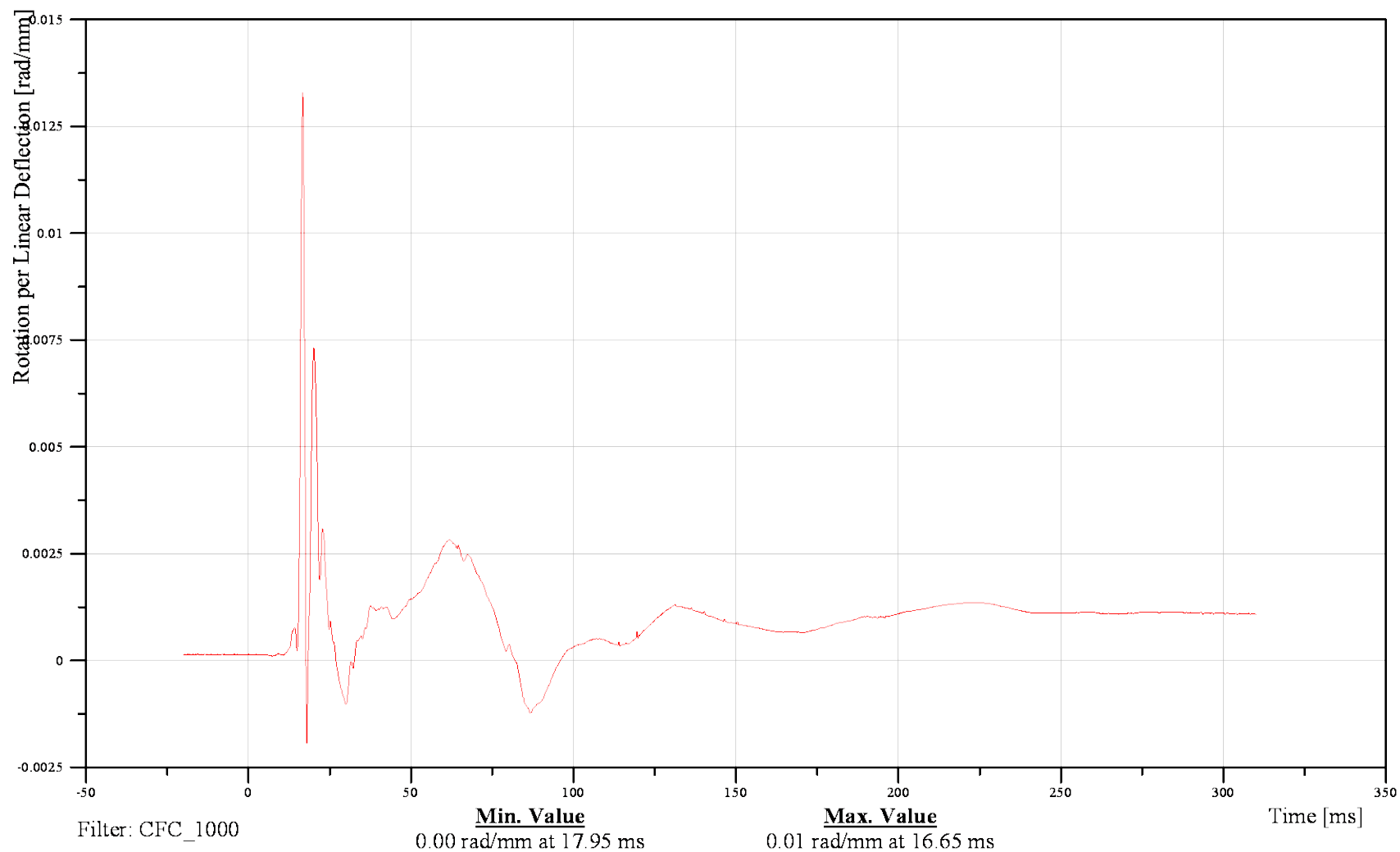
Time: 12:36

Customer: VRTC

11CHBA5910WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 11

Date: 06/17/2013

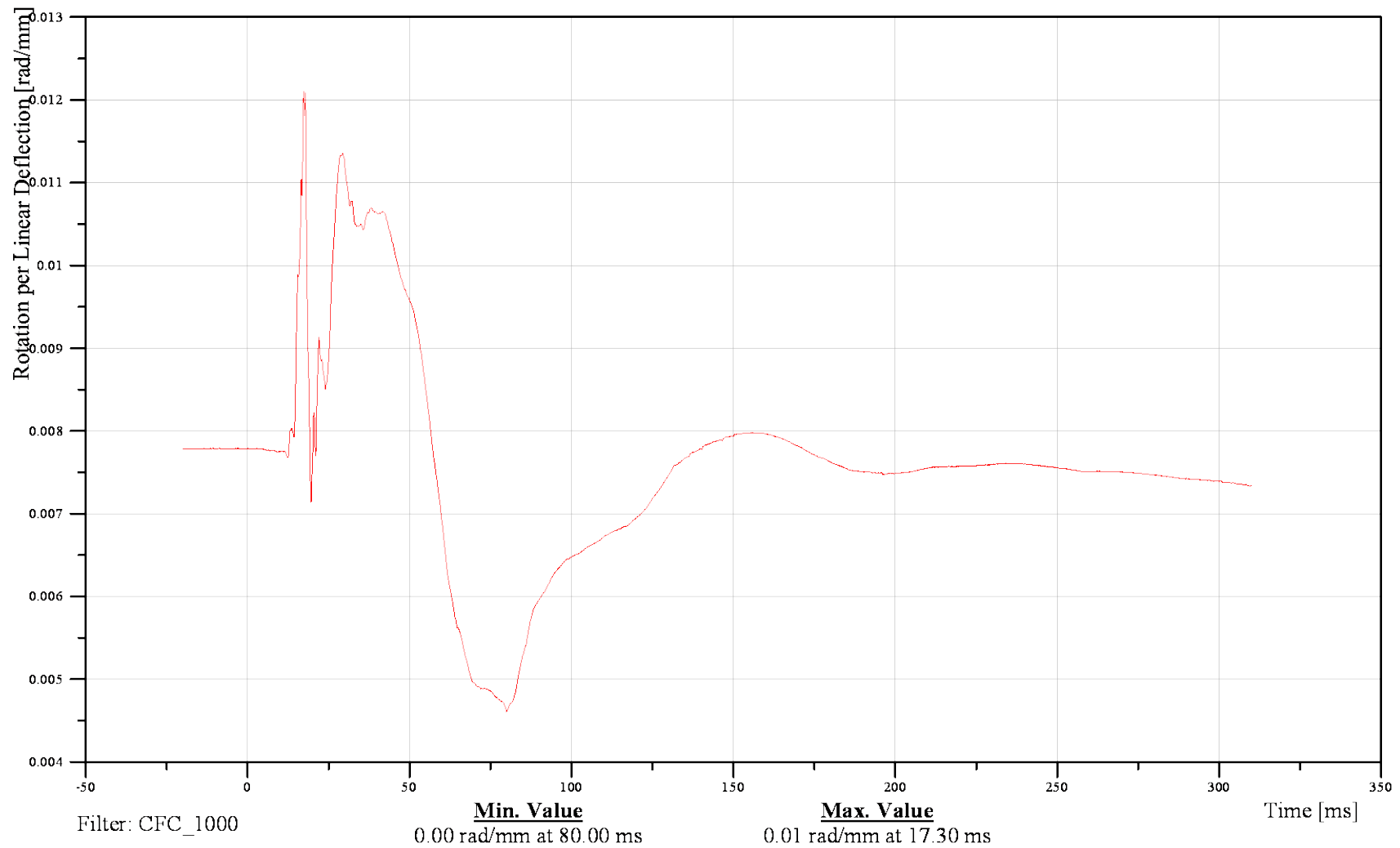
Time: 12:36

Customer: VRTC

11CHBA5911WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 12

Date: 06/17/2013

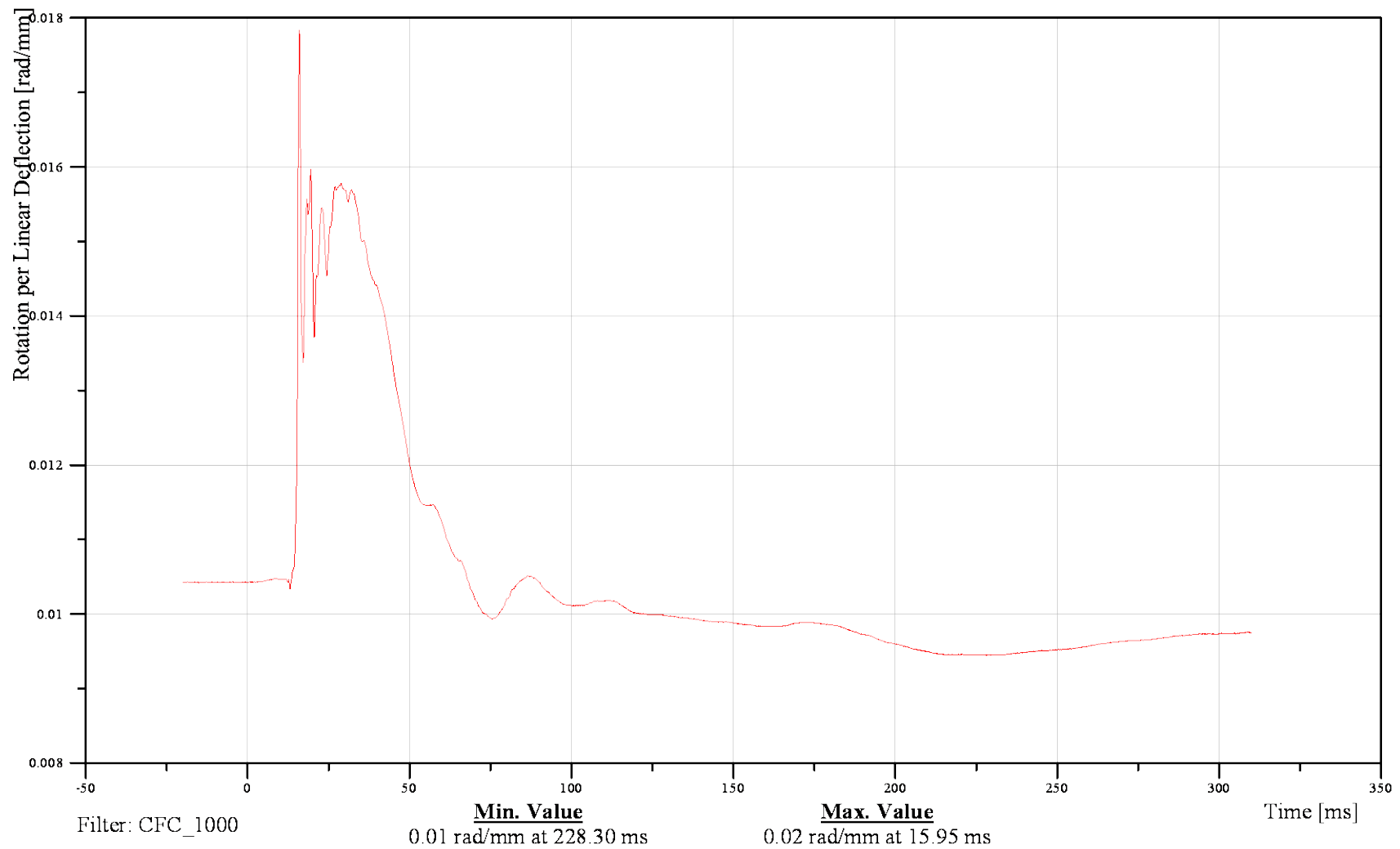
Time: 12:36

Customer: VRTC

11CHBA5912WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 13

Date: 06/17/2013

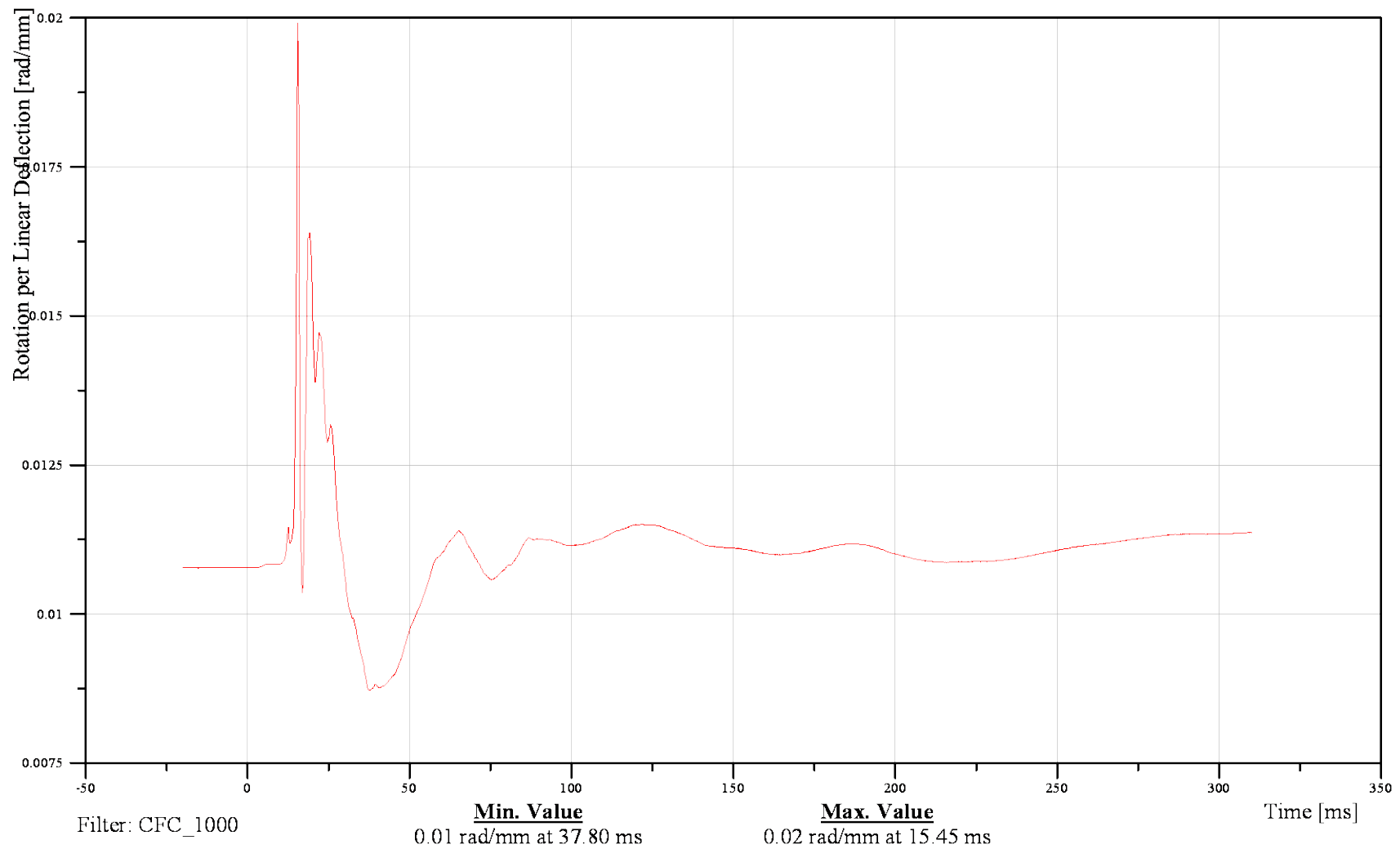
Time: 12:36

Customer: VRTC

11CHBA5913WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 14

Date: 06/17/2013

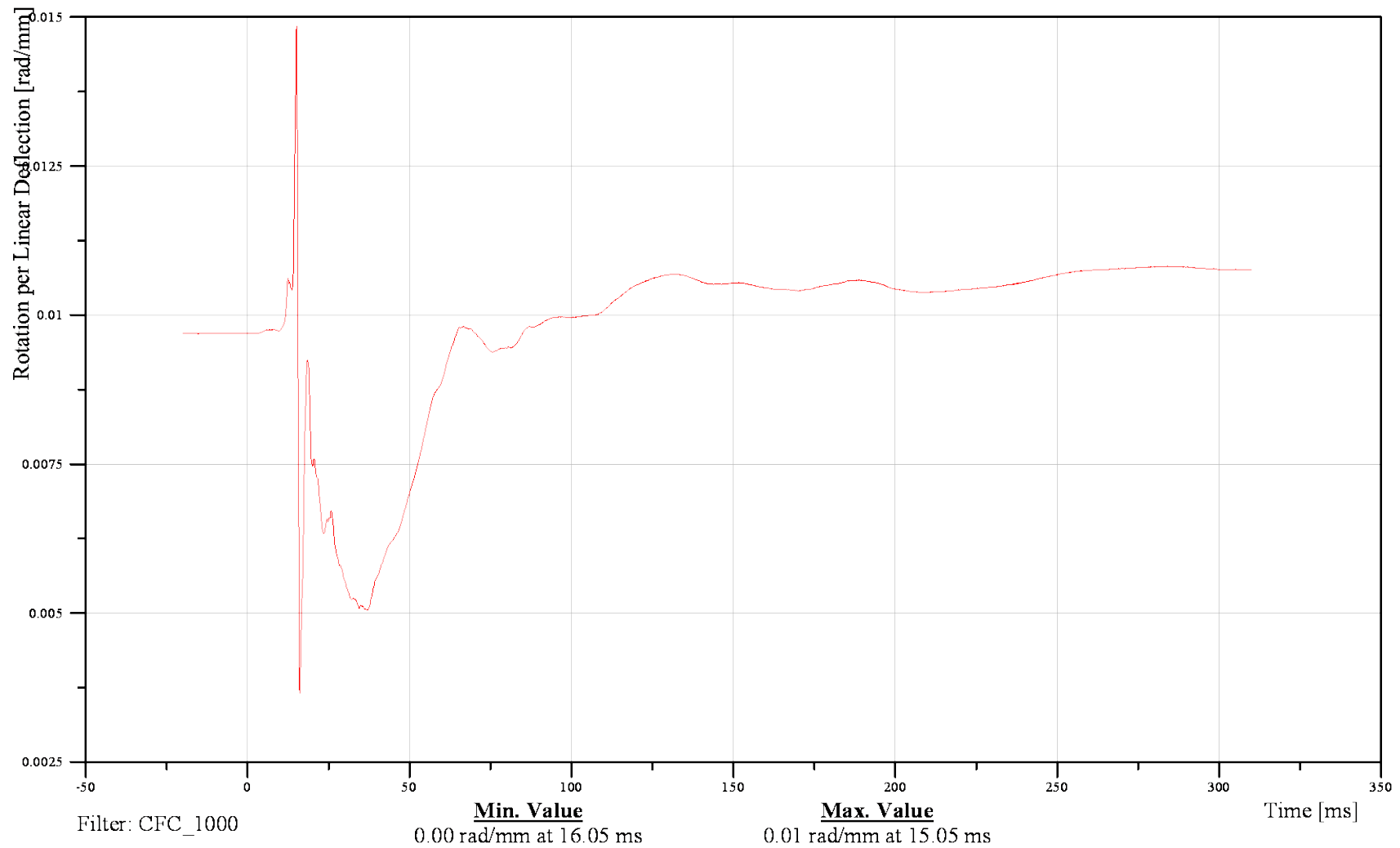
Time: 12:36

Customer: VRTC

11CHBA5914WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 15

Date: 06/17/2013

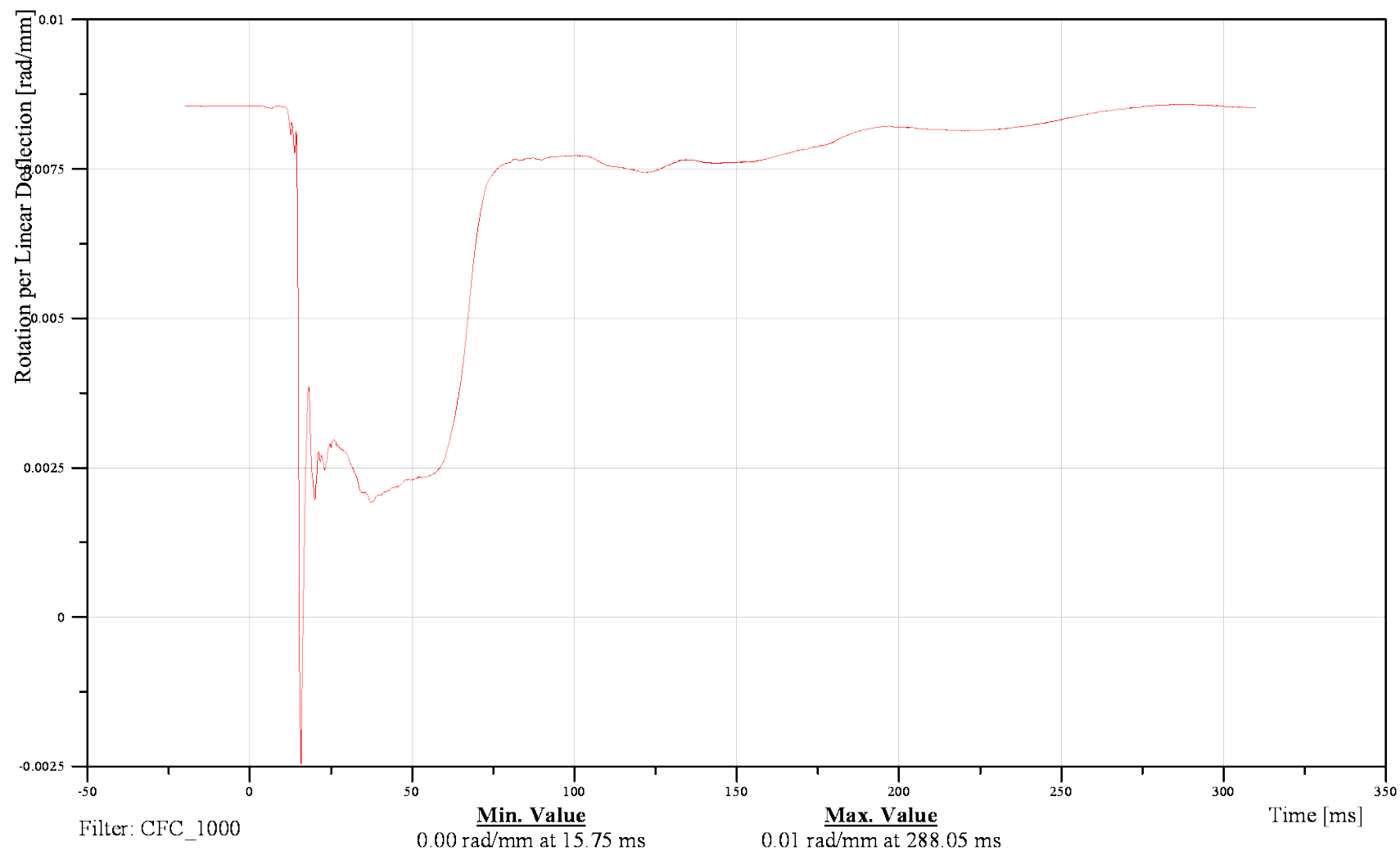
Time: 12:36

Customer: VRTC

11CHBA5915WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 16

Date: 06/17/2013

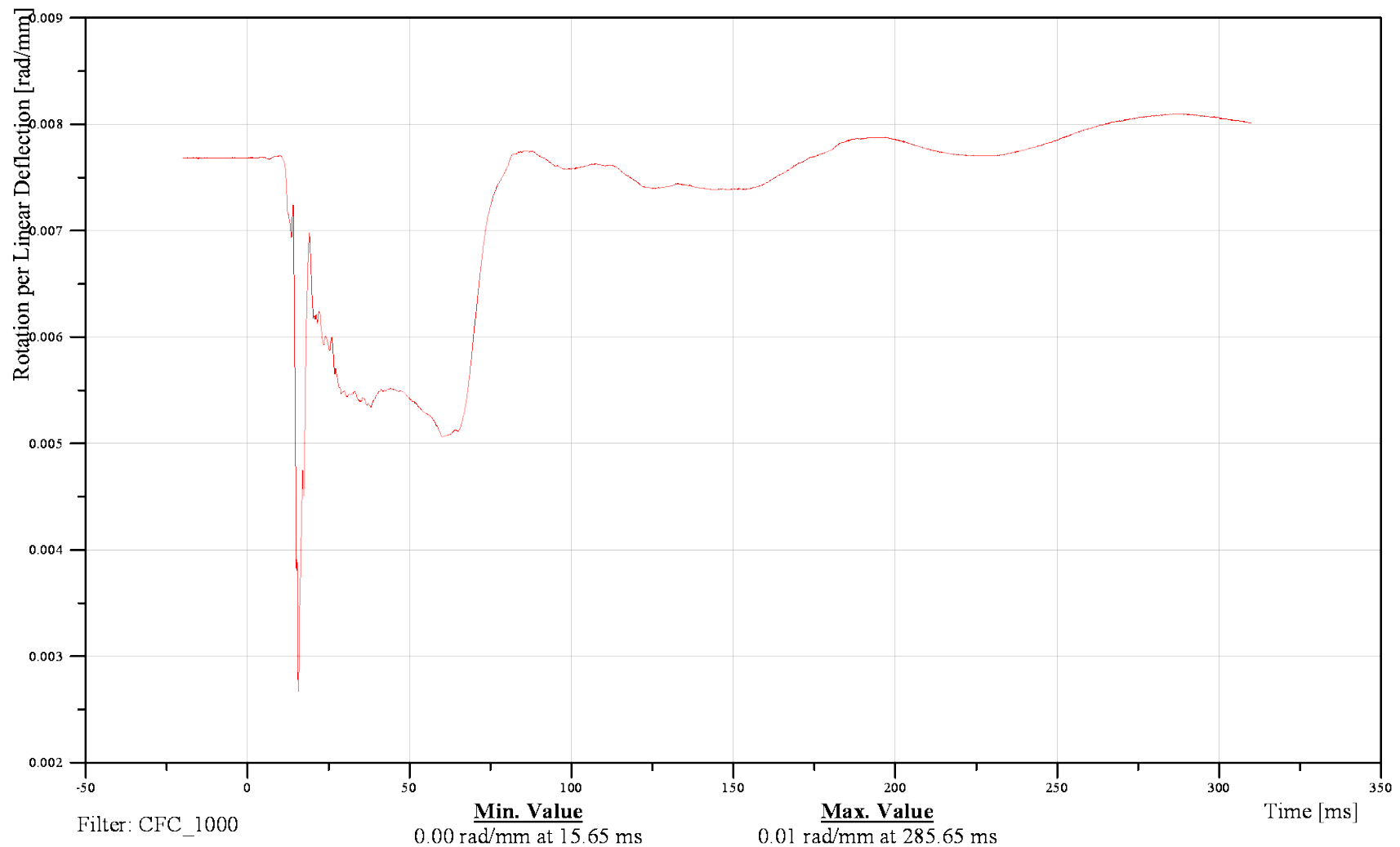
Time: 12:36

Customer: VRTC

11CHBA5916WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 17

Date: 06/17/2013

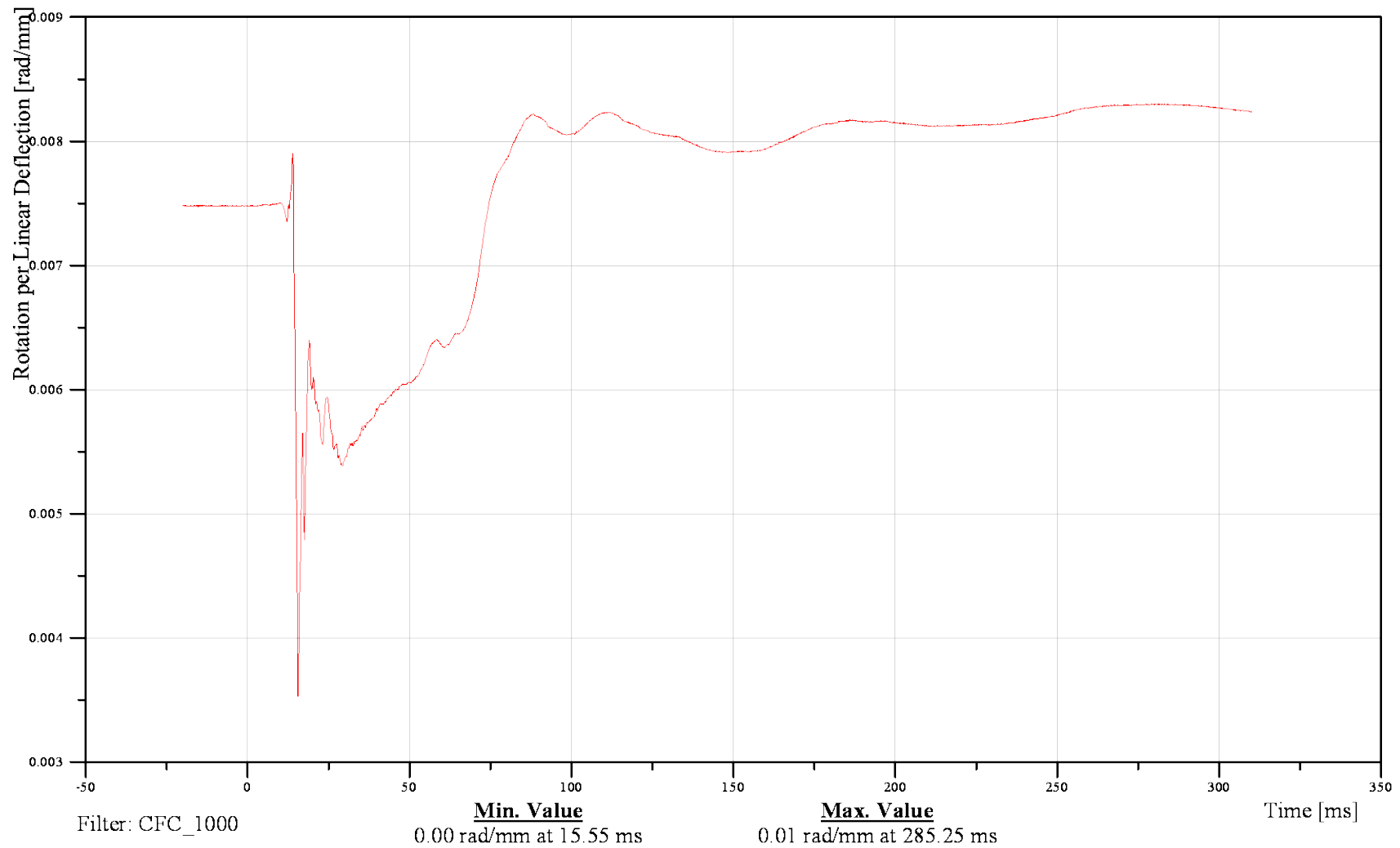
Time: 12:36

Customer: VRTC

11CHBA5917WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 18

Date: 06/17/2013

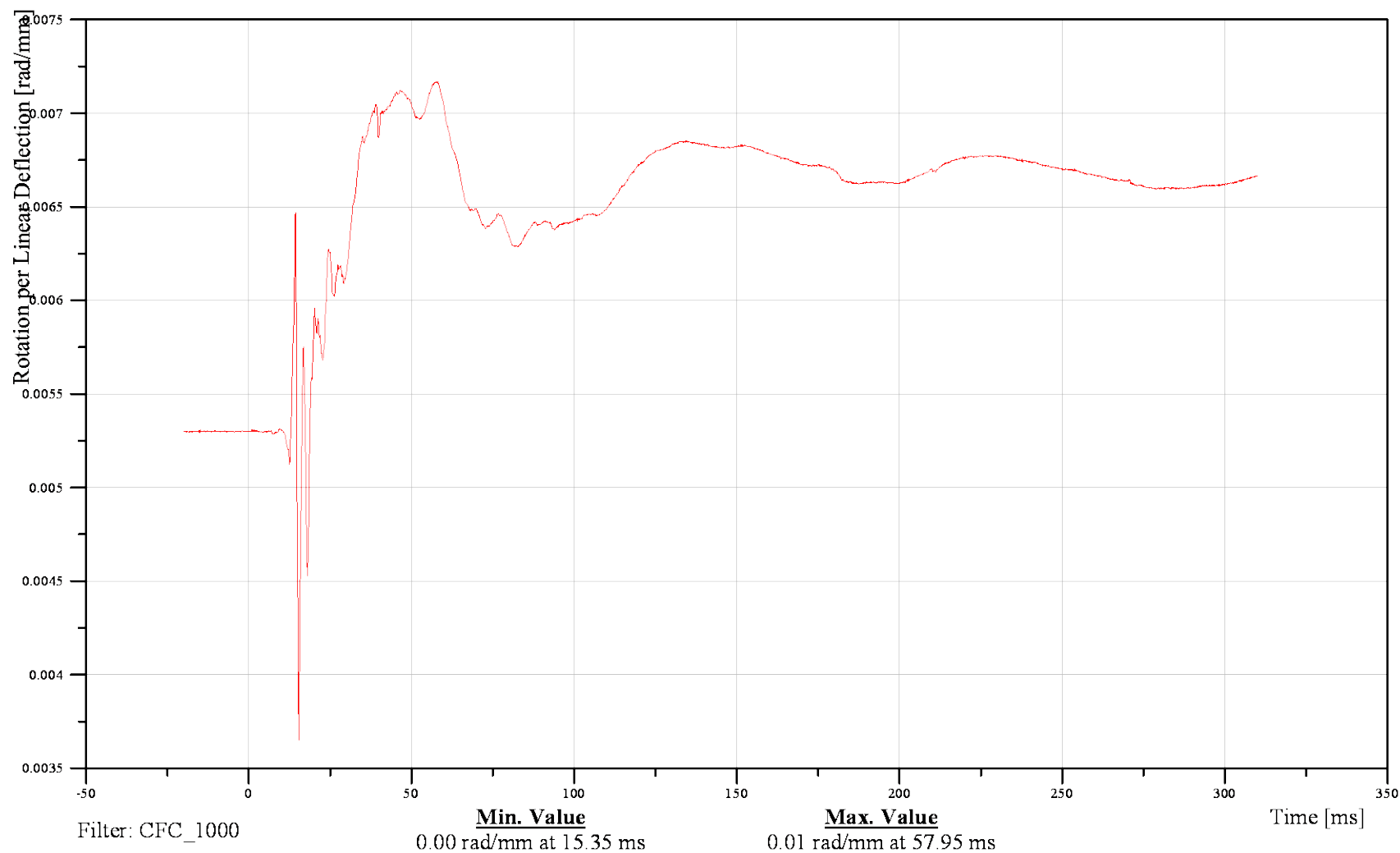
Time: 12:36

Customer: VRTC

11CHBA5918WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 19

Date: 06/17/2013

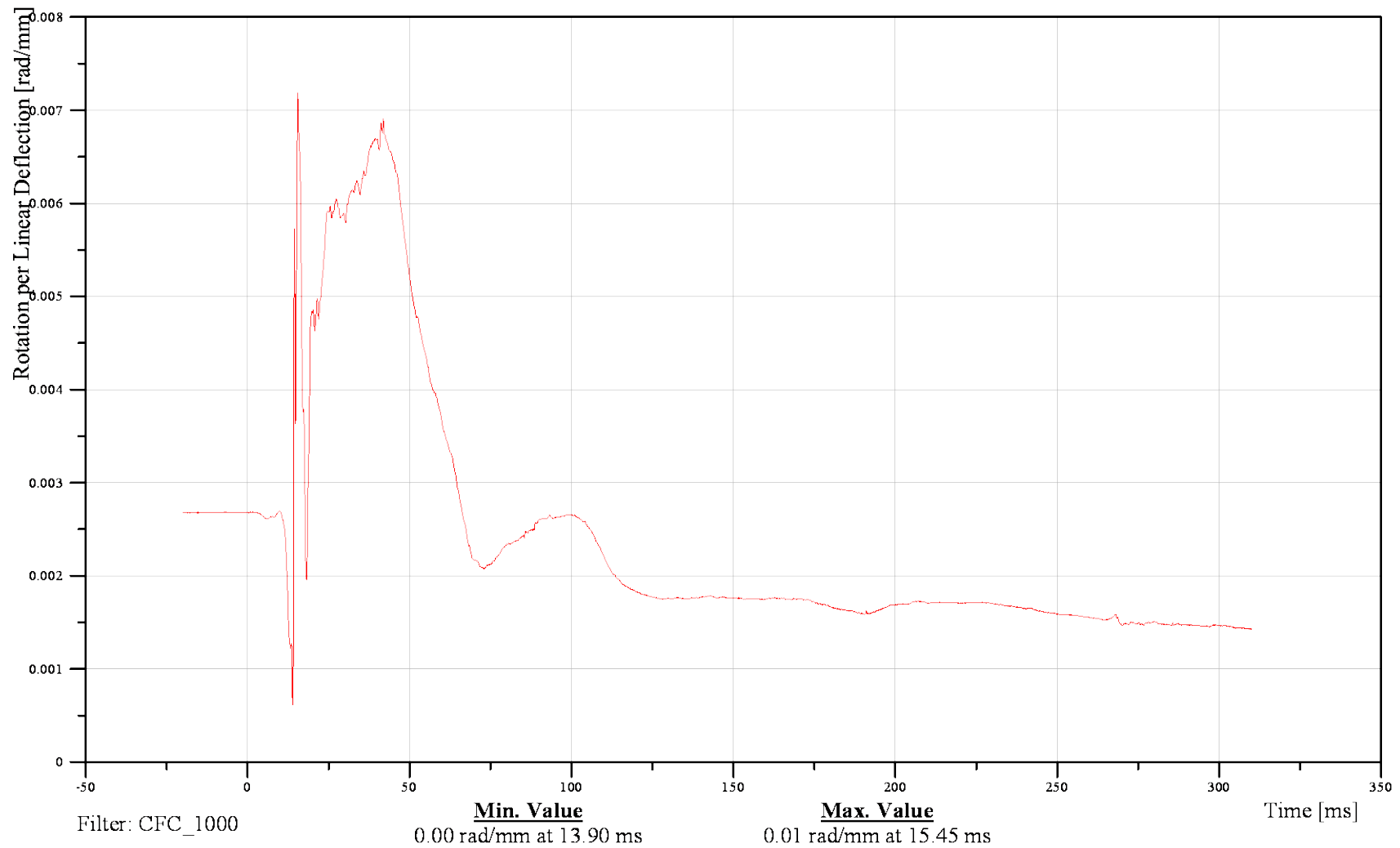
Time: 12:36

Customer: VRTC

11CHBA5919WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 20

Date: 06/17/2013

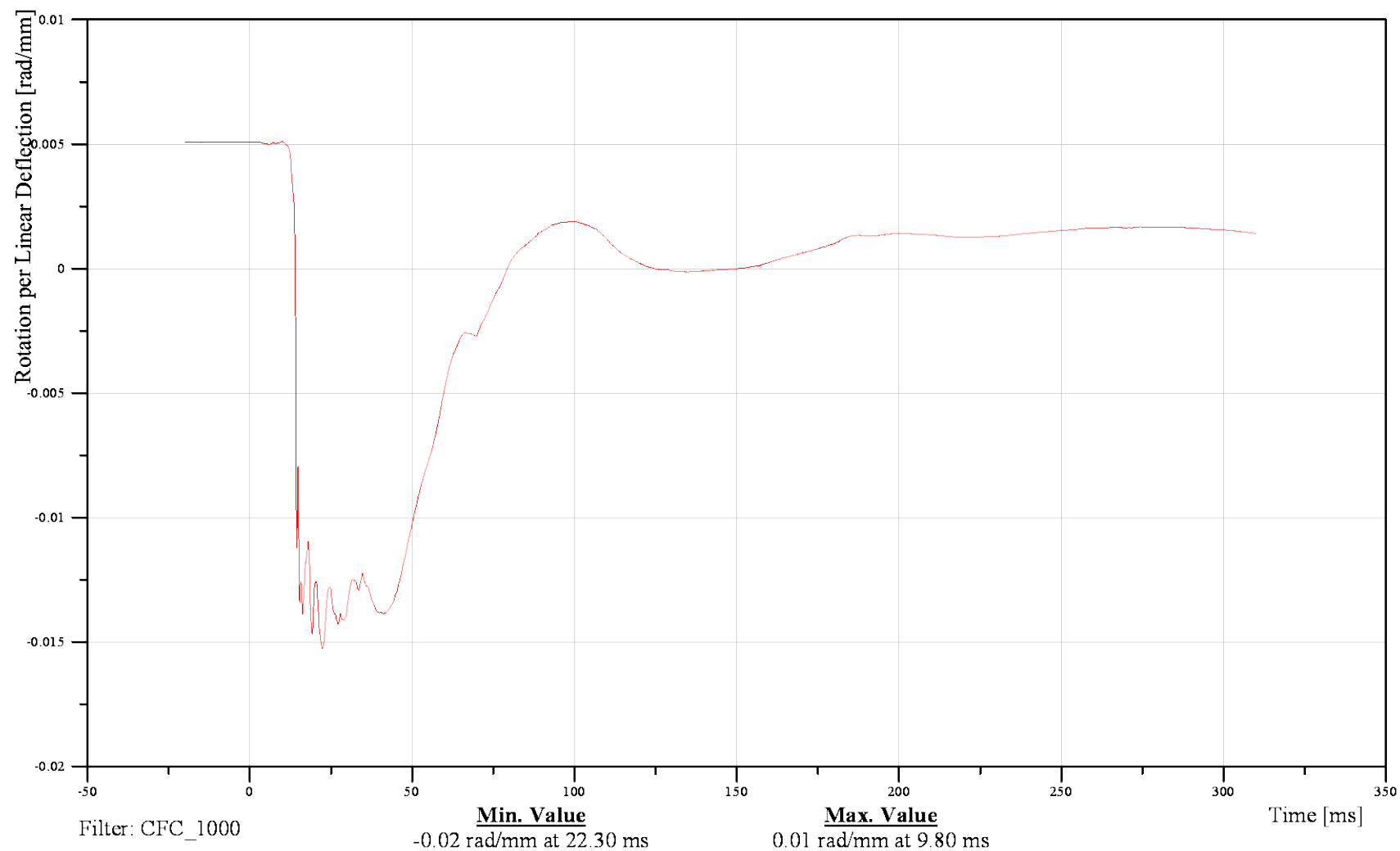
Time: 12:36

Customer: VRTC

11CHBA5920WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 21

Date: 06/17/2013

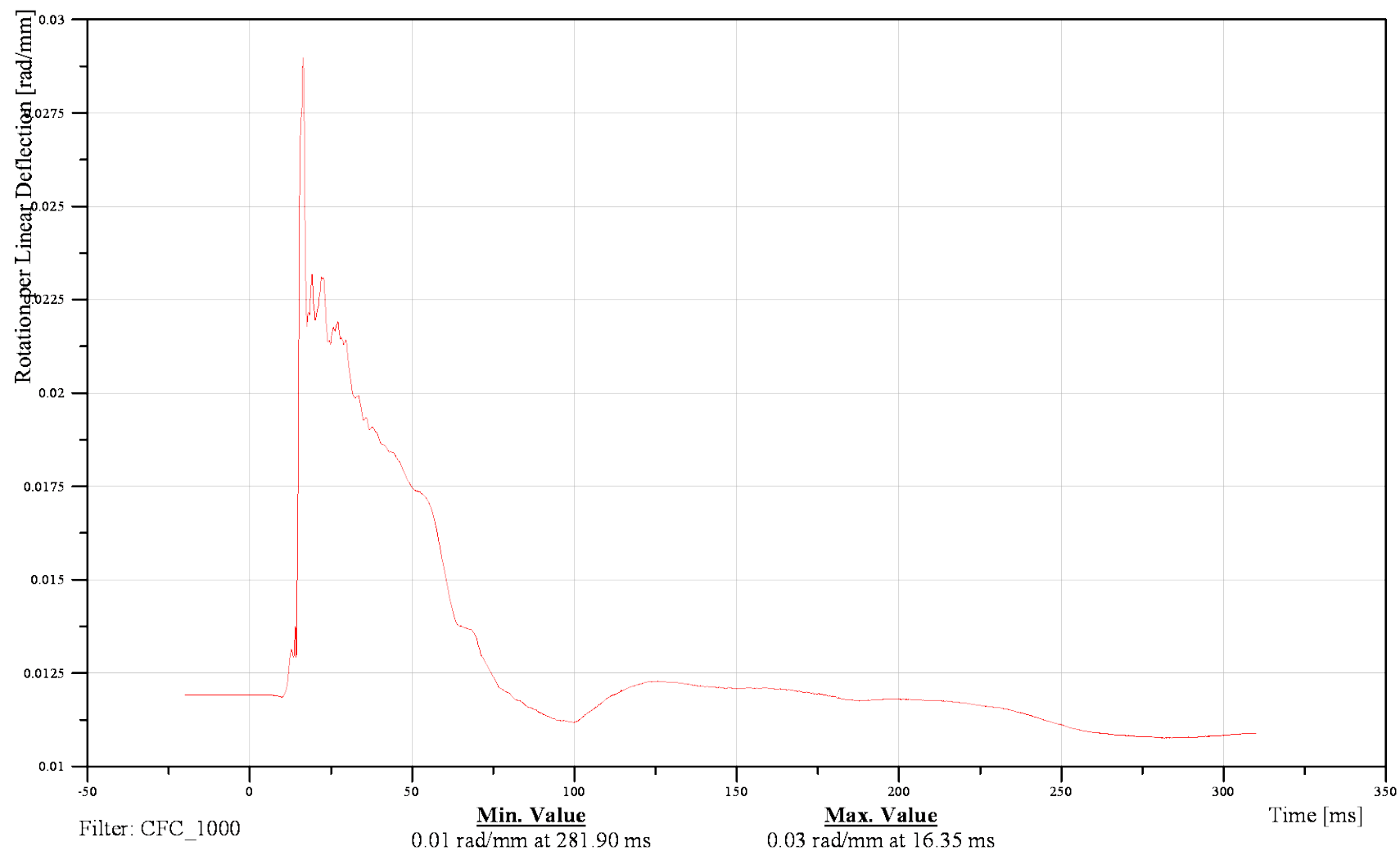
Time: 12:36

Customer: VRTC

11CHBA5921WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 22

Date: 06/17/2013

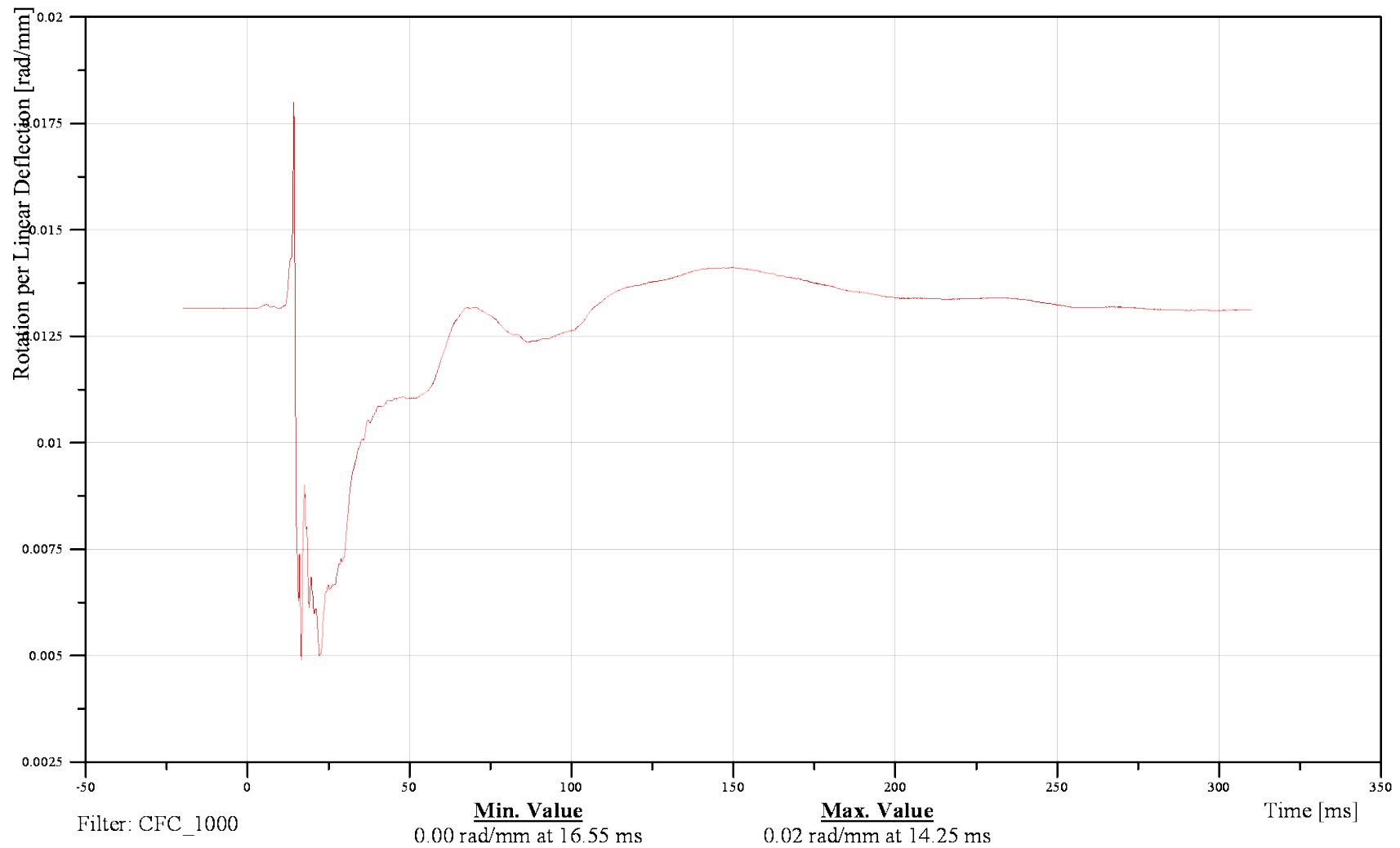
Time: 12:36

Customer: VRTC

11CHBA5922WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 23

Date: 06/17/2013

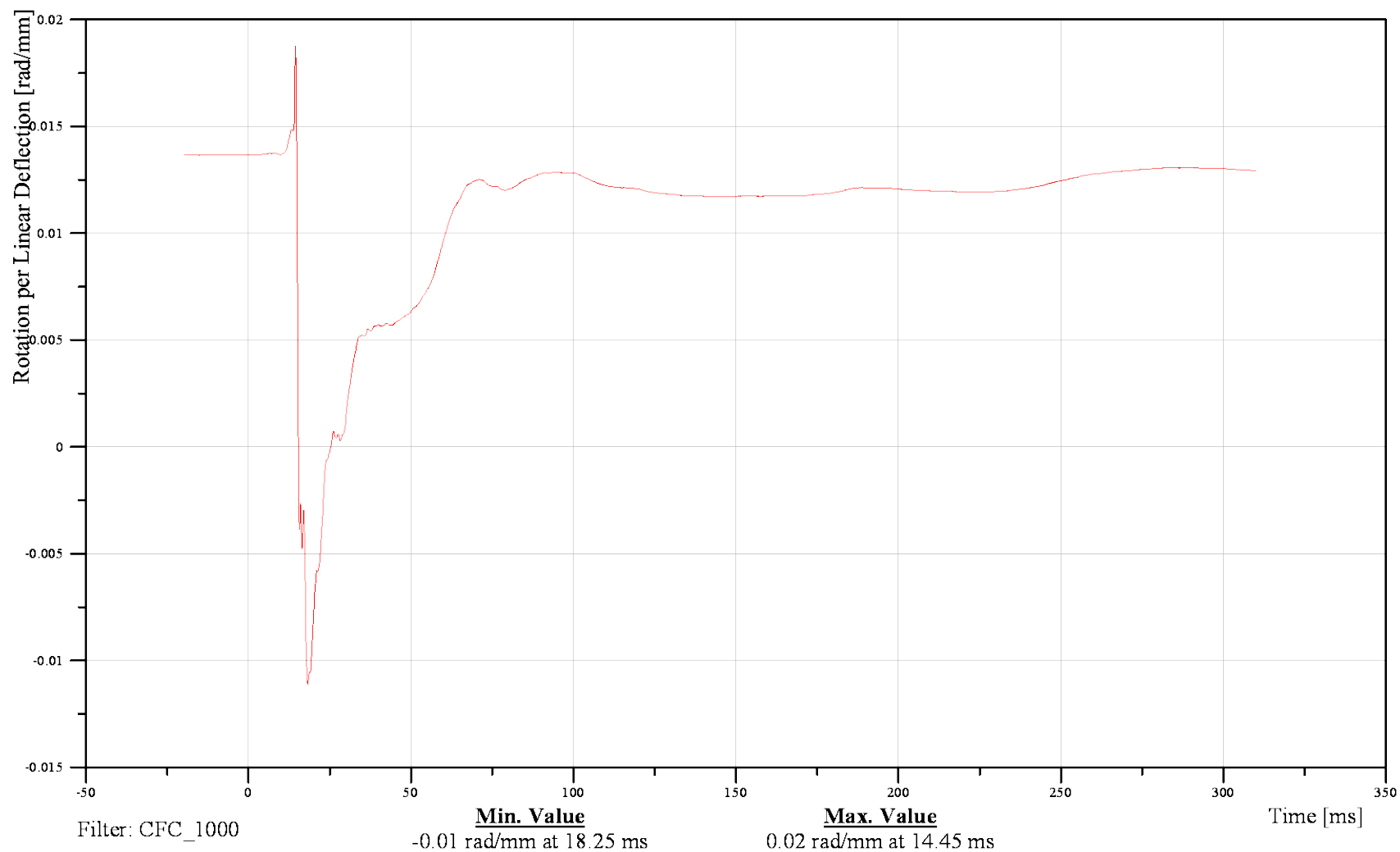
Time: 12:36

Customer: VRTC

11CHBA5923WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 24

Date: 06/17/2013

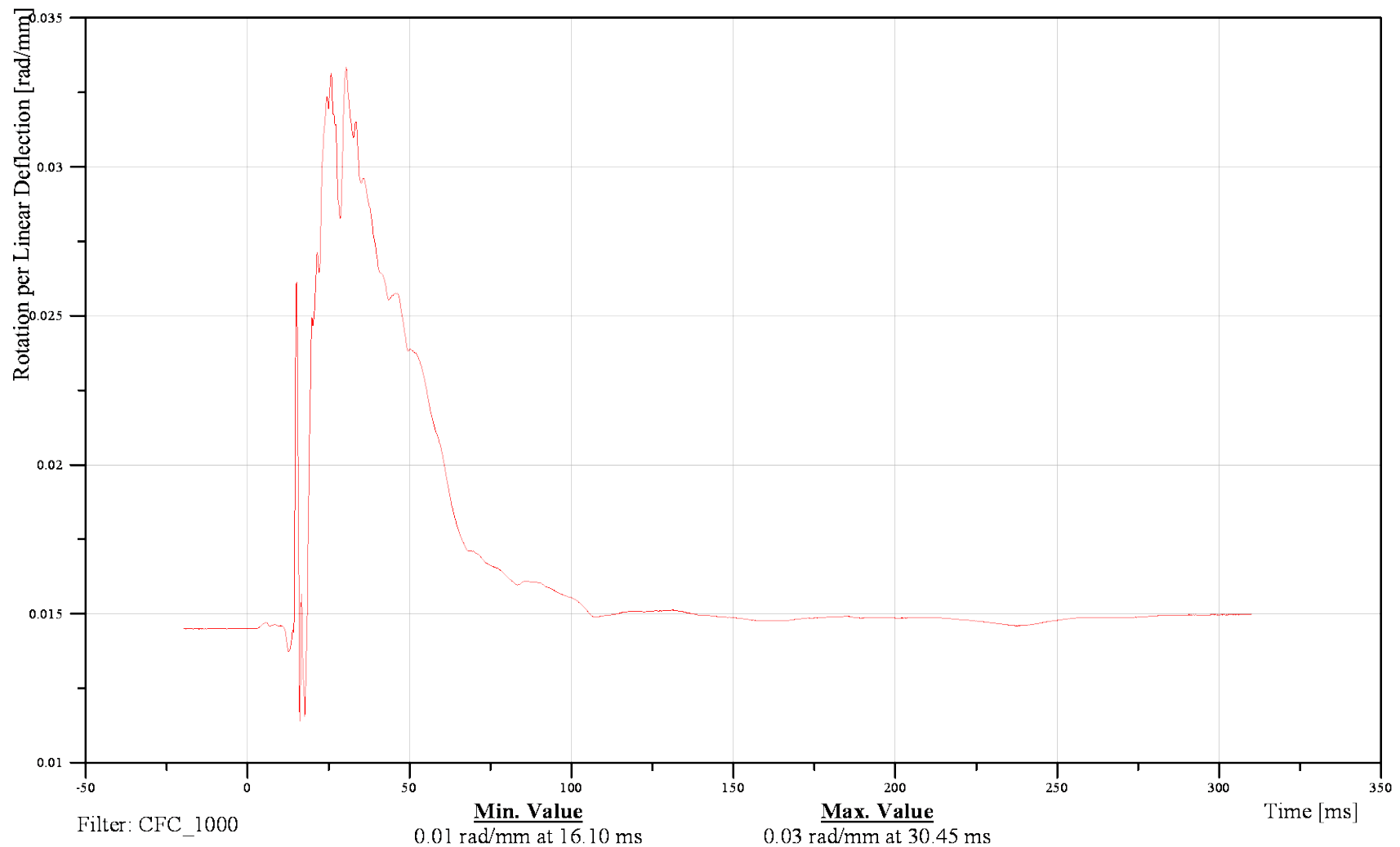
Time: 12:36

Customer: VRTC

11CHBA5924WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 25

Date: 06/17/2013

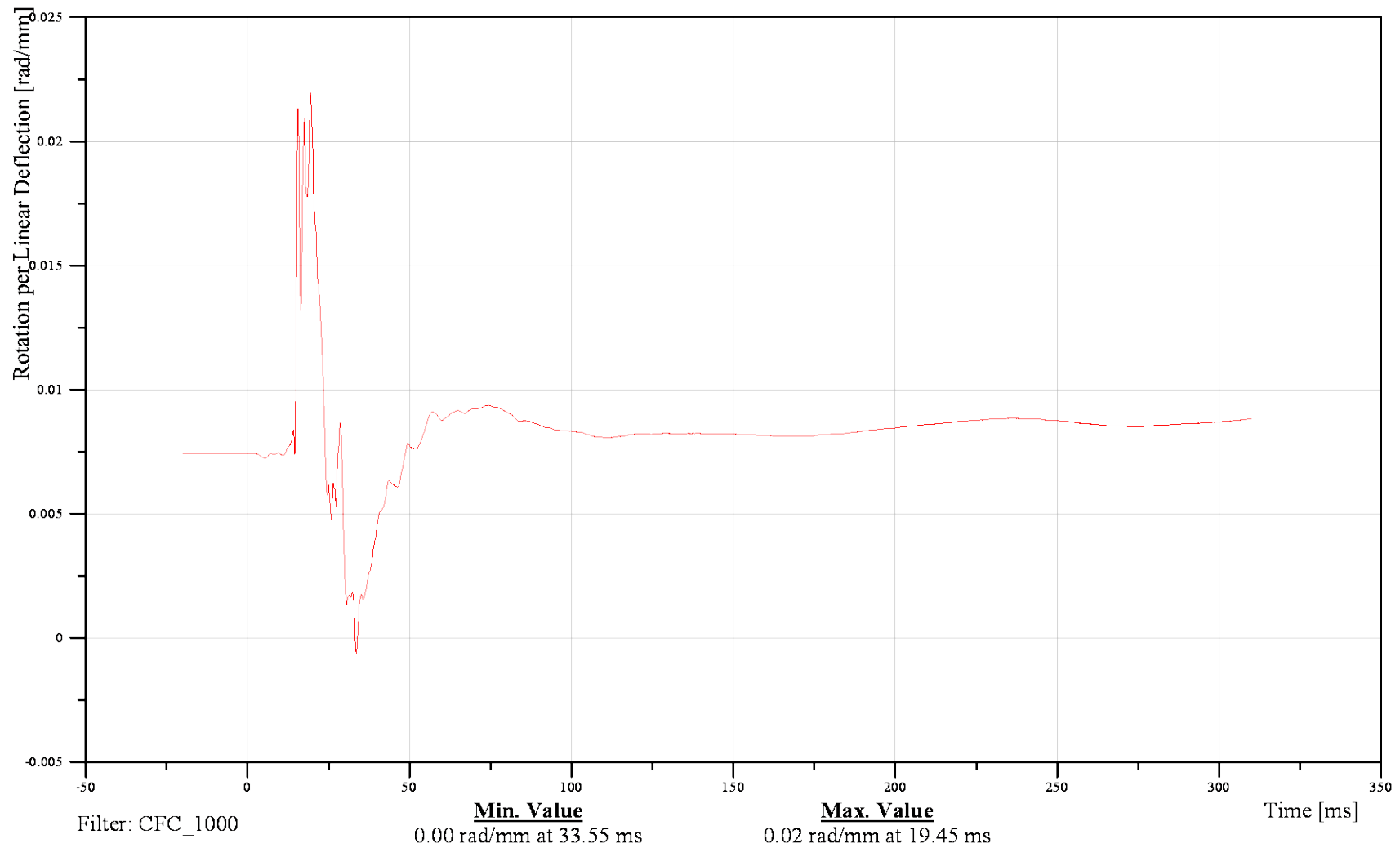
Time: 12:36

Customer: VRTC

11CHBA5925WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 26

Date: 06/17/2013

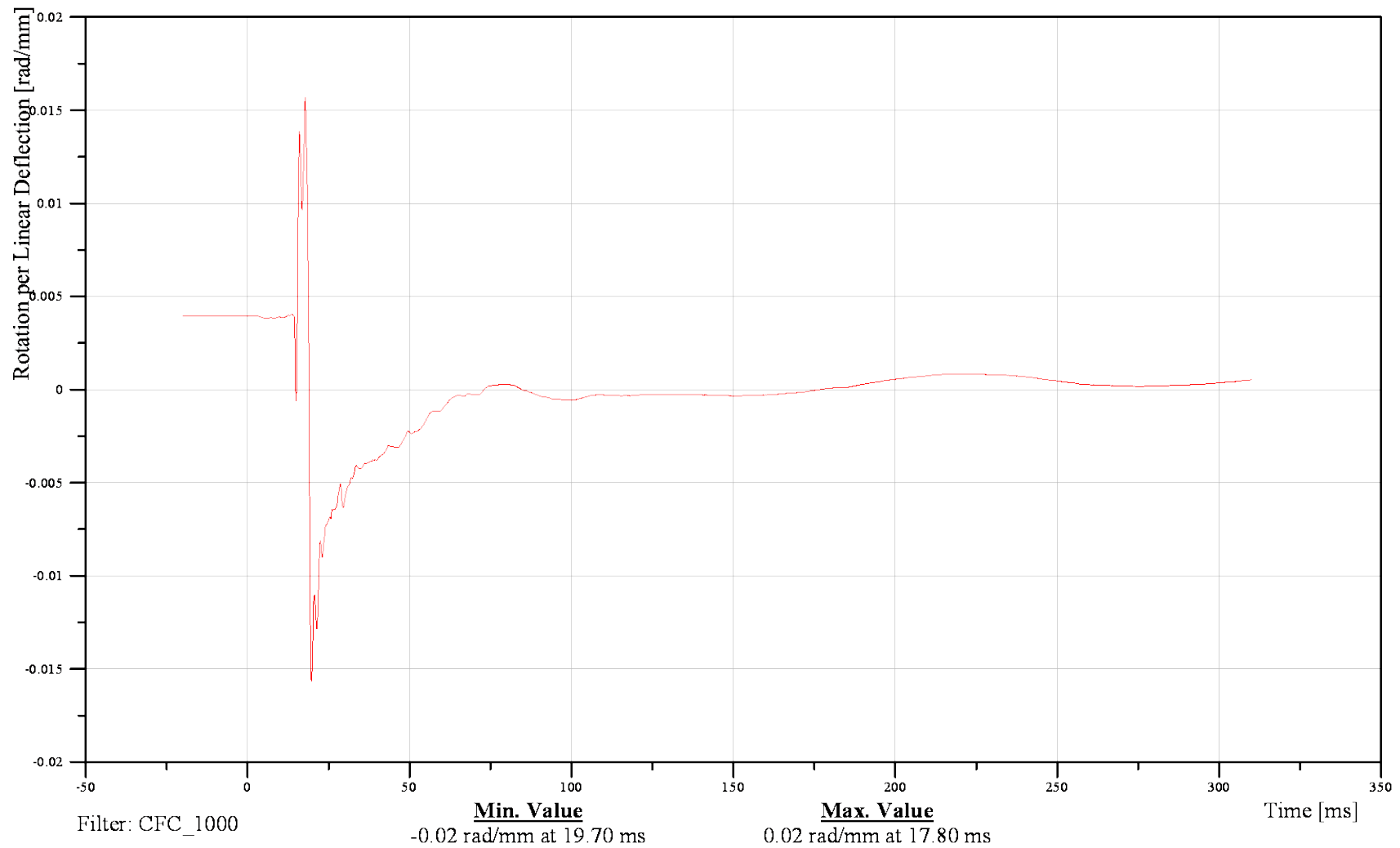
Time: 12:36

Customer: VRTC

11CHBA5926WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 27

Date: 06/17/2013

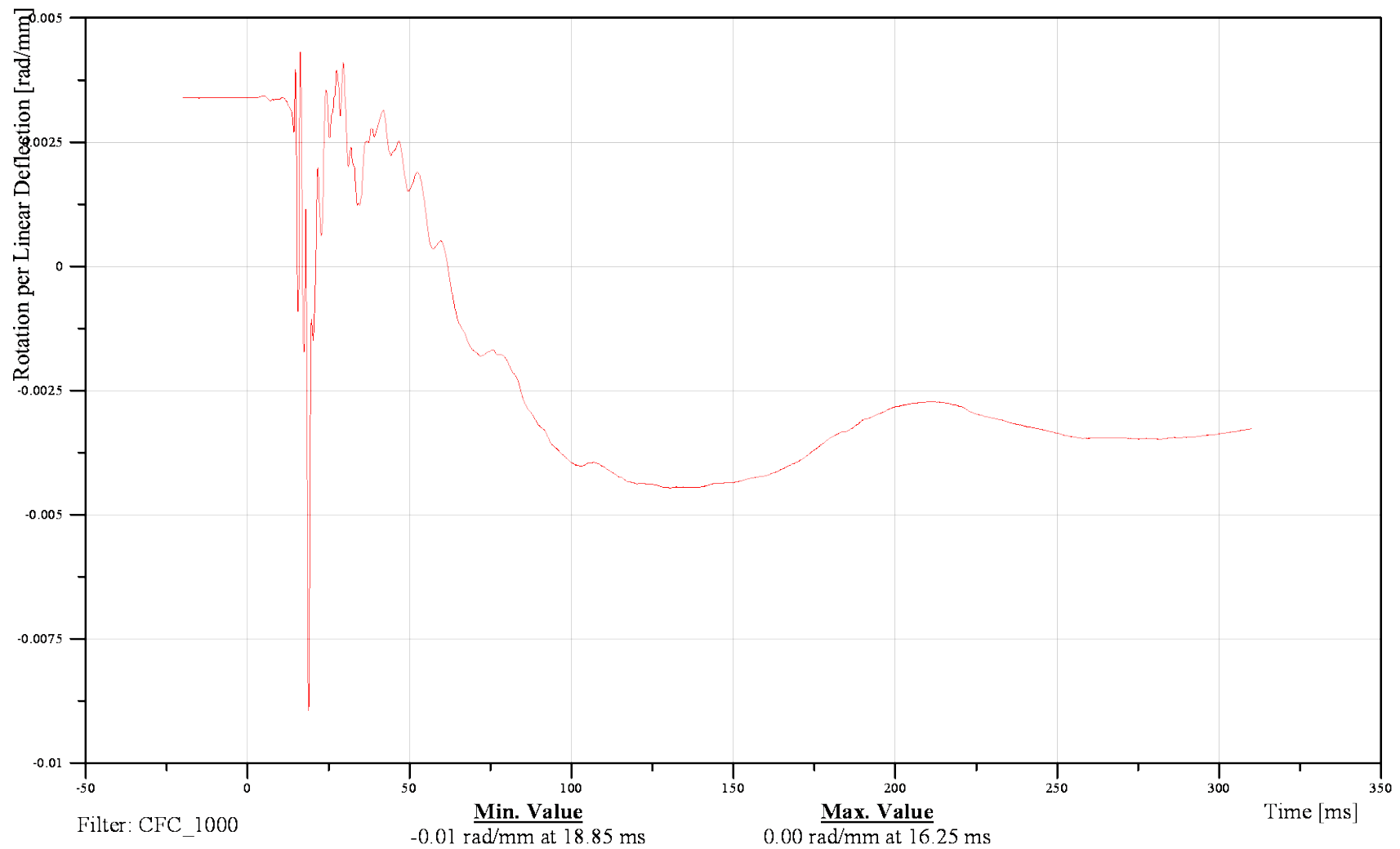
Time: 12:36

Customer: VRTC

11CHBA5927WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 28

Date: 06/17/2013

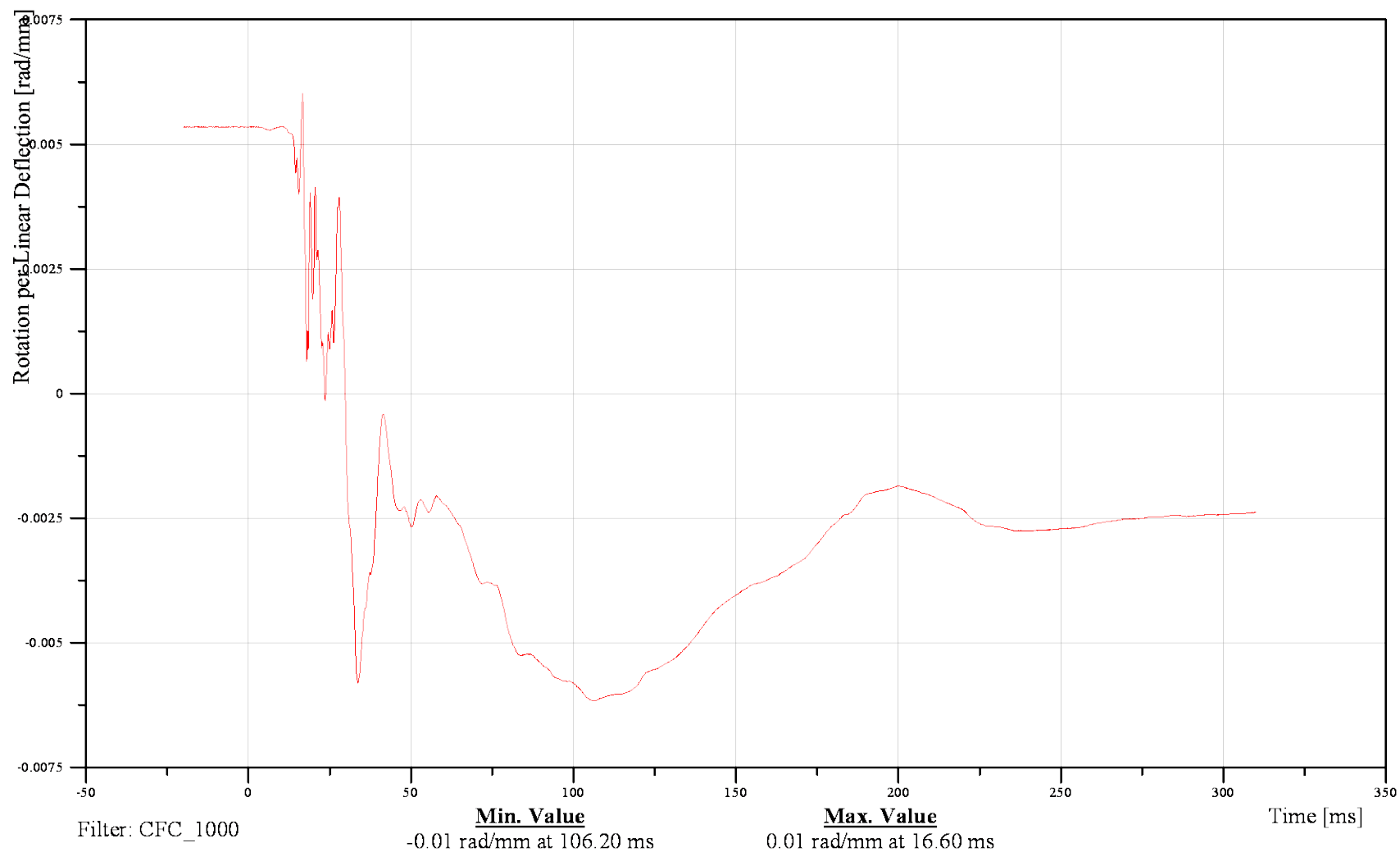
Time: 12:36

Customer: VRTC

11CHBA5928WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 29

Date: 06/17/2013

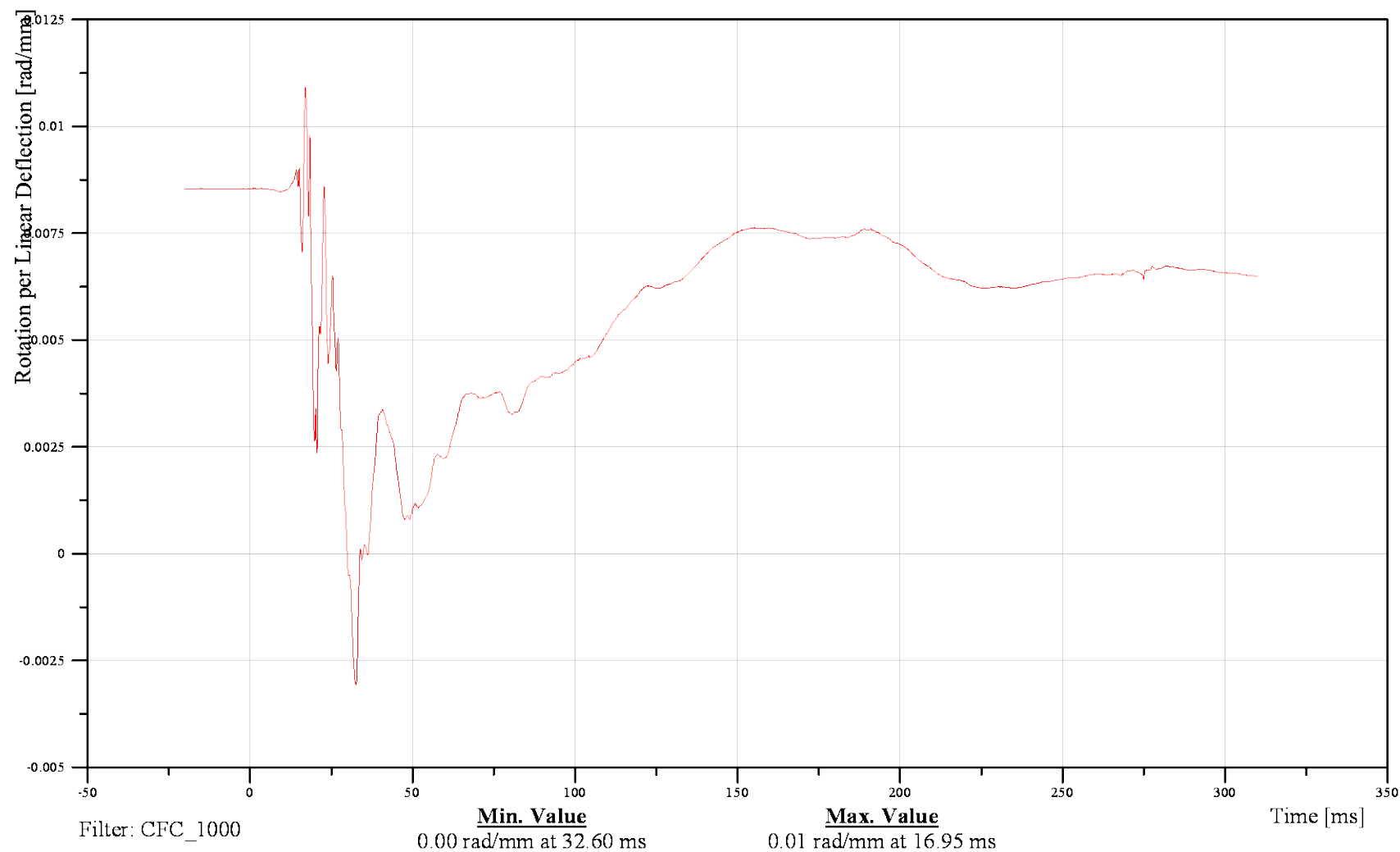
Time: 12:36

Customer: VRTC

11CHBA5929WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 30

Date: 06/17/2013

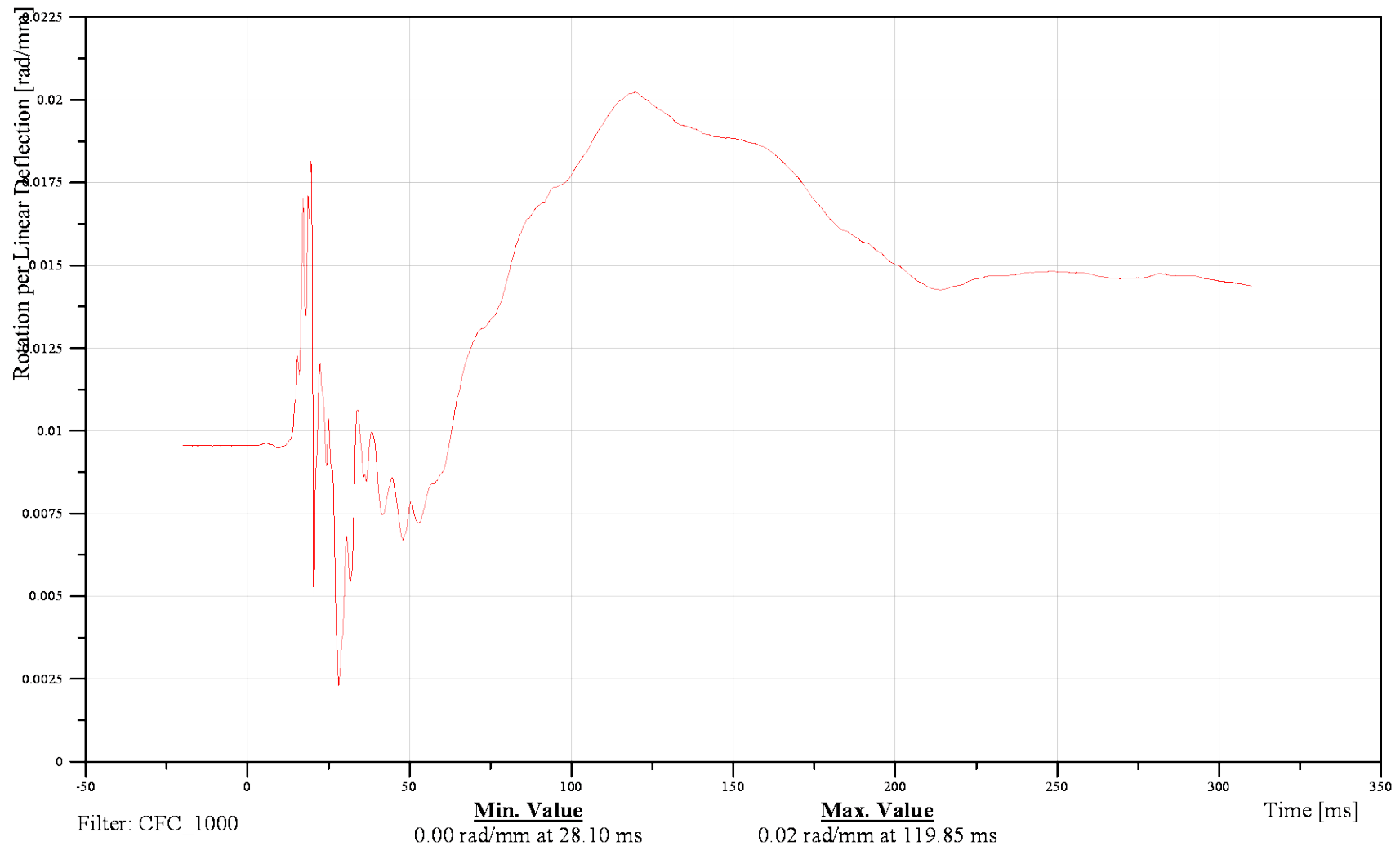
Time: 12:36

Customer: VRTC

11CHBA5930WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 31

Date: 06/17/2013

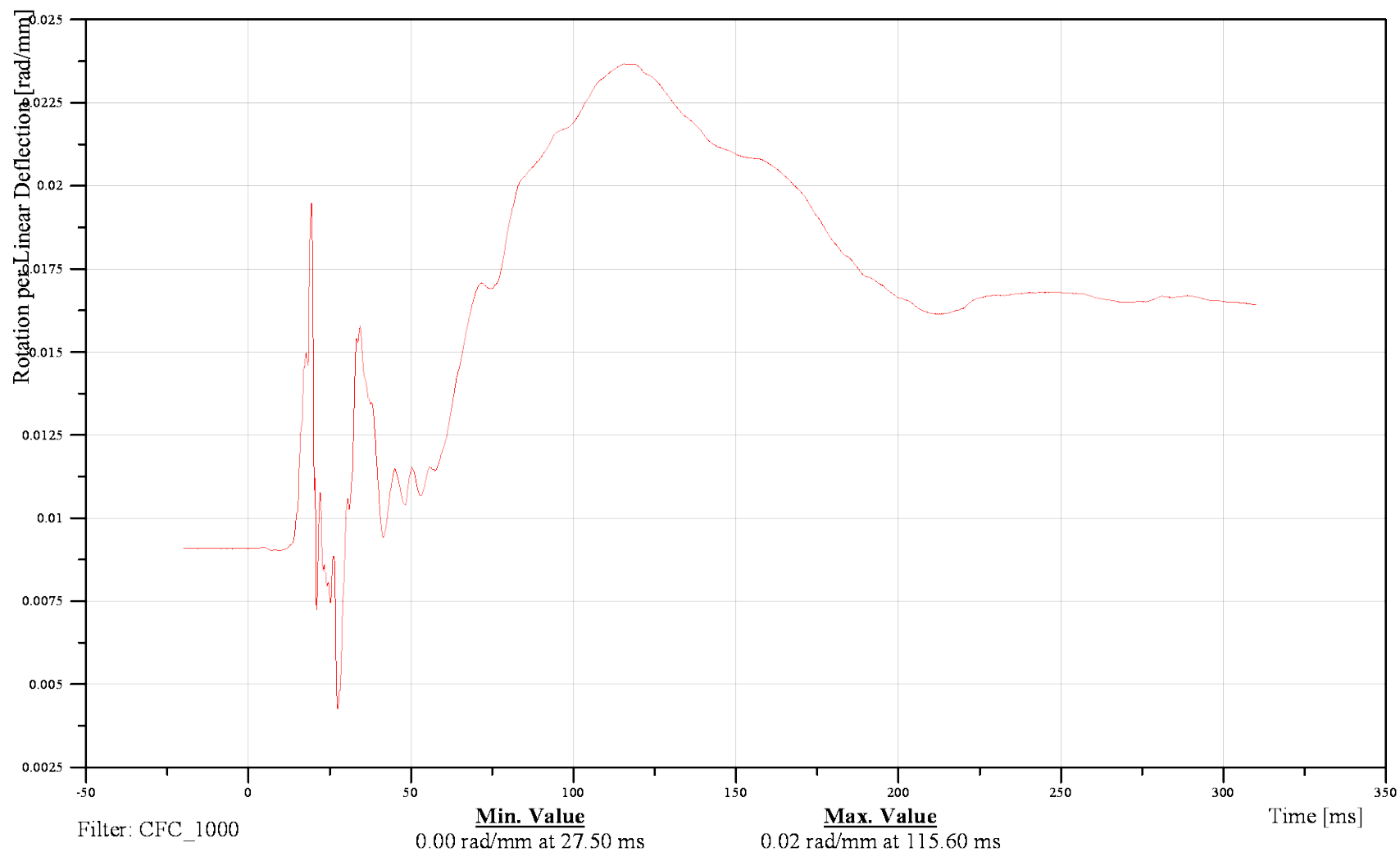
Time: 12:36

Customer: VRTC

11CHBA5931WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 32

Date: 06/17/2013

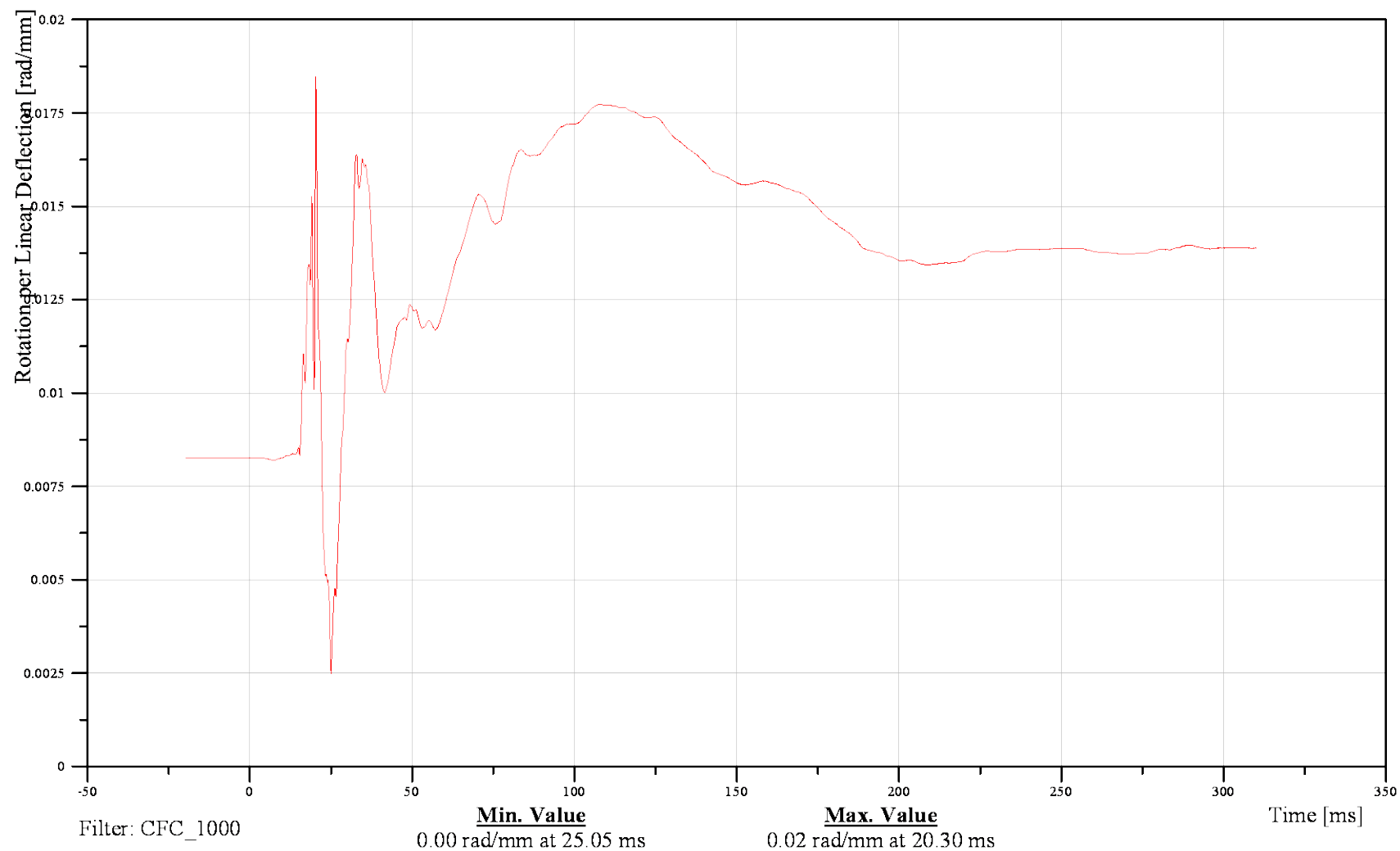
Time: 12:36

Customer: VRTC

11CHBA5932WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 33

Date: 06/17/2013

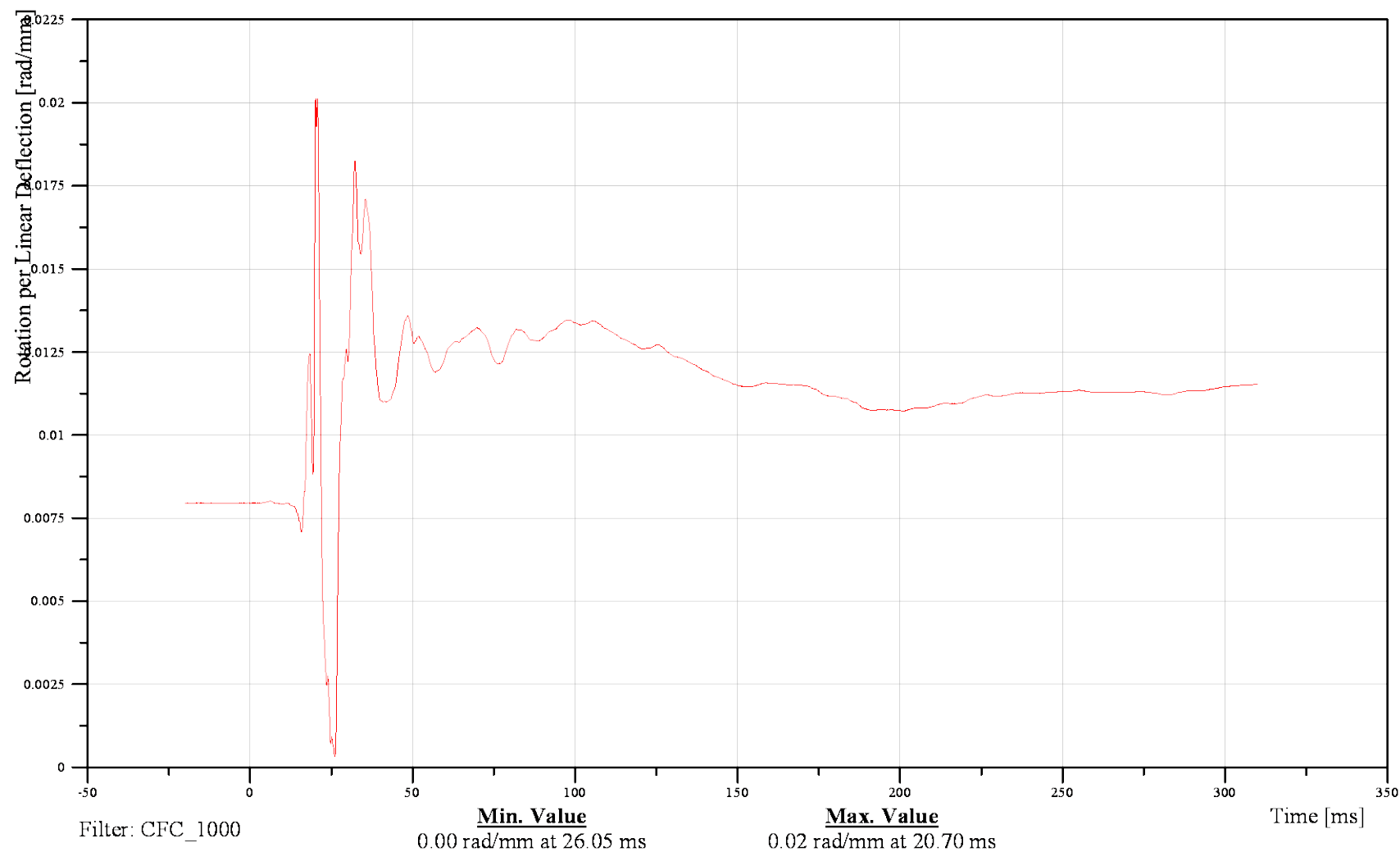
Time: 12:36

Customer: VRTC

11CHBA5933WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 34

Date: 06/17/2013

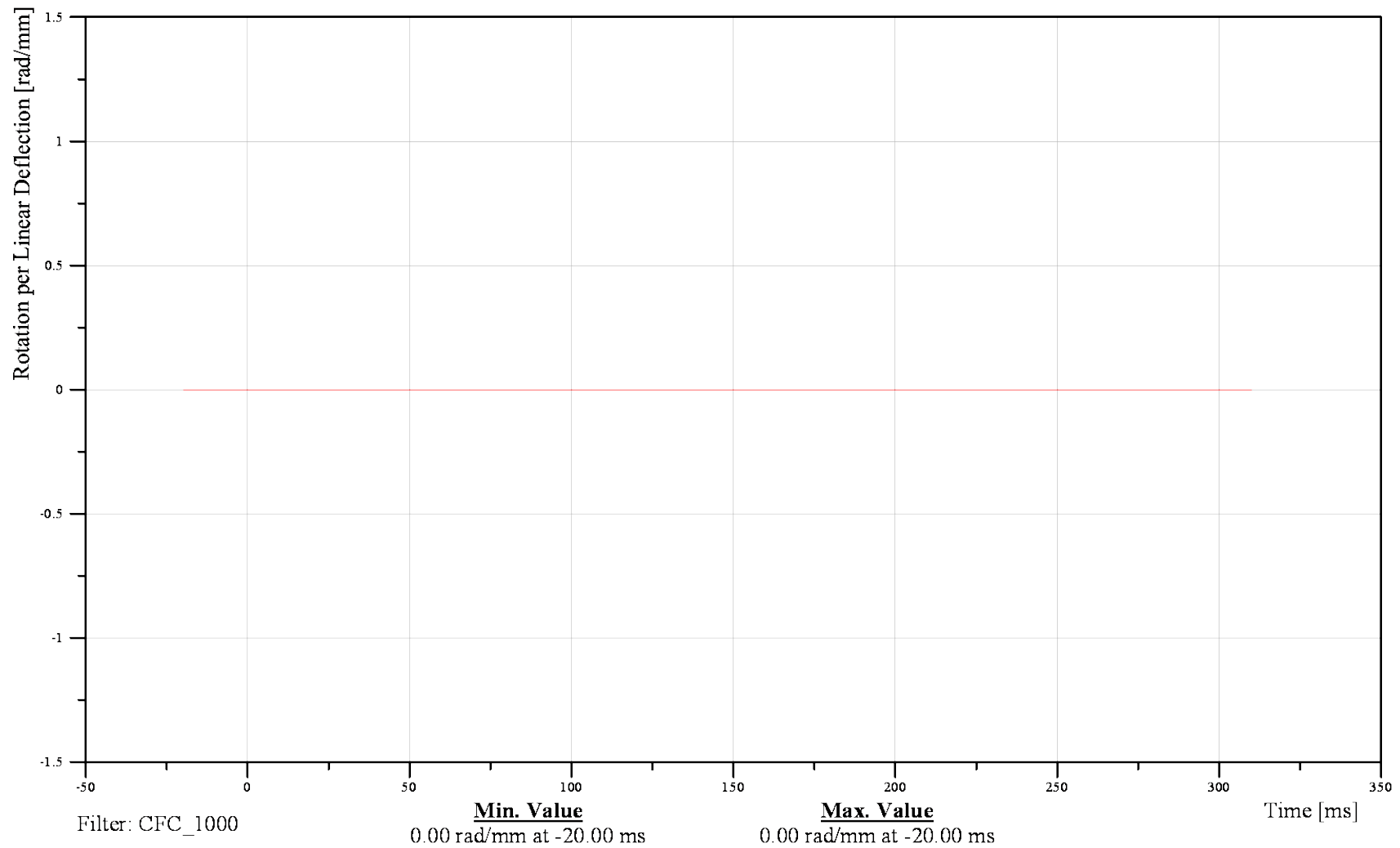
Time: 12:36

Customer: VRTC

11CHBA5934WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 35

Date: 06/17/2013

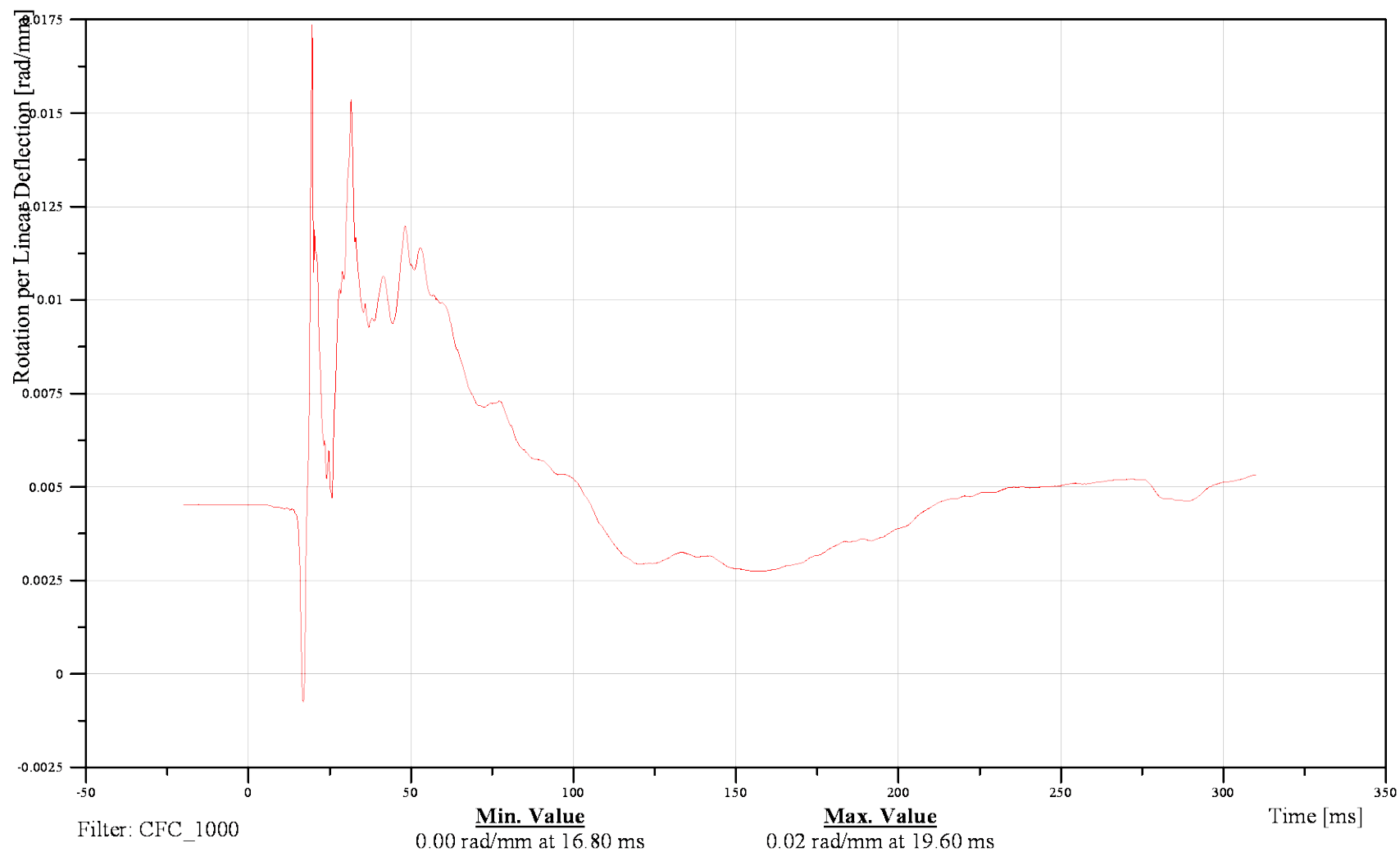
Time: 12:36

Customer: VRTC

11CHBA5935WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 36

Date: 06/17/2013

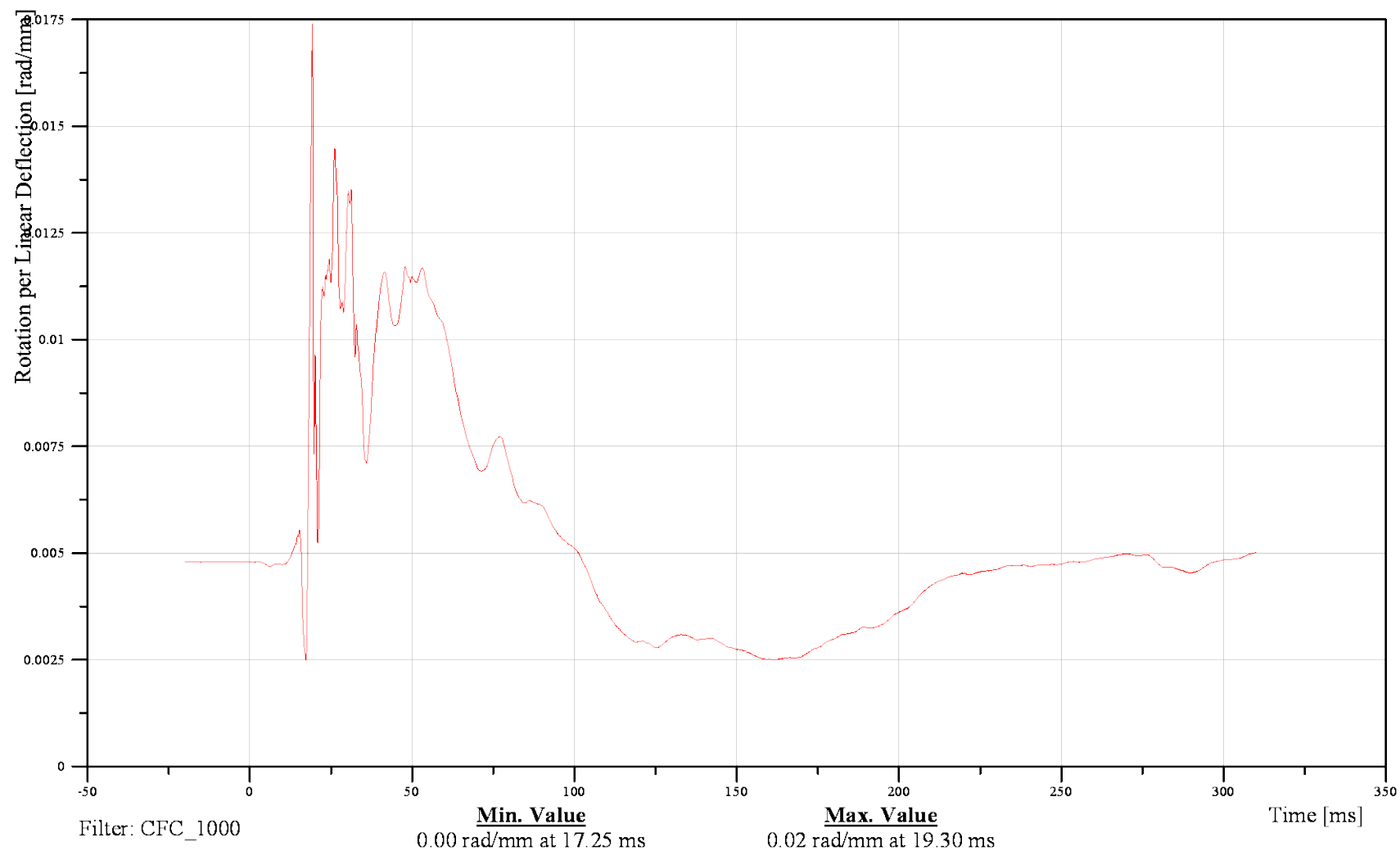
Time: 12:36

Customer: VRTC

11CHBA5936WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 37

Date: 06/17/2013

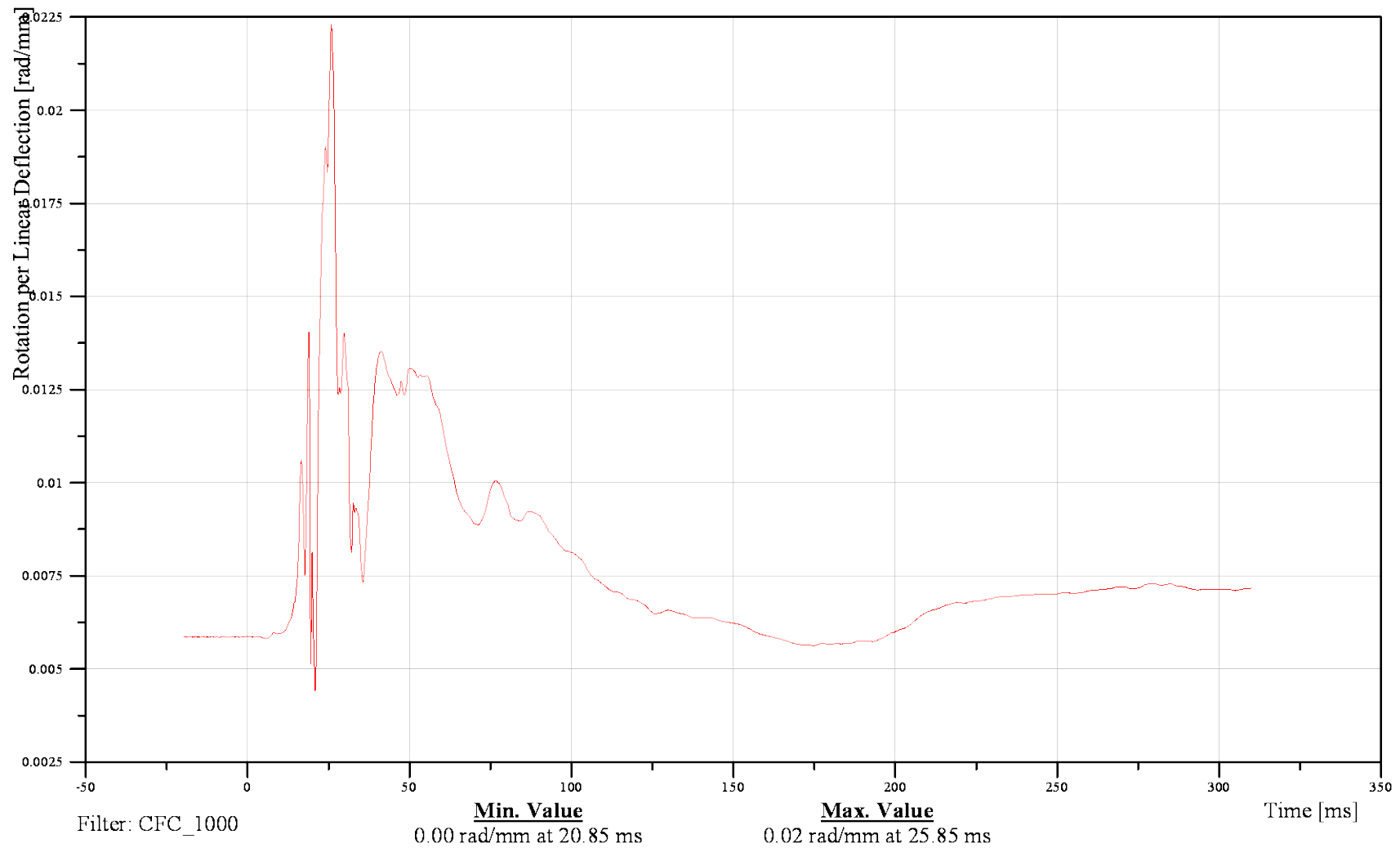
Time: 12:36

Customer: VRTC

11CHBA5937WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 38

Date: 06/17/2013

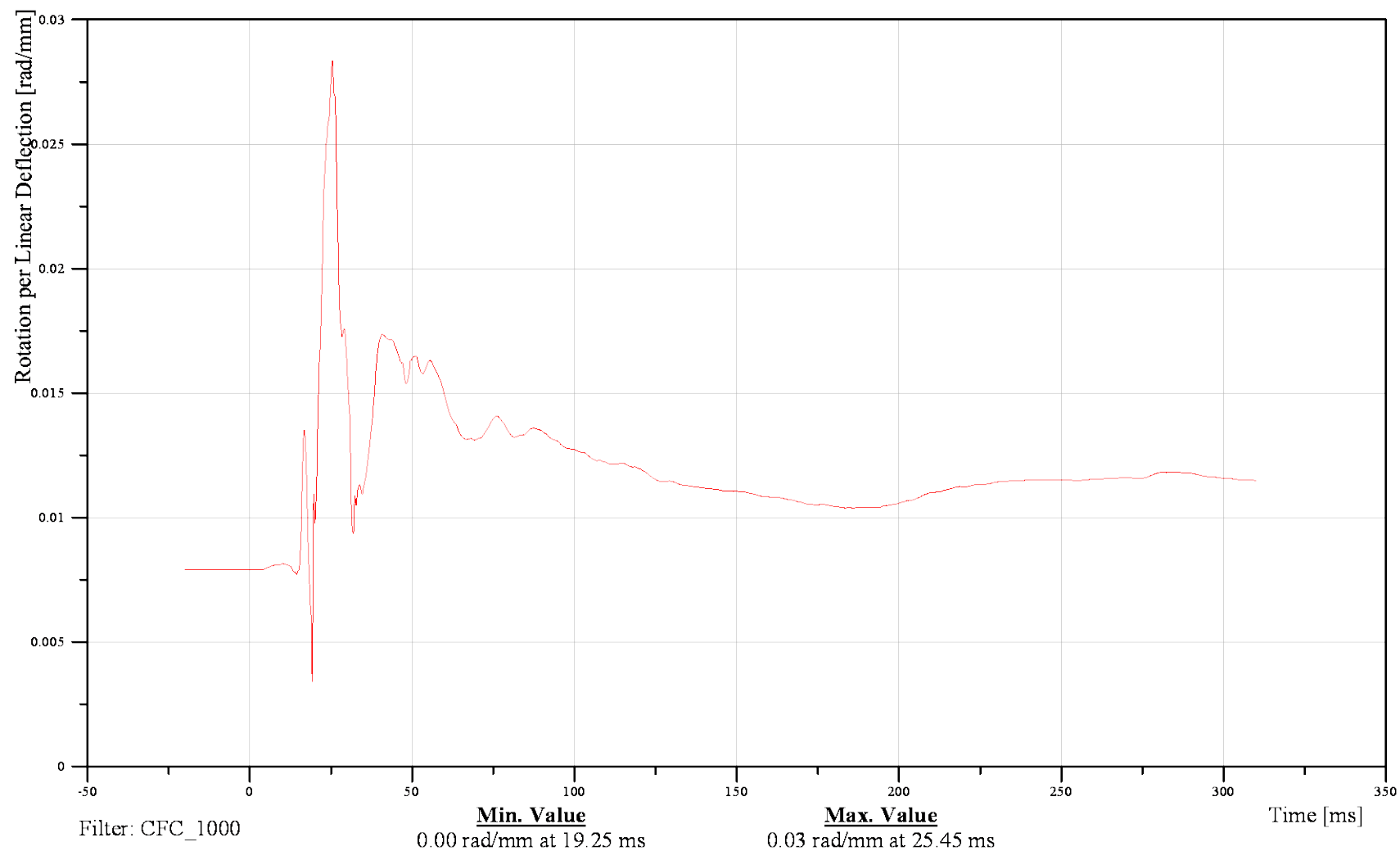
Time: 12:36

Customer: VRTC

11CHBA5938WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 39

Date: 06/17/2013

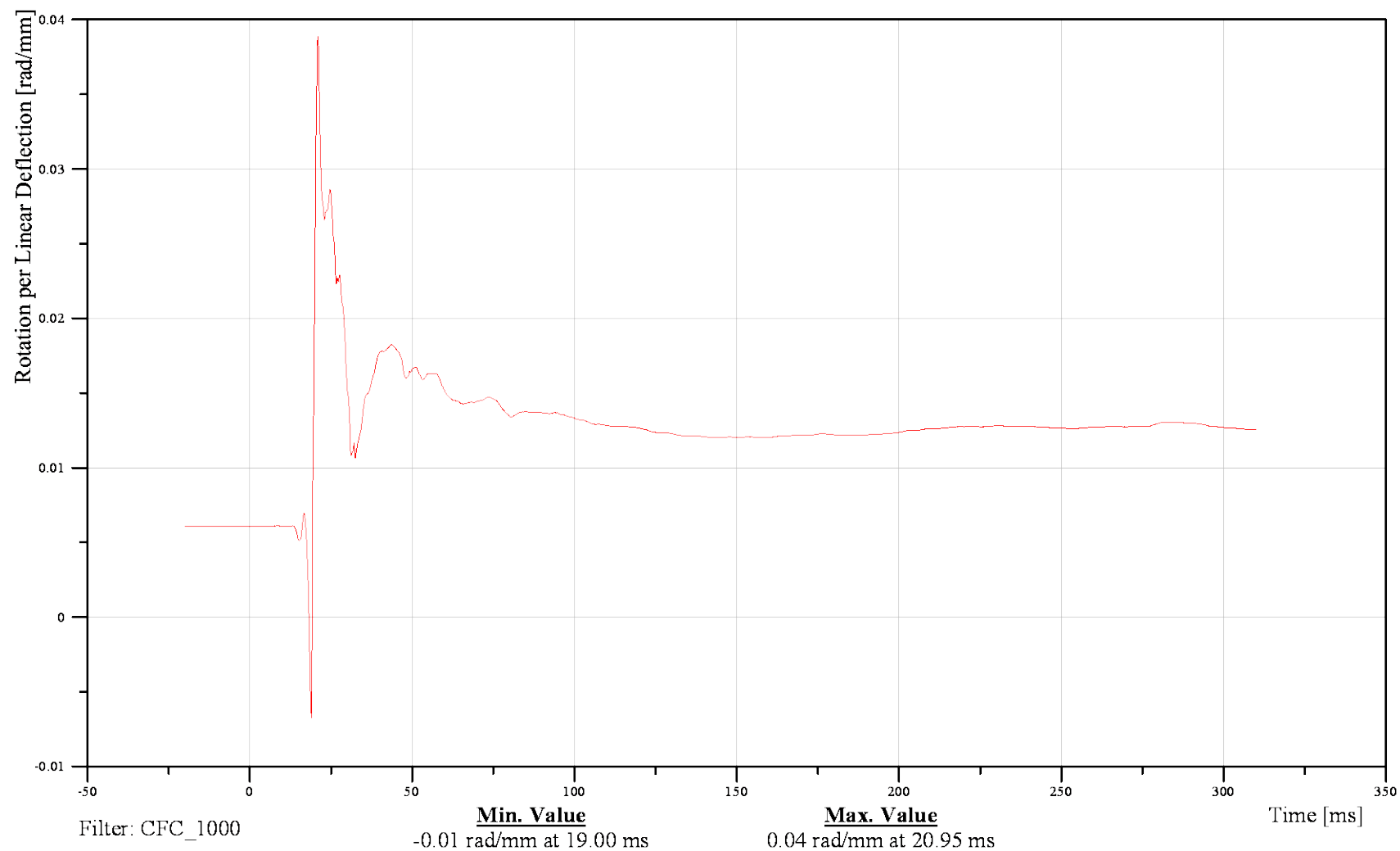
Time: 12:36

Customer: VRTC

11CHBA5939WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 40

Date: 06/17/2013

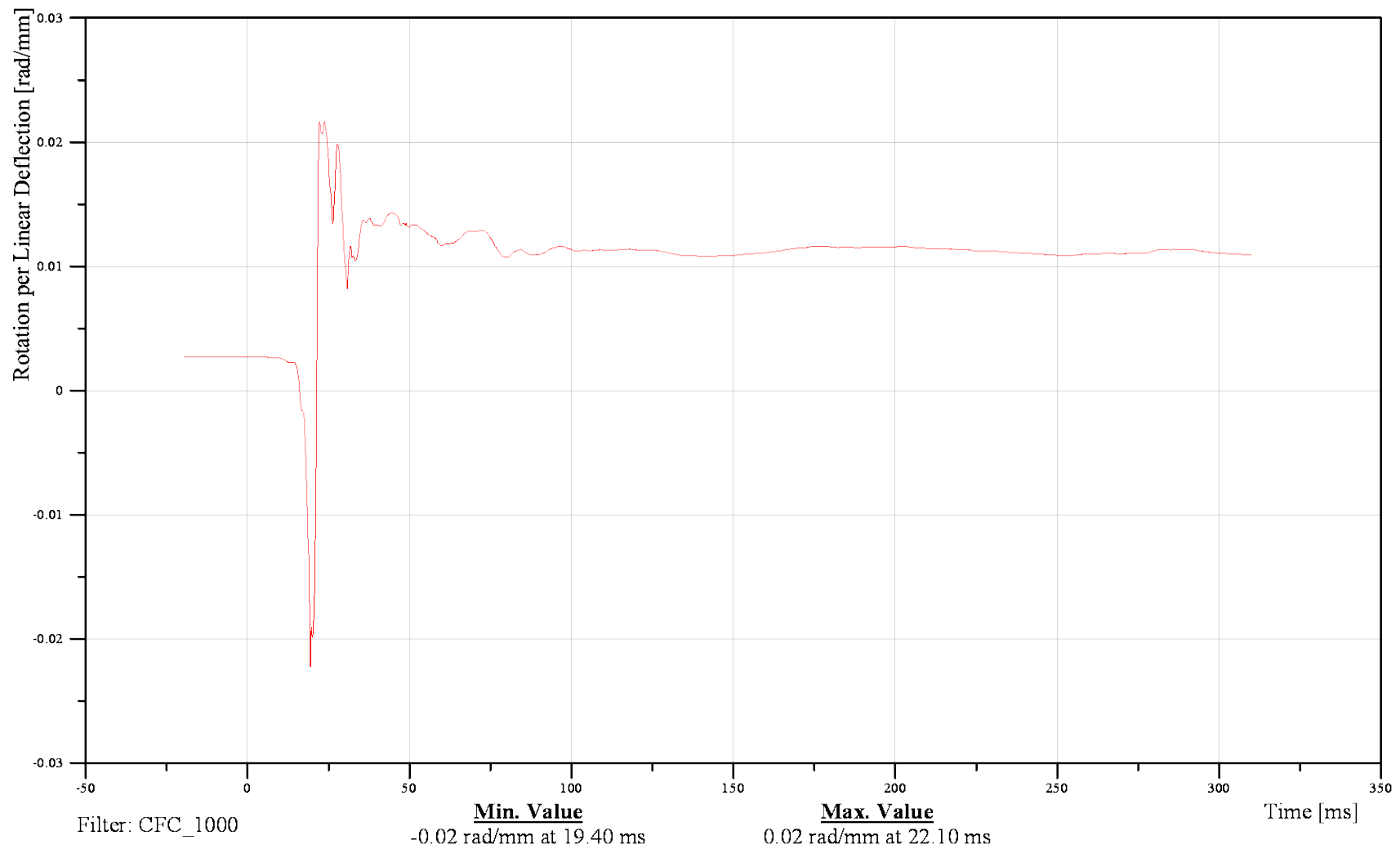
Time: 12:36

Customer: VRTC

11CHBA5940WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 41

Date: 06/17/2013

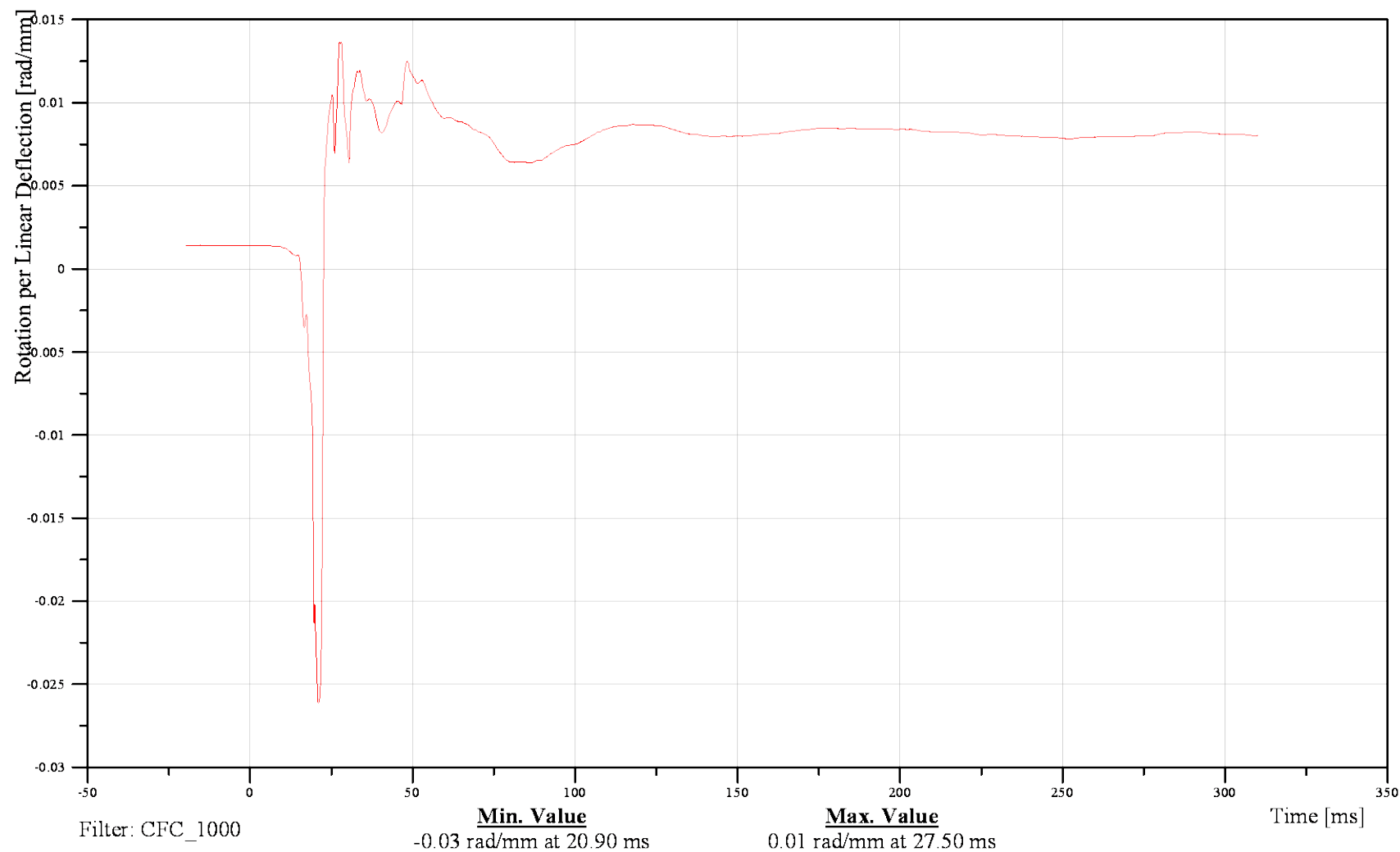
Time: 12:36

Customer: VRTC

11CHBA5941WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 42

Date: 06/17/2013

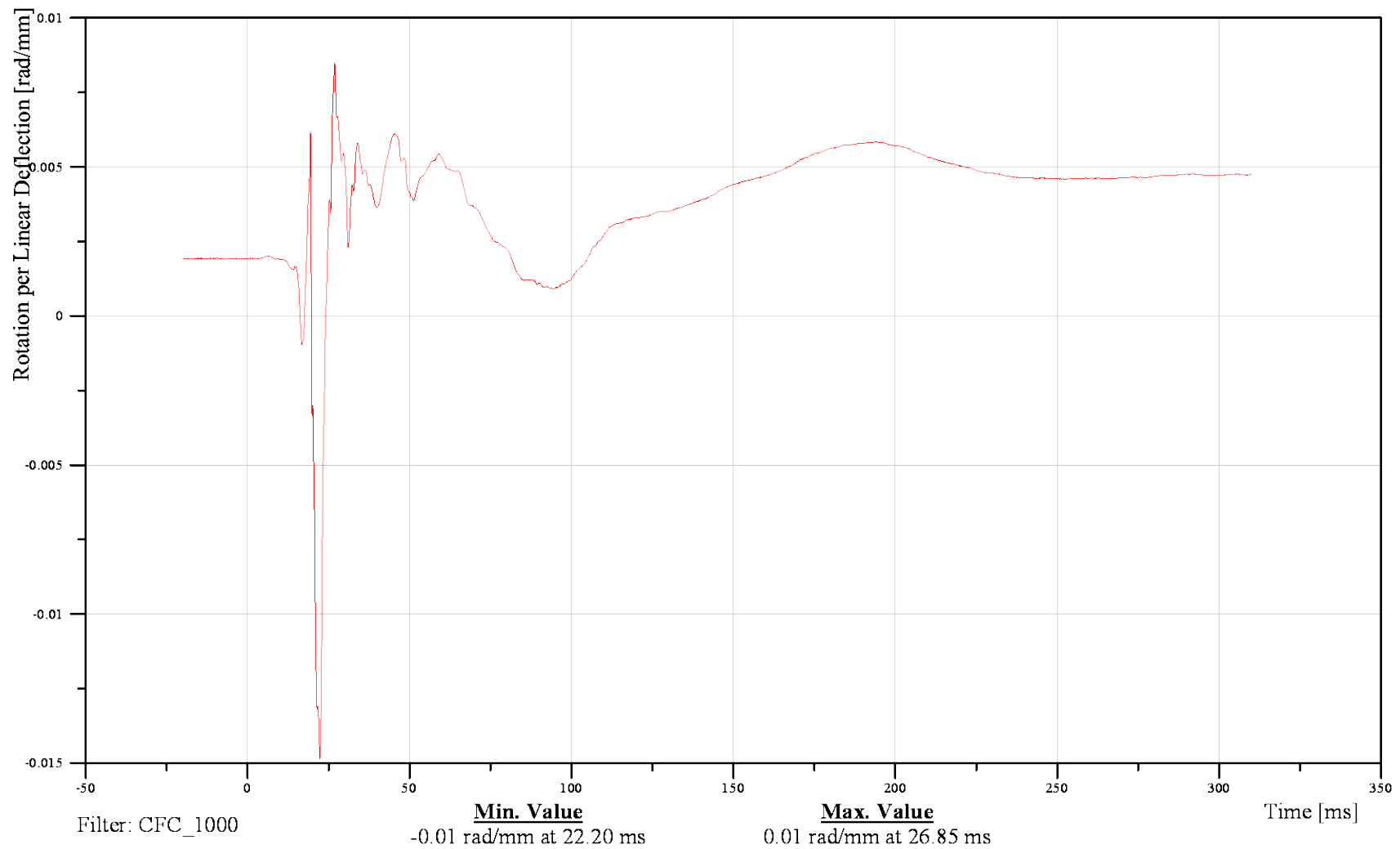
Time: 12:36

Customer: VRTC

11CHBA5942WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 43

Date: 06/17/2013

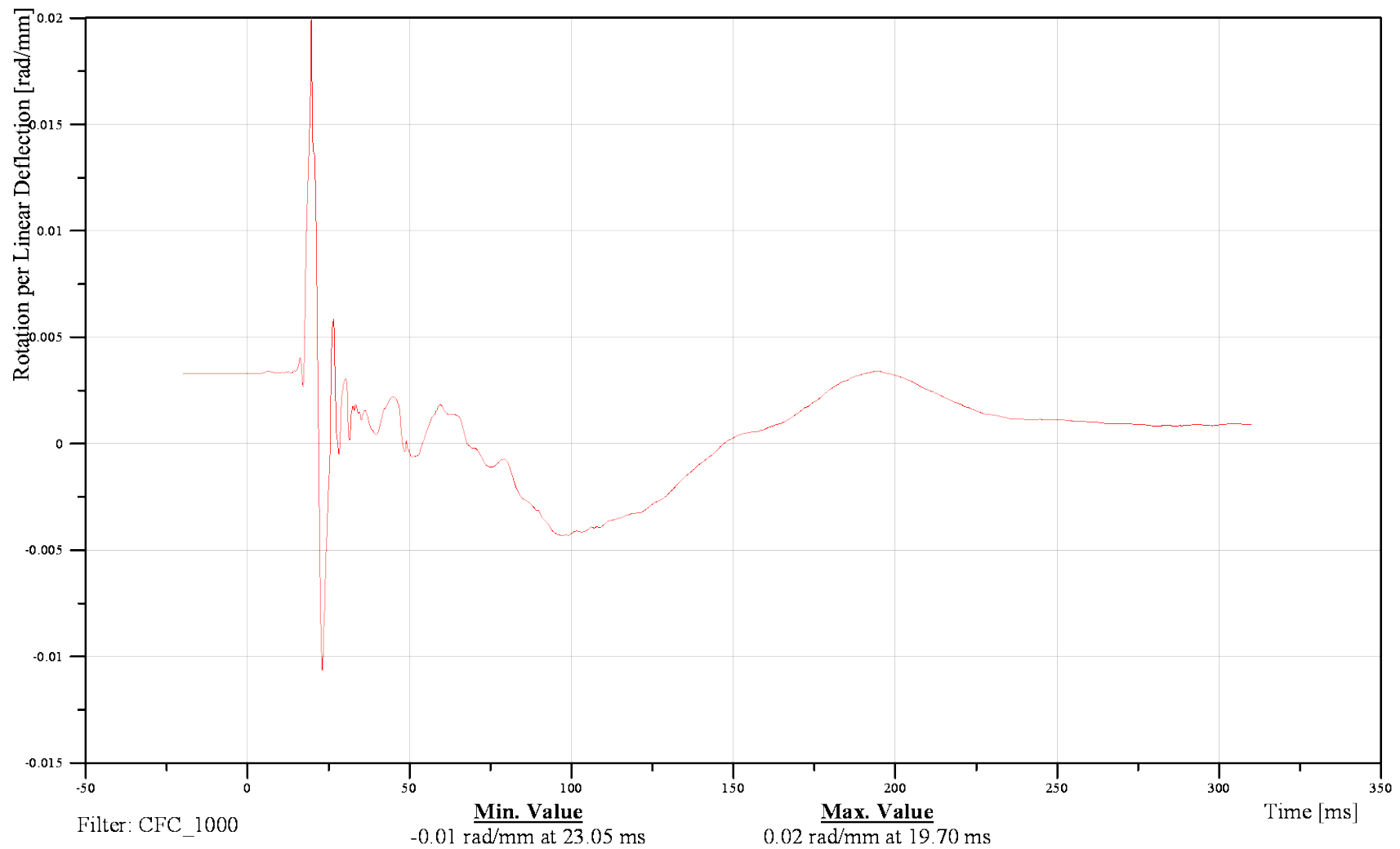
Time: 12:36

Customer: VRTC

11CHBA5943WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 44

Date: 06/17/2013

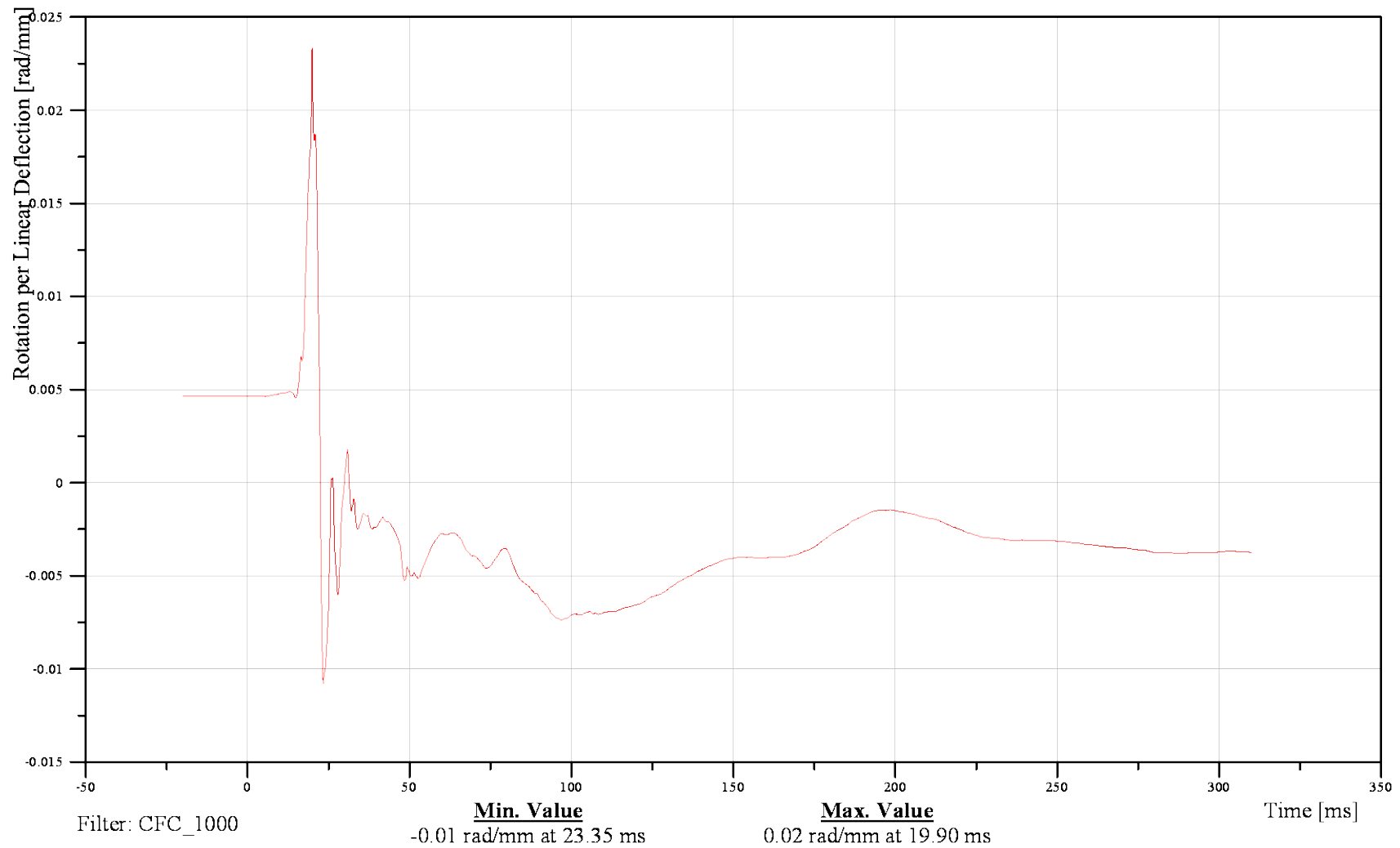
Time: 12:36

Customer: VRTC

11CHBA5944WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 45

Date: 06/17/2013

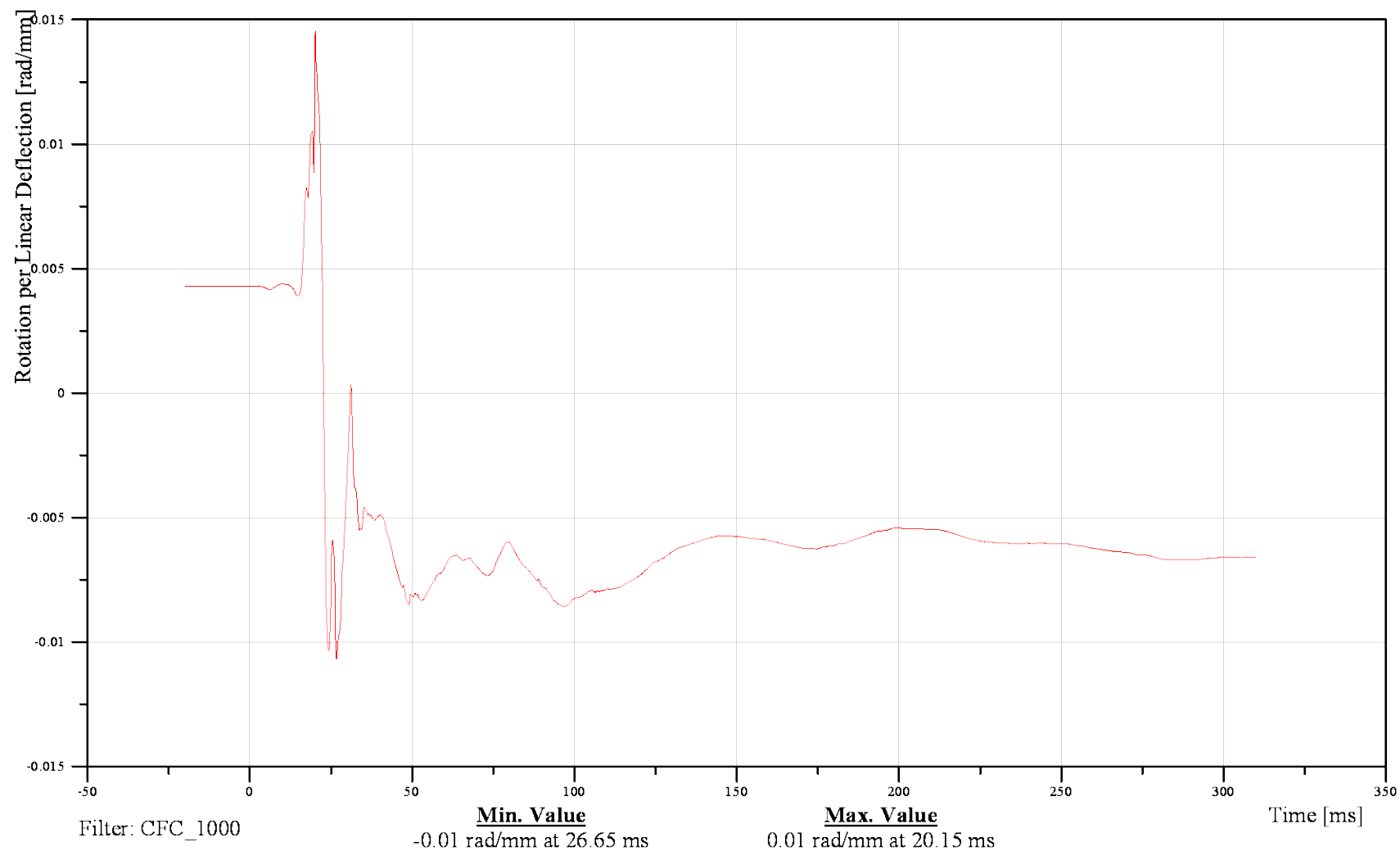
Time: 12:36

Customer: VRTC

11CHBA5945WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 46

Date: 06/17/2013

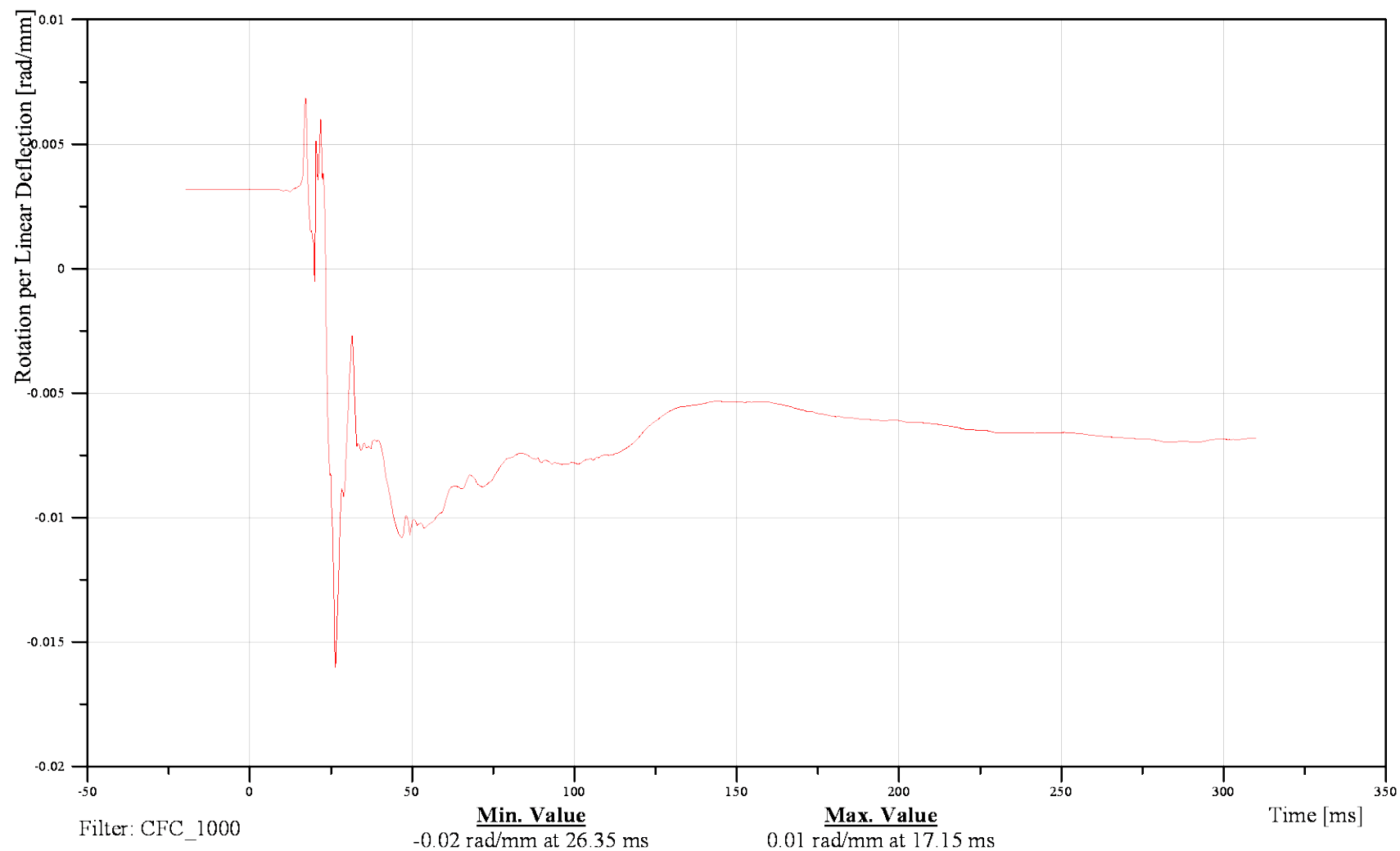
Time: 12:36

Customer: VRTC

11CHBA5946WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 47

Date: 06/17/2013

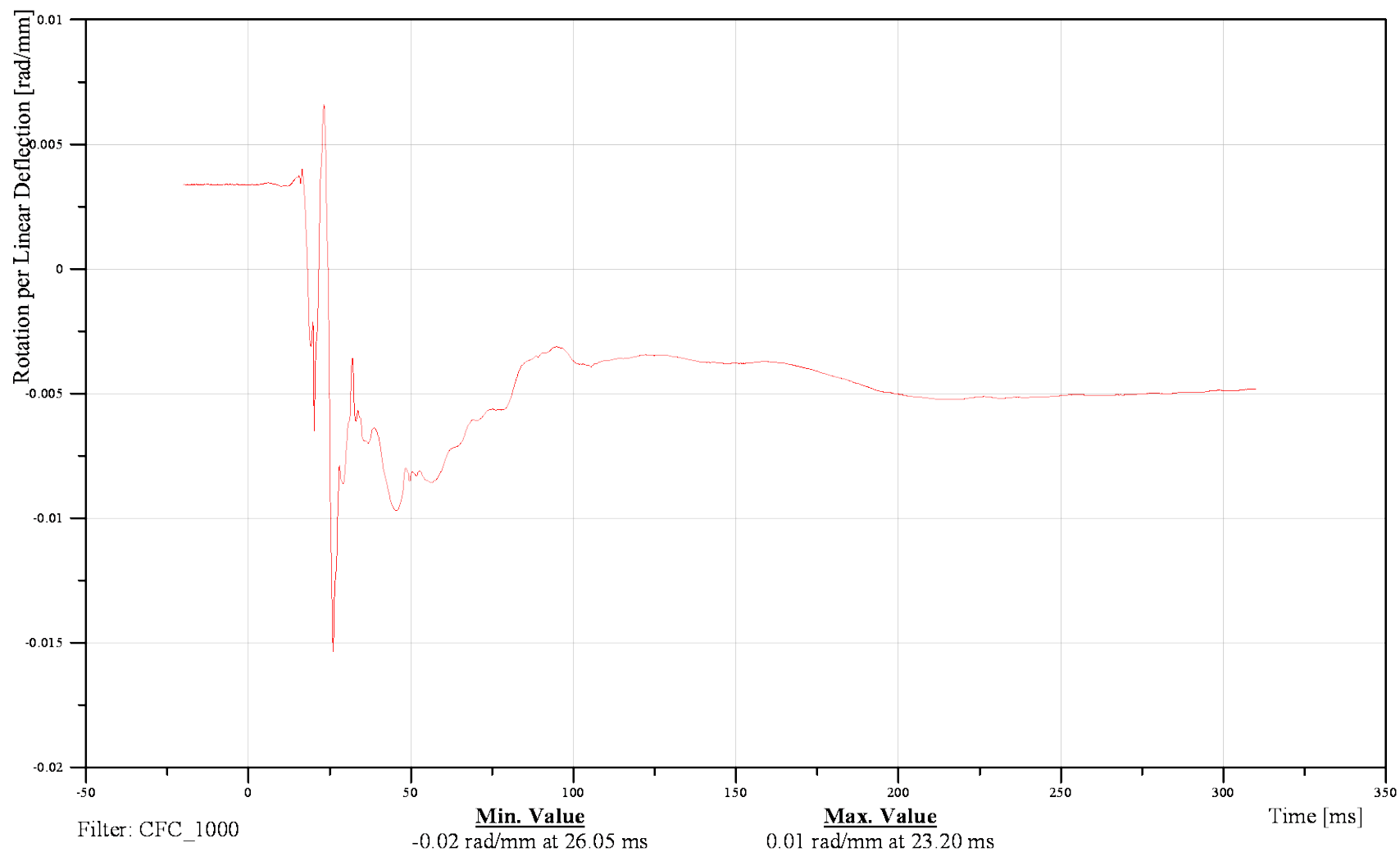
Time: 12:36

Customer: VRTC

11CHBA5947WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 48

Date: 06/17/2013

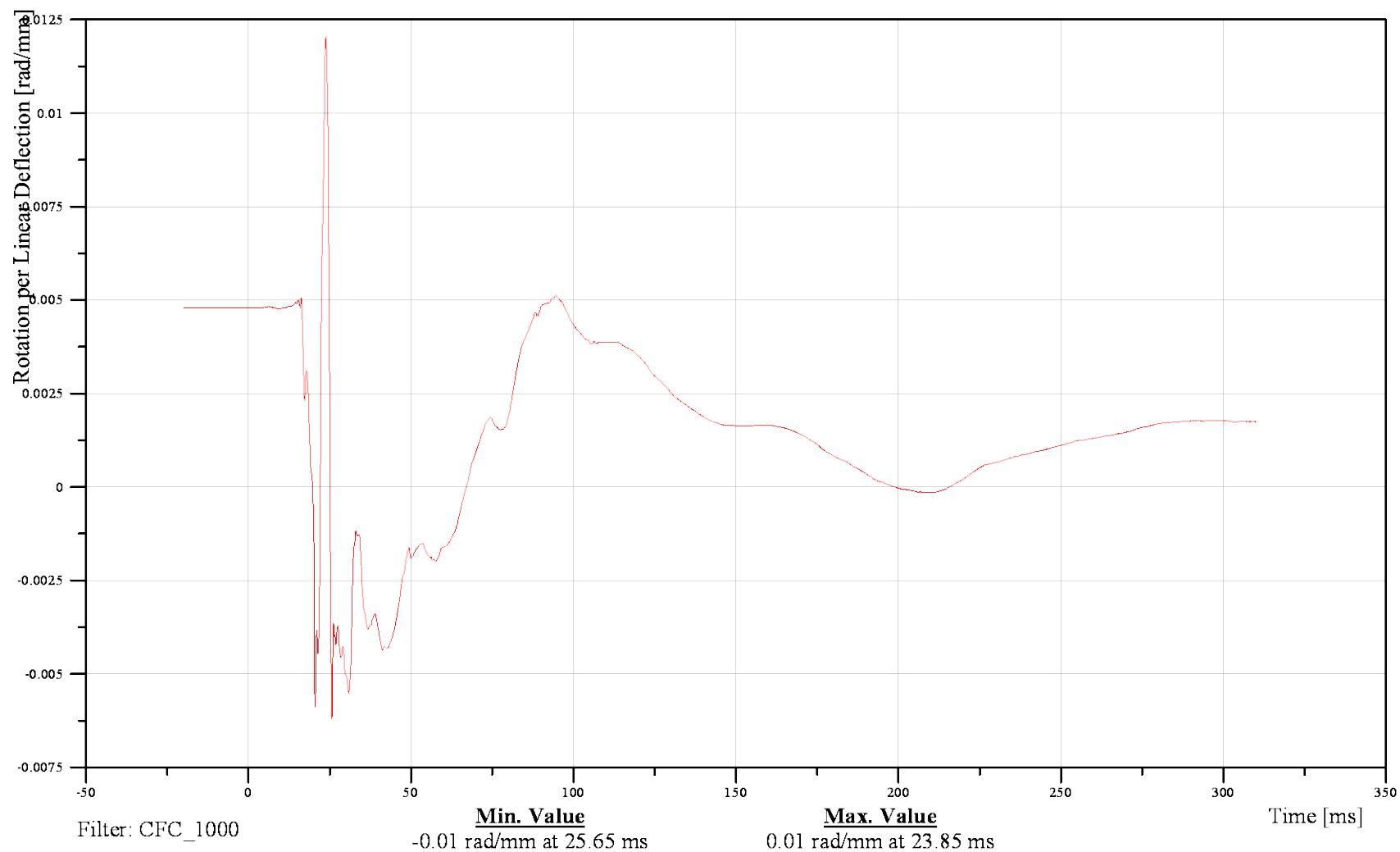
Time: 12:36

Customer: VRTC

11CHBA5948WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 49

Date: 06/17/2013

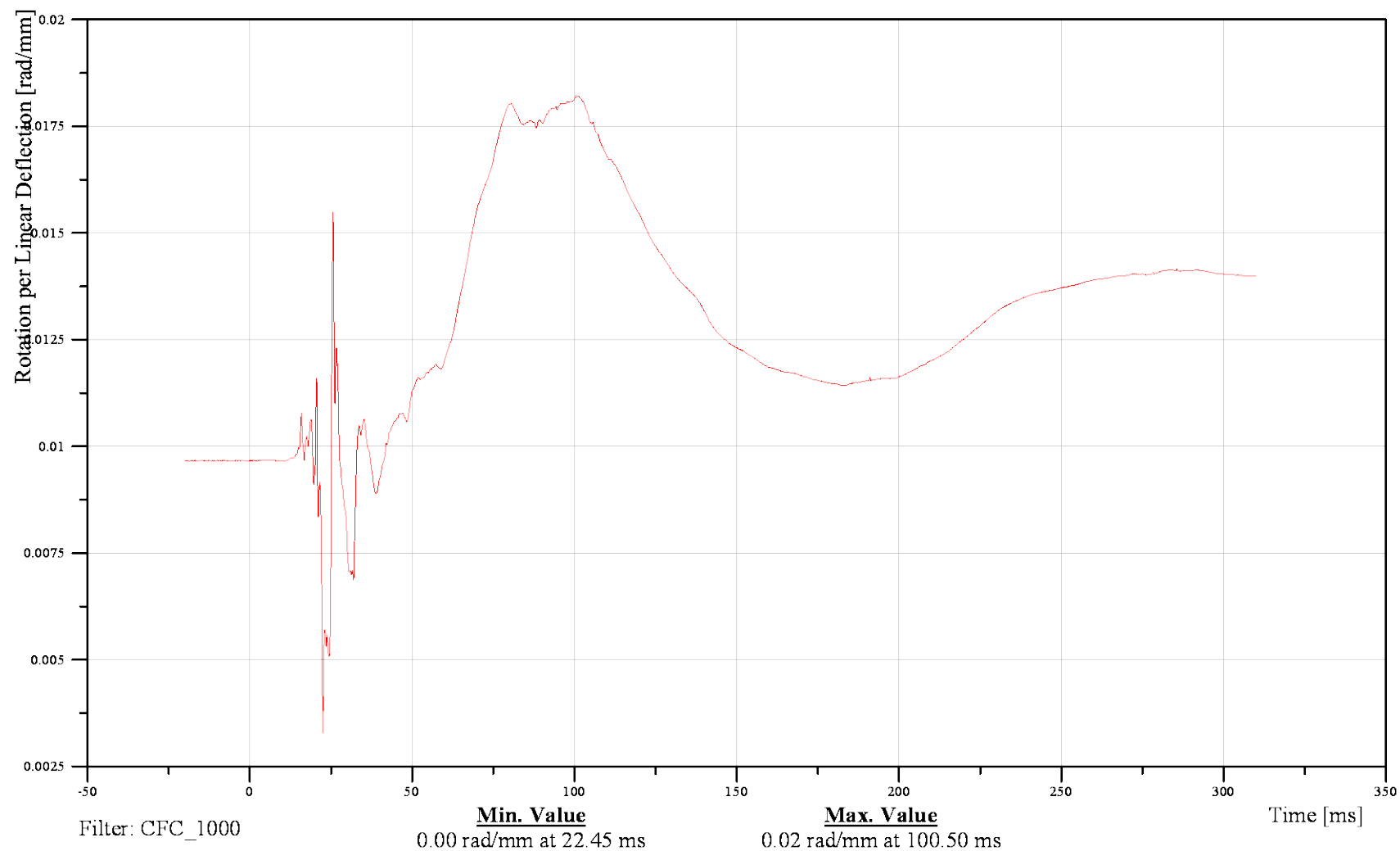
Time: 12:36

Customer: VRTC

11CHBA5949WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 50

Date: 06/17/2013

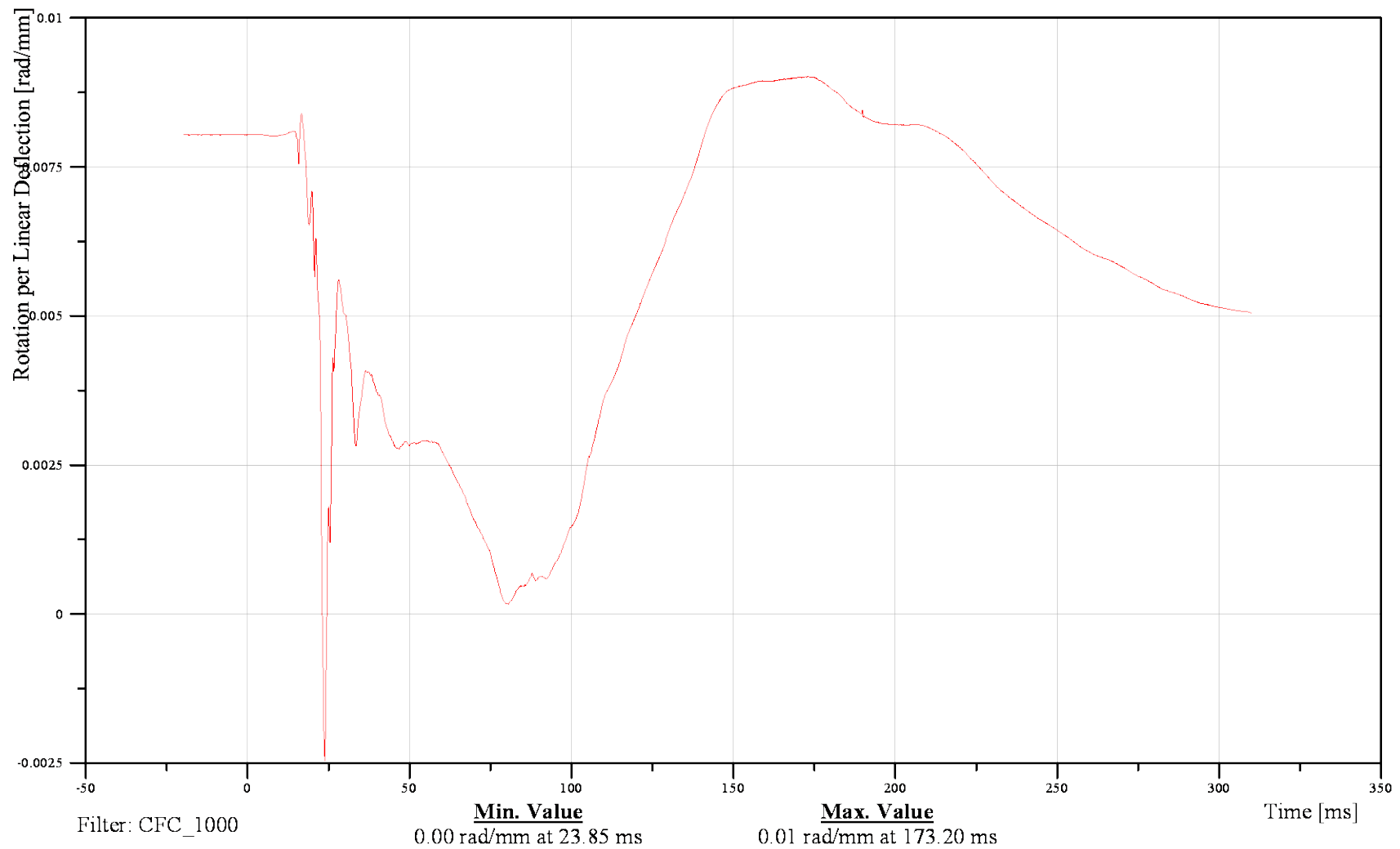
Time: 12:36

Customer: VRTC

11CHBA5950WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 51

Date: 06/17/2013

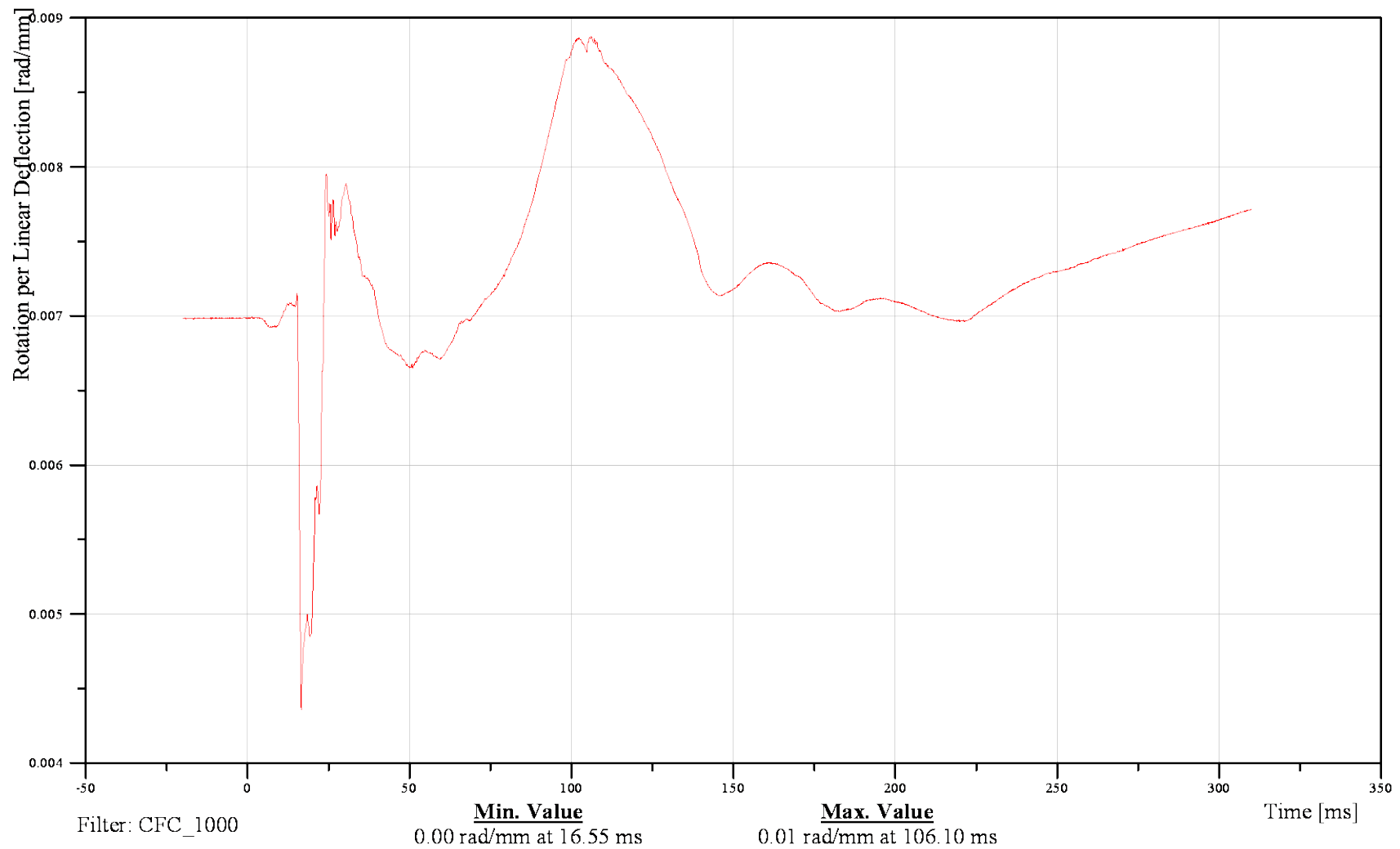
Time: 12:36

Customer: VRTC

11CHBA5951WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 52

Date: 06/17/2013

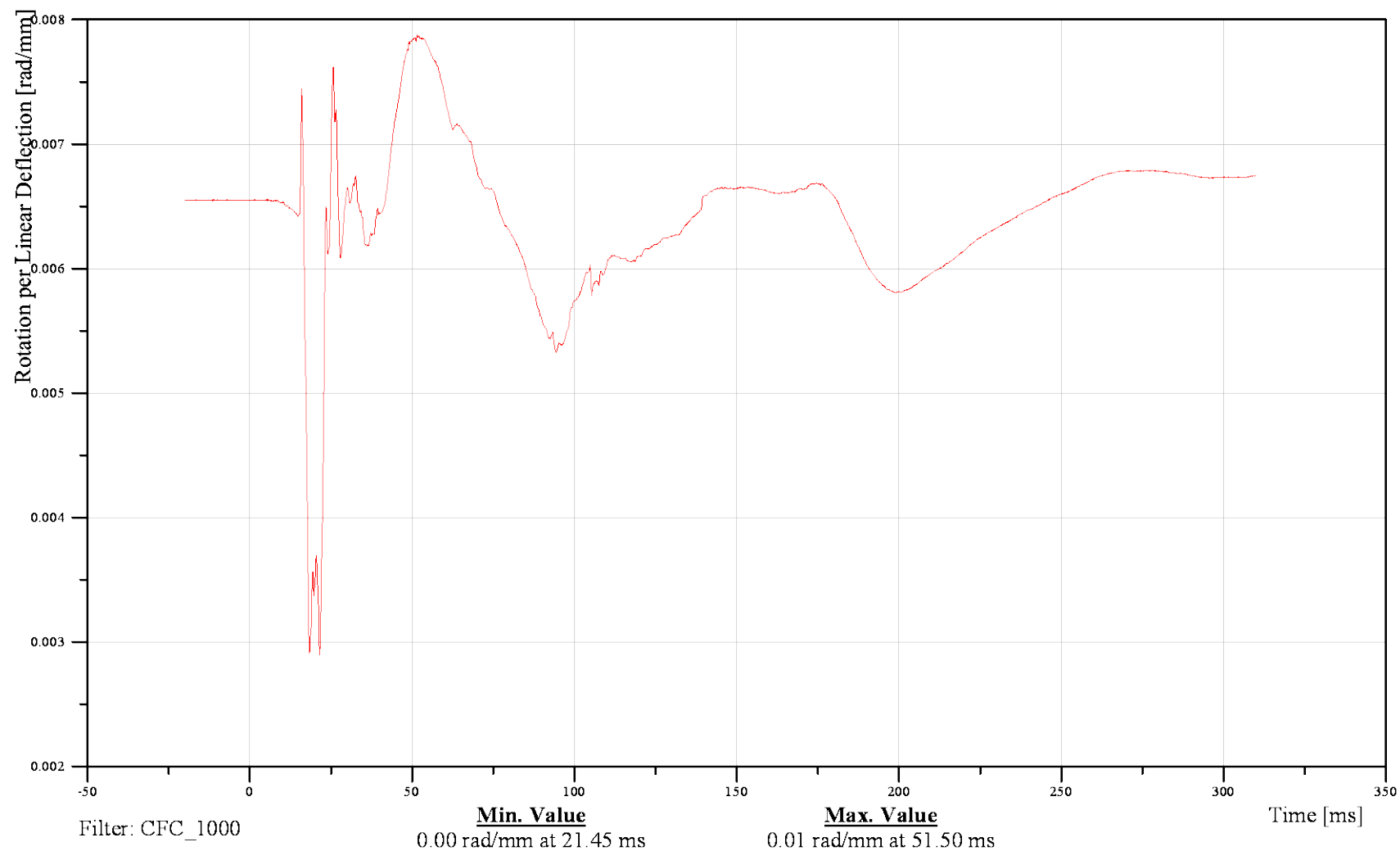
Time: 12:36

Customer: VRTC

11CHBA5952WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 53

Date: 06/17/2013

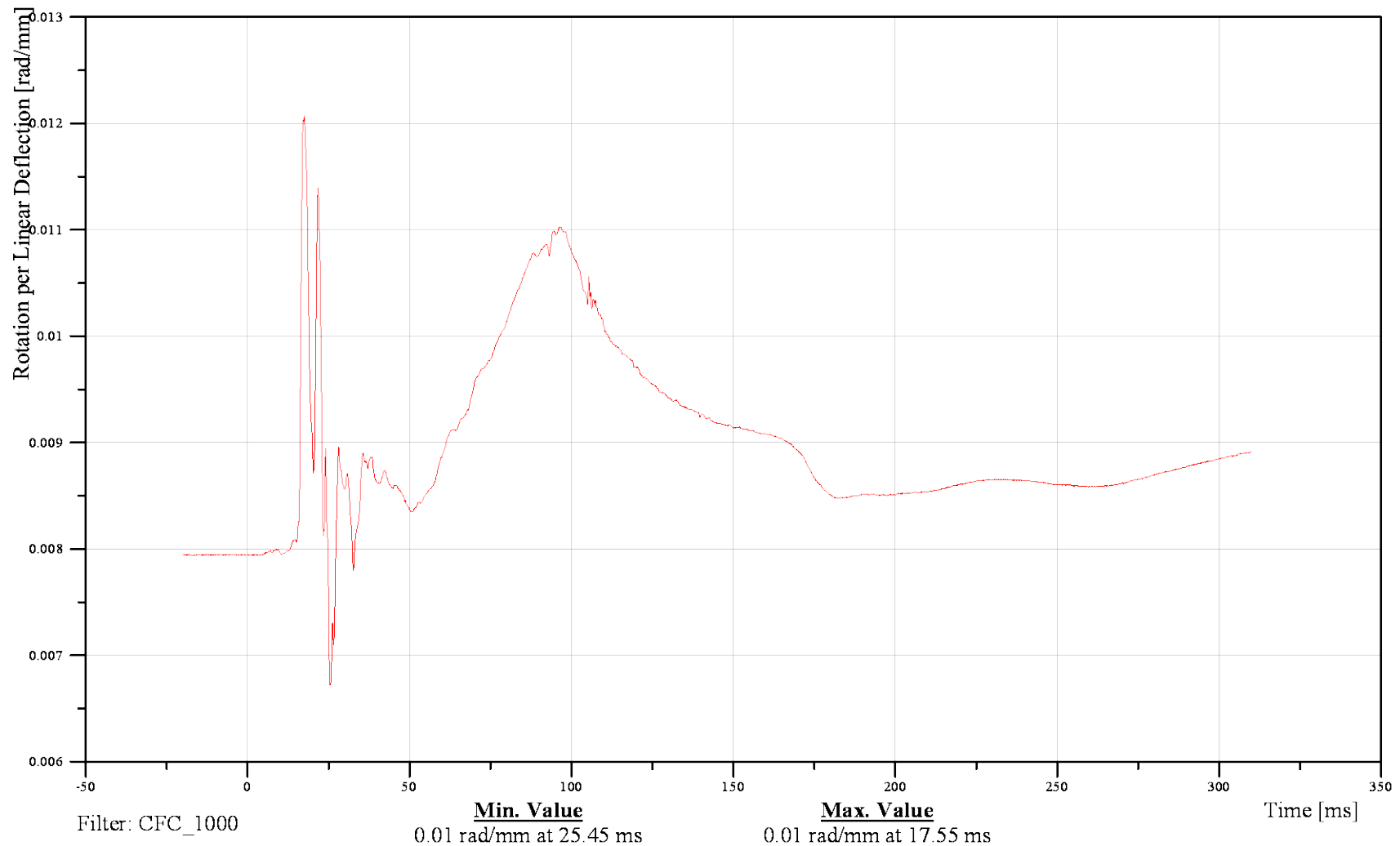
Time: 12:36

Customer: VRTC

11CHBA5953WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 54

Date: 06/17/2013

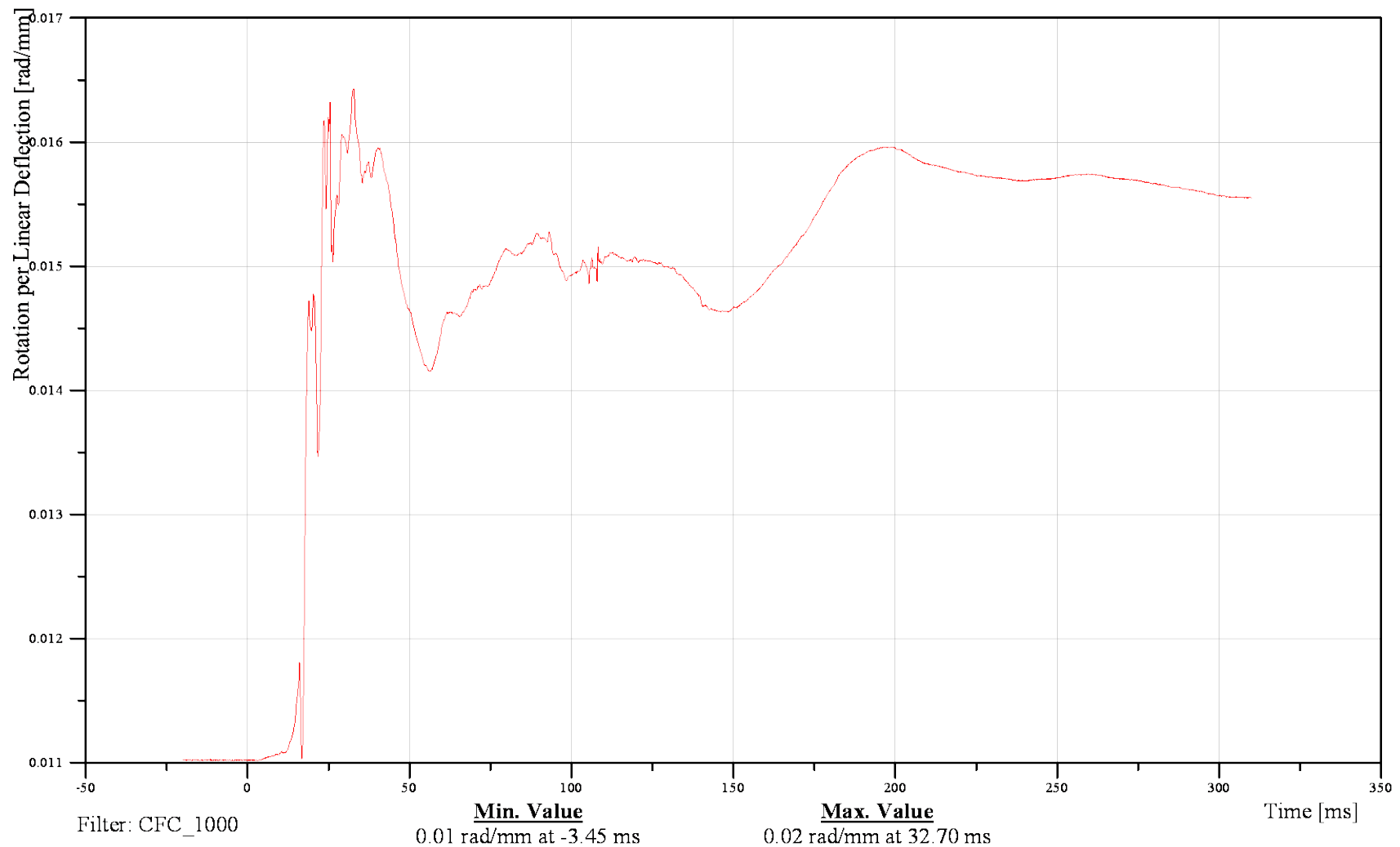
Time: 12:36

Customer: VRTC

11CHBA5954WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 55

Date: 06/17/2013

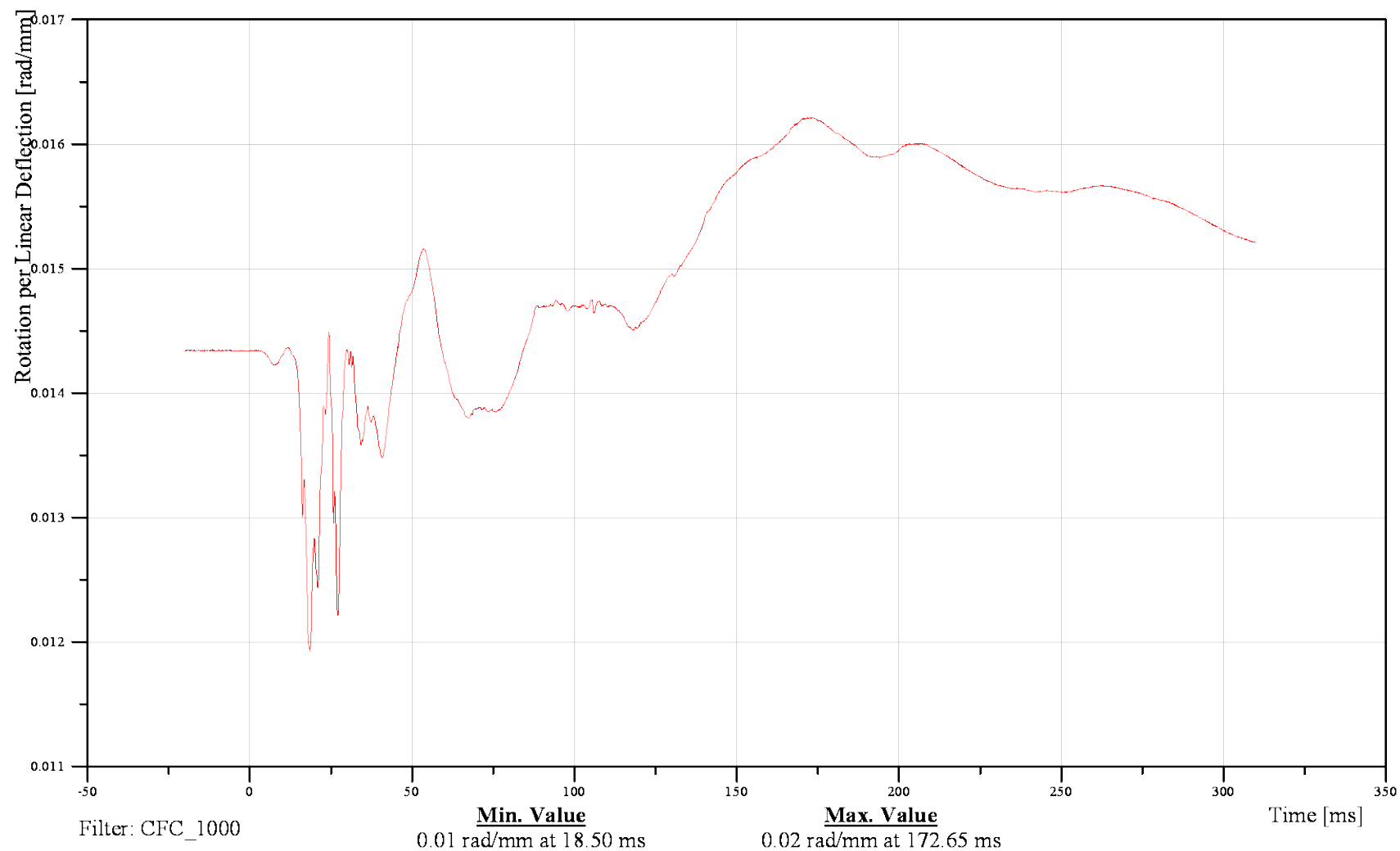
Time: 12:36

Customer: VRTC

11CHBA5955WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/59 gages, gage 56

Date: 06/17/2013

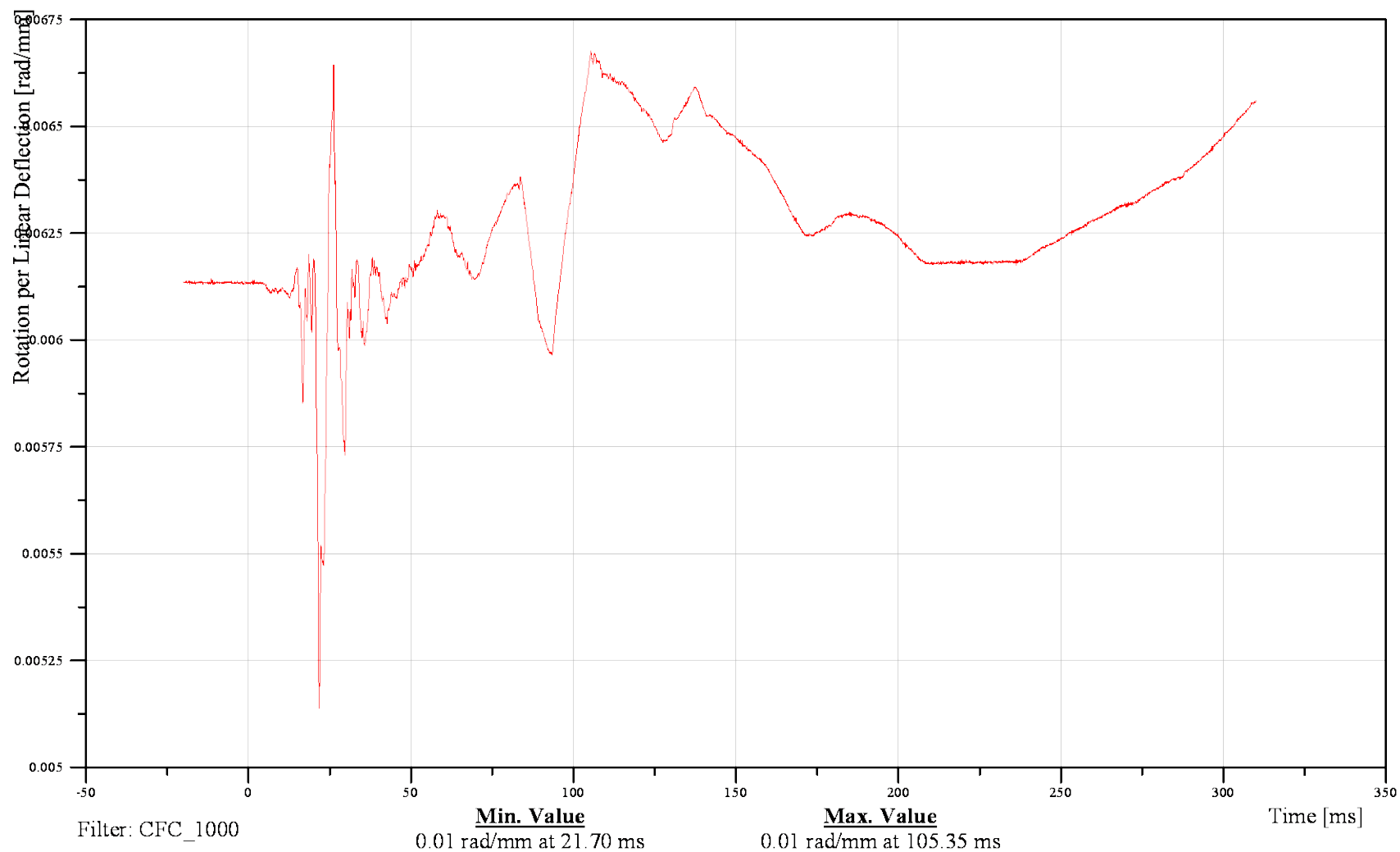
Time: 12:36

Customer: VRTC

11CHBA5956WSVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Head Contact

Date: 06/17/2013

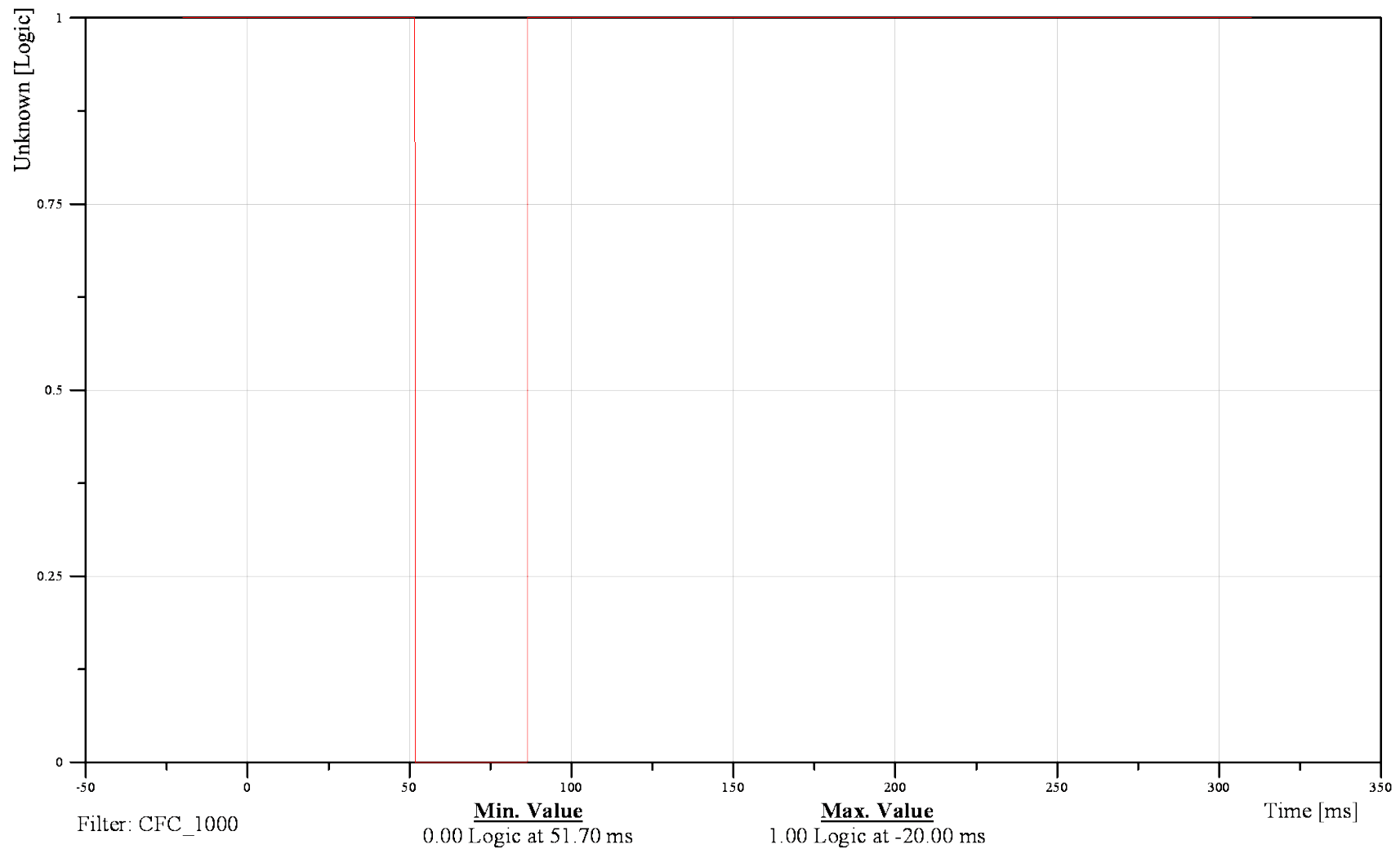
Time: 12:36

Customer: VRTC

14HEADCONT00VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Shoulder Contact

Date: 06/17/2013

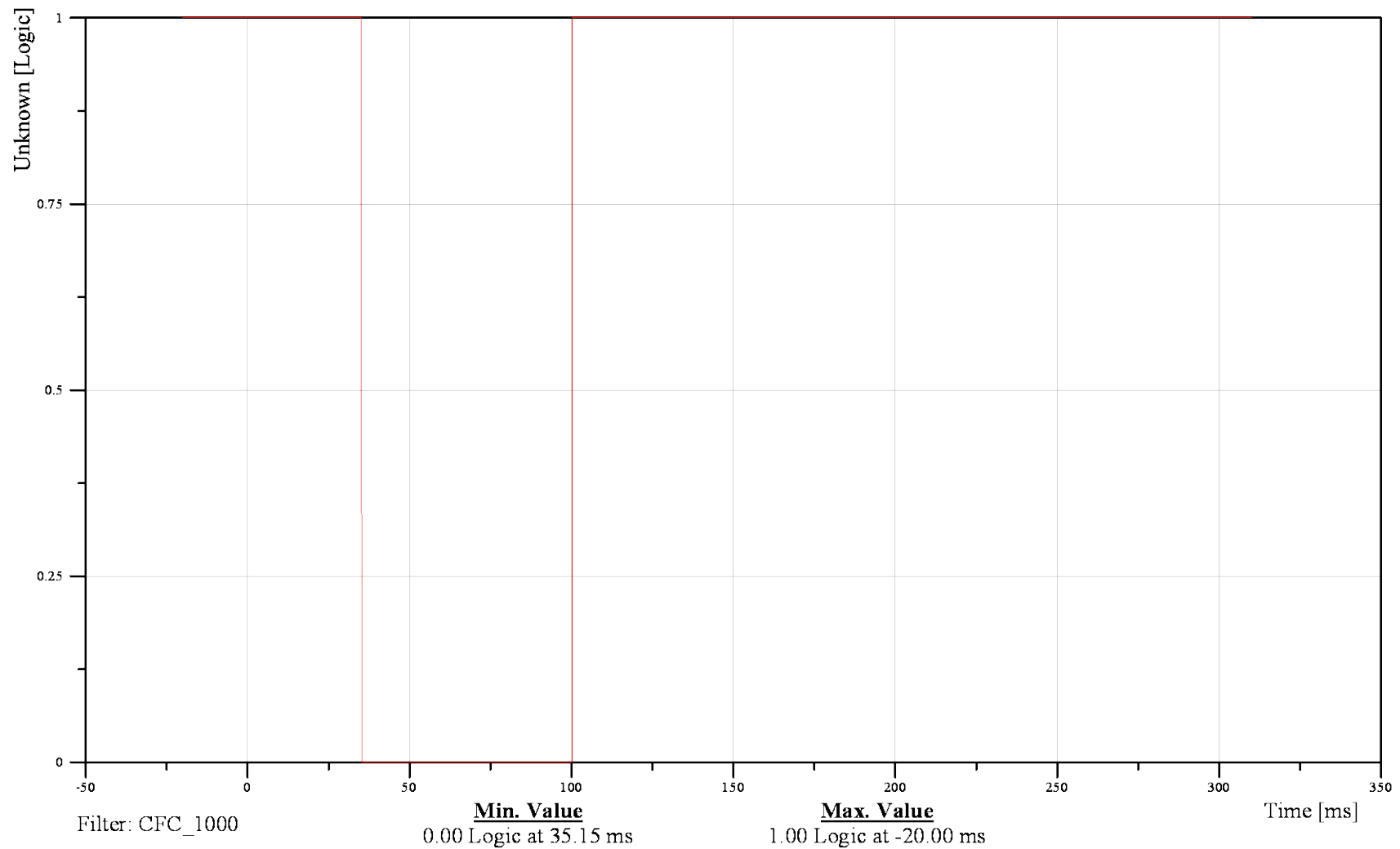
Time: 12:36

Customer: VRTC

14SHLDCONT00VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Thorax Contact

Date: 06/17/2013

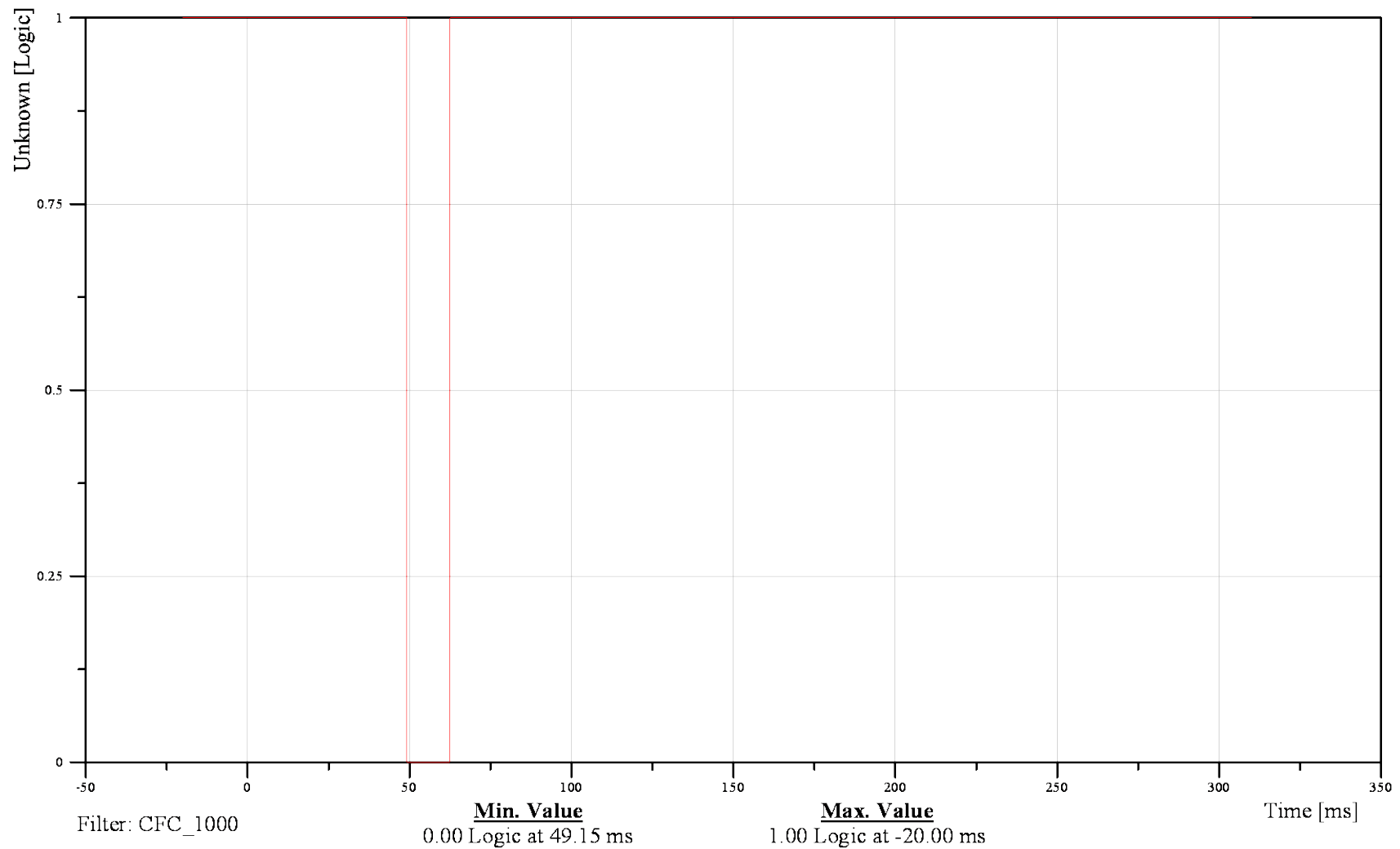
Time: 12:36

Customer: VRTC

14THORCONT00VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

Date: 06/17/2013

Time: 12:36

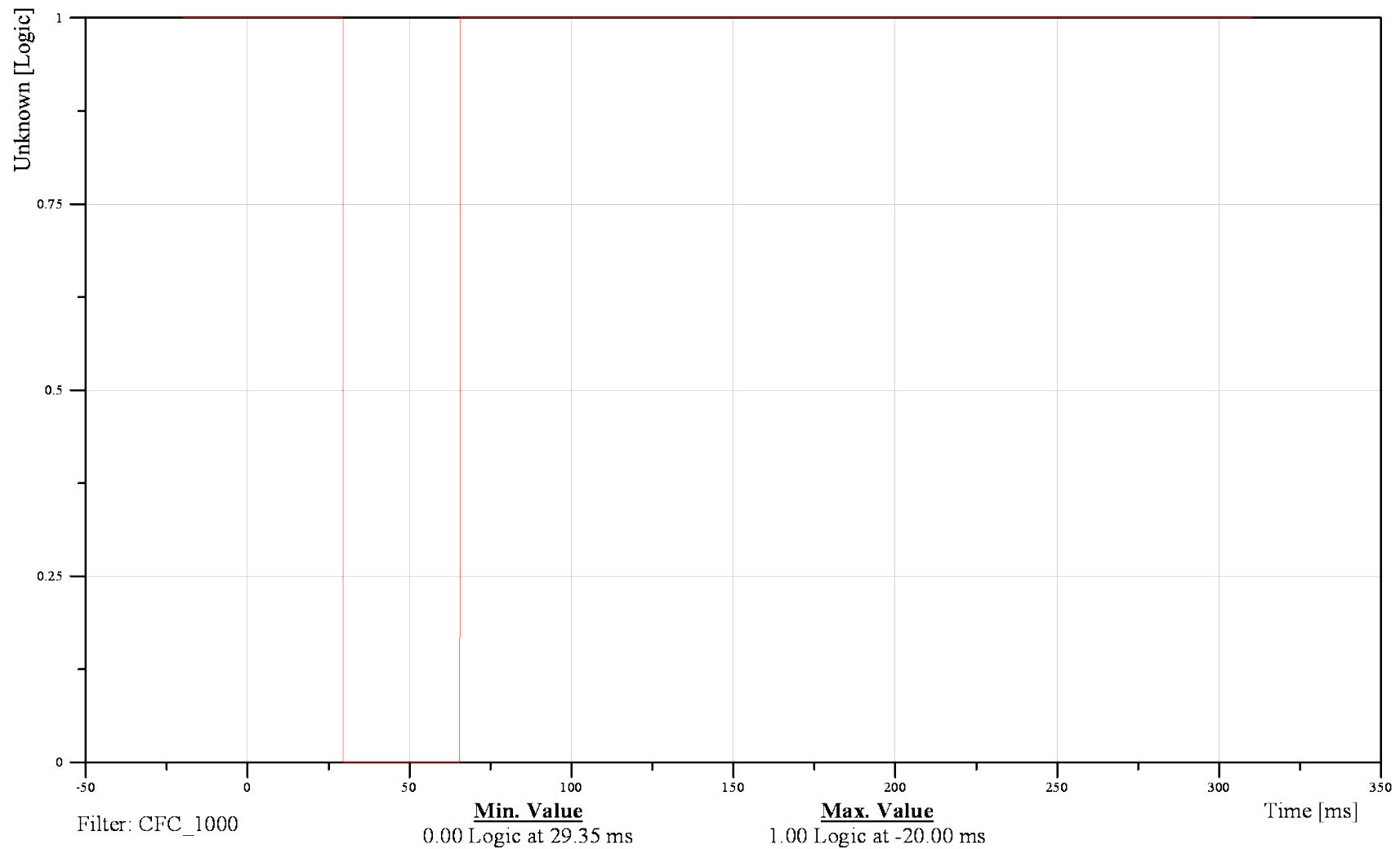
Leg Contact

Customer: VRTC

14LEGCONT000VO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 1

Date: 06/17/2013

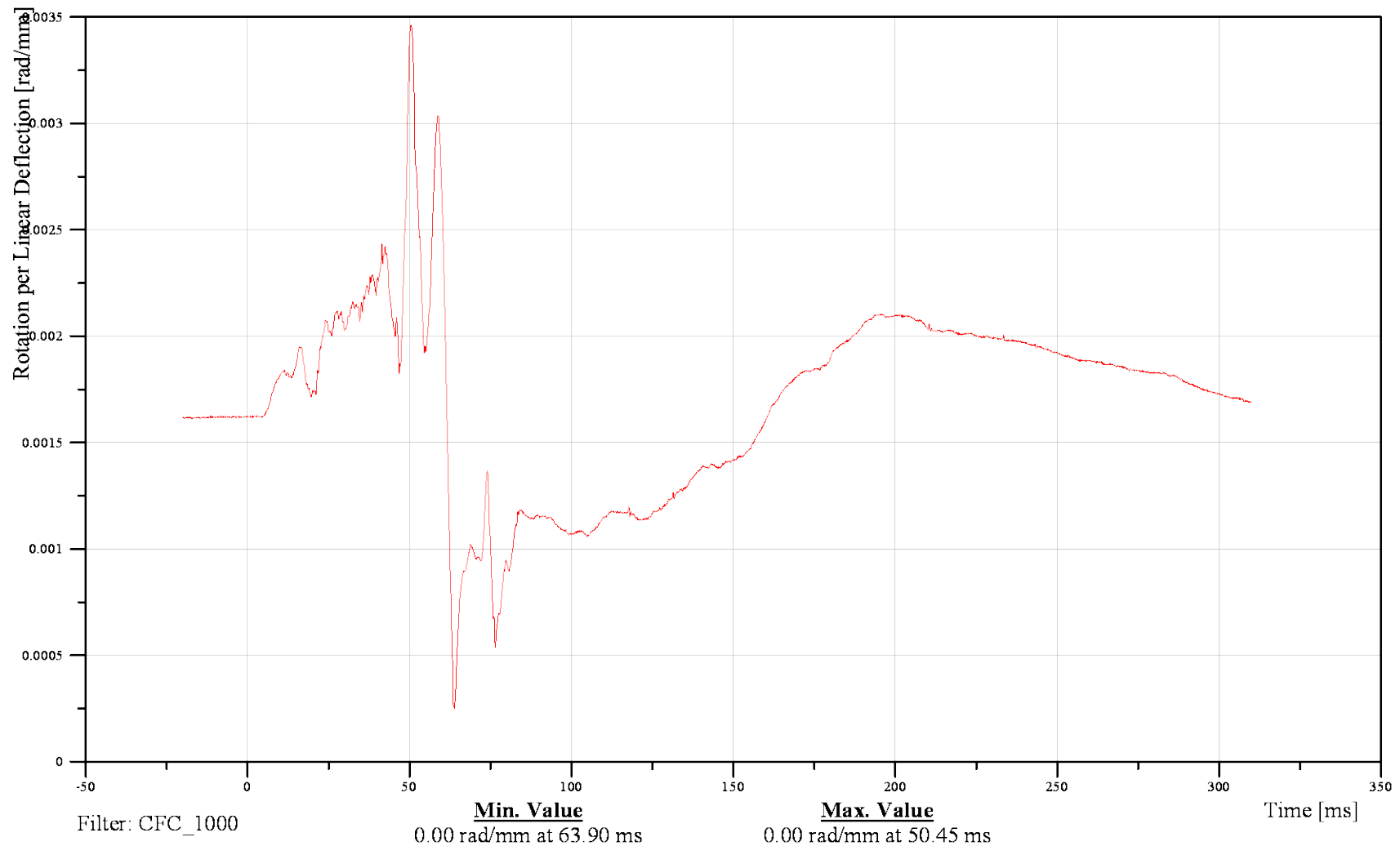
Time: 12:36

Customer: VRTC

14CHBA4001WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 2

Date: 06/17/2013

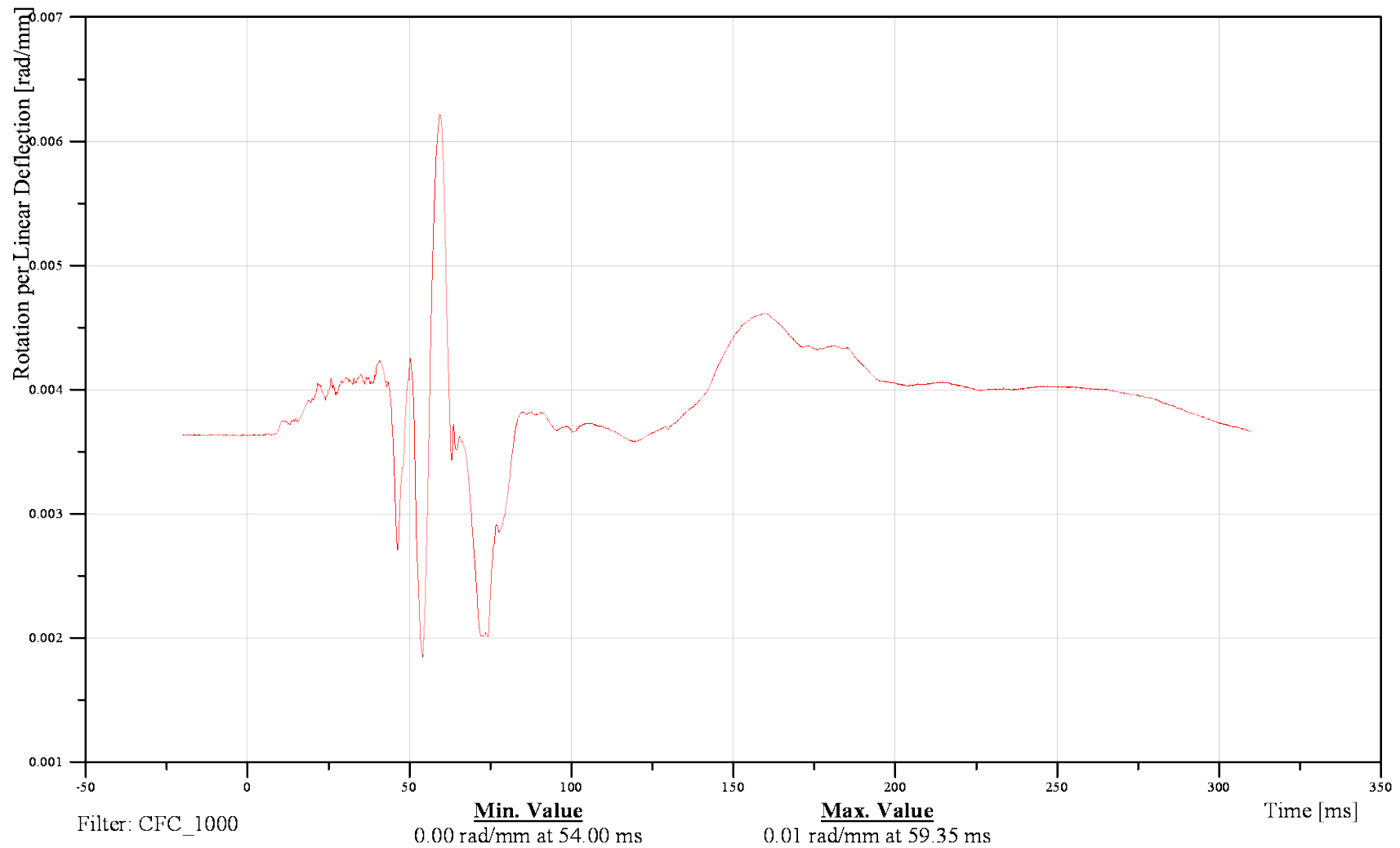
Time: 12:36

Customer: VRTC

14CHBA4002WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 3

Date: 06/17/2013

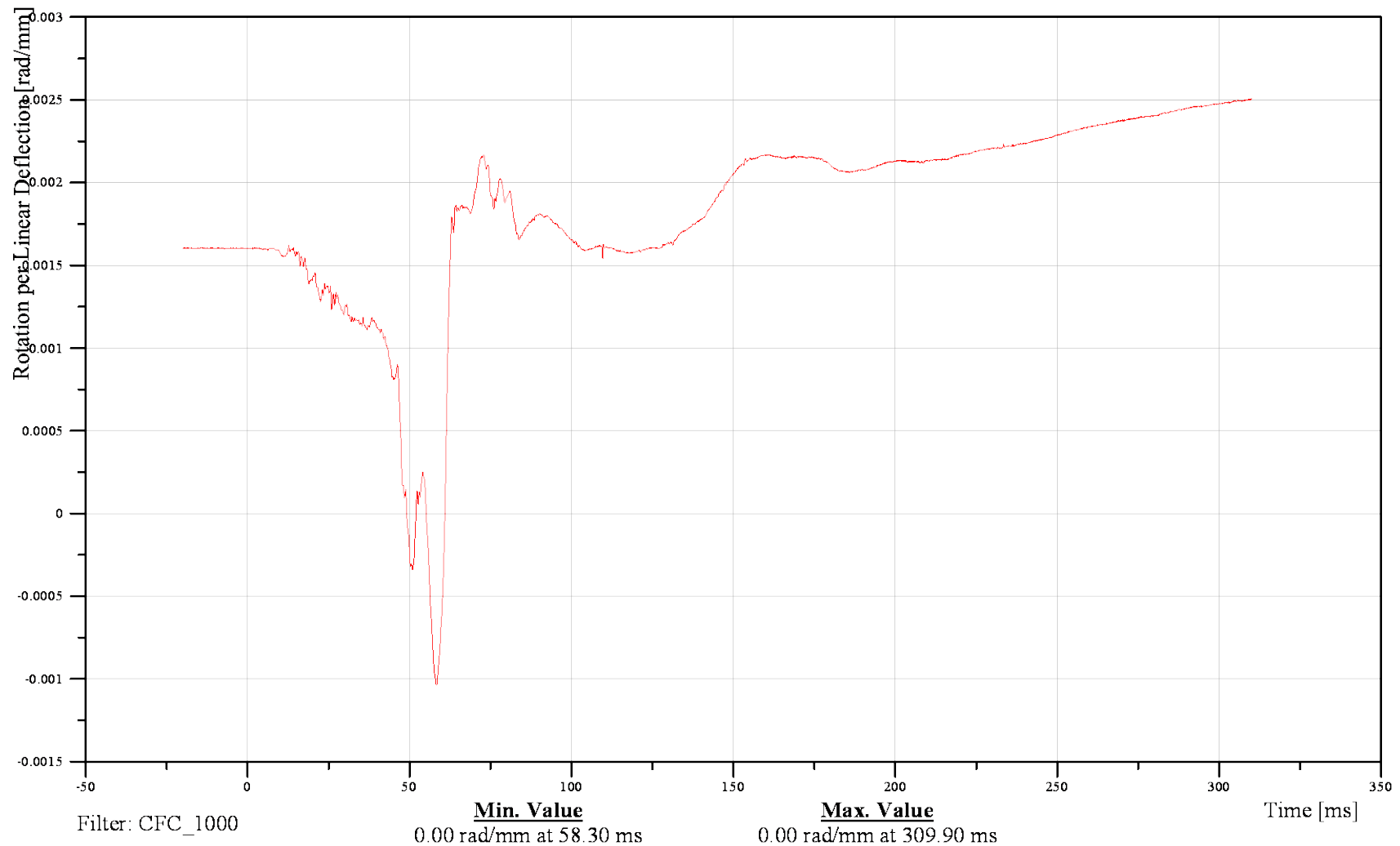
Time: 12:36

Customer: VRTC

14CHBA4003WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 4

Date: 06/17/2013

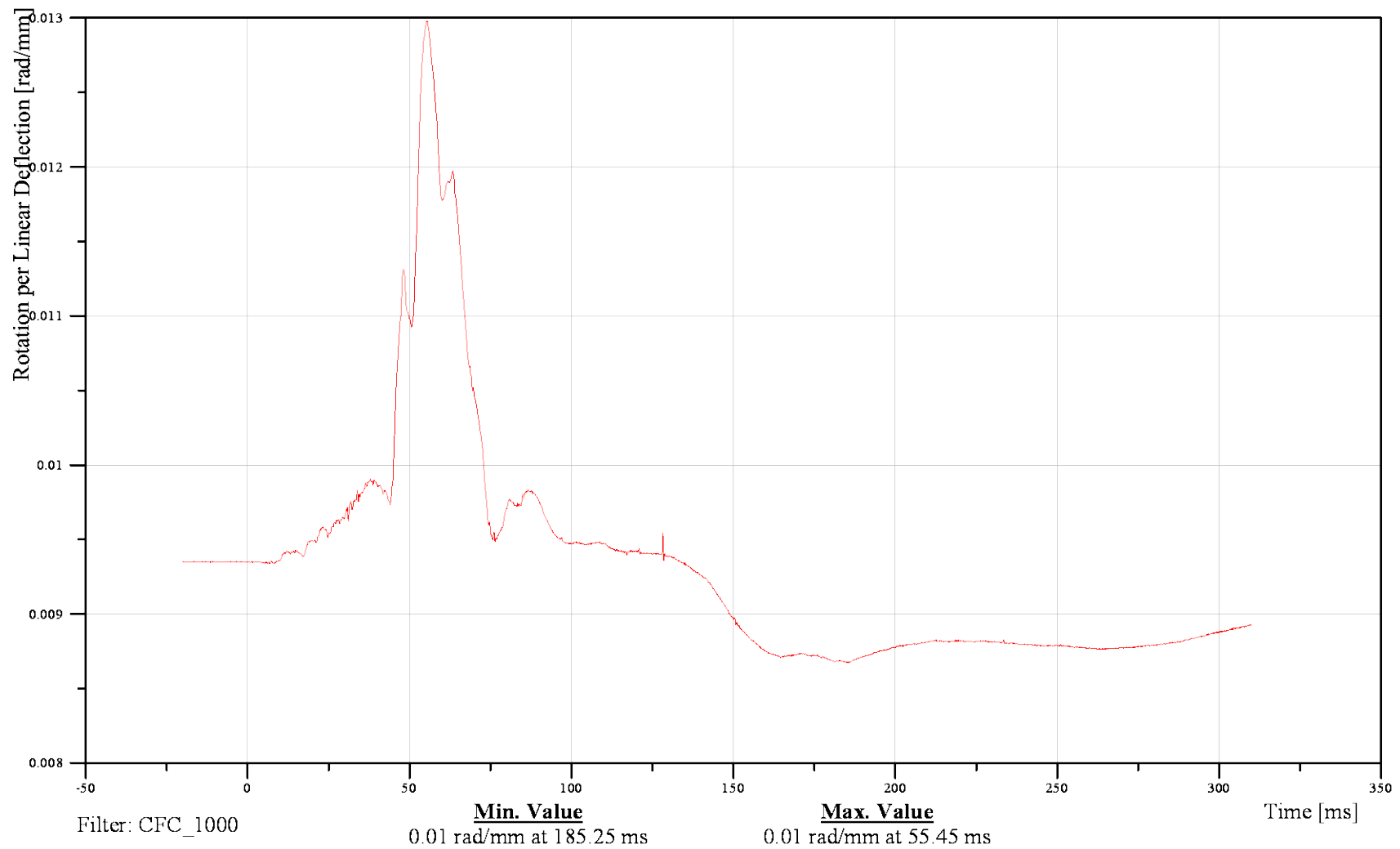
Time: 12:36

Customer: VRTC

14CHBA4004WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 5

Date: 06/17/2013

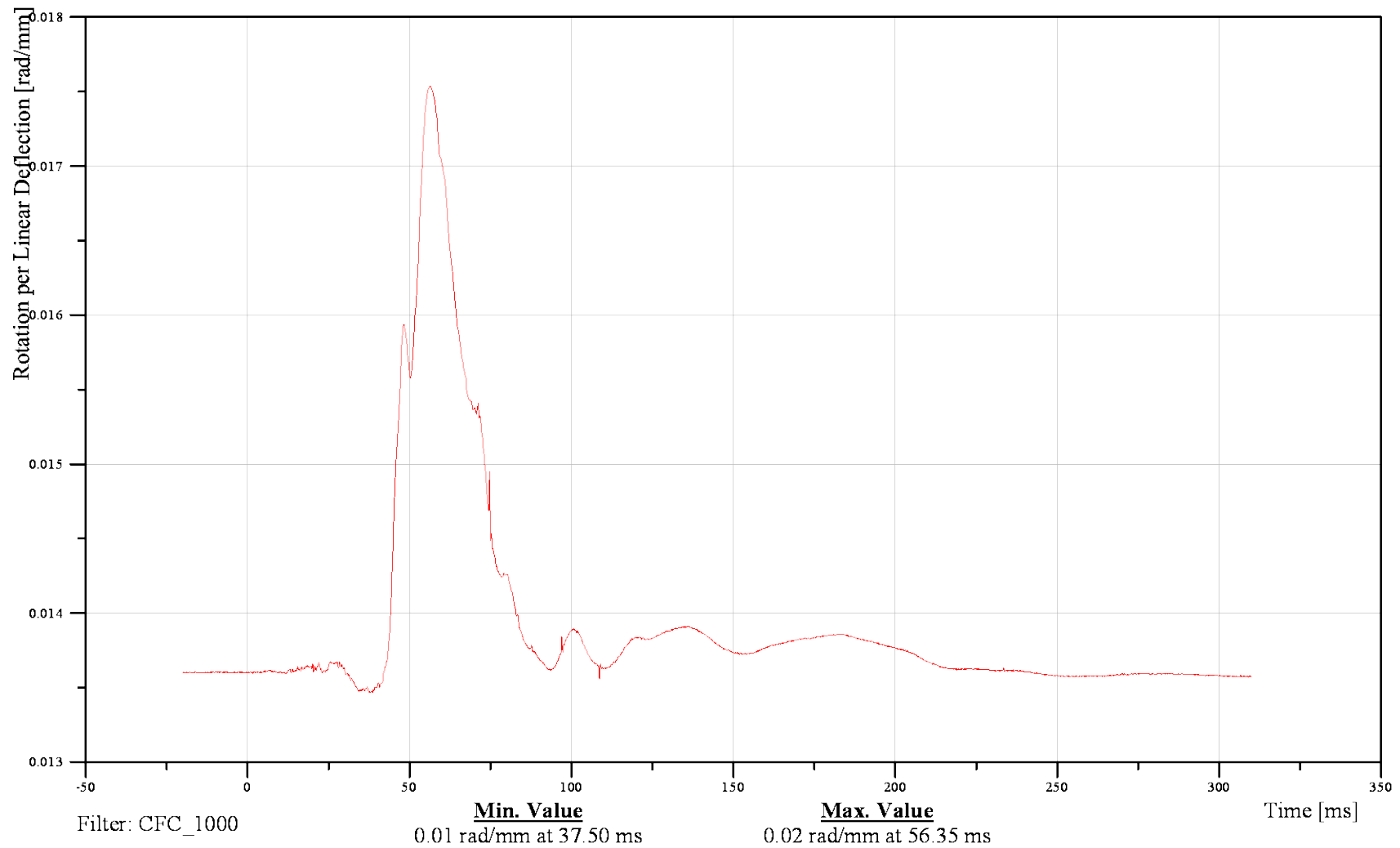
Time: 12:36

Customer: VRTC

14CHBA4005WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 6

Date: 06/17/2013

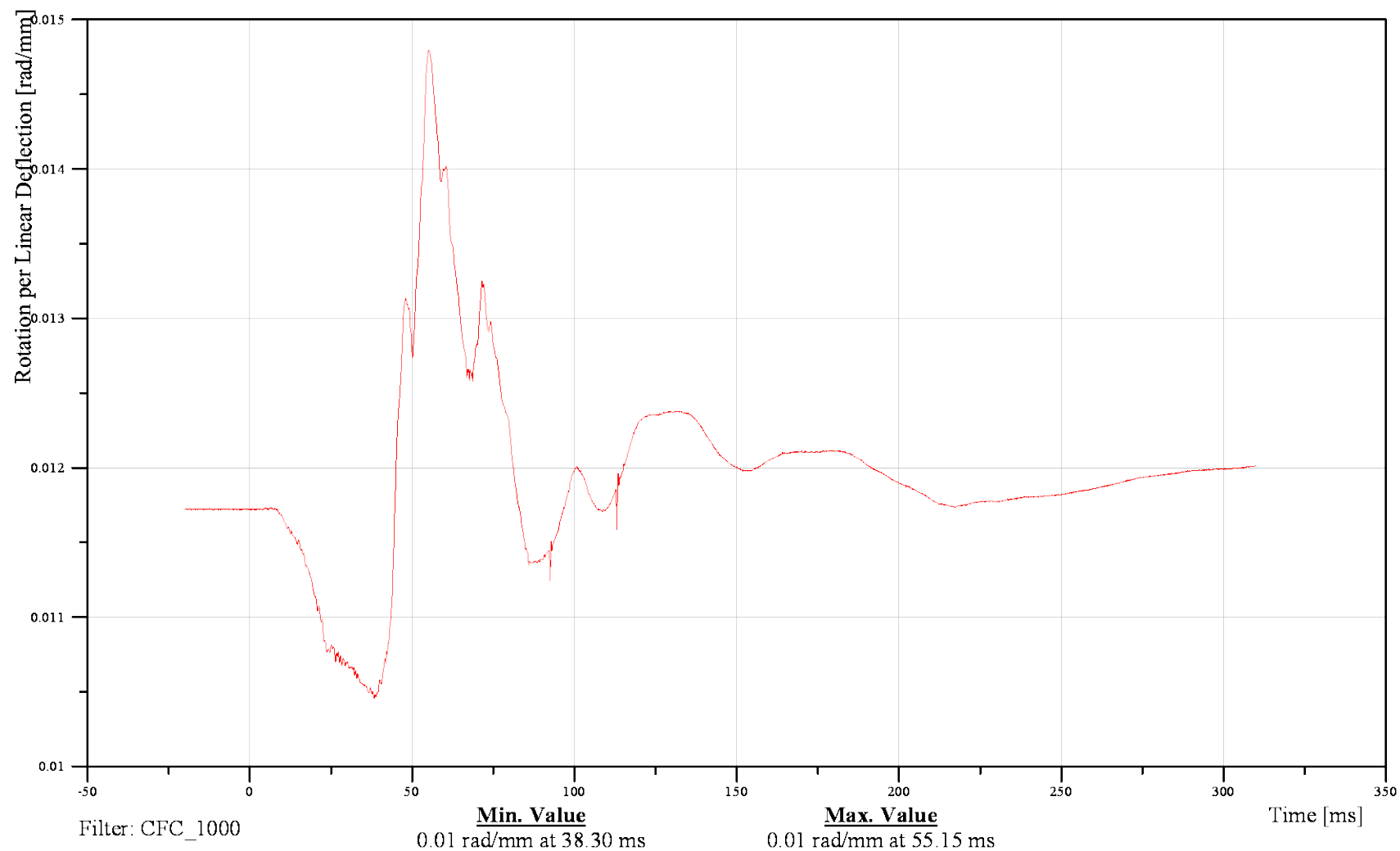
Time: 12:36

Customer: VRTC

14CHBA4006WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 7

Date: 06/17/2013

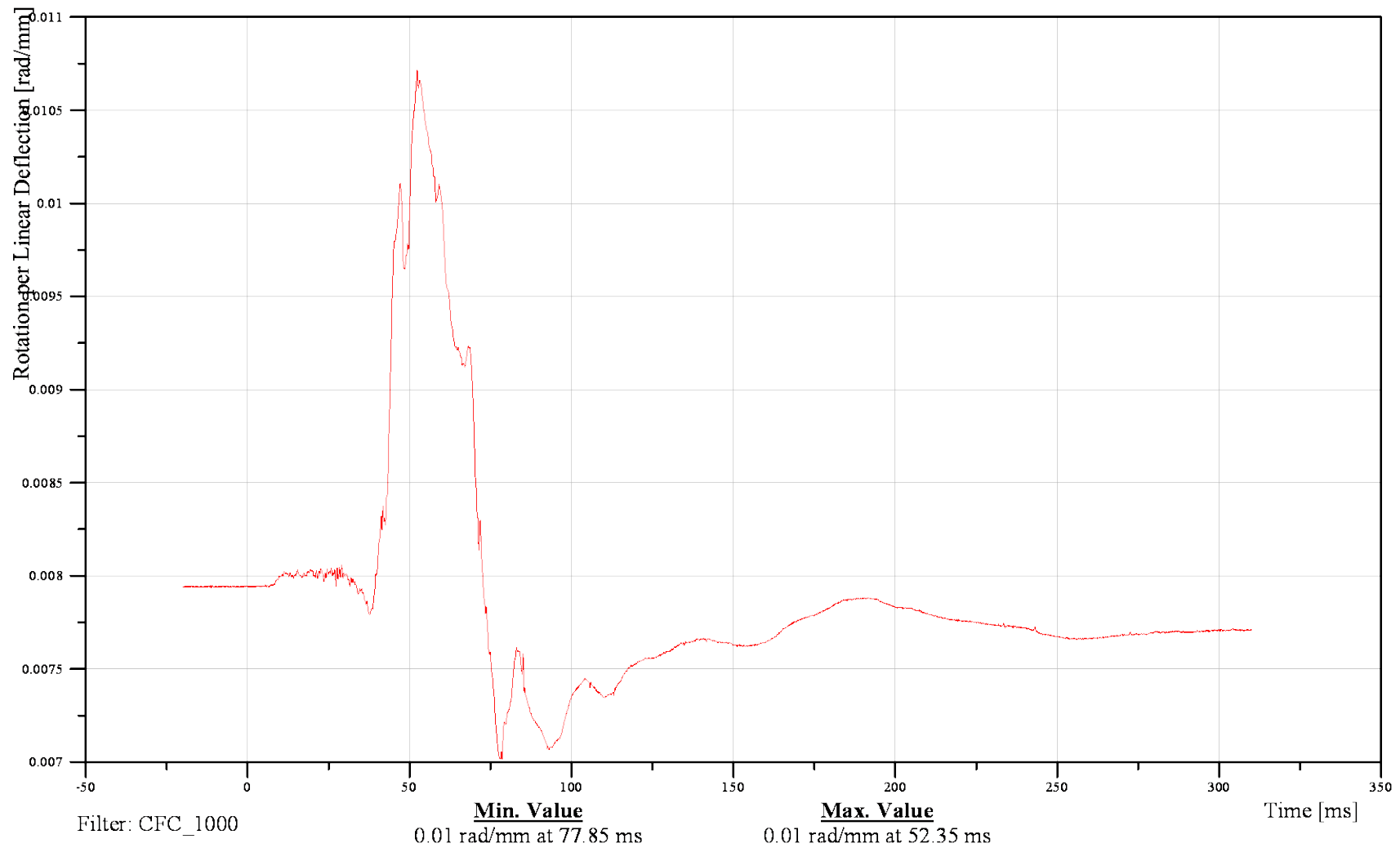
Time: 12:36

Customer: VRTC

14CHBA4007WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 8

Date: 06/17/2013

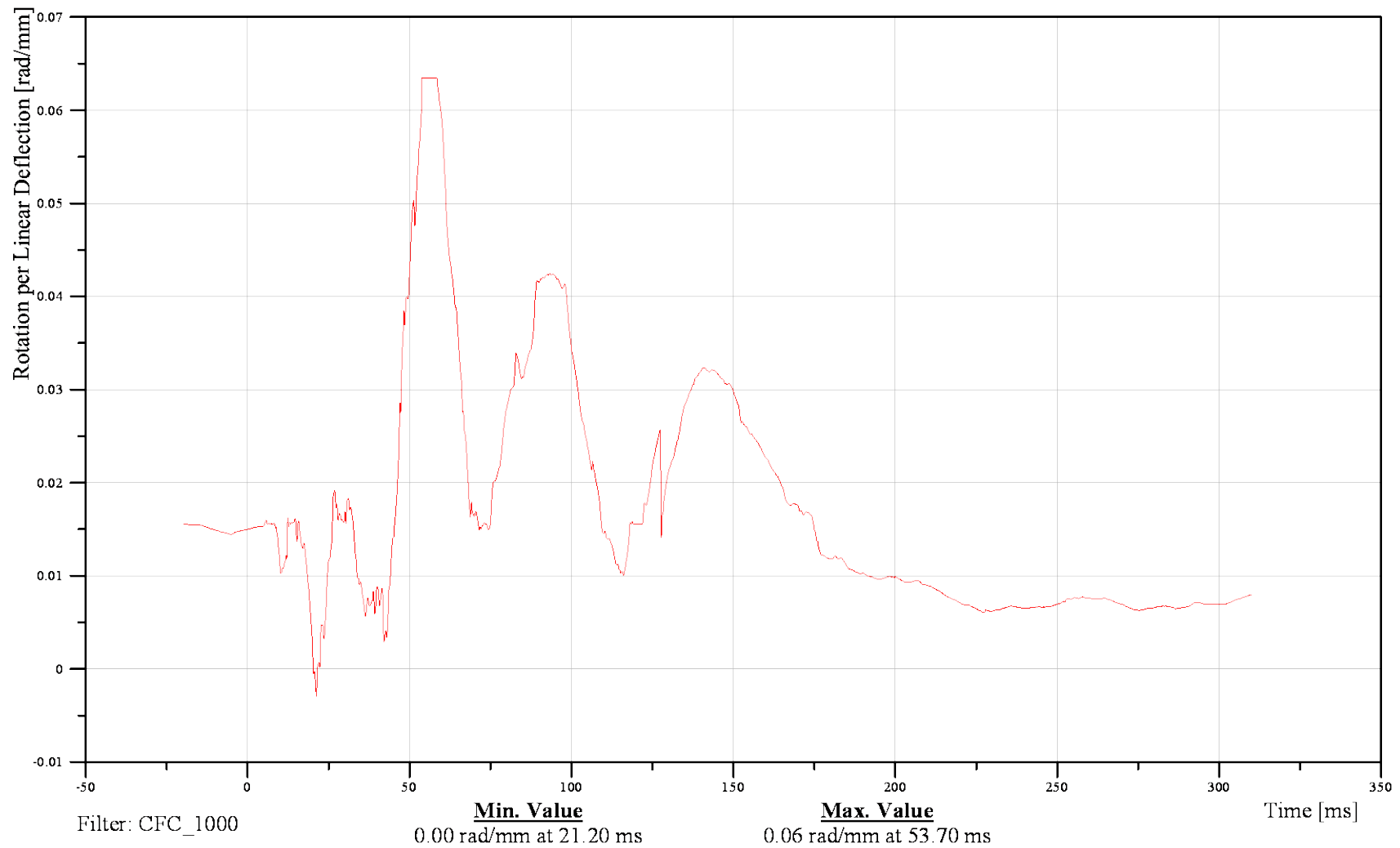
Time: 12:36

Customer: VRTC

14CHBA4008WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 9

Date: 06/17/2013

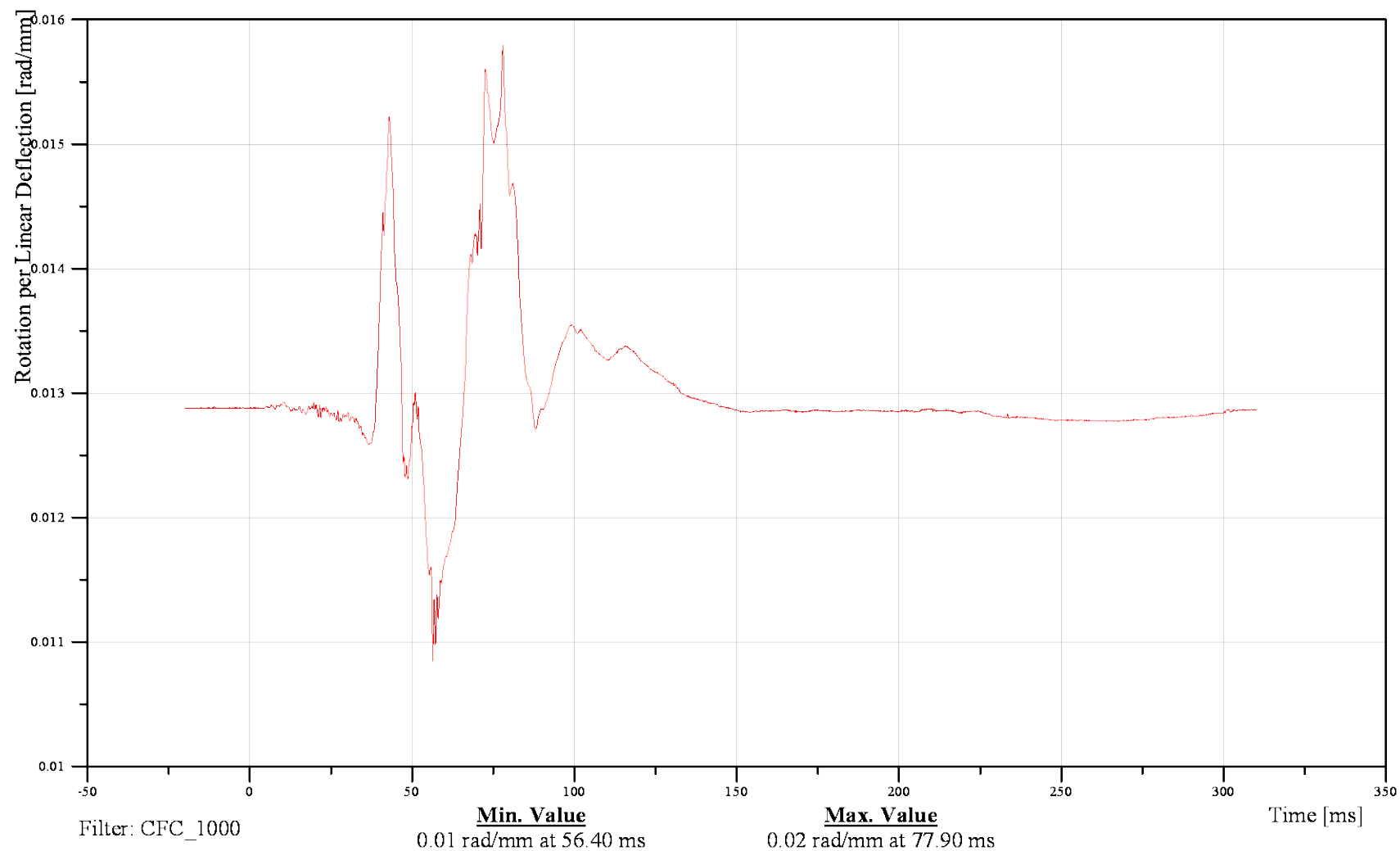
Time: 12:36

Customer: VRTC

14CHBA4009WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 10

Date: 06/17/2013

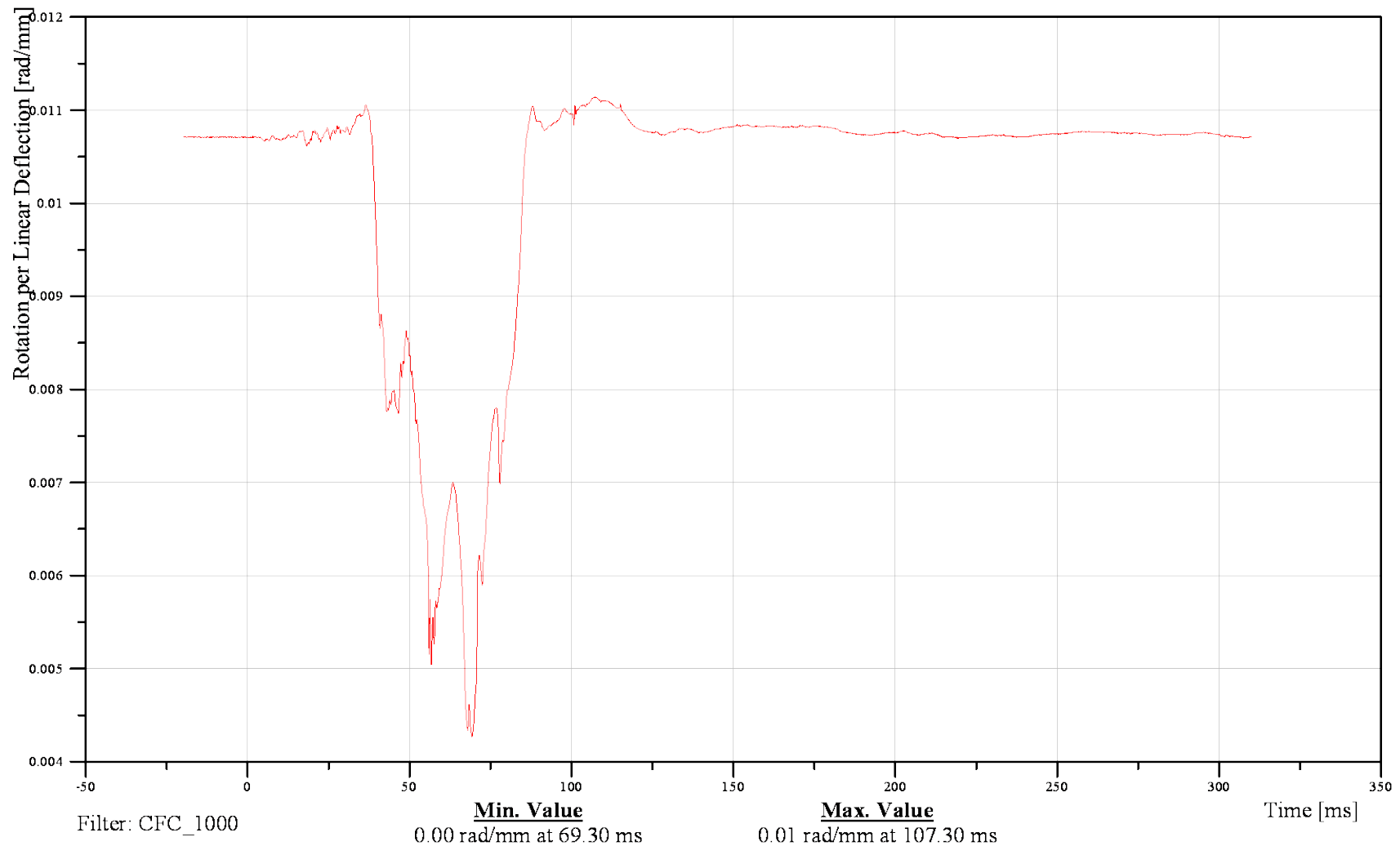
Time: 12:36

Customer: VRTC

14CHBA4010WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 11

Date: 06/17/2013

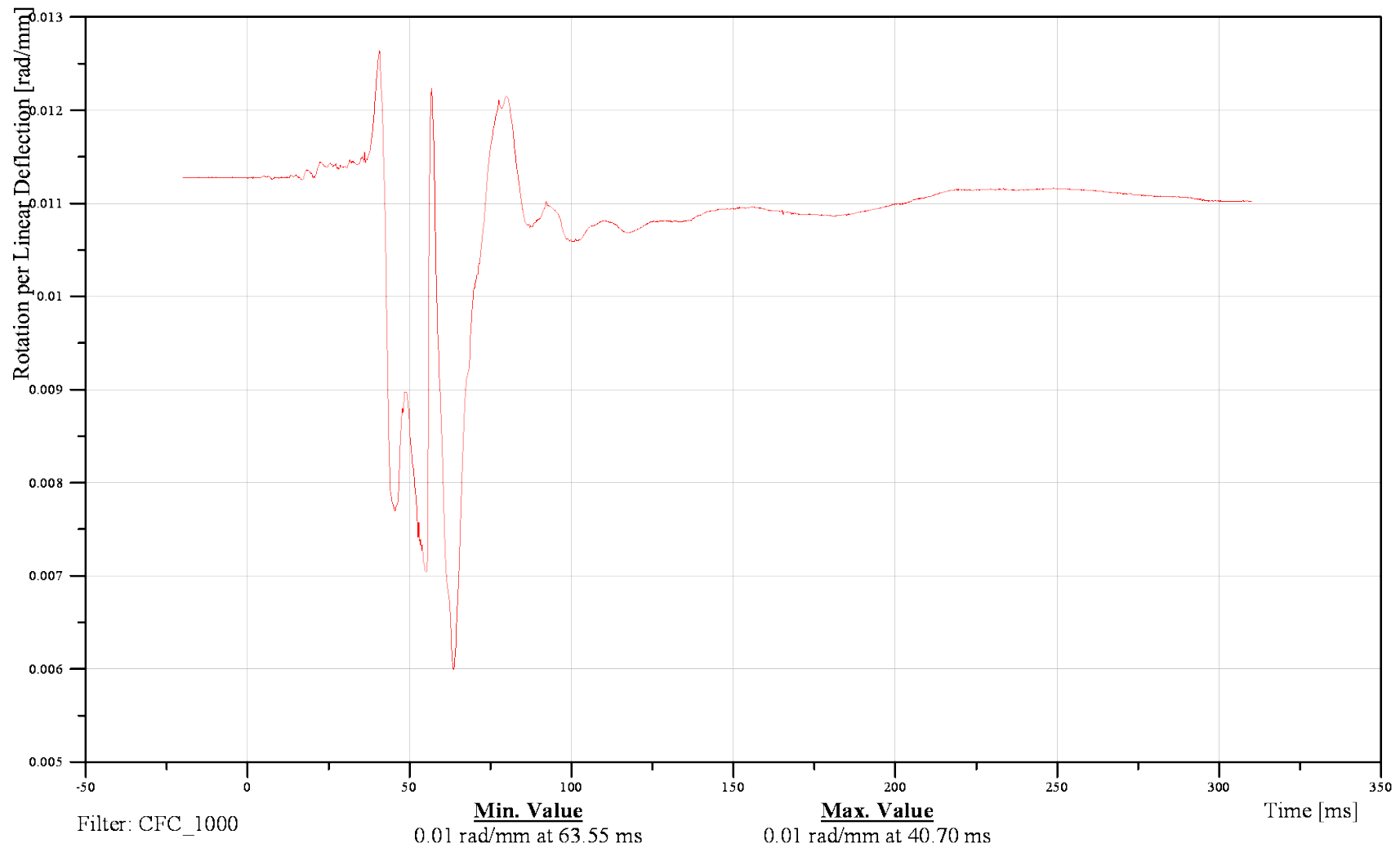
Time: 12:36

Customer: VRTC

14CHBA4011WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 12

Date: 06/17/2013

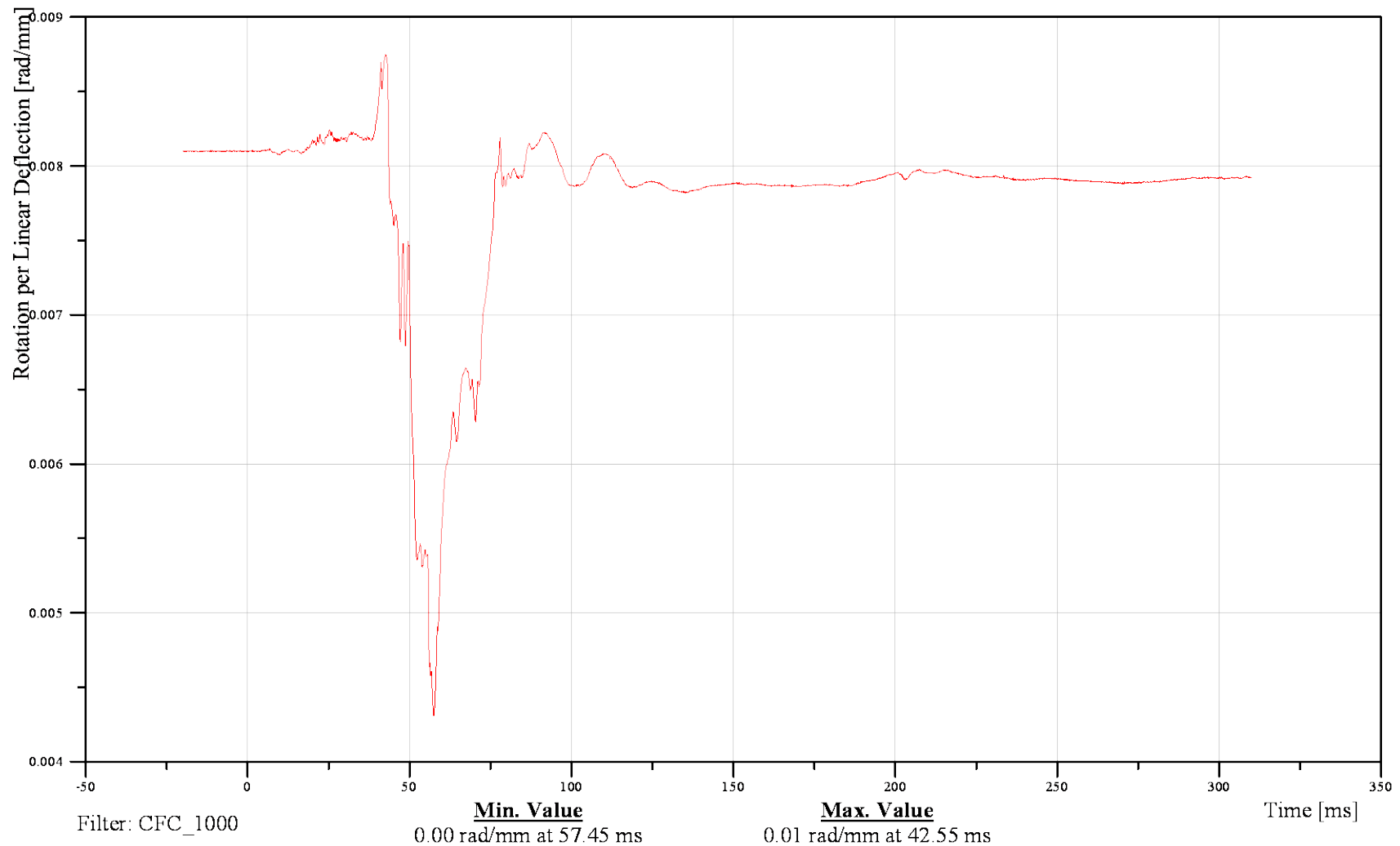
Time: 12:36

Customer: VRTC

14CHBA4012WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 13

Date: 06/17/2013

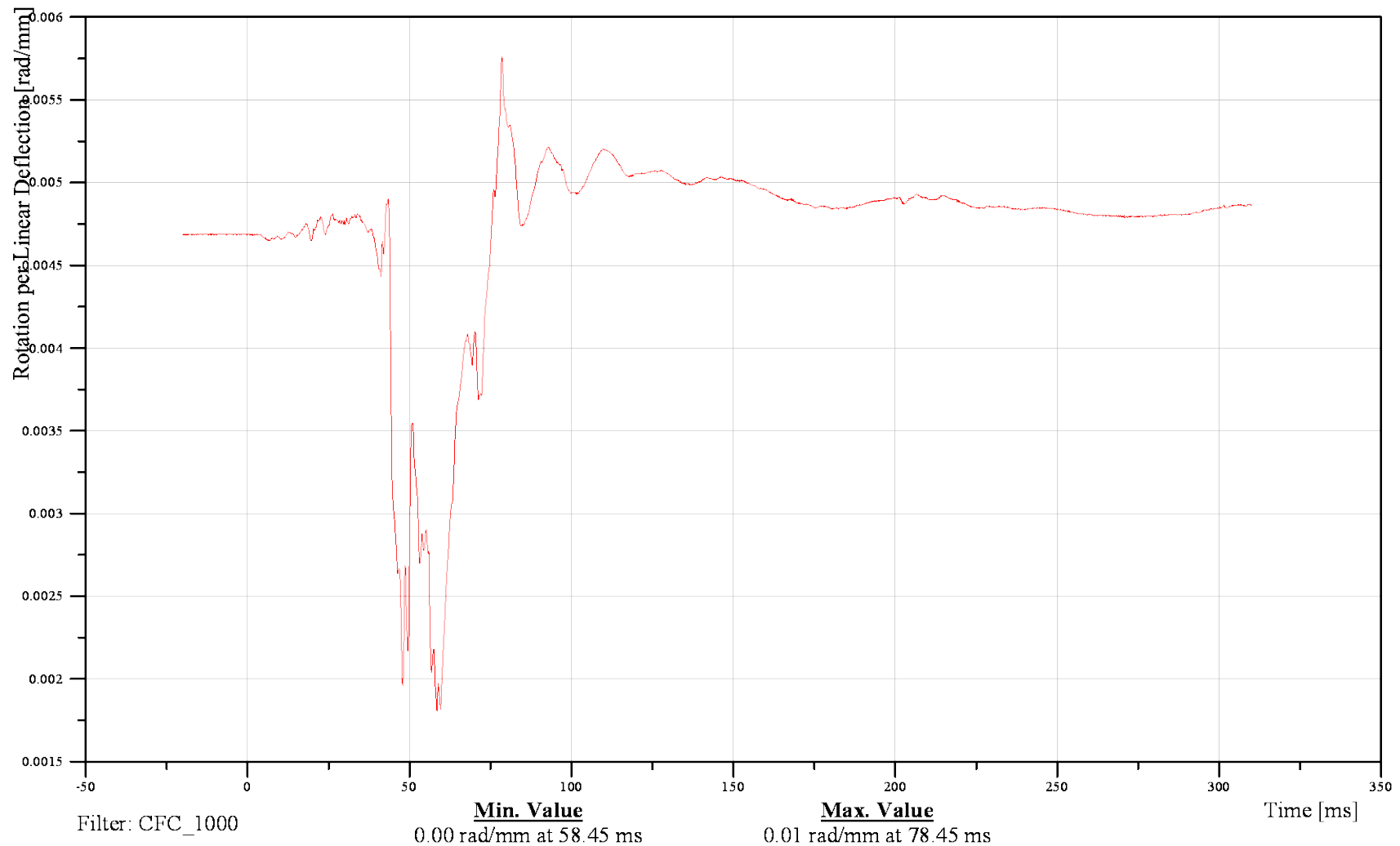
Time: 12:36

Customer: VRTC

14CHBA4013WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 14

Date: 06/17/2013

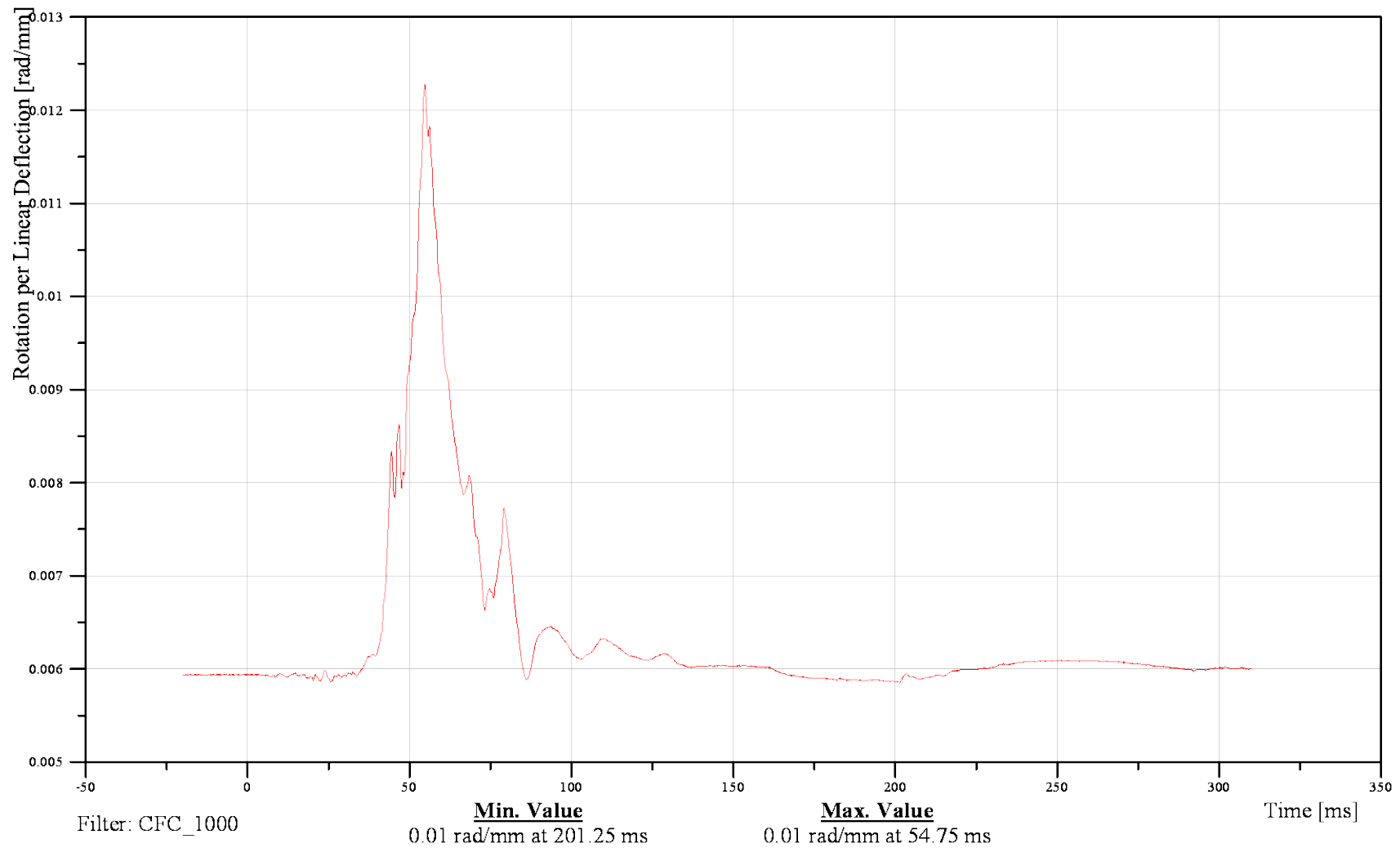
Time: 12:36

Customer: VRTC

14CHBA4014WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 15

Date: 06/17/2013

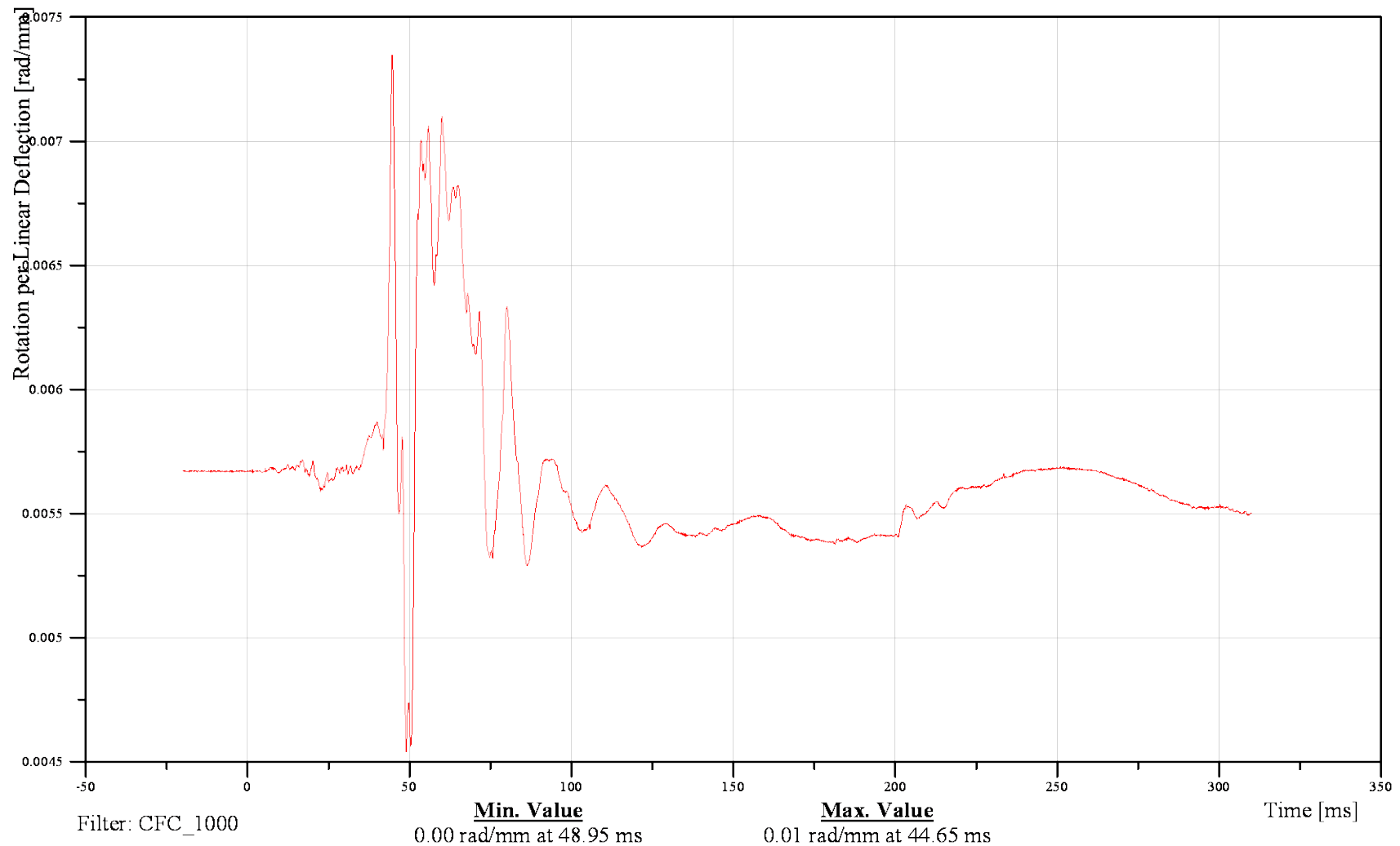
Time: 12:36

Customer: VRTC

14CHBA4015WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 16

Date: 06/17/2013

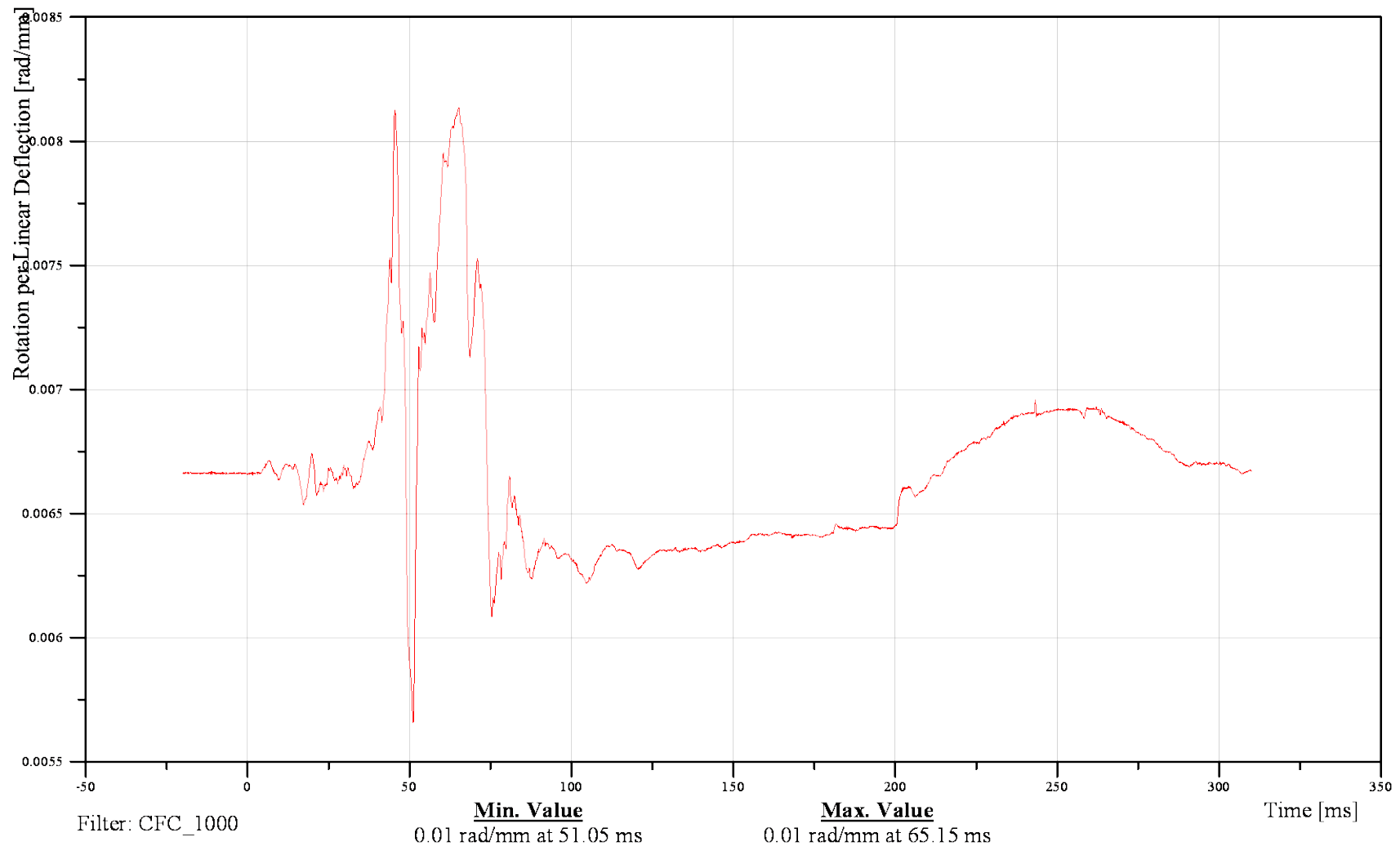
Time: 12:36

Customer: VRTC

14CHBA4016WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 17

Date: 06/17/2013

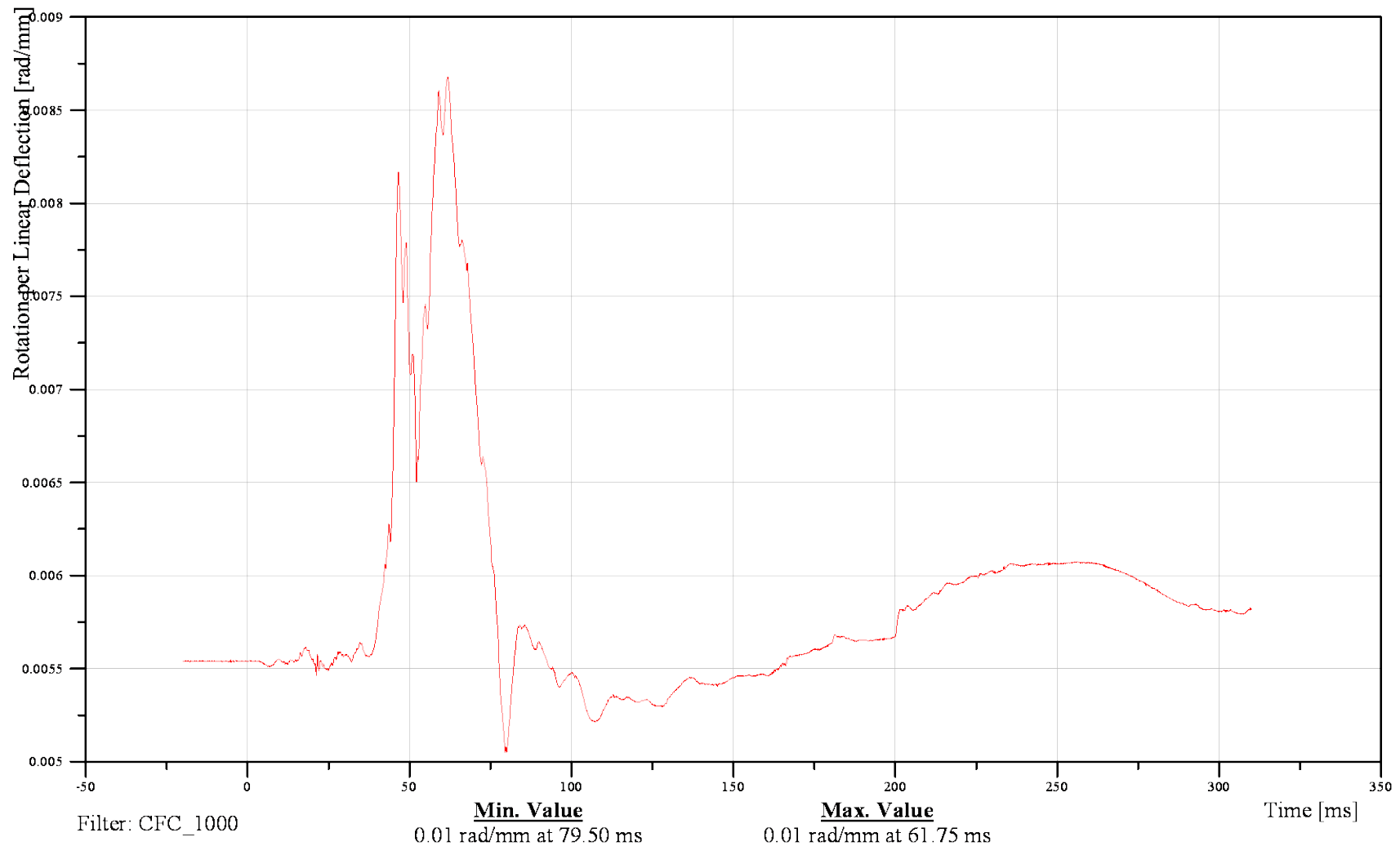
Time: 12:36

Customer: VRTC

14CHBA4017WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 18

Date: 06/17/2013

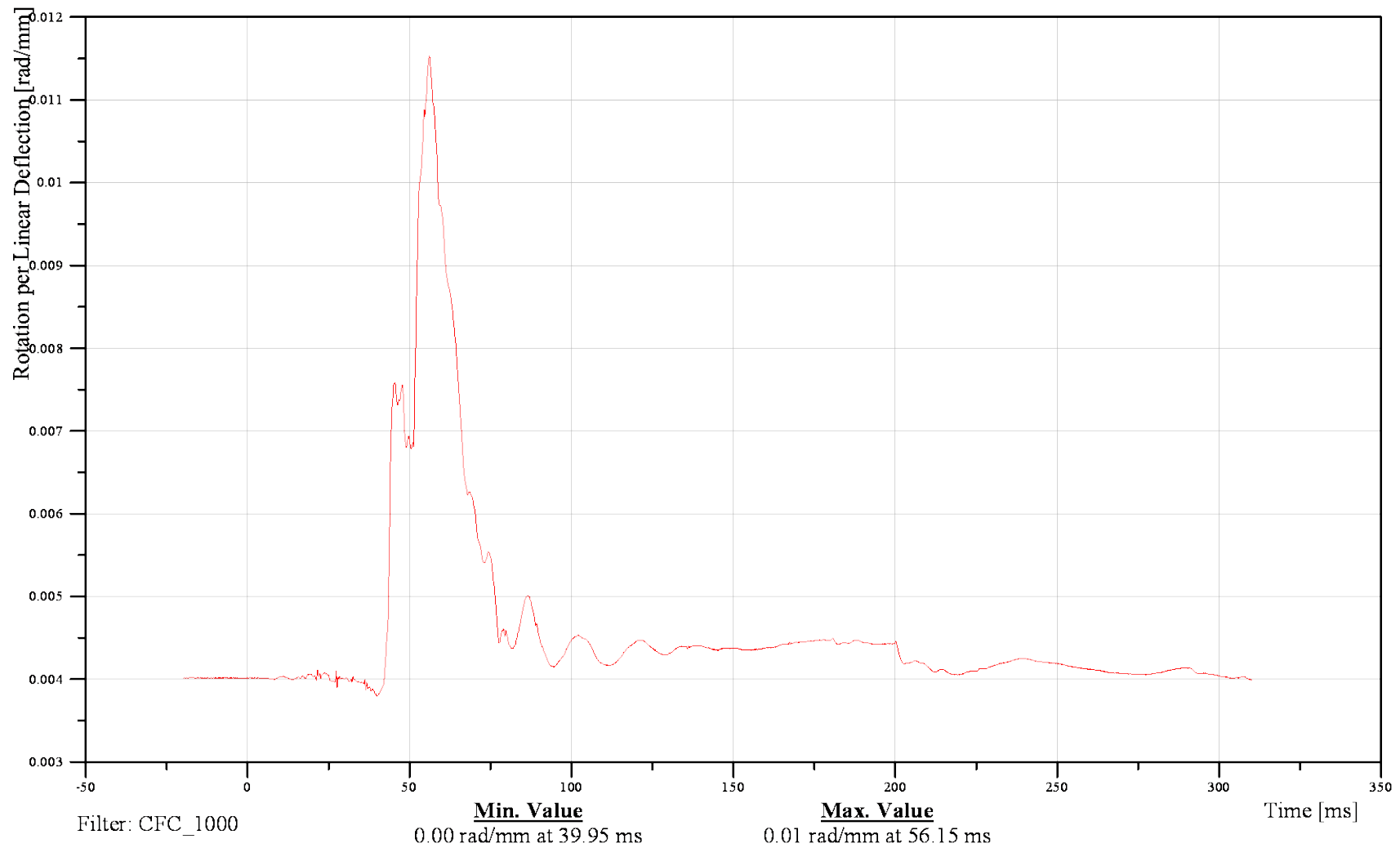
Time: 12:36

Customer: VRTC

14CHBA4018WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 19

Date: 06/17/2013

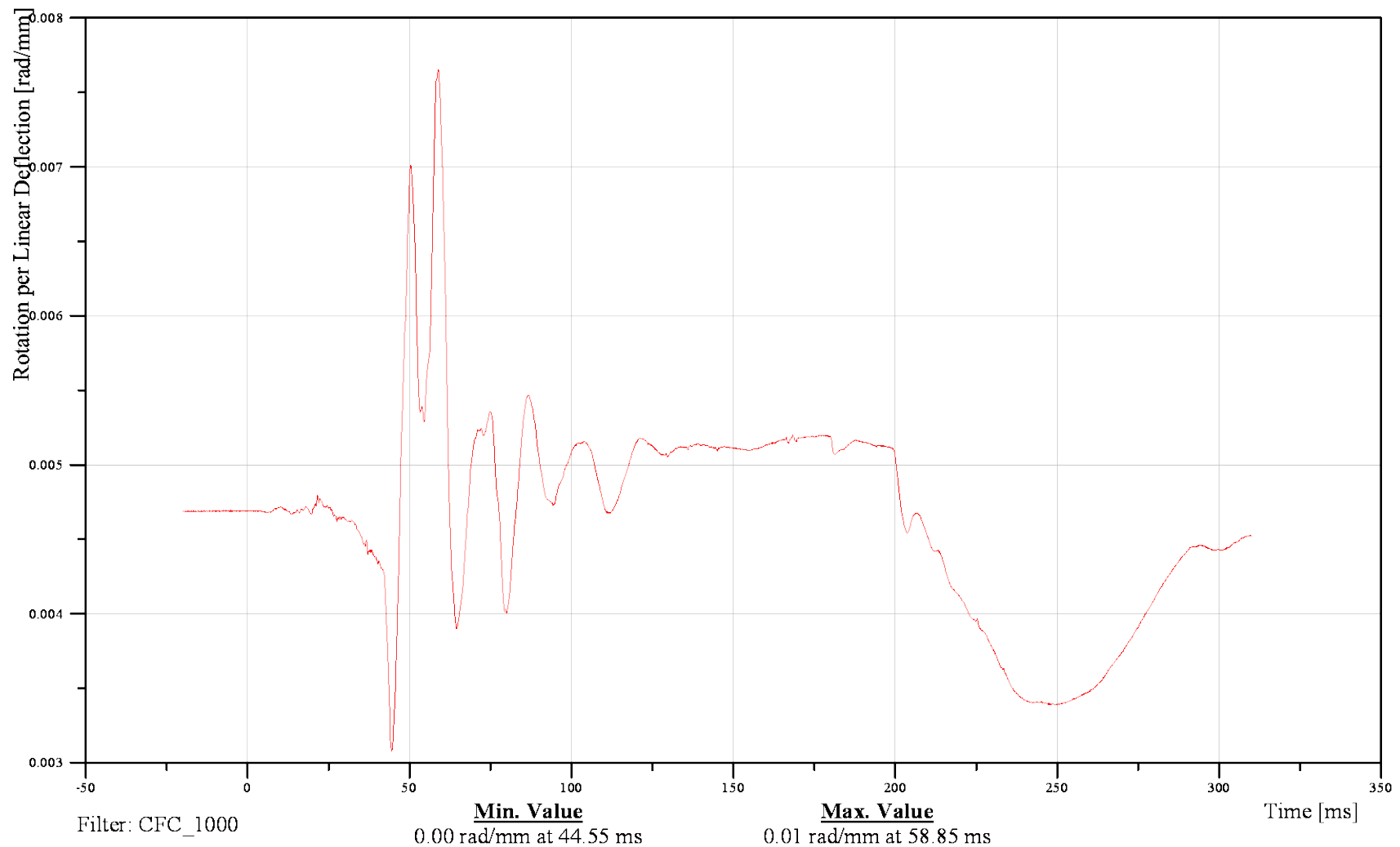
Time: 12:36

Customer: VRTC

14CHBA4019WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 20

Date: 06/17/2013

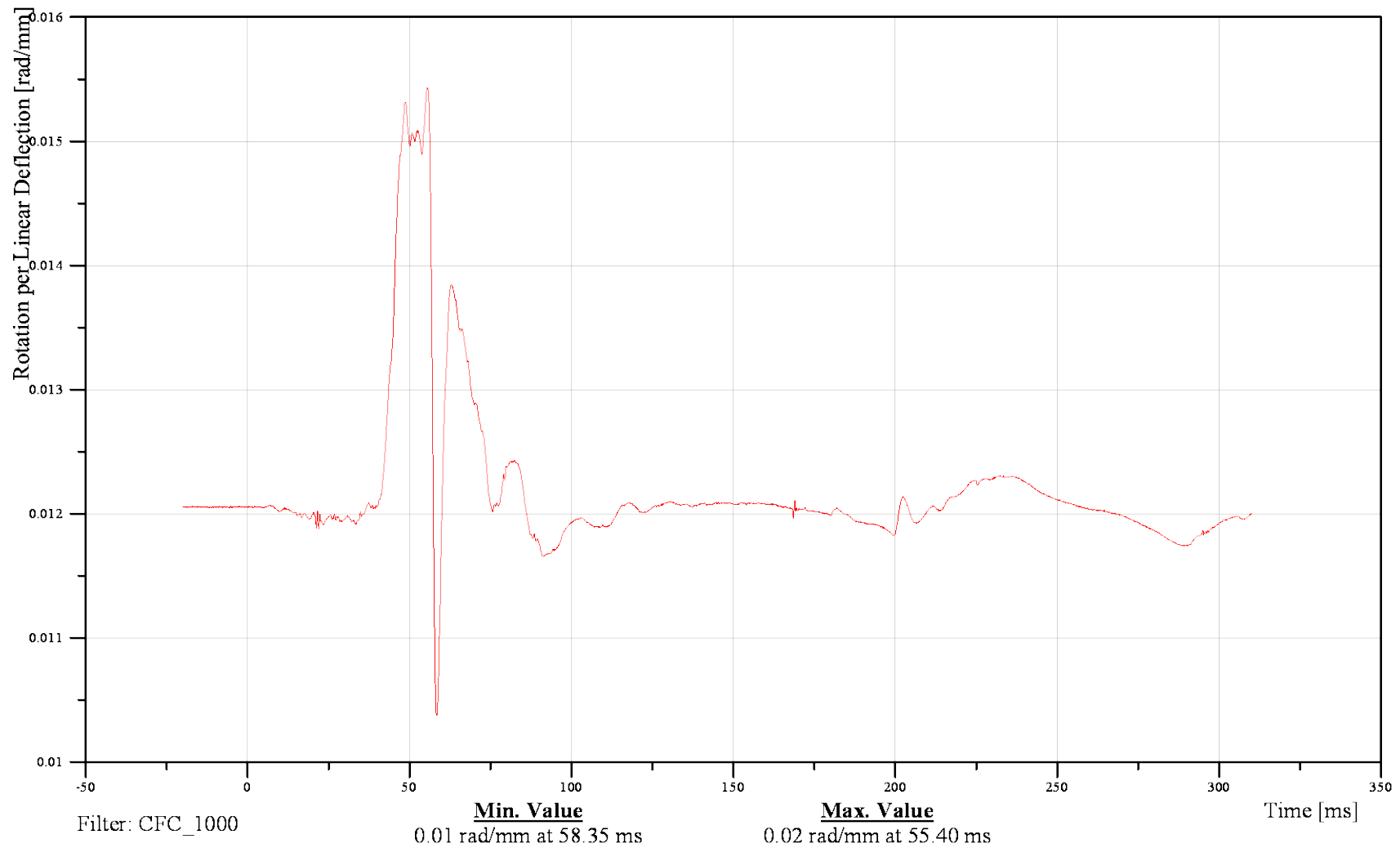
Time: 12:36

Customer: VRTC

14CHBA4020WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 21

Date: 06/17/2013

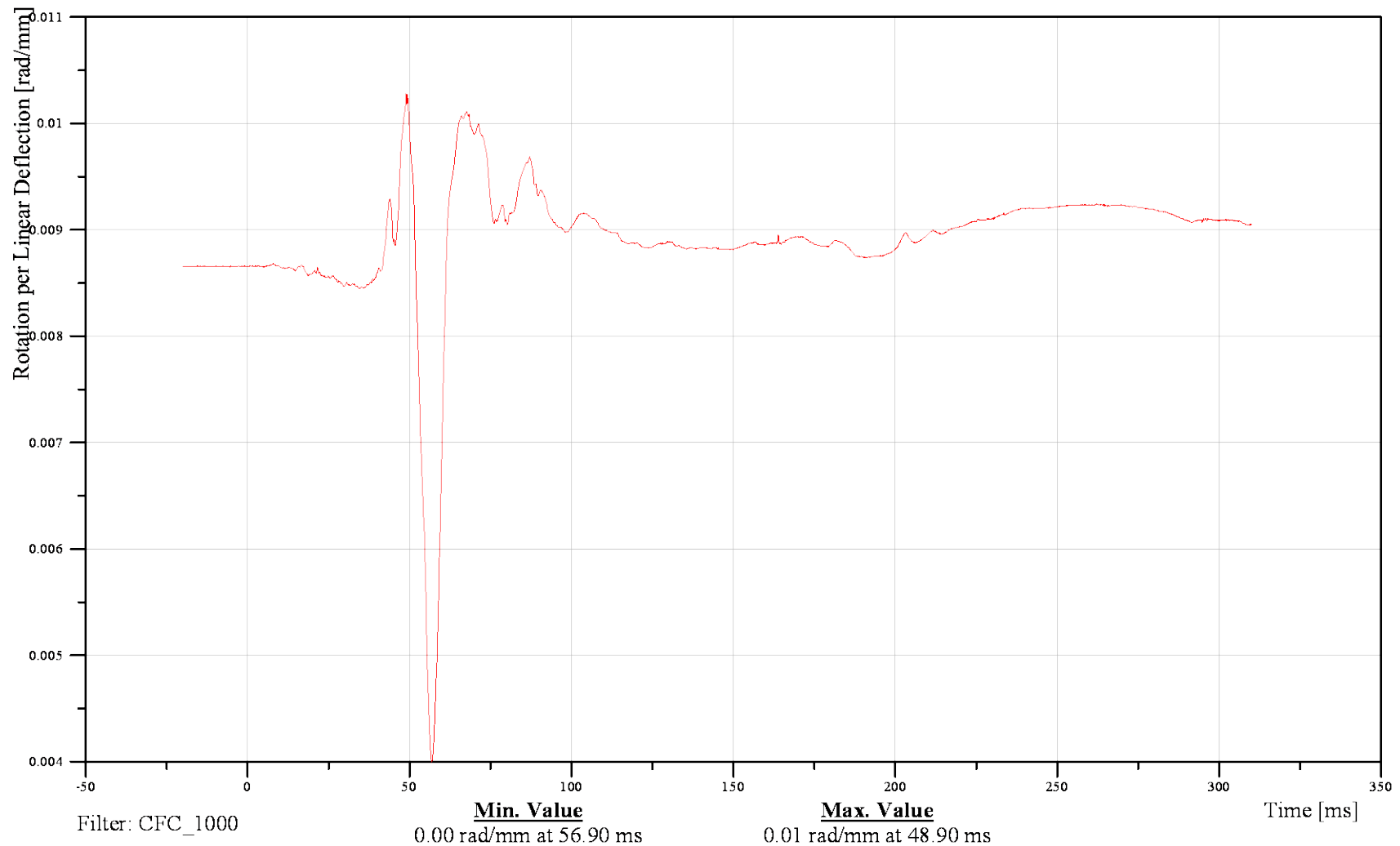
Time: 12:36

Customer: VRTC

14CHBA4021WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 22

Date: 06/17/2013

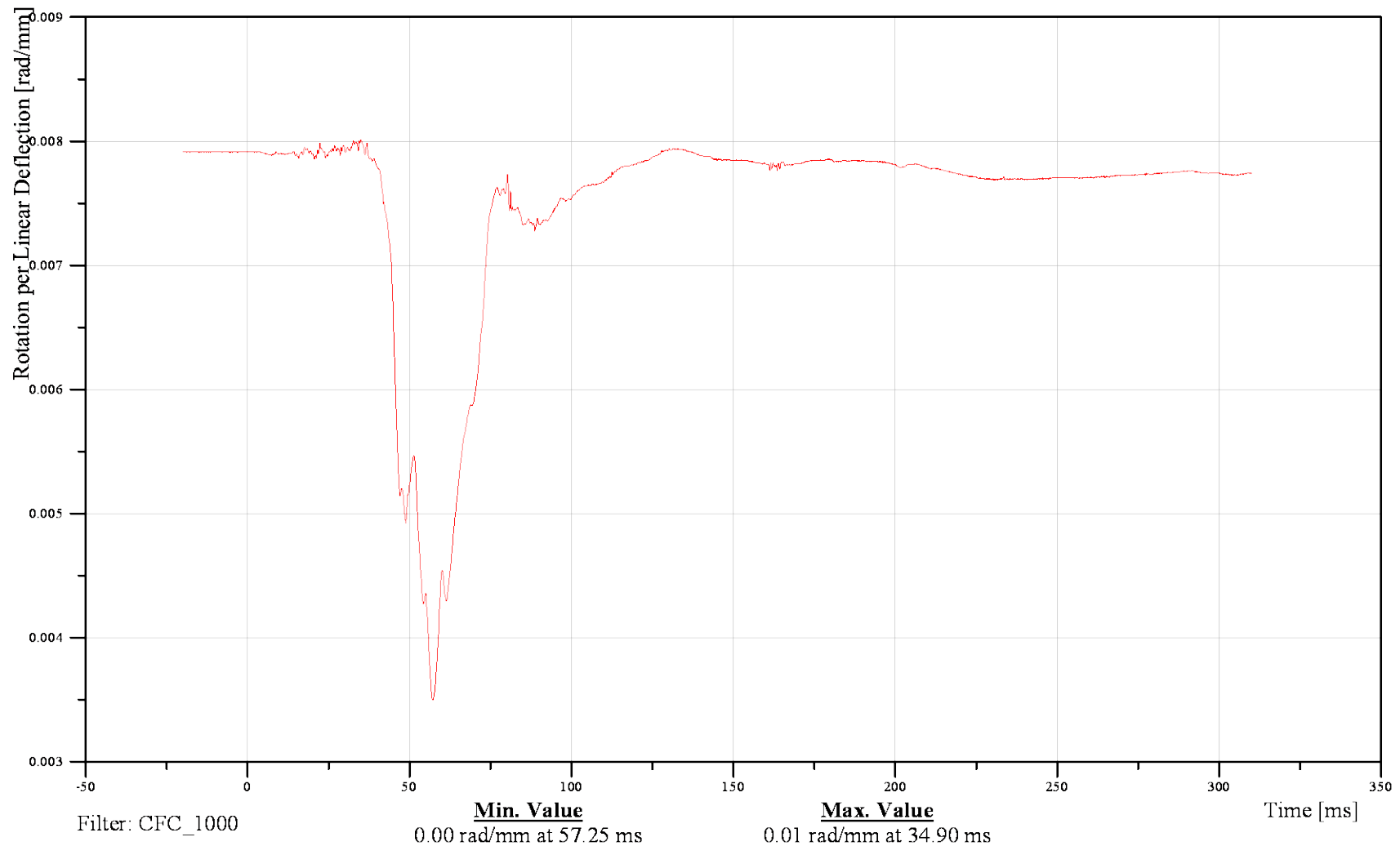
Time: 12:36

Customer: VRTC

14CHBA4022WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 23

Date: 06/17/2013

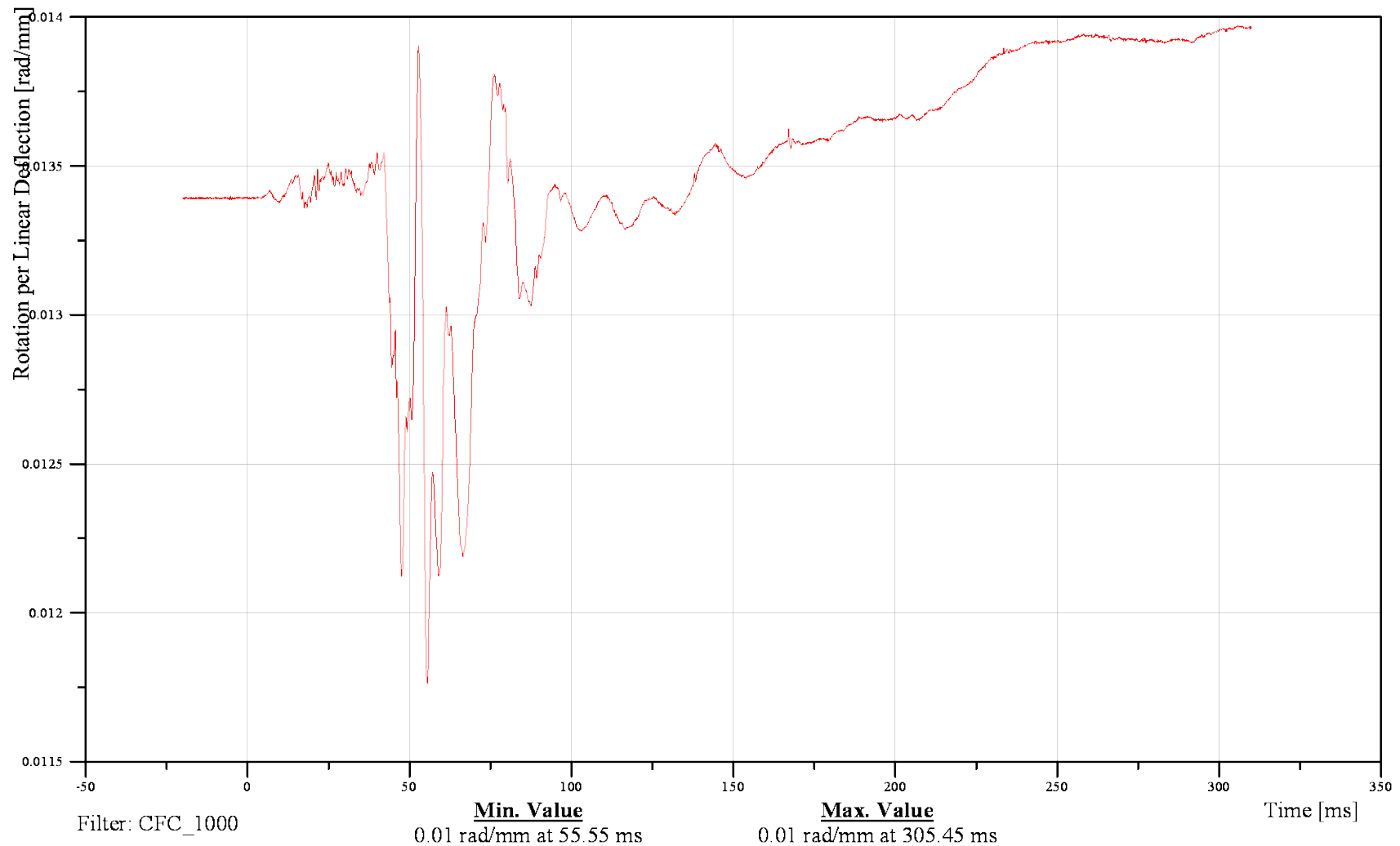
Time: 12:36

Customer: VRTC

14CHBA4023WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 24

Date: 06/17/2013

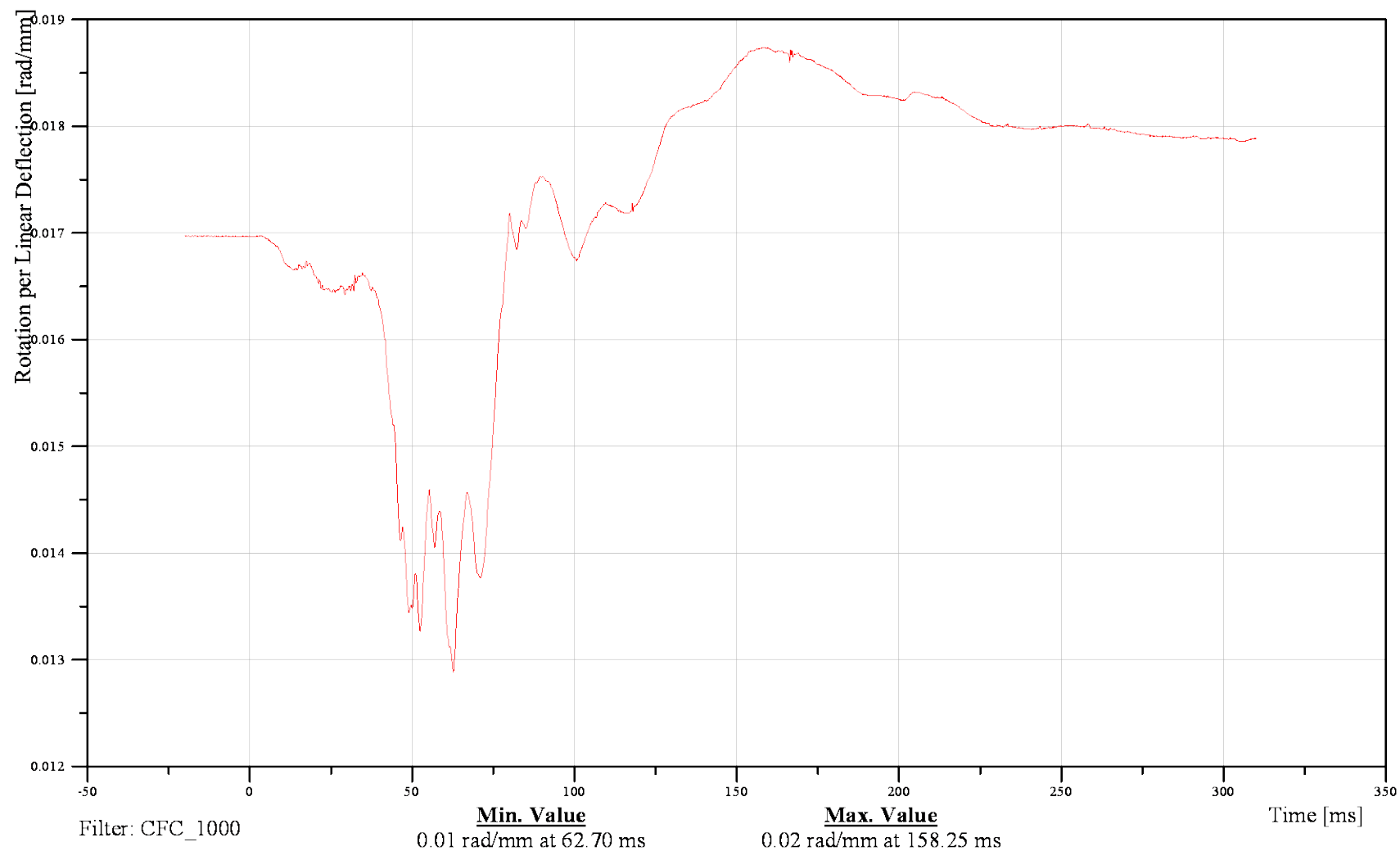
Time: 12:36

Customer: VRTC

14CHBA4024WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 25

Date: 06/17/2013

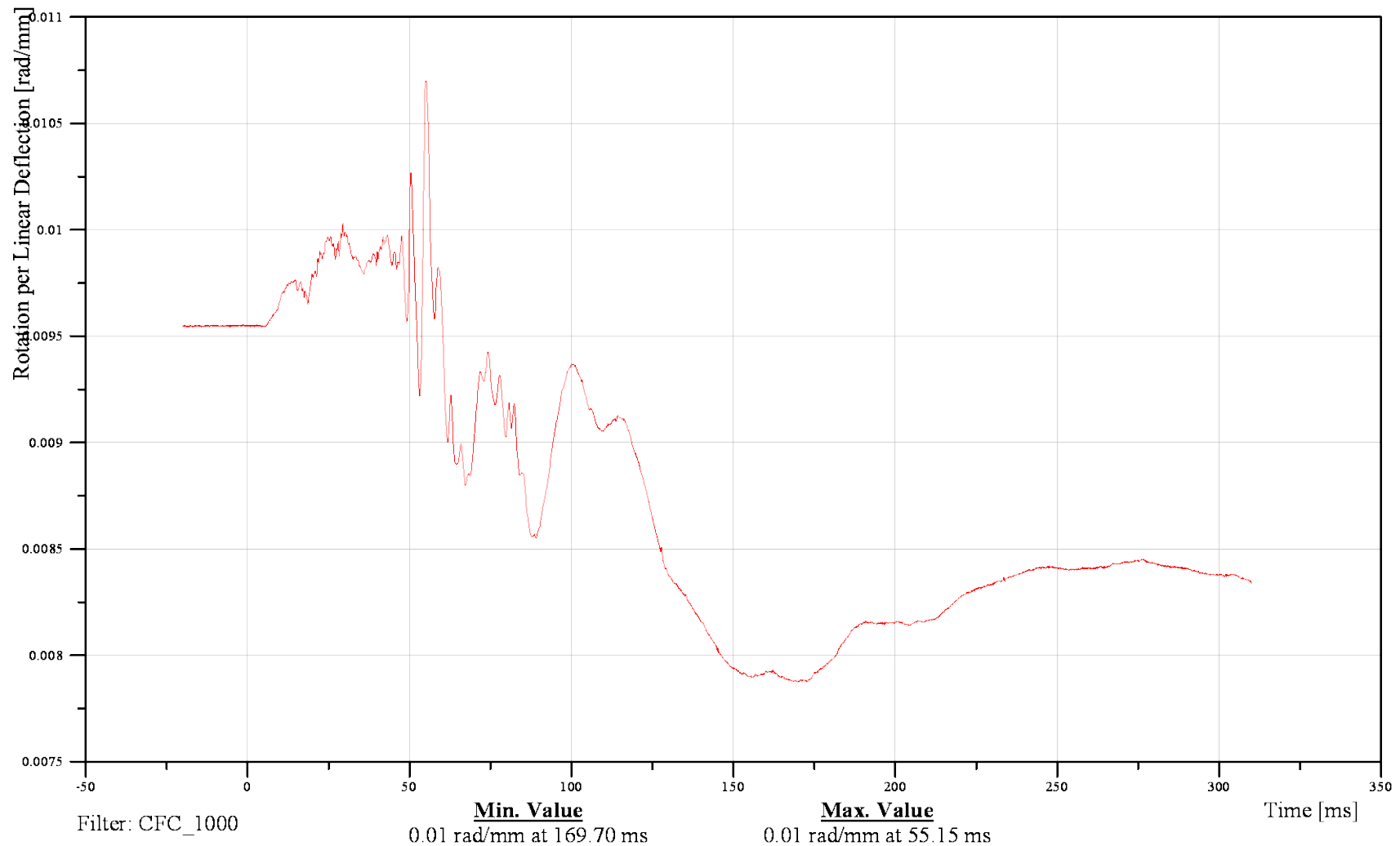
Time: 12:36

Customer: VRTC

14CHBA4025WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 26

Date: 06/17/2013

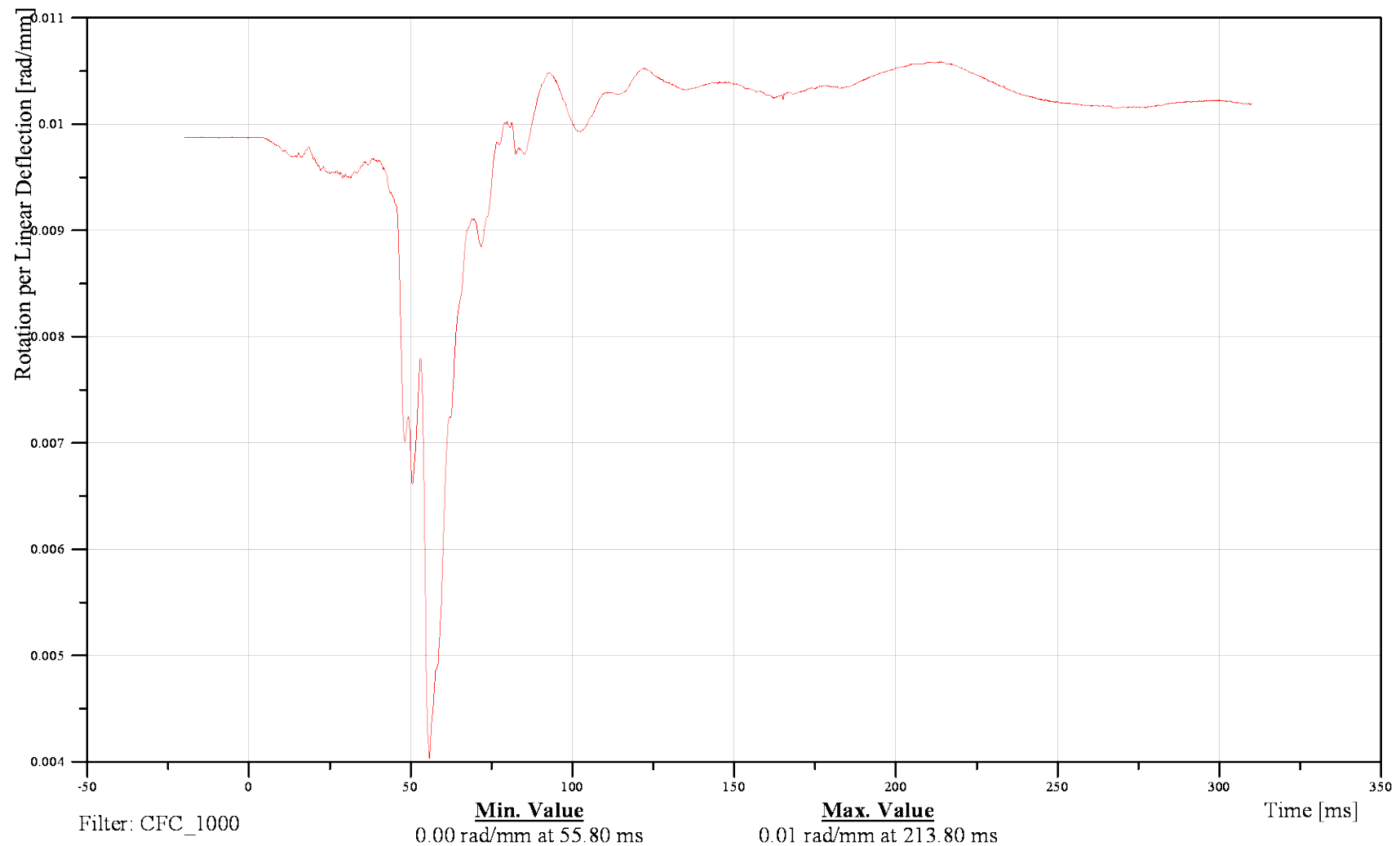
Time: 12:36

Customer: VRTC

14CHBA4026WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 27

Date: 06/17/2013

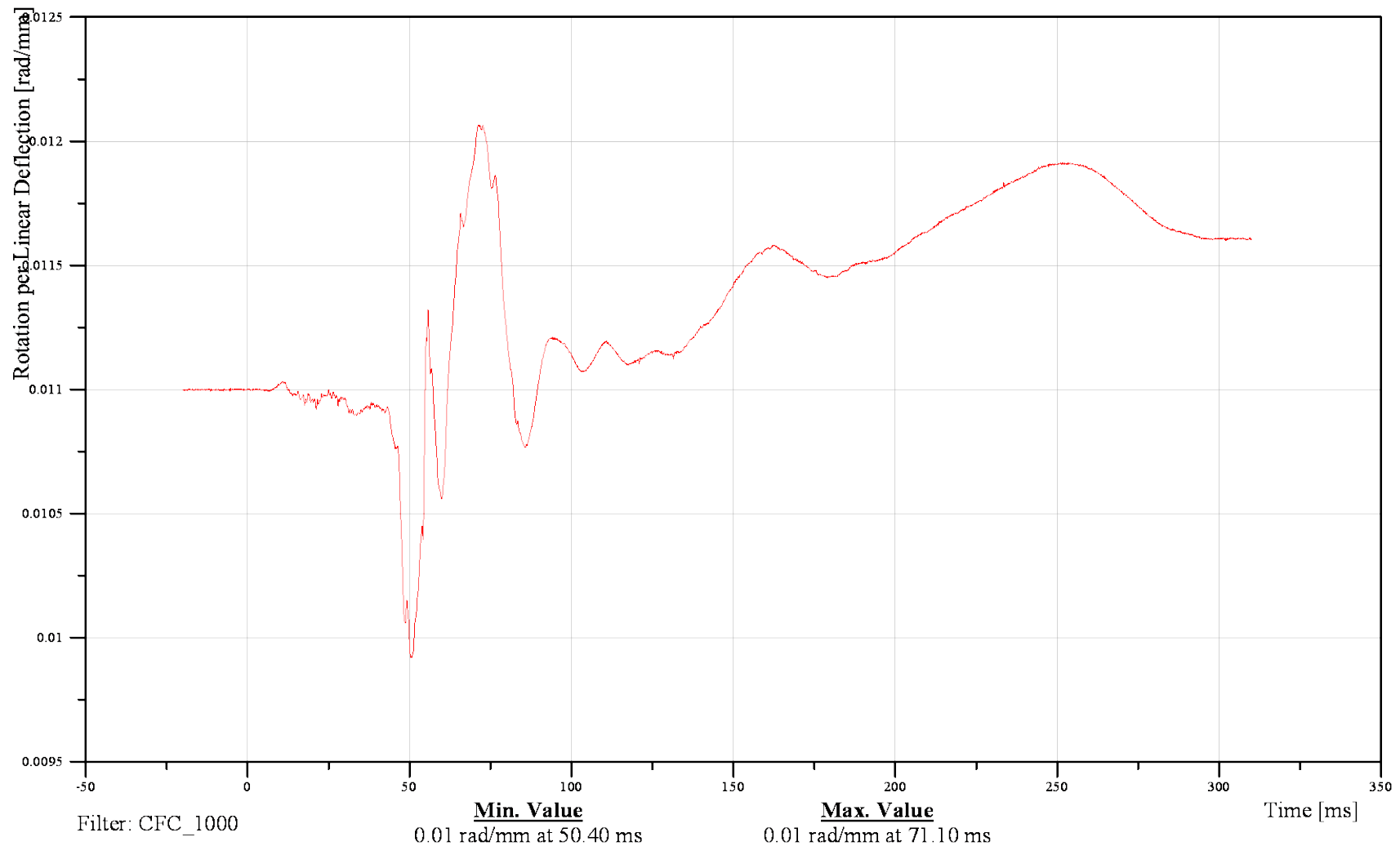
Time: 12:36

Customer: VRTC

14CHBA4027WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 28

Date: 06/17/2013

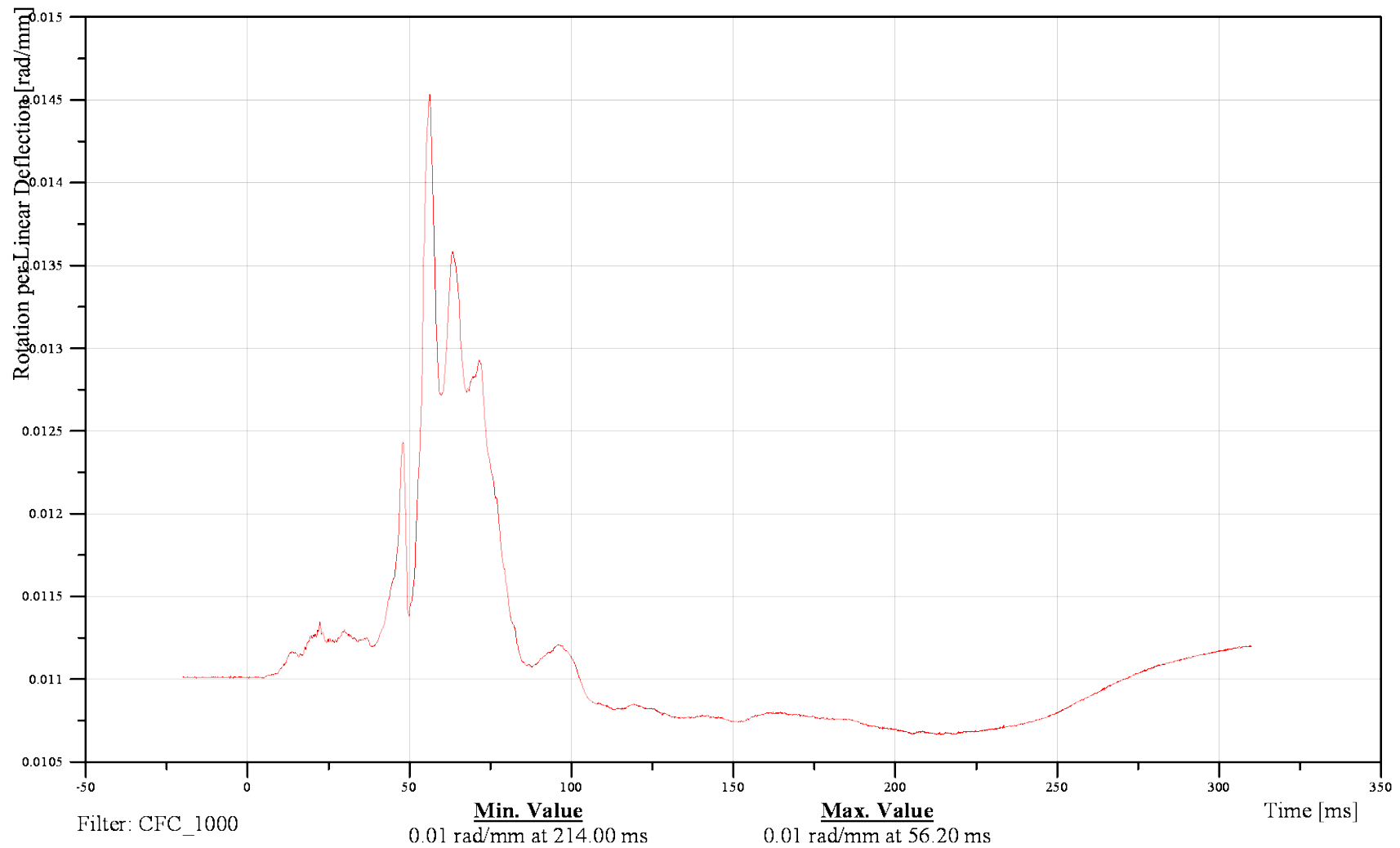
Time: 12:36

Customer: VRTC

14CHBA4028WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 29

Date: 06/17/2013

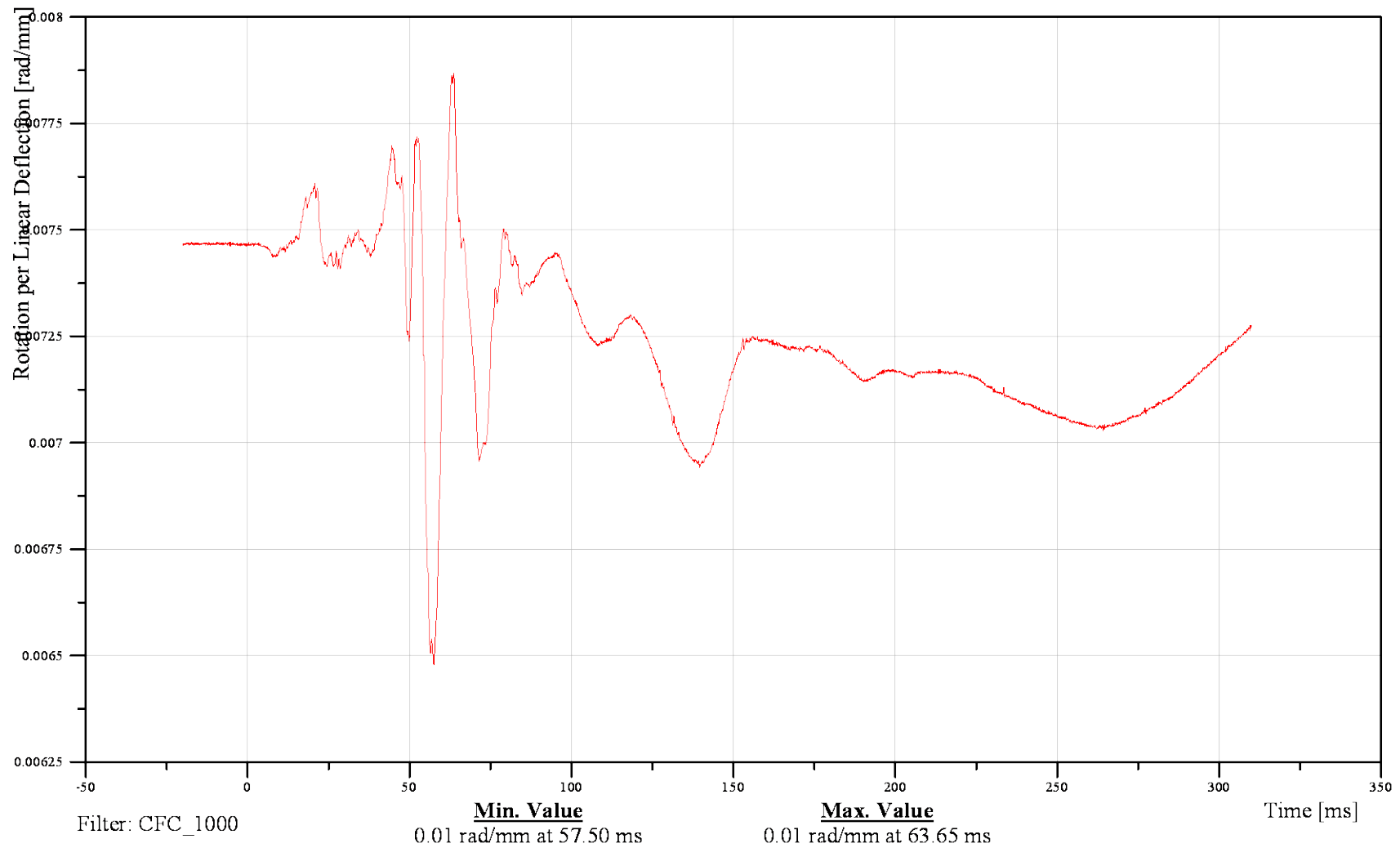
Time: 12:36

Customer: VRTC

14CHBA4029WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

chest band w/40 gages, gage 30

Date: 06/17/2013

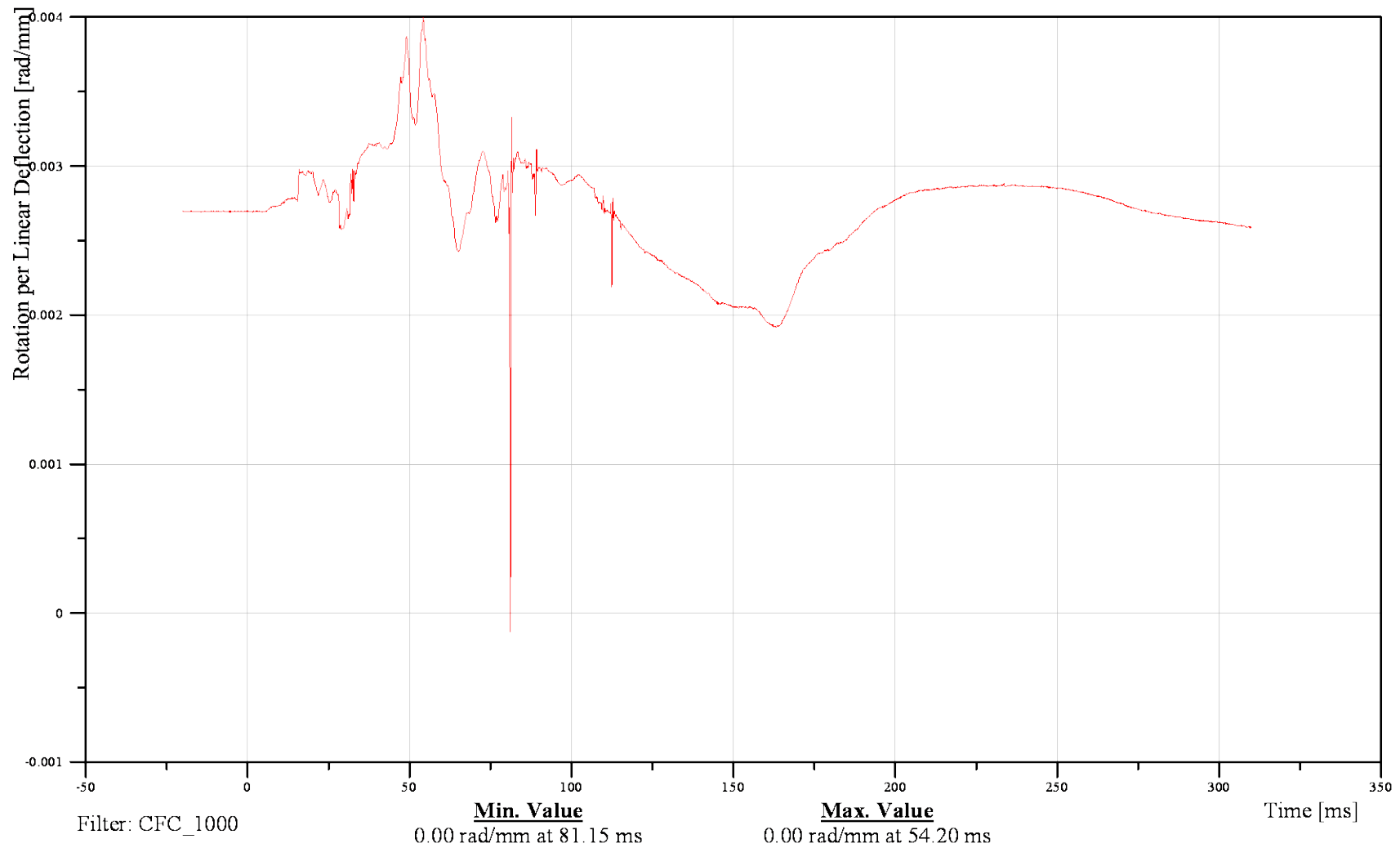
Time: 12:36

Customer: VRTC

14CHBA4030WFVO0A

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

MDB CG AX

Date: 06/17/2013

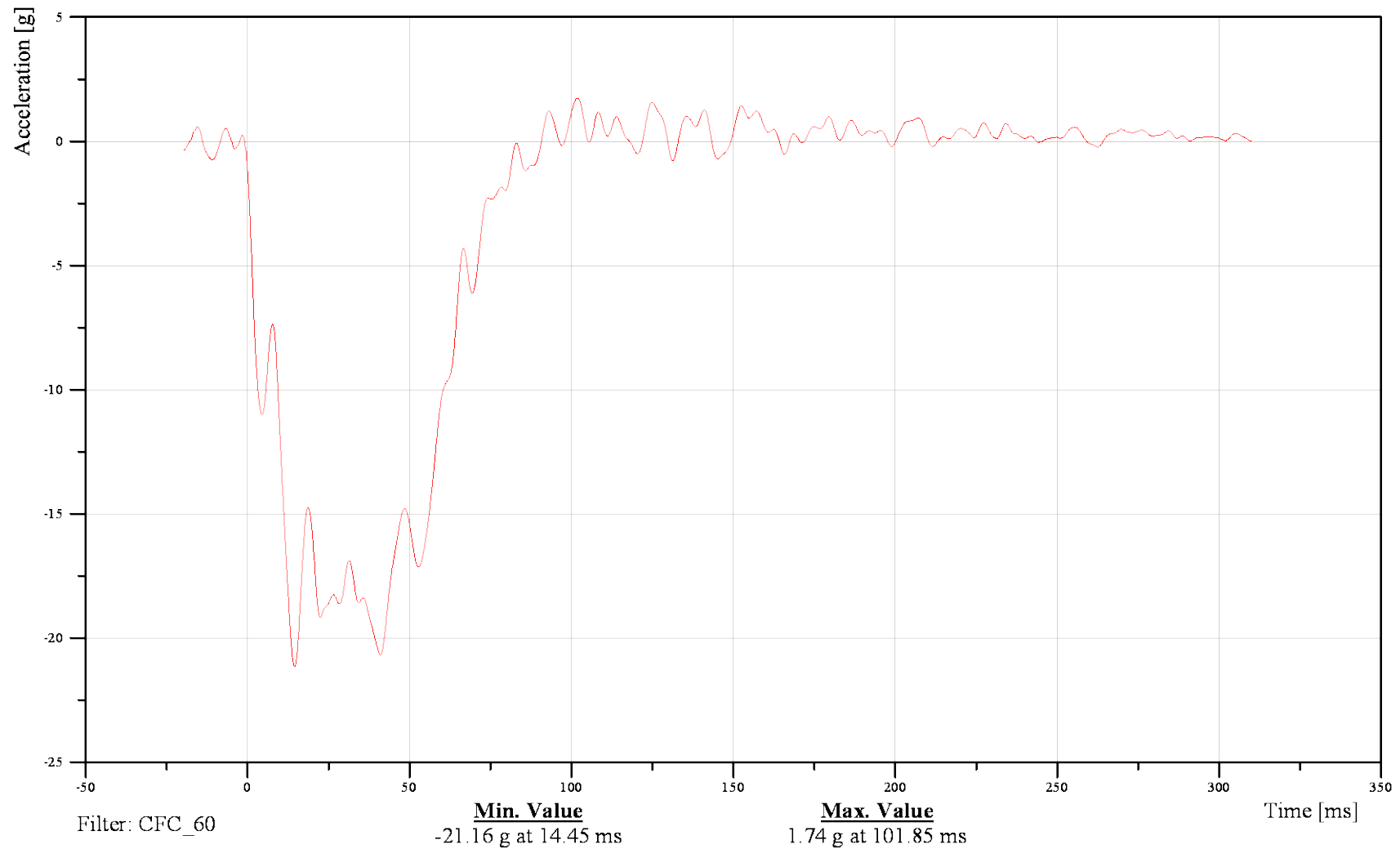
Time: 12:36

Customer: VRTC

M0MBARCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

MDB CG AY

Date: 06/17/2013

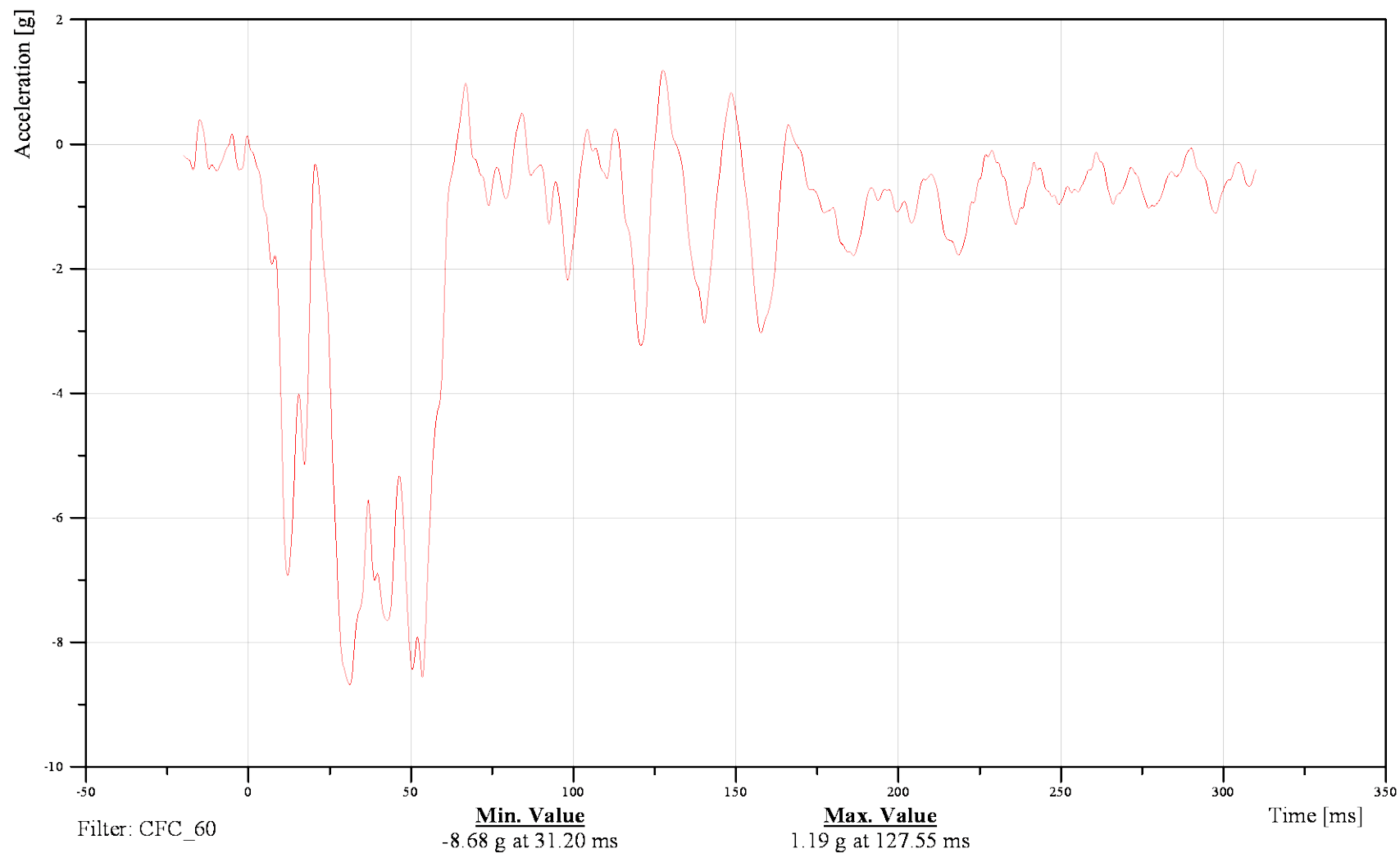
Time: 12:36

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

MDB CG AZ

Date: 06/17/2013

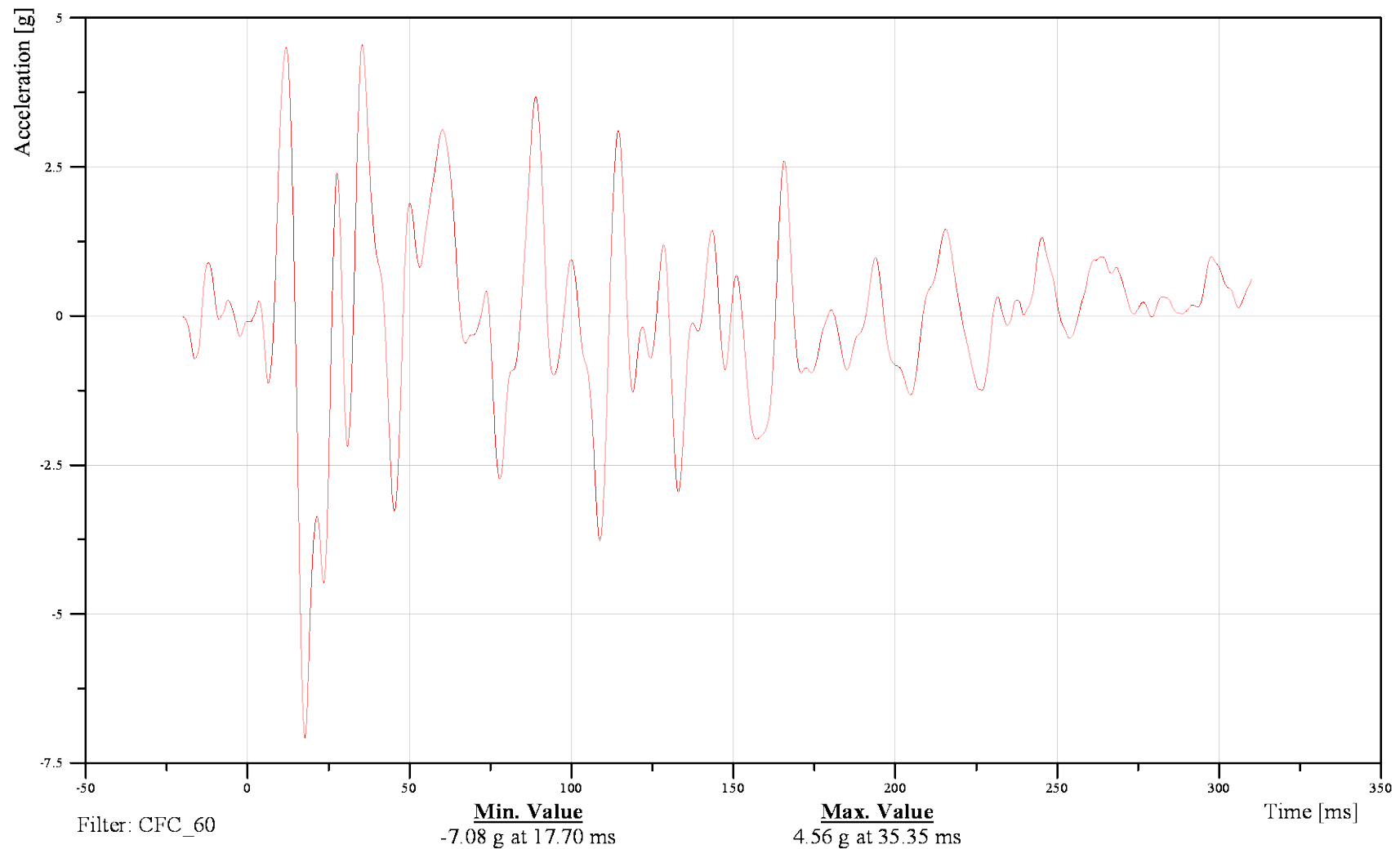
Time: 12:36

Customer: VRTC

M0MBCRCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

MDB CG A Resultant

Date: 06/17/2013

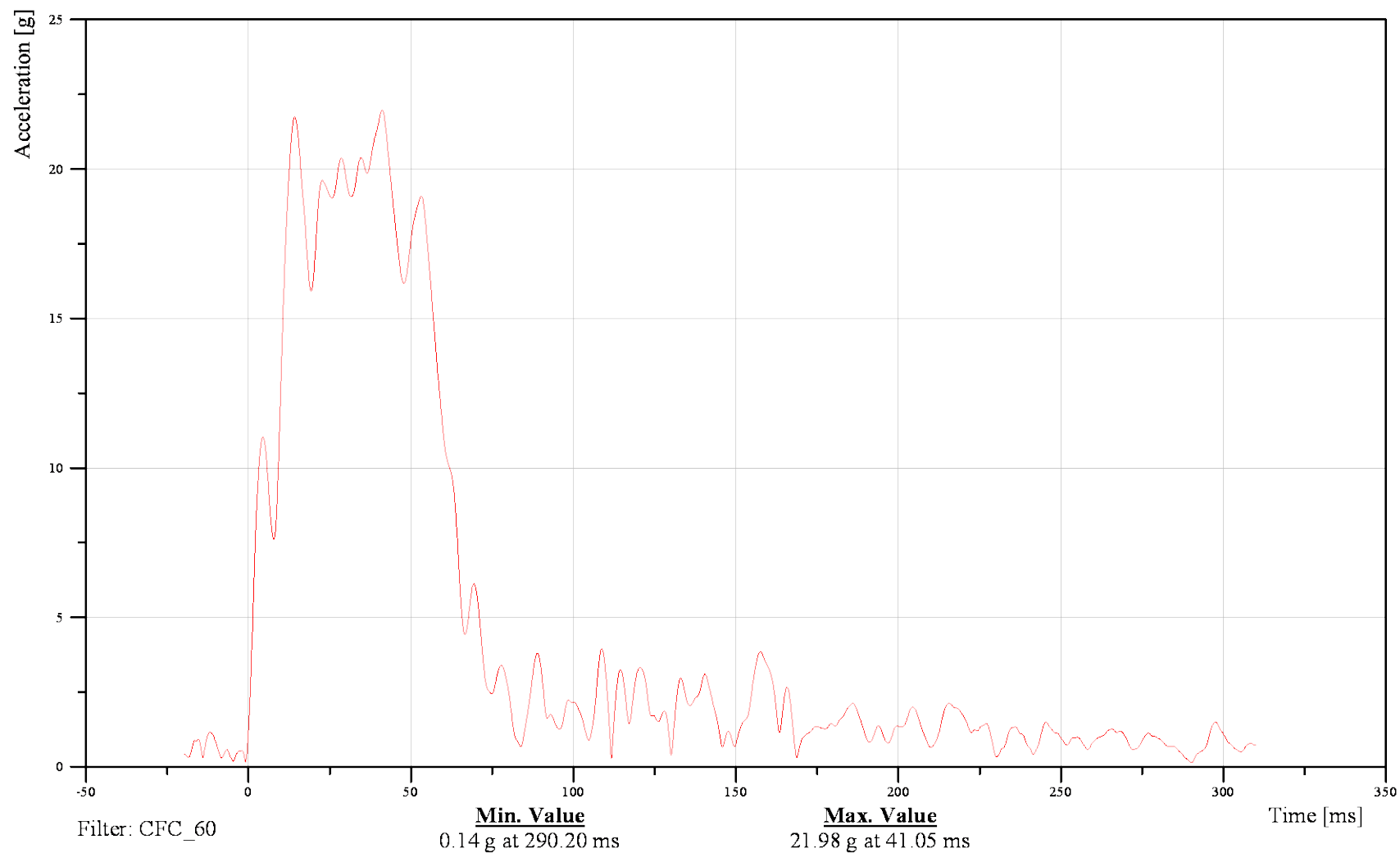
Time: 12:36

Customer: VRTC

M0MBARCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

MDB REAR AX

Date: 06/17/2013

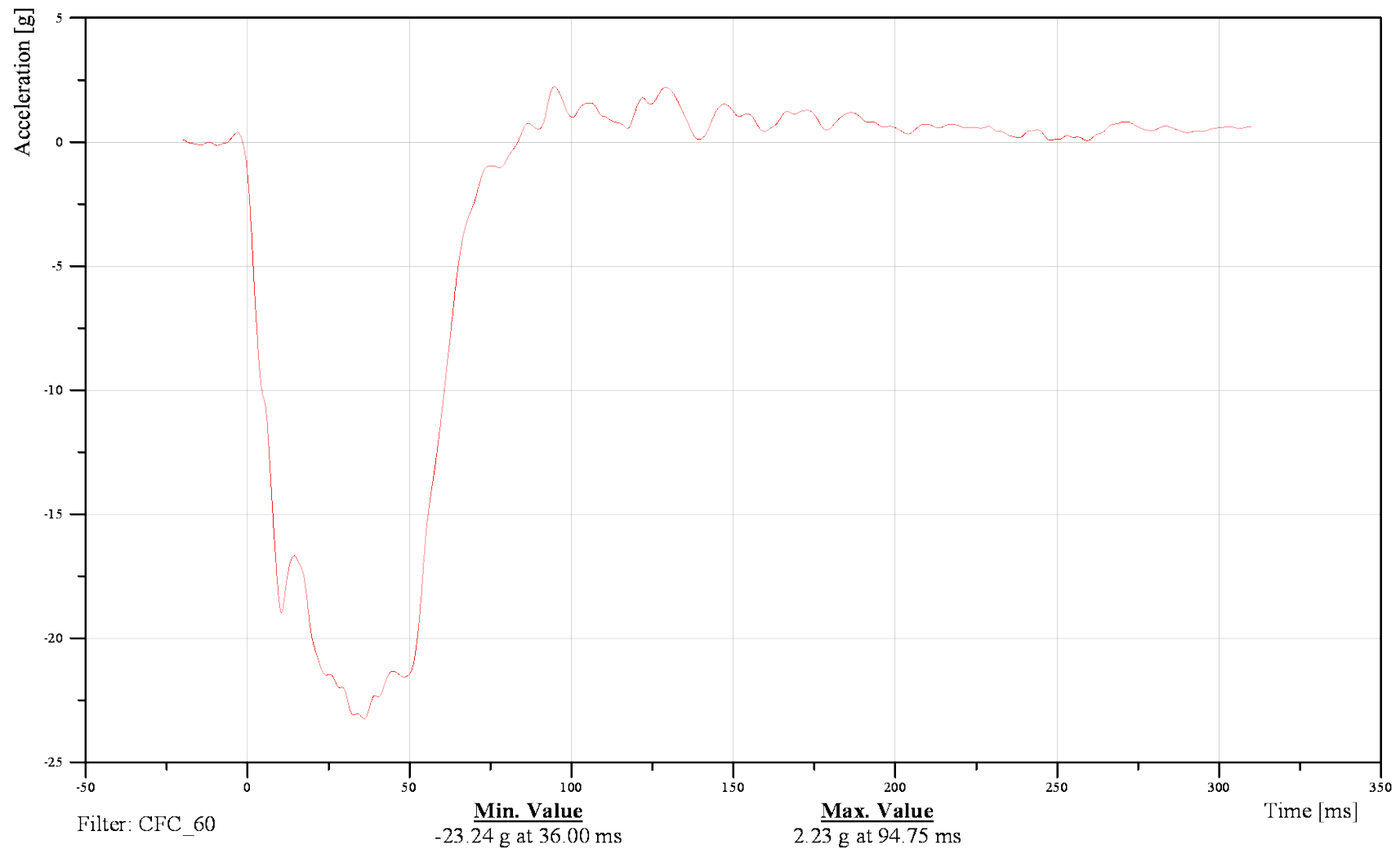
Time: 12:36

Customer: VRTC

M0FRAMRE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 120920





FMVSS 214 Side Impact 2011 Cadillac CTS

MDB REAR AY

Date: 06/17/2013

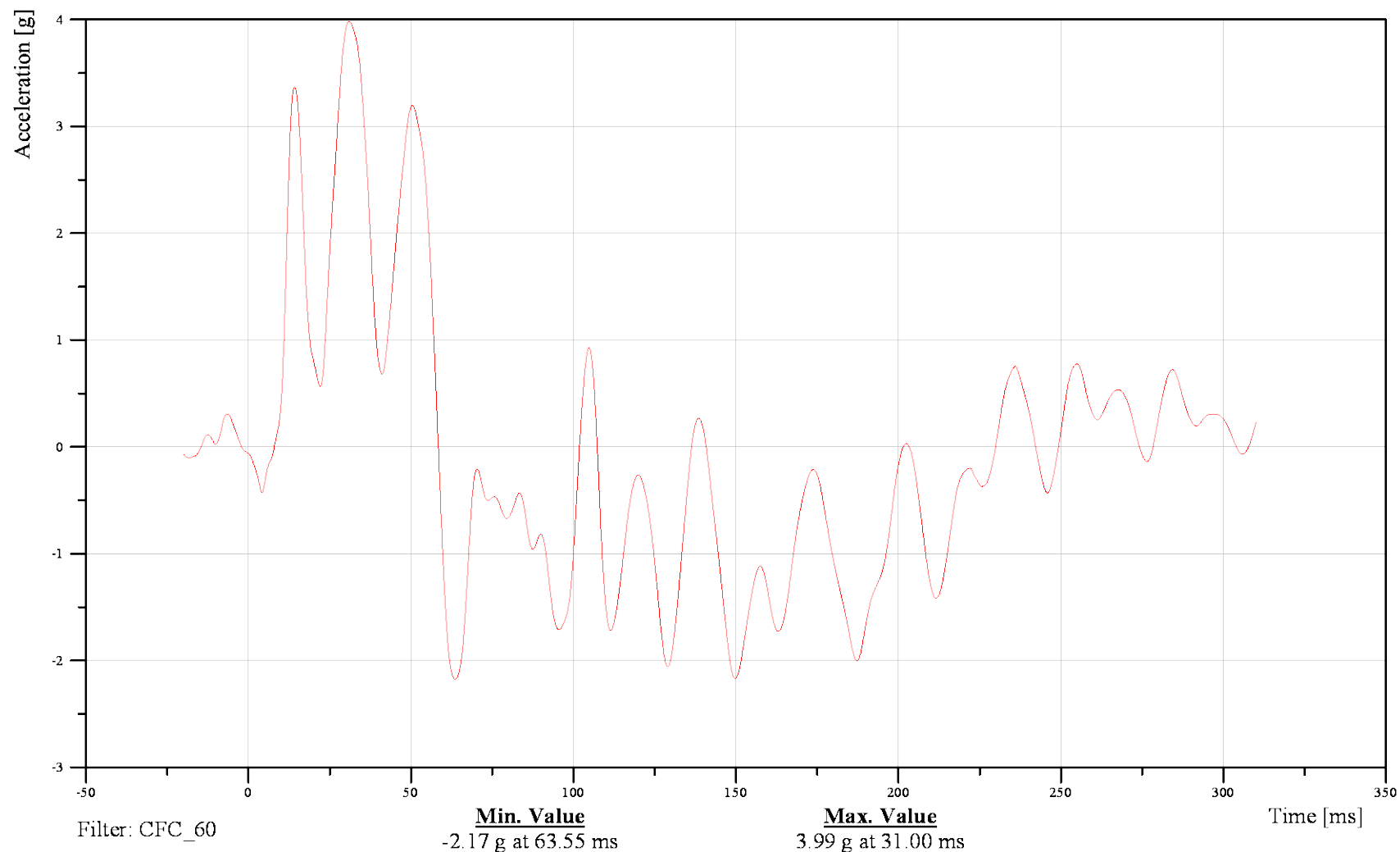
Time: 12:36

Customer: VRTC

M0FRAMRE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 120920



Appendix C

WorldSID Configuration and Performance Verification Data

Calibration Test Results

Pre-Test

WorldSID: 16

Configured for Left Side Impact

Transportation Research Center Inc.

Front Head Drop

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	270.3 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-5.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

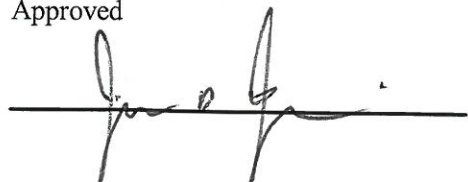
Test meets specifications.

Comments:

Technician



Approved

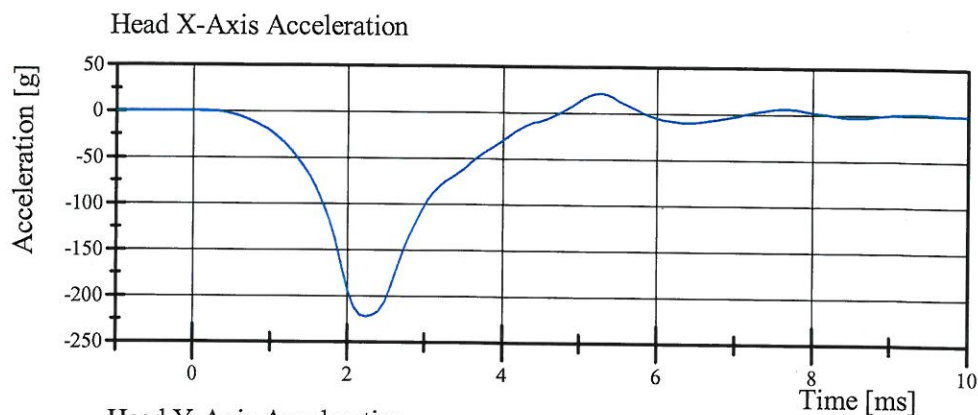


Transportation Research Center Inc.

Front Head Drop

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

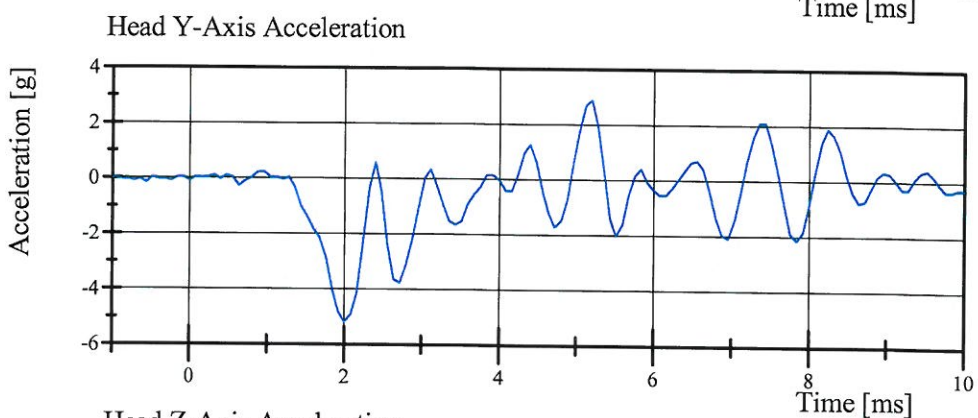
Test Date: 9/14/2012



Filter Class: CFC_1000

Max: 21.6 gn at 5.3 ms

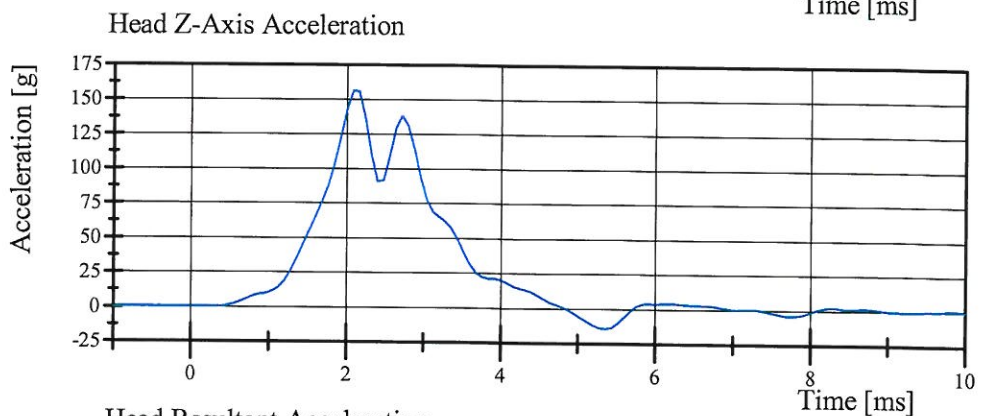
Min: -222.3 gn at 2.2 ms



Filter Class: CFC_1000

Max: 2.9 gn at 5.2 ms

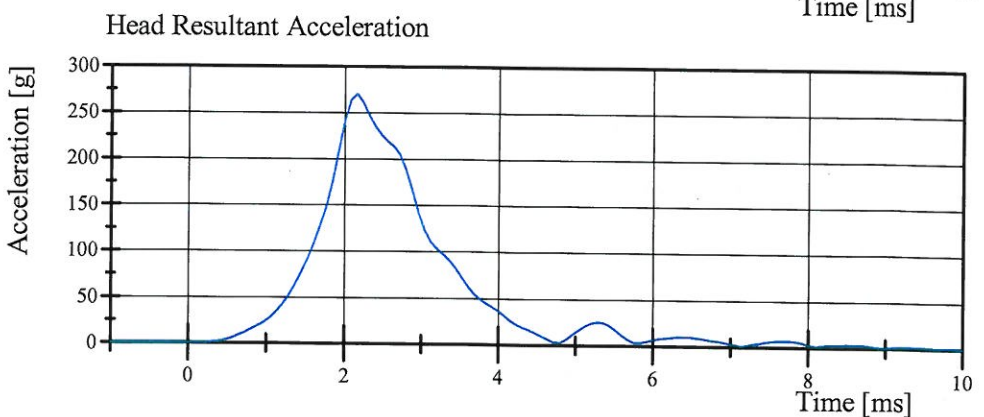
Min: -5.2 gn at 2.0 ms



Filter Class: CFC_1000

Max: 156.4 gn at 2.1 ms

Min: -14.4 gn at 5.4 ms



Filter Class: CFC_1000

Max: 270.3 gn at 2.2 ms

Min: 0.0 gn at -0.2 ms

Transportation Research Center Inc.

Left Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Peak Head Resultant Acceleration	99 - 121 g	116.9 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	-4.5 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

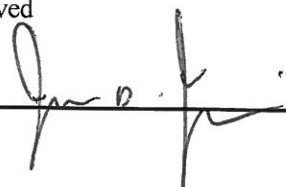
Test meets specifications.

Comments:

Technician



Approved

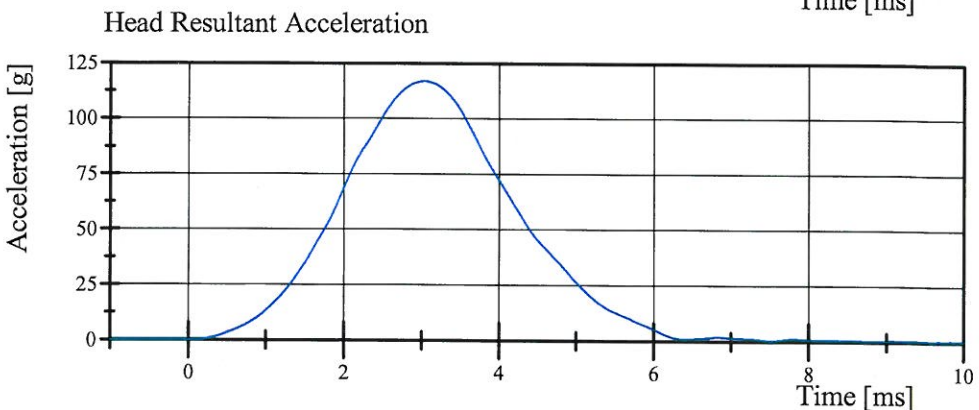
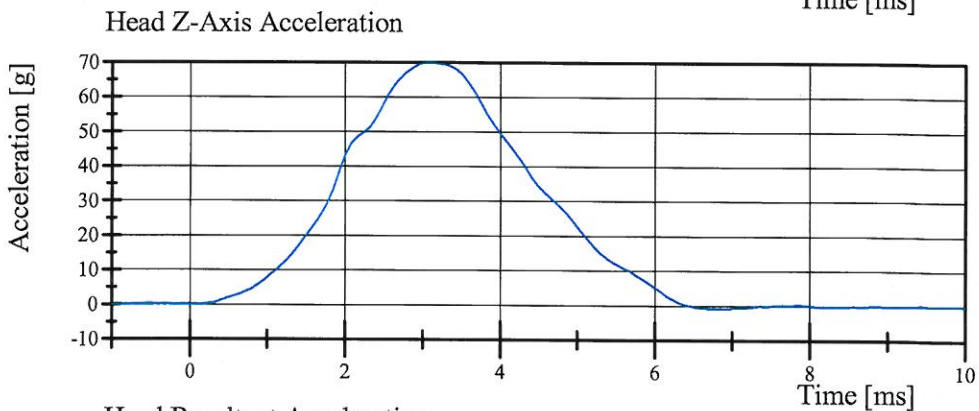
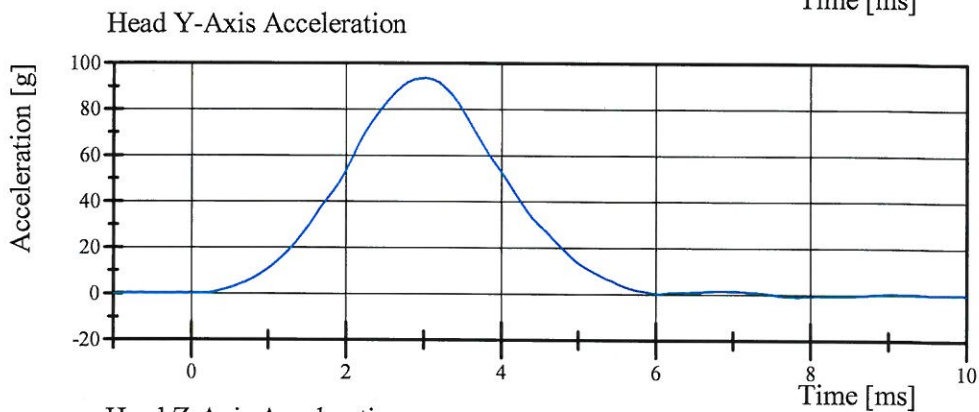
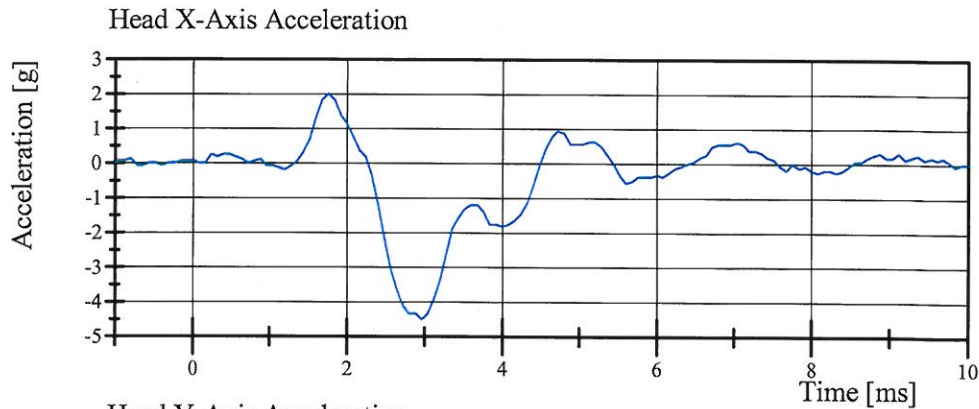


Transportation Research Center Inc.

Left Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/14/2012



Transportation Research Center Inc.

Right Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

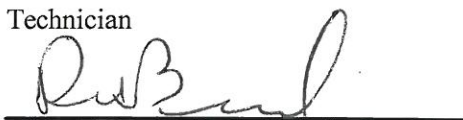
Test Date: 9/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Peak Head Resultant Acceleration	99 - 121 g	115.9 g	Yes
Peak Head Longitudinal Acceleration	(-15) - 15 g	3.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

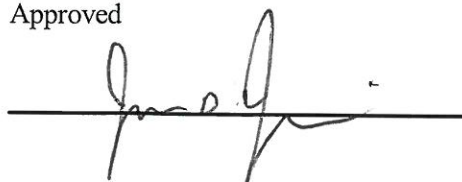
Test meets specifications.

Comments:

Technician



Approved



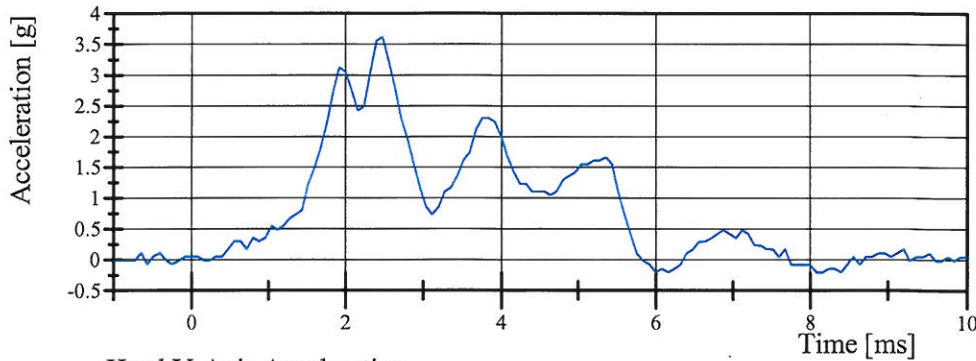
Transportation Research Center Inc.

Right Lateral Head Drop

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/14/2012

Head X-Axis Acceleration

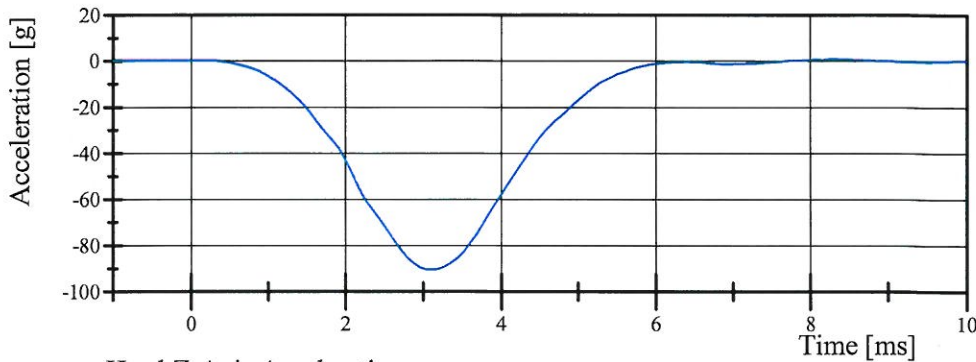


Filter Class: CFC_1000

Max: 3.6 gn at 2.5 ms

Min: -0.2 gn at 6.0 ms

Head Y-Axis Acceleration

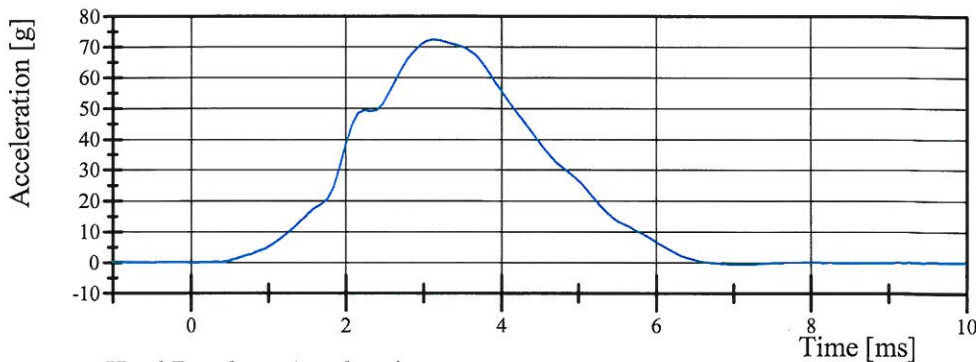


Filter Class: CFC_1000

Max: 0.9 gn at 8.3 ms

Min: -90.5 gn at 3.1 ms

Head Z-Axis Acceleration

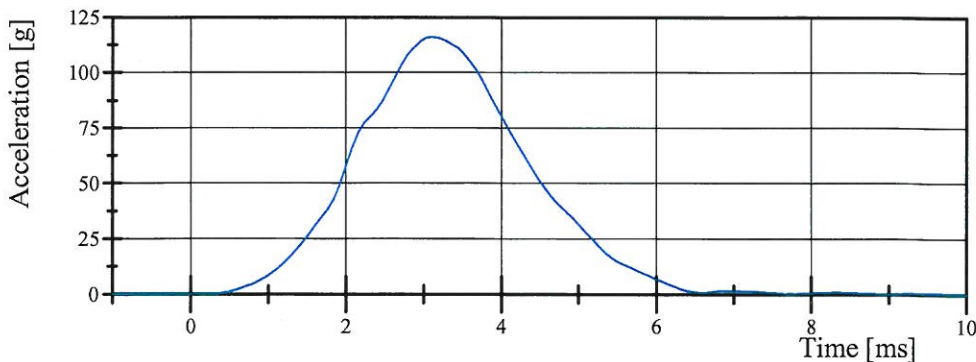


Filter Class: CFC_1000

Max: 72.4 gn at 3.1 ms

Min: -0.7 gn at 7.1 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 115.9 gn at 3.1 ms

Min: 0.0 gn at 0.2 ms

Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-1

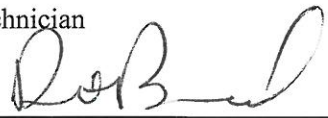
Test Date: 9/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.35 m/s	Yes
Pendulum Integrated Velocity			
Change at 4 ms	0.77 - 1.04 m/s	0.937 m/s	Yes
Change at 8 ms	1.6 - 2.16 m/s	1.992 m/s	Yes
Change at 12 ms	2.43 - 3.29 m/s	3.153 m/s	Yes
Maximum Headform Flexion	(-50) - (-61) deg	-54.9 deg	Yes
Headform Flexion Decay			
- from Peak to Zero Degrees	58 - 72 ms	61.3 ms	Yes
Total Neck Occipital Condyles Moment	55 - 68 N·m	62.7 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	71 - 87 ms	79.0 ms	Yes
Maximum Forward Pot Rotation			
Peak	(-32) - (-39) °	-35.3 °	Yes
Time of Peak	56 - 68 ms	58.5 ms	Yes
Maximum Rear Pot Rotation			
Peak	(-30) - (-37) °	-31.0 °	Yes
Time of Peak	56 - 68 ms	57.2 ms	Yes

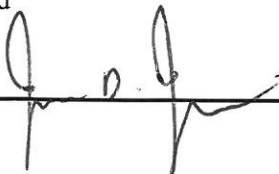
Test meets specifications.

Comments:

Technician



Approved



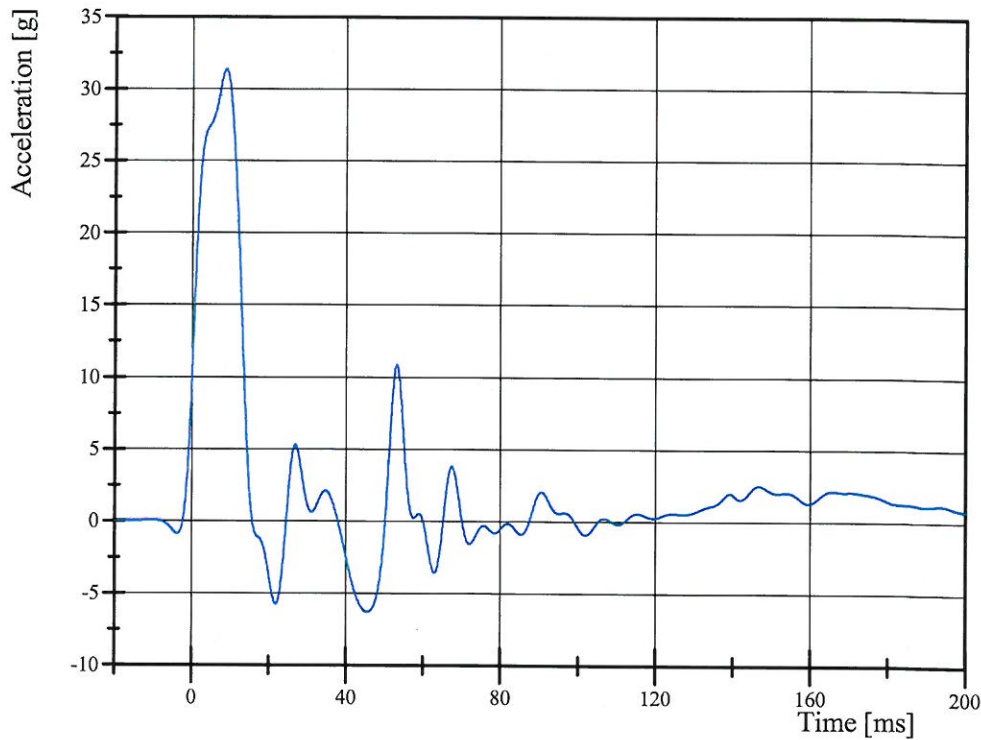
Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-1

Test Date: 9/14/2012

Pendulum Acceleration

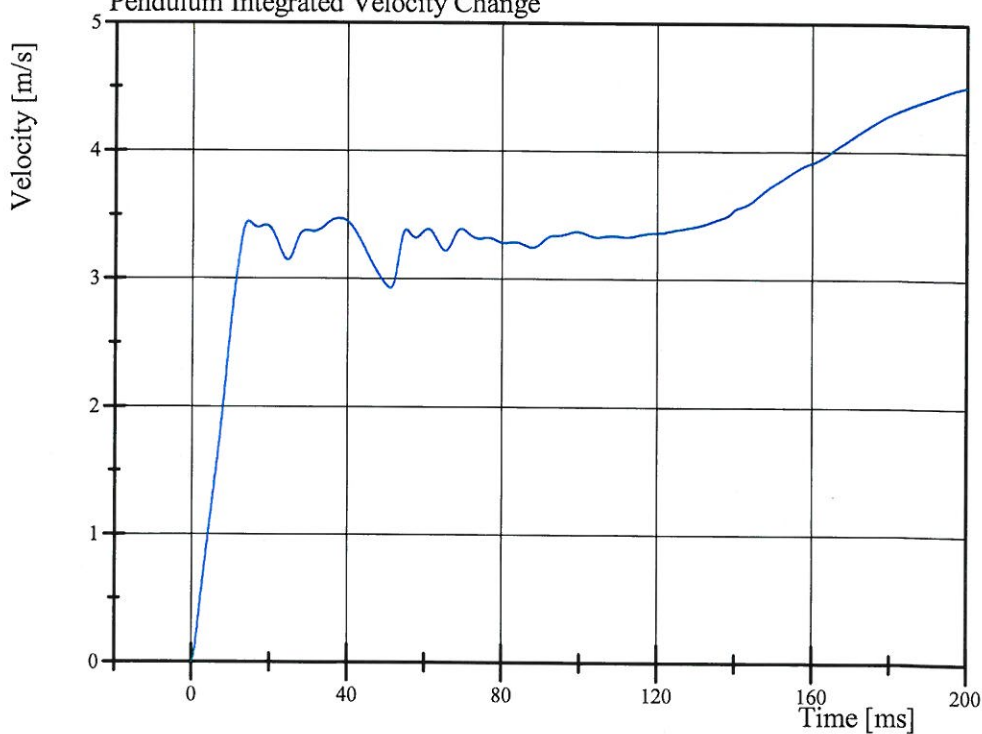


Filter Class: CFC_60

Max: 31.4 gn at 8.7 ms

Min: -6.3 gn at 45.5 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180

Max: 4.5 m/s at 200.0 ms

Min: 0.0 m/s at 0.0 ms

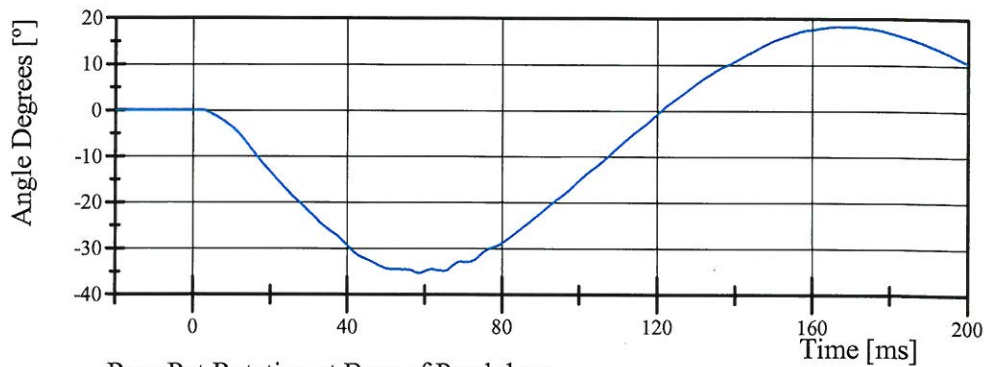
Transportation Research Center Inc.

Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-1

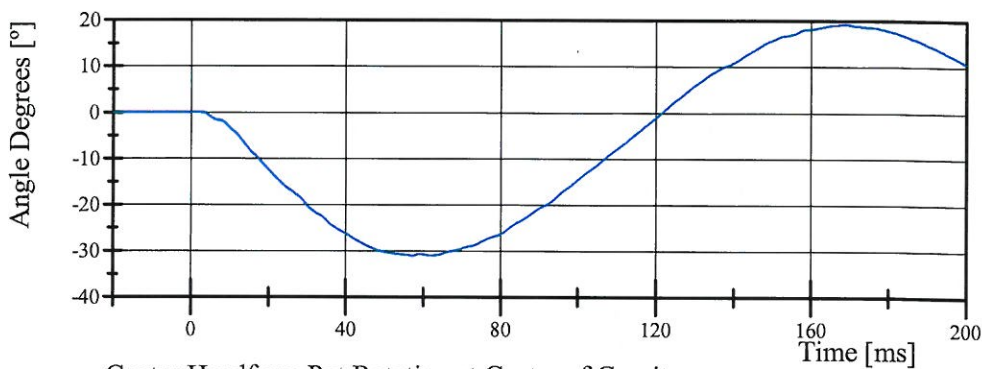
Test Date: 9/14/2012

Forward Pot Rotation at Base of Pendulum



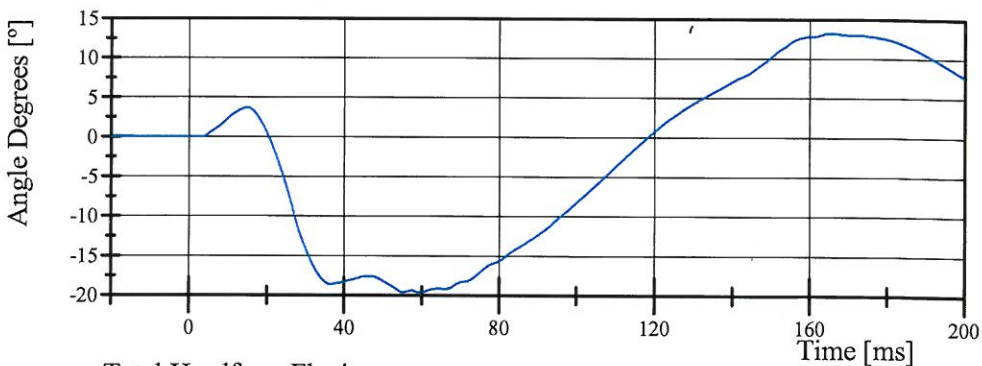
Filter Class: CFC_180
Max: 18.3 ° at 166.6 ms
Min: -35.3 ° at 58.5 ms

Rear Pot Rotation at Base of Pendulum



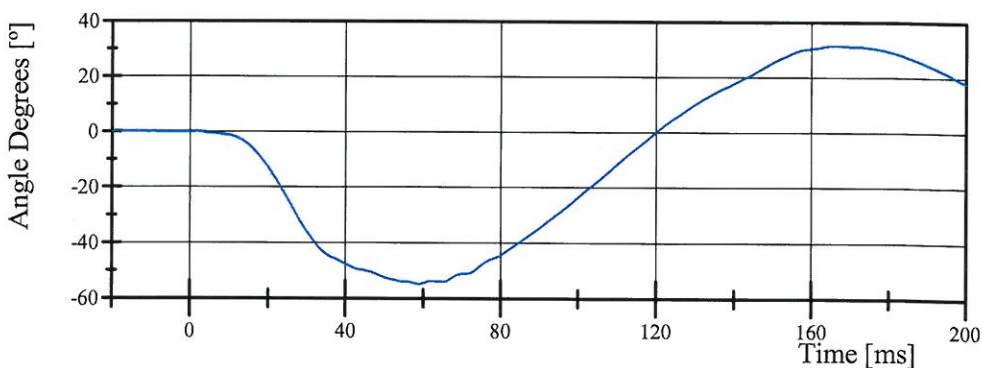
Filter Class: CFC_180
Max: 19.3 ° at 168.8 ms
Min: -31.0 ° at 57.2 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_180
Max: 13.3 ° at 165.4 ms
Min: -19.6 ° at 59.3 ms

Total Headform Flexion



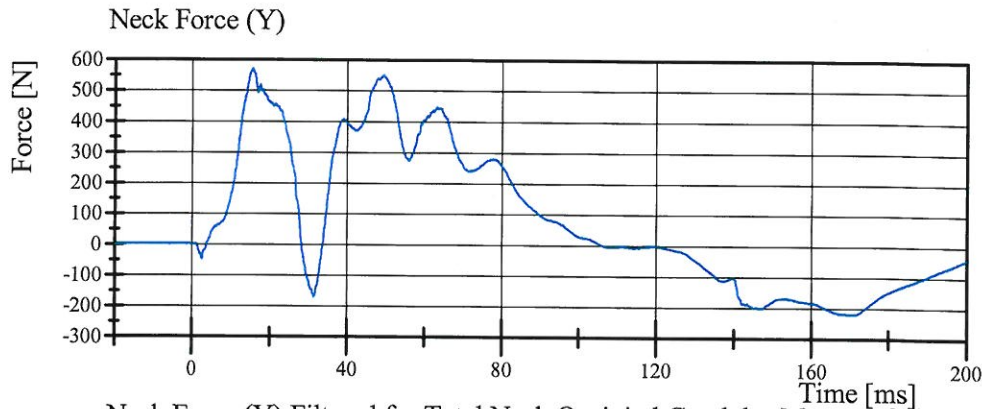
Filter Class: CFC_180
Max: 31.6 ° at 166.0 ms
Min: -54.9 ° at 58.8 ms

Transportation Research Center Inc.

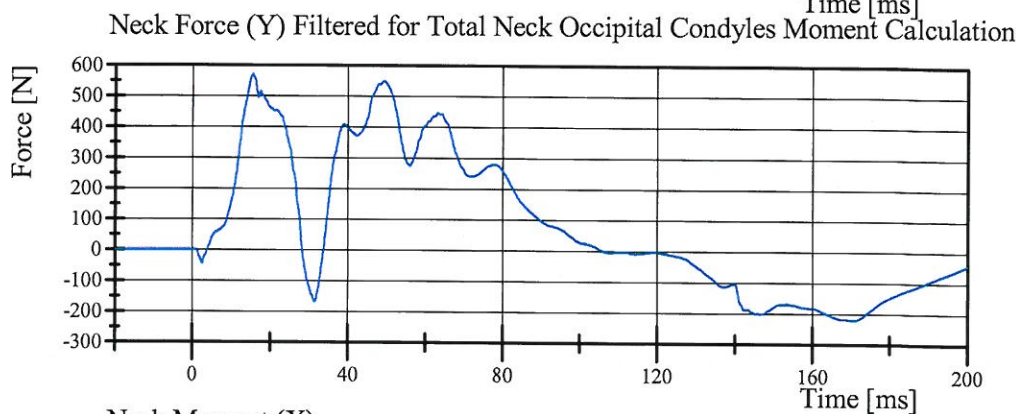
Left Lateral Neck

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-1

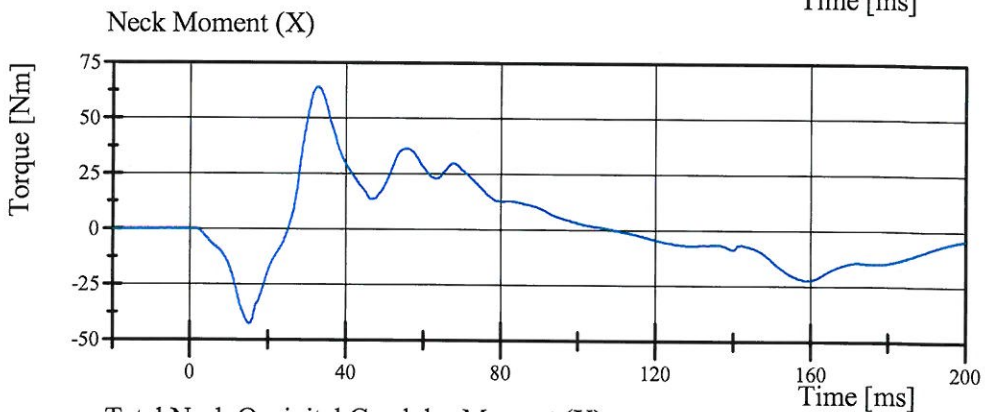
Test Date: 9/14/2012



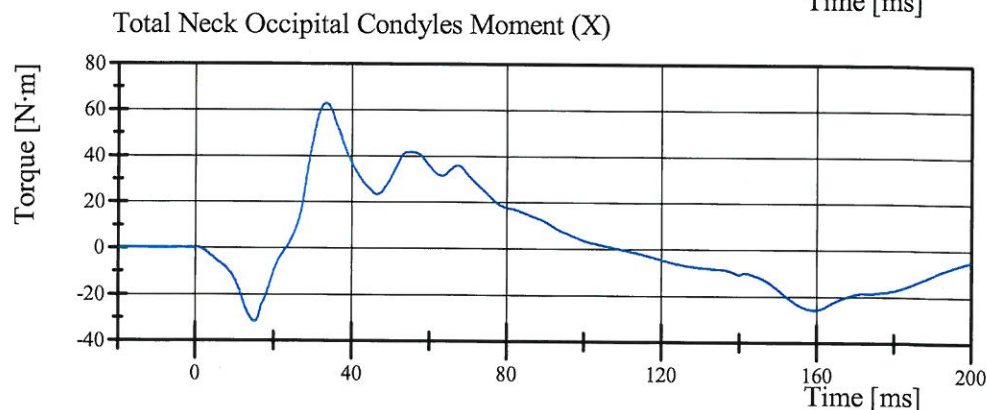
Filter Class: CFC_1000
Max: 569.4 N at 15.4 ms
Min: -221.0 N at 169.9 ms



Filter Class: CFC_600
Max: 568.8 N at 15.4 ms
Min: -220.4 N at 170.0 ms



Filter Class: CFC_600
Max: 64.1 Nm at 32.6 ms
Min: -42.8 Nm at 15.3 ms



Filter Class: Without_(Consta
Max: 62.7 N·m at 33.4 ms
Min: -31.7 N·m at 15.2 ms

Transportation Research Center Inc.

Left Lateral Shoulder

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

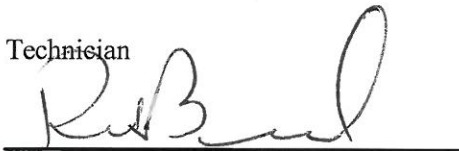
Test Date: 9/17/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.39 m/s	Yes
Impactor Force	(-2,600) - (-3,300) N	-2,942.6 N	Yes
Shoulder Displacement	35 - 44 mm	37.5 mm	Yes

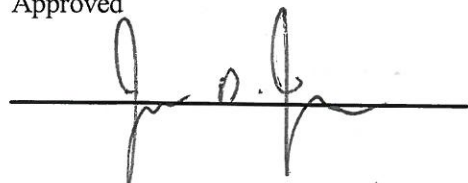
Test meets specifications.

Comments:

Technician



Approved

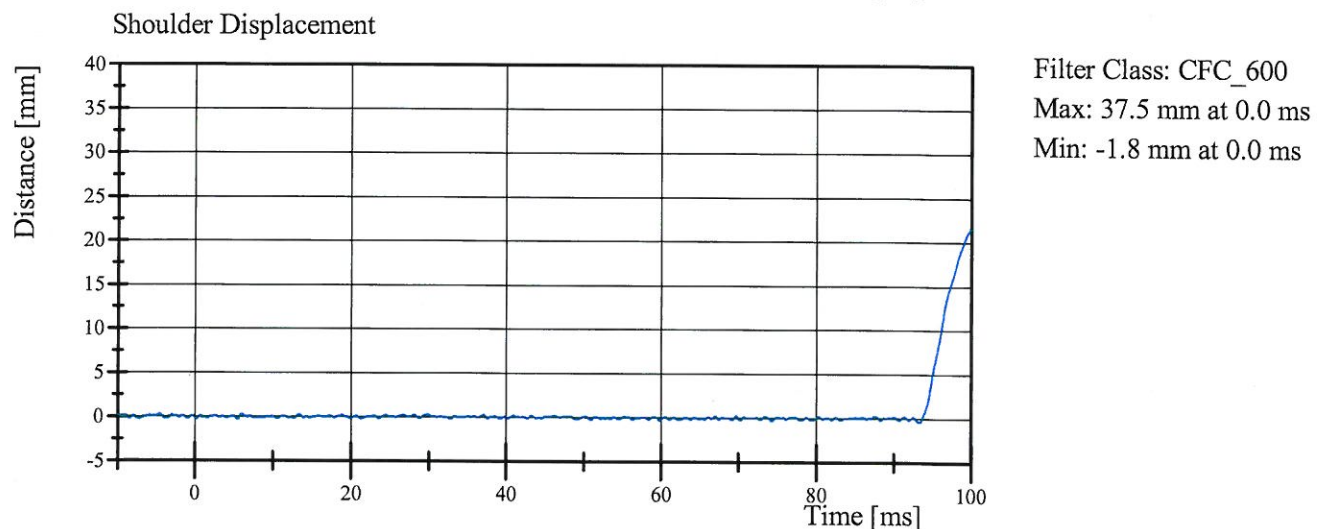
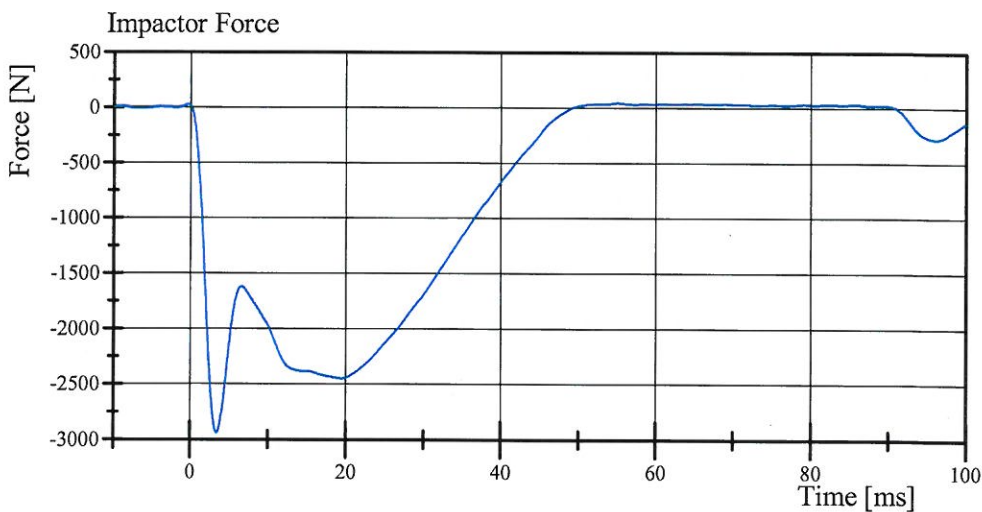
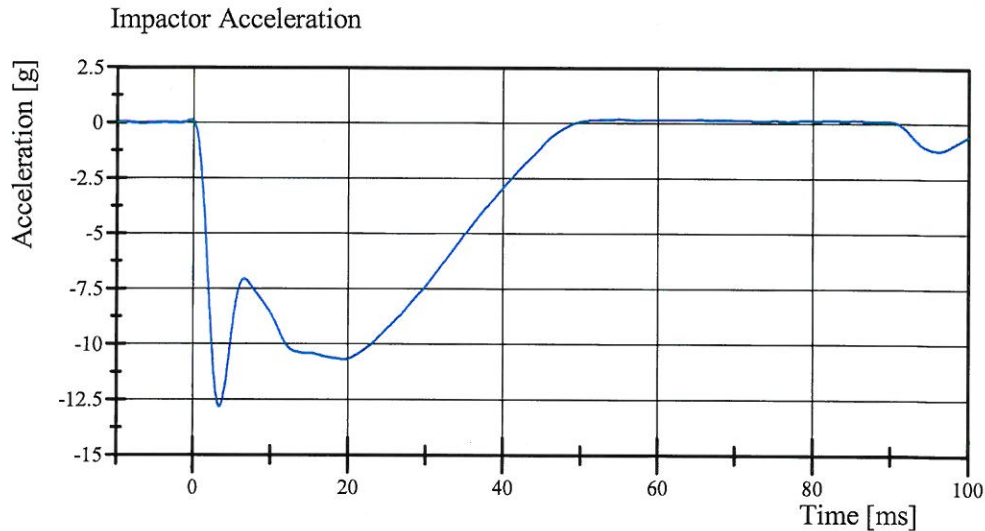


Transportation Research Center Inc.

Left Lateral Shoulder

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/17/2012



Transportation Research Center Inc.

Left Lateral Thorax with Arm

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/17/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.82 m/s	No
Impactor Force	(-4,900) - (-5,800) N	-5,406.7 N	Yes
Upper Thorax Rib Displacement	35 - 47 mm	39.9 mm	Yes
Center Thorax Rib Displacement	46 - 56 mm	49.7 mm	Yes
Lower Thorax Rib Displacement	39 - 46 mm	42.8 mm	Yes
Upper Spine Lateral Acceleration	28 - 37 g	27.8 g	No
Lower Spine Lateral Acceleration	22 - 28 g	21.6 g	No

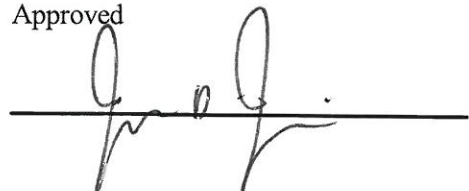
Test does not meet specifications.

Comments: Ok per A.Louden

Technician



Approved

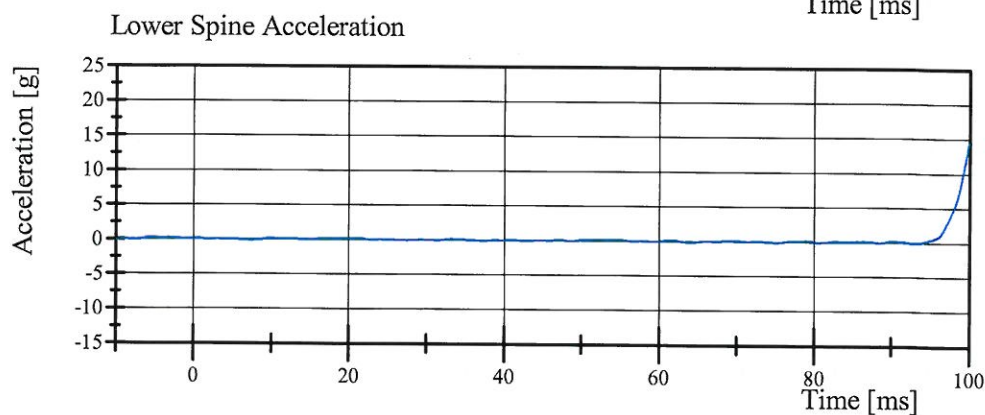
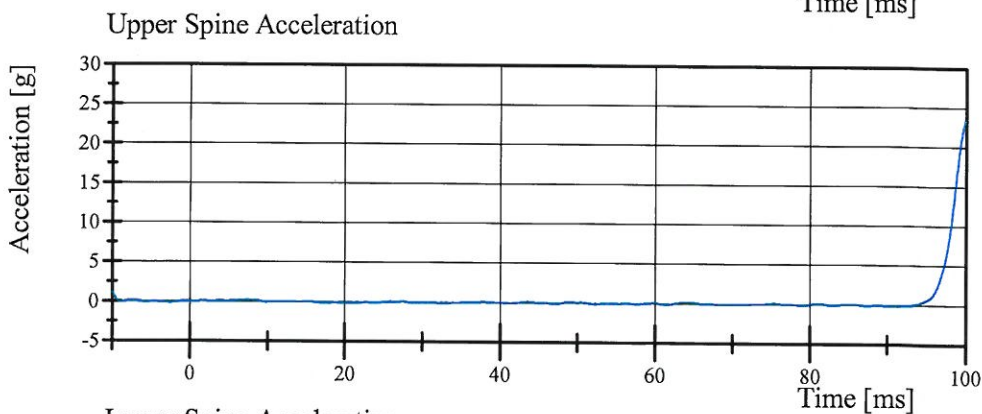
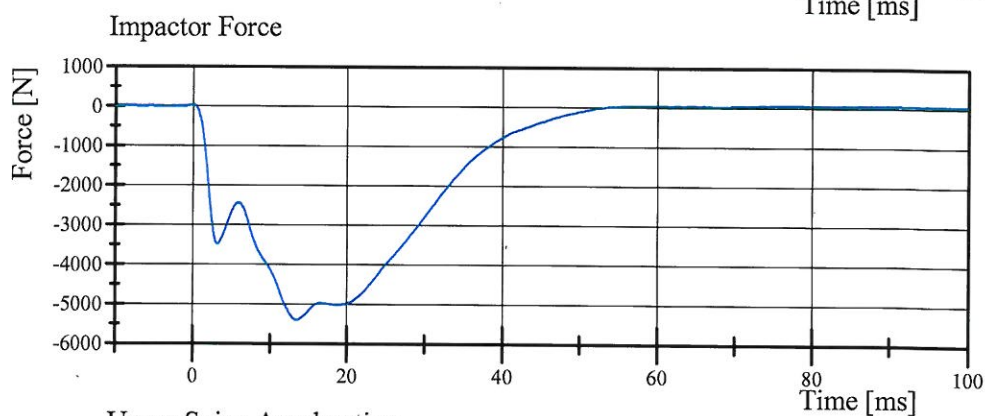
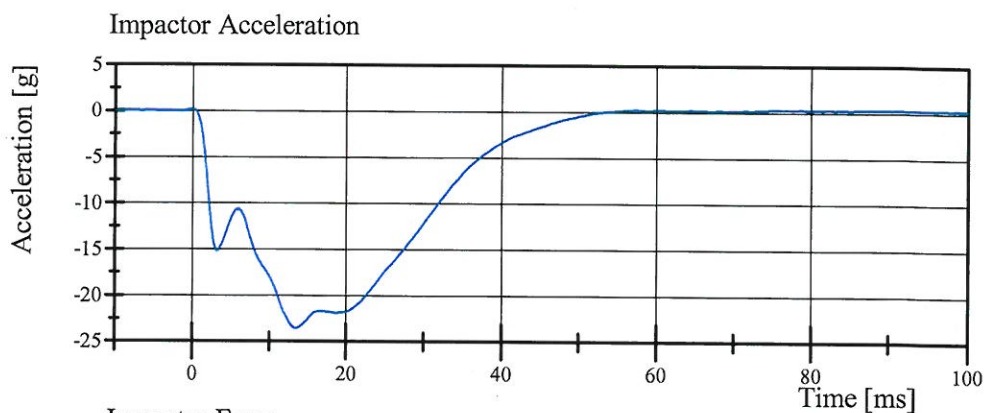


Transportation Research Center Inc.

Left Lateral Thorax with Arm

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/17/2012



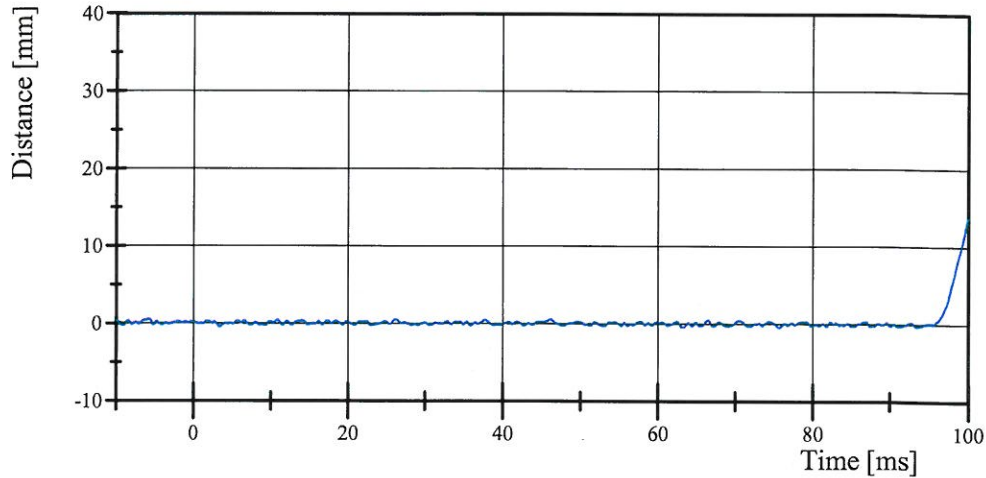
Transportation Research Center Inc.

Left Lateral Thorax with Arm

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

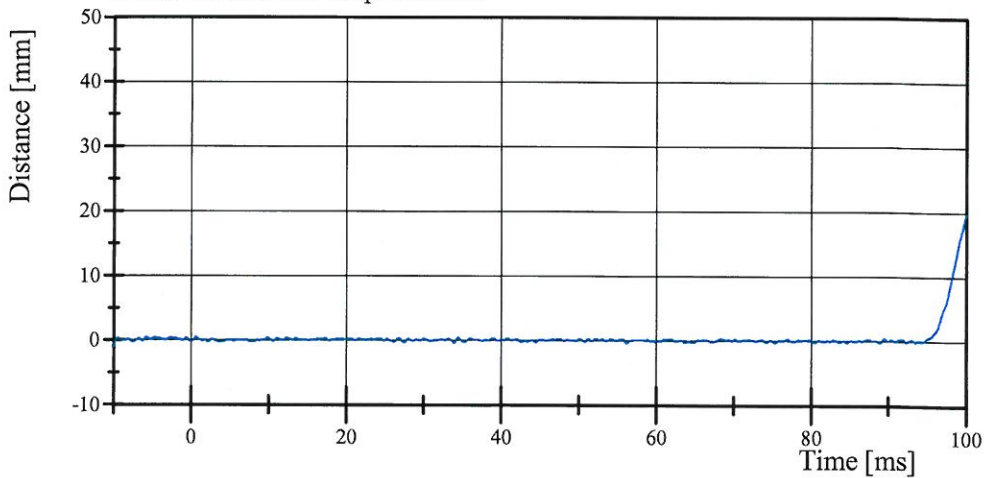
Test Date: 9/17/2012

Upper Thorax Rib Displacement



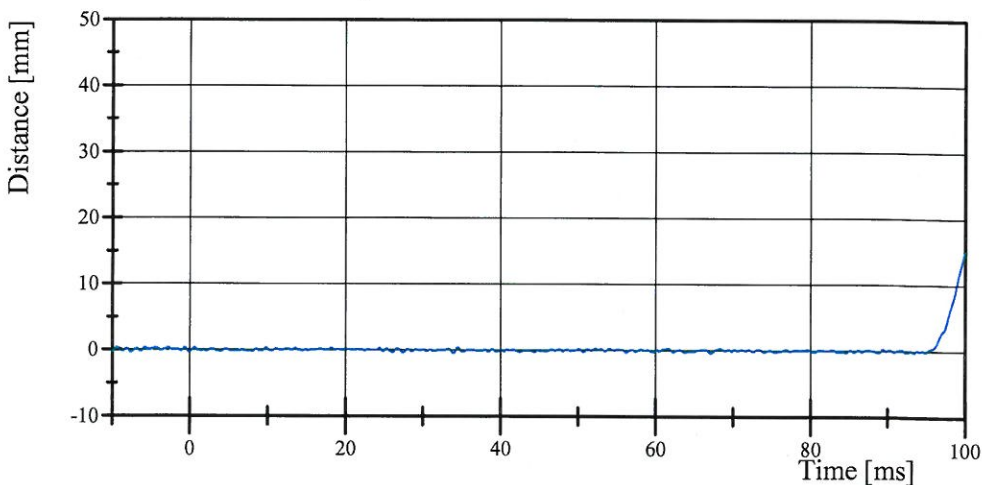
Filter Class: CFC_600
Max: 39.9 mm at 0.0 ms
Min: -3.5 mm at 0.0 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 49.7 mm at 0.0 ms
Min: -1.9 mm at 0.0 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 42.8 mm at 0.0 ms
Min: -0.9 mm at 0.0 ms

Transportation Research Center Inc.

Left Lateral Thorax without Arm

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/18/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Impactor Velocity	4.20 - 4.40 m/s	4.339 m/s	Yes
Impactor Force	(-3,200) - (-3,800) N	-3,654.4 N	Yes
Upper Thorax Rib Displacement	33 - 43 mm	35.4 mm	Yes
Center Thorax Rib Displacement	35 - 43 mm	36.6 mm	Yes
Lower Thorax Rib Displacement	32 - 40 mm	35.0 mm	Yes
Upper Spine Lateral Acceleration	14 - 20 g	15.2 g	Yes
Lower Spine Lateral Acceleration	14 - 22 g	17.0 g	Yes

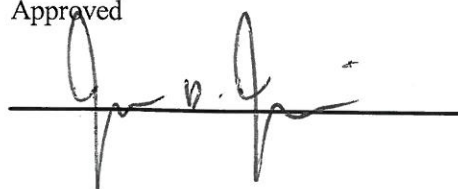
Test meets specifications.

Comments:

Technician



Approved

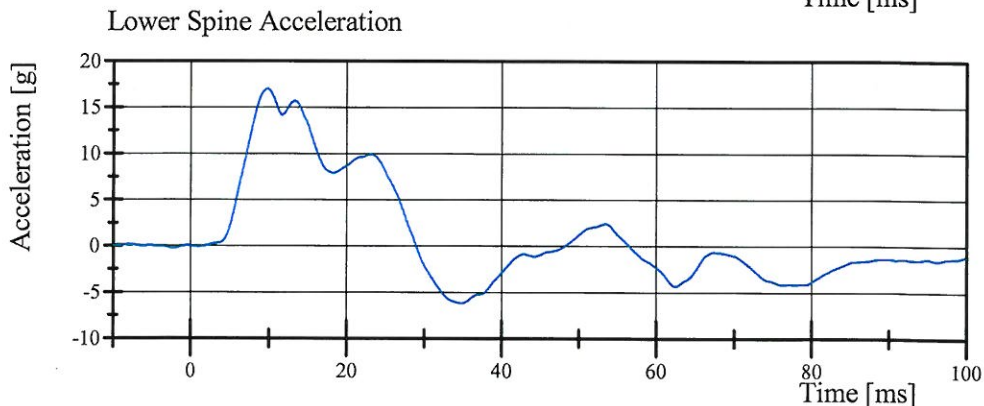
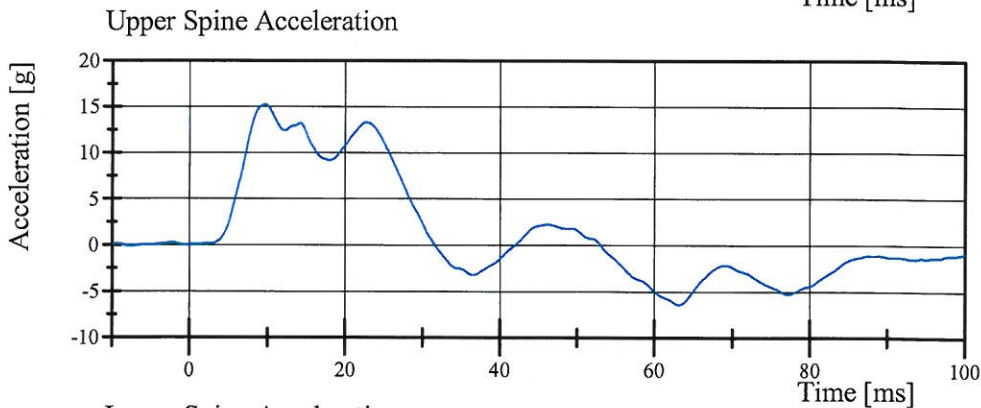
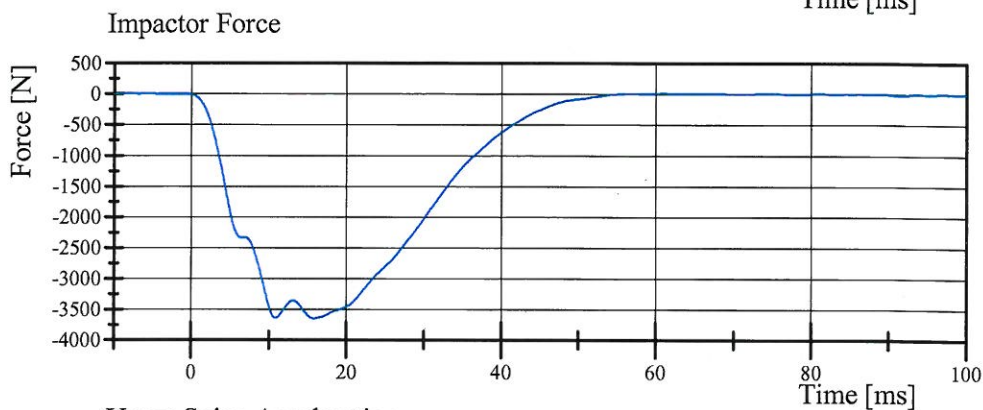
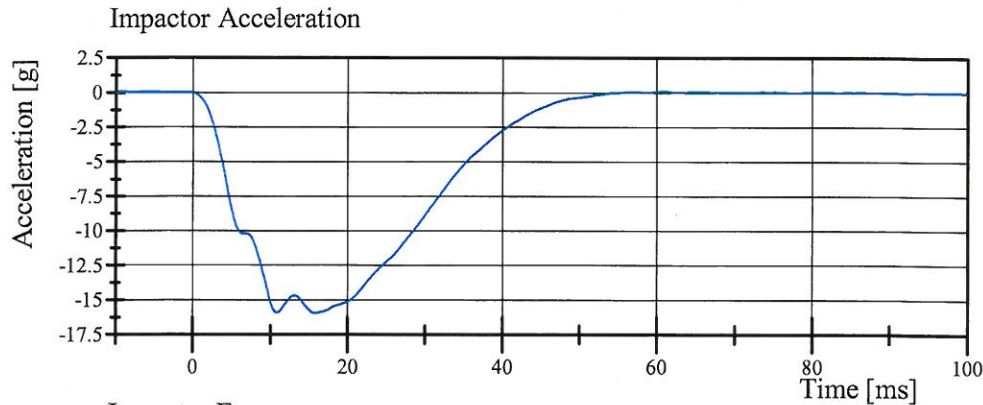


Transportation Research Center Inc.

Left Lateral Thorax without Arm

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/18/2012



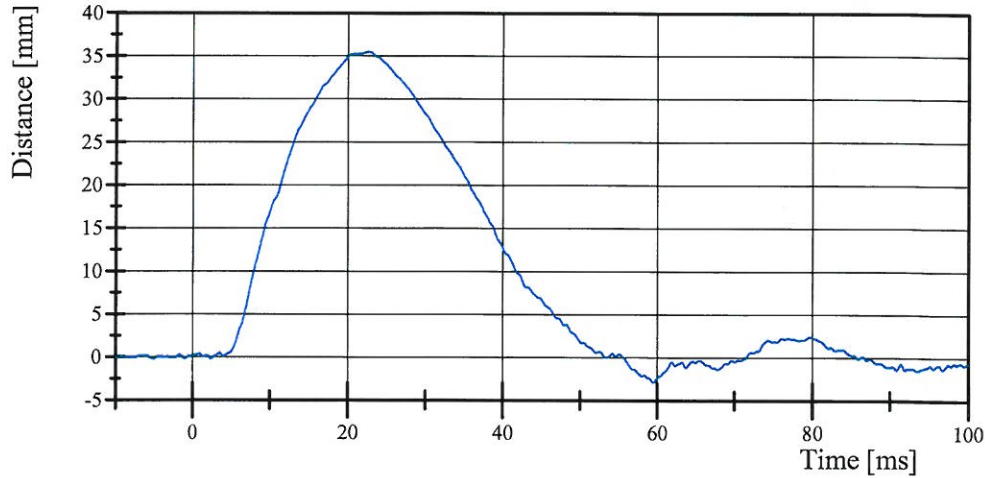
Transportation Research Center Inc.

Left Lateral Thorax without Arm

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/18/2012

Upper Thorax Rib Displacement

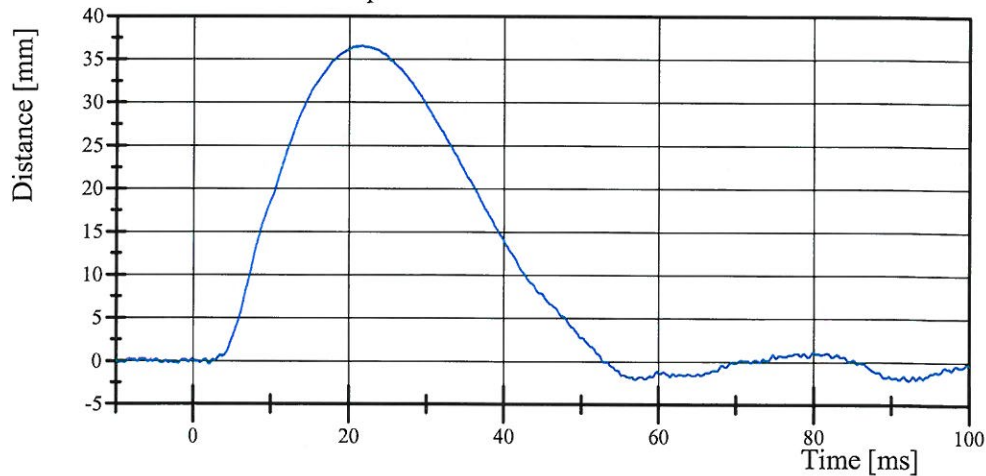


Filter Class: CFC_600

Max: 35.4 mm at 22.6 ms

Min: -2.9 mm at 59.6 ms

Center Thorax Rib Displacement

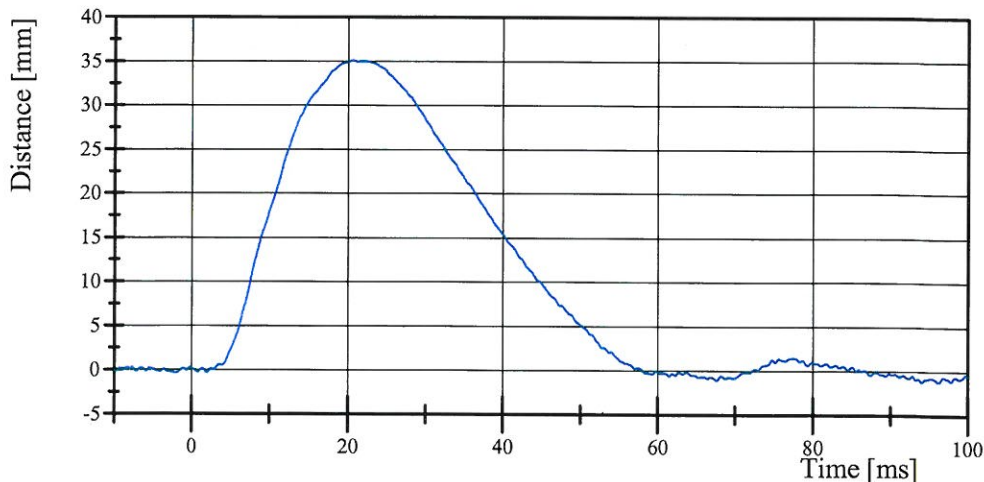


Filter Class: CFC_600

Max: 36.6 mm at 21.7 ms

Min: -2.2 mm at 92.3 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600

Max: 35.0 mm at 20.6 ms

Min: -1.2 mm at 94.1 ms

Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-3

Test Date: 9/18/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	66 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.29 m/s	Yes
Impactor Force	(-2,700) - (-3,100) N	-3,081.8 N	Yes
Upper Abdominal Rib Displacement	33 - 40 mm	35.3 mm	Yes
Lower Abdominal Rib Displacement	30 - 36 mm	31.4 mm	Yes
Lower Spine Lateral Acceleration	15 - 20 g	16.7 g	Yes

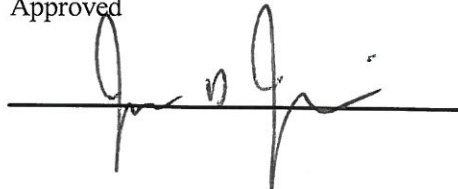
Test meets specifications.

Comments:

Technician



Approved

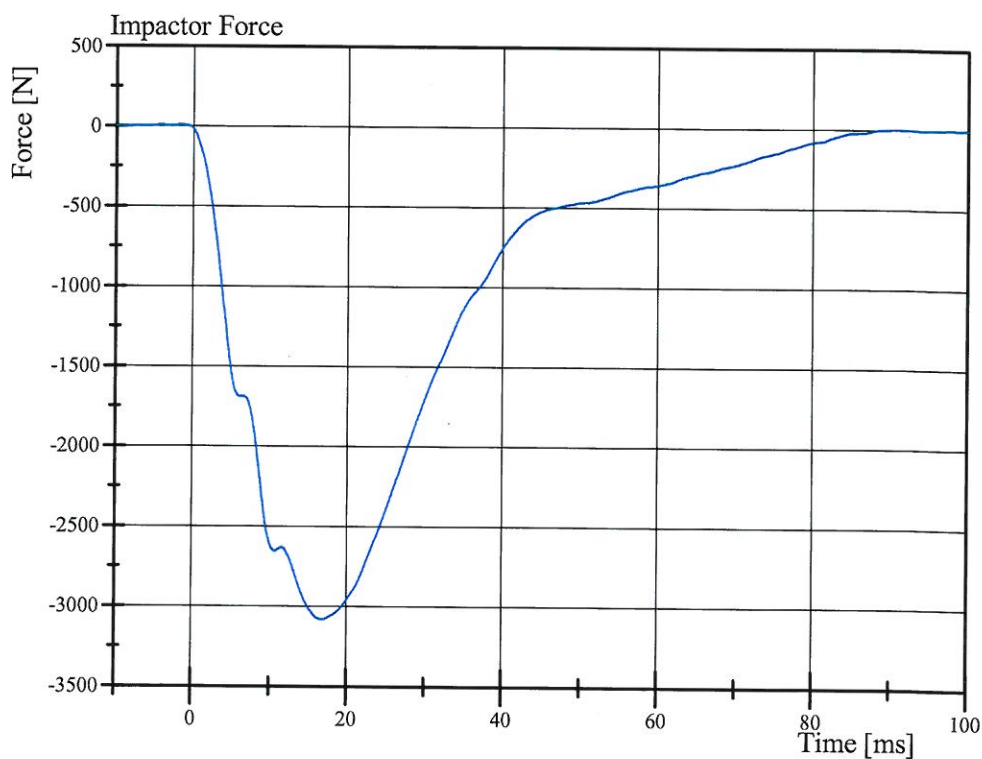
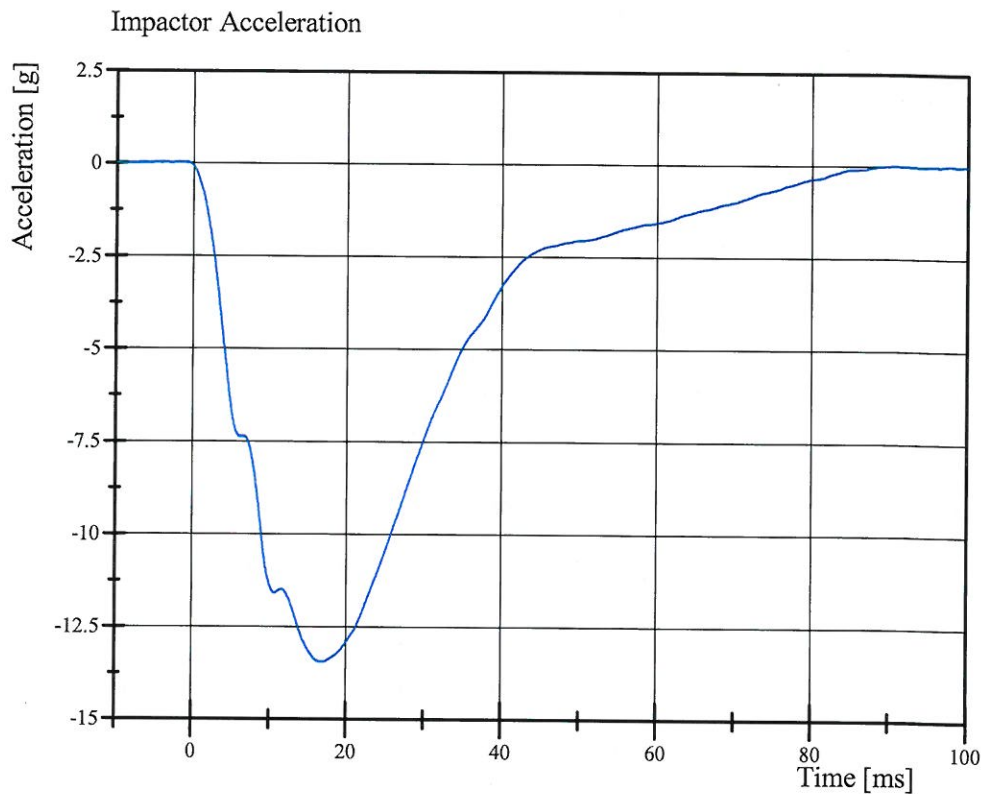


Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-3

Test Date: 9/18/2012



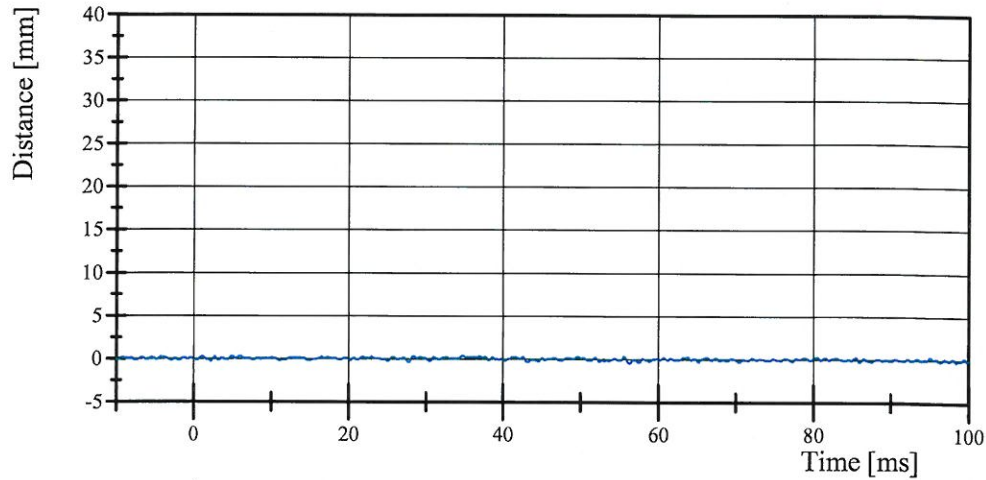
Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-3

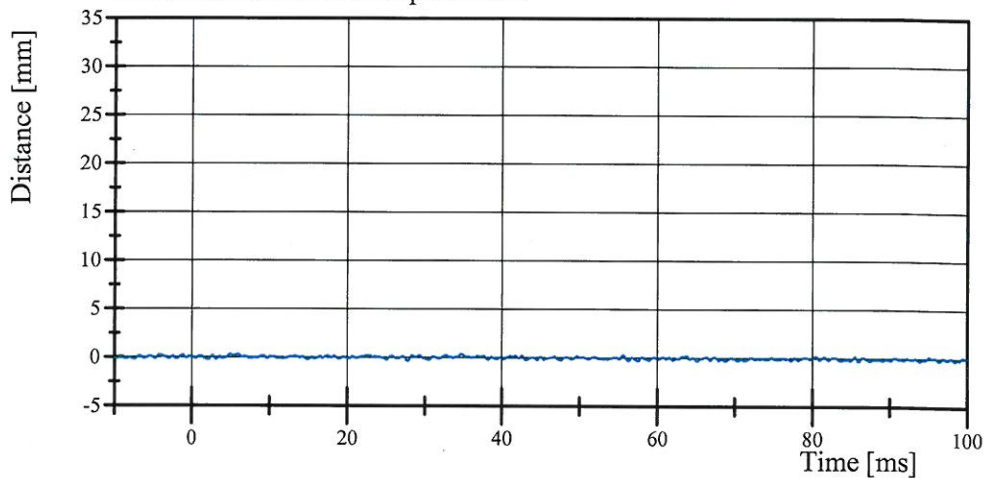
Test Date: 9/18/2012

Upper Abdominal Rib Displacement



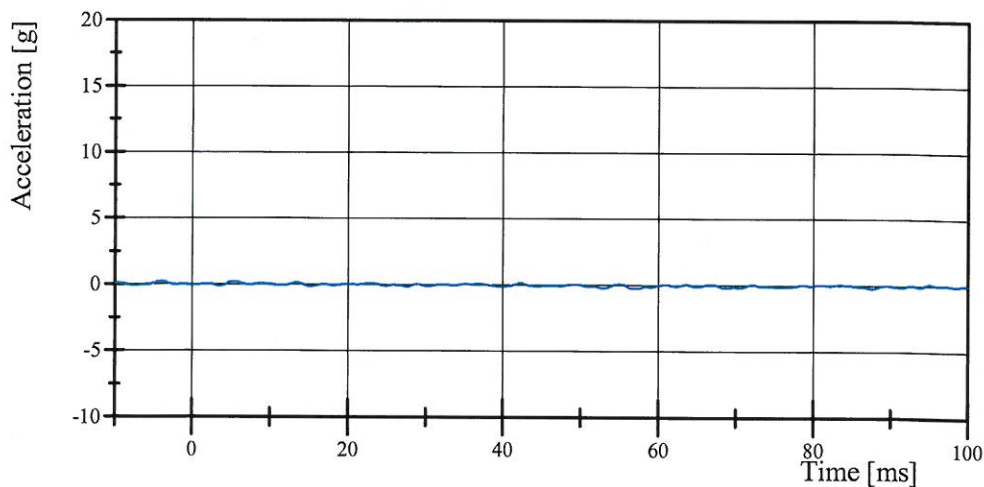
Filter Class: CFC_600
Max: 35.3 mm at 0.0 ms
Min: -0.6 mm at 0.0 ms

Lower Abdominal Rib Displacement



Filter Class: CFC_600
Max: 31.4 mm at 0.0 ms
Min: -0.9 mm at 0.0 ms

Lower Spine Acceleration (Y)



Filter Class: CFC_180
Max: 16.7 gn at 0.0 ms
Min: -8.1 gn at 0.0 ms

Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

Test Date: 9/18/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	66 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.77 m/s	Yes
Impactor Force	(-6,300) - (-7,800) N	-7,122.5 N	Yes
Pelvis Lateral Acceleration	41 - 51 g	44.4 g	Yes
Lower Spine Lateral Acceleration	10 - 14 g	12.5 g	Yes

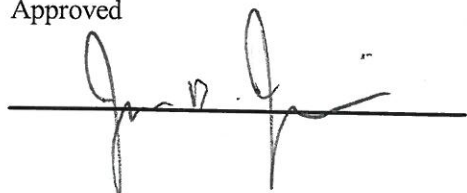
Test meets specifications.

Comments:

Technician



Approved



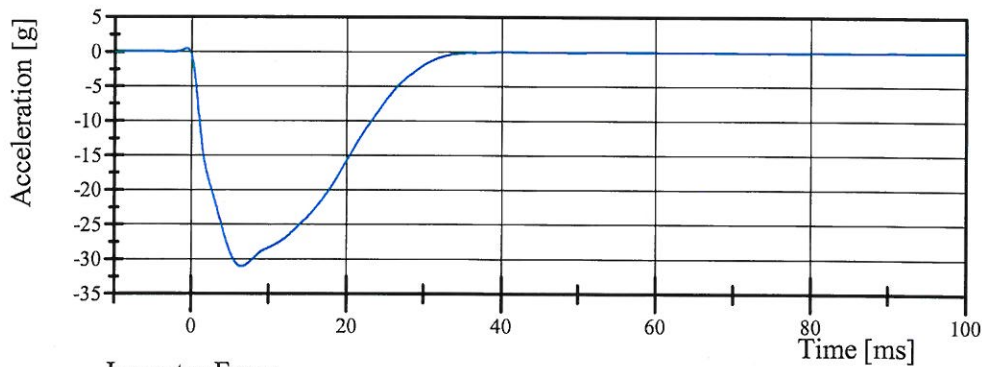
Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID ISO 15830-2 Serial No. 016 Certification No. 10-2

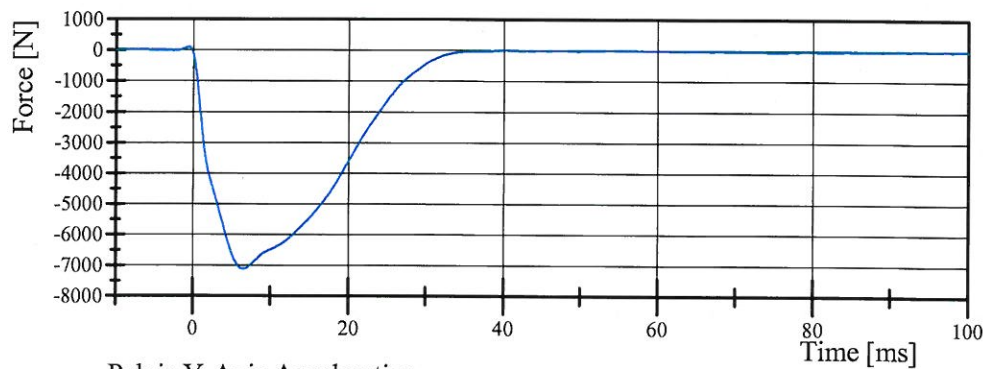
Test Date: 9/18/2012

Impactor Acceleration



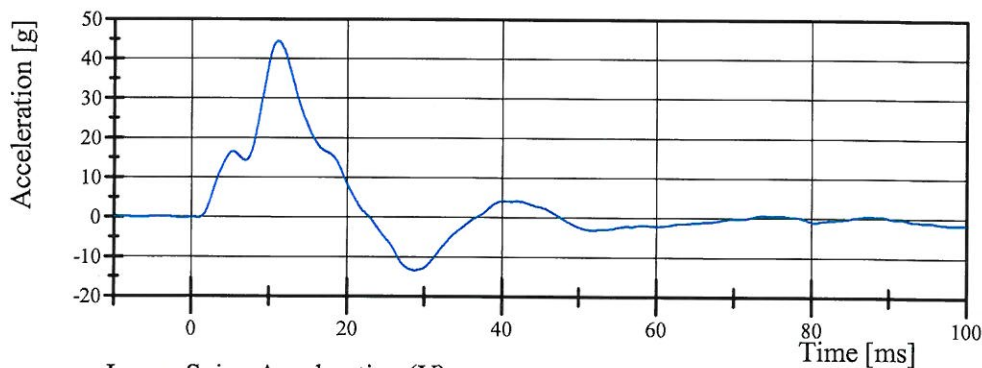
Filter Class: CFC_180
Max: 0.4 gn at -0.7 ms
Min: -31.1 gn at 6.5 ms

Impactor Force



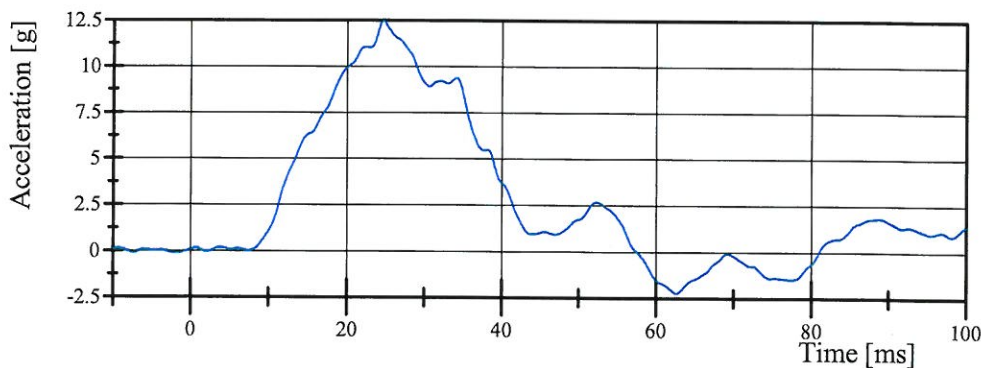
Filter Class: CFC_180
Max: 90.2 N at -0.7 ms
Min: -7,122.5 N at 6.5 ms

Pelvis Y-Axis Acceleration



Filter Class: CFC_180
Max: 44.4 gn at 11.2 ms
Min: -13.4 gn at 28.7 ms

Lower Spine Acceleration (Y)



Filter Class: CFC_180
Max: 12.5 gn at 24.7 ms
Min: -2.2 gn at 62.6 ms

Calibration Test Results

Pre-Test

WorldSID: 236

Configured for Left Side Impact

Transportation Research Center Inc.

Front Head Drop

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/7/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	63 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	242.0 g	No
Peak Head Lateral Acceleration	(-15) - 15 g	4.2 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

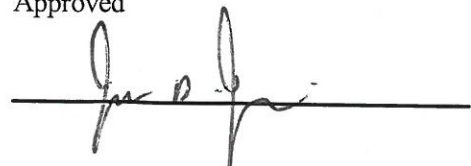
Test does not meet specifications.

Comments:

Technician



Approved



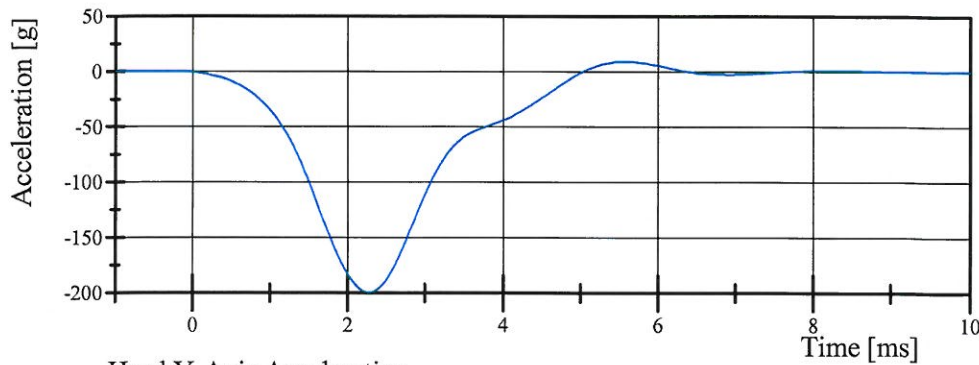
Transportation Research Center Inc.

Front Head Drop

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

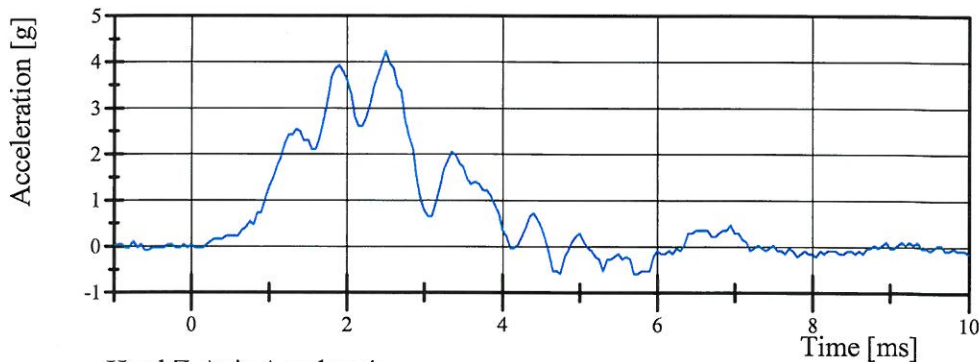
Test Date: 8/7/2012

Head X-Axis Acceleration



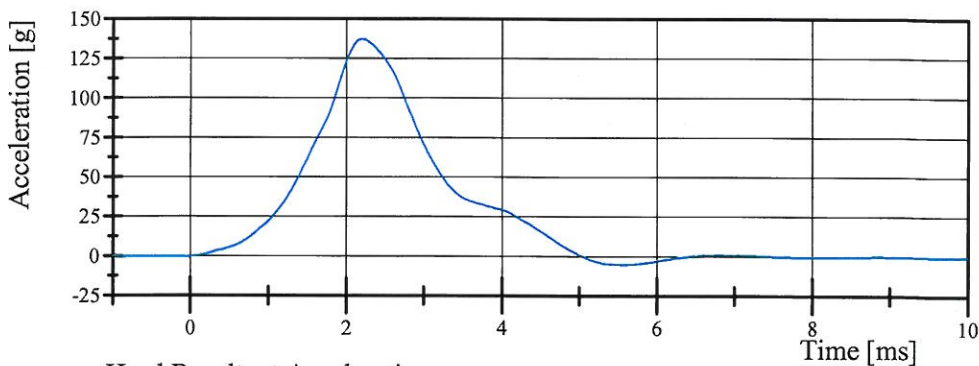
Filter Class: CFC_1000
Max: 9.2 gn at 5.6 ms
Min: -199.4 gn at 2.3 ms

Head Y-Axis Acceleration



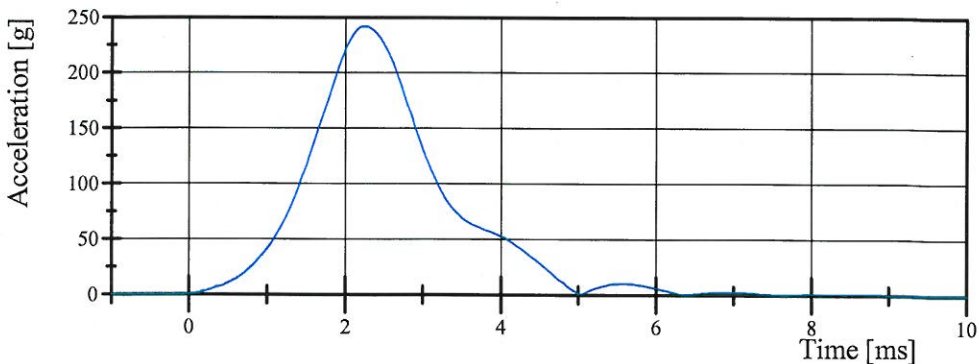
Filter Class: CFC_1000
Max: 4.2 gn at 2.5 ms
Min: -0.6 gn at 4.8 ms

Head Z-Axis Acceleration



Filter Class: CFC_1000
Max: 137.5 gn at 2.2 ms
Min: -5.0 gn at 5.6 ms

Head Resultant Acceleration



Filter Class: CFC_1000
Max: 242.0 gn at 2.3 ms
Min: 0.0 gn at 9.6 ms

Transportation Research Center Inc.

Left Lateral Head Drop

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/7/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Peak Head Resultant Acceleration	124 - 149 g	111.4 g	No
Peak Head Longitudinal Acceleration	(-15) - 15 g	4.4 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

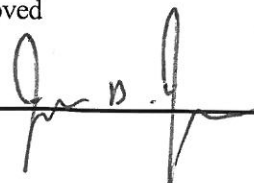
Test does not meet specifications.

Comments:

Technician



Approved



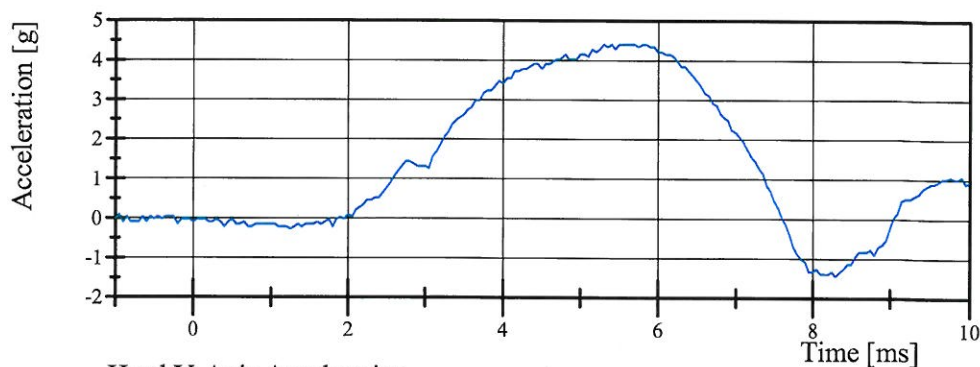
Transportation Research Center Inc.

Left Lateral Head Drop

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/7/2012

Head X-Axis Acceleration

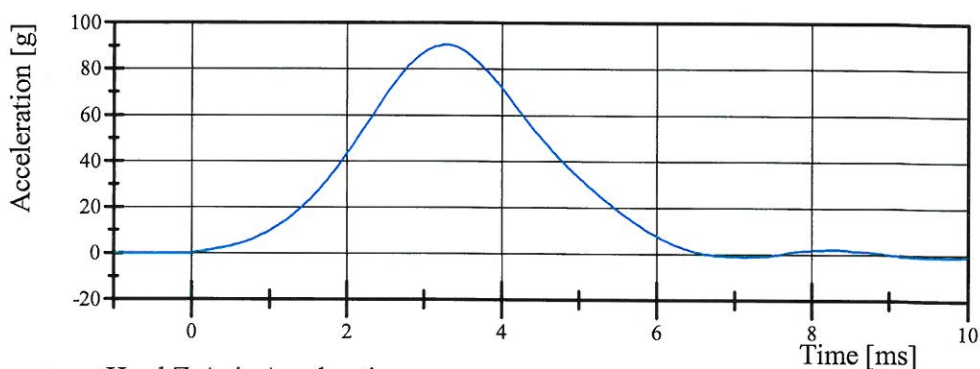


Filter Class: CFC_1000

Max: 4.4 gn at 5.3 ms

Min: -1.4 gn at 8.3 ms

Head Y-Axis Acceleration

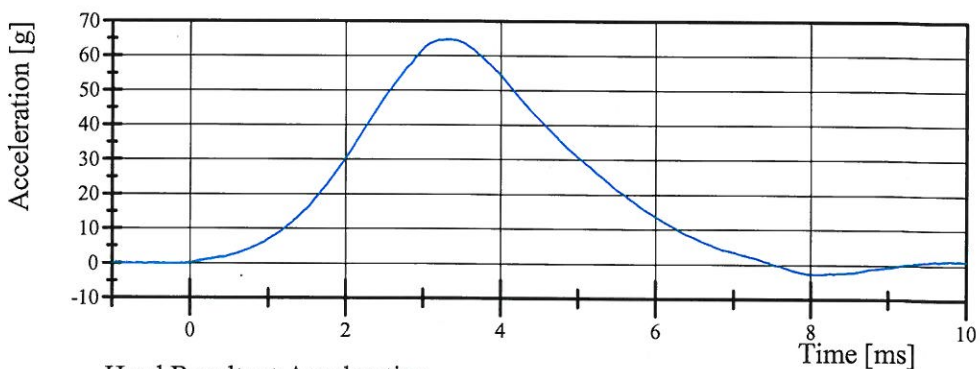


Filter Class: CFC_1000

Max: 90.6 gn at 3.3 ms

Min: -1.0 gn at 7.1 ms

Head Z-Axis Acceleration

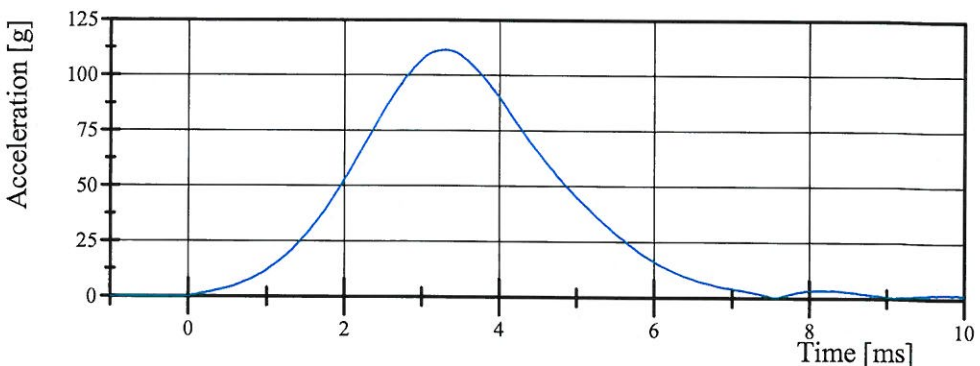


Filter Class: CFC_1000

Max: 64.8 gn at 3.3 ms

Min: -2.6 gn at 8.1 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 111.4 gn at 3.3 ms

Min: 0.0 gn at -1.0 ms

Transportation Research Center Inc.

Right Lateral Head Drop

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/7/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Peak Head Resultant Acceleration	124 - 149 g	111.8 g	No
Peak Head Longitudinal Acceleration	(-15) - 15 g	5.0 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

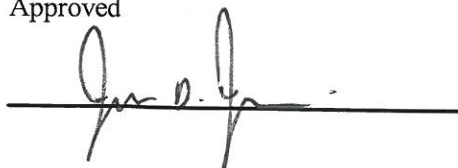
Test does not meet specifications.

Comments:

Technician



Approved



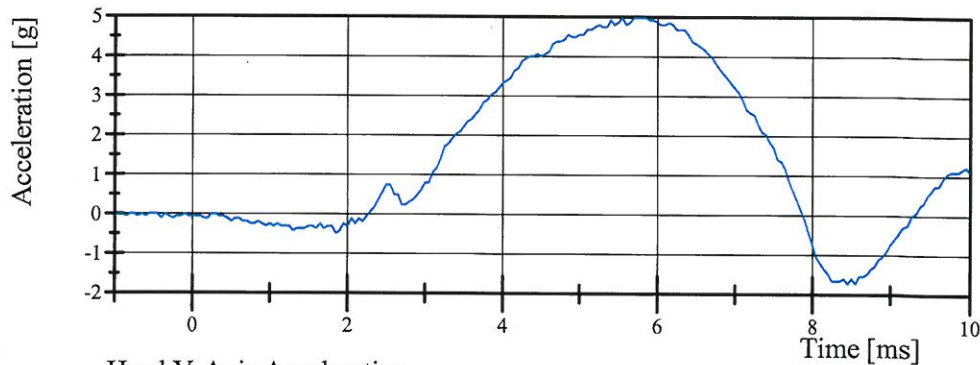
Transportation Research Center Inc.

Right Lateral Head Drop

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/7/2012

Head X-Axis Acceleration

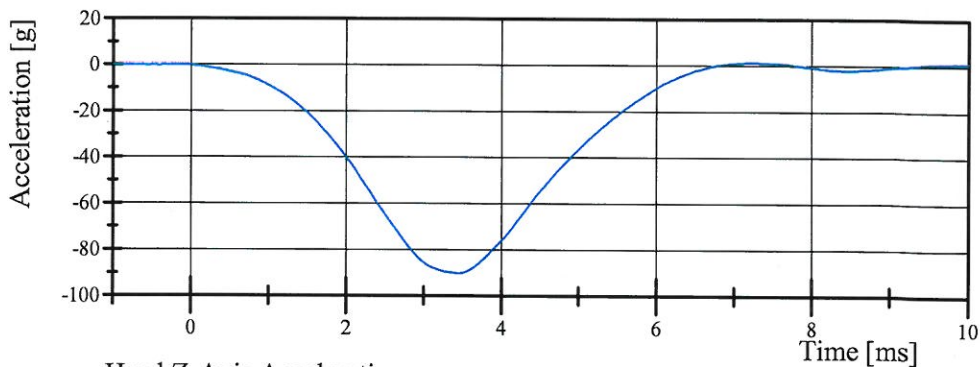


Filter Class: CFC_1000

Max: 5.0 gn at 5.6 ms

Min: -1.7 gn at 8.5 ms

Head Y-Axis Acceleration

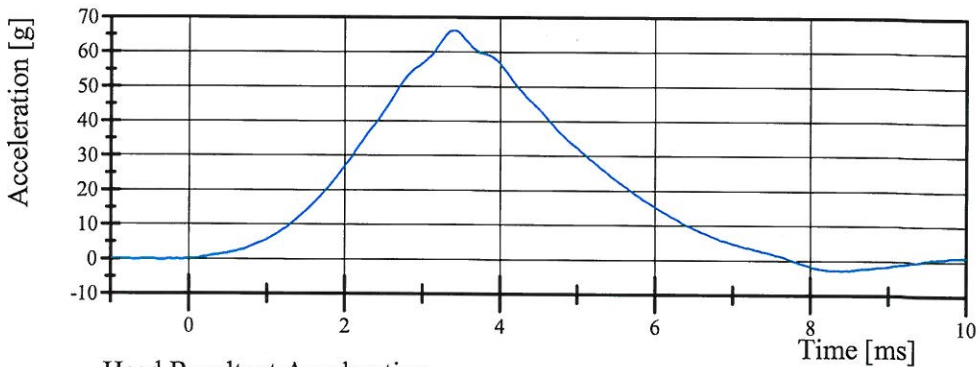


Filter Class: CFC_1000

Max: 1.4 gn at 7.2 ms

Min: -90.2 gn at 3.5 ms

Head Z-Axis Acceleration

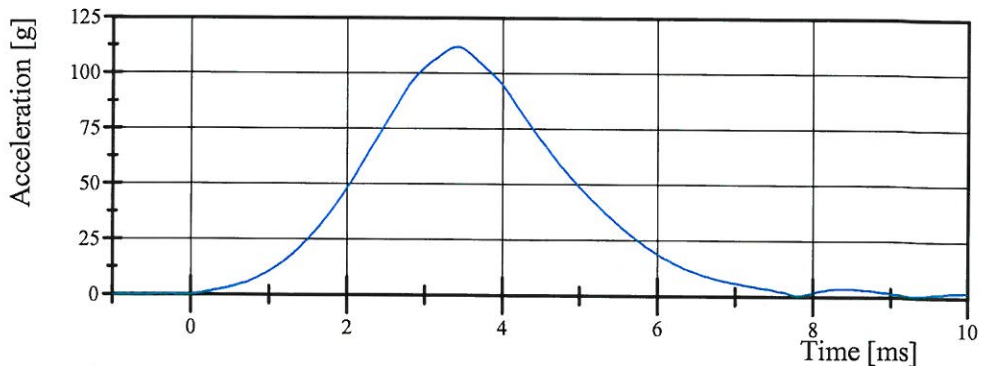


Filter Class: CFC_1000

Max: 66.3 gn at 3.4 ms

Min: -2.7 gn at 8.4 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 111.8 gn at 3.4 ms

Min: 0.0 gn at -0.6 ms

Transportation Research Center Inc.

Left Lateral Neck

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-5

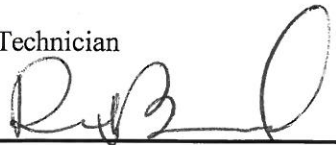
Test Date: 8/8/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	62 %	Yes
Pendulum Velocity	(-3.3) - (-3.5) m/s	-3.39 m/s	Yes
Pendulum Integrated Velocity			
Change at 4 ms	0.77 - 1.04 m/s	0.872 m/s	Yes
Change at 8 ms	1.6 - 2.16 m/s	1.801 m/s	Yes
Change at 12 ms	2.43 - 3.29 m/s	2.839 m/s	Yes
Maximum Headform Flexion	(-58.5) - (-71.4) deg	-64.32 deg	Yes
Headform Flexion Decay			
- from Peak to Zero Degrees	57.3 - 76.5 ms	60.85 ms	Yes
Total Neck Occipital Condyles Moment	34.2 - 51.0 N·m	43.19 N·m	Yes
Total Neck Occipital Condyles Moment			
Decay Time to 0 N·m	69.4 - 93.3 ms	81.35 ms	Yes
Maximum Forward Pot Rotation			
Peak	(-38.4) - (-46.9) °	-41.15 °	Yes
Time of Peak	56.0 - 68.5 ms	62.05 ms	Yes
Maximum Rear Pot Rotation			
Peak	(-33.9) - (-41.5) °	-35.89 °	Yes
Time of Peak	56.5 - 69.1 ms	60.90 ms	Yes

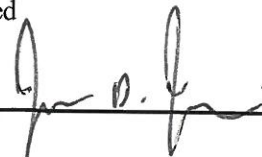
Test meets specifications.

Comments:

Technician



Approved

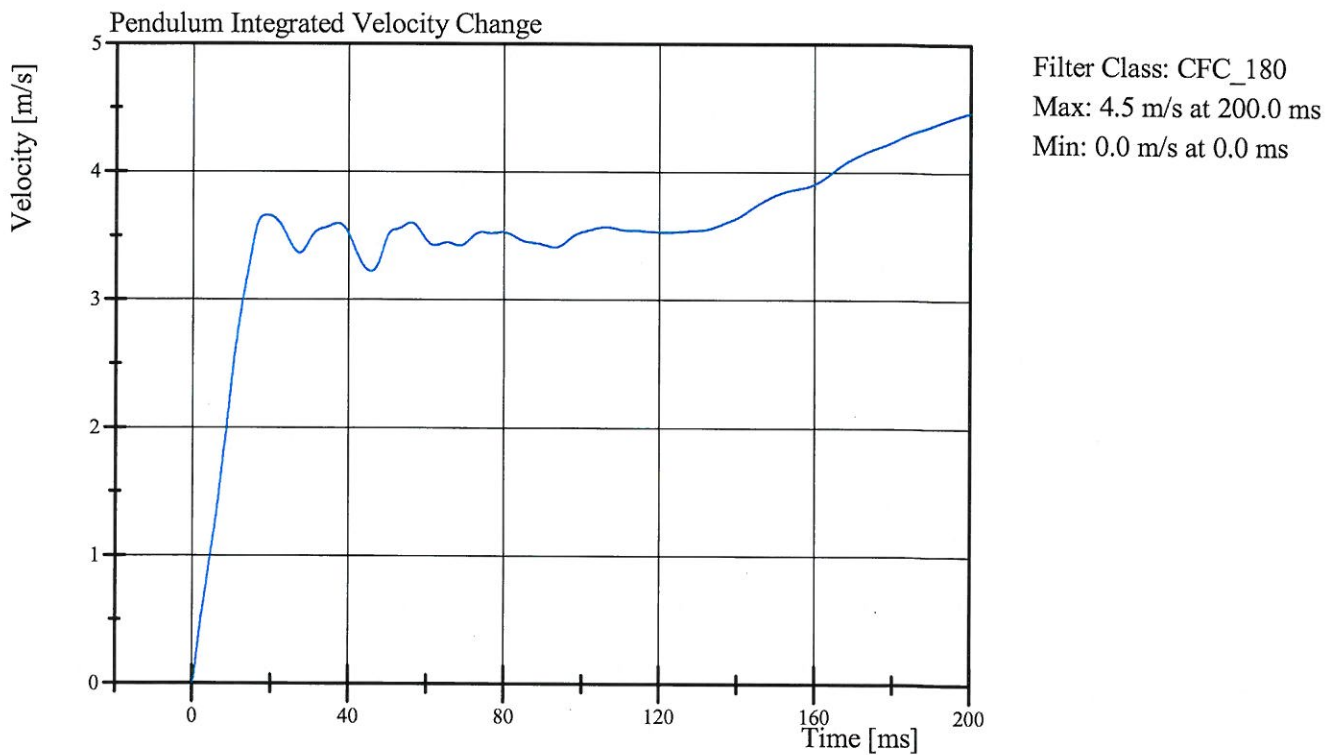
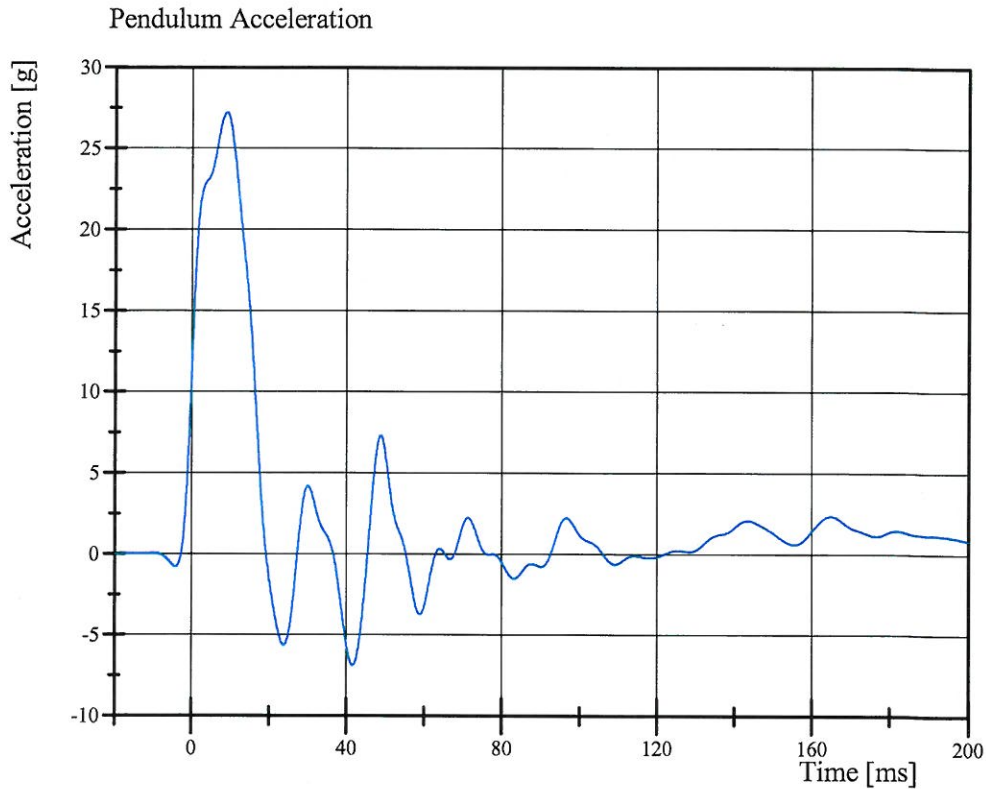


Transportation Research Center Inc.

Left Lateral Neck

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-5

Test Date: 8/8/2012



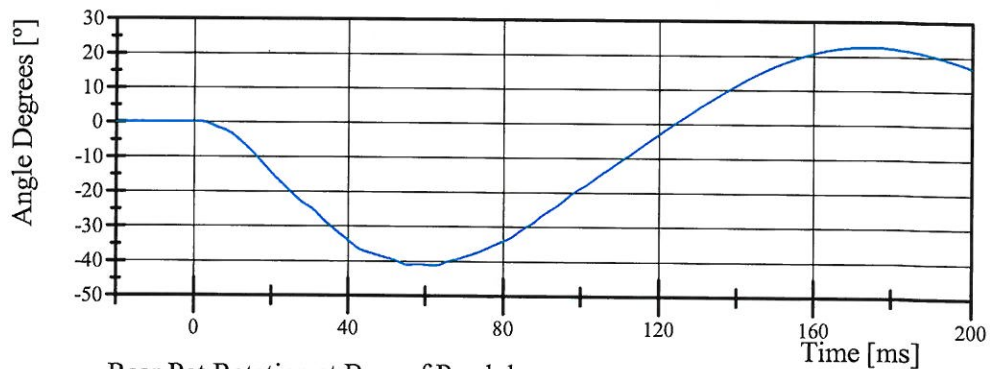
Transportation Research Center Inc.

Left Lateral Neck

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-5

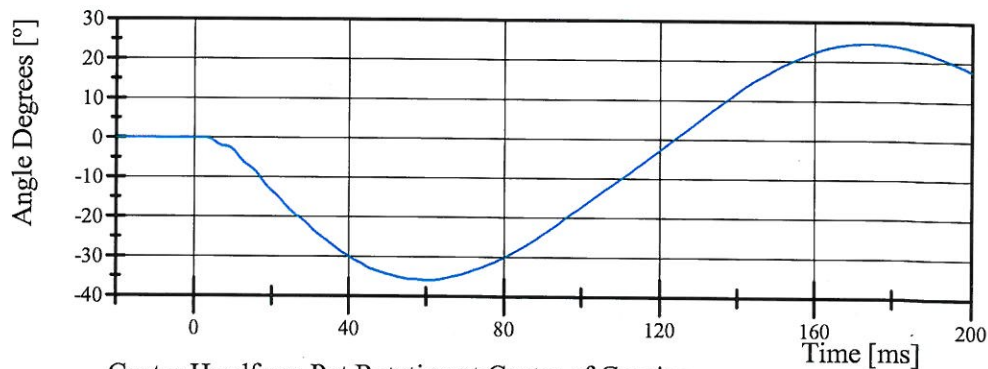
Test Date: 8/8/2012

Forward Pot Rotation at Base of Pendulum



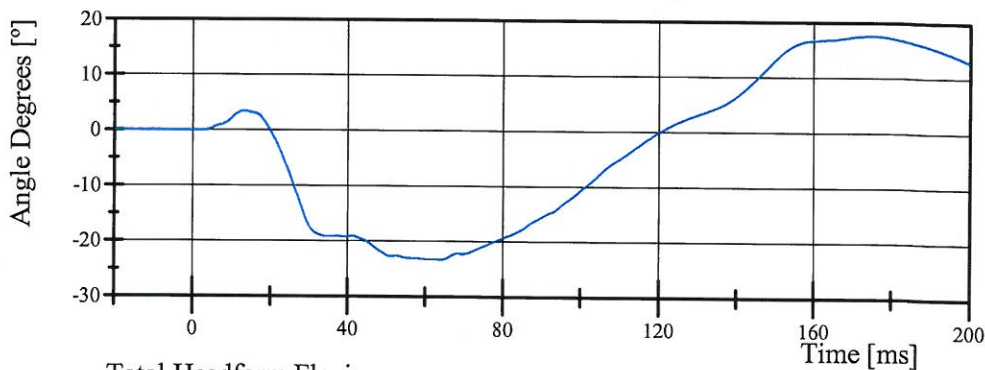
Filter Class: CFC_180
Max: 22.7 ° at 174.0 ms
Min: -41.1 ° at 62.1 ms

Rear Pot Rotation at Base of Pendulum



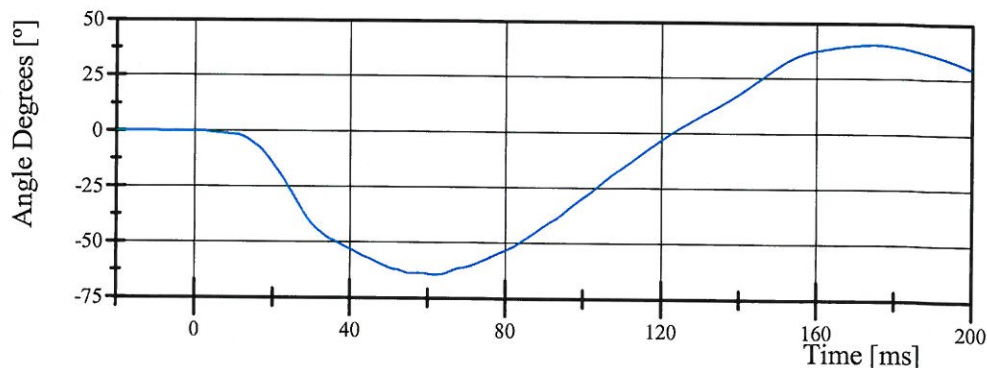
Filter Class: CFC_180
Max: 24.6 ° at 173.8 ms
Min: -35.9 ° at 60.9 ms

Center Headform Pot Rotation at Center of Gravity



Filter Class: CFC_180
Max: 17.7 ° at 175.1 ms
Min: -23.3 ° at 64.1 ms

Total Headform Flexion



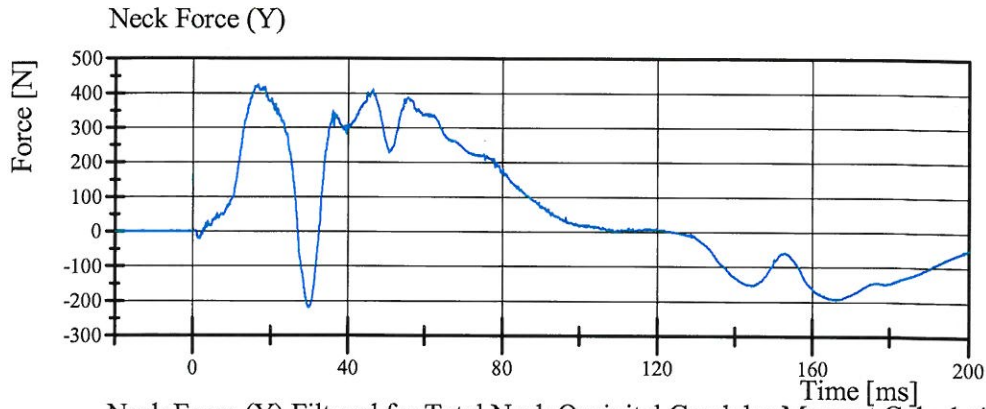
Filter Class: CFC_180
Max: 40.4 ° at 174.8 ms
Min: -64.3 ° at 61.9 ms

Transportation Research Center Inc.

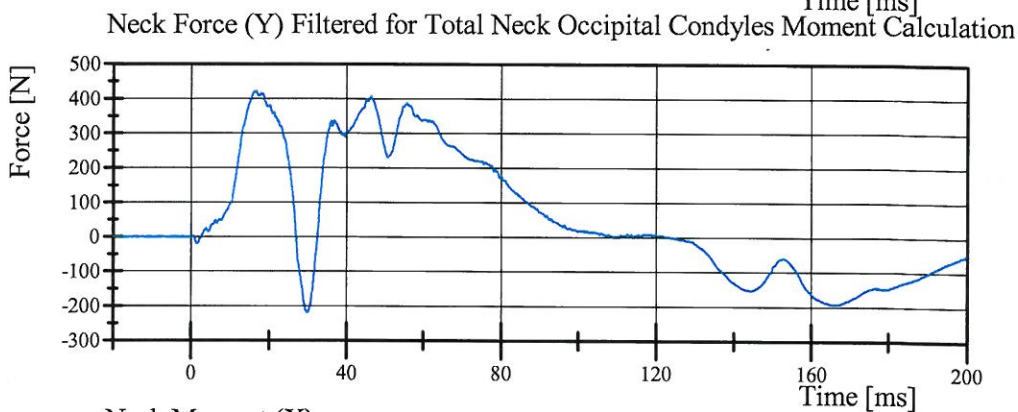
Left Lateral Neck

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-5

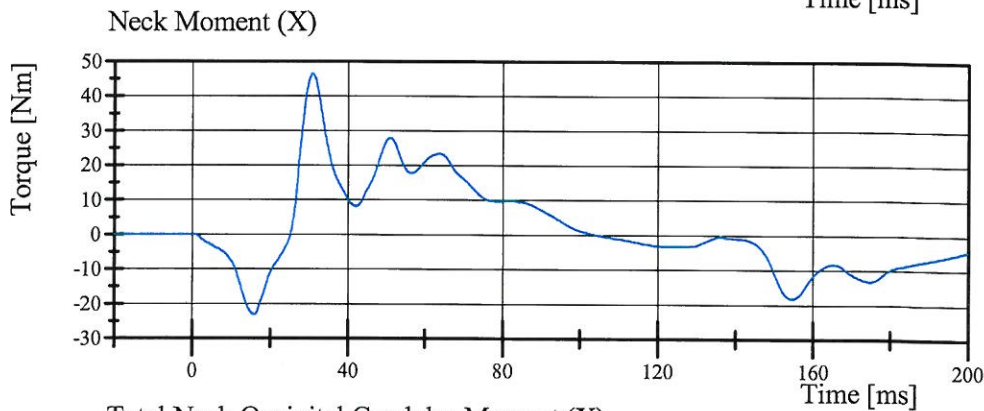
Test Date: 8/8/2012



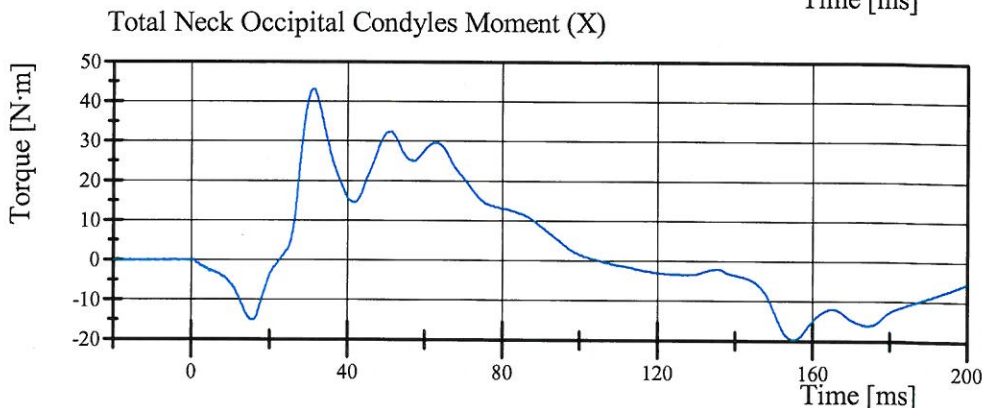
Filter Class: CFC_1000
Max: 423.5 N at 16.6 ms
Min: -219.7 N at 29.8 ms



Filter Class: CFC_600
Max: 421.8 N at 16.6 ms
Min: -218.9 N at 29.8 ms



Filter Class: CFC_600
Max: 46.5 Nm at 30.8 ms
Min: -23.2 Nm at 15.9 ms



Filter Class: Without (Consta
Max: 43.2 N·m at 31.3 ms
Min: -19.7 N·m at 155.2 ms

Transportation Research Center Inc.

Left Lateral Shoulder

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-2

Test Date: 8/13/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.31 m/s	Yes
Impactor Force	(-1,580) - (-2,280) N	-2,098.9 N	Yes
Shoulder Displacement	23.4 - 36.6 mm	29.64 mm	Yes

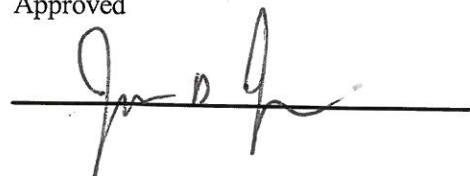
Test meets specifications.

Comments:

Technician



Approved



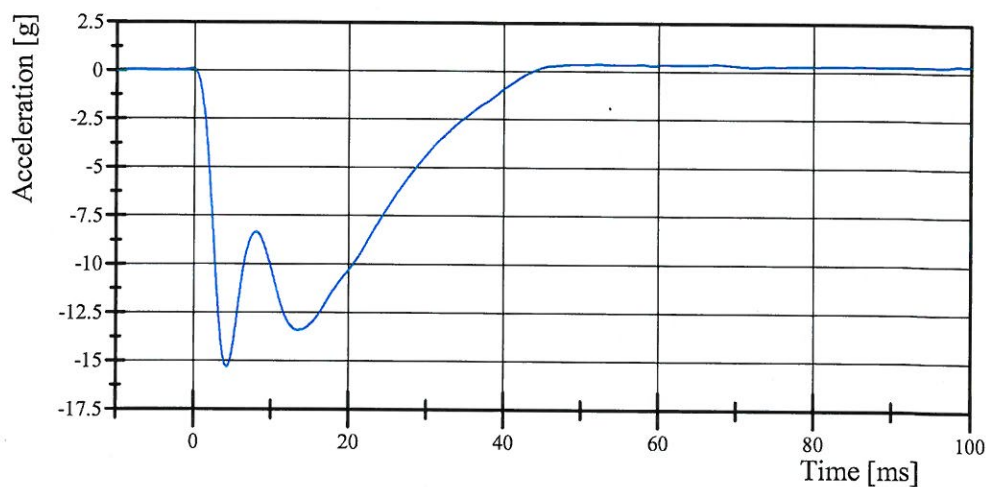
Transportation Research Center Inc.

Left Lateral Shoulder

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-2

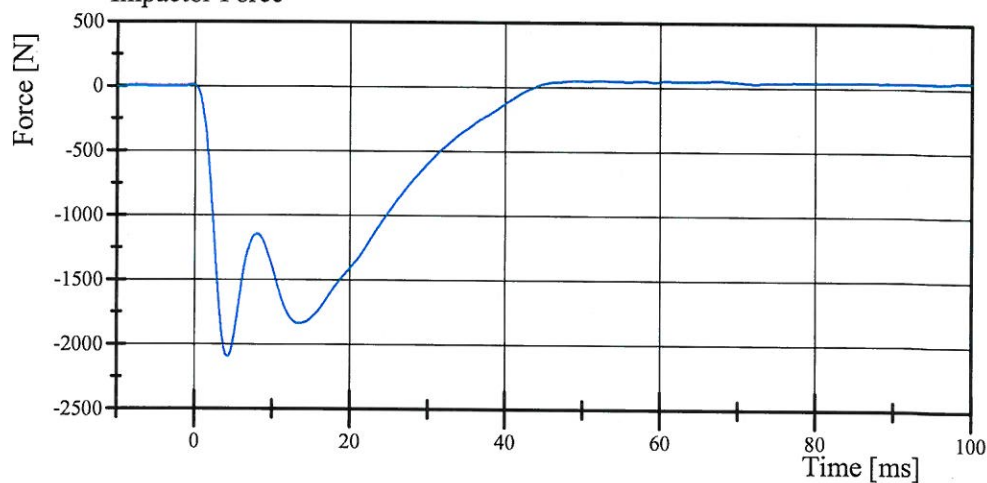
Test Date: 8/13/2012

Impactor Acceleration



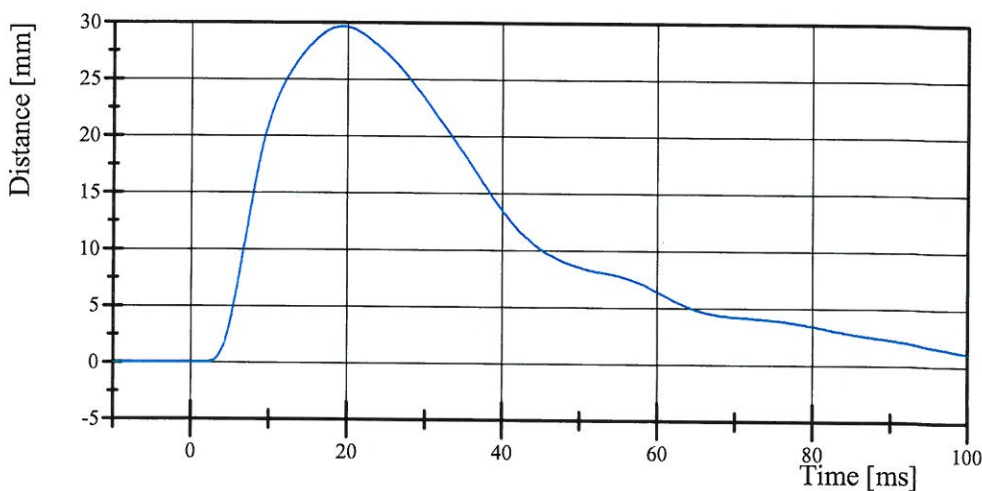
Filter Class: CFC_180
Max: 0.4 gn at 67.3 ms
Min: -15.3 gn at 4.3 ms

Impactor Force



Filter Class: CFC_180
Max: 52.4 N at 67.3 ms
Min: -2,098.9 N at 4.3 ms

Shoulder Displacement



Filter Class: CFC_600
Max: 29.6 mm at 19.5 ms
Min: -0.0 mm at -7.4 ms

Transportation Research Center Inc.

Left Lateral Thorax with Arm

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	66 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.73 m/s	Yes
Impactor Force	(-5,020) - (-6,130) N	-5,733.8 N	Yes
Upper Thorax Rib Displacement	18.3 - 26.4 mm	19.84 mm	Yes
Center Thorax Rib Displacement	21.6 - 26.4 mm	22.60 mm	Yes
Lower Thorax Rib Displacement	19.7 - 26.6 mm	21.03 mm	Yes
Upper Spine Lateral Acceleration	34.7 - 52.0 g	48.18 g	Yes
Lower Spine Lateral Acceleration	44.5 - 54.9 g	52.38 g	Yes

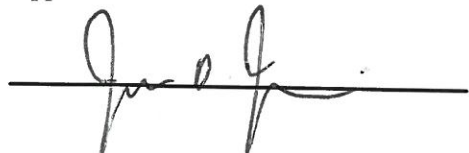
Test meets specifications.

Comments:

Technician



Approved

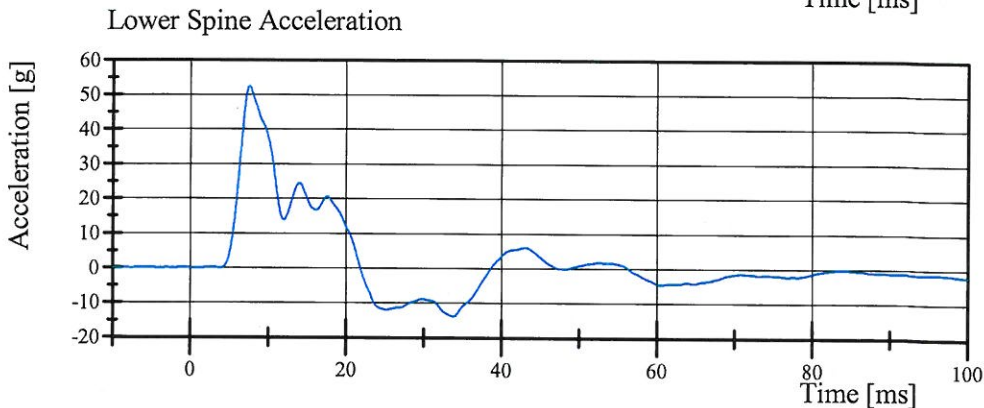
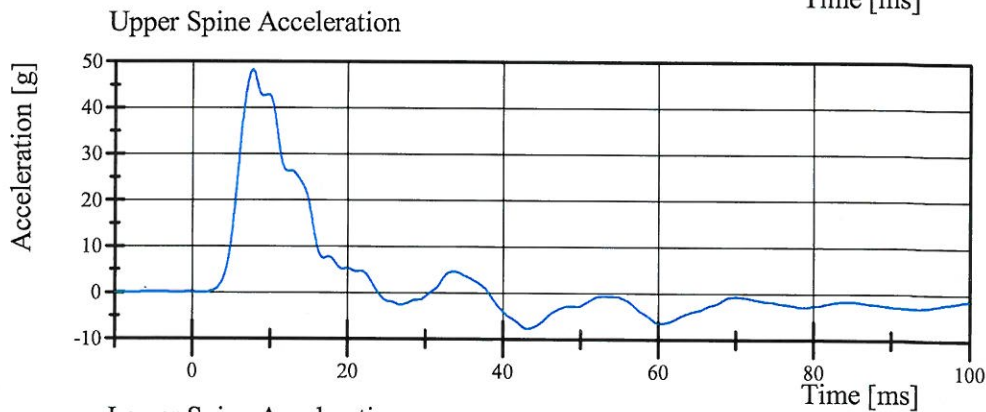
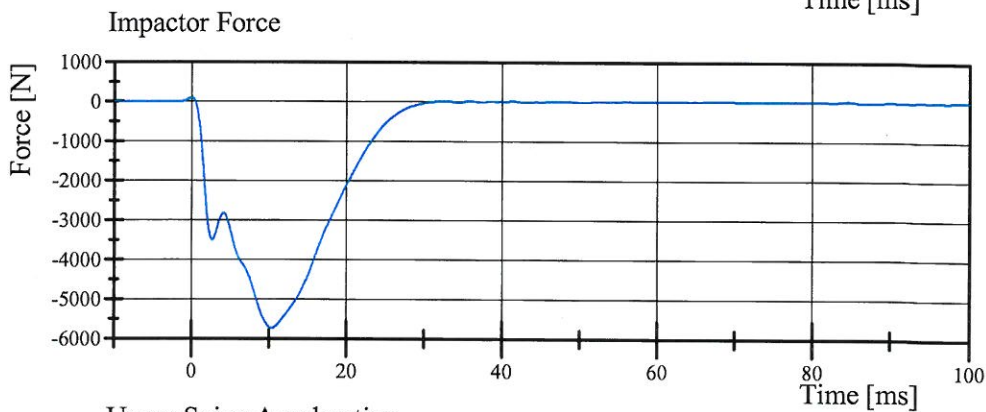
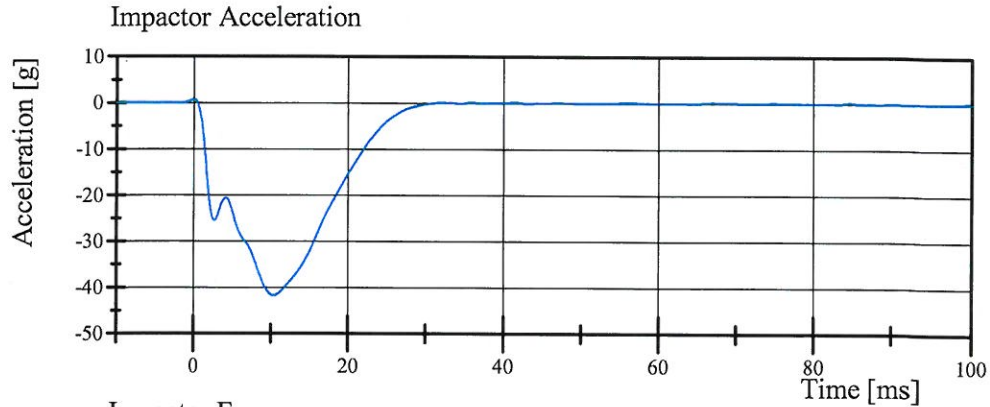


Transportation Research Center Inc.

Left Lateral Thorax with Arm

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/14/2012



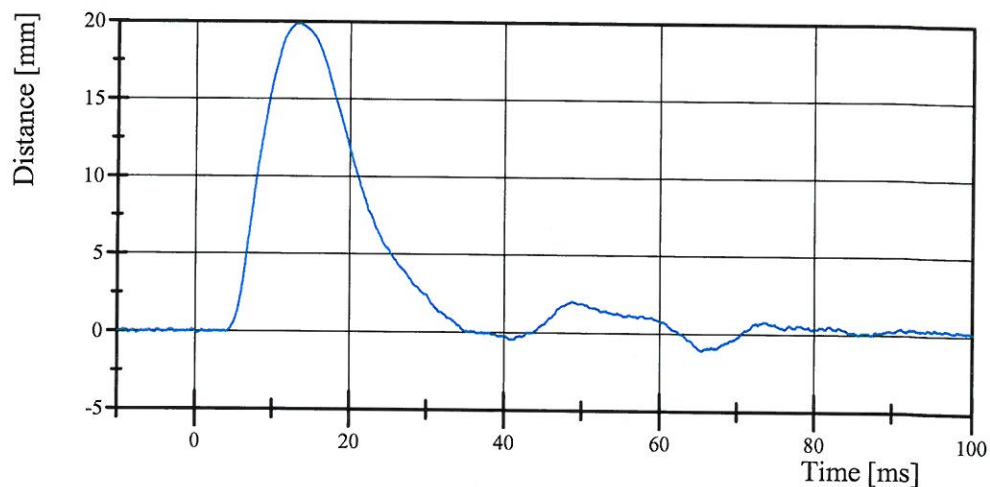
Transportation Research Center Inc.

Left Lateral Thorax with Arm

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

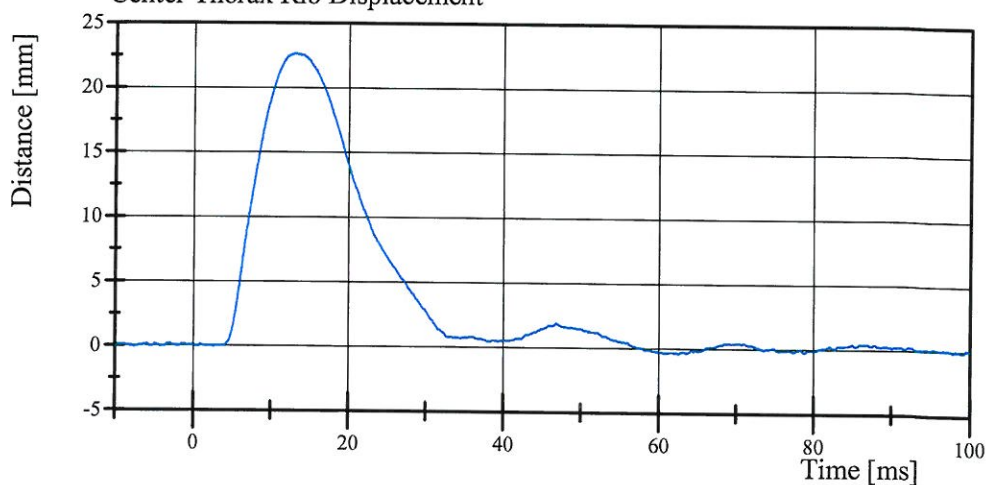
Test Date: 8/14/2012

Upper Thorax Rib Displacement



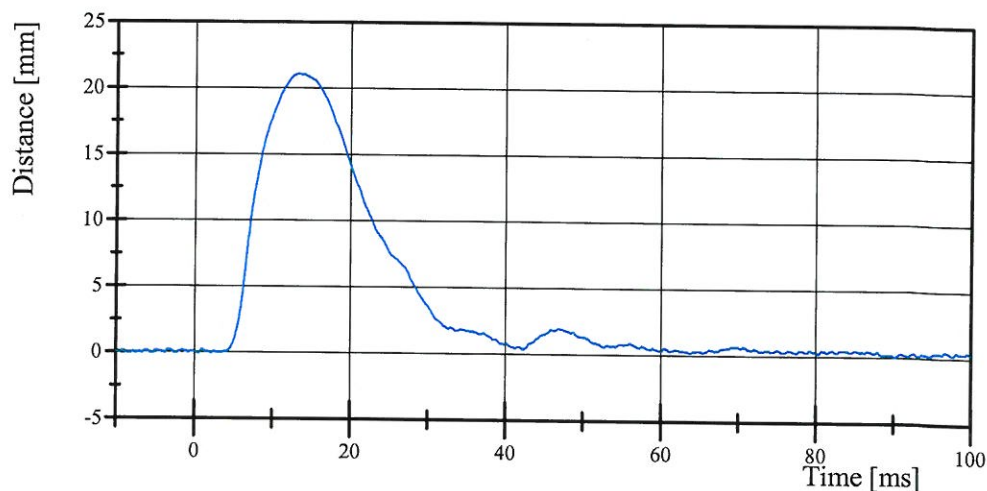
Filter Class: CFC_600
Max: 19.8 mm at 13.4 ms
Min: -1.1 mm at 65.4 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 22.6 mm at 13.1 ms
Min: -0.4 mm at 62.5 ms

Lower Thorax Rib Displacement



Filter Class: CFC_600
Max: 21.0 mm at 13.3 ms
Min: -0.1 mm at 0.5 ms

Transportation Research Center Inc.

Left Lateral Thorax without Arm

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-2

Test Date: 8/13/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	61 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.30 m/s	Yes
Impactor Force	(-2,640) - (-3,220) N	-3,344.5 N	No
Upper Thorax Rib Displacement	20.5 - 27.7 mm	19.40 mm	No
Center Thorax Rib Displacement	21.7 - 26.7 mm	22.18 mm	Yes
Lower Thorax Rib Displacement	20.9 - 27.3 mm	24.10 mm	Yes
Upper Spine Lateral Acceleration	21.2 - 27.5 g	24.35 g	Yes
Lower Spine Lateral Acceleration	20.6 - 28.9 g	25.31 g	Yes

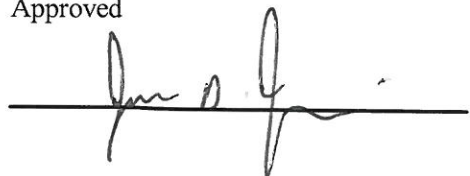
Test does not meet specifications.

Comments:

Technician



Approved

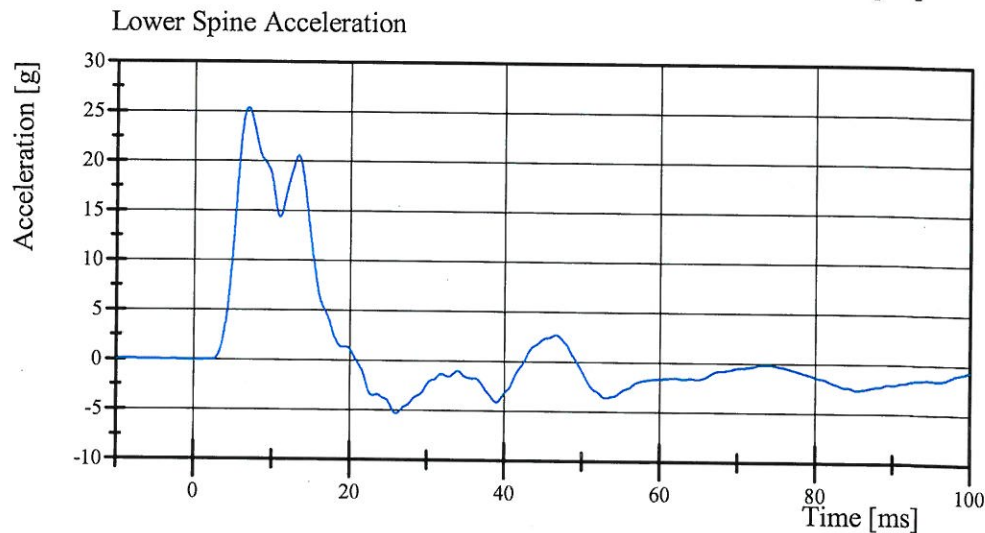
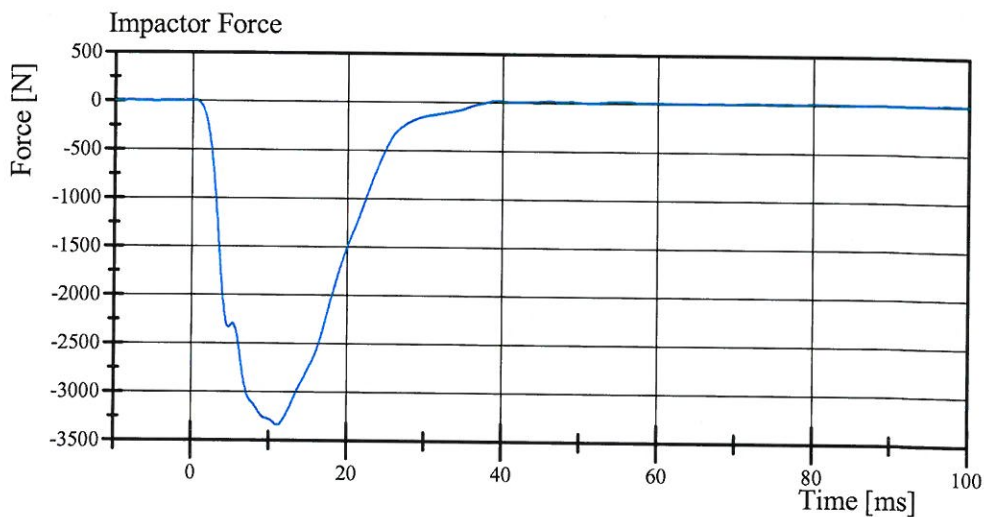
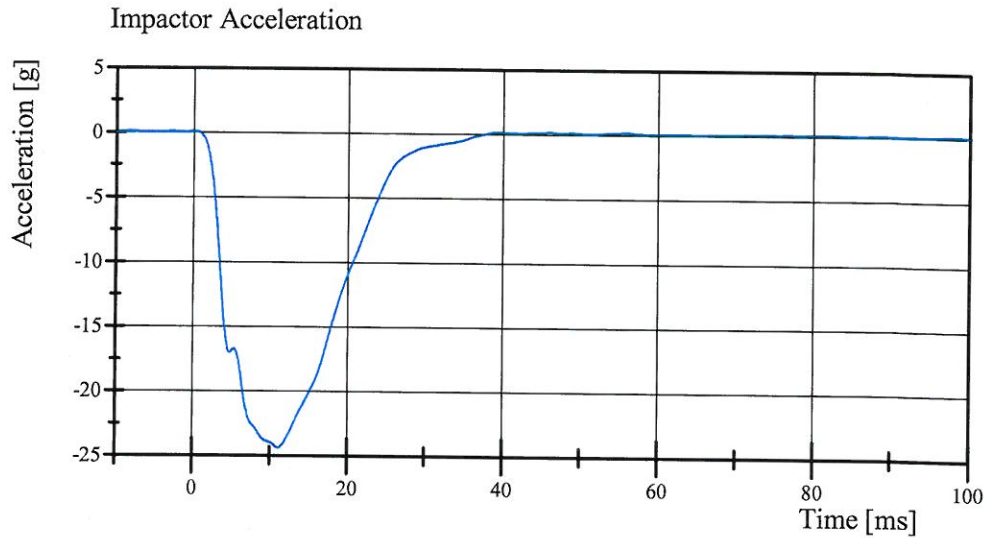


Transportation Research Center Inc.

Left Lateral Thorax without Arm

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-2

Test Date: 8/13/2012



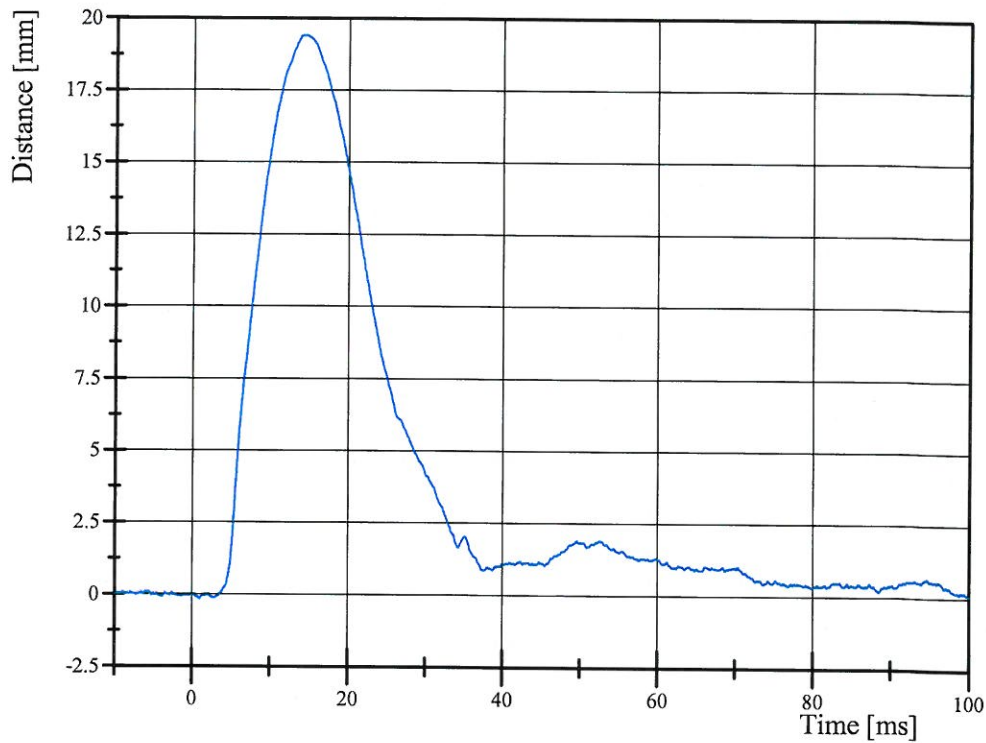
Transportation Research Center Inc.

Left Lateral Thorax without Arm

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-2

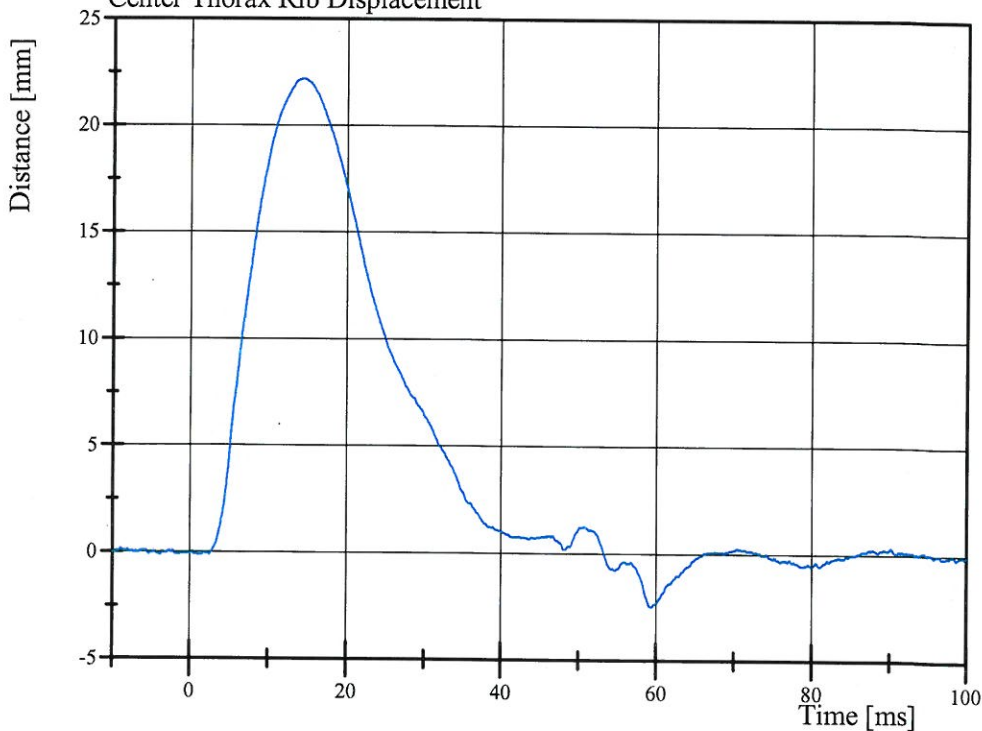
Test Date: 8/13/2012

Upper Thorax Rib Displacement



Filter Class: CFC_600
Max: 19.4 mm at 14.3 ms
Min: -0.2 mm at 1.0 ms

Center Thorax Rib Displacement



Filter Class: CFC_600
Max: 22.2 mm at 14.3 ms
Min: -2.5 mm at 59.4 ms

Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	64 %	Yes
Impactor Velocity	4.2 - 4.4 m/s	4.31 m/s	Yes
Impactor Force	(-2,210) - (-2,700) N	-2,695.1 N	Yes
Upper Abdominal Rib Displacement	23.1 - 31.2 mm	24.17 mm	Yes
Lower Abdominal Rib Displacement	22.7 - 27.8 mm	22.06 mm	No
Lower Spine Lateral Acceleration	24.4 - 30.6 g	28.80 g	Yes

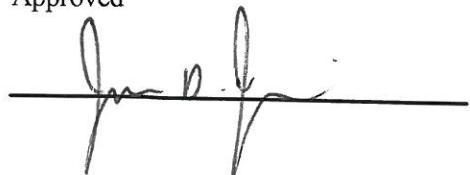
Test does not meet specifications.

Comments:

Technician



Approved

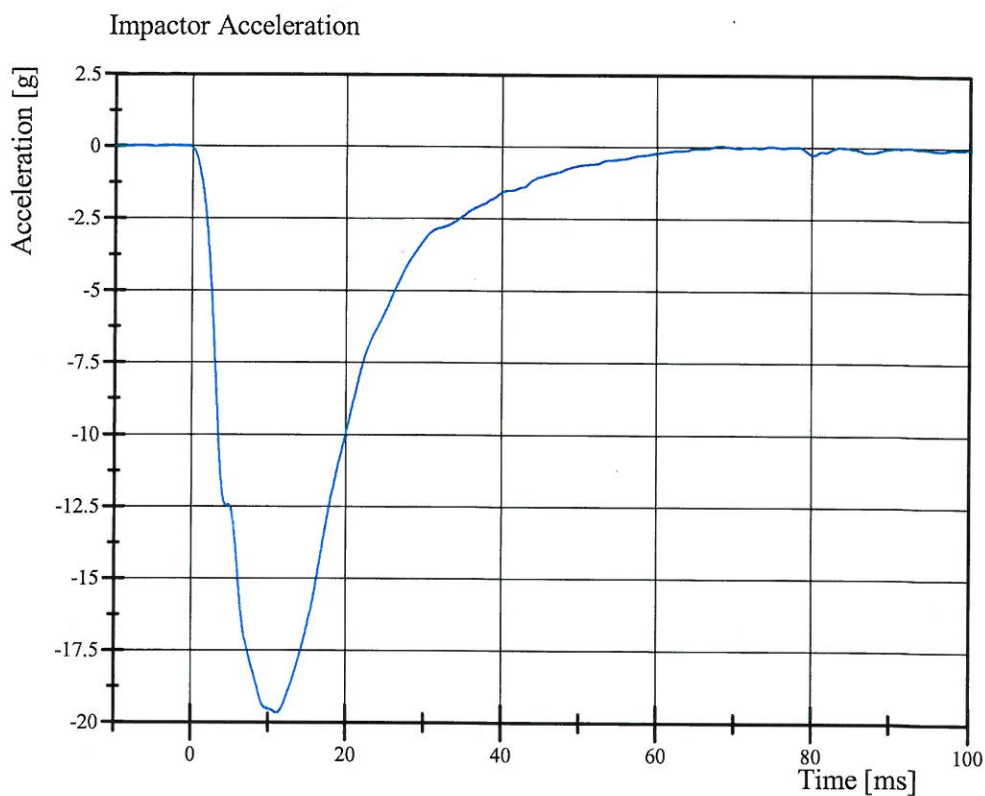


Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

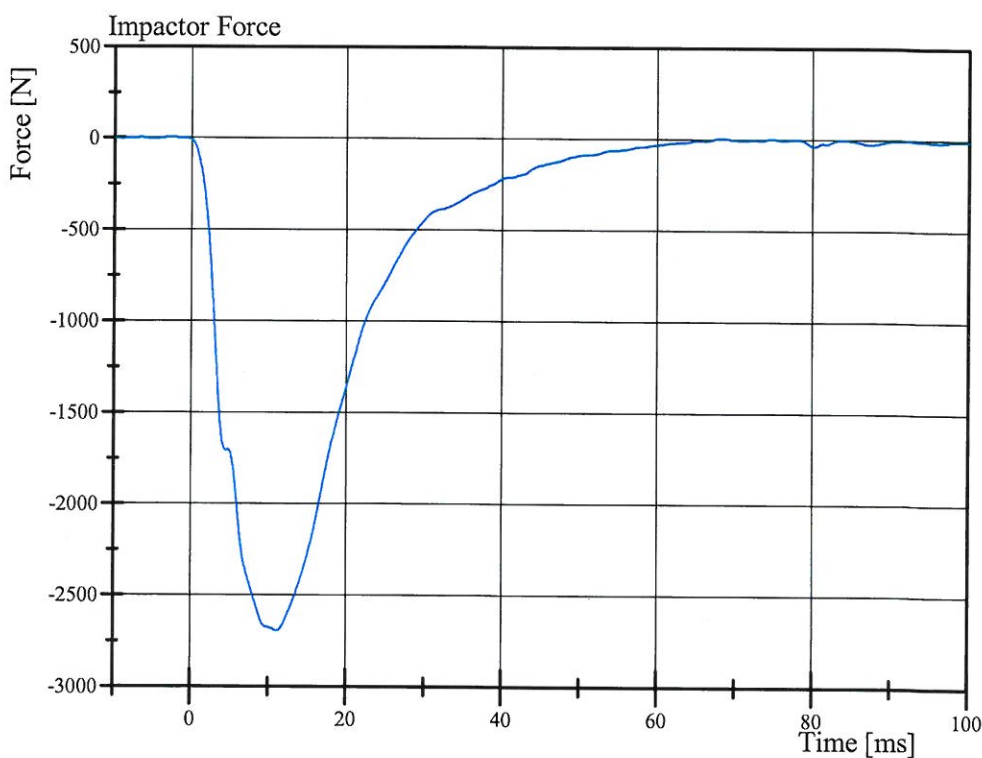
Test Date: 8/14/2012



Filter Class: CFC_180

Max: 0.0 gn at 68.2 ms

Min: -19.7 gn at 11.1 ms



Filter Class: CFC_180

Max: 5.5 N at 68.2 ms

Min: -2,695.1 N at 11.1 ms

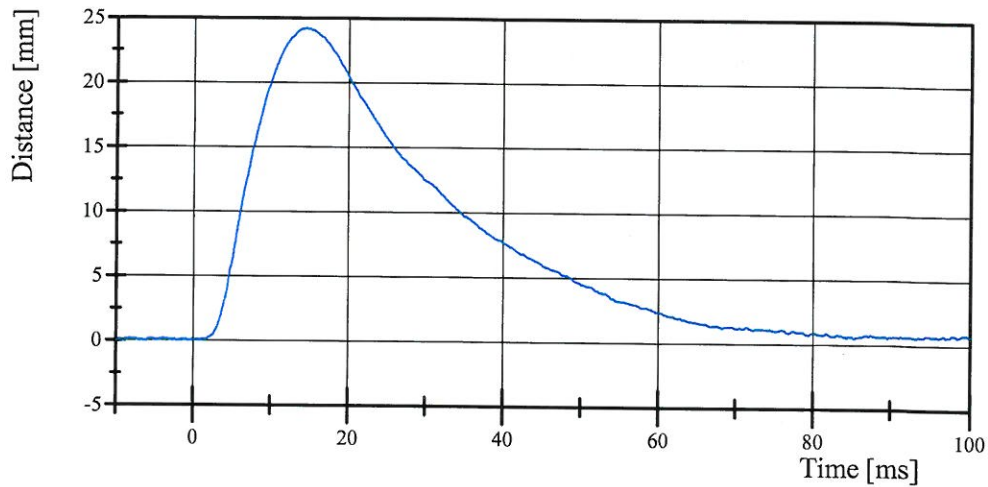
Transportation Research Center Inc.

Left Lateral Abdomen

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

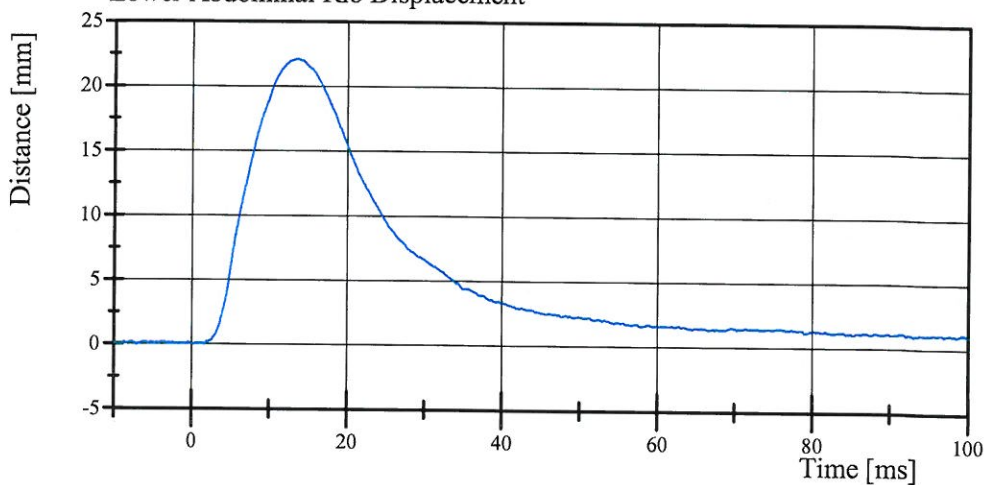
Test Date: 8/14/2012

Upper Abdominal Rib Displacement



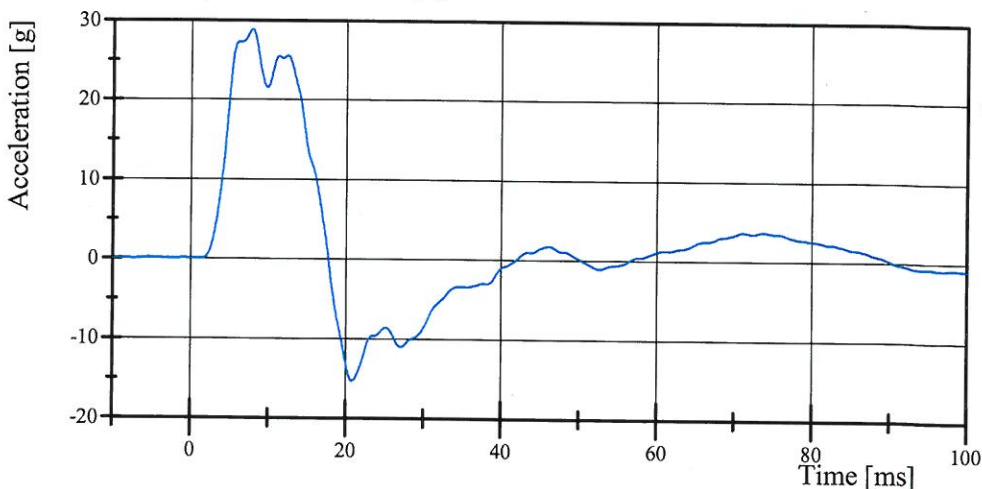
Filter Class: CFC_600
Max: 24.2 mm at 14.5 ms
Min: -0.1 mm at -9.1 ms

Lower Abdominal Rib Displacement



Filter Class: CFC_600
Max: 22.1 mm at 13.5 ms
Min: -0.1 mm at -7.1 ms

Lower Spine Acceleration (Y)



Filter Class: CFC_180
Max: 28.8 gn at 7.9 ms
Min: -15.4 gn at 20.8 ms

Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

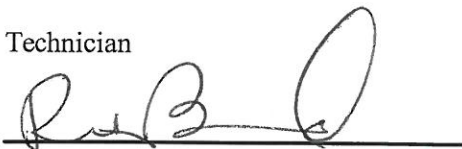
Test Date: 8/14/2012

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	66 %	Yes
Impactor Velocity	6.6 - 6.8 m/s	6.72 m/s	Yes
Impactor Force	(-4,620) - (-5,650) N	-4,796.2 N	Yes
Pelvis Lateral Acceleration	48.6 - 74.4 g	64.37 g	Yes
Lower Spine Lateral Acceleration	11.8 - 15.8 g	13.60 g	Yes
Pubic Lateral Force	(-770) - (-1,200) N	-1,023.7 N	Yes

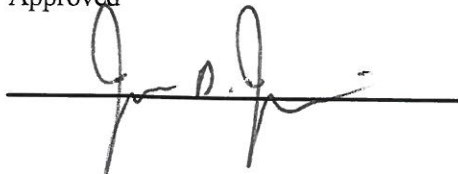
Test meets specifications.

Comments:

Technician



Approved

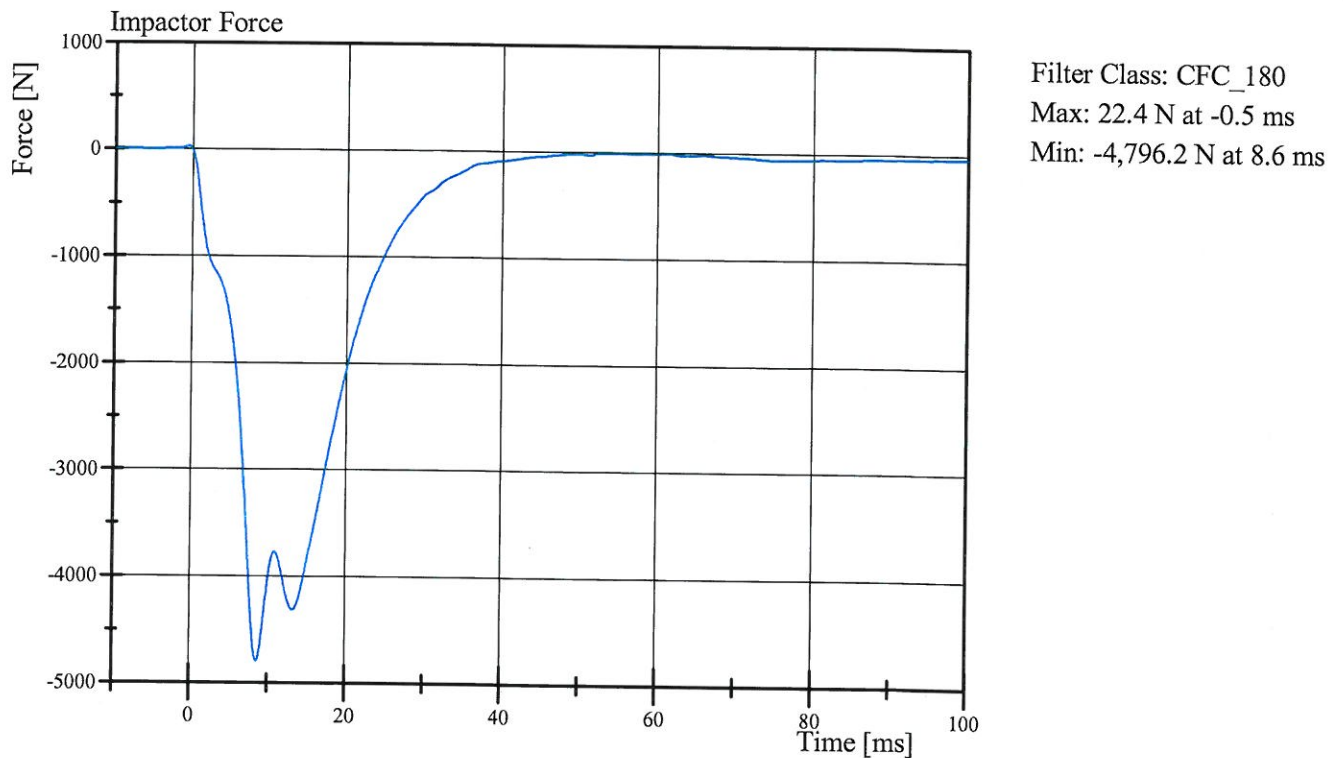
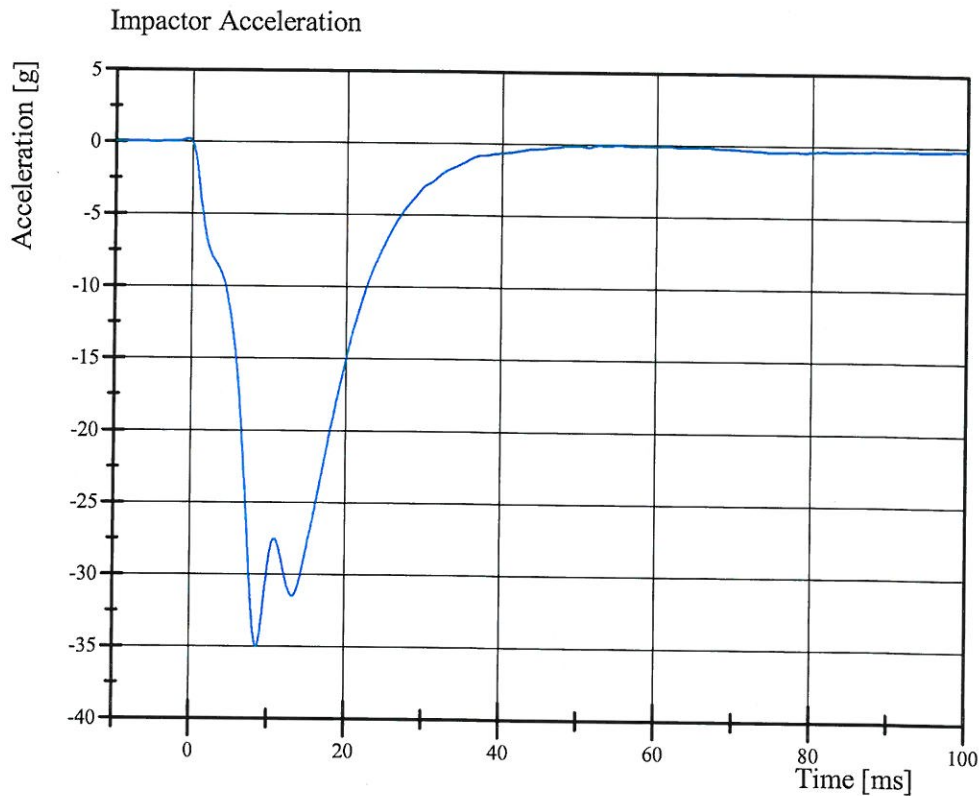


Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

Test Date: 8/14/2012



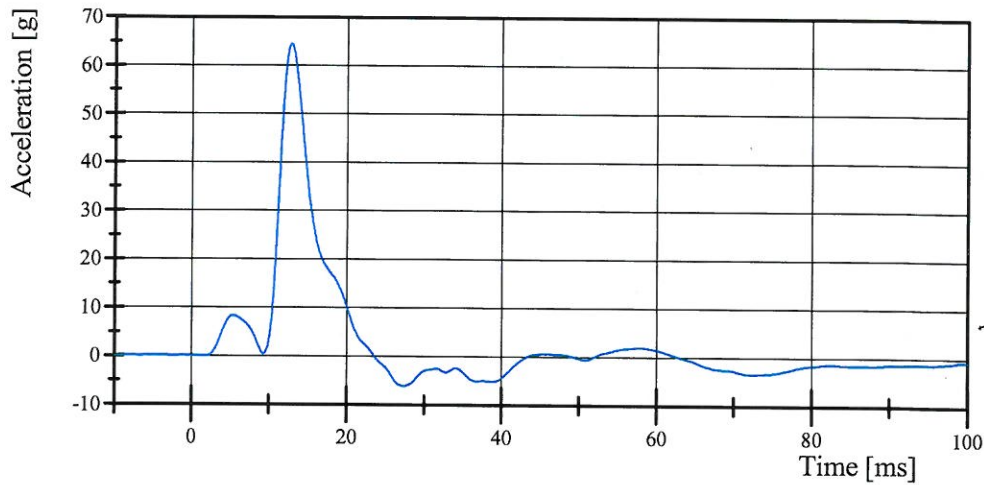
Transportation Research Center Inc.

Left Lateral Pelvis

WorldSID W5-9900 Rev C Serial No. 236 Certification No. 1-1

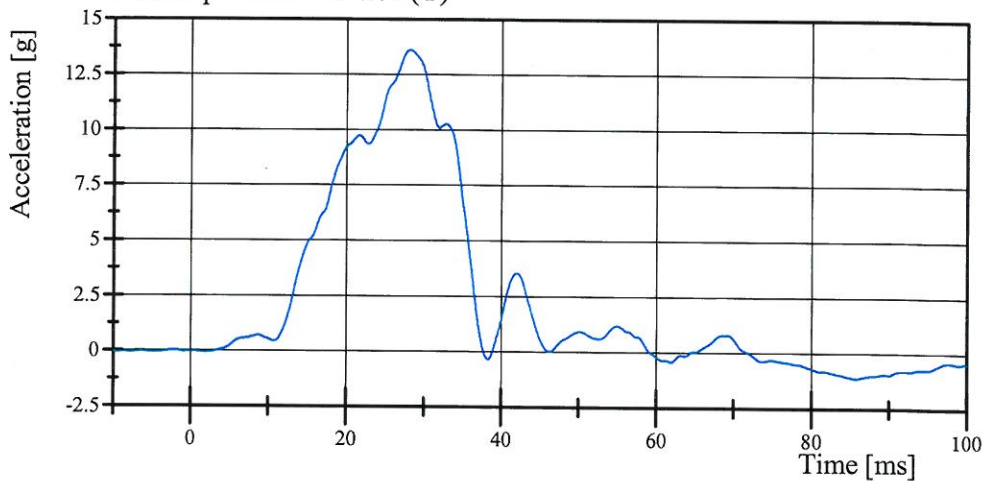
Test Date: 8/14/2012

Pelvis Y-Axis Acceleration



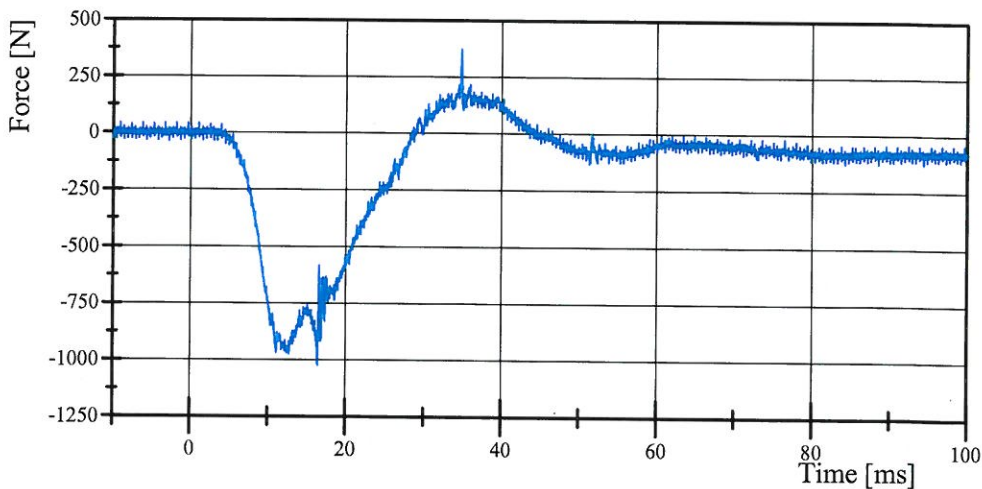
Filter Class: CFC_180
Max: 64.4 gn at 12.8 ms
Min: -6.1 gn at 27.3 ms

Lower Spine Acceleration (Y)



Filter Class: CFC_180
Max: 13.6 gn at 28.1 ms
Min: -1.1 gn at 85.8 ms

Pubic Lateral Force



Filter Class: CFC_1000
Max: 370.9 N at 34.8 ms
Min: -1,023.7 N at 16.5 ms

Appendix D

Miscellaneous Test 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 120920

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity
1	Trig D1	10ZERO000000VO0A	EVENT	1	Logic	Bipolar
2	ARS-PRO-18K-ARS4718	11HEADCG00WSANXA	Head X-Axis Angular Displacement	5000	°/s	Bipolar
3	ARS-PRO-18K-ARS4719	11HEADCG00WSANYA	Head Y-Axis Angular Displacement	5000	°/s	Bipolar
4	ARS-PRO-18K-ARS4726	11HEADCG00WSANZA	Head Z-Axis Angular Displacement	5000	°/s	Bipolar
5	ARS-PRO-18K-ARS4730	14HEADCG00WSANXA	Head X-Axis Angular Displacement	5000	°/s	Bipolar
6	ARS-PRO-18K-ARS4732	14HEADCG00WSANYA	Head Y-Axis Angular Displacement	5000	°/s	Bipolar
7	ARS-PRO-18K-ARS4711	14HEADCG00WSANZA	Head Z-Axis Angular Displacement	5000	°/s	Bipolar
8	P74479	11VEHCCG0000ACXA	Vehicle CG (X)	2000	g	Bipolar
9	P74091	11VEHCCG0000ACYA	Vehicle CG (Y)	2000	g	Bipolar
10	P74478	11VEHCCG0000ACZA	Vehicle CG (Z)	2000	g	-Bipolar
11	P74239	11SILBRIFR00ACXA	Right Front Sill at Front Seat (X)	2000	g	Bipolar
12	P75110	11SILBRIFR00ACYA	Right Front Sill at Front Seat (Y)	2000	g	Bipolar
13	P75518	11SILBRIFR00ACZA	Right Front Sill at Front Seat (Z)	2000	g	-Bipolar
14	P75777	11SILBRIRE00ACXA	Right Rear Sill at Rear Seat (X)	2000	g	Bipolar
15	P74098	11SILBRIRE00ACYA	Right Rear Sill at Rear Seat (Y)	2000	g	-Bipolar
16	P75775	11SILBRIRE00ACZA	Right Rear Sill at Rear Seat (Z)	2000	g	-Bipolar
17	P75718	11SILBLEFR00ACYA	Left Side Sill at Front Seat (Y)	2000	g	Bipolar
18	P75567	11SILBLERE00ACYA	Left Side Sill at Rear Seat (Y)	2000	g	Bipolar
19	P78142	11APILLO0000ACYA	Left Lower A Post (Y)	2000	g	-Bipolar
20	P75996	11APILMI0000ACYA	Left Middle A-Post (Y)	2000	g	-Bipolar
21	P74822	11BPILLO0000ACYA	Left Lower B Post (Y)	2000	g	-Bipolar
22	P74796	11BPILMI0000ACYA	Left Middle B Post (Y)	2000	g	-Bipolar
23	P76393	11SETR000000ACYA	Front Seat Track (Y)	2000	g	Bipolar
24	P75525	11SETRLERE00ACYA	LEFT REAR SEAT STRUCTURE AY	2000	g	Bipolar
25	P75761	112OCCRIRE00ACYA	RIGHT REAR OCCUPANT COMPARTMENT AY	2000	g	-Bipolar

Channel Report Test Number 120920 Continued

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity
26	P75570	11ENGNTPO000ACXA	ENGINE BLOCK AX	2000	g	Bipolar
27	P75776	11ENGNTPO000ACYA	ENGINE BLOCK AY	2000	g	-Bipolar
28	P74084	11FORA000000ACXA	Rear Floor Pan Above Axle (X)	2000	g	Bipolar
29	P75105	11FORA000000ACYA	Rear Floor Pan Above Axle (Y)	2000	g	-Bipolar
30	P74519	11FORA000000ACZA	Rear Floor Pan Above Axle (Z)	2000	g	-Bipolar
31	P74428	11VEHEDR0000ACXA	Vehicle at EDR (X)	2000	g	Bipolar
32	P75240	11VEHEDR0000ACYA	Vehicle at EDR (Y)	2000	g	Bipolar
33	P74480	11VEHEDR0000ACZA	Vehicle at EDR (Z)	2000	g	-Bipolar
34	P74438	10DECKRR0000ACXA	REAR DECK AX	2000	g	Bipolar
35	P74446	10DECKRR0000ACYA	REAR DECK AY	2000	g	Bipolar
36	P74449	10DECKRR0000ACZA	REAR DECK AZ	2000	g	-Bipolar
37	P76386	11DOORMIMI71ACYA	Left Front Door Mid Centerline (Y)	2000	g	Bipolar
38	P75717	11DOORMIRE71ACYA	Left Front Door Mid Rear (Y)	2000	g	Bipolar
39	P75754	11DOORMIUP71ACYA	Left Front Door Upper Centerline (Y)	2000	g	Bipolar
40	P75571	14DOORMIRE71ACYA	Left Rear Door Mid Rear (Y)	2000	g	Bipolar
41	P75997	14DOORMIUP71ACYA	Left Rear Door Upper Centerline (Y)	2000	g	Bipolar
42	ARS-1500-ARS0300	10VEHCCG0000AVXA	VEHICLE CENTER OF GRAVITY (X) ROLL RATE GYRO	1500	°/s	Bipolar
43	ARS-1500-ARS0323	10VEHCCG0000AVYA	VEHICLE CENTER OF GRAVITY (Y) PITCH RATE GYRO	1500	°/s	Bipolar
44	ARS-1500-ARS2331	10VEHCCG0000AVZA	VEHICLE CENTER OF GRAVITY (Z) YAW RATE GYRO	1500	°/s	Bipolar
45	ARS-1500-ARS4512	10VEHEDR0000AVXA	VEHICLE AT EDR (X) ROLL RATE GYRO	1500	°/s	Bipolar
46	ARS-1500-ARS4783	10VEHEDR0000AVYA	VEHICLE AT EDR (Y) PITCH RATE GYRO	1500	°/s	Bipolar
47	ARS-1500-ARS4511	10VEHEDR0000AVZA	VEHICLE AT EDR (Z) YAW RATE GYRO	1500	°/s	Bipolar
48	ARS-1500-ARS0738	10DECKRR0000AVXA	REAR DECK (X) ROLL RATE GYRO	1500	°/s	Bipolar
49	ARS-1500-ARS0330	10DECKRR0000AVYA	REAR DECK (Y) PITCH RATE GYRO	1500	°/s	Bipolar
50	ARS-1500-ARS0010	10DECKRR0000AVZA	REAR DECK (Z) YAW RATE GYRO	1500	°/s	Bipolar
51	ABFire1	11SENS000000VO0A	Driver primary	5	V	Bipolar
52	ABFire2	11SENS010000VO0A	SAB TIMING IND	5	V	Bipolar

Channel Report Test Number 120920 Continued

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity
53	ABFire3	11SENS020000VO00	SCAB TIMING IND	5	V	Bipolar
54	Bit.00	11HEADCONT00VO0A	Head Contact	1	Logic	Bipolar
55	Bit.01	11SHLDCONT00VO0A	Shoulder Contact	1	Logic	Bipolar
56	Bit.02	11THORCONT00VO0A	Thorax Contact	1	Logic	Bipolar
57	Bit.03	11LEGCONT000VO0A	Leg Contact	1	Logic	Bipolar
58	Bit.04	14HEADCONT00VO0A	Head Contact	1	Logic	Bipolar
59	Bit.05	14SHLDCONT00VO0A	Shoulder Contact	1	Logic	Bipolar
60	Bit.06	14THORCONT00VO0A	Thorax Contact	1	Logic	Bipolar
61	Bit.07	14LEGCONT000VO0A	Leg Contact	1	Logic	Bipolar
62	VRTC Chestbands	11CHBA5901WSVO0A	chest band w/59 gages, gage 1	100	mV	Bipolar
63	VRTC Chestbands	11CHBA5902WSVO0A	chest band w/59 gages, gage 2	100	mV	Bipolar
64	VRTC Chestbands	11CHBA5903WSVO0A	chest band w/59 gages, gage 3	100	mV	Bipolar
65	VRTC Chestbands	11CHBA5904WSVO0A	chest band w/59 gages, gage 4	100	mV	Bipolar
66	VRTC Chestbands	11CHBA5905WSVO0A	chest band w/59 gages, gage 5	100	mV	Bipolar
67	VRTC Chestbands	11CHBA5906WSVO0A	chest band w/59 gages, gage 6	100	mV	Bipolar
68	VRTC Chestbands	11CHBA5907WSVO0A	chest band w/59 gages, gage 7	100	mV	Bipolar
69	VRTC Chestbands	11CHBA5908WSVO0A	chest band w/59 gages, gage 8	100	mV	Bipolar
70	VRTC Chestbands	11CHBA5909WSVO0A	chest band w/59 gages, gage 9	100	mV	Bipolar
71	VRTC Chestbands	11CHBA5910WSVO0A	chest band w/59 gages, gage 10	100	mV	Bipolar
72	VRTC Chestbands	11CHBA5911WSVO0A	chest band w/59 gages, gage 11	100	mV	Bipolar
73	VRTC Chestbands	11CHBA5912WSVO0A	chest band w/59 gages, gage 12	100	mV	Bipolar
74	VRTC Chestbands	11CHBA5913WSVO0A	chest band w/59 gages, gage 13	100	mV	Bipolar
75	VRTC Chestbands	11CHBA5914WSVO0A	chest band w/59 gages, gage 14	100	mV	Bipolar
76	VRTC Chestbands	11CHBA5915WSVO0A	chest band w/59 gages, gage 15	100	mV	Bipolar
77	VRTC Chestbands	11CHBA5916WSVO0A	chest band w/59 gages, gage 16	100	mV	Bipolar
78	VRTC Chestbands	11CHBA5917WSVO0A	chest band w/59 gages, gage 17	100	mV	Bipolar

Channel Report Test Number 120920 Continued

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity
79	VRTC Chestbands	11CHBA5918WSVO0A	chest band w/59 gages, gage 18	100	mV	Bipolar
80	VRTC Chestbands	11CHBA5919WSVO0A	chest band w/59 gages, gage 19	100	mV	Bipolar
81	VRTC Chestbands	11CHBA5920WSVO0A	chest band w/59 gages, gage 20	100	mV	Bipolar
82	VRTC Chestbands	11CHBA5921WSVO0A	chest band w/59 gages, gage 21	100	mV	Bipolar
83	VRTC Chestbands	11CHBA5922WSVO0A	chest band w/59 gages, gage 22	100	mV	Bipolar
84	VRTC Chestbands	11CHBA5923WSVO0A	chest band w/59 gages, gage 23	100	mV	Bipolar
85	VRTC Chestbands	11CHBA5924WSVO0A	chest band w/59 gages, gage 24	100	mV	Bipolar
86	VRTC Chestbands	11CHBA5925WSVO0A	chest band w/59 gages, gage 25	100	mV	Bipolar
87	VRTC Chestbands	11CHBA5926WSVO0A	chest band w/59 gages, gage 26	100	mV	Bipolar
88	VRTC Chestbands	11CHBA5927WSVO0A	chest band w/59 gages, gage 27	100	mV	Bipolar
89	VRTC Chestbands	11CHBA5928WSVO0A	chest band w/59 gages, gage 28	100	mV	Bipolar
90	VRTC Chestbands	11CHBA5929WSVO0A	chest band w/59 gages, gage 29	100	mV	Bipolar
91	VRTC Chestbands	11CHBA5930WSVO0A	chest band w/59 gages, gage 30	100	mV	Bipolar
92	VRTC Chestbands	11CHBA5931WSVO0A	chest band w/59 gages, gage 31	100	mV	Bipolar
93	VRTC Chestbands	11CHBA5932WSVO0A	chest band w/59 gages, gage 32	100	mV	Bipolar
94	VRTC Chestbands	11CHBA5933WSVO0A	chest band w/59 gages, gage 33	100	mV	Bipolar
95	VRTC Chestbands	11CHBA5934WSVO0A	chest band w/59 gages, gage 34	100	mV	Bipolar
96	VRTC Chestbands	11CHBA5935WSVO0A	chest band w/59 gages, gage 35	100	mV	Bipolar
97	VRTC Chestbands	11CHBA5936WSVO0A	chest band w/59 gages, gage 36	100	mV	Bipolar
98	VRTC Chestbands	11CHBA5937WSVO0A	chest band w/59 gages, gage 37	100	mV	Bipolar
99	VRTC Chestbands	11CHBA5938WSVO0A	chest band w/59 gages, gage 38	100	mV	Bipolar
100	VRTC Chestbands	11CHBA5939WSVO0A	chest band w/59 gages, gage 39	100	mV	Bipolar
101	VRTC Chestbands	11CHBA5940WSVO0A	chest band w/59 gages, gage 40	100	mV	Bipolar
102	VRTC Chestbands	11CHBA5941WSVO0A	chest band w/59 gages, gage 41	100	mV	Bipolar
103	VRTC Chestbands	11CHBA5942WSVO0A	chest band w/59 gages, gage 42	100	mV	Bipolar
104	VRTC Chestbands	11CHBA5943WSVO0A	chest band w/59 gages, gage 43	100	mV	Bipolar

Channel Report Test Number 120920 Continued

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity
105	VRTC Chestbands	11CHBA5944WSVO0A	chest band w/59 gages, gage 44	100	mV	Bipolar
106	VRTC Chestbands	11CHBA5945WSVO0A	chest band w/59 gages, gage 45	100	mV	Bipolar
107	VRTC Chestbands	11CHBA5946WSVO0A	chest band w/59 gages, gage 46	100	mV	Bipolar
108	VRTC Chestbands	11CHBA5947WSVO0A	chest band w/59 gages, gage 47	100	mV	Bipolar
109	VRTC Chestbands	11CHBA5948WSVO0A	chest band w/59 gages, gage 48	100	mV	Bipolar
110	VRTC Chestbands	11CHBA5949WSVO0A	chest band w/59 gages, gage 49	100	mV	Bipolar
111	VRTC Chestbands	11CHBA5950WSVO0A	chest band w/59 gages, gage 50	100	mV	Bipolar
112	VRTC Chestbands	11CHBA5951WSVO0A	chest band w/59 gages, gage 51	100	mV	Bipolar
113	VRTC Chestbands	11CHBA5952WSVO0A	chest band w/59 gages, gage 52	100	mV	Bipolar
114	VRTC Chestbands	11CHBA5953WSVO0A	chest band w/59 gages, gage 53	100	mV	Bipolar
115	VRTC Chestbands	11CHBA5954WSVO0A	chest band w/59 gages, gage 54	100	mV	Bipolar
116	VRTC Chestbands	11CHBA5955WSVO0A	chest band w/59 gages, gage 55	100	mV	Bipolar
117	VRTC Chestbands	11CHBA5956WSVO0A	chest band w/59 gages, gage 56	100	mV	Bipolar
118	VRTC Chestbands	11CHBA5957WSVO0A	chest band w/59 gages, gage 57	100	mV	Bipolar
119	VRTC Chestbands	14CHBA4001WFVO0A	chest band w/40 gages, gage 1	100	mV	Bipolar
120	VRTC Chestbands	14CHBA4002WFVO0A	chest band w/40 gages, gage 2	100	mV	Bipolar
121	VRTC Chestbands	14CHBA4003WFVO0A	chest band w/40 gages, gage 3	100	mV	Bipolar
122	VRTC Chestbands	14CHBA4004WFVO0A	chest band w/40 gages, gage 4	100	mV	Bipolar
123	VRTC Chestbands	14CHBA4005WFVO0A	chest band w/40 gages, gage 5	100	mV	Bipolar
124	VRTC Chestbands	14CHBA4006WFVO0A	chest band w/40 gages, gage 6	100	mV	Bipolar
125	VRTC Chestbands	14CHBA4007WFVO0A	chest band w/40 gages, gage 7	100	mV	Bipolar
126	VRTC Chestbands	14CHBA4008WFVO0A	chest band w/40 gages, gage 8	100	mV	Bipolar
127	VRTC Chestbands	14CHBA4009WFVO0A	chest band w/40 gages, gage 9	100	mV	Bipolar
128	VRTC Chestbands	14CHBA4010WFVO0A	chest band w/40 gages, gage 10	100	mV	Bipolar
129	VRTC Chestbands	14CHBA4011WFVO0A	chest band w/40 gages, gage 11	100	mV	Bipolar
130	VRTC Chestbands	14CHBA4012WFVO0A	chest band w/40 gages, gage 12	100	mV	Bipolar

Channel Report Test Number 120920 Continued

Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity
131	VRTC Chestbands	14CHBA4013WFVO0A	chest band w/40 gages, gage 13	100	mV	Bipolar
132	VRTC Chestbands	14CHBA4014WFVO0A	chest band w/40 gages, gage 14	100	mV	Bipolar
133	VRTC Chestbands	14CHBA4015WFVO0A	chest band w/40 gages, gage 15	100	mV	Bipolar
134	VRTC Chestbands	14CHBA4016WFVO0A	chest band w/40 gages, gage 16	100	mV	Bipolar
135	VRTC Chestbands	14CHBA4017WFVO0A	chest band w/40 gages, gage 17	100	mV	Bipolar
136	VRTC Chestbands	14CHBA4018WFVO0A	chest band w/40 gages, gage 18	100	mV	Bipolar
137	VRTC Chestbands	14CHBA4019WFVO0A	chest band w/40 gages, gage 19	100	mV	Bipolar
138	VRTC Chestbands	14CHBA4020WFVO0A	chest band w/40 gages, gage 20	100	mV	Bipolar
139	VRTC Chestbands	14CHBA4021WFVO0A	chest band w/40 gages, gage 21	100	mV	Bipolar
140	VRTC Chestbands	14CHBA4022WFVO0A	chest band w/40 gages, gage 22	100	mV	Bipolar
141	VRTC Chestbands	14CHBA4023WFVO0A	chest band w/40 gages, gage 23	100	mV	Bipolar
142	VRTC Chestbands	14CHBA4024WFVO0A	chest band w/40 gages, gage 24	100	mV	Bipolar
143	VRTC Chestbands	14CHBA4025WFVO0A	chest band w/40 gages, gage 25	100	mV	Bipolar
144	VRTC Chestbands	14CHBA4026WFVO0A	chest band w/40 gages, gage 26	100	mV	Bipolar
145	VRTC Chestbands	14CHBA4027WFVO0A	chest band w/40 gages, gage 27	100	mV	Bipolar
146	VRTC Chestbands	14CHBA4028WFVO0A	chest band w/40 gages, gage 28	100	mV	Bipolar
147	VRTC Chestbands	14CHBA4029WFVO0A	chest band w/40 gages, gage 29	100	mV	Bipolar
148	VRTC Chestbands	14CHBA4030WFVO0A	chest band w/40 gages, gage 30	100	mV	Bipolar
149	VRTC Chestbands	14CHBA4031WFVO0A	chest band w/40 gages, gage 31	100	mV	Bipolar
150	P74527	M0MBARCG0000ACXA	MDB CG AX	2000	g	Bipolar
151	P74442	M0MBARCG0000ACYA	MDB CG AY	2000	g	Bipolar
152	P49016	M0MBARCG0000ACZA	MDB CG AZ	2000	g	-Bipolar
153	P75519	M0FRAMRE0000ACXA	MDB REAR AX	2000	g	Bipolar
154	P75992	M0FRAMRE0000ACYA	MDB REAR AY	2000	g	-Bipolar

Command File Test Number 120920

Channel			Filter				
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale	
3A	1	11HEADCG00WSACXA	Head Longitudinal Ax	1000	+	no	1000
	2	11HEADCG00WSACYA	Head Lateral Ay	1000	+	no	1000
	3	11HEADCG00WSACZA	Head Vertical Az	1000	+	no	1000
		11HEADCG00WSACRA	Head A Resultant	1000			
	4	11HEAD0000WSAAXA	Head Rotational Acceleration Rx	1000	-	no	50000
	5	11HEAD0000WSAAYA	Head Rotational Acceleration Ry	1000	+	no	50000
	6	11HEAD0000WSAAZA	Head Rotational Acceleration Rz	1000	+	no	50000
	7	11HEADCG00WSAVXA	Head X-Axis Angular Velocity	1000	+	no	5000
	8	11HEADCG00WSAVYA	Head Y-Axis Angular Velocity	1000	+	no	5000
9	11HEADCG00WSAVZA	Head Z-Axis Angular Velocity	1000	+	no	5000	
10	11NECKUP00WSFOXA	Neck Upper Force Fx	1000	-	no	10000	
11	11NECKUP00WSFOYA	Neck Upper Force Fy	1000	+	no	10000	
12	11NECKUP00WSFOZA	Neck Upper Force Fz	1000	-	no	12000	
13	11NECKUP00WSMOXA	Neck Upper Moment Mx	600	+	no	300	
14	11NECKUP00WSMOYA	Neck Upper Moment My	600	+	no	300	
15	11NECKUP00WSMOZA	Neck Upper Moment Mz	600	+	no	200	
16	11NECKLO00WSFOXA	Neck Lower Force Fx	1000	+	no	10000	
17	11NECKLO00WSFOYA	Neck Lower Force Fy	1000	+	no	10000	
18	11NECKLO00WSFOZA	Neck Lower Force Fz	1000	-	no	12000	
19	11NECKLO00WSMOXA	Neck Lower Moment Mx	600	+	no	300	
20	11NECKLO00WSMOYA	Neck Lower Moment My	600	+	no	300	
21	11NECKLO00WSMOZA	Neck Lower Moment Mz	600	+	no	200	
24A	22	11SHLDLE00WSACXA	Shoulder Longitudinal Ax	1000	+	no	500
	23	11SHLDLE00WSACYA	Shoulder Lateral Ay	1000	+	no	500
	24	11SHLDLE00WSACZA	Shoulder Vertical Az	1000	+	no	500
		11SHLDLE00WSACRA	Shoulder A Resultant	1000			
	25	11SHLDLE00WSFOXA	Shoulder Force Fx	1000	+	no	5000

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
26	11SHLDLE00WSFOYA	Shoulder Force Fy	1000	-	no	10000
27	11SHLDLE00WSFOZA	Shoulder Force Fz	1000	+	no	5000
28	11SHRILE00WSDSYA	Shoulder Y Disp	600	+	no	102
29	11THSP0100WSACXA	T1 Longitudinal Ax	180	+	no	1000
30	11THSP0100WSACYA	T1 Lateral Ay	180	+	no	1000
31	11THSP0100WSACZA	T1 Vertical Az	180	-	no	1000
31A	11THSP0100WSACRA	T1 A Resultant	180			
32	11TRRILE01WSACXA	Thorax Rib 1 Longitudinal Ax	1000	+	no	500
33	11TRRILE01WSACYA	Thorax Rib 1 Lateral Ay	1000	+	no	500
34	11TRRILE01WSACZA	Thorax Rib 1 Vertical Az	1000	+	no	500
34A	11TRRILE01WSACRA	Thorax Rib 1 A Resultant	1000			
35	11TRRILE01WSDSYA	Thorax Rib 1 Lateral Disp	600	+	no	102
36	11TRRILE02WSACXA	Thorax Rib 2 Longitudinal Ax	1000	+	no	500
37	11TRRILE02WSACYA	Thorax Rib 2 Lateral Ay	1000	+	no	500
38	11TRRILE02WSACZA	Thorax Rib 2 Vertical Az	1000	+	no	500
38A	11TRRILE02WSACRA	Thorax Rib 2 A Resultant	1000			
39	11TRRILE02WSDCOA	THX RIB 2 IRTRAC Compression	600	+	no	110
40	11TRRILE02WSANZA	THX RIB2 Rotational Angle	600	+	no	110
41	11TRRILE02WSDSXA	THX RIB 2 IRTRAC X Deflection	600	+	no	110
42	11TRRILE02WSDSYA	THX RIB 2 IRTRAC Y Deflection	600	+	no	110
43	11TRRILE03WSACXA	Thorax Rib 3 Longitudinal Ax	1000	+	no	500
44	11TRRILE03WSACYA	Thorax Rib 3 Lateral Ay	1000	+	no	500
45	11TRRILE03WSACZA	Thorax Rib 3 Vertical Az	1000	+	no	500
45A	11TRRILE03WSACRA	Thorax Rib 3 A Resultant	1000			
46	11TRRILE03WSDCOA	THX RIB 3 IRTRAC Compression	600	+	no	110
47	11TRRILE03WSANZA	THX RIB3 Rotational Angle	600	+	no	110

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
48	11TRRILE03WSDSXA	THX RIB 3 IRTRAC X Deflection	600	+	no	110
49	11TRRILE03WSDSYA	THX RIB 3 IRTRAC Y Deflection	600	+	no	110
50	11ABRILE01WSACXA	Abdominal Rib 1 Longitudinal Ax	1000	+	no	500
51	11ABRILE01WSACYA	Abdominal Rib 1 Lateral Ay	1000	+	no	500
52	11ABRILE01WSACZA	Abdominal Rib 1 Vertical Az	1000	+	no	500
52A	11ABRILE01WSACRA	Abdominal Rib 1 A Resultant	1000			
53	11ABRILE01WSDCOA	ABD RIB 1 IRTRAC Compression	600	+	no	110
54	11ABRILE01WSANZA	ABD RIB1 Rotational Angle	600	+	no	110
55	11ABRILE01WSDSXA	ABD RIB 1 IRTRAC X Deflection	600	+	no	110
56	11ABRILE01WSDSYA	ABD RIB 1 IRTRAC Y Deflection	600	+	no	110
57	11ABRILE02WSACXA	Abdominal Rib 2 Longitudinal Ax	1000	+	no	500
58	11ABRILE02WSACYA	Abdominal Rib 2 Lateral Ay	1000	+	no	500
59	11ABRILE02WSACZA	Abdominal Rib 2 Vertical Az	1000	+	no	500
59A	11ABRILE02WSACRA	Abdominal Rib 2 A Resultant	1000			
60	11ABRILE02WSDSYA	Abdominal Rib 2 Lateral Disp	600	+	no	102
61	11THSP0400WSACXA	T4 Longitudinal Ax	180	+	no	1000
62	11THSP0400WSACYA	T4 Lateral Ay	180	+	no	1000
63	11THSP0400WSACZA	T4 Vertical Az	180	+	no	1000
63A	11THSP0400WSACRA	T4 A Resultant	180			
64	11THSP1200WSACXA	T12 Longitudinal Ax	180	+	no	1000
65	11THSP1200WSACYA	T12 Lateral Ay	180	+	no	1000
66	11THSP1200WSACZA	T12 Vertical Az	180	+	no	1000
66A	11THSP1200WSACRA	T12 A Resultant	180			
67	11PELV0000WSACXA	Pelvis Longitudinal Ax	1000	+	no	1000
68	11PELV0000WSACYA	Pelvis Lateral Ay	1000	+	no	1000
69	11PELV0000WSACZA	Pelvis Vertical Az	1000	+	no	1000

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
69A	11PELV0000WSACRA	Pelvis A Resultant	1000			
70	11PUBC0000WSFOYA	Pubic Force Fy	600	+	no	12000
71	11LUSP0000WSFOXA	Lumbar Force Fx	600	+	no	10000
72	11LUSP0000WSFOYA	Lumbar Force Fy	600	+	no	10000
73	11LUSP0000WSFOZA	Lumbar Force Fz	600	-	no	12000
74	11LUSP0000WSMOXA	Lumbar Moment Mx	600	+	no	300
75	11LUSP0000WSMOYA	Lumbar Moment My	600	+	no	300
76	11LUSP0000WSMOZA	Lumbar Moment Mz	600	+	no	200
77	11SACRRI00WSMOXA	Sacro-Iliac Right Moment Mx	600	+	no	800
78	11SACRRI00WSMOYA	Sacro-Iliac Right Moment My	600	+	no	400
79	11SACRRI00WSMOZA	Sacro-Iliac Right Moment Mz	600	+	no	400
80	11SACRRI00WSFOXA	Sacro-Iliac Right Force Fx	600	+	no	6000
81	11SACRRI00WSFOYA	Sacro-Iliac Right Force Fy	600	-	no	12000
82	11SACRRI00WSFOZA	Sacro-Iliac Right Force Fz	600	-	no	6000
83	11SACRLE00WSMOXA	Sacro-Iliac Left Moment Mx	600	+	no	800
84	11SACRLE00WSMOYA	Sacro-Iliac Left Moment My	600	+	no	400
85	11SACRLE00WSMOZA	Sacro-Iliac Left Moment Mz	600	+	no	400
86	11SACRLE00WSFOXA	Sacro-Iliac Left Force Fx	600	+	no	6000
87	11SACRLE00WSFOYA	Sacro-Iliac Left Force Fy	600	-	no	12000
88	11SACRLE00WSFOZA	Sacro-Iliac Left Force Fz	600	+	no	6000
89	11FEACLE00WSFOXA	Left Femoral Neck Force Fx	600	-	no	10000
90	11FEACLE00WSFOYA	Left Femoral Neck Force Fy	600	-	no	25000
91	11FEACLE00WSFOZA	Left Femoral Neck Force Fz	600	-	no	10000
92	11FEACRI00WSFOXA	Right Femoral Neck Force Fx	600	-	no	10000
93	11FEACRI00WSFOYA	Right Femoral Neck Force Fy	600	-	no	25000
94	11FEACRI00WSFOZA	Right Femoral Neck Force Fz	600	-	no	10000

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
95	14HEADCG00WFACXA	Head Longitudinal Ax	1000	+	no	400
96	14HEADCG00WFACYA	Head Lateral Ay	1000	+	no	400
97	14HEADCG00WFACZA	Head Vertical Az	1000	-	no	400
97A	14HEADCG00WFACRA	Head A Resultant	1000			
98	14HEAD0000WFAAXA	Head Rotational Acceleration Rx	1000	+	no	50000
99	14HEAD0000WFAAYA	Head Rotational Acceleration Ry	1000	+	no	50000
100	14HEAD0000WFAAZA	Head Rotational Acceleration Rz	1000	+	no	50000
101	14HEADCG00WFAVXA	Head X-Axis Angular Velocity	1000	+	no	5000
102	14HEADCG00WFAVYA	Head Y-Axis Angular Velocity	1000	+	no	5000
103	14HEADCG00WFAVZA	Head Z-Axis Angular Velocity	1000	+	no	5000
104	14NECKUP00WFFOXA	Neck Upper Force Fx	1000	+	no	10000
105	14NECKUP00WFFOYA	Neck Upper Force Fy	1000	+	no	10000
106	14NECKUP00WFFOZA	Neck Upper Force Fz	1000	+	no	12000
107	14NECKUP00WFMOXA	Neck Upper Moment Mx	600	-	no	200
108	14NECKUP00WFMOYA	Neck Upper Moment My	600	+	no	300
109	14NECKUP00WFMOZA	Neck Upper Moment Mz	600	+	no	200
110	14NECKLO00WFFOXA	Neck Lower Force Fx	1000	+	no	10000
111	14NECKLO00WFFOYA	Neck Lower Force Fy	1000	+	no	10000
112	14NECKLO00WFFOZA	Neck Lower Force Fz	1000	+	no	12000
113	14NECKLO00WFMOXA	Neck Lower Moment Mx	600	+	no	300
114	14NECKLO00WFMOYA	Neck Lower Moment My	600	+	no	300
115	14NECKLO00WFMOZA	Neck Lower Moment Mz	600	+	no	200
116	14SHLDLE00WFACXA	Shoulder Longitudinal Ax	1000	+	no	400
117	14SHLDLE00WFACYA	Shoulder Lateral Ay	1000	+	no	400
118	14SHLDLE00WFACZA	Shoulder Vertical Az	1000	+	no	400
118A	14SHLDLE00WFACRA	Shoulder A Resultant	1000			

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
119	14SHLDLE00WFFOZA	Shoulder Force Fz	600	-	no	4000
120	14SHLDLE00WFFOYA	Shoulder Force Fy	600	+	no	5000
121	14SHLDLE00WFFOXA	Shoulder Force Fx	600	-	no	4000
122	14SHLDLE00WFDSYA	Shoulder Displacement Dy	600	+	no	102
123	14THSP0100WFACXA	T1 Longitudinal Ax	180	+	no	400
124	14THSP0100WFACYA	T1 Lateral Ay	180	+	no	400
125	14THSP0100WFACZA	T1 Vertical Az	180	+	no	400
125A	14THSP0100WFACRA	T1 A Resultant	180			
126	14TRRILE01WFACXA	Thorax Rib 1 Longitudinal Ax	1000	+	no	400
127	14TRRILE01WFACYA	Thorax Rib 1 Lateral Ay	1000	+	no	400
128	14TRRILE01WFACZA	Thorax Rib 1 Vertical Az	1000	+	no	400
128A	14TRRILE01WFACRA	Thorax Rib 1 A Resultant	1000			
129	14TRRILE01WFDC0A	THX RIB 1 IRTRAC Compression	600	+	no	110
130	14TRRILE01WFANZA	THX RIB1 Rotational Angle	600	+	no	110
131	14TRRILE01WFDSXA	THX RIB 1 IRTRAC X Deflection	600	+	no	110
132	14TRRILE01WFDSYA	THX RIB 1 IRTRAC Y Deflection	600	+	no	110
133	14TRRILE02WFACXA	Thorax Rib 2 Longitudinal Ax	1000	+	no	400
134	14TRRILE02WFACYA	Thorax Rib 2 Lateral Ay	1000	+	no	400
135	14TRRILE02WFACZA	Thorax Rib 2 Vertical Az	1000	+	no	400
135A	14TRRILE02WFACRA	Thorax Rib 2 A Resultant	1000			
136	14TRRILE02WFDC0A	THX RIB 2 IRTRAC Compression	600	+	no	110
137	14TRRILE02WFANZA	THX RIB2 Rotational Angle	600	+	no	110
138	14TRRILE02WFDSXA	THX RIB 2 IRTRAC X Deflection	600	+	no	110
139	14TRRILE02WFDSYA	THX RIB 2 IRTRAC Y Deflection	600	+	no	110
140	14TRRILE03WFACXA	Thorax Rib 3 Longitudinal Ax	1000	+	no	400
141	14TRRILE03WFACYA	Thorax Rib 3 Lateral Ay	1000	+	no	400

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
142	14TRRILE03WFACZA	Thorax Rib 3 Vertical Az	1000	+	no	400
142A	14TRRILE03WFACRA	Thorax Rib 3 A Resultant	1000			
143	14TRRILE03WFDC0A	THX RIB 3 IRTAC Compression	600	+	no	110
144	14TRRILE03WFANZA	THX RIB3 Rotational Angle	600	+	no	110
145	14TRRILE03WFDSXA	THX RIB 3 IRTAC X Deflection	600	+	no	110
146	14TRRILE03WFDSYA	THX RIB 3 IRTAC Y Deflection	600	+	no	110
147	14ABRILE01WFACXA	Abdominal Rib 1 Longitudinal Ax	1000	+	no	400
148	14ABRILE01WFACYA	Abdominal Rib 1 Lateral Ay	1000	+	no	400
149	14ABRILE01WFACZA	Abdominal Rib 1 Vertical Az	1000	+	no	400
149A	14ABRILE01WFACRA	Abdominal Rib 1 A Resultant	1000			
150	14ABRILE01WFDC0A	ABD RIB 1 IRTAC Compression	600	+	no	110
151	14ABRILE01WFANZA	ABD RIB1 Rotational Angle	600	+	no	110
152	14ABRILE01WFDSXA	ABD RIB 1 IRTAC X Deflection	600	+	no	110
153	14ABRILE01WFDSYA	ABD RIB 1 IRTAC Y Deflection	600	+	no	110
154	14ABRILE02WFACXA	Abdominal Rib 2 Longitudinal Ax	1000	+	no	400
155	14ABRILE02WFACYA	Abdominal Rib 2 Lateral Ay	1000	+	no	400
156	14ABRILE02WFACZA	Abdominal Rib 2 Vertical Az	1000	+	no	400
156A	14ABRILE02WFACRA	Abdominal Rib 2 A Resultant	1000			
157	14ABRILE02WFDC0A	ABD RIB 2 IRTAC Compression	600	+	no	110
158	14ABRILE02WFANZA	ABD RIB2 Rotational Angle	600	+	no	110
159	14ABRILE02WFDSXA	ABD RIB 2 IRTAC X Deflection	600	+	no	110
160	14ABRILE02WFDSYA	ABD RIB 2 IRTAC Y Deflection	600	+	no	110
161	14THSP0400WFACXA	T4 Longitudinal Ax	180	+	no	400
162	14THSP0400WFACYA	T4 Lateral Ay	180	+	no	400
163	14THSP0400WFACZA	T4 Vertical Az	180	+	no	400
163A	14THSP0400WFACRA	T4 A Resultant	180			

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Channel			Filter			
Number	ISO mnemonic	Channel Title	Class	Flip	Zero	Full Scale
164	14THSP1200WFACXA	T12 Longitudinal Ax	180	+	no	400
165	14THSP1200WFACYA	T12 Lateral Ay	180	+	no	400
166	14THSP1200WFACZA	T12 Vertical Az	180	+	no	400
166A	14THSP1200WFACRA	T12 A Resultant	180			
167	14PELV0000WFACXA	Pelvis Longitudinal Ax	180	+	no	400
168	14PELV0000WFACYA	Pelvis Lateral Ay	180	-	no	400
169	14PELV0000WFACZA	Pelvis Vertical Az	180	+	no	400
169A	14PELV0000WFACRA	Pelvis A Resultant	180			
170	14PUBC0000WFFOYA	Pubic Force Fy	600	-	no	12000
171	11VEHCCG0000ACXA	Vehicle CG (X)	60	+	no	2000
172	11VEHCCG0000ACYA	Vehicle CG (Y)	60	+	no	2000
173	11VEHCCG0000ACZA	Vehicle CG (Z)	60	+	no	2000
173A	11VEHCCG0000ACRA	Vehicle CG Resultant	60			
174	11SILBRIFR00ACXA	Right Front Sill at Front Seat (X)	60	+	no	2000
175	11SILBRIFR00ACYA	Right Front Sill at Front Seat (Y)	60	-	no	2000
176	11SILBRIFR00ACZA	Right Front Sill at Front Seat (Z)	60	+	no	2000
176A	11SILBRIFR00ACRA	Right Front Sill at Front Seat Resultant	60			
177	11SILBRIRE00ACXA	Right Rear Sill at Rear Seat (X)	60	+	no	2000
178	11SILBRIRE00ACYA	Right Rear Sill at Rear Seat (Y)	60	+	no	2000
179	11SILBRIRE00ACZA	Right Rear Sill at Rear Seat (Z)	60	+	no	2000
179A	11SILBRIRE00ACRA	Right Rear Sill at Rear Seat Resultant	60			
180	11SILBLEFR00ACYA	Left Side Sill at Front Seat (Y)	60	+	no	2000
181	11SILBLERE00ACYA	Left Side Sill at Rear Seat (Y)	60	+	no	2000
182	11APILLO0000ACYA	Left Lower A Post (Y)	60	+	no	2000
183	11APILMI0000ACYA	Left Middle A-Post (Y)	60	+	no	2000
184	11BPILLO0000ACYA	Left Lower B Post (Y)	60	+	no	2000

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Channel Number	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
185	11BPILMI0000ACYA	Left Middle B Post (Y)	60	+	yes	2000
186	11SETR000000ACYA	Front Seat Track (Y)	60	+	yes	2000
187	11SETRLERE00ACYA	LEFT REAR SEAT STRUCTURE AY	60	+	yes	2000
188	11VEHCRIRE00ACYA	RIGHT REAR OCCUPANT COMPARTMENT AY	60	+	yes	2000
189	11ENGNTPO000ACXA	ENGINE BLOCK AX	60	+	yes	2000
190	11ENGNTPO000ACYA	ENGINE BLOCK AY	60	+	yes	2000
191	11FORA000000ACXA	Rear Floor Pan Above Axle (X)	60	+	yes	2000
192	11FORA000000ACYA	Rear Floor Pan Above Axle (Y)	60	+	yes	2000
193	11FORA000000ACZA	Rear Floor Pan Above Axle (Z)	60	+	yes	2000
193A	11FORA000000ACRA	Rear Floor Pan Above Axle Resultant	60			
194	11VEHCEDR000ACXA	Vehicle at EDR (X)	60	+	yes	2000
195	11VEHCEDR000ACYA	Vehicle at EDR (Y)	60	+	yes	2000
196	11VEHCEDR000ACZA	Vehicle at EDR (Z)	60	+	yes	2000
196A	11VEHCEDR000ACRA	Vehicle at EDR Resultant	60			
197	10FORARD0000ACXA	REAR DECK AX	60	+	yes	2000
198	10FORARD0000ACYA	REAR DECK AY	60	+	yes	2000
199	10FORARD0000ACZA	REAR DECK AZ	60	+	yes	2000
199A	10FORARD0000ACRA	REAR DECK A Resultant	60			
200	10VEHCCG0000AVXA	VEHICLE CENTER OF GRAVITY (X) ROLL RATE GYRO	60	+	yes	1500
201	10VEHCCG0000AVYA	VEHICLE CENTER OF GRAVITY (Y) PITCH RATE GYRO	60	+	yes	1500
202	10VEHCCG0000AVZA	VEHICLE CENTER OF GRAVITY (Z) YAW RATE GYRO	60	+	yes	1500
203	10VEHCEDR000AVXA	VEHICLE AT EDR (X) ROLL RATE GYRO	60	+	yes	1500
204	10VEHCEDR000AVYA	VEHICLE AT EDR (Y) PITCH RATE GYRO	60	+	yes	1500
205	10VEHCEDR000AVZA	VEHICLE AT EDR (Z) YAW RATE GYRO	60	+	yes	1500
206	10FORARD0000AVXA	REAR DECK (X) ROLL RATE GYRO	60	+	yes	1500
207	10FORARD0000AVYA	REAR DECK (Y) PITCH RATE GYRO	60	+	yes	1500

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Channel Number	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
208	10FORARD0000AVZA	REAR DECK (Z) YAW RATE GYRO	60	+	yes	1500
209	11DOORMIMI71ACYA	Left Front Door Mid Centerline (Y)	60	+	yes	2000
210	11DOORMIRE71ACYA	Left Front Door Mid Rear (Y)	60	+	yes	2000
211	11DOORMIUP71ACYA	Left Front Door Upper Centerline (Y)	60	+	yes	2000
212	14DOORMIRE71ACYA	Left Rear Door Mid Rear (Y)	60	+	yes	2000
213	14DOORMIUP71ACYA	Left Rear Door Upper Centerline (Y)	60	+	yes	2000
214	11SENS000000VO0A	Driver primary	1000	+	no	5
215	11SENS010000VO0A	SAB TIMING IND	1000	+	no	5
216	11SENS020000VO00	SCAB TIMING IND	0	+	no	5
217	11HEADCONT00VO0A	Head Contact	1000	+	no	1
218	11SHLDCONT00VO0A	Shoulder Contact	1000	+	no	1
219	11THORCONT00VO0A	Thorax Contact	1000	+	no	1
220	11LEGCONT000VO0A	Leg Contact	1000	+	no	1
221	11CHBA5901WSVO0A	chest band w/59 gages, gage 1	1000	+	no	1
222	11CHBA5902WSVO0A	chest band w/59 gages, gage 2	1000	+	no	1
223	11CHBA5903WSVO0A	chest band w/59 gages, gage 3	1000	+	no	1
224	11CHBA5904WSVO0A	chest band w/59 gages, gage 4	1000	+	no	1
225	11CHBA5905WSVO0A	chest band w/59 gages, gage 5	1000	+	no	1
226	11CHBA5906WSVO0A	chest band w/59 gages, gage 6	1000	+	no	1
227	11CHBA5907WSVO0A	chest band w/59 gages, gage 7	1000	+	no	1
228	11CHBA5908WSVO0A	chest band w/59 gages, gage 8	1000	+	no	1
229	11CHBA5909WSVO0A	chest band w/59 gages, gage 9	1000	+	no	1
230	11CHBA5910WSVO0A	chest band w/59 gages, gage 10	1000	+	no	1
231	11CHBA5911WSVO0A	chest band w/59 gages, gage 11	1000	+	no	1
232	11CHBA5912WSVO0A	chest band w/59 gages, gage 12	1000	+	no	1
233	11CHBA5913WSVO0A	chest band w/59 gages, gage 13	1000	+	no	1

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Channel Number	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
234	11CHBA5914WSVO0A	chest band w/59 gages, gage 14	1000	+	no	1
235	11CHBA5915WSVO0A	chest band w/59 gages, gage 15	1000	+	no	1
236	11CHBA5916WSVO0A	chest band w/59 gages, gage 16	1000	+	no	1
237	11CHBA5917WSVO0A	chest band w/59 gages, gage 17	1000	+	no	1
238	11CHBA5918WSVO0A	chest band w/59 gages, gage 18	1000	+	no	1
239	11CHBA5919WSVO0A	chest band w/59 gages, gage 19	1000	+	no	1
240	11CHBA5920WSVO0A	chest band w/59 gages, gage 20	1000	+	no	1
241	11CHBA5921WSVO0A	chest band w/59 gages, gage 21	1000	+	no	1
242	11CHBA5922WSVO0A	chest band w/59 gages, gage 22	1000	+	no	1
243	11CHBA5923WSVO0A	chest band w/59 gages, gage 23	1000	+	no	1
244	11CHBA5924WSVO0A	chest band w/59 gages, gage 24	1000	+	no	1
245	11CHBA5925WSVO0A	chest band w/59 gages, gage 25	1000	+	no	1
246	11CHBA5926WSVO0A	chest band w/59 gages, gage 26	1000	+	no	1
247	11CHBA5927WSVO0A	chest band w/59 gages, gage 27	1000	+	no	1
248	11CHBA5928WSVO0A	chest band w/59 gages, gage 28	1000	+	no	1
249	11CHBA5929WSVO0A	chest band w/59 gages, gage 29	1000	+	no	1
250	11CHBA5930WSVO0A	chest band w/59 gages, gage 30	1000	+	no	1
251	11CHBA5931WSVO0A	chest band w/59 gages, gage 31	1000	+	no	1
252	11CHBA5932WSVO0A	chest band w/59 gages, gage 32	1000	+	no	1
253	11CHBA5933WSVO0A	chest band w/59 gages, gage 33	1000	+	no	1
254	11CHBA5934WSVO0A	chest band w/59 gages, gage 34	1000	+	no	1
255	11CHBA5935WSVO0A	chest band w/59 gages, gage 35	1000	+	no	1
256	11CHBA5936WSVO0A	chest band w/59 gages, gage 36	1000	+	no	1
257	11CHBA5937WSVO0A	chest band w/59 gages, gage 37	1000	+	no	1
258	11CHBA5938WSVO0A	chest band w/59 gages, gage 38	1000	+	no	1
259	11CHBA5939WSVO0A	chest band w/59 gages, gage 39	1000	+	no	1

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Channel Number	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
260	11CHBA5940WSVO0A	chest band w/59 gages, gage 40	1000	+	no	1
261	11CHBA5941WSVO0A	chest band w/59 gages, gage 41	1000	+	no	1
262	11CHBA5942WSVO0A	chest band w/59 gages, gage 42	1000	+	no	1
263	11CHBA5943WSVO0A	chest band w/59 gages, gage 43	1000	+	no	1
264	11CHBA5944WSVO0A	chest band w/59 gages, gage 44	1000	+	no	1
265	11CHBA5945WSVO0A	chest band w/59 gages, gage 45	1000	+	no	1
266	11CHBA5946WSVO0A	chest band w/59 gages, gage 46	1000	+	no	1
267	11CHBA5947WSVO0A	chest band w/59 gages, gage 47	1000	+	no	1
268	11CHBA5948WSVO0A	chest band w/59 gages, gage 48	1000	+	no	1
269	11CHBA5949WSVO0A	chest band w/59 gages, gage 49	1000	+	no	1
270	11CHBA5950WSVO0A	chest band w/59 gages, gage 50	1000	+	no	1
271	11CHBA5951WSVO0A	chest band w/59 gages, gage 51	1000	+	no	1
272	11CHBA5952WSVO0A	chest band w/59 gages, gage 52	1000	+	no	1
273	11CHBA5953WSVO0A	chest band w/59 gages, gage 53	1000	+	no	1
274	11CHBA5954WSVO0A	chest band w/59 gages, gage 54	1000	+	no	1
275	11CHBA5955WSVO0A	chest band w/59 gages, gage 55	1000	+	no	1
276	11CHBA5956WSVO0A	chest band w/59 gages, gage 56	1000	+	no	1
277	14HEADCONT00VO0A	Head Contact	1000	+	no	1
278	14SHLDCONT00VO0A	Shoulder Contact	1000	+	no	1
279	14THORCONT00VO0A	Thorax Contact	1000	+	no	1
280	14LEGCONT000VO0A	Leg Contact	1000	+	no	1
281	14CHBA4001WFVO0A	chest band w/40 gages, gage 1	1000	+	no	1
282	14CHBA4002WFVO0A	chest band w/40 gages, gage 2	1000	+	no	1
283	14CHBA4003WFVO0A	chest band w/40 gages, gage 3	1000	+	no	1
284	14CHBA4004WFVO0A	chest band w/40 gages, gage 4	1000	+	no	1
285	14CHBA4005WFVO0A	chest band w/40 gages, gage 5	1000	+	no	1

Command File Test Number 120920

Channel Number	ISO mnemonic	Channel Title	Filter Class	Flip	Zero	Full Scale
286	14CHBA4006WFVO0A	chest band w/40 gages, gage 6	1000	+	no	1
287	14CHBA4007WFVO0A	chest band w/40 gages, gage 7	1000	+	no	1
288	14CHBA4008WFVO0A	chest band w/40 gages, gage 8	1000	+	no	1
289	14CHBA4009WFVO0A	chest band w/40 gages, gage 9	1000	+	no	1
290	14CHBA4010WFVO0A	chest band w/40 gages, gage 10	1000	+	no	1
291	14CHBA4011WFVO0A	chest band w/40 gages, gage 11	1000	+	no	1
292	14CHBA4012WFVO0A	chest band w/40 gages, gage 12	1000	+	no	1
293	14CHBA4013WFVO0A	chest band w/40 gages, gage 13	1000	+	no	1
294	14CHBA4014WFVO0A	chest band w/40 gages, gage 14	1000	+	no	1
295	14CHBA4015WFVO0A	chest band w/40 gages, gage 15	1000	+	no	1
296	14CHBA4016WFVO0A	chest band w/40 gages, gage 16	1000	+	no	1
297	14CHBA4017WFVO0A	chest band w/40 gages, gage 17	1000	+	no	1
298	14CHBA4018WFVO0A	chest band w/40 gages, gage 18	1000	+	no	1
299	14CHBA4019WFVO0A	chest band w/40 gages, gage 19	1000	+	no	1
300	14CHBA4020WFVO0A	chest band w/40 gages, gage 20	1000	+	no	1
301	14CHBA4021WFVO0A	chest band w/40 gages, gage 21	1000	+	no	1
302	14CHBA4022WFVO0A	chest band w/40 gages, gage 22	1000	+	no	1
303	14CHBA4023WFVO0A	chest band w/40 gages, gage 23	1000	+	no	1
304	14CHBA4024WFVO0A	chest band w/40 gages, gage 24	1000	+	no	1
305	14CHBA4025WFVO0A	chest band w/40 gages, gage 25	1000	+	no	1
306	14CHBA4026WFVO0A	chest band w/40 gages, gage 26	1000	+	no	1
307	14CHBA4027WFVO0A	chest band w/40 gages, gage 27	1000	+	no	1
308	14CHBA4028WFVO0A	chest band w/40 gages, gage 28	1000	+	no	1
309	14CHBA4029WFVO0A	chest band w/40 gages, gage 29	1000	+	no	1
310	14CHBA4030WFVO0A	chest band w/40 gages, gage 30	1000	+	no	1

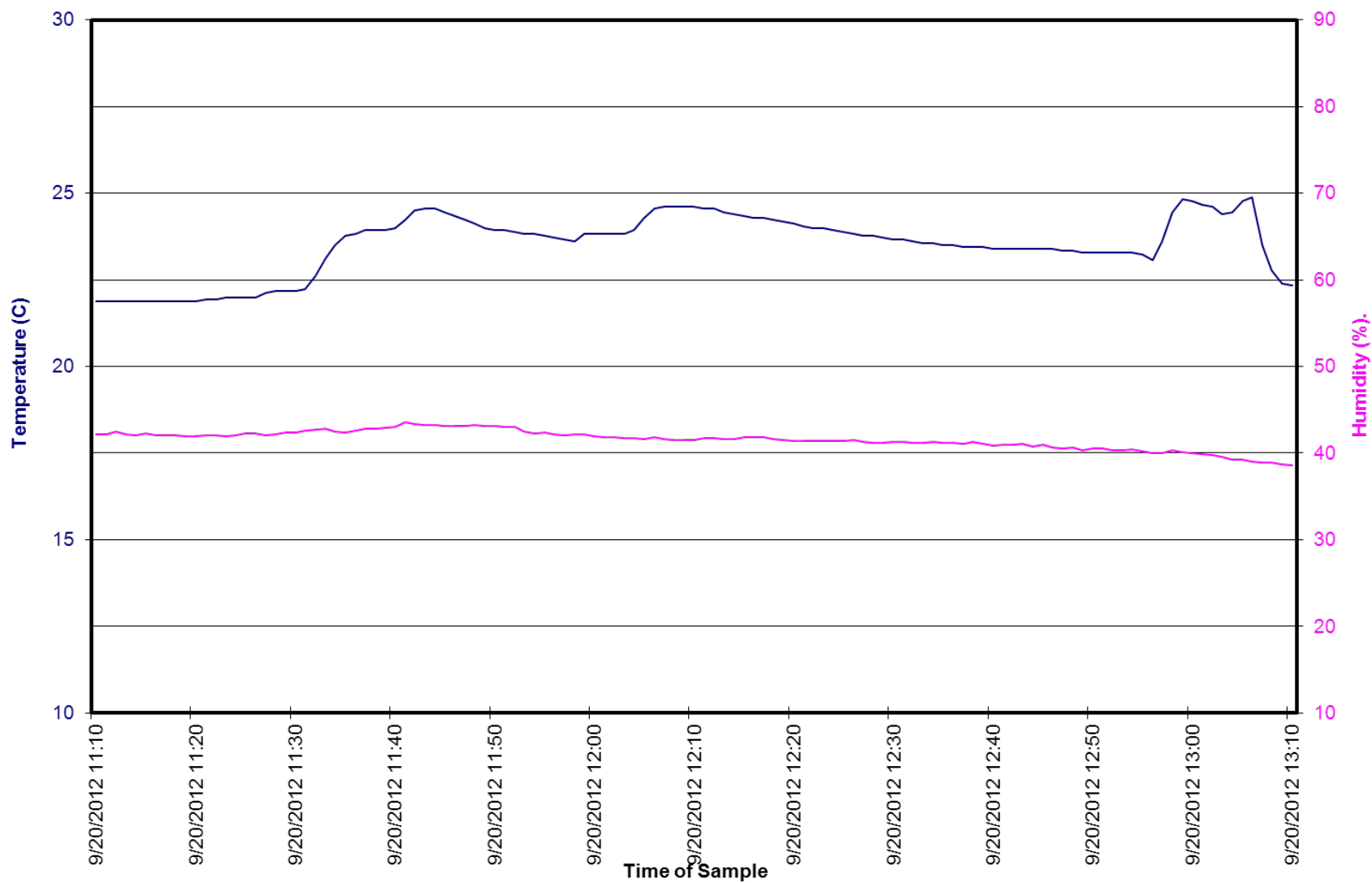
Command File Test Number 120920

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311	MOMBARCG0000ACXA	MDB CG AX	60	+	yes	2000
312	MOMBARCG0000ACYA	MDB CG AY	60	+	yes	2000
313	MOMBARCG0000ACZA	MDB CG AZ	60	+	yes	2000
313A	MOMBARCG0000ACRA	MDB CG A Resultant	60			
314	MOFRAMRE0000ACXA	MDB REAR AX	60	+	yes	2000
315	MOFRAMRE0000ACYA	MDB REAR AY	60	+	yes	2000

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Appendix E

Chest Band Information

Two chest bands were used in this test: one 59-channel chest band installed on the WorldSID 50th male dummy in the driver seat; one 40-channel chest band installed on the WorldSID 5th female dummy in the rear seat. The chest bands were installed directly on the ribs denoted in Table 1 using double-sided foam tape to ensure that the band followed the rib's motion (Figures 1-8). The bands were used in this test to determine the shape of the rib contour throughout the crash event. Pertinent information regarding the location of the band on the dummies (Table 1) may be used for processing the chest band data in RBandPC or CrashStar software. FARO data locating three points on the chest bands prior to the dummies being in pre-test seated ready position are included in Table 2. Table 1 and Figures 9 and 10 show results from processing the chest band data using CrashStar. Maximum deflection was determined using the forced angle method by Pintar et al., 2009. Information related to the chest band used in this test may be directed to heather.rhule@dot.gov.



Figure 1. Rear of WorldSID 50th male dummy showing chest band location



Figure 2. Left side of WorldSID 50th male dummy showing chest band location



Figure 3. Front of WorldSID 50th male dummy showing chest band location



Figure 4. Right side of WorldSID 50th dummy showing chest band location



Figure 5. Rear of WorldSID 5th female dummy showing chest band location



Figure 6. Left side of WorldSID 5th female dummy showing chest band location



Figure 7. Front of WorldSID 5th female dummy showing chest band location



Figure 8. Right side of WorldSID 5th female dummy showing chest band location

Table 1. Chest Band Information

Test date	09/20/2012	
Test vehicle	Cadillac CTS	
Dummy	WorldSID 50 th Male	WorldSID 5 th Female
Seating position	Driver	Rear seat
Chest band location	Abdomen rib 1	Thorax Rib 3
Chest circumference	939.8 mm	773 mm
Number of active gages	56	30
Gage closest to spine	8	1
Distance from spine	-2 mm	0 mm
Gage closest to sternum	41	16
Distance from sternum	+5 mm	0 mm
Maximum half-chest deflection (forced angle method) from chest band data	27.1 mm	29.7 mm
Angle from spine-sternum line to maximum deflection (forced angle method) from chest band data	92.5 deg	20.3 deg

Table 2. Chest Band Faro Data Points

Dummy	WorldSID 50 th Male				WorldSID 5 th Female			
		X	Y	Z		X	Y	Z
(Anchor) Chest Band Gage #	8	-12.2581	3.1127	-303.4331	1	6.5305	3.0592	-209.7259
Chest Band Gage #	41	239.8737	6.8544	-297.352	16	199.1028	0.8664	-198.28
Chest Band Gage #	23	115.5258	167.4268	-298.253	8	80.7607	129.4312	-199.161

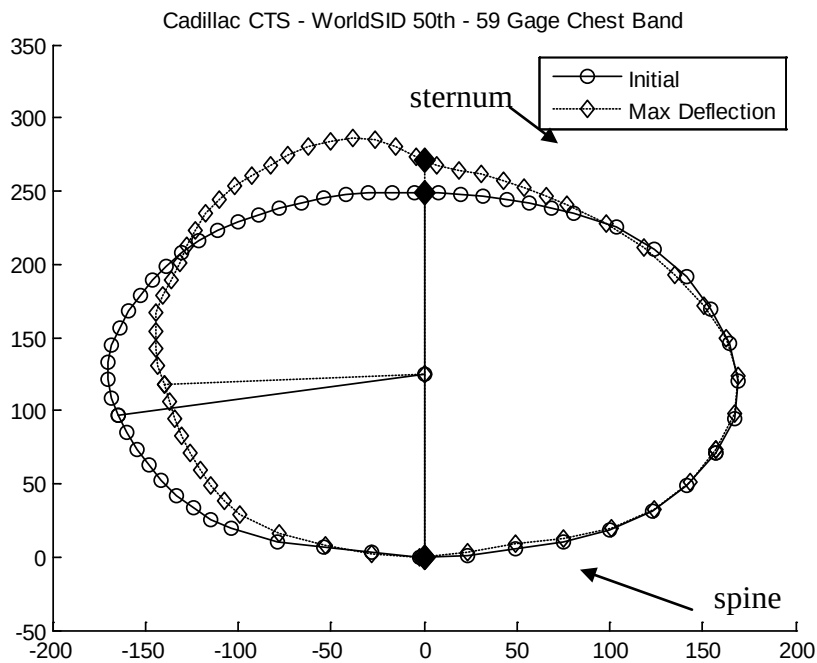


Figure 9. Chest band contours at initial position and maximum deflection for the WorldSID 50th dummy, where maximum deflection was determined using the forced angle method (Pintar et al., 2009). Contours were aligned such that the spine-sternum lines coincide.

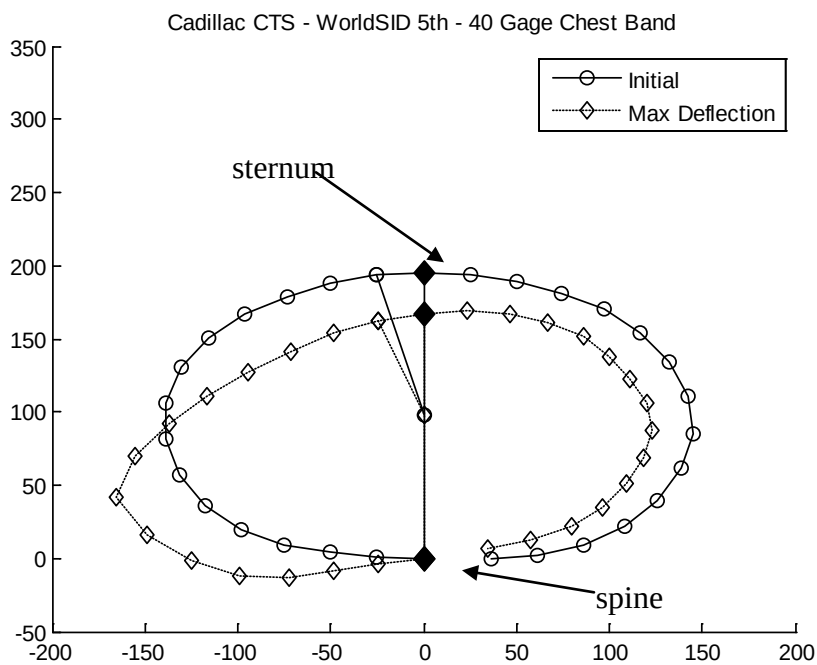


Figure 10. Chest band contours at initial position and maximum deflection for the WorldSID 5th dummy, where maximum deflection was determined using the forced angle method (Pintar et al., 2009). Contours were aligned such that the spine-sternum lines coincide.

REFERENCE:

Pintar, F., Humm, J., Yoganandan, N., Martin, P. (2009) Test Program To Define Oblique Chest Loading In Side Impact. SAE paper number 09-0557. The 19th International Technical Conference on the Enhanced Safety of Vehicles, Washington D.C.