

**Vehicle Research and Test Center
2003 Chevrolet Silverado
into Front of 2002 Ford Focus
TRC Inc. Test Number: 050719**

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**Prepared For:
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Section 1.0

Purpose and Test Procedure

Purpose

This 128.7 km/h (80.0 mph), full frontal collinear vehicle-to-vehicle impact test 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 test mode was defined with bullet vehicle moving at 52.0 km/h to impact the target vehicle moving at 76.7 km/h at an impact angle of 0 degrees. The purpose of this test was to evaluate the aggressiveness of the bullet vehicle, a 2003 Chevrolet Silverado 4-door pickup truck, and the vehicle and occupant response of the target vehicle, a 2002 Ford Focus SE 4-door, in this full frontal collinear vehicle-to-vehicle impact mode.

Test Procedure

This test was conducted in accordance with VRTC instructions for a full frontal collinear vehicle-to-vehicle test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" (December 18, 2001), FMVSS 212, "Windshield Mounting, and FMVSS 219 (partial), Windshield Zone Intrusion.

The target vehicle, a 2002 Ford Focus, was instrumented with seventeen (17) accelerometers to measure longitudinal, lateral and vertical axis accelerations. The driver's and passenger's airbag signals were monitored with inductive pickups. The vehicle's specified impact velocity range was 76.0 to 77.6 km/h.

The bullet vehicle, a 2003 Chevrolet Silverado, was instrumented with seventeen (17) accelerometers to measure longitudinal, lateral and vertical axis accelerations. The driver's and passenger's airbag signals were monitored with inductive pickups. The vehicle's specified impact velocity range was 51.2 to 52.8 km/h.

The bullet vehicle impacted the front of the target, at an impact angle of 0 degrees. The bullet vehicle's centerline was aligned with the target vehicle's centerline.

One (1) 50th percentile adult male Hybrid III dummy and one (1) 5th percentile adult female dummy were placed in the target vehicle's left front and right front designated seating positions, respectively, according to NHTSA Laboratory Test Procedure TP-208-12. The driver dummy and passenger dummy were both belted and were restrained with front dual stage airbags.

The target vehicle's driver dummy was instrumented with nine (9) accelerometers in the head, plus six (6) chest and three (3) pelvis accelerometers to measure longitudinal, lateral and vertical accelerations (primary and redundant in the chest). The target vehicle's driver dummy was also instrumented with upper and lower neck moment and force load cells, a chest deflection potentiometer, left and right femur load cells to measure moments and forces, and tibia to femur displacement potentiometers at each knee. The target vehicle's driver dummy

was also equipped with THOR-LX lower legs and with upper and lower tibia load cells to measure forces and moments.

The target vehicle's passenger dummy was instrumented with an array of six (6) accelerometers in the head, plus six (6) chest, and three (3) pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations (primary and redundant in the head and chest). The target vehicle's passenger dummy was also instrumented with upper and lower neck moment and force load cells, left and right femur load cells to measure axial forces, and a chest deflection potentiometer. The target vehicle's passenger dummy was also equipped with THOR-FLX lower legs, which included upper and lower tibia load cells to measure forces and moments, and a tibia to femur displacement potentiometer at each knee.

One (1) 50th percentile adult male Hybrid III dummy and one (1) 5th percentile adult female dummy were placed in the bullet vehicle's front outboard designated seating positions according to NHTSA Laboratory Test Procedure TP-208-12. The driver dummy and passenger dummy were both belted and were restrained with front dual stage airbags.

The bullet vehicle driver dummy was instrumented with nine (9) accelerometers in the head, plus six (6) chest and three (3) pelvis accelerometers to measure longitudinal, lateral and vertical accelerations (primary and redundant in the chest). The bullet vehicle's driver dummy was also instrumented with upper and lower neck moment and force load cells, a chest deflection potentiometer, left and right femur load cells to measure moments and forces, and tibia to femur displacement potentiometers at each knee. The bullet vehicle's driver dummy was also equipped with THOR-LX lower legs and with upper and lower tibia load cells to measure forces and moments.

The bullet vehicle's passenger dummy was instrumented with three (3) accelerometers in the head, plus three (3) chest and three (3) pelvis accelerometers to measure longitudinal, lateral, and vertical accelerations. The bullet vehicle's passenger dummy was also instrumented with upper and lower neck moment and force load cells, left and right femur load cells to measure axial forces, and a chest deflection potentiometer.

The 293 data channels were digitally sampled and recorded at 12,500 samples per second and processed per SAE J211 March 1995.

The crash event was recorded by one (1) real-time panning motion picture camera and eighteen (18) high-speed motion picture cameras. The pre-test and post-test conditions were recorded by one (1) real-time motion picture camera.

The test summary data are presented in Section 2.0. The summary of FMVSS 208 data are presented in Section 3.0. The occupant, camera, and vehicle measurements are presented in Section 4.0. Appendix A contains the still photographic prints. Appendix B contains the dummy and vehicle data plots. Appendix C contains the dummy verification data. Appendix D contains miscellaneous test information. Appendix E contains an INSIA report that was the basis for the Structural Measurements presented in Tables 13 and 18 of this report.

Section 2.0

Car into Car Impact Test Summary

Test Results Summary

This 128.7 km/h 0° full frontal collinear vehicle-to-vehicle impact test was conducted by TRC Inc. on July 19, 2005.

The test vehicle, a 2002 Ford Focus SE 4-door, was equipped with a 4-cylinder engine, automatic transmission, power steering, and power brakes, and dual stage front airbags. The vehicle's test weight was 1552.8 kg. The vehicle's impact speed was 76.9 km/h. The bullet test vehicle, a 2003 Chevrolet Silverado 4-door pickup truck, was equipped with a 4.3-liter inline engine, automatic transmission, power steering, power brakes, and dual stage front airbags. The bullet vehicle's test weight was 2293.4 kg. The bullet vehicle's impact speed was 52.4 km/h.

Injury Criteria Data Summary				
	Target Vehicle		Bullet Vehicle	
	Driver	Passenger	Driver	Passenger
HIC (15 ms)	2948	757	700	583
HIC (36 ms)	2948	1183	970	737
Chest 3 ms (g)	108.5	71.6	57.5	52.8
Chest Deflection (mm)	54	32	34	22
Upper Neck				
NTF	0.32	0.42	0.08	0.31
NTE	1.00	1.93	0.47	0.68
NCF	0.01	0.37	0.11	0.19
NCE	0.21	0.21	0.13	0.55
Neck Tension (N)	6364	4131	2554	1318
Neck Compression (N)	502	1051	381	682
Left Femur (N)	3642	6530	4924	5204
Right Femur (N)	5809	5857	8470	3776
Maximum Upper TI	1.02	1.52	1.02	N/A
Maximum Lower TI	1.11	1.74	0.96	N/A

Data Acquisition Explanations

The target vehicle passenger's upper neck Y-axis force data channel, 13NECKUP00HFFOYA, recorded intermittent data throughout the test.

The target vehicle passenger's left foot X-axis acceleration data channel, 13FOOTLEFXHFACXA, exceeded full scale at approximately 44 milliseconds.

The target vehicle passenger's left foot Y-axis acceleration data channel, 13FOOTLEFXHFACYA, recorded questionable data throughout the test.

The bullet vehicle driver's right knee displacement data channel, 21KNSLRI00H3DSXA, did not record any useful data during the test.

The bullet vehicle passenger's X-axis head (LT), 23HEADLE00HFACXA, recorded no useful data during the test.

The target vehicle's top of engine X-axis acceleration data channel, 12ENGNTF0000ACXA, exceeded full scale at approximately 67 milliseconds and recorded no useful data after that.

The target vehicle's center of gravity X-, Y-, and Z-axis acceleration data channels, 10VEHCCG0000ACXA, 10VEHCCG0000ACYA, and 10VEHCCG0000ACZA, recorded questionable data throughout the test. The accelerometer mounting block was found to be dislodged during post-test inspection. The velocity, displacement, and the resultant were also affected.

The target vehicle's rear deck Y-axis acceleration data channel, 18VEHC000000ACYA, did not record any useful data during the test. The resultant was also affected.

The bullet vehicle's top of engine X-axis acceleration data channel, 22ENGNT0000ACXA, exceeded full scale at approximately 66 milliseconds and recorded no useful data after that.

The bullet vehicle's bottom of engine X-axis acceleration data channel, 22ENGNB0000ACXA, exceeded full scale at approximately 40 milliseconds and recorded no useful data after that.

The bullet vehicle's toe pan accelerator X-axis acceleration data channel, 21PEAC000000ACXA, was found to be dislodged during post-test inspection.

The bullet vehicle's toe pan accelerator Z-axis acceleration data channel, 21PEAC000000ACZA, was found to be dislodged during post-test inspection.

Table 1 Crash Test Summary

Test mode:	Full frontal collinear		
Test date:	07/19/05		
Test time:	1752		
Ambient temperature:	28° C		
Target vehicle year/make/ model/body style:	2002/Ford/Focus/4-door		
Target vehicle test weight:	1552.8 kg		
Bullet vehicle year/make/ model/body style:	2003/Chevrolet/Silverado/4-door pickup truck		
Bullet vehicle test weight:	2293.4 kg		
Impact angle ¹ :	0°		
Impact velocity ² :	Target vehicle = 76.9 km/h Bullet vehicle = 52.4 km/h		
Total number of data channels:	293		
Number of cameras:	High-speed	18	Real-time 1
<u>Target vehicle dummies:</u>	<u>Driver #110</u>	<u>Passenger #416</u>	
Type:	Hybrid III 50th	Hybrid III 5th	
Location:	Left front	Right front	
Restraint:	3 pt. seat belt, airbag	3 pt. seat belt, airbag	
<u>Bullet vehicle dummies:</u>	<u>Driver #090</u>	<u>Passenger #070</u>	
Type:	Hybrid III 50th	Hybrid III 5th	
Location:	Left front	Right front	
Restraint:	3 pt. seat belt, airbag	3 pt. seat belt, airbag	

¹ With respect to tow track centerline.

² Speed trap measurement ($\pm .08$ km/h accuracy)

Table 1 Crash Test Summary, Continued

Target vehicle seat track position for test:

Driver: Middle; detent #9 of 17

Passenger: Full forward

Target vehicle seat back position for test:

Driver: 25°; dummy torso angle measured by SAE J826

Passenger: 8.9°, measured at head restraint support post

Target vehicle head restraint position for test:

Driver: Full up

Passenger: Full down

Target vehicle steering column

position for test: 23.6°; middle of geometric range of travel

Target vehicle D-ring position for test:

Driver: 1 detent down from full up; (detent # 3 of 4)

Passenger: Full down

Bullet vehicle seat track position for test:

Driver: Middle; detent #12 of 23

Passenger: Full forward

Bullet vehicle seat back position for test:

Driver: 25°; dummy torso angle measured by SAE J826

Passenger: 4.7°; measured at head restraint support post

Bullet vehicle head restraint position for test:

Driver: Full up

Passenger: Full down

Bullet vehicle steering column

position for test: 3 detents down from full up; (detent # 4 of 6)

Bullet vehicle D-ring position for test:

Driver: N/A

Passenger: N/A

Table 2 Target General Test and Vehicle Parameter Data

Vehicle year/make/ model/body style:	2002/Ford/Focus SE/4-door
VIN:	1FAFP34322W105107
Model year:	2002
Body style:	4-door
Color:	Silver
Engine data:	
Cylinders:	4
Displacement	2 liters
Cylinder placement:	Straight
Engine placement:	Transverse
Transmission data:	<u>3</u> speed, ___ manual, <u>X</u> automatic, <u>X</u> overdrive
Final drive:	<u>X</u> FWD, ___ RWD, ___ 4WD
Date vehicle received:	
Odometer reading:	37,904 miles
Dealer's name and address:	Vehicle provided by VRTC

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	Yes	Telescoping steering wheel	Yes
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	Yes
Clock	Yes	Rear window defroster	Yes
Other	None	Power door locks	Yes

Certification data from vehicle's label:

Vehicle manufactured by:	Ford Motor Company
Date of manufacture:	09/01
VIN:	1FAFP34322W105107
GVWR:	1651 kg (3640 lbs.)
GAWR: Front:	895 kg (1975 lbs.)
Rear:	791 kg (1745 lbs.)

Table 2 Target General Test and Vehicle Parameter Data, Continued

Tires on vehicle (mfr., line, size): MasterCraft, Avenger, P195/60R15

Tire pressure with maximum capacity vehicle load:

Front:	44 psi	(300 kPa)
Rear:	44 psi	(300 kPa)

Spare tire (mfr., line, size): Hankook, Temporary, T125/80R15

Type of seats:

Front	Bucket
Rear	Bench

Maximum width: 1700 mm

Wheelbase: 2600 mm

Location of “Recommended Tire Pressure” label:

The label was located on driver C-pillar.

Data from vehicle’s “Recommended Tire Pressure” label”:

Recommended tire size: P195/60R15

Recommended cold tire pressure:

Front:	32 psi	(221 kPa)
Rear:	32 psi	(221 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front	2
Mid	0
Rear	3
Total	5

Vehicle capacity weight: 375 kg (826.7 lbs.)

Rated cargo/luggage weight 77.2 kg (35 lbs.)

Test vehicle attitude:

Delivered attitude:	LF 665 mm;	RF 660 mm;	LR 673 mm;	RR 678 mm
Pre-test attitude:	LF 632 mm;	RF 628 mm;	LR 614 mm;	RR 608 mm
Post-test attitude:	LF N/A ¹ mm;	RF N/A ¹ mm;	LR 663 mm;	RR 609 mm

¹ Measurement point was destroyed during impact.

Table 2 Target General Test and Vehicle Parameter Data, Continued

Weight of test vehicle as received (with maximum fluids):

Right front	360.0 kg	Right rear	250.5 kg
Left front	379.0 kg	Left rear	238.0 kg
Total front weight	739.0 kg	(60.2 % of total vehicle weight)	
Total rear weight	488.5 kg	(39.8 % of total vehicle weight)	
Total delivered weight	1227.5 kg		

Weight of test vehicle with required dummies and equipment:

Right front	415.4 kg	Right rear	358.8 kg
Left front	404.0 kg	Left rear	374.6 kg
Total front weight	819.4 kg	(52.8% of total vehicle weight)	
Total rear weight	733.4 kg	(47.2% of total vehicle weight)	
Total test weight	1552.8 kg		

Weight of ballast secured in vehicle: 18.1 kg

Components removed to meet target test weight: Rear center brake light, rear license plate light assembly, rear trunk seal, rear trunk lid carpet

Location of Vehicle's CG: 1228 mm rearward of front wheel centerline

Fuel System Data:

Usable fuel system capacity	50.0 liters (from owner's manual)
Actual test volume:	46.6 liters (93% of usable)

Table 3 Bullet General Test and Vehicle Parameter Data

Vehicle year/make/
model/body style: 2003/Chevrolet/Silverado/4-door pickup truck

VIN: 2GCEC19XX31294020

Model year: 2003

Body style: 4-door pickup truck

Color: Green

Engine data:

 Cylinders: 6

 Displacement 4.3 liters

 Cylinder placement: V

 Engine placement: Inline

Transmission data: 4 speed, ___ manual, X automatic, X overdrive

 Final drive: ___ FWD, X RWD, ___ 4WD

Date vehicle received:

Odometer reading: 45,854 miles

Dealer's name
and address: Vehicle provided by VRTC

Accessories:

Power steering	Yes	Automatic transmission	Yes
Power brakes	Yes	Automatic speed control	Yes
Power seats	No	Tilting steering wheel	Yes
Power windows	No	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
Radio	Yes	Anti-skid brake	Yes
Clock	Yes	Rear window defroster	No
Other	None	Power door locks	No

Certification data from vehicle's label:

Vehicle manufactured by: General Motors of Canada

Date of manufacture: 02/03

VIN: 2GCEC19XX31294020

GVWR: 2812 kg (6200 lbs.)

GAWR: Front: 1633 kg (3600 lbs.)

 Rear: 1672 kg (3686 lbs.)

Table 3 Bullet General Test and Vehicle Parameter Data, Continued

Tires on vehicle (mfr., line, size): Front: Kumho, Radial 798, P245/70R16,
Rear: Goodyear, Wrangler ST, P235/65R16

Tire pressure with maximum capacity vehicle load:

Front:	44 psi	(300 kPa)
Rear:	44 psi	(300 kPa)

Spare tire (mfr., line, size): Goodyear, Wrangler ST, P235/75R16

Type of seats:

Front	Split bench
Rear	Bench

Maximum width: 1991 mm

Wheelbase: 3658 mm

Location of “Recommended Tire Pressure” label:

The label was located on driver door.

Data from vehicle’s “Recommended Tire Pressure” label”:

Recommended tire size: P235/75R16

Recommended cold tire pressure:

Front:	35 psi	(240 kPa)
Rear:	35 psi	(240 kPa)

Vehicle Capacity Data:

Number of Occupants (Designated seating capacity):

Front	3
Mid	0
Rear	3
Total	6

Vehicle capacity weight: N/A kg

Rated cargo/luggage weight N/A kg

Test vehicle attitude:

Delivered attitude:	LF 837 mm;	RF 849 mm;	LR 893 mm;	RR 898 mm
Pre-test attitude:	LF 814 mm;	RF 842 mm;	LR 870 mm;	RR 895 mm
Post-test attitude:	LF 841 mm;	RF 815 mm;	LR 880 mm;	RR 890 mm

Table 3 Bullet General Test and Vehicle Parameter Data, Continued

Weight of test vehicle with required dummies and equipment:

Right front	624.4 kg	Right rear	486.0 kg
Left front	662.4 kg	Left rear	520.6 kg
Total front weight	1286.8 kg	(56.1% of total vehicle weight)	
Total rear weight	1006.6 kg	(43.9% of total vehicle weight)	
Total test weight	2293.4 kg		

Weight of ballast secured in vehicle: 0

Components removed to meet target test weight: Spare tire, taillights, exhaust system

Location of Vehicle's CG: 1606 mm rearward of front wheel centerline

Fuel System Data:

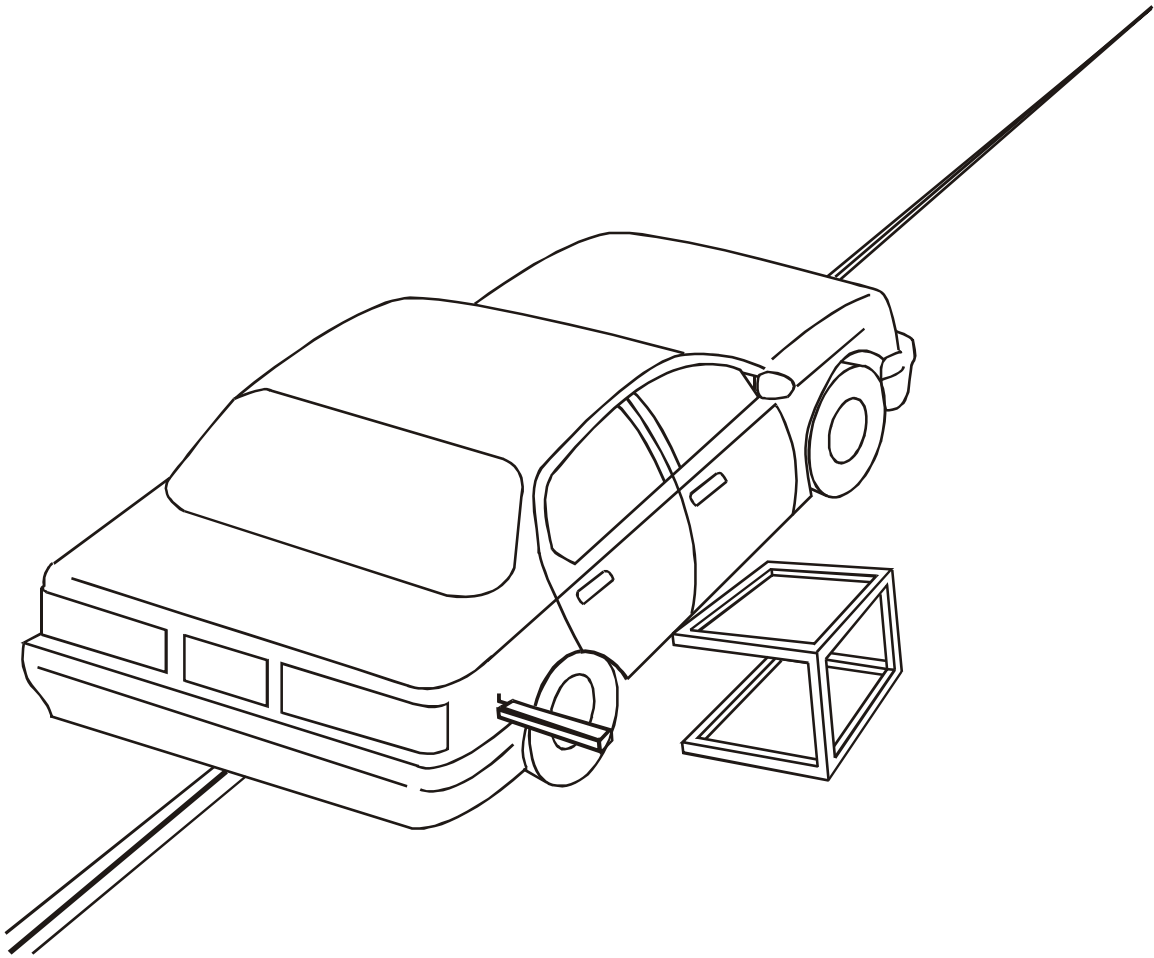
Usable fuel system capacity	98.4 liters (from owner's manual)
Actual test volume:	N/A ¹

¹ Actual test volume was not recorded.

Table 4 Post-Impact Data

Test number:	050719
Test date:	07/19/05
Test time:	17:52
Test type:	Full frontal collinear
Impact angle:	0°
Ambient temperature at impact area:	28° C
Impact velocity:	
Target vehicle:	76.9 km/h
Bullet vehicle:	52.4 km/h
Required impact velocity range:	
Target vehicle:	76.0 to 77.6 km/h
Bullet vehicle:	51.2 to 52.8 km/h
Distance from each vehicle to intended impact point:	
Entering velocity trap:	661 mm
Exiting velocity trap:	51 mm, approximately
Impact point:	0 mm left or right of intended impact point (referenced to target vehicle coordinate system)

Figure 1 Impact Velocity Measurement System



The final vane clears the final emitter/receiver pair approximately 51 millimeters before impact.

The vanes have 610-millimeter spacing.

Table 5 Target Vehicle Accelerometer Data Summary

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	Left Rear Seat Cross-member	X	2.8	155.8	40.7	63.3
2	Right Rear Seat Cross-member	X	3.1	165.9	35.3	80.7
3	Top of Engine ¹	X	---	---	---	---
4	Bottom of Engine	X	124.8	30.0	98.0	15.8
5	Right Front Brake Caliper	X	51.5	63.0	104.0	44.9
6	Left Front Brake Caliper	X	24.0	63.7	185.6	31.0
7	Toe Pan Accelerator	X	46.3	67.2	75.3	39.7
		Z	34.8	33.9	83.9	49.8
8	Toe Pan Footrest	X	58.2	72.4	139.3	49.4
		Z	70.5	53.3	92.1	68.7
9	Rear Tunnel Center	Y	29.8	78.4	45.3	49.8
10	Vehicle Center of Gravity ¹	X	15.8	55.8	77.3	49.2
		Y	25.1	70.0	69.5	61.2
		Z	31.3	51.2	69.6	65.4
	Resultant ¹		88.3	61.4		
11	Vehicle Rear Deck ¹	X	19.7	16.0	50.6	68.0
		Y	5.5	61.1	9.3	67.6
		Z	15.2	107.4	16.3	31.0
	Resultant ¹		51.9	67.9		

Reference: X: + Forward From Rear Bumper
 Y: + Rightward From Vehicle Centerline
 Z: + Downward From Ground Level

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

¹ See Data Acquisition Explanations.

Table 6 Bullet Vehicle Accelerometer Data Summary

Accel. No.	Location		Positive Direction		Negative Direction	
			Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	Left Rear Seat Cross-member	X	4.5	135.9	34.6	51.8
2	Right Rear Seat Cross-member	X	2.7	152.7	31.4	52.3
3	Top of Engine ¹	X	---	---	---	---
4	Bottom of Engine ¹	X	---	---	---	---
5	Right Front Brake Caliper	X	53.7	53.4	97.6	41.1
6	Left Front Brake Caliper	X	83.0	52.1	97.8	41.9
7	Toe Pan Accelerator ¹	X	6.2	70.6	84.5	49.7
		Z	23.1	55.0	27.1	47.0
8	Toe Pan Footrest	X	12.6	56.2	72.4	50.2
		Z	16.4	40.5	26.6	61.6
9	Rear Tunnel Center	Y	2.5	151.4	31.8	60.6
10	Vehicle Center of Gravity	X	4.1	136.2	29.5	52.4
		Y	5.3	92.6	5.4	62.6
		Z	6.7	159.8	16.3	54.4
		Resultant	32.1	52.7		
11	Vehicle Rear Deck	X	5.4	183.0	36.2	81.1
		Y	5.1	80.0	4.5	90.7
		Z	20.4	101.0	17.1	59.8
		Resultant	36.6	81.0		

Reference: X: + Forward From Rear Bumper
 Y: + Rightward From Vehicle Centerline
 Z: + Downward From Ground Level

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

¹ See Data Acquisition Explanations.

Section 3.0

Summary of FMVSS 208 Data

Table 7 Target Vehicle Dummy Injury Criteria Data

<u>Maximum Acceleration¹</u>								
	Head				Chest			
	X	Y	Z	R	X	Y	Z	R
Driver	-195.4 g	18.0 g	-55.7 g	202.4 g	-110.6 g	8.5 g	29.1 g	112.5 g
Passenger	-78.5 g	21.5 g	-85.3 g	114.8 g	-78.6 g	15.5 g	23.5 g	79.5 g

<u>Maximum Femur Compressive Force</u>		
	Left Femur	Right Femur
Driver	3642 N	5809 N
Passenger	6530 N	5857 N

<u>Head Injury Criteria²</u>			
36 millisecond			
	HIC	Start Time t ₁	End Time t ₂
Driver	2948	74.00 ms	85.04 ms
Passenger	1183	49.36 ms	85.36 ms

15 millisecond			
	HIC	Start Time t ₁	End Time t ₂
Driver	2948	74.00 ms	85.04 ms
Passenger	757	64.96 ms	80.00 ms

<u>Chest Maximum Resultant Acceleration³</u>			
	Acceleration	Start Time t ₁	End Time t ₂
Driver	108.5 g	76.90 ms	79.90 ms
Passenger	71.6 g	75.48 ms	78.48 ms

Table 7 Target Vehicle Dummy Injury Criteria Data, Continued

<u>Maximum Chest Deflection</u>				
Driver	54 mm			
Passenger	32 mm			
 <u>Neck Injury Calculations (Nij)²</u>				
	NTF	NTE	NCF	NCE
Driver	0.32	1.00	0.01	0.21
Passenger	0.42	1.93	0.37	0.21
 <u>Upper Neck Axial Force</u>				
	Tension	Compression		
Driver	6364 N	502 N		
Passenger	4131 N	1051 N		
 <u>Tibia Index</u>				
	Upper Tibia	Lower Tibia		
Driver-left	1.02	1.05		
Driver-right	0.86	1.11		
Passenger-left	1.52	1.74		
Passenger-right	1.11	1.00		

¹ See Report Sign Convention in Appendix D.

² As defined in FMVSS No. 208.

³ Defined as equal to or exceeding 0.003 sec. duration.

Table 8 Bullet Vehicle Dummy Injury Criteria Data

<u>Maximum Acceleration¹</u>								
	Head				Chest			
	X	Y	Z	R	X	Y	Z	R
Driver	-76.9 g	-15.5 g	30.8 g	78.8 g	-56.1 g	8.1 g	21.3 g	58.2 g
Passenger	-75.4 g	-15.4 g	20.7 g	76.1 g	-53.5 g	-4.5 g	16.5 g	55.4 g

<u>Maximum Femur Compressive Force</u>		
	Left Femur	Right Femur
Driver	4924 N	8470 N
Passenger	5204 N	3776 N

<u>Head Injury Criteria²</u>			
36 millisecond			
	HIC	Start Time t ₁	End Time t ₂
Driver	970	71.92 ms	100.96 ms
Passenger	737	64.08 ms	95.12 ms

15 millisecond			
	HIC	Start Time t ₁	End Time t ₂
Driver	700	79.28 ms	94.32 ms
Passenger	583	72.24 ms	87.28 ms

<u>Chest Maximum Resultant Acceleration³</u>			
	Acceleration	Start Time t ₁	End Time t ₂
Driver	57.5 g	77.81 ms	80.81 ms
Passenger	52.8 g	80.08 ms	83.08 ms

Table 8 Bullet Vehicle Dummy Injury Criteria Data, Continued

Maximum Chest Deflection

Driver	34 mm
Passenger	22 mm

Upper Neck Injury Calculations (Nij)²

	NTF	NTE	NCF	NCE
Driver	0.08	0.47	0.11	0.13
Passenger	0.31	0.68	0.19	0.55

Upper Neck Axial Force

	Tension	Compression
Driver	2554 N	381 N
Passenger	1318 N	682 N

Tibia Index

	Upper Tibia	Lower Tibia
Driver-left	0.48	0.48
Driver-right	1.02	0.96

¹ See Report Sign Convention in Appendix D.

² As defined in FMVSS No. 208.

³ Defined as equal to or exceeding 0.003 sec. duration.

Table 9 Target Vehicle Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, head restraint, seat back	Airbag, head restraint, seat back
Chest	Airbag	Airbag
Abdomen	None	None
Left knee	Knee bolster	Glove box
Right knee	Knee bolster	Glove box

Door opening:

	<u>Left</u>	<u>Right</u>
Front	Easy	Easy
Rear	Easy	Easy

Seat movement:

	<u>Seat back failure</u>	<u>Seat shift</u>
Left Front	None	None
Right Front	None	None
Left Rear	None	None
Right Rear	None	None

Glazing damage: Windshield broken

Other notable impact effects: None

Table 10 Bullet Vehicle Post-Impact Dummy/Vehicle Data

Visible Dummy Contact Points:

	<u>Driver</u>	<u>Passenger</u>
Head	Airbag, head restraint	Airbag, head restraint, seat back
Chest	Airbag	Airbag
Abdomen	None	None
Left knee	Knee bolster	Glove box
Right knee	Knee bolster	Glove box

Door opening:

	<u>Left</u>	<u>Right</u>
Front	Tools required	Tools required
Rear	Easy	Easy

Seat movement:

	<u>Seat back failure</u>	<u>Seat shift</u>
Left Front	None	None
Right Front	None	None
Left Rear	None	None
Right Rear	None	None

Glazing damage: Windshield broken

Other notable impact effects: None

Section 4.0

Occupant, Camera, and Vehicle Information

Figure 2 Vehicle Dummy Measurement Locations for Front Seat Occupants

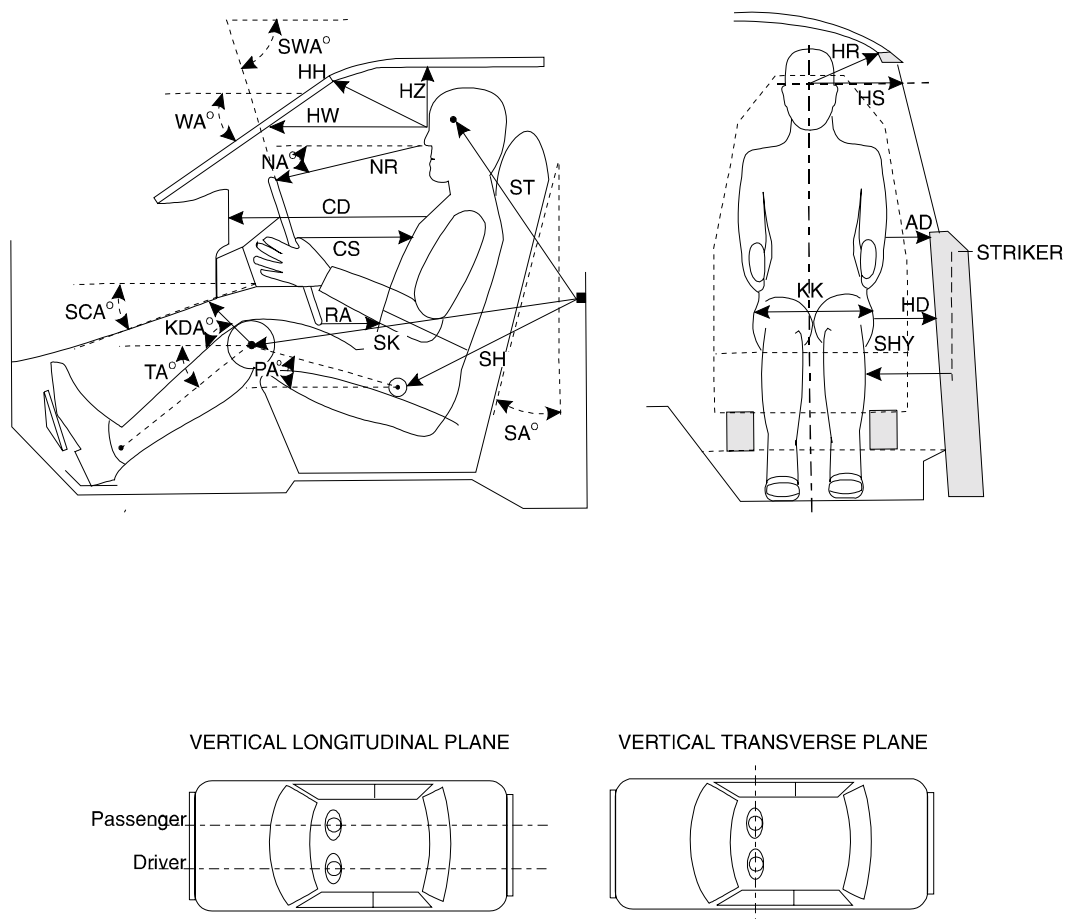


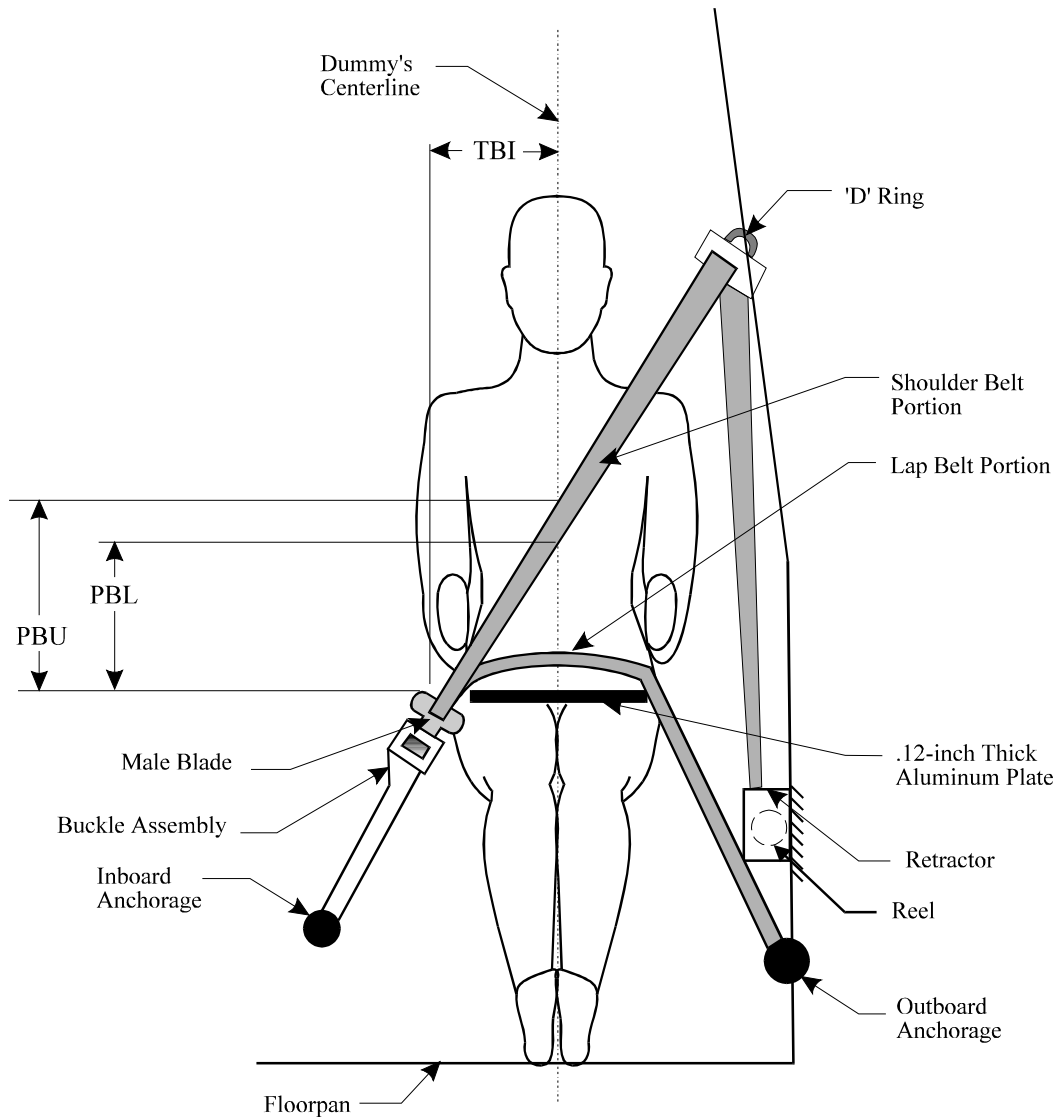
Table 11 Target Vehicle Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial # 110)	Passenger (Serial # 416)
WA	Windshield angle	24.5°	24.5°
SWA	Steering wheel angle	65.6°	N/A
SCA	Steering column angle	24.4°	N/A
SA	Seat back angle	15.6°	9.6°
HZ	Head to roof	209 mm	208 mm
HH	Head to header	343 mm	261 mm
HW	Head to windshield	657 mm	613 mm
HR	Head to side header	222 mm	243 mm
NR	Nose to rim	417 mm	N/A
NA	Nose to rim angle	7.1°	N/A
CD	Chest to dash	563 mm	381 mm
CS	Steering wheel to chest	326 mm	N/A
RA	Rim to abdomen	211 mm	N/A
KDL	Left knee to dash	83 mm	30 mm
KDR	Right knee to dash	83 mm	36 mm
KDA	Outboard knee to dash angle	6.6°	14.6°
PA	Pelvic angle	23.6°	20.1°
TA	Tibia angle	55.2°	55.4°
KK	Knee to knee	214 mm	155 mm
ST ¹	Striker to head	520 mm	516 mm
	Striker to head angle	-83.6°	-68.6°
SK ¹	Striker to knee	621 mm	705 mm
	Striker to knee angle	-5.4°	-0.4°
SH ¹	Striker to H-point	222 mm	325 mm
	Striker to H-point angle	32.0°	15.3°
SHY	Striker to H-point (Y dir.)	214 mm	255 mm
HS	Head to side window	320 mm	336 mm
HD	H-point to door	95 mm	172 mm
AD	Arm to door	87 mm	165 mm

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

¹ A negative angle indicates the measurement point was above the striker.

Figure 3 Target Vehicle Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge	330 mm	260 mm
PBL - Top surface of aluminum plate to belt lower edge	250 mm	180 mm
TBI - Dummy centerline to intersection of upper torso belt and lap belt	225 mm	210 mm
Total belt length	2340 mm	2440 mm
Lap belt length	830 mm	870 mm
Shoulder belt length	800 mm	850 mm

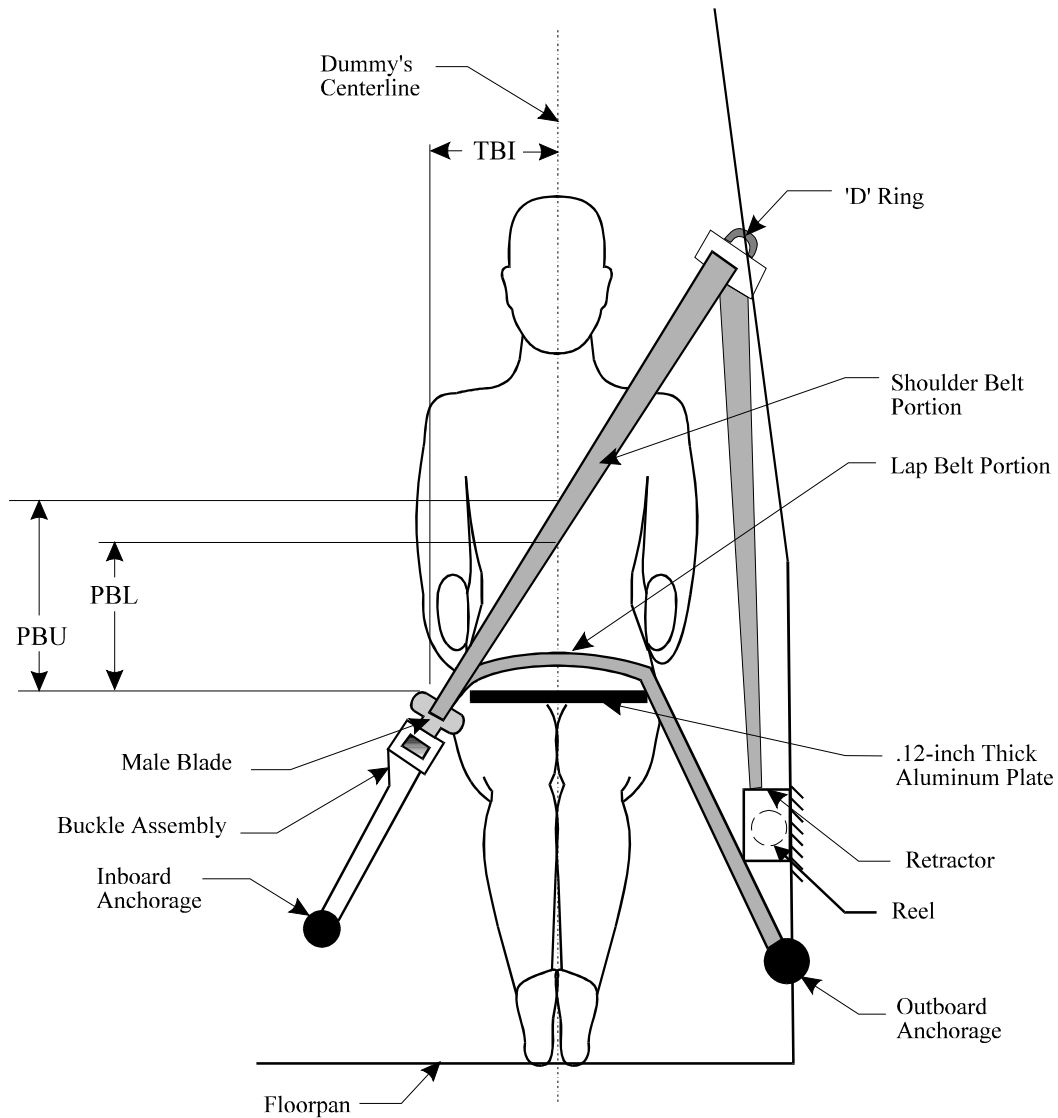
Table 12 Bullet Vehicle Dummy Measurement Data For Front Seat Occupants

Designation	Type of Measurement	Driver (Serial # 90)	Passenger (Serial # 70)
WA	Windshield angle	36.4°	36.4°
SWA	Steering wheel angle	63.5°	N/A
SCA	Steering column angle	26.5°	N/A
SA	Seat back angle	8.2°	2.1°
HZ	Head to roof	277 mm	344 mm
HH	Head to header	531 mm	434 mm
HW	Head to windshield	739 mm	699 mm
HR	Head to side header	253 mm	325 mm
NR	Nose to rim	430 mm	N/A
NA	Nose to rim angle	4.7°	N/A
CD	Chest to dash	605 mm	351 mm
CS	Steering wheel to chest	360 mm	N/A
RA	Rim to abdomen	194 mm	N/A
KDL	Left knee to dash	95 mm	56 mm
KDR	Right knee to dash	97 mm	56 mm
KDA	Outboard knee to dash angle	18.6°	18.5°
PA	Pelvic angle	23.7°	20.3°
TA	Tibia angle	57.6°	67.9°
KK	Knee to knee	239 mm	169 mm
ST ¹	Striker to head	627 mm	593 mm
	Striker to head angle	-73.1°	-56.4°
SK ¹	Striker to knee	772 mm	835 mm
	Striker to knee angle	-5.9°	-1.9°
SH ¹	Striker to H-point	319 mm	416 mm
	Striker to H-point angle	3.3°	7.1°
SHY	Striker to H-point (Y dir.)	256 mm	291 mm
HS	Head to side window	335 mm	340 mm
HD	H-point to door	172 mm	217 mm
AD	Arm to door	142 mm	189 mm

The seat back angle (SA°) is measured relative to vertical, all other angles are measured relative to horizontal.

¹ A negative angle indicates the measurement point was above the striker.

Figure 4 Bullet Vehicle Seat Belt Positioning Data



	Driver Dummy	Passenger Dummy
PBU - Top surface of aluminum plate to belt upper edge	360 mm	300 mm
PBL - Top surface of aluminum plate to belt lower edge	280 mm	200 mm
TBI - Dummy centerline to intersection of upper torso belt and lap belt	195 mm	180 mm
Total belt length	2210 mm	2210 mm
Lap belt length	800 mm	710 mm
Shoulder belt length	570 mm	560 mm

Figure 5 Target Vehicle FMVSS 212 Test Data

Details of windshield mounting such as retention method, trim type, etc.:

Adhesive molding

FMVSS 212 requirements: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

Windshield periphery measurements:

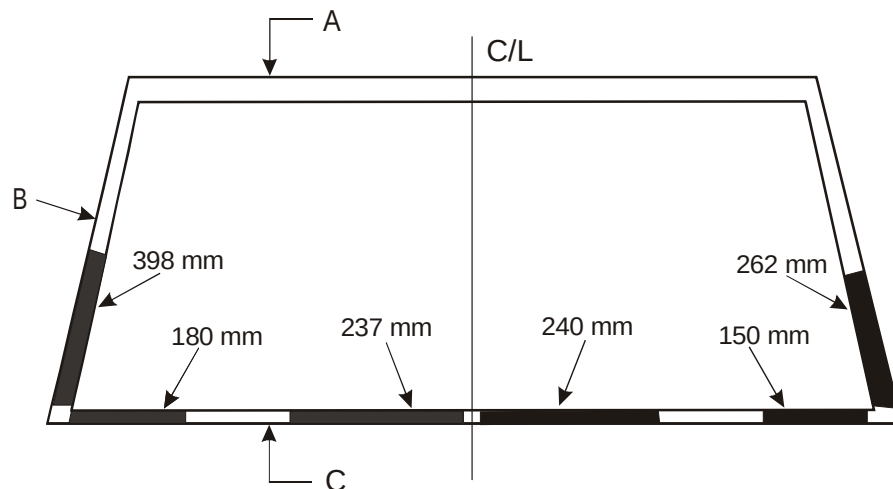
	<u>Pre-test</u>	<u>Post-test</u>	<u>Percent retention</u>
Right side	2115 mm	1463 mm	69.2 %
Left side	2115 mm	1300 mm	61.5 %
Total	4230 mm	2763 mm	65.3 %

Pre-test windshield mounting material temperature: 23° C

A = 6 mm

B = 6 mm

C = 13 mm



Front view of windshield

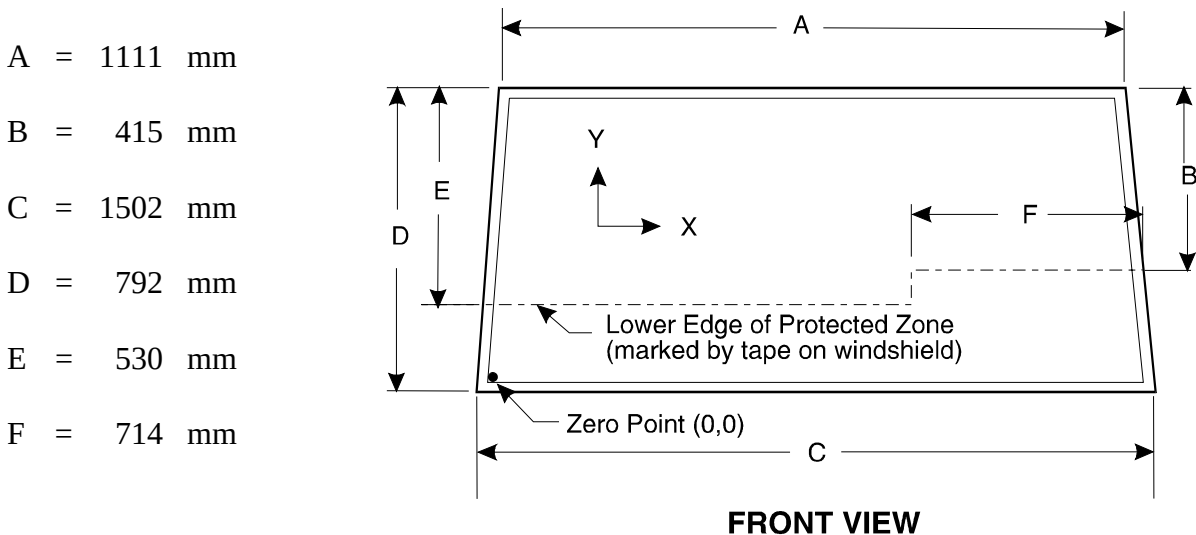
Loss of windshield retention lengths: 398 mm on the right side, 180 mm on the bottom right, 237 mm on bottom right center, 240 mm on the bottom left center, 150 mm on the bottom left, 262 mm on the left side.

Figure 6 Target Vehicle FMVSS 219 Test Data

Protected zone lower edge requirement:

The lower edge of the protected zone is determined by placing a 165-millimeter diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 13 millimeters from the locus line. The **lower edge of the protected zone** is the longitudinal projection onto the outer surface of the windshield of this line.

Windshield measurements:



Method of adhering protected zone template to windshield: N/A

Areas of windshield template penetration greater than 6 mm: N/A

Coordinates, mm		
	X	Y
1.	N/A	N/A
2.		
3.		

Areas of windshield penetration, below the protected zone, through the inner surface of the windshield:

1.	N/A	N/A
2.		
3.		

Figure 7 Bullet Vehicle FMVSS 212 Test Data

Details of windshield mounting such as retention method, trim type, etc.:

Adhesive Plastic

FMVSS 212 requirements: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

Windshield periphery measurements:

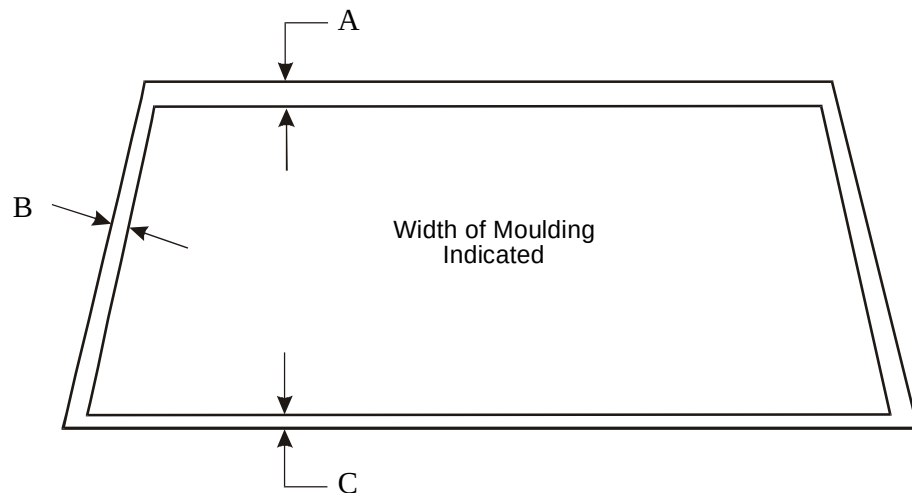
	<u>Pre-test</u>	<u>Post-test</u>	<u>Percent retention</u>
Right side	670 mm	670 mm	100.0 %
Left side	670 mm	670 mm	100.0 %
Total	1340 mm	1340 mm	100.0 %

Pre-test windshield mounting material temperature: 23° C

A = 20 mm

B = 22 mm

C =N/A mm



Front view of windshield

Loss of windshield retention lengths: None

Figure 8 FMVSS 219 Test Data

Protected zone lower edge requirement:

The lower edge of the protected zone is determined by placing a 165-millimeter diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable by the sphere across the width of the instrument panel. From the outermost contactable points, extend the locus line horizontally to the edges of the windshield, and then draw a line on the inner surface of the windshield below and 13 millimeters from the locus line. The **lower edge of the protected zone** is the longitudinal projection onto the outer surface of the windshield of this line.

Windshield measurements:

A = 1405 mm

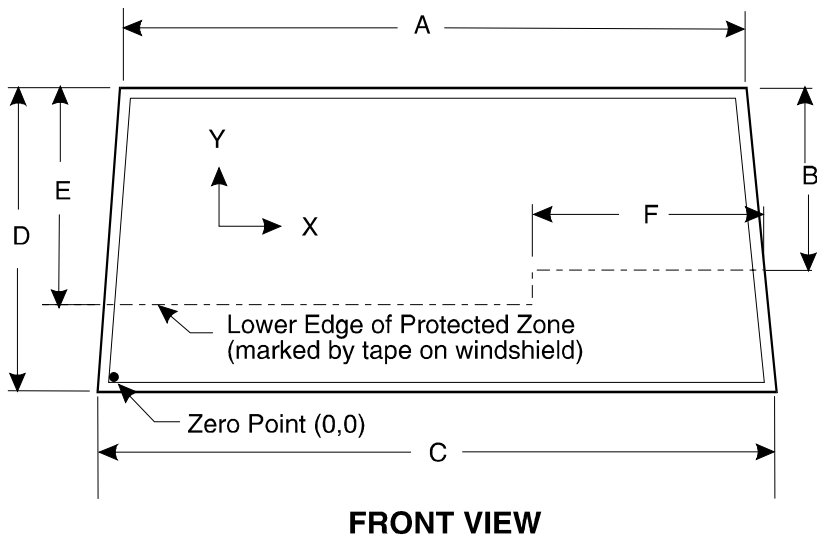
B = 358 mm

C = 1770 mm

D = 670 mm

E = 440 mm

F = 883 mm



Method of adhering protected zone template to windshield: N/A

Areas of windshield template penetration greater than 6 mm: None

Areas of windshield penetration, below the protected zone, through the inner surface of the windshield: None

Table 13 Target Vehicle Structural Measurements¹

	Elements	Pre-Test
1	Total Length	4433
2	Total Width	1700
3	Bumper Top Height	528
4	Bumper Bottom Height	373
5	Longitudinal Member Top Height	504
6	Longitudinal Member Bottom Height	402
7	Distance Between Longitudinal Members	916
7'	Longitudinal Member Width	1081
8	Engine Top Height	752
9	Engine Bottom Height	161
10	Engine and Gearbox Width	777
11	Front Bumper - Engine Distance	526
12	Front Shock Absorber Fixing Height	822
13	Bonnet Leading Edge Height	645
14	Front Shock Absorber Fixing Width	1100
15	Front Bumper - Front Axle Distance	878
16	Front Axle - A Pillar Distance	555
17	A Pillar - B Pillar Distance	945
18	B Pillar - Rear Axle Distance	1091
19	B Pillar - C Pillar Distance	900
20	Roof Sill Bottom Height	1344
21	Roof Sill Top Height	1384
22	Floor Sill Bottom Height	265
23	Floor Sill Top Height	294

All distance measurements are in millimeters.

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

Figure 9 Target Vehicle Pre-Test And Post-Test Measurement Points

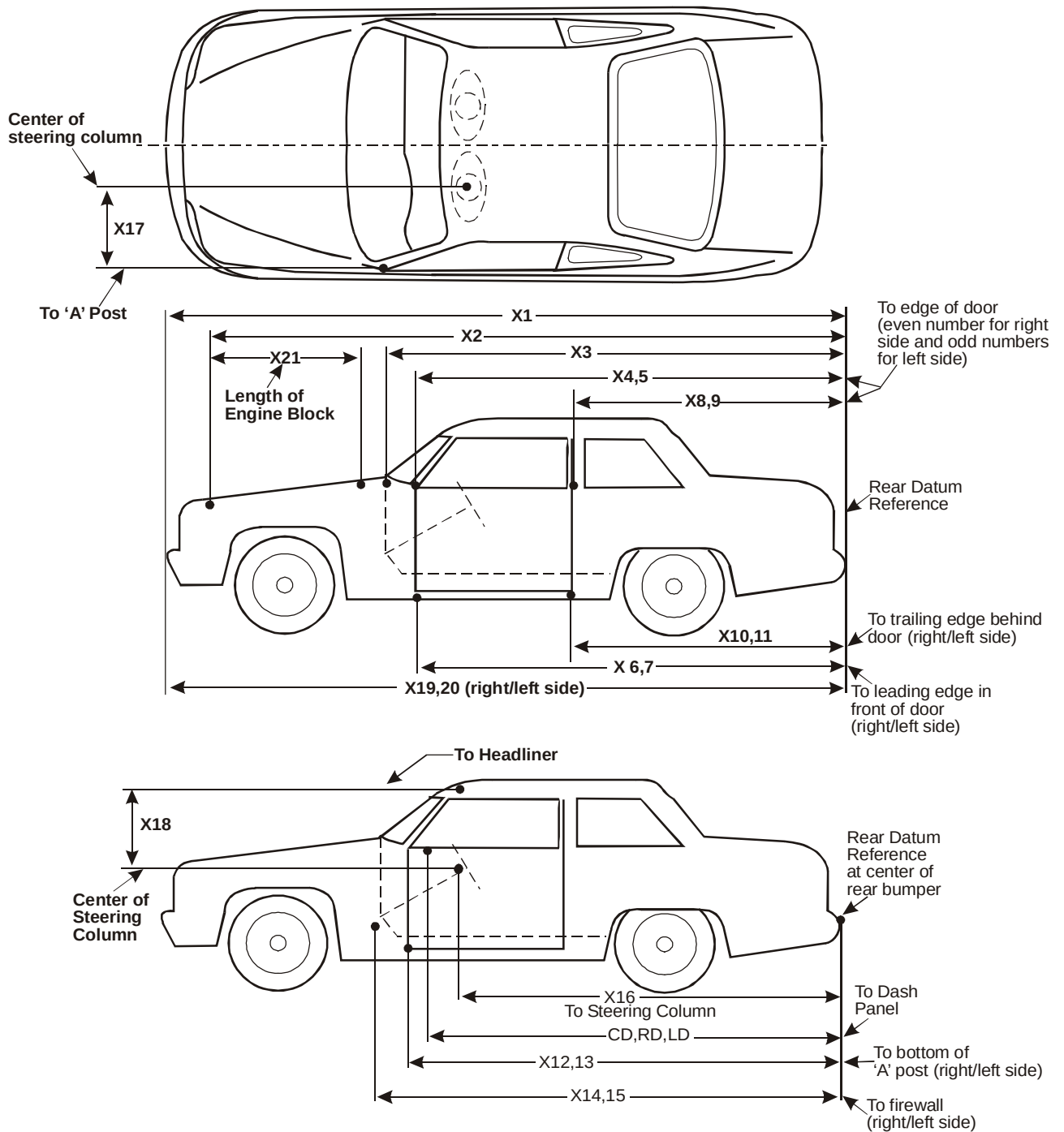


Table 14 Target Vehicle Impacted Measurements

Test number: 050719

Vehicle year/make/model/body style: 2002/Ford/Focus SE/4-door

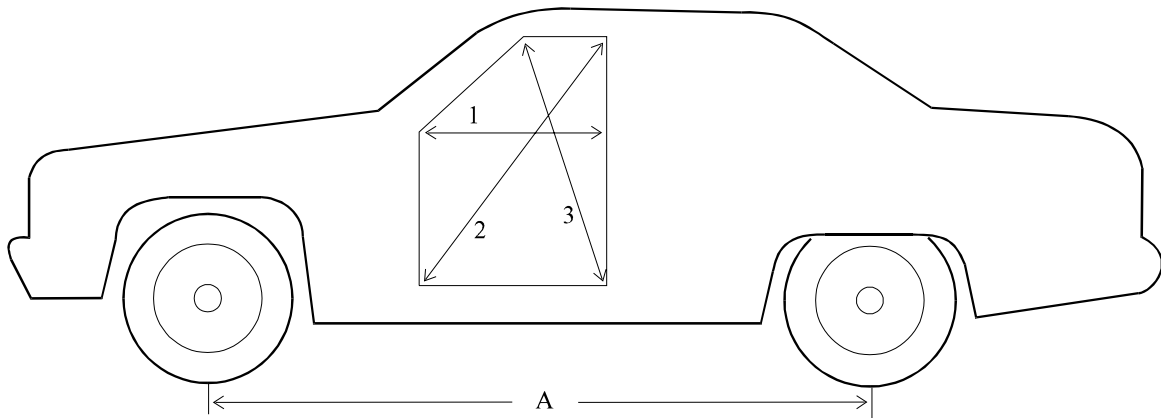
No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4433	--- ¹	--- ¹
X2	Rear Surface of Vehicle to Front of Engine Block	3903	3300	603
X3	Rear Surface of Vehicle to Firewall	3501	3151	350
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	3072	3022	50
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	3074	3038	36
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	3030	2955	75
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	3035	3080	-45
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	2065	2000	65
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	2060	2024	36
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	2057	1985	72
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	2056	2000	56
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	3016	2922	94
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	3004	2933	71
X14	Rear Surface of Vehicle to Firewall - Right Side	3477	3055	422
X15	Rear Surface of Vehicle to Firewall - Left Side	3460	3115	345
X16	Rear Surface of Vehicle to Steering Wheel Center	2635	2520	115
X17	Center of Steering Column to " A " Post	293	193	100
X18	Center of Steering Column to Headliner	430	495	-65
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4383	--- ¹	--- ¹
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4365	--- ¹	--- ¹
X21	Length of Engine Block	470	470	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2790	2631	159
CD	Rear Surface of Vehicle to Center of Dash Panel	2855	2621	234
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2790	2655	135

All distance measurements are in millimeters.

¹ Measurement point could not be located post test.

Figure 10 Target Vehicle Intrusion Measurements

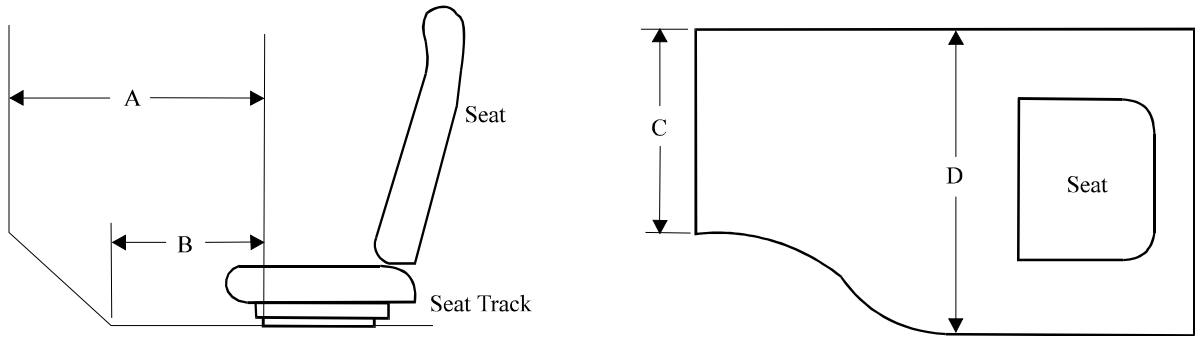
Door Opening Width



Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	900 mm	1414 mm	995 mm	890 mm	1398 mm	992 mm
Post-Test	836 mm	1372 mm	1100 mm	812mm	1363 mm	1085 mm
Difference	64 mm	42 mm	-105 mm	78 mm	35 mm	-93 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	2600 mm	2600 mm
Post-Test	2455 mm	2412 mm
Difference	145 mm	188 mm

Figure 11 Target Vehicle Intrusion Measurements
Static Footwell Deformation



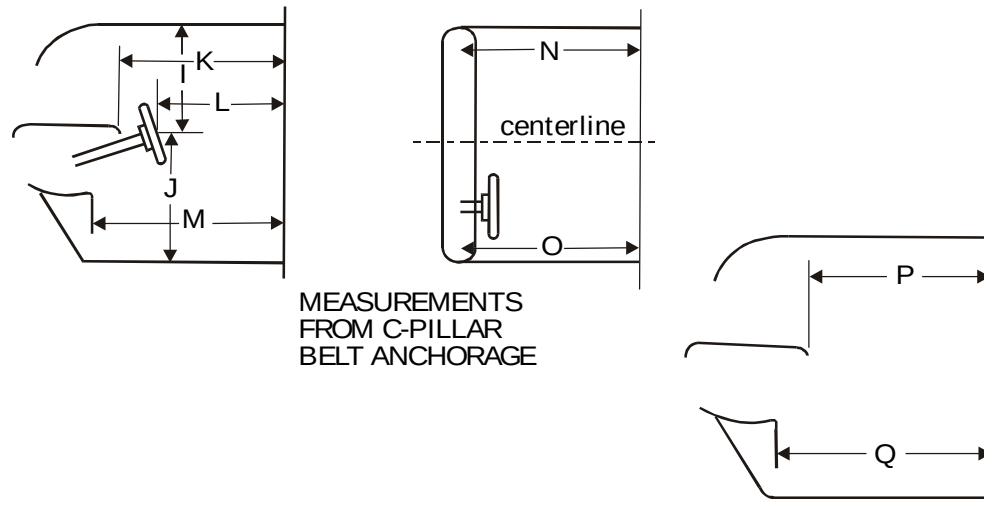
Driver's Side

Measurement	Pre-Test	Post-Test	Difference
A	630 mm	514 mm	116 mm
B	494 mm	417 mm	77 mm
C	472 mm	468 mm	4 mm
D	456 mm	443 mm	13 mm

Passenger's Side

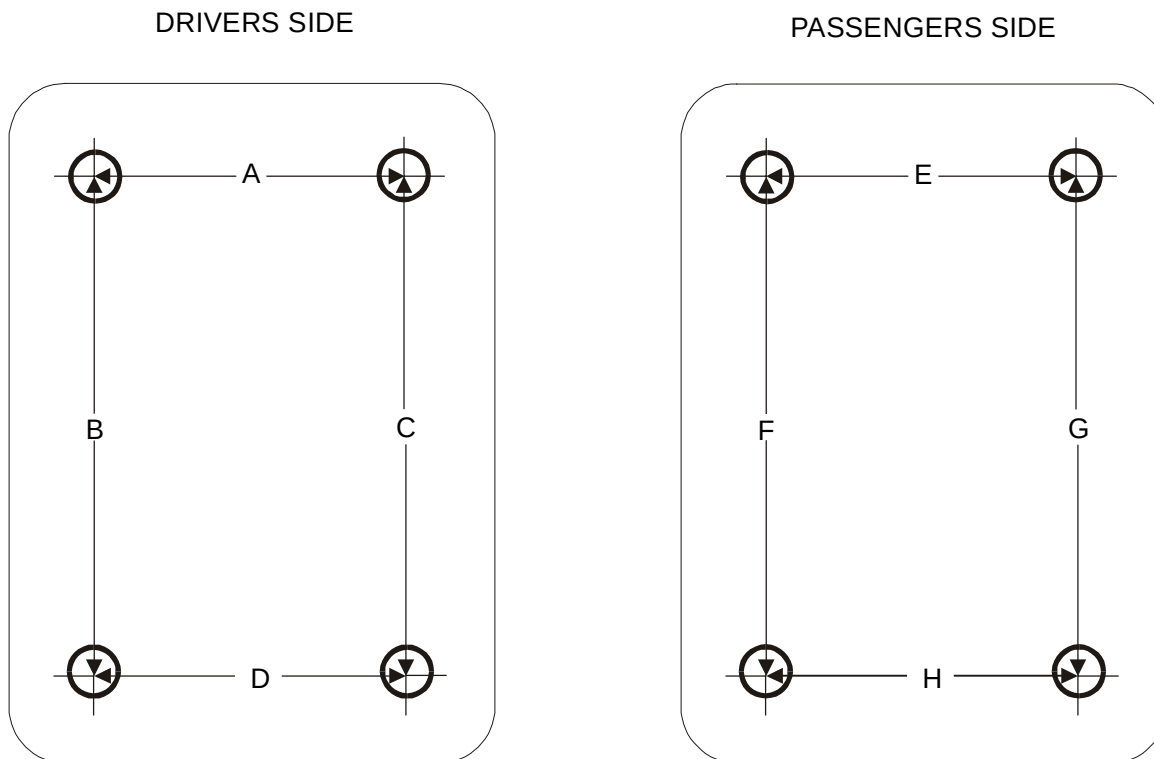
Measurement	Pre-Test	Post-Test	Difference
A	635 mm	445 mm	190 mm
B	507 mm	450 mm	57 mm
C	440 mm	405 mm	35 mm
D	413 mm	410 mm	3 mm

Figure 12 Target Vehicle Intrusion Measurements
Static Passenger Compartment Intrusion



Measurement	Pre-Test	Post-Test	Difference
I	408 mm	495 mm	-87 mm
J	737 mm	793 mm	-56 mm
K (driver's side)	1900 mm	1719 mm	181 mm
L	1722 mm	1568 mm	154 mm
M (driver's side)	2035 mm	1924 mm	111 mm
N (passenger's side)	1948 mm	1716 mm	232 mm
O (driver's side)	1899 mm	1668 mm	231 mm
P (passenger's side)	1899 mm	1677 mm	222 mm
Q (passenger's side)	2032 mm	1861 mm	171 mm

Figure 13 Target Vehicle Floorboard Deformation



Measurement	Pre-Test	Post-Test	Difference
A	475 mm	468 mm	7 mm
B	410 mm	418 mm	-8 mm
C	407 mm	406 mm	1 mm
D	455 mm	443 mm	12 mm
E	440 mm	405 mm	35 mm
F	425 mm	400 mm	25 mm
G	442 mm	440 mm	2 mm
H	414 mm	410 mm	4 mm

Table 15 Target Vehicle Frontal Profile Measurements

Bottom of Front Bumper

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4365	-608	N/A
2	4418	-367	N/A
3	4424	-125	N/A
4	4435	121	N/A
5	4421	365	N/A
6	4363	607	N/A

Post-Test		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A

Difference		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A

Top of Front Bumper

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4350	-610	N/A
2	4404	-366	N/A
3	4436	-122	N/A
4	443	120	N/A
5	4421	365	N/A
6	4364	609	N/A

Post-Test		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A

Difference		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A

Center of Grill

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4250	-612	-601
2	4314	-365	-591
3	4329	-122	N/A
4	4329	124	N/A
5	4313	370	-605
6	4269	612	-610

Post-Test		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A ¹
N/A ¹	N/A ¹	N/A ¹
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A ¹
N/A ¹	N/A ¹	N/A ¹

Difference		
Xmm	Ymm	Zmm
N/A ¹	N/A ¹	N/A ¹
N/A ¹	N/A ¹	N/A ¹
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A
N/A ¹	N/A ¹	N/A ¹
N/A ¹	N/A ¹	N/A ¹

Front of Hood

Pre-Test			
Index	Xmm	Ymm	Zmm
1	4036	-612	-758
2	4295	-377	-628
3	4315	-128	-652
4	4317	125	-650
5	4310	370	-639
6	4038	610	-757

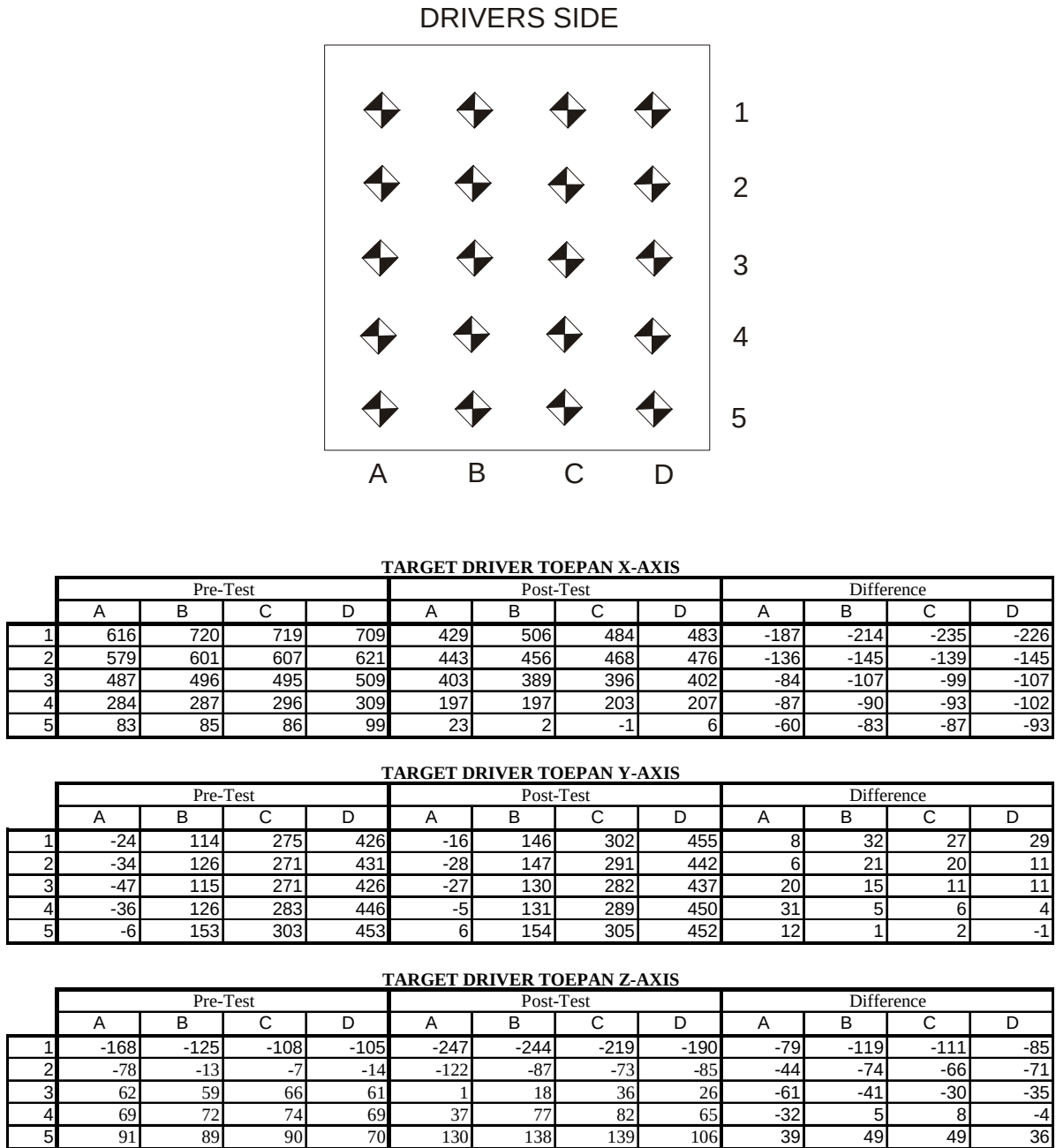
Post-Test		
Xmm	Ymm	Zmm
3554	-565	-1149
3597	-375	-907
3592	-125	-959
3594	125	-923
3617	365	-803
3519	615	-999

Difference ²		
Xmm	Ymm	Zmm
-482	47	-391
-698	2	-279
-723	3	-307
-723	0	-273
-693	-5	-164
-519	5	-242

¹ Measurement point could not be located post-test.

² Measurements 1-6, Front of Hood, are included in the NHTSA Entrée database submission as Damage Profile Distance 1-6.

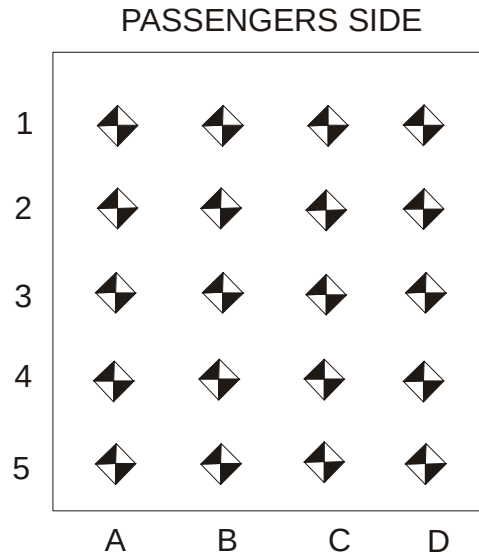
Figure 14 Target Vehicle Toeboard Measurements



Pre- and post-test measurement reference: +X forward; +Y right; +Z down.

0,0,0 origin is front outboard seat bolt.

Figure 14 Target Vehicle Toeboard Measurements, Continued



TARGET PASSENGER TOEPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	694	716	713	619	413	452	408	373	-281	-264	-305	-246
2	606	593	595	567	458	416	401	420	-148	-177	-194	-147
3	497	496	493	503	376	410	367	436	-121	-86	-126	-67
4	285	288	281	278	174	179	175	189	-111	-109	-106	-89
5	70	75	69	66	-40	-34	-24	1	-110	-109	-93	-65

TARGET PASSENGER TOEPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-361	-247	-110	4	-355	-251	-125	7	6	-4	-15	3
2	-381	-253	-103	25	-374	-255	-113	31	7	-2	-10	6
3	-407	-261	-113	34	-400	-260	-111	4	7	1	2	-30
4	-394	-251	-108	38	-383	-238	-99	20	11	13	9	-18
5	-390	-253	-112	26	-377	-235	-82	7	13	18	30	-19

TARGET PASSENGER TOEPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-120	-121	-143	-173	-177	-216	-237	-231	-57	-95	-94	-58
2	-15	-8	-15	-58	-60	-58	-76	-109	-45	-50	-61	-51
3	59	60	56	57	38	14	43	6	-21	-46	-13	-51
4	69	73	73	67	81	70	54	48	12	-3	-19	-19
5	71	90	90	90	106	86	41	104	35	-4	-49	14

Pre- and post-test measurement reference: +X forward; +Y right; +Z down.

0,0,0 origin is front outboard seat bolt.

Table 16 Target Vehicle IIHS Measurements

TARGET IIHS MEASUREMENTS										
		Pre-Test			Post-Test			Difference		
Index	Description	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	Center of Steering Wheel on the Airbag Door	2431	-339	-264	2291	-383	-266	-140	-44	-2
2	Driver's Lower Left Instrument Panel	2678	-488	4	2570	-522	-45	-108	-34	-49
3	Driver's Lower Right Instrument Panel	2666	-187	4	2529	-227	-33	-137	-40	-37
4	Brake Pedal Center	2894	-313	254	2661	-374	216	-233	-61	-38
5	Center Left Toeboard 150 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	3110	-462	258	2891	-440	136	-219	22	-122
6	Toeboard Behind the Center of the Brake Pedal at Height of Brake Pedal	3112	-314	256	2871	-294	146	-241	20	-110
8	Foot Rest 250 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	3011	-563	254	2829	-560	173	-182	3	-81
9	Left Front Driver's Seat Mounting Bolt	2394	-590	385	2381	-573	417	-13	17	32
10	Right Front Driver's Seat Mounting Bolt	2387	-139	364	2324	-135	421	-63	4	57
11	Left Rear Driver's Seat Mounting Bolt	2008	-625	402	2001	-640	398	-7	-15	-4
12	Right Rear Driver's Seat Mounting Bolt	1958	-105	402	1892	-123	406	-66	-18	4
17	Exterior A-Pillar at Height of Bottom of Front Window	2808	-694	-262	2745	-749	-312	-63	-55	-50
18	Exterior B-pillar at Height of A-Pillar Measurement Location	1845	-732	-262	1842	-731	-261	-3	1	1

Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

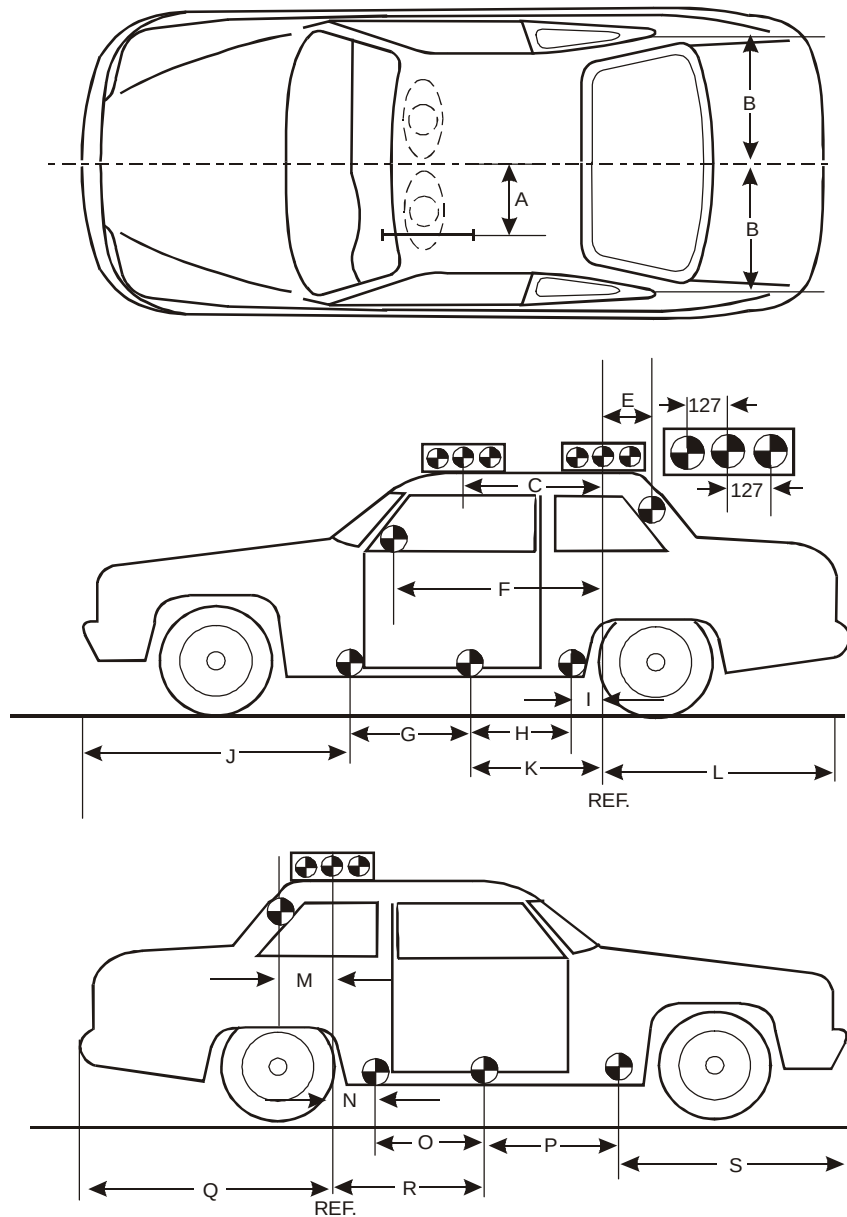
Table 17 Target Vehicle Bumper Measurements

TARGET BUMPER PROFILE											
Pre-Test				Post-Test ¹			Difference ¹				
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm		
1	4124	-608	199	3629	-590	62	-495	18	-137		
2	4148	-489	199	3582	-518	-22	-566	-29	-221		
3	4149	-366	197	3573	-406	-54	-576	-40	-251		
4	4149	-241	197	3583	-280	-54	-566	-39	-251		
5	4149	-119	196	3594	-159	-54	-555	-40	-250		
6	4149	5	195	3601	-37	-60	-548	-42	-255		
7	4149	125	195	3590	79	-74	-559	-46	-269		
8	4149	248	195	3552	190	-111	-597	-58	-306		
9	4149	373	194	3522	306	-143	-627	-67	-337		
10	4148	494	194	3495	471	-108	-653	-23	-302		
11	4126	614	193	3557	574	-85	-569	-40	-278		

¹ Post-test the target vehicle bumper was almost detached. For the bumper profile measurements the bumper was manually held in place

Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

Figure 15 Target Vehicle Reference Photo Target Locations



Measurement	Pre-Test
A	Left 355 mm Right 355 mm
B	Left 576 mm Right 576 mm
C	Left 600 mm Right 600 mm
E ¹	395 mm

Measurement	Pre-Test
F	1215 mm
G	884 mm
H	898 mm
I	-231 mm
J	1231 mm
K	665 mm
L	1582 mm

Measurement	Pre-Test
M	402 mm
N	-242 mm
O	892 mm
P	889 mm
Q	1599 mm
R	648 mm
S	1244 mm

¹ The first side target is placed 600 mm from front edge of bumper, and others are at 300 mm intervals

Table 18 Bullet Vehicle Structural Measurements¹

	Elements	Pre-Test
1	Total Length	5799
2	Total Width	1991
3	Bumper Top Height	496
4	Bumper Bottom Height	400
5	Longitudinal Member Top Height	626
6	Longitudinal Member Bottom Height	373
7	Distance Between Longitudinal Members	870
7'	Longitudinal Member Width	110
8	Engine Top Height	1038
9	Engine Bottom Height	282
10	Engine and Gearbox Width	520
11	Front Bumper - Engine Distance	775
12	Front Shock Absorber Fixing Height	654
13	Bonnet Leading Edge Height	991
14	Front Shock Absorber Fixing Width	930
15	Front Bumper - Front Axle Distance	920
16	Front Axle - A Pillar Distance	589
17	A Pillar - B Pillar Distance	1130
18	B Pillar - Rear Axle Distance	1904
19	B Pillar - C Pillar Distance	705
20	Roof Sill Bottom Height	1653
21	Roof Sill Top Height	1664
22	Floor Sill Bottom Height	413
23	Floor Sill Top Height	427

All distance measurements are in millimeters.

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

Figure 16 Bullet Pre-Test And Post-Test Measurement Points

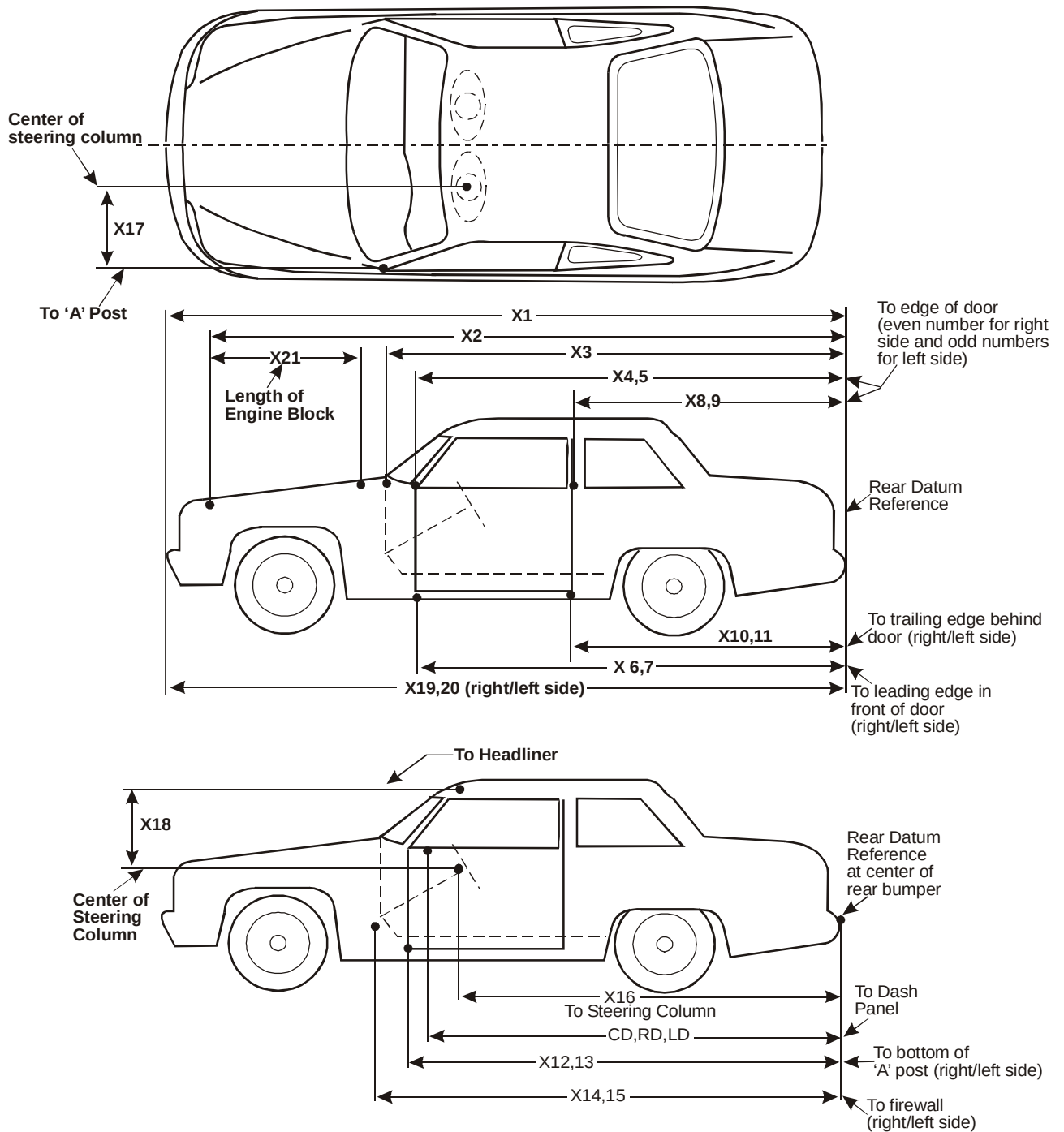


Table 19 Bullet Vehicle Impacted Measurements

Test number: 050719

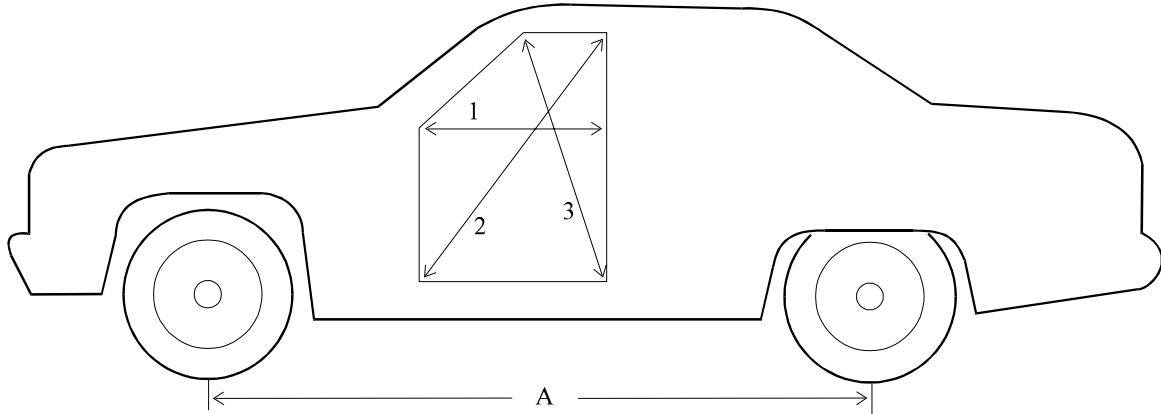
Vehicle year/make/model/body style: 2003/Chevrolet/Silverado/4-door pickup truck

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5799	5047	752
X2	Rear Surface of Vehicle to Front of Engine Block	4947	4237	710
X3	Rear Surface of Vehicle to Firewall	4579	4507	72
X4	Rear Surface of Veh. to Upper Leading Edge of Right Door	4244	4186	58
X5	Rear Surface of Veh. to Upper Leading Edge of Left Door	4253	4190	63
X6	Rear Surface of Veh. to Lower Leading Edge of Right Door	4205	4153	52
X7	Rear Surface of Veh. to Lower Leading Edge of Left Door	4208	4155	53
X8	Rear Surface of Veh. to Upper Trailing Edge of Right Door	3128	3069	59
X9	Rear Surface of Veh. to Upper Trailing Edge of Left Door	3116	3055	61
X10	Rear Surface of Veh. to Lower Trailing Edge of Right Door	3110	3060	50
X11	Rear Surface of Veh. to Lower Trailing Edge of Left Door	3106	3054	52
X12	Rear Surface of Veh. to Bottom of " A " Post on Right Side	4252	4193	59
X13	Rear Surface of Veh. to Bottom of " A " Post on Left Side	4255	4192	63
X14	Rear Surface of Vehicle to Firewall - Right Side	4634	4513	121
X15	Rear Surface of Vehicle to Firewall - Left Side	4584	4530	54
X16	Rear Surface of Vehicle to Steering Wheel Center	3787	3736	51
X17	Center of Steering Column to " A " Post	300	283	17
X18	Center of Steering Column to Headliner	415	439	-24
X19	Rear Surface of Vehicle to Right Side of Front Bumper	5700	5123	577
X20	Rear Surface of Vehicle to Left Side of Front Bumper	5730	5067	663
X21	Length of Engine Block	500	500	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3969	3913	56
CD	Rear Surface of Vehicle to Center of Dash Panel	3952	3886	66
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3953	3890	63

All distance measurements are in millimeters.

Figure 17 Bullet Vehicle Intrusion Measurements

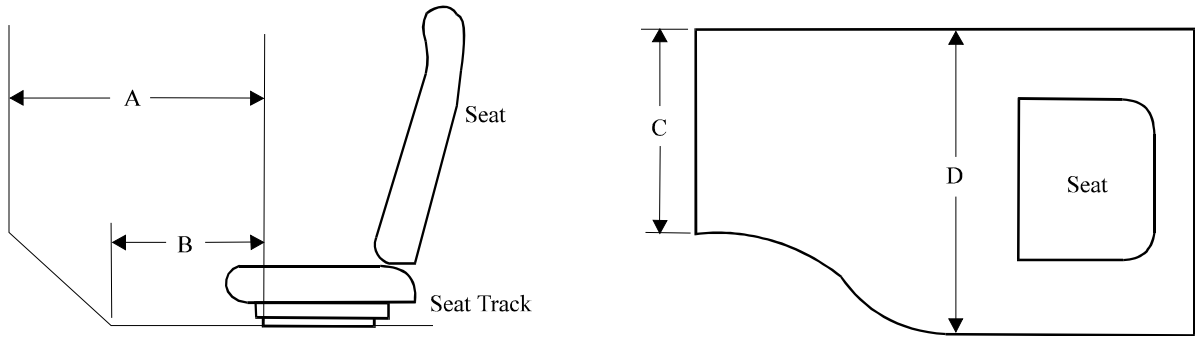
Door Opening Width



Units (mm)	Left			Right		
Measurement	1	2	3	1	2	3
Pre-Test	1141 mm	1573 mm	1282 mm	1160 mm	1560 mm	1295 mm
Post-Test	1129 mm	1553 mm	1307 mm	1140 mm	1545 mm	1293 mm
Difference	12 mm	20 mm	-25 mm	20 mm	15 mm	2 mm

Units (mm)	A = Wheelbase Left	A = Wheelbase Right
Pre-Test	3658 mm	3658 mm
Post-Test	3473 mm	3510 mm
Difference	185mm	148 mm

Figure 18 Bullet Vehicle Intrusion Measurements
Static Footwell Deformation



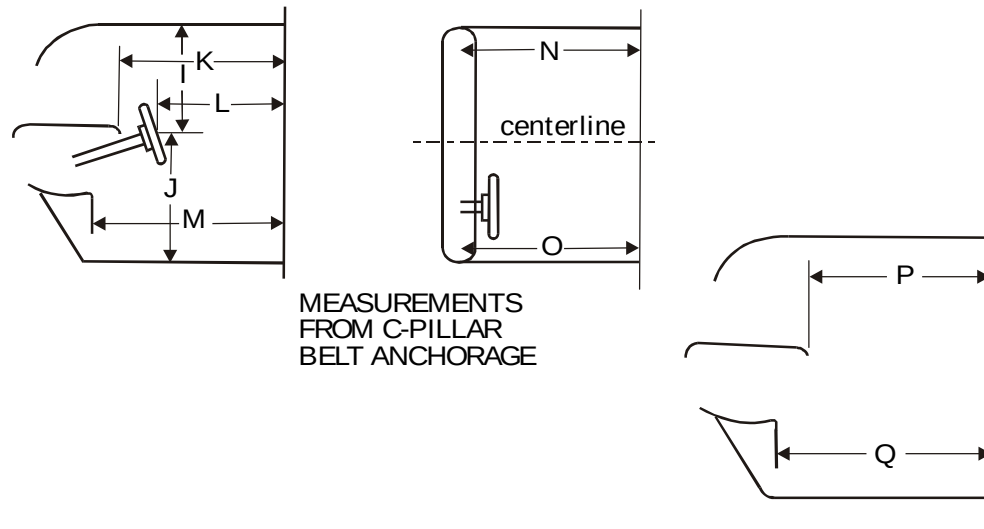
Driver's Side

Measurement	Pre-Test	Post-Test	Difference
A	760 mm	708 mm	52 mm
B	681 mm	612 mm	69 mm
C	360 mm	359 mm	1 mm
D	445 mm	445 mm	0 mm

Passenger's Side

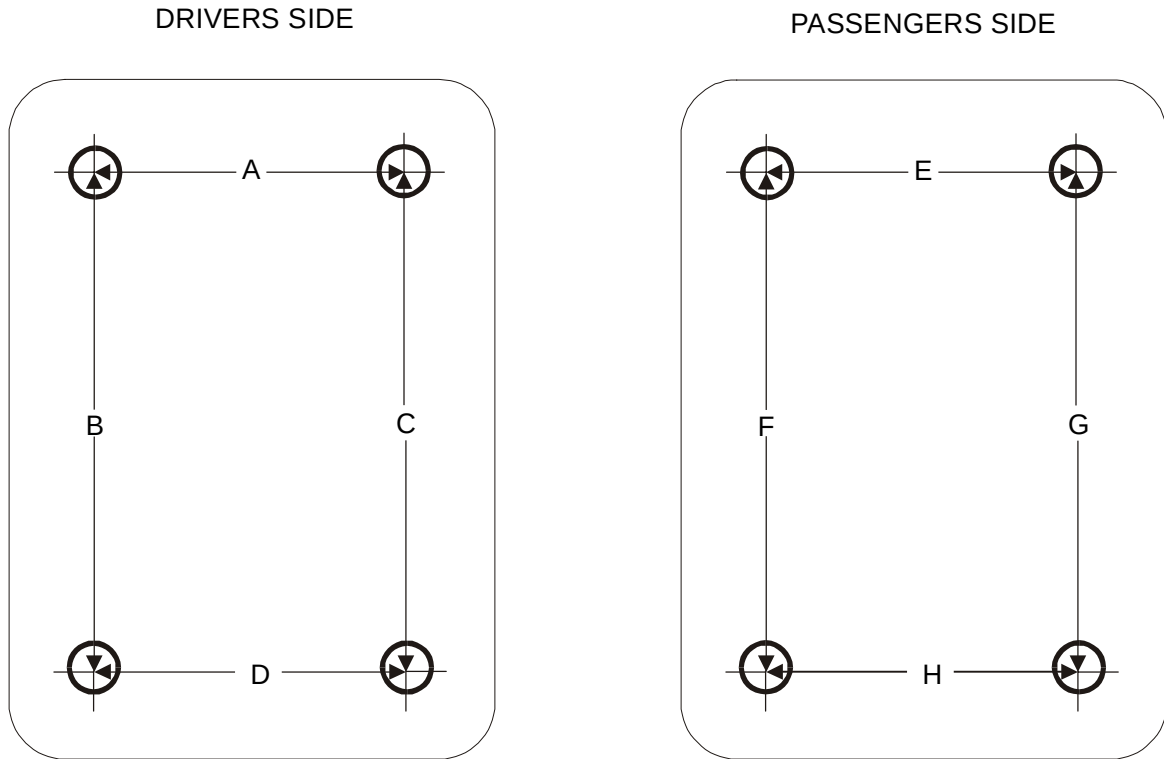
Measurement	Pre-Test	Post-Test	Difference
A	755 mm	705 mm	50 mm
B	578 mm	541 mm	37 mm
C	330 mm	328 mm	2 mm
D	352 mm	358 mm	-6 mm

Figure 19 Bullet Vehicle Intrusion Measurements
Static Passenger Compartment Intrusion



Measurement	Pre-Test	Post-Test	Difference
I	393 mm	439 mm	-46 mm
J	762 mm	793 mm	-31 mm
K (driver's side)	1560 mm	1534 mm	26 mm
L	1430 mm	1421 mm	9 mm
M (driver's side)	1740 mm	1721 mm	19 mm
N (passenger's side)	1510 mm	1490 mm	20 mm
O (driver's side)	1635 mm	1622 mm	13 mm
P (passenger's side)	1550 mm	1545 mm	5 mm
Q (passenger's side)	1742 mm	1765 mm	-23 mm

Figure 20 Bullet Vehicle Floorboard Deformation



Measurement	Pre-Test	Post-Test	Difference
A	427 mm	425 mm	2 mm
B	495 mm	493 mm	2 mm
C	390 mm	390 mm	0 mm
D	445 mm	445 mm	0 mm
E	330 mm	328 mm	2 mm
F	381 mm	380 mm	1 mm
G	418 mm	412 mm	6 mm
H	356 mm	358 mm	-2 mm

Table 20 Bullet Vehicle Frontal Profile Measurements

Bottom of Front Bumper

Pre-Test			
Index	Xmm	Ymm	Zmm
1	5715	-772	-430
2	5773	-455	-445
3	5800	-152	-455
4	5794	150	-464
5	5765	457	-464
6	5690	764	-463

Post-Test		
Xmm	Ymm	Zmm
5053	-560	-168
5167	-414	-639
5055	-140	-652
5091	140	-658
5203	424	-676
5223	678	-263

Difference¹		
Xmm	Ymm	Zmm
-662	212	262
-606	41	-194
-745	12	-197
-703	-10	-194
-562	-33	-212
-467	-86	200

Top of Front Bumper

Pre-Test			
Index	Xmm	Ymm	Zmm
1	5730	-758	-615
2	5773	-450	-609
3	5800	-152	-615
4	5794	155	-615
5	5765	460	-627
6	5705	774	-637

Post-Test		
Xmm	Ymm	Zmm
5150	-710	-653
5090	-440	-740
5180	-138	-757
5100	156	-760
5107	445	-759
5133	753	-740

Difference²		
Xmm	Ymm	Zmm
-580	48	-38
-683	10	-131
-620	14	-142
-694	1	-145
-658	-15	-132
-572	-21	-103

Center of Grill

Pre-Test			
Index	Xmm	Ymm	Zmm
1	5621	-755	-849
2	5685	-440	-835
3	5720	-148	-835
4	5723	-160	-840
5	5692	455	-846
6	5615	775	-851

Post-Test		
Xmm	Ymm	Zmm
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³

Difference		
Xmm	Ymm	Zmm
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³
N/A ³	N/A ³	N/A ³

Front of Hood

Pre-Test			
Index	Xmm	Ymm	Zmm
1	5543	-760	-1010
2	5631	-440	-1000
3	5664	-150	-1006
4	5671	155	-1007
5	5652	450	-995
6	5557	770	-1002

Post-Test		
Xmm	Ymm	Zmm
5460	-765	-1517
5550	-443	-1530
5575	-154	-1535
5570	152	-1531
5550	446	-1525
5460	765	-1516

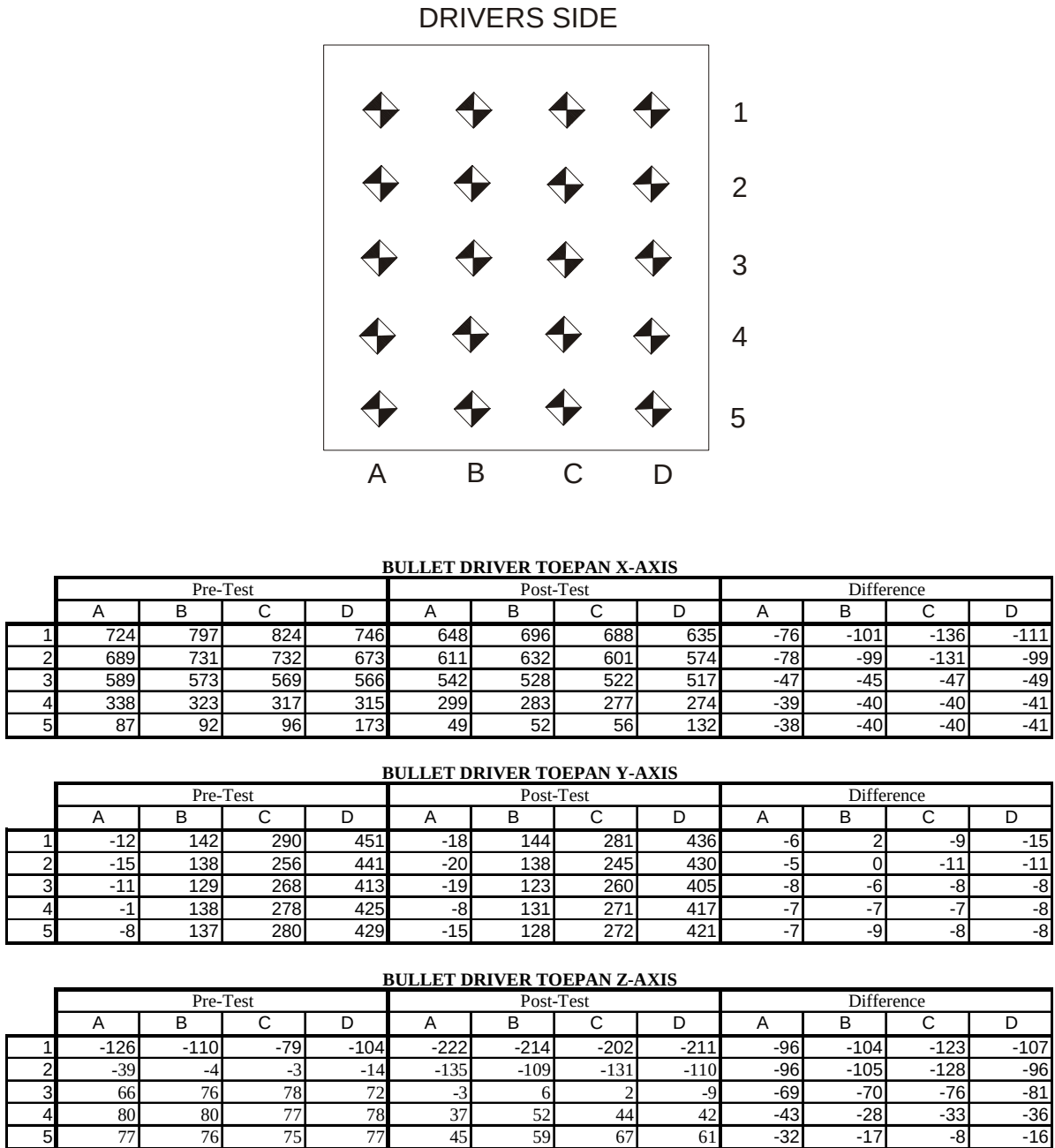
Difference		
Xmm	Ymm	Zmm
-83	-5	-507
-81	-3	-530
-89	-4	-529
-101	-3	-524
-102	-4	-530
-97	-5	-514

¹ Measurements 1, 3, and 4, Bottom of Front Bumper, are included in the NHTSA Entrée database submission as Damage Profile Distance 1, 3, and 4.

² Measurements 2, 5, and 6, Top of Front Bumper, are included in the NHTSA Entrée database submission as Damage Profile Distance 2, 5, and 6.

³ Measurement point could not be located post-test.

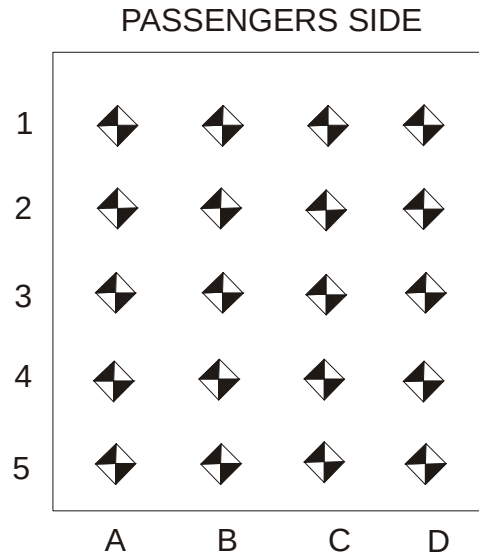
Figure 21 Bullet Vehicle Toeboard Measurements



Pre- and post-test measurement reference: +X forward; +Y right; +Z down.

0,0,0 origin is front outboard seat bolt.

Figure 21 Bullet Vehicle Toeboard Measurements, Continued



BULLET PASSENGER TOEPAN X-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	699	726	727	715	574	643	661	660	-125	-83	-66	-55
2	652	651	651	650	553	570	588	600	-99	-81	-63	-50
3	545	536	536	540	503	500	502	504	-42	-36	-34	-36
4	330	329	303	318	295	292	273	287	-35	-37	-30	-31
5	162	154	126	124	130	121	93	91	-32	-33	-33	-33

BULLET PASSENGER TOEPAN Y-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-344	-180	-42	52	-342	-189	-52	42	2	-9	-10	-10
2	-297	-181	-45	52	-296	-182	-48	48	1	-1	-3	-4
3	-275	-151	-43	53	-278	-153	-46	50	-3	-2	-3	-3
4	-300	-178	-68	57	-302	-183	-69	55	-2	-5	-1	-2
5	-310	-177	-69	47	-311	-179	-67	44	-1	-2	2	-3

BULLET PASSENGER TOEPAN Z-AXIS

	Pre-Test				Post-Test				Difference			
	A	B	C	D	A	B	C	D	A	B	C	D
1	-109	-92	-106	-121	-217	-183	-192	-206	-108	-91	-86	-85
2	-36	-28	-29	-30	-133	-118	-113	-111	-97	-90	-84	-81
3	64	70	69	66	-20	-7	-3	-7	-84	-77	-72	-73
4	78	77	78	78	27	22	30	26	-51	-55	-48	-52
5	76	77	77	78	46	41	40	32	-30	-36	-37	-46

Pre- and post-test measurement reference: +X forward; +Y right; +Z down.

0,0,0 origin is front outboard seat bolt.

Table 21 Bullet Vehicle IIHS Measurements

BULLET IIHS MEASUREMENTS										
Index	Description	Pre-Test			Post-Test			Difference		
		Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	Center of Steering Wheel on the Airbag Door	3767	-422	-787	3723	-430	-834	-44	-8	-47
2	Driver's Lower Left Instrument Panel	4021	-571	-477	3969	-572	-556	-52	-1	-79
3	Driver's Lower Right Instrument Panel	4023	-271	-476	3960	-273	-553	-63	-2	-77
4	Brake Pedal Center	4228	-441	-221	4170	-431	-298	-58	10	-77
5	Center Left Toeboard 150 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	4441	-591	-219	4346	-590	-319	-95	1	-100
6	Toeboard Behind the Center of the Brake Pedal at Height of Brake Pedal	4532	-441	-220	4397	-436	-332	-135	5	-112
7	Center Right Toeboard 150 mm Right of the Brake Pedal Center at Height of Brake Pedal Center	4467	-290	-220	4340	-304	-330	-127	-14	-110
8	Foot Rest 250 mm Left of the Brake Pedal Center at Height of Brake Pedal Center	4405	-687	-219	4328	-692	-312	-77	-5	-93
9	Left Front Driver's Seat Mounting Bolt	3688	-674	-105	3658	-676	-123	-30	-2	-18
10	Right Front Driver's Seat Mounting Bolt	3682	-231	-112	3651	-234	-118	-31	-3	-6
11	Left Rear Driver's Seat Mounting Bolt	3266	-672	-107	3238	-674	-140	-28	-2	-33
12	Right Rear Driver's Seat Mounting Bolt	3285	-233	-116	3254	-236	-139	-31	-3	-23
17	Exterior A-Pillar at Height of Bottom of Front Window	4181	-832	-737	4111	-835	-813	-70	-3	-76
18	Exterior B-pillar at Height of A-Pillar Measurement Location	3090	-864	-736	3043	-868	-770	-47	-4	-34

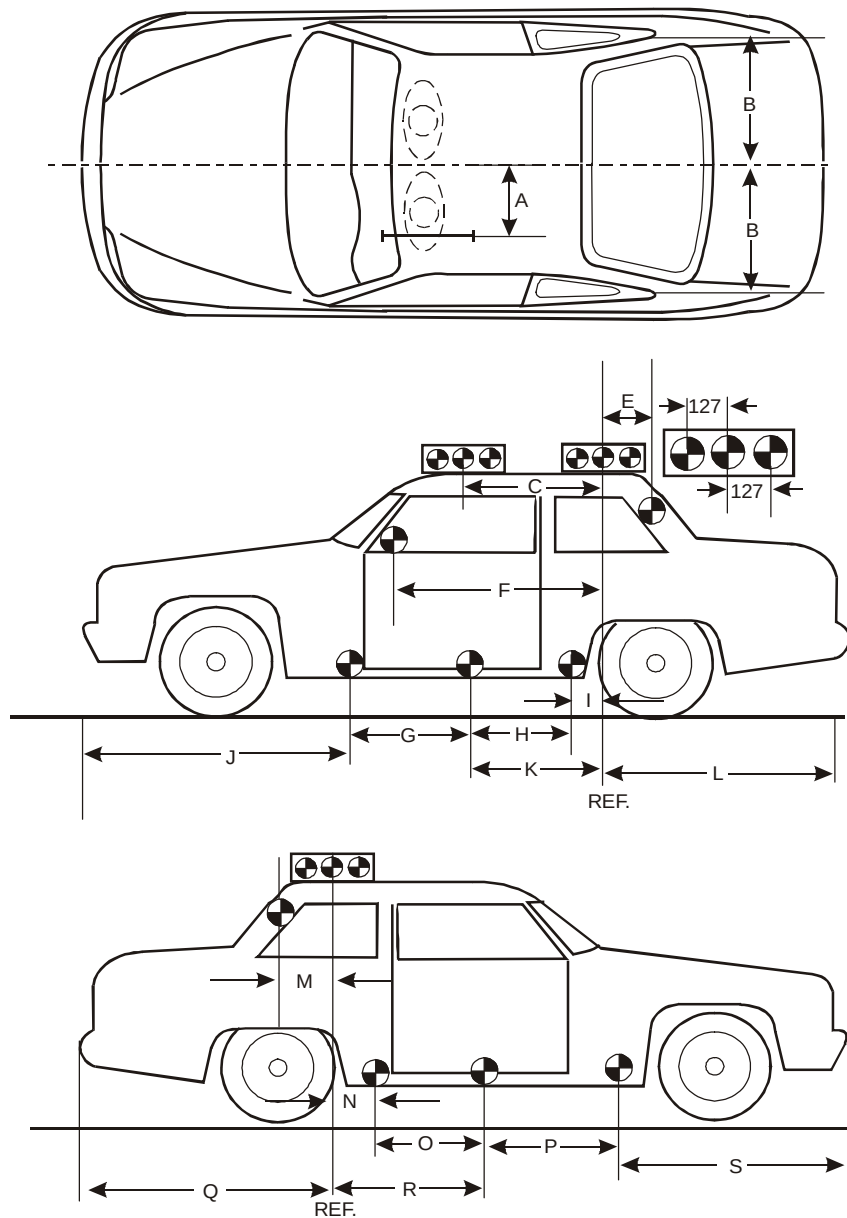
Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

Table 22 Bullet Vehicle Bumper Measurements

				BULLET BUMPER					
Pre-Test				Post-Test			Difference		
Index	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm	Xmm	Ymm	Zmm
1	5288	-959	-135	4837	-1096	-367	-451	-137	-232
2	5542	-916	-126	5046	-944	-346	-496	-28	-220
3	5728	-760	-123	5098	-714	-364	-630	46	-241
4	5776	-506	-123	5063	-490	-423	-713	16	-300
5	5800	-247	-121	5029	-256	-479	-771	-9	-358
6	5814	12	-125	5036	-5	-493	-778	-17	-368
7	5790	275	-127	5068	251	-492	-722	-24	-365
8	5753	532	-132	5094	488	-455	-659	-44	-323
9	5691	783	-135	5126	725	-425	-565	-58	-290
10	5497	925	-134	5019	937	-376	-478	12	-242
11	5246	963	-136	4806	1062	-320	-440	99	-184

Pre-test and post-test measurement references: +X, forward of rear bumper; +Y, rightward from vehicle centerline; +Z, downward from ground level.

Figure 22 Bullet Vehicle Reference Photo Target Locations



Measurement	Pre-Test
A	Left 420 mm Right 440 mm
B	Left 803 mm Right 817 mm
C	Left 610 mm Right 610 mm
E ¹	520 mm

Measurement	Pre-Test
F	1104 mm
G	1282 mm
H	1297 mm
I	-1166 mm
J	1510 mm
K	134 mm
L	2878 mm

Measurement	Pre-Test
M	504 mm
N	-1165 mm
O	1300 mm
P	1290 mm
Q	2880 mm
R	137 mm
S	1497 mm

¹ The first side target is placed 600 mm from front edge of bumper, and others are at 300 mm intervals.

Figure 23 Camera Positions

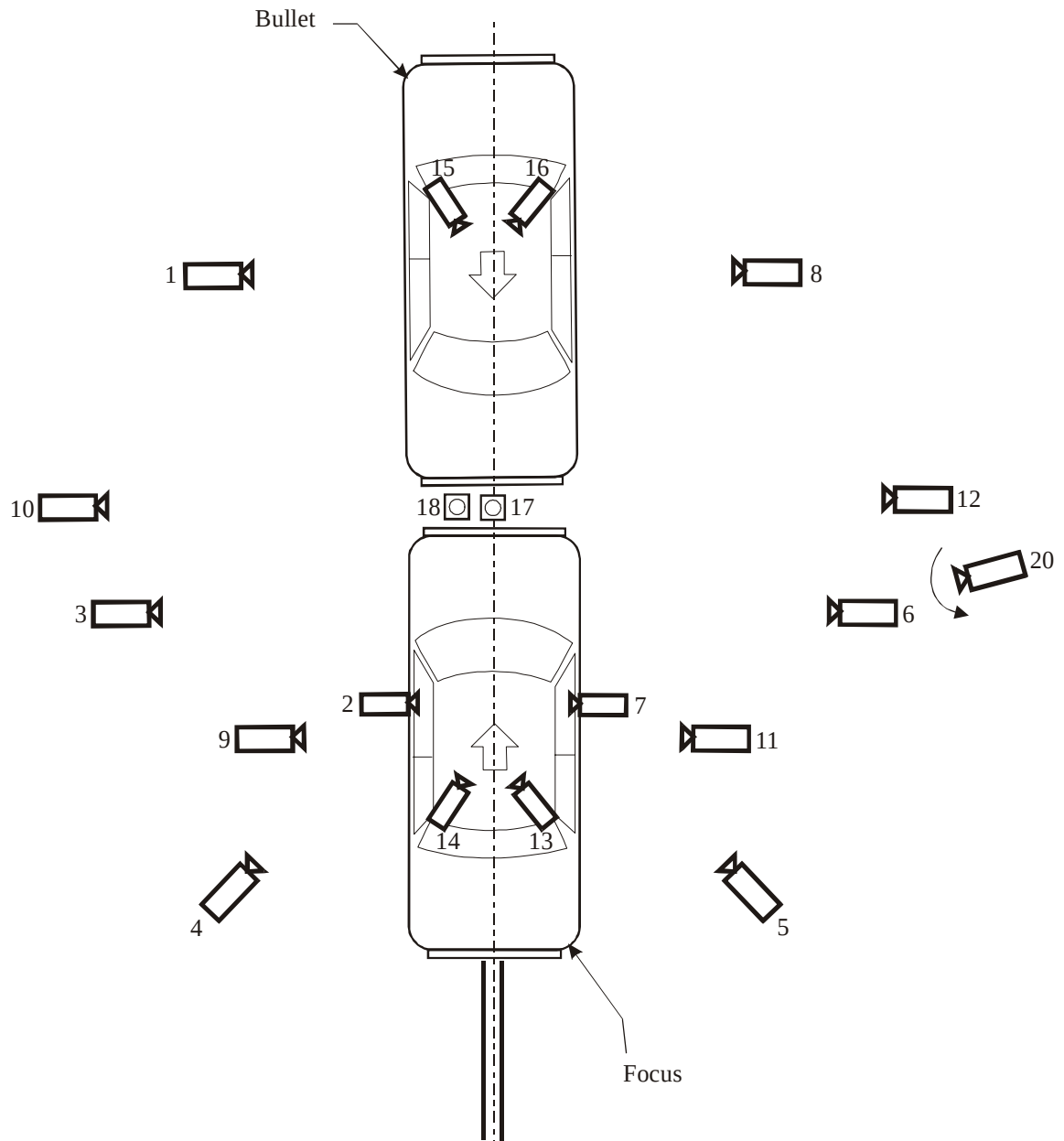


Table 23 Camera Information

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Bullet vehicle passenger side	950	-1100	-1170	-1.0	13	1000
2	Onboard target vehicle - driver	-2045	-715	-1200	-4.9	6.5	1000
3	Target vehicle left tight	-1630	-1980	-920	0.0	50	1000
4	Target vehicle driver angled	-5160	-5430	-1990	-9.1	50	1000
5	Target vehicle passenger angled	-5420	3850	-2010	-11.7	50	1000
6	Target vehicle right tight	-960	12390	-930	-0.5	50	1000
7	Onboard target vehicle - passenger	-1940	740	-1158	-13.8	6.5	1000
8	Bullet vehicle driver side	1220	10980	-960	0.6	13	1000
9	Target vehicle driver side wide	-2420	-1860	-1020	-0.6	13	1000
10	Left overall wide (reference to target vehicle)	0	-14460	-1010	-0.9	12.5	1000
11	Target vehicle passenger side wide	-1750	930	-970	0	13	1000
12	Right overall wide (reference to target vehicle)	0	13700	-1010	-0.2	12.5	1000
13	Onboard target vehicle - driver overshoulder	-2095	300	-1275	-0.5	12.5	1000
14	Onboard target vehicle - passenger overshoulder	-2095	-330	-1200	-4.6	12.5	1000
15	Onboard bullet vehicle - driver overshoulder	2950	-310	-1435	-11.9	13	1000
16	Onboard bullet vehicle - passenger overshoulder	2950	310	-1435	-3.3	13	1000
17	Overhead wide	0	0	N/A	90.0	10	1000
18	Overhead tight	0	0	N/A	90.0	50	1000
20	Panning/documentary	N/A	N/A	N/A	N/A	13	24

+X: Forward (referenced to Target) from impact point
+Y: Rightward (referenced to Target) from impact point
+Z: Downward from ground level

Appendix A

Photographs



Figure A-1 Pre-Test Overall - View 1



Figure A-2 Pre-Test Overall - View 2



Figure A-3 Pre-Test Overall - View 3



Figure A-4 Pre-Test Overall - View 4



Figure A-5 Pre-Test Overall - View 5

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Figure A-6 Pre-Test Overhead Wide View



Figure A-7 Post-Test Overhead Wide View



Figure A-8 Post-Test Overhead Close-up View

Intentionally Left Blank



Figure A-9 Pre-Test Overhead Target Vehicle View



Figure A-10 Pre-Test Overhead Bullet Vehicle View



Figure A-11 Pre-Test Target Vehicle Front View



Figure A-12 Post-Test Target Vehicle Front View



Figure A-13 Pre-Test Target Vehicle Left Front View



Figure A-14 Post-Test Target Vehicle Left Front View



Figure A-15 Pre-Test Target Vehicle Left Side View



Figure A-16 Post-Test Target Vehicle Left Side View



Figure A-17 Pre-Test Target Vehicle Left Rear View



Figure A-18 Post-Test Target Vehicle Left Rear View



Figure A-19 Pre-Test Target Vehicle Rear View



Figure A-20 Post-Test Target Vehicle Rear View



Figure A-21 Pre-Test Target Vehicle Right Rear View



Figure A-22 Post-Test Target Vehicle Right Rear View



Figure A-23 Pre-Test Target Vehicle Right Side View



Figure A-24 Post-Test Target Vehicle Right Side View



Figure A-25 Pre-Test Target Vehicle Right Front View



Figure A-26 Post-Test Target Vehicle Right Front View



Figure A-27 Pre-Test Target Vehicle Engine Compartment View



Figure A-28 Post-Test Target Vehicle Engine Compartment View



Figure A-29 Post-Test Target Vehicle Front Underbody View

Intentionally Left Blank



Figure A-30 Pre-Test Target Vehicle Front Mid Underbody View



Figure A-31 Post-Test Target Vehicle Front Mid Underbody View



Figure A-32 Pre-Test Target Vehicle Mid Underbody View



Figure A-33 Post-Test Target Vehicle Mid Underbody View



Figure A-34 Pre-Test Target Vehicle Rear Mid Underbody View



Figure A-35 Post-Test Target Vehicle Rear Mid Underbody View



Figure A-36 Pre-Test Target Vehicle Rear Underbody View



Figure A-37 Post-Test Target Vehicle Rear Underbody View



Figure A-38 Pre-Test Bullet Vehicle Front View



Figure A-39 Post-Test Bullet Vehicle Front View



Figure A-40 Pre-Test Bullet Vehicle Left Front View



Figure A-41 Post-Test Bullet Vehicle Left Front View



Figure A-42 Pre-Test Bullet Vehicle Left Side View



Figure A-43 Post-Test Bullet Vehicle Left Side View



Figure A-44 Pre-Test Bullet Vehicle Left Rear View



Figure A-45 Post-Test Bullet Vehicle Left Rear View



Figure A-46 Pre-Test Bullet Vehicle Rear View



Figure A-47 Post-Test Bullet Vehicle Rear View



Figure A-48 Pre-Test Bullet Vehicle Right Rear View



Figure A-49 Post-Test Bullet Vehicle Right Rear View



Figure A-50 Pre-Test Bullet Vehicle Right Side View



Figure A-51 Post-Test Bullet Vehicle Right Side View



Figure A-52 Pre-Test Bullet Vehicle Right Front View



Figure A-53 Post-Test Bullet Vehicle Right Front View



Figure A-54 Pre-Test Bullet Vehicle Engine Compartment View



Figure A-55 Post-Test Bullet Vehicle Engine Compartment View



Figure A-56 Post-Test Bullet Vehicle Front Underbody View

Intentionally Left Blank



Figure A-57 Pre-Test Bullet Vehicle Front Mid Underbody View



Figure A-58 Post-Test Bullet Vehicle Front Mid Underbody View



Figure A-59 Pre-Test Bullet Vehicle Mid Underbody - View 1



Figure A-60 Post-Test Bullet Vehicle Mid Underbody - View 1



Figure A-61 Pre-Test Bullet Vehicle Mid Underbody - View 2



Figure A-62 Post-Test Bullet Vehicle Mid Underbody - View 2



Figure A-63 Pre-Test Bullet Vehicle Rear Mid Underbody View

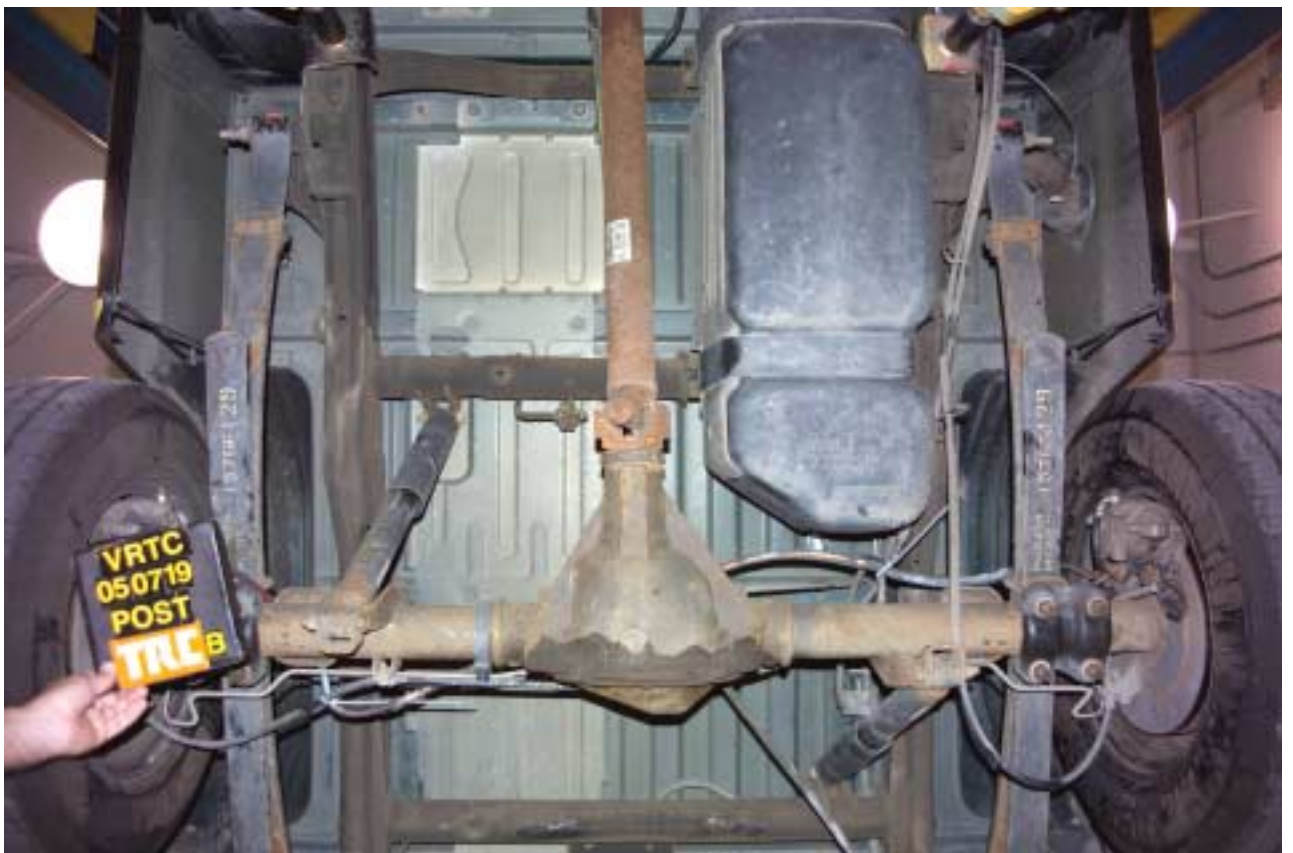


Figure A-64 Post-Test Bullet Vehicle Rear Mid Underbody View



Figure A-65 Pre-Test Bullet Vehicle Rear Underbody View



Figure A-66 Post-Test Bullet Vehicle Rear Underbody View



Figure A-67 Pre-Test Target Vehicle Windshield View



Figure A-68 Post-Test Target Vehicle Windshield View



Figure A-69 Pre-Test Target Vehicle Driver and Passenger Dummies through Windshield View



Figure A-70 Post-Test Target Vehicle Driver and Passenger Dummies through Windshield View

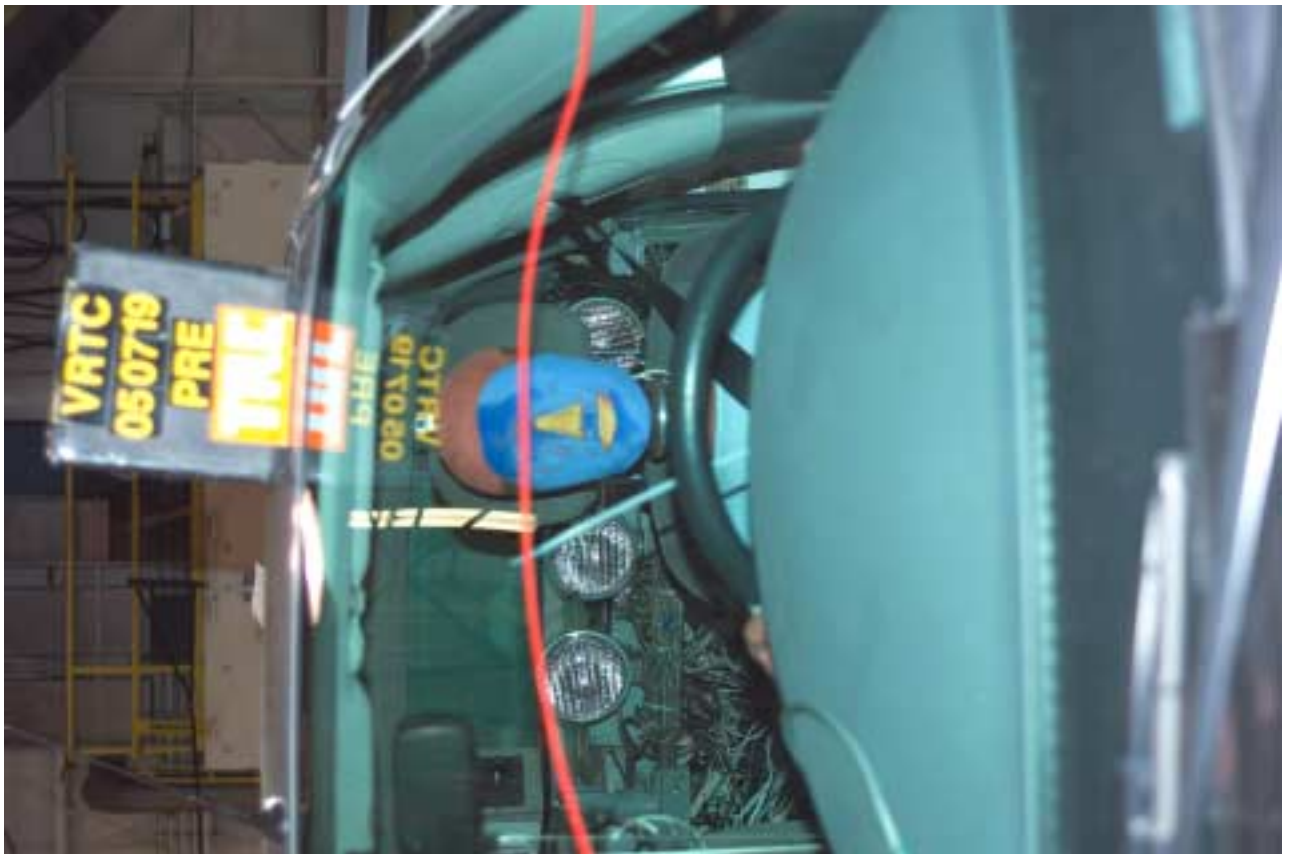


Figure A-71 Pre-Test Target Vehicle Driver Dummy - View 1



Figure A-72 Post-Test Target Vehicle Driver Dummy - View 1



Figure A-73 Pre-Test Target Vehicle Driver Dummy - View 2



Figure A-74 Post-Test Target Vehicle Driver Dummy - View 2



Figure A-75 Pre-Test Target Vehicle Driver Dummy - View 3



Figure A-76 Pre-Test Target Vehicle Driver Dummy - View 4

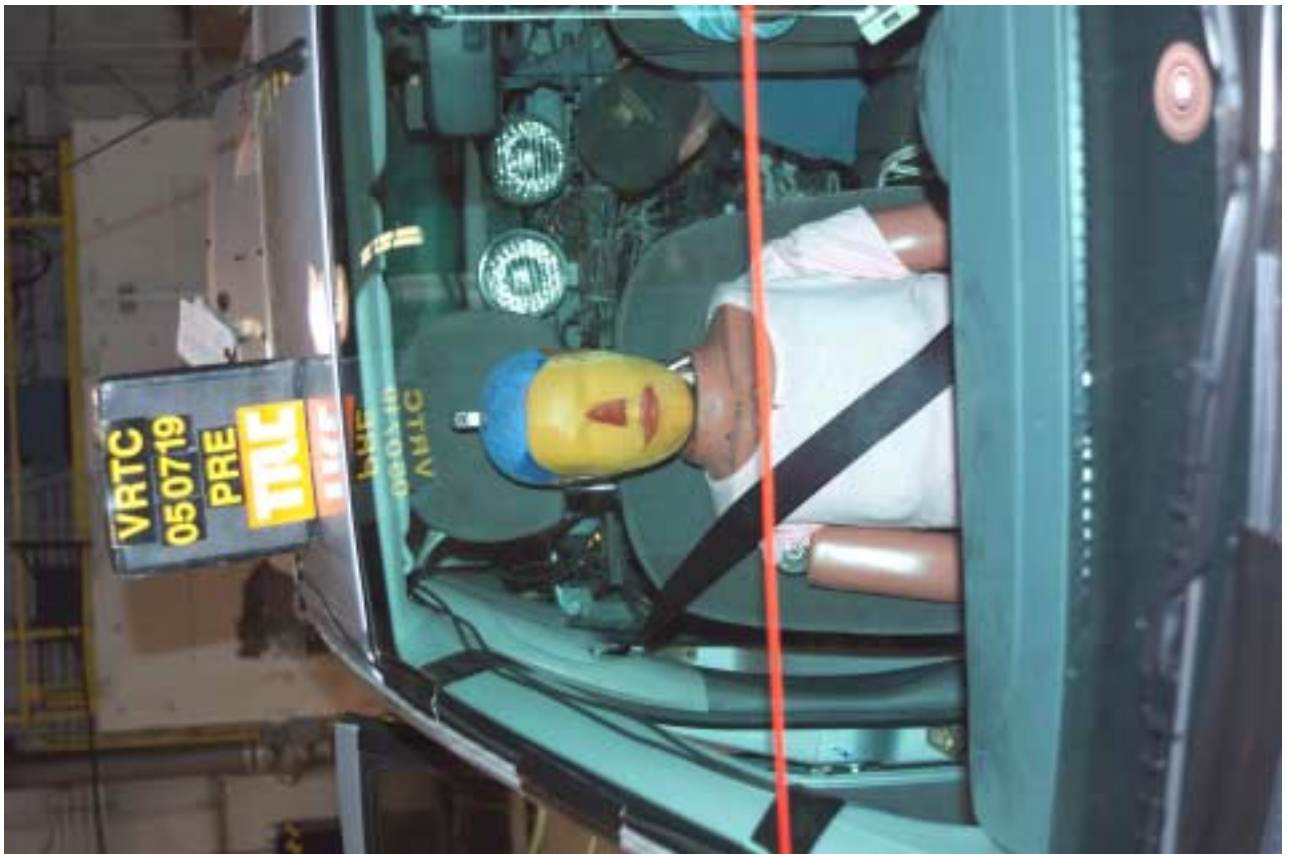


Figure A-77 Pre-Test Target Vehicle Passenger Dummy - View 1



Figure A-78 Post-Test Target Vehicle Passenger Dummy - View 1



Figure A-79 Pre-Test Target Vehicle Passenger Dummy - View 2



Figure A-80 Post-Test Target Vehicle Passenger Dummy - View 2



Figure A-81 Pre-Test Target Vehicle Passenger Dummy - View 3



Figure A-82 Pre-Test Target Vehicle Passenger Dummy - View 4



Figure A-83 Pre-Test Bullet Vehicle Windshield View



Figure A-84 Post-Test Bullet Vehicle Windshield View



Figure A-85 Pre-Test Bullet Vehicle Driver and Passenger Dummies through Windshield View



Figure A-86 Post-Test Bullet Vehicle Driver and Passenger Dummies through Windshield View



Figure A-87 Pre-Test Bullet Vehicle Driver Dummy - View 1



Figure A-88 Post-Test Bullet Vehicle Driver Dummy - View 1



Figure A-89 Pre-Test Bullet Vehicle Driver Dummy - View 2



Figure A-90 Post-Test Bullet Vehicle Driver Dummy - View 2



Figure A-91 Pre-Test Bullet Vehicle Driver Dummy - View 3



Figure A-92 Post-Test Bullet Vehicle Driver Dummy - View 3



Figure A-93 Pre-Test Bullet Vehicle Driver Dummy - View 4



Figure A-94 Post-Test Bullet Vehicle Driver Dummy - View 4



Figure A-95 Pre-Test Bullet Vehicle Passenger Dummy - View 1



Figure A-96 Post-Test Bullet Vehicle Passenger Dummy - View 1



Figure A-97 Pre-Test Bullet Vehicle Passenger Dummy - View 2



Figure A-98 Post-Test Bullet Vehicle Passenger Dummy - View 2



Figure A-99 Pre-Test Bullet Vehicle Passenger Dummy - View 3



Figure A-100 Post-Test Bullet Vehicle Passenger Dummy - View 3



Figure A-101 Pre-Test Bullet Vehicle Passenger Dummy - View 4



Figure A-102 Post-Test Bullet Vehicle Passenger Dummy - View 4



Figure A-103 Post-Test Target Vehicle Driver Dummy Overall Contact View



Figure A-104 Post-Test Target Vehicle Driver Dummy Head Contact - View 1



Figure A-105 Post-Test Target Vehicle Driver Dummy Head Contact - View 2



Figure A-106 Post-Test Target Vehicle Driver Dummy Head Contact - View 3



Figure A-107 Post-Test Target Vehicle Driver Dummy Knee Contact - View 1



Figure A-108 Post-Test Target Vehicle Driver Dummy Knee Contact - View 2



Figure A-109 Post-Test Target Vehicle Passenger Dummy Overall Contact View



Figure A-110 Post-Test Target Vehicle Passenger Dummy Head Contact - View 1



Figure A-111 Post-Test Target Vehicle Passenger Dummy Head Contact - View 2



Figure A-112 Post-Test Target Vehicle Passenger Dummy Head Contact - View 3



Figure A-113 Post-Test Target Vehicle Passenger Dummy Knee Contact - View 1



Figure A-114 Post-Test Target Vehicle Passenger Dummy Knee Contact - View 2



Figure A-115 Post-Test Bullet Vehicle Driver Dummy Overall Contact View



Figure A-116 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 1



Figure A-117 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 2



Figure A-118 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 3



Figure A-119 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 1



Figure A-120 Post-Test Bullet Vehicle Driver Dummy Knee Contact - View 2



Figure A-121 Post-Test Bullet Vehicle Passenger Dummy Overall Contact View



Figure A-122 Post-Test Bullet Vehicle Passenger Dummy Head Contact - View 1



Figure A-123 Post-Test Bullet Vehicle Passenger Dummy Head Contact - View 2



Figure A-124 Post-Test Bullet Vehicle Passenger Dummy Head Contact - View 3



Figure A-125 Post-Test Bullet Vehicle Passenger Dummy Knee Contact - View 1



Figure A-126 Post-Test Bullet Vehicle Passenger Dummy Knee Contact - View 2



Figure A-127 Post-Test Target Vehicle Driver Floorboard Deformation View



Figure A-128 Post-Test Target Vehicle Driver Toeboard Deformation View



Figure A-129 Post-Test Target Vehicle Passenger Floorboard Deformation View



Figure A-130 Post-Test Target Vehicle Passenger Toeboard Deformation View



Figure A-131 Post-Test Bullet Vehicle Driver Floorboard Deformation View



Figure A-132 Post-Test Bullet Vehicle Driver Toeboard Deformation View



Figure A-133 Post-Test Bullet Vehicle Passenger Floorboard Deformation View



Figure A-134 Post-Test Bullet Vehicle Passenger Toeboard Deformation View



Figure A-135 Target Vehicle Certification Label View



Figure A-136 Bullet Vehicle Certification Label View

Appendix B

Data Plots



2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

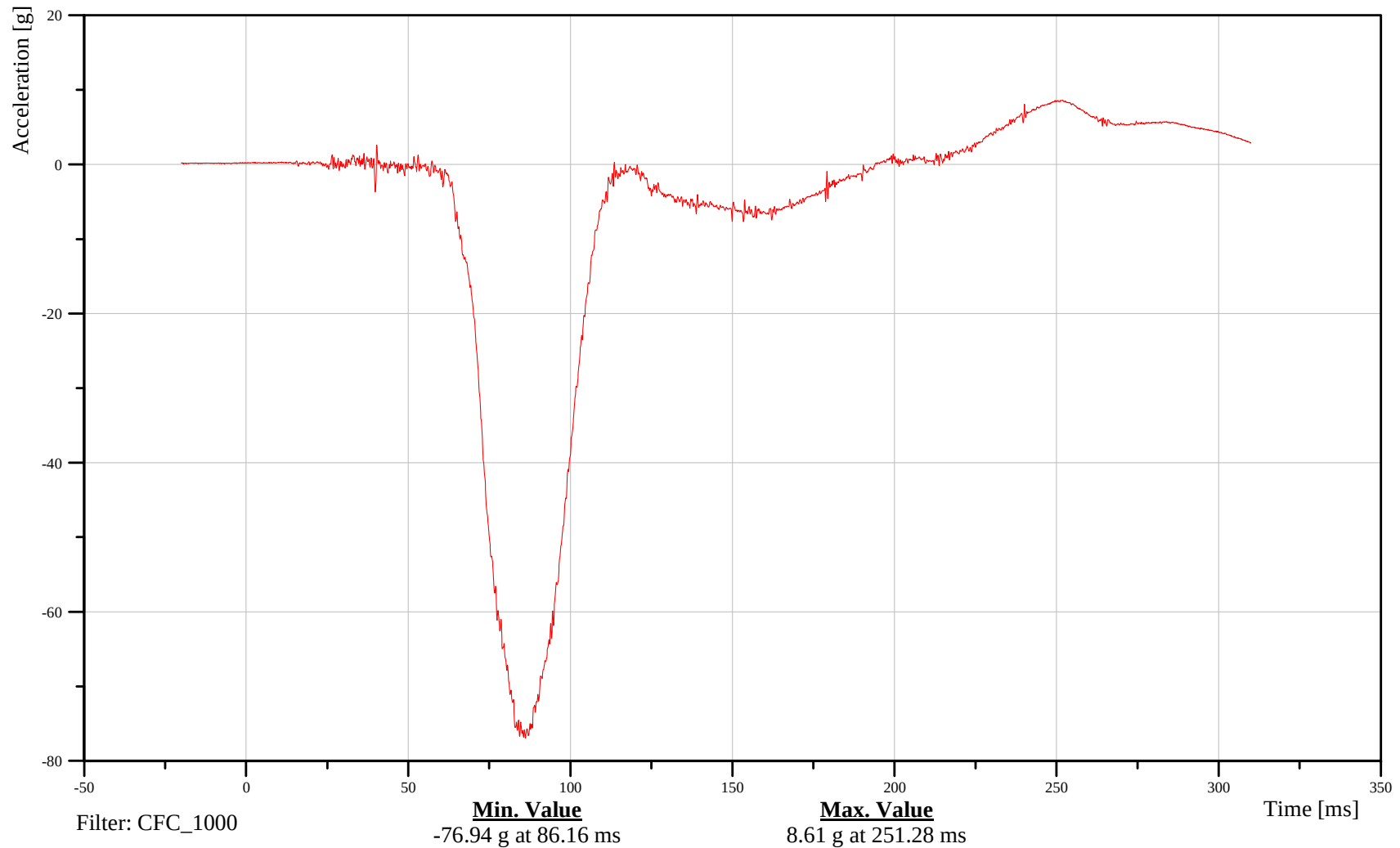
Head Accel X

Customer: VRTC

21HEADCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

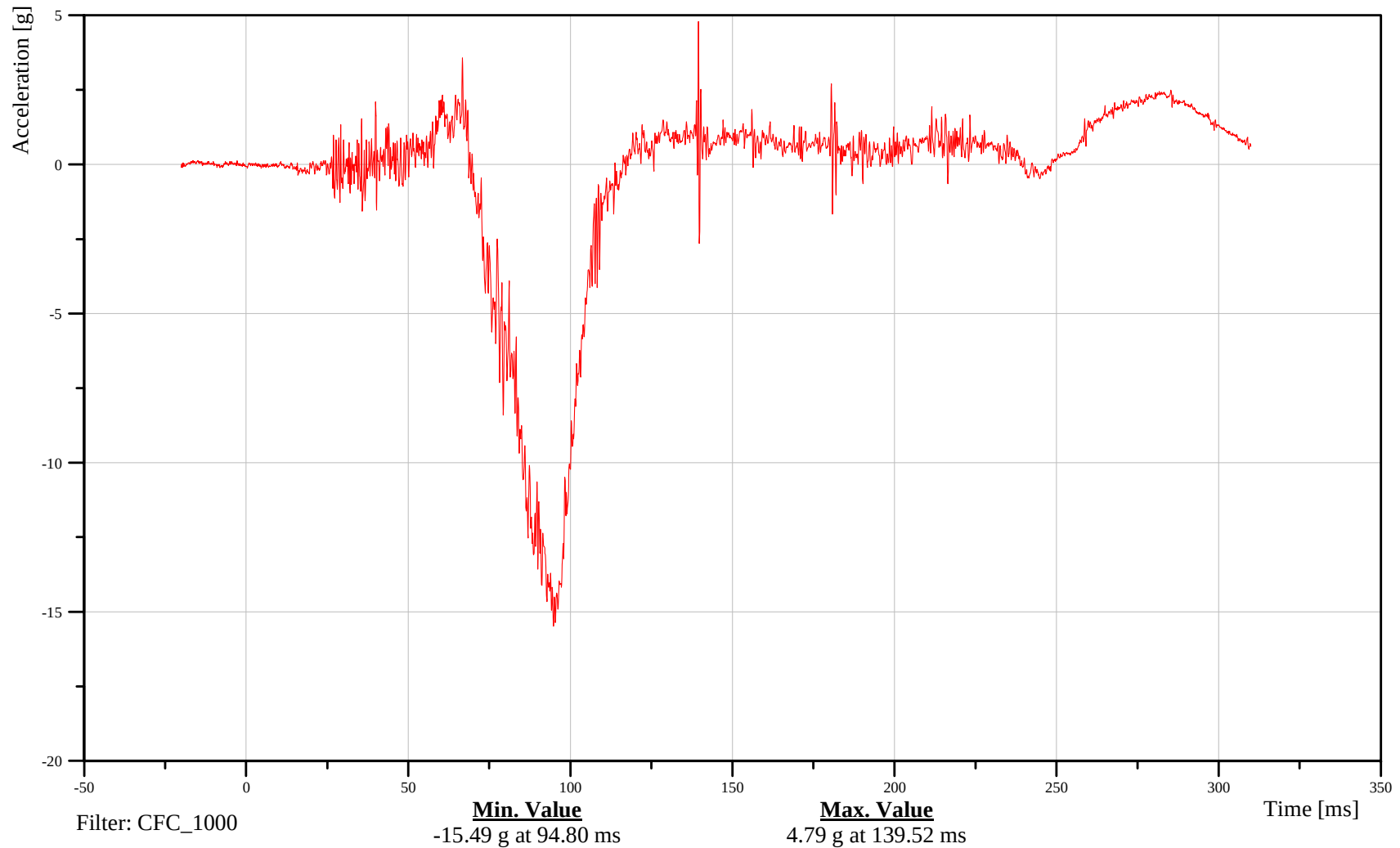
Head Accel Y

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

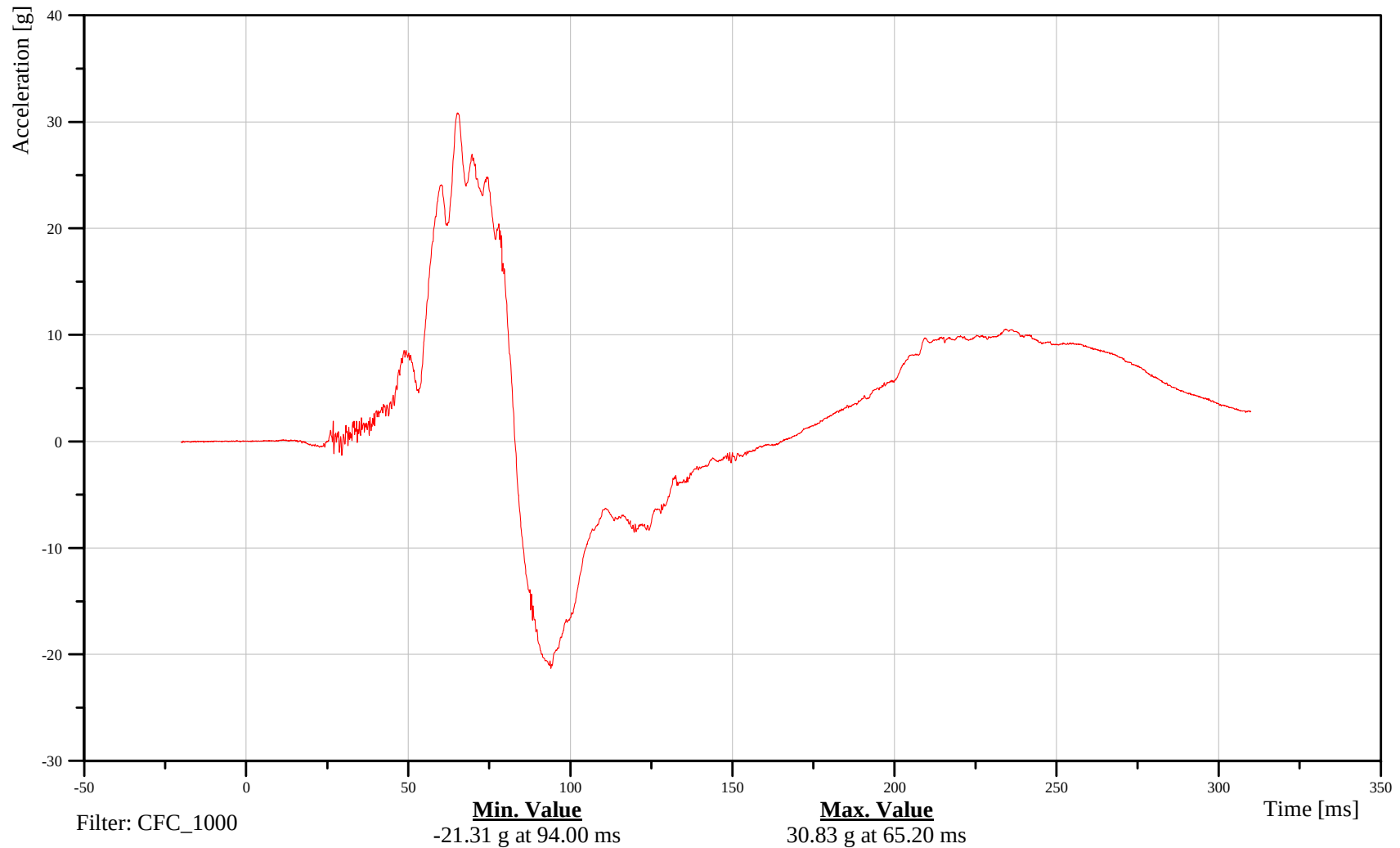
Head Accel Z

Customer: VRTC

21HEADCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Resultant

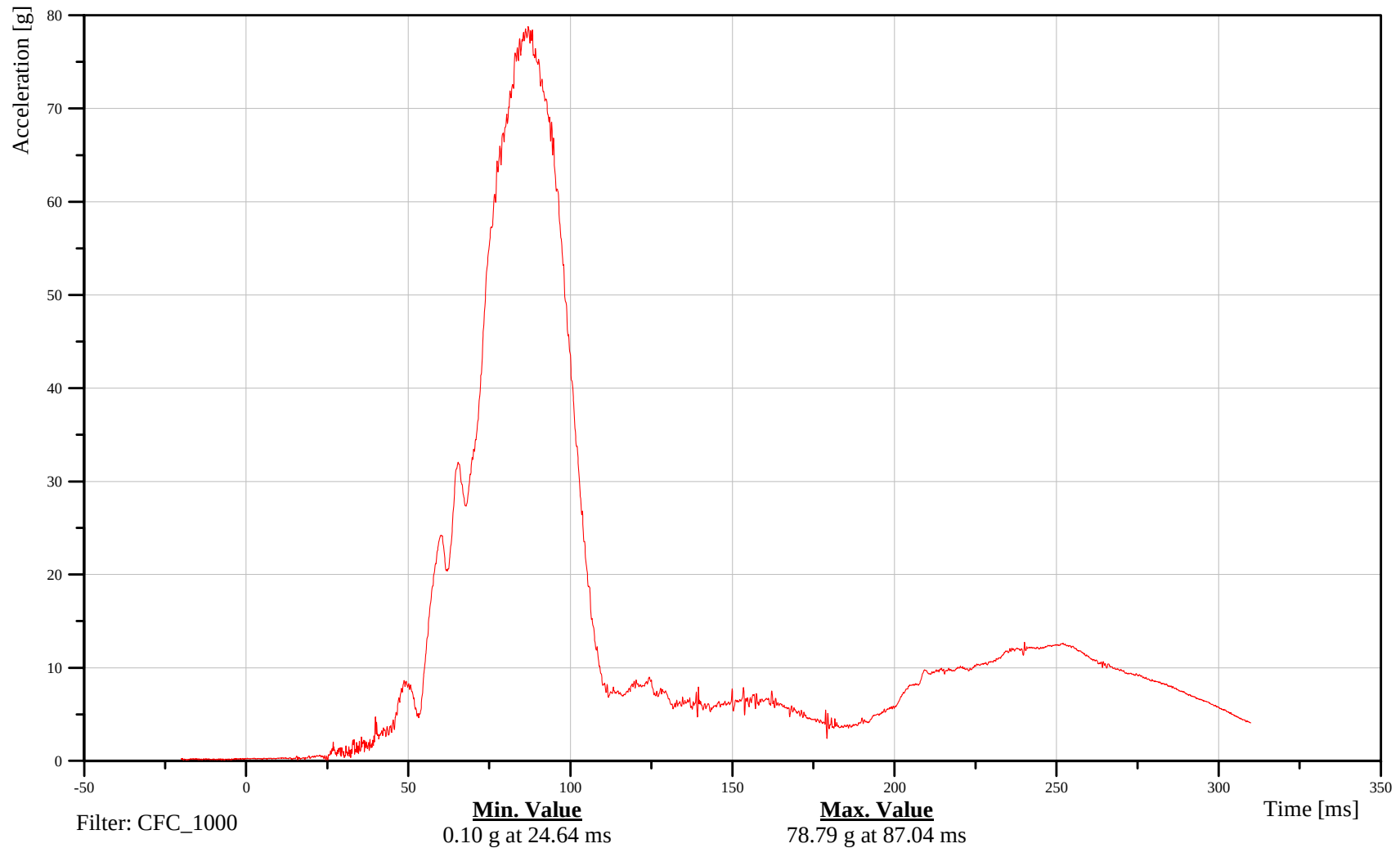
Time: 07:51

Customer: VRTC

21HEADCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

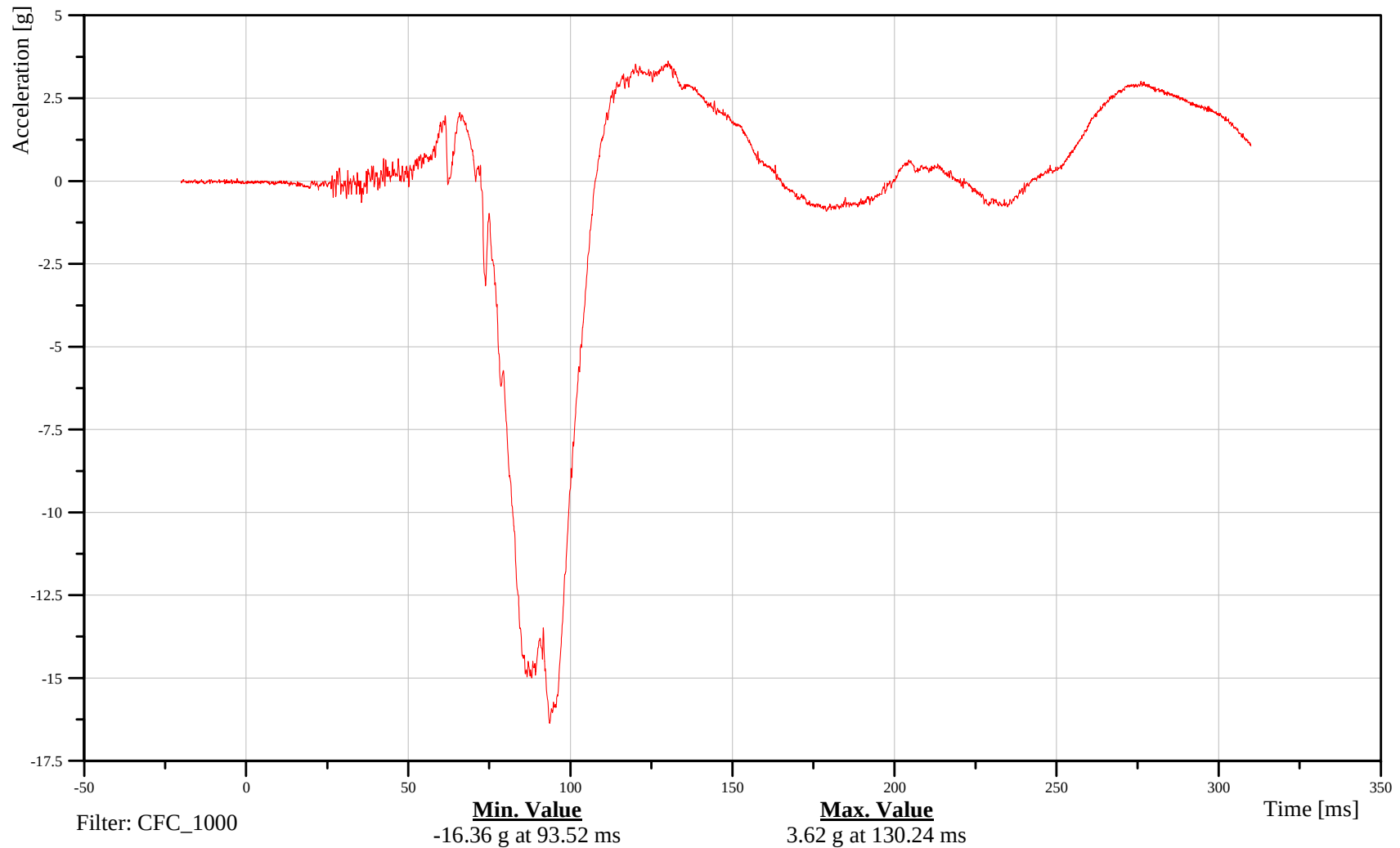
Head (FT) Accel Y

Customer: VRTC

21HEADFR00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

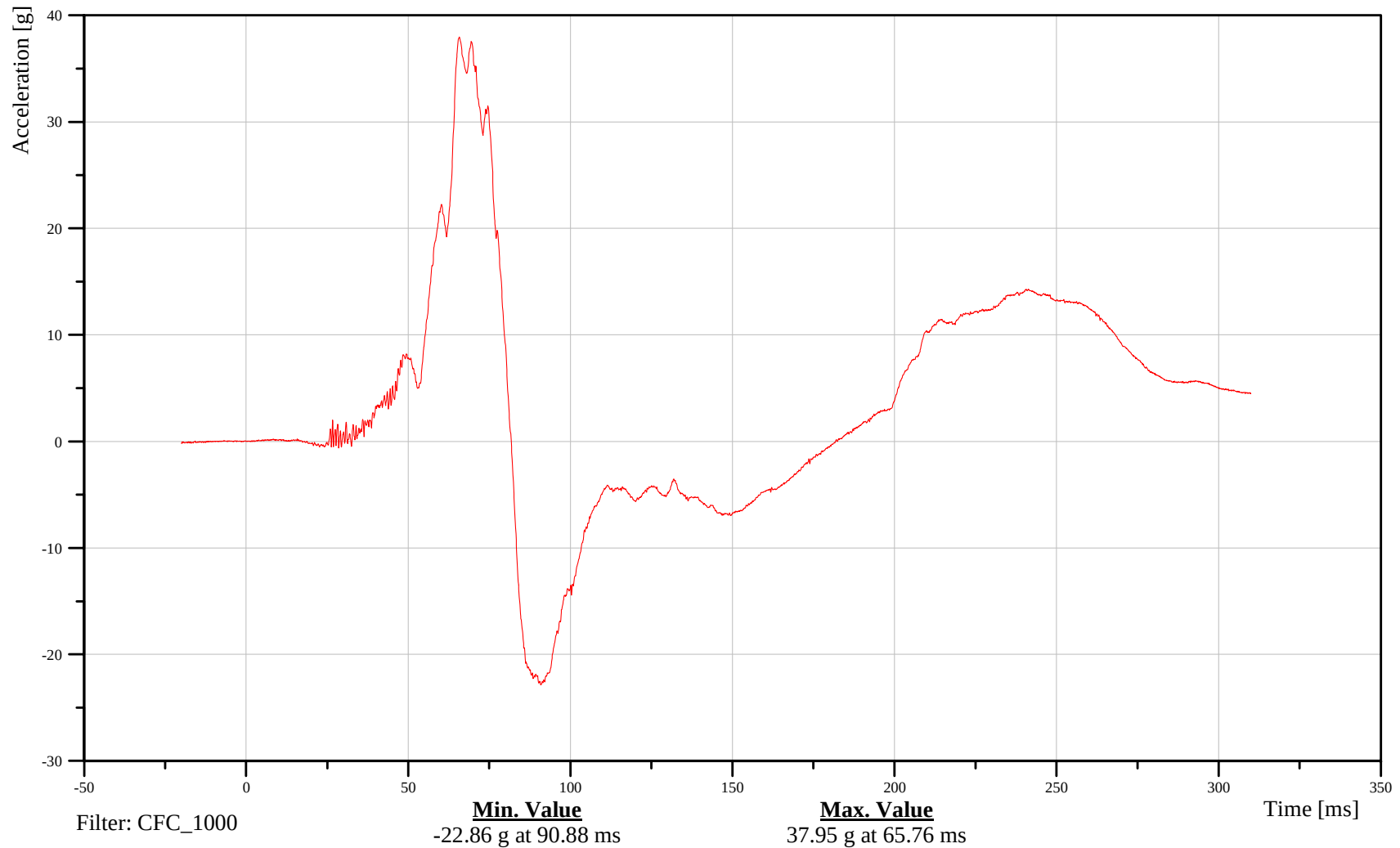
Head (FT) Accel Z

Customer: VRTC

21HEADFR00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel X

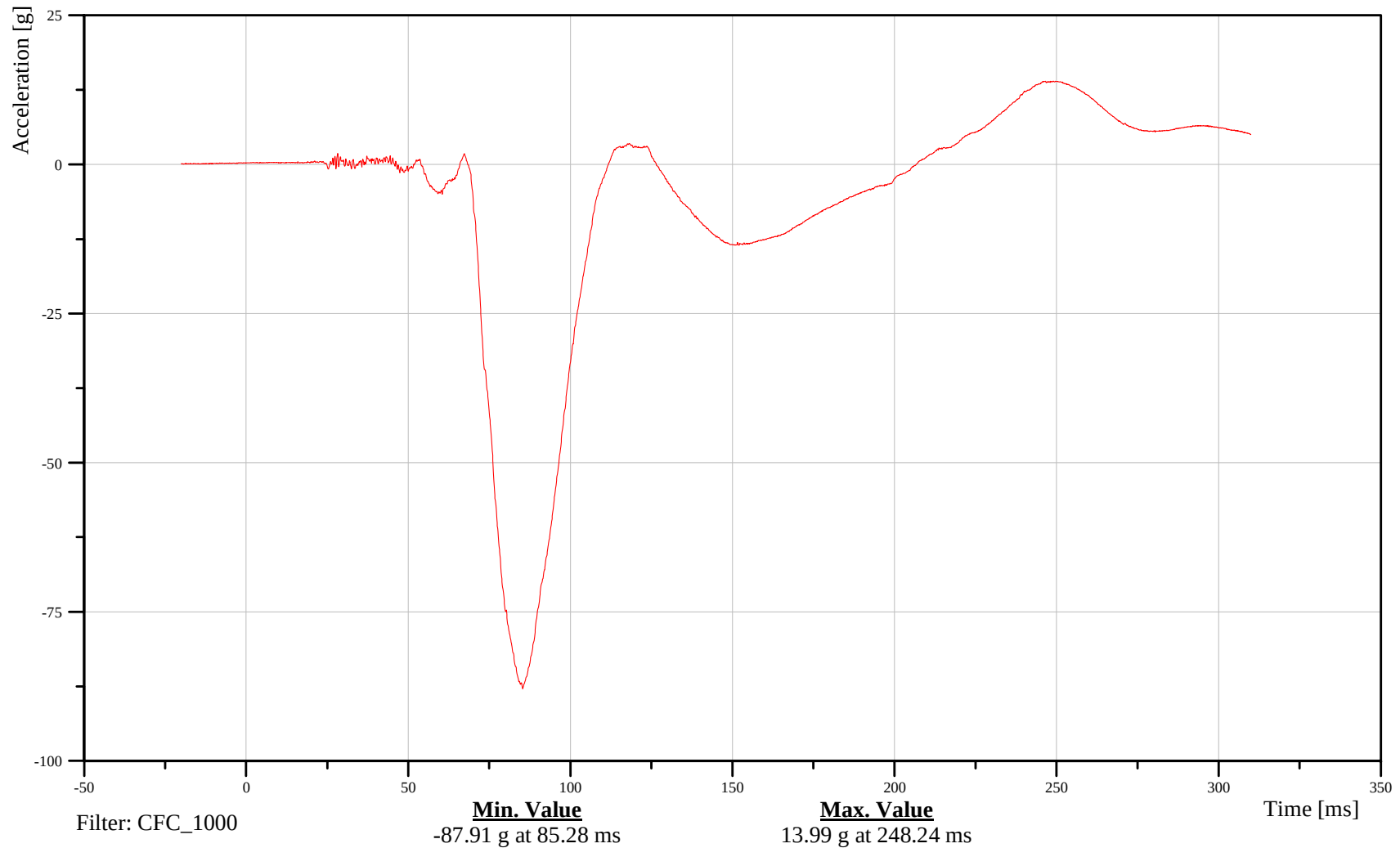
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel Y

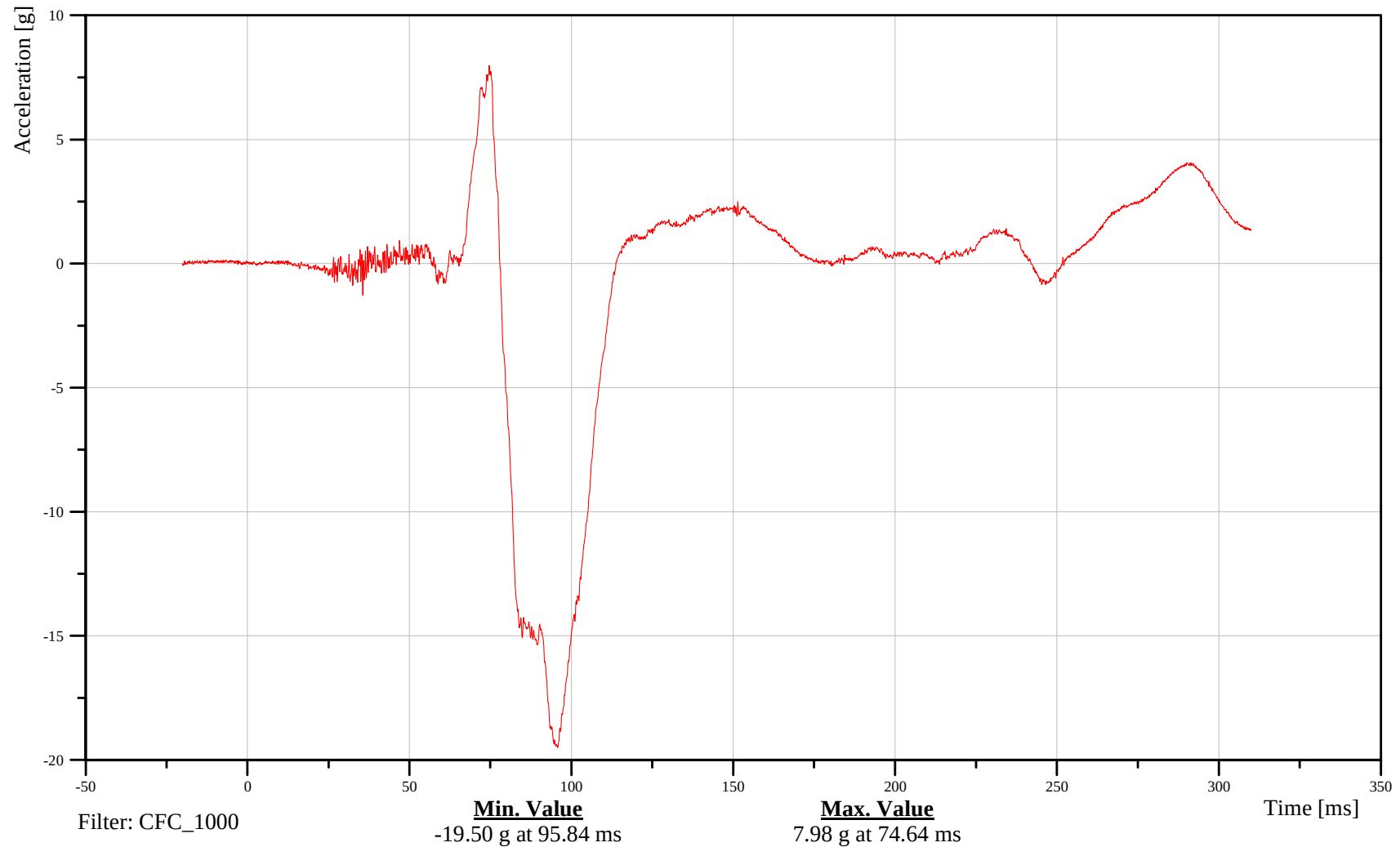
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (LT) Accel X

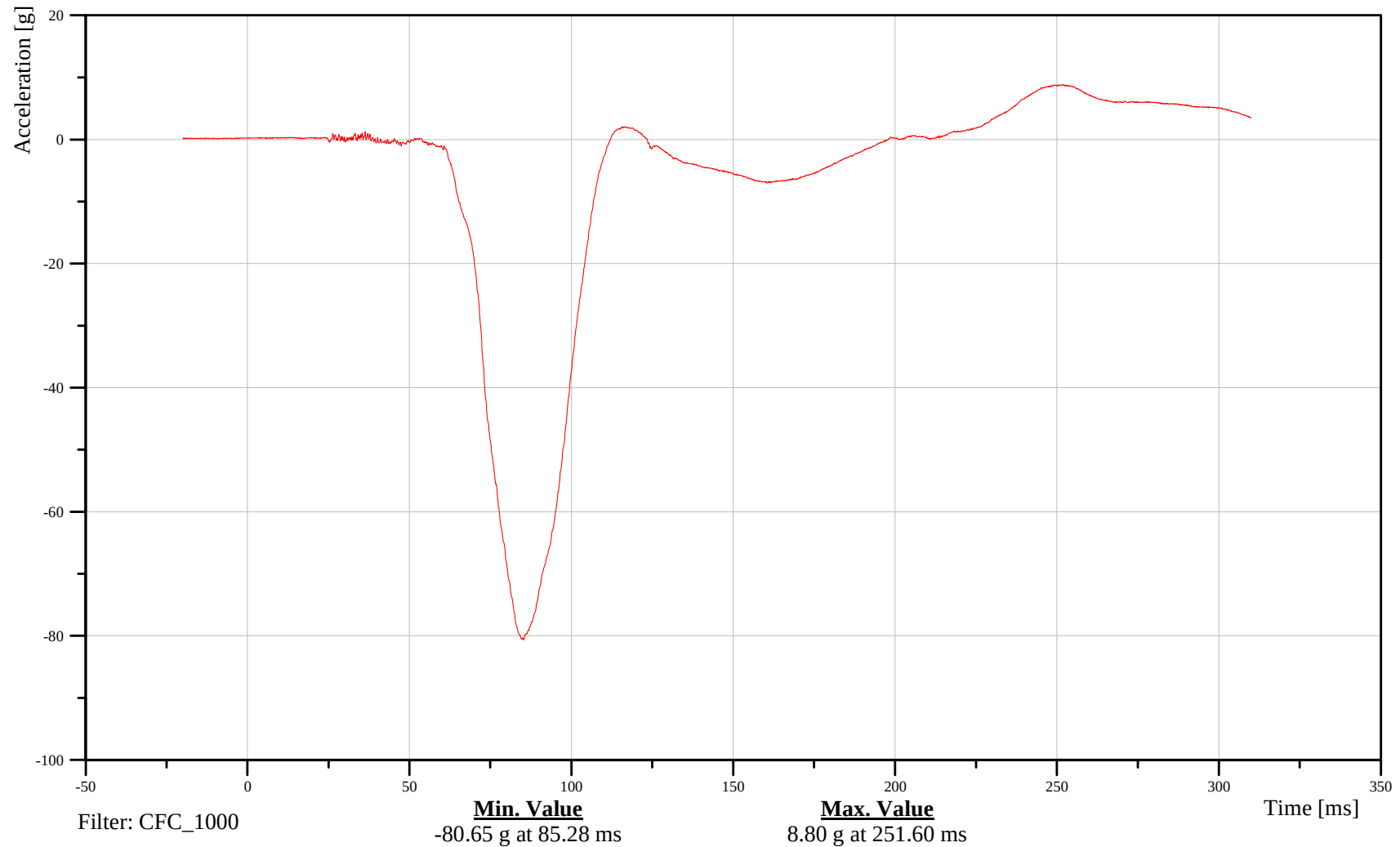
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (LT) Accel Z

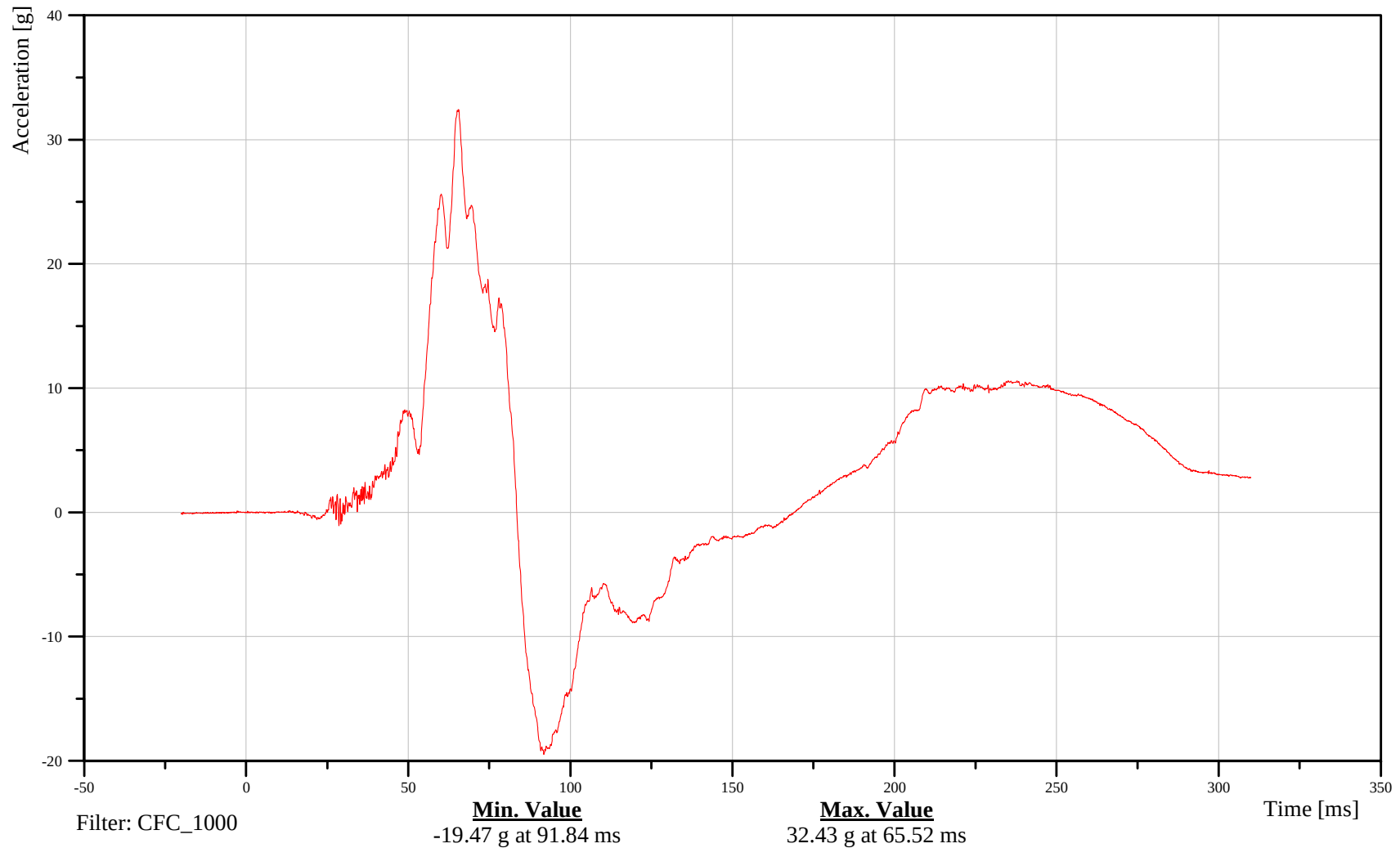
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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

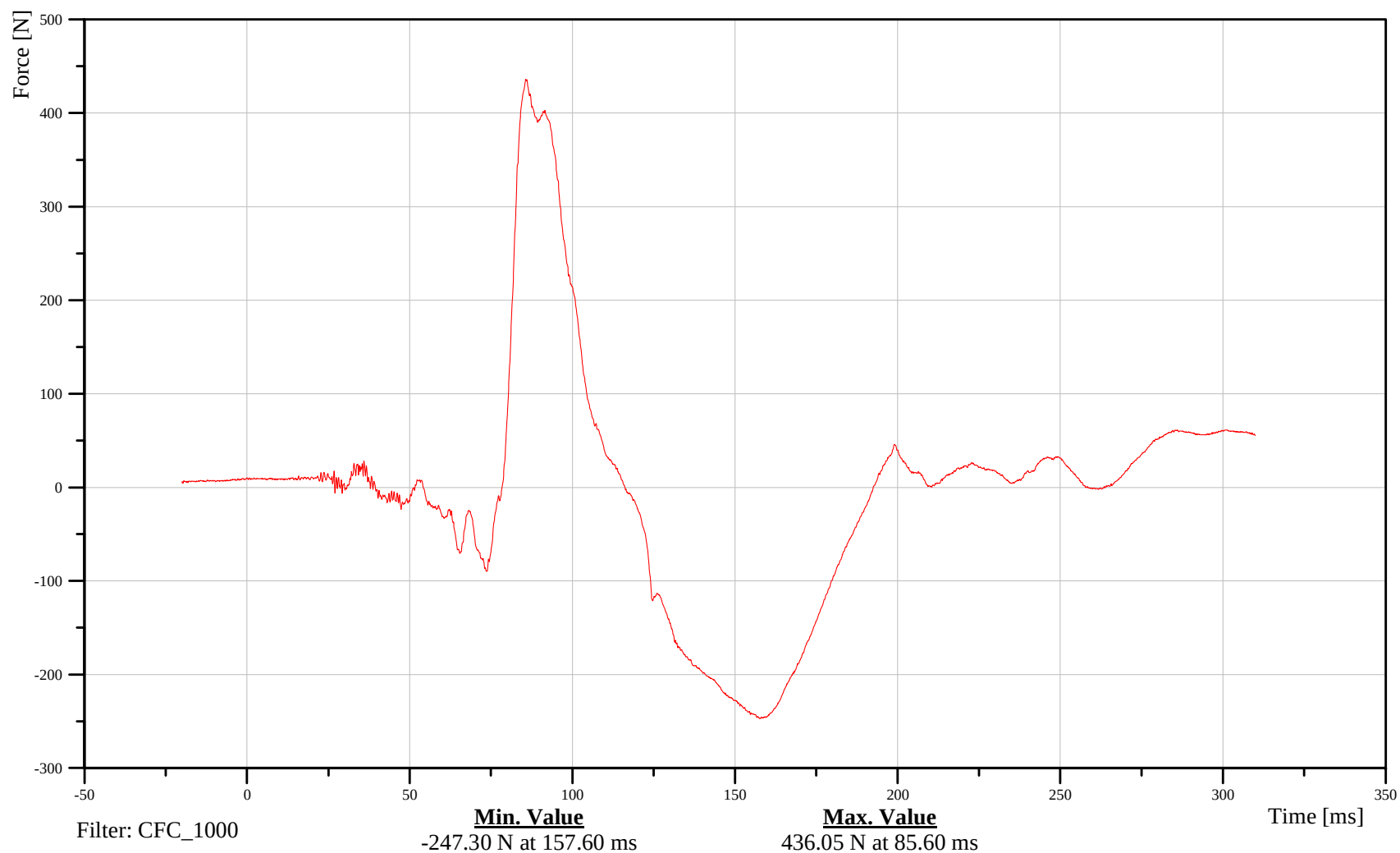
Neck Force X

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

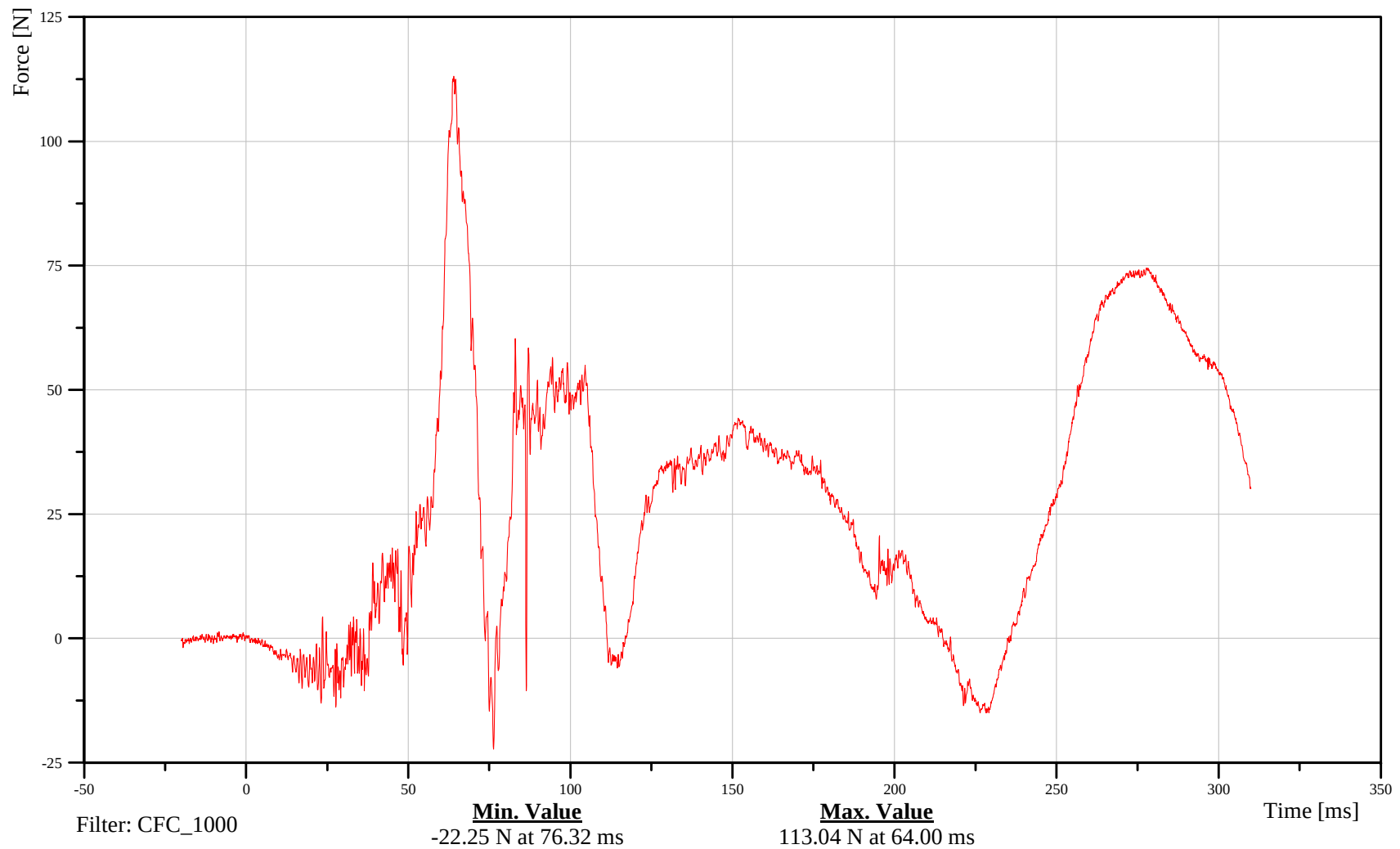
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

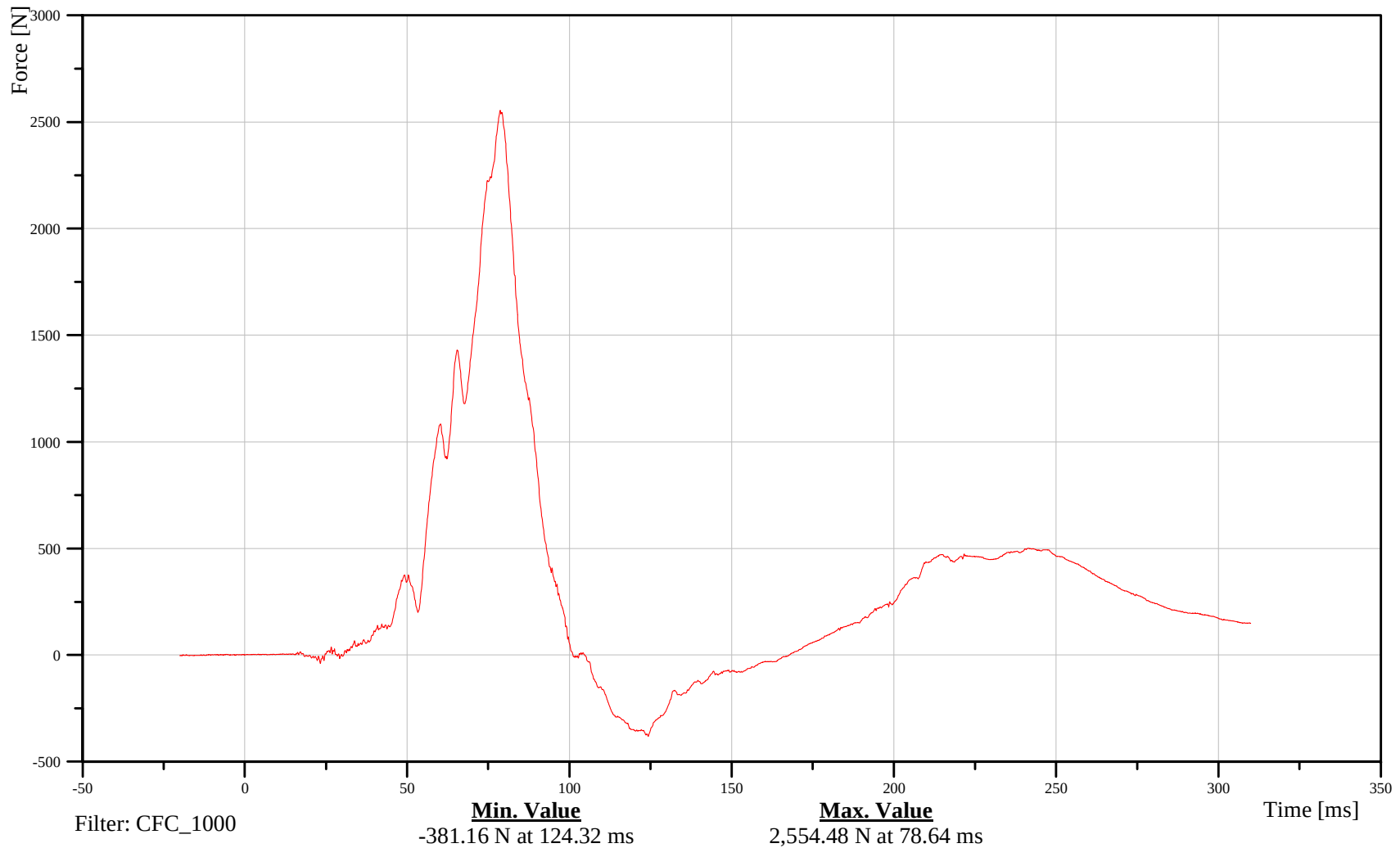
Neck Force Z

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

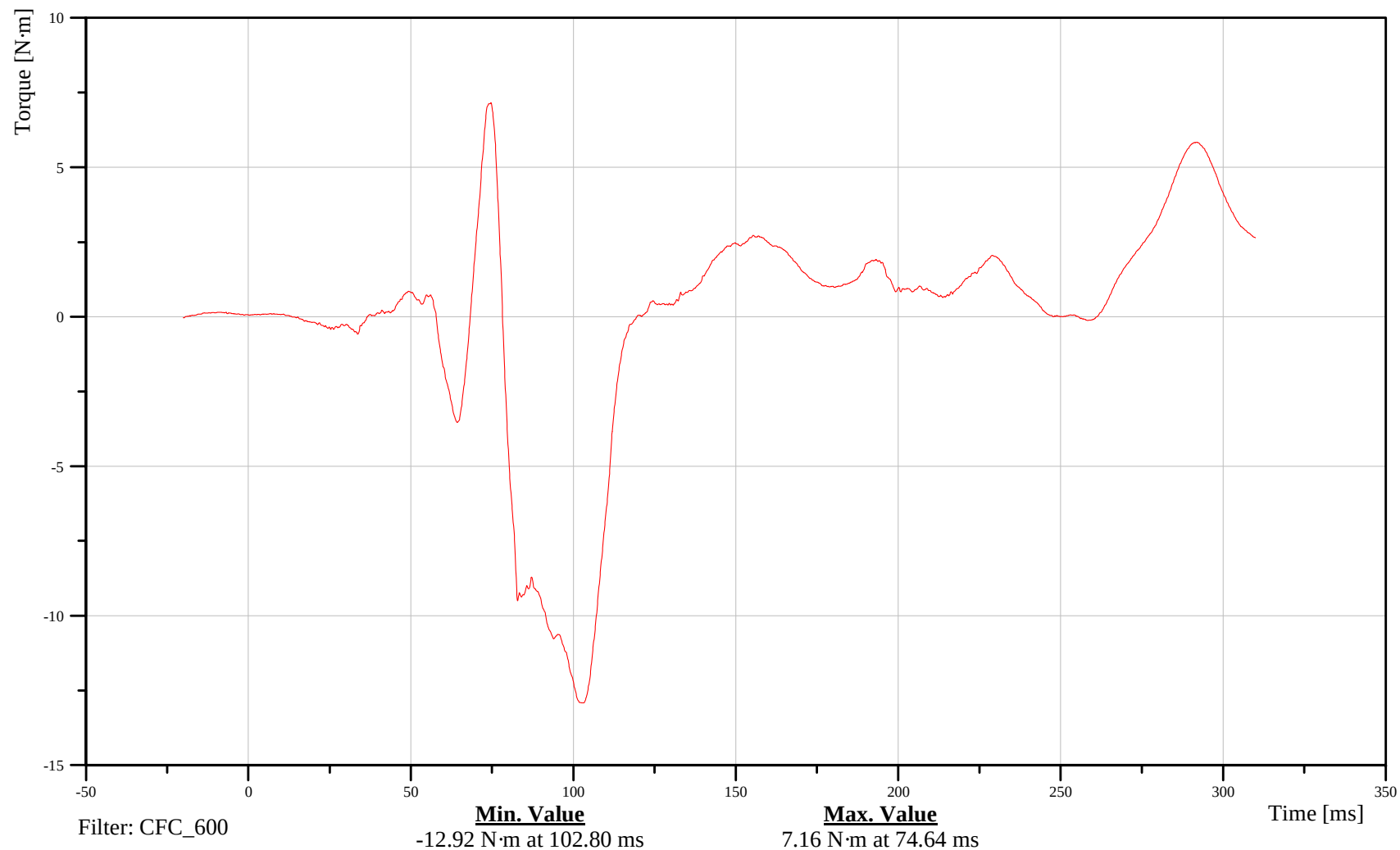
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Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

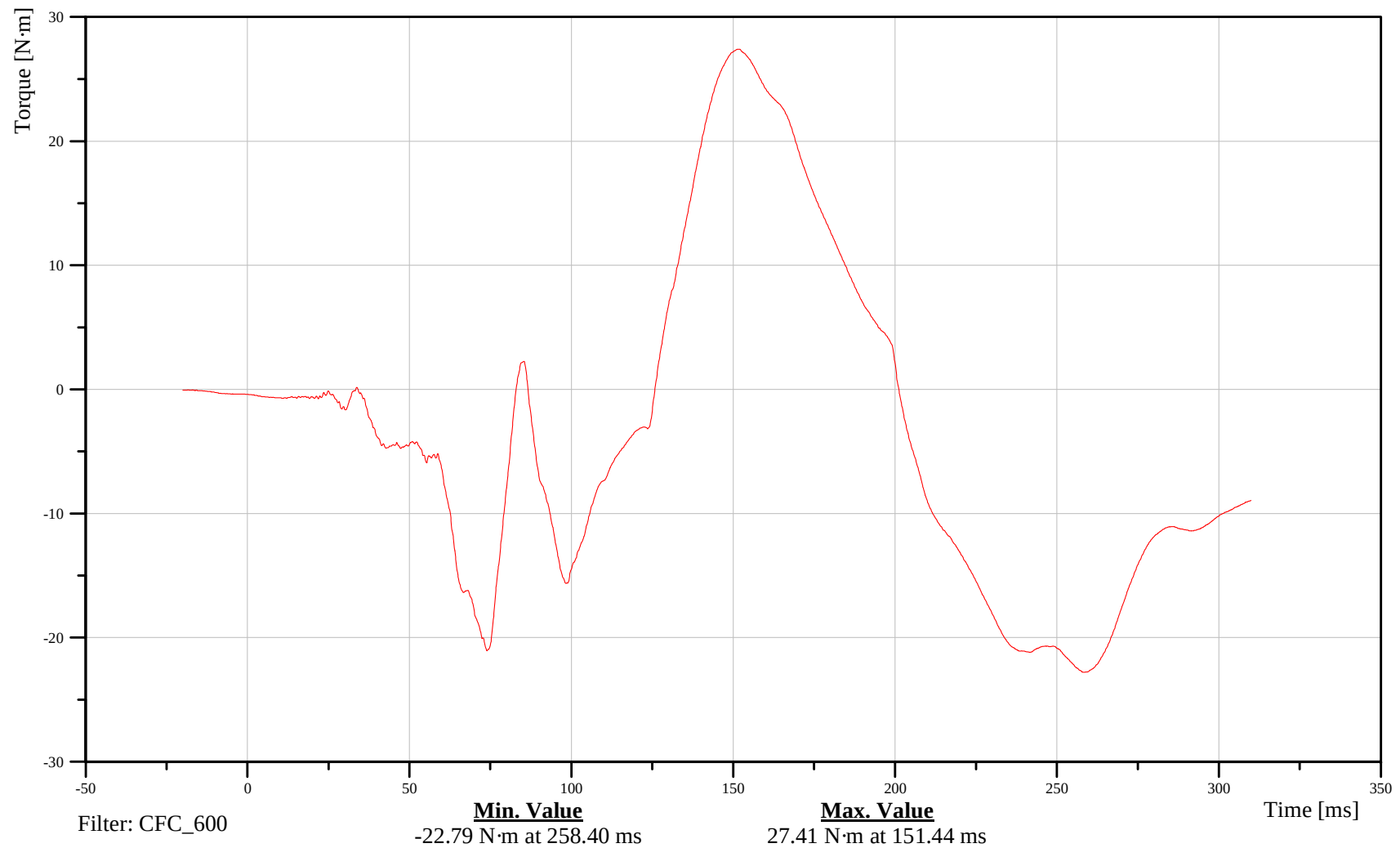
Neck Moment Y

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

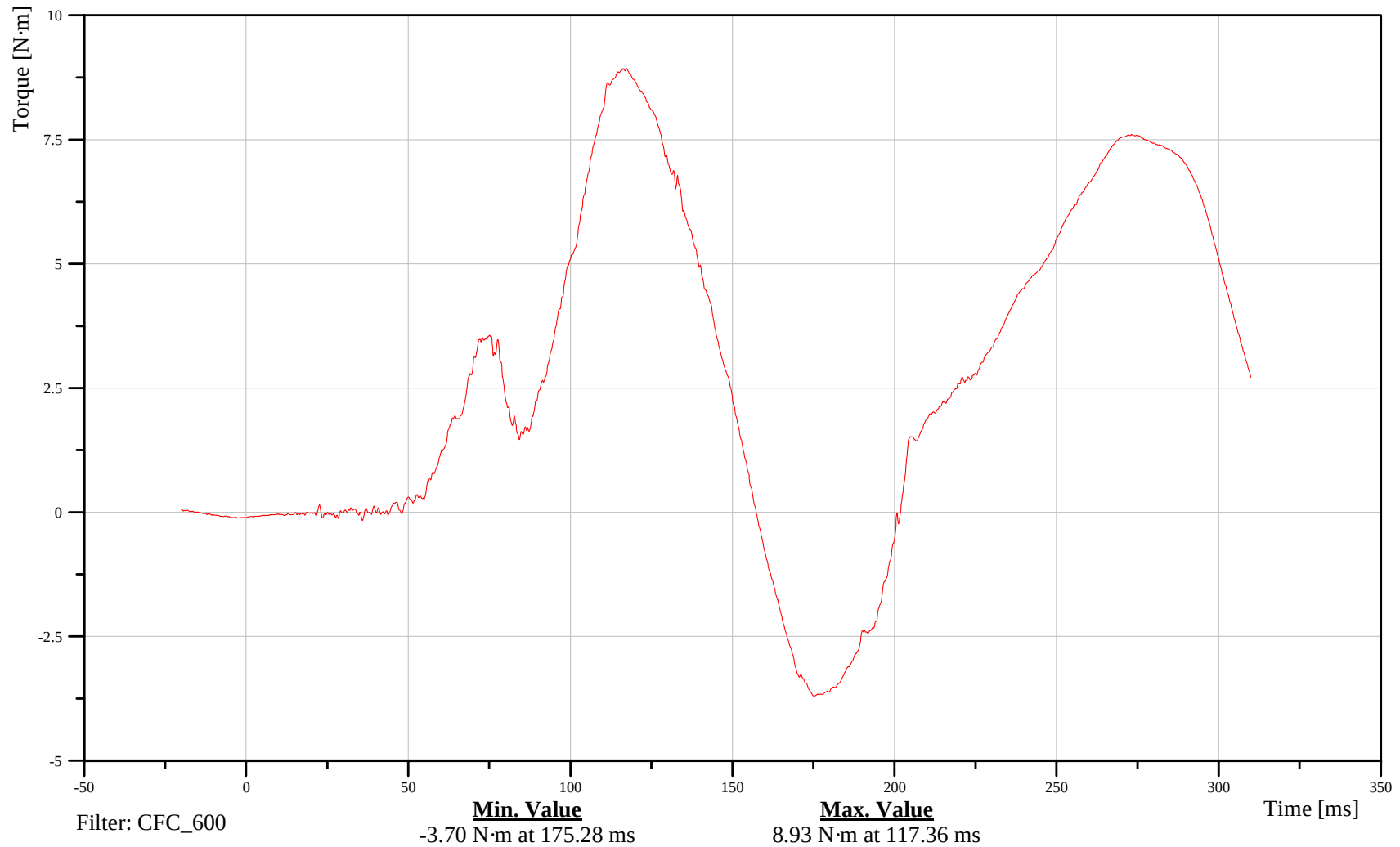
Neck Moment Z

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

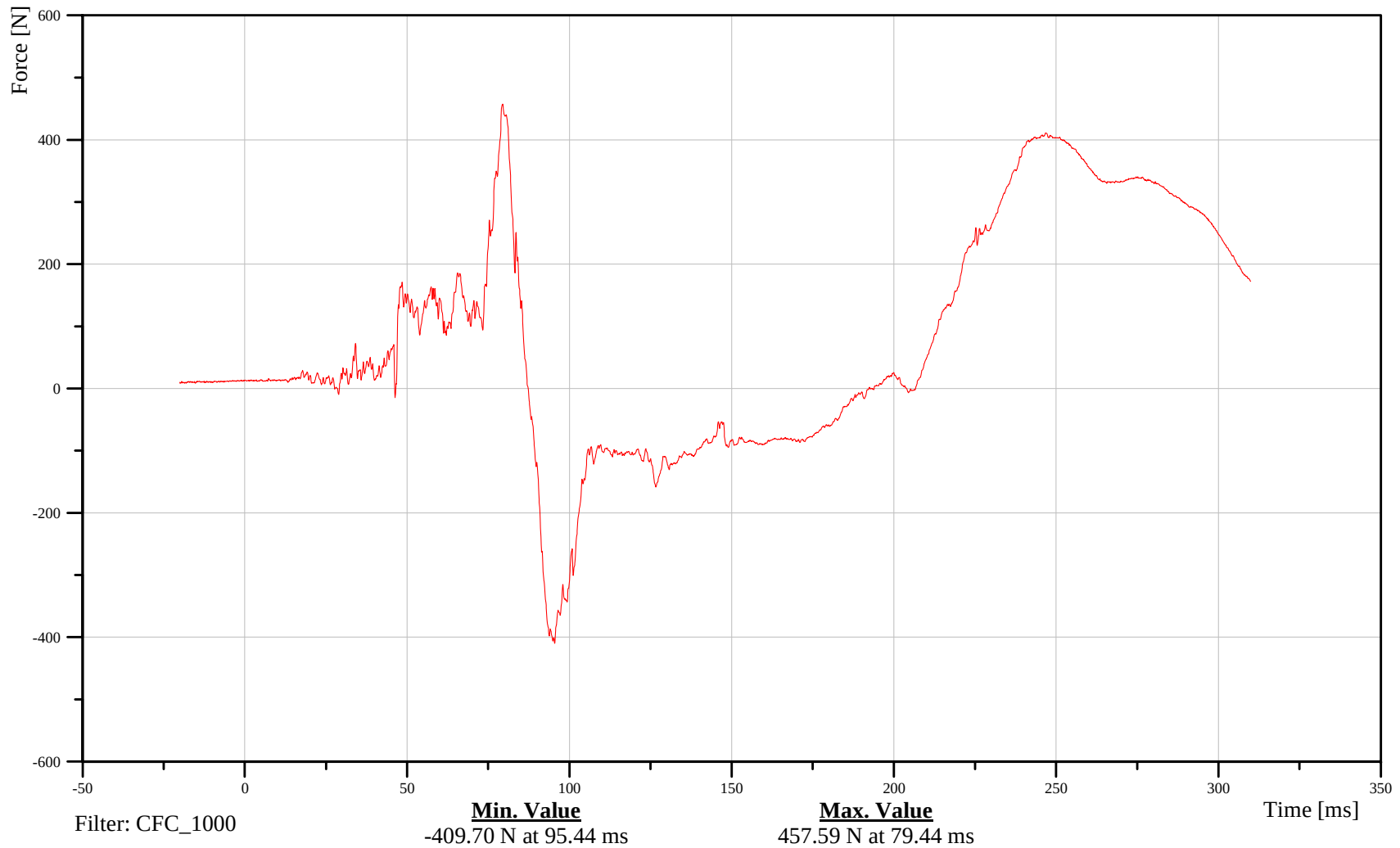
Neck Lower Force X

Customer: VRTC

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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force Y

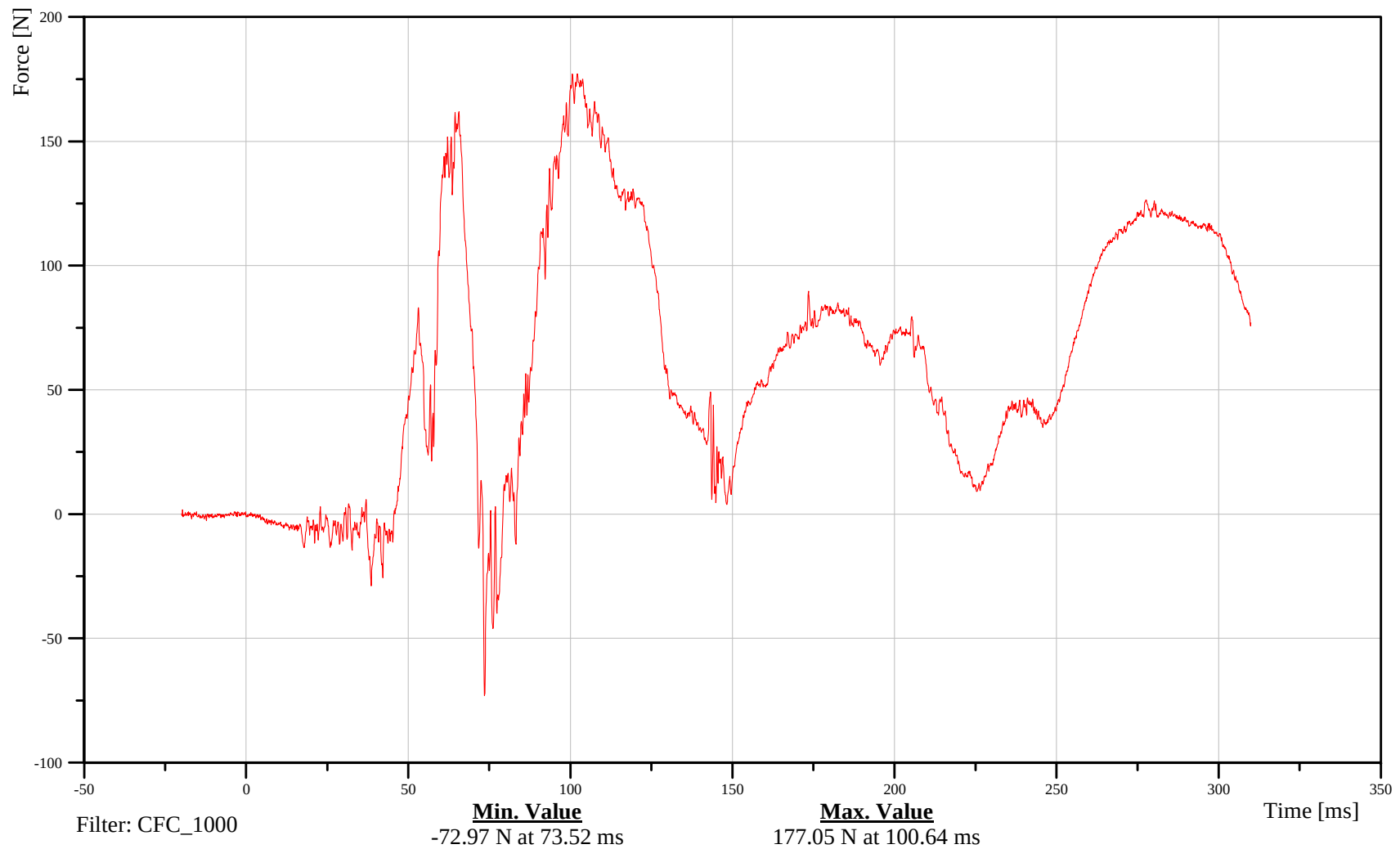
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TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

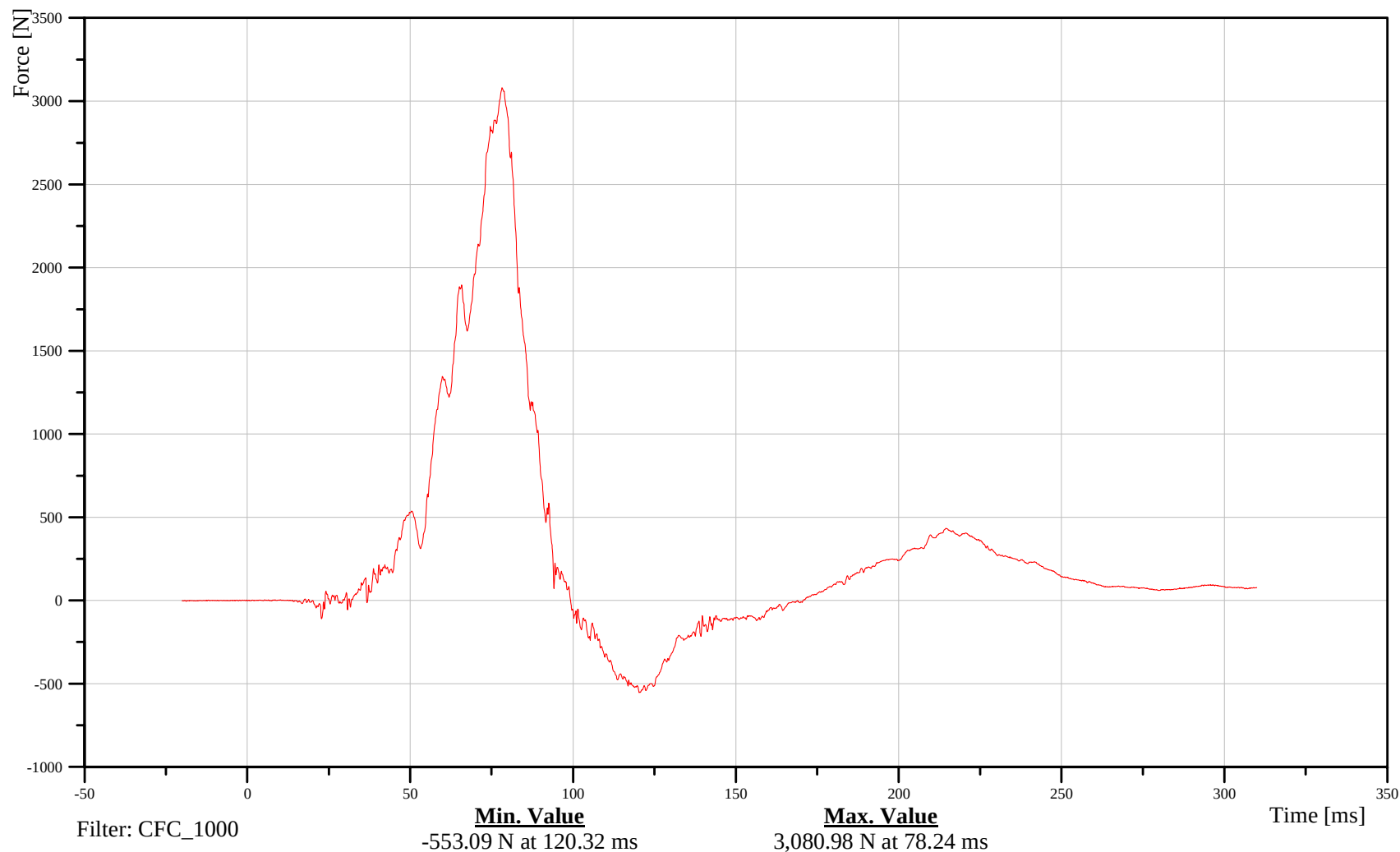
Neck Lower Force Z

Customer: VRTC

21NECKLO00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

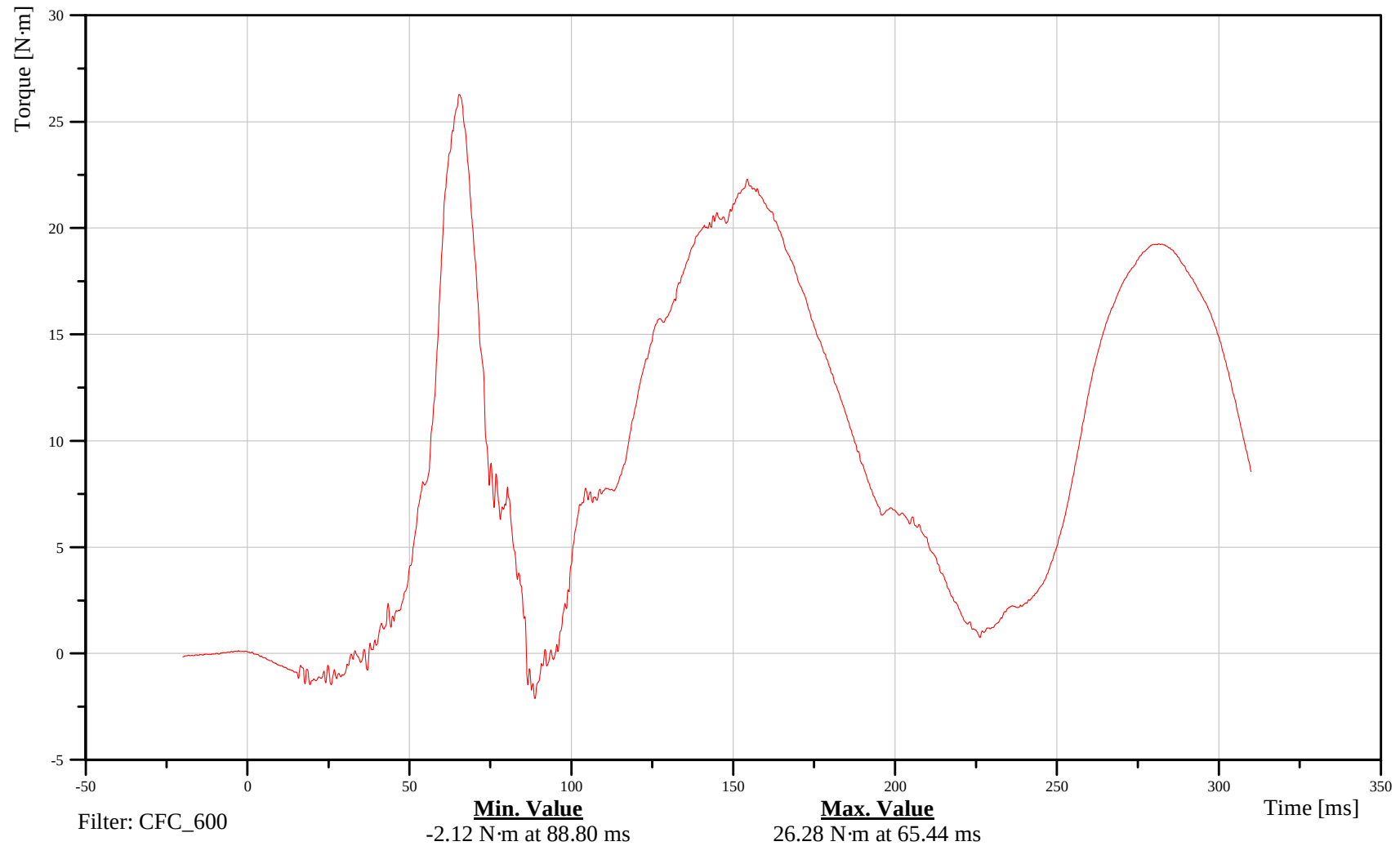
Neck Lower Moment X

Customer: VRTC

21NECKLO00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

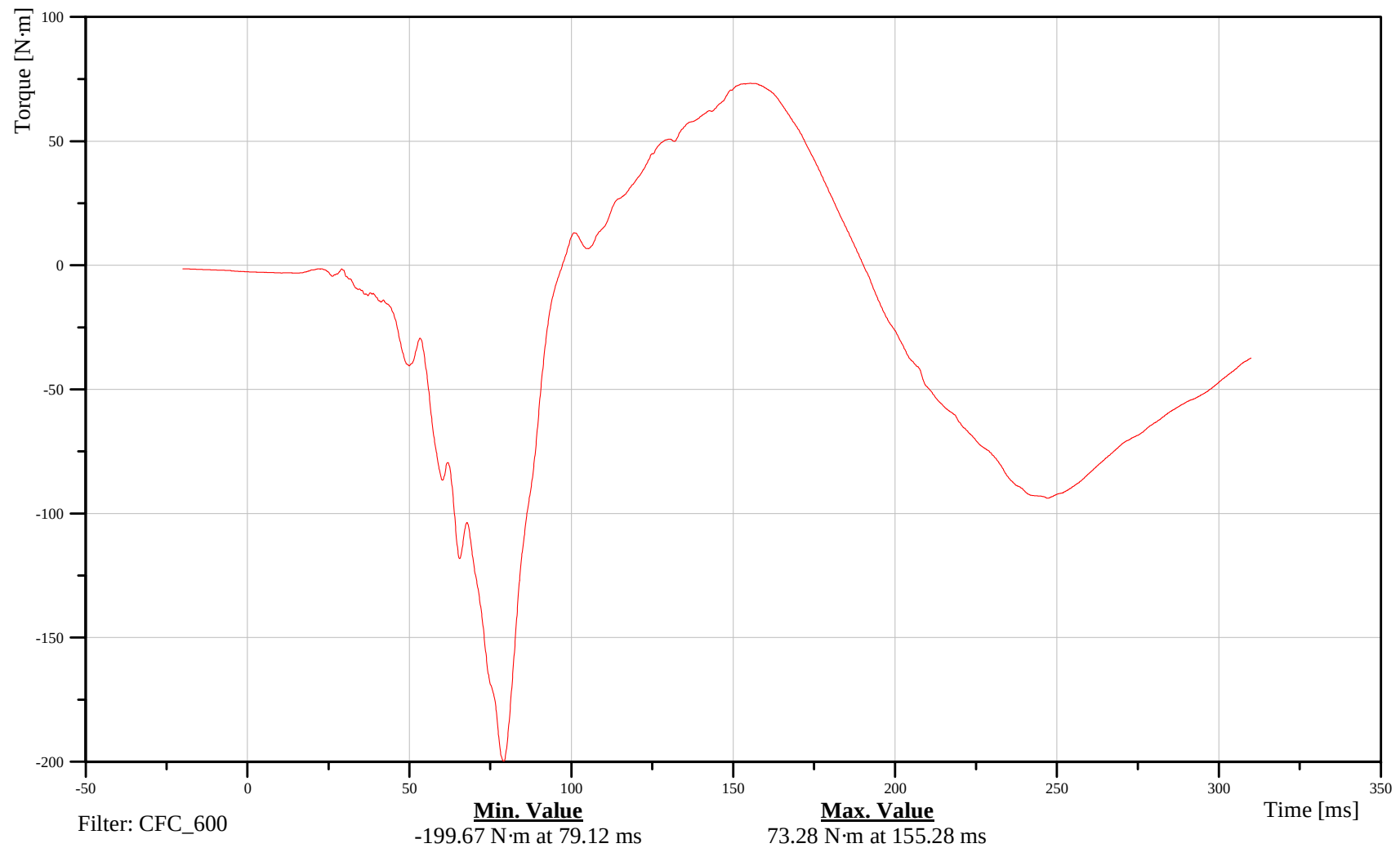
Neck Lower Moment Y

Customer: VRTC

21NECKLO00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

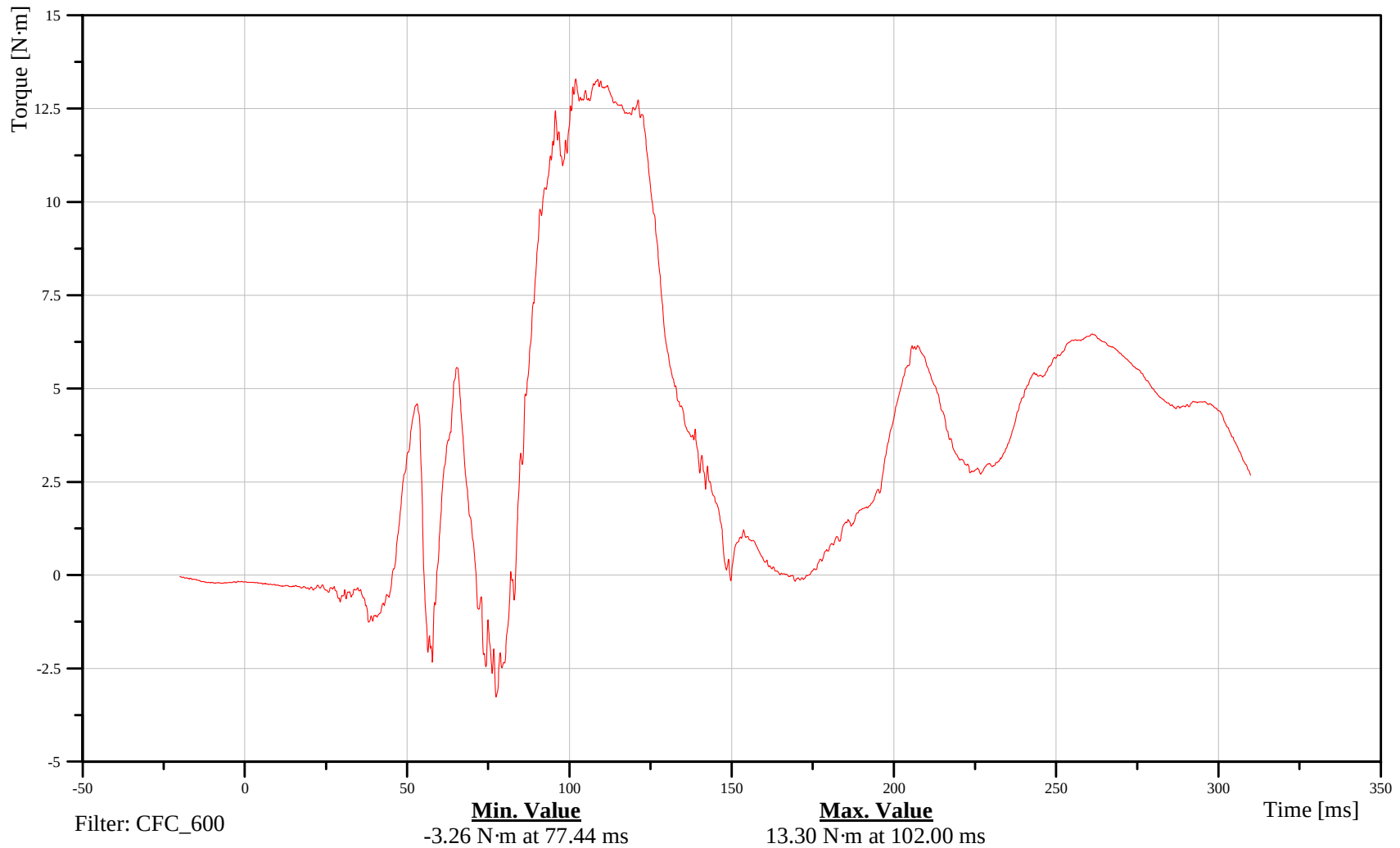
Neck Lower Moment Z

Customer: VRTC

21NECKLO00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

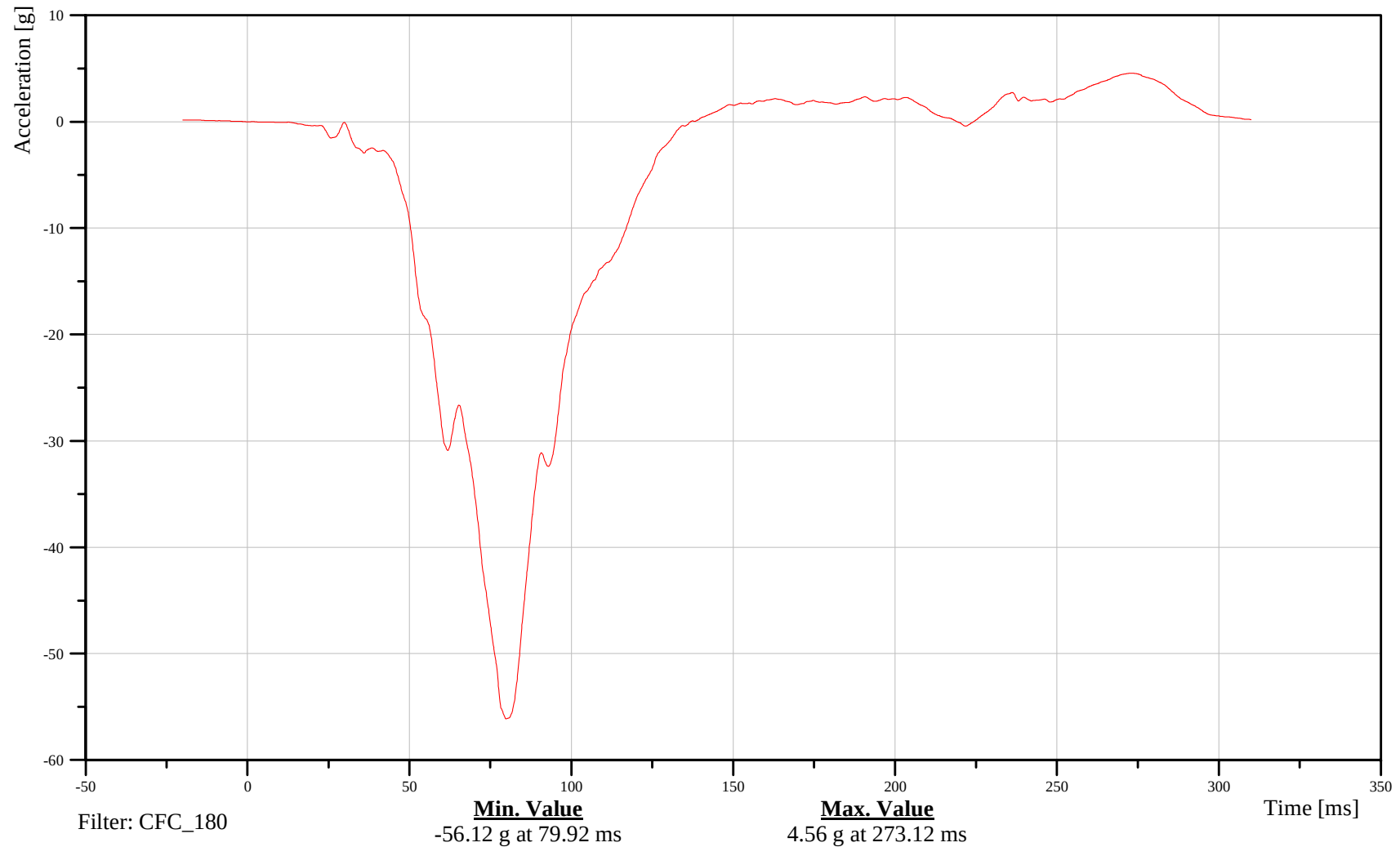
Chest Accel X

Customer: VRTC

21CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

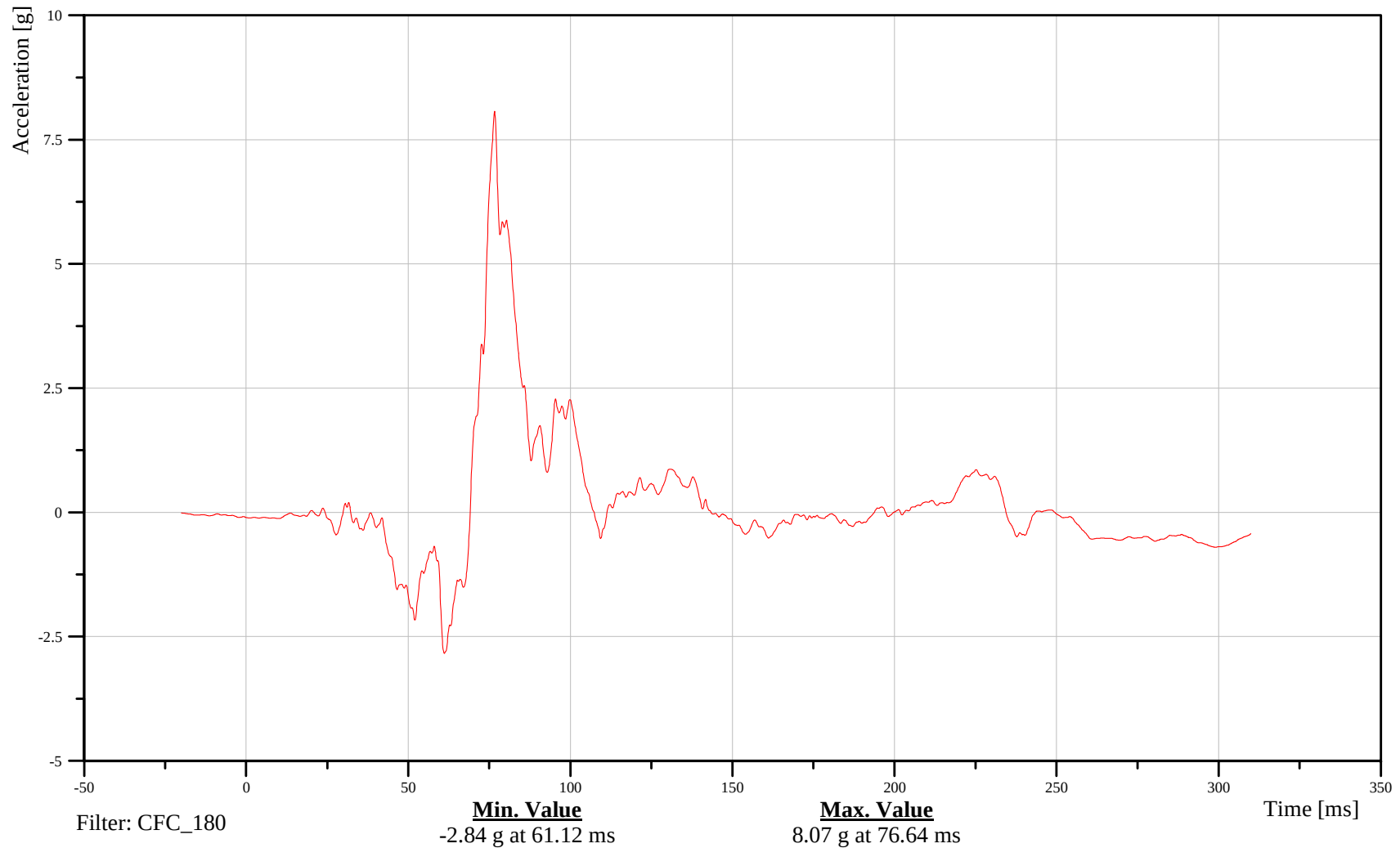
Chest Accel Y

Customer: VRTC

21CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

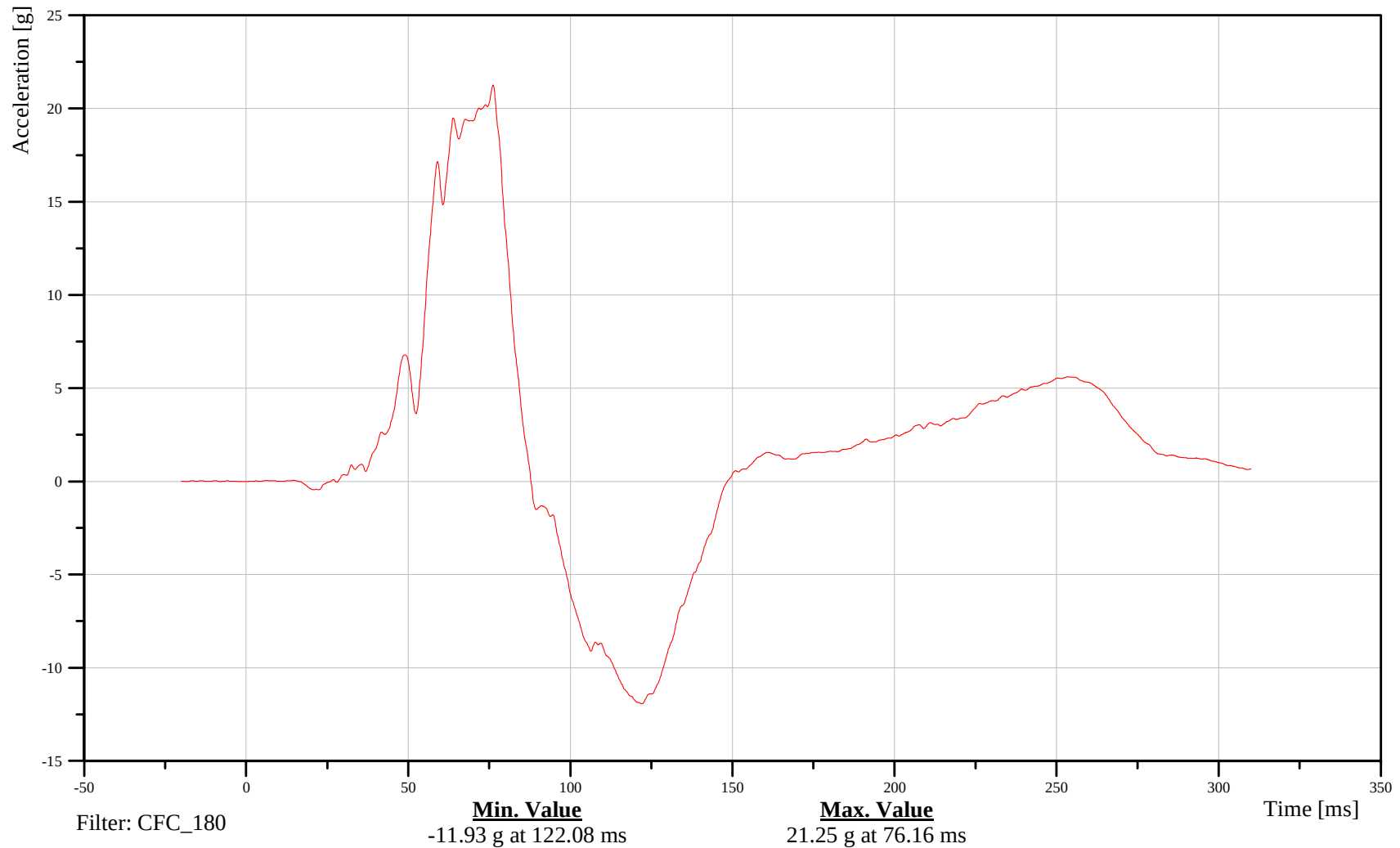
Chest Accel Z

Customer: VRTC

21CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Resultant

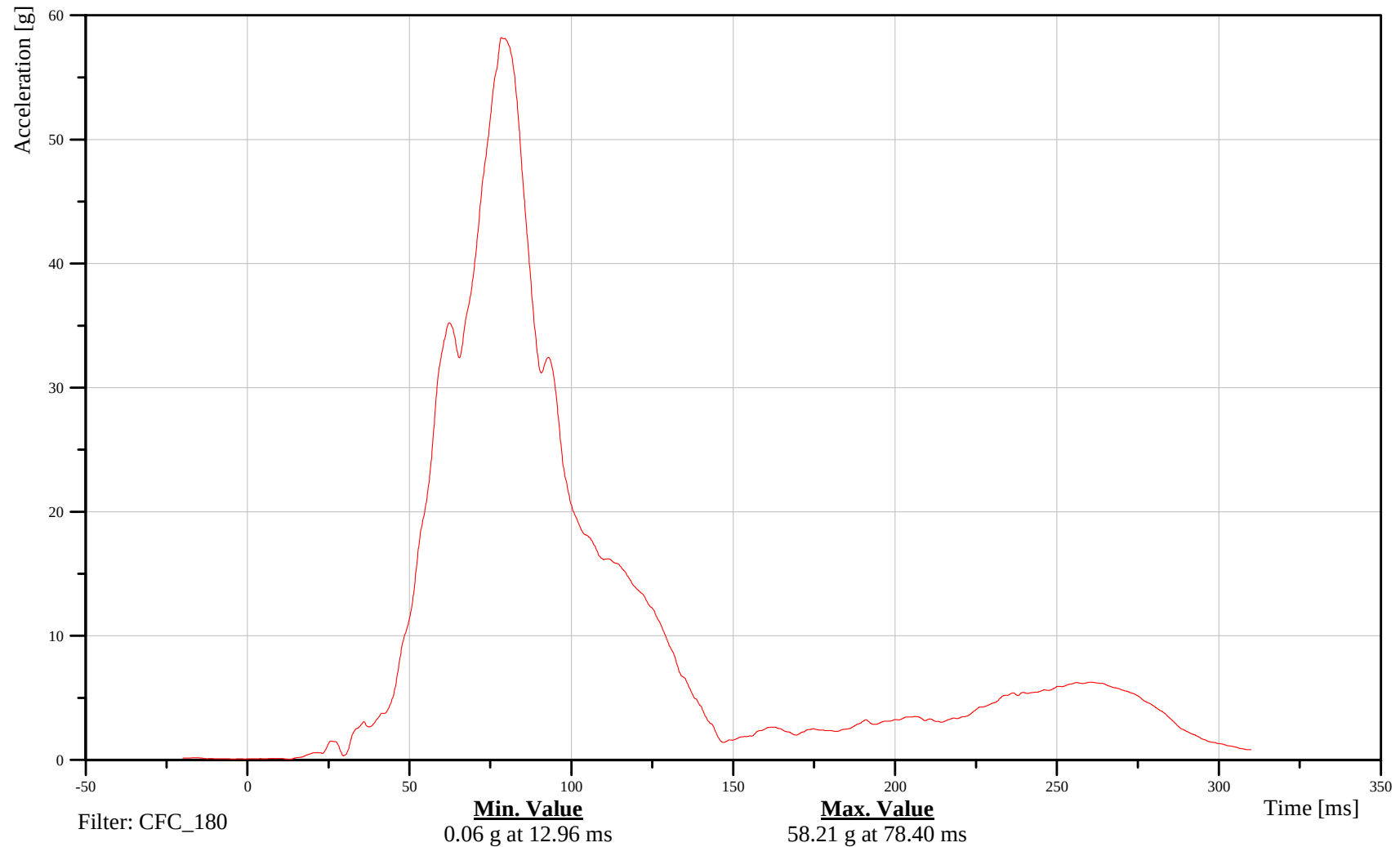
Time: 07:51

Customer: VRTC

21CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Chest Accel X Red.

Date: 07/20/2005

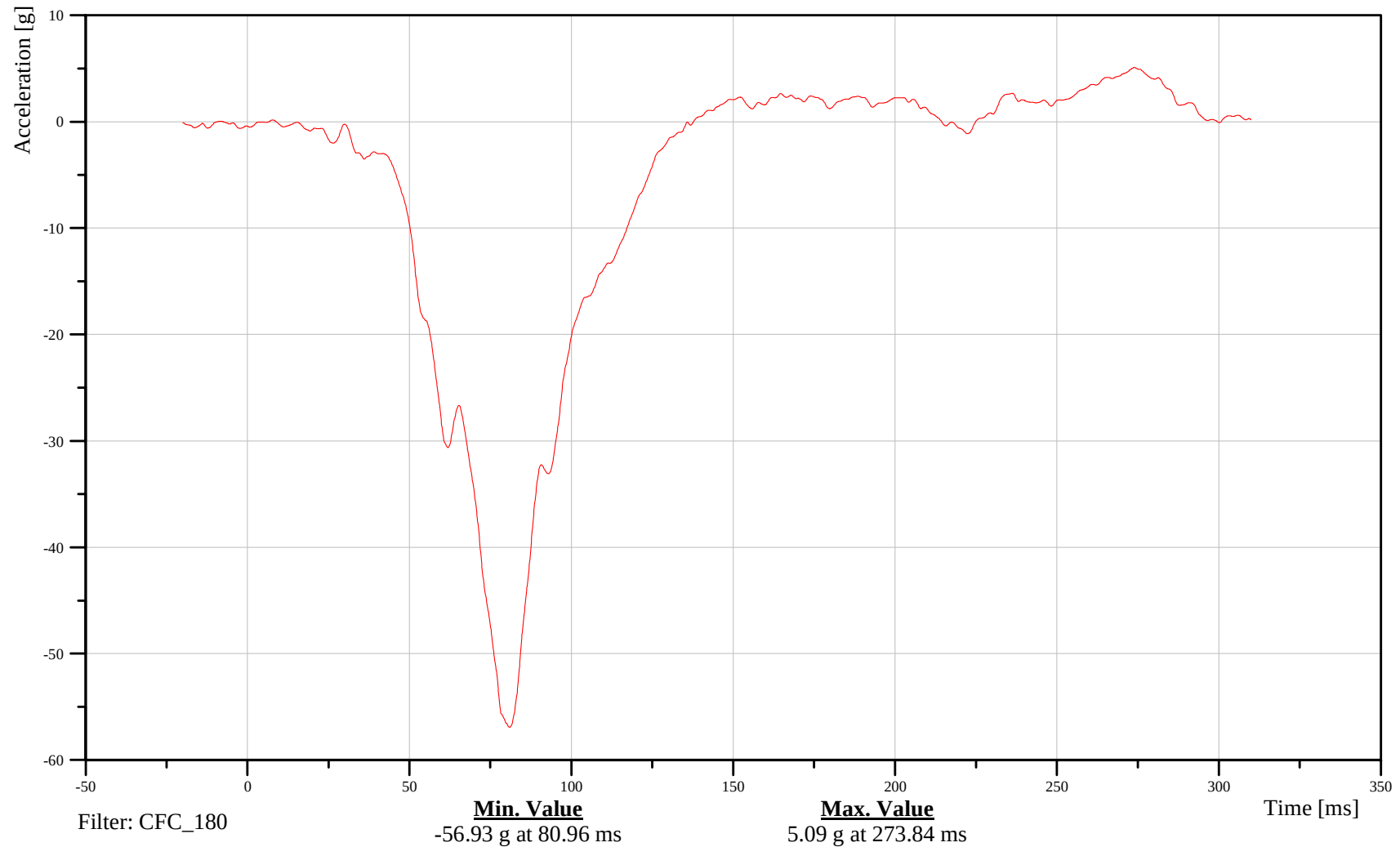
Time: 07:51

Customer: VRTC

21CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Y Red.

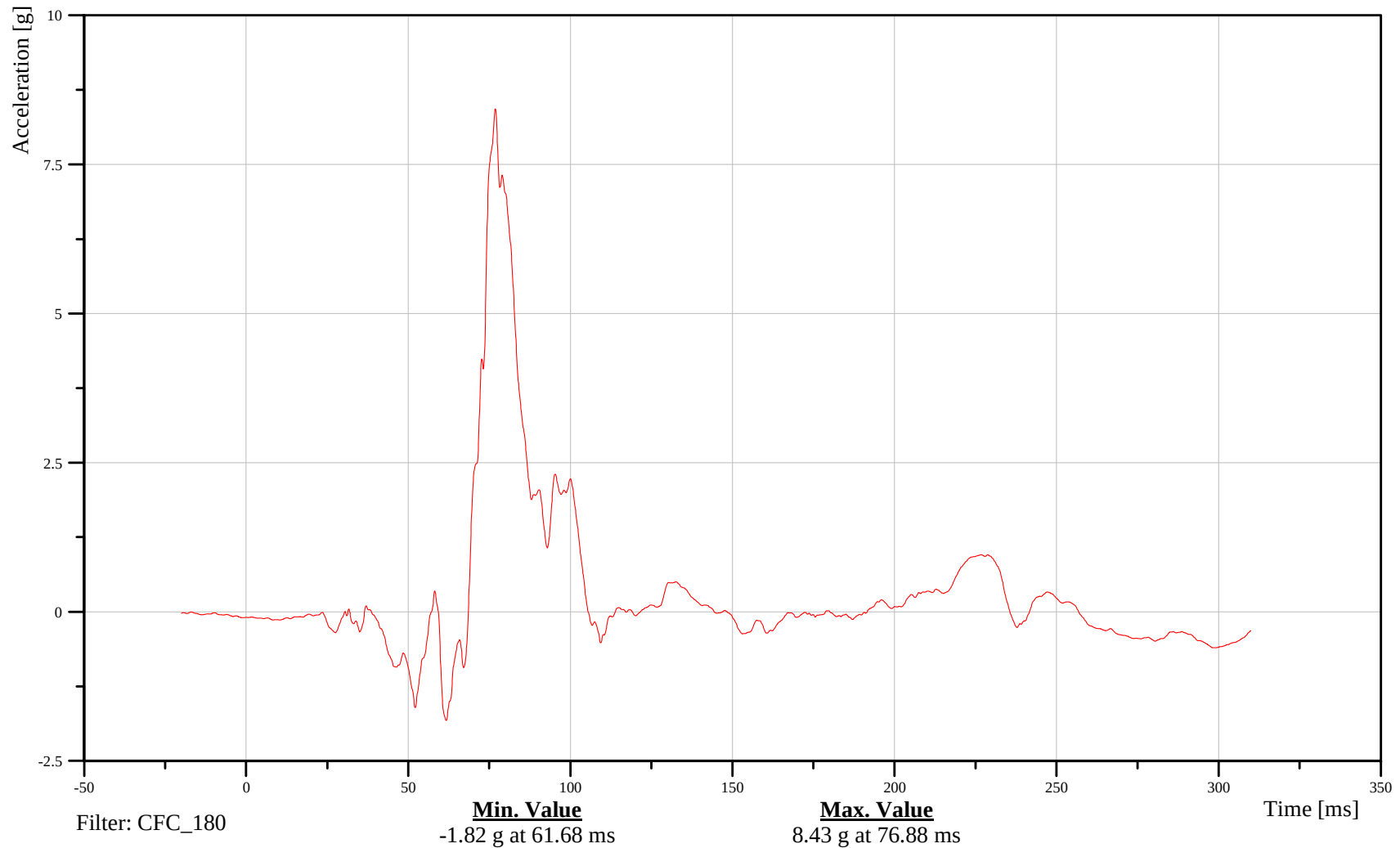
Time: 07:51

Customer: VRTC

21CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

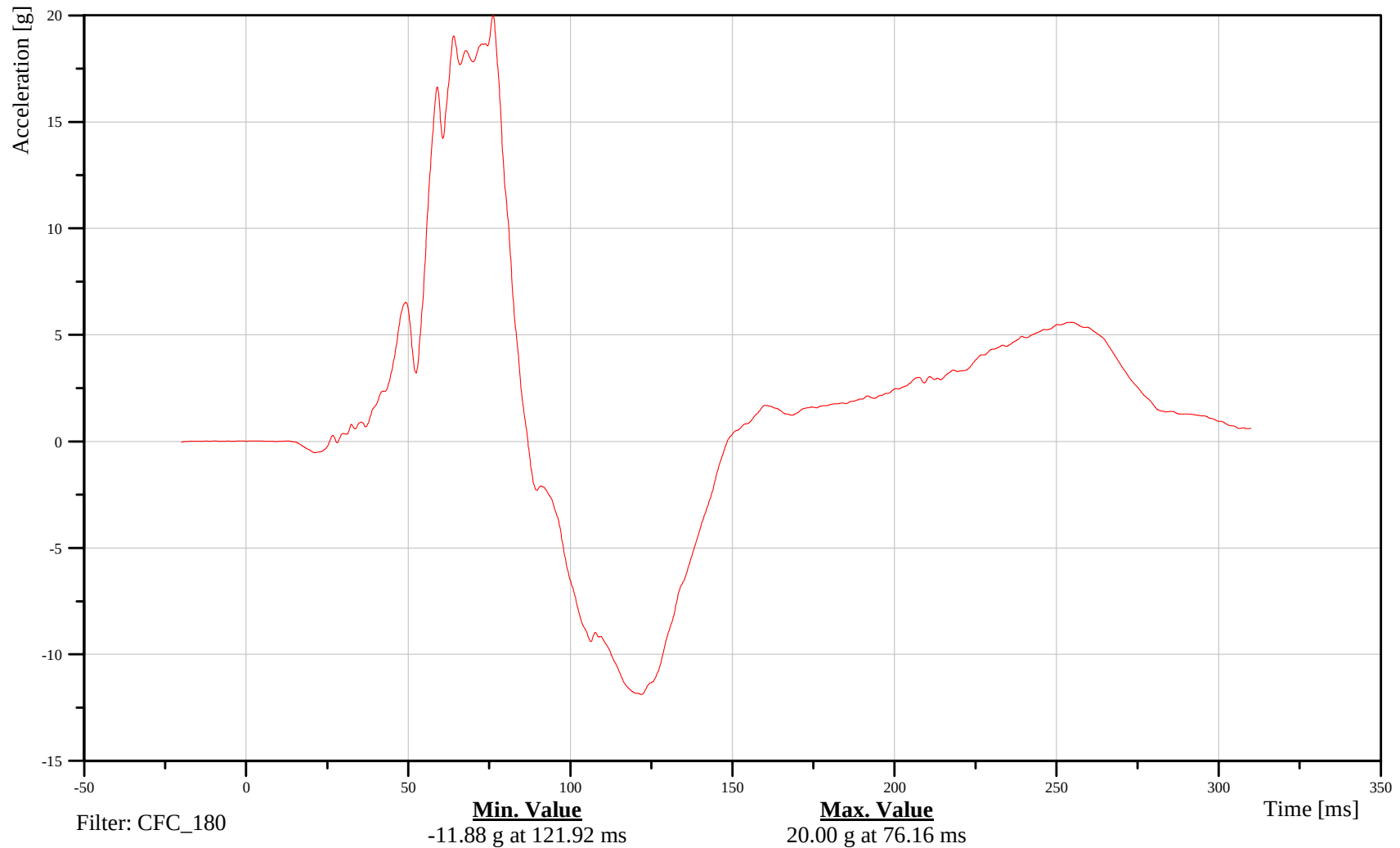
Chest Accel Z Red.

Customer: VRTC

21CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Red. Resultant

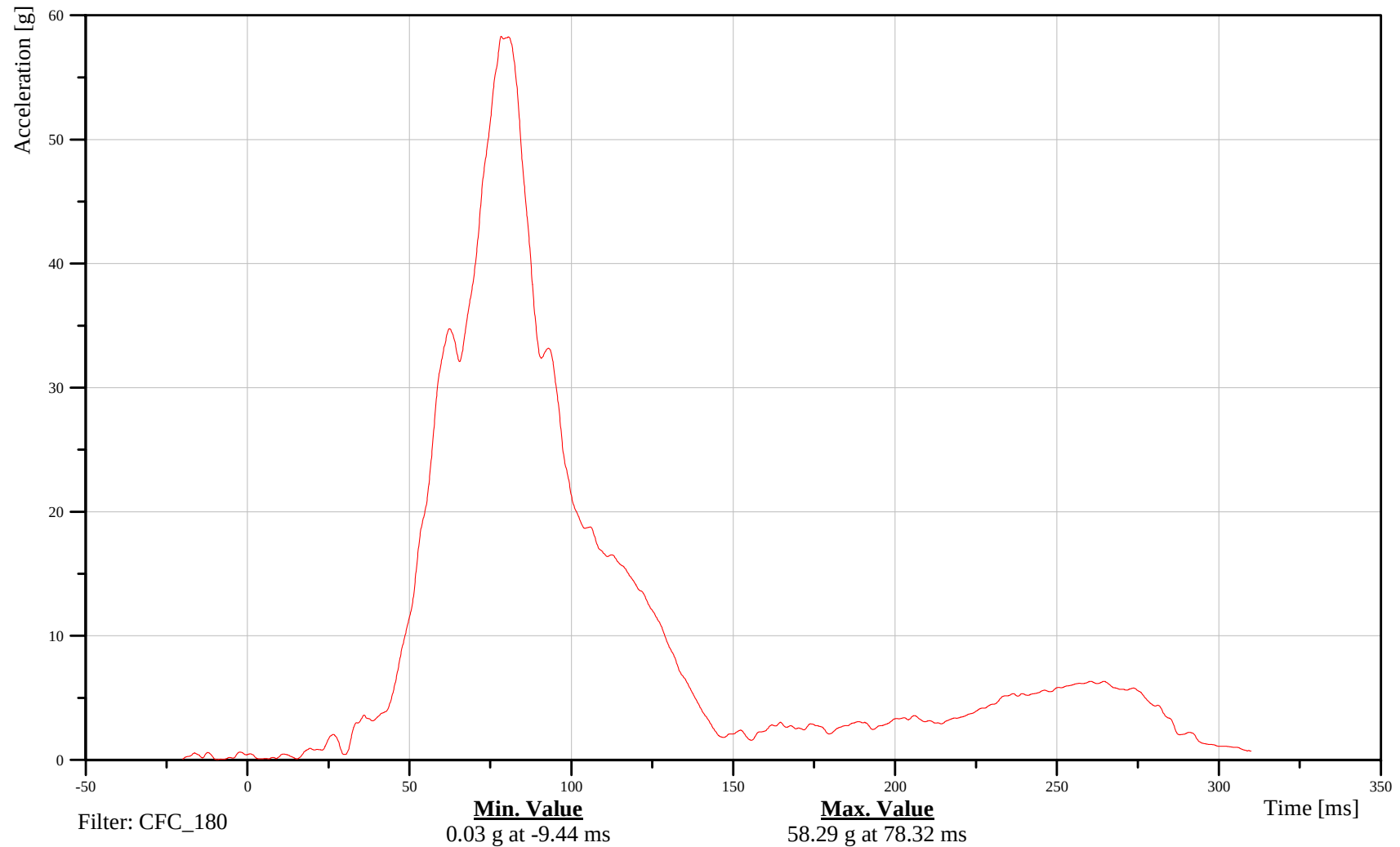
Time: 07:51

Customer: VRTC

21CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Deflection X

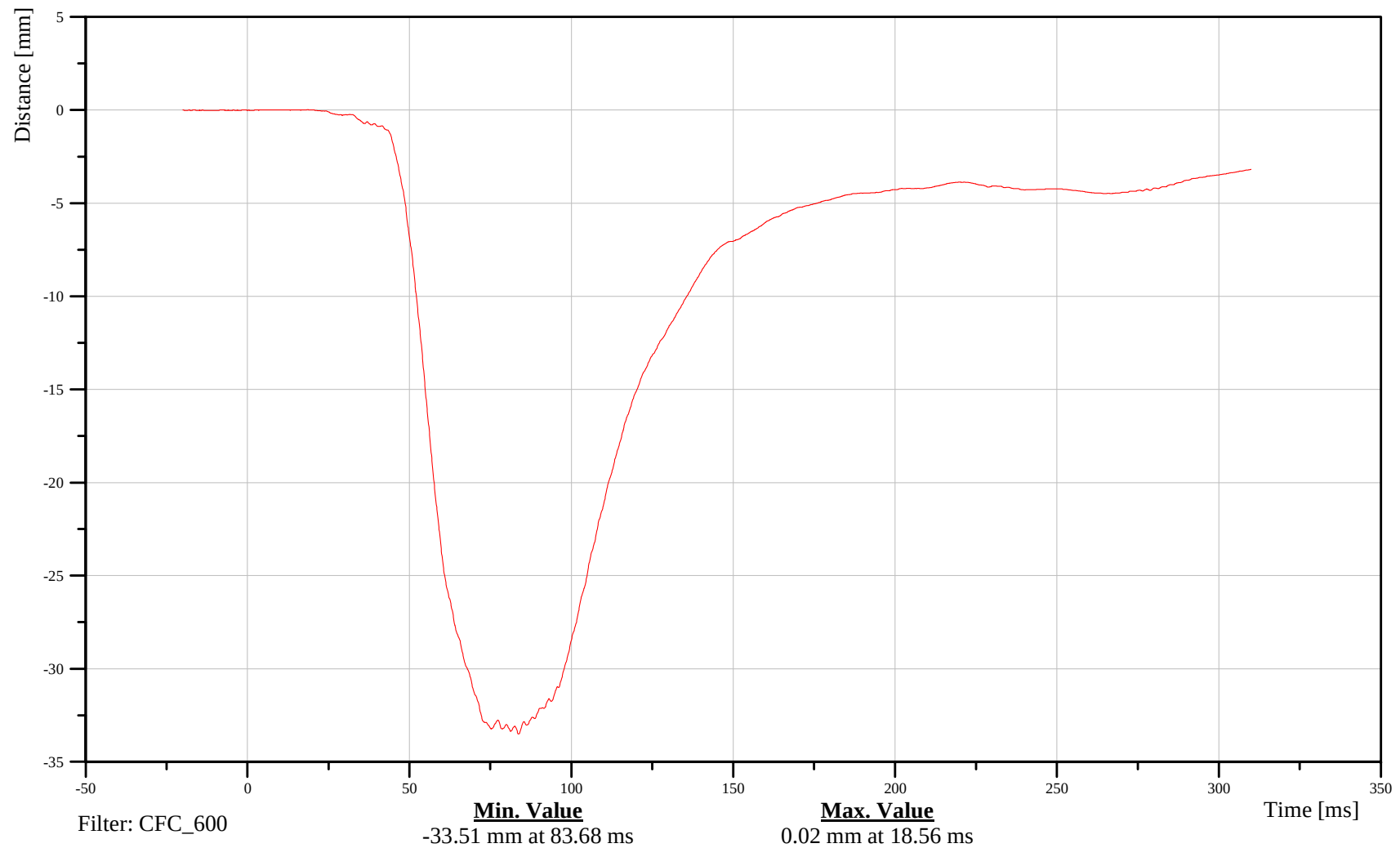
Time: 07:51

Customer: VRTC

21CHST0000H3DSXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel X

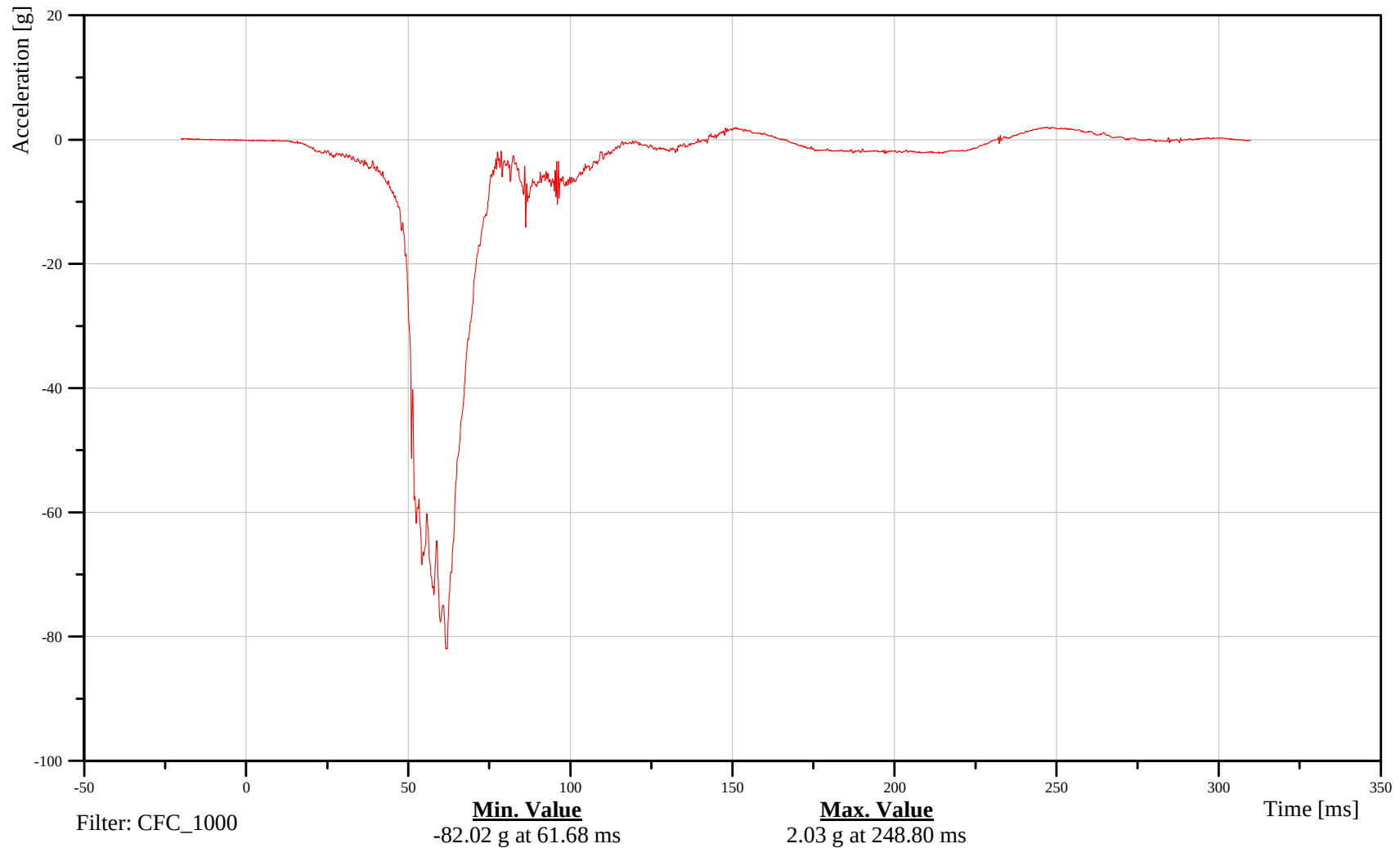
Time: 07:51

Customer: VRTC

21PELVCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Y

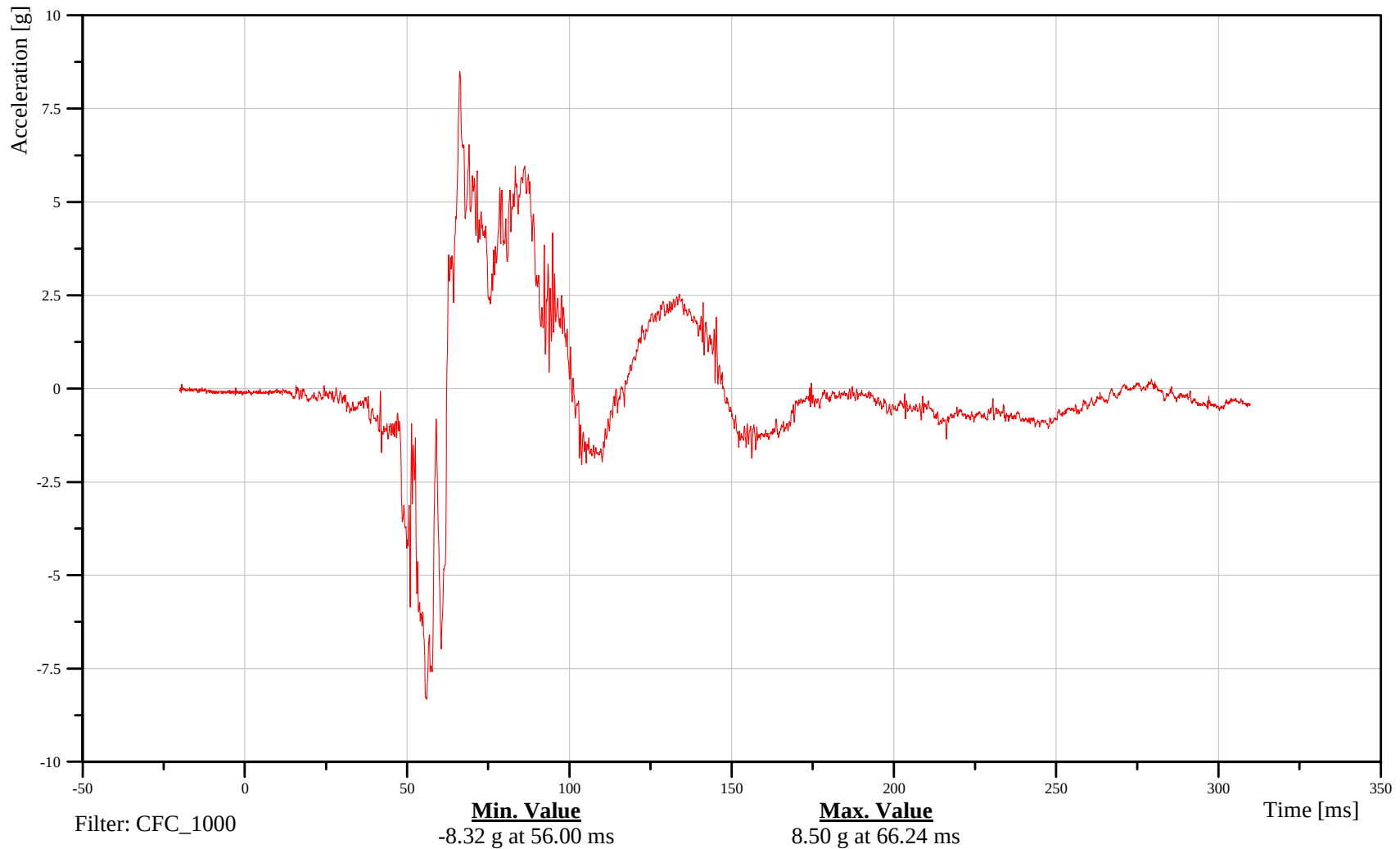
Time: 07:51

Customer: VRTC

21PELVCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Z

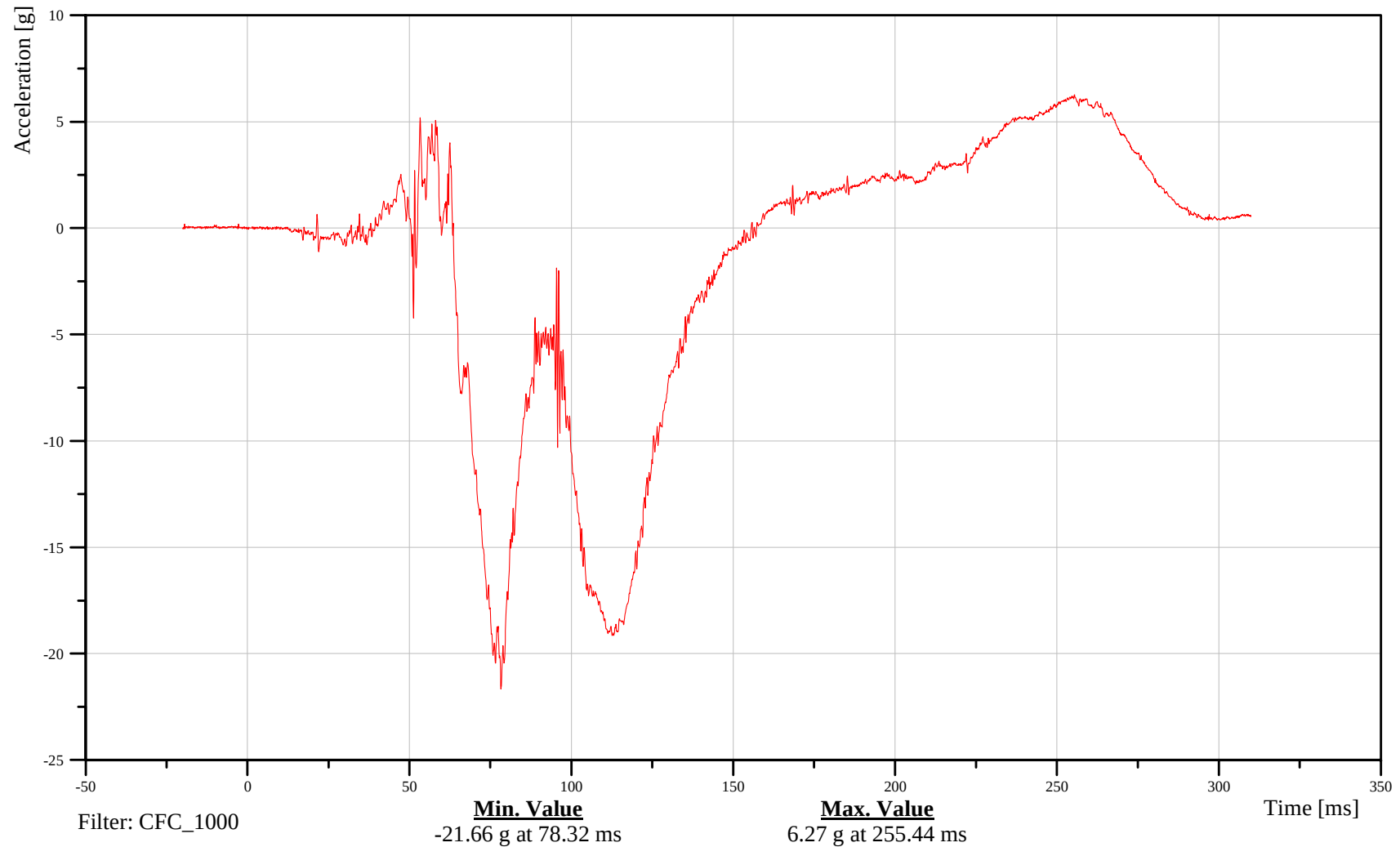
Time: 07:51

Customer: VRTC

21PELVCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

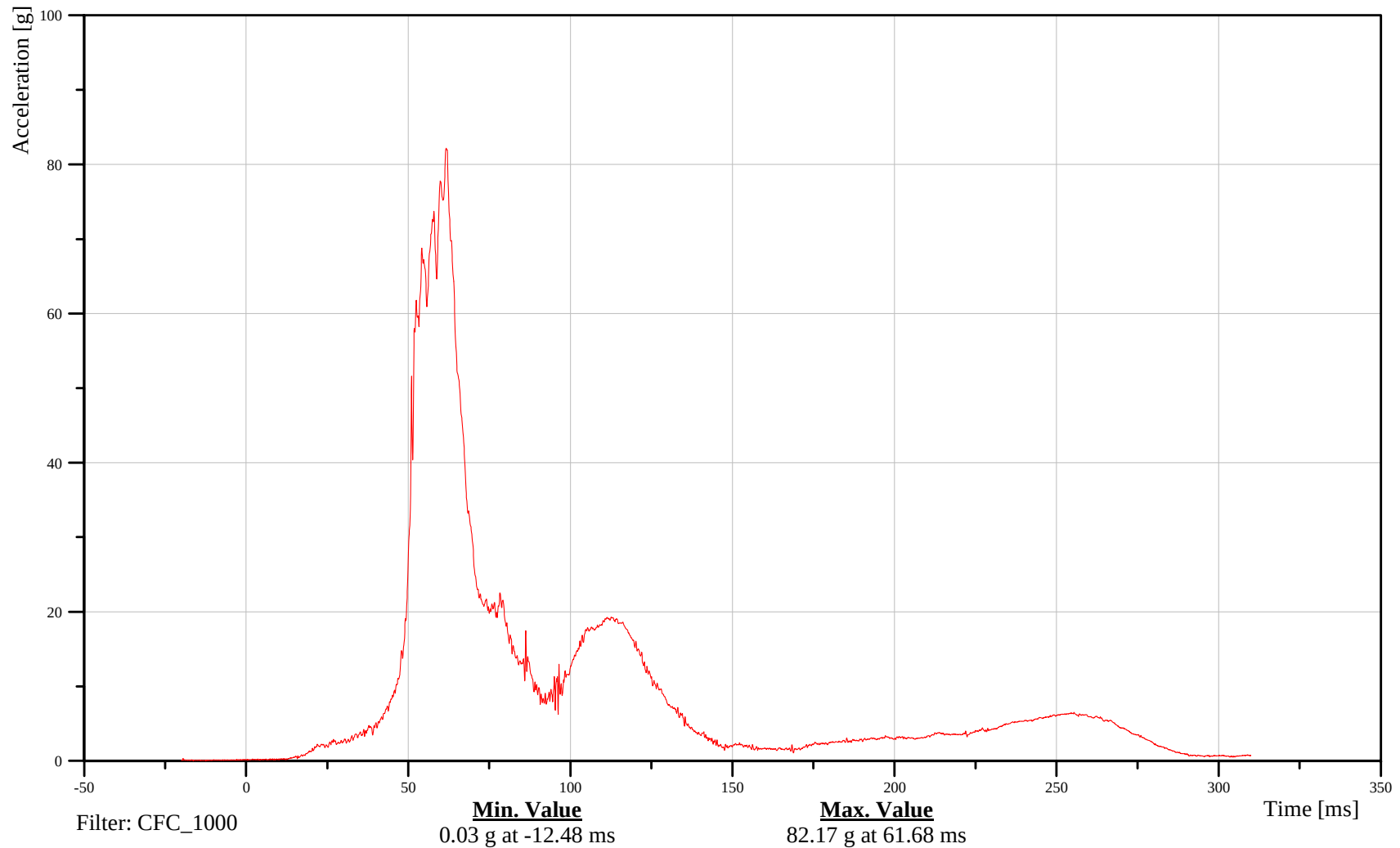
Pelvis Accel Resultant

Customer: VRTC

21PELVCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

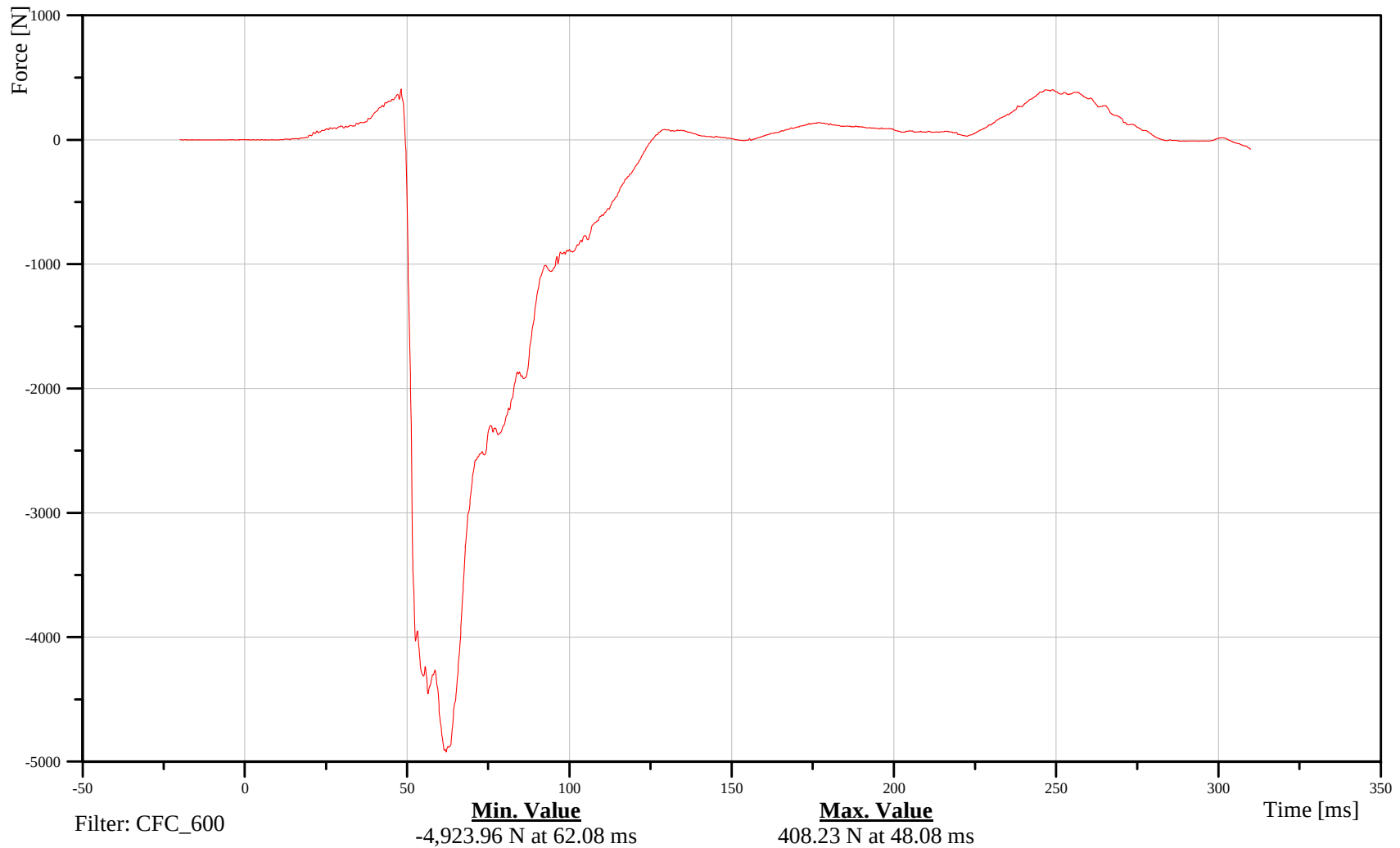
Left Femur Force Z

Customer: VRTC

21FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Knee Displacement X

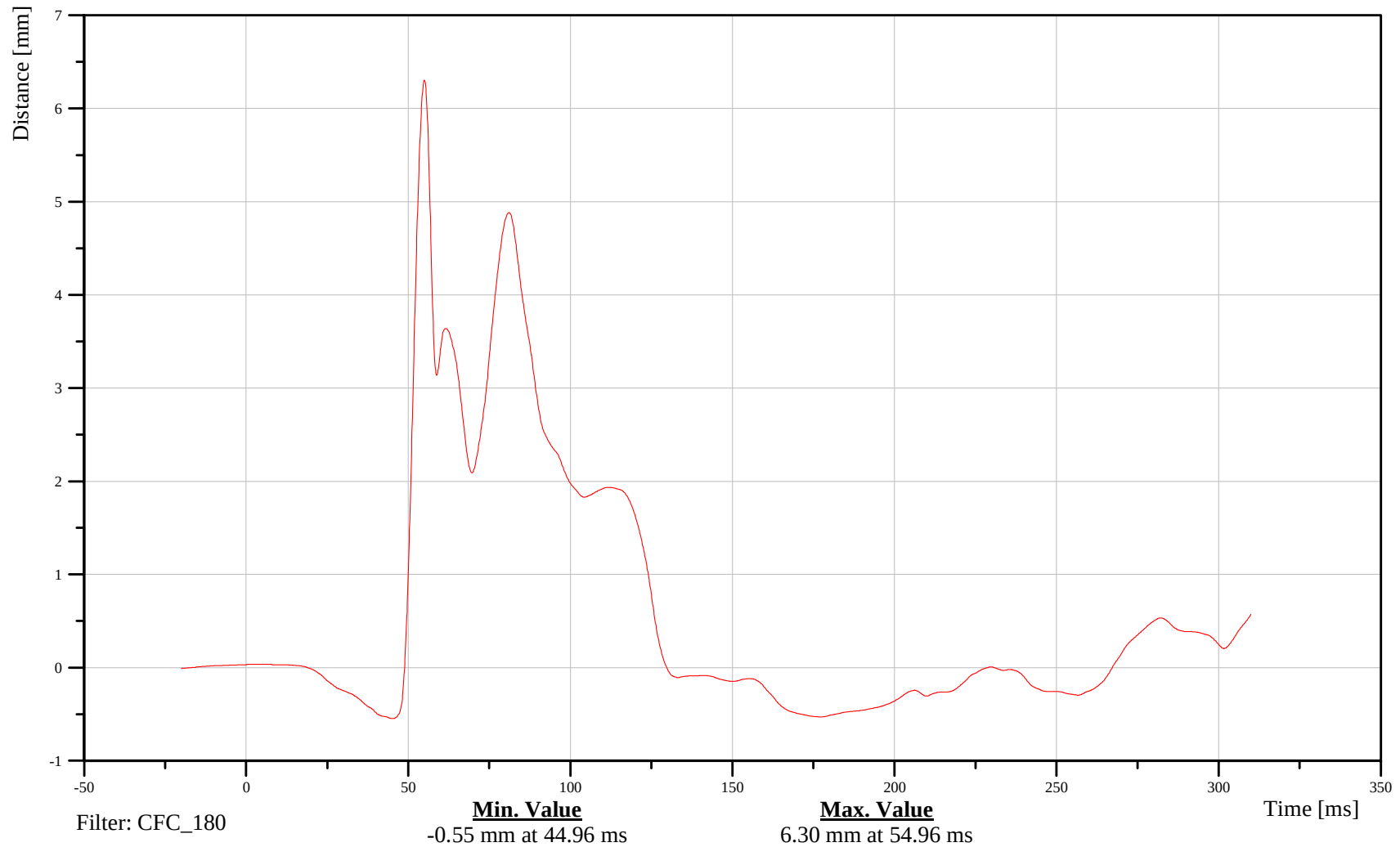
Time: 07:51

Customer: VRTC

21KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

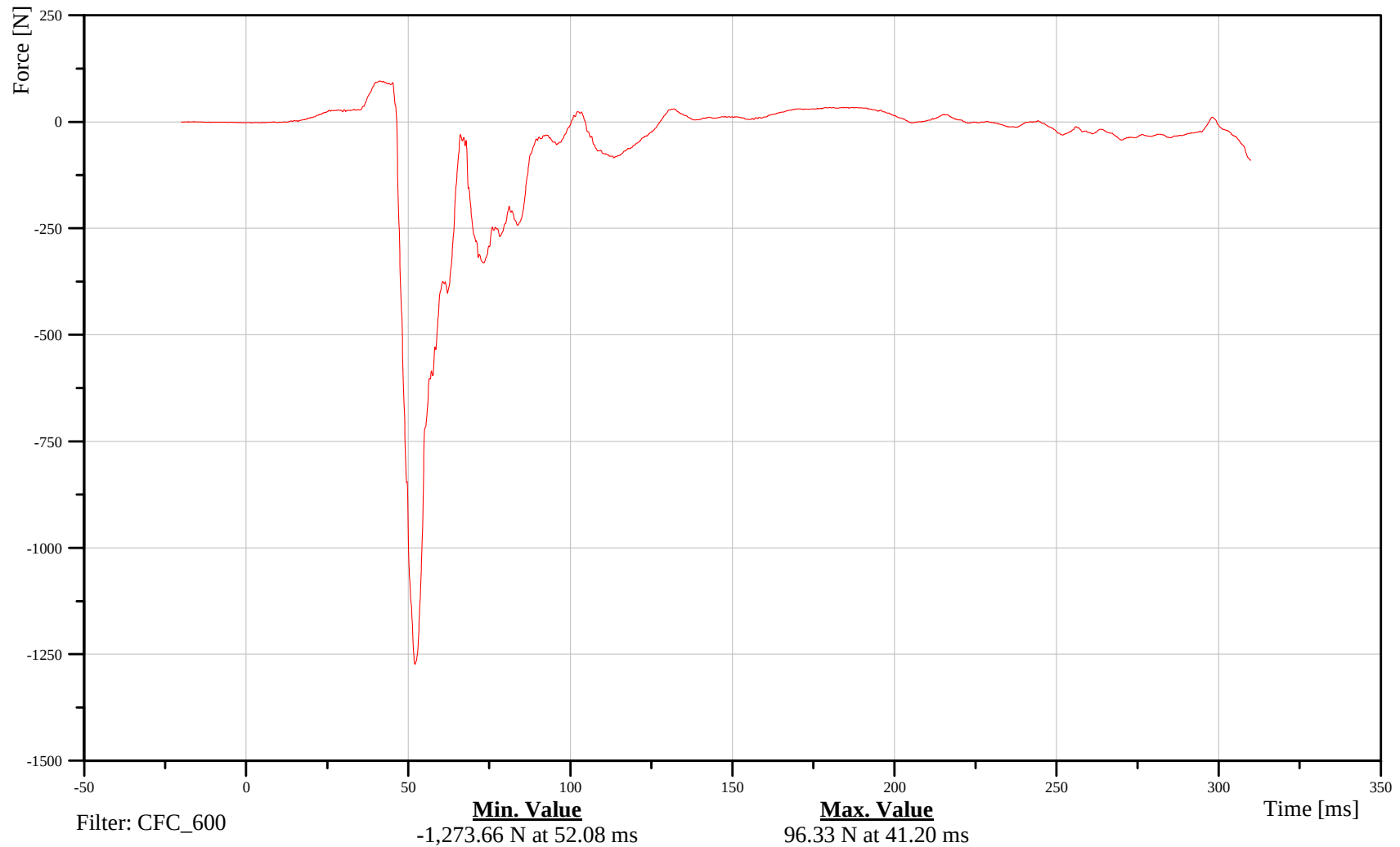
Left Upper Tibia Force X

Customer: VRTC

21TIBILULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

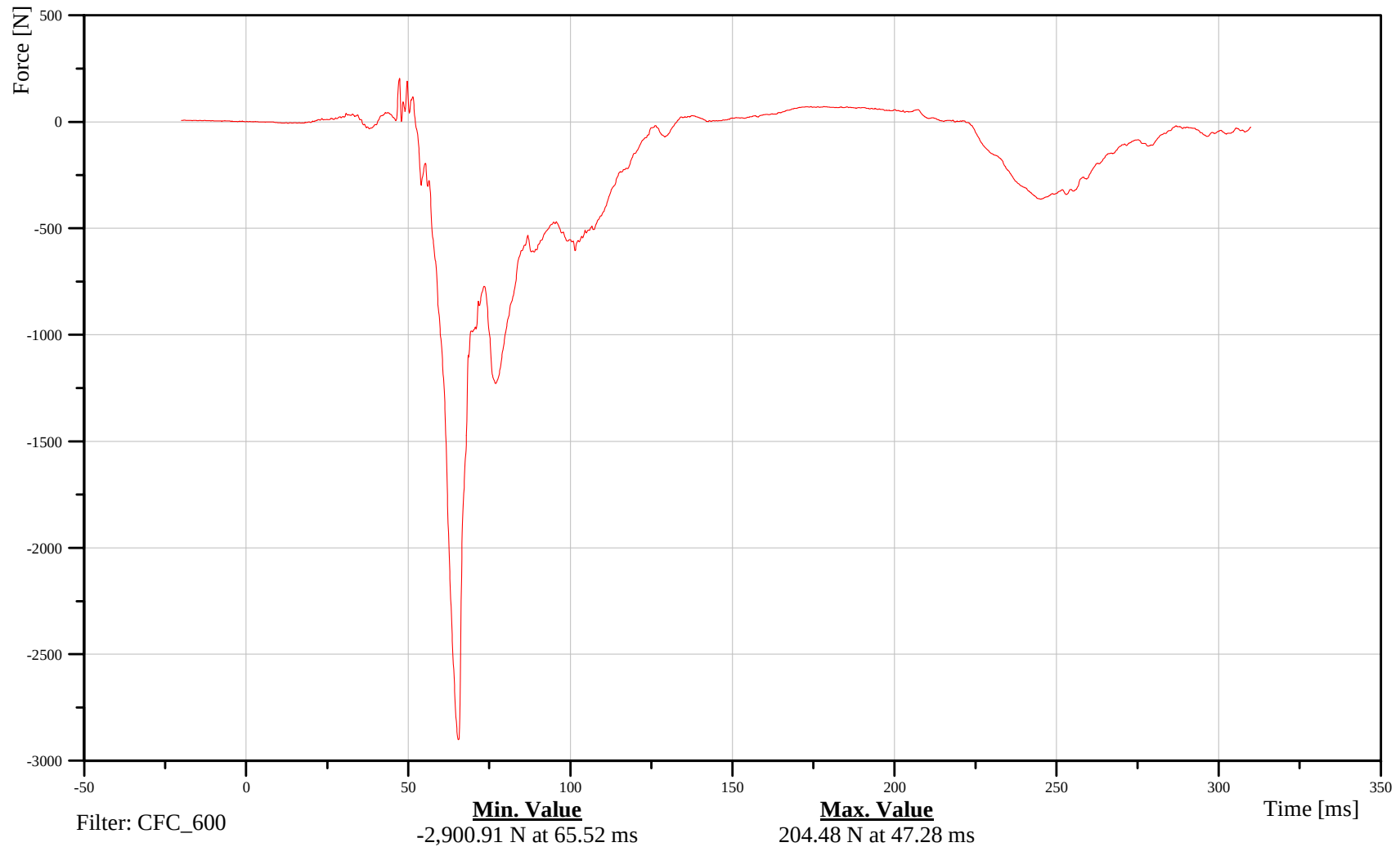
Left Upper Tibia Force Z

Customer: VRTC

21TIBILULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Upper Tibia Moment X

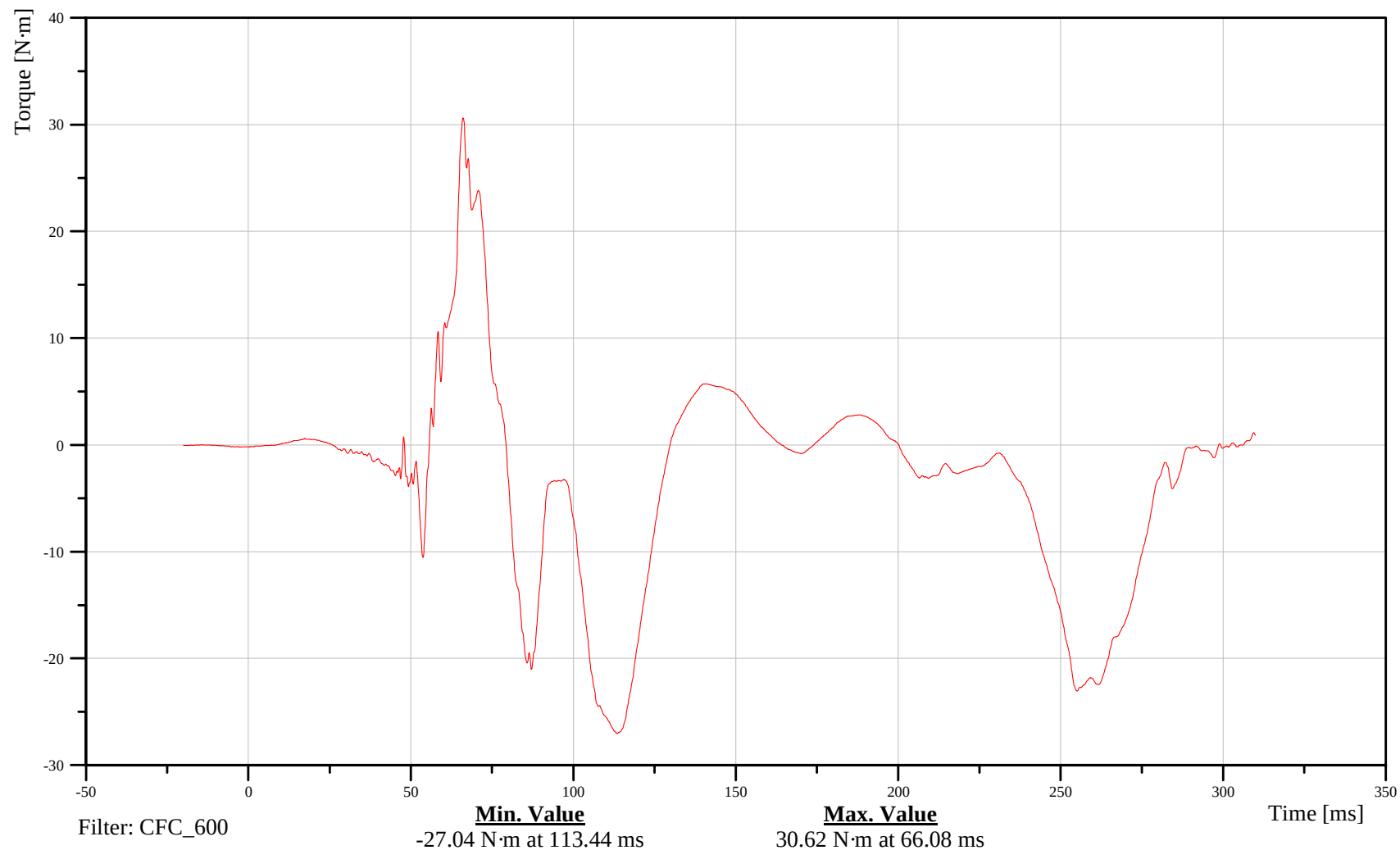
Time: 07:51

Customer: VRTC

21TIBILULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Upper Tibia Moment Y

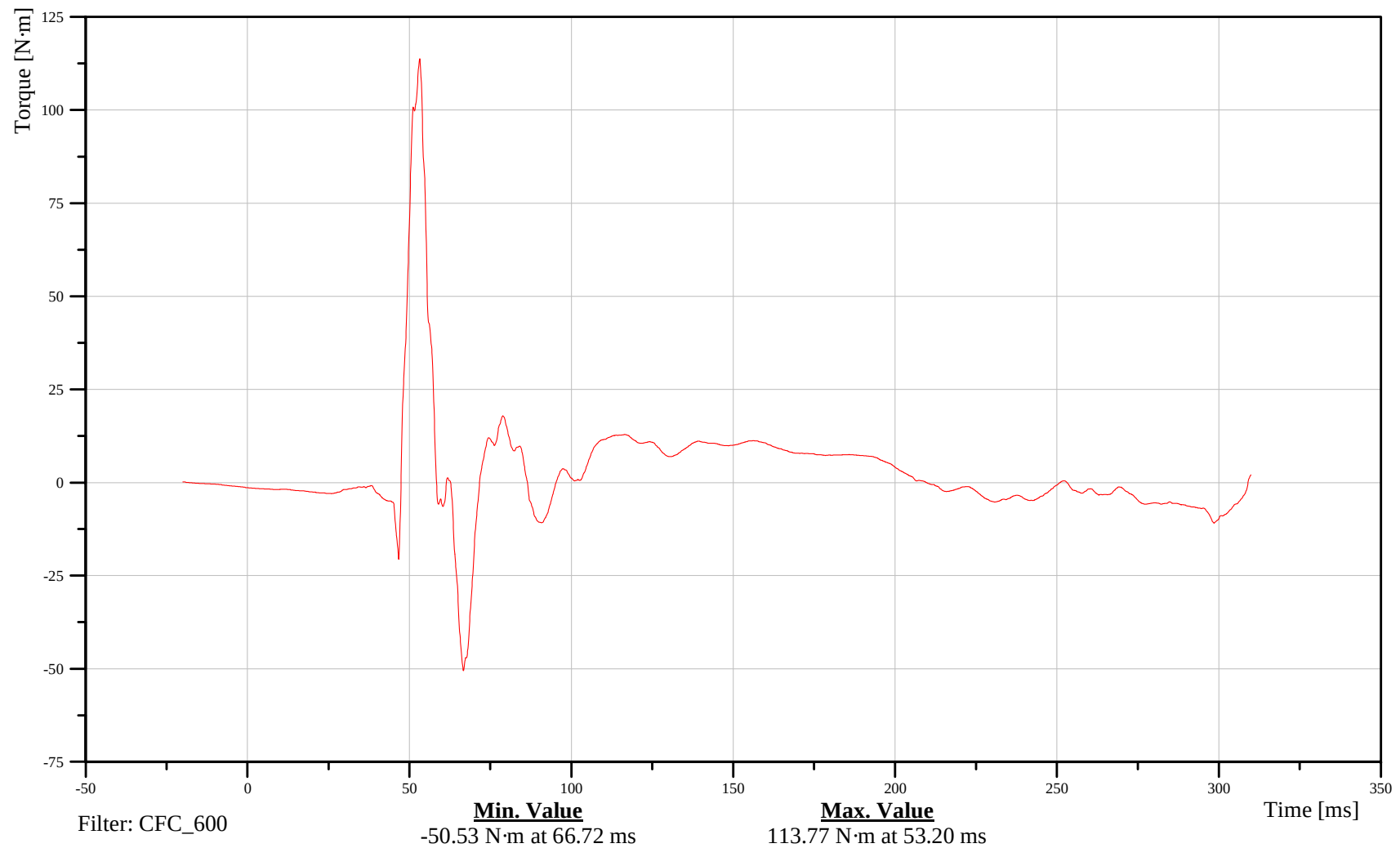
Time: 07:51

Customer: VRTC

21TIBILULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Tibia Accel X

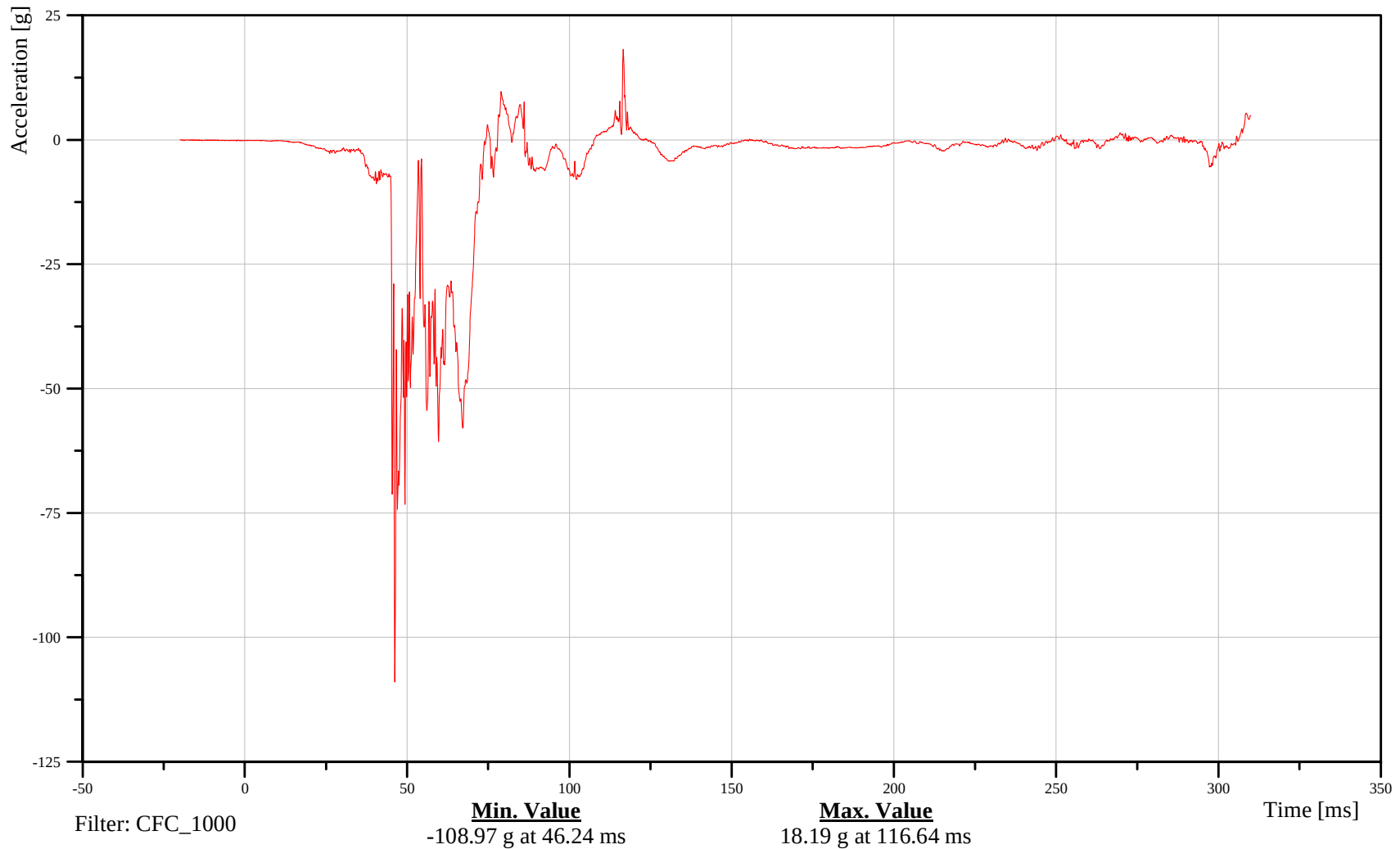
Time: 07:51

Customer: VRTC

21TIBILELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Tibia Accel Y

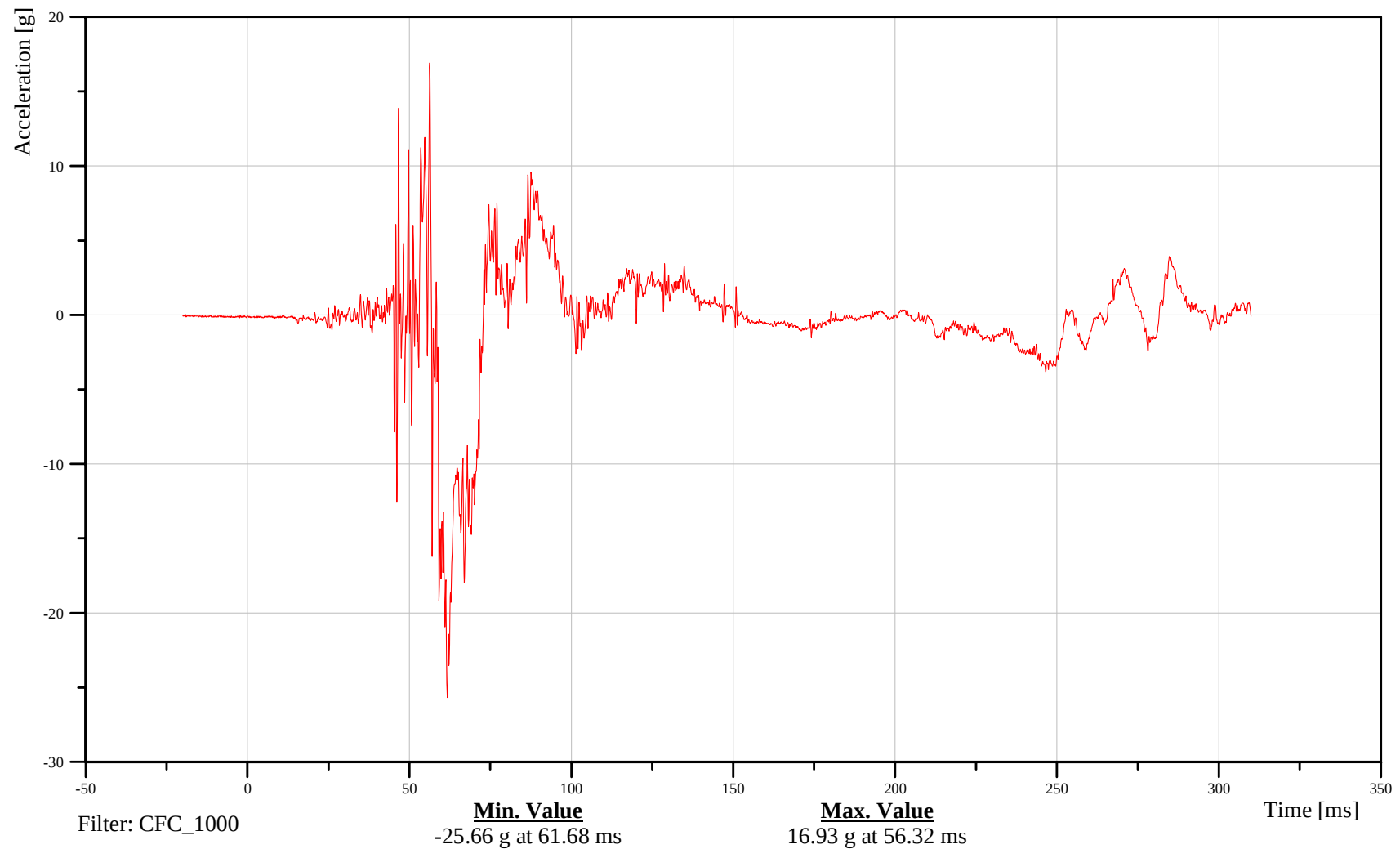
Time: 07:51

Customer: VRTC

21TIBILELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

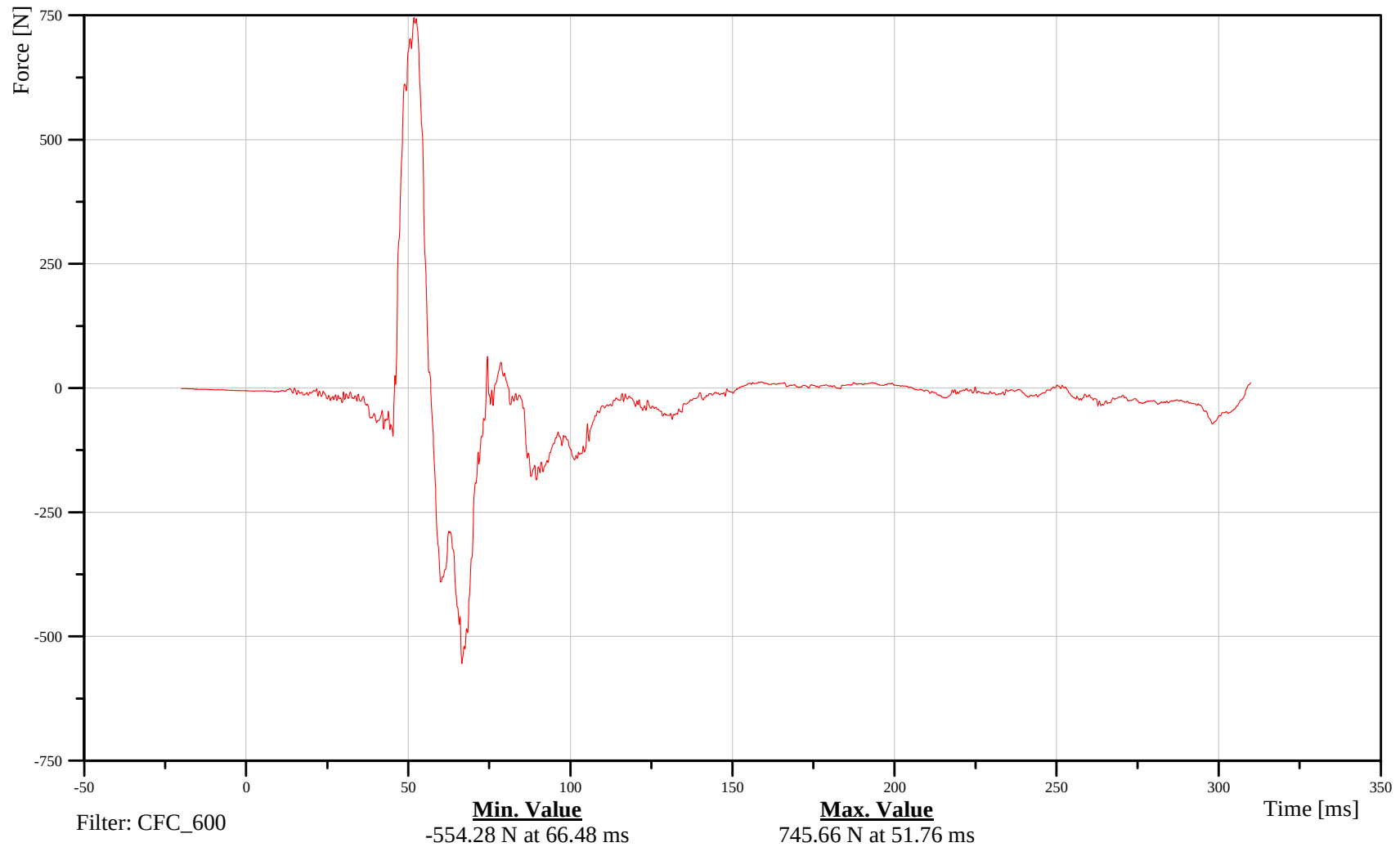
Left Lower Tibia Force X

Customer: VRTC

21TIBILLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force Y

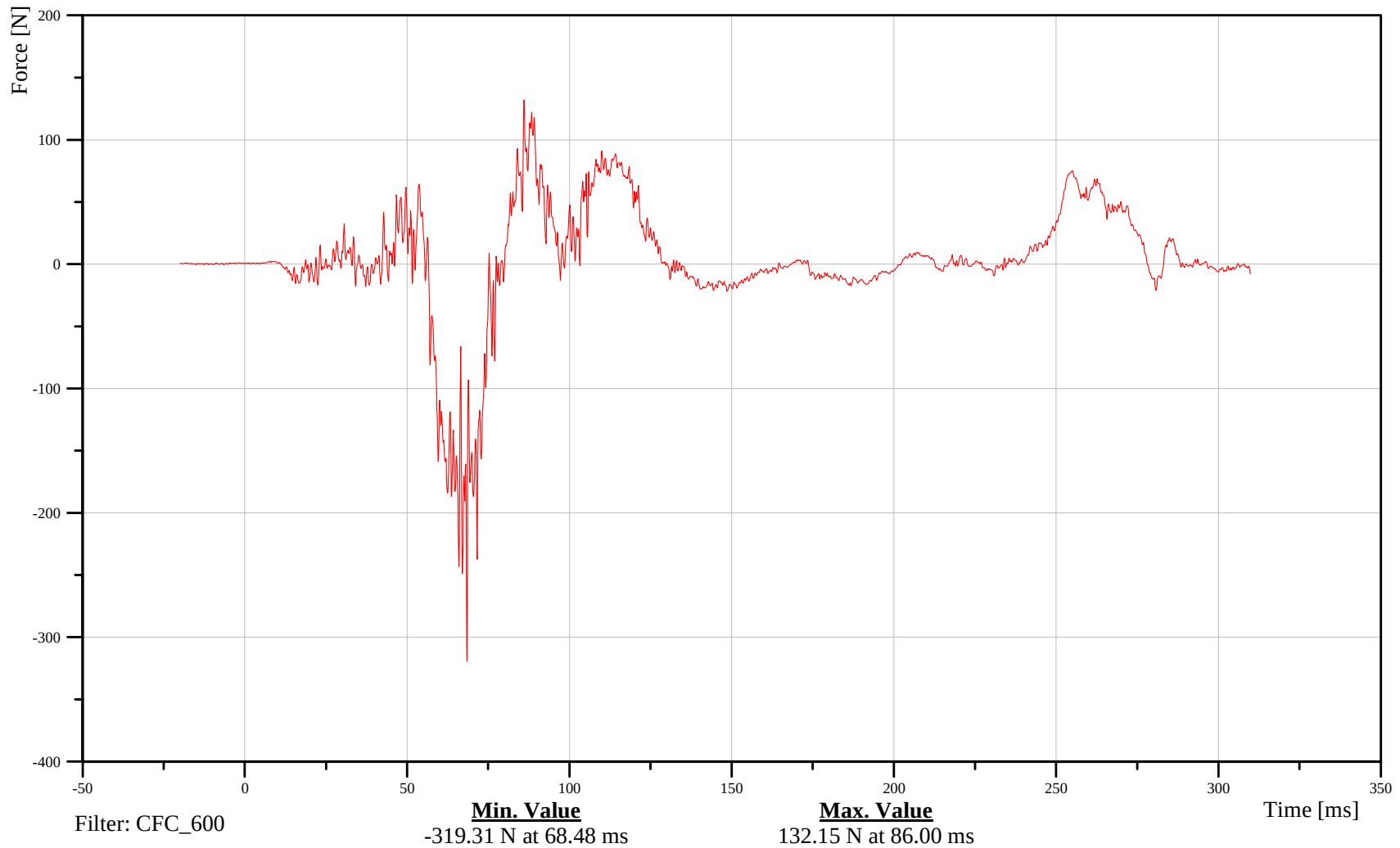
Time: 07:51

Customer: VRTC

21TIBILLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force Z

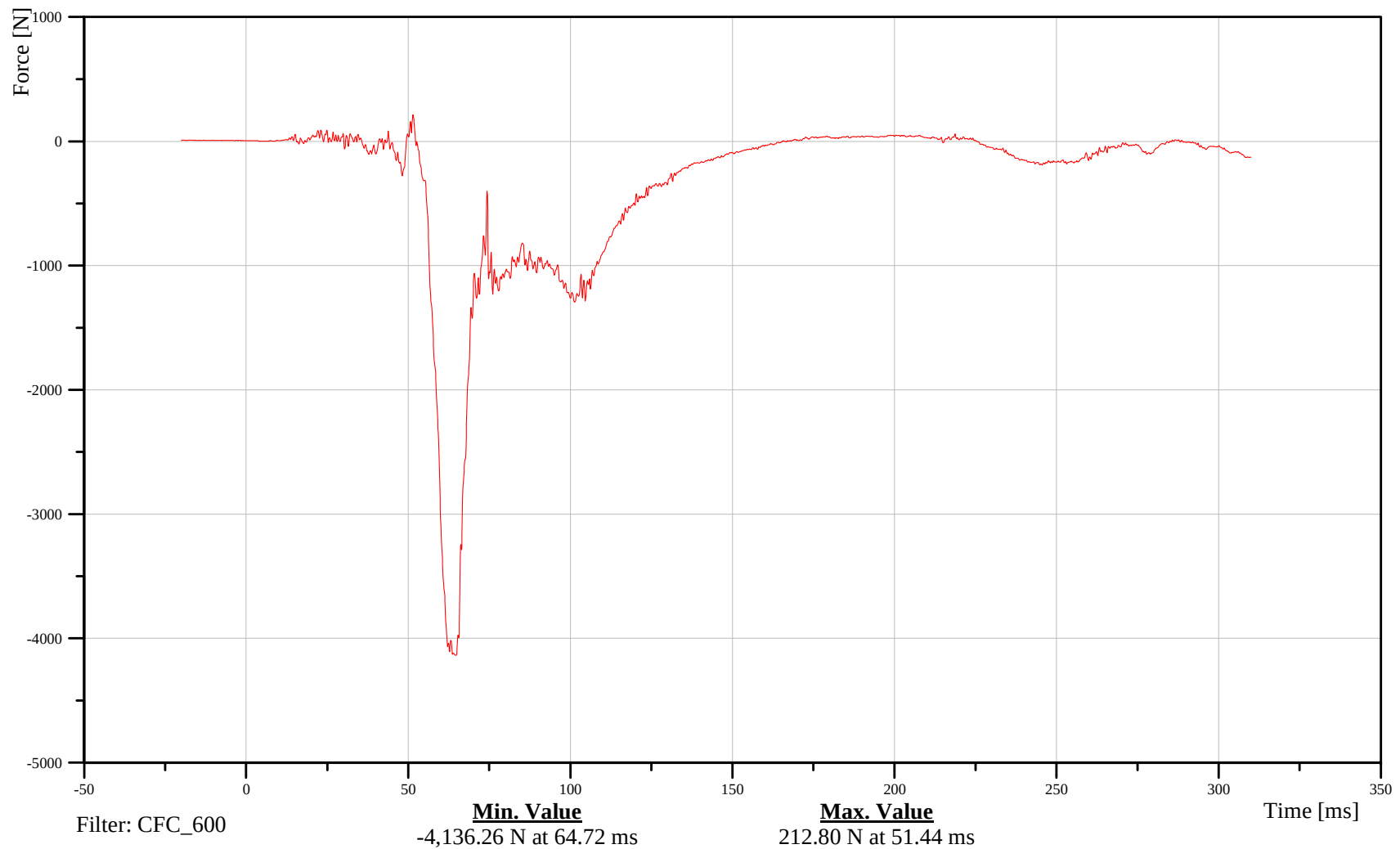
Time: 07:51

Customer: VRTC

21TIBILLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Moment X

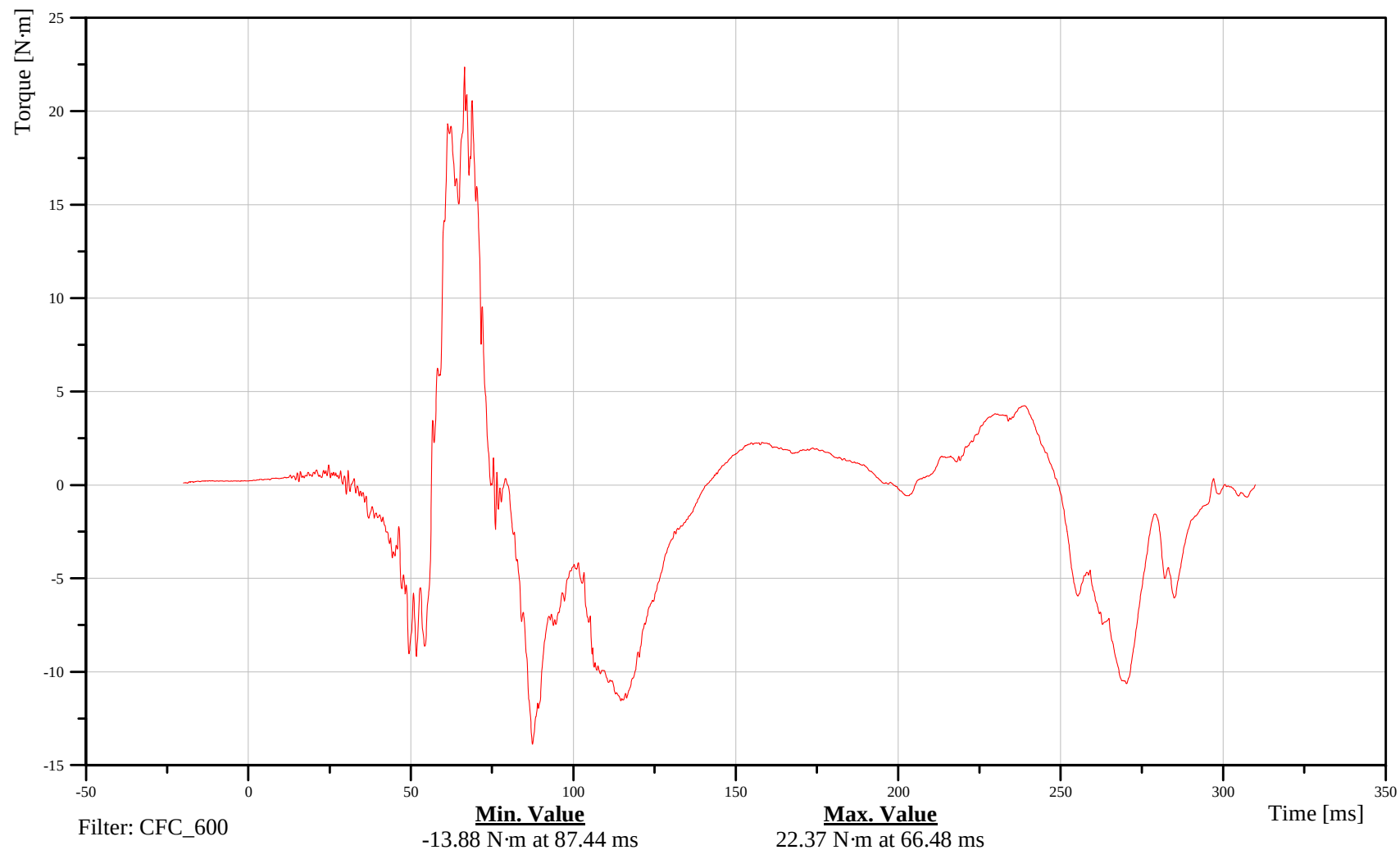
Time: 07:51

Customer: VRTC

21TIBILLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

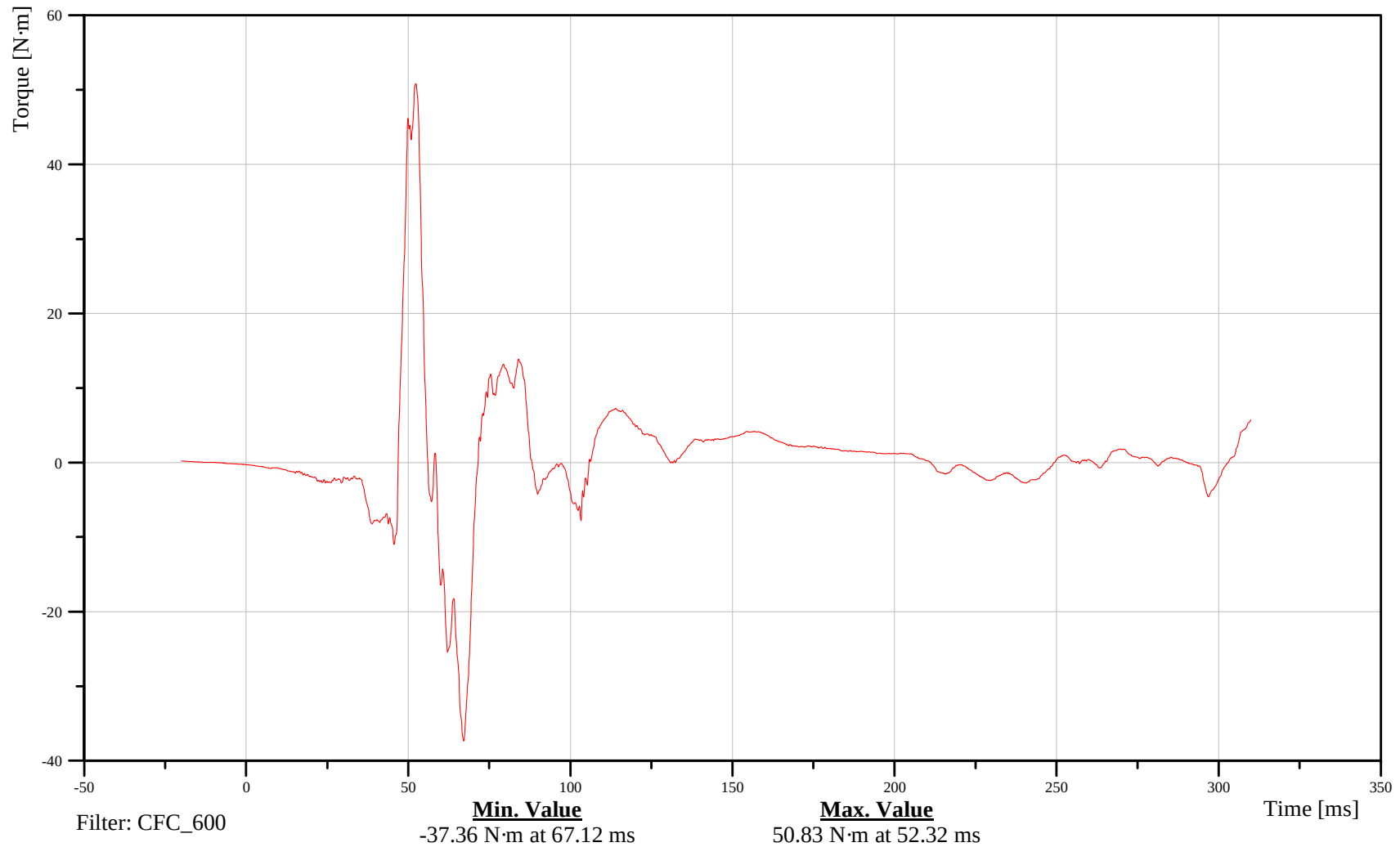
Left Lower Tibia Moment Y

Customer: VRTC

21TIBILLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Angular Dis. X LX104X

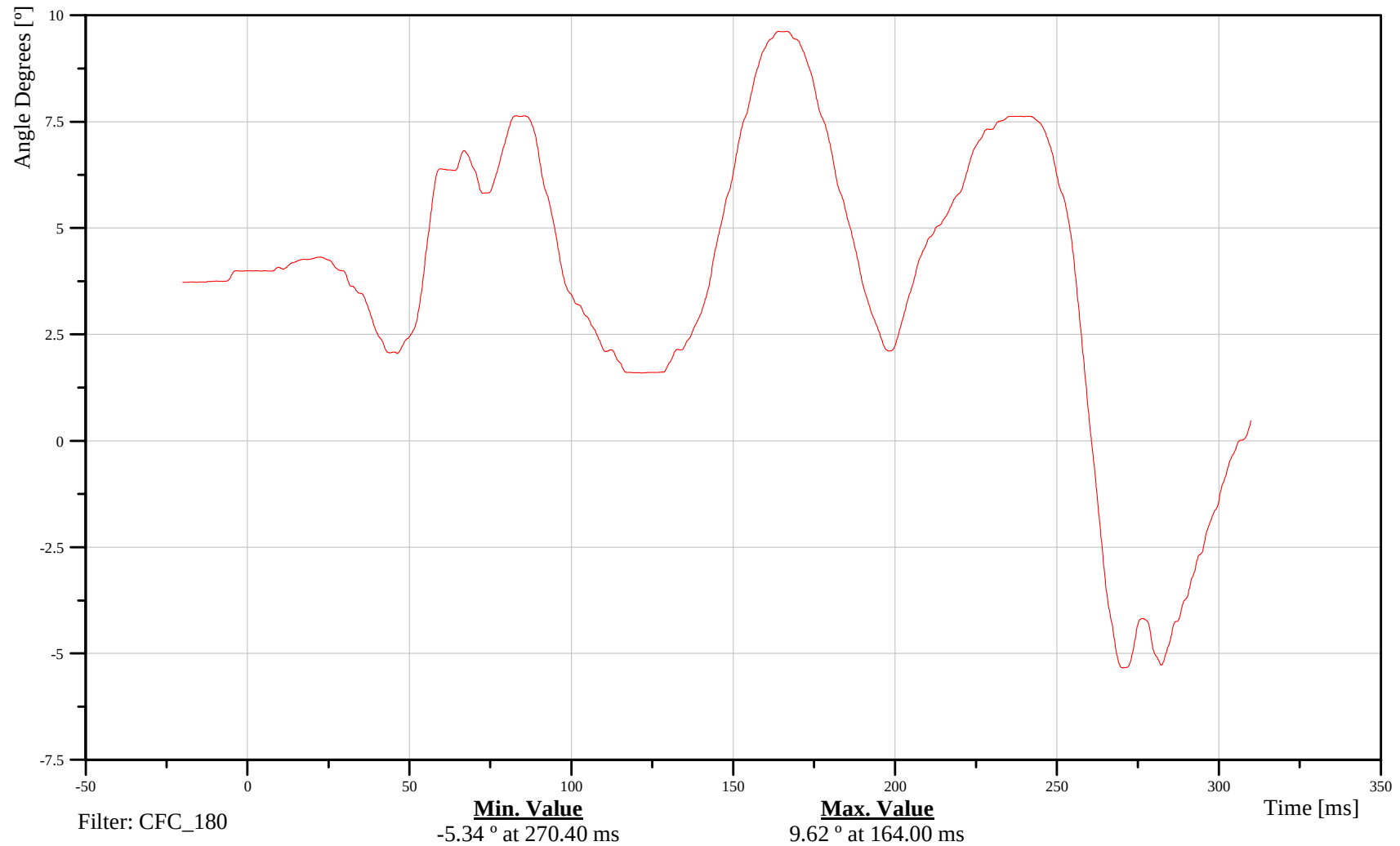
Time: 07:51

Customer: VRTC

21FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Angular Dis. Y LX104Y

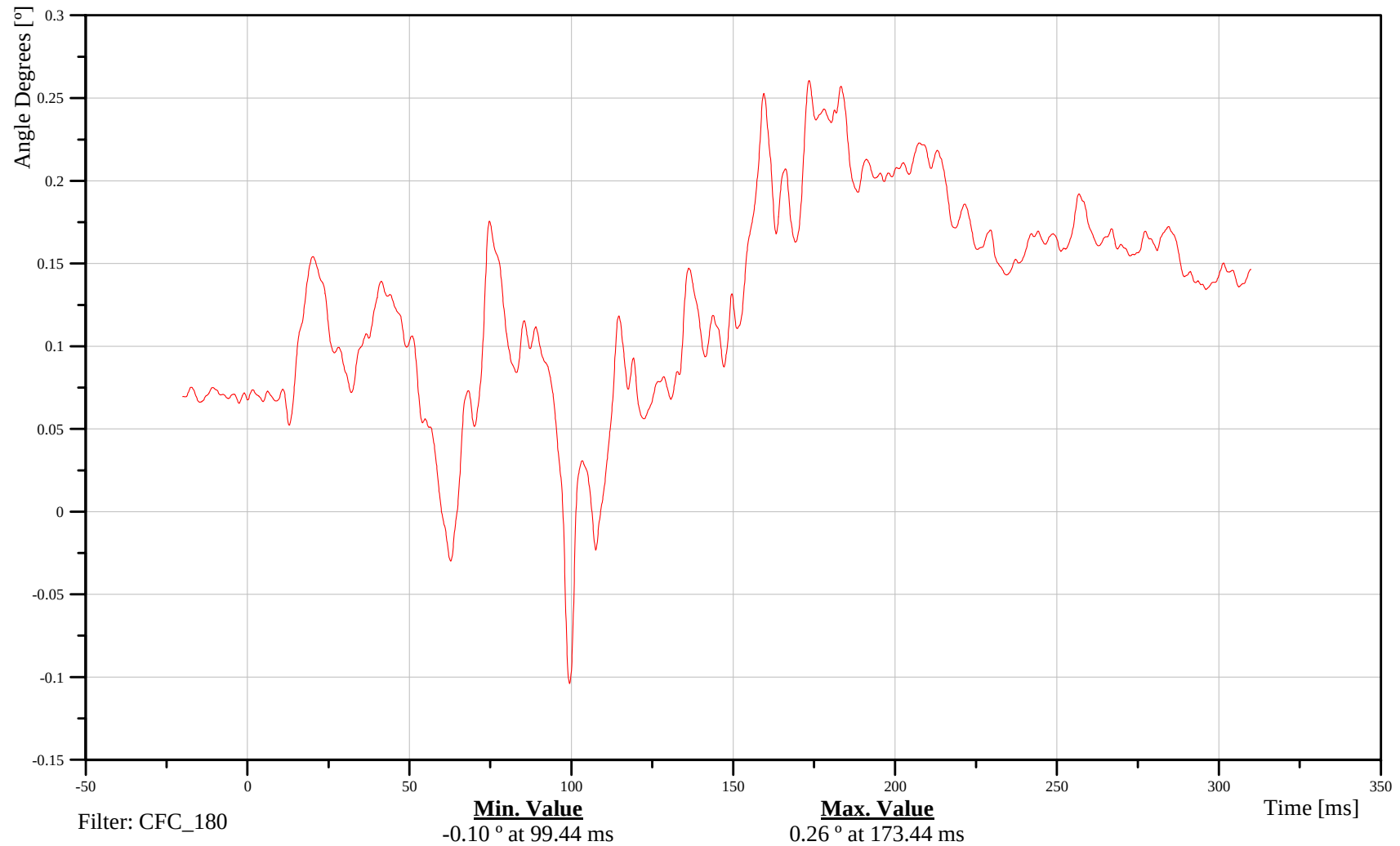
Time: 07:51

Customer: VRTC

21FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Angular Dis. Z LX104Z

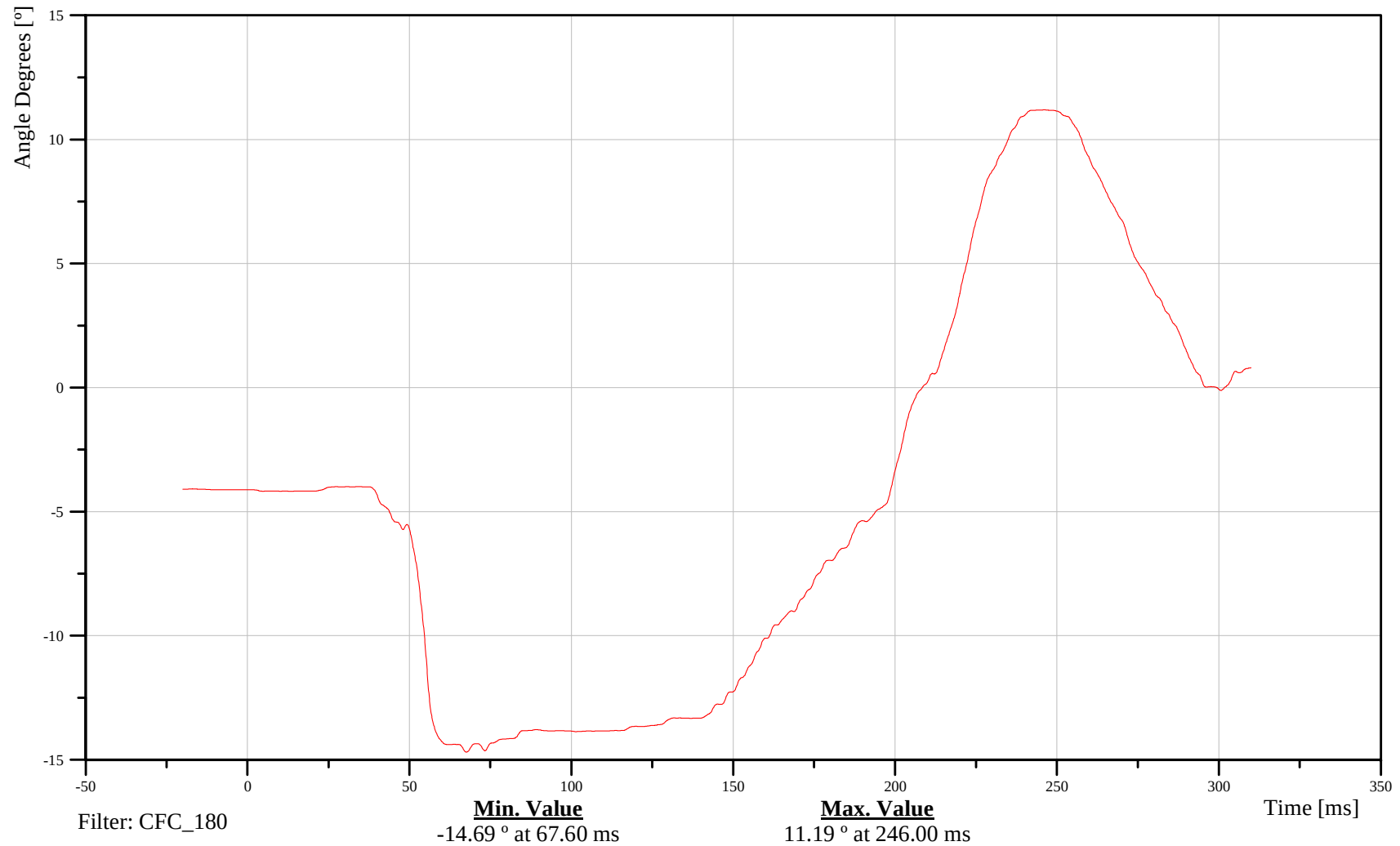
Time: 07:51

Customer: VRTC

21FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel X

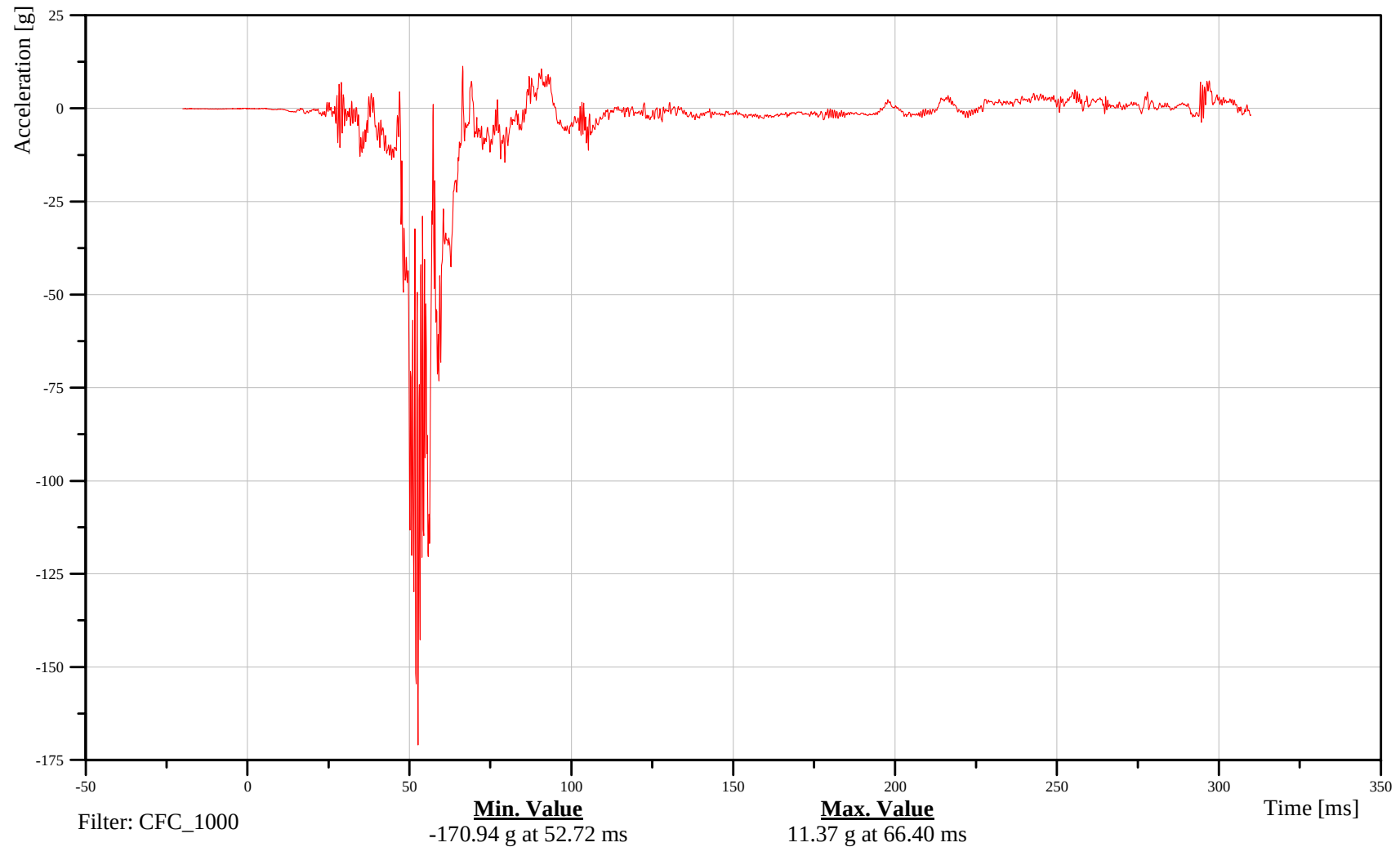
Time: 07:51

Customer: VRTC

21FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Y

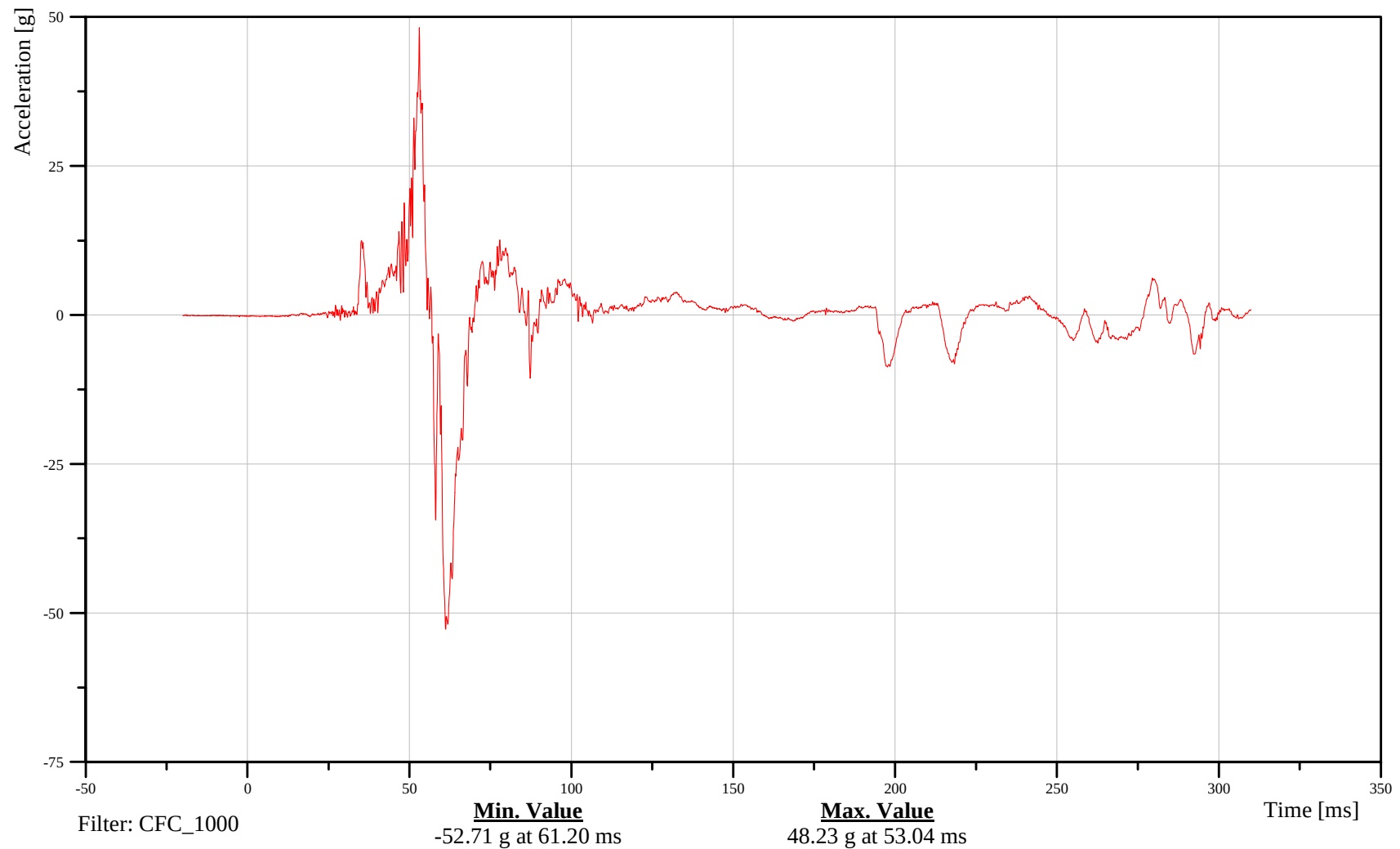
Time: 07:51

Customer: VRTC

21FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Z

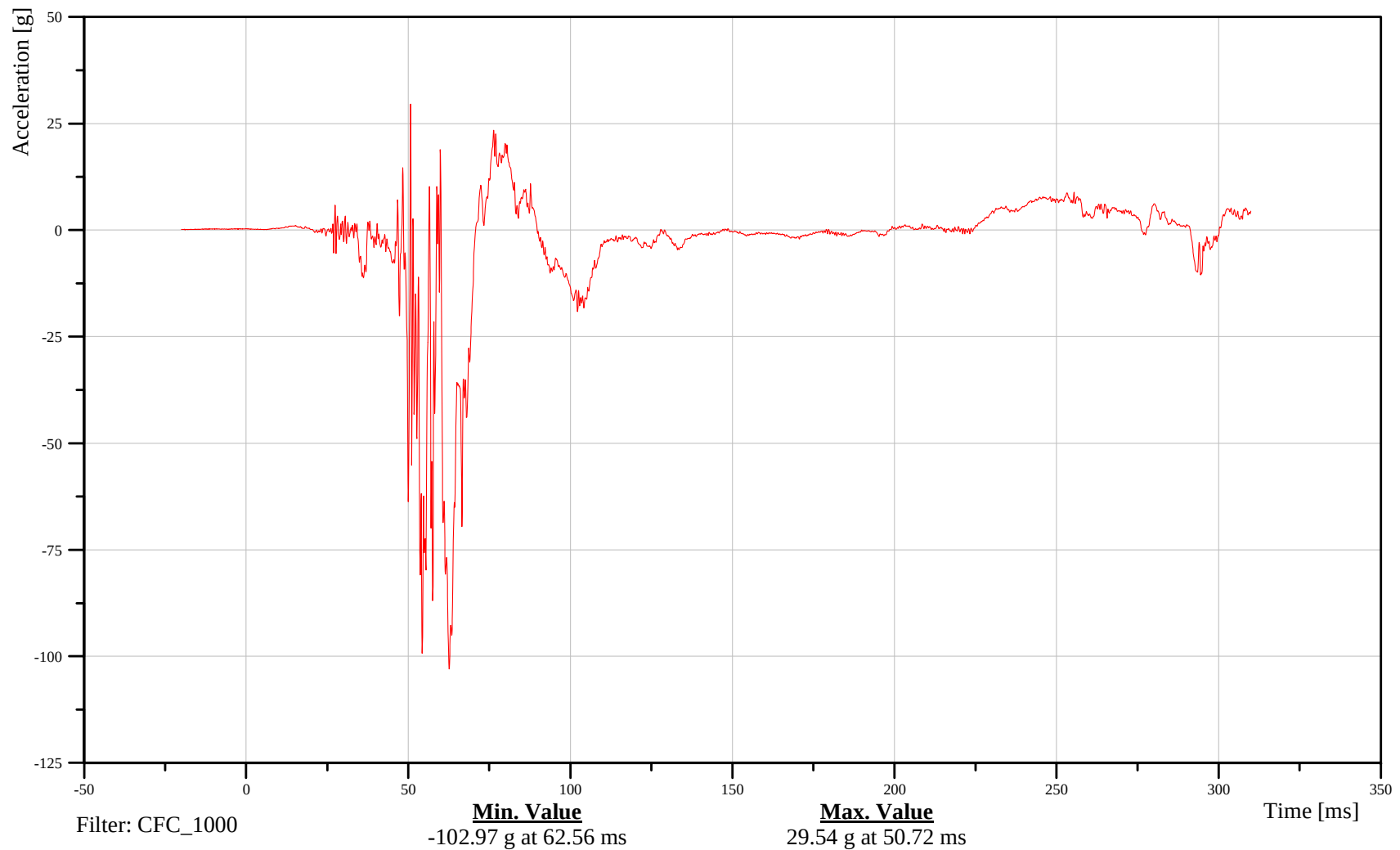
Time: 07:51

Customer: VRTC

21FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

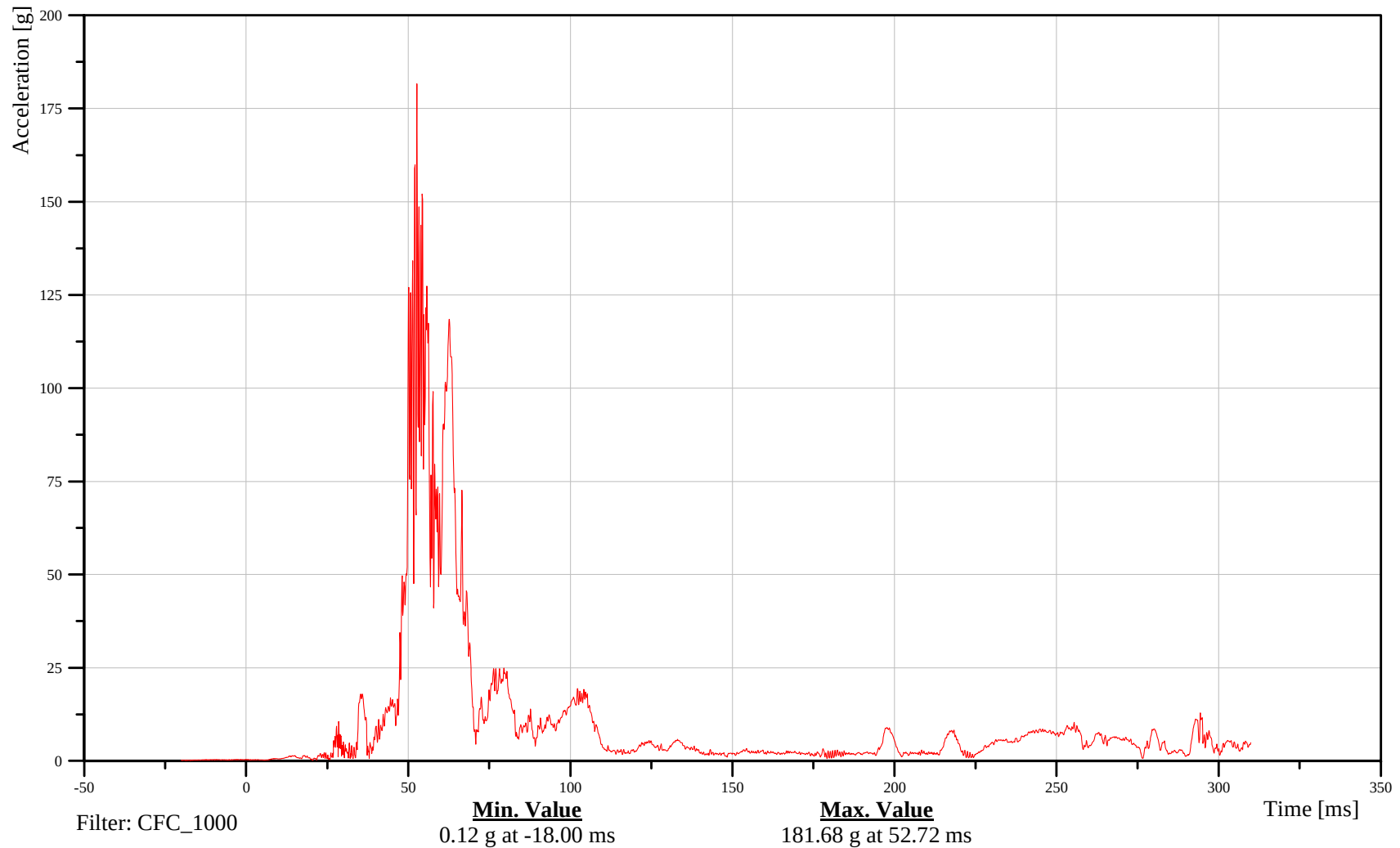
Left Foot Accel Resultant

Customer: VRTC

21FOOTLELXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

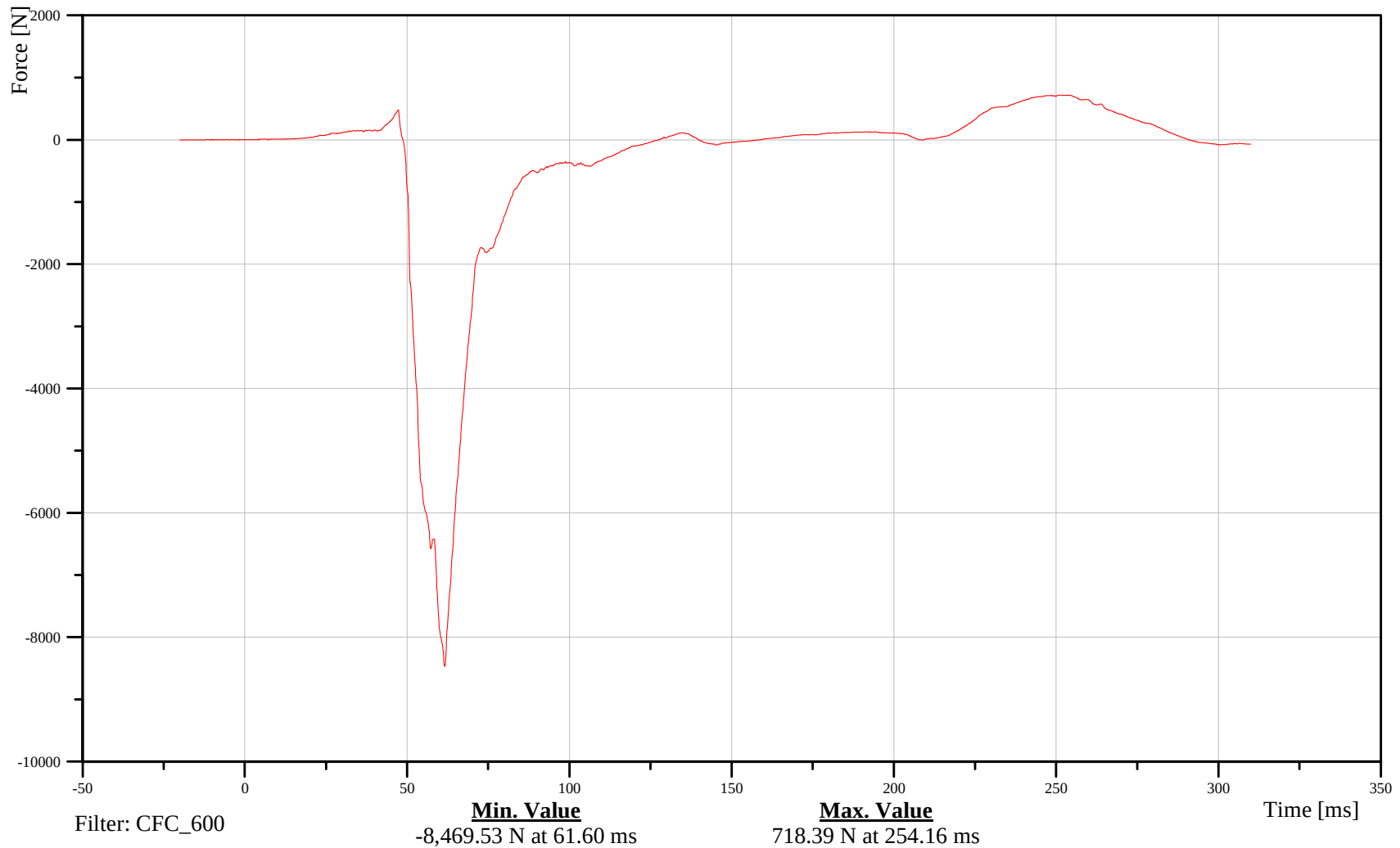
Right Femur Force Z

Customer: VRTC

21FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

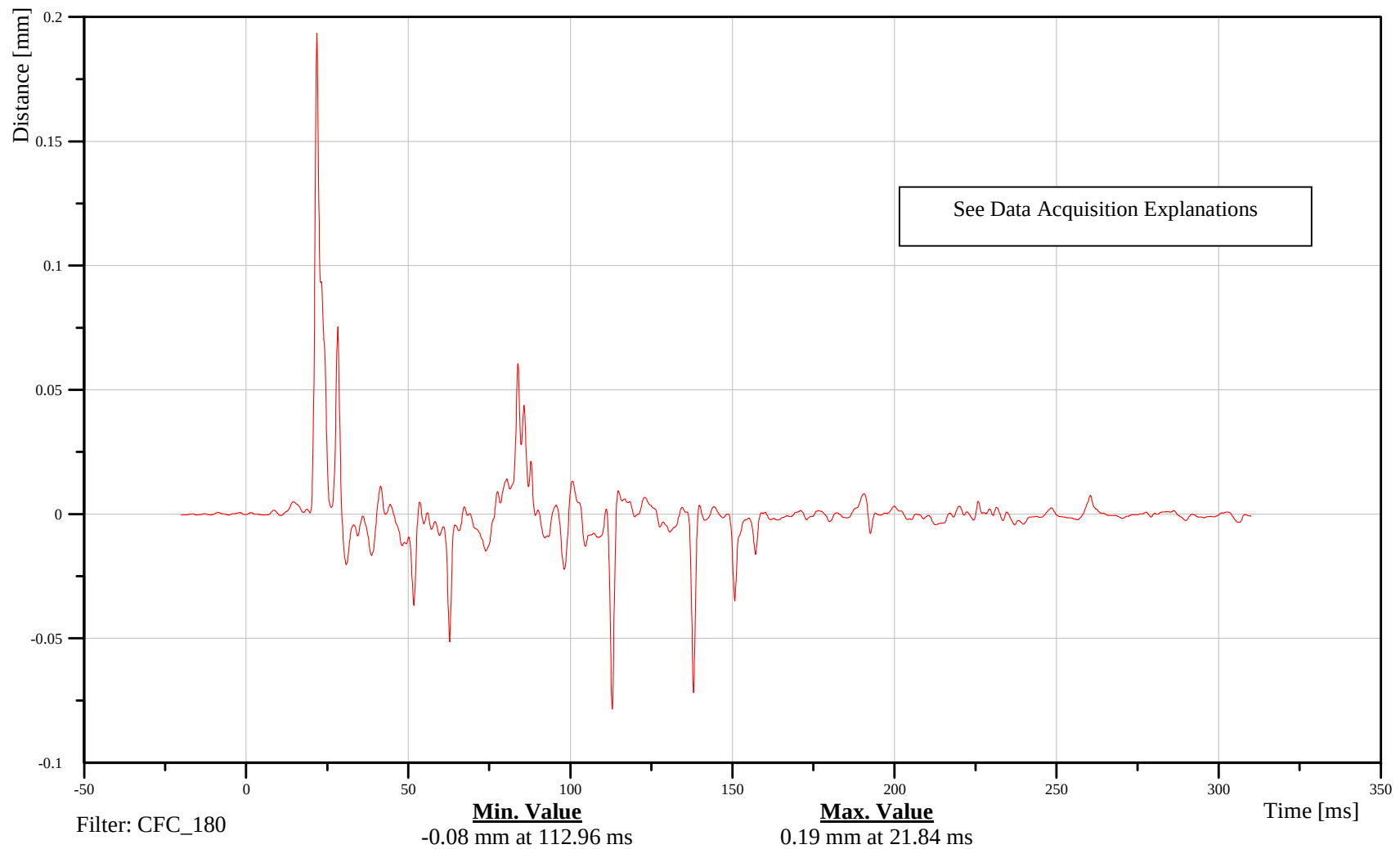
Right Knee Displacement X

Customer: VRTC

21KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

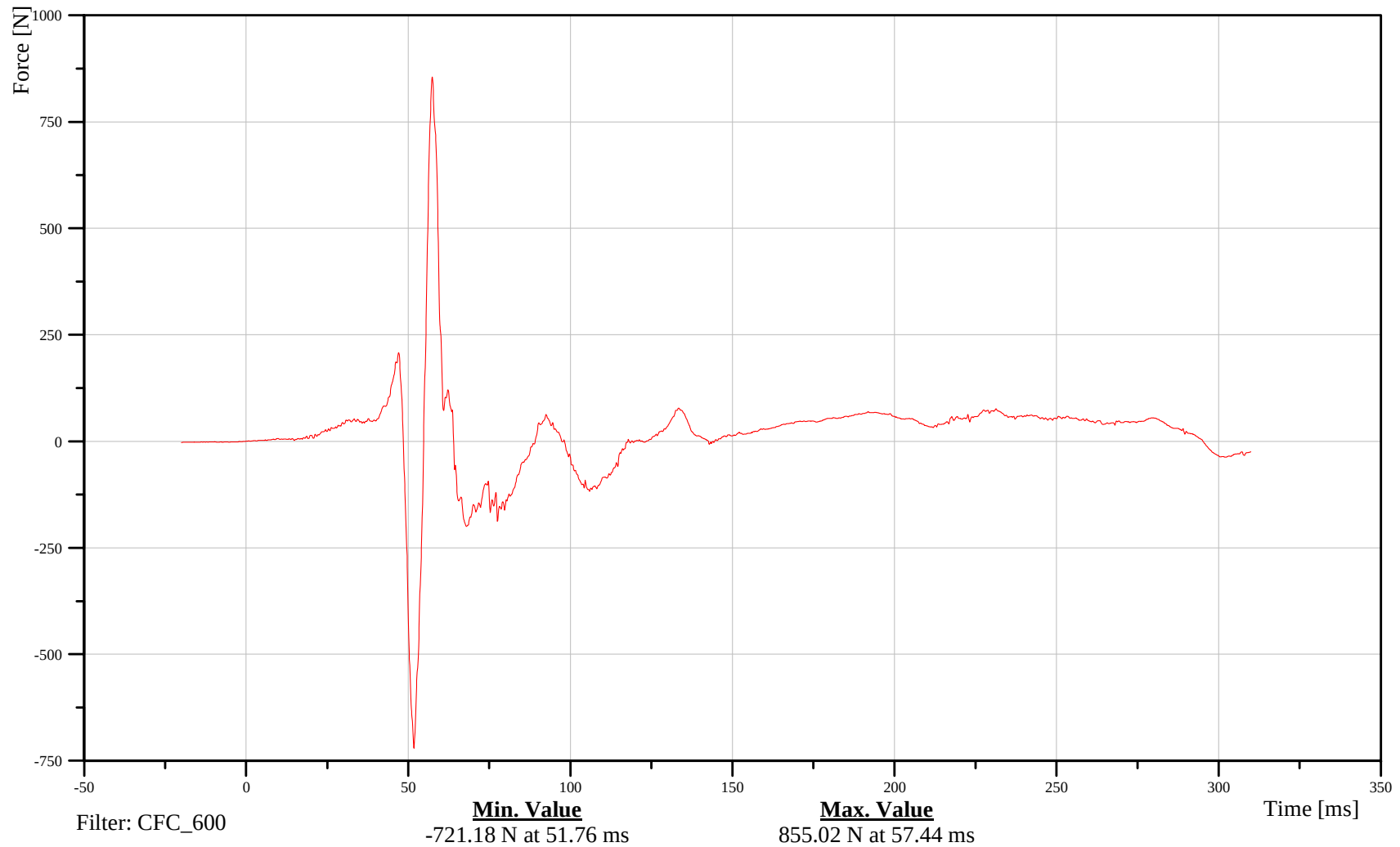
Right Upper Tibia Force X

Customer: VRTC

21TIBIRULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

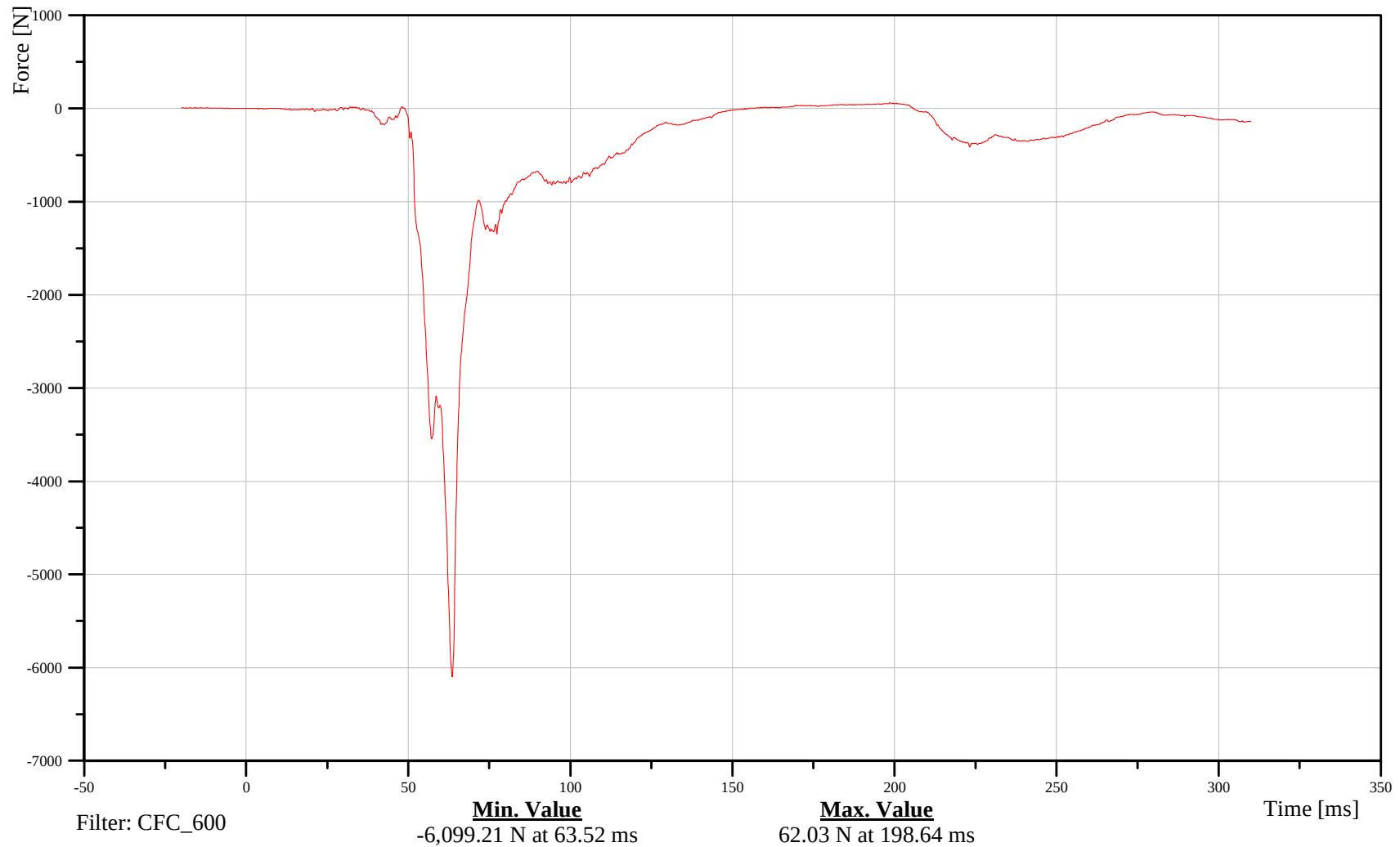
Right Upper Tibia Force Z

Customer: VRTC

21TIBIRULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

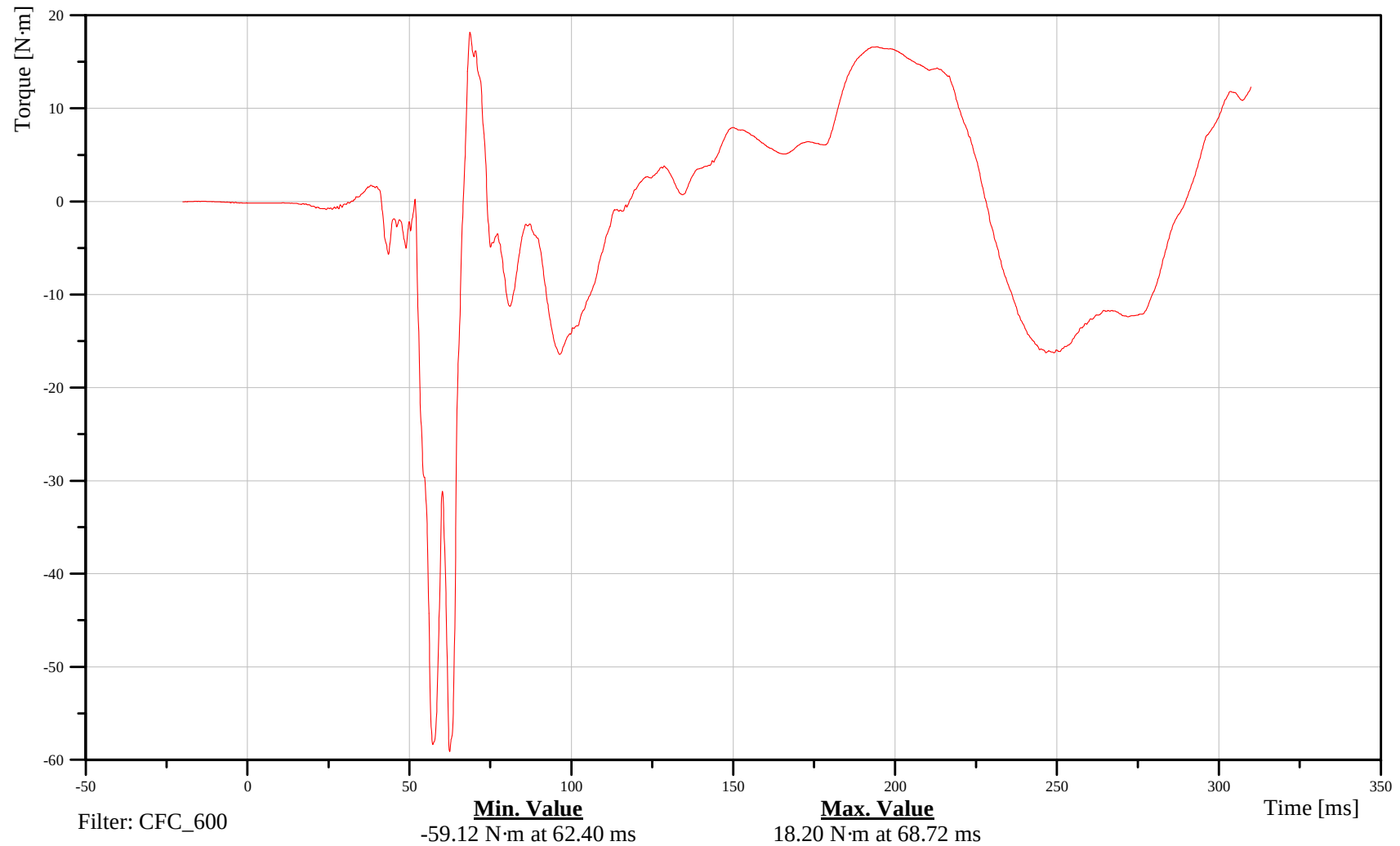
Right Upper Tibia Moment X

Customer: VRTC

21TIBIRULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

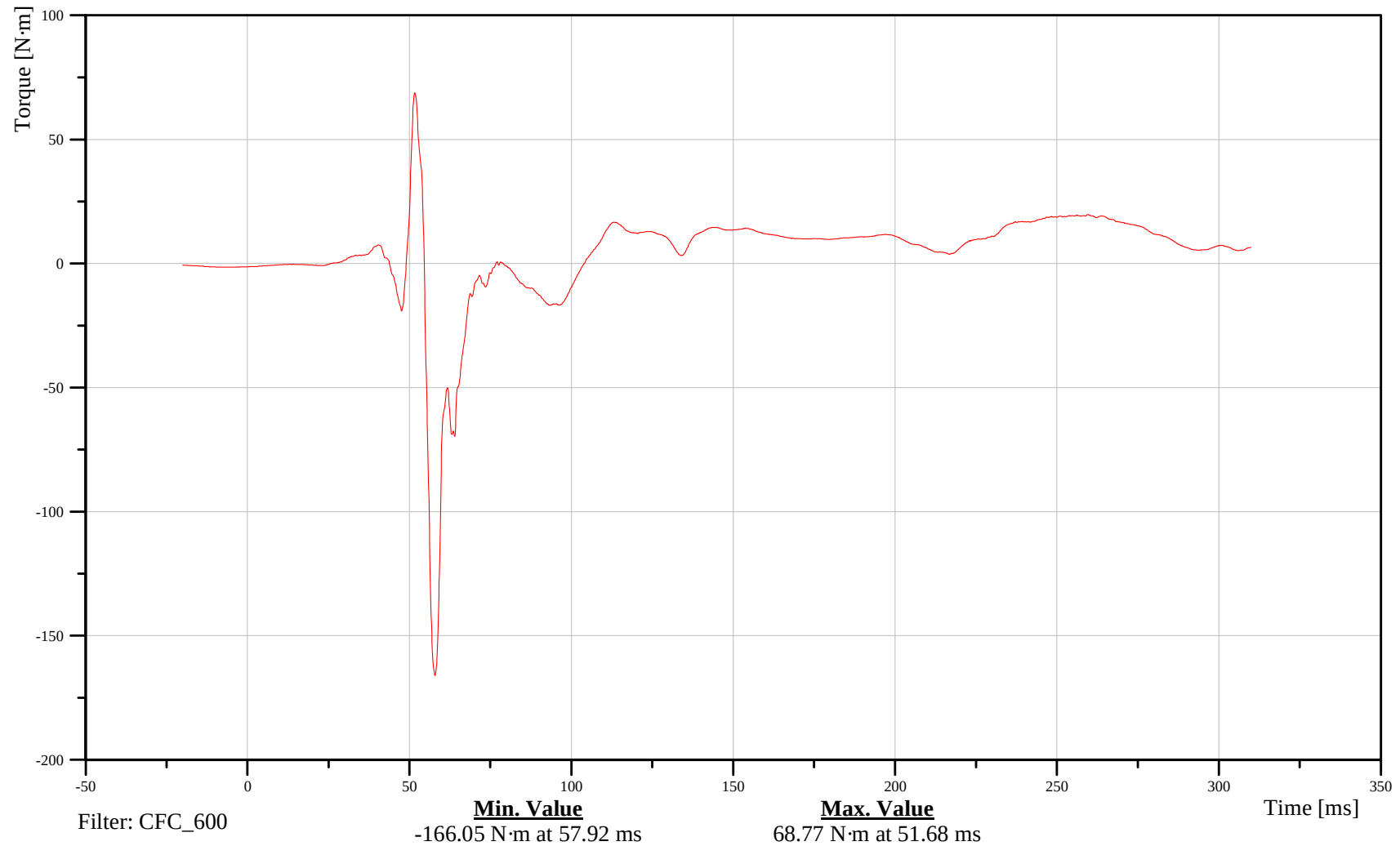
Right Upper Tibia Moment Y

Customer: VRTC

21TIBIRULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Tibia Accel X

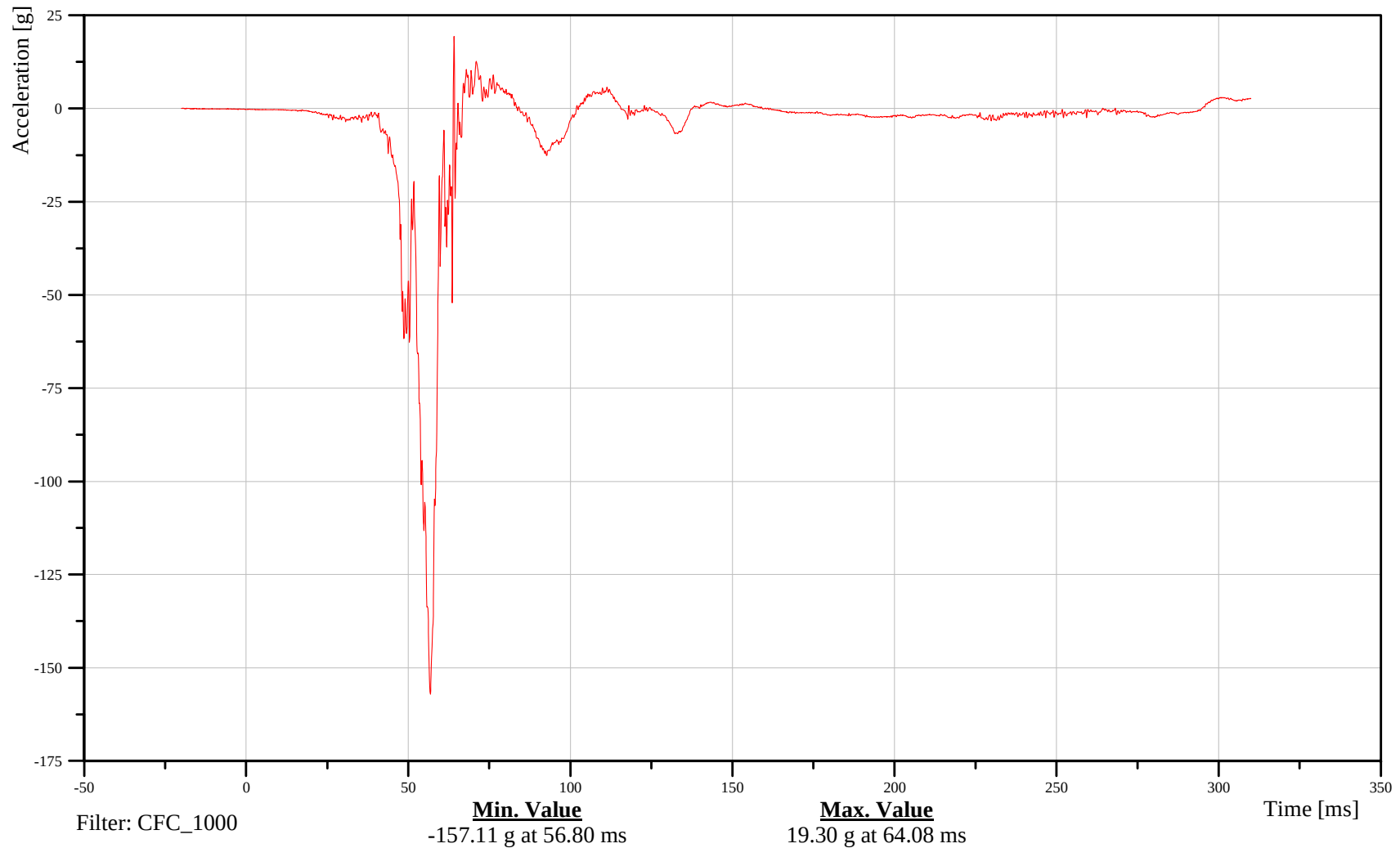
Time: 07:51

Customer: VRTC

21TIBIRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

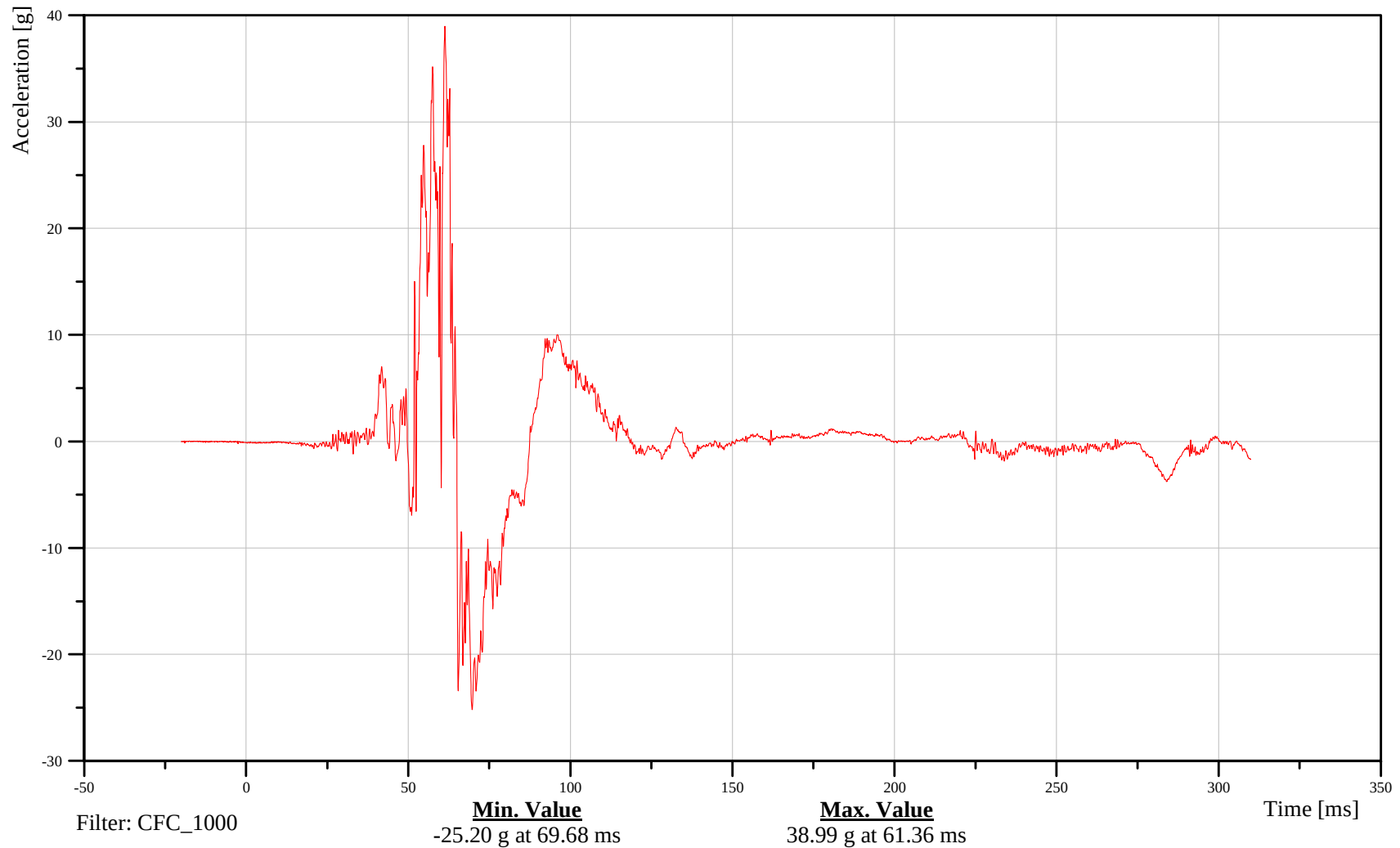
Right Tibia Accel Y

Customer: VRTC

21TIBIRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

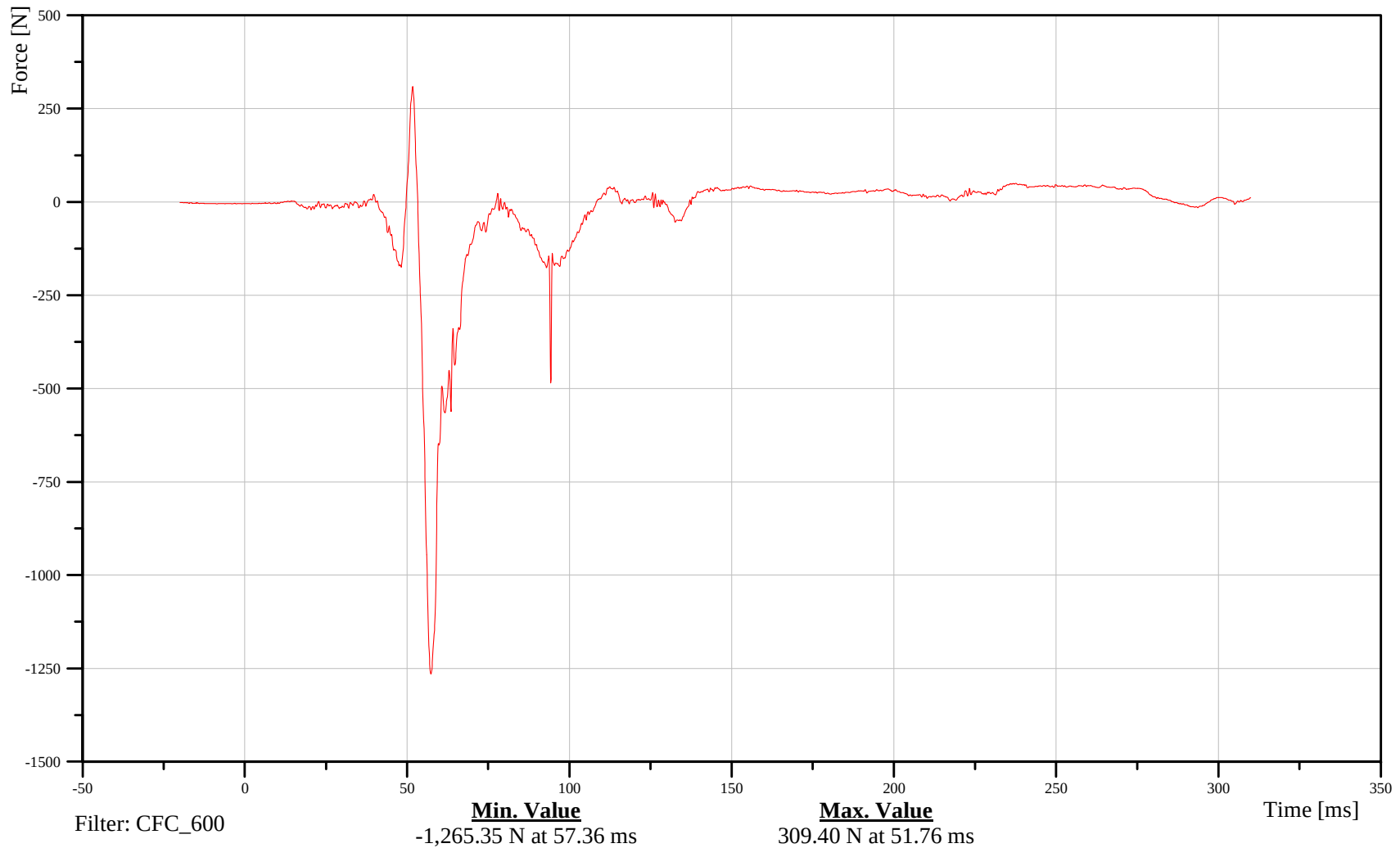
Right Lower Tibia Force X

Customer: VRTC

21TIBIRLLXH3FOX B

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

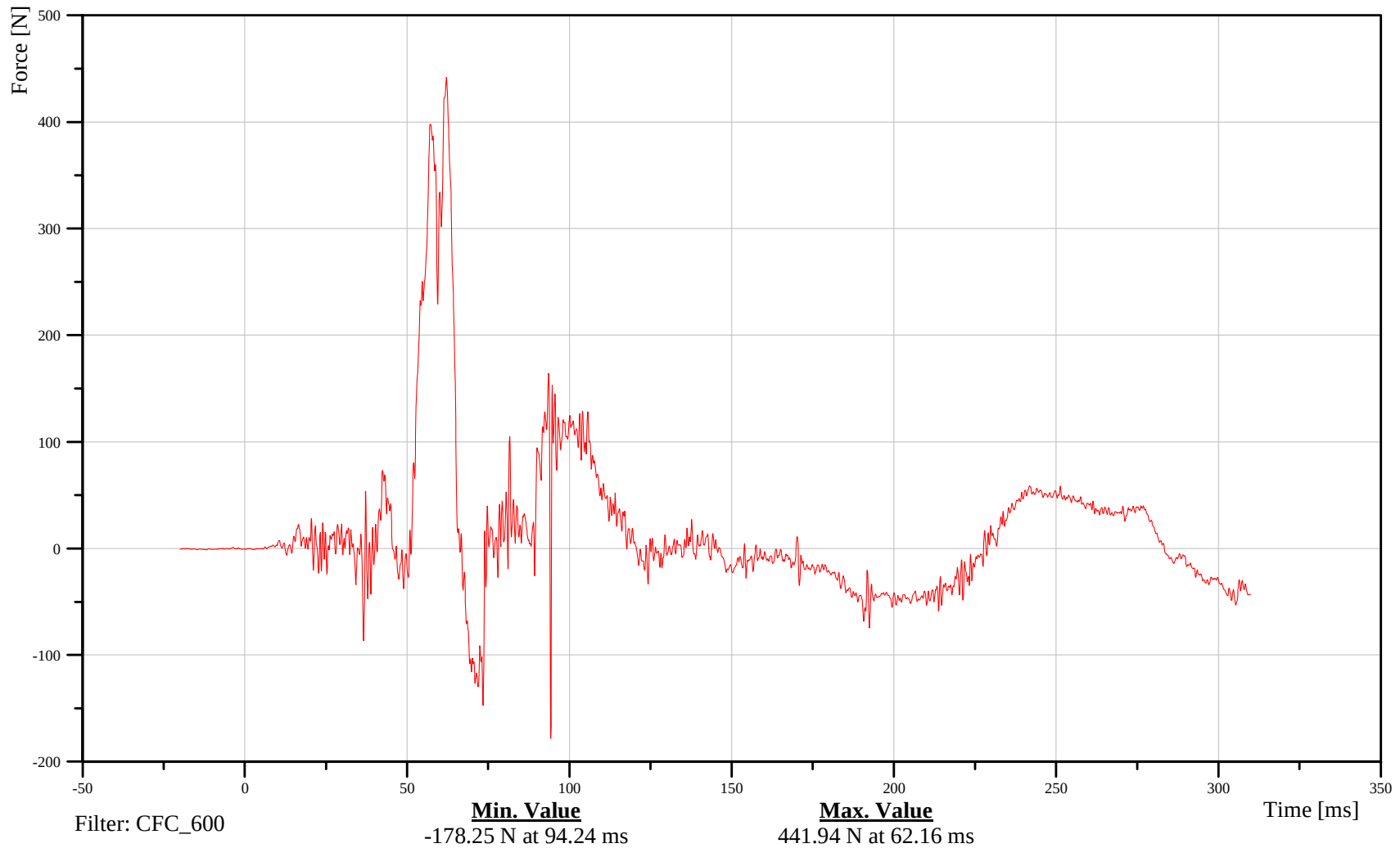
Right Lower Tibia Force Y

Customer: VRTC

21TIBIRLLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

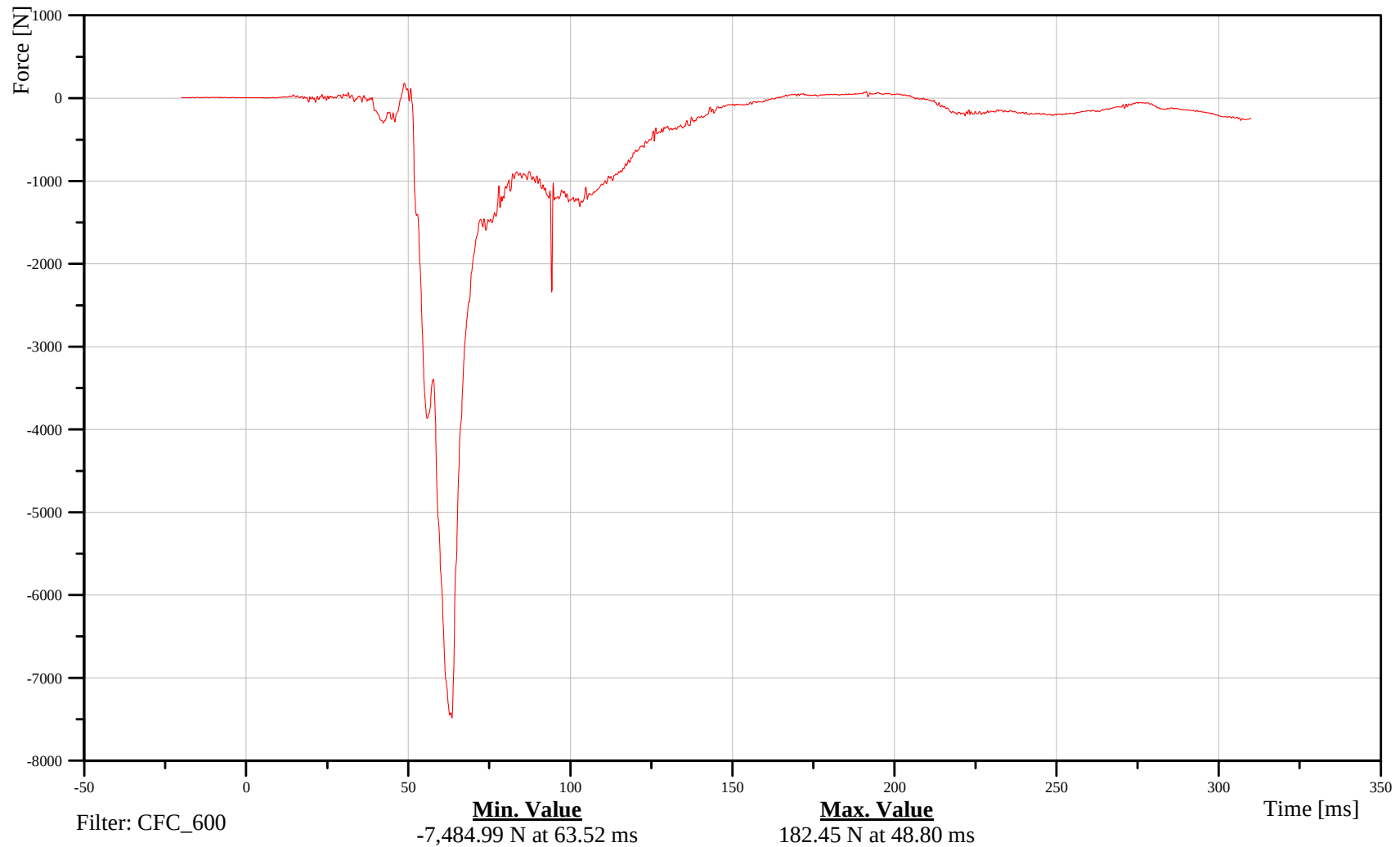
Right Lower Tibia Force Z

Customer: VRTC

21TIBIRLLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

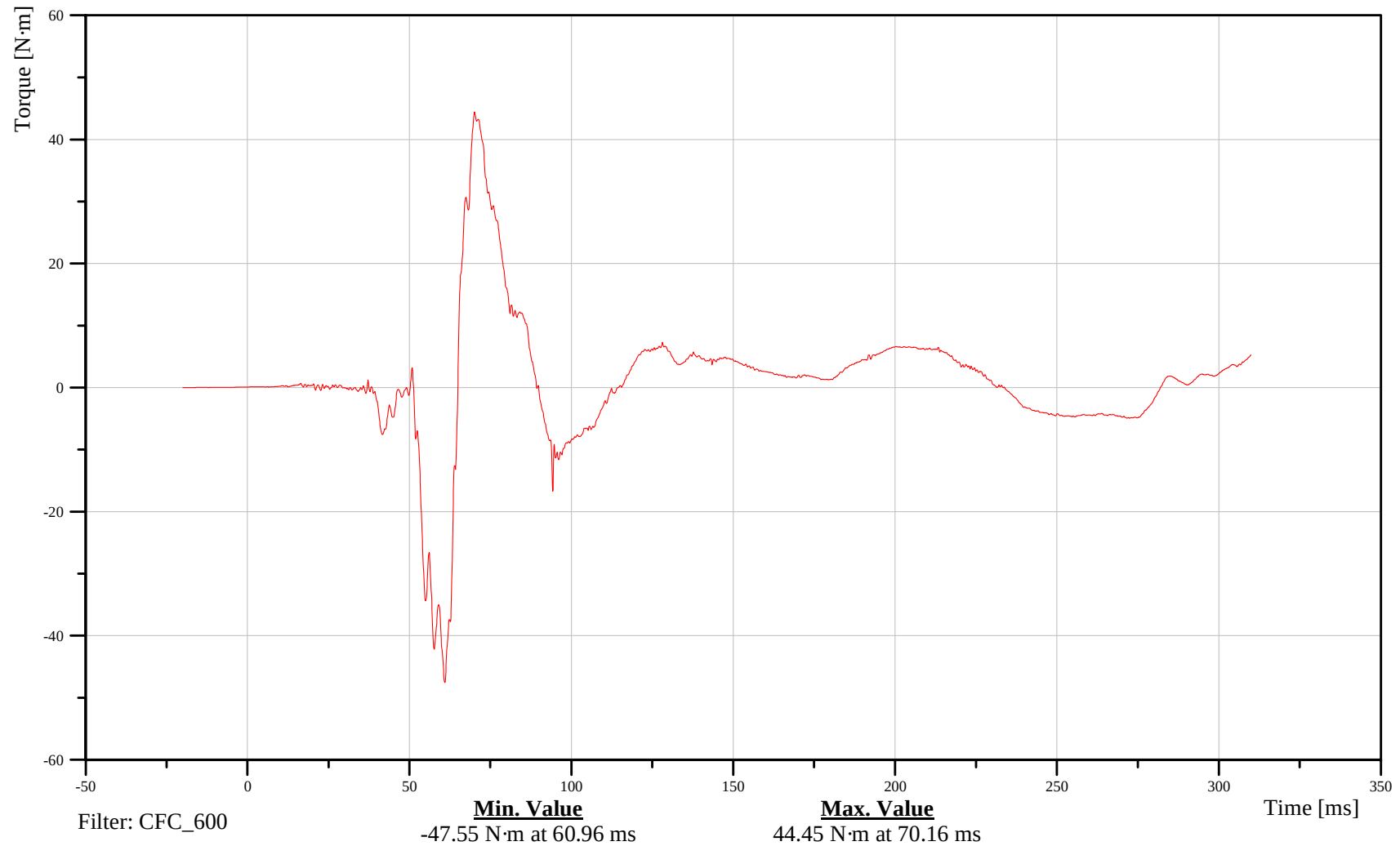
Right Lower Tibia Moment X

Customer: VRTC

21TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

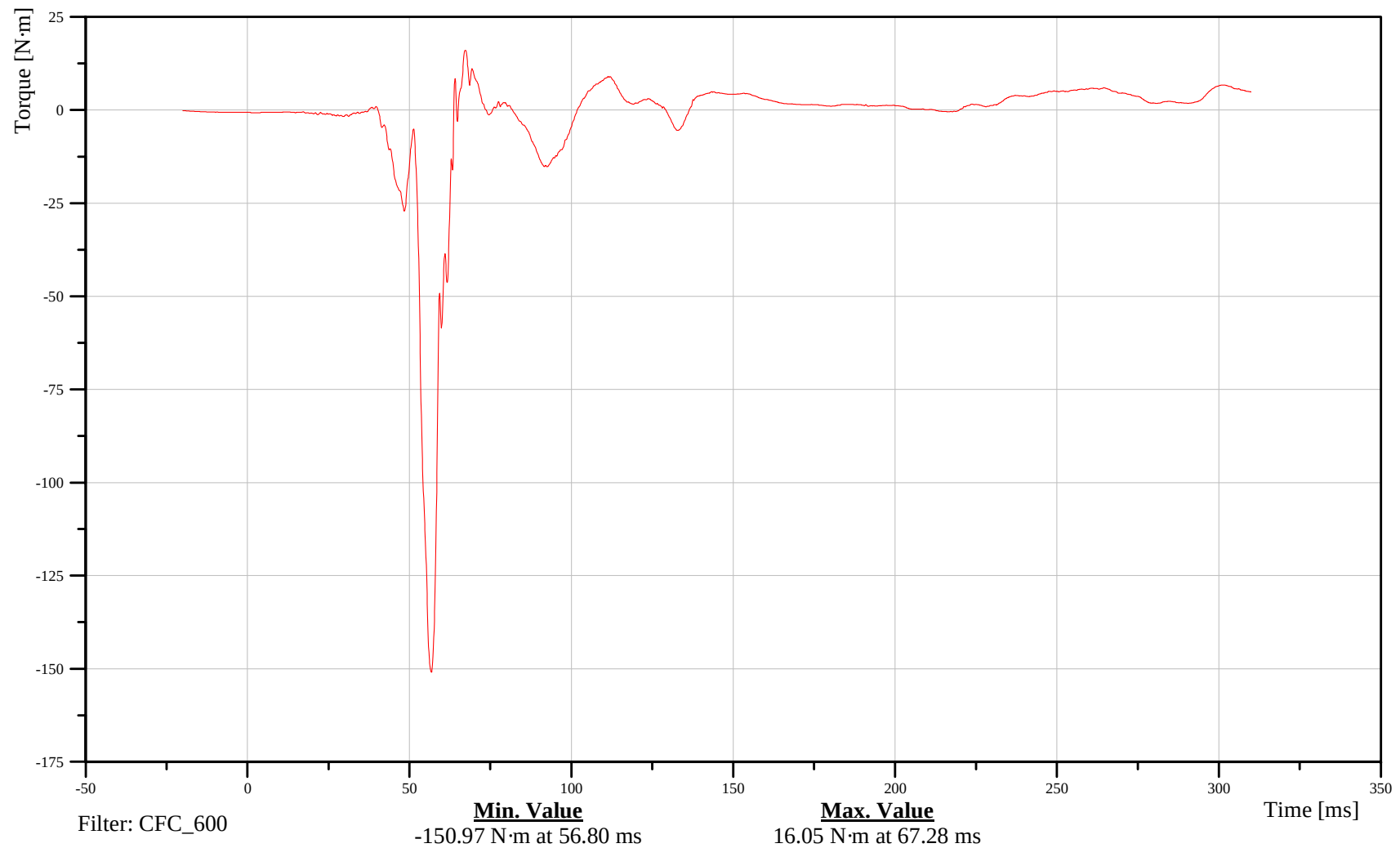
Right Lower Tibia Moment Y

Customer: VRTC

21TIBIRLLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Angular Dis. X AK037X

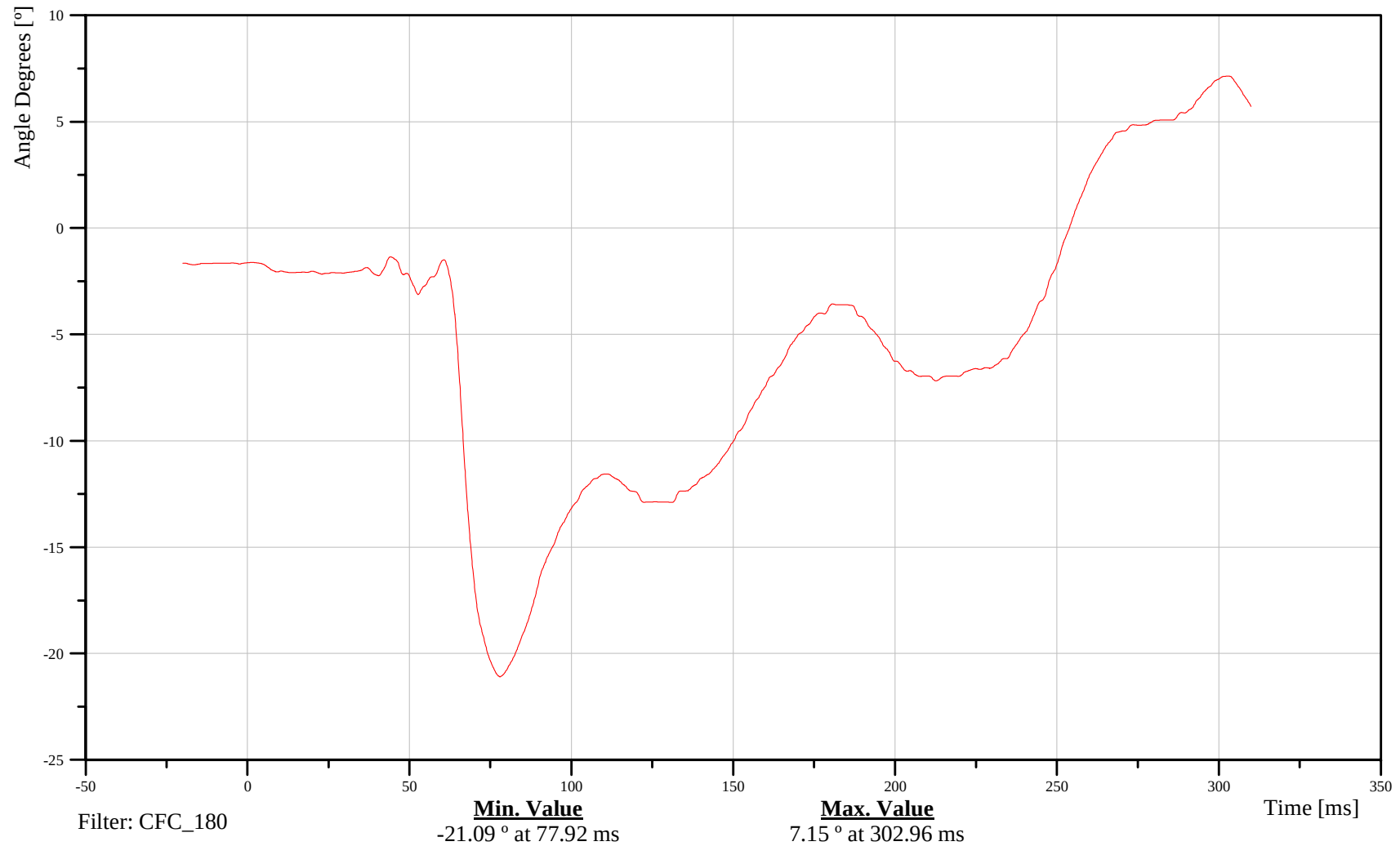
Time: 07:51

Customer: VRTC

21FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Angular Dis. Y AK225Y

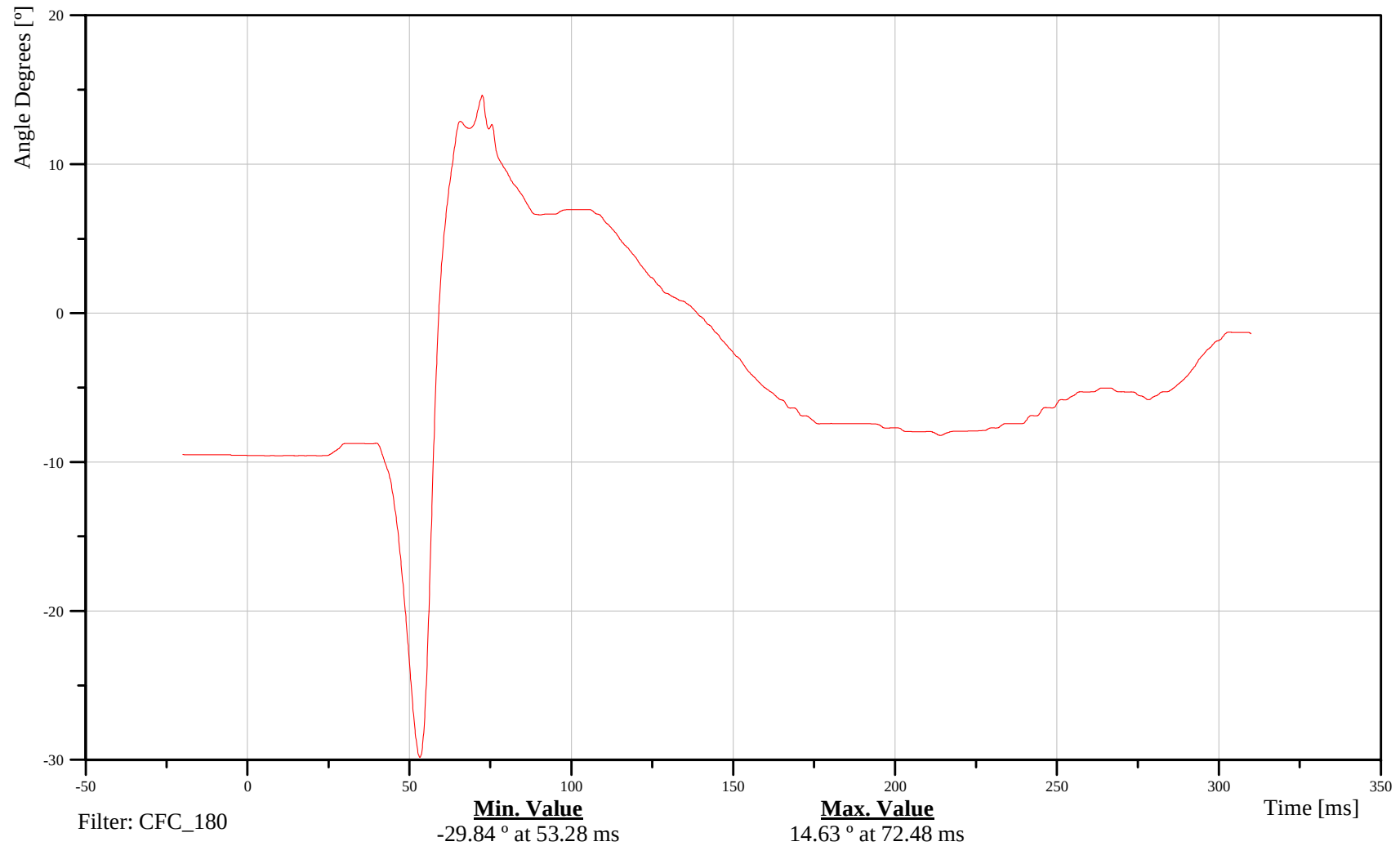
Time: 07:51

Customer: VRTC

21FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

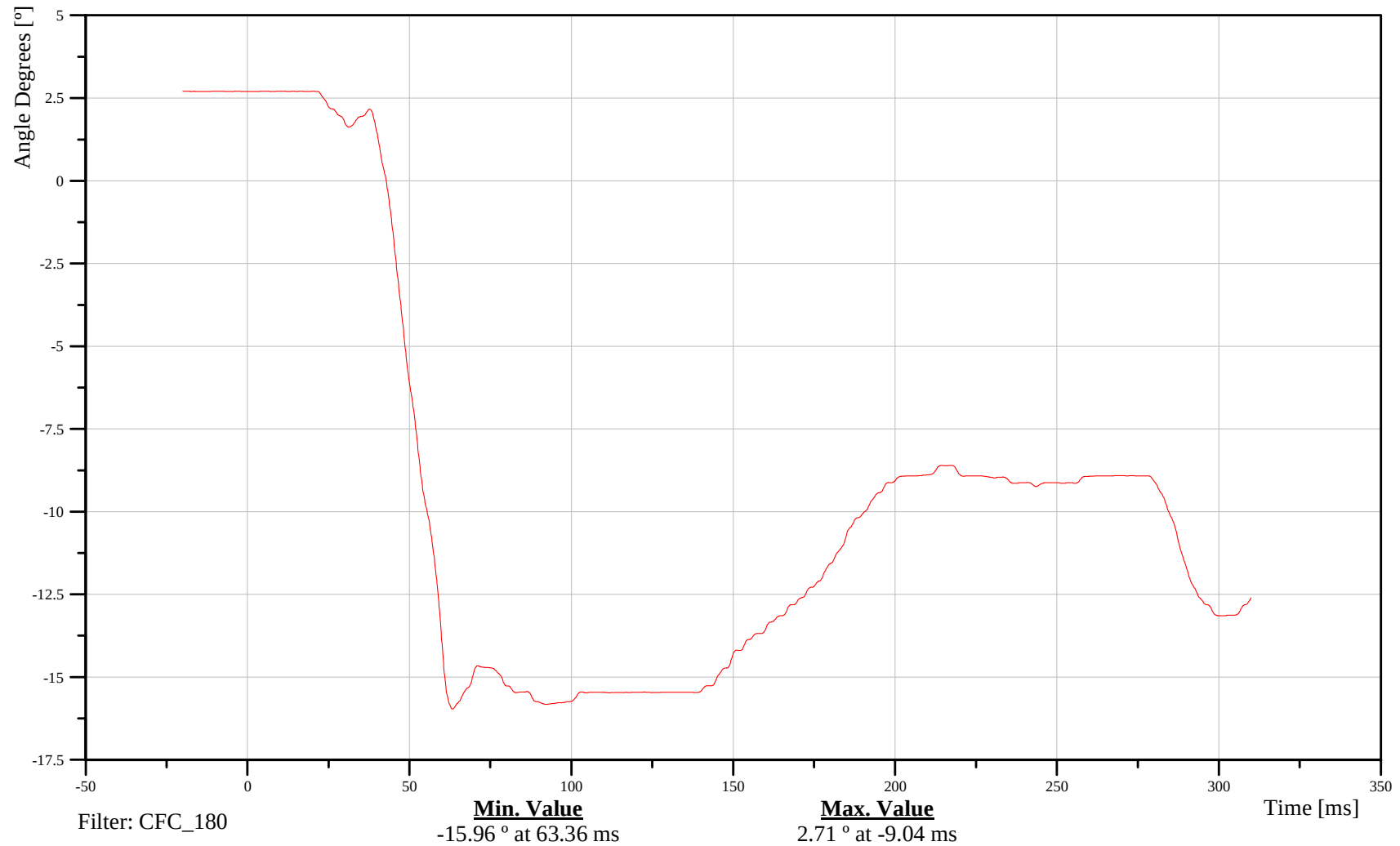
Right Foot Angular Dis. Z AK039Z

Customer: VRTC

21FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Accel X

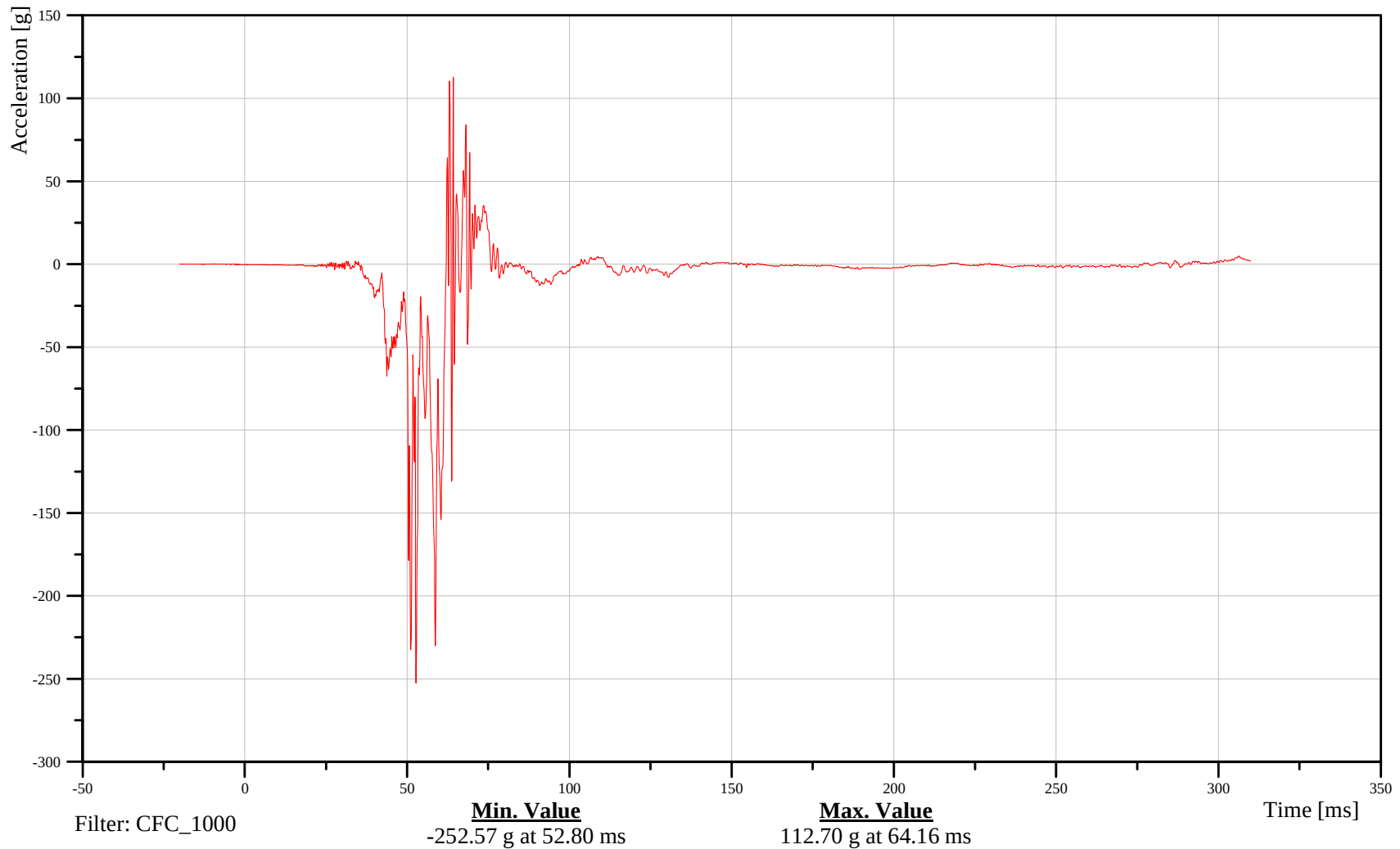
Time: 07:51

Customer: VRTC

21FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Accel Y

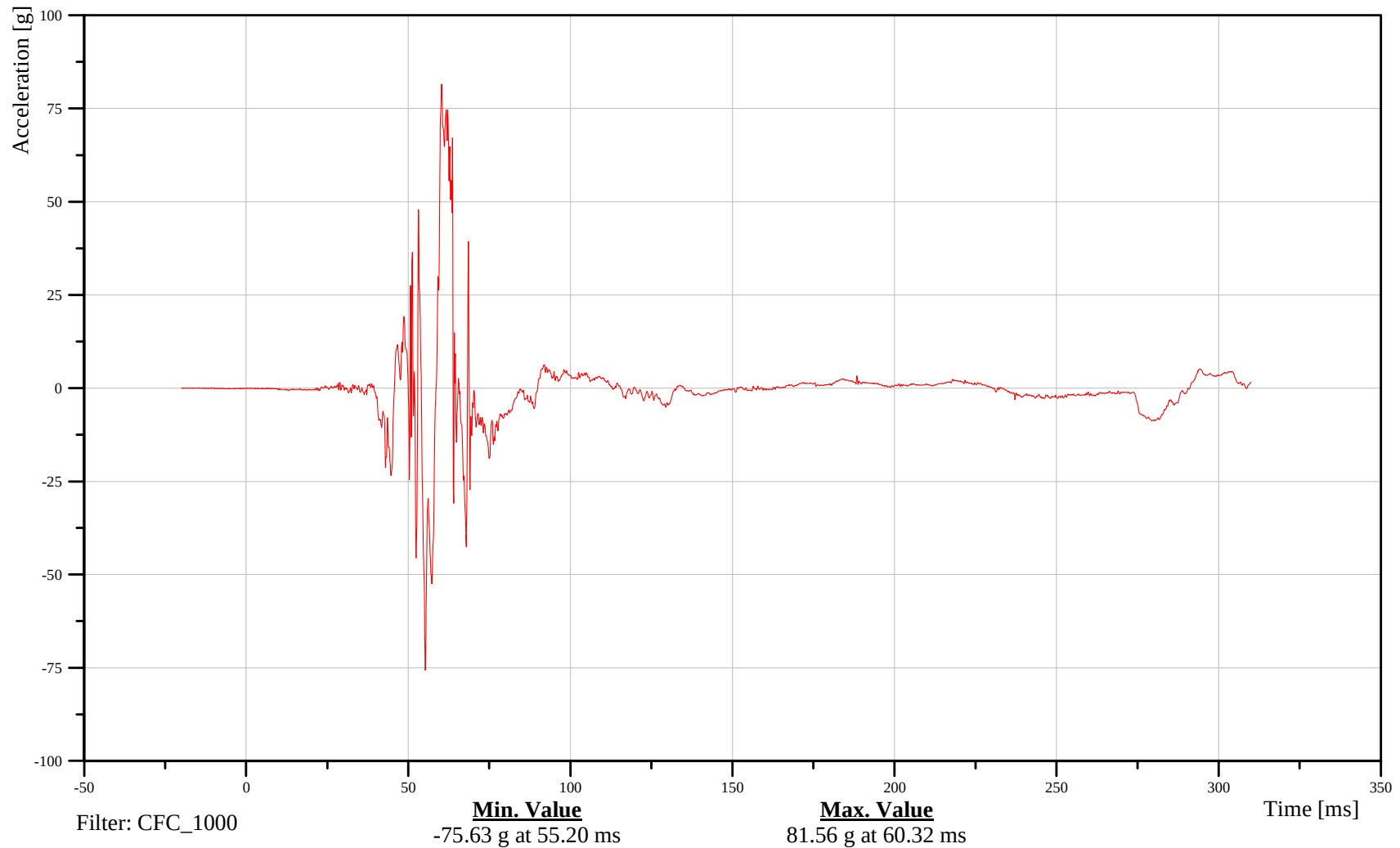
Time: 07:51

Customer: VRTC

21FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Accel Z

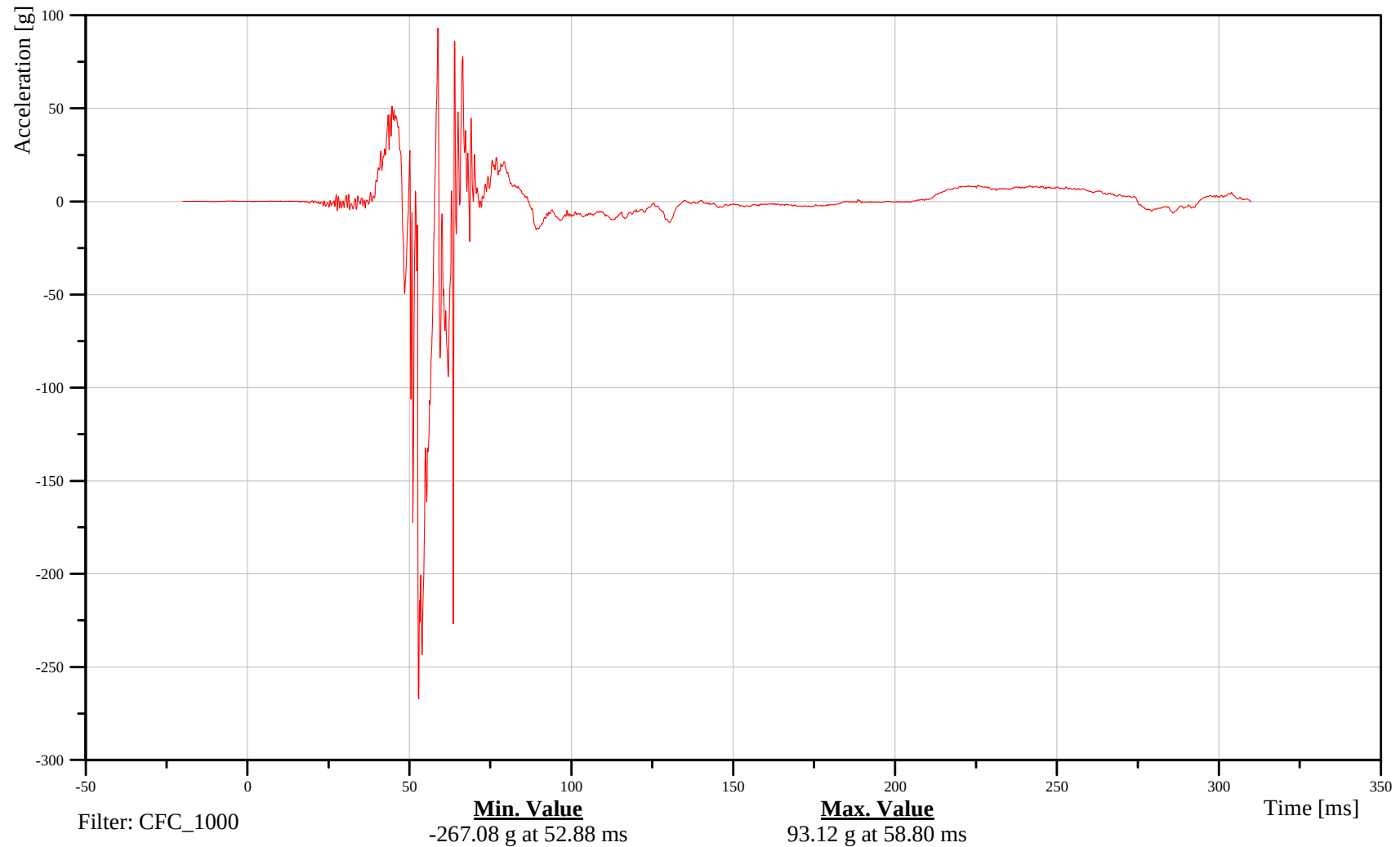
Time: 07:51

Customer: VRTC

21FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

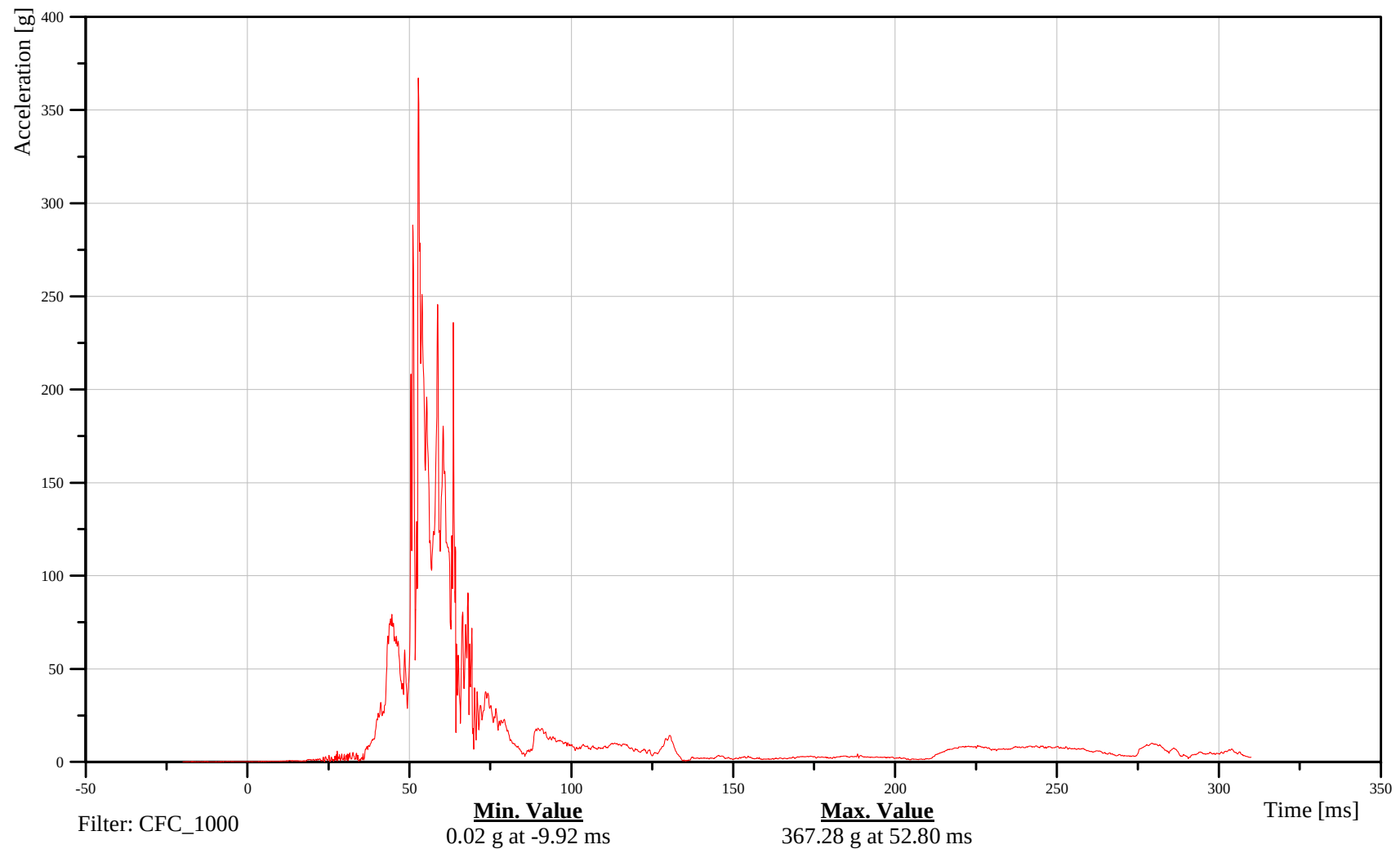
Right Foot Accel Resultant

Customer: VRTC

21FOOTRILXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

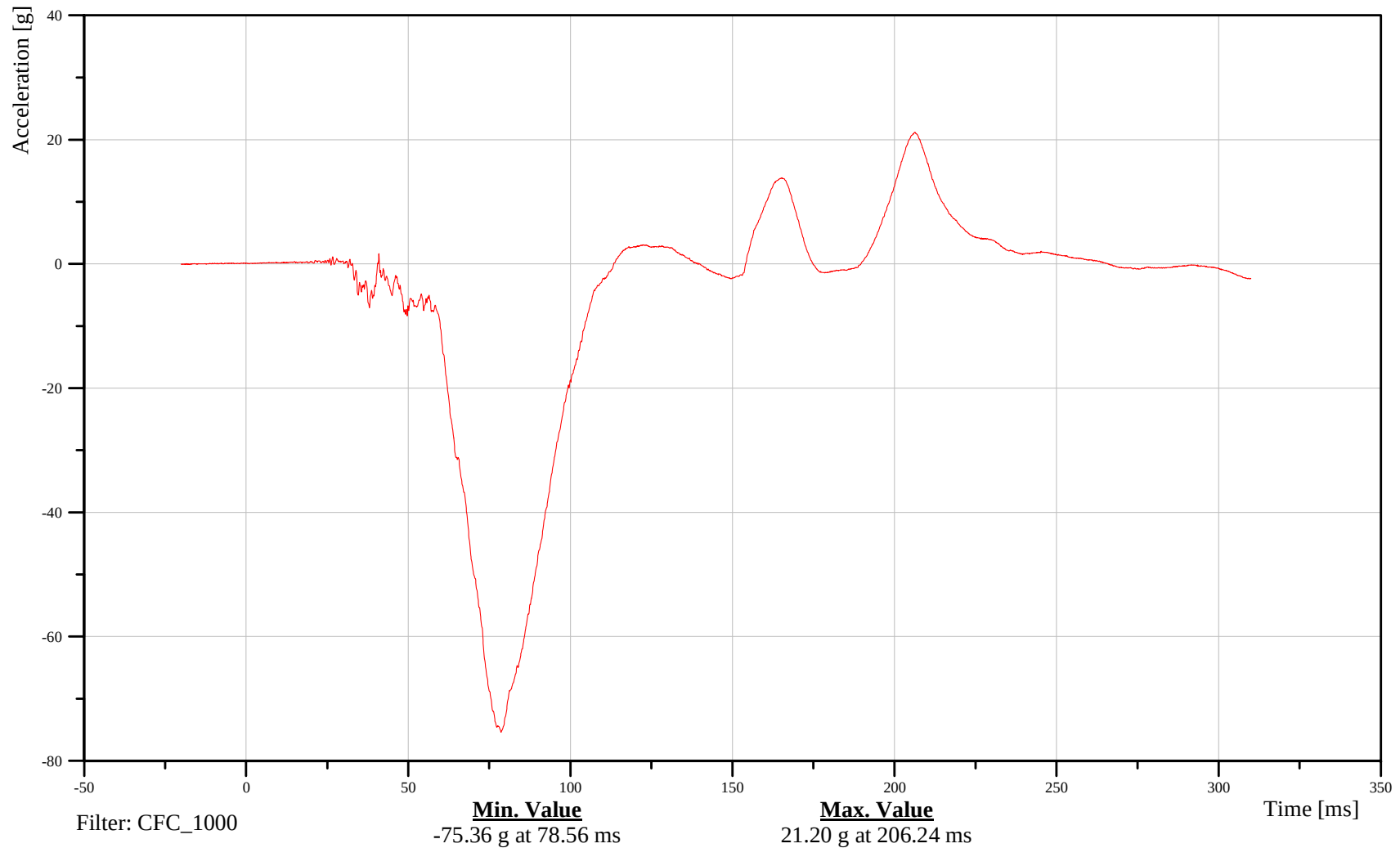
Head Accel X

Customer: VRTC

23HEADCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Y

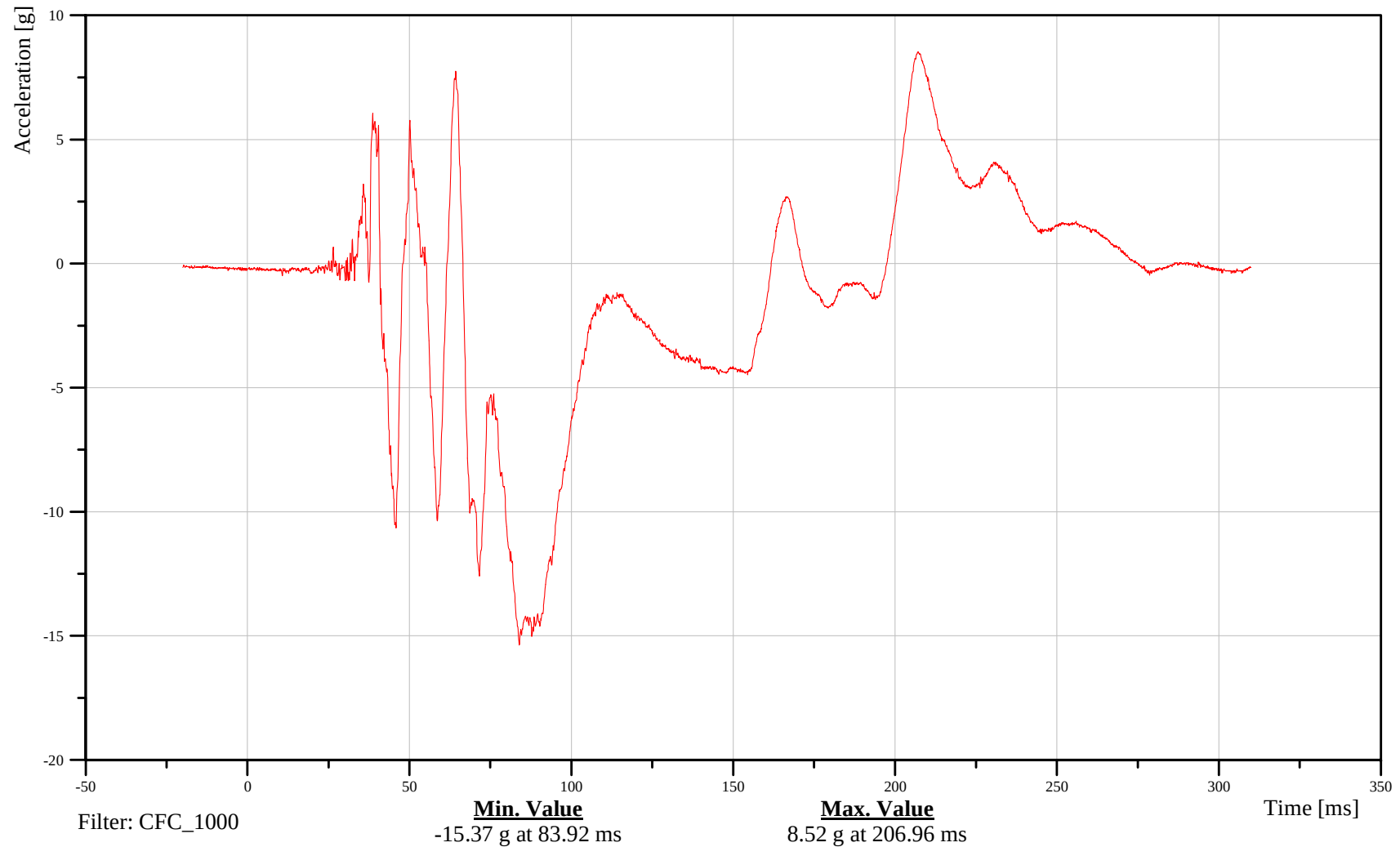
Time: 07:51

Customer: VRTC

23HEADCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

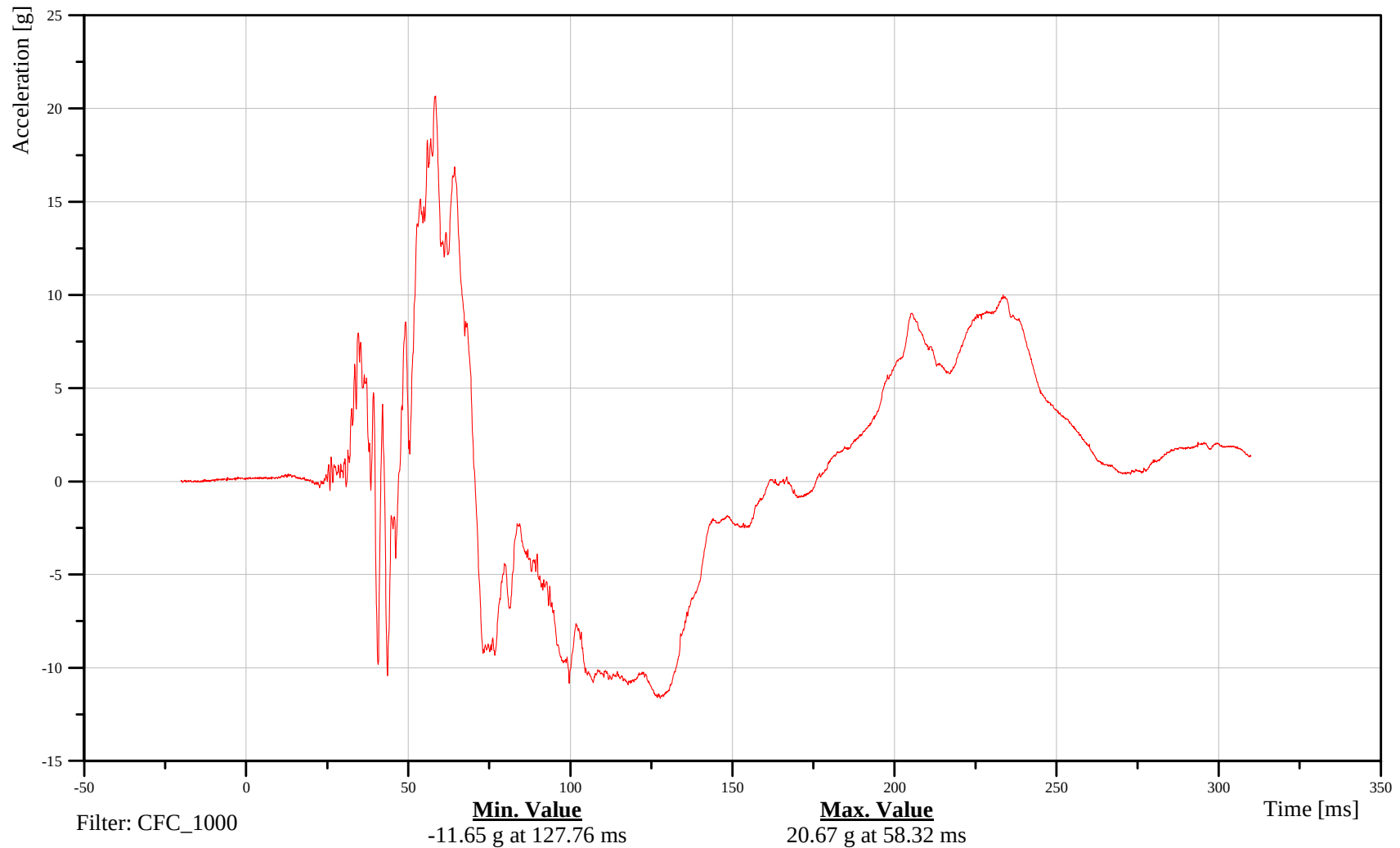
Head Accel Z

Customer: VRTC

23HEADCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Resultant

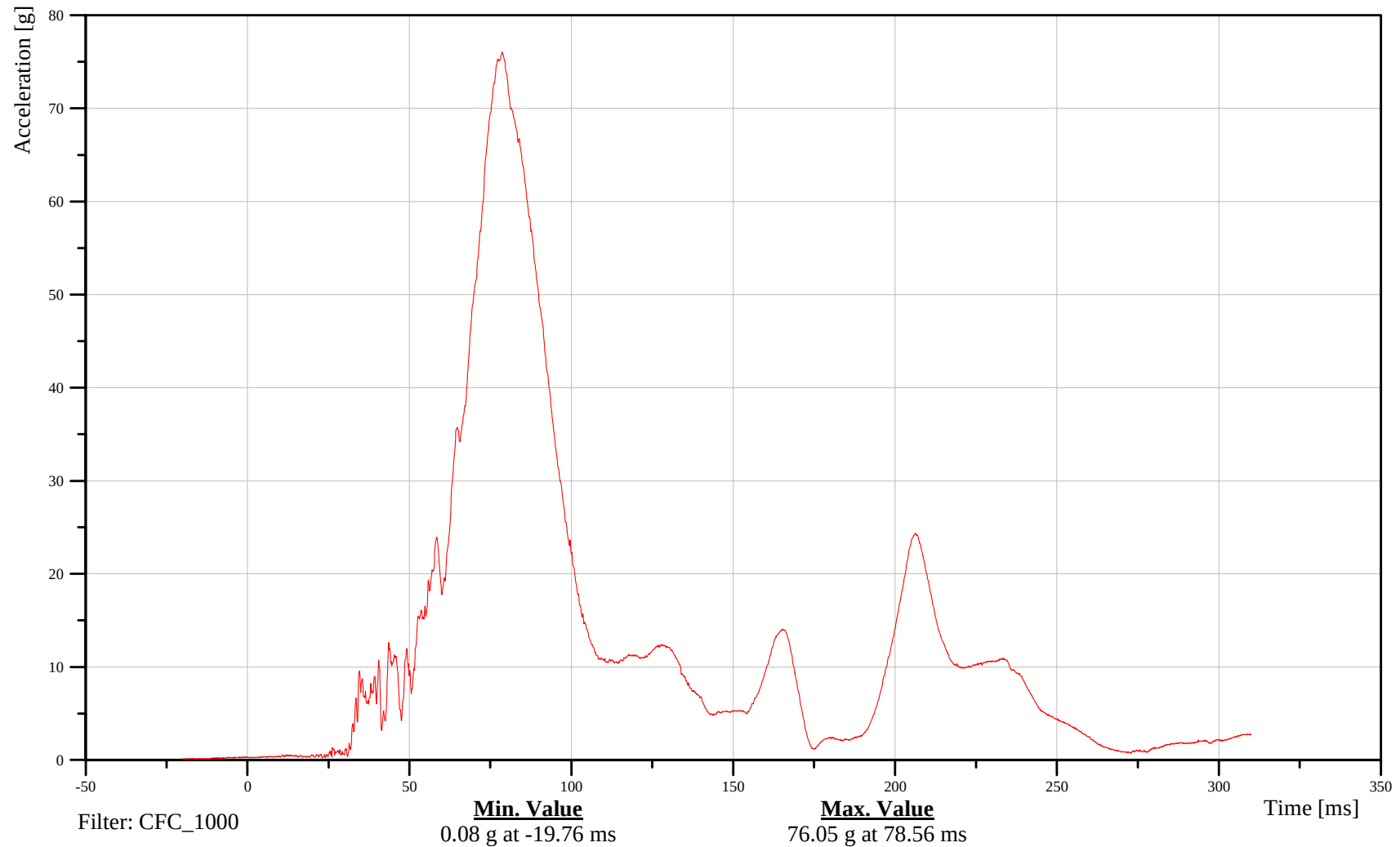
Time: 07:51

Customer: VRTC

23HEADCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

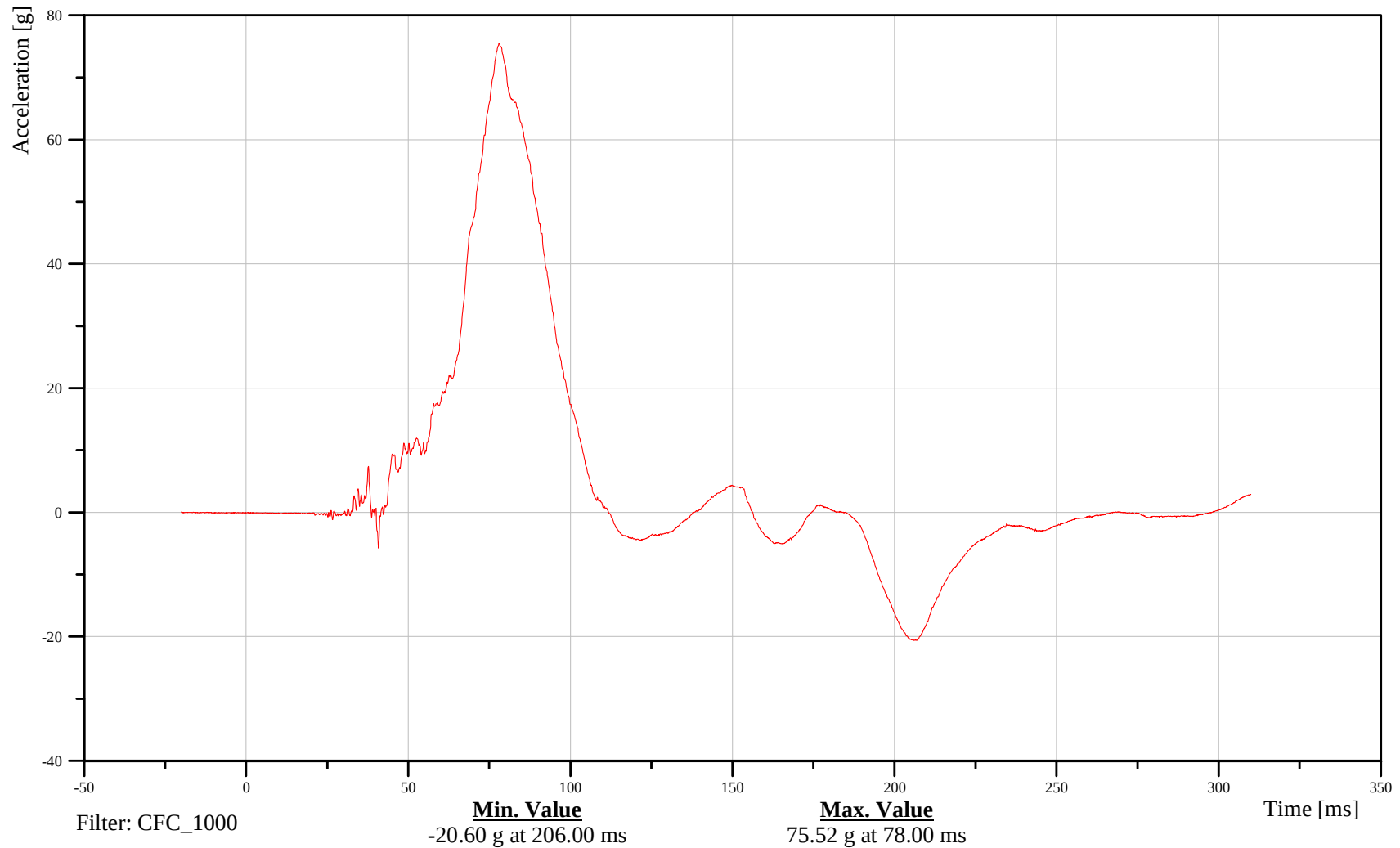
Head (FT) Accel Y

Customer: VRTC

23HEADFR00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (FT) Accel Z

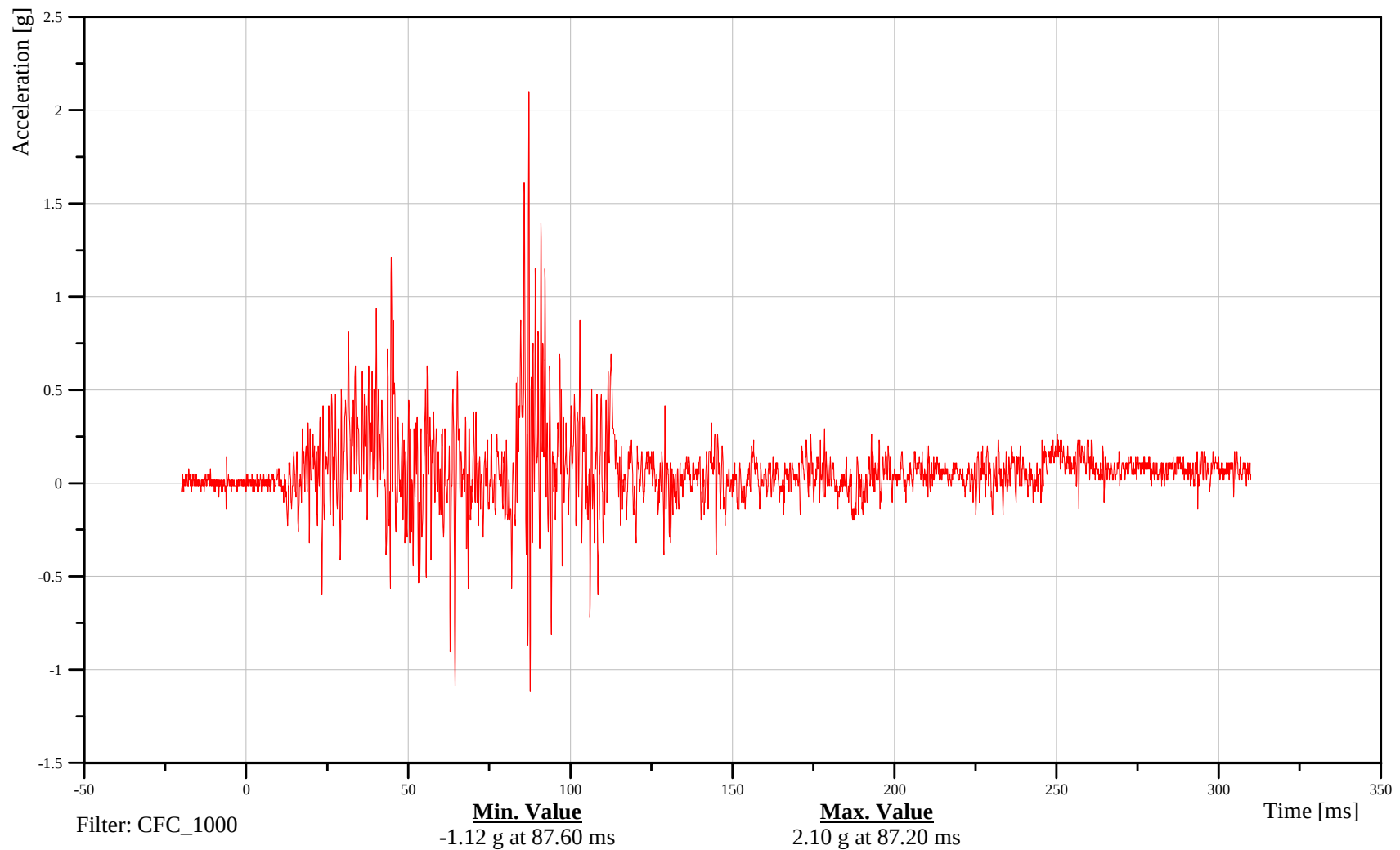
Time: 07:51

Customer: VRTC

23HEADFR00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel X

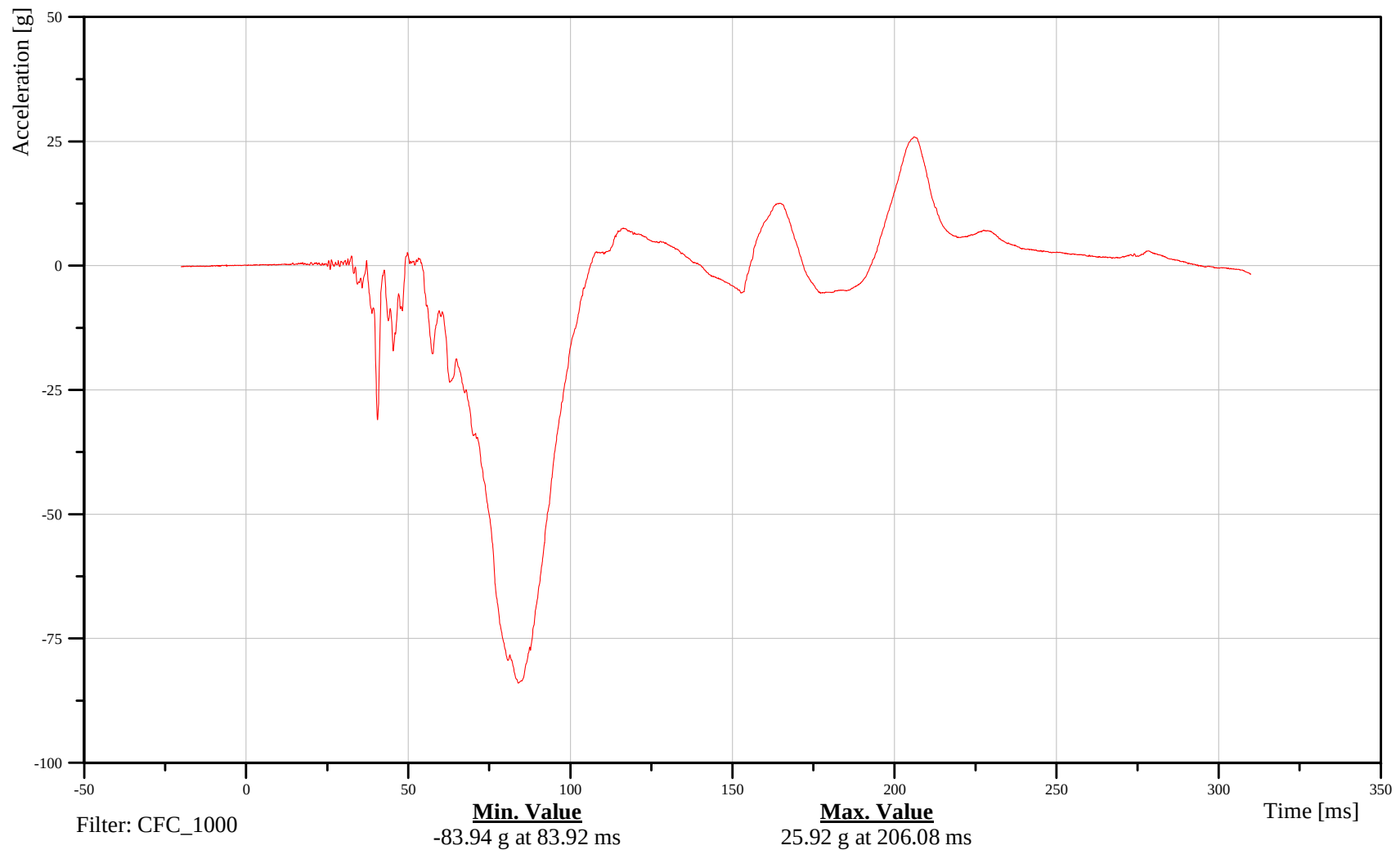
Time: 07:51

Customer: VRTC

23HEADUP00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel Y

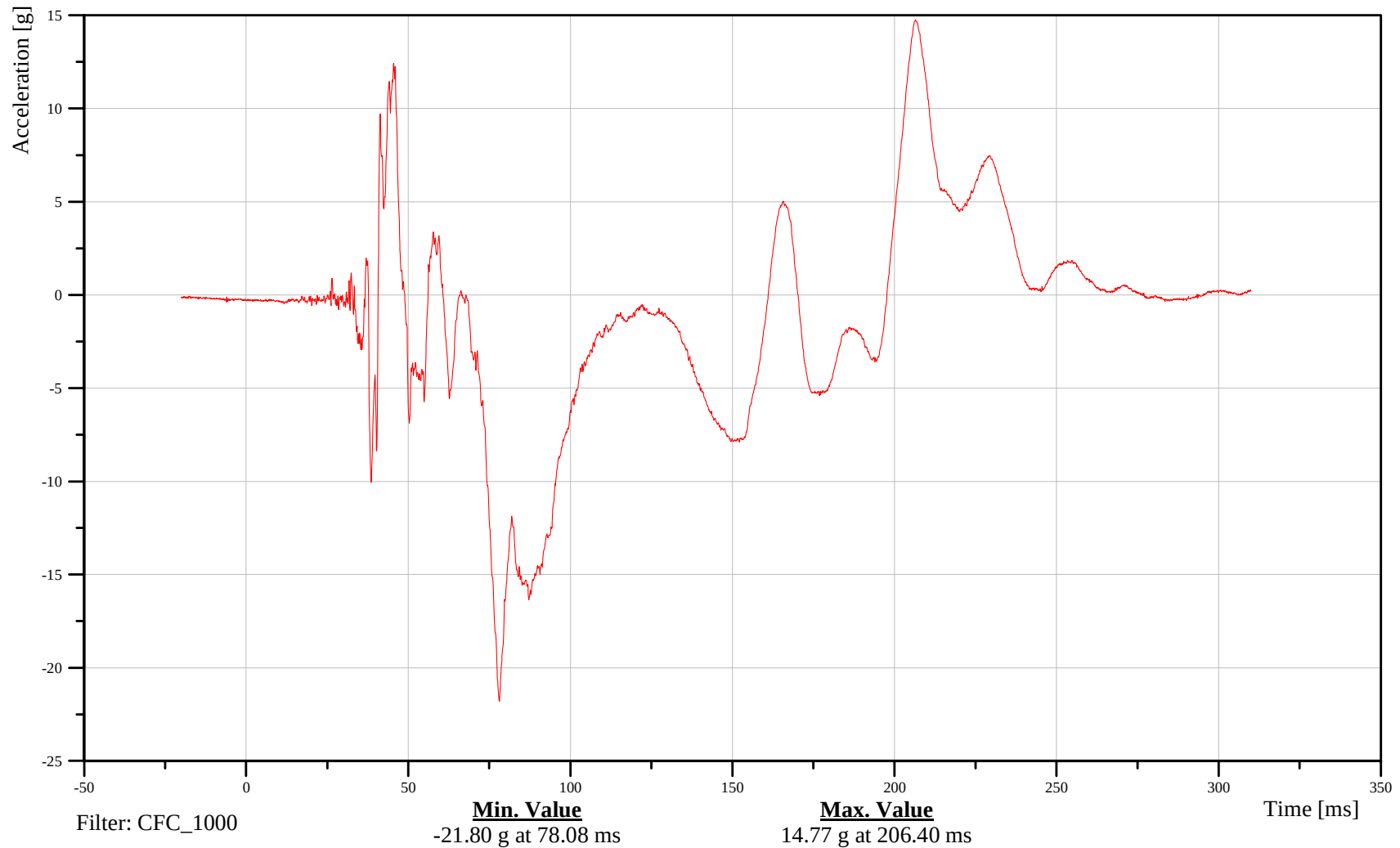
Time: 07:51

Customer: VRTC

23HEADUP00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (LT) Accel X

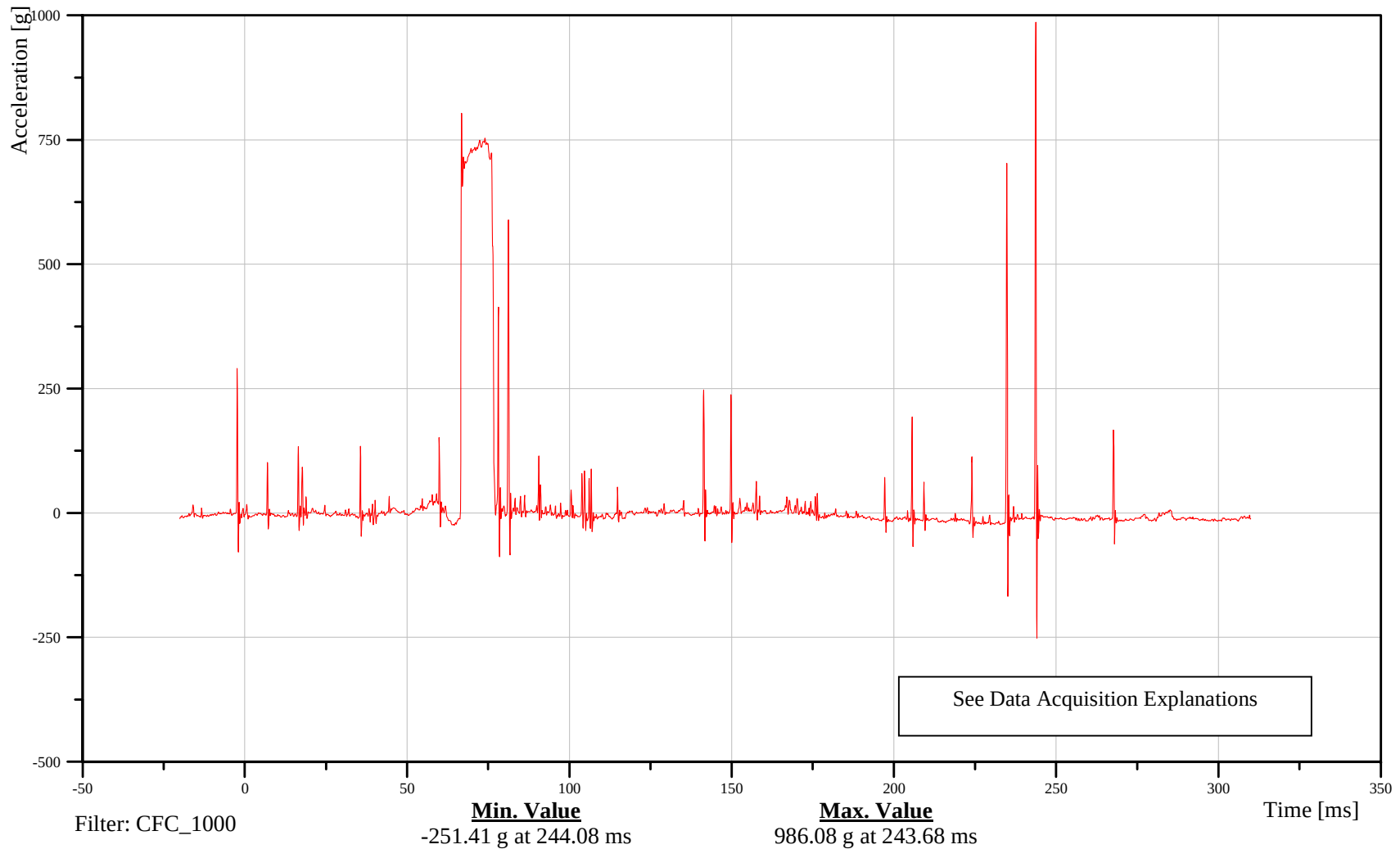
Time: 07:51

Customer: VRTC

23HEADLE00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

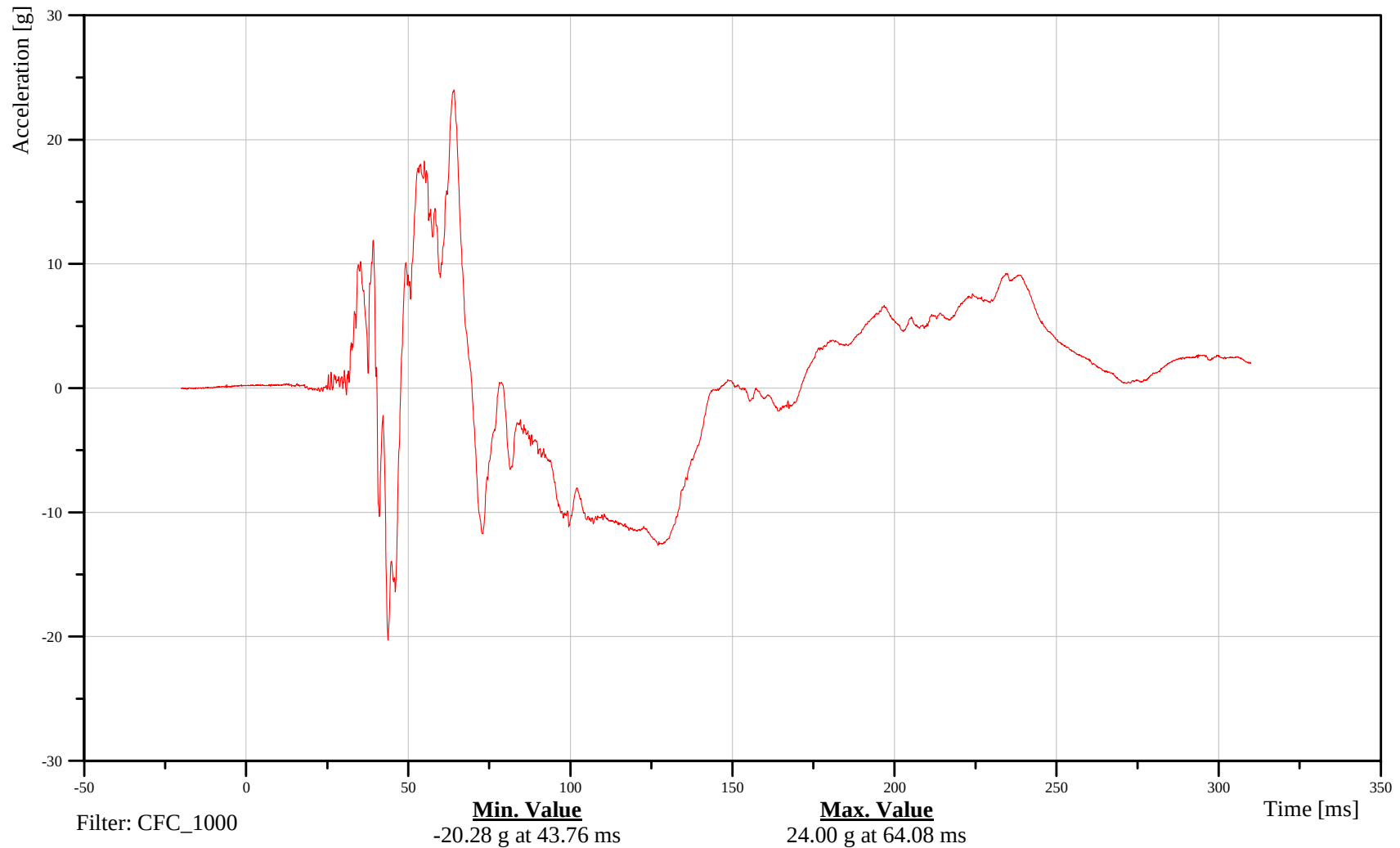
Head (LT) Accel Z

Customer: VRTC

23HEADLE00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

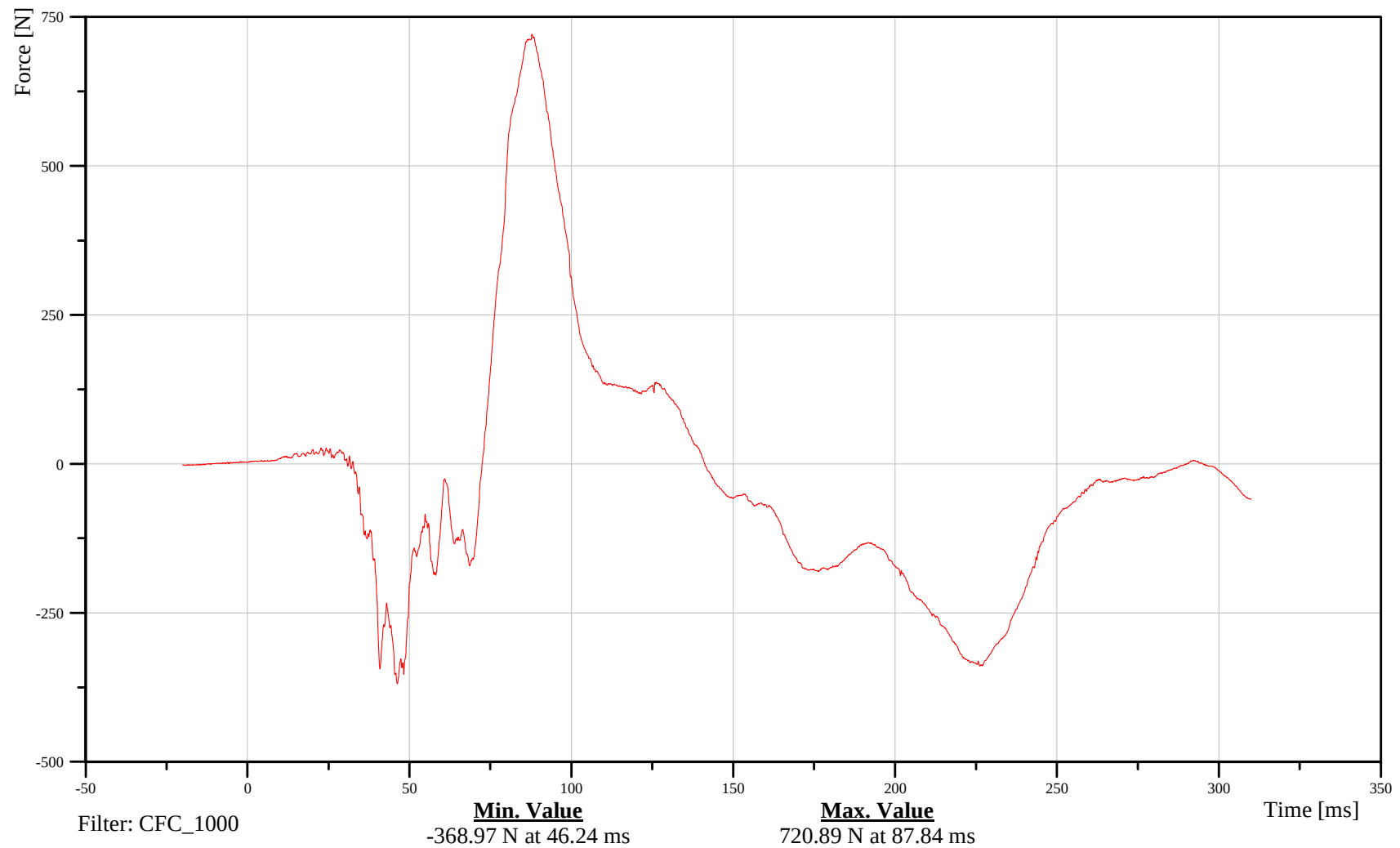
Neck Force X

Customer: VRTC

23NECKUP00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

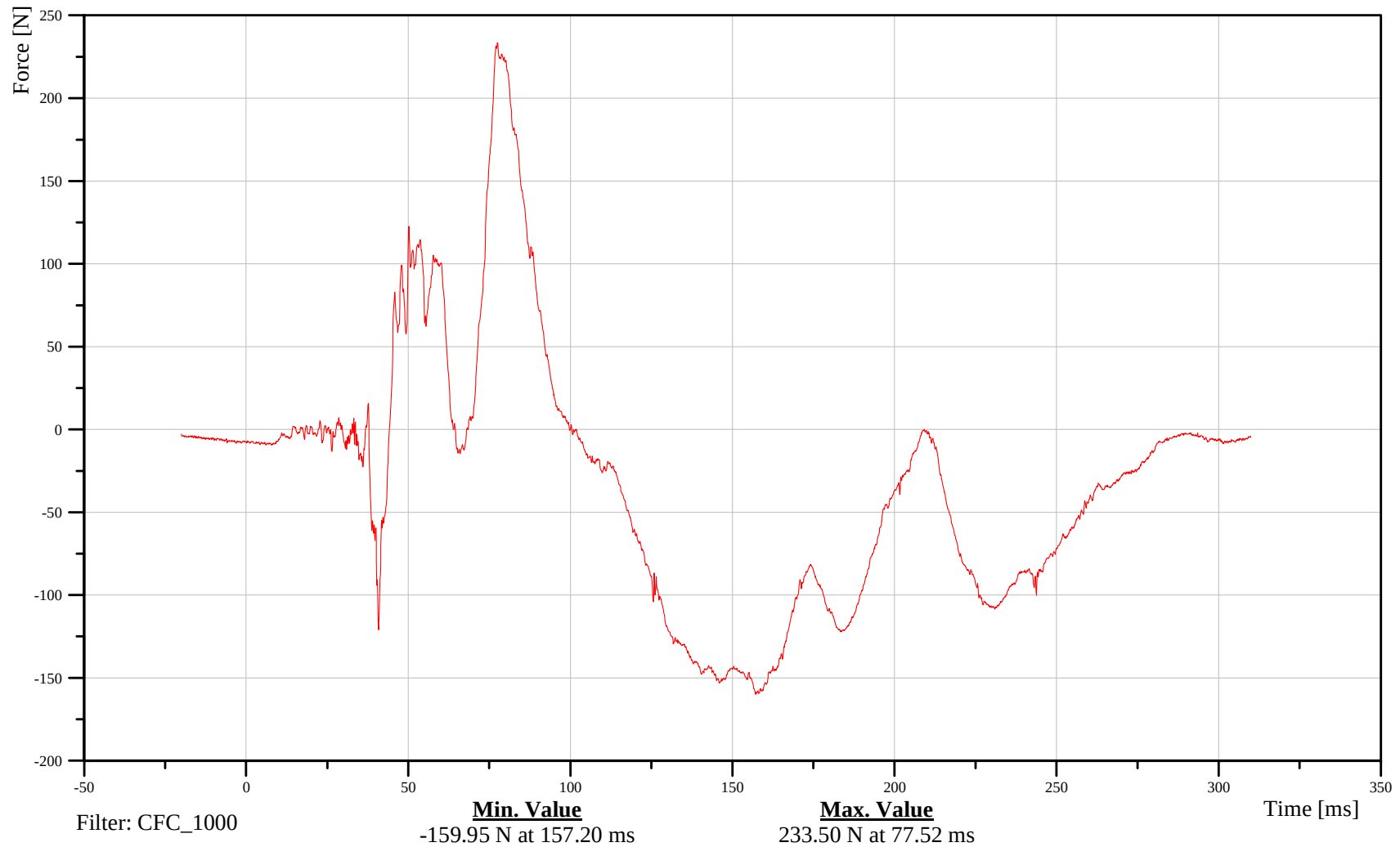
Neck Force Y

Customer: VRTC

23NECKUP00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

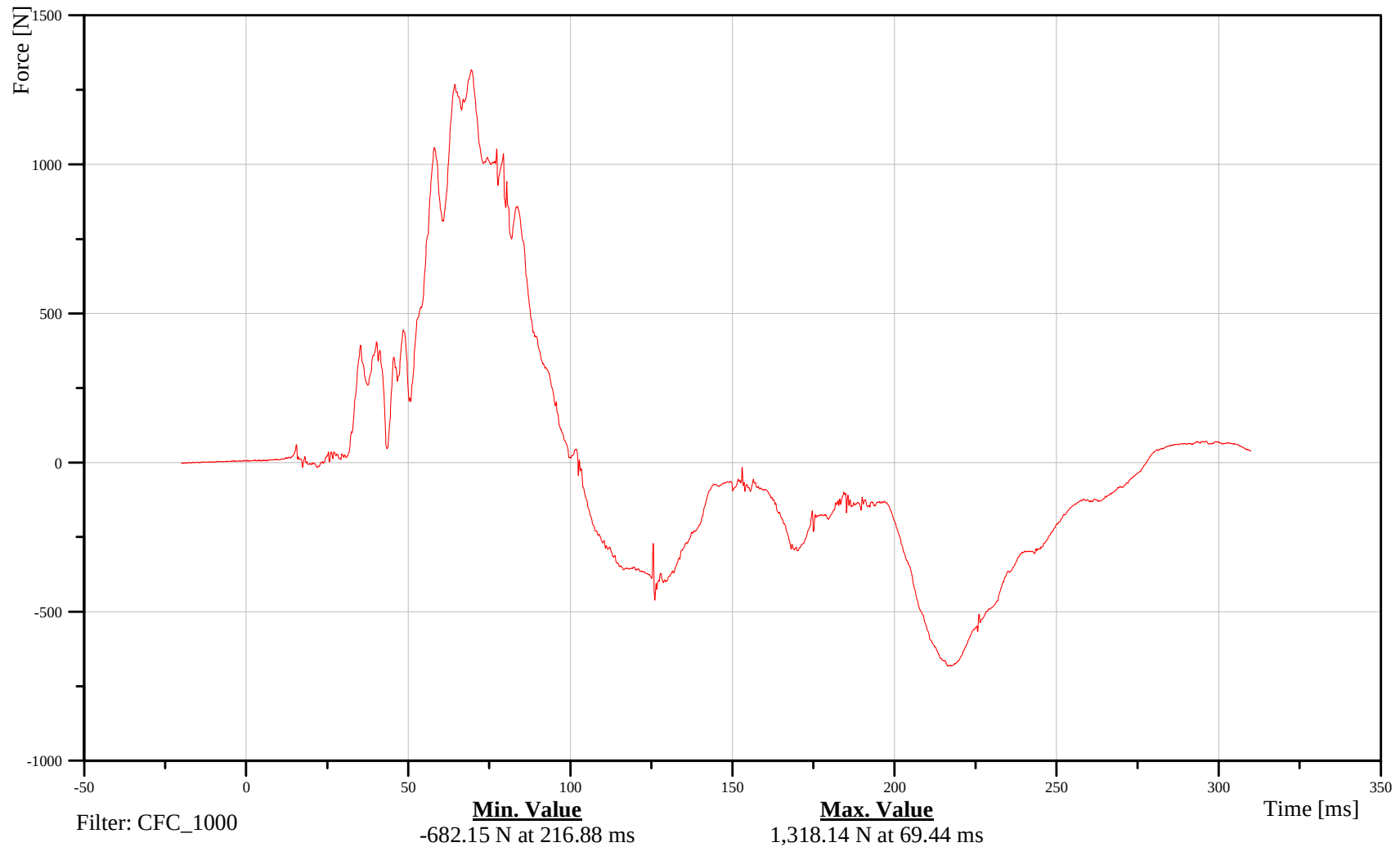
Neck Force Z

Customer: VRTC

23NECKUP00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

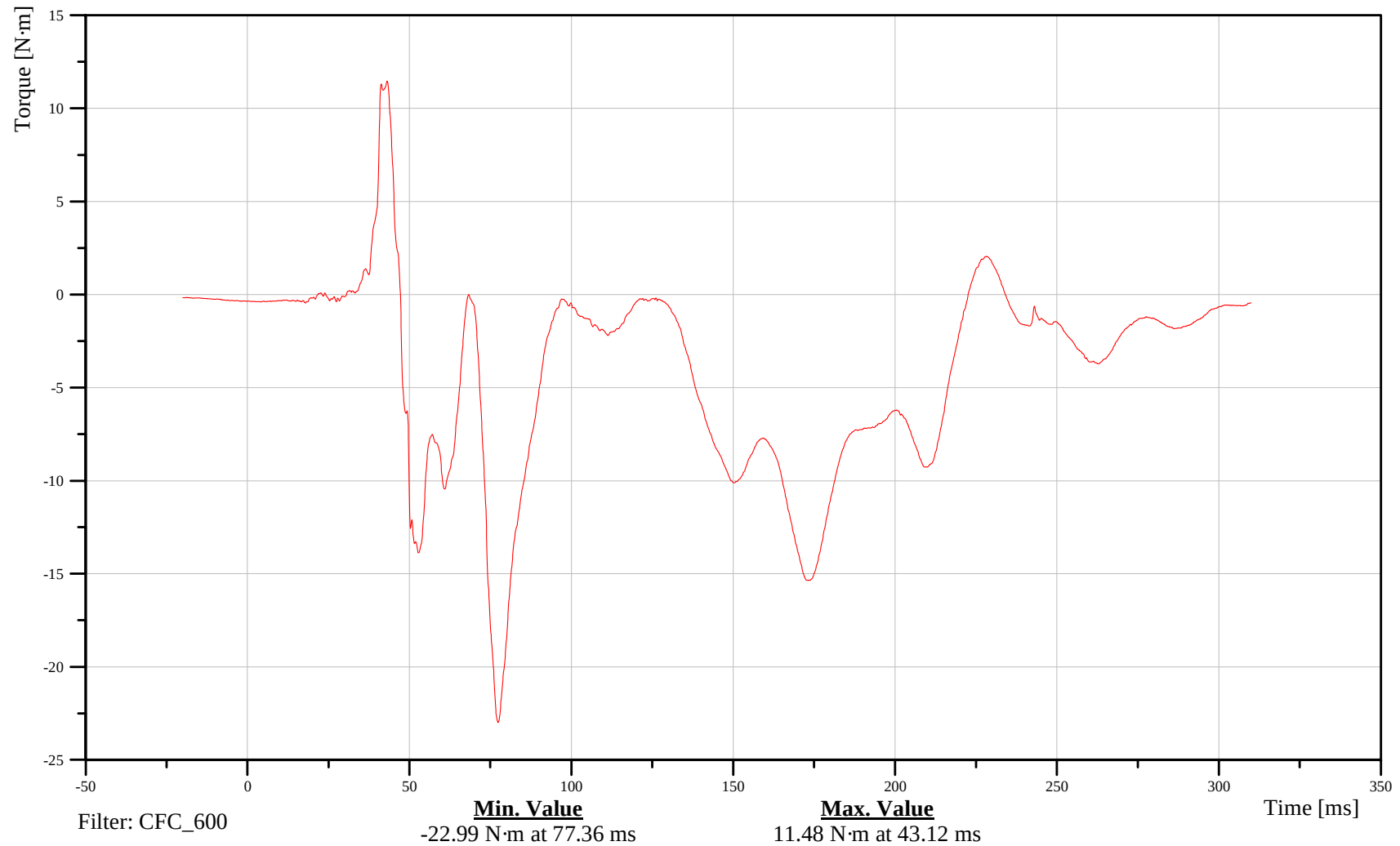
Neck Moment X

Customer: VRTC

23NECKUP00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

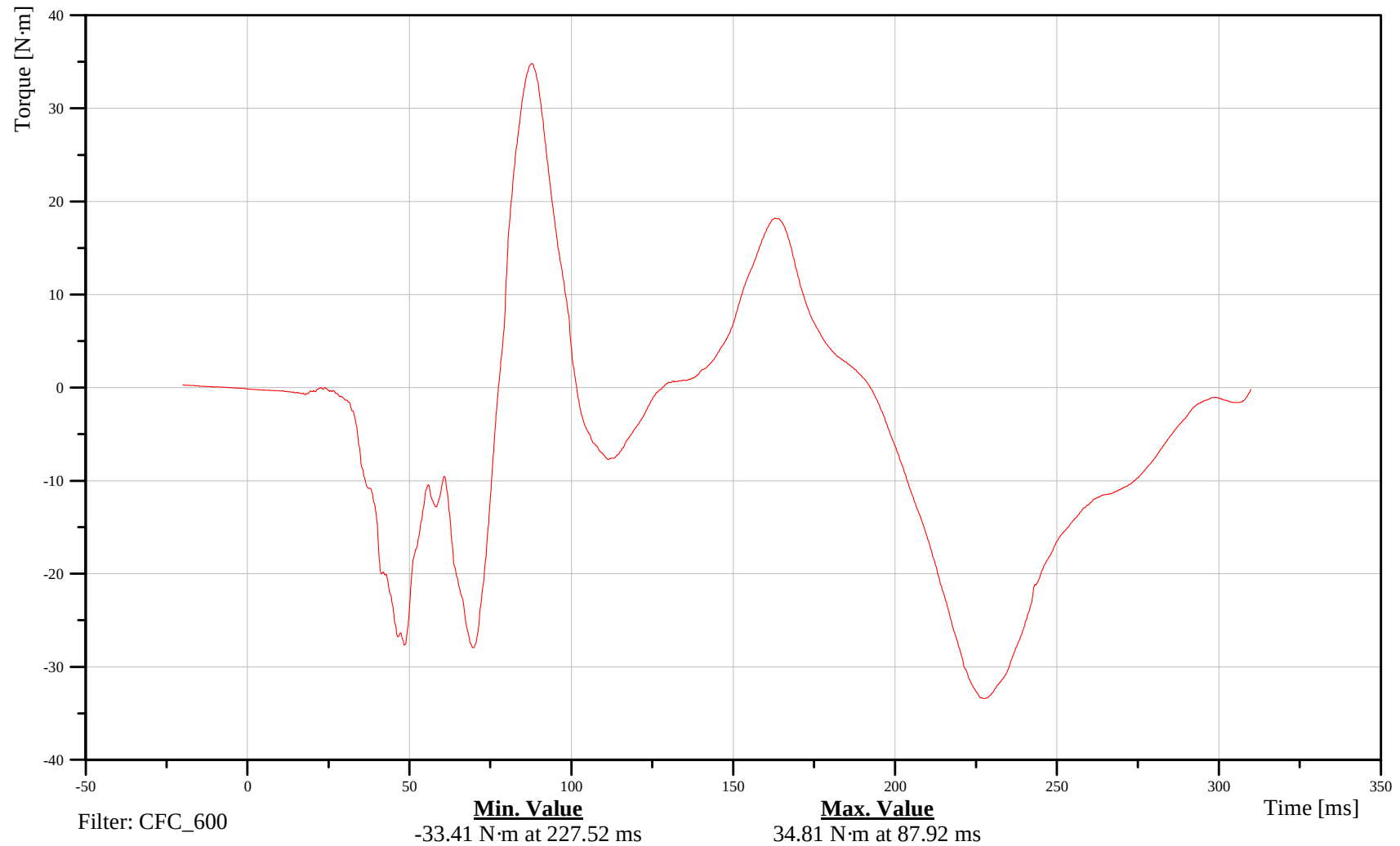
Neck Moment Y

Customer: VRTC

23NECKUP00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

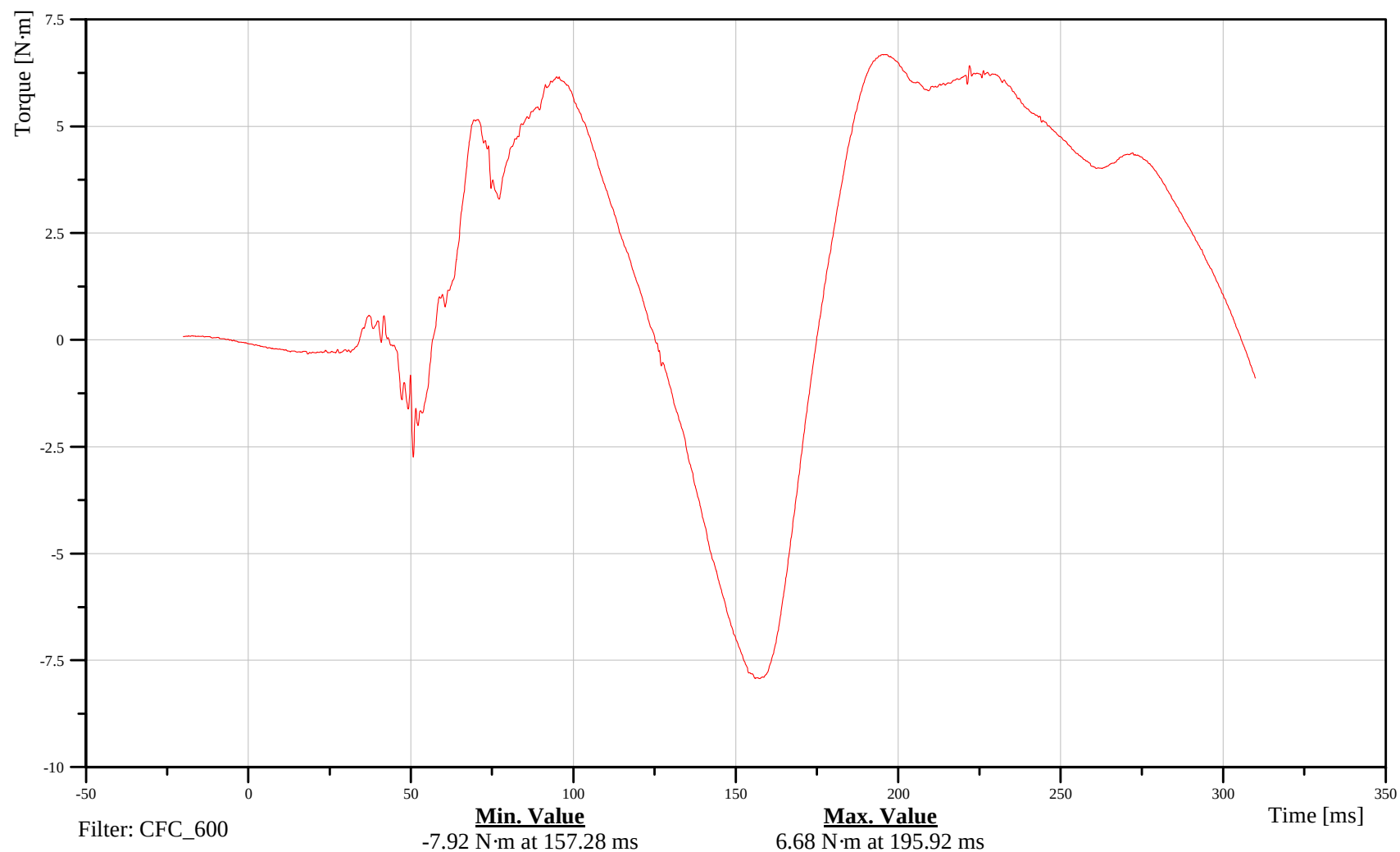
Neck Moment Z

Customer: VRTC

23NECKUP00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

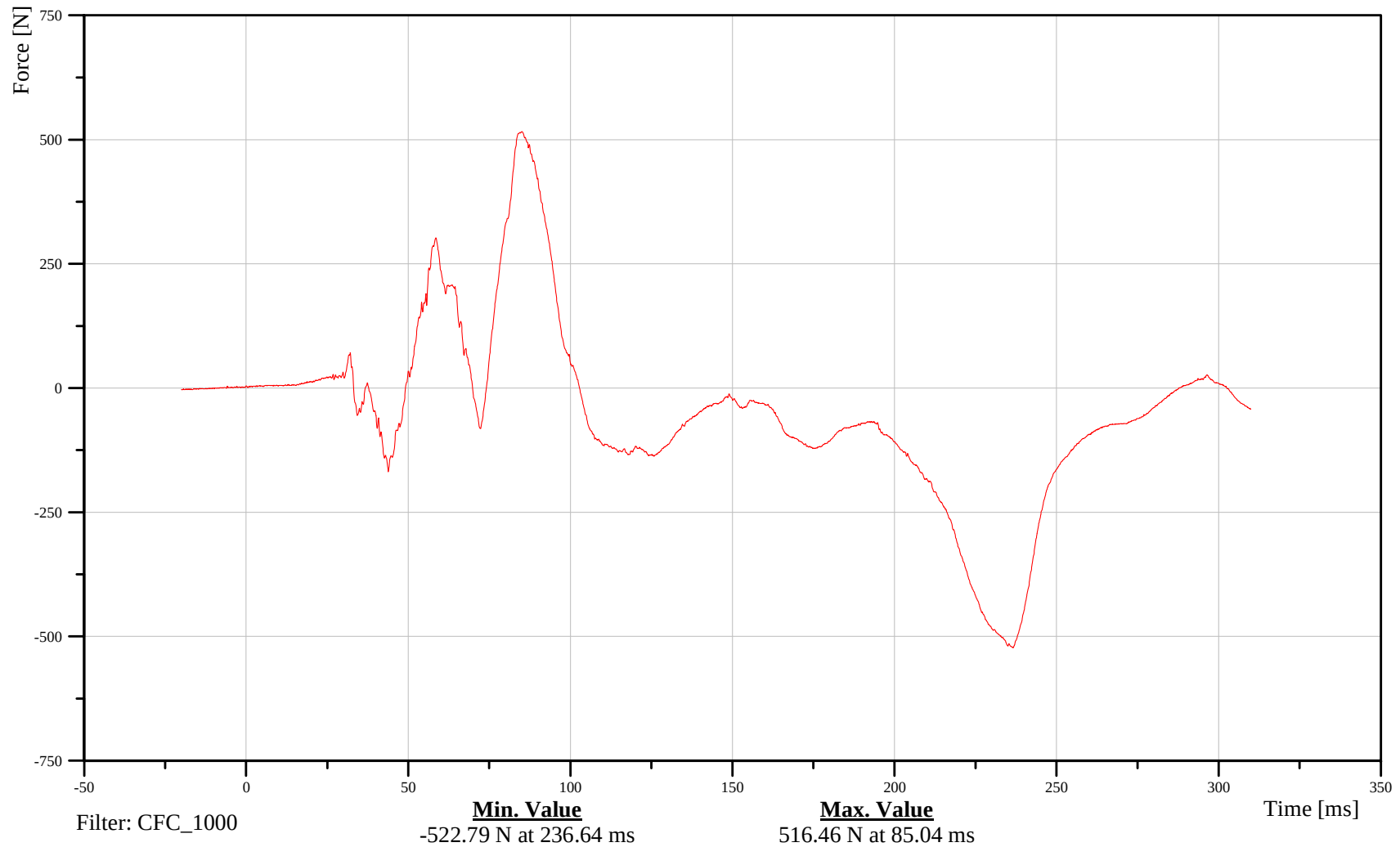
Neck Lower Force X

Customer: VRTC

23NECKLO00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force Y

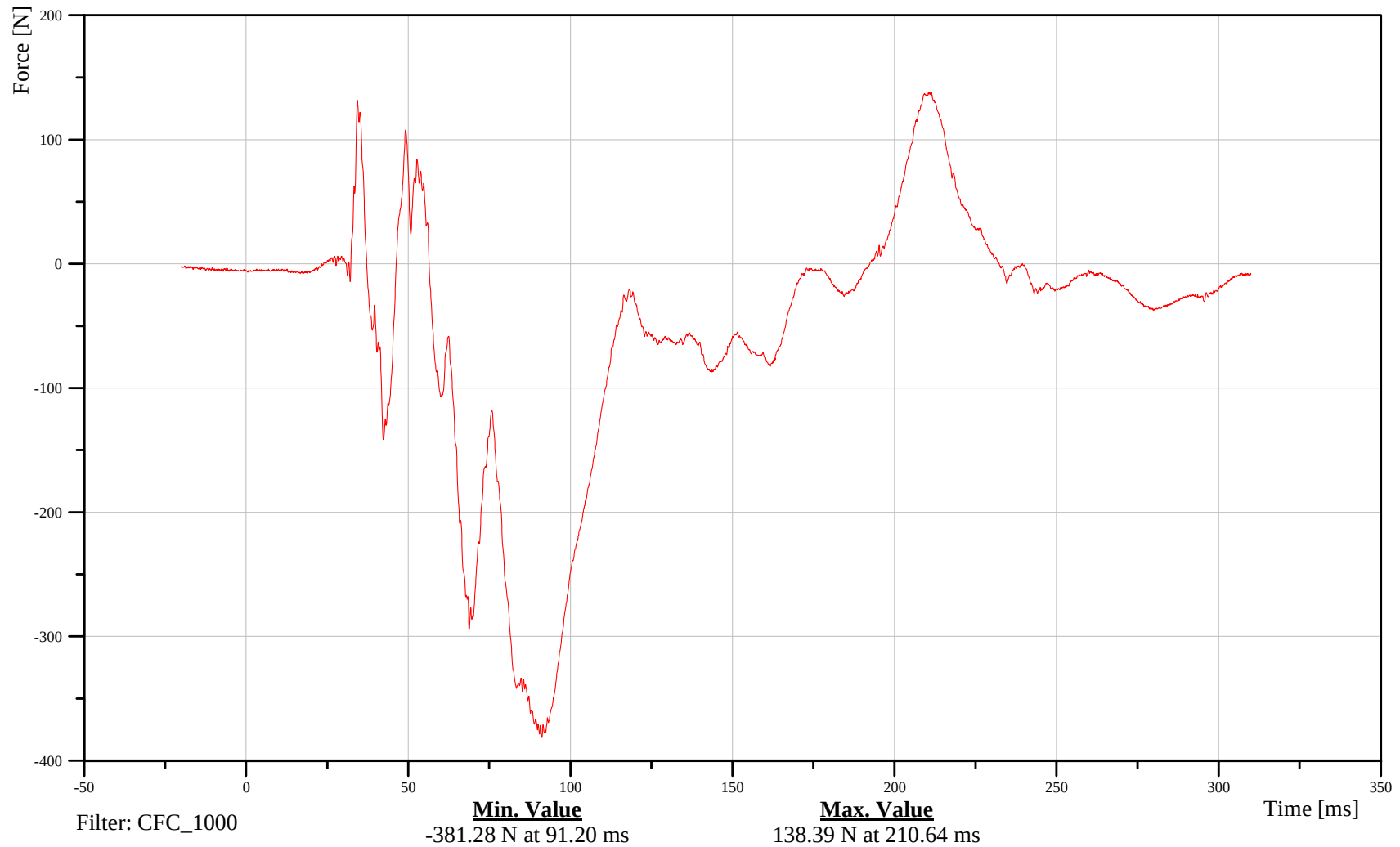
Time: 07:51

Customer: VRTC

23NECKLO00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

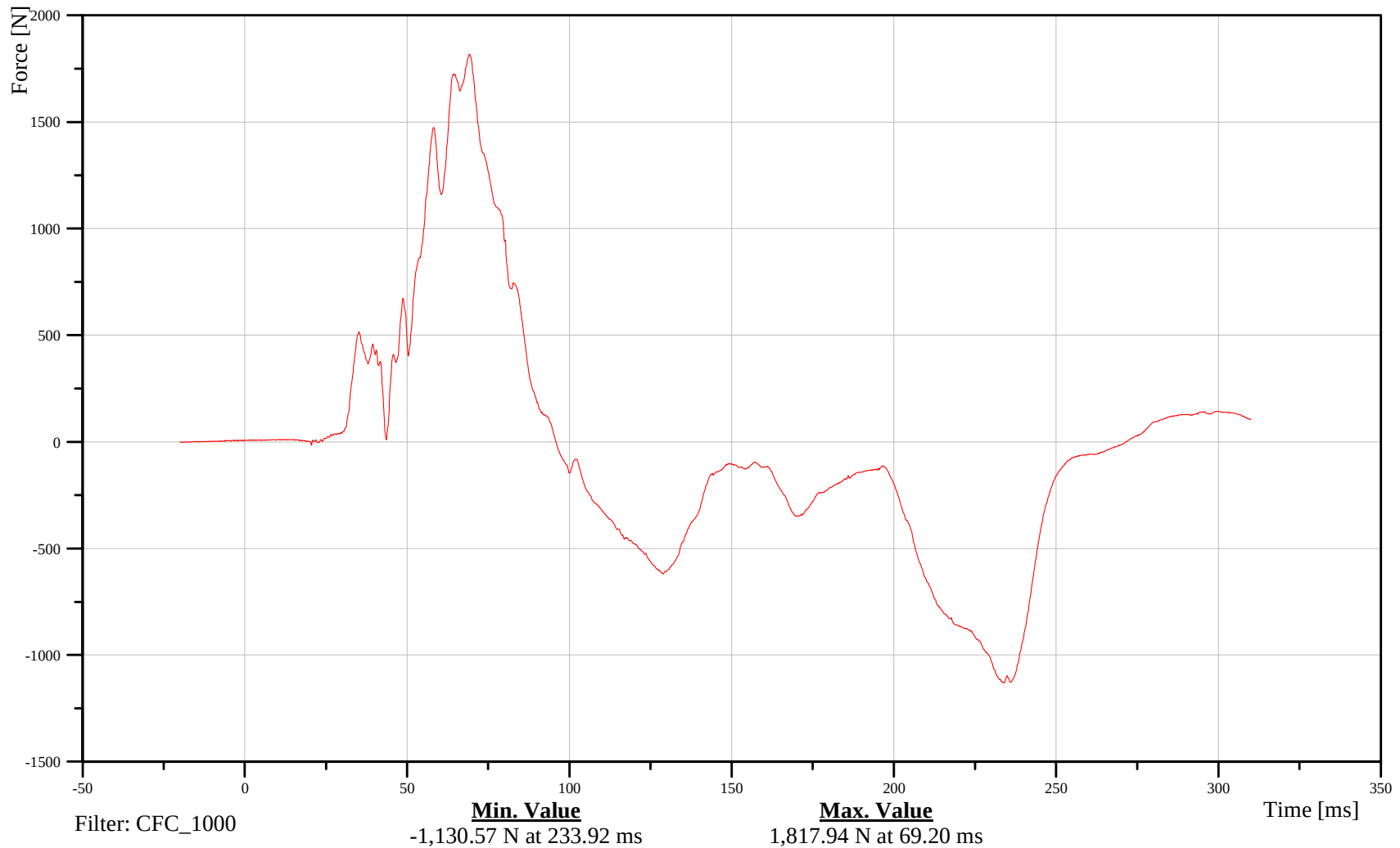
Neck Lower Force Z

Customer: VRTC

23NECKLO00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

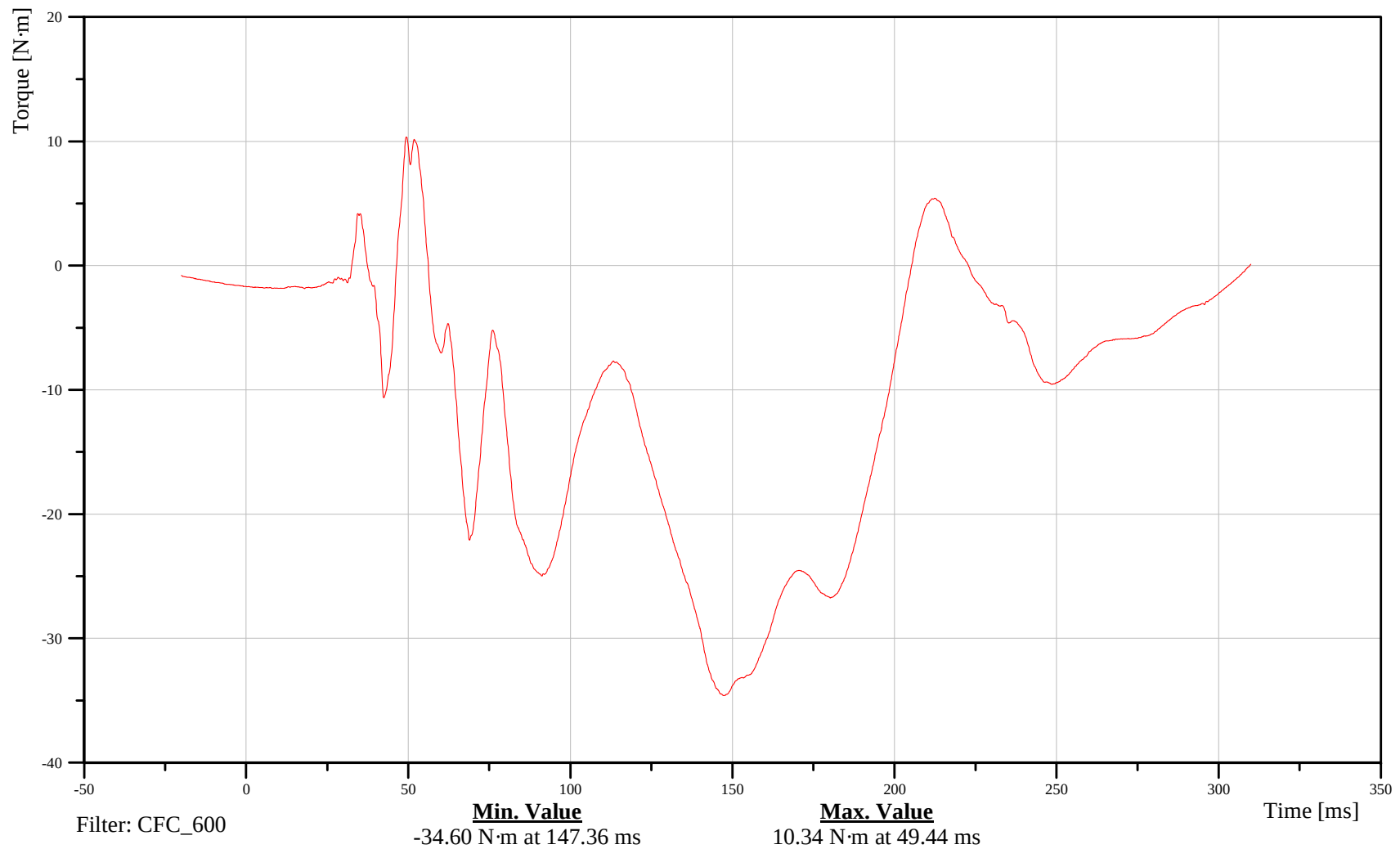
Neck Lower Moment X

Customer: VRTC

23NECKLO00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

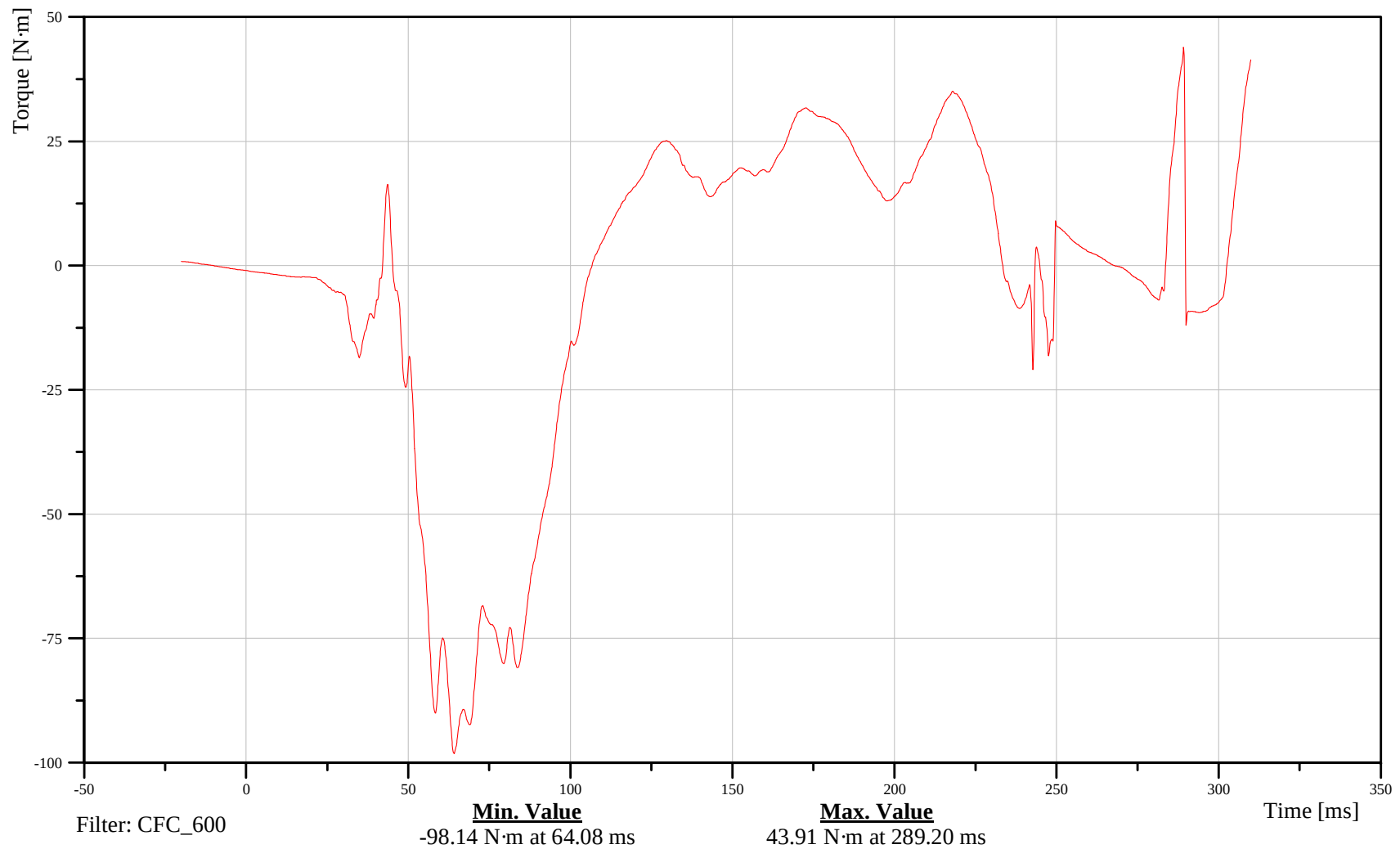
Neck Lower Moment Y

Customer: VRTC

23NECKLO00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

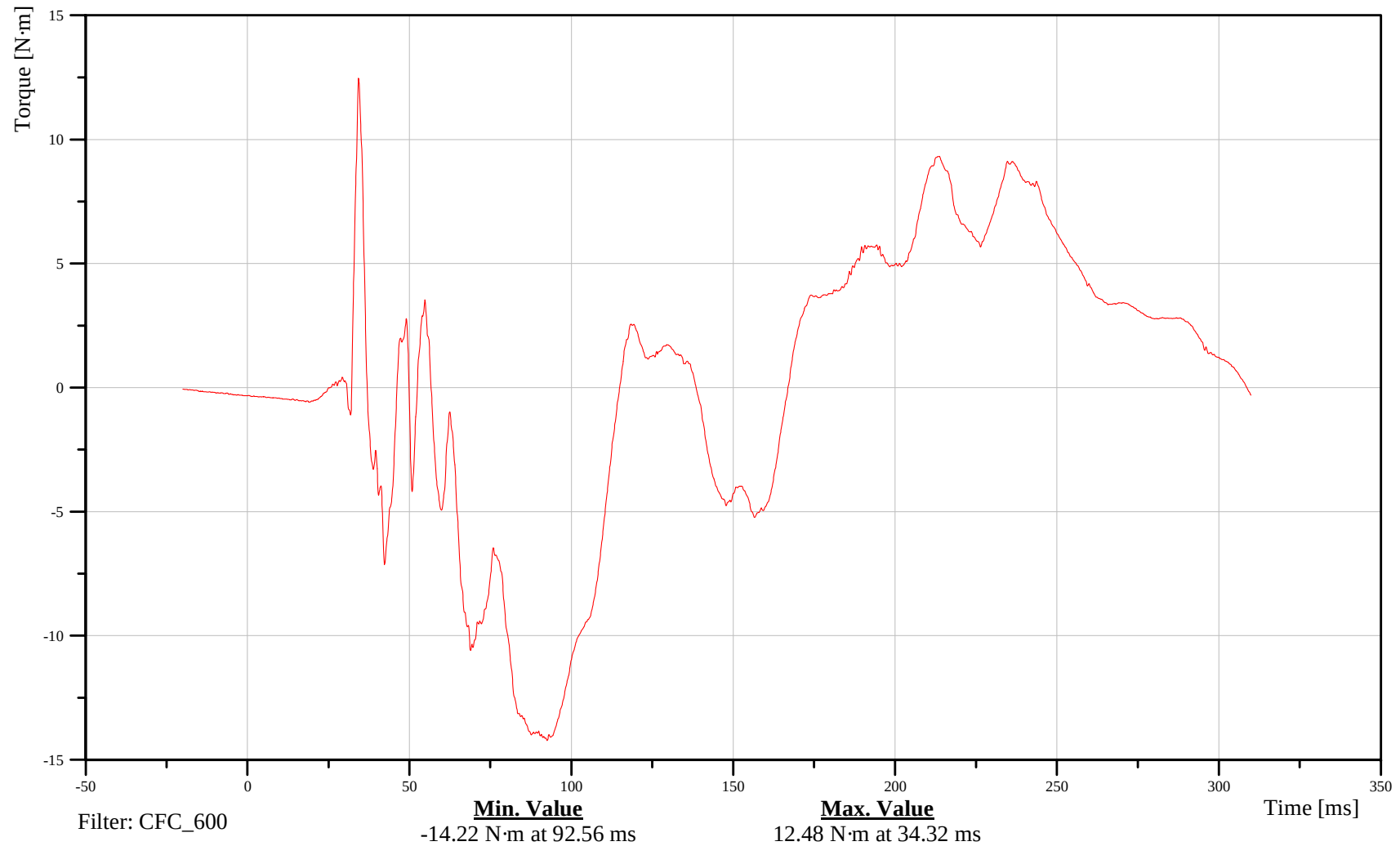
Neck Lower Moment Z

Customer: VRTC

23NECKLO00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

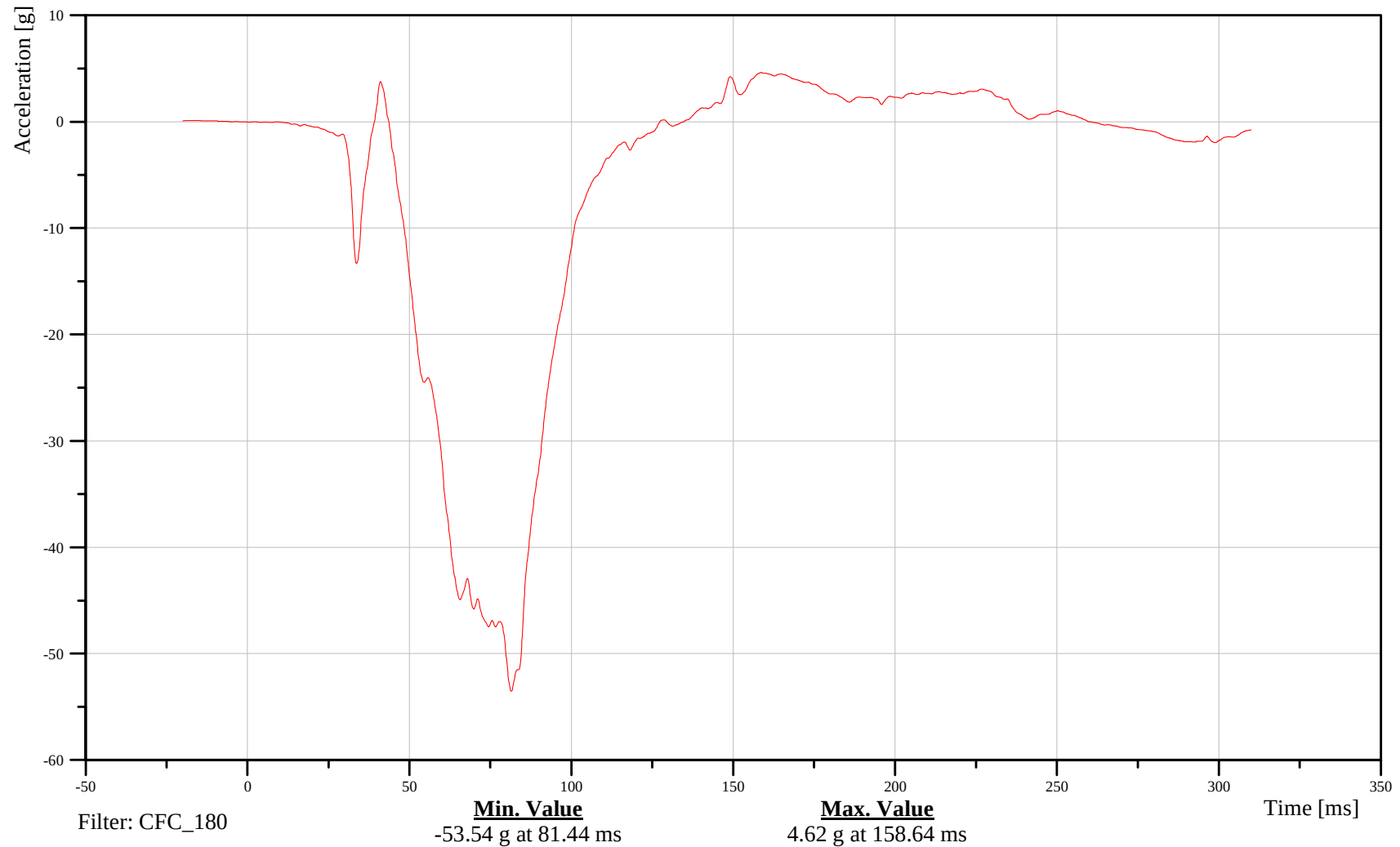
Chest Accel X

Customer: VRTC

23CHSTCG00HFACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

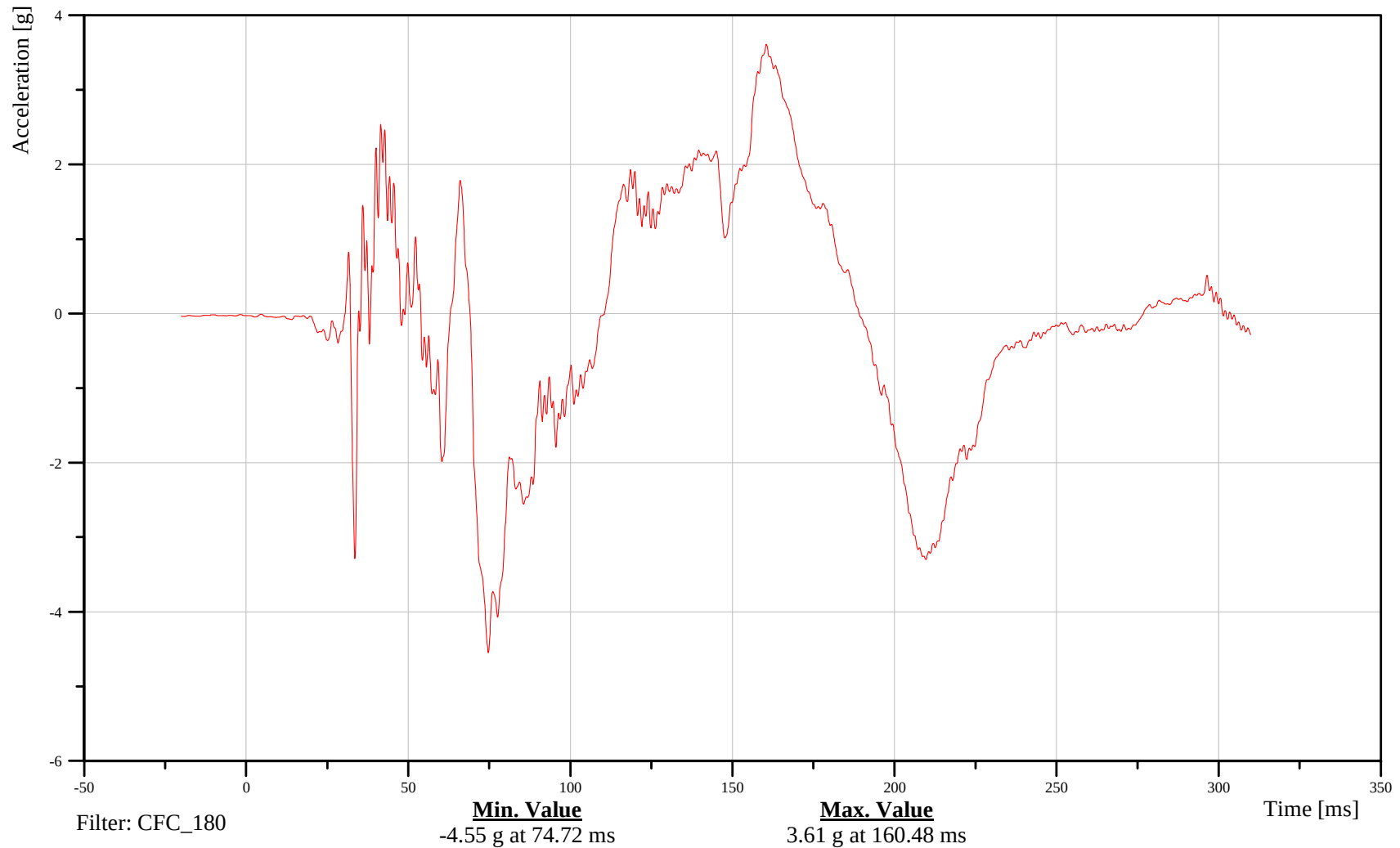
Chest Accel Y

Customer: VRTC

23CHSTCG00HFACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

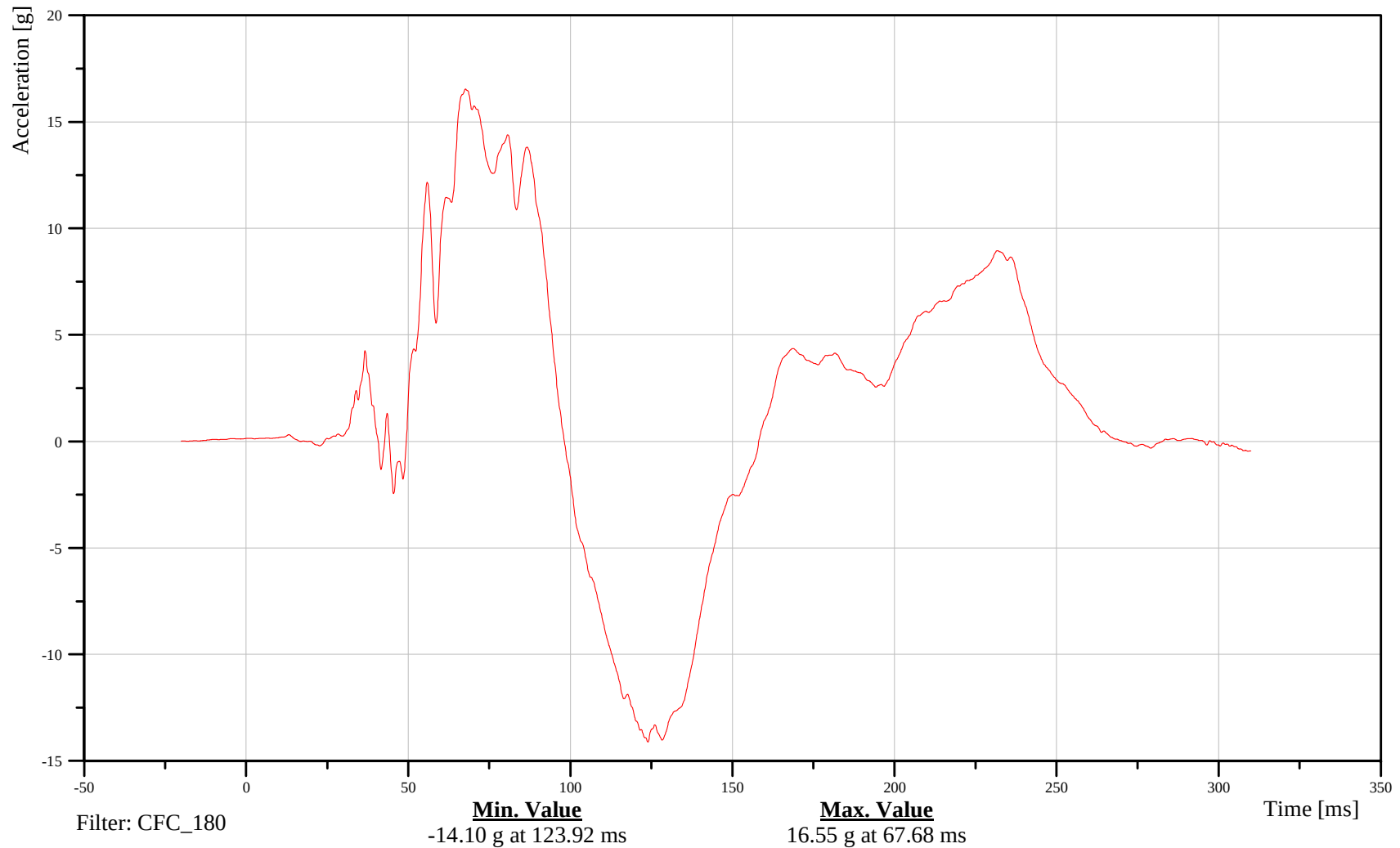
Chest Accel Z

Customer: VRTC

23CHSTCG00HFACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Resultant

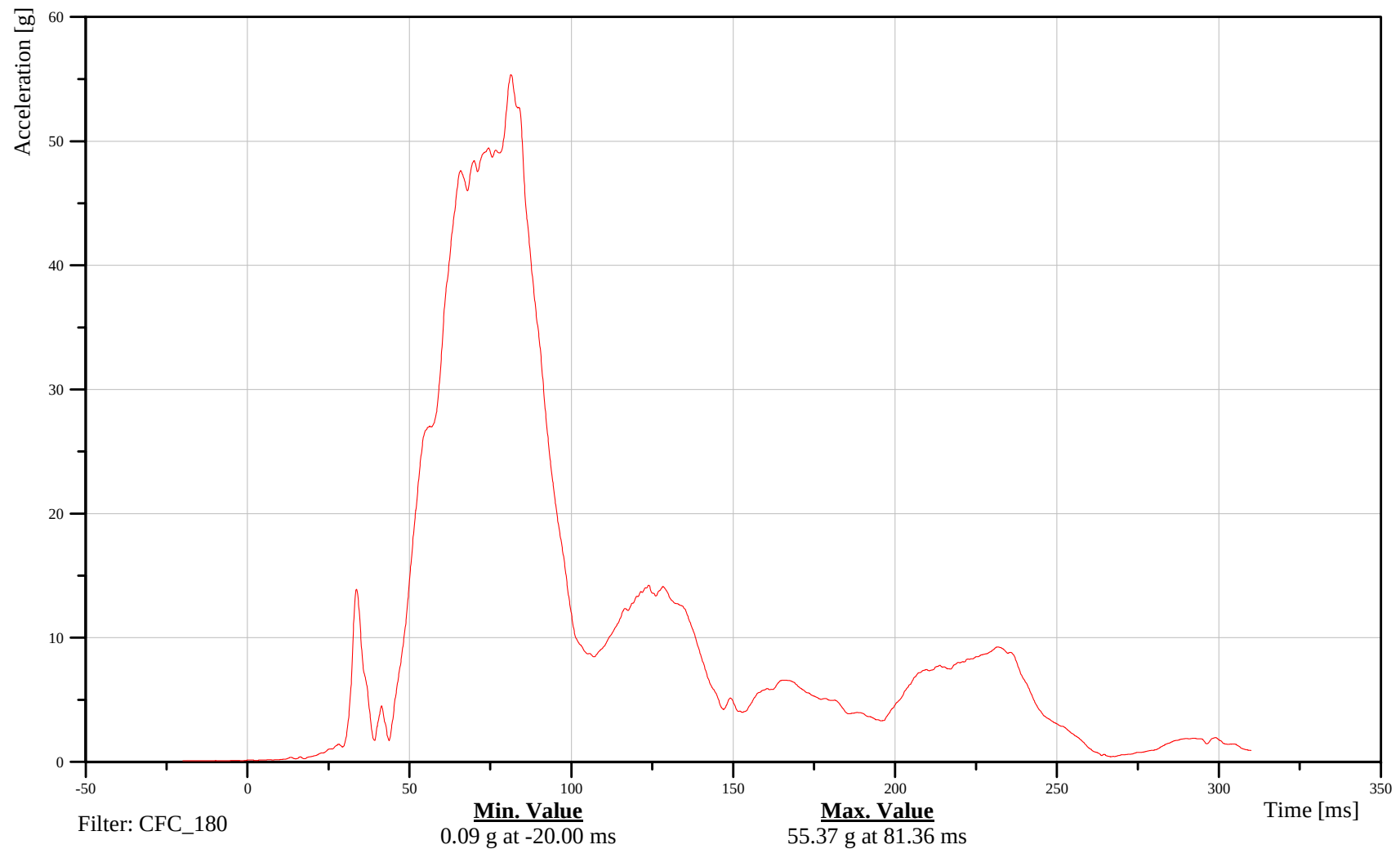
Time: 07:51

Customer: VRTC

23CHSTCG00HFACRC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

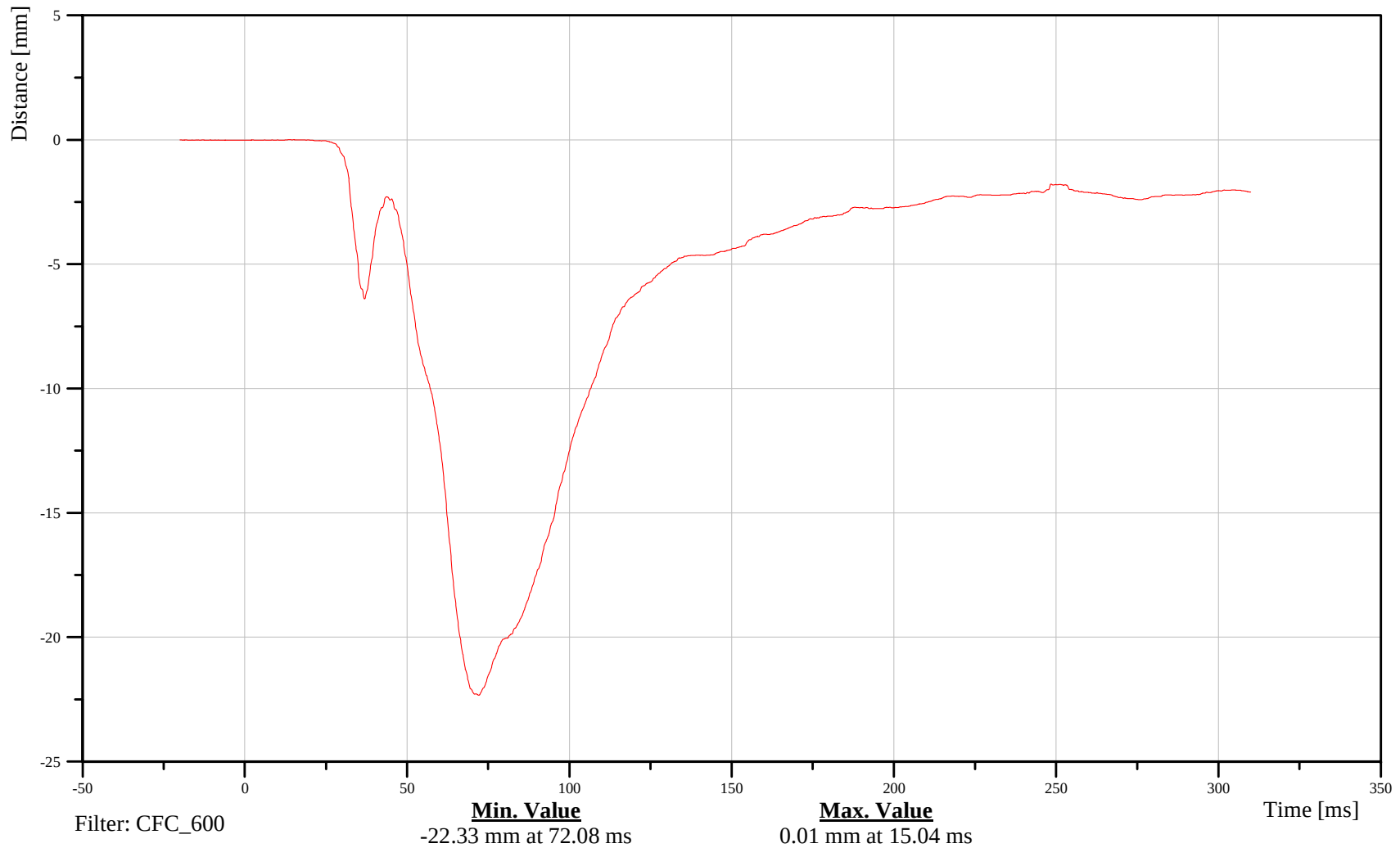
Chest Deflection X

Customer: VRTC

23CHST0000HFDSXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

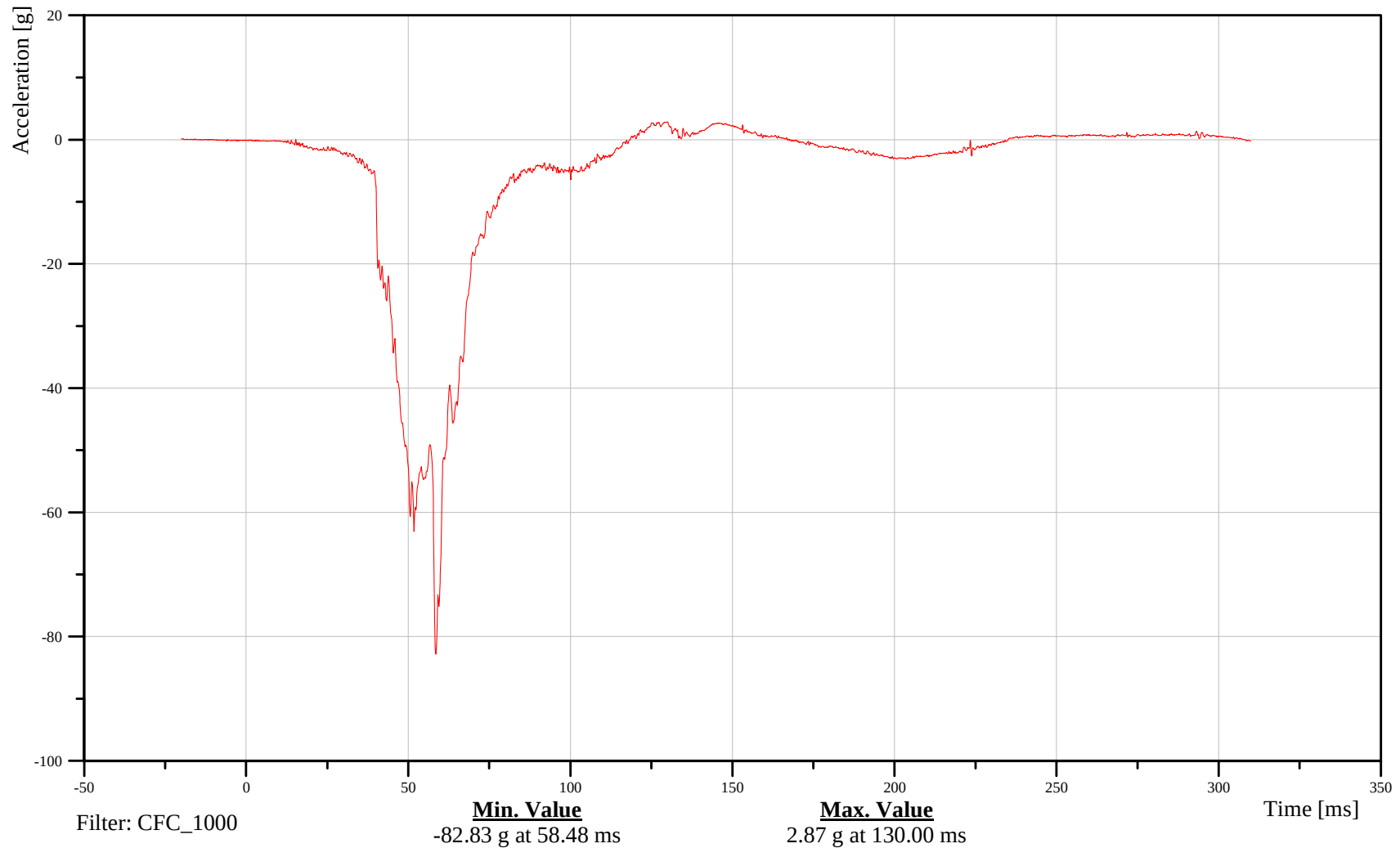
Pelvis Accel X

Customer: VRTC

23PELVCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Y

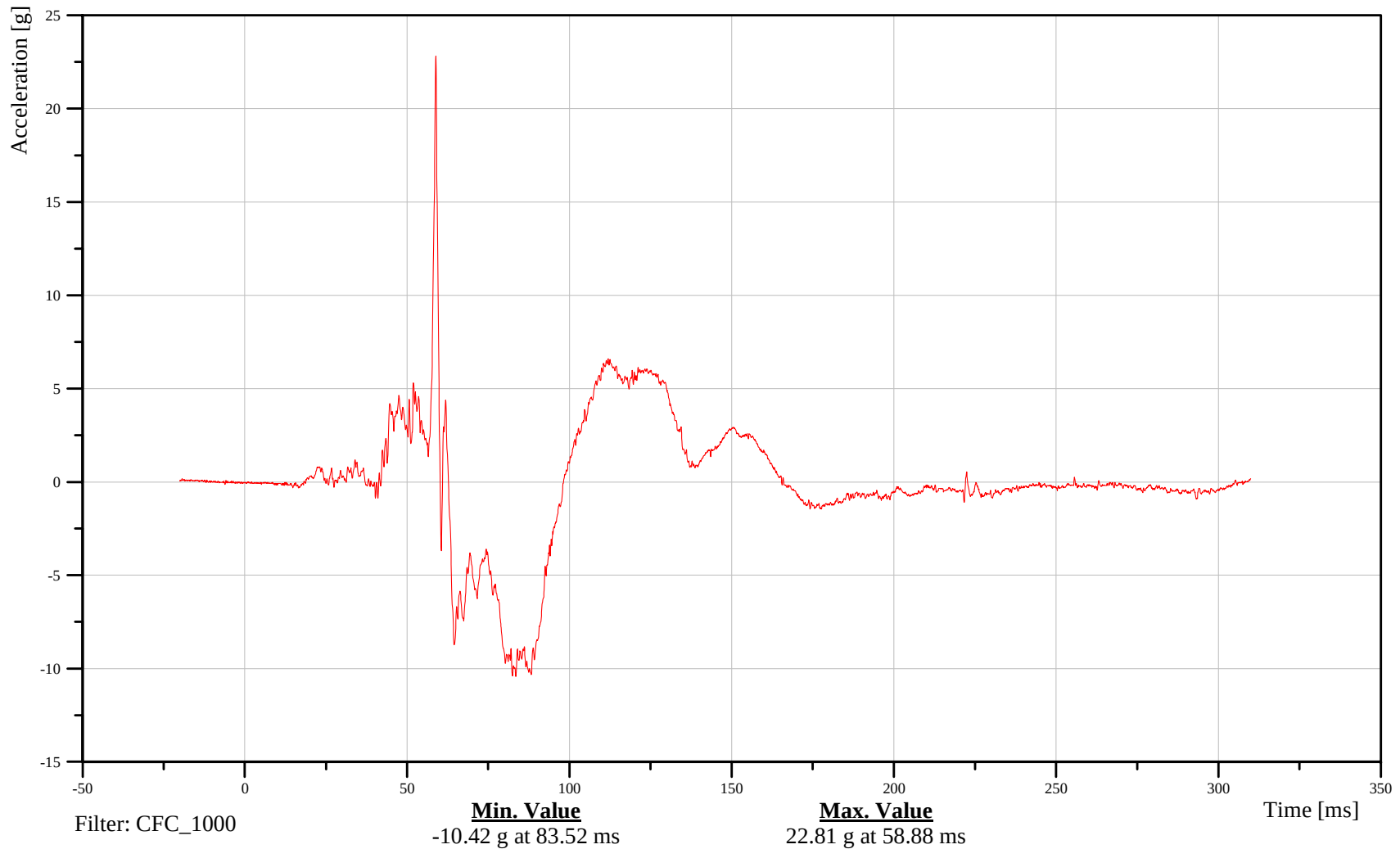
Time: 07:51

Customer: VRTC

23PELVCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Pelvis Accel Z

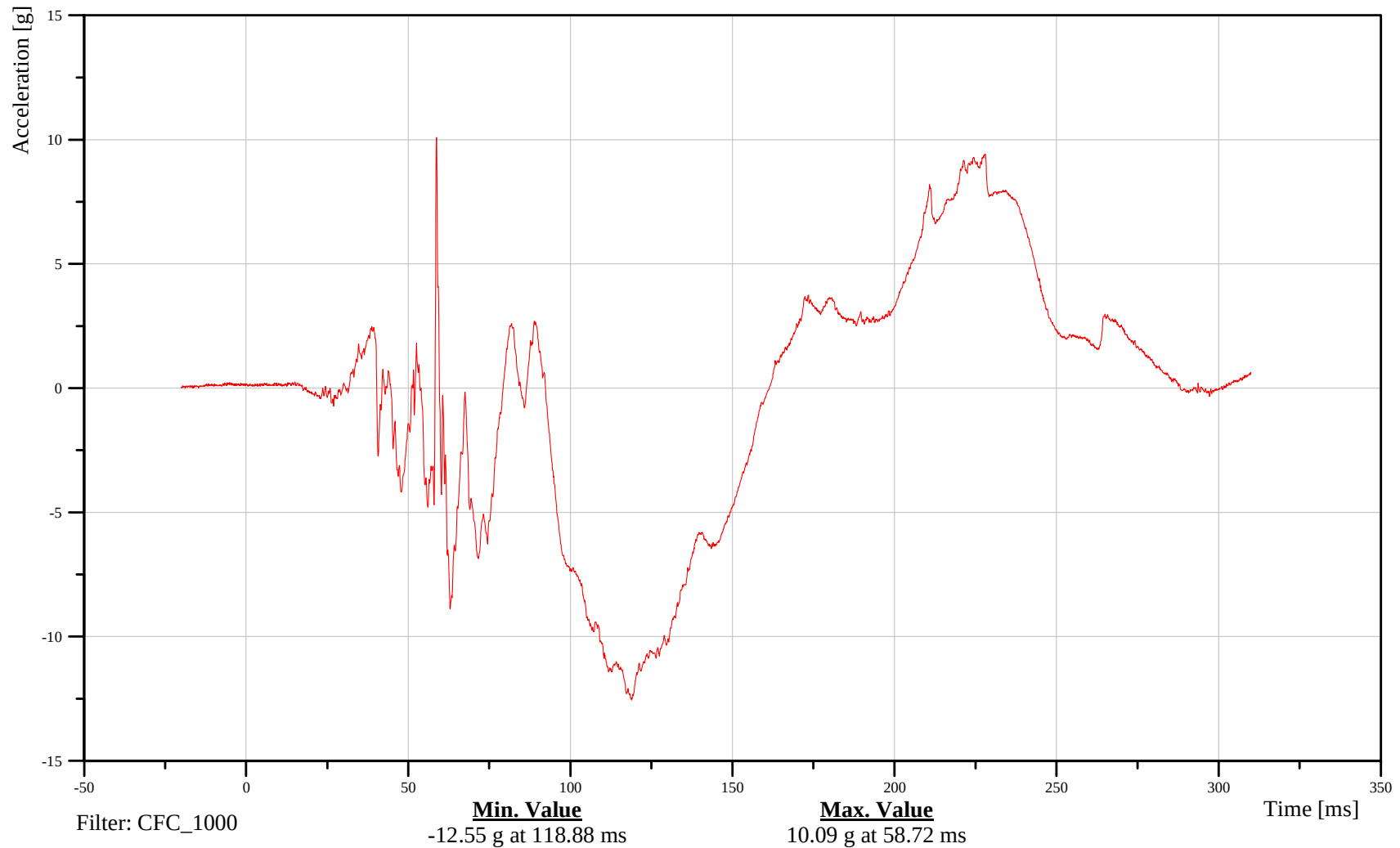
Date: 07/20/2005
Time: 07:51

Customer: VRTC

23PELVCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Resultant

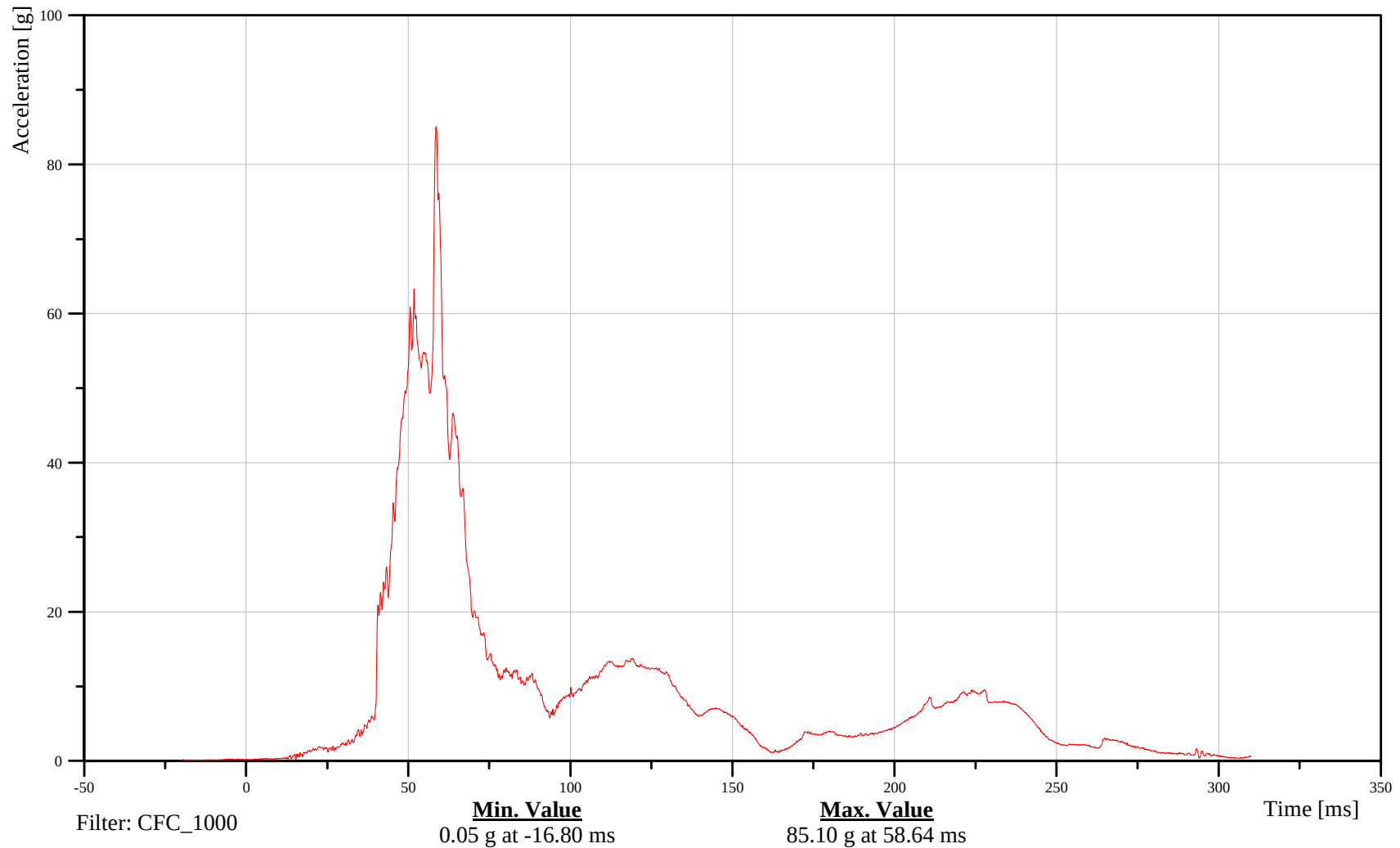
Time: 07:51

Customer: VRTC

23PELVCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Femur Force Z

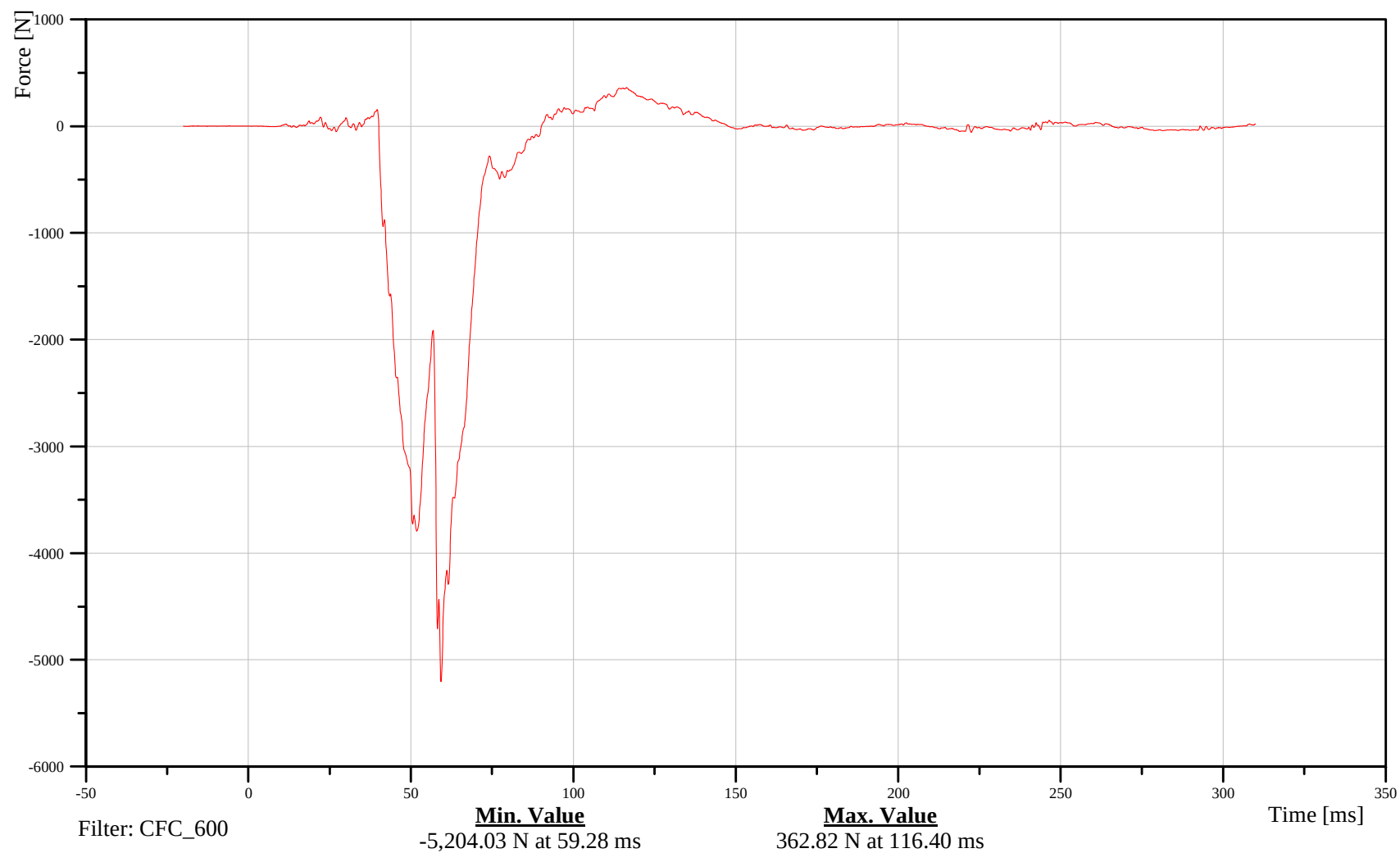
Time: 07:51

Customer: VRTC

23FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

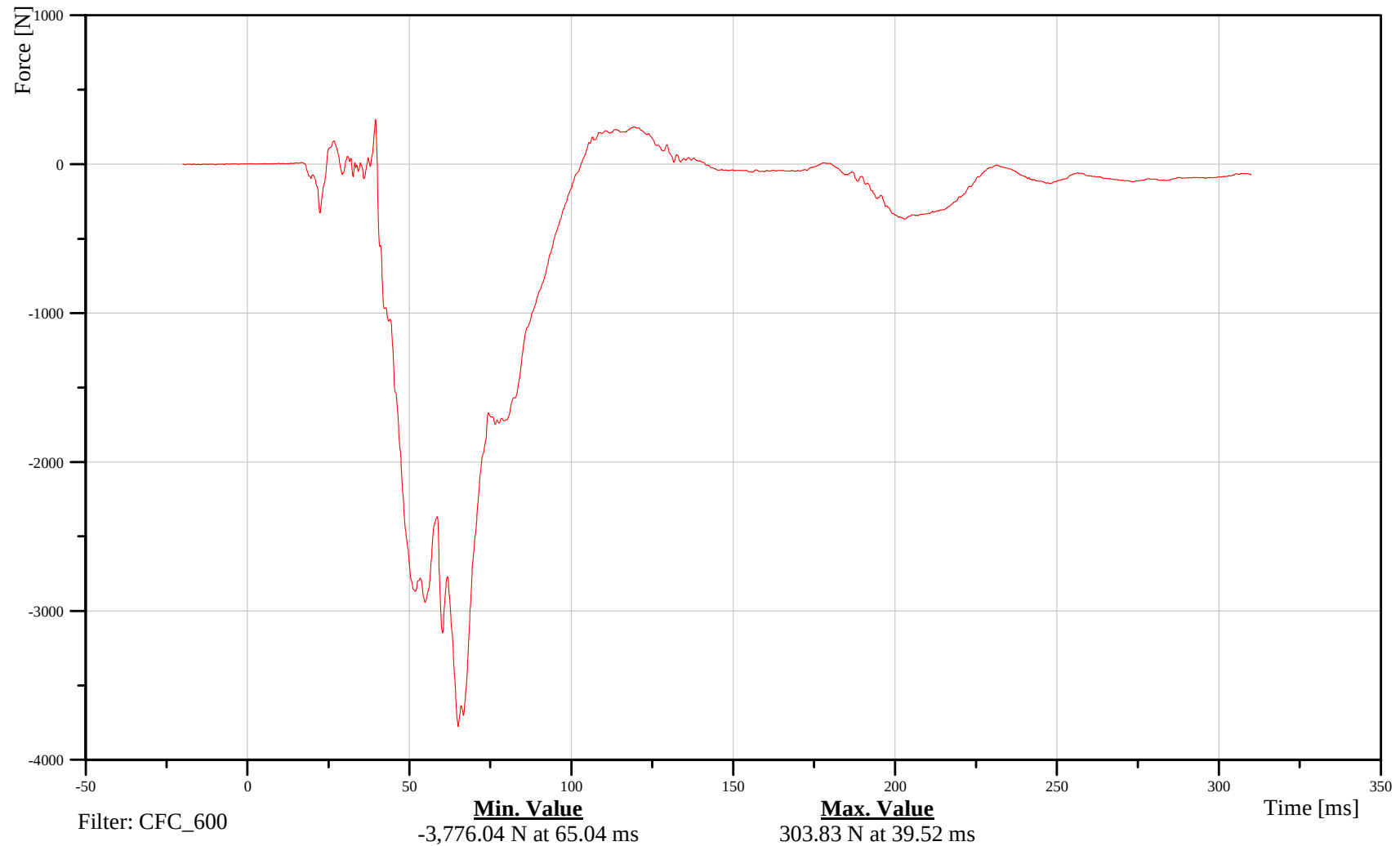
Right Femur Force Z

Customer: VRTC

23FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Rear Seat Crossmember X-axis Acceleration

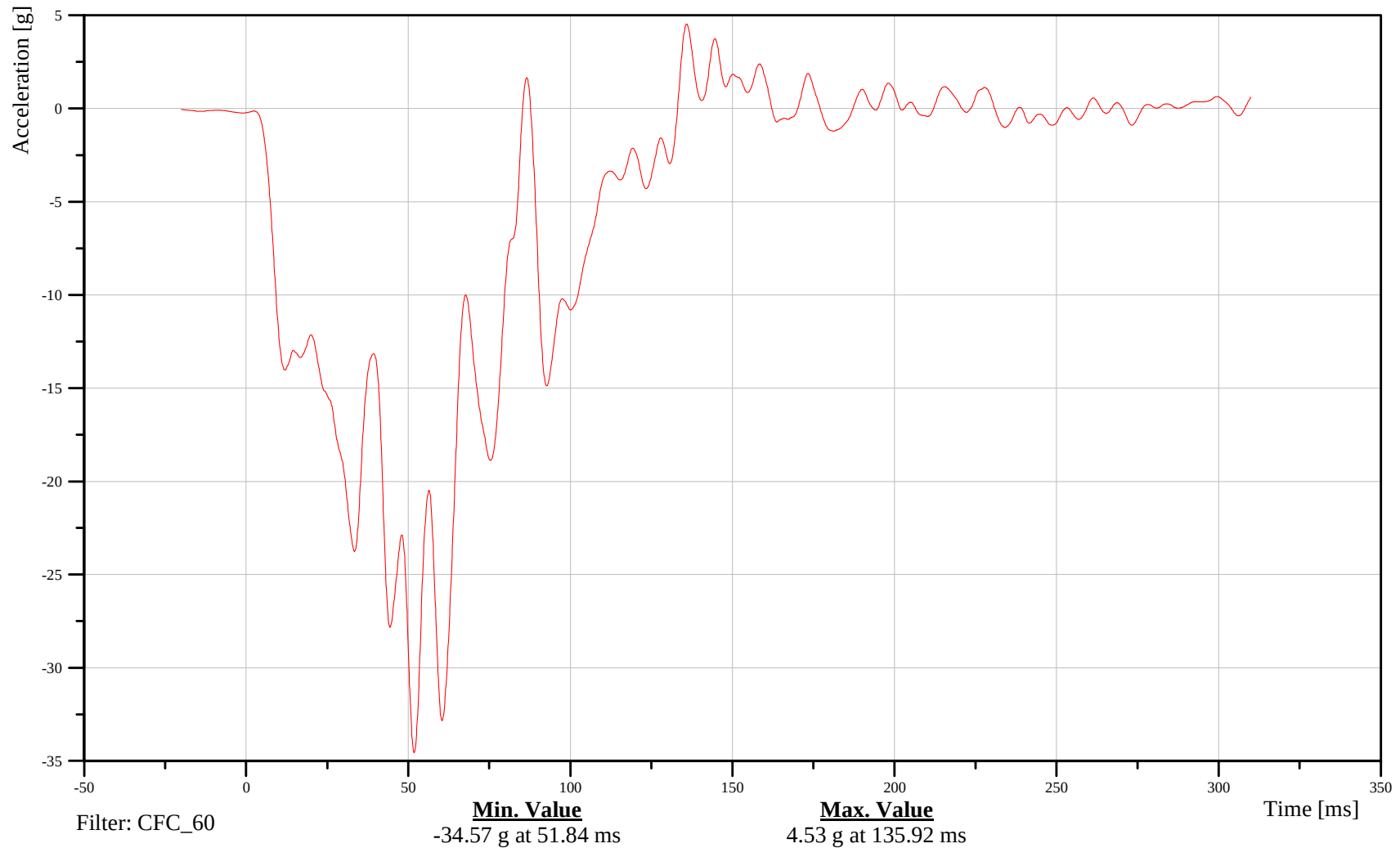
Time: 07:51

Customer: VRTC

24CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Rear Seat Crossmember X-axis Acceleration

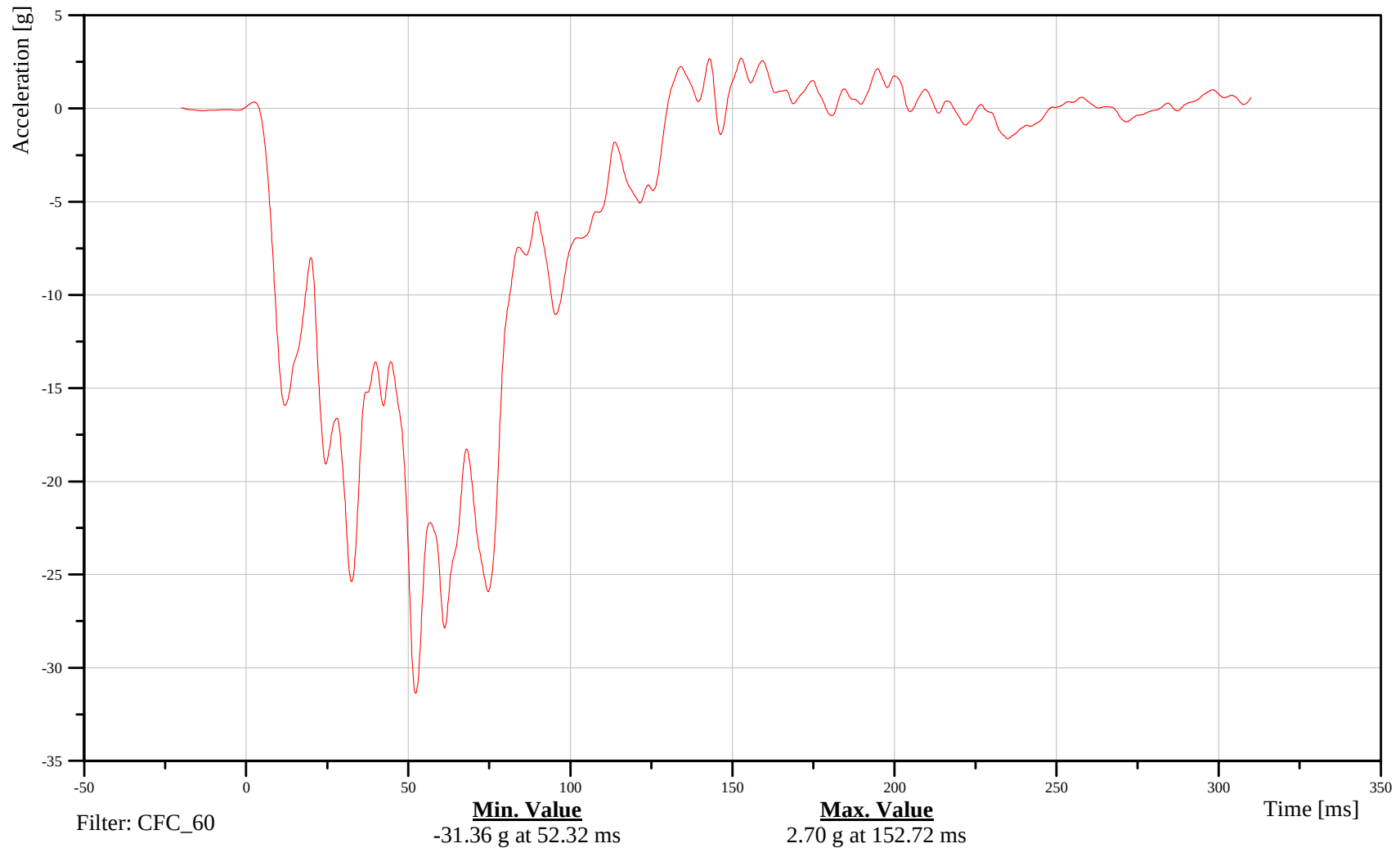
Time: 07:51

Customer: VRTC

26CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

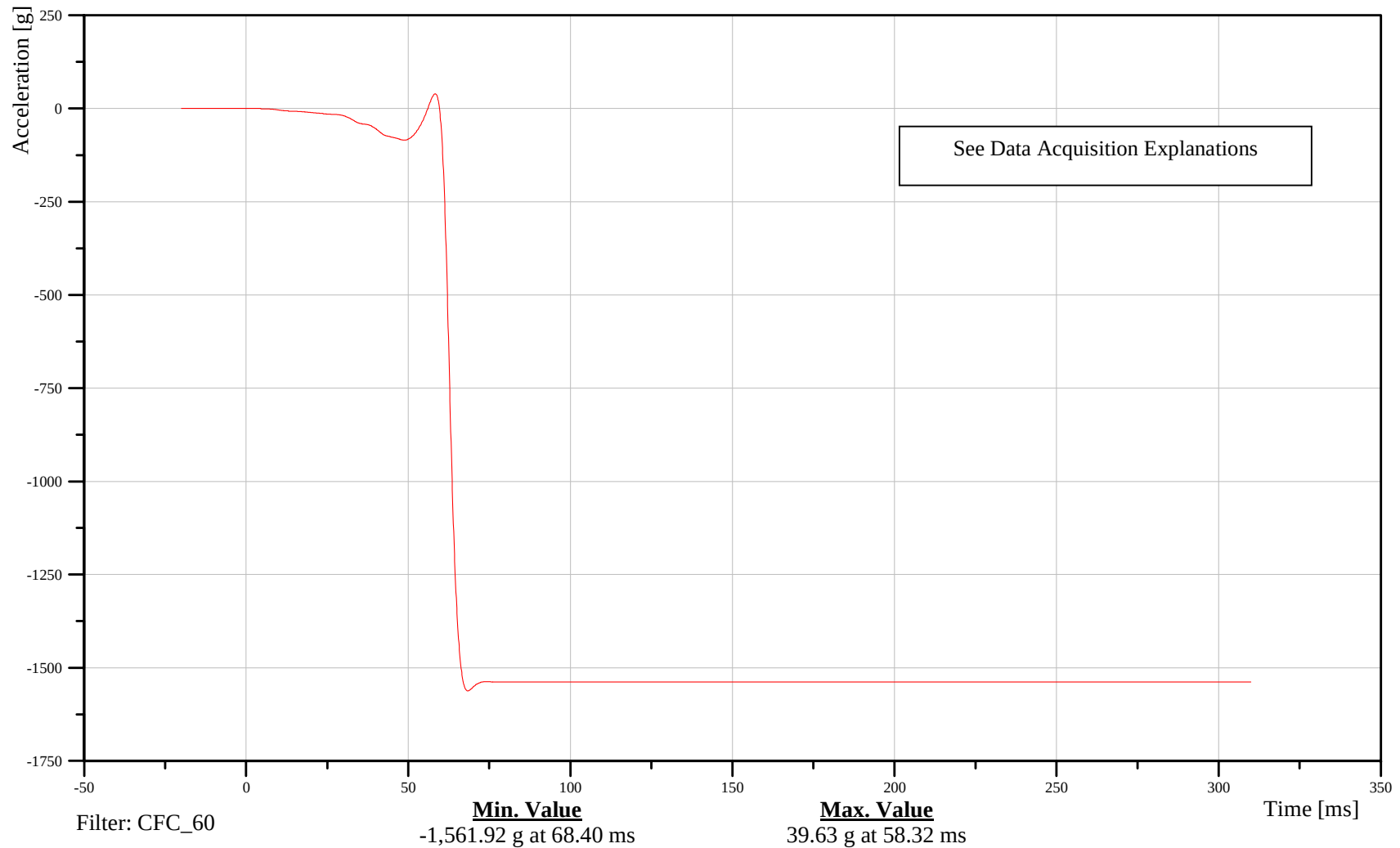
Top of Engine X-axis Acceleration

Customer: VRTC

22ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

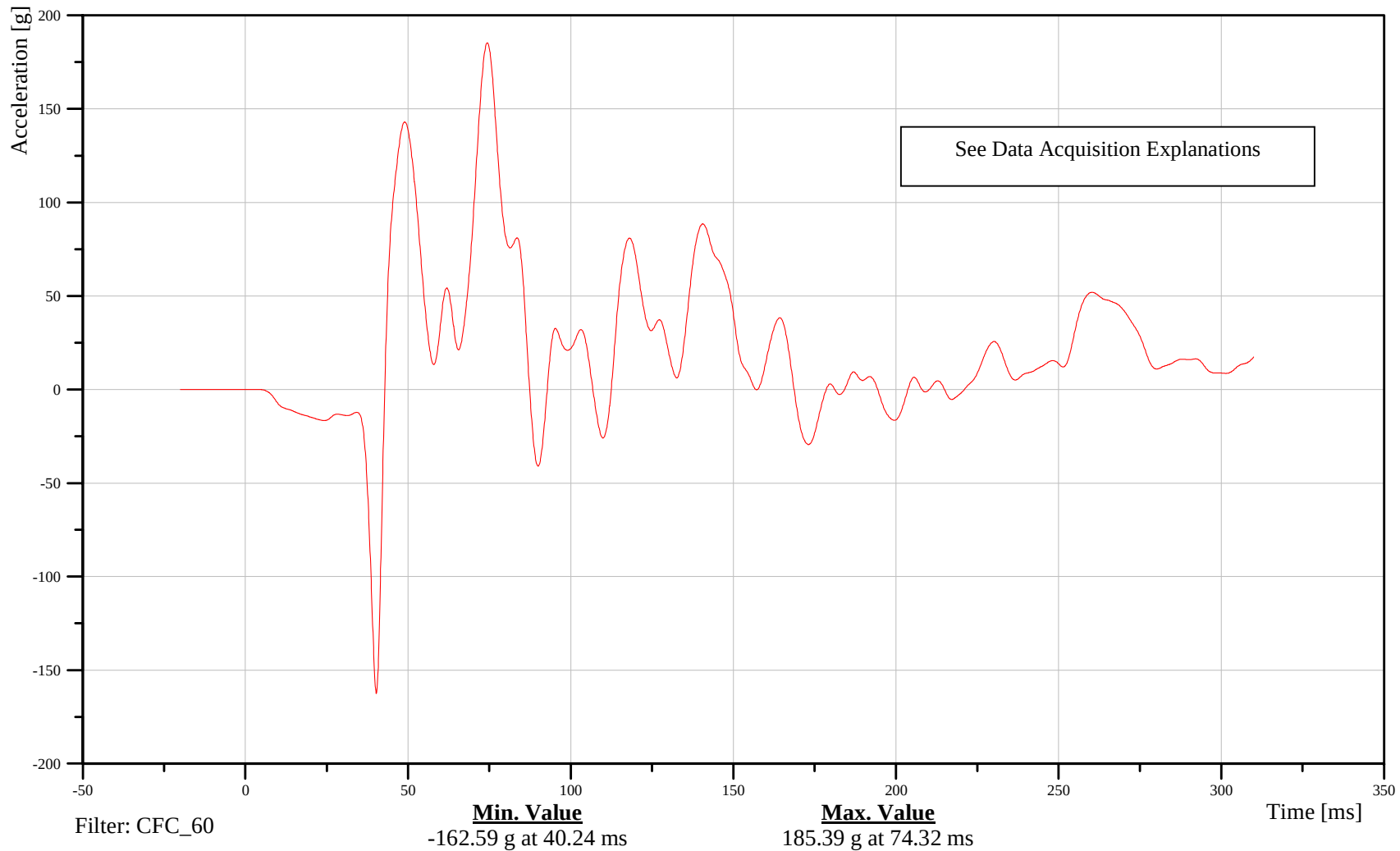
Bottom of Engine X-axis Acceleration

Customer: VRTC

22ENGNBO0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

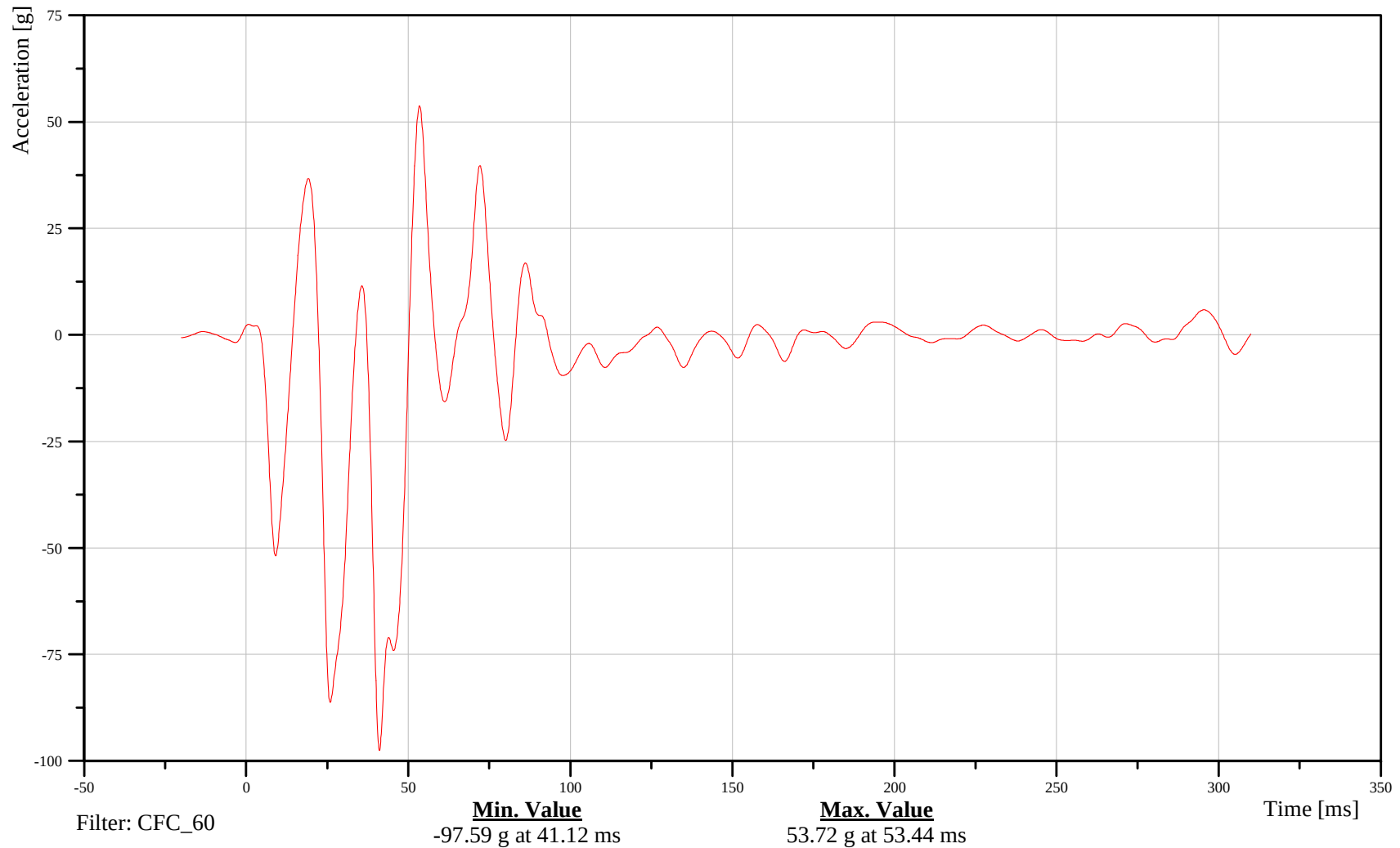
Right Front Brake Caliper X-axis Acceleration

Customer: VRTC

23VEHCRI0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Front Brake Caliper X-axis Acceleration

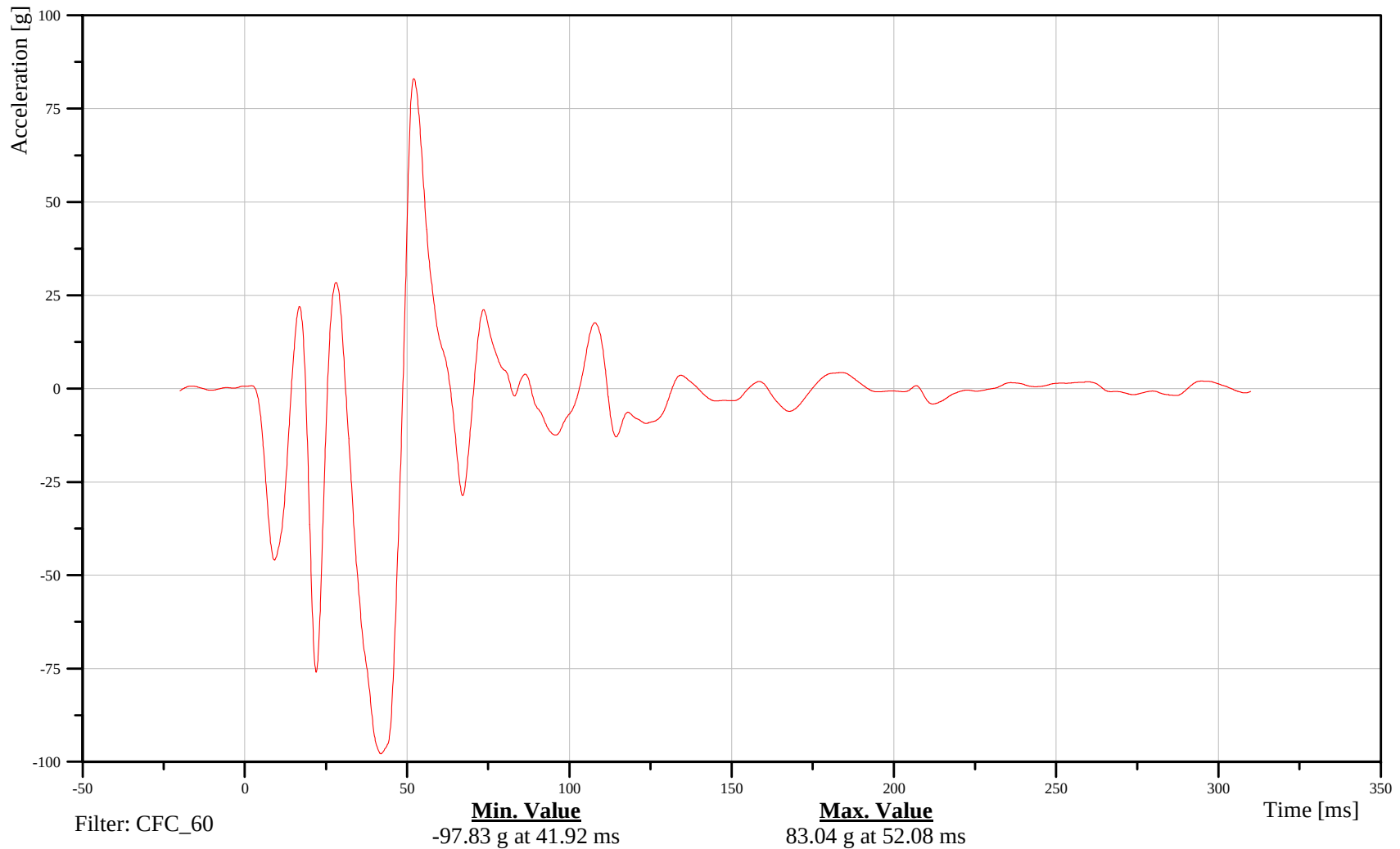
Time: 07:51

Customer: VRTC

21VEHICLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

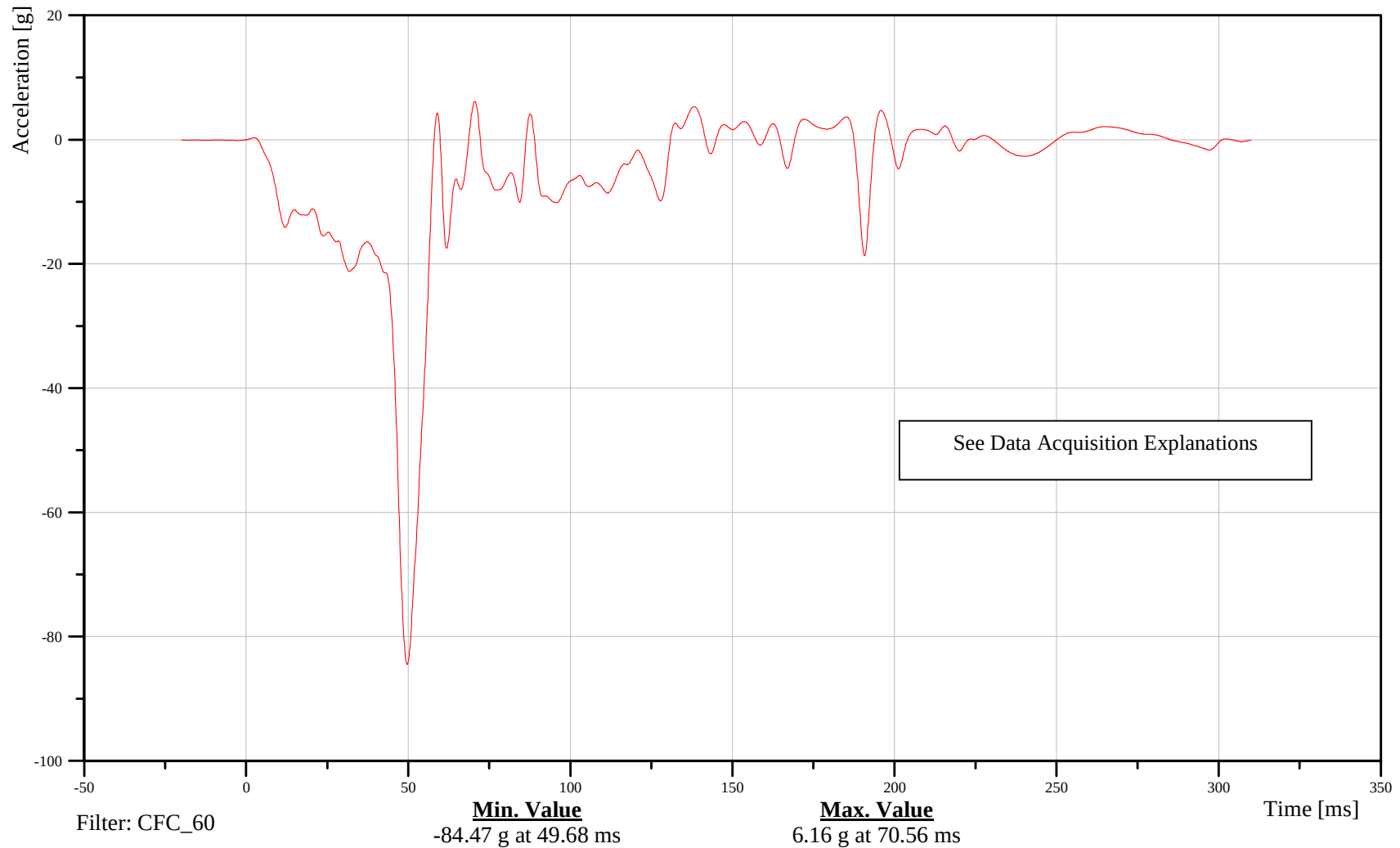
Toe Pan Accelerator X-axis Acceleration

Customer: VRTC

21PEAC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

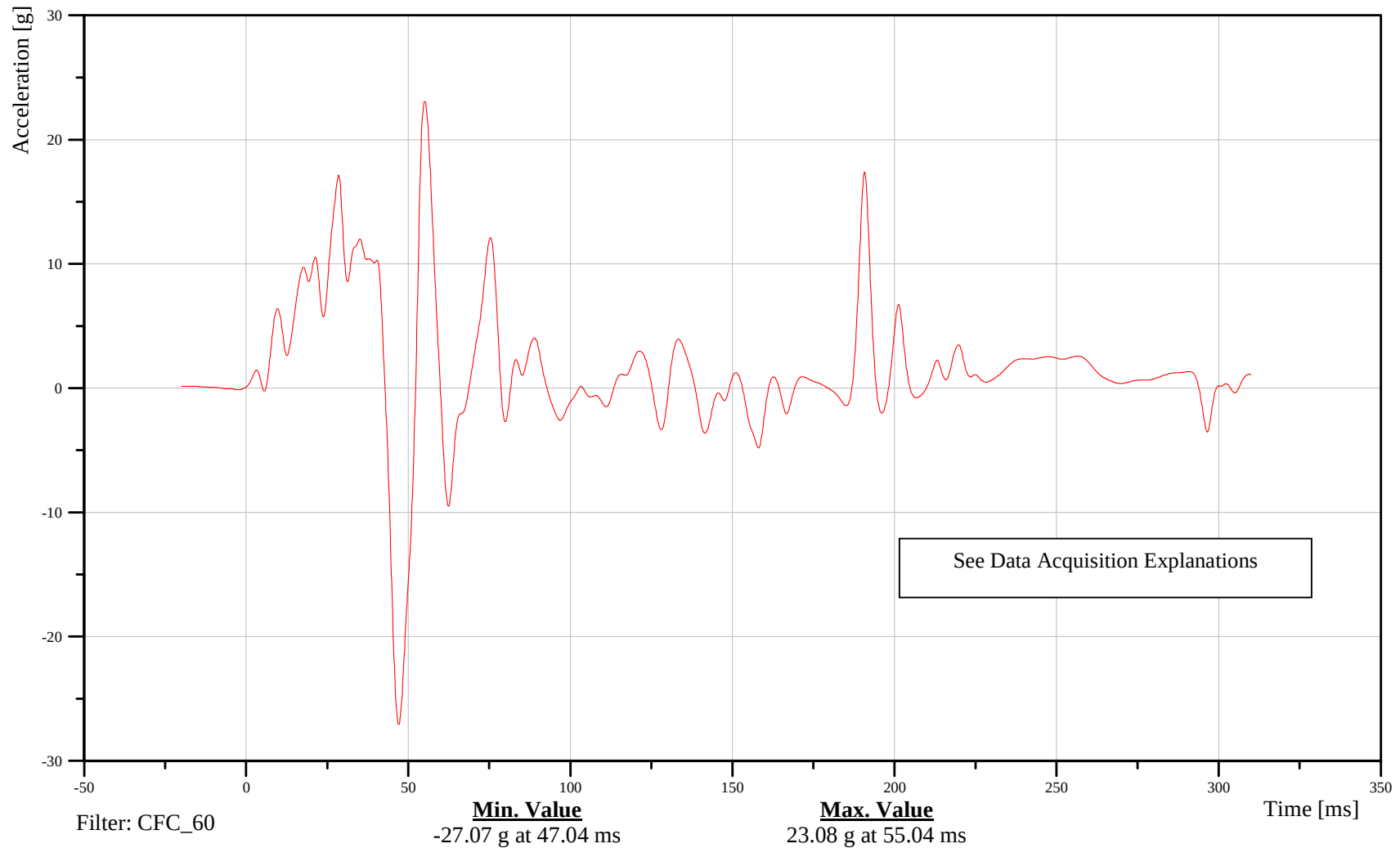
Toe Pan Accelerator Z-axis Acceleration

Customer: VRTC

21PEAC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

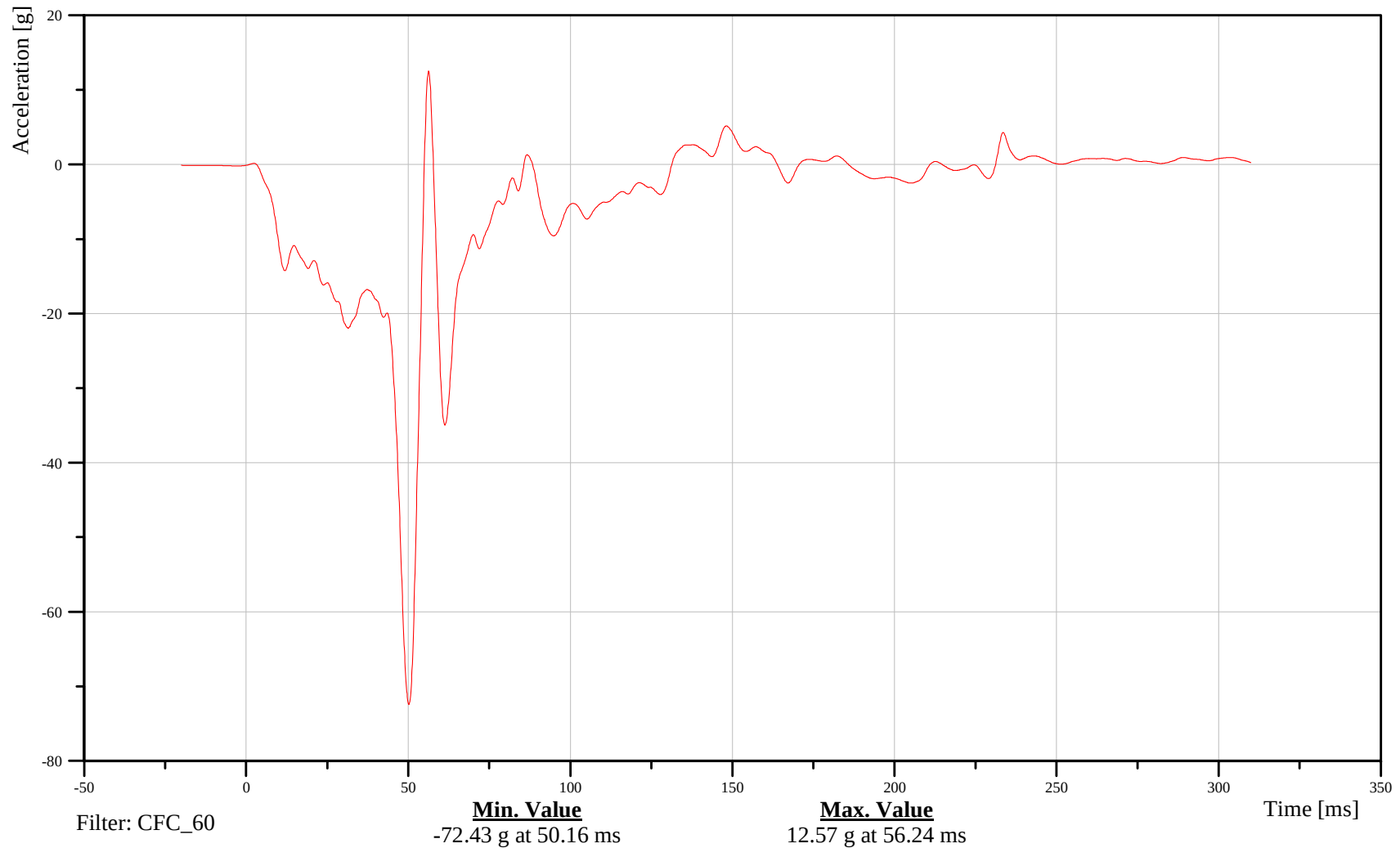
Toe Pan Footrest X-axis Acceleration

Customer: VRTC

21VEHC000001ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

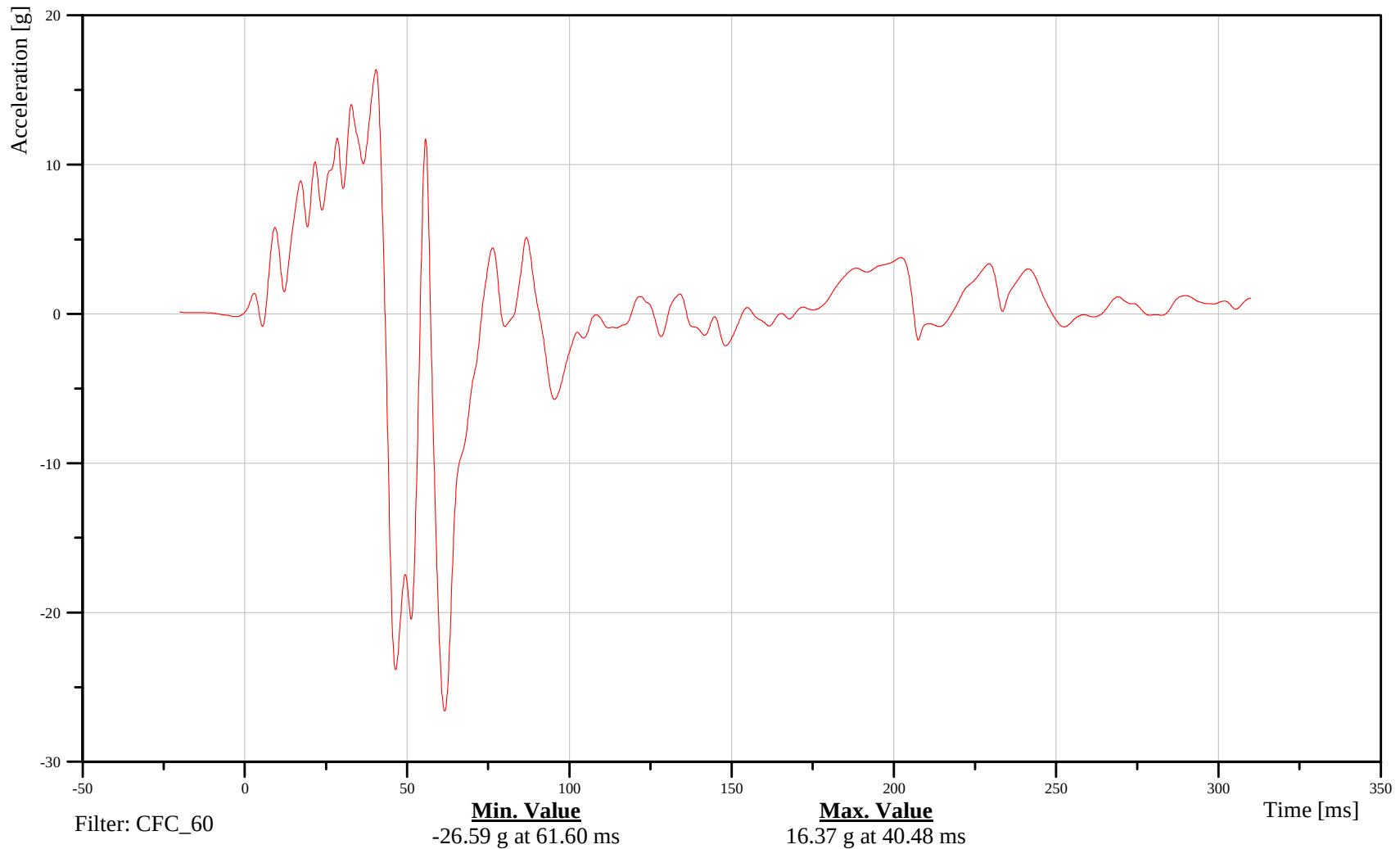
Toe Pan Footrest Z-axis Acceleration

Customer: VRTC

21VEHC000001ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

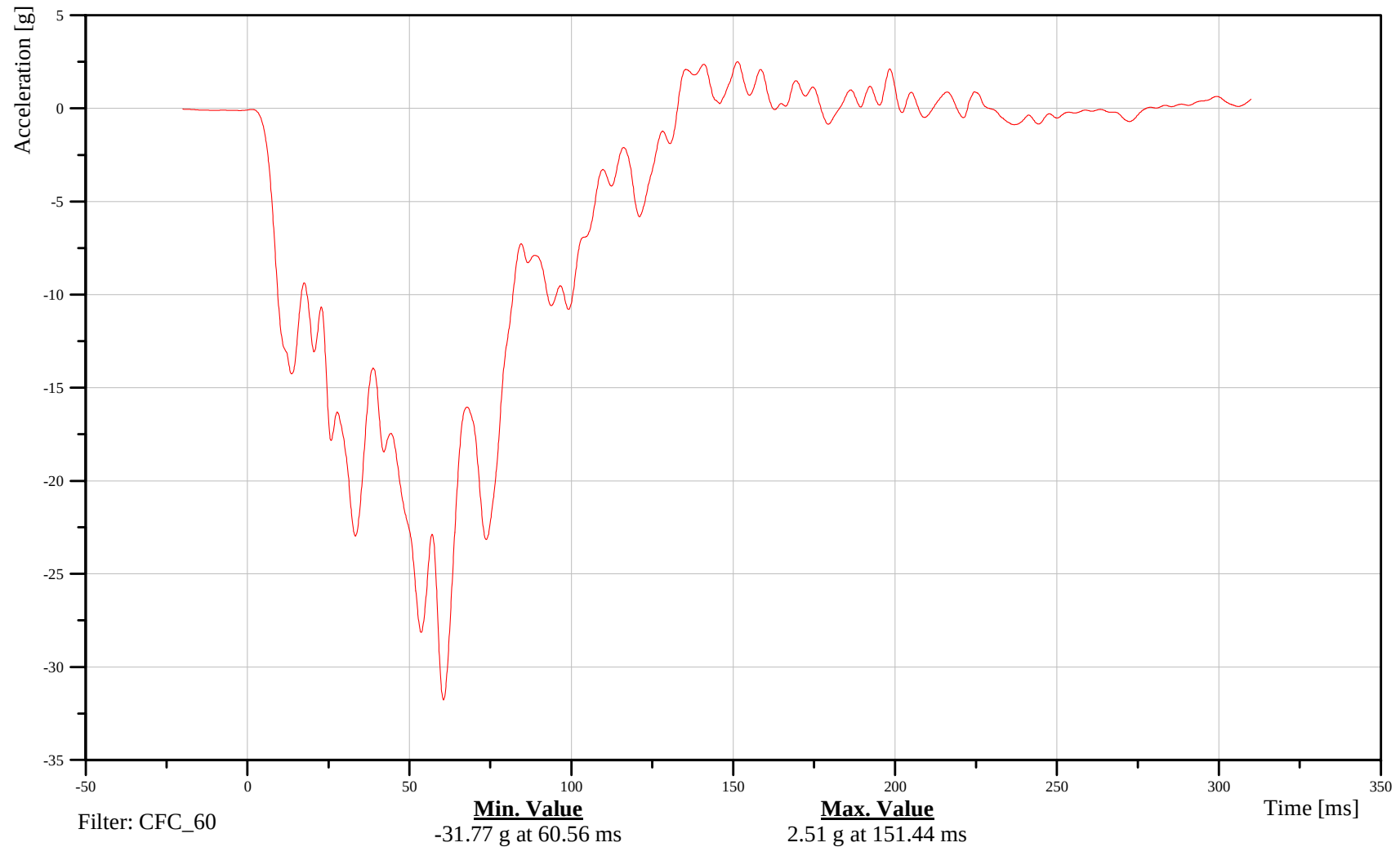
Rear Tunnel Center X-axis Acceleration

Customer: VRTC

25TUNNCY0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

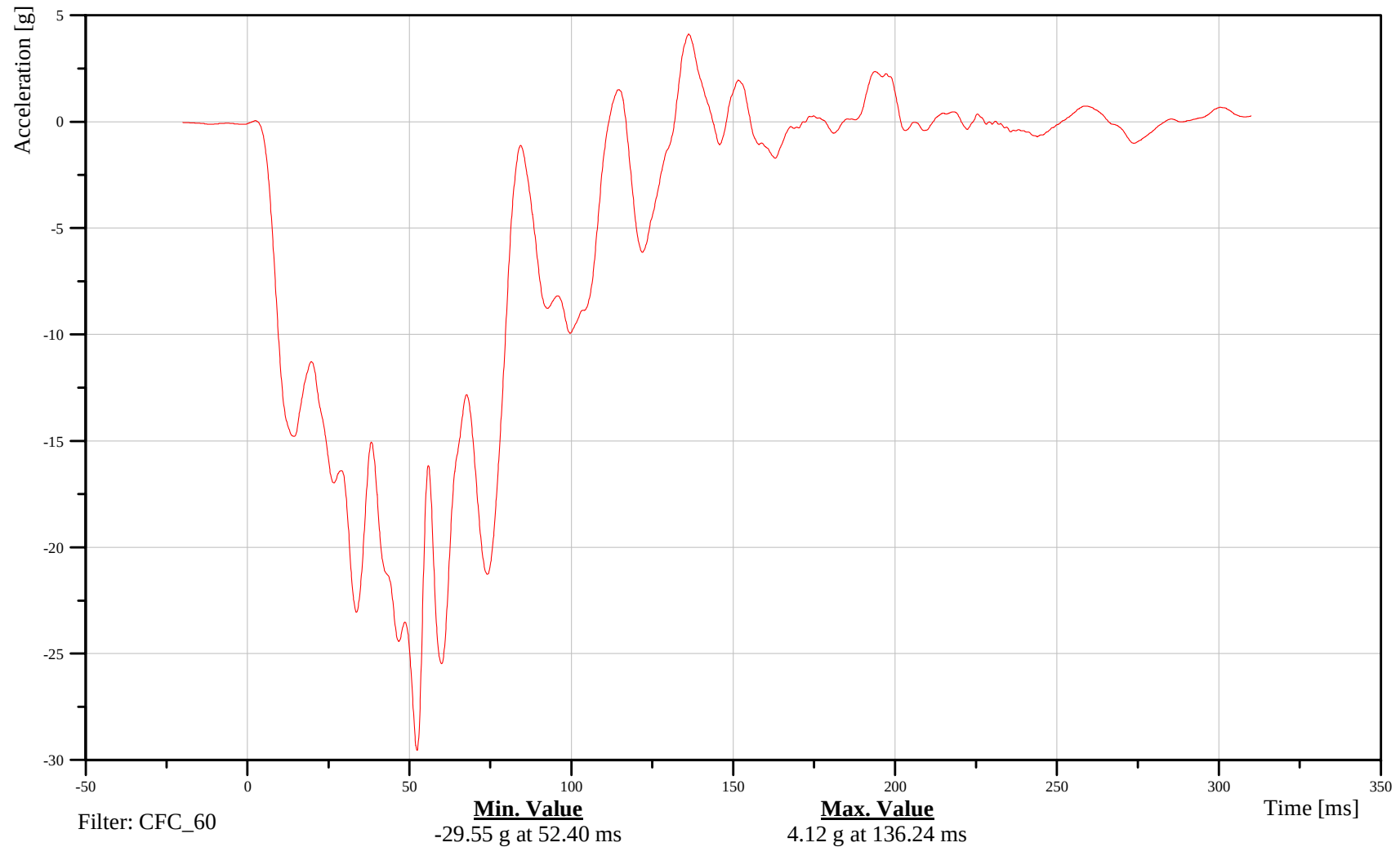
Vehicle CG X-axis Acceleration

Customer: VRTC

20VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

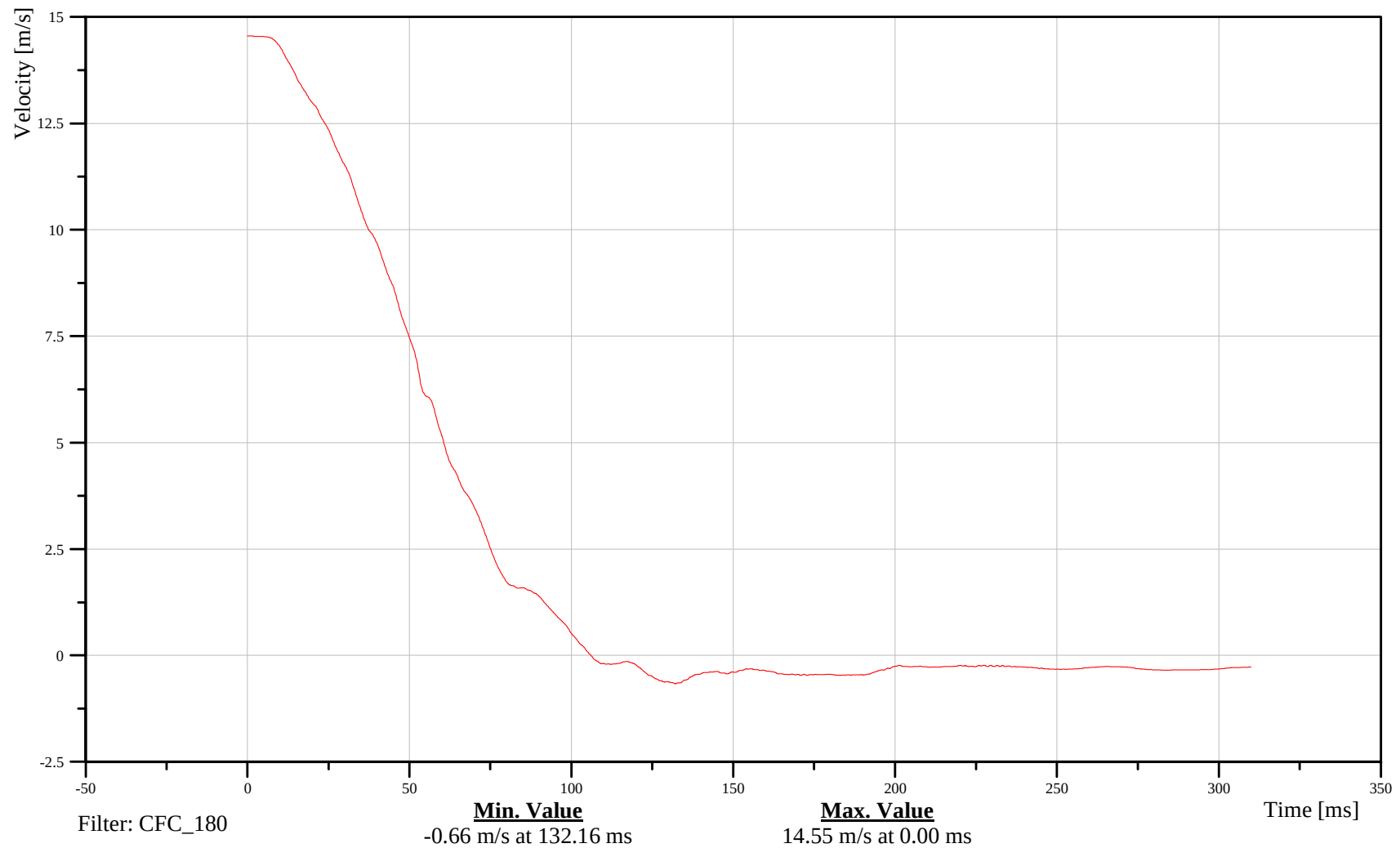
Vehicle CG X-axis Velocity

Customer: VRTC

20VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

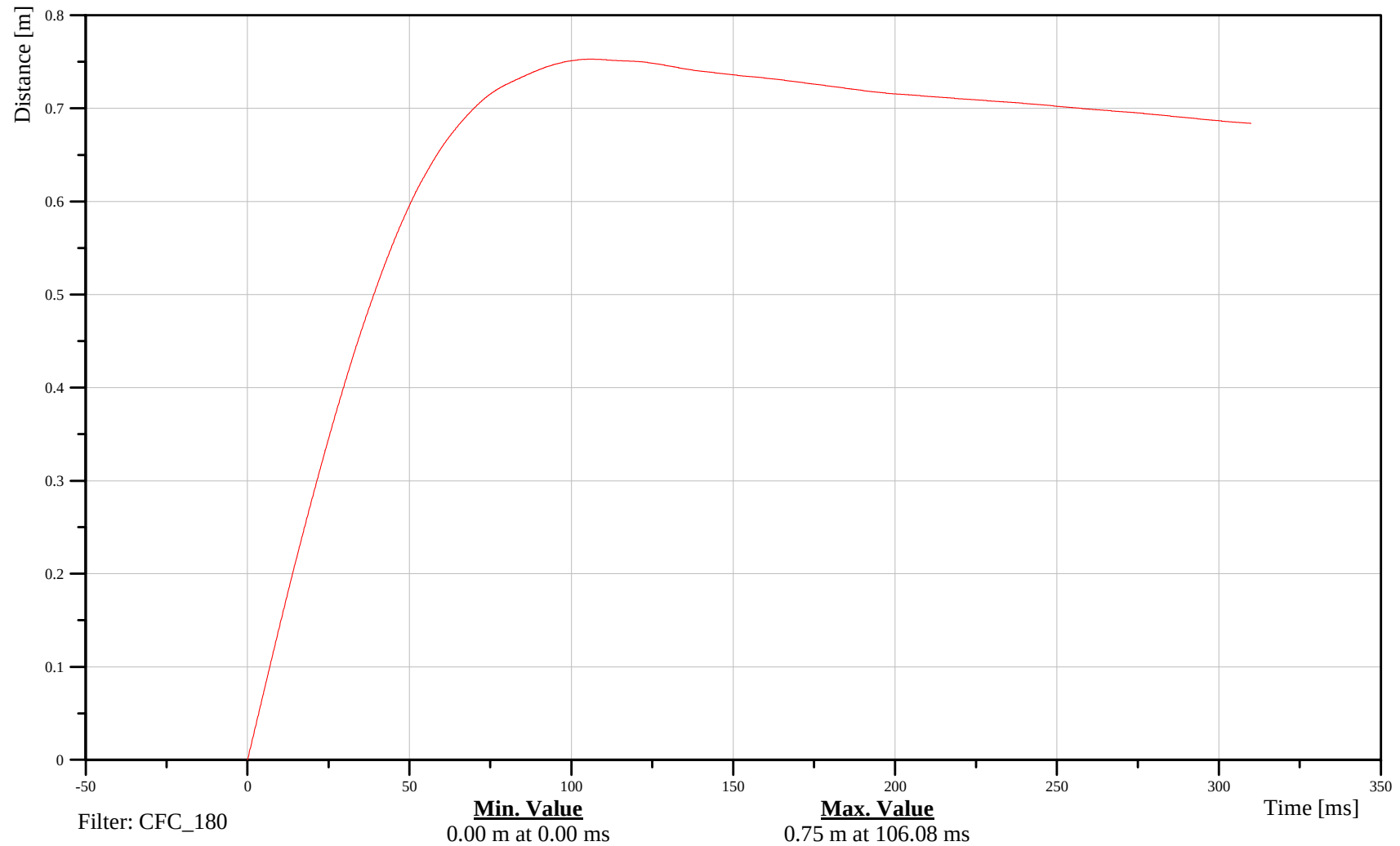
Vehicle CG X-axis Displacement

Customer: VRTC

20VEHCCG0000DCXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

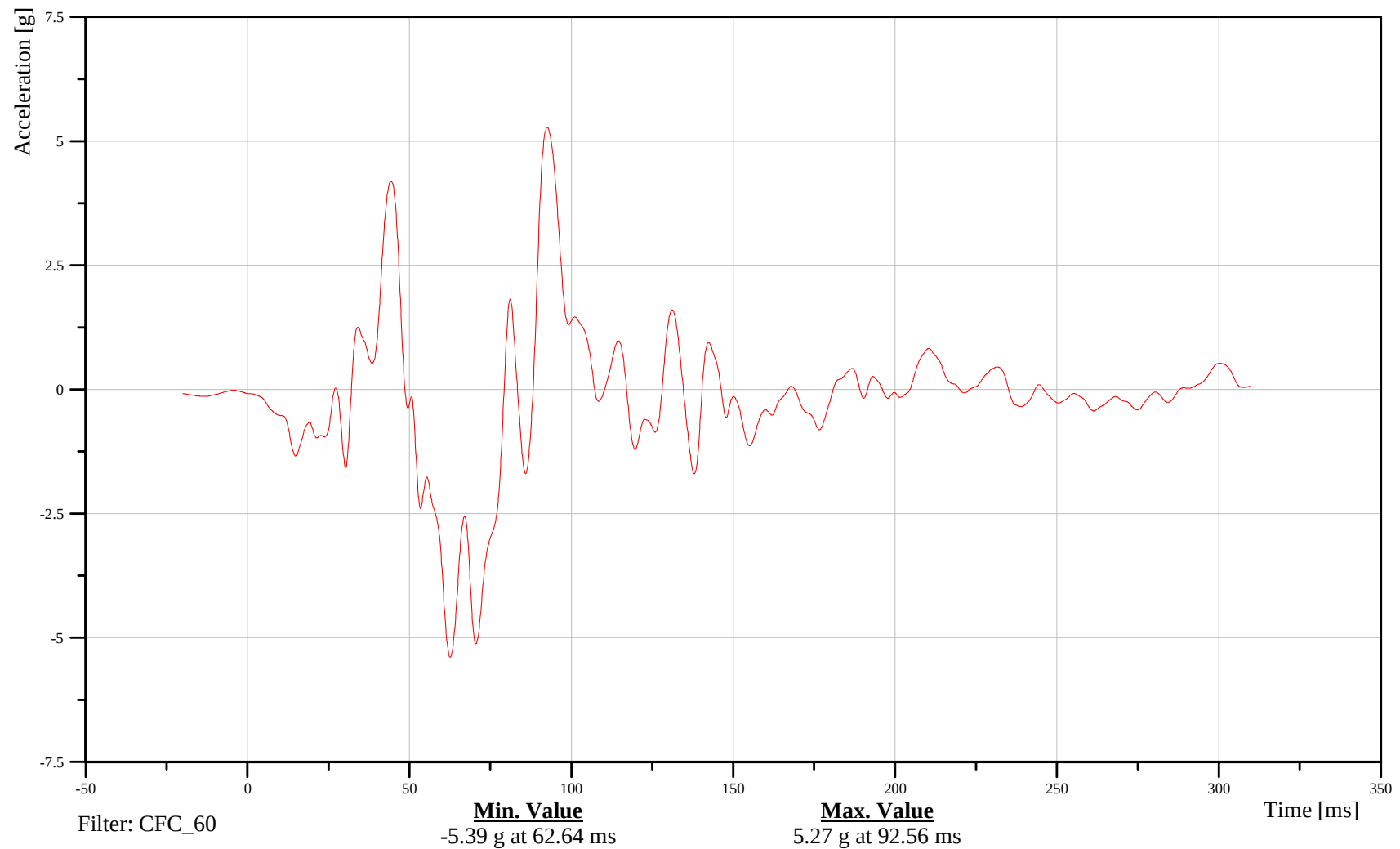
Vehicle CG Y-axis Acceleration

Customer: VRTC

20VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

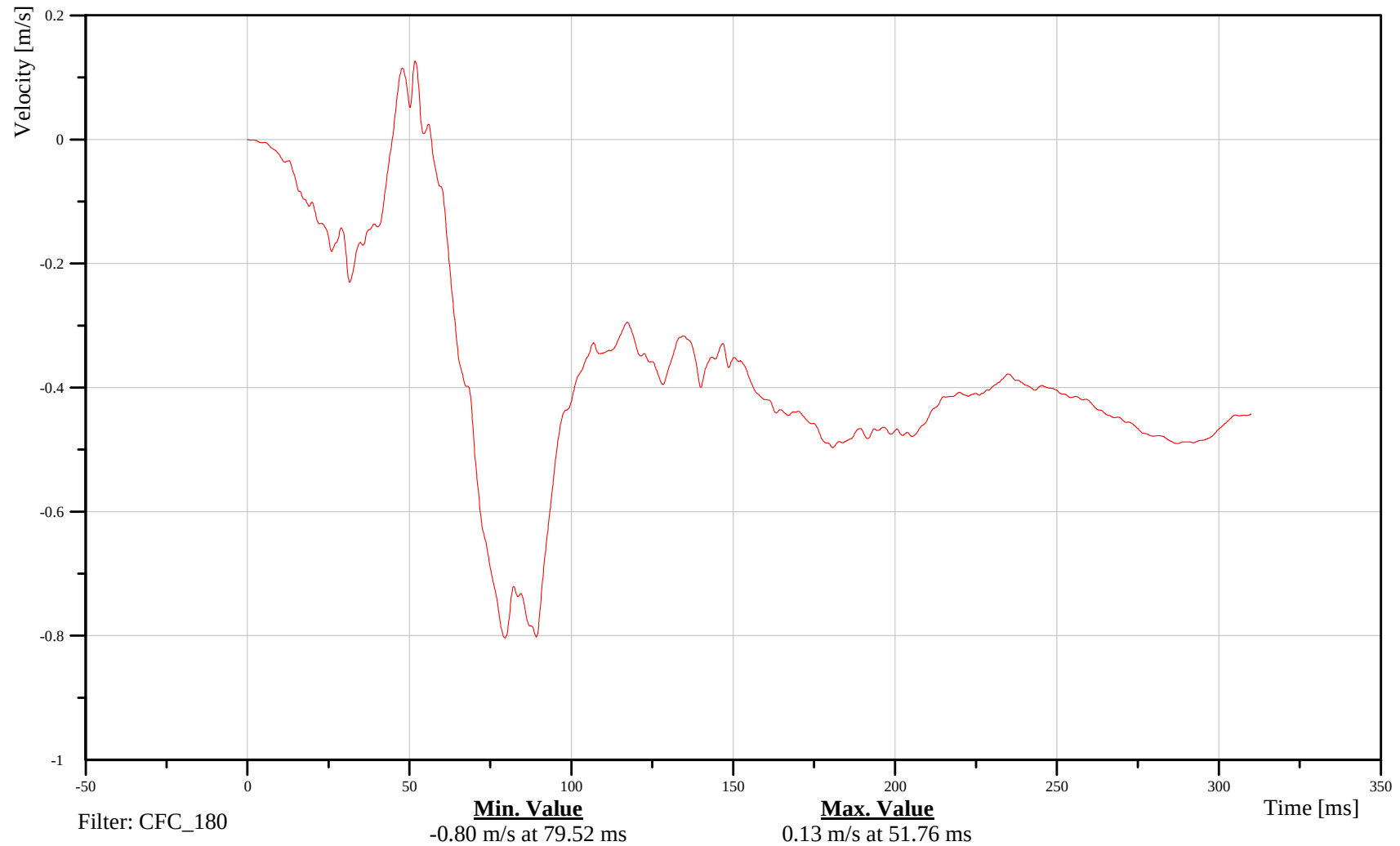
Vehicle CG Y-axis Velocity

Customer: VRTC

20VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

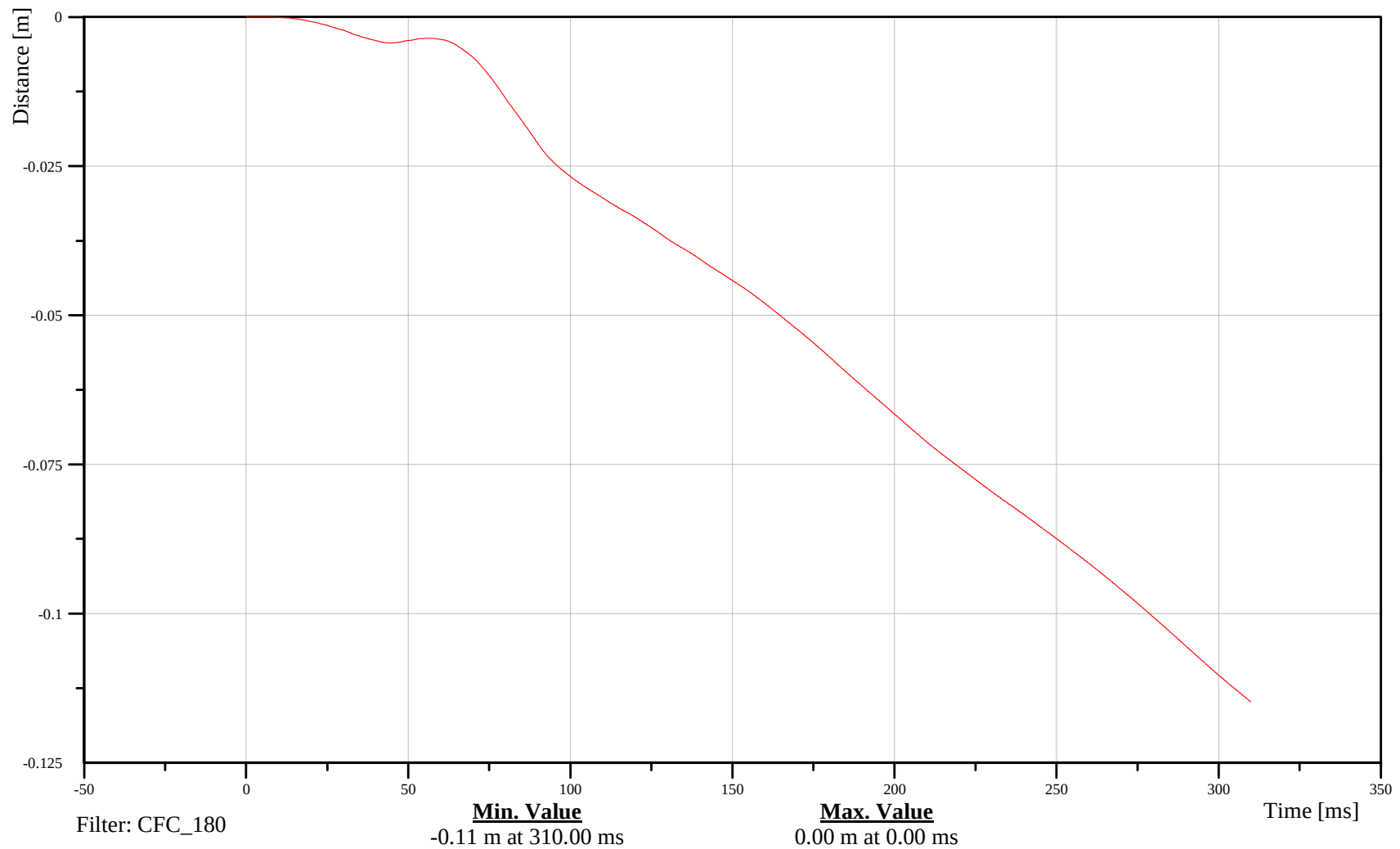
Vehicle CG Y-axis Displacement

Customer: VRTC

20VEHCCG0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle CG Z-axis Acceleration

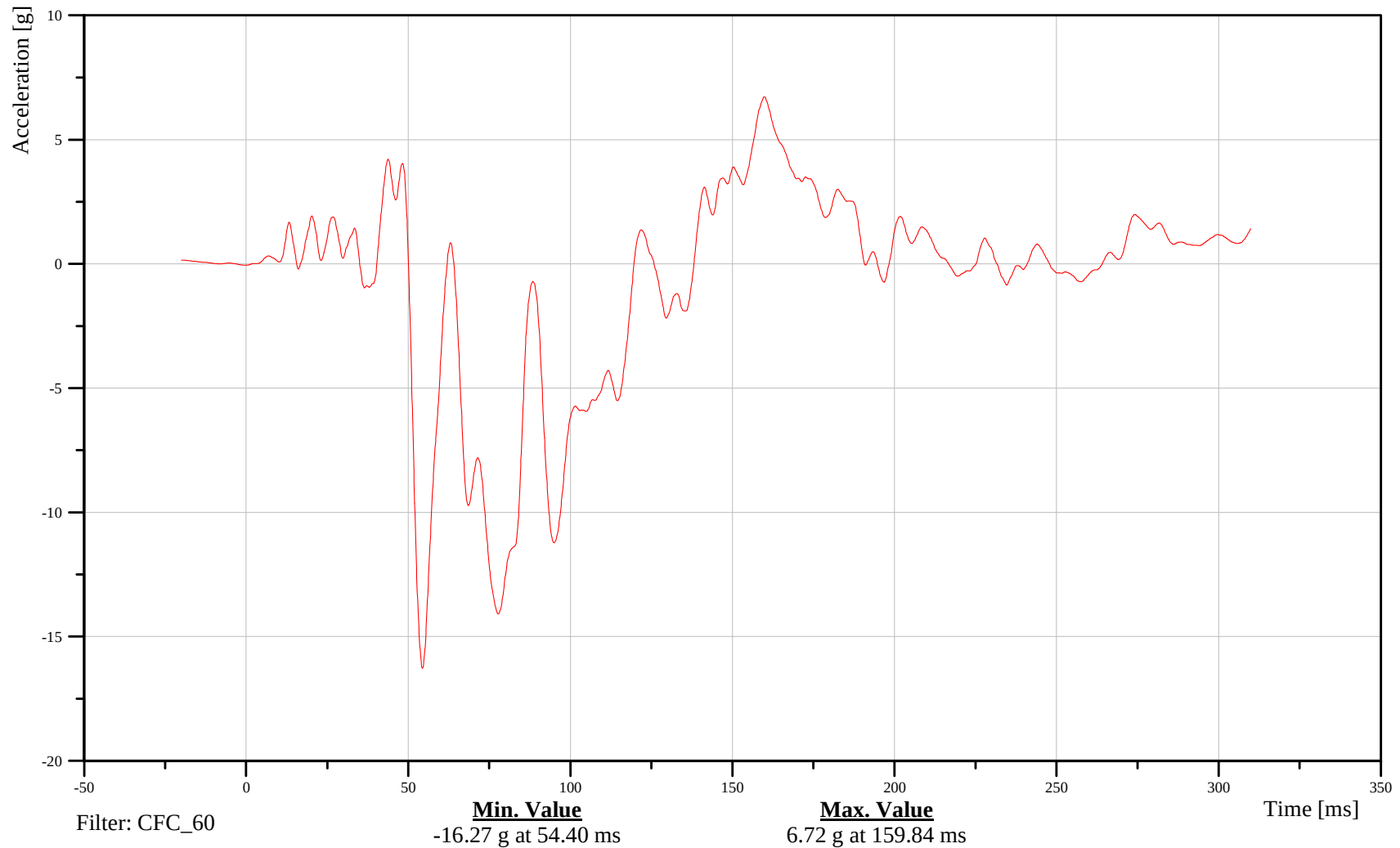
Time: 07:51

Customer: VRTC

20VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

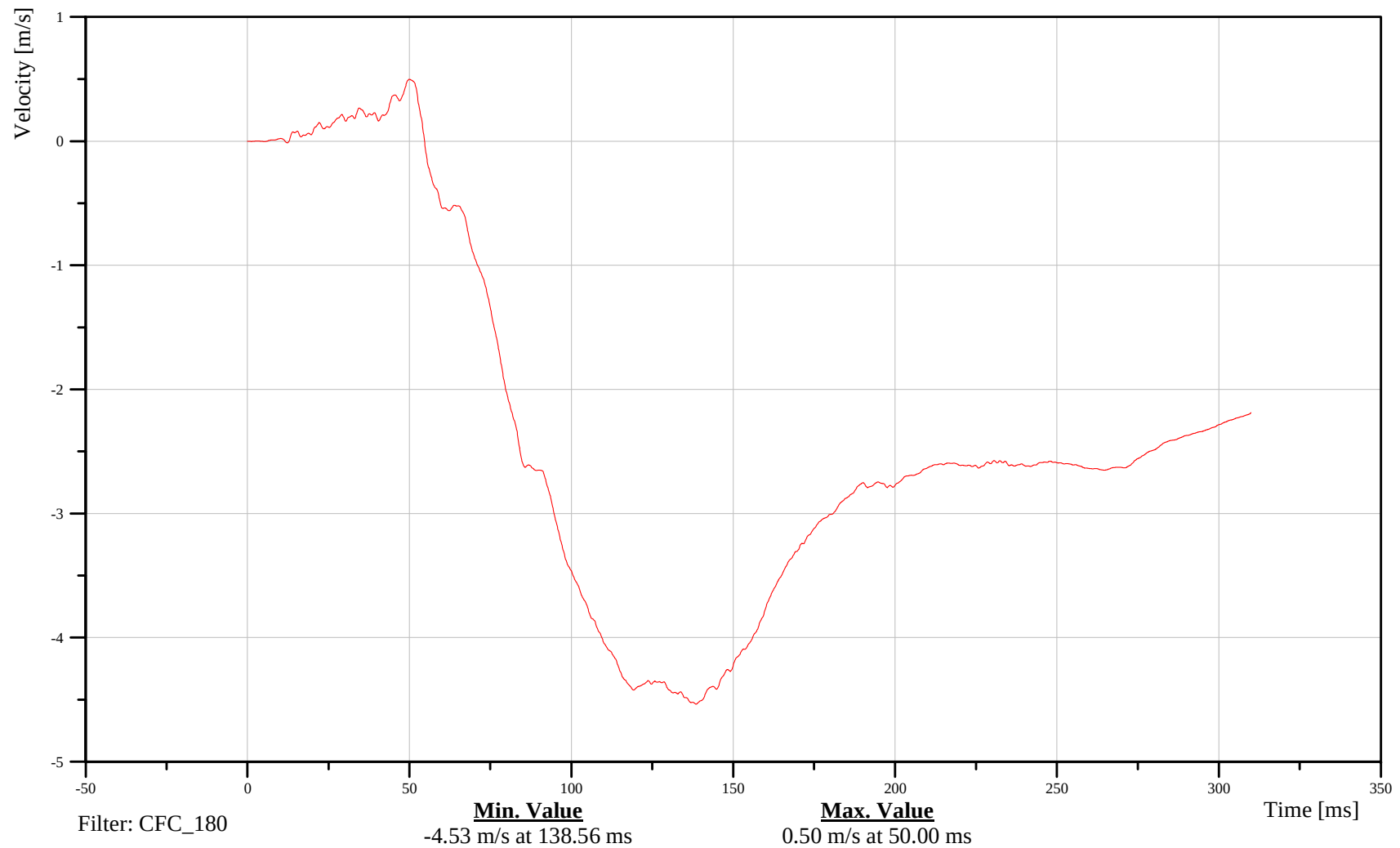
Vehicle CG Z-axis Velocity

Customer: VRTC

20VEHCCG0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

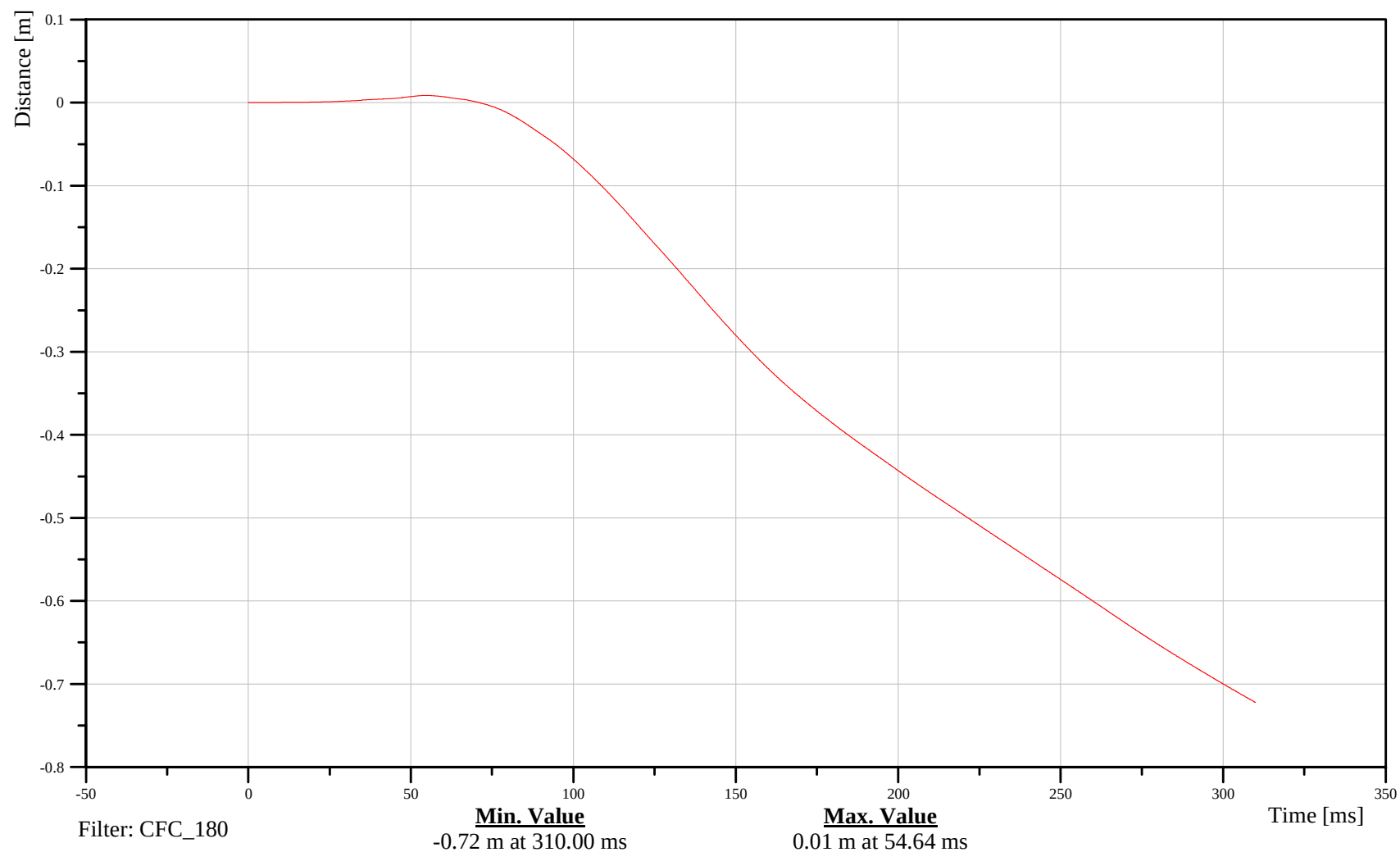
Vehicle CG Z-axis Displacement

Customer: VRTC

20VEHCCG0000DCZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle CG Resultant Acceleration

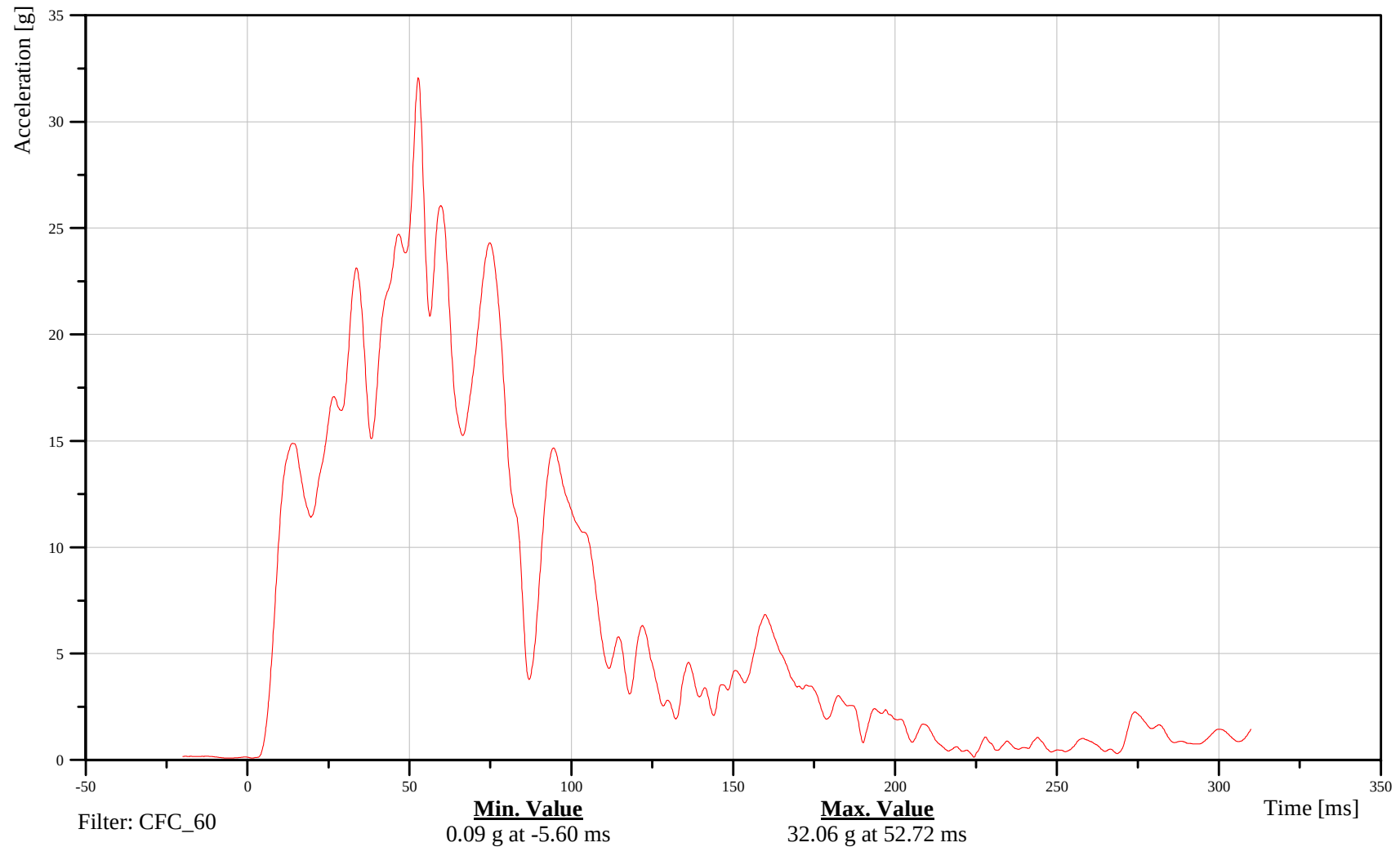
Time: 07:51

Customer: VRTC

20VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck X-axis Acceleration

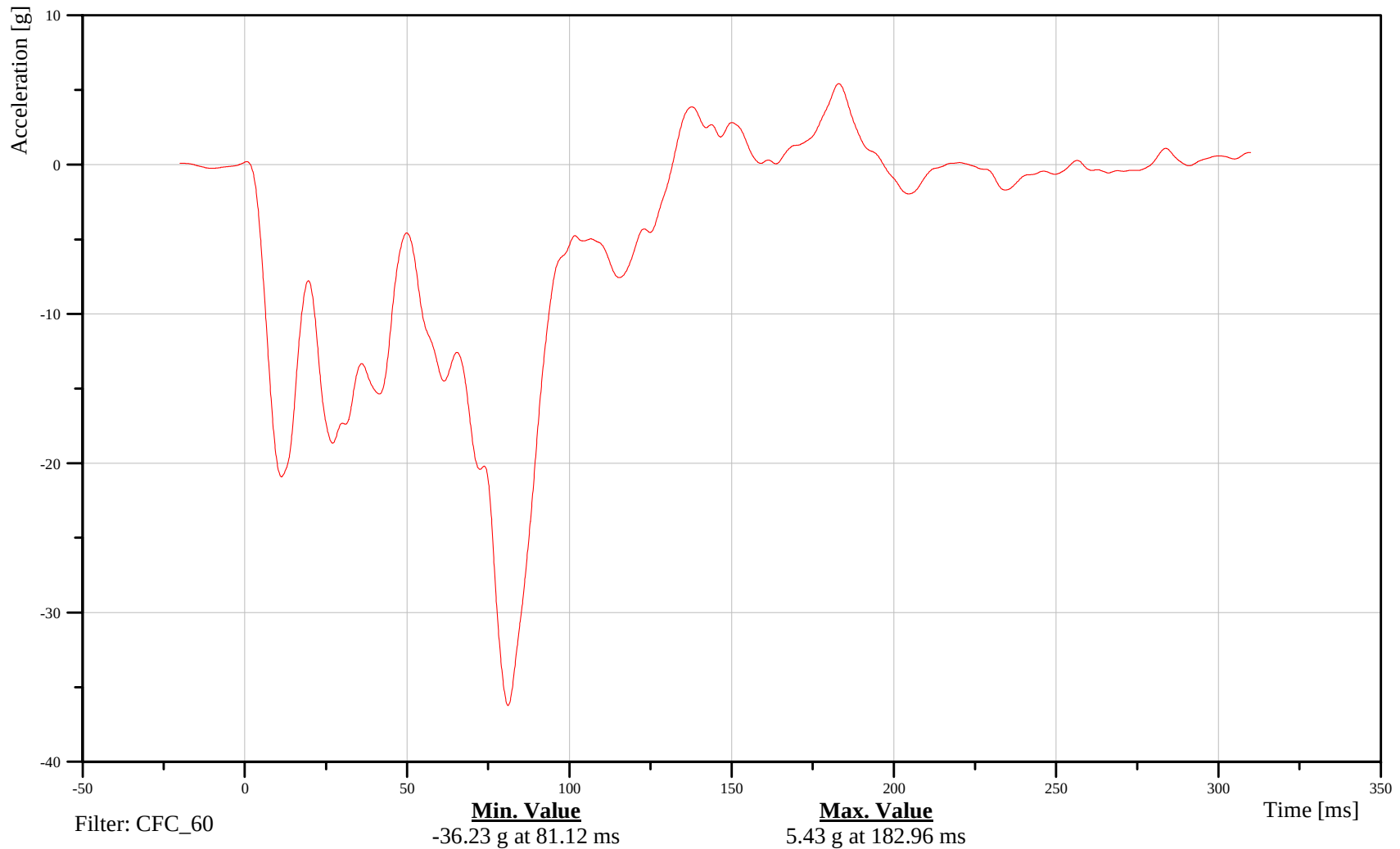
Time: 07:51

Customer: VRTC

28VEHC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck Y-axis Acceleration

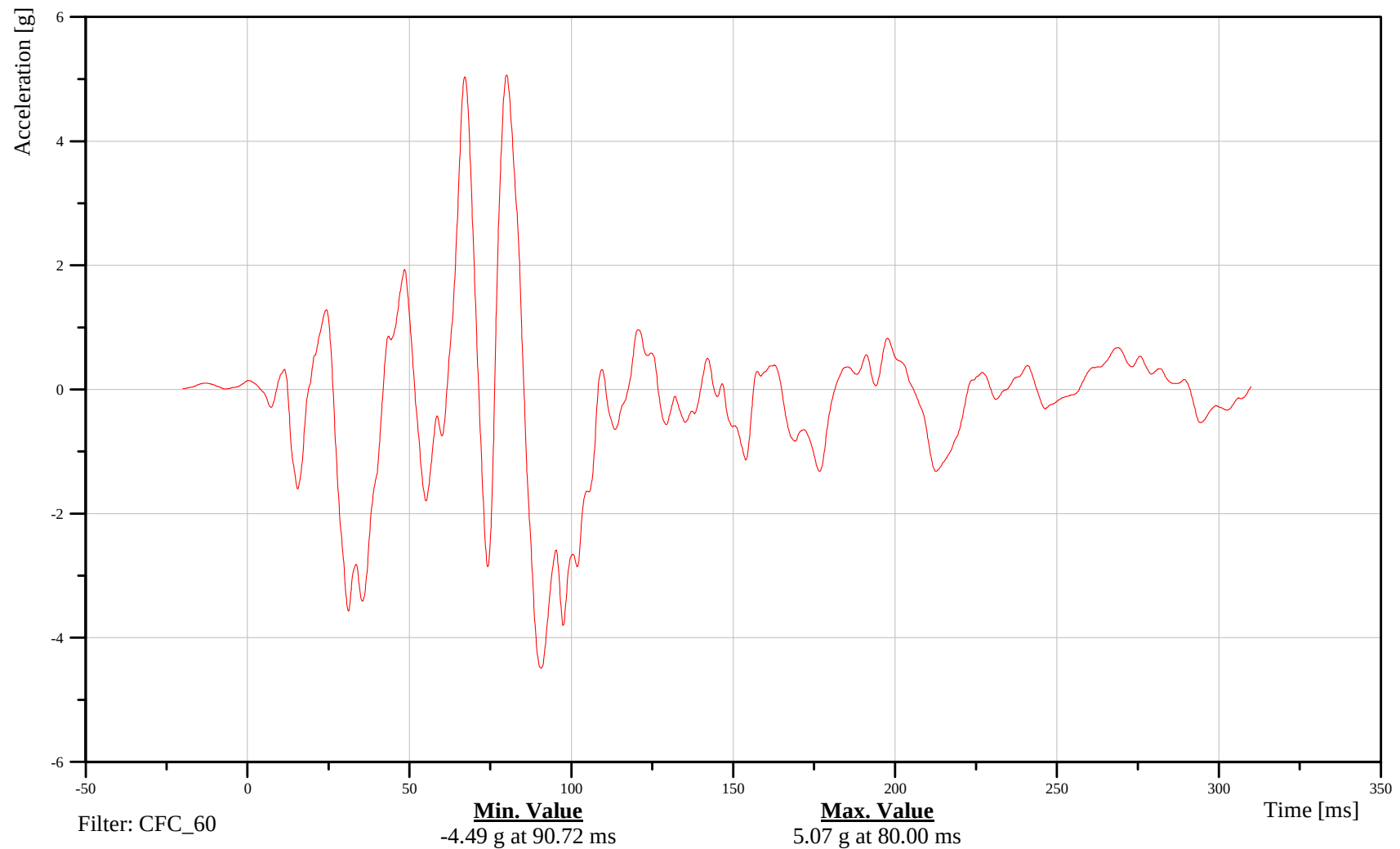
Time: 07:51

Customer: VRTC

28VEHC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck Z-axis Acceleration

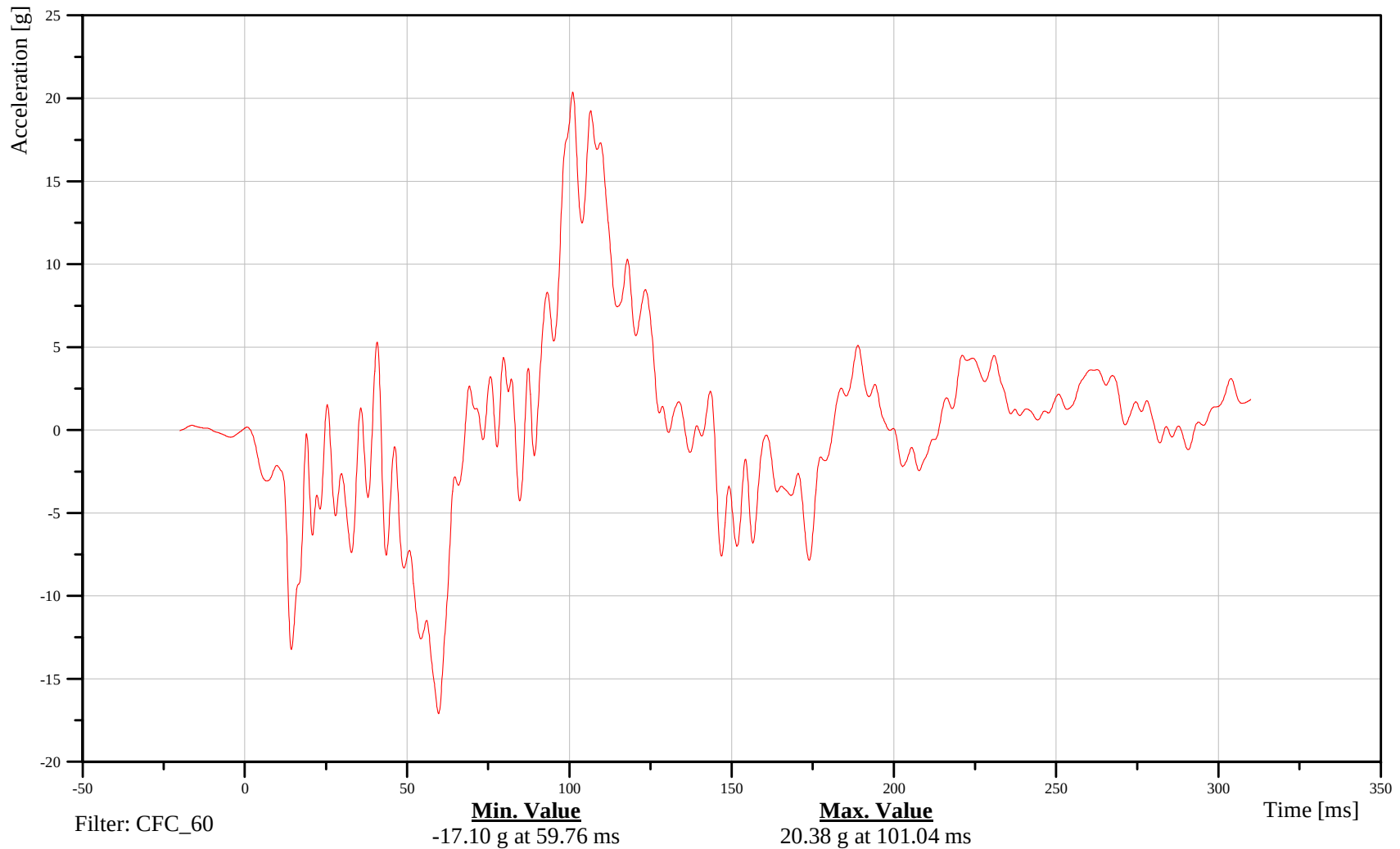
Time: 07:51

Customer: VRTC

28VEHC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck Resultant Acceleration

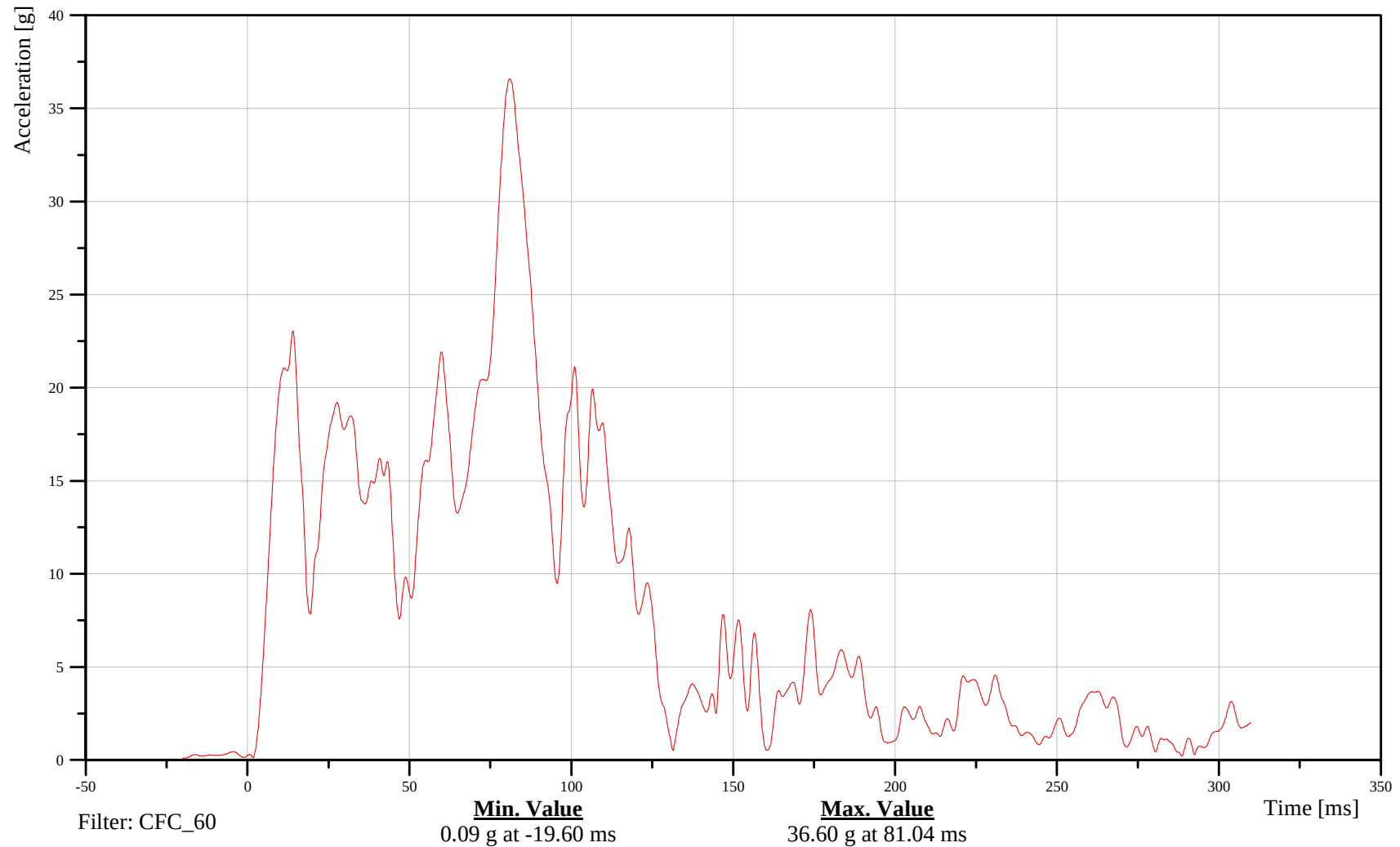
Time: 07:51

Customer: VRTC

28VEHC000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

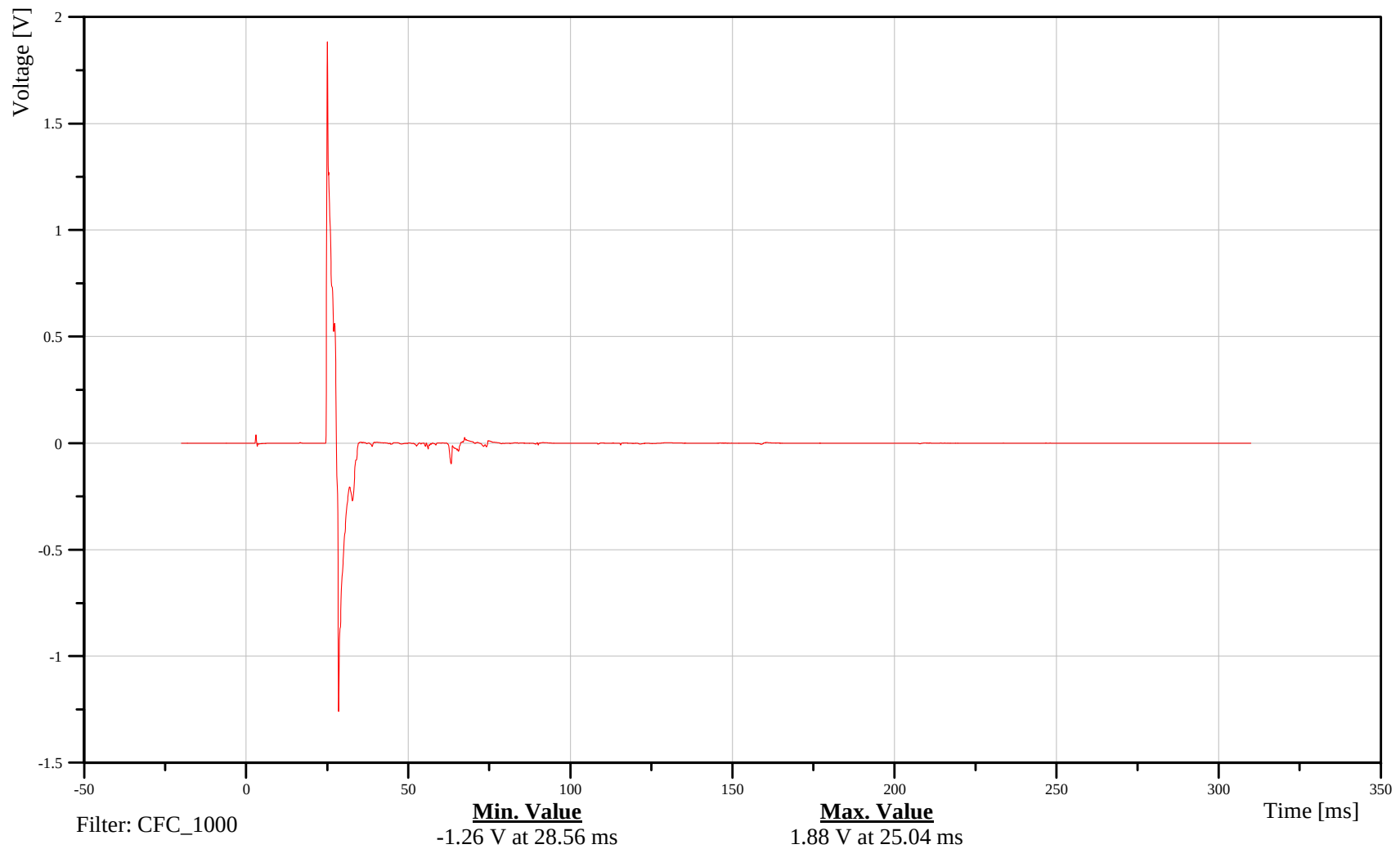
Driver Airbag - Primary

Customer: VRTC

21SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Driver Airbag - Secondary

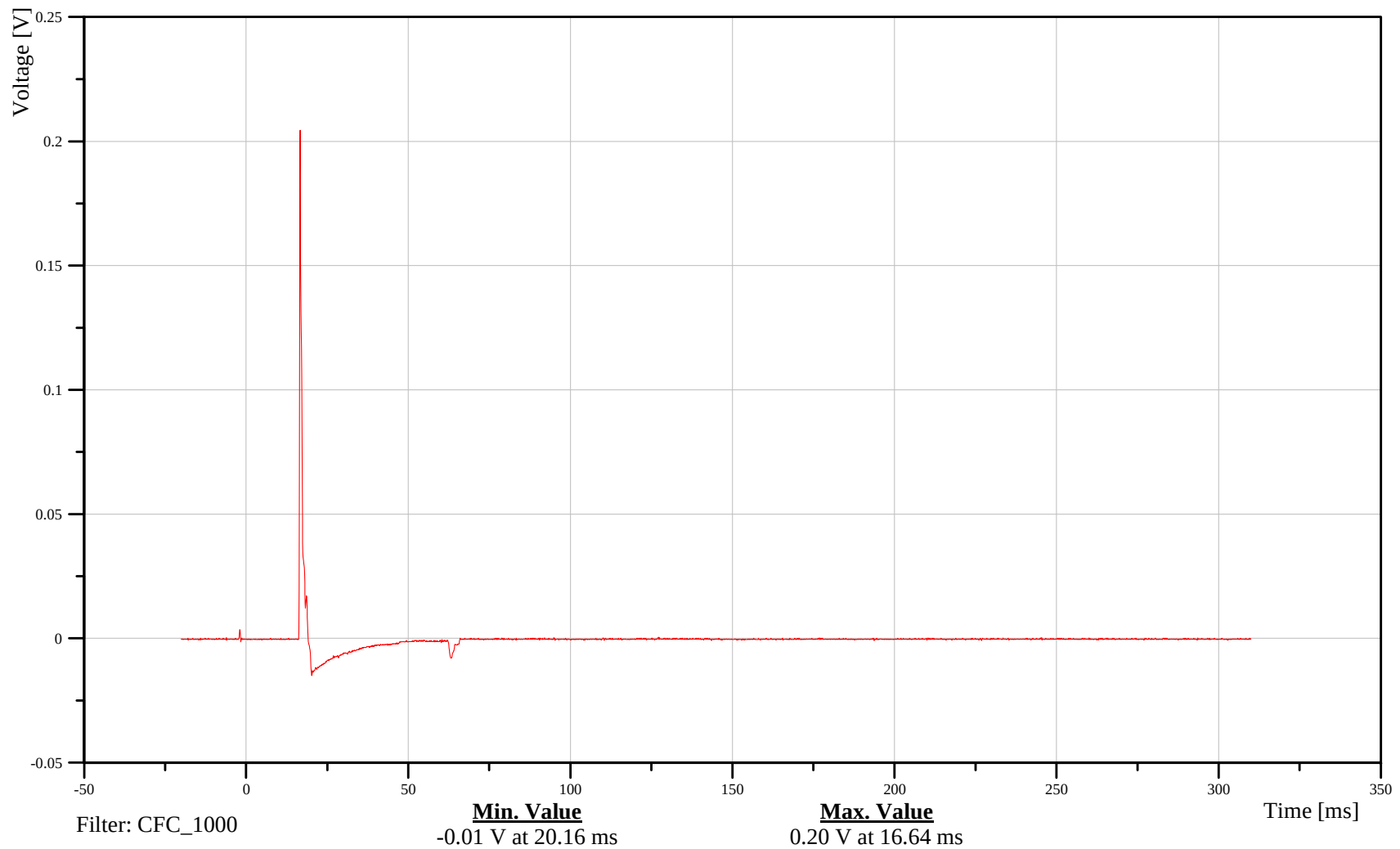
Time: 07:51

Customer: VRTC

21SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

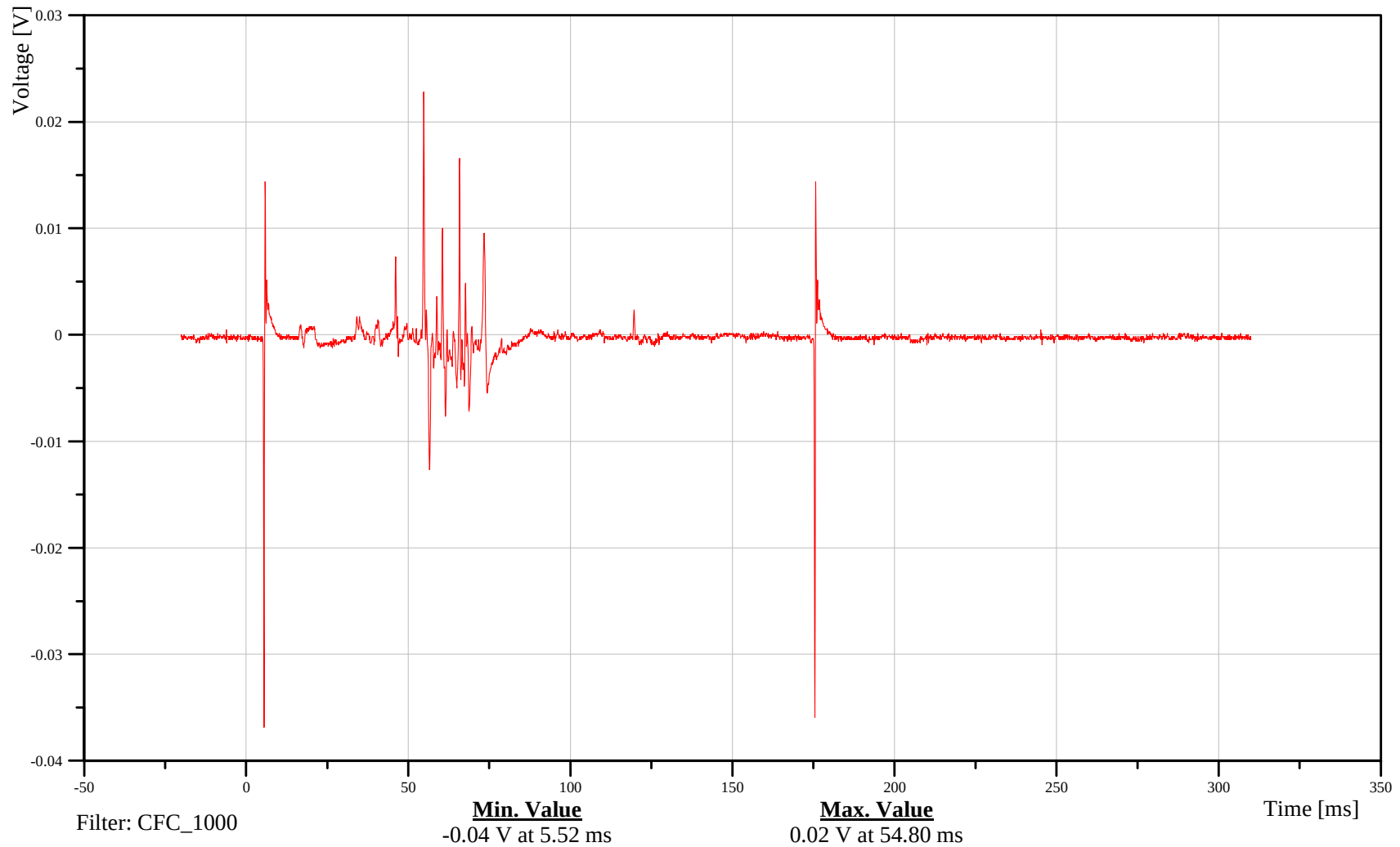
Passenger Airbag - Primary

Customer: VRTC

23SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

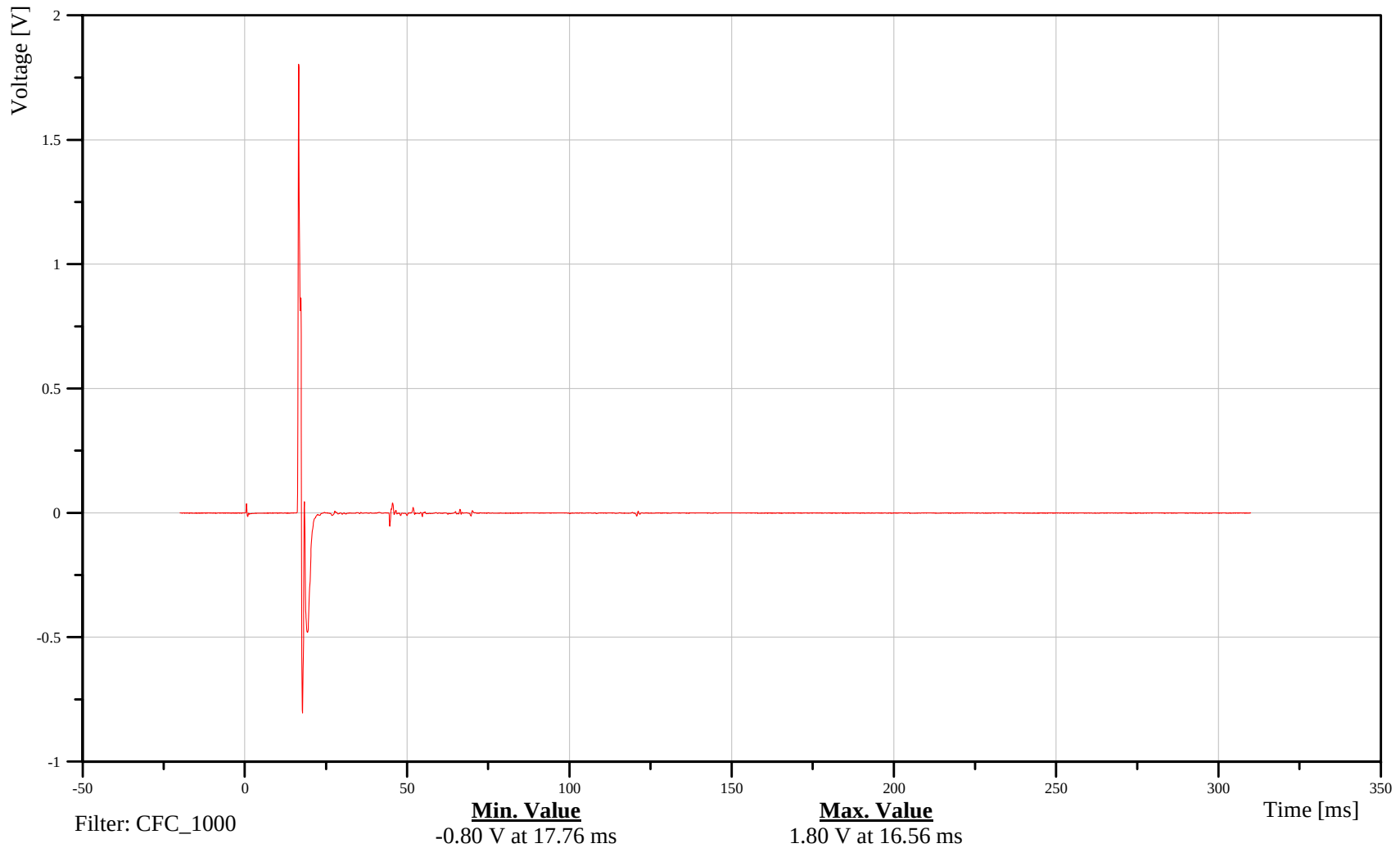
Passenger Airbag - Secondary

Customer: VRTC

23SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Driver Shoulder Belt Spool and Retraction

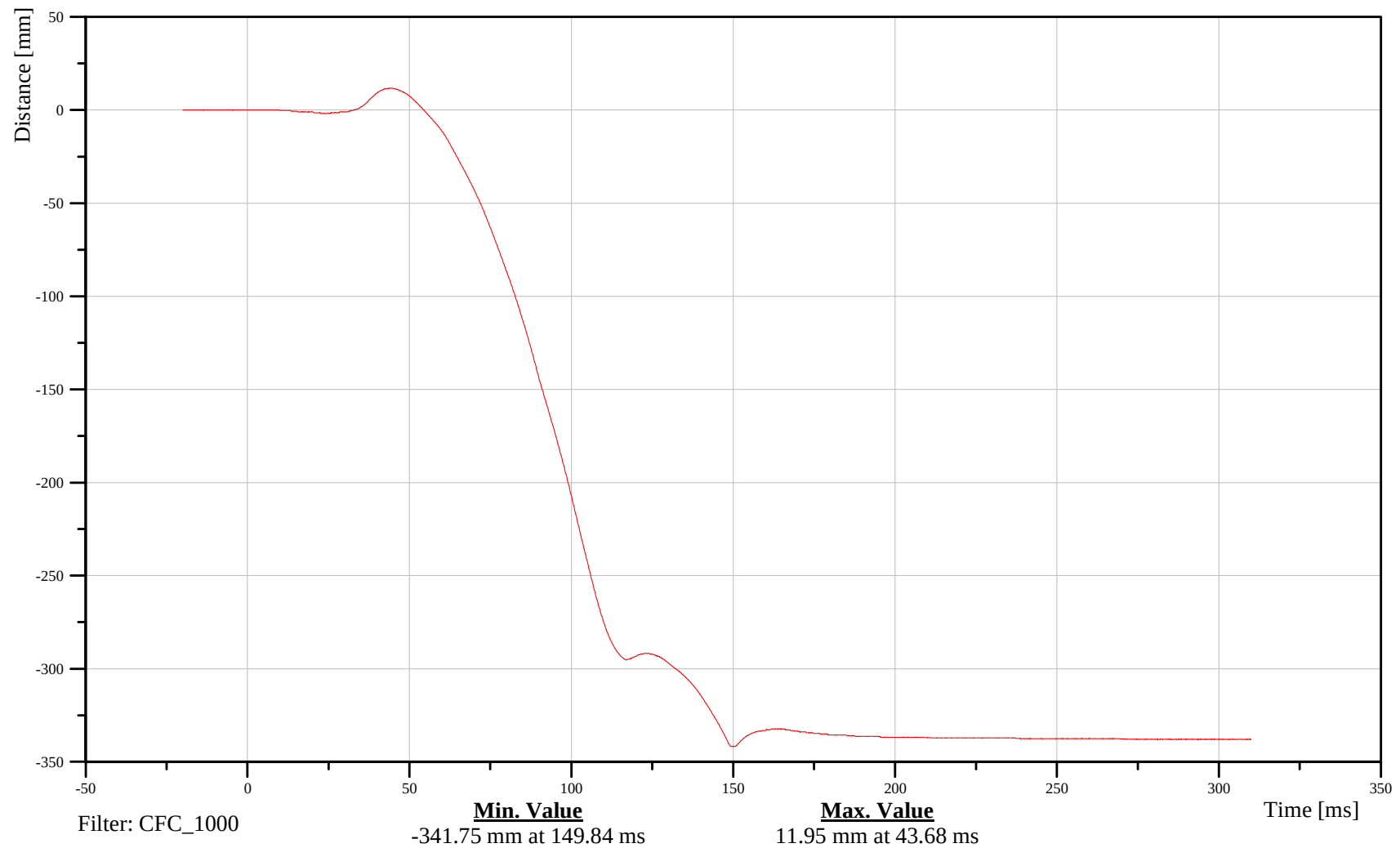
Time: 07:51

Customer: VRTC

21SEBA0000B3DS0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

RF Pass Shoulder Belt Spool and Retraction

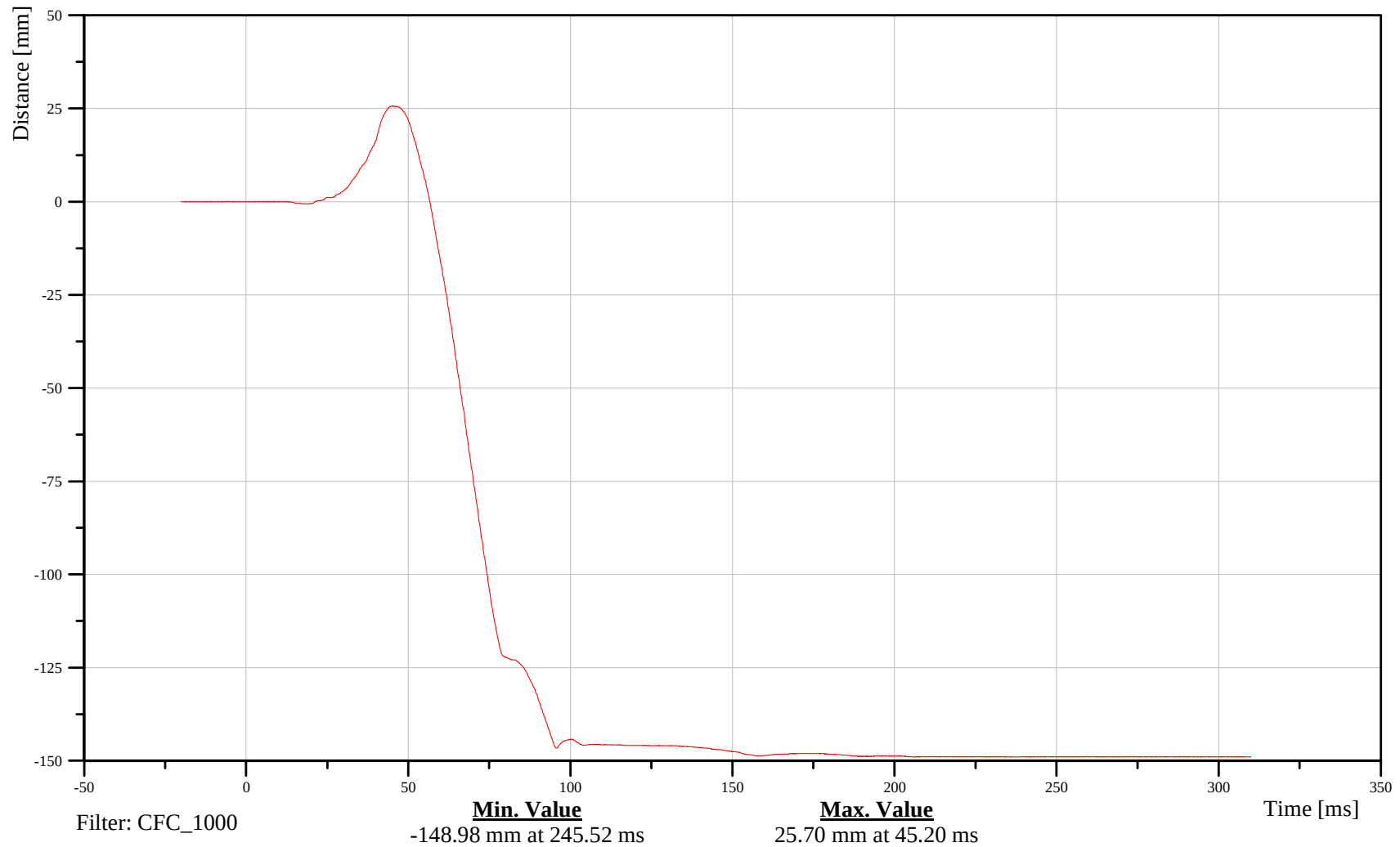
Time: 07:51

Customer: VRTC

23SEBA0000B3DS0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

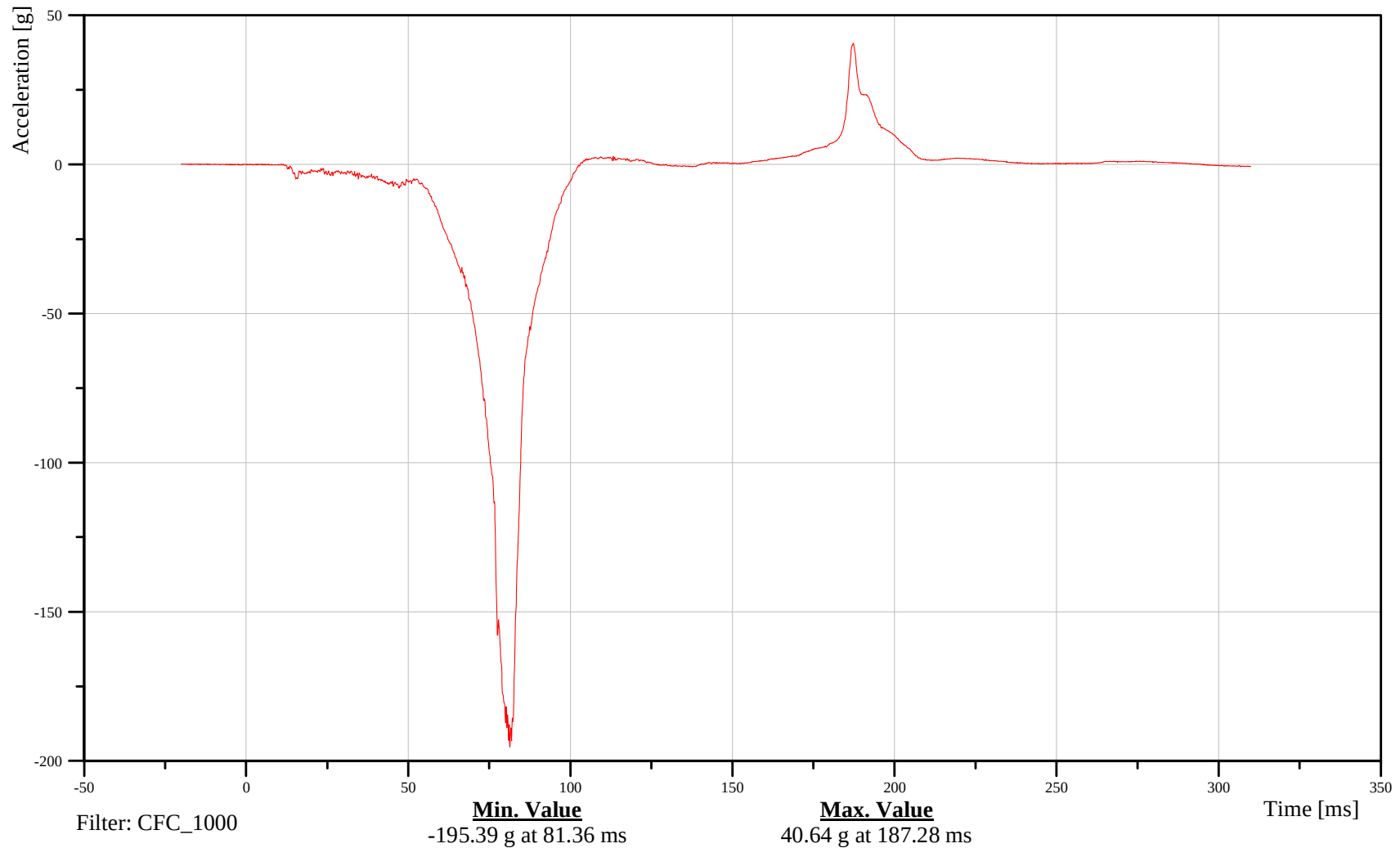
Head Accel X

Customer: VRTC

11HEADCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

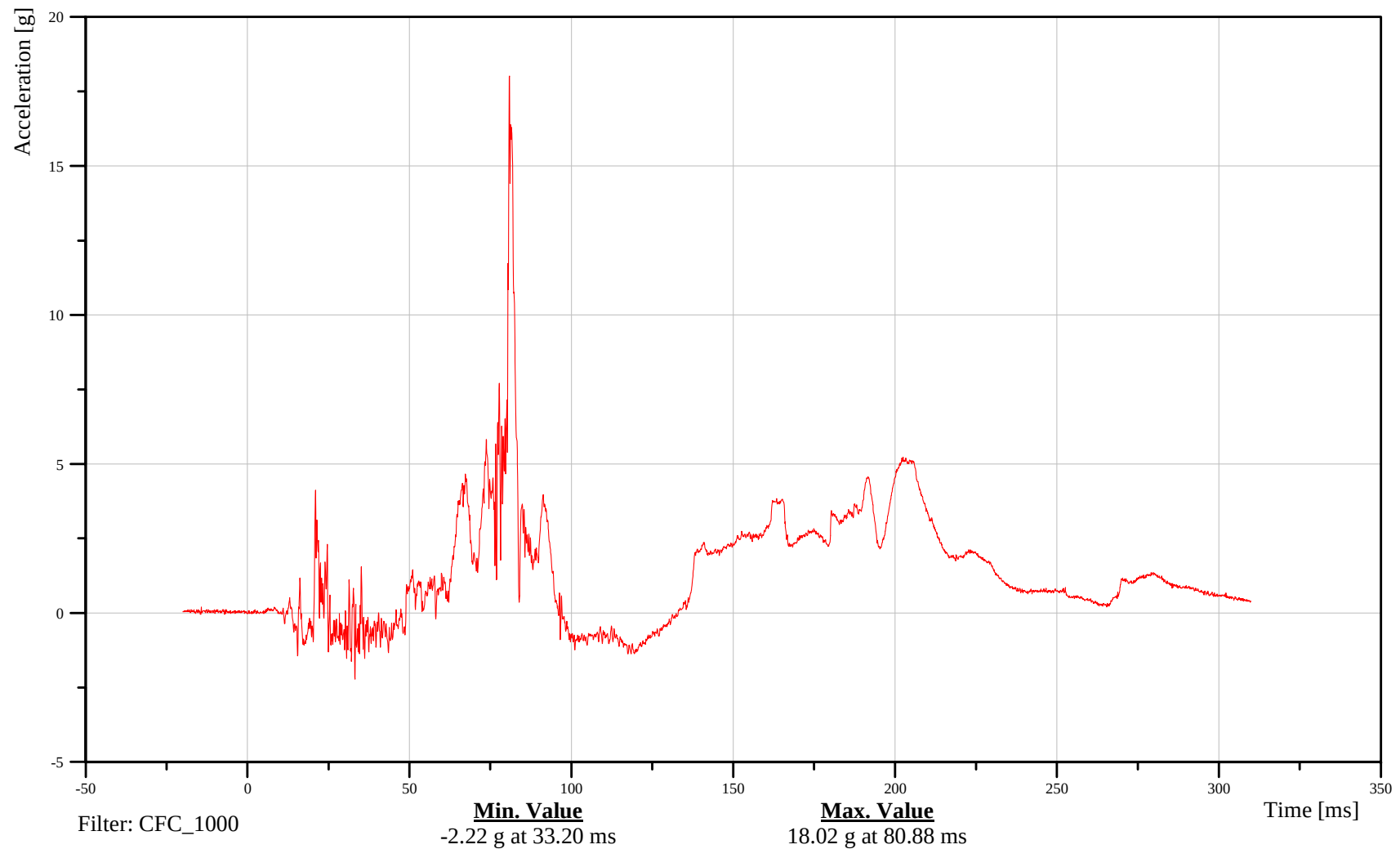
Head Accel Y

Customer: VRTC

11HEADCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

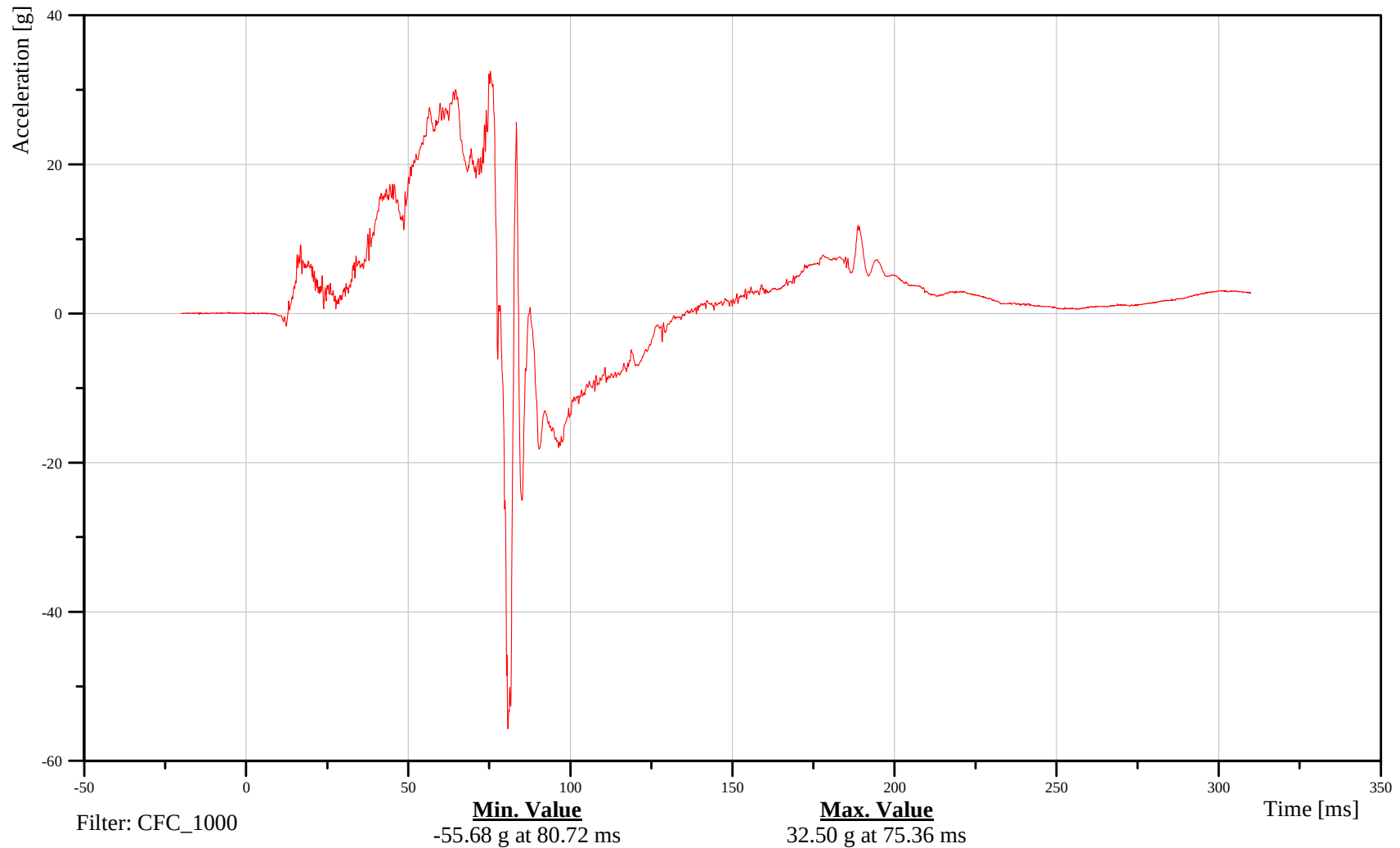
Head Accel Z

Customer: VRTC

11HEADCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

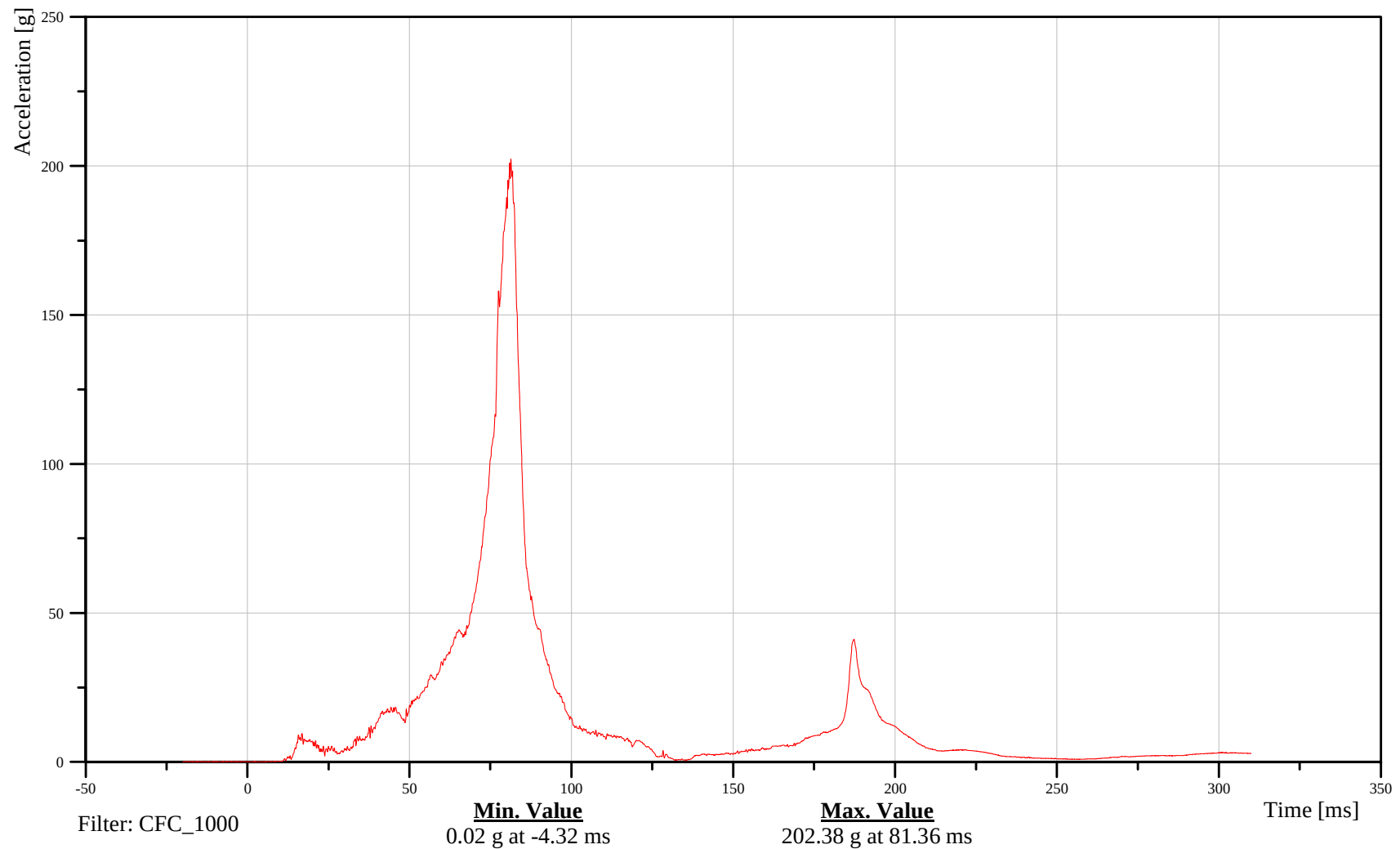
Head Accel Resultant

Customer: VRTC

11HEADCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (FT) Accel Y

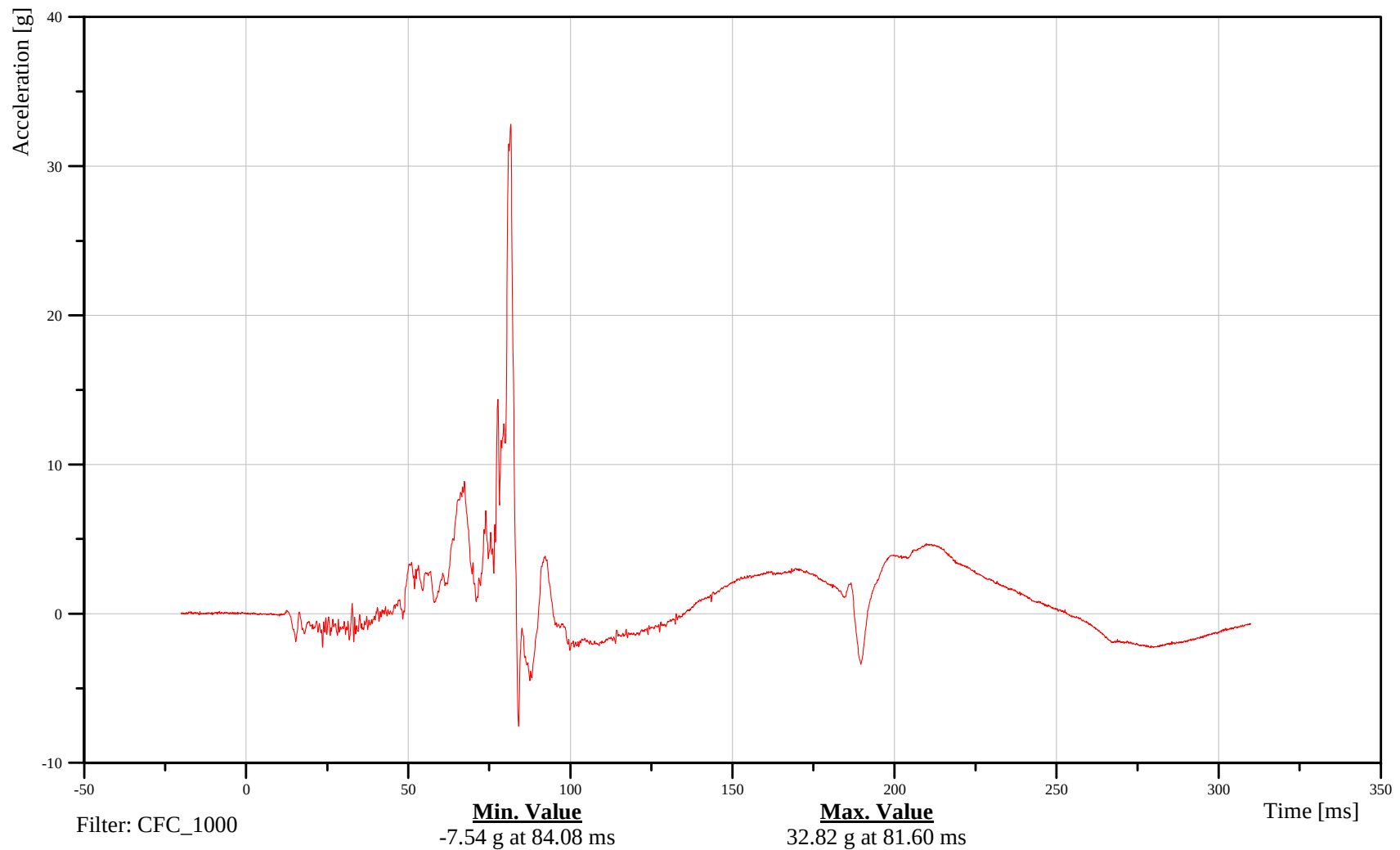
Time: 07:51

Customer: VRTC

11HEADFR00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (FT) Accel Z

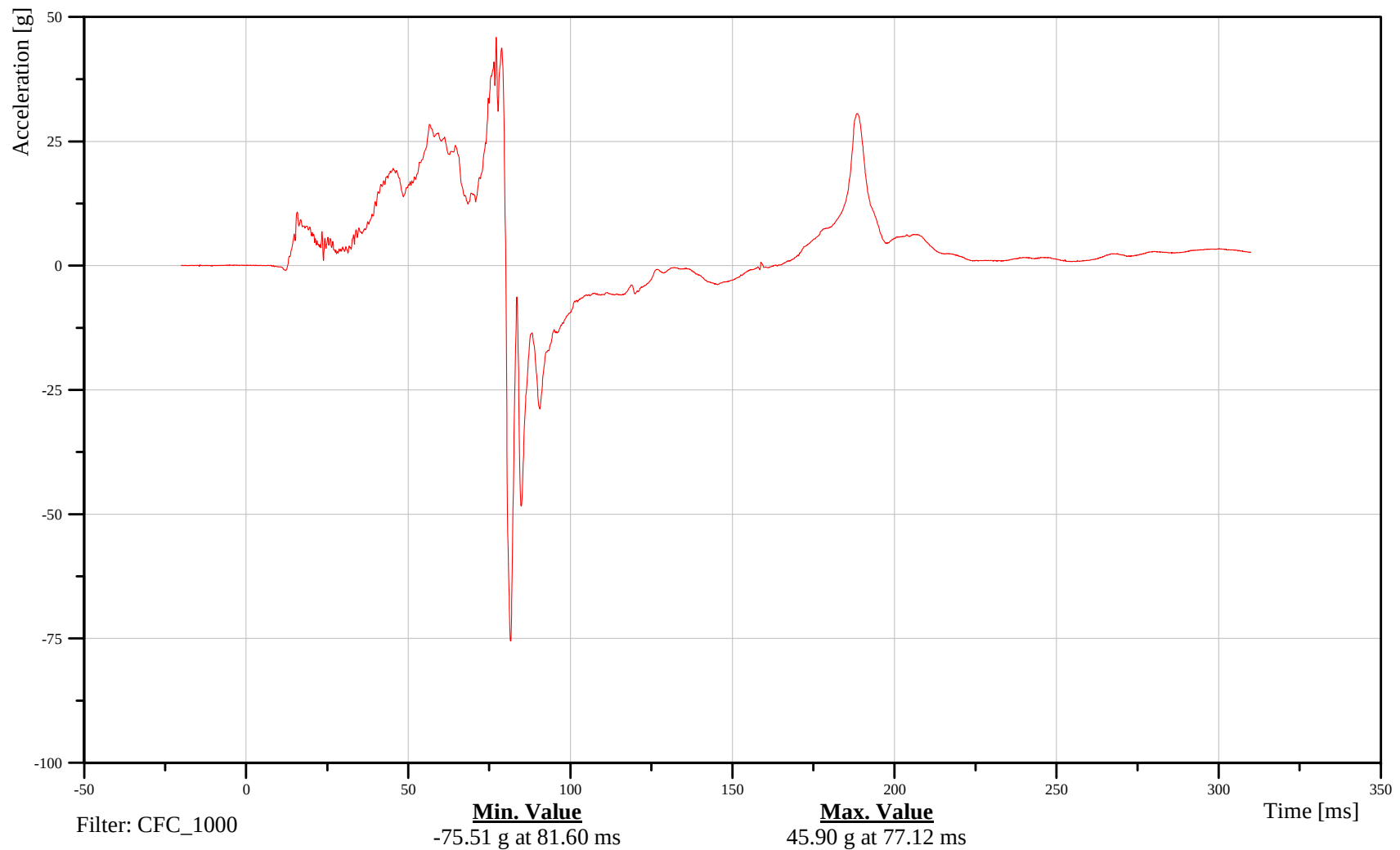
Time: 07:51

Customer: VRTC

11HEADFR00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

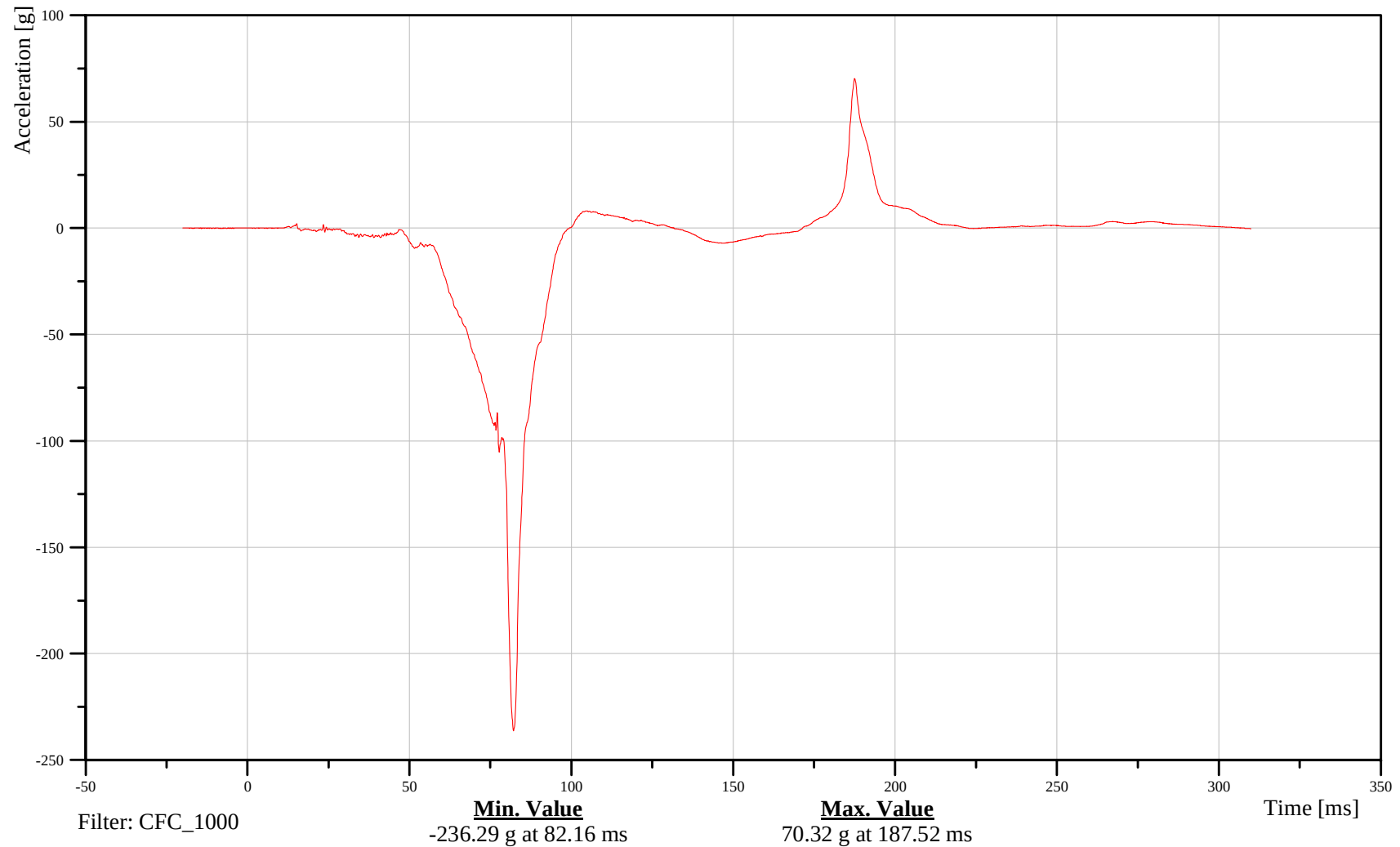
Head (TP) Accel X

Customer: VRTC

11HEADUP00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel Y

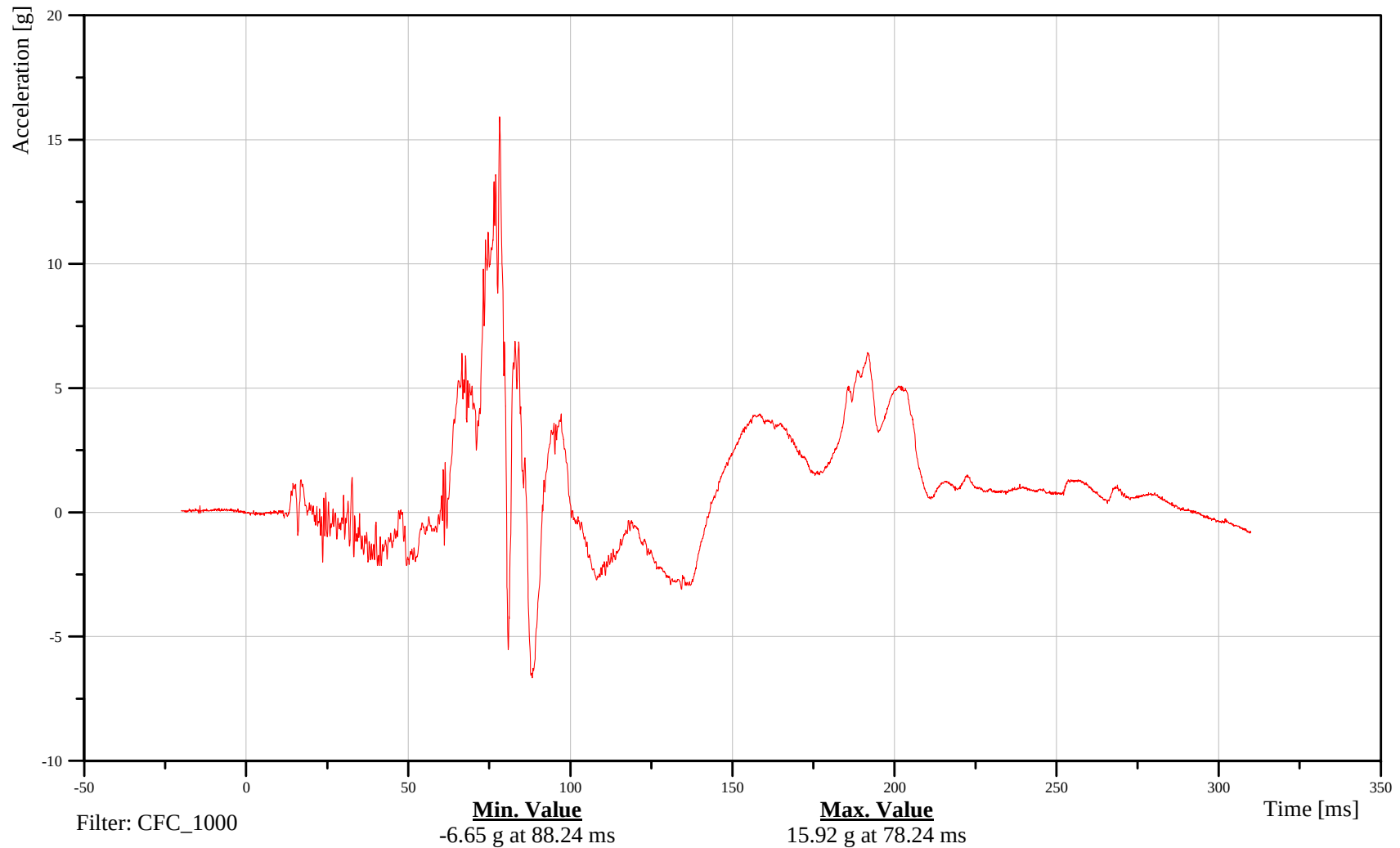
Time: 07:51

Customer: VRTC

11HEADUP00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (LT) Accel X

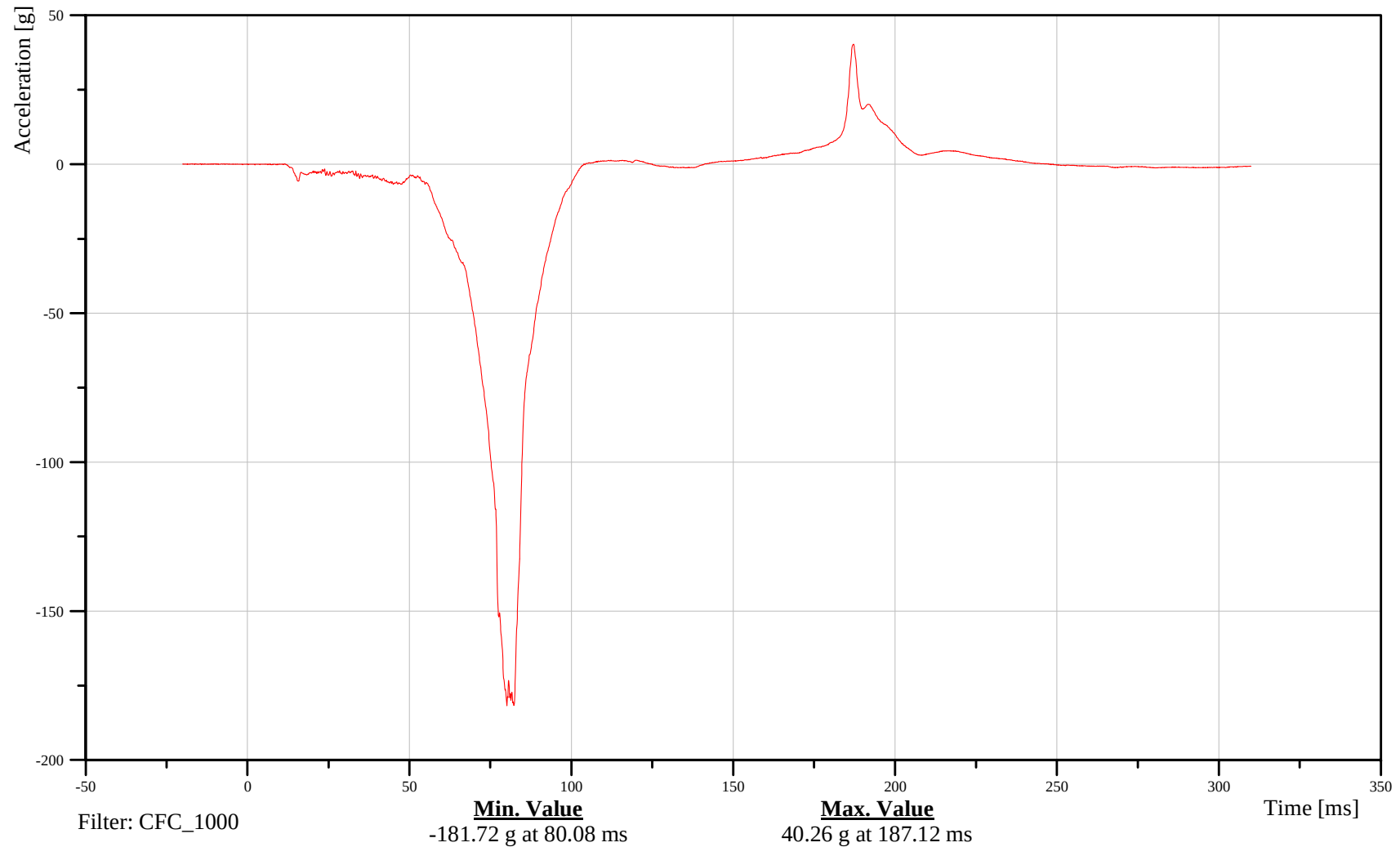
Time: 07:51

Customer: VRTC

11HEADLE00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

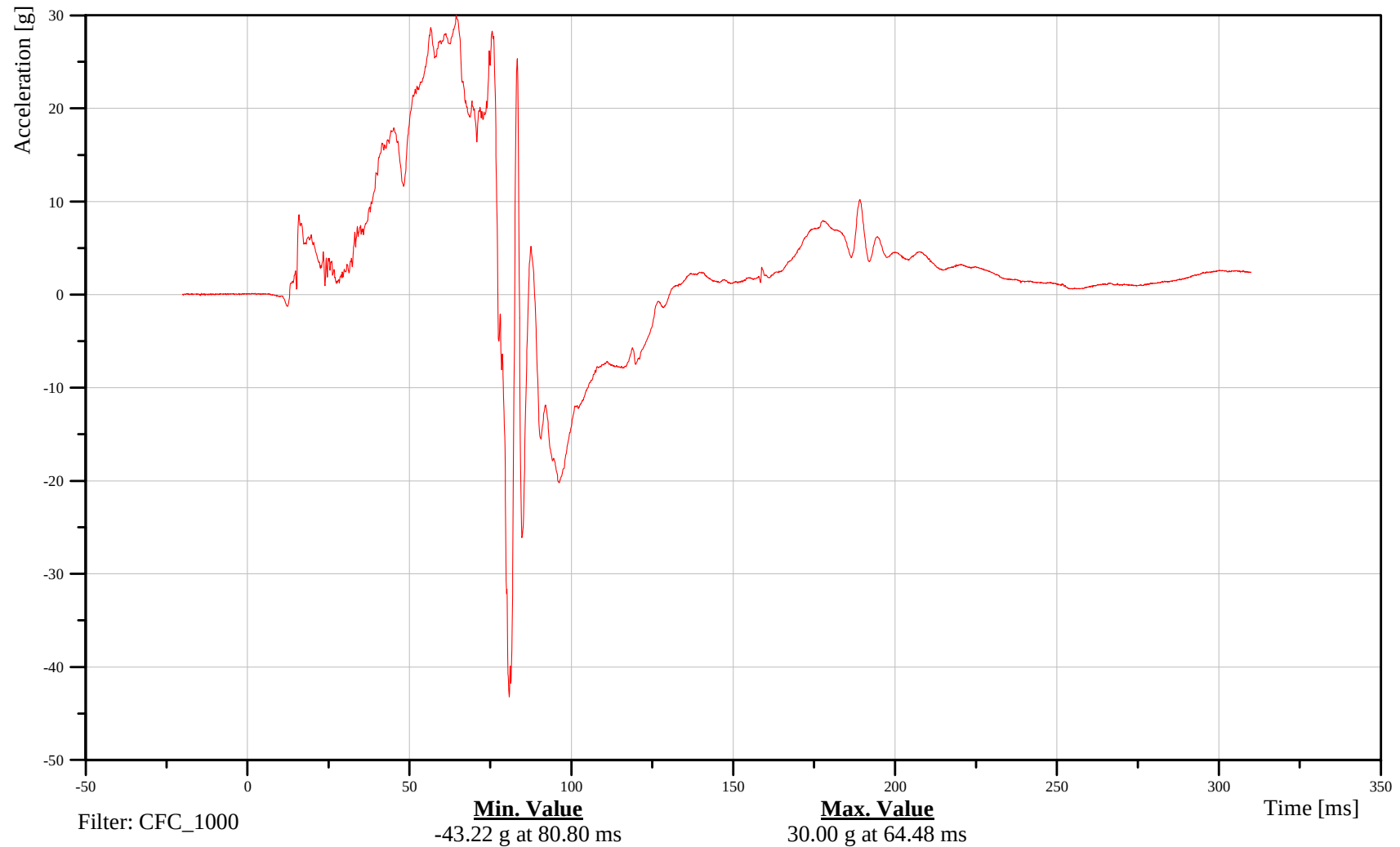
Head (LT) Accel Z

Customer: VRTC

11HEADLE00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

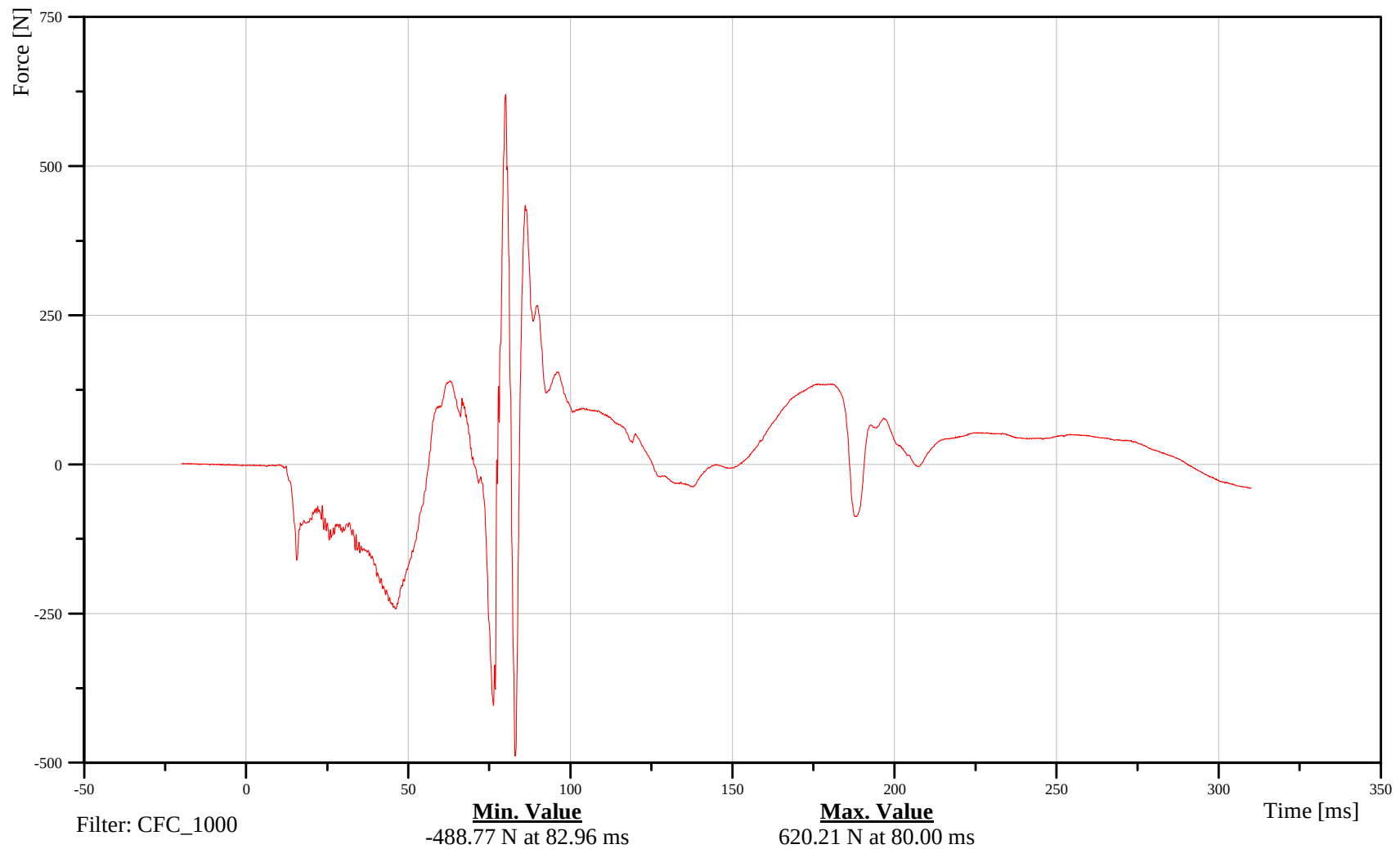
Neck Force X

Customer: VRTC

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

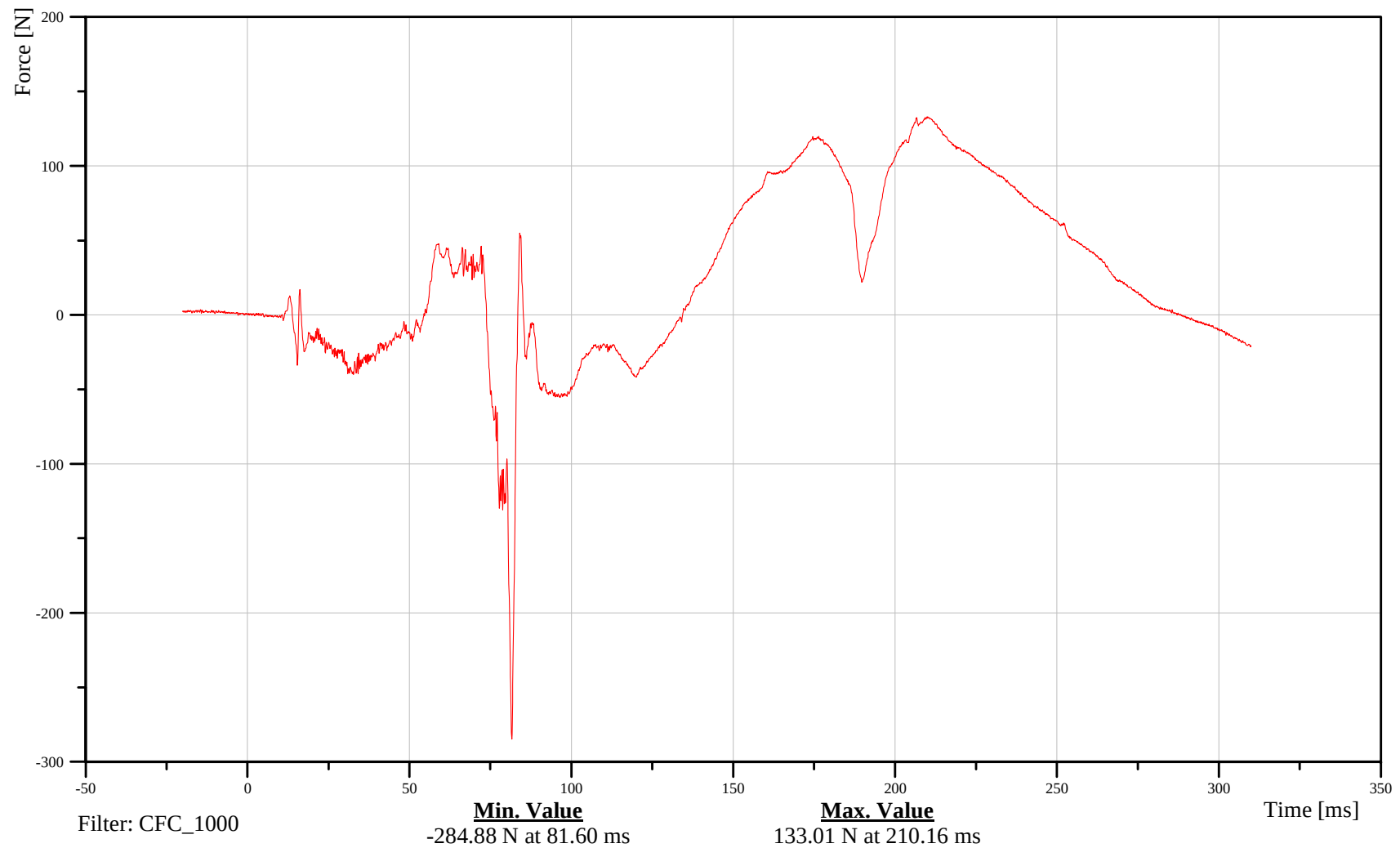
Neck Force Y

Customer: VRTC

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

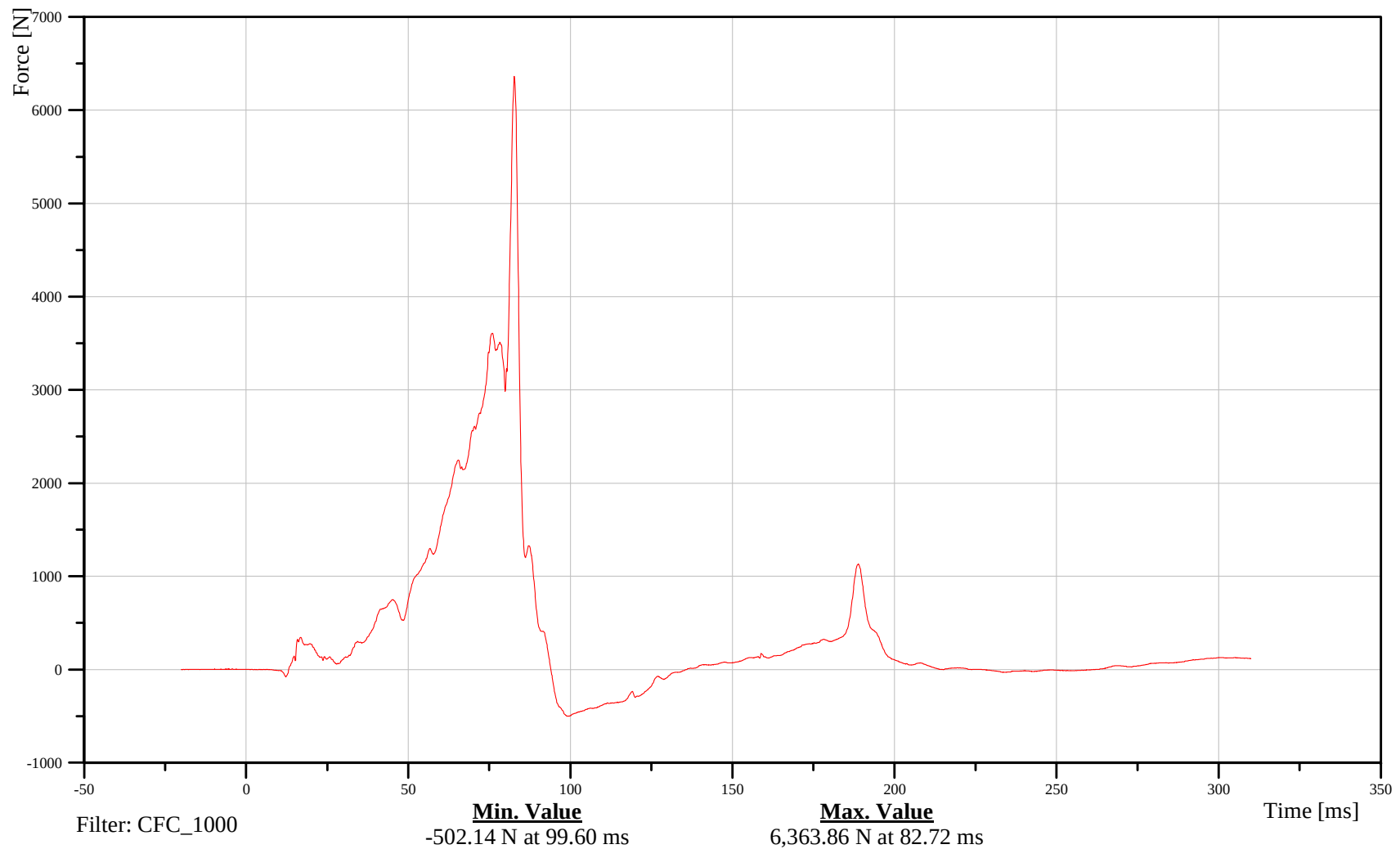
Neck Force Z

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

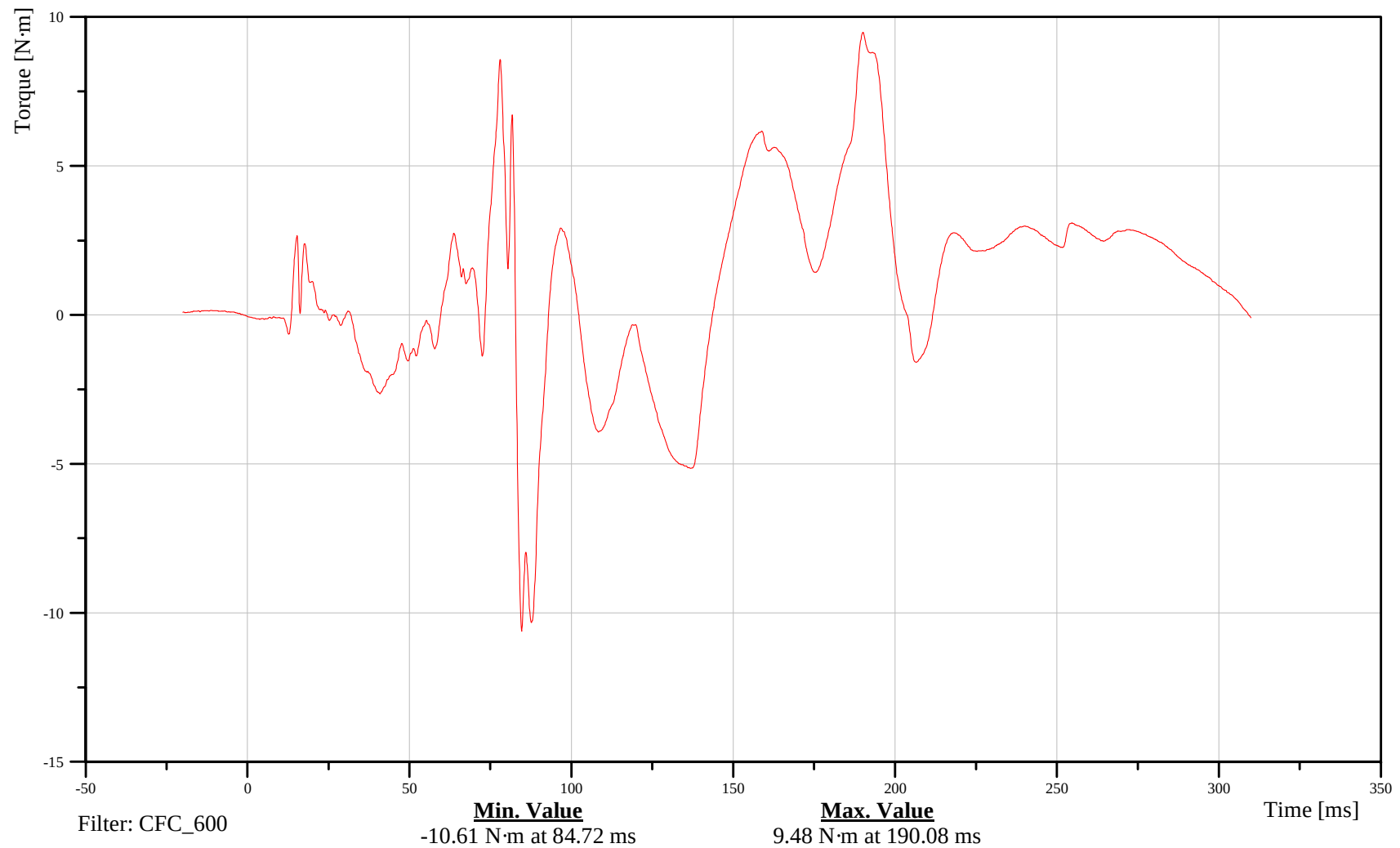
Neck Moment X

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

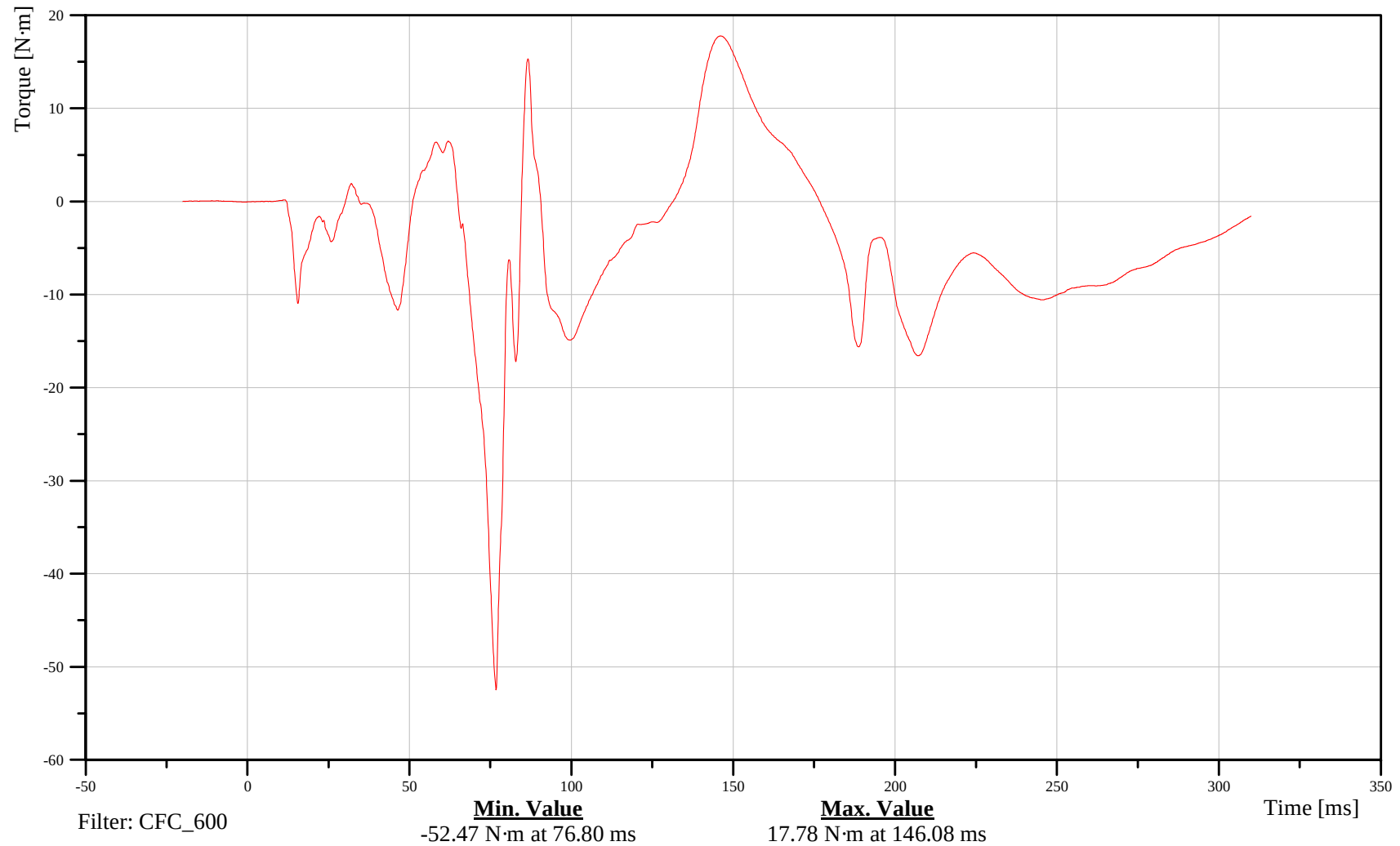
Neck Moment Y

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

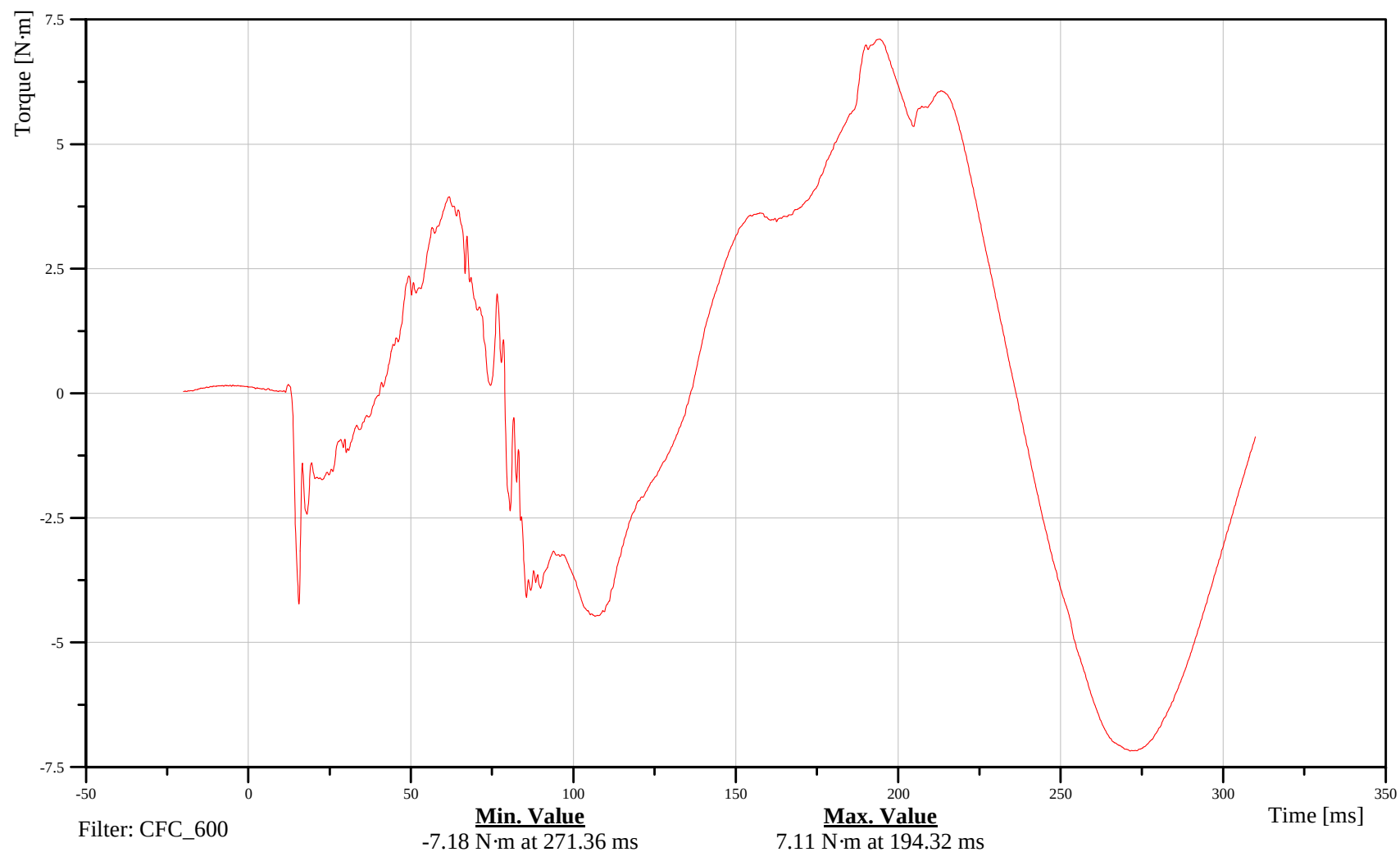
Neck Moment Z

Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force X

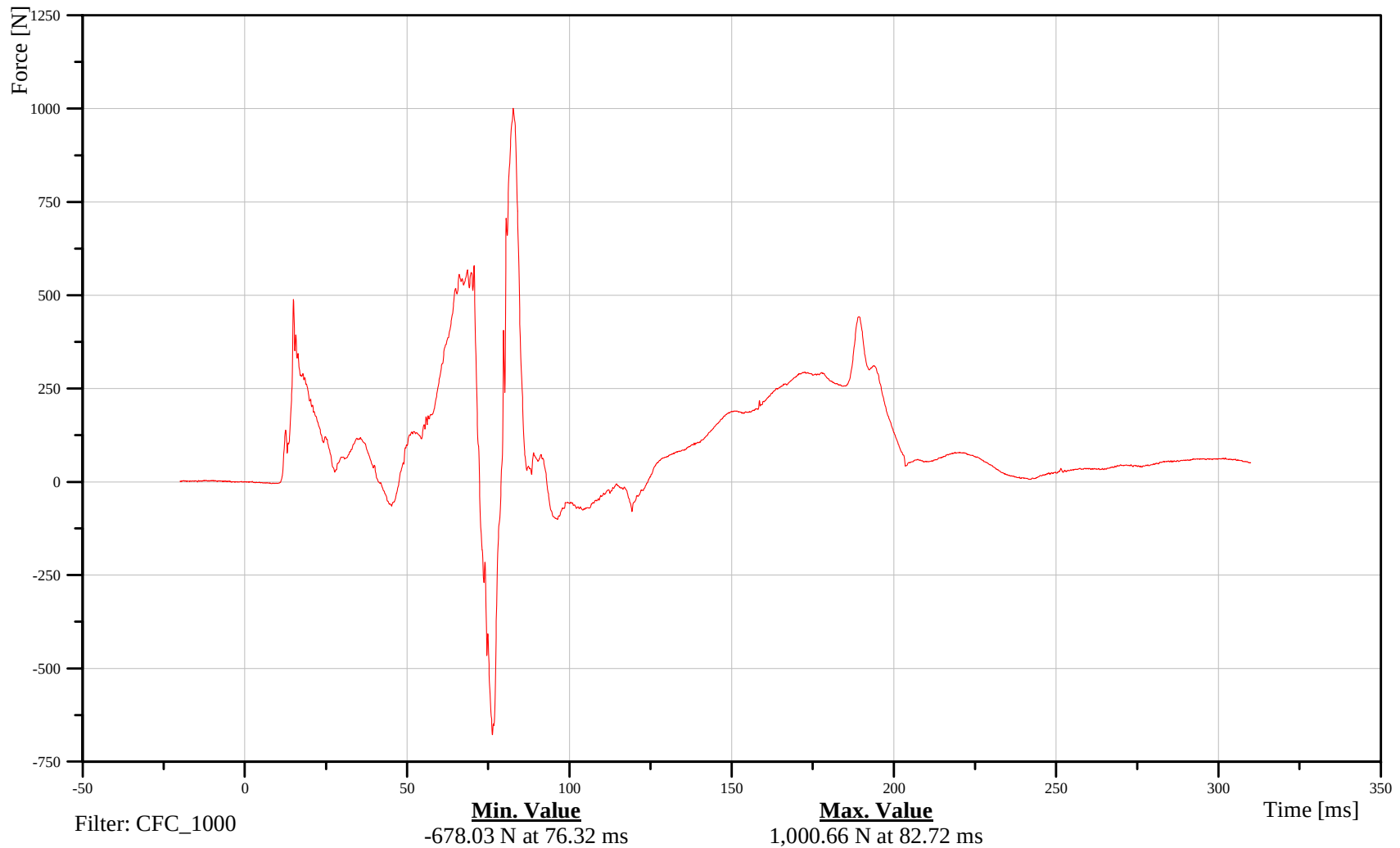
Time: 07:51

Customer: VRTC

11NECKLO00H3FOXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force Y

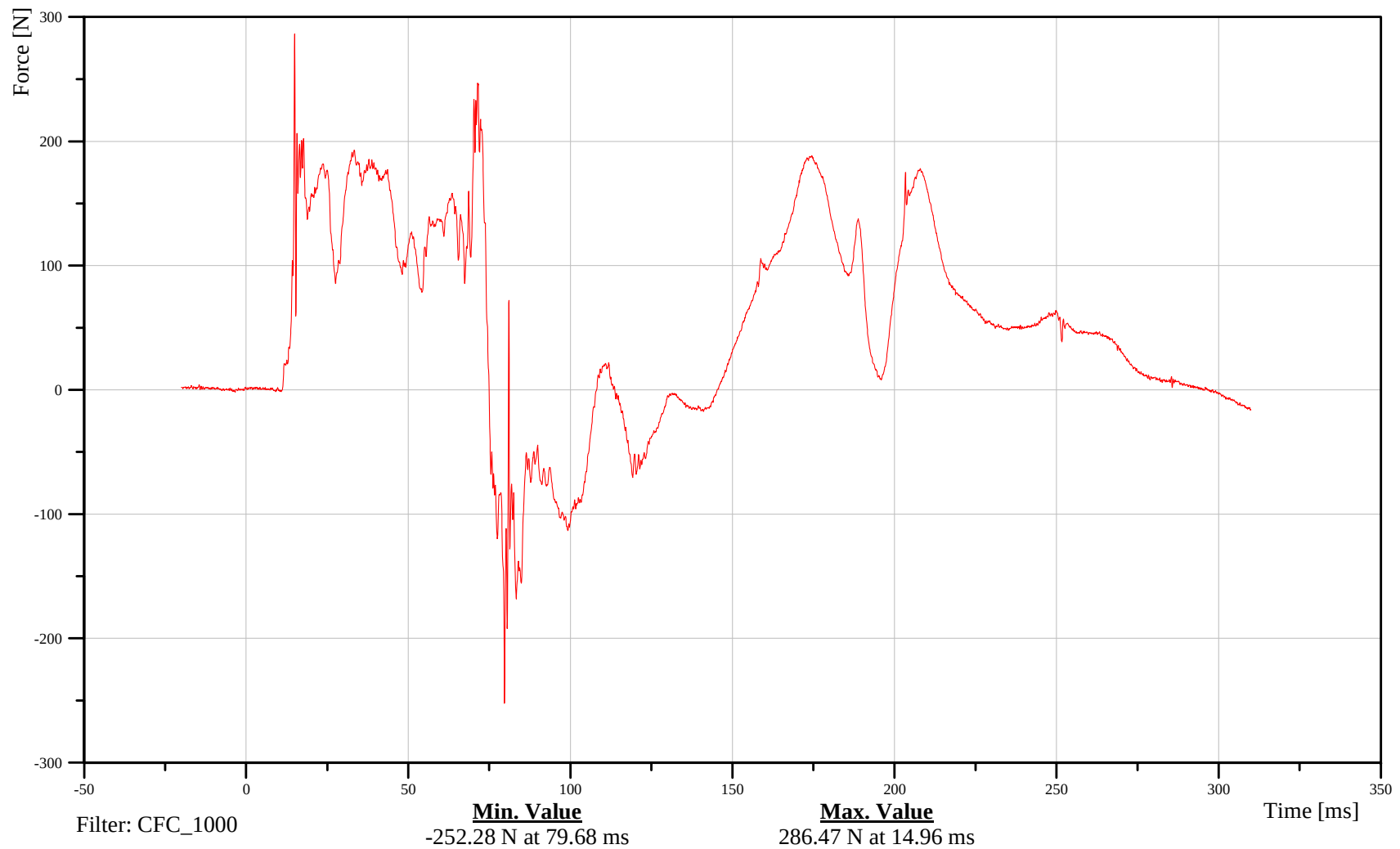
Time: 07:51

Customer: VRTC

11NECKLO00H3FOYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force Z

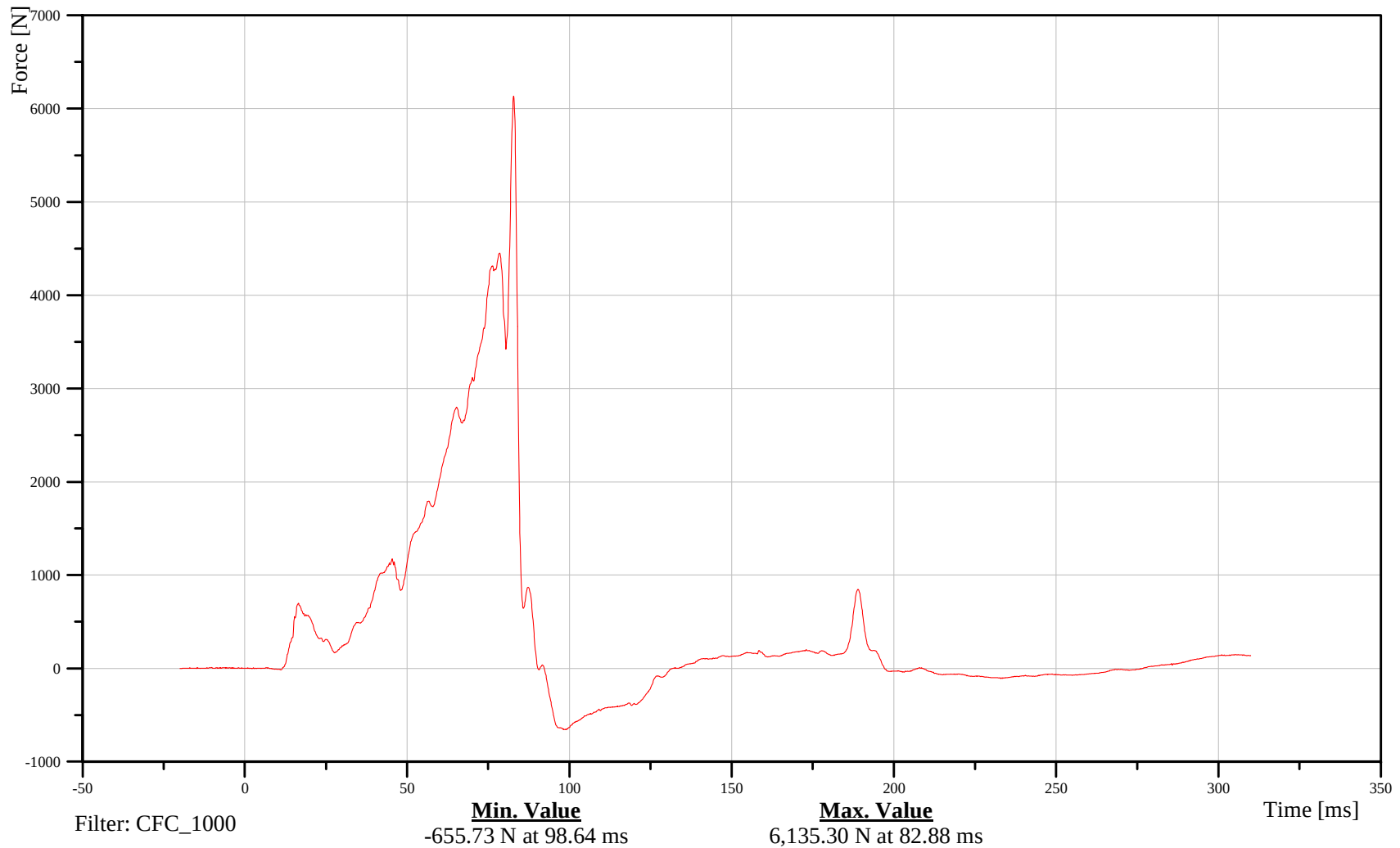
Time: 07:51

Customer: VRTC

11NECKLO00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

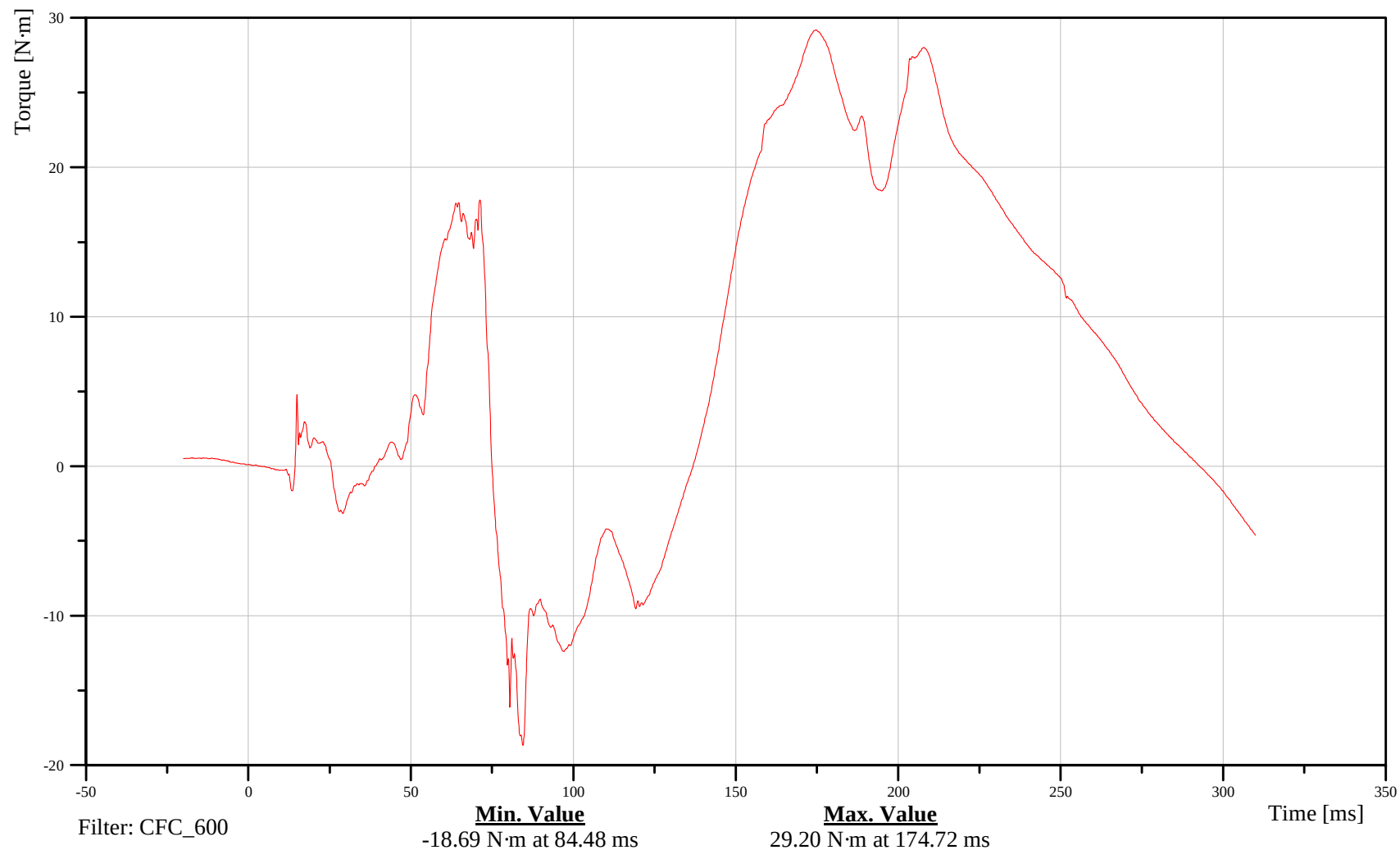
Neck Lower Moment X

Customer: VRTC

11NECKLO00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

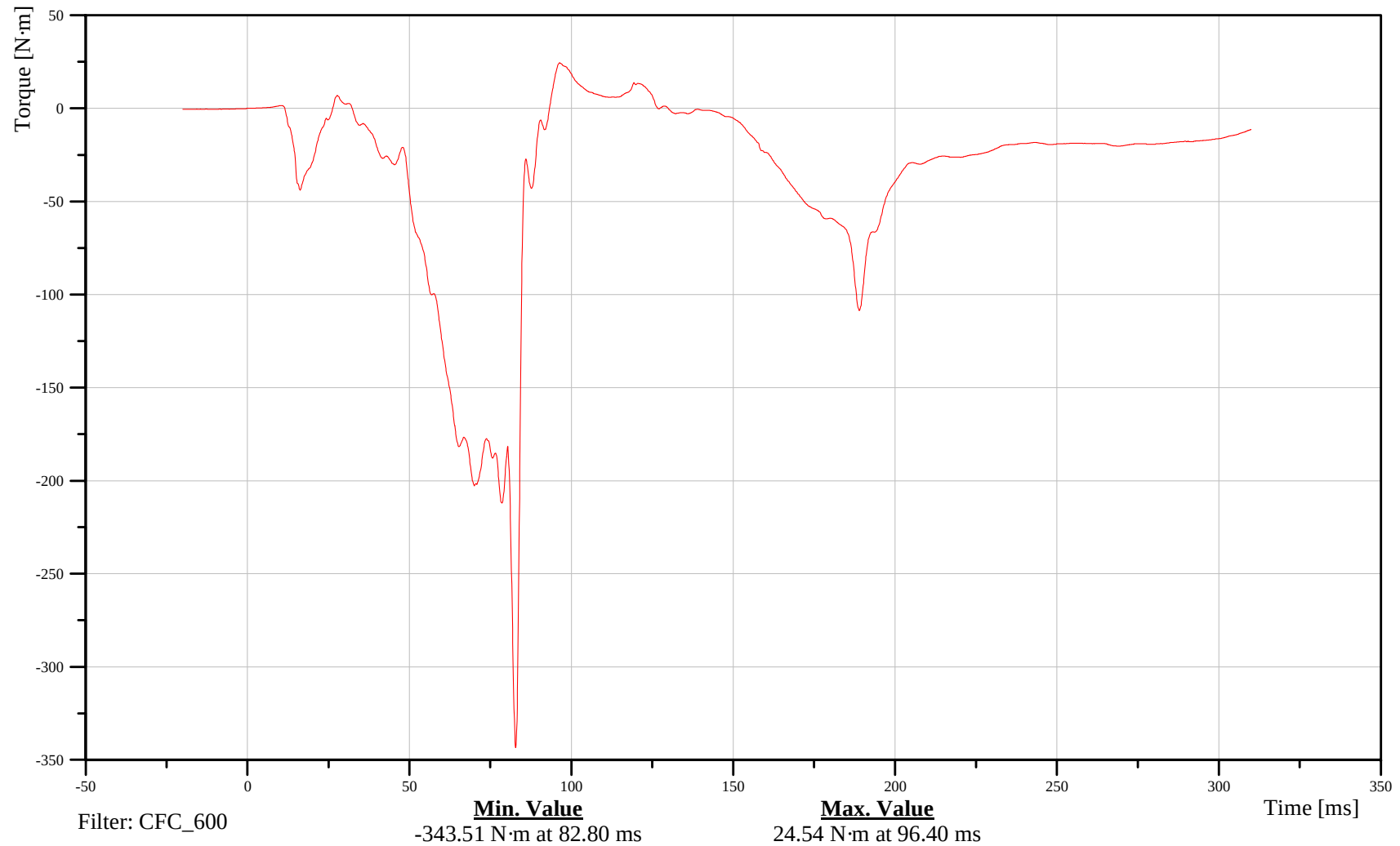
Neck Lower Moment Y

Customer: VRTC

11NECKLO00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

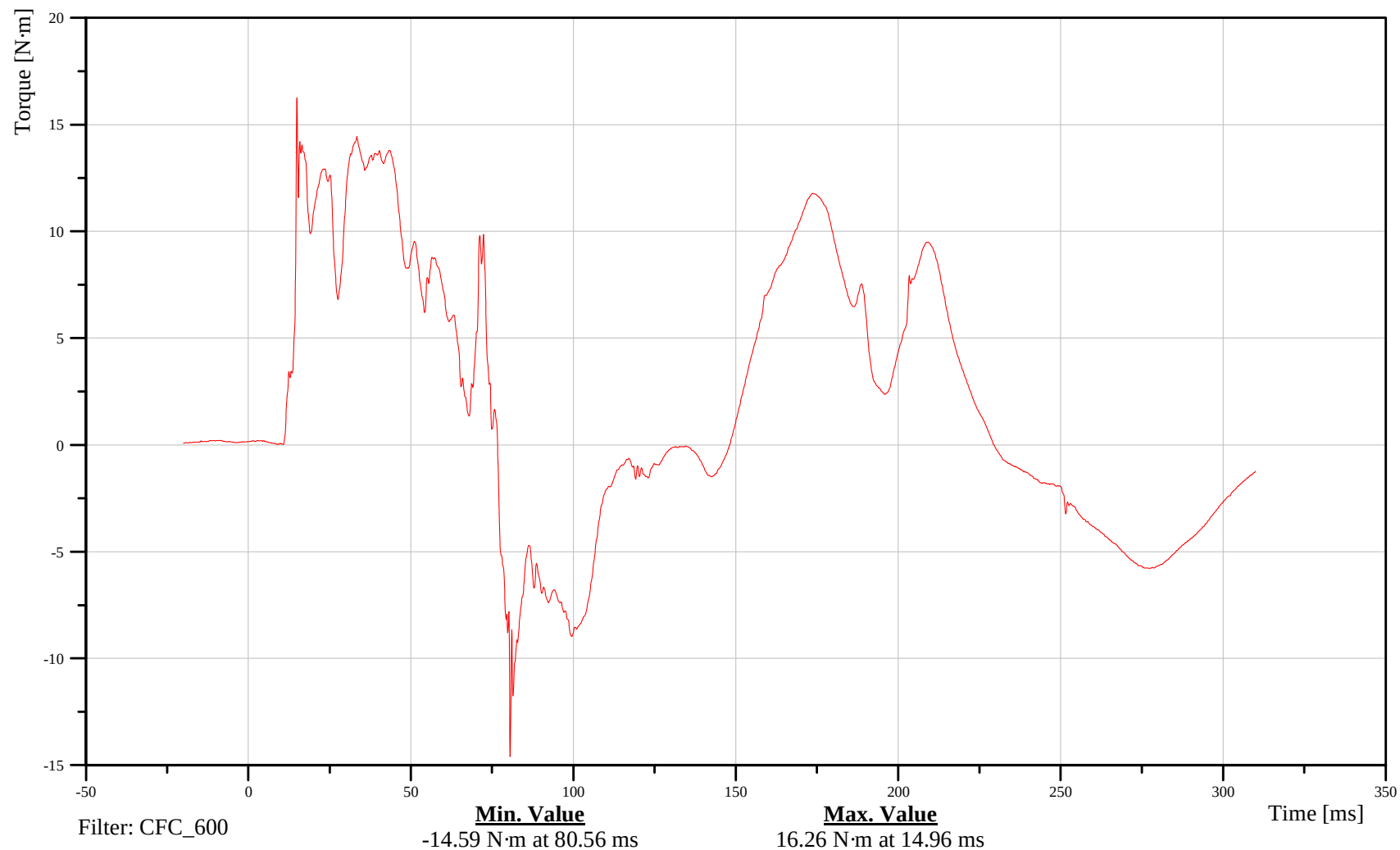
Neck Lower Moment Z

Customer: VRTC

11NECKLO00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

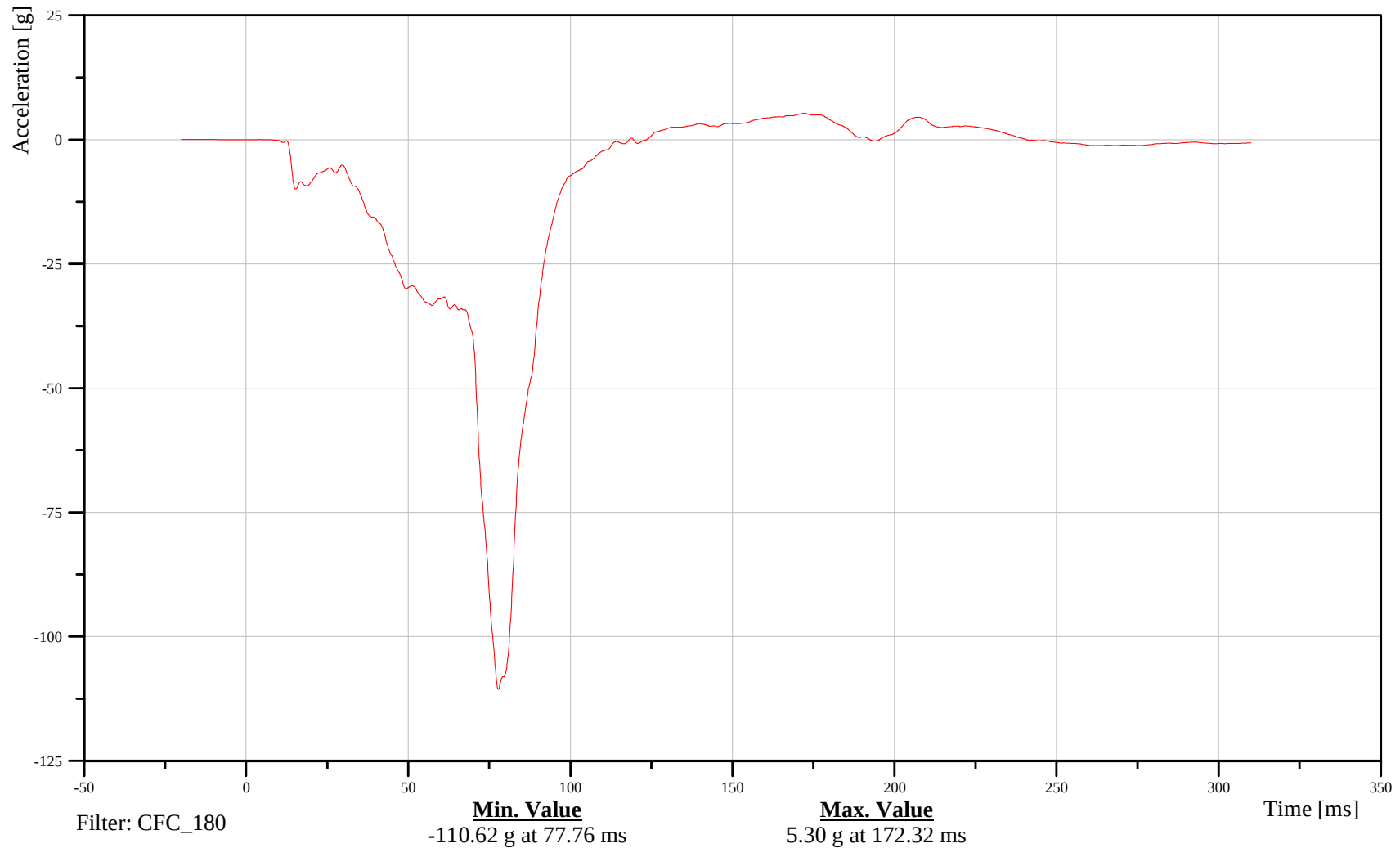
Chest Accel X

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Y

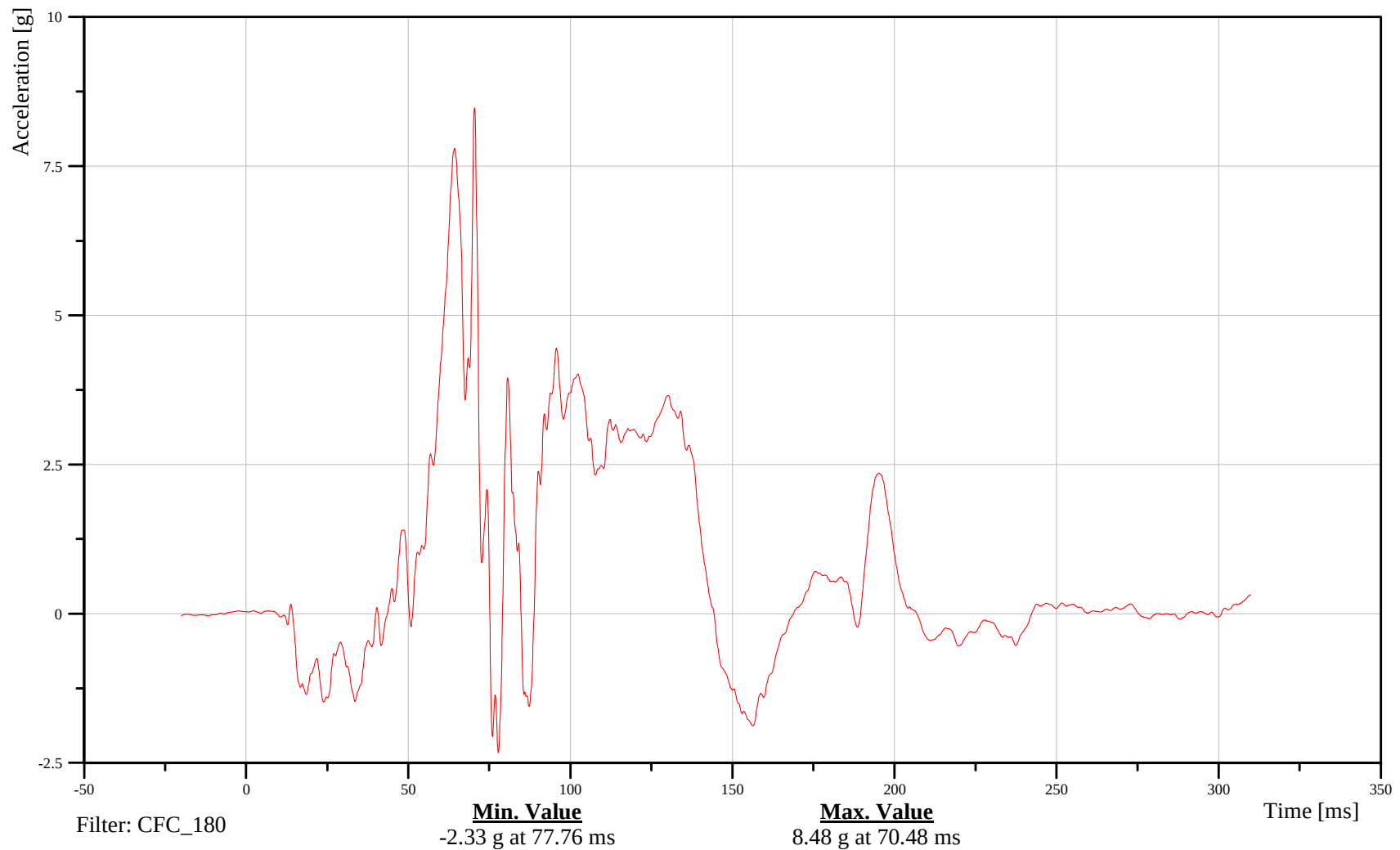
Time: 07:51

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

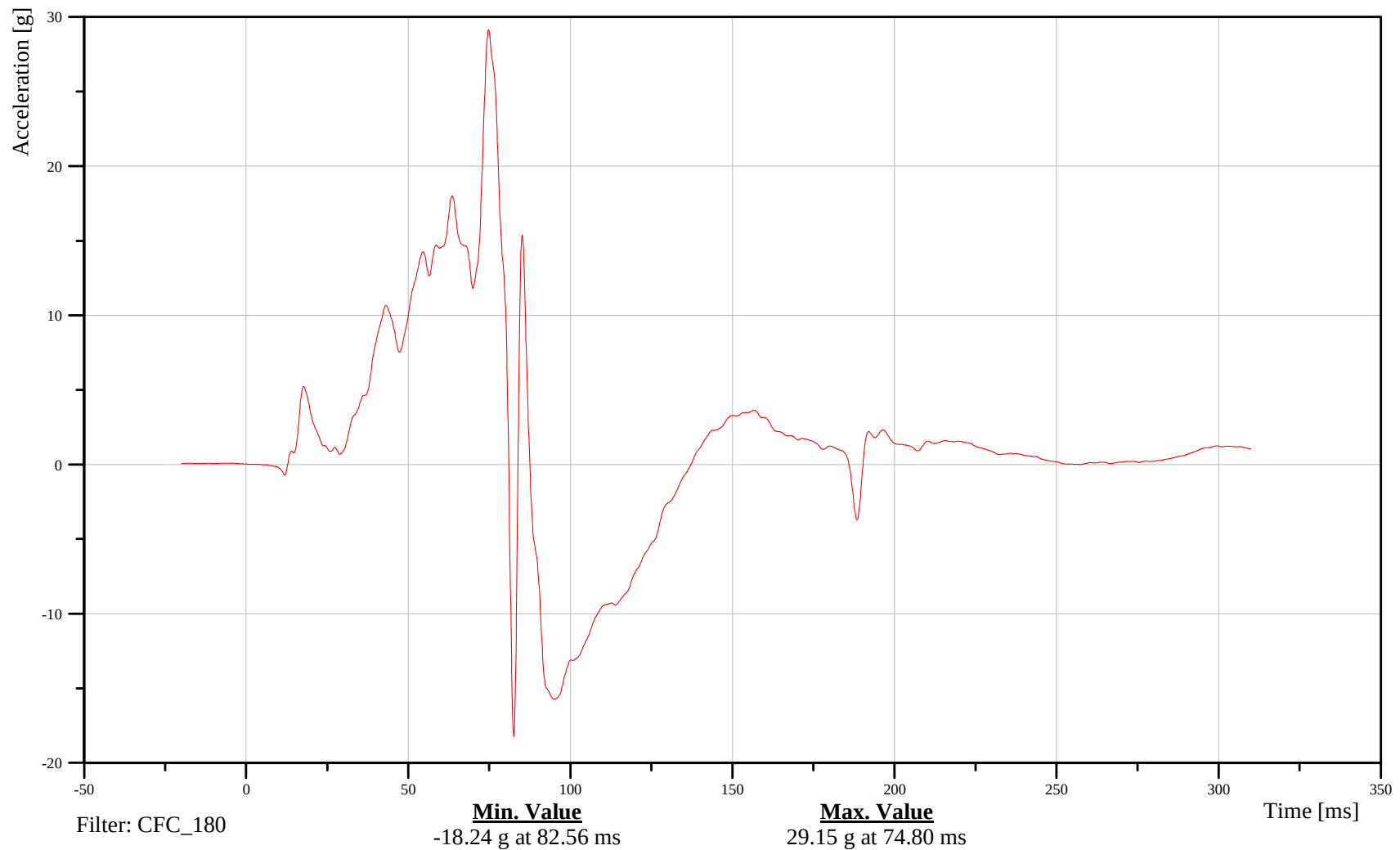
Chest Accel Z

Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Resultant

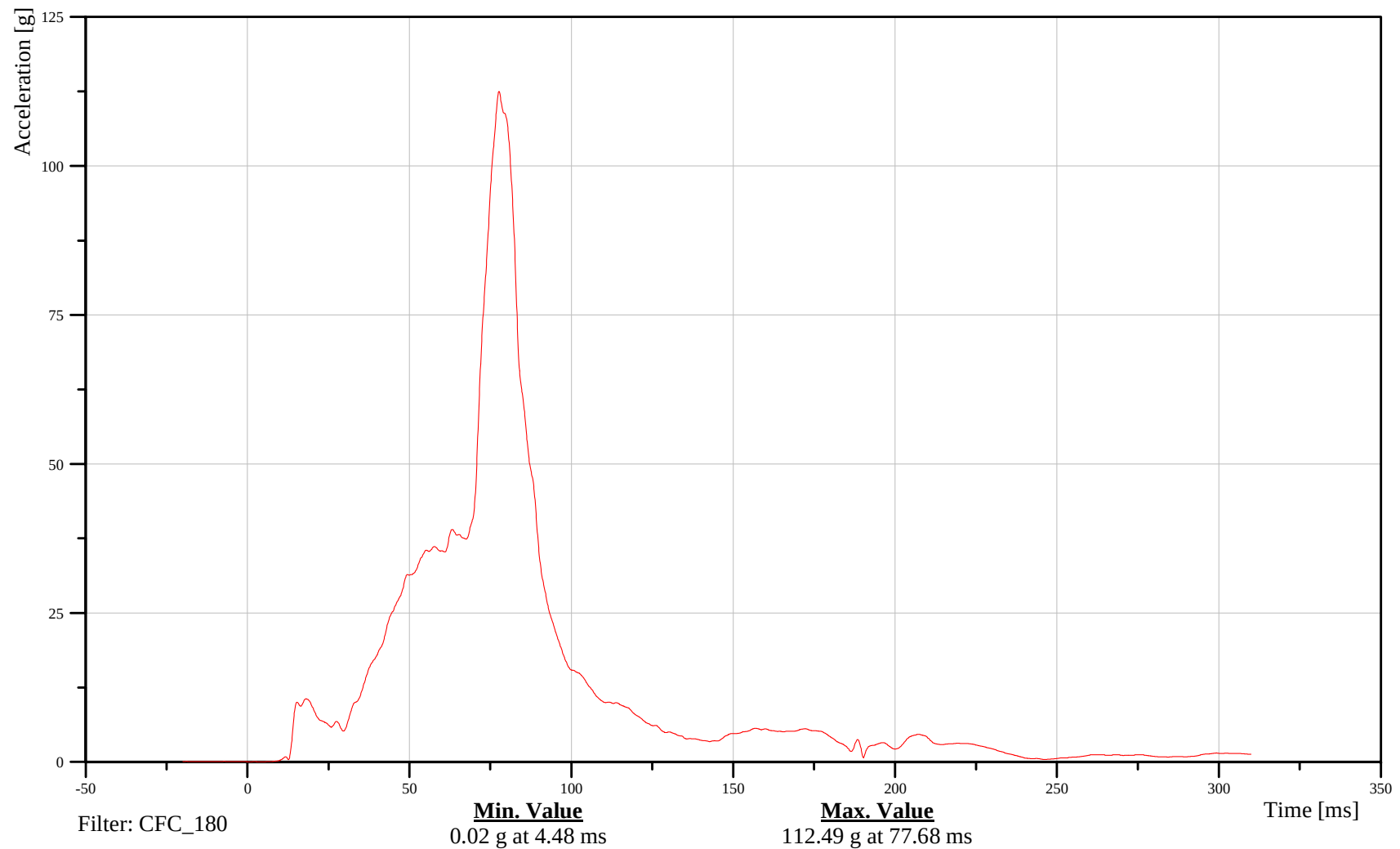
Time: 07:51

Customer: VRTC

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel X Red.

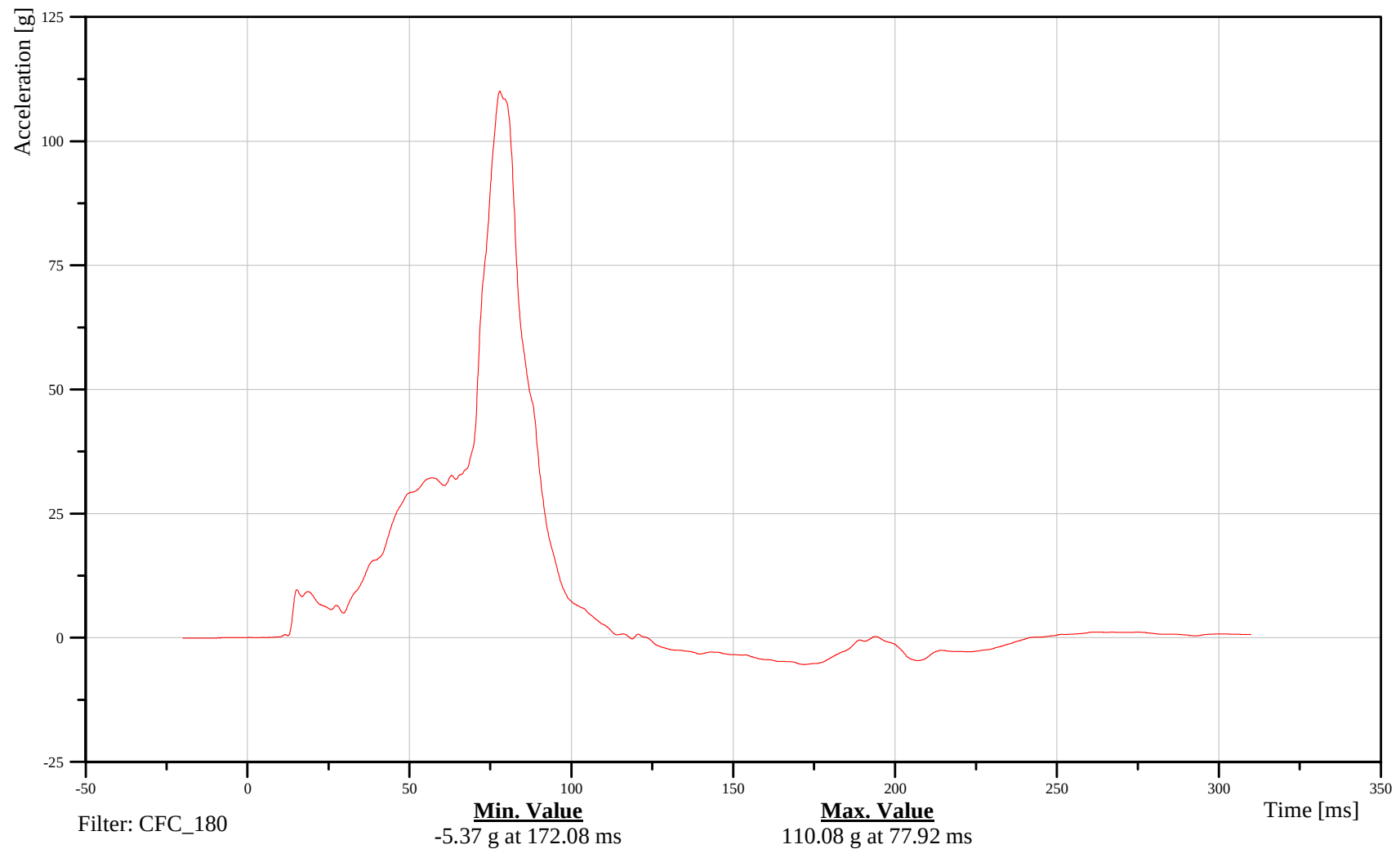
Time: 07:51

Customer: VRTC

11CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Y Red.

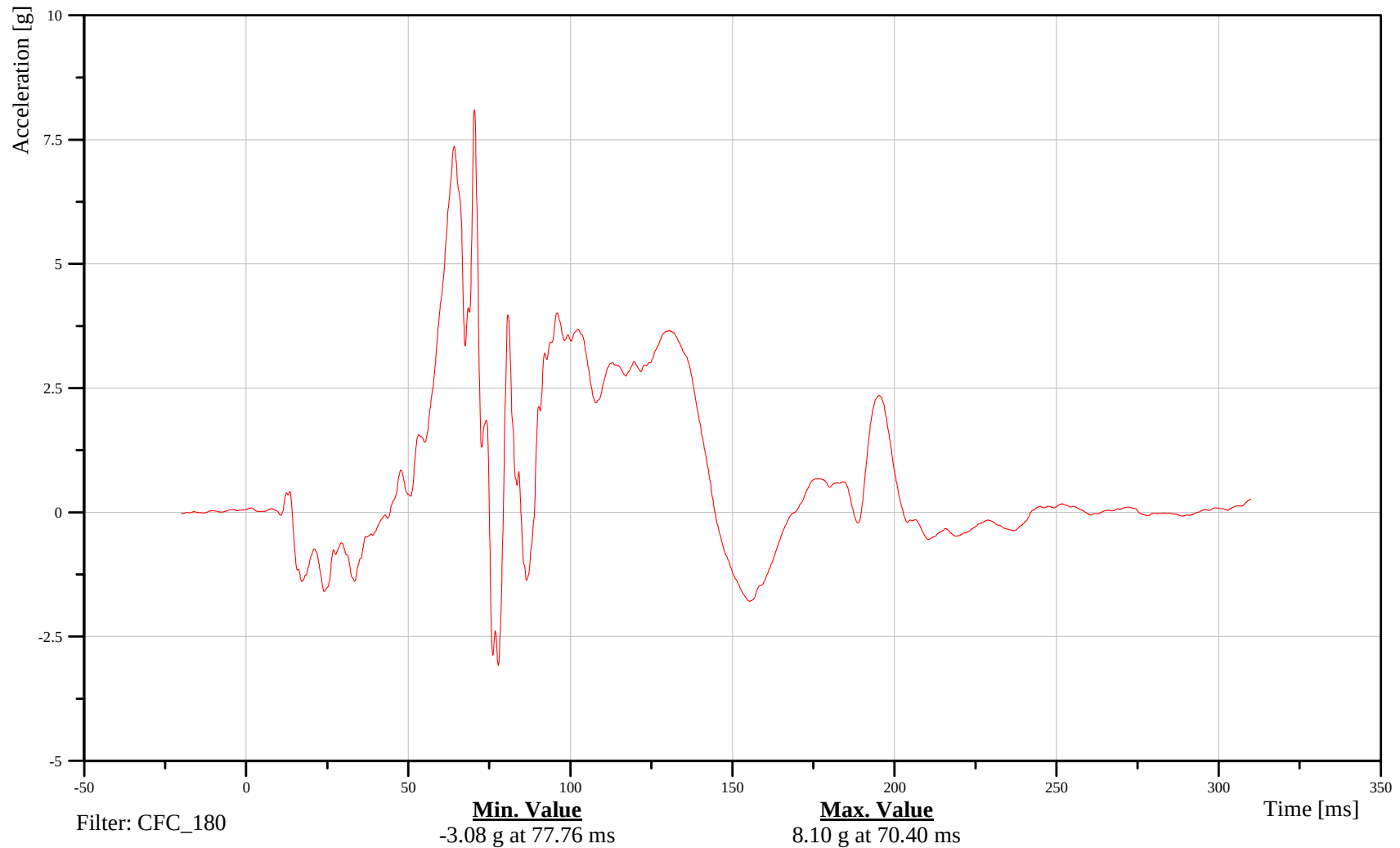
Time: 07:51

Customer: VRTC

11CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Z Red.

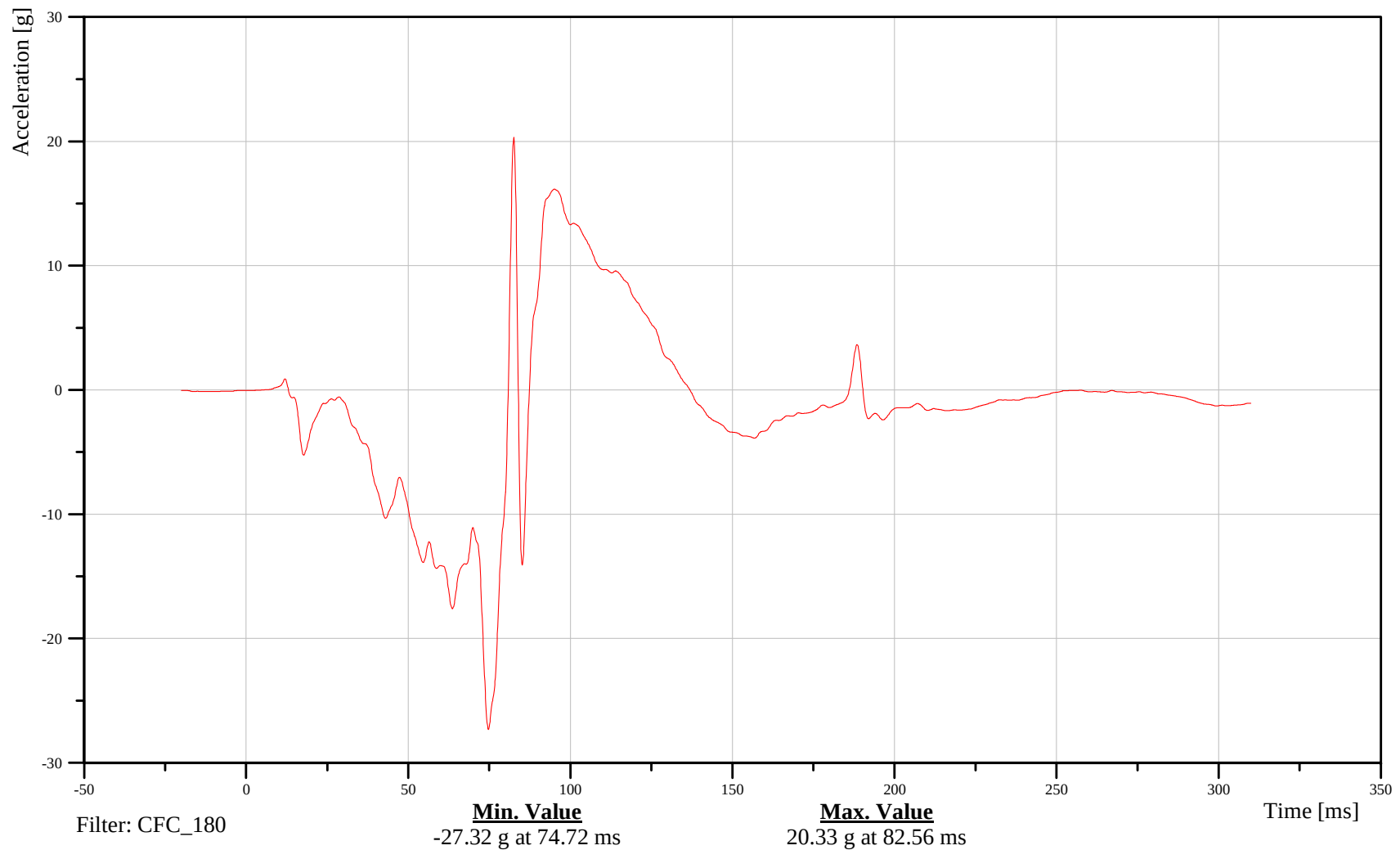
Time: 07:51

Customer: VRTC

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Red. Resultant

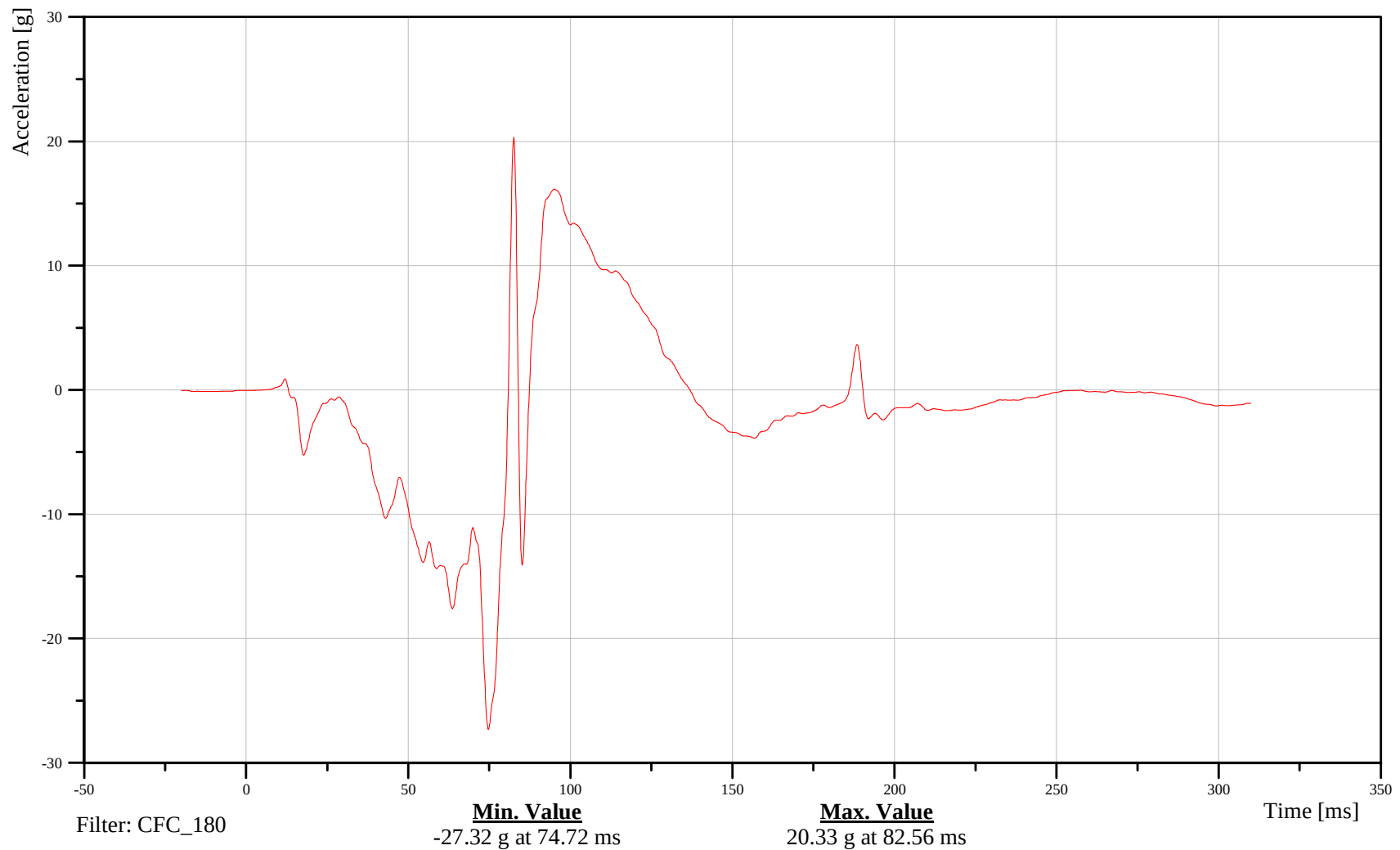
Time: 07:51

Customer: VRTC

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Deflection X

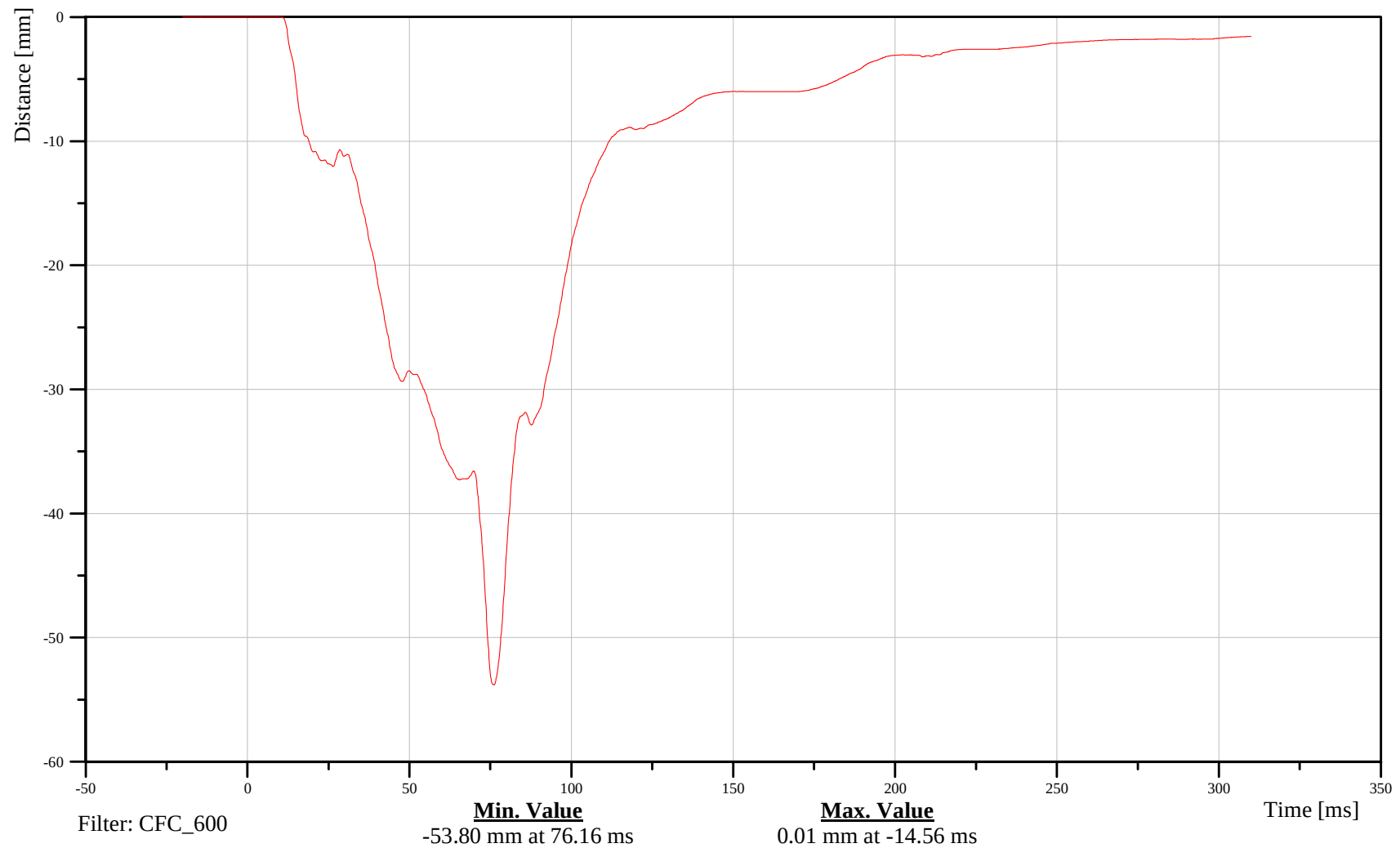
Time: 07:51

Customer: VRTC

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel X

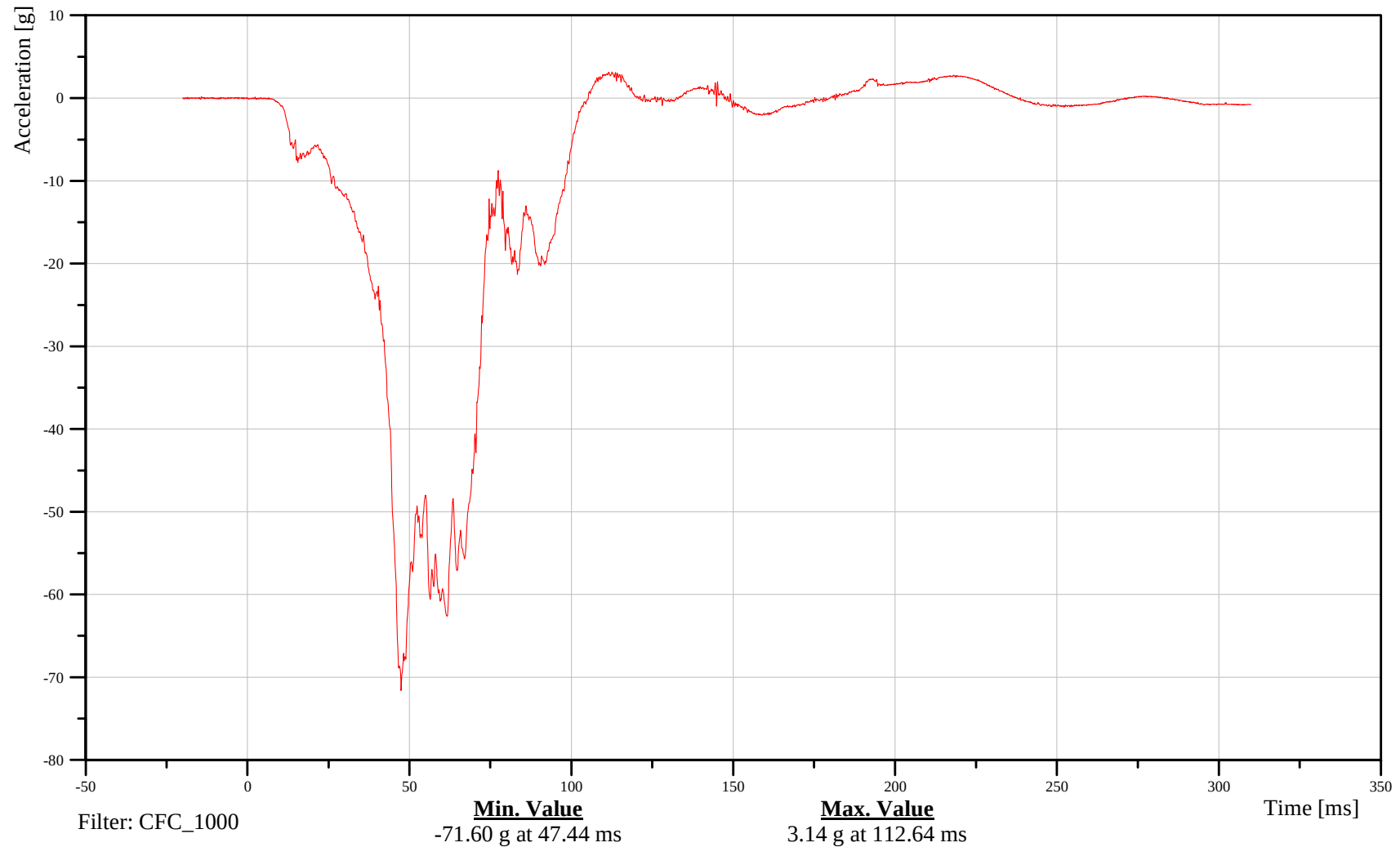
Time: 07:51

Customer: VRTC

11PELVCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Y

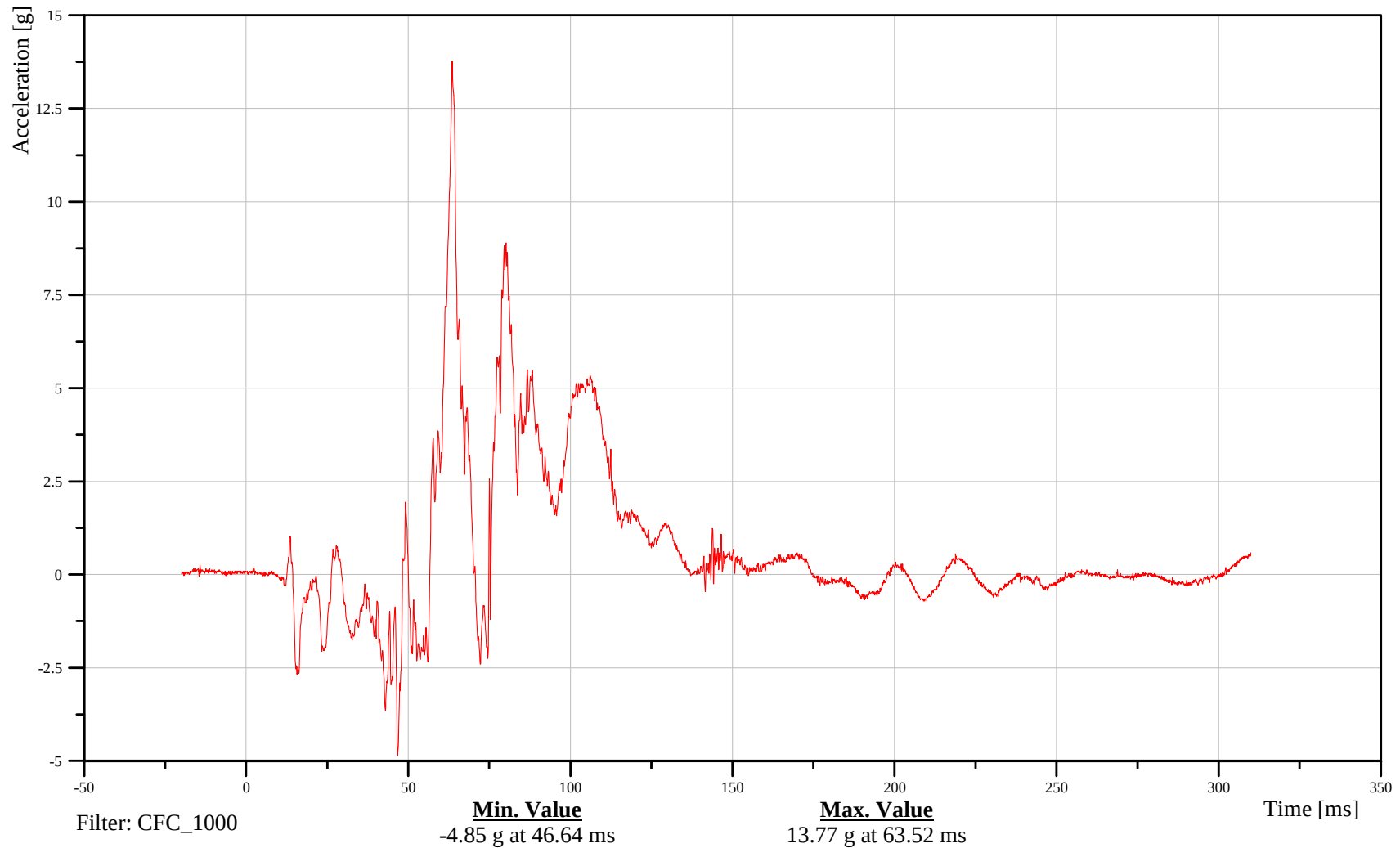
Time: 07:51

Customer: VRTC

11PELVCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

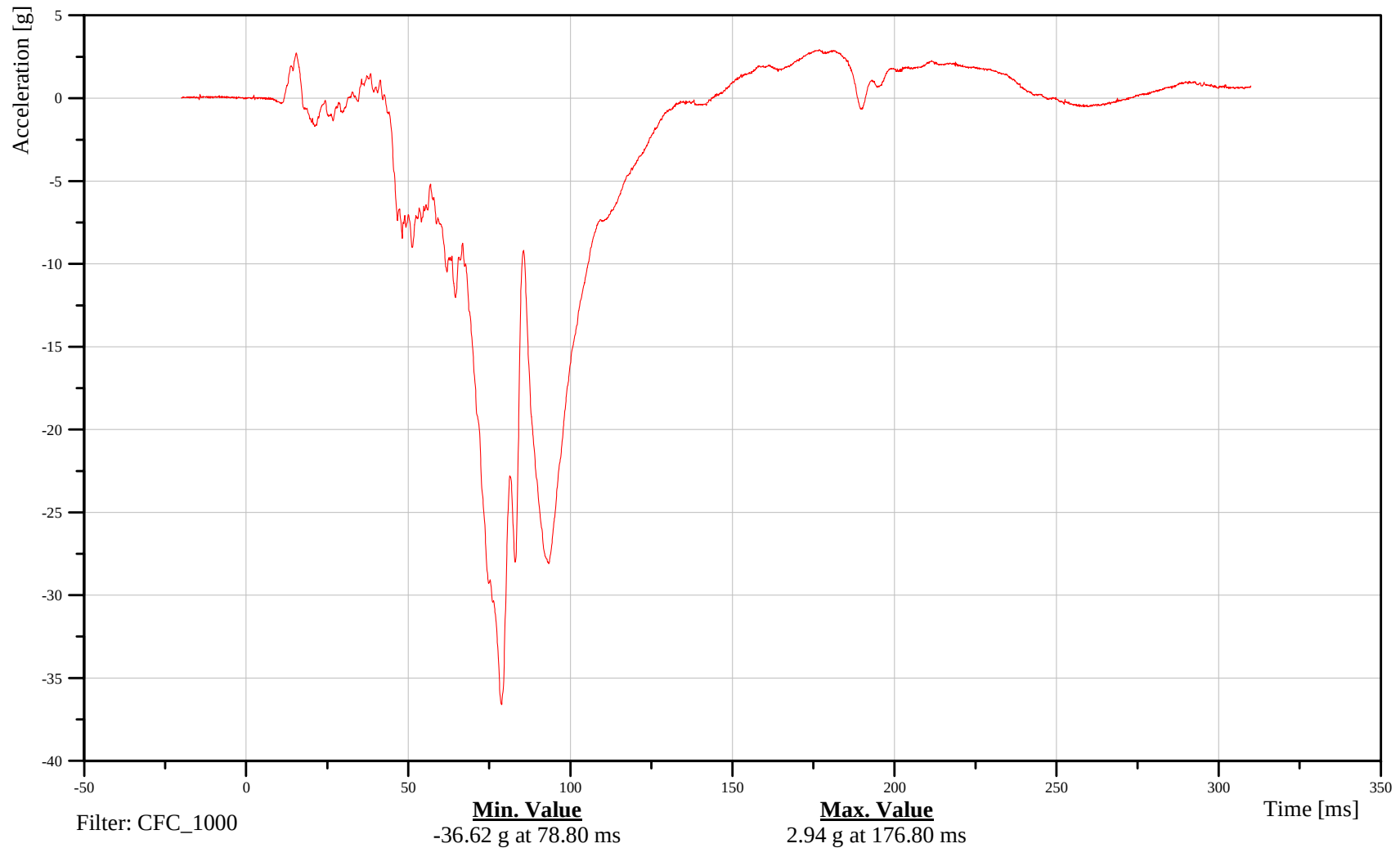
Pelvis Accel Z

Customer: VRTC

11PELVCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Resultant

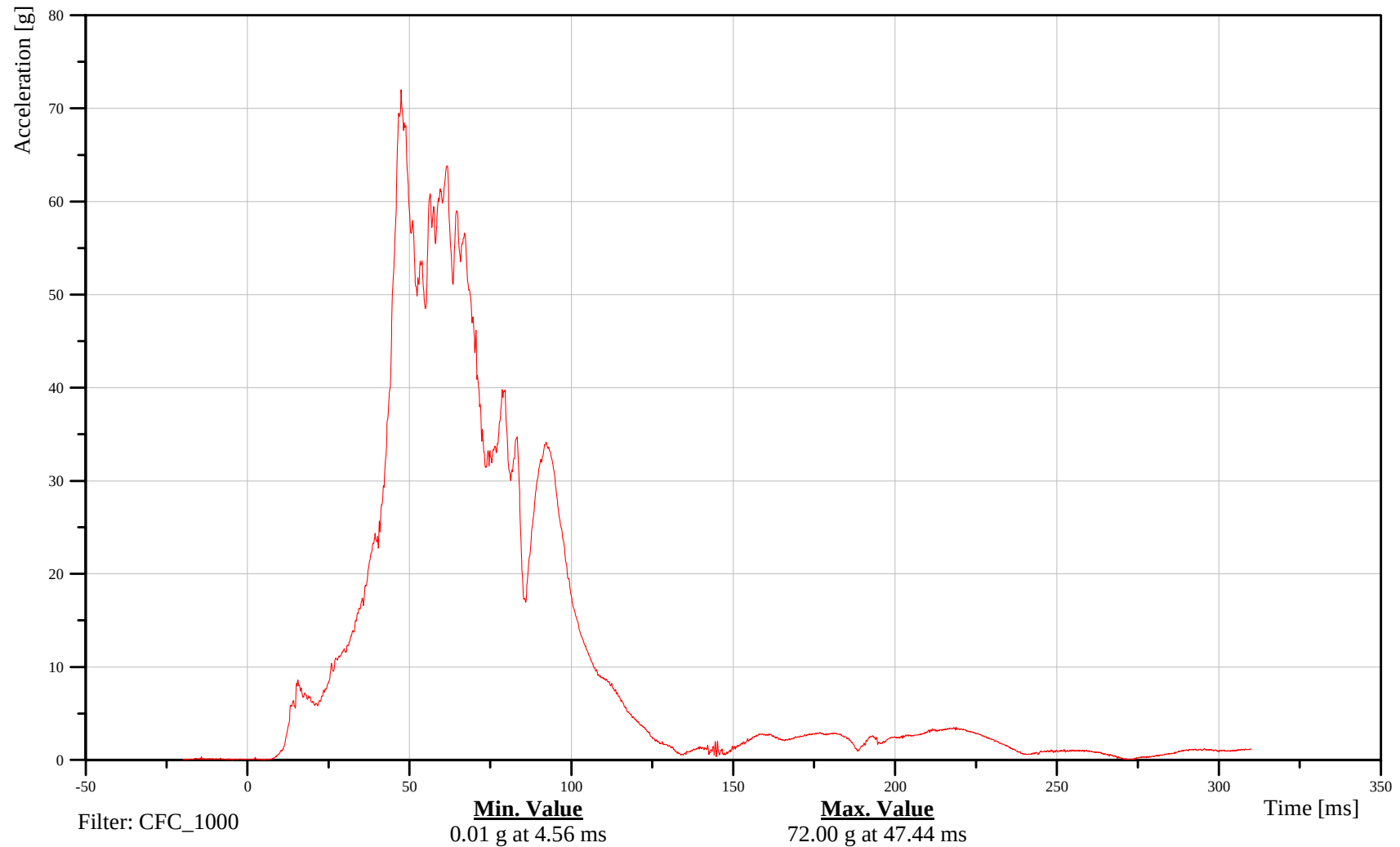
Time: 07:51

Customer: VRTC

11PELVCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Femur Force Z

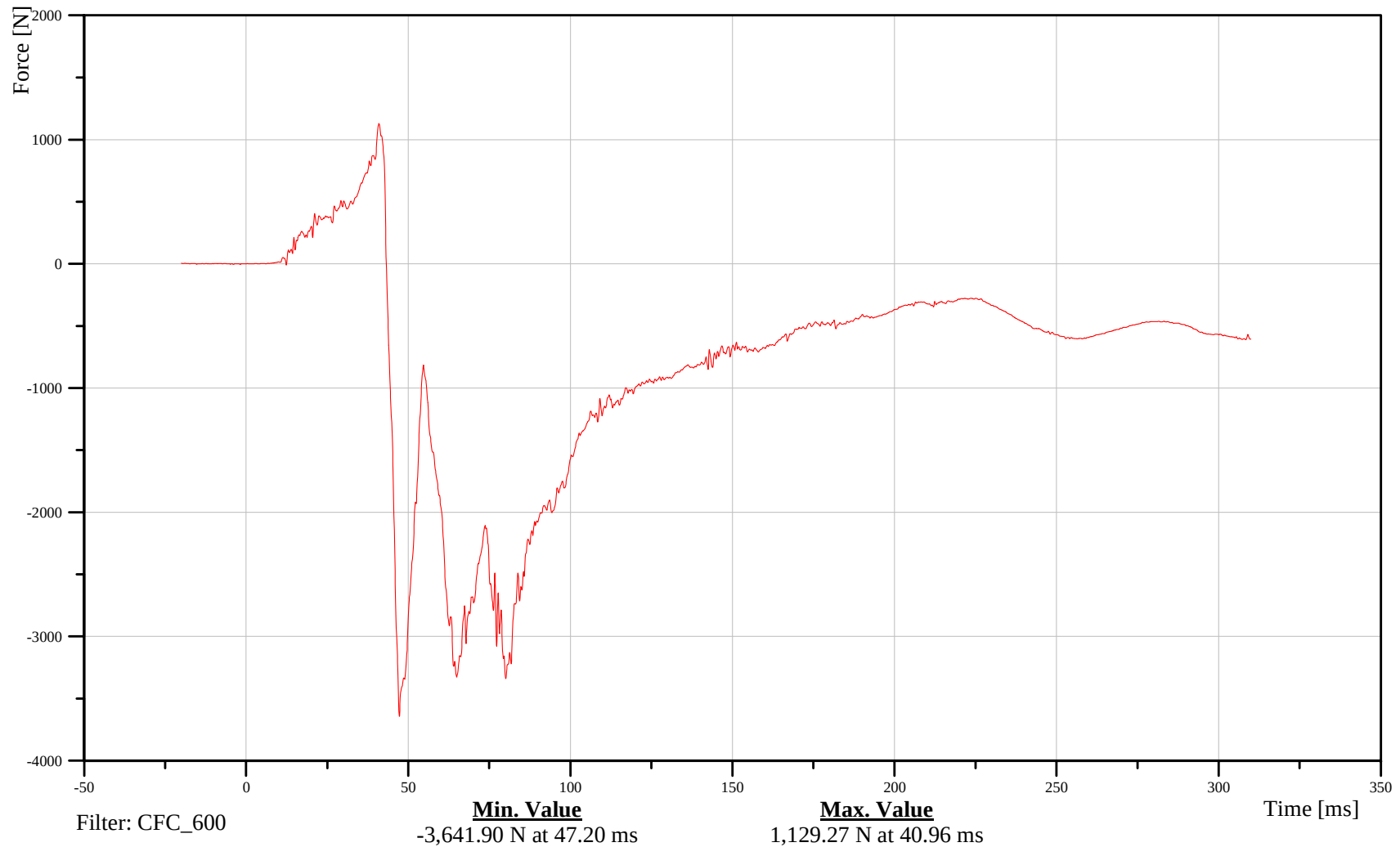
Time: 07:51

Customer: VRTC

11FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Knee Displacement X

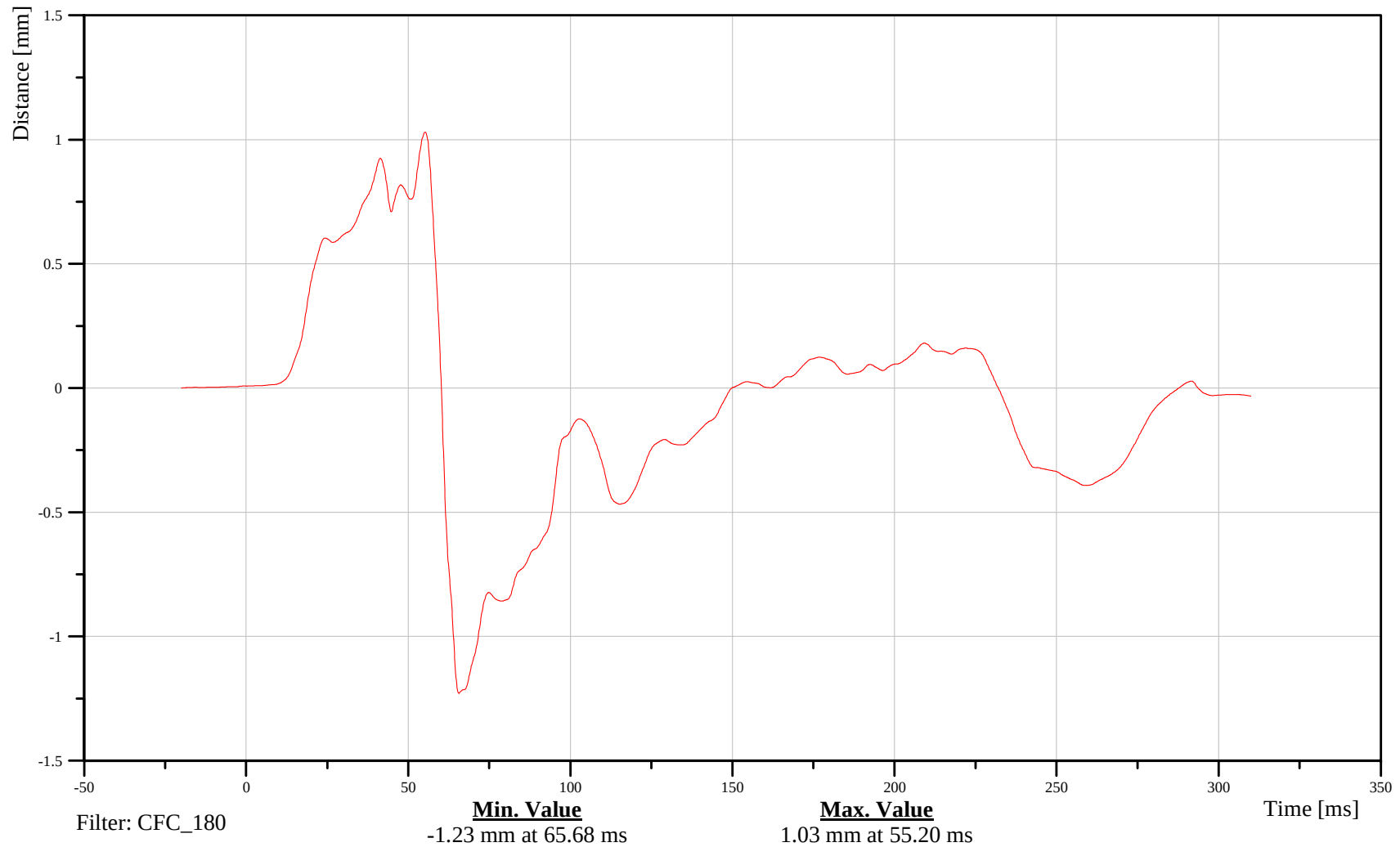
Time: 07:51

Customer: VRTC

11KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

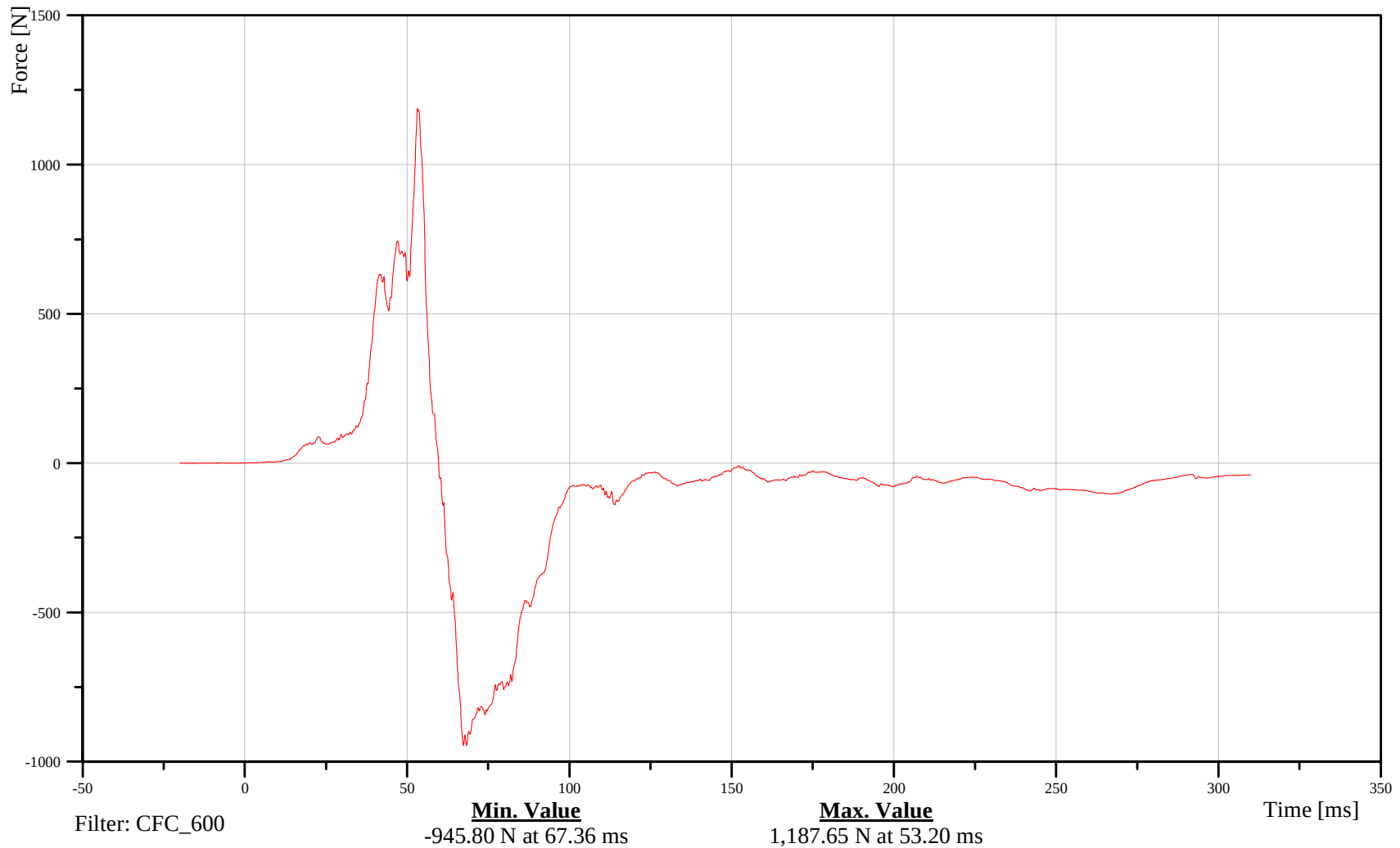
Left Upper Tibia Force X

Customer: VRTC

11TIBILULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

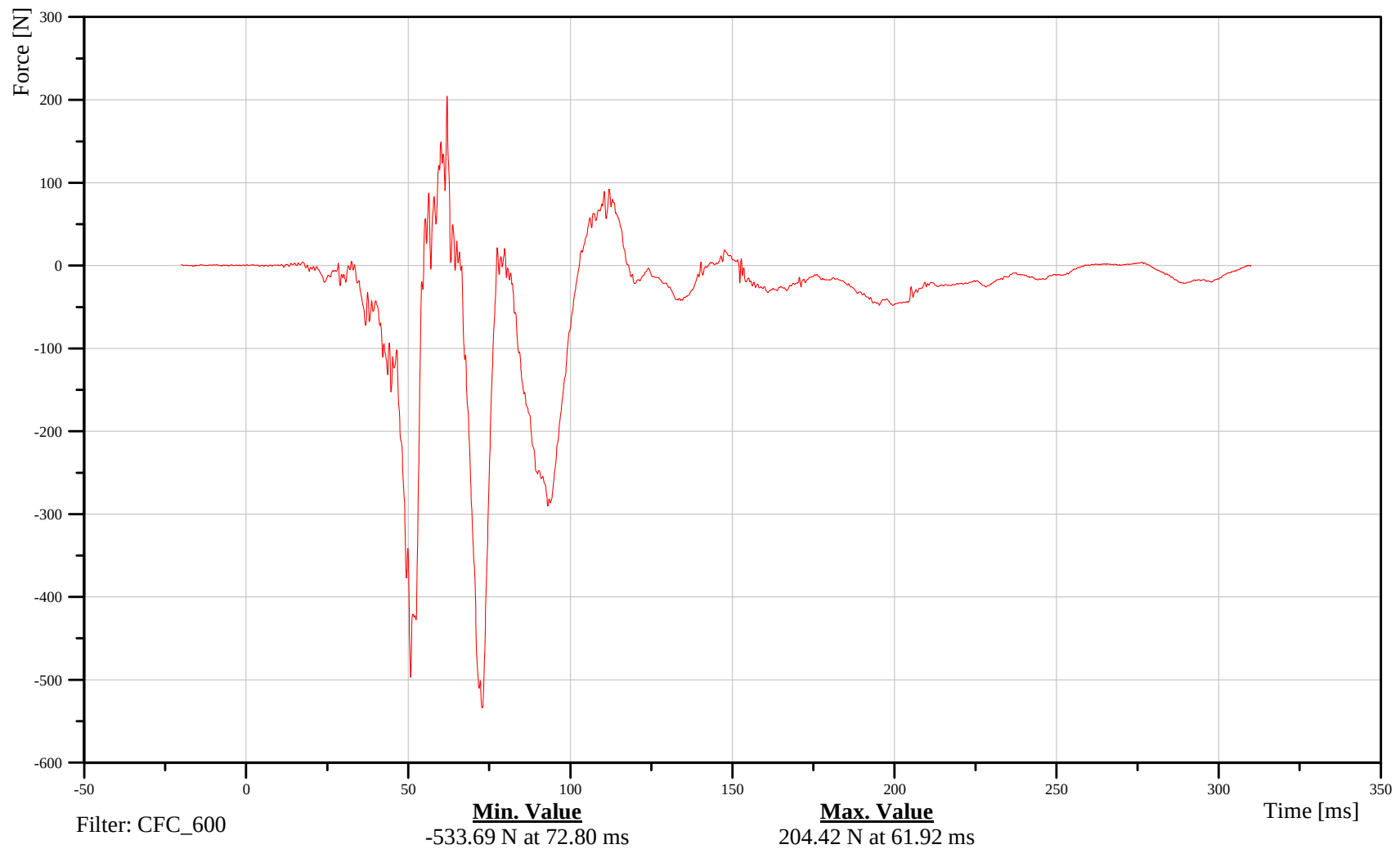
Left Upper Tibia Force Y

Customer: VRTC

11TIBILULXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

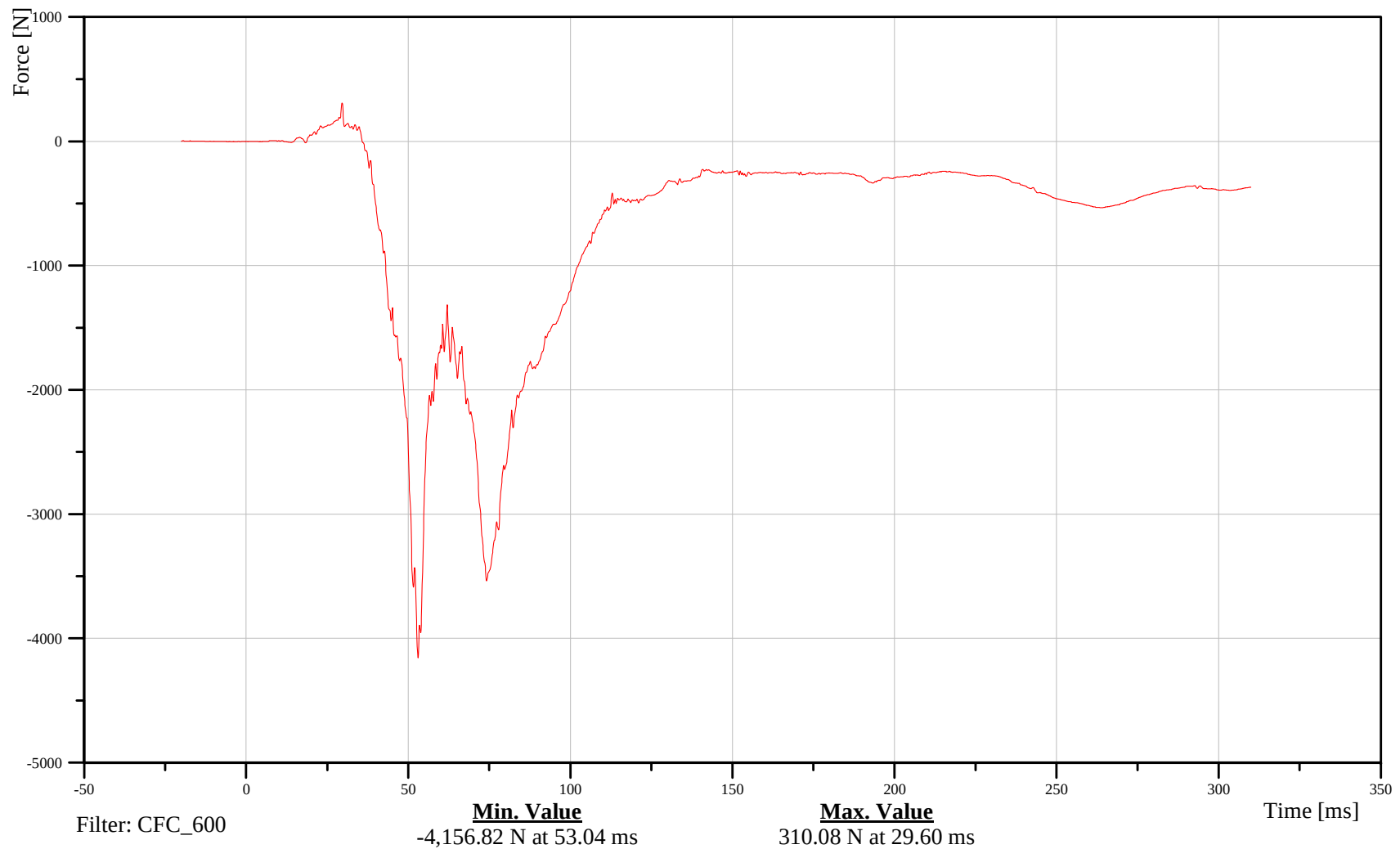
Left Upper Tibia Force Z

Customer: VRTC

11TIBILULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Upper Tibia Moment X

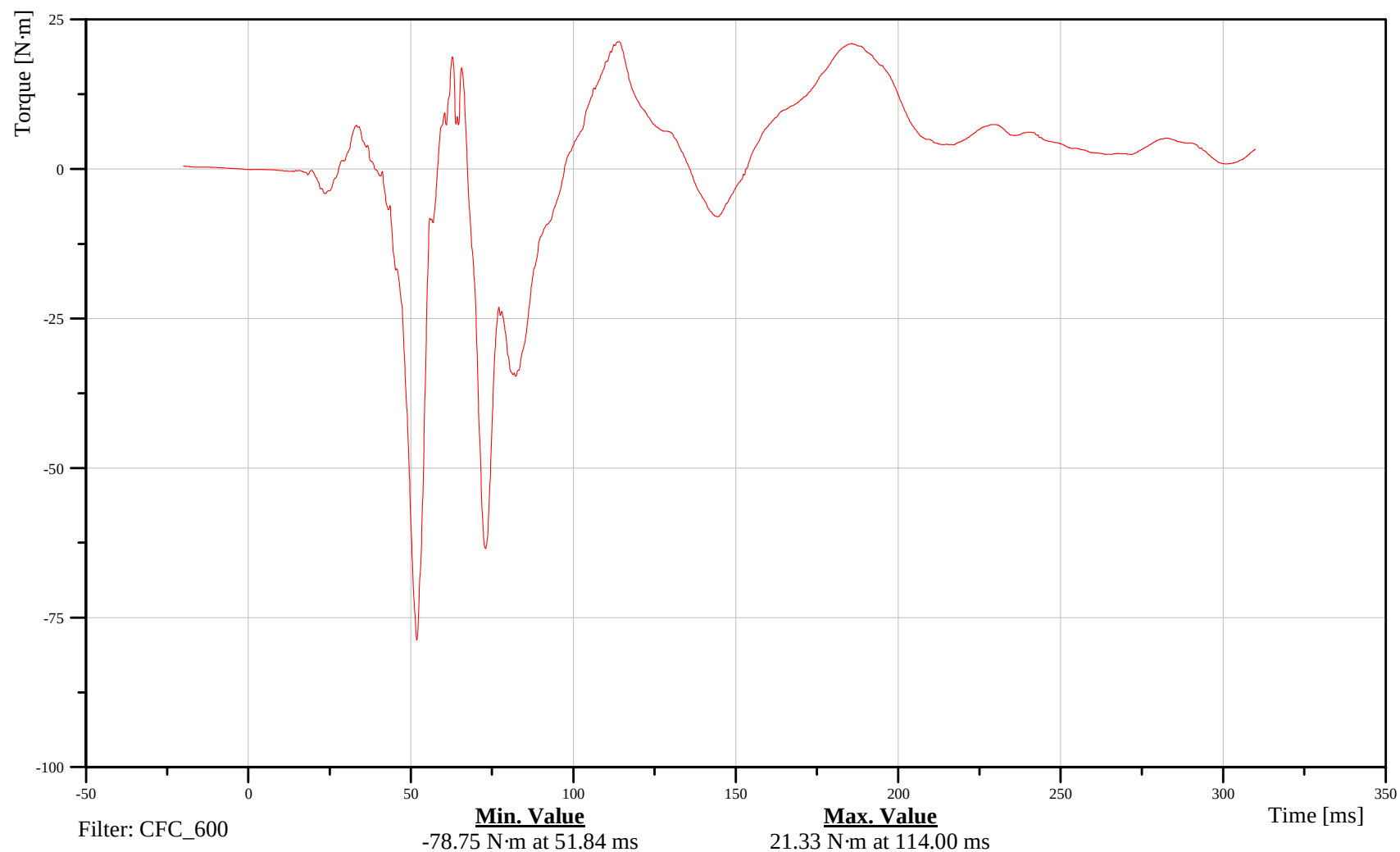
Time: 07:51

Customer: VRTC

11TIBILULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

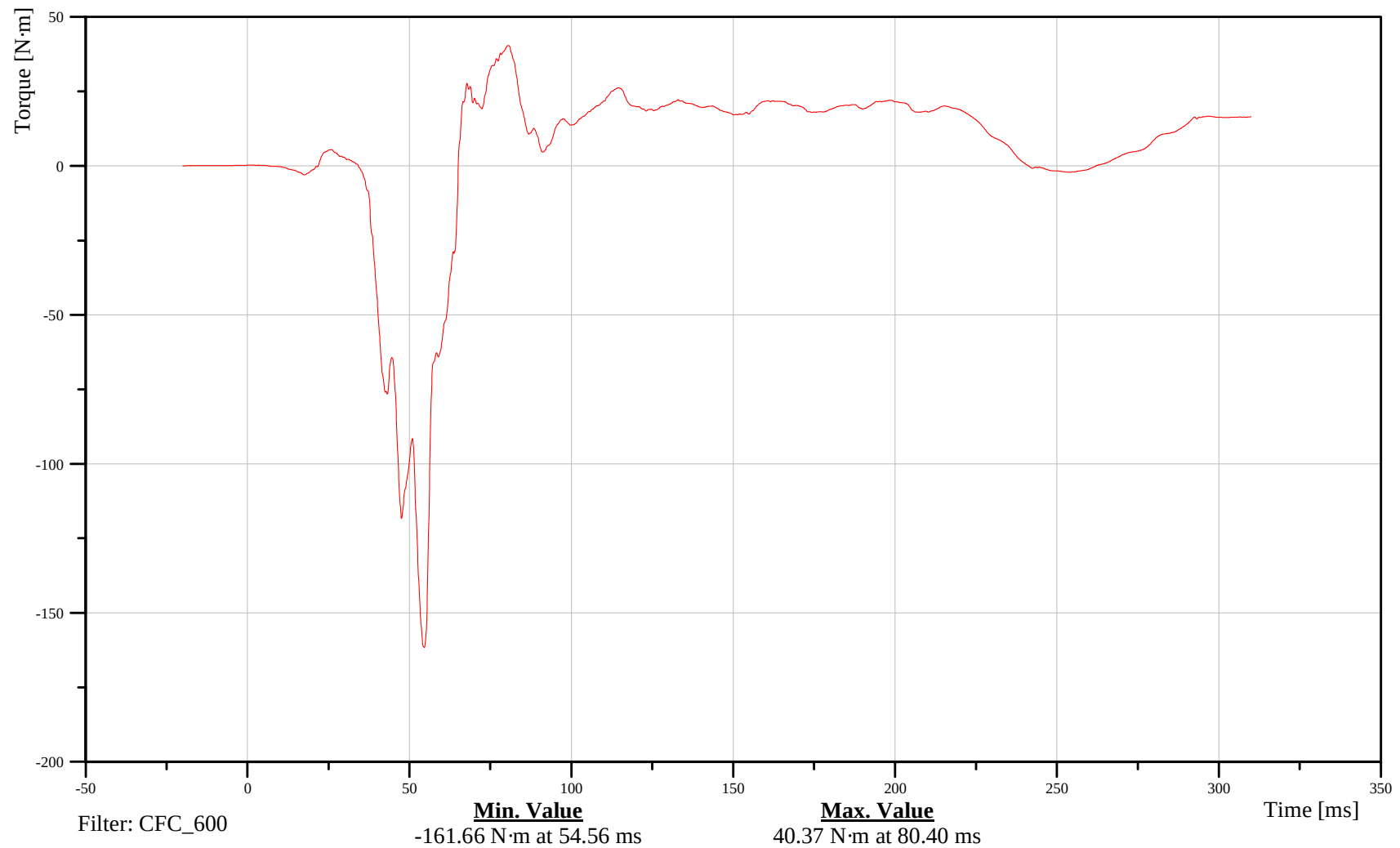
Left Upper Tibia Moment Y

Customer: VRTC

11TIBILULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Tibia Accel X

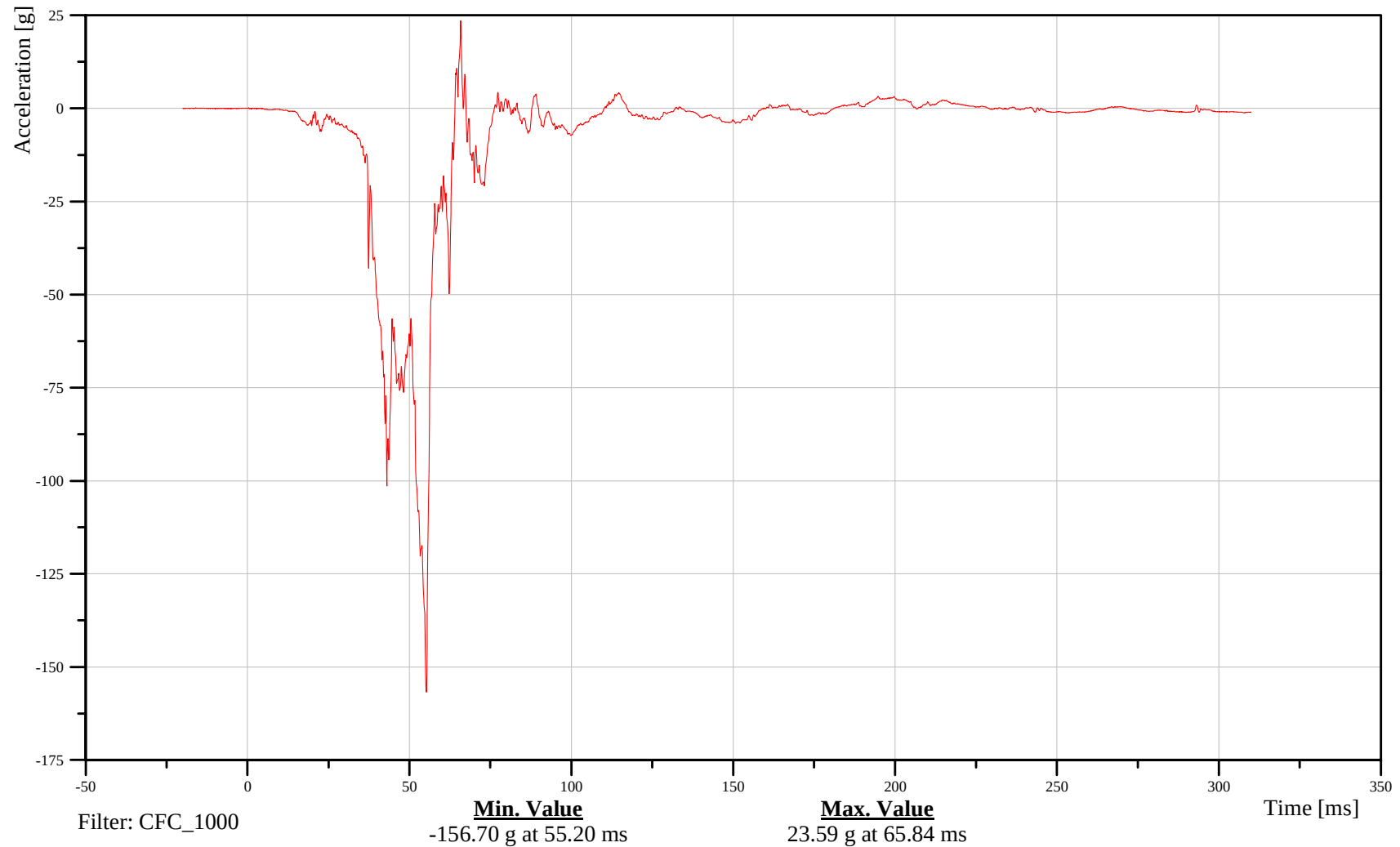
Time: 07:51

Customer: VRTC

11TIBILELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Tibia Accel Y

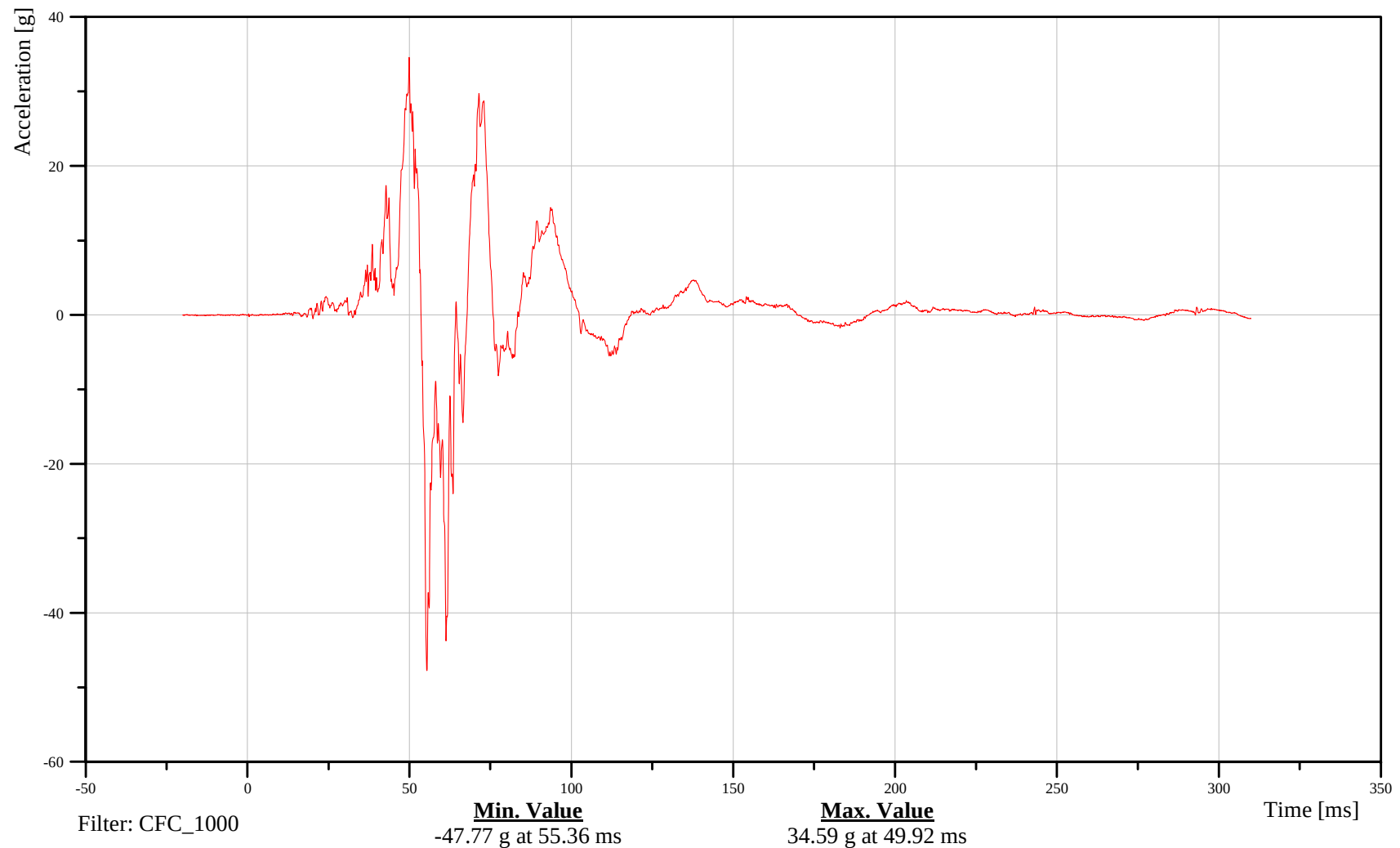
Time: 07:51

Customer: VRTC

11TIBILELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force X

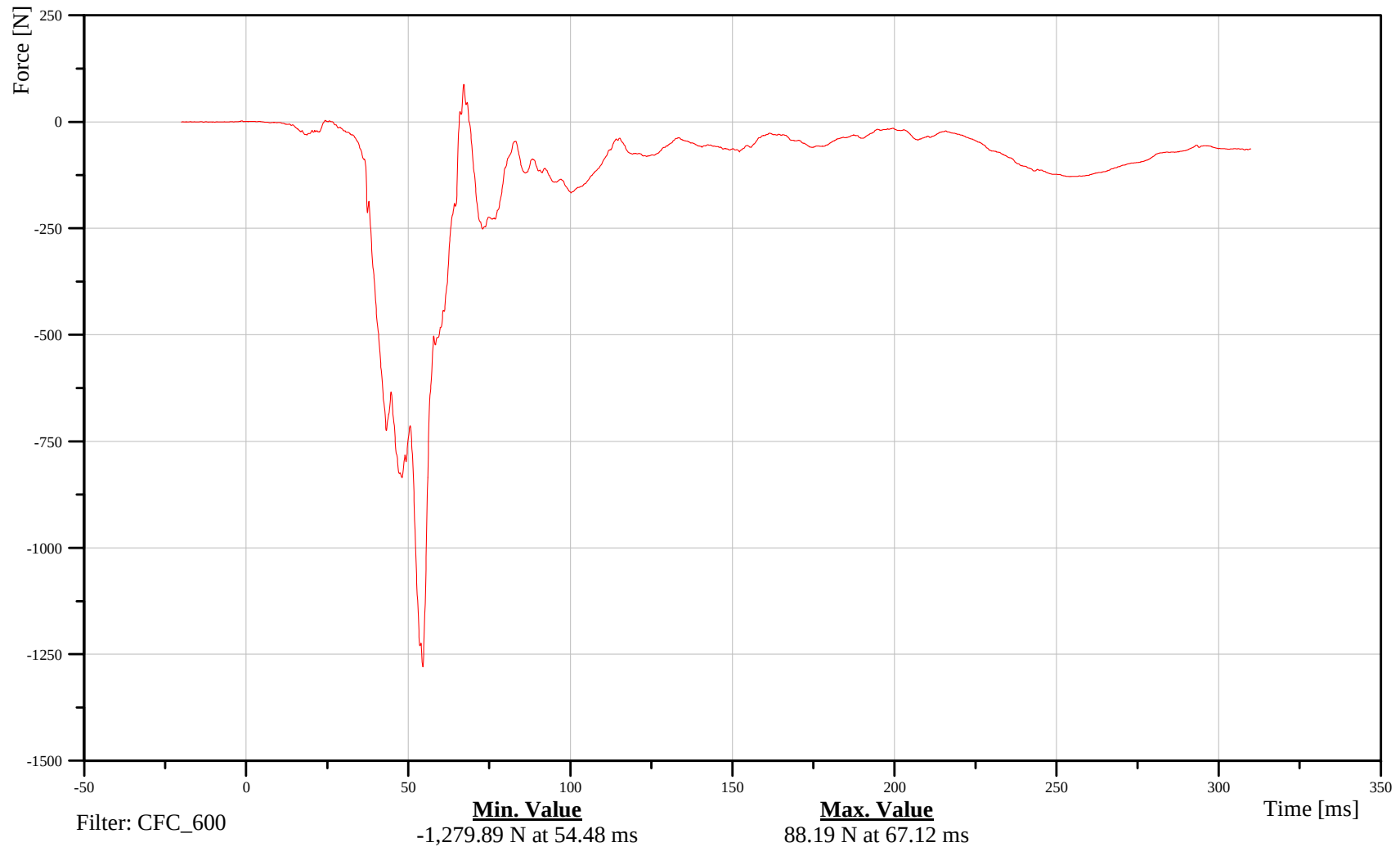
Time: 07:51

Customer: VRTC

11TIBILLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

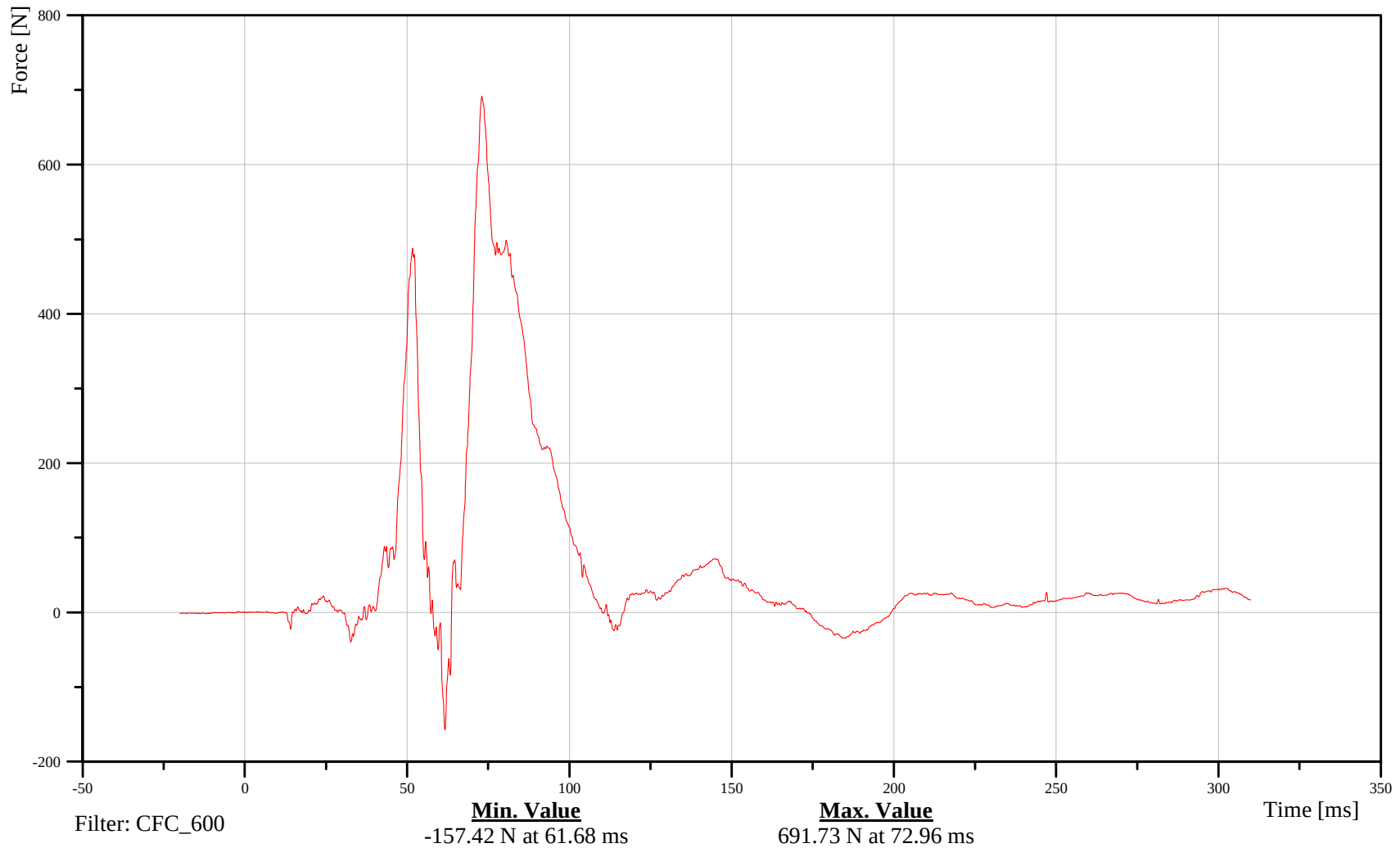
Left Lower Tibia Force Y

Customer: VRTC

11TIBILLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force Z

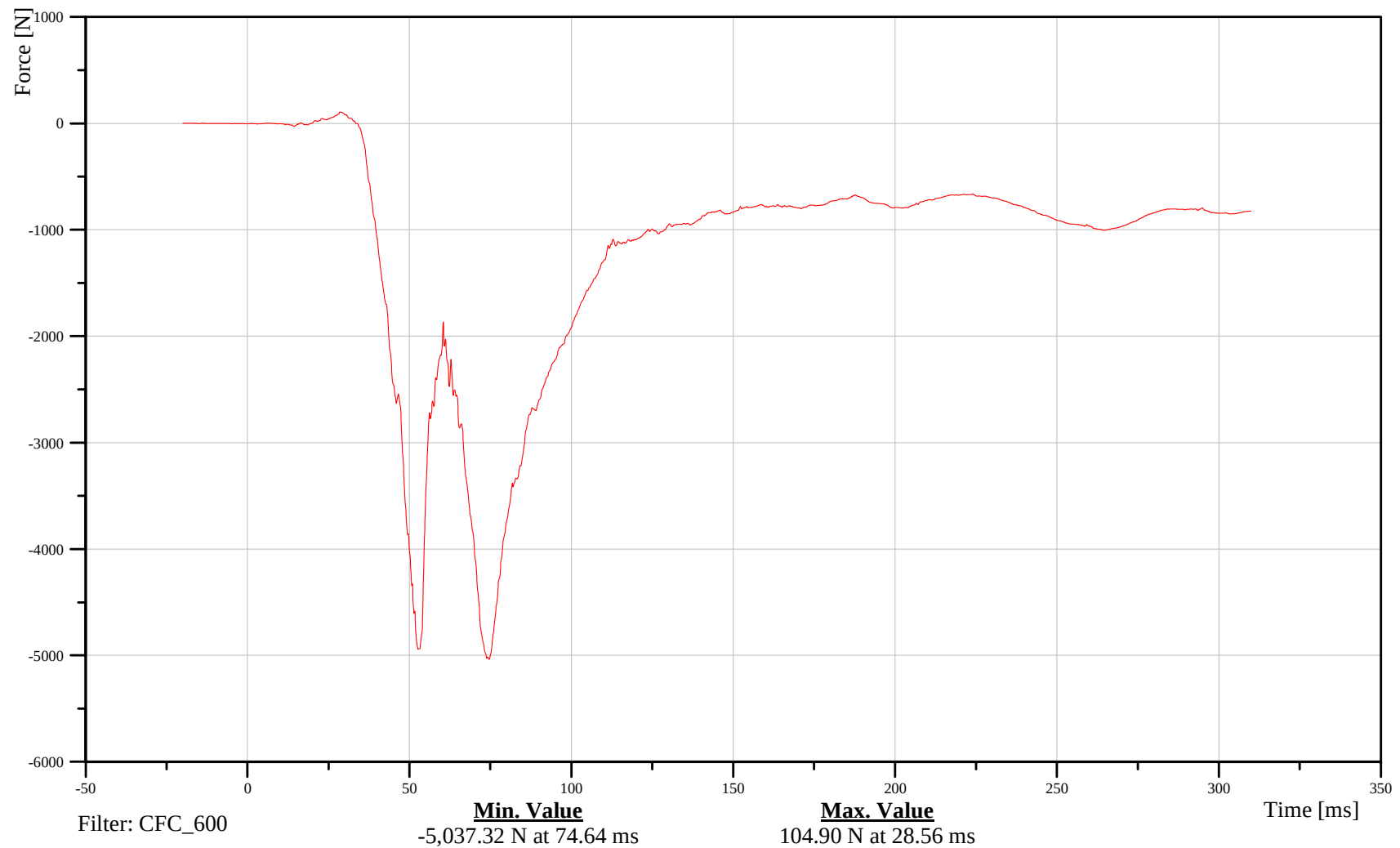
Time: 07:51

Customer: VRTC

11TIBILLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Moment X

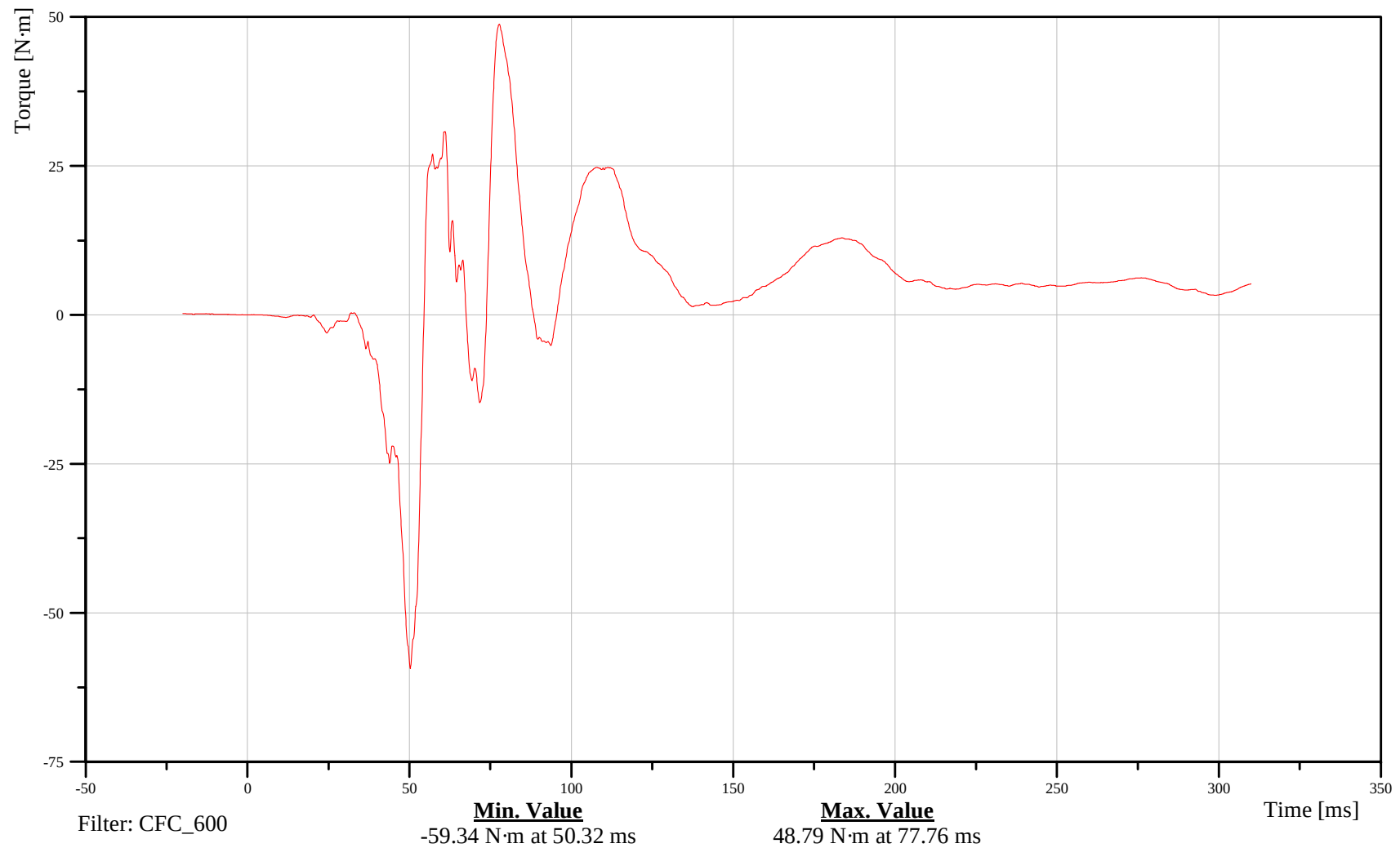
Time: 07:51

Customer: VRTC

11TIBILLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

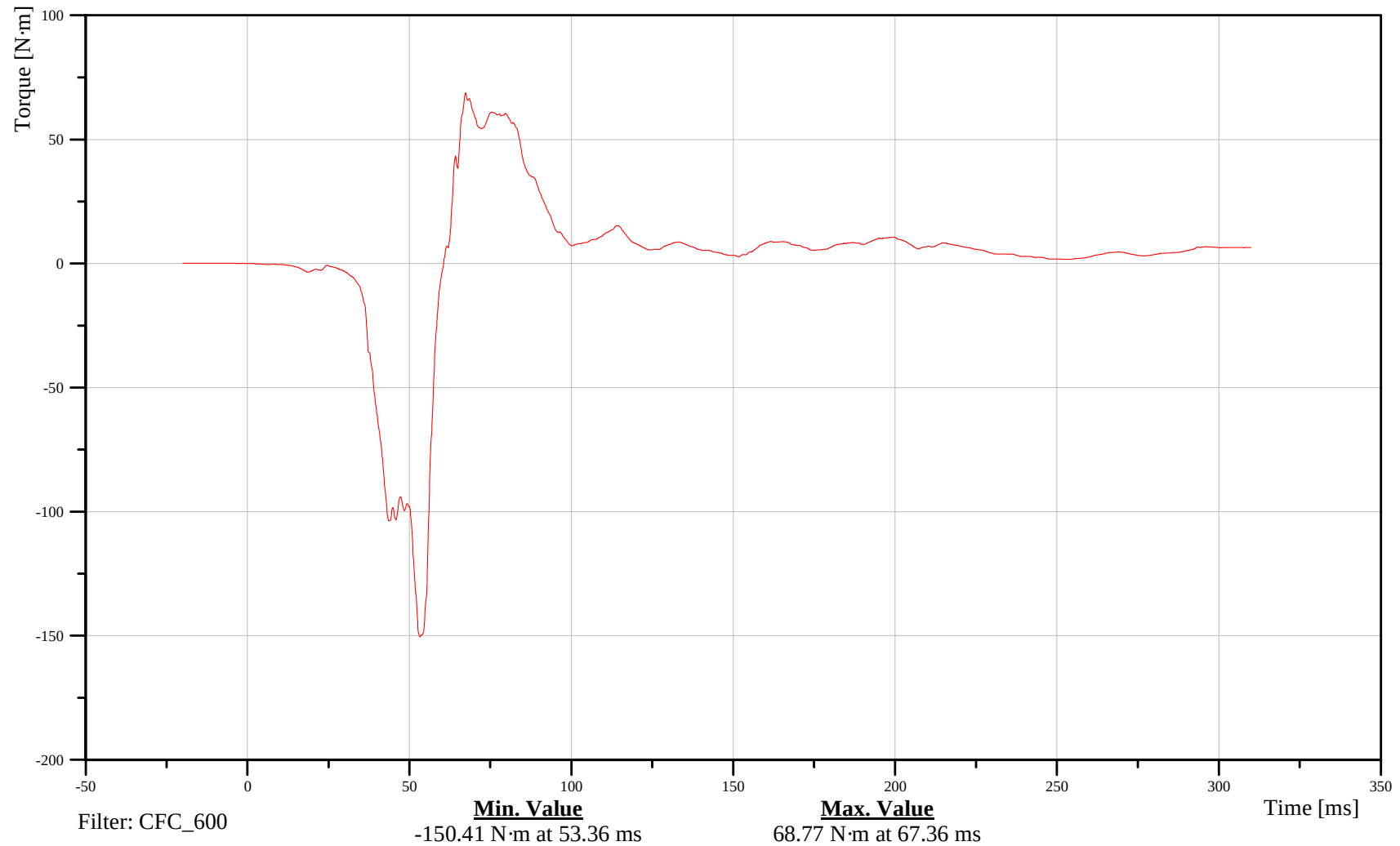
Left Lower Tibia Moment Y

Customer: VRTC

11TIBILLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

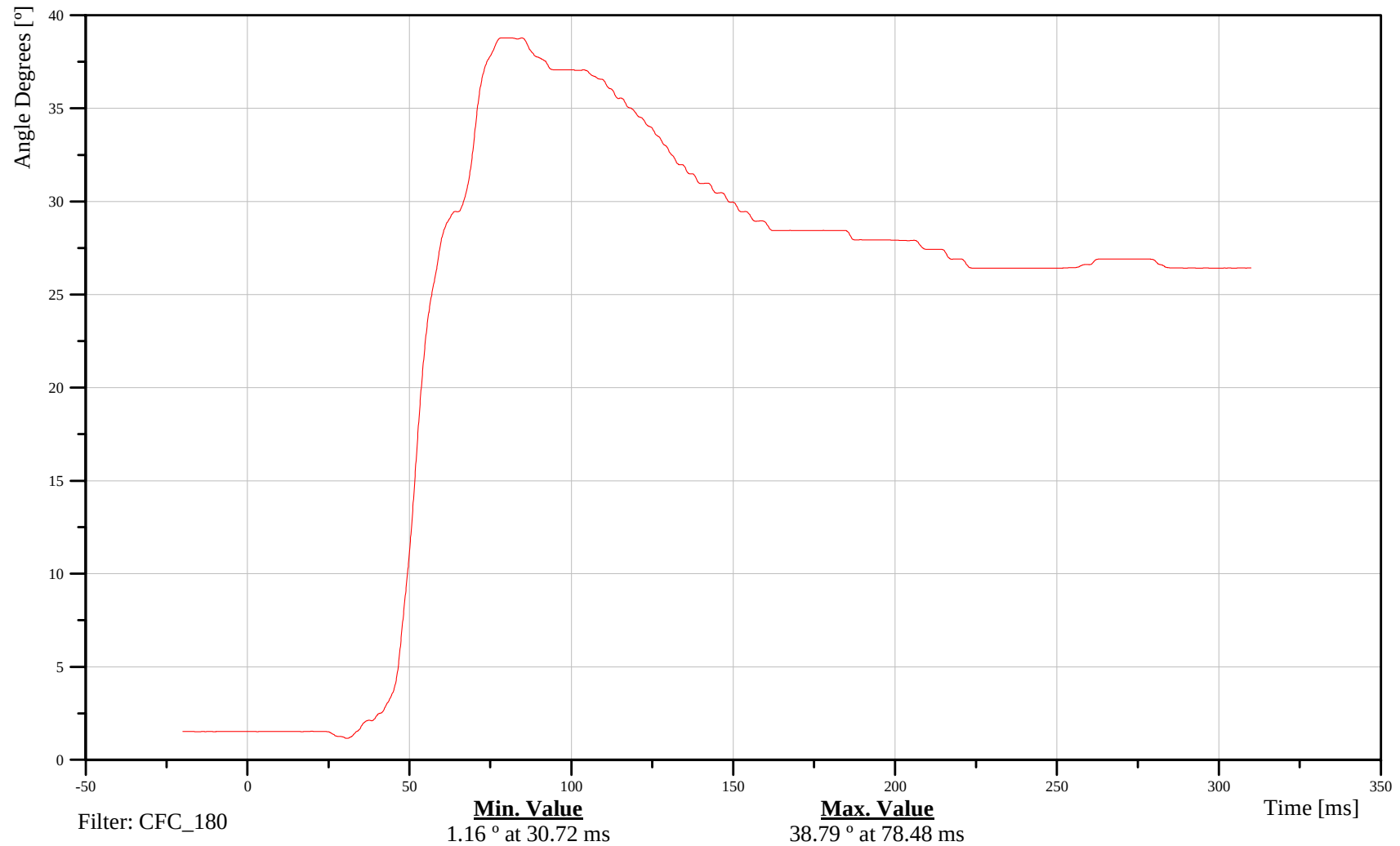
Left Foot Angular Dis. X

Customer: VRTC

11FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Angular Dis. Y

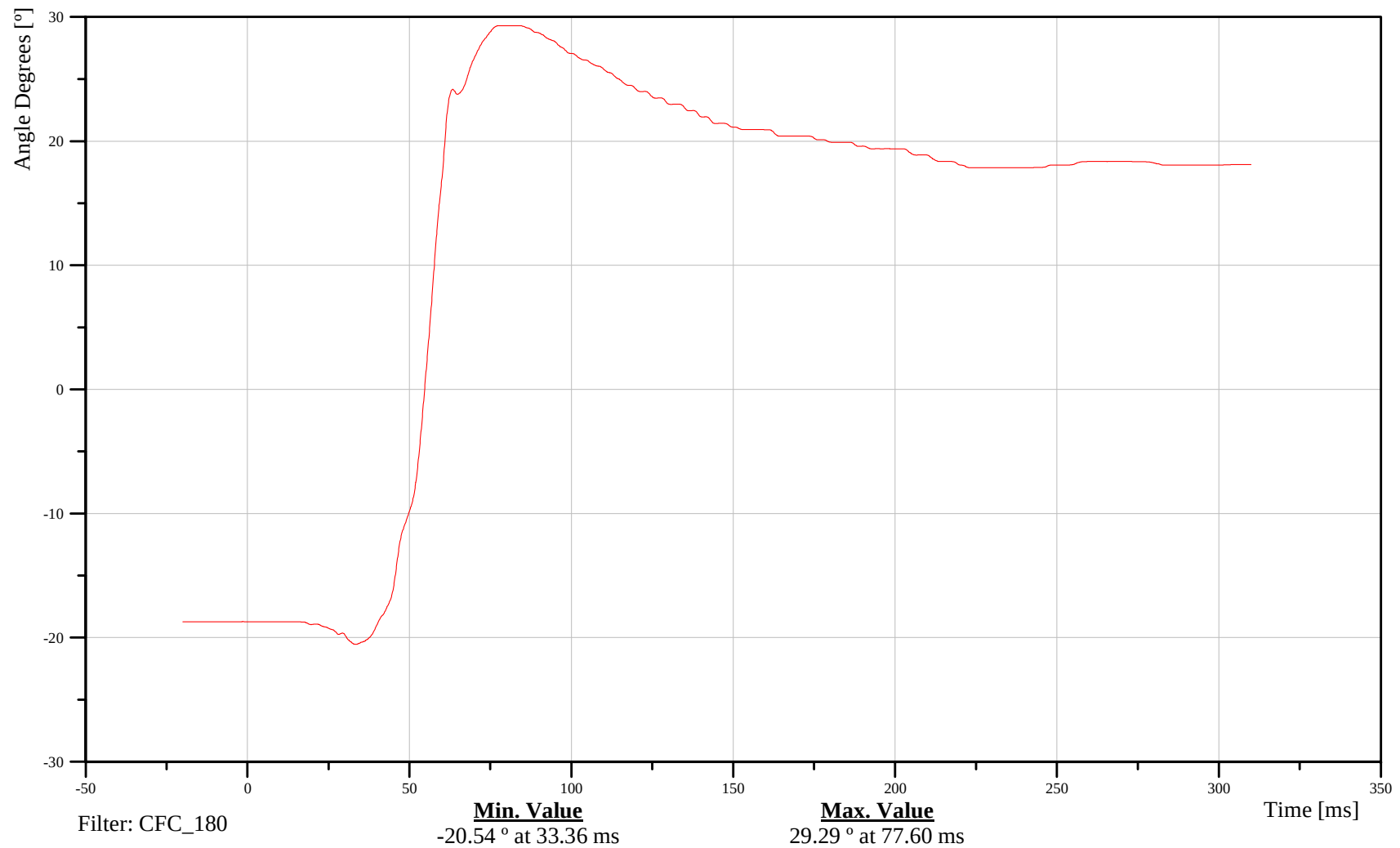
Time: 07:51

Customer: VRTC

11FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Angular Dis. Z

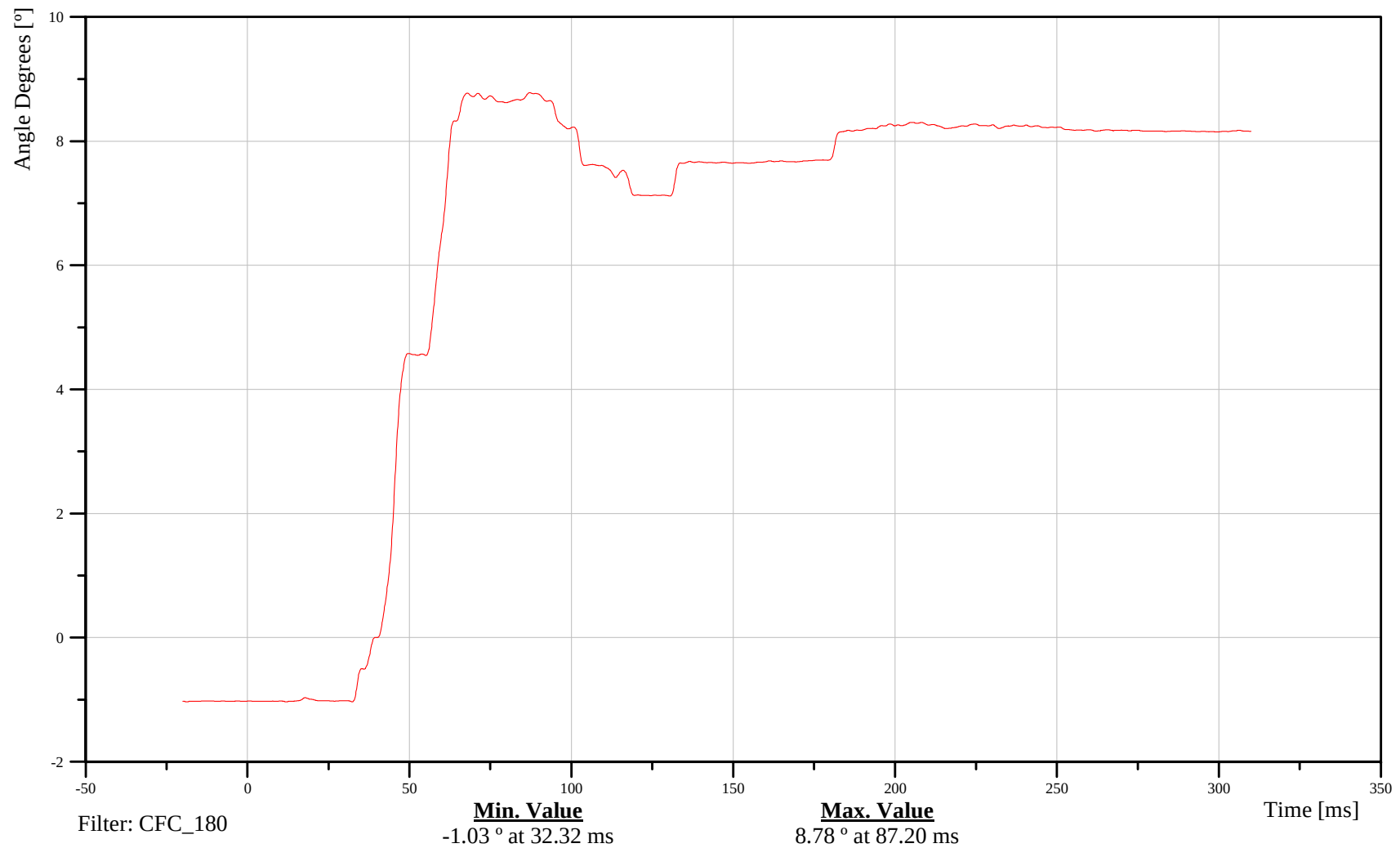
Time: 07:51

Customer: VRTC

11FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel X

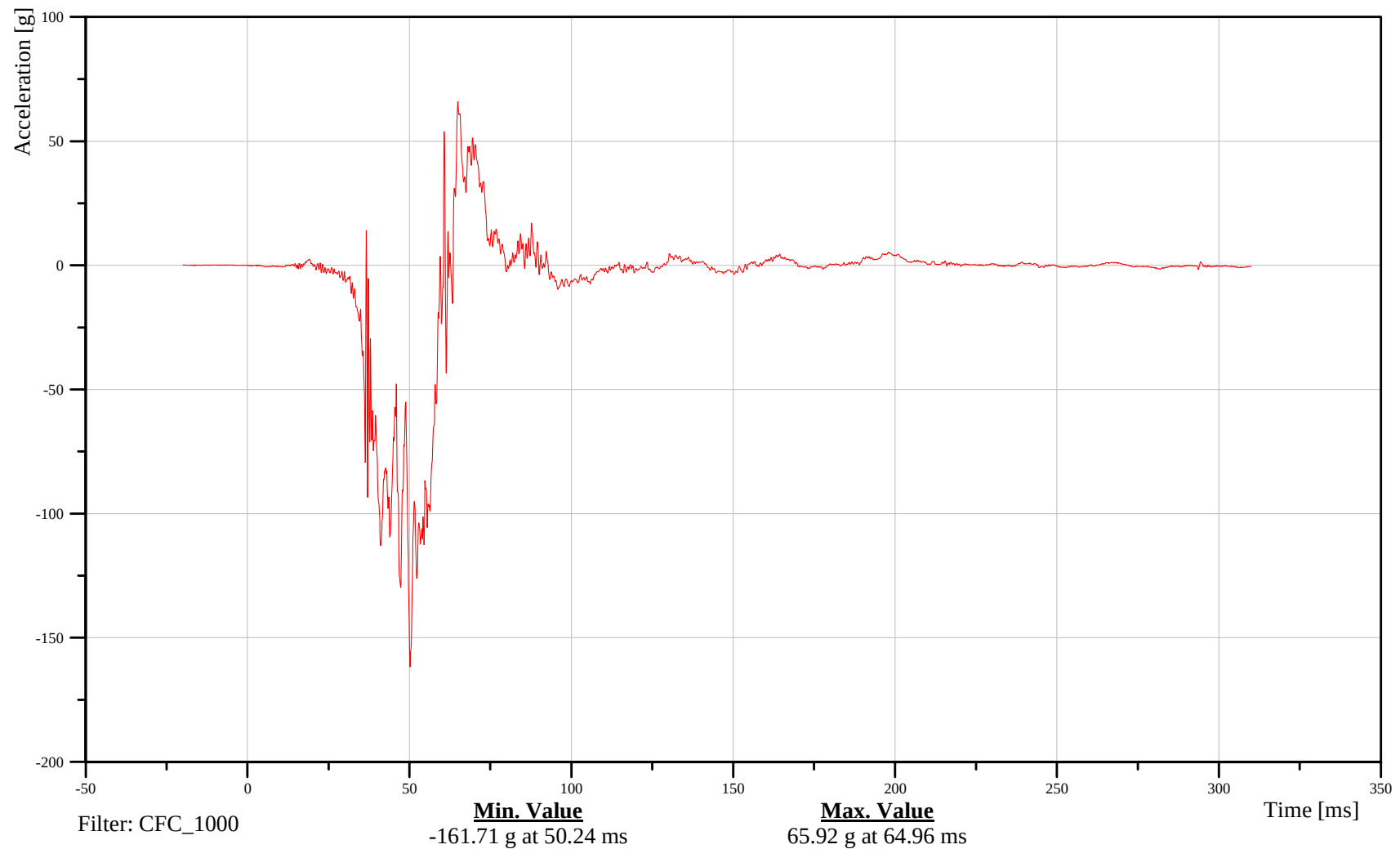
Time: 07:51

Customer: VRTC

11FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Y

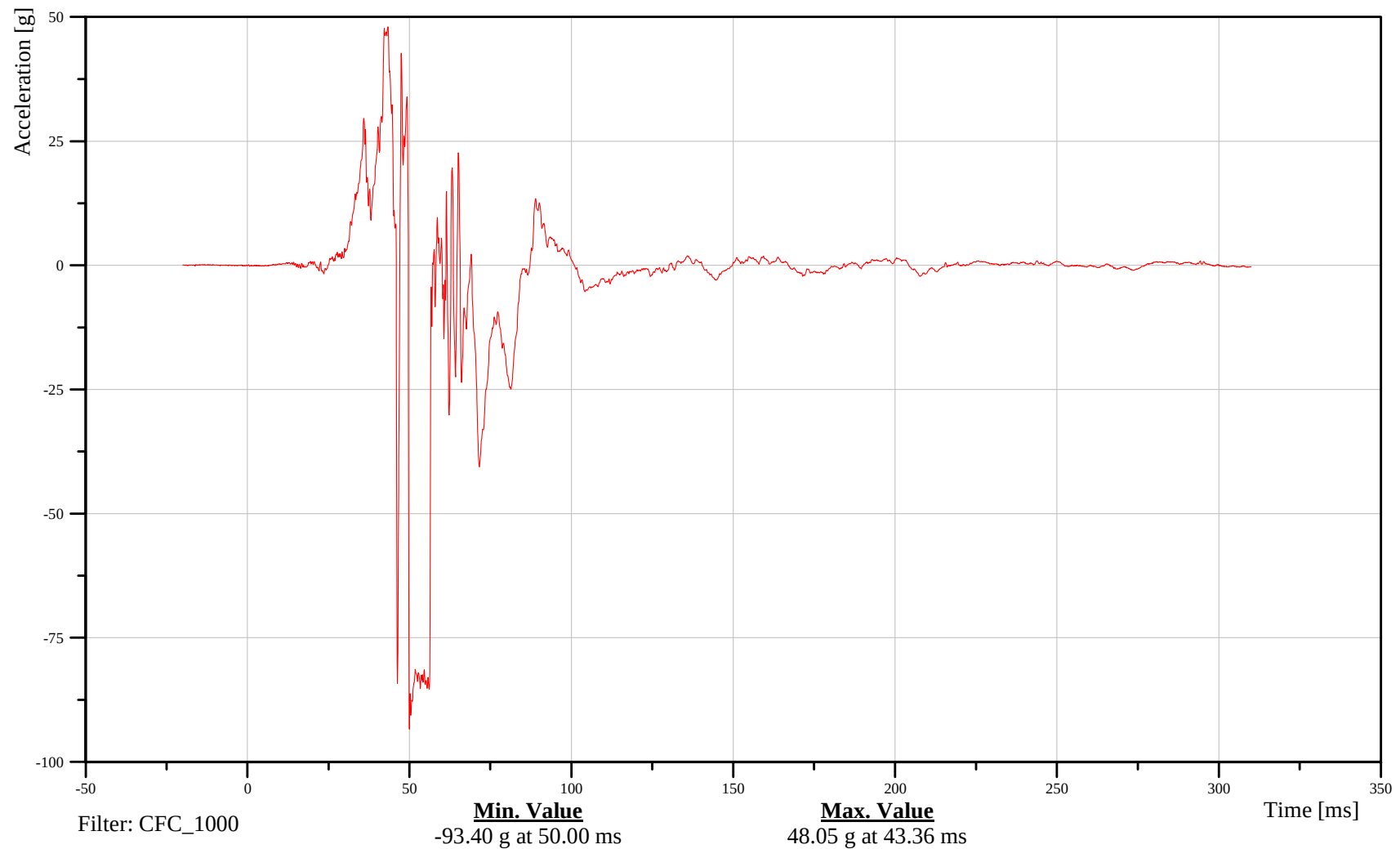
Time: 07:51

Customer: VRTC

11FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Z

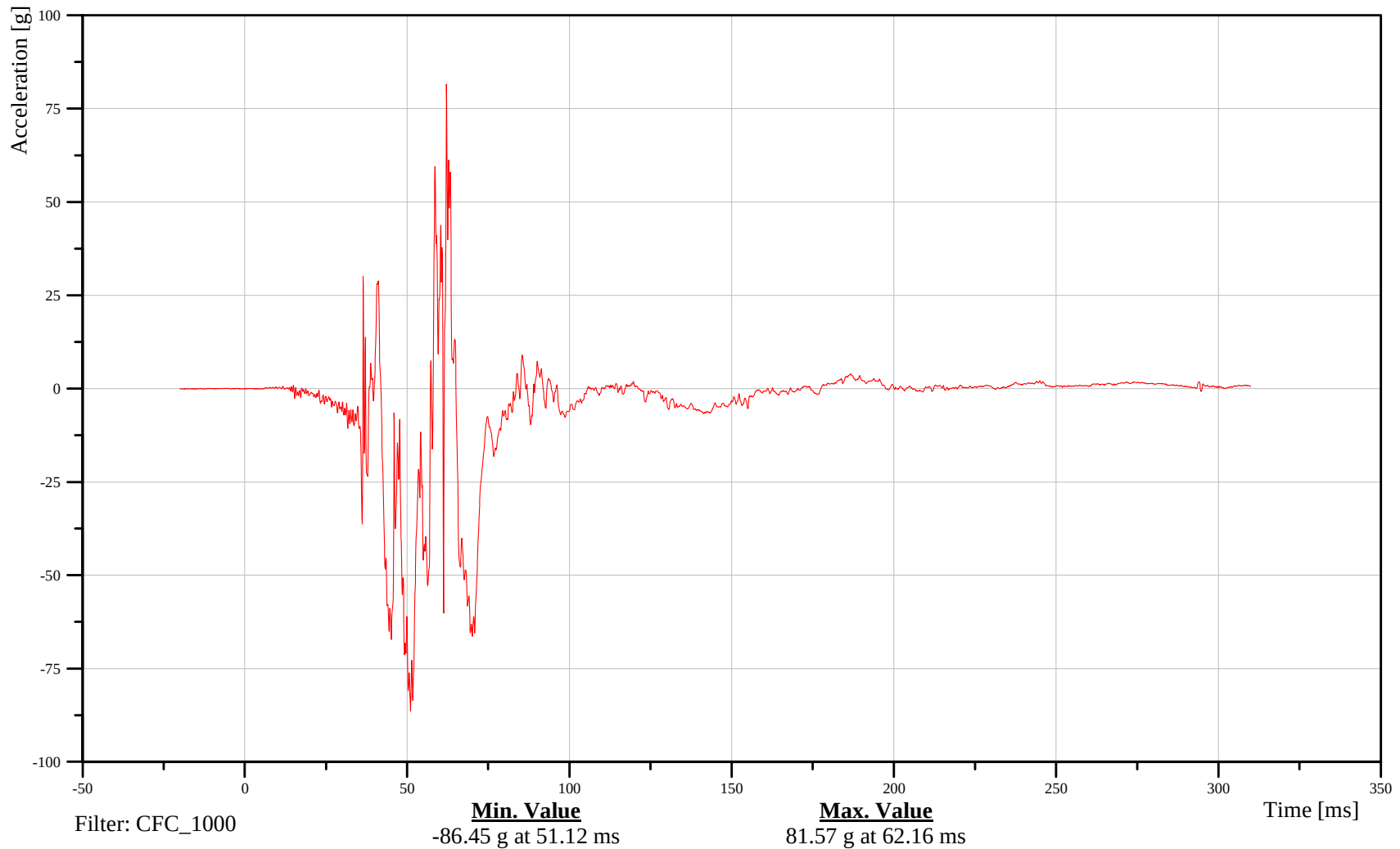
Time: 07:51

Customer: VRTC

11FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Resultant

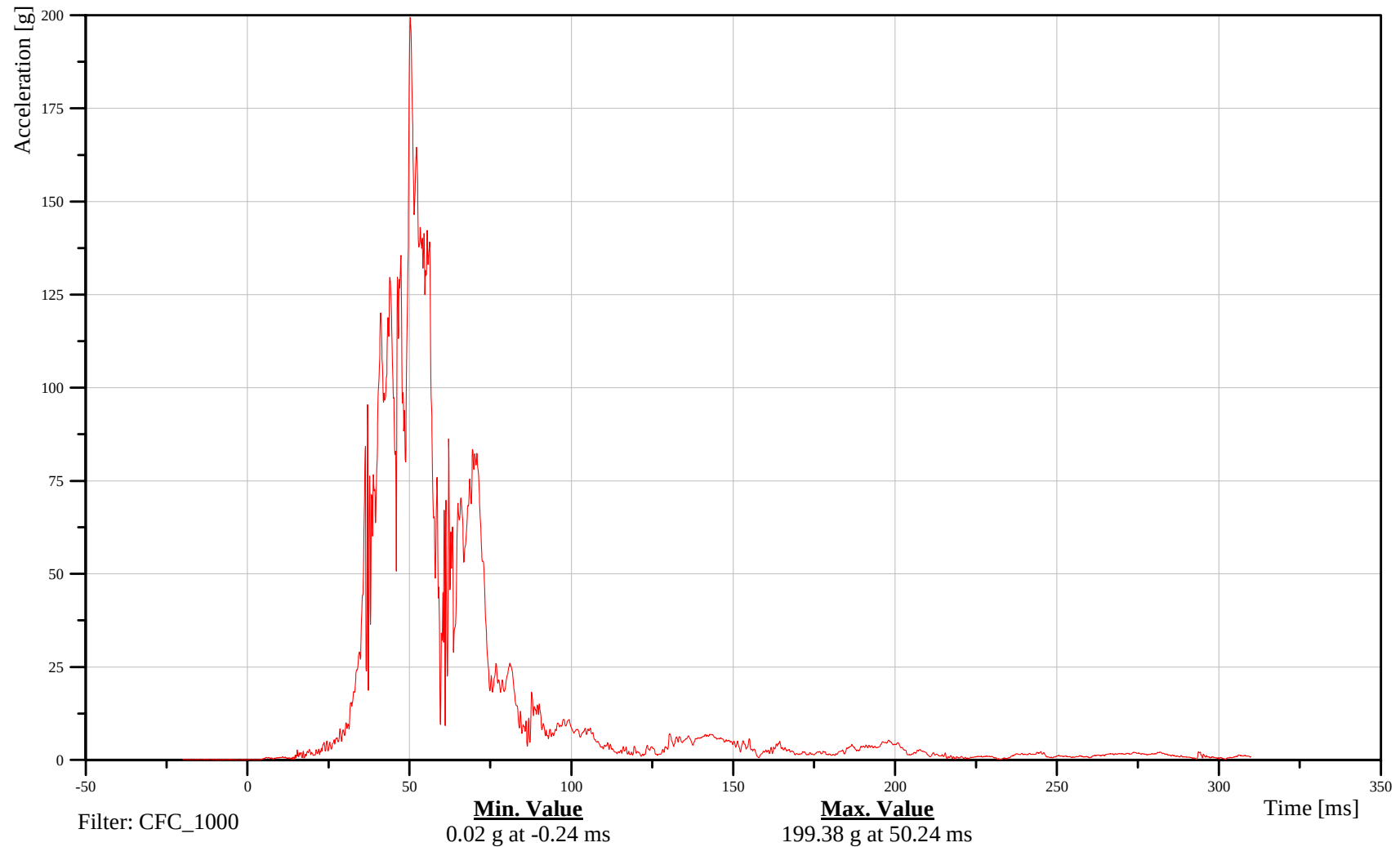
Time: 07:51

Customer: VRTC

11FOOTLELXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

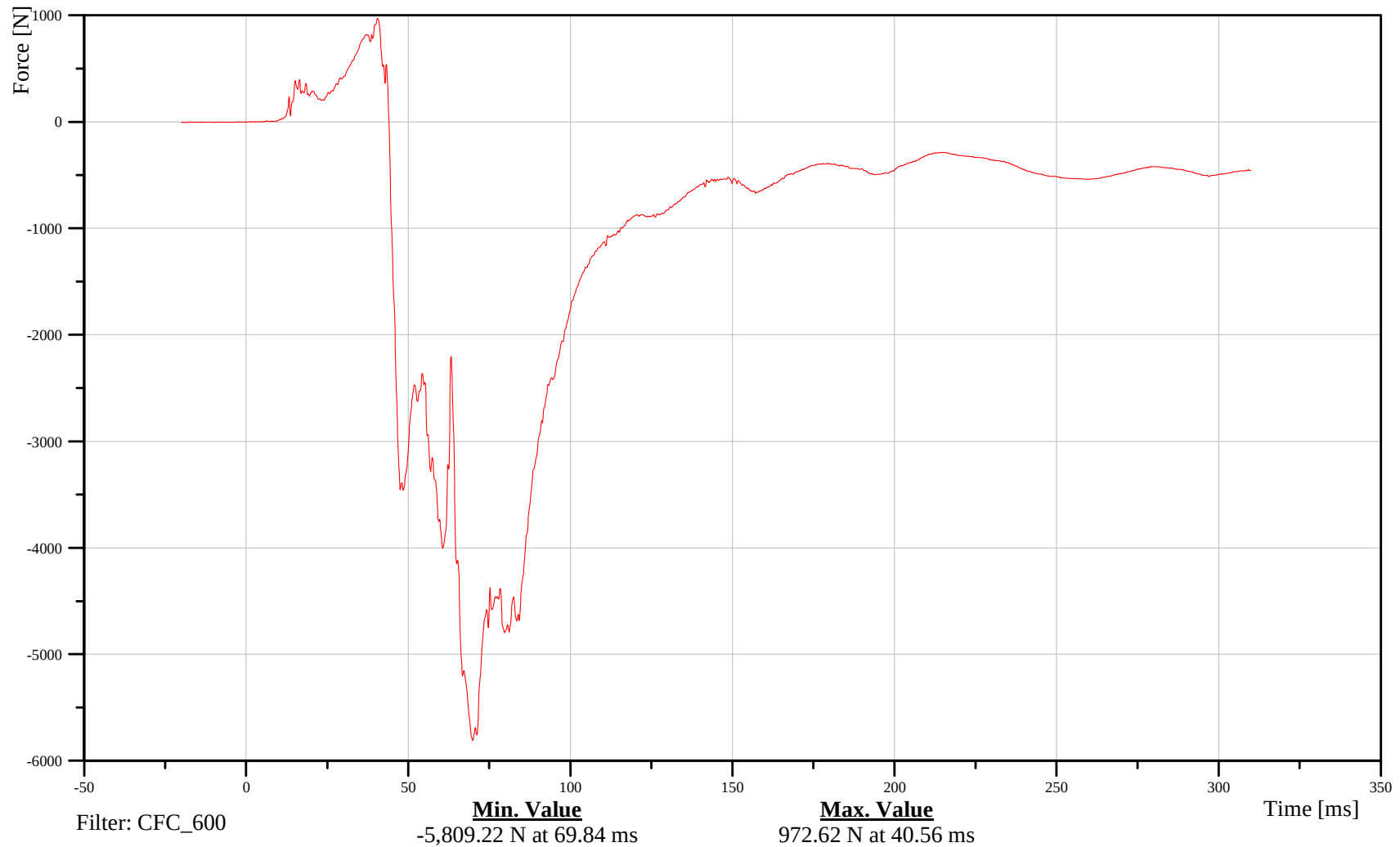
Right Femur Force Z

Customer: VRTC

11FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

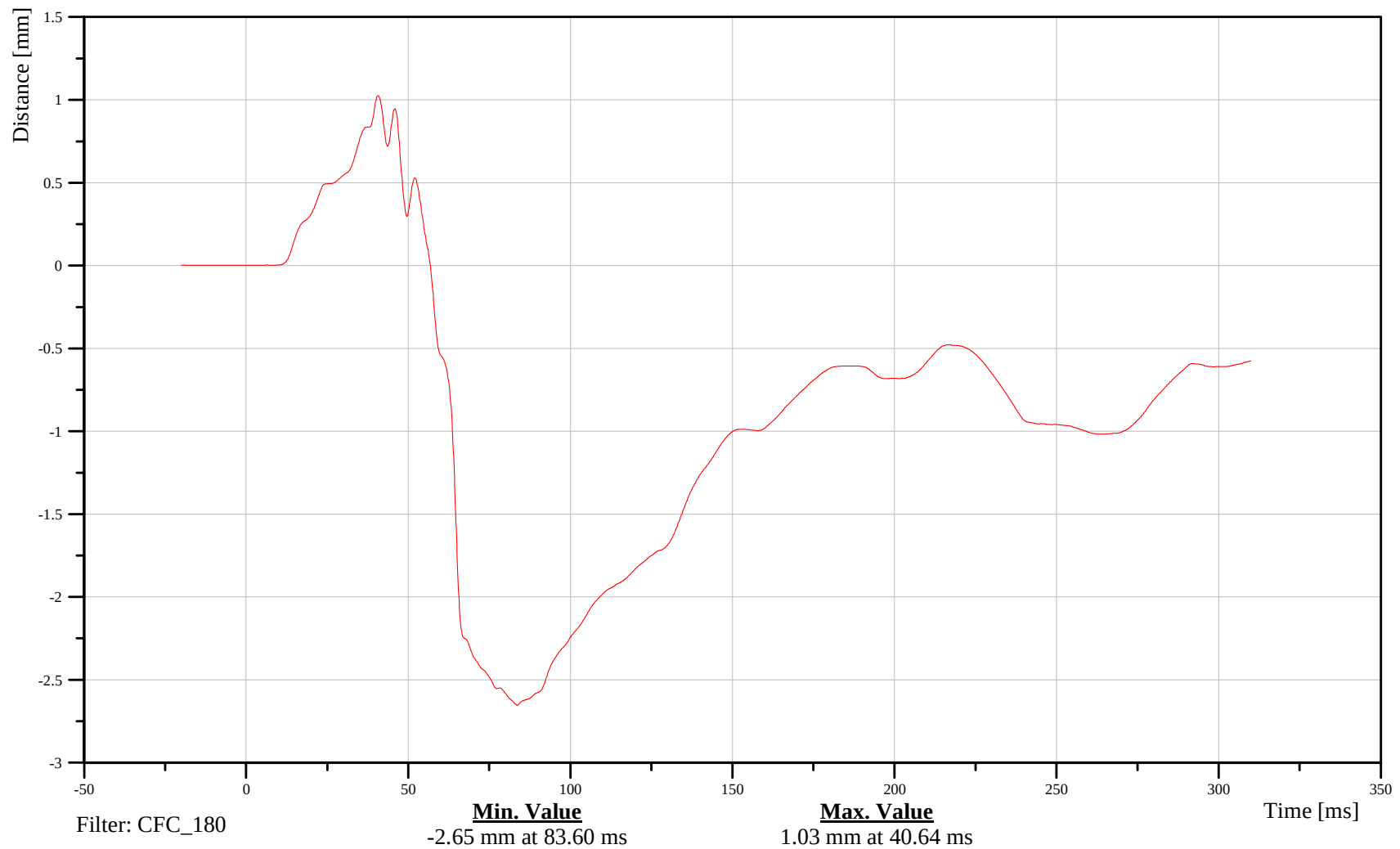
Right Knee Displacement X

Customer: VRTC

11KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

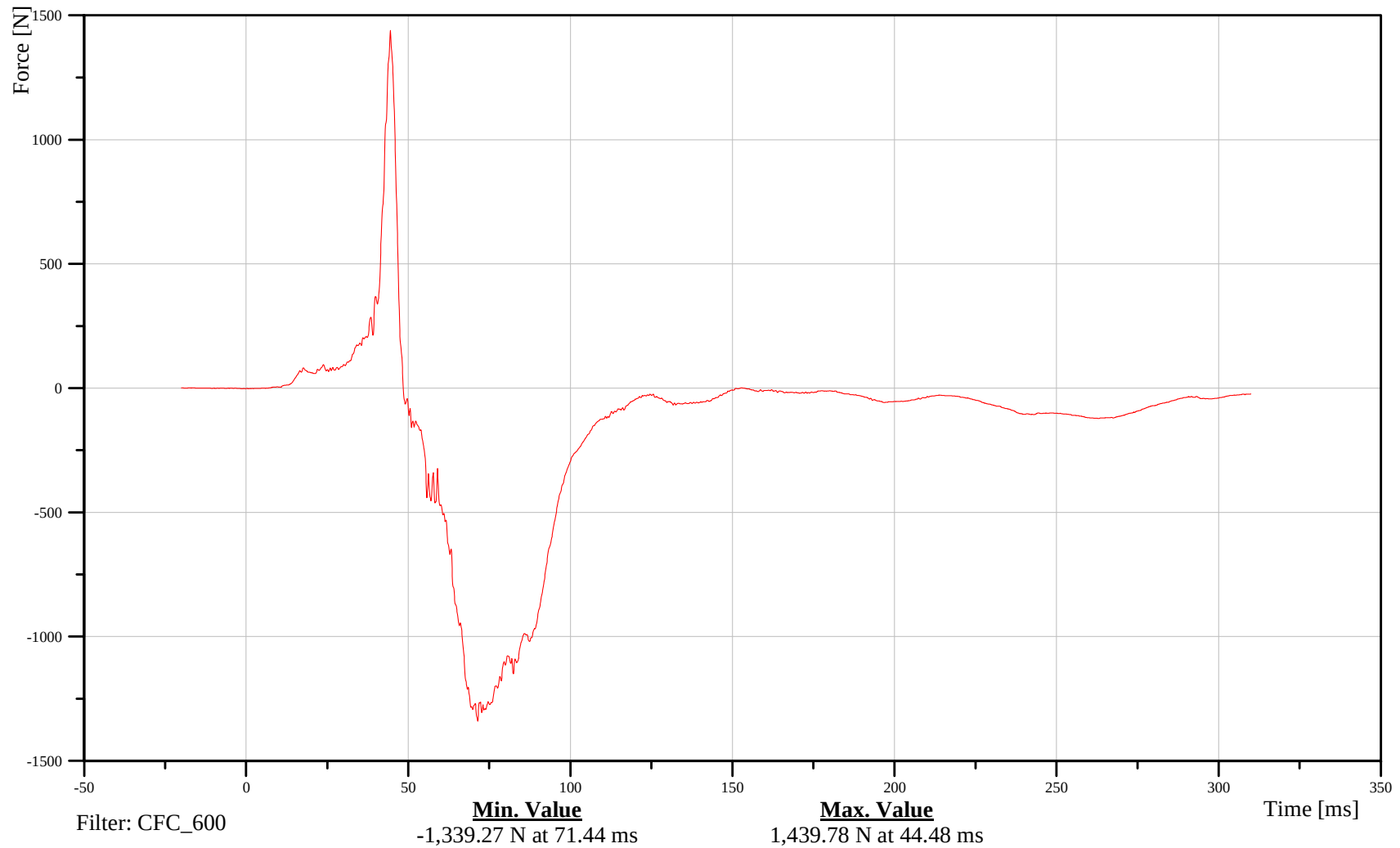
Right Upper Tibia Force X

Customer: VRTC

11TIBIRULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

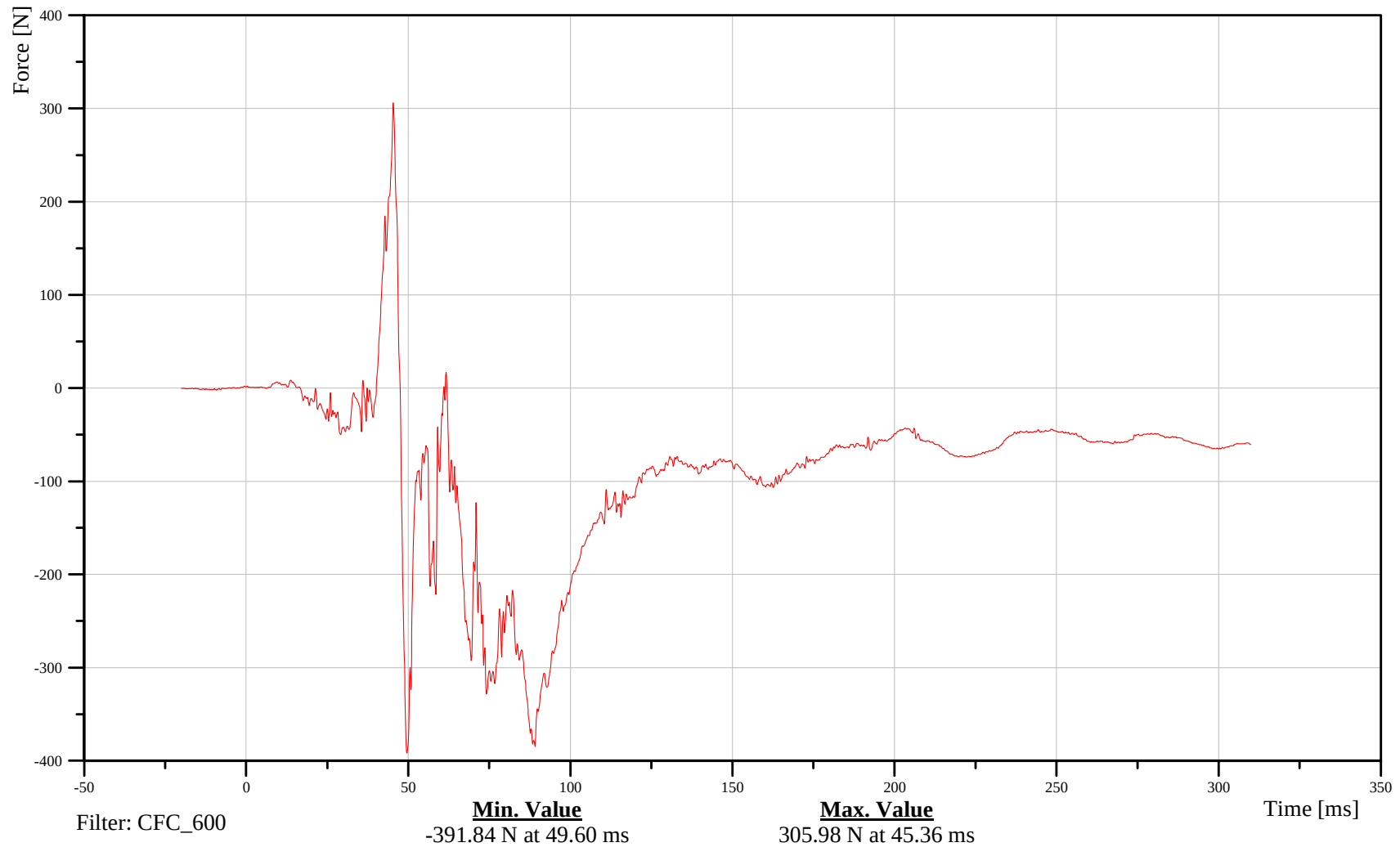
Right Upper Tibia Force Y

Customer: VRTC

11TIBIRULXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

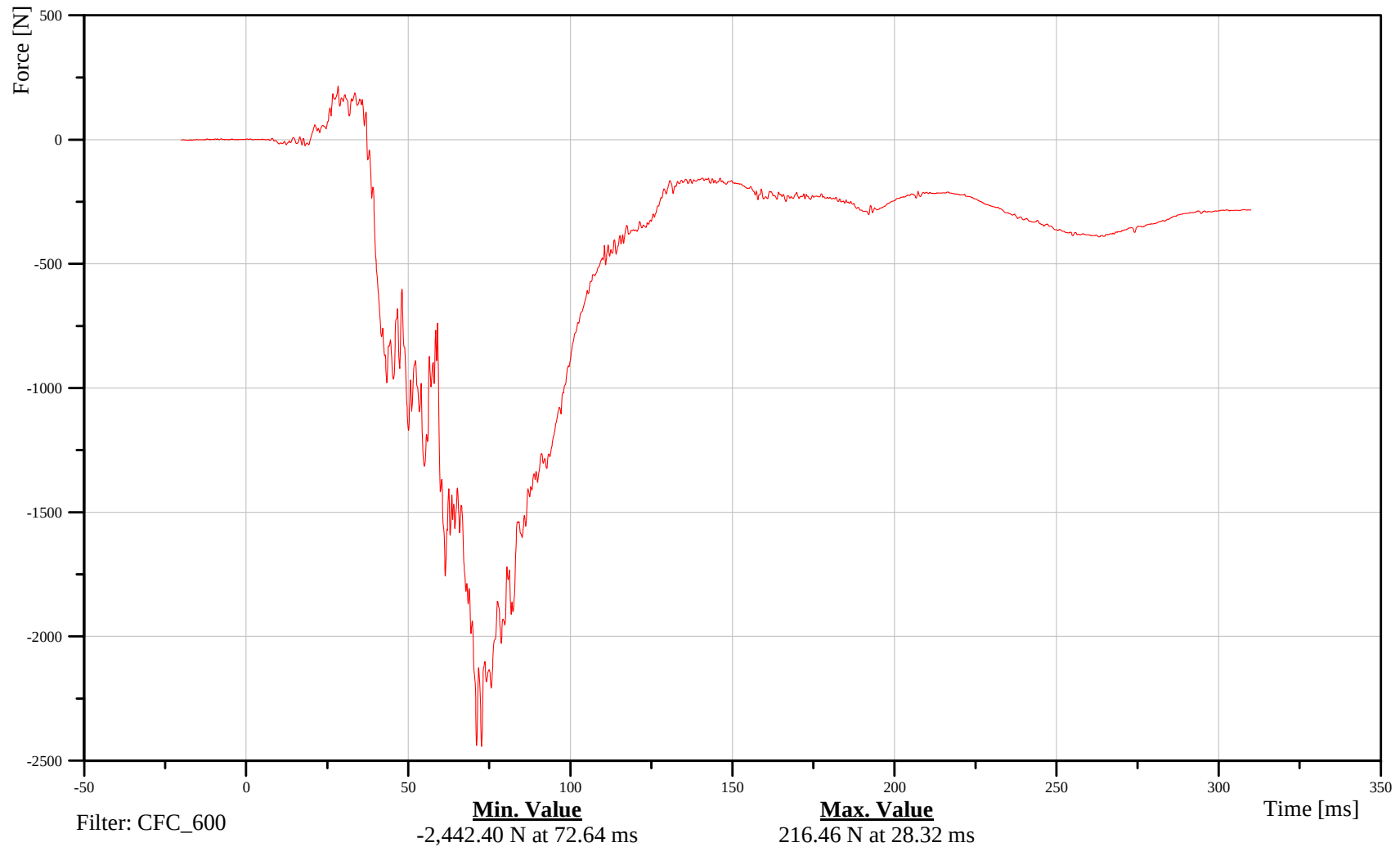
Right Upper Tibia Force Z

Customer: VRTC

11TIBIRULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

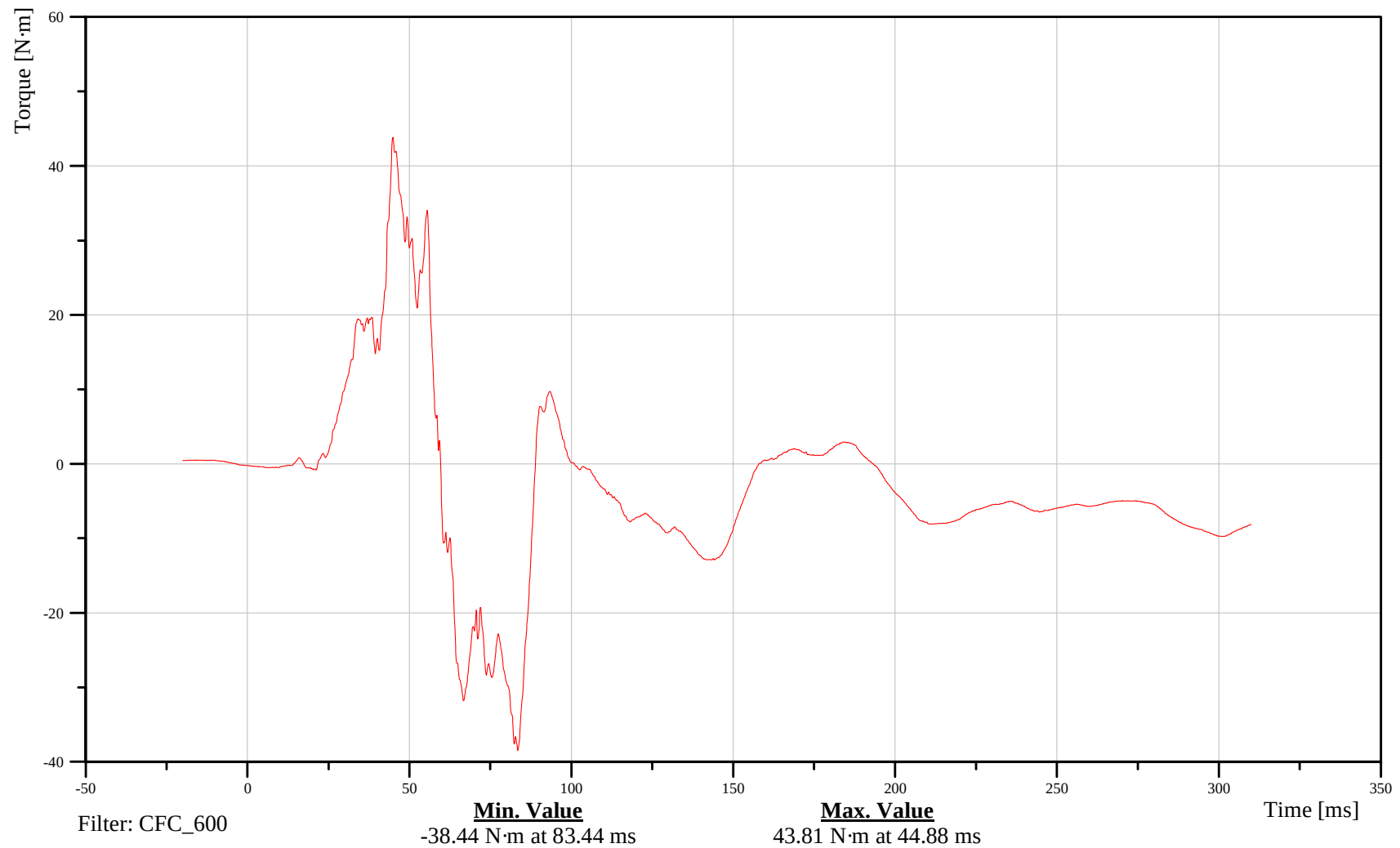
Right Upper Tibia Moment X

Customer: VRTC

11TIBIRULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

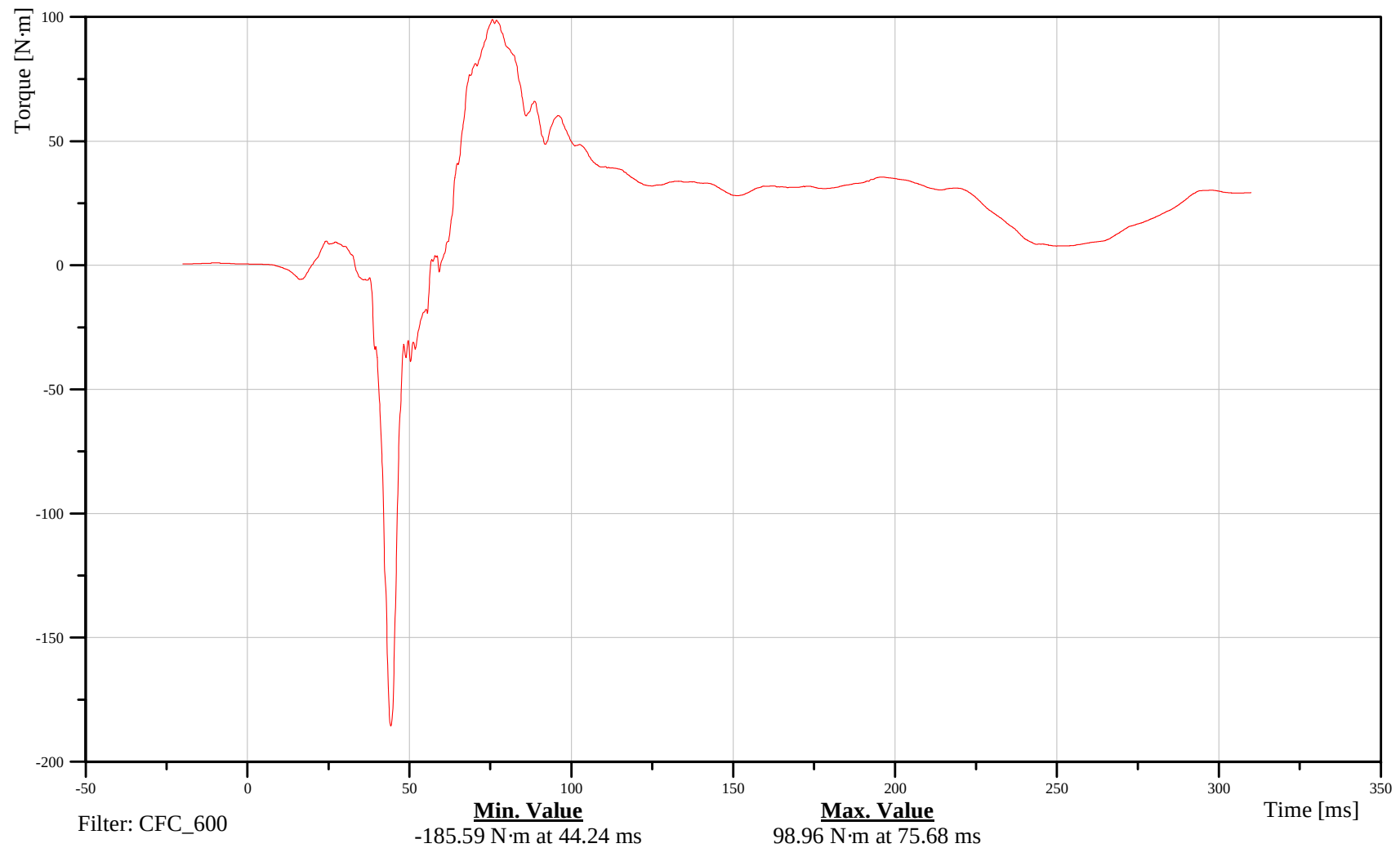
Right Upper Tibia Moment Y

Customer: VRTC

11TIBIRULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

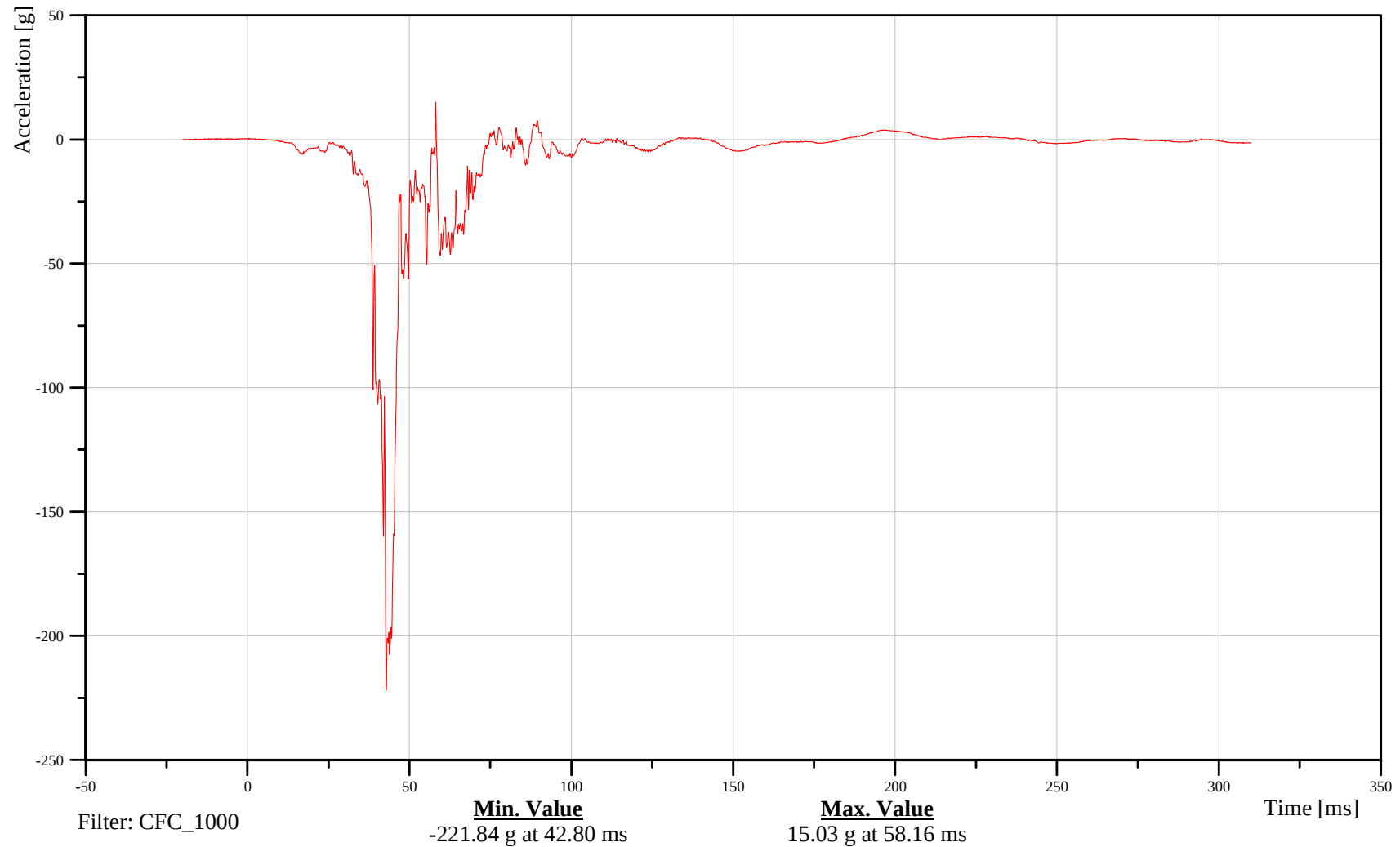
Right Tibia Accel X

Customer: VRTC

11TIBIRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Tibia Accel Y

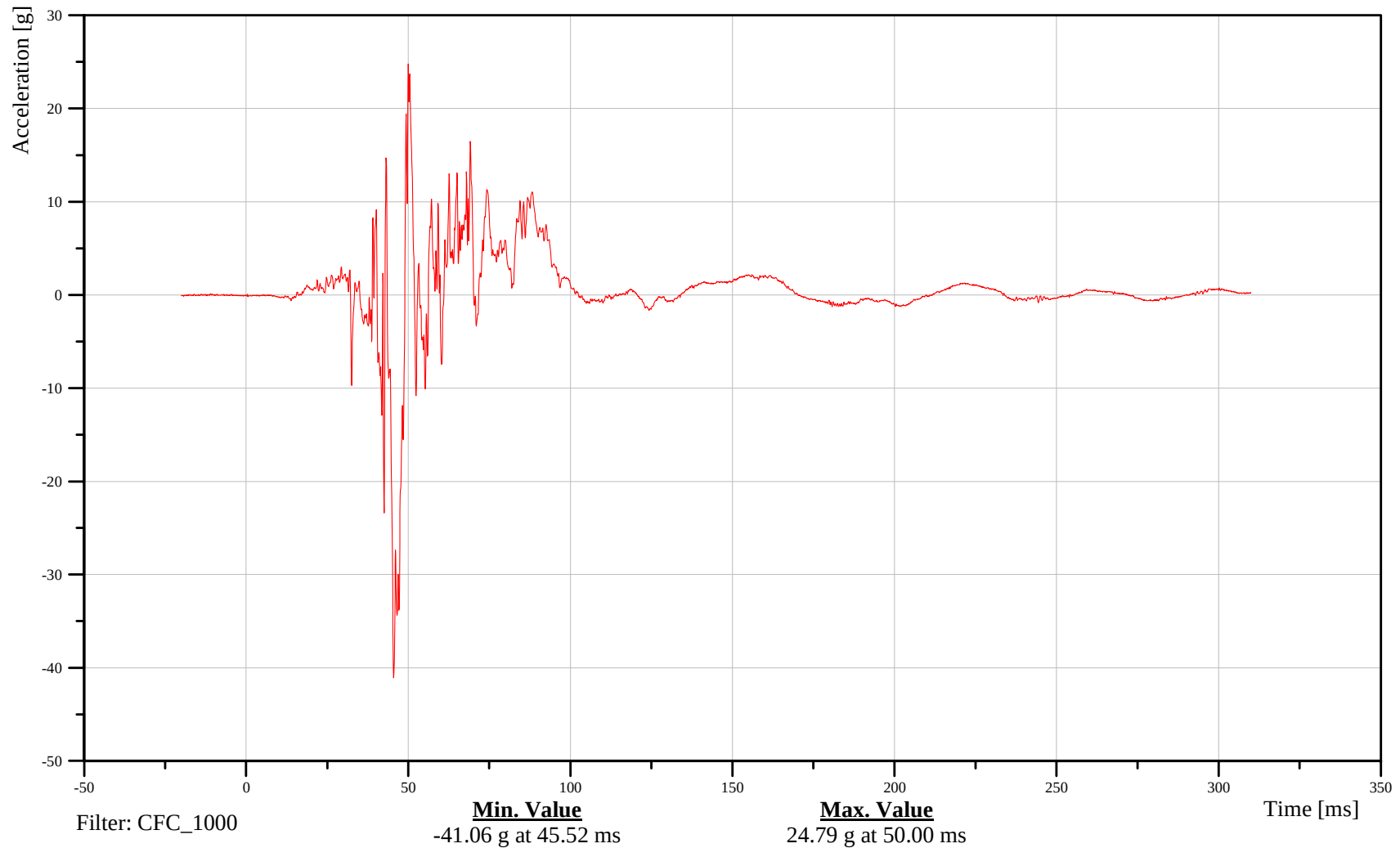
Time: 07:51

Customer: VRTC

11TIBIRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

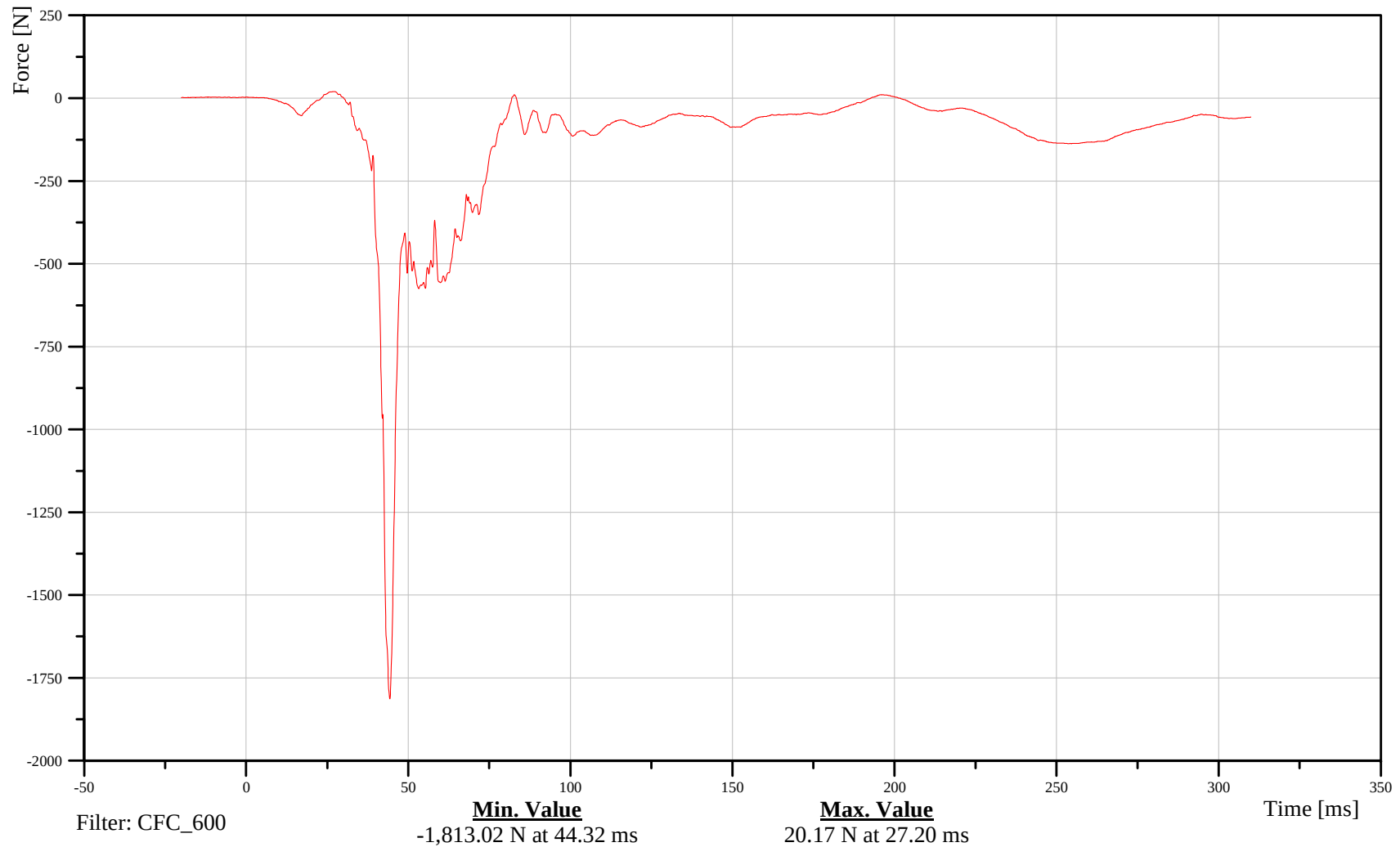
Right Lower Tibia Force X

Customer: VRTC

11TIBIRLLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Lower Tibia Force Y

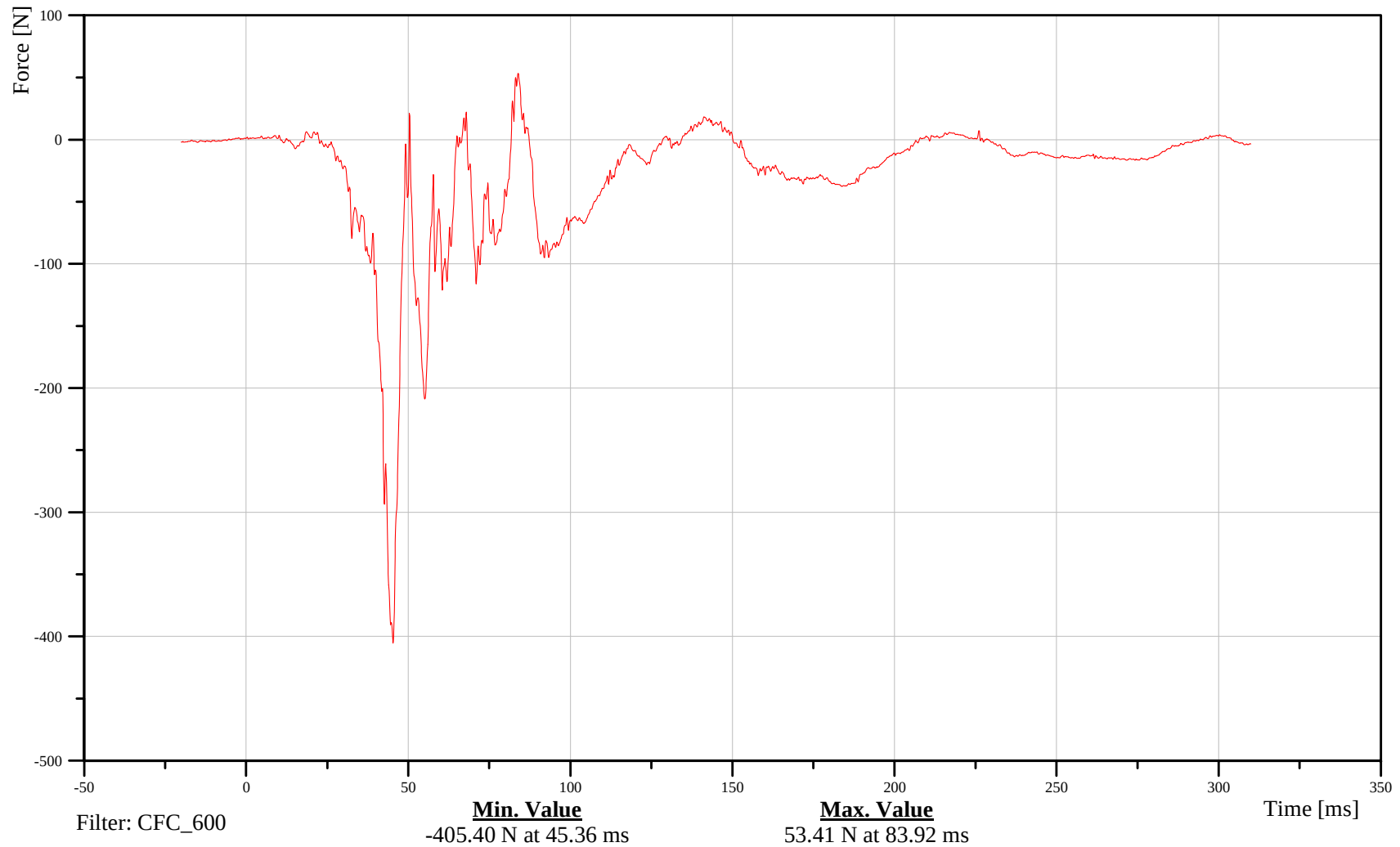
Time: 07:51

Customer: VRTC

11TIBIRLLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

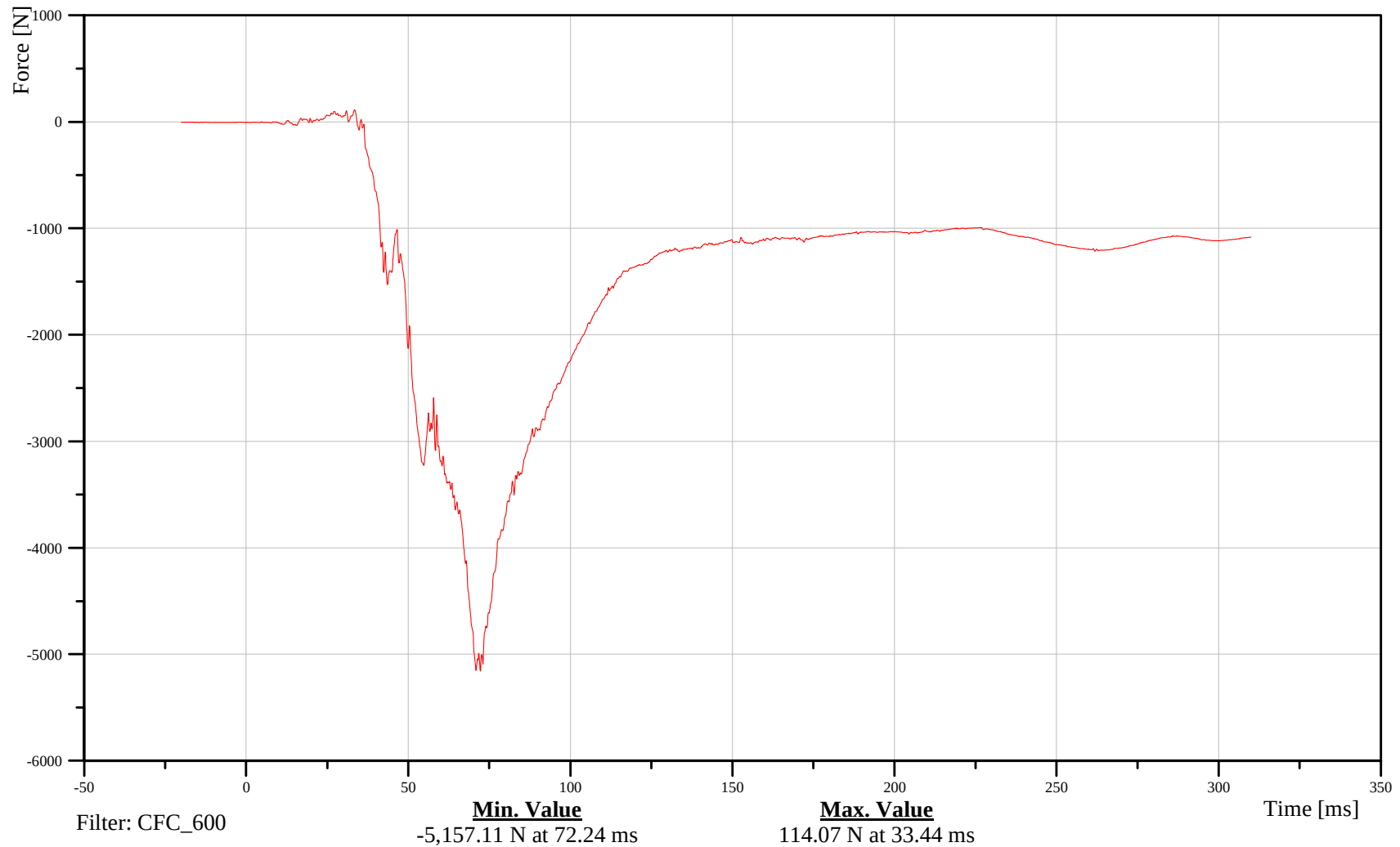
Right Lower Tibia Force Z

Customer: VRTC

11TIBIRLLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

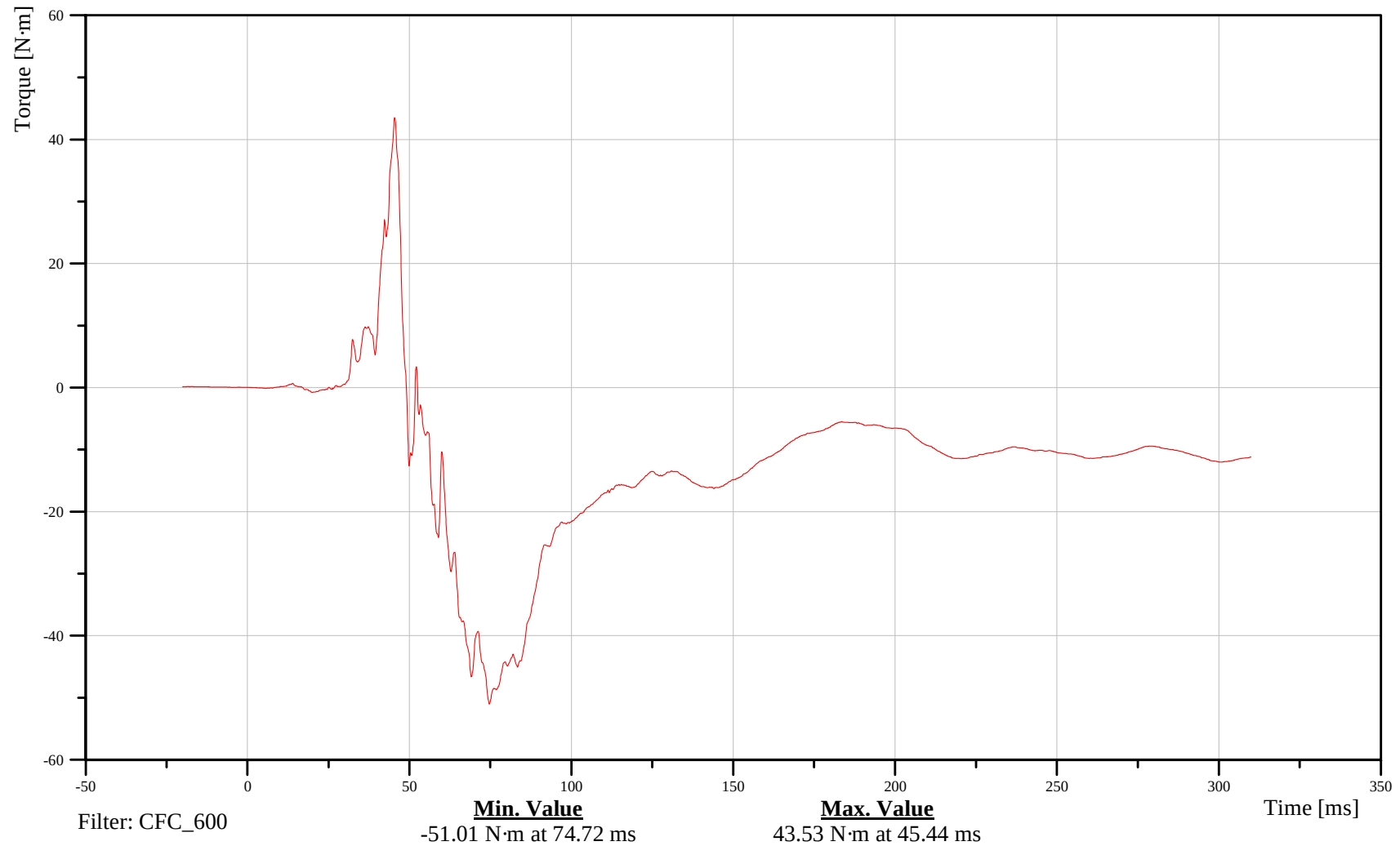
Right Lower Tibia Moment X

Customer: VRTC

11TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

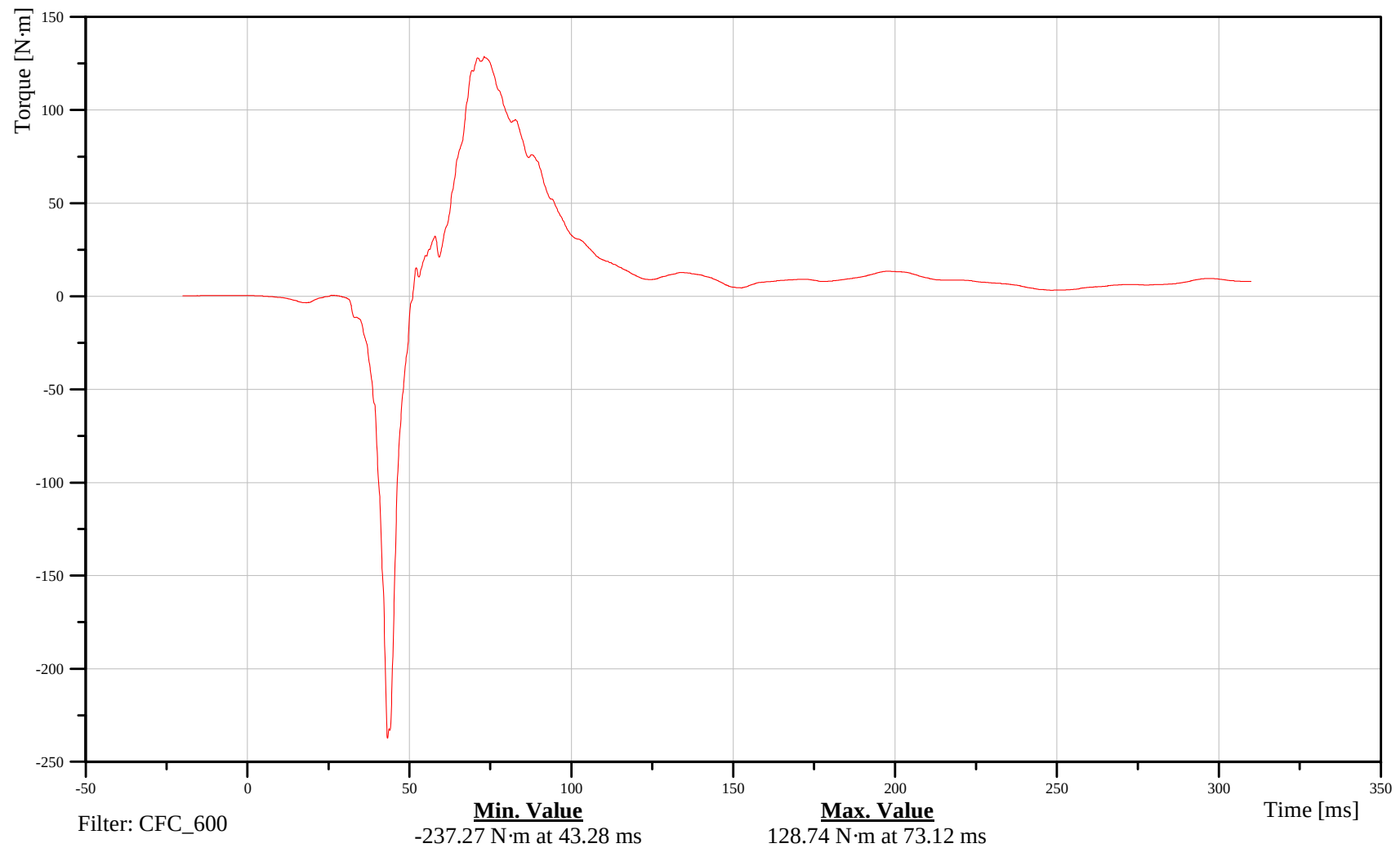
Right Lower Tibia Moment Y

Customer: VRTC

11TIBIRLLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

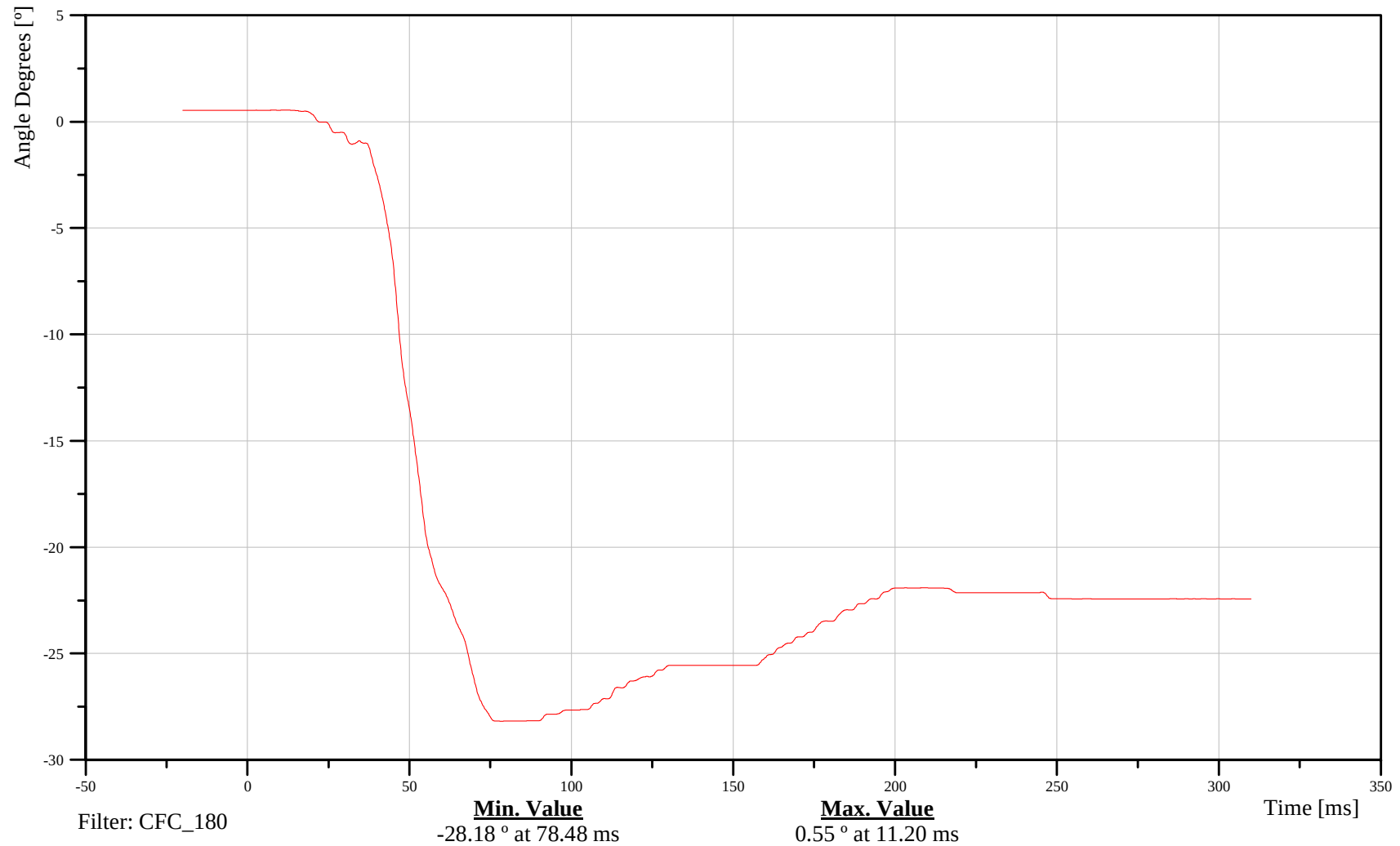
Right Foot Angular Dis. X

Customer: VRTC

11FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

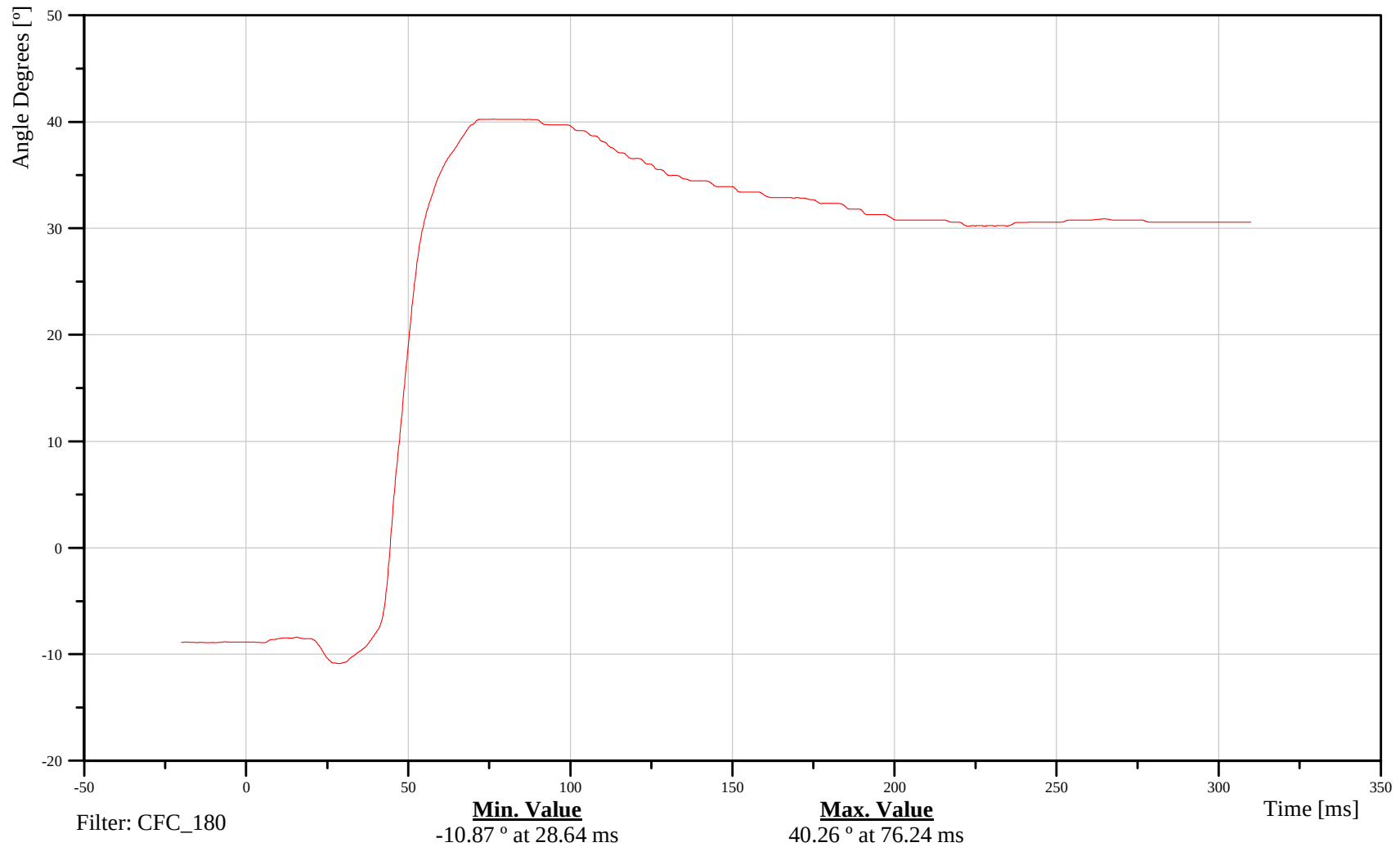
Right Foot Angular Dis. Y

Customer: VRTC

11FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Angular Dis. Z

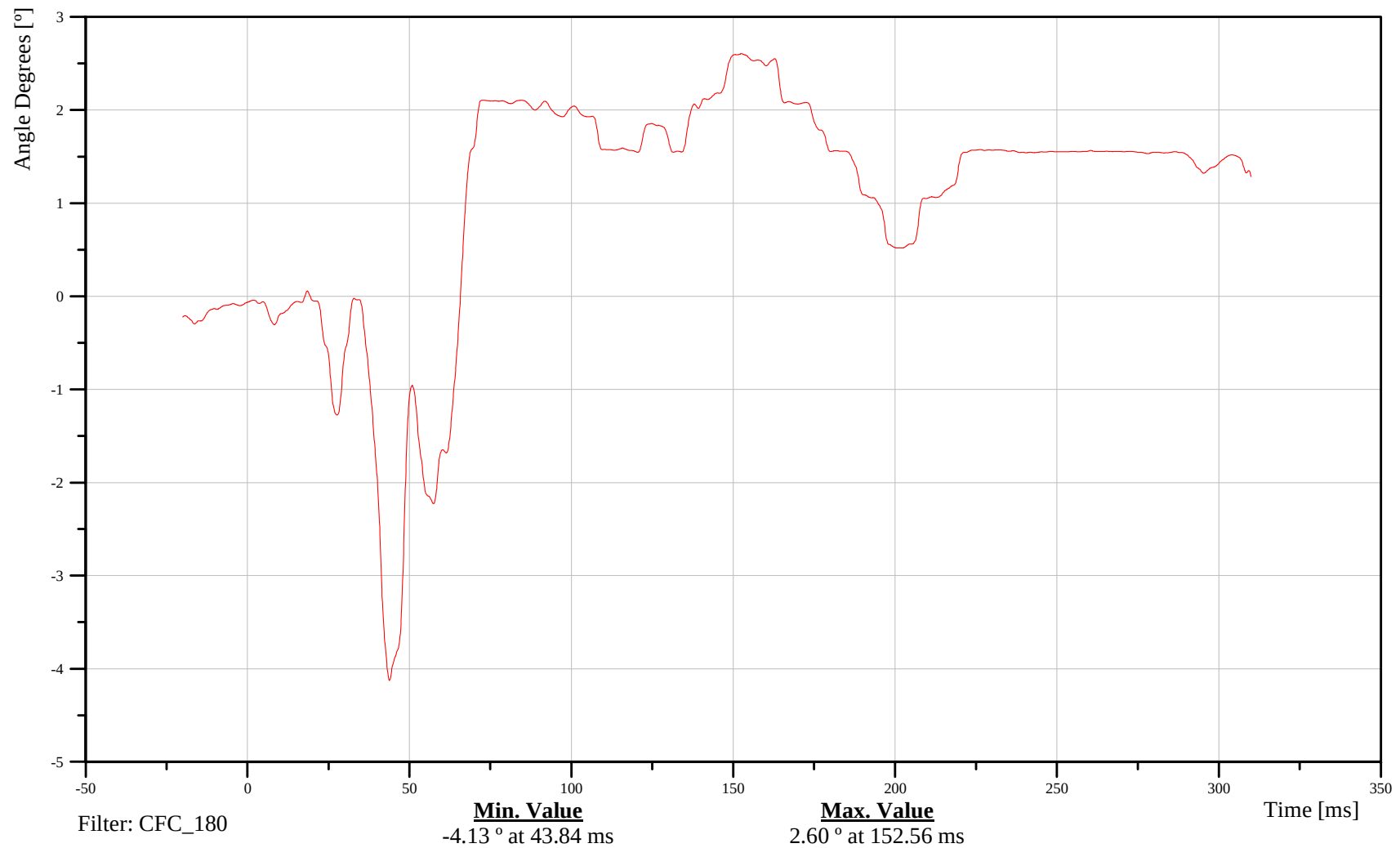
Time: 07:51

Customer: VRTC

11FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Accel X

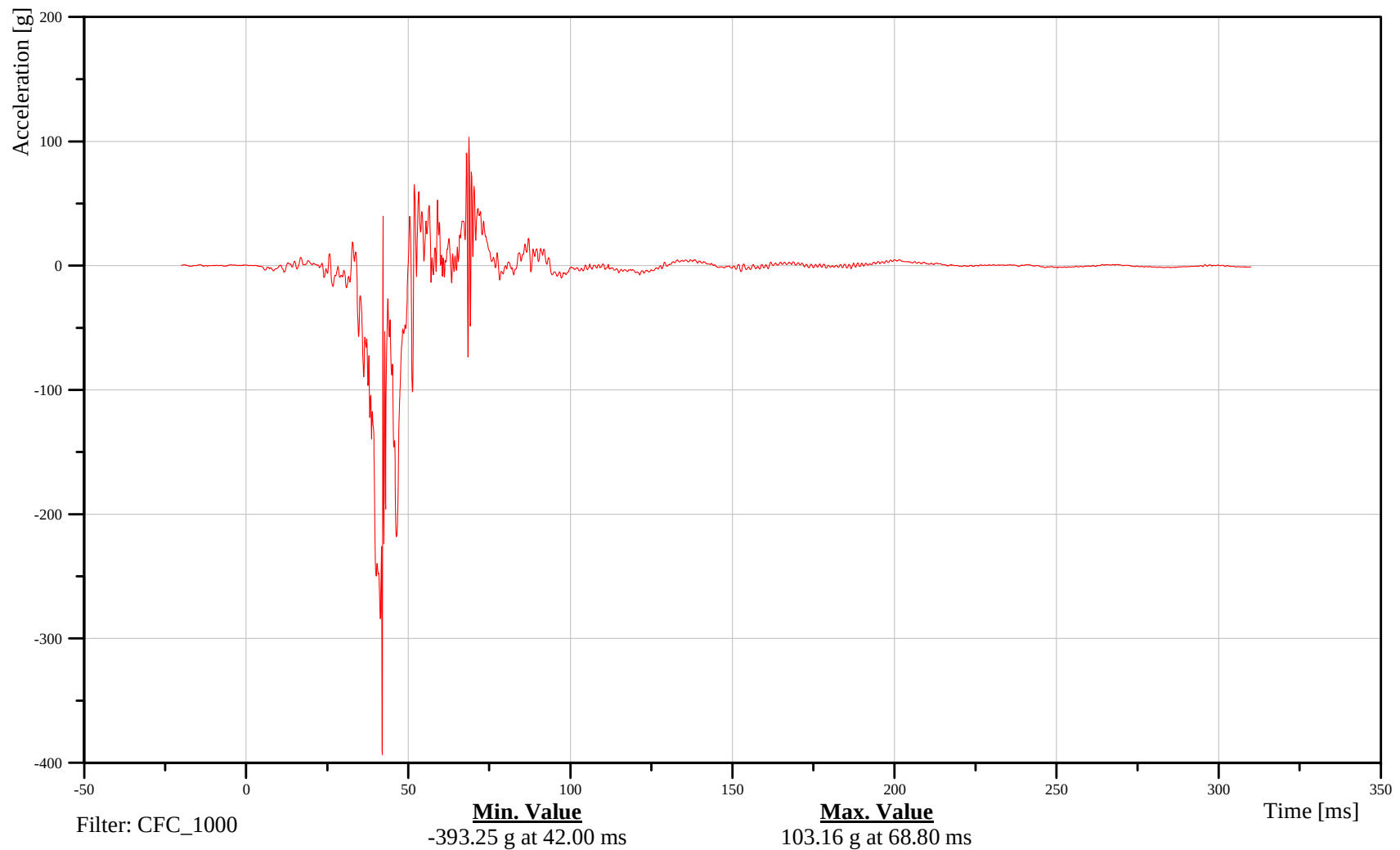
Time: 07:51

Customer: VRTC

11FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

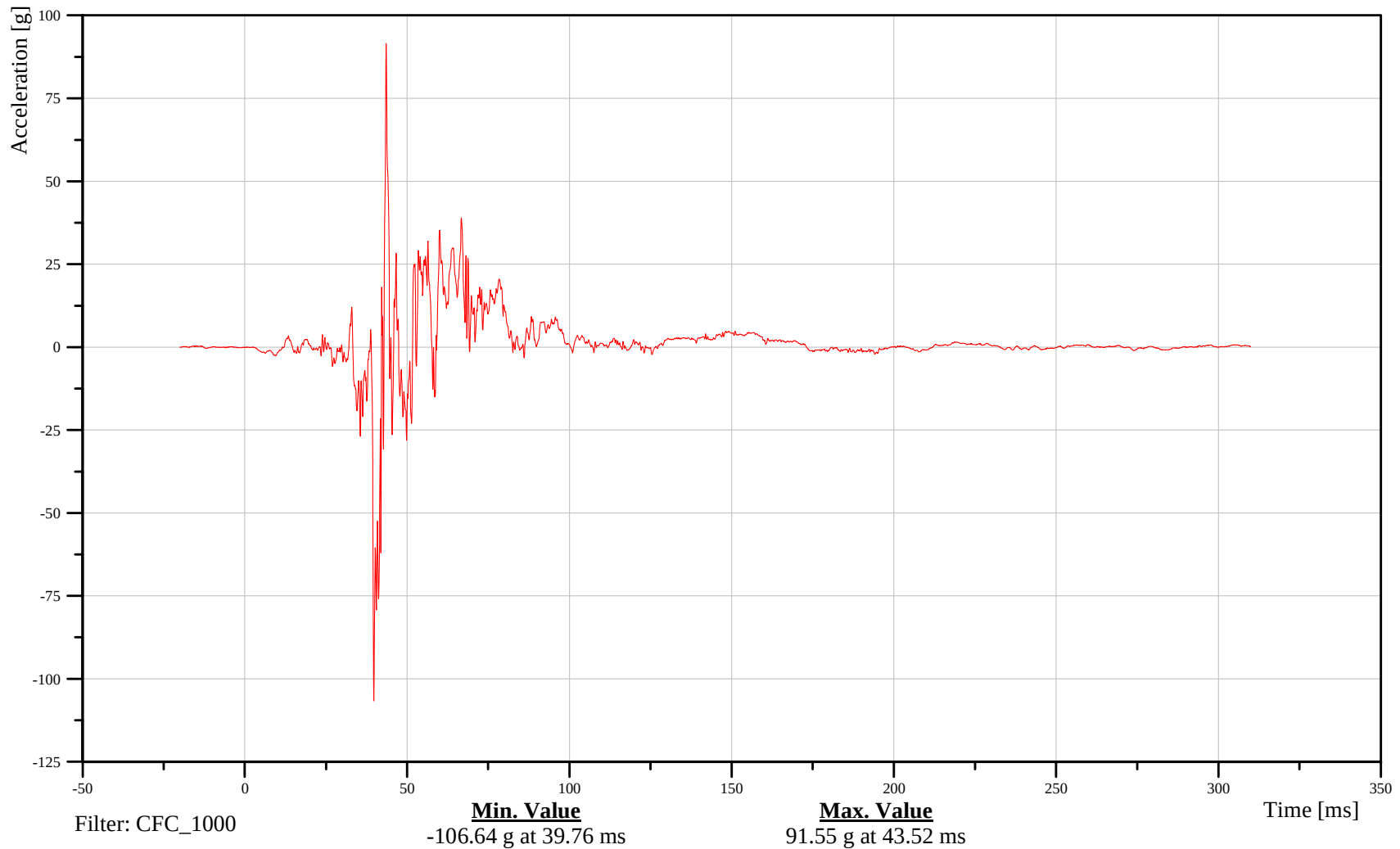
Right Foot Accel Y

Customer: VRTC

11FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

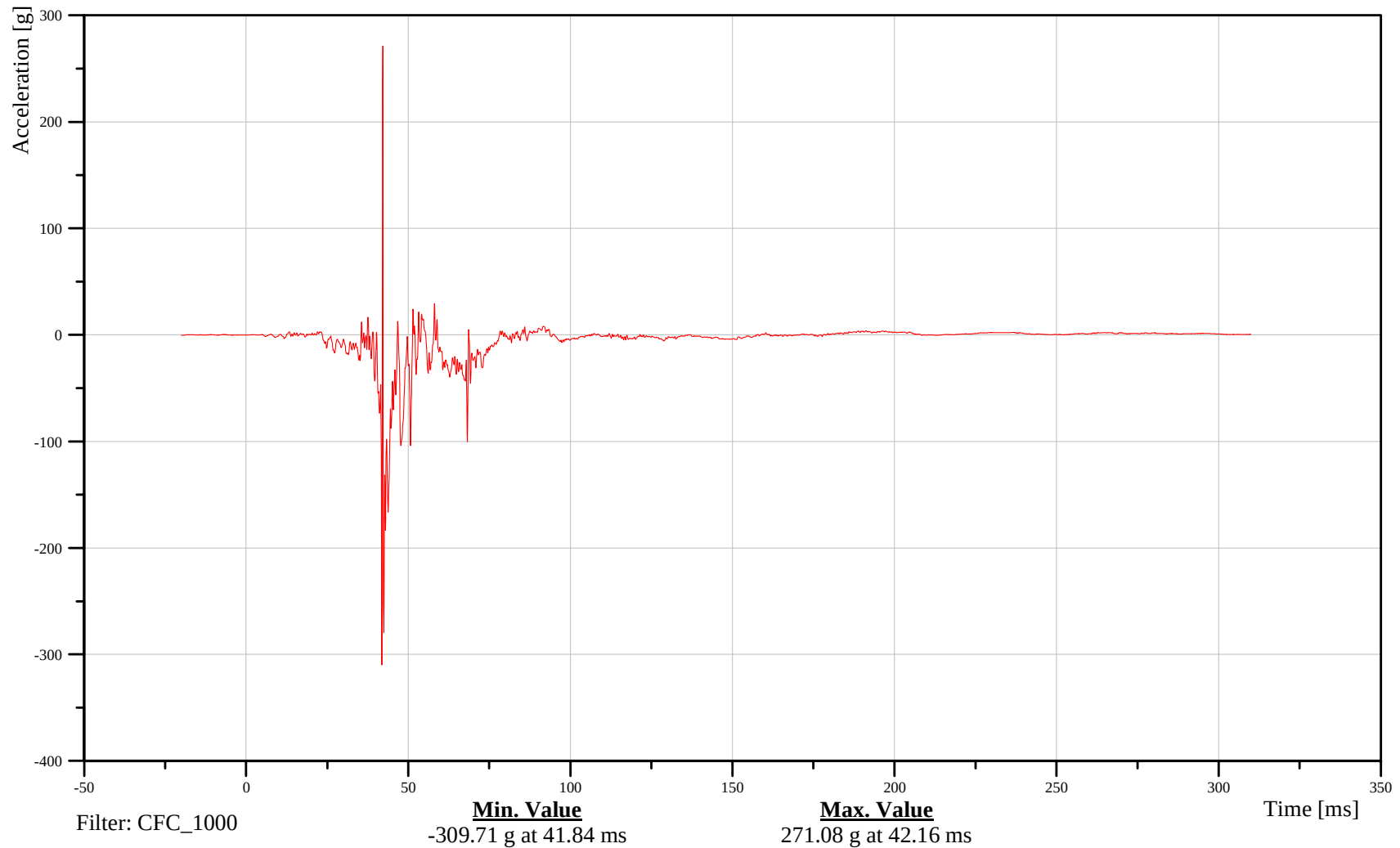
Right Foot Accel Z

Customer: VRTC

11FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

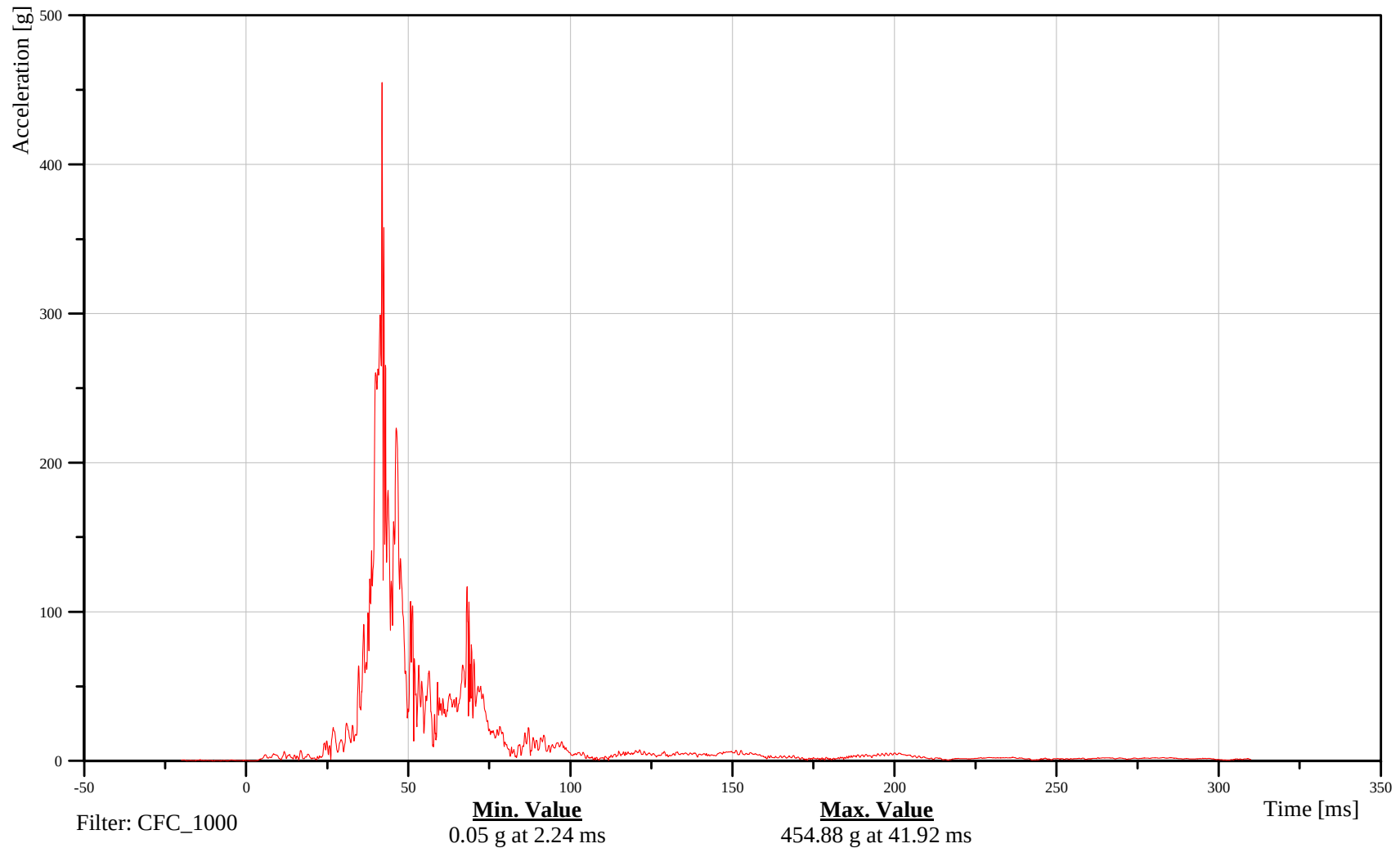
Right Foot Accel Resultant

Customer: VRTC

11FOOTRILXH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

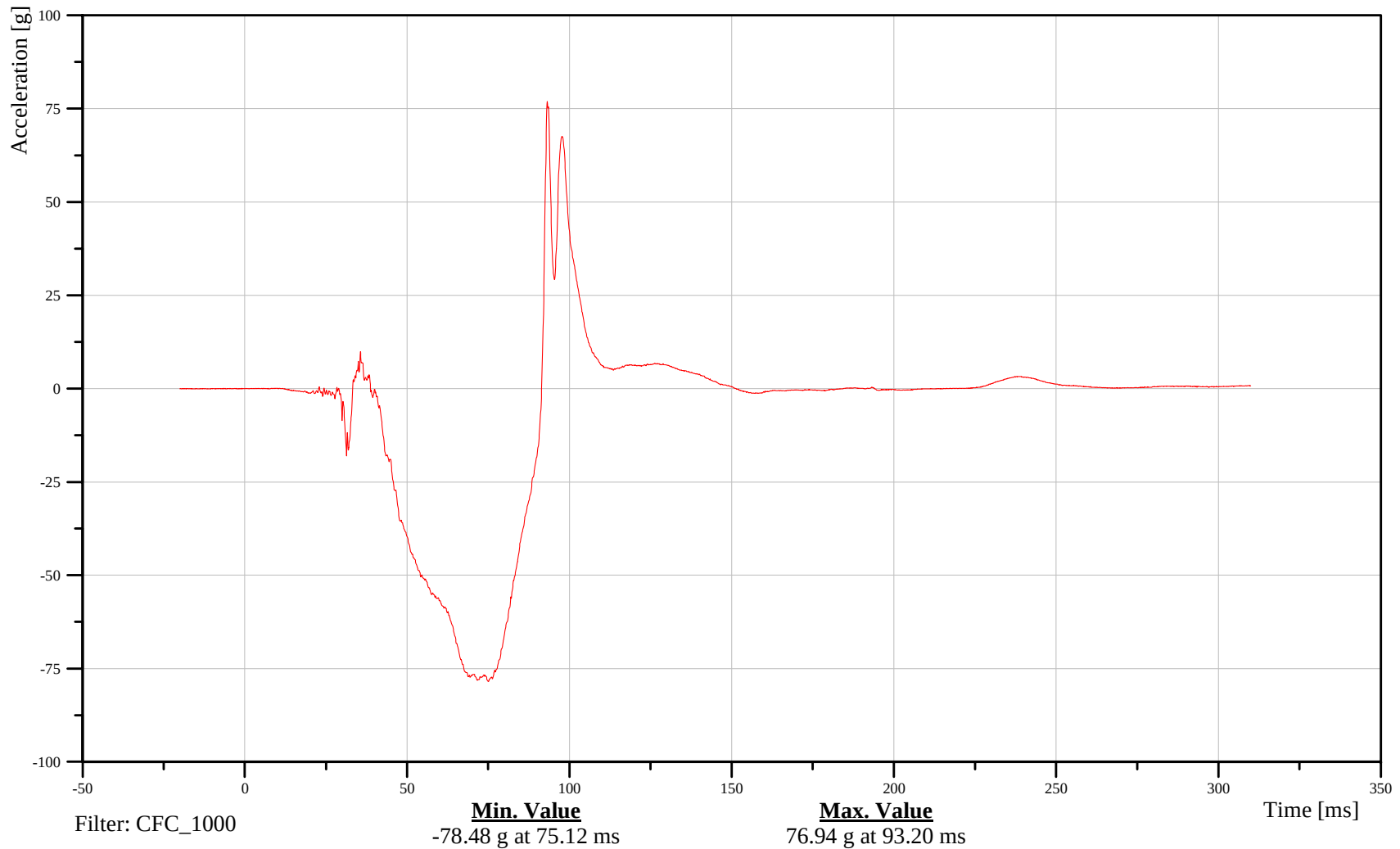
Head Accel X

Customer: VRTC

13HEADCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Y

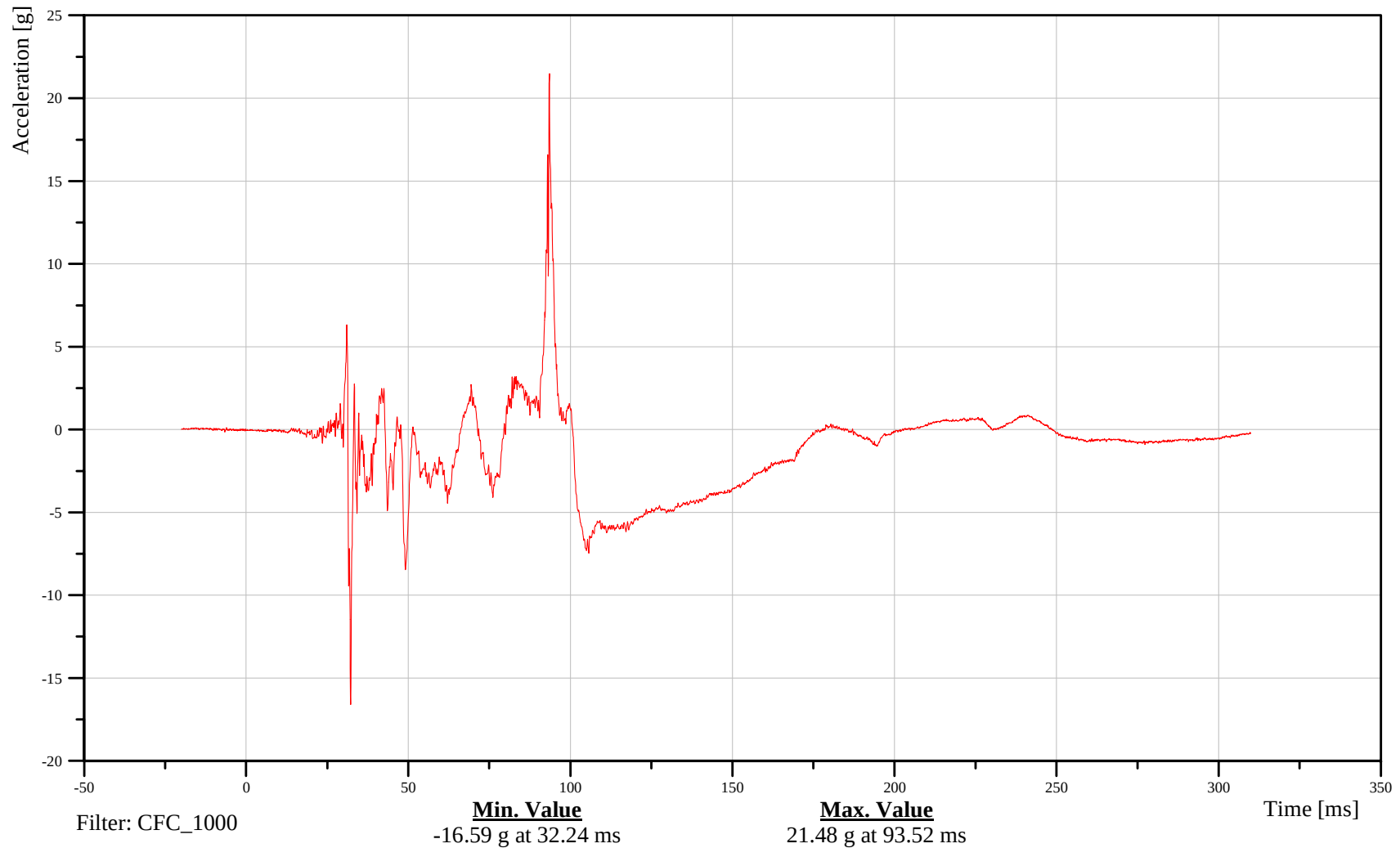
Time: 07:51

Customer: VRTC

13HEADCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

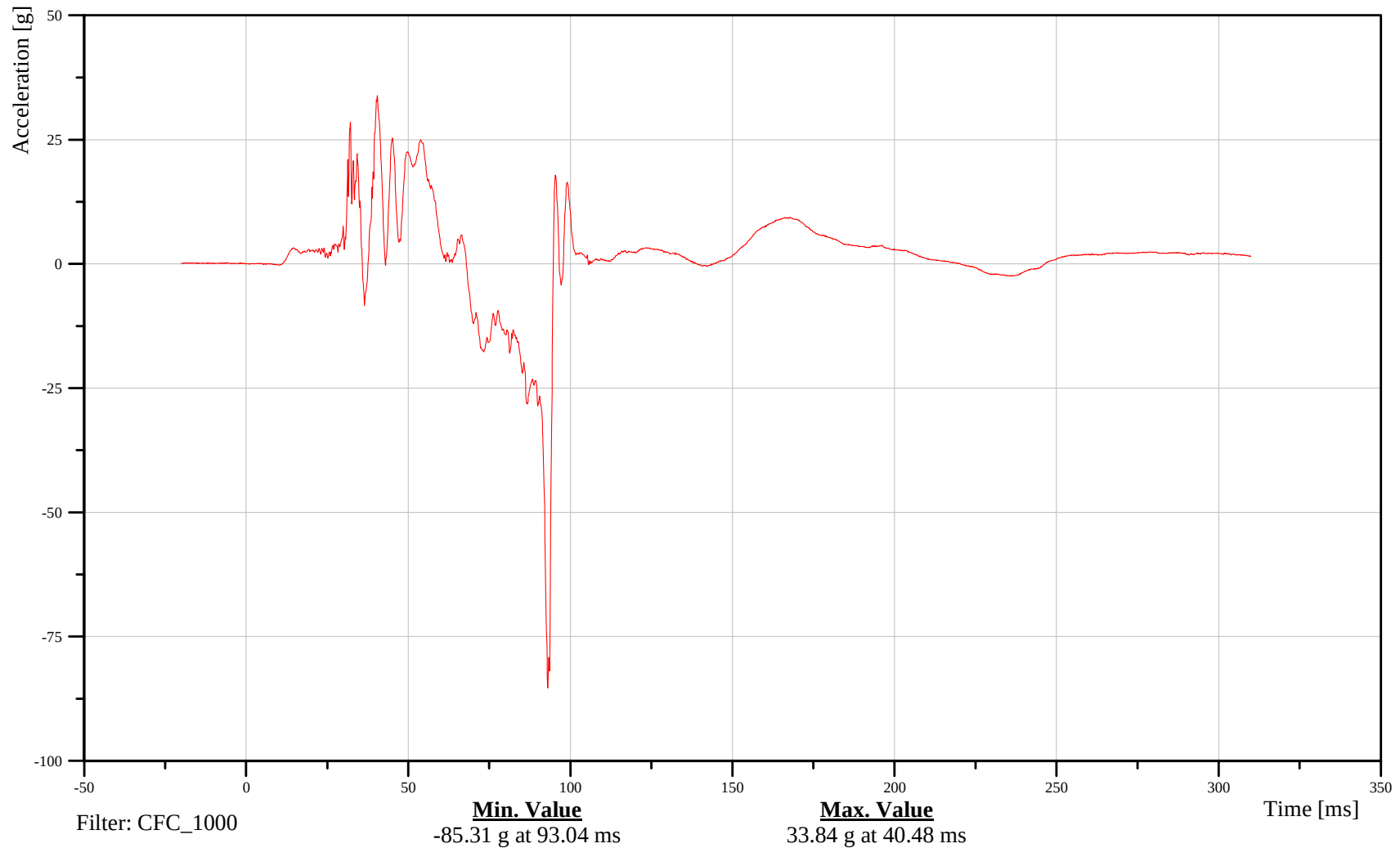
Head Accel Z

Customer: VRTC

13HEADCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Resultant

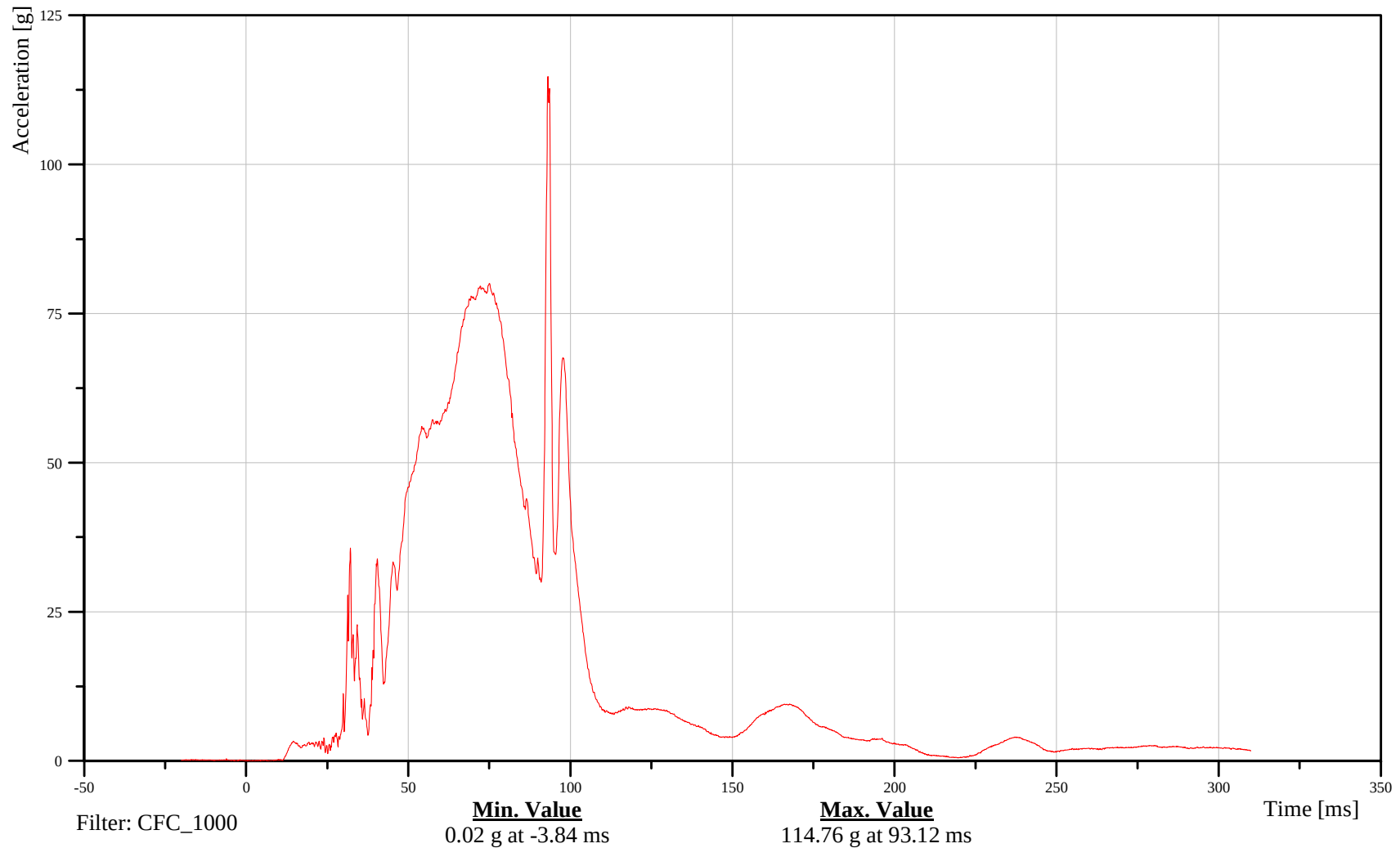
Time: 07:51

Customer: VRTC

13HEADCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Red X

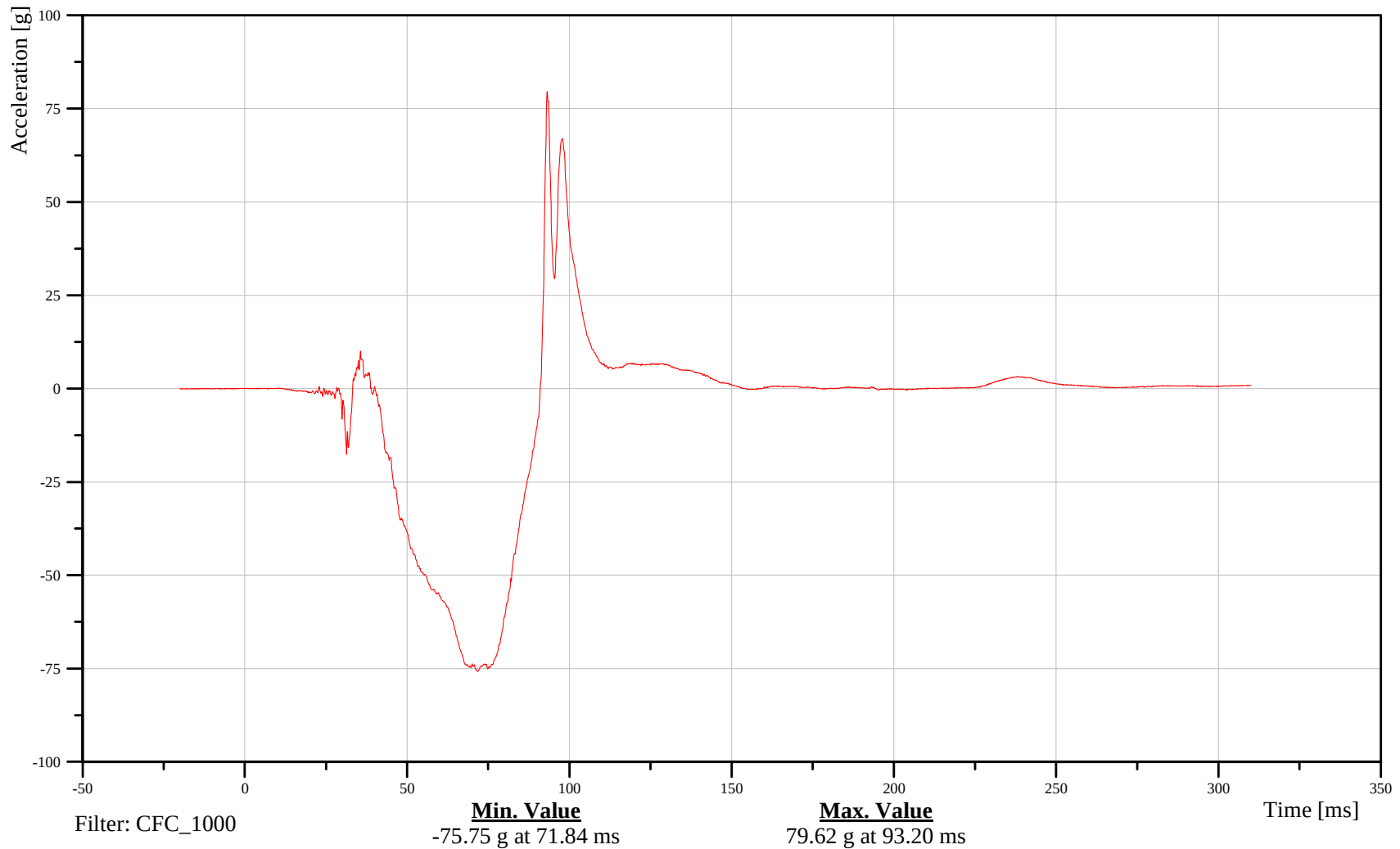
Time: 07:51

Customer: VRTC

13HEADCGRDHFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Red Y

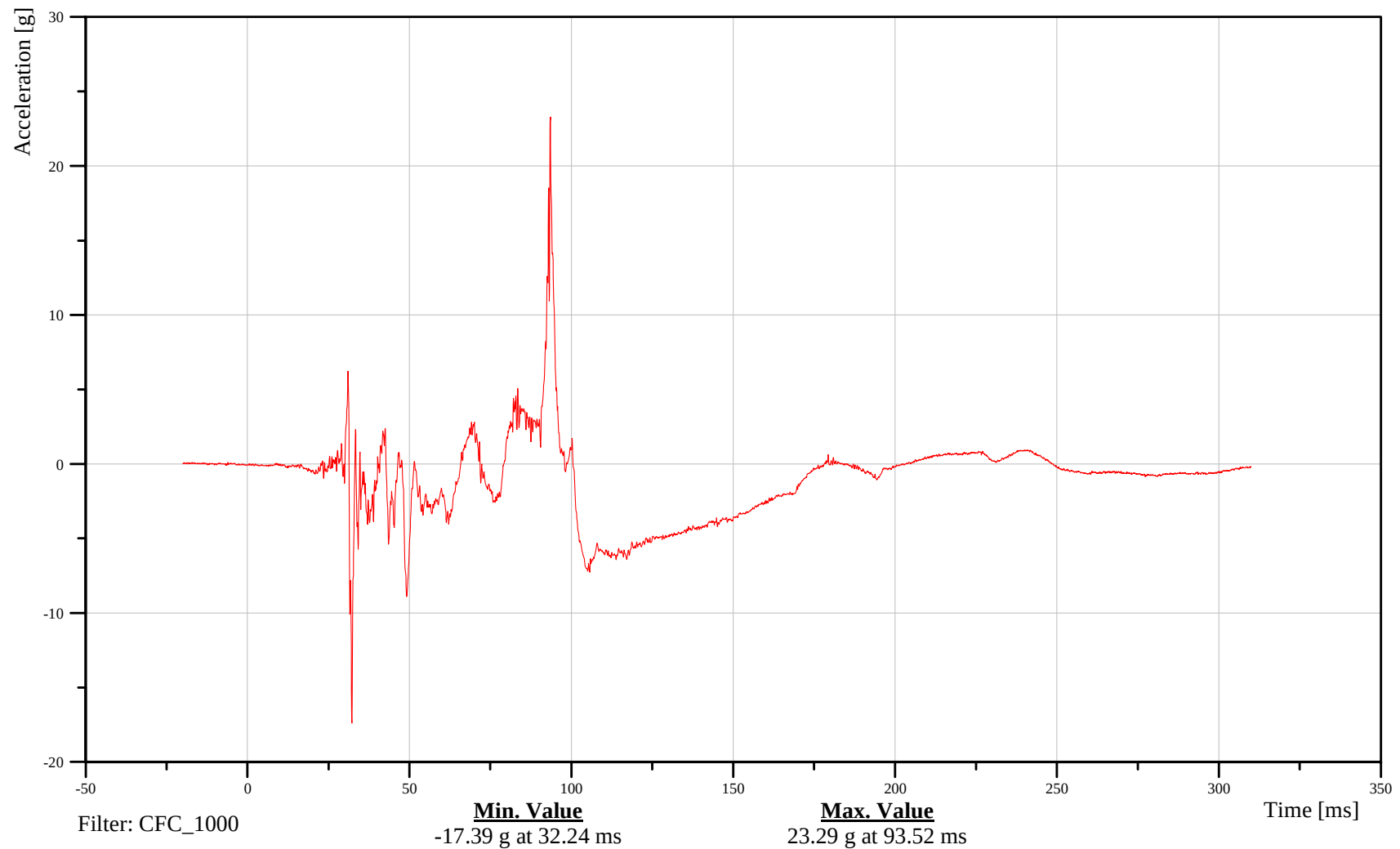
Time: 07:51

Customer: VRTC

13HEADCGRDHFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Red Z

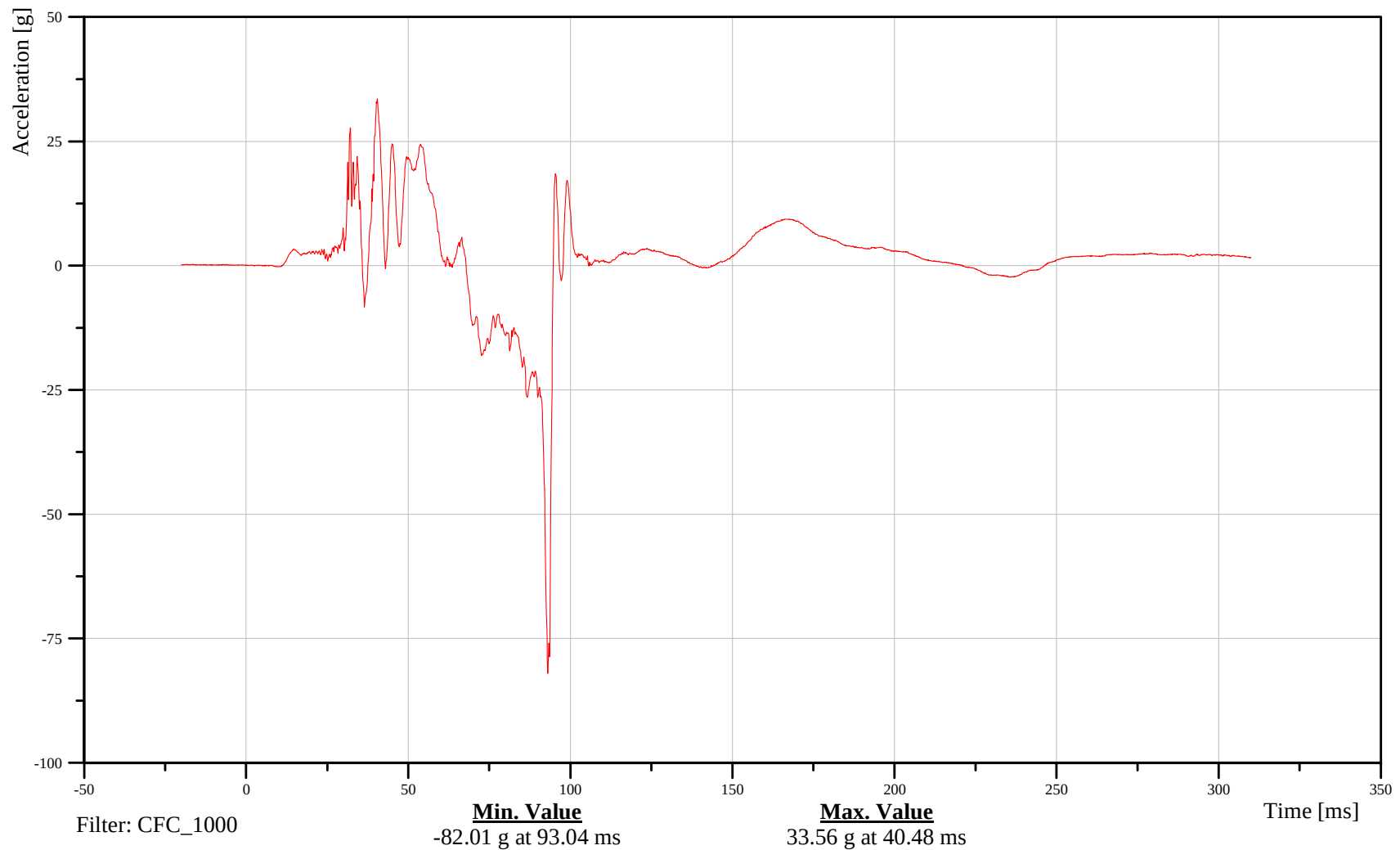
Time: 07:51

Customer: VRTC

13HEADCGRDHFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head Accel Red Resultant

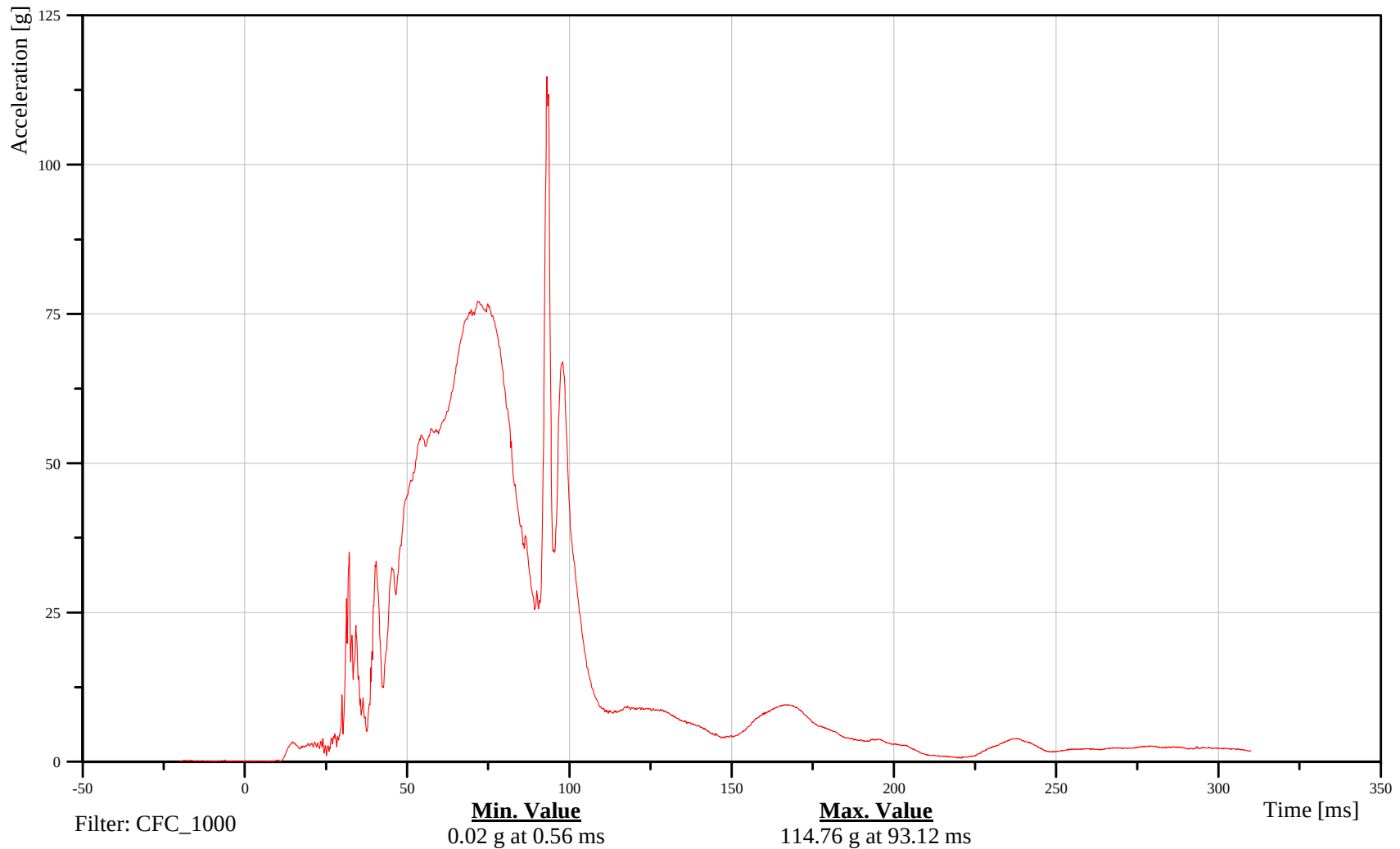
Time: 07:51

Customer: VRTC

13HEADCGRDHFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (LT) Accel X

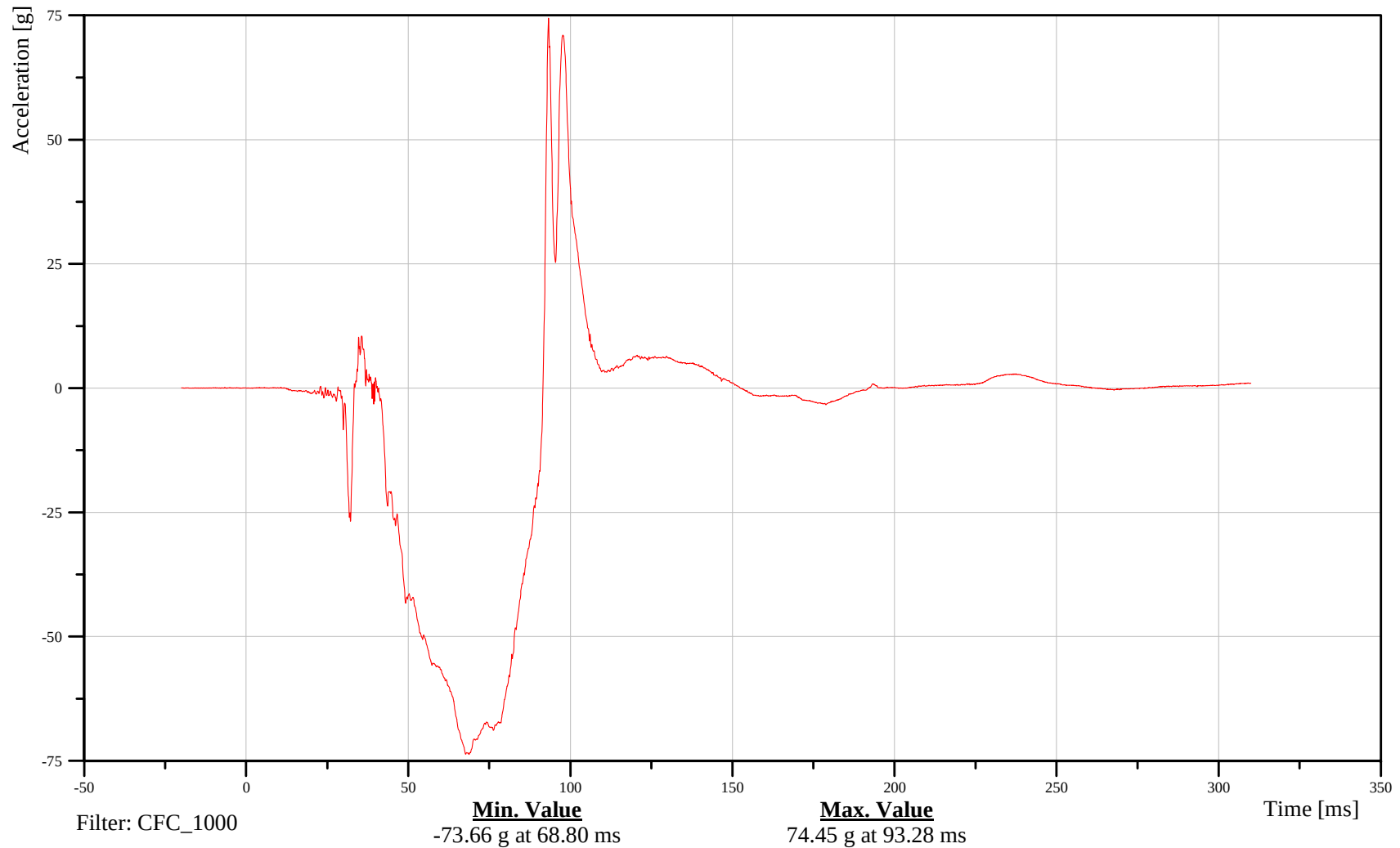
Time: 07:51

Customer: VRTC

13HEADLE00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (LT) Accel Z

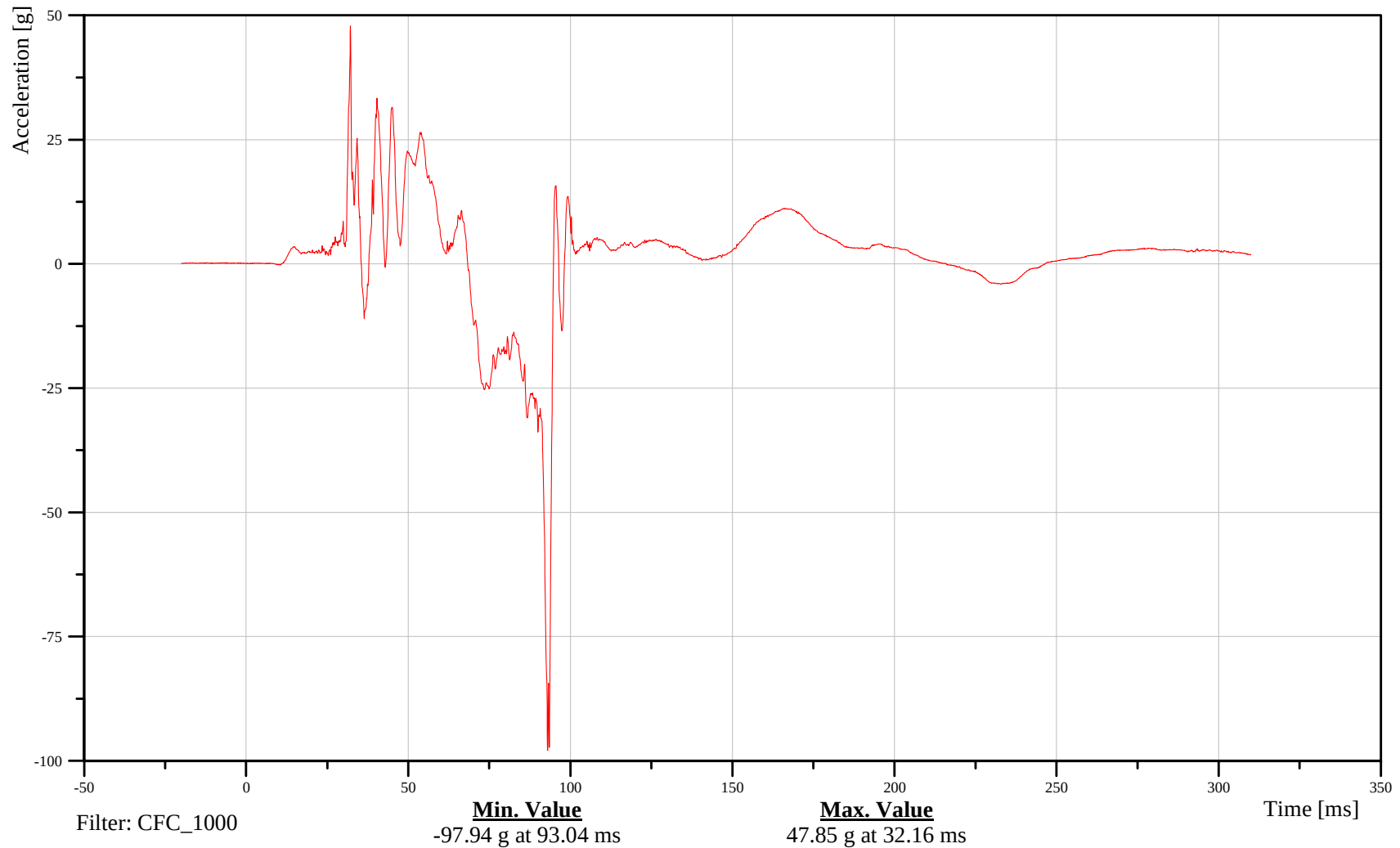
Time: 07:51

Customer: VRTC

13HEADLE00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (FT) Accel Y

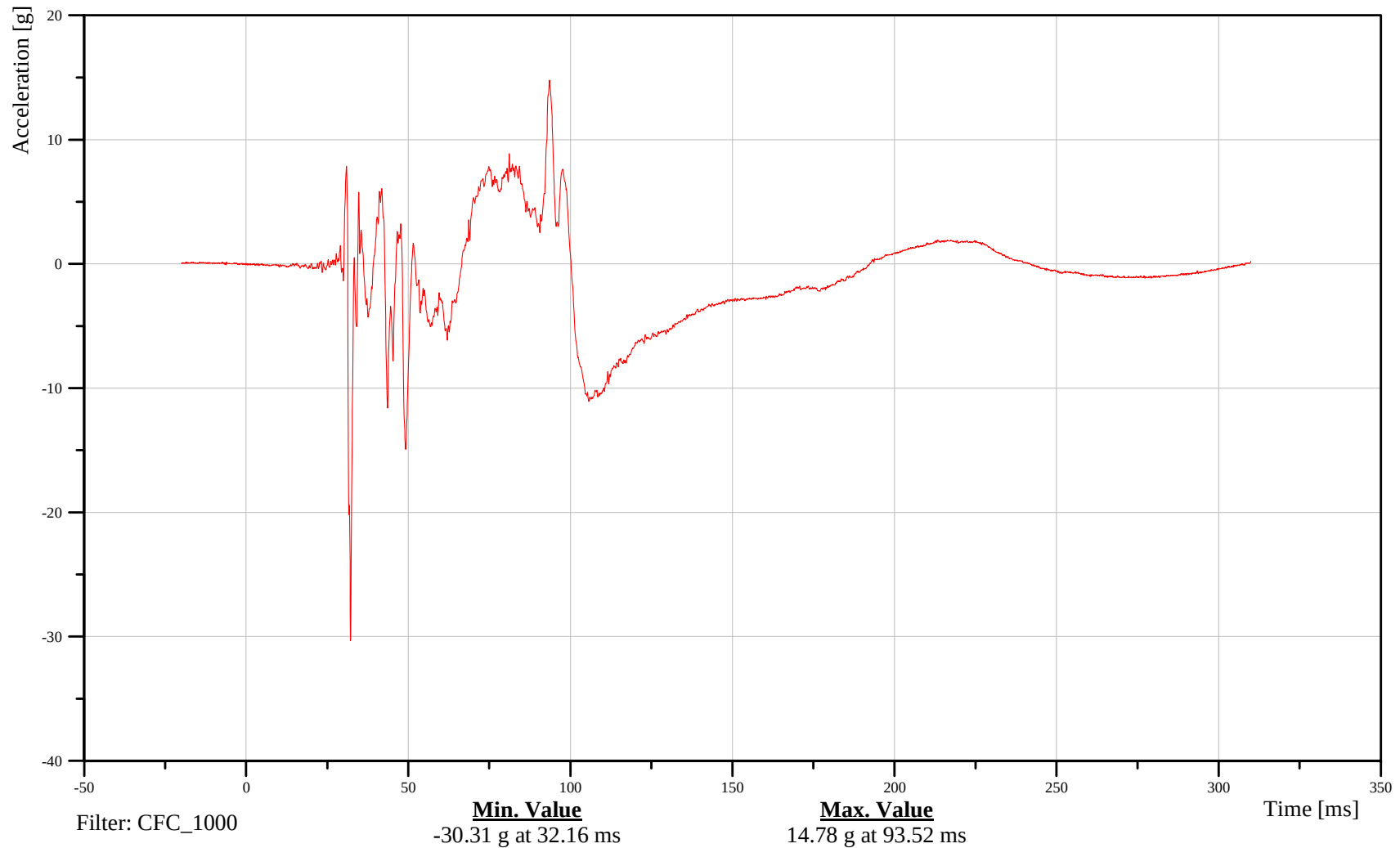
Time: 07:51

Customer: VRTC

13HEADFR00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (FT) Accel Z

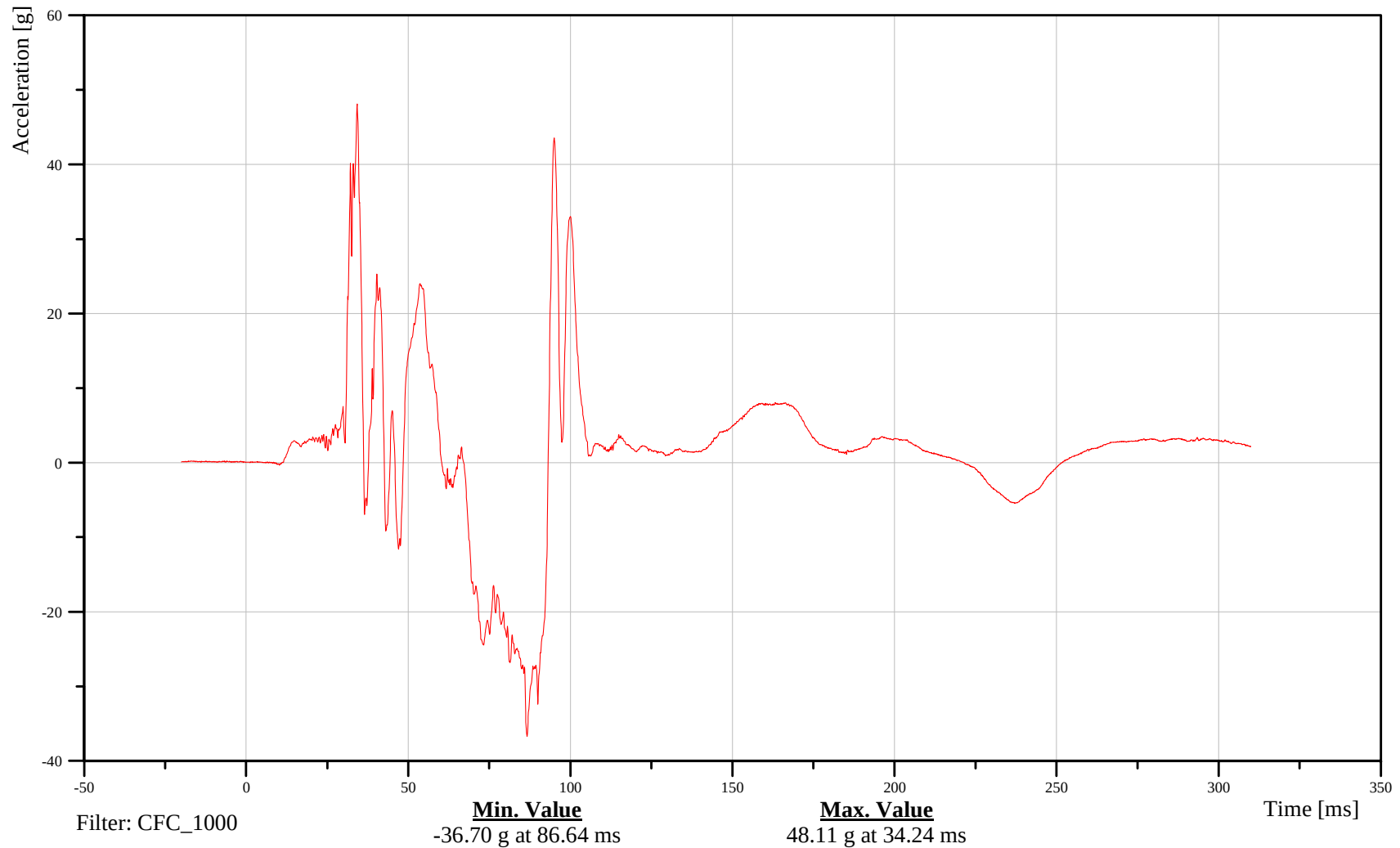
Time: 07:51

Customer: VRTC

13HEADFR00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel X

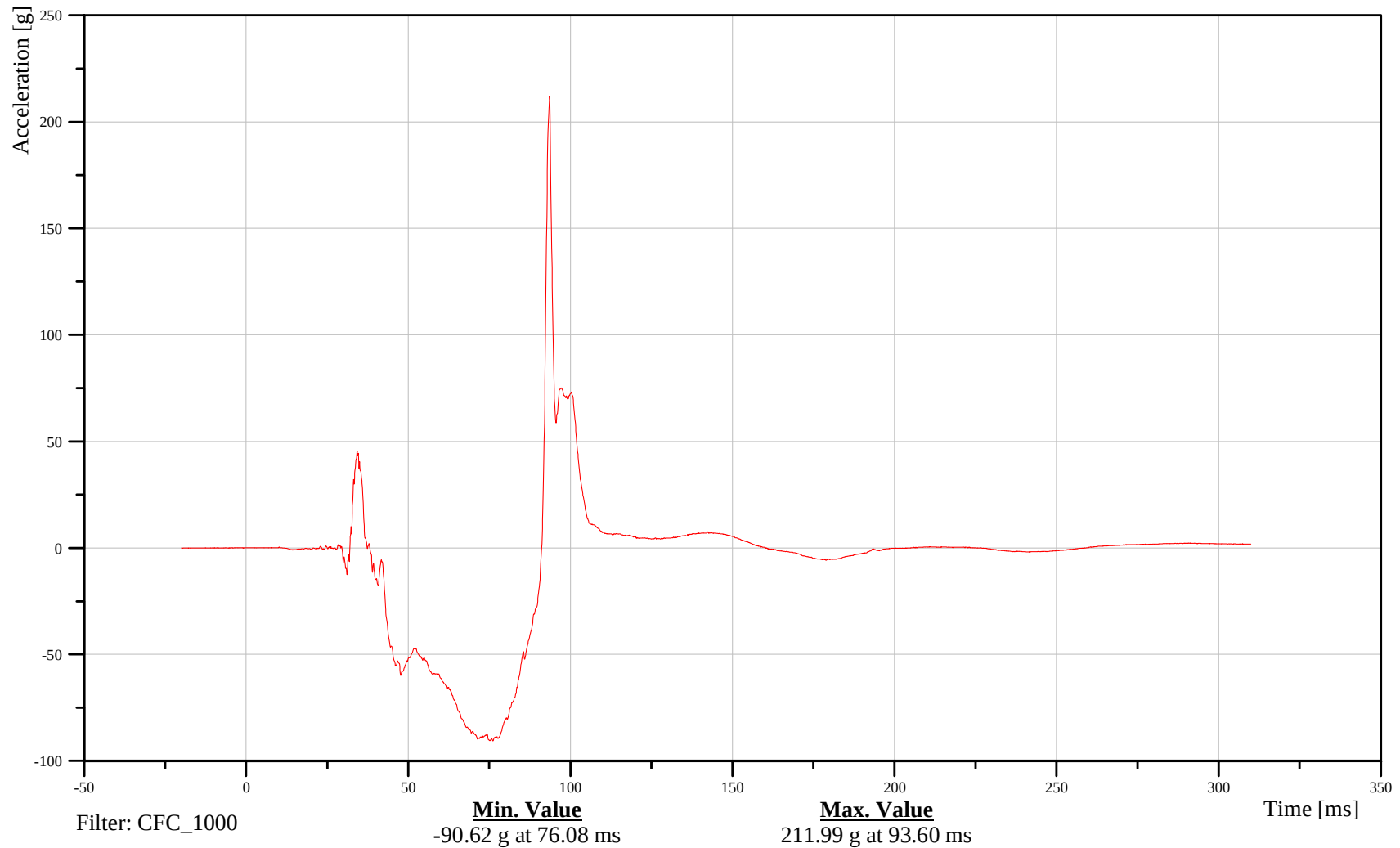
Time: 07:51

Customer: VRTC

13HEADUP00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Head (TP) Accel Y

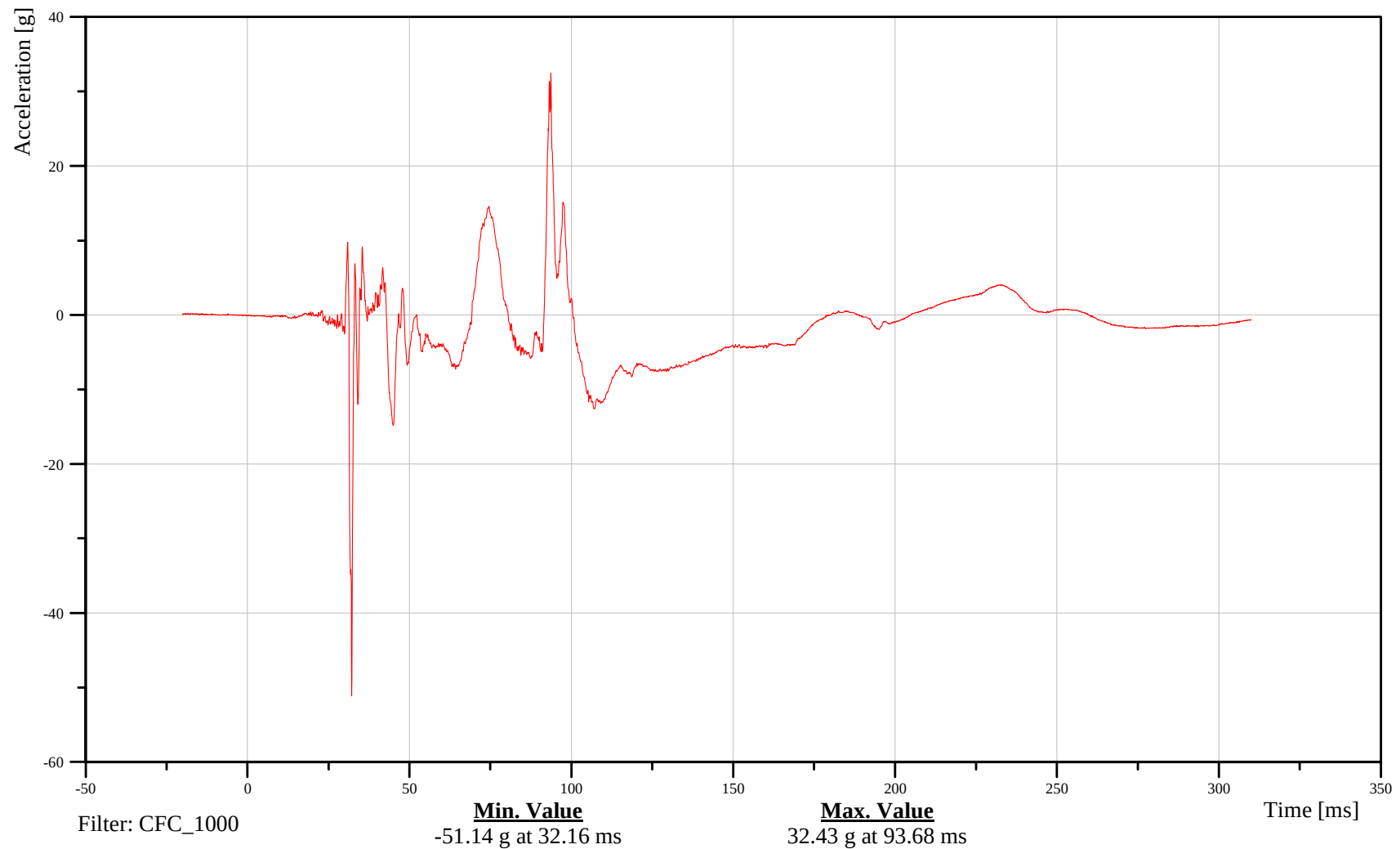
Time: 07:51

Customer: VRTC

13HEADUP00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

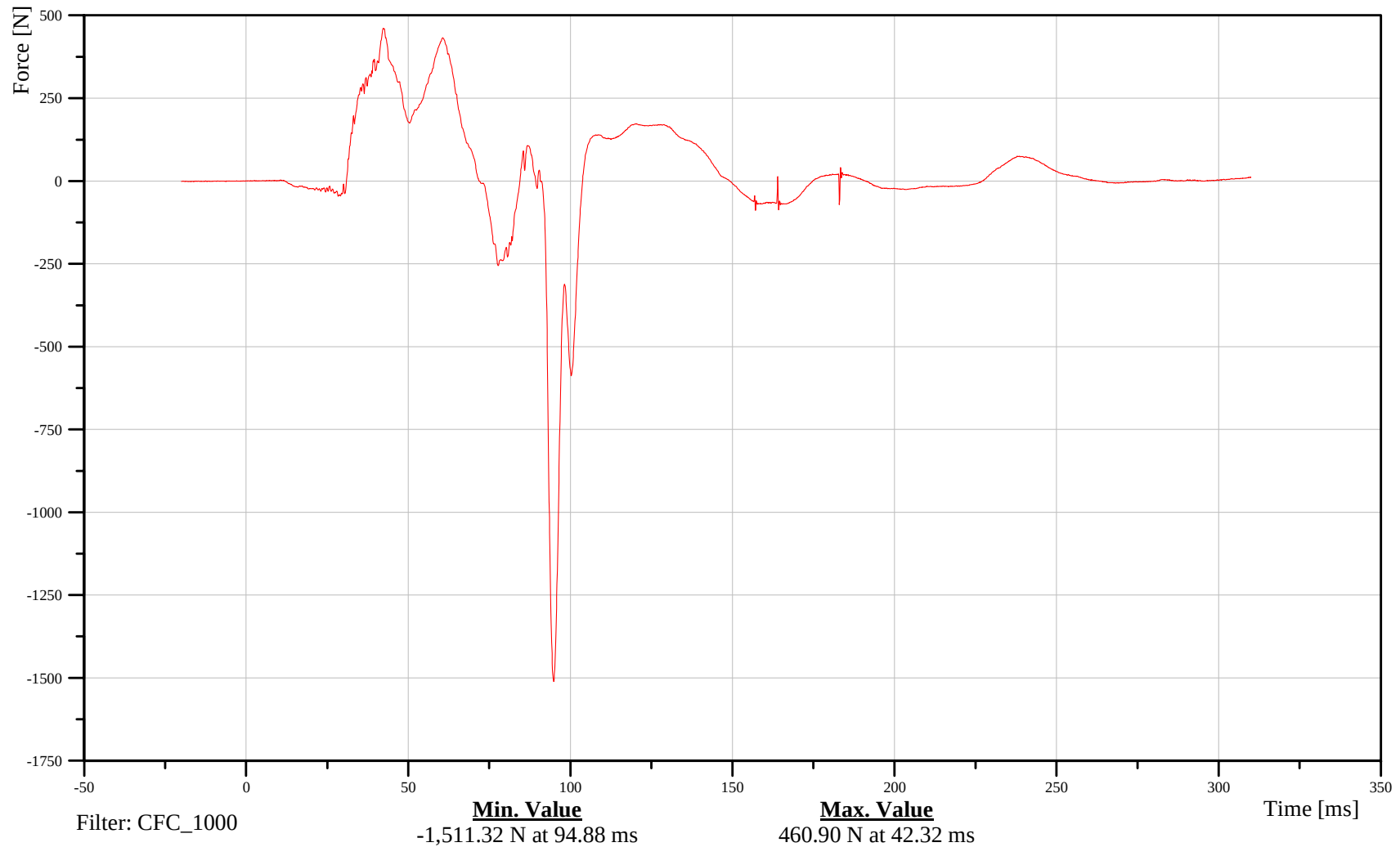
Neck Force X

Customer: VRTC

13NECKUP00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

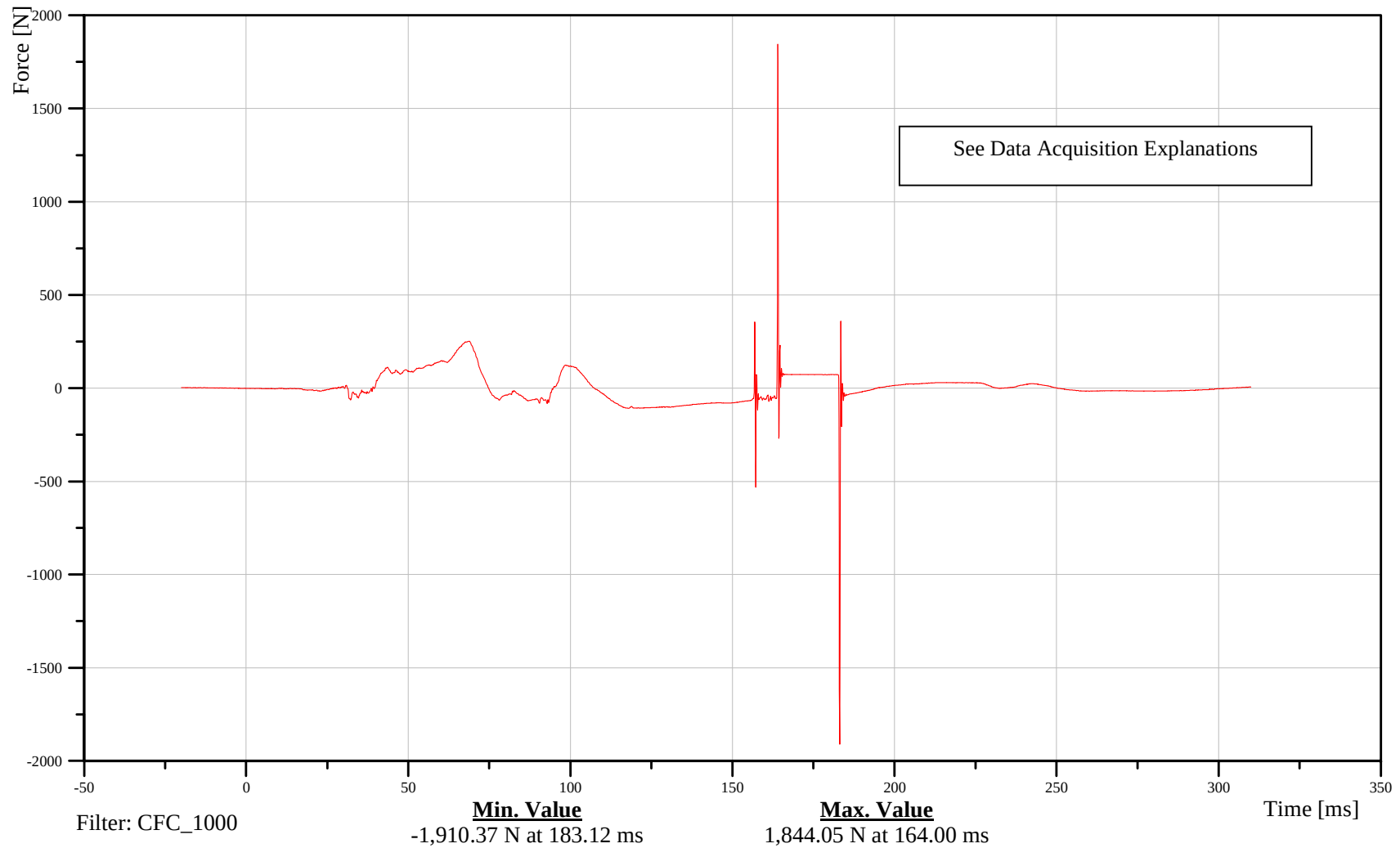
Neck Force Y

Customer: VRTC

13NECKUP00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

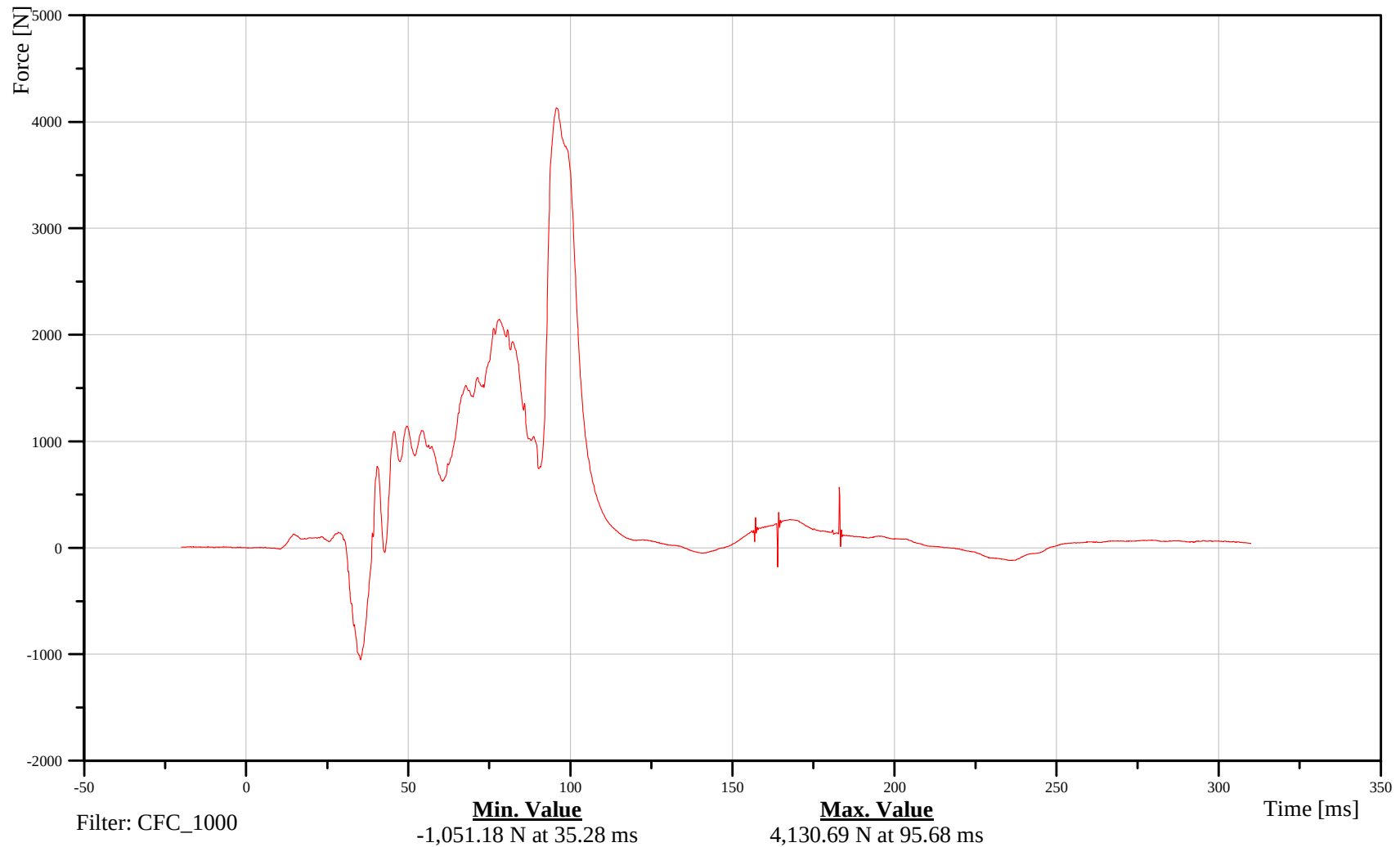
Neck Force Z

Customer: VRTC

13NECKUP00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

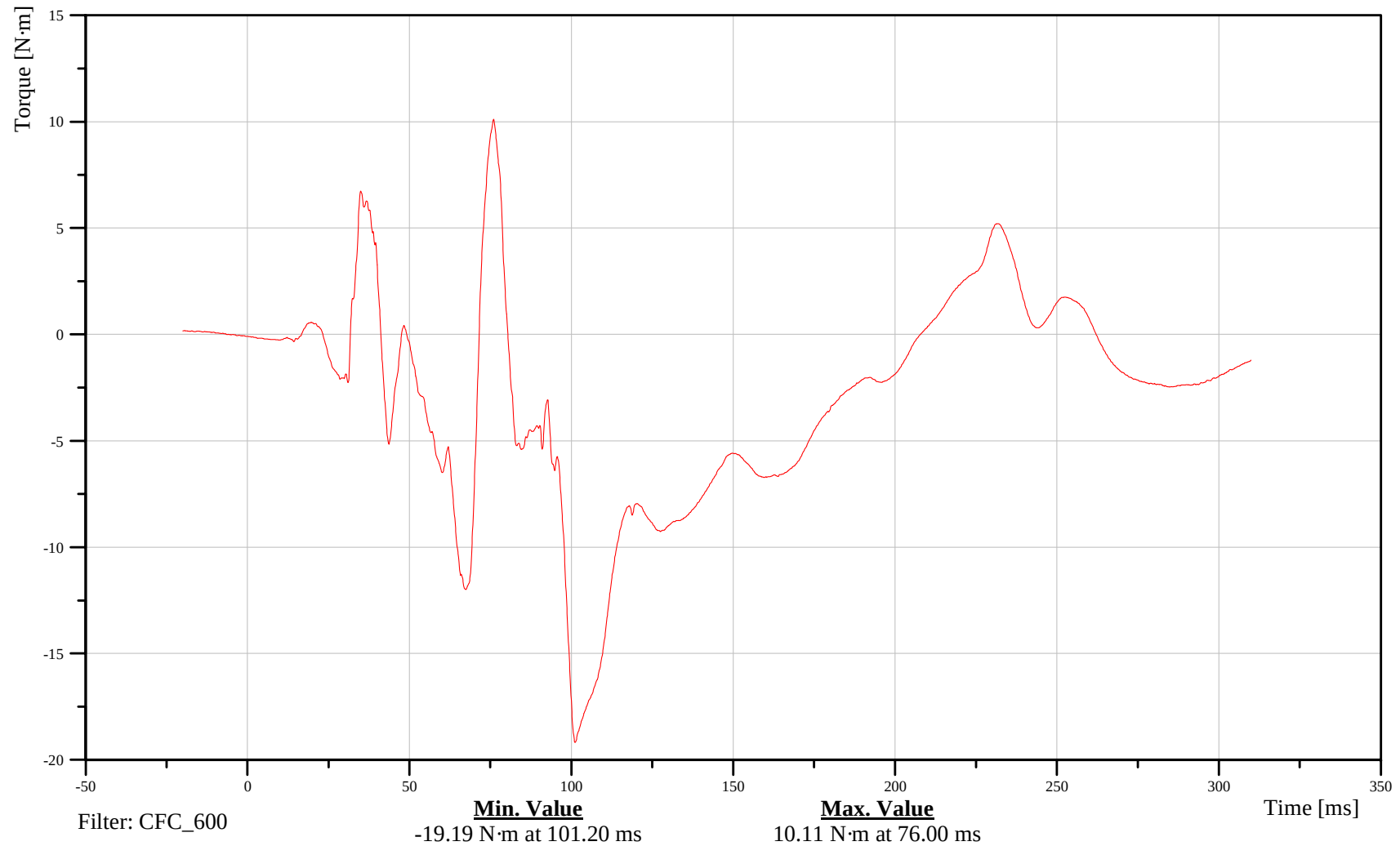
Neck Moment X

Customer: VRTC

13NECKUP00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Moment Y

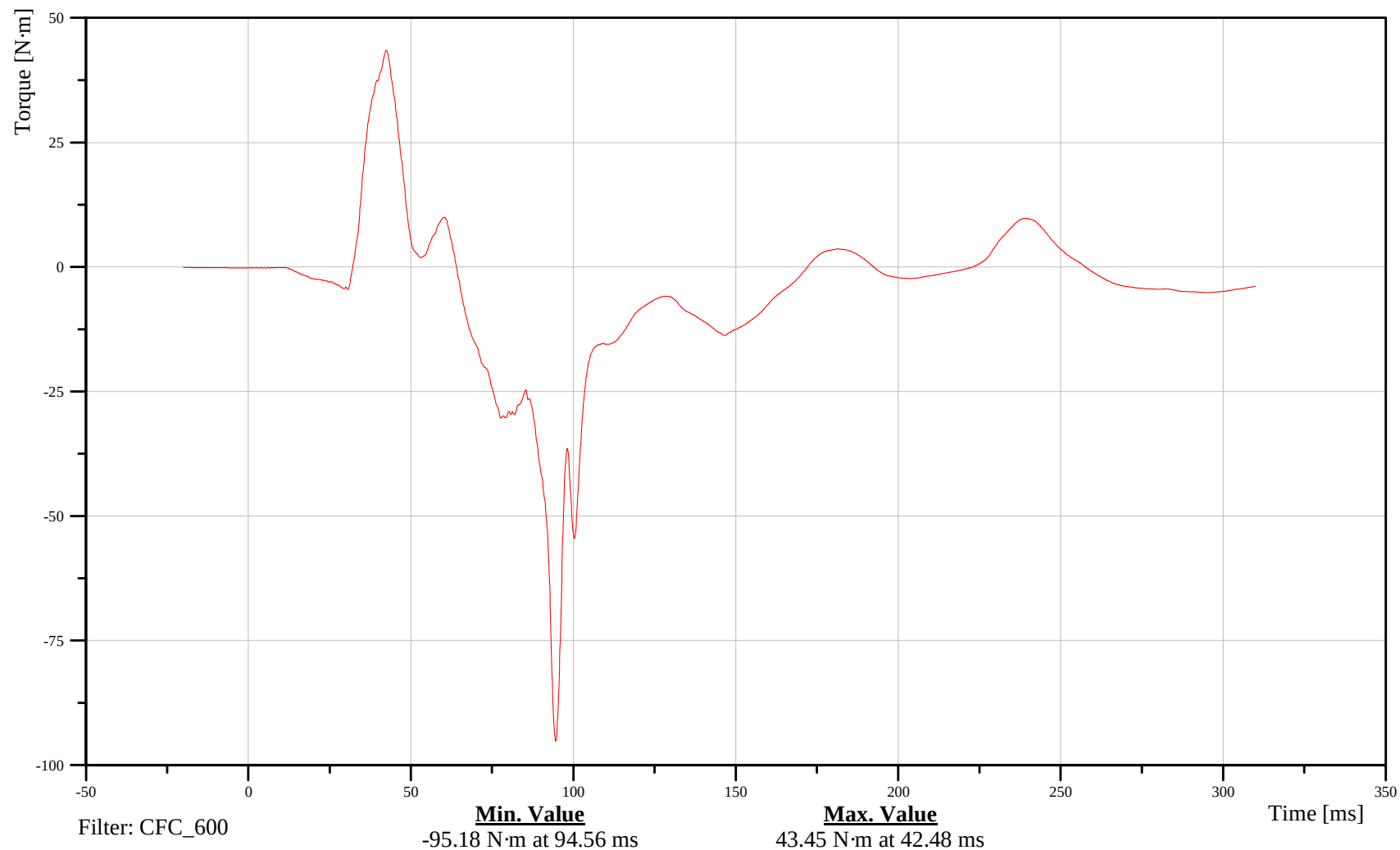
Time: 07:51

Customer: VRTC

13NECKUP00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

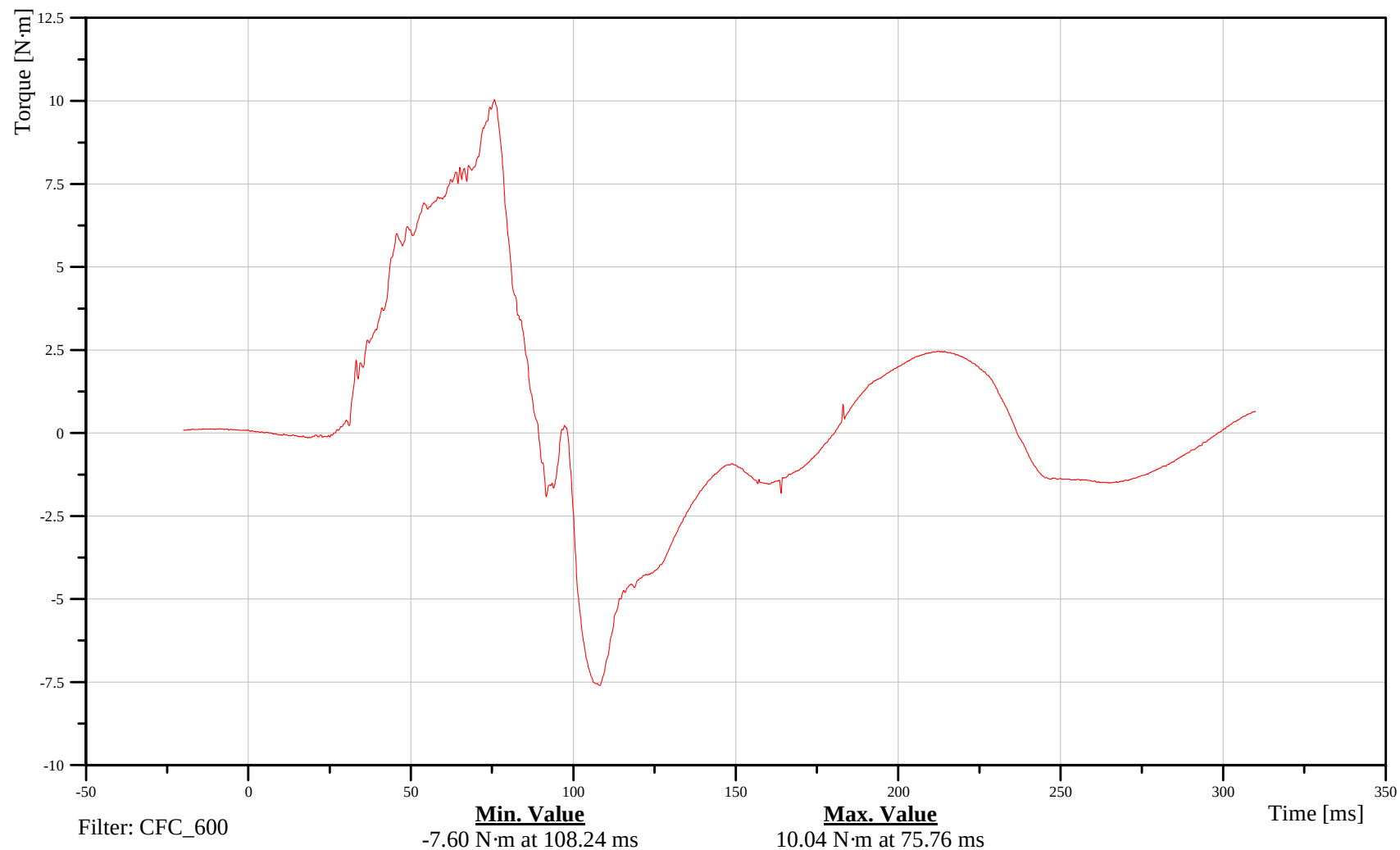
Neck Moment Z

Customer: VRTC

13NECKUP00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force X

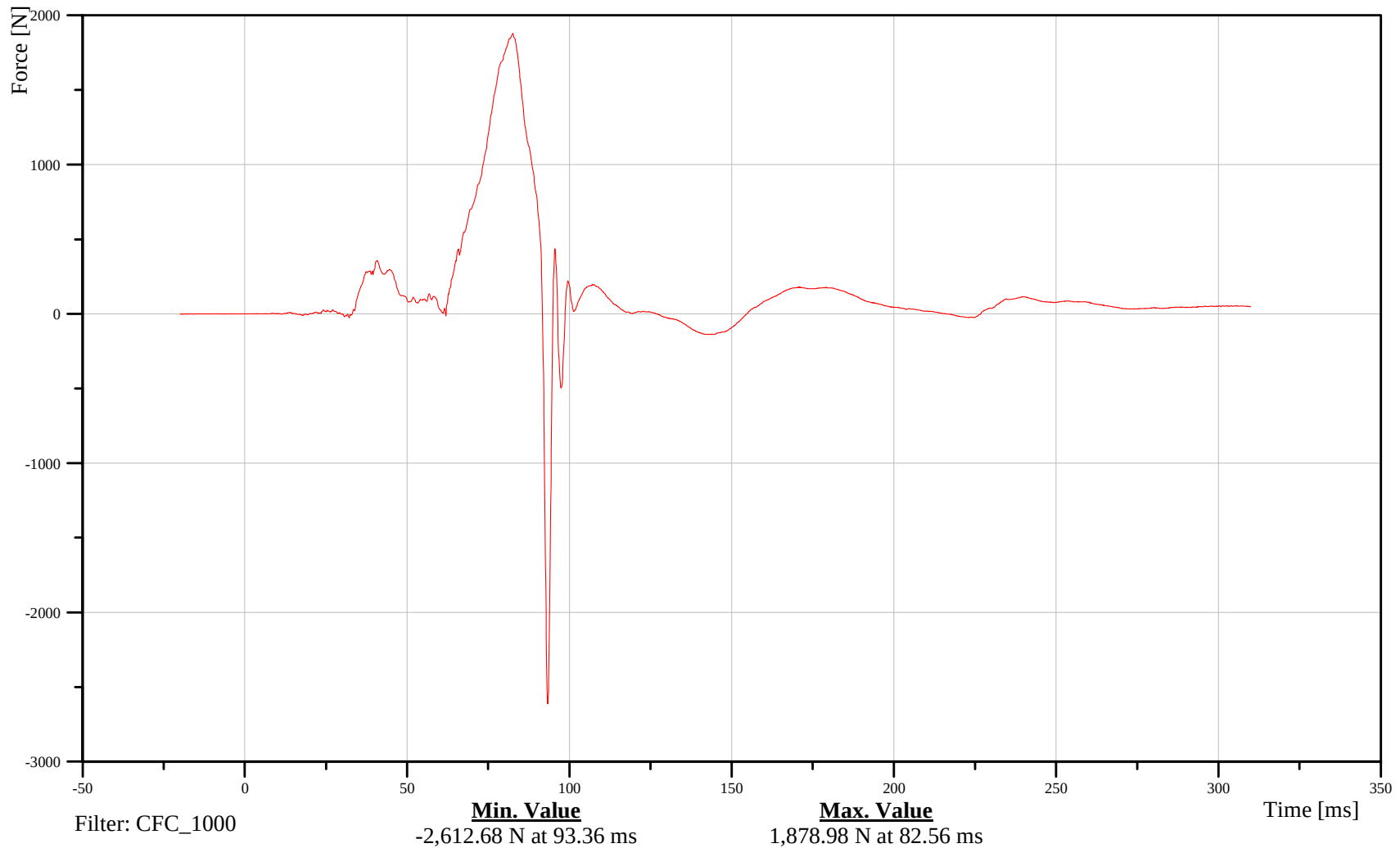
Time: 07:51

Customer: VRTC

13NECKLO00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Neck Lower Force Y

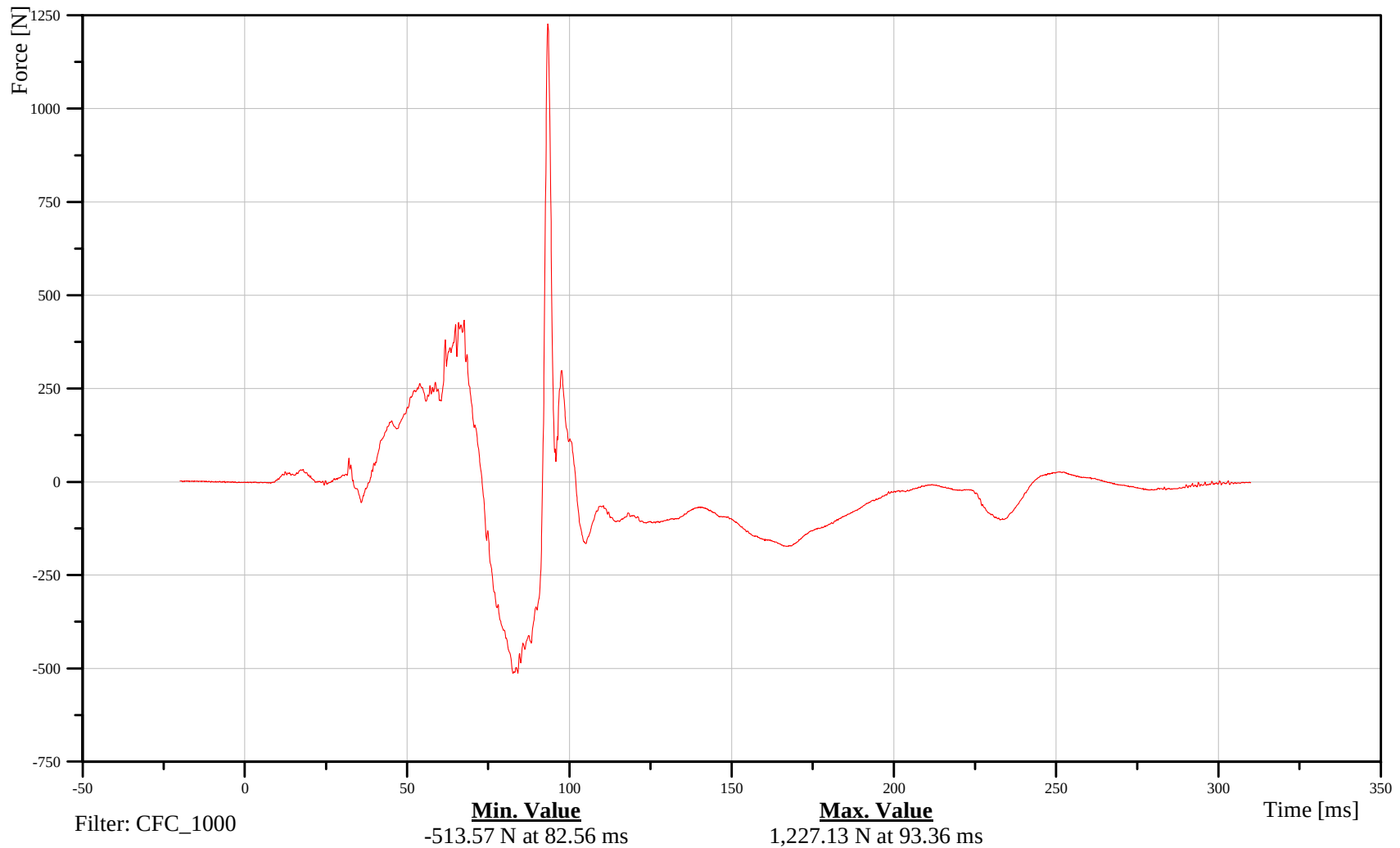
Time: 07:51

Customer: VRTC

13NECKLO00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

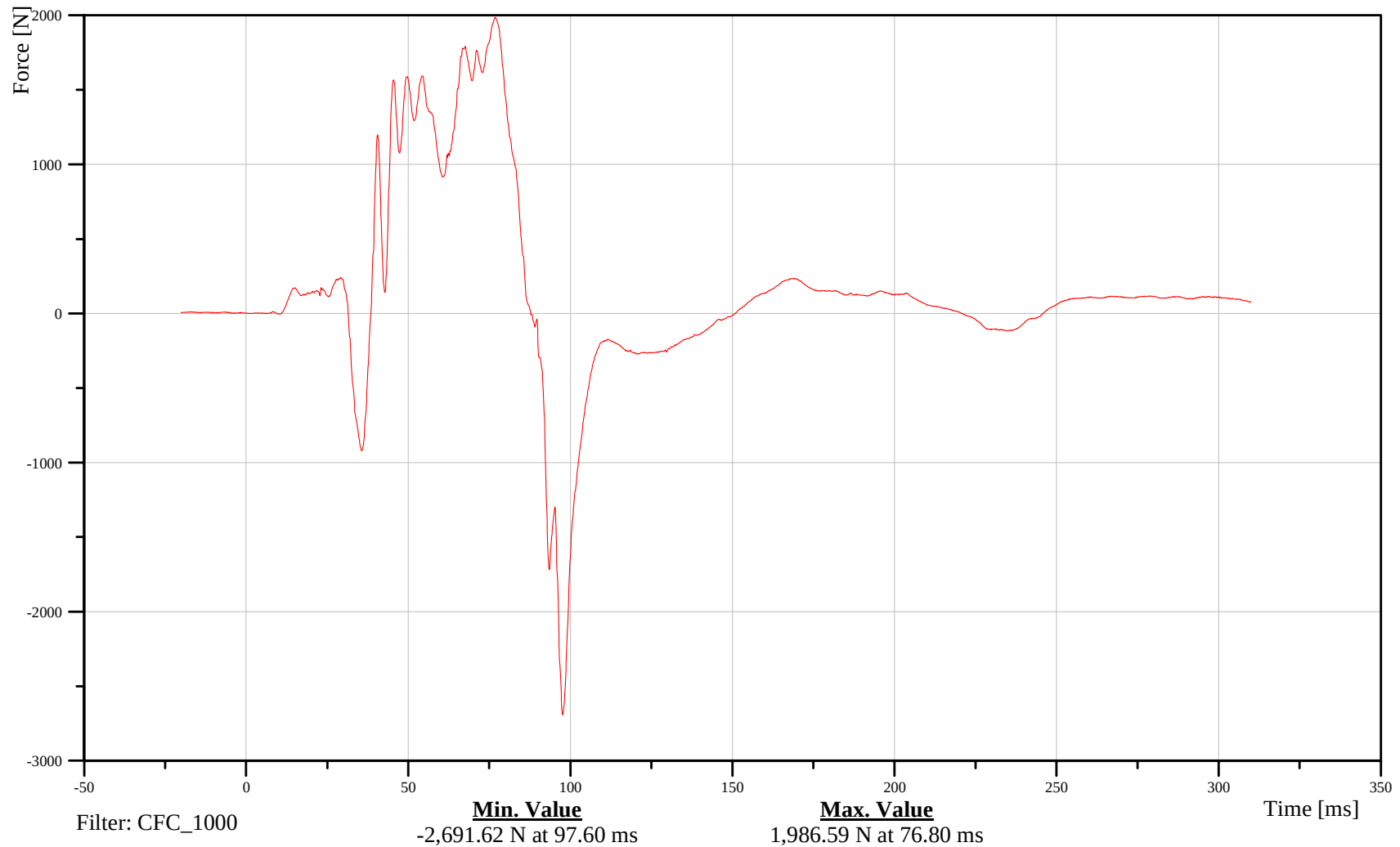
Neck Lower Force Z

Customer: VRTC

13NECKLO00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

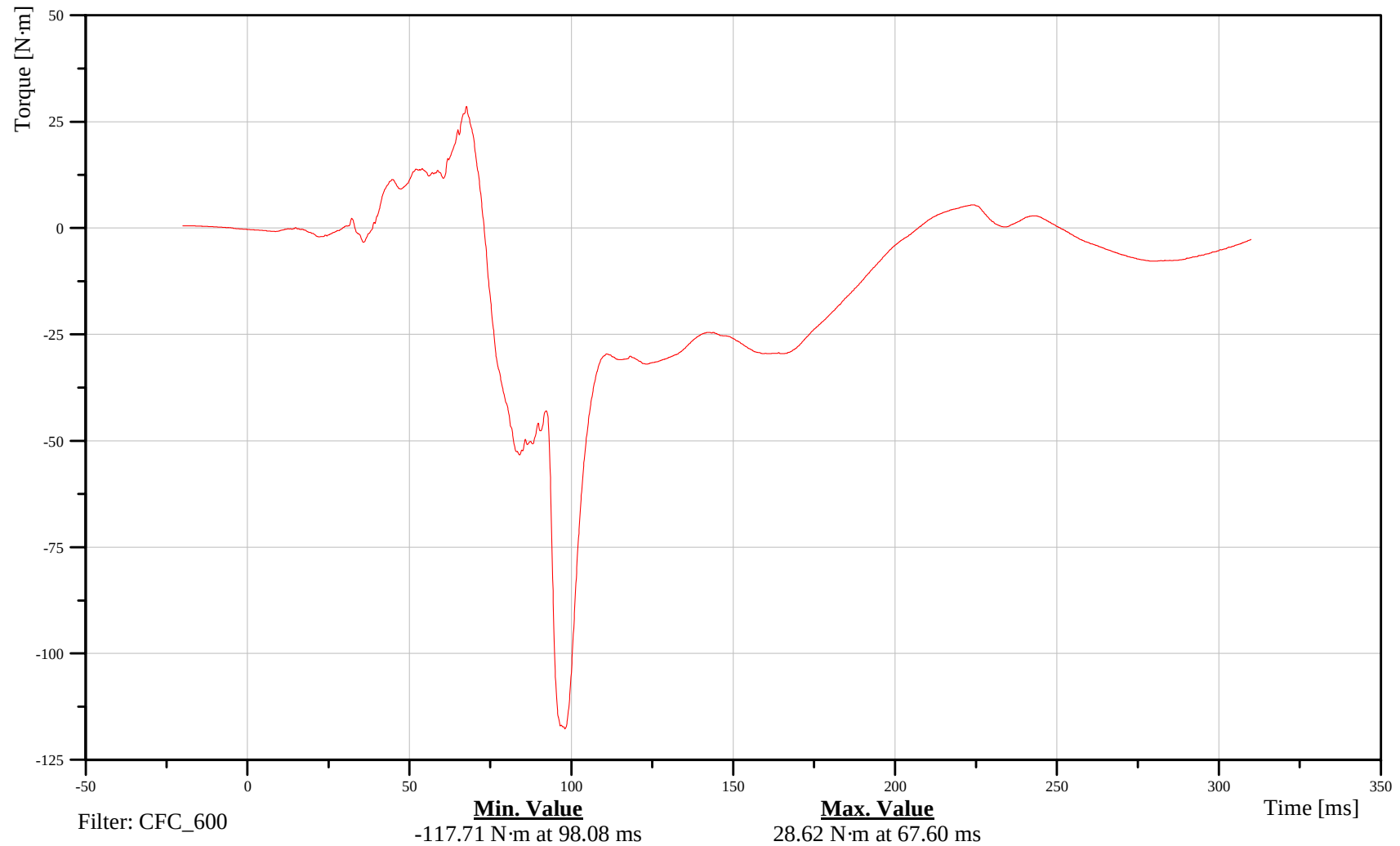
Neck Lower Moment X

Customer: VRTC

13NECKLO00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

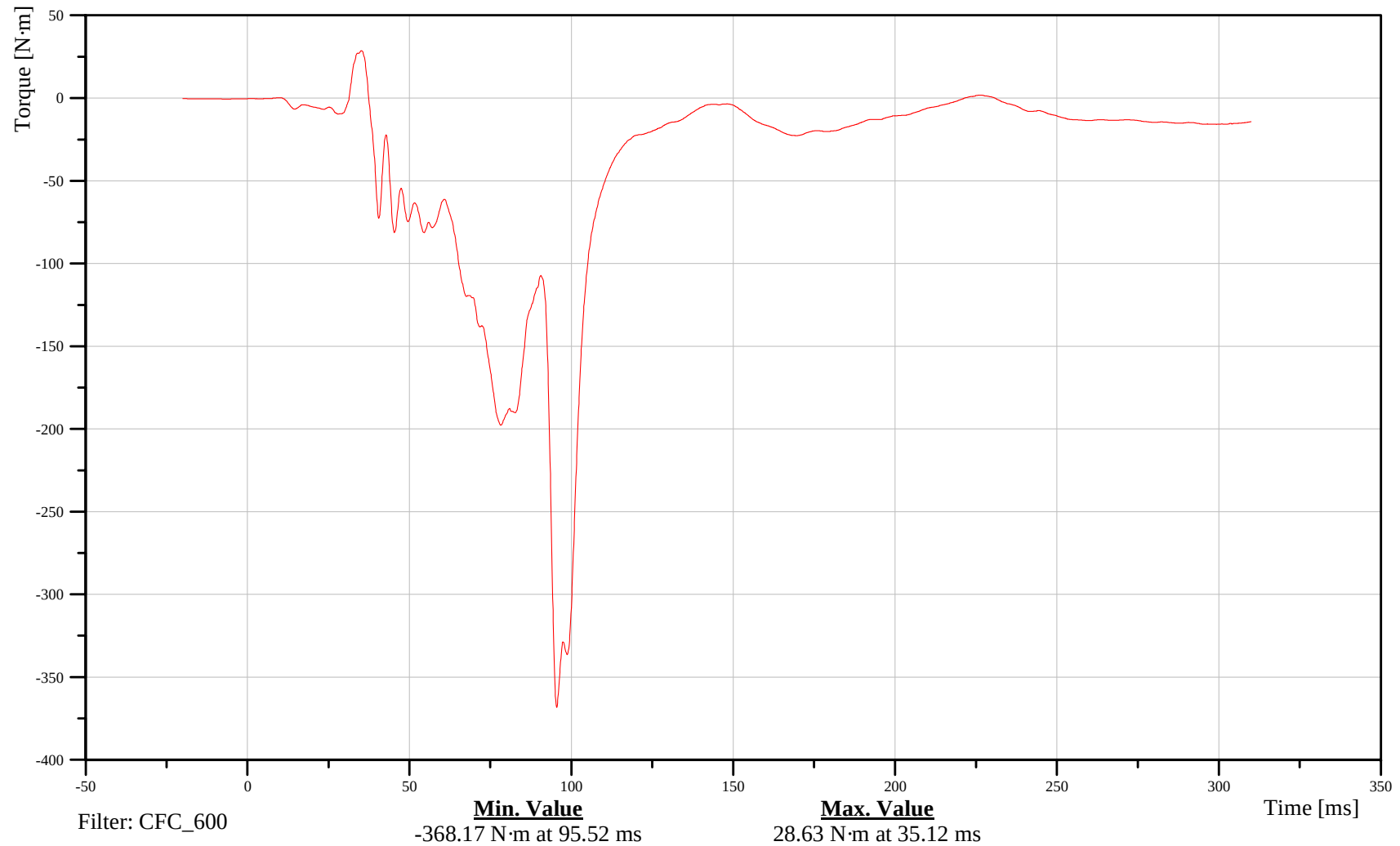
Neck Lower Moment Y

Customer: VRTC

13NECKLO00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

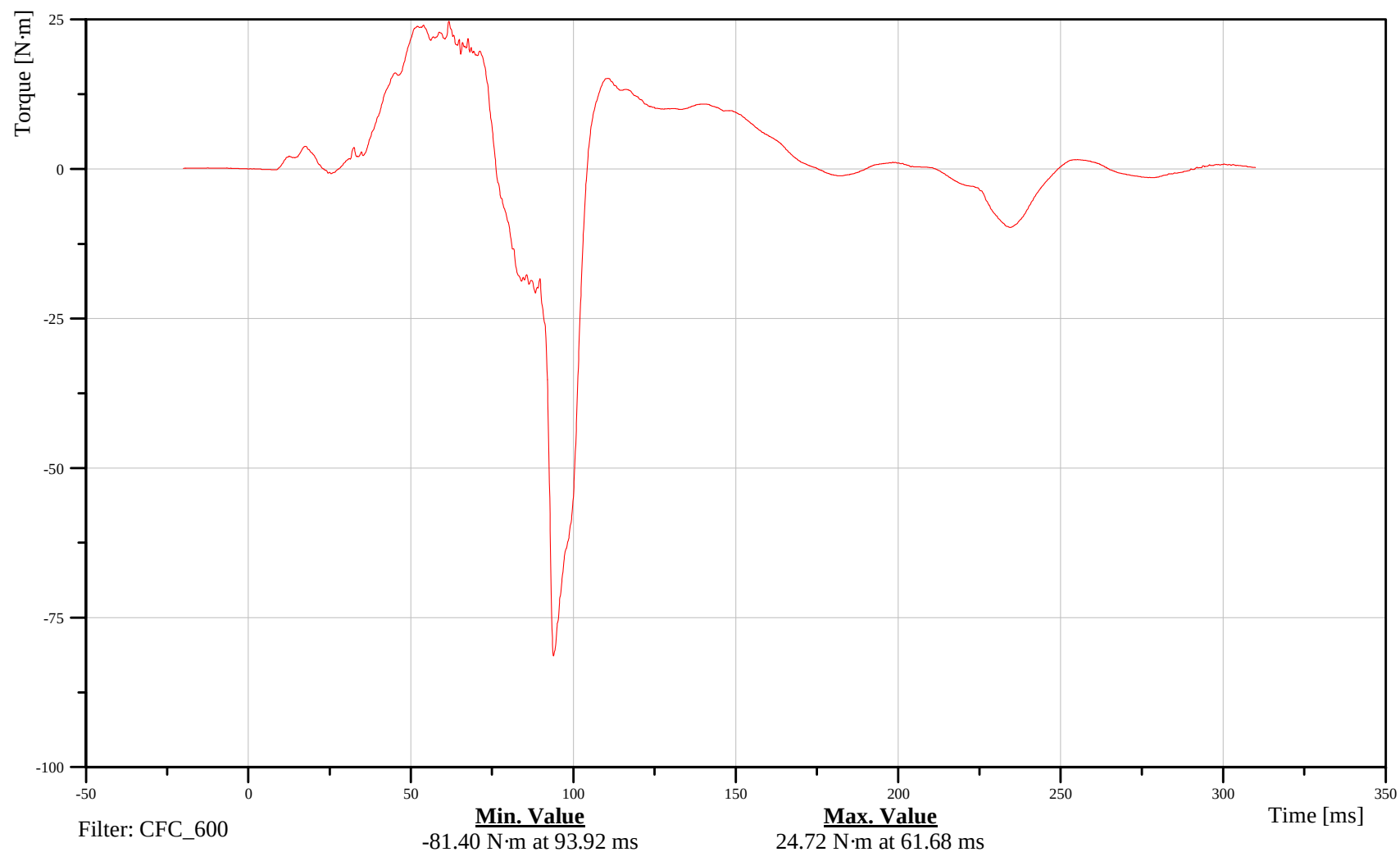
Neck Lower Moment Z

Customer: VRTC

13NECKLO00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

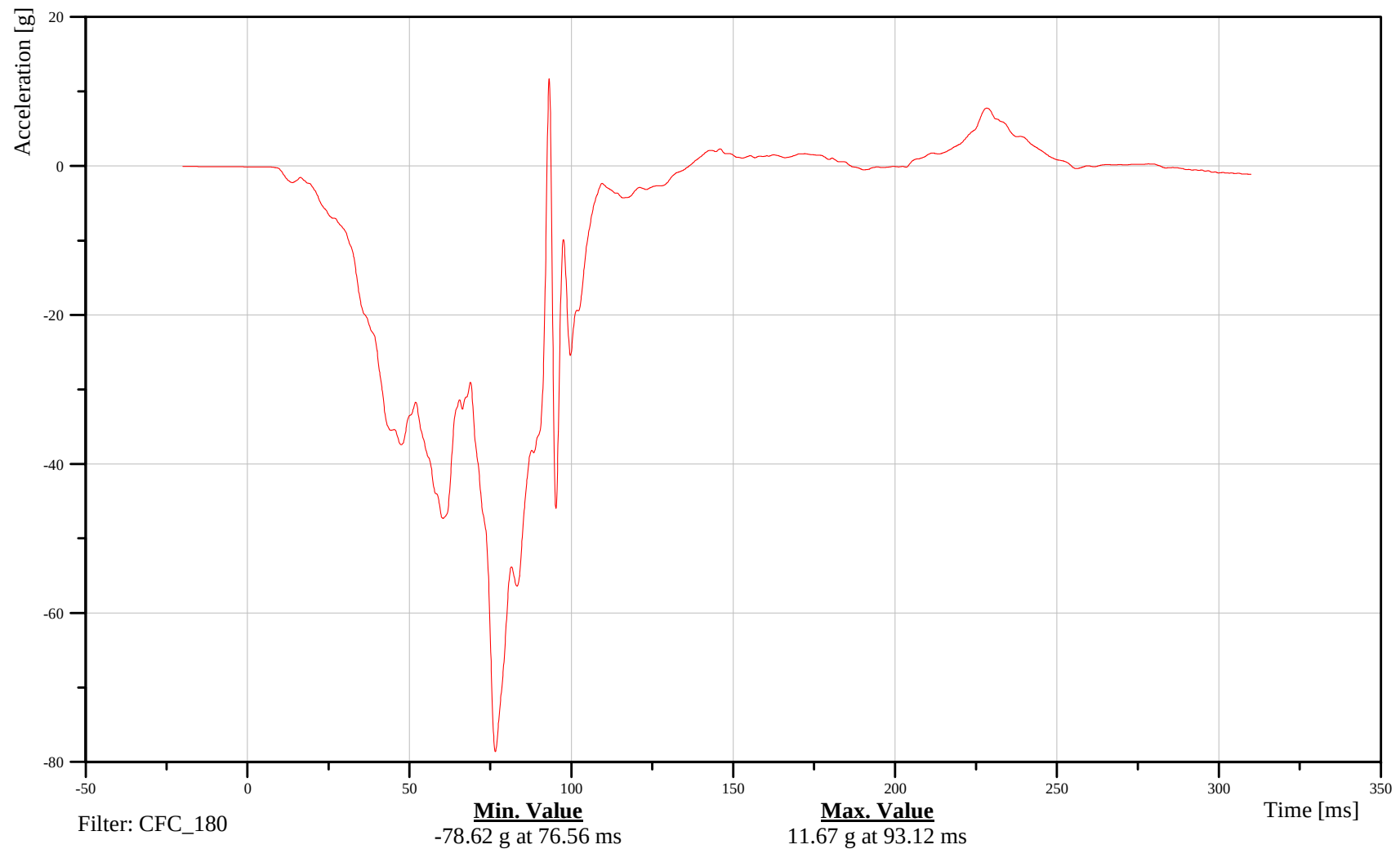
Chest Accel X

Customer: VRTC

13CHSTCG00HFACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Y

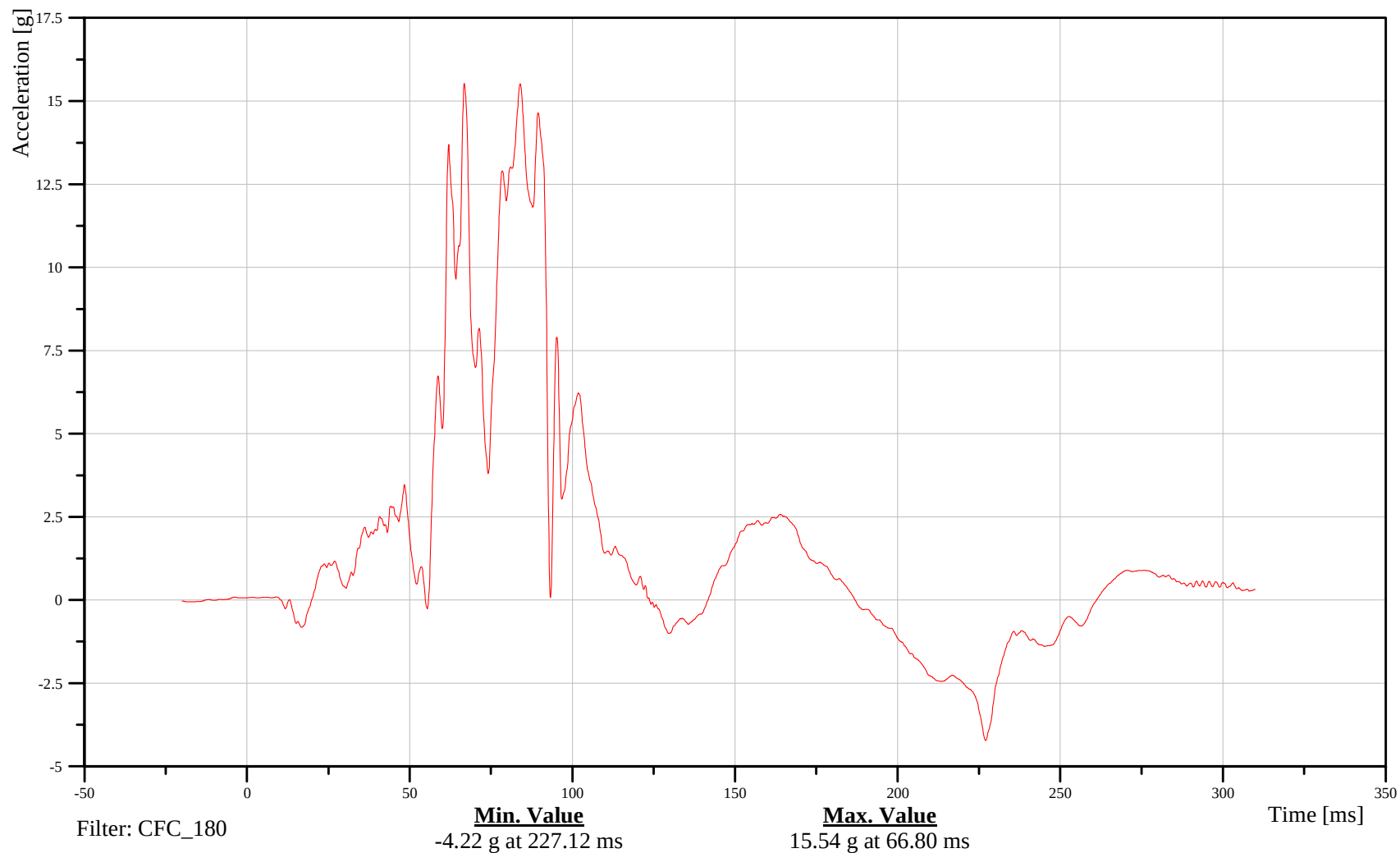
Time: 07:51

Customer: VRTC

13CHSTCG00HFACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

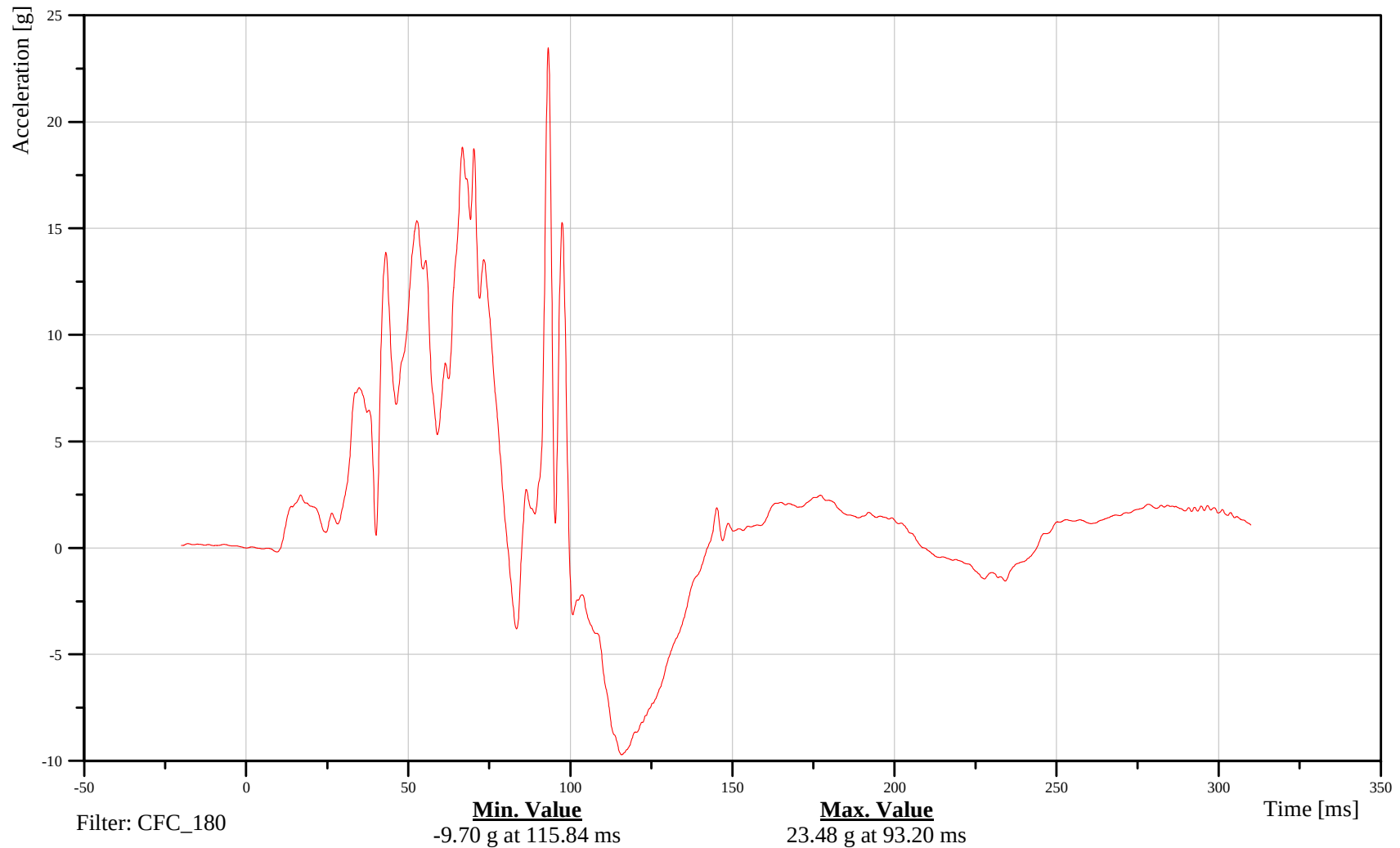
Chest Accel Z

Customer: VRTC

13CHSTCG00HFACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Resultant

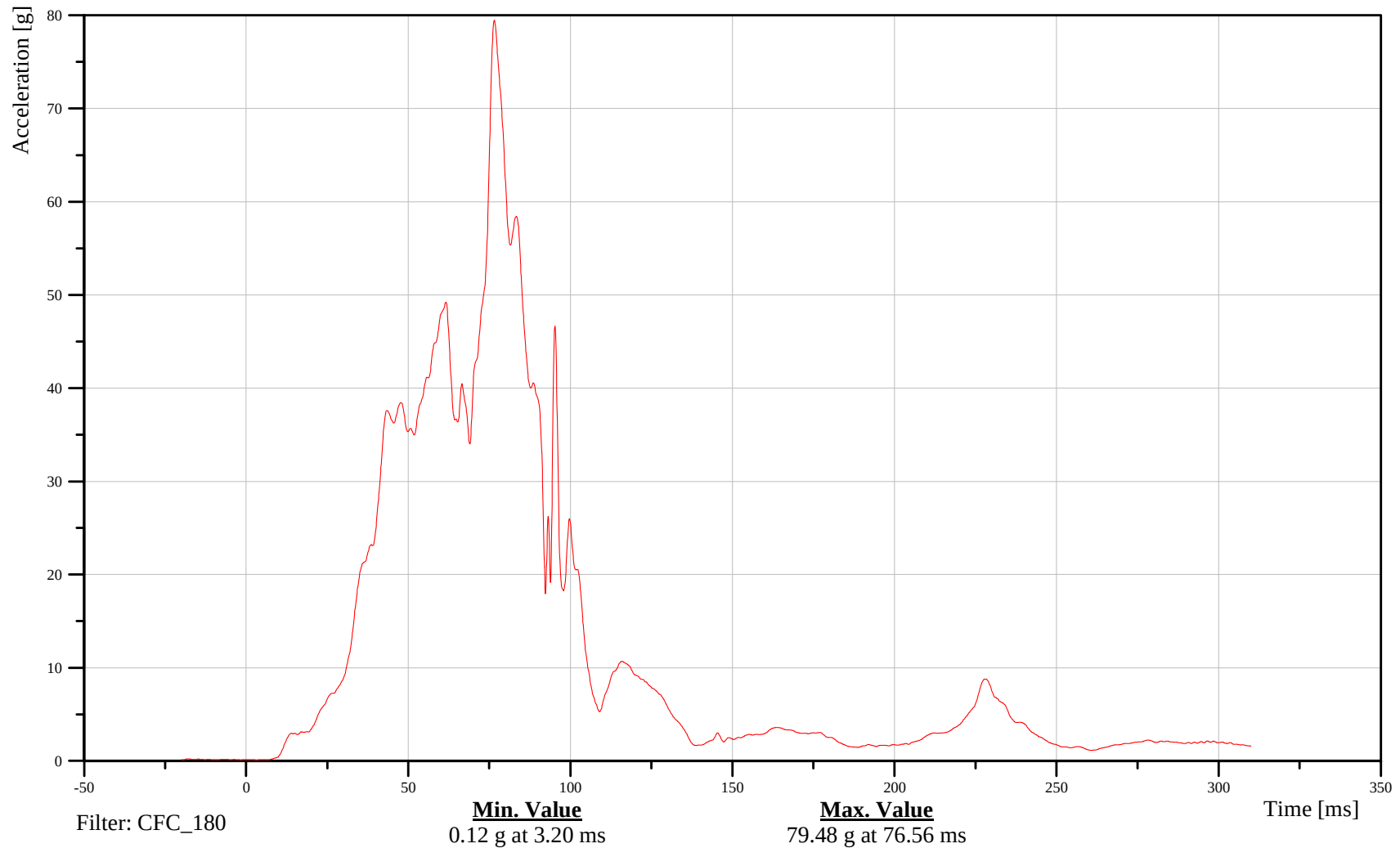
Time: 07:51

Customer: VRTC

13CHSTCG00HFACRC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Red X

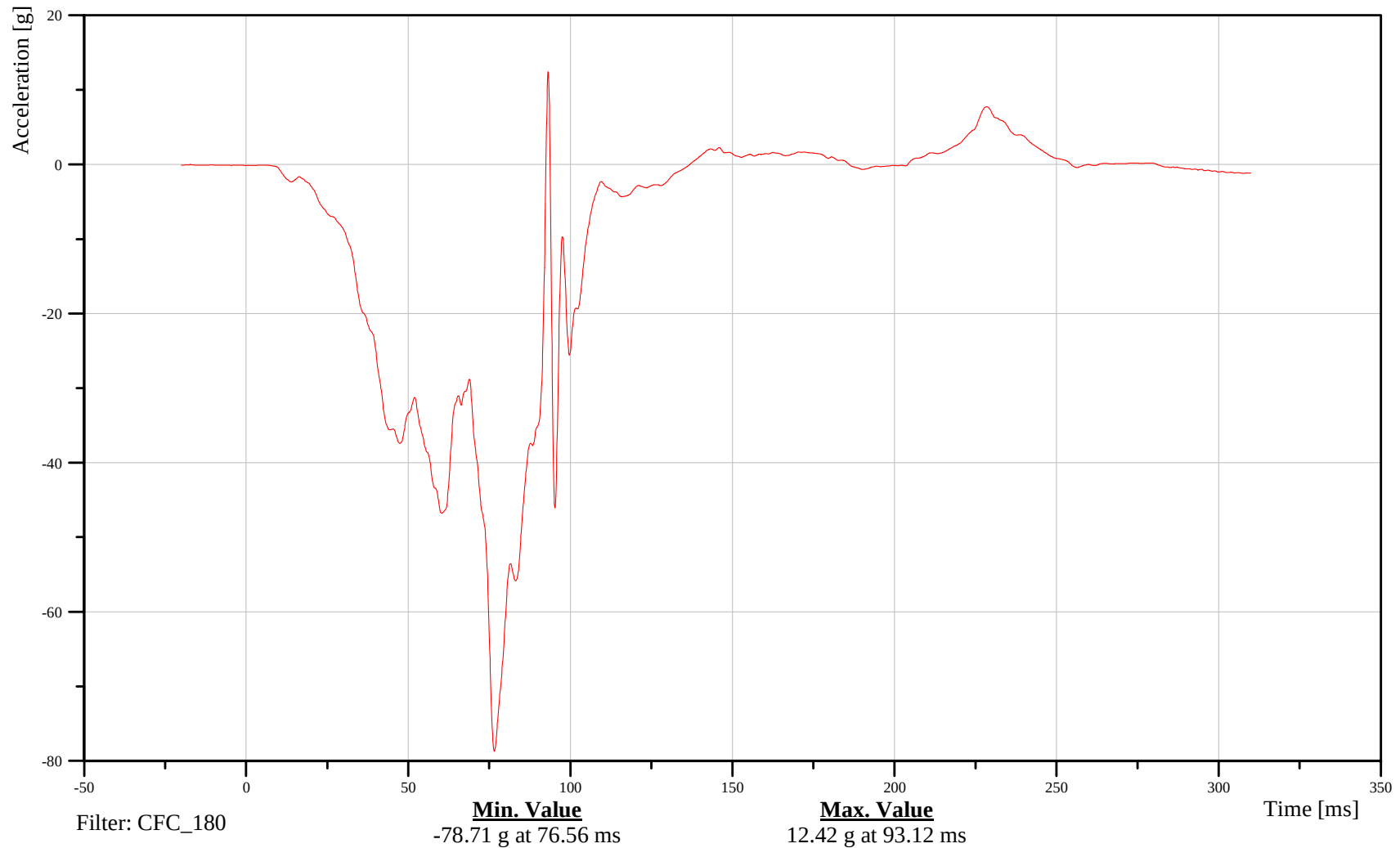
Time: 07:51

Customer: VRTC

13CHSTCGRDHFACXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Red Y

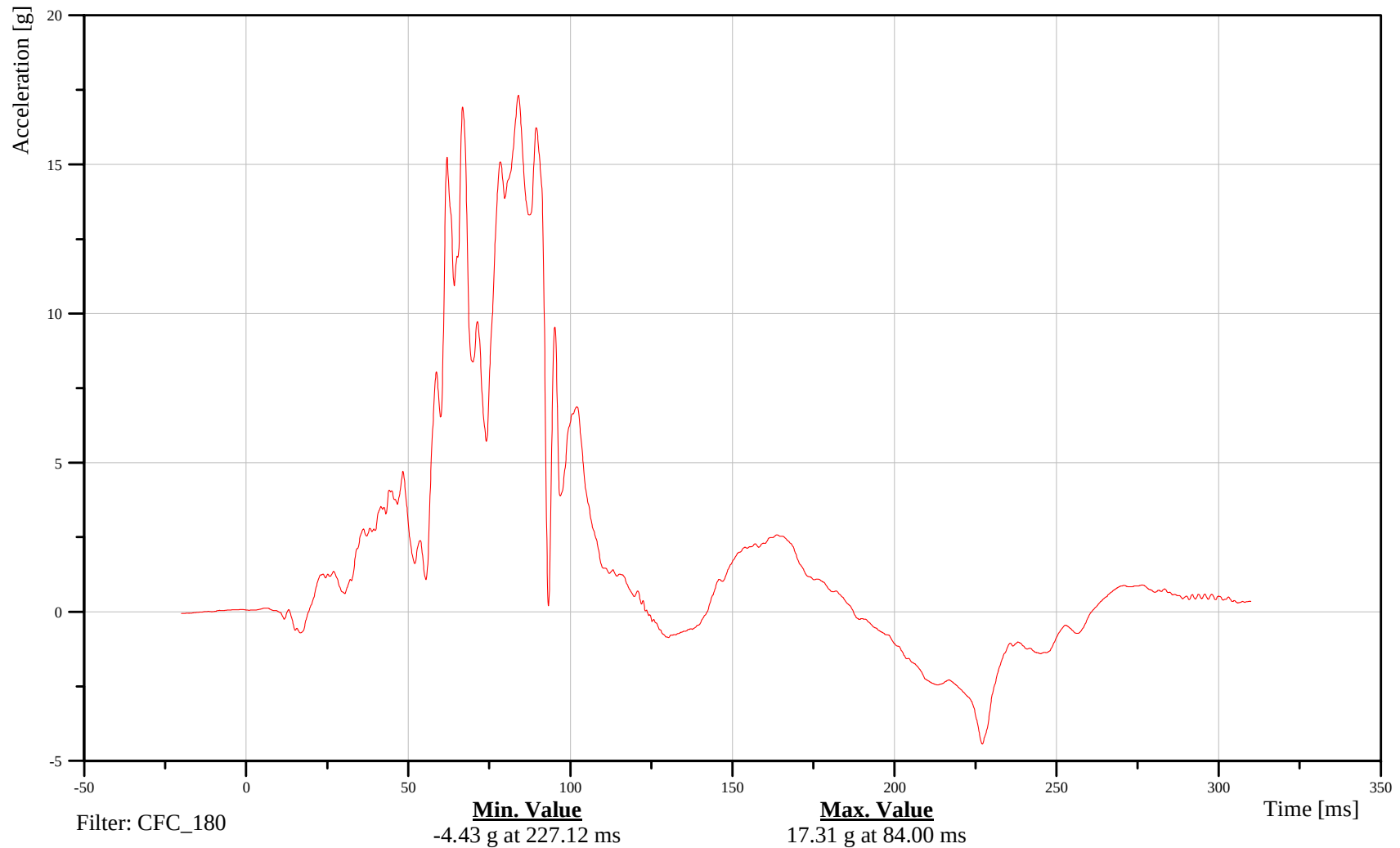
Time: 07:51

Customer: VRTC

13CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

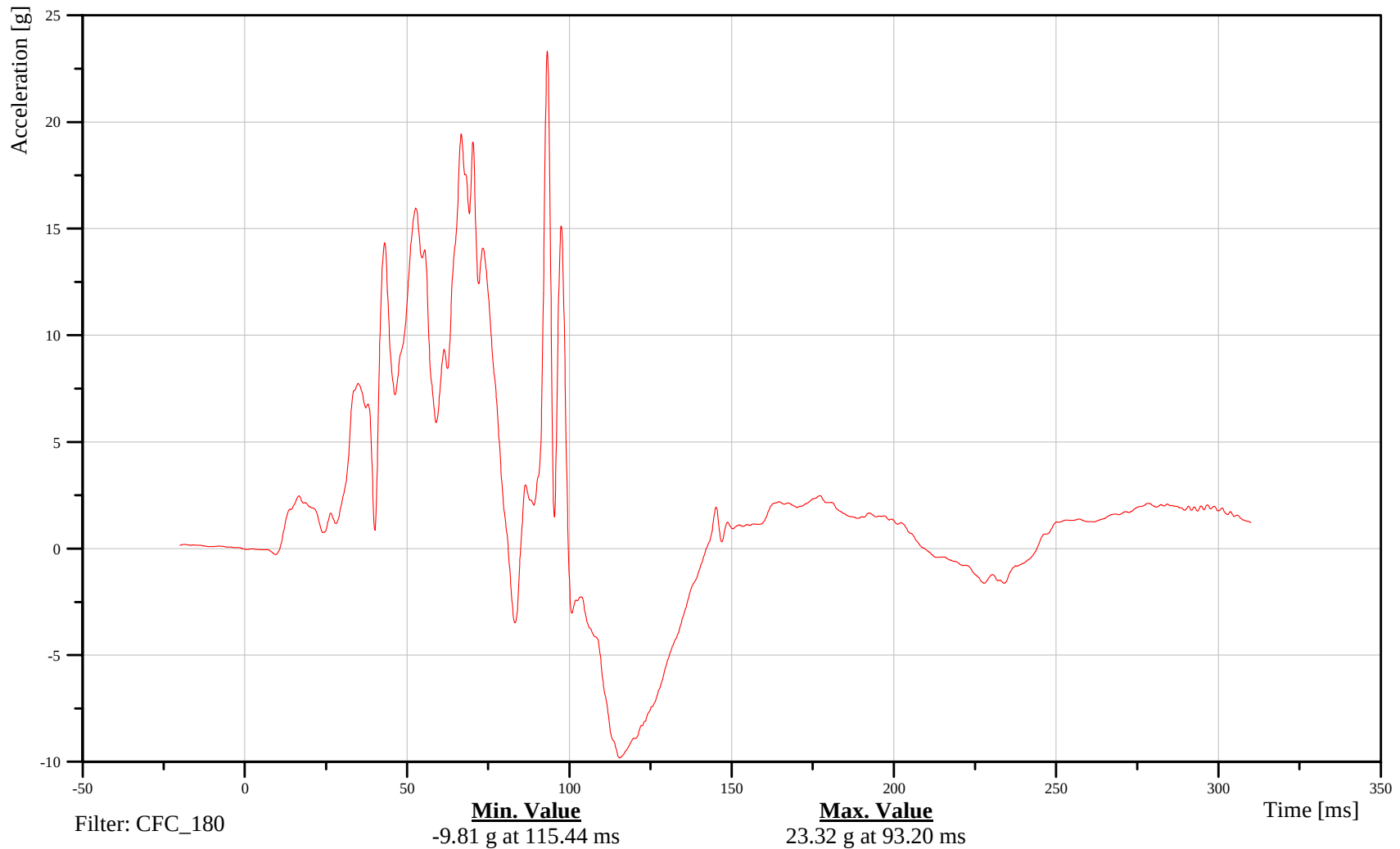
Chest Accel Red Z

Customer: VRTC

13CHSTCGRDHFACZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Accel Red Resultant

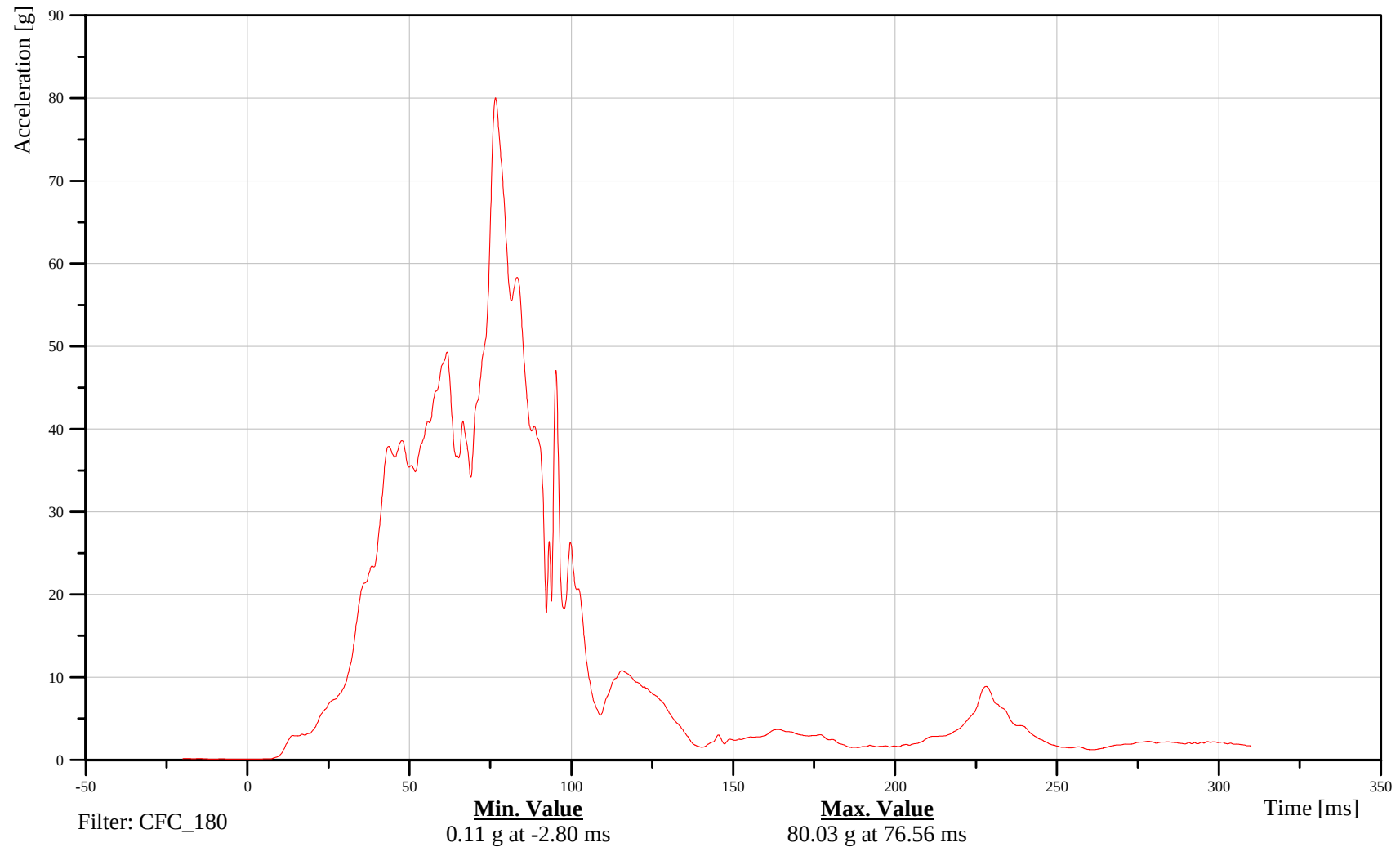
Time: 07:51

Customer: VRTC

13CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Chest Deflection X

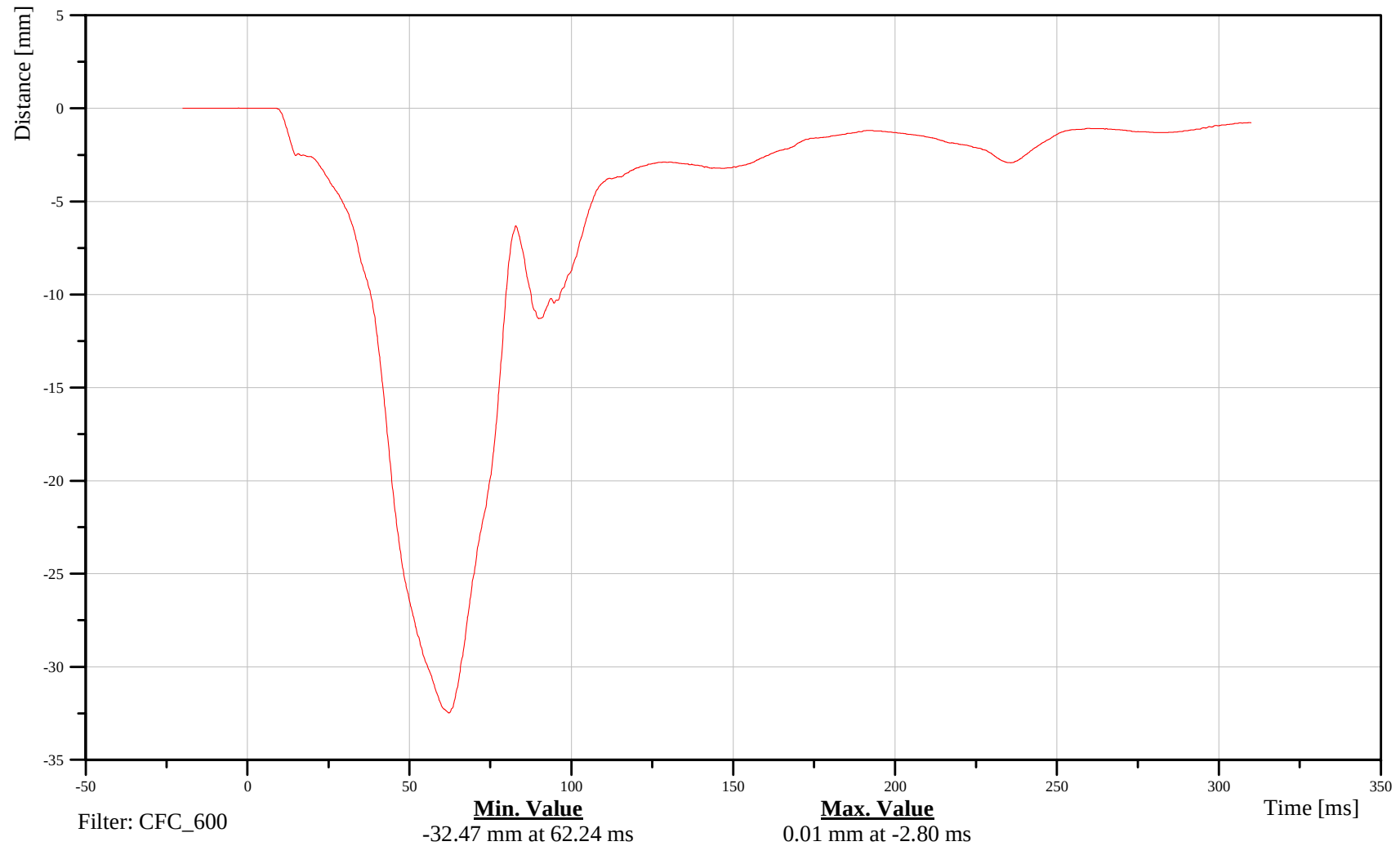
Time: 07:51

Customer: VRTC

13CHST0000HFDSXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Sternum Upper Accel X

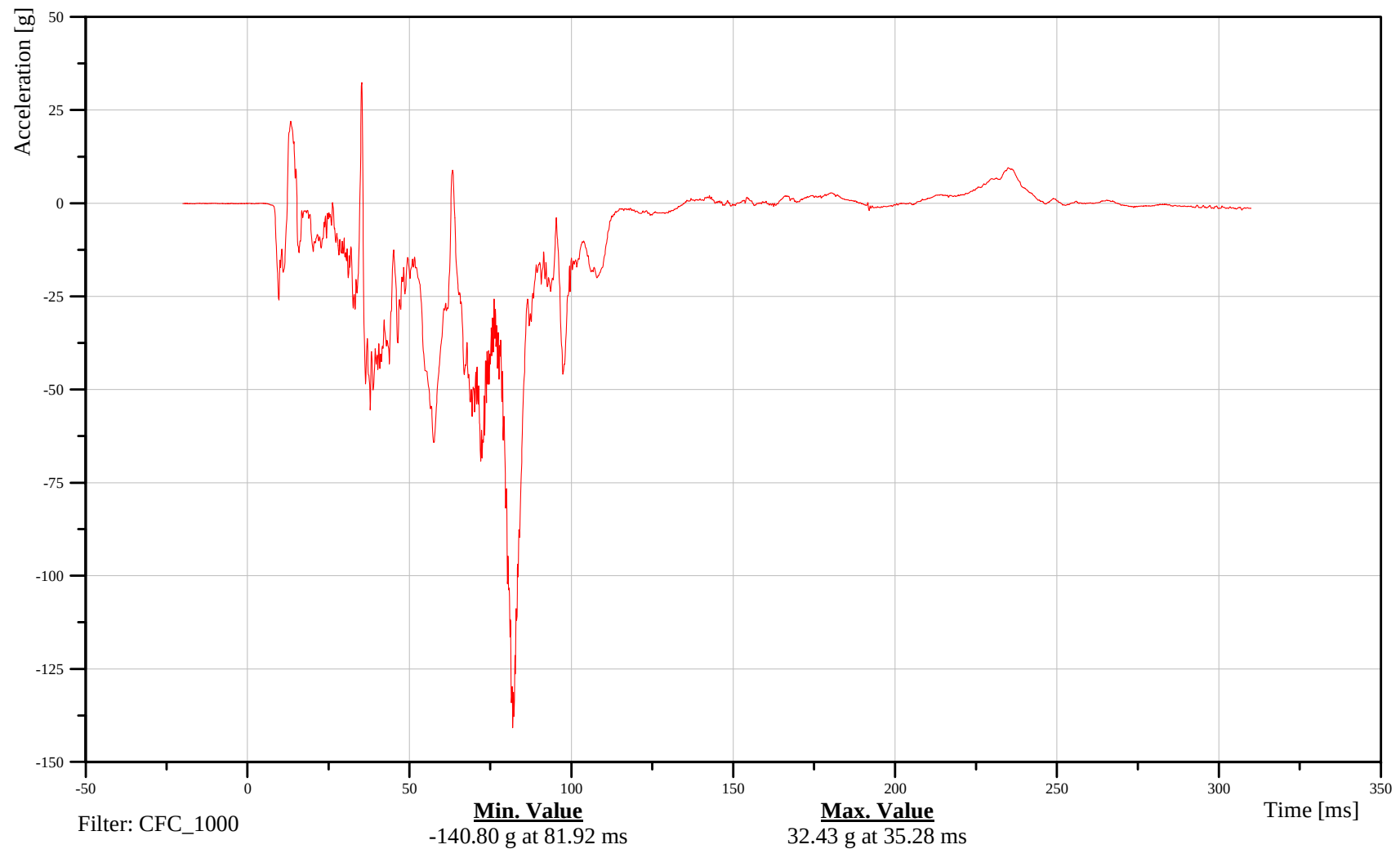
Time: 07:51

Customer: VRTC

13STRNUP00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Sternum Mid Accel X

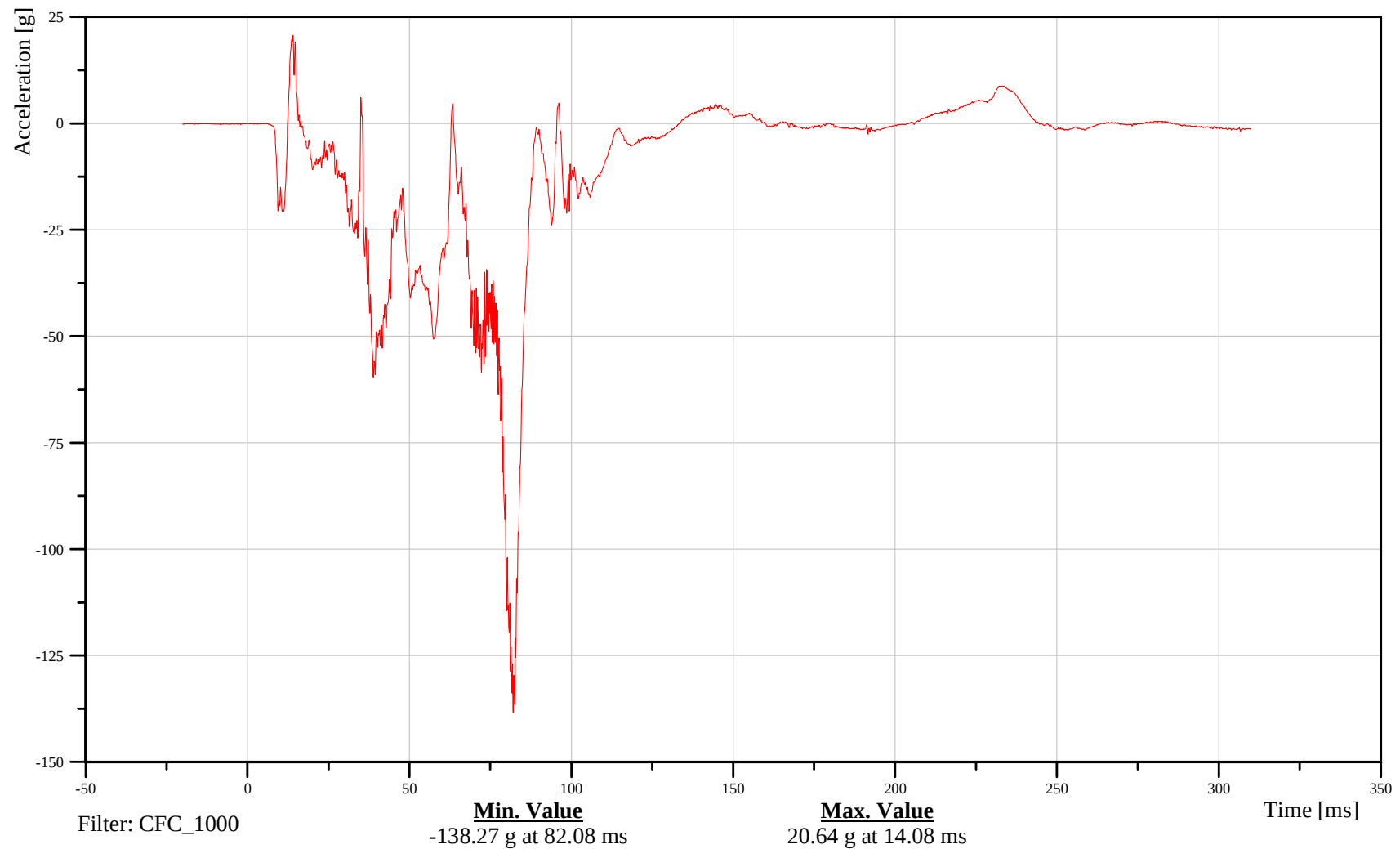
Time: 07:51

Customer: VRTC

13STRNMI00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

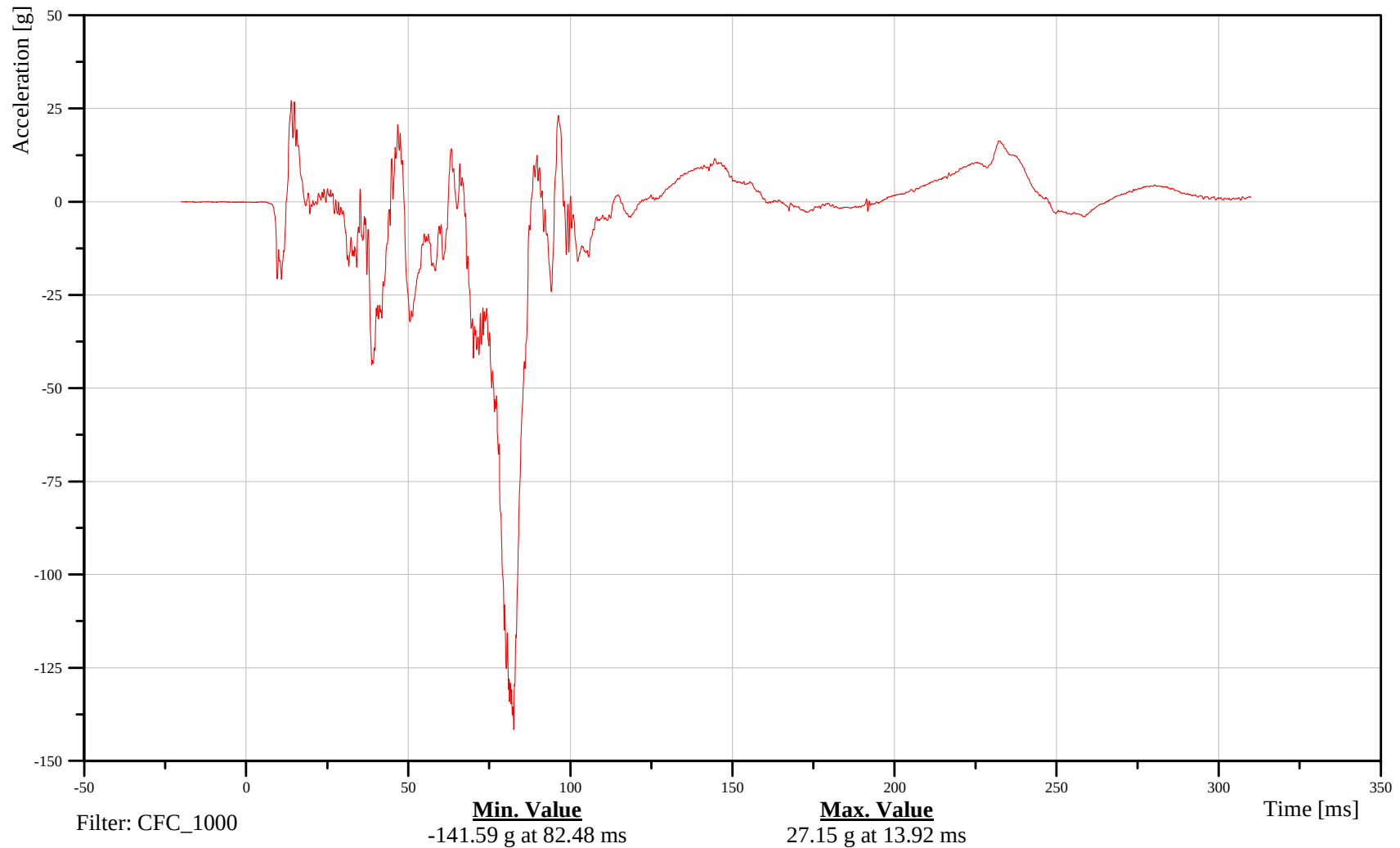
Sternum Lower Accel X

Customer: VRTC

13STRNLO00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

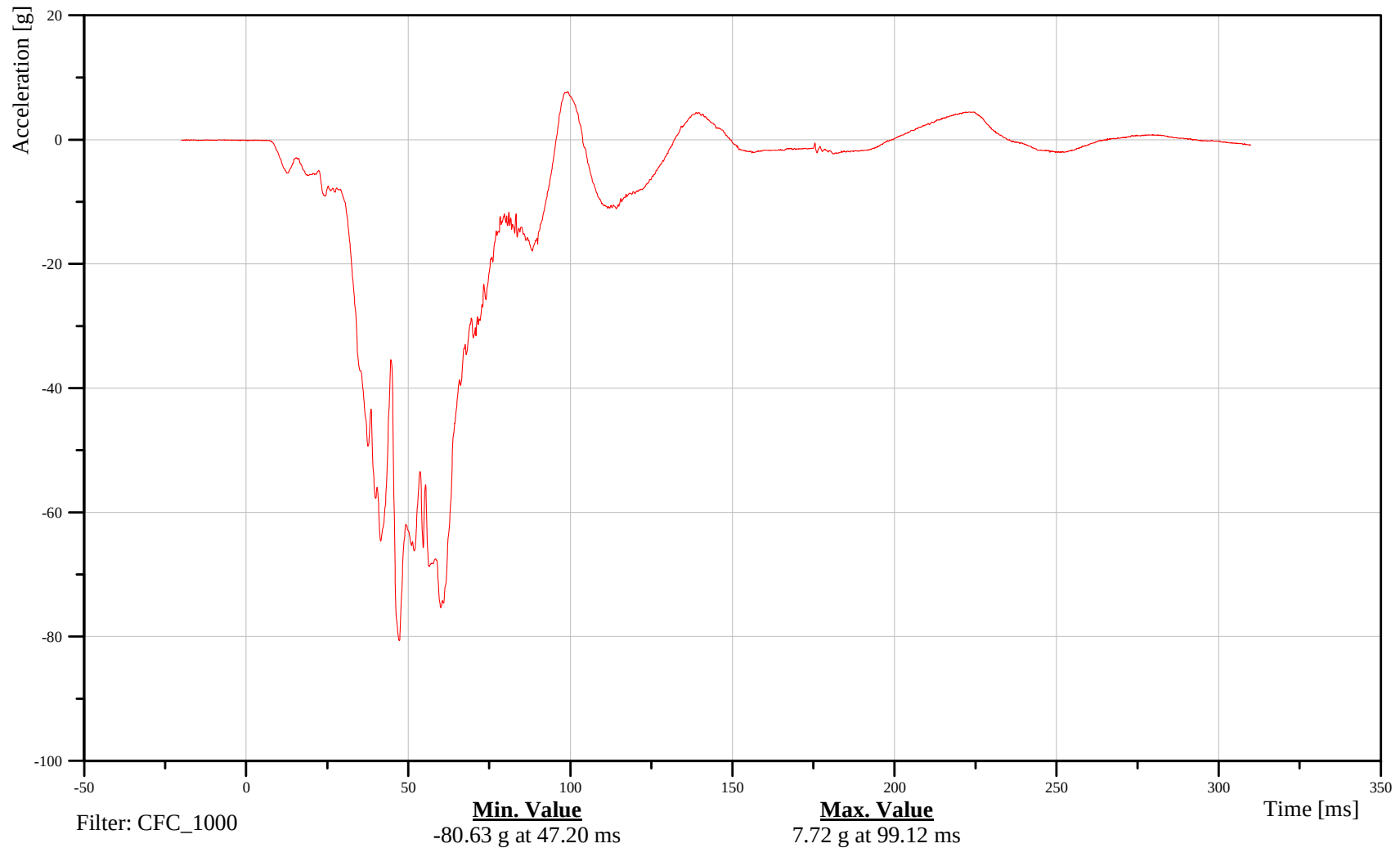
Pelvis Accel X

Customer: VRTC

13PELVCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Y

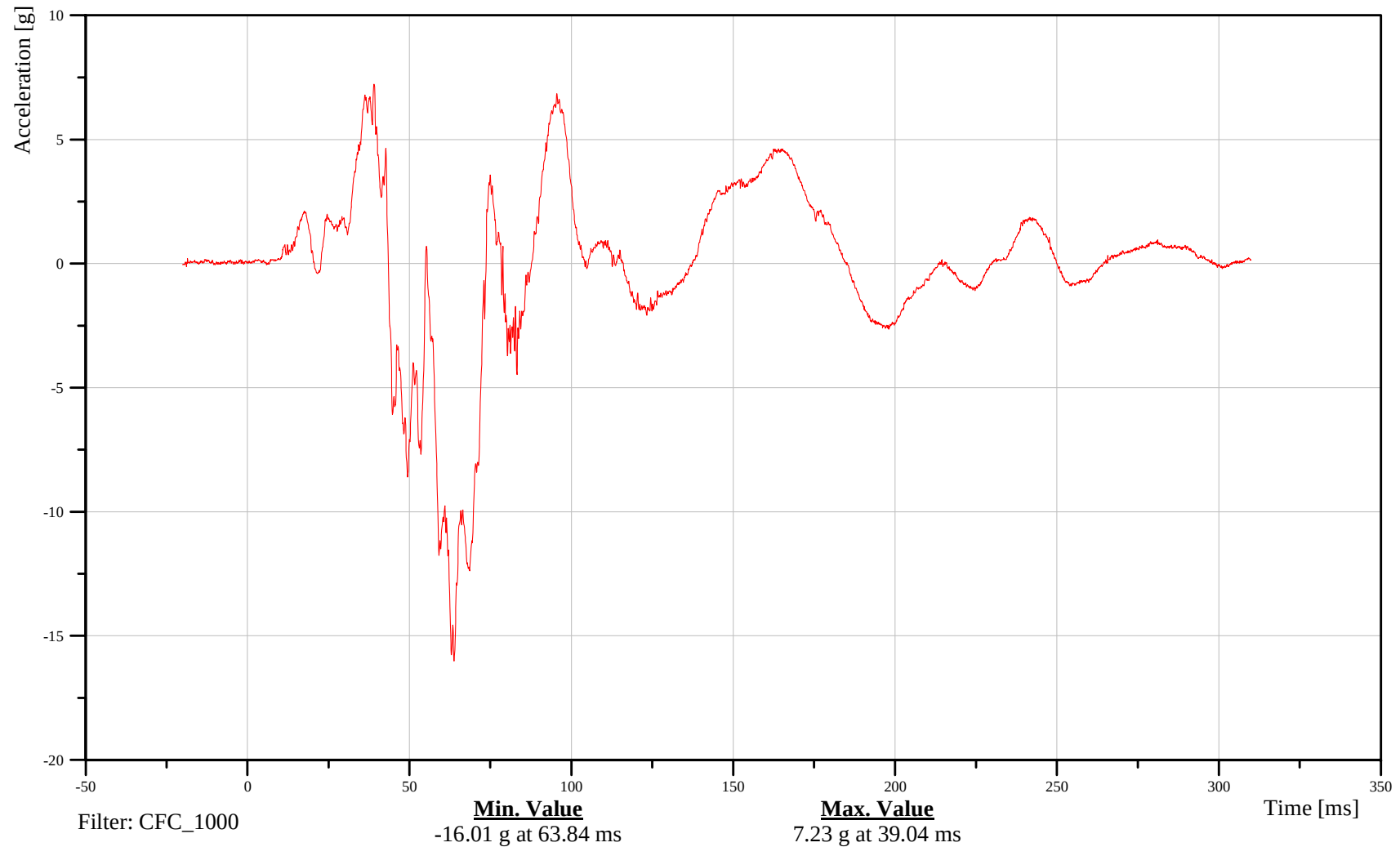
Time: 07:51

Customer: VRTC

13PELVCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Z

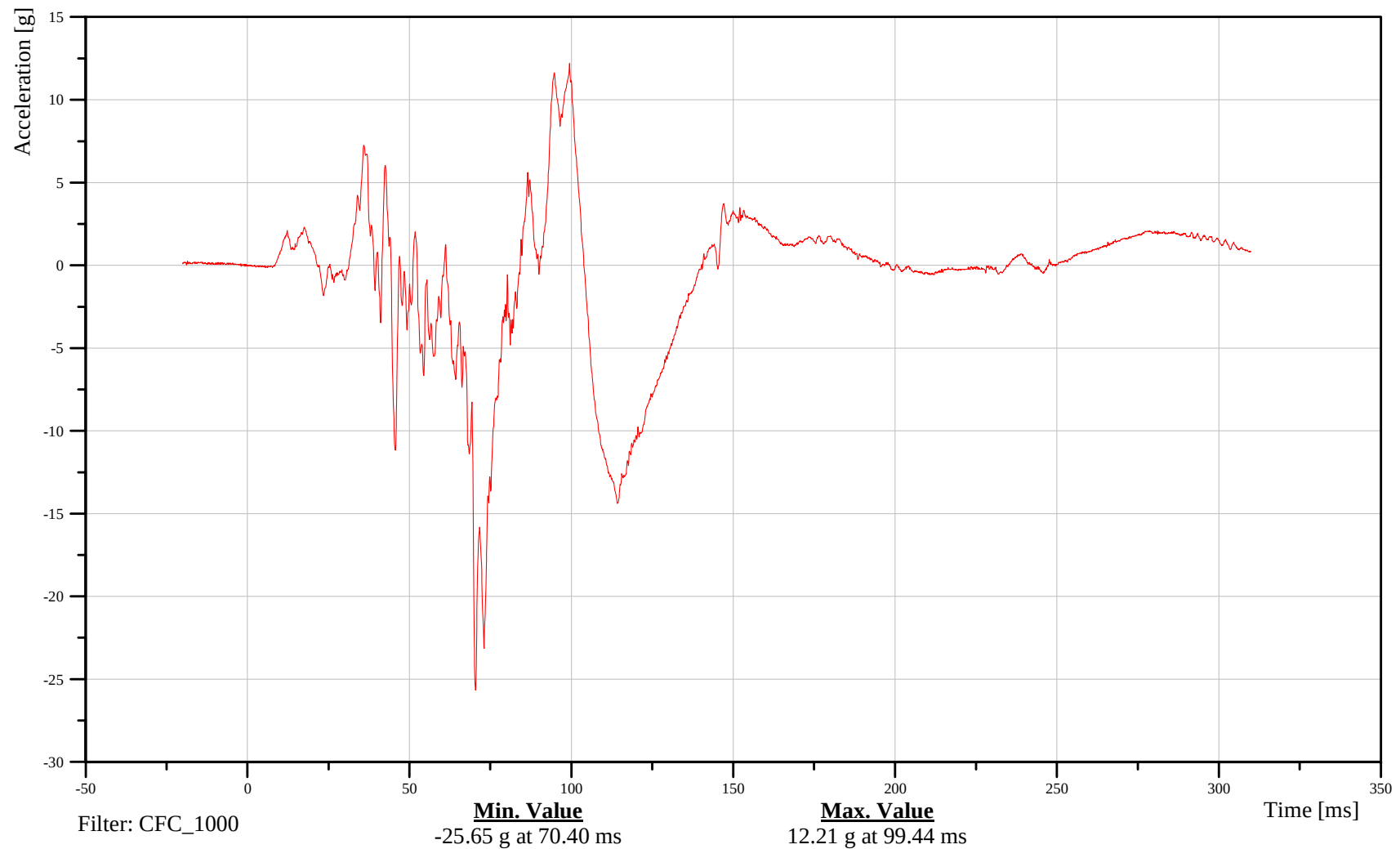
Time: 07:51

Customer: VRTC

13PELVCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Pelvis Accel Resultant

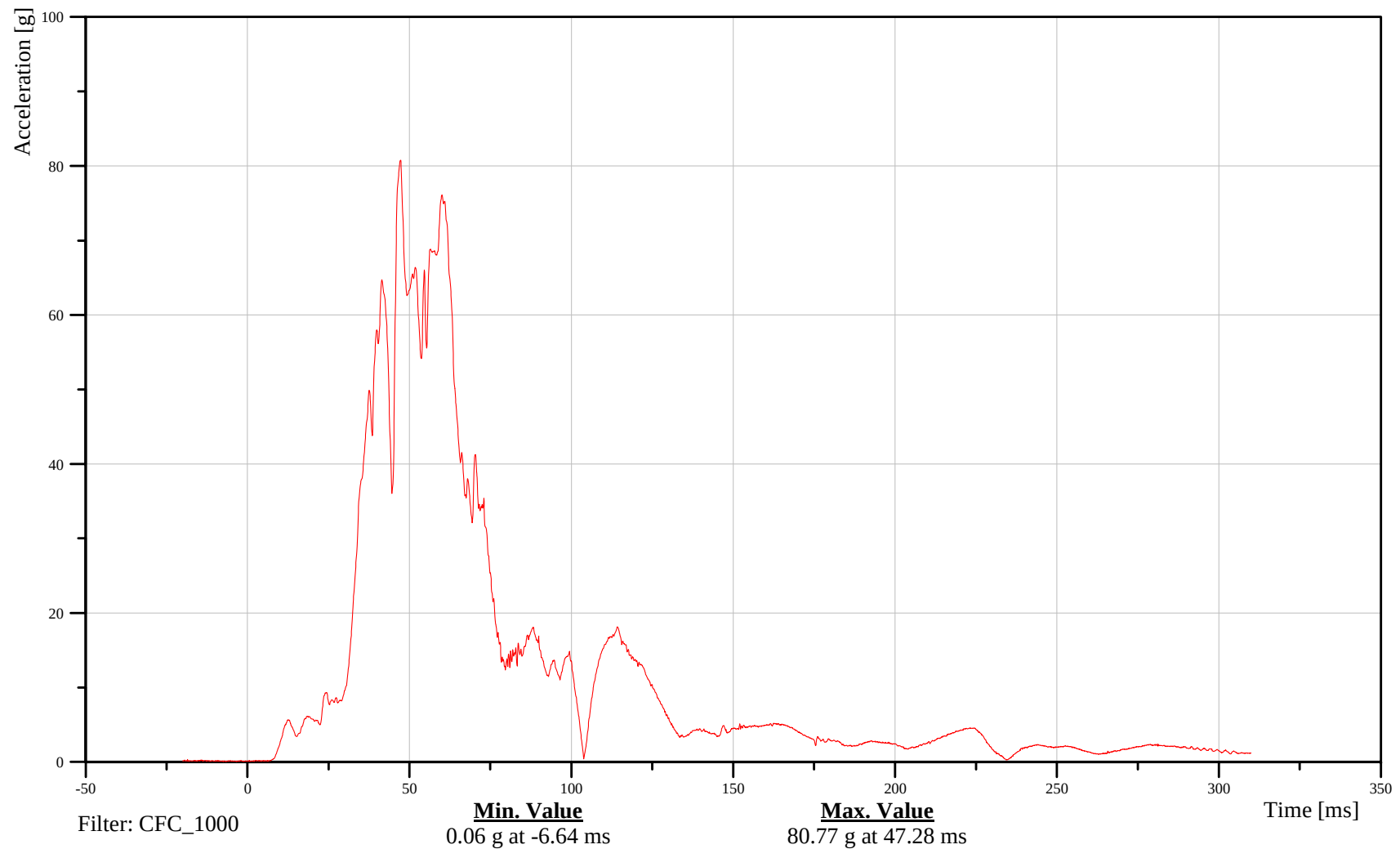
Time: 07:51

Customer: VRTC

13PELVCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Femur Force Z

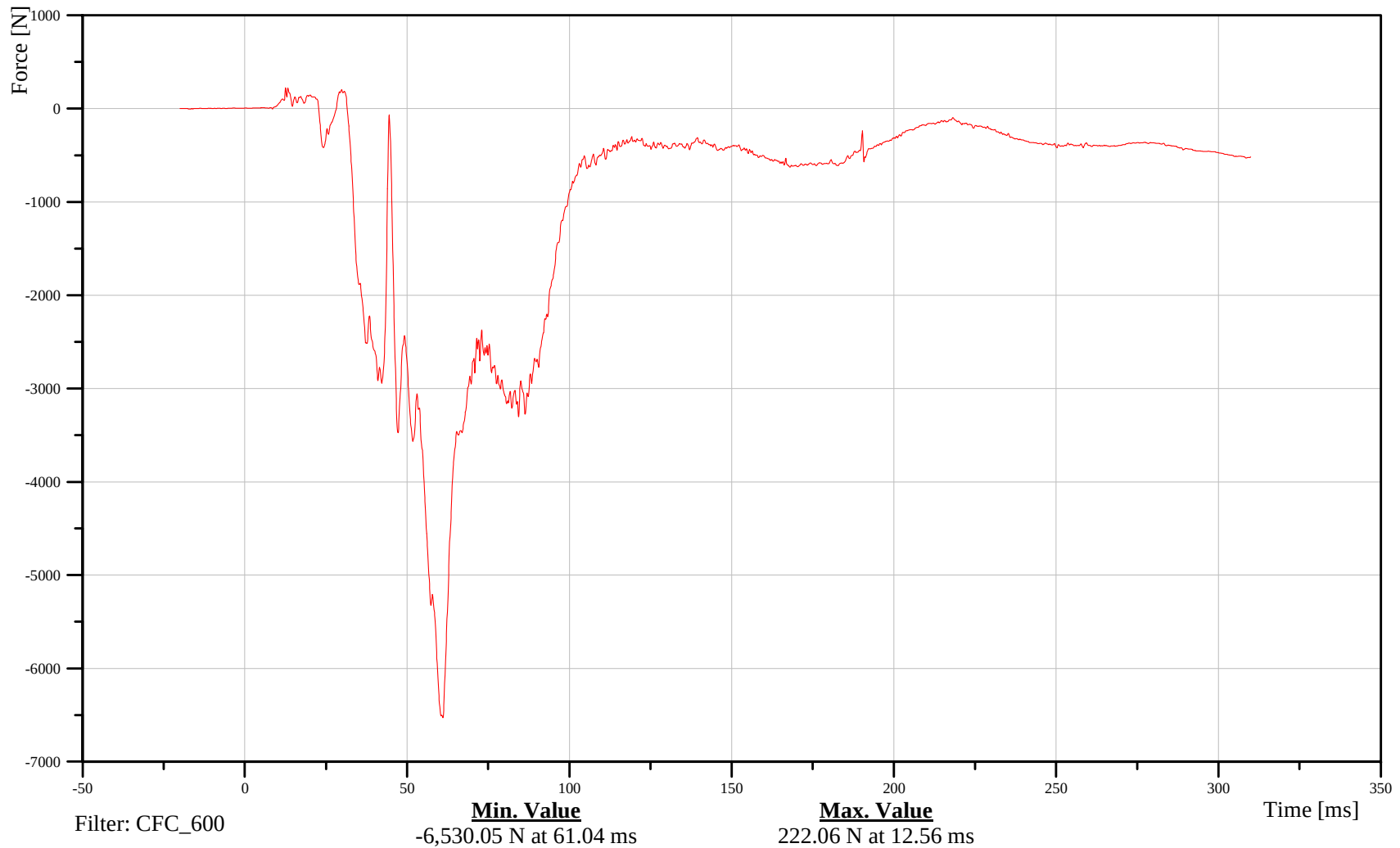
Time: 07:51

Customer: VRTC

13FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

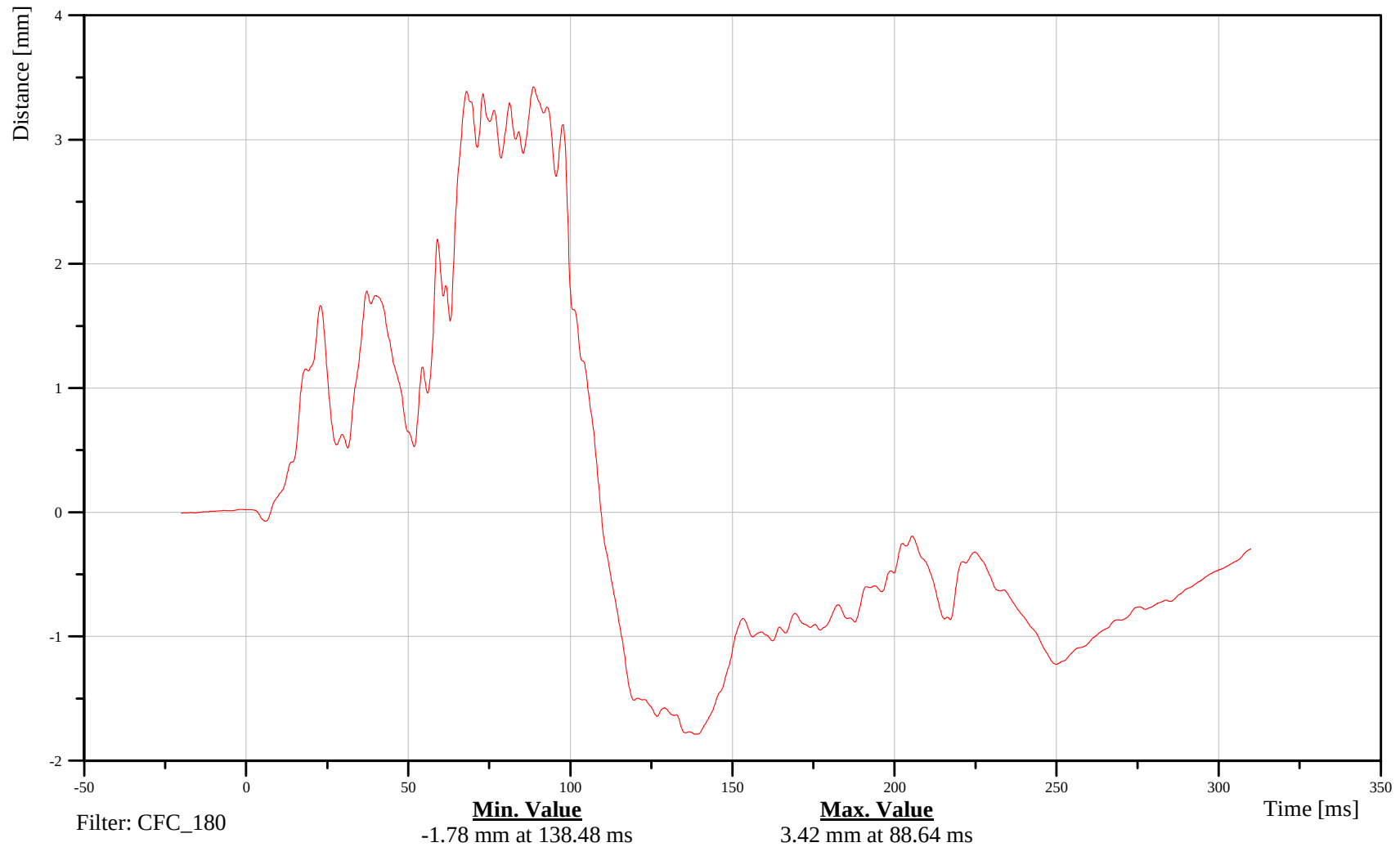
Left Knee Displacement

Customer: VRTC

13KNSLLE00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

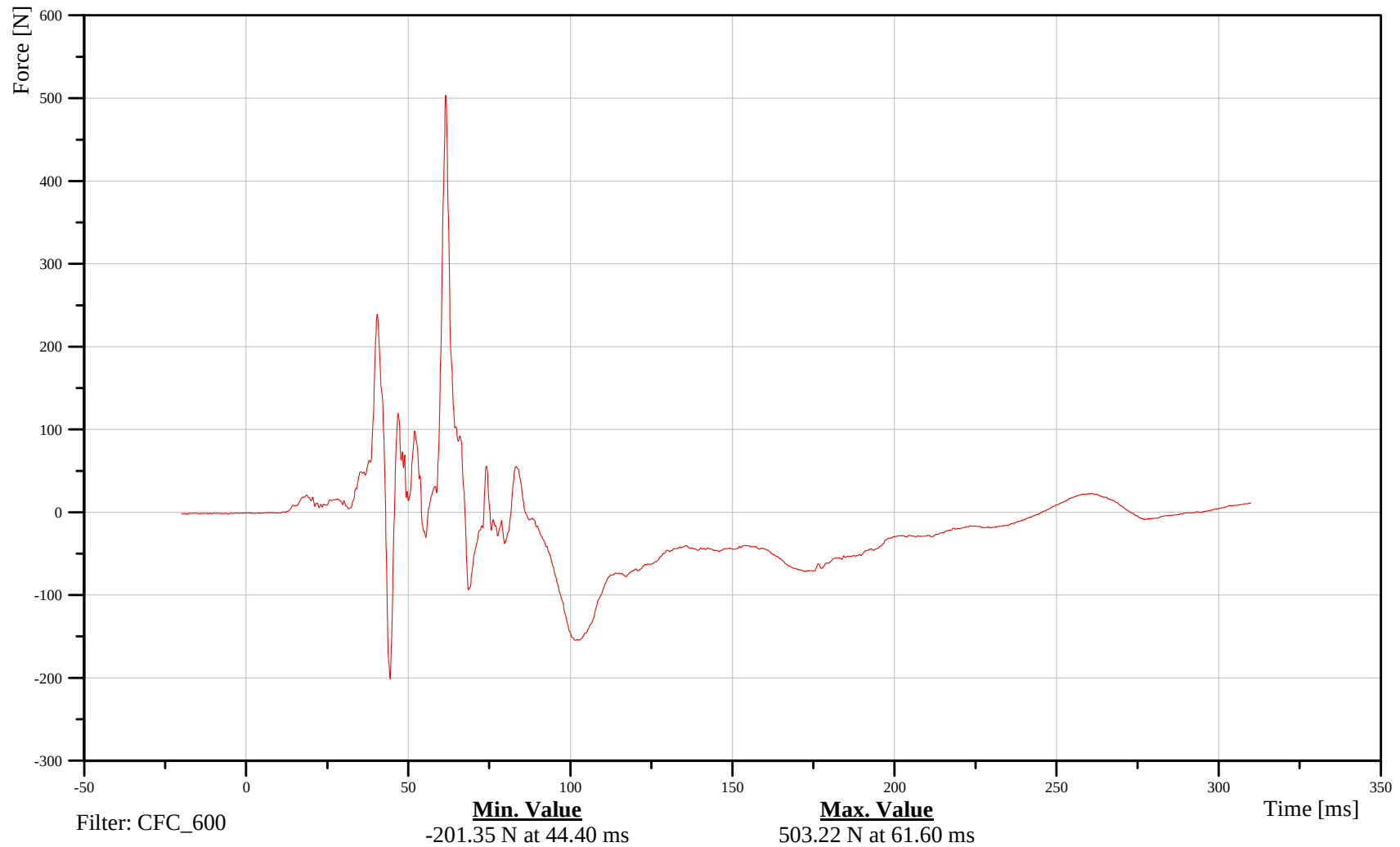
Left Upper Tibia Force X

Customer: VRTC

13TIBILUFXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

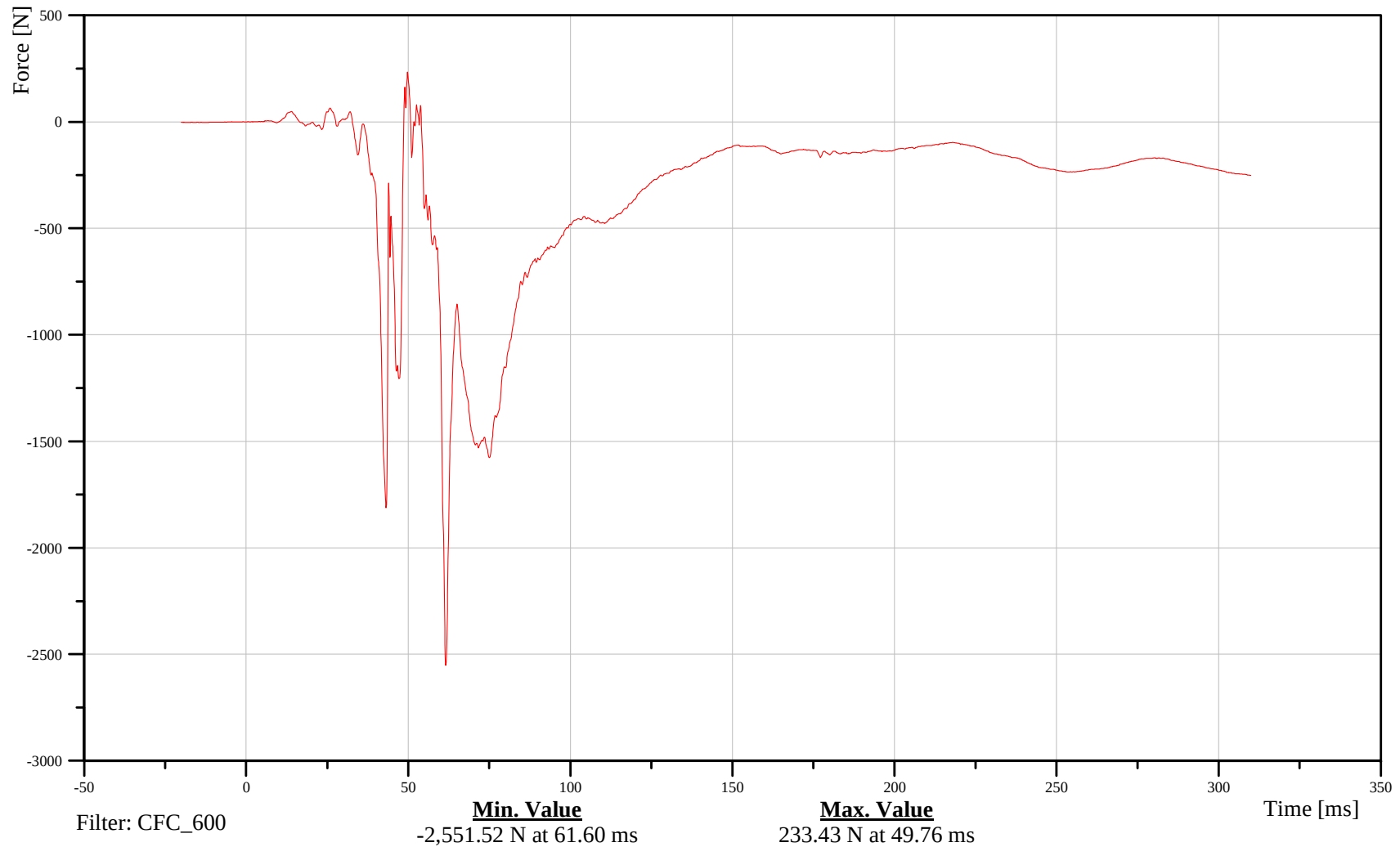
Left Upper Tibia Force Z

Customer: VRTC

13TIBILUFXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Upper Tibia Moment X

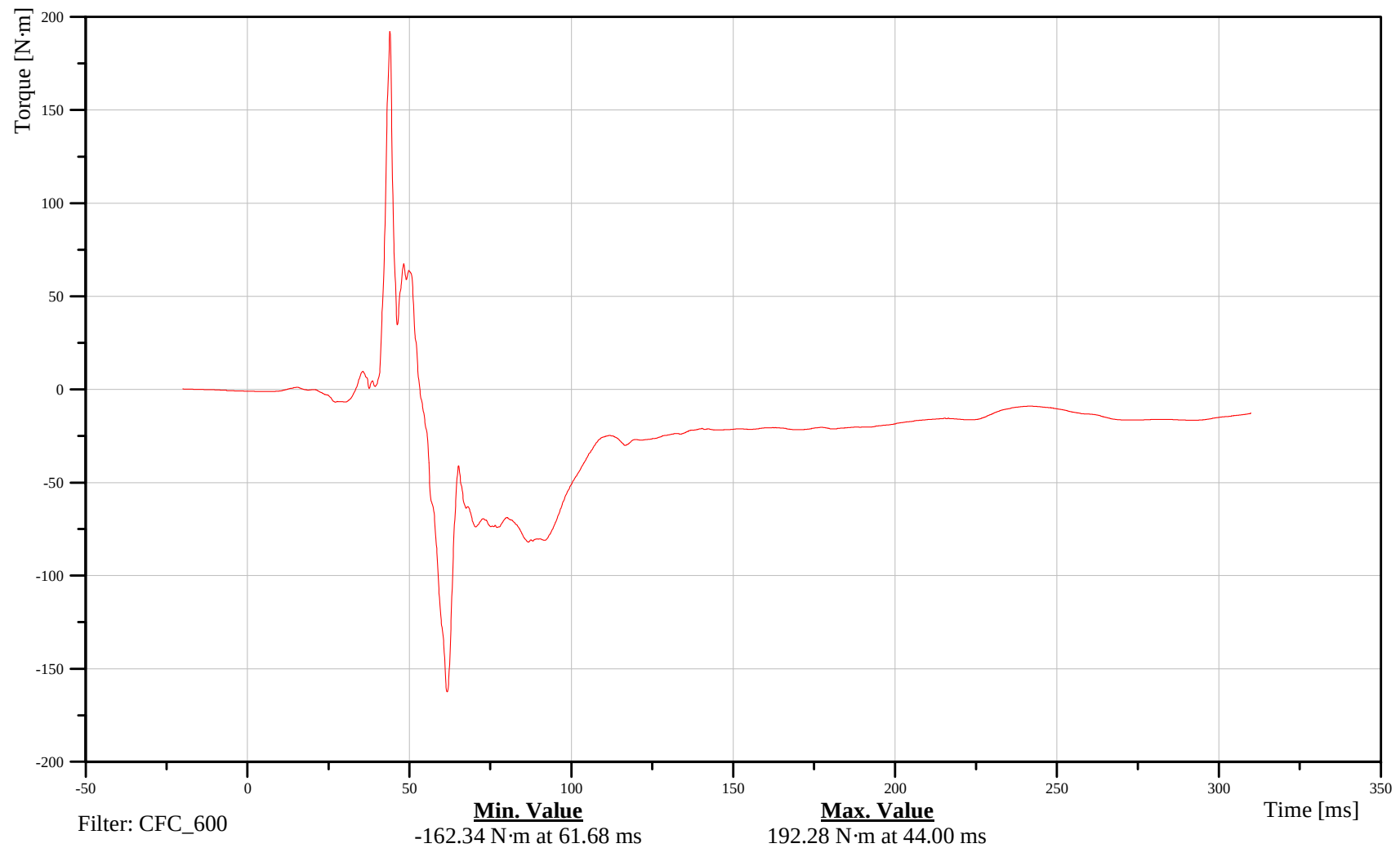
Time: 07:51

Customer: VRTC

13TIBILUFXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Upper Tibia Moment Y

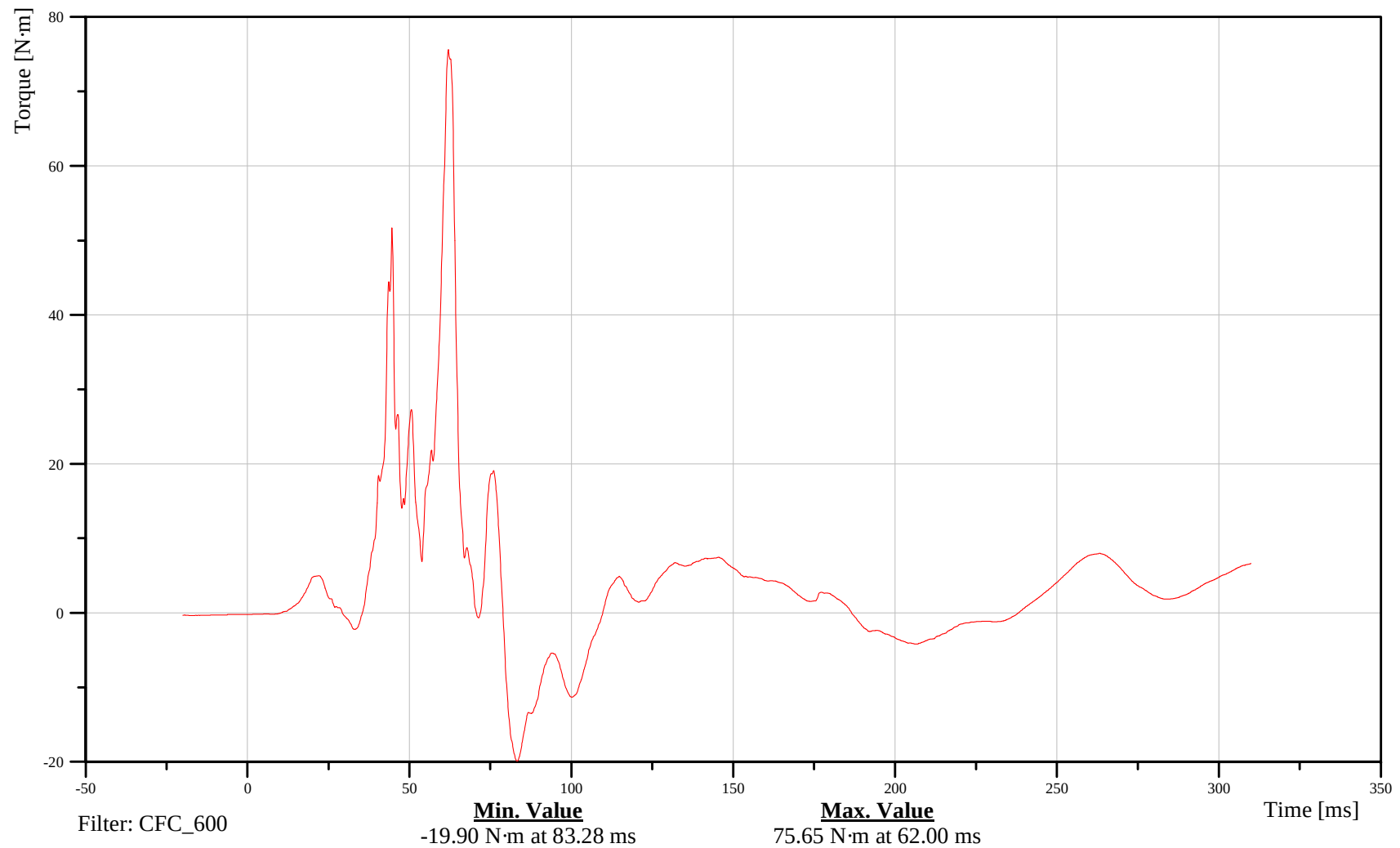
Time: 07:51

Customer: VRTC

13TIBILUFXHFM0YB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Tibia Accel X

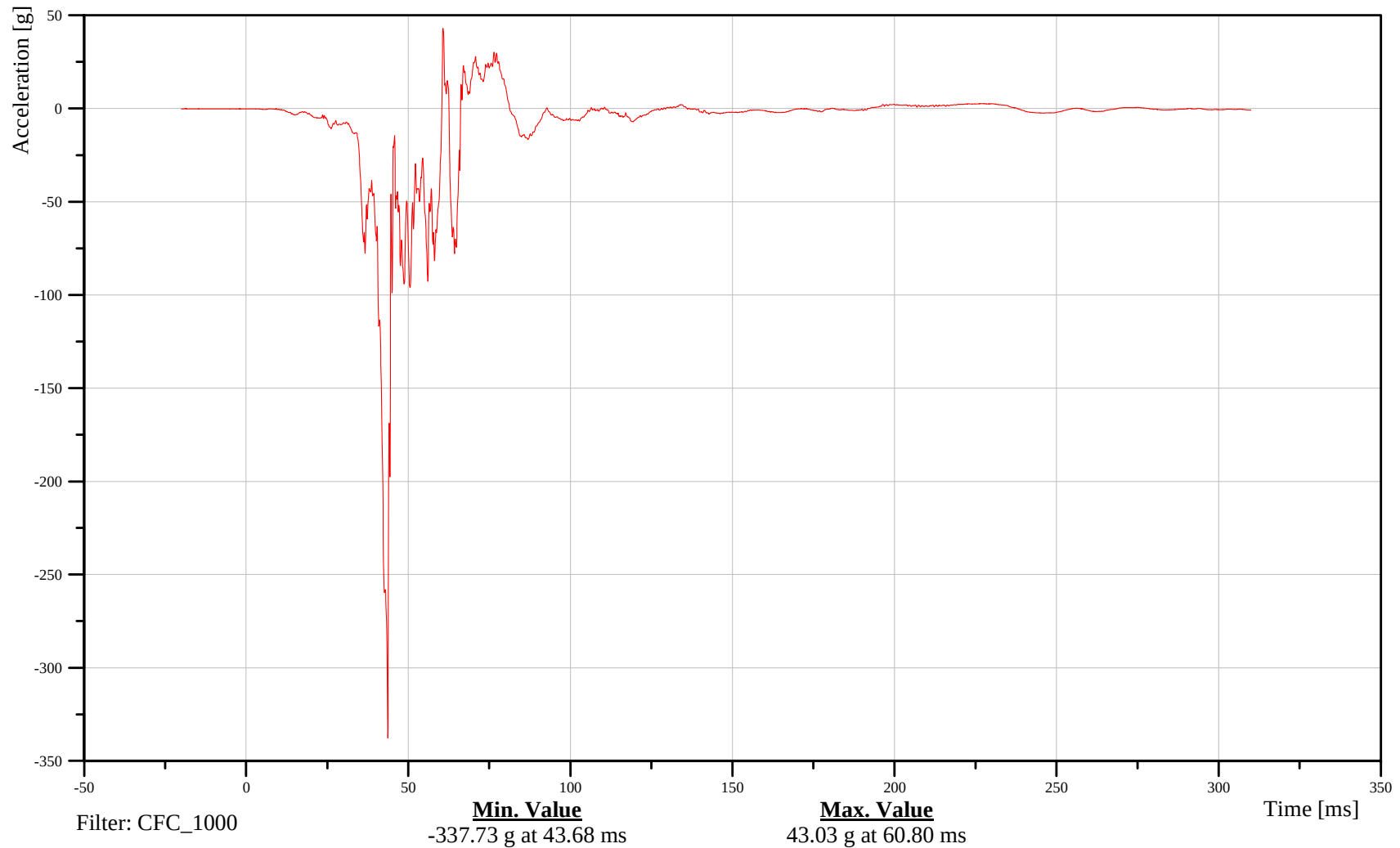
Time: 07:51

Customer: VRTC

13TIBILEFXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Tibia Accel Y

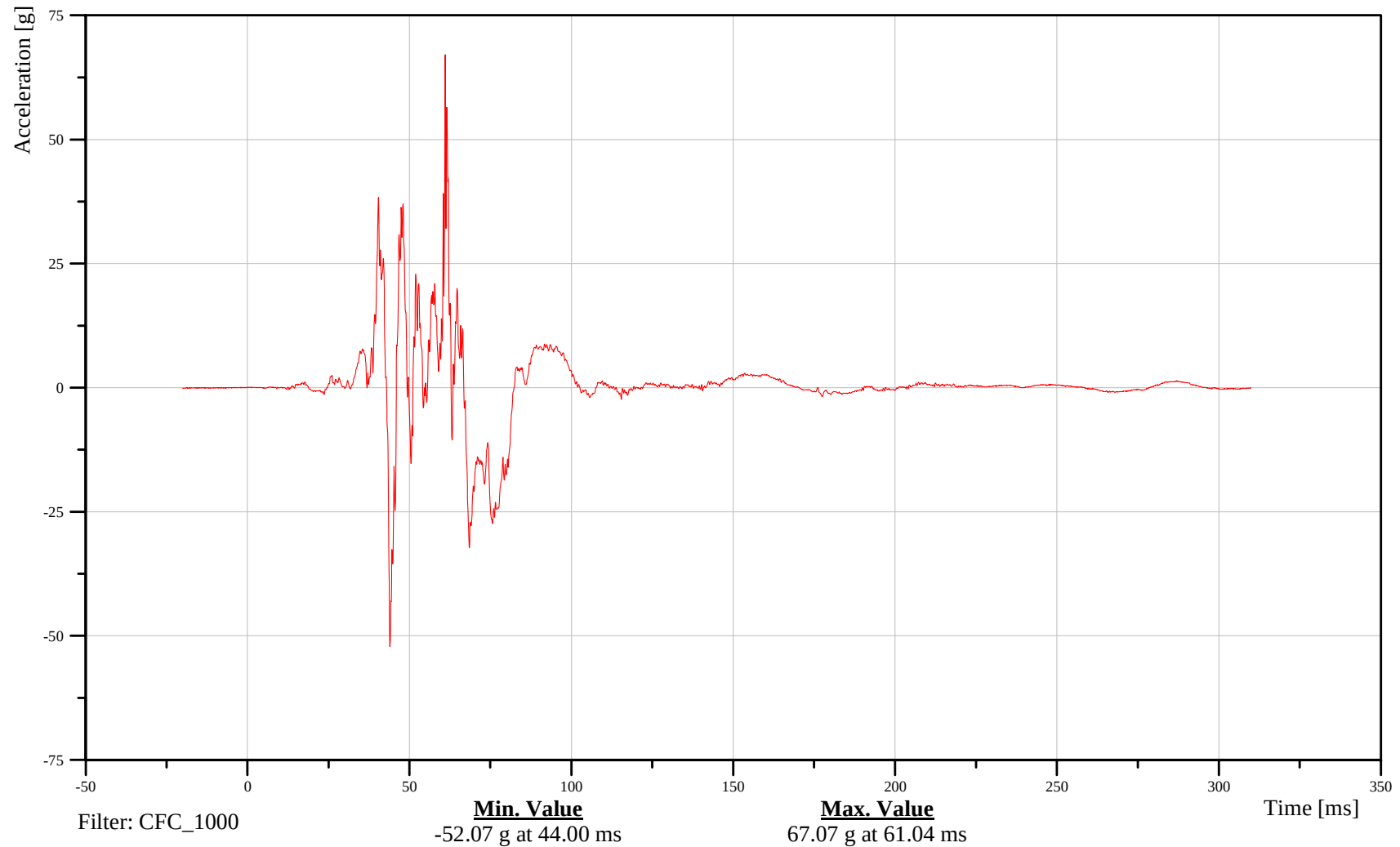
Time: 07:51

Customer: VRTC

13TIBILEFXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force X

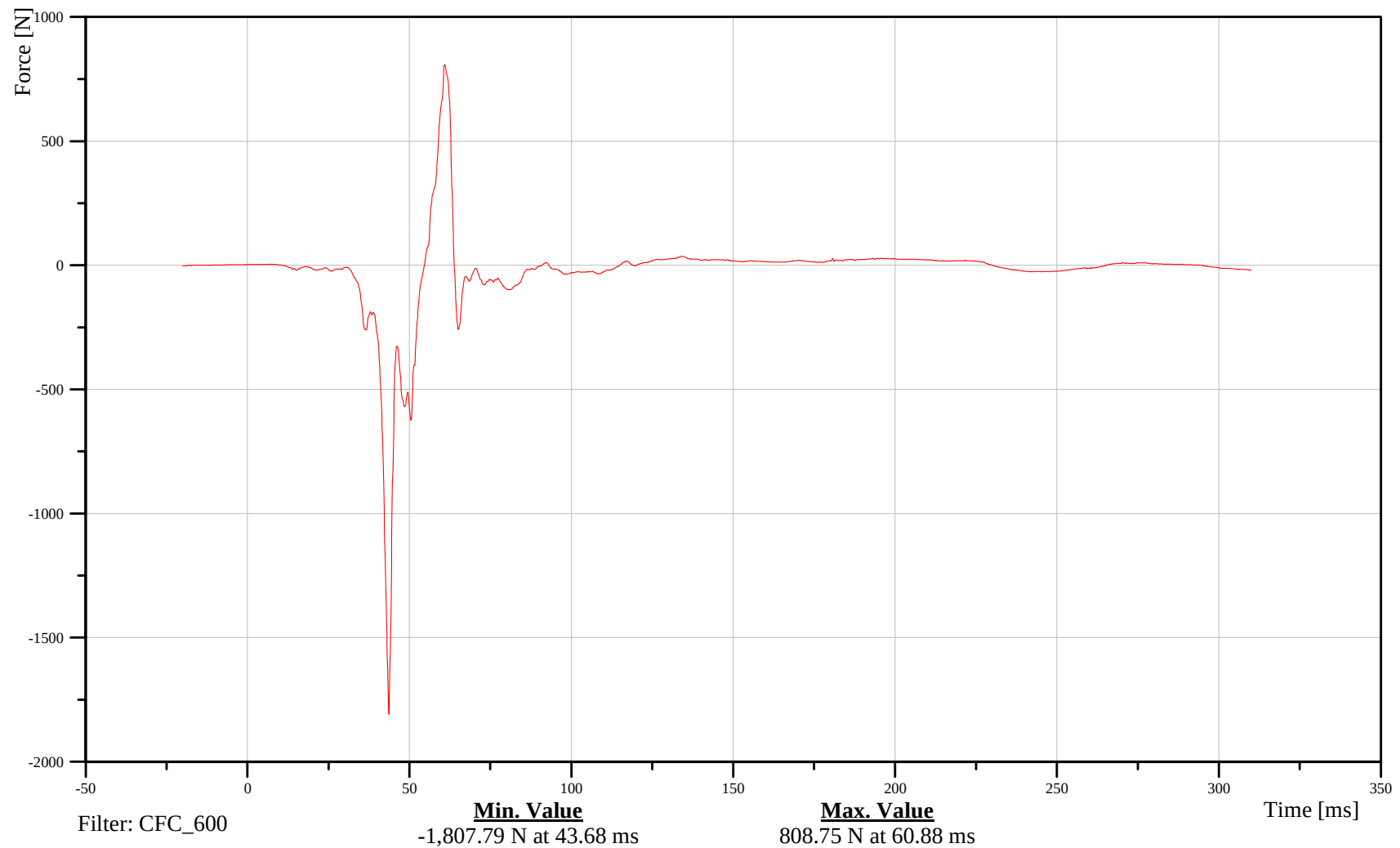
Time: 07:51

Customer: VRTC

13TIBILLFXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force Y

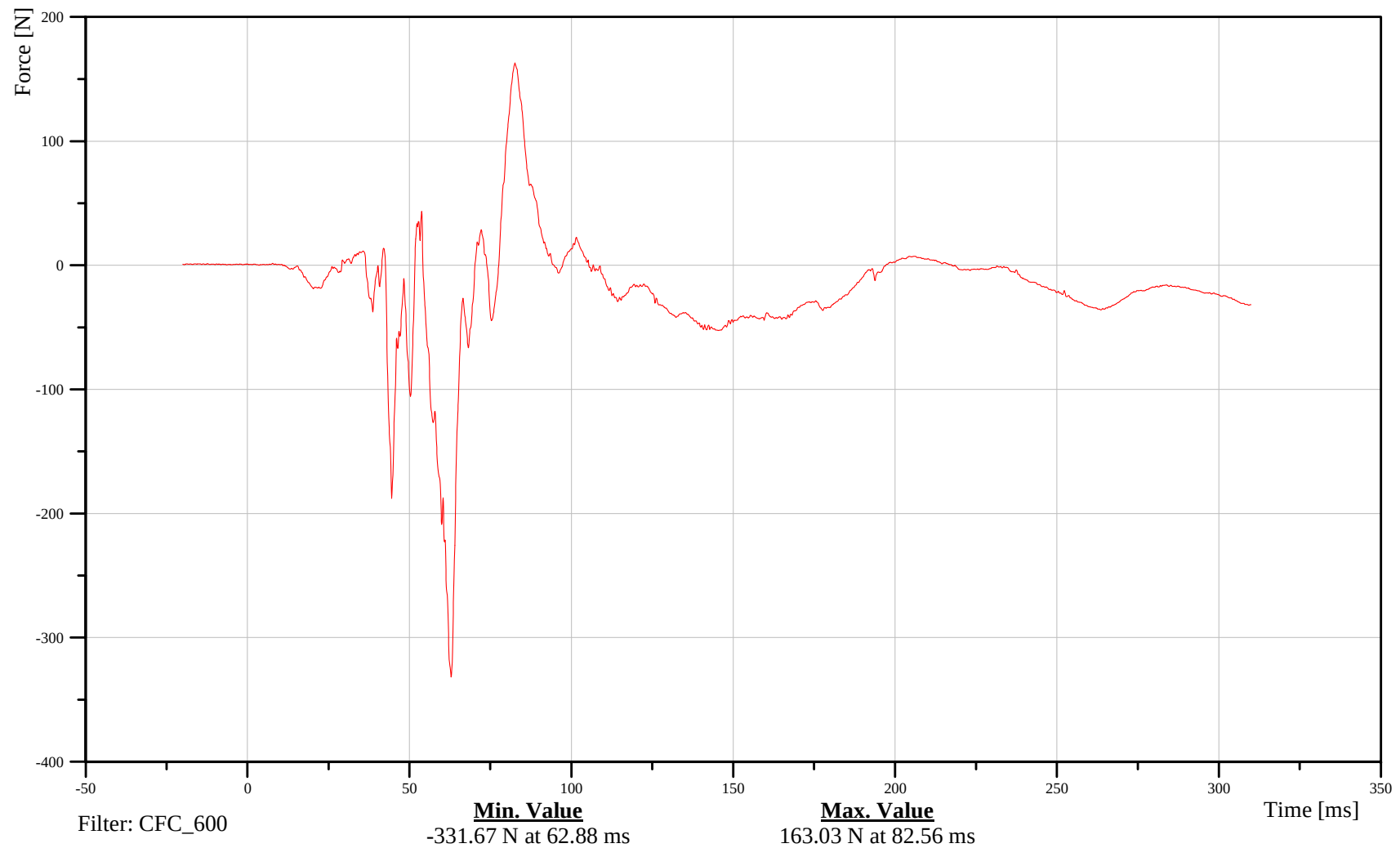
Time: 07:51

Customer: VRTC

13TIBILLFXHFFOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Force Z

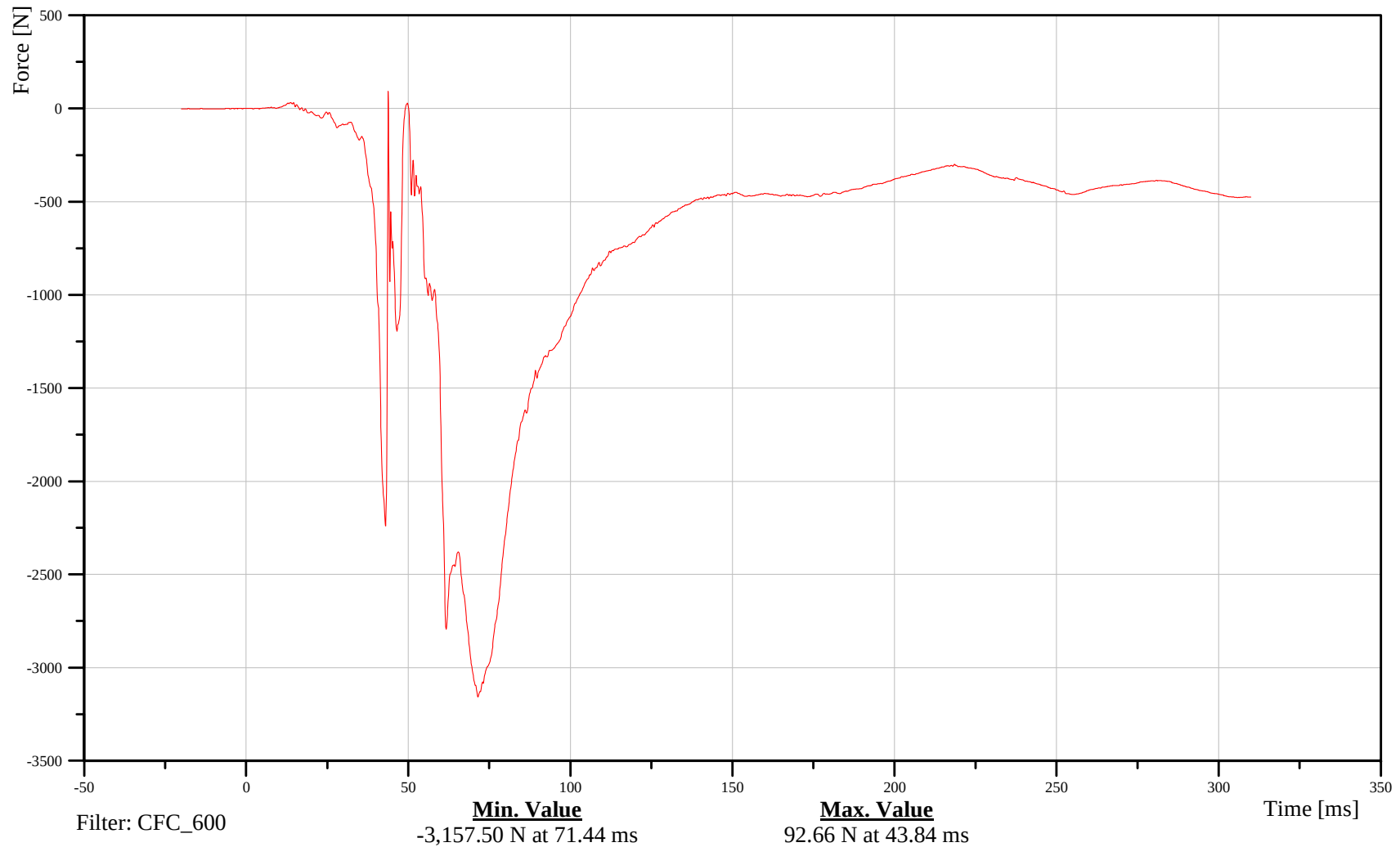
Time: 07:51

Customer: VRTC

13TIBILLFXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Moment X

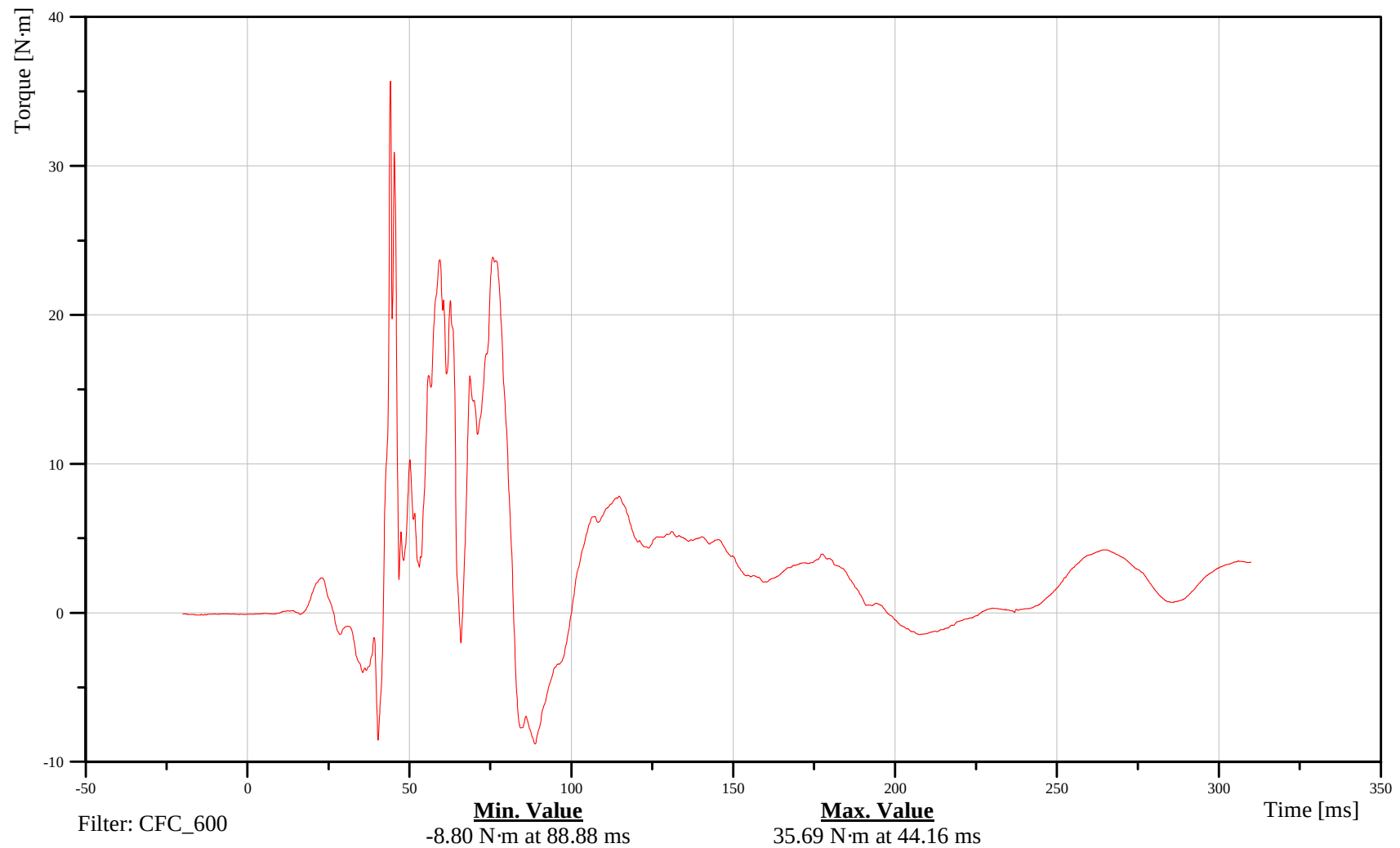
Time: 07:51

Customer: VRTC

13TIBILLFXHFMOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Lower Tibia Moment Y

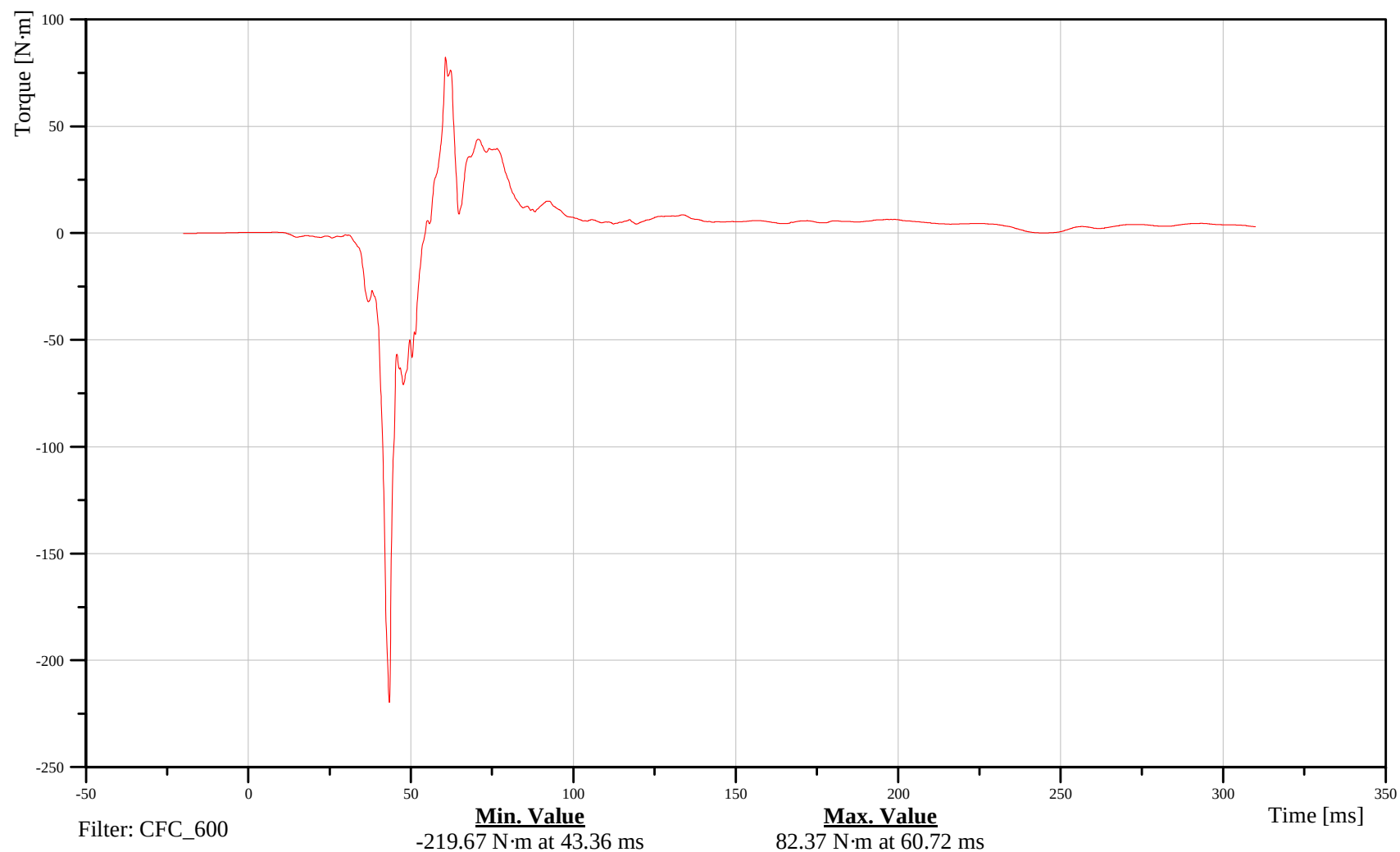
Time: 07:51

Customer: VRTC

13TIBILLFXHFMOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Disp. X FLX102X

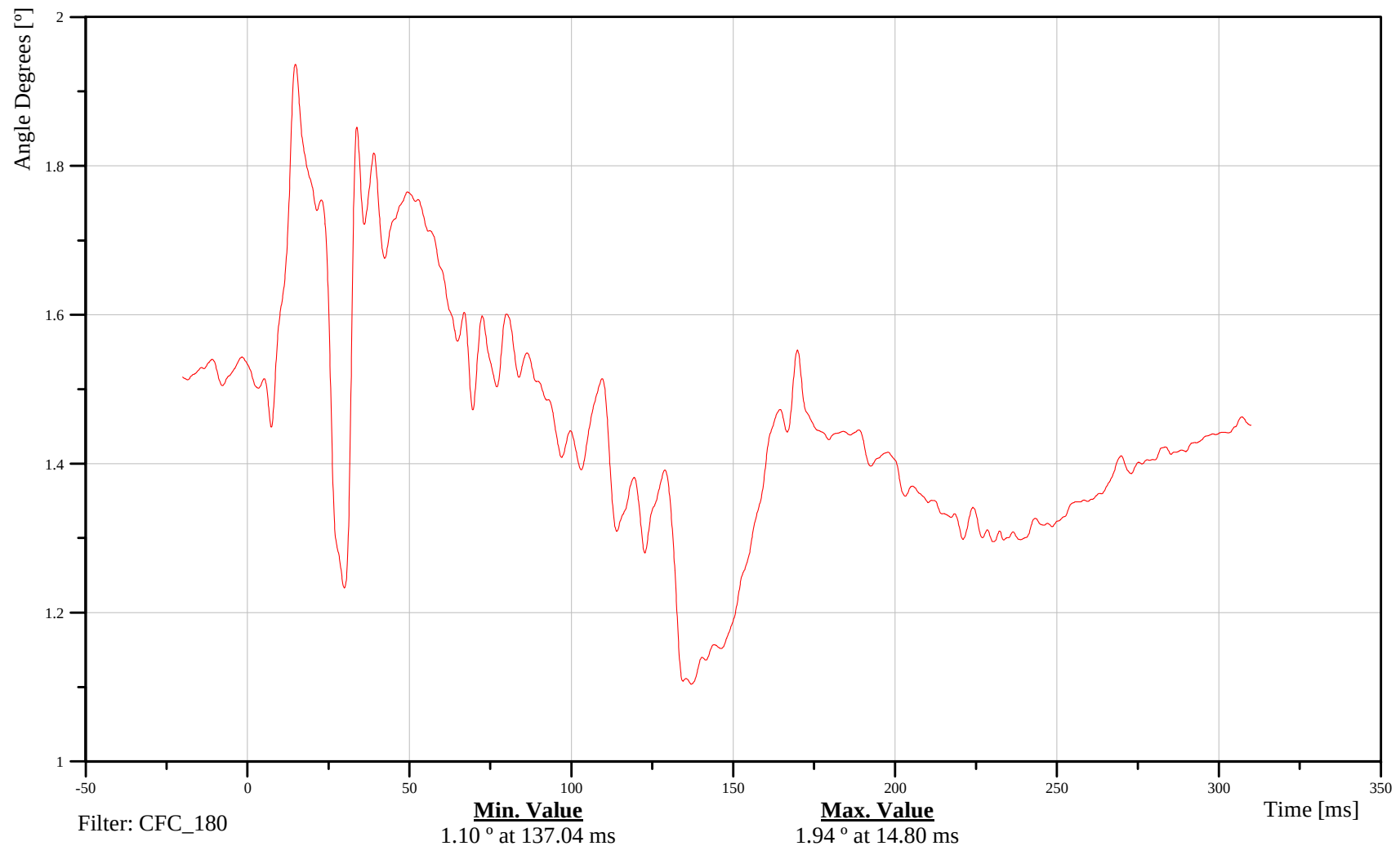
Time: 07:51

Customer: VRTC

13FOOTLEFXHFANXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

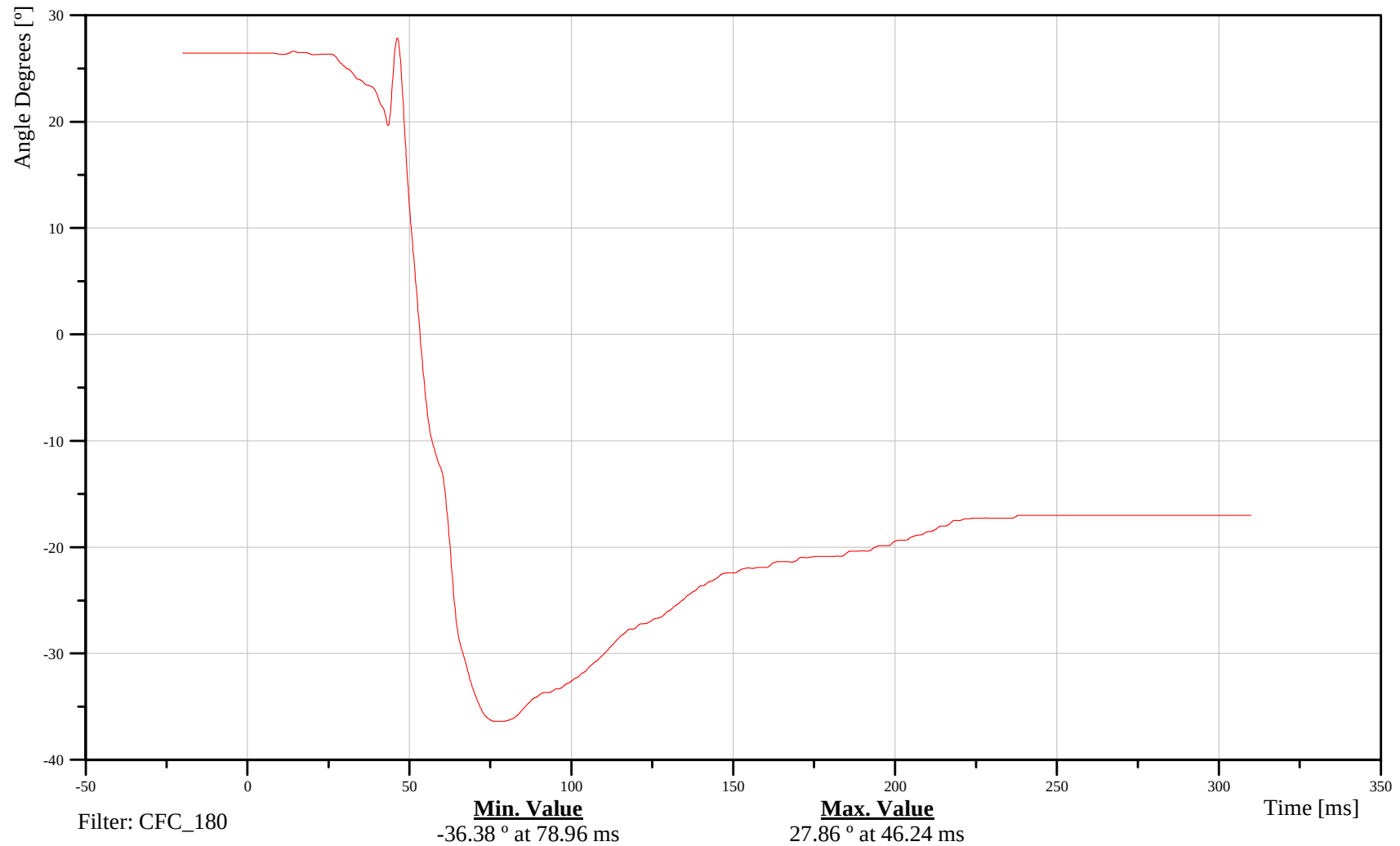
Left Foot Disp. Y FLX102Y

Customer: VRTC

13FOOTLEFXHFANYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Disp. Z FLX102Z

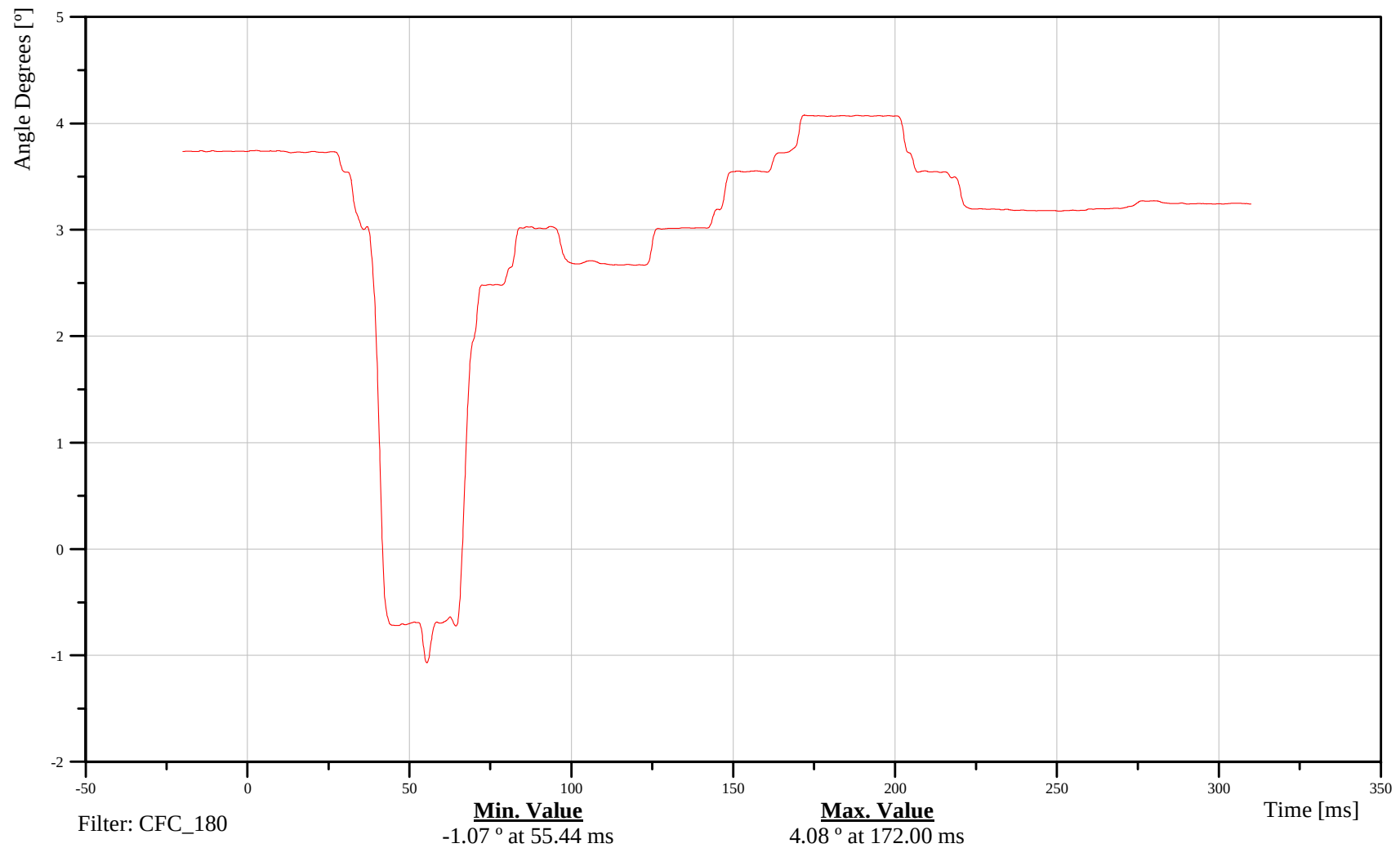
Time: 07:51

Customer: VRTC

13FOOTLEFXHFANZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel X

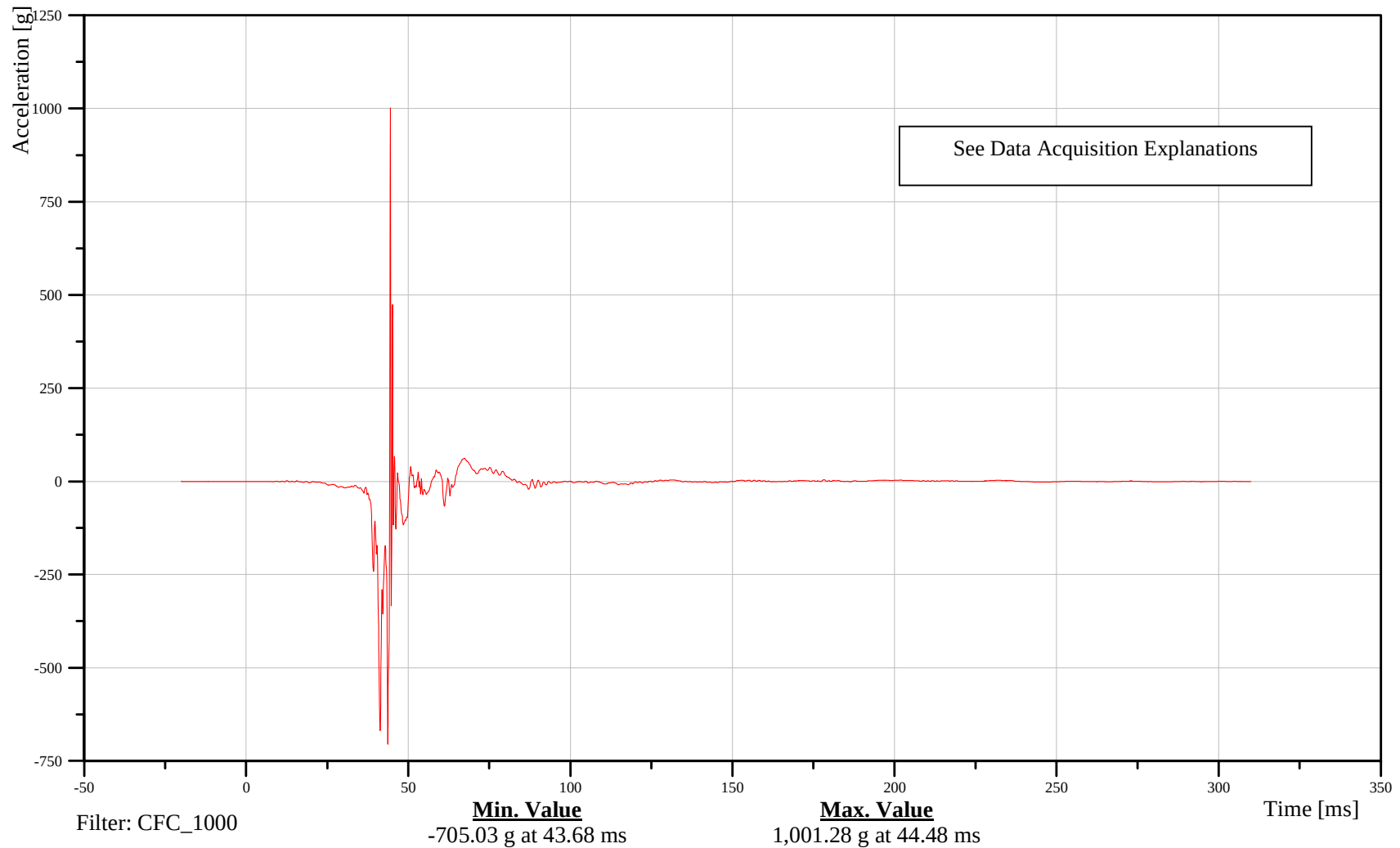
Time: 07:51

Customer: VRTC

13FOOTLEFXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Y

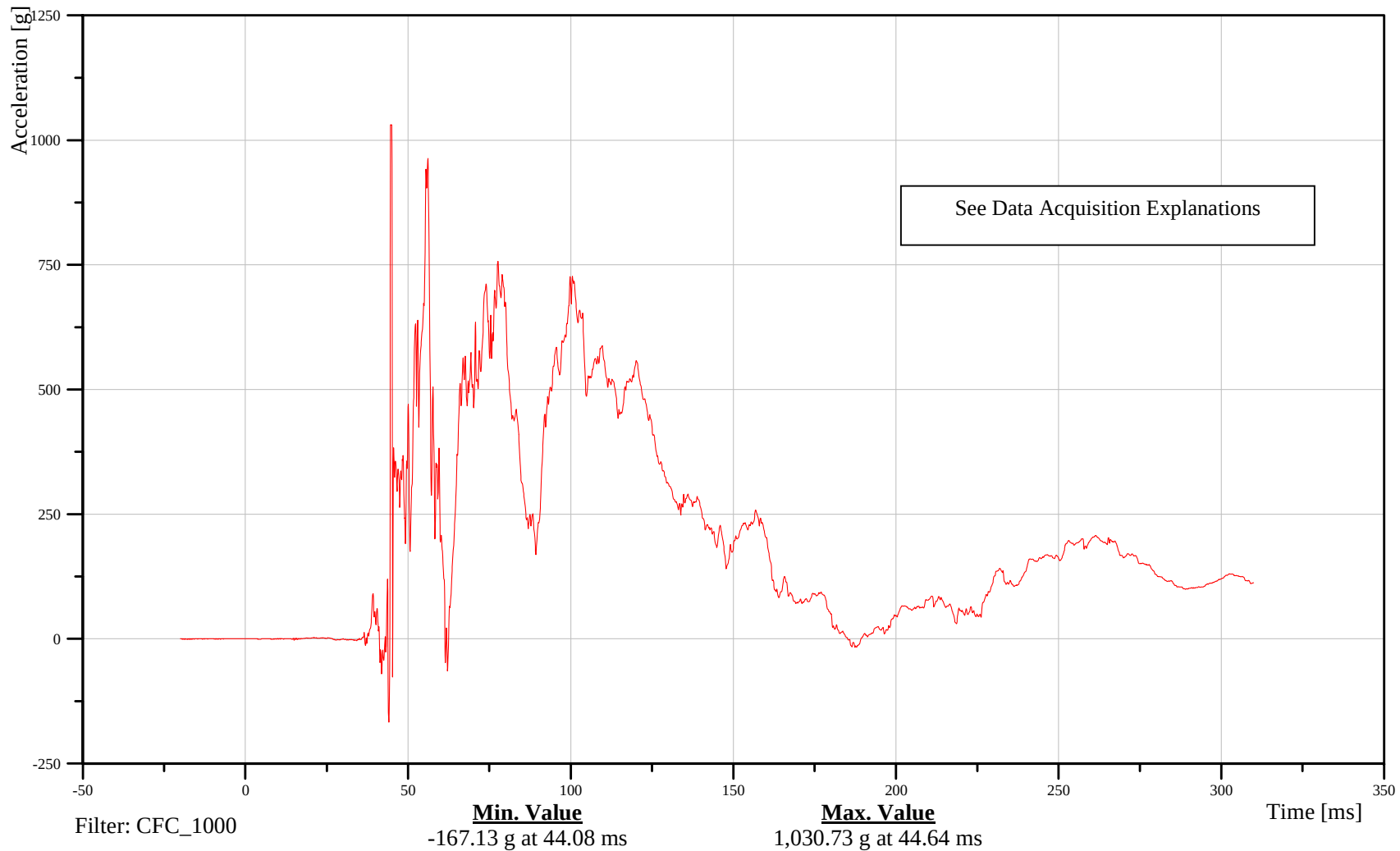
Time: 07:51

Customer: VRTC

13FOOTLEFXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Z

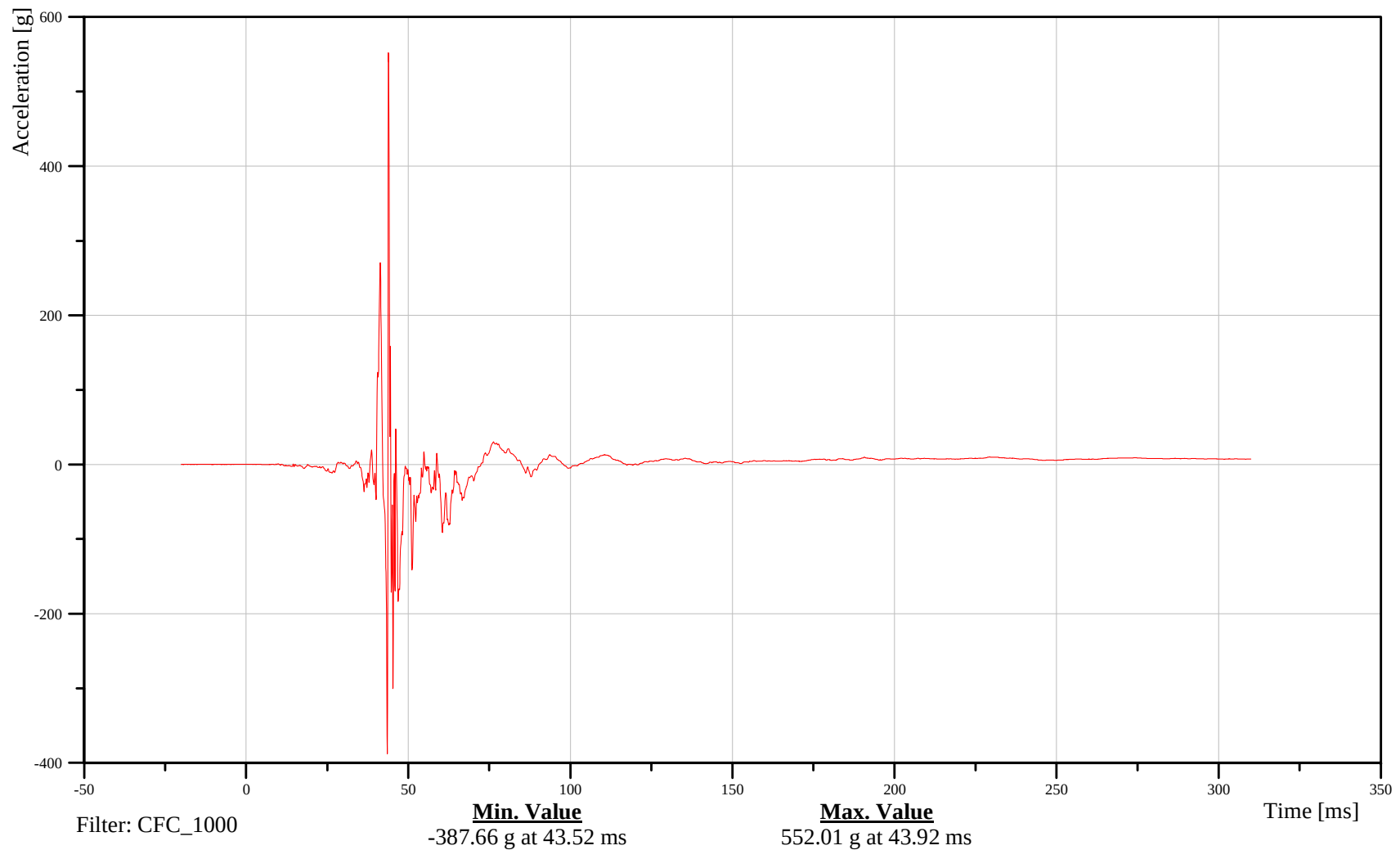
Time: 07:51

Customer: VRTC

13FOOTLEFXHFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Foot Accel Resultant

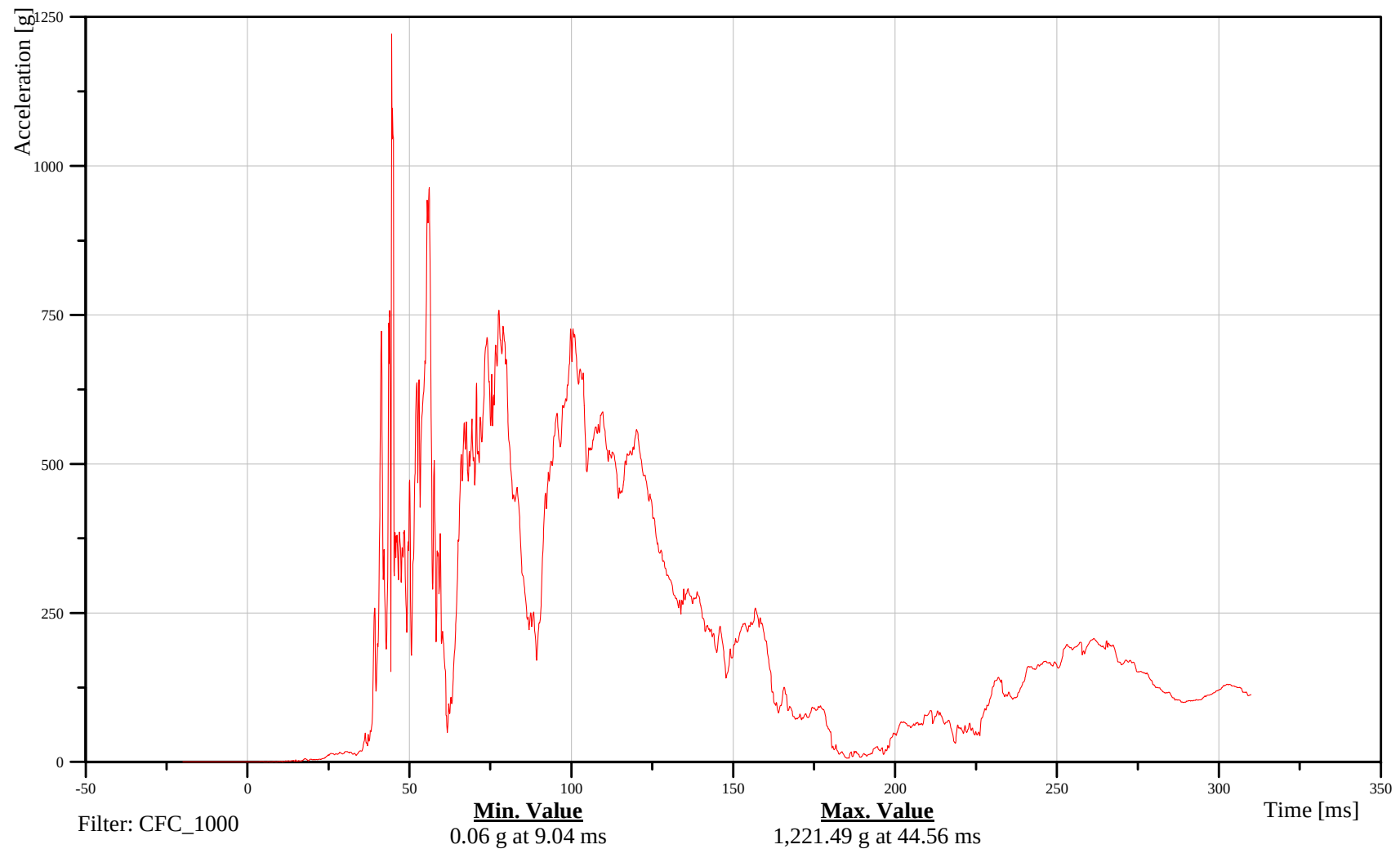
Time: 07:51

Customer: VRTC

13FOOTLEFXHFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

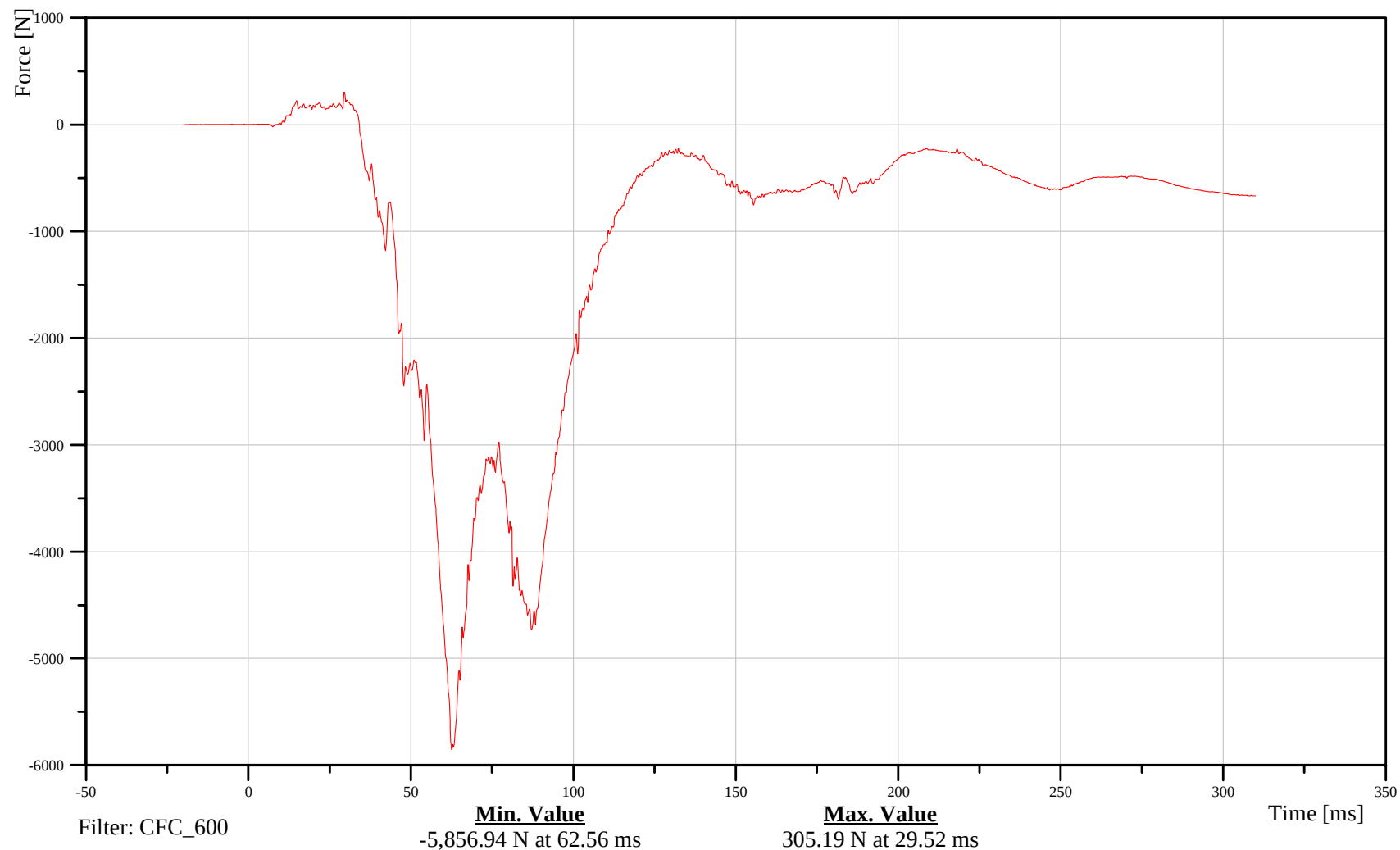
Right Femur Force Z

Customer: VRTC

13FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

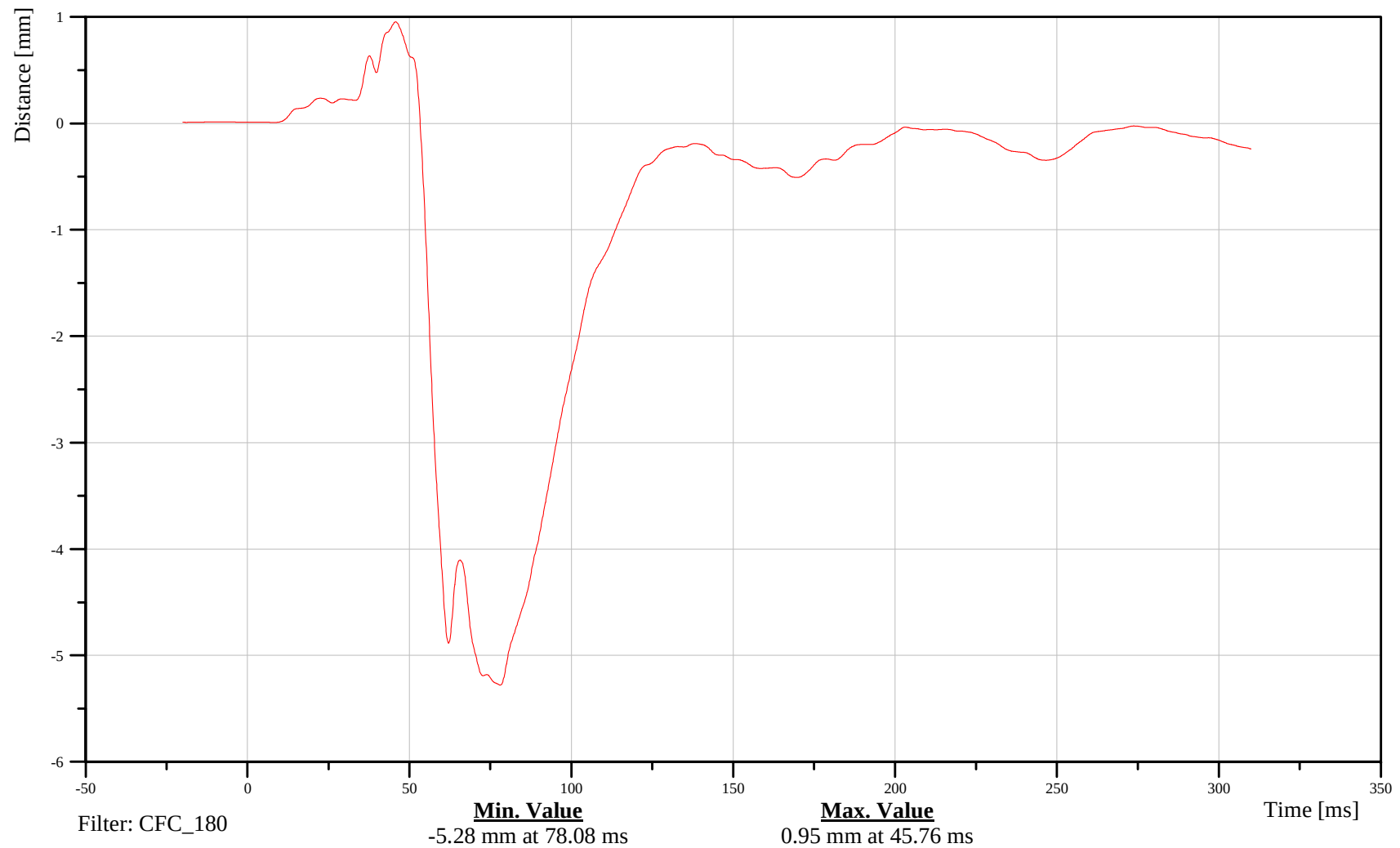
Right Knee Displacement

Customer: VRTC

13KNSLRI00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

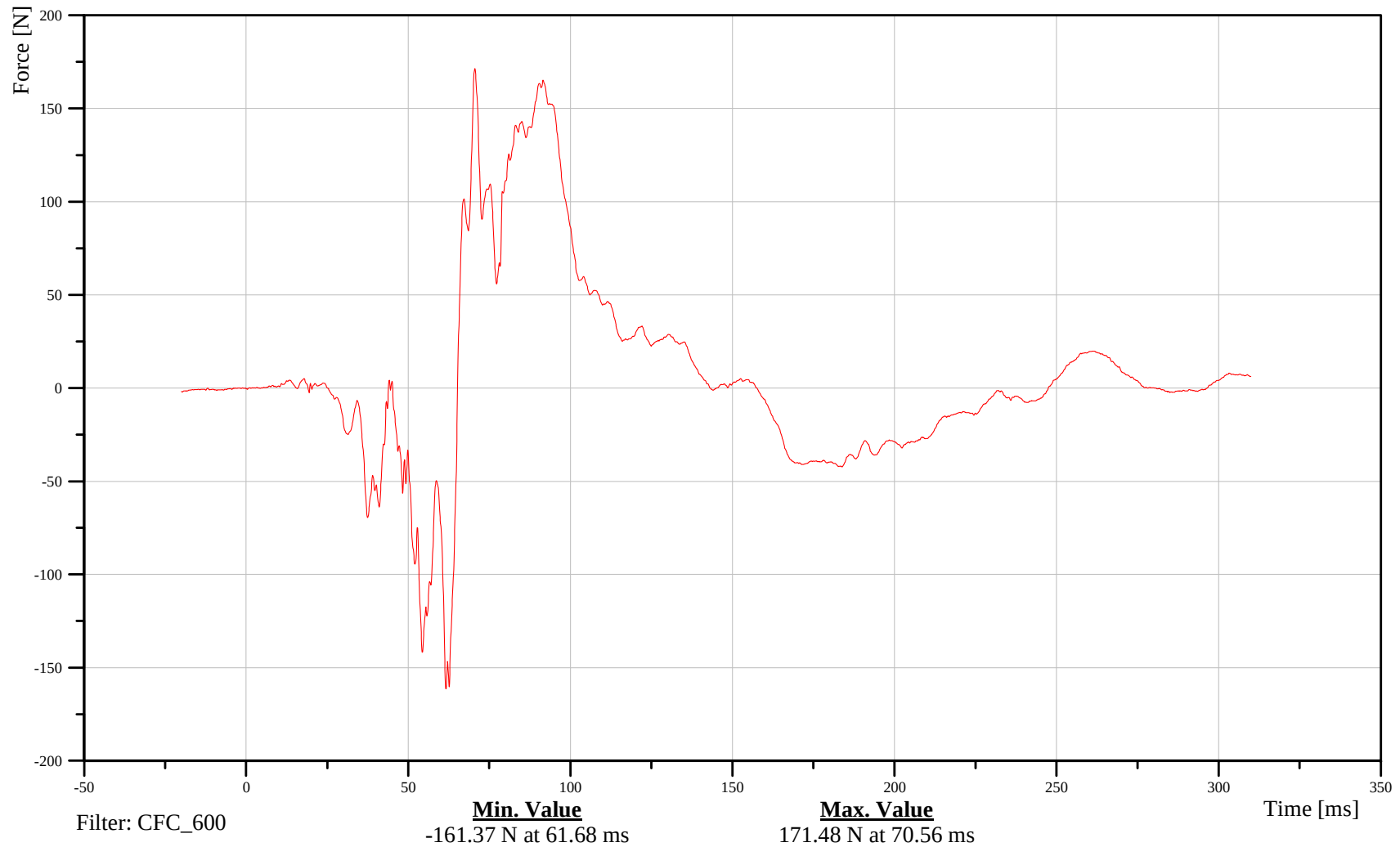
Right Upper Tibia Force X

Customer: VRTC

13TIBIRUFXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

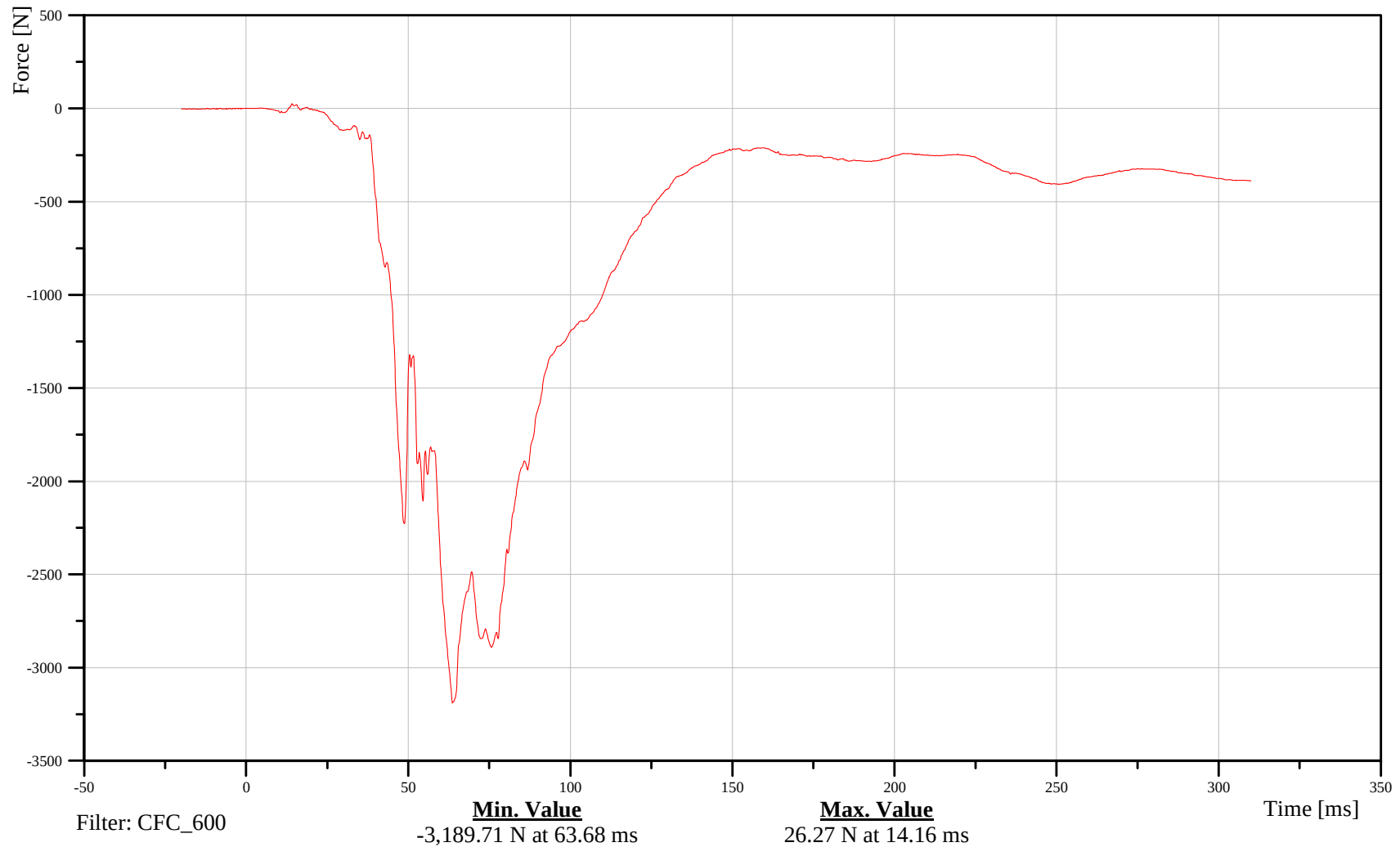
Right Upper Tibia Force Z

Customer: VRTC

13TIBIRUFXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

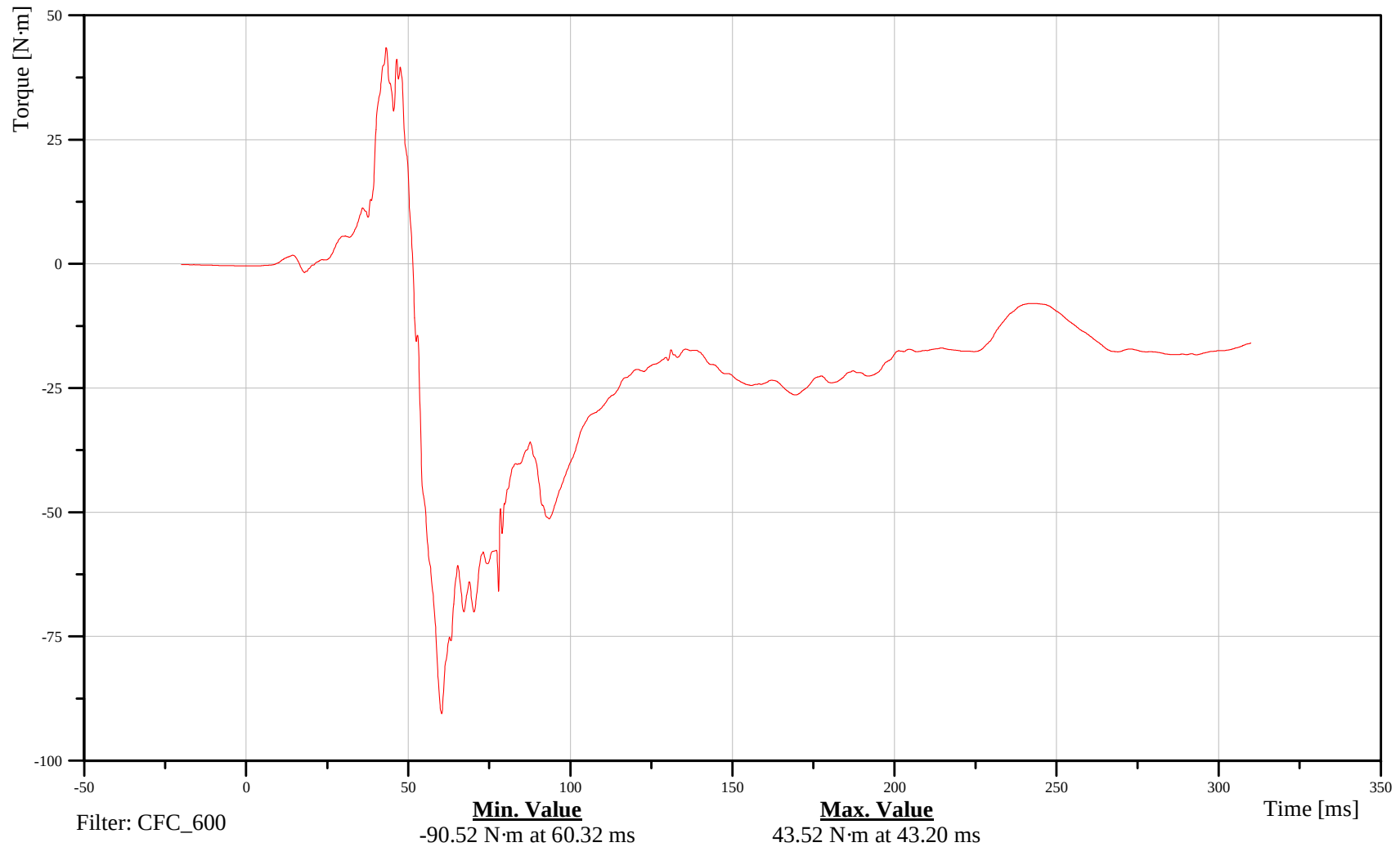
Right Upper Tibia Moment X

Customer: VRTC

13TIBIRUFXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

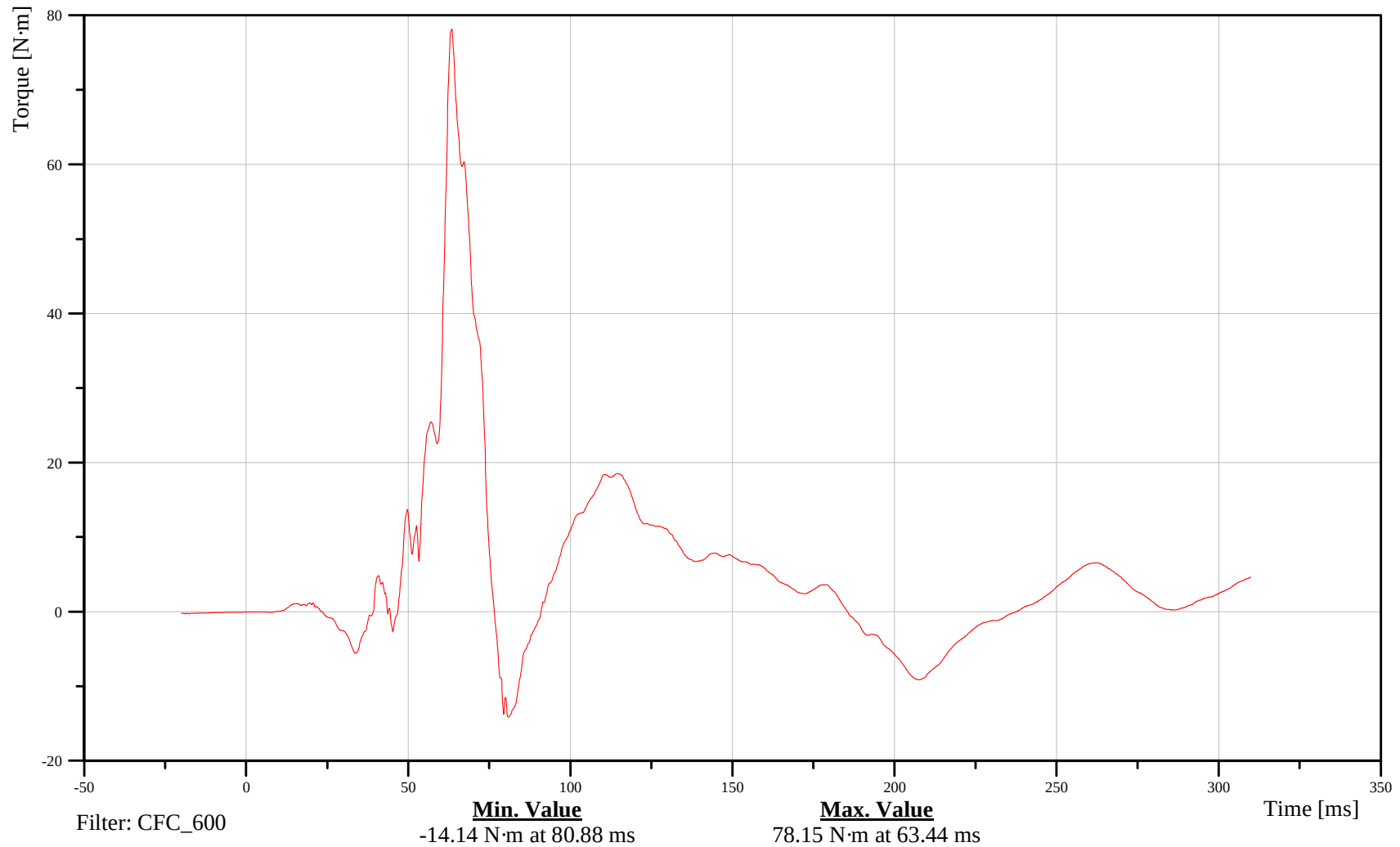
Right Upper Tibia Moment Y

Customer: VRTC

13TIBIRUFXHFM0YB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Tibia Accel X

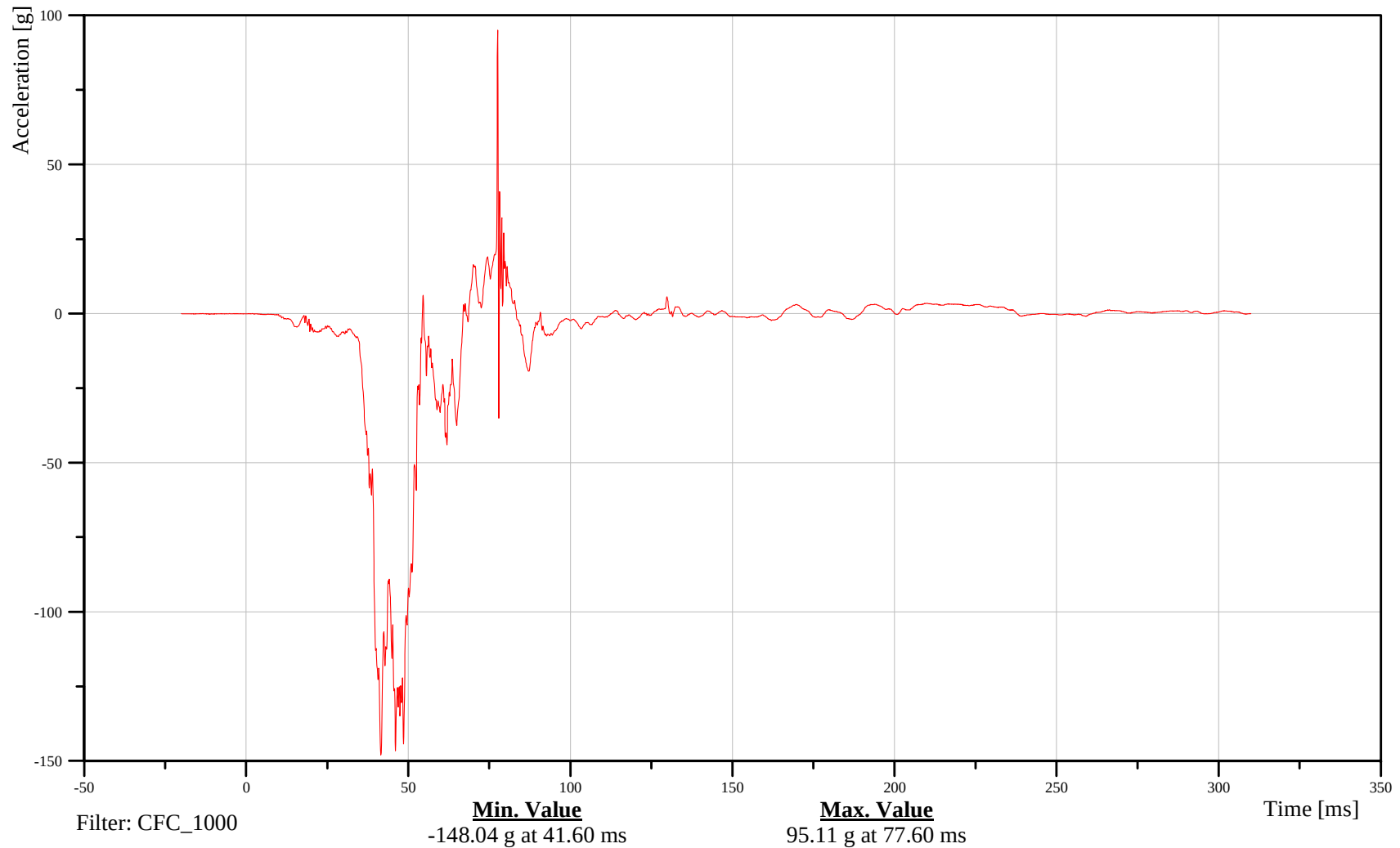
Time: 07:51

Customer: VRTC

13TIBIRIFXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

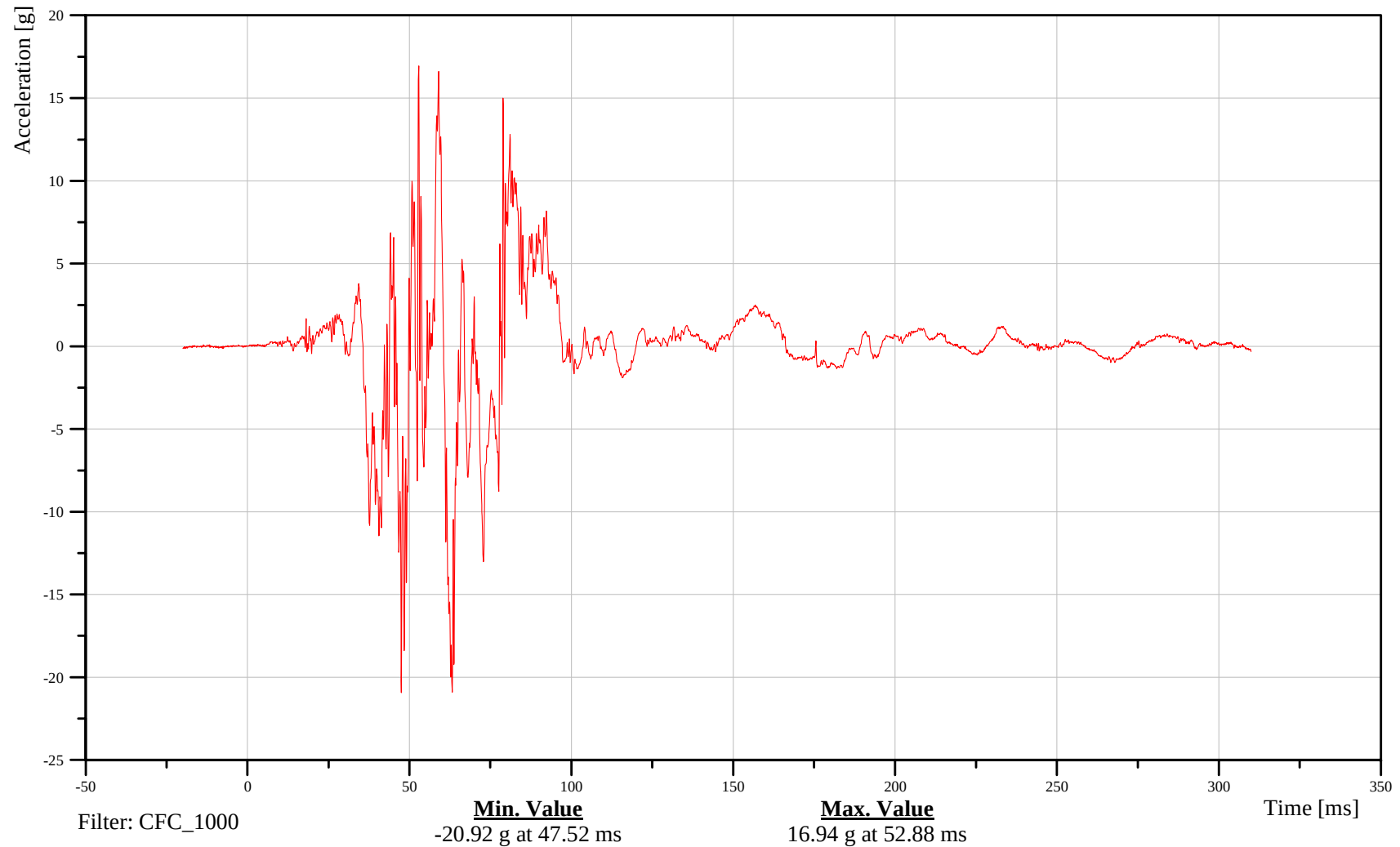
Right Tibia Accel Y

Customer: VRTC

13TIBIRIFXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

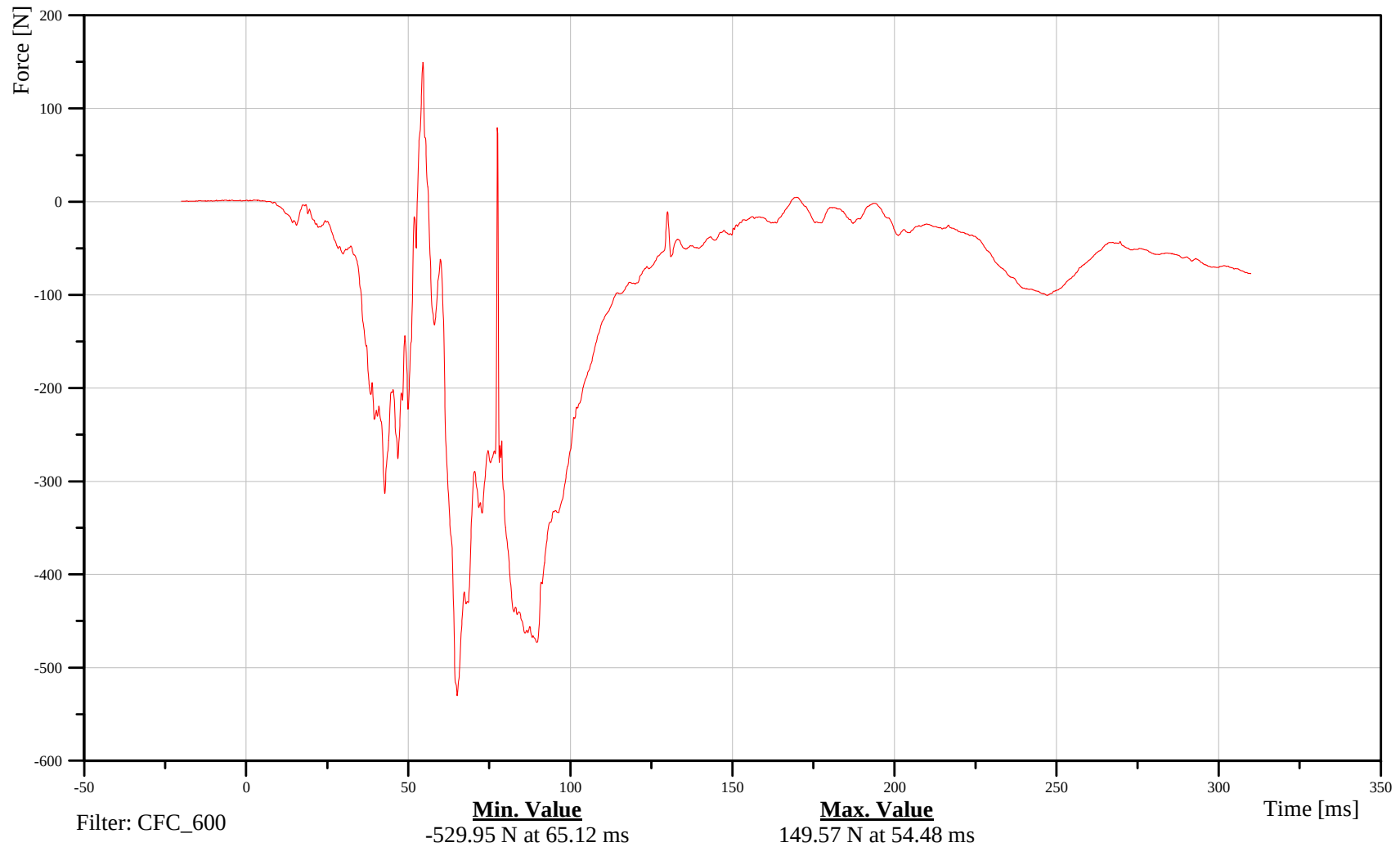
Right Lower Tibia Force X

Customer: VRTC

13TIBIRLFXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

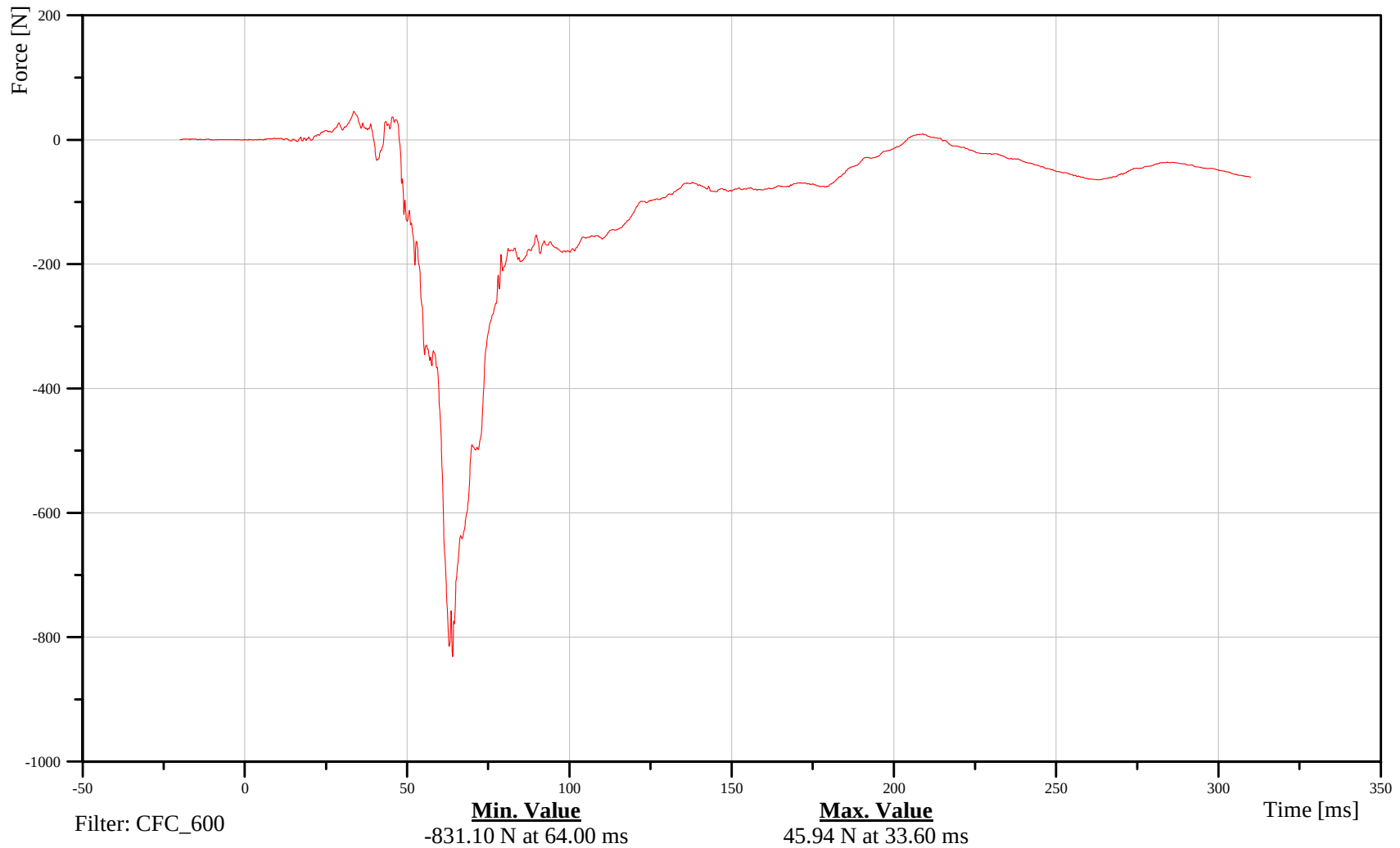
Right Lower Tibia Force Y

Customer: VRTC

13TIBIRLFXHFFOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

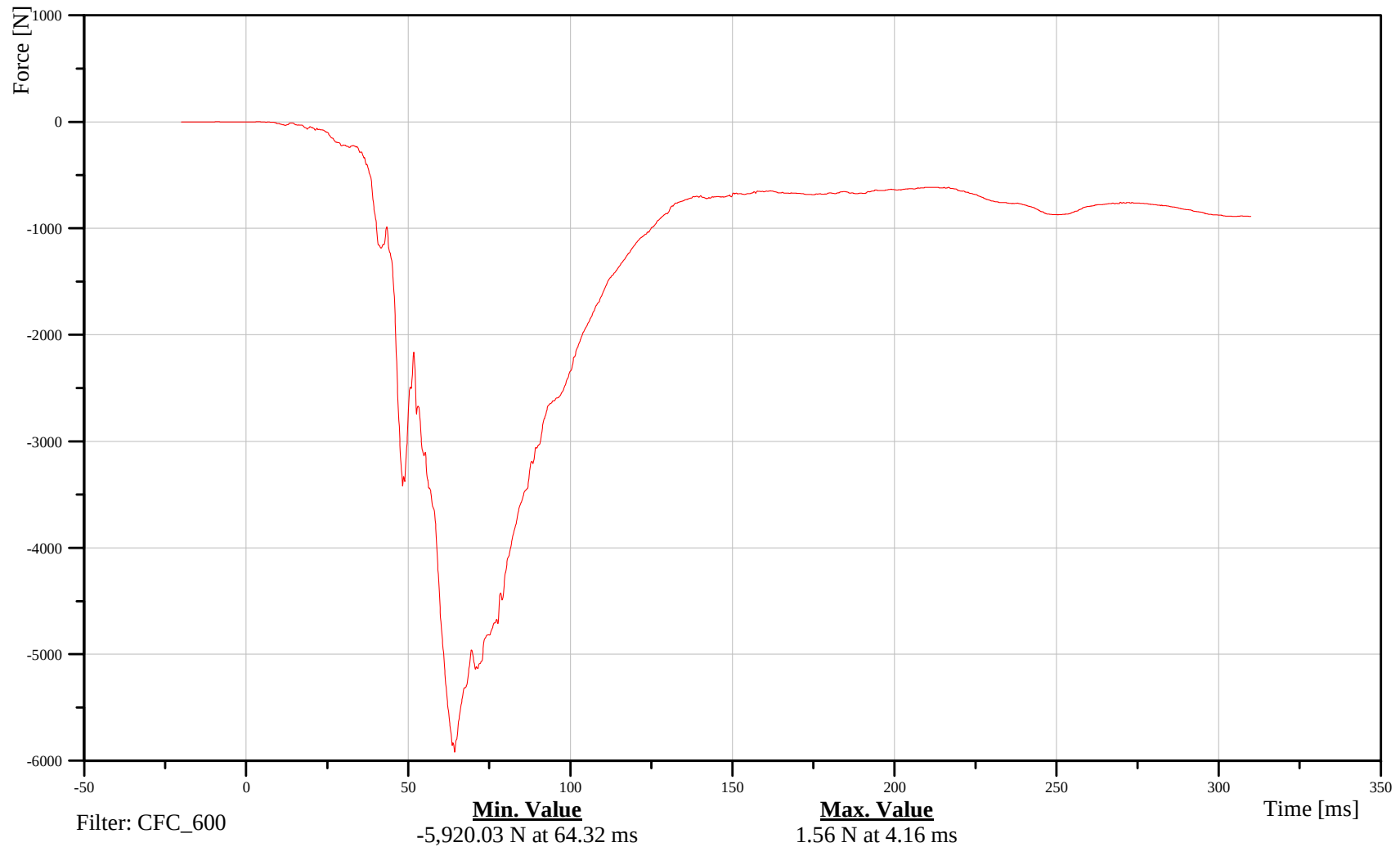
Right Lower Tibia Force Z

Customer: VRTC

13TIBIRLFXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

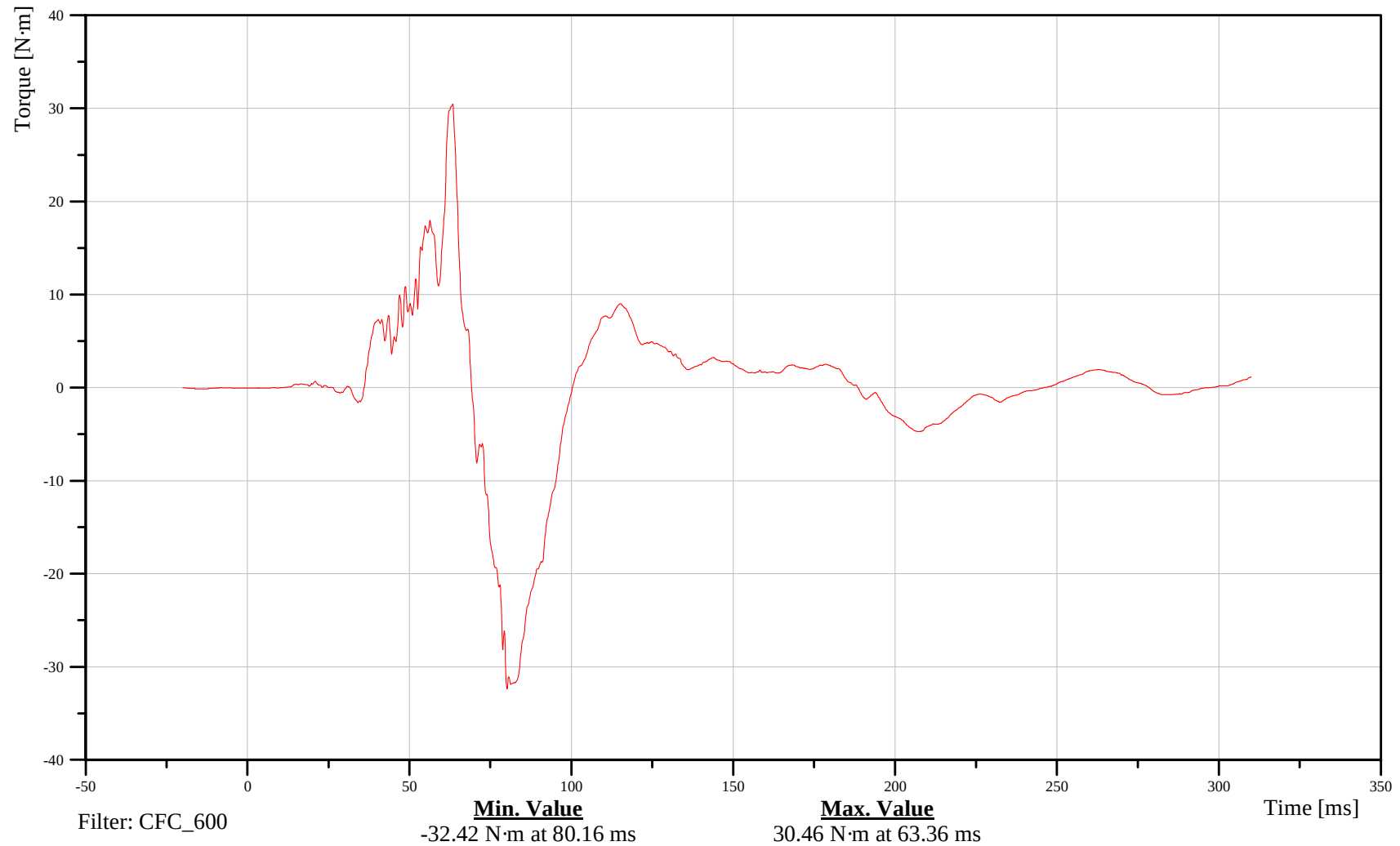
Right Lower Tibia Moment X

Customer: VRTC

13TIBIRLFXHFMOXB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

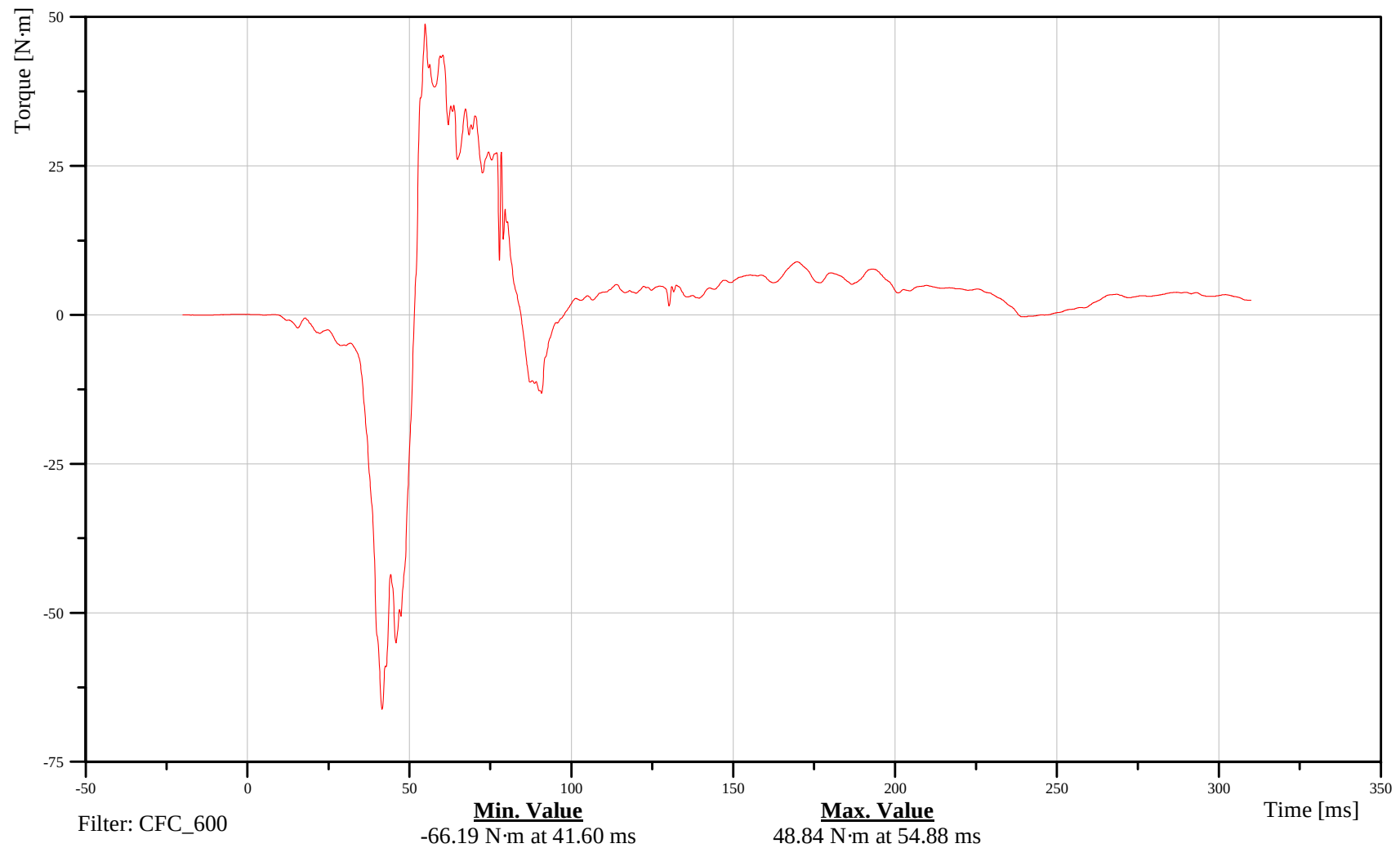
Right Lower Tibia Moment Y

Customer: VRTC

13TIBIRLFXHFMOYB

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Disp. X FLX101X

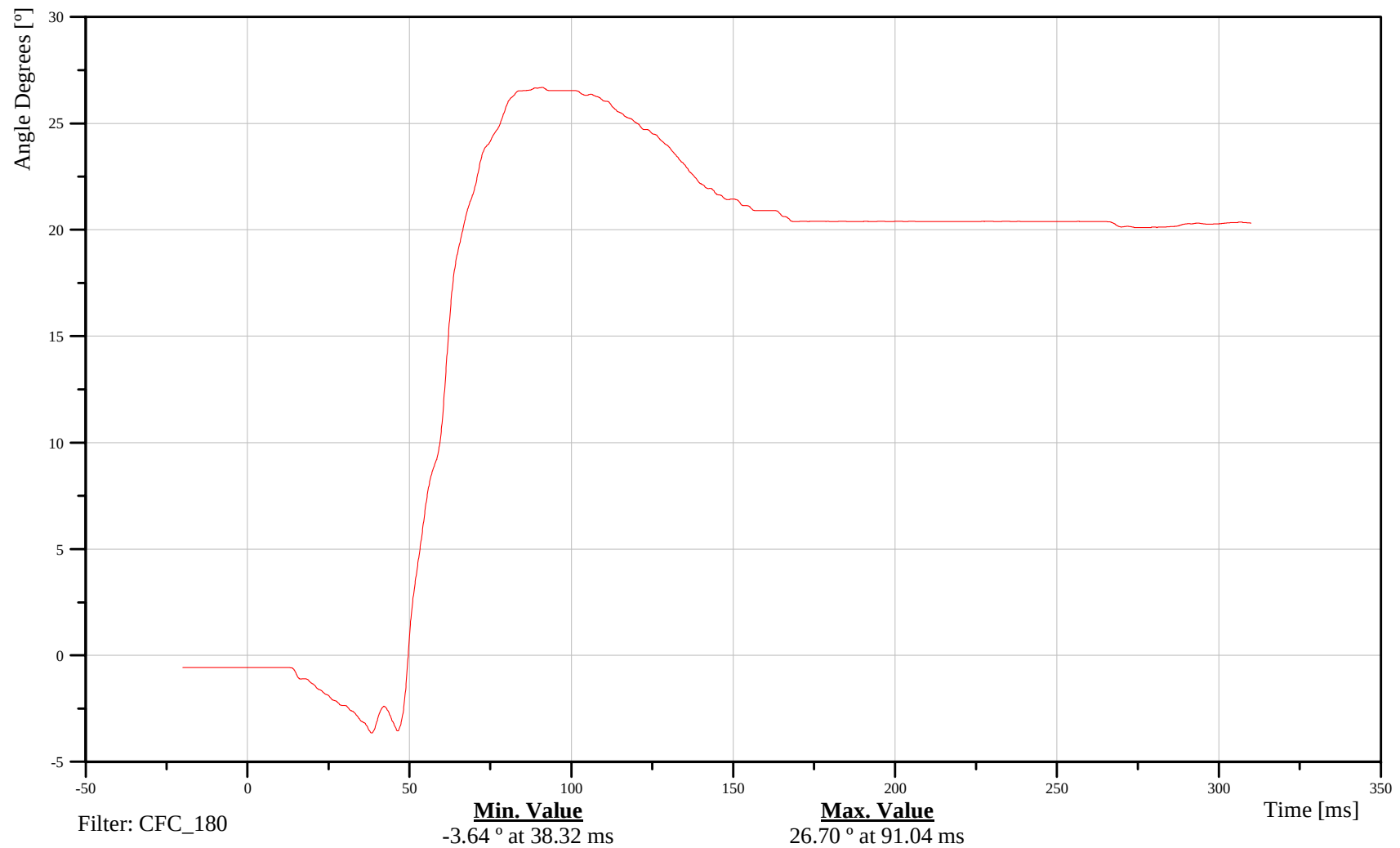
Time: 07:51

Customer: VRTC

13FOOTRIFXHFANXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

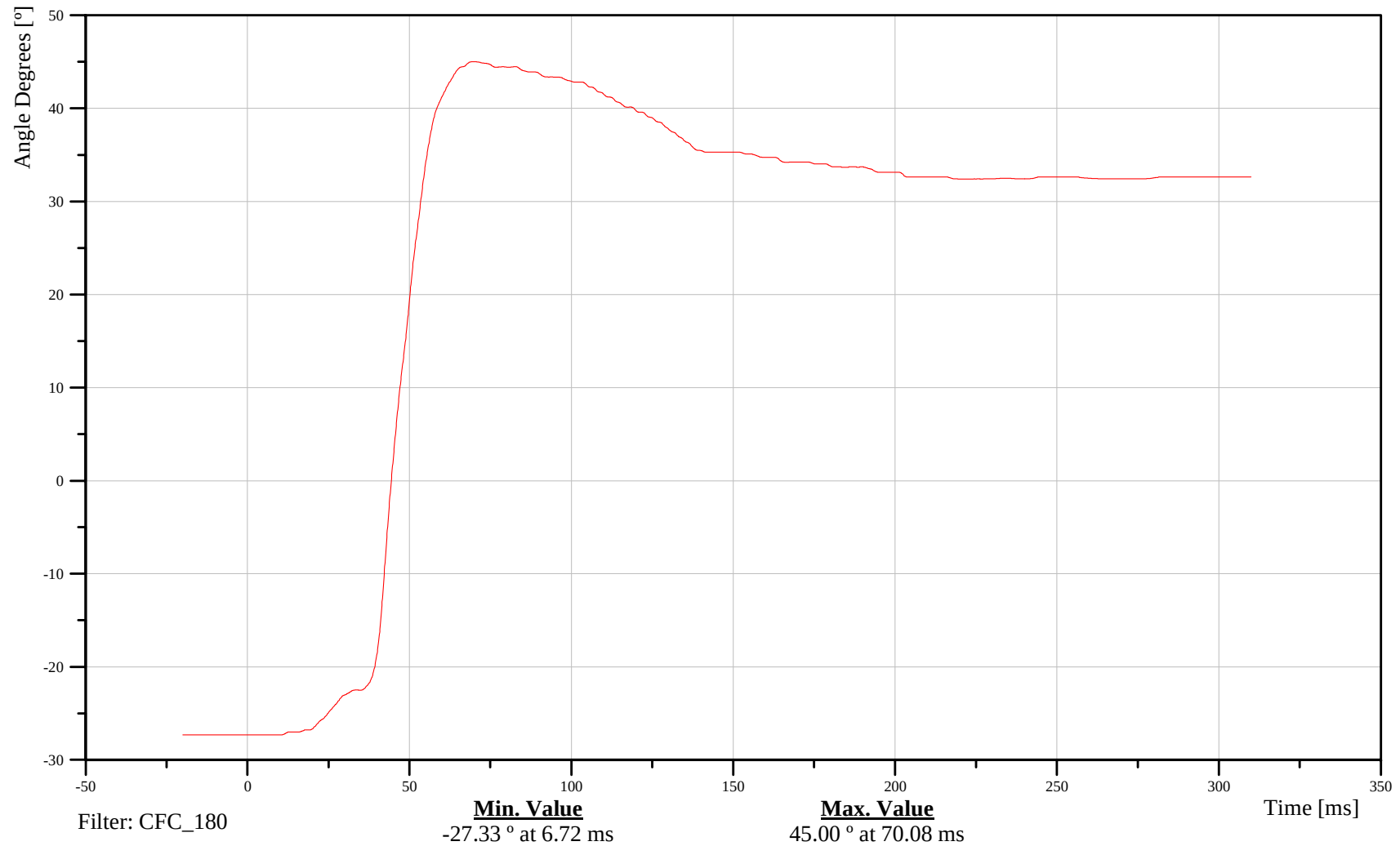
Right Foot Disp. Y FLX101Y

Customer: VRTC

13FOOTRIFXHFANYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Disp. Z FLX101Z

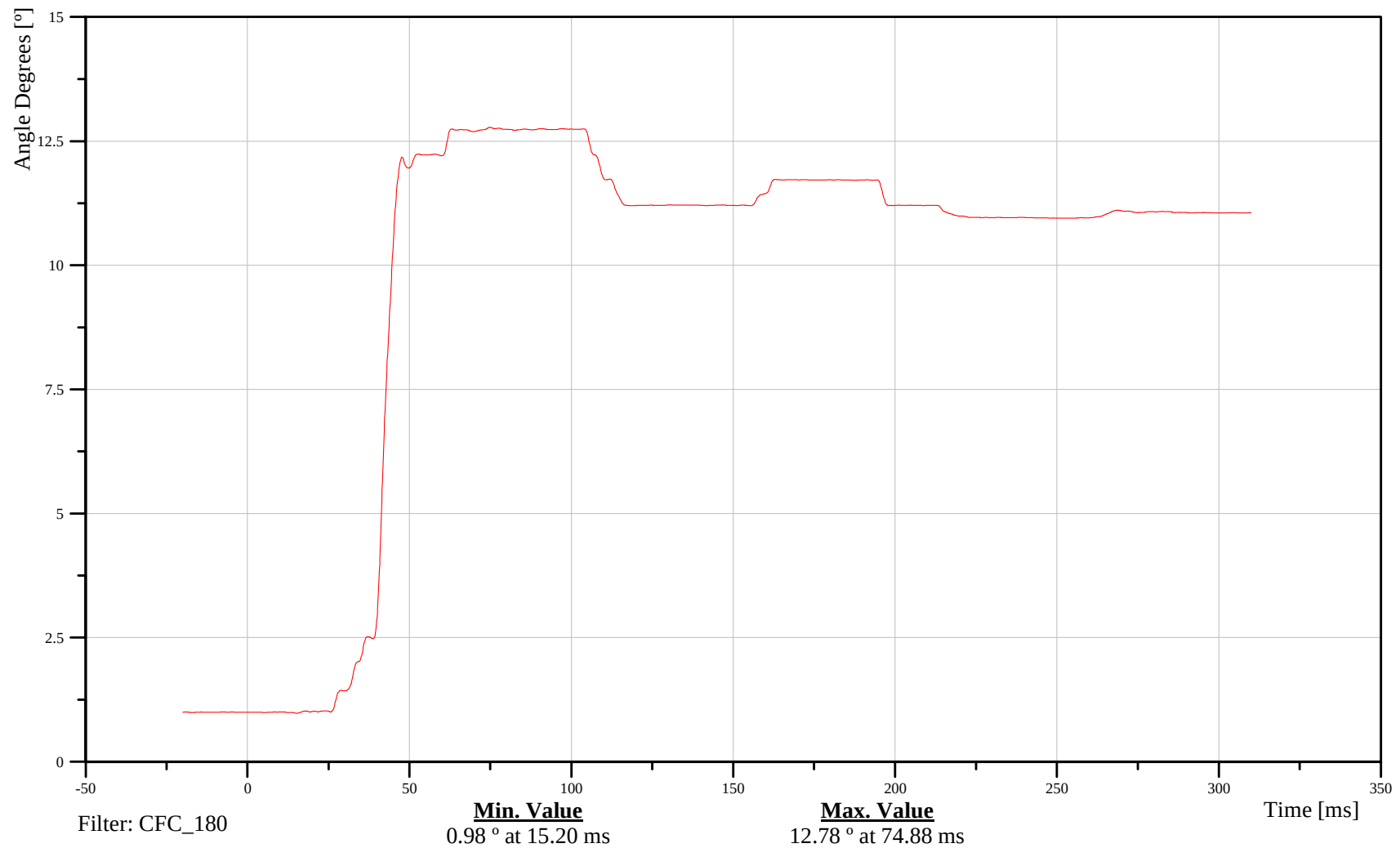
Time: 07:51

Customer: VRTC

13FOOTRIFXHFANZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Accel X

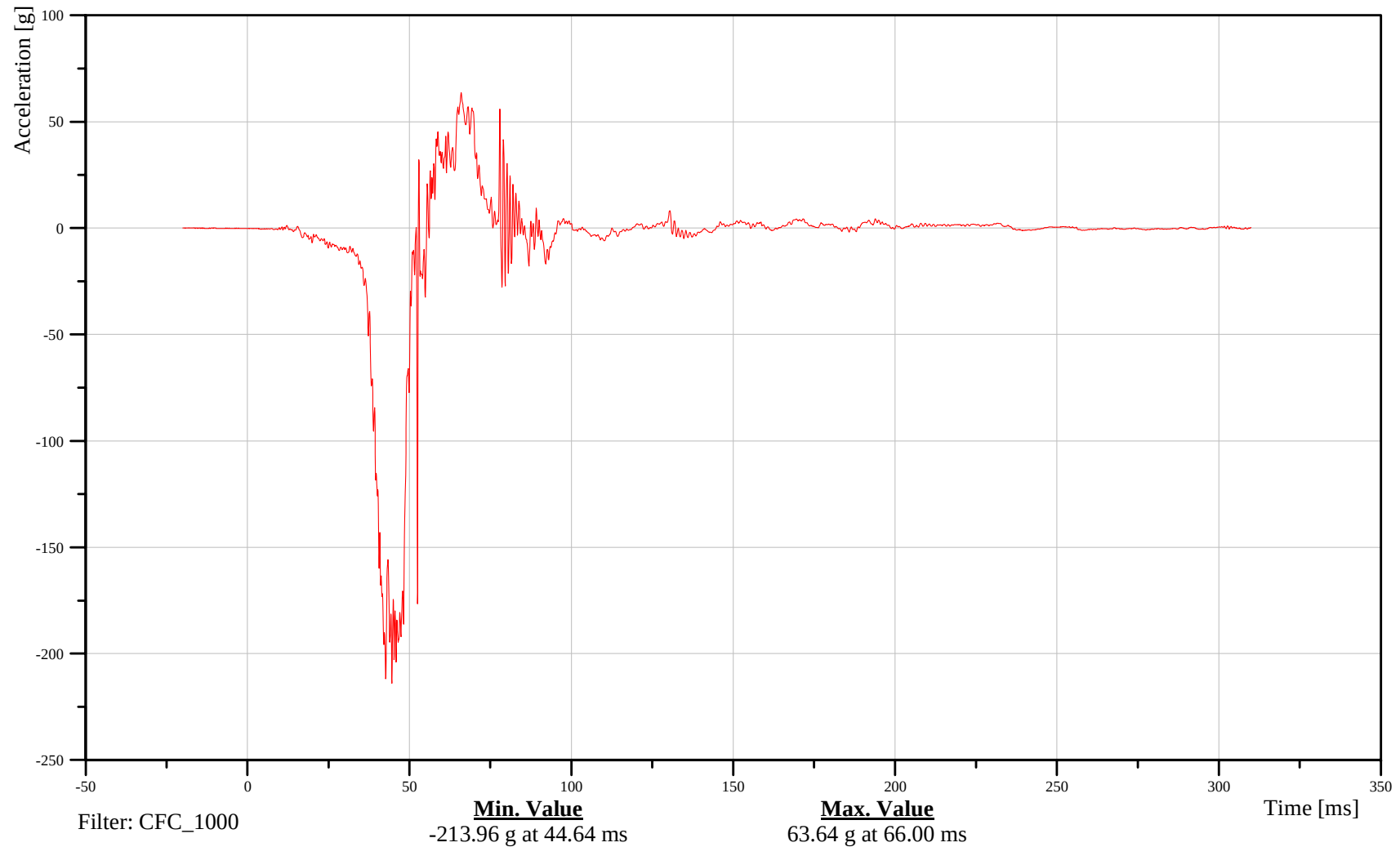
Time: 07:51

Customer: VRTC

13FOOTRIFXHFACXA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

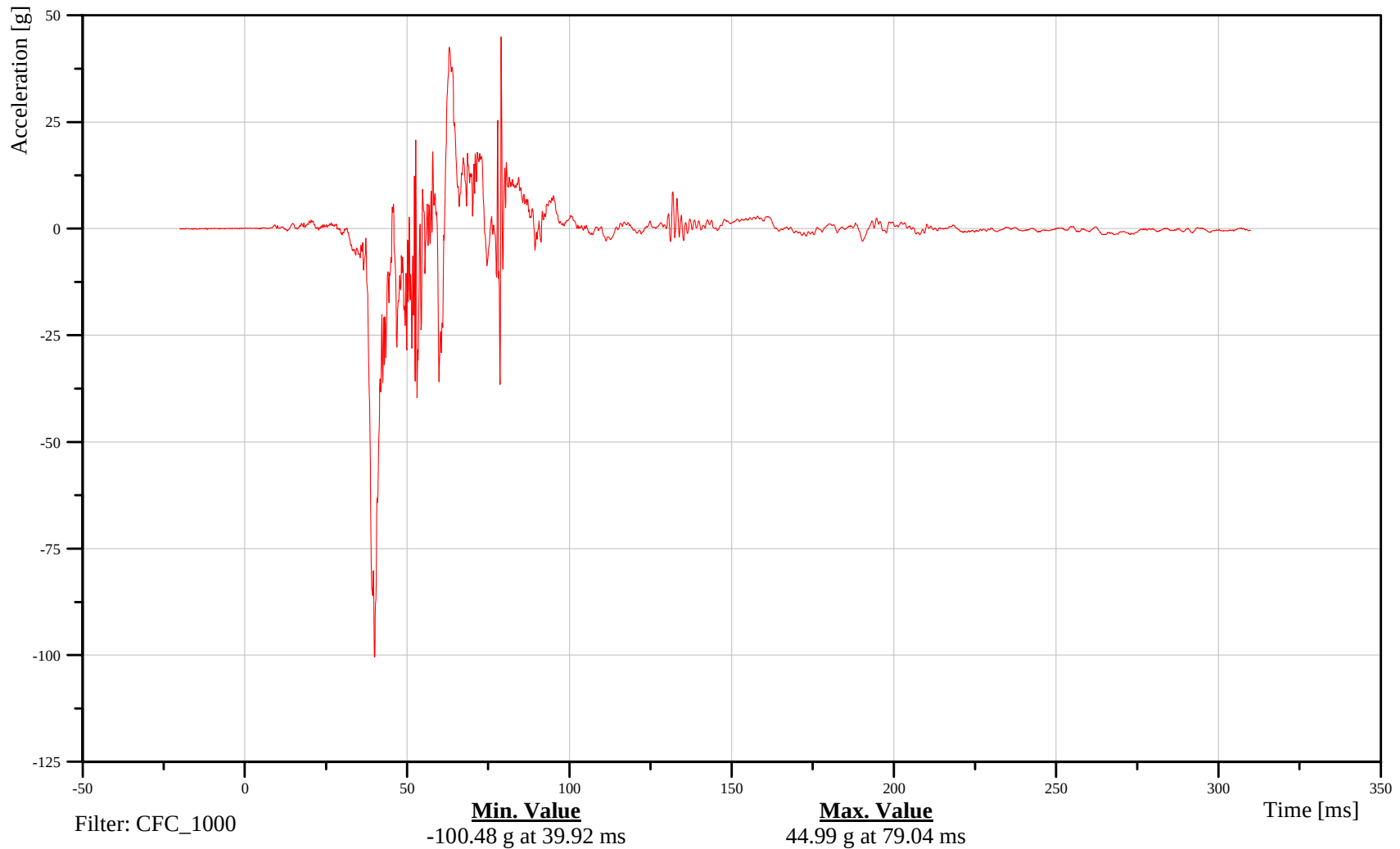
Right Foot Accel Y

Customer: VRTC

13FOOTRIFXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Right Foot Accel Z

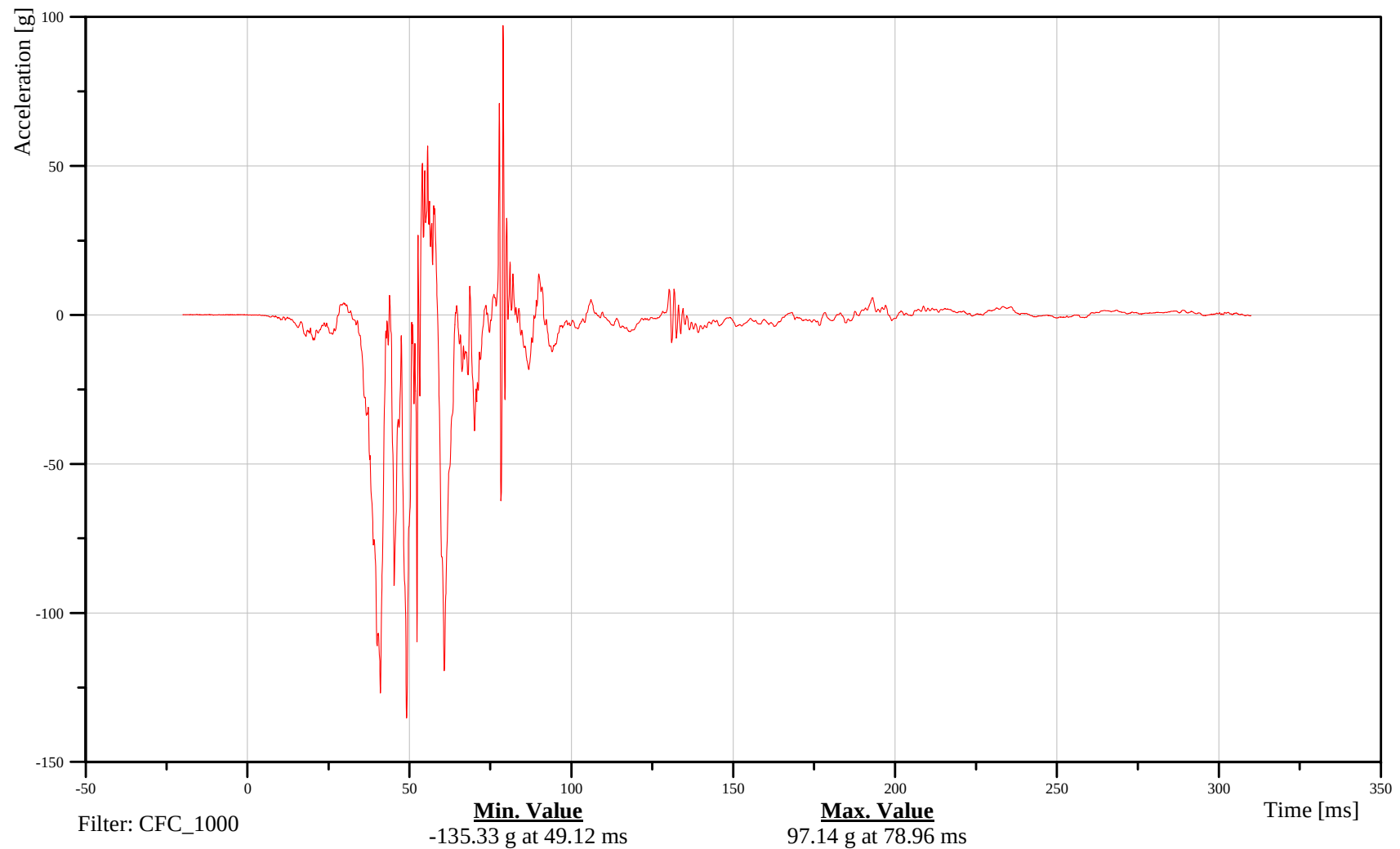
Time: 07:51

Customer: VRTC

13FOOTRIFXHFACZA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

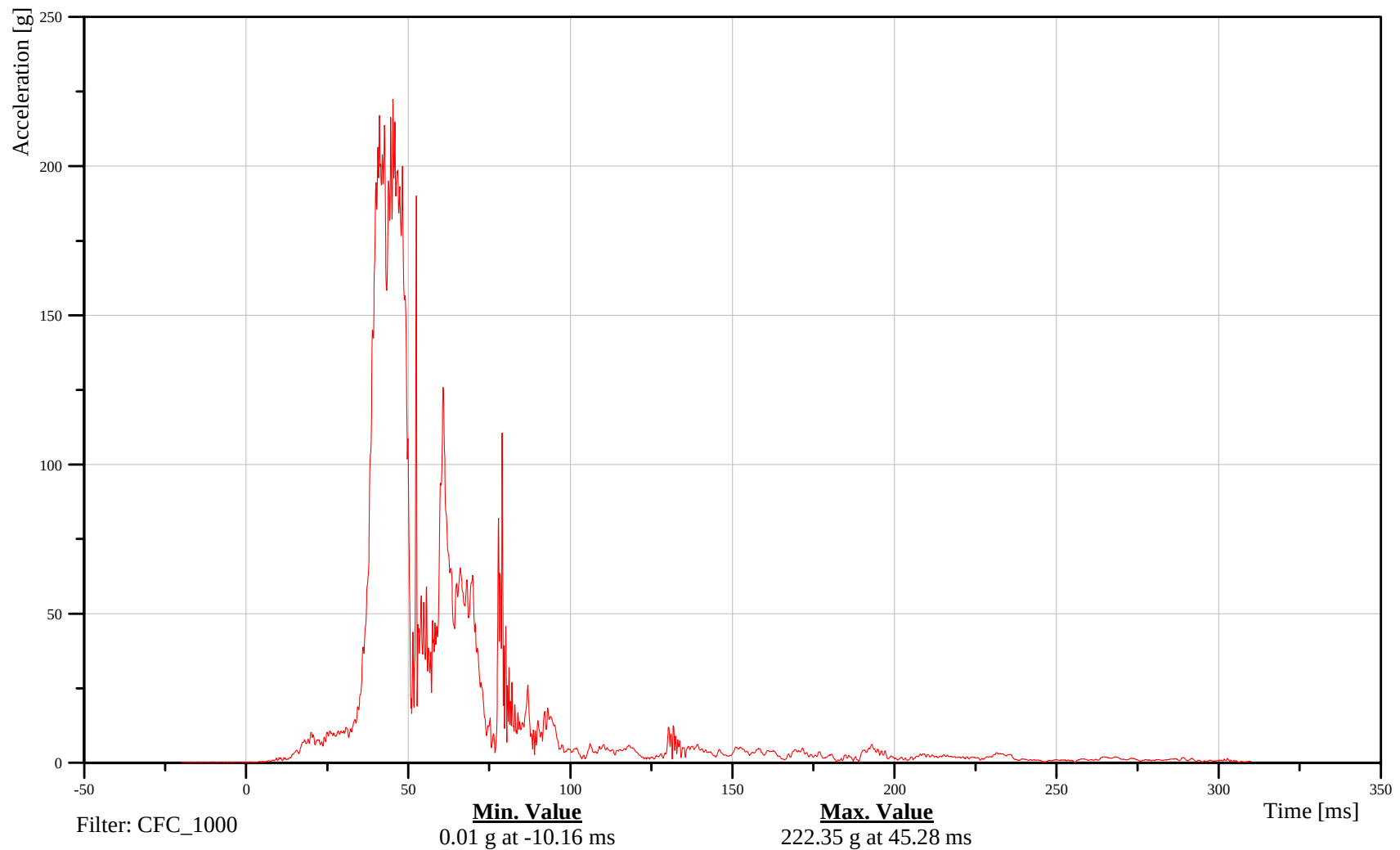
Right Foot Accel Resultant

Customer: VRTC

13FOOTRIFXHFACRA

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Rear Seat Crossmember X-axis Acceleration

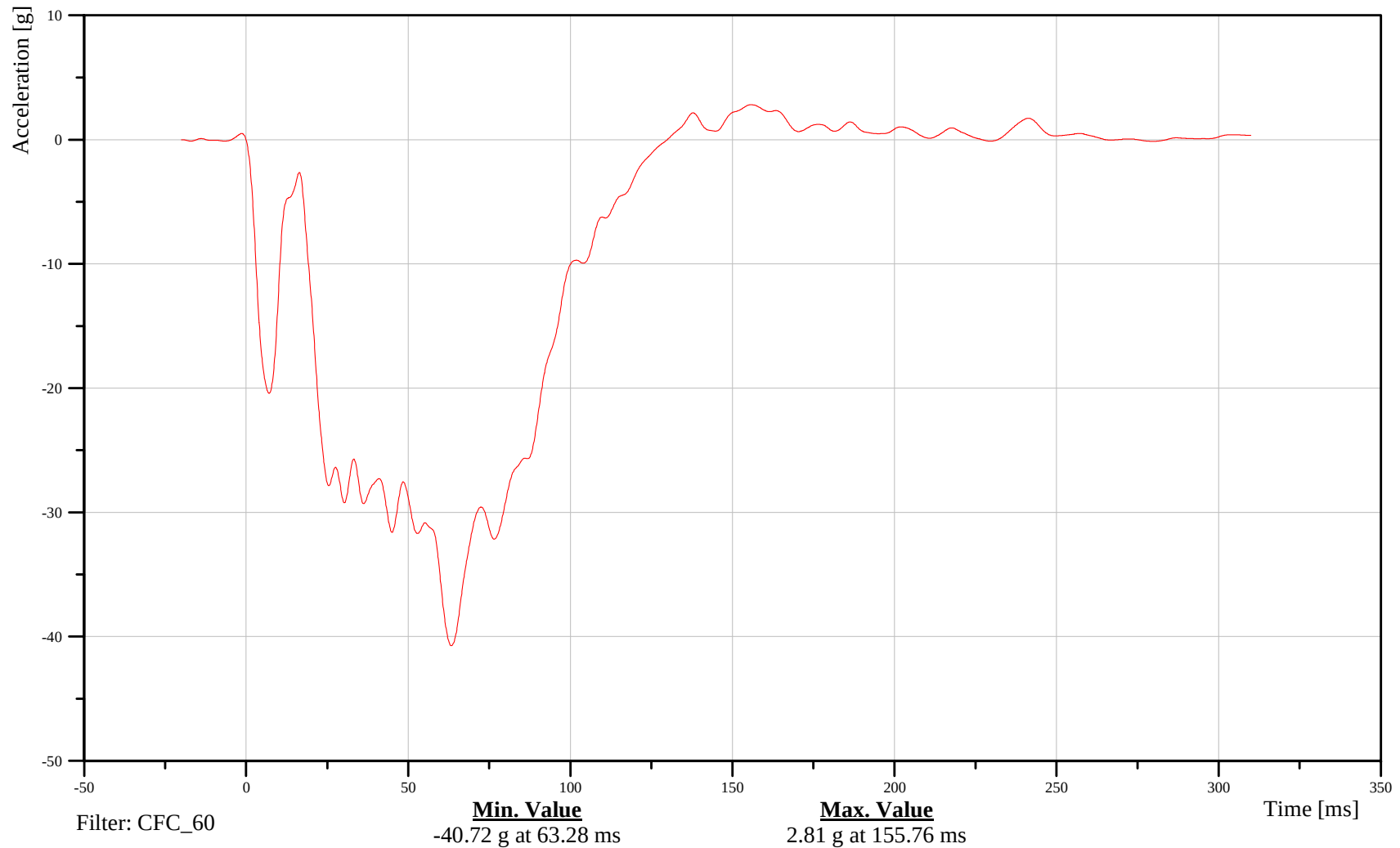
Time: 07:51

Customer: VRTC

14CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

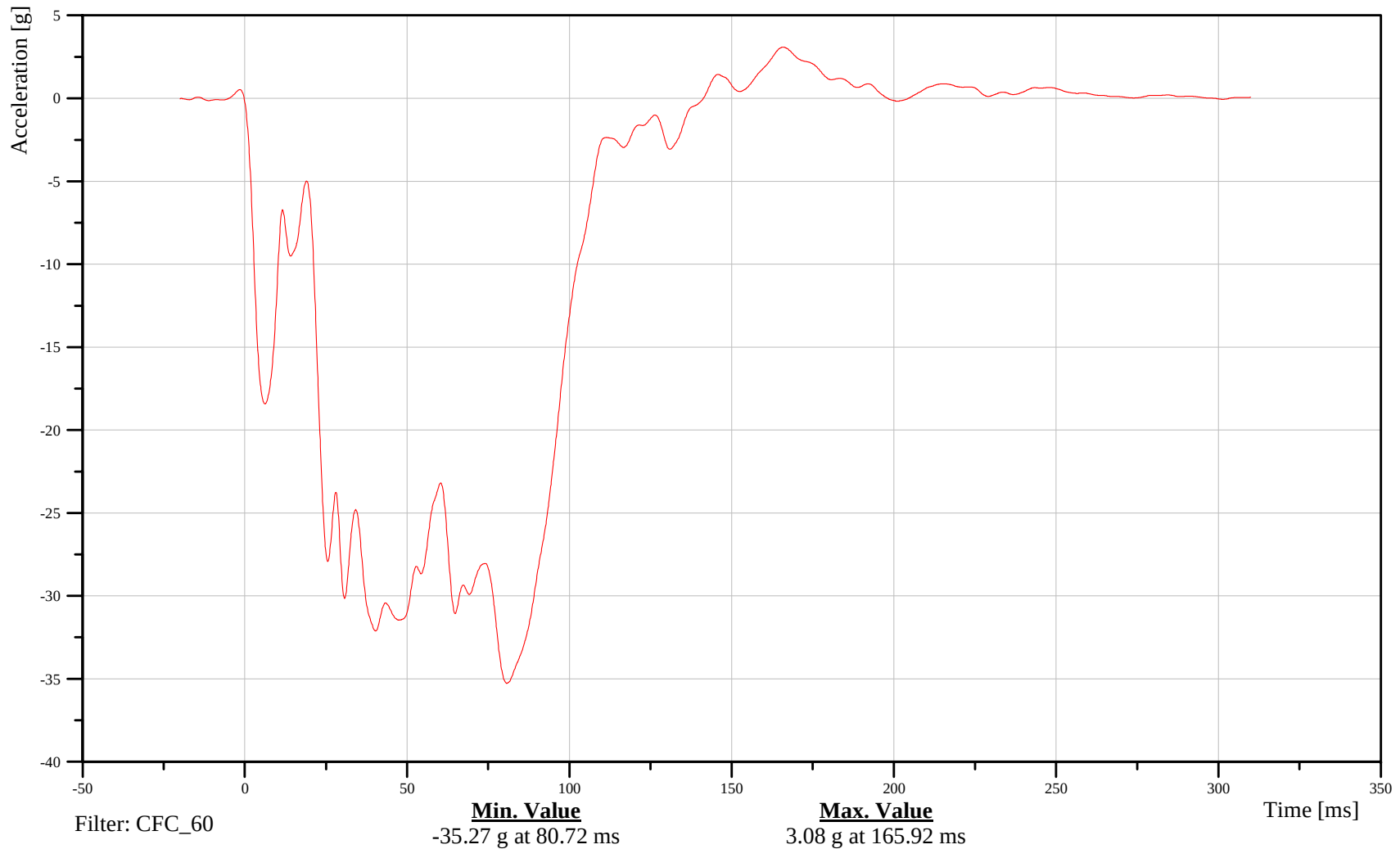
Right Rear Seat Crossmember X-axis Acceleration

Customer: VRTC

16CRME000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

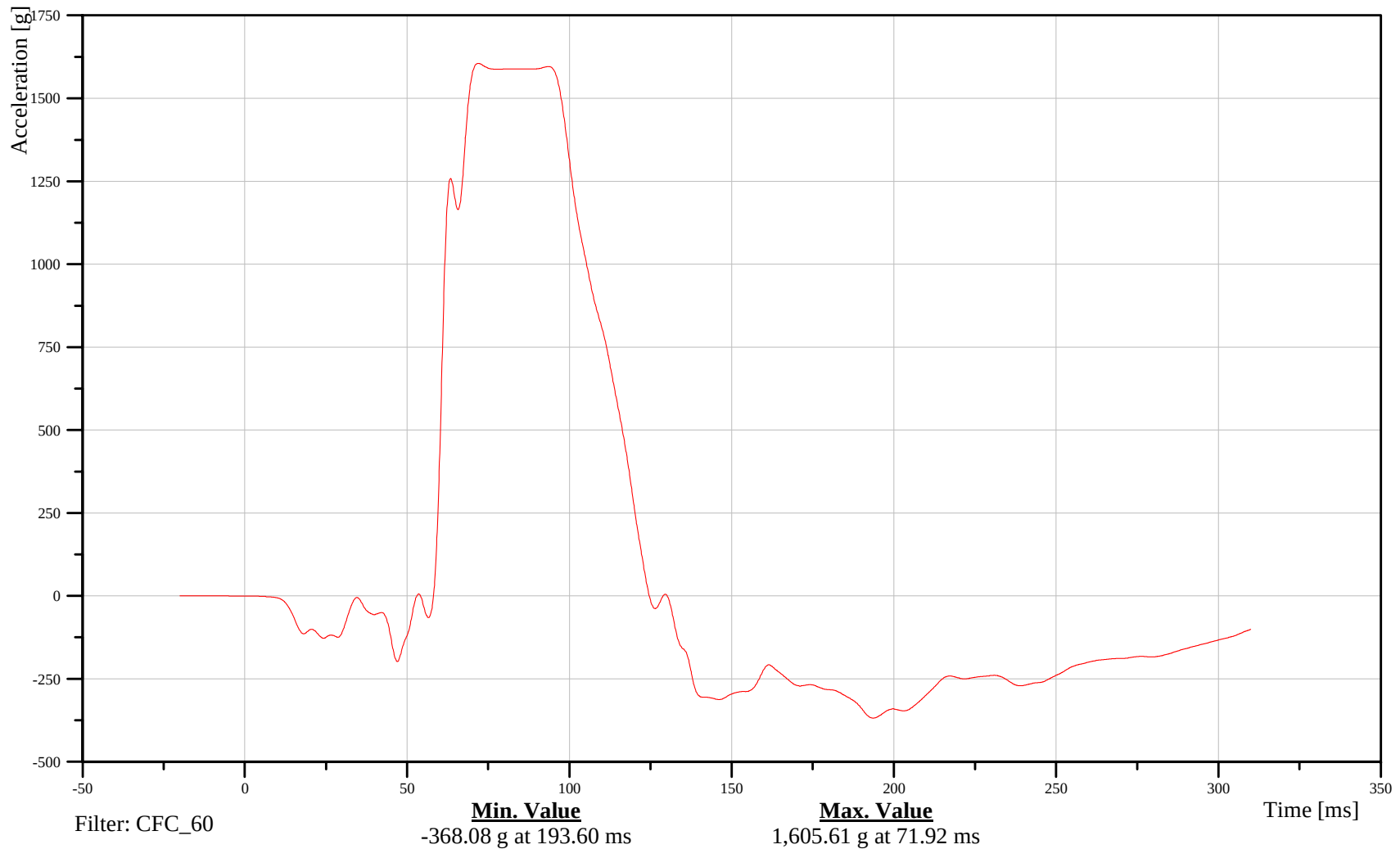
Top of Engine X-axis Acceleration

Customer: VRTC

12ENGNTTP0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

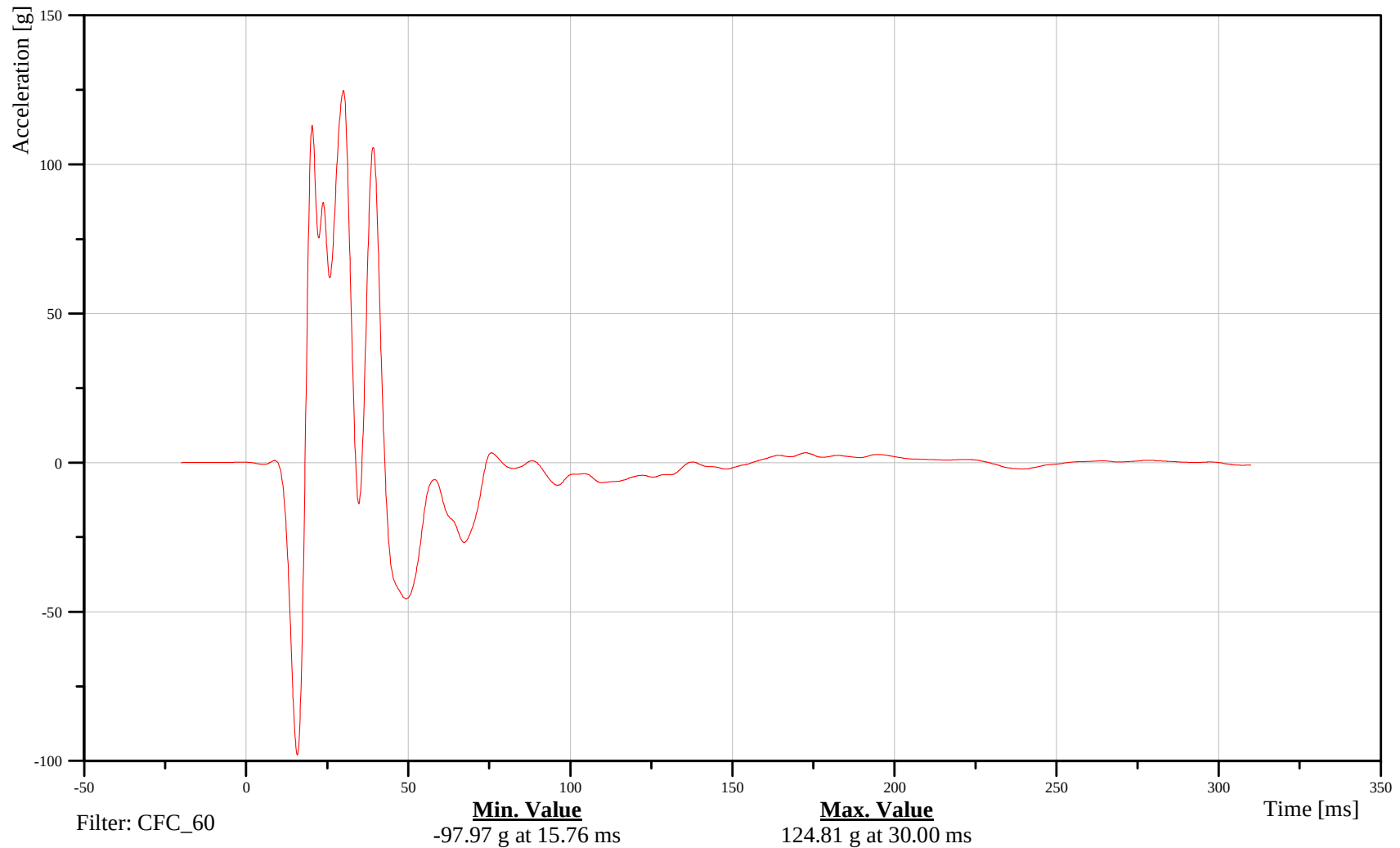
Bottom of Engine X-axis Acceleration

Customer: VRTC

12ENGNBO0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

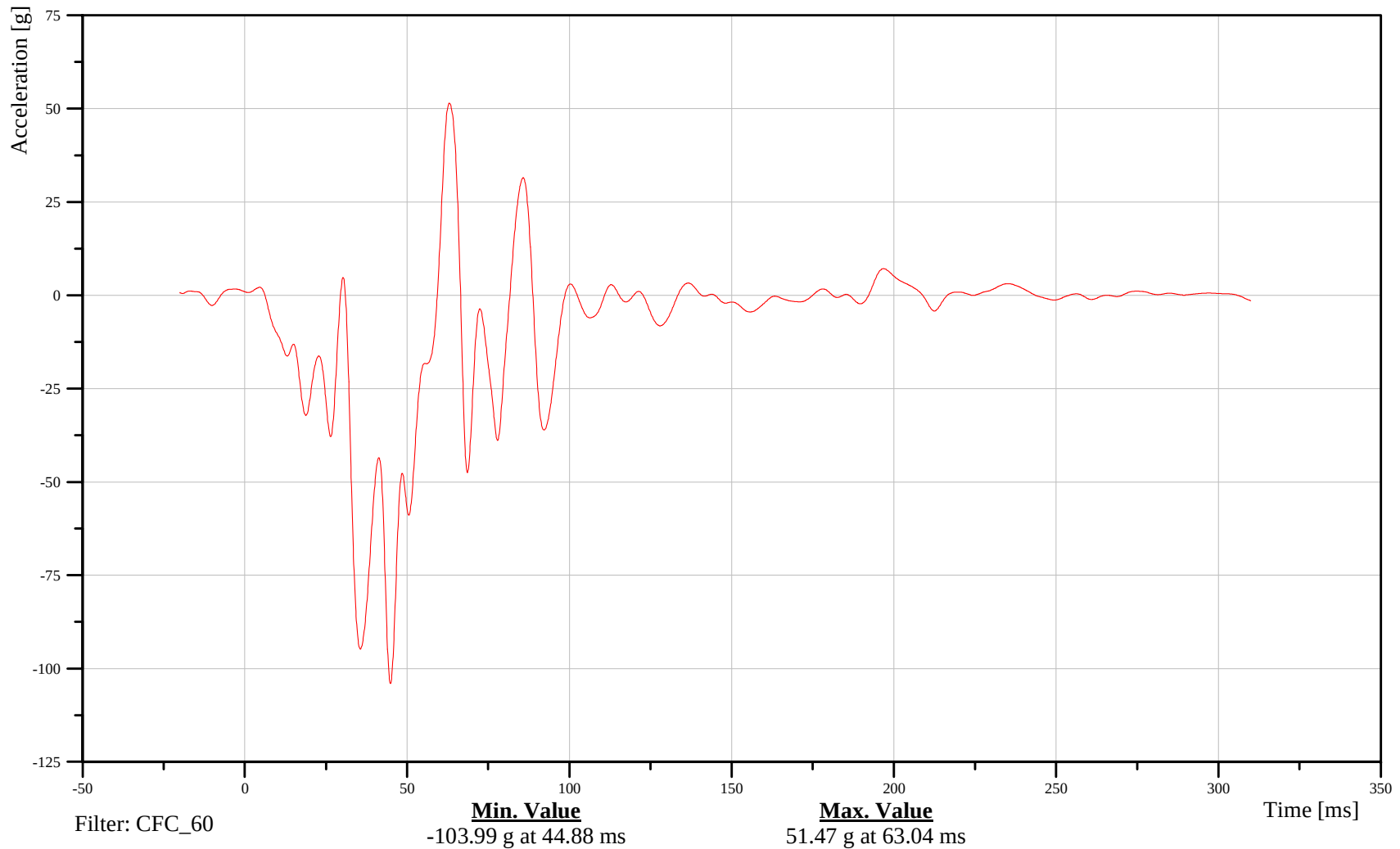
Right Front Brake Caliper X-axis Acceleration

Customer: VRTC

13VEHCRI0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Left Front Brake Caliper X-axis Acceleration

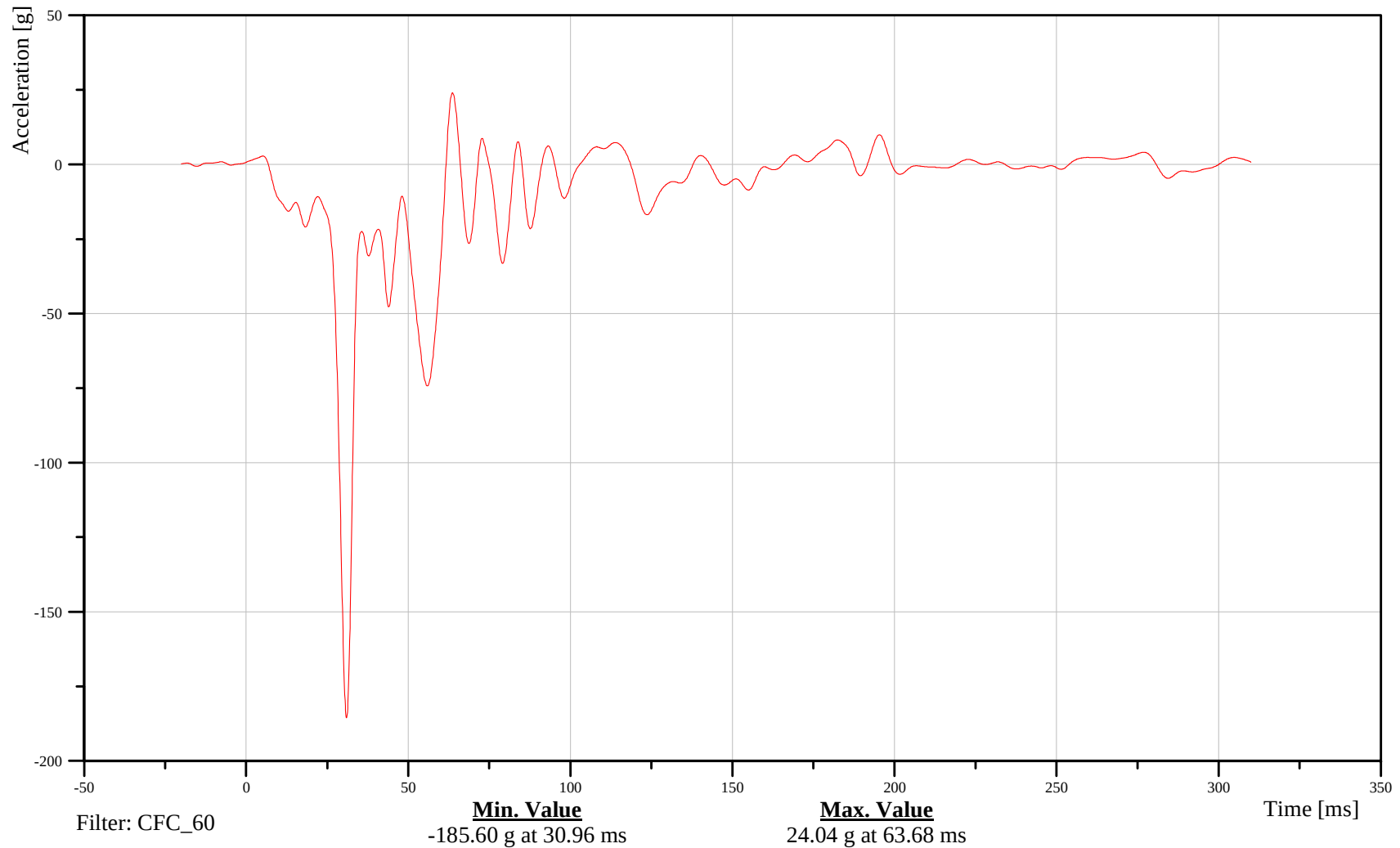
Time: 07:51

Customer: VRTC

11VEHICLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Toe Pan Accelerator X-axis Acceleration

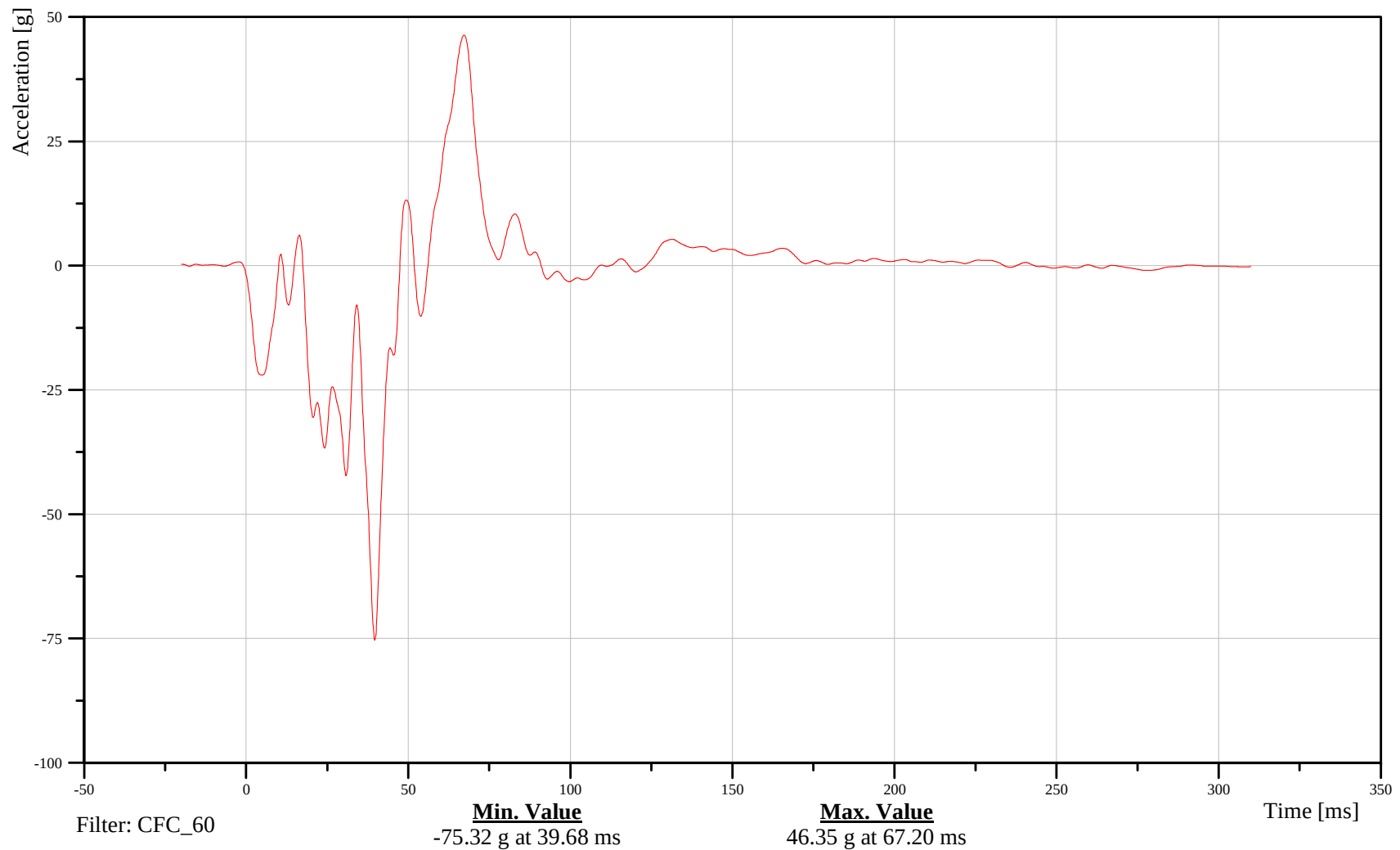
Time: 07:51

Customer: VRTC

11PEAC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

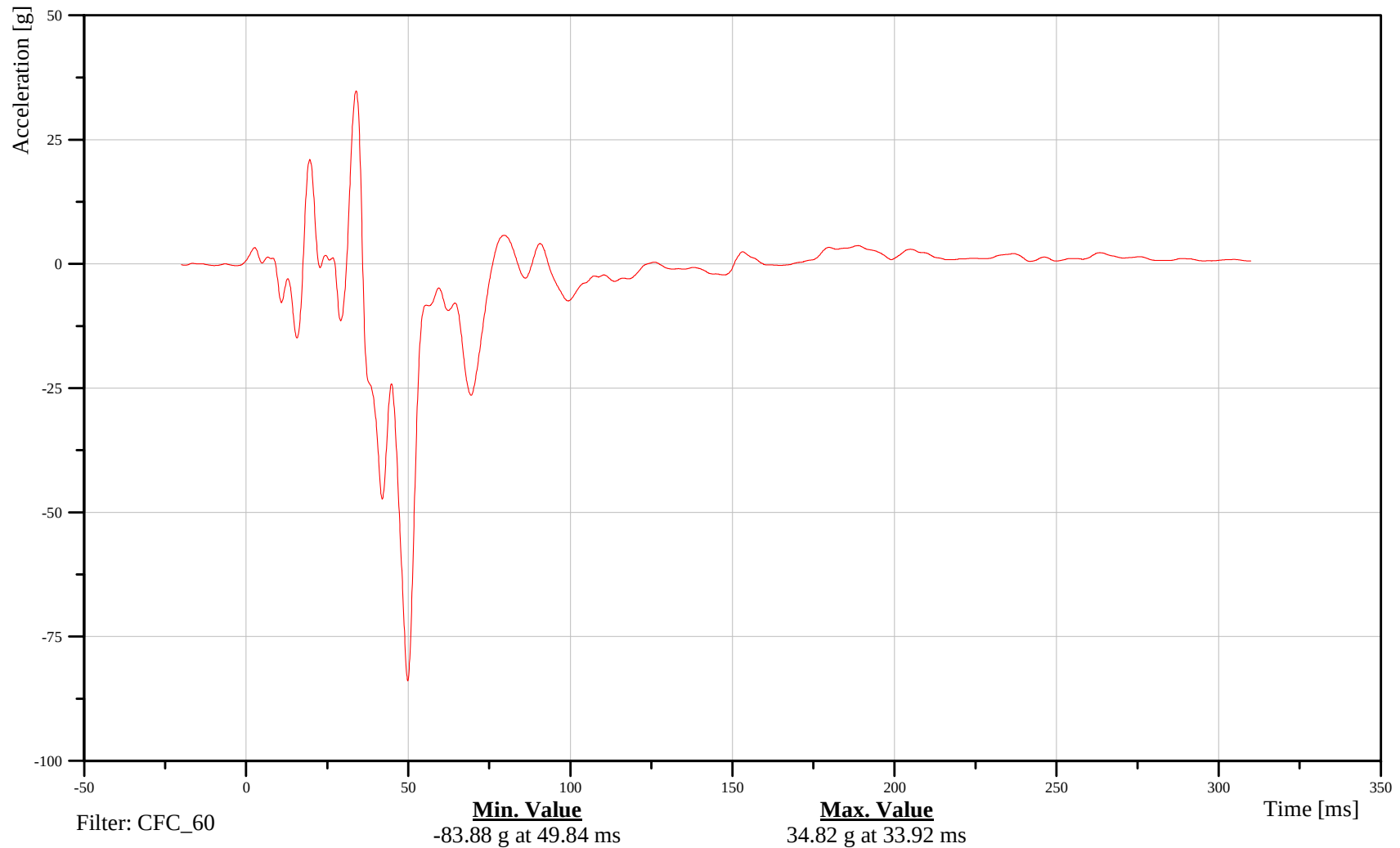
Toe Pan Accelerator Z-axis Acceleration

Customer: VRTC

11PEAC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

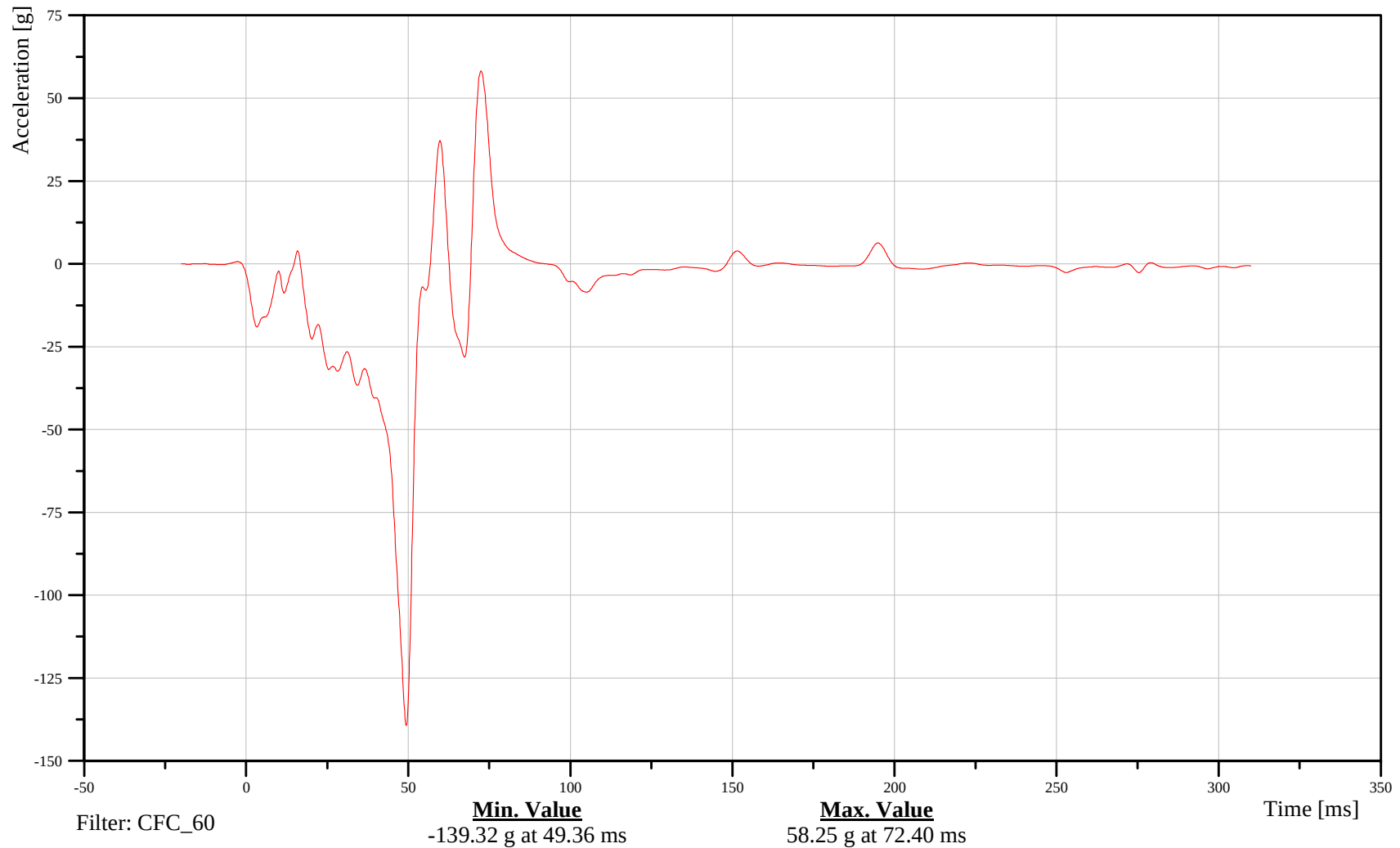
Toe Pan Footrest X-axis Acceleration

Customer: VRTC

11VEHC000001ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

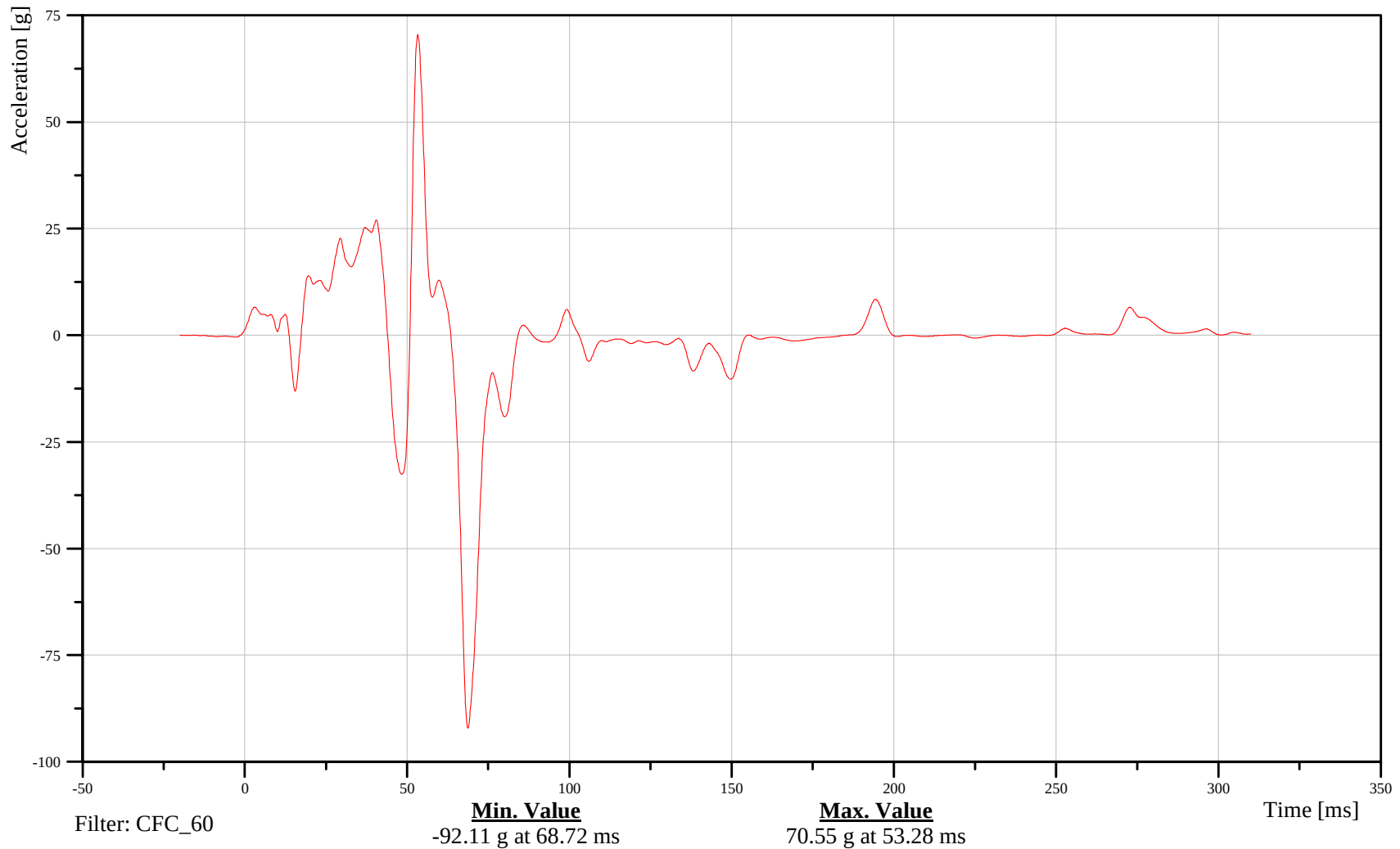
Toe Pan Footrest Z-axis Acceleration

Customer: VRTC

11VEHC000001ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Rear Tunnel Center X-axis Acceleration

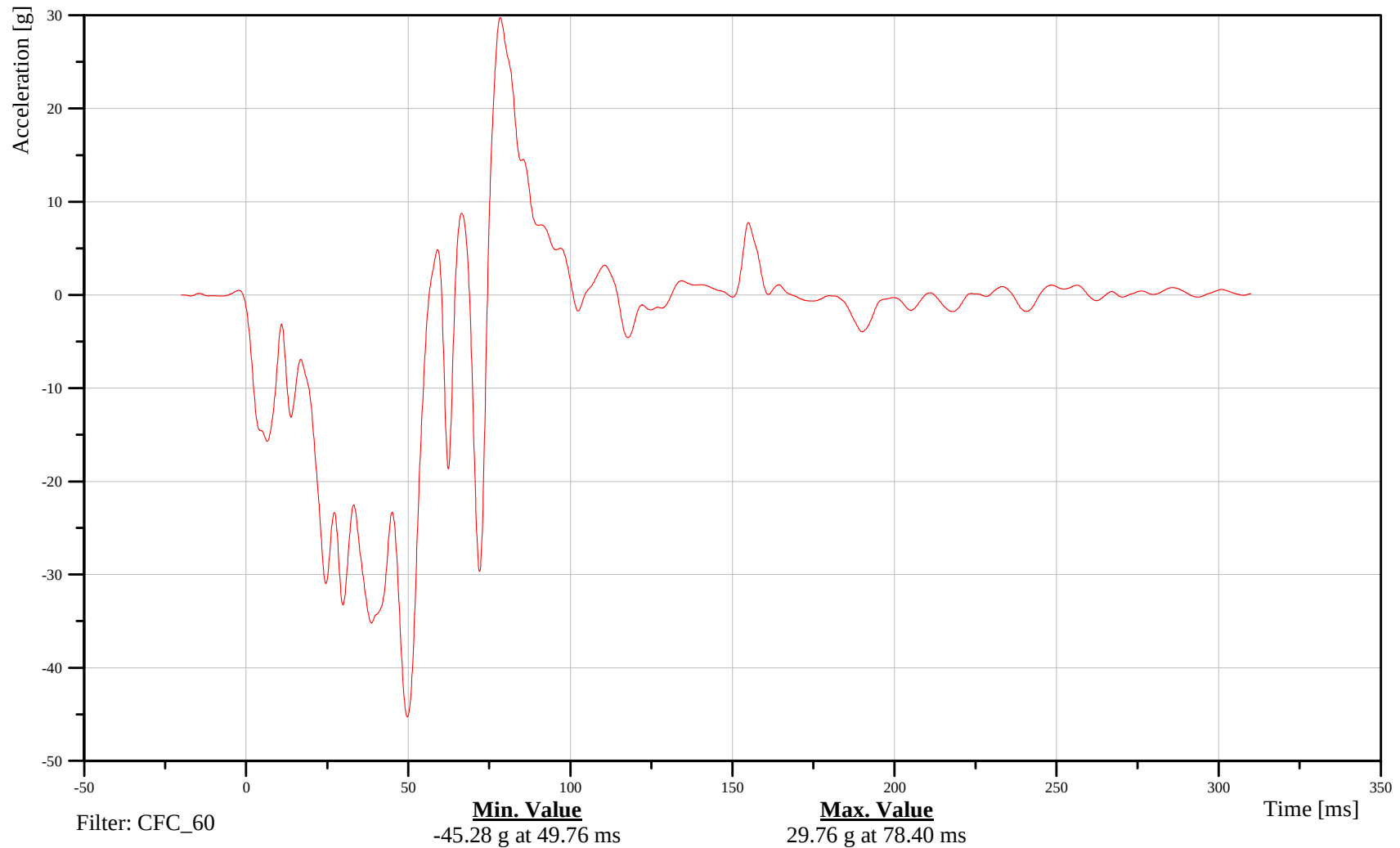
Time: 07:51

Customer: VRTC

15TUNNCY0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

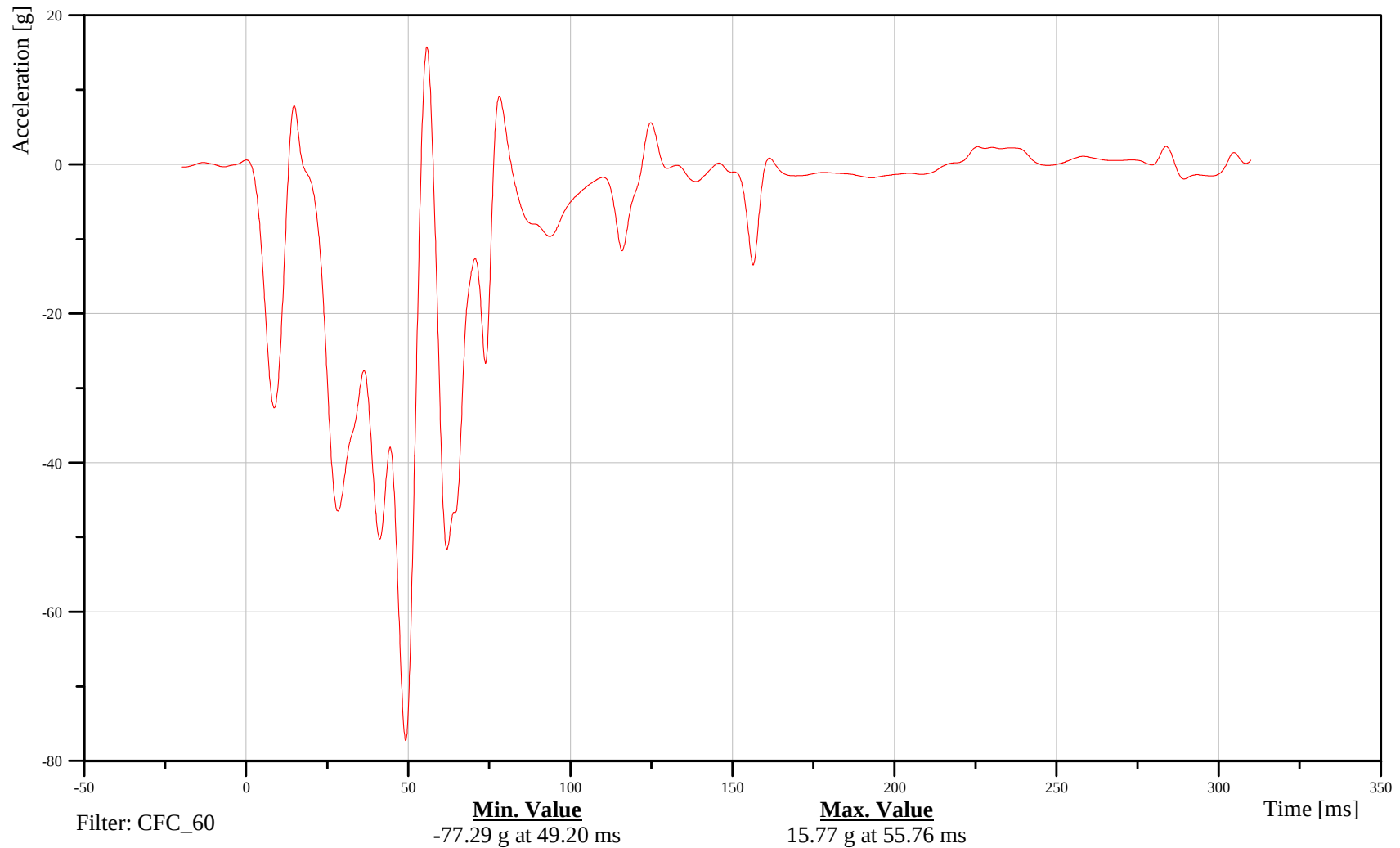
Vehicle CG X-axis Acceleration

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

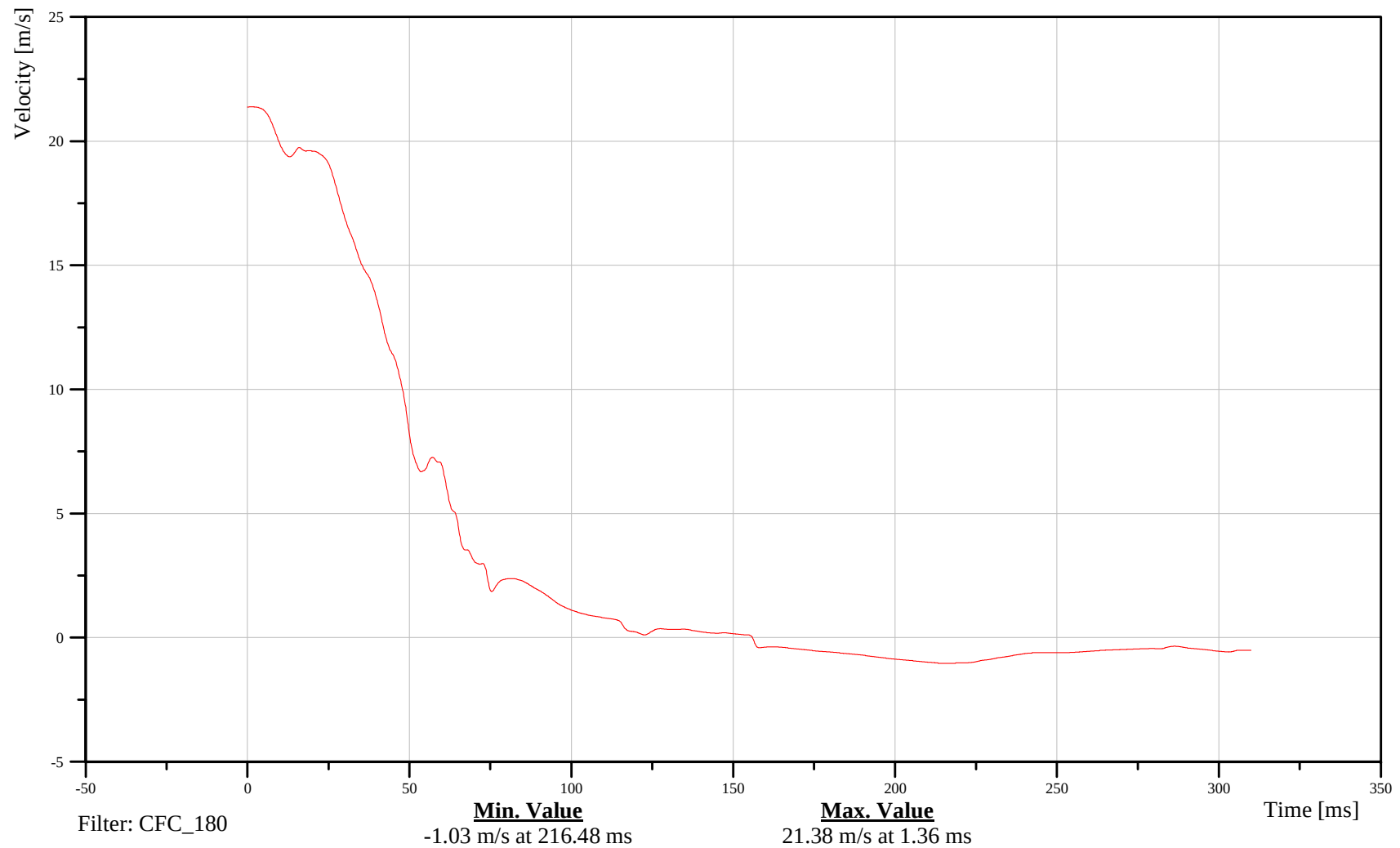
Vehicle CG X-axis Velocity

Customer: VRTC

10VEHCCG0000VEXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle CG X-axis Displacement

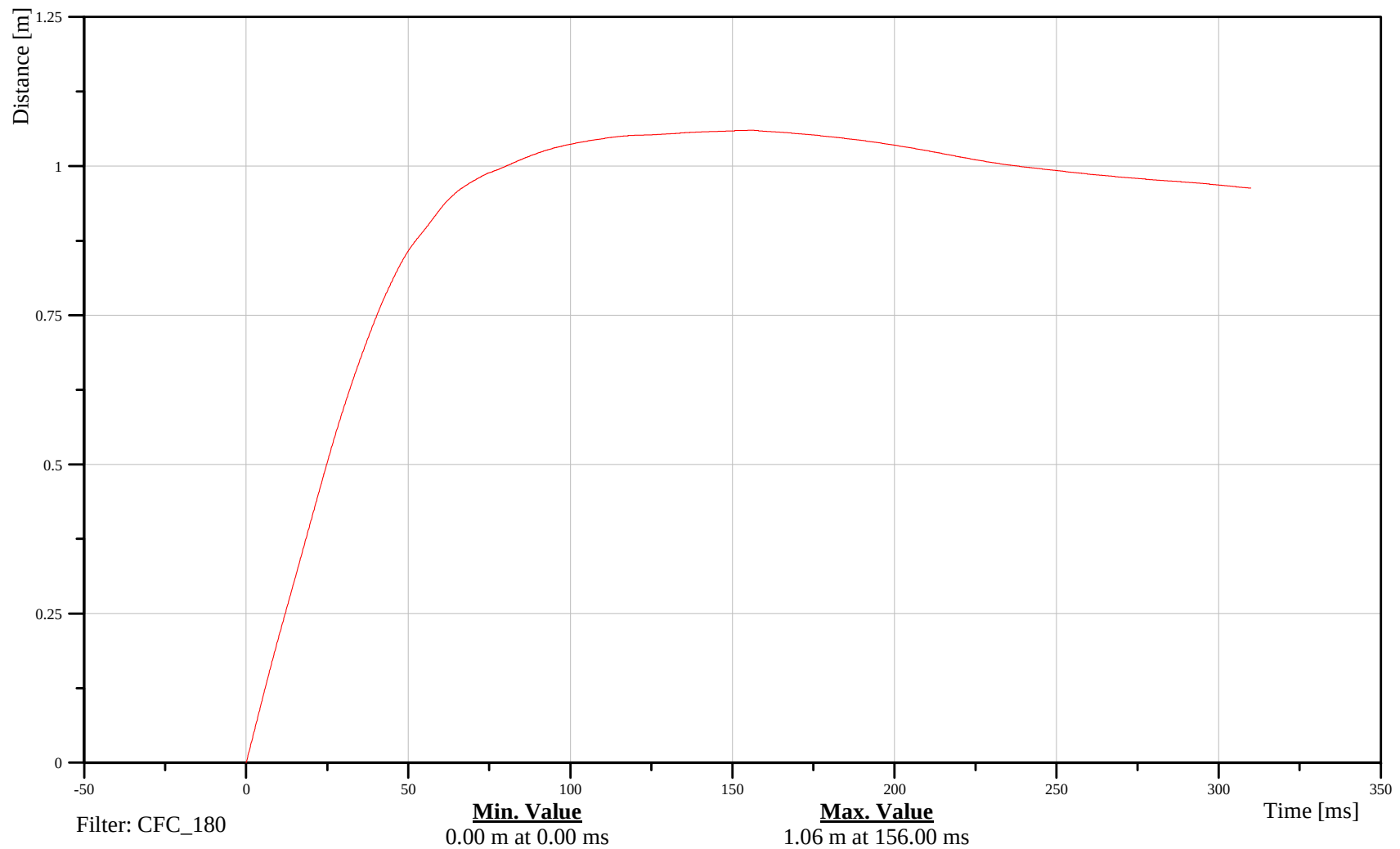
Time: 07:51

Customer: VRTC

10VEHCCG0000DCXC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle CG Y-axis Acceleration

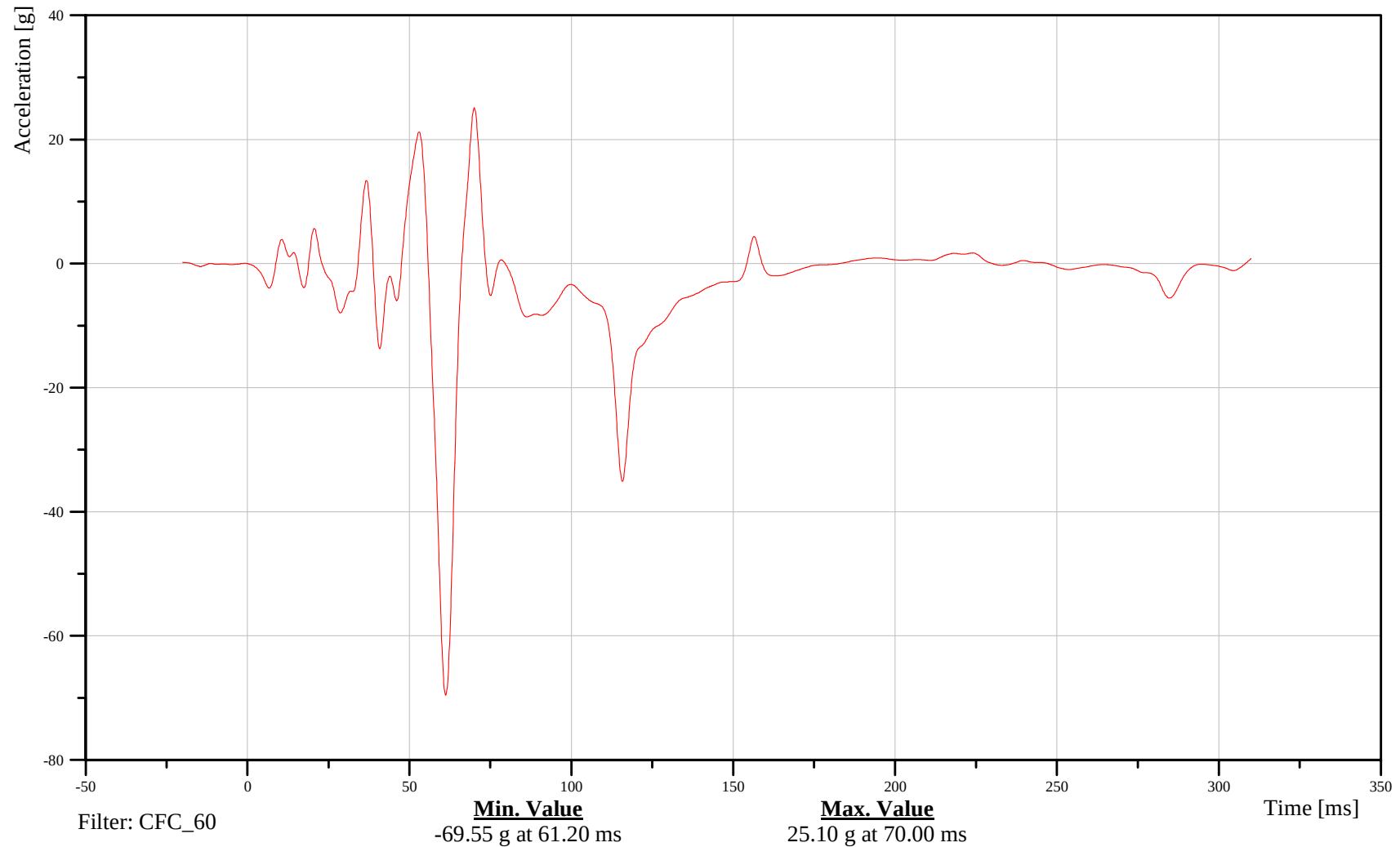
Time: 07:51

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

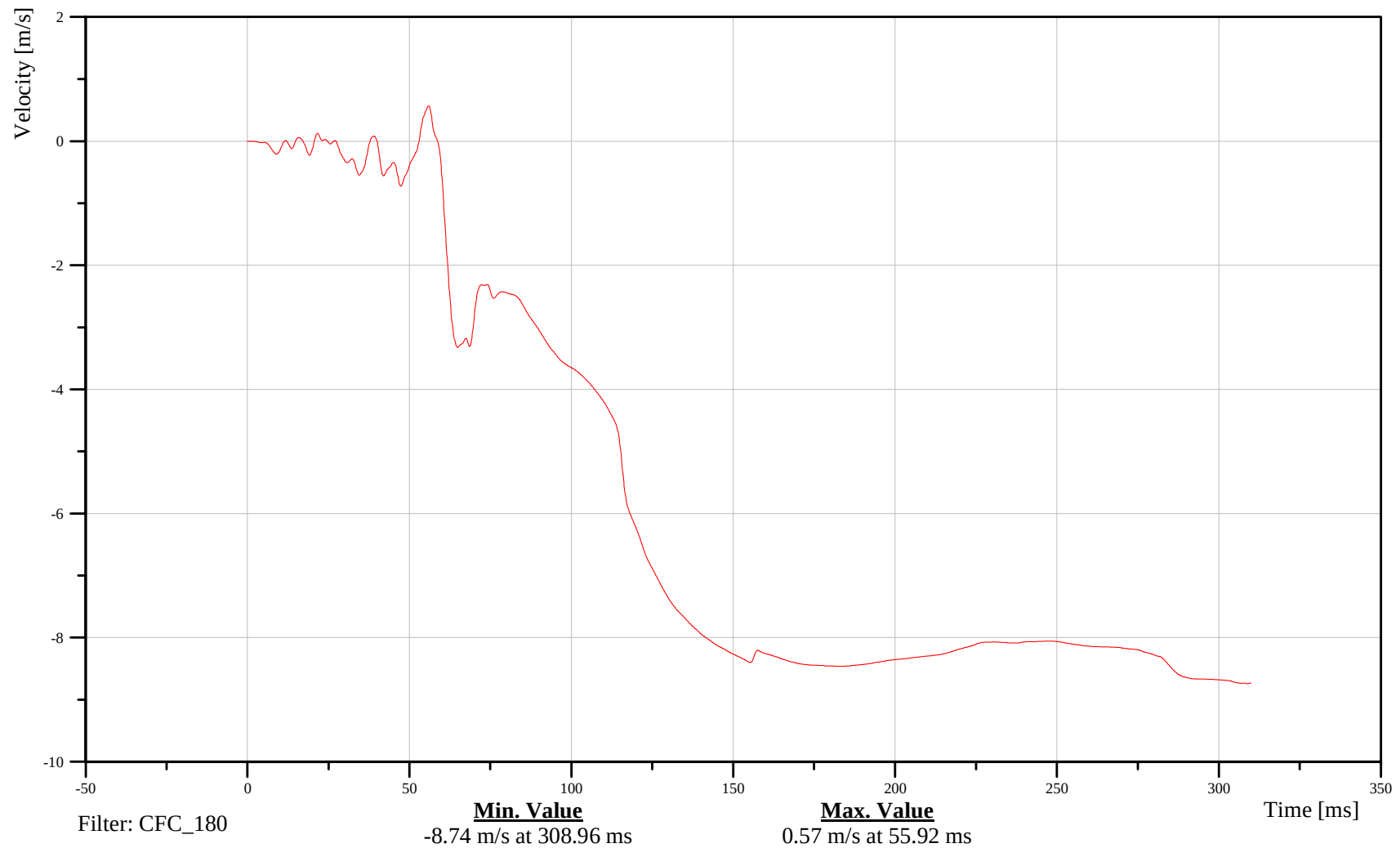
Vehicle CG Y-axis Velocity

Customer: VRTC

10VEHCCG0000VEYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle CG Y-axis Displacement

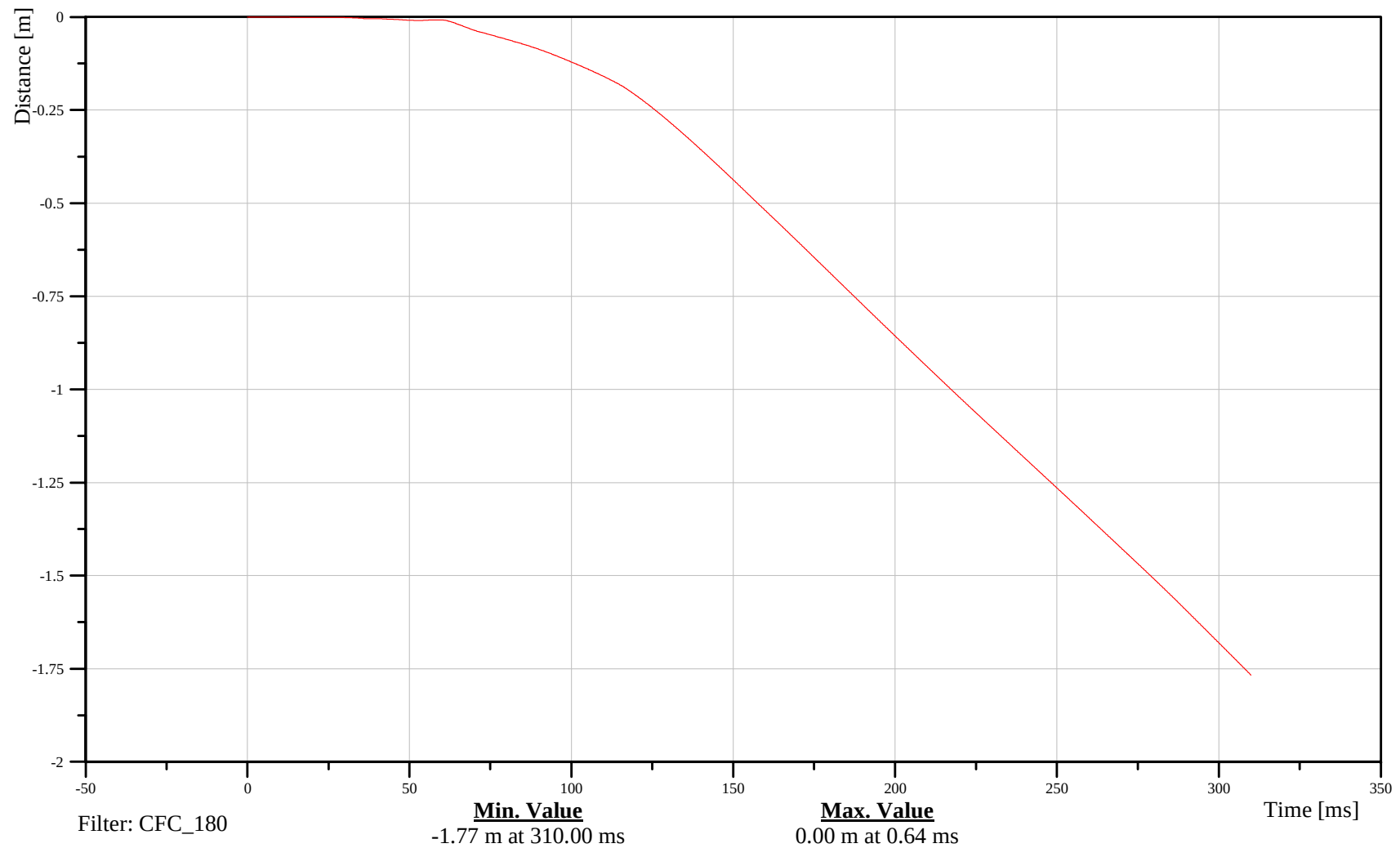
Time: 07:51

Customer: VRTC

10VEHCCG0000DCYC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle CG Z-axis Acceleration

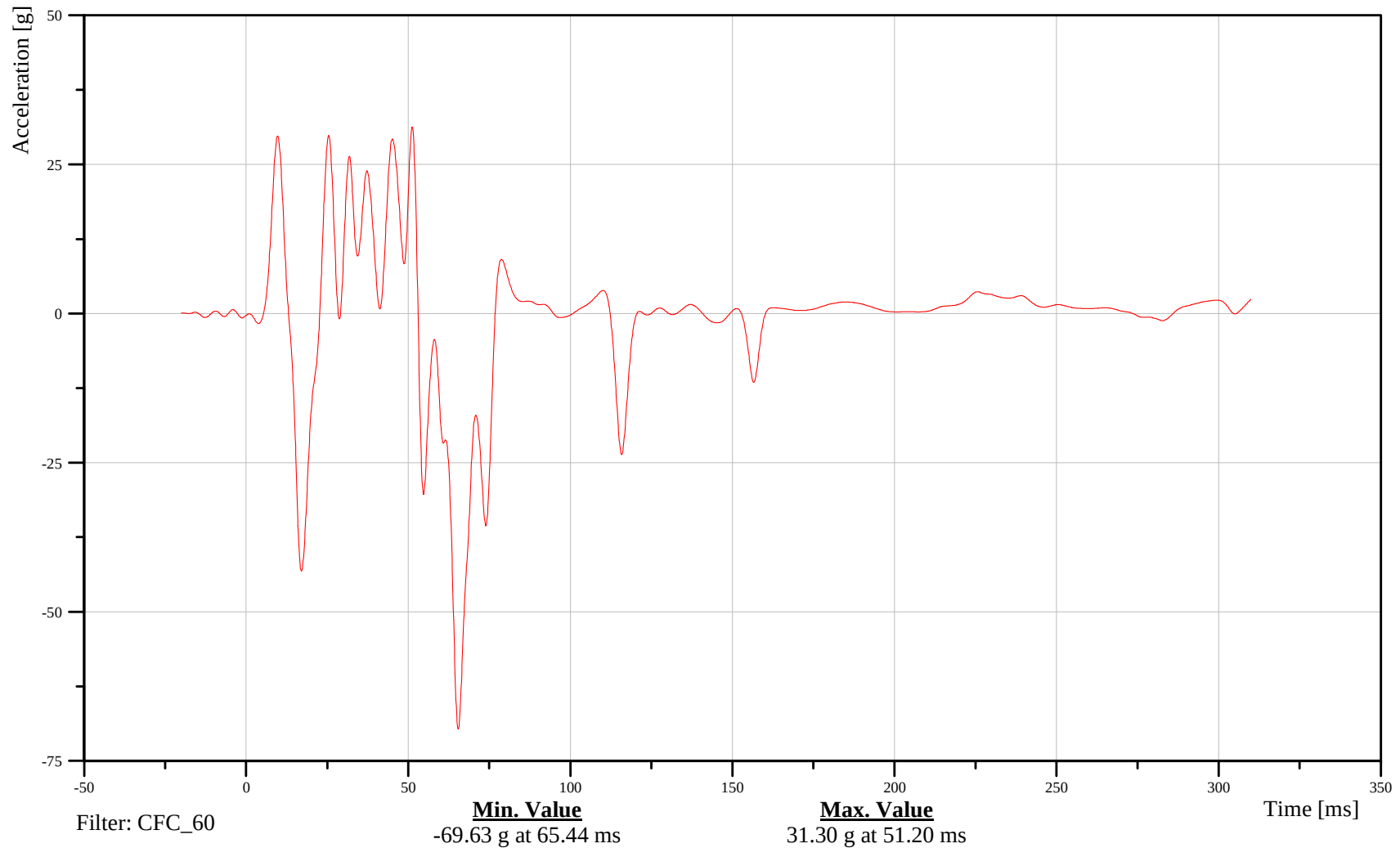
Time: 07:51

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

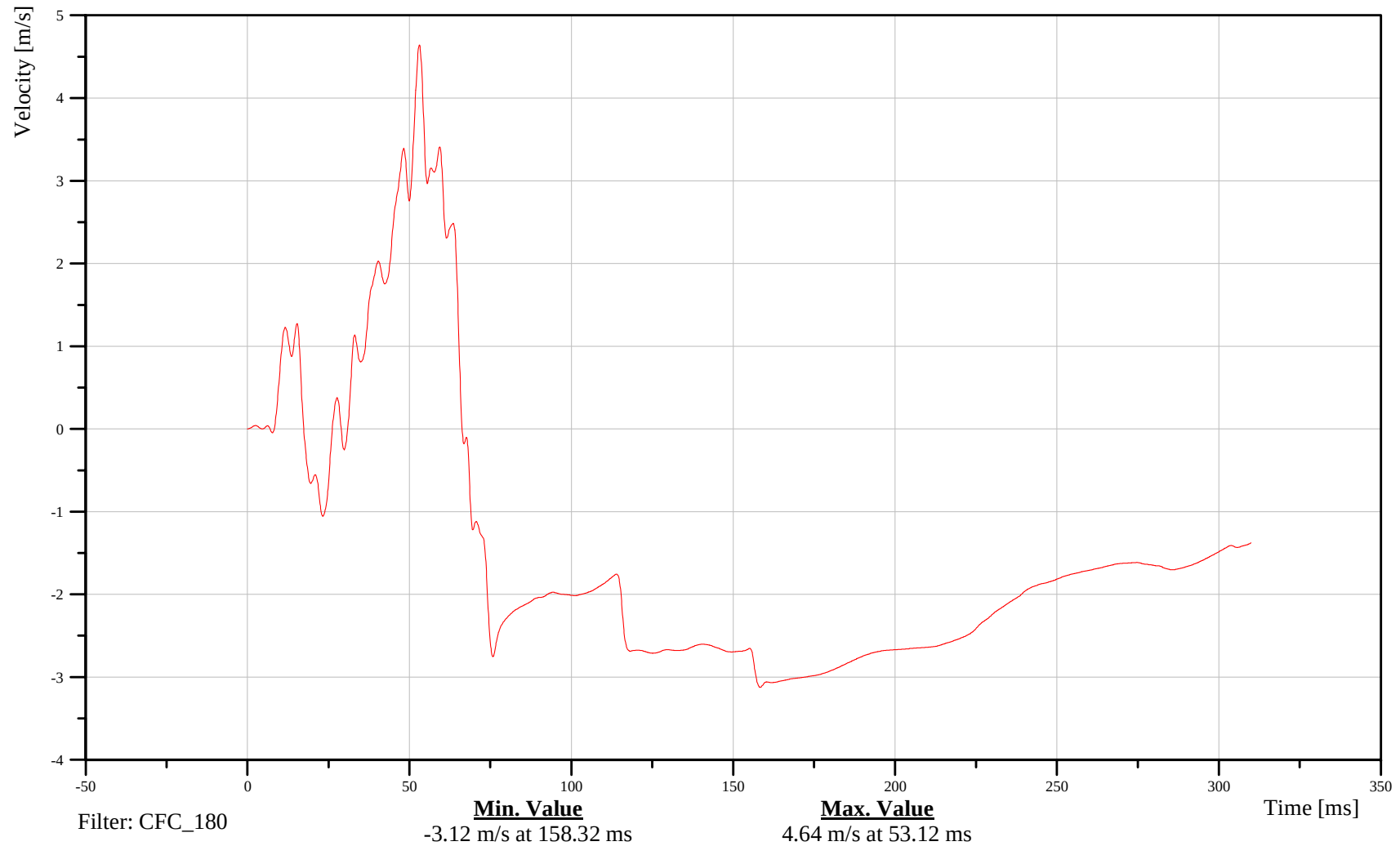
Vehicle CG Z-axis Velocity

Customer: VRTC

10VEHCCG0000VEZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

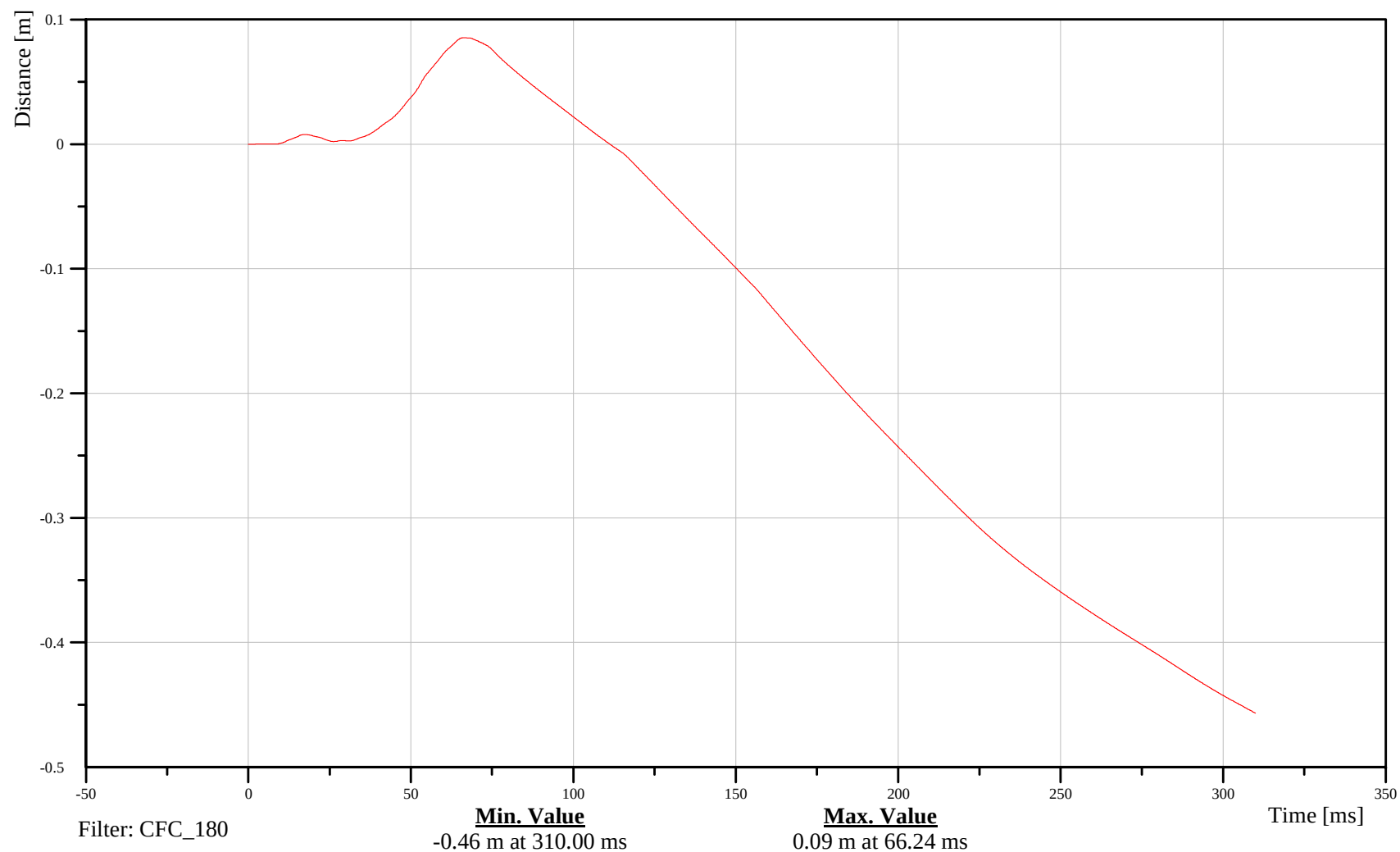
Vehicle CG Z-axis Displacement

Customer: VRTC

10VEHCCG0000DCZC

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

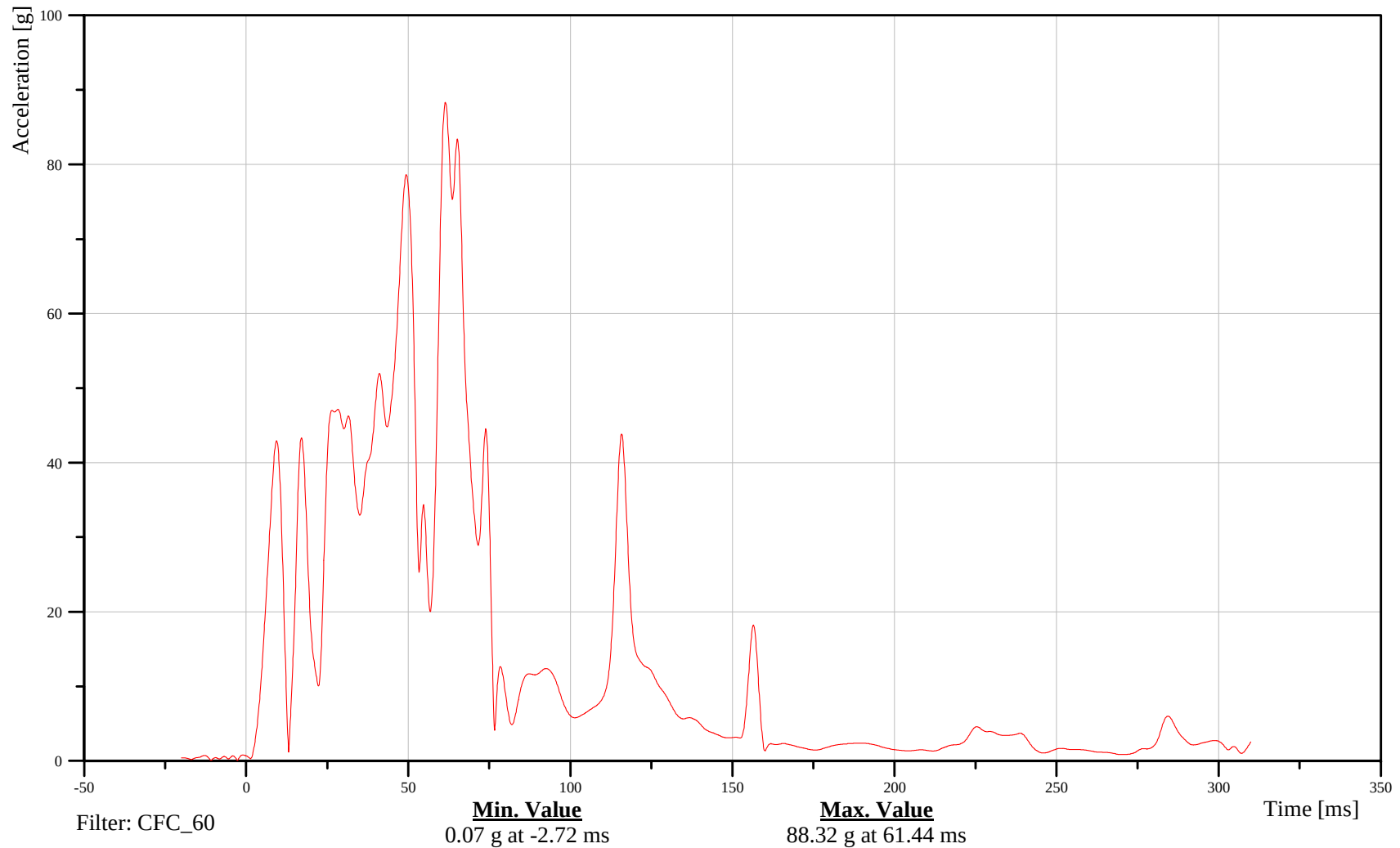
Vehicle CG Resultant Acceleration

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck X-axis Acceleration

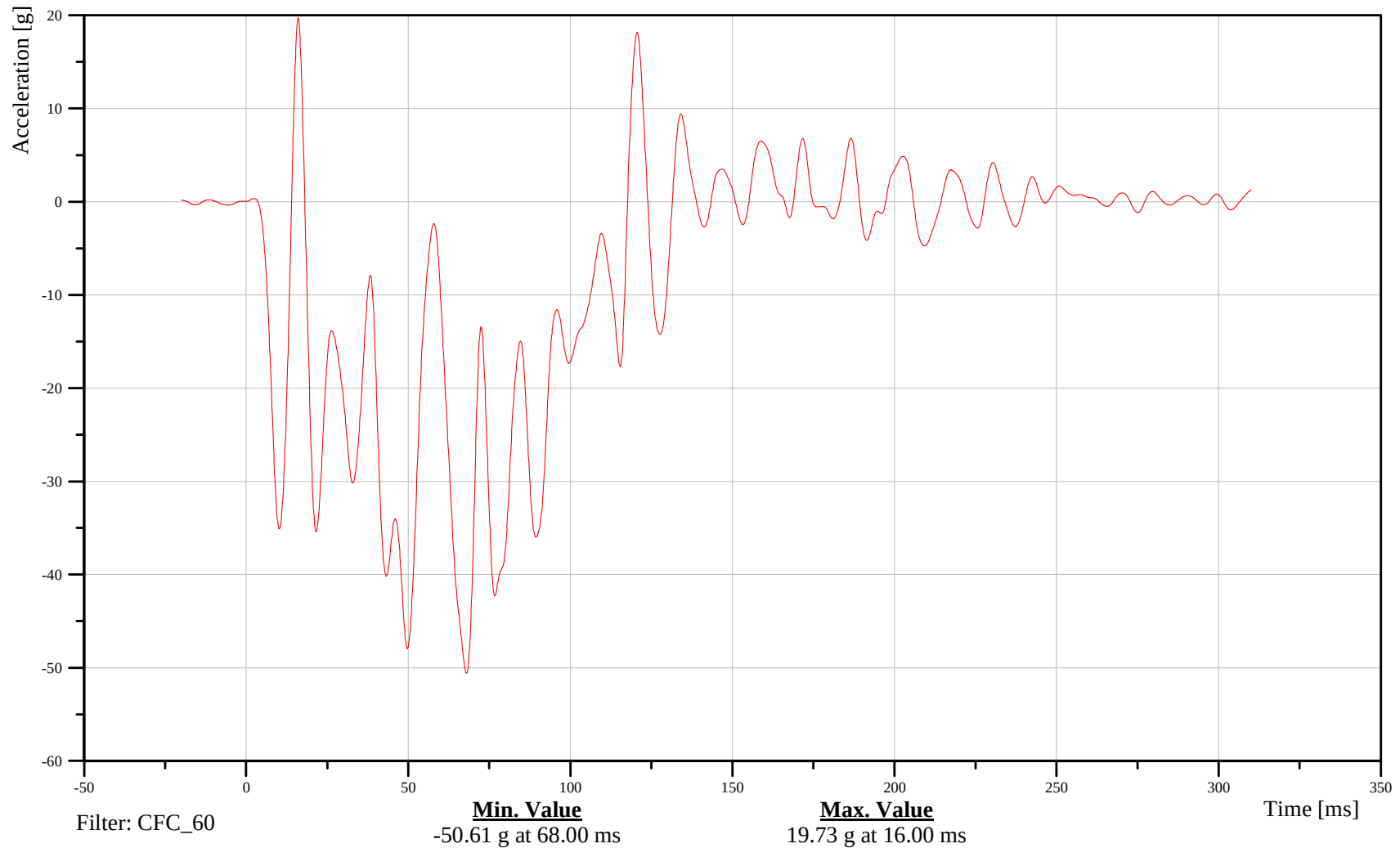
Time: 07:51

Customer: VRTC

18VEHC000000ACXD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck Y-axis Acceleration

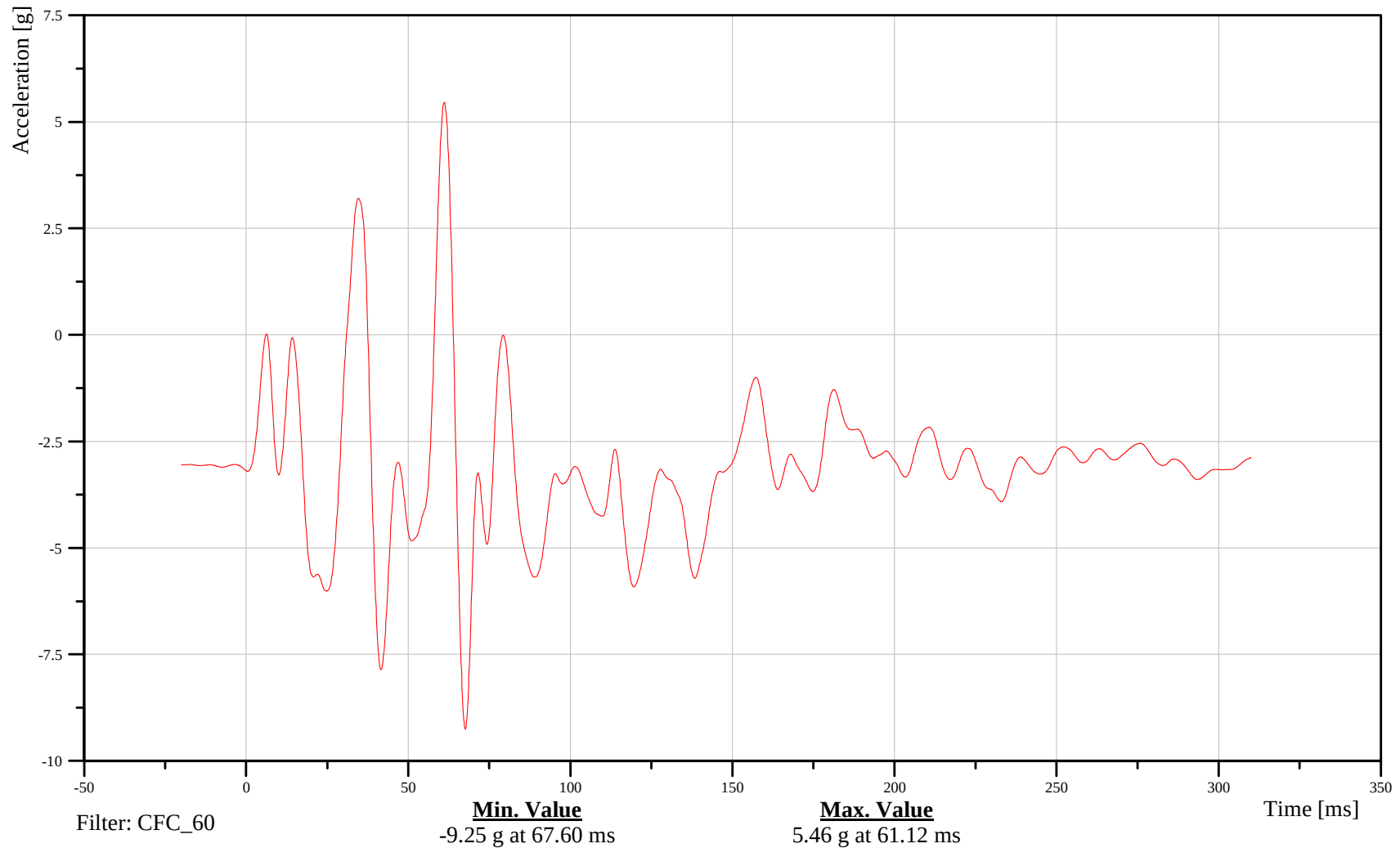
Time: 07:51

Customer: VRTC

18VEHC000000ACYD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck Z-axis Acceleration

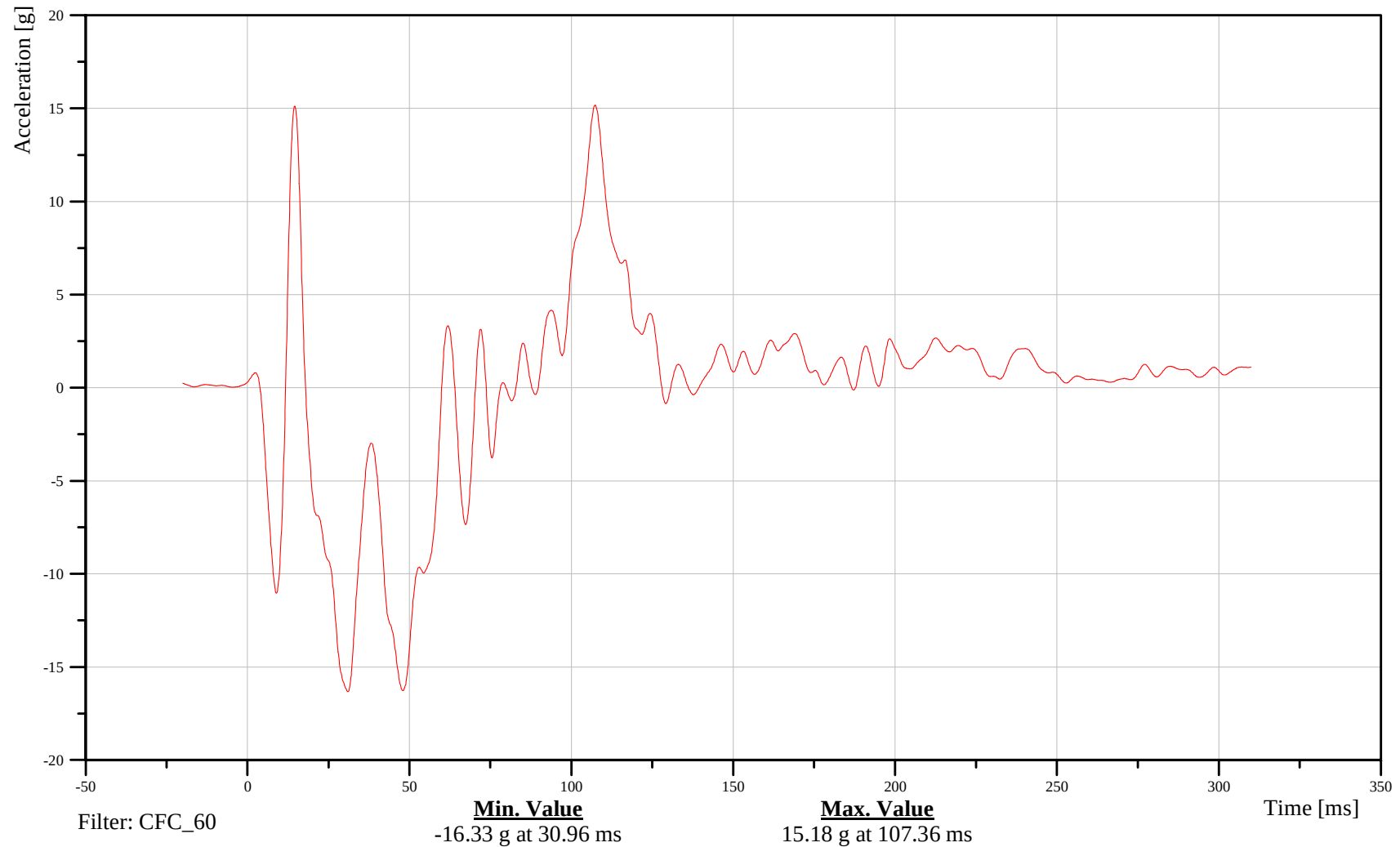
Time: 07:51

Customer: VRTC

18VEHC000000ACZD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Vehicle Rear Deck Resultant Acceleration

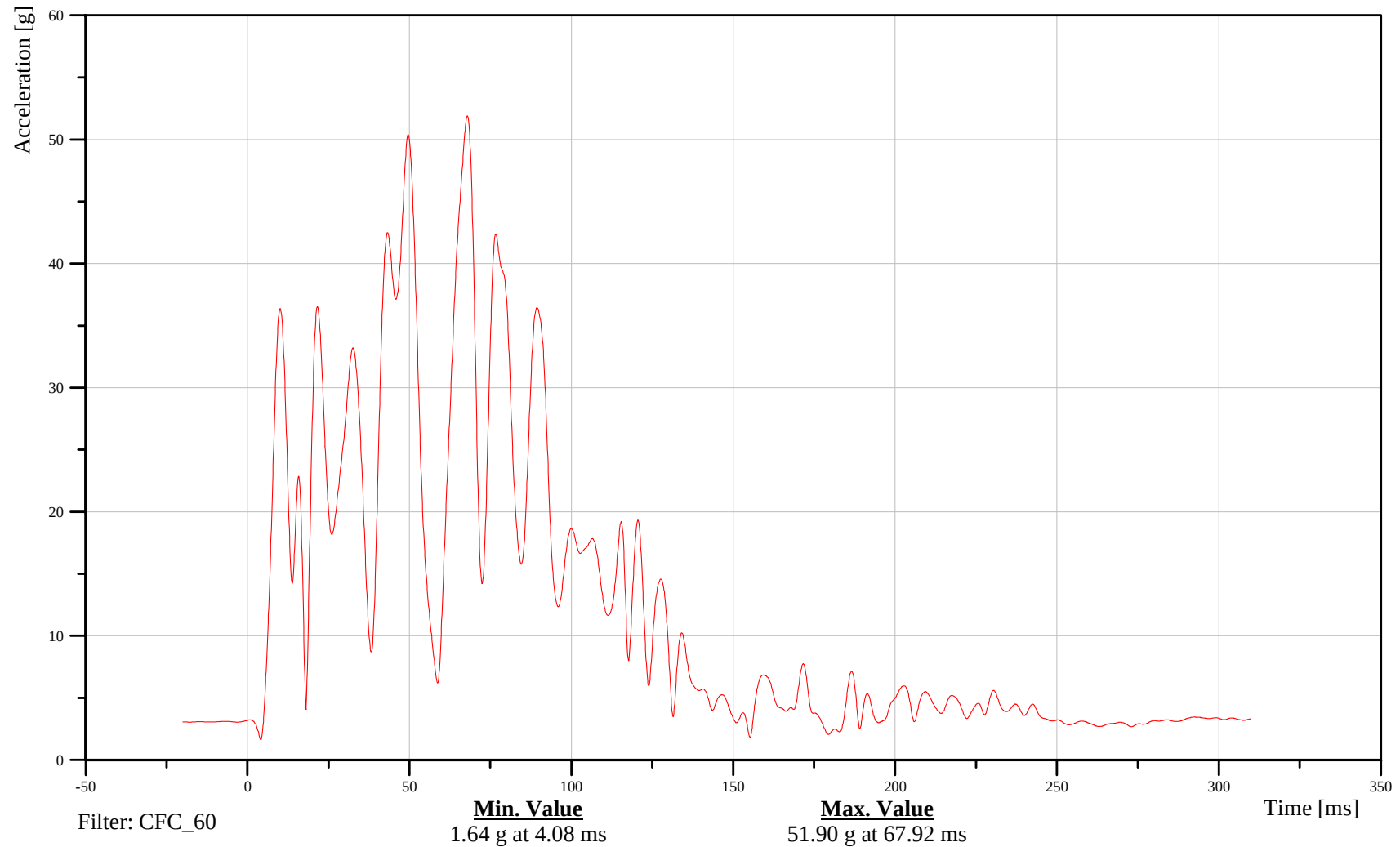
Time: 07:51

Customer: VRTC

18VEHC000000ACRD

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

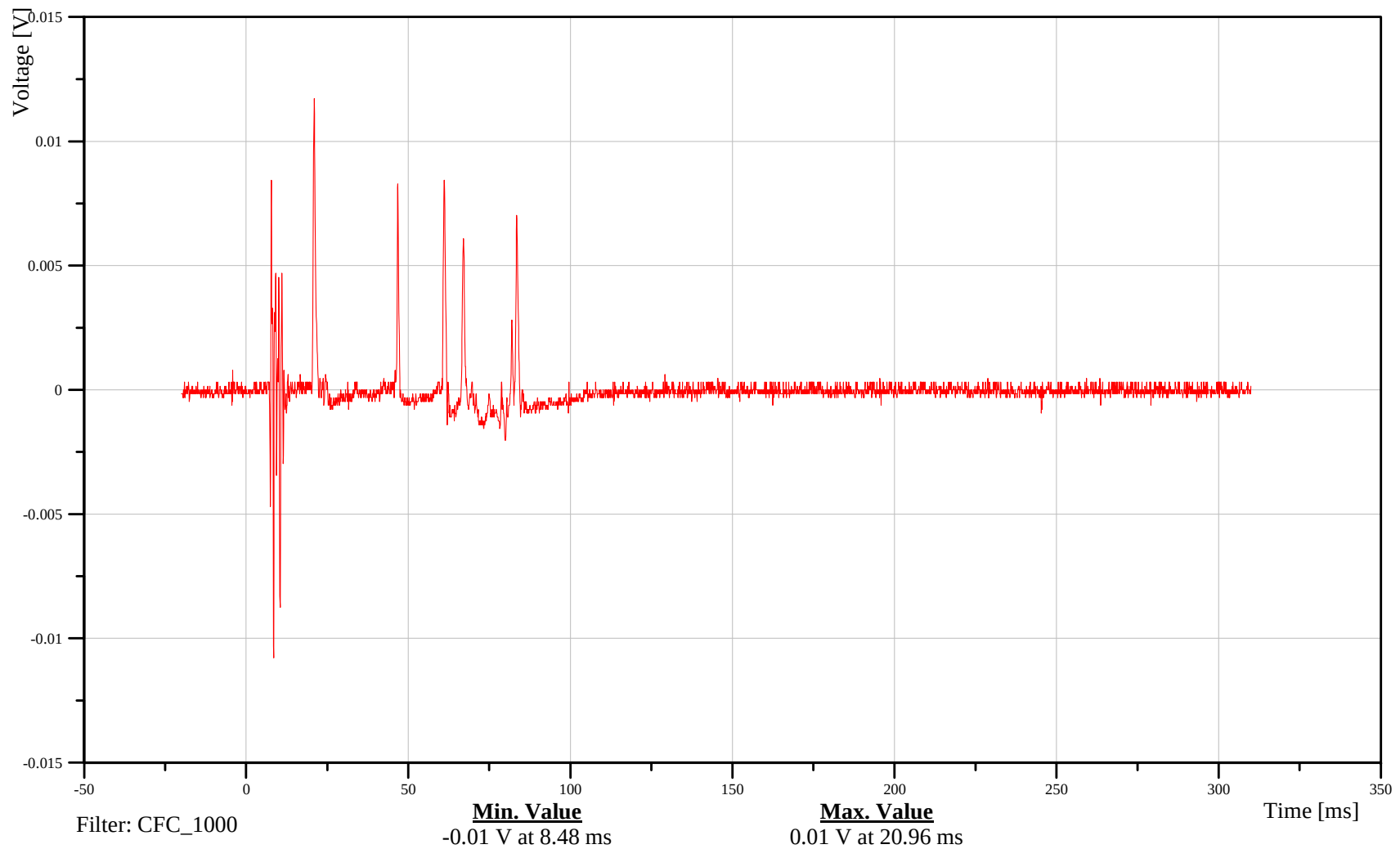
Driver Airbag - Primary

Customer: VRTC

11SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Driver Airbag - Secondary

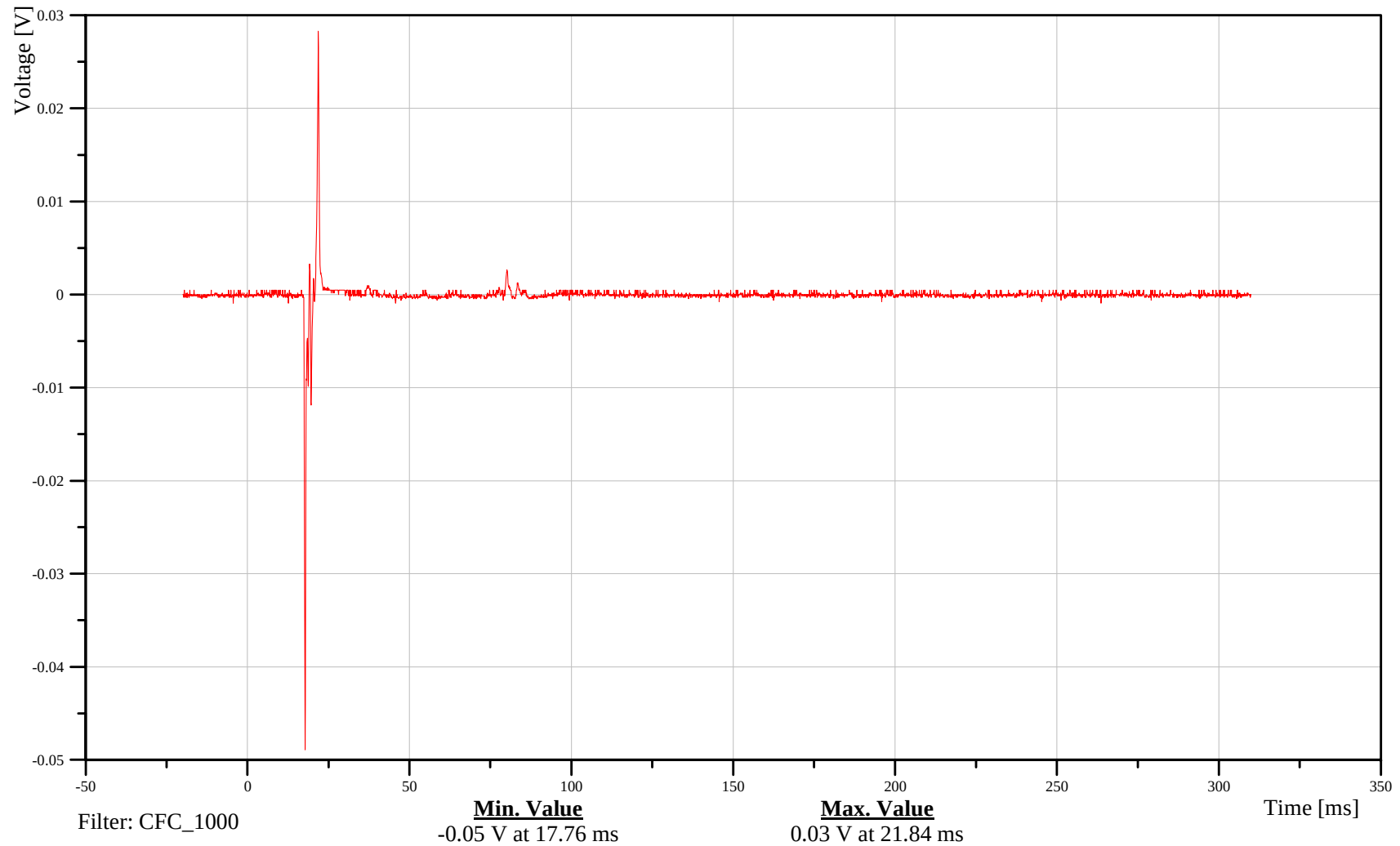
Time: 07:51

Customer: VRTC

11SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

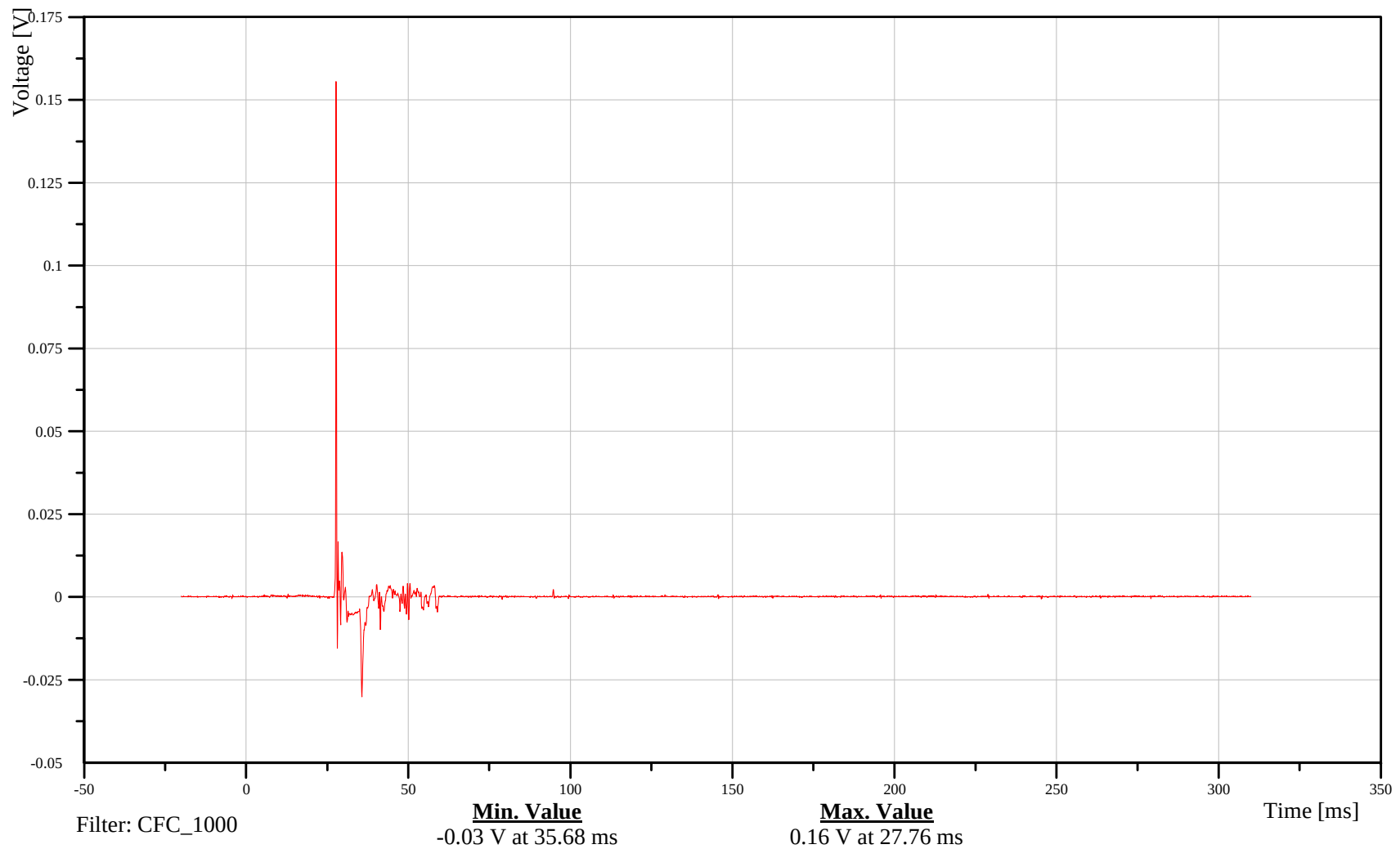
Passenger Airbag - Primary

Customer: VRTC

13SENS000001VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

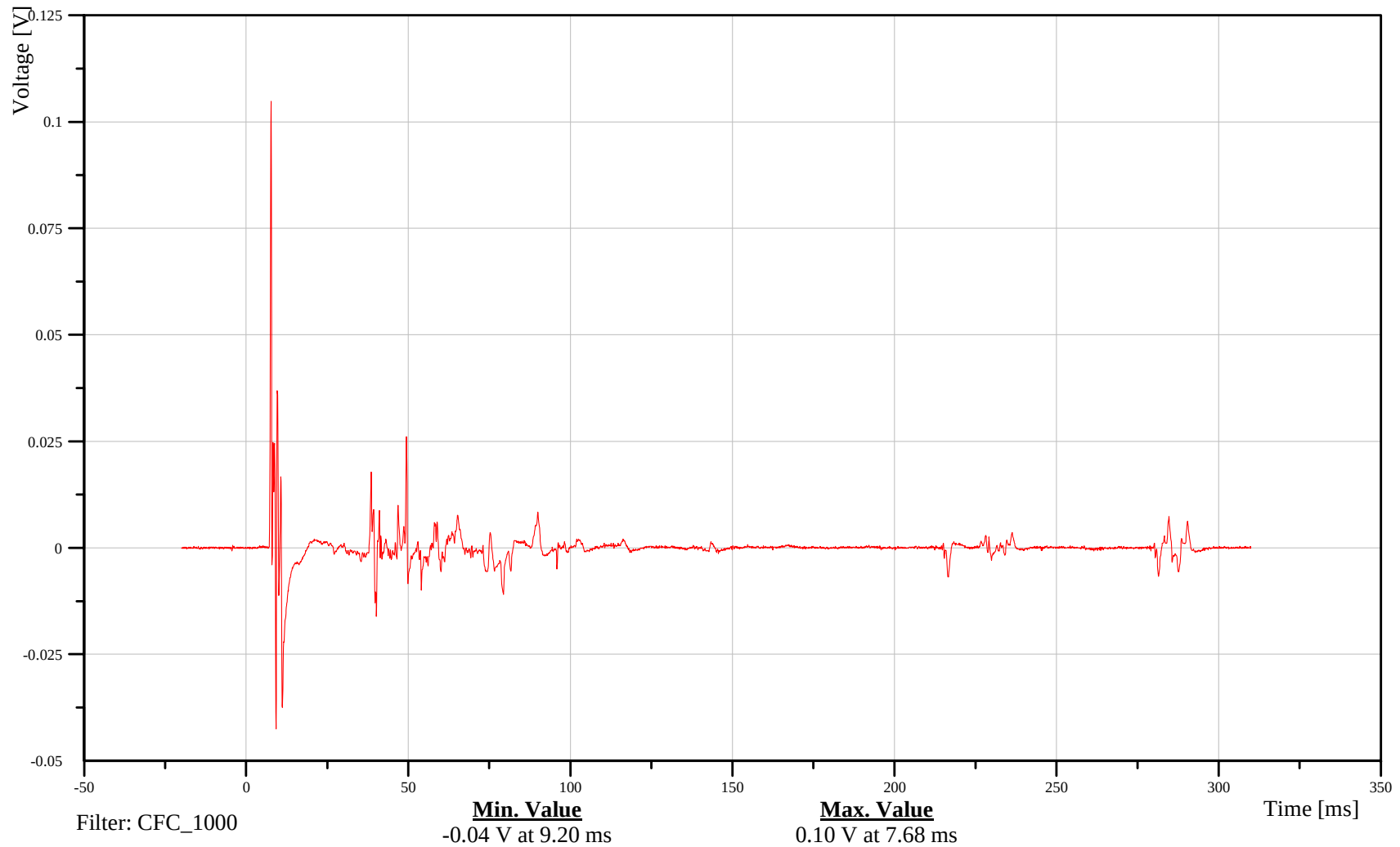
Passenger Airbag - Secondary

Customer: VRTC

13SENS000002VO0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Driver Lap Belt Spool

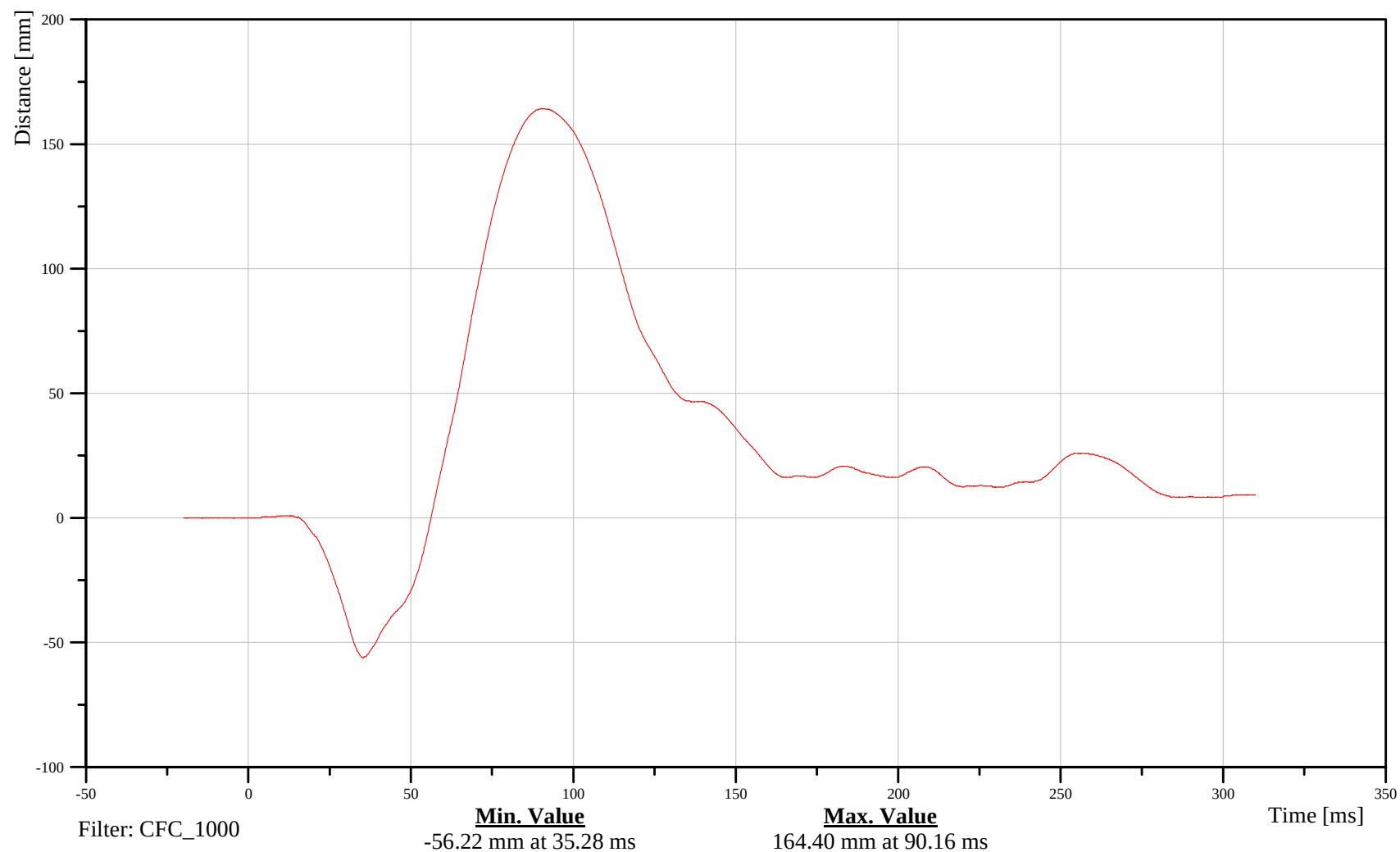
Time: 07:51

Customer: VRTC

11SEBA0000B5DS0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Driver Shoulder Belt Spool and Retraction

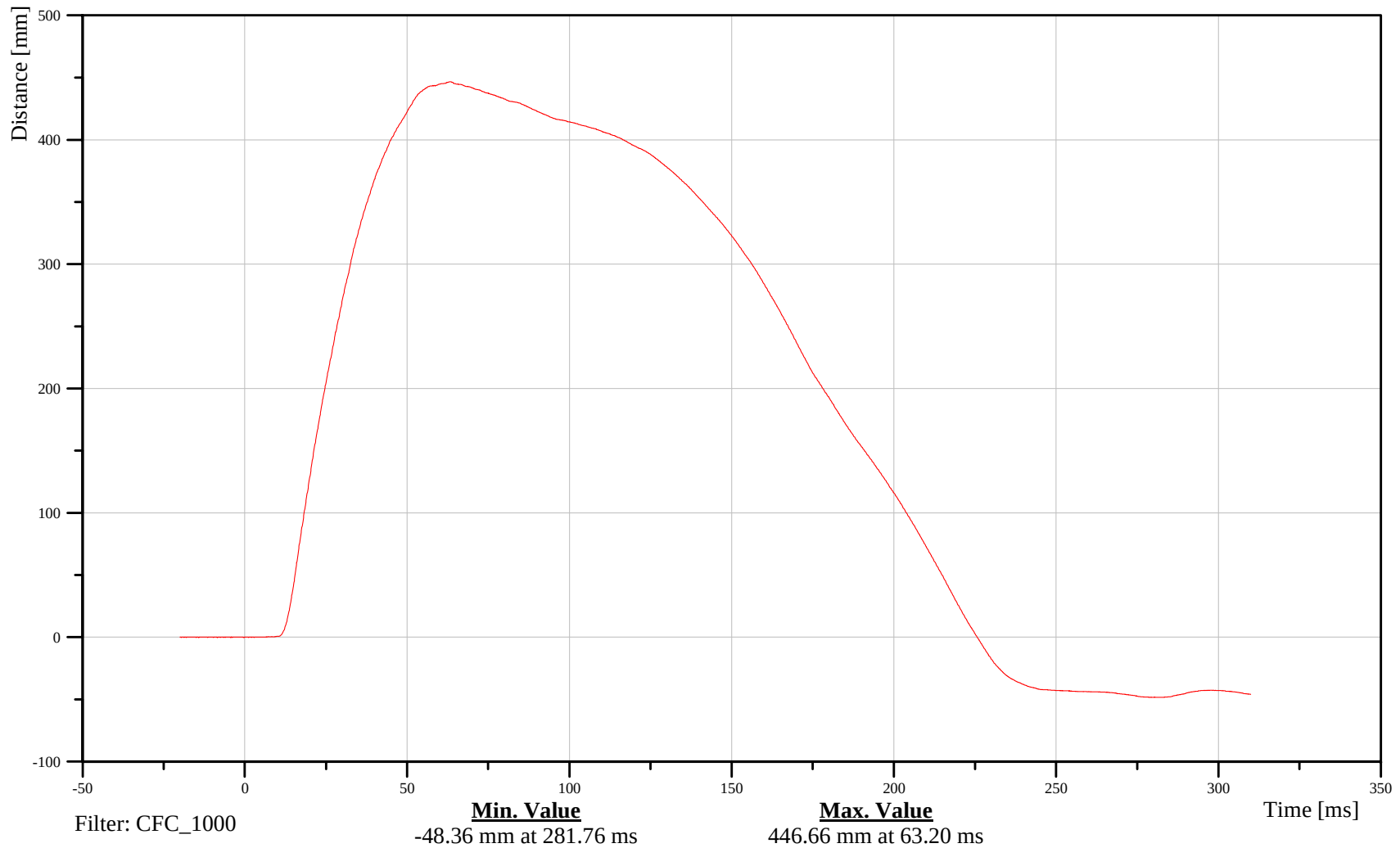
Time: 07:51

Customer: VRTC

11SEBA0000B3DS0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

Time: 07:51

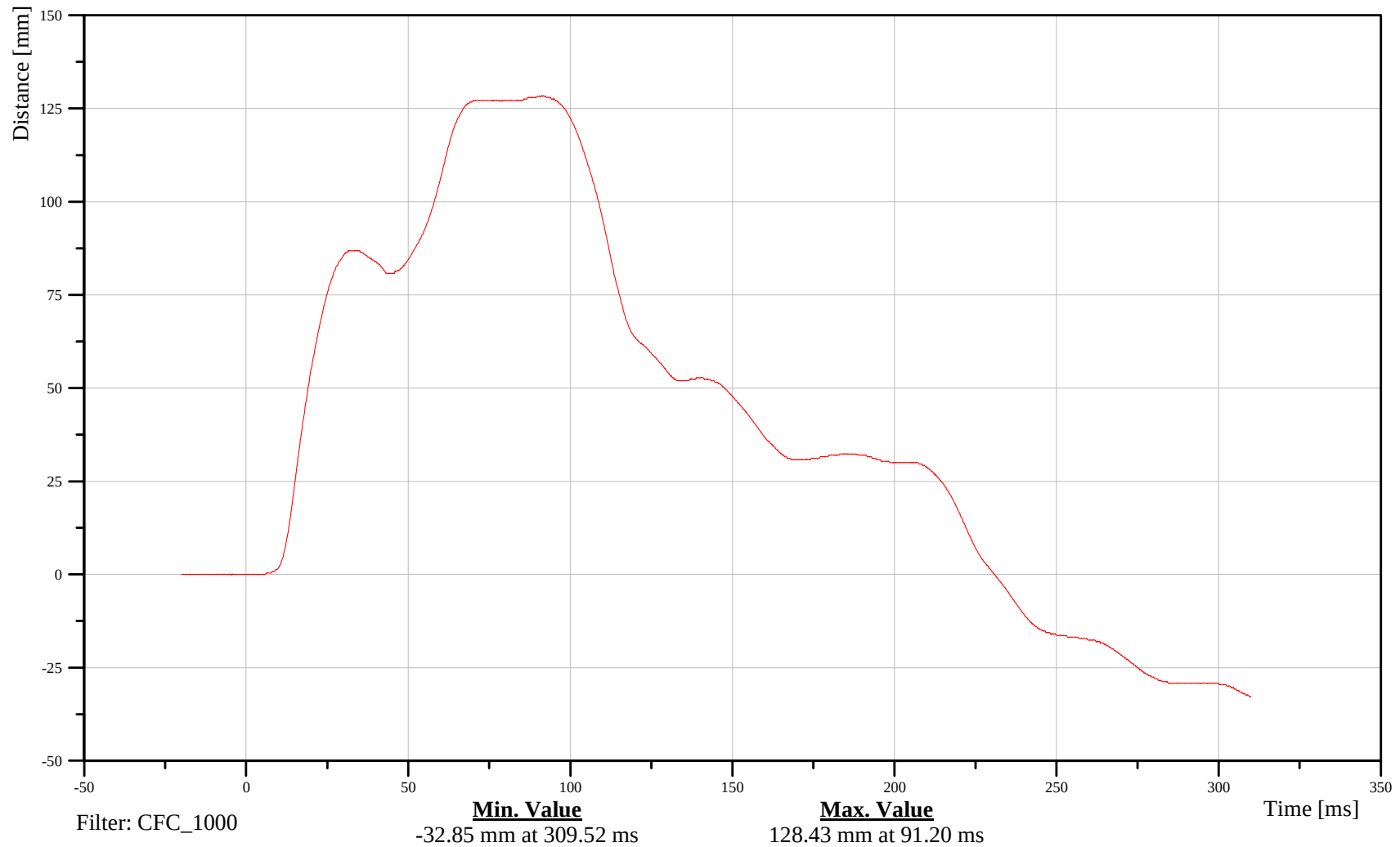
RF Pass Lap Belt Spool

Customer: VRTC

13SEBA0000B5DS0A

TRC Inc. Test Lab: CTF

Test Number: 050719





2003 Chevrolet Silverado into 2002 Ford Focus Full Frontal Collinear

Date: 07/20/2005

RF Pass Shoulder Belt Spool and Retraction

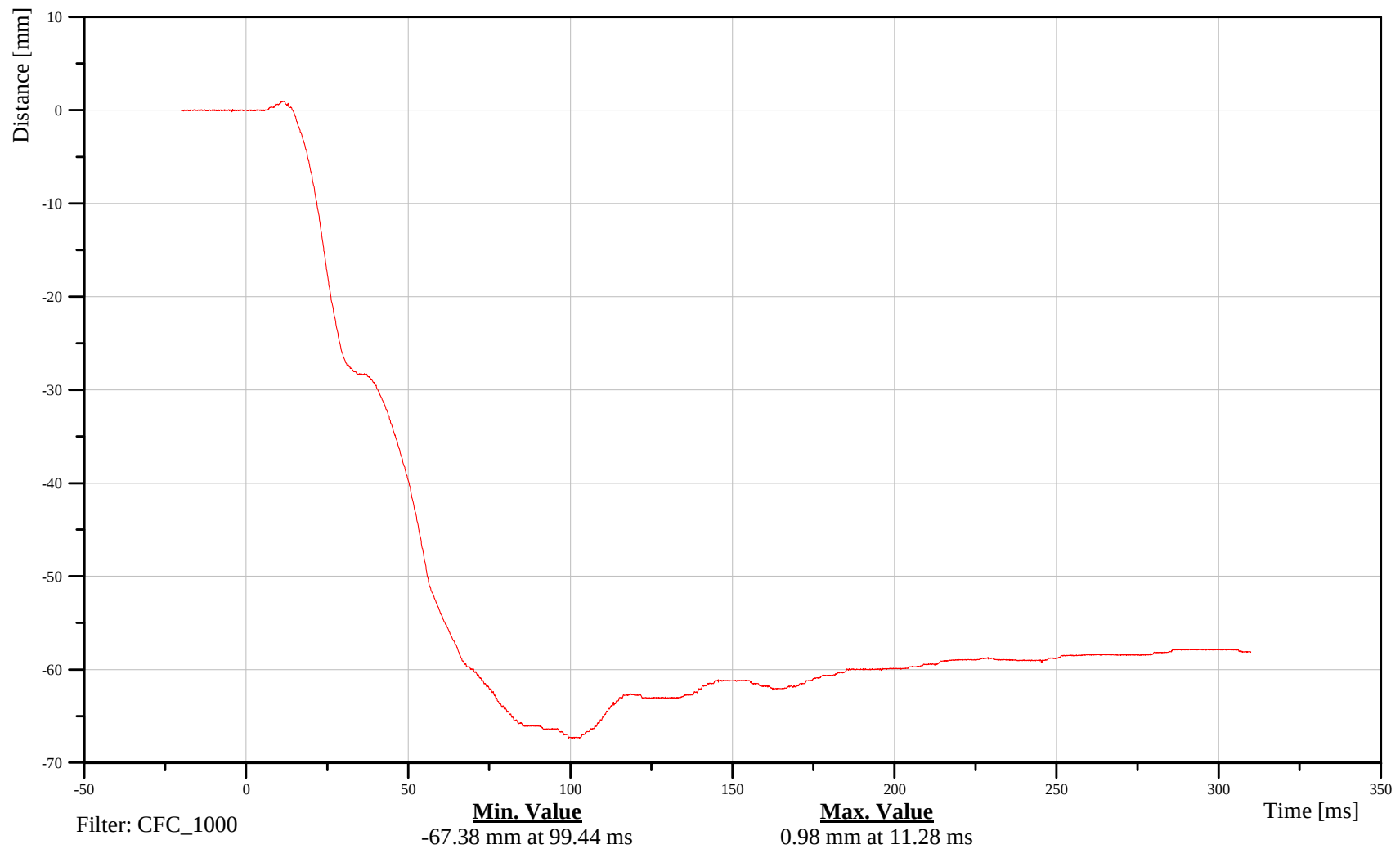
Time: 07:51

Customer: VRTC

13SEBA0000B3DS0A

TRC Inc. Test Lab: CTF

Test Number: 050719



Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Target Vehicle Driver Dummy S/N: 110

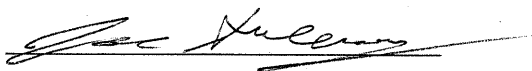
Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 110 w/ THOR-LX Calibration No. 14

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	888	Yes
B	Shoulder Pivot Height	505.5 - 520.7	515	Yes
C	H-Point Height	83.8 - 88.9	91	No ¹
D	H-Point From Seatback	134.6 - 139.7	137	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	94	Yes
F	Thigh Clearance	139.7 - 154.9	154	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	294	Yes
H	Skull Cap To Backline	40.6 - 45.7	44	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	341	Yes
J	Elbow Rest Height	190.5 - 210.8	209	Yes
K	Buttock Knee Length	579.1 - 604.5	603	Yes
L	Popliteal Height	429.3 - 454.7	439	Yes
M	Knee Pivot Height	485.1 - 500.4	499	Yes
N	Buttock Popliteal Length	452.1 - 477.5	470	Yes
O	Chest Depth	213.4 - 228.6	219	Yes
P	Foot Length	251.5 - 266.7	253	Yes
V	Shoulder Breadth	421.6 - 436.9	426	Yes
W	Foot Breadth	91.4 - 106.7	97	Yes
Y	Chest Circumference	970.3 - 1000.8	978	Yes
Z	Waist Circumference	835.7 - 866.1	853	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	228	Yes

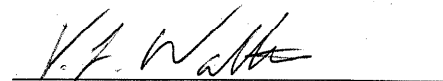
Does not meet all specifications

¹ Customer informed prior to test.

Technician



Approved



Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 3

Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Peak Resultant Acceleration	225 - 275 g	267.0 g	Yes
Peak Lateral Acceleration	15 g Max	4.6 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Test meets specifications.

Comments:

Technician

Vince Oliver

Approved

Paul K. Oliver

06.22.2005 11:33:21 614

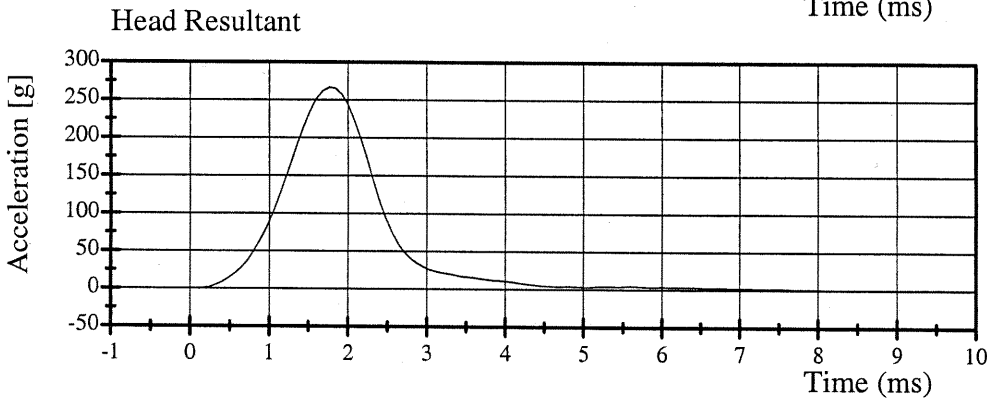
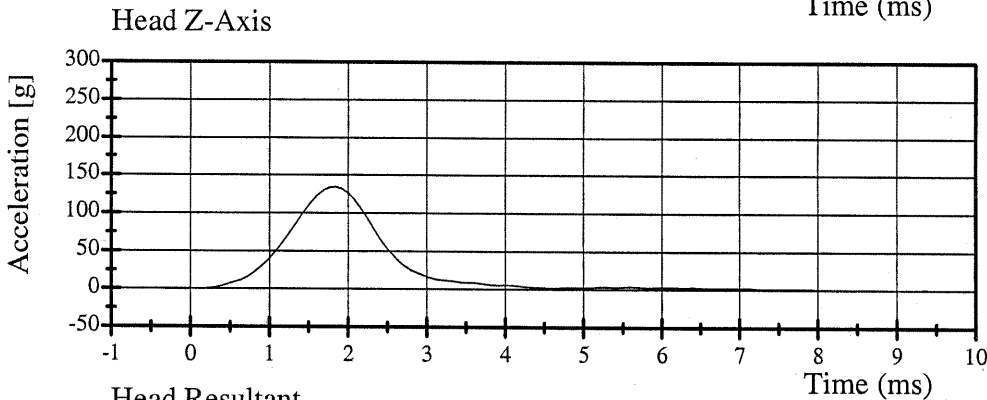
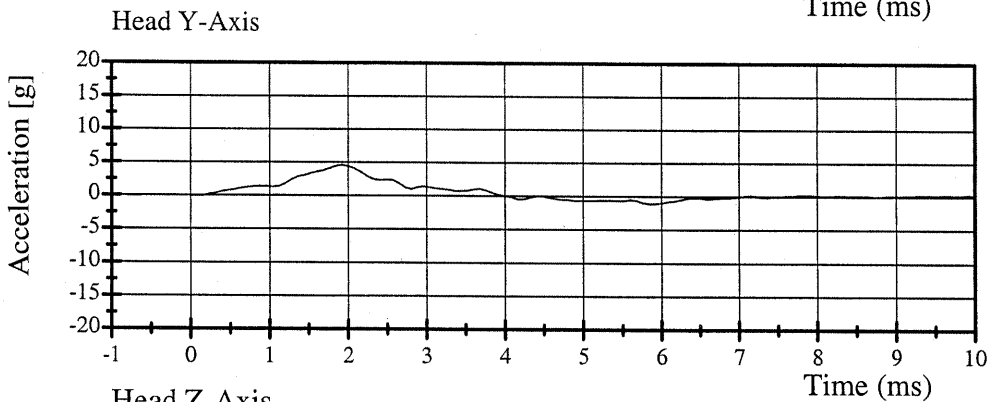
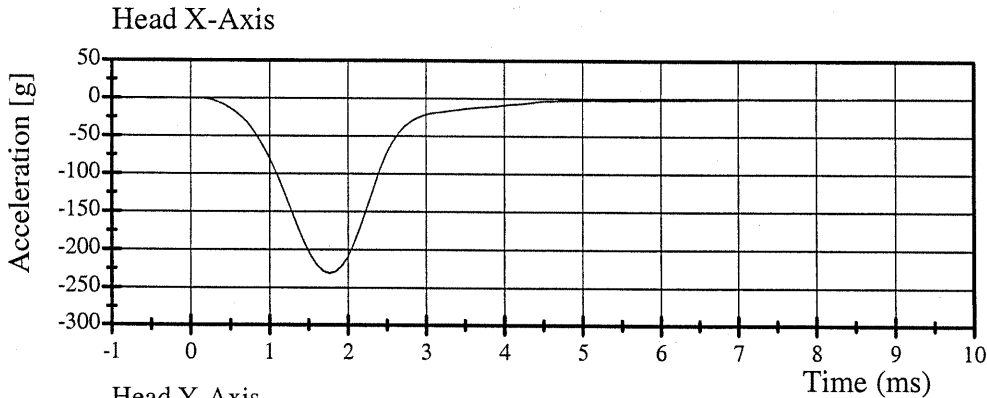


Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 3

Test Date 06/22/2005



06.22.2005 11:33:22 614



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/21/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.01 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	23.22 g	Yes
20 ms	17.60 - 22.60 g	21.44 g	Yes
30 ms	12.50 - 18.50 g	14.94 g	Yes
Max Pendulum Deceleration	29.00 g	24.42 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	14.86 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	34 - 42 ms	39.76 ms	Yes
D Plane Rotation			
Max	64 - 78 °	70.07 °	Yes
Time	57 - 64 ms	60.00 ms	Yes
Moment About Occipital Condyle			
Max	88.1 - 108.5 N·m	97.62 N·m	Yes
Time	47 - 58 ms	52.64 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	113 - 128 ms	122.24 ms	Yes
Positive Moment-Time Curve			
Decay Time To Zero	97 - 107 ms	100.72 ms	Yes

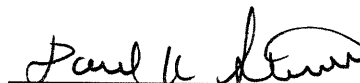
Test meets specifications.

Comments:

Technician



Approved



06.21.2005 13:32:24 1137



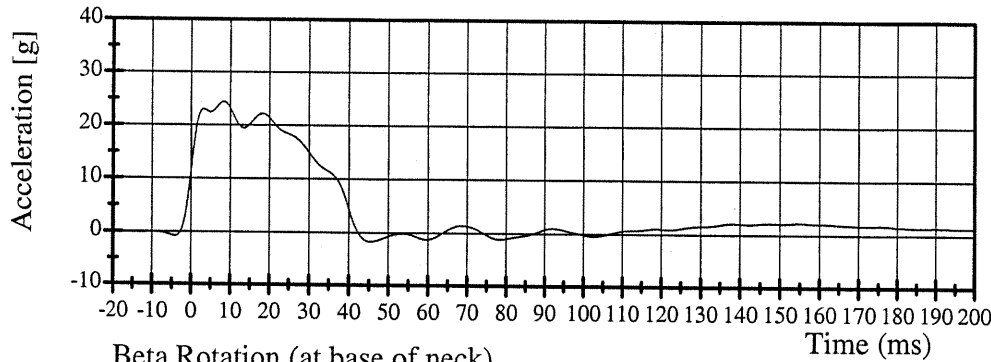
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/21/2005

Pendulum Deceleration

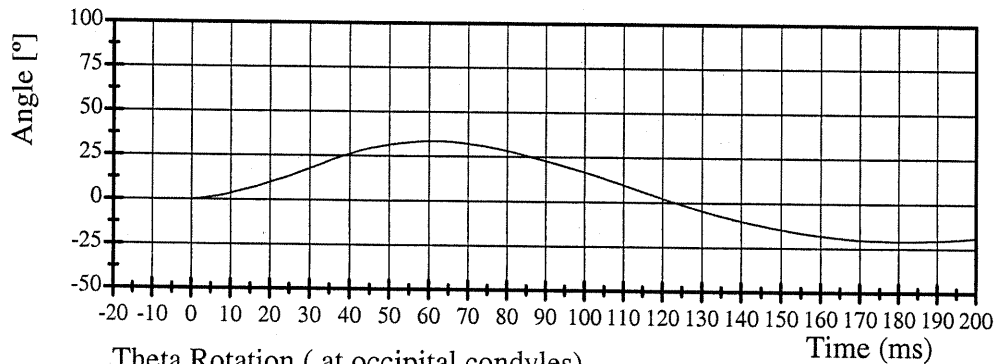


Filter Class: 60

Max: 24.4 g at 8.4 ms

Min: -1.6 g at 45.4 ms

Beta Rotation (at base of neck)

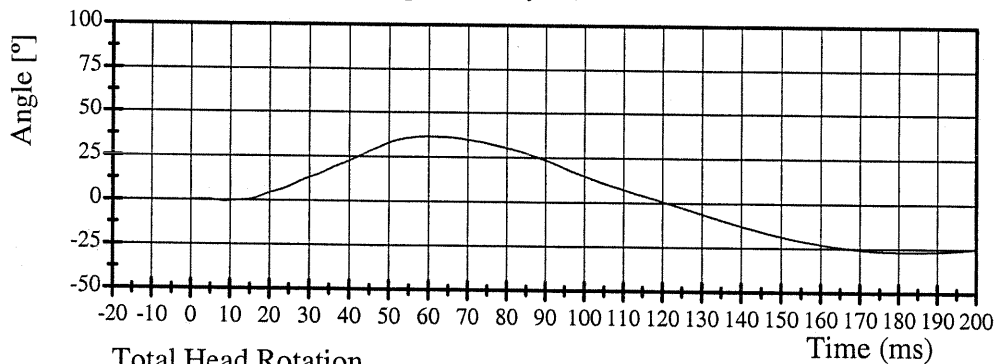


Filter Class: 60

Max: 33.5 ° at 61.0 ms

Min: -20.8 ° at 181.5 ms

Theta Rotation (at occipital condyles)

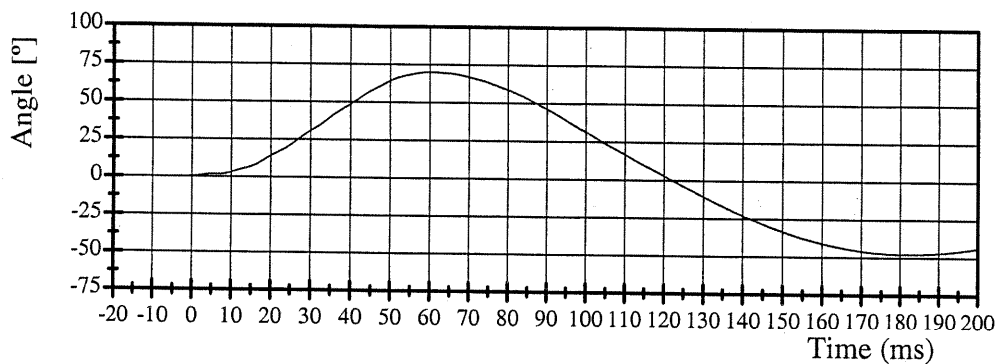


Filter Class: 60

Max: 36.6 ° at 59.5 ms

Min: -26.8 ° at 183.1 ms

Total Head Rotation



Filter Class: 60

Max: 70.1 ° at 60.0 ms

Min: -47.7 ° at 182.4 ms

06.21.2005 13:32:25 1137

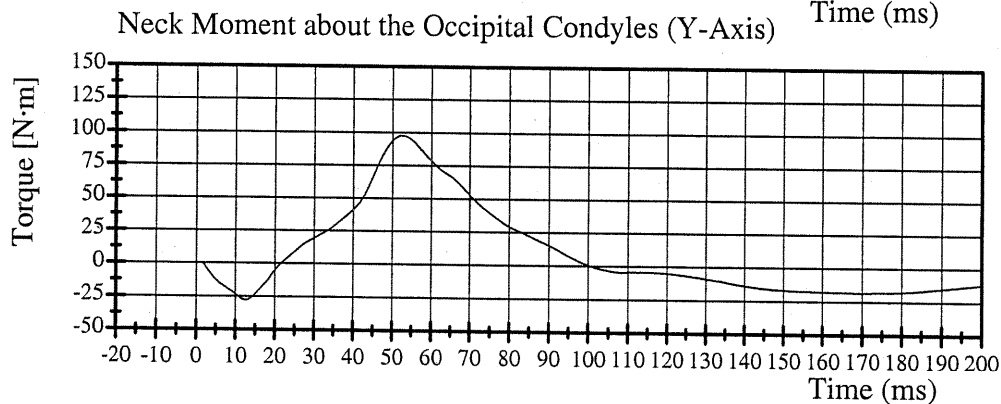
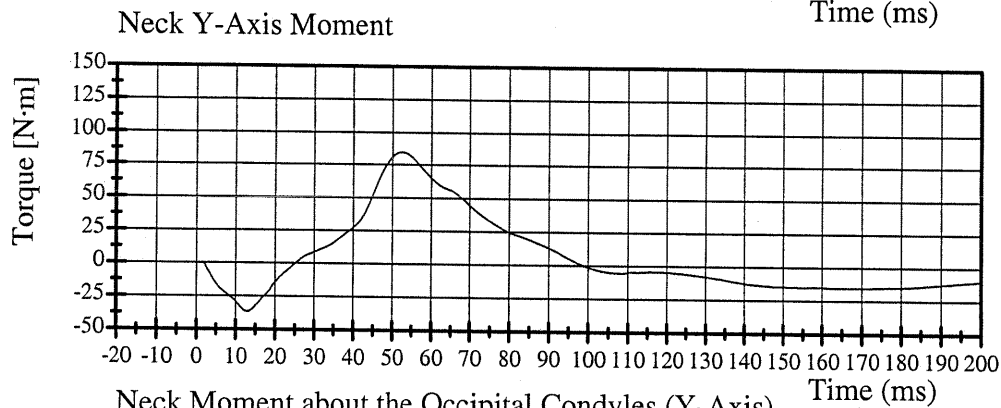
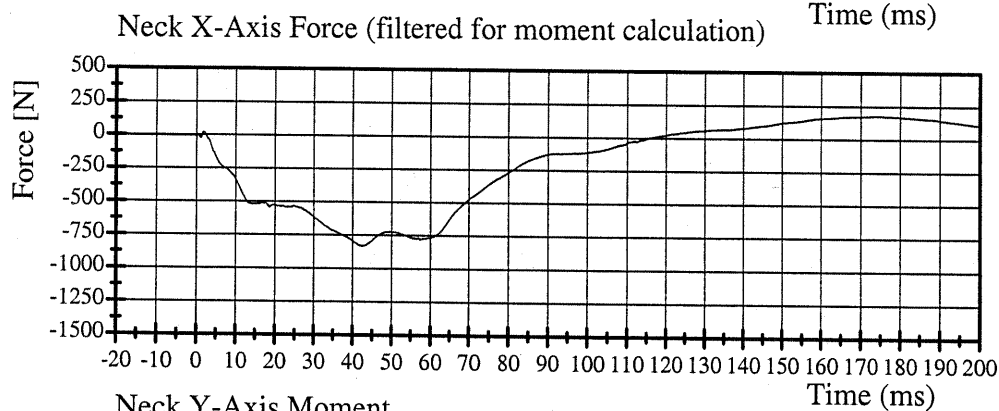
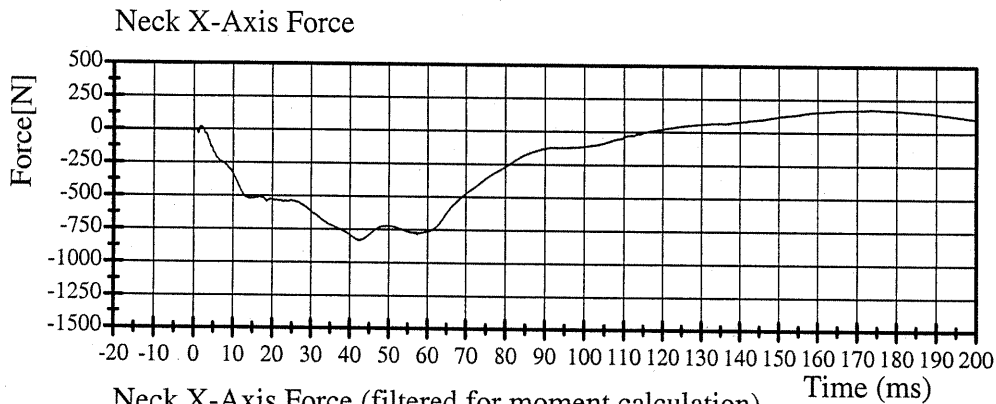


Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/21/2005



06.21.2005 13:32:27 1137



Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

HIII 50th Male Serial No. 110 Calibration No. 14 - 3

Test Date 06/21/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.05 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	17.97 g	Yes
20 ms	14.00 - 19.00 g	16.55 g	Yes
30 ms	11.00 - 16.00 g	13.04 g	Yes
Max Pendulum Deceleration	22.00 g	19.50 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	13.01 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	42.64 ms	Yes
D Plane Rotation			
Max	81 - 106 °	96.88 °	Yes
Time	72 - 82 ms	74.80 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-72.65 N·m	Yes
Time	65 - 79 ms	69.28 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	160.32 ms	Yes
Negative Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	145.68 ms	Yes

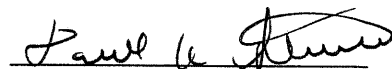
Test meets specifications.

Comments:

Technician



Approved



06.21.2005 15:25:27 3100



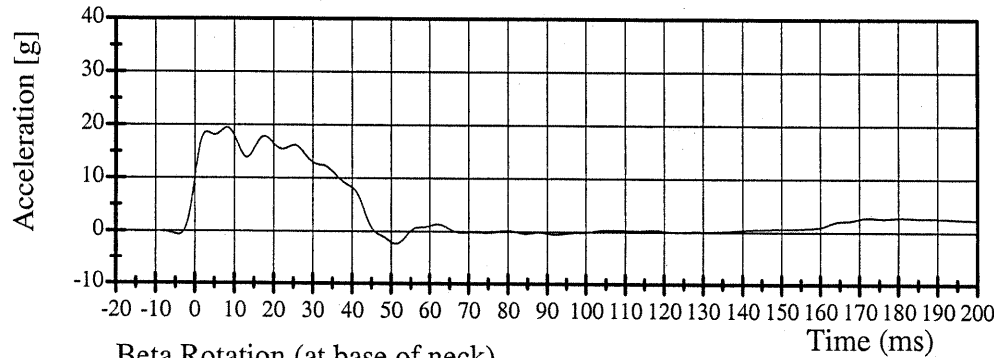
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 3

Test Date 06/21/2005

Pendulum Deceleration

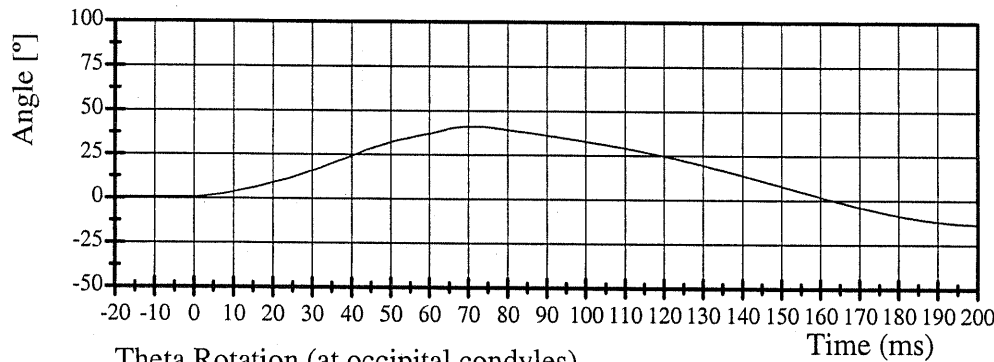


Filter Class: 60

Max: 19.5 g at 8.2 ms

Min: -2.3 g at 51.1 ms

Beta Rotation (at base of neck)

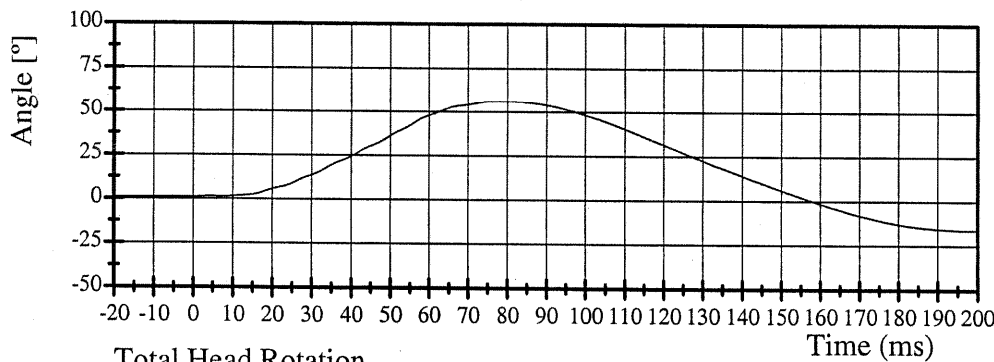


Filter Class: 60

Max: 41.1 ° at 72.2 ms

Min: -13.8 ° at 205.0 ms

Theta Rotation (at occipital condyles)

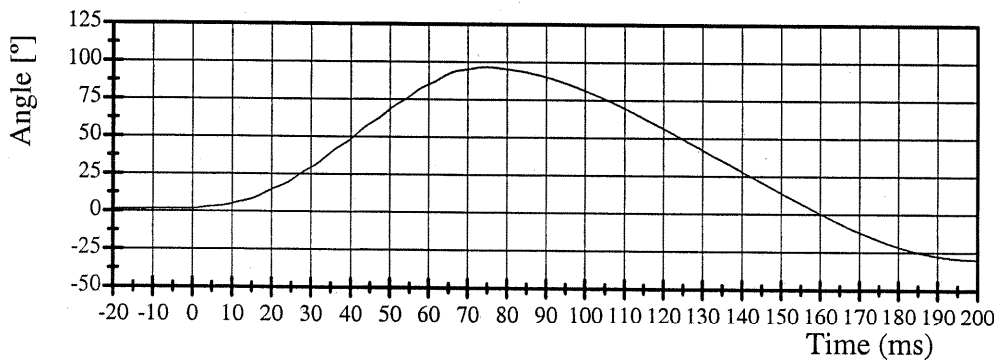


Filter Class: 60

Max: 56.2 ° at 77.0 ms

Min: -16.3 ° at 202.0 ms

Total Head Rotation



Filter Class: 60

Max: 96.9 ° at 74.8 ms

Min: -30.0 ° at 204.2 ms

06.21.2005 15:25:29 3100



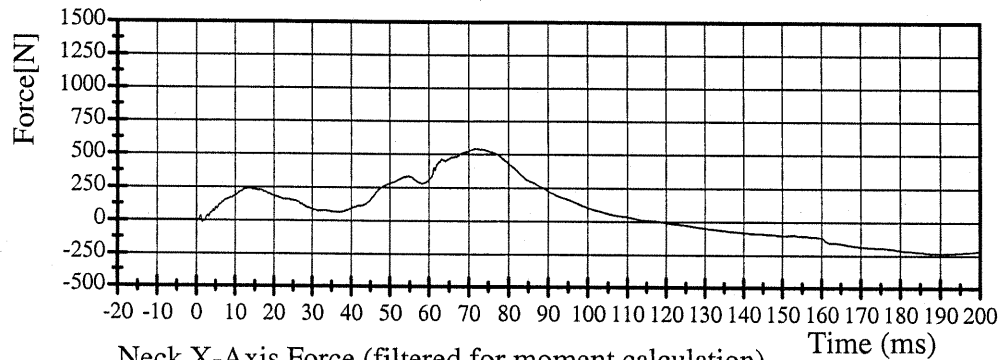
Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 3

Test Date 06/21/2005

Neck X-Axis Force

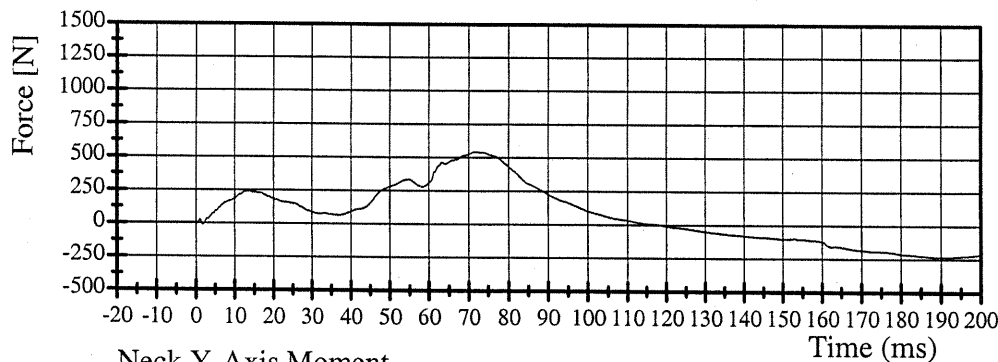


Filter Class: 1000

Max: 541.0 N at 71.8 ms

Min: -233.6 N at 190.1 ms

Neck X-Axis Force (filtered for moment calculation)

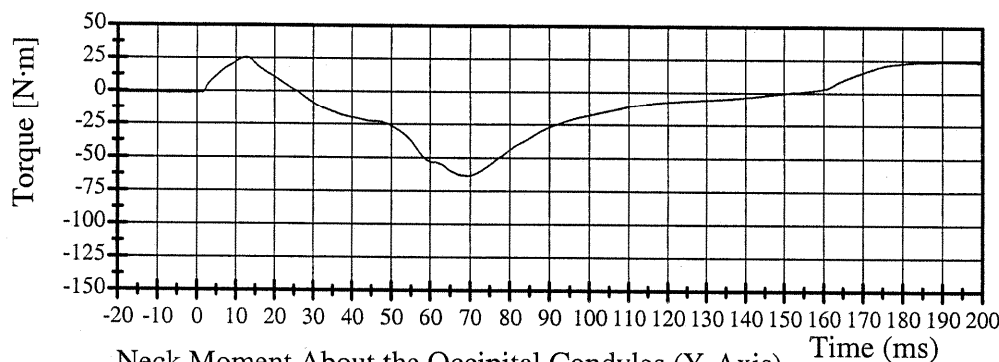


Filter Class: 600

Max: 540.7 N at 71.8 ms

Min: -233.4 N at 190.5 ms

Neck Y-Axis Moment

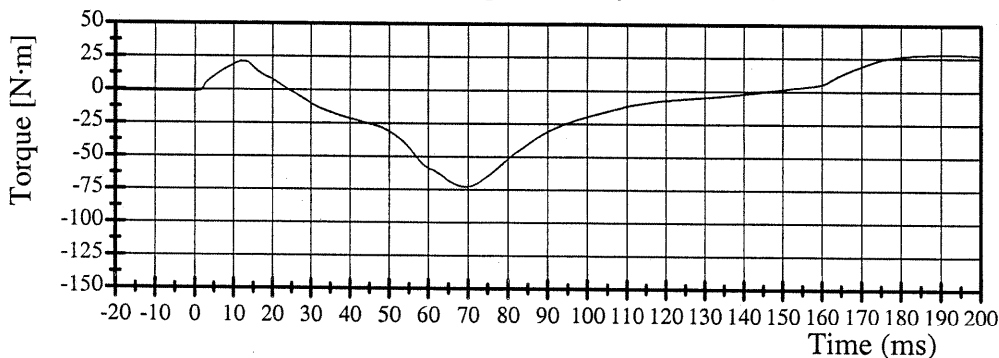


Filter Class: 600

Max: 25.6 N·m at 12.5 ms

Min: -63.5 N·m at 69.1 ms

Neck Moment About the Occipital Condyles (Y-Axis)



Filter Class: 600

Max: 28.2 N·m at 192.2 ms

Min: -72.7 N·m at 69.3 ms

06.21.2005 15:25:30 3100



Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.61 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-69.6 mm	Yes
Maximum Resistive Force	5160 - 5894 N	5662 N	Yes
Internal Hysteresis	69 - 85 %	70 %	Yes

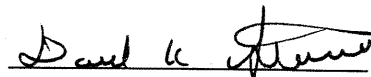
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 11:40:05 1604



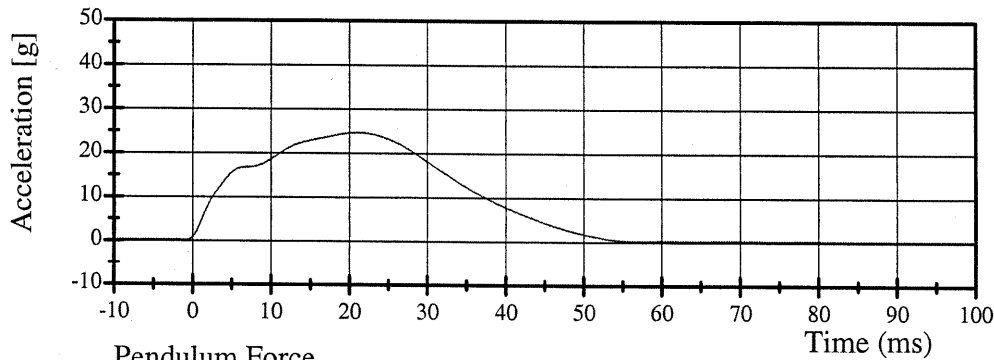
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/24/2005

Pendulum Deceleration

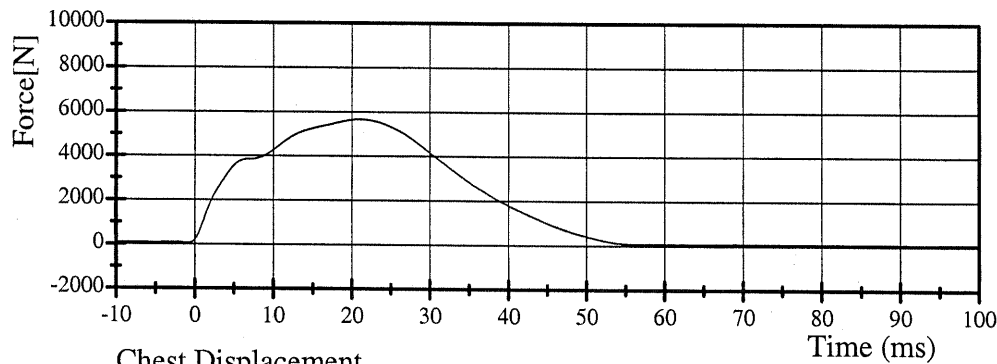


Filter Class: 180

Max: 24.7 g at 21.0 ms

Min: -0.0 g at -127.4 ms

Pendulum Force

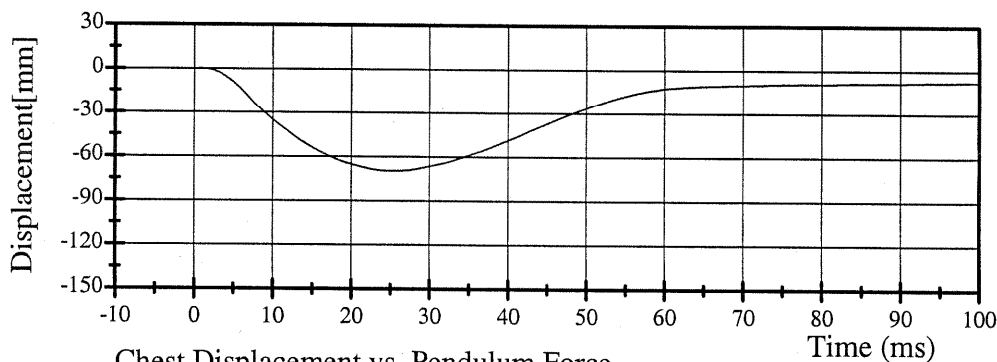


Filter Class: 180

Max: 5662.2 N at 21.0 ms

Min: -7.7 N at -127.4 ms

Chest Displacement

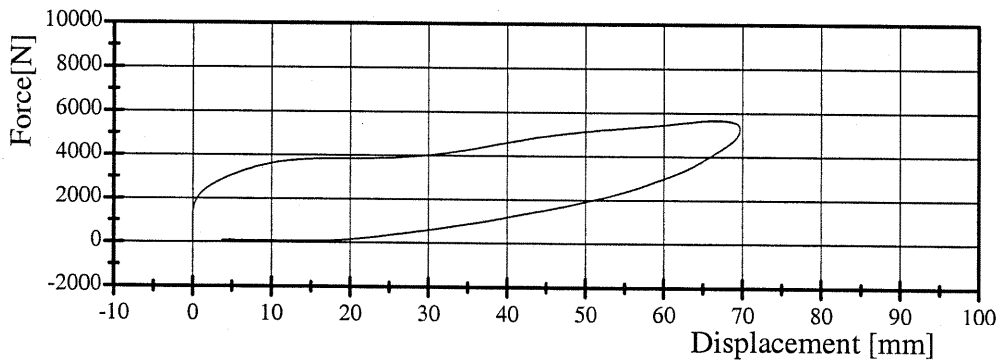


Filter Class: 180

Max: 0.1 mm at 0.9 ms

Min: -69.6 mm at 25.3 ms

Chest Displacement vs. Pendulum Force



06.24.2005 11:40:06 1604



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

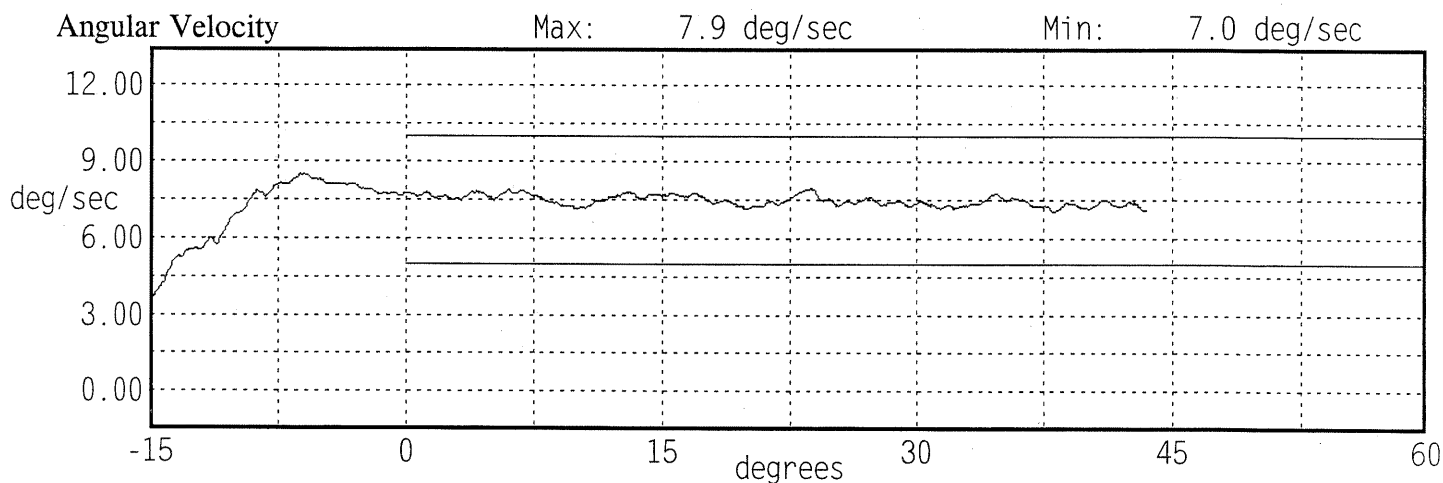
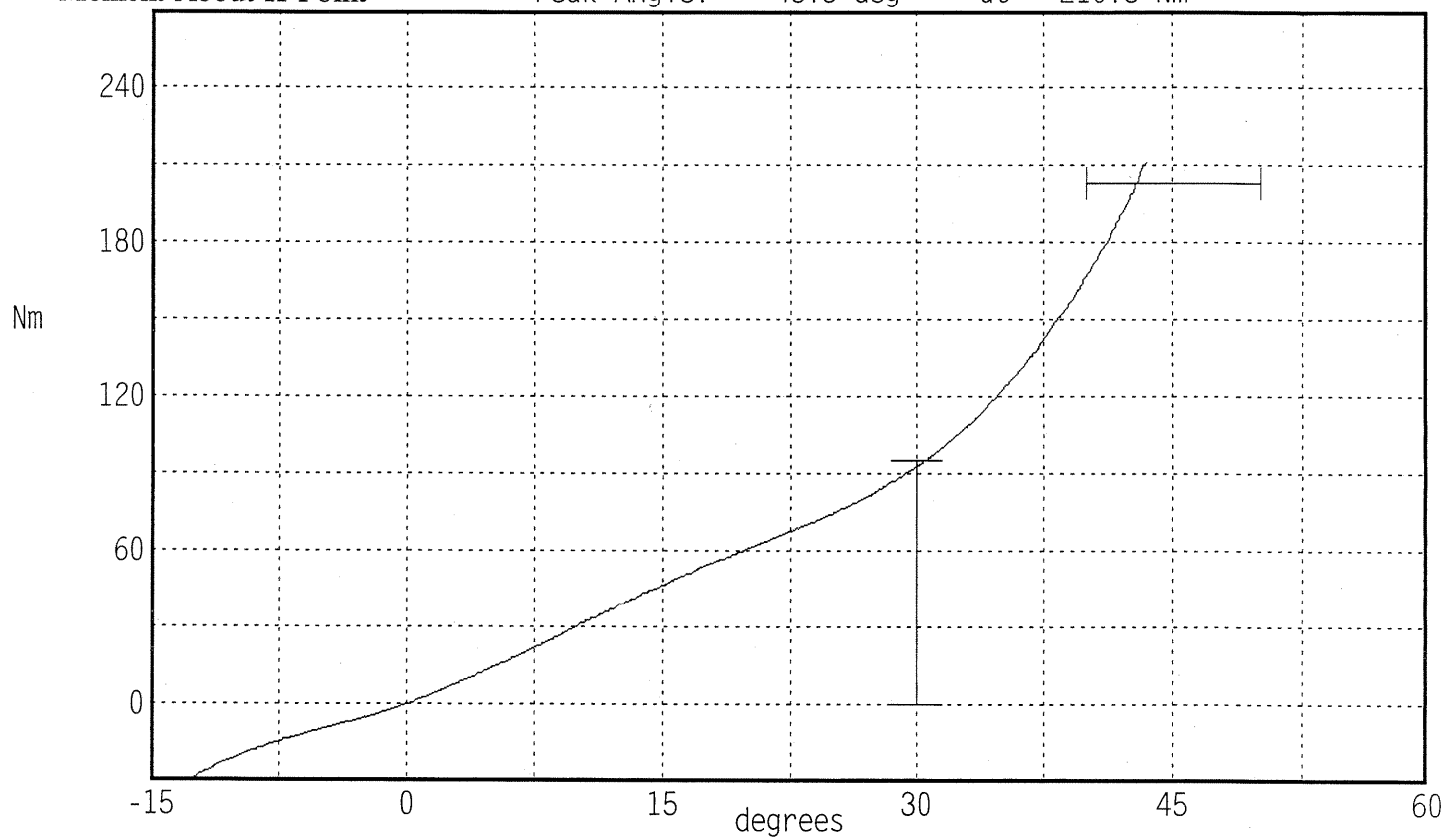
Serial Number: 110L
Test Number: 110C14

Date: 06/20/2005
Time: 15:15

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.2 °C Pass
Humidity	10 - 70	49 % Pass
Moment at 30 deg	<= 94.9	93.0 Nm Pass
Angle at 203 Nm	40.0 - 50.0	43.0 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 210.8 Nm at 43.5 deg
Peak Angle: 43.5 deg at 210.8 Nm



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

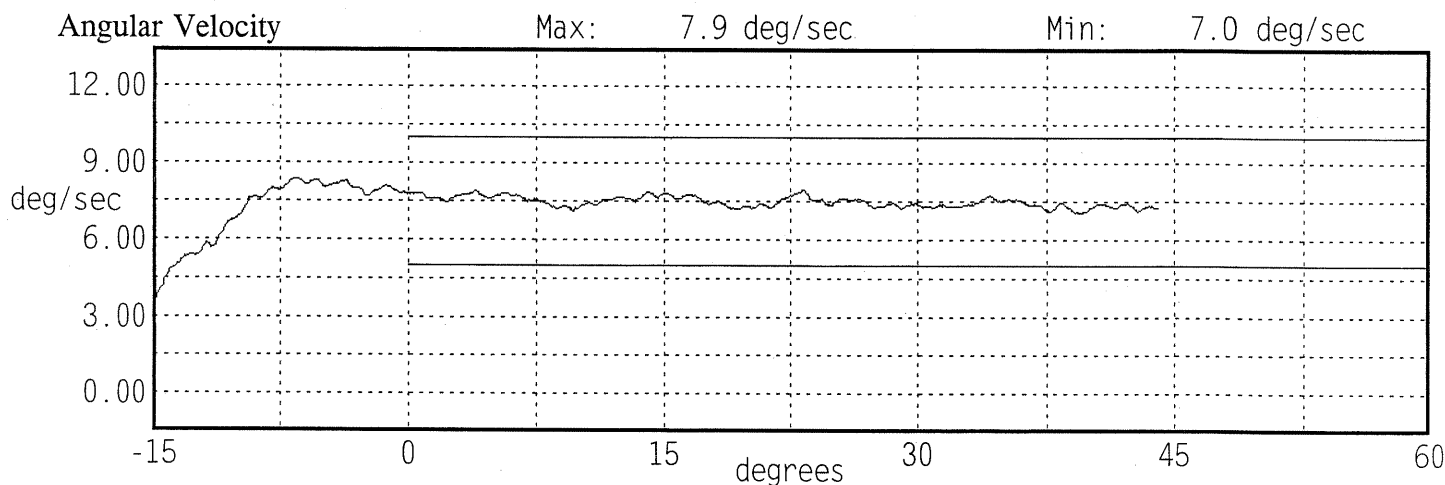
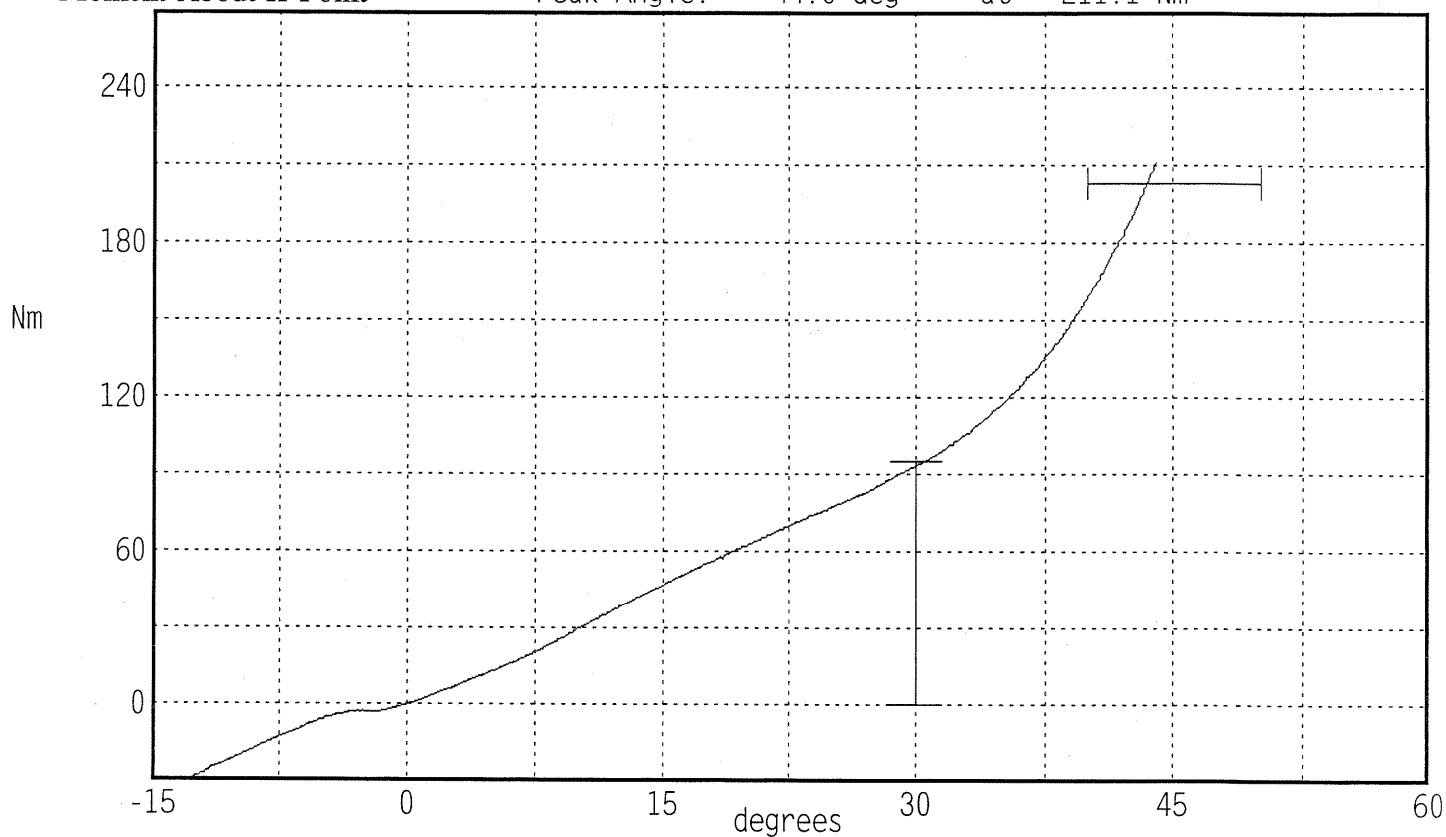
Serial Number: 110R
Test Number: 110C14

Date: 06/20/2005
Time: 15:23

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.4 °C Pass
Humidity	10 - 70	47 % Pass
Moment at 30 deg	<= 94.9	93.6 Nm Pass
Angle at 203 Nm	40.0 - 50.0	43.5 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Moment About H-Point
Peak Moment: 211.1 Nm at 44.0 deg
Peak Angle: 44.0 deg at 211.1 Nm



Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

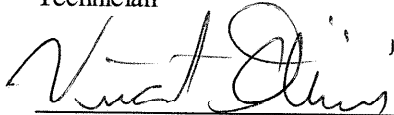
Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.13 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5662 N	Yes

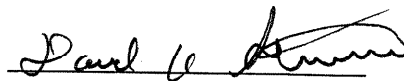
Test meets specifications.

Comments:

Technician



Approved



06.22.2005 12:42:14 2079

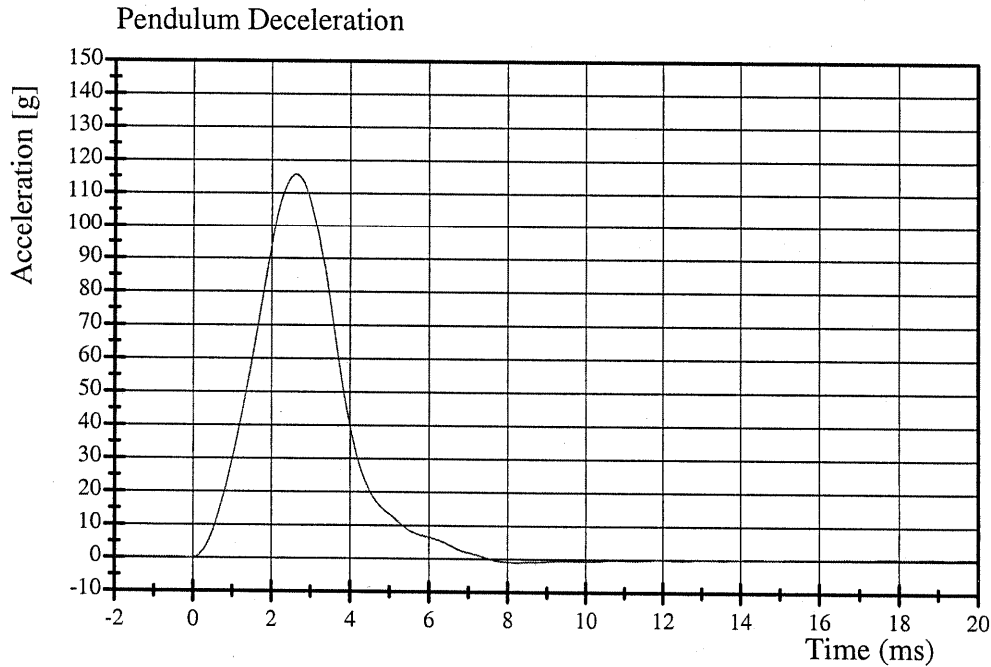


Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

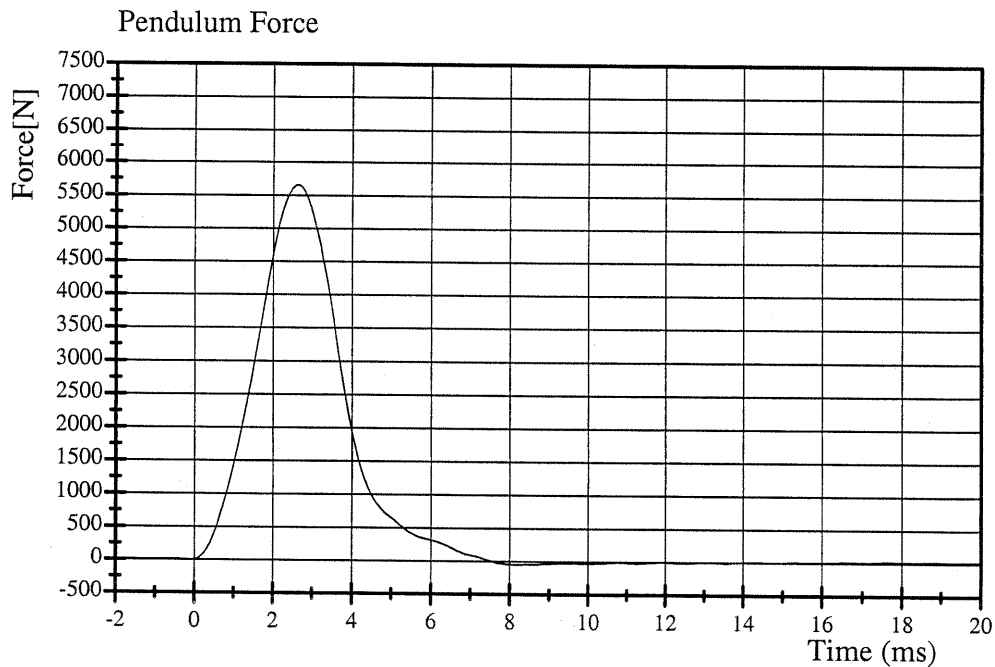
Test Date 06/22/2005



Filter Class: 600

Max: 115.7 g at 2.6 ms

Min: -1.0 g at 8.2 ms



Filter Class: 600

Max: 5662.4 N at 2.6 ms

Min: -50.1 N at 8.2 ms

06.22.2005 12:42:15 2079



Transportation Research Center Inc.

572E Left Slider Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/23/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.74 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1459 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2786 N	Yes

Test meets specifications.

Comments:

Technician

Vincent Olmstead

Approved

Paul H. Sturges

06.23.2005 08:01:38 1742

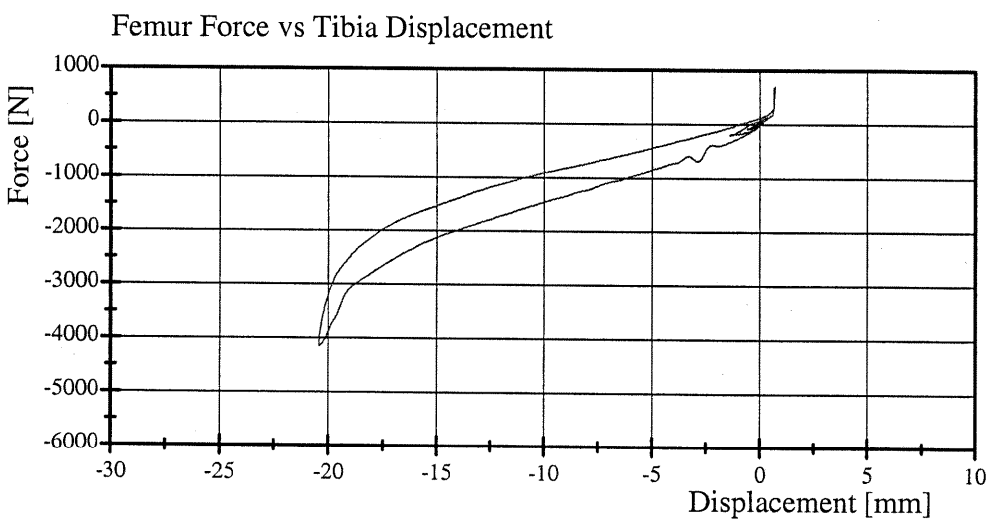
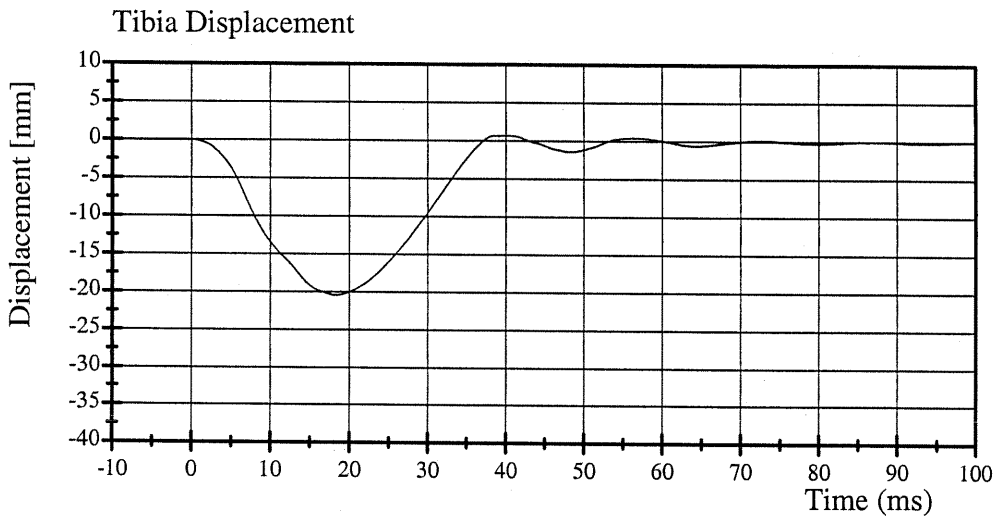
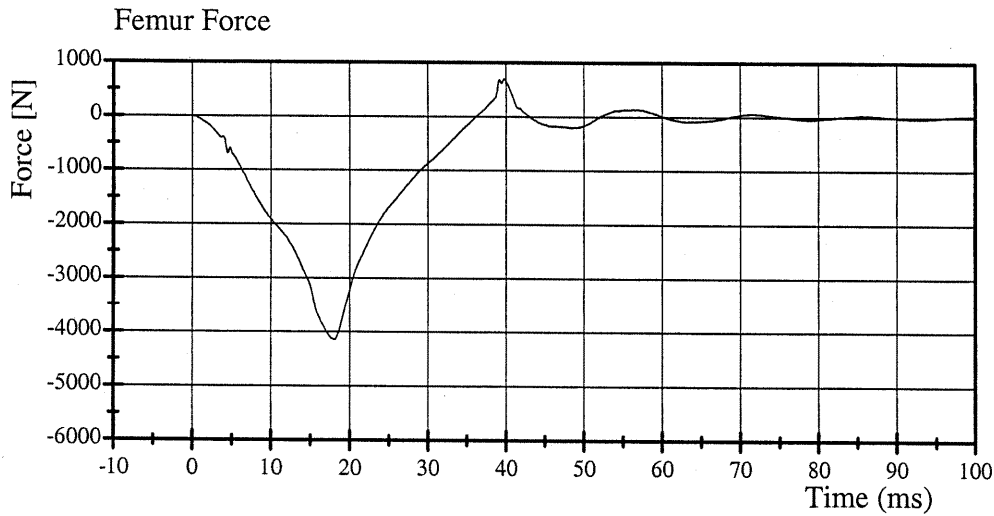


Transportation Research Center Inc.

572E Left Slider Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/23/2005



06.23.2005 08:01:39 1742



Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 2

Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.12 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5539 N	Yes

Test meets specifications.

Comments:

Technician

Vincent Oliver

Approved

David W. Oliver

06.22.2005 13:29:26 2138

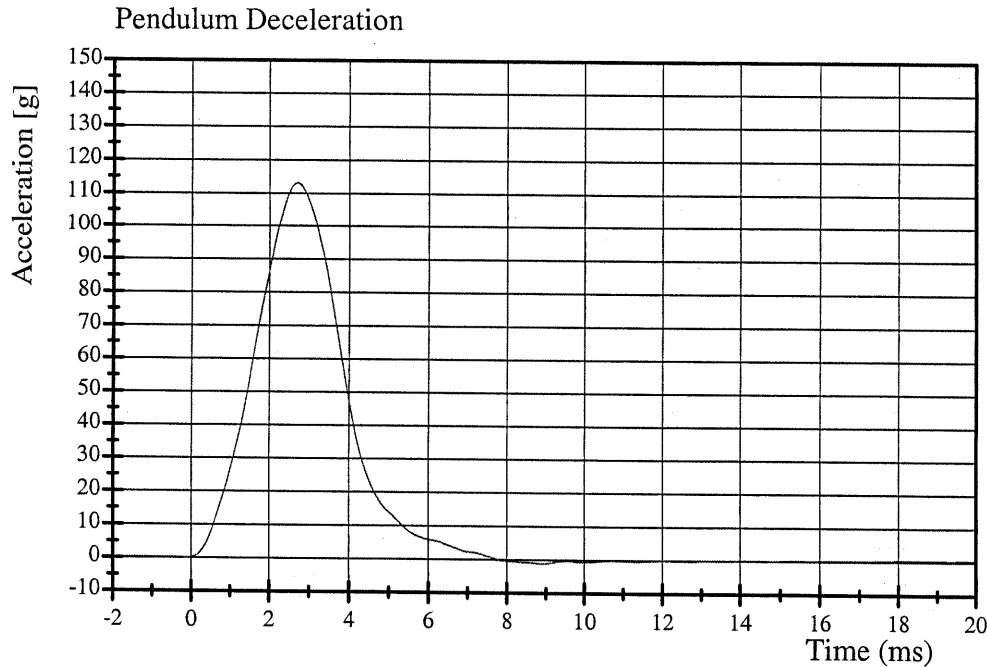


Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 2

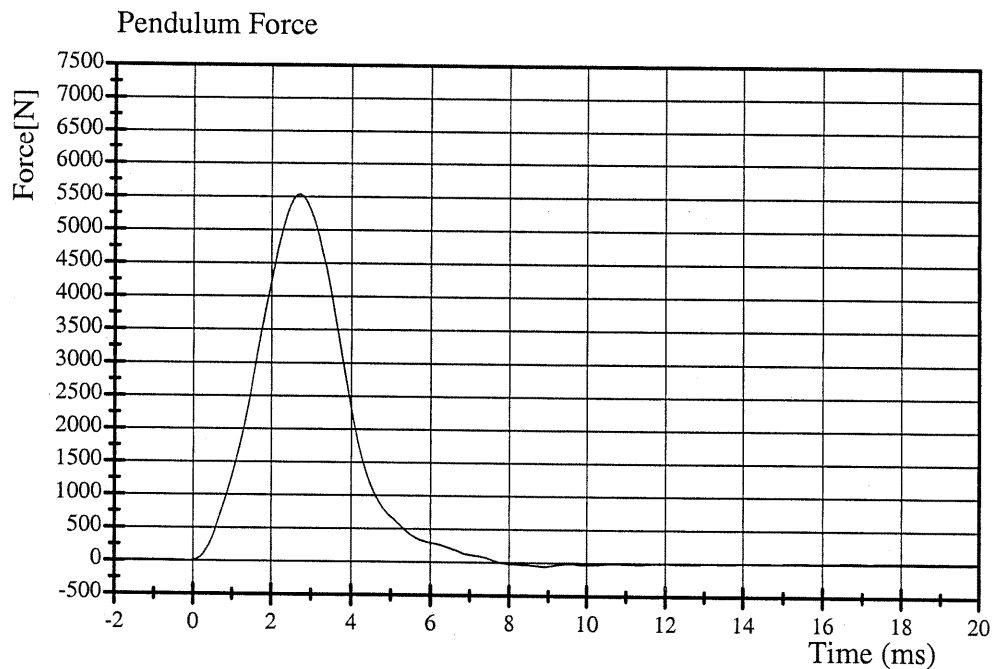
Test Date 06/22/2005



Filter Class: 600

Max: 113.2 g at 2.7 ms

Min: -1.1 g at 8.9 ms



Filter Class: 600

Max: 5538.8 N at 2.7 ms

Min: -56.2 N at 8.9 ms

06.22.2005 13:29:27 2138



Transportation Research Center Inc.

572E Right Slider Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.75 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1515 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2883 N	Yes

Test meets specifications.

Comments:

Technician

Vincent Oliveri

Approved

David K. Hume

06.22.2005 15:22:27 1751

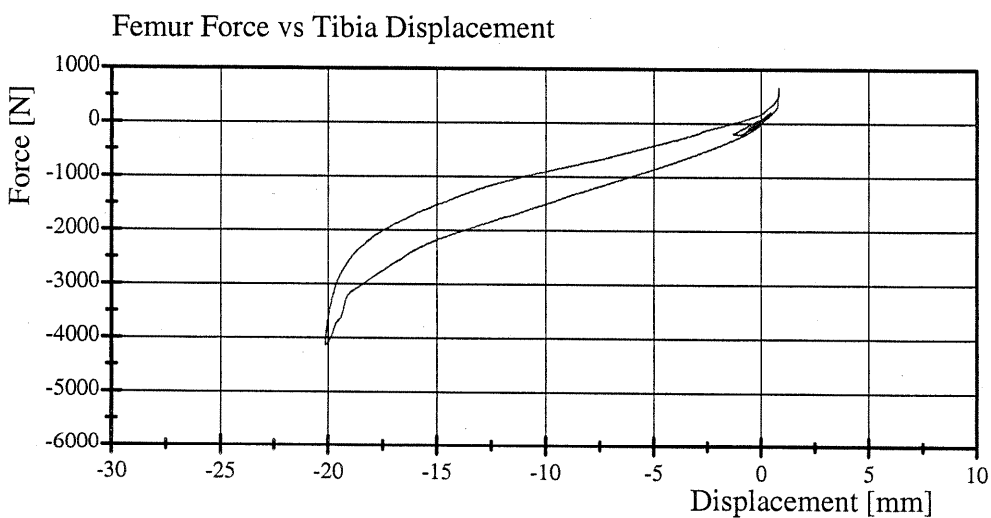
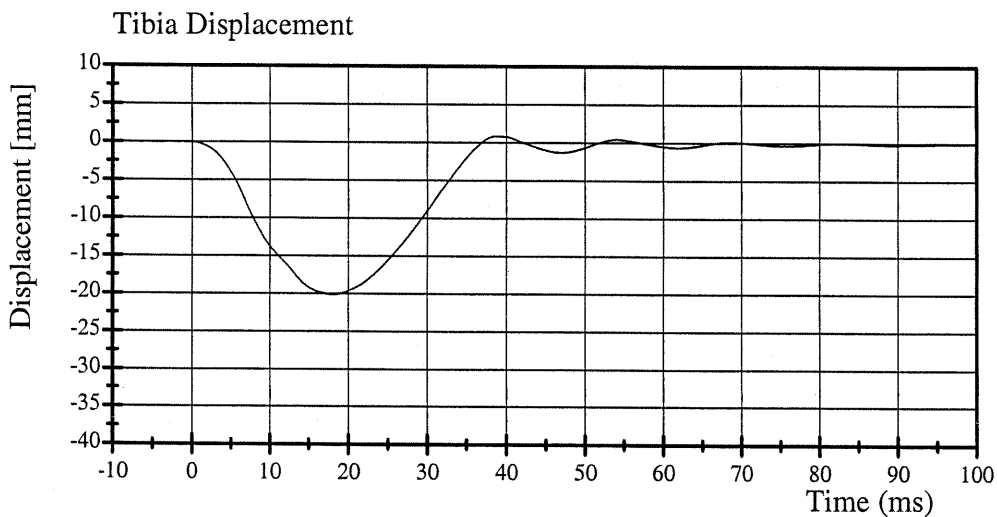
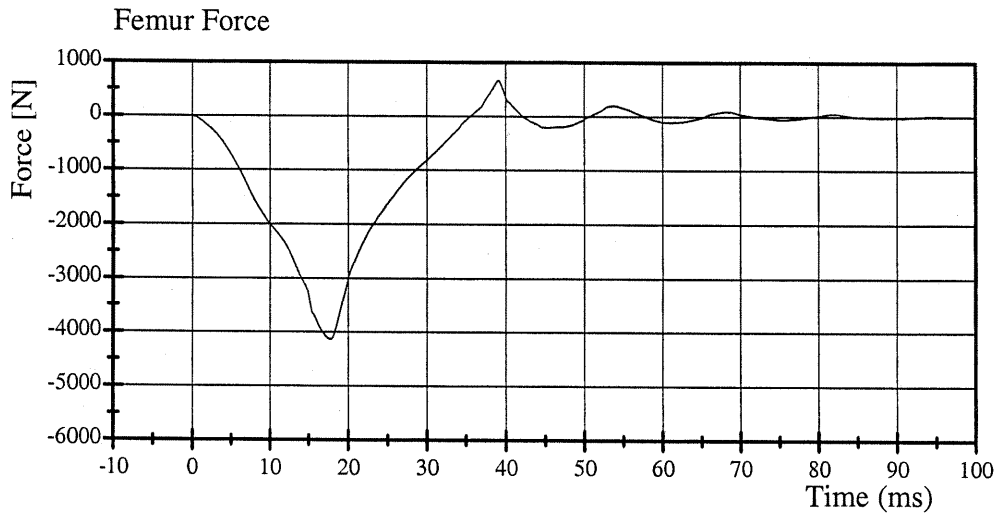


Transportation Research Center Inc.

572E Right Slider Test

HIII 50th Male Serial No. 110 Calibration No. 14 - 1

Test Date 06/22/2005



06.22.2005 15:22:28 1751



Pre-Test Dummy Configuration and Performance Verification Data

Target Vehicle Passenger Dummy S/N: 416

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 416 Calibration No. 28
With Thor FLX Legs

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	780	Yes
B	Shoulder Pivot Height	431.8 - 457.2	454	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	146	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	78	Yes
F	Thigh Clearance	119.4 - 134.6	129	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	248	Yes
H	Head Back to Backline	43.2 - 48.2	44	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	286	Yes
J	Elbow Rest Height	182.8 - 203.2	196	Yes
K	Buttock Knee Length	520.7 - 546.1	530	Yes
L	Popliteal Height	355.6 - 376.0	358	Yes
M	Knee Pivot Height	393.7 - 419.1	403	Yes
N	Buttock Popliteal Height	414.0 - 439.4	422	Yes
O	Chest Depth without Jacket	175.3 - 190.5	186	Yes
P	Foot Length	218.5 - 233.7	220	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	475	Yes
S	Head Breadth	137.1 - 147.3	142	Yes
T	Head Depth	177.8 - 188.0	182	Yes
U	Hip Breadth	299.7 - 314.9	302	Yes
V	Shoulder Breadth	350.5 - 365.7	358	Yes
W	Foot Breadth	78.8 - 94.0	88	Yes
X	Head Circumference	528.3 - 548.7	535	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	868	Yes
Z	Waist Circumference	759.5 - 789.9	772	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	340	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician

Vincent D. Dini

Approved

David A. Dini

Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 1

Test Date 06/23/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Peak Resultant Acceleration	250 - 300 g	275.2 g	Yes
Peak Lateral Acceleration	15 g Max	5.0 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Test meets specifications.

Comments:

Technician

Vincent Oliveri

Approved

Paul K. Oliveri

06.23.2005 14:40:59 608

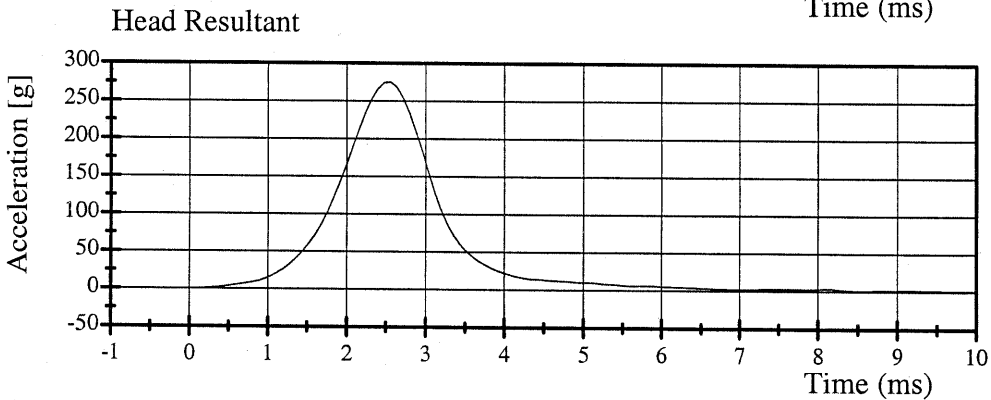
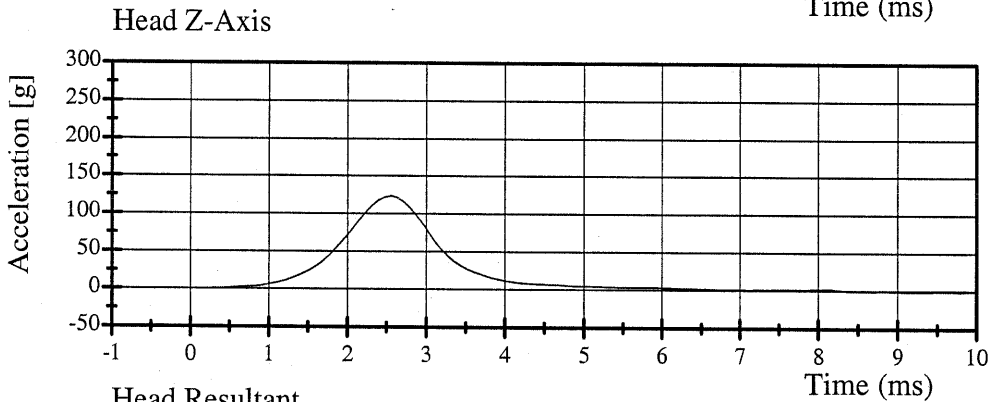
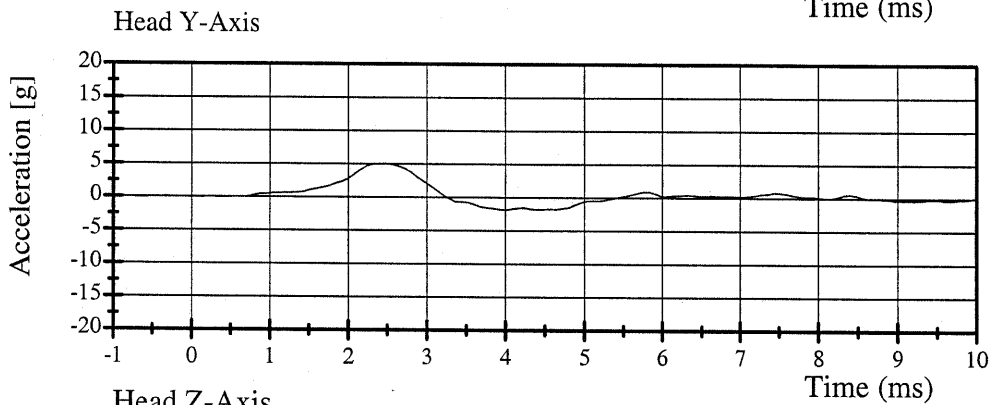
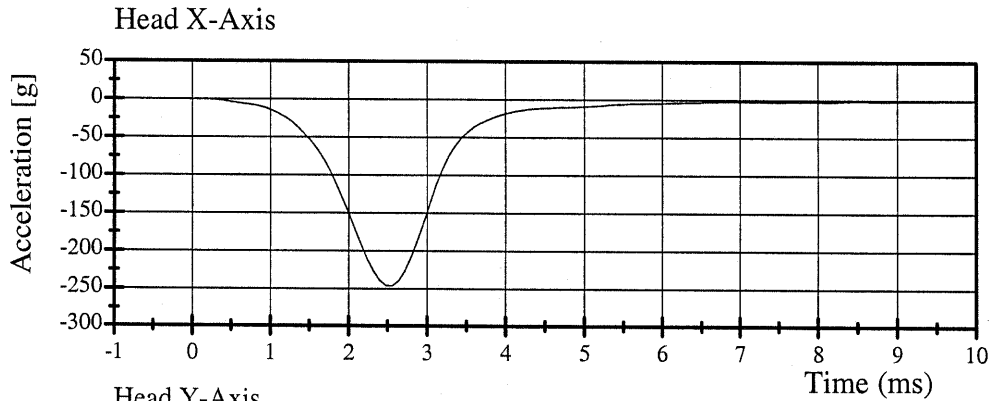


Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 1

Test Date 06/23/2005



06.23.2005 14:41:01 608



Transportation Research Center Inc.

5720 Neck Flexion Test - 6 Channel Transducer

HIII 5th Female Serial No. 416 Calibration No. 28 - 6

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.10 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.10 - 2.50 m/s	2.45 m/s	Yes
20 ms	4.00 - 5.00 m/s	4.70 m/s	Yes
30 ms	5.80 - 7.00 m/s	6.81 m/s	Yes
Peak D Plane Rotation	77 - 91 °	82.1 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	69.0 - 83.0 N·m	70.81 N·m	Yes
Positive Moment Decay Time To 10 N·m	80 - 100 ms	88.08 ms	Yes

Test meets specifications.

Comments:

Technician

Vince Dineen

Approved

Paul G. Krumm

06.24.2005 17:19:22 3006

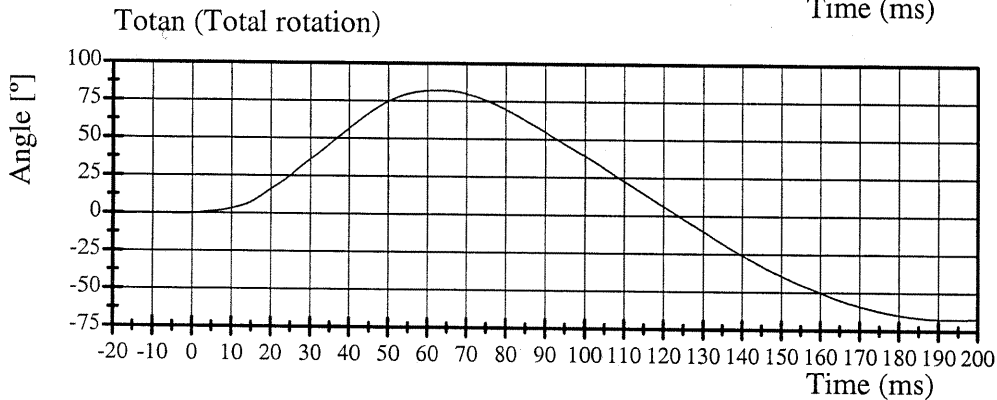
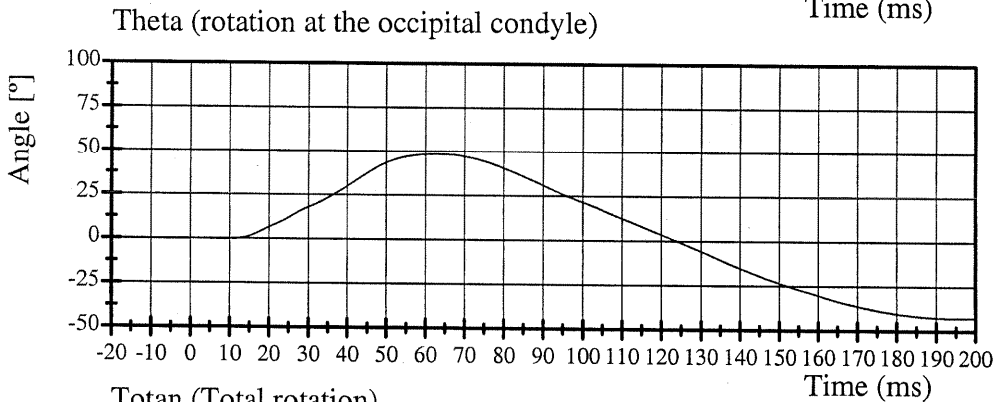
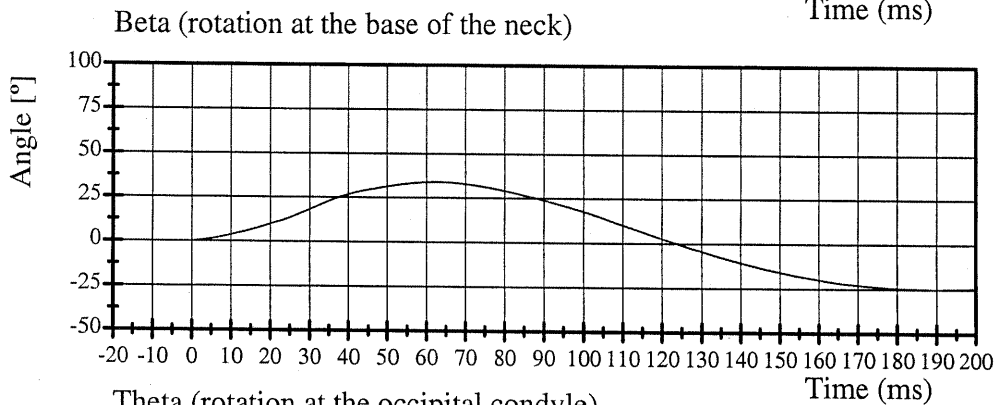
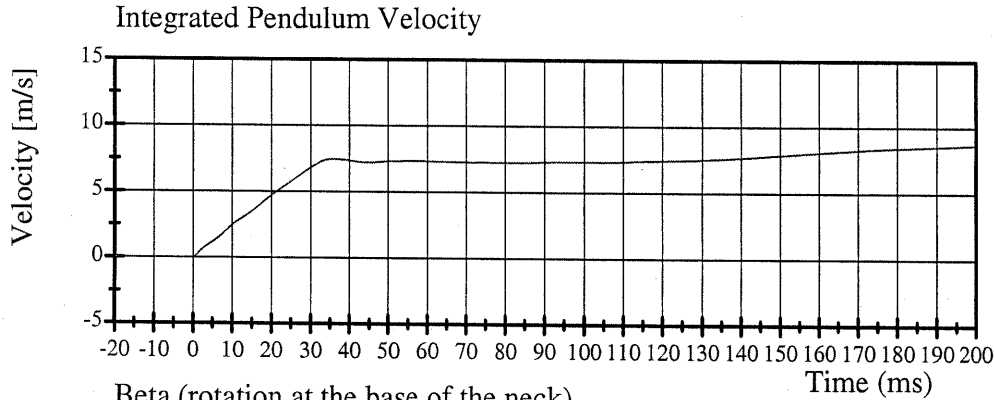


Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 6

Test Date 06/24/2005



06.24.2005 17:19:23 3006

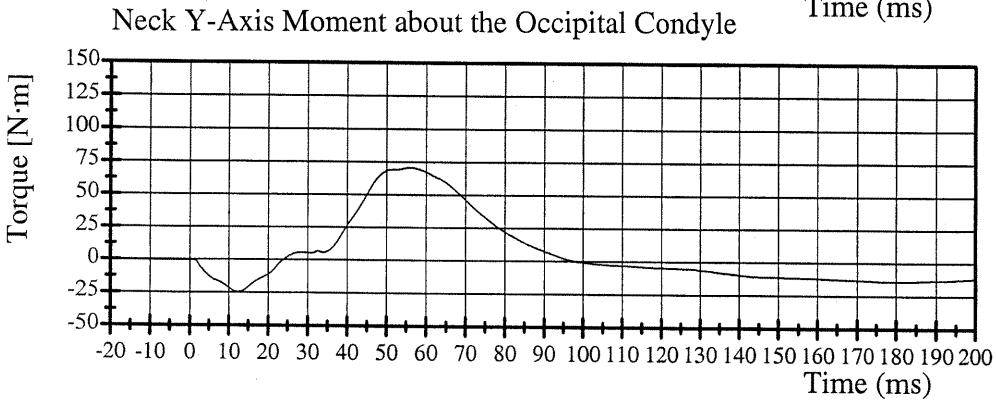
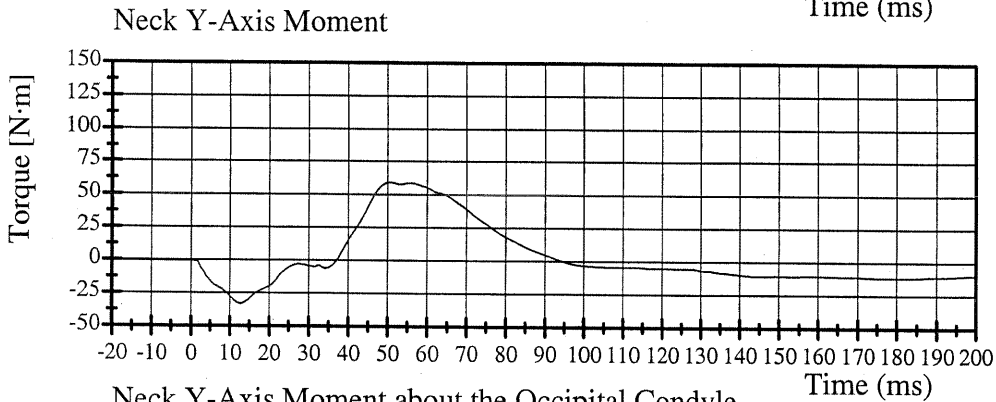
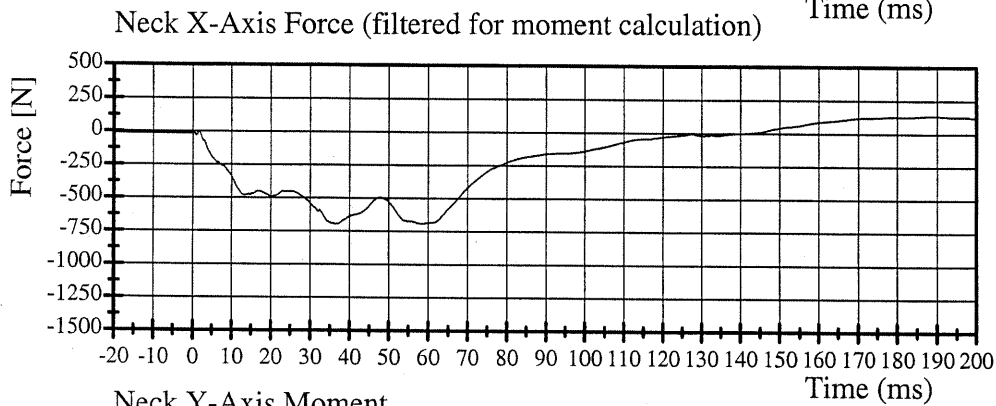
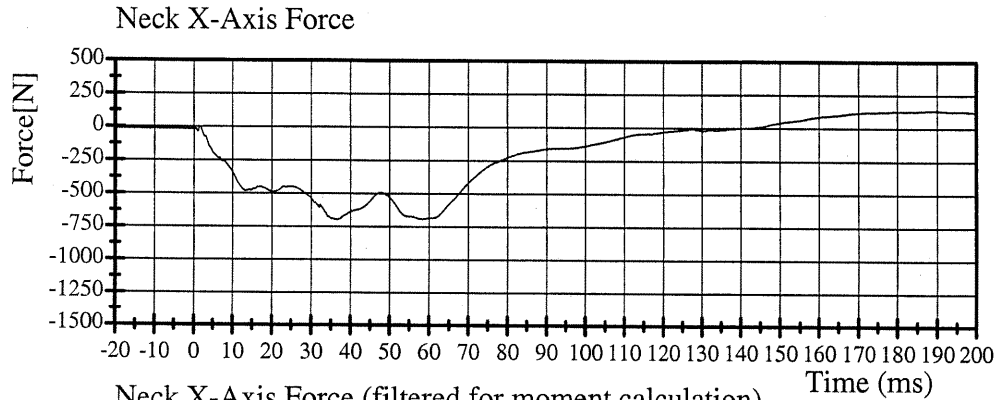


Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 6

Test Date 06/24/2005



06.24.2005 17:19:24 3006



Transportation Research Center Inc.

5720 Neck Extension Test - 6 Channel Transducer

HIII 5th Female Serial No. 416 Calibration No. 28 - 7

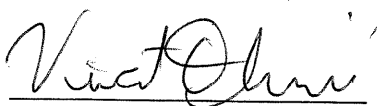
Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.05 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.50 - 1.90 m/s	1.59 m/s	Yes
20 ms	3.10 - 3.90 m/s	3.14 m/s	Yes
30 ms	4.60 - 5.60 m/s	4.61 m/s	Yes
Peak D Plane Rotation	99 - 114 °	113.6 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	-65.0 - (-53.0) N·m	-54.89 N·m	Yes
Negative Moment Decay Time To -10 N·m	94 - 114 ms	112.40 ms	Yes

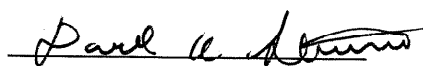
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 18:44:54 3099

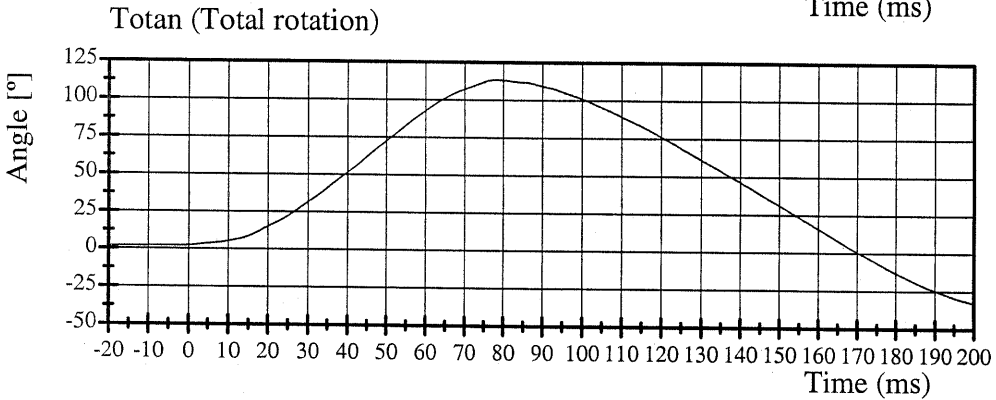
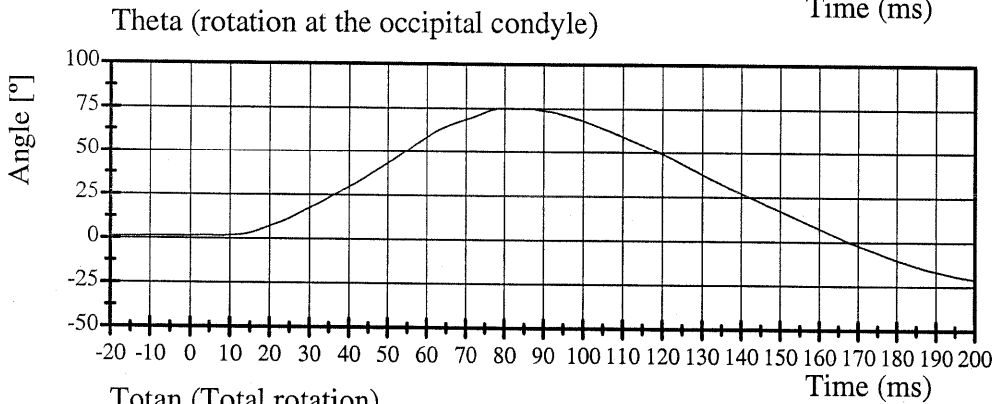
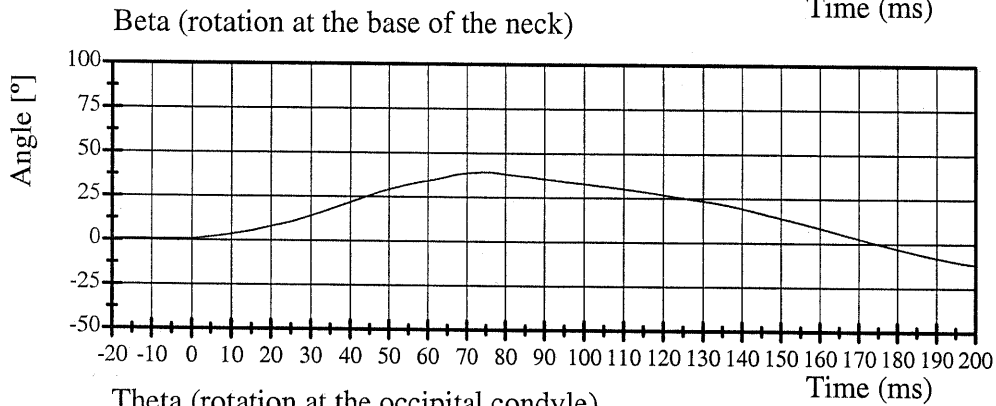
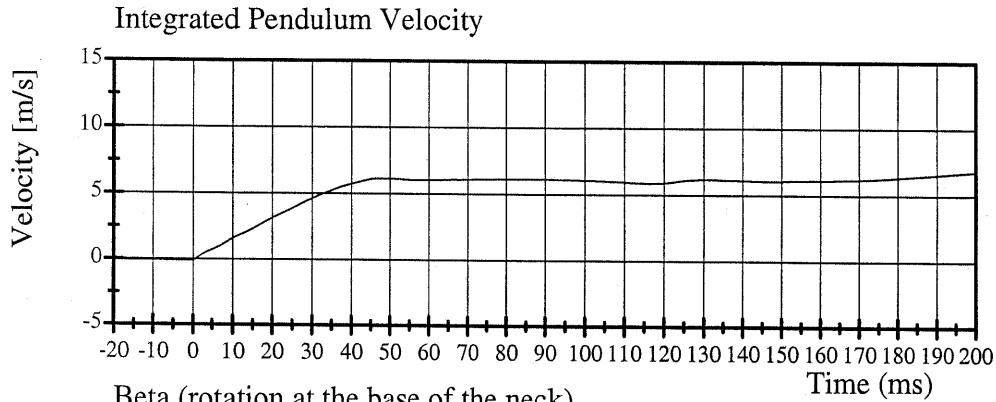


Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 7

Test Date 06/24/2005



06.24.2005 18:44:55 3099

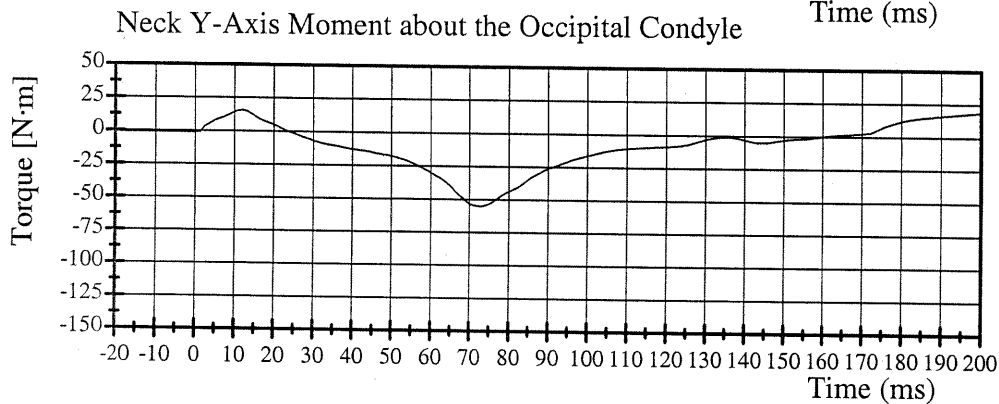
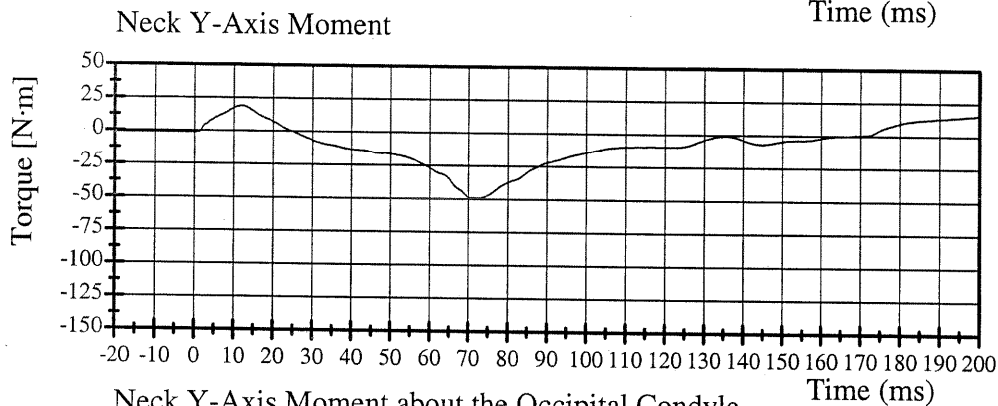
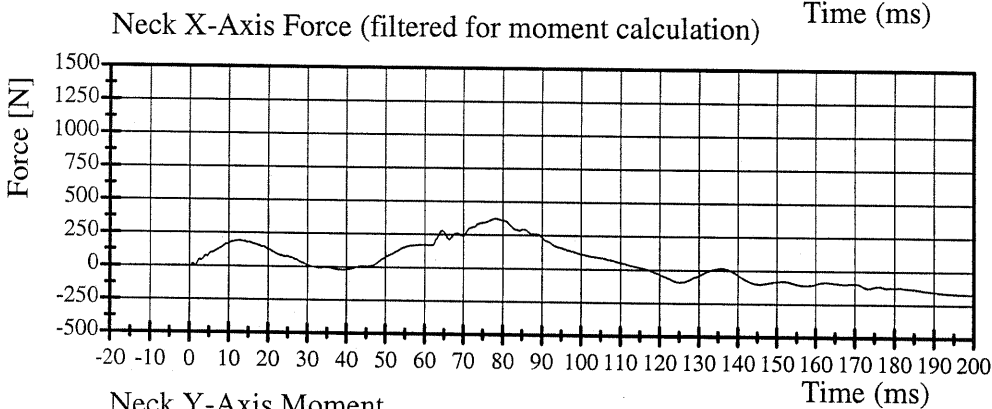
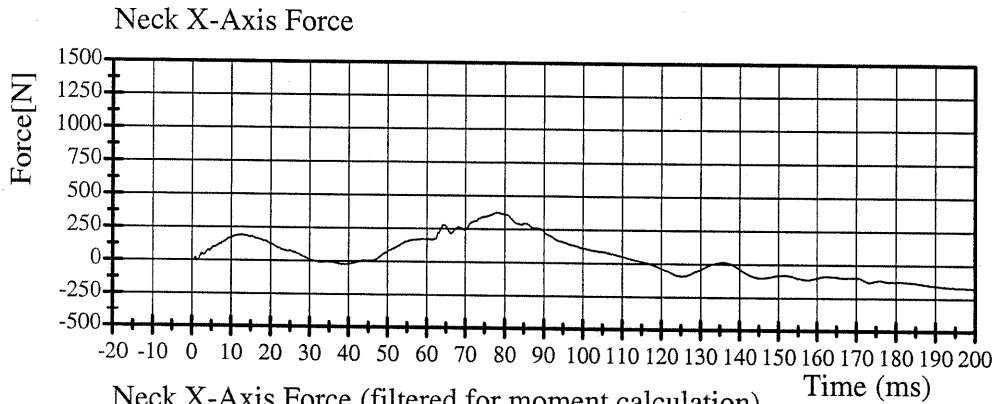


Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 7

Test Date 06/24/2005



06.24.2005 18:44:56 3099



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 22-Jun-05

TRC, INC. TEST NO: 416C28TF6 572 O SN416 TORSO FLEX CAL 28

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.3° C
RELATIVE HUMIDITY	10 – 70 %	51 %
INITIAL ANGLE OF UNSUPPORTED DUMMY	<= 20° REFERENCED TO VERTICAL	19.0°
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	336.8 N
RETURN ANGLE		24.3°
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	5.3 °
RATE	0.5° - 1.5°/sec	0.98 °/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN

Vincent Oliver

Transportation Research Center Inc.

5720 Thorax Test

HHH 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.60 m/s	Yes
Maximum Chest Deflection	-58.0 - (-50.0) mm	-55.0 mm	Yes
Peak Impact Probe Force Within Compression Corridor	3900 - 4400 N	4328 N	Yes
Peak Force Between 18 mm and 50 mm	4600 N	4148 N	Yes
Internal Hysteresis	69 - 85 %	72 %	Yes

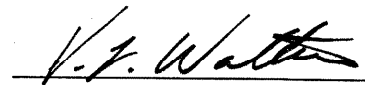
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 20:38:16 1708



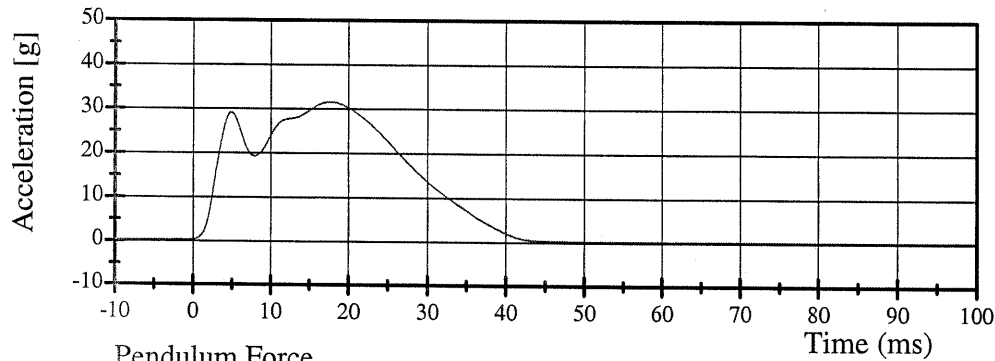
Transportation Research Center Inc.

5720 Thorax Test

HHH 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Pendulum Deceleration

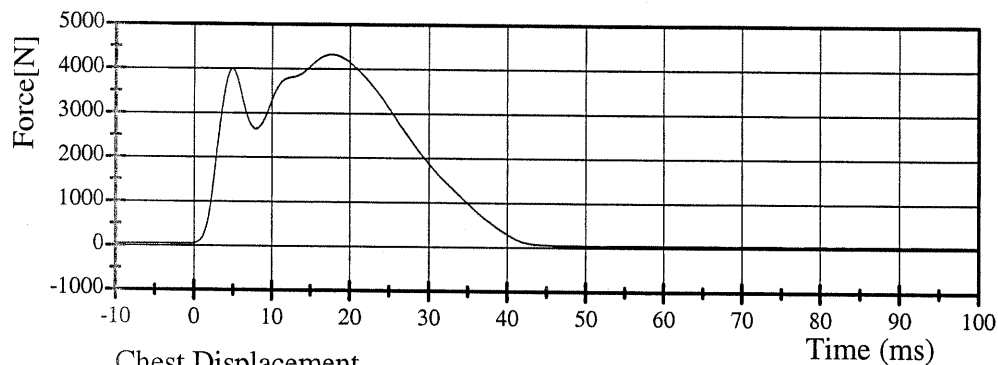


Filter Class: 180

Max: 31.6 g at 17.8 ms

Min: -0.4 g at 265.4 ms

Pendulum Force

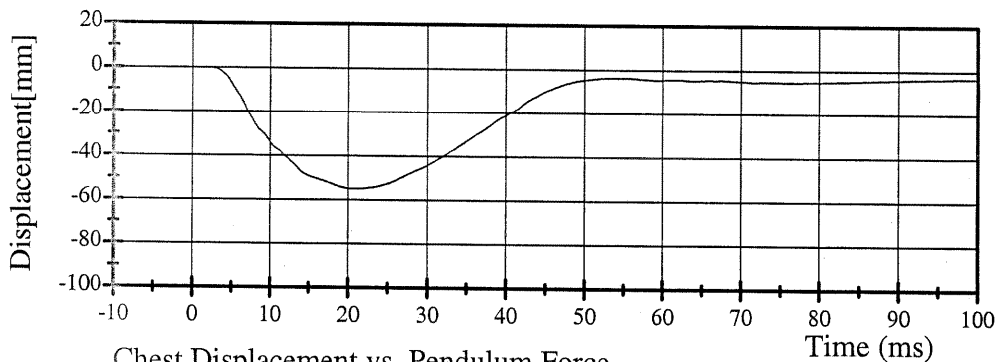


Filter Class: 180

Max: 4328.4 N at 17.8 ms

Min: -49.6 N at 265.4 ms

Chest Displacement

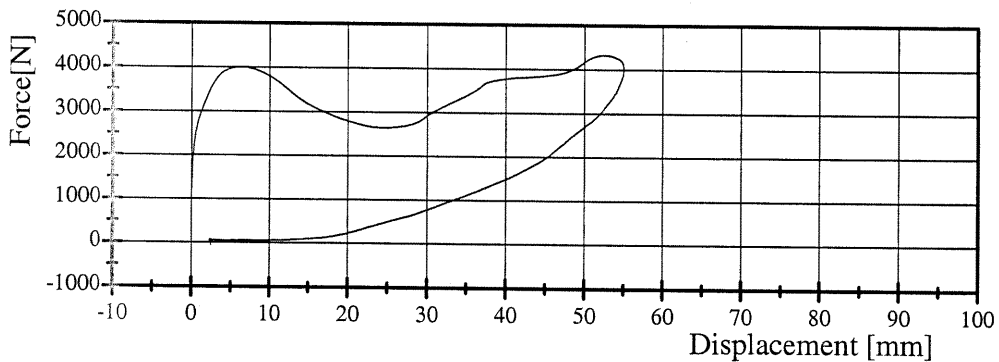


Filter Class: 600

Max: 0.0 mm at -69.4 ms

Min: -55.0 mm at 20.9 ms

Chest Displacement vs. Pendulum Force



06.24.2005 20:38:17 1708



Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.09 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3518 N	Yes

Test meets specifications.

Comments:

Technician

Vicente

Approved

Mark A. Turner

06.24.2005 15:36:48 1783



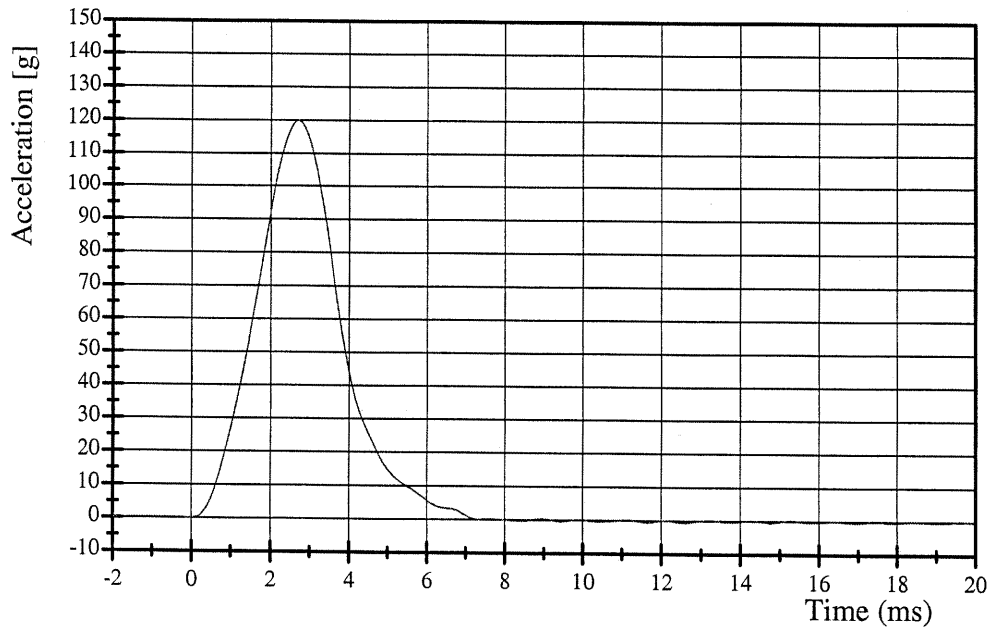
Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Pendulum Deceleration

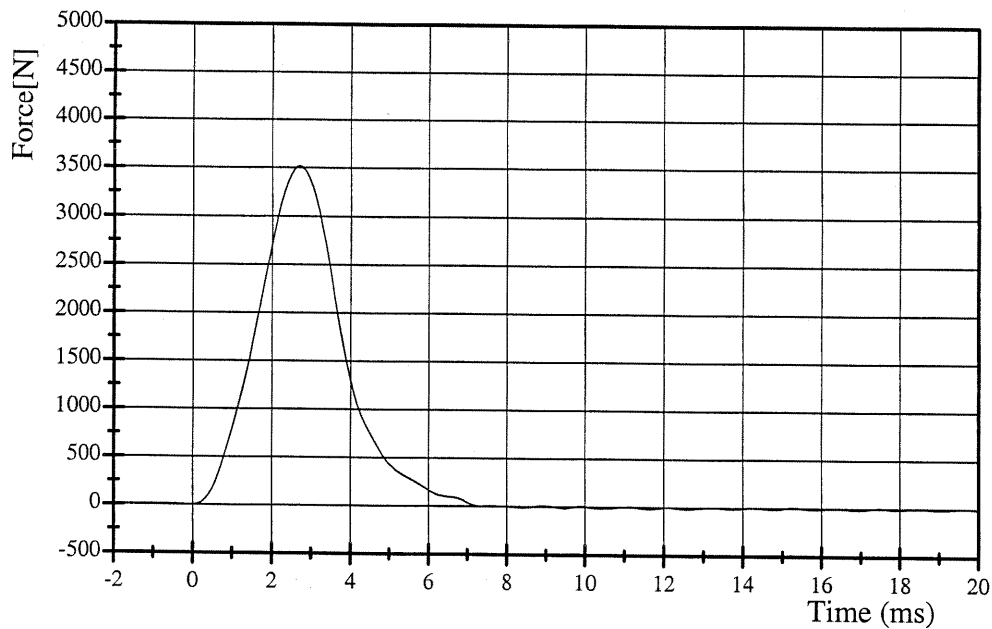


Filter Class: 600

Max: 120.0 g at 2.7 ms

Min: -1.2 g at 107.6 ms

Pendulum Force



Filter Class: 600

Max: 3518.1 N at 2.7 ms

Min: -35.8 N at 107.6 ms

Transportation Research Center Inc.

5720 Left Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 3

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.78 m/s	Yes
Knee Displacement	-15.5 - (-12.7) mm	-13.7 mm	Yes

Test meets specifications.

Comments:

Technician

Victor Oliver

Approved

Paul C. Oliver

06.24.2005 09:04:48 1853

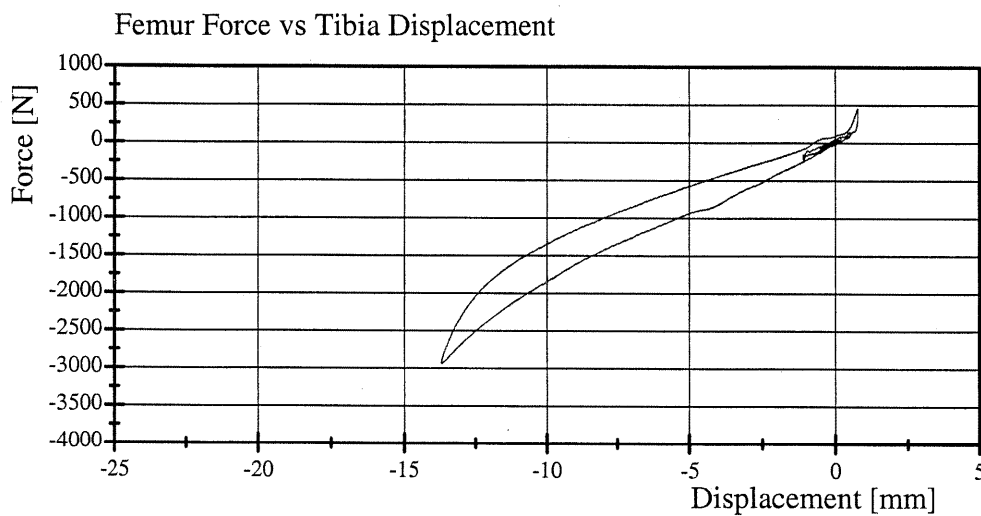
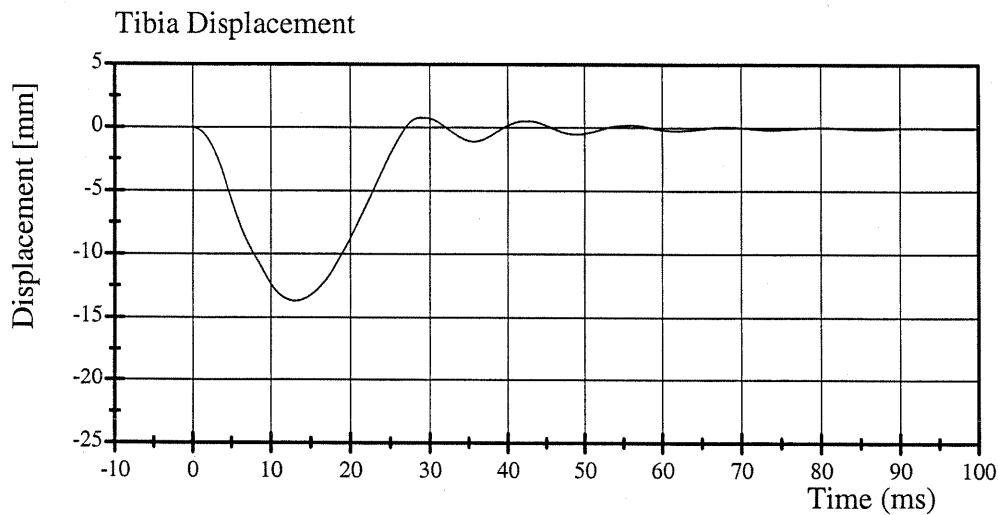
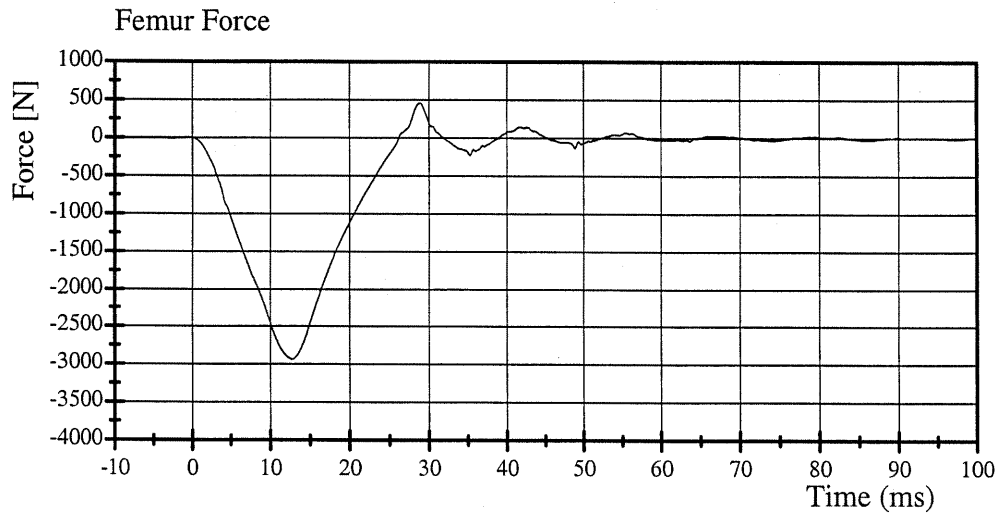


Transportation Research Center Inc.

5720 Left Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 3

Test Date 06/24/2005



06.24.2005 09:04:50 1853



Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3460 N	Yes

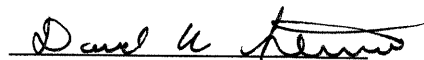
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 15:42:32 1788



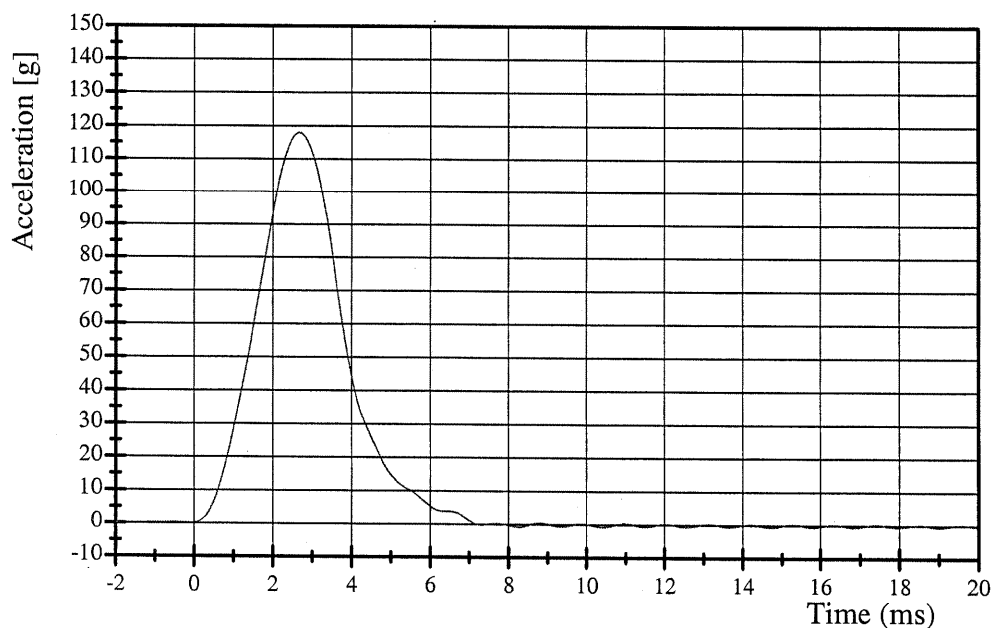
Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Pendulum Deceleration

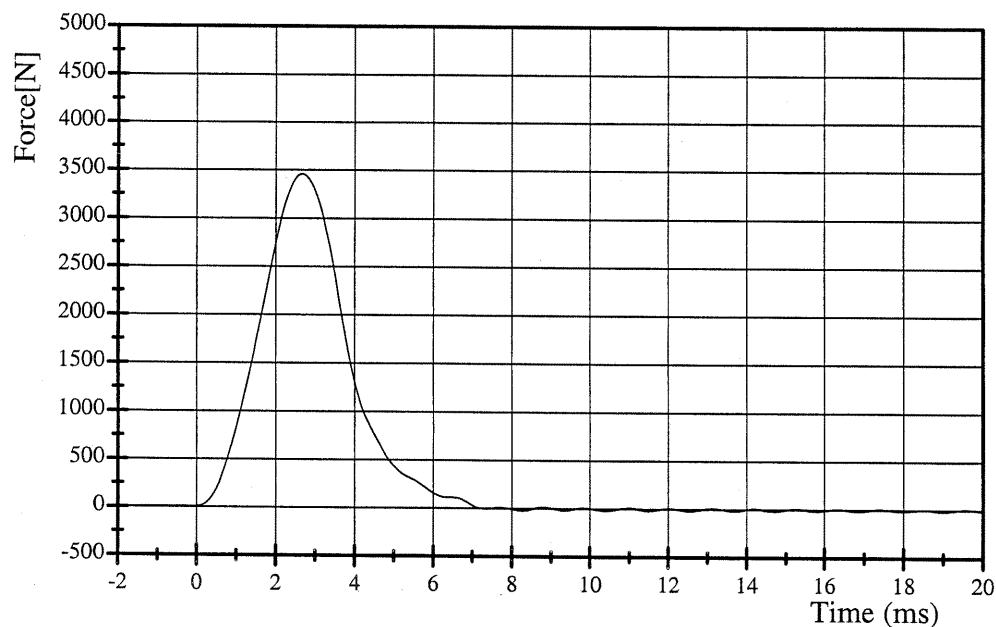


Filter Class: 600

Max: 118.0 g at 2.6 ms

Min: -0.8 g at 8.2 ms

Pendulum Force



Filter Class: 600

Max: 3459.8 N at 2.6 ms

Min: -23.1 N at 8.2 ms

06.24.2005 15:42:33 1788



Transportation Research Center Inc.

5720 Right Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	48 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.78 m/s	Yes
Knee Displacement	-15.5 - (-12.7) mm	-13.2 mm	Yes

Test meets specifications.

Comments:

Technician

Vincent Oliveri

Approved

David A. Hester

06.24.2005 12:00:36 1851

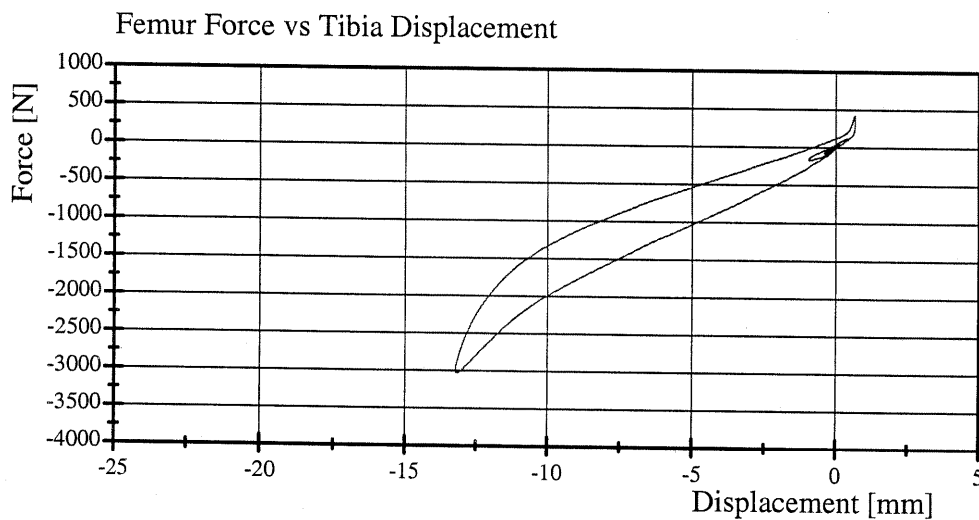
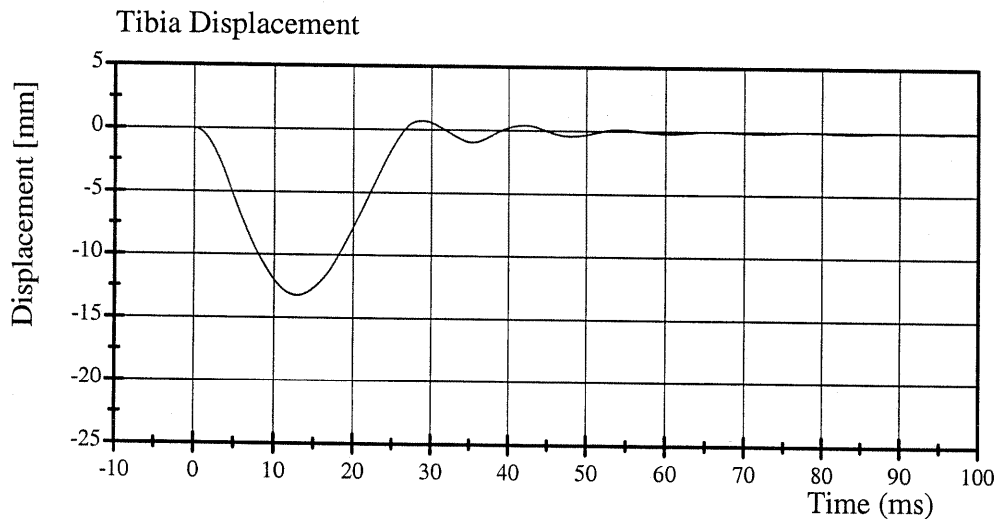
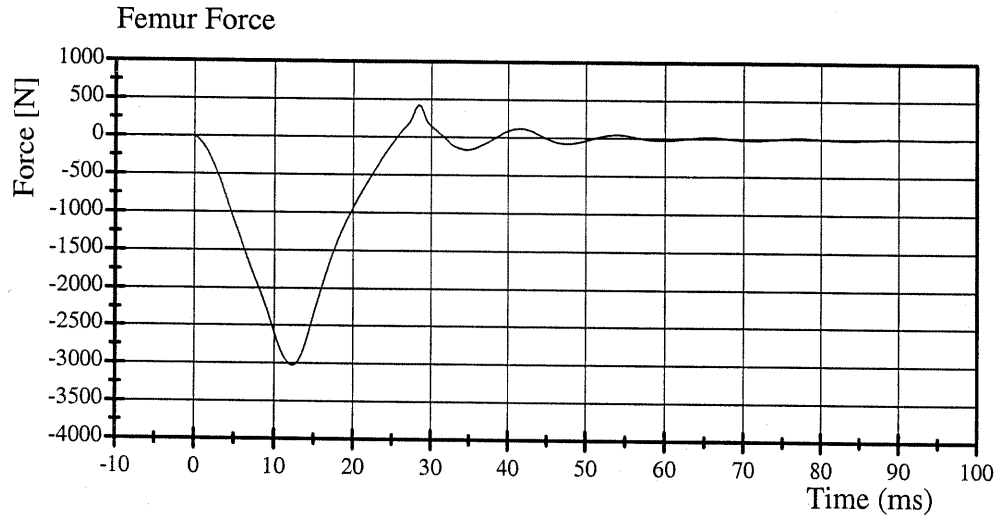


Transportation Research Center Inc.

5720 Right Knee Slider Test

HIII 5th Female Serial No. 416 Calibration No. 28 - 2

Test Date 06/24/2005



06.24.2005 12:00:38 1851



Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Driver Dummy S/N: 090

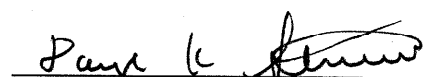
NHTSA/VRTC
572E HIII 50th Male Dummy
External Dimensions
Serial No. 090 w/ THOR-LX legs Calibration No. 47

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	884	Yes
B	Shoulder Pivot Height	505.5 - 520.7	510	Yes
C	H-Point Height	83.8 - 88.9	88	Yes
D	H-Point From Seatback	134.6 - 139.7	136	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	154	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	298	Yes
H	Skull Cap To Backline	40.6 - 45.7	43	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	339	Yes
J	Elbow Rest Height	190.5 - 210.8	204	Yes
K	Buttock Knee Length	579.1 - 604.5	604	Yes
L	Popliteal Height	429.3 - 454.7	445	Yes
M	Knee Pivot Height	485.1 - 500.4	500	Yes
N	Buttock Popliteal Length	452.1 - 477.5	462	Yes
O	Chest Depth	213.4 - 228.6	217	Yes
P	Foot Length	251.5 - 266.7	253	Yes
V	Shoulder Breadth	421.6 - 436.9	425	Yes
W	Foot Breadth	91.4 - 106.7	97	Yes
Y	Chest Circumference	970.3 - 1000.8	996	Yes
Z	Waist Circumference	835.7 - 866.1	858	Yes
AA	Location For Chest Circumference	429.3 - 434.3	432	Yes
BB	Location For Waist Circumference	226.1 - 231.1	229	Yes

Technician



Approved



Transportation Research Center Inc.

572E Head Drop Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 2

Test Date 06/21/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.0 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Peak Resultant Acceleration	225 - 275 g	268.8 g	Yes
Peak Lateral Acceleration	15 g Max	1.5 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

Test meets specifications.

Comments:

Technician

Vincent Oliver

Approved

Paul H. Oliver

06.21.2005 15:57:49 614

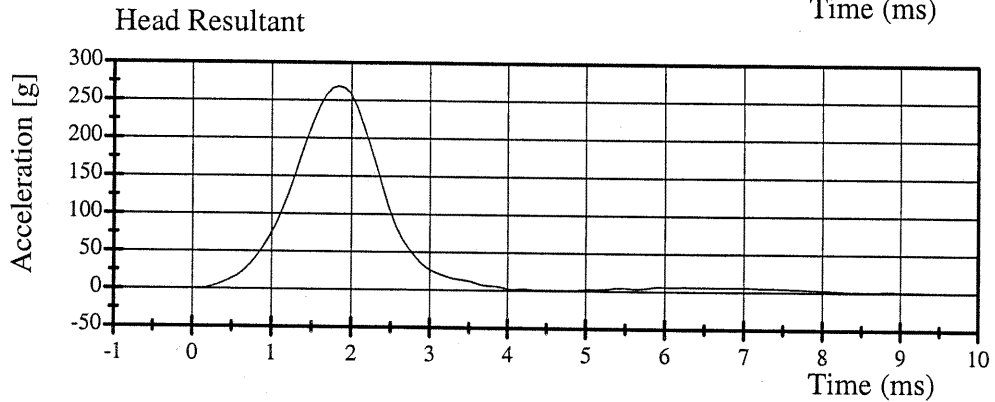
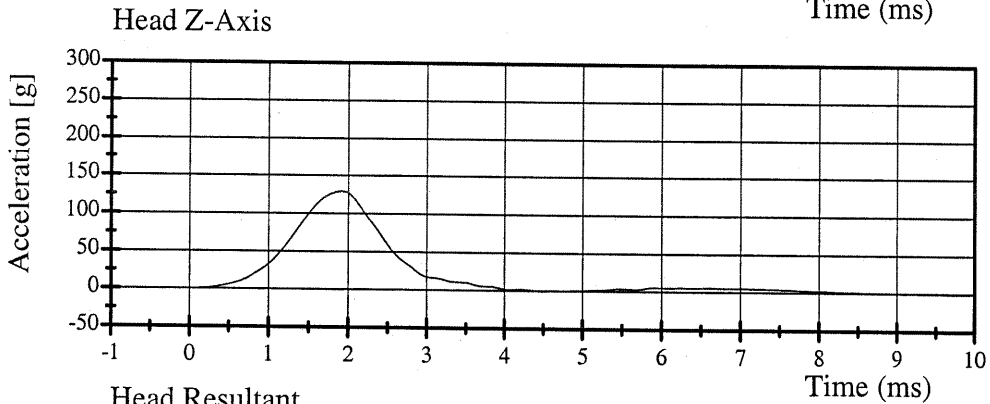
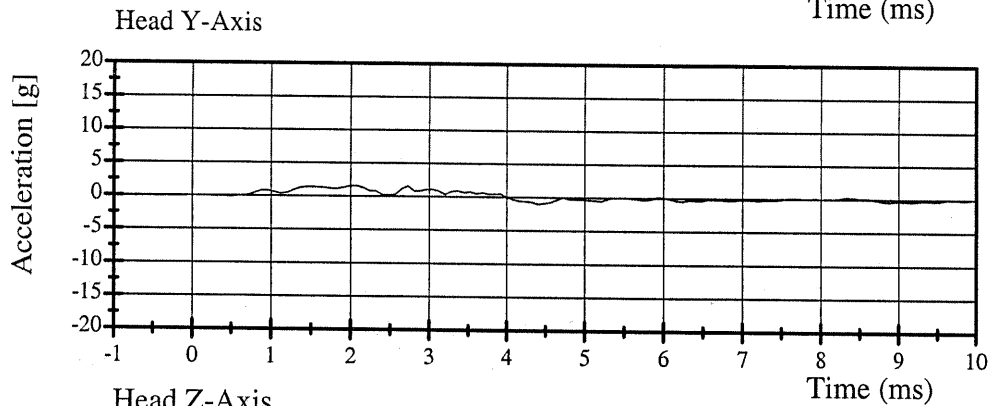
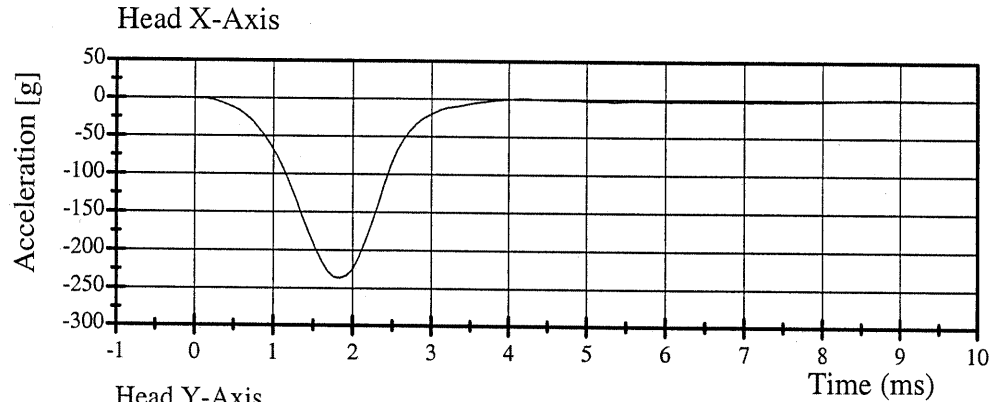


Transportation Research Center Inc.

572E Head Drop Test

HHH 50th Male Serial No. 090 Calibration No. 47 - 2

Test Date 06/21/2005



06.21.2005 15:57:50 614



Transportation Research Center Inc.

572E Neck Flexion Test - 6 Channel Transducer

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.01 m/s	Yes
Pendulum Deceleration			
10 ms	22.50 - 27.50 g	25.82 g	Yes
20 ms	17.60 - 22.60 g	21.36 g	Yes
30 ms	12.50 - 18.50 g	16.52 g	Yes
Max Pendulum Deceleration	29.00 g	26.71 g	Yes
Max Pendulum Deceleration After 30 ms	29.00 g	16.48 g	Yes
Deceleration-Time Curve Decay Time To 5g	34 - 42 ms	35.92 ms	Yes
D Plane Rotation			
Max	64 - 78 °	74.75 °	Yes
Time	57 - 64 ms	59.52 ms	Yes
Moment About Occipital Condyle			
Max	88.1 - 108.5 N·m	101.43 N·m	Yes
Time	47 - 58 ms	48.80 ms	Yes
Rotation Angle-Time Curve Decay Time To Zero	113 - 128 ms	118.32 ms	Yes
Positive Moment-Time Curve Decay Time To Zero	97 - 107 ms	100.00 ms	Yes

Test meets specifications.

Comments:

Technician

Approved

06.22.2005 10:28:20 1138

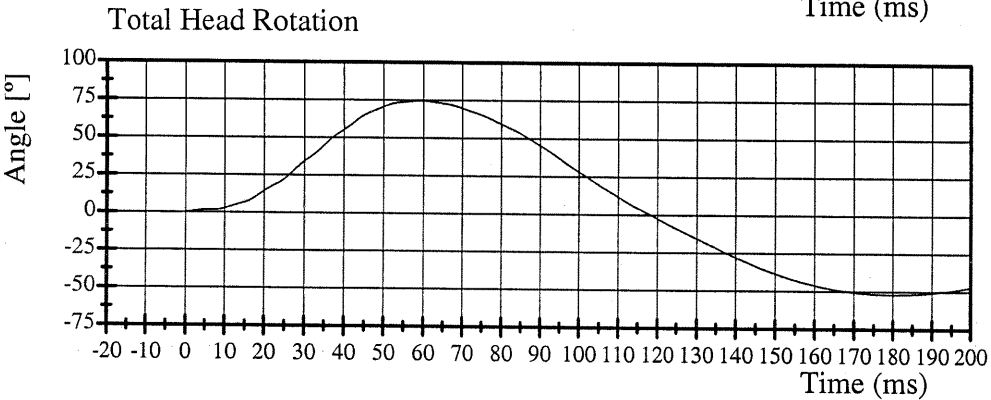
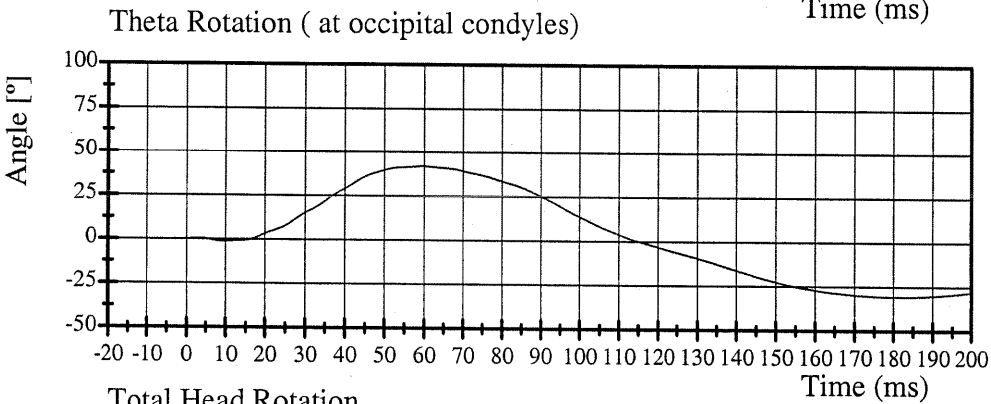
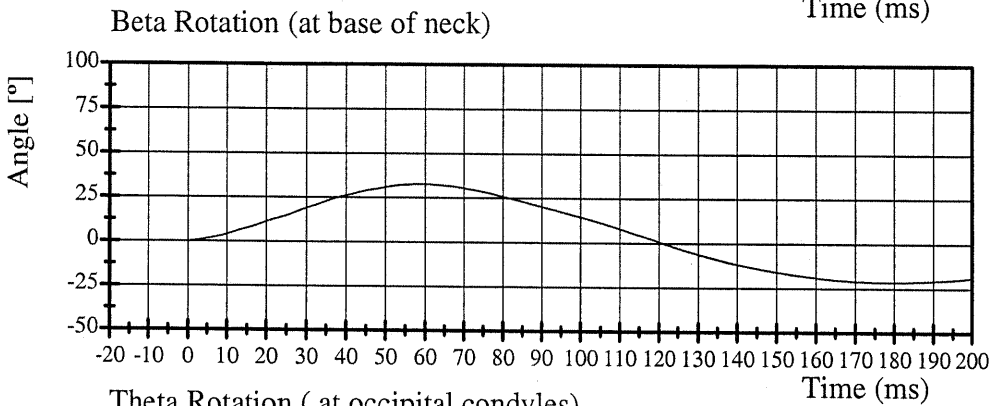
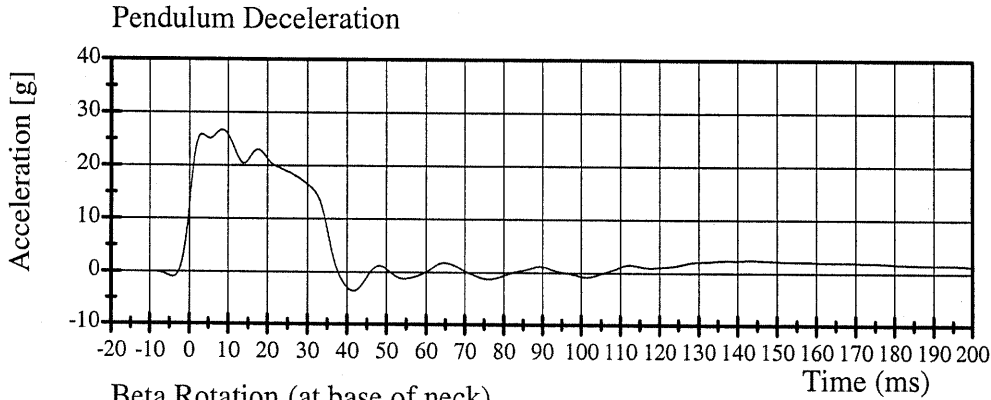


Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005



06.22.2005 10:28:22 1138



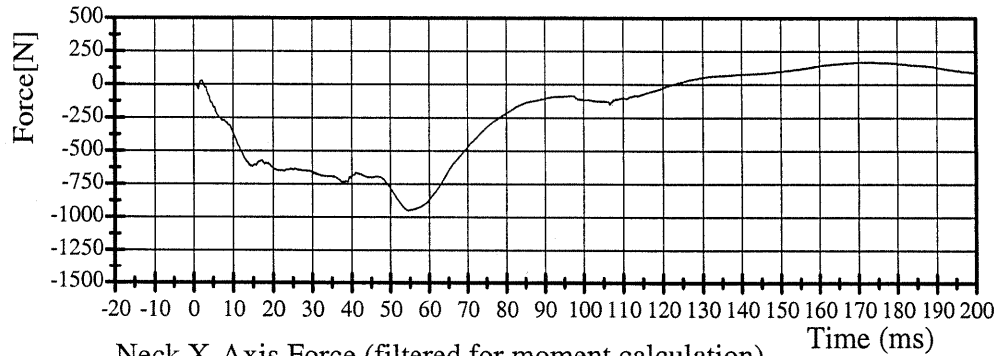
Transportation Research Center Inc.

572E Neck Flexion Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005

Neck X-Axis Force

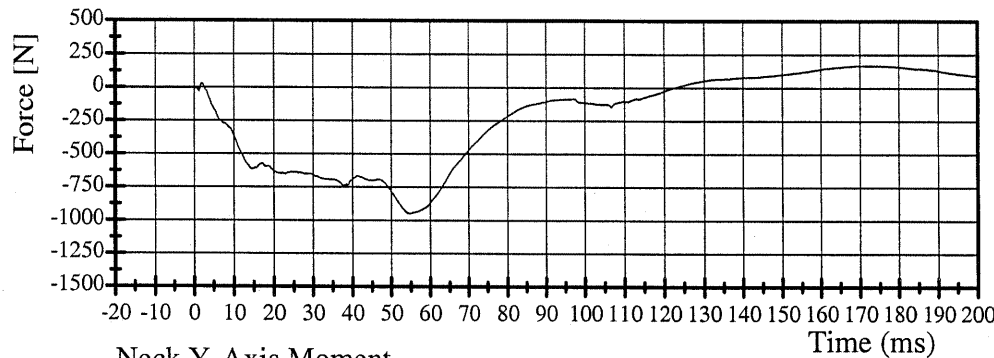


Filter Class: 1000

Max: 169.2 N at 171.5 ms

Min: -947.7 N at 54.6 ms

Neck X-Axis Force (filtered for moment calculation)

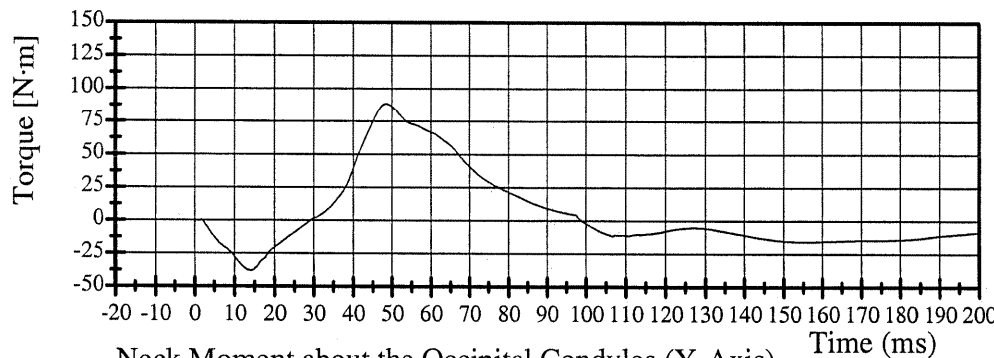


Filter Class: 600

Max: 168.4 N at 172.2 ms

Min: -947.5 N at 54.6 ms

Neck Y-Axis Moment

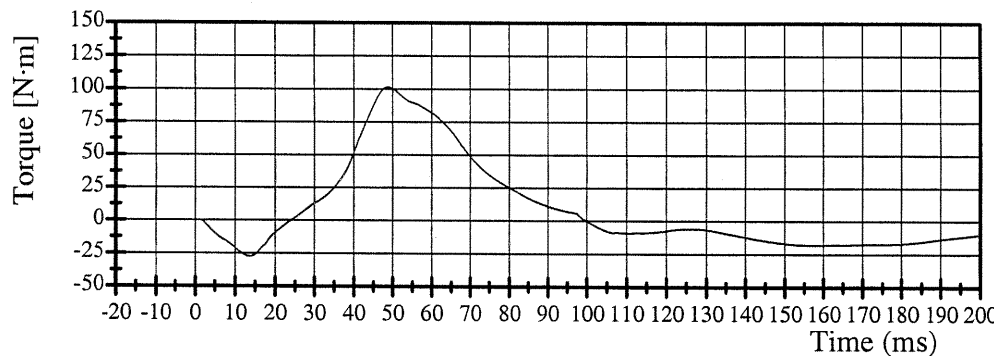


Filter Class: 600

Max: 88.6 N·m at 48.5 ms

Min: -38.0 N·m at 14.1 ms

Neck Moment about the Occipital Condyles (Y-Axis)



Filter Class: 600

Max: 101.4 N·m at 48.8 ms

Min: -27.4 N·m at 13.6 ms

Transportation Research Center Inc.

572E Neck Extension Test - 6 Channel Transducer

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.05 m/s	Yes
Pendulum Deceleration			
10 ms	17.20 - 21.20 g	18.65 g	Yes
20 ms	14.00 - 19.00 g	16.91 g	Yes
30 ms	11.00 - 16.00 g	13.12 g	Yes
Max Pendulum Deceleration	22.00 g	19.83 g	Yes
Max Pendulum Deceleration After 30 ms	22.00 g	13.07 g	Yes
Deceleration-Time Curve			
Decay Time To 5g	38 - 46 ms	41.92 ms	Yes
D Plane Rotation			
Max	81 - 106 °	97.51 °	Yes
Time	72 - 82 ms	75.68 ms	Yes
Moment About Occipital Condyle			
Min	-80.0 - (-52.9) N·m	-70.03 N·m	Yes
Time	65 - 79 ms	72.80 ms	Yes
Rotation Angle-Time Curve			
Decay Time To Zero	147 - 174 ms	163.12 ms	Yes
Negative Moment-Time Curve			
Decay Time To Zero	120 - 148 ms	143.92 ms	Yes

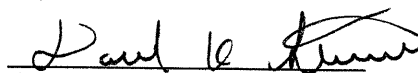
Test meets specifications.

Comments:

Technician



Approved



06.22.2005 11:07:10 1226



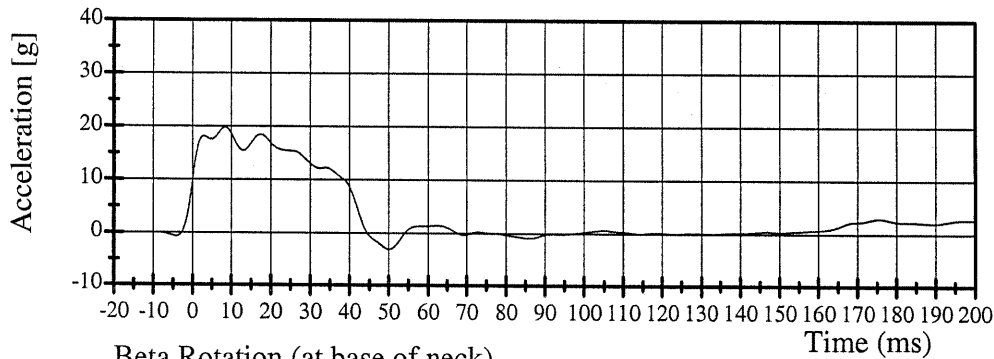
Transportation Research Center Inc.

572E Neck Extension Test

HIH 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005

Pendulum Deceleration

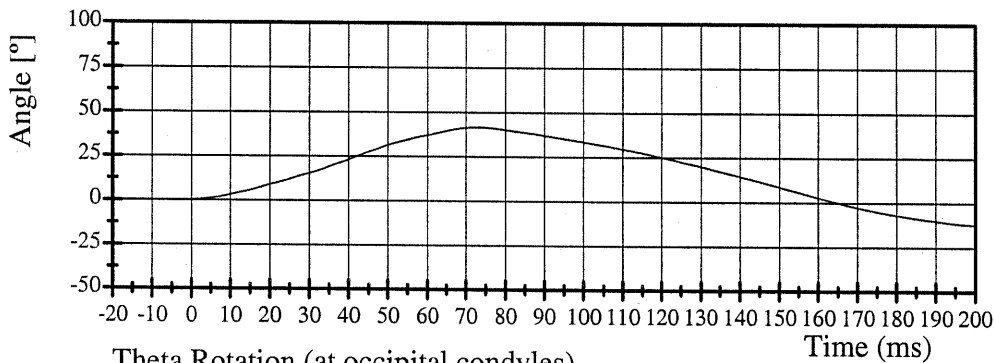


Filter Class: 60

Max: 19.8 g at 8.4 ms

Min: -3.1 g at 50.1 ms

Beta Rotation (at base of neck)

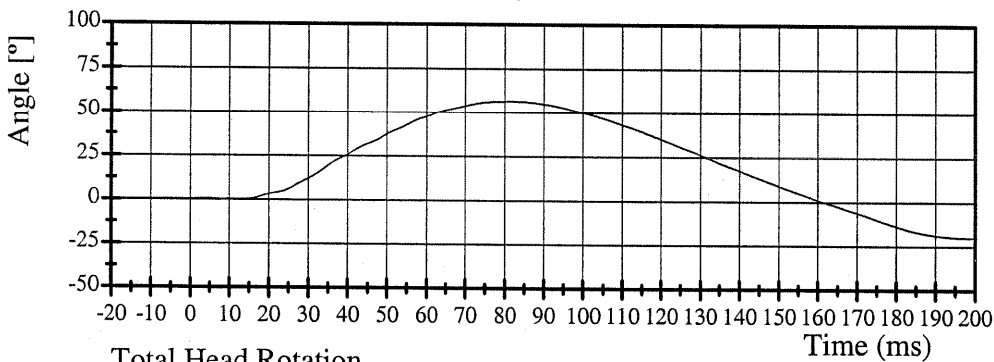


Filter Class: 60

Max: 41.6 ° at 72.9 ms

Min: -12.6 ° at 201.9 ms

Theta Rotation (at occipital condyles)

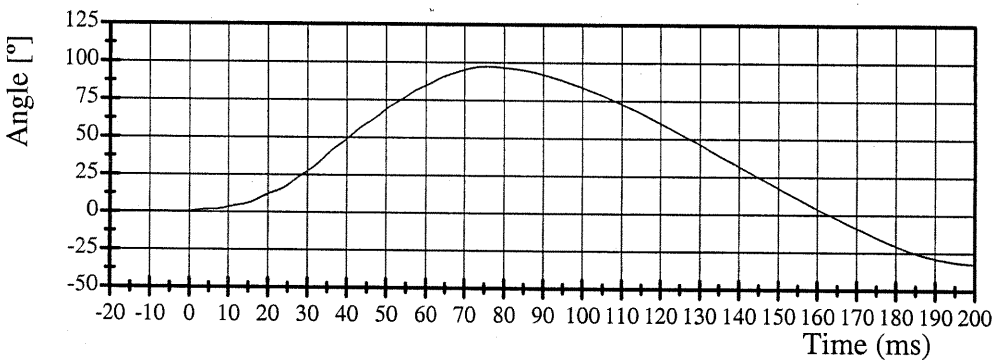


Filter Class: 60

Max: 56.5 ° at 81.9 ms

Min: -20.3 ° at 201.9 ms

Total Head Rotation



Filter Class: 60

Max: 97.5 ° at 75.7 ms

Min: -32.8 ° at 201.9 ms

06.22.2005 11:07:11 1226

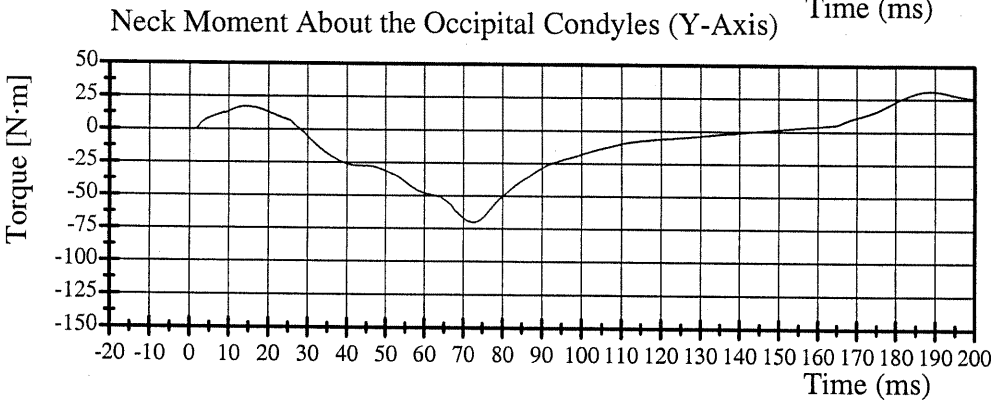
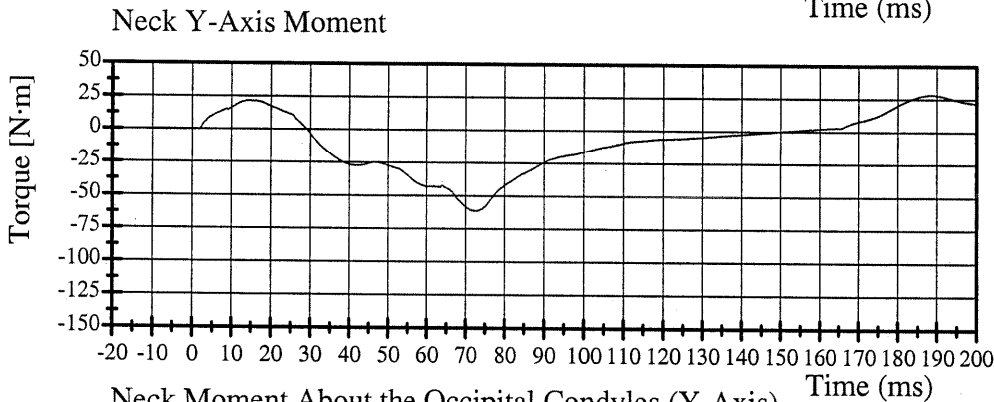
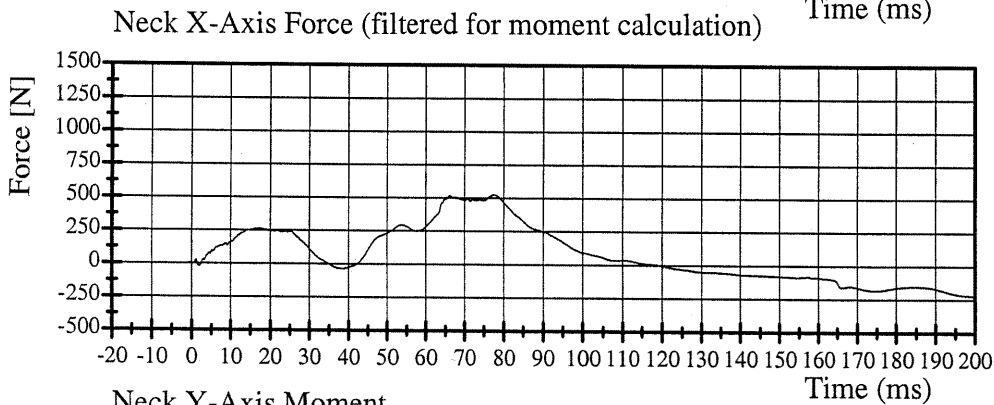
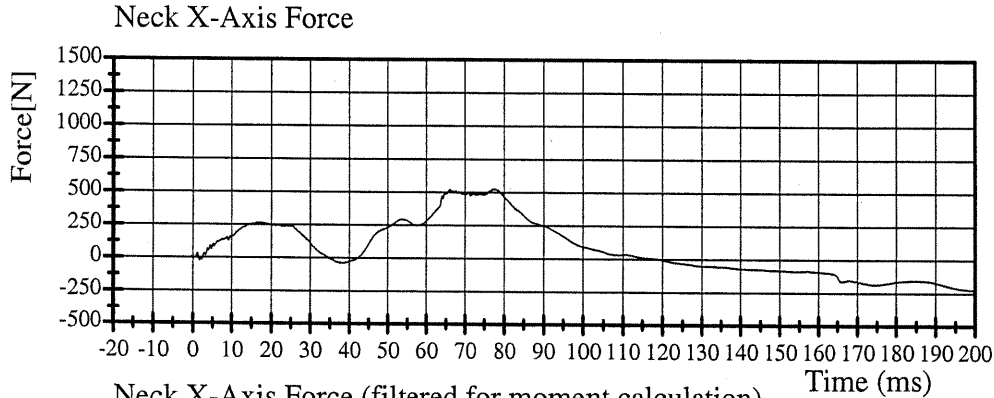


Transportation Research Center Inc.

572E Neck Extension Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005



06.22.2005 11:07:13 1226



Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

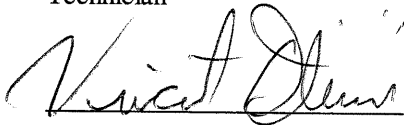
Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.65 m/s	Yes
Maximum Chest Deflection	-72.6 - (-63.5) mm	-71.6 mm	Yes
Maximum Resistive Force	5160 - 5894 N	5744 N	Yes
Internal Hysteresis	69 - 85 %	71 %	Yes

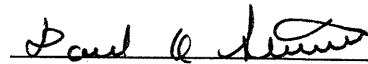
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 08:57:35 1601



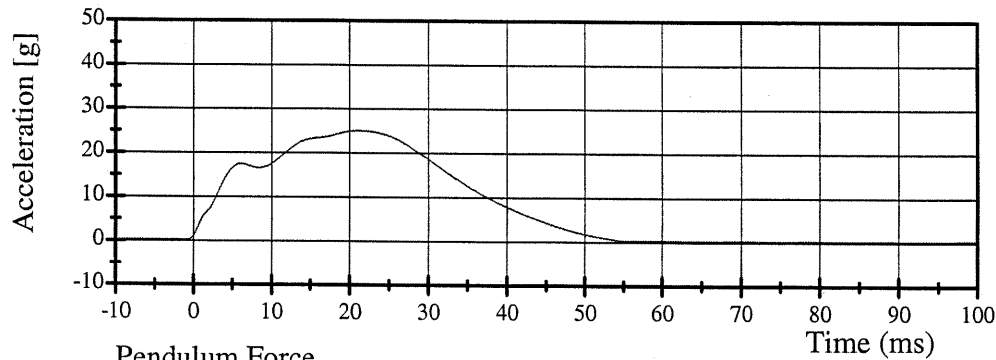
Transportation Research Center Inc.

572E Thorax Test

HHH 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/24/2005

Pendulum Deceleration

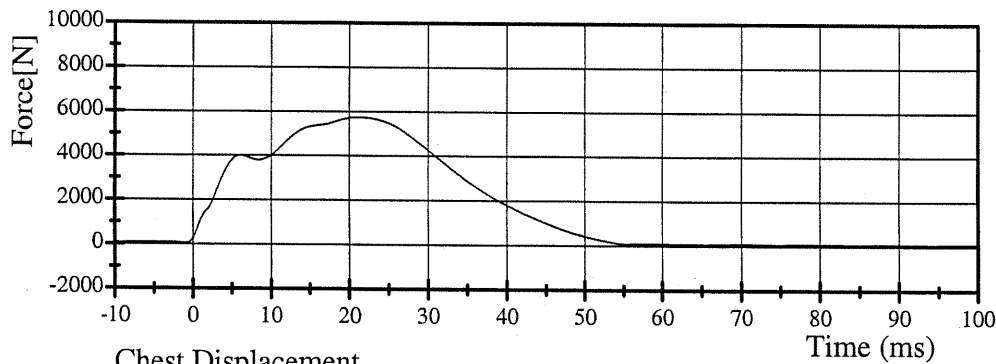


Filter Class: 180

Max: 25.1 g at 21.1 ms

Min: -0.0 g at -128.0 ms

Pendulum Force

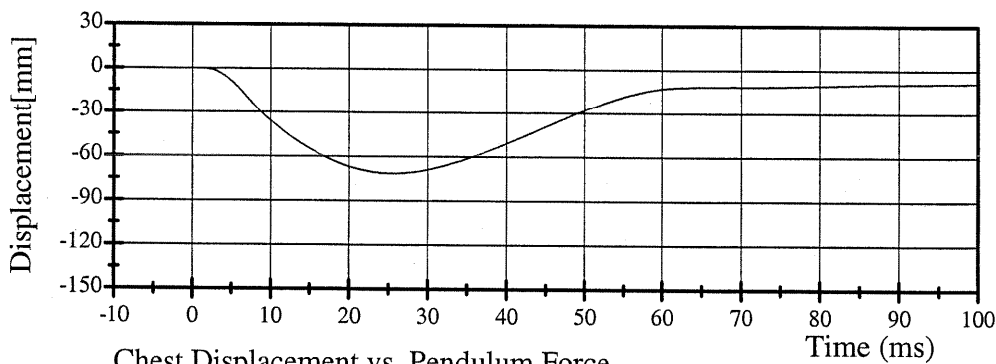


Filter Class: 180

Max: 5743.8 N at 21.1 ms

Min: -9.2 N at -128.0 ms

Chest Displacement

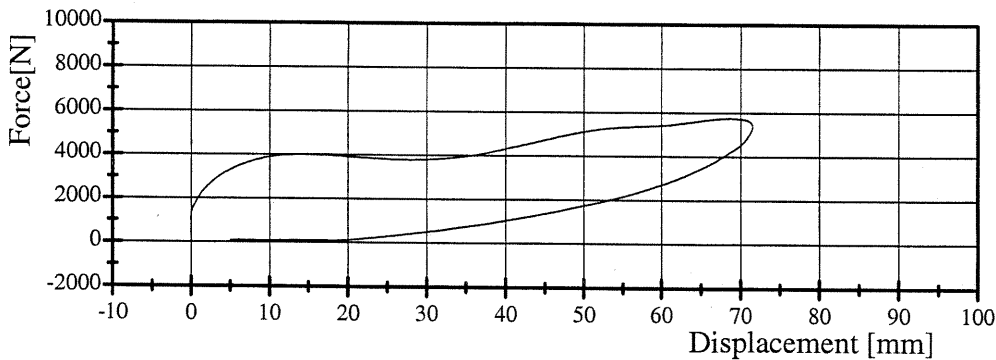


Filter Class: 180

Max: 0.0 mm at 0.6 ms

Min: -71.6 mm at 25.7 ms

Chest Displacement vs. Pendulum Force



06.24.2005 08:57:36 1601



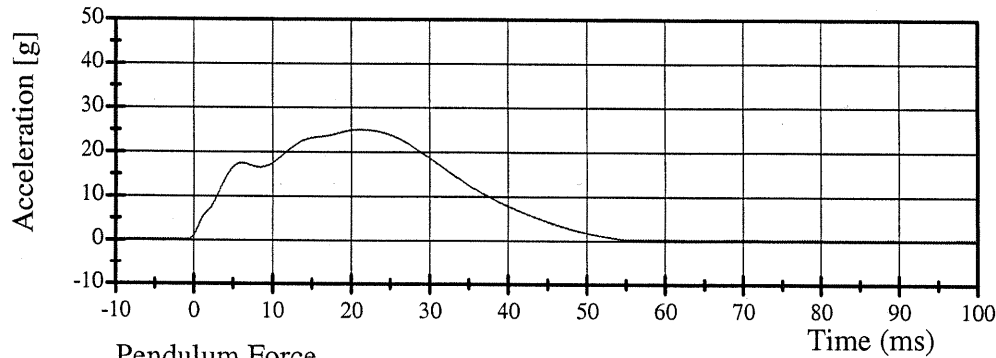
Transportation Research Center Inc.

572E Thorax Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/24/2005

Pendulum Deceleration

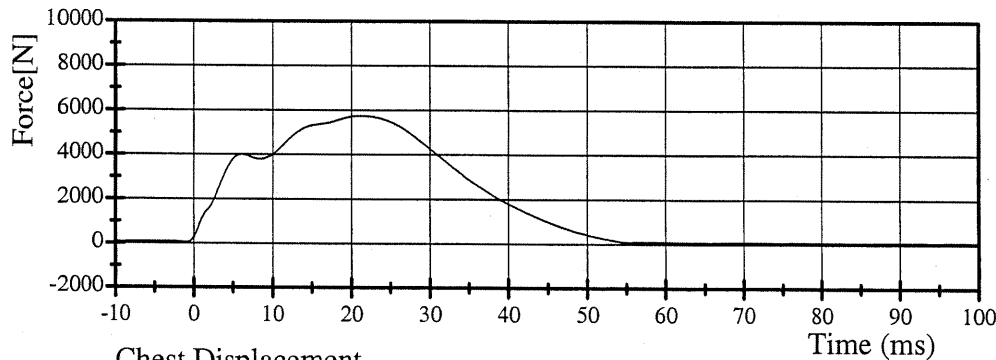


Filter Class: 180

Max: 25.1 g at 21.1 ms

Min: -0.0 g at -128.0 ms

Pendulum Force

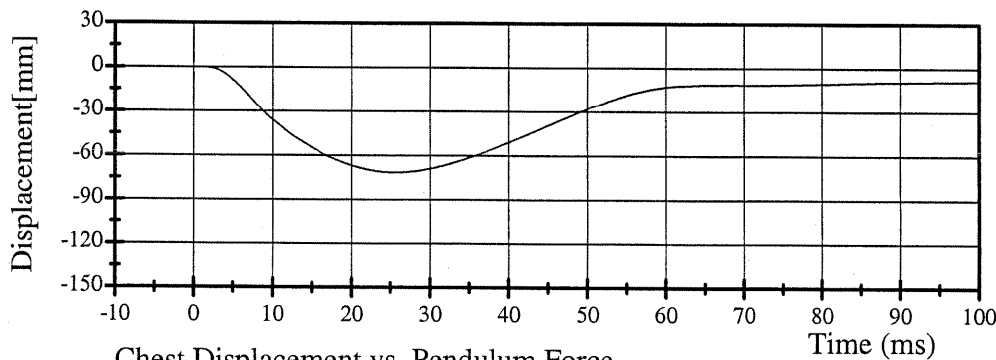


Filter Class: 180

Max: 5743.8 N at 21.1 ms

Min: -9.2 N at -128.0 ms

Chest Displacement

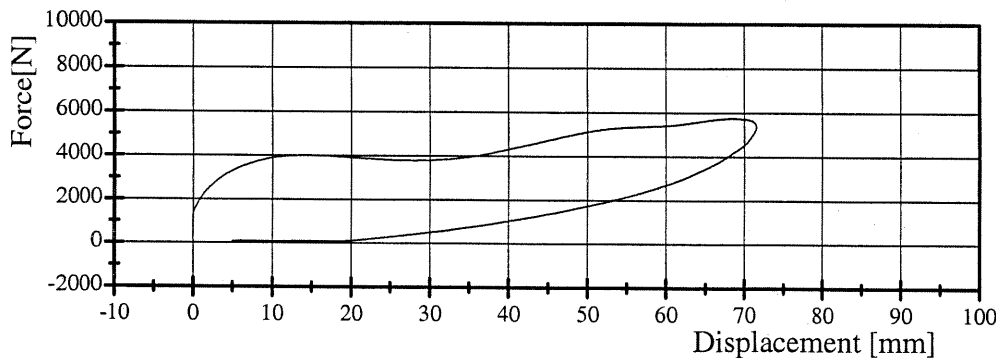


Filter Class: 180

Max: 0.0 mm at 0.6 ms

Min: -71.6 mm at 25.7 ms

Chest Displacement vs. Pendulum Force



06.24.2005 08:58:06 1601



Applied Safety Technologies Corp.

Hybrid III Hip Range of Motion

Serial Number: 090L

Date: 06/21/2005

Test Number: 090C47

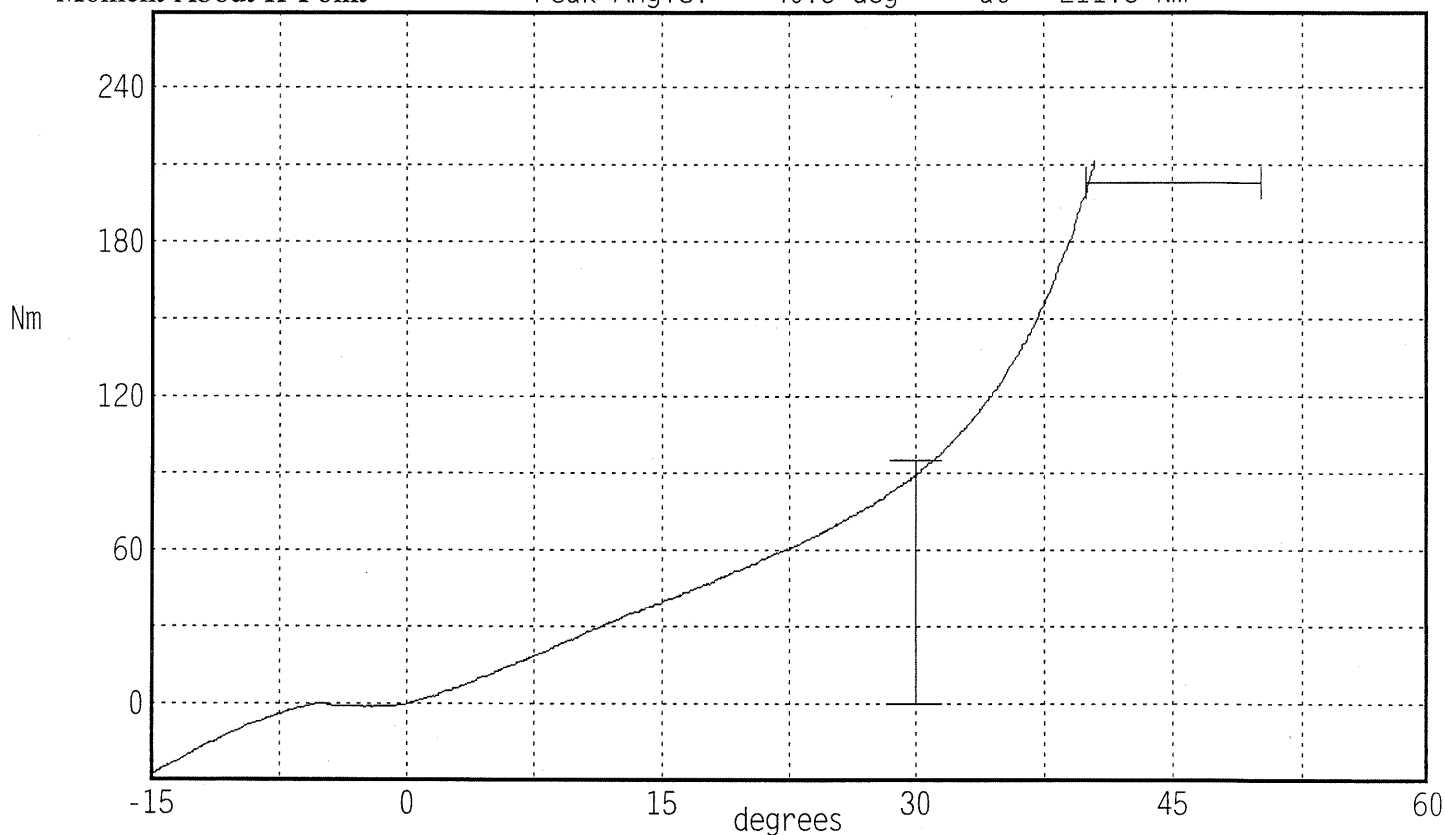
Time: 08:36

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.2 °C Pass
Humidity	10 - 70	50 % Pass
Moment at 30 deg	<= 94.9	89.3 Nm Pass
Angle at 203 Nm	40.0 - 50.0	40.1 deg Pass
Average Velocity	5.0 - 10.0	7.5 deg/sec Pass

Peak Moment: 211.3 Nm at 40.5 deg
Peak Angle: 40.5 deg at 211.3 Nm

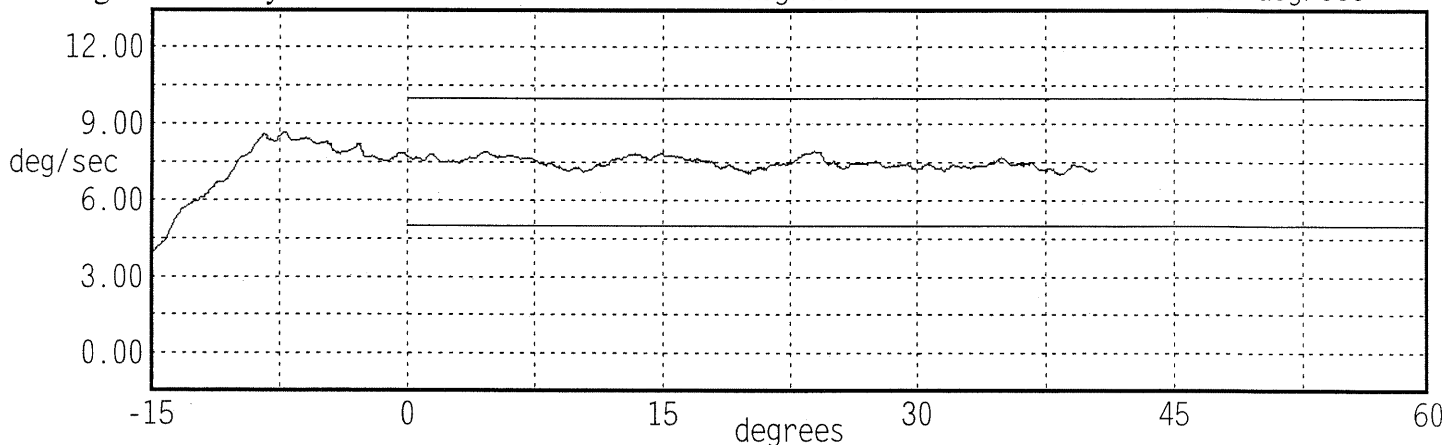
Moment About H-Point



Angular Velocity

Max: 7.9 deg/sec

Min: 7.0 deg/sec



Applied Safety Technologies Corp.

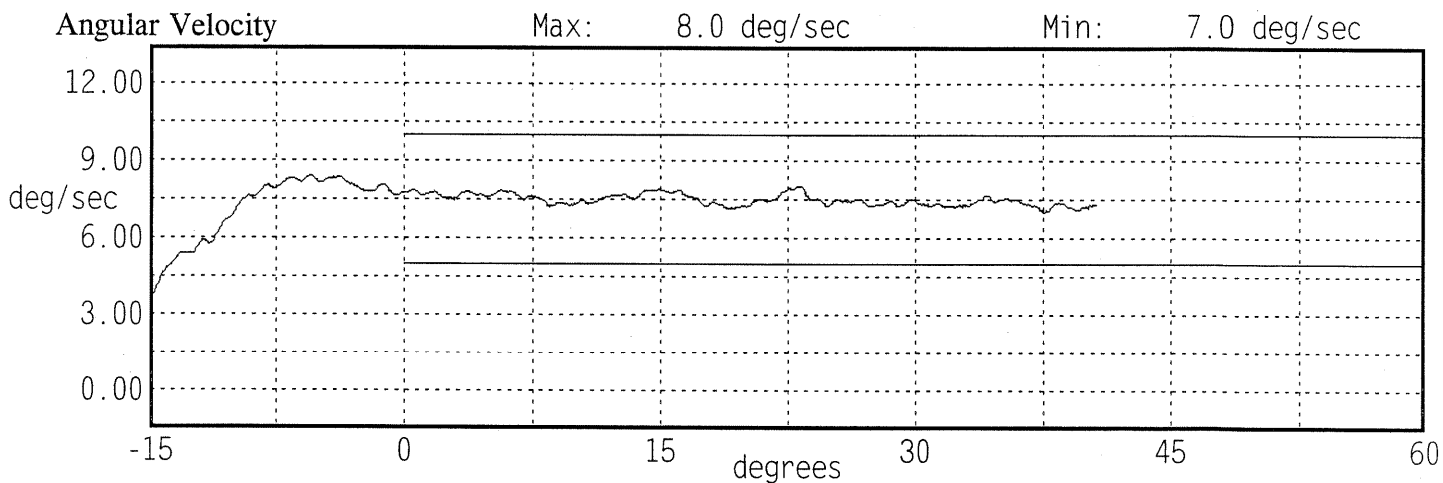
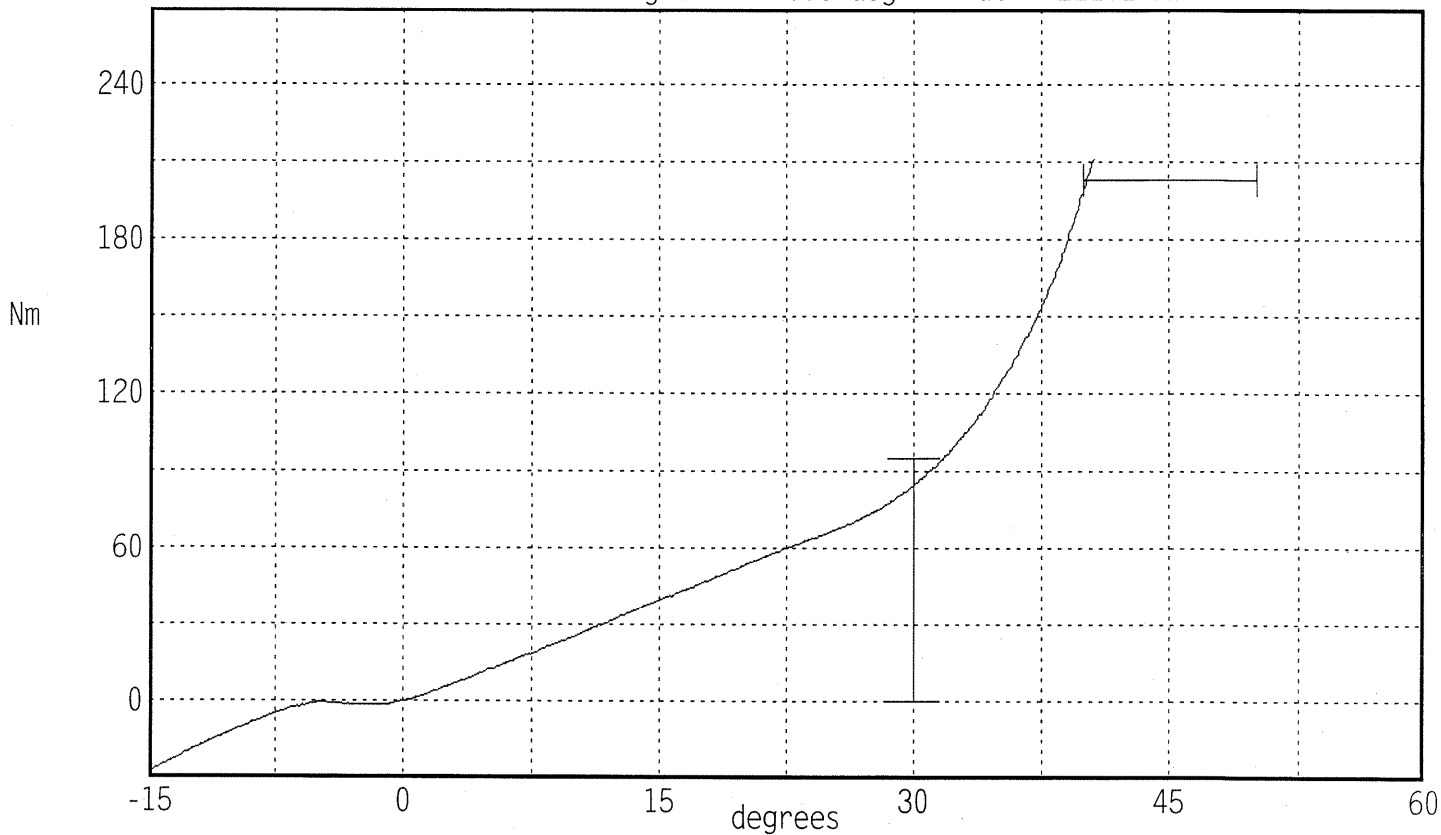
Hybrid III Hip Range of Motion

Serial Number: 090R
Test Number: 090C47
Comments:

Date: 06/21/2005
Time: 09:31

TEST PARAMETER	SPECIFICATION	TEST RESULTS		
Temperature	18.9 - 25.6	21.4	°C	Pass
Humidity	10 - 70	50	%	Pass
Moment at 30 deg	<= 94.9	84.8	Nm	Pass
Angle at 203 Nm	40.0 - 50.0	40.2	deg	Pass
Average Velocity	5.0 - 10.0	7.5	deg/sec	Pass

Moment About H-Point
Peak Moment: 211.1 Nm at 40.6 deg
Peak Angle: 40.6 deg at 211.1 Nm



Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

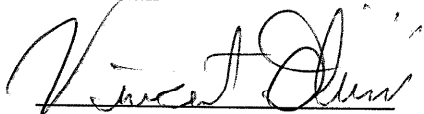
Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.2 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.12 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5479 N	Yes

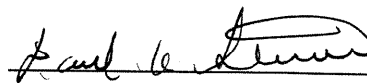
Test meets specifications.

Comments:

Technician



Approved



06.22.2005 13:08:09 2133

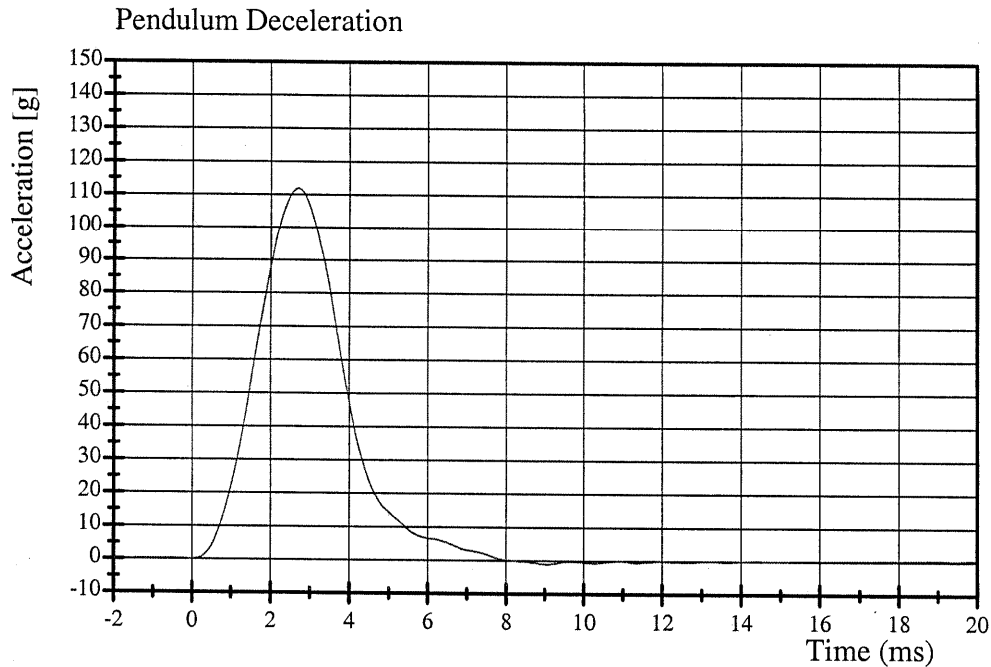


Transportation Research Center Inc.

572E Left Knee Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

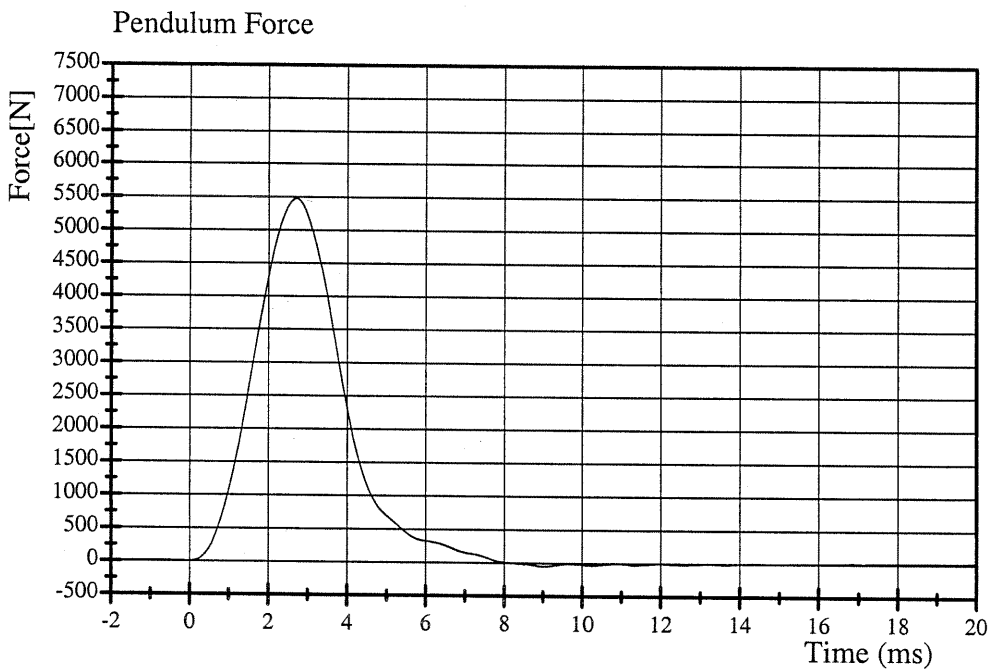
Test Date 06/22/2005



Filter Class: 600

Max: 112.0 g at 2.7 ms

Min: -1.0 g at 9.0 ms



Filter Class: 600

Max: 5479.5 N at 2.7 ms

Min: -48.9 N at 9.0 ms

06.22.2005 13:08:10 2133



Transportation Research Center Inc.

572E Left Slider Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

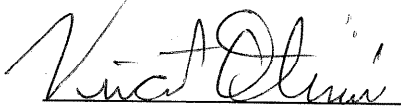
Test Date 06/23/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.75 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1364 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2801 N	Yes

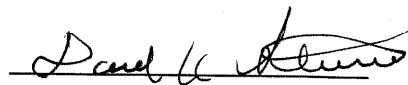
Test meets specifications.

Comments:

Technician



Approved



06.23.2005 10:27:32 1755

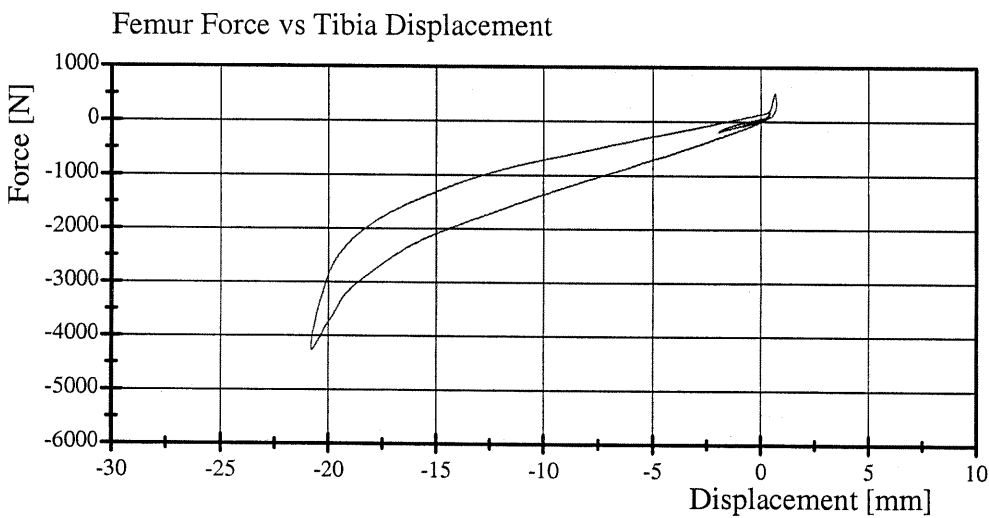
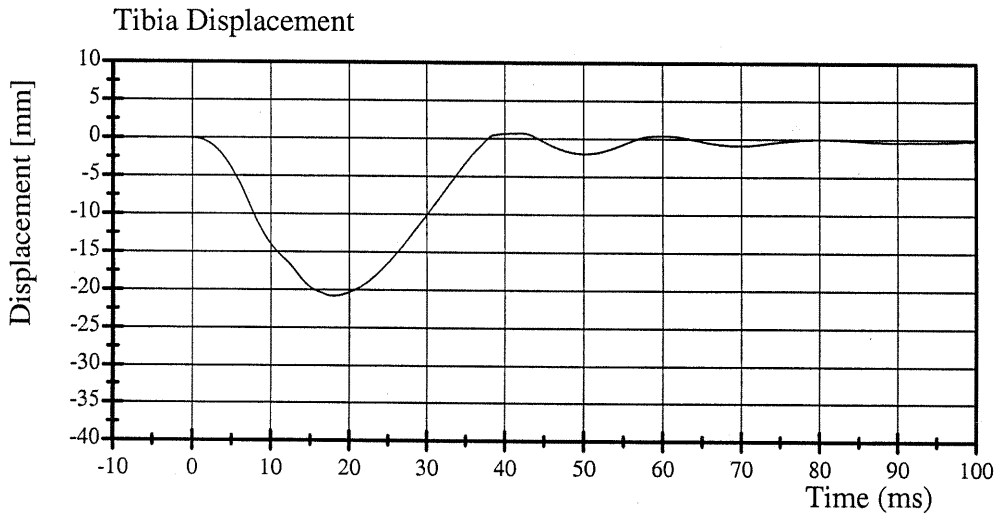
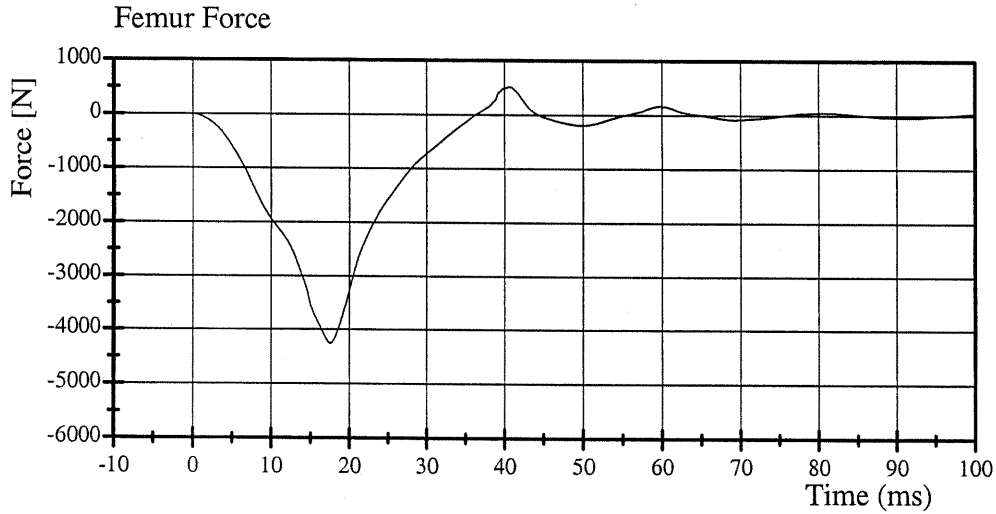


Transportation Research Center Inc.

572E Left Slider Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/23/2005



06.23.2005 10:27:33 1755



Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/22/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.1 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.12 m/s	Yes
Maximum Pendulum Force	4715 - 5783 N	5605 N	Yes

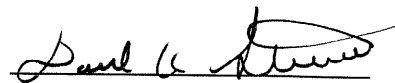
Test meets specifications.

Comments:

Technician



Approved



06.22.2005 13:15:05 2143

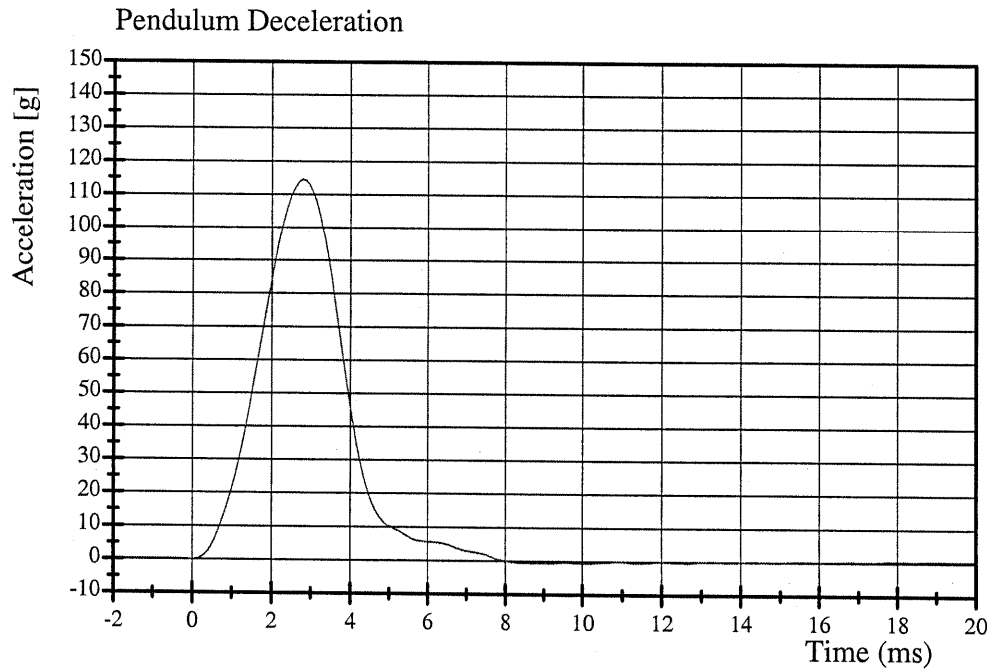


Transportation Research Center Inc.

572E Right Knee Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

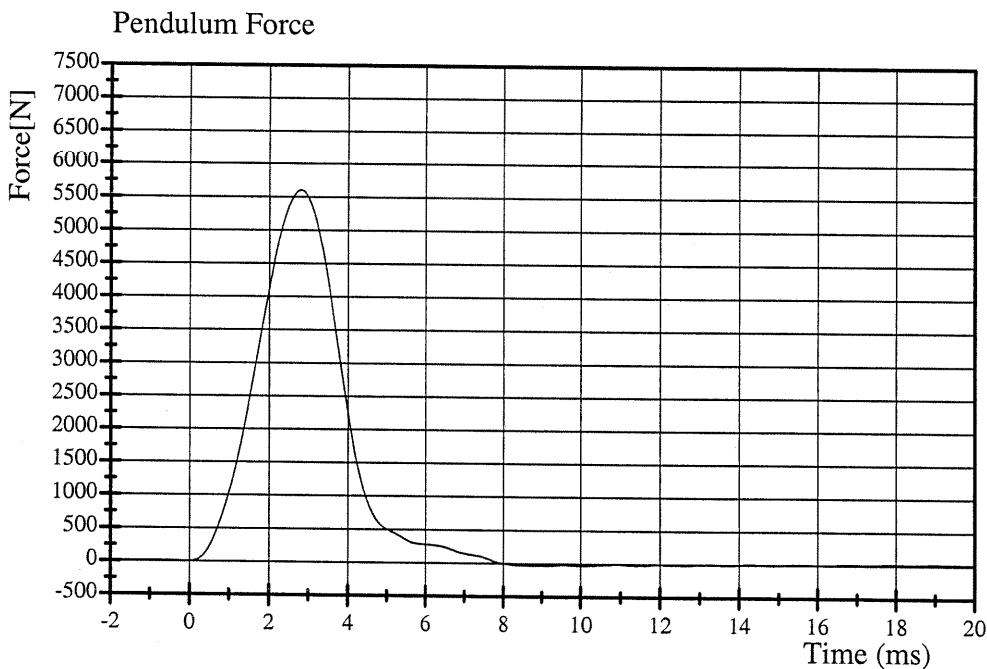
Test Date 06/22/2005



Filter Class: 600

Max: 114.6 g at 2.8 ms

Min: -0.6 g at 9.1 ms



Filter Class: 600

Max: 5605.1 N at 2.8 ms

Min: -29.7 N at 9.1 ms

06.22.2005 13:15:06 2143



Transportation Research Center Inc.

572E Right Slider Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/23/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	49 %	Yes
Pendulum Velocity	2.70 - 2.80 m/s	2.75 m/s	Yes
Force At 10 mm Displacement	-1259 - (-1721) N	-1306 N	Yes
Force At 18 mm Displacement	-2268 - (-3096) N	-2627 N	Yes

Test meets specifications.

Comments:

Technician

Vic Olm

Approved

Paul K. [Signature]

06.23.2005 12:11:05 1750

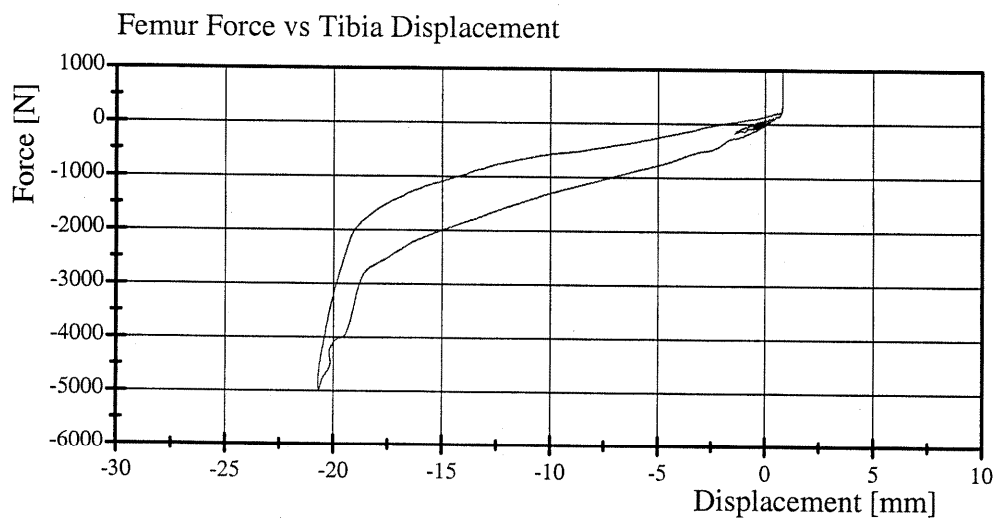
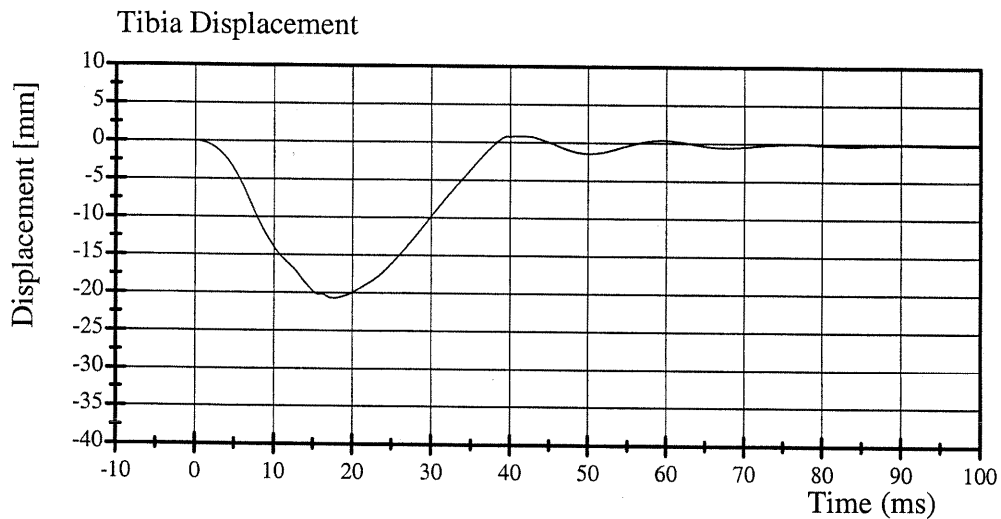
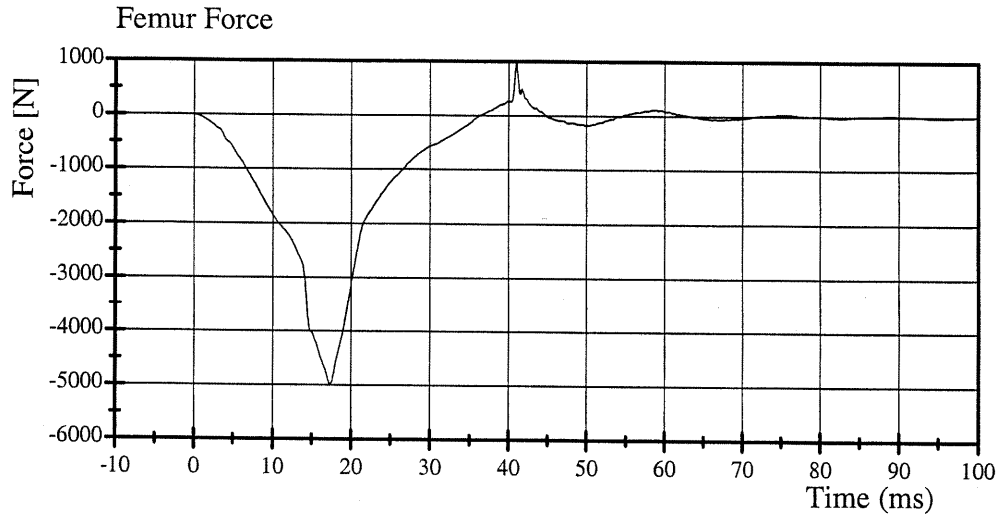


Transportation Research Center Inc.

572E Right Slider Test

HIII 50th Male Serial No. 090 Calibration No. 47 - 1

Test Date 06/23/2005



06.23.2005 12:11:06 1750



Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Passenger Dummy S/N: 070

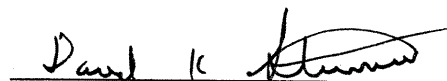
Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 070 Calibration No. 09

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	784	Yes
B	Shoulder Pivot Height	431.8 - 457.2	447	Yes
C	Hip Pivot Height	81.3 - 86.3	85	Yes
D	Hip Pivot from Backline	144.8 - 149.8	147	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	75	Yes
F	Thigh Clearance	119.4 - 134.6	124	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	250	Yes
H	Head Back to Backline	43.2 - 48.2	44	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	290	Yes
J	Elbow Rest Height	182.8 - 203.2	187	Yes
K	Buttock Knee Length	520.7 - 546.1	535	Yes
L	Popliteal Height	355.6 - 376.0	356	Yes
M	Knee Pivot Height	393.7 - 419.1	402	Yes
N	Buttock Popliteal Length	414.0 - 439.4	420	Yes
O	Chest Depth without Jacket	175.3 - 190.5	185	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	479	Yes
S	Head Breadth	137.1 - 147.3	142	Yes
T	Head Depth	177.8 - 188.0	184	Yes
U	Hip Breadth	299.7 - 314.9	309	Yes
V	Shoulder Breadth	350.5 - 365.7	361	Yes
W	Foot Breadth	78.8 - 94.0	87	Yes
X	Head Circumference	528.3 - 548.7	540	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	866	Yes
Z	Waist Circumference	759.5 - 789.9	782	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	350	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	165	Yes

Technician



Approved



Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 3

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Peak Resultant Acceleration	250 - 300 g	265.9 g	Yes
Peak Lateral Acceleration	15 g Max	-2.7 g	Yes
Oscillations After Main Pulse	Less Than 10% of Peak Resultant Acceleration?	Yes	Yes

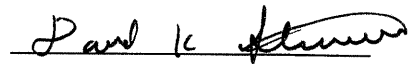
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 07:31:26 606

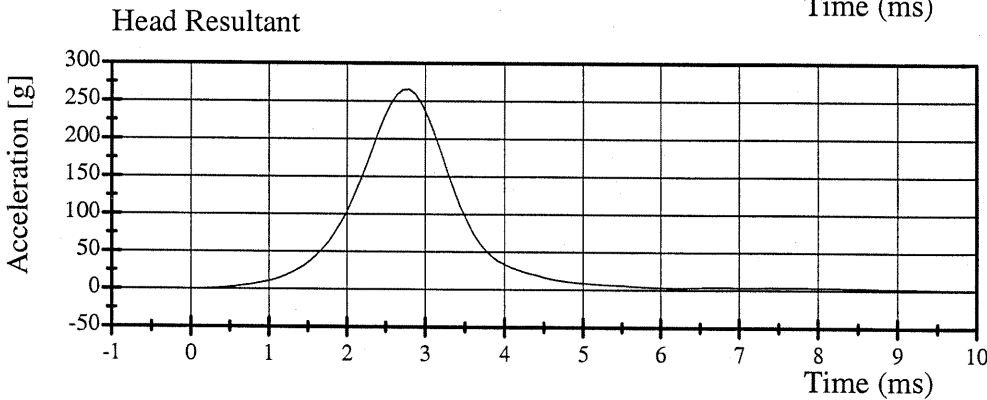
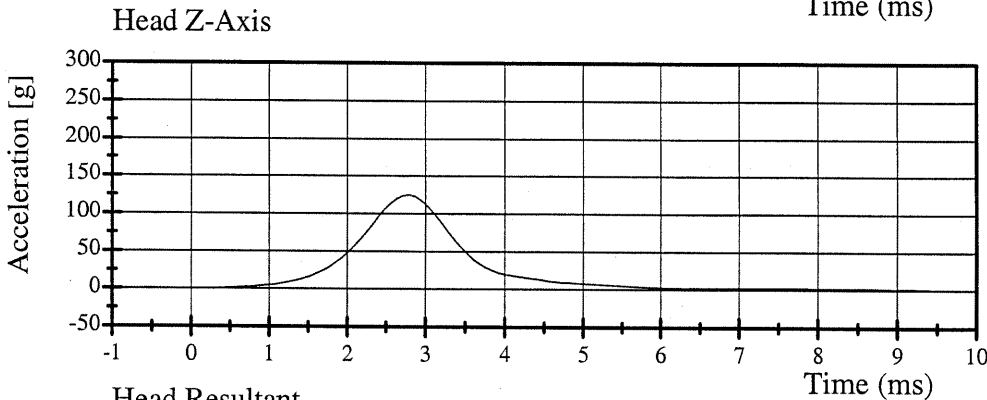
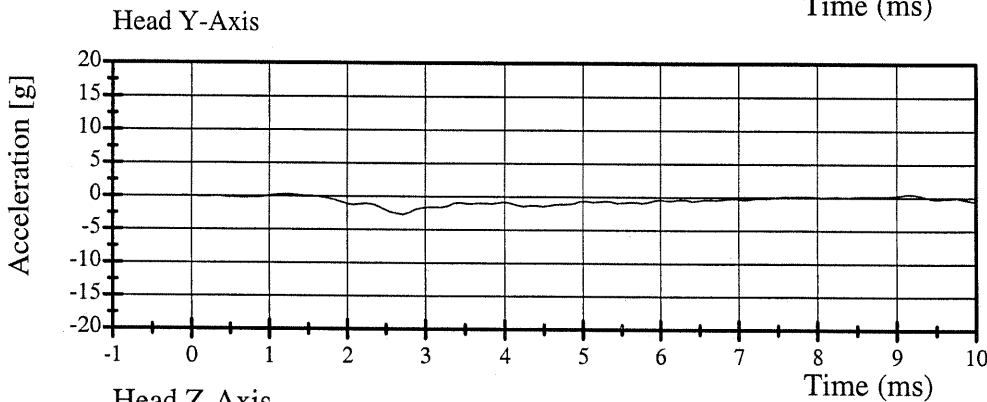
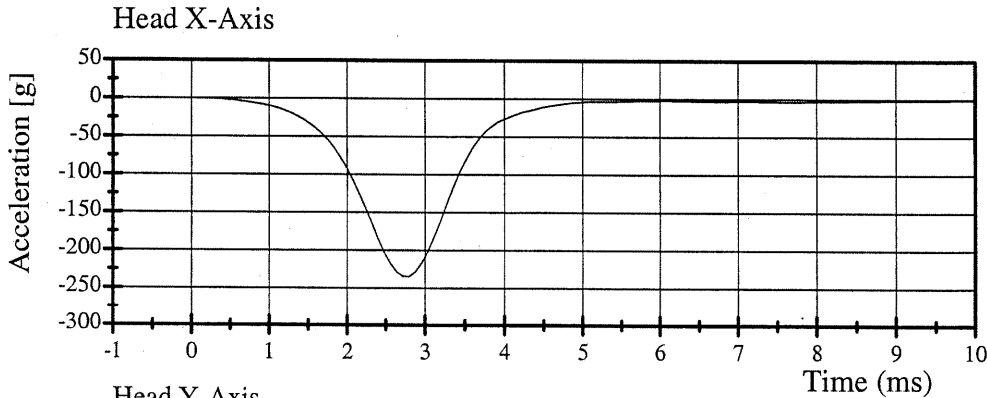


Transportation Research Center Inc.

5720 Head Drop Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 3

Test Date 06/24/2005



06.24.2005 07:31:27 606



Transportation Research Center Inc.

5720 Neck Flexion Test - 6 Channel Transducer

HIII 5th Female Serial No. 070 Calibration No. 09 - 2

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Impact Velocity	6.89 - 7.13 m/s	7.10 m/s	Yes
Integrated Pendulum Velocity			
10 ms	2.10 - 2.50 m/s	2.42 m/s	Yes
20 ms	4.00 - 5.00 m/s	4.60 m/s	Yes
30 ms	5.80 - 7.00 m/s	6.59 m/s	Yes
Peak D Plane Rotation	77 - 91 °	77.4 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	69.0 - 83.0 N·m	73.54 N·m	Yes
Positive Moment Decay Time To 10 N·m	80 - 100 ms	86.64 ms	Yes

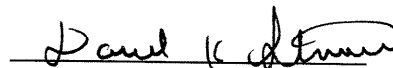
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 20:43:03 1131

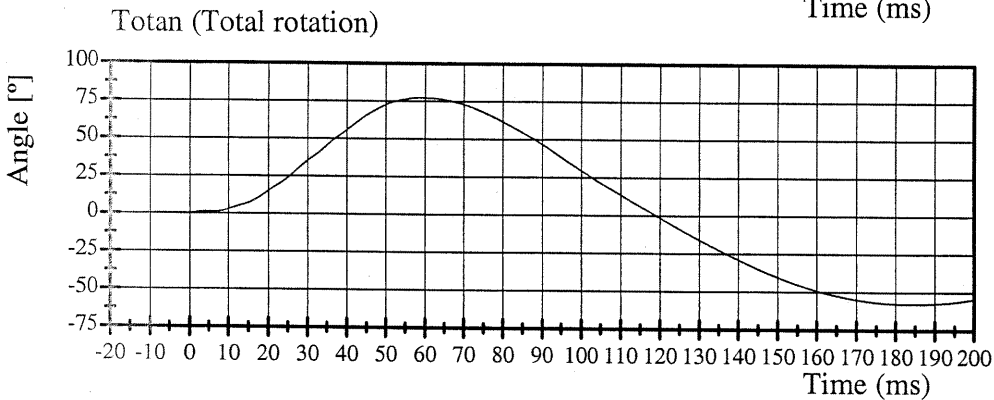
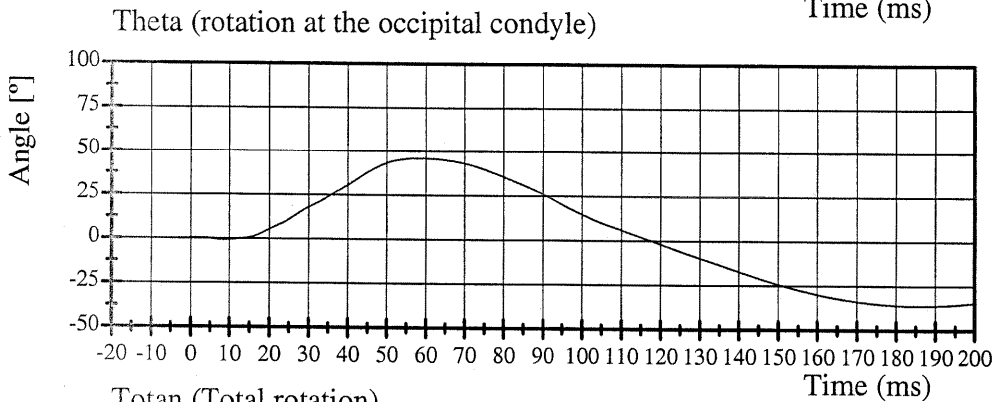
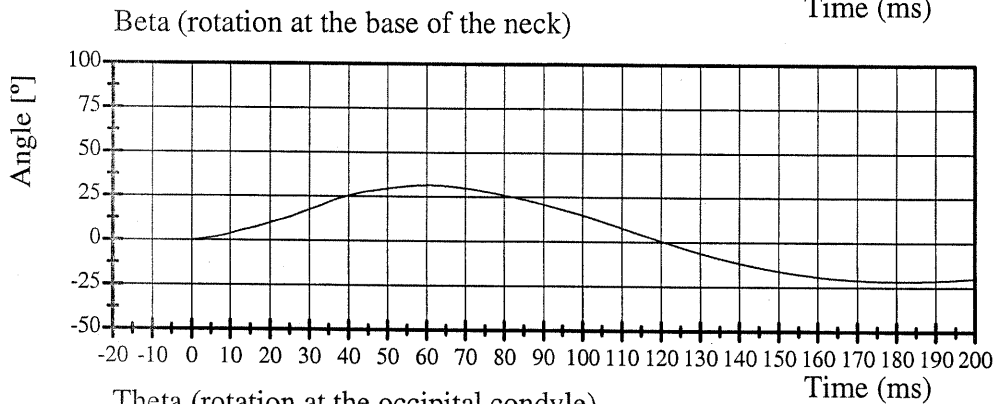
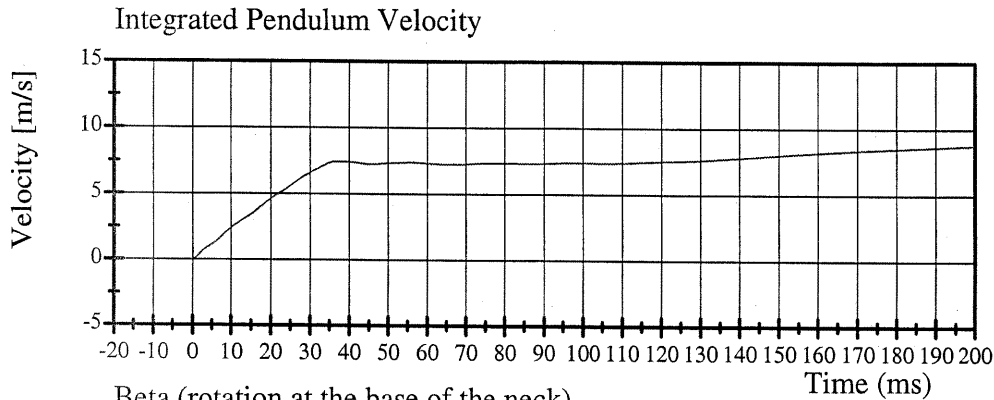


Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 2

Test Date 06/24/2005



06.24.2005 20:43:04 1131



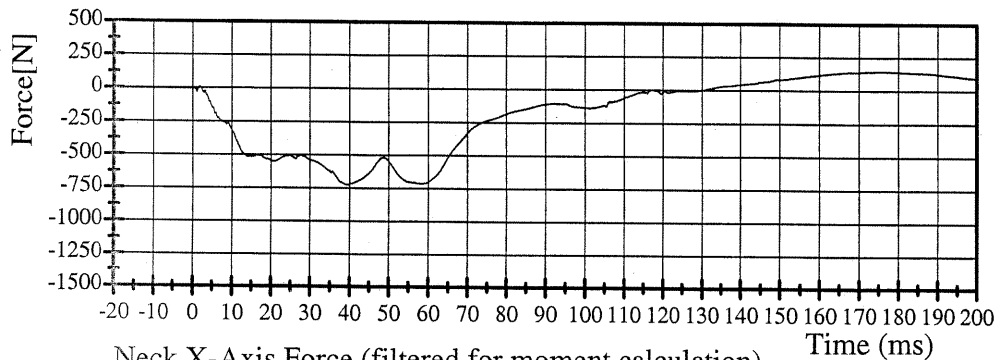
Transportation Research Center Inc.

5720 Neck Flexion Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 2

Test Date 06/24/2005

Neck X-Axis Force

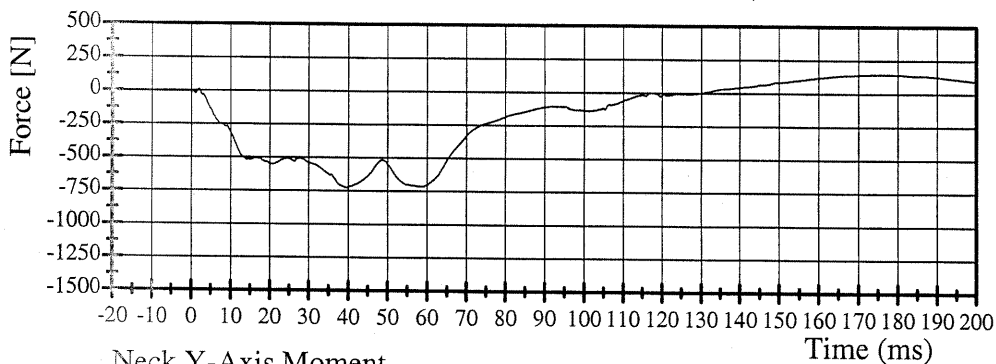


Filter Class: 1000

Max: 147.1 N at 174.4 ms

Min: -724.6 N at 39.4 ms

Neck X-Axis Force (filtered for moment calculation)

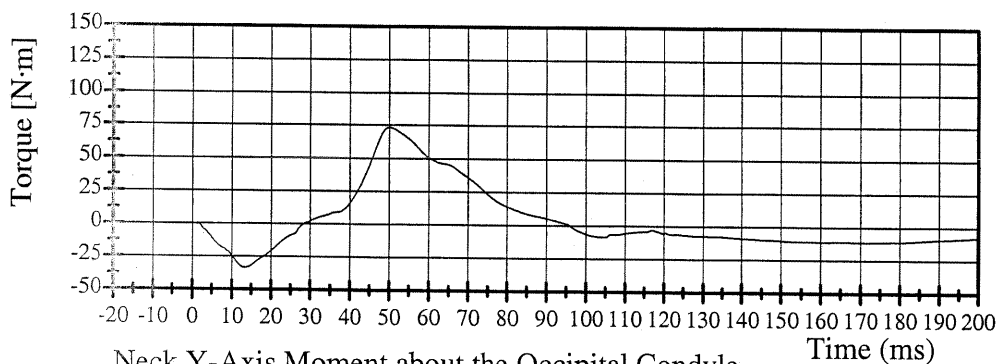


Filter Class: 600

Max: 146.9 N at 175.6 ms

Min: -724.1 N at 39.4 ms

Neck Y-Axis Moment

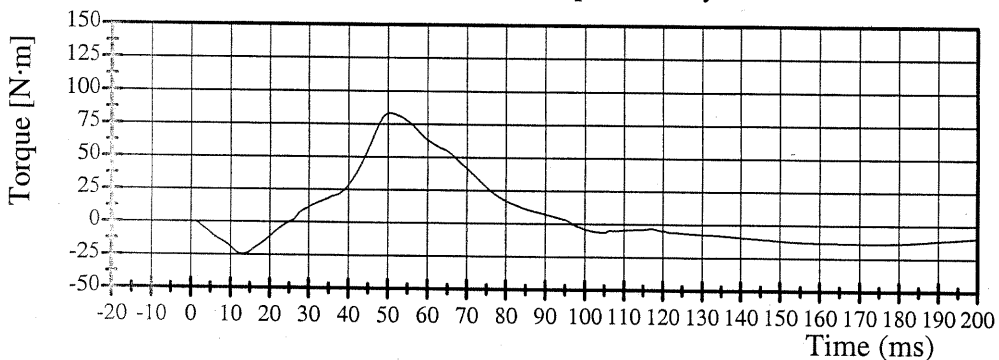


Filter Class: 600

Max: 73.3 N·m at 50.0 ms

Min: -33.4 N·m at 13.3 ms

Neck Y-Axis Moment about the Occipital Condyle



Filter Class: 600

Max: 83.3 N·m at 50.6 ms

Min: -24.5 N·m at 13.0 ms

Transportation Research Center Inc.

5720 Neck Extension Test - 6 Channel Transducer

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	44 %	Yes
Impact Velocity	5.95 - 6.19 m/s	6.15 m/s	Yes
Integrated Pendulum Velocity			
10 ms	1.50 - 1.90 m/s	1.83 m/s	Yes
20 ms	3.10 - 3.90 m/s	3.51 m/s	Yes
30 ms	4.60 - 5.60 m/s	4.94 m/s	Yes
Peak D Plane Rotation	99 - 114 °	103.3 °	Yes
Peak Moment About Occipital Condyles (During time interval rotation is within specified corridors)	-65.0 - (-53.0) N·m	-59.31 N·m	Yes
Negative Moment Decay Time To -10 N·m	94 - 114 ms	104.96 ms	Yes

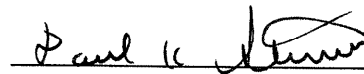
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 21:14:55 1219



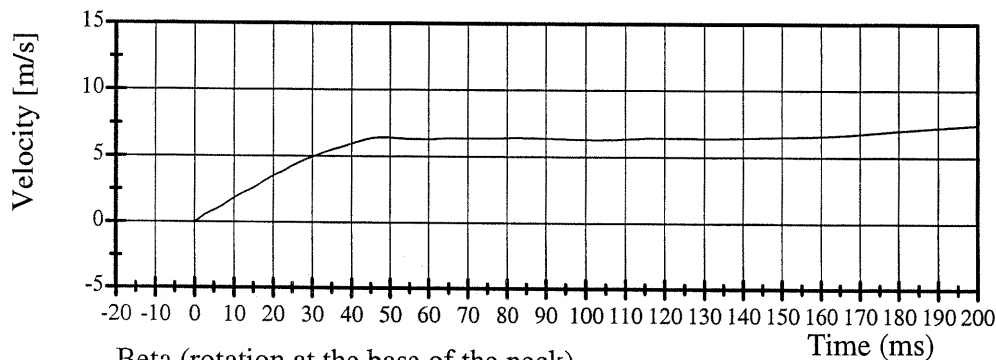
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Integrated Pendulum Velocity

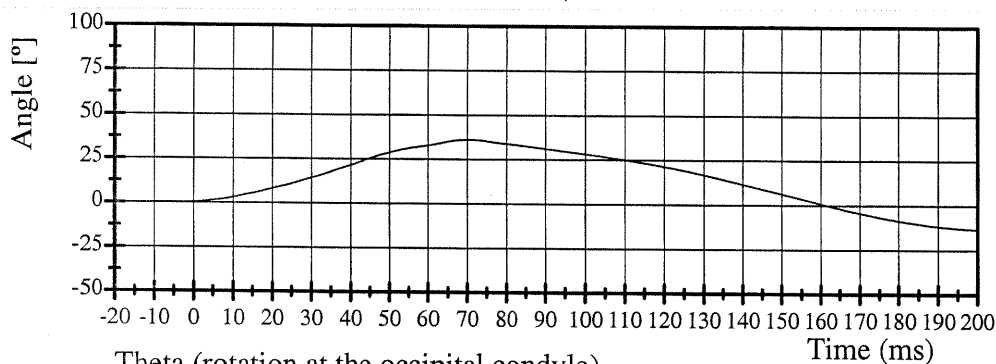


Filter Class: 180

Max: 8.1 m/s at 260.9 ms

Min: -0.0 m/s at -91.7 ms

Beta (rotation at the base of the neck)

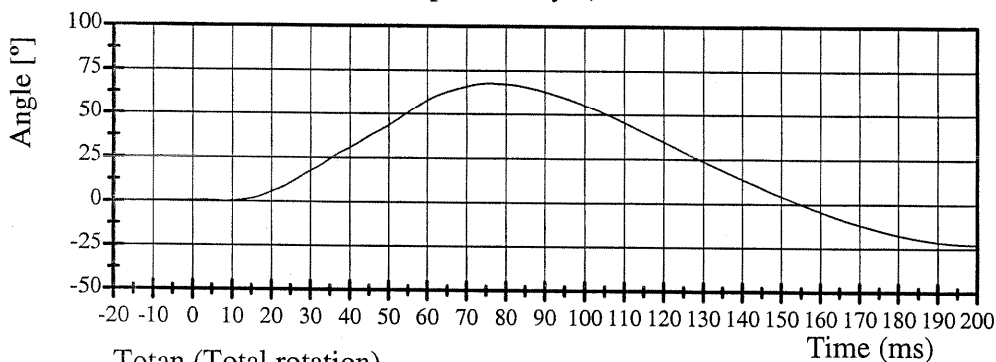


Filter Class: 60

Max: 36.2 ° at 70.6 ms

Min: -13.6 ° at 206.7 ms

Theta (rotation at the occipital condyle)

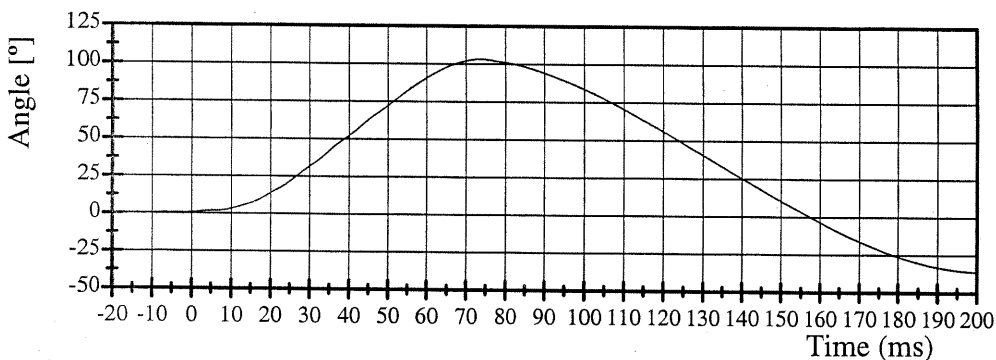


Filter Class: 60

Max: 67.8 ° at 75.8 ms

Min: -22.8 ° at 201.4 ms

Totan (Total rotation)



Filter Class: 60

Max: 103.3 ° at 73.6 ms

Min: -36.3 ° at 203.1 ms

06.24.2005 21:14:56 1219



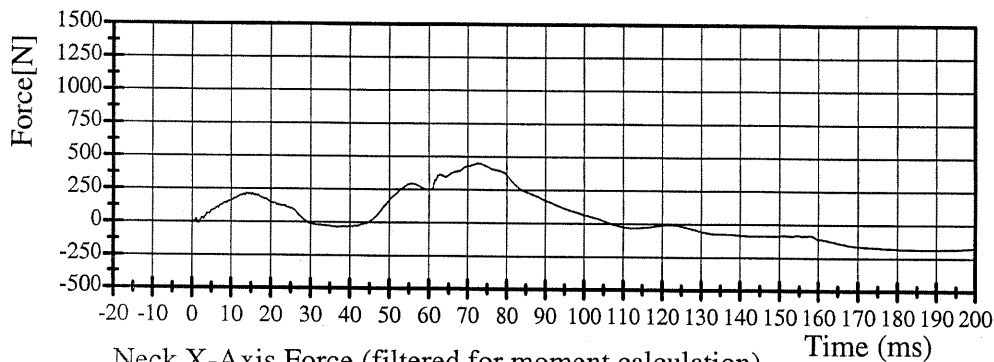
Transportation Research Center Inc.

5720 Neck Extension Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Neck X-Axis Force

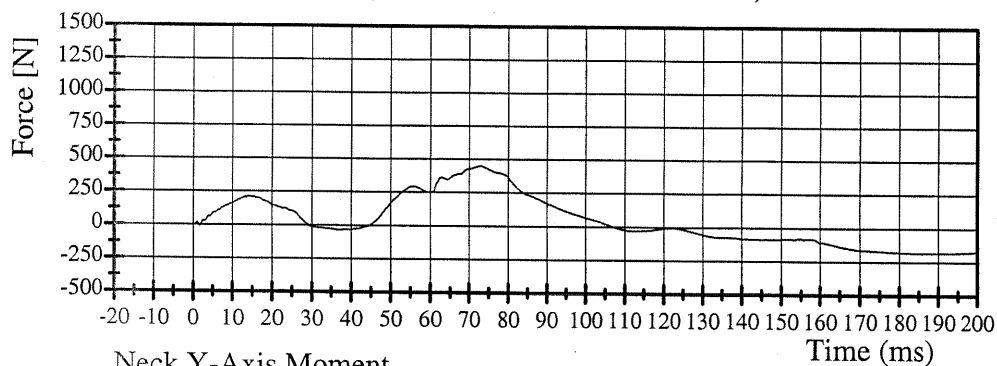


Filter Class: 1000

Max: 450.0 N at 73.0 ms

Min: -183.5 N at 185.8 ms

Neck X-Axis Force (filtered for moment calculation)

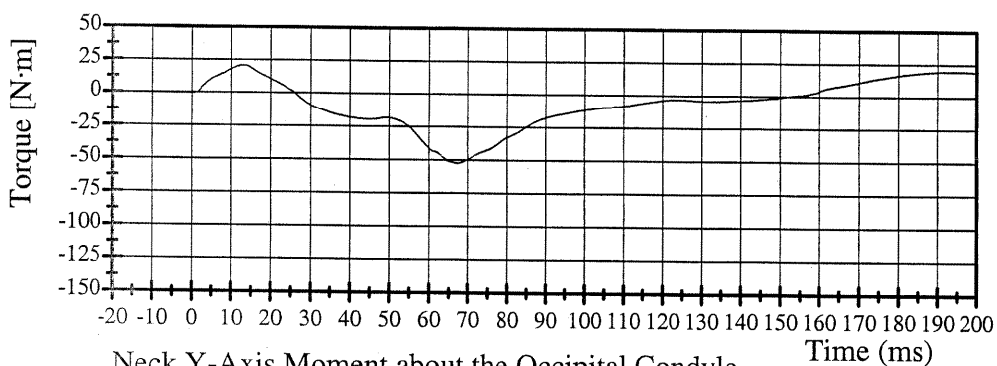


Filter Class: 600

Max: 449.5 N at 73.0 ms

Min: -183.0 N at 188.4 ms

Neck Y-Axis Moment

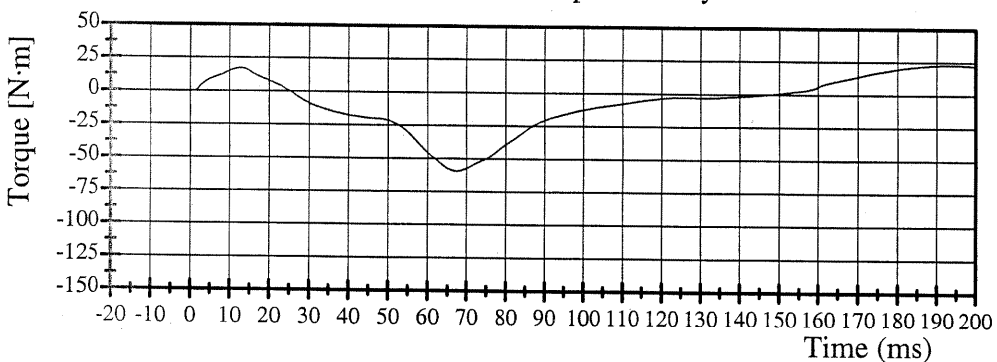


Filter Class: 600

Max: 20.8 N·m at 13.0 ms

Min: -52.4 N·m at 67.1 ms

Neck Y-Axis Moment about the Occipital Condyle



Filter Class: 600

Max: 23.0 N·m at 193.5 ms

Min: -59.3 N·m at 67.5 ms

06.24.2005 21:14:57 1219



Transportation Research Center Inc.

5720 Thorax Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	43 %	Yes
Pendulum Velocity	6.59 - 6.83 m/s	6.74 m/s	Yes
Maximum Chest Deflection	-58.0 - (-50.0) mm	-54.3 mm	Yes
Peak Impact Probe Force Within Compression Corridor	3900 - 4400 N	4331 N	Yes
Peak Force Between 18 mm and 50 mm	4600 N	4292 N	Yes
Internal Hysteresis	69 - 85 %	73 %	Yes

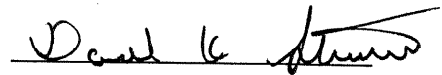
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 18:56:26 1626

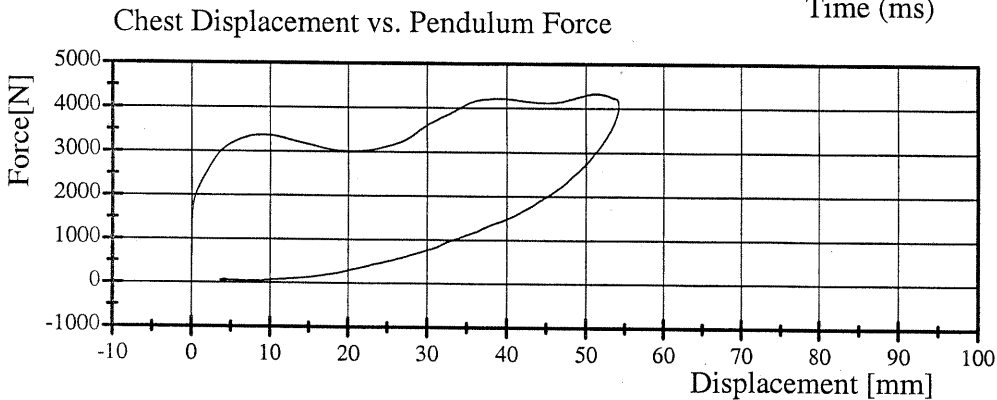
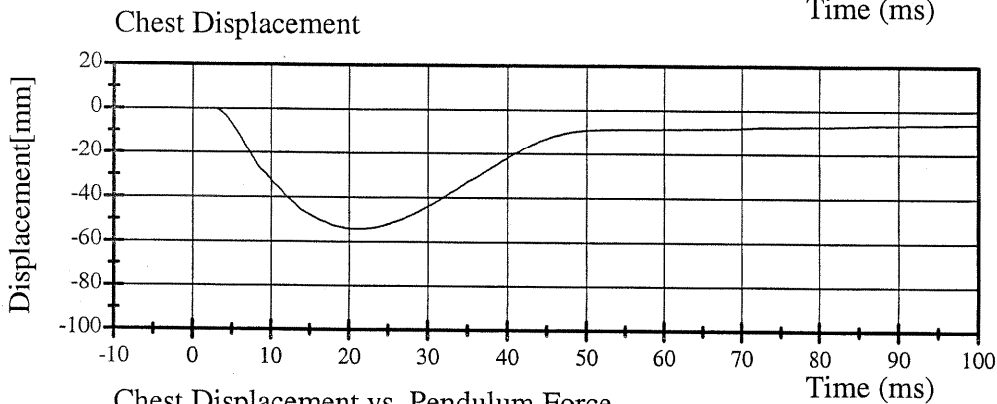
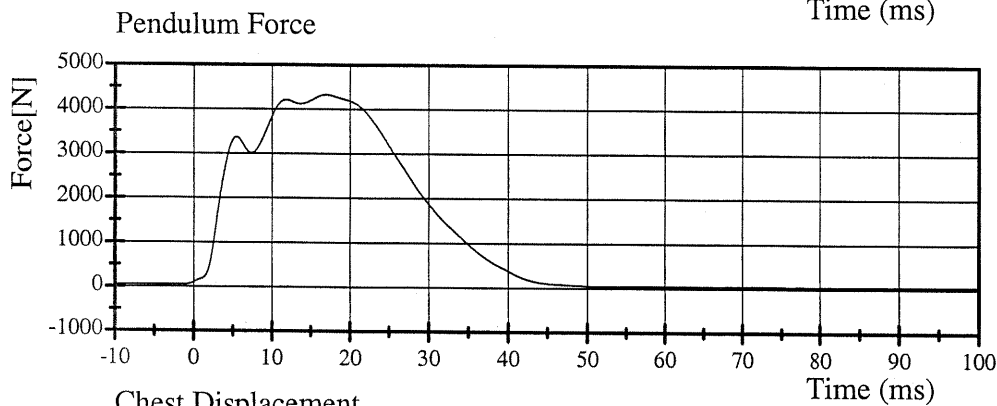
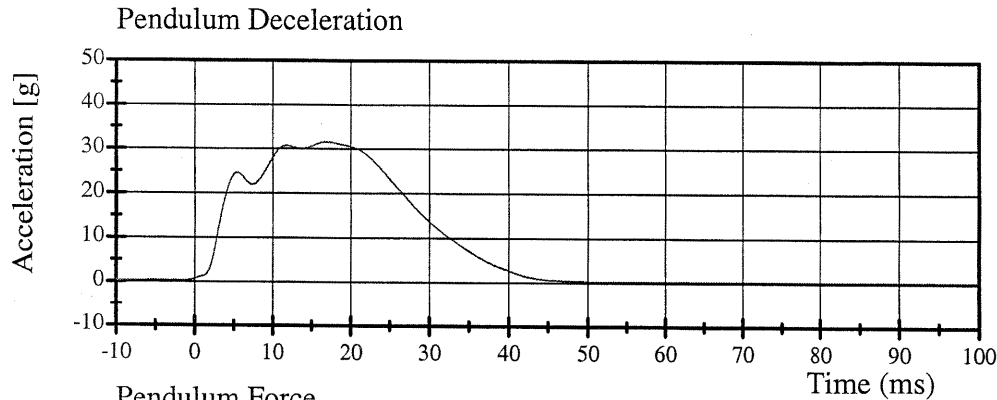


Transportation Research Center Inc.

5720 Thorax Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005



06.24.2005 18:56:27 1626



TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 22-Jun-05

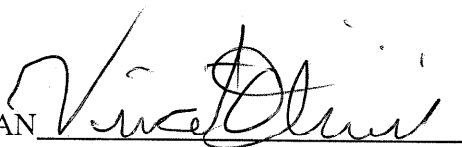
TRC, INC. TEST NO: 070C09TF1 572 O SN070 TORSO FLEX CAL 09

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.4° C
RELATIVE HUMIDITY	10 – 70 %	45 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20° REFERENCED TO VERTICAL	14.7 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	344.1 N
RETURN ANGLE		20.0 °
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	5.3 °
RATE	0.5° - 1.5°/sec	0.97 °/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN



Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3635 N	Yes

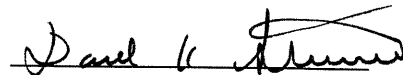
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 15:07:09 1742



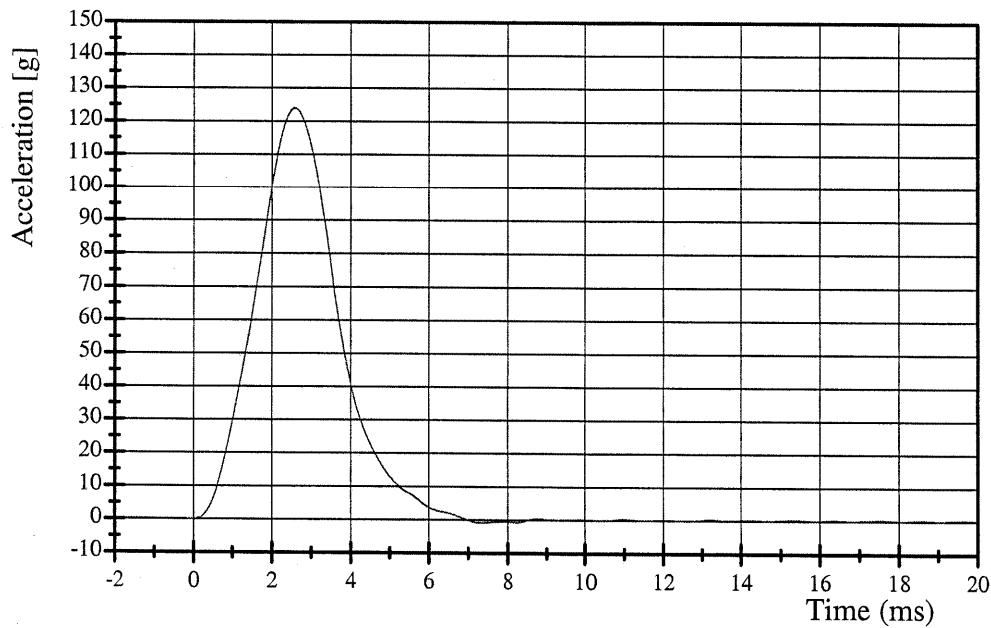
Transportation Research Center Inc.

5720 Left Knee Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Pendulum Deceleration

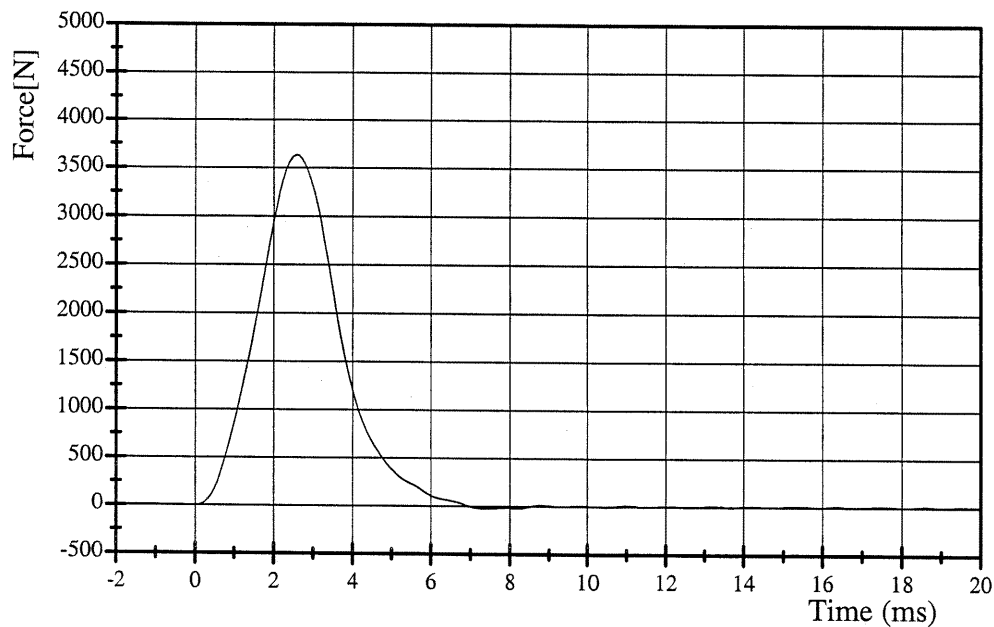


Filter Class: 600

Max: 124.0 g at 2.6 ms

Min: -0.8 g at 7.4 ms

Pendulum Force



Filter Class: 600

Max: 3634.6 N at 2.6 ms

Min: -23.6 N at 7.4 ms

06.24.2005 15:07:10 1742



Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.3 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	2.07 - 2.13 m/s	2.10 m/s	Yes
Maximum Pendulum Force	3450 - 4060 N	3679 N	Yes

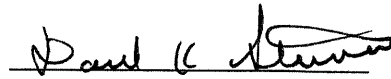
Test meets specifications.

Comments:

Technician



Approved



06.24.2005 15:11:37 1735



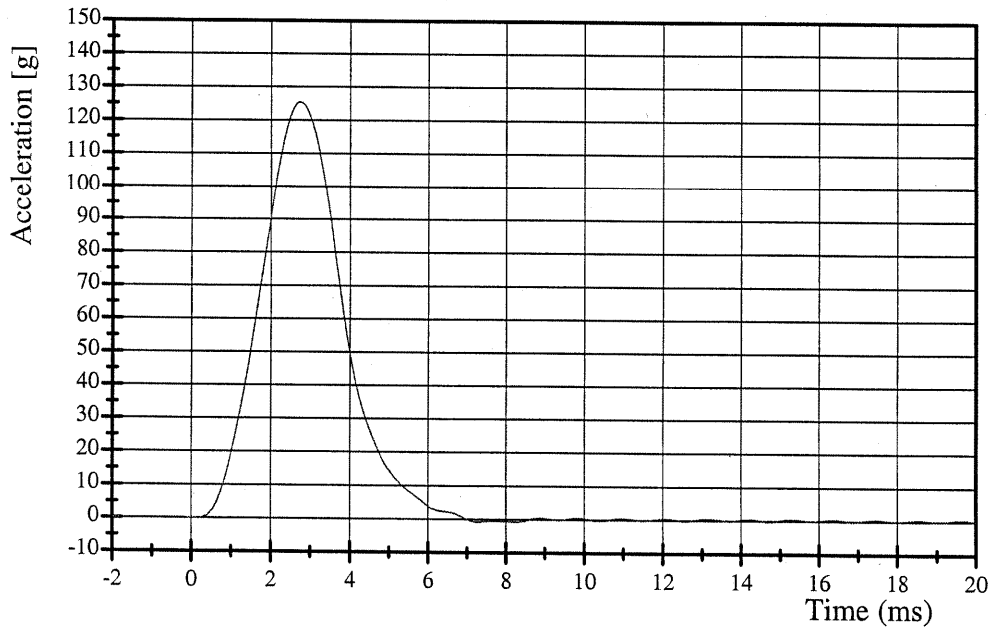
Transportation Research Center Inc.

5720 Right Knee Test

HIII 5th Female Serial No. 070 Calibration No. 09 - 1

Test Date 06/24/2005

Pendulum Deceleration

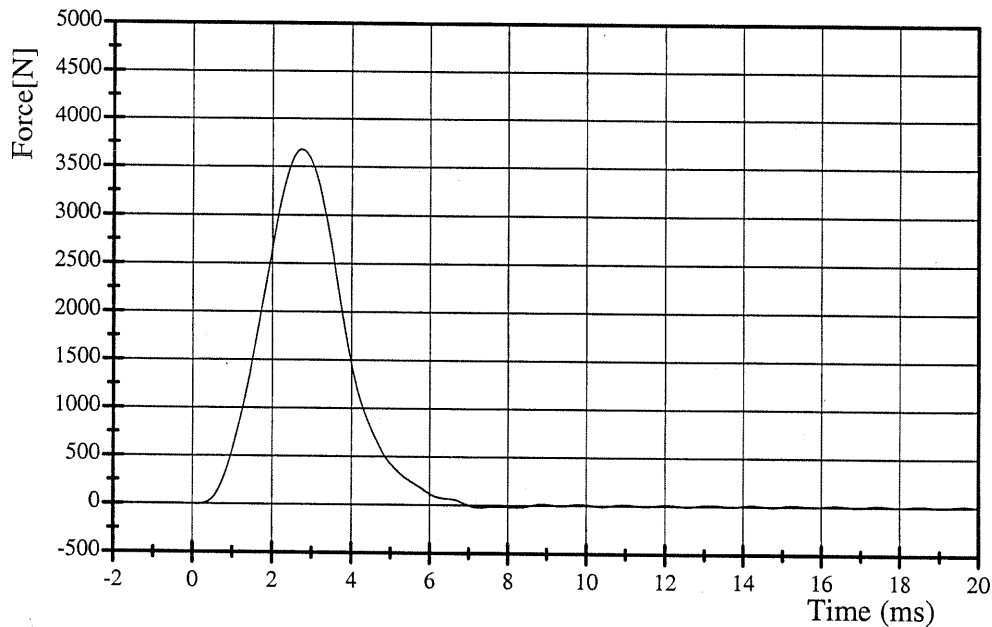


Filter Class: 600

Max: 125.5 g at 2.7 ms

Min: -0.8 g at 7.3 ms

Pendulum Force



Filter Class: 600

Max: 3679.3 N at 2.7 ms

Min: -22.4 N at 7.3 ms

06.24.2005 15:11:38 1735



Appendix D

Test Equipment and Instrumentation Calibration Information

Sign Convention
SAE J211 MAR95

Accelerometers:

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

Potentiometers:

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

Rotation potentiometers:

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

Load cells:

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

Neck load cells:

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

Tibia load cells:

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

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 050719 Target Vehicle

Ref	Channel Name	Transducer ID	ISO Signal Identifier	Description	Polarity	FScale	Units	Assembly
1	DAU202.Trigger	Trig D1	10ZERO000000EV00	EVENT	Bipolar		1 Logic	
2	DAU202.01	J36743	11HEADCG00H3ACXA	Head Accel X	Bipolar	1000	g	1-110 HIII 50th FTSS.001
3	DAU202.02	99102-F15	11HEADCG00H3ACYA	Head Accel Y	-Bipolar	1000	g	1-110 HIII 50th FTSS.002
4	DAU202.03	J19227	11HEADCG00H3ACZA	Head Accel Z	-Bipolar	1000	g	1-110 HIII 50th FTSS.003
5	DAU202.04	02A16-A25	11HEADFR00H3ACYA	Head (FT) Accel Y	-Bipolar	1000	g	1-110 HIII 50th FTSS.004
6	DAU202.05	03E03E21-M21	11HEADFR00H3ACZA	Head (FT) Accel Z	-Bipolar	1000	g	1-110 HIII 50th FTSS.005
7	DAU202.06	00L13-F14	11HEADUP00H3ACXA	Head (TP) Accel X	Bipolar	1000	g	1-110 HIII 50th FTSS.006
8	DAU202.07	98H12-F08	11HEADUP00H3ACYA	Head (TP) Accel Y	-Bipolar	1000	g	1-110 HIII 50th FTSS.007
9	DAU202.08	03E03E20-N01	11HEADLE00H3ACXA	Head (LT) Accel X	Bipolar	1000	g	1-110 HIII 50th FTSS.008
10	DAU202.09	03D03D16-F14	11HEADLE00H3ACZA	Head (LT) Accel Z	-Bipolar	1000	g	1-110 HIII 50th FTSS.009
11	DAU202.10	1716A-1039-FX	11NECKUP00H3FOXA	Neck Force X	-Bipolar	8896.4	N	1-110 HIII 50th FTSS.010
12	DAU202.11	1716A-1039-FY	11NECKUP00H3FOYA	Neck Force Y	Bipolar	8896.4	N	1-110 HIII 50th FTSS.011
13	DAU202.12	1716A-1039-FZ	11NECKUP00H3FOZA	Neck Force Z	Bipolar	13344.6	N	1-110 HIII 50th FTSS.012
14	DAU202.13	1716A-1039-MX	11NECKUP00H3MOXA	Neck Moment X	-Bipolar	282.4	N-m	1-110 HIII 50th FTSS.013
15	DAU202.14	1716A-1039-MY	11NECKUP00H3MOYA	Neck Moment Y	Bipolar	282.4	N-m	1-110 HIII 50th FTSS.014
16	DAU202.15	1716A-1039-MZ	11NECKUP00H3MOZA	Neck Moment Z	Bipolar	282.4	N-m	1-110 HIII 50th FTSS.015
17	DAU202.16	1794A-215-FX	11NECKLO00H3FOXA	Neck Lower Force X	-Bipolar	13344.6	N	1-110 HIII 50th FTSS.016
18	DAU202.17	1794A-215-FY	11NECKLO00H3FOYA	Neck Lower Force Y	Bipolar	13344.6	N	1-110 HIII 50th FTSS.017
19	DAU202.18	1794A-215-FZ	11NECKLO00H3FOZA	Neck Lower Force Z	Bipolar	13344.6	N	1-110 HIII 50th FTSS.018
20	DAU202.19	1794A-215-MX	11NECKLO00H3MOXA	Neck Lower Moment X	-Bipolar	452	N-m	1-110 HIII 50th FTSS.019
21	DAU202.20	1794A-215-MY	11NECKLO00H3MOYA	Neck Lower Moment Y	Bipolar	452	N-m	1-110 HIII 50th FTSS.020
22	DAU202.21	1794A-215-MZ	11NECKLO00H3MOZA	Neck Lower Moment Z	Bipolar	452	N-m	1-110 HIII 50th FTSS.021
23	DAU202.22	AJ534	11CHSTCG00H3ACXA	Chest Accel X	Bipolar	1000	g	1-110 HIII 50th FTSS.022
24	DAU202.23	J17976	11CHSTCG00H3ACYA	Chest Accel Y	-Bipolar	1000	g	1-110 HIII 50th FTSS.023
25	DAU202.24	J32884	11CHSTCG00H3ACZA	Chest Accel Z	-Bipolar	1000	g	1-110 HIII 50th FTSS.024
26	DAU202.25	98H10-F18	11CHSTCGRDH3ACXA	Chest Accel X Red.	-Bipolar	1000	g	1-110 HIII 50th FTSS.025
27	DAU202.26	02I02I10-N15	11CHSTCGRDH3ACYA	Chest Accel Y Red.	Bipolar	1000	g	1-110 HIII 50th FTSS.026
28	DAU202.27	02D02C21-N02	11CHSTCGRDH3ACZA	Chest Accel Z Red.	Bipolar	1000	g	1-110 HIII 50th FTSS.027
29	DAU202.28	CST110	11CHST0000H3DSXA	Chest Deflection X	Bipolar	100	mm	1-110 HIII 50th FTSS.028
30	DAU202.29	J23803	11PELVCG00H3ACXA	Pelvis Accel X	-Bipolar	1000	g	1-110 HIII 50th FTSS.029
31	DAU202.30	J32180	11PELVCG00H3ACYA	Pelvis Accel Y	-Bipolar	1000	g	1-110 HIII 50th FTSS.030
32	DAU202.31	J20556	11PELVCG00H3ACZA	Pelvis Accel Z	-Bipolar	1000	g	1-110 HIII 50th FTSS.031
33	DAU202.32	2430-741	11FEMRLL00H3FOZA	Left Femur Force Z	Bipolar	13344	N	1-110 HIII 50th FTSS.032
34	DAU712.01	2430-96661	11FEMRRL00H3FOZA	Right Femur Force Z	Bipolar	13344	N	1-110 HIII 50th FTSS.033
35	DAU712.02	150-0121VR-14691	11KNSLLE00H3DSXA	Left Knee Displacement X	-Bipolar	40	mm	1-110 HIII 50th FTSS.034
36	DAU712.03	4509J-90-FX	11TIBILULXH3FOXA	Left Upper Tibia Force X	Bipolar	11120	N	1-110 HIII 50th FTSS.035
37	DAU712.04	4509J-90-FY	11TIBILULXH3FOYA	Left Upper Tibia Force Y	Bipolar	11120	N	1-110 HIII 50th FTSS.036
38	DAU712.05	4509J-90-FZ	11TIBILULXH3FOZA	Left Upper Tibia Force Z	Bipolar	11120	N	1-110 HIII 50th FTSS.037
39	DAU712.06	4509J-90-MX	11TIBILULXH3MOXA	Left Upper Tibia Moment X	Bipolar	395.4	N-m	1-110 HIII 50th FTSS.038

40	DAU712.07	4509J-90-MY	11TIBILULXH3MOYA	Left Upper Tibia Moment Y	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.039
41	DAU712.08	P16171	11TIBILELXH3ACXA	Left Tibia Accel X	Bipolar	1000 g	1-110 HIII 50th FTSS.040
42	DAU712.09	P15591	11TIBILELXH3ACYA	Left Tibia Accel Y	Bipolar	1000 g	1-110 HIII 50th FTSS.041
43	DAU712.10	4929J-120-FX	11TIBILLLXH3FOXA	Left Lower Tibia Force X	Bipolar	11120.5 N	1-110 HIII 50th FTSS.042
44	DAU712.11	4929J-120-FY	11TIBILLLXH3FOYA	Left Lower Tibia Force Y	Bipolar	11120.5 N	1-110 HIII 50th FTSS.043
45	DAU712.12	4929J-120-FZ	11TIBILLLXH3FOZA	Left Lower Tibia Force Z	Bipolar	11120.5 N	1-110 HIII 50th FTSS.044
46	DAU712.13	4929J-120-MX	11TIBILLLXH3MOXA	Left Lower Tibia Moment X	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.045
47	DAU712.14	4929J-120-MY	11TIBILLLXH3MOYA	Left Lower Tibia Moment Y	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.046
48	DAU712.15	PD210-4B-AK-0326	11FOOTLELXH3ANXA	Left Foot Angular Dis. X	Bipolar	318 °	1-110 HIII 50th FTSS.047
49	DAU712.16	PD210-4B-AK-0327	11FOOTLELXH3ANYA	Left Foot Angular Dis. Y	Bipolar	318 °	1-110 HIII 50th FTSS.048
50	DAU712.17	PD210-4B-AK-0259	11FOOTLELXH3ANZA	Left Foot Angular Dis. Z	Bipolar	318 °	1-110 HIII 50th FTSS.049
51	DAU712.18	P17833	11FOOTLELXH3ACXA	Left Foot Accel X	Bipolar	1000 g	1-110 HIII 50th FTSS.050
52	DAU712.19	P15321	11FOOTLELXH3ACYA	Left Foot Accel Y	Bipolar	1000 g	1-110 HIII 50th FTSS.051
53	DAU712.20	P16945	11FOOTLELXH3ACZA	Left Foot Accel Z	Bipolar	1000 g	1-110 HIII 50th FTSS.052
54	DAU712.21	150-0121VL-14239	11KNSLRI00H3DSXA	Right Knee Displacement X	-Bipolar	40 mm	1-110 HIII 50th FTSS.053
55	DAU712.22	4509J-89-FX	11TIBIRULXH3FOXA	Right Upper Tibia Force X	Bipolar	11120 N	1-110 HIII 50th FTSS.054
56	DAU712.24	4509J-89-FY	11TIBIRULXH3FOYA	Right Upper Tibia Force Y	Bipolar	11120 N	1-110 HIII 50th FTSS.055
57	DAU712.25	4509J-89-FZ	11TIBIRULXH3FOZA	Right Upper Tibia Force Z	Bipolar	11120 N	1-110 HIII 50th FTSS.056
58	DAU712.26	4509J-89-MX	11TIBIRULXH3MOXA	Right Upper Tibia Moment X	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.057
59	DAU712.27	4509J-89-MY	11TIBIRULXH3MOYA	Right Upper Tibia Moment Y	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.058
60	DAU712.28	P15334	11TIBIRILXH3ACXA	Right Tibia Accel X	Bipolar	1000 g	1-110 HIII 50th FTSS.059
61	DAU712.29	J19625	11TIBIRILXH3ACYA	Right Tibia Accel Y	Bipolar	1000 g	1-110 HIII 50th FTSS.060
62	DAU712.30	4929J-121-FX	11TIBIRLLXH3FOXA	Right Lower Tibia Force X	Bipolar	11120.5 N	1-110 HIII 50th FTSS.061
63	DAU712.31	4929J-121-FY	11TIBIRLLXH3FOYA	Right Lower Tibia Force Y	Bipolar	11120.5 N	1-110 HIII 50th FTSS.062
64	DAU712.32	4929J-121-FZ	11TIBIRLLXH3FOZA	Right Lower Tibia Force Z	Bipolar	11120.5 N	1-110 HIII 50th FTSS.063
65	DAU732.01	4929J-121-MX	11TIBIRLLXH3MOXA	Right Lower Tibia Moment X	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.064
66	DAU732.02	4929J-121-MY	11TIBIRLLXH3MOYA	Right Lower Tibia Moment Y	Bipolar	395.4 N·m	1-110 HIII 50th FTSS.065
67	DAU732.03	PD210-4B-AK-0254	11FOOTRILXH3ANXA	Right Foot Angular Dis. X	Bipolar	318 °	1-110 HIII 50th FTSS.066
68	DAU732.04	PD210-4B-AK-0255	11FOOTRILXH3ANYA	Right Foot Angular Dis. Y	Bipolar	318 °	1-110 HIII 50th FTSS.067
69	DAU732.05	PD210-4B-AK-0256	11FOOTRILXH3ANZA	Right Foot Angular Dis. Z	Bipolar	318 °	1-110 HIII 50th FTSS.068
70	DAU732.06	AJ4L3	11FOOTRILXH3ACXA	Right Foot Accel X	Bipolar	1000 g	1-110 HIII 50th FTSS.069
71	DAU732.07	J27464	11FOOTRILXH3ACYA	Right Foot Accel Y	Bipolar	1000 g	1-110 HIII 50th FTSS.070
72	DAU732.08	J23998	11FOOTRILXH3ACZA	Right Foot Accel Z	Bipolar	1000 g	1-110 HIII 50th FTSS.071
73	DAU732.09	03E03E20-N20	13HEADCG00HFACXA	Head Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.001
74	DAU732.10	02A18-N10	13HEADCG00HFACYA	Head Accel Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.002
75	DAU732.11	02A09-F15	13HEADCG00HFACZA	Head Accel Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.003
76	DAU732.12	01L26-F02	13HEADCGRDHFACXA	Head Accel Red X	-Bipolar	1000 g	3-416 HIII 5th FTSS.004
77	DAU732.13	02A09-F13	13HEADCGRDHFACYA	Head Accel Red Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.005
78	DAU732.14	02A16-A06	13HEADCGRDHFACZA	Head Accel Red Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.006
79	DAU732.15	02A16-A19	13HEADLE00HFACXA	Head (LT) Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.007
80	DAU732.16	02A16-A22	13HEADLE00HFACZA	Head (LT) Accel Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.008
81	DAU732.17	02A18-N04	13HEADFR00HFACYA	Head (FT) Accel Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.009

82	DAU732.18	02A18-N20	13HEADFR00HFACZA	Head (FT) Accel Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.010
83	DAU732.19	03F03F09-N05	13HEADUP00HFACXA	Head (TP) Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.011
84	DAU732.20	98H14-K10	13HEADUP00HFACYA	Head (TP) Accel Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.012
85	DAU732.21	IF-205-161-FX	13NECKUP00HFFOXA	Neck Force X	-Bipolar	8896 N	3-416 HIII 5th FTSS.013
86	DAU732.22	IF-205-161-FY	13NECKUP00HFFOYA	Neck Force Y	Bipolar	8896 N	3-416 HIII 5th FTSS.014
87	DAU732.23	IF-205-161-FZ	13NECKUP00HFFOZA	Neck Force Z	Bipolar	13344 N	3-416 HIII 5th FTSS.015
88	DAU732.24	IF-205-161-MX	13NECKUP00HFMOXA	Neck Moment X	-Bipolar	282.5 N·m	3-416 HIII 5th FTSS.016
89	DAU732.25	IF-205-161-MY	13NECKUP00HFMOYA	Neck Moment Y	Bipolar	282.5 N·m	3-416 HIII 5th FTSS.017
90	DAU732.26	IF-205-161-MZ	13NECKUP00HFMOZA	Neck Moment Z	Bipolar	282.5 N·m	3-416 HIII 5th FTSS.018
91	DAU732.27	3251-108-FX	13NECKLO00HFFOXA	Neck Lower Force X	-Bipolar	13344.6 N	3-416 HIII 5th FTSS.019
92	DAU732.28	3251-108-FY	13NECKLO00HFFOYA	Neck Lower Force Y	Bipolar	13344.6 N	3-416 HIII 5th FTSS.020
93	DAU732.29	3251-108-FZ	13NECKLO00HFFOZA	Neck Lower Force Z	Bipolar	13344.6 N	3-416 HIII 5th FTSS.021
94	DAU732.30	3251-108-MX	13NECKLO00HFMOXA	Neck Lower Moment X	-Bipolar	451.9 N·m	3-416 HIII 5th FTSS.022
95	DAU732.31	3251-108-MY	13NECKLO00HFMOYA	Neck Lower Moment Y	Bipolar	451.9 N·m	3-416 HIII 5th FTSS.023
96	DAU732.32	3251-108-MZ	13NECKLO00HFMOZA	Neck Lower Moment Z	Bipolar	338.95 N·m	3-416 HIII 5th FTSS.024
97	DAU3173.01	02A16-A04	13CHSTCG00HFACXA	Chest Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.025
98	DAU3173.02	C02B19-F02	13CHSTCG00HFACYA	Chest Accel Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.026
99	DAU3173.03	C02B19-F06	13CHSTCG00HFACZA	Chest Accel Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.027
100	DAU3173.04	B02A25-N08	13CHSTCGRDHFACXA	Chest Accel Red X	-Bipolar	1000 g	3-416 HIII 5th FTSS.028
101	DAU3173.05	03E03E19-N02	13CHSTCGRDHFACYA	Chest Accel Red Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.029
102	DAU3173.06	C02B19-F04	13CHSTCGRDHFACZA	Chest Accel Red Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.030
103	DAU3173.07	B02A09-F08	13STRNUP00HFACXA	Sternum Upper Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.031
104	DAU3173.09	02A16-A05	13STRNMI00HFACXA	Sternum Mid Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.032
105	DAU3173.10	03F03F09-N18	13STRNLO00HFACXA	Sternum Lower Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.033
106	DAU3173.11	14CB1-2897-416	13CHST0000HFDSXA	Chest Deflection X 516	Bipolar	100 mm	3-416 HIII 5th FTSS.034
107	DAU3173.12	2152-076-FX	13LUSP0000HFFOXA	Lumbar Force X	-Bipolar	13344.6 N	3-416 HIII 5th FTSS.035
108	DAU3173.13	2152-076-FY	13LUSP0000HFFOYA	Lumbar Force Y	Bipolar	13344.6 N	3-416 HIII 5th FTSS.036
109	DAU3173.14	2152-076-FZ	13LUSP0000HFFOZA	Lumbar Force Z	Bipolar	17793 N	3-416 HIII 5th FTSS.037
110	DAU3173.15	2152-076-MX	13LUSP0000HFMOXA	Lumbar Moment X	-Bipolar	677.9 N	3-416 HIII 5th FTSS.038
111	DAU3173.16	2152-076-MY	13LUSP0000HFMOYA	Lumbar Moment Y	Bipolar	677.9 N	3-416 HIII 5th FTSS.039
112	DAU3173.17	C02B19-F03	13PELVCG00HFACXA	Pelvis Accel X	-Bipolar	1000 g	3-416 HIII 5th FTSS.040
113	DAU3173.18	02A16-A27	13PELVCG00HFACYA	Pelvis Accel Y	-Bipolar	1000 g	3-416 HIII 5th FTSS.041
114	DAU3173.19	C02B19-F01	13PELVCG00HFACZA	Pelvis Accel Z	-Bipolar	1000 g	3-416 HIII 5th FTSS.042
115	DAU3173.20	2430-736	13FEMRL00HFFOZA	Left Femur Force Z #8	Bipolar	13344 N	3-416 HIII 5th FTSS.043
116	DAU3173.21	2430-742	13FEMRRL00HFFOZA	Right Femur Force Z 507	Bipolar	13344 N	3-416 HIII 5th FTSS.044
117	DAU3173.22	150-0121VR-22653	13KNSLLE00HFDSXA	Left Knee Displacement	Bipolar	40 mm	3-416 HIII 5th FTSS.045
118	DAU3173.23	4825J-91-FX	13TIBILUFXHFFOXA	Left Upper Tibia Force X	Bipolar	8896.4 N	3-416 HIII 5th FTSS.046
119	DAU3173.24	4825J-91-FZ	13TIBILUFXHFFOZA	Left Upper Tibia Force Z	Bipolar	8896.4 N	3-416 HIII 5th FTSS.047
120	DAU3173.25	4825J-91-MX	13TIBILUFXHFM0XA	Left Upper Tibia Moment X	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.048
121	DAU3173.26	4825J-91-MY	13TIBILUFXHFM0YA	Left Upper Tibia Moment Y	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.049
122	DAU3173.27	99H30-Z01	13TIBILEFXHFACXA	Left Tibia Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.050
123	DAU3173.28	99108-F26	13TIBILEFXHFACYA	Left Tibia Accel Y	Bipolar	1000 g	3-416 HIII 5th FTSS.051

124	DAU3173.29	4826J-92-FX	13TIBILLFXHFFOXA	Left Lower Tibia Force X	Bipolar	8896.4 N	3-416 HIII 5th FTSS.052
125	DAU3173.30	4826J-92-FY	13TIBILLFXHFFOYA	Left Lower Tibia Force Y	Bipolar	8896.4 N	3-416 HIII 5th FTSS.053
126	DAU3173.31	4826J-92-FZ	13TIBILLFXHFFOZA	Left Lower Tibia Force Z	Bipolar	8896.4 N	3-416 HIII 5th FTSS.054
127	DAU3173.32	4826J-92-MX	13TIBILLFXHFMOXA	Left Lower Tibia Moment X	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.055
128	DAU3174.01	4826J-92-MY	13TIBILLFXHFMOYA	Left Lower Tibia Moment Y	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.056
129	DAU3174.02	PD210-4B-AK-044	13FOOTLEFXHFANXA	Left Foot Disp. X FLX102X	-Bipolar	318 °	3-416 HIII 5th FTSS.057
130	DAU3174.03	PD210-4B-AK-043	13FOOTLEFXHFANYA	Left Foot Disp. Y FLX102Y	Bipolar	318 °	3-416 HIII 5th FTSS.058
131	DAU3174.04	PD210-4B-265	13FOOTLEFXHFANZA	Left Foot Disp. Z FLX102Z	-Bipolar	318 °	3-416 HIII 5th FTSS.059
132	DAU3174.05	02I02I05-F18	13FOOTLEFXHFACXA	Left Foot Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.060
133	DAU3174.06	00L13-F72	13FOOTLEFXHFACYA	Left Foot Accel Y	Bipolar	1000 g	3-416 HIII 5th FTSS.061
134	DAU3174.07	02I02I05-F03	13FOOTLEFXHFACZA	Left Foot Accel Z	Bipolar	1000 g	3-416 HIII 5th FTSS.062
135	DAU3174.08	150-0121VL-20590	13KNSLRIO0HFDSXA	Right Knee Displacement	Bipolar	40 mm	3-416 HIII 5th FTSS.063
136	DAU3174.09	4825J-90-FX	13TIBIRUFXHFFOXA	Right Upper Tibia Force X	Bipolar	8896.4 N	3-416 HIII 5th FTSS.064
137	DAU3174.10	4825J-90-FZ	13TIBIRUFXHFFOZA	Right Upper Tibia Force Z	Bipolar	8896.4 N	3-416 HIII 5th FTSS.065
138	DAU3174.11	4825J-90-MX	13TIBIRUFXHFMOMA	Right Upper Tibia Moment X	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.066
139	DAU3174.12	4825J-90-MY	13TIBIRUFXHFMOMA	Right Upper Tibia Moment Y	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.067
140	DAU3174.13	98H10-F05	13TIBIRIFXHFACXA	Right Tibia Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.068
141	DAU3174.14	J35987	13TIBIRIFXHFACYA	Right Tibia Accel Y	Bipolar	1000 g	3-416 HIII 5th FTSS.069
142	DAU3174.15	4826J-93-FX	13TIBIRLFXHFFOXA	Right Lower Tibia Force X	Bipolar	8896.4 N	3-416 HIII 5th FTSS.070
143	DAU3174.16	4826J-93-FY	13TIBIRLFXHFFOYA	Right Lower Tibia Force Y	Bipolar	8896.4 N	3-416 HIII 5th FTSS.071
144	DAU3174.17	4826J-93-FZ	13TIBIRLFXHFFOZA	Right Lower Tibia Force Z	Bipolar	8896.4 N	3-416 HIII 5th FTSS.072
145	DAU3174.18	4826J-93-MX	13TIBIRLFXHFMOXA	Right Lower Tibia Moment X	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.073
146	DAU3174.19	4826J-93-MY	13TIBIRLFXHFMOYA	Right Lower Tibia Moment Y	Bipolar	282.4 N·m	3-416 HIII 5th FTSS.074
147	DAU3174.20	PD210-4B-AK-029	13FOOTRIFXHFANXA	Right Foot Disp. X FLX101X	-Bipolar	318 °	3-416 HIII 5th FTSS.075
148	DAU3174.21	PD210-4B-AK-030	13FOOTRIFXHFANYA	Right Foot Disp. Y FLX101Y	Bipolar	318 °	3-416 HIII 5th FTSS.076
149	DAU3174.22	PD210-4B-345	13FOOTRIFXHFANZA	Right Foot Disp. Z FLX101Z	-Bipolar	318 °	3-416 HIII 5th FTSS.077
150	DAU3174.23	02I02I10-N18	13FOOTRIFXHFACXA	Right Foot Accel X	Bipolar	1000 g	3-416 HIII 5th FTSS.078
151	DAU3174.24	00L13-F29	13FOOTRIFXHFACYA	Right Foot Accel Y	Bipolar	1000 g	3-416 HIII 5th FTSS.079
152	DAU3174.25	01G25-N08	13FOOTRIFXHFACZA	Right Foot Accel Z	Bipolar	1000 g	3-416 HIII 5th FTSS.080
153	DAU3174.26	P40424	14CRME000000ACXA	Left Rear Seat Cross-member X-axis Acceleration	Bipolar	1000 g	
154	DAU3174.27	P40166	16CRME000000ACXA	Right Rear Seat Cross-member X-axis Acceleration	Bipolar	1000 g	
155	DAU3174.28	P46008	12ENGNTPO0000ACXA	Top of Engine X-axis Acceleration	Bipolar	1500 g	
156	DAU3174.29	P46061	12ENGNB00000ACXA	Bottom of Engine X-axis Acceleration	Bipolar	1500 g	
157	DAU3174.30	P29195	13VEHCRI00000ACXA	Right Front Brake Caliper X-axis acceleration	Bipolar	1000 g	
158	DAU3174.31	P46068	11VEHCLE00000ACXA	Left Front Brake Caliper X-axis acceleration	Bipolar	1000 g	
159	DAU3174.32	P40053	11PEAC000000ACXA	Toe Pan Accelerator x-axis acceleration	-Bipolar	1000 g	
160	DAU3175.01	P39866	11PEAC000000ACZA	Toe Pan Accelerator z-axis acceleration	-Bipolar	1000 g	
161	DAU3175.02	P47526	11VEHC000001ACXA	Toe Pan footrest x-axis acceleration	-Bipolar	1000 g	
162	DAU3175.03	P46019	11VEHC000001ACZA	Toe Pan footrest z-axis acceleration	-Bipolar	1000 g	
163	DAU3175.04	P44312	15TUNNCY00000ACXA	Rear Tunnel center x-axis acceleration	Bipolar	1000 g	
164	DAU3175.05	P39976	10VEHCCG00000ACXA	Vehicle CG X-axis acceleration	Bipolar	1000 g	
165	DAU3175.06	P44323	10VEHCCG00000ACYA	Vehicle CG Y-axis acceleration	Bipolar	1000 g	

166	DAU3175.07	P34775	10VEHCCG0000ACZA	Vehicle CG Z-axis acceleration	-Bipolar	1000 g
167	DAU3175.08	P46028	18VEHC000000ACXA	Vehicle rear deck X-axis acceleration	Bipolar	1000 g
168	DAU3175.09	P46012	18VEHC000000ACYA	Vehicle rear deck Y-axis acceleration	Bipolar	1000 g
169	DAU3175.10	P46010	18VEHC000000ACZA	Vehicle rear deck Z-axis acceleration	-Bipolar	1000 g
170	DAU3175.11	ABFire1	11SENS000001VO0A	Driver airbag - primary	Bipolar	5 V
171	DAU3175.12	ABFire2	11SENS000002VO0A	Driver airbag - secondary	Bipolar	5 V
172	DAU3175.13	ABFire3	13SENS000001VO0A	Passenger airbag - primary	Bipolar	5 V
173	DAU3175.14	ABFire4	13SENS000002VO0A	Passenger airbag - secondary	Bipolar	5 V
174	DAU3175.15	A37490	11SEBA0000B5DS0A	Driver lap belt spool	Bipolar	1270 mm
175	DAU3175.16	A23306	11SEBA0000B3DS0A	Driver shoulder belt spool and retraction	Bipolar	1524 mm
176	DAU3175.17	A60897	13SEBA0000B5DS0A	RF Pass lap belt spool	Bipolar	1270 mm
177	DAU3175.18		586135 13SEBA0000B3DS0A	RF Pass shoulder belt spool and retraction	Bipolar	1016 mm

Channel Report Test Number 050719 Bullet Vehicle

Ref	Channel Name	Transducer ID	ISO Signal Identifier	Description	Polarity	FScale	Units	Assembly
1	DAU3179.Trigger	Trig D1	20ZERO000000EV00	EVENT	Bipolar		1 Logic	
2	DAU3179.01	J32101	21HEADCG00H3ACXA	Head Accel X	Bipolar	1000	g	1-090 HIII 50th Alderson.001
3	DAU3179.02	AJ4J6	21HEADCG00H3ACYA	Head Accel Y	-Bipolar	1000	g	1-090 HIII 50th Alderson.002
4	DAU3179.03	P30407	21HEADCG00H3ACZA	Head Accel Z	-Bipolar	1000	g	
5	DAU3179.04	03E03E18-F08	21HEADFR00H3ACYA	Head (FT) Accel Y	-Bipolar	1000	g	1-090 HIII 50th Alderson.004
6	DAU3179.05	03F03E29-N01	21HEADFR00H3ACZA	Head (FT) Accel Z	-Bipolar	1000	g	1-090 HIII 50th Alderson.005
7	DAU3179.06	02I02I10-N04	21HEADUP00H3ACXA	Head (TP) Accel X	Bipolar	1000	g	1-090 HIII 50th Alderson.006
8	DAU3179.07	98H10-F02	21HEADUP00H3ACYA	Head (TP) Accel Y	-Bipolar	1000	g	1-090 HIII 50th Alderson.007
9	DAU3179.08	03G03F23-M09	21HEADLE00H3ACXA	Head (LT) Accel X	Bipolar	1000	g	1-090 HIII 50th Alderson.008
10	DAU3179.09	B02A18-N13	21HEADLE00H3ACZA	Head (LT) Accel Z	-Bipolar	1000	g	1-090 HIII 50th Alderson.009
11	DAU3179.10	1716A-810-FX	21NECKUP00H3FOXA	Neck Force X	-Bipolar	8896.4	N	1-090 HIII 50th Alderson.010
12	DAU3179.11	1716A-810-FY	21NECKUP00H3FOYA	Neck Force Y	Bipolar	8896.4	N	1-090 HIII 50th Alderson.011
13	DAU3179.12	1716A-810-FZ	21NECKUP00H3FOZA	Neck Force Z	Bipolar	13344.6	N	1-090 HIII 50th Alderson.012
14	DAU3179.13	1716A-810-MX	21NECKUP00H3MOXA	Neck Moment X	-Bipolar	282.4	N·m	1-090 HIII 50th Alderson.013
15	DAU3179.14	1716A-810-MY	21NECKUP00H3MOYA	Neck Moment Y	Bipolar	282.4	N·m	1-090 HIII 50th Alderson.014
16	DAU3179.15	1716A-810-MZ	21NECKUP00H3MOZA	Neck Moment Z	Bipolar	282.4	N·m	1-090 HIII 50th Alderson.015
17	DAU3179.16	1794A-0121-FX	21NECKLO00H3FOXA	Neck Lower Force X	-Bipolar	13344	N	1-090 HIII 50th Alderson.016
18	DAU3179.17	1794A-0121-FY	21NECKLO00H3FOYA	Neck Lower Force Y	Bipolar	13344	N	1-090 HIII 50th Alderson.017
19	DAU3179.18	1794A-0121-FZ	21NECKLO00H3FOZA	Neck Lower Force Z	Bipolar	13344	N	1-090 HIII 50th Alderson.018
20	DAU3179.19	1794A-0121-MX	21NECKLO00H3MOXA	Neck Lower Moment X	-Bipolar	452	N·m	1-090 HIII 50th Alderson.019
21	DAU3179.20	1794A-0121-MY	21NECKLO00H3MOYA	Neck Lower Moment Y	Bipolar	452	N·m	1-090 HIII 50th Alderson.020
22	DAU3179.21	1794A-0121-MZ	21NECKLO00H3MOZA	Neck Lower Moment Z	Bipolar	452	N·m	1-090 HIII 50th Alderson.021
23	DAU3179.22	P16155	21CHSTCG00H3ACXA	Chest Accel X	Bipolar	1000	g	1-090 HIII 50th Alderson.022
24	DAU3179.23	J27430	21CHSTCG00H3ACYA	Chest Accel Y	-Bipolar	1000	g	1-090 HIII 50th Alderson.023
25	DAU3179.24	J13739	21CHSTCG00H3ACZA	Chest Accel Z	-Bipolar	1000	g	1-090 HIII 50th Alderson.024
26	DAU3179.25	B02A25-N09	21CHSTCGRDH3ACXA	Chest Accel X Red.	-Bipolar	1000	g	1-090 HIII 50th Alderson.025
27	DAU3179.26	03E03E20-N17	21CHSTCGRDH3ACYA	Chest Accel Y Red.	Bipolar	1000	g	1-090 HIII 50th Alderson.026
28	DAU3179.27	00L13-F05	21CHSTCGRDH3ACZA	Chest Accel Z Red.	Bipolar	1000	g	1-090 HIII 50th Alderson.027
29	DAU3179.28	CST090	21CHST0000H3DSXA	Chest Deflection X	Bipolar	100	mm	1-090 HIII 50th Alderson.028
30	DAU3179.29	AGR67	21PELVCG00H3ACXA	Pelvis Accel X	-Bipolar	1000	g	1-090 HIII 50th Alderson.029
31	DAU3179.30	J29023	21PELVCG00H3ACYA	Pelvis Accel Y	-Bipolar	1000	g	1-090 HIII 50th Alderson.030
32	DAU3179.31	ACCT5	21PELVCG00H3ACZA	Pelvis Accel Z	-Bipolar	1000	g	1-090 HIII 50th Alderson.031
33	DAU3179.32	2121A-1420	21FEMRLL00H3FOZA	Left Femur Force Z	Bipolar	13344.6	N	1-090 HIII 50th Alderson.032
34	DAU3183.01	150-0121VR-13739	21KNSLLE00H3DSXA	Left Knee Displacement X	-Bipolar	40	mm	1-090 HIII 50th Alderson.033
35	DAU3183.02	4353J-76-FX	21TIBILULXH3FOXA	Left Upper Tibia Force X	Bipolar	11120.5	N	1-090 HIII 50th Alderson.034
36	DAU3183.03	4353J-76-FZ	21TIBILULXH3FOZA	Left Upper Tibia Force Z	Bipolar	11120.5	N	1-090 HIII 50th Alderson.035
37	DAU3183.04	4353J-76-MX	21TIBILULXH3MOXA	Left Upper Tibia Moment X	Bipolar	395.4	N·m	1-090 HIII 50th Alderson.036
38	DAU3183.05	4353J-76-MY	21TIBILULXH3MOYA	Left Upper Tibia Moment Y	Bipolar	395.4	N·m	1-090 HIII 50th Alderson.037
39	DAU3183.06	J34330	21TIBILELXH3ACXA	Left Tibia Accel X	Bipolar	1000	g	1-090 HIII 50th Alderson.038
40	DAU3183.07	J32099	21TIBILELXH3ACYA	Left Tibia Accel Y	Bipolar	1000	g	1-090 HIII 50th Alderson.039

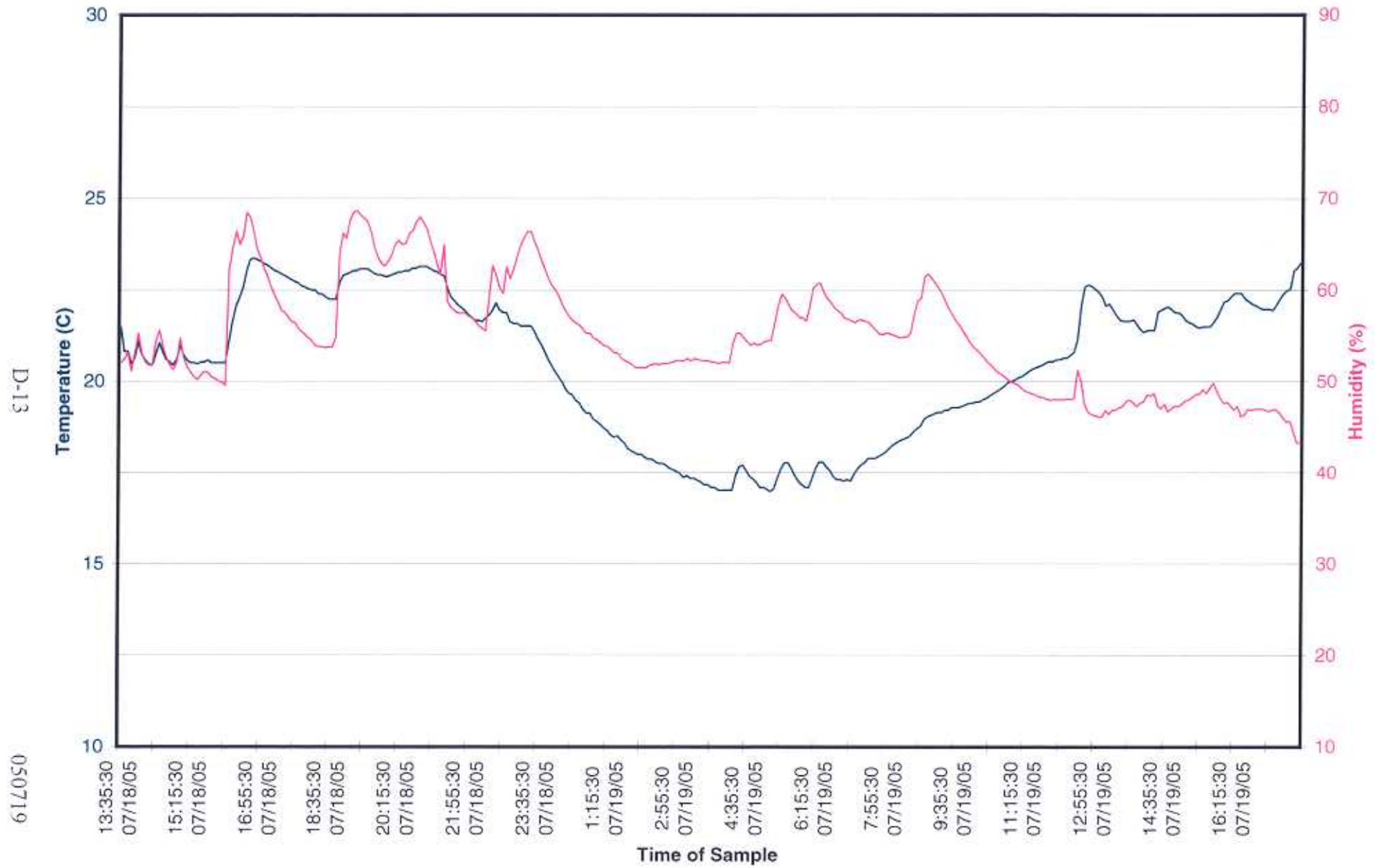
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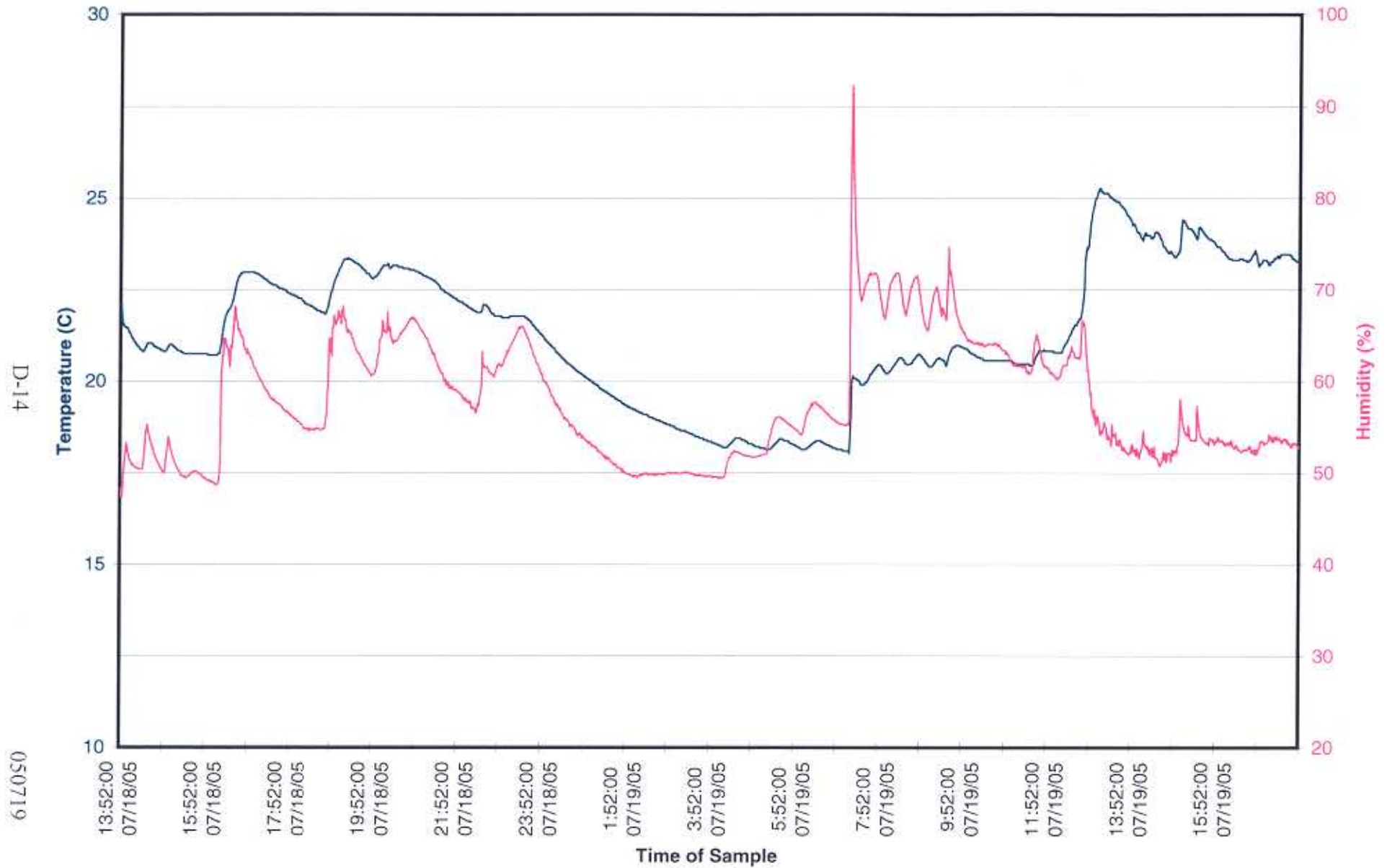
41	DAU3183.08	4929J-77-FX	21TIBILLXH3FOXA	Left Lower Tibia Force X	Bipolar	11120.5 N	1-090 HIII 50th Alderson.040
42	DAU3183.09	4929J-77-FY	21TIBILLXH3FOYA	Left Lower Tibia Force Y	Bipolar	11120.5 N	1-090 HIII 50th Alderson.041
43	DAU3183.10	4929J-77-FZ	21TIBILLXH3FOZA	Left Lower Tibia Force Z	Bipolar	11120.5 N	1-090 HIII 50th Alderson.042
44	DAU3183.11	4929J-77-MX	21TIBILLXH3MOXA	Left Lower Tibia Moment X	Bipolar	395.4 N-m	1-090 HIII 50th Alderson.043
45	DAU3183.12	4929J-77-MY	21TIBILLXH3MOYA	Left Lower Tibia Moment Y	Bipolar	395.4 N-m	1-090 HIII 50th Alderson.044
46	DAU3183.13	PD210-4B-118	21FOOTLELXH3ANXA	Left Foot Angular Dis. X X104X	Bipolar	318 °	1-090 HIII 50th Alderson.045
47	DAU3183.14	PD210-4B-229	21FOOTLELXH3ANYA	Left Foot Angular Dis. Y LX104Y	Bipolar	318 °	1-090 HIII 50th Alderson.046
48	DAU3183.15	PD210-4B-224	21FOOTLELXH3ANZA	Left Foot Angular Dis. Z LX104Z	Bipolar	318 °	1-090 HIII 50th Alderson.047
49	DAU3183.16	J27387	21FOOTLELXH3ACXA	Left Foot Accel X	Bipolar	1000 g	1-090 HIII 50th Alderson.048
50	DAU3183.17	J27040	21FOOTLELXH3ACYA	Left Foot Accel Y	Bipolar	1000 g	1-090 HIII 50th Alderson.049
51	DAU3183.18	J27553	21FOOTLELXH3ACZA	Left Foot Accel Z	Bipolar	1000 g	1-090 HIII 50th Alderson.050
52	DAU3183.19	2121A-1421	21FEMRRL00H3FOZA	Right Femur Force Z	Bipolar	13344.6 N	1-090 HIII 50th Alderson.051
53	DAU3183.20	150-0121VL-13723	21KNSLRI00H3DSXA	Right Knee Displacement X	Bipolar	40 mm	1-090 HIII 50th Alderson.052
54	DAU3183.21	4353J-75-FX	21TIBIRULXH3FOXA	Right Upper Tibia Force X	Bipolar	11120.5 N	1-090 HIII 50th Alderson.053
55	DAU3183.22	4353J-75-FZ	21TIBIRULXH3FOZA	Right Upper Tibia Force Z	Bipolar	11120.5 N	1-090 HIII 50th Alderson.054
56	DAU3183.23	4353J-75-MX	21TIBIRULXH3MOXA	Right Upper Tibia Moment X	Bipolar	395.4 N-m	1-090 HIII 50th Alderson.055
57	DAU3183.24	4353J-75-MY	21TIBIRULXH3MOYA	Right Upper Tibia Moment Y	Bipolar	395.4 N-m	1-090 HIII 50th Alderson.056
58	DAU3183.25	AALG2	21TIBIRILXH3ACXA	Right Tibia Accel X	Bipolar	1000 g	1-090 HIII 50th Alderson.057
59	DAU3183.26	J26976	21TIBIRILXH3ACYA	Right Tibia Accel Y	Bipolar	1000 g	1-090 HIII 50th Alderson.058
60	DAU3183.27	4929J-76-FX	21TIBIRLLXH3FOXA	Right Lower Tibia Force X	Bipolar	11120.5 N	1-090 HIII 50th Alderson.059
61	DAU3183.28	4929J-76-FY	21TIBIRLLXH3FOYA	Right Lower Tibia Force Y	Bipolar	11120.5 N	1-090 HIII 50th Alderson.060
62	DAU3183.29	4929J-76-FZ	21TIBIRLLXH3FOZA	Right Lower Tibia Force Z	Bipolar	11120.5 N	1-090 HIII 50th Alderson.061
63	DAU3183.30	4929J-76-MX	21TIBIRLLXH3MOXA	Right Lower Tibia Moment X	Bipolar	395.4 N-m	1-090 HIII 50th Alderson.062
64	DAU3183.31	4929J-76-MY	21TIBIRLLXH3MOYA	Right Lower Tibia Moment Y	Bipolar	395.4 N-m	1-090 HIII 50th Alderson.063
65	DAU3183.32	PD210-4B-AK-037	21FOOTRILXH3ANXA	Right Foot Angular Dis. X AK037X	Bipolar	318 °	1-090 HIII 50th Alderson.064
66	DAU3184.01	PD210-4B-AK-225	21FOOTRILXH3ANYA	Right Foot Angular Dis. Y AK225Y	Bipolar	318 °	1-090 HIII 50th Alderson.065
67	DAU3184.03	PD210-4B-AK-039	21FOOTRILXH3ANZA	Right Foot Angular Dis. Z AK039Z	Bipolar	318 °	1-090 HIII 50th Alderson.066
68	DAU3184.04	AC9P8	21FOOTRILXH3ACXA	Right Foot Accel X	Bipolar	1000 g	1-090 HIII 50th Alderson.067
69	DAU3184.05	AAKB4	21FOOTRILXH3ACYA	Right Foot Accel Y	Bipolar	1000 g	1-090 HIII 50th Alderson.068
70	DAU3184.06	AGWB1	21FOOTRILXH3ACZA	Right Foot Accel Z	Bipolar	1000 g	1-090 HIII 50th Alderson.069
71	DAU3184.07	98H13-F03	23HEADCG00HFACXA	Head Accel X	Bipolar	1000 g	3-070 HIII 5th Denton.001
72	DAU3184.08	03E03E21-M01	23HEADCG00HFACYA	Head Accel Y	-Bipolar	1000 g	3-070 HIII 5th Denton.002
73	DAU3184.09	02I02I05-F15	23HEADCG00HFACZA	Head Accel Z	-Bipolar	1000 g	3-070 HIII 5th Denton.003
74	DAU3184.10	1716AJ-1563-FX	23NECKUP00HFFOXA	Neck Force X	Bipolar	8896.4 N	3-070 HIII 5th Denton.010
75	DAU3184.11	1716AJ-1563-FY	23NECKUP00HFFOYA	Neck Force Y	Bipolar	8896.4 N	3-070 HIII 5th Denton.011
76	DAU3184.12	1716AJ-1563-FZ	23NECKUP00HFFOZA	Neck Force Z	Bipolar	13344.6 N	3-070 HIII 5th Denton.012
77	DAU3184.13	1716AJ-1563-MX	23NECKUP00HFMOXA	Neck Moment X	Bipolar	282.5 N-m	3-070 HIII 5th Denton.013
78	DAU3184.14	1716AJ-1563-MY	23NECKUP00HFMOYA	Neck Moment Y	Bipolar	282.5 N-m	3-070 HIII 5th Denton.014
79	DAU3184.15	1716AJ-1563-MZ	23NECKUP00HFMOZA	Neck Moment Z	Bipolar	282.5 N-m	3-070 HIII 5th Denton.015
80	DAU3184.16	3251-107-FX	23NECKLO00HFFOXA	Neck Lower Force X	-Bipolar	13345 N	3-070 HIII 5th Denton.016
81	DAU3184.17	3251-107-FY	23NECKLO00HFFOYA	Neck Lower Force Y	Bipolar	13345 N	3-070 HIII 5th Denton.017
82	DAU3184.18	3251-107-FZ	23NECKLO00HFFOZA	Neck Lower Force Z	Bipolar	13345 N	3-070 HIII 5th Denton.018
83	DAU3184.19	3251-107-MX	23NECKLO00HFMOXA	Neck Lower Moment X	-Bipolar	452 N-m	3-070 HIII 5th Denton.019

84	DAU3184.20	3251-107-MY	23NECKLO00HFMOYA	Neck Lower Moment Y	Bipolar	452 N-m	3-070 HIII 5th Denton.020
85	DAU3184.21	3251-107-MZ	23NECKLO00HFMOZA	Neck Lower Moment Z	Bipolar	339 N-m	3-070 HIII 5th Denton.021
86	DAU3184.22	AAJY4	23CHSTCG00HFACXA	Chest Accel X	Bipolar	1000 g	3-070 HIII 5th Denton.022
87	DAU3184.23	AKAA4	23CHSTCG00HFACYA	Chest Accel Y	-Bipolar	1000 g	3-070 HIII 5th Denton.023
88	DAU3184.24	ACC63	23CHSTCG00HFACZA	Chest Accel Z	-Bipolar	1000 g	3-070 HIII 5th Denton.024
89	DAU3184.25	14CB1-2897-070	23CHST0000HFDSXA	Chest Deflection X	Bipolar	100 mm	3-070 HIII 5th Denton.025
90	DAU3184.27	AGN83	23PELVCG00HFACXA	Pelvis Accel X	-Bipolar	1000 g	3-070 HIII 5th Denton.026
91	DAU3184.28	J35770	23PELVCG00HFACYA	Pelvis Accel Y	-Bipolar	1000 g	3-070 HIII 5th Denton.027
92	DAU3184.29	J20014	23PELVCG00HFACZA	Pelvis Accel Z	-Bipolar	1000 g	3-070 HIII 5th Denton.028
93	DAU3184.30	IF-625-140-FZ	23FEMRLL00HFFOZA	Left Femur Force Z	Bipolar	13344.6 N	3-070 HIII 5th Denton.029
94	DAU3184.31	IF-625-141-FZ	23FEMRRL00HFFOZA	Right Femur Force Z	Bipolar	13344.6 N	3-070 HIII 5th Denton.030
95	DAU3184.32	P45701	24CRME000000ACXA	Left Rear Seat Cross-member X-axis Acceleration	Bipolar	1000 g	
96	DAU3189.01	P46020	26CRME000000ACXA	Right Rear Seat Cross-member X-axis Acceleration	Bipolar	1000 g	
97	DAU3189.02	P34287	22ENGNTPO000ACXA	Top of Engine X-axis Acceleration	Bipolar	1500 g	
98	DAU3189.03	P42158	22ENGNB00000ACXA	Bottom of Engine X-axis Acceleration	Bipolar	1500 g	
99	DAU3189.04	P33618	23VEHCRI0000ACXA	Right Front Brake Caliper X-axis acceleration	Bipolar	1000 g	
100	DAU3189.05	P33592	21VEHCLE0000ACXA	Left Front Brake Caliper X-axis acceleration	Bipolar	1000 g	
101	DAU3189.06	P45723	21PEAC000000ACXA	Toe Pan Accelerator x-axis acceleration	Bipolar	1000 g	
102	DAU3189.07	P46051	21PEAC000000ACZA	Toe Pan Accelerator z-axis acceleration	-Bipolar	1000 g	
103	DAU3189.08	P42068	21VEHC000001ACXA	Toe Pan footrest x-axis acceleration	Bipolar	1000 g	
104	DAU3189.09	P33871	21VEHC000001ACZA	Toe Pan footrest z-axis acceleration	-Bipolar	1000 g	
105	DAU3189.10	P45999	25TUNNCY0000ACXA	Rear Tunnel center x-axis acceleration	Bipolar	1000 g	
106	DAU3189.11	P35091	20VEHCCG0000ACXA	Vehicle CG X-axis acceleration	Bipolar	1000 g	
107	DAU3189.12	P27919	20VEHCCG0000ACYA	Vehicle CG Y-axis acceleration	-Bipolar	1000 g	
108	DAU3189.13	P46024	20VEHCCG0000ACZA	Vehicle CG Z-axis accelerationq	-Bipolar	1000 g	
109	DAU3189.14	P41571	28VEHC000000ACXA	Vehicle rear deck X-axis acceleration	Bipolar	1000 g	
110	DAU3189.15	P41713	28VEHC000000ACYA	Vehicle rear deck Y-axis acceleration	Bipolar	1000 g	
111	DAU3189.16	P40394	28VEHC000000ACZA	Vehicle rear deck Z-axis acceleration	-Bipolar	1000 g	
112	DAU3189.17	ABFire1	21SENS000001VO0A	Driver airbag - primary	Bipolar	5 V	
113	DAU3189.18	ABFire2	21SENS000002VO0A	Driver airbag - secondary	Bipolar	5 V	
114	DAU3189.19	ABFire3	23SENS000001VO0A	Passenger airbag - primary	Bipolar	5 V	
115	DAU3189.20	ABFire4	23SENS000002VO0A	Passenger airbag - secondary	Bipolar	5 V	
116	DAU3189.22	A60896	21SEBA0000B3DS0A	Driver shoulder belt spool and retraction	Bipolar	1270 mm	
117	DAU3189.24	14673	23SEBA0000B3DS0A	RF Pass shoulder belt spool and retraction	Bipolar	500 mm	
118	DAU3189.25	02I02I10-N01	23HEADUP00HFACYA	Head (TP) Accel Y	-Bipolar	1000 g	3-070 HIII 5th Denton.009
119	DAU3189.26	03F03E29-N08	23HEADLE00HFACXA	Head (LT) Accel X	Bipolar	1000 g	3-070 HIII 5th Denton.004
120	DAU3189.27	01G19-F03	23HEADLE00HFACZA	Head (LT) Accel Z	-Bipolar	1000 g	3-070 HIII 5th Denton.005
121	DAU3189.28	03E03E20-N08	23HEADFR00HFACYA	Head (FT) Accel Y	-Bipolar	1000 g	3-070 HIII 5th Denton.006
122	DAU3189.29	99H30-Z03	23HEADFR00HFACZA	Head (FT) Accel Z	-Bipolar	1000 g	3-070 HIII 5th Denton.007
123	DAU3189.30	01J02-F03	23HEADUP00HFACXA	Head (TP) Accel X	Bipolar	1000 g	3-070 HIII 5th Denton.008

FULL FRONTAL COLLINEAR 2002 FORD FOCUS



FULL FRONTAL COLLINEAR 2003 CHEVROLET SILVERADO



Appendix E

INSIA Report on Structural Measurements



STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY

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March, 1999

REPORT DOCUMENTATION PAGE	
Title:	<i>STRUCTURAL SURVEY OF CARS. MEASUREMENT METHODOLOGY OF THE MAIN RESISTANT ELEMENTS IN THE CAR BODY</i>
Author(s):	Aparicio Izquierdo, Francisco Páez Ayuso, Francisco Javier
Performing Organisation name and address:	INSIA – University Institute for Automobile Research Carretera de Valencia, Km. 7 – Campus Sur de la Universidad Politécnica de Madrid 28031 – Madrid – Spain
Supplementary notes:	Under contract to: THE EUROPEAN COMMUNITY Project: “Improvement of Crash Compatibility between Cars” Contract N°: RO – 97 – SC.1064
Abstract:	The main aim of this working package -<i>Structural Survey of Cars</i>- is the reduction of incompatibilities, both structural and geometric, between passenger vehicles and their potential collision partners. The understanding of these incompatibilities needs a previous step for the knowledge of the existing car fleet. Firstly, it is necessary to select the main resistant elements in the car body. These elements have to be chosen from the point of view of the sort of collision that we want to study, that is to say, frontal and side impacts. Detailed measurements have been taken from exterior and interior elements, spread to a total number of 74 models selected from the main vehicle manufacturers at Spain. All of them are being sold this year. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars will be defined. This report shows the methodology followed to get these measurements.
Subject terms:	Crash compatibility, geometric compatibility, resistant elements, measure methodology
Date:	March, 1999

1.- METHODOLOGY.

Detailed measurements have been taken from exterior and interior elements. Using the information available from the previous measurements in vehicles, the geometric characteristics of the main resistant elements involved in the geometric compatibility between cars have been defined. These elements are presented in the following figures, and have been divided in two main groups according to the vehicle zones studied in this project.

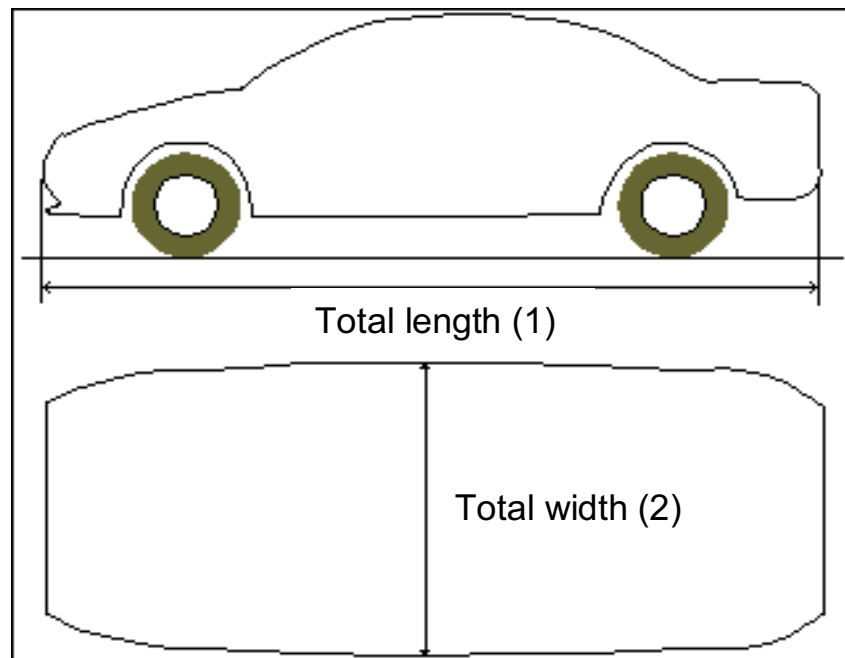


Figure 1.- Definition of the main resistant elements. General dimensions.

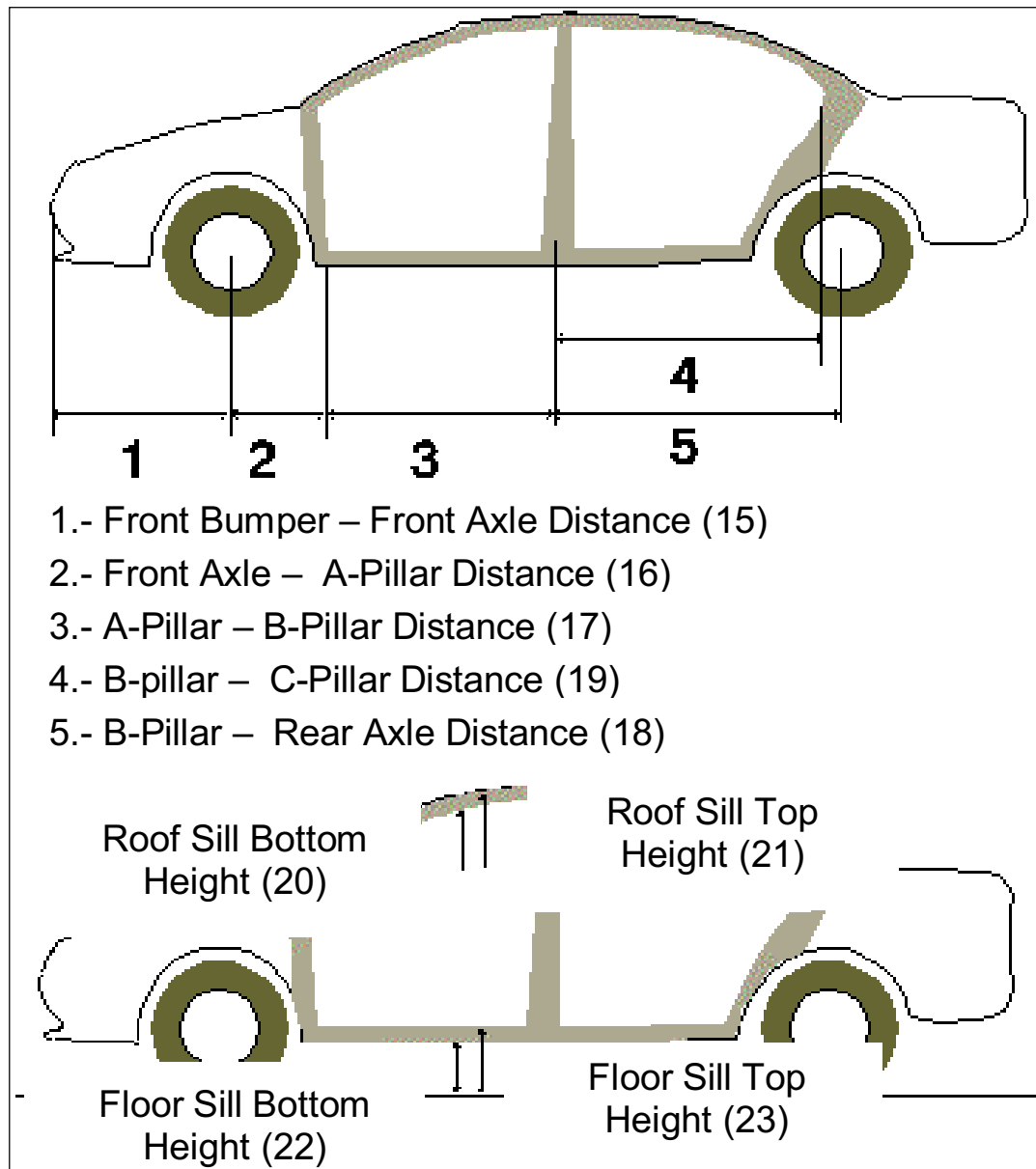


Figure 2.- Definition of the main resistant elements. Side elements.

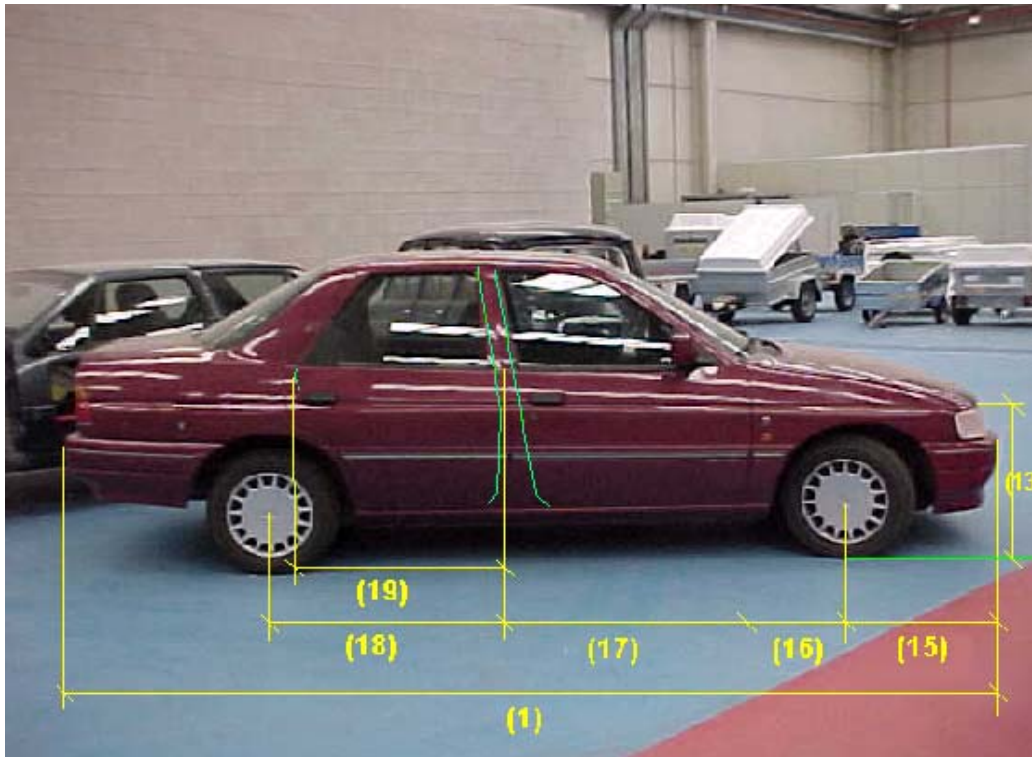


Figure 3.-
Measurements of
the side resistant
elements (outer).

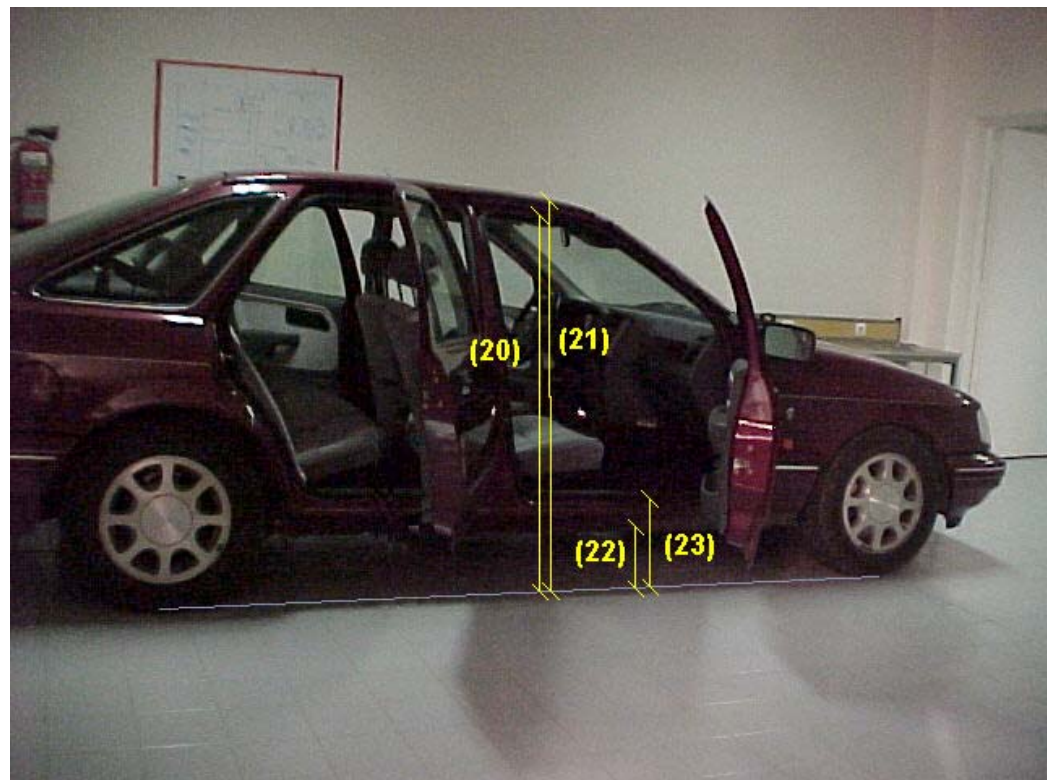


Figure 4.- Measurements
of the side resistant
elements (inner).

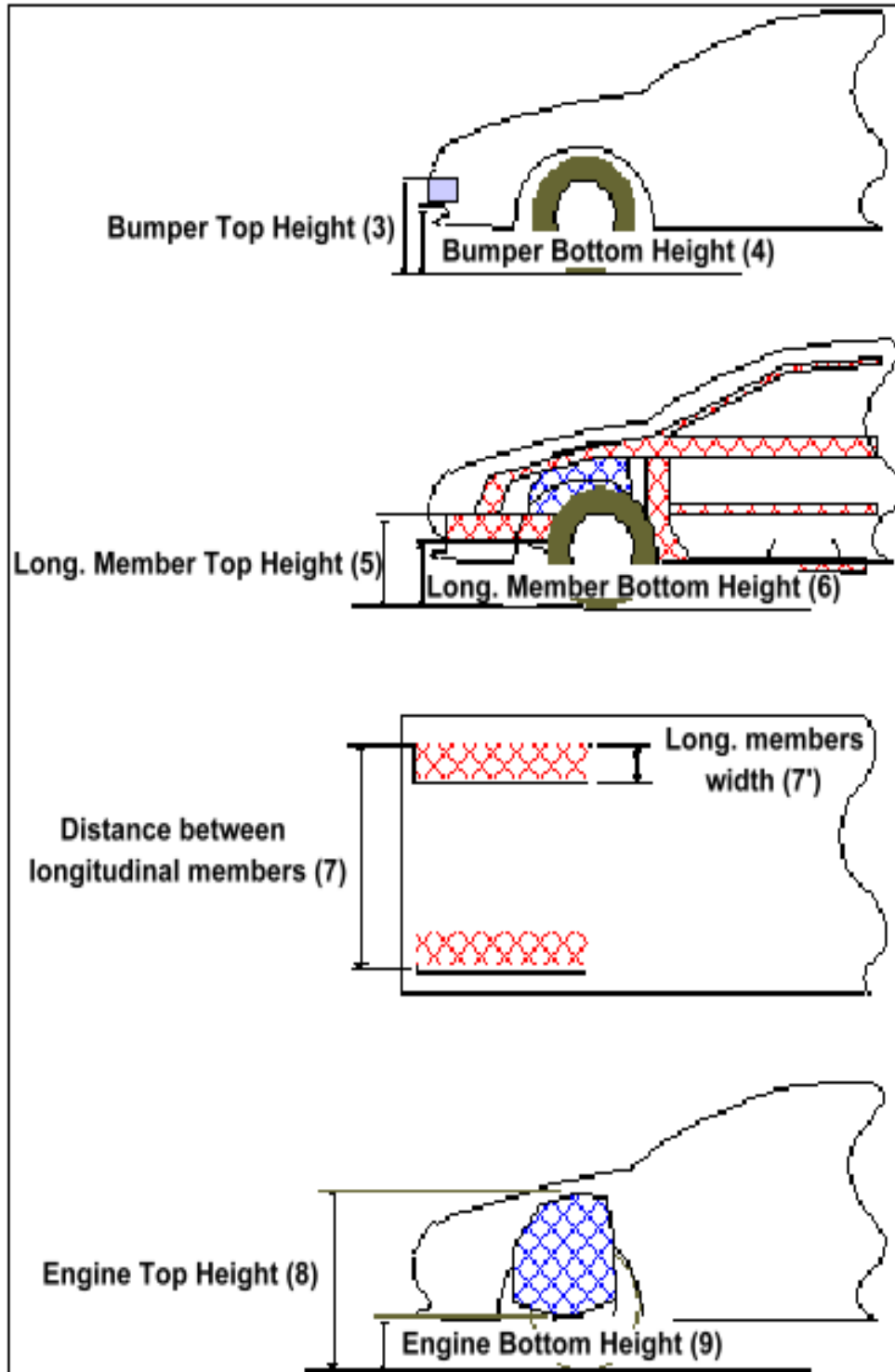


Figure 5.- Definition of the main resistant elements. Front elements.

Figure 6.-
Measurements of the
main resistant elements.
Front elements 1.

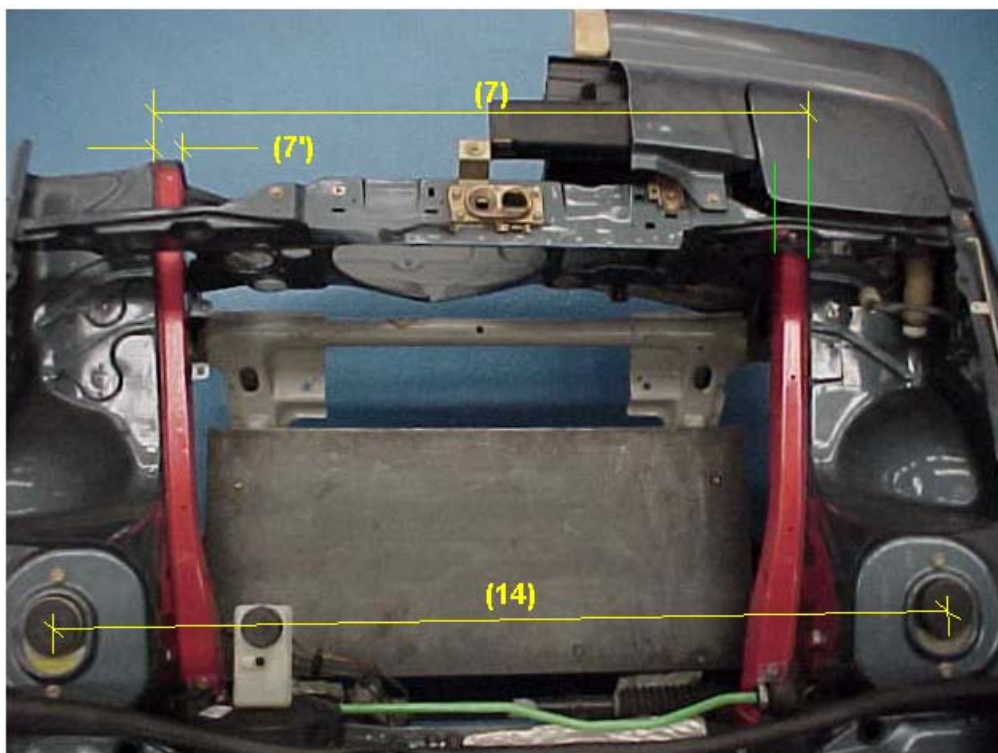
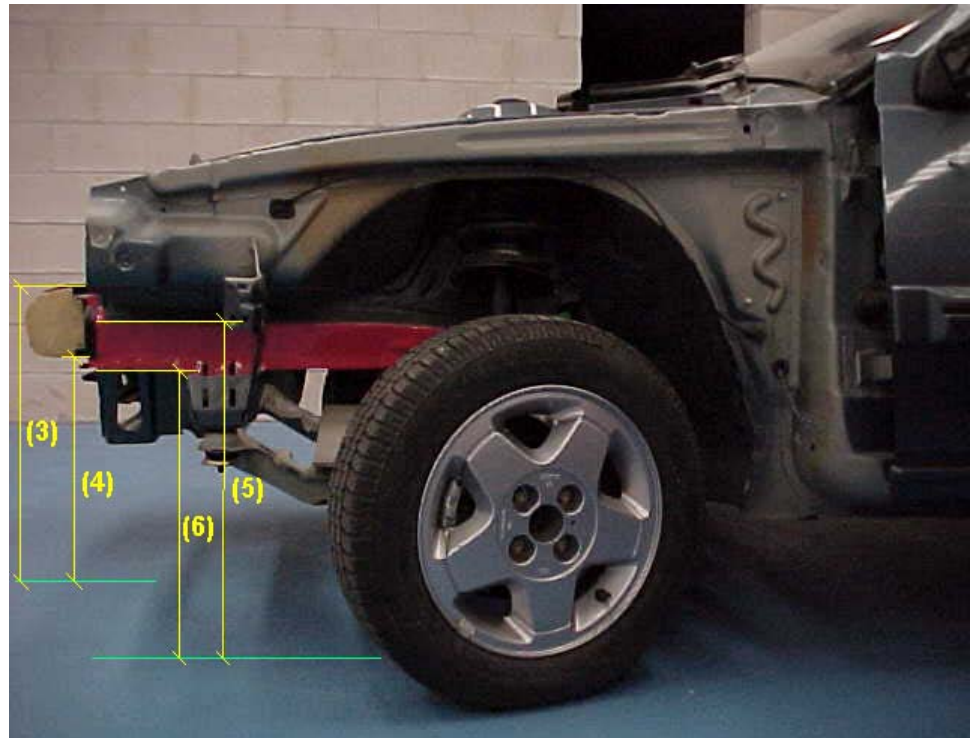


Figure 7.-
Measurements
of the main
resistant
elements. Front
elements 2.

Figure 8.-
Measurements of
the main resistant
elements. Front
elements 3.

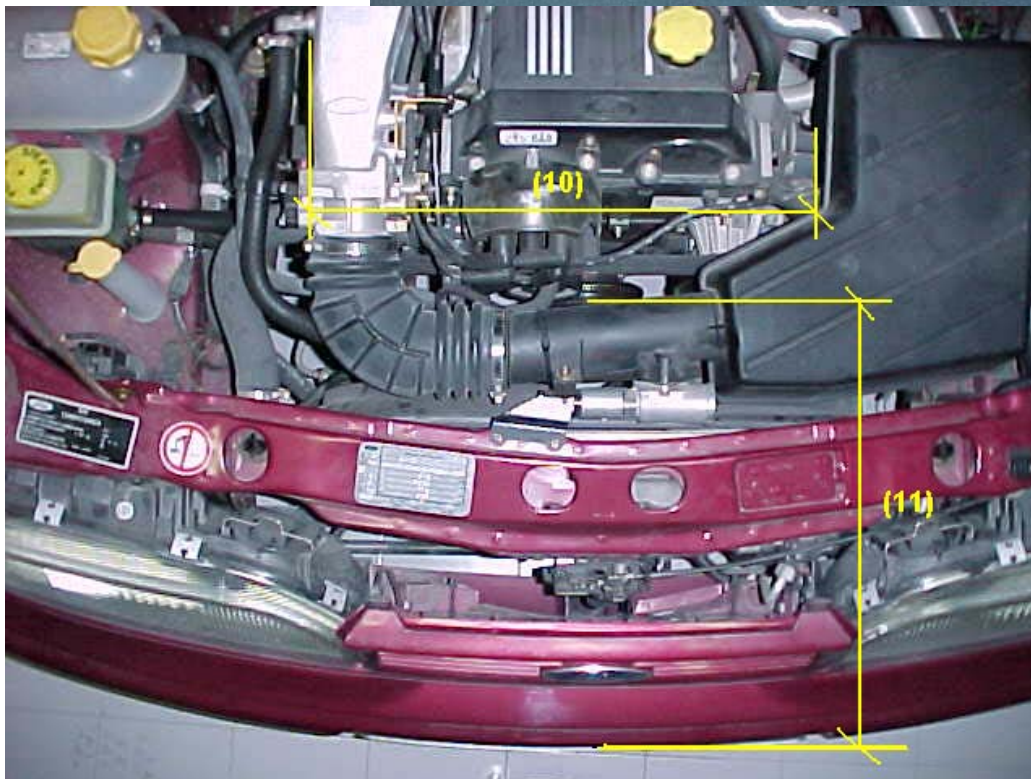
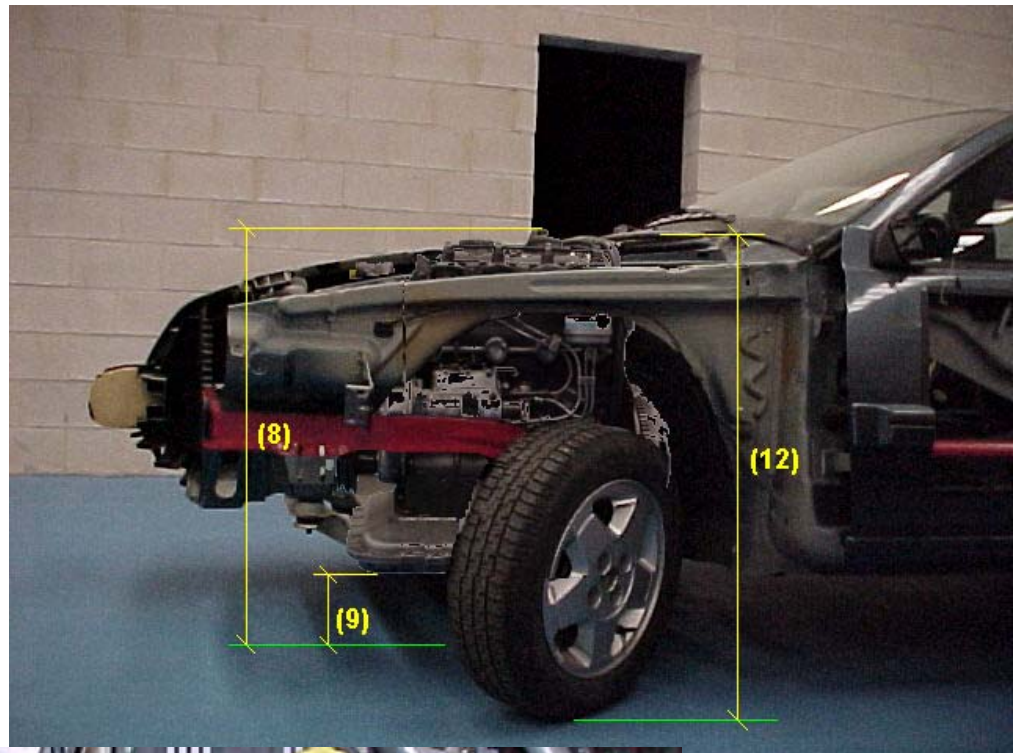


Figure 9.-
Definition of
the main
resistant
elements. Front
elements
(Longitudinal
engine).



The procedure considered to measure these elements is described as follows, where it is indicated the location of these ones in the Excel Sheet (SURVEY.XLS) into brackets:

FRONT ELEMENTS

- **Total Length –(1)- (Side & Front Sheets - C column):** distance between the point in the front bumper further on and the point in the rear bumper further back.
- **Weight (Side & Front Sheets - D column):** mass, including an average driver weight (70 kg), and the fuel tank mass (at half-capacity).
- **Total Width –(2)- (Side & Front Sheets - E column):** distance between the outer side points in a transverse plane of the vehicle (middle plane between the front and rear axles).
- **Bumper bottom height –(4)- (Front Sheet G column):** distance between the ground and the lowest point on the front bumper, being a resistant member (aerodynamic elements under the front bumper are not considered).
- **Bumper top height –(3)- (Front Sheet H column):** distance between the ground and the highest point on the front bumper, being a resistant member (aerodynamic elements are not considered).
- **Longitudinal member top height –(5)- (Front Sheet I column):** distance between the ground and the highest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint (when accessible).
- **Longitudinal member bottom height –(6)- (Front Sheet J column):** distance between the ground and the lowest point on the longitudinal members, measured approximately in the front bumper-longitudinal member joint.
- **Distance between longitudinal members (Front Sheet K column):** transverse distance between extreme points in longitudinal members, measured approximately in the front bumper-longitudinal member joint.

Depending on the accessibility of these members, the extreme points are the inner points (I) or the outer points (O).

- **Longitudinal member width -7'- (Front Sheet L column):** width of one of the longitudinal members, measured approximately in the front bumper-longitudinal member joint.



- **Engine top height (8) (Front Sheet N column):** distance between the ground and the highest point on the engine that can be a resistant member in case of accident (usually, the highest point on the head, or the highest point of the inlet or exhaust manifolds).
- **Engine bottom height (9) (Front Sheet M column):** distance between the ground and the lowest point on the engine (usually, the lowest point on the crankcase).
- **Engine and Gearbox width (10) (Front Sheet O & P columns):**
 - *Transverse configuration engine:* distance between extreme points in the gearbox-cylinder block unit or others resistant members attached to the cylinder block unit, i.e. fan belts (from a front point of view).
 - *Longitudinal configuration engine:* distance between extreme points in the cylinder block unit (from a front point of view).
- **Front bumper - Engine distance (11) (Front Sheet Q column):** distance between the point in the front bumper further on and the point in the engine further on that is a resistant element, i.e. the further on point of the exhaust manifold placed in the front of the engine.
- **Front shock absorber fixing width (14) (Front Sheet R column):** transverse distance between the front shock absorber - body car joints.
- **Front shock absorber fixing height (12) (Front Sheet S column):** distance between the ground and the front shock absorber-body car joint.
- **Bonnet leading edge height (Front Sheet T column):** distance between the ground and the bonnet edge further on.

SIDE ELEMENTS

- **Front bumper - Front axle distance (15) (Side Sheet G column):** distance between the point in the front bumper further on and the middle point in the front tyre-road contact patch.
- **Front axle - A Pillar distance (16) (Side Sheet H column):** distance between the middle point in the front tyre-road contact patch and the point in the A-pillar further back.
- **A Pillar - B Pillar distance (17) (Side Sheet I column):** distance between the point in the A-pillar further back and the middle point in the B-pillar.
- **B Pillar - C Pillar distance (19) (Side Sheet J column):** distance between the middle point in the B-pillar and the point in the C-pillar further back (only 4/5-door vehicles).
- **B Pillar - Rear axle distance (18) (Side Sheet K column):** distance between the middle point in the B-pillar and the middle point in the rear tyre-road contact patch.
- **Roof sill bottom height (20) (Side Sheet L column):** distance between the ground and the lowest point on the roof sill, measured in the front door middle point.
- **Roof sill top height (21) (Side Sheet M column):** distance between the ground and the highest point on the roof sill (usually located in the sill-roof joint), measured in the front door middle point.
- **Floor sill bottom height (22) (Side Sheet N column):** distance between the ground and the lowest point on the floor sill, measured in the front door middle point.
- **Floor sill top height (23) (Side Sheet O column):** distance between the ground and the highest point on the floor sill, measured in the front door middle point.

NOTE

- N/A: dimension not available.