

Vehicle Research and Test Center
2007 Ford Five Hundred into Left Front of a
2007 Ford Five Hundred - 50% Overlap - Oblique 15°
TRC Inc. Test Number: 091030

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

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

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TRC TEST NUMBER: 091030

Report Approved by:



Mike Tonneman
Project Manager
Transportation Research Center Inc.

Date: 6-3-10

Final Report Accepted by:

Aloke Prasad
Project Engineer
Vehicle Research & Test Center

Date: _____

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SECTION 1

PURPOSE AND TEST PROCEDURE

PURPOSE

This 112.2 km/h (69.7 mph), 50% overlap, 15° oblique, 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 the bullet vehicle moving at 112.2 km/h to impact the left front corner of the target vehicle, offset 50%, at an impact angle of 15 degrees. The purpose of this test was to evaluate the aggressiveness of the bullet vehicle, a 2007 Ford Five Hundred 4-door Sedan, and the vehicle and occupant response of the target vehicle, a 2007 Ford Five Hundred 4-door Sedan, in the vehicle-to-vehicle angled impact mode.

TEST PROCEDURE

This test was conducted in accordance with VRTC instructions for a 50% overlap 15° oblique, vehicle-to-vehicle test. Data was obtained relative to FMVSS 208, "Occupant Crash Protection" (December 18, 2001).

SECTION 2

TEST SUMMARY

A model year 2007 Ford Five Hundred 4-door Sedan (target vehicle) was impacted on the left front corner by a 2007 Ford Five Hundred 4-door Sedan (bullet vehicle) which was moving at a velocity of 112.2 km/h. The target vehicle was stationary and positioned at an angle of 15° to the line of forward motion and 50% overlap. The weight of the target vehicle as tested was 1892.1 kg and the test weight of the bullet vehicle was 1889.1 kg. The 50% Overlap, vehicle-to-vehicle impact test was conducted by TRC Inc. on October 30, 2009.

One (1) real-time motion picture camera and eighteen (18) high-speed digital motion picture cameras were used to document the impact event. The pre- and post-test conditions were recorded by one (1) real-time motion picture camera. Camera locations and pertinent camera information are documented in this report. Pre- and post-test photographs of the test vehicles and anthropomorphic test devices (Dummies) are included in Appendix A.

The target test vehicle had one (1) restrained 50th percentile adult male THOR NT Dummy placed in the driver designated seating position. The THOR NT driver was positioned according to instructions specified in the Laboratory Test Procedure for FMVSS No. 208 “Occupant Crash Protection”, TP208-13, July 27, 2005. The dummy was instrumented with 107 data channels. The dummy channels were composed of accelerometers, load cells, rotational displacement potentiometers, and displacement transducers. The dummy transducers and locations are detailed in Appendix D.

The bullet test vehicle had one restrained Part 572E Hybrid III 50th percentile adult male ATD and two Part 572O Hybrid III 5th percentile adult female dummies. In addition the two dummies in the front outboard seating positions were equipped with THOR lower legs. The dummies were placed in the driver, right front, and left rear passenger seating positions, respectively. Dummy based seating methods were used to determine the placement for the driver 50th percentile male dummy. The Hybrid III 5th percentile right front seat occupant was positioned according to the placement procedures specified in Appendix F of Laboratory Procedure TP208-13, July 27, 2005. The Hybrid III 5th percentile left rear seat occupant was positioned accord to instructions specified in the Laboratory Test Procedure for FMVSS 214,

“Side Impact Protection”, TP214D-08, December 15, 2006. The driver and front passenger dummies were instrumented with sixty (60) data channels. The rear passenger dummy was instrumented with twenty-six (26) data channels. The dummy channels were composed of accelerometers, load cells, rotational displacement potentiometers, and displacement transducers. The dummy transducers and locations are detailed in Appendix D.

The test vehicles were instrumented with eleven (11) structural accelerometers, shoulder and lap seat belt load cells, and four (4) airbag inductive pick-up transducers. All data channels were recorded with a fully self-contained onboard Kayser Threde data acquisition system. The data channels were digitally sampled and recorded at 12,500 samples per second and processed per Vehicle Research and Test Center (VRTC) specified procedures. The target vehicle sustained 615 mm of static crush during the impact. The bullet vehicle sustained 670 mm of static crush during the impact. General test and vehicle parameters are detailed in the data sheets in this report.

The vehicle information summary is presented in Section 3. The occupant, camera, and vehicle measurements are presented in Section 4. 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 Dummy FARO measurements.

VEHICLE DUMMY INJURY CRITERIA SUMMARY

		Units	Target Vehicle		Bullet Vehicle		
			Driver		Driver	Passenger	LR Pass
Maximum Head Acceleration ¹	X	g	-48.9		-59.4	-55.6	-82.0
	Y	g	41.3		17.0	21.1	10.4
	Z	g	49.5		25.5	23.9	64.2
	R	g	64.0		66.6	60.4	89.8
Maximum Chest Acceleration ¹	X	g			-39.5	-34.5	-60.7
	Y	g			16.4	17.0	15.7
	Z	g			-10.3	-15.4	-29.8
	R	g			43.6	38.7	62.8
Head Injury Criteria ²	HIC ₃₆	g	553.0		502.0	821.0	1289.0
	T1	ms	84.2		79.7	83.8	78.2
	T2	ms	120.2		115.7	119.8	114.2
	HIC ₁₅	g	363.0		312.0	380.0	783.0
	T1	ms	103.2		92.9	89.6	98.2
	T2	ms	118.2		107.9	104.6	113.3
Chest Maximum Resultant Acceleration ³		g			41.4	37.2	61.4
	T1	ms			71.4	81.5	74.4
	T2	ms			74.4	84.5	77.4
Chest Deflection		mm			-25.1	-29.4	-40.5
Upper Neck Injury Calculations (NIJ) ²	NTF				0.23	0.17	1.20
	NTE				0.16	0.36	0.73
	NCF				0.00	0.08	0.01
	NCE				0.01	0.11	0.98
Upper Neck Axial Force	Tension	N	1807.6		862.9	622.9	3776.1
	Compression	N	-277.4		-46.4	-40.6	-908.6
Upper Tibia Index (SAE)	Left		0.33		0.65	0.27	
	Right		0.61		0.47	0.30	
Lower Tibia Index (SAE)	Left		0.43		0.62	0.42	
	Right		0.87		0.72	0.31	
Maximum Femur Force	Left	N	-4171.3		-1007.7	-1867.6	-217.8
	Right	N	-3471.6		-2529.1	-738.5	-63.7

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.

Test Notes:

The bullet vehicle driver dummy's redundant head Y-Axis data channel, 11HEADCGRDH3ACYA, recorded noisy data throughout the event.

The bullet vehicle front passenger dummy's head X-Axis data channel, 13HEADCG00HFACXA, failed at 83.8 milliseconds and recorded no valid data thereafter.

The bullet vehicle front passenger dummy's right knee displacement data channel, 13KNSLRI00HFDSXA, recorded questionable data throughout the event.

The bullet vehicle rear passenger dummy's right knee displacement data channel, 14KNSLRI00HFDSXA, recorded no valid data after approximately 112 milliseconds.

The target vehicle driver dummy's right lower tibia force X-Axis data channel, 21TIBIRLLXH3FOXA, recorded questionable data after approximately 64 milliseconds.

The target vehicle driver dummy's lap belt load cell data channel, 21SEBE0000B5FO0A, recorded noisy data throughout the event.

The target vehicle driver dummy's shoulder belt load cell data channel, 21SEBE0000B3FO0A, recorded questionable data throughout the event.

SECTION 3
VEHICLE INFORMATION SUMMARY

DATA SHEET NO. 1

TARGET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

TARGET VEHICLE INFORMATION AND OPTIONS

Make	Ford	Driver Front Airbag	Yes
Model Year	2007	Driver Side Airbag	No
VIN:	1FAFP24177G114024	Driver Head Airbag	No
Model:	Five Hundred	Driver Curtain Airbag	No
Body style:	4-door Sedan	Driver Knee Airbag	No
Color:	Blue	Pass. Front Airbag	Yes ¹
Engine Displacement	3.0 Liters	Pass. Side Airbag	No
Type /No. of Cylinders	V 6	Pass. Head Airbag	No
Engine Placement:	Transverse	Pass. Curtain Airbag	No
Transmission data:	Automatic 4-speed	Pass. Knee Airbag	No
Final drive:	Front Wheel Drive	Load Limiters	No
Delivery Date	11/9/2009	Anti-lock Brakes	No
Odometer reading:	Unknown	All-Wheel Drive	No
Dealer:	Unknown	Pretensioners	No
Power steering	Yes	Front Disc	Yes
Power brakes	Yes	Rear Disc	Yes
Power seats	Yes	Automatic speed control	Yes
Power windows	Yes	Tilting steering wheel	Yes
Power door locks	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
AM/FM CD	Yes	Anti-skid brake	Yes
Roof Rack	No	Rear window defroster	Yes
Sunroof / T-Top	No	Automatic Door Locks	No
Traction Control	No	Other	
Does owner's manual provide instructions to turn off automatic door locks?			N/A

DATA FROM CERTIFICATION LABEL

Manufactured by	Ford Motor Co.	GVWR (kg)	2186
Date of Manufacture	06/06	GAWR Front (kg)	1150
		GAWR Rear (kg)	1066

TARGET TEST VEHICLE SEAT TYPE AND CAPACITY

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	N/A	Bench	
Designated Seating Capacity (DSC)	2	0	3	5
Type of Seat Back	Manual Adjustable	N/A	Fixed	
(A) Capacity Wt. (VCW) (kg)				430
(B) DSC x 68.08 kg				340
(A-B) Cargo Wt. (RCLW) (kg)				90

¹ The passenger front airbag was disabled for this test.

DATA SHEET NO. 1 (CONTINUED)**TARGET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**TARGET VEHICLE WEIGHTS**

	Units	As Tested (ATW)		
		Front	Rear	Total
Left	kg	535.0	422.6	
Right	kg	508.5	426.0	
Ratio	%	55.2	44.8	
Totals	kg	1043.5	848.6	1892.1

TARGET VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG(aft of front axle)
Delivered:	mm	732	735	743	750	
Pre-test:	mm	718	731	688	716	1287
Post-test:	mm	820	705	942	775	

GENERAL TARGET VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	2870.0
Total Vehicle Length at Left Side	mm	4933.0
Total Vehicle Length at Centerline	mm	5093.0
Total Vehicle Length at Right Side	mm	4933.0
Weight of Ballast in Cargo Area	kg	5.4
Weight of Vehicle Components Removed	kg	0.0
Amount of Stoddard Solvent in Fuel Tank	liters	75.7

Weight of ballast secured in vehicle: 5.4 kg

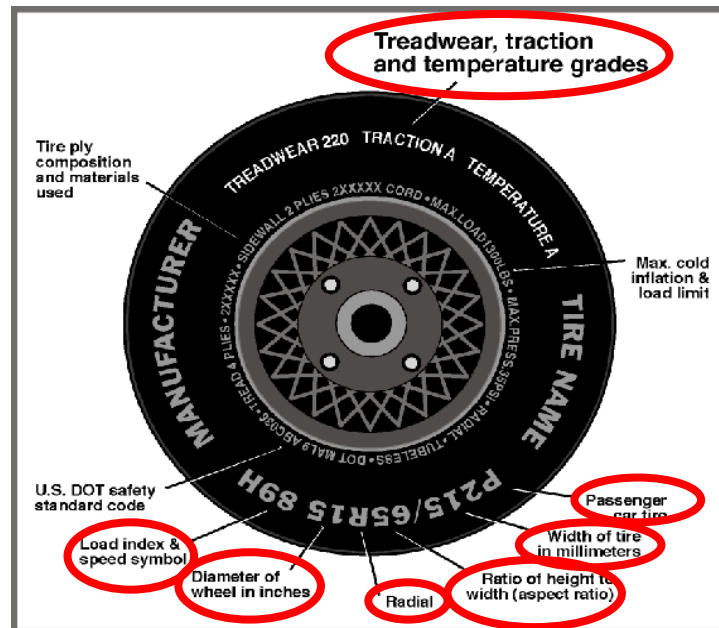
Components removed to meet target test weight: None

DATA SHEET NO. 1 (CONTINUED)

TARGET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300 (44 psi)	300 (44 psi)
Cold / Test Pressure (kPa)	220 (32psi)	220 (32psi)
Recommended Tire Size	P215/60R17	P215/60R17
Tire Size on Vehicle	P215/60R17	P215/60R17
Tire Manufacturer	Continental	Continental
Tire Name	Conti-Tour	Conti-Tour
Load Index & Speed Symbol	95T	95T
Treadwear	360	360
Traction Grade	A	A
Temperature Grade	A	A

DATA SHEET NO. 2

TARGET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

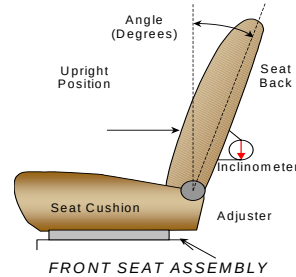
Test Date: 10/30/09

NORMAL DESIGN RIDING POSITION

The seat back angle was measured relative to the rocker sill. The test position was measured using a Faro Inc. C. Measurement Machine.

TARGET SEAT BACK ANGLE

	Degrees
Driver Seat	3.4°

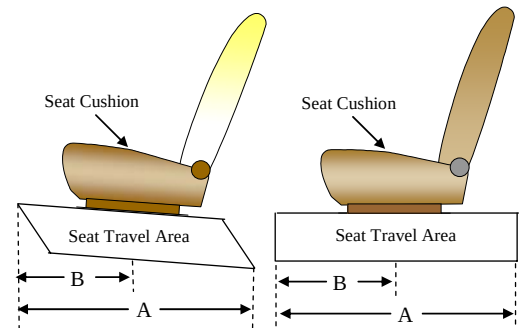


SEAT FORE/AFT POSITIONS

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

TARGET SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	245 mm	Mid



TARGET SEAT BELT UPPER ANCHORAGE

	Total No. of Positions	Placed in Position No.
Driver Seat	5	1

Position number one is the uppermost adjustment position.

DATA SHEET NO. 2 (CONTINUED)

TARGET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

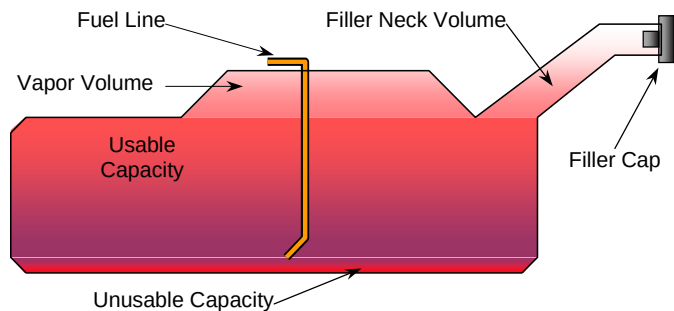
Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

FUEL TANK CAPACITY

	Liters
Usable Capacity of Tank	75.7
Usable Capacity used for FMVSS301	71.9
Actual Amount of Solvent used	75.7

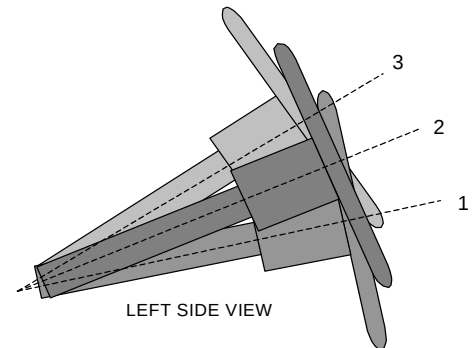
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies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



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



LEFT SIDE VIEW

STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

	Detents	Fore/Aft Position, mm
Lowermost Position	1 of 5	23.4
Geometric Center Position	3 of 5	26.0
Uppermost Position	5 of 5	28.7
Telescoping Steering Wheel Travel		No Feature
Test Position		Fixed

DATA SHEET NO. 3

BULLET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

BULLET VEHICLE INFORMATION AND OPTIONS

Make	Ford	Driver Front Airbag	Yes
Model Year	2007	Driver Side Airbag	Yes
VIN:	1FAHP25187G135858	Driver Head Airbag	No
Model:	Five Hundred	Driver Curtain Airbag	Yes
Body style:	4-door Sedan	Driver Knee Airbag	No
Color:	White	Pass. Front Airbag	Yes
Engine Displacement	3 Liters	Pass. Side Airbag	Yes
Type /No. of Cylinders	V 6	Pass. Head Airbag	No
Engine Placement:	Transverse	Pass. Curtain Airbag	Yes
Transmission data:	Automatic 4-speed	Pass. Knee Airbag	No
Final drive:	Front Wheel Drive	Load Limiters	No
Delivery Date	11/9/2009	Anti-lock Brakes	Yes
Odometer reading:	Unknown	All-Wheel Drive	No
Dealer:	Unknown	Pretensioners	No
Power steering	Yes	Front Disc	Yes
Power brakes	Yes	Rear Disc	Yes
Power seats	Yes	Automatic speed control	Yes
Power windows	Yes	Tilting steering wheel	Yes
Power door locks	Yes	Telescoping steering wheel	No
Tinted glass	Yes	Air conditioning	Yes
AM/FM CD Player	Yes	Anti-skid brake	Yes
Roof Rack	No	Rear window defroster	Yes
Sunroof / T-Top	No	Automatic Door Locks	Yes
Traction Control	No	Other	
Does owner's manual provide instructions to turn off automatic door locks?			N/A

DATA FROM CERTIFICATION LABEL

Manufactured by	Ford Motor Co.
Date of Manufacture	10/06

GVWR (kg)	2186
GAWR Front (kg)	1150
GAWR Rear (kg)	1066

BULLET VEHICLE SEAT TYPE AND CAPACITY

Measured Parameter	Front	Mid	Rear	Total
Type of Seats	Bucket	N/A	Split bench	
Designated Seating Capacity (DSC)	2	0	3	5
Type of Seat Back	Power adjustable	N/A	Fixed	
(A) Capacity Wt. (VCW) (kg)				430
(B) DSC x 68.08 kg				340
(A-B) Cargo Wt. (RCLW) (kg)				90

DATA SHEET NO. 3 (CONTINUED)**BULLET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**TEST VEHICLE WEIGHTS**

	Units	As Tested (ATW)		
		Front	Rear	Total
Left	kg	538.5	408.6	
Right	kg	535.0	407.0	
Ratio	%	56.8	43.2	
Totals	kg	1073.5	815.6	1889.1

BULLET VEHICLE ATTITUDES AND CG

	Units	LF	RF	LR	RR	CG (aft of front axle)
Delivered:	mm	732	735	743	750	
Pre-test:	mm	723	730	718	725	1239
Post-test	mm	852	709	685	732	

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheelbase	mm	Not Recorded
Total Vehicle Length at Left Side	mm	4945
Total Vehicle Length at Centerline	mm	5100
Total Vehicle Length at Right Side	mm	4951
Weight of Ballast in Cargo Area	kg	0
Weight of Vehicle Components Removed	kg	Not Recorded
Amount of Stoddard Solvent in Fuel Tank	liters	0

Weight of ballast secured in vehicle: None

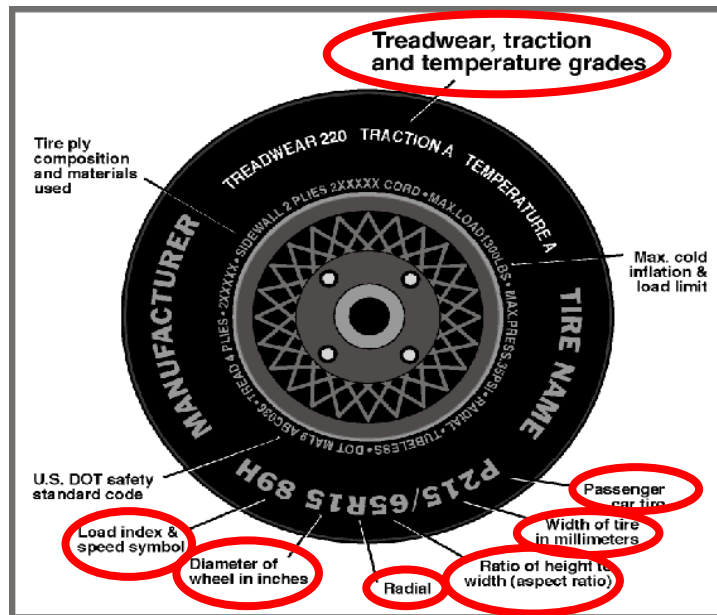
Components removed to meet target test weight: Door glass and window regulators from all 4 doors, rear deck lid and hinges, rear bumper beam and fascia, weather striping, and exhaust system aft of the catalytic converter

DATA SHEET NO. 3 (CONTINUED)

BULLET VEHICLE GENERAL TEST AND VEHICLE PARAMETER DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	300 (44 psi)	300 (44 psi)
Cold / Test Pressure (kPa)	220 (32 psi)	220 (32 psi)
Recommended Tire Size	P225/55R18	P225/55R18
Tire Size on Vehicle	P225/55R18	P225/55R18
Tire Manufacturer	Pirelli	Pirelli
Tire Name	P6	P6
Load Index & Speed Symbol	97T	97T
Treadwear	400	400
Traction Grade	A	A
Temperature Grade	A	A

DATA SHEET NO. 4

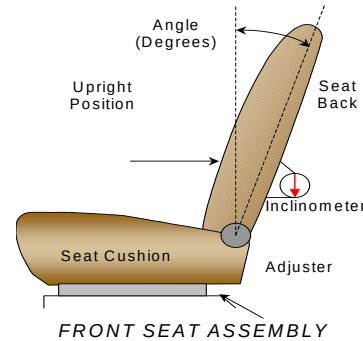
BULLET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

NORMAL DESIGN RIDING POSITION

The seat back angle was measured relative to the rocker sill. The test position was measured using a Faro Inc. C. Measurement Machine.



BULLET SEAT BACK ANGLE

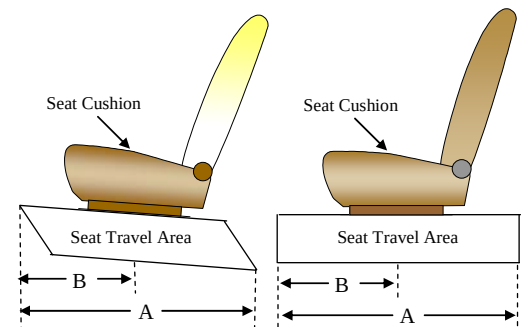
	Degrees
Driver Seat	5.5°
Front Passenger Seat	5.6°
Left Rear Passenger Seat	Fixed

SEAT FORE/AFT POSITIONS

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

BULLET SEAT FORE/AFT POSITIONING

	Total Fore/Aft Travel	Placed in Position No.
Driver Seat	235 mm	45 mm rear of mid
Front Passenger Seat	240 mm	Full fwd
Left Rear Seat	N/A	fixed



BULLET SEAT BELT UPPER ANCHORAGE

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

Position number one is the uppermost adjustment position.

DATA SHEET NO. 4 (CONTINUED)

BULLET VEHICLE SEAT, SEAT BELT, STEERING WHEEL ADJUSTMENT AND FUEL SYSTEMS DATA

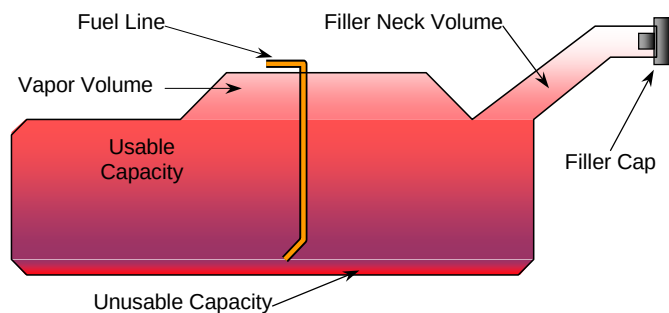
Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

FUEL TANK CAPACITY

	Liters
Usable Capacity of Tank	74.7
Usable Capacity used for FMVSS301	71.9
Actual Amount of Solvent used	0

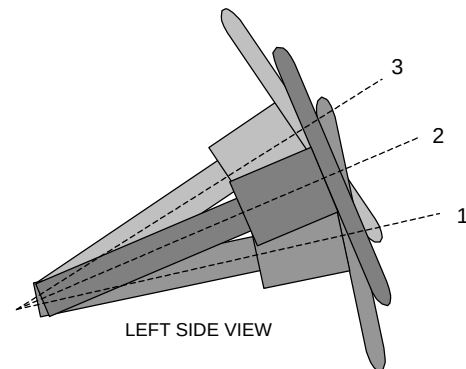
The test vehicle is equipped with an electric fuel pump. The fuel pump operates for approximately two seconds after the ignition is placed in the "ON" position, after which the fuel pump automatically shuts off. The fuel filler door is located on the left rear fender. The standard fuel tank occupies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



VEHICLE FUEL TANK ASSEMBLY

STEERING COLUMN ADJUSTMENT

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



STEERING COLUMN ASSEMBLY

STEERING COLUMN POSITIONS

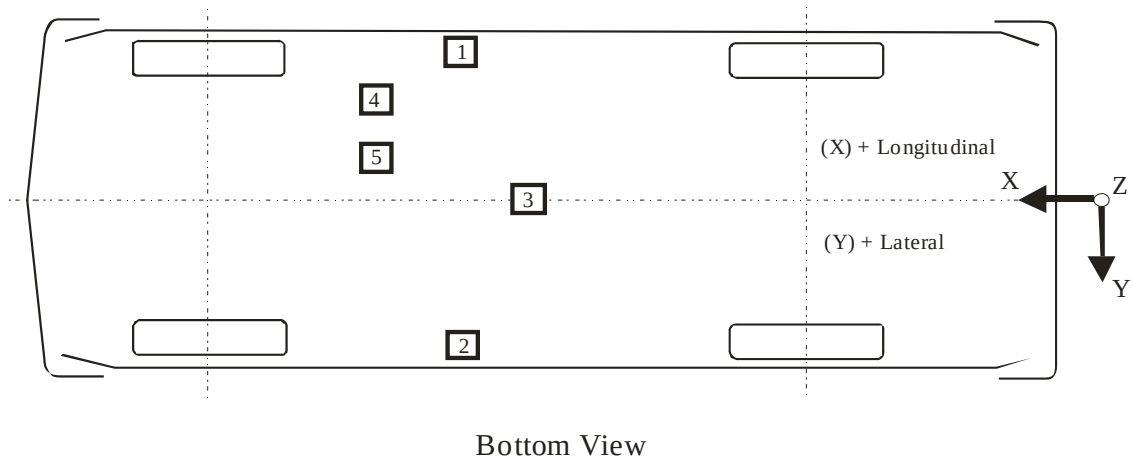
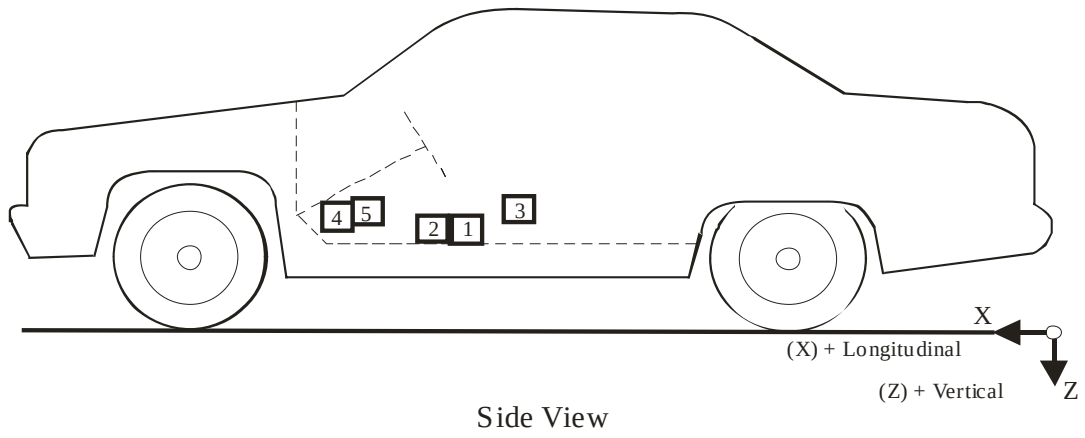
	Detents	Fore/Aft Position, mm
Lowermost Position No. 1	1 of 5	23.4
Geometric Center Position No. 2	3 of 5	26.0
Uppermost Position No. 3	5 of 5	28.7
Telescoping Steering Wheel Travel		No Feature
Test Position		Fixed

DATA SHEET NO. 5

VEHICLES' ACCELEROMETER PLACEMENT AND DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DATA SHEET NO. 5 (CONTINUED)

VEHICLES' ACCELEROMETER PLACEMENT AND DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

TARGET VEHICLE INSTRUMENTATION DATA

Location		Positive Direction		Negative Direction	
		Max. (g)	Time (ms)	Max. (g)	Time (ms)
(1) Left Sill Acceleration	X	1.5	168.2	-45.5	58.7
	Y	17.9	36.9	-10.4	89.4
(2) Right Sill Acceleration	X	0.9	164.1	-34.1	61.4
	Y	20.6	37.0	-8.9	79.3
(3) Vehicle Center of Gravity Acceleration	X	1.0	190.4	-34.3	60.9
	Y	27.0	37.7	-9.5	89.3
	Z	17.4	45.3	-17.5	76.2
	R	36.3	74.3		
(4) Driver Foot Rest Acceleration	X	1.5	167.8	-40.5	57.4
	Z	31.0	65.4	-116.1	50.2
(5) Toe Pan Behind Center of Accelerator Acceleration	X	56.9	38.8	-73.2	57.4
	Z	42.8	64.2	-27.6	60.0

BULLET VEHICLE INSTRUMENTATION DATA

Location		Positive Direction		Negative Direction	
		Max. (g)	Time (ms)	Max. (g)	Time (ms)
(1) Left Sill Acceleration	X	2.0	185.3	-26.5	62.9
	Y	17.9	41.7	-3.0	93.0
(2) Right Sill Acceleration	X	1.6	180.7	-33.3	54.9
	Y	23.7	43.9	-4.1	92.7
(3) Vehicle Center of Gravity Acceleration	X	6.8	43.4	-36.0	51.8
	Y	34.6	40.2	-6.3	93.9
	Z	52.0	44.4	-20.1	62.4
	R	52.3	44.4		
(4) Driver Foot Rest Acceleration	X	2.4	155.8	-45.5	52.1
	Z	35.8	44.0	-15.7	30.6
(5) Toe Pan Behind Center of Accelerator Acceleration	X	7.4	42.5	-31.9	62.1
	Z	50.4	44.2	-20.1	59.6

DATA SHEET NO. 6

GENERAL TEST DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

Test Time: 15:58

Ambient temperature at impact area: 14° C

SPEED TRAP DATA

Measured Parameter	Units	Requirements	Value
Trap No. 1 Velocity (Primary)	km/h	110.2 - 115.1	112.2

DATA CHANNELS

TARGET ATD Sensors	107
TARGET Vehicle Structure Accelerometers	11
TARGET Seatbelt Load Cells	2
Airbag Signal Transducers	2
BULLET ATD Sensors	146
BULLET Vehicle Structure Accelerometers	11
BULLET Seatbelt Load Cells	4
Airbag Signal Transducers	4
Total	287

CAMERA COVERAGE

Cameras	
High-Speed Vehicle Onboard - TARGET	4
High-Speed Vehicle Onboard - BULLET	2
High-Speed Offboard	12
Real-Time	1
Total	19

DATA SHEET NO. 7**TARGET VEHICLE POST-IMPACT DUMMY/VEHICLE DATA**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**TEST DUMMY INFORMATION**

Description	Driver
Dummy Type/Serial No.	THOR / T015
Head Contact	Front airbag, fore arm, and head restraint
Upper Torso Contact	Front airbag
Lower Torso Contact	None
Left Knee Contact	Knee bolster
Right Knee Contact	Knee bolster

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Left
Locked / Unlocked Doors	Unlocked
Front Door Opening	Closed and latched
Rear Door Opening	Closed and latched
Seat Track Shift (mm)	None
Seat Back Failure	None
Glazing Damage	Cracks

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Cracks throughout
Window Damage	None
Other Notable Effects	None

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Driver	
	Installed	Operated
Frontal Airbag	Yes	Yes
Knee Airbag	No	N/A
Side Torso Airbag	No	N/A
Head/Torso Side Airbag	No	N/A
Curtain Airbag	No	N/A
Seat Belt Pretensioner	Unknown	Unknown
Seat Belt Load Limiter	Unknown	Unknown

DATA SHEET NO. 8**BULLET VEHICLE POST-IMPACT DUMMY/VEHICLE DATA**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**TEST DUMMY INFORMATION**

Description	Driver	Passenger	Left Rear
Dummy Type/Serial No.	HIII 50 th / 206	HIII 5 th / 329	HIII 5 th / 416
Head Contact	Front airbag and head restraint	Front airbag and head restraint	Head restraint
Upper Torso Contact	Front airbag	Front airbag	None
Lower Torso Contact	None	None	None
Left Knee Contact	Knee bolster	Glove box	None
Right Knee Contact	Knee bolster	Glove box	None

DOOR OPENING AND SEAT TRACK INFORMATION

Description	Left	Right
Locked / Unlocked Doors	Unlocked	Unlocked
Front Door Opening	Closed and latched	Closed and latched
Rear Door Opening	Closed and latched	Closed and latched
Seat Track Shift (mm)	None	None
Seat Back Failure	None	None
Glazing Damage ¹	N/A	N/A

POST-TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Windshield Damage	Cracks throughout
Window Damage ¹	N/A
Other Notable Effects	Left front tire flat

SUPPLEMENTAL RESTRAINT SYSTEM INFORMATION

Restraint Type	Driver (Pos. 1)		Passenger (Pos. 3)		Left Rear (Pos. 4)	
	Installed	Operated	Installed	Operated	Installed	Operated
Frontal Airbag	Yes	Yes	Yes	Yes	No	N/A
Knee Airbag	No	N/A	No	N/A	No	N/A
Side Torso Airbag	No	N/A	No	N/A	No	N/A
Head/Torso Side Airbag	No	N/A	No	N/A	No	N/A
Curtain Airbag	Yes	No	Yes	No	Yes	No
Seat Belt Pretensioner	Unknown	Unknown	Unknown	Unknown	No	N/A
Seat Belt Load Limiter	Unknown	Unknown	Unknown	Unknown	No	N/A

¹ The windows were removed from all four (4) doors in order to achieve test weight.

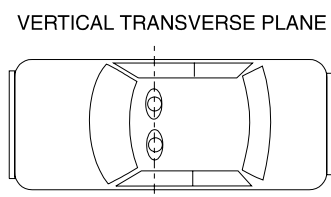
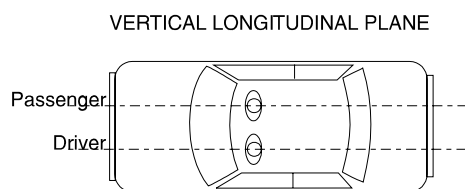
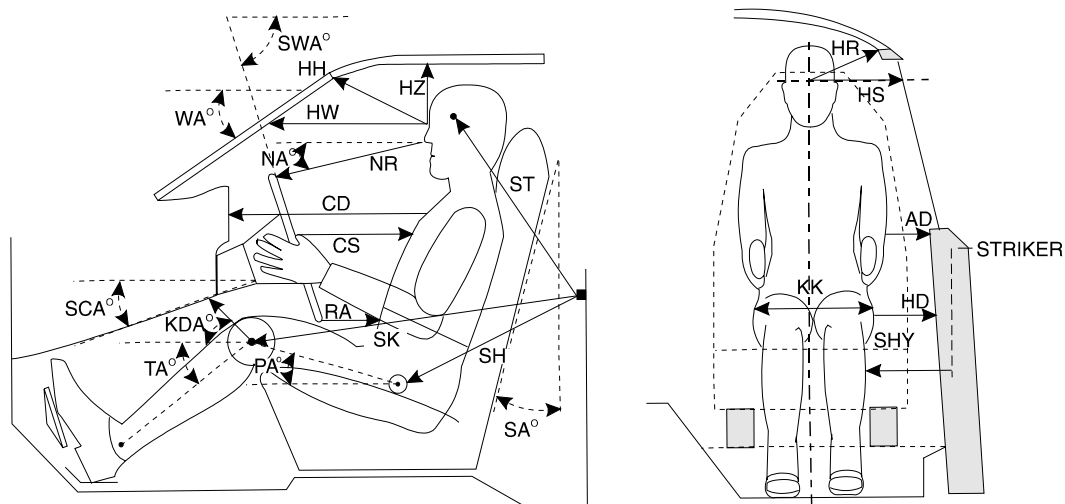
SECTION 4
OCCUPANT, VEHICLE, AND CAMERA MEASUREMENT SUMMARY

DATA SHEET NO. 9

TARGET VEHICLE DUMMY CLEARANCE DIMENSIONS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DATA SHEET NO. 9 (CONTINUED)

TARGET VEHICLE DUMMY CLEARANCE DIMENSIONS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

Code	Measurement Description	Unit	Driver S/N T015
WA	Windshield angle	°	25.0
SWA	Steering wheel angle	°	64.1
SCA	Steering column angle	°	25.9
SA	Seat back angle	°	1.1
HZ	Head to roof	mm	188
HH	Head to header	mm	335
HW	Head to windshield	mm	636
HR	Head to side header	mm	235
NR	Nose to rim	mm	425
NA	Nose to rim angle	°	9.7
CD	Chest to dash	mm	590
CS	Steering wheel to chest	mm	315
RA	Rim to abdomen	mm	188
KDL	Left knee to dash	mm	107
KDR	Right knee to dash	mm	103
KDA	Outboard knee to dash angle	°	12.8
PA	Pelvic angle	°	28.7
TA	Tibia angle	°	61.1
KK	Knee to knee	mm	397
ST ¹	Striker to head	mm	521
	Striker to head angle	°	-78.8
SK ¹	Striker to knee	mm	635
	Striker to knee angle	°	-1.1
SH ¹	Striker to H-point	mm	306
	Striker to H-point angle	°	34.5
SHY	Striker to H-point (Y dir.)	mm	258
HS	Head to side window	mm	355
HD	H-point to door	mm	127
AD	Arm to door	mm	197
	Final head angle (X)	°	--- ²
	Final head angle (Y)	°	--- ²

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.

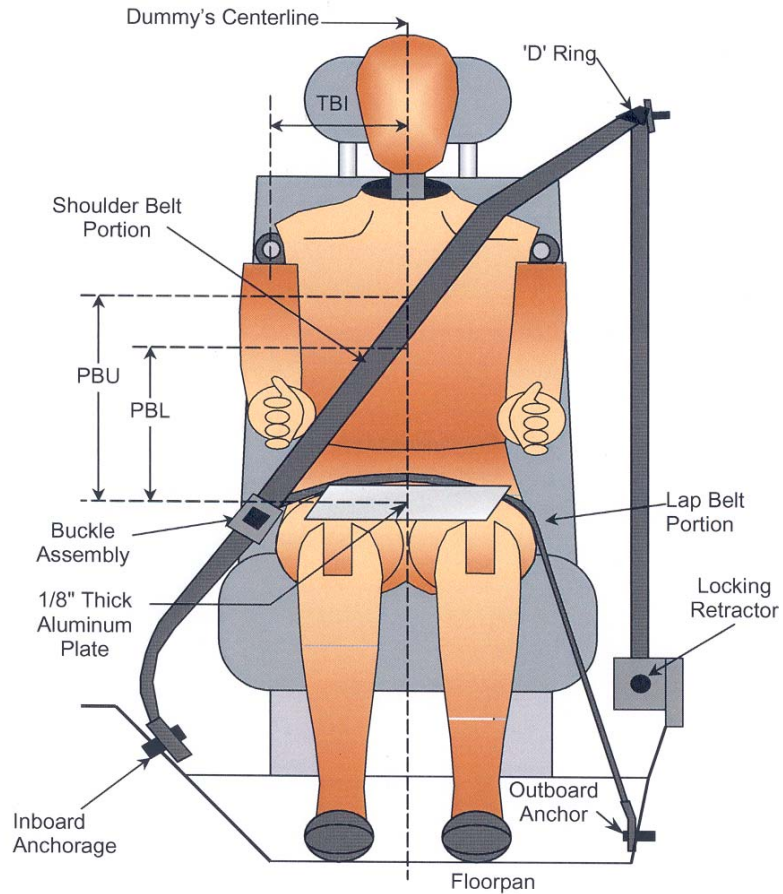
² Not recorded. Was less than 1° from level in both X- and Y-Axes.

DATA SHEET NO. 10

TARGET VEHICLE SEAT BELT POSITIONING DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



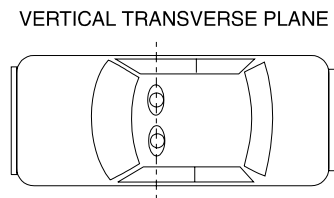
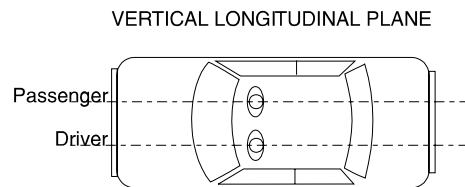
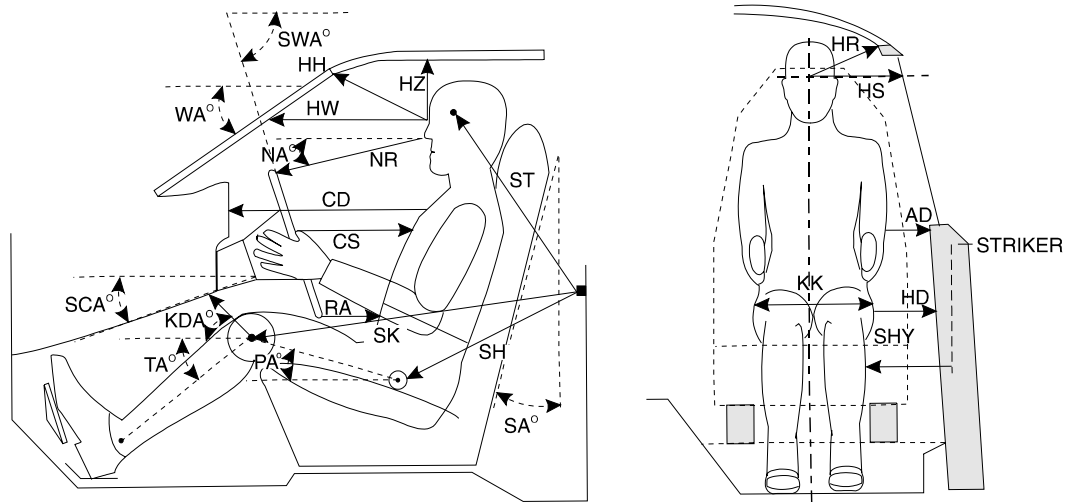
Measurement Parameter		Units	Driver S/N T015
PBU	Top surface of aluminum plate to belt upper edge	mm	300
PBL	Top surface of aluminum plate to belt lower edge	mm	229
TBI	Dummy centerline to intersection of upper torso belt and lap belt	mm	259

DATA SHEET NO. 11

BULLET VEHICLE DUMMY CLEARANCE DIMENSIONS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DATA SHEET NO. 11 (CONTINUED)

BULLET VEHICLE DUMMY CLEARANCE DIMENSIONS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

Code	Measurement Description	Unit	Driver S/N 206	Front Passenger S/N 329	Left Rear Passenger S/N 416
WA	Windshield angle	°	26.6		
SWA	Steering wheel angle	°	66.9		
SCA	Steering column angle	°	23.1		
SA	Seat back angle	°	4.9	4.1	Fixed
HZ	Head to roof	mm	227	214	327
HH	Head to header	mm	368	295	
	Head to Seatback	mm			641
HW	Head to windshield	mm	683	639	
HR	Head to side header	mm	236	265	302
NR	Nose to rim	mm	419		
NA	Nose to rim angle	°	8.4		
CD	Chest to dash	mm	615	417	
CB	Chest to seatback	mm			634
CS	Steering wheel to chest	mm	314		
RA	Rim to abdomen	mm	237		
KDL	Left knee to dash / seatback	mm	221	99	318
KDR	Right knee to dash / seatback	mm	204	113	323
KDA	Outboard knee to dash / seatback angle	°	9.6	24.9	
PA	Pelvic angle	°	---	---	
TA	Tibia angle	°	44.0	48.2	60.4
KK	Knee to knee	mm	368	254	276
ST ¹	Striker to head	mm	478	461	300
	Striker to head angle	°	-80.9	-63.8	-71.9
SK ¹	Striker to knee	mm	577	708	637
	Striker to knee angle	°	6.3	7.6	19.7
SH ¹	Striker to H-point	mm	267	396	358
	Striker to H-point angle	°	43.9	21.4	47.7
SHY	Striker to H-point (Y dir.)	mm	254	176	243
HS	Head to side window	mm	349	371	380
HD	H-point to door	mm	134	127	127
AD	Arm to door	mm	126	177	108

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

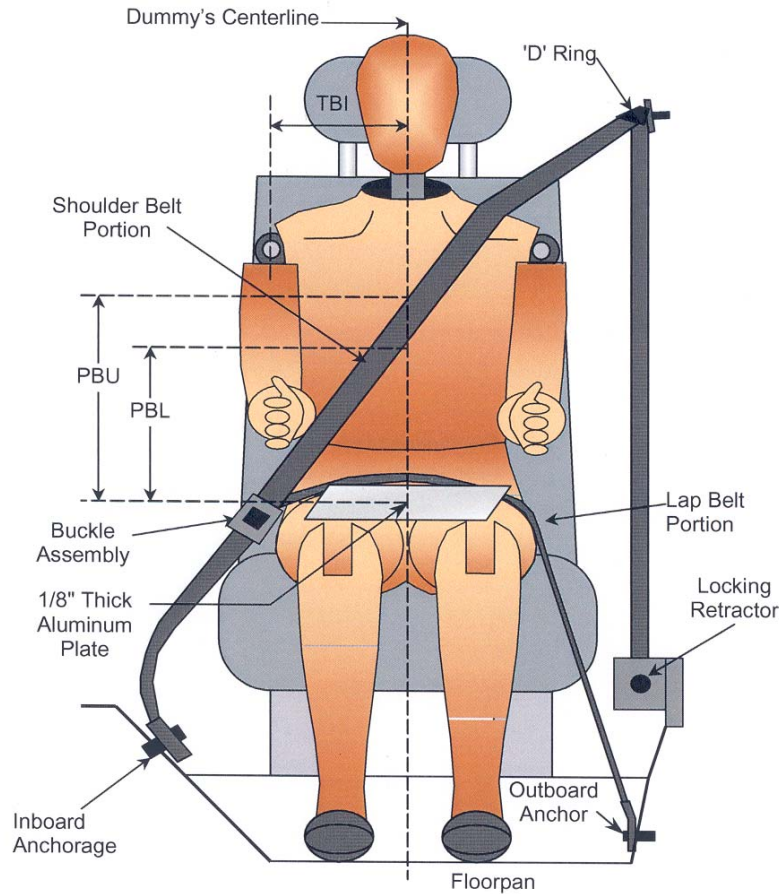
¹ A negative angle indicates the measurement point was above the striker.

DATA SHEET NO. 12

BULLET VEHICLE SEAT BELT POSITIONING DATA

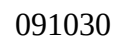
Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



Measurement Parameter		Units	Driver S/N 206	Front Passenger S/N 329	Left Rear Passenger S/N 416
PBU	Top surface of aluminum plate to belt upper edge	mm	290	240	290
PBL	Top surface of aluminum plate to belt lower edge	mm	220	162	210
TBI	belt and lap belt	mm	255	245	300

TARGET VEHICLE PROFILE MEASUREMENTS

Test Date: 10/30/09

DATA SHEET NO. 13 (CONTINUED)**TARGET VEHICLE PROFILE MEASUREMENTS**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09

No.	Type of measurement	Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5093	4588	505
X2	RSOV to Front of Engine Block	4588	4308	280
X3	RSOV to Firewall	3983	3803	180
X4	RSOV to Upper Leading Edge of Right Door	3524	3524	0
X5	RSOV to Upper Leading Edge of Left Door	3528	3423	105
X6	RSOV to Lower Leading Edge of Right Door	3503	3509	-6
X7	RSOV to Lower Leading Edge of Left Door	3503	3453	50
X8	RSOV to Upper Trailing Edge of Right Door	2477	2480	-3
X9	RSOV to Upper Trailing Edge of Left Door	2473	2414	59
X10	RSOV to Lower Trailing Edge of Right Door	2503	2523	-20
X11	RSOV to Lower Trailing Edge of Left Door	2511	2485	26
X12	RSOV to Bottom of " A " Post on Right Side	3488	3486	2
X13	RSOV to Bottom of " A " Post on Left Side	3488	3353	135
X14	RSOV to Firewall - Right Side	3933	3895	38
X15	RSOV to Firewall - Left Side	3928	3628	300
X16	RSOV to Steering Wheel Center	3108	3013	95
X17	Center of Steering Column to " A " Post	350	360	-10
X18	Center of Steering Column to Headliner	435	490	-55
X19	RSOV to Right Side of Front Bumper	4933	4968	-35
X20	RSOV to Left Side of Front Bumper	4933	4353	580
X21	Length of Engine Block	500	500	0
RD	RSOV to Right Side of Dash Panel	3263	3273	-10
CD	RSOV to Center of Dash Panel	3352	3263	89
LD	RSOV to Left Side of Dash Panel	3288	3148	140
	Maximum Width	1895	1900	-5

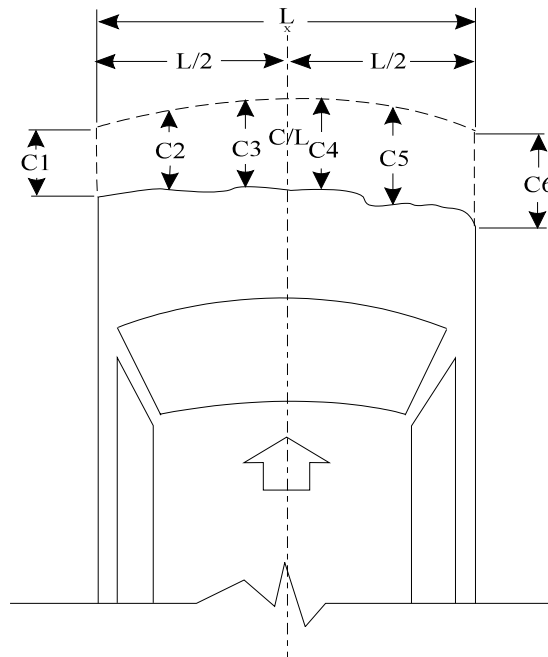
All distance measurements are in millimeters.

DATA SHEET NO. 14

TARGET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2007 Ford Five Hundred

Tape measurement with bumper fascia in place:

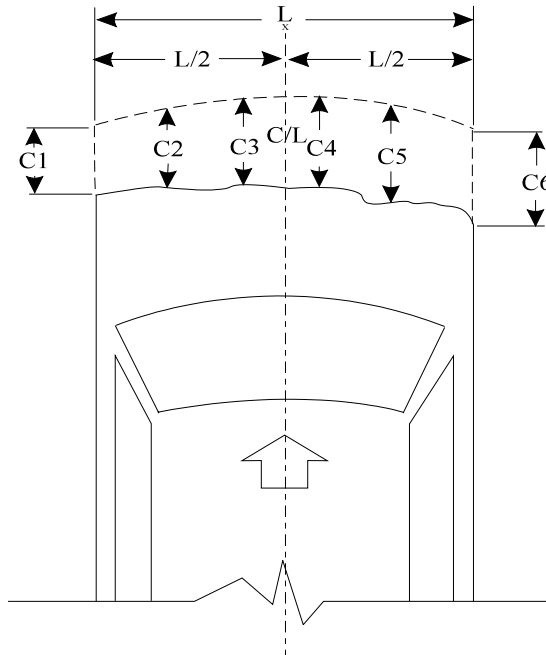
	Pre-Test	Post-Test	Difference	
L=	1524			mm
C1=	4933	4353	580	mm
C2=	5038	4423	615	mm
C3=	5088	4483	605	mm
C4=	5093	4588	505	mm
C5=	5088	4698	390	mm
C6=	5038	4893	145	mm
CL=	4933	4968	-35	mm

DATA SHEET NO. 14 (CONTINUED)

TARGET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2007 Ford Five Hundred
FARO measurement of bumper reinforcement:

	Pre-Test	Post-Test	Difference	
L=	1347			mm
C1=	4935	4372	563	mm
C2=	4998	4450	548	mm
C3=	5013	4568	445	mm
C4=	5013	4733	280	mm
C5=	4997	4883	114	mm
C6=	4933	4972	-39	mm
CL=	5015	4650	365	mm

DATA SHEET NO. 14 (CONTINUED)

TARGET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



LEFT SIDE VIEW

Measurements are taken with vehicle in the as tested condition.

All measurements below in mm.

MAXIMUM EXTERIOR Y-AXIS STATIC CRUSH

Level	Measurement Description	Maximum Exterior Static Crush
5	Window Top	22
4	Window Sill	118
3	Mid Door	249
2	Occupant H-Point	103
1	Sill Top	13
	Maximum Crush	249

DATA SHEET NO. 14 (CONTINUED)

TARGET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
100			-867					-618					-249		
200			-889					-679					-210		
300			-911					-733					-178		
400			-936					-809					-127		
500															
600															
700															
800															
900	-882			-809		-895			-819		-13			10	
1000	-882		-948	-828		-893		-793	-878		-11		-155	50	
1100	-882	-946	-943	-846		-890	-843	-836	-929		-8	-103	-107	83	
1200	-882	-936	-936	-857	-808	-888	-892	-872	-871	-808	-6	-44	-64	14	0
1300	-882	-936	-937	-864	-790	-886	-928	-923	-865	-784	-4	-8	-14	1	-6
1400	-881	-937	-938	-868	-769	-883	-1008	-1008	-885	-771	-2	71	70	17	2
1500	-881	-939	-940	-872	-748	-881	-1019	-1012	-903	-744	0	80	72	31	-4
1600	-880	-940	-941	-875	-726	-879	-1019	-1003	-920	-718	1	79	62	45	-8
1700	-879	-941	-942	-878	-706	-877	-1000	-998	-937	-694	2	59	56	59	-12
1800	-878	-942	-943	-881	-689	-876	-1019	-1012	-952	-674	2	77	69	71	-15
1900	-877	-942	-944	-882	-670	-874	-1026	-1026	-967	-654	3	84	82	85	-16
2000	-875	-943	-944	-884	-659	-872	-1030	-1032	-981	-642	3	87	88	97	-17
2100	-873	-943	-945	-885	-650	-870	-1032	-1037	-994	-633	3	89	92	109	-17
2200	-872	-943	-945	-886	-644	-871	-1033	-1041	-1004	-627	1	90	96	118	-17
2300		-943	-944	-886	-639		-976	-987	-974	-617		33	43	88	-22
2400		-942	-943	-884	-632		-940	-940	-882	-621		-2	-3	-2	-11
2500		-941	-942	-884	-630		-940	-940	-883	-621		-1	-2	-1	-9
2600		-939	-941	-883	-630		-939	-940	-883	-622		0	-1	0	-8
2700		-938	-939	-883	-631		-939	-940	-884	-624		1	1	1	-7
2800		-936	-937	-882	-632		-938	-940	-884	-626		2	3	2	-6
2900		-934	-936	-881	-635		-937	-938	-884	-629		3	2	3	-6
3000		-932	-933	-879	-638		-936	-938	-884	-634		4	5	5	-4
3100		-932	-933	-877	-644		-937	-938	-882	-642		5	5	5	-2
3200		-935	-940	-875	-656		-933	-938	-880	-655		-2	-2	5	-1
3300			-942	-872				-939	-878				-3	6	

Reference plane is parallel to test vehicle longitudinal centerline.

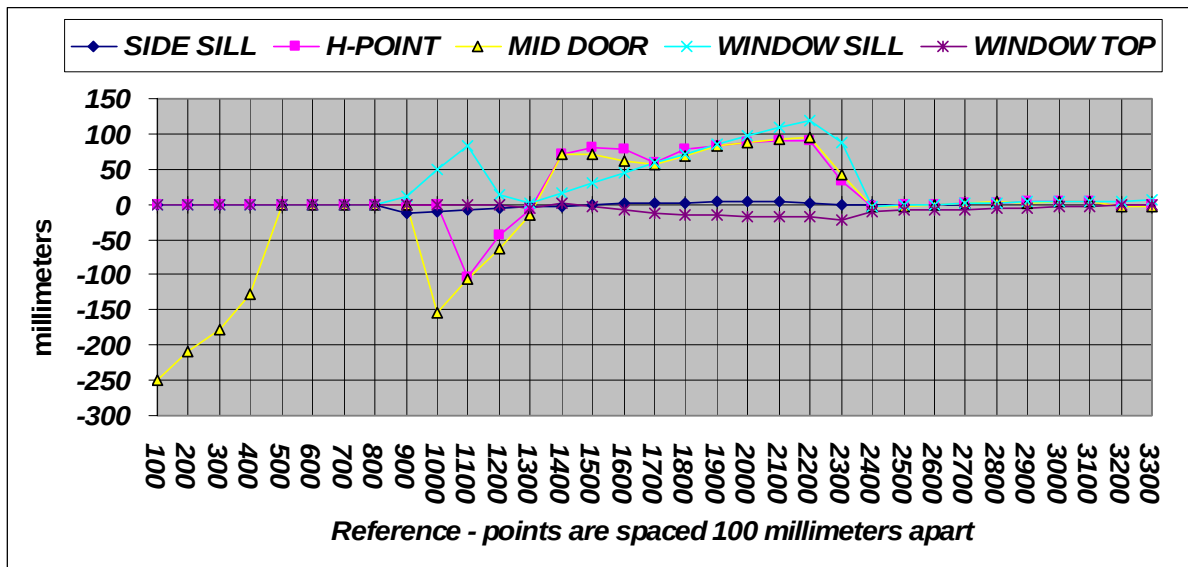
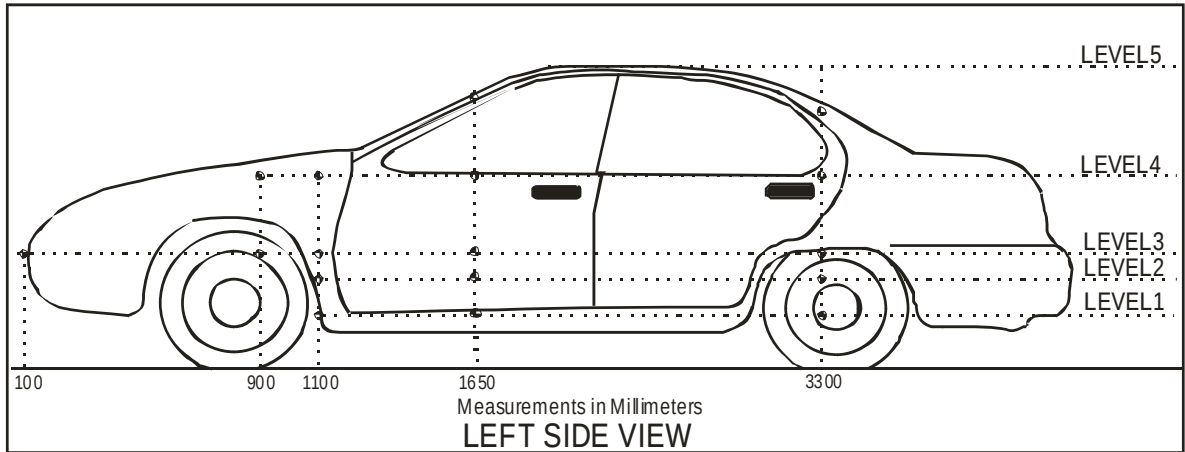
Given measurements = Reference plane to car body

DATA SHEET NO. 14 (CONTINUED)

TARGET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



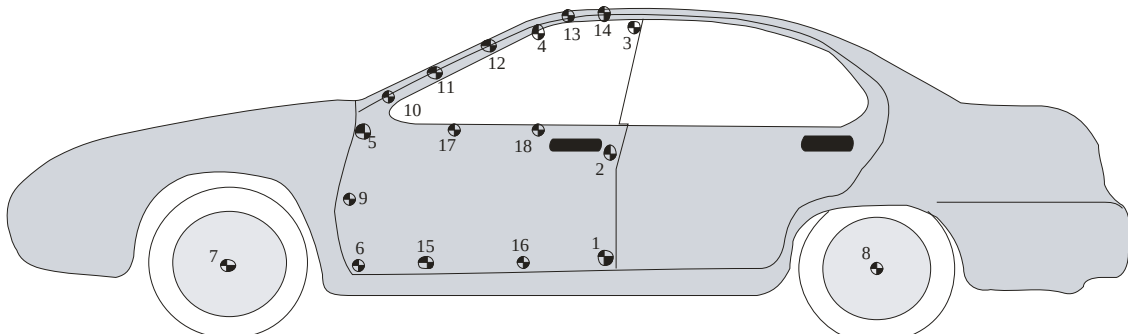
Side Crush data was collected at five levels; Window Top, Window Sill, Mid Door, Hip Point, and Side Sill, in increments of 100 mm. Point one of the grid is the forward-most point on the vehicle at the Mid Door height. The FARO origin (0, 0, 0) is defined as the rearward most point along the centerline of the vehicle. The coordinate system conforms to SAE J211.

DATA SHEET NO. 15

TARGET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



LEFT SIDE VIEW

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2643	-840	70	2633	-837	78	10	-3	-8
2	2515	-849	-331	2511	-843	-326	4	-6	-5
3	2420	-648	-917	2420	-635	-911	0	-13	-6
4	2947	-686	-843	2954	-670	-922	-7	-16	79
5	3488	-825	-405	3385	-800	-426	103	-25	21
6	3419	-825	170	3378	-830	152	41	5	-18
Front Axle 7	4083	-908	207	3918	-857	67	165	-51	140
Rear Axle 8	1215	-911	192	1214	-907	163	1	-4	29
9	3474	-803	-171	3367	-796	-192	107	-7	21
10	3543	-818	-455	3440	-809	-472	103	-9	17
11	3378	-776	-591	3299	-777	-619	79	1	28
12	3169	-731	-731	3158	-719	-824	11	-12	93
13	2786	-664	-894	2787	-645	-942	-1	-19	48
14	2593	-649	-925	2592	-632	-938	1	-17	13
15	3187	-819	203	3182	-824	219	5	5	16
16	2899	-817	197	2895	-822	202	4	5	5
17	3134	-857	-468	3042	-910	-482	92	53	14
18	2798	-860	-484	2710	-963	-488	88	103	4

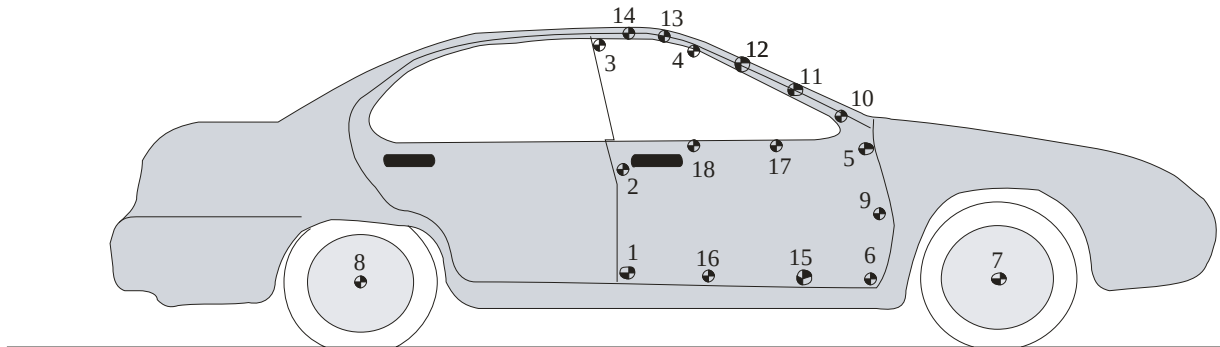
Units (mm)	(7-8) = Wheelbase Left
Pre-Test	2870
Post-Test	2720
Difference	150

DATA SHEET NO. 15 (CONTINUED)

TARGET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



RIGHT SIDE VIEW

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2644	841	63	2642	850	35	2	-9	28
2	2516	853	-340	2508	860	-366	8	-7	26
3	2418	645	-927	2404	653	-952	14	-8	25
4	2960	685	-844	2946	699	-877	14	-14	33
5	3489	820	-424	3481	849	-463	8	-29	39
6	3415	823	166	3415	845	129	0	-22	-40
Front Axle 7	4085	909	212	4106	883	132	-21	26	80
Rear Axle 8	1217	909	193	1239	904	247	-22	5	-54
9	3475	803	-181	3470	829	-218	5	-26	37
10	3540	813	-468	3529	840	-508	11	-27	40
11	3373	772	-602	3358	799	-639	15	-27	37
12	3185	731	-729	3170	752	-763	15	-21	34
13	2790	660	-898	2777	673	-929	13	-13	31
14	2608	646	-929	2593	656	-957	15	-10	-28
15	3177	822	196	3176	837	162	1	-15	34
16	2885	820	188	2884	832	157	1	-12	31
17	3134	857	-481	3130	883	-514	4	-26	33
18	2755	864	-499	2751	878	-526	4	-14	27

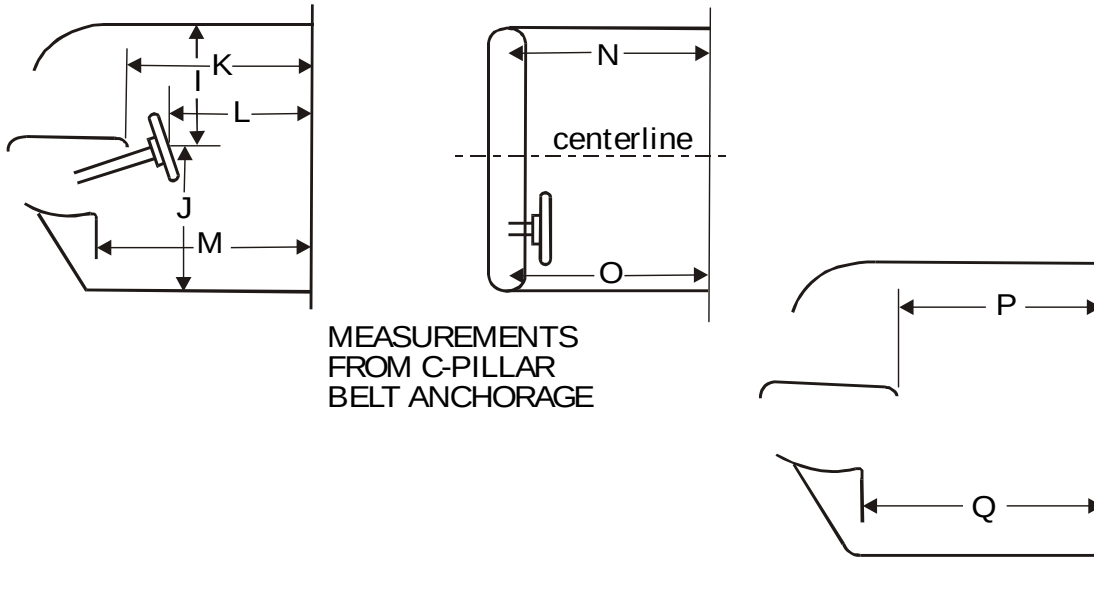
Units (mm)	(7-8) = Wheelbase Right
Pre-Test	2870
Post-Test	2870
Difference	0

DATA SHEET NO. 15 (CONTINUED)

TARGET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



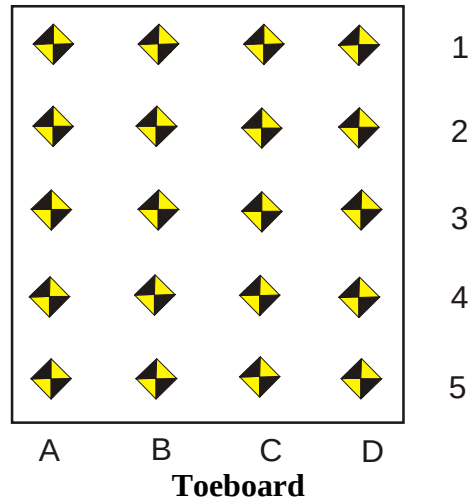
STATIC PASSENGER COMPARTMENT INTRUSION

Measurement	Pre-Test	Post-Test	Difference
I	435	490	-55
J	720	615	105
K	2040	1933	107
L	1855	1810	45
M	2140	2033	107
N	2050	2010	40
O	2092	2000	92
P = K (Pass.)	2025	2018	7
Q = M (Pass.)	2130	2127	3

DATA SHEET NO. 15 (CONTINUED)
TARGET VEHICLE INTRUSION MEASUREMENTS
DRIVER SIDE

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DRIVER'S SIDE TOEBOARD MEASUREMENTS

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3641	-550	168	3572	-544	112	69	-6	56
B1	3705	-445	180	3619	-427	110	86	-18	70
C1	3689	-333	186	3628	-315	134	61	-18	52
D1	3695	-218	209	3679	-212	166	16	-6	43
A2	3623	-558	231	3567	-549	177	56	-9	54
B2	3638	-458	231	3596	-449	184	42	-9	47
C2	3628	-334	232	3612	-328	207	16	-6	25
D2	3629	-218	259	3621	-214	216	8	-5	43
A3	3560	-552	285	3549	-550	254	12	-2	31
B3	3555	-457	287	3546	-455	262	9	-2	25
C3	3553	-327	285	3548	-323	254	5	-4	31
D3	3551	-223	292	3546	-220	256	5	-3	36
A4	3338	-584	288	3329	-578	290	9	-6	-2
B4	3343	-471	287	3338	-467	285	6	-5	2
C4	3331	-324	287	3325	-320	267	6	-4	20
D4	3332	-213	286	3328	-206	257	4	-7	29
A5	3143	-562	275	3136	-557	283	7	-5	-8
B5	3148	-474	282	3142	-468	281	6	-6	1
C5	3154	-322	282	3150	-316	267	4	-6	15
D5	3158	-221	281	3154	-216	258	4	-5	23

All measurements are in millimeters.

DATA SHEET NO. 15 (CONTINUED)**TARGET VEHICLE INTRUSION MEASUREMENTS**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**DRIVER'S SIDE**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
Front Outboard Seat Bolt	3061	-582	200	3060	-588	205	1	6	-5
Steering Center	3069	-378	-421	3014	-343	-415	55	-35	6
Left Knee Bolster	3341	-536	-177	3260	-495	-201	81	-41	24
Right Knee Bolster	3337	-225	-181	3277	-184	-203	60	-41	22
Accelerator Pedal	3600	-207	103	3530	-192	73	70	-15	30
Brake Pedal	3540	-364	97	3456	-377	62	84	13	35
Footrest	3526	-543	197	3480	-546	167	46	3	30
IIHS Toepan Right	3751	-216	107	3693	-198	43	58	-18	64
IIHS Toepan Center	3752	-363	106	3650	-341	26	102	-22	80
IIHS Toepan Left	3685	-518	99	3592	-500	37	93	-18	62
IIHS Footrest	3629	-616	95	3556	-603	50	73	-13	45

All measurements are in millimeters.

DATA SHEET NO. 15 (CONTINUED)**TARGET VEHICLE INTRUSION MEASUREMENTS**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**PASSENGER'S SIDE TOEBOARD**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3707	223	197	3713	241	158	-6	-18	39
B1	3689	322	186	3685	339	141	4	-17	45
C1	3710	439	179	3706	457	132	4	-18	47
D1	3636	552	164	3637	574	120	-1	-22	44
A2	3641	217	248	3645	238	212	-4	-21	36
B2	3625	322	235	3624	341	191	1	-19	44
C2	3643	456	234	3642	475	188	1	-19	46
D2	3616	566	218	3618	587	175	-2	-21	43
A3	3557	213	289	3560	233	252	-3	-20	37
B3	3554	324	285	3554	343	245	0	-19	40
C3	3557	456	290	3558	474	249	-1	-18	41
D3	3560	583	290	3562	601	249	-2	-18	41
A4	3377	190	285	3379	209	251	-2	-19	34
B4	3375	313	285	3377	331	251	-2	-18	34
C4	3366	442	279	3366	462	252	0	-20	27
D4	3359	583	280	3364	599	250	-5	-16	30
A5	3212	177	286	3213	194	255	-1	-17	31
B5	3211	299	279	3212	316	247	-1	-17	32
C5	3193	454	281	3195	470	259	-2	-16	22
D5	3187	582	269	3190	598	234	-3	-16	35

All measurements are in millimeters.

DATA SHEET NO. 15 (CONTINUED)**TARGET VEHICLE INTRUSION MEASUREMENTS**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**BUMPER MEASUREMENTS
(without fascia)**

Index	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	4933	674	69	4972	555	-71	39	-119	-140
2	4984	550	69	4952	422	-71	-32	-128	-140
3	4997	412	70	4883	302	-67	-114	-111	-137
4	5007	277	69	4810	188	-62	-197	-89	-131
5	5013	140	71	4733	74	-55	-281	-66	-126
6	5015	0	71	4650	-39	-47	-365	-39	-118
7	5013	-136	72	4568	-146	-40	-445	-9	-112
8	5008	-274	71	4481	-251	-27	-527	23	-98
9	4998	-413	72	4450	-349	-53	-548	65	-125
10	4984	-551	72	4430	-475	-91	-555	75	-164
11	4935	-674	71	4372	-578	-148	-563	96	-219

All measurements are in millimeters.

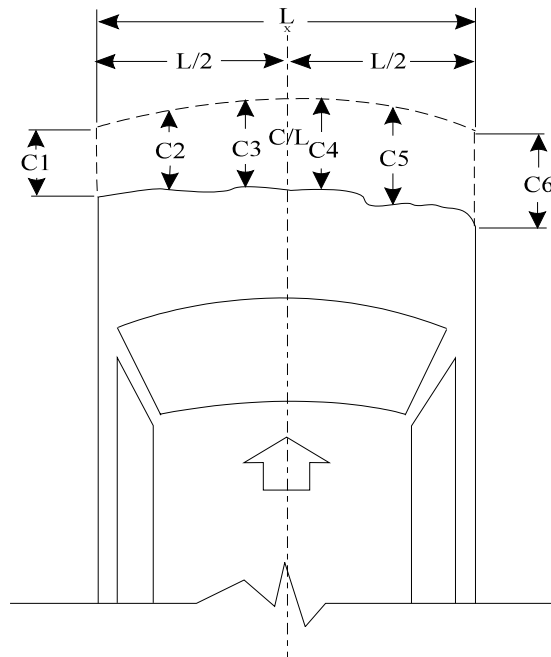
Point 1 is on the passenger side of the bumper.

DATA SHEET NO. 16

BULLET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2007 Ford Five Hundred

Tape measurement with bumper fascia in place:

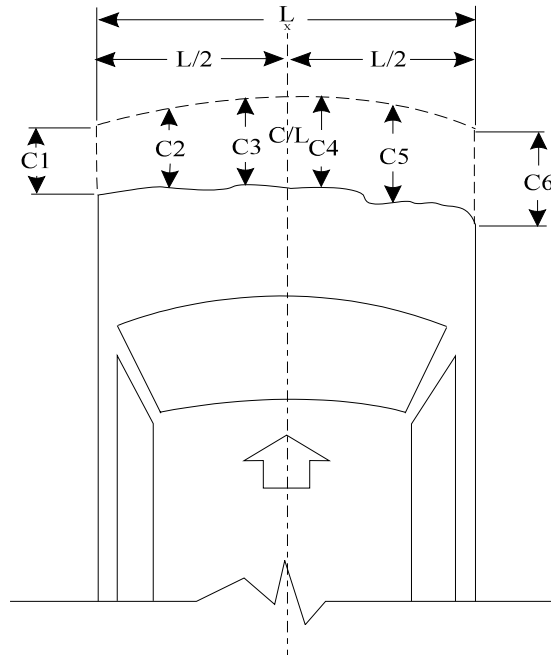
	Pre-Test	Post-Test	Difference	
L=	1524			mm
C1=	4945	4350	595	mm
C2=	5055	4385	670	mm
C3=	5075	4450	625	mm
C4=	5075	1625	450	mm
C5=	5055	4718	337	mm
C6=	4951	4895	56	mm
CL=	5100	4535	565	mm

DATA SHEET NO. 16 (CONTINUED)

BULLET VEHICLE CRUSH

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



Notes: L is pre-test length of contact surface.
C1 through C6 are spaced equally apart.
CL is vehicle centerline.

Vehicle: 2007 Ford Five Hundred
FARO measurement of bumper reinforcement:

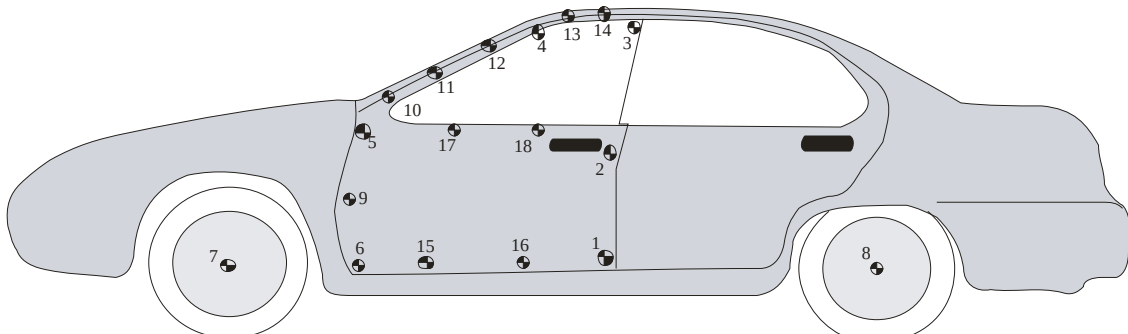
	Pre-Test	Post-Test	Difference	
L=	1347			mm
C1=	4933	4409	524	mm
C2=	4996	4256	740	mm
C3=	5011	4430	581	mm
C4=	5011	4614	397	mm
C5=	4995	4780	215	mm
C6=	4932	4909	23	mm
CL=	5013	4524	489	mm

DATA SHEET NO. 17

BULLET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



LEFT SIDE VIEW

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2642	-845	64	2638	-847	70	4	2	-6
2	2511	-854	-331	2508	-853	-326	3	-1	-5
3	2418	-646	-925	2417	-644	-920	1	-2	-5
4	2949	-685	-847	2951	-687	-859	-2	2	12
5	3487	-820	-429	3462	-841	-422	25	21	-7
6	3438	-833	140	3420	-853	149	18	20	-9
Front Axle 7	4081	-915	204	3859	-942	182	222	27	22
Rear Axle 8	1220	-918	192	1216	-917	196	4	-1	-4
9	3473	-806	-180	3440	-829	-173	33	23	-7
10	3540	-817	-460	3515	-831	-448	25	14	12
11	3374	-774	-600	3358	-789	-599	16	15	-1
12	3162	-729	-741	3159	-734	-756	3	5	15
13	2794	-663	-897	2795	-662	-903	-1	-1	6
14	2602	-648	-930	2601	-647	-931	1	-1	-1
15	3198	-825	196	3192	-831	212	6	6	-16
16	2896	-824	190	2890	-828	199	6	4	-9
17	3167	-857	-474	3143	-893	-469	24	36	-5
18	2807	-861	-489	2783	-898	-489	24	37	0

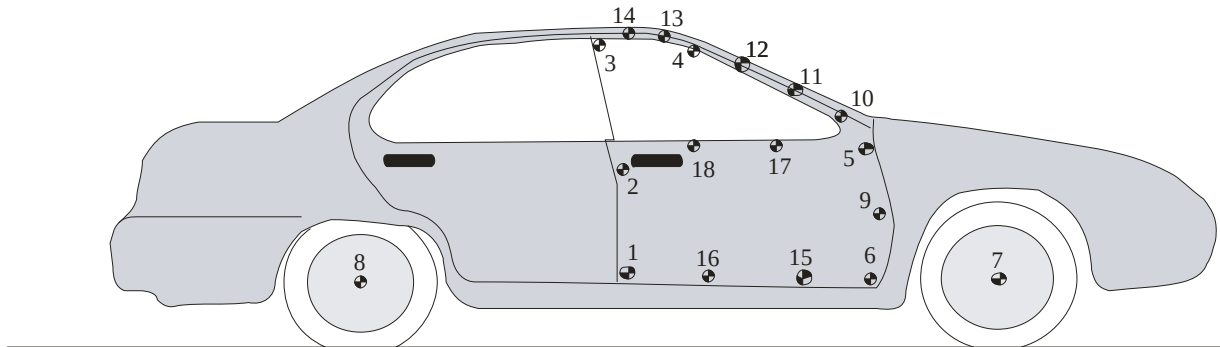
Units (mm)	(7-8) = Wheelbase Left
Pre-Test	2861
Post-Test	2643
Difference	-218

DATA SHEET NO. 17 (CONTINUED)

BULLET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



RIGHT SIDE VIEW

	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	2641	837	67	2640	842	69	1	-5	-2
2	2513	850	-336	2512	853	-334	1	-3	-2
3	2416	647	-921	2416	647	-918	0	0	-3
4	2943	684	-847	2945	683	-844	-2	1	-3
5	3486	819	-419	3490	828	-416	-4	-9	-3
6	3428	821	156	3426	836	158	2	-15	-2
Front Axle 7	4082	908	208	4174	842	197	-92	66	11
Rear Axle 8	1212	907	192	1226	905	245	-14	2	-53
9	3472	802	-176	3473	812	-173	-1	-10	-3
10	3544	817	-451	3547	818	-449	-3	-1	-2
11	3381	774	-590	3380	779	-588	1	-5	-2
12	3188	733	-721	3189	735	-718	-1	-2	-3
13	2793	662	-894	2794	662	-891	-1	0	-3
14	2589	647	-928	2590	646	-925	-1	1	-3
15	3179	817	200	3178	829	203	1	-12	-3
16	2884	817	193	2882	826	196	2	-9	-3
17	3124	855	-473	3129	859	-471	-5	-4	-2
18	2780	858	-489	2784	860	-487	-4	-2	-2

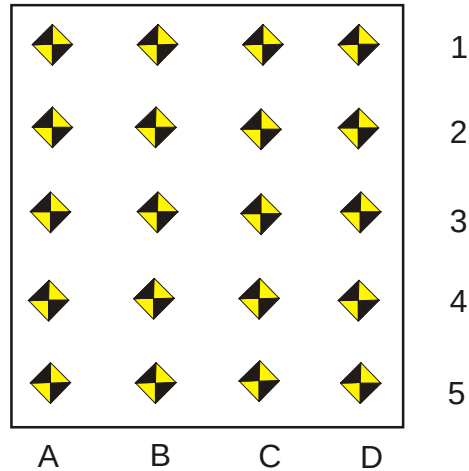
Units (mm)	(7-8) = Wheelbase Right
Pre-Test	2870
Post-Test	2948
Difference	-78

DATA SHEET NO. 17 (CONTINUED)

BULLET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



DRIVER'S SIDE TOEBOARD MEASUREMENTS

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3637	-554	168	3610	-573	154	27	19	14
B1	3701	-443	183	3658	-449	156	43	6	27
C1	3689	-342	185	3645	-350	161	44	8	24
D1	3701	-217	202	3662	-227	183	39	10	19
A2	3619	-565	222	3597	-579	212	22	14	10
B2	3638	-460	232	3610	-469	218	28	9	14
C2	3627	-342	231	3596	-351	223	31	9	8
D2	3631	-212	255	3612	-222	253	19	10	2
A3	3554	-566	287	3548	-578	294	6	12	-6
B3	3552	-451	288	3547	-461	300	5	10	-12
C3	3545	-335	285	3541	-344	303	4	9	-18
D3	3554	-218	290	3552	-229	307	2	11	-17
A4	3336	-584	288	3333	-594	299	3	10	-11
B4	3332	-472	286	3330	-480	299	2	8	-13
C4	3336	-337	284	3333	-346	293	3	9	-9
D4	3335	-208	284	3335	-216	294	0	8	-10
A5	3150	-587	277	3147	-596	289	3	9	-12
B5	3152	-467	281	3147	-475	292	5	8	-11
C5	3159	-341	281	3156	-348	292	3	7	-11
D5	3163	-209	279	3161	-213	292	2	4	-13

All measurements are in millimeters

DATA SHEET NO. 17 (CONTINUED)**BULLET VEHICLE INTRUSION MEASUREMENTS**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**DRIVER'S SIDE**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
Front Outboard Seat Bolt	3061	-586	196	3064	-594	212	-3	8	-16
Steering Center	3061	-381	-405	3106	-386	-356	-45	5	-49
Left Knee Bolster	3334	-536	-186	3310	-540	-175	24	4	-11
Right Knee Bolster	3331	-231	-186	3310	-236	-168	21	5	-18
Accelerator Pedal	3596	-214	100	3545	-220	87	51	6	13
Brake Pedal	3537	-372	88	3497	-363	87	40	-9	1
Footrest	3529	-548	195	3511	-555	193	18	7	2
IIHS Toepan Right	3755	-219	91	3684	-222	56	71	3	35
IIHS Toepan Center	3753	-368	94	3688	-372	60	65	4	34
IIHS Toepan Left	3684	-517	89	3642	-529	71	42	12	18
IIHS Footrest	3628	-621	92	3598	-637	84	30	16	8

All measurements are in millimeters.

DATA SHEET NO. 17 (CONTINUED)**BULLET VEHICLE INTRUSION MEASUREMENTS**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09**PASSENGER'S SIDE TOEBOARD MEASUREMENTS**

Intrusion Location	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
A1	3691	218	206	3694	227	238	-3	-9	-32
B1	3673	317	196	3664	322	213	9	-5	-17
C1	3691	430	192	3680	436	199	11	-6	-7
D1	3644	537	161	3637	546	167	7	-9	-6
A2	3633	211	251	3632	223	281	1	-12	-30
B2	3616	320	239	3612	329	260	4	-9	-21
C2	3640	450	234	3631	458	244	9	-8	-10
D2	3625	548	221	3620	558	227	4	-10	-6
A3	3555	211	287	3552	222	313	3	-11	-26
B3	3548	323	285	3547	334	310	1	-11	-25
C3	3547	449	290	3546	462	308	1	-13	-18
D3	3557	568	290	3556	580	300	1	-12	-10
A4	3372	190	283	3370	201	296	2	-11	-13
B4	3369	303	280	3368	314	297	1	-11	-17
C4	3364	445	283	3363	456	305	1	-11	-22
D4	3361	573	281	3360	582	293	1	-9	-12
A5	3206	179	284	3205	189	299	1	-10	-15
B5	3199	296	275	3197	305	288	3	-9	-13
C5	3195	436	281	3194	447	298	1	-11	-17
D5	3178	575	276	3177	584	283	1	-9	-7

All measurements are in millimeters.

DATA SHEET NO. 17 (CONTINUED)

BULLET VEHICLE INTRUSION MEASUREMENTS

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

**BUMPER MEASUREMENTS
(without fascia)**

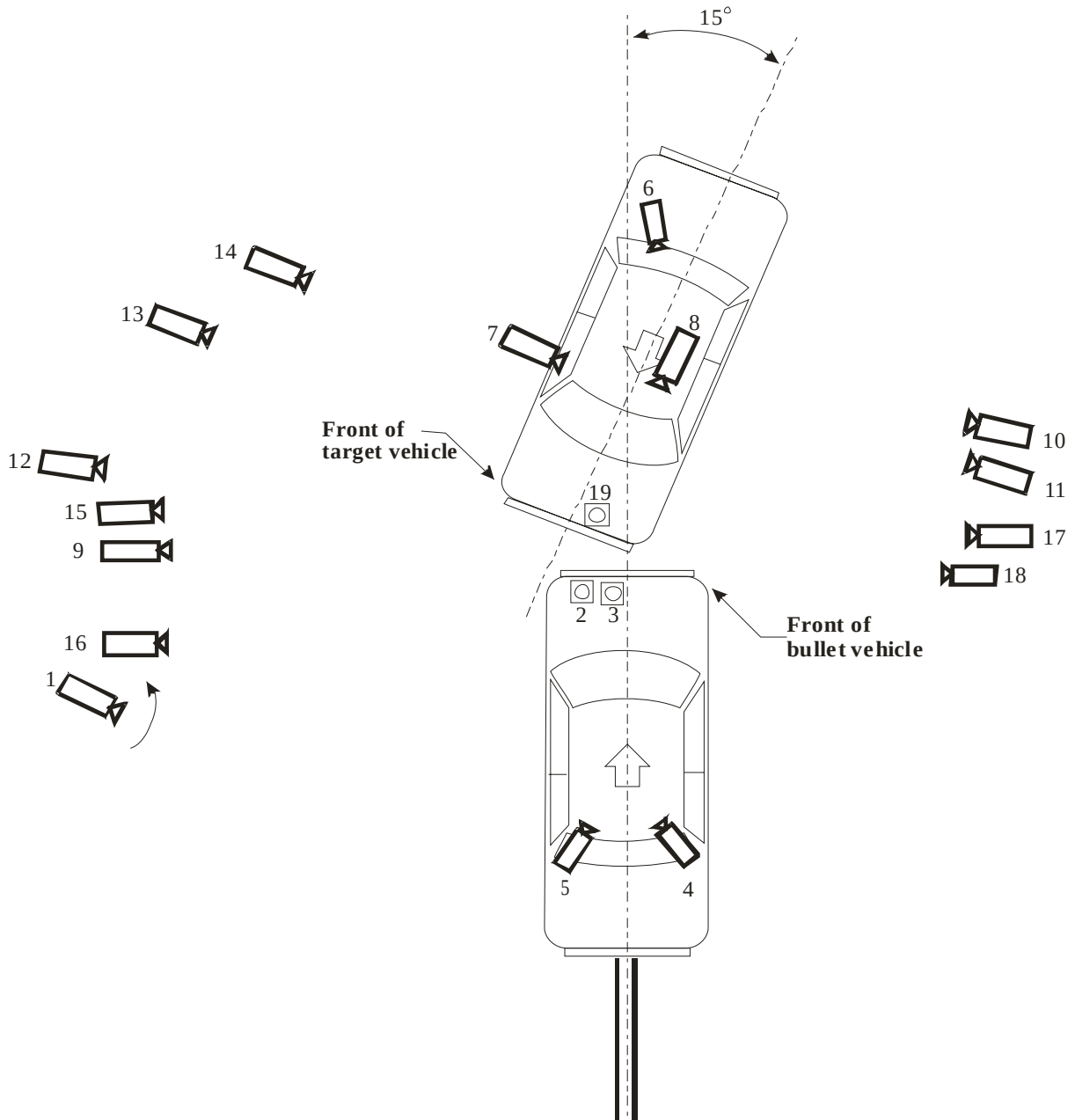
Index	Pre-Test			Post-Test			Difference		
	X	Y	Z	X	Y	Z	X	Y	Z
1	4932	668	74	4909	304	19	23	364	55
2	4982	544	73	4860	180	3	122	364	70
3	4995	409	73	4781	72	-21	214	337	94
4	5005	270	73	4696	-36	-46	309	306	119
5	5011	137	72	4614	-135	-65	397	272	137
6	5013	-5	71	4524	-241	-86	489	236	157
7	5011	-145	70	4430	-344	-109	581	199	179
8	5006	-281	69	4337	-441	-132	669	160	201
9	4996	-421	69	4257	-546	-146	739	125	215
10	4982	-555	67	4446	-755	26	536	200	41
11	4933	-678	67	4409	-879	23	524	201	44

All measurements are in millimeters.

Point 1 is on the passenger side of the bumper.

CAMERA LOCATIONS AND DATA

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09

DATA SHEET NO. 18 (CONTINUED)**CAMERA LOCATIONS AND DATA**Test Program: Vehicle to Vehicle Frontal Offset ImpactTest Date: 10/30/09

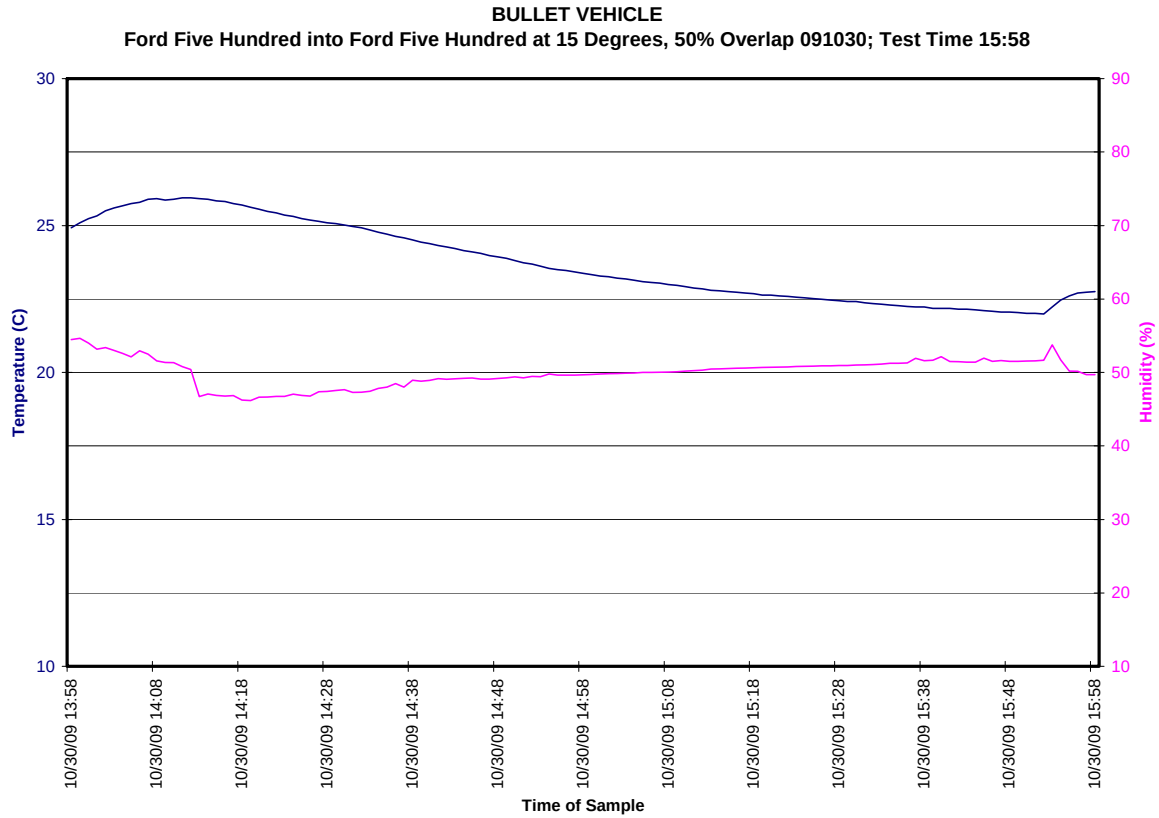
Ref.	Description / Location	Type	Lens (mm)	Speed (f/s)
1	Real Time Panning/Documentary	Canon	Zoom	30
2	Overhead Wide	Visario-G1	12.5	1000
3	Overhead Tight	Visario-G1	50	1000
4	Bullet Onboard Driver Overshoulder	Redlake-LE	12.5	1000
5	Bullet Onboard Passenger Overshoulder	Redlake-LE	8.5	1000
6	Target Onboard Driver Overshoulder	Redlake-LE	8.5	1000
7	Target Onboard Driver Lateral	Redlake-LE	12.5	1000
8	Target Onboard Driver Footwell	VRTC1	5.5	1000
9	Left Wide Bullet Vehicle/Target Vehicle at T-0	VRTC2	8.5	1000
10	Left Side Tight Target Vehicle B-Pillar to Bullet Vehicle	Visario-G2	25	1000
11	Left Tight Target Driver to IP/Airbag Contact	VRTC3	25	1000
12	Right Wide Target Vehicle/Bullet Vehicle at T-0	Visario-G1	16	1000
13	Right Side Tight Target Vehicle B-Pillar to Bullet Tight	Visario-G2	25	1000
14	Right Tight Target Passenger to IP/Airbag Contact	Visario-G1	50	1000
15	Left Side Tight Bullet Vehicle B-Pillar to Target Vehicle	Visario-G2	25	1000
16	Left Tight Bullet Driver to IP/Airbag Contact	Visario-G1	50	1000
17	Right Side Tight Bullet Vehicle B-Pillar to Target Tight	VRTC4	25	1000
18	Right Tight Bullet Passenger to IP/Airbag Contact	VRTC5	25	1000
19	Pit Wide	Redlake-LE	12.5	1000

DATA SHEET NO. 19

BULLET DUMMY / VEHICLE TEMPERATURE STABILIZATION

Test Program: Vehicle to Vehicle Frontal Offset Impact

Test Date: 10/30/09



Appendix A

Photographs

List of Photographs

<u>Figure</u>	<u>Description</u>	<u>Page</u>
A-1	Pre-Test Overall - View 1	A-8
A-2	Pre-Test Overall - View 2	A-8
A-3	Pre-Test Overall - View 3	A-9
A-4	Pre-Test Overall - View 4	A-9
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Figure A-1 Pre-Test Overall - View 1

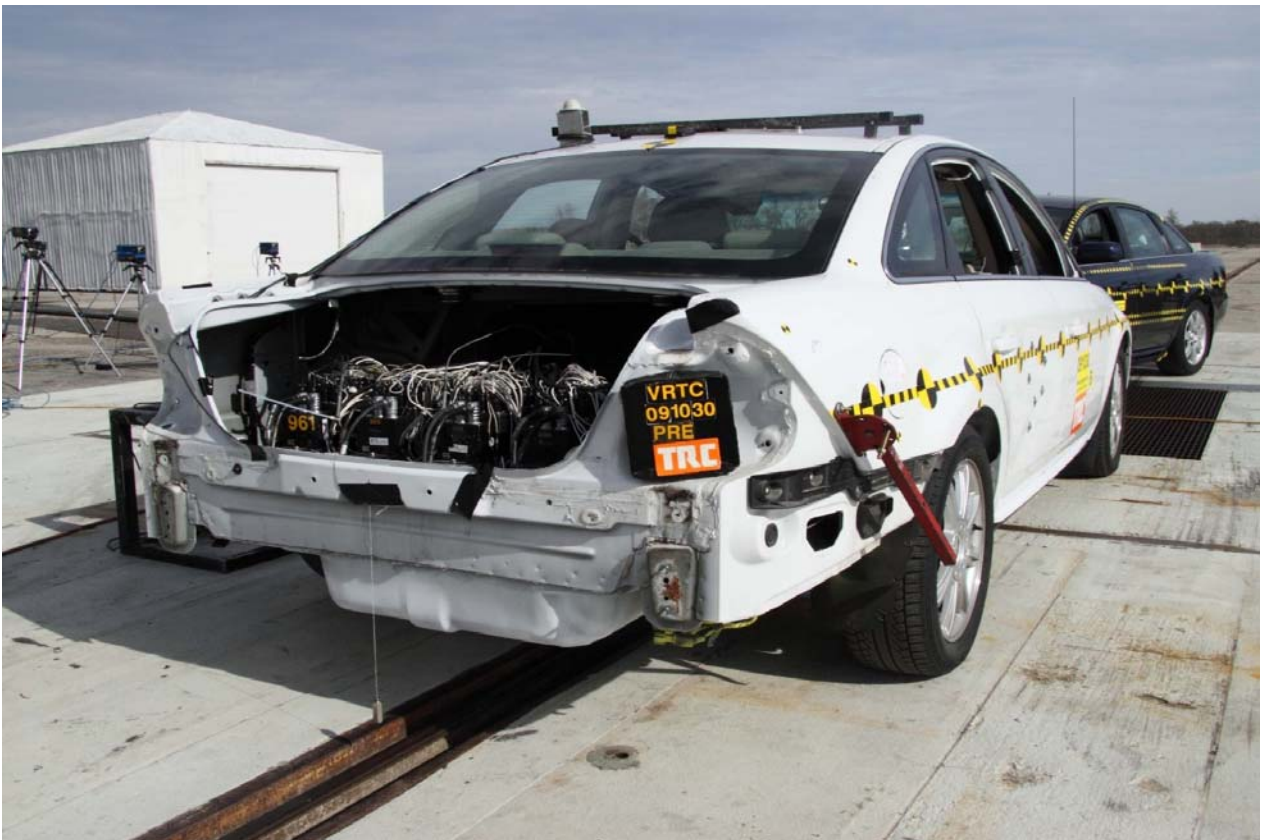


Figure A-2 Pre-Test Overall - View 2



Figure A-3 Pre-Test Overall - View 3



Figure A-4 Pre-Test Overall - View 4



Figure A-5 Pre-Test Overall - View 5



Figure A-6 Pre-Test Overall - View 6



Figure A-7 Pre-Test Overall - View 7



Figure A-8 Pre-Test Overall - View 8



Figure A-9 Pre-Test Overhead Wide View



Figure A-10 Pre-Test Overhead Medium View

Photograph Not Available

Figure A-11 Pre-Test Overhead Tight View

Photograph Not Available

Figure A-12 Pre-Test Overhead Impact Alignment View

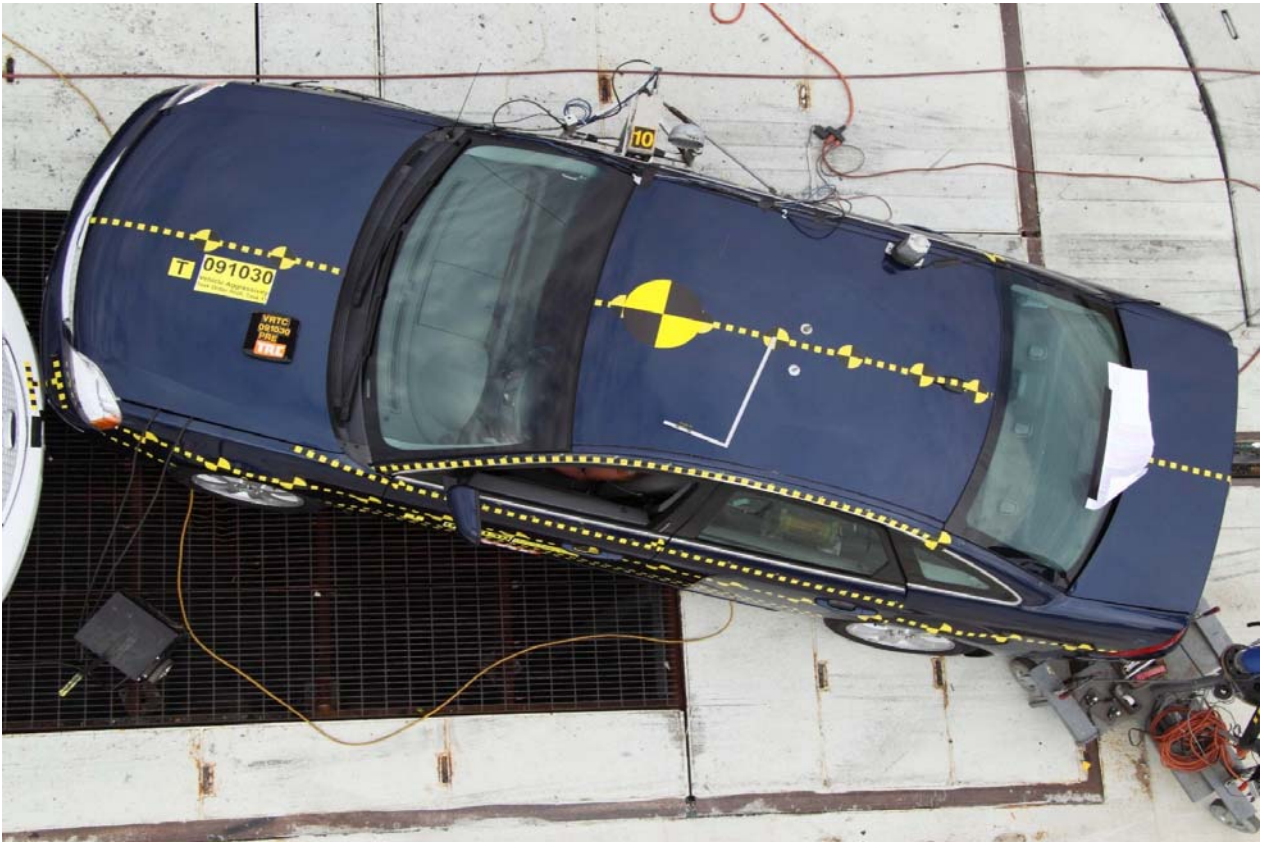


Figure A-13 Pre-Test Overhead Target Vehicle View



Figure A-14 Pre-Test Overhead Bullet Vehicle View



Figure A-15 Pre-Test Impact Alignment – View 1



Figure A-16 Pre-Test Impact Alignment – View 2



Figure A-17 Pre-Test Target Vehicle Front View



Figure A-18 Post-Test Target Vehicle Front View



Figure A-19 Pre-Test Target Vehicle Left Front View



Figure A-20 Post-Test Target Vehicle Left Front View



Figure A-21 Pre-Test Target Vehicle Left Side View

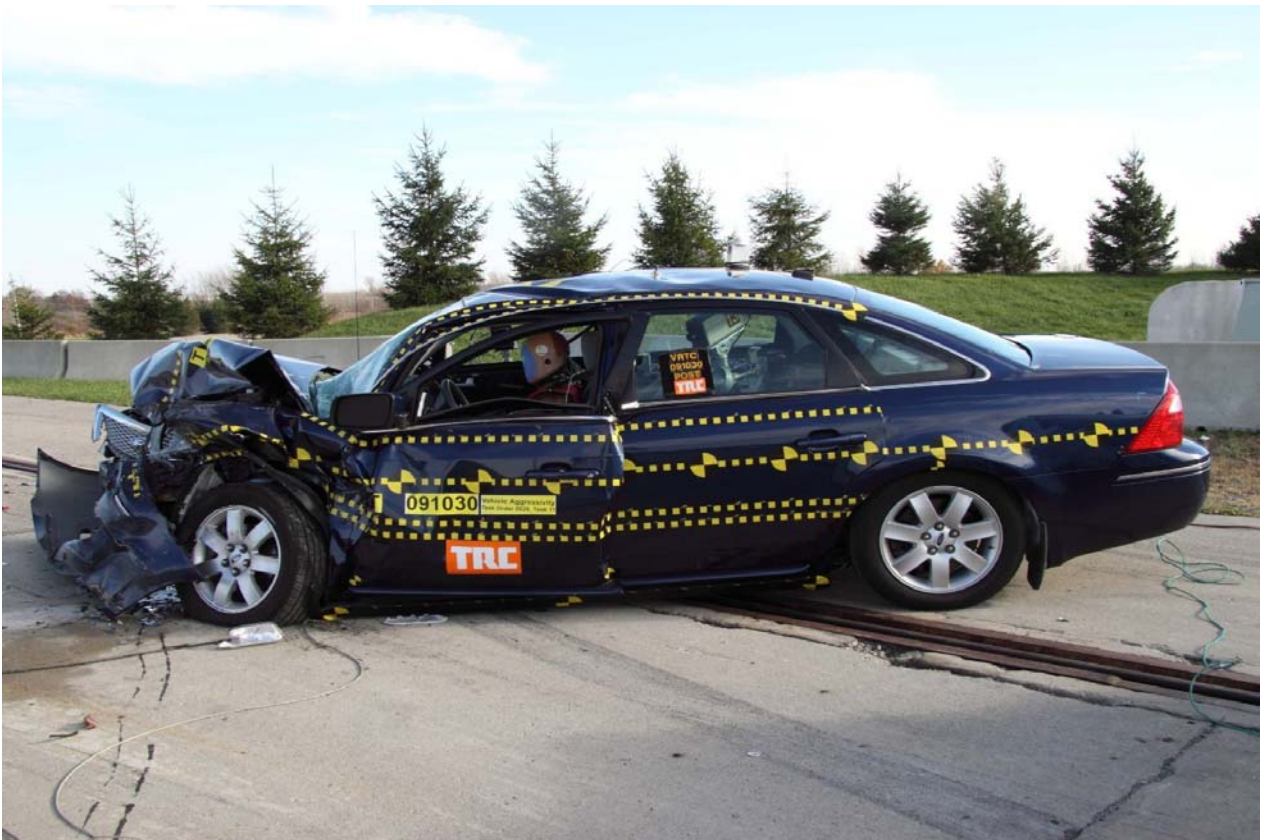


Figure A-22 Post-Test Target Vehicle Left Side View

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Figure A-23 Pre-Test Target Vehicle Left Rear View

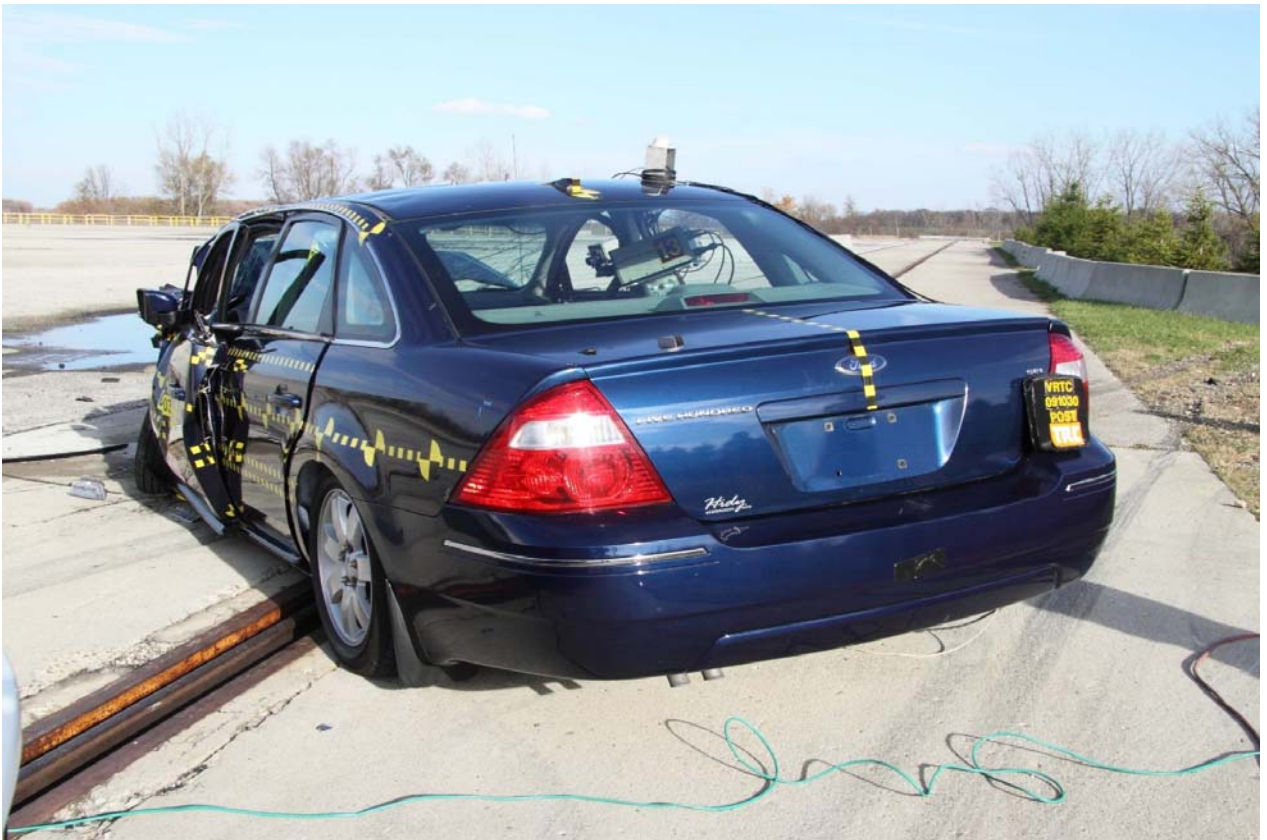


Figure A-24 Post-Test Target Vehicle Left Rear View

Photograph Not Available

Figure A-25 Pre-Test Target Vehicle Rear View



Figure A-26 Post-Test Target Vehicle Rear View

Photograph Not Available

Figure A-27 Pre-Test Target Vehicle Right Rear View

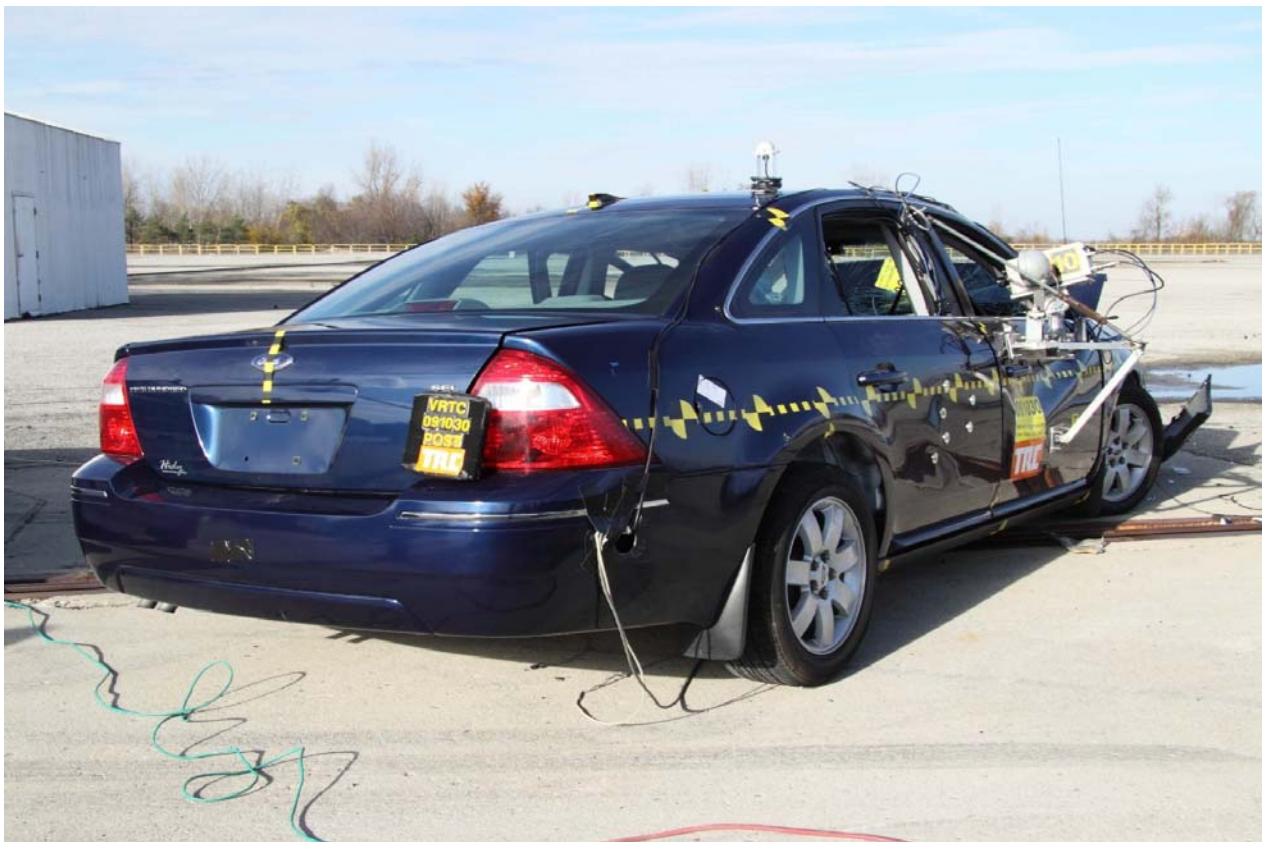


Figure A-28 Post-Test Target Vehicle Right Rear View



Figure A-29 Pre-Test Target Vehicle Right Side View

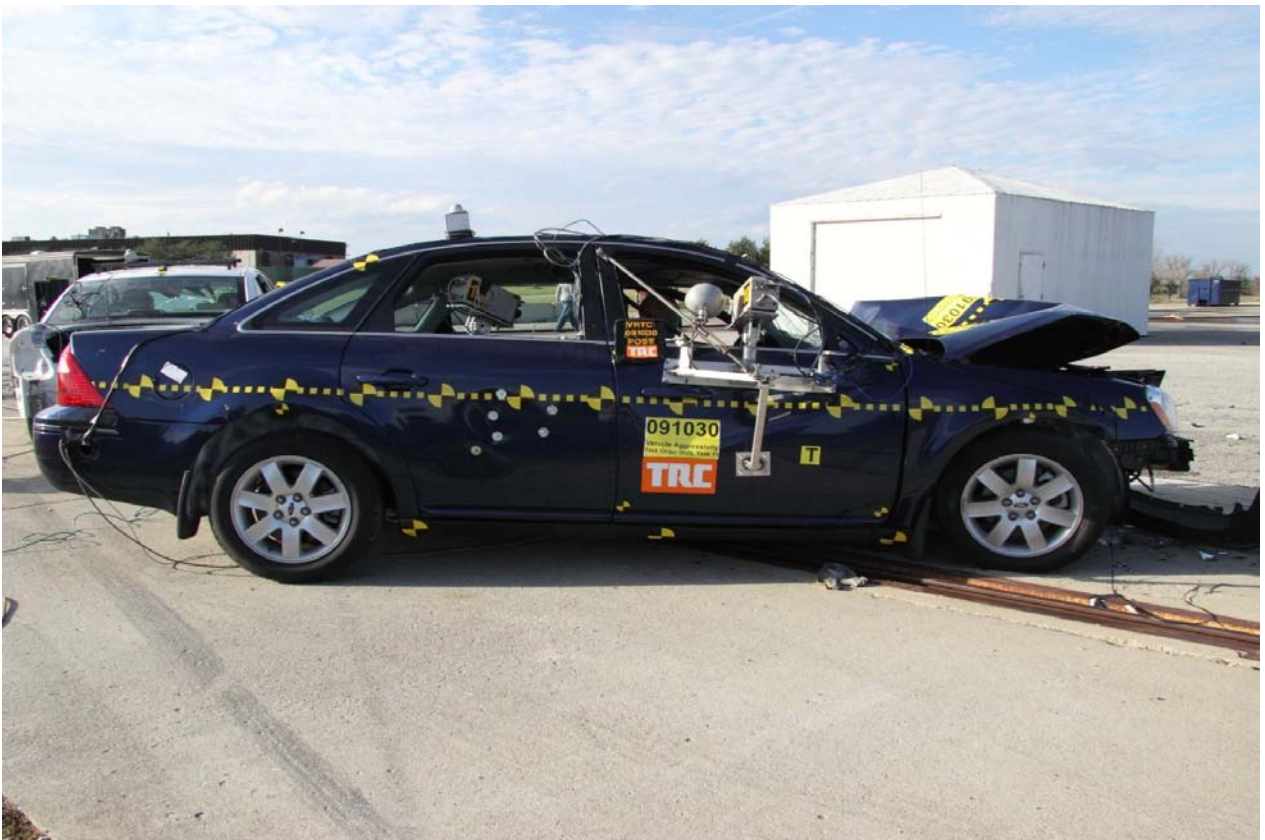


Figure A-30 Post-Test Target Vehicle Right Side View



Figure A-31 Pre-Test Target Vehicle Right Front View



Figure A-32 Post-Test Target Vehicle Right Front View



Figure A-33 Pre-Test Target Vehicle Engine Compartment View



Figure A-34 Post-Test Target Vehicle Engine Compartment View

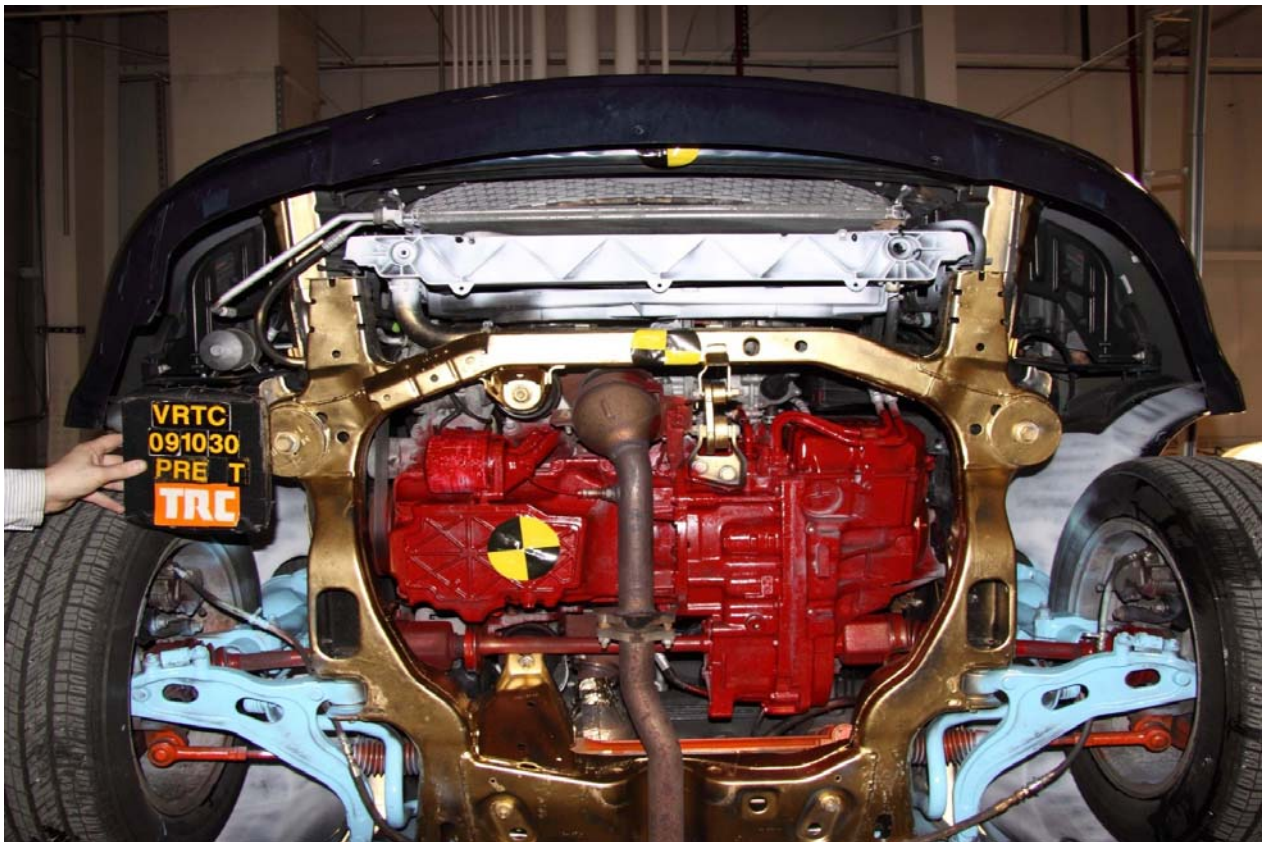


Figure A-35 Pre-Test Target Vehicle Front Underbody View



Figure A-36 Post-Test Target Vehicle Front Underbody View

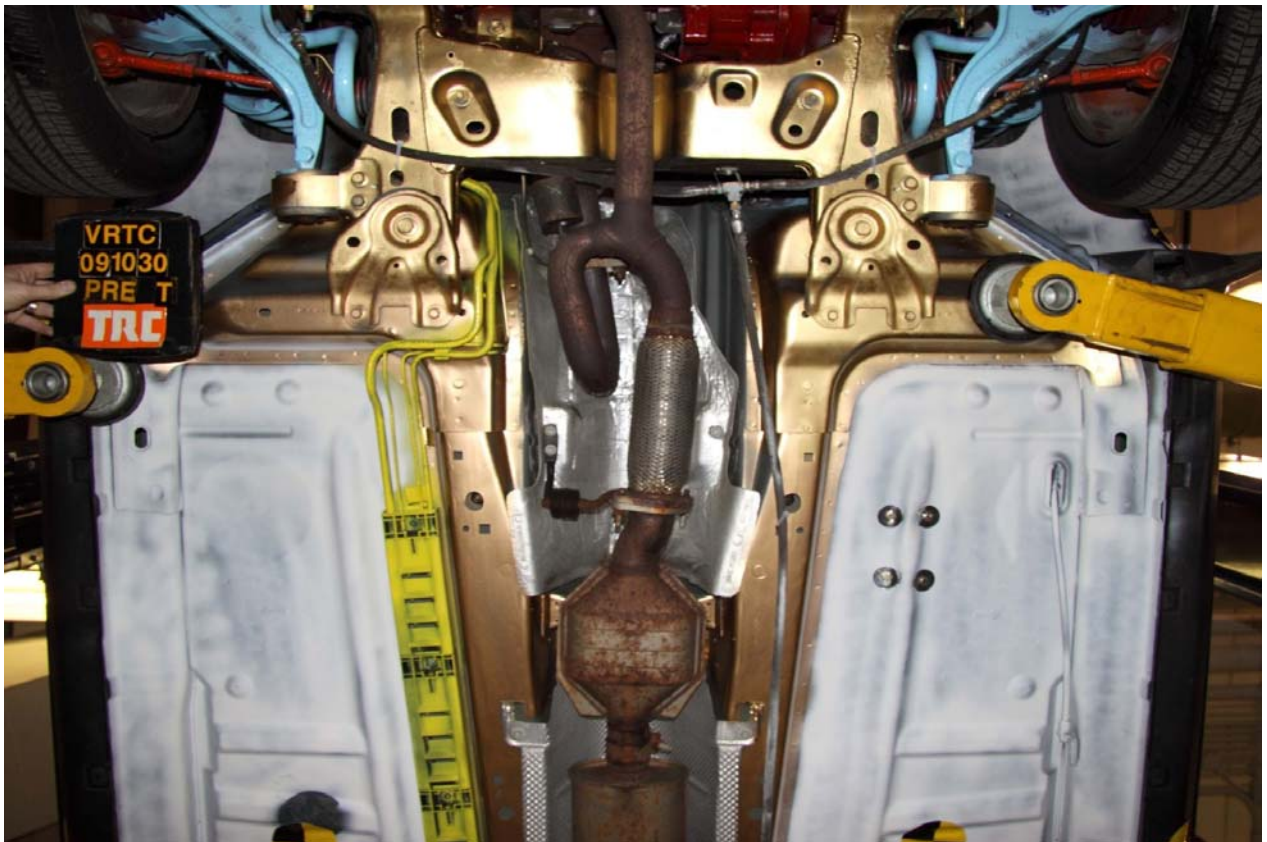


Figure A-37 Pre-Test Target Vehicle Mid Front Underbody View

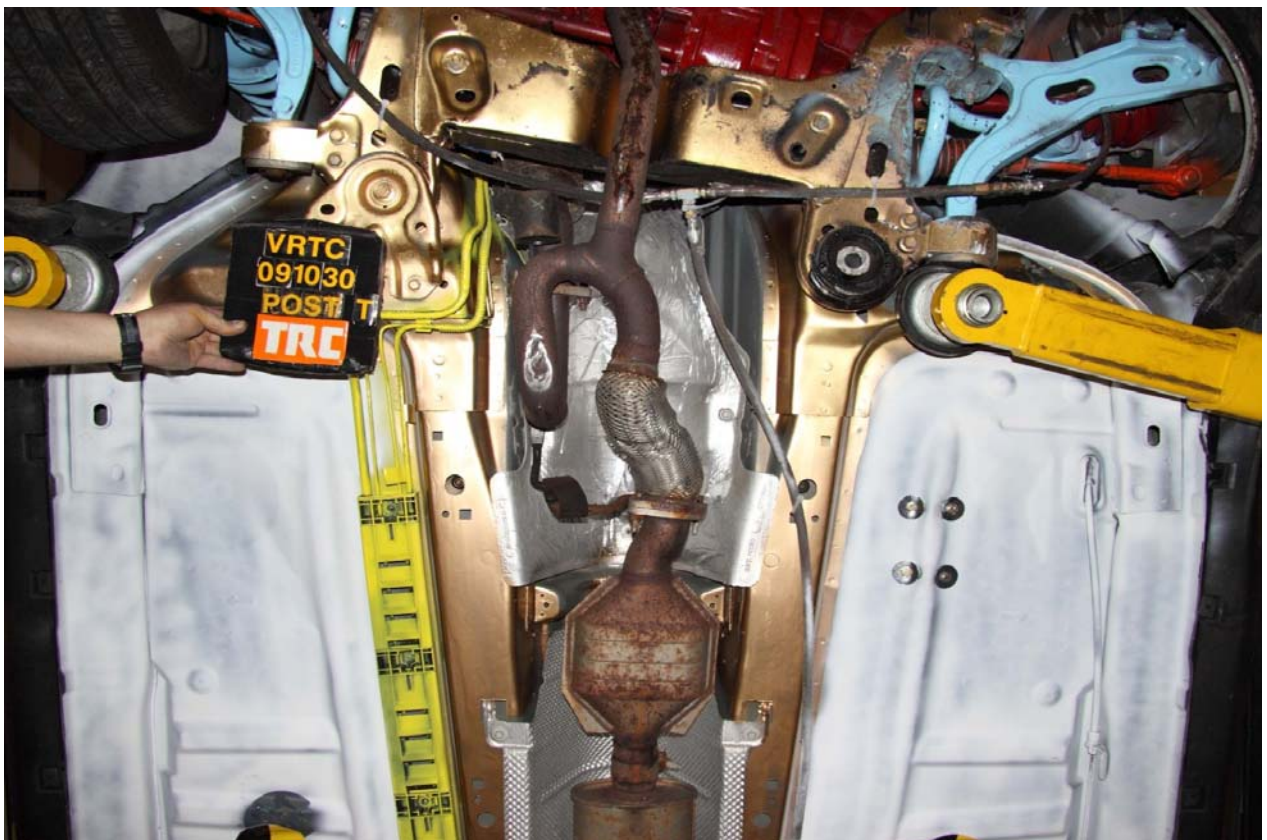


Figure A-38 Post-Test Target Vehicle Mid Front Underbody View



Figure A-39 Pre-Test Target Vehicle Mid Underbody View

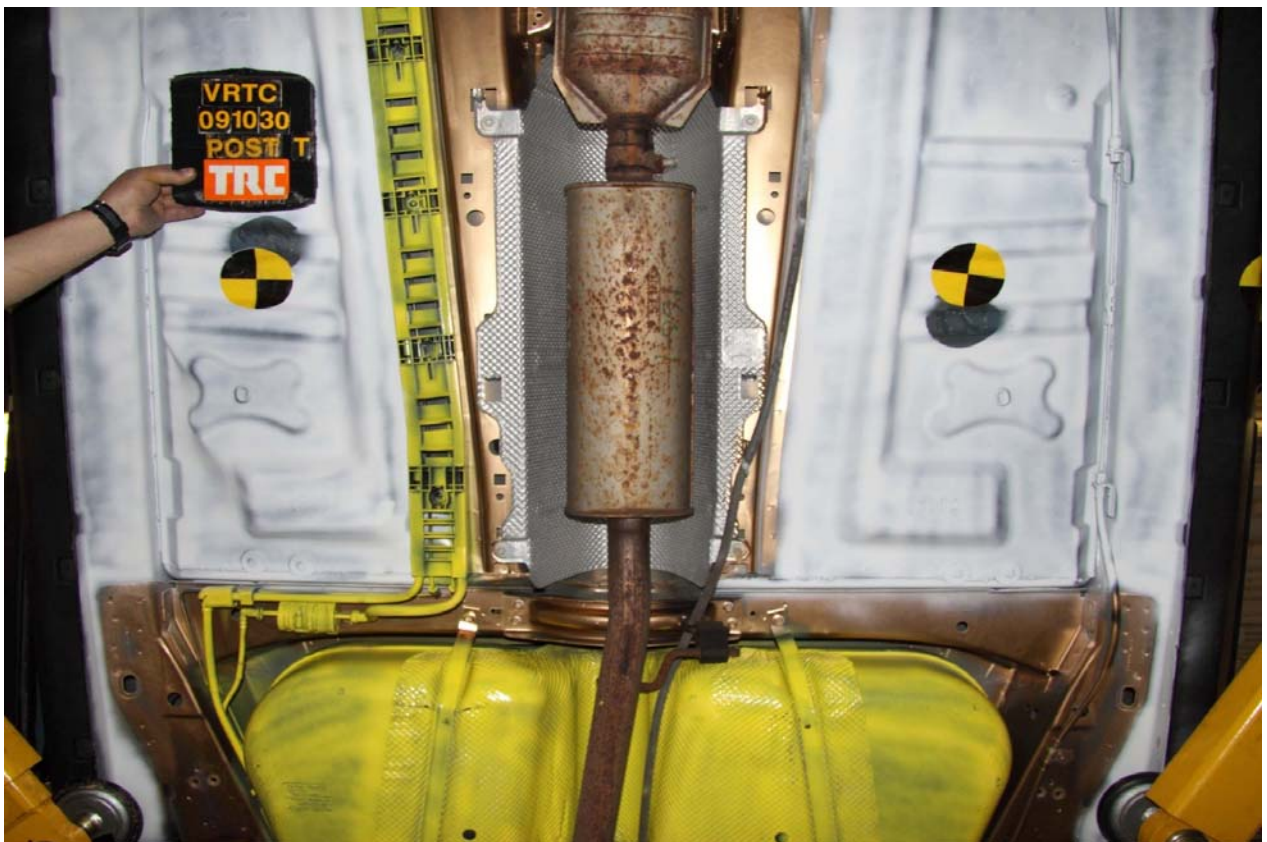


Figure A-40 Post-Test Target Vehicle Mid Underbody View

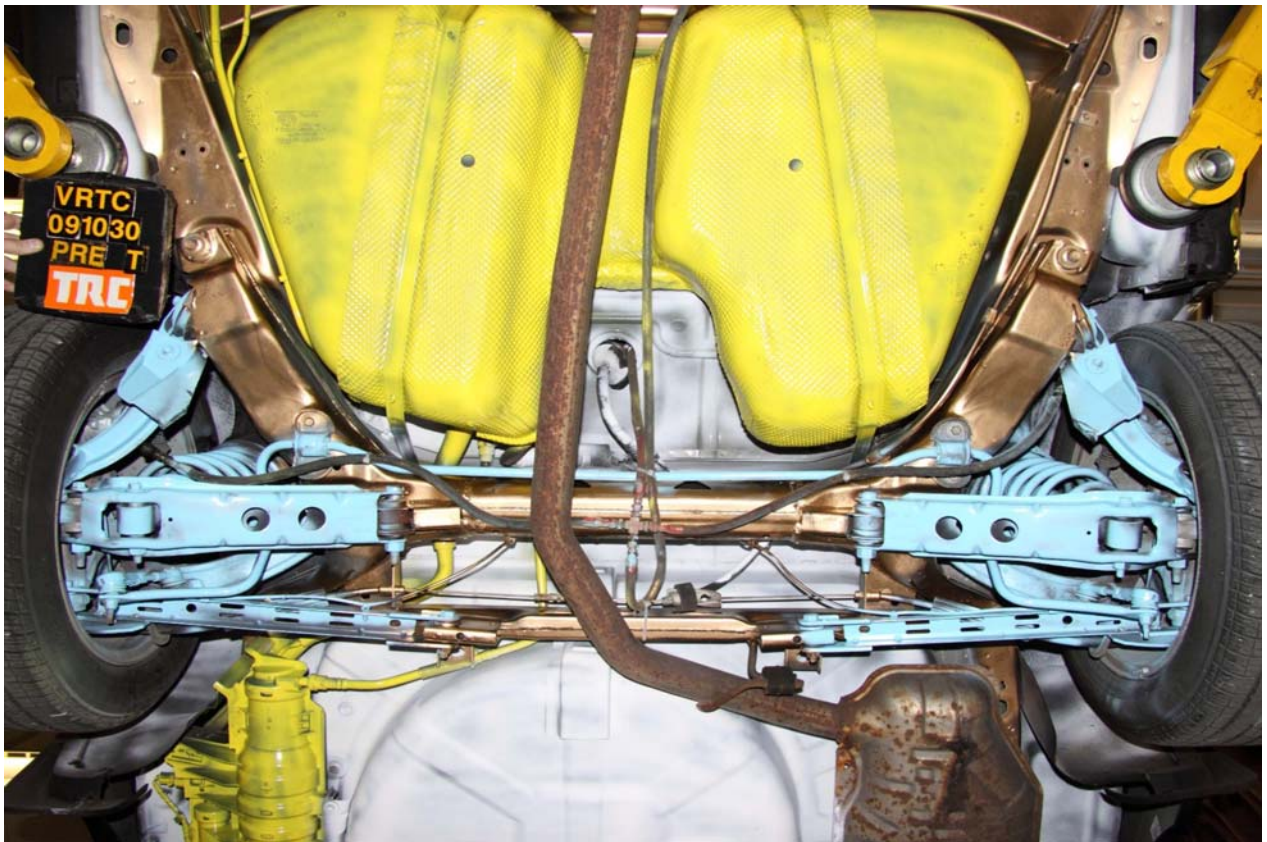


Figure A-41 Pre-Test Target Vehicle Mid Rear Underbody View

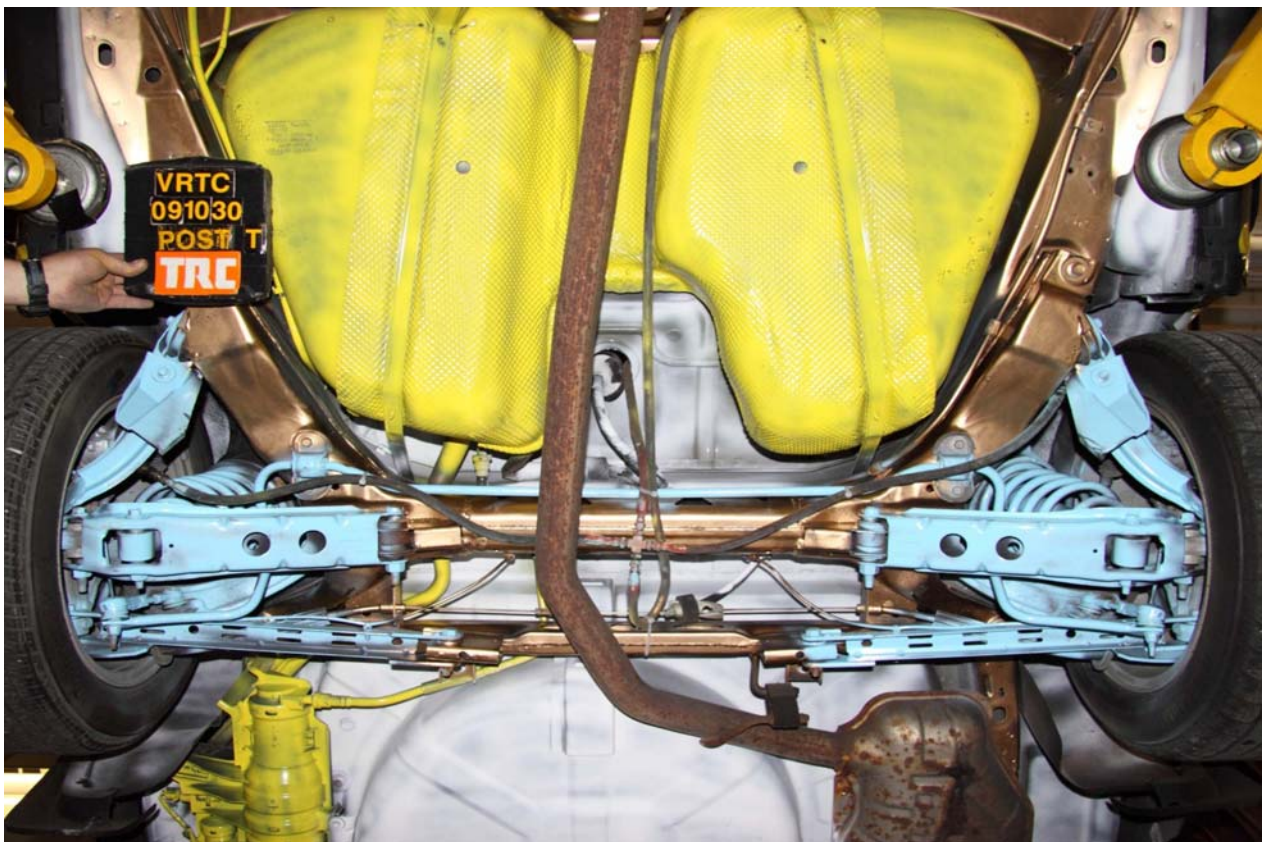


Figure A-42 Post-Test Target Vehicle Mid Rear Underbody View

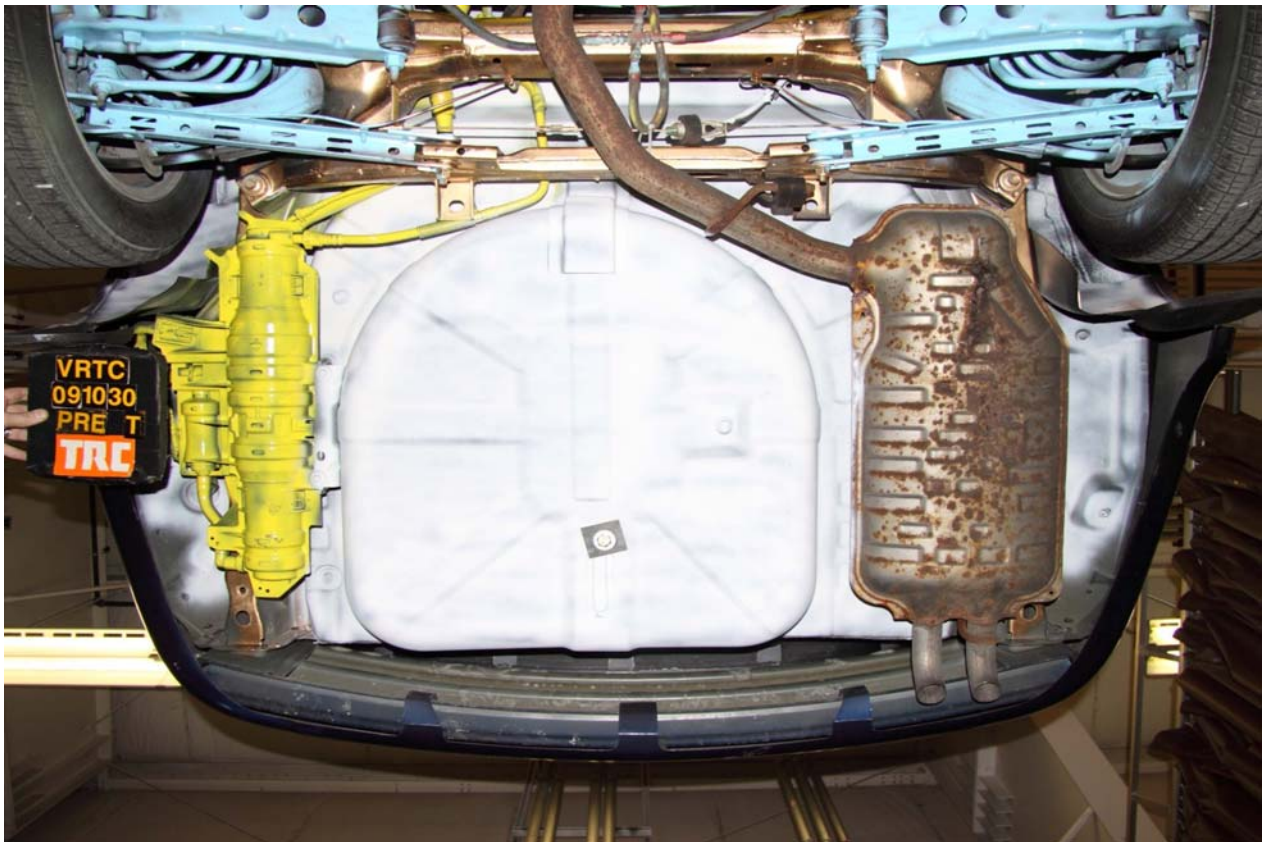


Figure A-43 Pre-Test Target Vehicle Rear Underbody View

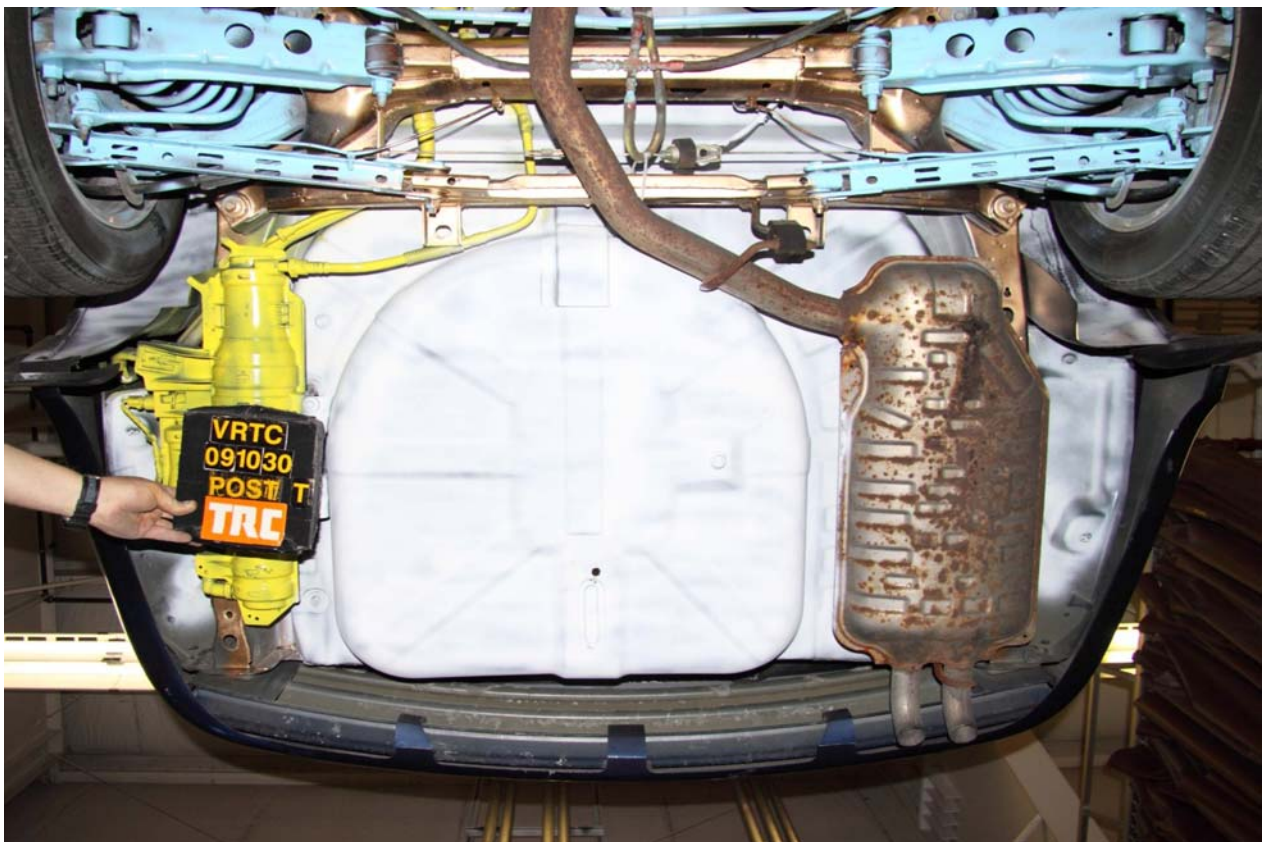


Figure A-44 Post-Test Target Vehicle Rear Underbody View



Figure A-45 Pre-Test Bullet Vehicle Front View



Figure A-46 Post-Test Bullet Vehicle Front View



Figure A-47 Pre-Test Bullet Vehicle Left Front View

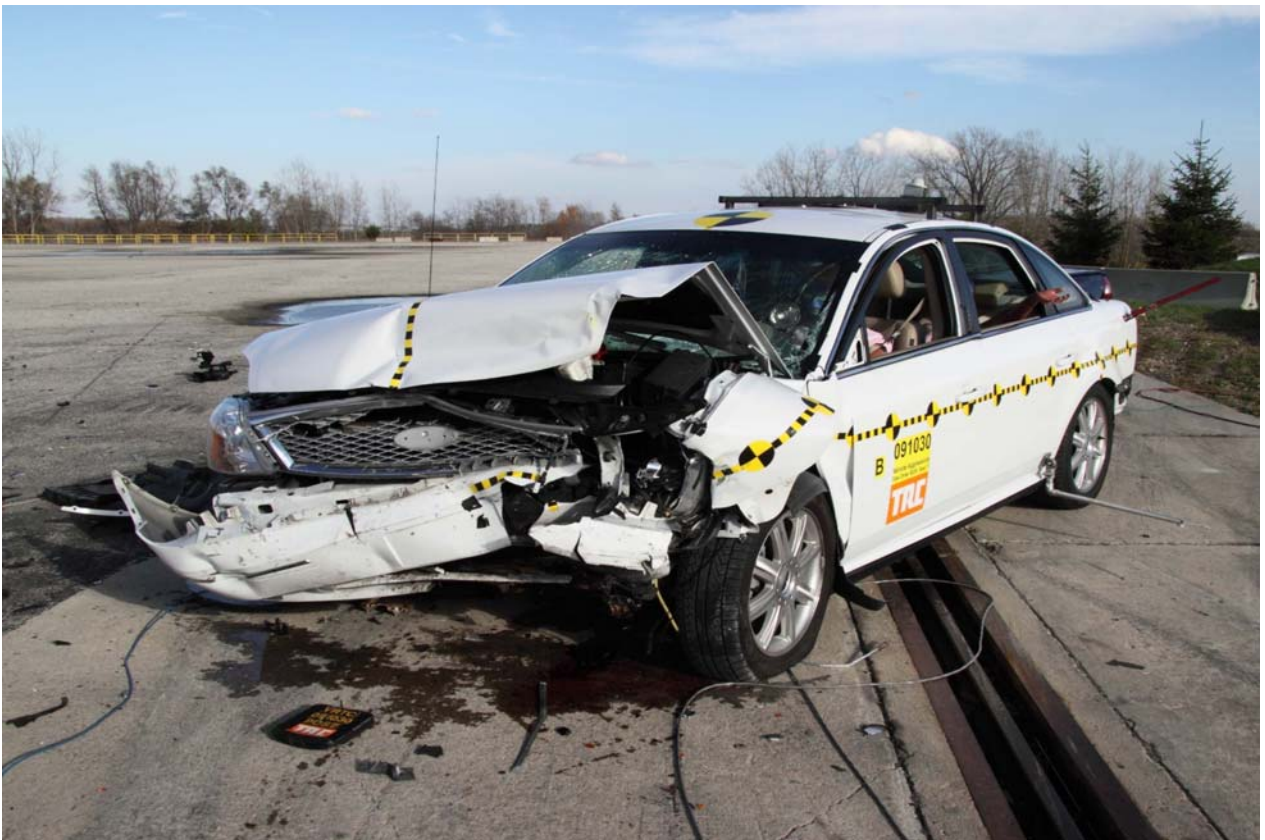


Figure A-48 Post-Test Bullet Vehicle Left Front View



Figure A-49 Pre-Test Bullet Vehicle Left Side View



Figure A-50 Post-Test Bullet Vehicle Left Side View

Photograph Not Available

Figure A-51 Pre-Test Bullet Vehicle Left Rear View



Figure A-52 Post-Test Bullet Vehicle Left Rear View

Photograph Not Available

Figure A-53 Pre-Test Bullet Vehicle Rear View



Figure A-54 Post-Test Bullet Vehicle Rear View

Photograph Not Available

Figure A-55 Pre-Test Bullet Vehicle Right Rear View



Figure A-56 Post-Test Bullet Vehicle Right Rear View



Figure A-57 Pre-Test Bullet Vehicle Right Side View



Figure A-58 Post-Test Bullet Vehicle Right Side View



Figure A-59 Pre-Test Bullet Vehicle Right Front View



Figure A-60 Post-Test Bullet Vehicle Right Front View



Figure A-61 Pre-Test Bullet Vehicle Engine Compartment View



Figure A-62 Post-Test Bullet Vehicle Engine Compartment View

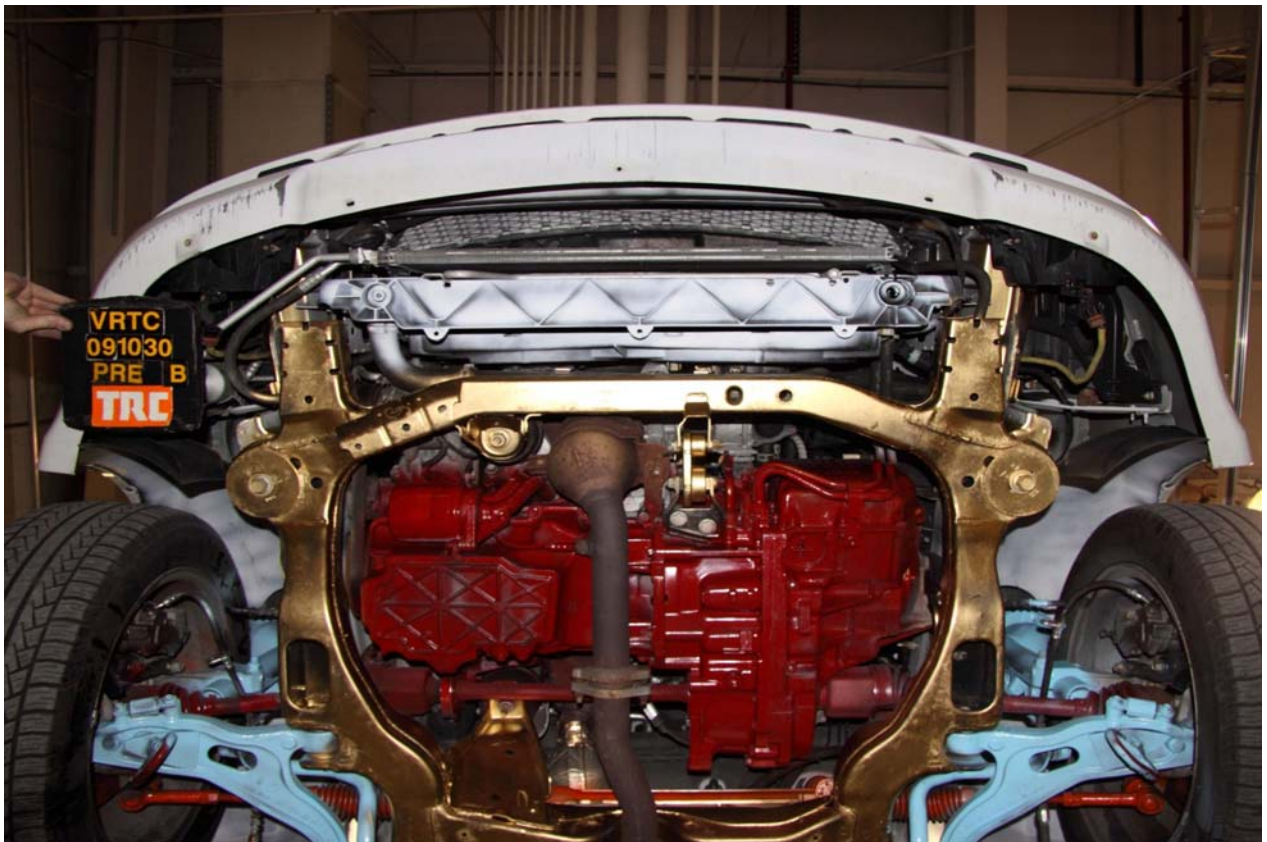


Figure A-63 Pre-Test Bullet Vehicle Front Underbody View

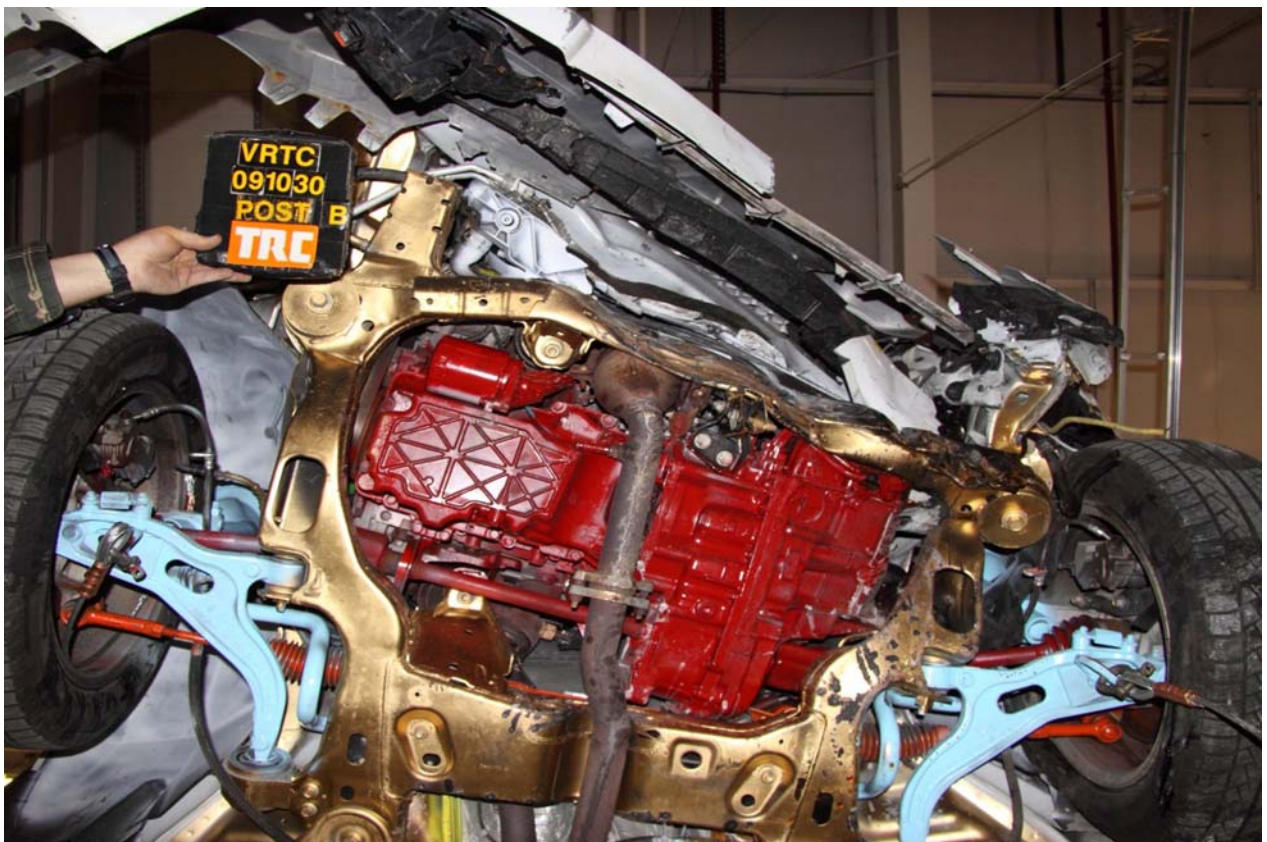


Figure A-64 Post-Test Bullet Vehicle Front Underbody View

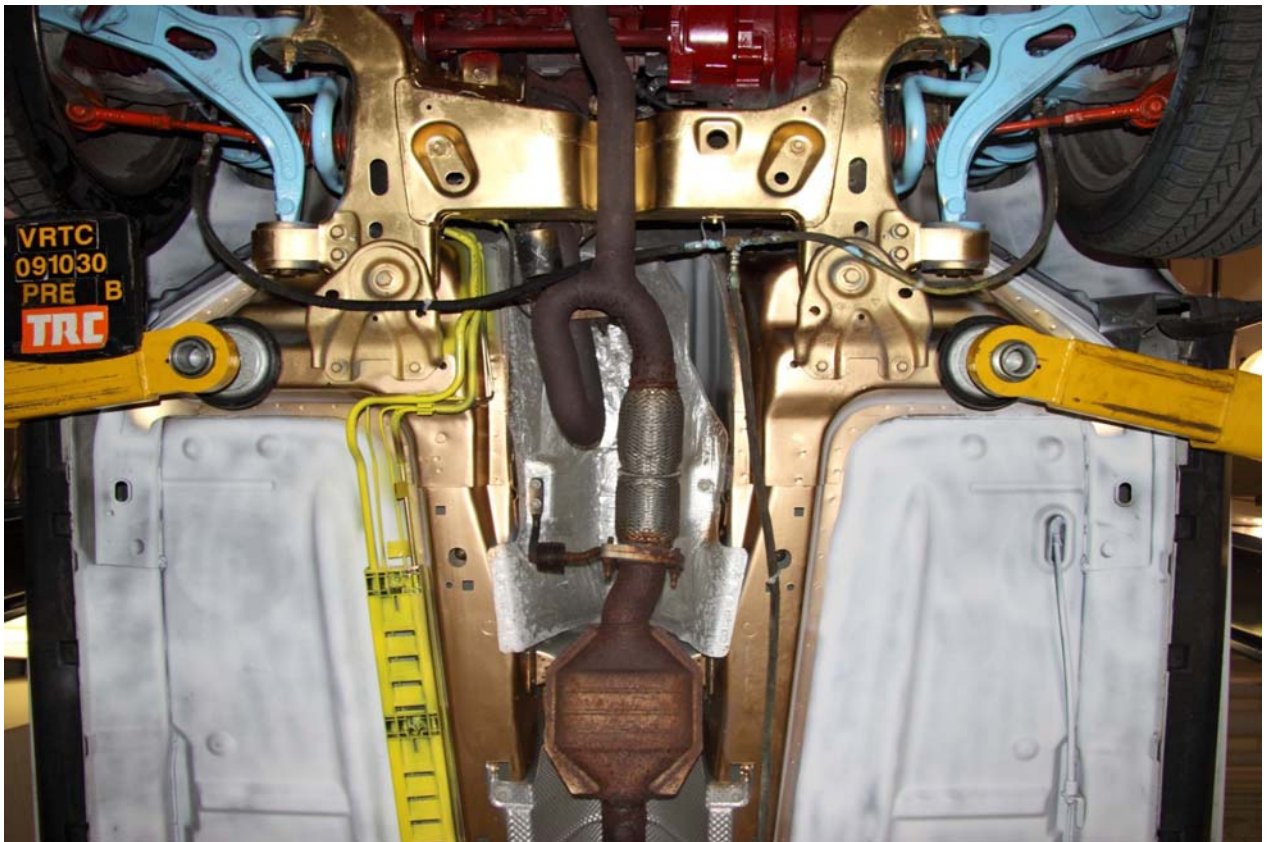


Figure A-65 Pre-Test Bullet Vehicle Mid Front Underbody View



Figure A-66 Post-Test Bullet Vehicle Mid Front Underbody View



Figure A-67 Pre-Test Bullet Vehicle Mid Underbody View



Figure A-68 Post-Test Bullet Vehicle Mid Underbody View

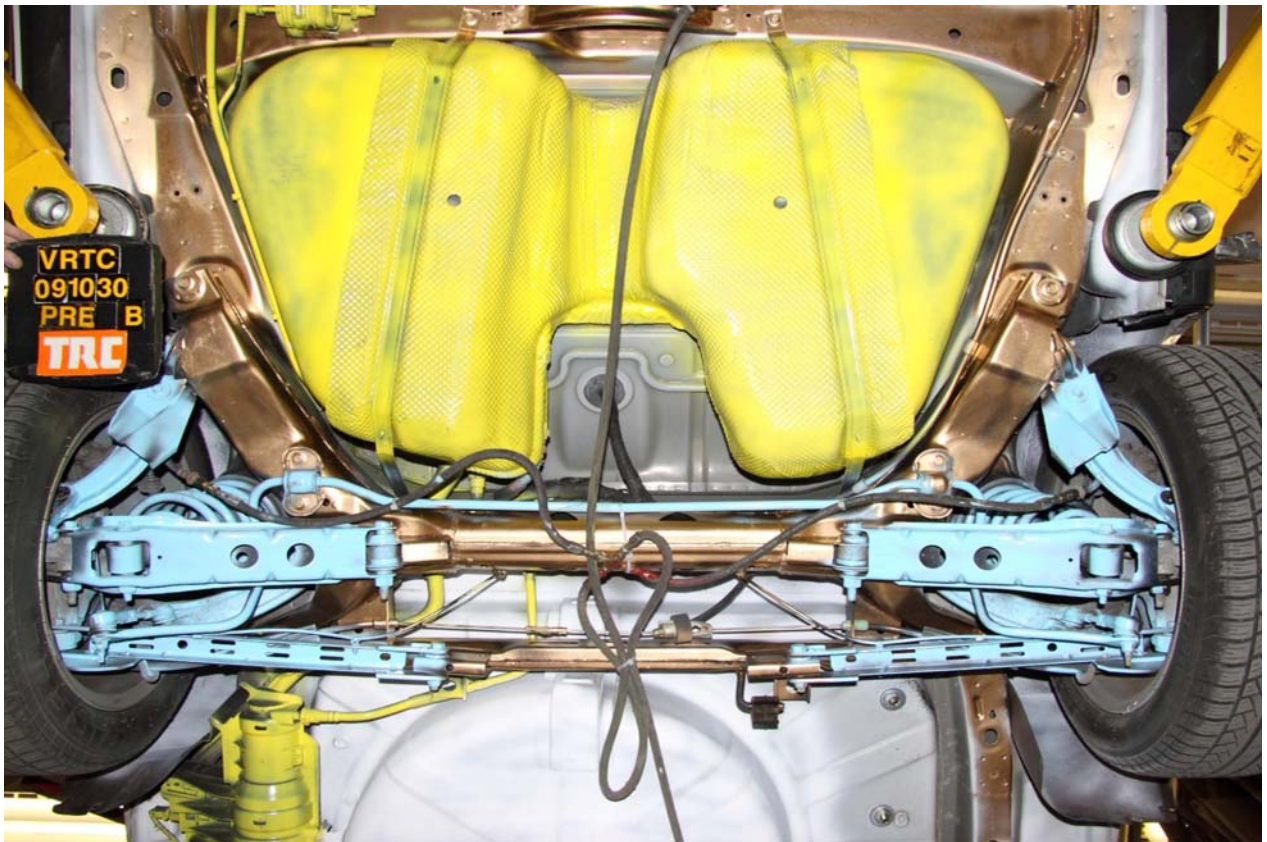


Figure A-69 Pre-Test Bullet Vehicle Mid Rear Underbody View

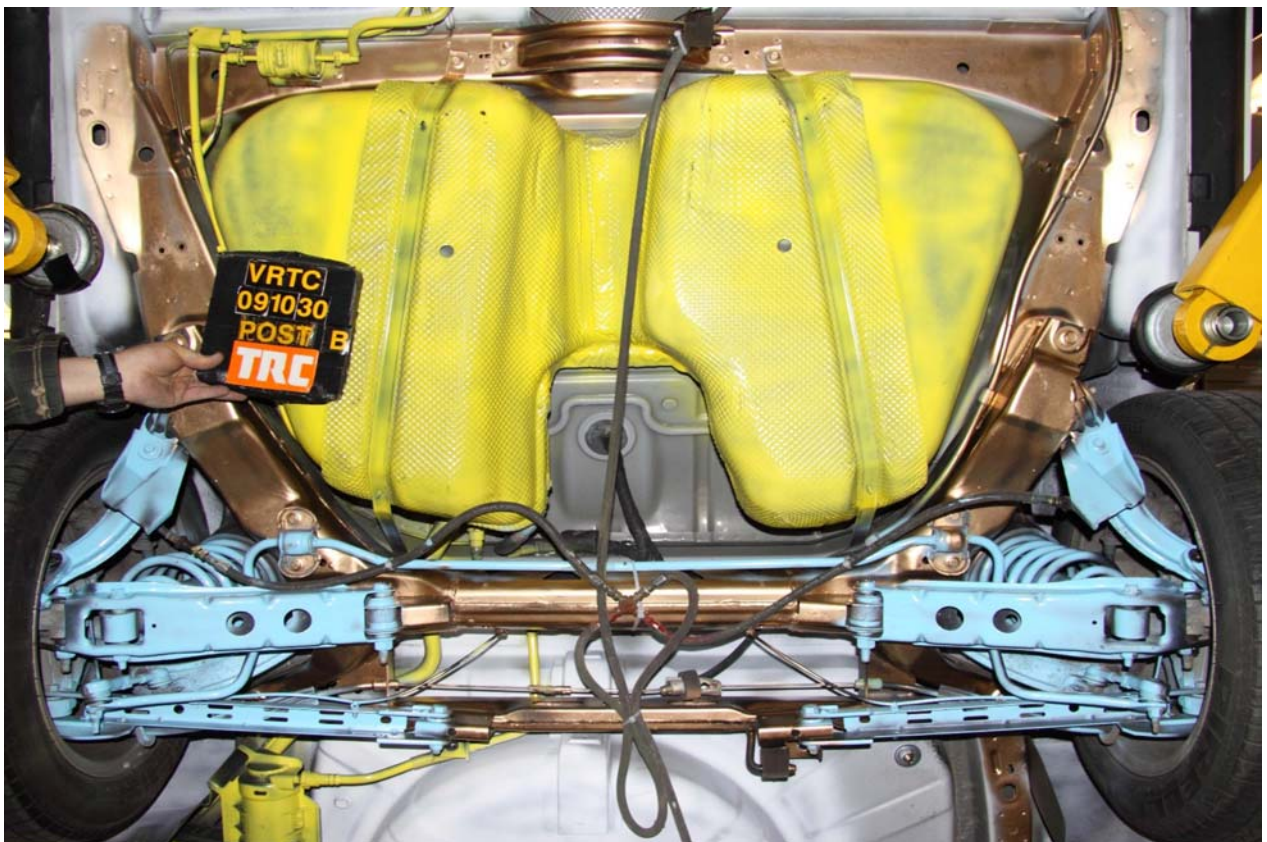


Figure A-70 Post-Test Bullet Vehicle Mid Rear Underbody View

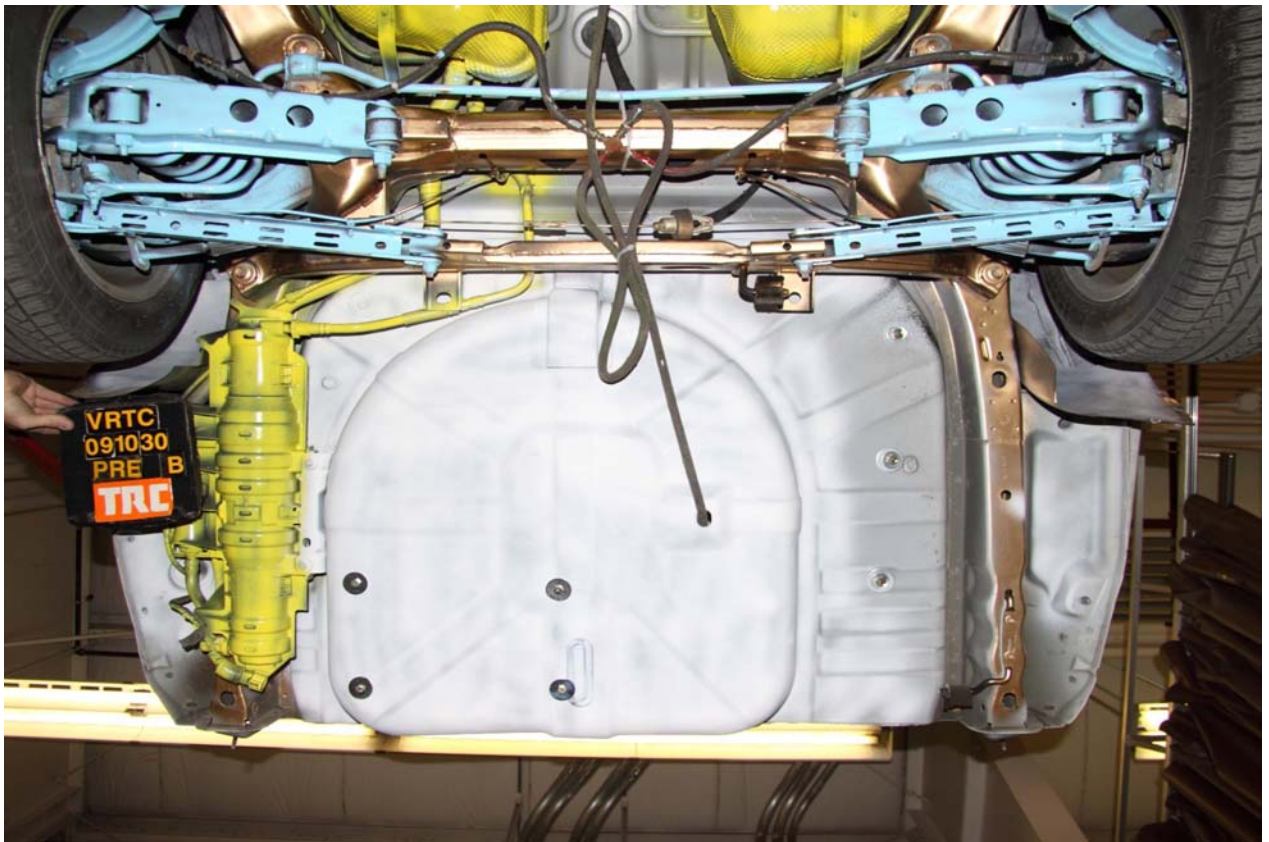


Figure A-71 Pre-Test Bullet Vehicle Rear Underbody View



Figure A-72 Post-Test Bullet Vehicle Rear Underbody View



Figure A-73 Pre-Test Target Vehicle Driver & Passenger Dummies thru Windshield View



Figure A-74 Post-Test Target Vehicle Driver & Passenger Dummies thru Windshield View



Figure A-75 Pre-Test Target Vehicle Driver Dummy - View 1



Figure A-76 Post-Test Target Vehicle Driver Dummy - View 1



Figure A-77 Pre-Test Target Vehicle Driver Dummy - View 2

Photograph Not Available

Figure A-78 Post-Test Target Vehicle Driver Dummy - View 2



Figure A-79 Pre-Test Target Vehicle Driver Dummy - View 3

Photograph Not Available

Figure A-80 Post-Test Target Vehicle Driver Dummy - View 3



Figure A-81 Pre-Test Target Vehicle Driver Dummy - View 4



Figure A-82 Post-Test Target Vehicle Driver Dummy - View 4



Figure A-83 Pre-Test Target Vehicle Driver Dummy Knee Bolster View

Photograph Not Available

Figure A-84 Post-Test Target Vehicle Driver Dummy Knee Bolster View

Photograph Not Available

Figure A-85 Pre-Test Target Vehicle Driver Dummy Foot Position View



Figure A-86 Pre-Test Target Vehicle Driver Dummy Seat Track View

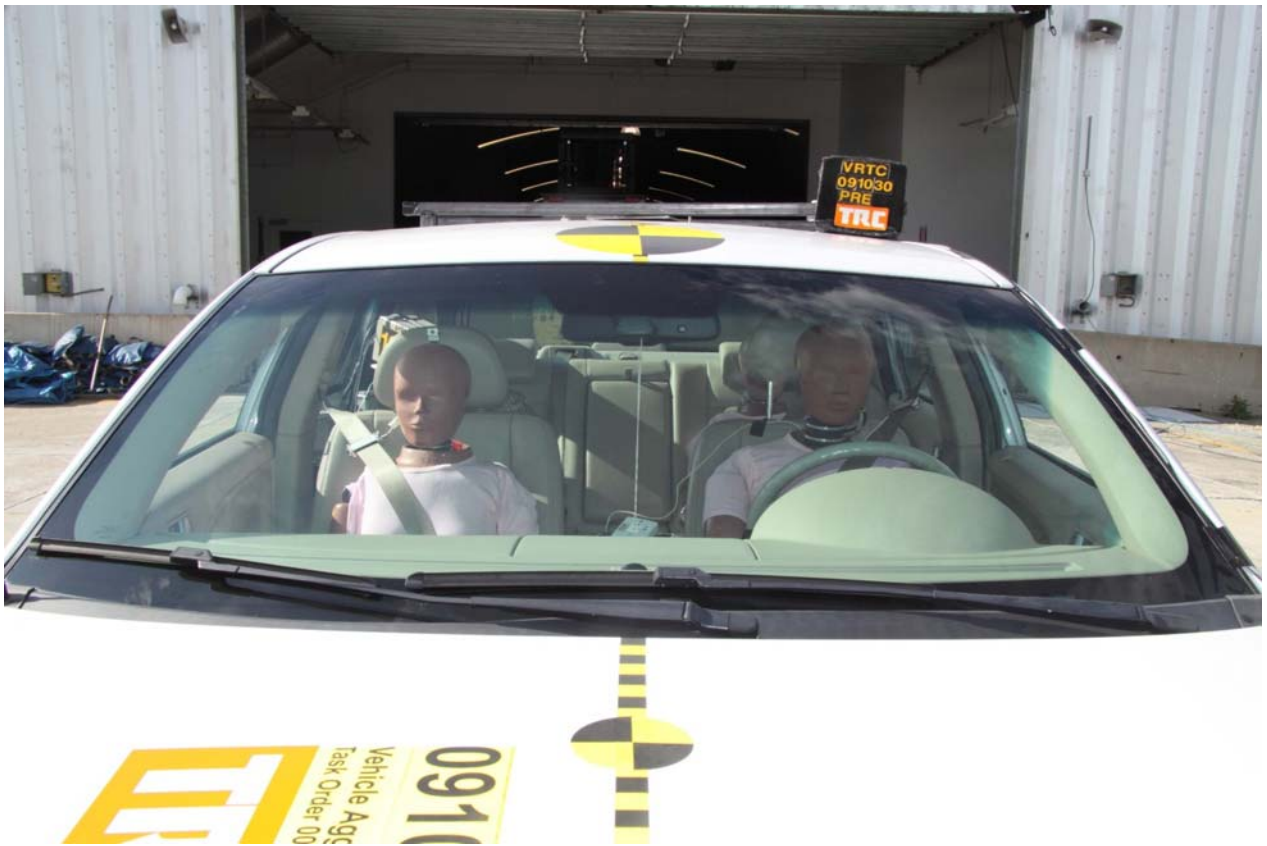


Figure A-87 Pre-Test Bullet Vehicle Driver & Passenger Dummies thru Windshield View



Figure A-88 Post-Test Bullet Vehicle Driver & Passenger Dummies thru Windshield View



Figure A-89 Pre-Test Bullet Vehicle Driver Dummy - View 1



Figure A-90 Post-Test Bullet Vehicle Driver Dummy - View 1



Figure A-91 Pre-Test Bullet Vehicle Driver Dummy - View 2



Figure A-92 Post-Test Bullet Vehicle Driver Dummy - View 2



Figure A-93 Pre-Test Bullet Vehicle Driver Dummy - View 3



Figure A-94 Post-Test Bullet Vehicle Driver Dummy - View 3

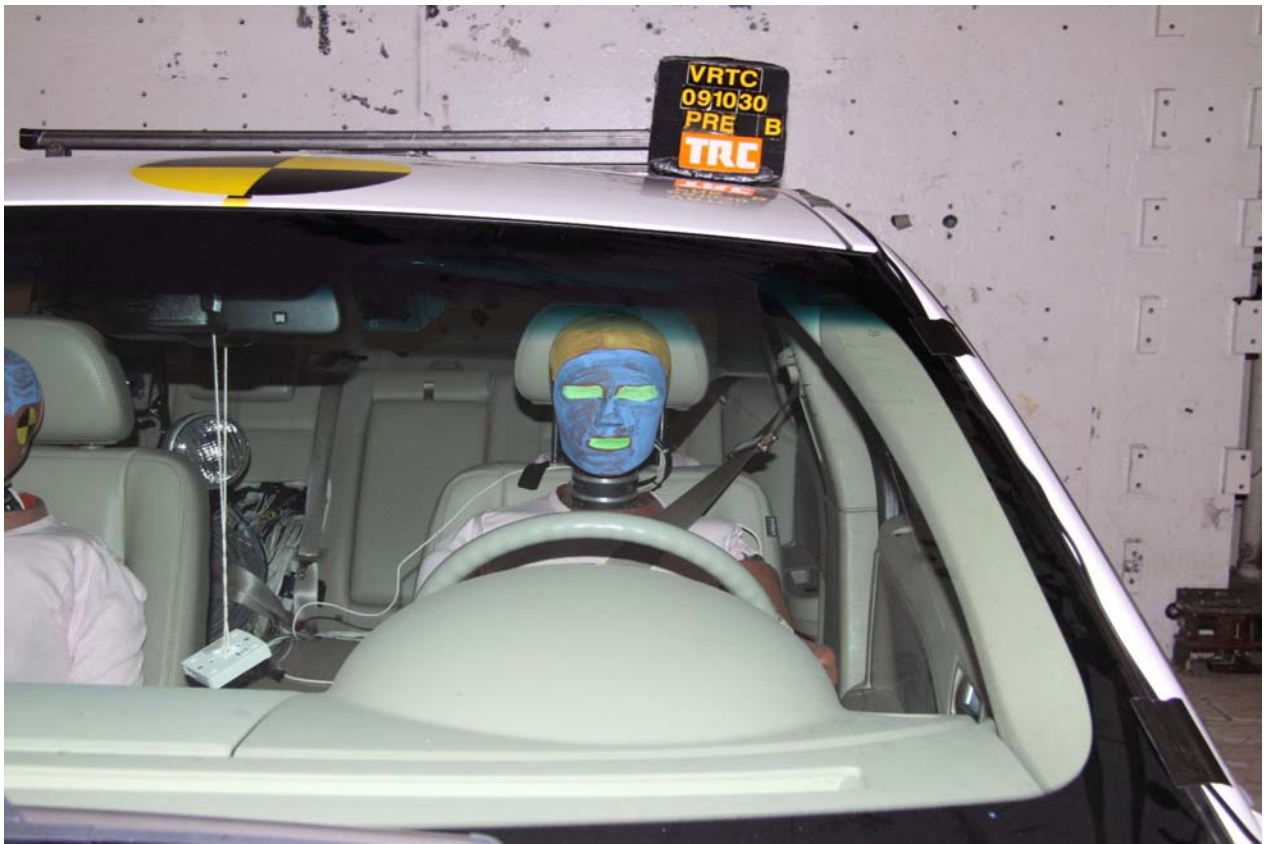


Figure A-95 Pre-Test Bullet Vehicle Driver Dummy - View 4



Figure A-96 Post-Test Bullet Vehicle Driver Dummy - View 4



Figure A-97 Pre-Test Bullet Vehicle Driver Dummy Knee Bolster View



Figure A-98 Post-Test Bullet Vehicle Driver Dummy Knee Bolster View

Photo Not Available

Figure A-99 Pre-Test Bullet Vehicle Driver Dummy Foot Position View



Figure A-100 Pre-Test Bullet Vehicle Driver Dummy Seat Track View



Figure A-101 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 1



Figure A-102 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 1



Figure A-103 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 2



Figure A-104 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 2



Figure A-105 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 3



Figure A-106 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 3



Figure A-107 Pre-Test Bullet Vehicle Right Front Passenger Dummy - View 4



Figure A-108 Post-Test Bullet Vehicle Right Front Passenger Dummy - View 4



Figure A-109 Pre-Test Bullet Vehicle Right Front Passenger Dummy Knee Bolster View



Figure A-110 Post-Test Bullet Vehicle Right Front Passenger Dummy Knee Bolster View



Figure A-111 Pre-Test Bullet Vehicle Right Front Passenger Dummy Seat Track View

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Figure A-112 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 1



Figure A-113 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 1



Figure A-114 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 2



Figure A-115 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 2



Figure A-116 Pre-Test Bullet Vehicle Left Rear Passenger Dummy - View 3



Figure A-117 Post-Test Bullet Vehicle Left Rear Passenger Dummy - View 3



Figure A-118 Post-Test Target Vehicle Driver Dummy Overall Contact View



Figure A-119 Post-Test Target Vehicle Driver Dummy Head Contact - View 1



Figure A-120 Post-Test Target Vehicle Driver Dummy Head Contact - View 2



Figure A-121 Post-Test Target Vehicle Driver Dummy Head Contact - View 3



Figure A-122 Post-Test Target Vehicle Driver Dummy Head Contact – View 4



Figure A-123 Post-Test Target Vehicle Driver Dummy Knee Contact View



Figure A-124 Post-Test Bullet Vehicle Driver Dummy Overall Contact View



Figure A-125 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 1



Figure A-126 Post-Test Bullet Vehicle Driver Dummy Head Contact - View 2



Figure A-127 Post-Test Bullet Vehicle Right Front Passenger Dummy Overall Contact View



Figure A-128 Post-Test Bullet Vehicle Right Front Passenger Dummy Head Contact-View 1



Figure A-129 Post-Test Bullet Vehicle Right Front Passenger Dummy Head Contact-View 2



Figure A-130 Post-Test Bullet Vehicle Right Front Passenger Dummy Head Contact-View 3



Figure A-131 Post-Test Bullet Vehicle Left Rear Passenger Dummy Overall Contact View



Figure A-132 Post-Test Bullet Vehicle Left Rear Passenger Dummy Contact View



Figure A-133 Post-Test Bullet Vehicle Left Rear Passenger Dummy Head Contact View



Figure A-134 Post-Test Light Trap Readout View

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Figure A-135 Pre-Test Target Vehicle Certification Label View



Figure A-136 Pre-Test Target Vehicle Tire Load Label View



Figure A-137 Pre-Test Bullet Vehicle Certification Label View



Figure A-138 Pre-Test Bullet Vehicle Tire Load Label View

Appendix B

Data Plots



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head X-Axis Acceleration

Date: 10/30/2009

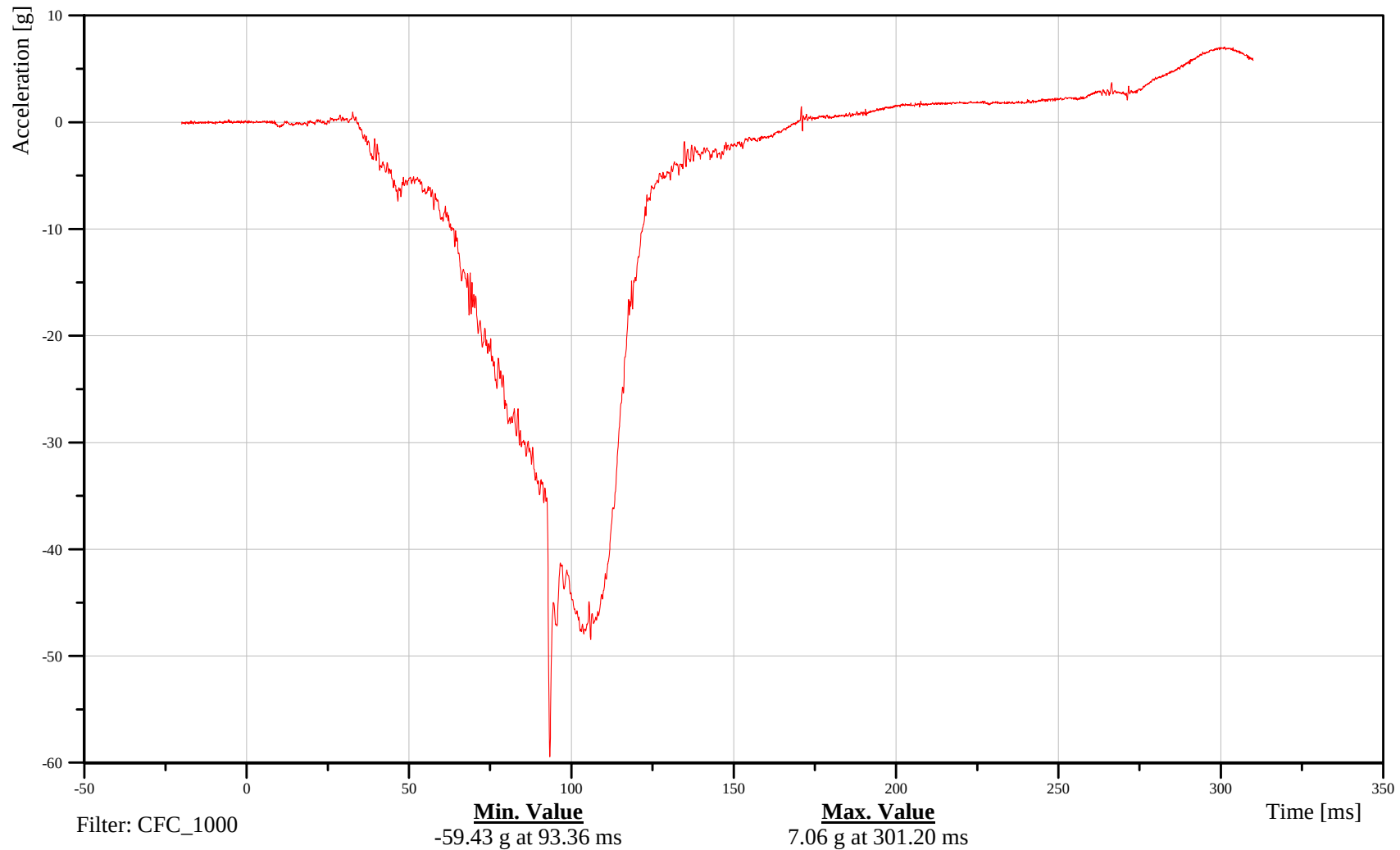
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TRC Inc. Test Lab: CTF

Test Number: 091030



B-2

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Y-Axis Acceleration

Date: 10/30/2009

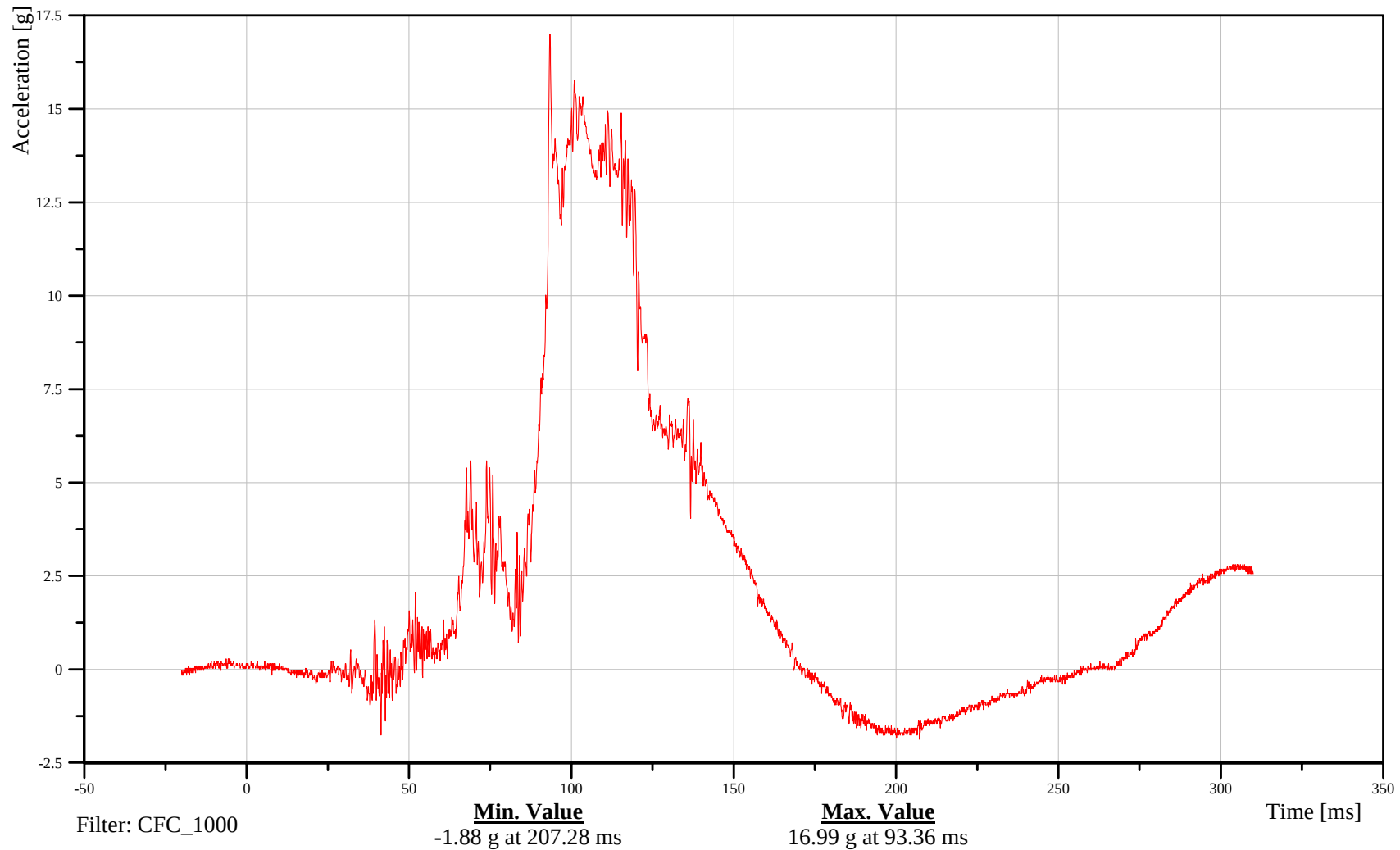
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TRC Inc. Test Lab: CTF

Test Number: 091030



B-3

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Z-Axis Acceleration

Date: 10/30/2009

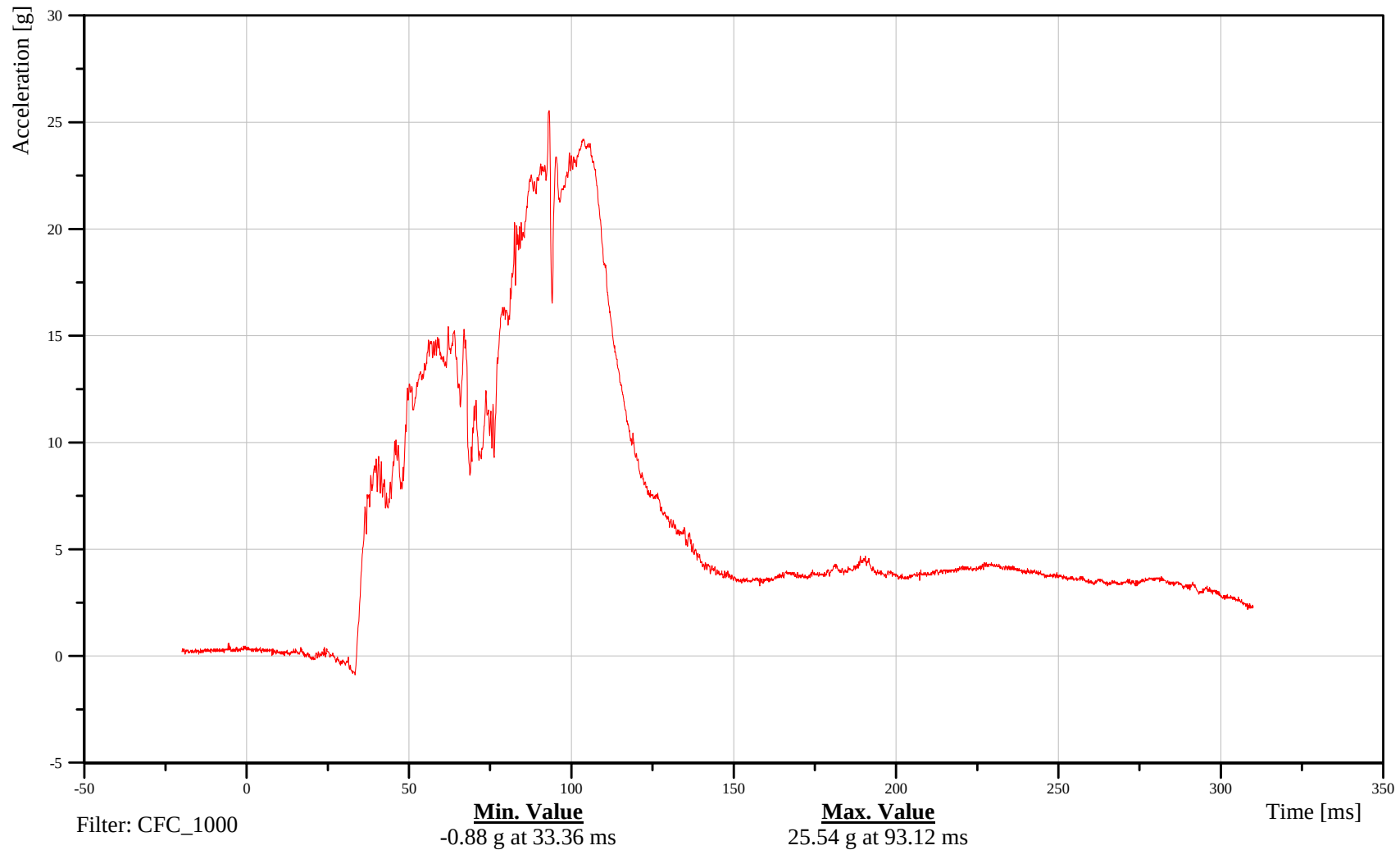
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TRC Inc. Test Lab: CTF

Test Number: 091030



B-4

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Resultant Acceleration

Date: 10/30/2009

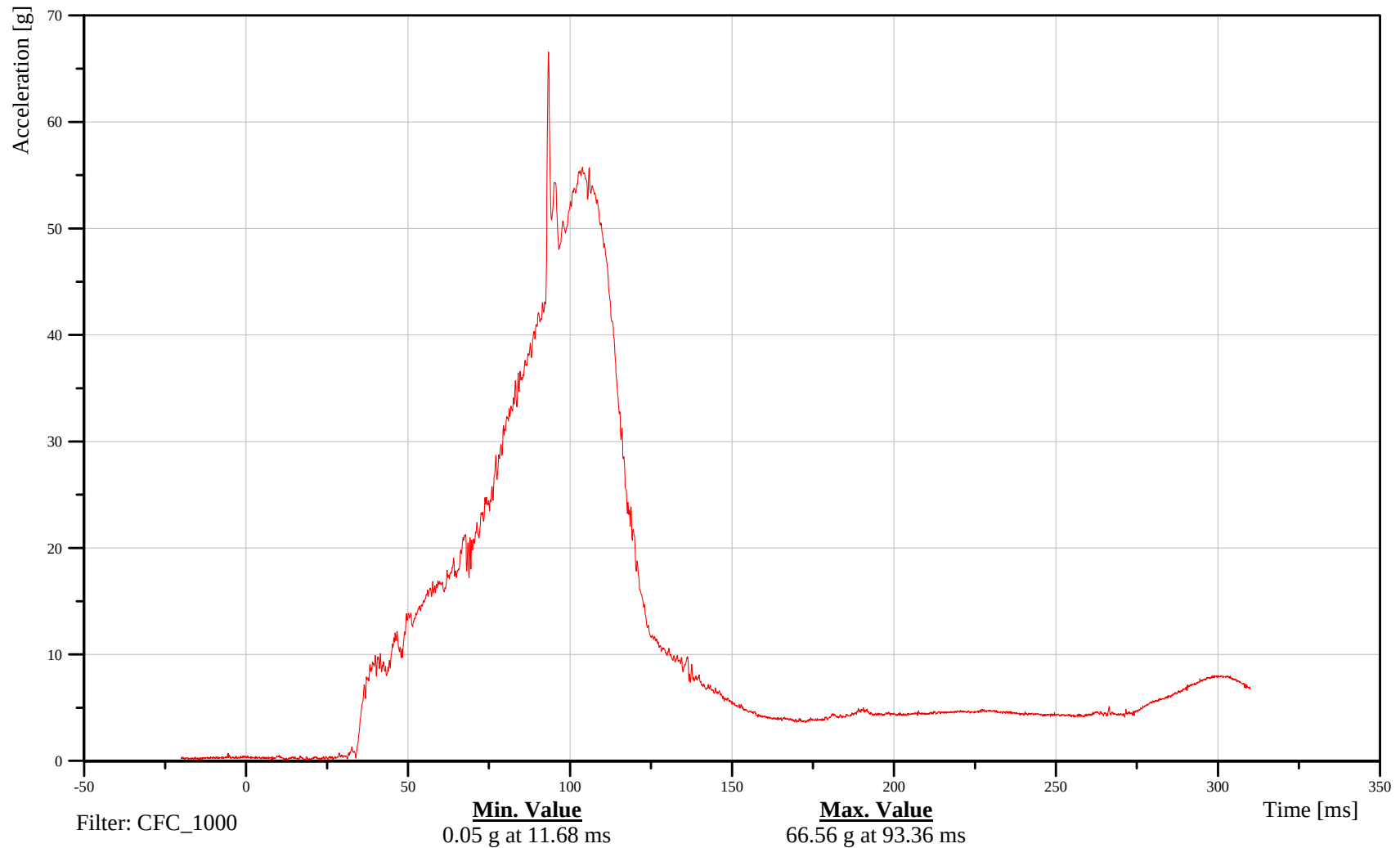
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TRC Inc. Test Lab: CTF

Test Number: 091030



B-5

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Redundant X-Axis Acceleration

Date: 10/30/2009

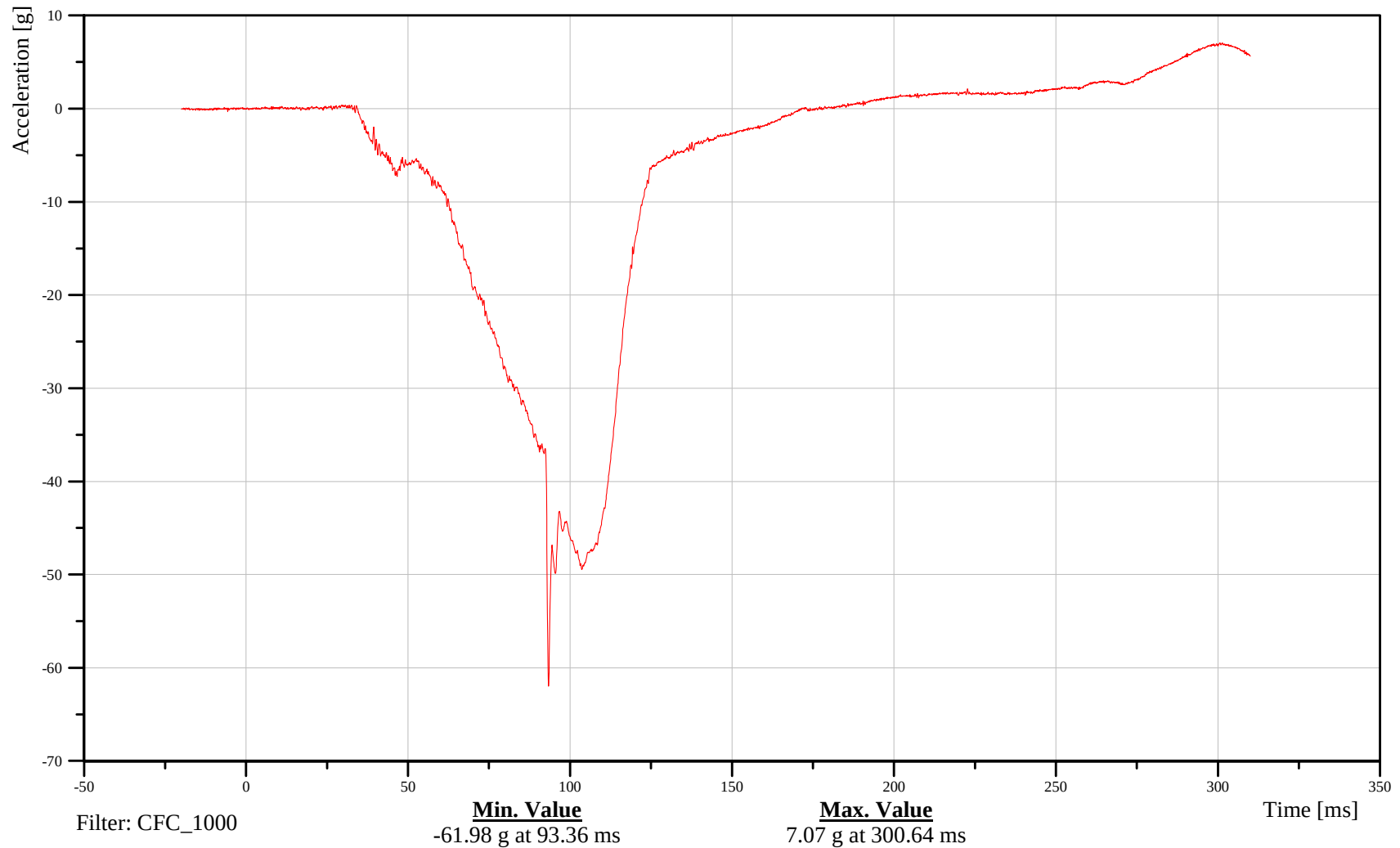
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TRC Inc. Test Lab: CTF

Test Number: 091030



B-6

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Redundant Y-Axis Acceleration

Date: 10/30/2009

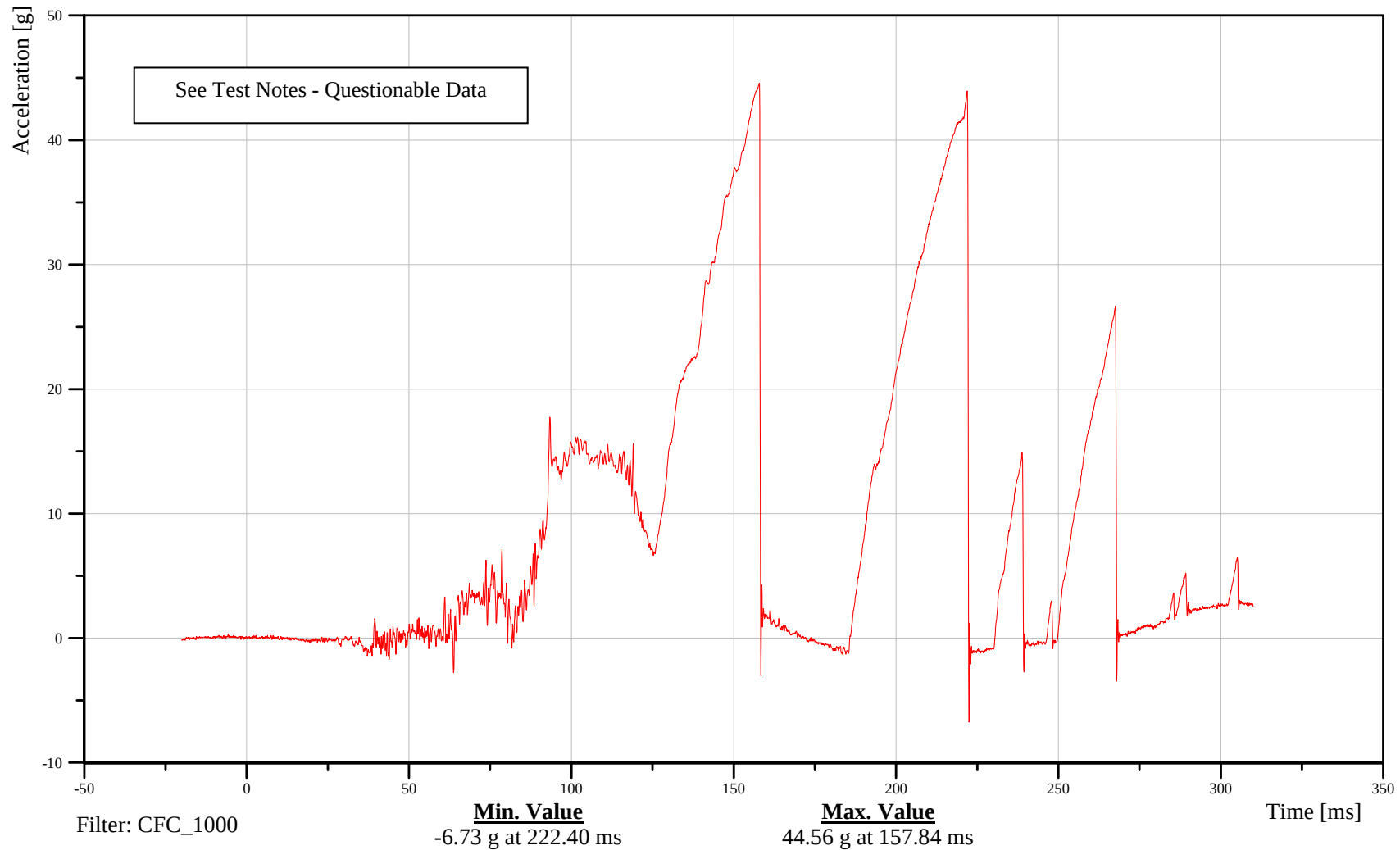
Time: 16:48

Customer: VRTC

11HEADCGRDH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-7

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Redundant Z-Axis Acceleration

Date: 10/30/2009

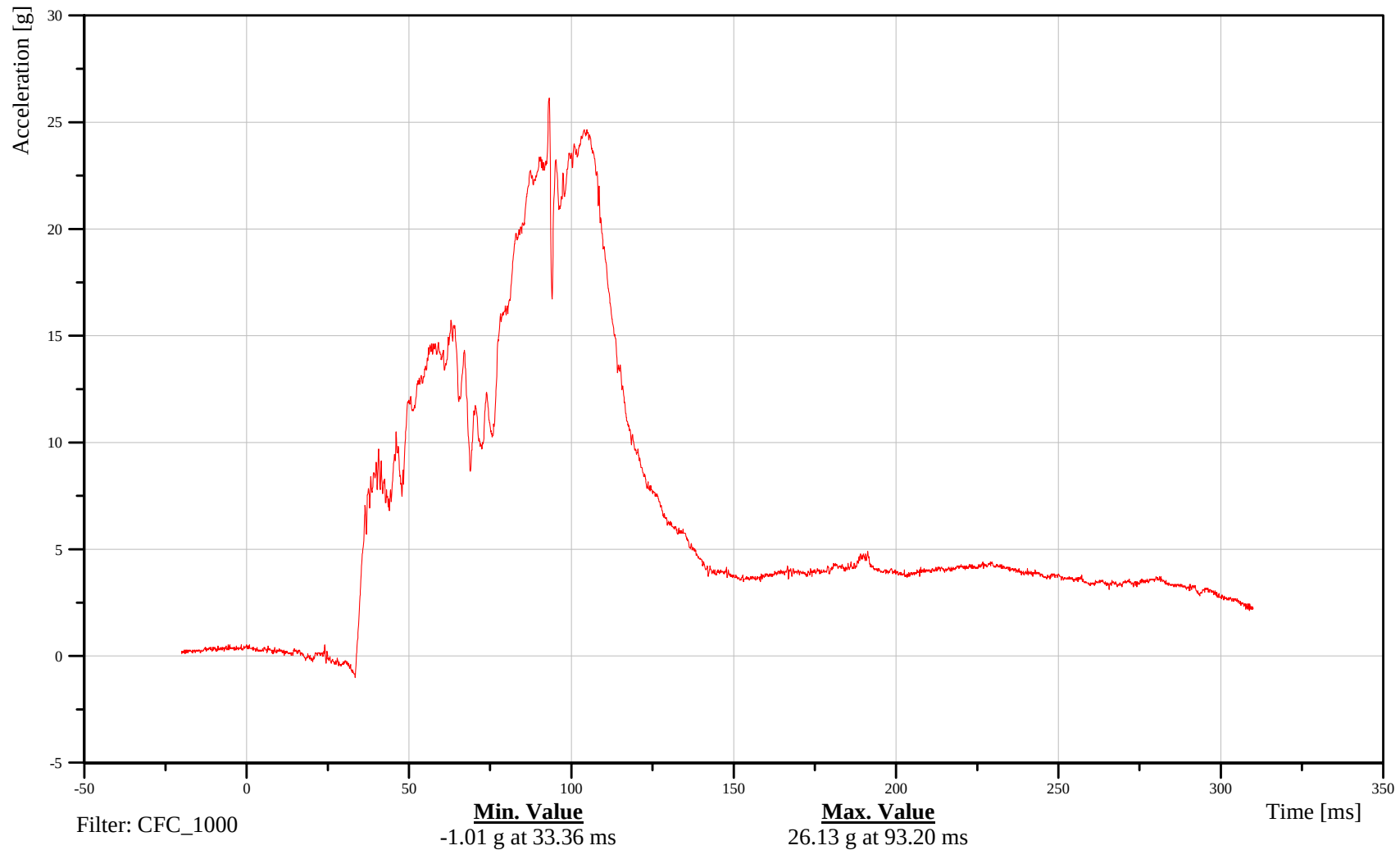
Time: 16:48

Customer: VRTC

11HEADCGRDH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-8

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Head Redundant Resultant Acceleration

Date: 10/30/2009

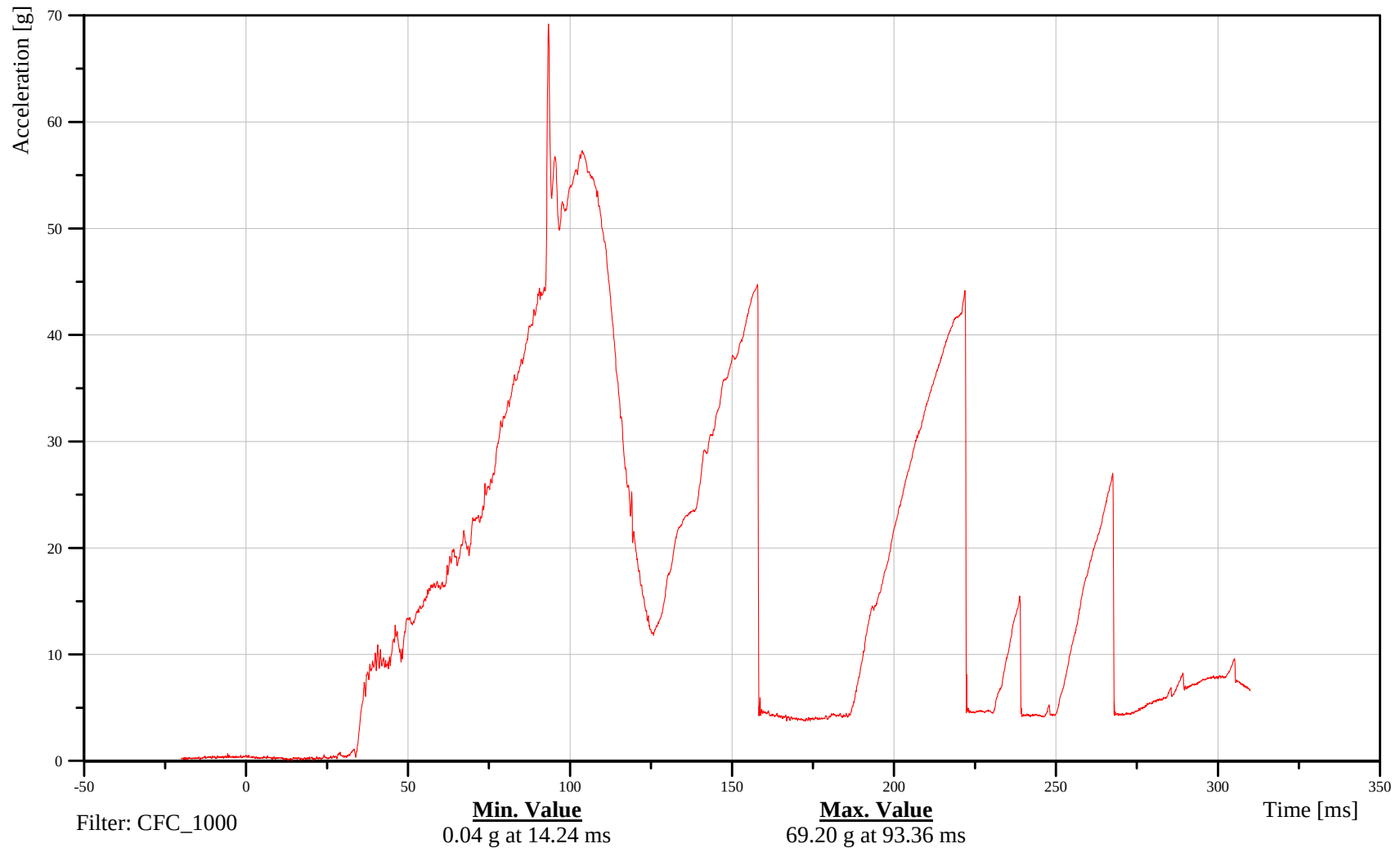
Time: 16:48

Customer: VRTC

11HEADCGRDH3ACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-9

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Upper Neck X-Axis Force

Date: 10/30/2009

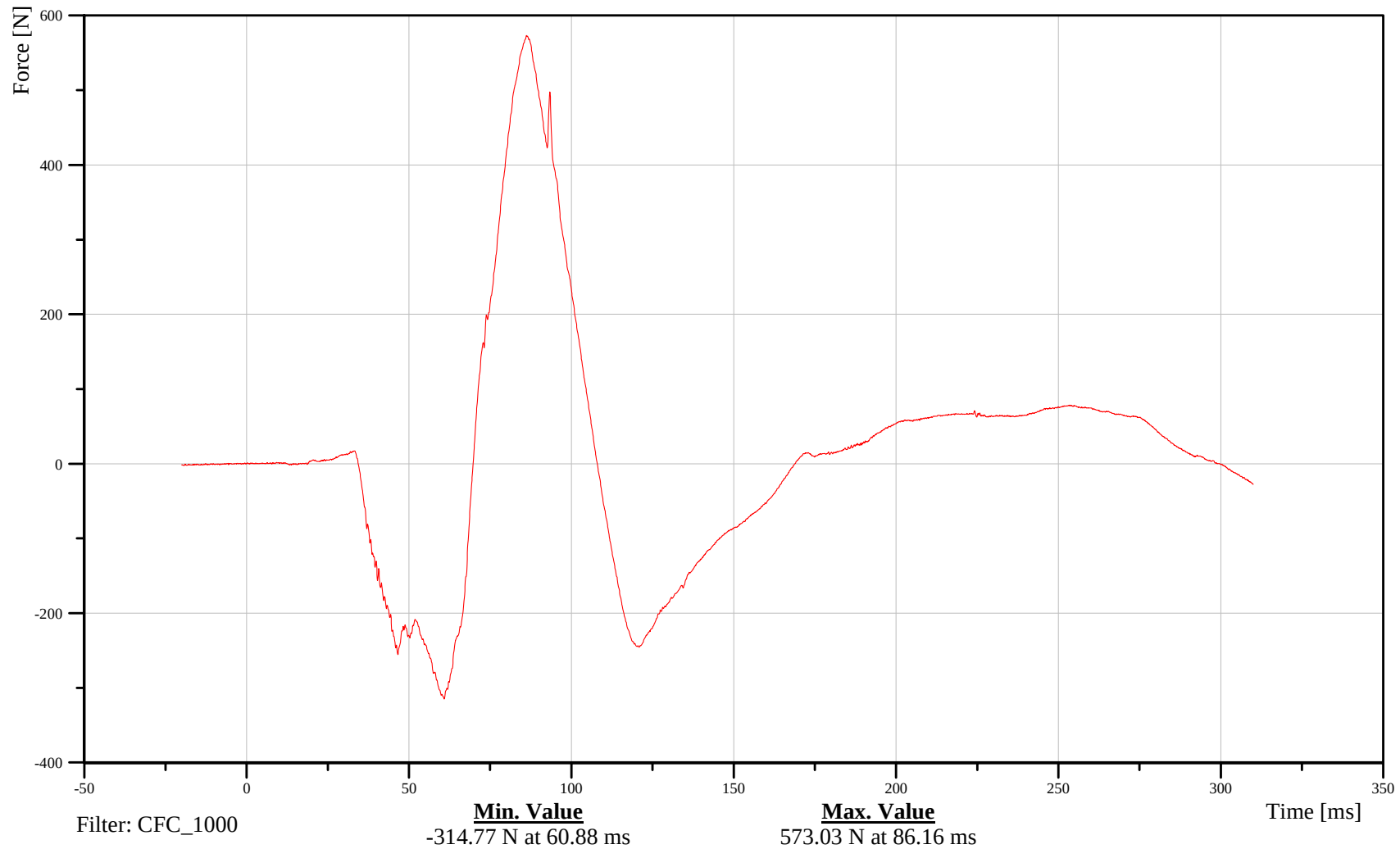
Time: 16:48

Customer: VRTC

11NECKUP00H3FOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-10

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Upper Neck Y-Axis Force

Date: 10/30/2009

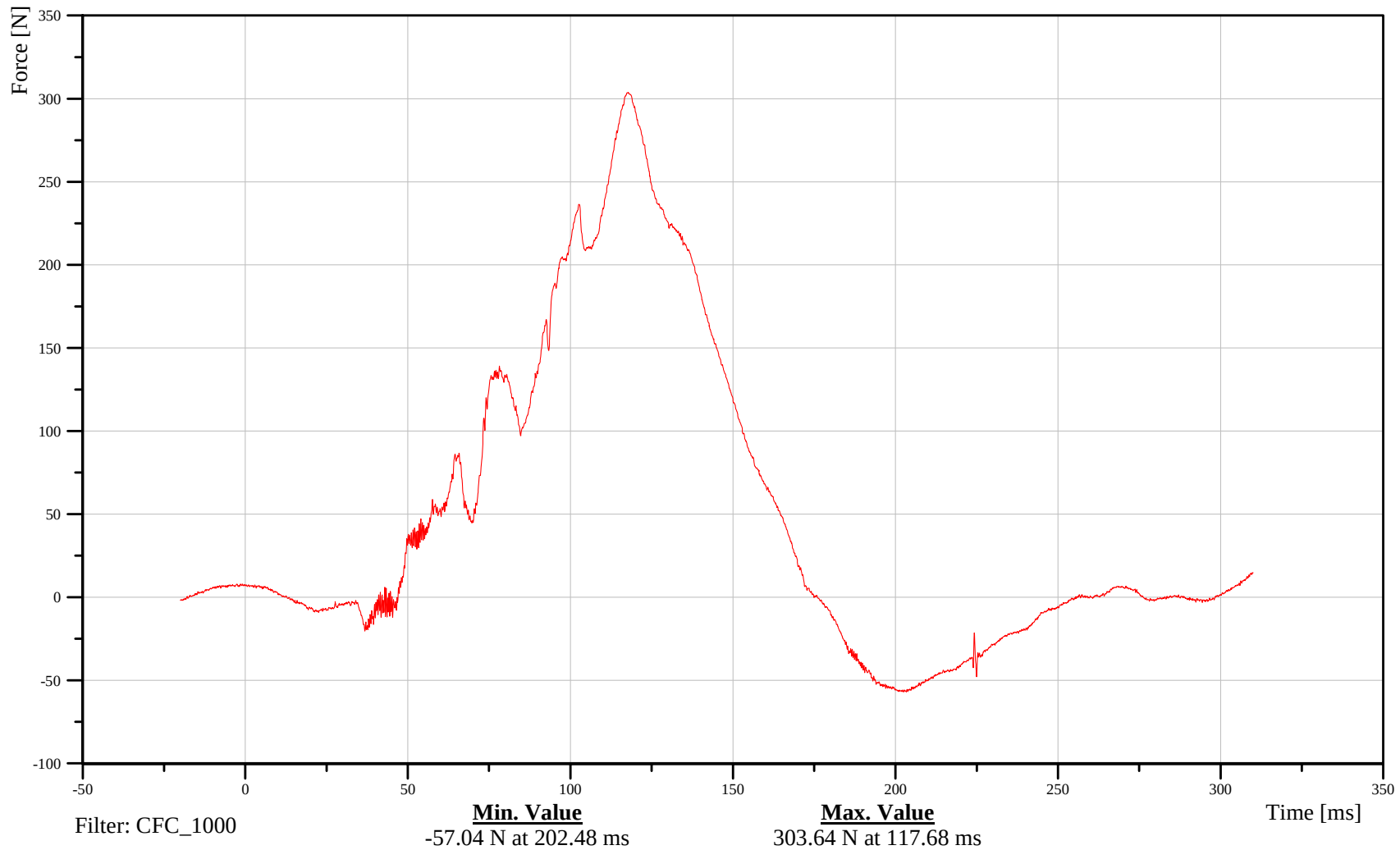
Time: 16:48

Customer: VRTC

11NECKUP00H3FOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-11

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Upper Neck Z-Axis Force

Date: 10/30/2009

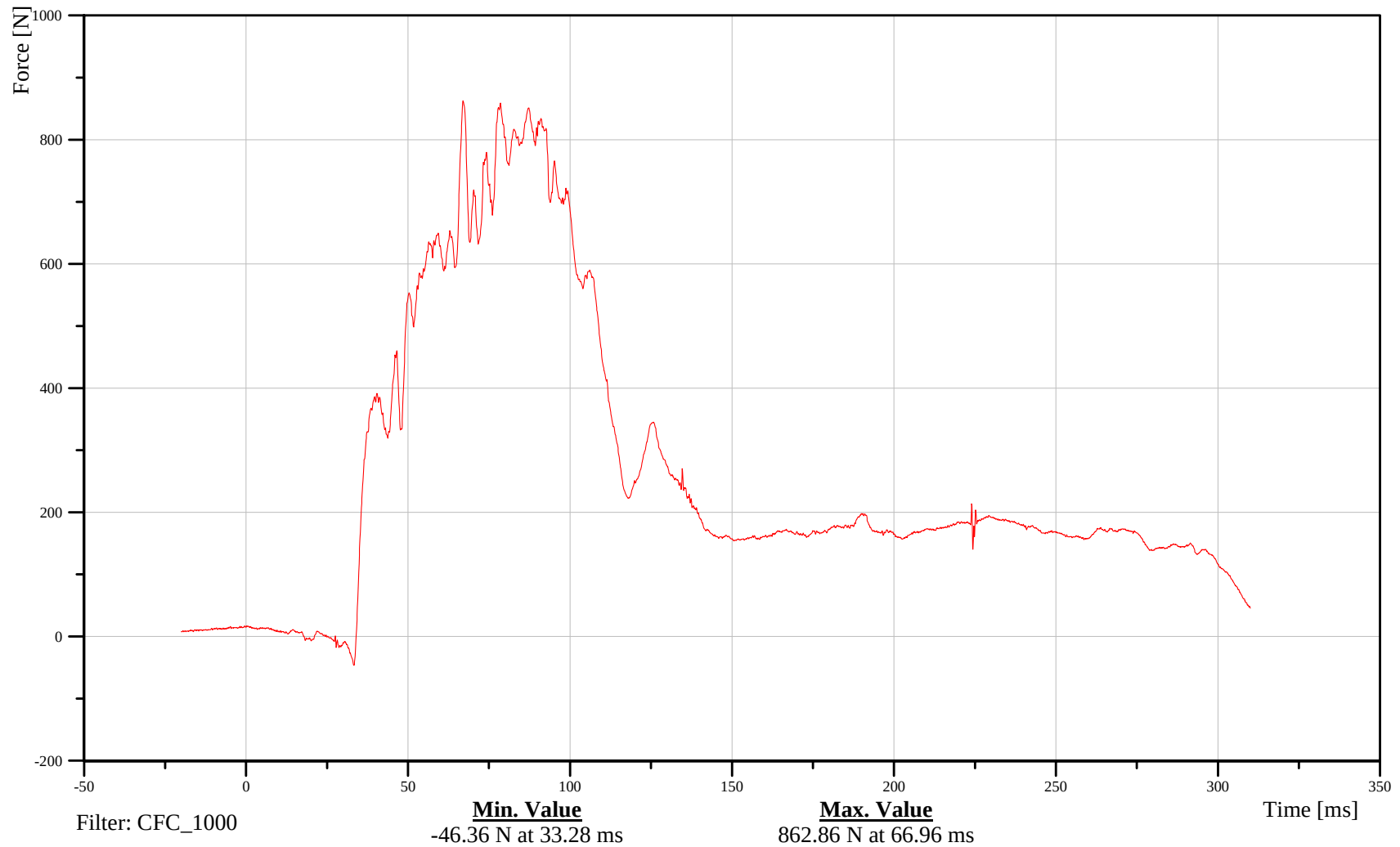
Time: 16:48

Customer: VRTC

11NECKUP00H3FOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-12

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

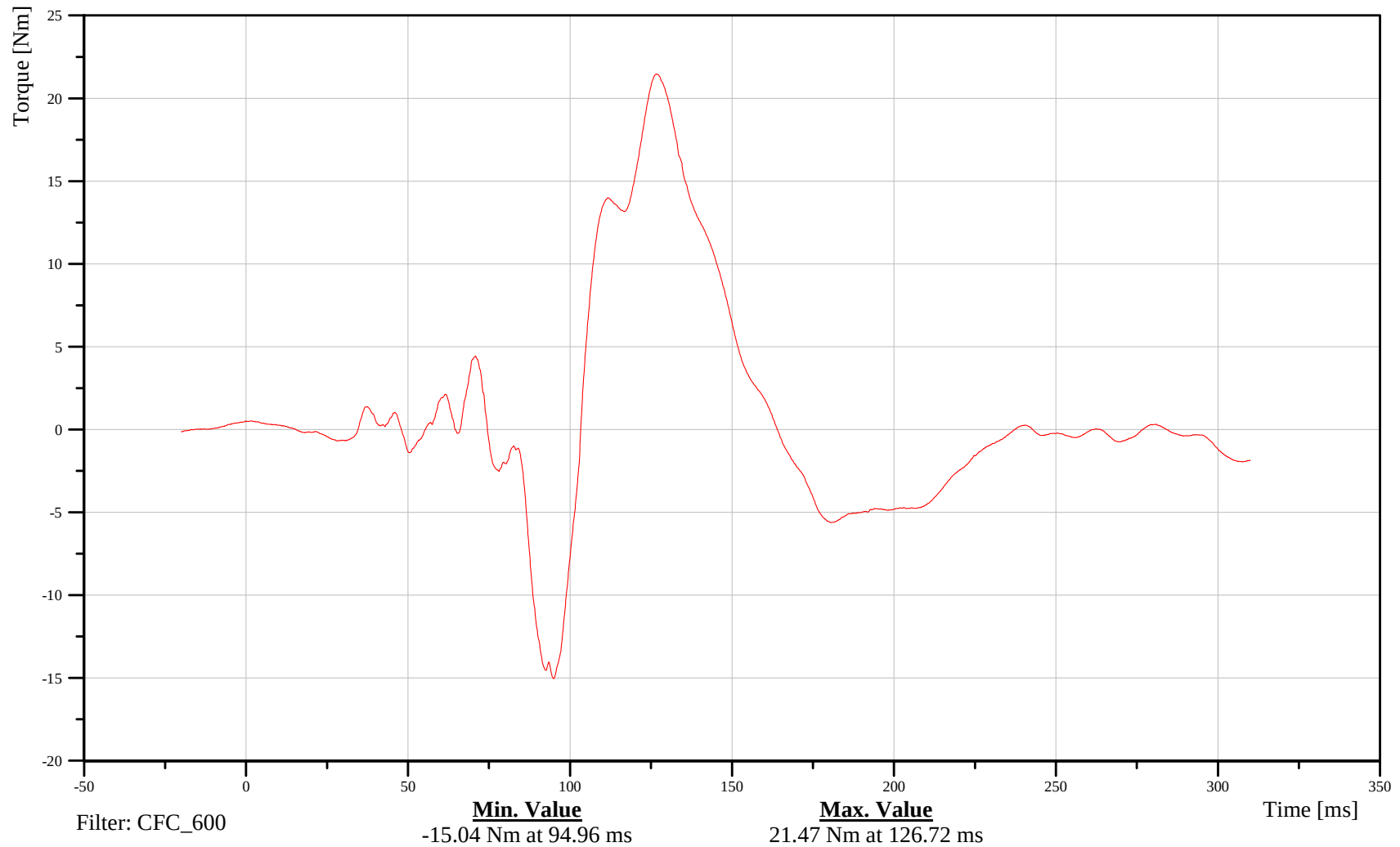
Bullet Vehicle Driver Upper Neck Moment About X Axis

Customer: VRTC

11NECKUP00H3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-13

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

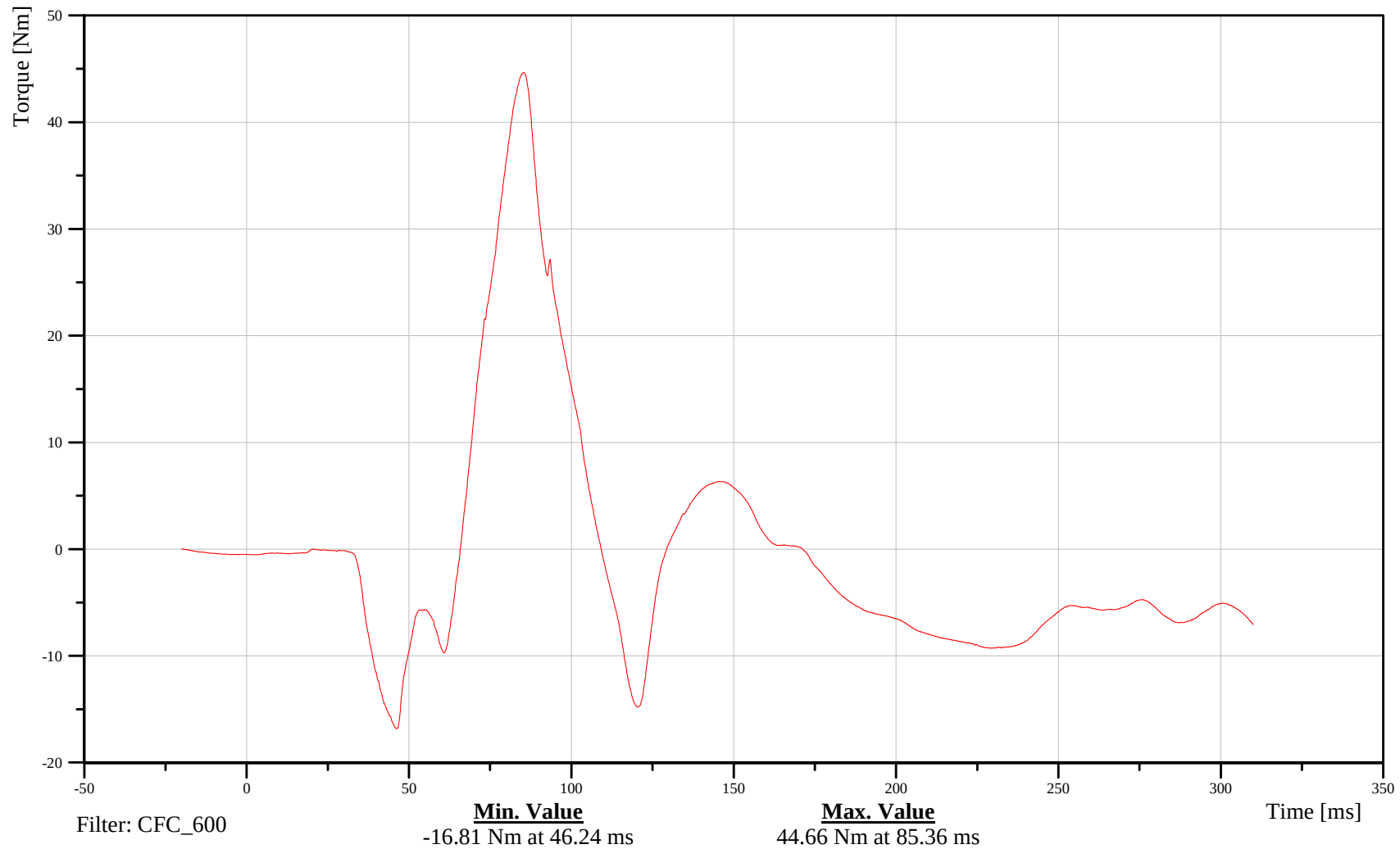
Bullet Vehicle Driver Upper Neck Moment About Y Axis

Customer: VRTC

11NECKUP00H3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-14

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Upper Neck Moment About Z Axis

Date: 10/30/2009

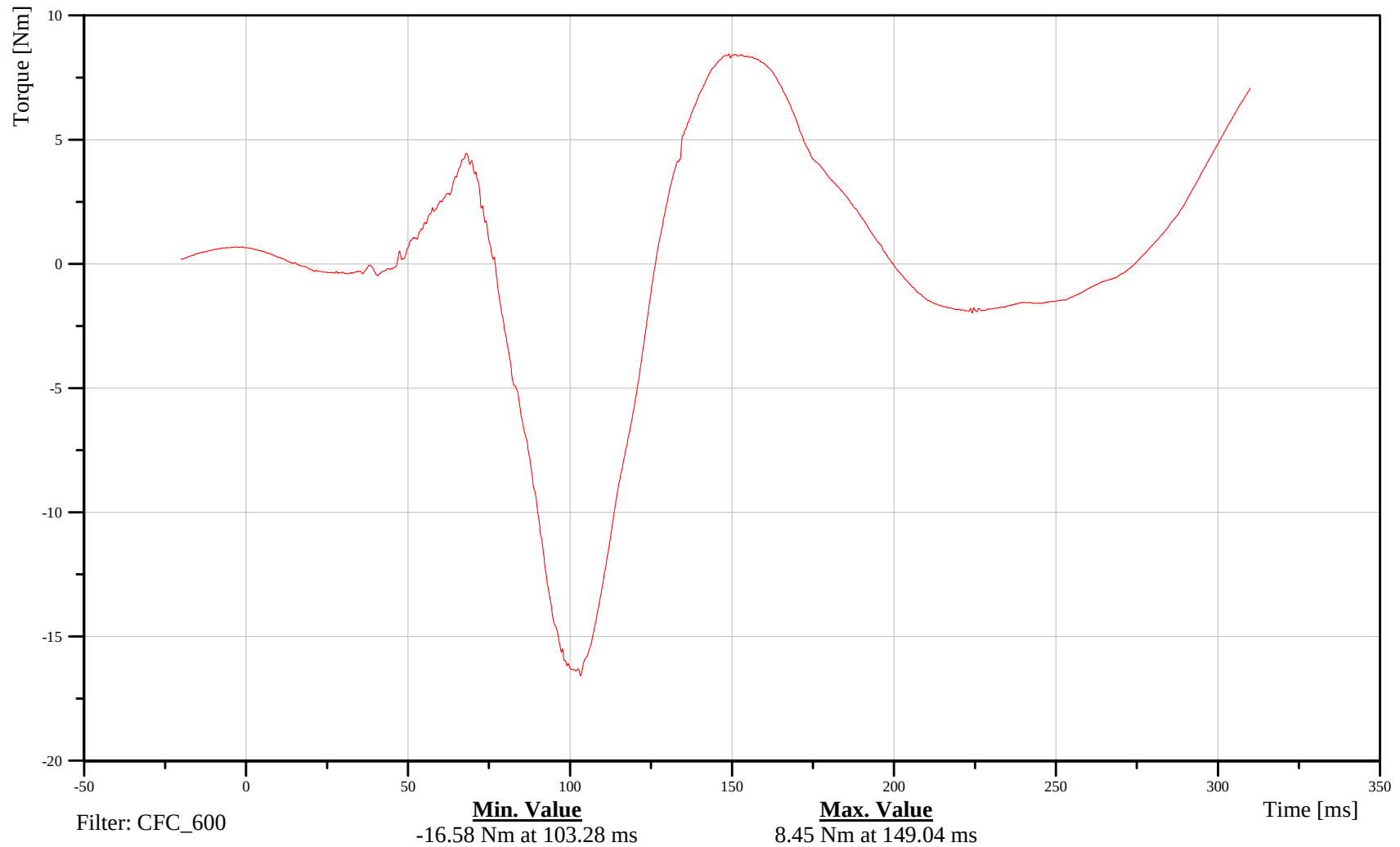
Time: 16:48

Customer: VRTC

11NECKUP00H3MOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-15

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest X-Axis Acceleration

Date: 10/30/2009

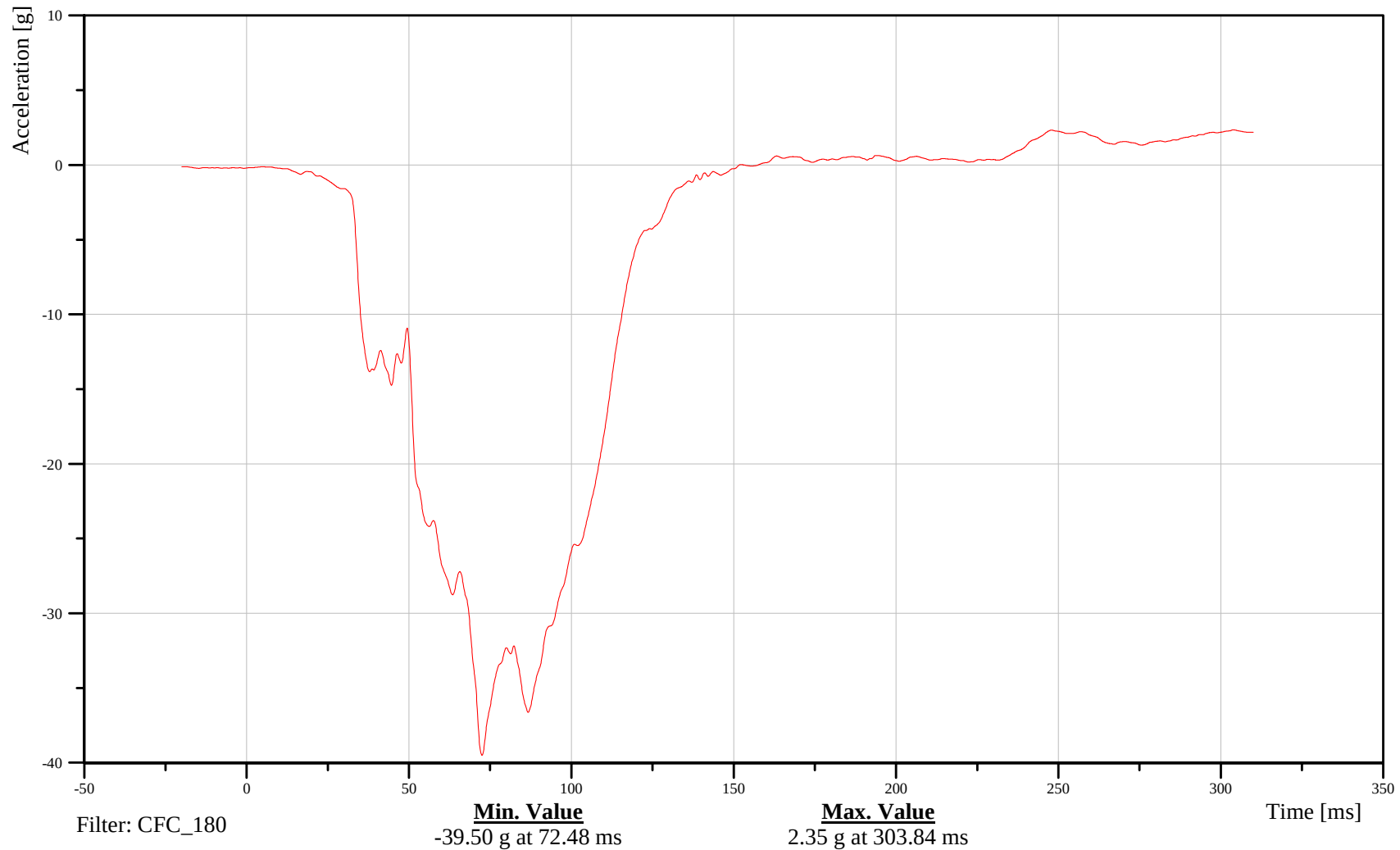
Time: 16:48

Customer: VRTC

11CHSTCG00H3ACXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-16

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest Y-Axis Acceleration

Date: 10/30/2009

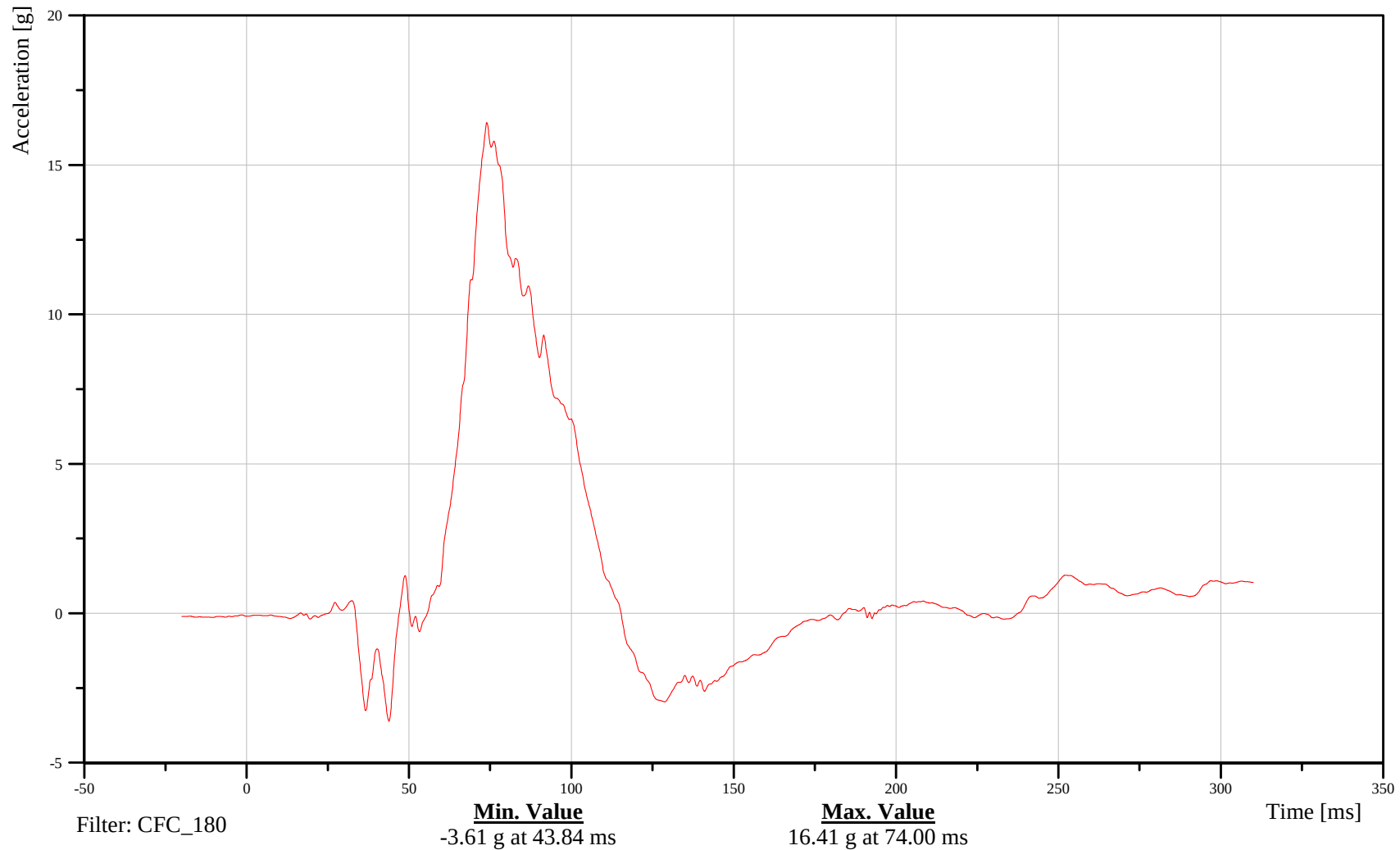
Time: 16:48

Customer: VRTC

11CHSTCG00H3ACYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-17

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest Z-Axis Acceleration

Date: 10/30/2009

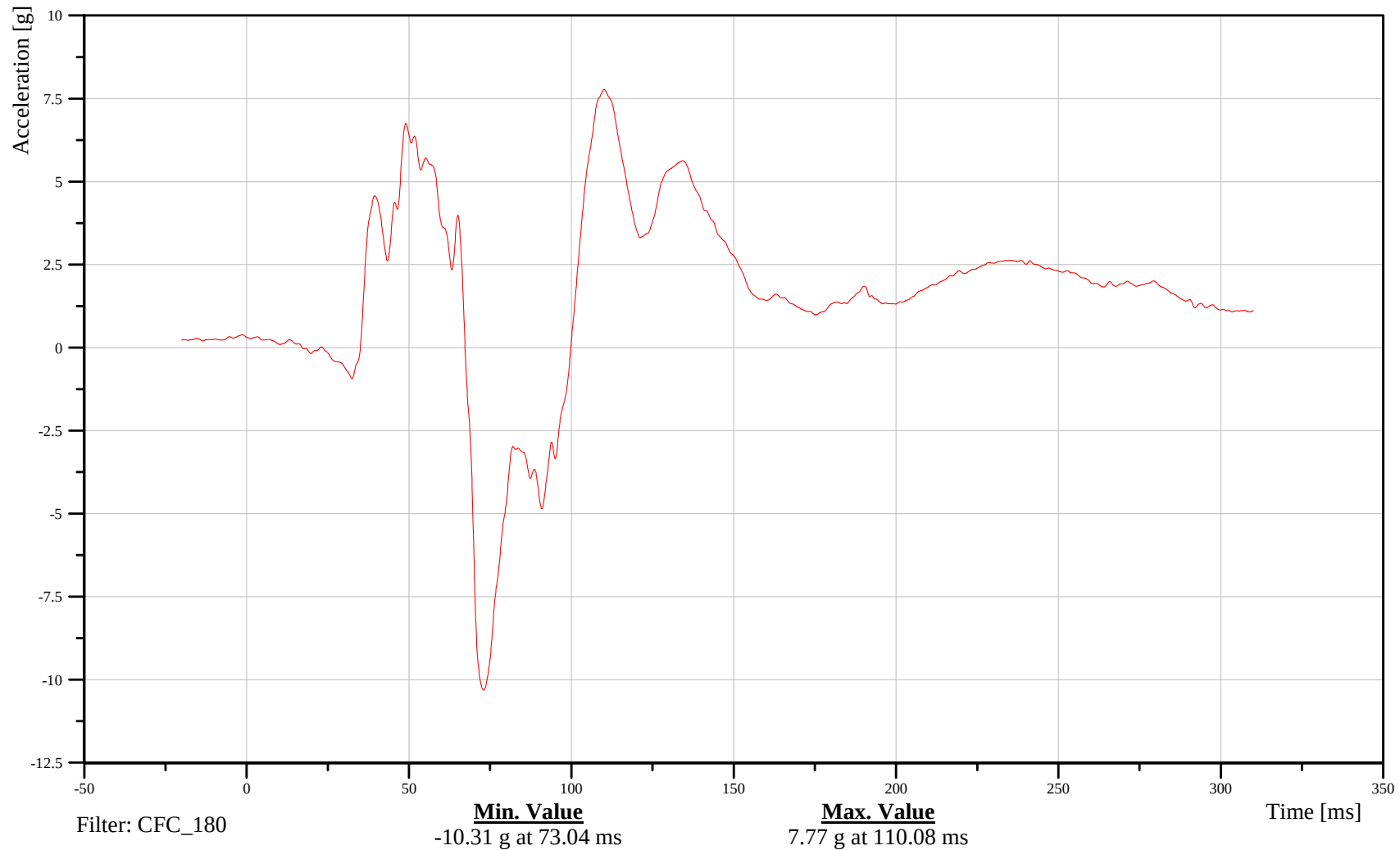
Time: 16:48

Customer: VRTC

11CHSTCG00H3ACZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-18

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

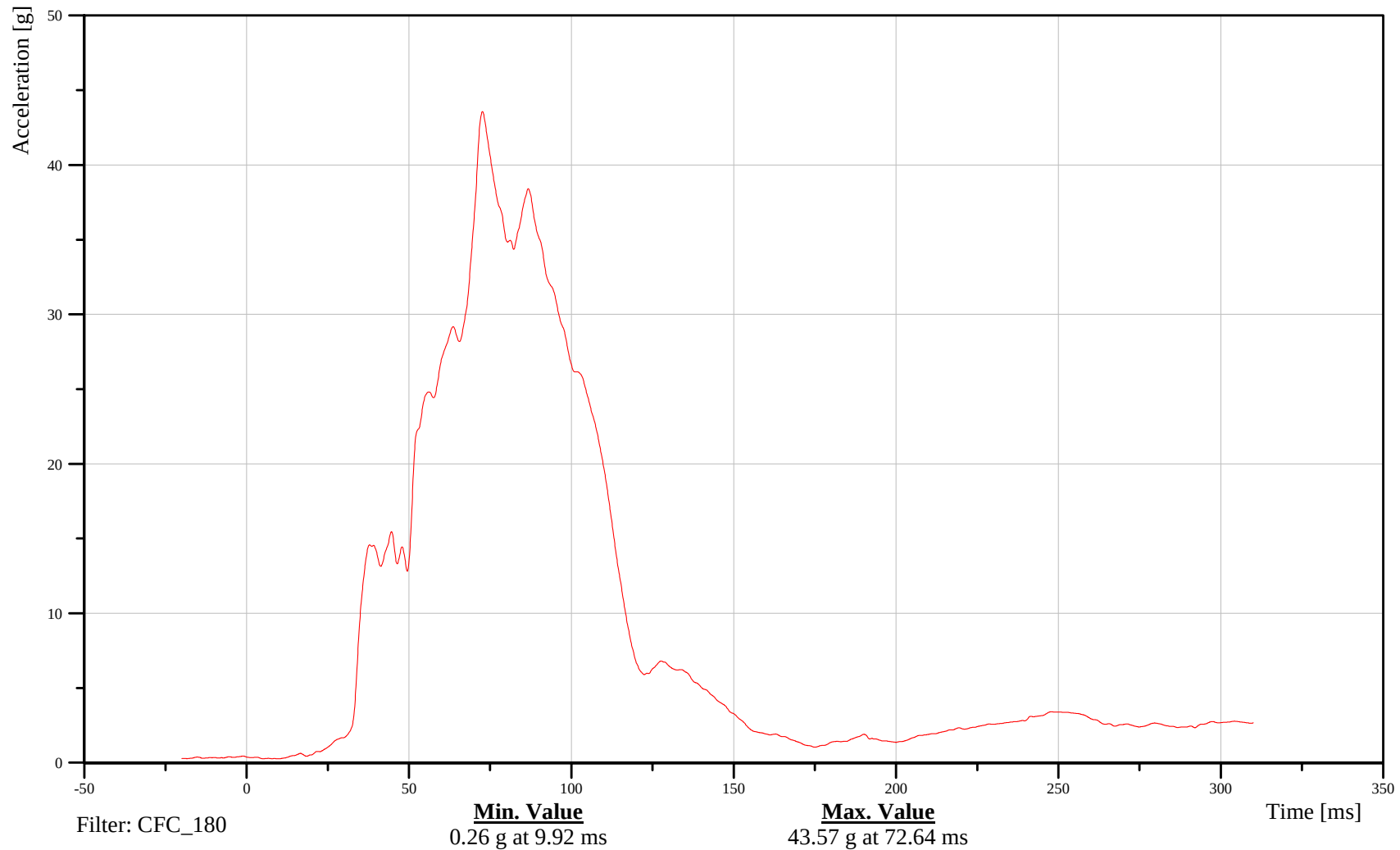
Bullet Vehicle Driver Chest Resultant Acceleration

Customer: VRTC

11CHSTCG00H3ACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-19

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest Redundant X-Axis Acceleration

Date: 10/30/2009

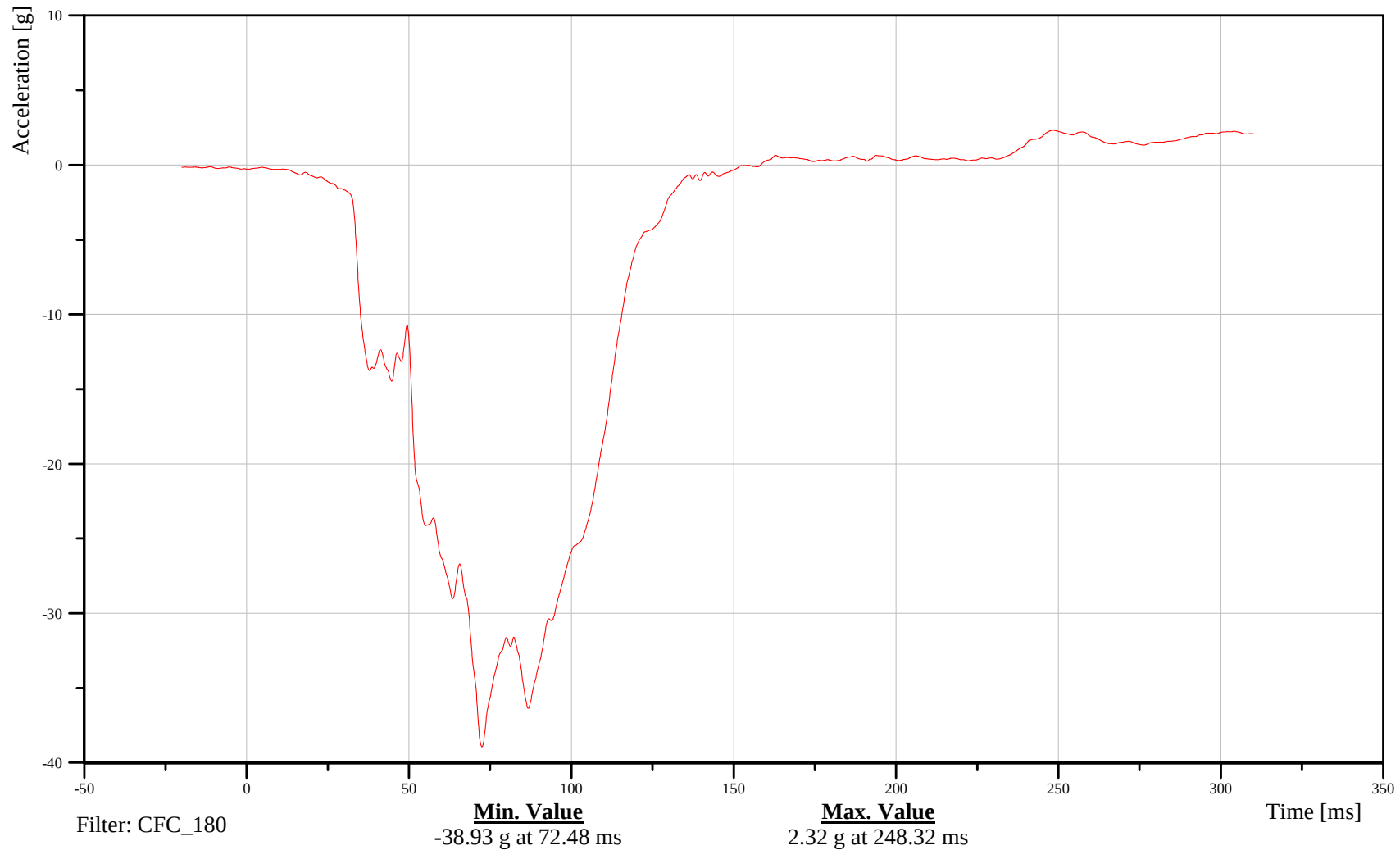
Time: 16:48

Customer: VRTC

11CHSTCGRDH3ACXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-20

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest Redundant Y-Axis Acceleration

Date: 10/30/2009

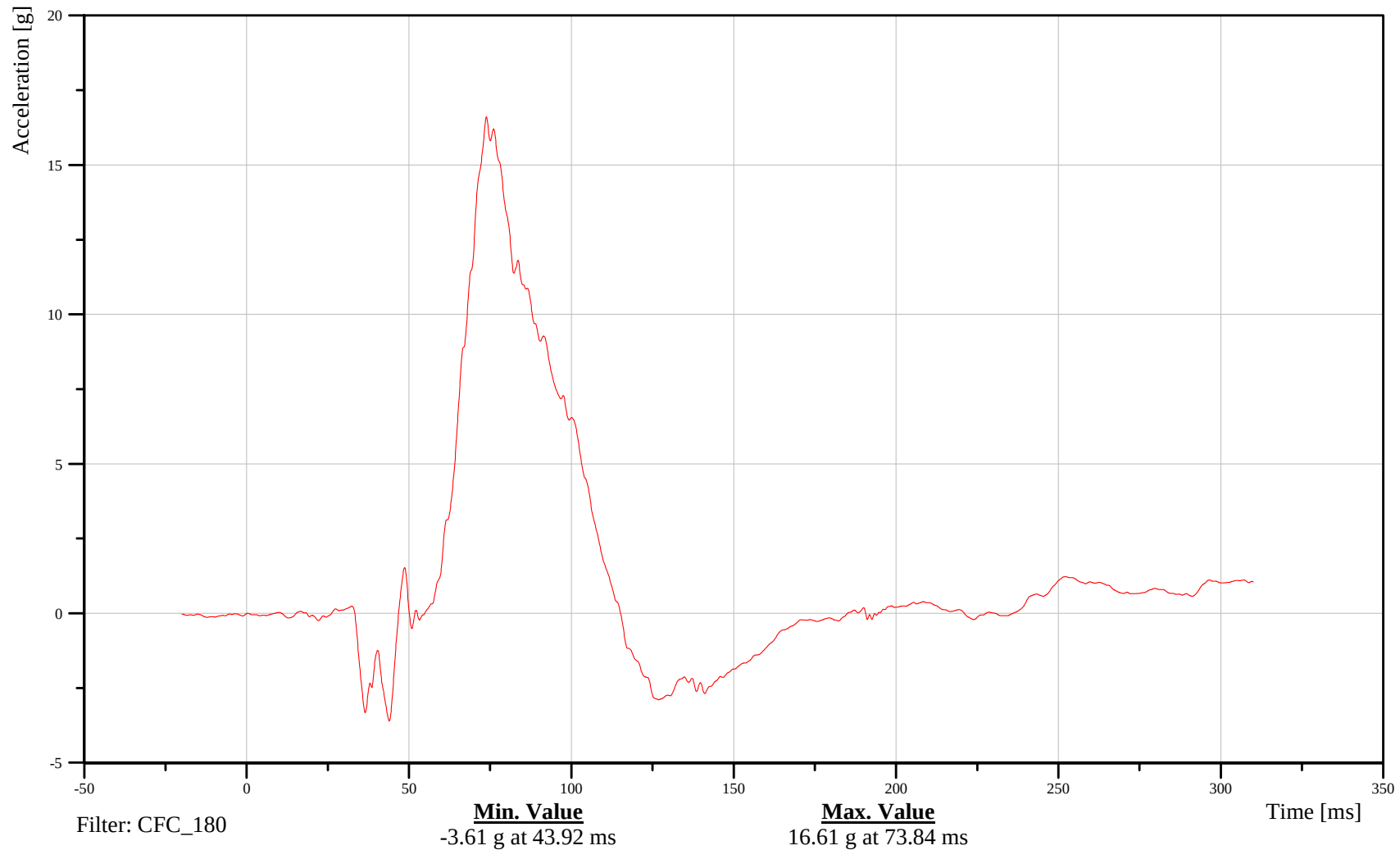
Time: 16:48

Customer: VRTC

11CHSTCGRDH3ACYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-21

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest Redundant Z-Axis Acceleration

Date: 10/30/2009

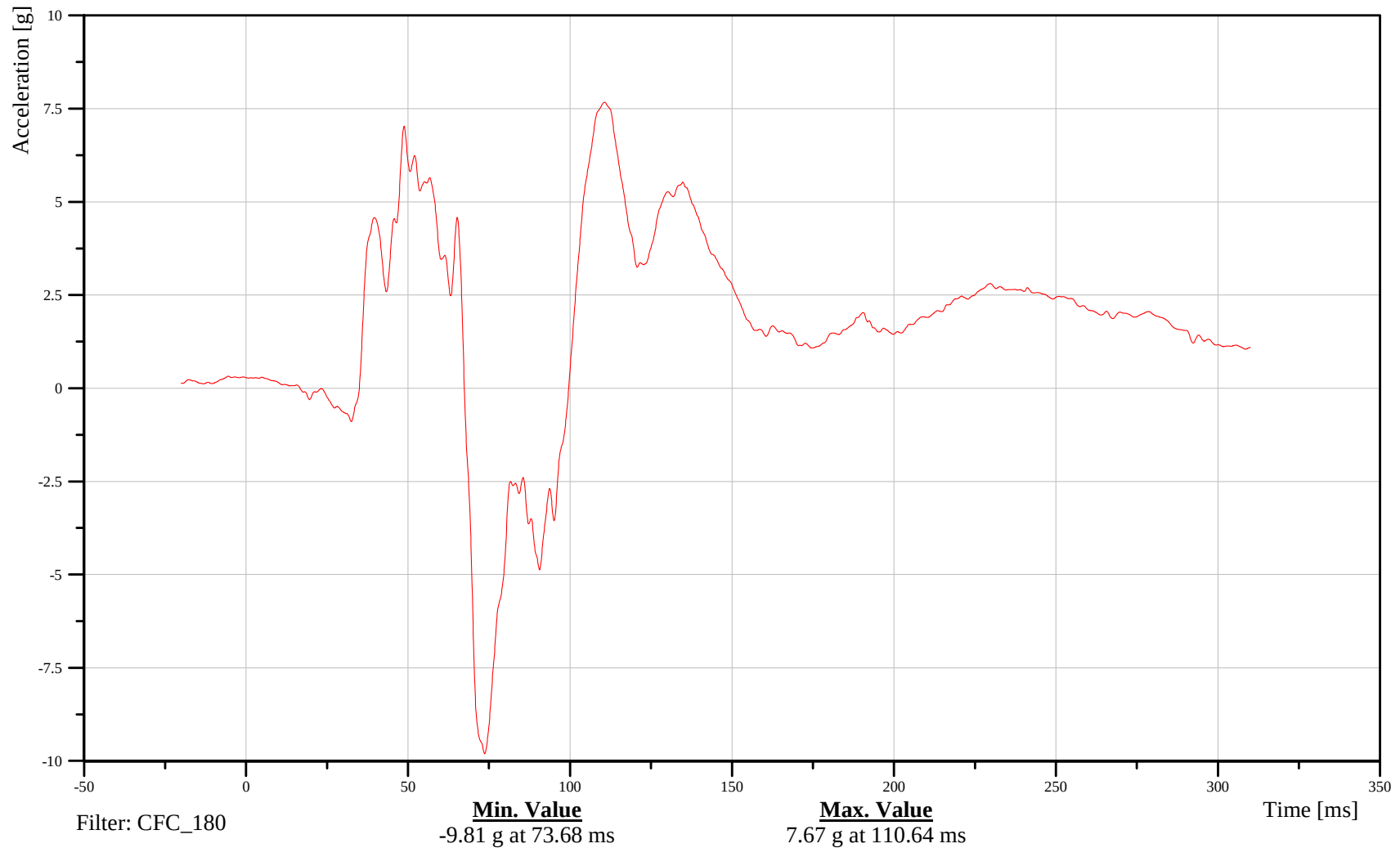
Time: 16:48

Customer: VRTC

11CHSTCGRDH3ACZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-22

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Chest Redundant Resultant Acceleration

Date: 10/30/2009

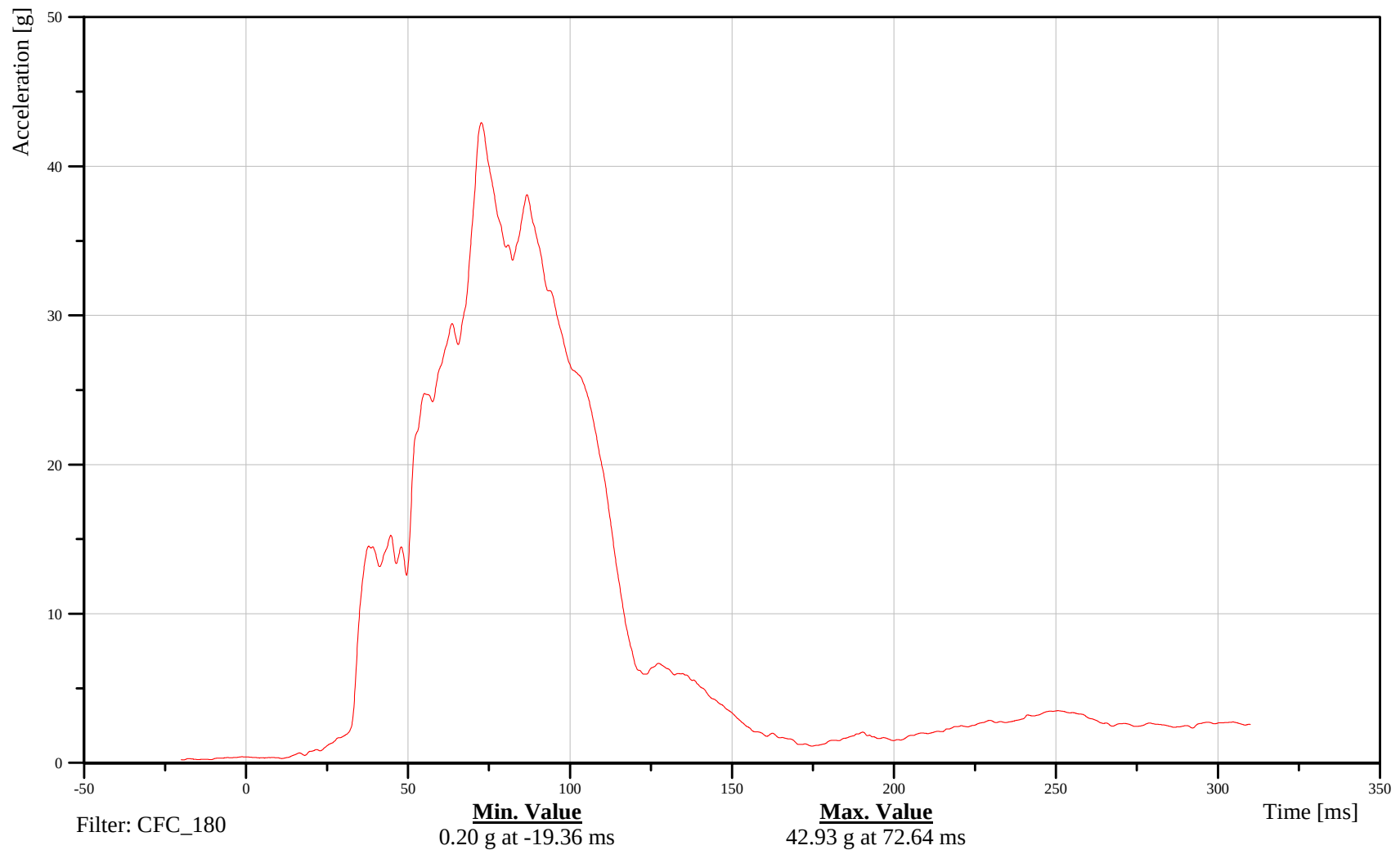
Time: 16:48

Customer: VRTC

11CHSTCGRDH3ACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-23

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

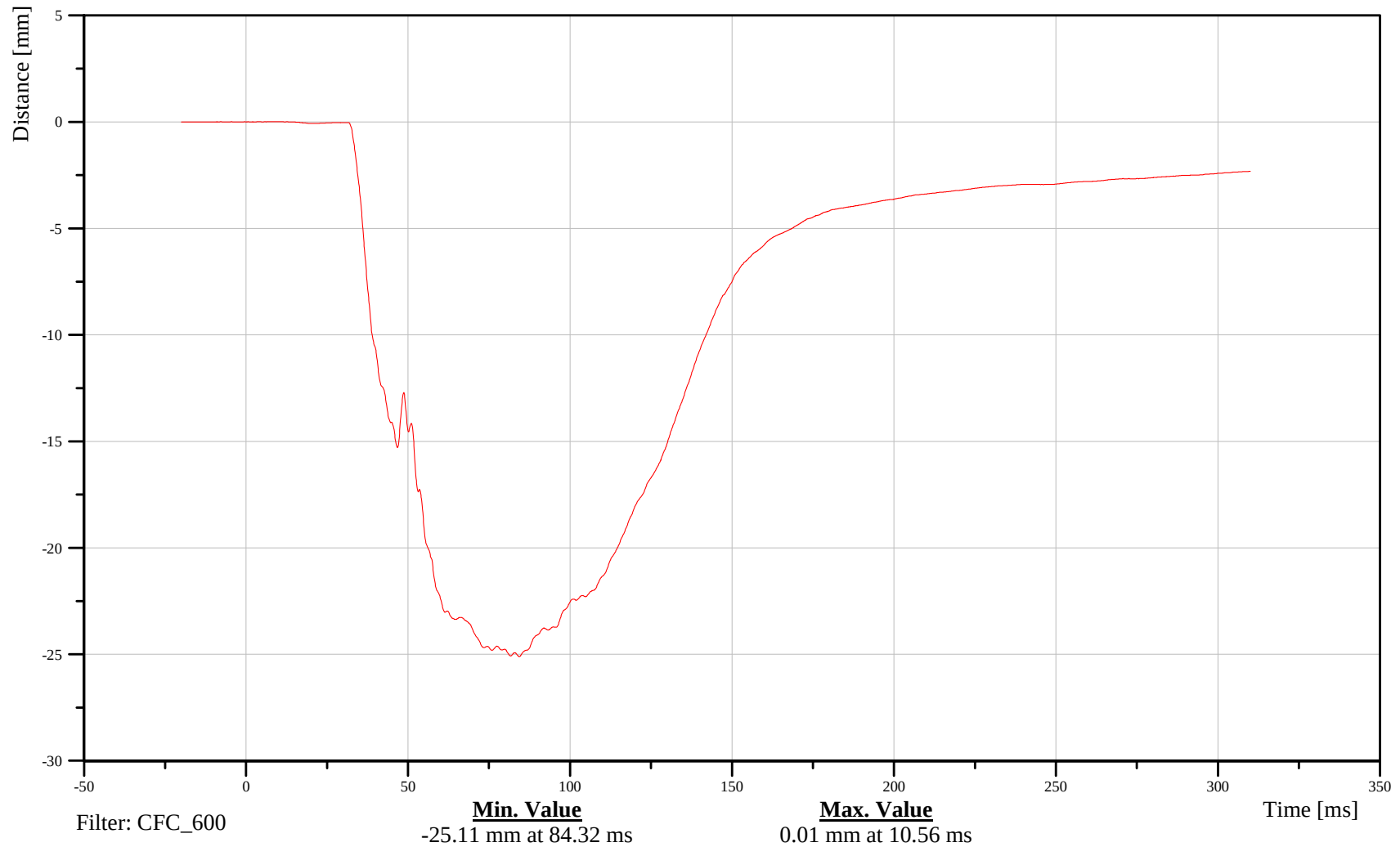
Bullet Vehicle Driver Chest X-Axis Displacement

Customer: VRTC

11CHST0000H3DSXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-24

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

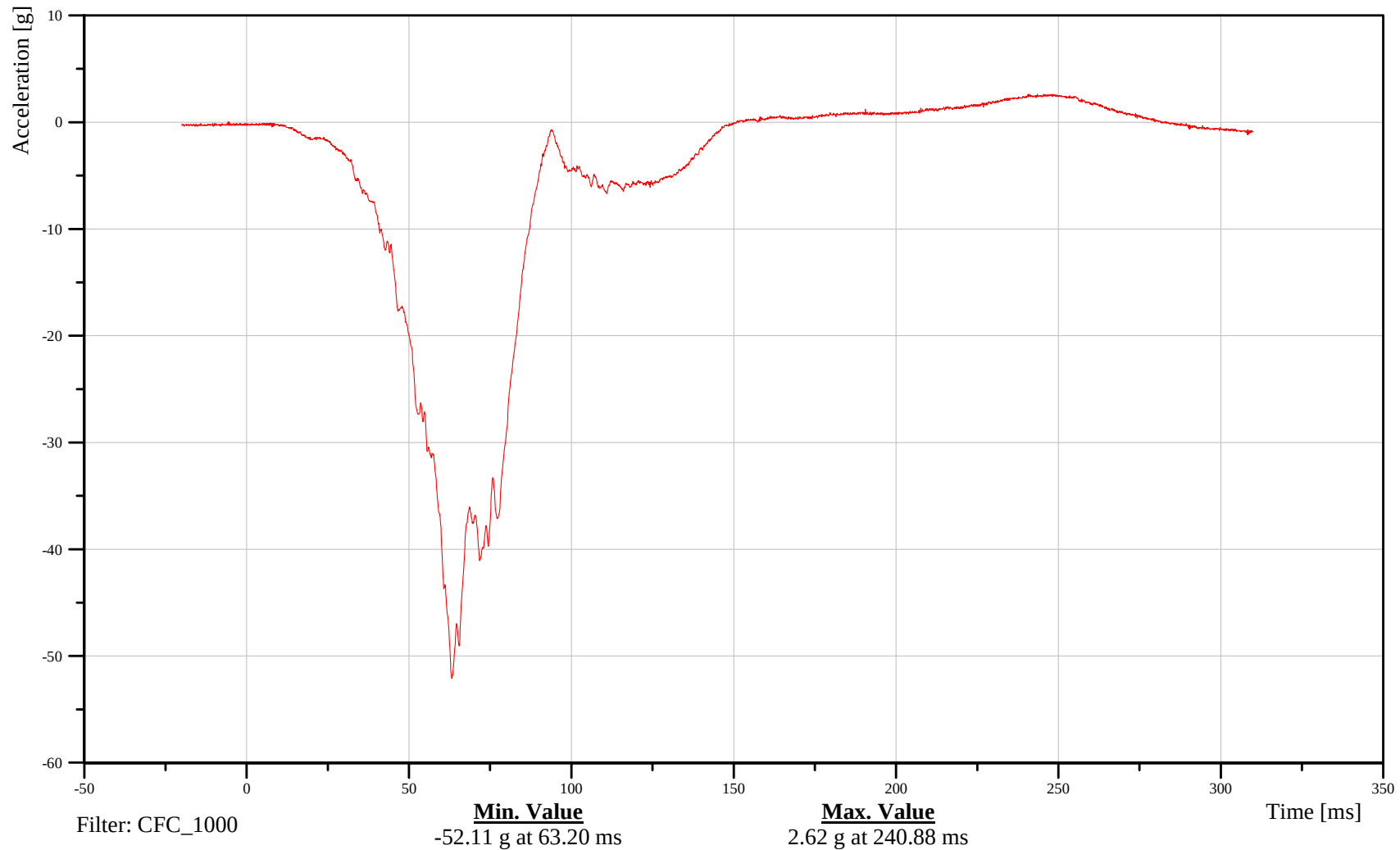
Bullet Vehicle Driver Pelvis X-Axis Acceleration

Customer: VRTC

11PELVCG00H3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-25

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

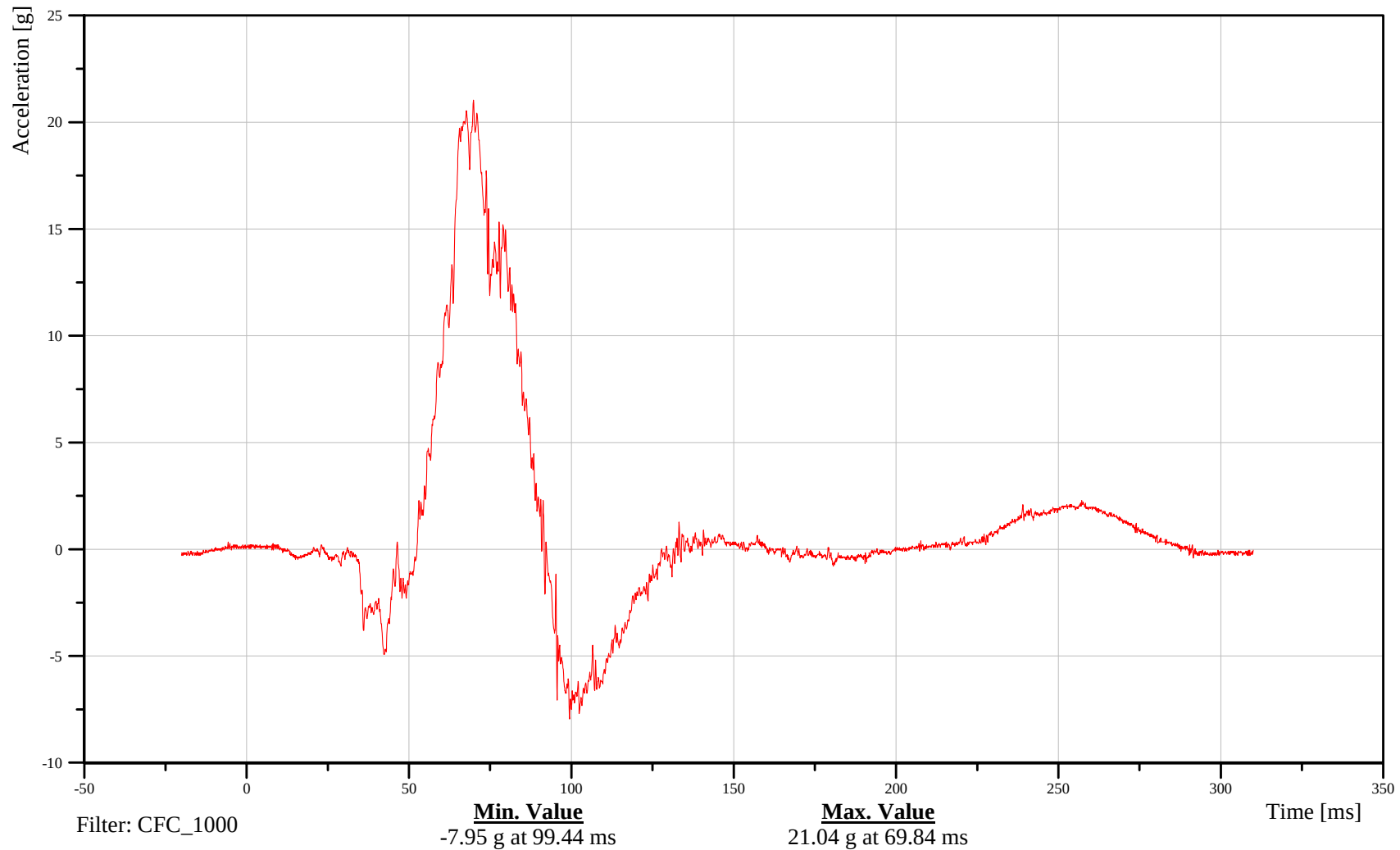
Bullet Vehicle Driver Pelvis Y-Axis Acceleration

Customer: VRTC

11PELVCG00H3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030





Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

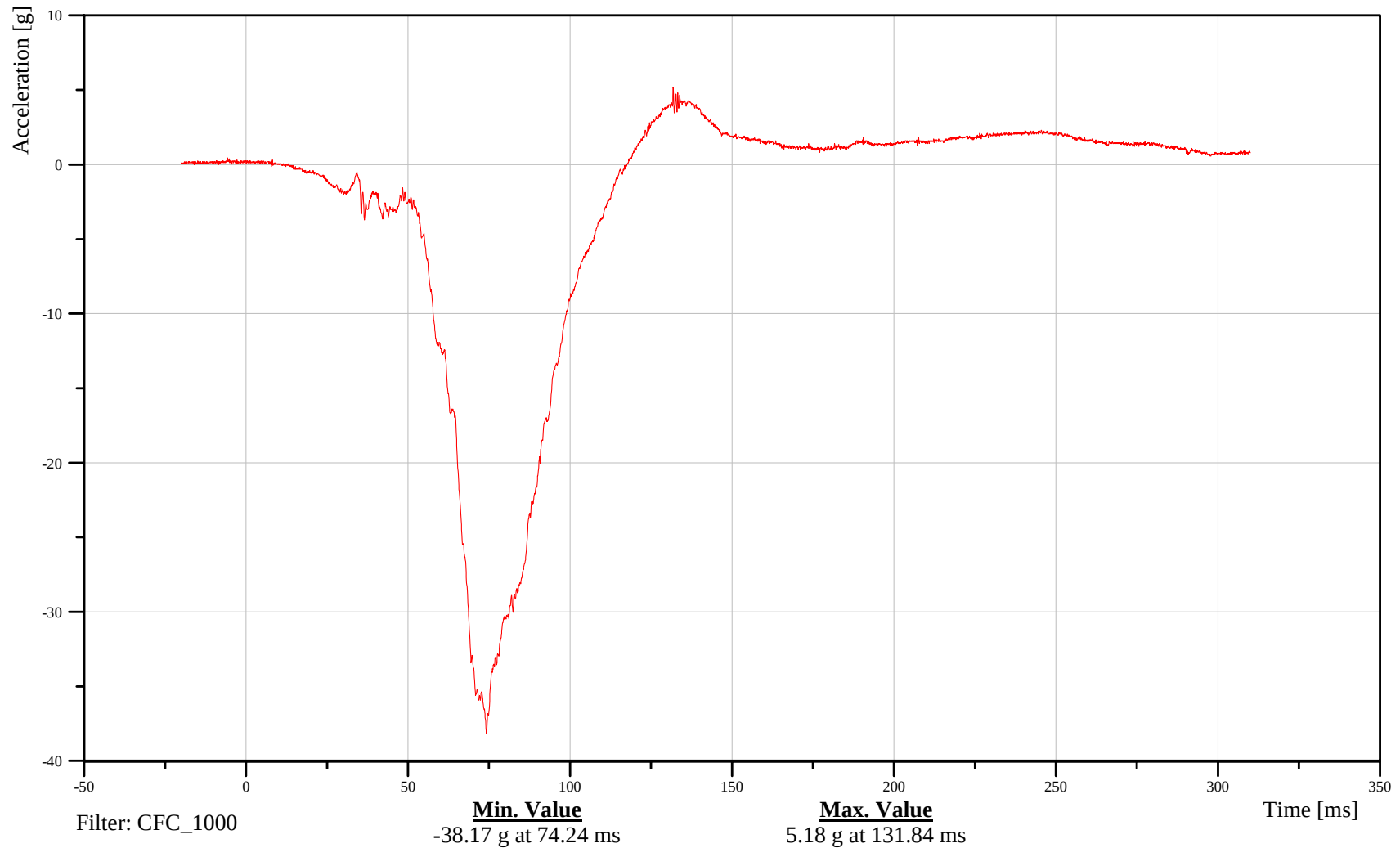
Bullet Vehicle Driver Pelvis Z-Axis Acceleration

Customer: VRTC

11PELVCG00H3ACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-27

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

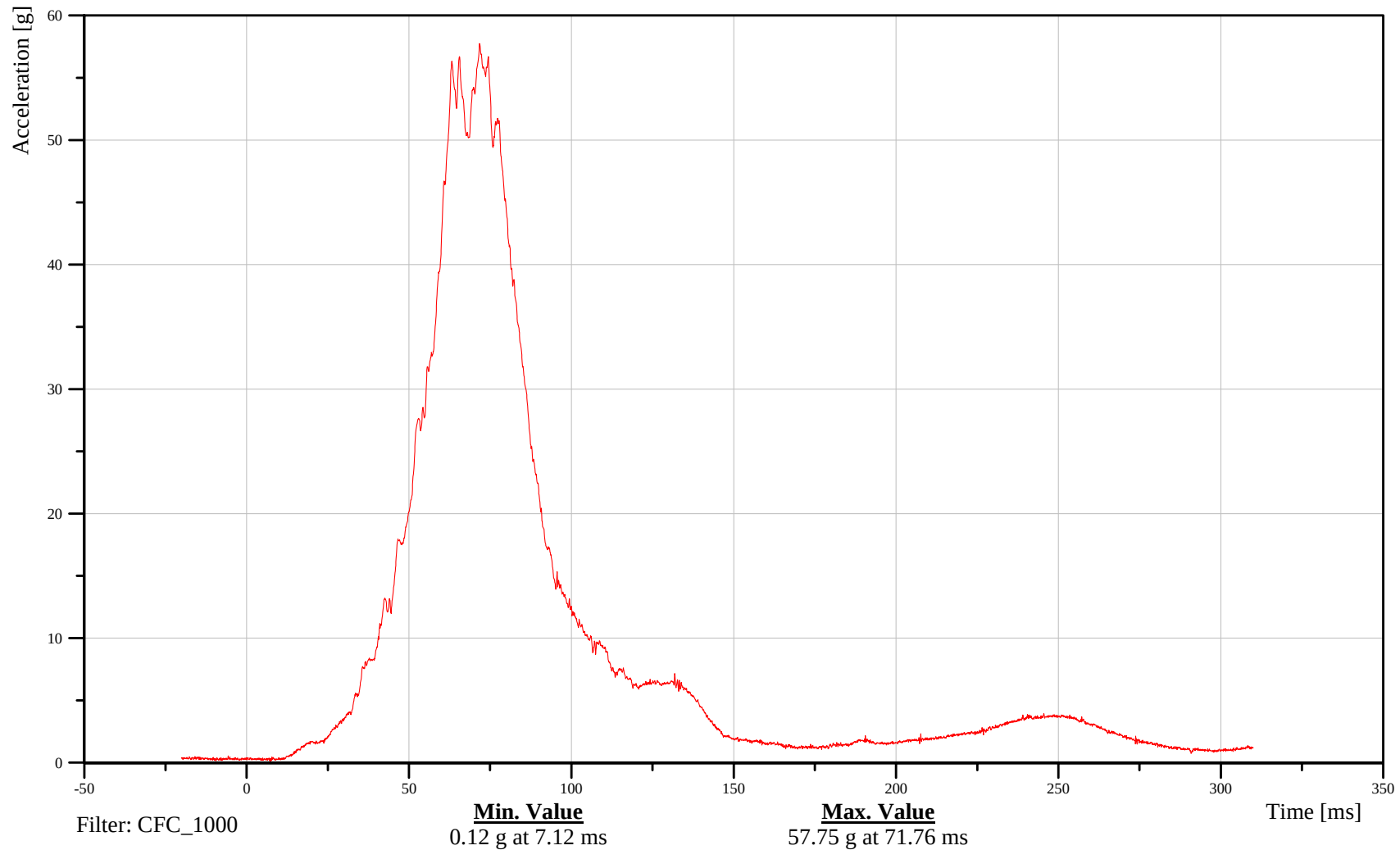
Bullet Vehicle Driver Pelvis Resultant Acceleration

Customer: VRTC

11PELVCG00H3ACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-28

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Femur Z-Axis Force

Date: 10/30/2009

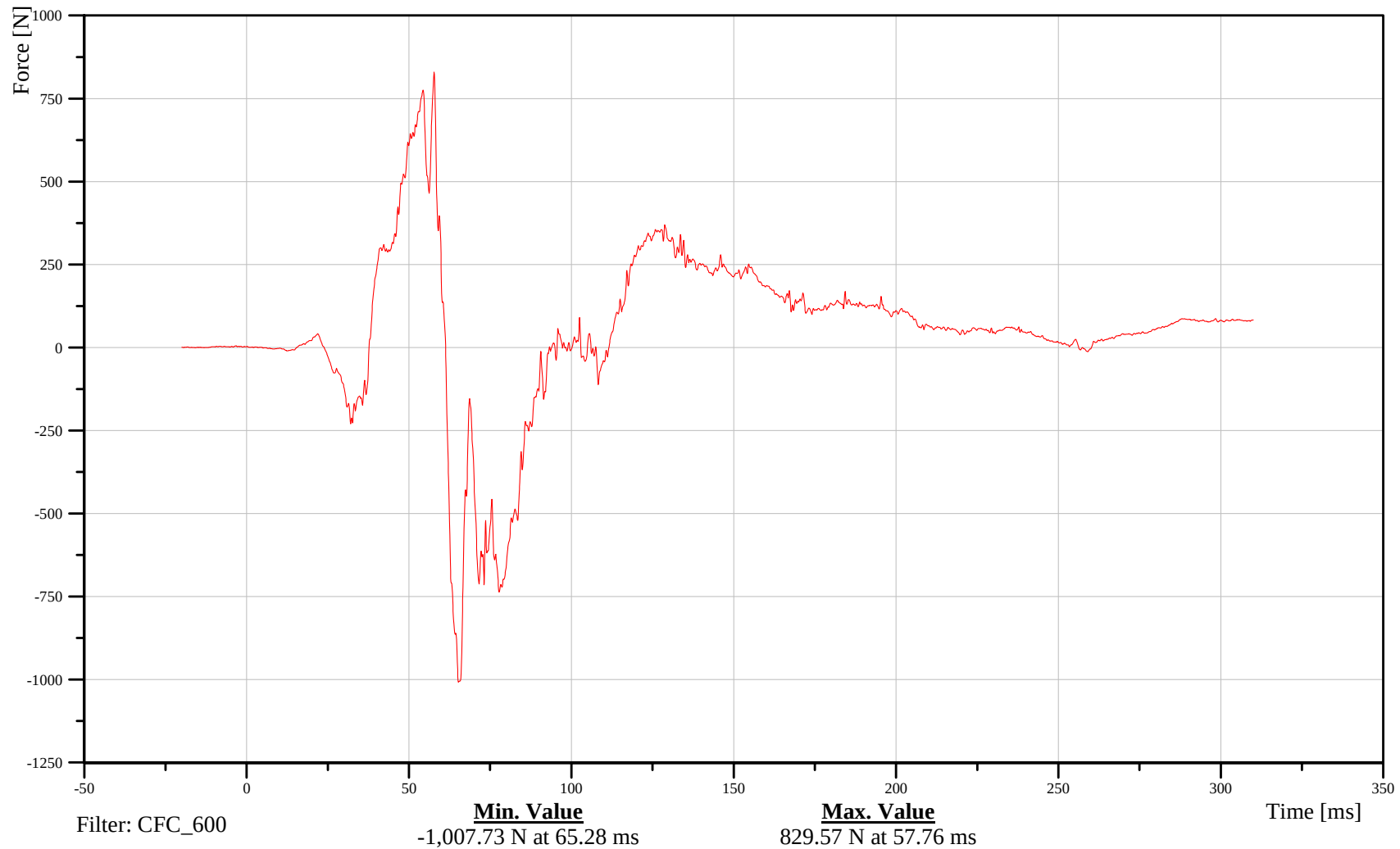
Time: 16:48

Customer: VRTC

11FEMRLL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-29

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

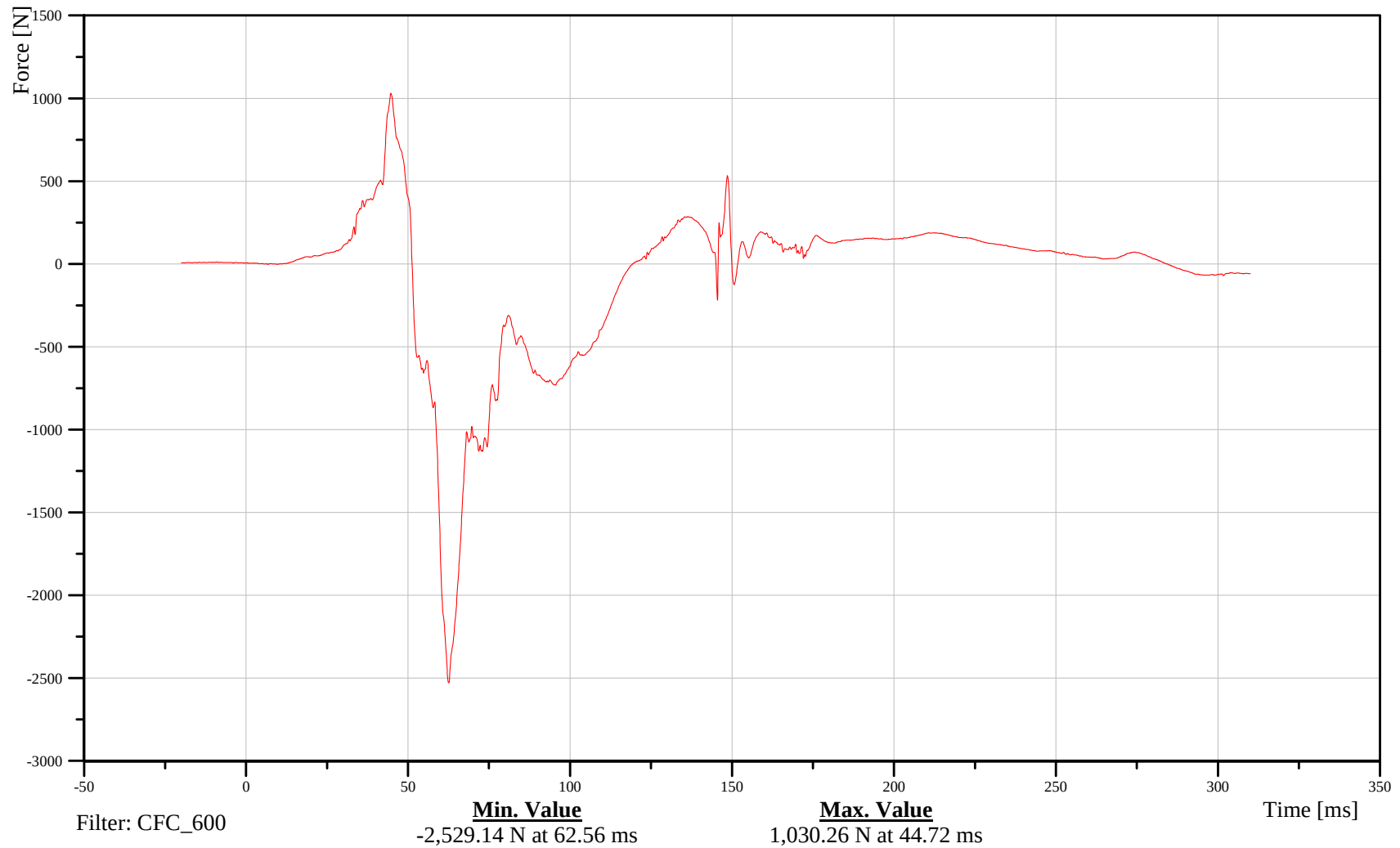
Bullet Vehicle Driver Right Femur Z-Axis Force

Customer: VRTC

11FEMRRL00H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-30

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

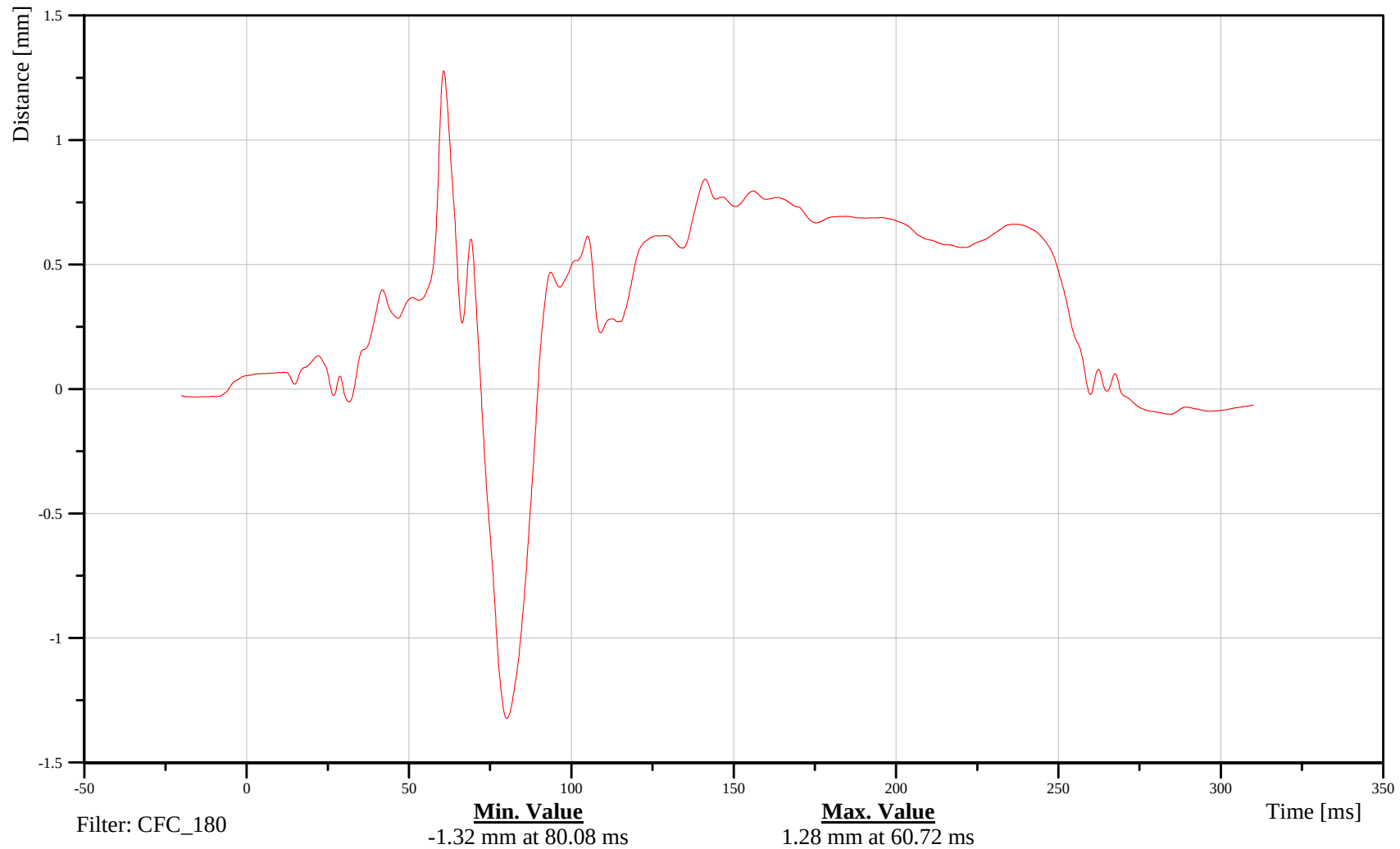
Bullet Vehicle Driver Left Knee X-Axis Displacement

Customer: VRTC

11KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-31

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

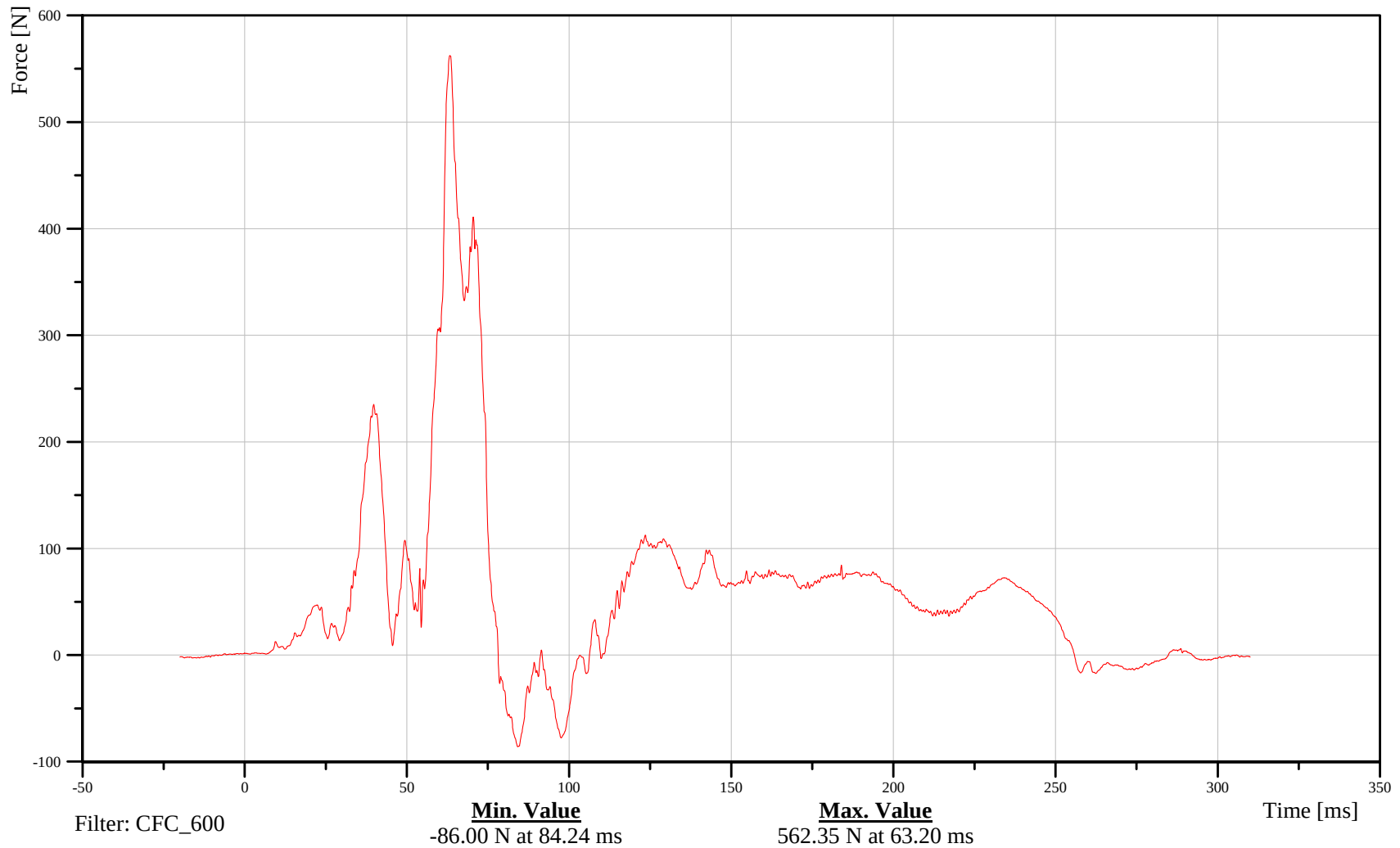
Bullet Vehicle Driver Left Upper Tibia X-Axis Force

Customer: VRTC

11TIBILULXH3FOX B

TRC Inc. Test Lab: CTF

Test Number: 091030



B-32

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

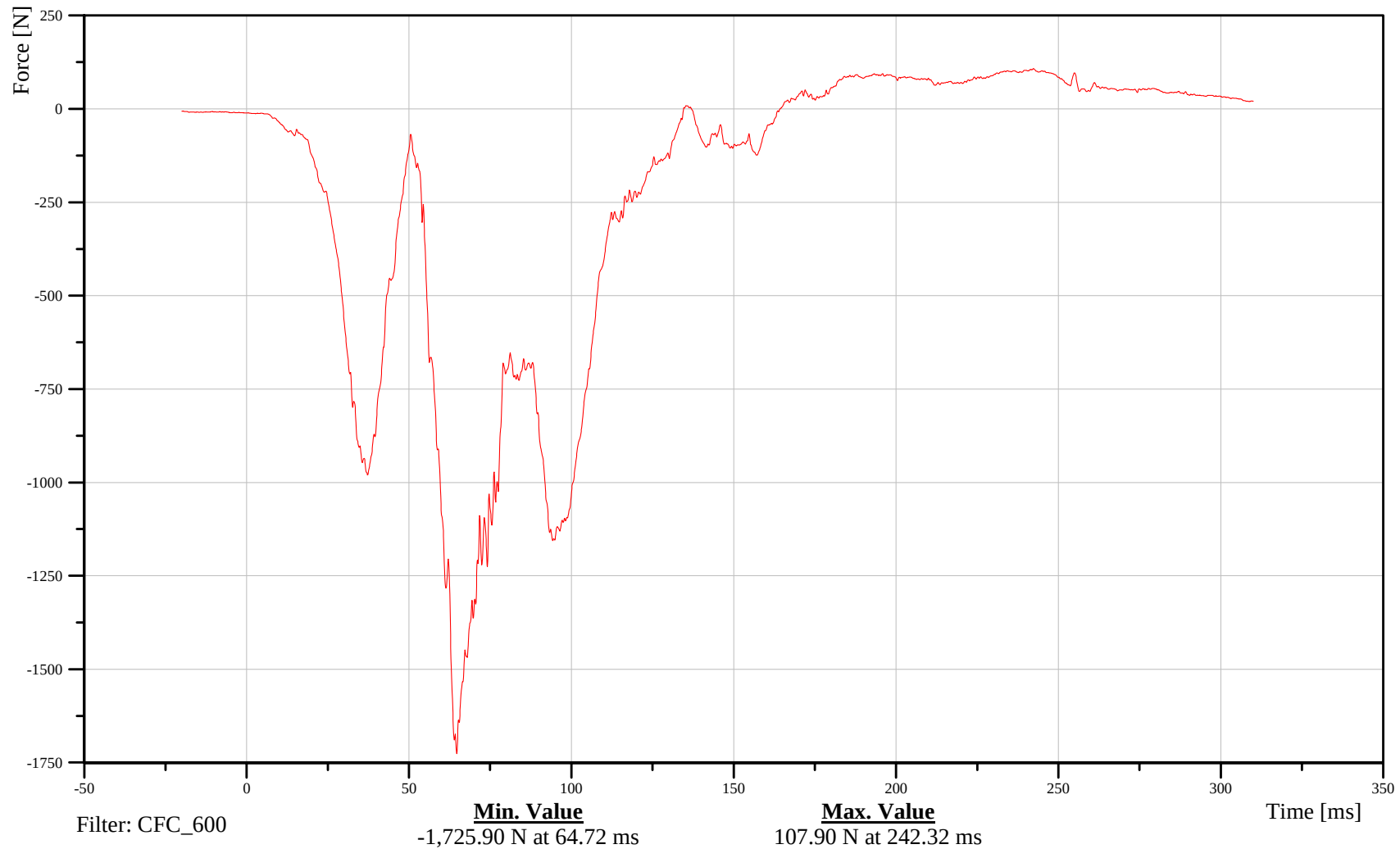
Bullet Vehicle Driver Left Upper Tibia Z-Axis Force

Customer: VRTC

11TIBILULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-33

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Upper Tibia Moment About X Axis

Date: 10/30/2009

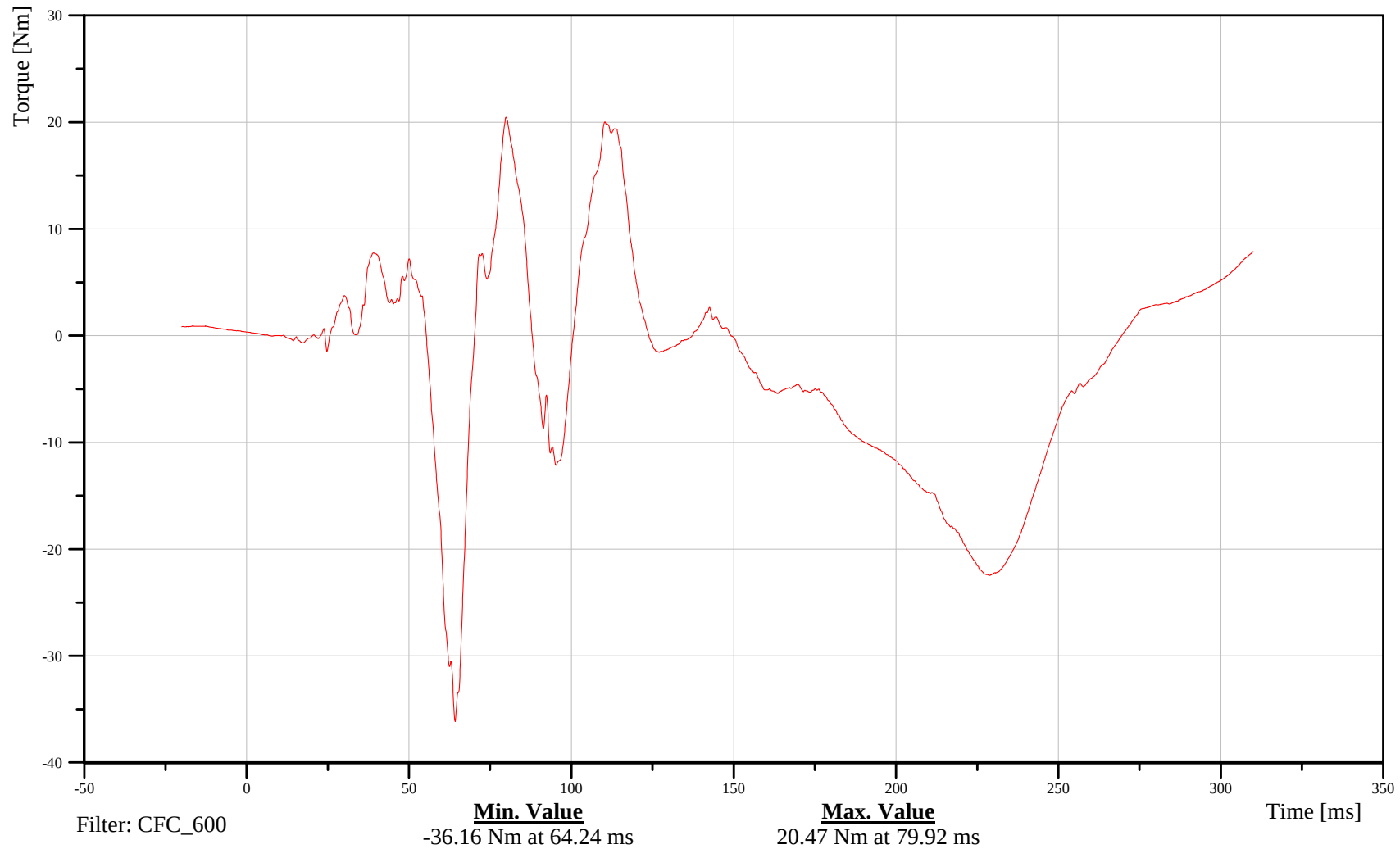
Time: 16:48

Customer: VRTC

11TIBILULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-34

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Upper Tibia Moment About Y Axis

Date: 10/30/2009

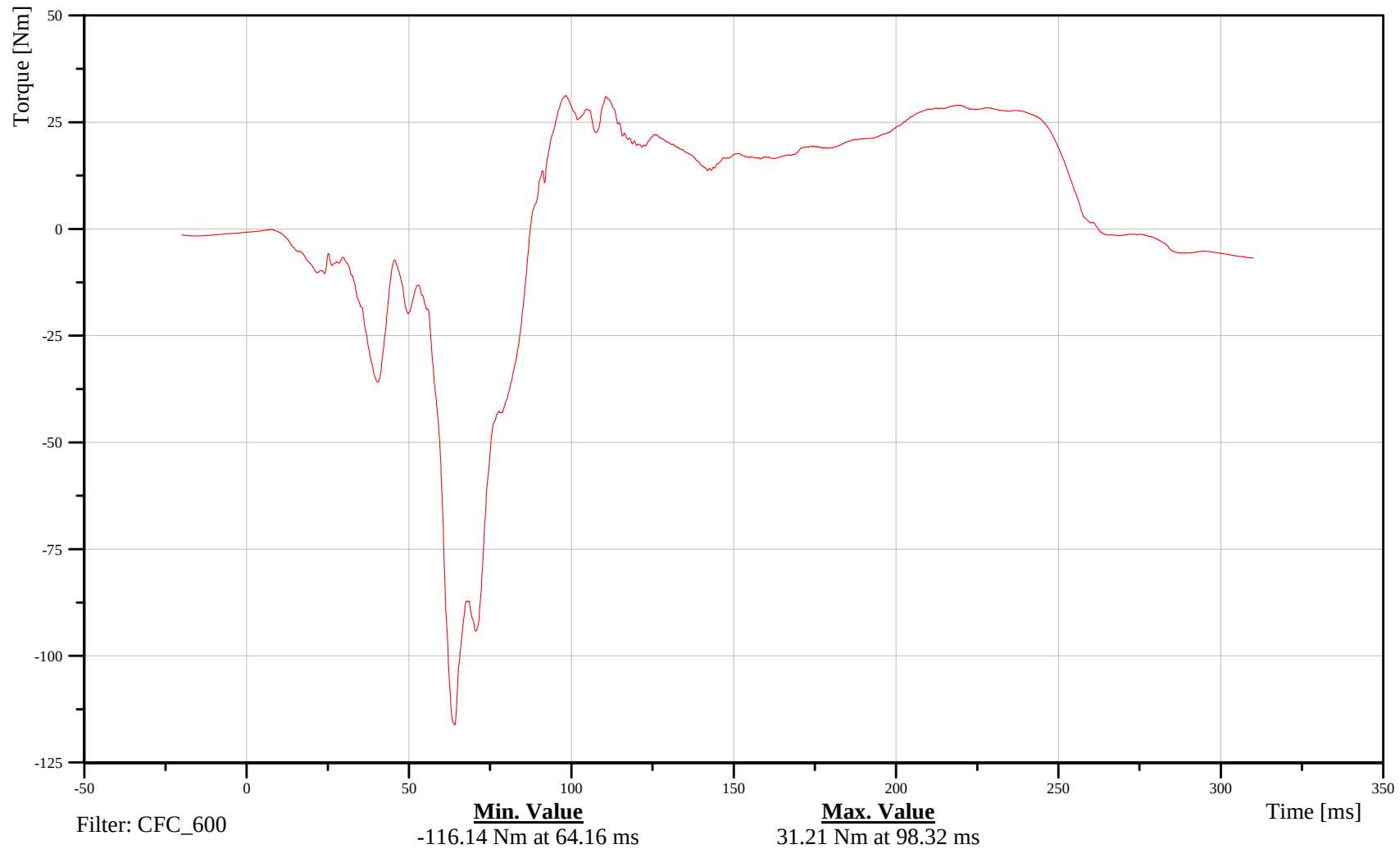
Time: 16:48

Customer: VRTC

11TIBILULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-35

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Lower Tibia X-Axis Force

Date: 10/30/2009

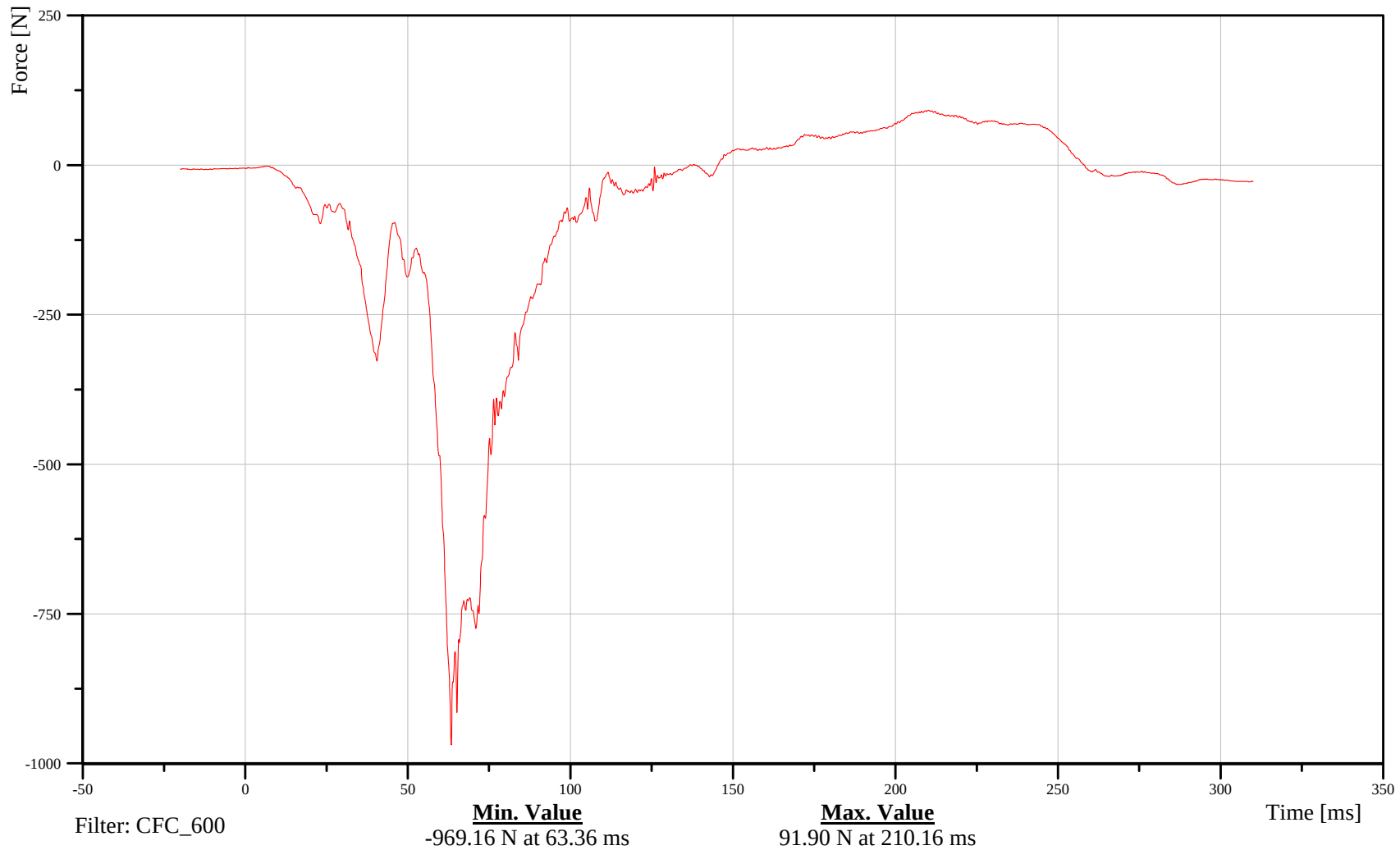
Time: 16:48

Customer: VRTC

11TIBILLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-36

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Lower Tibia Y-Axis Force

Date: 10/30/2009

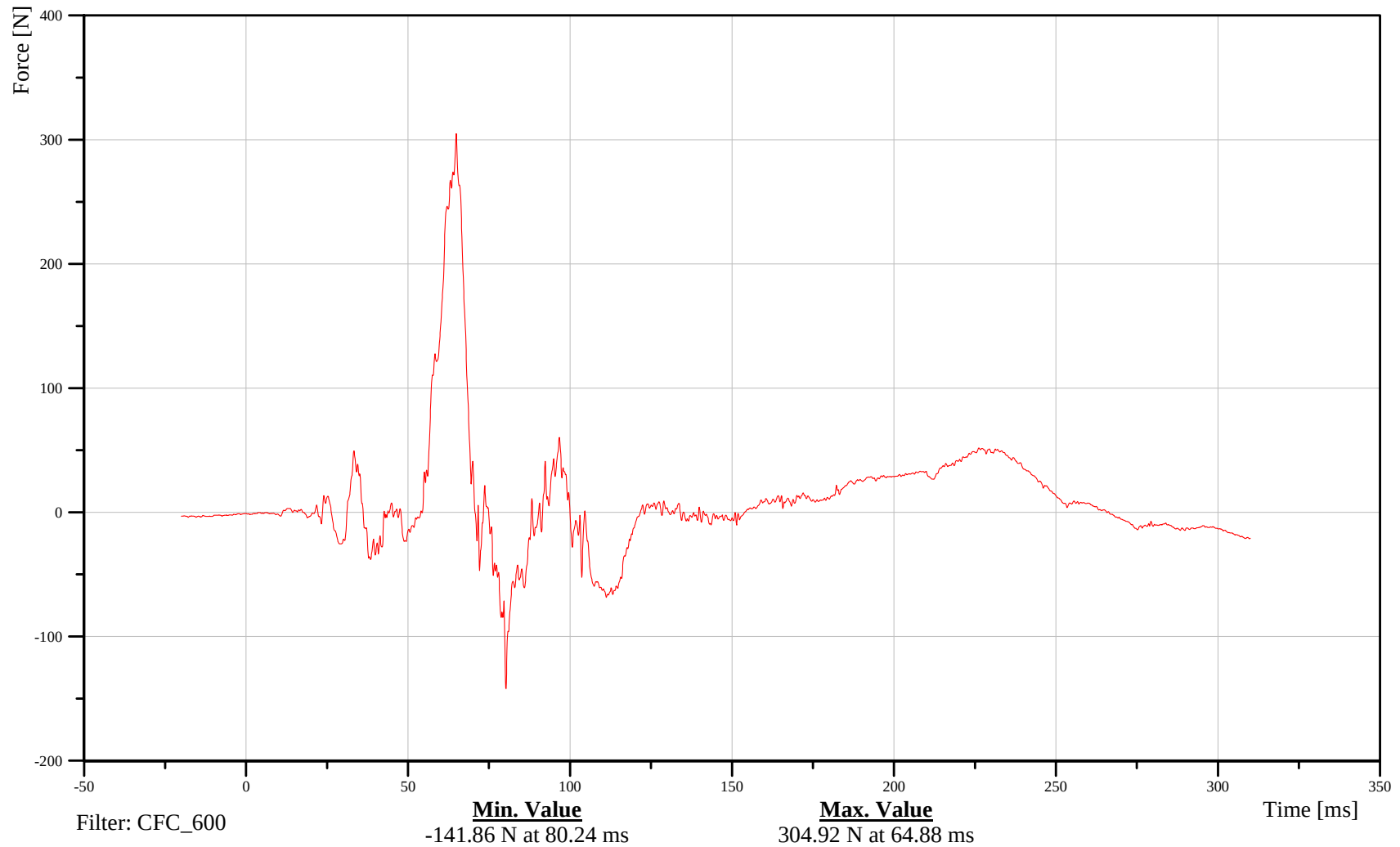
Time: 16:48

Customer: VRTC

11TIBILLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-37

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

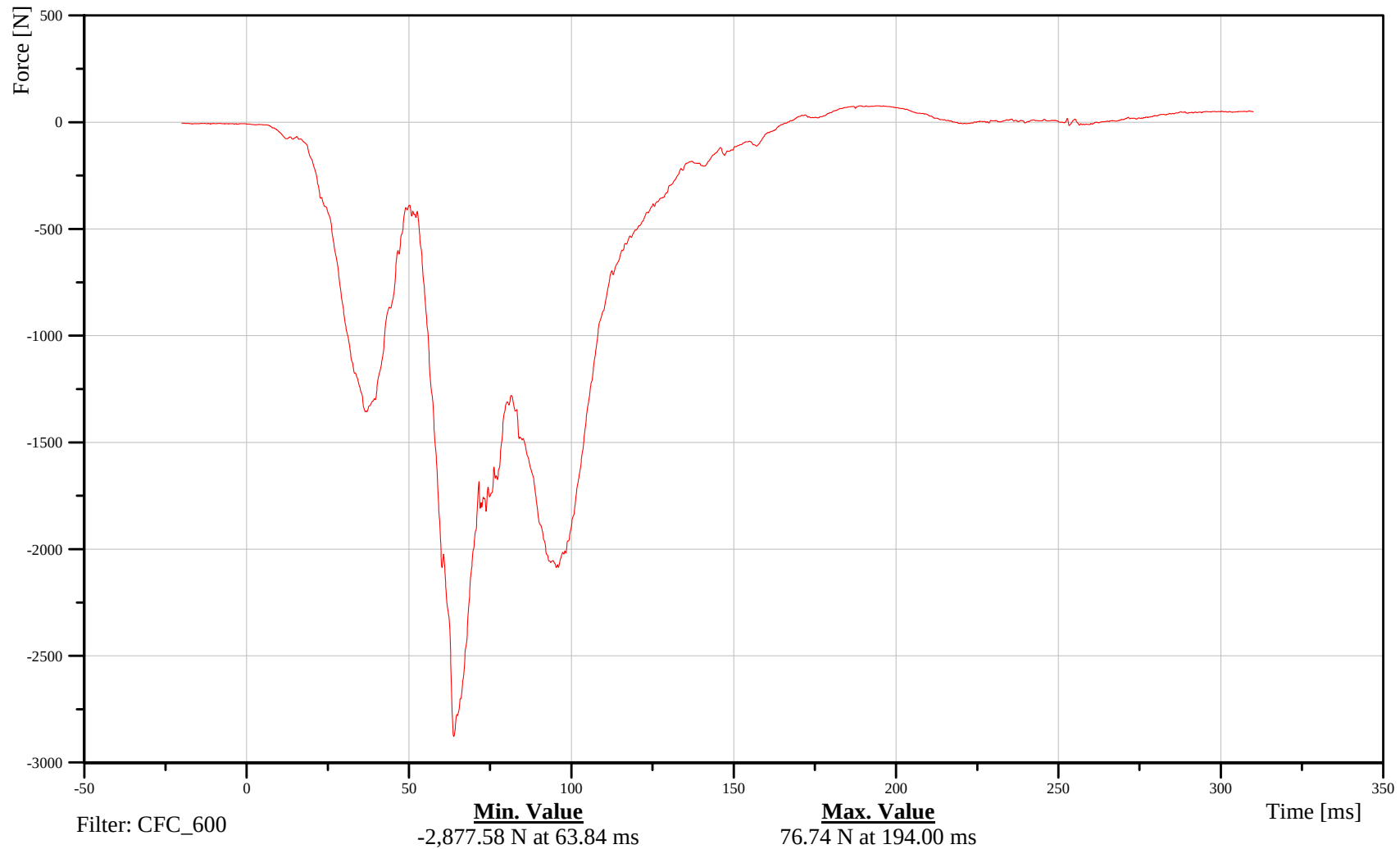
Bullet Vehicle Driver Left Lower Tibia Z-Axis Force

Customer: VRTC

11TIBILLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-38

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Lower Tibia Moment About X Axis

Date: 10/30/2009

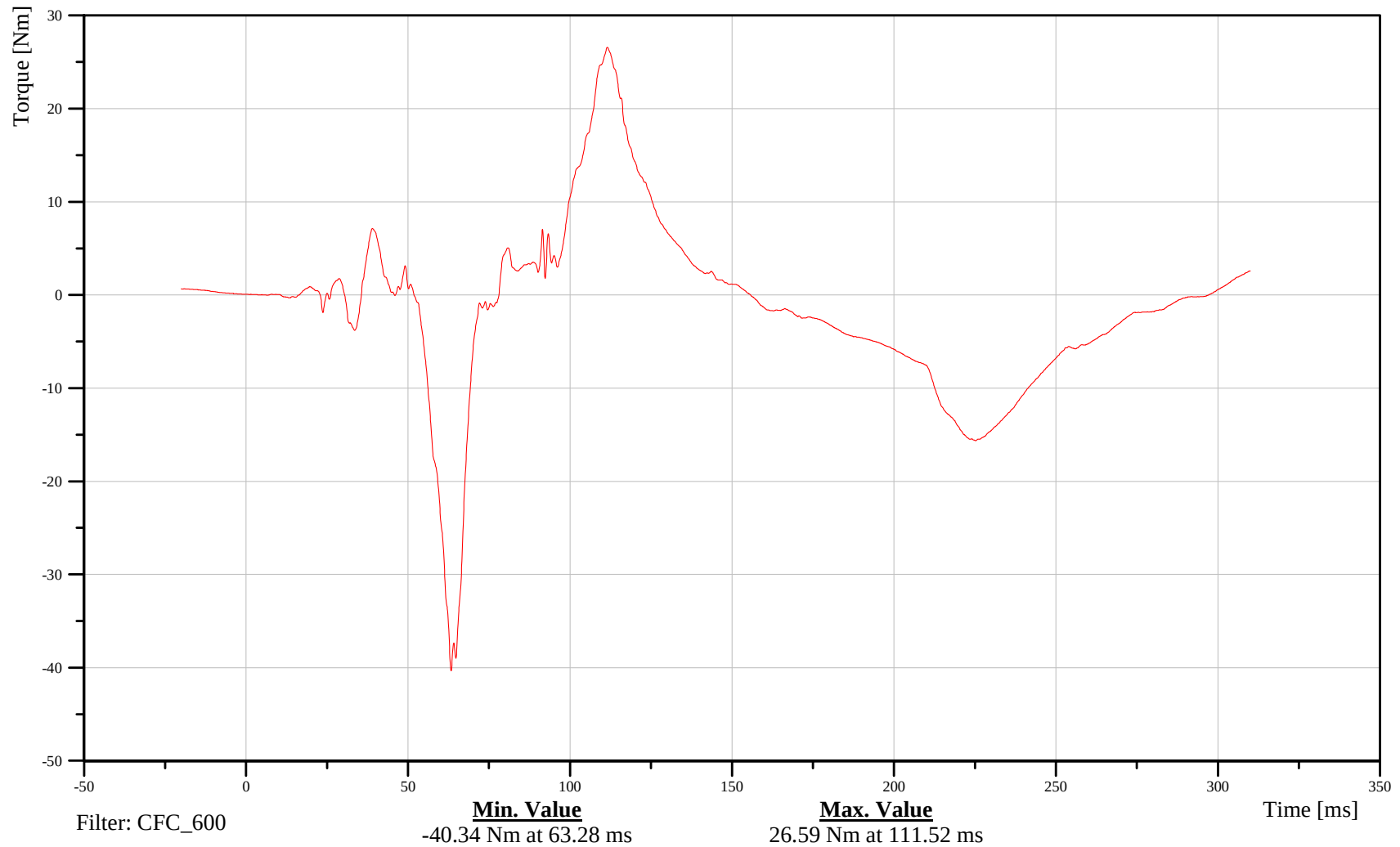
Time: 16:48

Customer: VRTC

11TIBILLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-39

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Lower Tibia Moment About Y Axis

Date: 10/30/2009

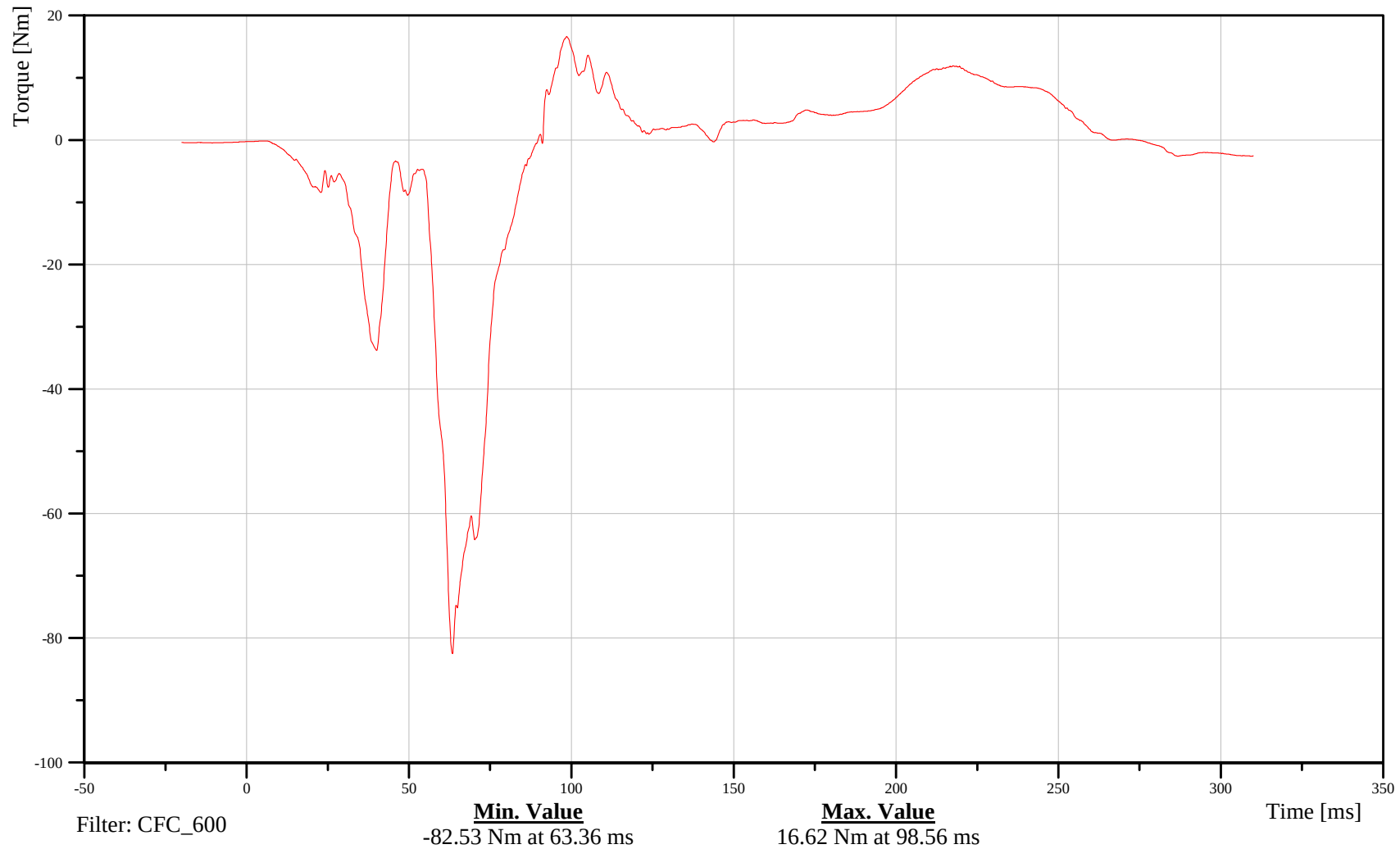
Time: 16:48

Customer: VRTC

11TIBILLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-40

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

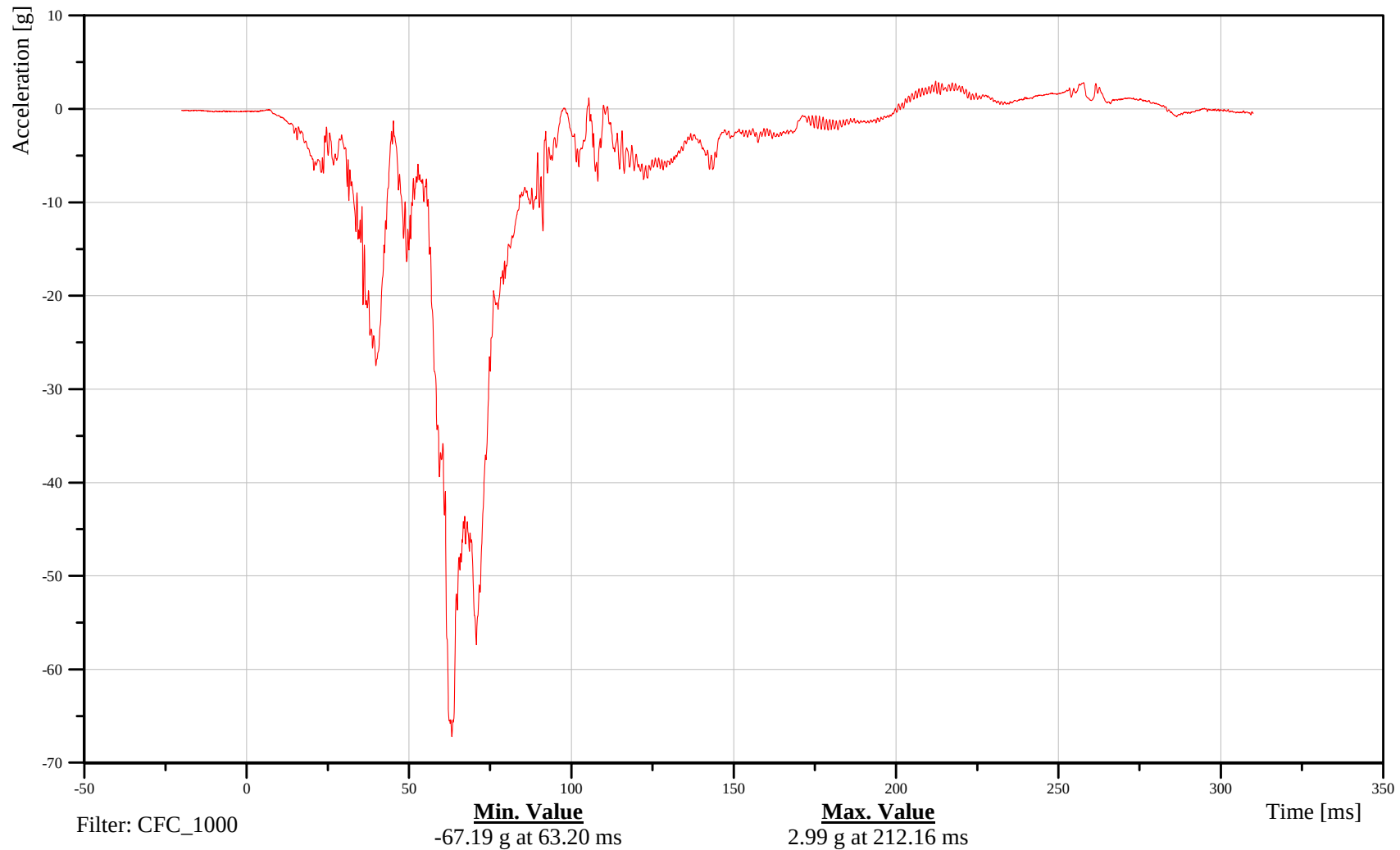
Bullet Vehicle Driver Left Tibia X-Axis Acceleration

Customer: VRTC

11TIBILELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-41

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

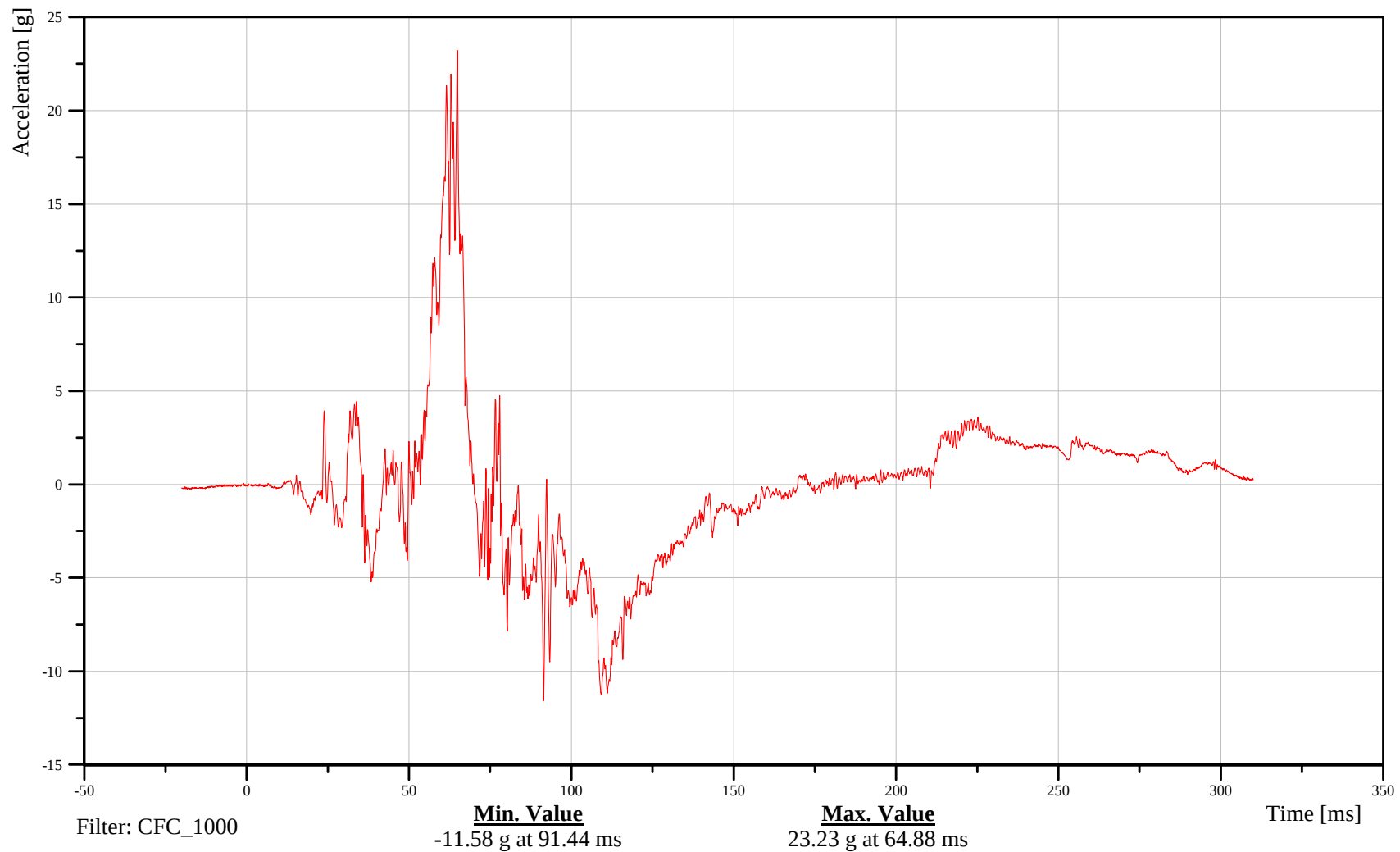
Bullet Vehicle Driver Left Tibia Y-Axis Acceleration

Customer: VRTC

11TIBILELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-42

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

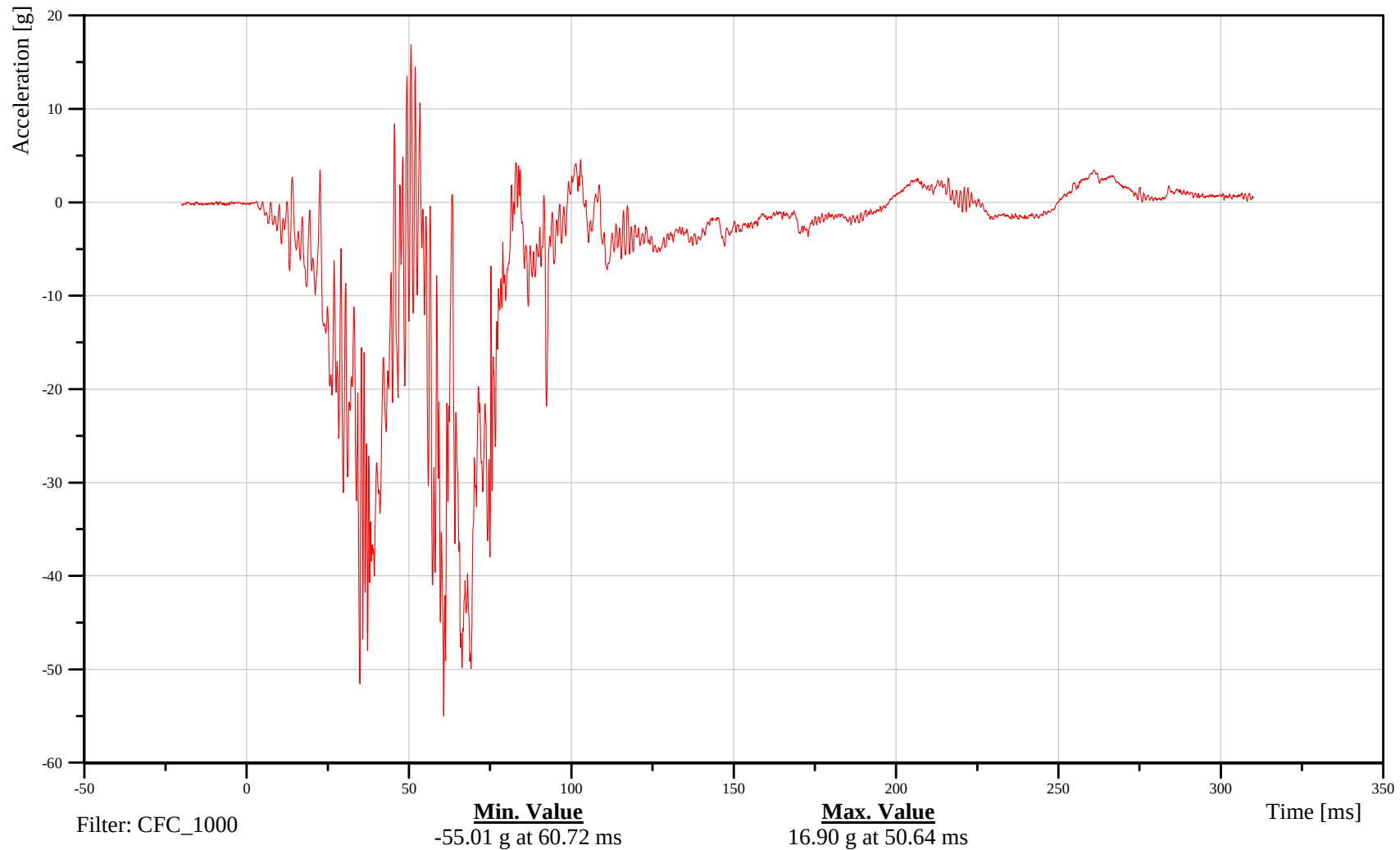
Bullet Vehicle Driver Left Foot X-Axis Acceleration

Customer: VRTC

11FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-43

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

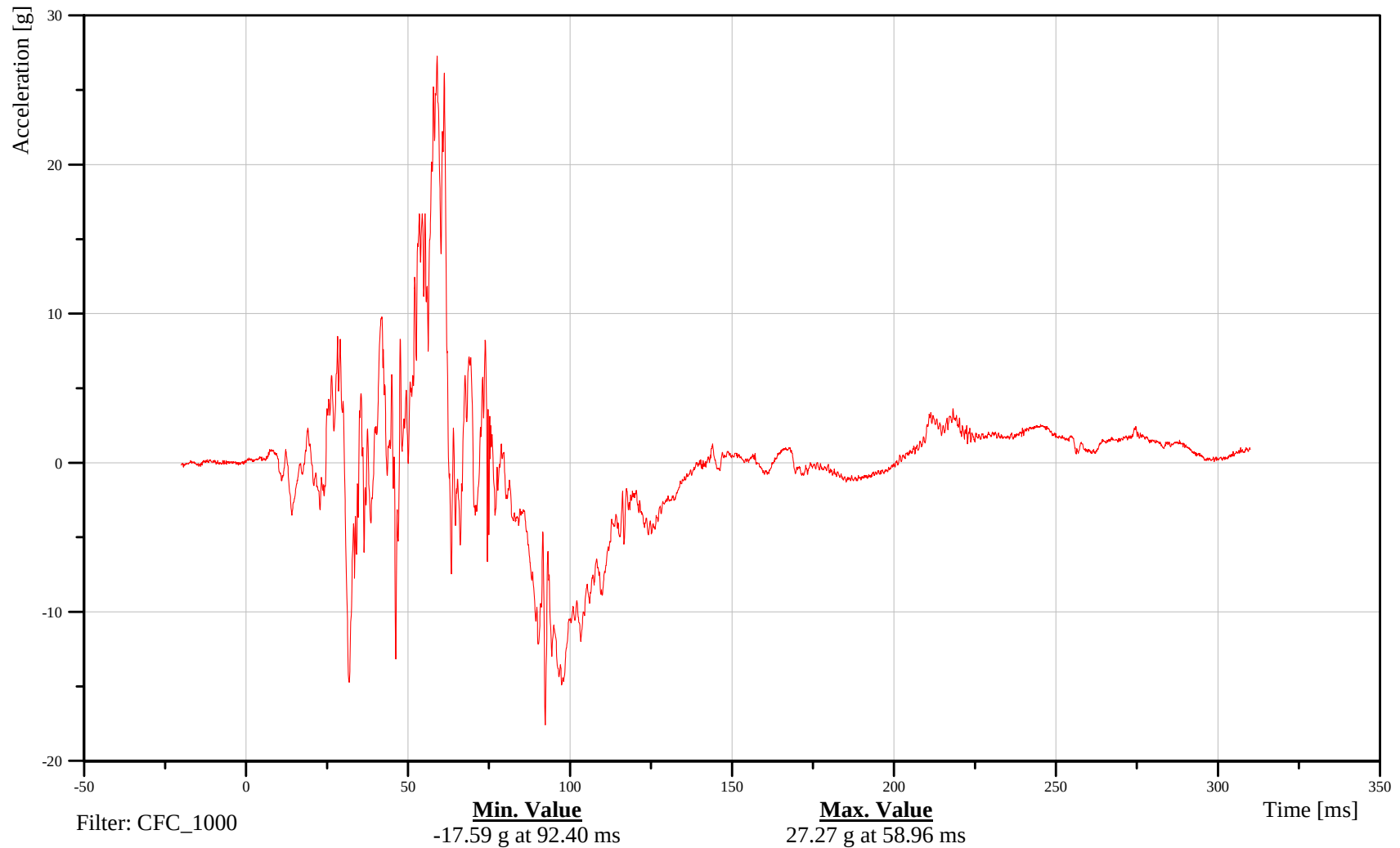
Bullet Vehicle Driver Left Foot Y-Axis Acceleration

Customer: VRTC

11FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-44

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

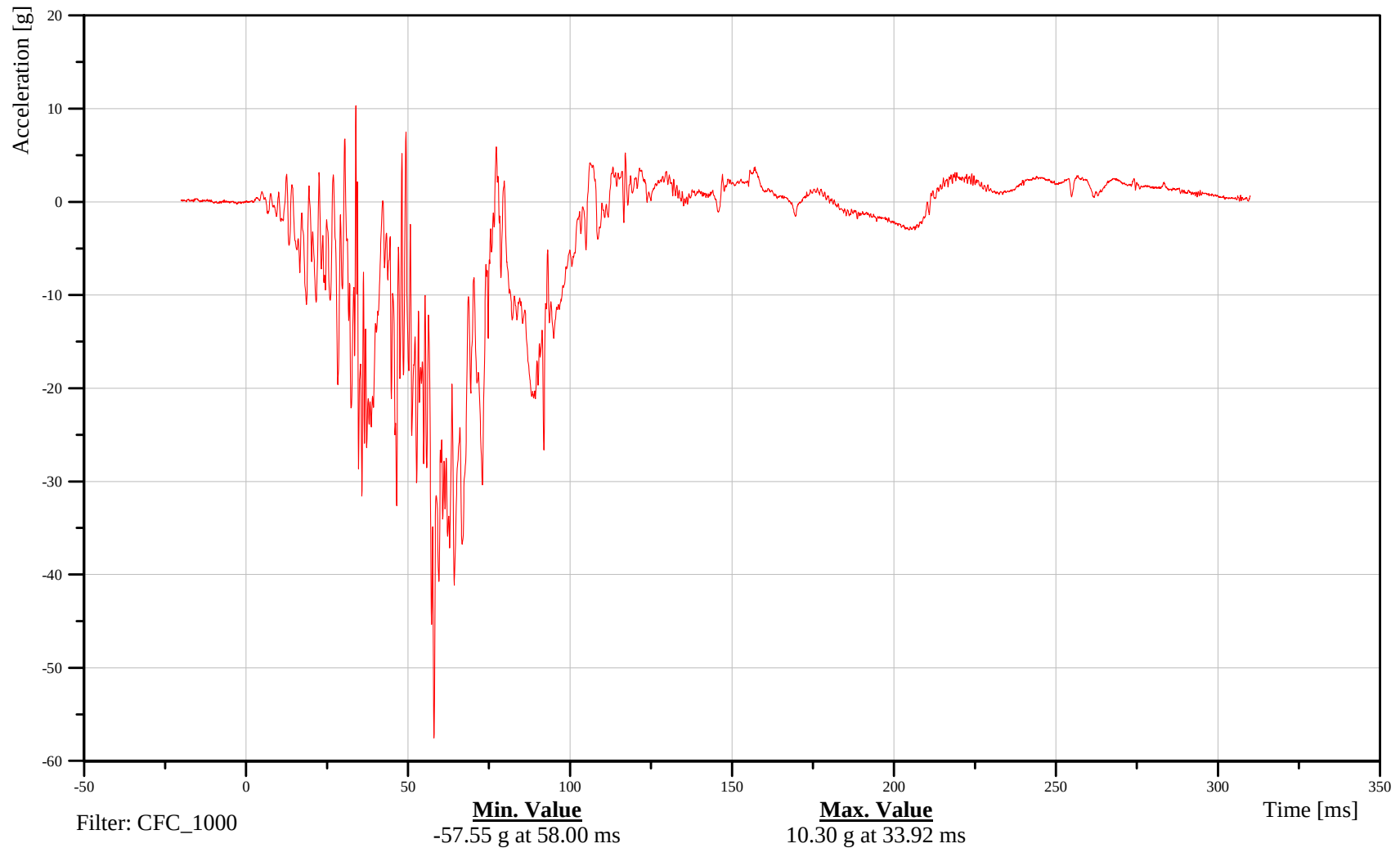
Bullet Vehicle Driver Left Foot Z-Axis Acceleration

Customer: VRTC

11FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-45

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

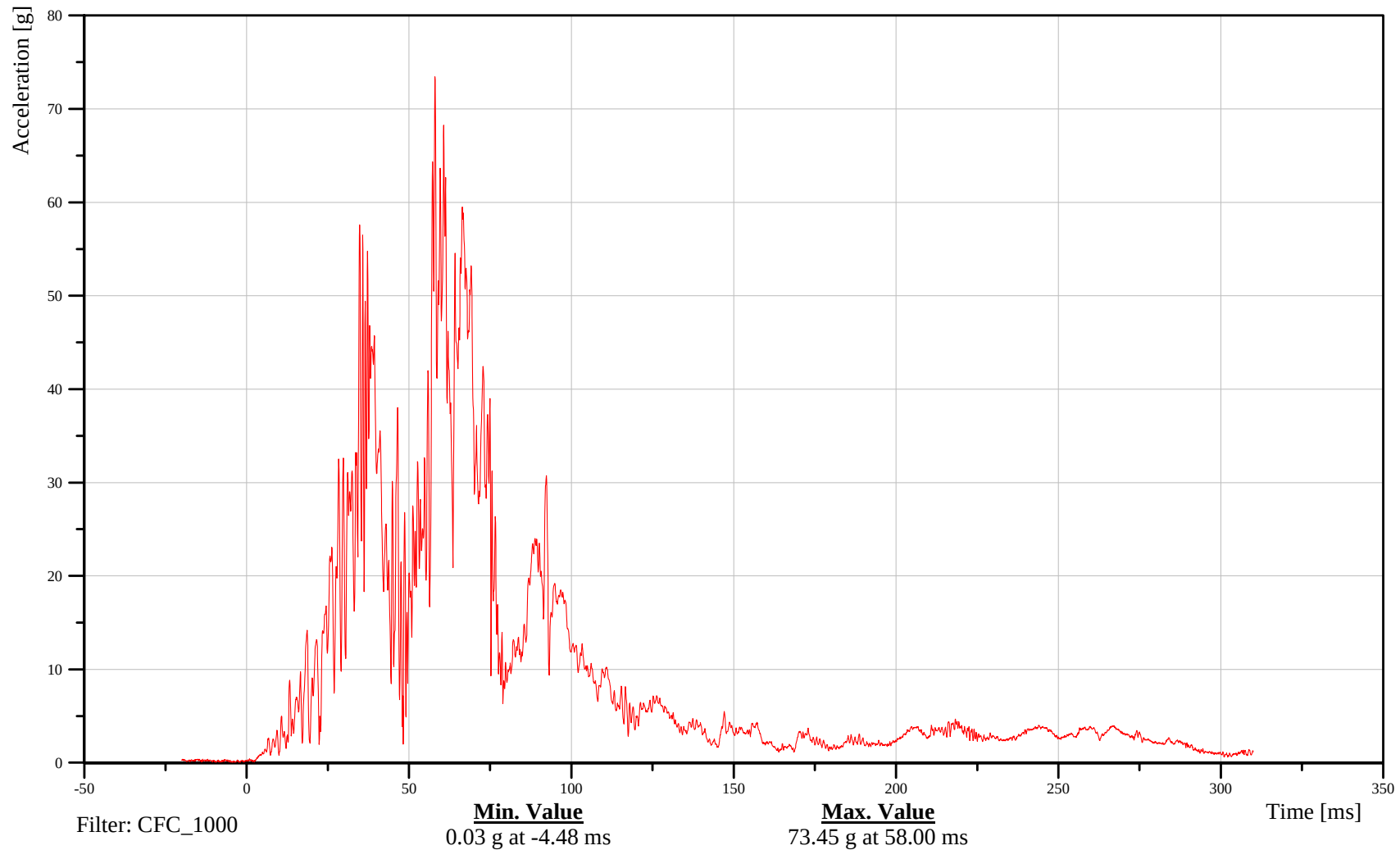
Bullet Vehicle Driver Left Foot Resultant Acceleration

Customer: VRTC

11FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-46

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Foot X-Axis Angular Displacement

Date: 10/30/2009

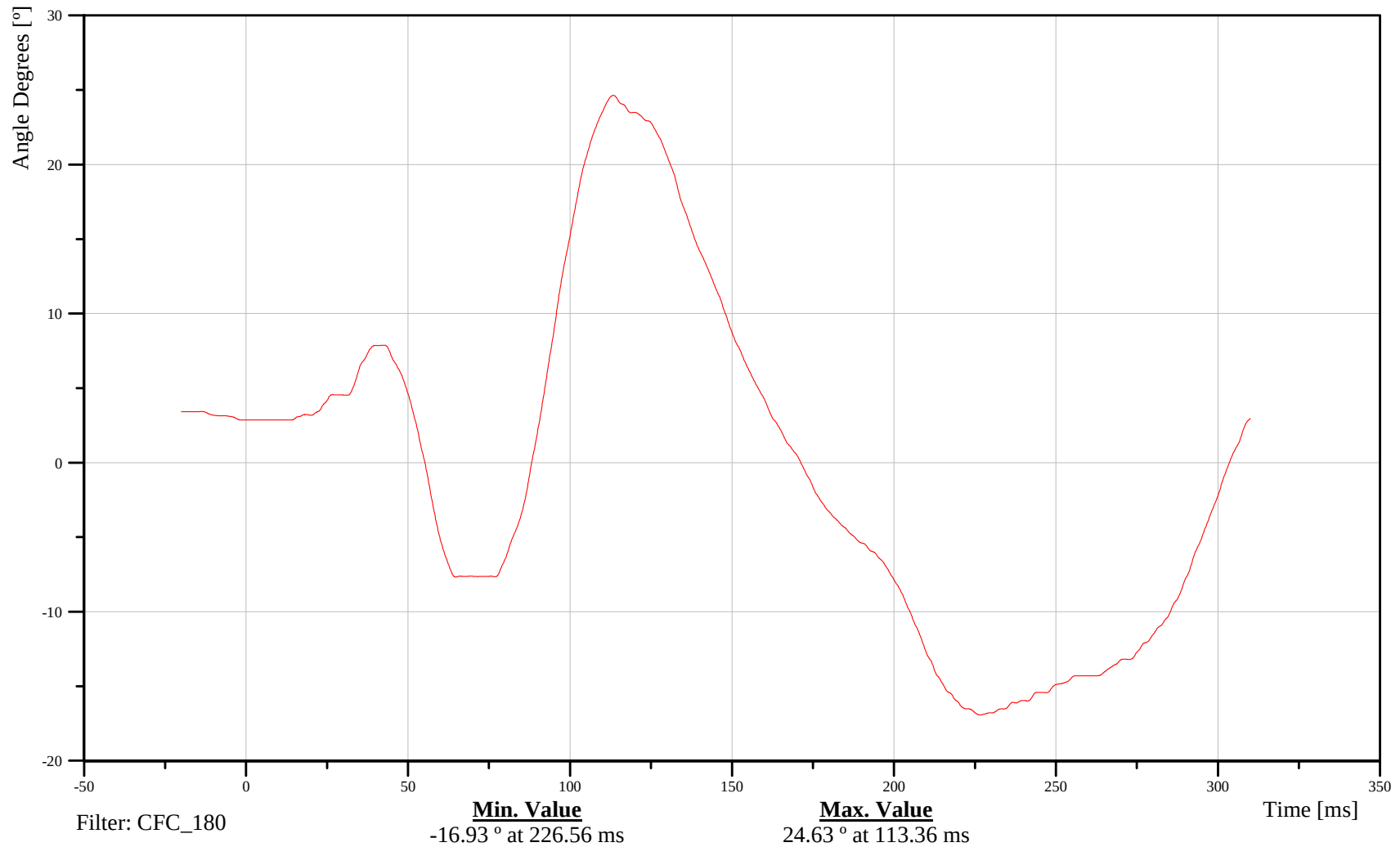
Time: 16:48

Customer: VRTC

11FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-47

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Foot Y-Axis Angular Displacement

Date: 10/30/2009

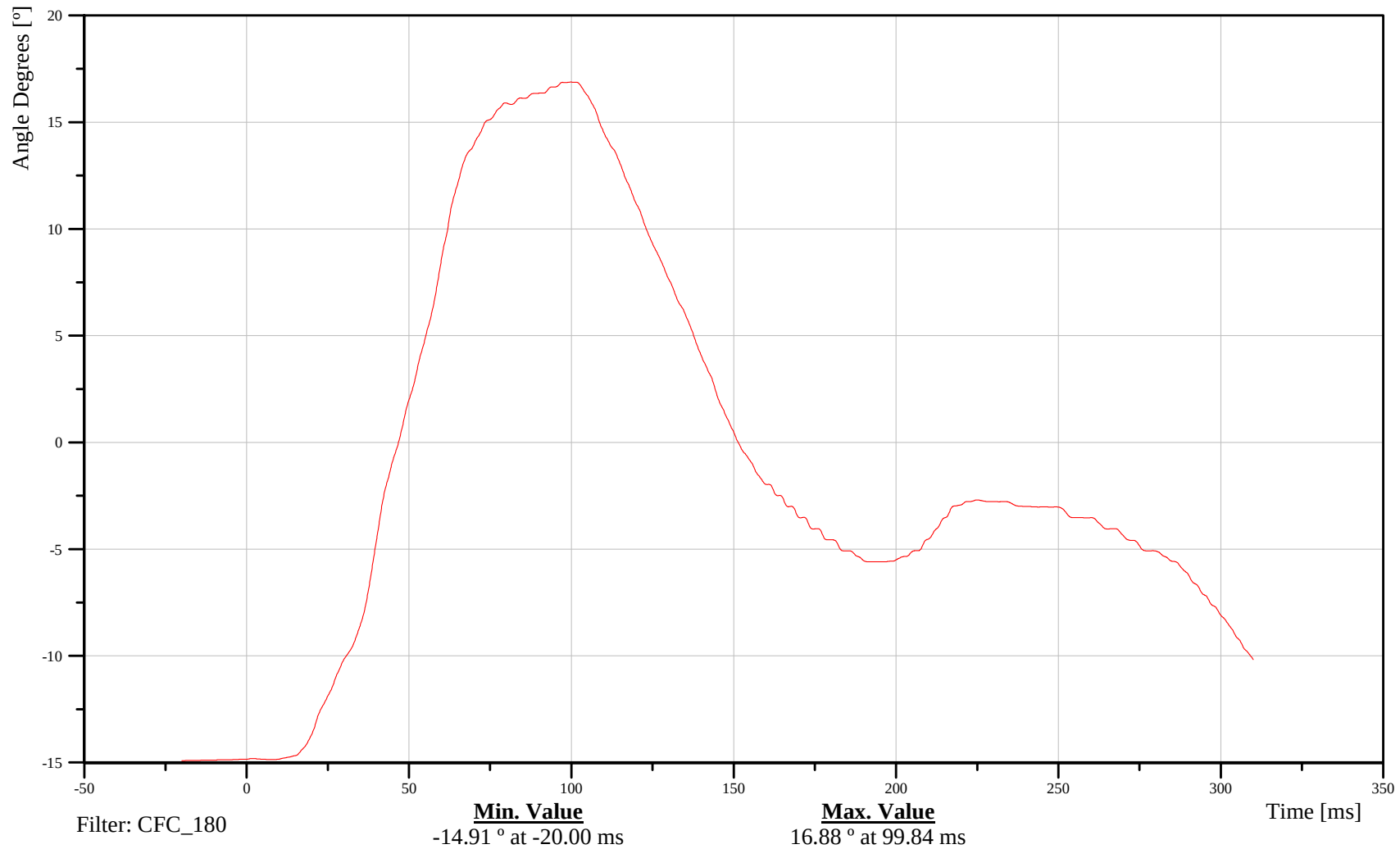
Time: 16:48

Customer: VRTC

11FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-48

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Left Foot Z-Axis Angular Displacement

Date: 10/30/2009

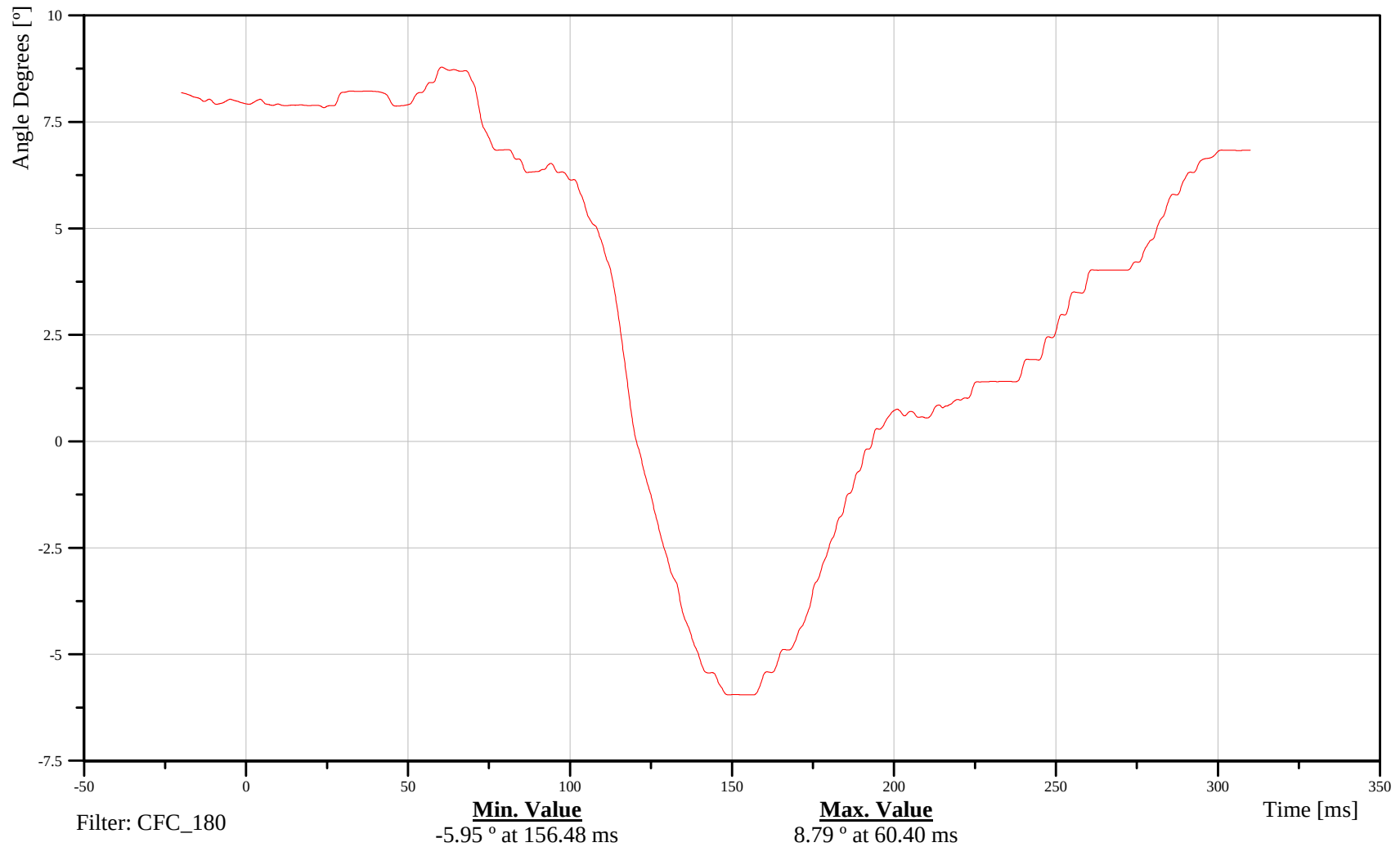
Time: 16:48

Customer: VRTC

11FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-49

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Knee X-Axis Displacement

Date: 10/30/2009

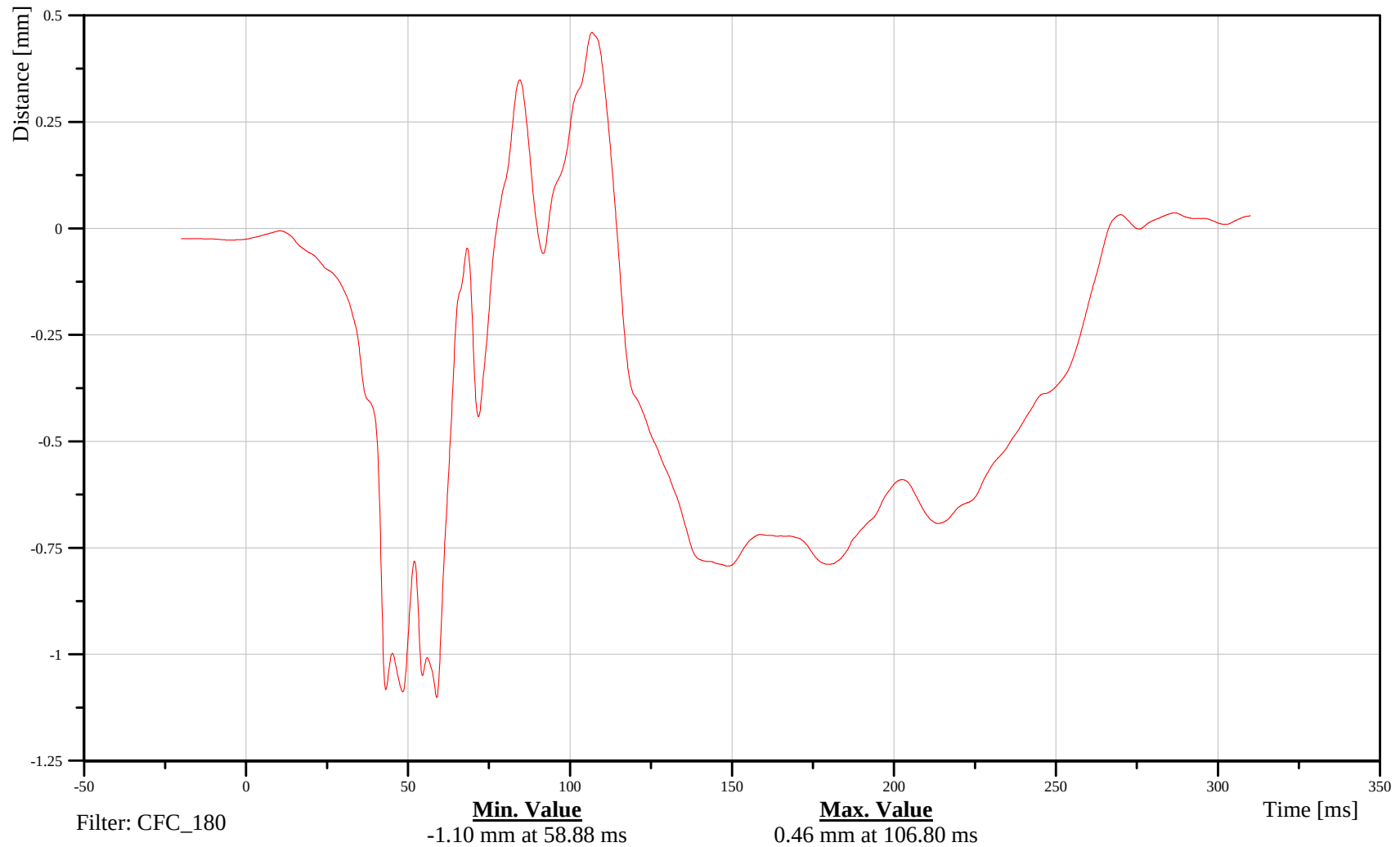
Time: 16:48

Customer: VRTC

11KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-50

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

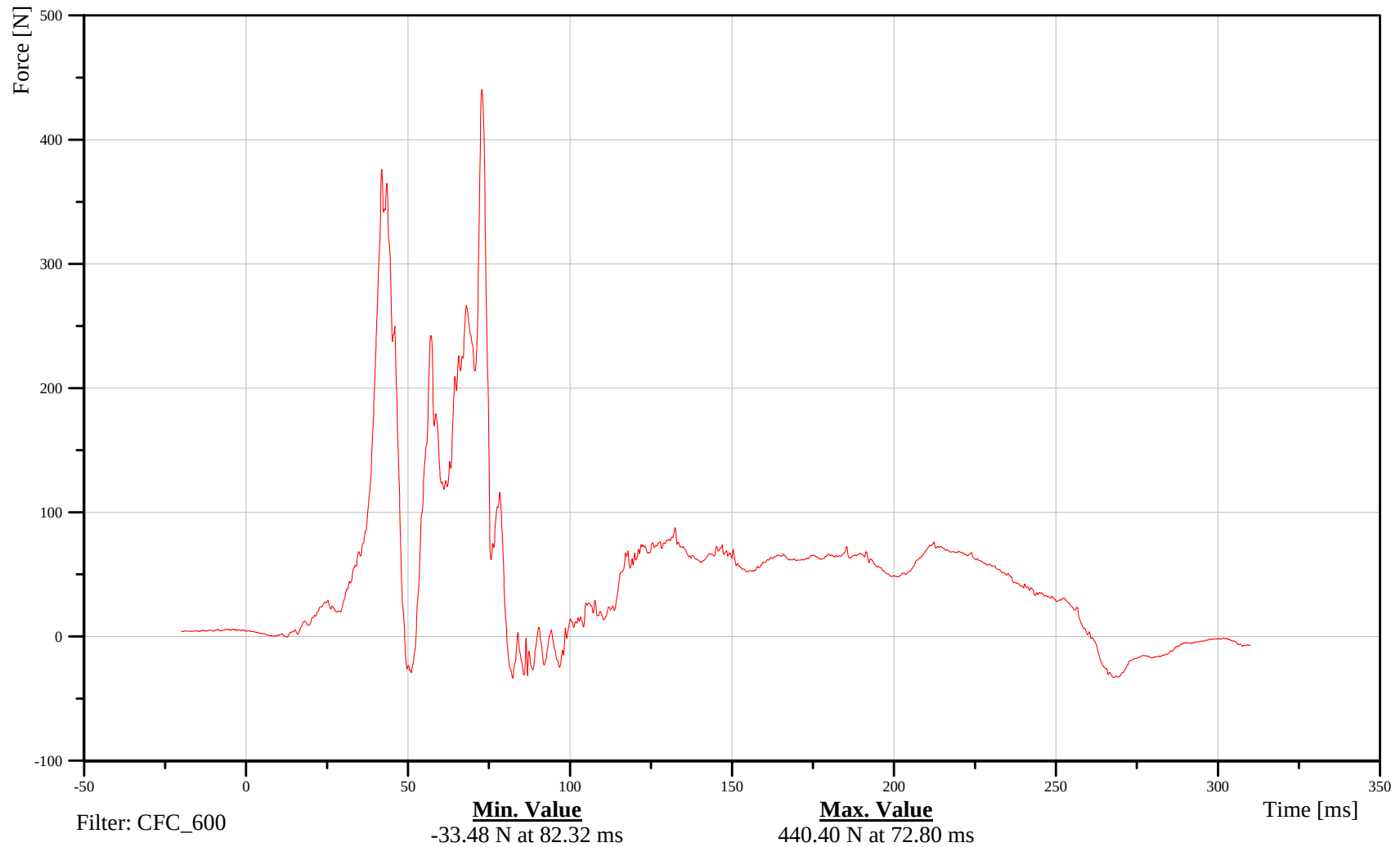
Bullet Vehicle Driver Right Upper Tibia X-Axis Force

Customer: VRTC

11TIBIRULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-51

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

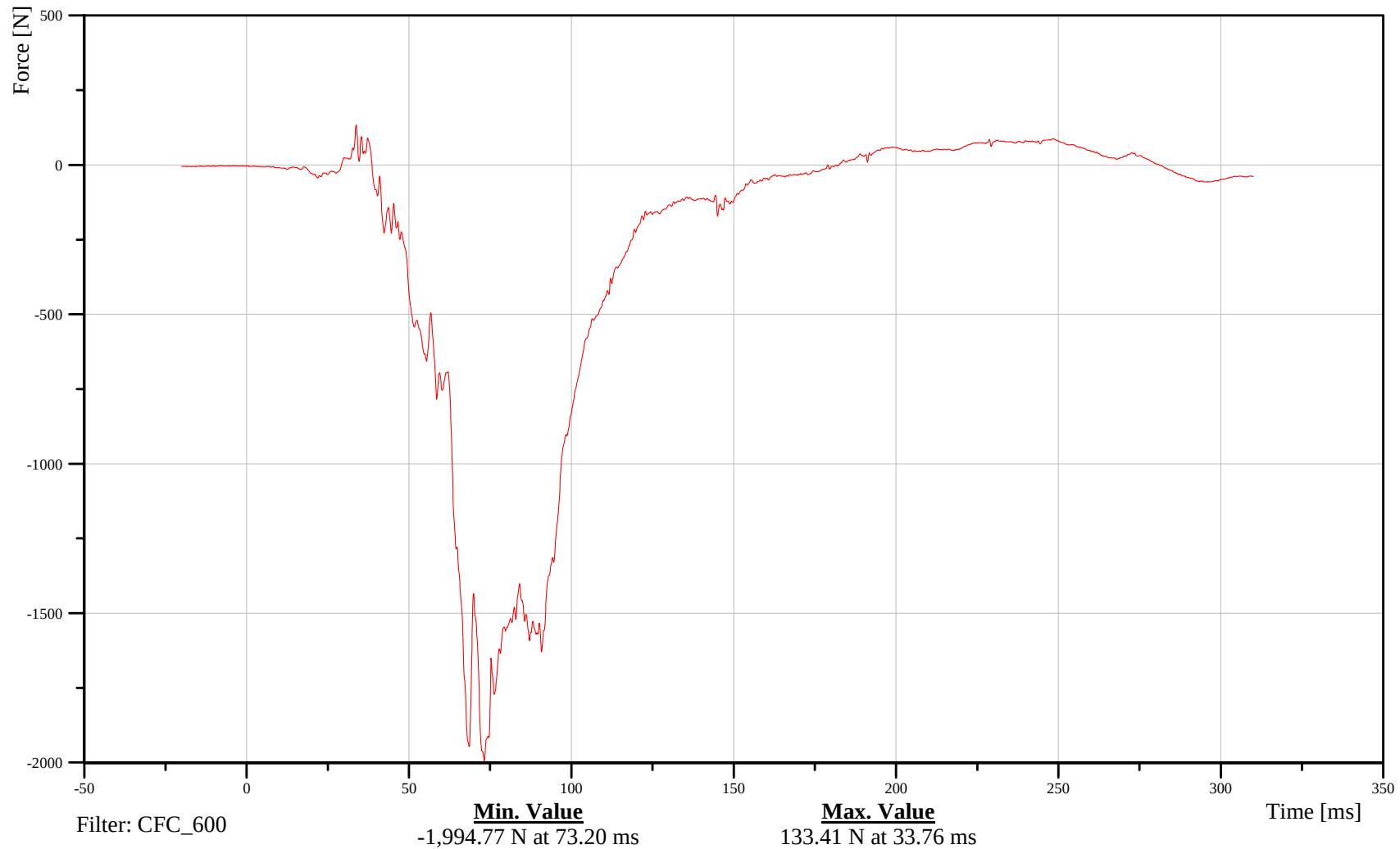
Bullet Vehicle Driver Right Upper Tibia Z-Axis Force

Customer: VRTC

11TIBIRULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-52

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Driver Right Upper Tibia Moment About X Axis

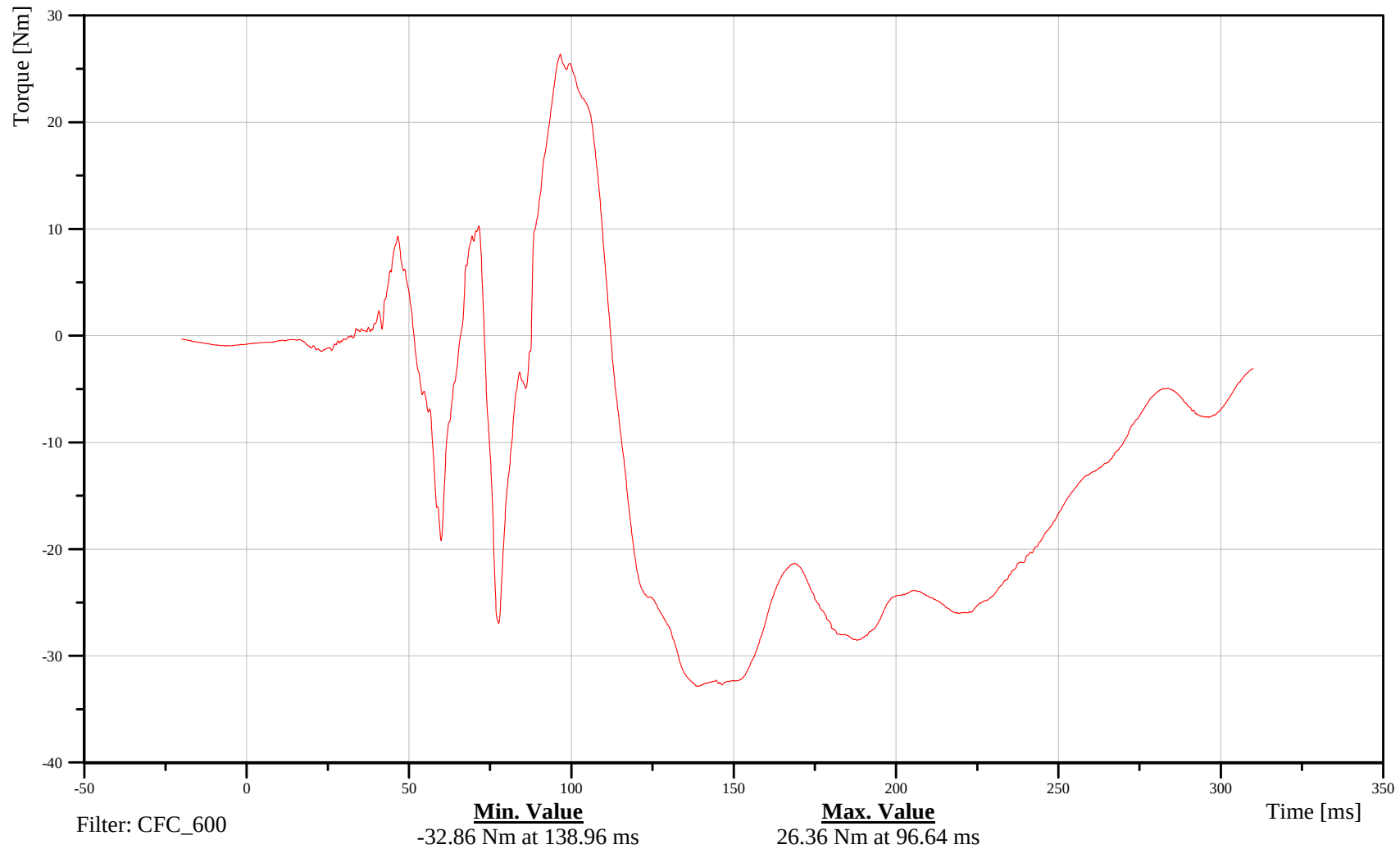
Date: 10/30/2009
Time: 16:48

Customer: VRTC

11TIBIRULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-53

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Upper Tibia Moment About Y Axis

Date: 10/30/2009

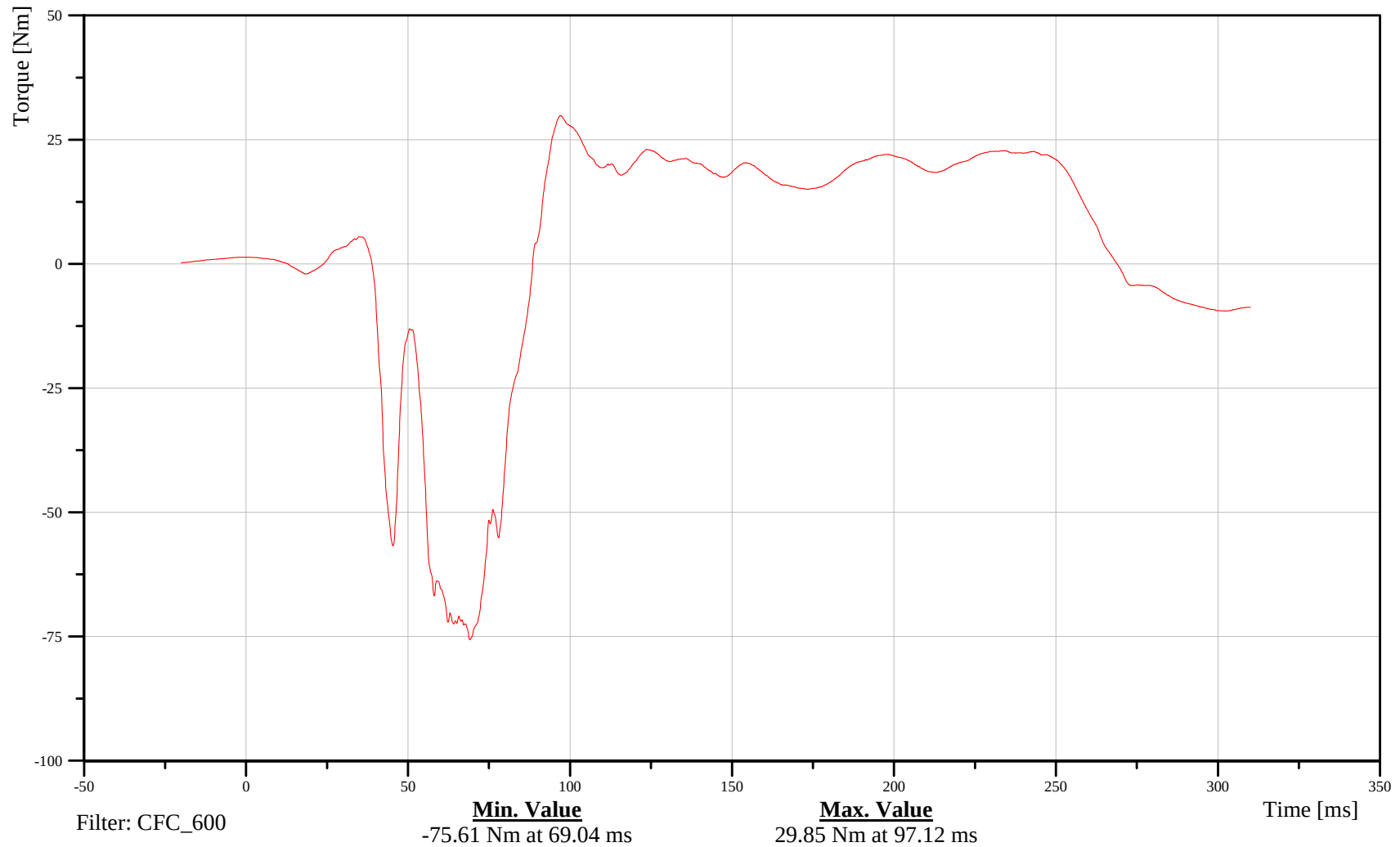
Time: 16:48

Customer: VRTC

11TIBIRULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-54

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Lower Tibia X-Axis Force

Date: 10/30/2009

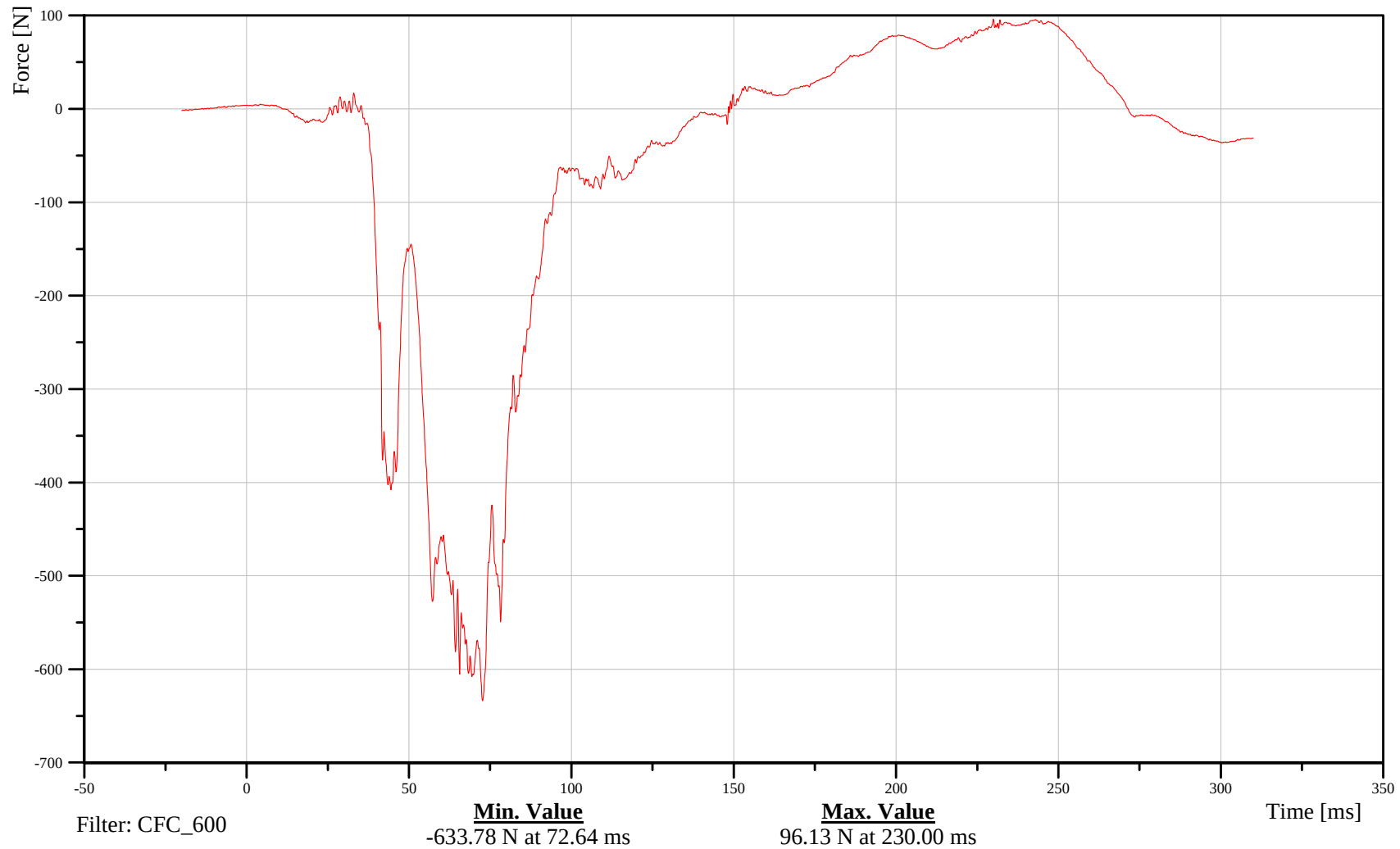
Time: 16:48

Customer: VRTC

11TIBIRLLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-55

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

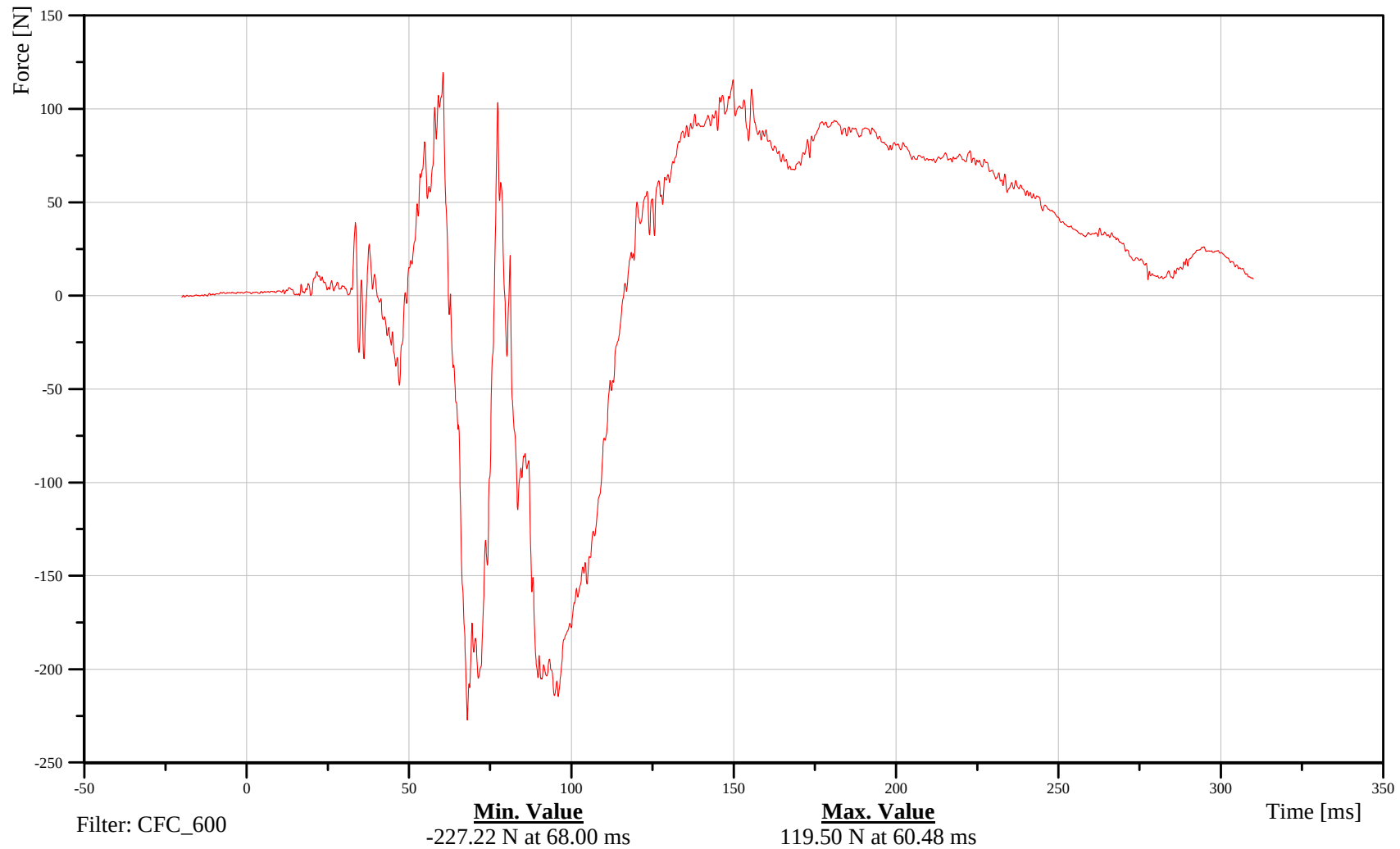
Bullet Vehicle Driver Right Lower Tibia Y-Axis Force

Customer: VRTC

11TIBIRLLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-56

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Lower Tibia Z-Axis Force

Date: 10/30/2009

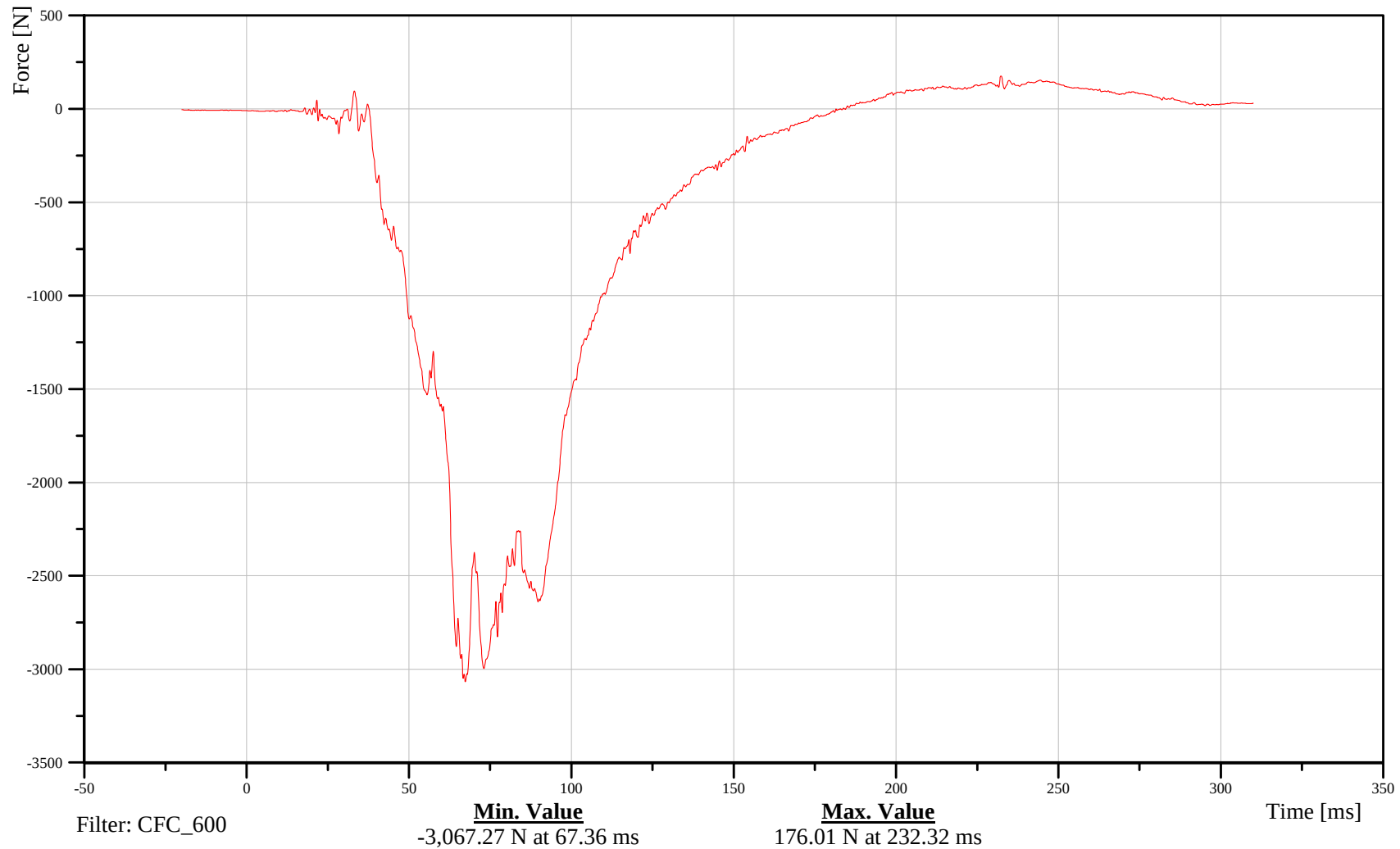
Time: 16:48

Customer: VRTC

11TIBIRLLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-57

091030



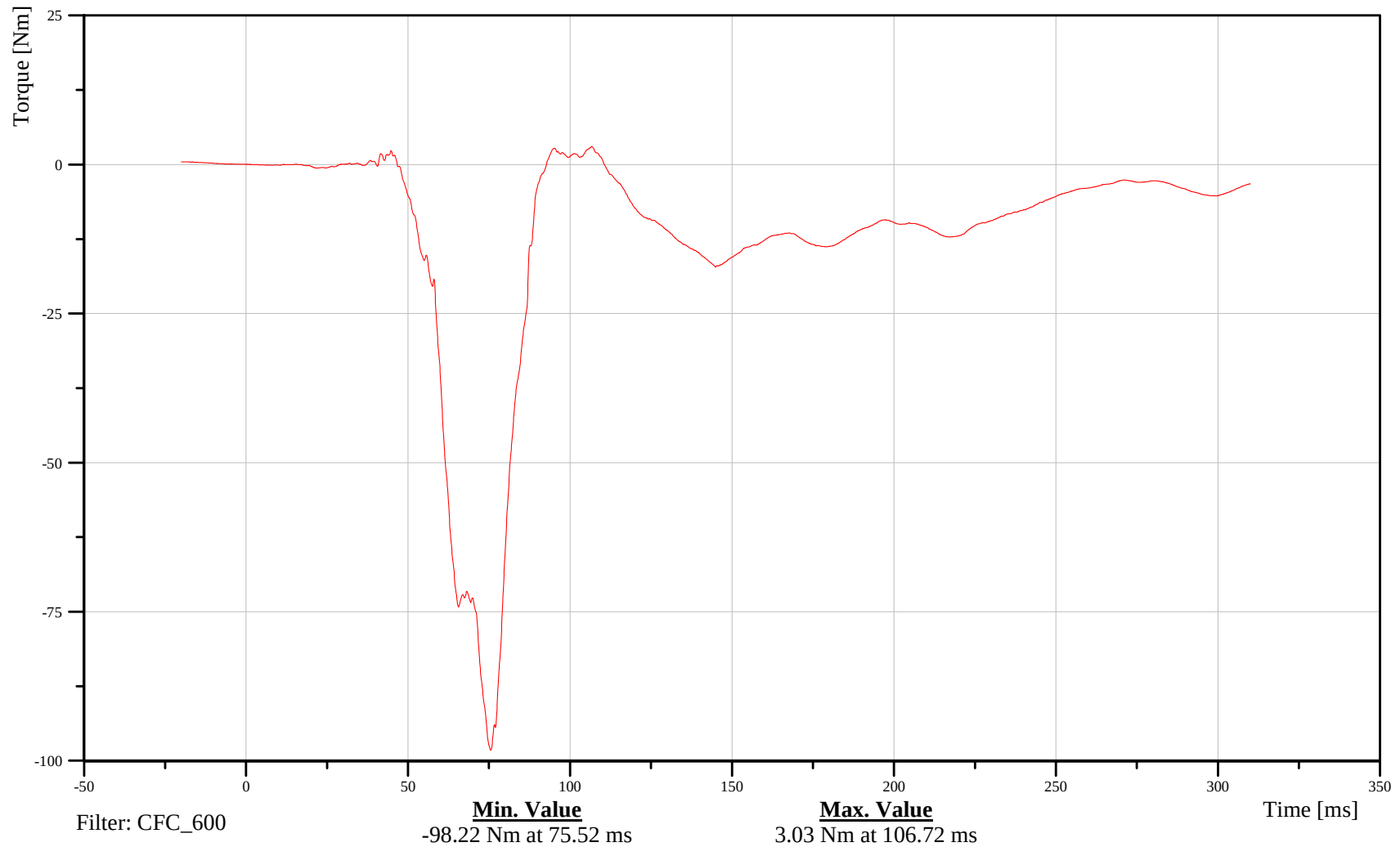
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Driver Right Lower Tibia Moment About X Axis

Date: 10/30/2009
Time: 16:48

Customer: VRTC

11TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-58

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Driver Right Lower Tibia Moment About Y Axis

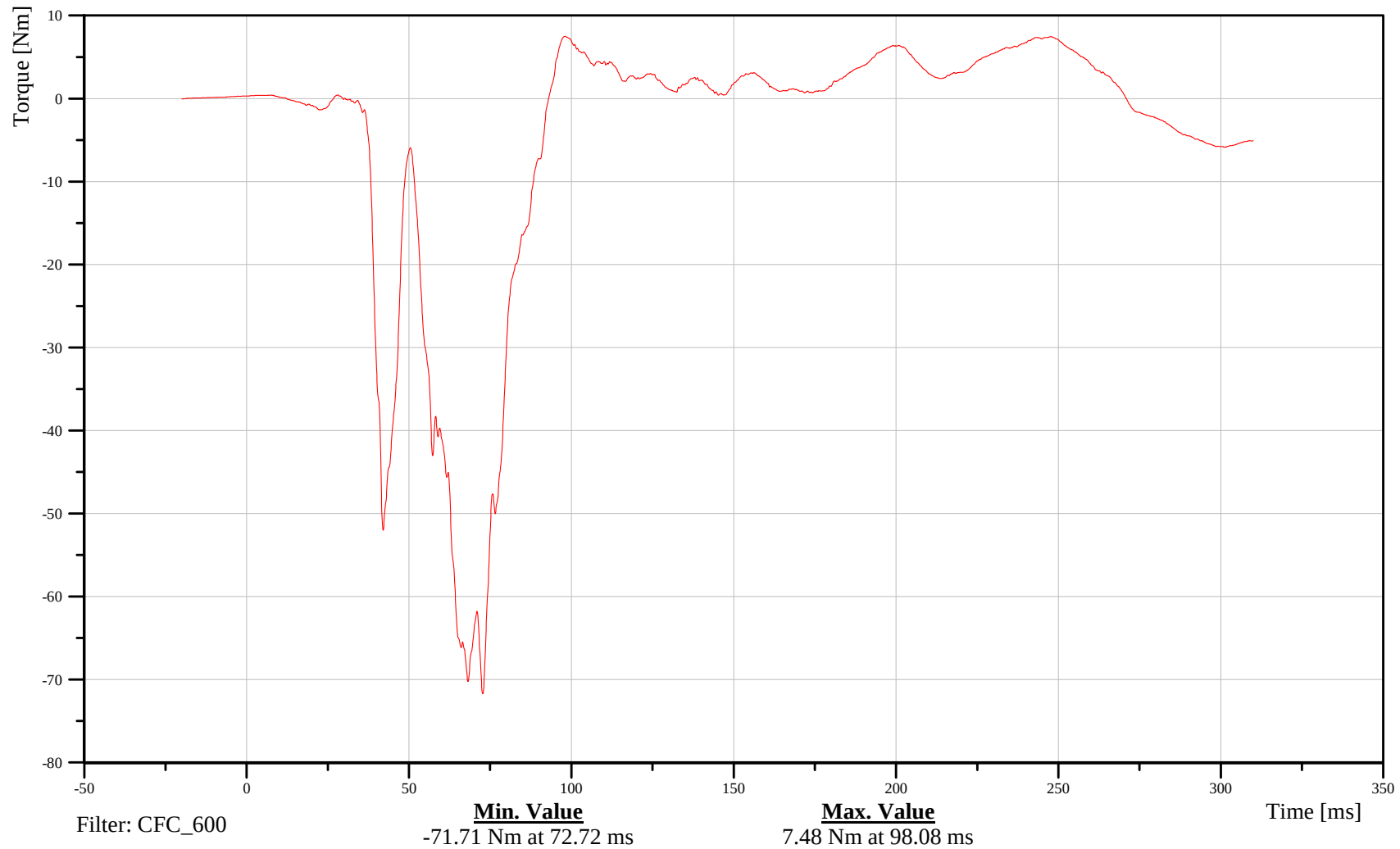
Date: 10/30/2009
Time: 16:48

Customer: VRTC

11TIBIRLLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-59

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Tibia X-Axis Acceleration

Date: 10/30/2009

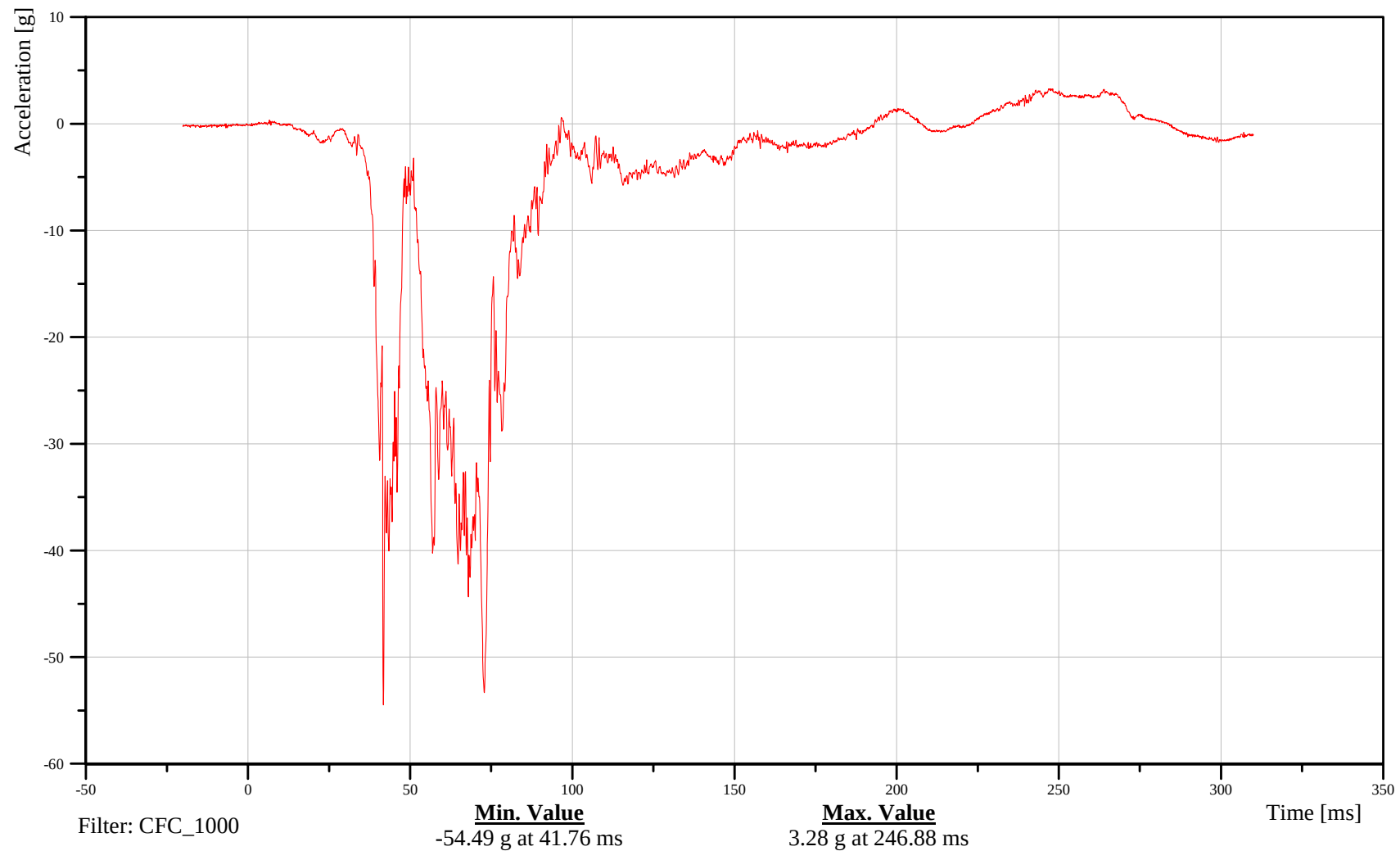
Time: 16:48

Customer: VRTC

11TIBIRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-60

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Tibia Y-Axis Acceleration

Date: 10/30/2009

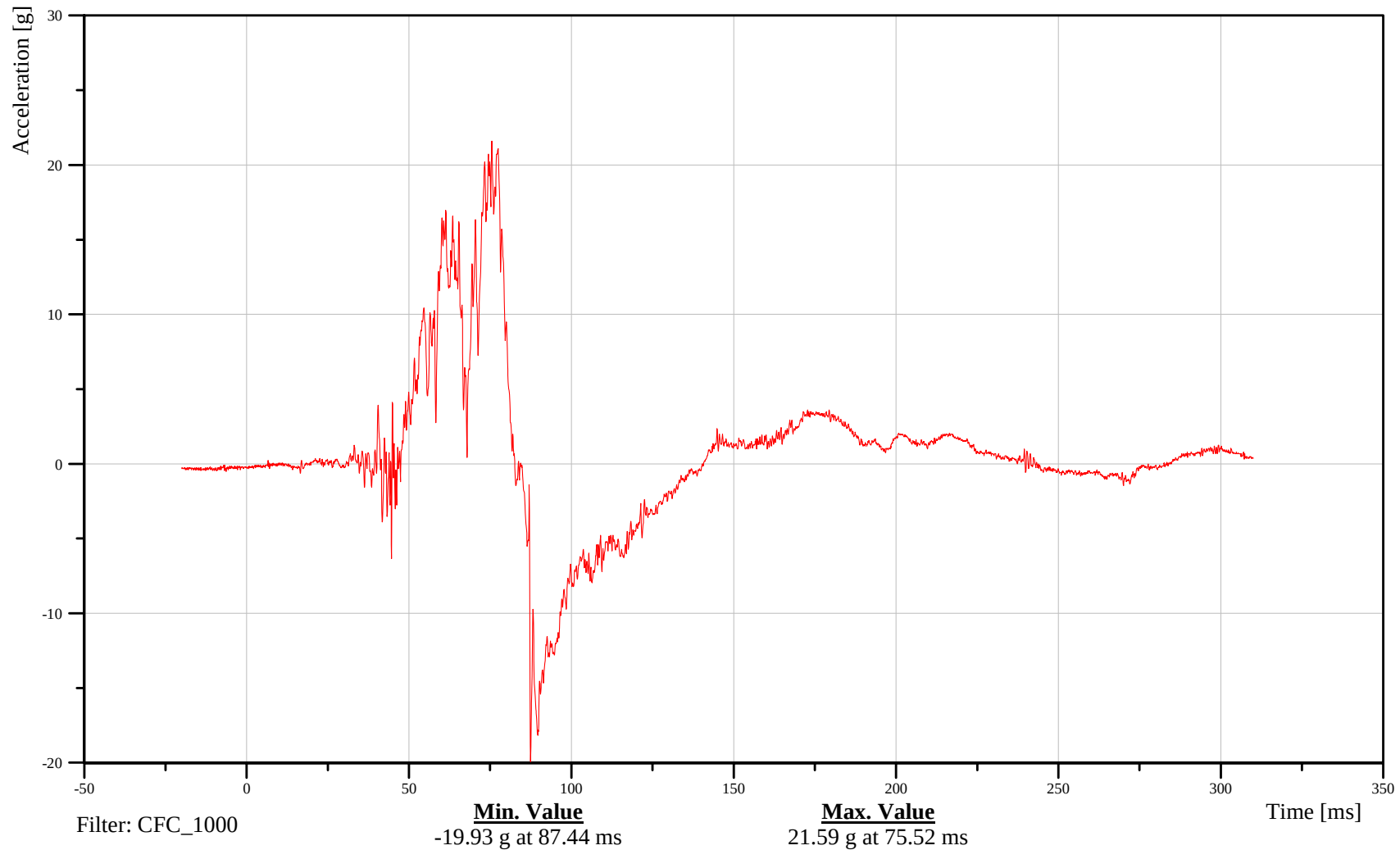
Time: 16:48

Customer: VRTC

11TIBIRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-61

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Foot X-Axis Acceleration

Date: 10/30/2009

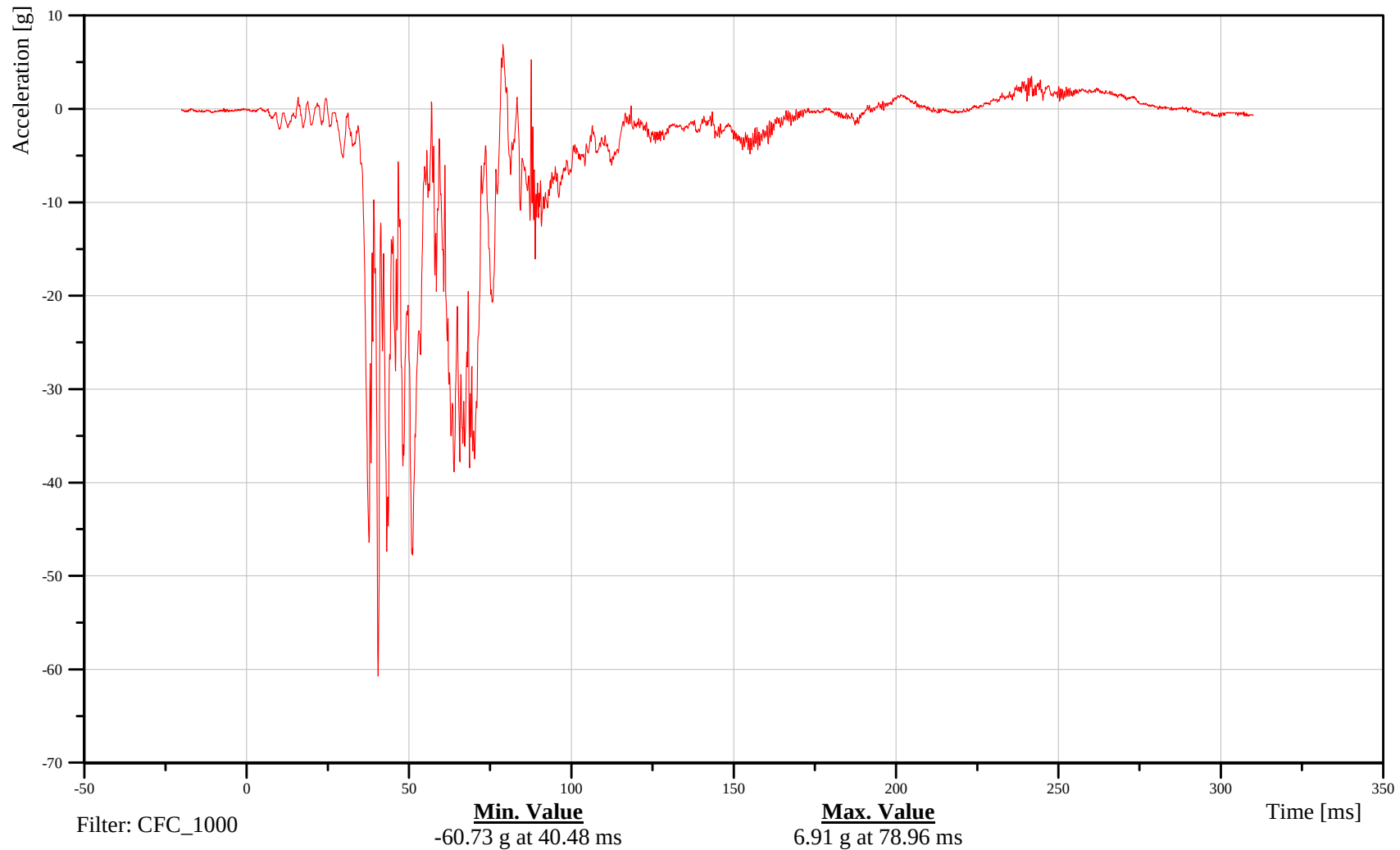
Time: 16:48

Customer: VRTC

11FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-62

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

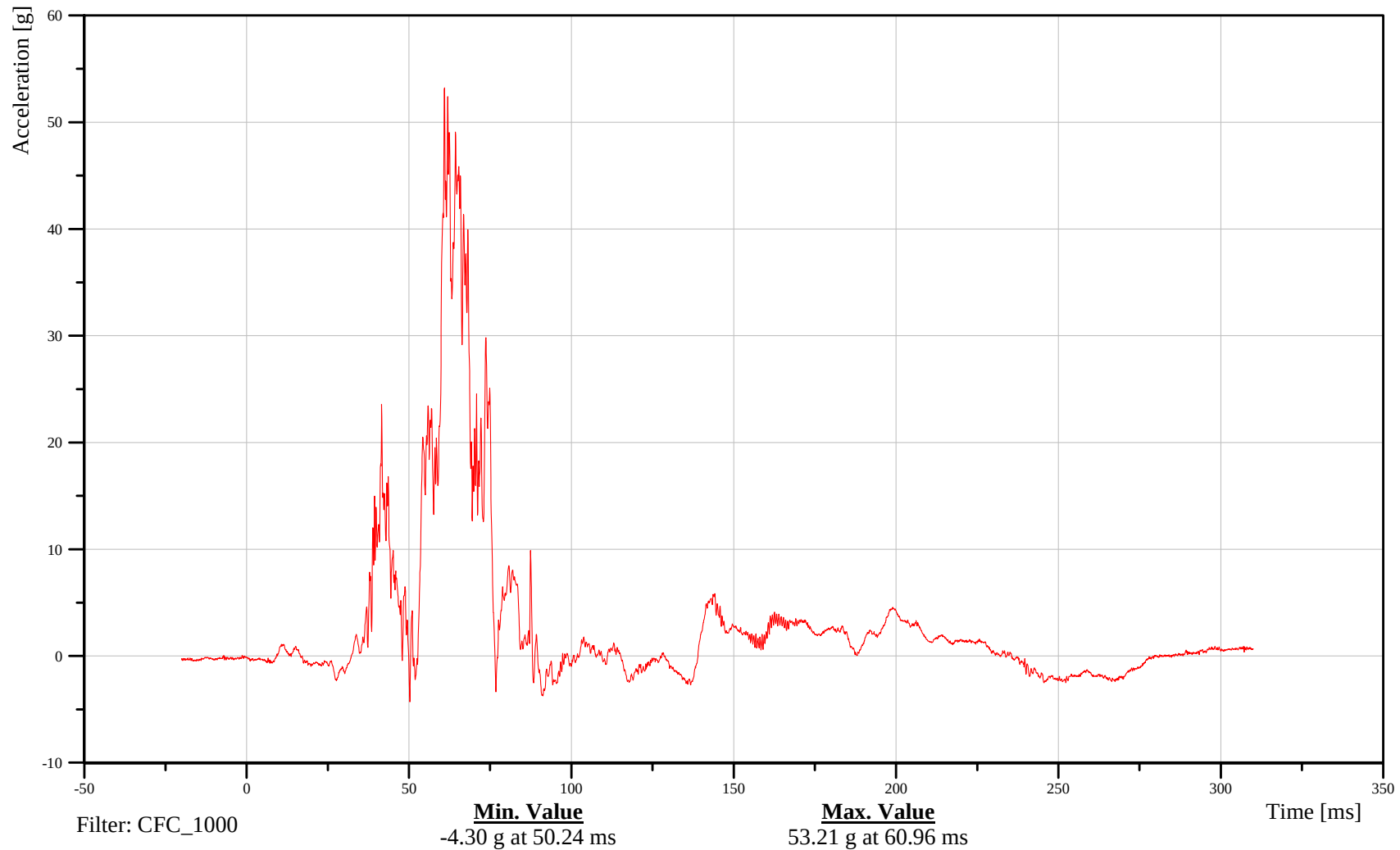
Bullet Vehicle Driver Right Foot Y-Axis Acceleration

Customer: VRTC

11FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-63

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Foot Z-Axis Acceleration

Date: 10/30/2009

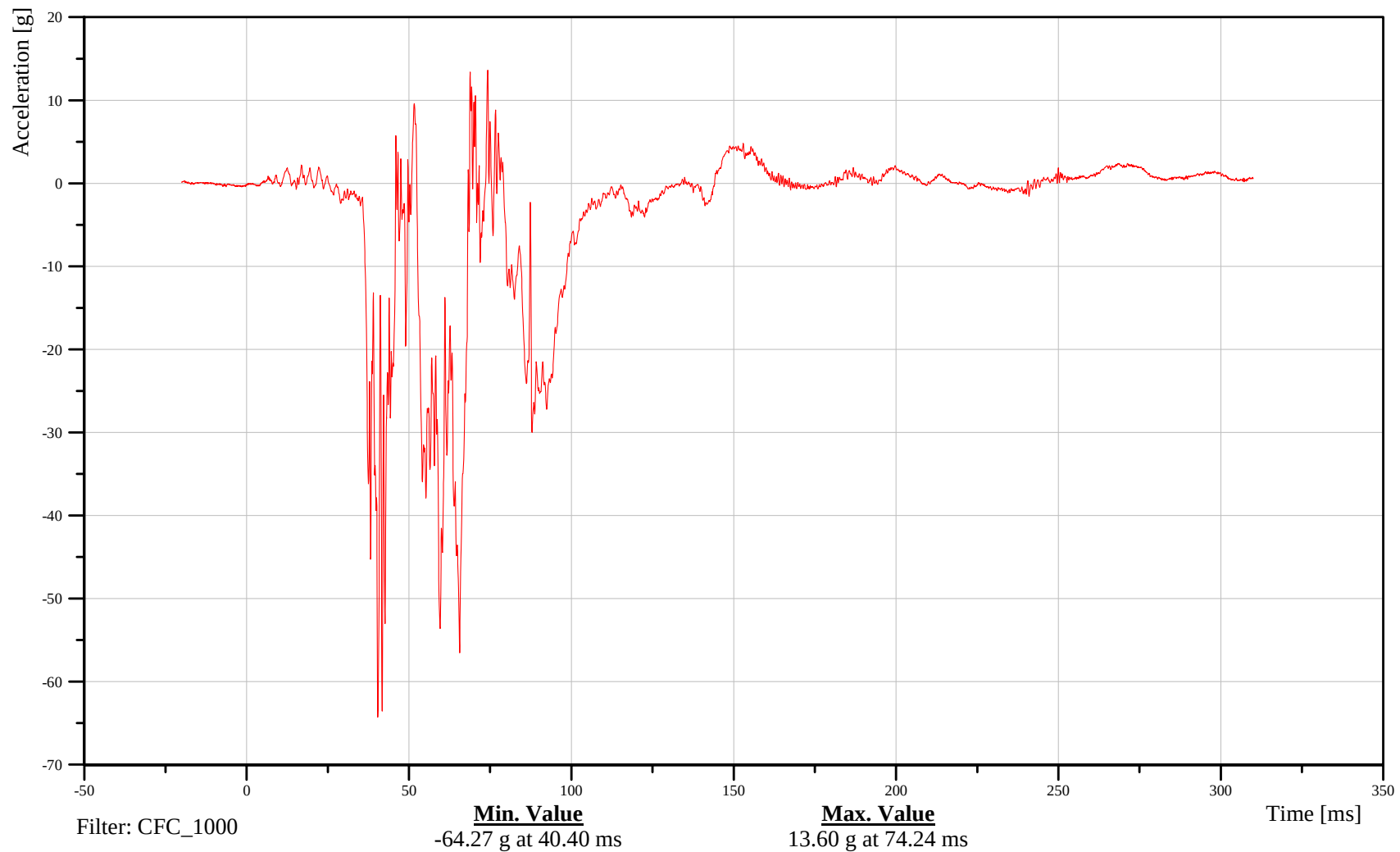
Time: 16:48

Customer: VRTC

11FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-64

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

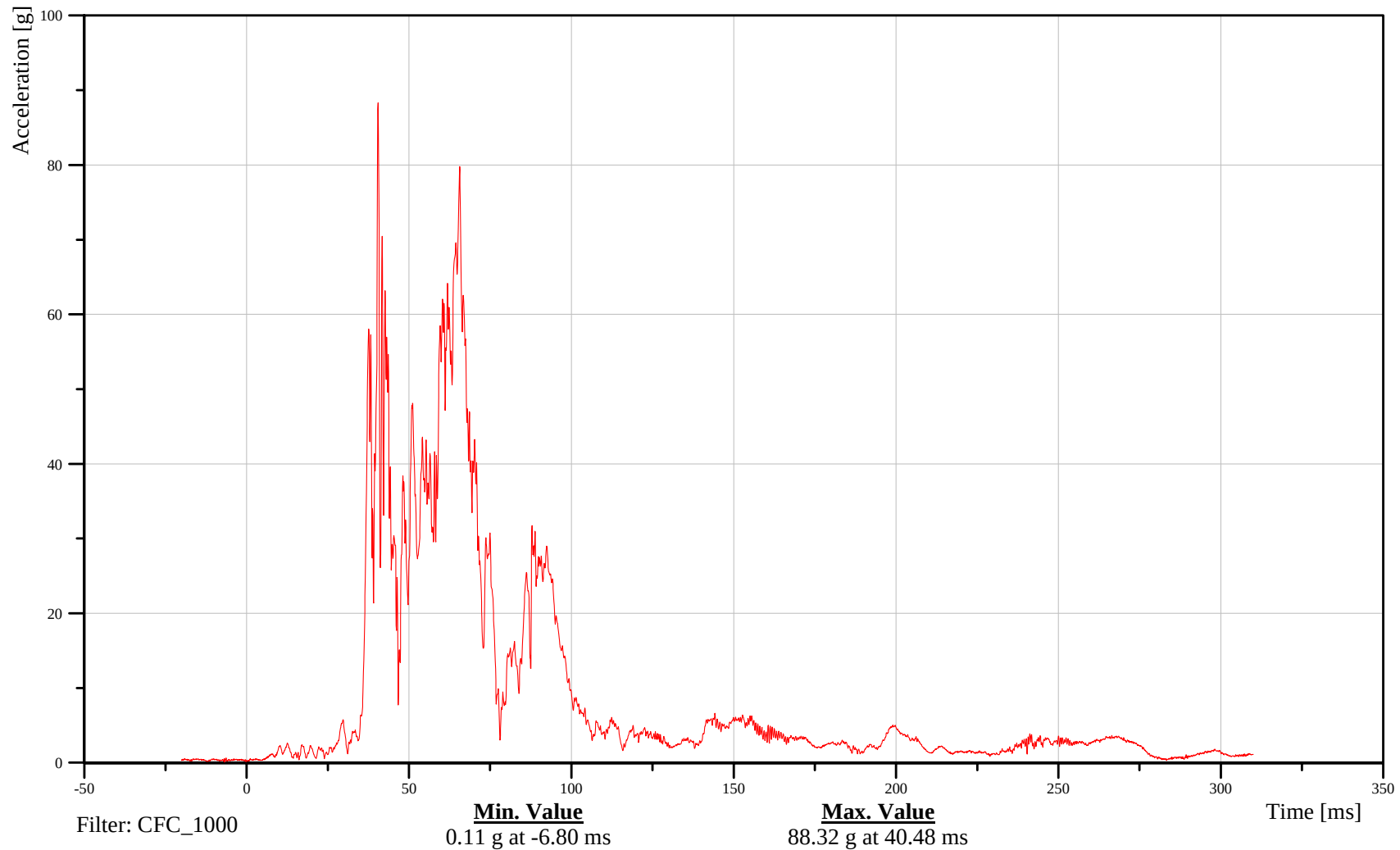
Bullet Vehicle Driver Right Foot Resultant Acceleration

Customer: VRTC

11FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-65

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Right Foot X-Axis Angular Displacement

Date: 10/30/2009

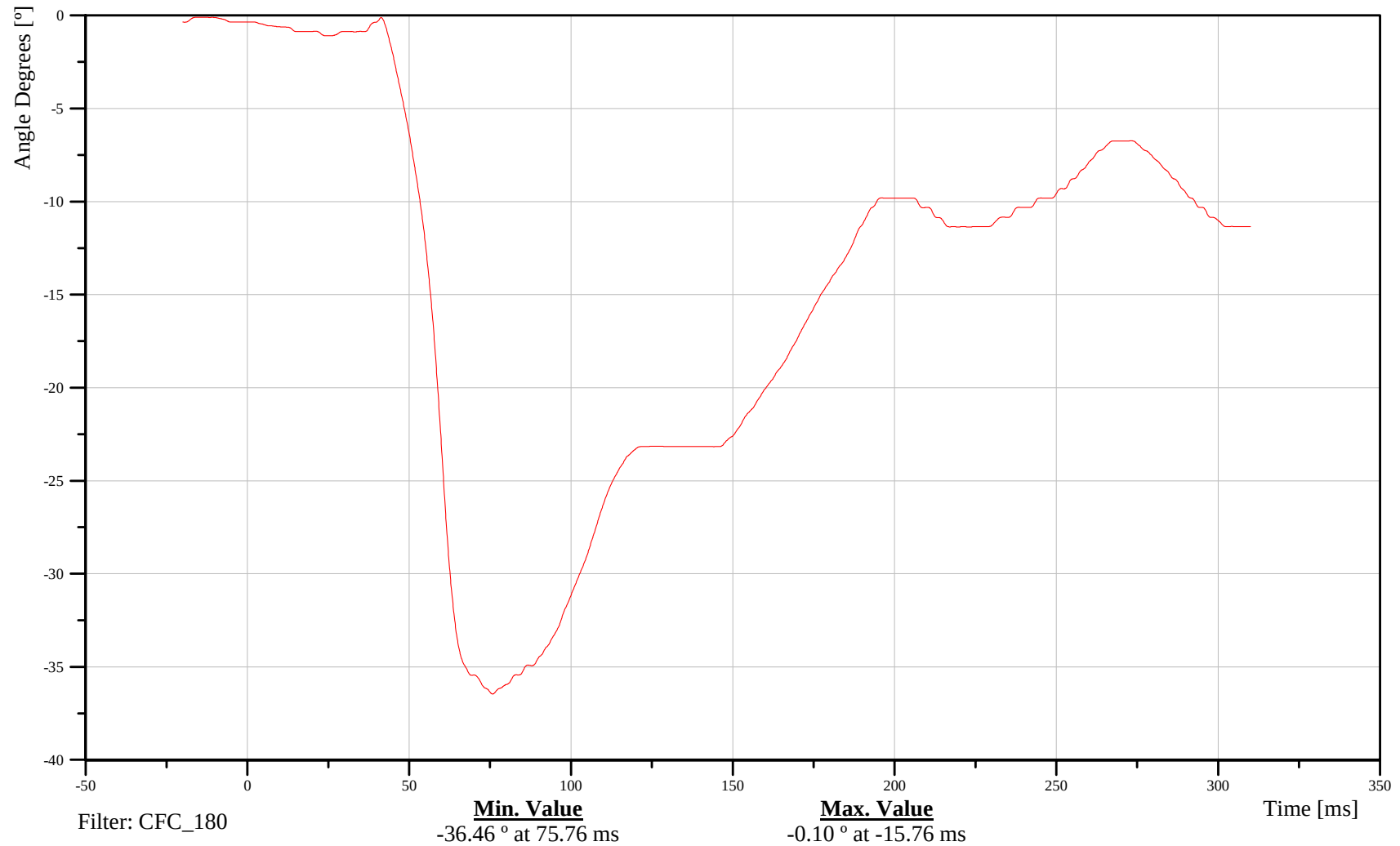
Time: 16:48

Customer: VRTC

11FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-66

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Driver Right Foot Y-Axis Angular Displacement

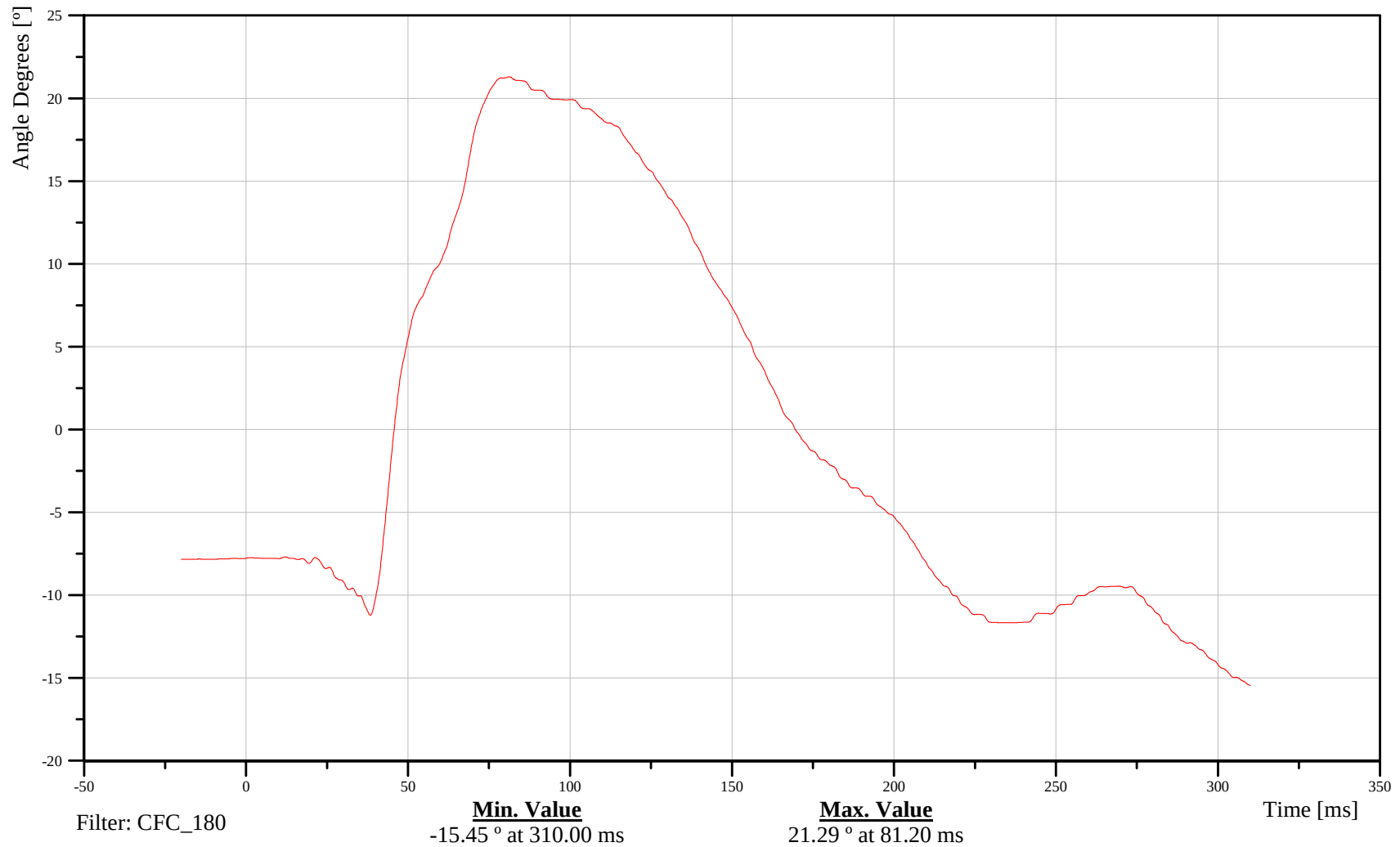
Date: 10/30/2009
Time: 16:48

Customer: VRTC

11FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-67

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Driver Right Foot Z-Axis Angular Displacement

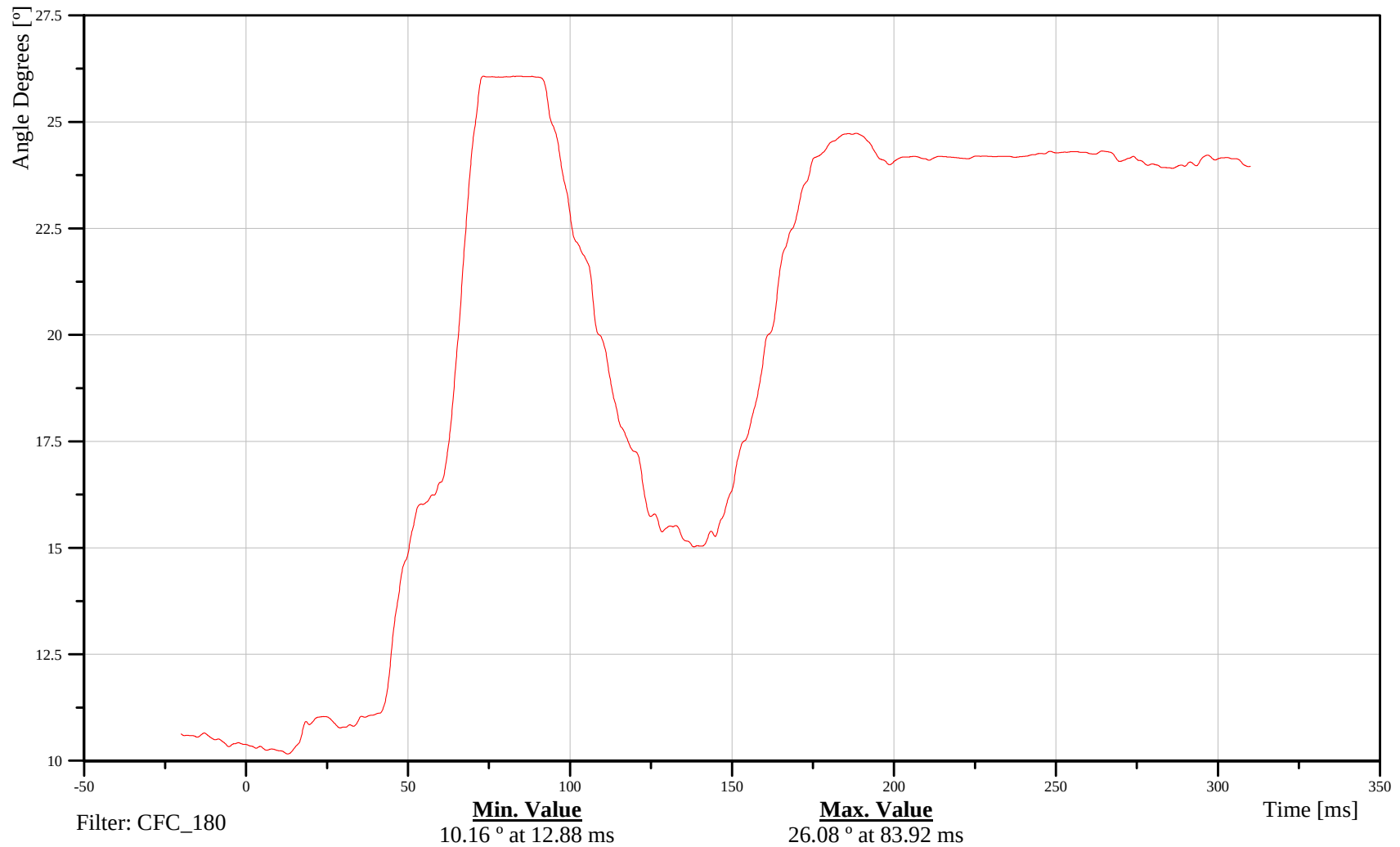
Date: 10/30/2009
Time: 16:48

Customer: VRTC

11FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-68

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

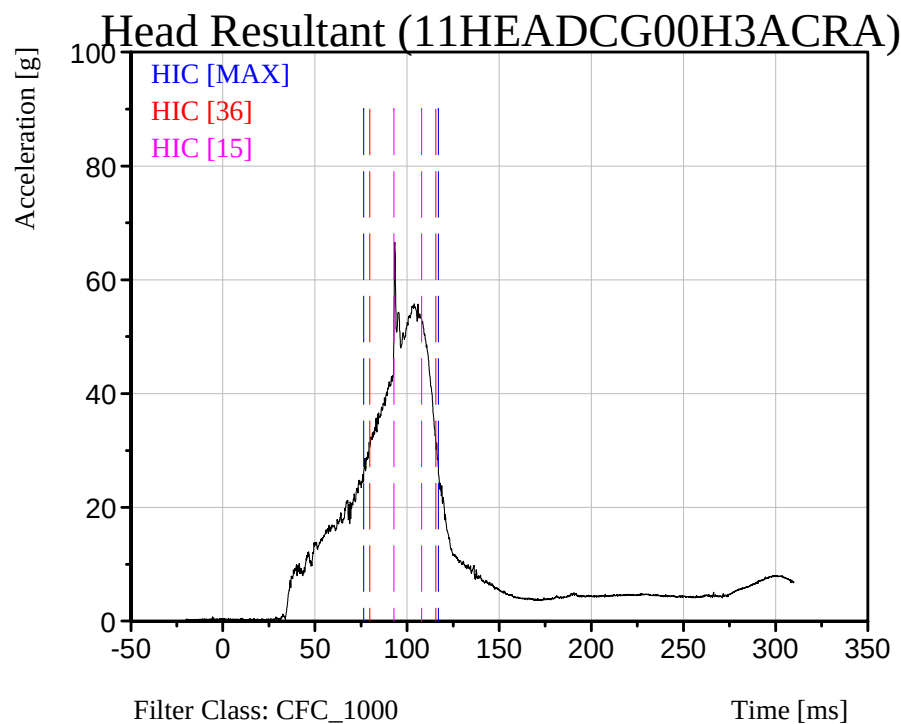
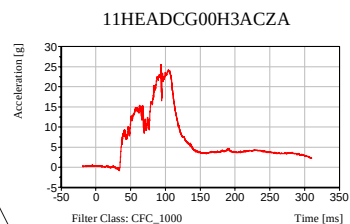
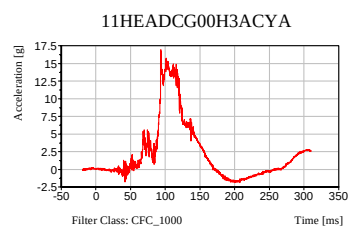
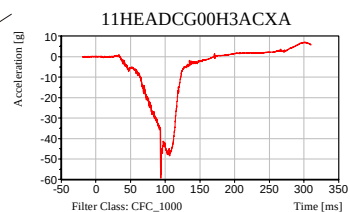
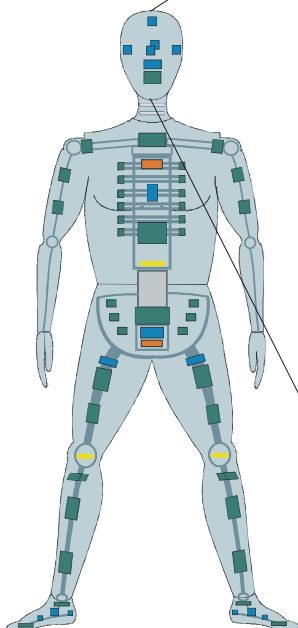
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 508.25	76.48 ms	117.04 ms	43.54 g
HIC [36] = 501.61	79.68 ms	115.68 ms	45.43 g
HIC [15] = 311.71	92.88 ms	107.92 ms	53.28 g

Dummy: HIII 50th Male
Seating Position:
Driver

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

B-69

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

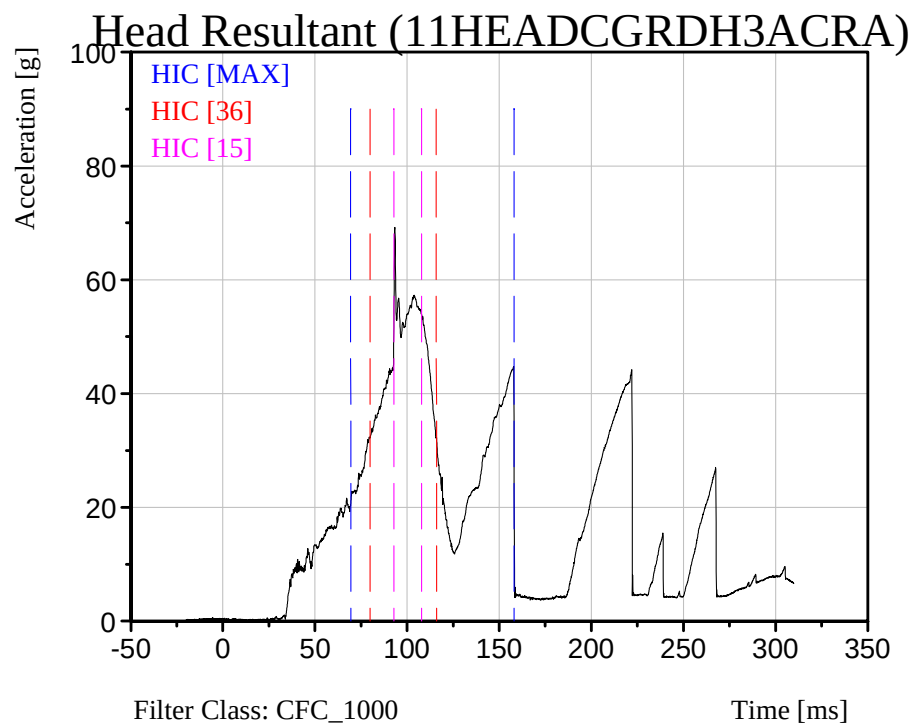
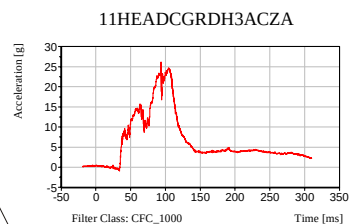
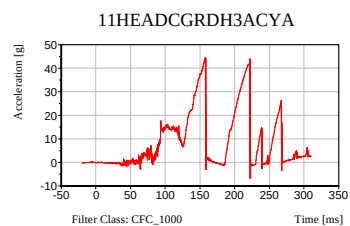
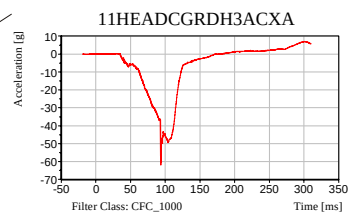
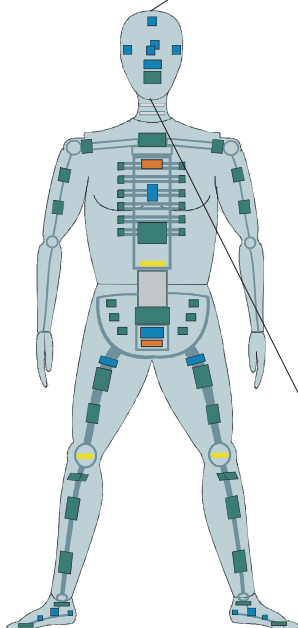
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 634.40	69.44 ms	158.16 ms	34.80 g
HIC [36] = 542.66	79.92 ms	115.92 ms	46.88 g
HIC [15] = 337.36	92.88 ms	107.92 ms	54.99 g

Dummy:IIII 50th Male
Seating Position:
Driver

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

B-70

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

3 ms Duration Acceleration (Chest)

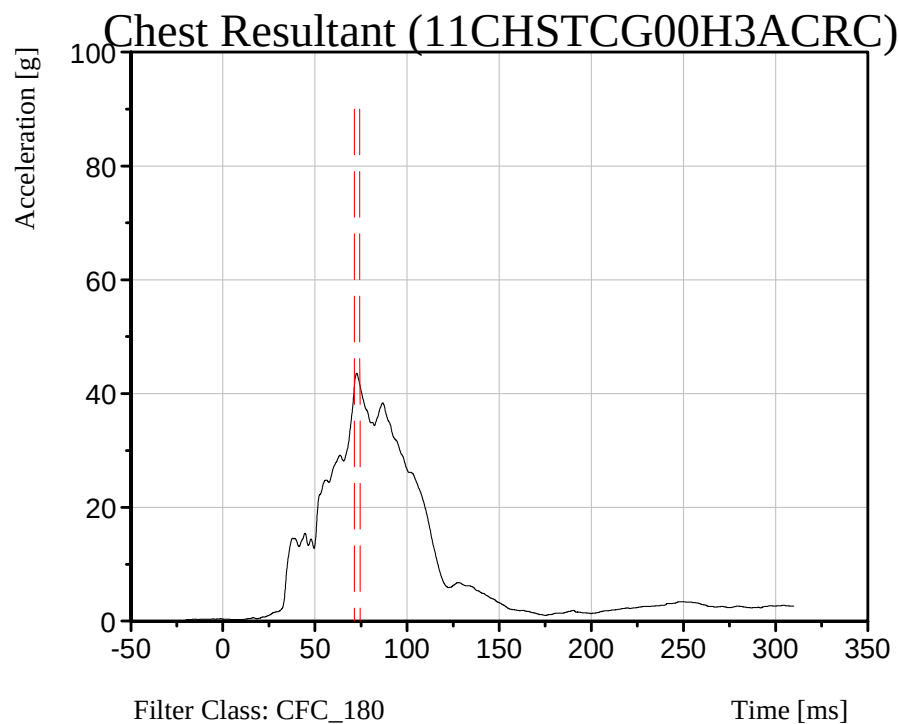
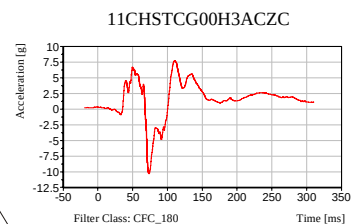
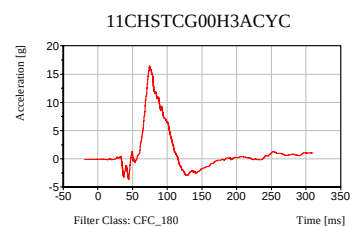
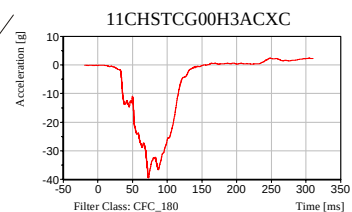
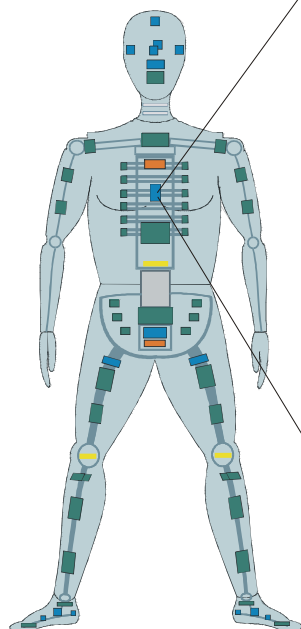
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



3 ms Duration Acceleration = 41.43 g
Chest Severity Index = 356.24

<u>T1</u> (Begin)	<u>T2</u> (End)
71.40 ms	74.40 ms

Dummy:HIII 50th Male
Seating Position:
Driver

3 ms Duration Acceleration Source Code : vbScript w/DIADEM 9.0

B-71

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

3 ms Duration Acceleration (Chest)

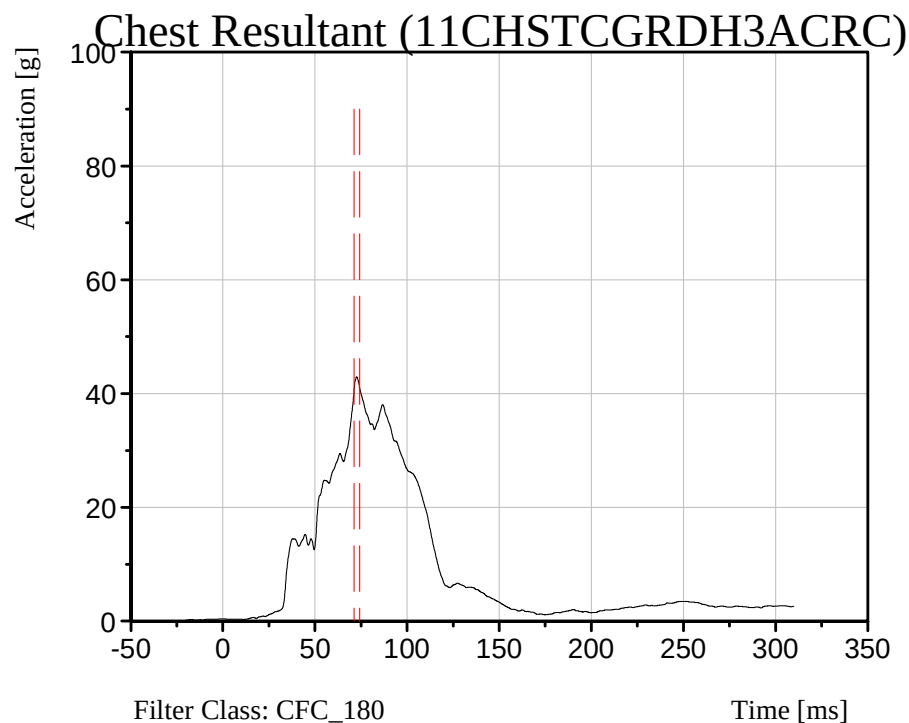
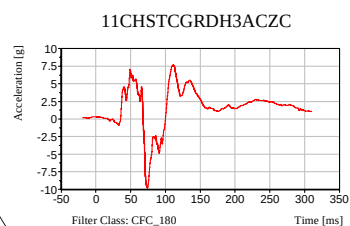
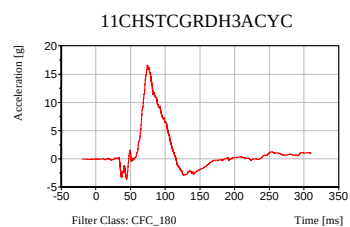
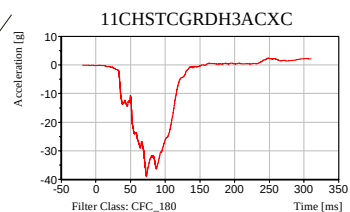
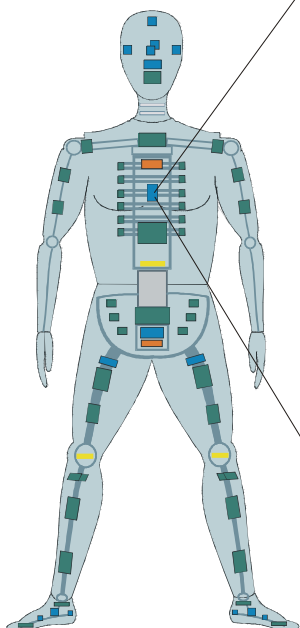
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



3 ms Duration Acceleration = 40.90 g
Chest Severity Index = 350.69

<u>T1</u> (Begin)	<u>T2</u> (End)
71.31 ms	74.31 ms

Dummy:HIII 50th Male
Seating Position:
Driver

3 ms Duration Acceleration Source Code : vbScript w/DIADEM 9.0

B-72

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

Chest Deflection

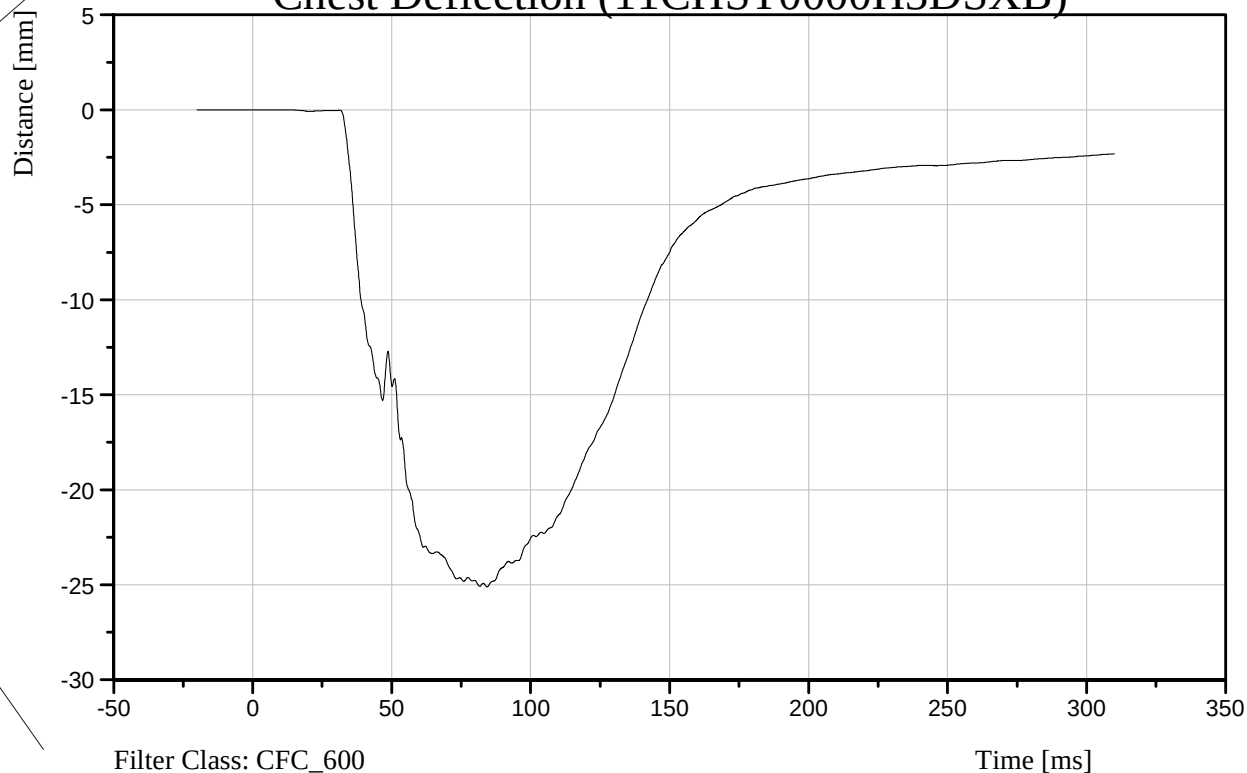
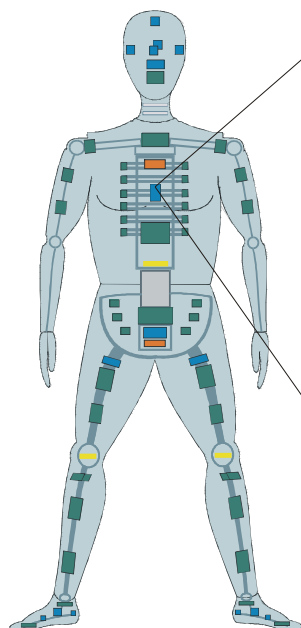
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Chest Deflection (11CHST0000H3DSXB)



Dummy:IIII 50th Male

Seating Position:

Driver

[Max.] 0.01 mm at 10.56 ms

[Min.] -25.11 mm at 84.32 ms

ChestDeflection Source Code : Min/Max of 11CHST0000H3DSXB (CFC_600)

B-73

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap Neck Moment about the Occipital Condyle (NECK OM)

Date: 10/30/2009
Time: 16:48

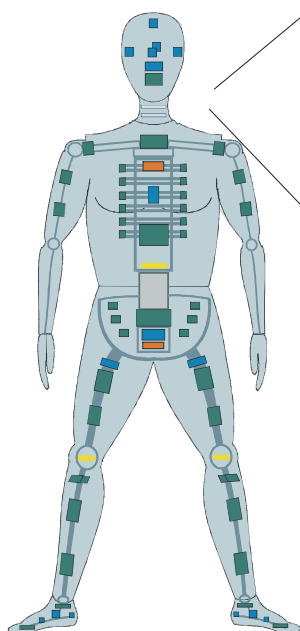
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

NECKOM (11TMONUP00H3MOYX)



Dummy: HIII 50th Male
Seating Position:
Driver

Neck OM Source Code: My - (D*Fx)

[Max.] 34.70 Nm at 85.04 ms

[Min.] -12.45 Nm at 46.08 ms

B-74

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Injury Predictor (NIJ)

Date: 10/30/2009

Time: 16:48

Customer: VRTC

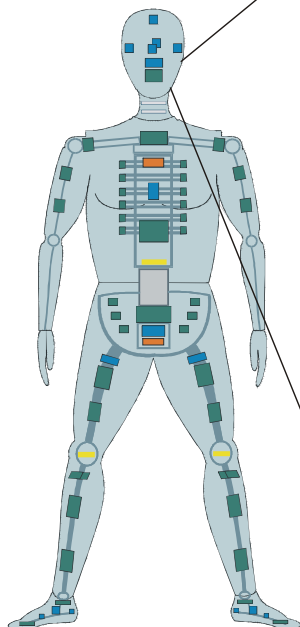
Test Orientation = Frontal

Fzc(Tension) = 6806

Fzc(Compression) = 6160

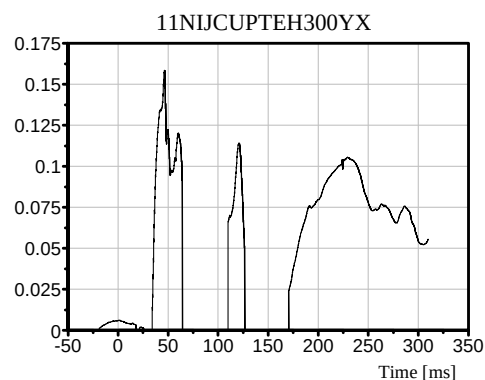
Myc(Extension) = 135

Myc(Flexion) = 310

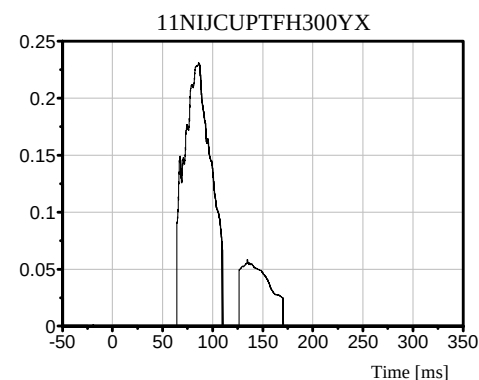


TRC Inc. Test Lab: CTF

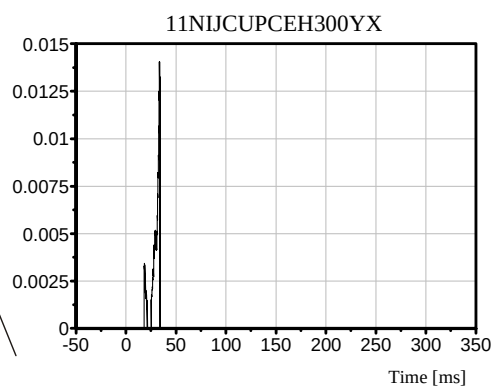
Test Number: 091030



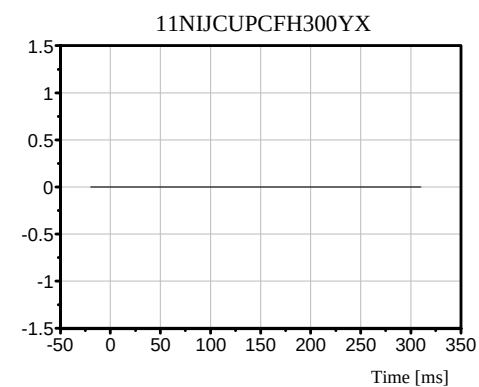
Max [NTE] 0.1587 at 46.24 ms



Max [NTF] 0.2312 at 86.08 ms



Max [NCE] 0.0141 at 33.44 ms



Max [NCF] 0.0000 at -20.00 ms

Dummy:IIII 50th Male
Seating Position:

Driver

NIJ Source Code: (Fz/Fzc)+(Myc/Myc)

B-75

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

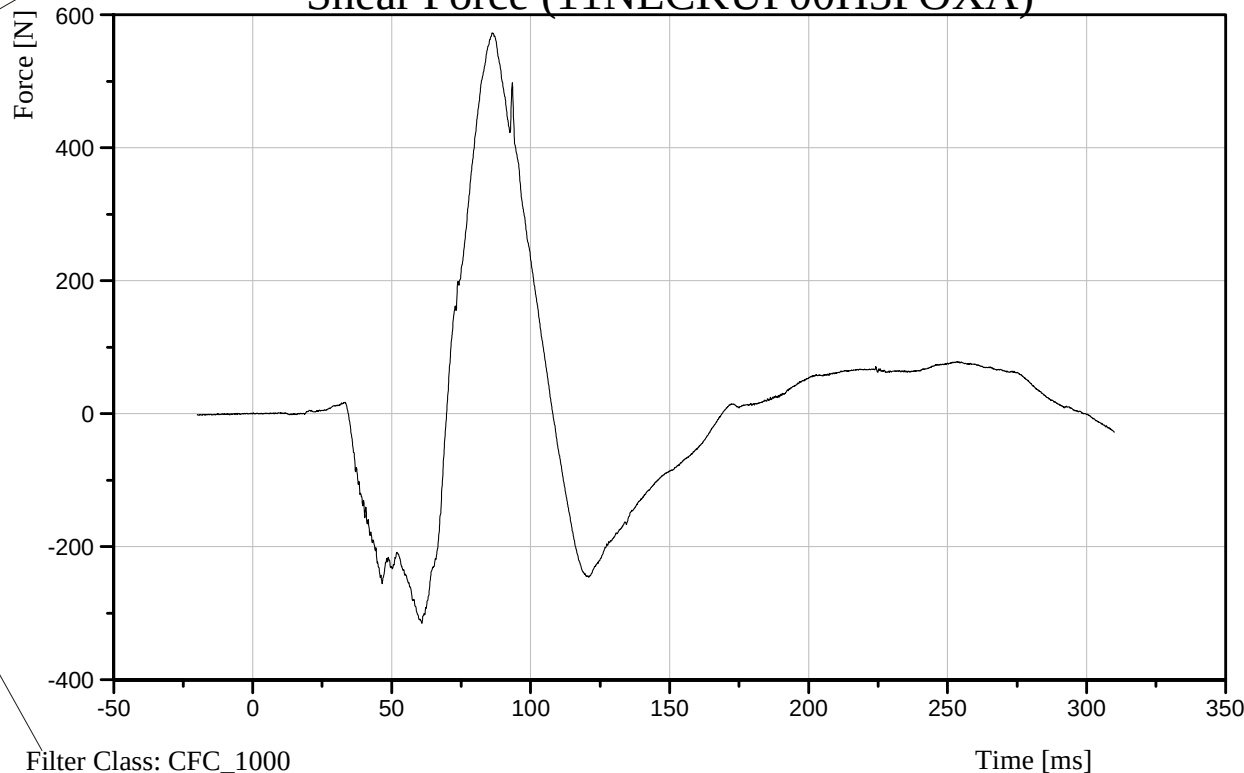
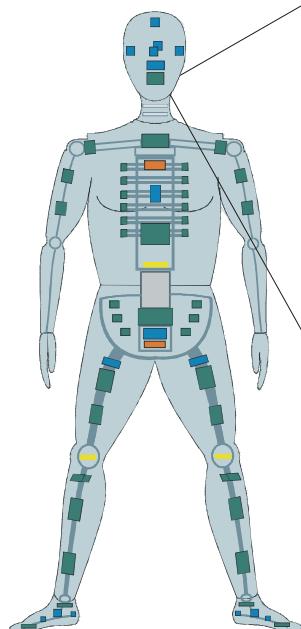
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (11NECKUP00H3FOXA)



Dummy:HIII 50th Male

Seating Position:

Driver

[Max.] 573.03 N at 86.16 ms

[Min.] -314.77 N at 60.88 ms

Neck Shear Force Source Code: Min/Max of 11NECKUP00H3FOXA

B-76

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

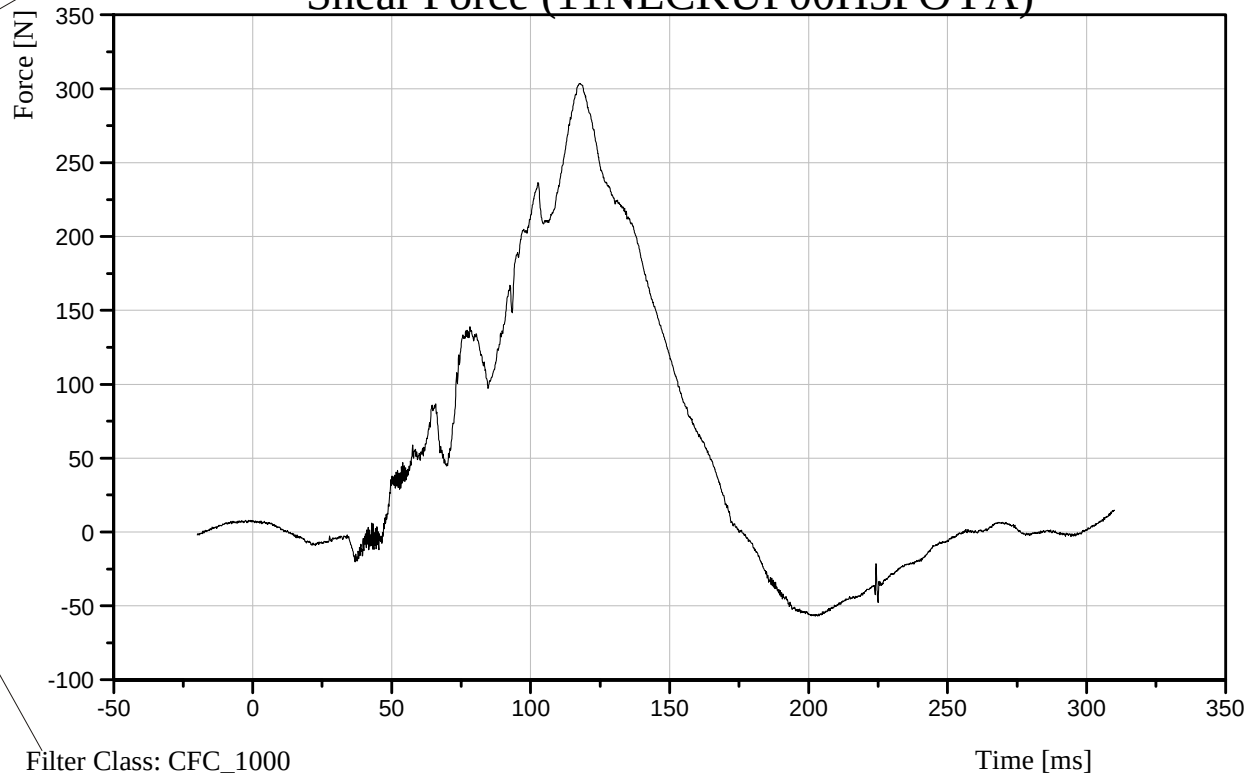
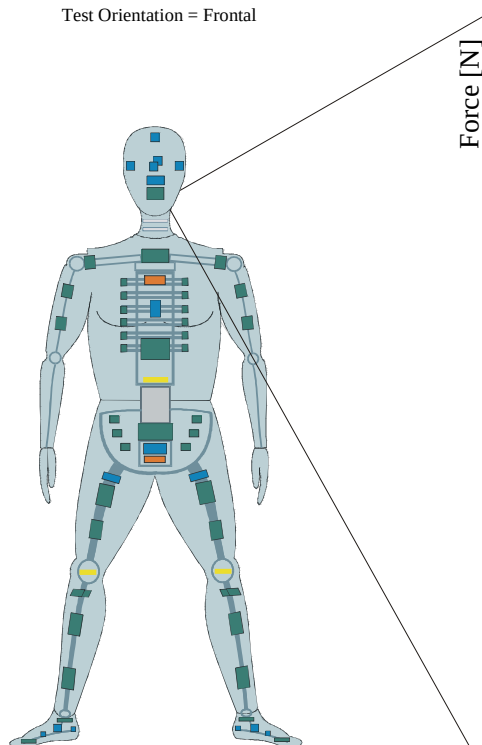
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (11NECKUP00H3FOYA)



Dummy:IIII 50th Male

Seating Position:

Driver

[Max.] 303.64 N at 117.68 ms

[Min.] -57.04 N at 202.48 ms

Neck Shear Force Source Code: Min/Max of 11NECKUP00H3FOYA

B-77

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Axial Force

Date: 10/30/2009

Time: 16:48

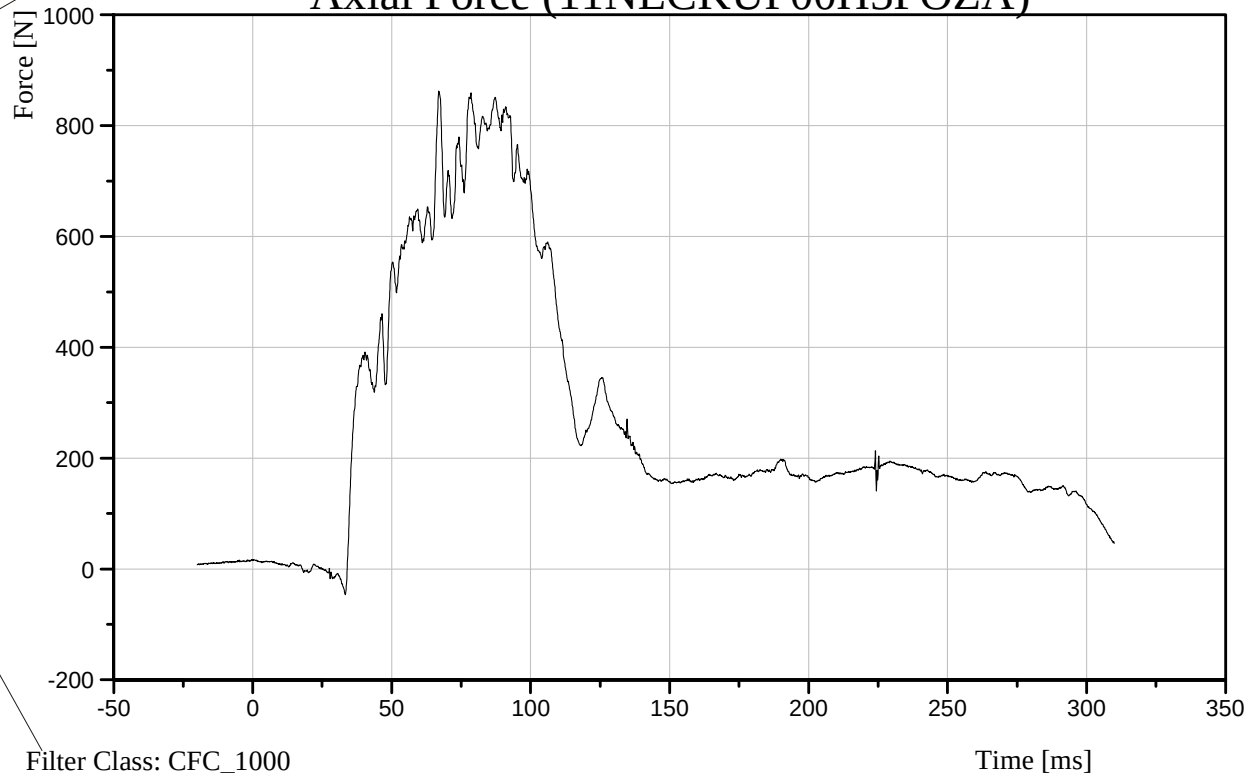
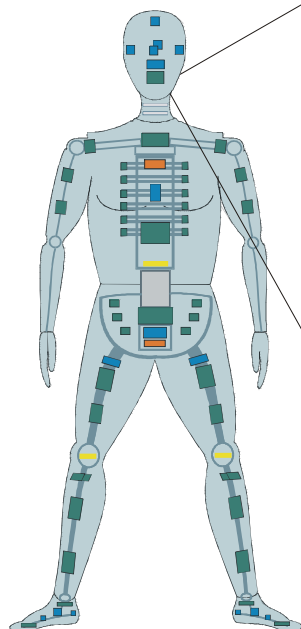
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Axial Force (11NECKUP00H3FOZA)



Dummy:HIII 50th Male
Seating Position:
Driver

[Max.] 862.86 N at 66.96 ms

[Min.] -46.36 N at 33.28 ms

Neck Axial Force Source Code: Min/Max of 11NECKUP00H3FOZA

B-78

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Femur Load

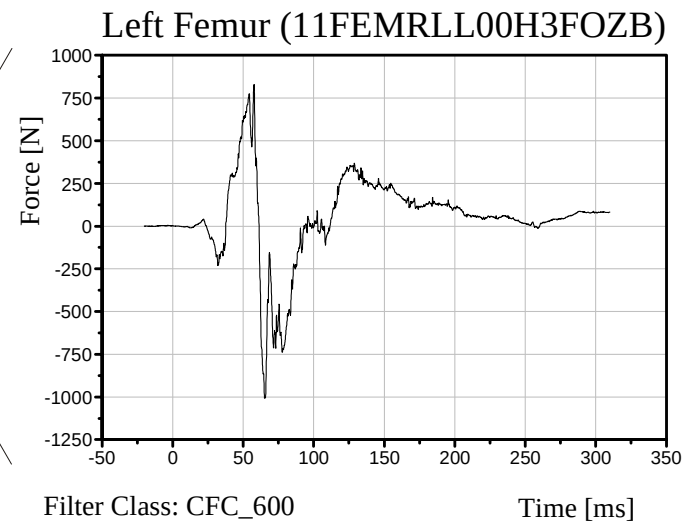
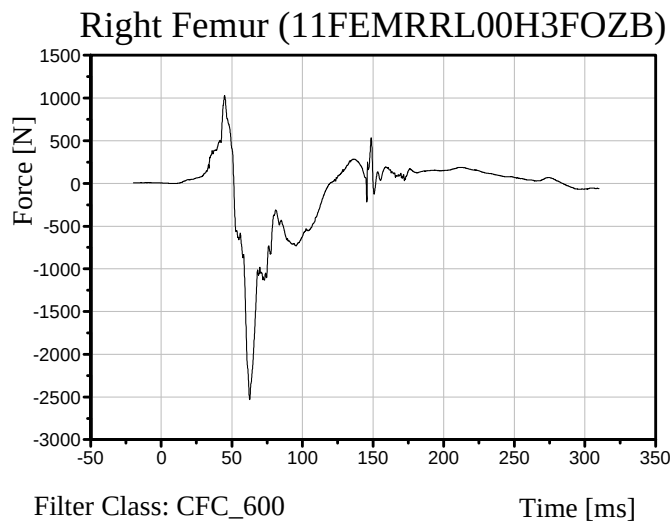
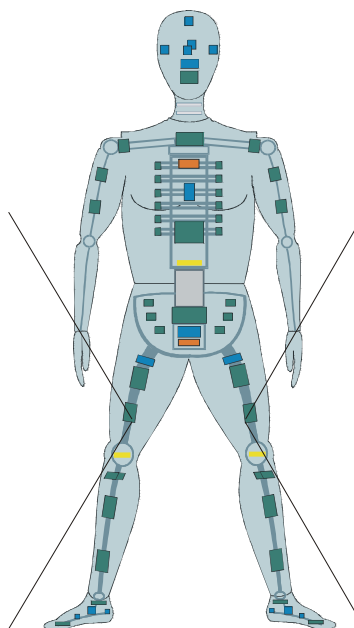
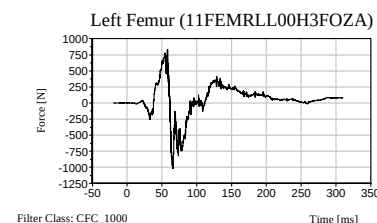
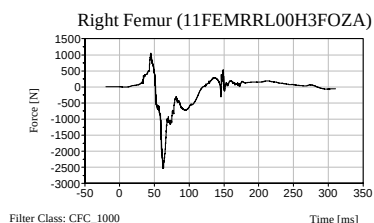
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max [Tension] 1,030.26 N at 44.72 ms
Min [Compression] -2,529.14 N at 62.56 ms

Dummy: HIII 50th Male
Seating Position:
Driver

Max [Tension] 829.57 N at 57.76 ms
Min [Compression] -1,007.73 N at 65.28 ms

Femur Load Source Code : Min/Max of 11FEMRRL00H3FOZB and 11FEMRLL00H3FOZB (CFC 600)

B-79

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Knee Slider Displacement

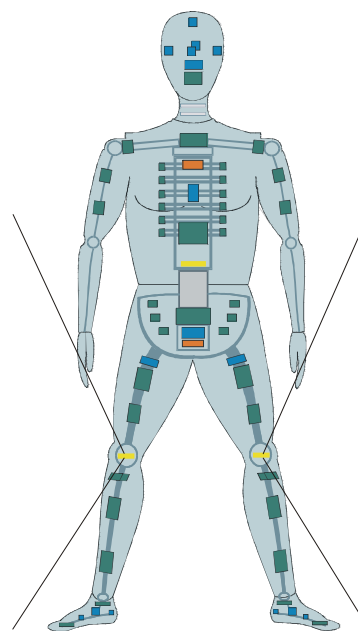
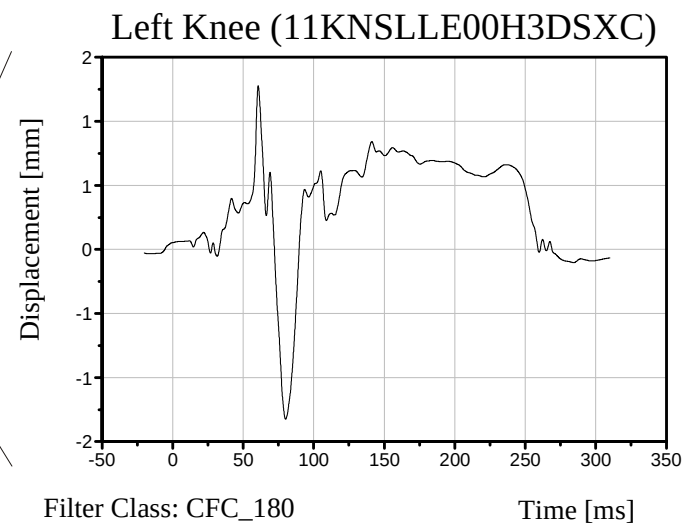
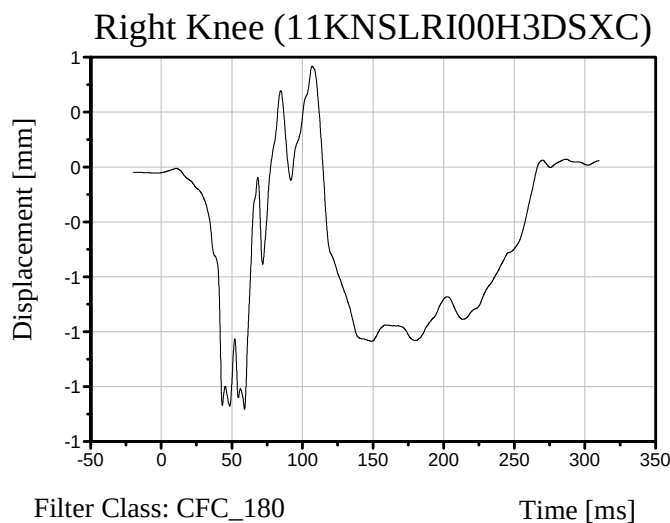
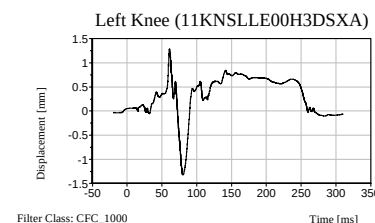
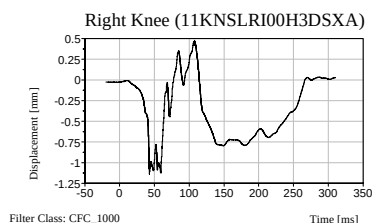
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max. [Tension] 0.46 mm at 106.80 ms
Min. [Compression] -1.10 mm at 58.88 ms

Dummy: HIII 50th Male
Seating Position:
Driver

Max. [Tension] 1.28 mm at 60.72 ms
Min. [Compression] -1.32 mm at 80.08 ms

Knee Displacement Source Code : Min/Max of 11KNSLRI00H3DSXC and 11KNSLLE00H3DSXC (CFC 600)

B-80

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Tibia Index (TI)

Date: 10/30/2009

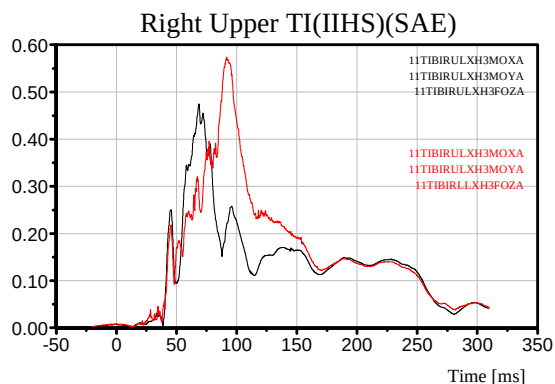
Time: 16:48

Customer: VRTC

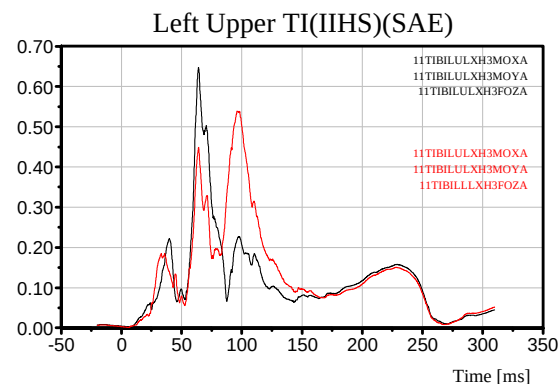
TRC Inc. Test Lab: CTF

Test Number: 091030

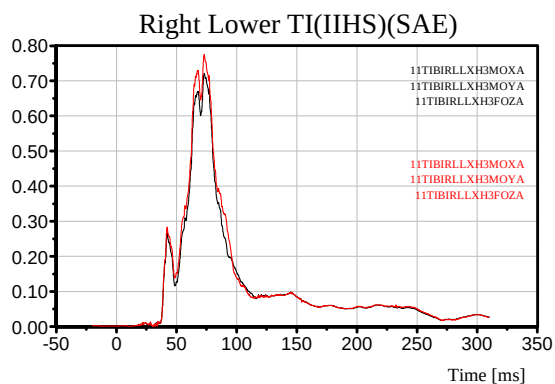
Critical Bending Moment = 240 N·m
Critical Compression Force = 12000 N



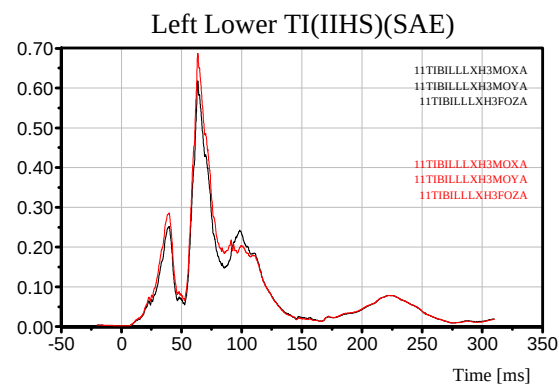
Max = 0.47 at 68.72 ms (SAE)
Max = 0.57 at 91.60 ms (IIHS)



Max = 0.65 at 64.08 ms (SAE)
Max = 0.54 at 96.08 ms (IIHS)



Max = 0.72 at 73.12 ms (SAE)
Max = 0.77 at 73.04 ms (IIHS)



Max = 0.62 at 63.52 ms (SAE)
Max = 0.69 at 63.52 ms (IIHS)

Dummy: HIII 50th Male
Seating Position:
Driver

Tibia Index Source Code : Guideline 96/79/EC; SAE J1727 AUG96; and IIHS Crashworthiness Evaluation Offset Barrier Crash Test Protocol (Version X)

B-81

091030



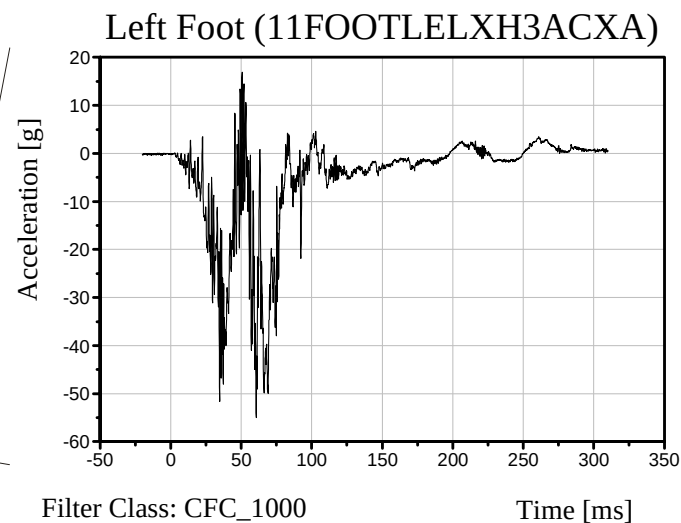
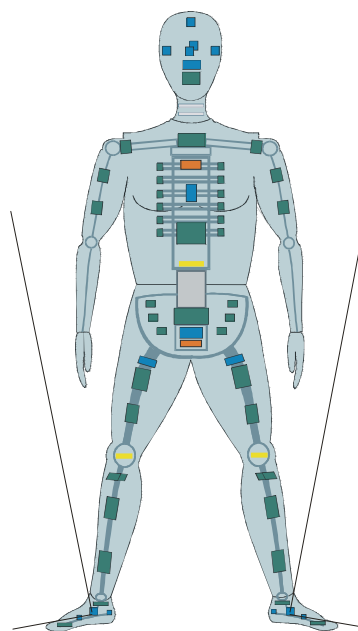
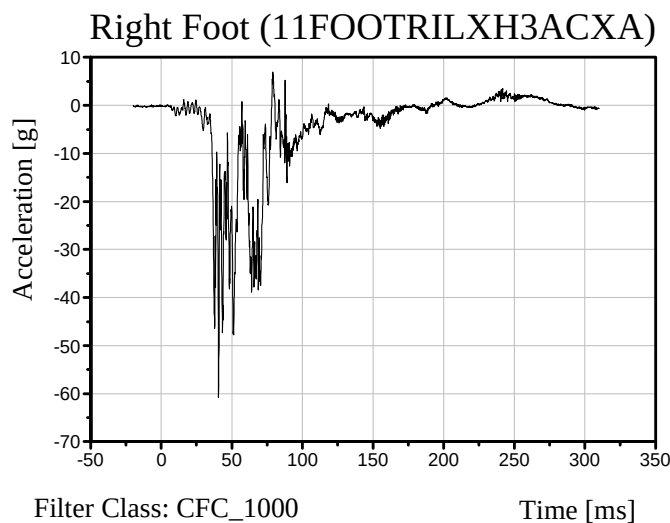
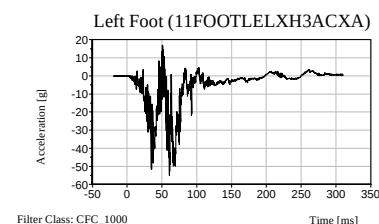
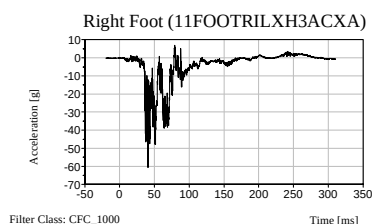
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Foot Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF
Test Number: 091030



Max [Acceleration] 6.91 g at 78.96 ms
Min [Acceleration] -60.73 g at 40.48 ms

Dummy: HIII 50th Male
Seating Position:
Driver

Max [Acceleration] 16.90 g at 50.64 ms
Min [Acceleration] -55.01 g at 60.72 ms

Foot Acceleration Source Code : Min/Max of 11FOOTRILXH3ACXA and 11FOOTLELXH3ACXA

B-82

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Head X-Axis Acceleration

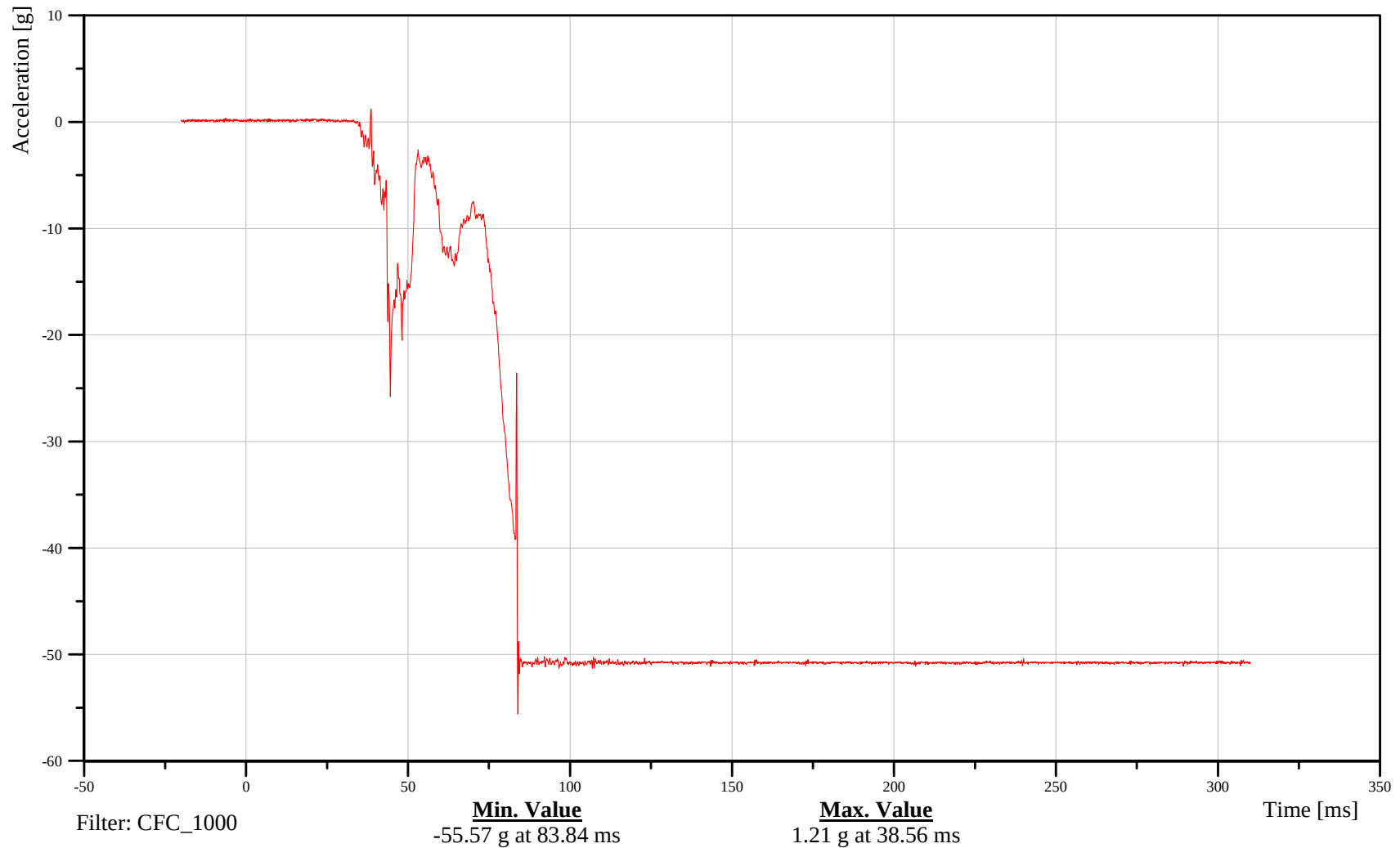
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13HEADCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-83

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Head Y-Axis Acceleration

Date: 10/30/2009

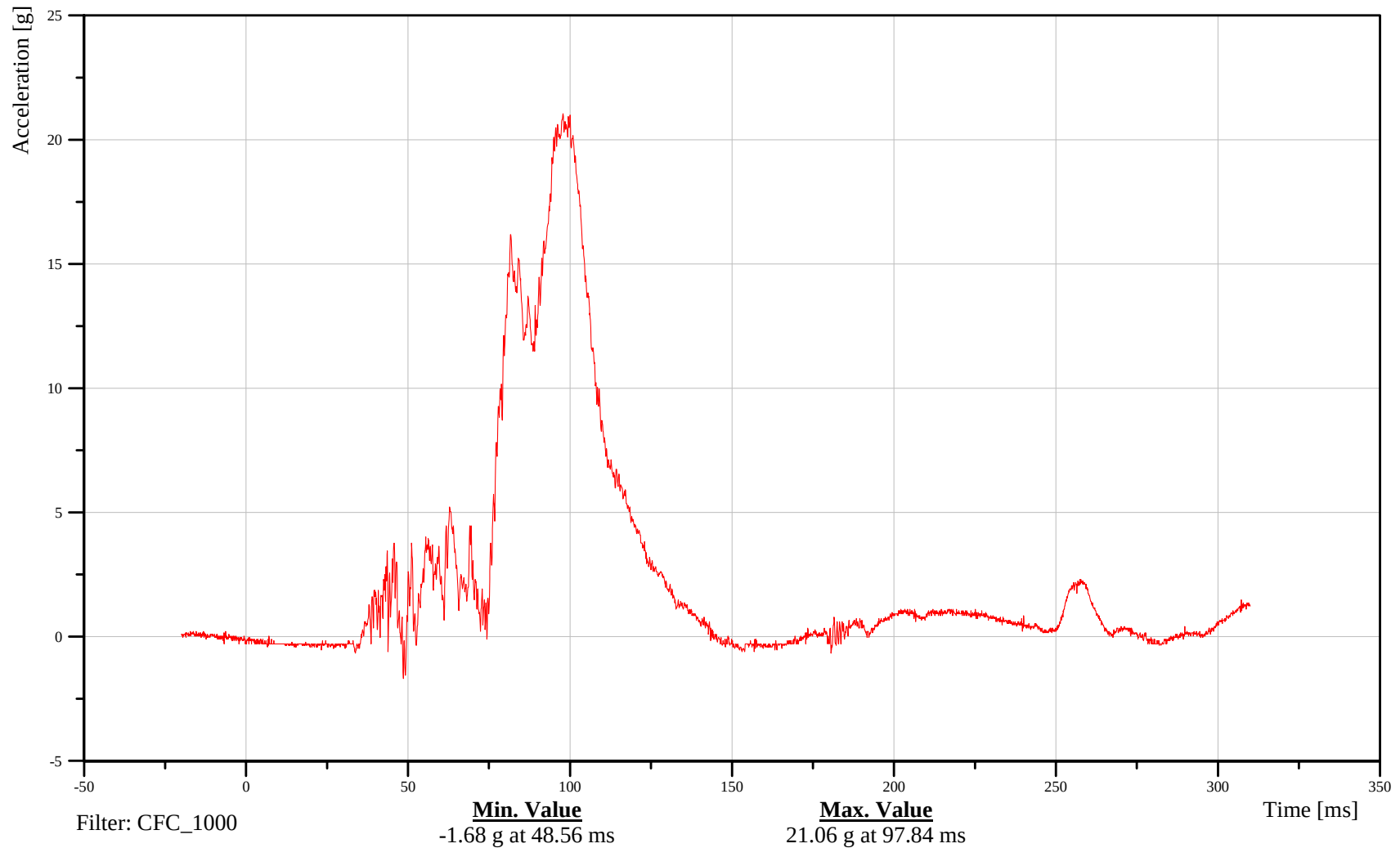
Time: 16:48

Customer: VRTC

13HEADCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-84

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Head Z-Axis Acceleration

Date: 10/30/2009

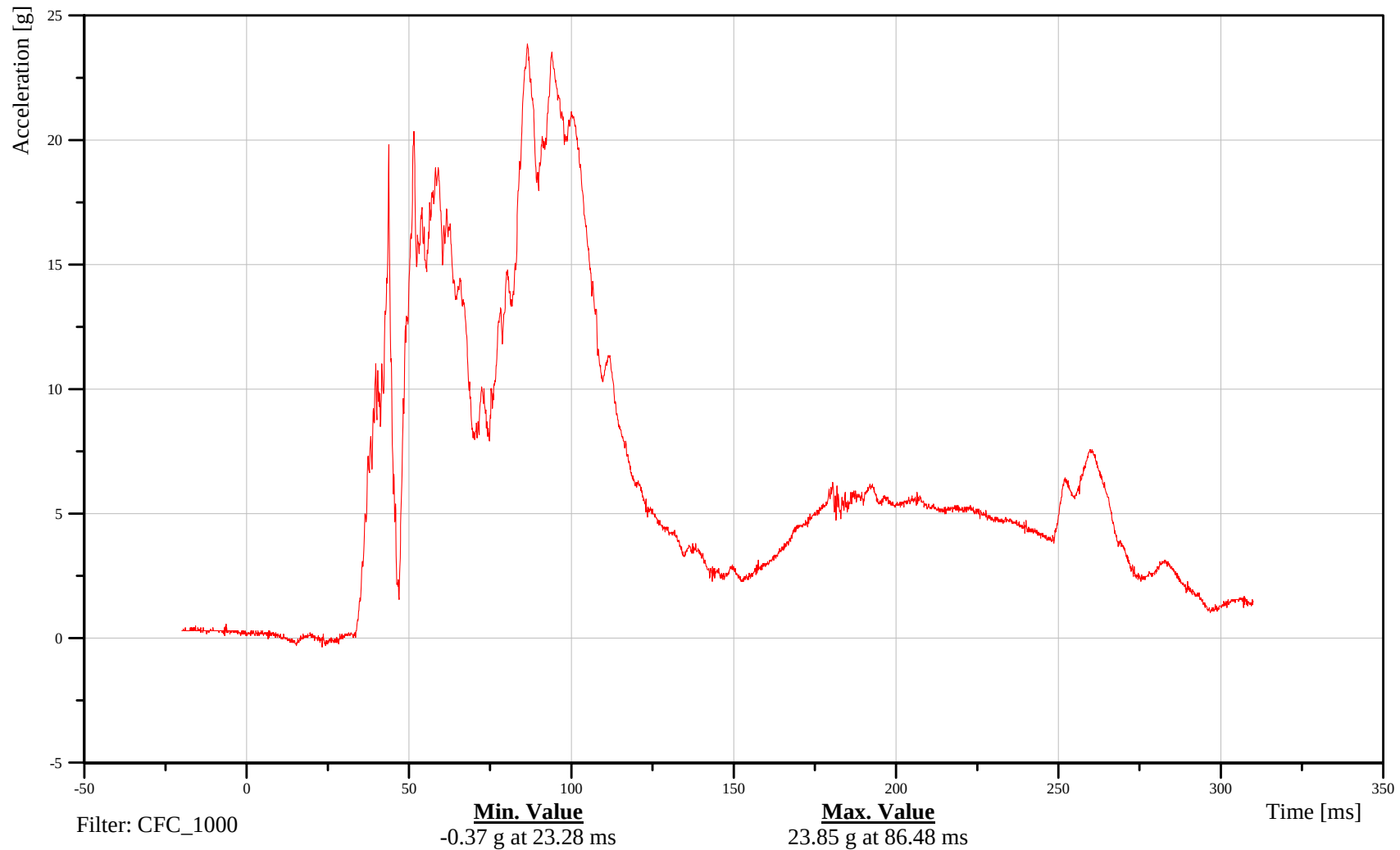
Time: 16:48

Customer: VRTC

13HEADCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-85

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Head Resultant Acceleration

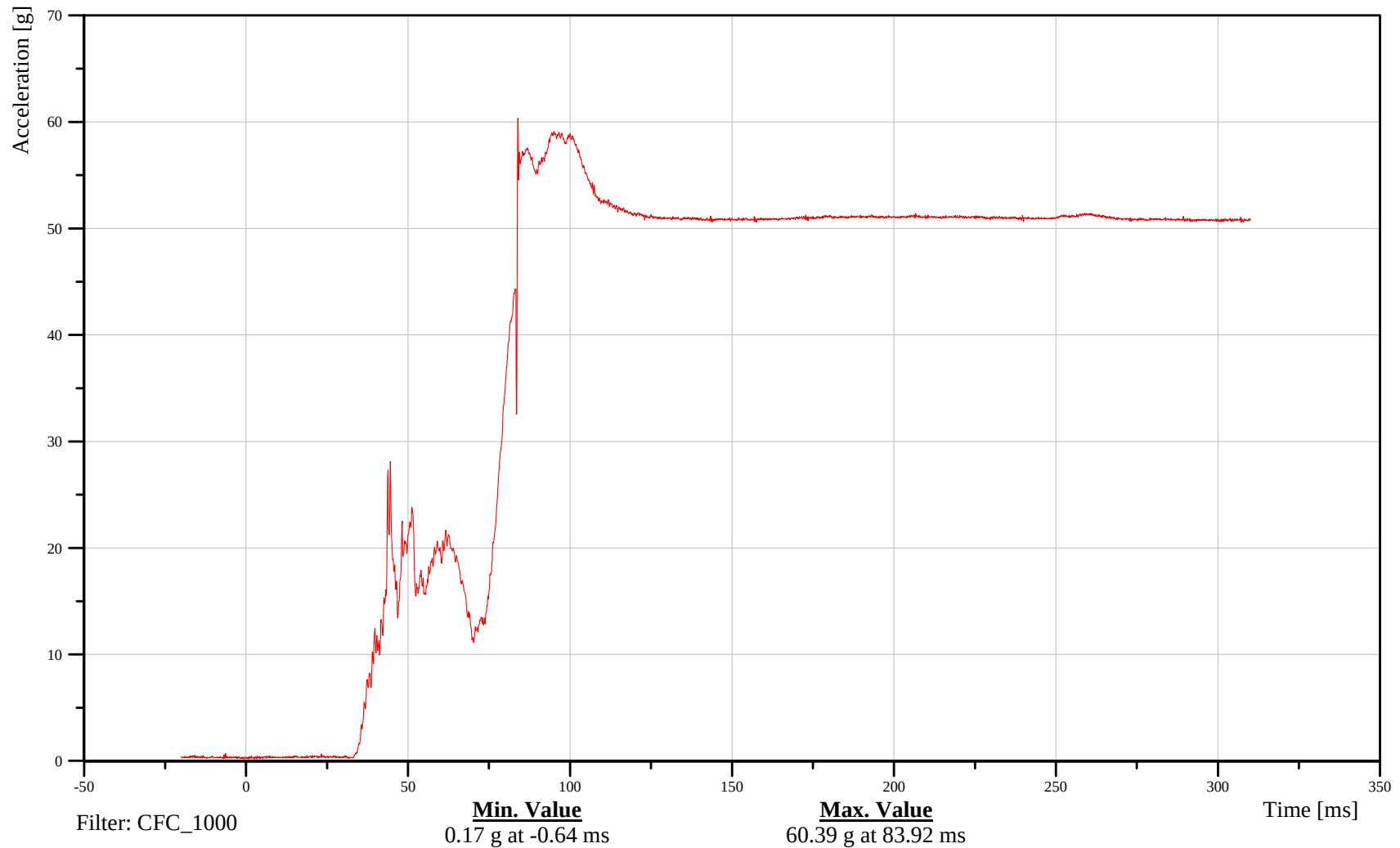
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13HEADCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-86

091030



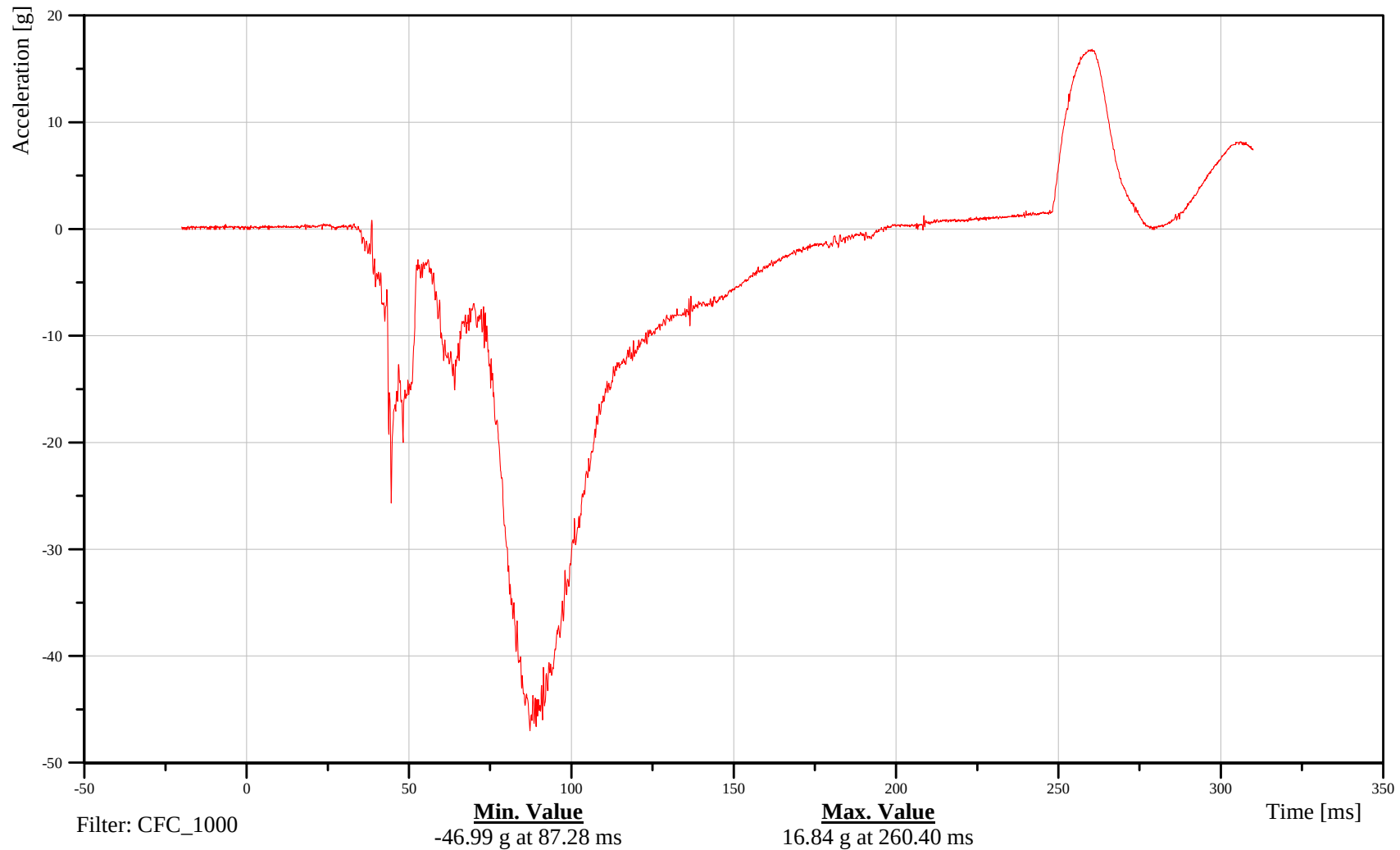
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Head Redundant X-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13HEADCGRDHFACXA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-87

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Head Redundant Y-Axis Acceleration

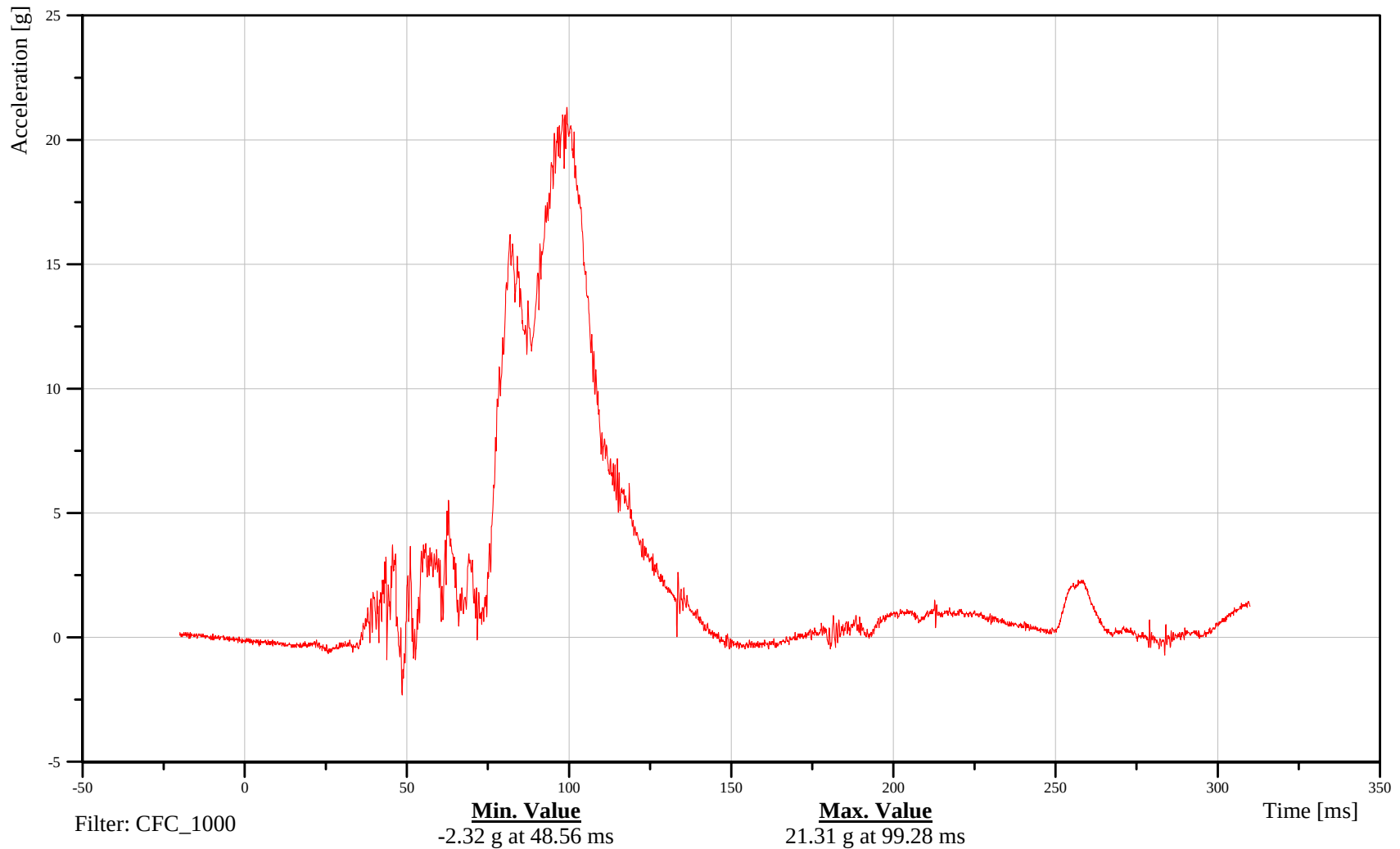
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13HEADCGRDHFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-88

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Head Redundant Z-Axis Acceleration

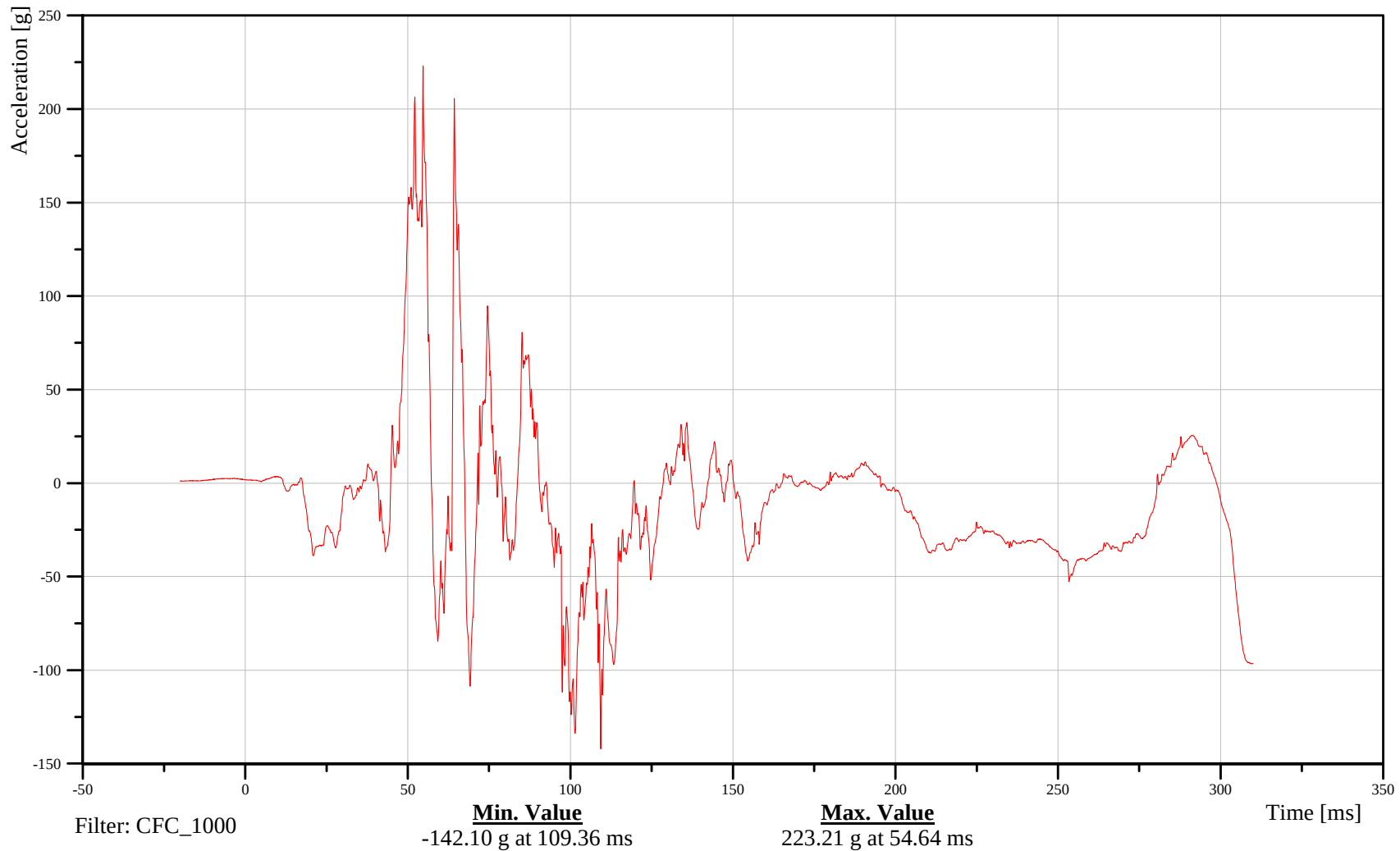
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13HEADCGRDHFACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-89

091030



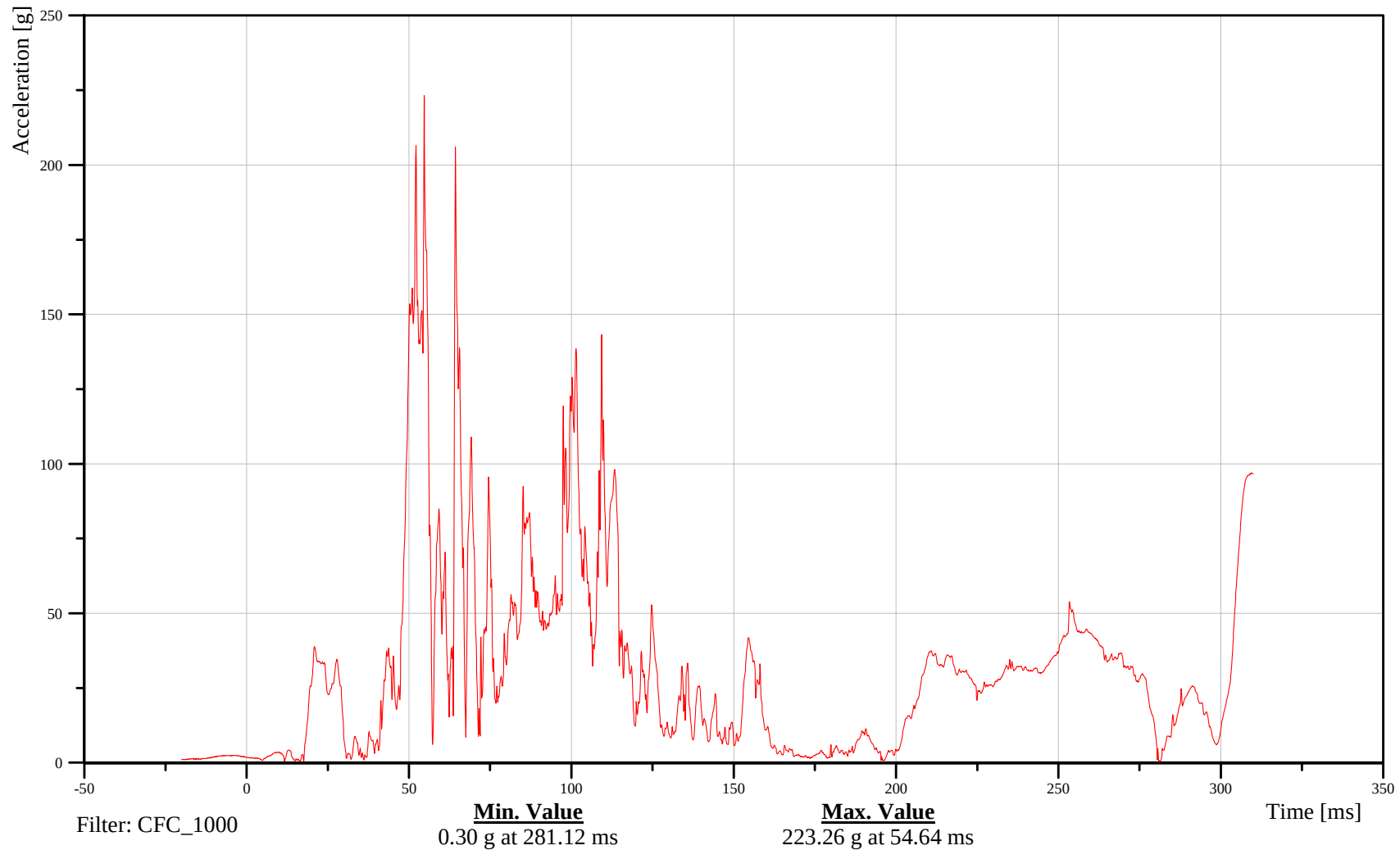
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Head Redundant Resultant Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13HEADCGRDHFACRA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-90

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Upper Neck X-Axis Force

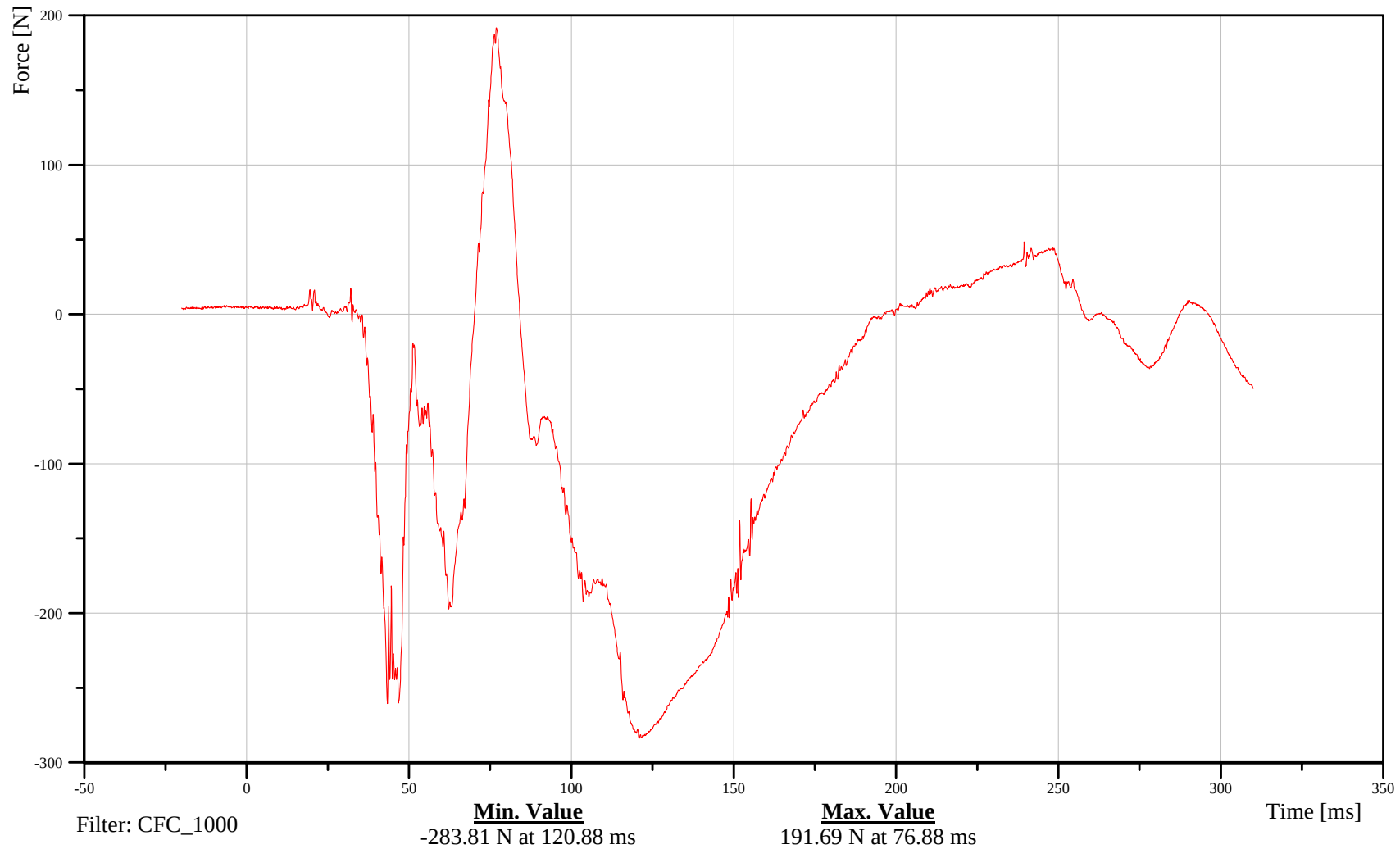
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13NECKUP00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-91

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Upper Neck Y-Axis Force

Date: 10/30/2009

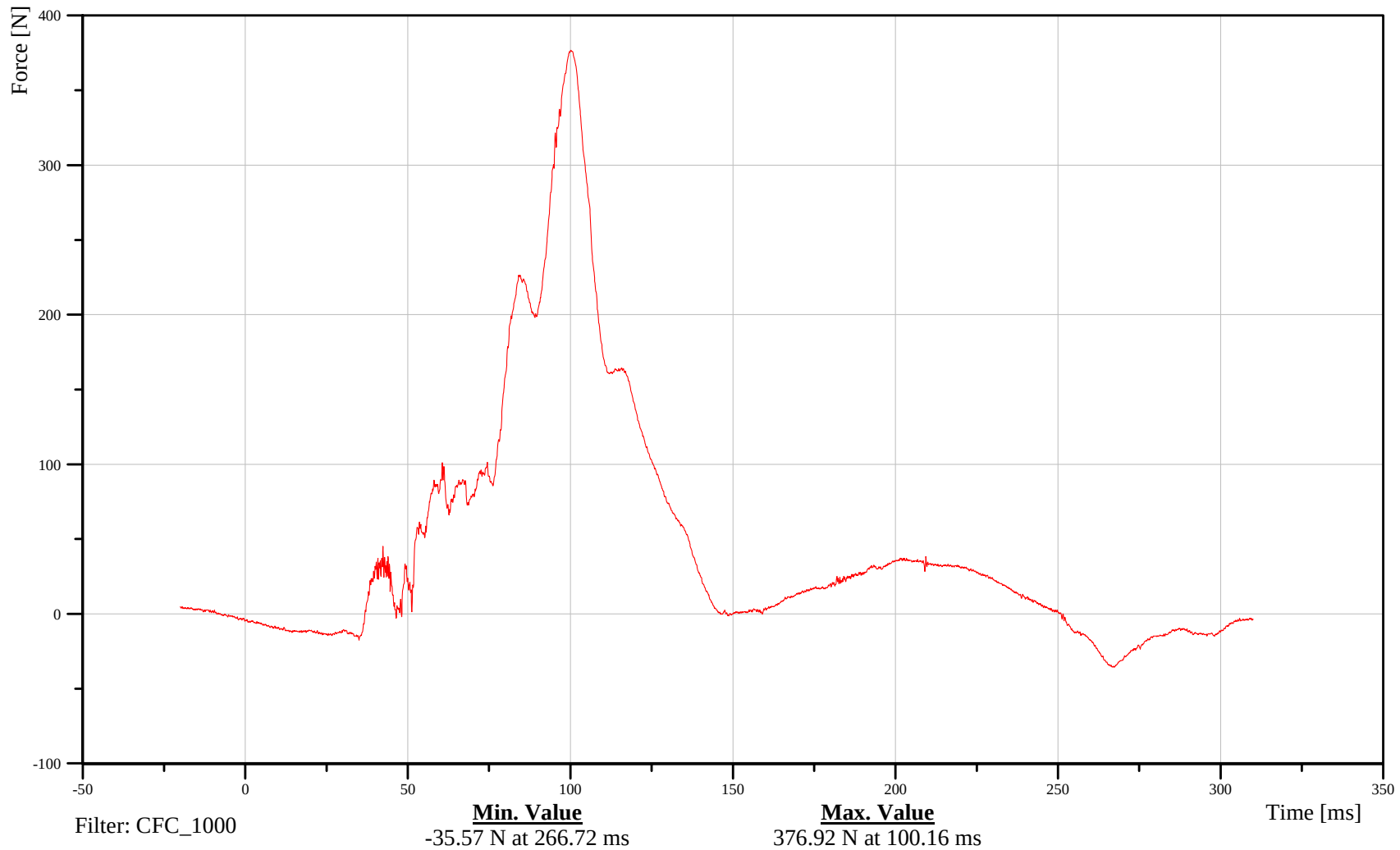
Time: 16:48

Customer: VRTC

13NECKUP00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-92

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Upper Neck Z-Axis Force

Date: 10/30/2009

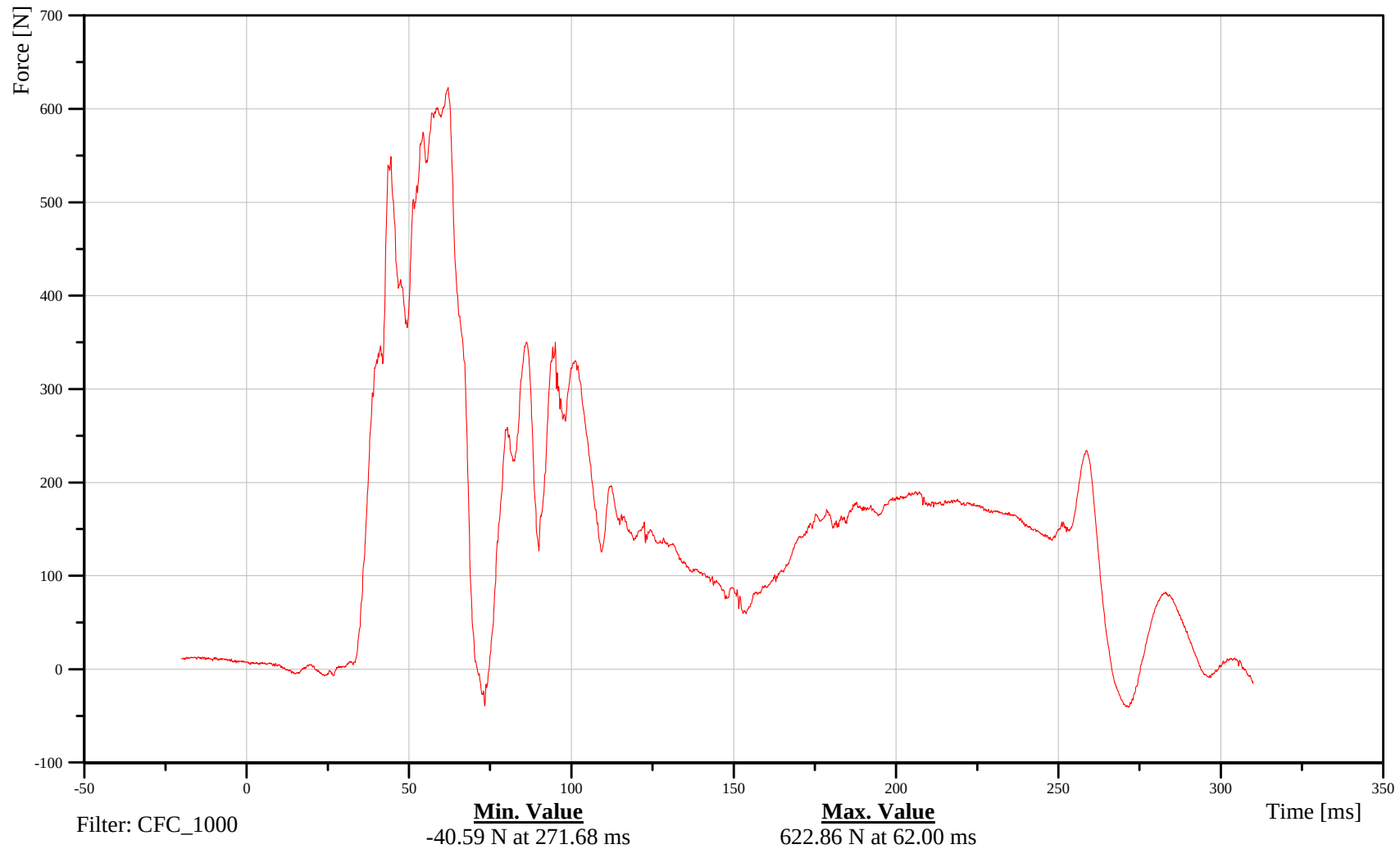
Time: 16:48

Customer: VRTC

13NECKUP00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-93

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Upper Neck Moment About X Axis

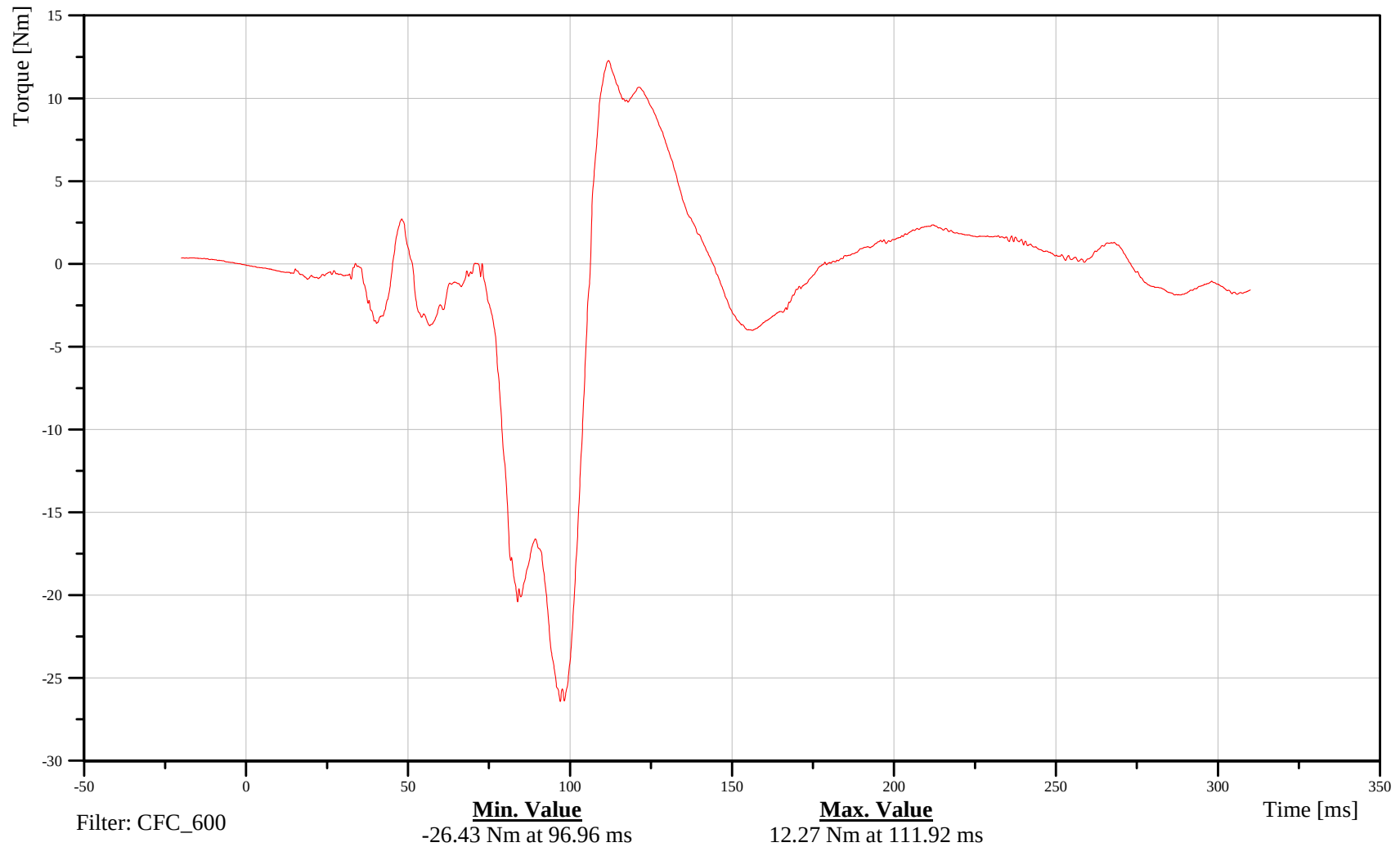
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13NECKUP00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-94

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Upper Neck Moment About Y Axis

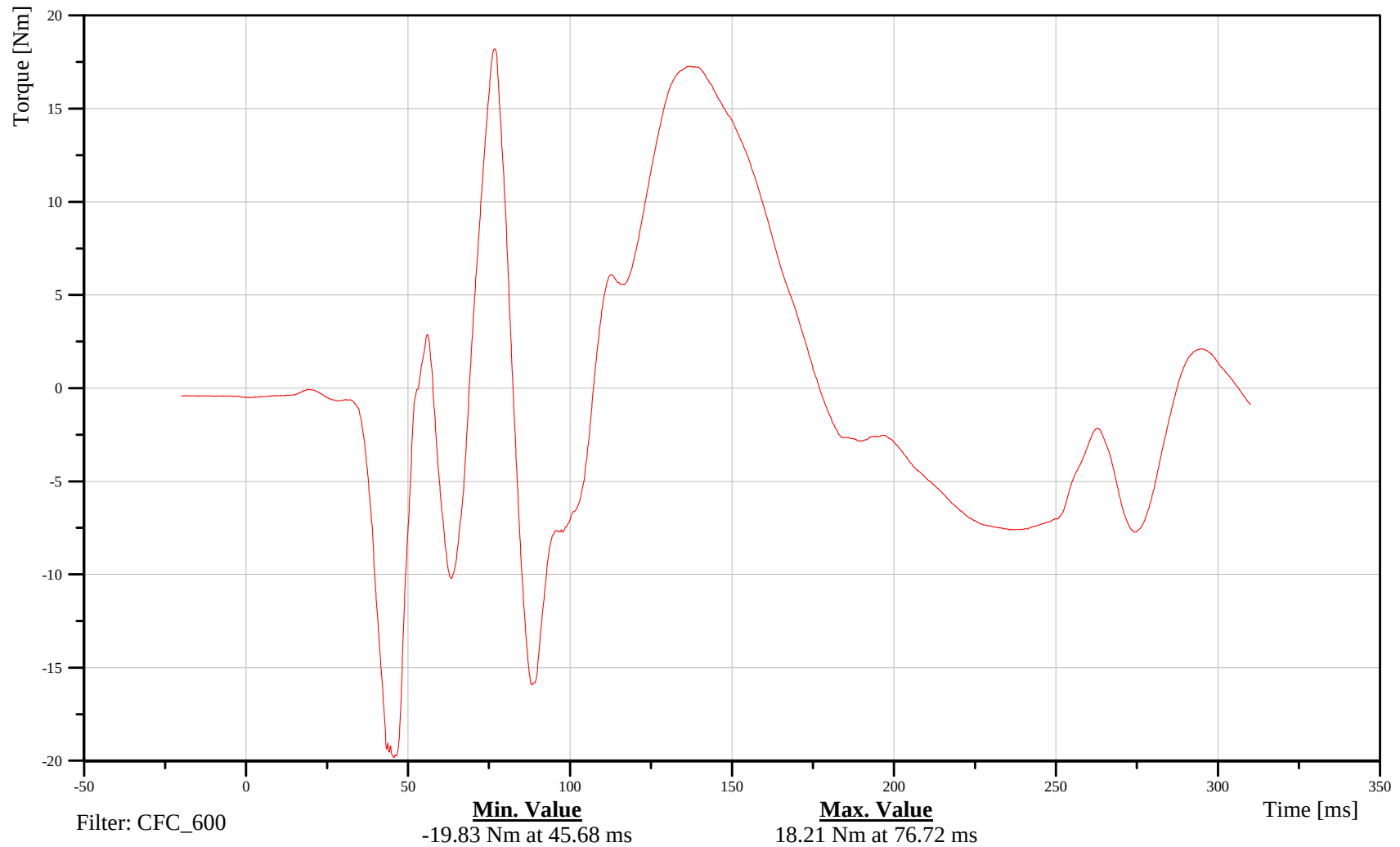
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13NECKUP00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-95

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Upper Neck Moment About Z Axis

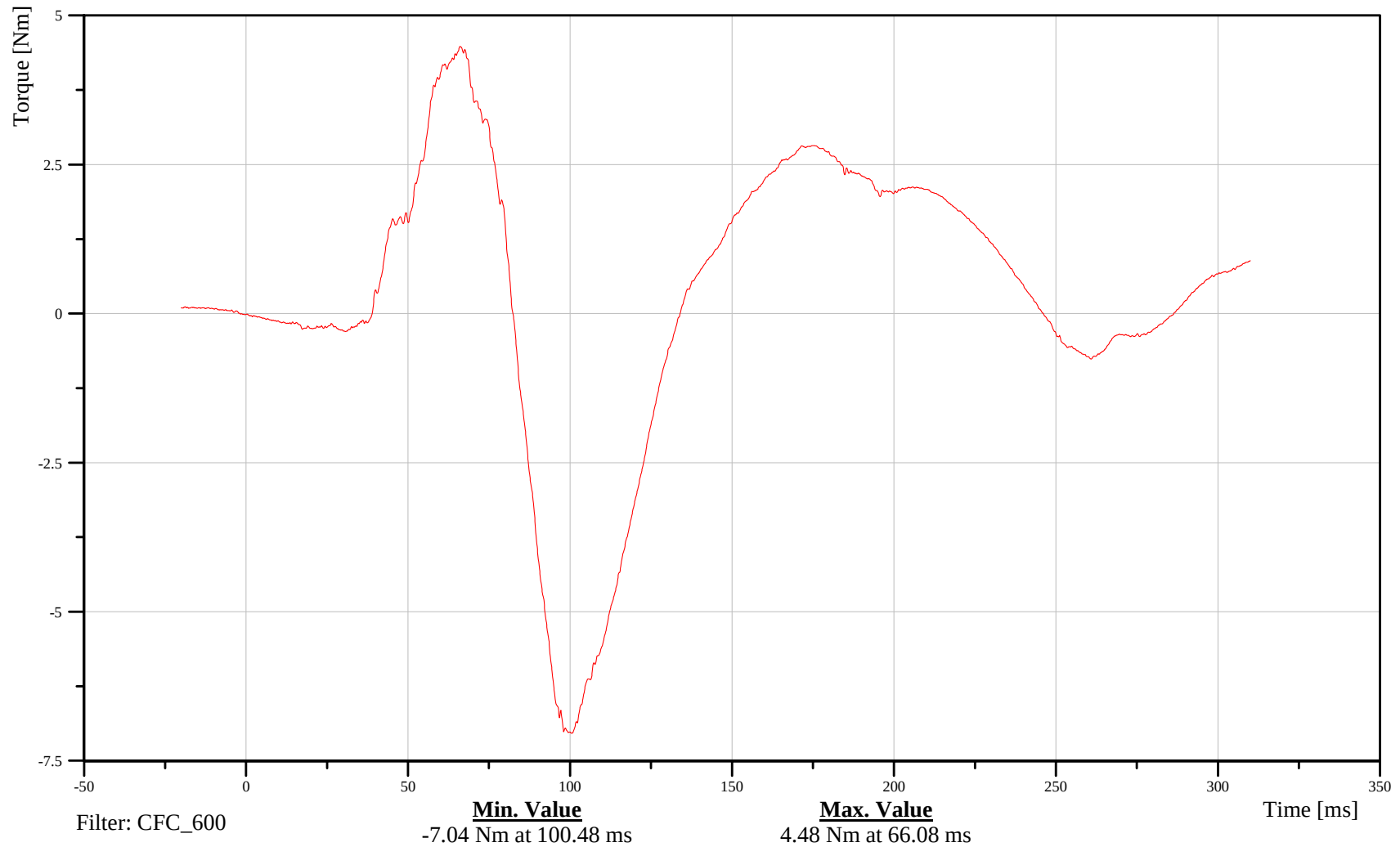
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13NECKUP00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-96

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest X-Axis Acceleration

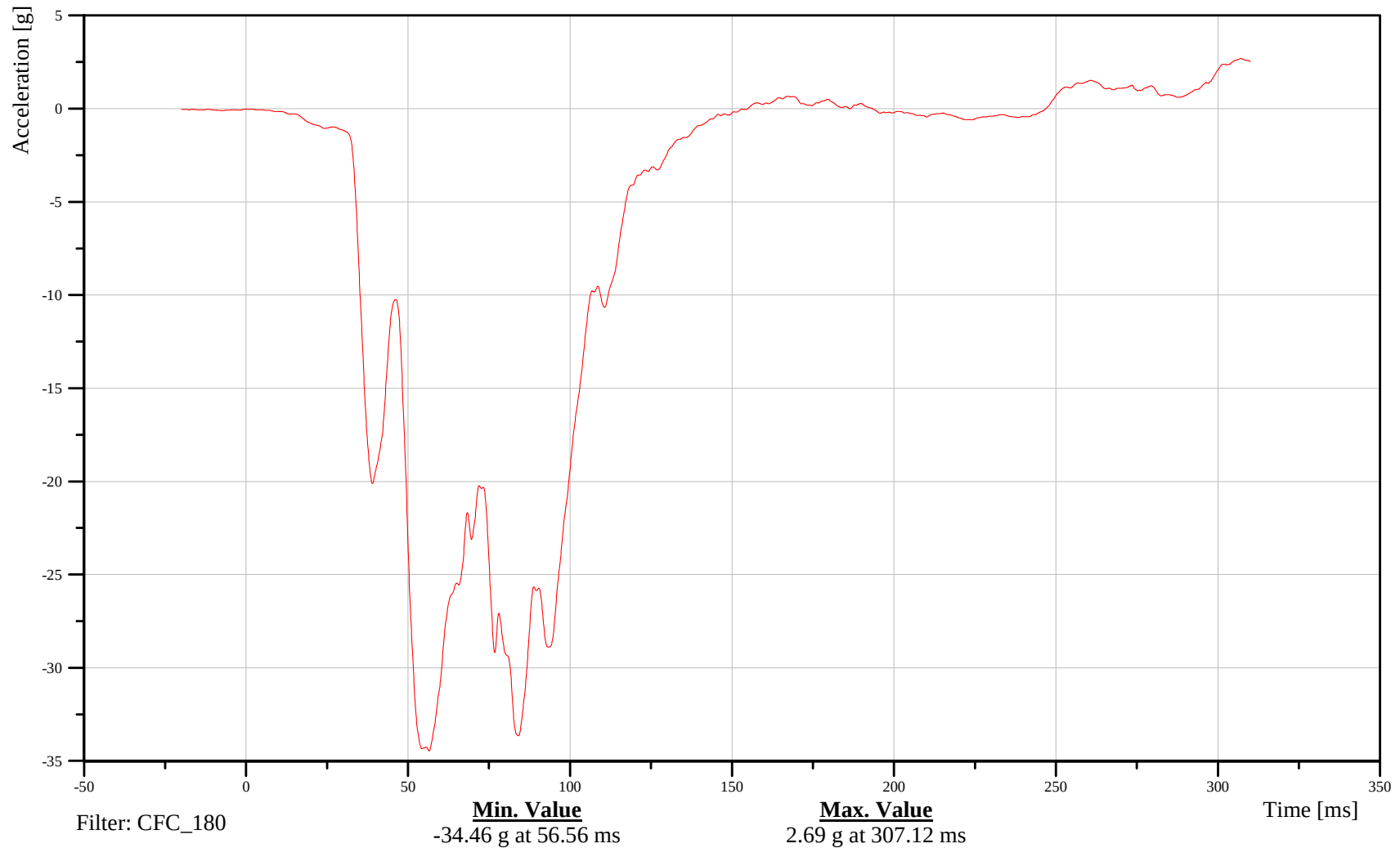
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCG00HFACXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-97

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest Y-Axis Acceleration

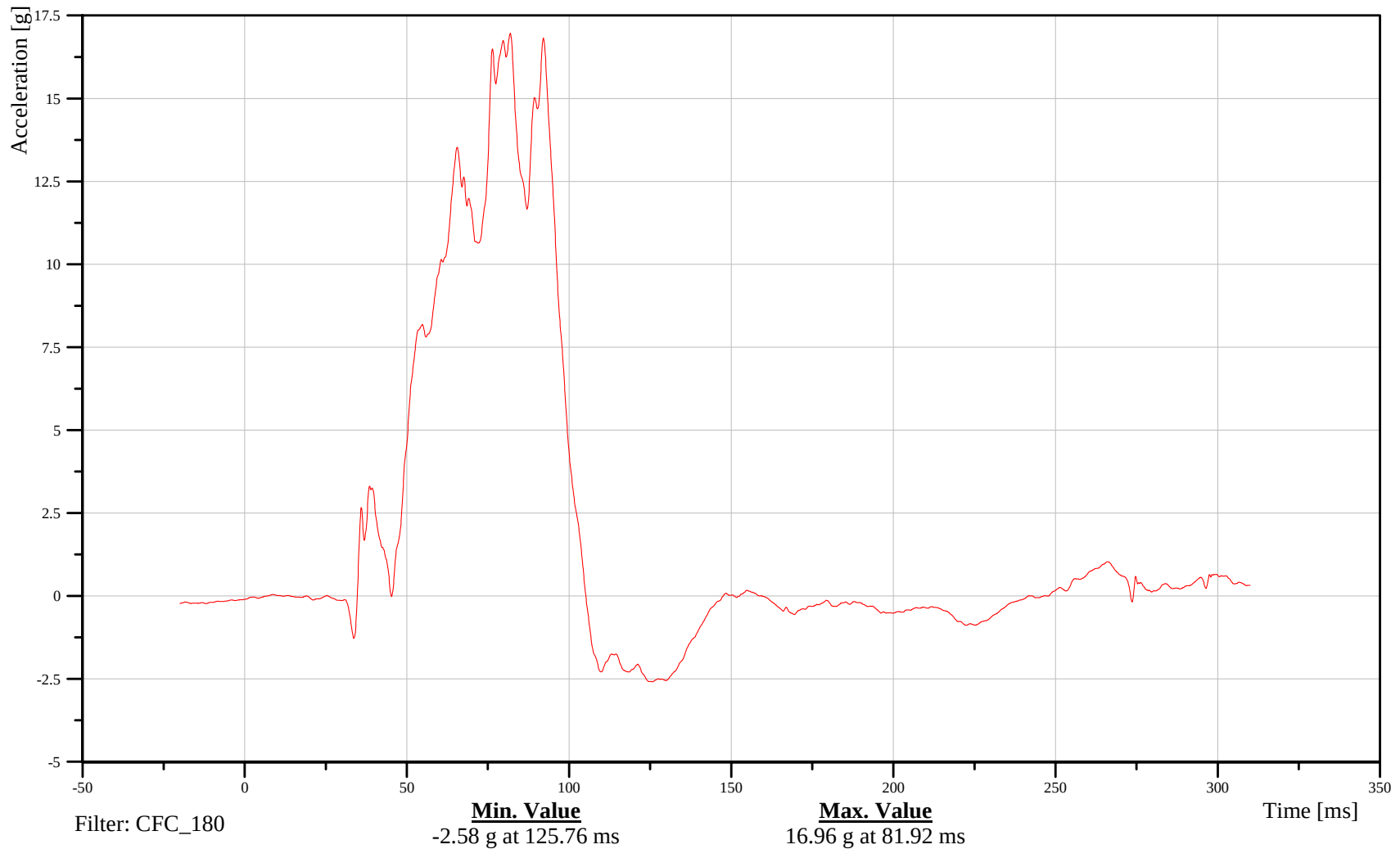
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCG00HFACYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-98

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Chest Z-Axis Acceleration

Date: 10/30/2009

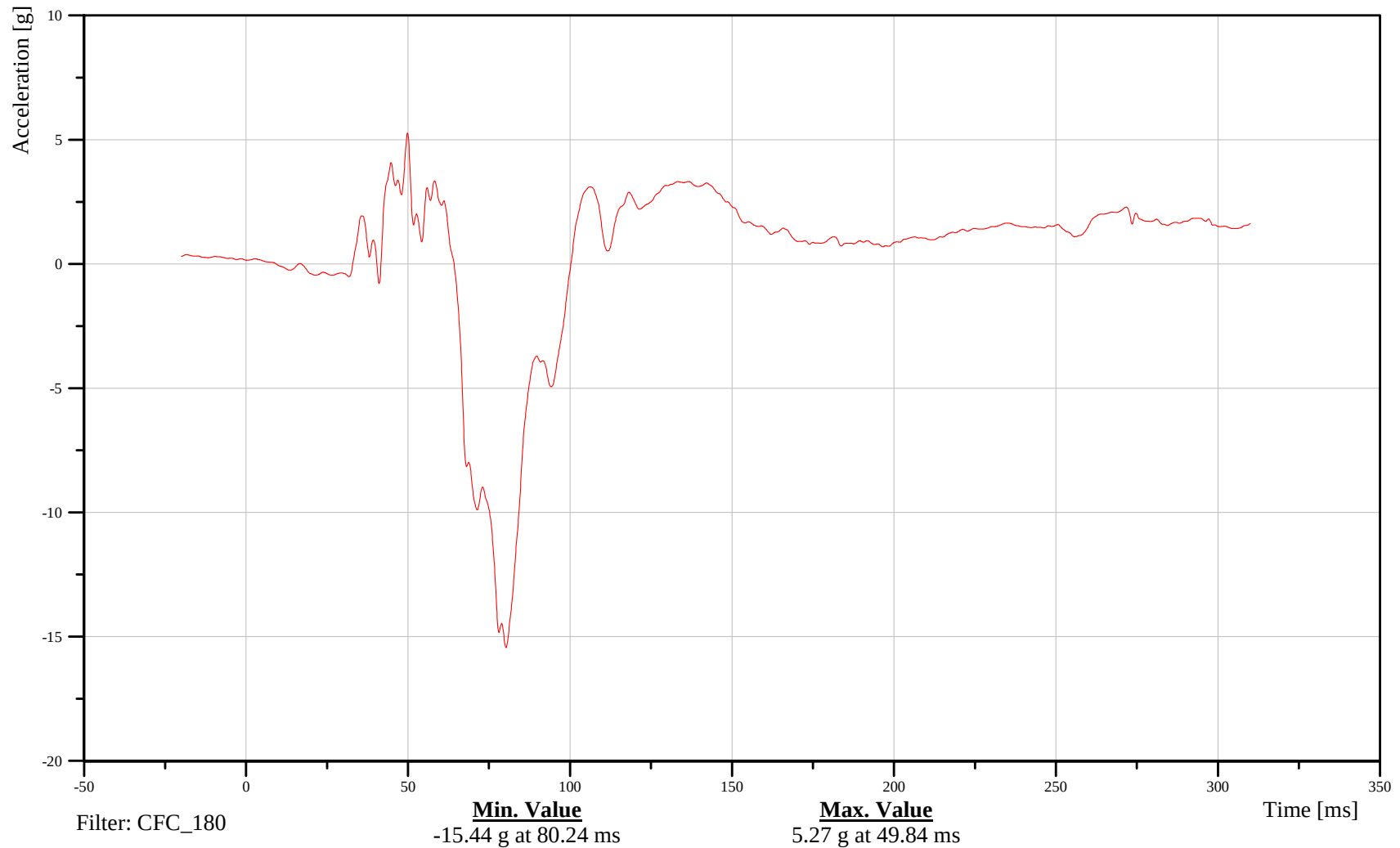
Time: 16:48

Customer: VRTC

13CHSTCG00HFACZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-99

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest Resultant Acceleration

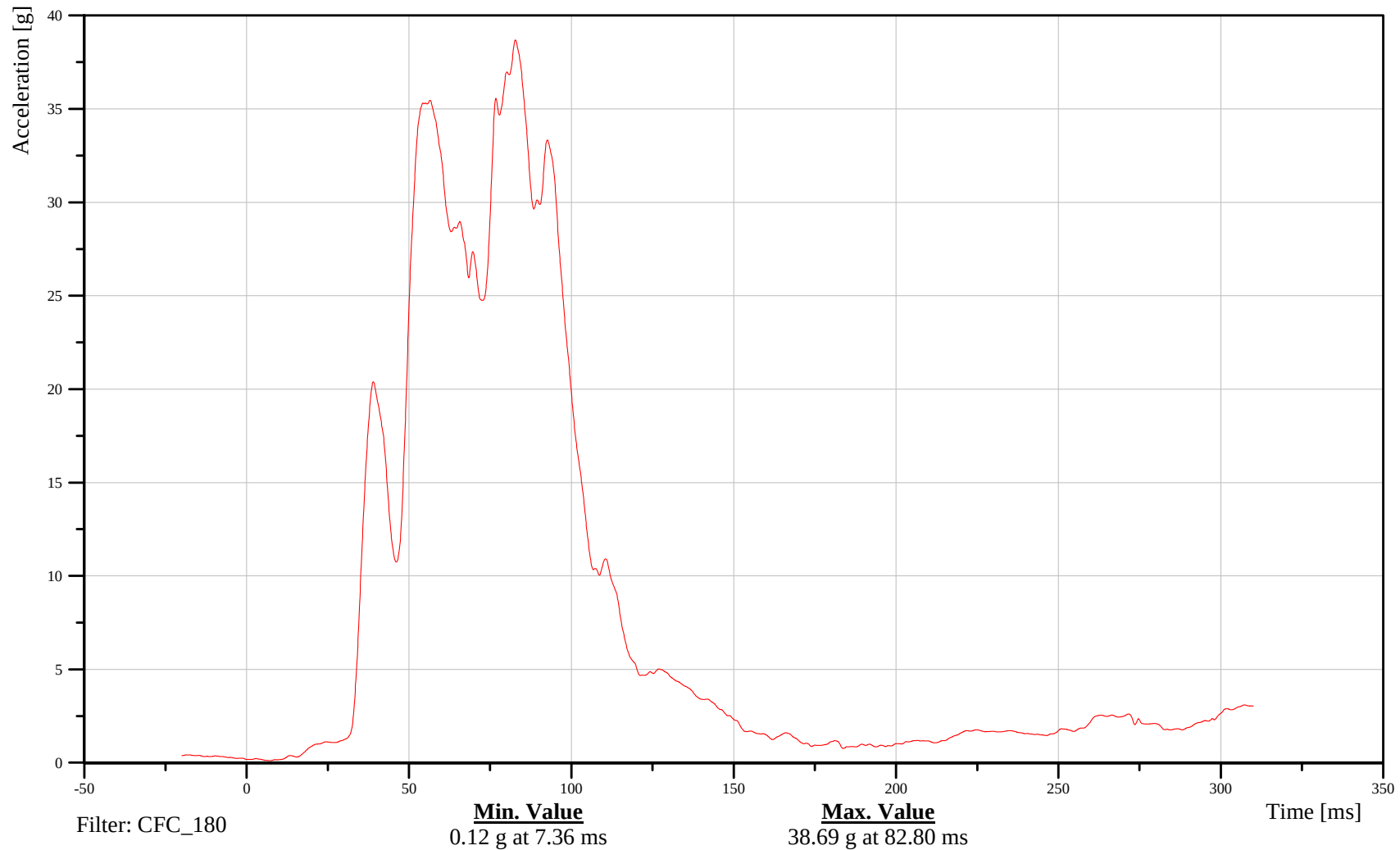
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCG00HFACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-100

091030



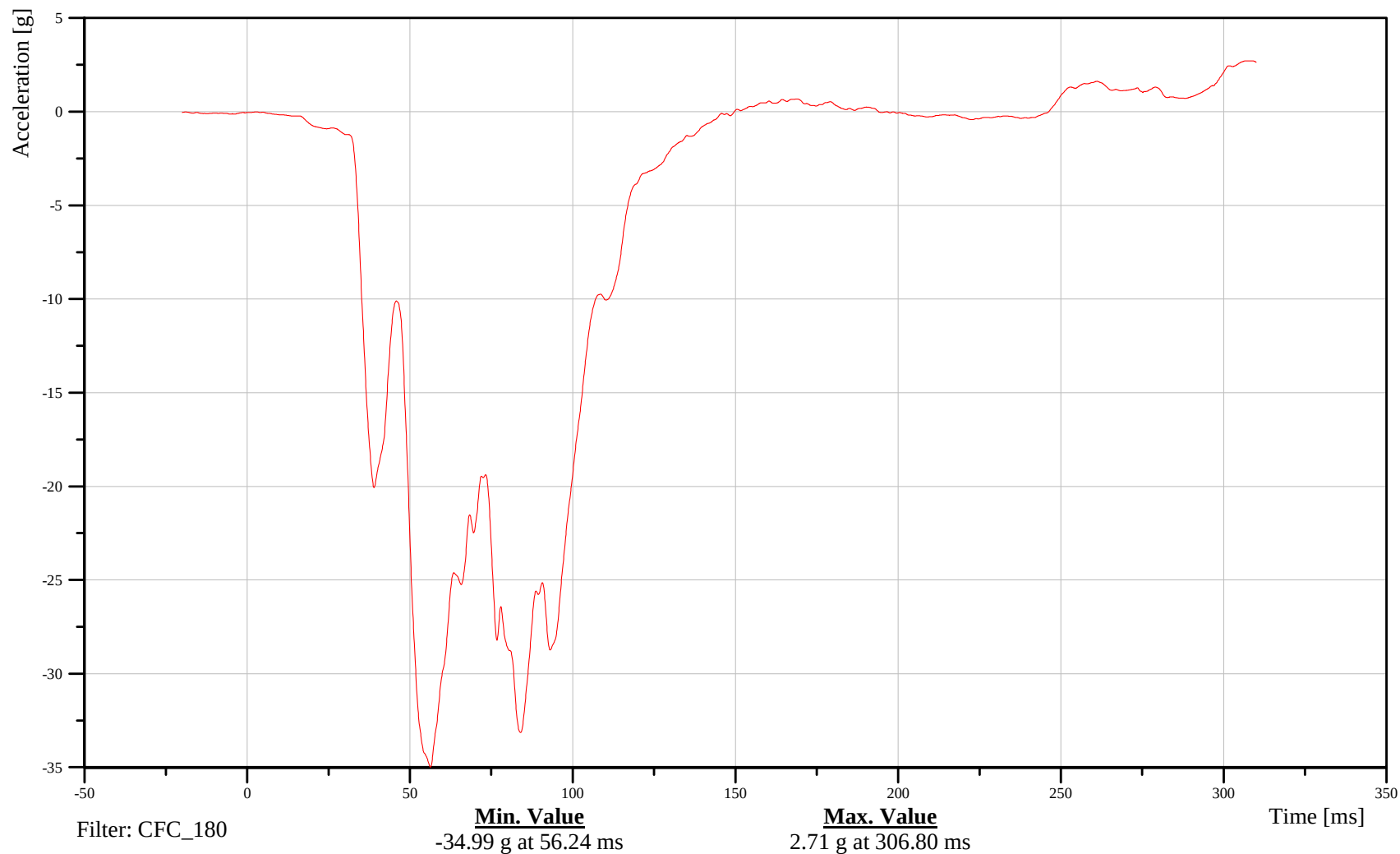
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest Redundant X-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCGRDHFACXC

TRC Inc. Test Lab: CTF
Test Number: 091030



B-101

091030



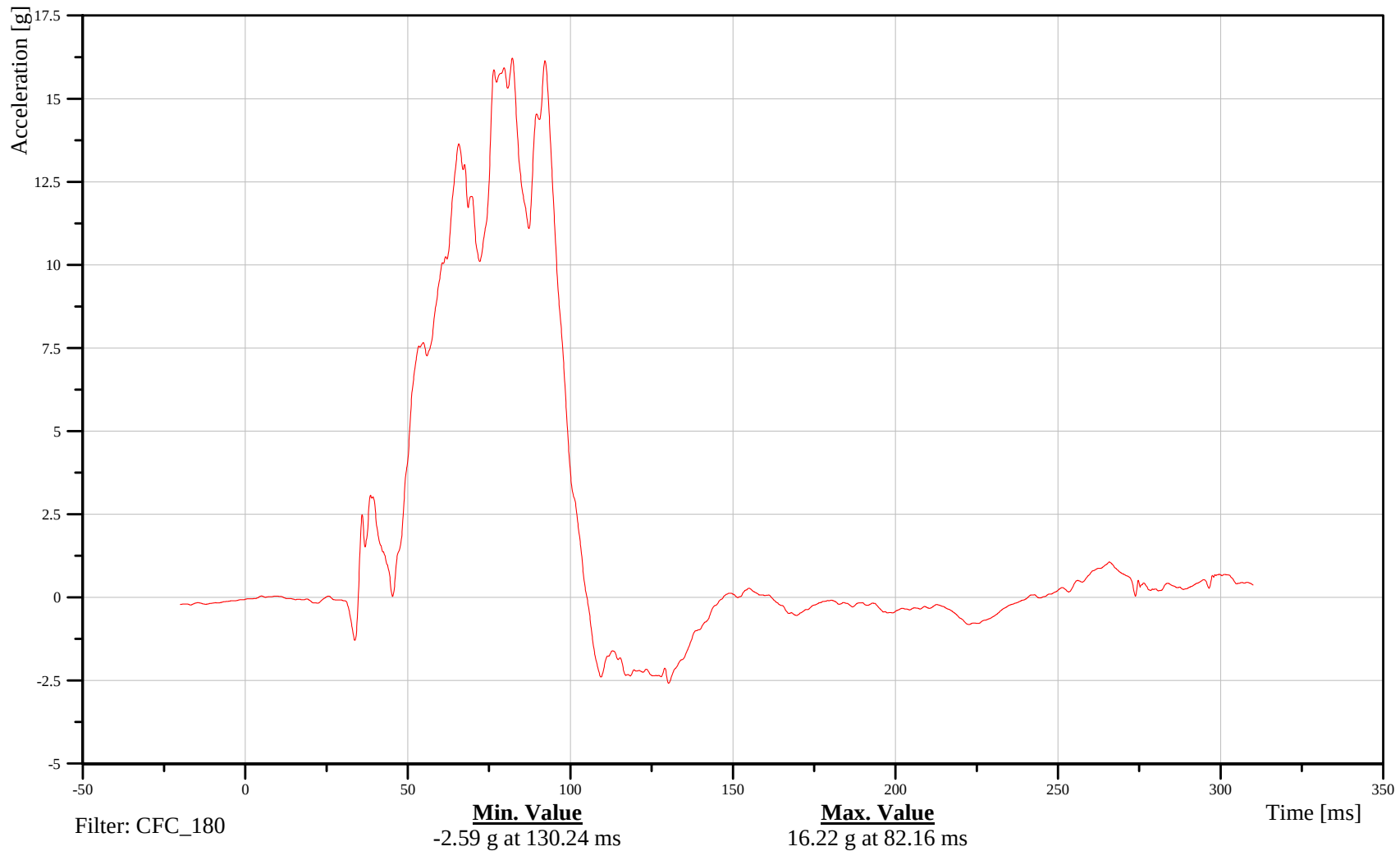
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest Redundant Y-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF
Test Number: 091030



B-102

091030



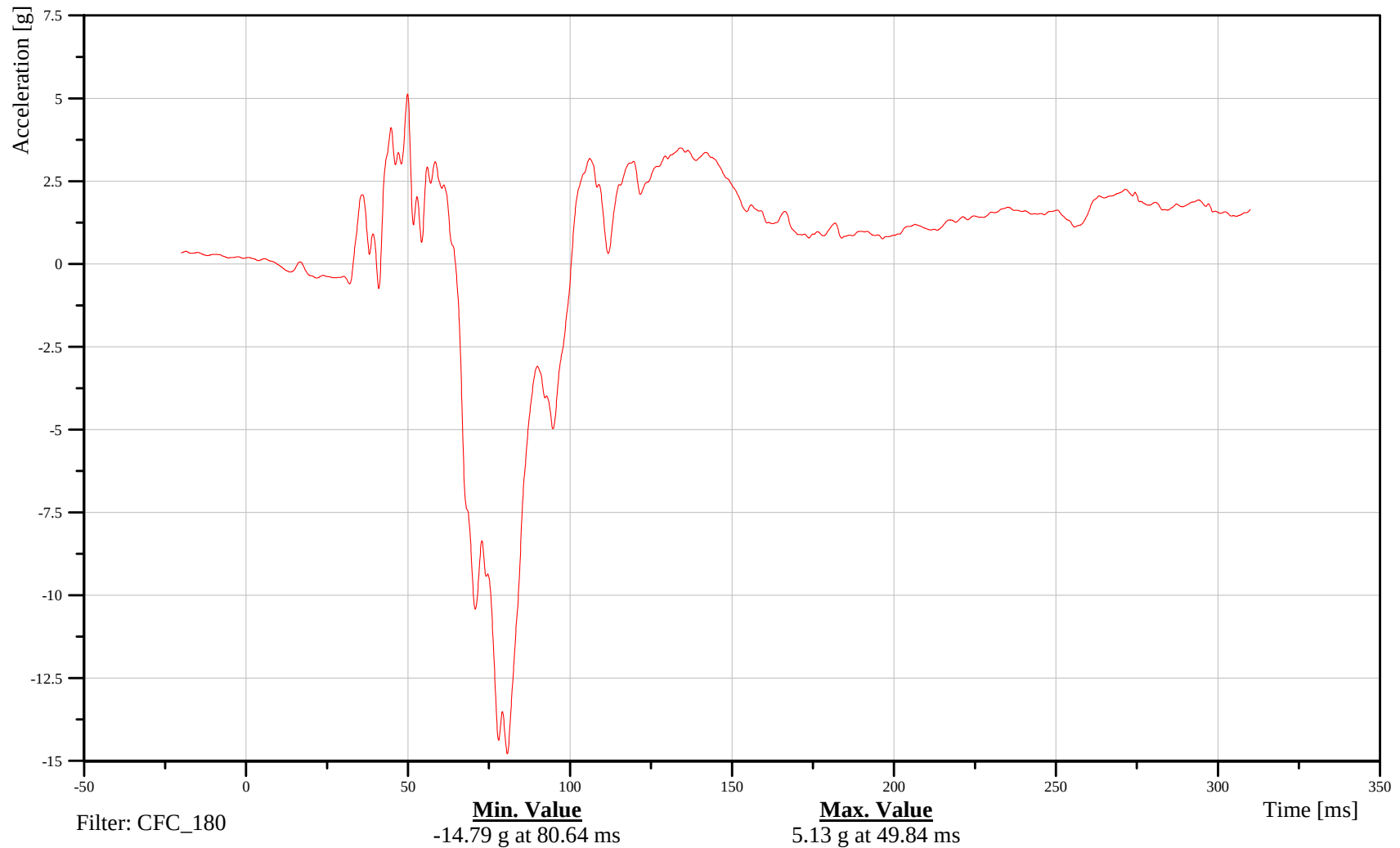
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest Redundant Z-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCGRDHFACZC

TRC Inc. Test Lab: CTF
Test Number: 091030



B-103

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest Redundant Resultant Acceleration

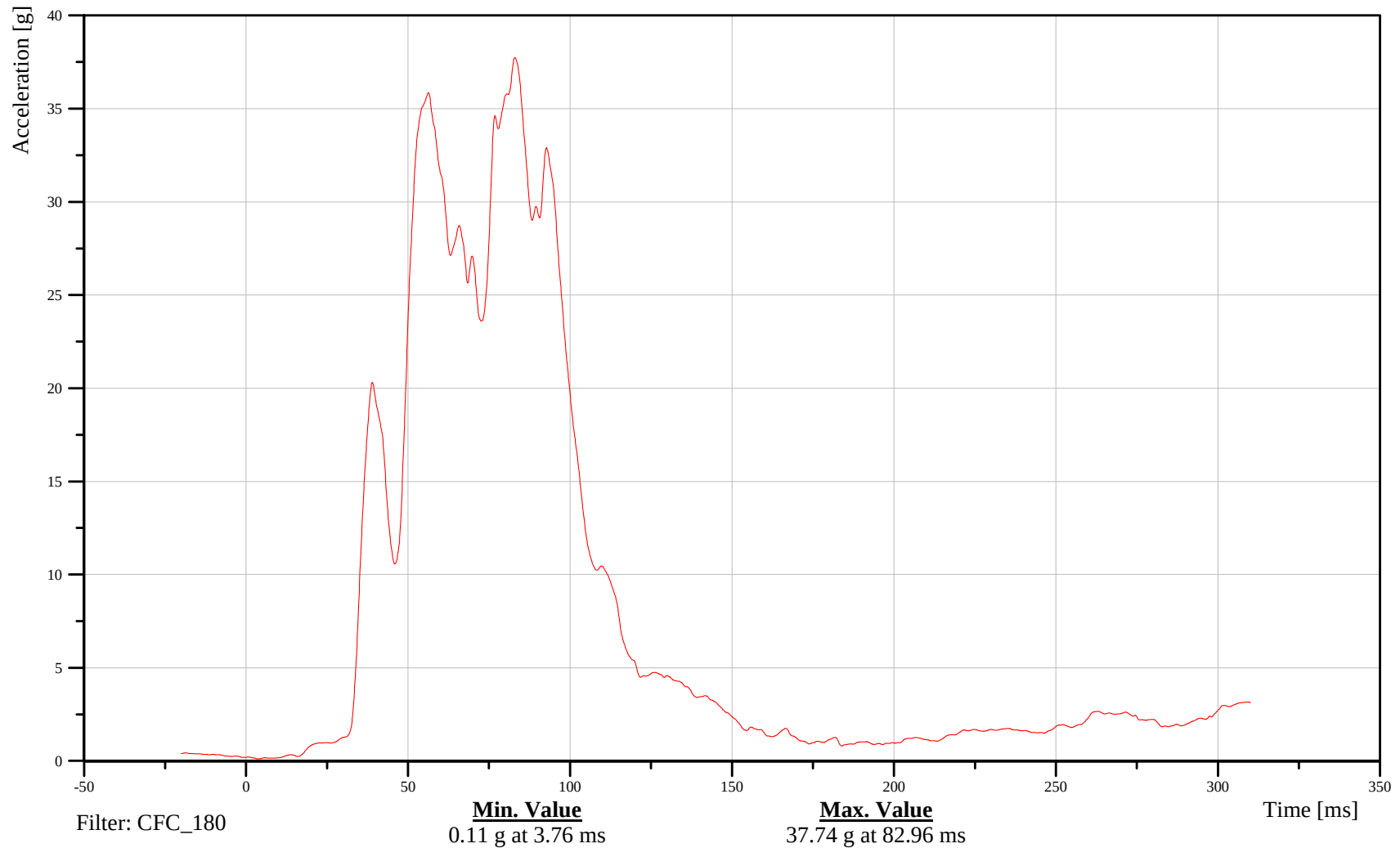
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-104

091030



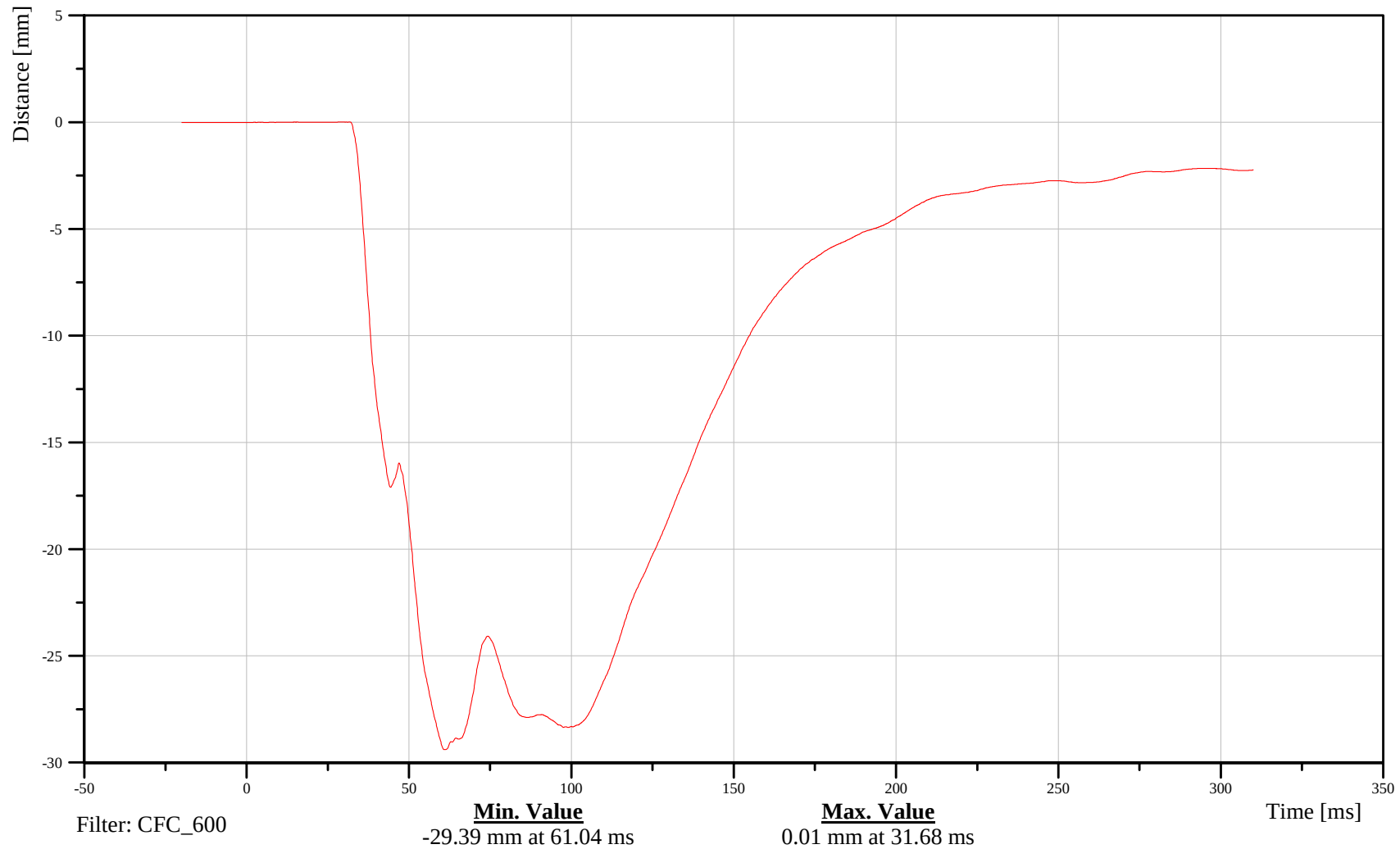
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Chest X-Axis Displacement

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13CHST0000HFDSXB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-105

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Pelvis X-Axis Acceleration

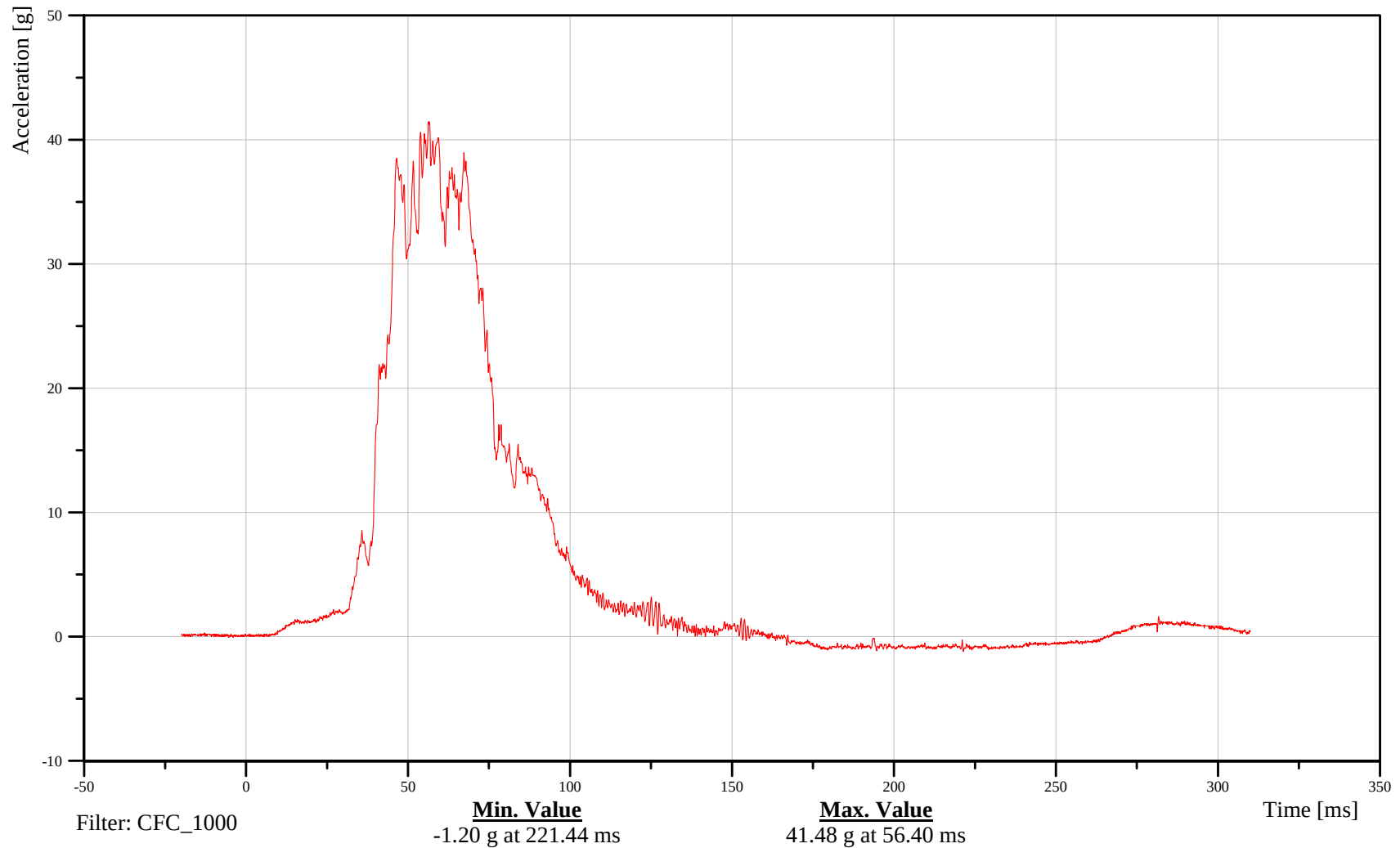
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13PELVCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-106

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Pelvis Y-Axis Acceleration

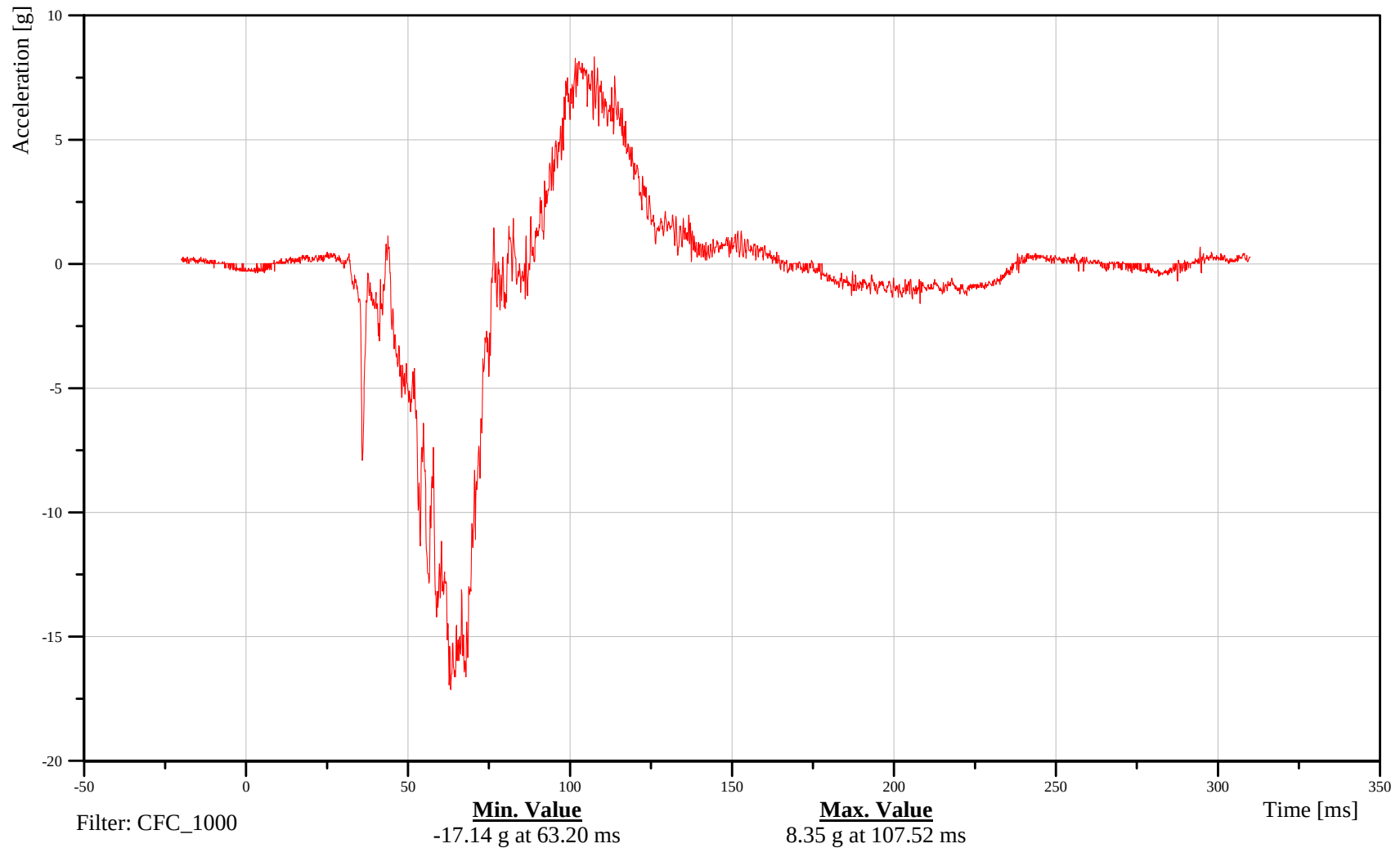
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13PELVCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-107

091030



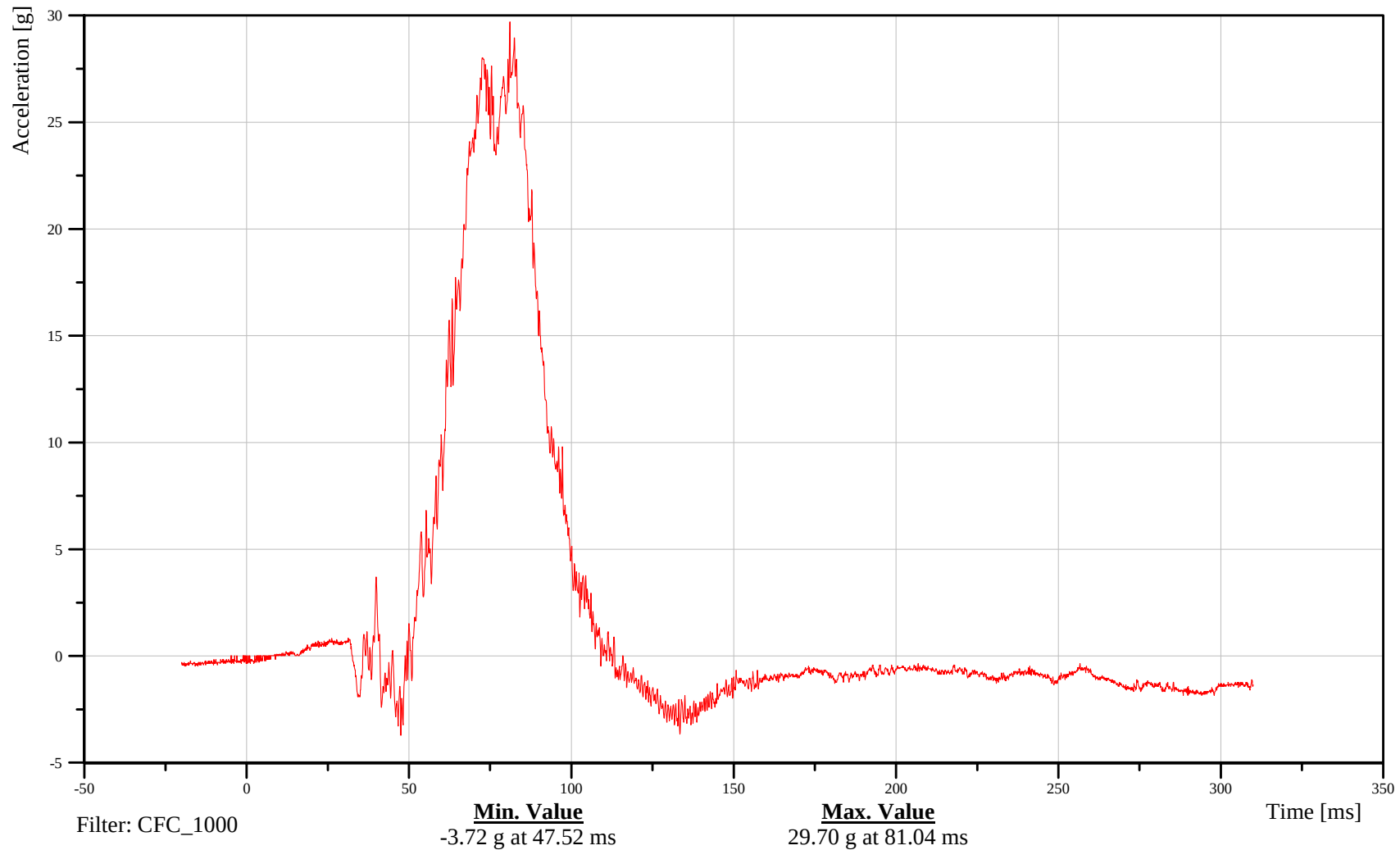
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Pelvis Z-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13PELVCG00HFACZA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-108

091030



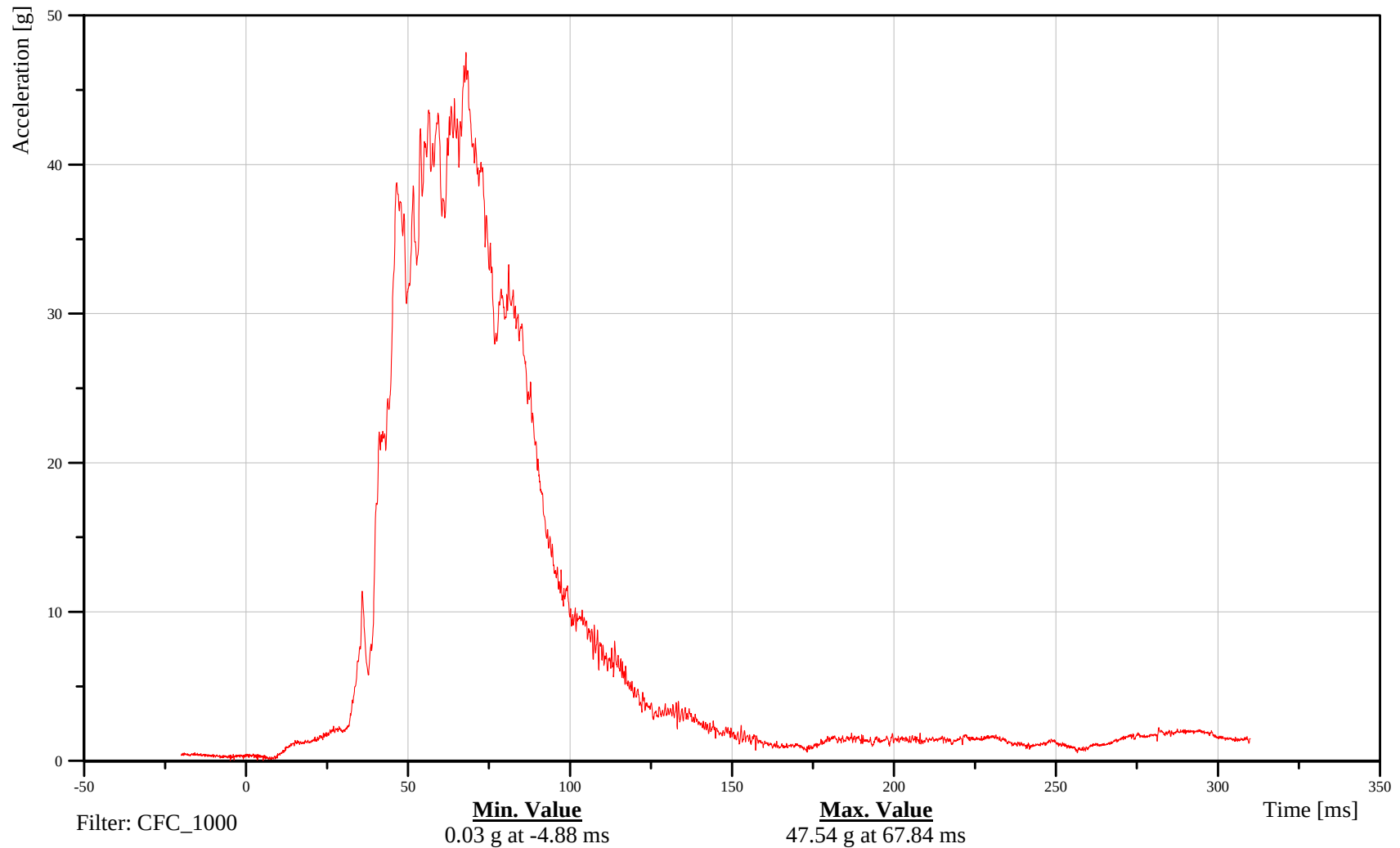
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Pelvis Resultant Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13PELVCG00HFACRA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-109

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Left Femur Z-Axis Force

Date: 10/30/2009

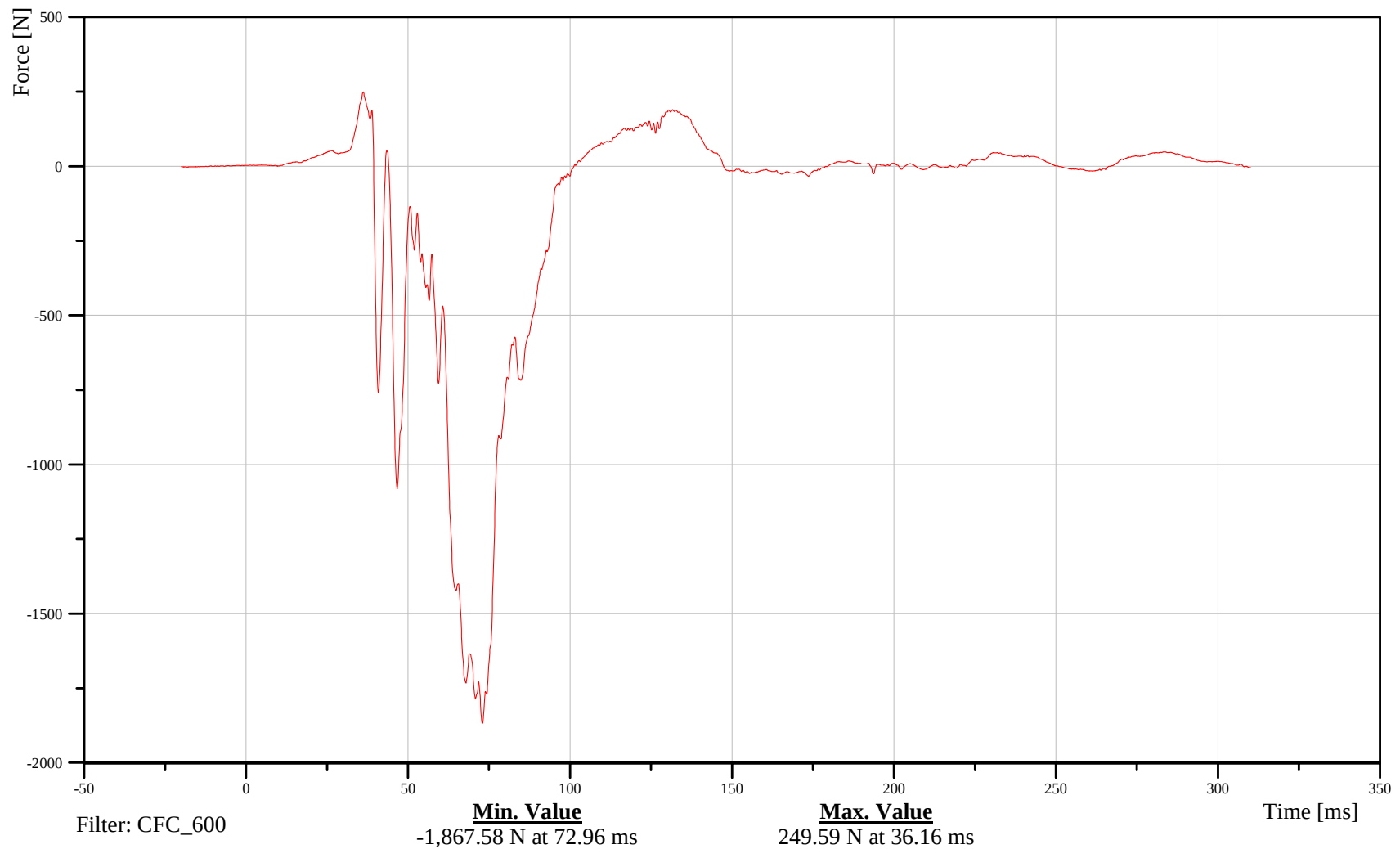
Time: 16:48

Customer: VRTC

13FEMRLU00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-110

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Front Passenger Right Femur Z-Axis Force

Date: 10/30/2009

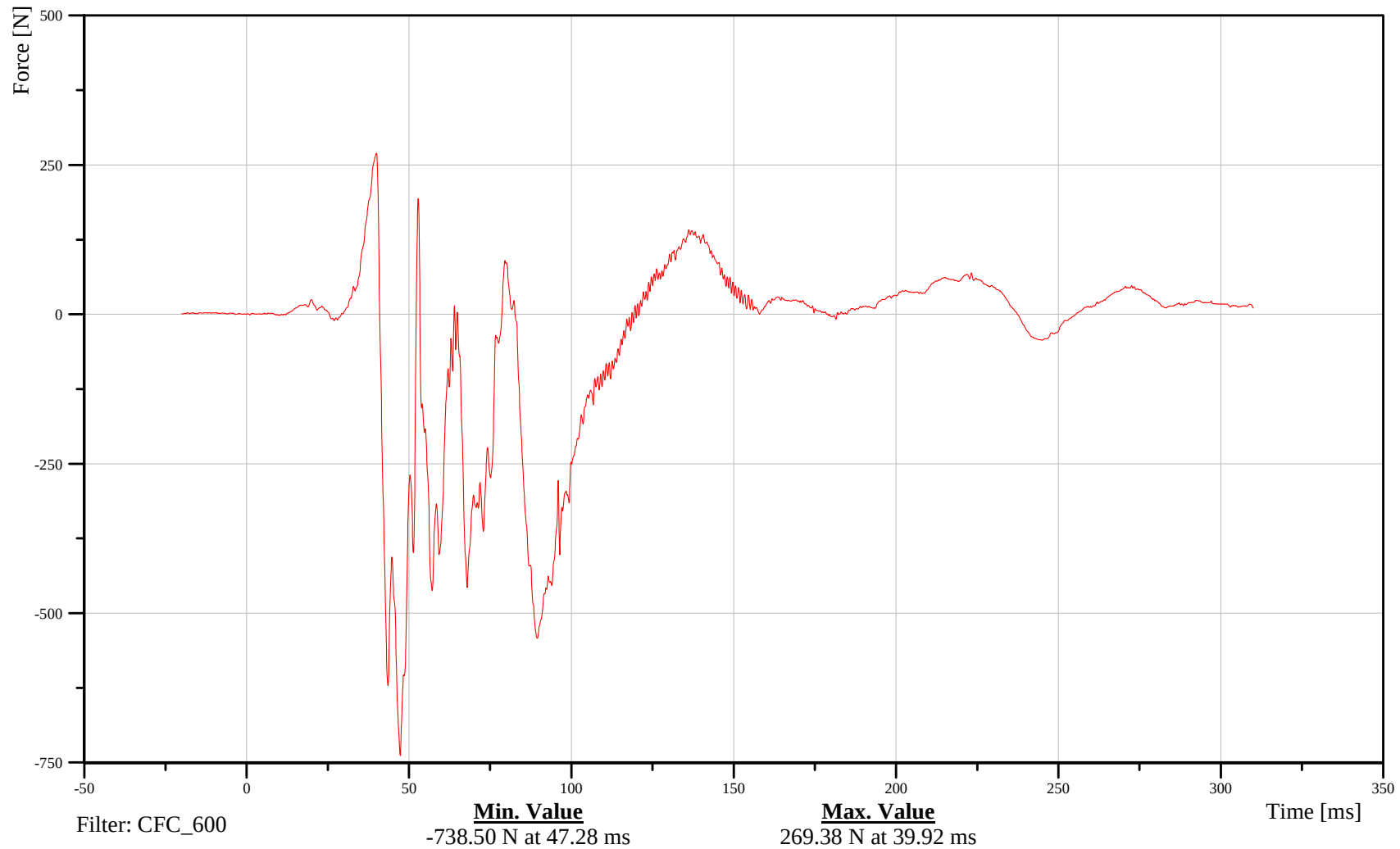
Time: 16:48

Customer: VRTC

13FEMRRU00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-111

091030



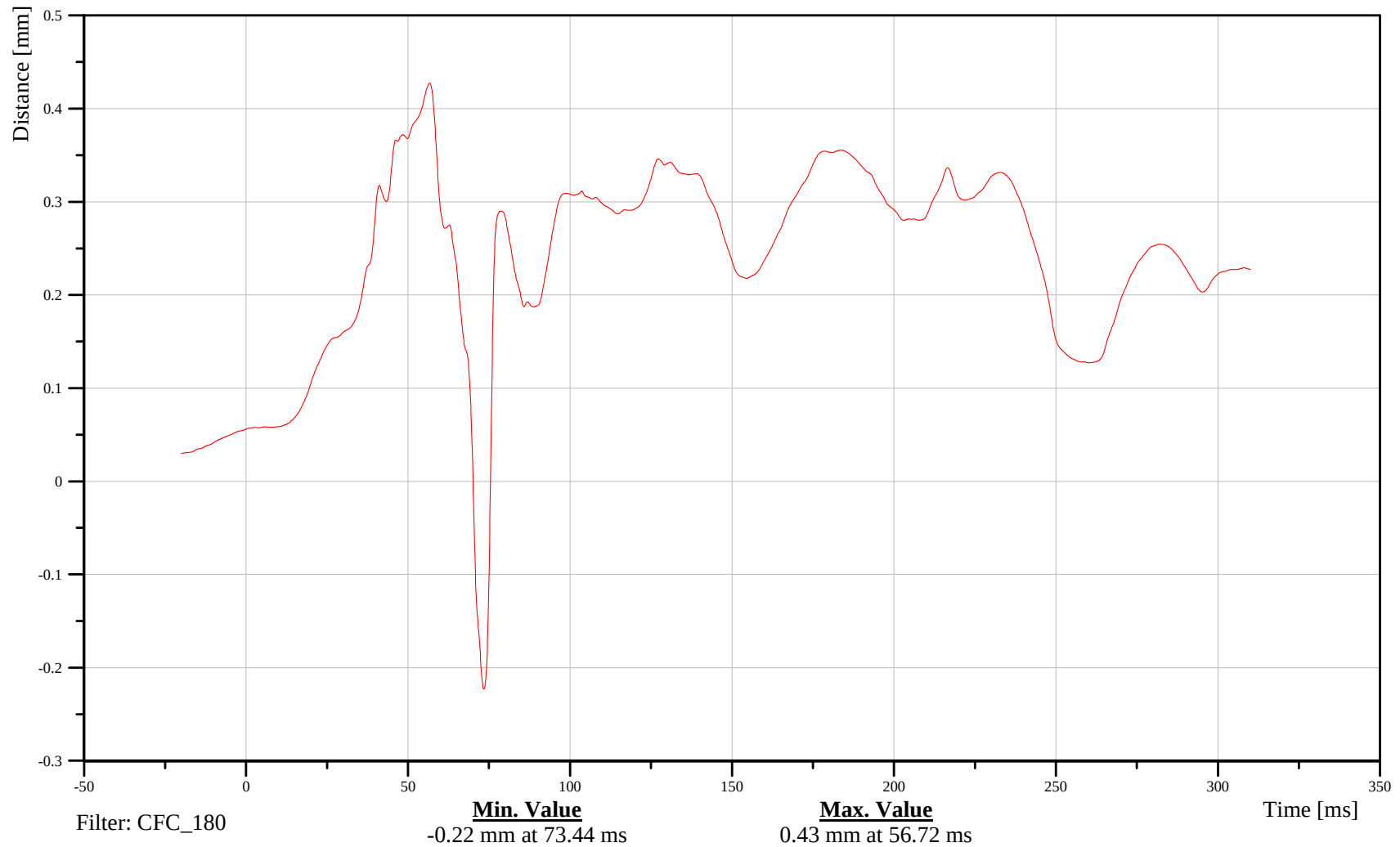
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Knee X-Axis Displacement

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13KNSLLE00HFDSXC

TRC Inc. Test Lab: CTF
Test Number: 091030



B-112

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Upper Tibia X-Axis Force

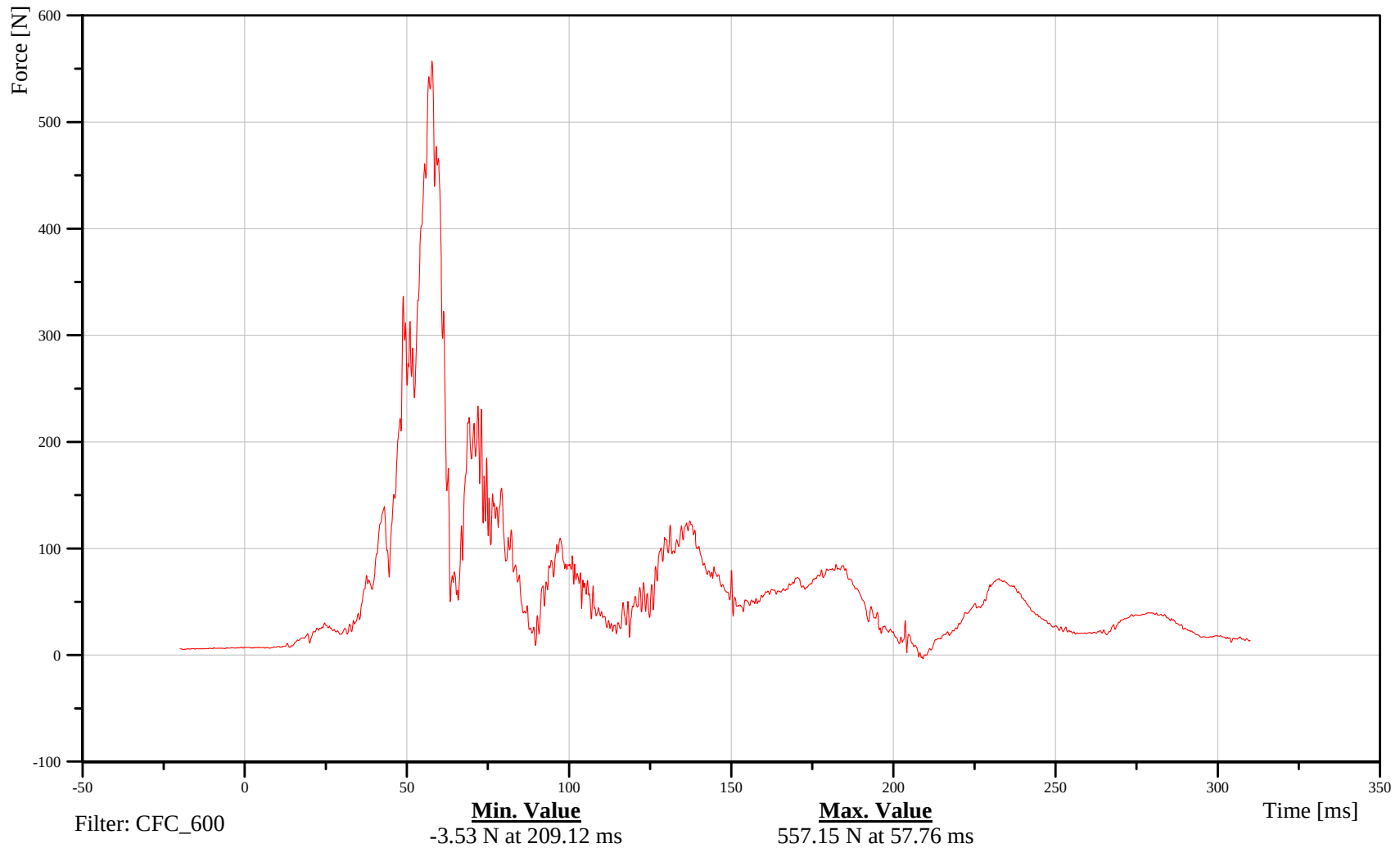
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILULXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-113

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Upper Tibia Z-Axis Force

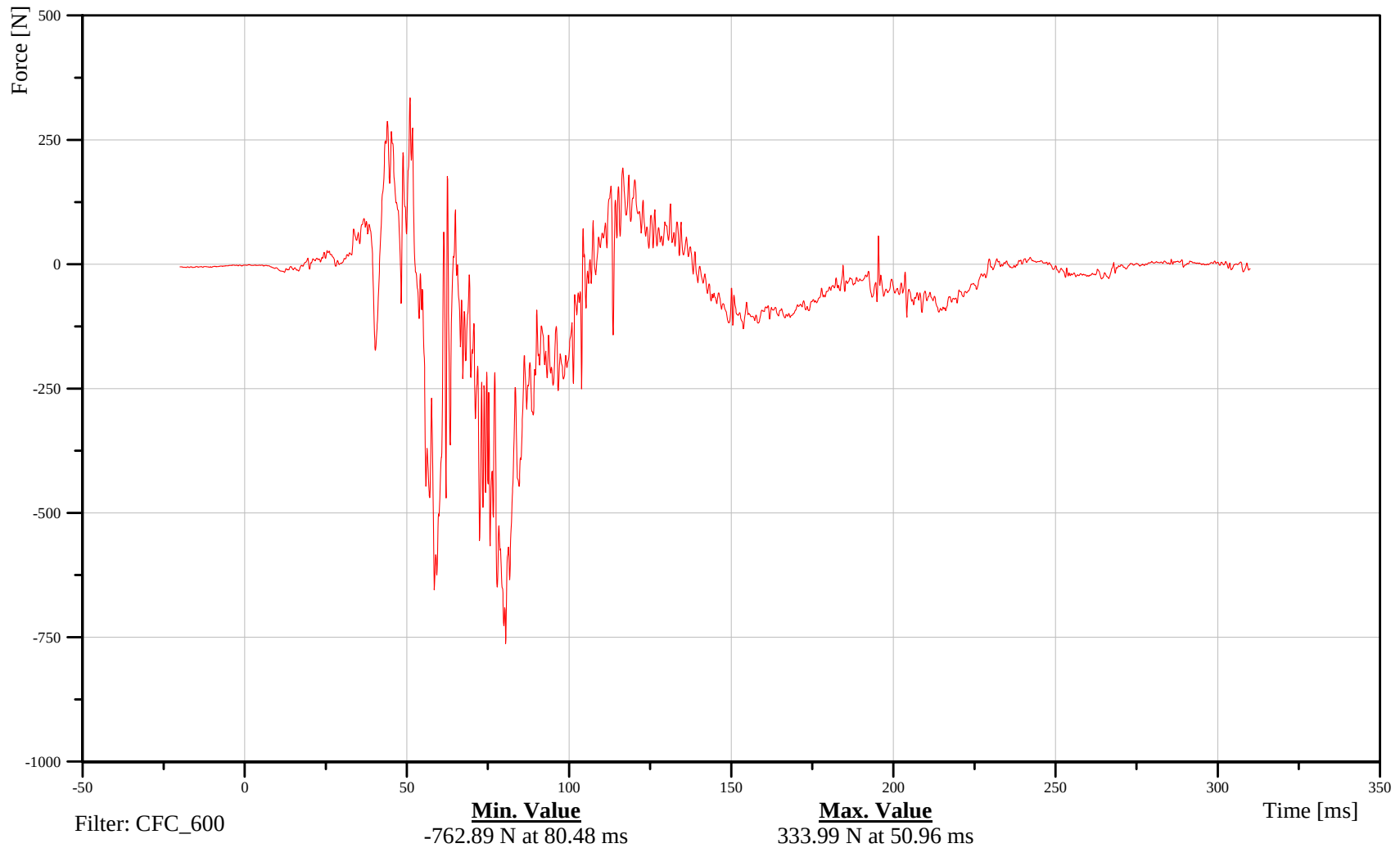
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILULXHFFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-114

091030



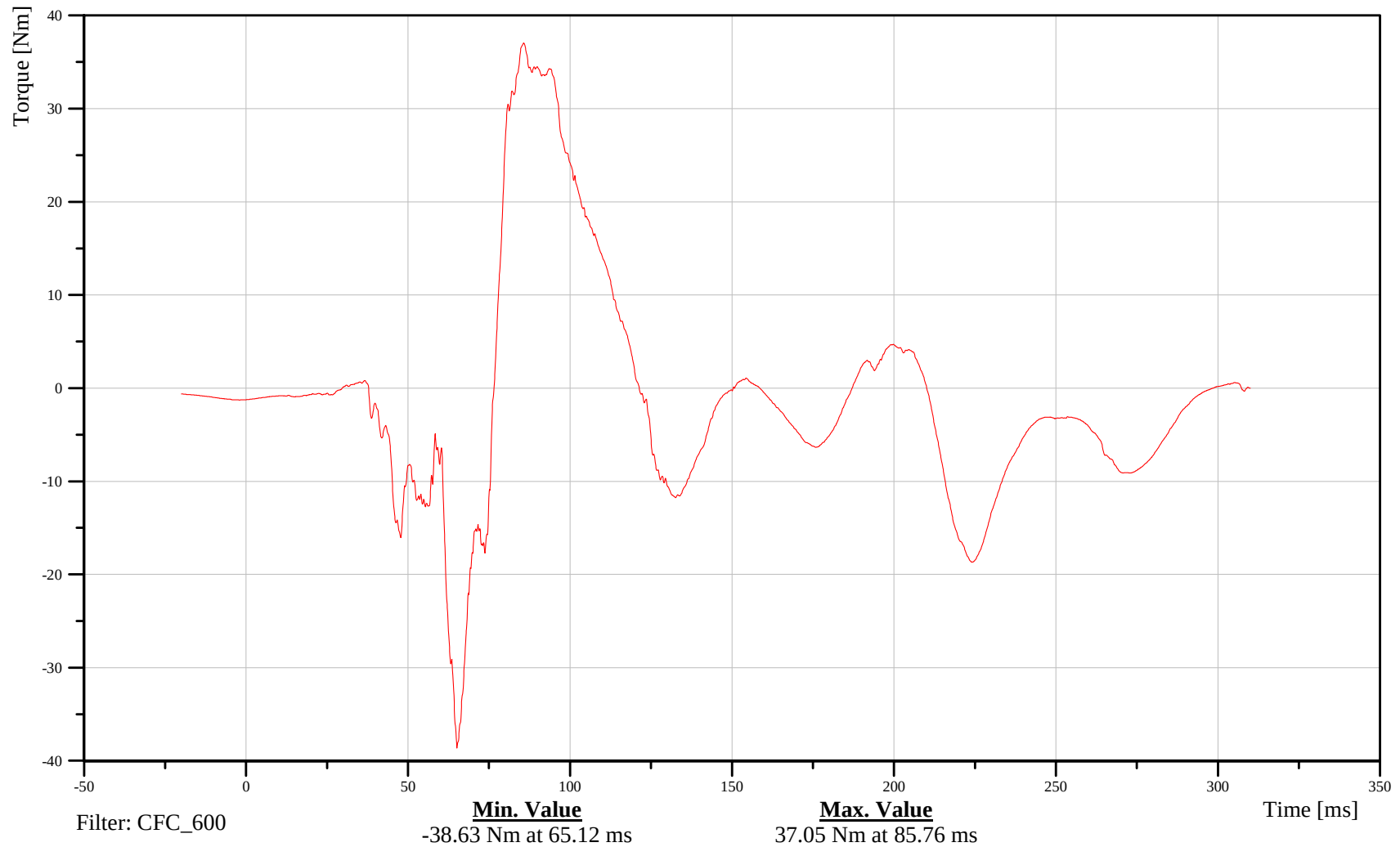
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Upper Tibia Moment About X Axis

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILULXHFM0XB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-115

091030



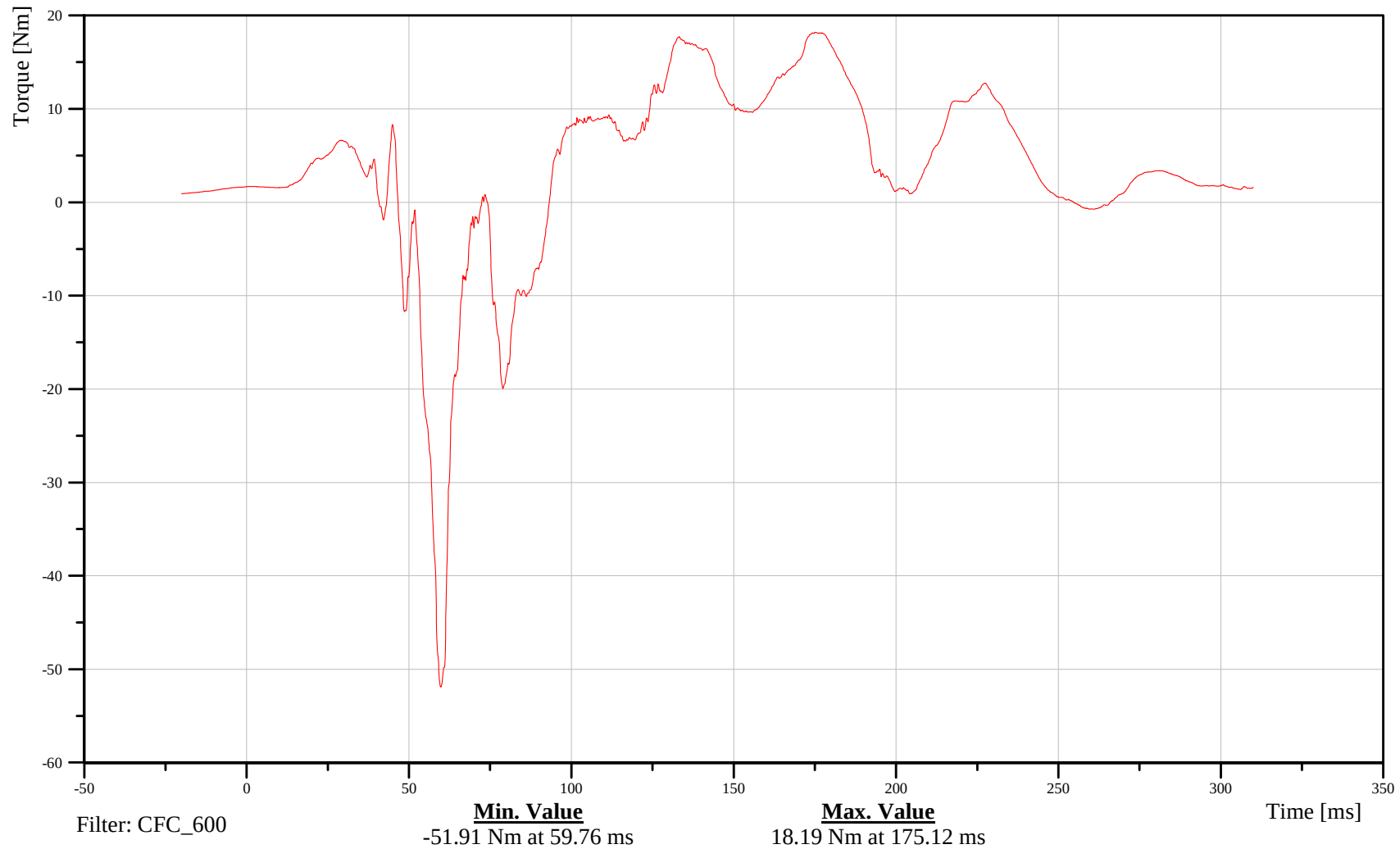
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Upper Tibia Moment About Y Axis

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILULXHFM0YB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-116

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Tibia X-Axis Acceleration

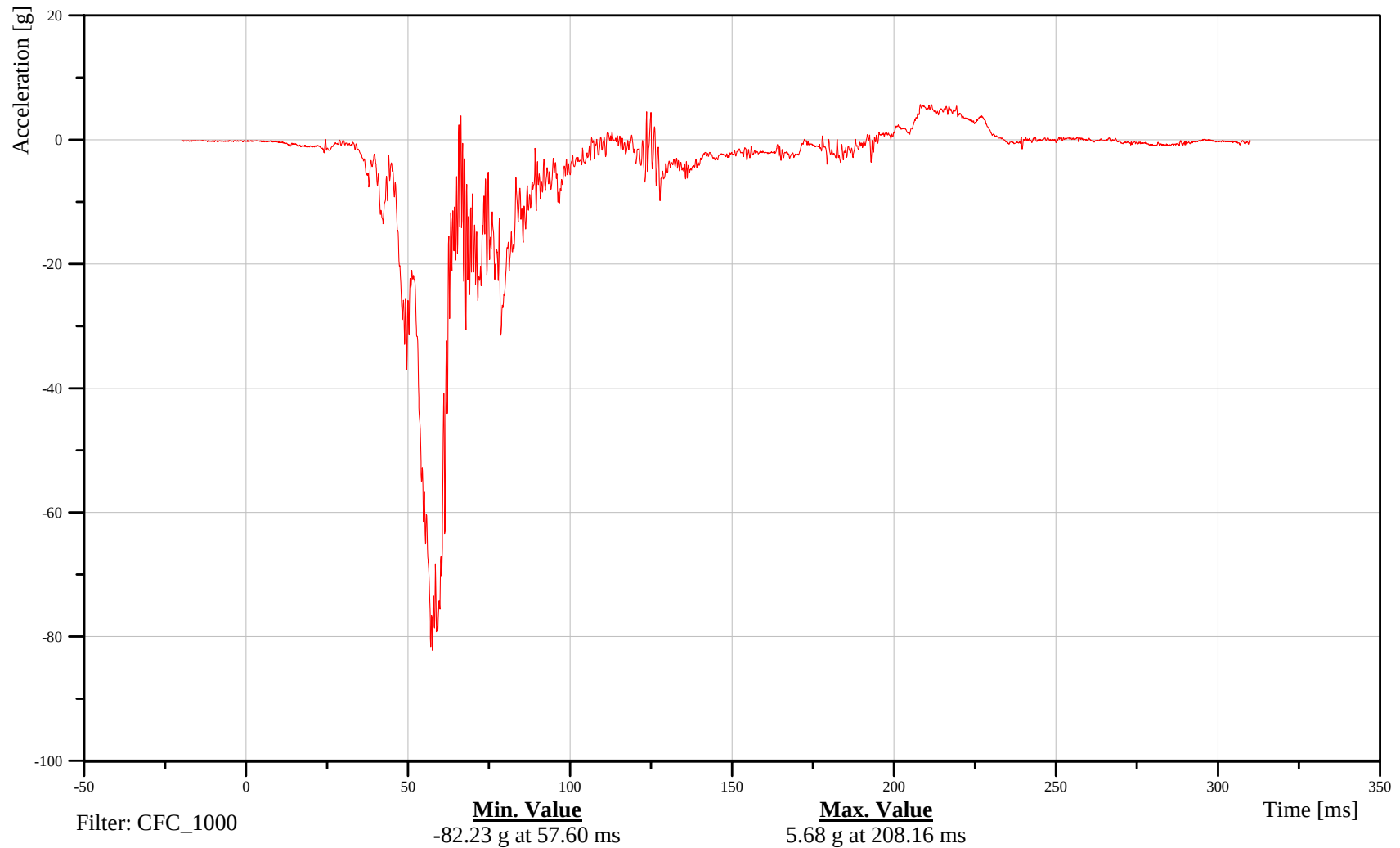
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILELXHFA C X A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-117

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Tibia Y-Axis Acceleration

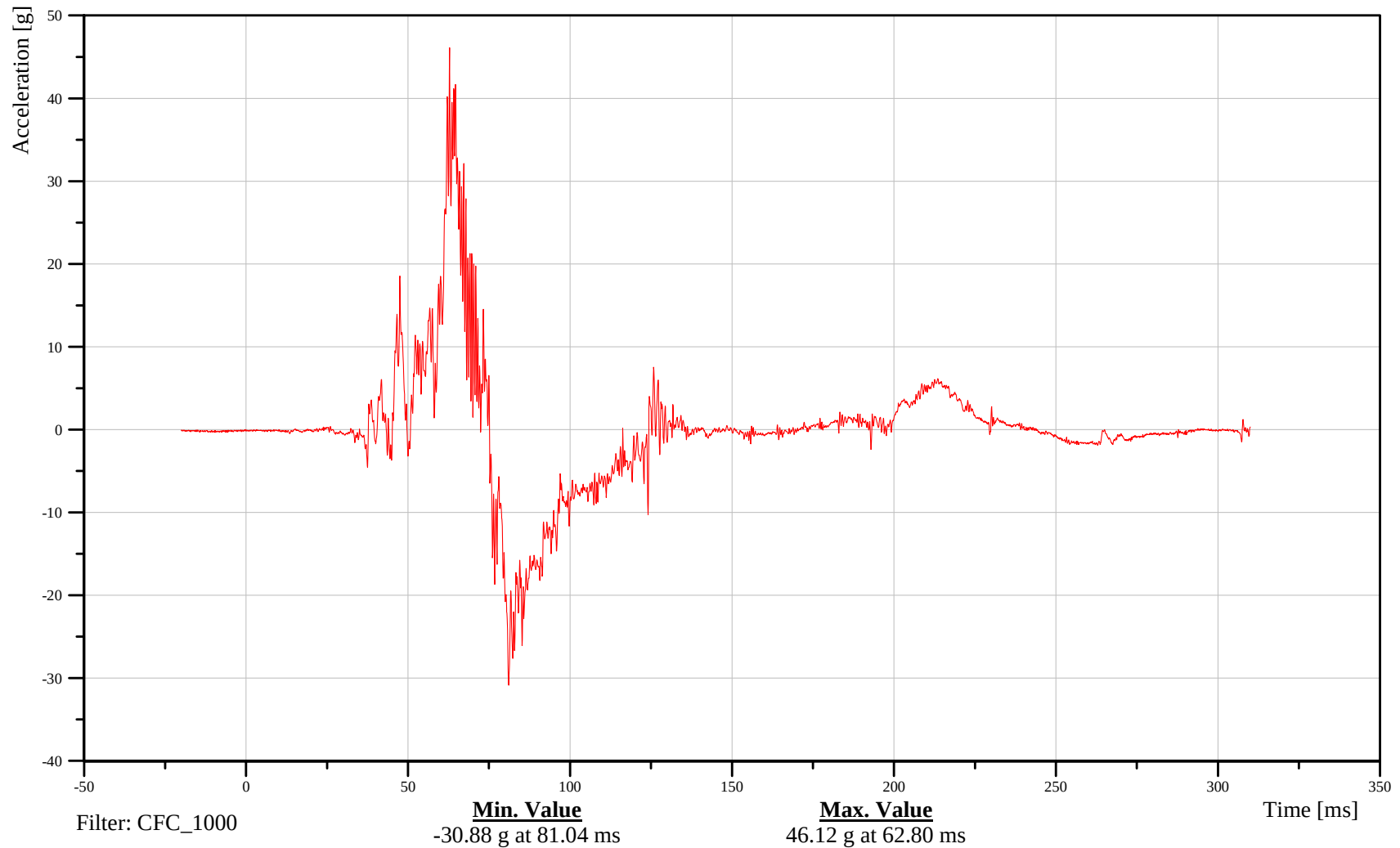
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILELXHFACTYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-118

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Lower Tibia X-Axis Force

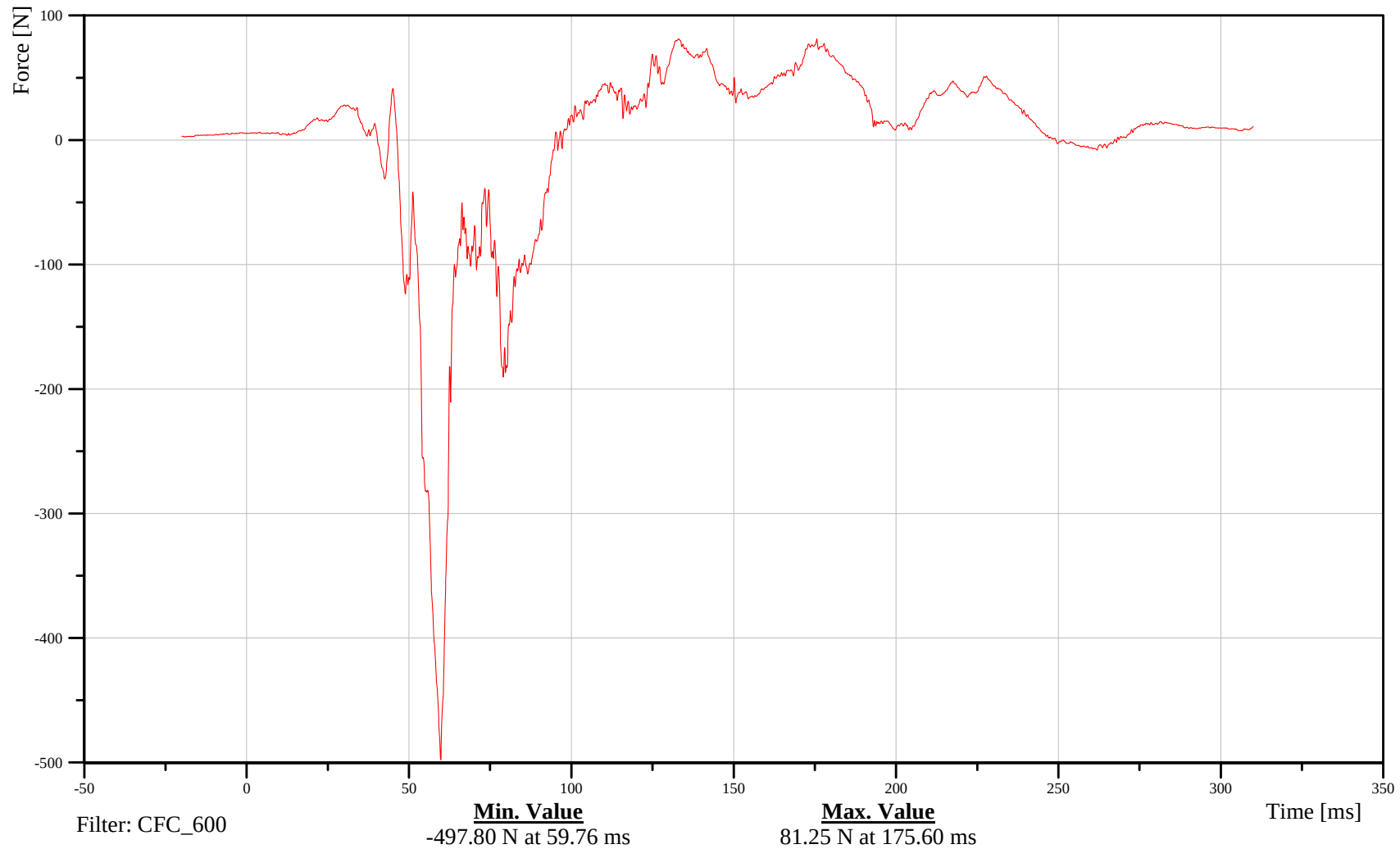
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILLXHFFOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-119

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Lower Tibia Y-Axis Force

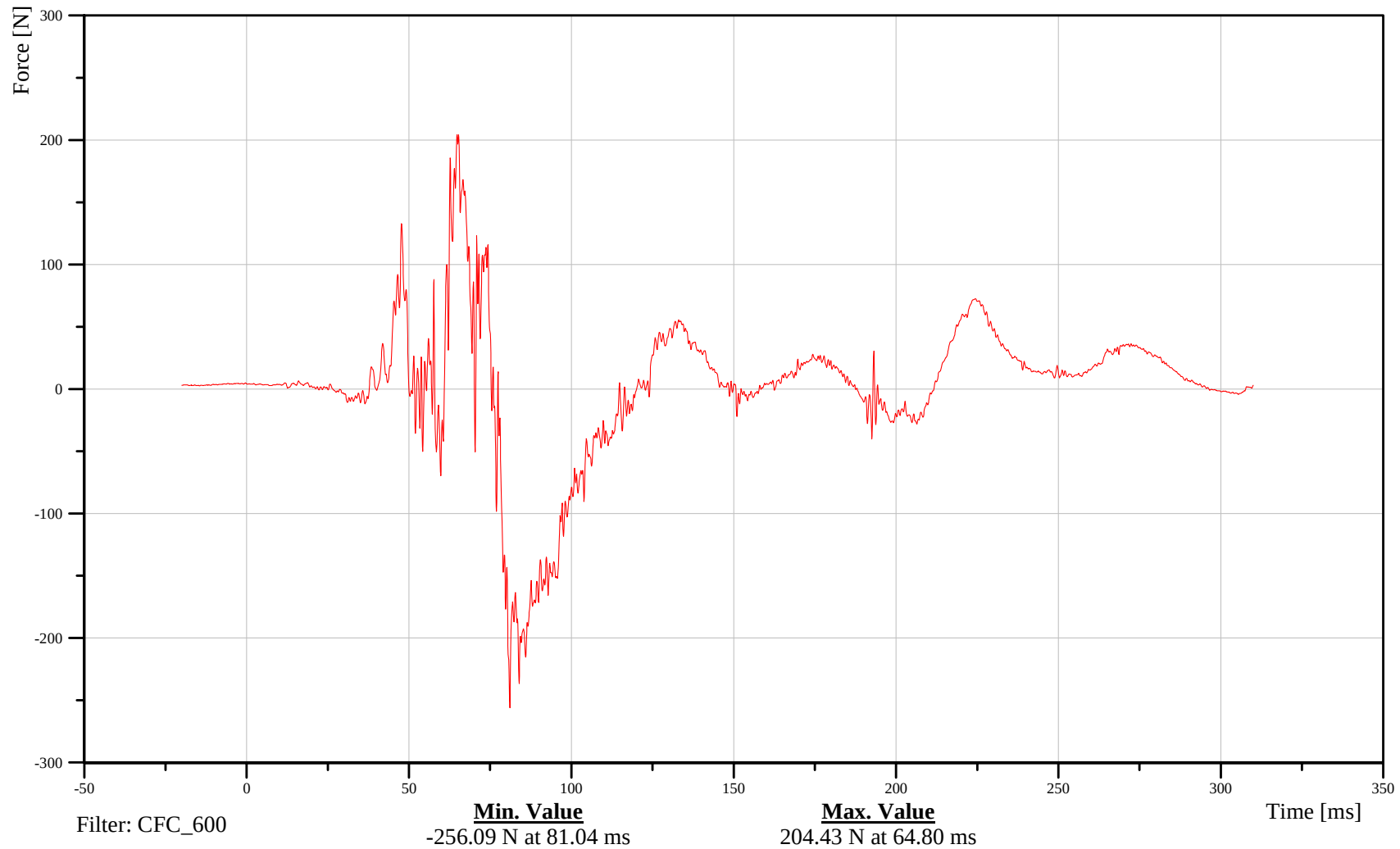
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILLXHFFOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-120

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Lower Tibia Z-Axis Force

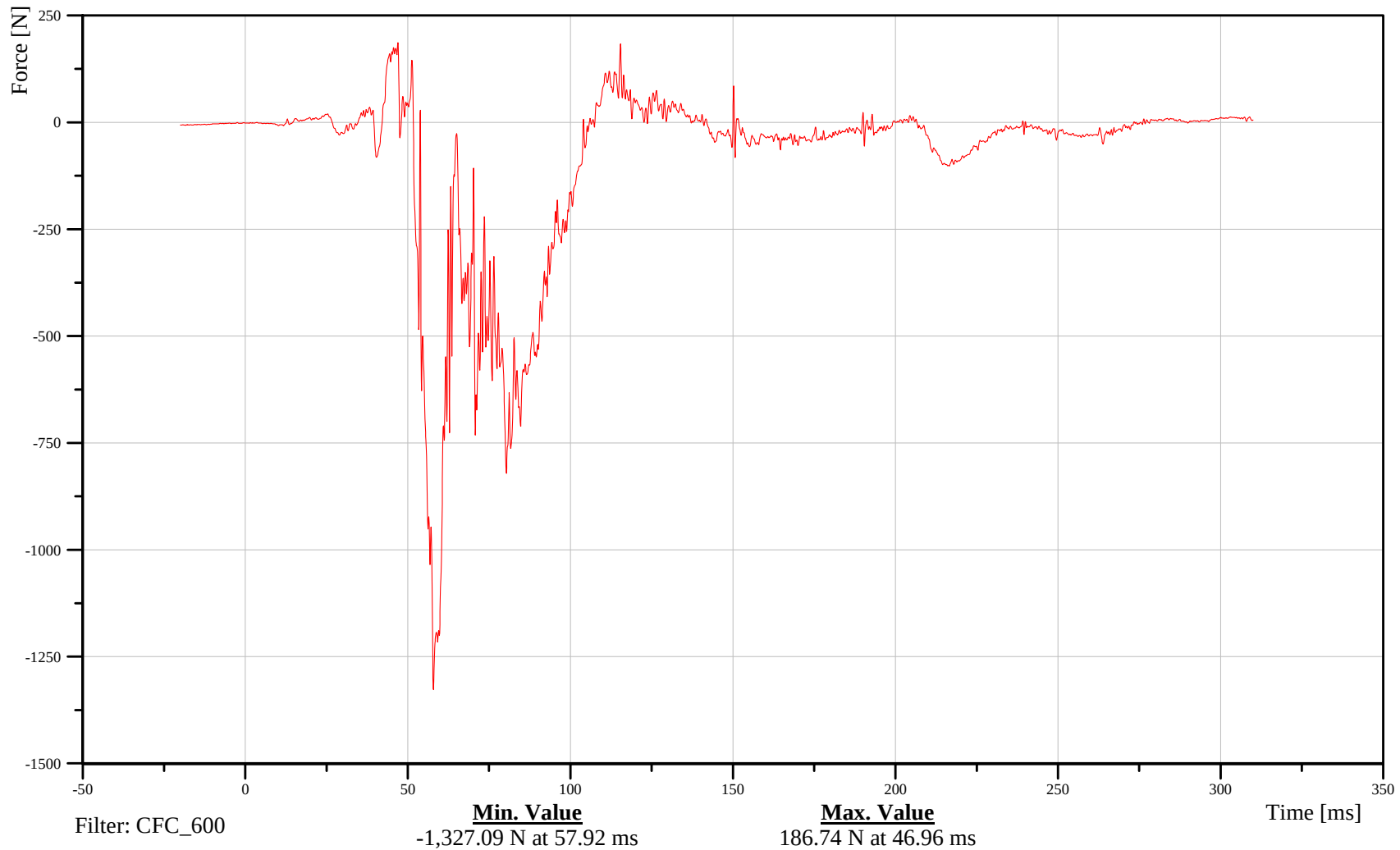
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILLXHF0ZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-121

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Lower Tibia Moment About X Axis

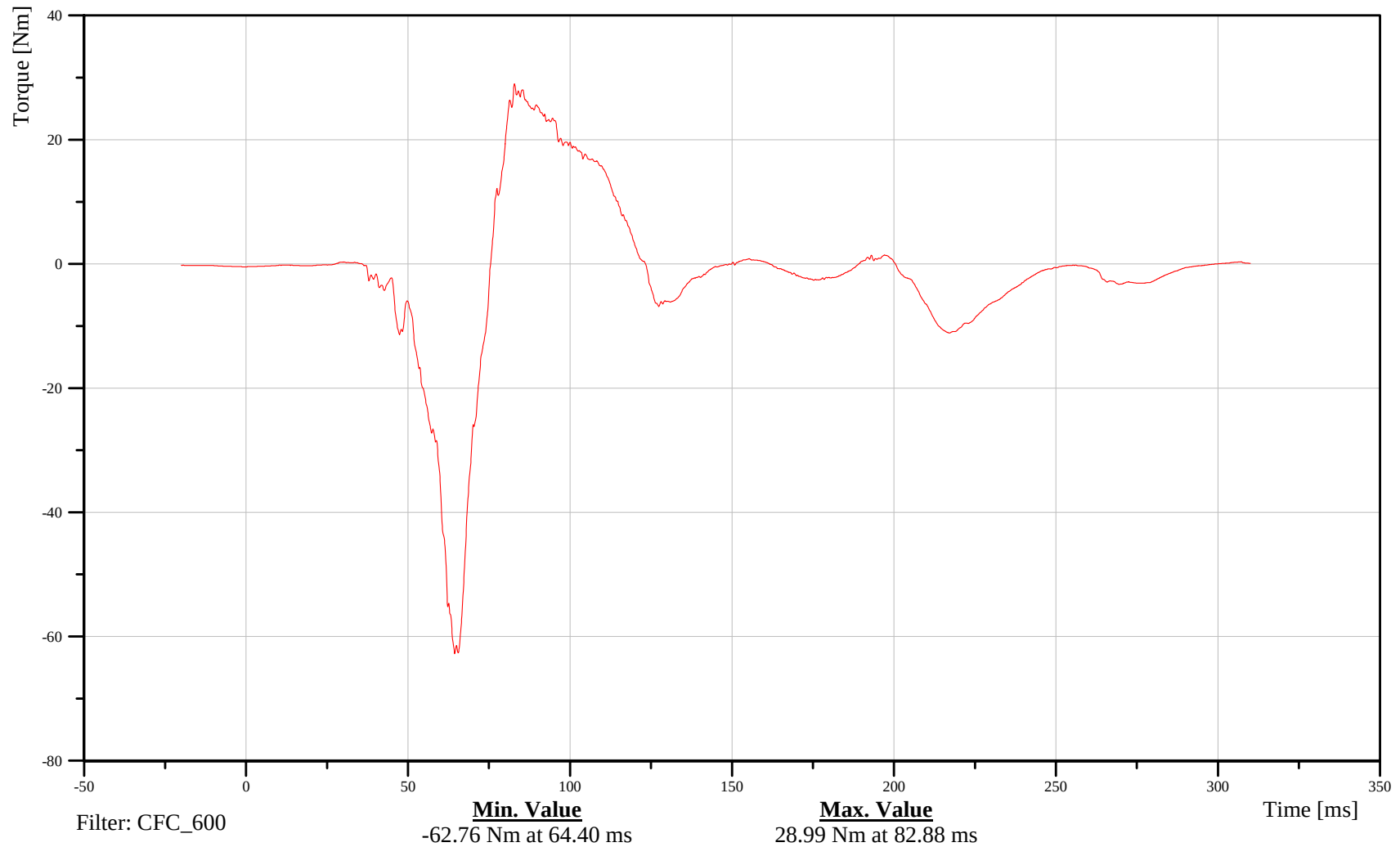
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILLXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-122

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Lower Tibia Moment About Y Axis

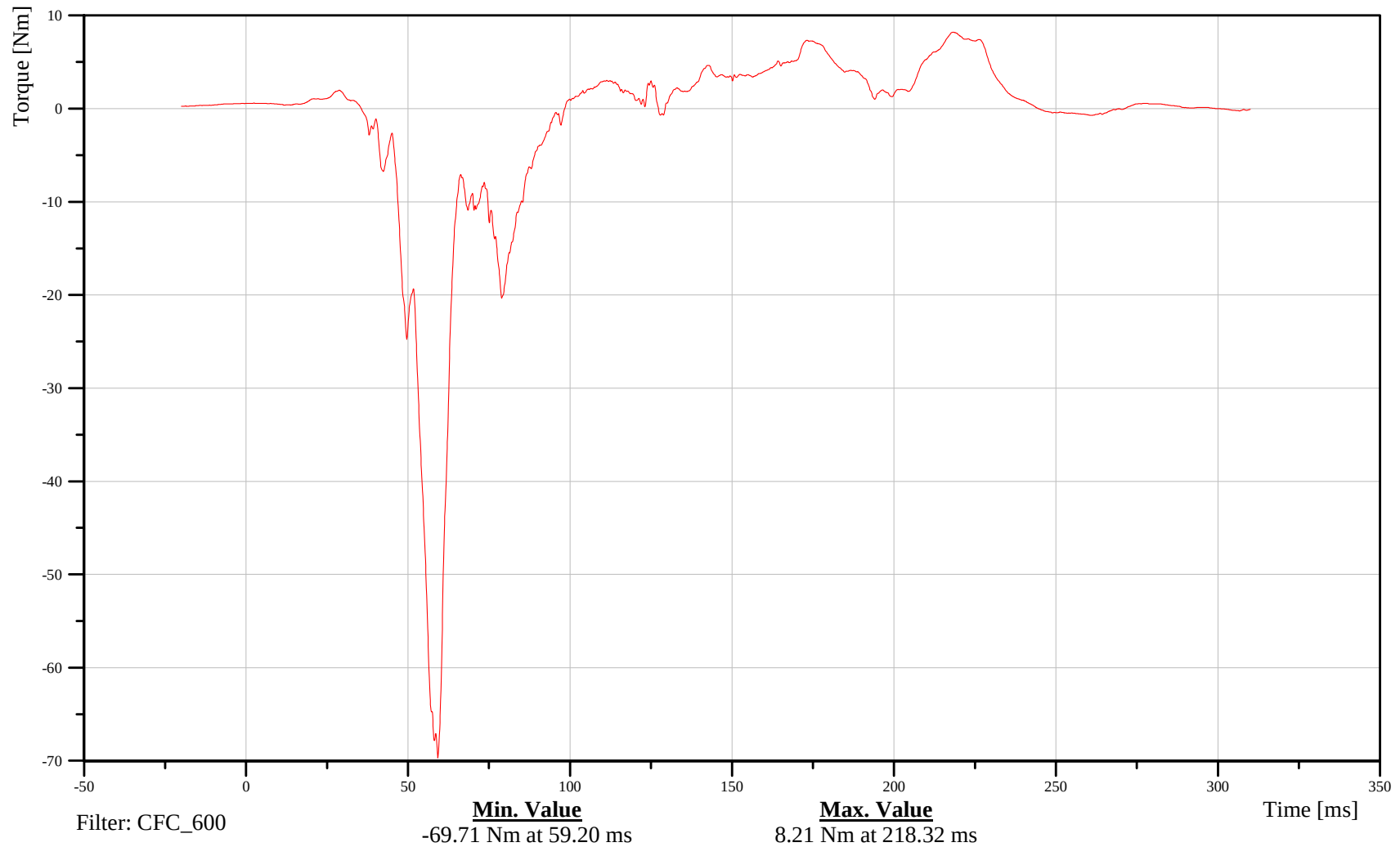
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBILLXHFMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-123

091030



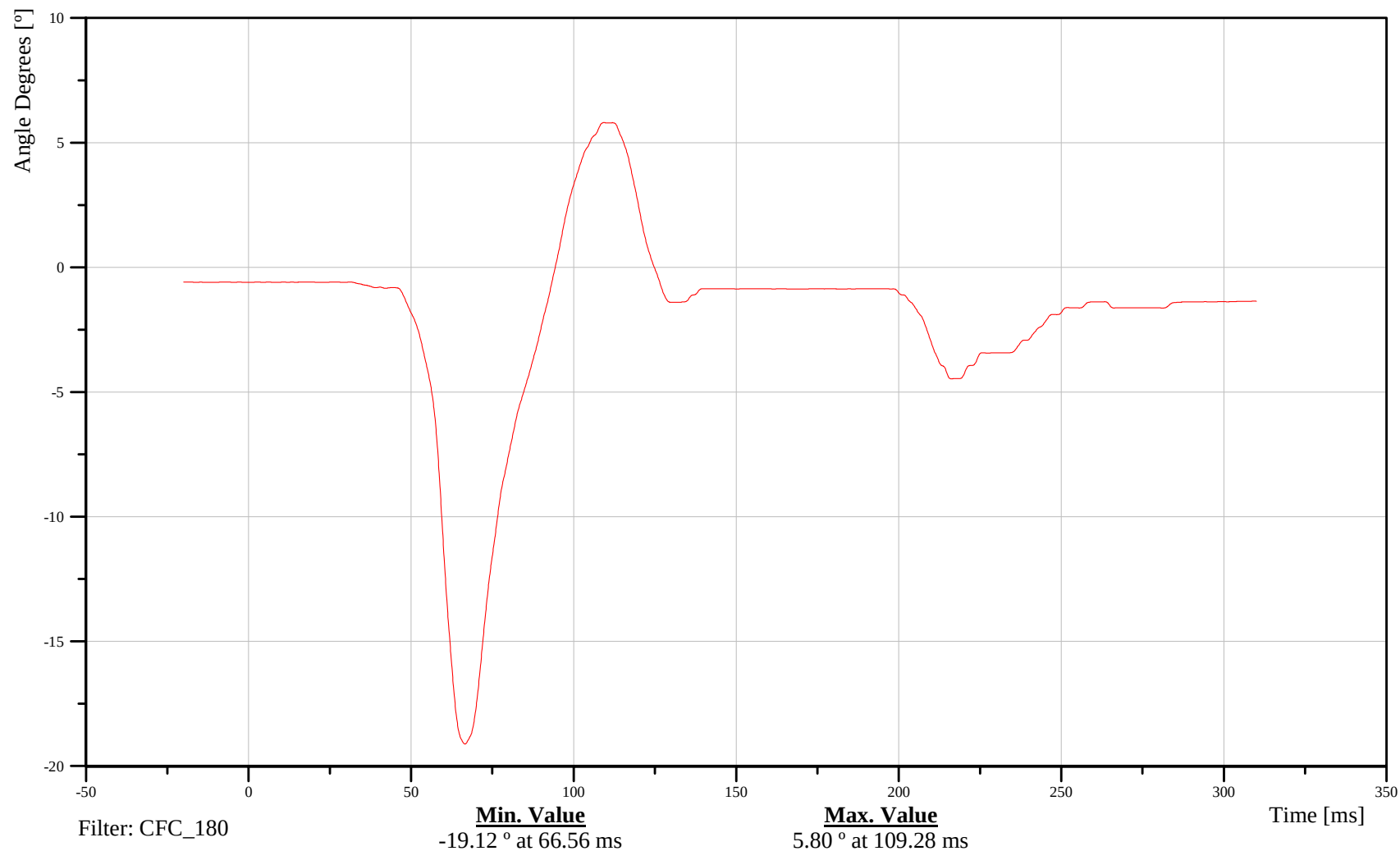
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot X-Axis Angular Displacement

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFXC

TRC Inc. Test Lab: CTF
Test Number: 091030



B-124

091030



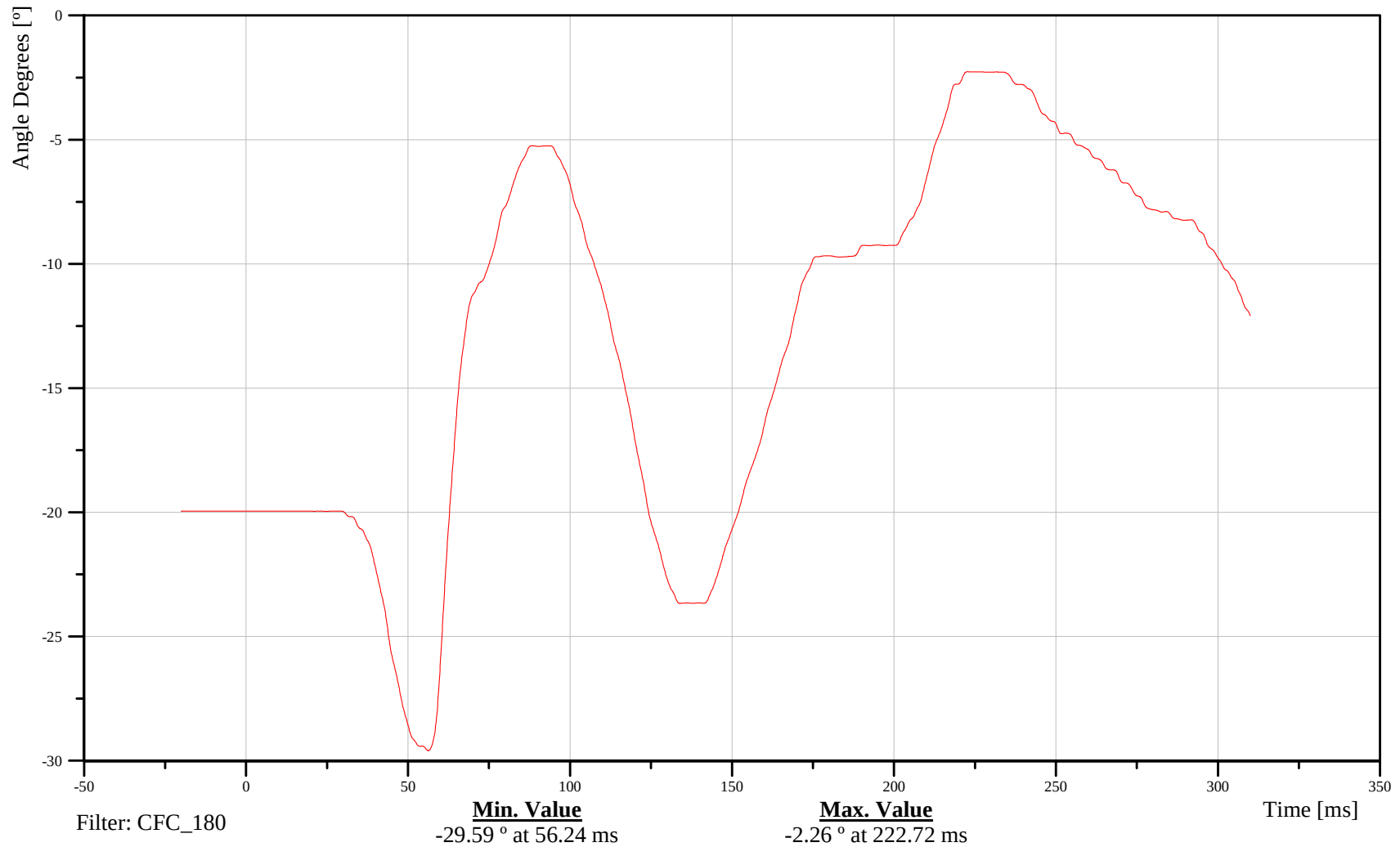
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot Y-Axis Angular Displacement

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFANYC

TRC Inc. Test Lab: CTF
Test Number: 091030



B-125

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot Z-Axis Angular Displacement

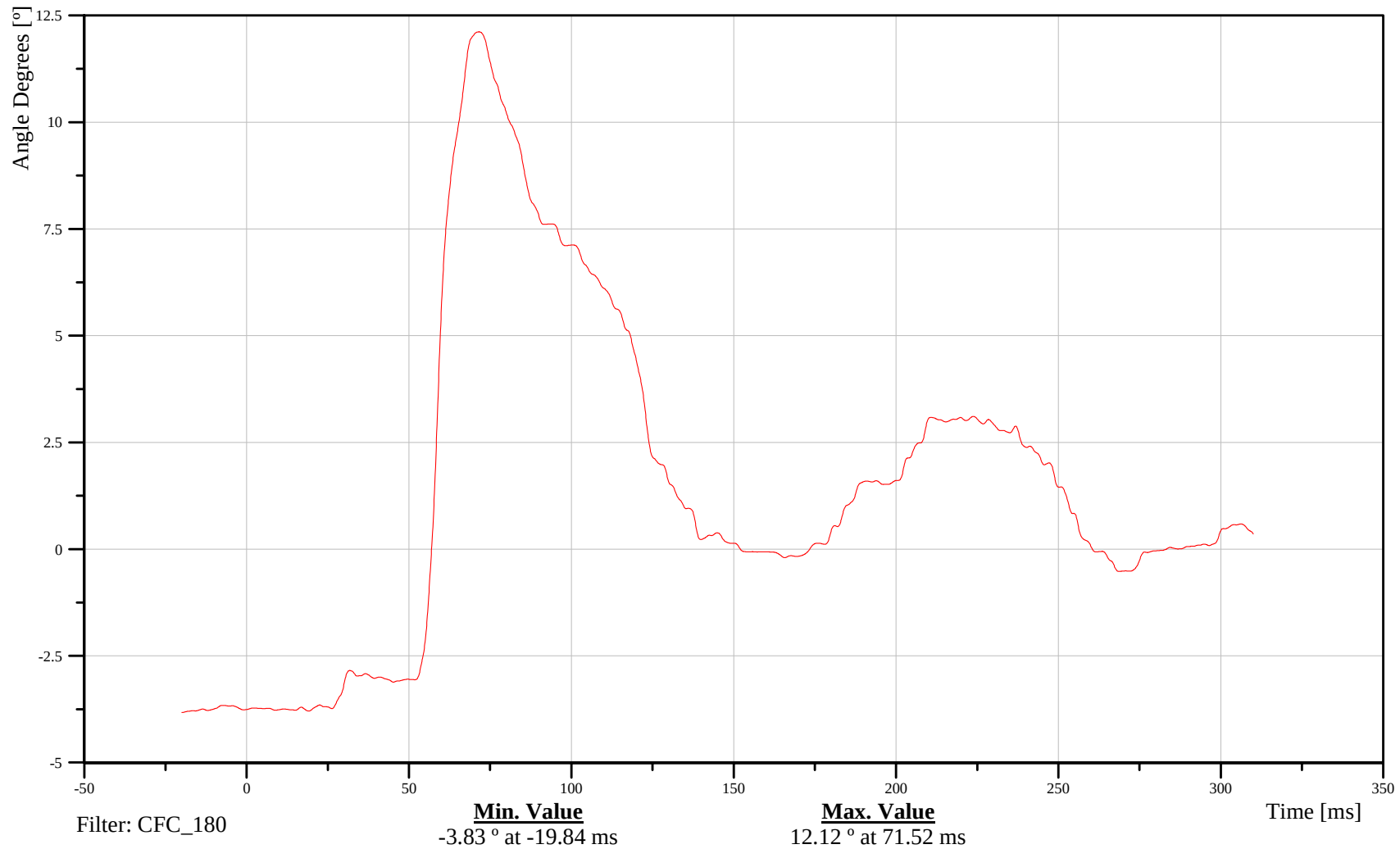
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-126

091030



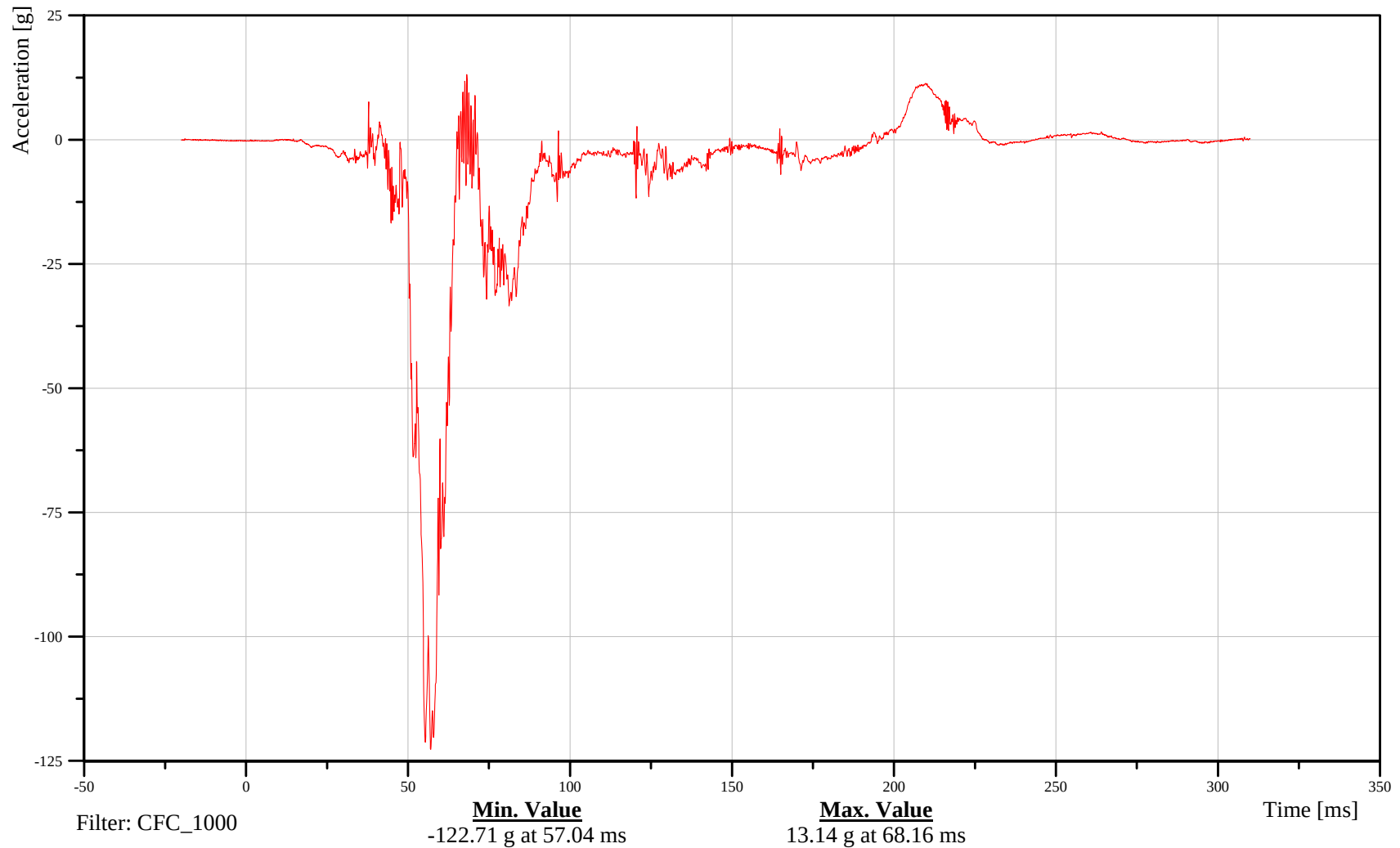
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot X-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFA C X A

TRC Inc. Test Lab: CTF
Test Number: 091030



B-127

091030



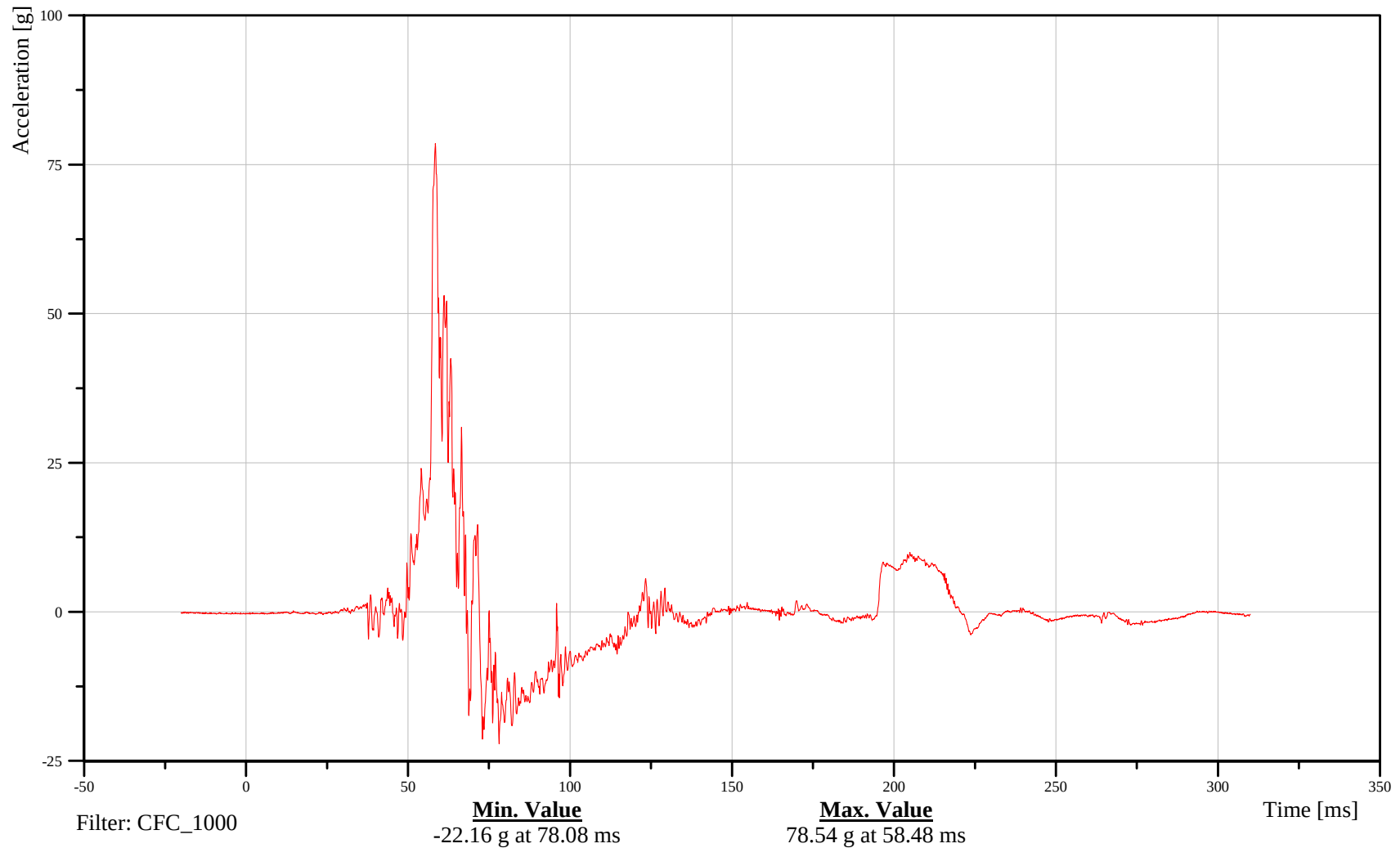
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot Y-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFACYA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-128

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot Z-Axis Acceleration

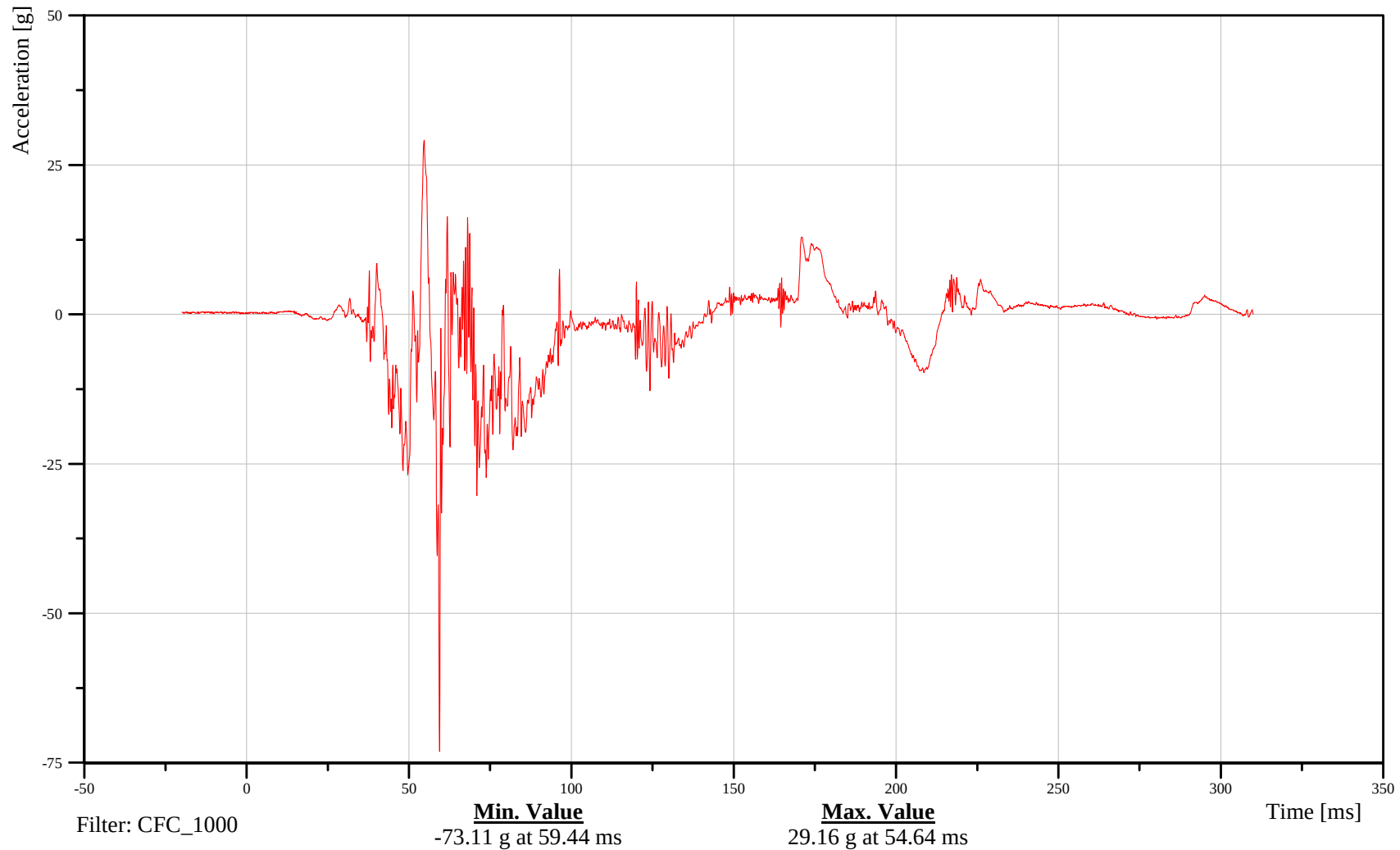
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-129

091030



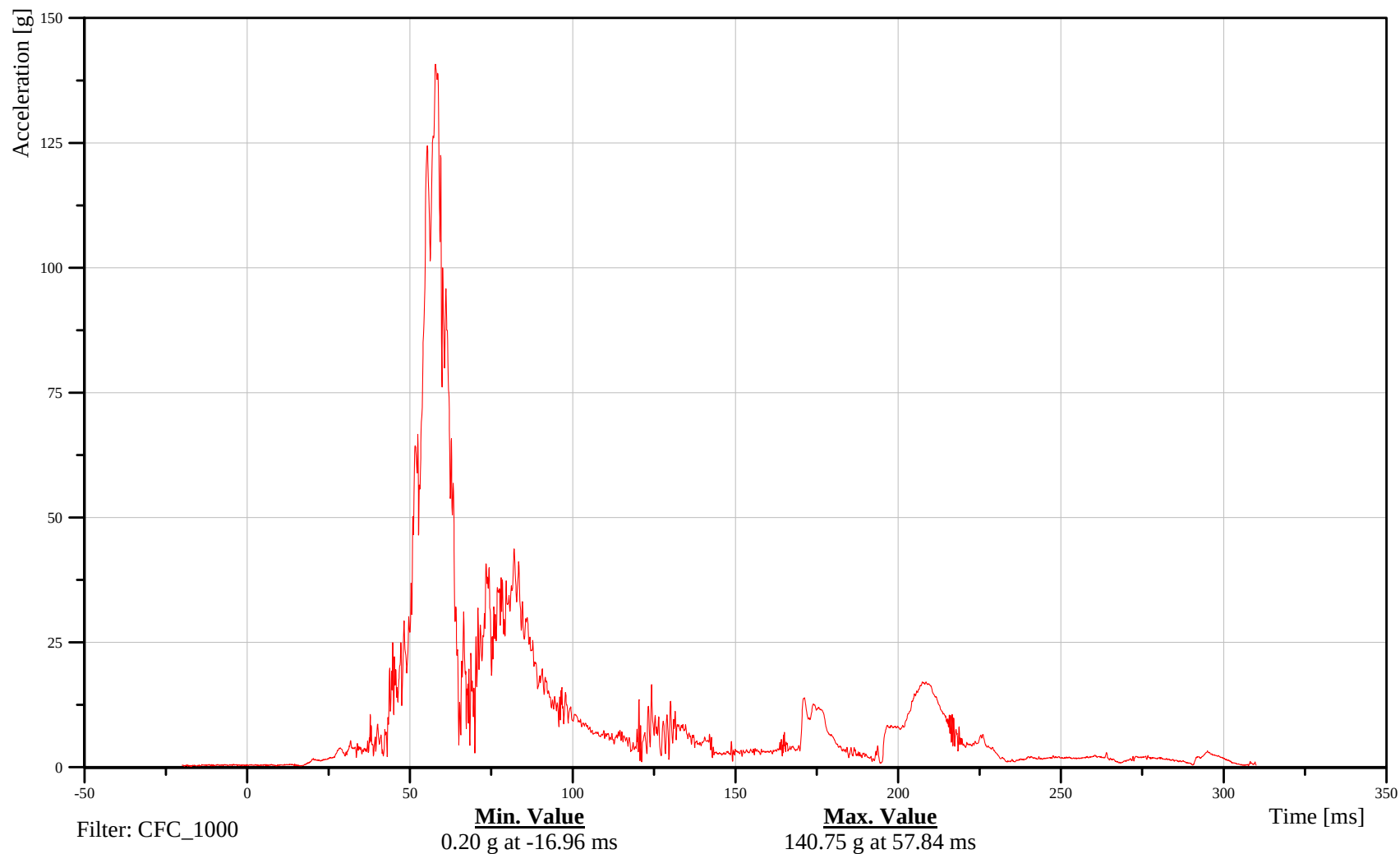
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Left Foot Resultant Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTLELXHFAACXA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-130

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Knee X-Axis Displacement

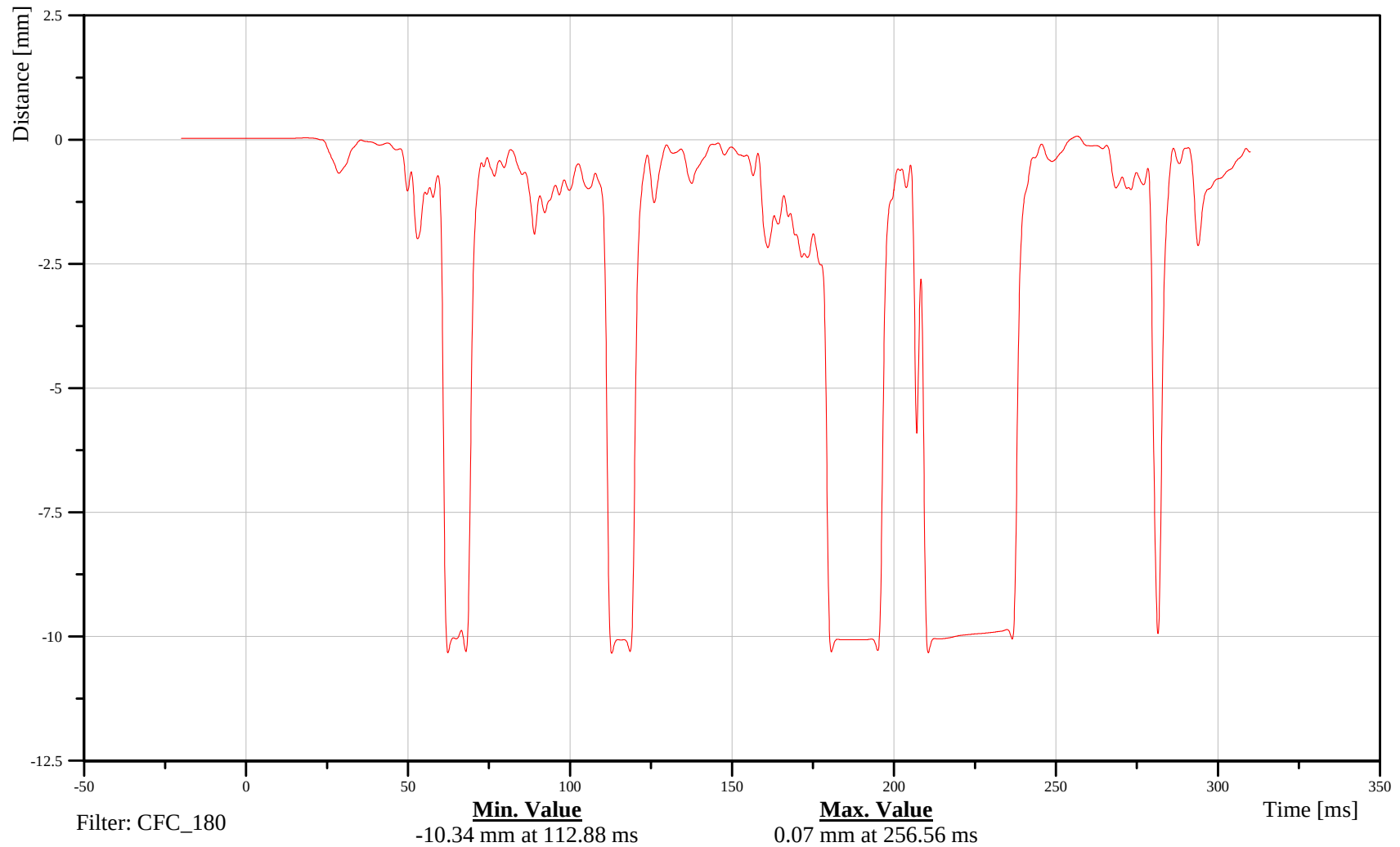
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13KNSLRI00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-131

091030



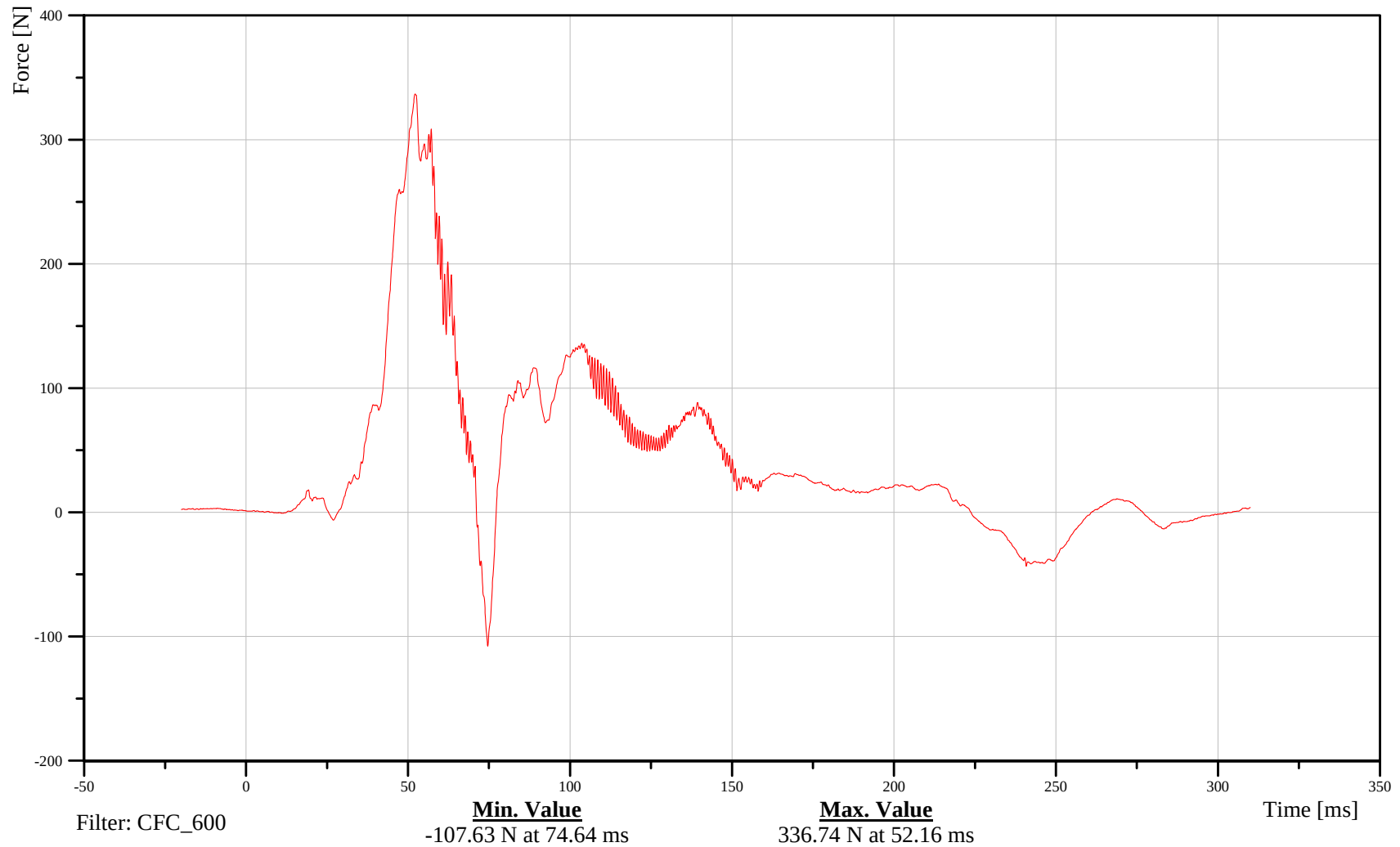
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Upper Tibia X-Axis Force

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRULXHFFOXB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-132

091030



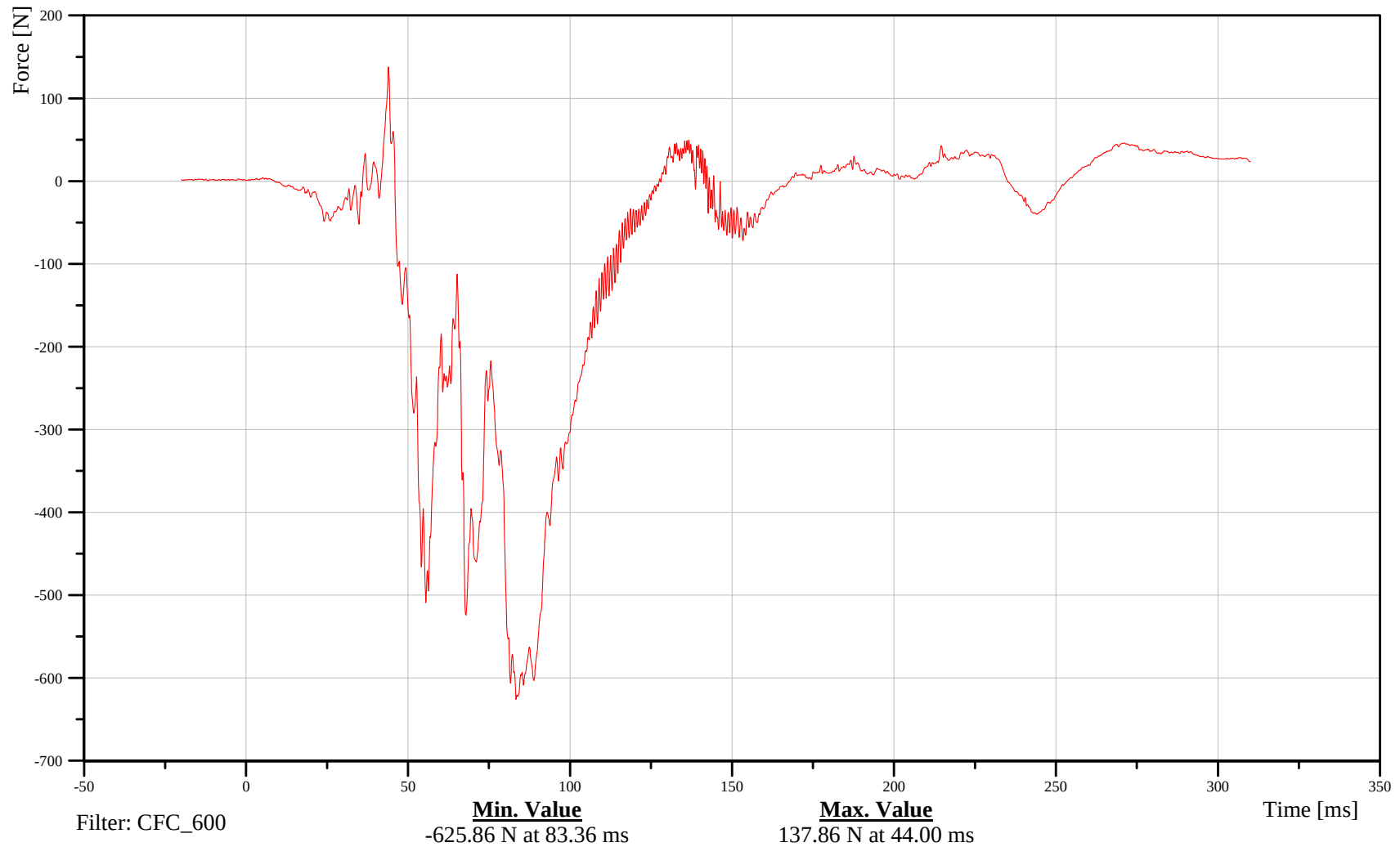
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Upper Tibia Z-Axis Force

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRULXHFFOZB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-133

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Upper Tibia Moment About X Axis

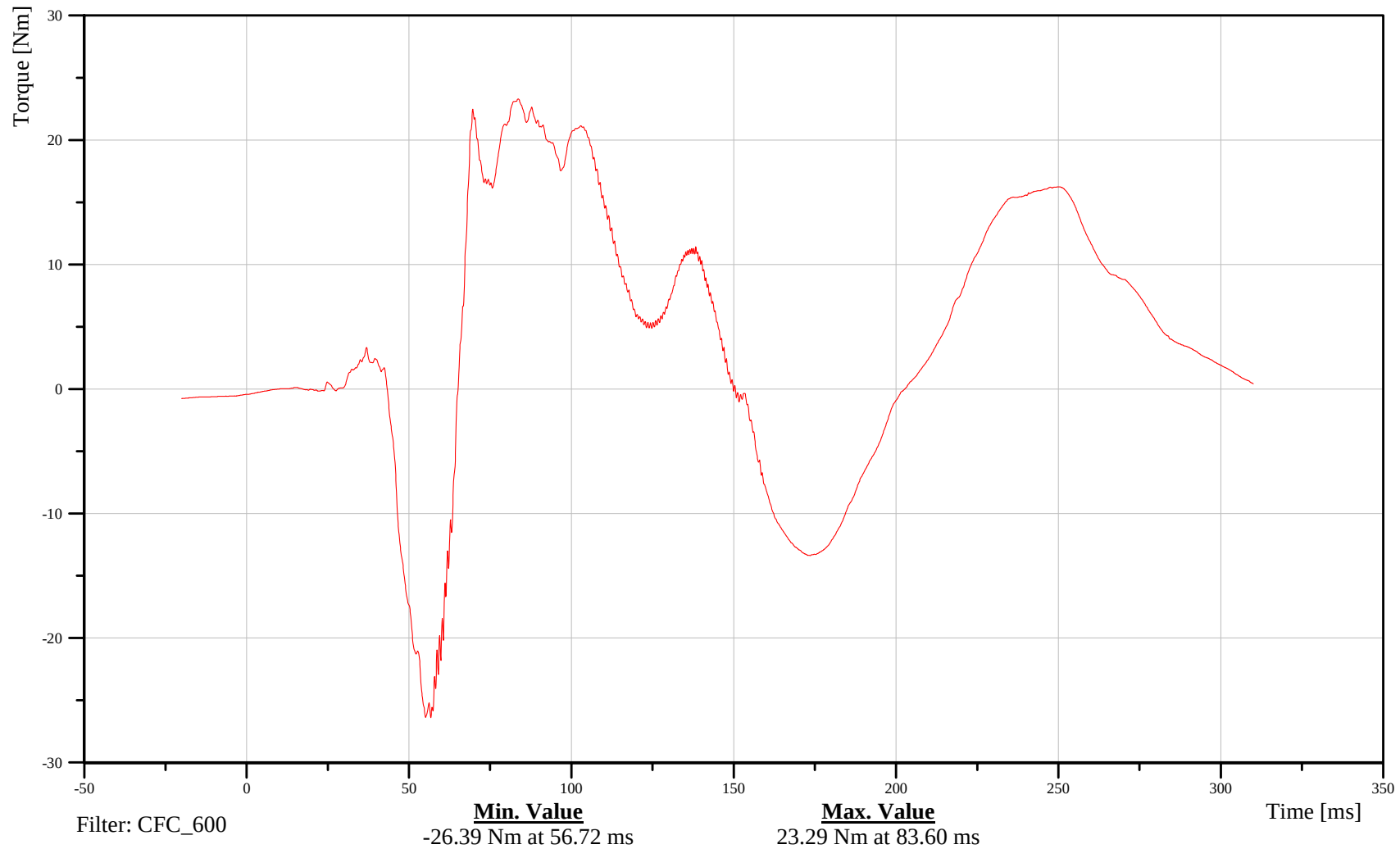
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRULXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-134

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Upper Tibia Moment About Y Axis

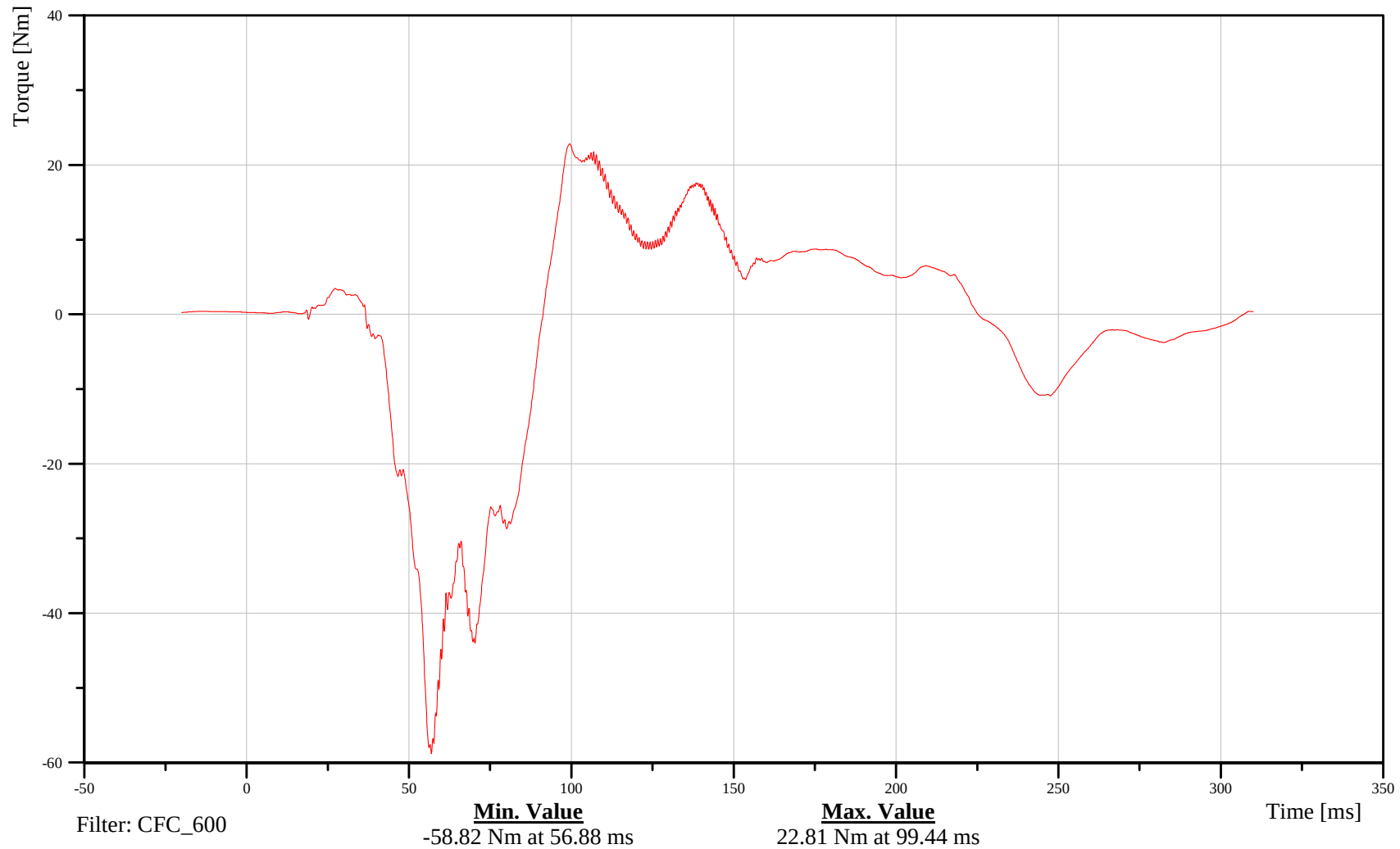
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRULXHFM0YB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-135

091030



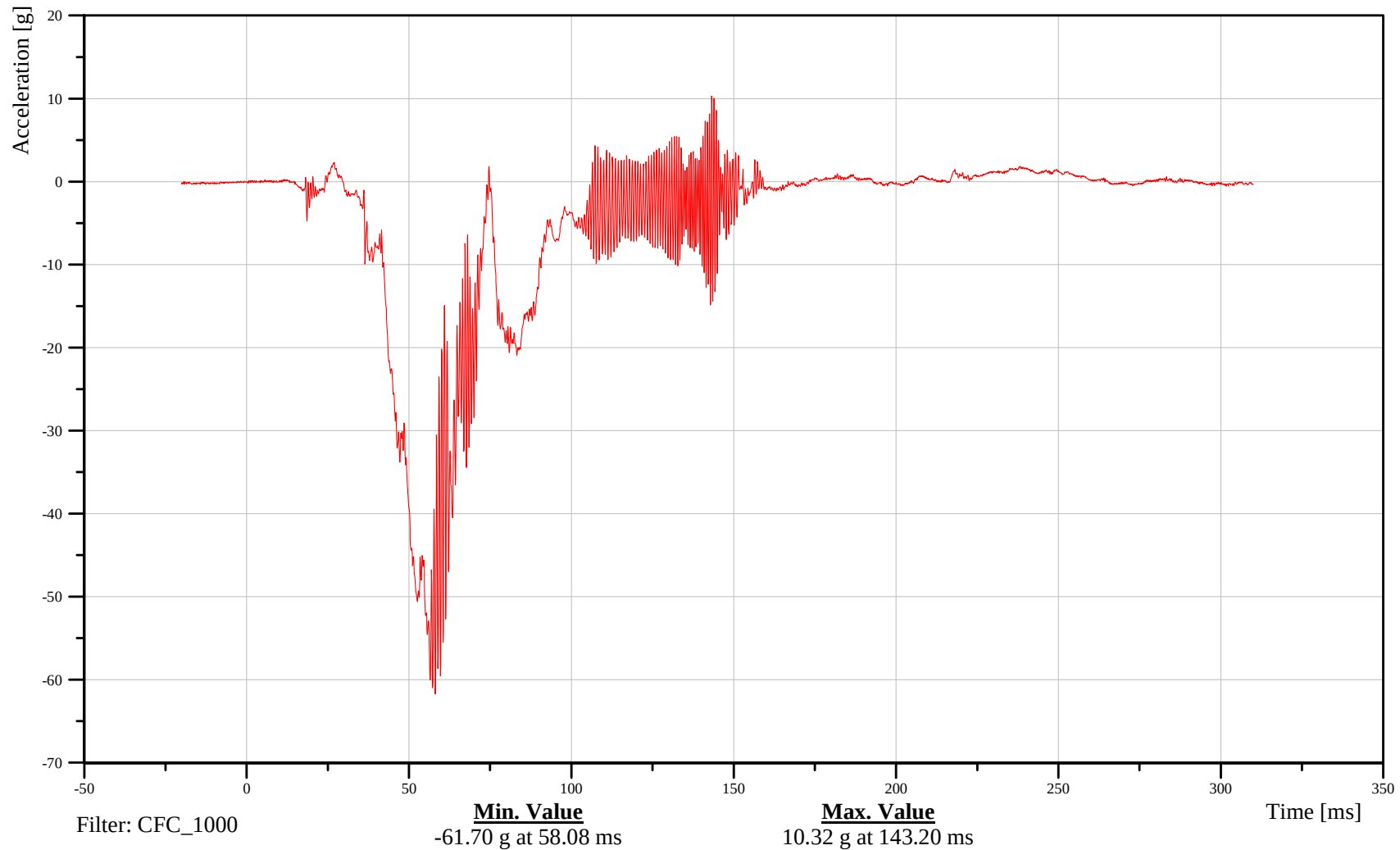
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Tibia X-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRILXHFACXA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-136

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Tibia Y-Axis Acceleration

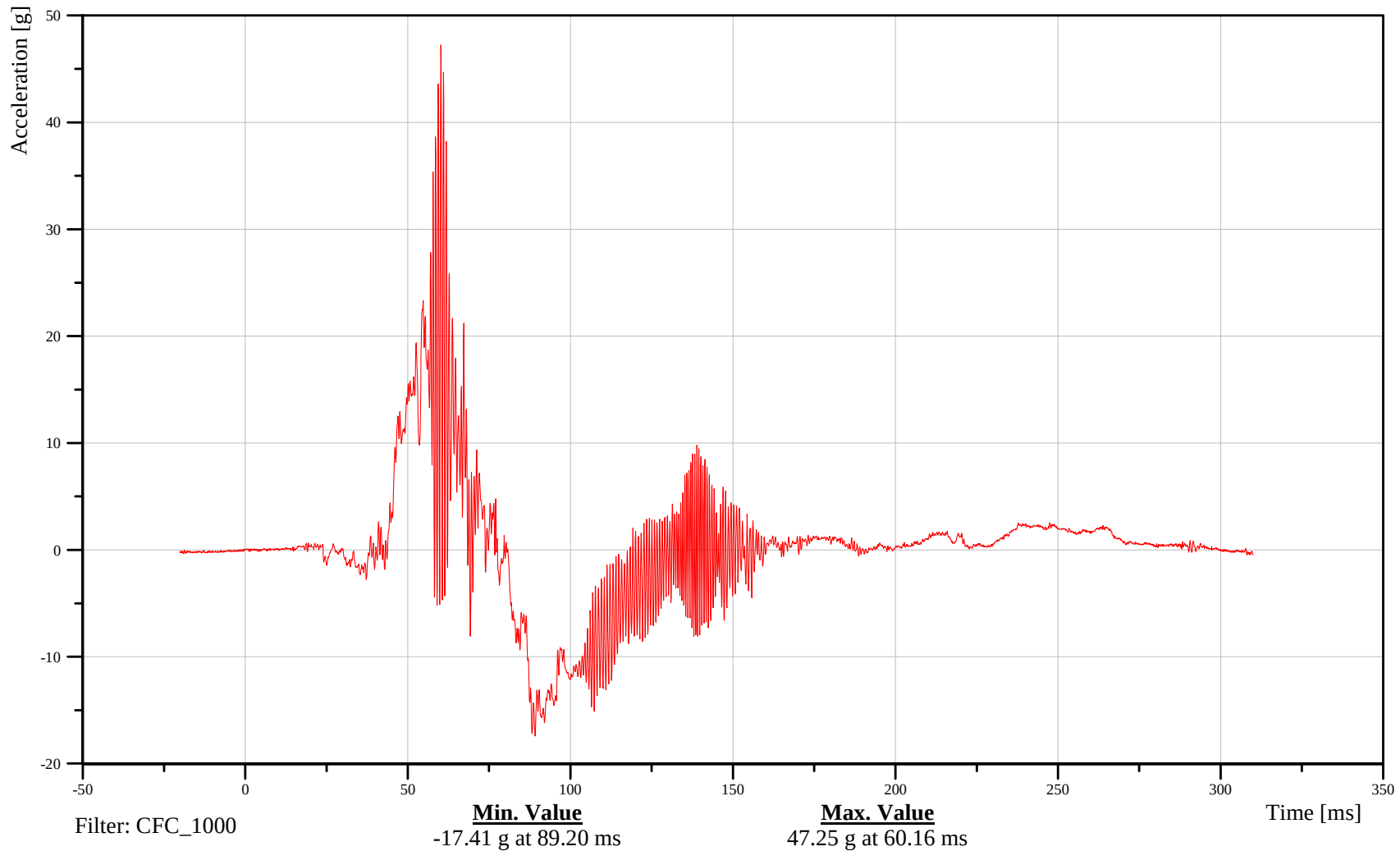
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRILXHFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-137

091030



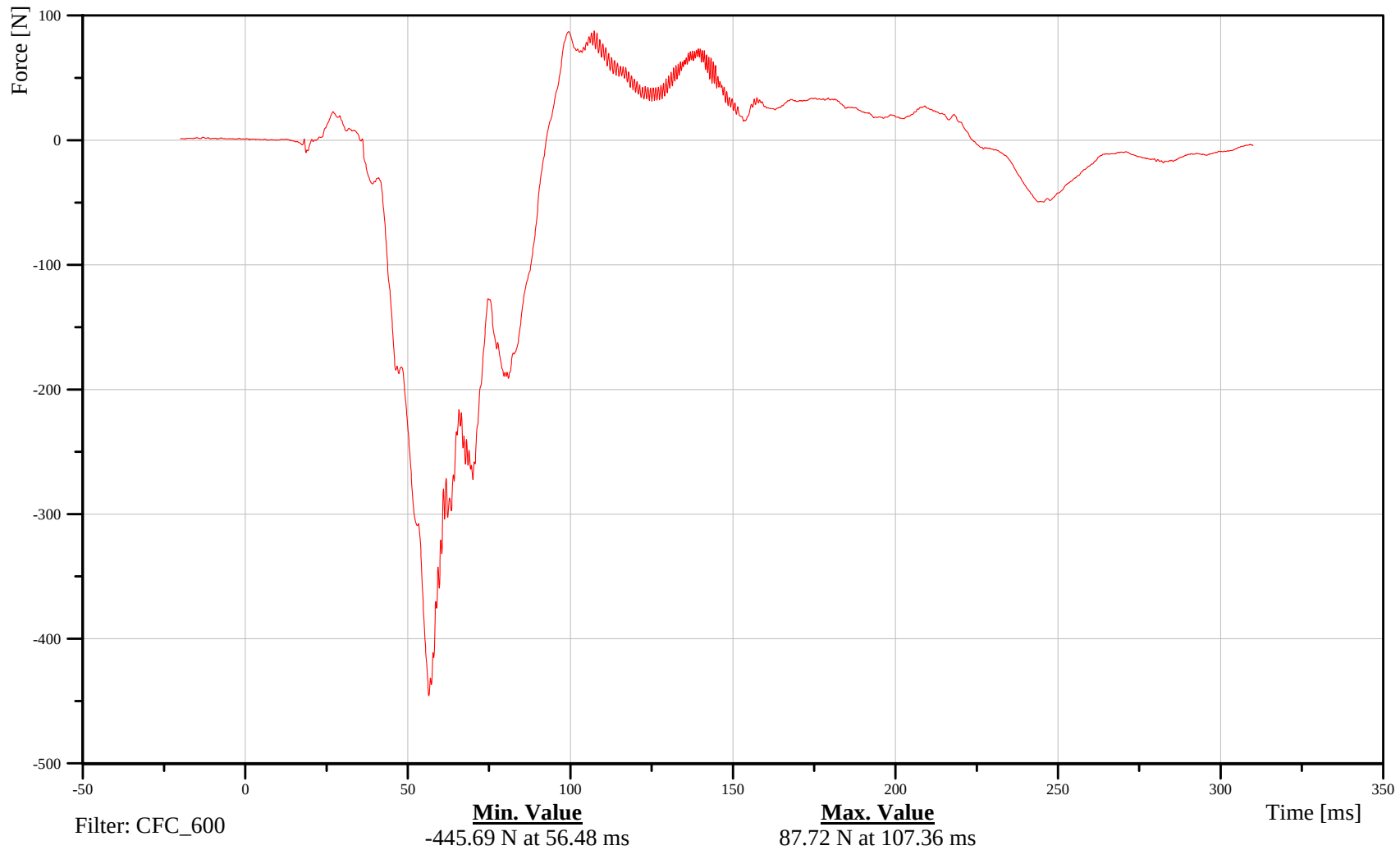
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Lower Tibia X-Axis Force

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRLLXHFFOXB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-138

091030



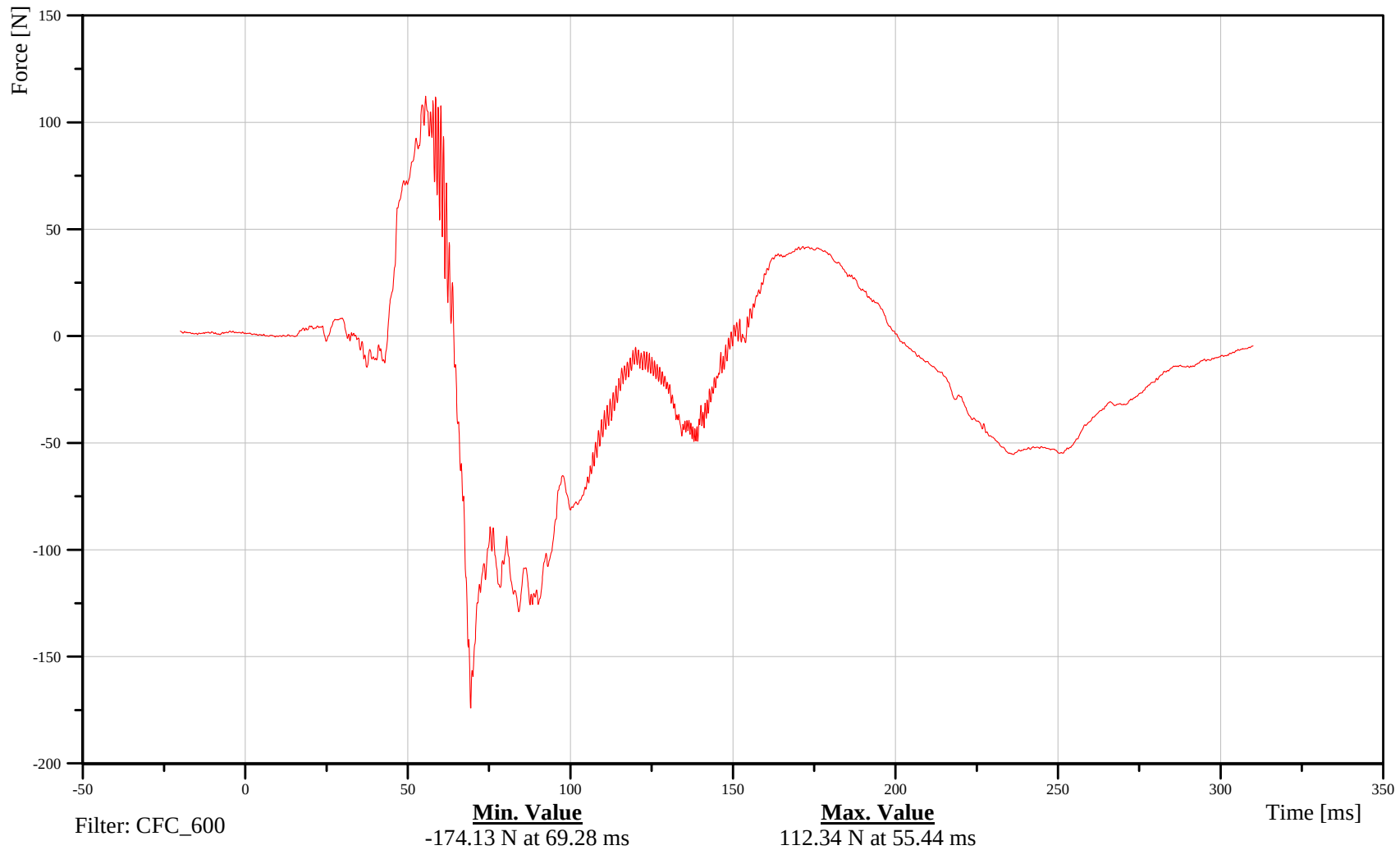
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Lower Tibia Y-Axis Force

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRLLXHFFOYB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-139

091030



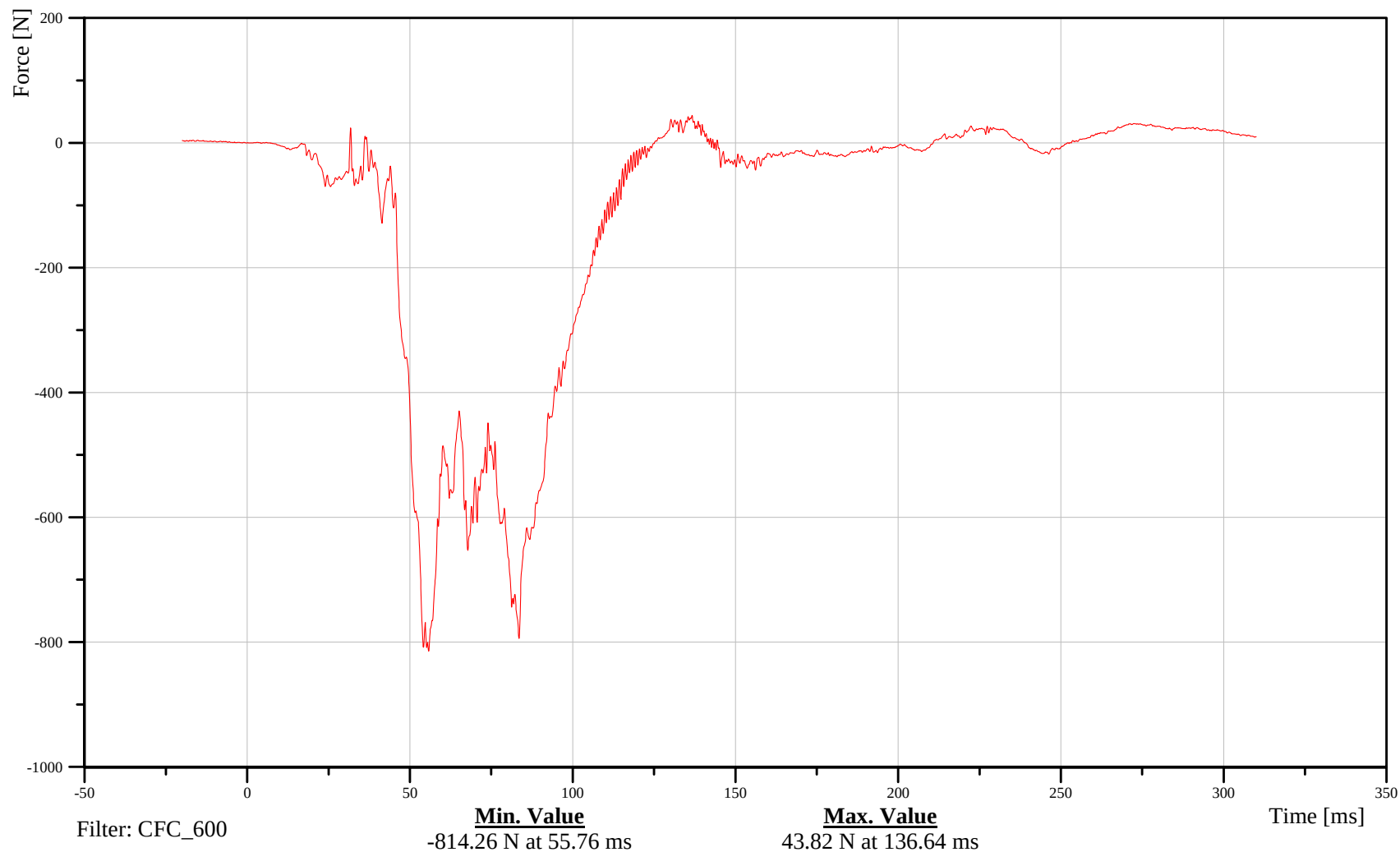
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Lower Tibia Z-Axis Force

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRLLXHFFOZB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-140

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Lower Tibia Moment About X Axis

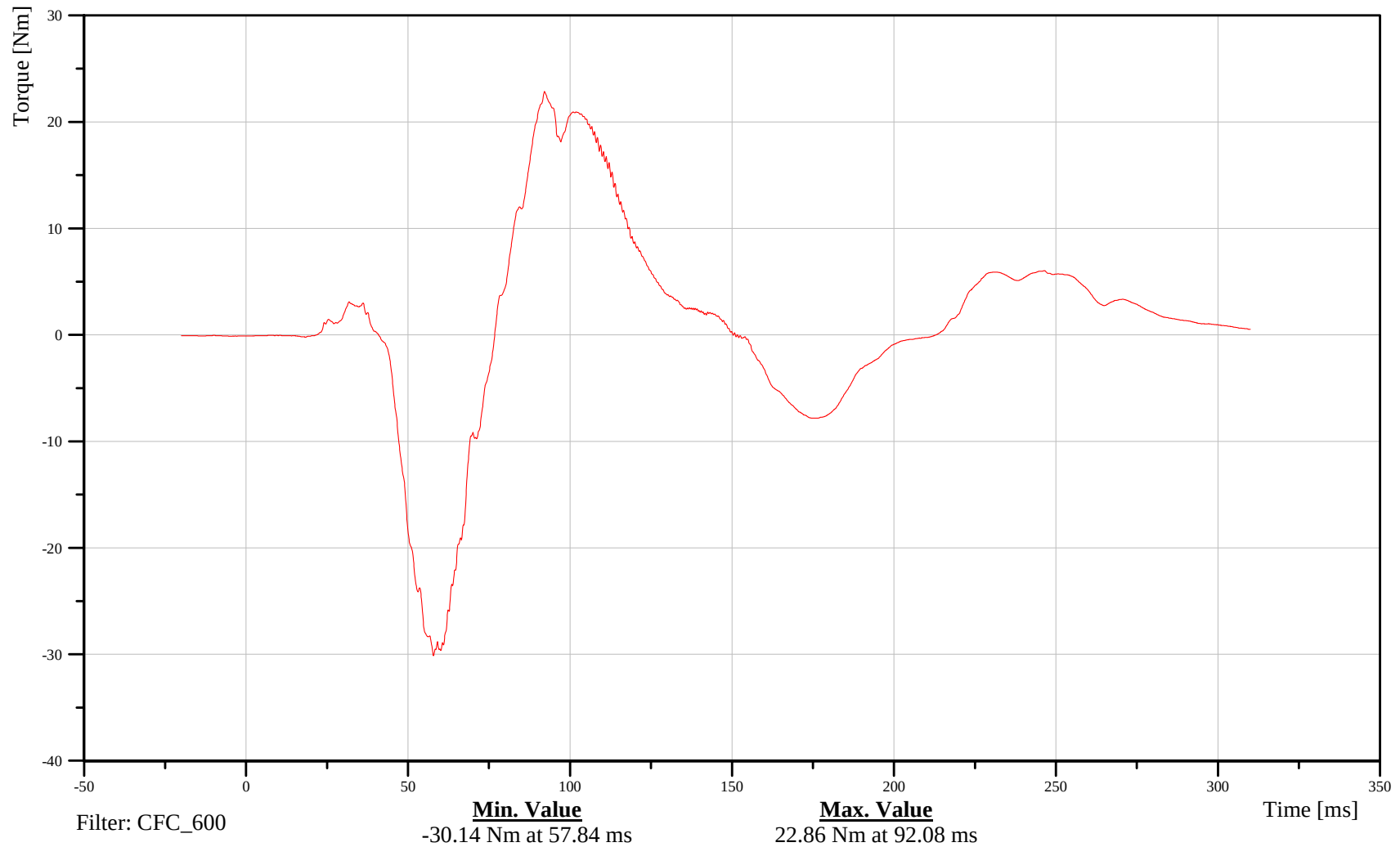
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRLLXHFM0XB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-141

091030



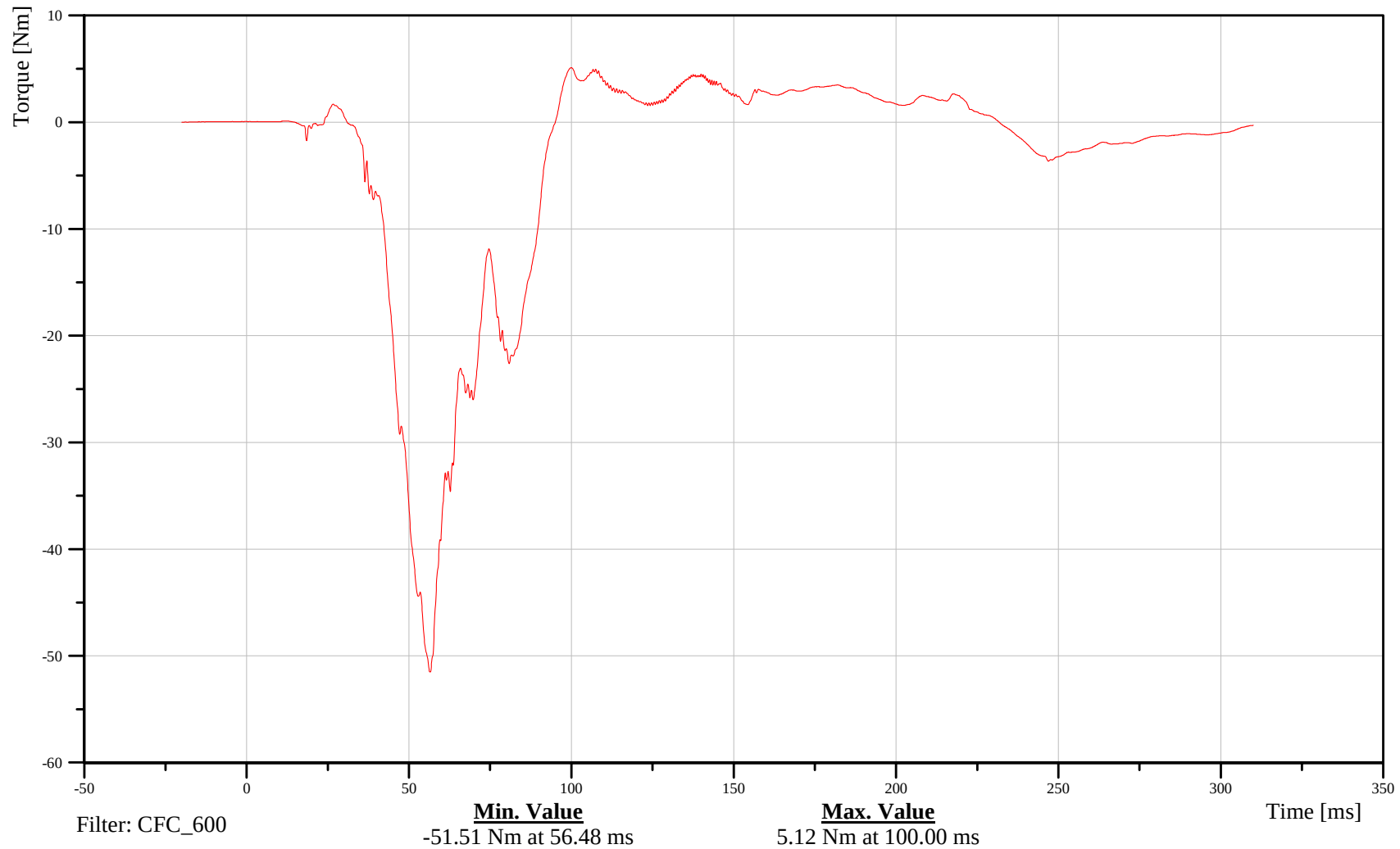
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Lower Tibia Moment About Y Axis

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13TIBIRLLXHFM0YB

TRC Inc. Test Lab: CTF
Test Number: 091030



B-142

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot X-Axis Angular Displacement

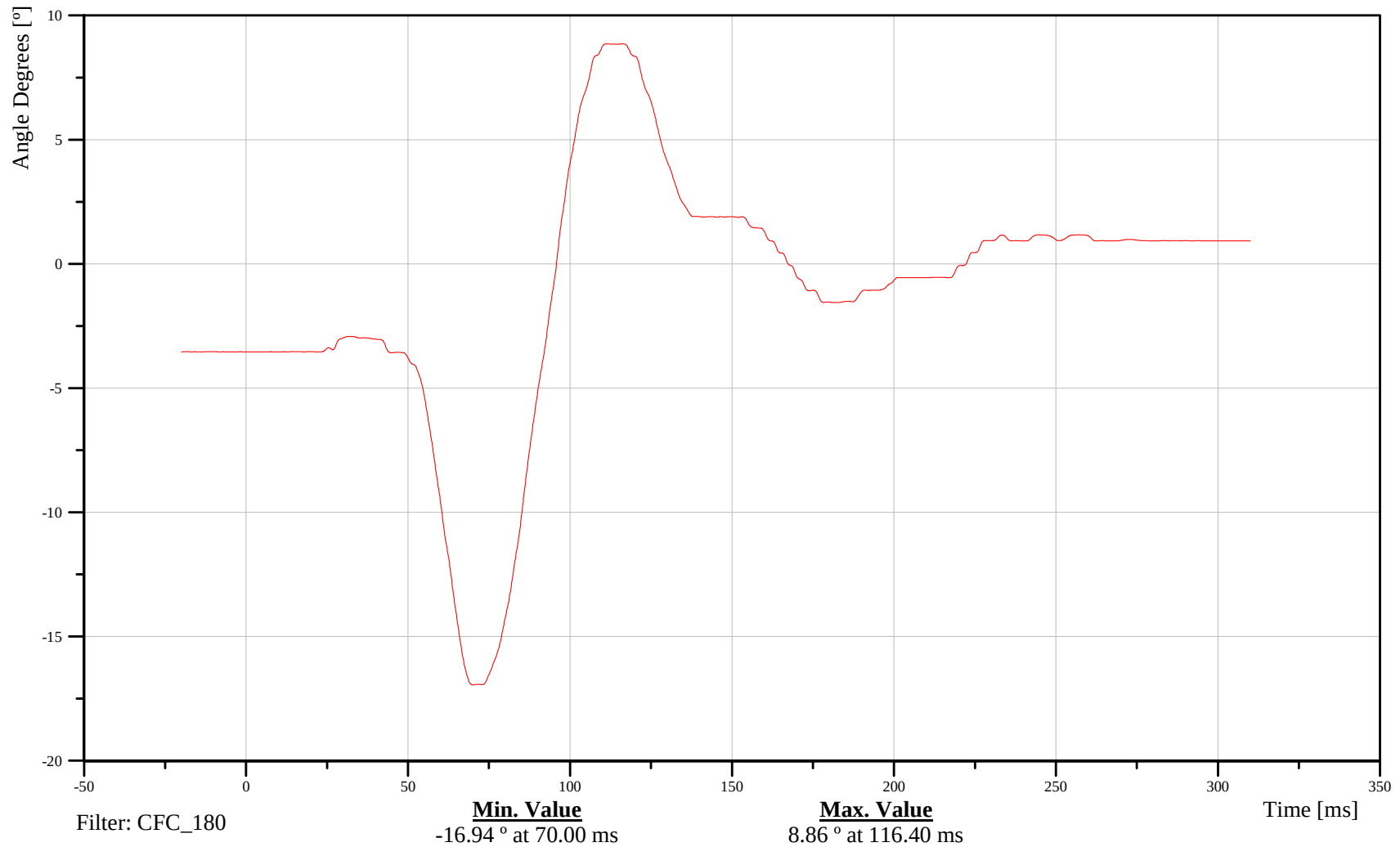
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFANXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-143

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot Y-Axis Angular Displacement

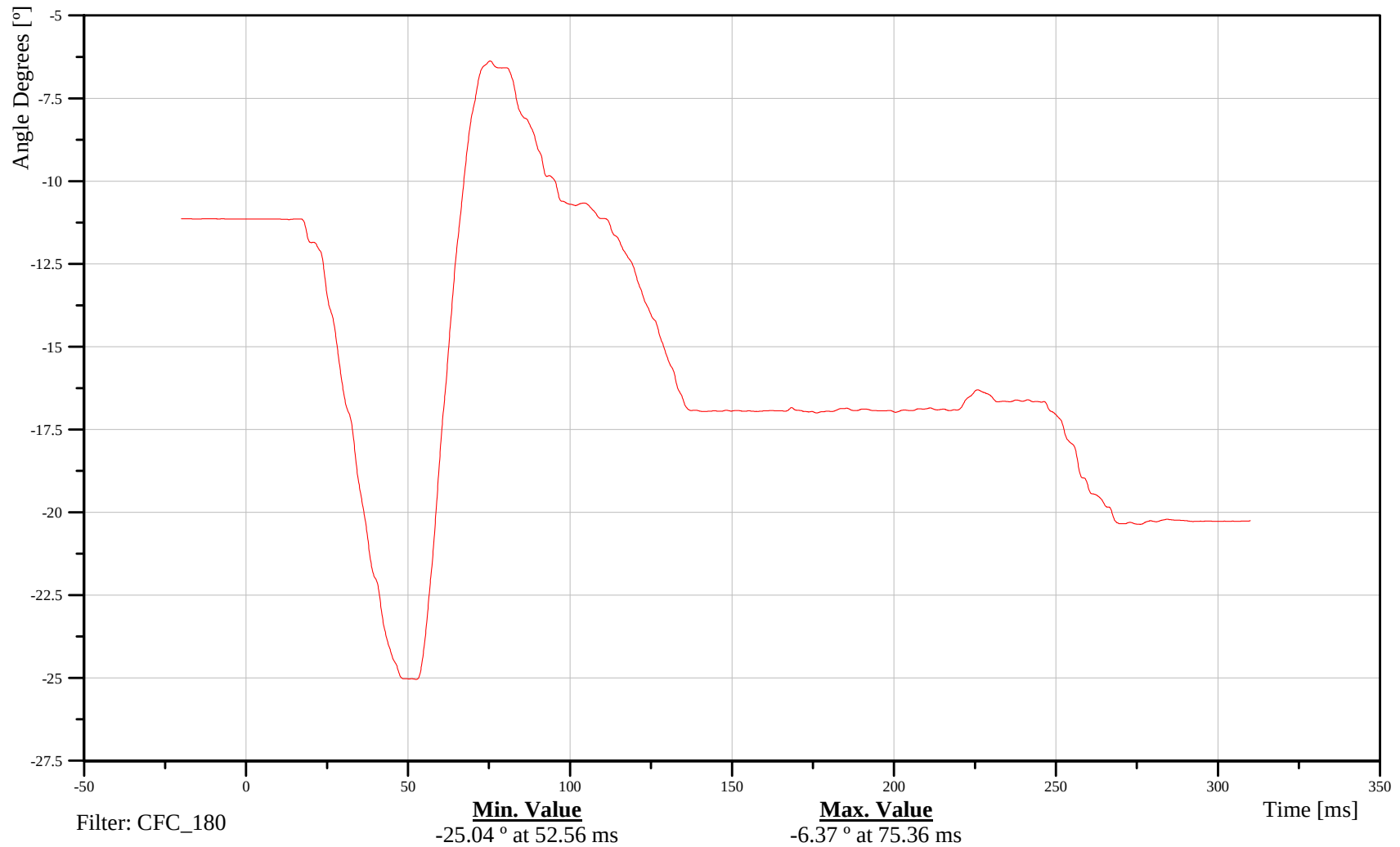
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-144

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot Z-Axis Angular Displacement

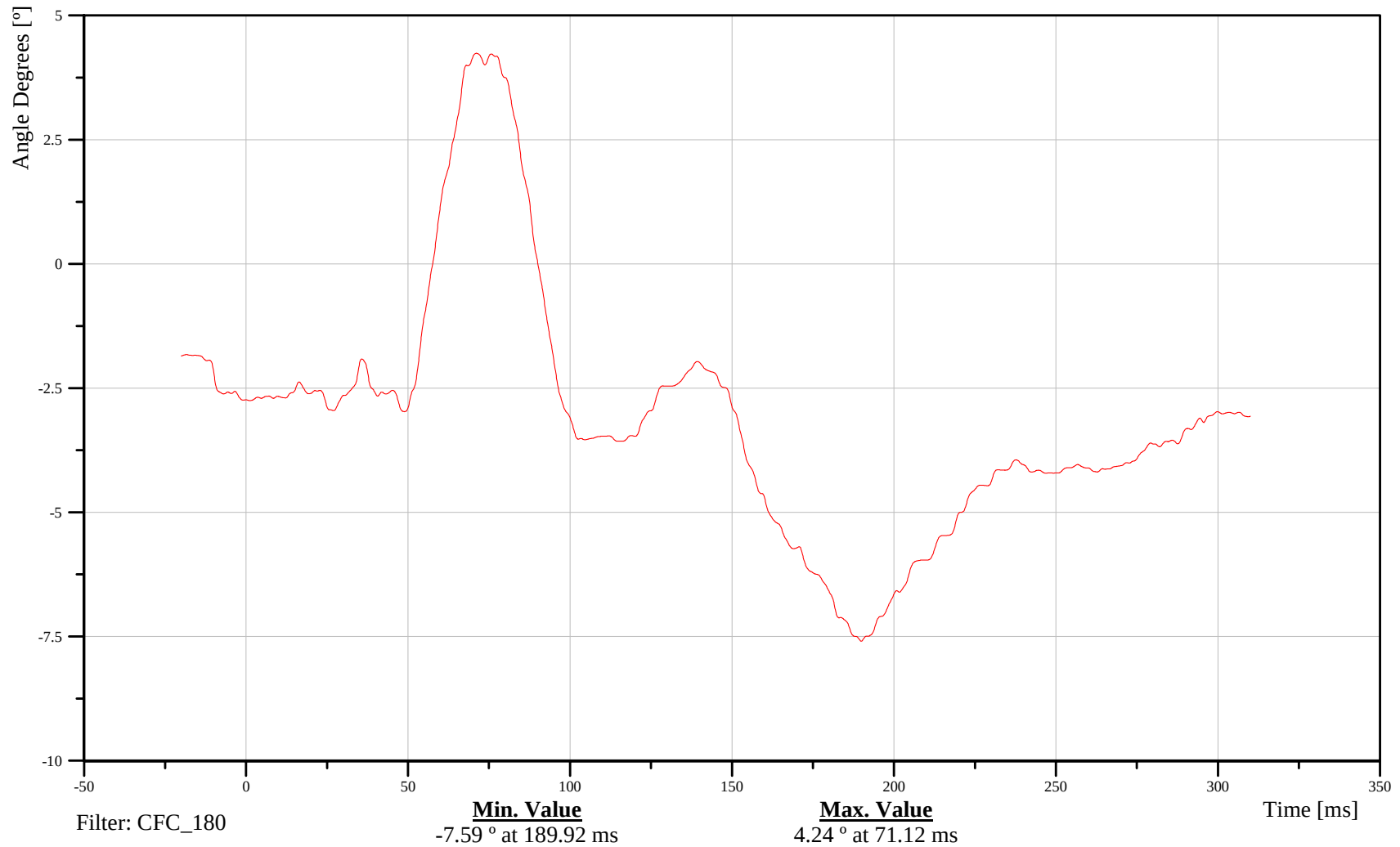
Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-145

091030



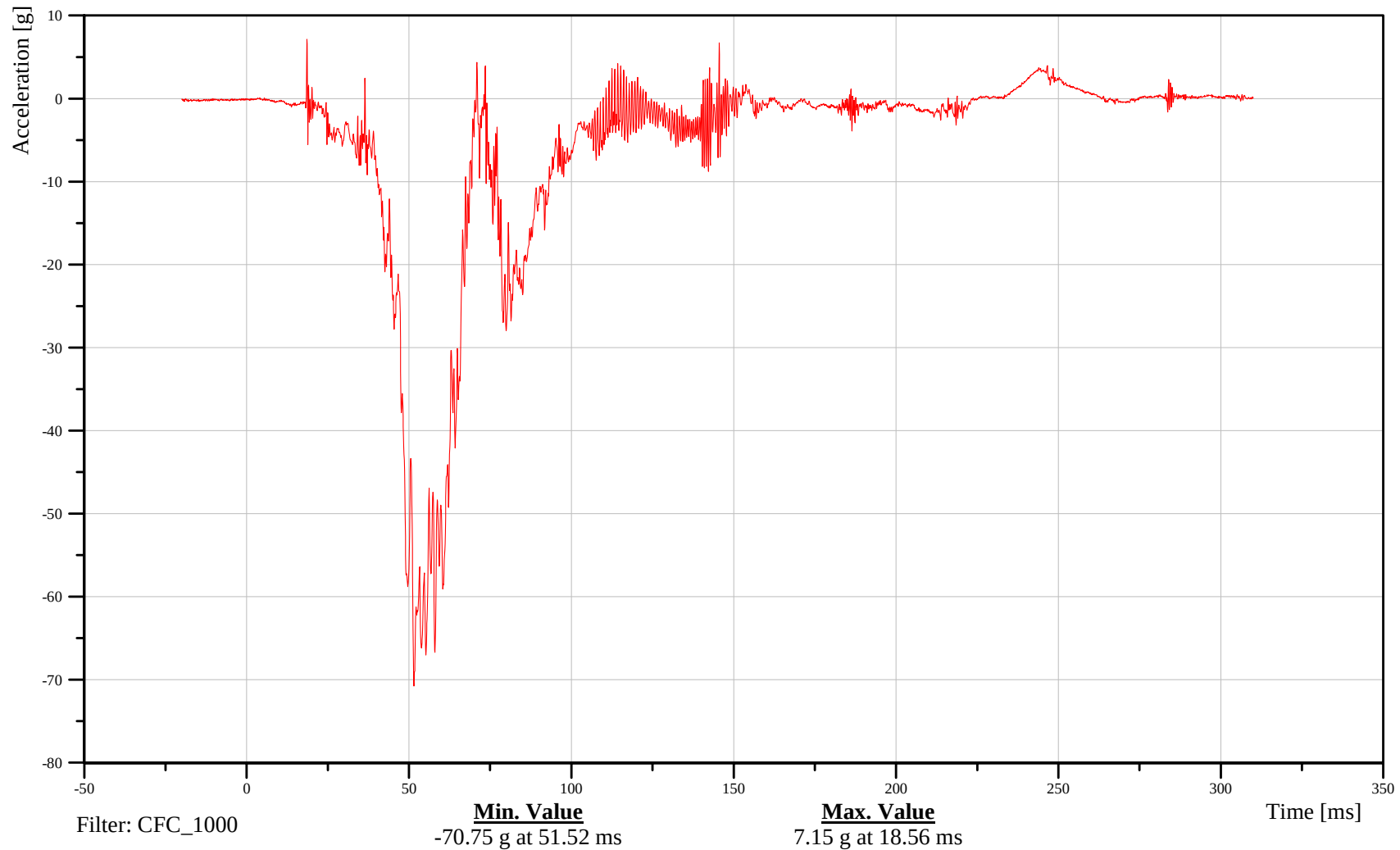
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot X-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFACXA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-146

091030



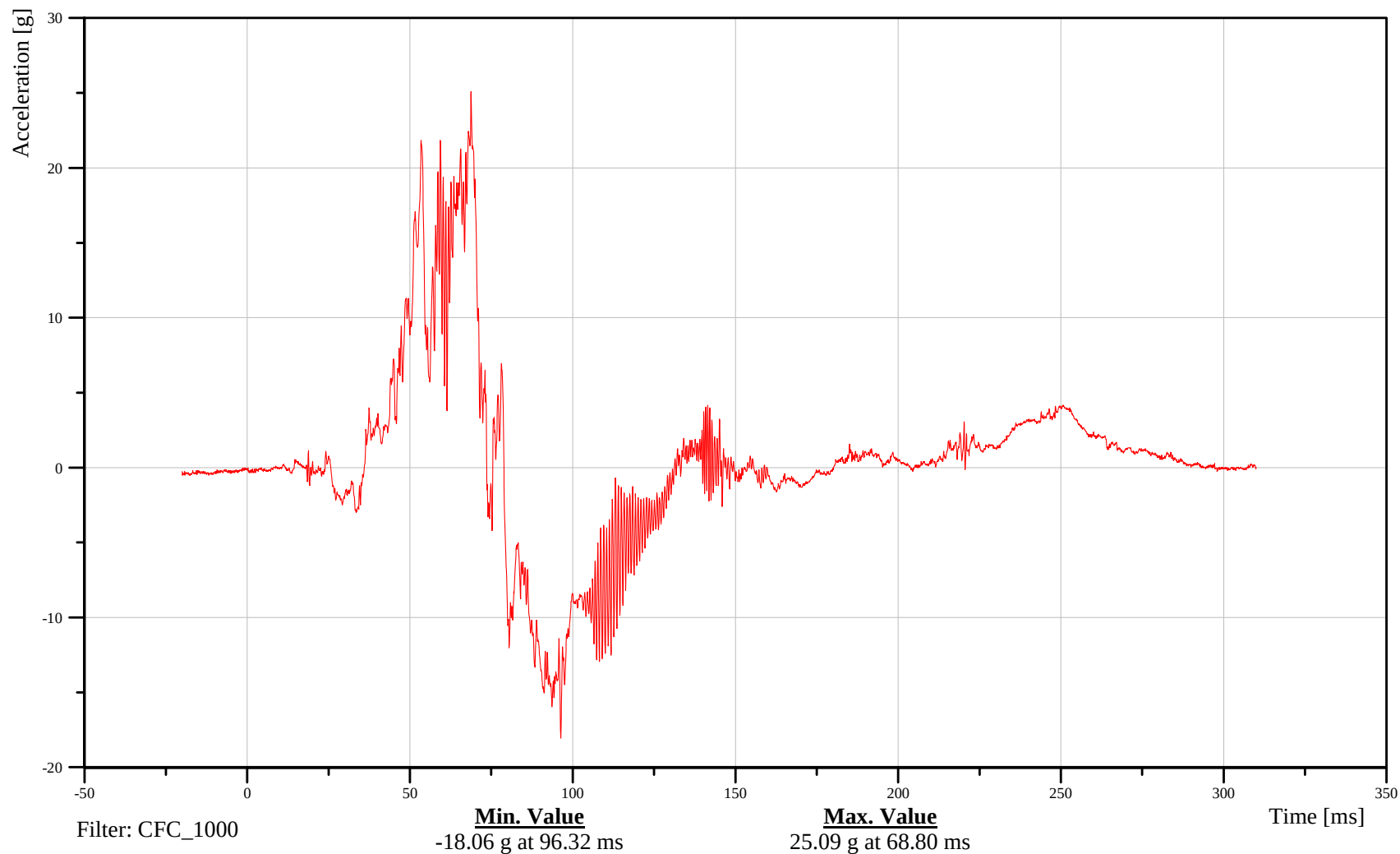
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot Y-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFACYA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-147

091030



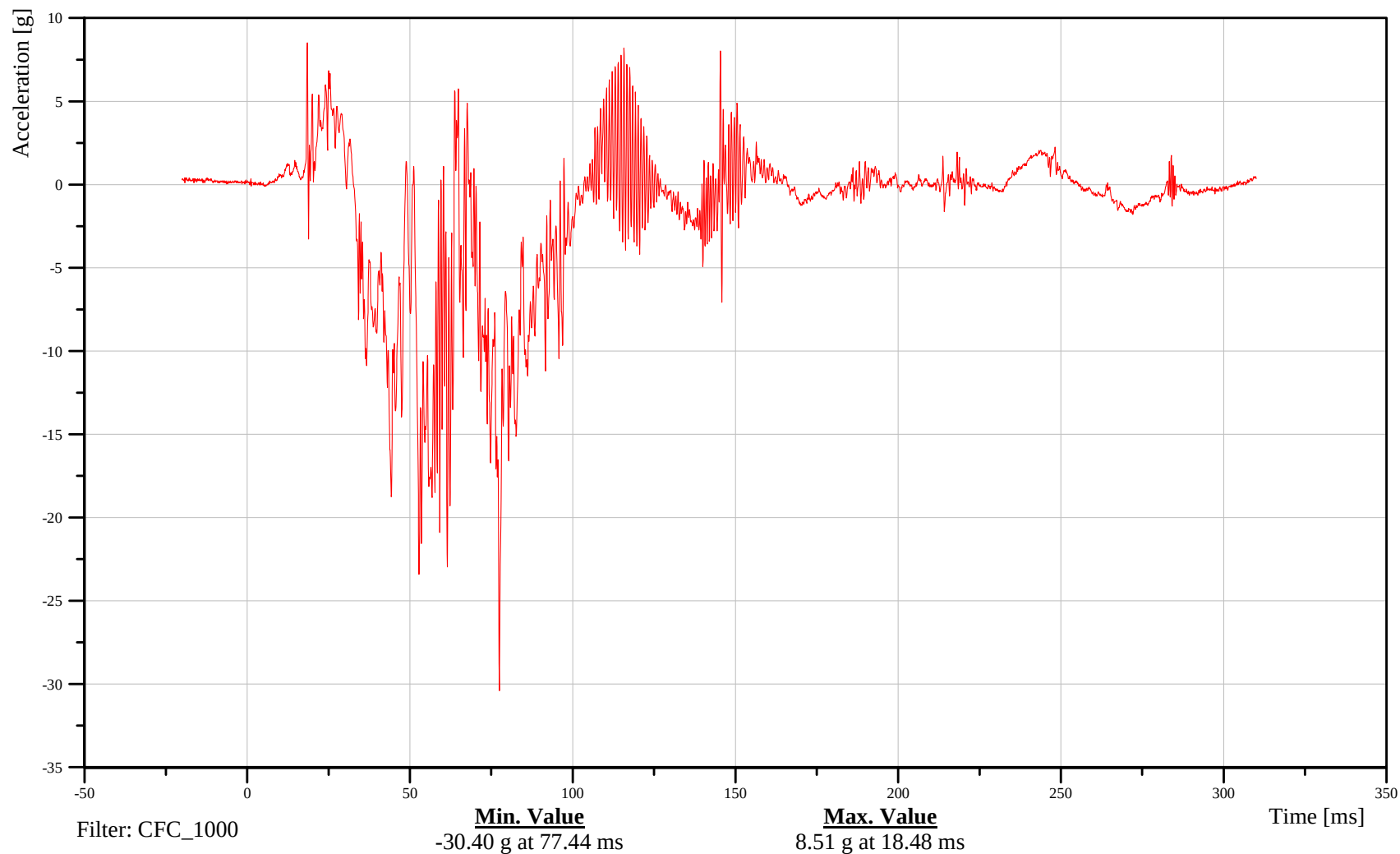
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot Z-Axis Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFACZA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-148

091030



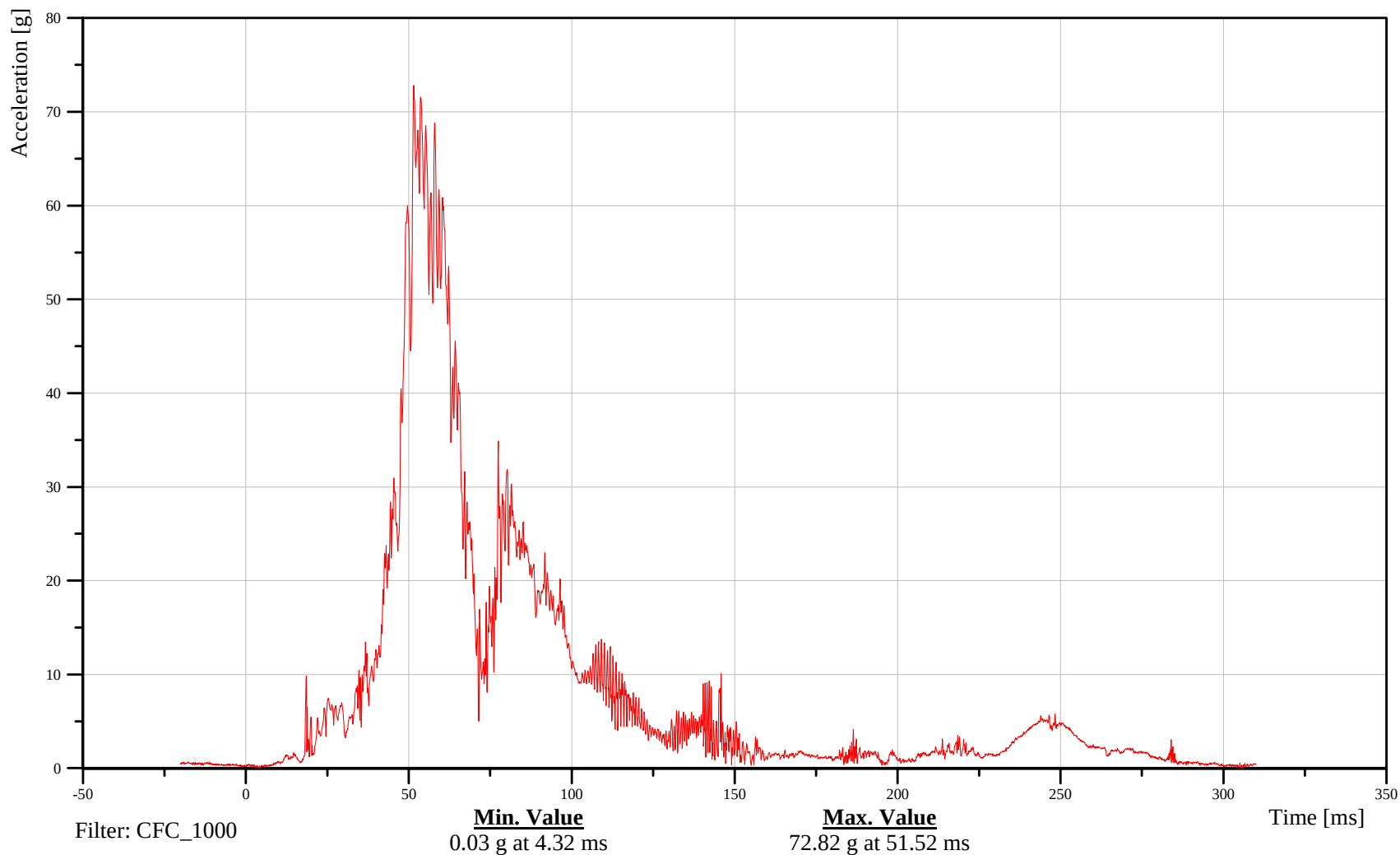
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Right Foot Resultant Acceleration

Date: 10/30/2009
Time: 16:48

Customer: VRTC

13FOOTRILXHFACXA

TRC Inc. Test Lab: CTF
Test Number: 091030



B-149

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

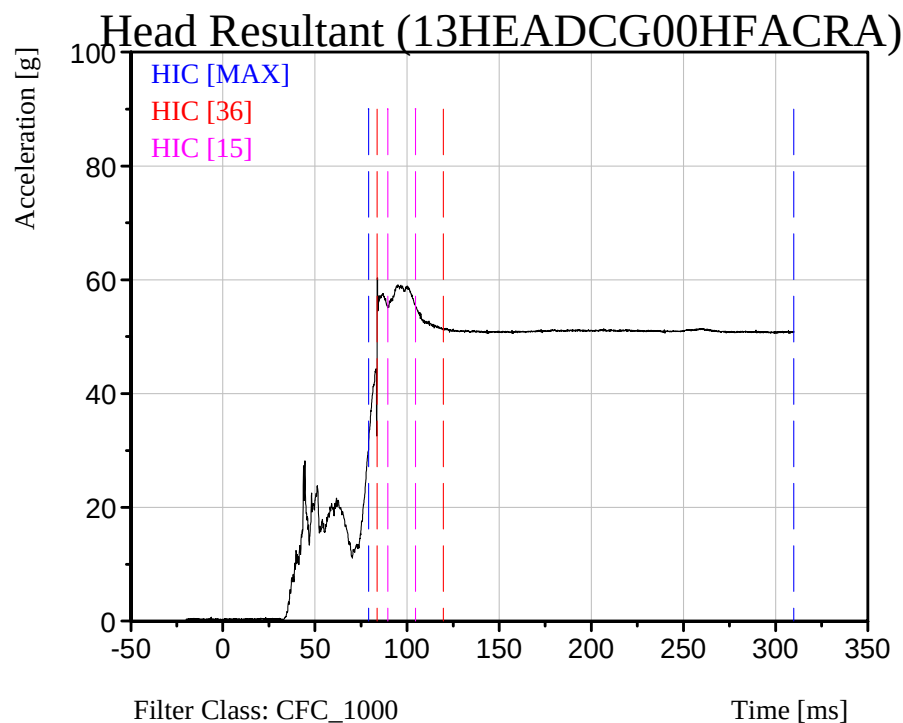
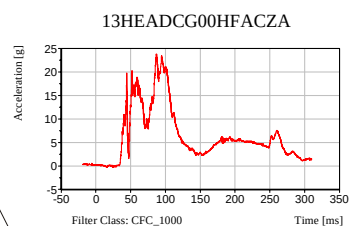
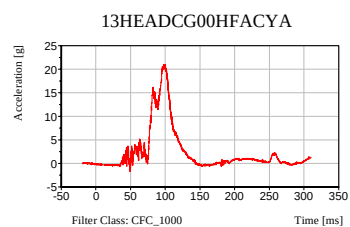
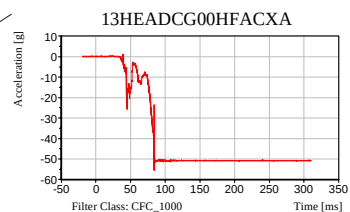
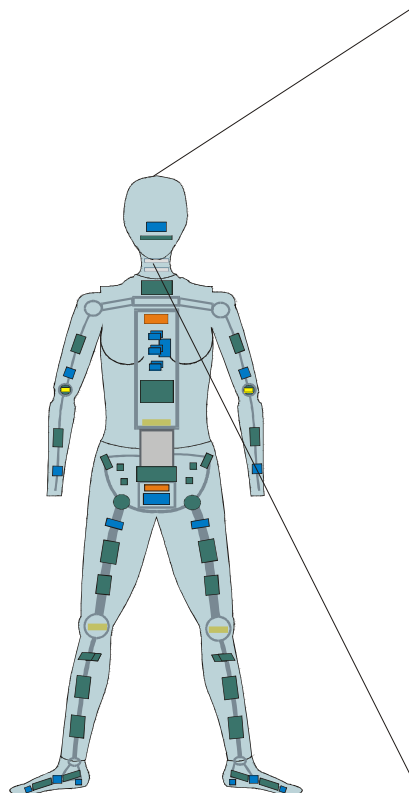
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 4,377.60	79.12 ms	310.00 ms	51.42 g
HIC [36] = 820.60	83.76 ms	119.76 ms	55.35 g
HIC [15] = 379.63	89.60 ms	104.64 ms	57.64 g

Dummy:HIII 5th Female
Seating Position:
Right Front Passenger

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

B-150

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

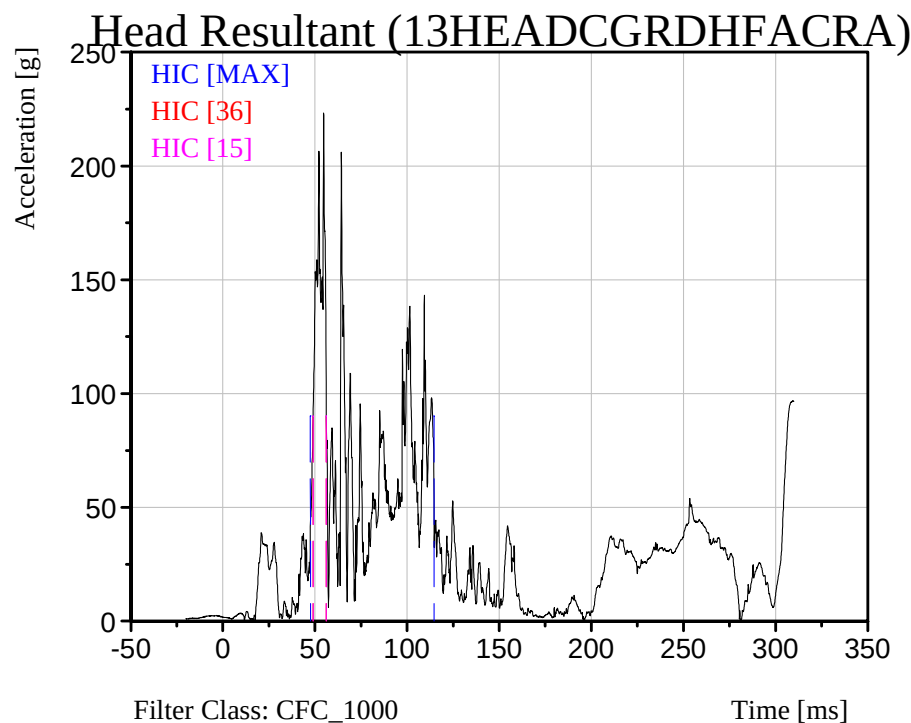
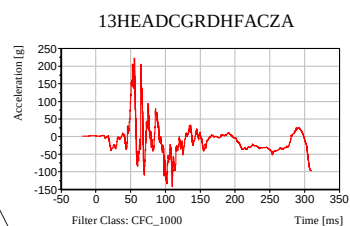
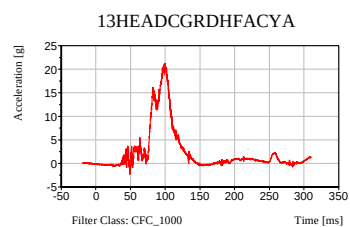
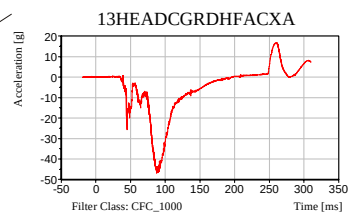
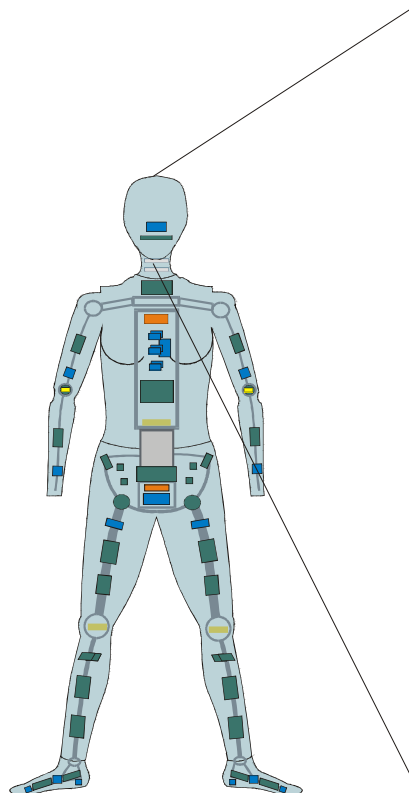
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 3,133.50	47.60 ms	114.64 ms	73.73 g
HIC [36] = 2,055.35	49.04 ms	56.16 ms	152.13 g
HIC [15] = 2,055.35	49.04 ms	56.16 ms	152.13 g

Dummy:HIII 5th Female
Seating Position:
Right Front Passenger

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

B-151

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

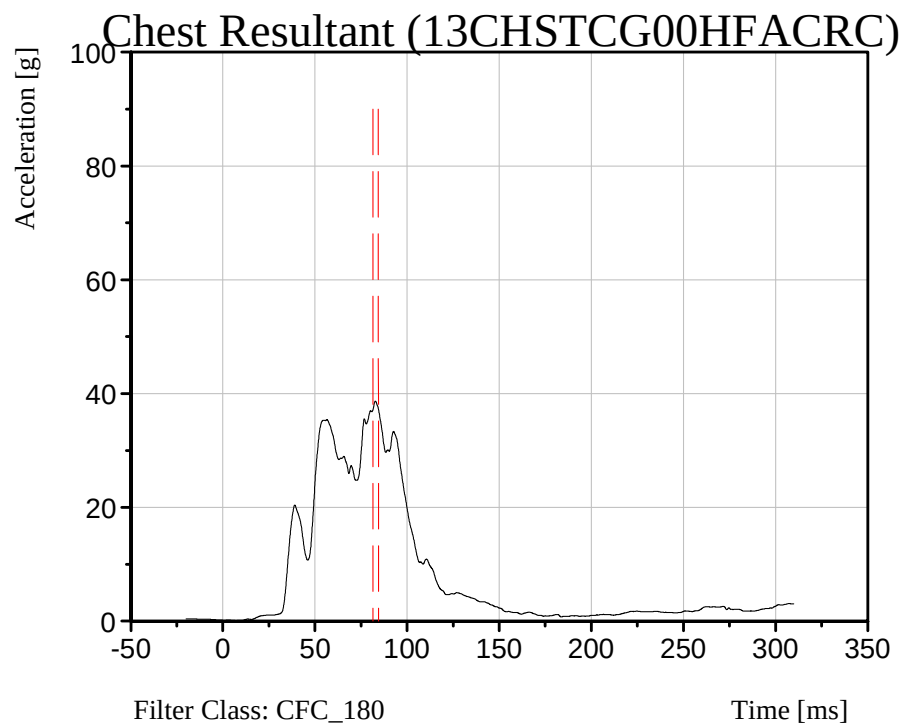
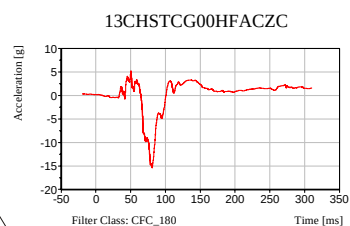
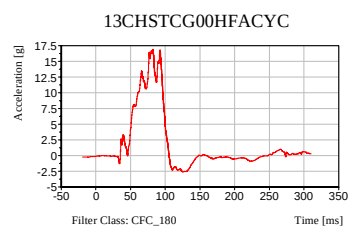
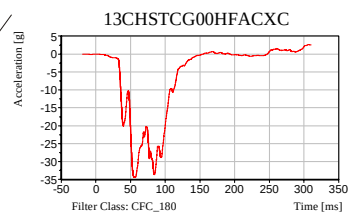
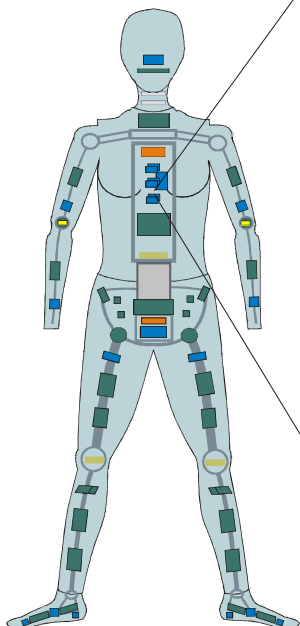
Time: 16:48

3 ms Duration Acceleration (Chest)

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



3 ms Duration Acceleration = 37.20 g
Chest Severity Index = 305.30

<u>T1</u> (Begin)	<u>T2</u> (End)
81.51 ms	84.51 ms

Dummy:IIII 5th Female
Seating Position:
Right Front Passenger

3 ms Duration Acceleration Source Code : vbScript w/DIADEM 9.0

B-152

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

3 ms Duration Acceleration (Chest)

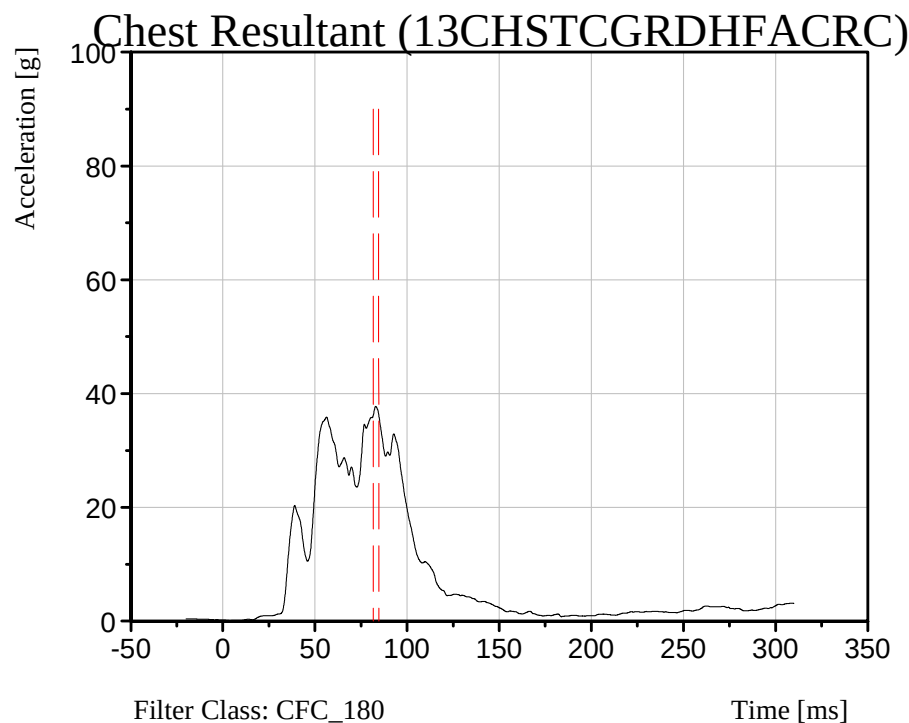
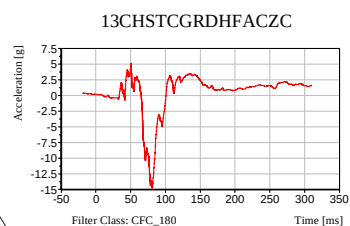
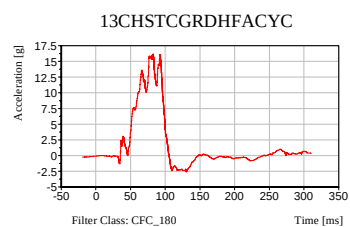
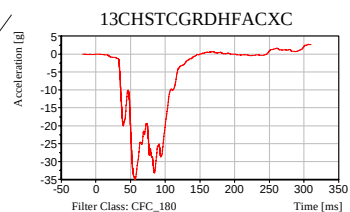
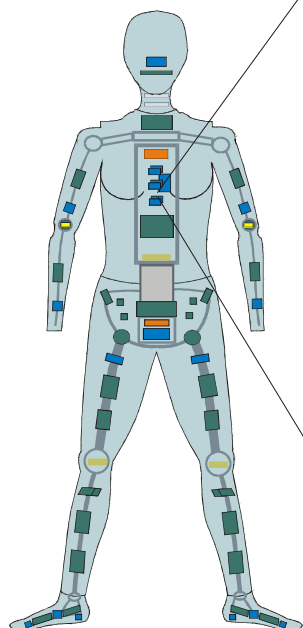
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



3 ms Duration Acceleration = 36.20 g
Chest Severity Index = 291.24

<u>T1</u> (Begin)	<u>T2</u> (End)
81.66 ms	84.66 ms

Dummy:IIII 5th Female
Seating Position:
Right Front Passenger

3 ms Duration Acceleration Source Code : vbScript w/DIADEM 9.0

B-153

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

Chest Deflection

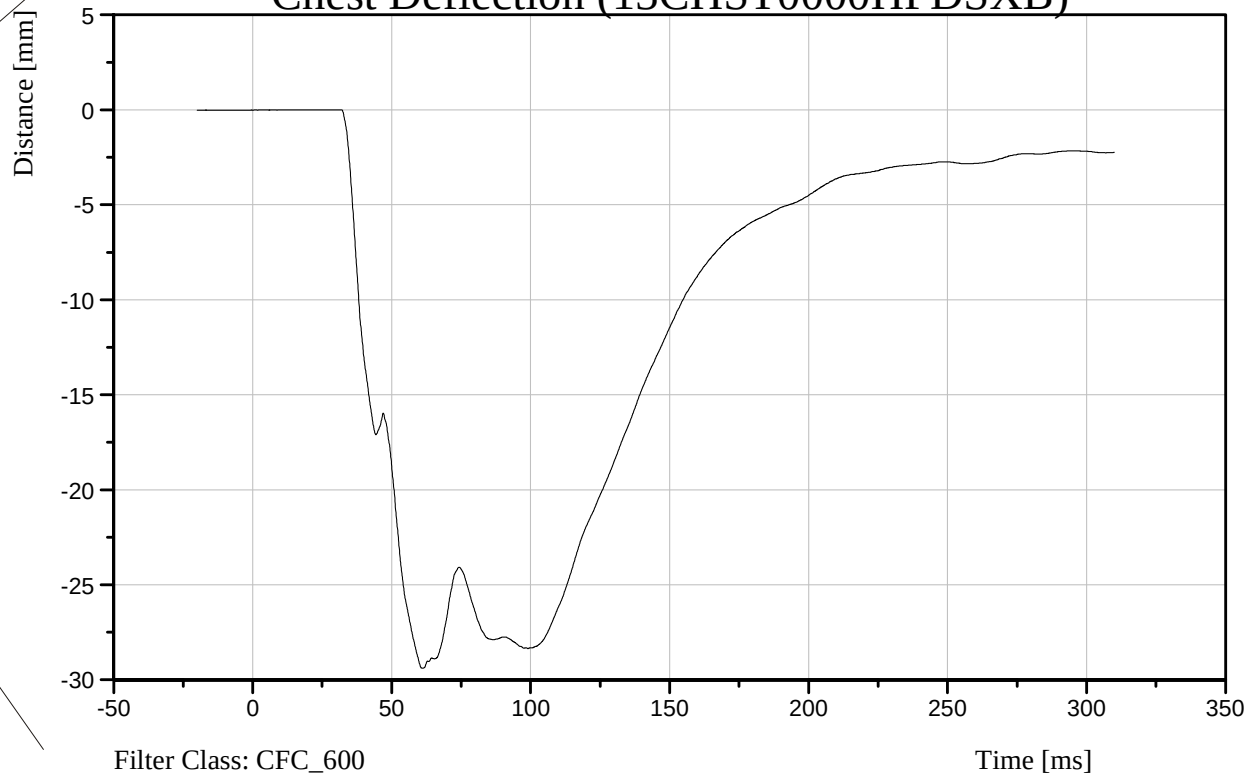
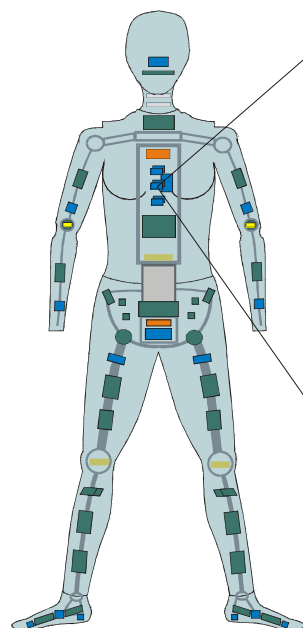
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Chest Deflection (13CHST0000HFDSXB)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 0.01 mm at 31.68 ms

[Min.] -29.39 mm at 61.04 ms

ChestDeflection Source Code : Min/Max of 13CHST0000HFDSXB (CFC_600)

B-154

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap Neck Moment about the Occipital Condyle (NECK OM)

Date: 10/30/2009
Time: 16:48

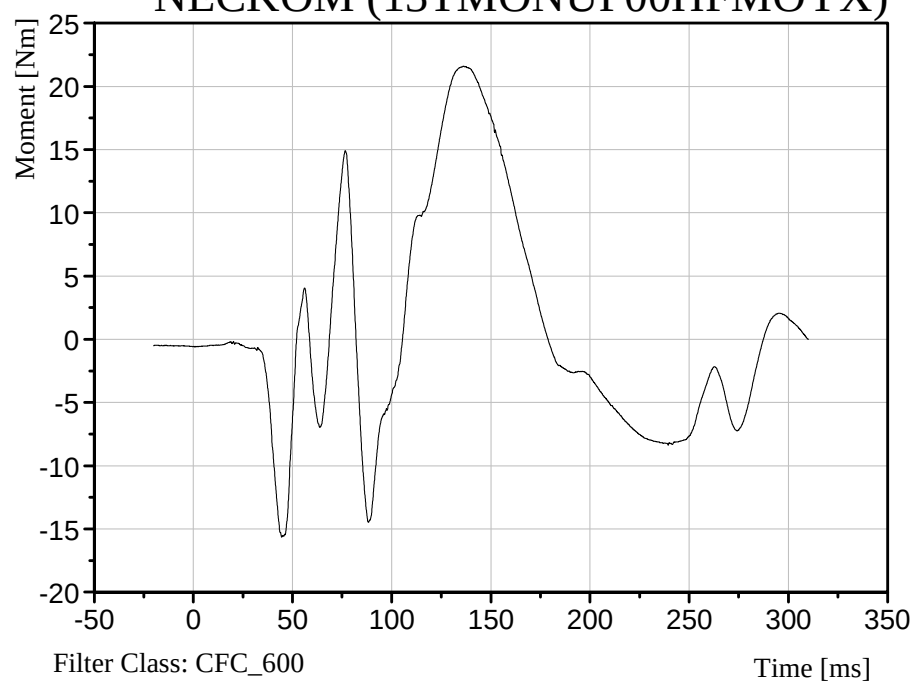
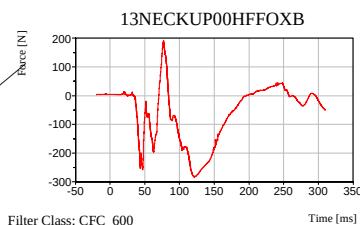
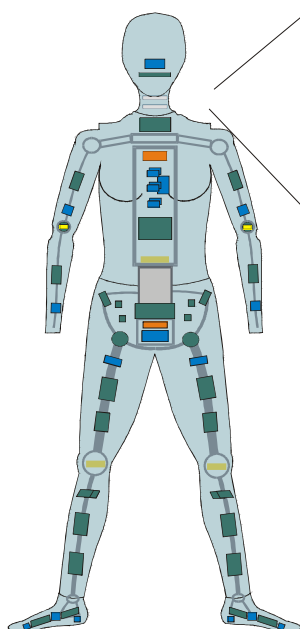
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

NECKOM (13TMONUP00HFM0YX)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

Neck OM Source Code: My - (D*Fx)

[Max.] 21.60 Nm at 136.16 ms

[Min.] -15.64 Nm at 44.56 ms

B-155

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Injury Predictor (NIJ)

Date: 10/30/2009

Time: 16:48

Customer: VRTC

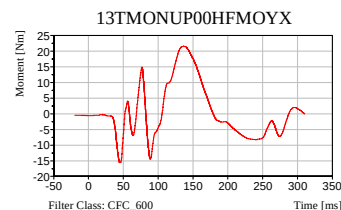
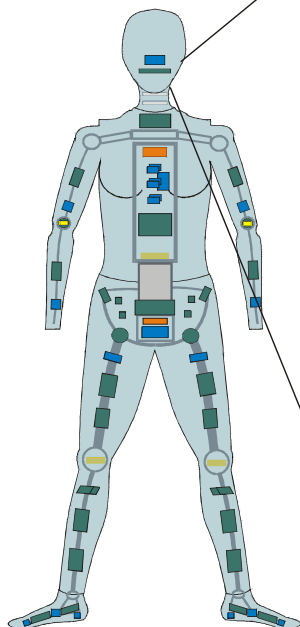
Test Orientation = Frontal

Fzc(Tension) = 4287

Fzc(Compression) = 3880

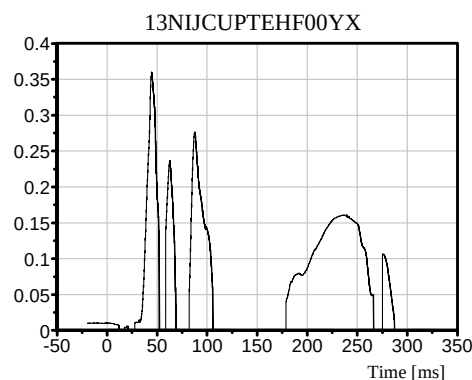
Myc(Extension) = 67

Myc(Flexion) = 155

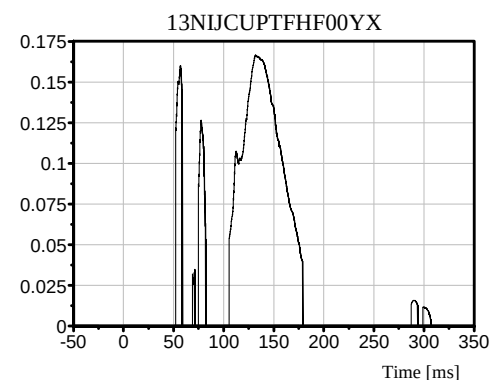


TRC Inc. Test Lab: CTF

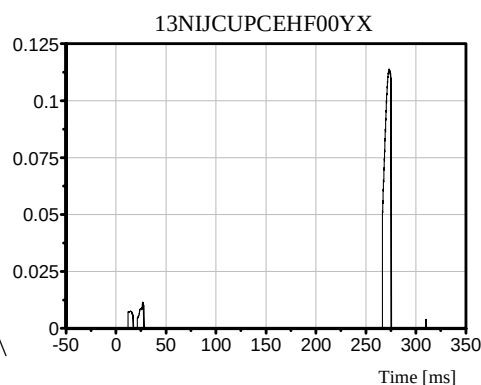
Test Number: 091030



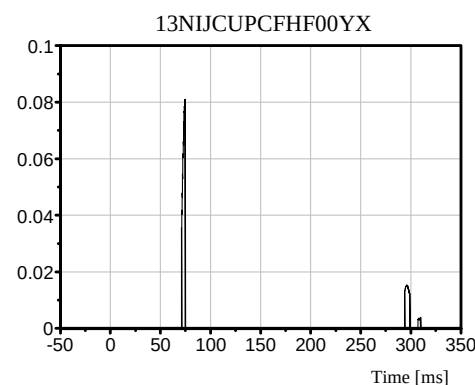
Max [NTE] 0.3600 at 44.48 ms



Max [NTF] 0.1665 at 131.92 ms



Max [NCE] 0.1140 at 273.04 ms



Max [NCF] 0.0811 at 74.64 ms

Dummy:IIII 5th Female
Seating Position:

Right Front Passenger

NIJ Source Code: (Fz/Fzc)+(My/Myc)

B-156

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

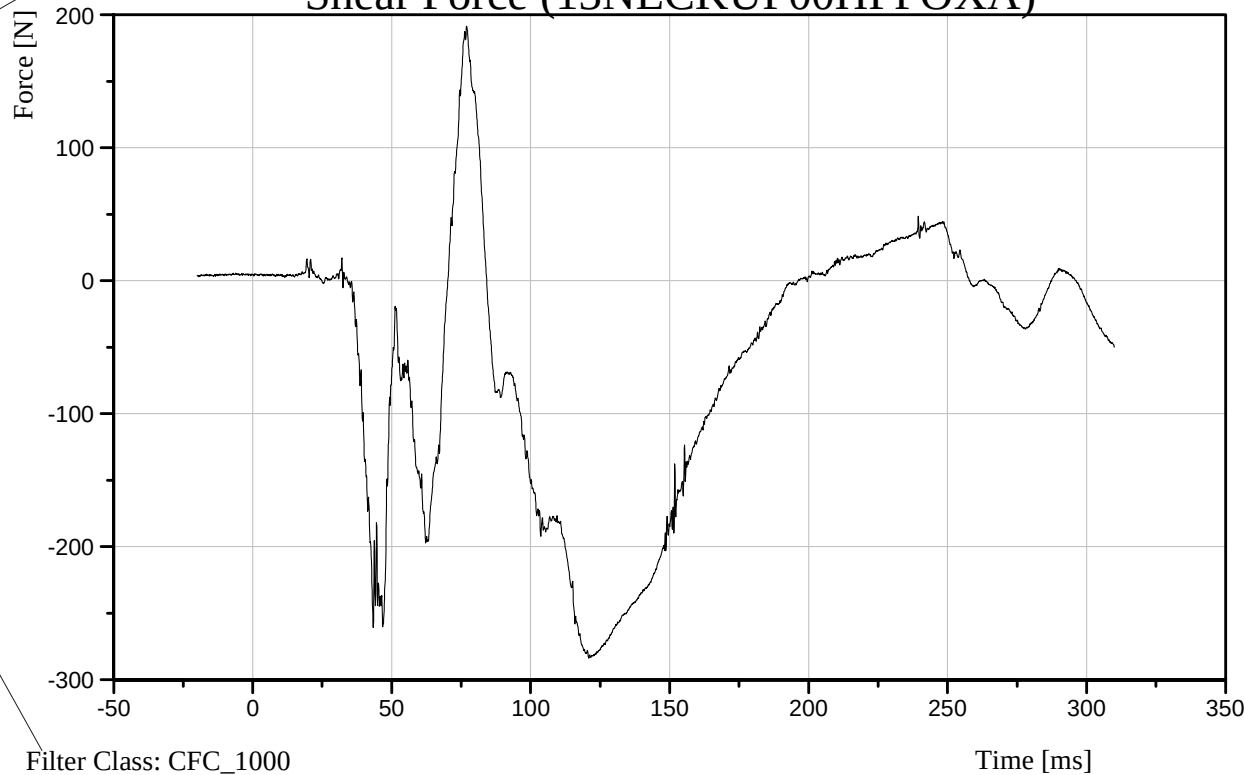
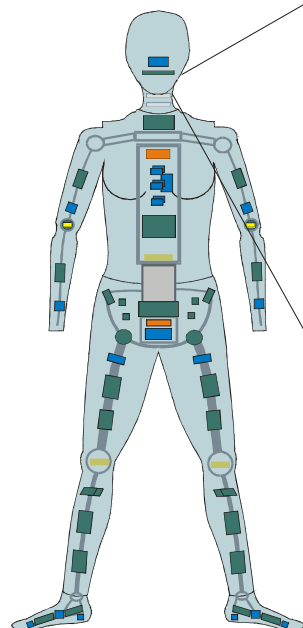
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (13NECKUP00HFFOXA)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 191.69 N at 76.88 ms

[Min.] -283.81 N at 120.88 ms

Neck Shear Force Source Code: Min/Max of 13NECKUP00HFFOXA

B-157

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

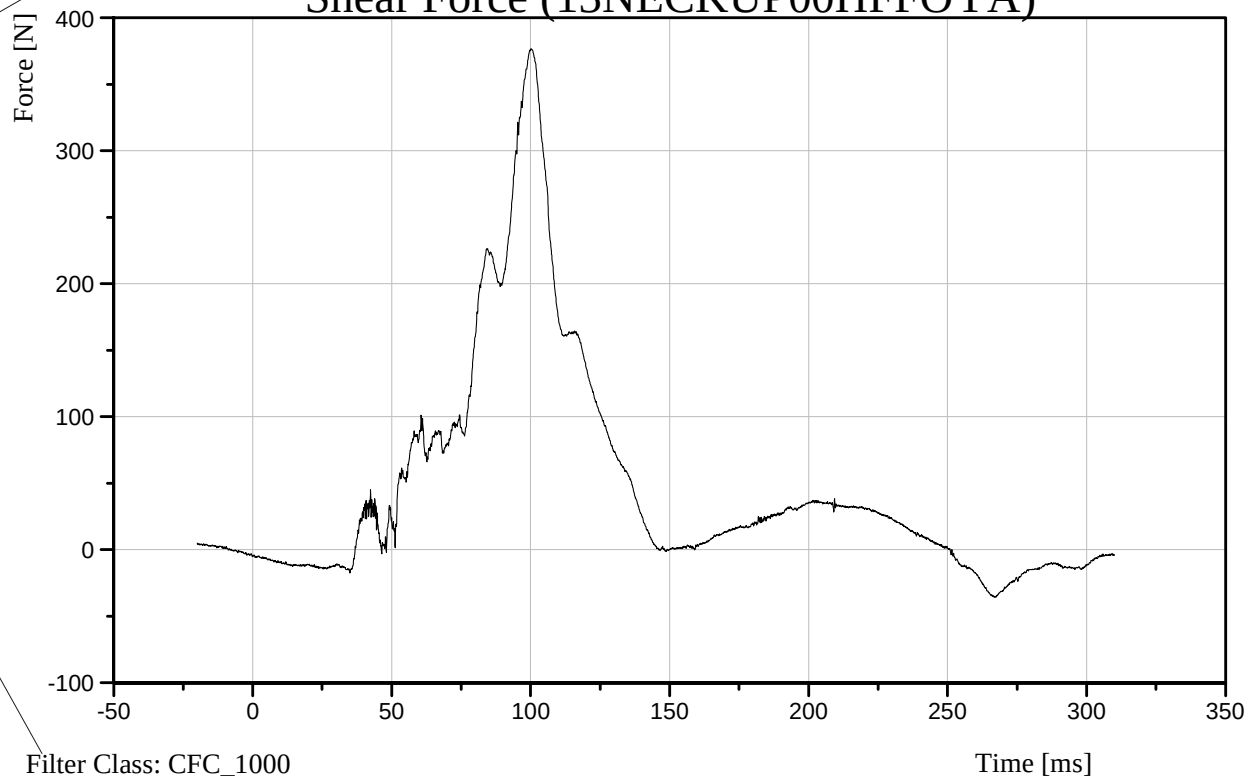
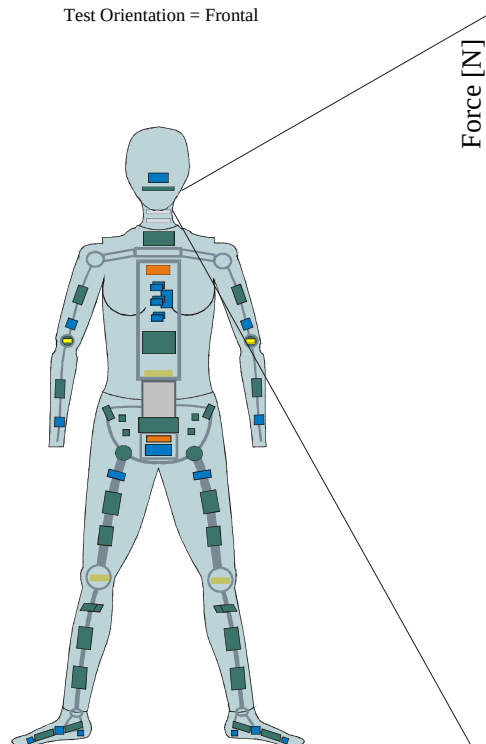
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (13NECKUP00HFFOYA)



Filter Class: CFC_1000

Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 376.92 N at 100.16 ms

[Min.] -35.57 N at 266.72 ms

Neck Shear Force Source Code: Min/Max of 13NECKUP00HFFOYA

B-158

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

Neck Axial Force

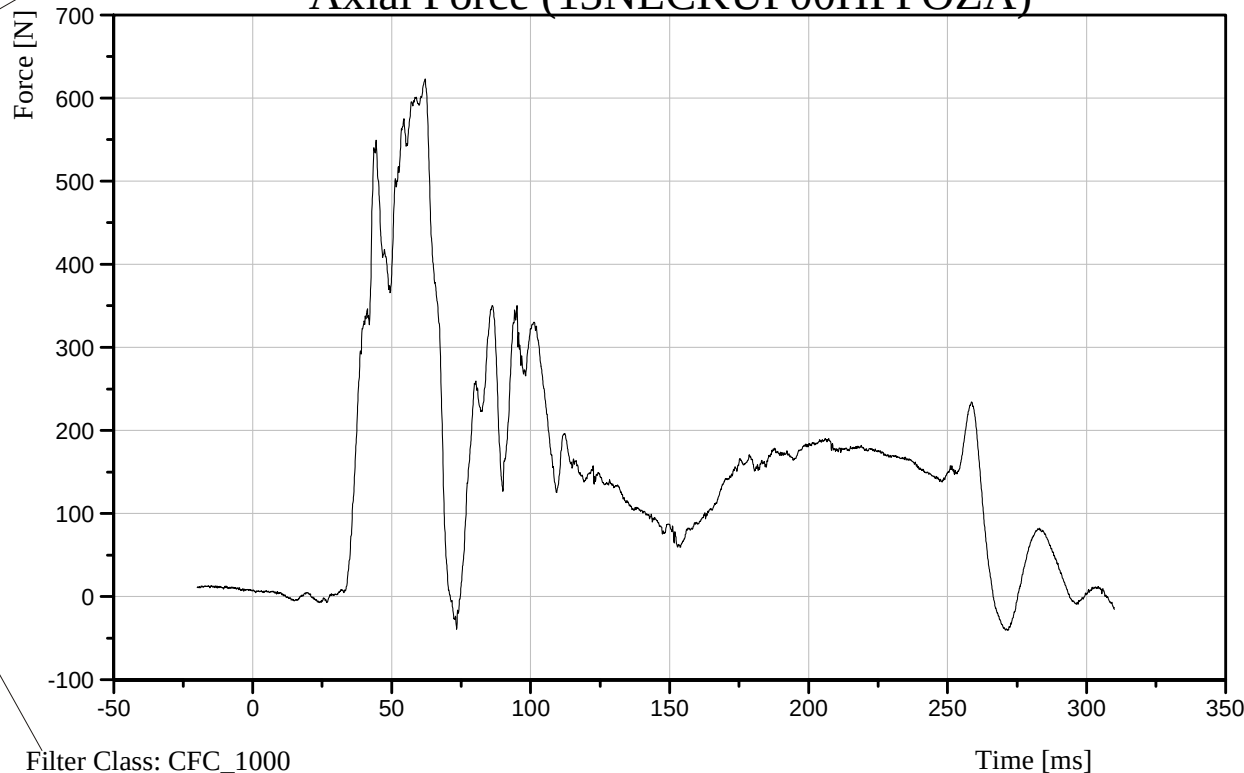
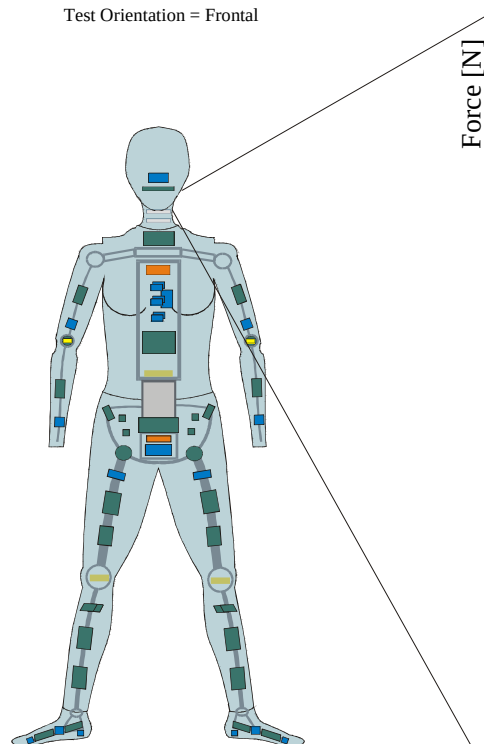
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Axial Force (13NECKUP00HFFOZA)



Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

[Max.] 622.86 N at 62.00 ms

[Min.] -40.59 N at 271.68 ms

Neck Axial Force Source Code: Min/Max of 13NECKUP00HFFOZA

B-159

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Femur Load

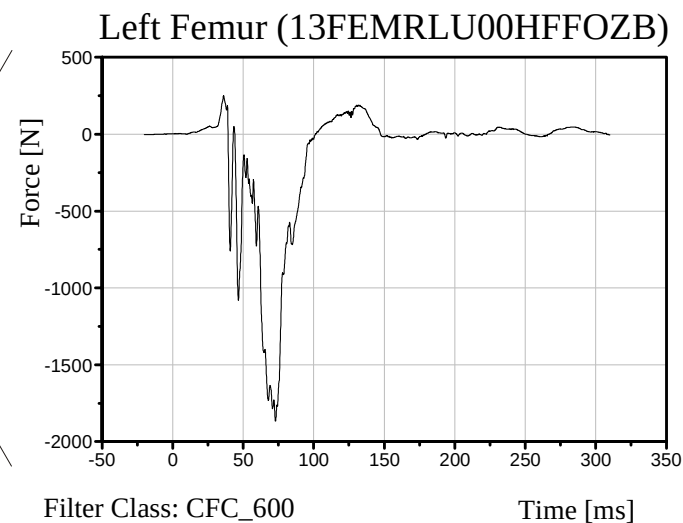
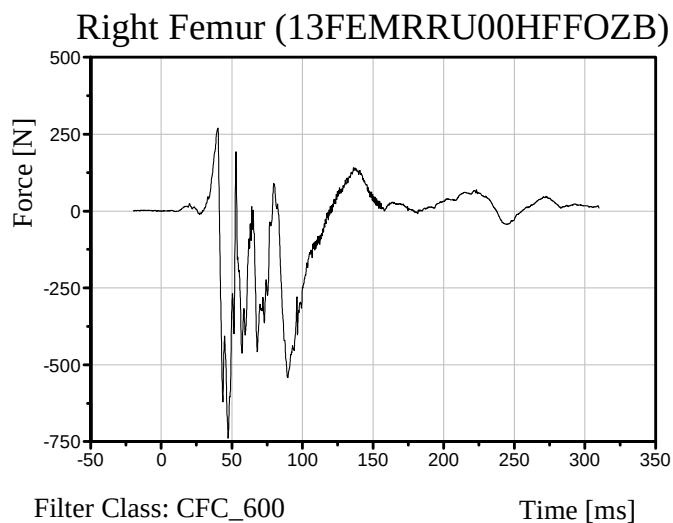
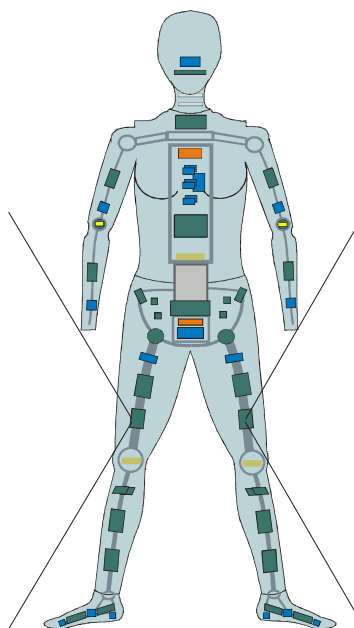
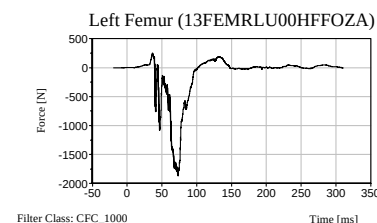
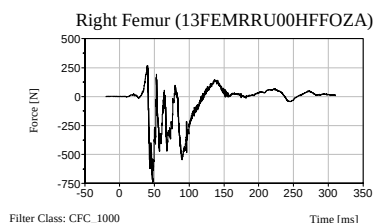
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max [Tension] 269.38 N at 39.92 ms
Min [Compression] -738.50 N at 47.28 ms

Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

Max [Tension] 249.59 N at 36.16 ms
Min [Compression] -1,867.58 N at 72.96 ms

Femur Load Source Code : Min/Max of 13FEMRRU00HFFOZB and 13FEMRLU00HFFOZB (CFC 600)

B-160

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Knee Slider Displacement

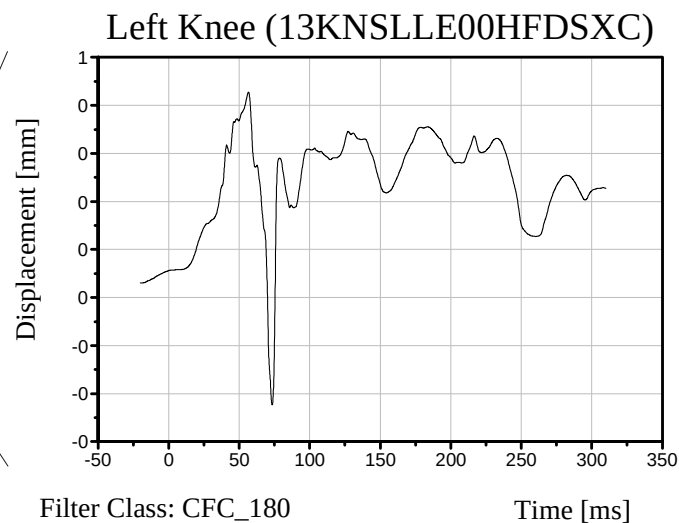
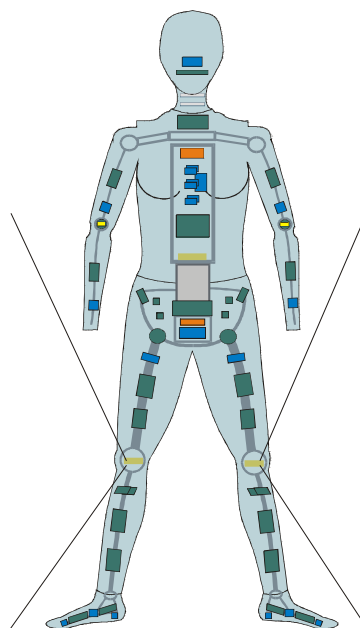
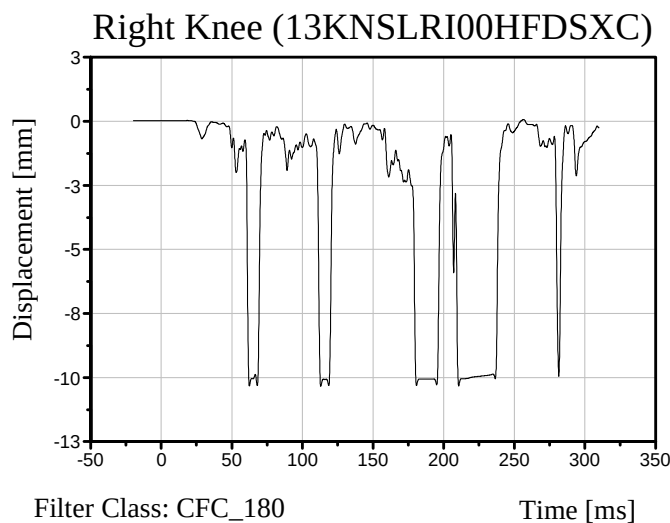
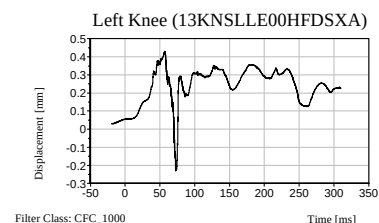
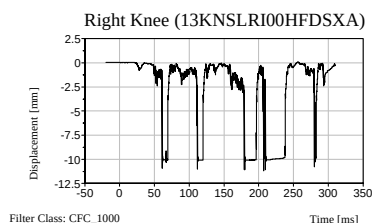
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max. [Tension] 0.07 mm at 256.56 ms
Min. [Compression] -10.34 mm at 112.88 ms

Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

Max. [Tension] 0.43 mm at 56.72 ms
Min. [Compression] -0.22 mm at 73.44 ms

Knee Displacement Source Code : Min/Max of 13KNSLRI00HFDSXC and 13KNSLLE00HFDSXC (CFC 600)

B-161

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Tibia Index (TI)

Date: 10/30/2009

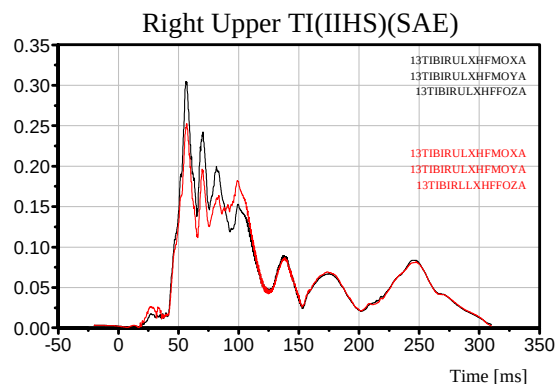
Time: 16:48

Customer: VRTC

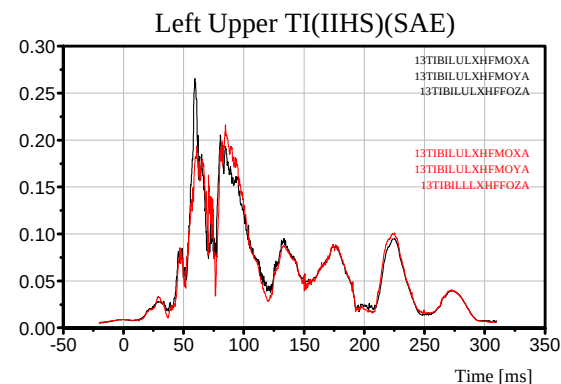
TRC Inc. Test Lab: CTF

Test Number: 091030

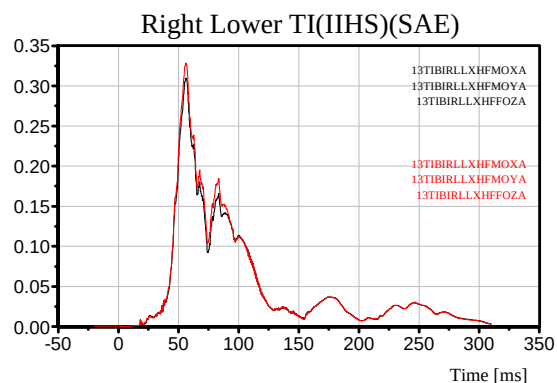
Critical Bending Moment = 240 N·m
Critical Compression Force = 12000 N



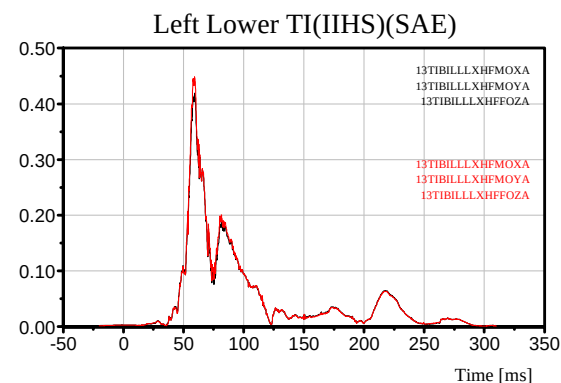
Max = 0.30 at 56.24 ms (SAE)
Max = 0.25 at 56.88 ms (IIHS)



Max = 0.27 at 59.36 ms (SAE)
Max = 0.22 at 84.72 ms (IIHS)



Max = 0.31 at 56.40 ms (SAE)
Max = 0.33 at 56.32 ms (IIHS)



Max = 0.42 at 59.28 ms (SAE)
Max = 0.45 at 59.28 ms (IIHS)

Dummy: HIII 5th Female
Seating Position:
Right Front Passenger

Tibia Index Source Code : Guideline 96/79/EC; SAE J1727 AUG96; and IIHS Crashworthiness Evaluation Offset Barrier Crash Test Protocol (Version X)

B-162

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Foot Acceleration

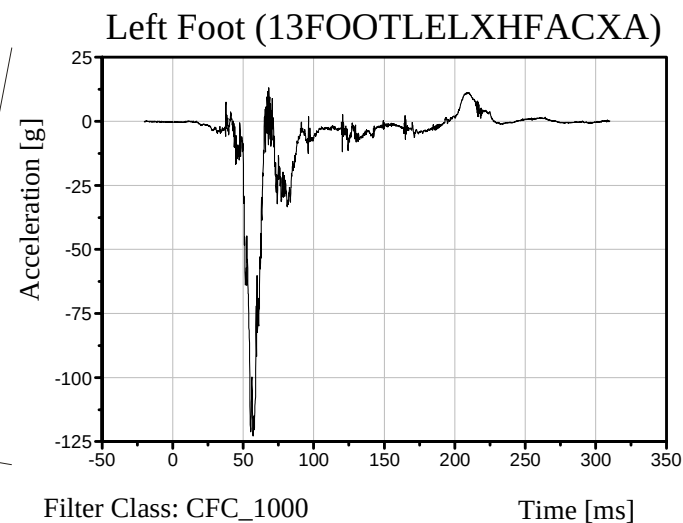
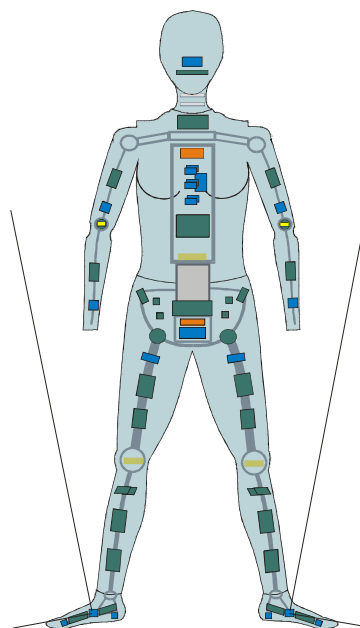
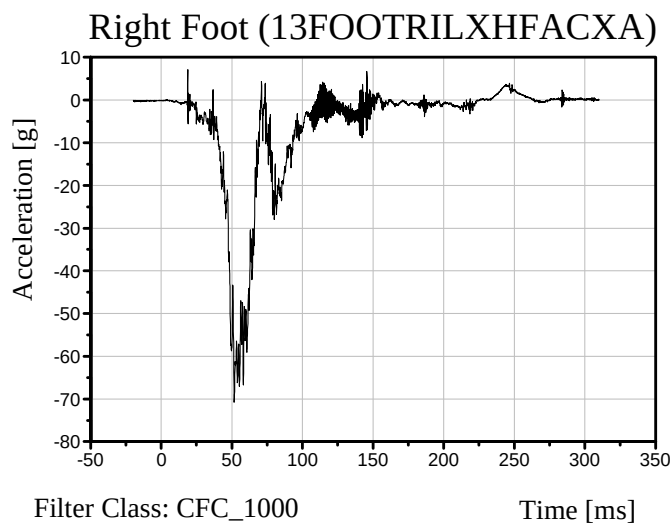
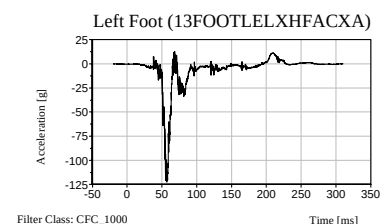
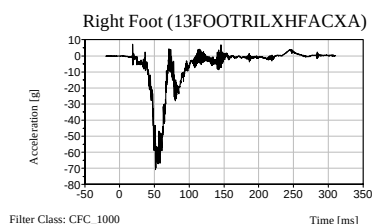
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max [Acceleration] 7.15 g at 18.56 ms
Min [Acceleration] -70.75 g at 51.52 ms

Dummy:HIII 5th Female
Seating Position:
Right Front Passenger

Max [Acceleration] 13.14 g at 68.16 ms
Min [Acceleration] -122.71 g at 57.04 ms

Foot Acceleration Source Code : Min/Max of 13FOOTRILXHFACXA and 13FOOTLELXHFACXA

B-163

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Head X-Axis Acceleration

Date: 10/30/2009

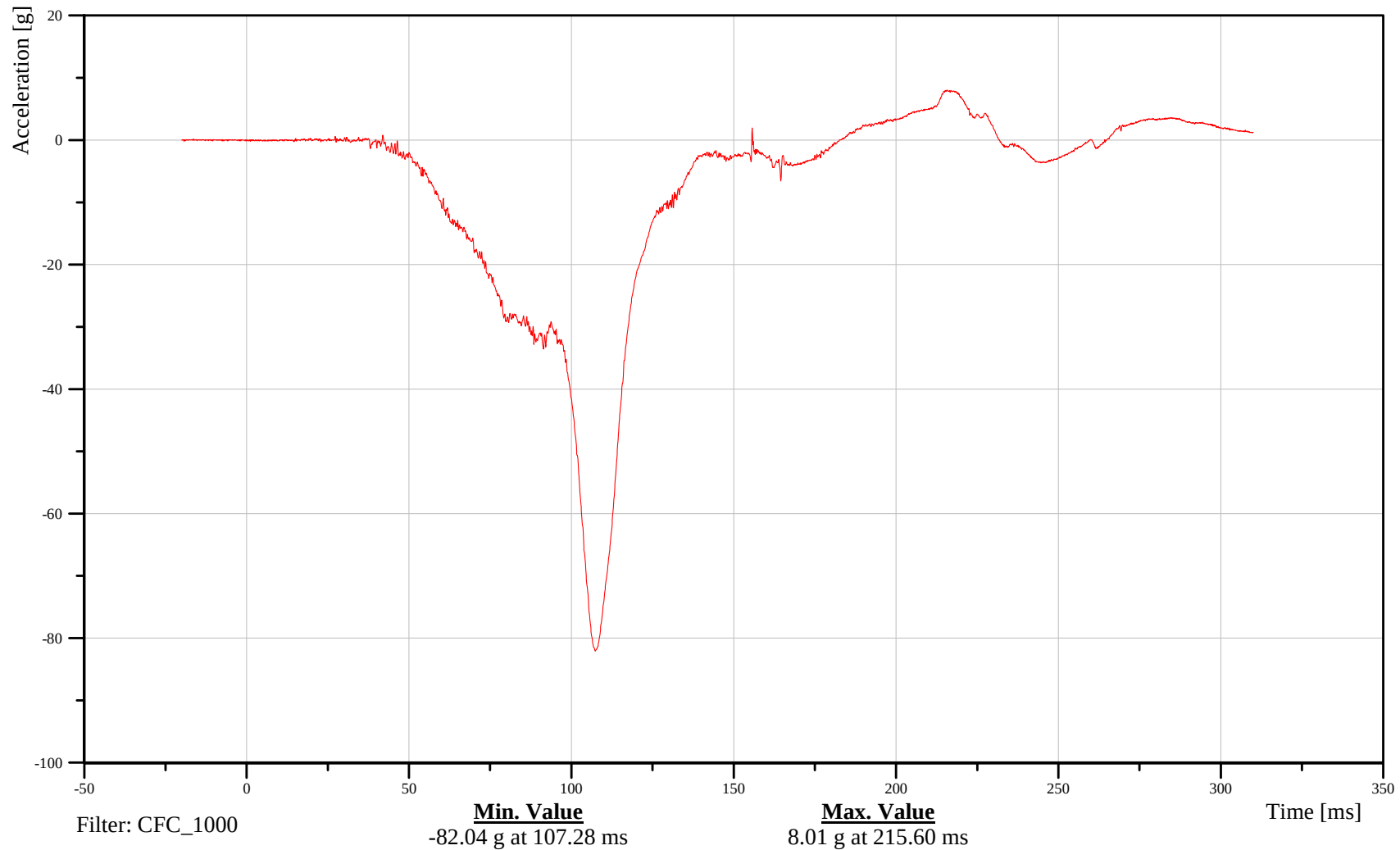
Time: 16:48

Customer: VRTC

14HEADCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-164

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Head Y-Axis Acceleration

Date: 10/30/2009

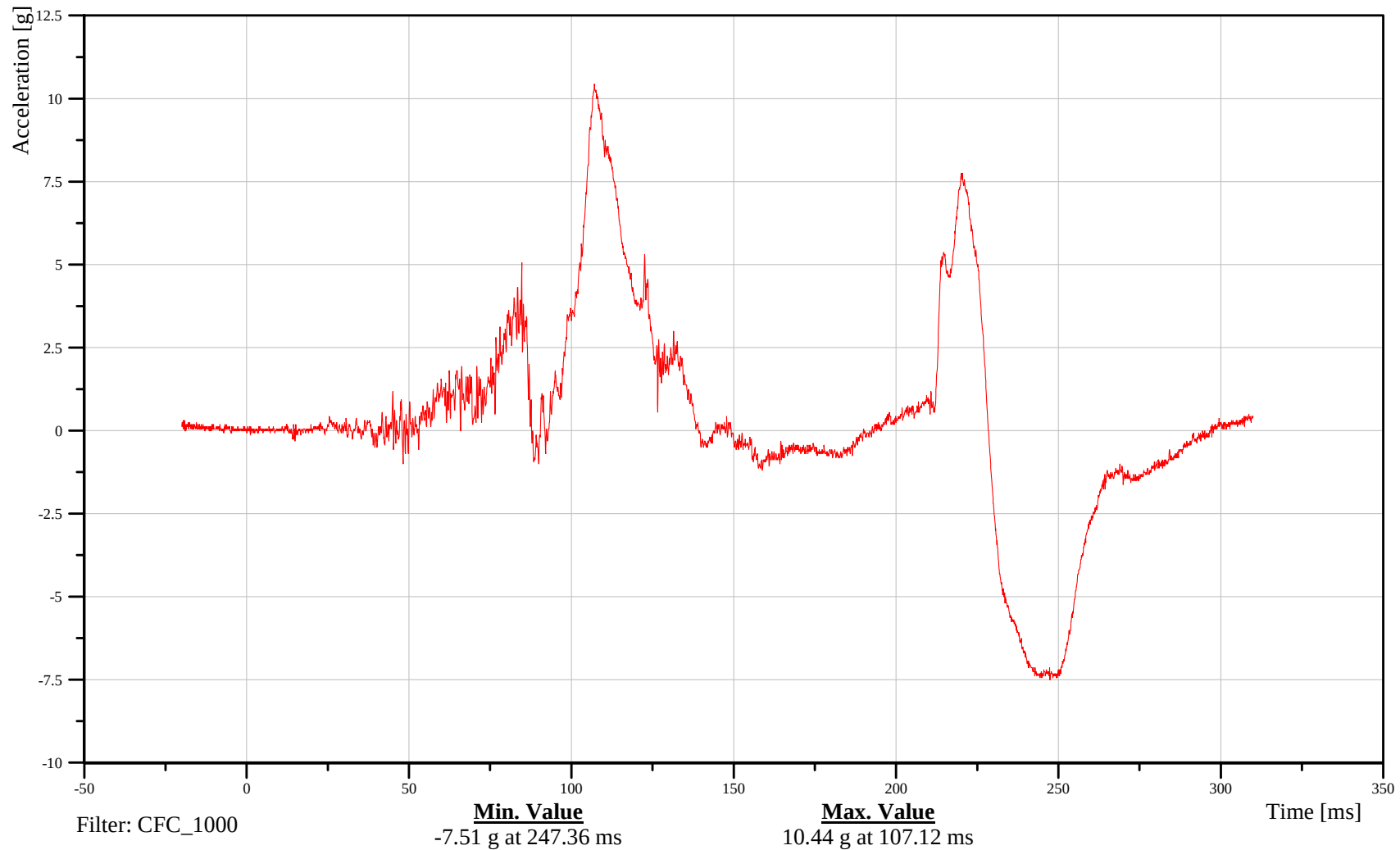
Time: 16:48

Customer: VRTC

14HEADCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-165

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

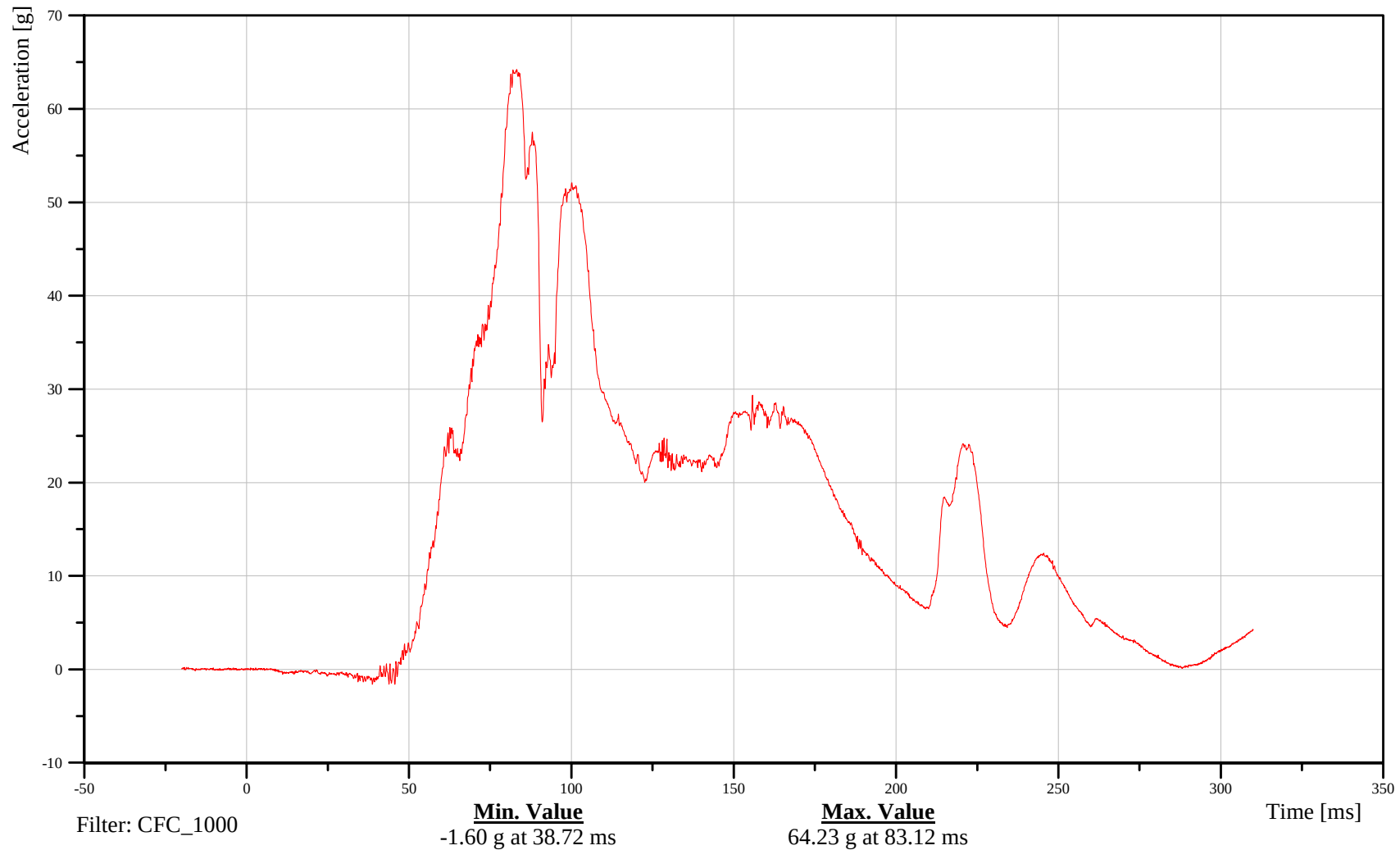
Bullet Vehicle Left Rear Passenger Head Z-Axis Acceleration

Customer: VRTC

14HEADCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-166

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Head Resultant Acceleration

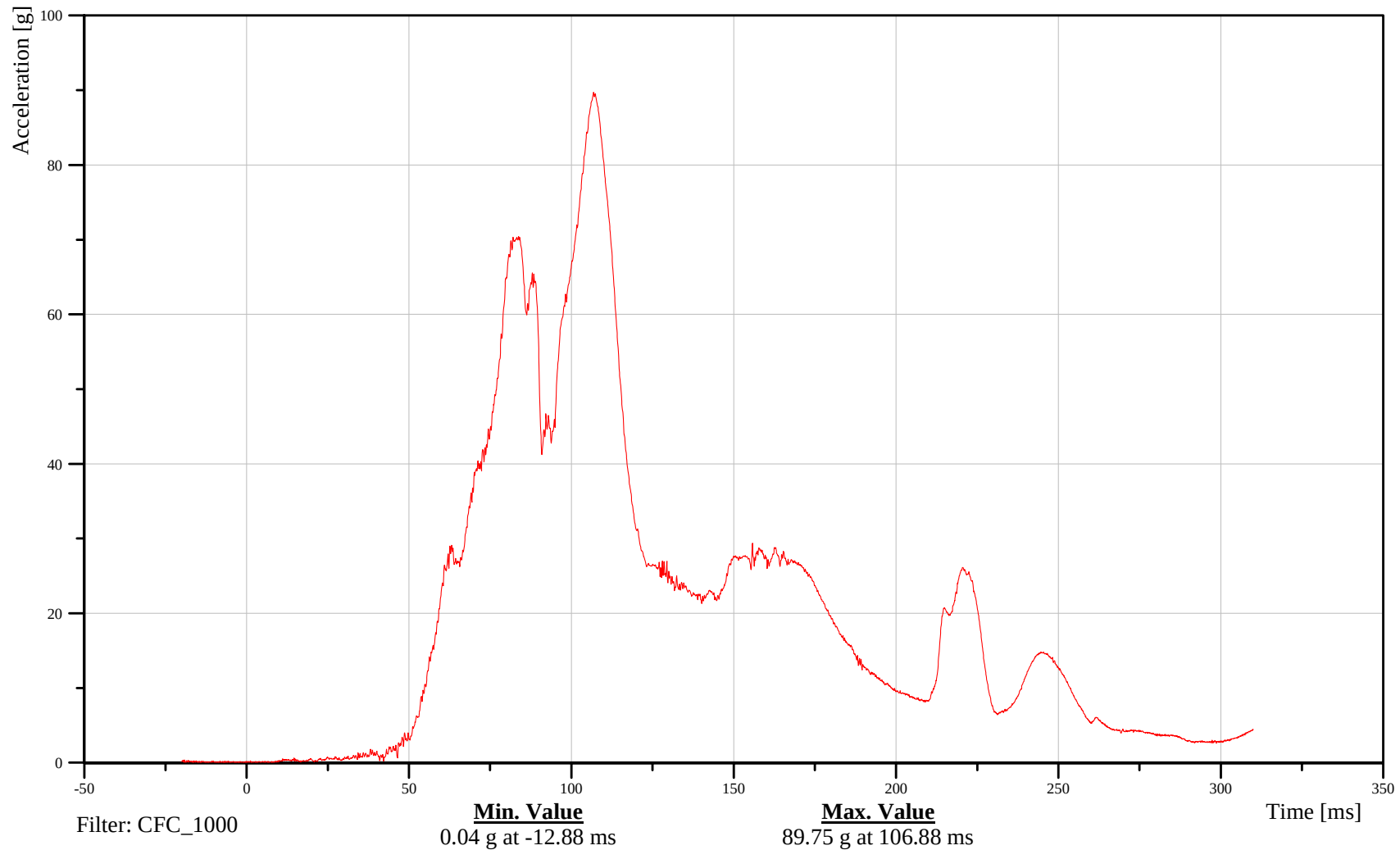
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14HEADCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-167

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Head Redundant X-Axis Acceleration

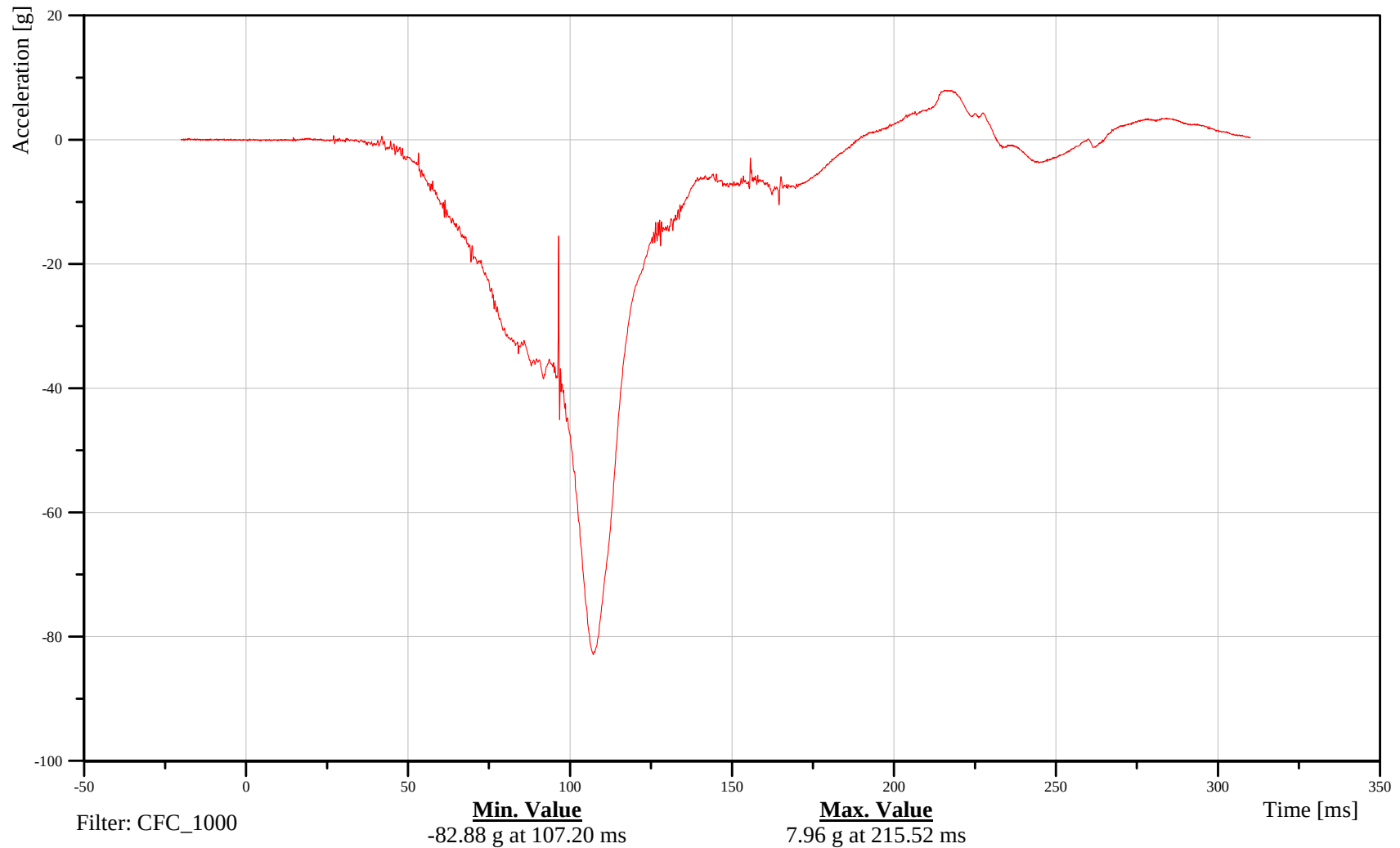
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14HEADCGRDHFACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-168

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Head Redundant Y-Axis Acceleration

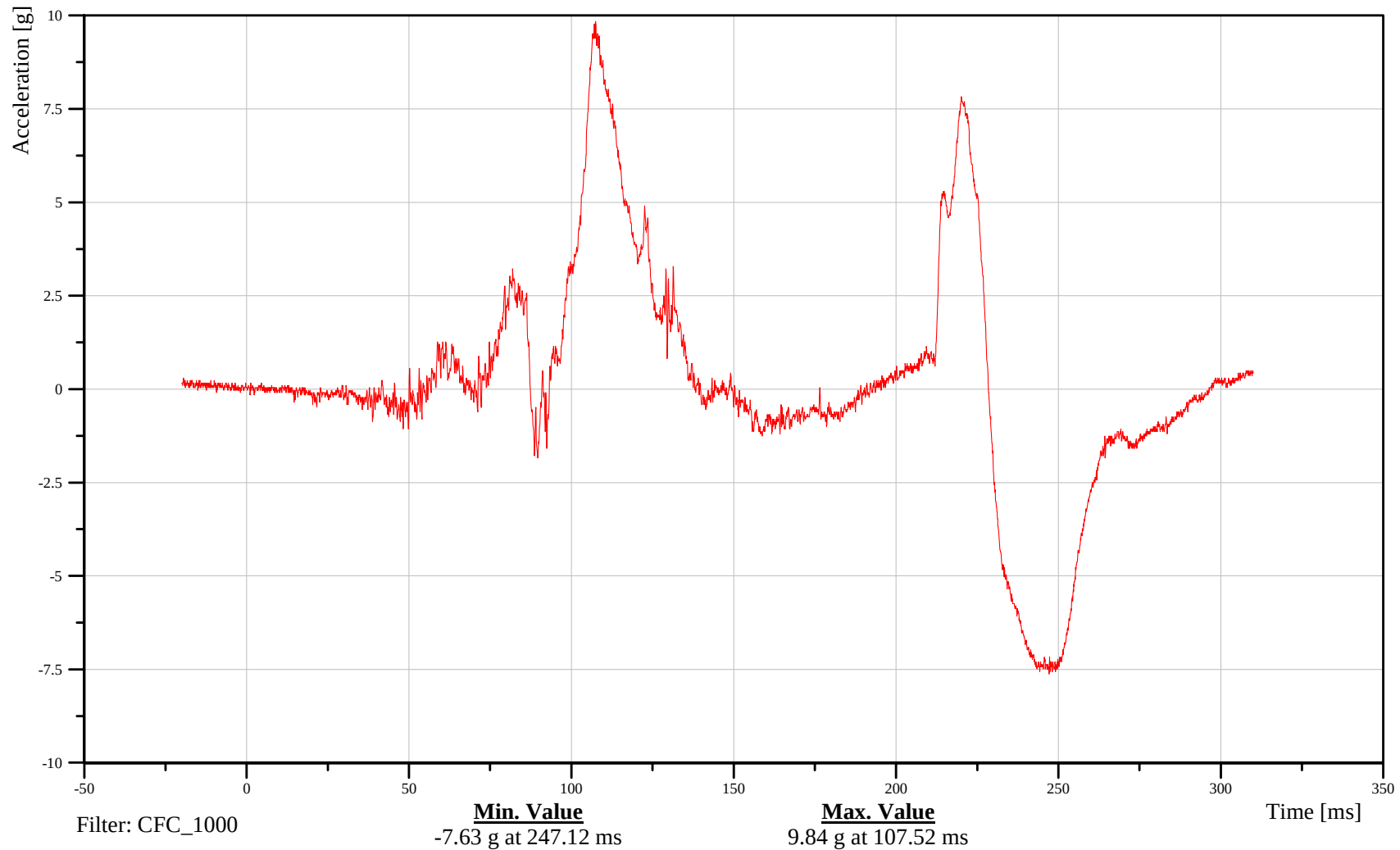
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14HEADCGRDHFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-169

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Head Redundant Z-Axis Acceleration

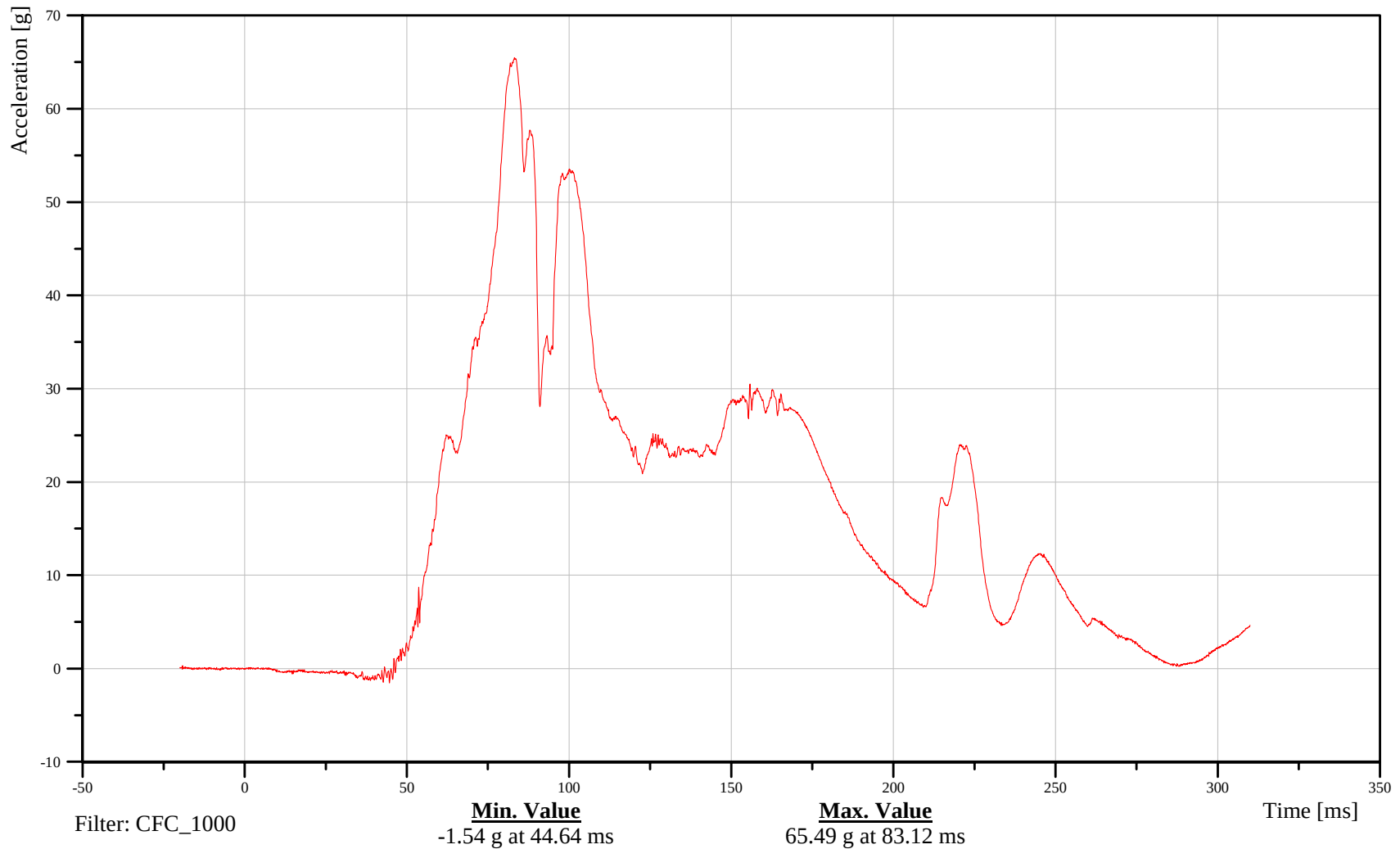
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14HEADCGRDHFACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-170

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Head Redundant Resultant Acceleration

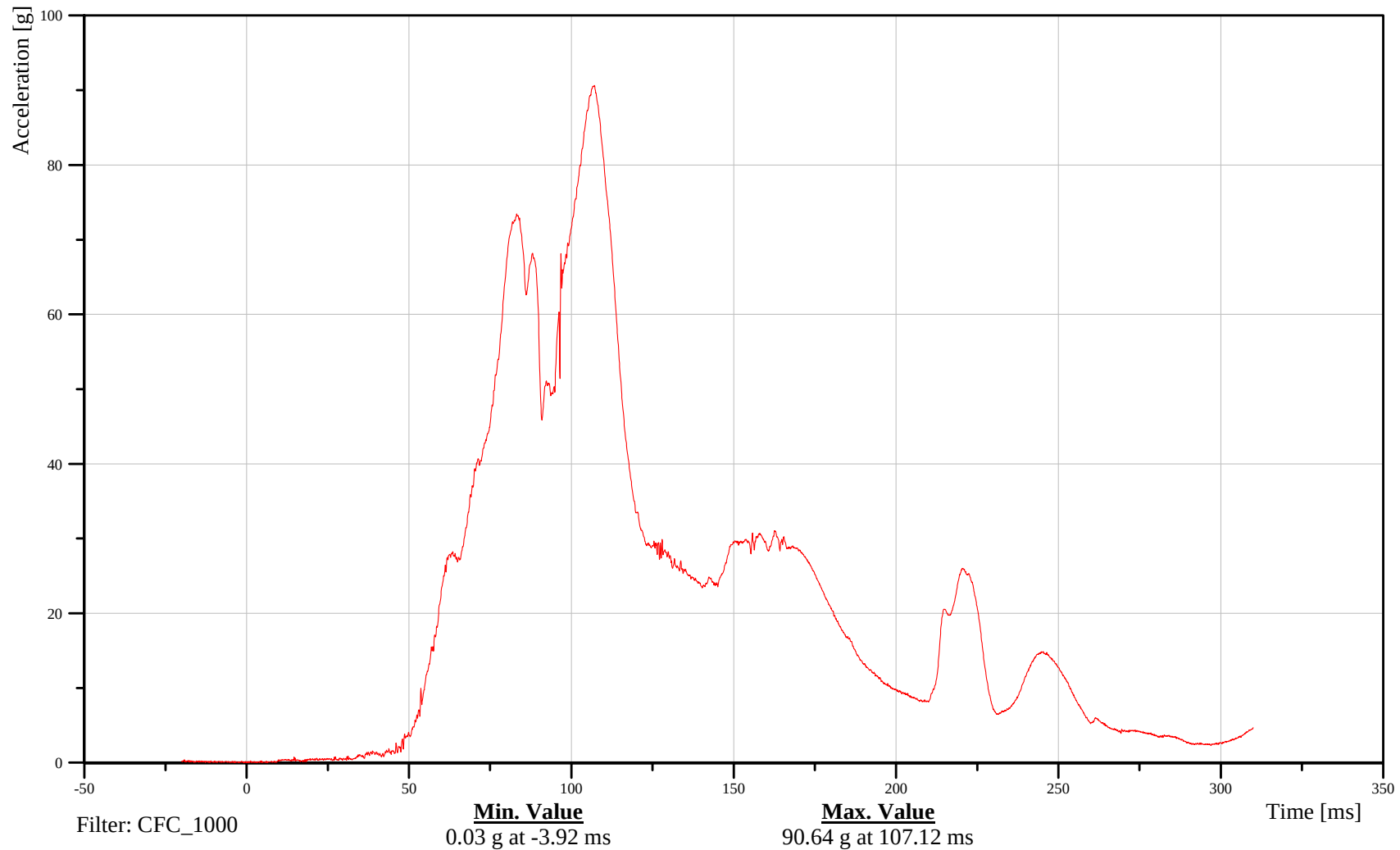
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14HEADCGRDHFACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-171

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Bullet Vehicle Left Rear Passenger Upper Neck X-Axis Force

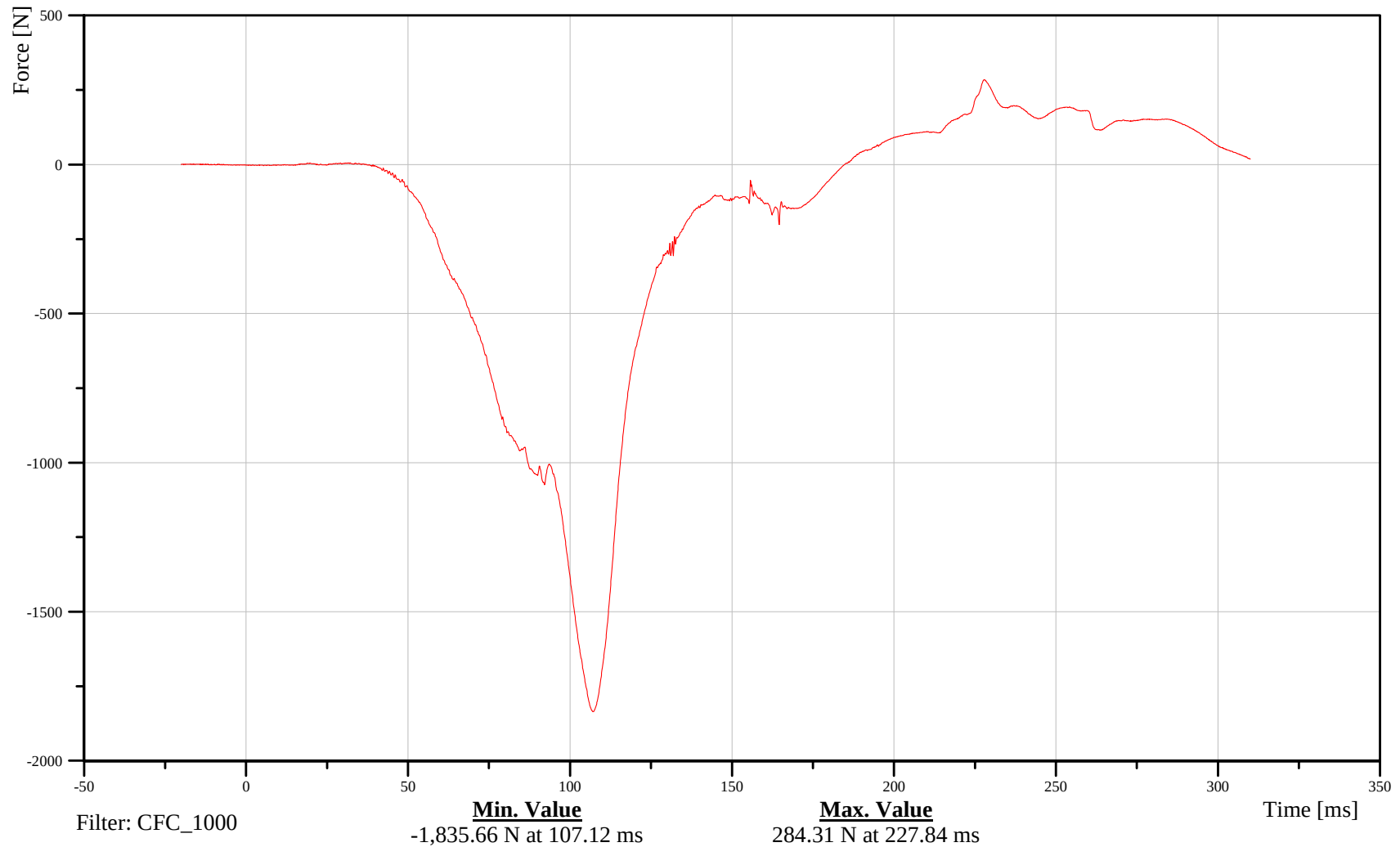
Time: 16:48

Customer: VRTC

14NECKUP00HFFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-172

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Upper Neck Y-Axis Force

Date: 10/30/2009

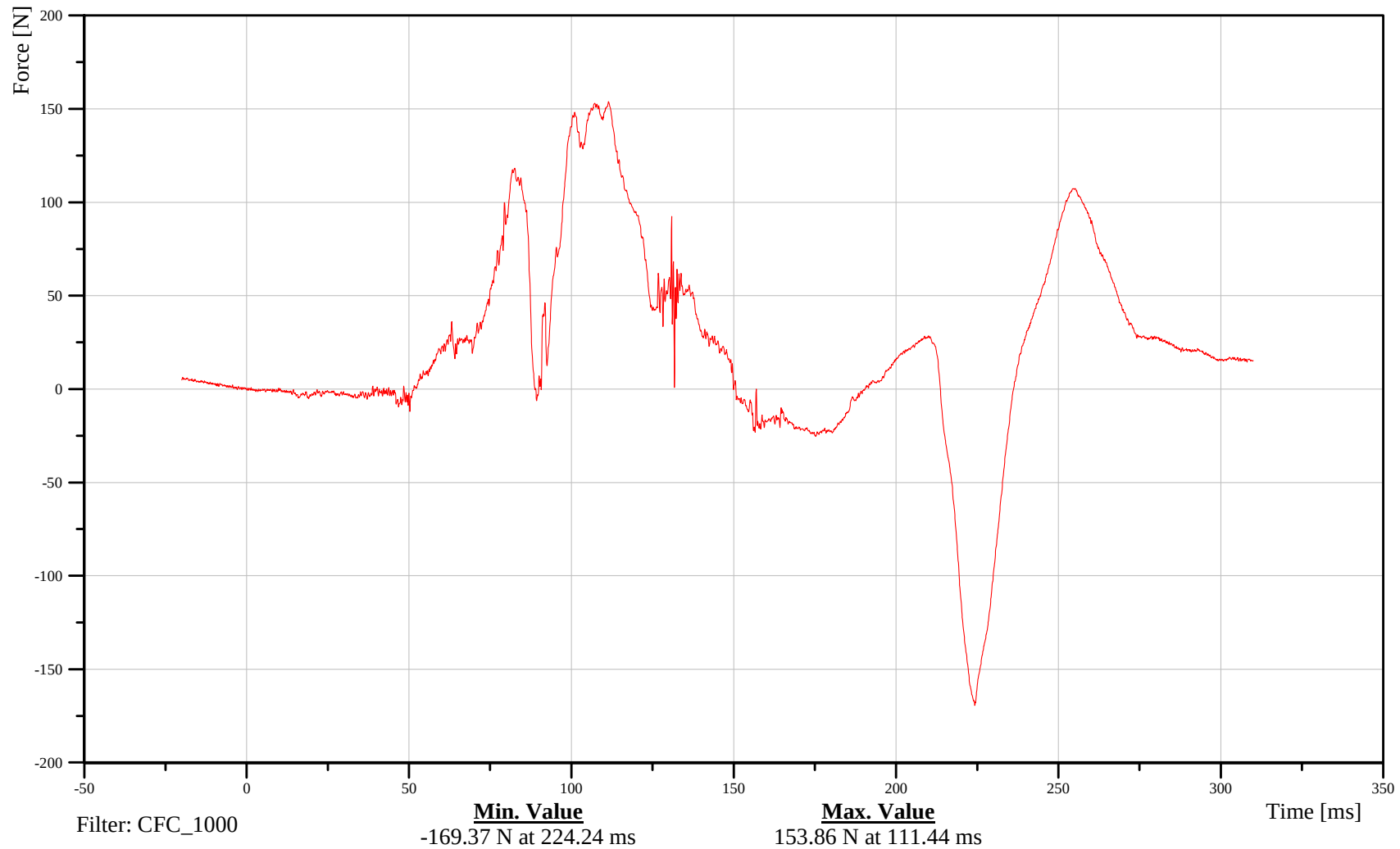
Time: 16:48

Customer: VRTC

14NECKUP00HFFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-173

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Bullet Vehicle Left Rear Passenger Upper Neck Z-Axis Force

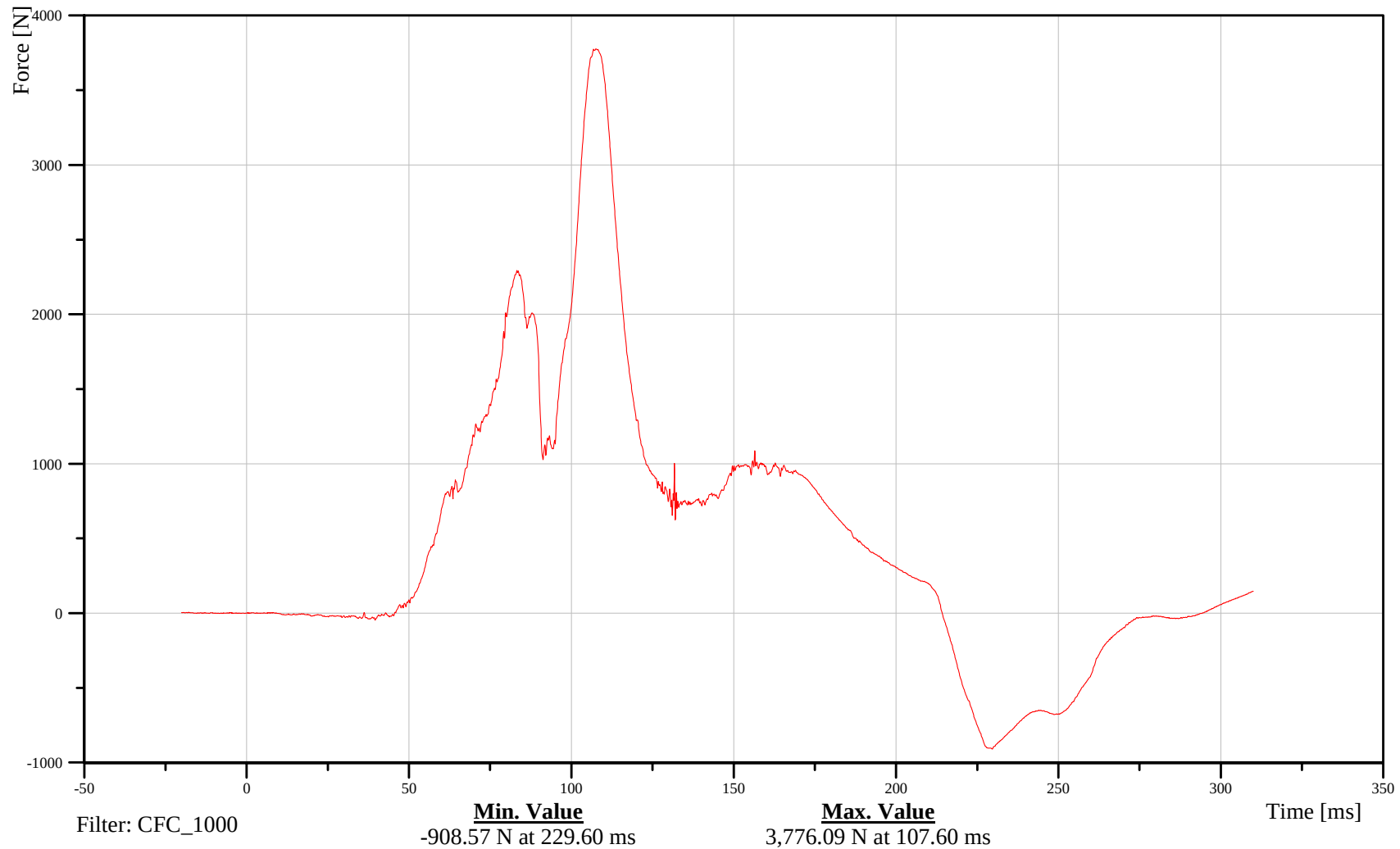
Time: 16:48

Customer: VRTC

14NECKUP00HFFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-174

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Upper Neck Moment About X Axis

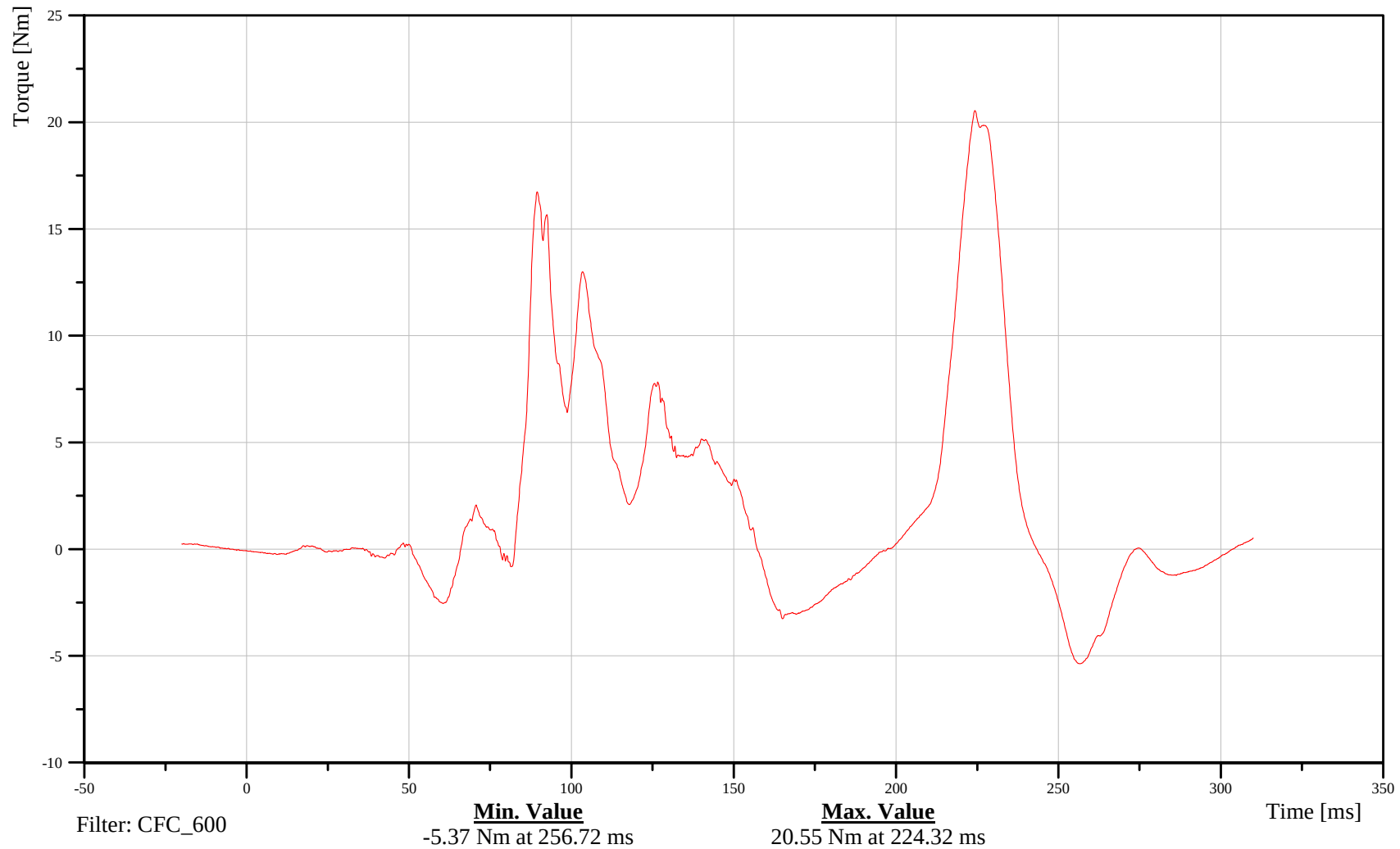
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14NECKUP00HFMOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-175

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Upper Neck Moment About Y Axis

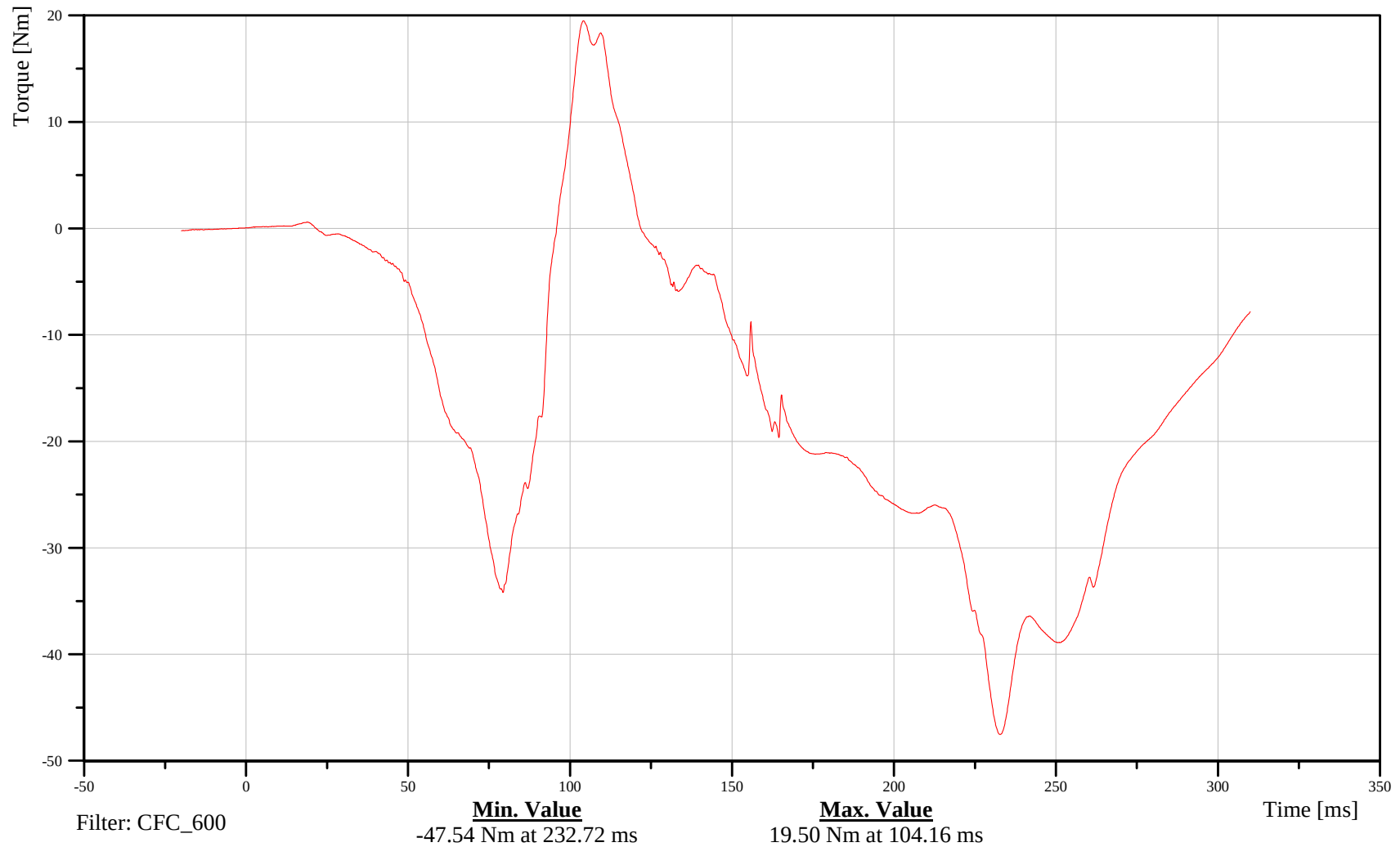
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14NECKUP00HFMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-176

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Upper Neck Moment About Z Axis

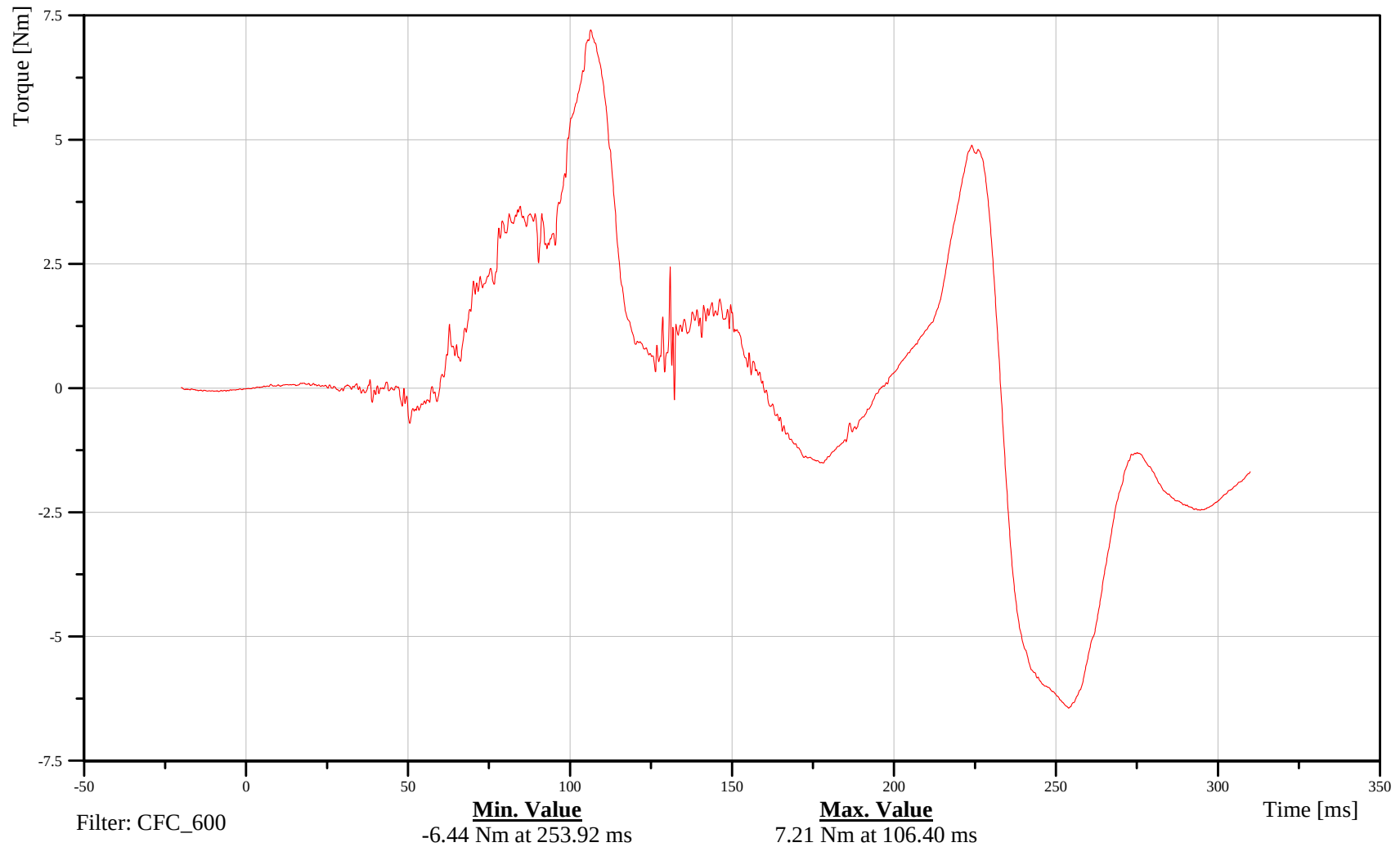
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14NECKUP00HFMOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-177

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

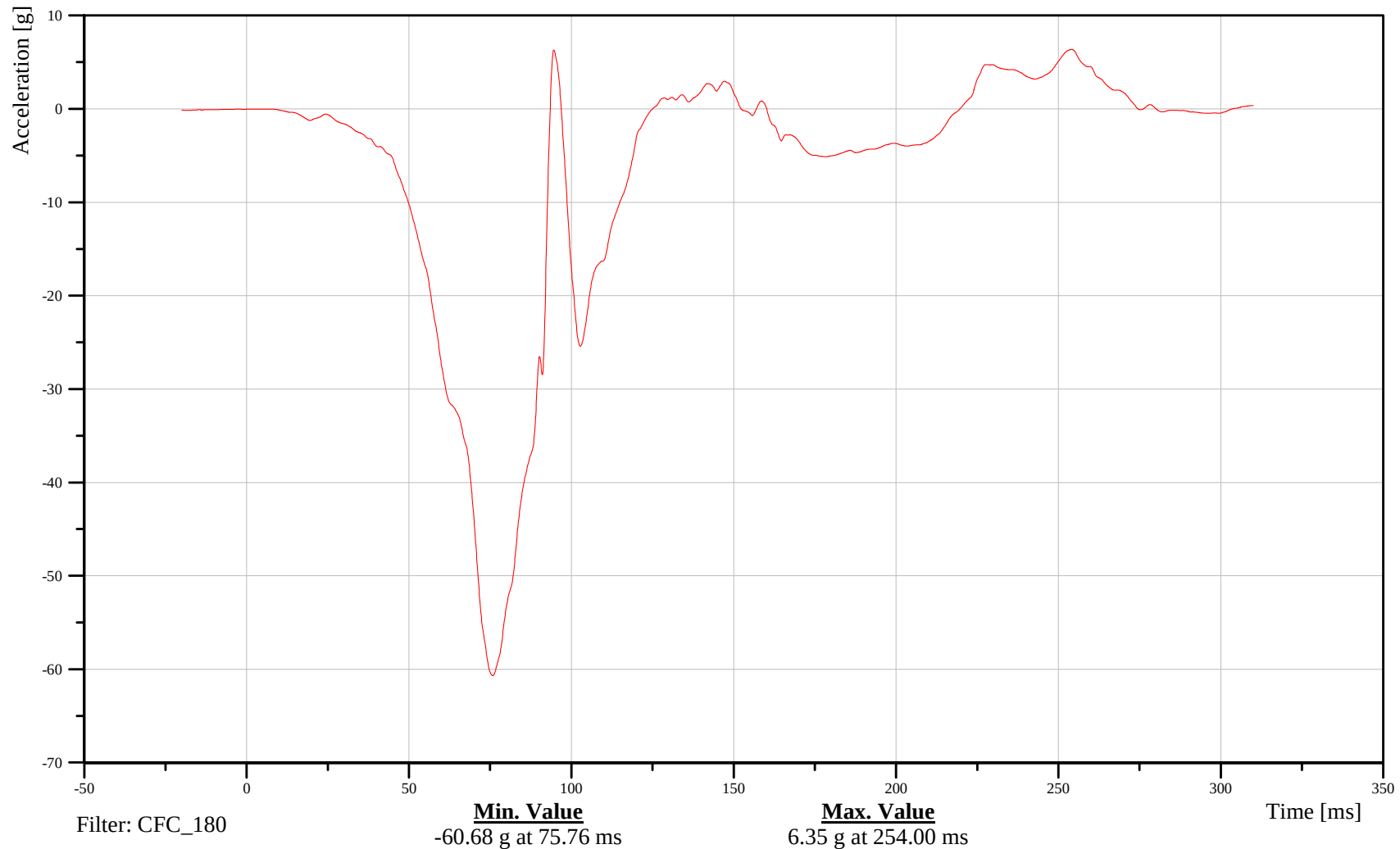
Bullet Vehicle Left Rear Passenger Chest X-Axis Acceleration

Customer: VRTC

14CHSTCG00HFACXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-178

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Chest Y-Axis Acceleration

Date: 10/30/2009

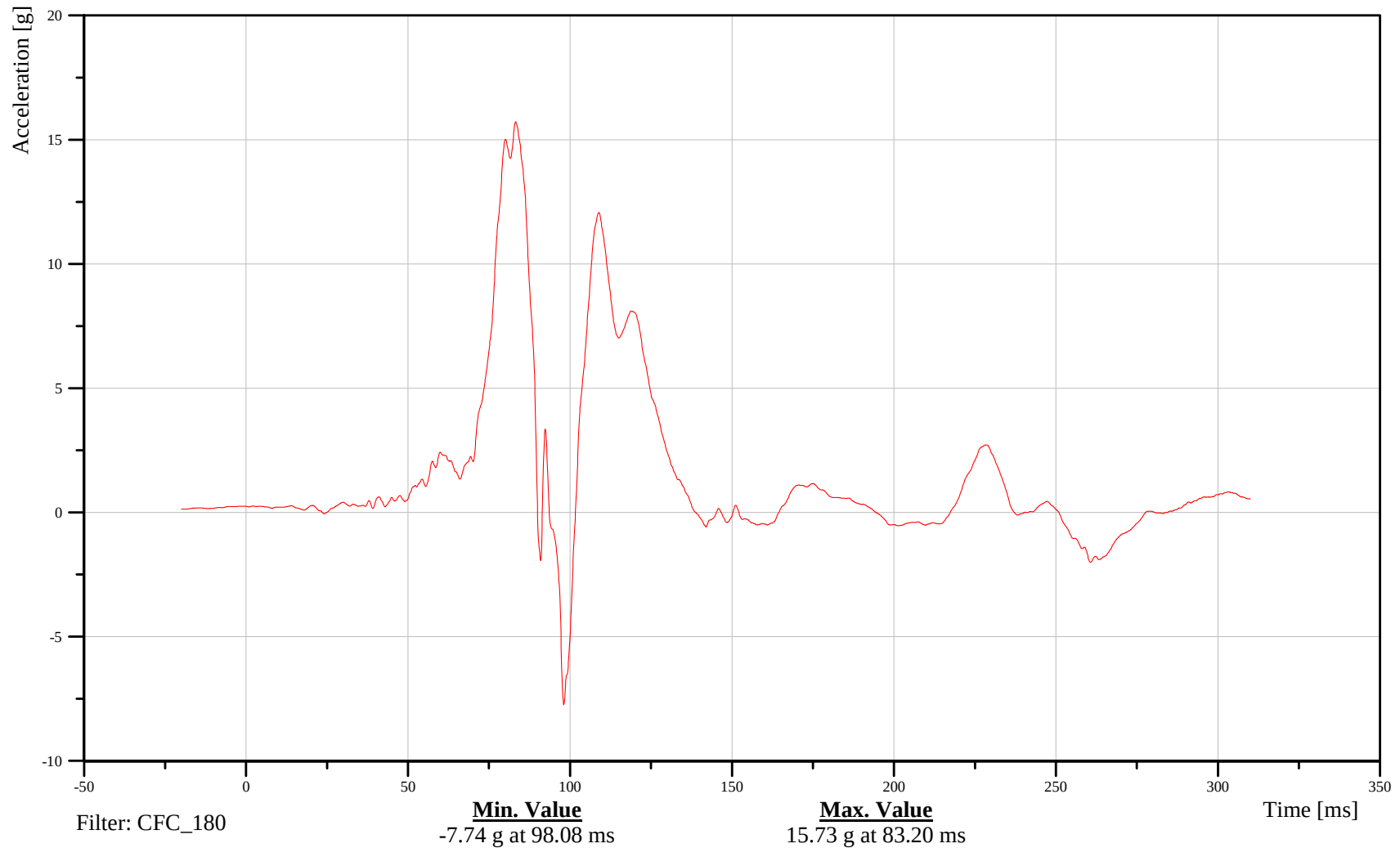
Time: 16:48

Customer: VRTC

14CHSTCG00HFACYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-179

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Chest Z-Axis Acceleration

Date: 10/30/2009

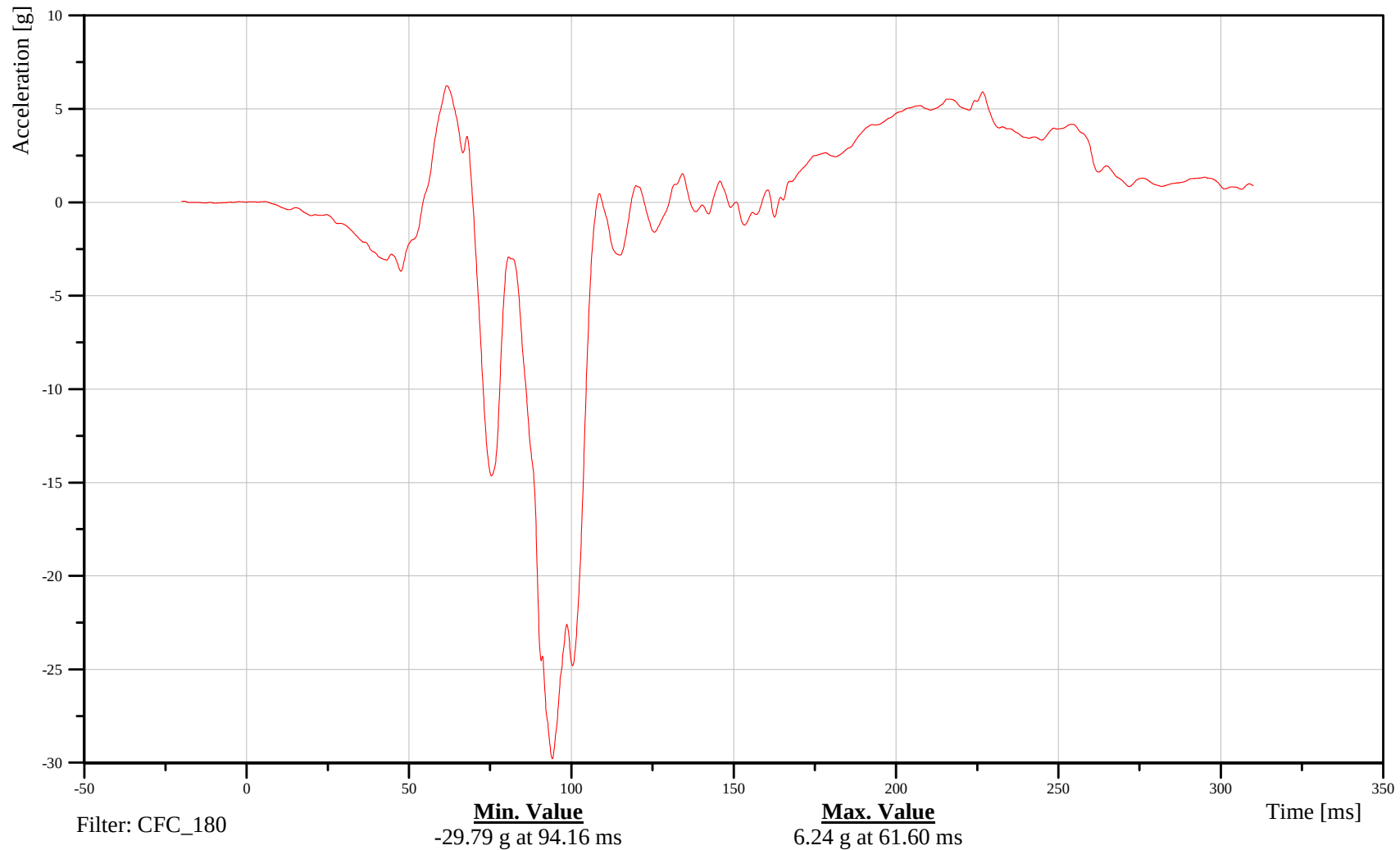
Time: 16:48

Customer: VRTC

14CHSTCG00HFACZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-180

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Chest Resultant Acceleration

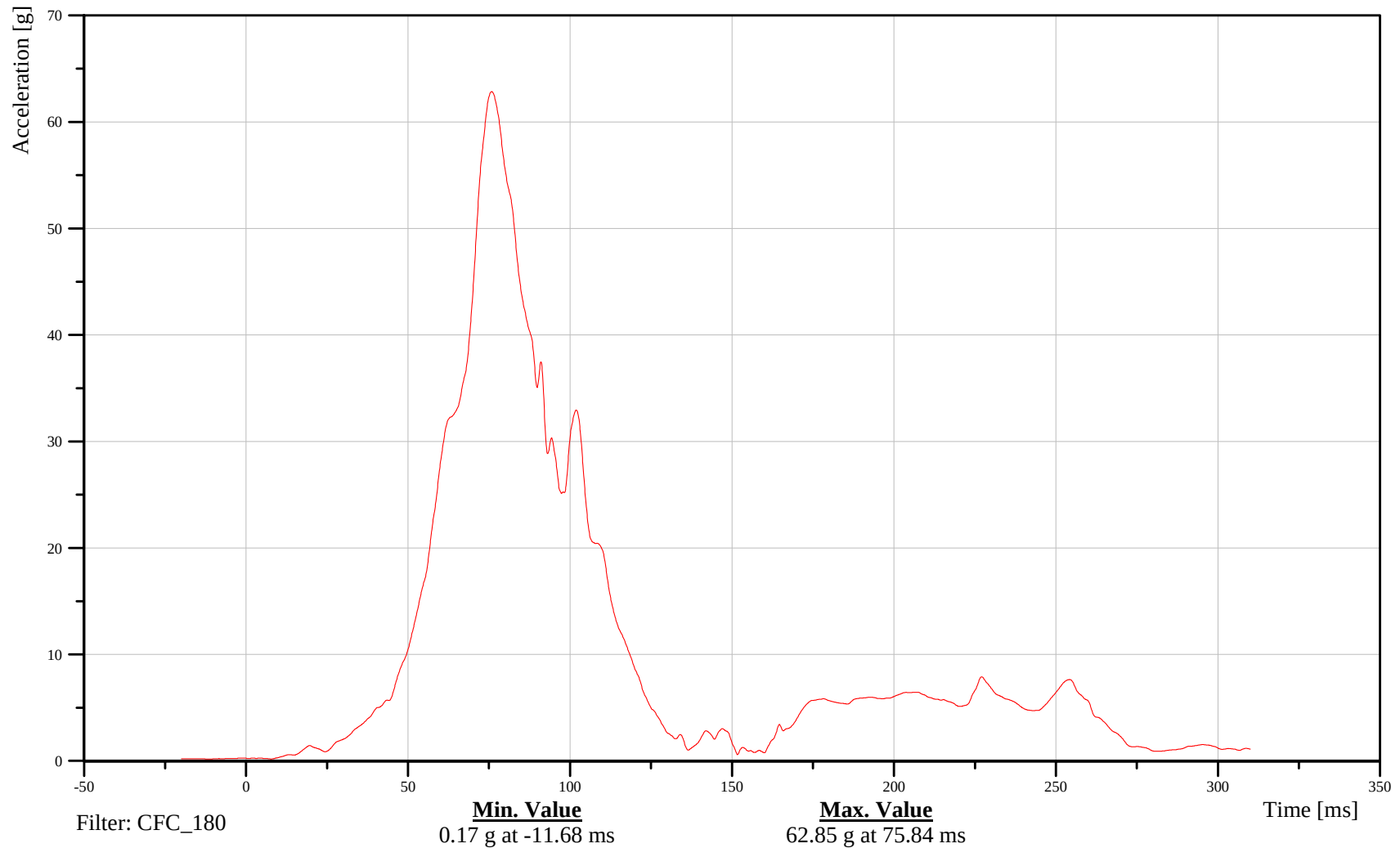
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14CHSTCG00HFACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-181

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Chest Redundant X-Axis Acceleration

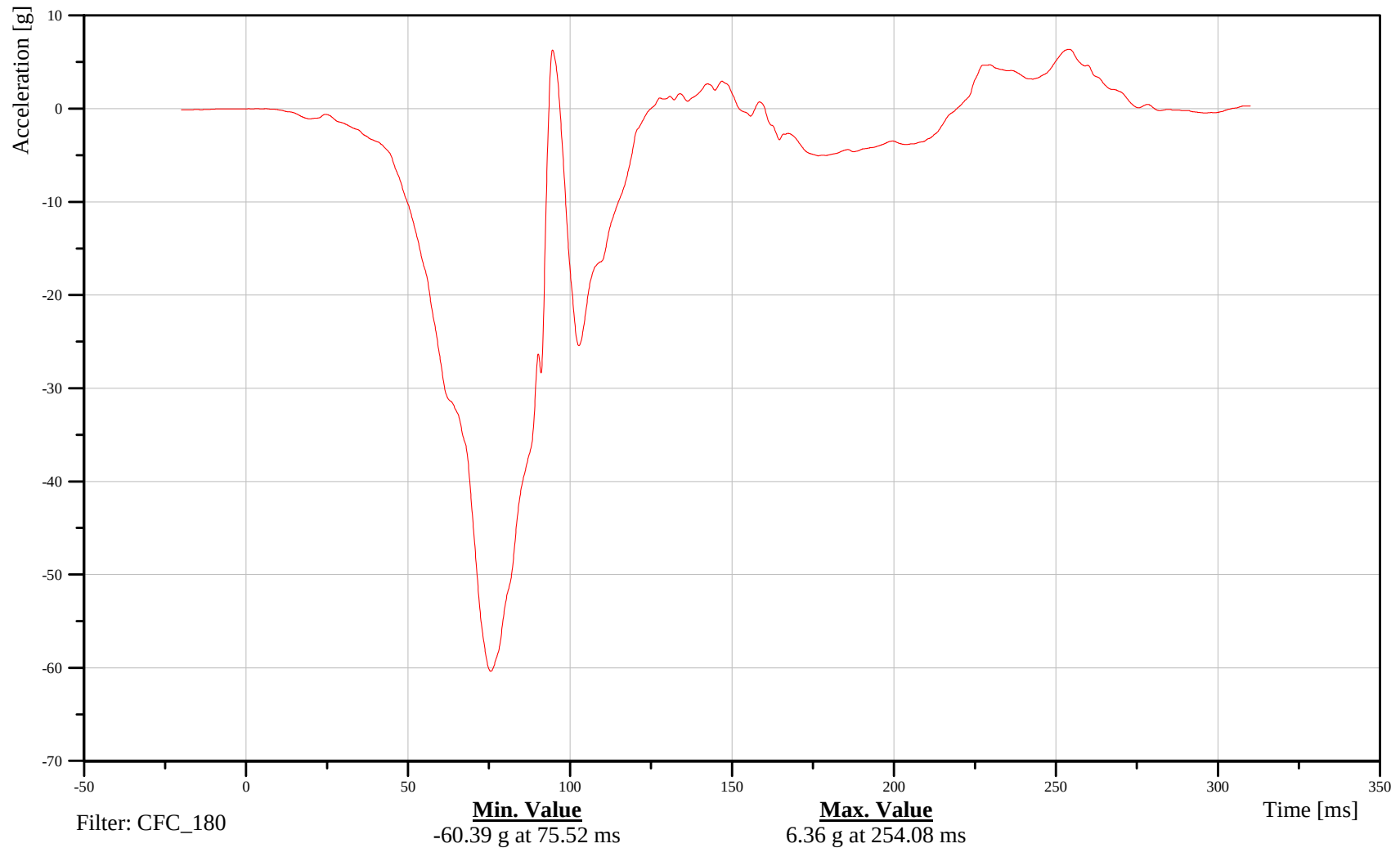
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14CHSTCGRDHFACXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-182

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Chest Redundant Y-Axis Acceleration

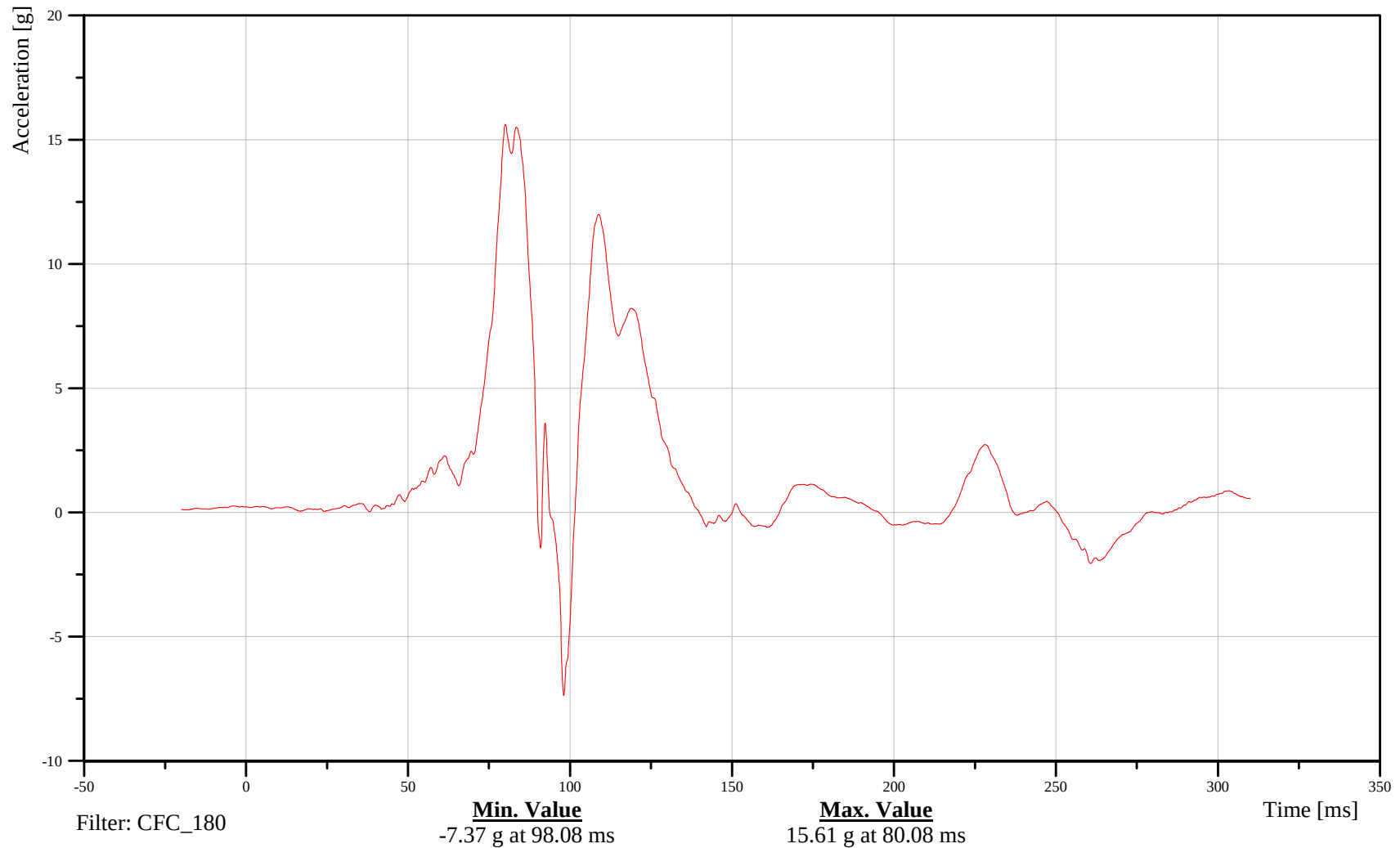
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14CHSTCGRDHFACYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-183

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Chest Redundant Z-Axis Acceleration

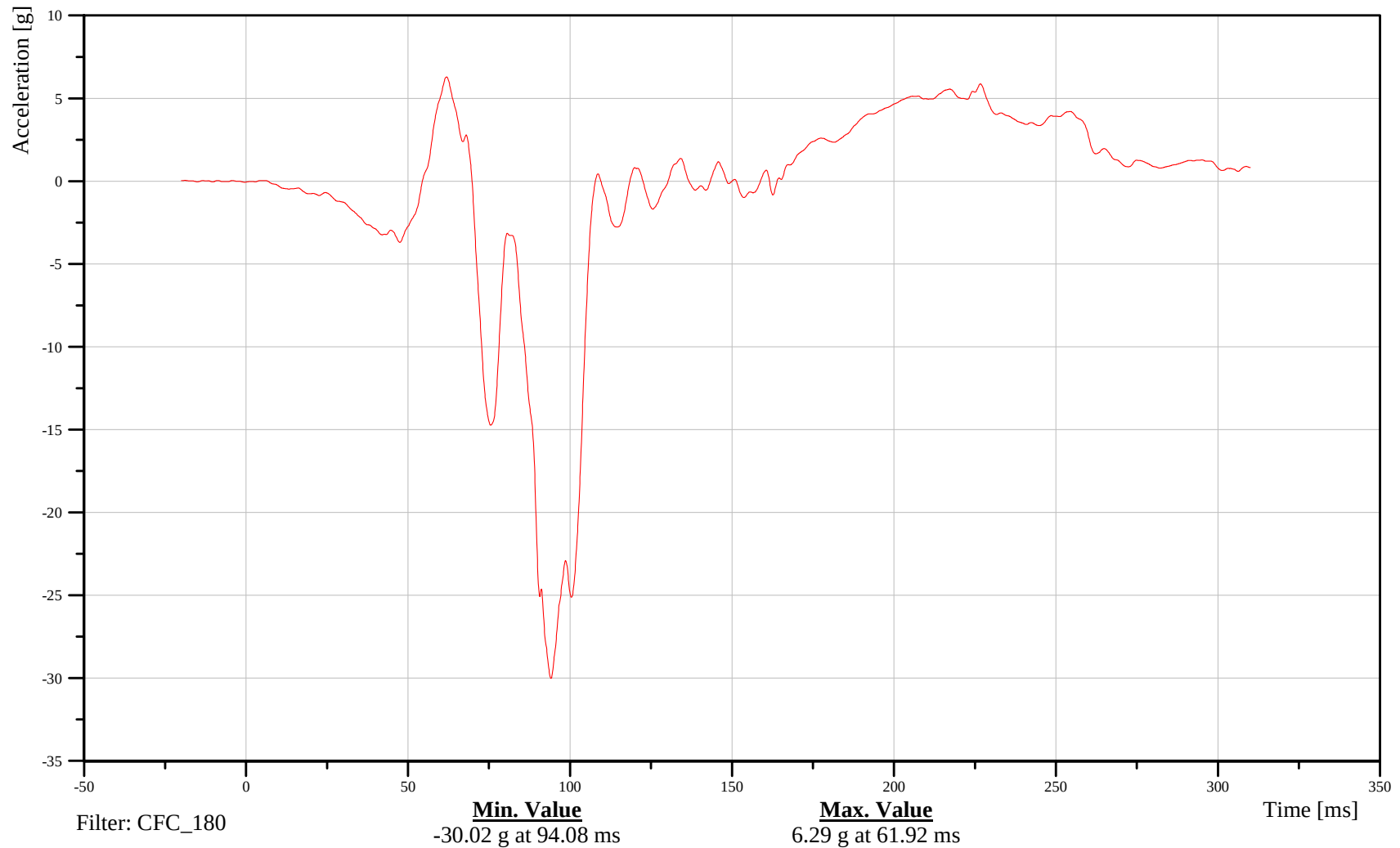
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14CHSTCGRDHFACZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-184

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Chest Redundant Resultant Acceleration

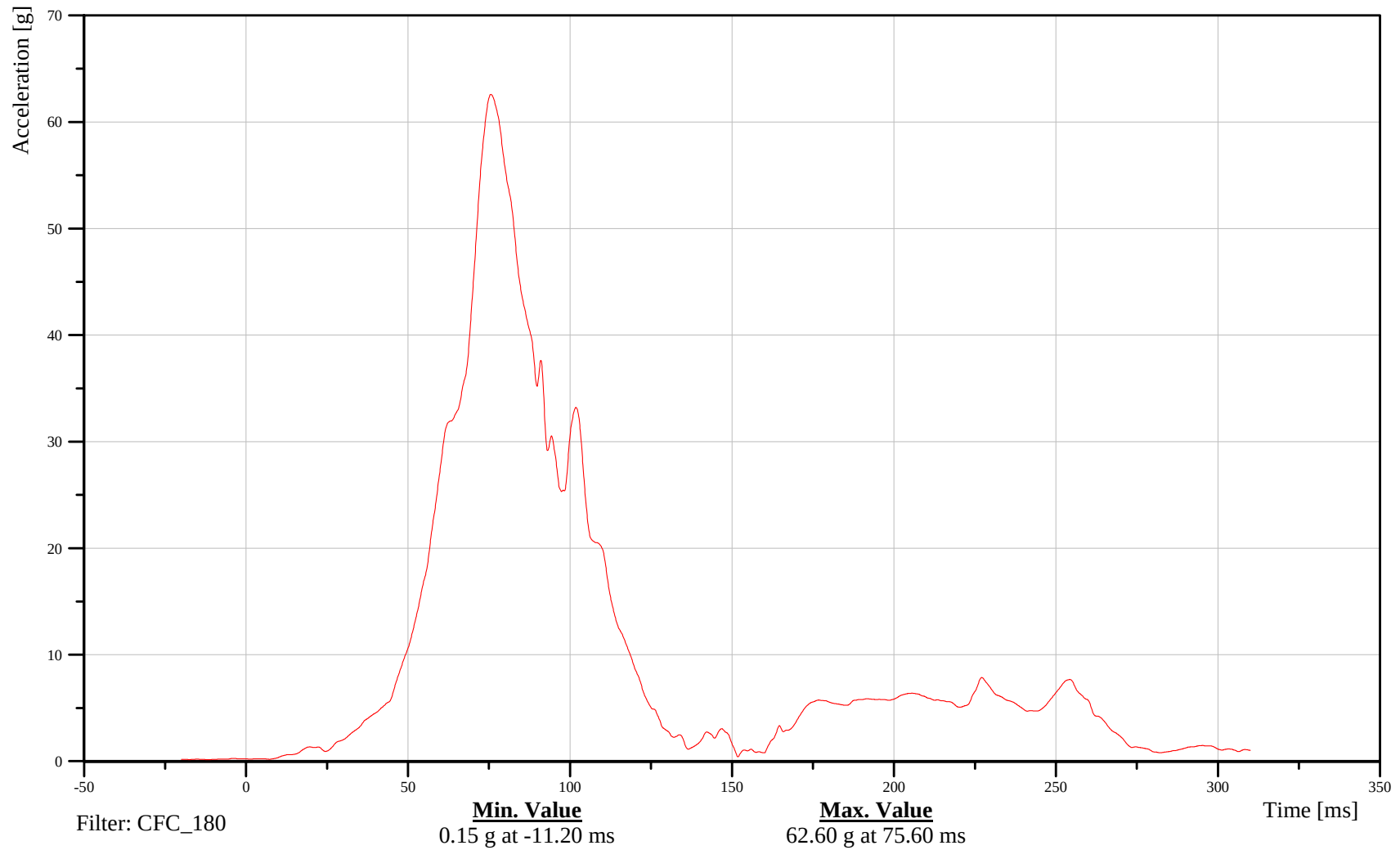
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14CHSTCGRDHFACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-185

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Chest X-Axis Displacement

Date: 10/30/2009

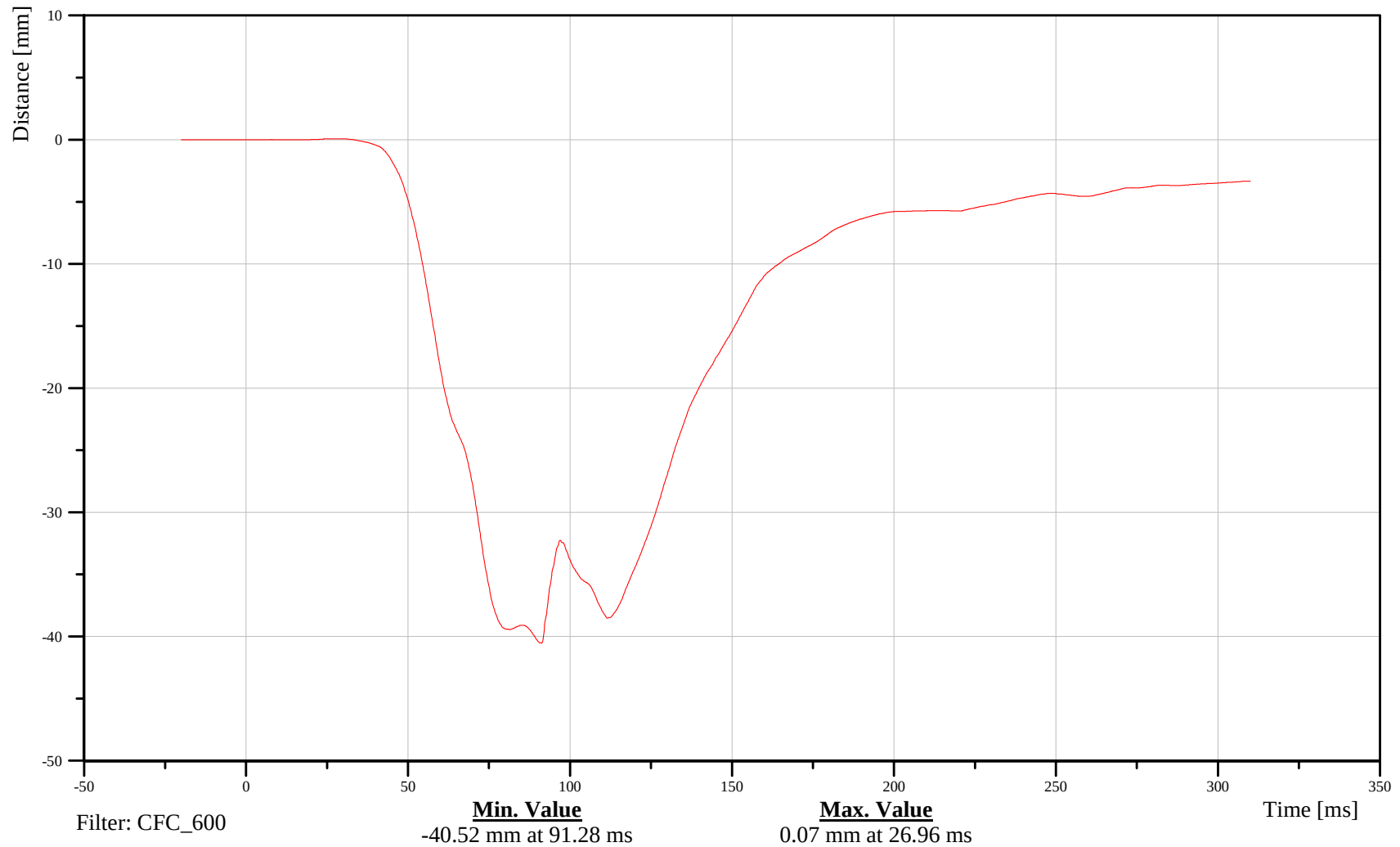
Time: 16:48

Customer: VRTC

14CHST0000HFDSXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-186

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Pelvis X-Axis Acceleration

Date: 10/30/2009

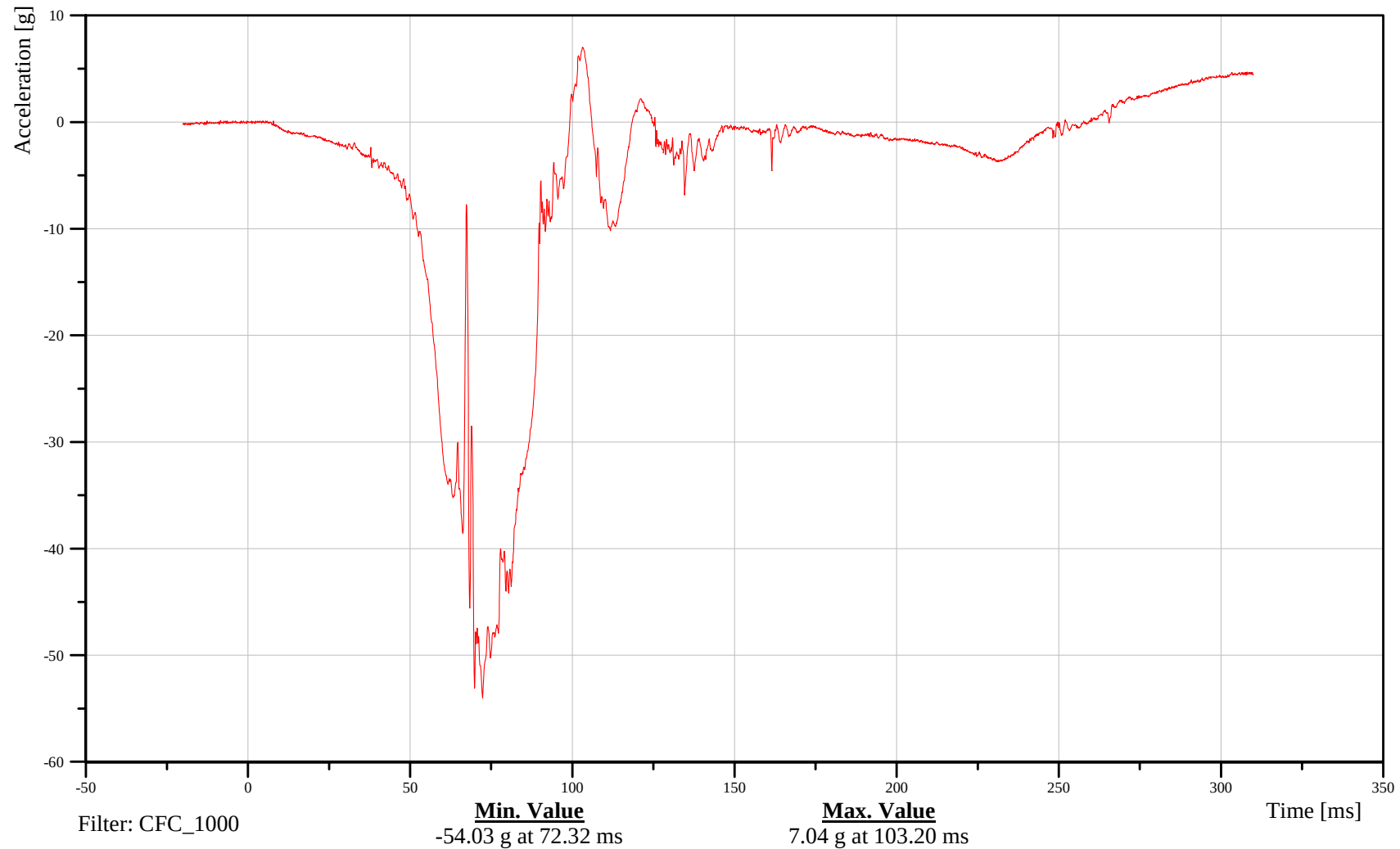
Time: 16:48

Customer: VRTC

14PELVCG00HFACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-187

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Pelvis Y-Axis Acceleration

Date: 10/30/2009

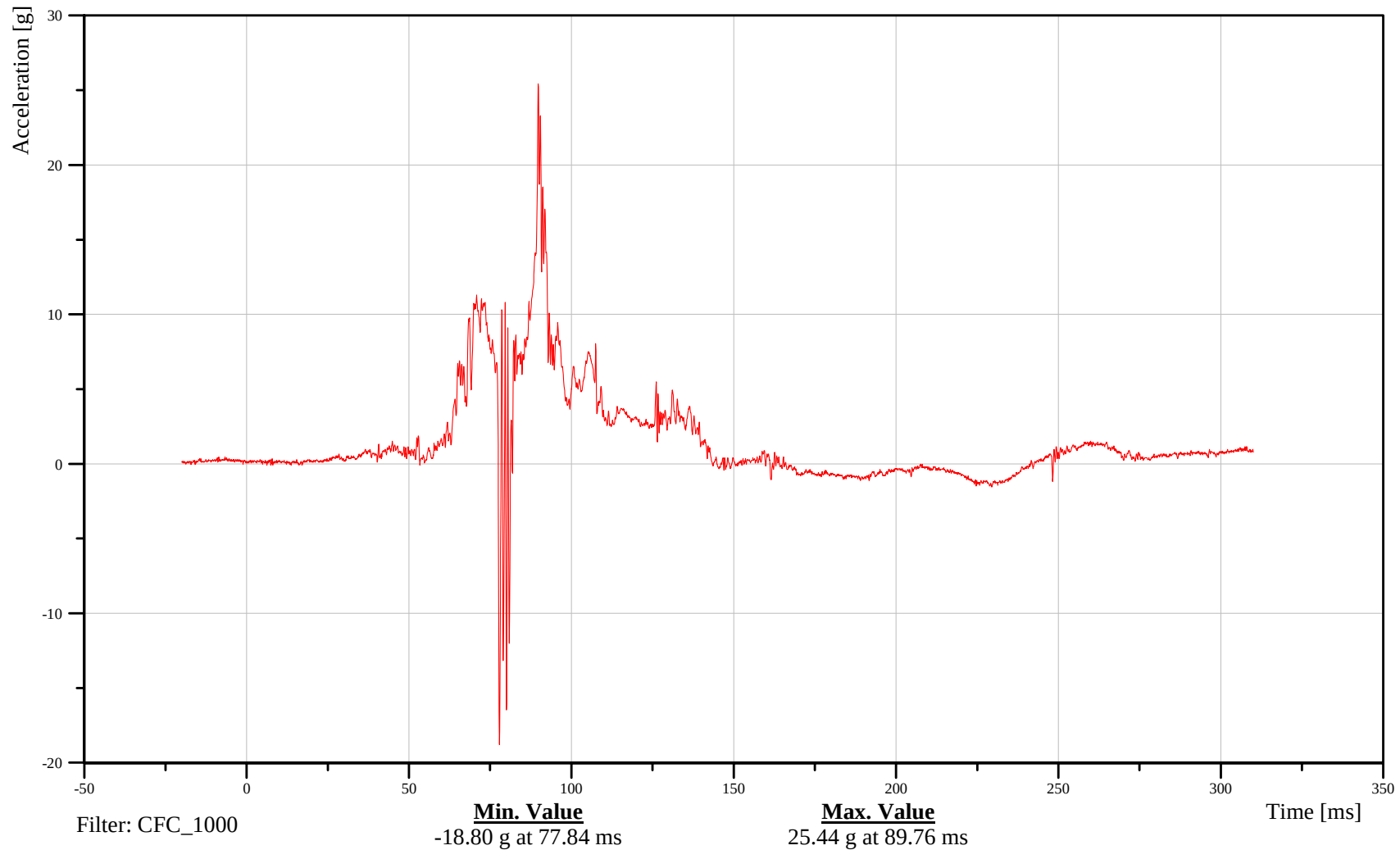
Time: 16:48

Customer: VRTC

14PELVCG00HFACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-188

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Pelvis Z-Axis Acceleration

Date: 10/30/2009

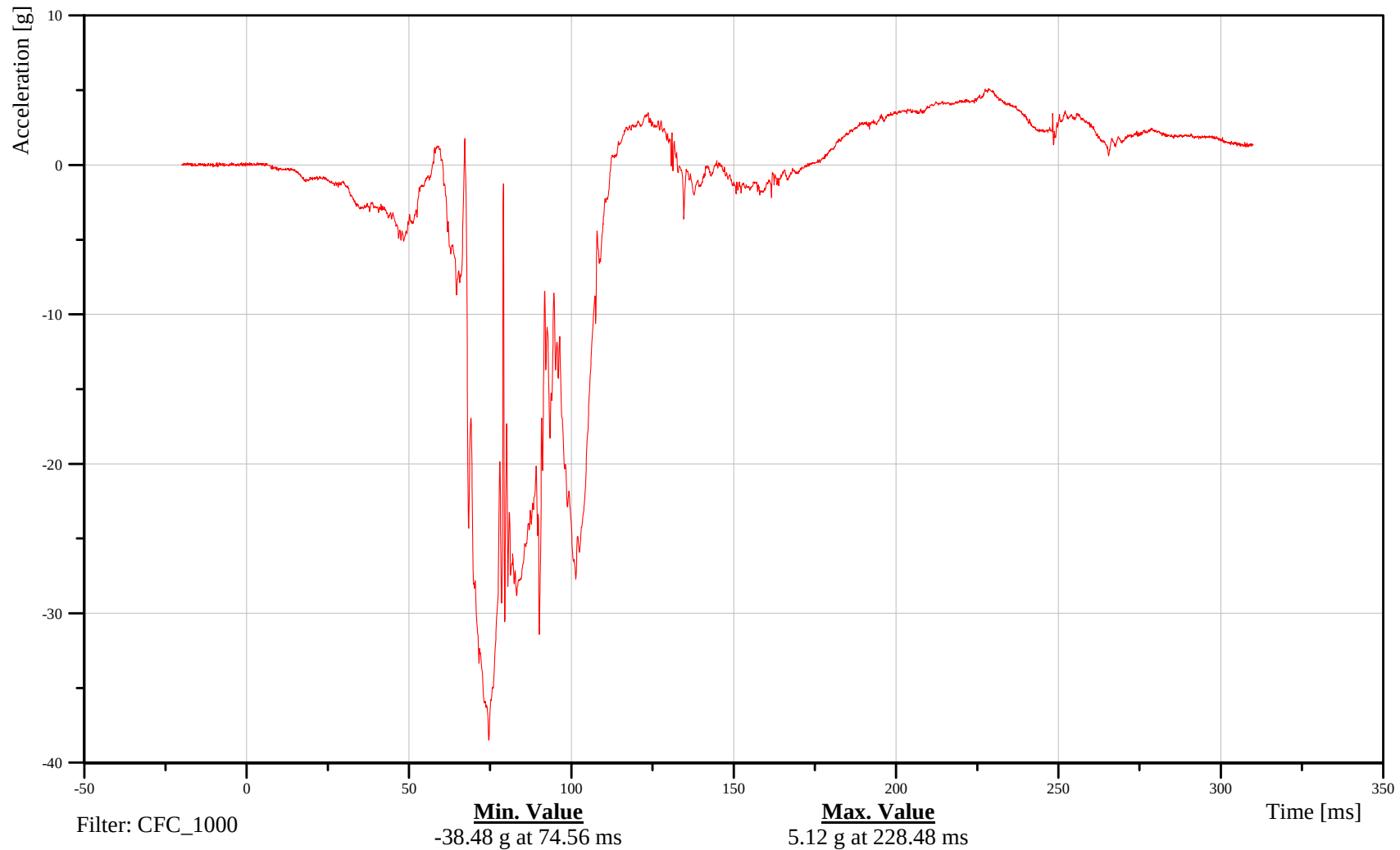
Time: 16:48

Customer: VRTC

14PELVCG00HFACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-189

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Pelvis Resultant Acceleration

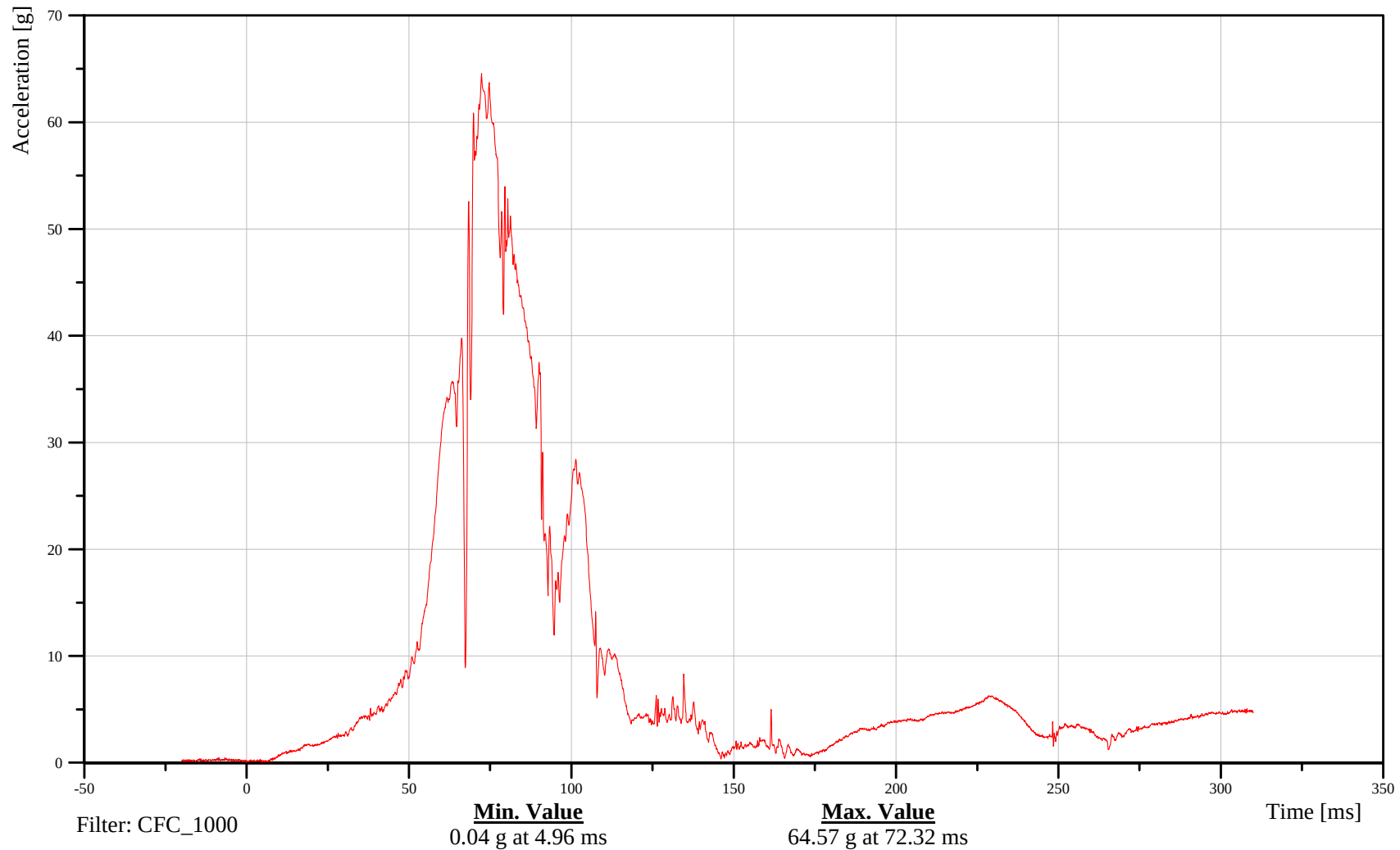
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14PELVCG00HFACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-190

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Left Femur Z-Axis Force

Date: 10/30/2009

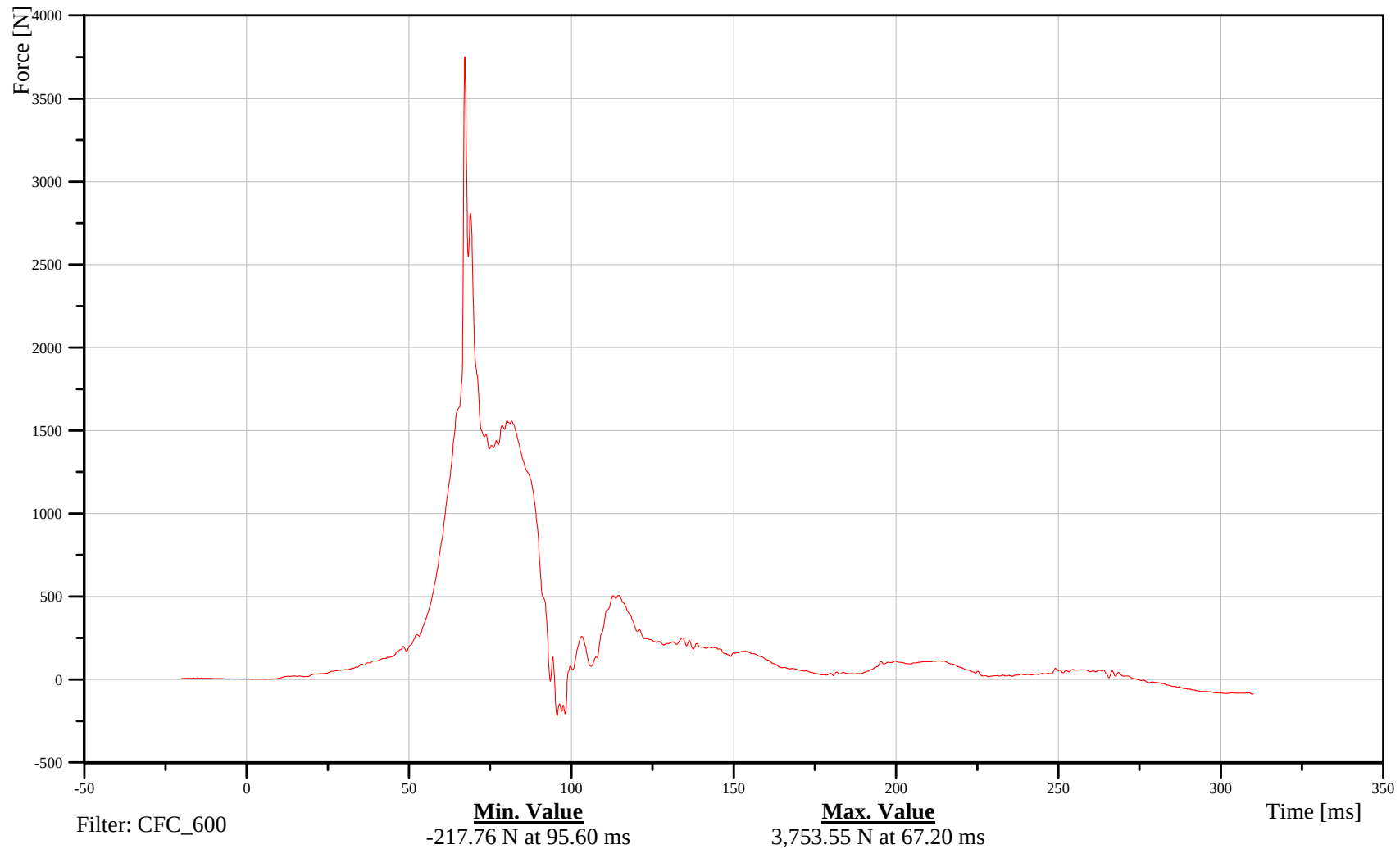
Time: 16:48

Customer: VRTC

14FEMRLL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-191

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Rear Passenger Right Femur Z-Axis Force

Date: 10/30/2009

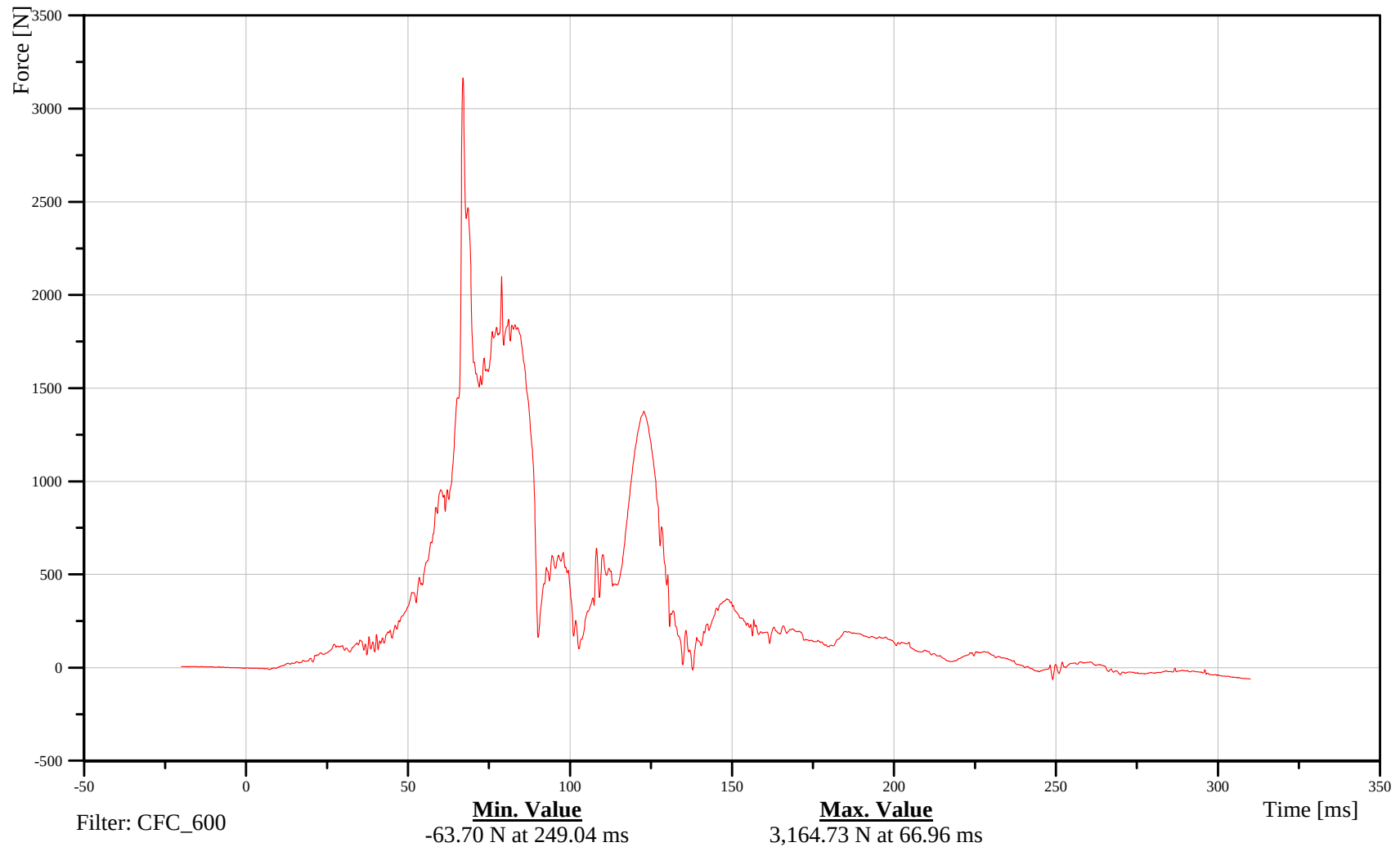
Time: 16:48

Customer: VRTC

14FEMRRL00HFFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-192

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Left Knee X-Axis Displacement

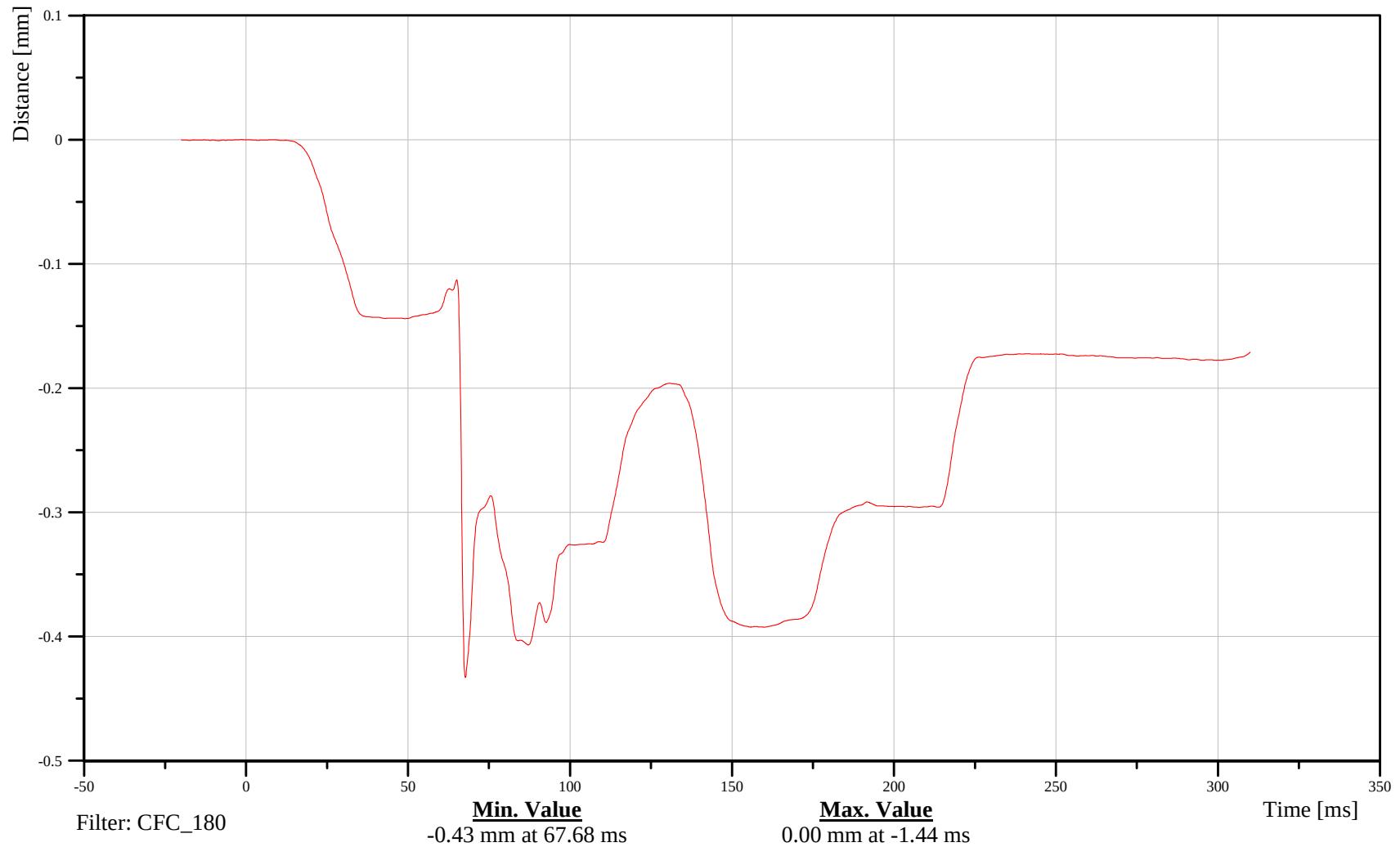
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14KNSLLE00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-193

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Left Rear Passenger Right Knee X-Axis Displacement

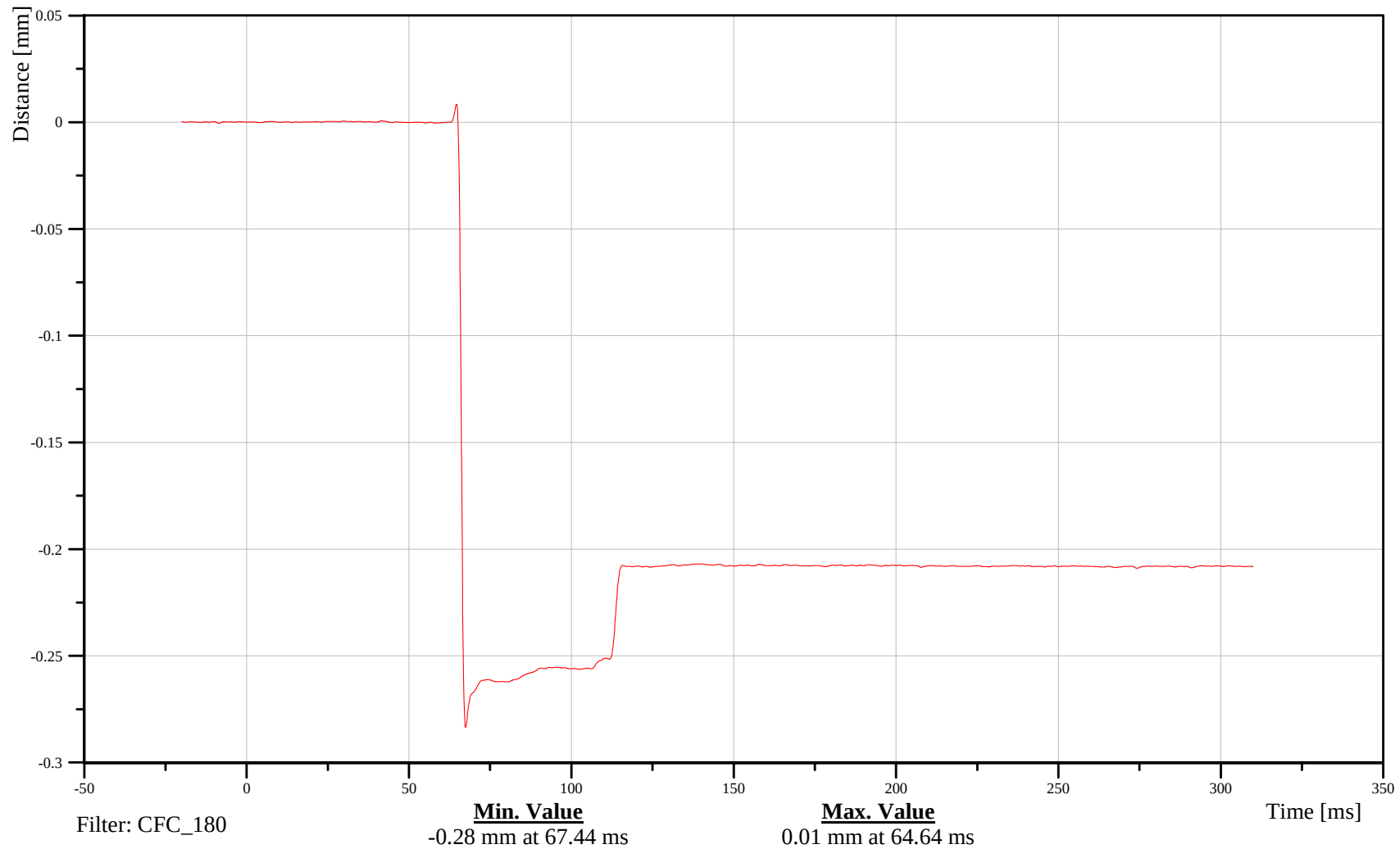
Date: 10/30/2009
Time: 16:48

Customer: VRTC

14KNSLRI00HFDSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-194

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

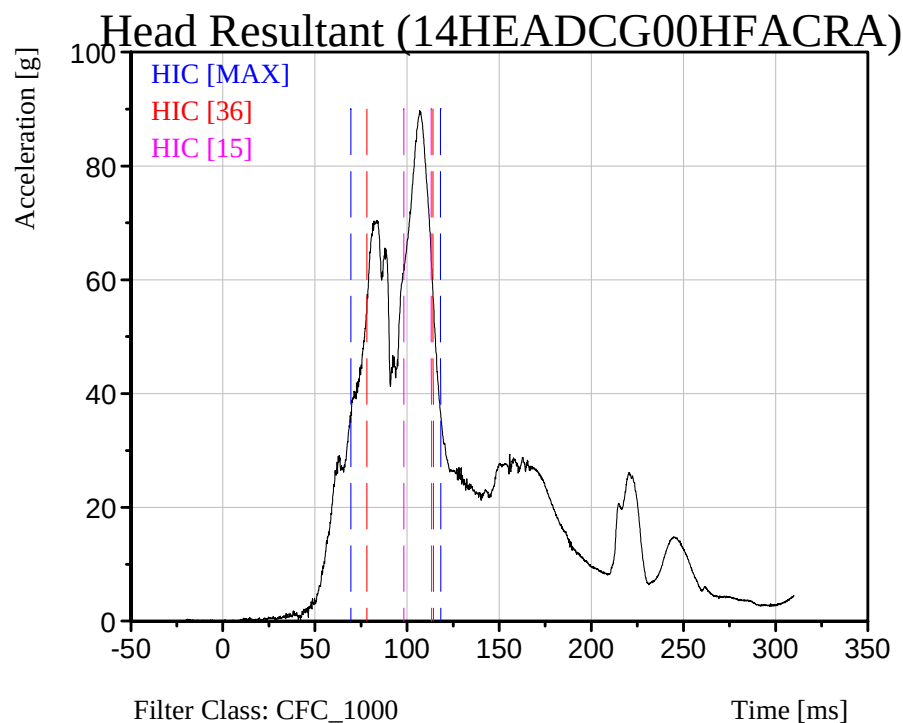
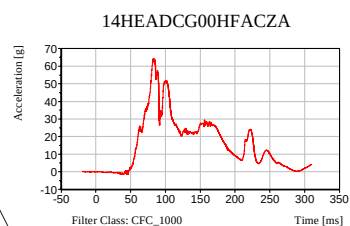
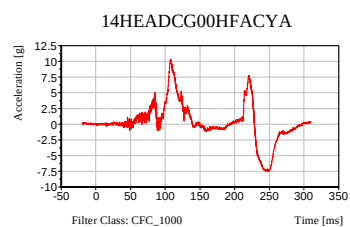
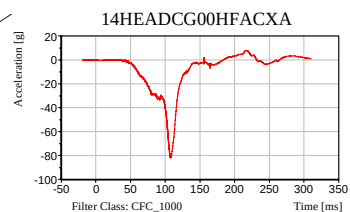
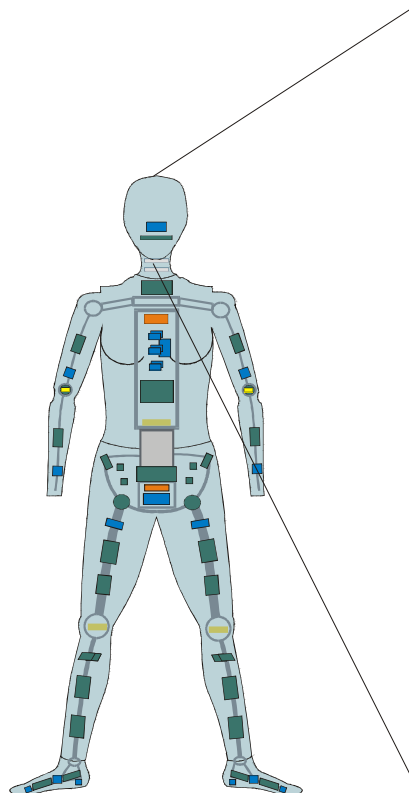
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 1,389.90	69.52 ms	118.24 ms	60.51 g
HIC [36] = 1,288.91	78.24 ms	114.24 ms	66.29 g
HIC [15] = 783.03	98.24 ms	113.28 ms	76.95 g

Dummy:HIII 5th Female
Seating Position:
Left Rear Passenger

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

B-195

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

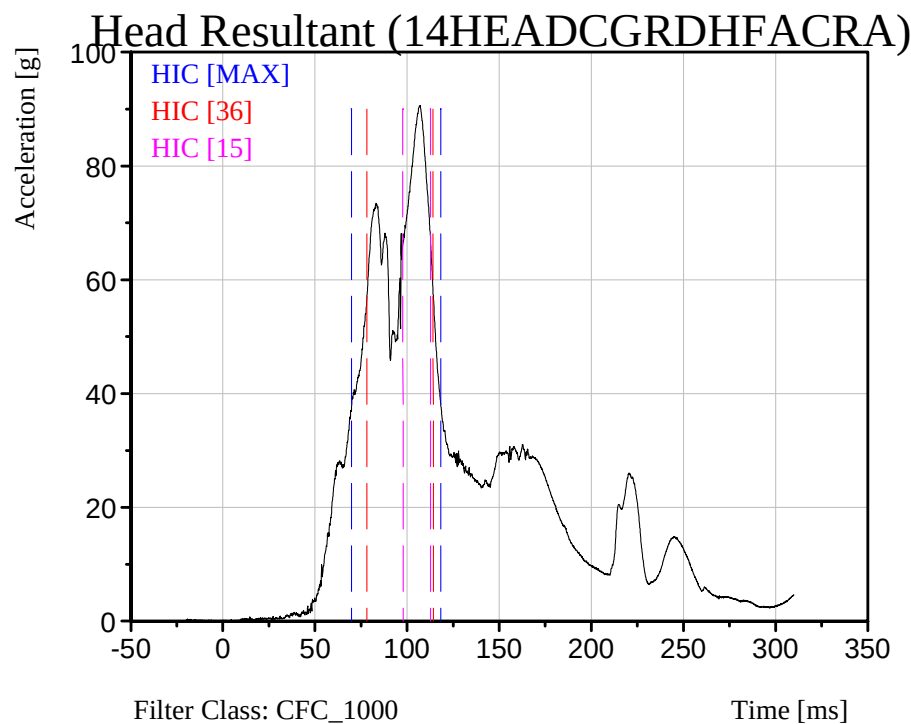
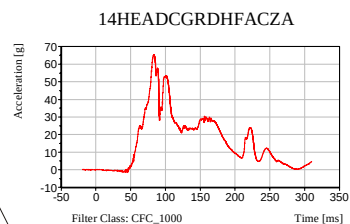
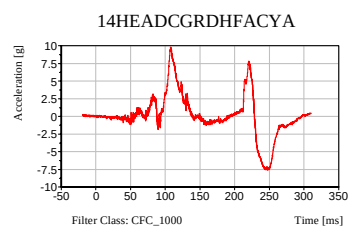
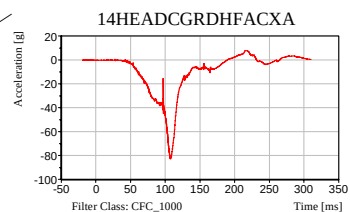
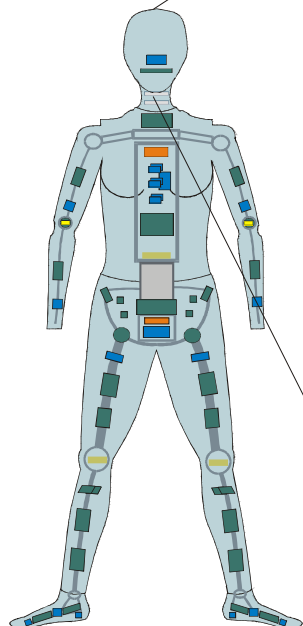
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 1,535.70	69.92 ms	118.32 ms	63.14 g
HIC [36] = 1,435.43	78.24 ms	114.24 ms	69.20 g
HIC [15] = 847.34	97.76 ms	112.80 ms	79.42 g

Dummy:HIII 5th Female
Seating Position:
Left Rear Passenger

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

B-196

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

3 ms Duration Acceleration (Chest)

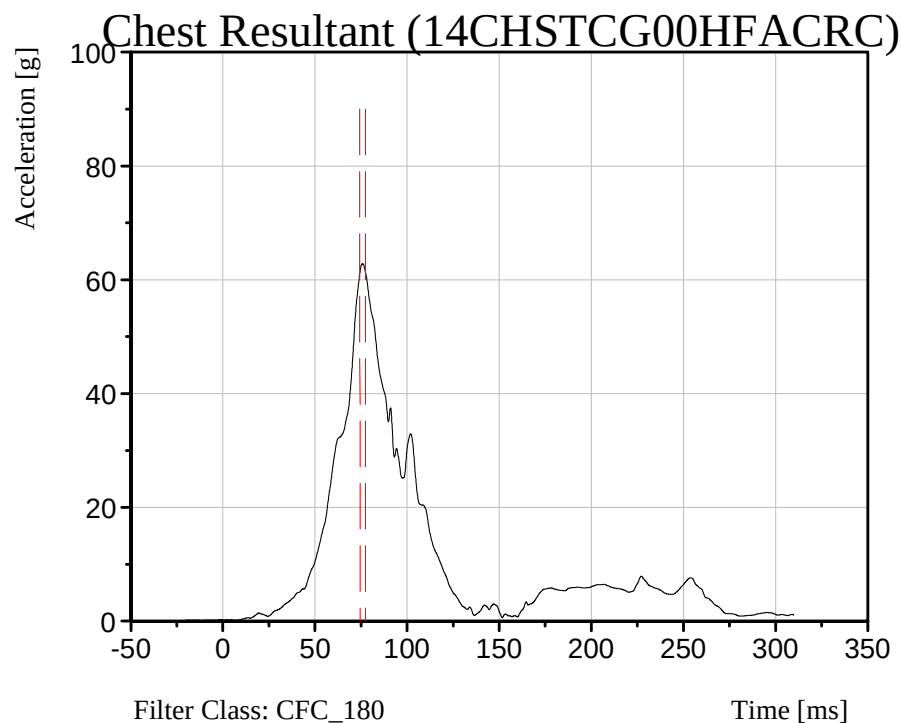
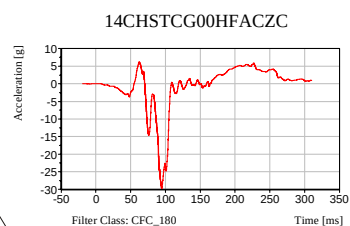
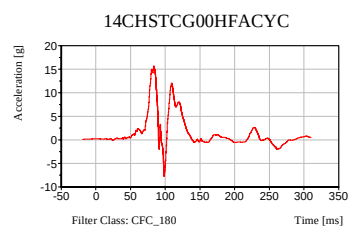
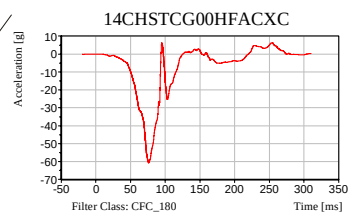
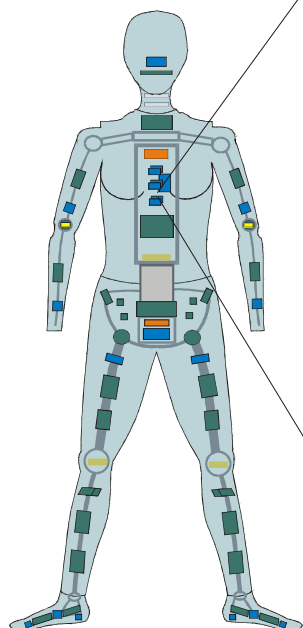
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



3 ms Duration Acceleration = 61.38 g
Chest Severity Index = 585.43

<u>T1</u> (Begin)	<u>T2</u> (End)
74.40 ms	77.40 ms

Dummy:HIII 5th Female
Seating Position:
Left Rear Passenger

3 ms Duration Acceleration Source Code : vbScript w/DIADEM 9.0

B-197

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

3 ms Duration Acceleration (Chest)

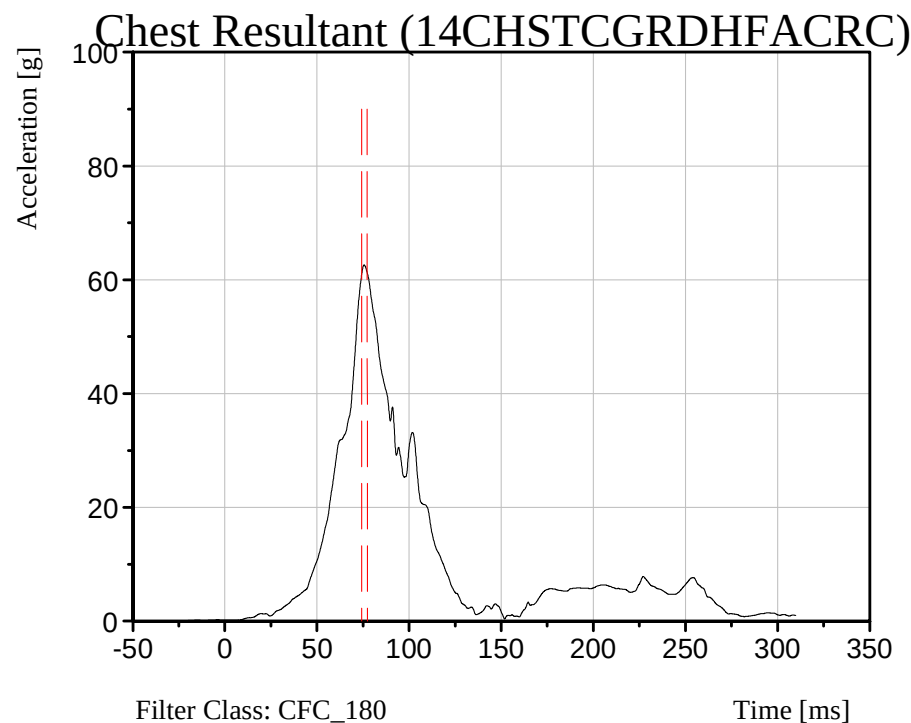
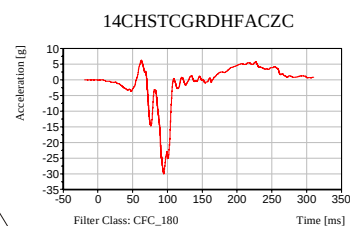
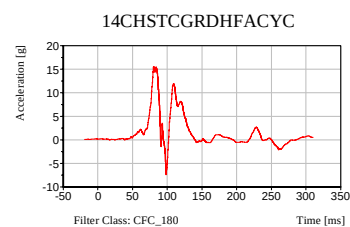
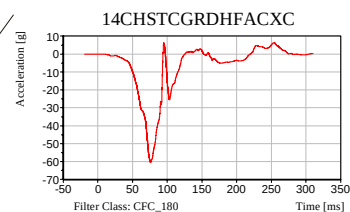
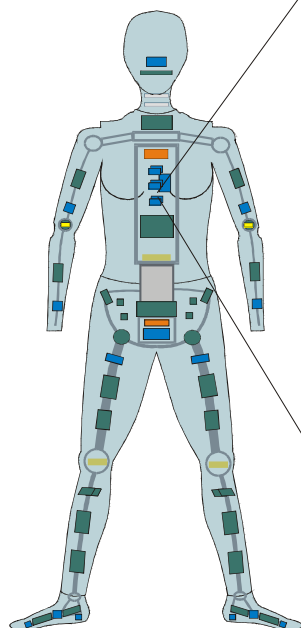
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



3 ms Duration Acceleration = 61.17 g
Chest Severity Index = 583.88

<u>T1</u> (Begin)	<u>T2</u> (End)
74.34 ms	77.34 ms

Dummy:HIII 5th Female
Seating Position:
Left Rear Passenger

3 ms Duration Acceleration Source Code : vbScript w/DIADEM 9.0

B-198

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

Chest Deflection

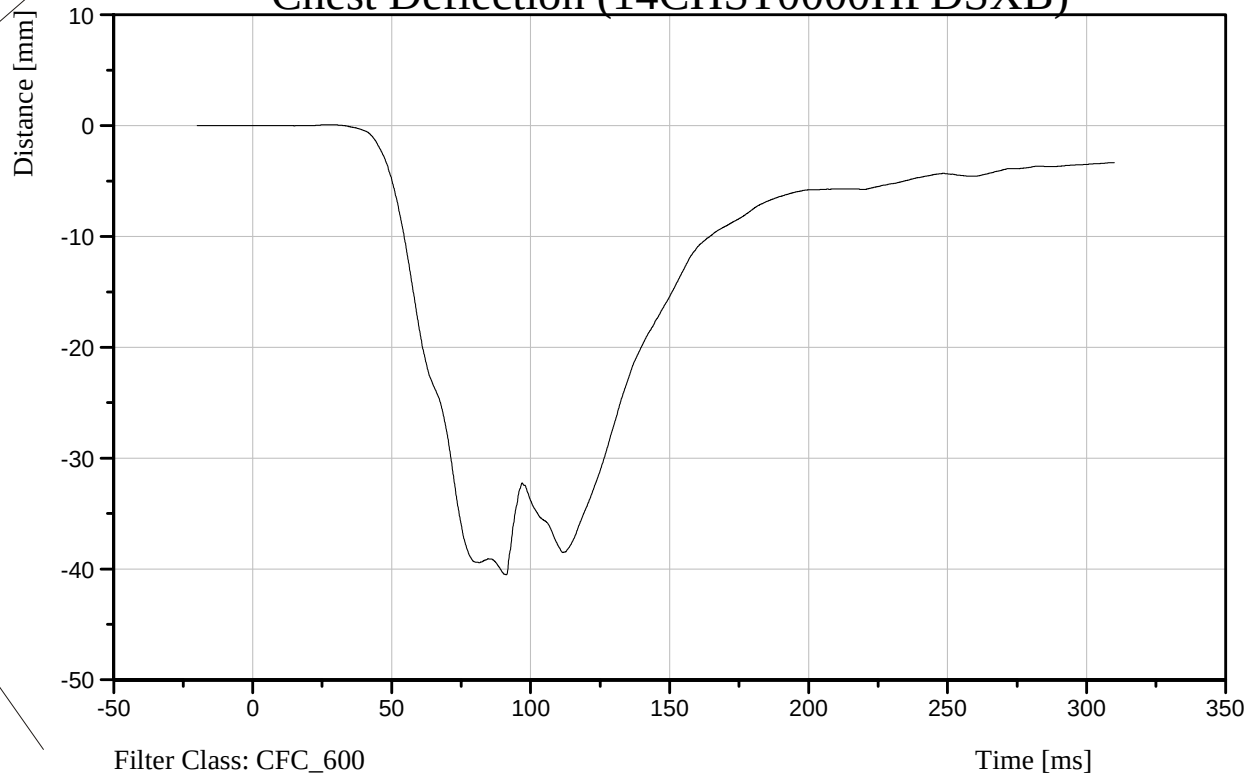
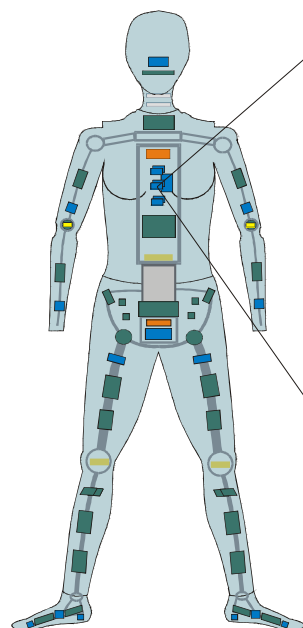
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Chest Deflection (14CHST0000HFDSXB)



Dummy: HIII 5th Female
Seating Position:
Left Rear Passenger

[Max.] 0.07 mm at 26.96 ms

[Min.] -40.52 mm at 91.28 ms

ChestDeflection Source Code : Min/Max of 14CHST0000HFDSXB (CFC_600)

B-199

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap Neck Moment about the Occipital Condyle (NECK OM)

Date: 10/30/2009
Time: 16:48

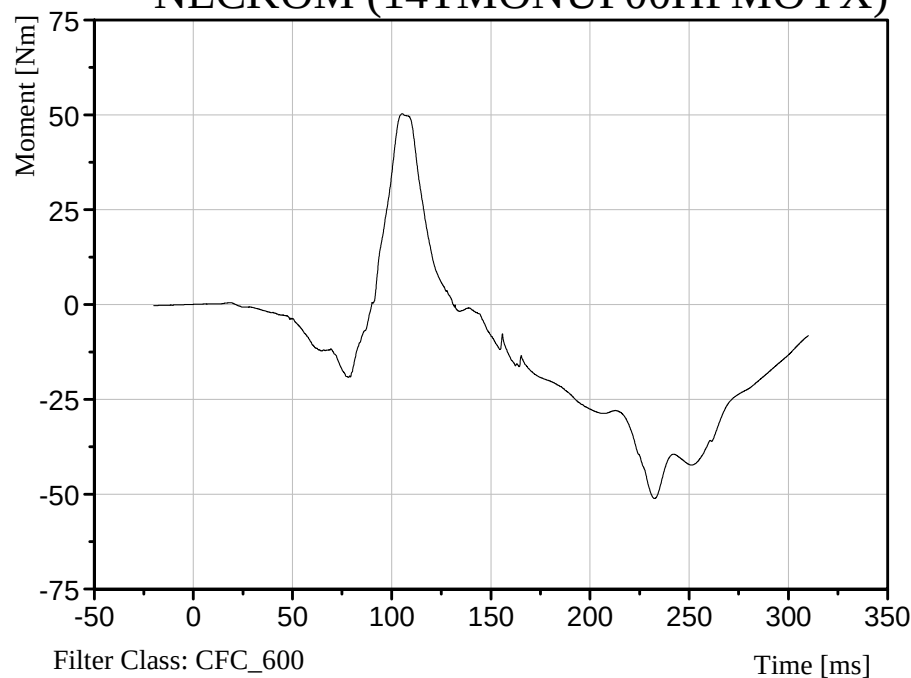
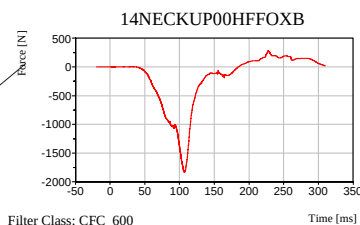
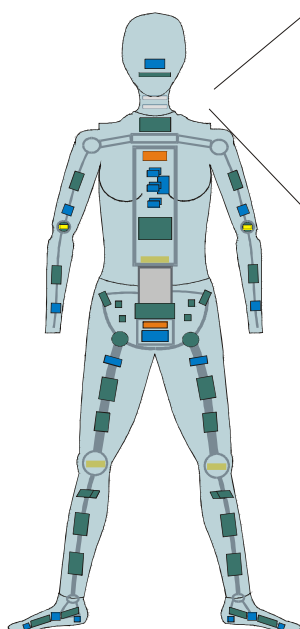
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

NECKOM (14TMONUP00HFM0YX)



Dummy: HIII 5th Female
Seating Position:
Left Rear Passenger

Neck OM Source Code: My - (D*Fx)

[Max.] 50.33 Nm at 105.28 ms

[Min.] -51.11 Nm at 232.56 ms

B-200

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Injury Predictor (NIJ)

Date: 10/30/2009

Time: 16:48

Customer: VRTC

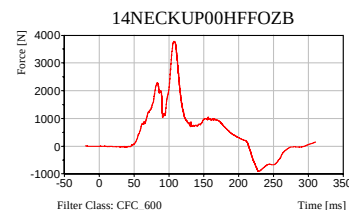
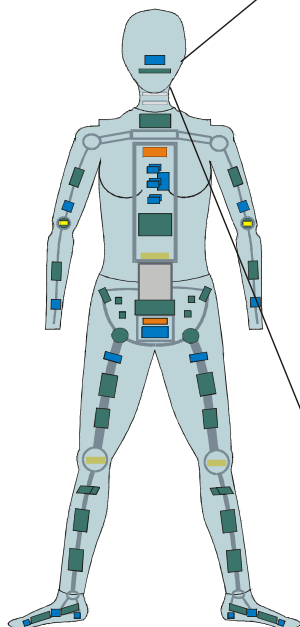
Test Orientation = Frontal

Fzc(Tension) = 4287

Fzc(Compression) = 3880

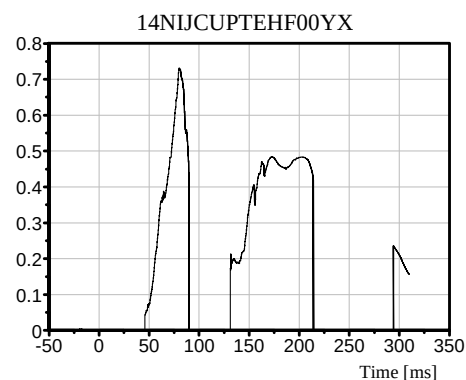
Myc(Extension) = 67

Myc(Flexion) = 155

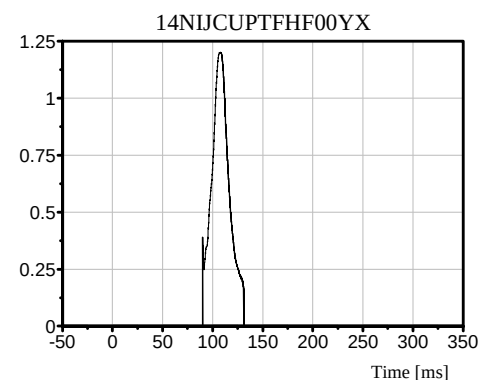


TRC Inc. Test Lab: CTF

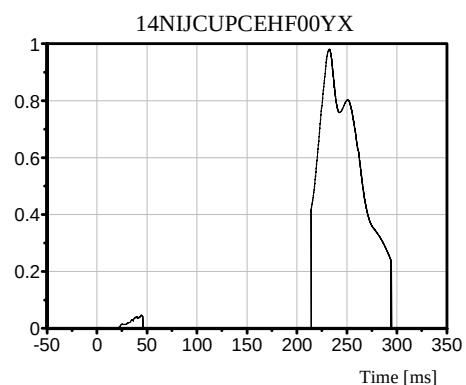
Test Number: 091030



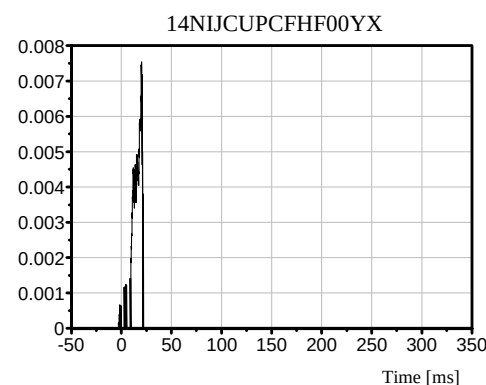
Max [NTE] 0.7316 at 79.92 ms



Max [NTF] 1.2016 at 107.60 ms



Max [NCE] 0.9815 at 232.32 ms



Max [NCF] 0.0075 at 19.92 ms

Dummy:IIII 5th Female
Seating Position:

Left Rear Passenger

NIJ Source Code: (Fz/Fzc)+(My/Myc)

B-201

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

Neck Shear Force

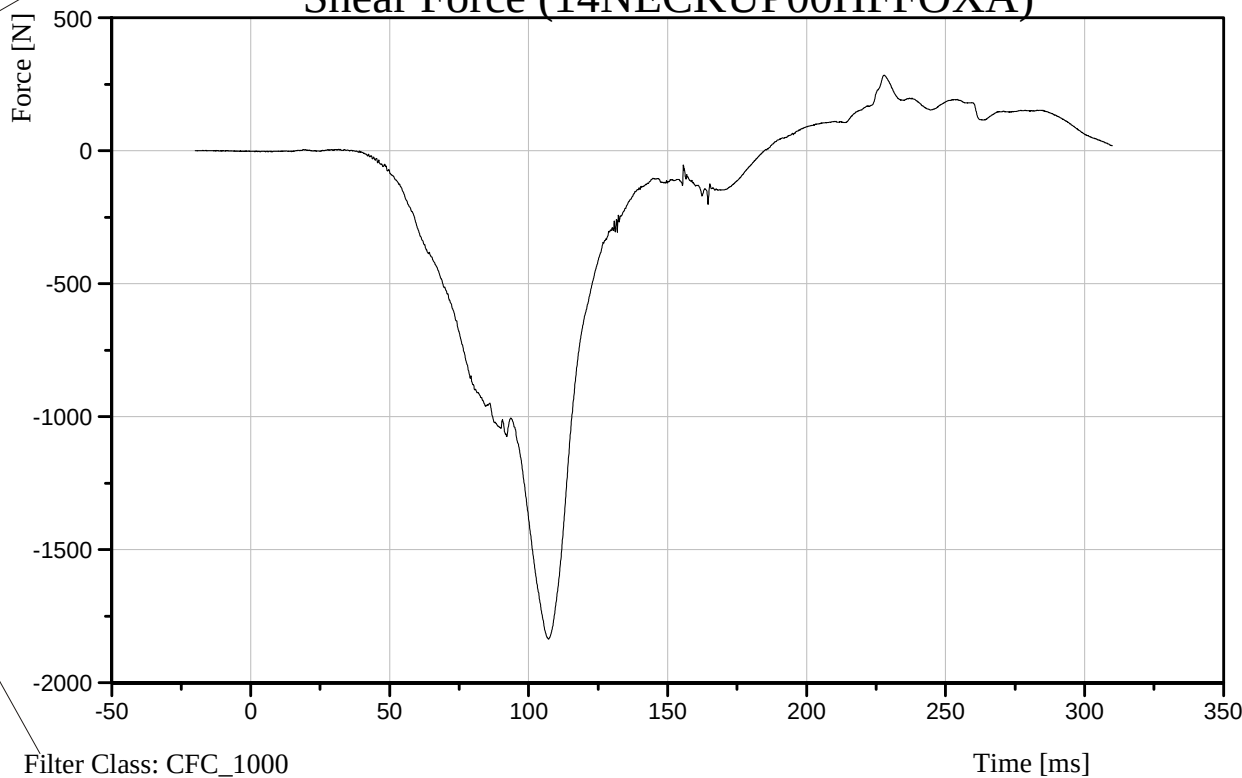
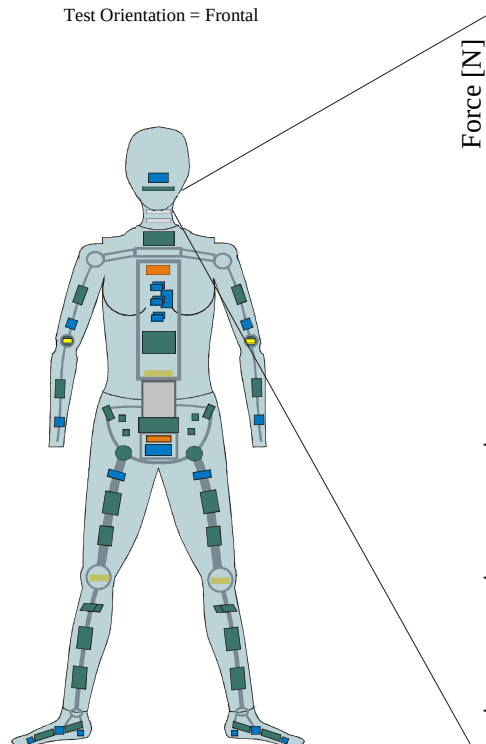
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (14NECKUP00HFFOXA)



Dummy: HIII 5th Female
Seating Position:
Left Rear Passenger

[Max.] 284.31 N at 227.84 ms
[Min.] -1,835.66 N at 107.12 ms

Neck Shear Force Source Code: Min/Max of 14NECKUP00HFFOXA

B-202

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

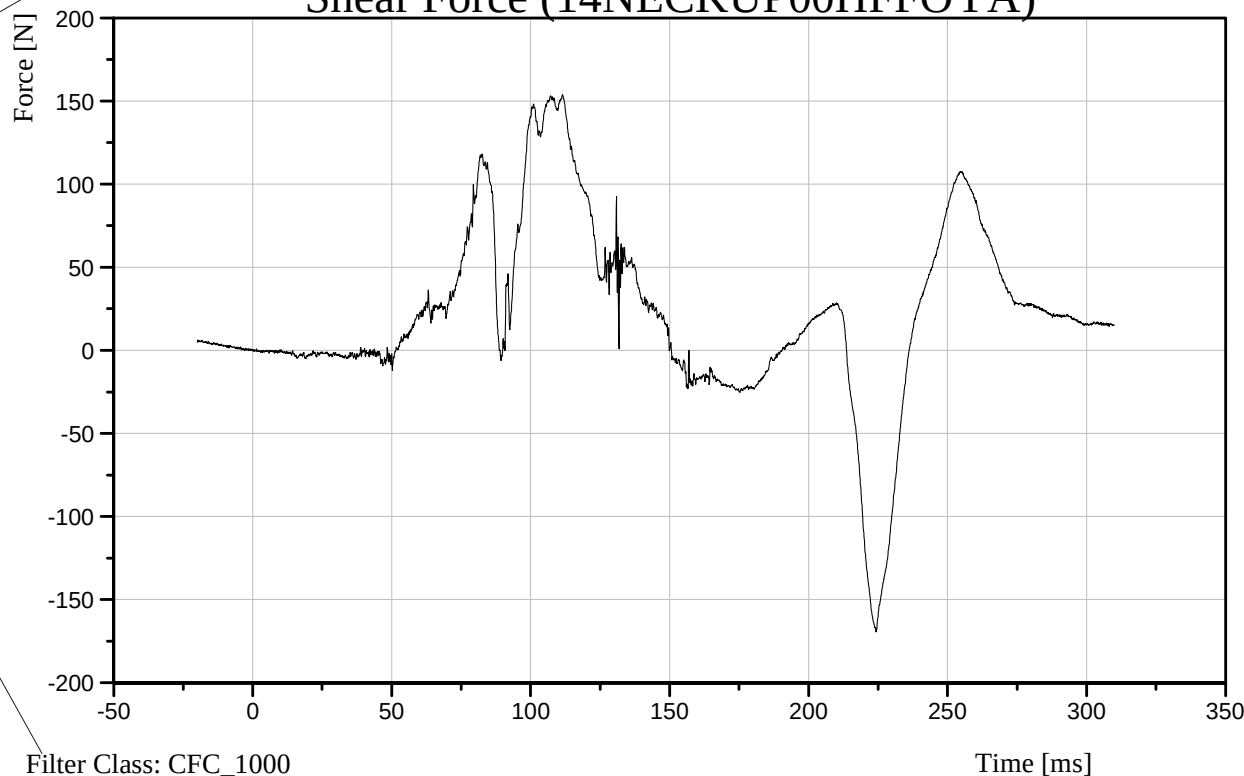
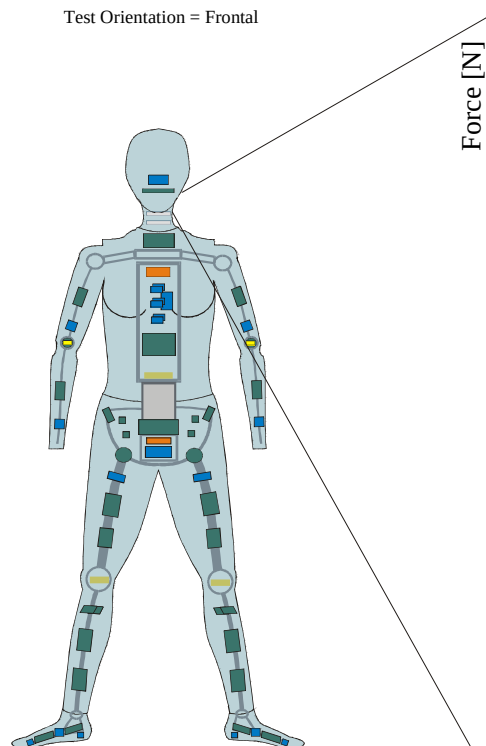
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (14NECKUP00HFFOYA)



Dummy: HIII 5th Female
Seating Position:
Left Rear Passenger

[Max.] 153.86 N at 111.44 ms

[Min.] -169.37 N at 224.24 ms

Neck Shear Force Source Code: Min/Max of 14NECKUP00HFFOYA

B-203

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Axial Force

Date: 10/30/2009

Time: 16:48

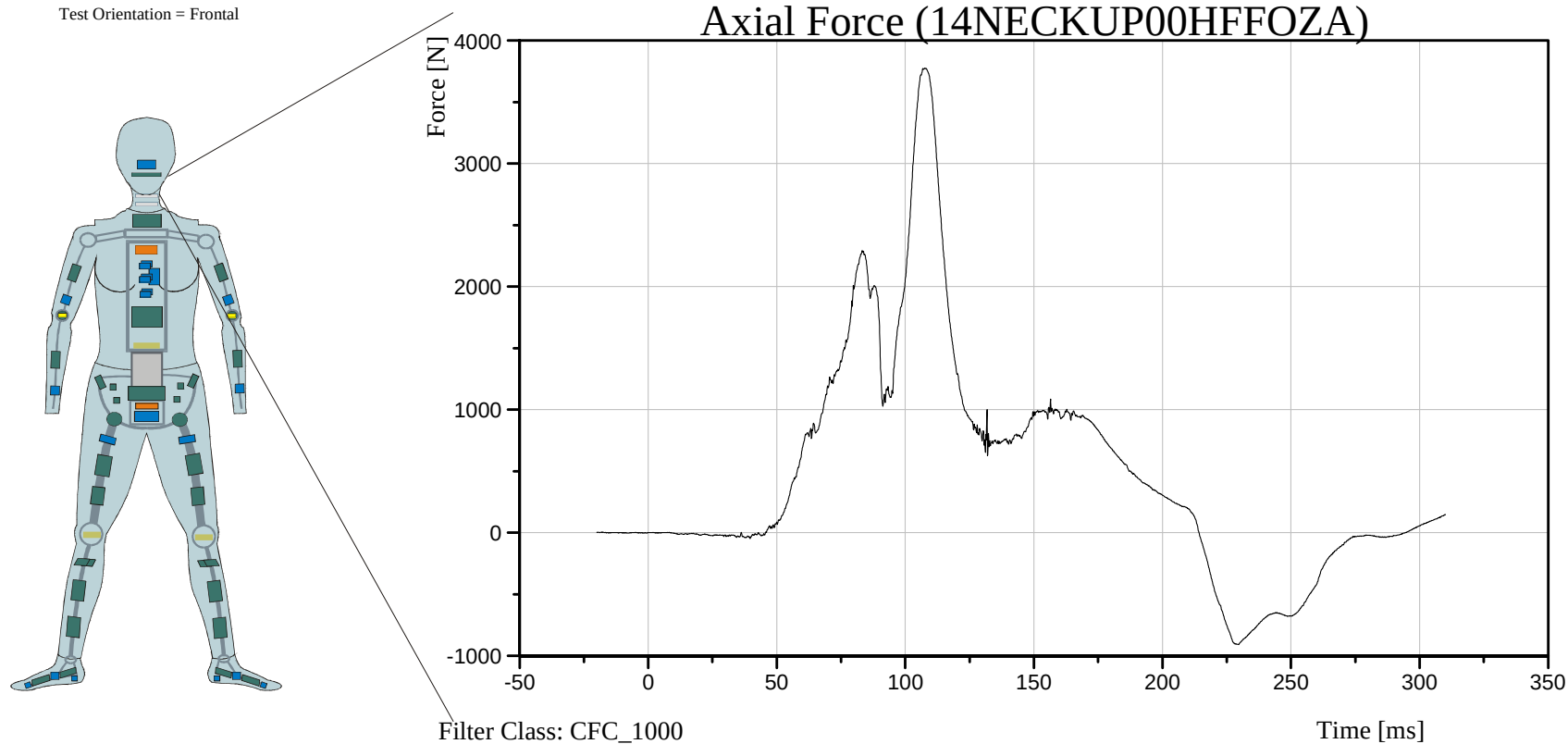
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Axial Force (14NECKUP00HFFOZA)



Dummy: HIII 5th Female
Seating Position:
Left Rear Passenger

[Max.] 3,776.09 N at 107.60 ms

[Min.] -908.57 N at 229.60 ms

Neck Axial Force Source Code: Min/Max of 14NECKUP00HFFOZA

B-204

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Femur Load

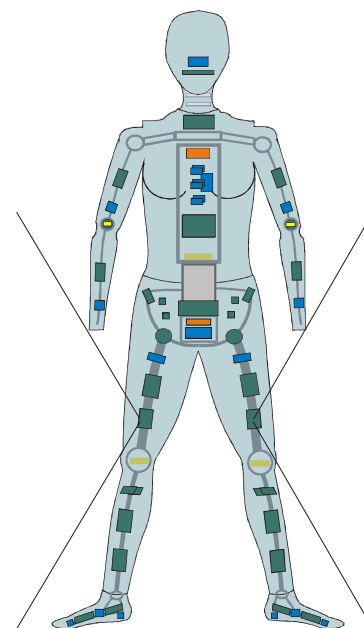
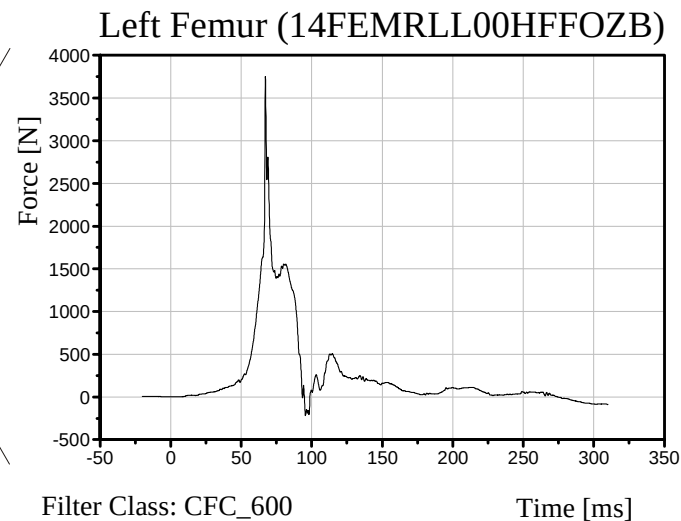
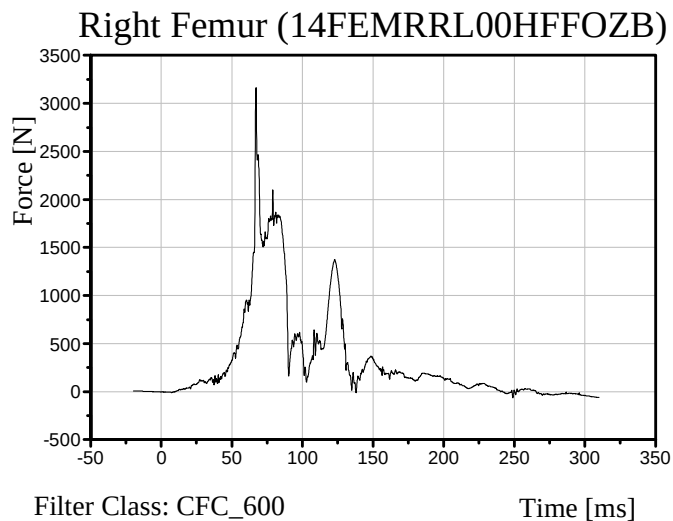
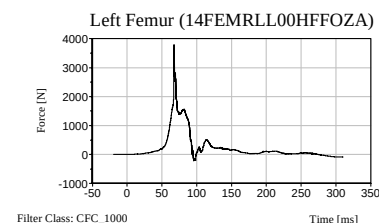
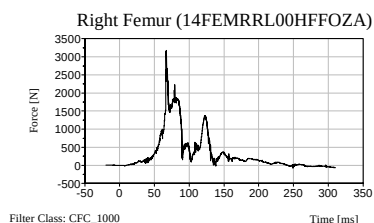
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max [Tension] 3,164.73 N at 66.96 ms
Min [Compression] -63.70 N at 249.04 ms

Dummy: HIII 5th Female
Seating Position:
Left Rear Passenger

Max [Tension] 3,753.55 N at 67.20 ms
Min [Compression] -217.76 N at 95.60 ms

Femur Load Source Code : Min/Max of 14FEMRRL00HFFOZB and 14FEMRLL00HFFOZB (CFC 600)

B-205

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Sill X-Axis Acceleration

Date: 10/30/2009

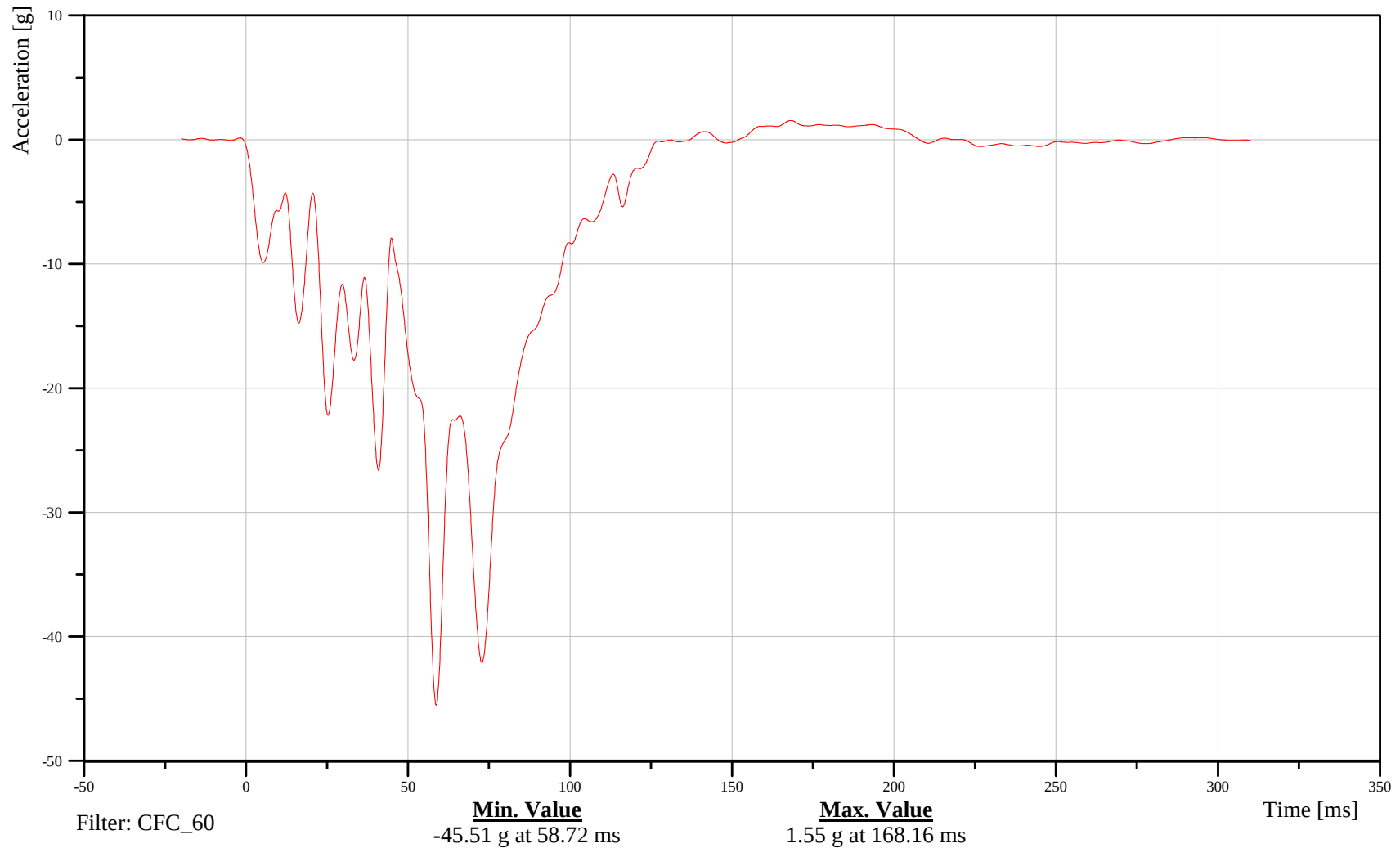
Time: 16:48

Customer: VRTC

10SILLLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-206

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Left Sill Y-Axis Acceleration

Date: 10/30/2009

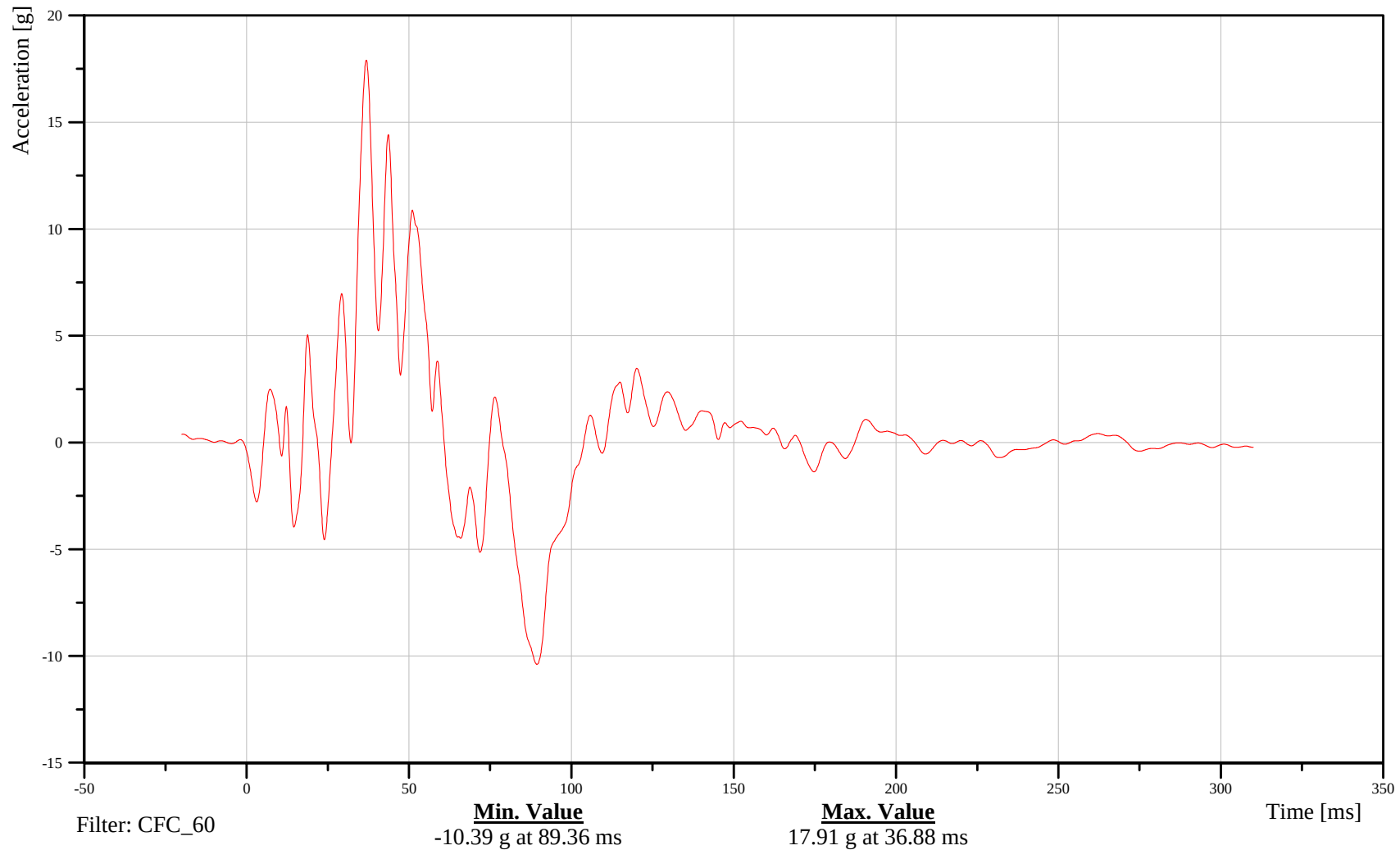
Time: 16:48

Customer: VRTC

10SILLLE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-207

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

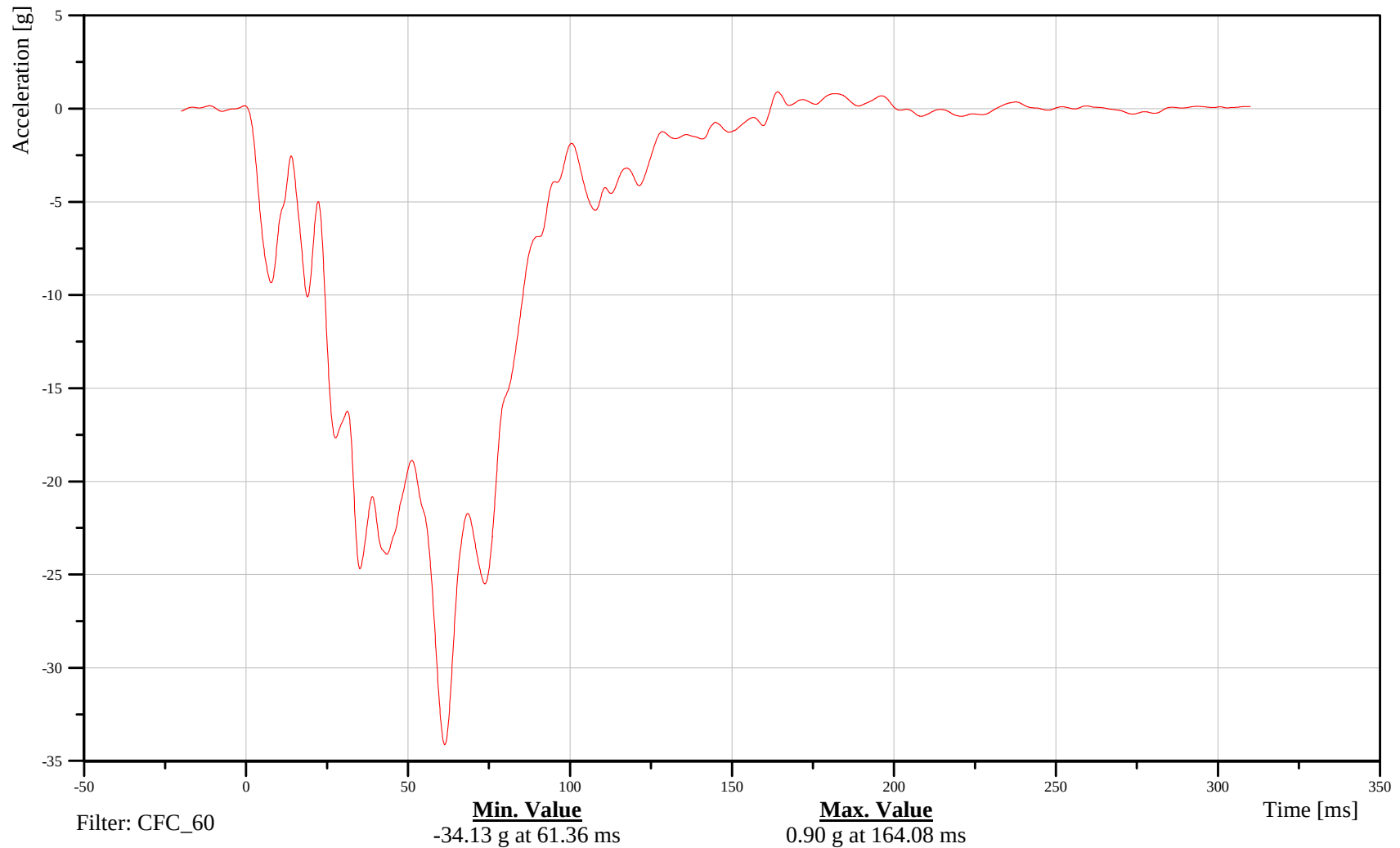
Bullet Vehicle Right Sill X-Axis Acceleration

Customer: VRTC

10SILLRI0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-208

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Right Sill Y-Axis Acceleration

Date: 10/30/2009

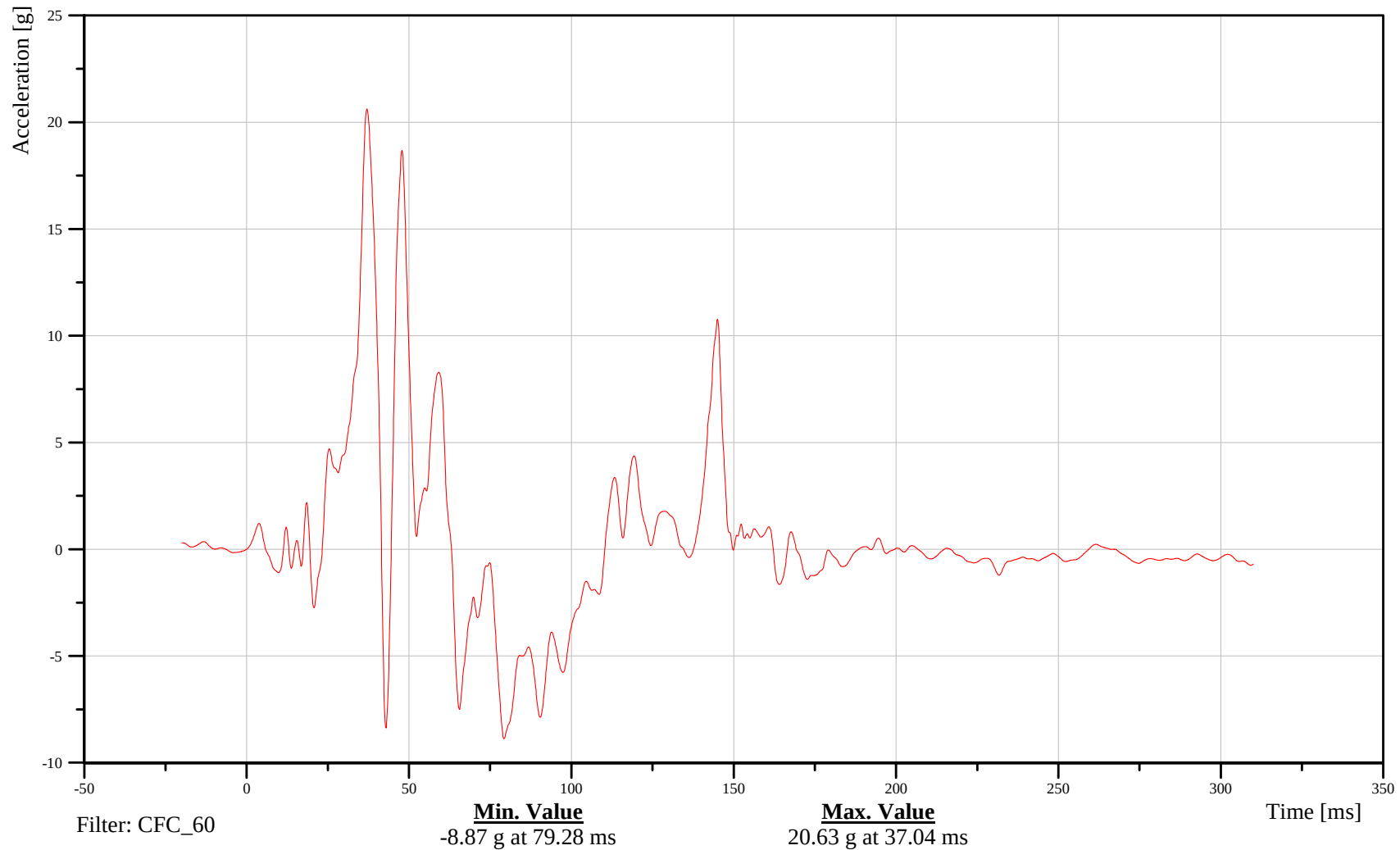
Time: 16:48

Customer: VRTC

10SILLRI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-209

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Vehicle Center of Gravity X-Axis Acceleration

Date: 10/30/2009

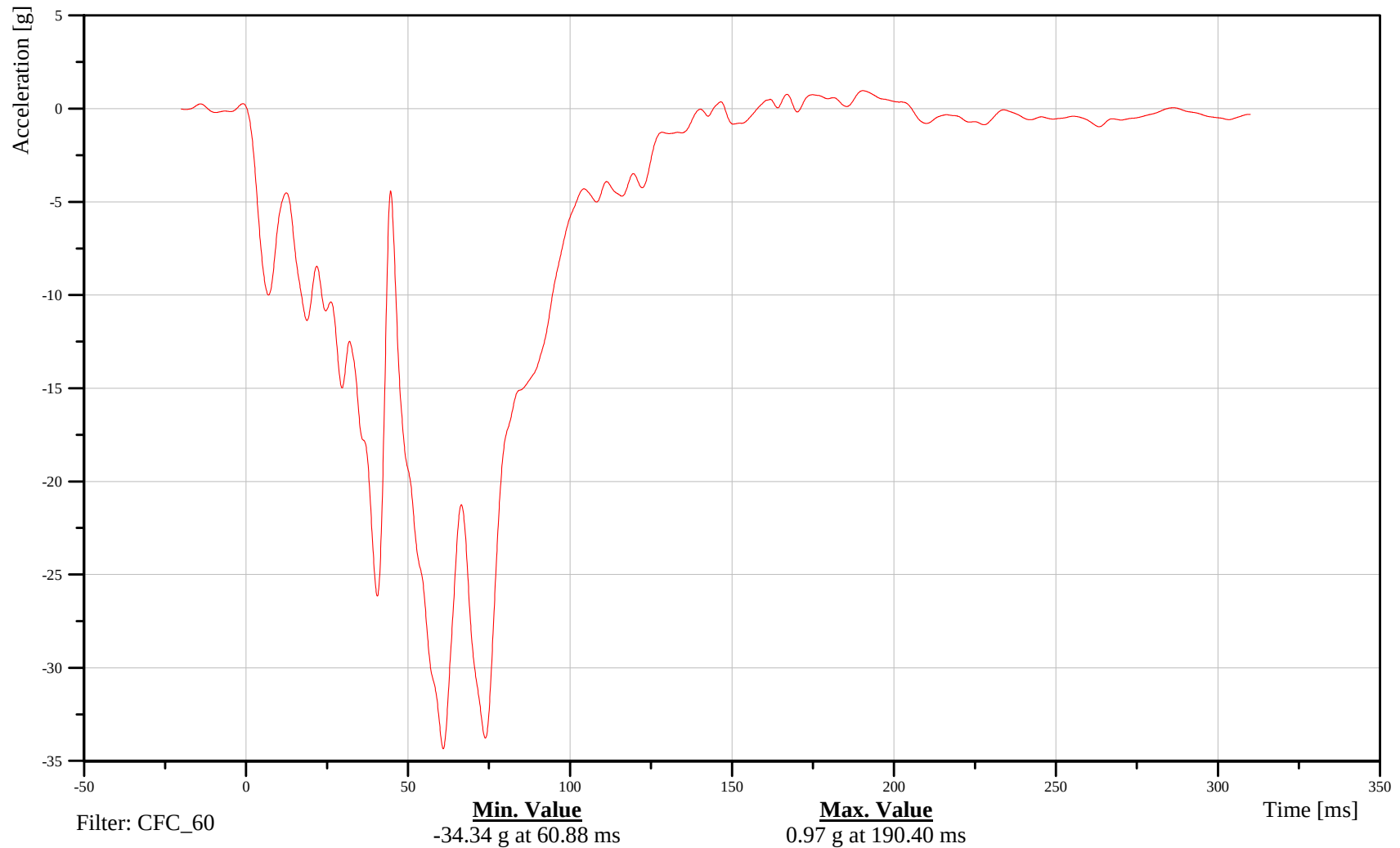
Time: 16:48

Customer: VRTC

10VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-210

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Vehicle Center of Gravity Y-Axis Acceleration

Date: 10/30/2009

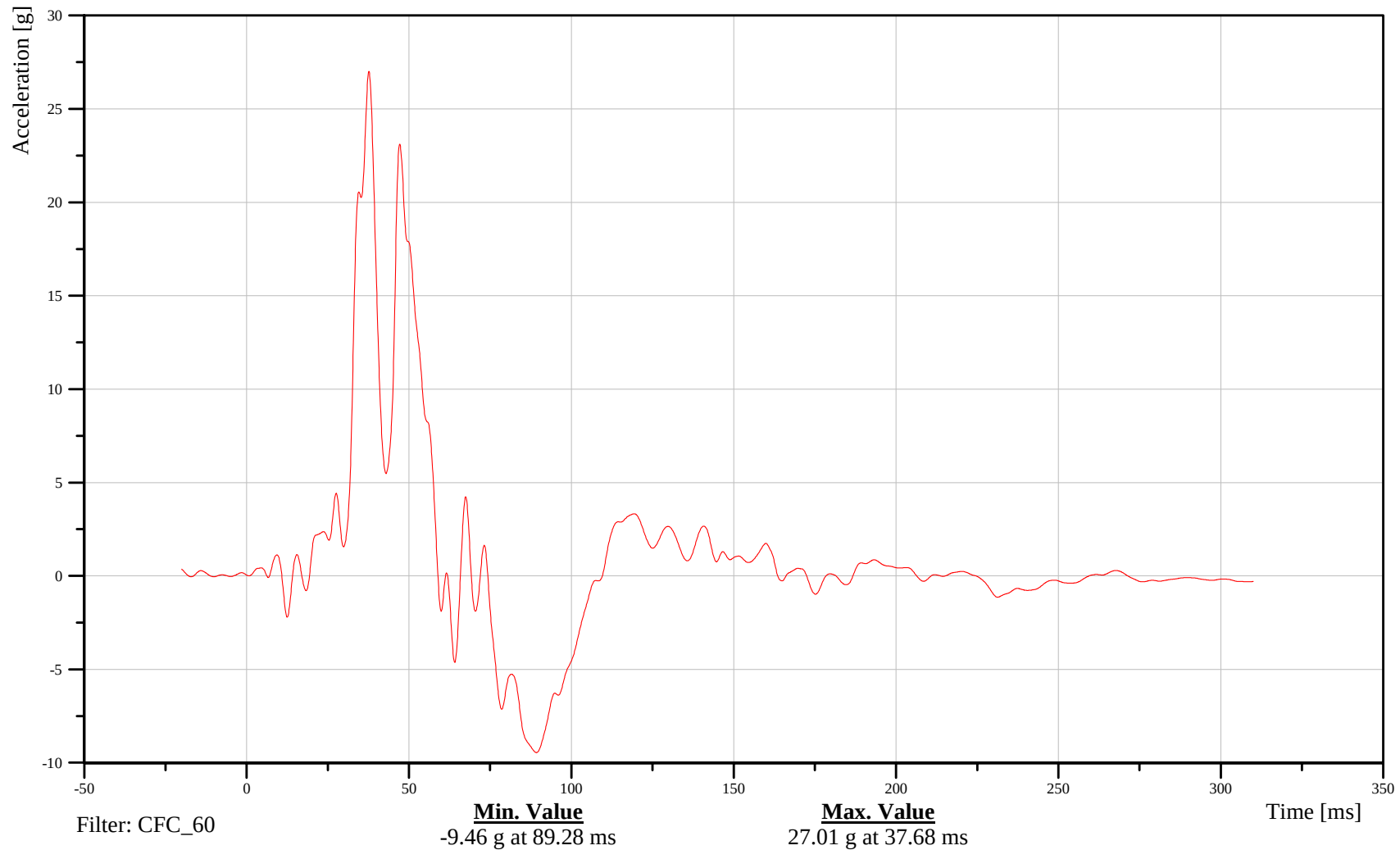
Time: 16:48

Customer: VRTC

10VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-211

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Vehicle Center of Gravity Z-Axis Acceleration

Date: 10/30/2009

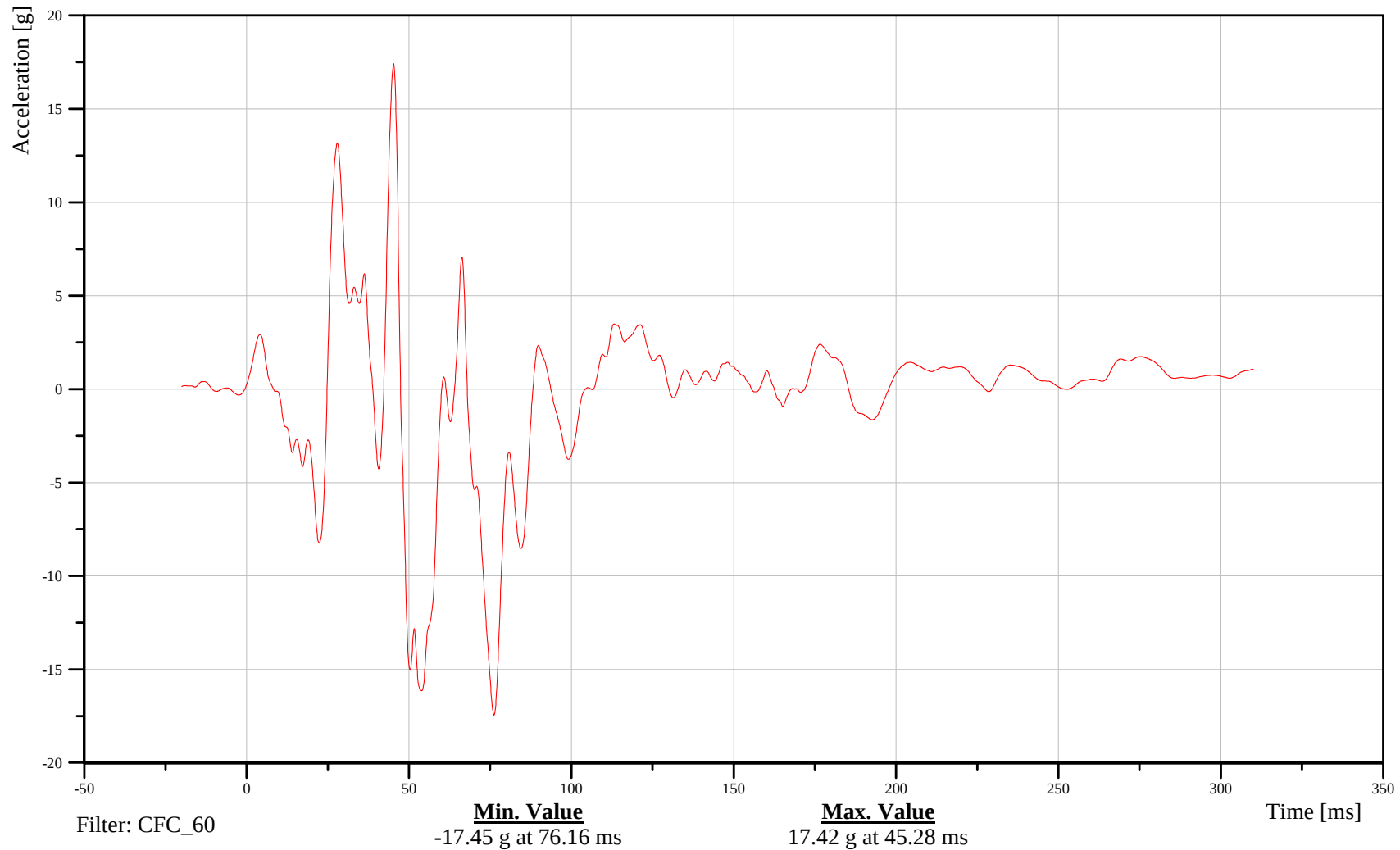
Time: 16:48

Customer: VRTC

10VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-212

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Vehicle Center of Gravity Resultant Acceleration

Date: 10/30/2009

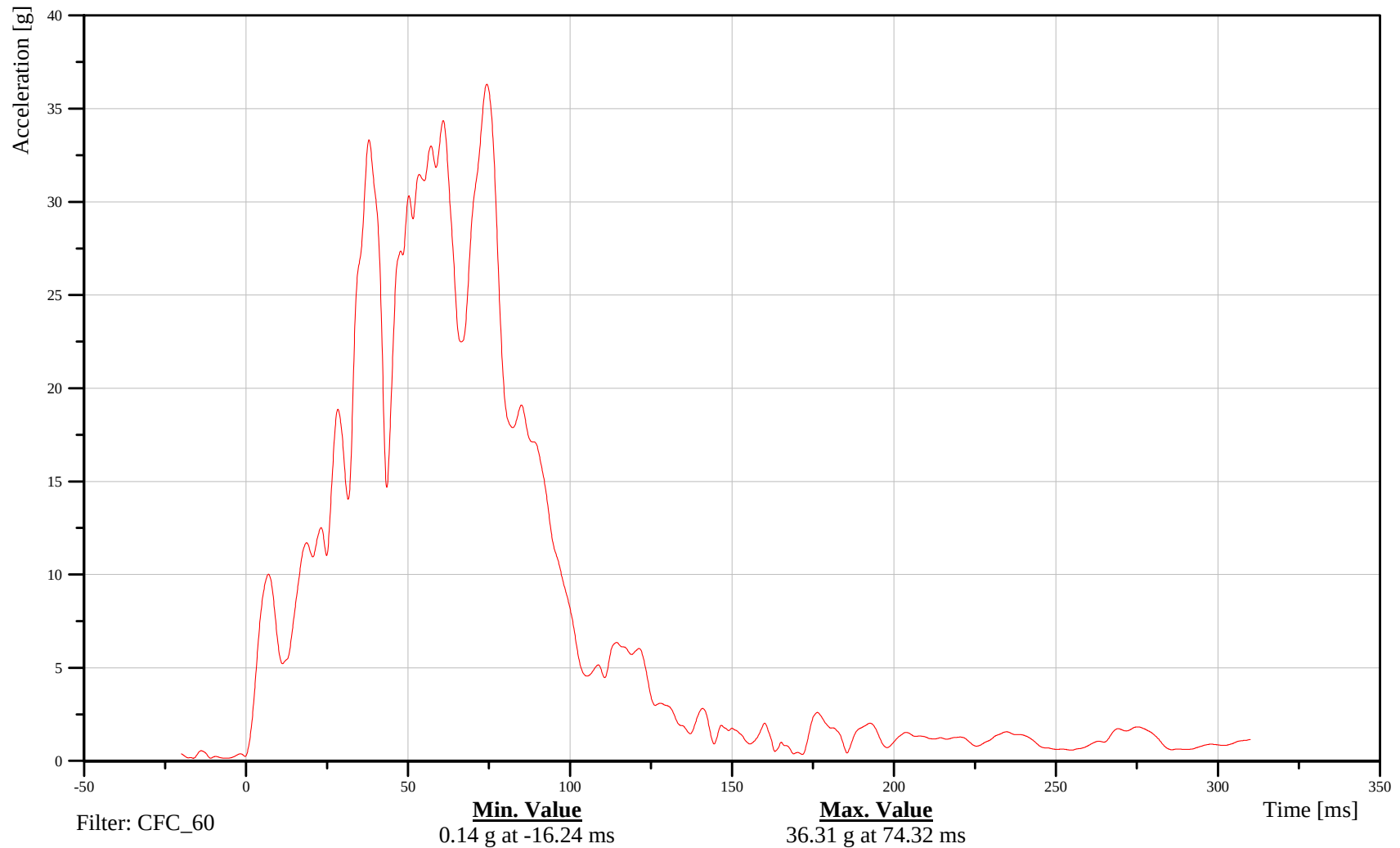
Time: 16:48

Customer: VRTC

10VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-213

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

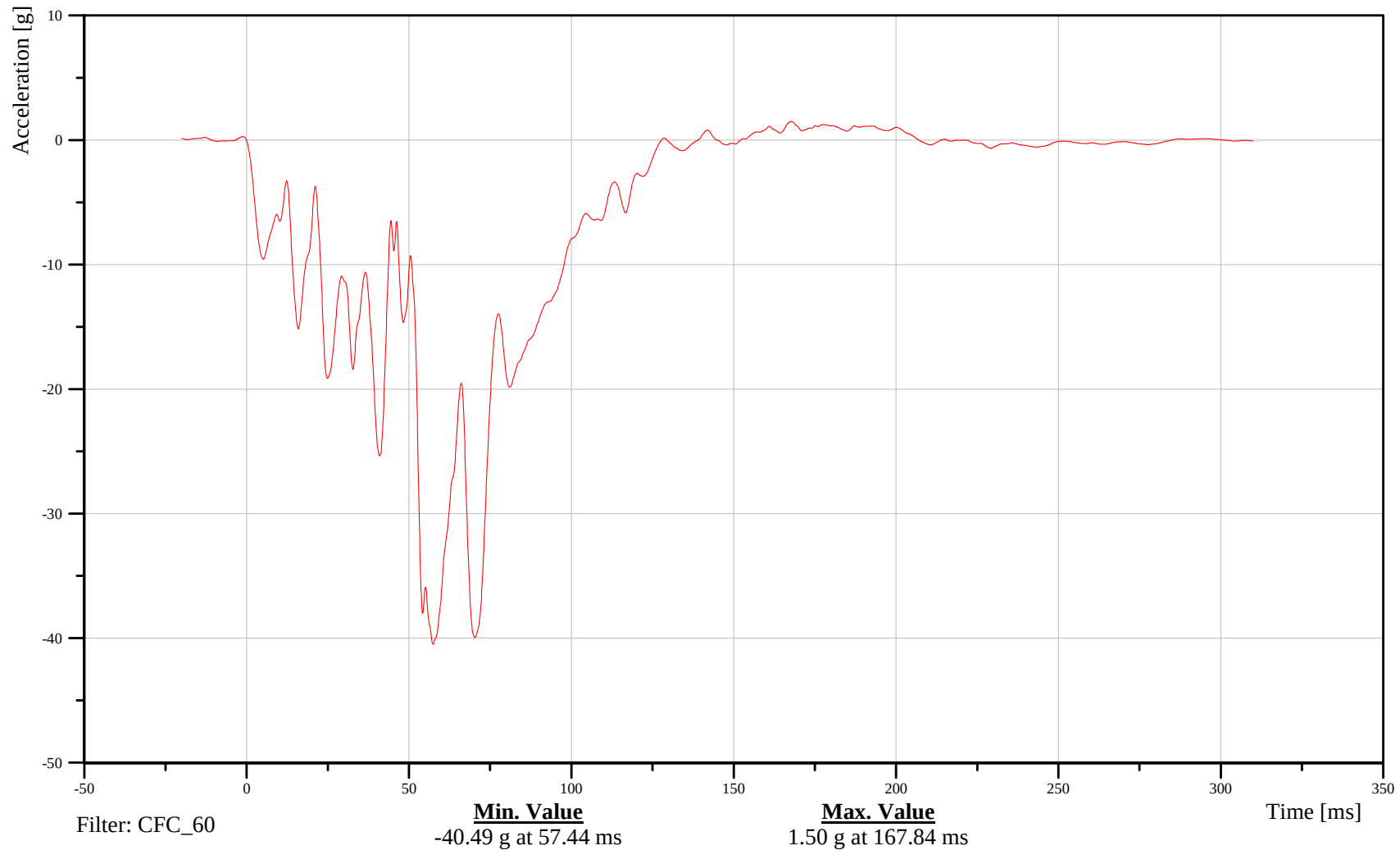
Bullet Vehicle Driver Footrest X-Axis Acceleration

Customer: VRTC

10FOOTLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-214

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

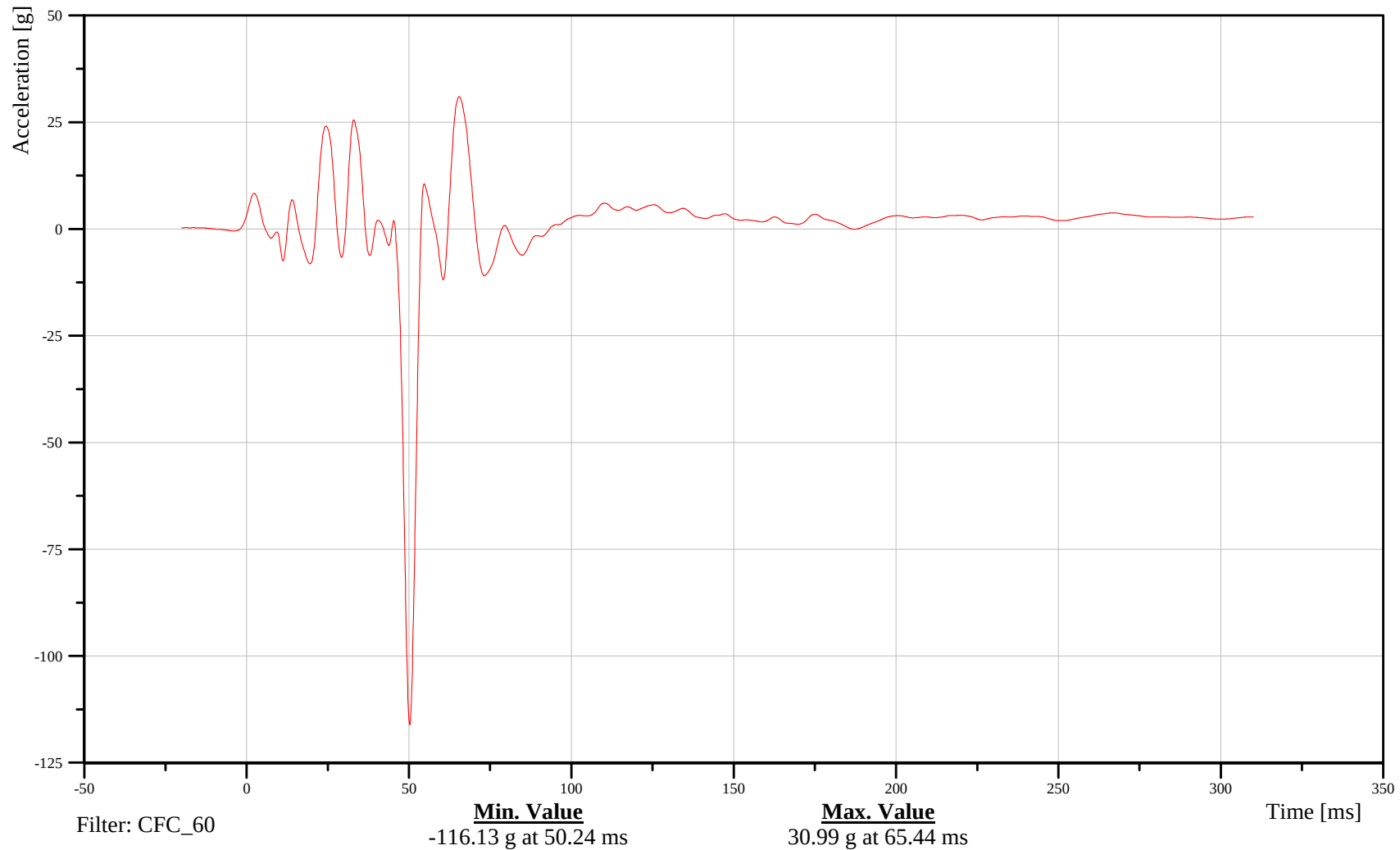
Bullet Vehicle Driver Footrest Z-Axis Acceleration

Customer: VRTC

10FOOTLE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-215

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Toepan Behind Center of Accelerator X-Axis Acceleration

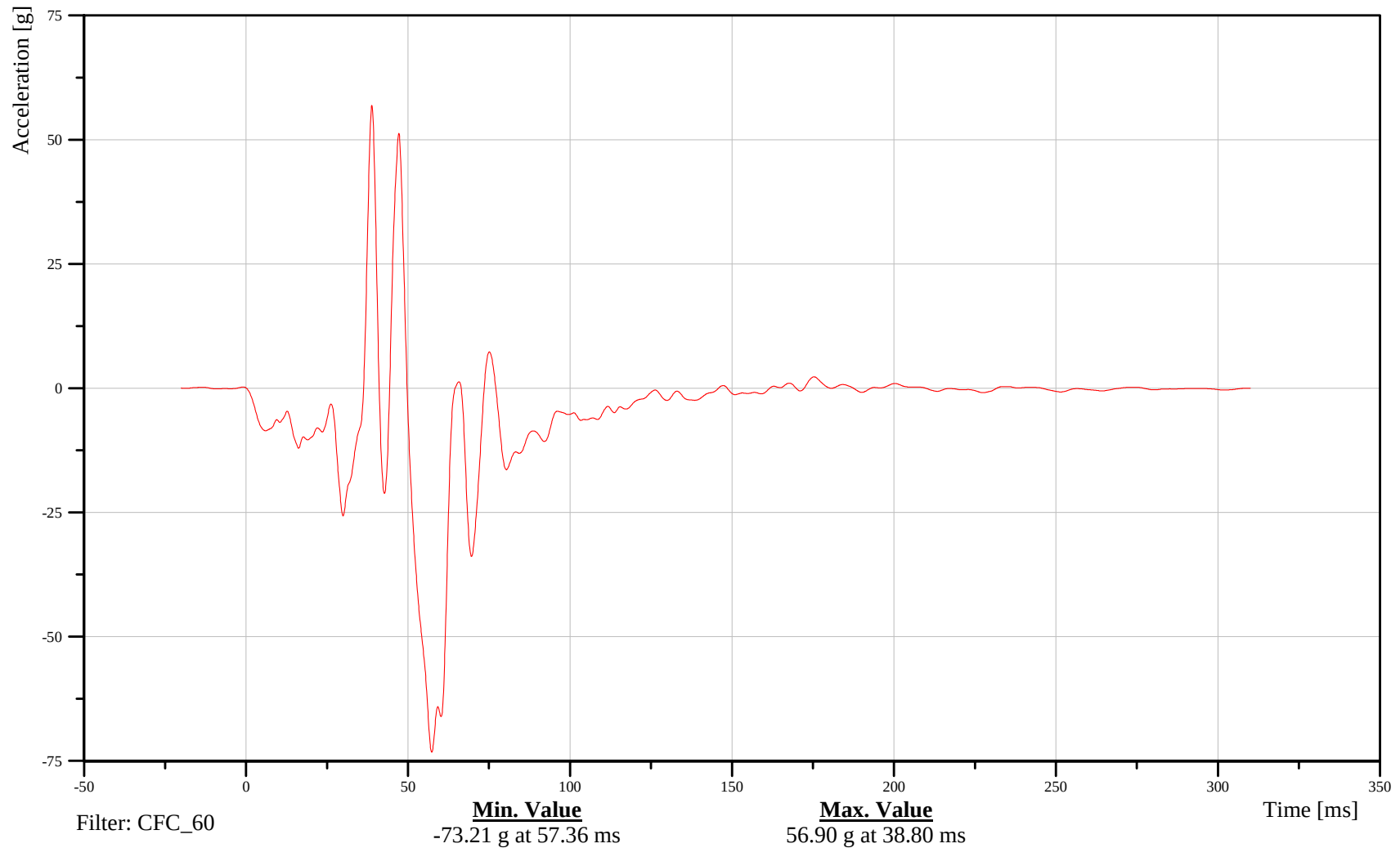
Date: 10/30/2009
Time: 16:48

Customer: VRTC

10TPANLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-216

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Toe pan Behind Center of Accelerator Z-Axis Acceleration

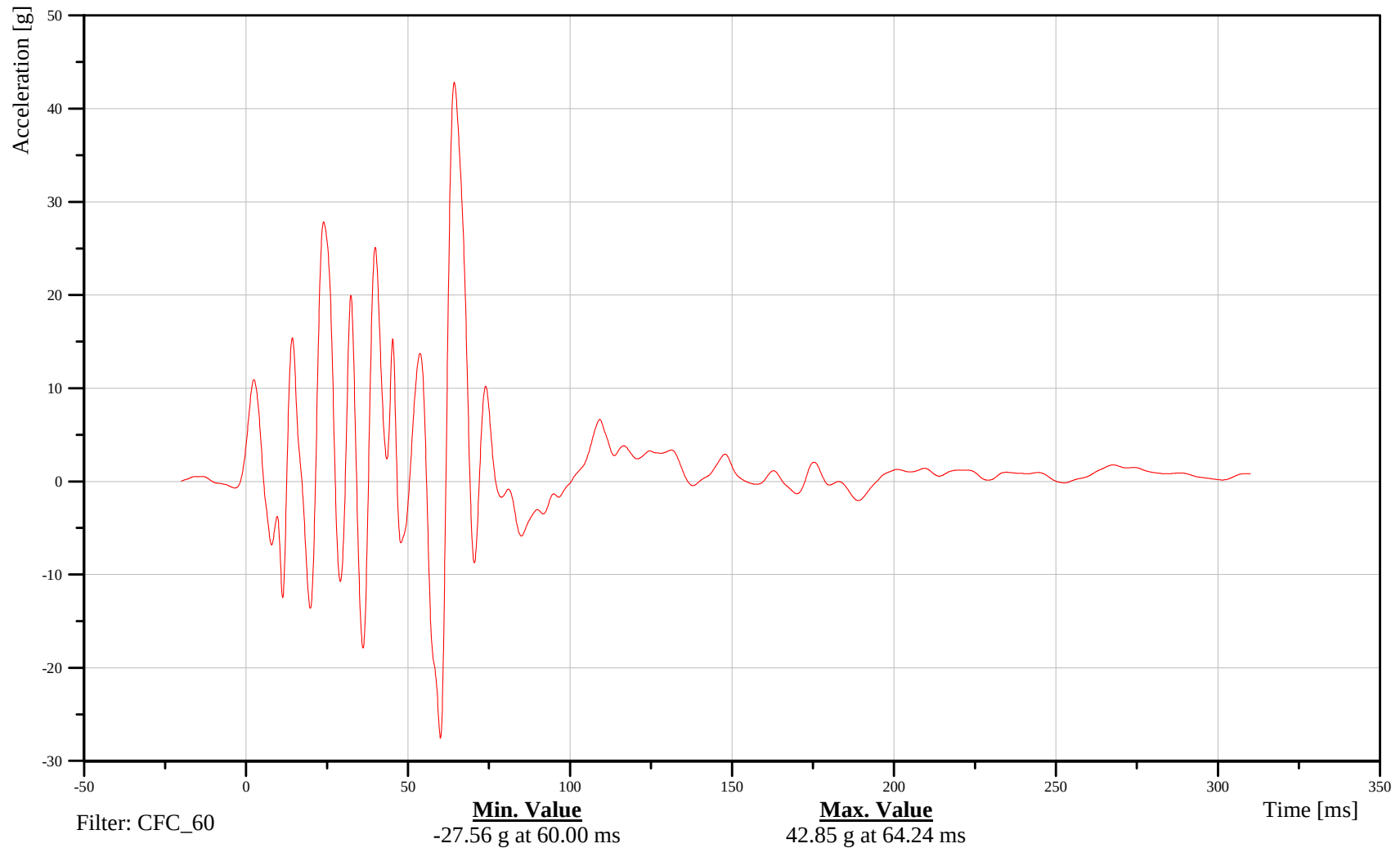
Date: 10/30/2009
Time: 16:48

Customer: VRTC

10TPANLE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-217

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

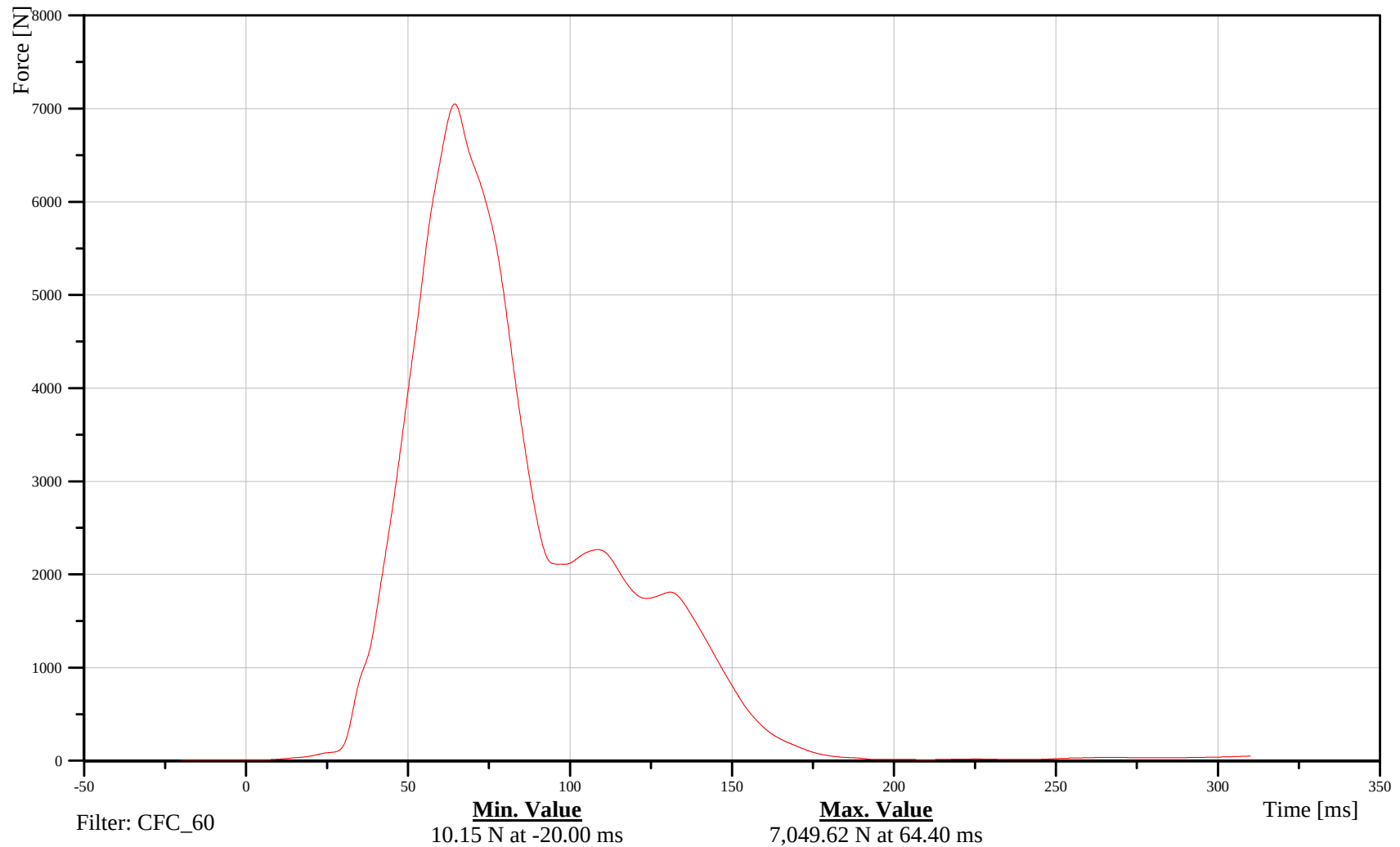
Bullet Vehicle Driver Lap Belt Force

Customer: VRTC

11SEBE0000B5FO0D

TRC Inc. Test Lab: CTF

Test Number: 091030



B-218

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

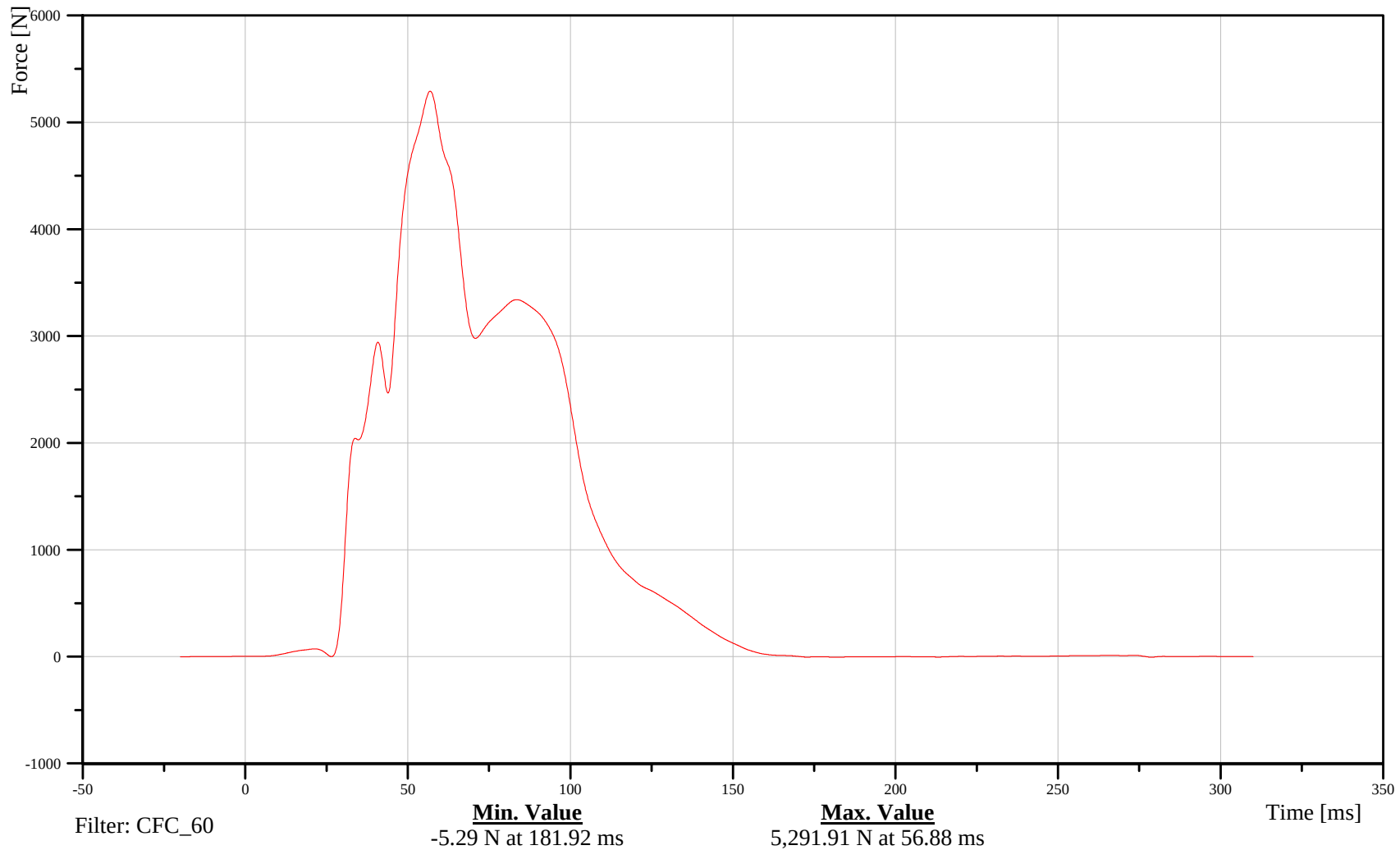
Bullet Vehicle Right Front Passenger Lap Belt Force

Customer: VRTC

13SEBE0000B5FO0D

TRC Inc. Test Lab: CTF

Test Number: 091030



B-219

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Bullet Vehicle Driver Shoulder Belt Force

Date: 10/30/2009

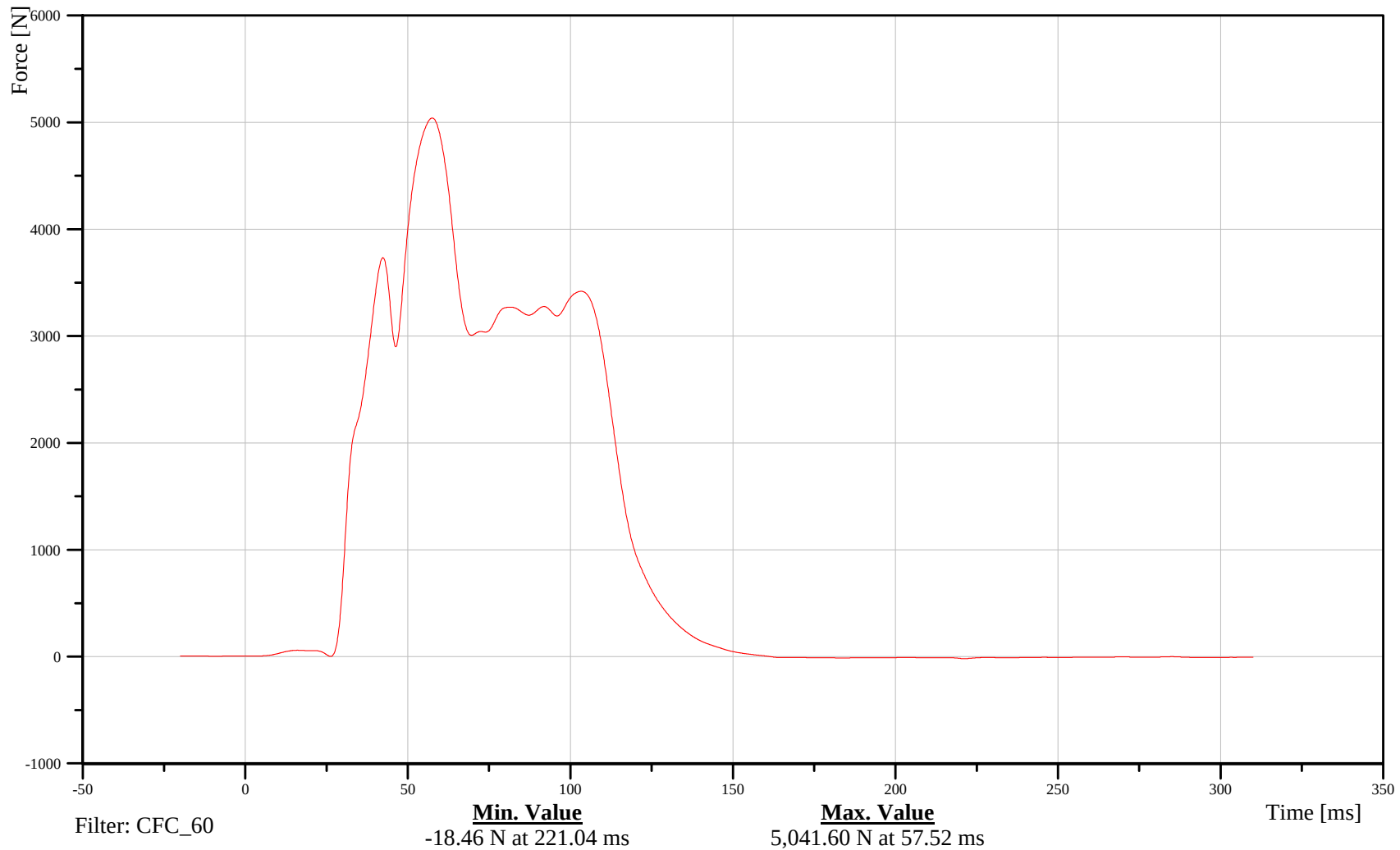
Time: 16:48

Customer: VRTC

11SEBE0000B3FO0D

TRC Inc. Test Lab: CTF

Test Number: 091030



B-220

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

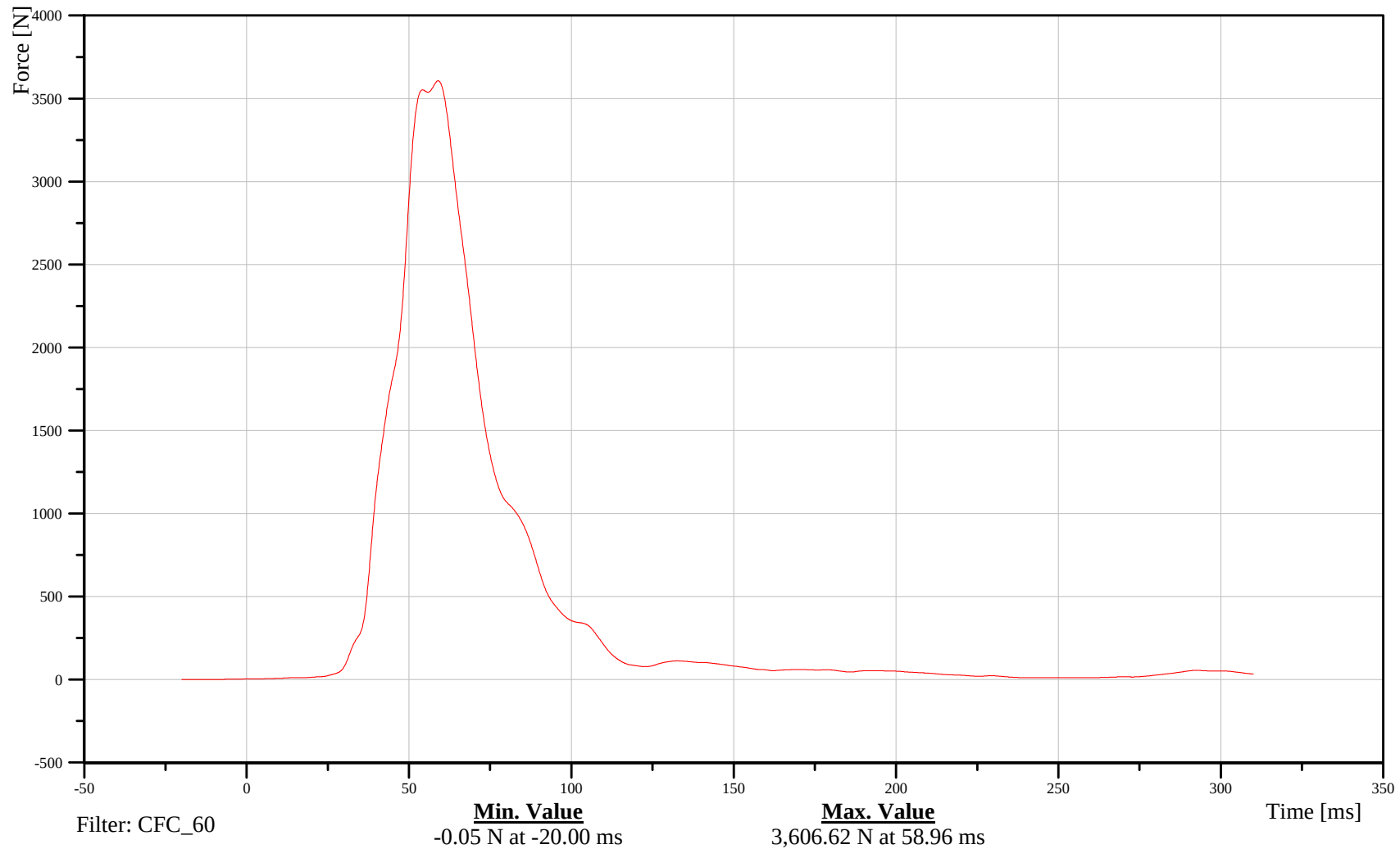
Bullet Vehicle Right Front Passenger Shoulder Belt Force

Customer: VRTC

13SEBE0000B3FO0D

TRC Inc. Test Lab: CTF

Test Number: 091030



B-221

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

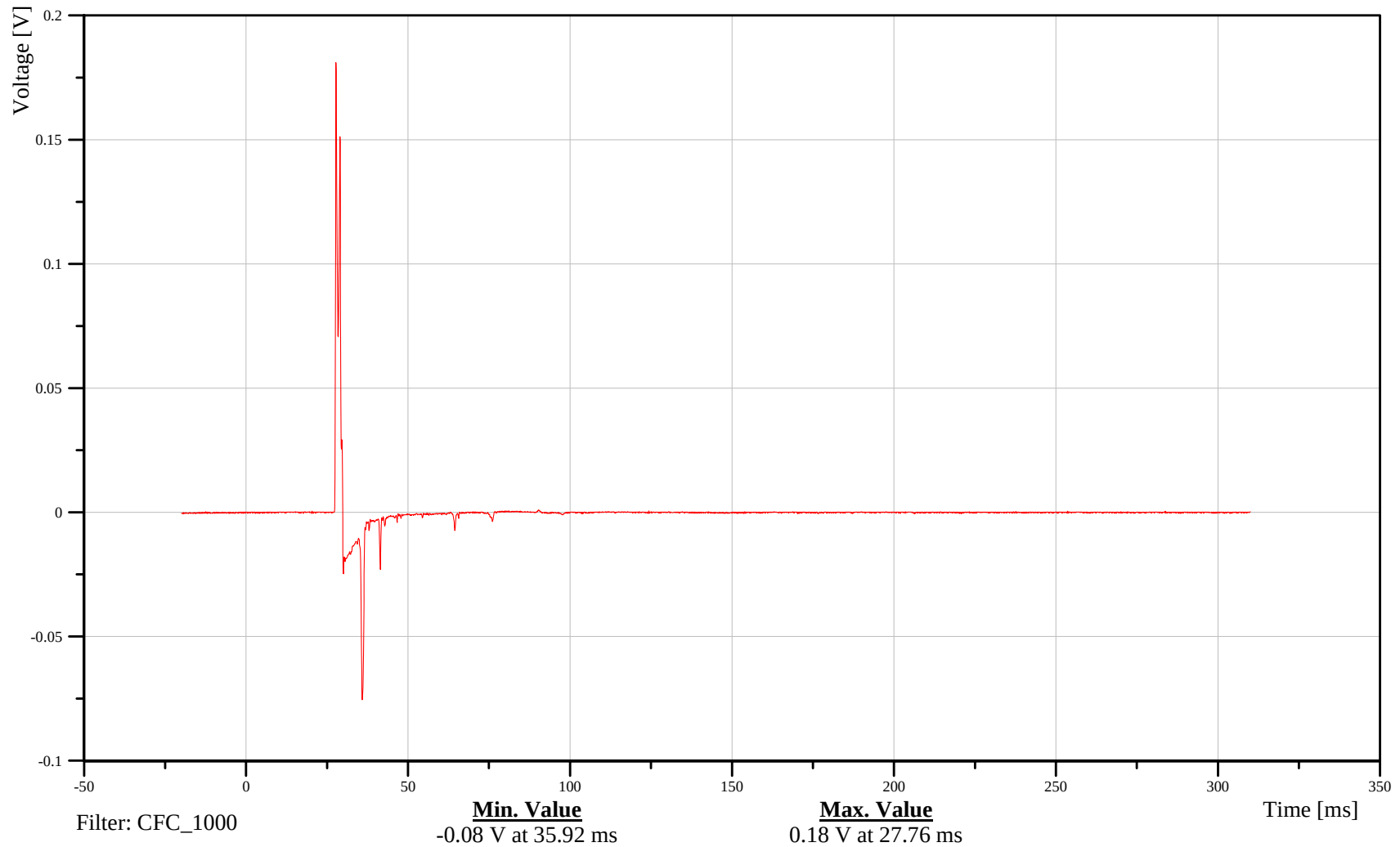
Bullet Vehicle Driver Airbag 1st Stage Fire Time

Customer: VRTC

10AIRBLEFR25VO0A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-222

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

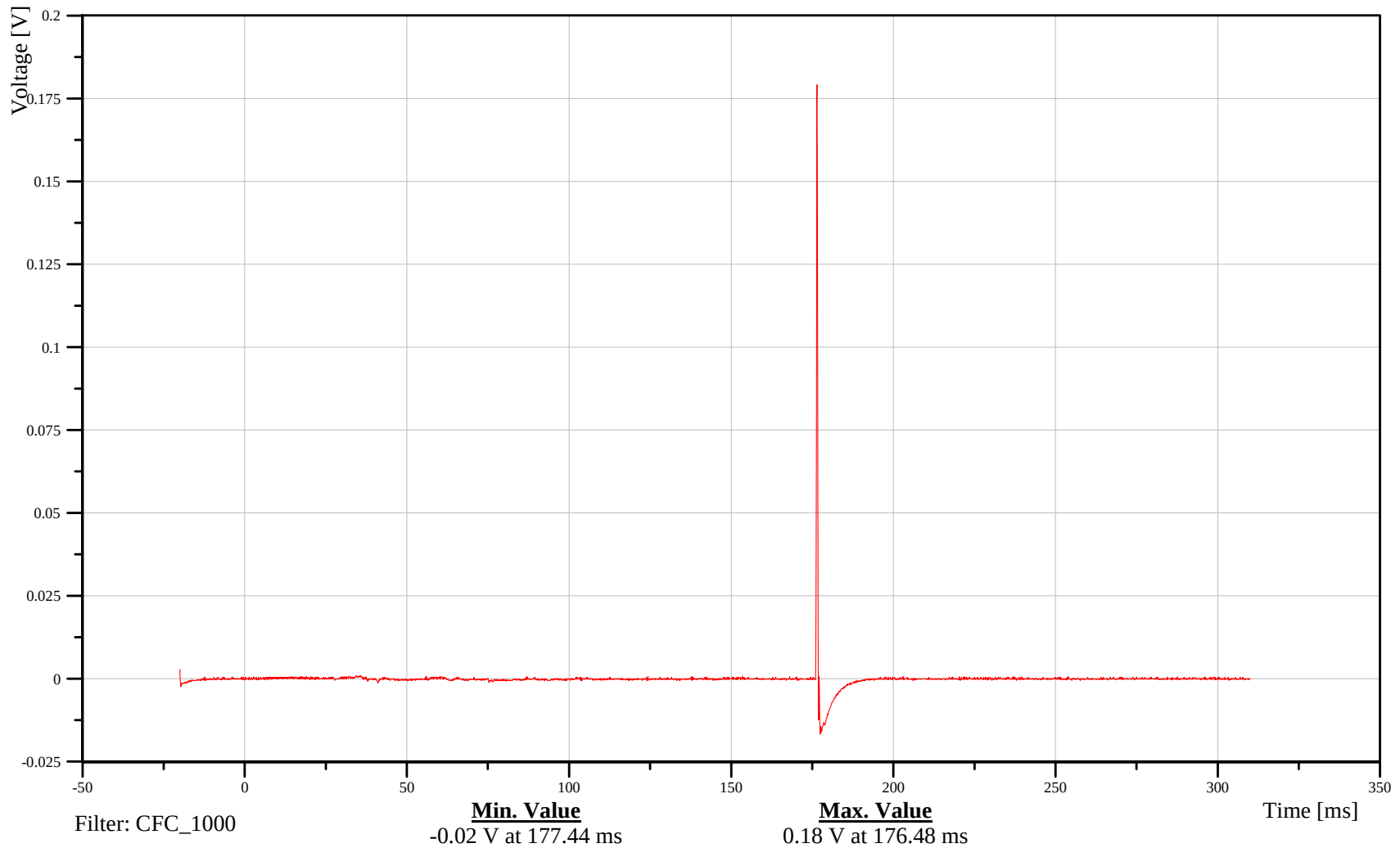
Bullet Vehicle Driver Airbag 2nd Stage Fire Time

Customer: VRTC

10AIRBLEFR26VO0A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-223

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Airbag 1st Stage Fire Time

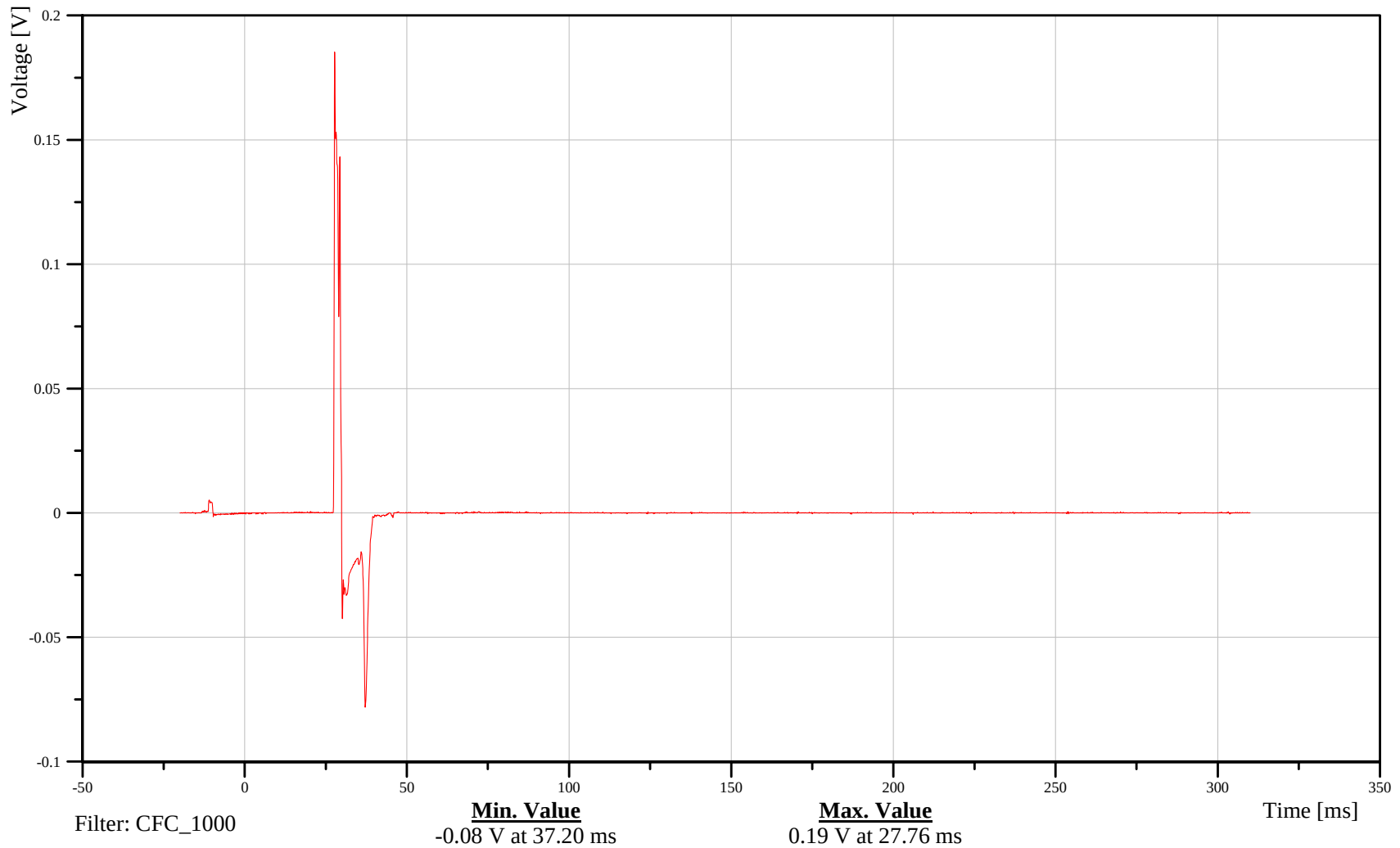
Date: 10/30/2009
Time: 16:48

Customer: VRTC

10AIRBRIFR25VO0A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-224

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Bullet Vehicle Right Front Passenger Airbag 2nd Stage Fire Time

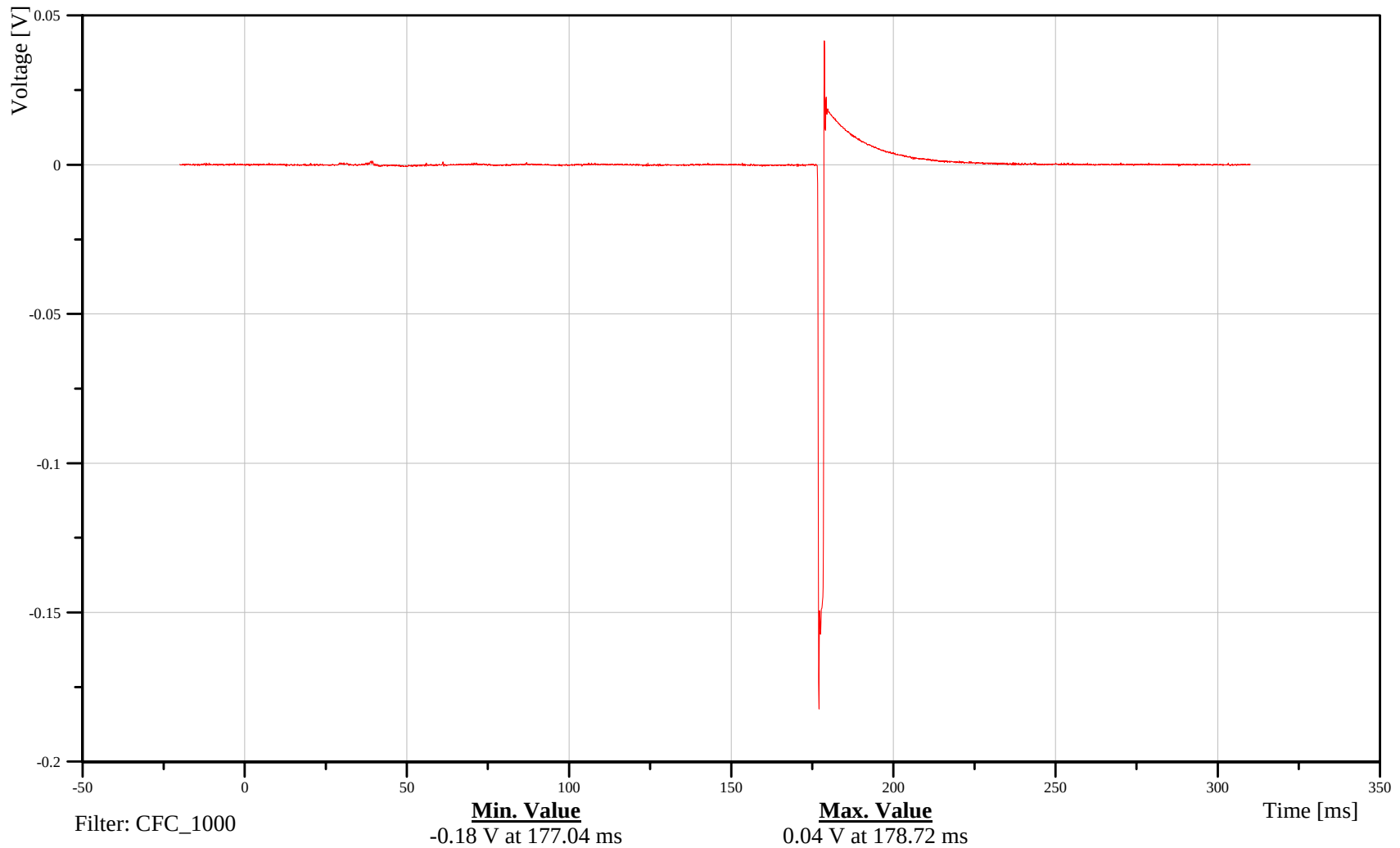
Date: 10/30/2009
Time: 16:48

Customer: VRTC

10AIRBRIFR26VO0A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-225

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

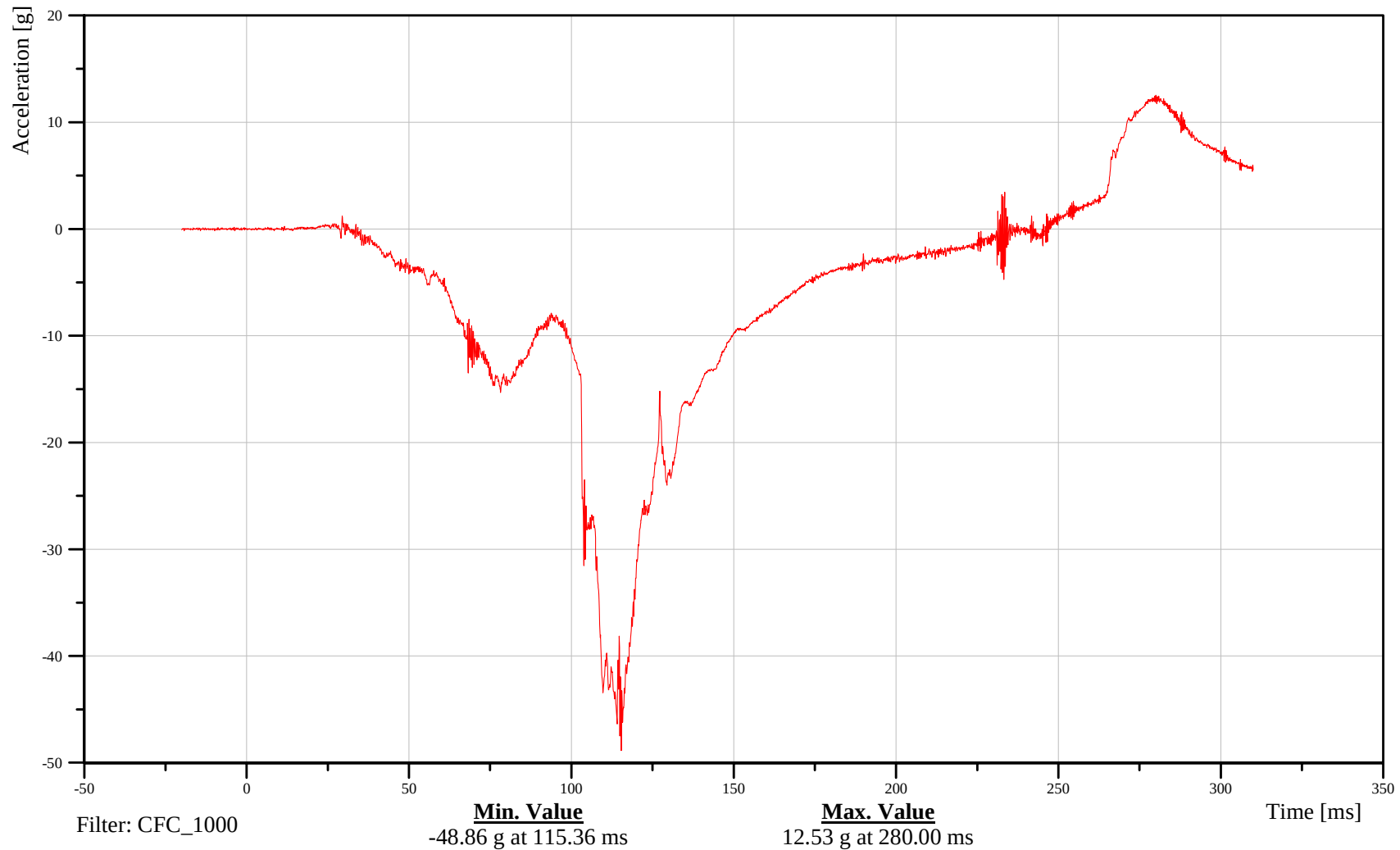
Target Vehicle Driver Head X-Axis Acceleration

Customer: VRTC

21HEADCG00THACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-226

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

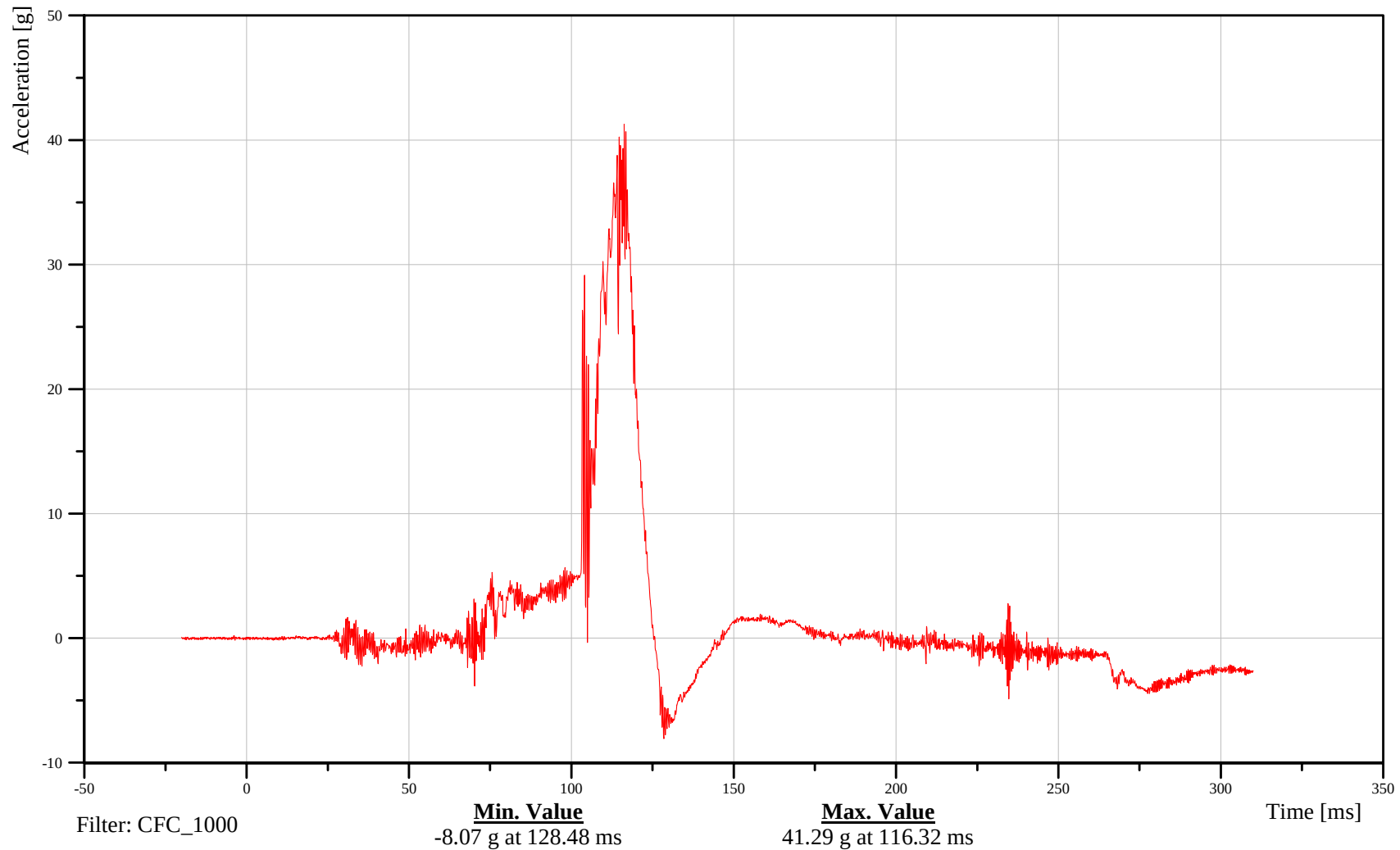
Target Vehicle Driver Head Y-Axis Acceleration

Customer: VRTC

21HEADCG00THACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-227

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

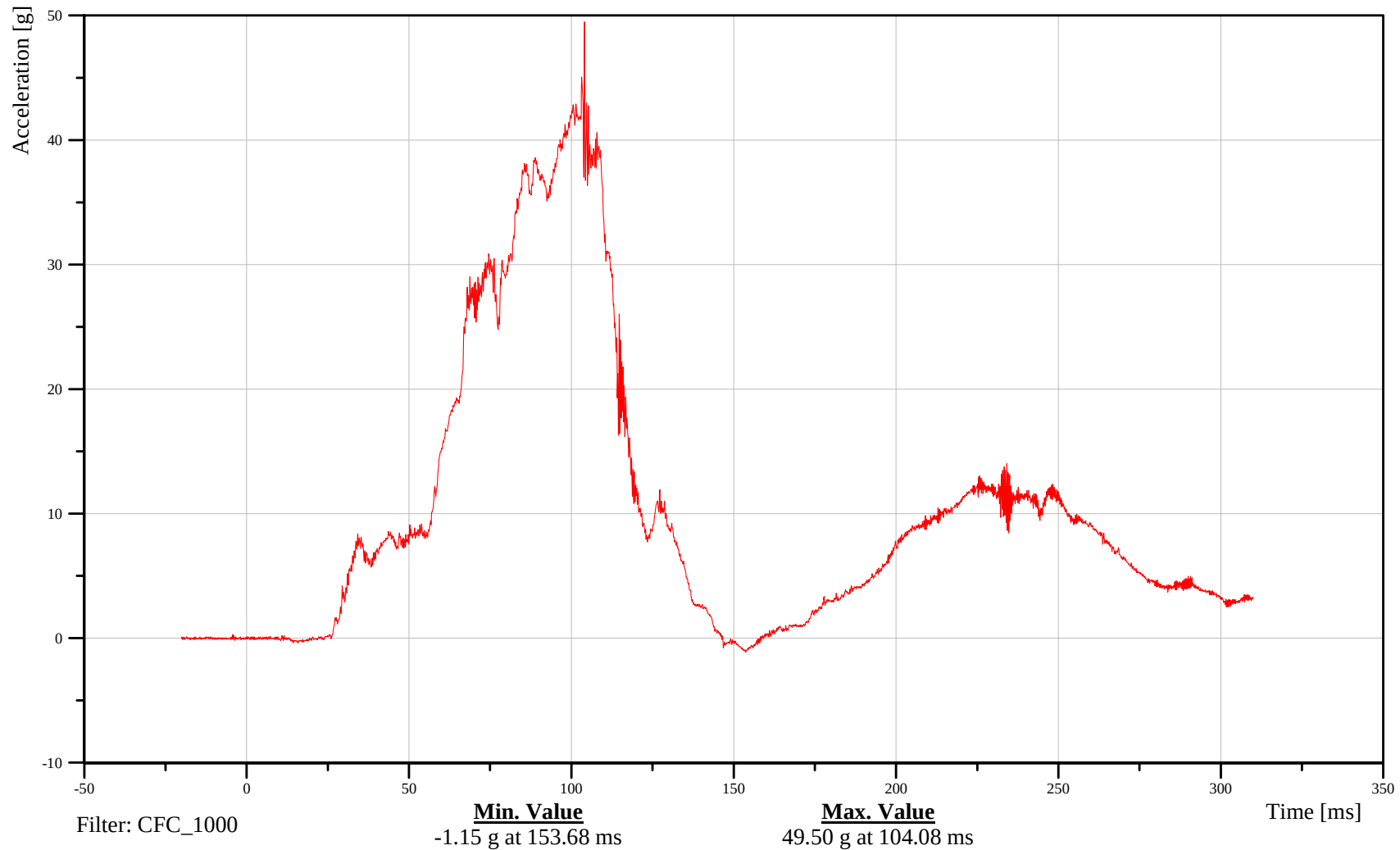
Target Vehicle Driver Head Z-Axis Acceleration

Customer: VRTC

21HEADCG00THACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-228

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

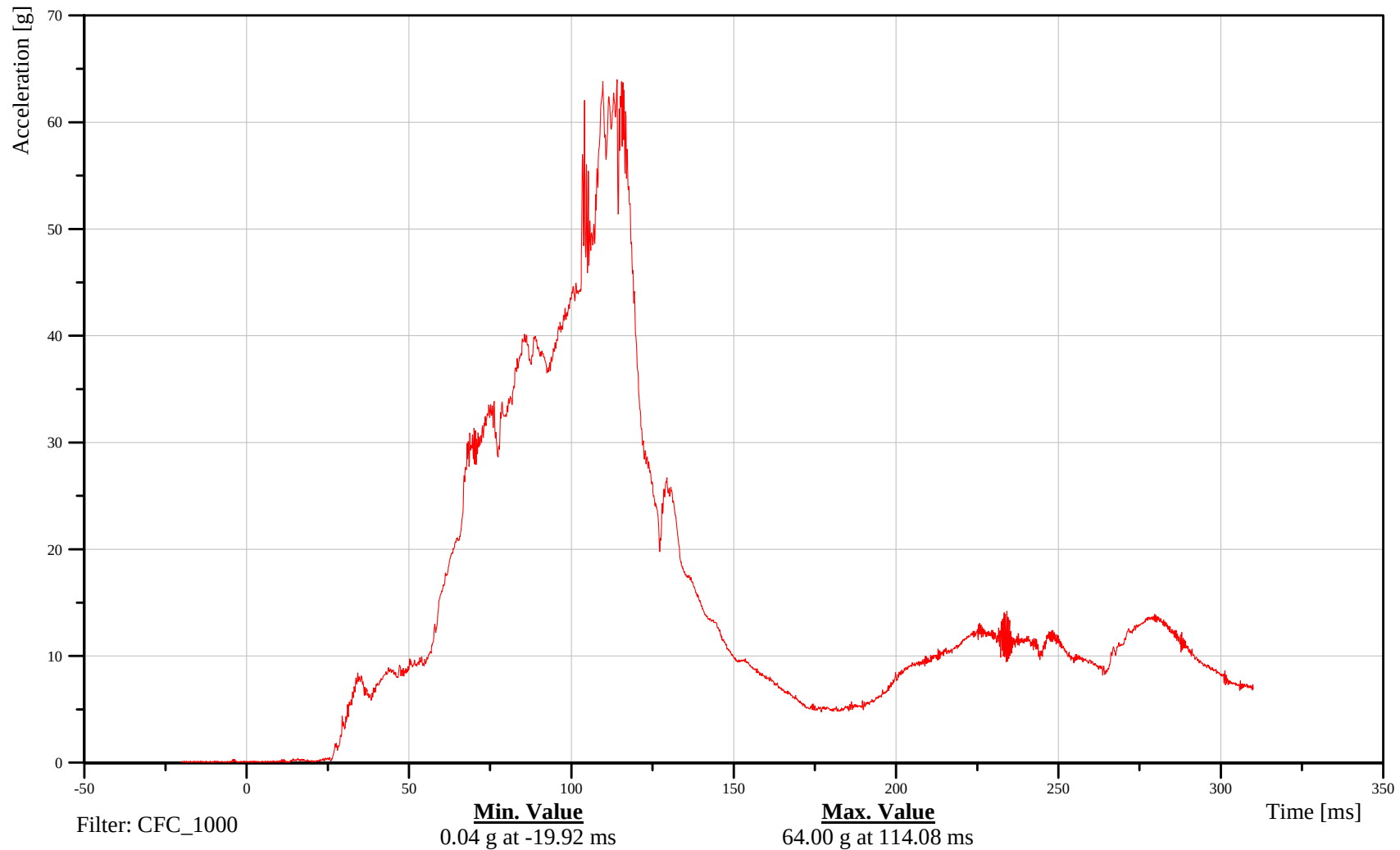
Target Vehicle Driver Head Resultant Acceleration

Customer: VRTC

21HEADCG00THACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-229

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

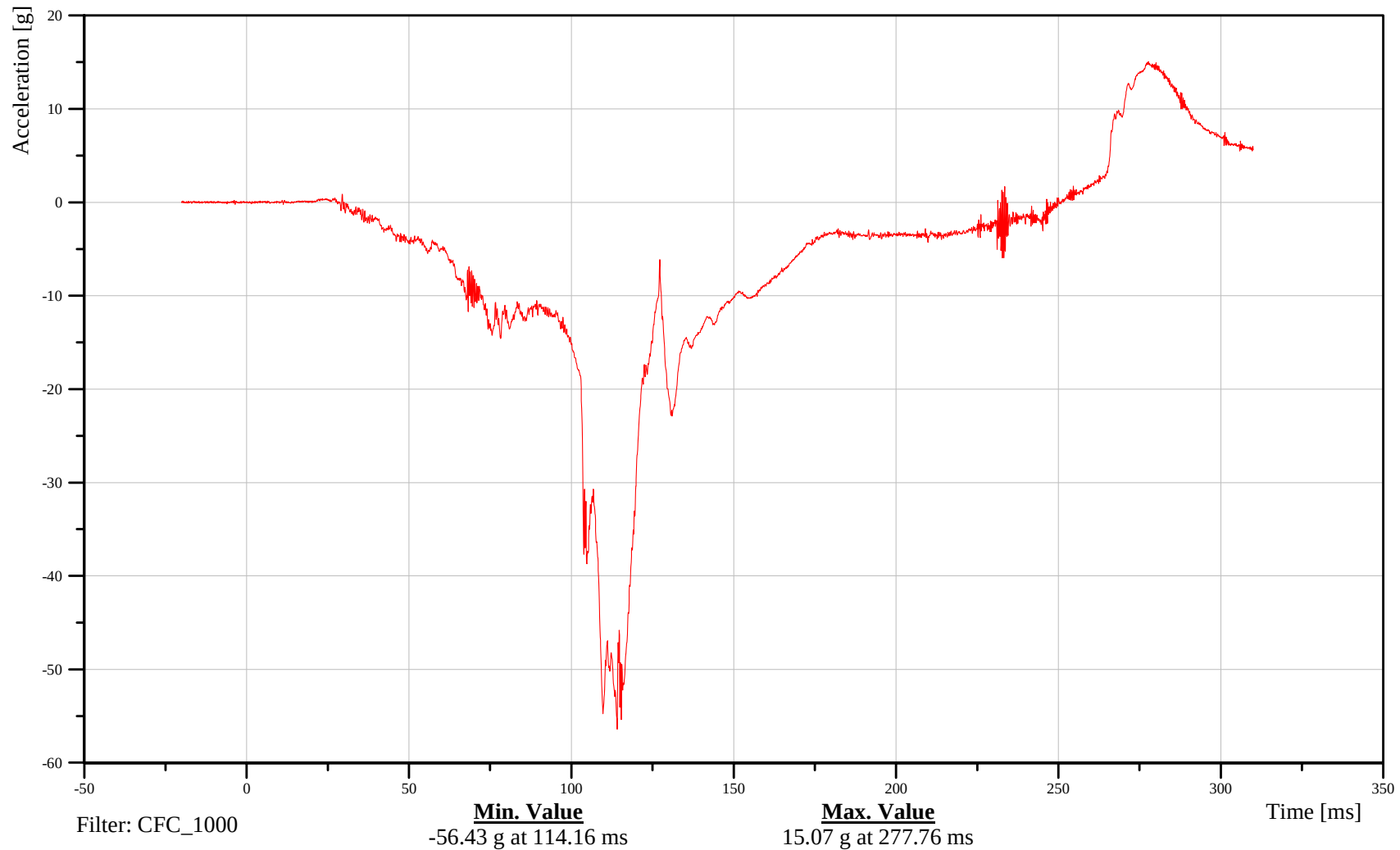
Target Vehicle Driver Head Left X-Axis Acceleration

Customer: VRTC

21HEADLE00THACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-230

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

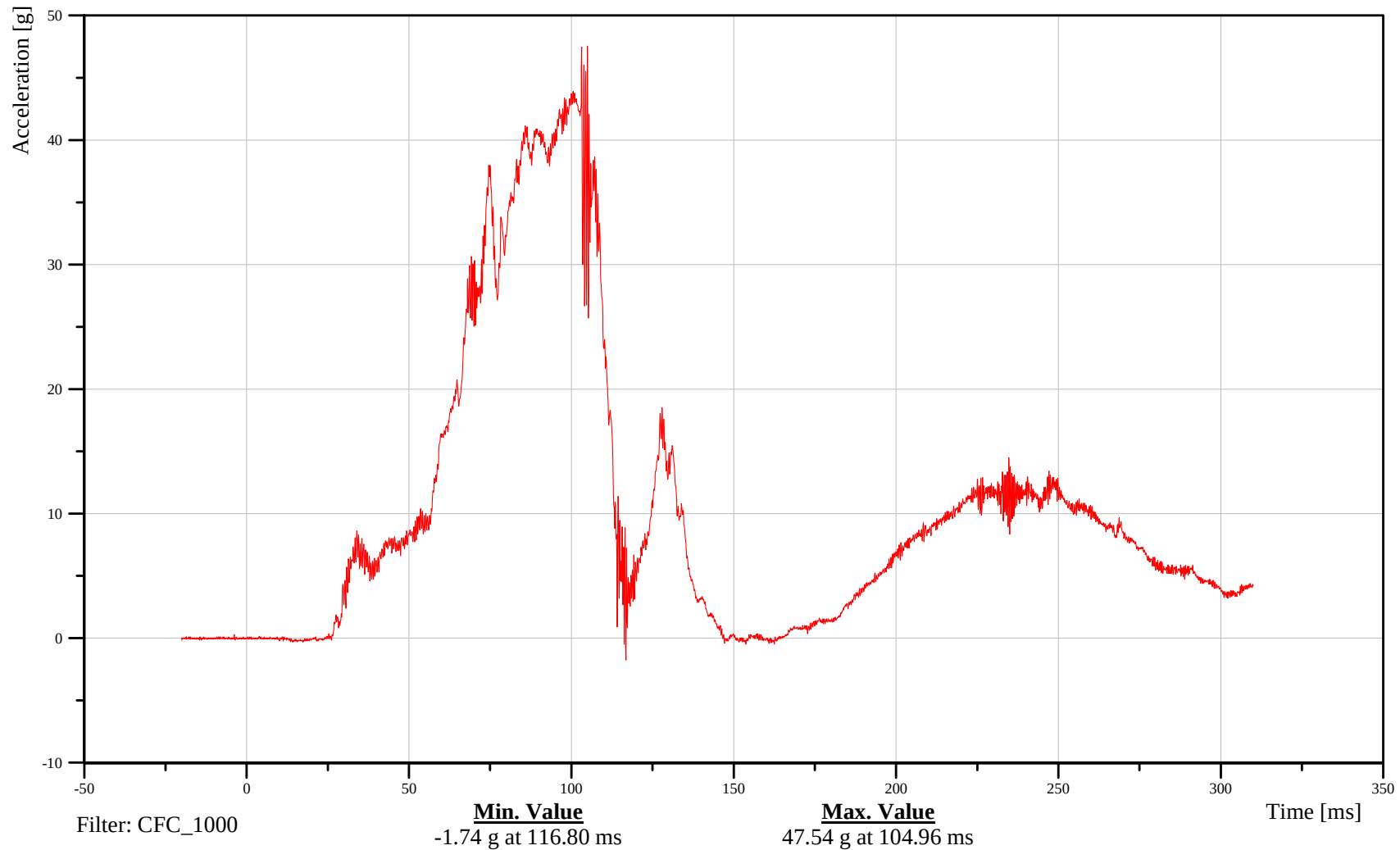
Target Vehicle Driver Head Left Z-Axis Acceleration

Customer: VRTC

21HEADLE00THACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-231

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

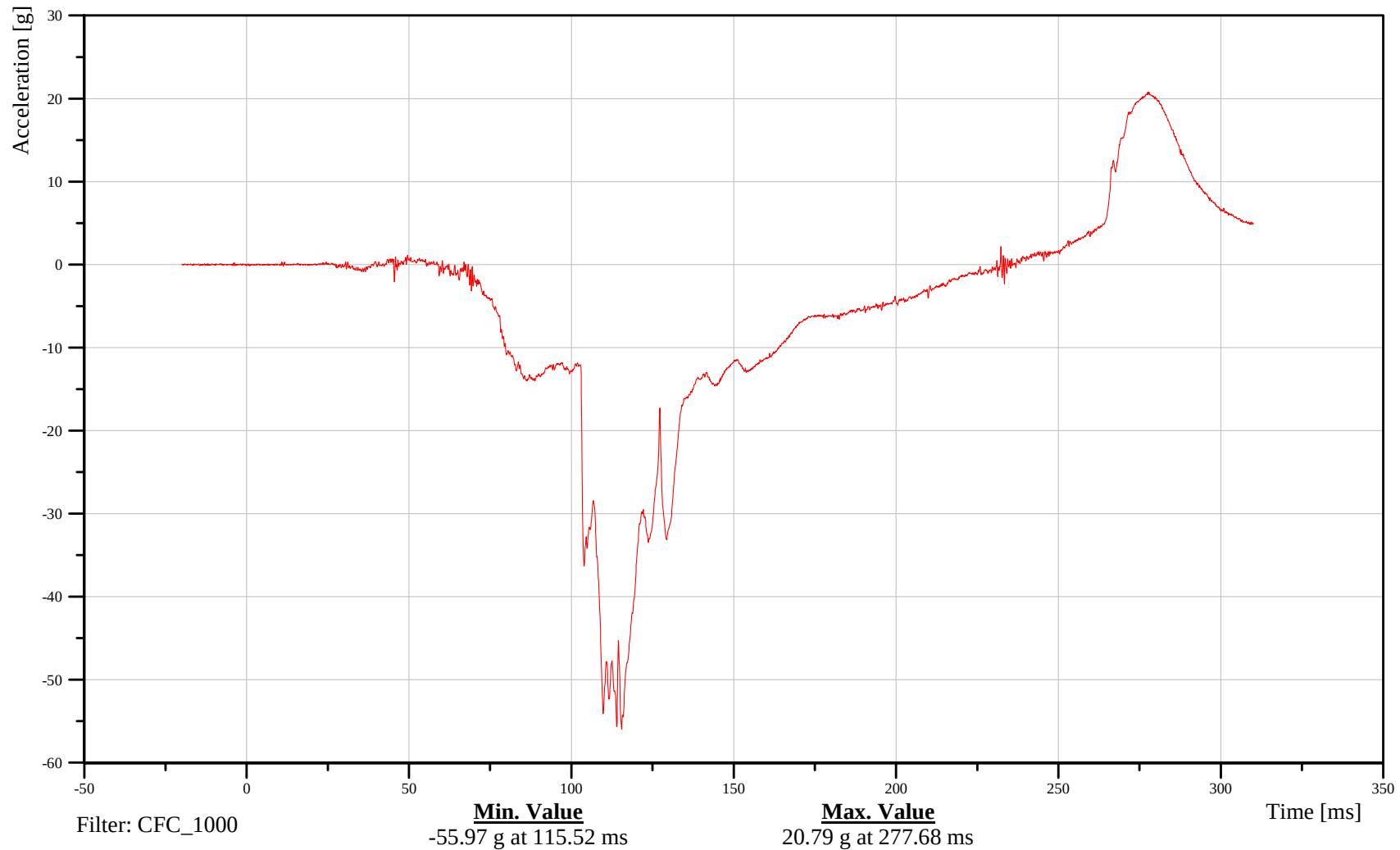
Target Vehicle Driver Head Top X-Axis Acceleration

Customer: VRTC

21HEADUP00THACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-232

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

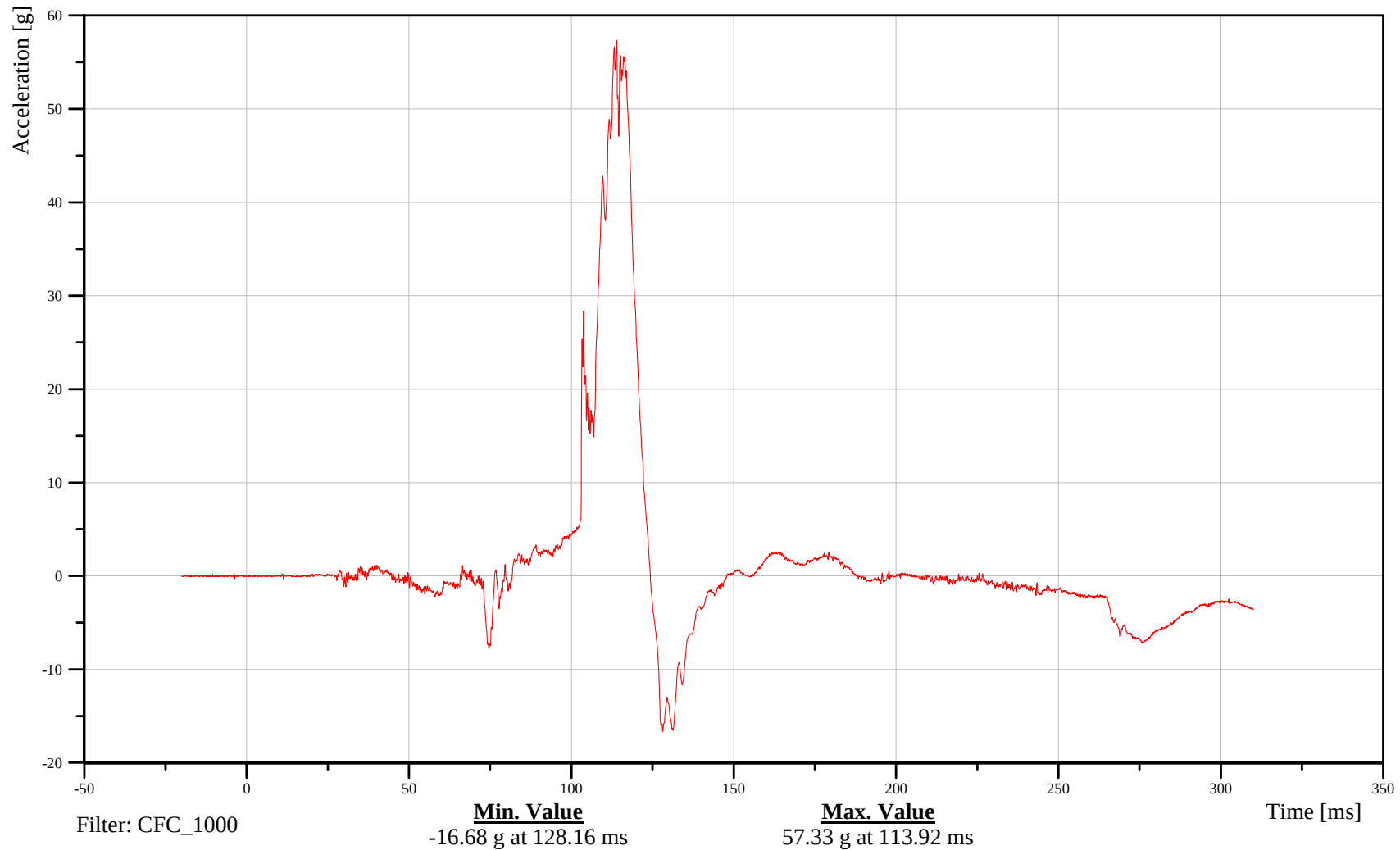
Target Vehicle Driver Head Top Y-Axis Acceleration

Customer: VRTC

21HEADUP00THACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-233

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

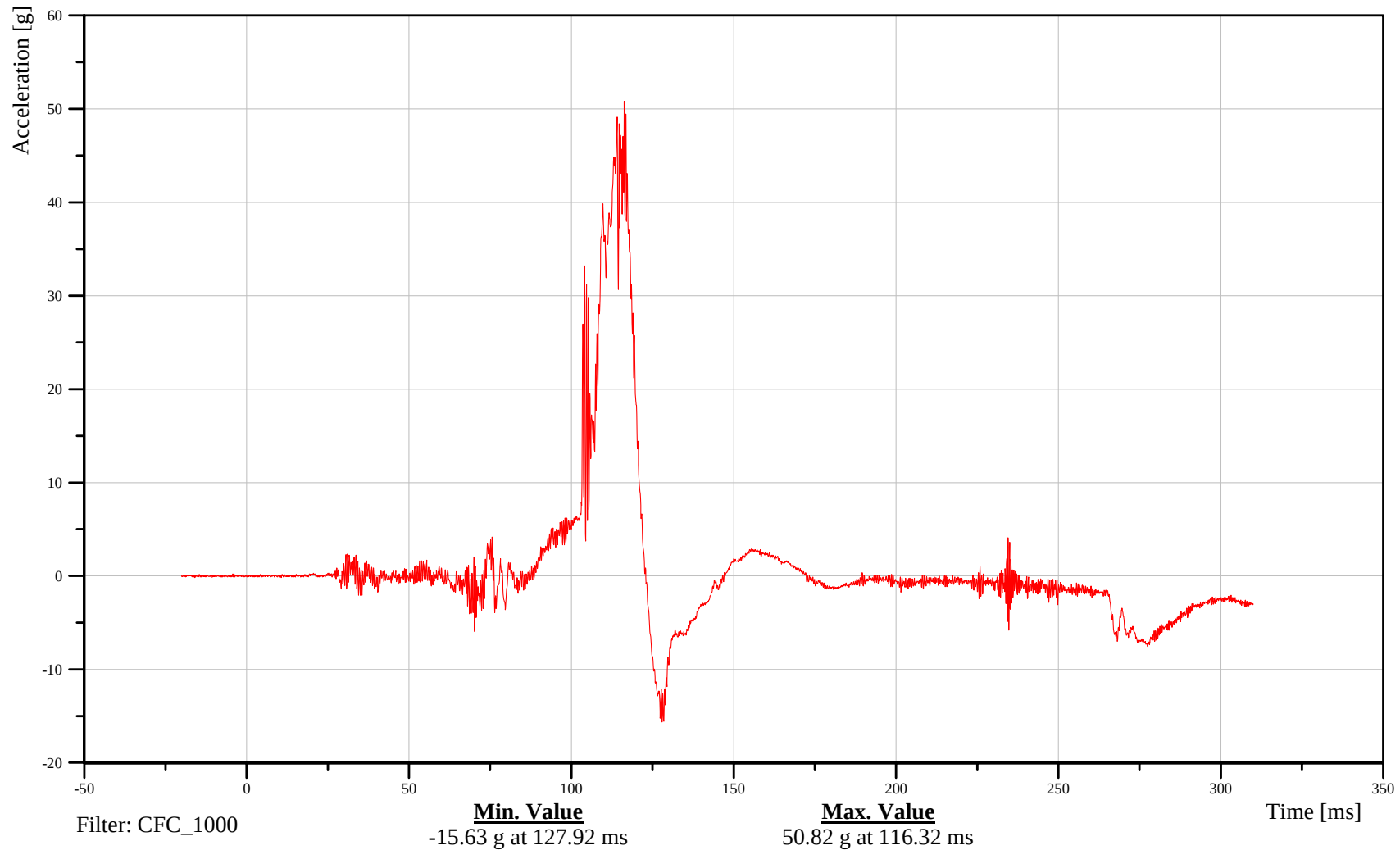
Target Vehicle Driver Head Rear Y-Axis Acceleration

Customer: VRTC

21HEADRE00THACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-234

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

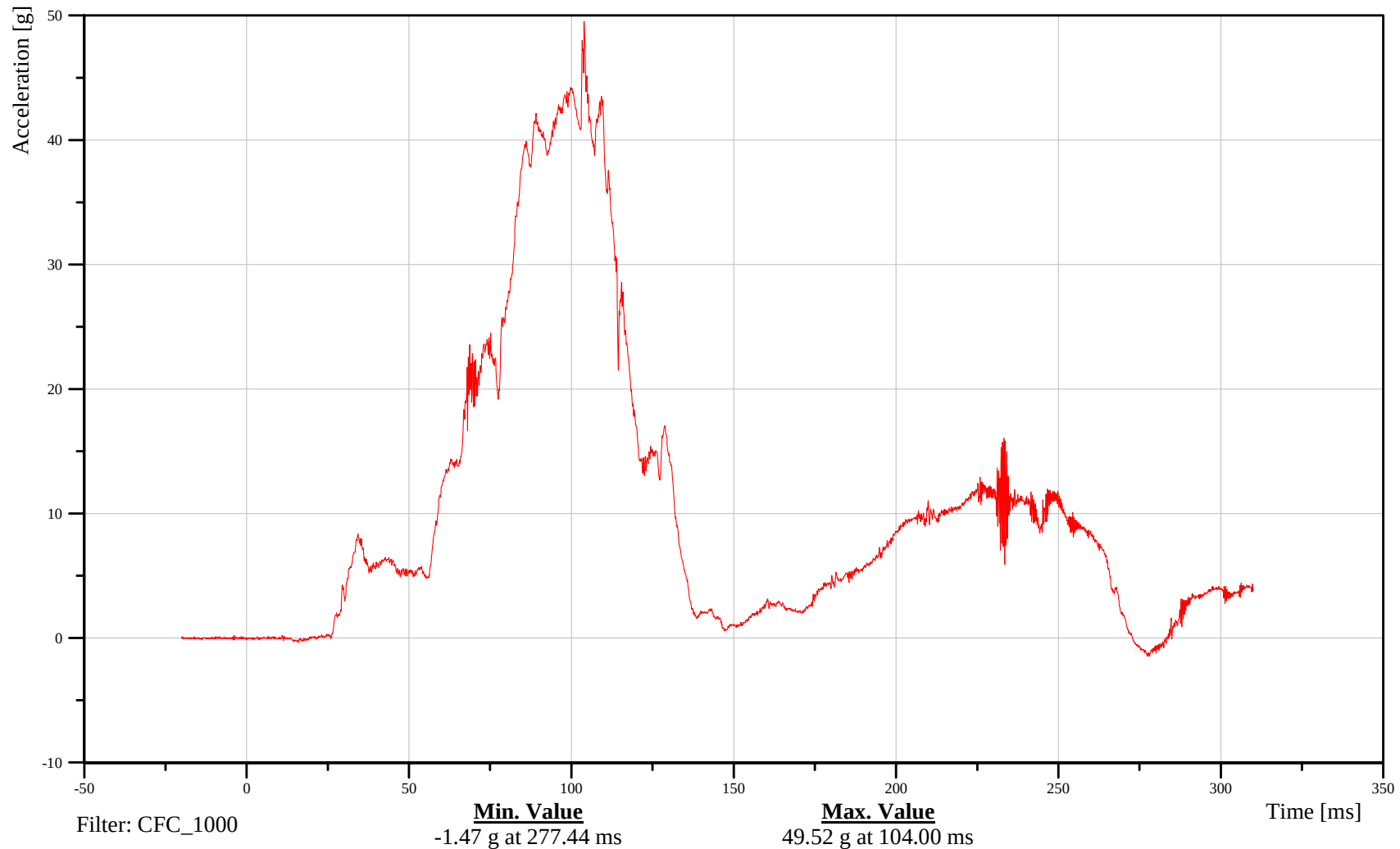
Target Vehicle Driver Head Rear Z-Axis Acceleration

Customer: VRTC

21HEADRE00THACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-235

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

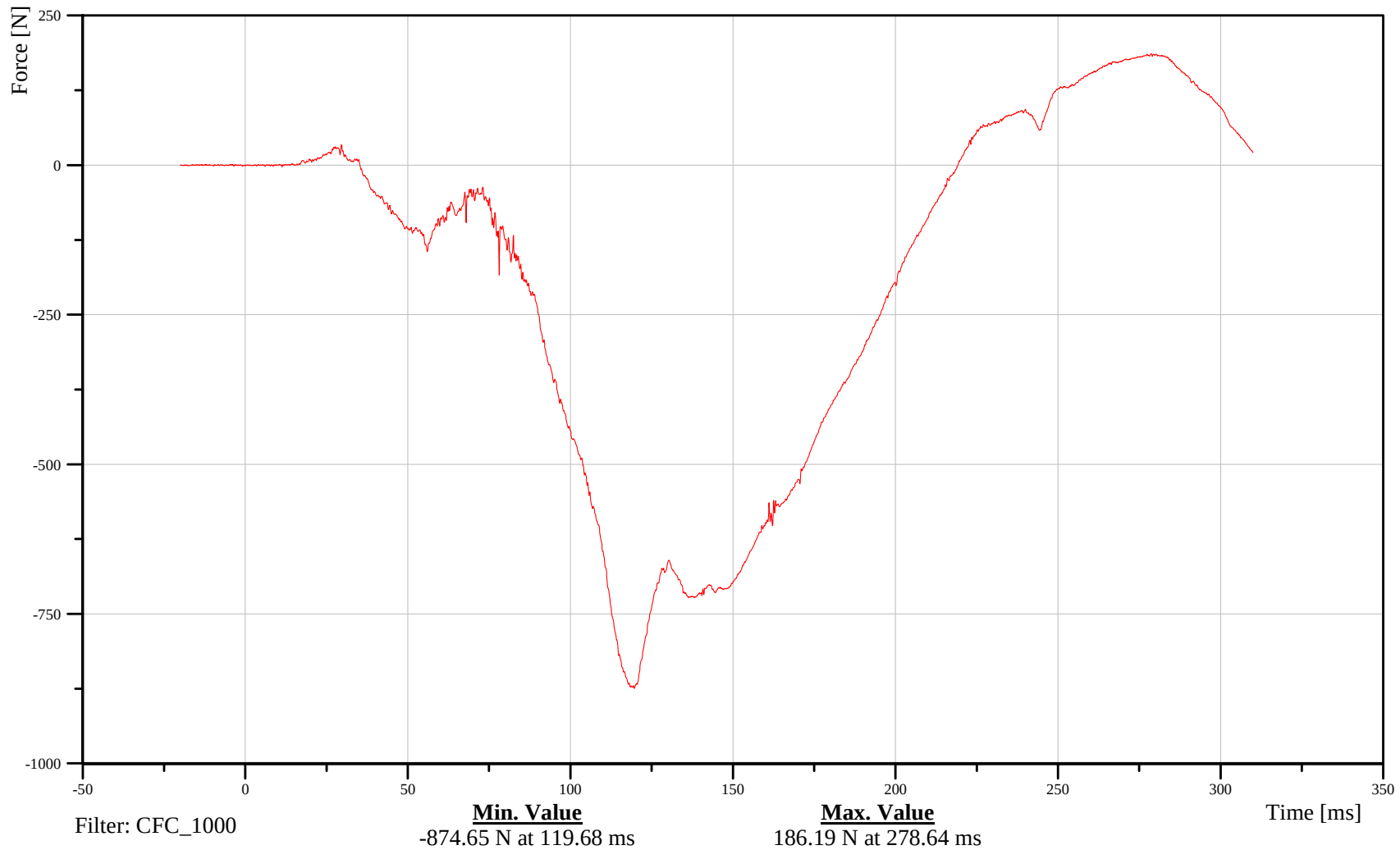
Target Vehicle Driver Upper Neck X-Axis Force

Customer: VRTC

21NECKUP00THFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-236

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Upper Neck Y-Axis Force

Date: 10/30/2009

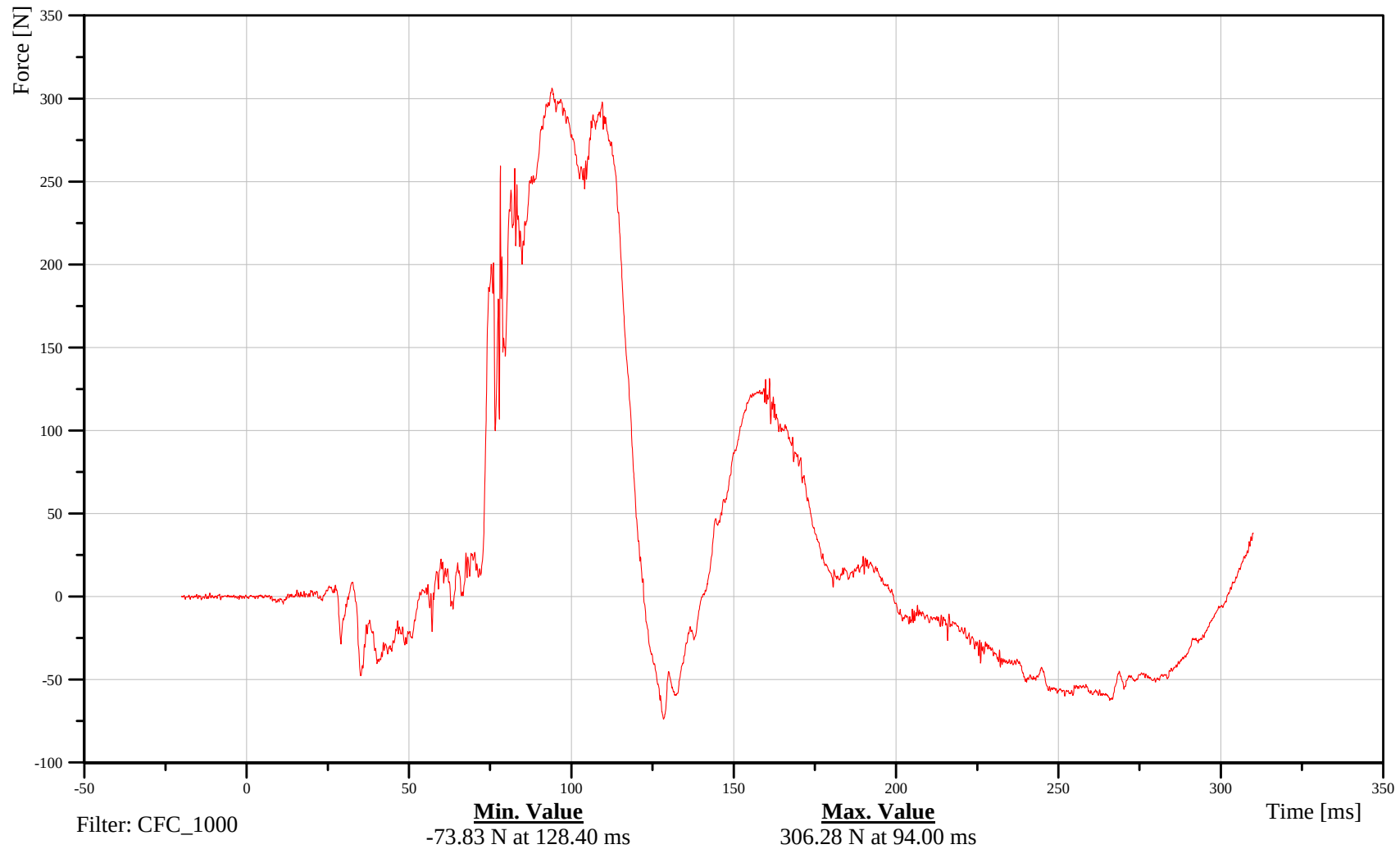
Time: 16:48

Customer: VRTC

21NECKUP00THFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-237

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

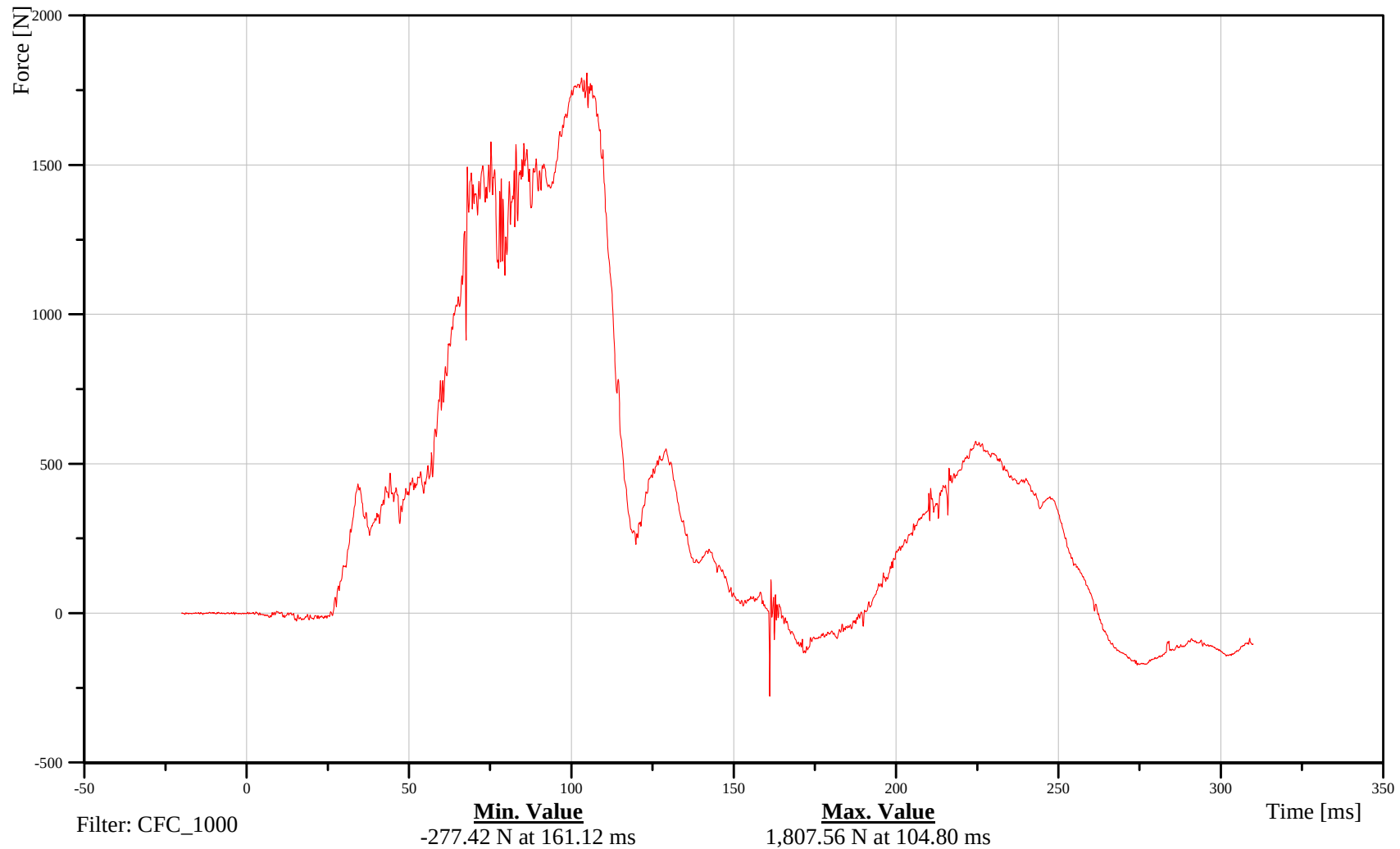
Target Vehicle Driver Upper Neck Z-Axis Force

Customer: VRTC

21NECKUP00THFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-238

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

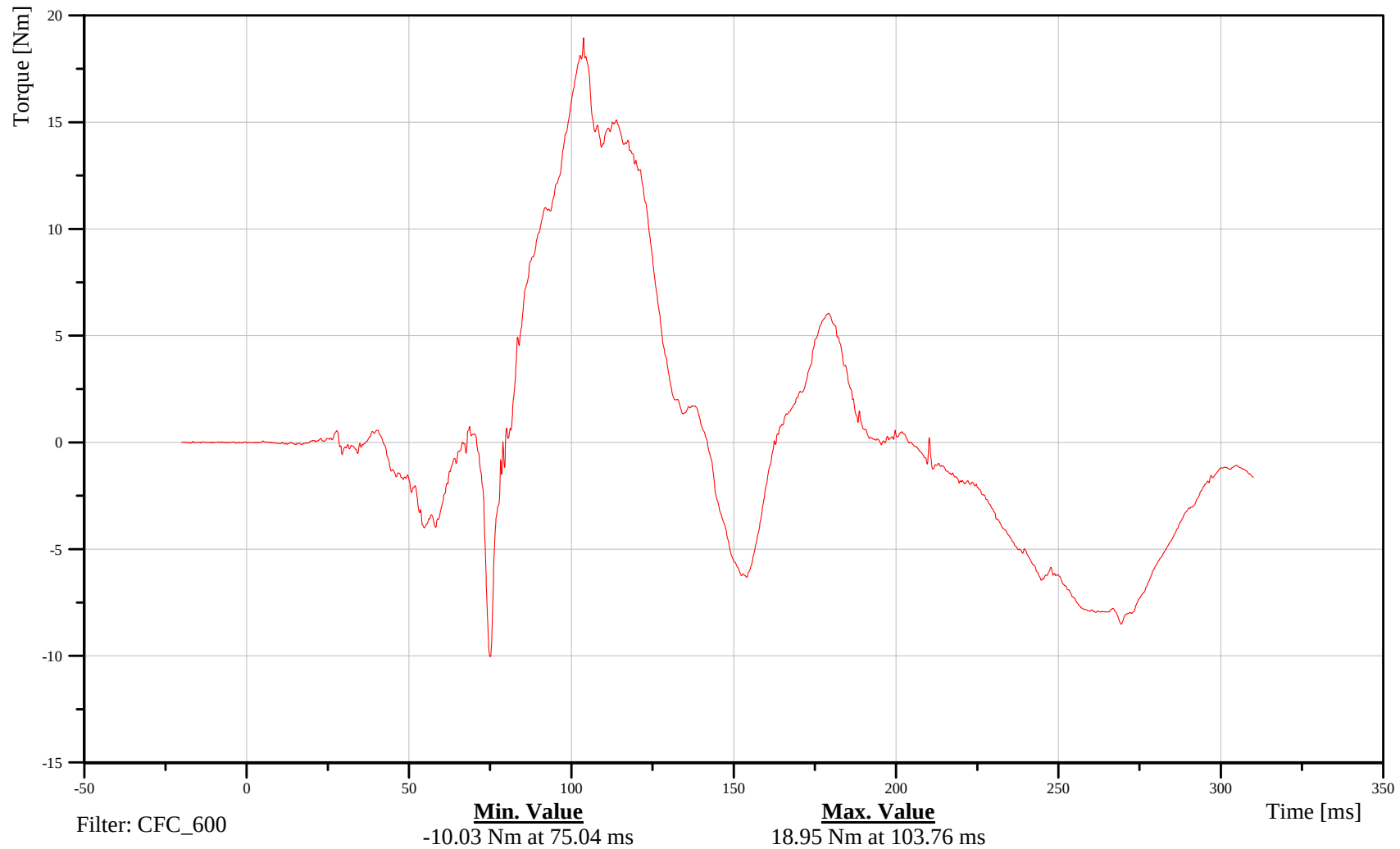
Target Vehicle Driver Upper Neck Moment About X Axis

Customer: VRTC

21NECKUP00THMOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-239

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

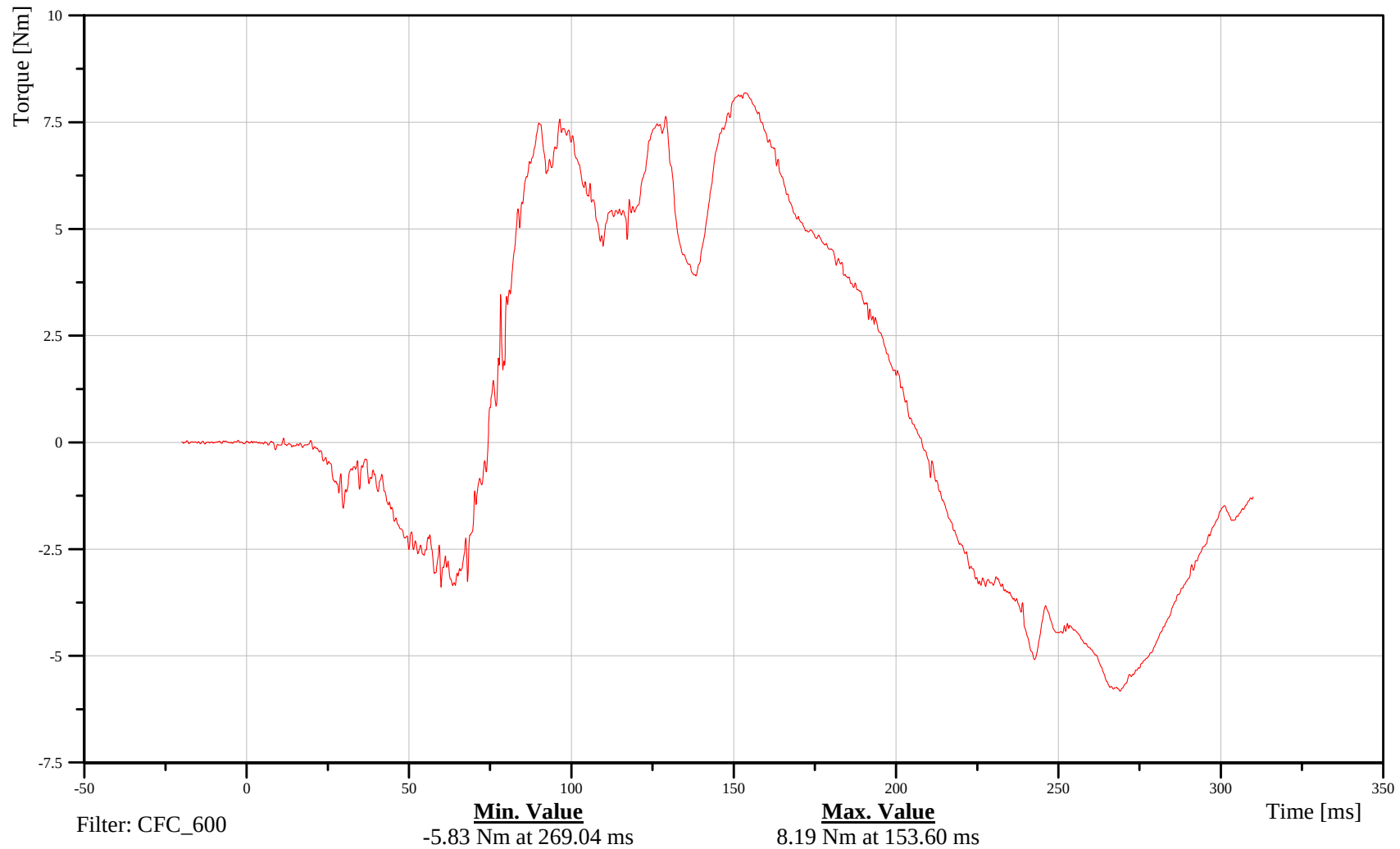
Target Vehicle Driver Upper Neck Moment About Y Axis

Customer: VRTC

21NECKUP00THMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-240

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

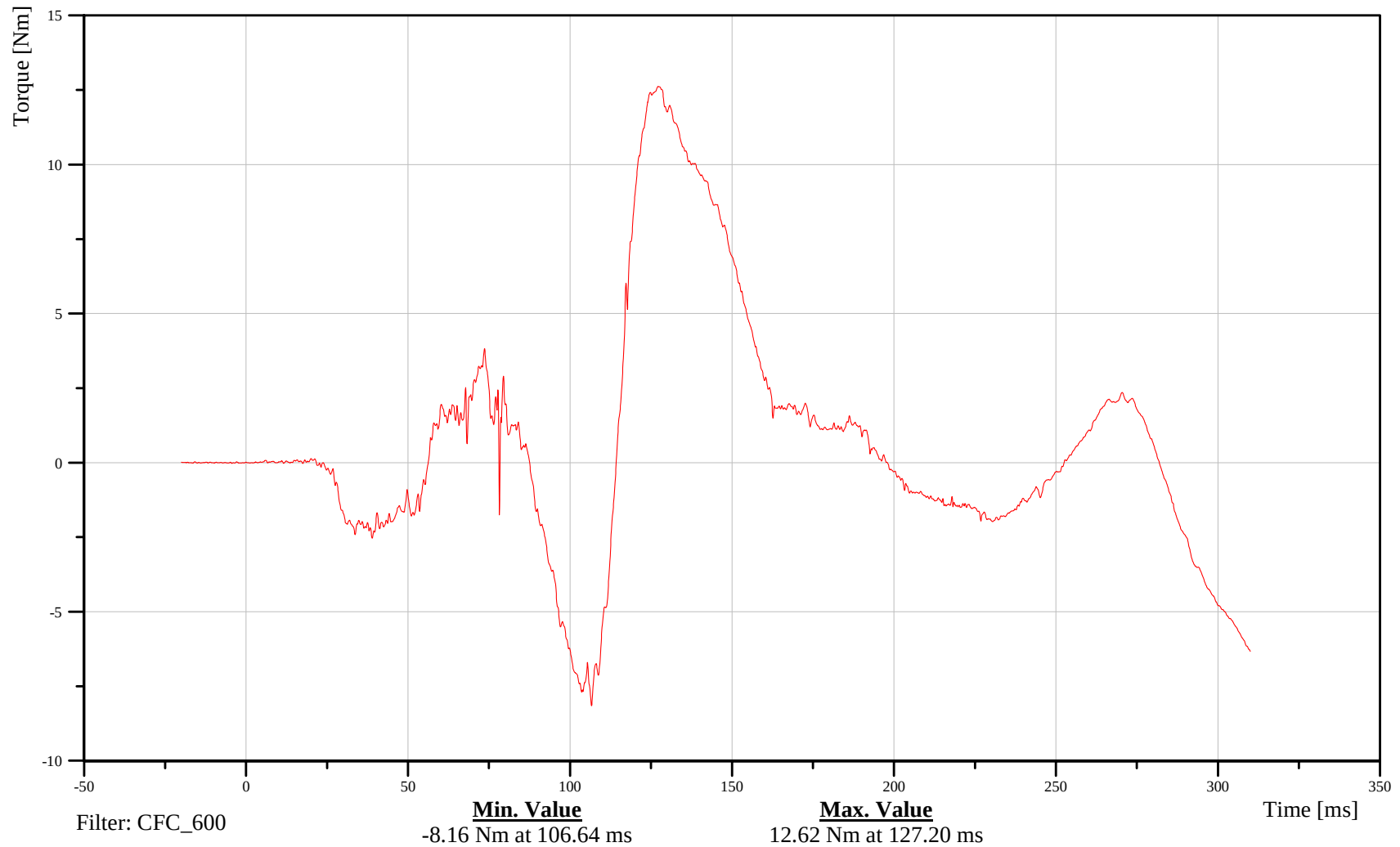
Target Vehicle Driver Upper Neck Moment About Z Axis

Customer: VRTC

21NECKUP00THMOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-241

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

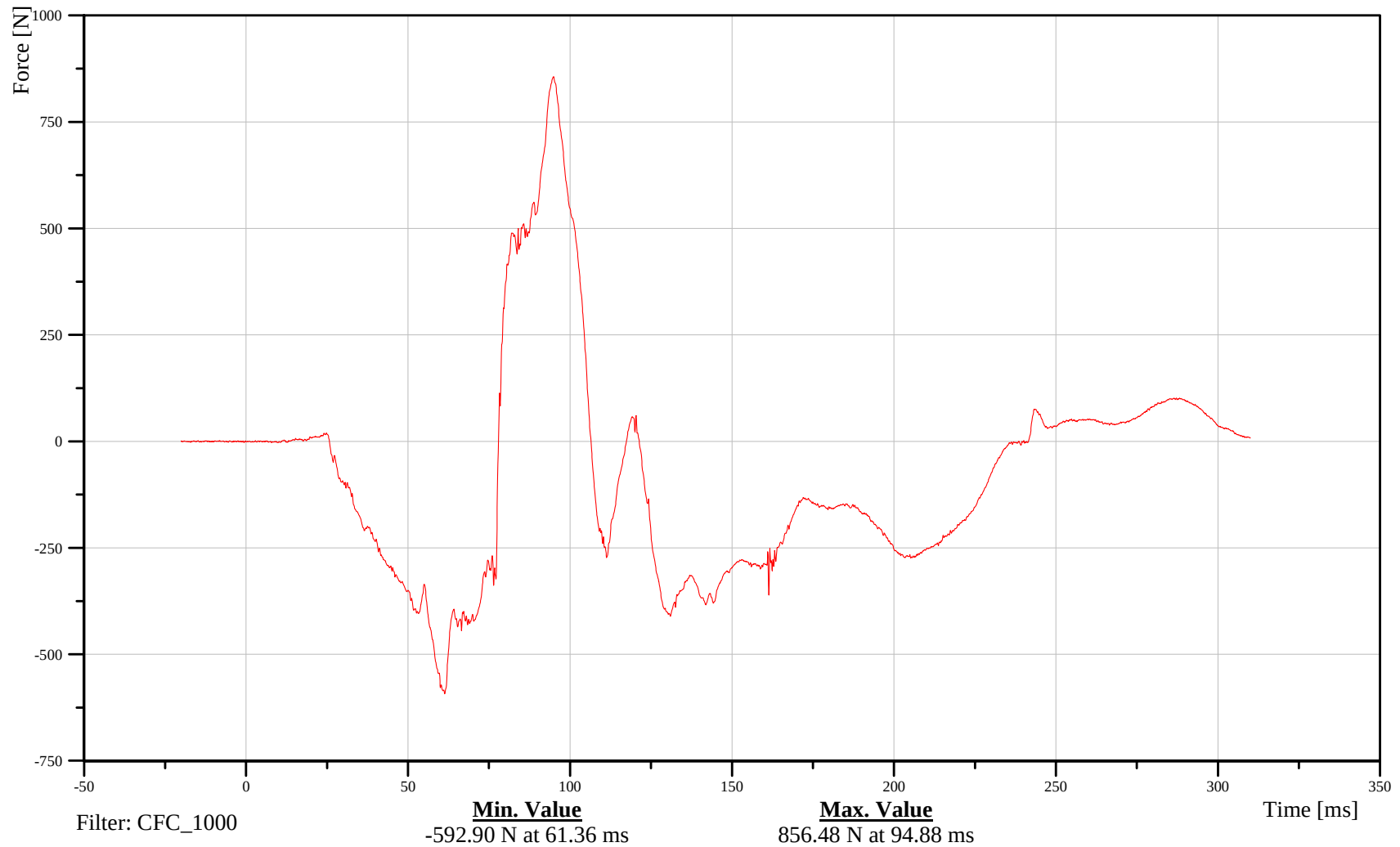
Target Vehicle Driver Lower Neck X-Axis Force

Customer: VRTC

21NECKLO00THFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-242

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Lower Neck Y-Axis Force

Date: 10/30/2009

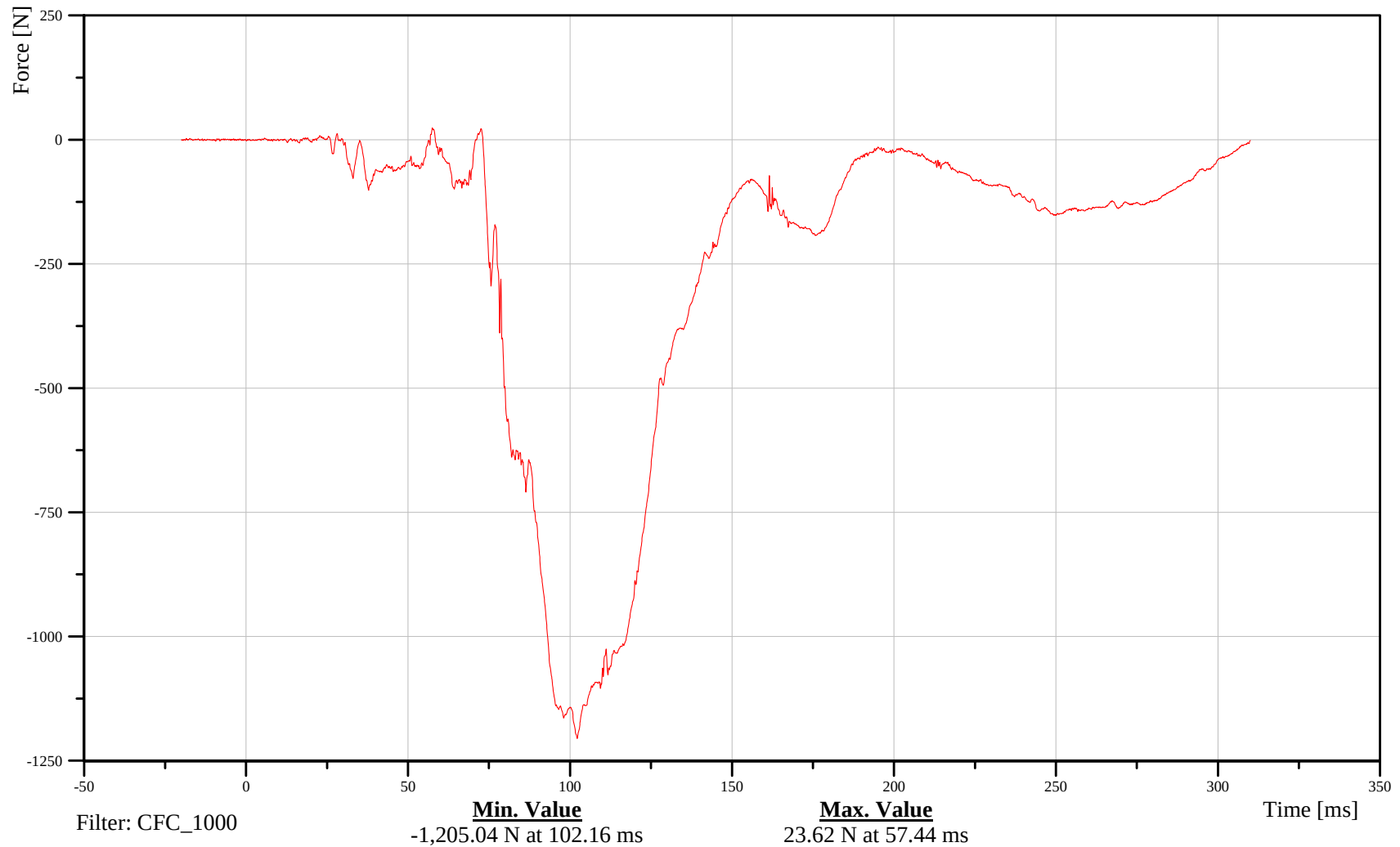
Time: 16:48

Customer: VRTC

21NECKLO00THFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-243

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Lower Neck Z-Axis Force

Date: 10/30/2009

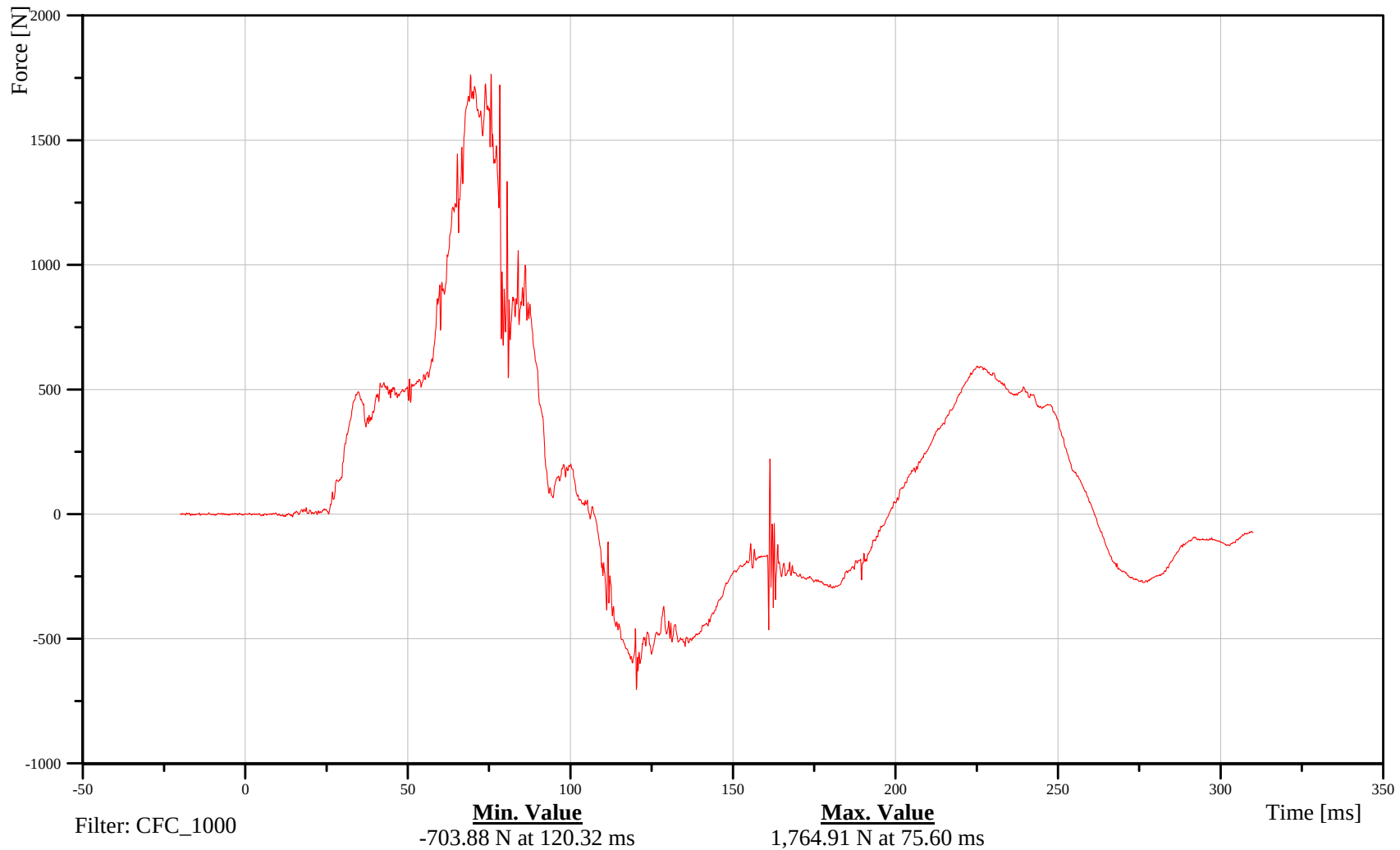
Time: 16:48

Customer: VRTC

21NECKLO00THFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-244

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

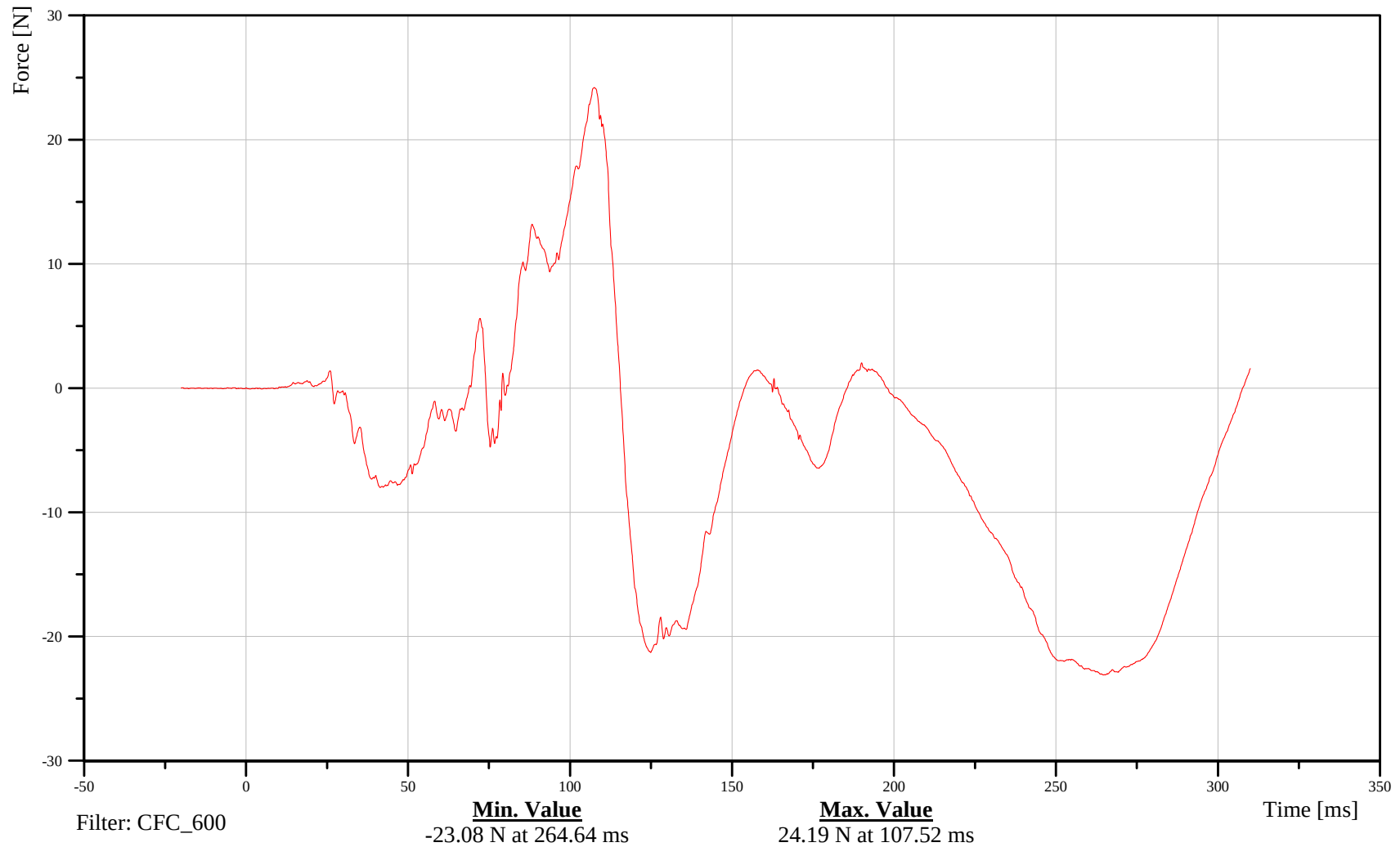
Target Vehicle Driver Lower Neck Moment About X Axis

Customer: VRTC

21NECKLO00THMOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-245

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

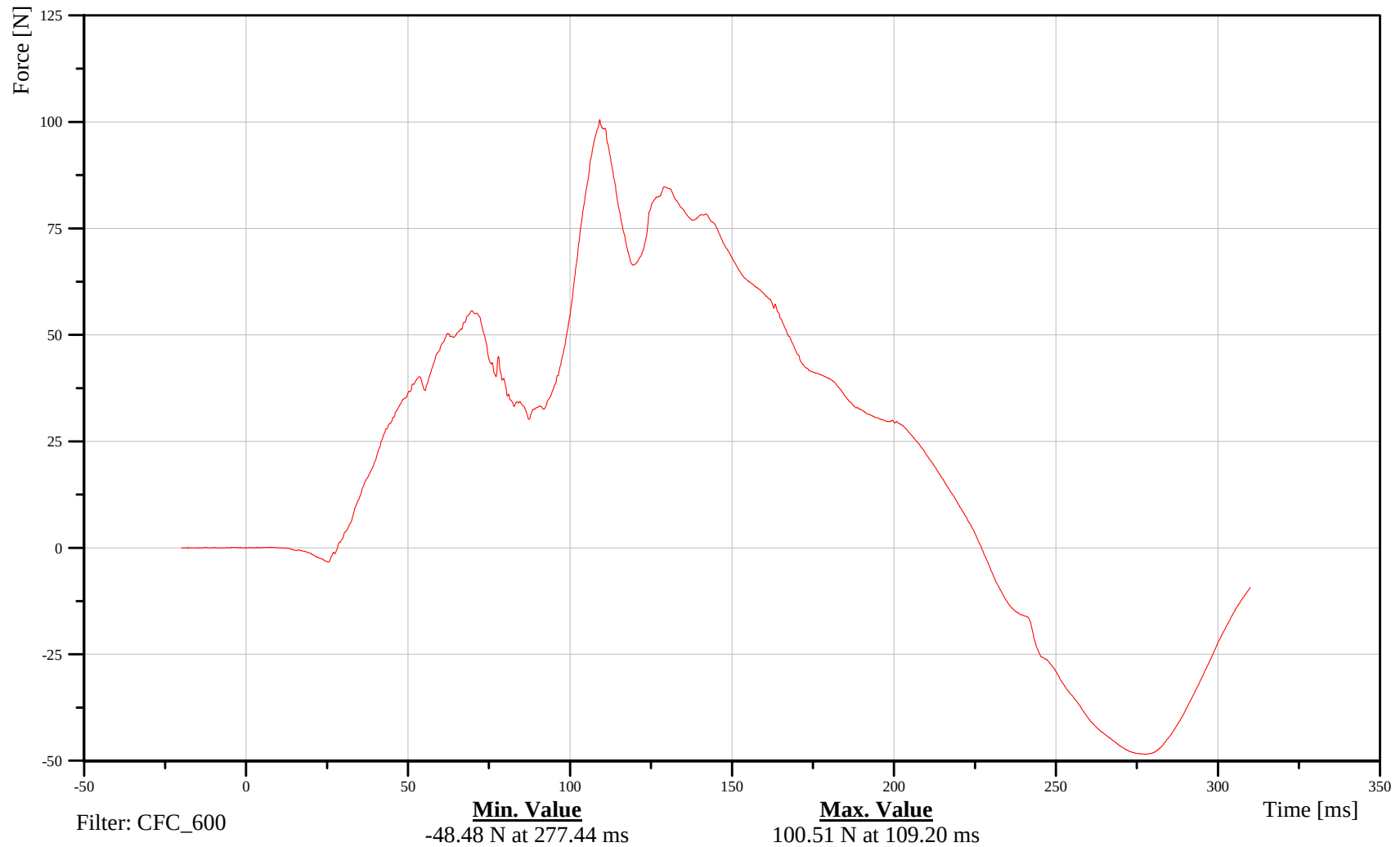
Target Vehicle Driver Lower Neck Moment About Y Axis

Customer: VRTC

21NECKLO00THMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-246

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

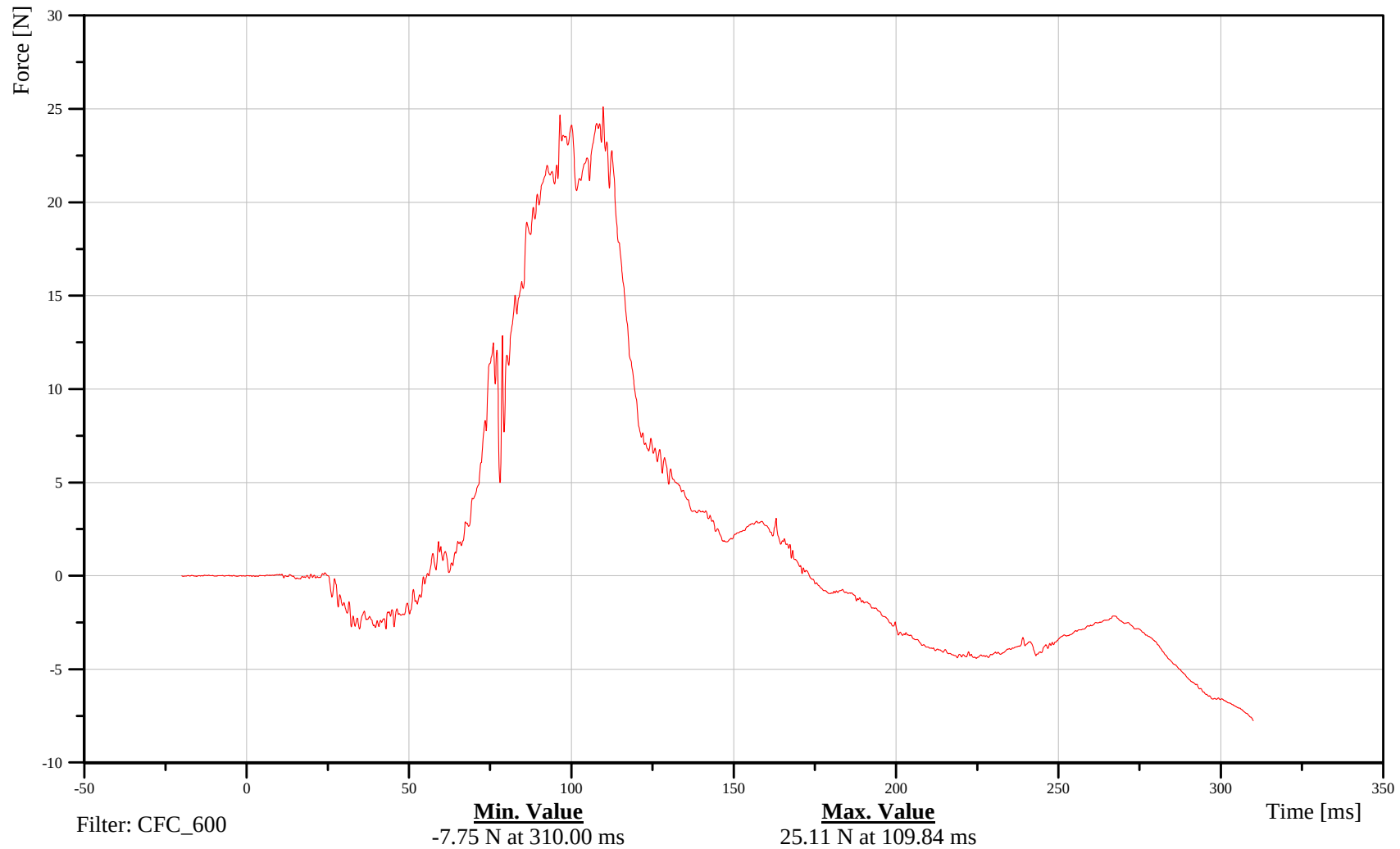
Target Vehicle Driver Lower Neck Moment About Z Axis

Customer: VRTC

21NECKLO00THMOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-247

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

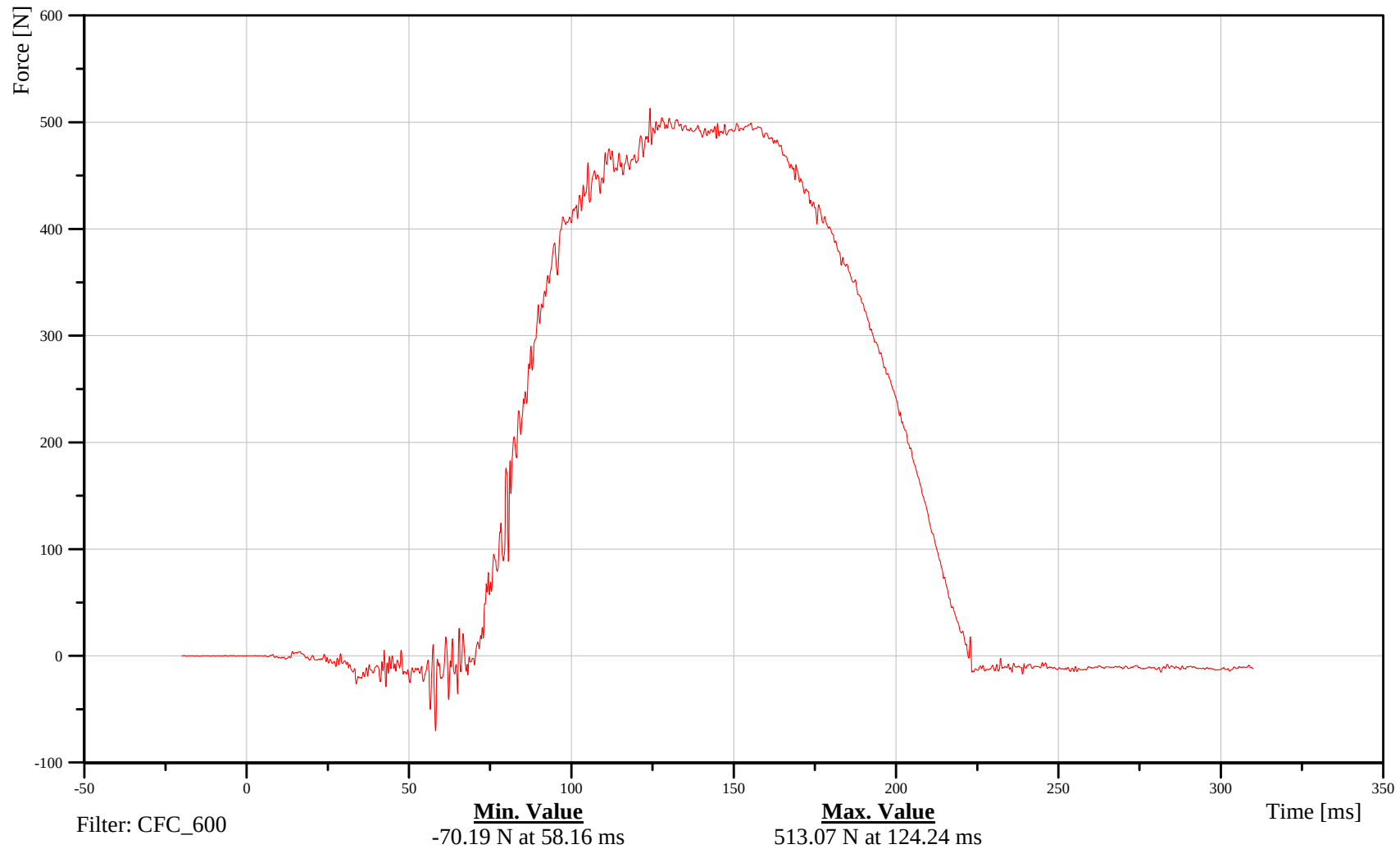
Target Vehicle Driver Rear Skull Spring Z-Axis Force

Customer: VRTC

21NECKRE00THFO0B

TRC Inc. Test Lab: CTF

Test Number: 091030



B-248

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

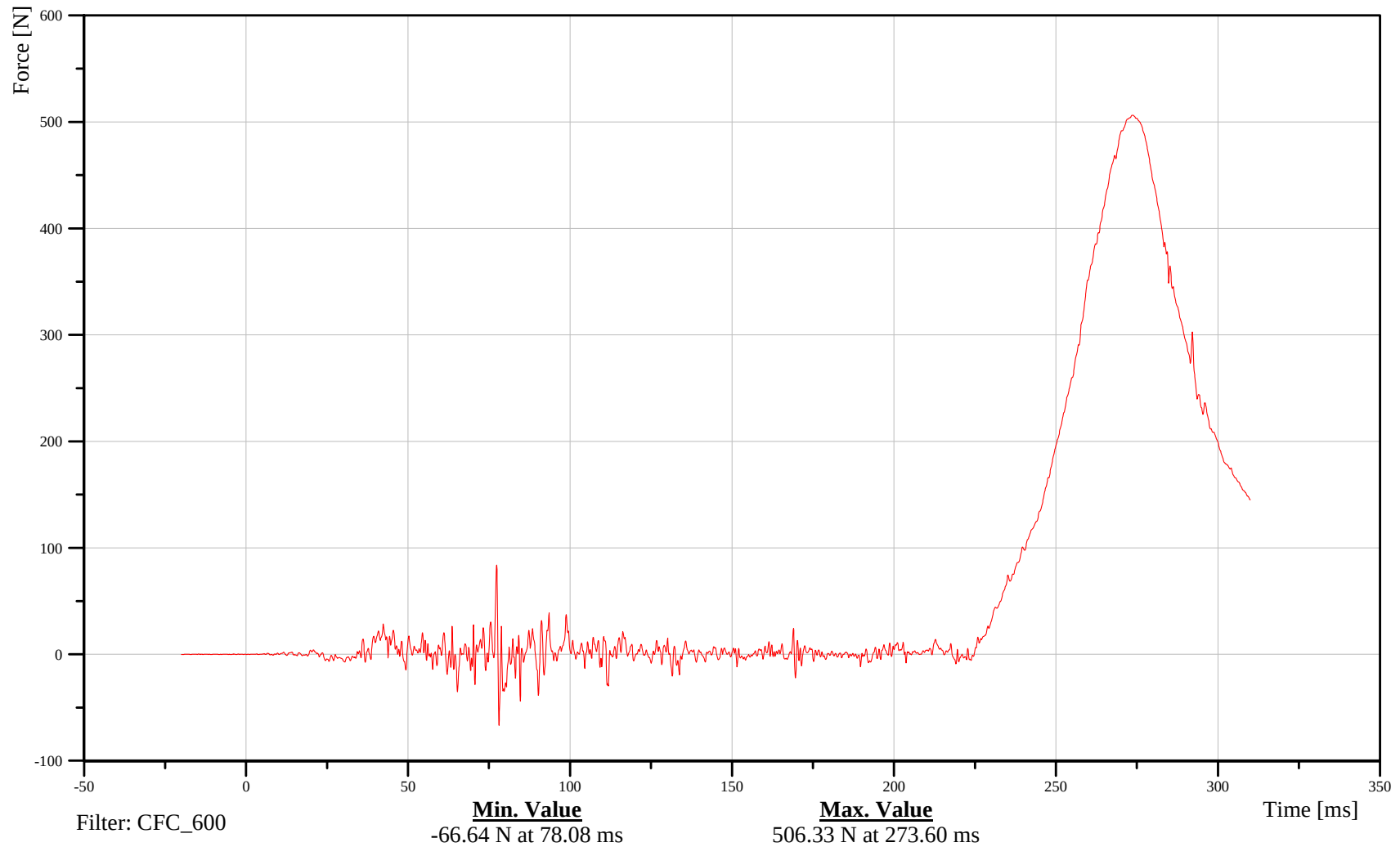
Target Vehicle Driver Front Skull Spring Z-Axis Force

Customer: VRTC

21NECKFR00THFO0B

TRC Inc. Test Lab: CTF

Test Number: 091030



B-249

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

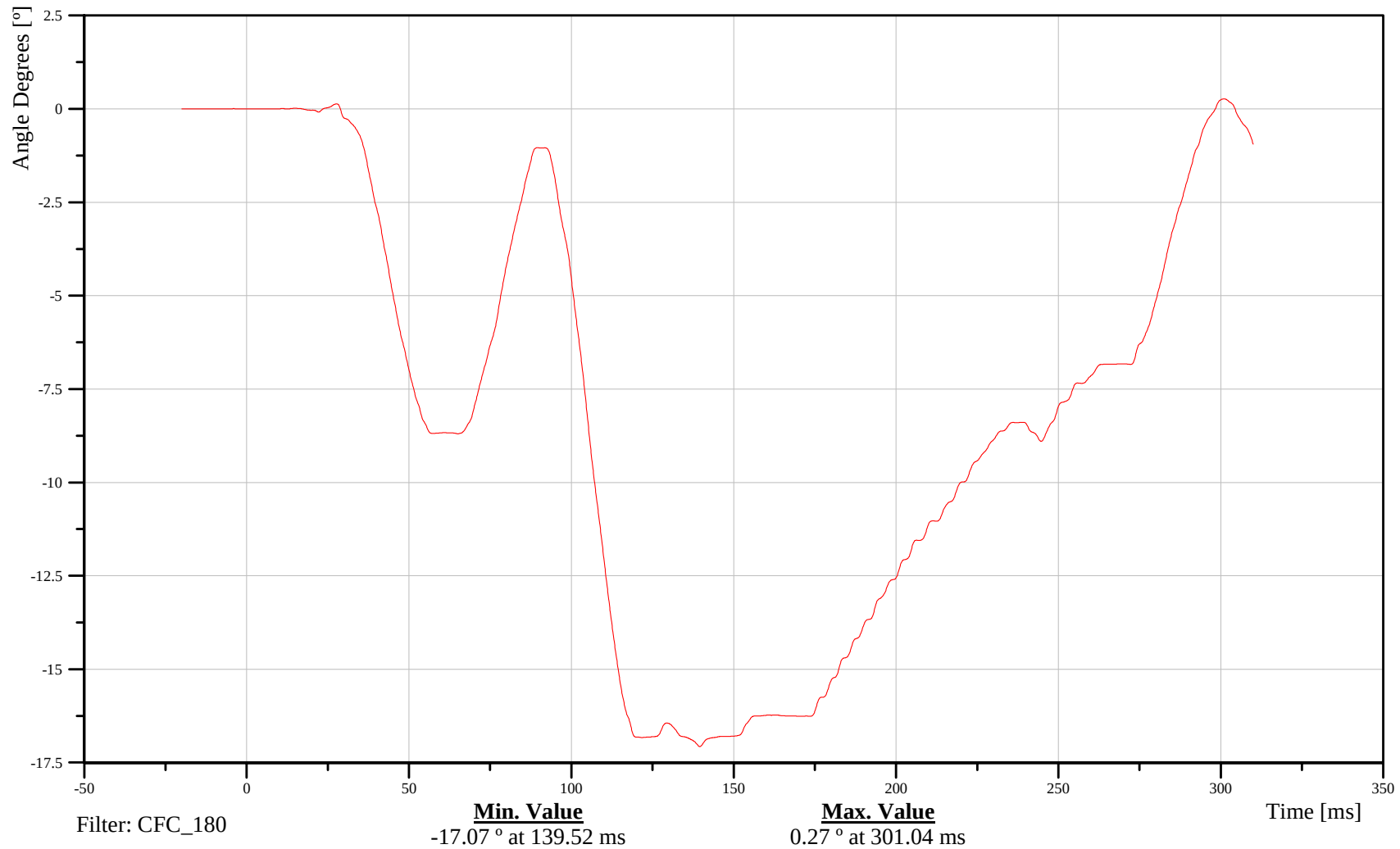
Target Vehicle Driver Occipital Condyle Rotary Pot

Customer: VRTC

21NECKUP00THANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-250

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver Lower Abdomen DGSP Right Displacement

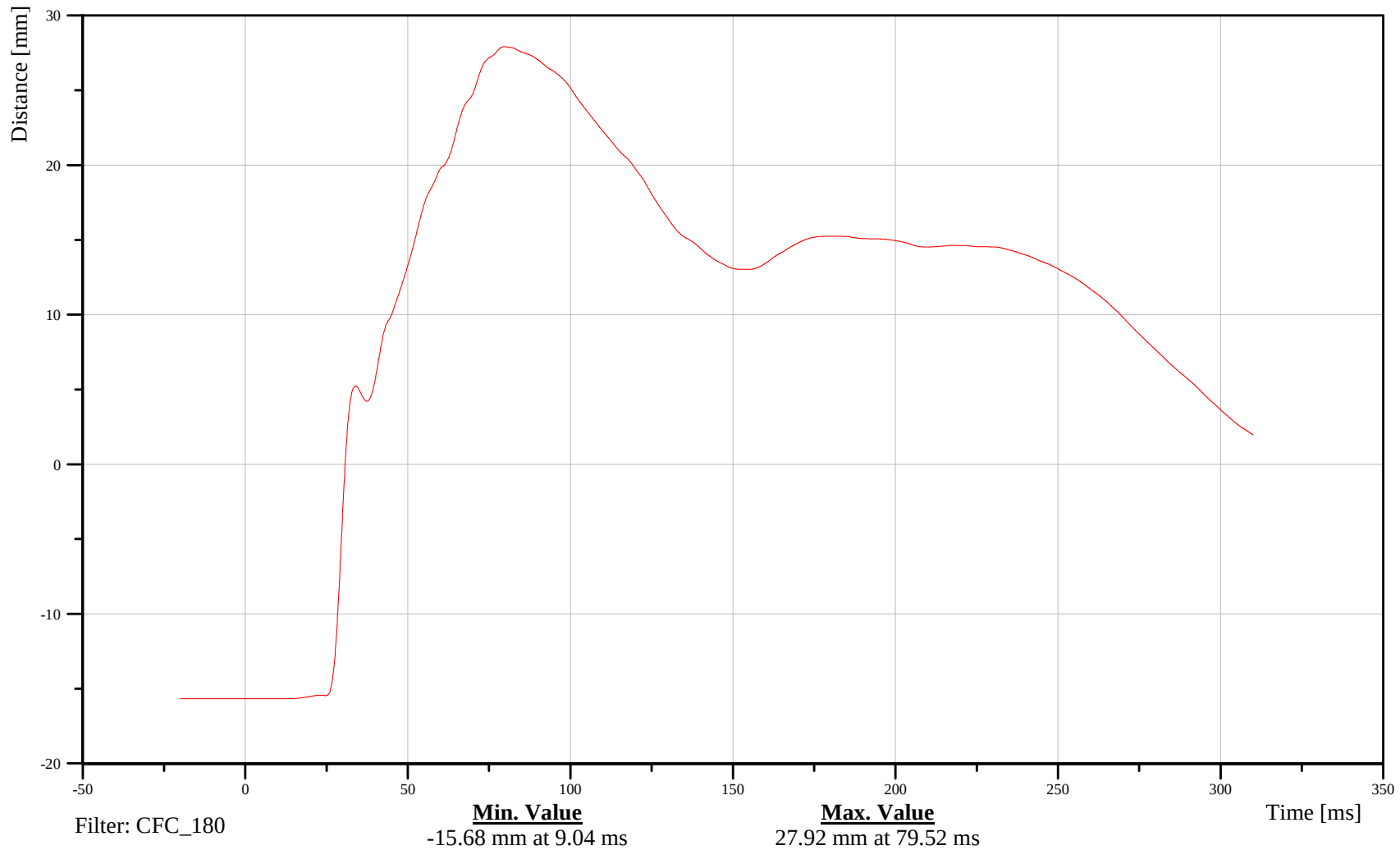
Date: 10/30/2009
Time: 16:48

Customer: VRTC

21ABDORL00THDS0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-251

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Lower Abdomen DGSP Right Pitch

Date: 10/30/2009

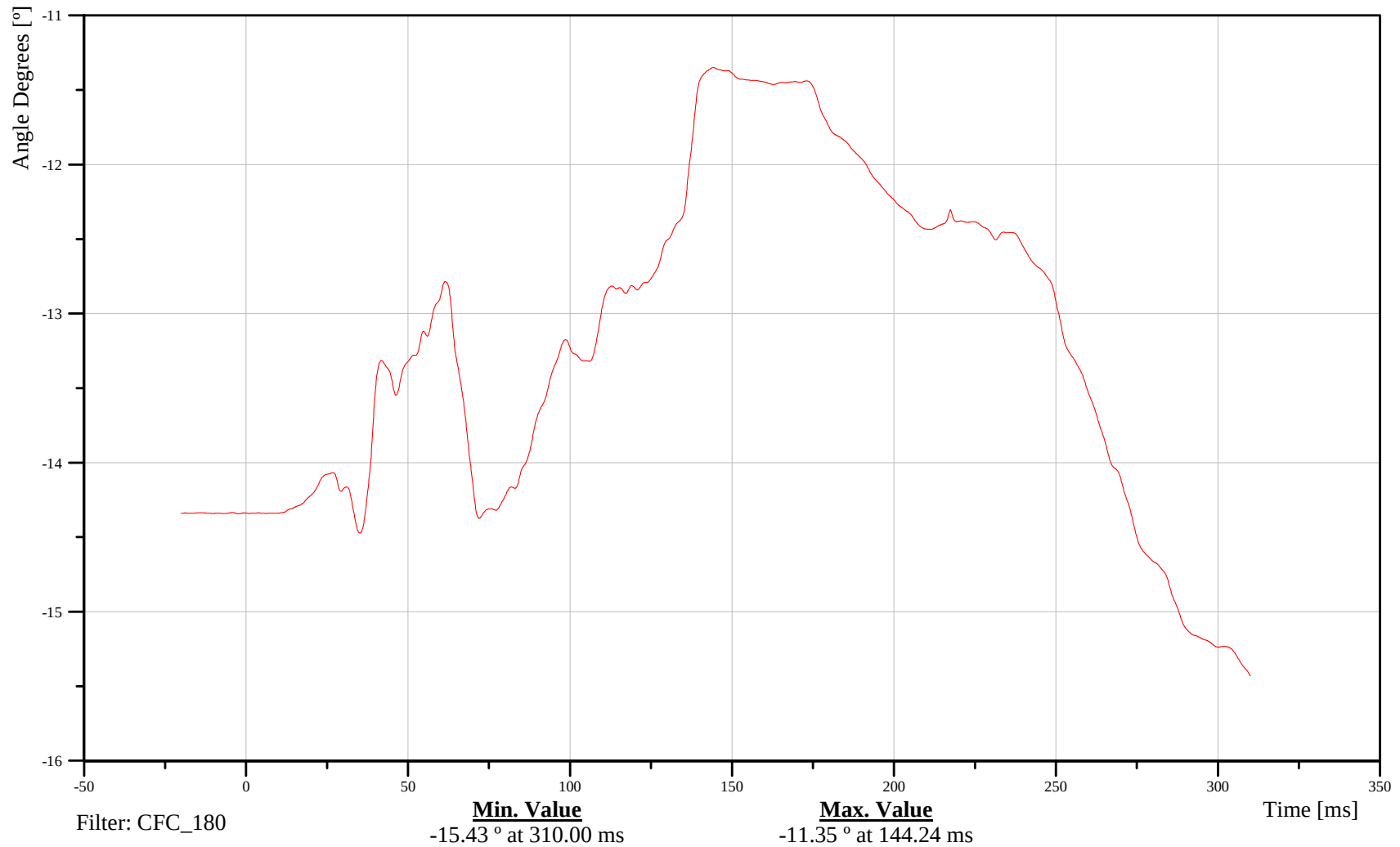
Time: 16:48

Customer: VRTC

21ABDORL00THANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-252

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

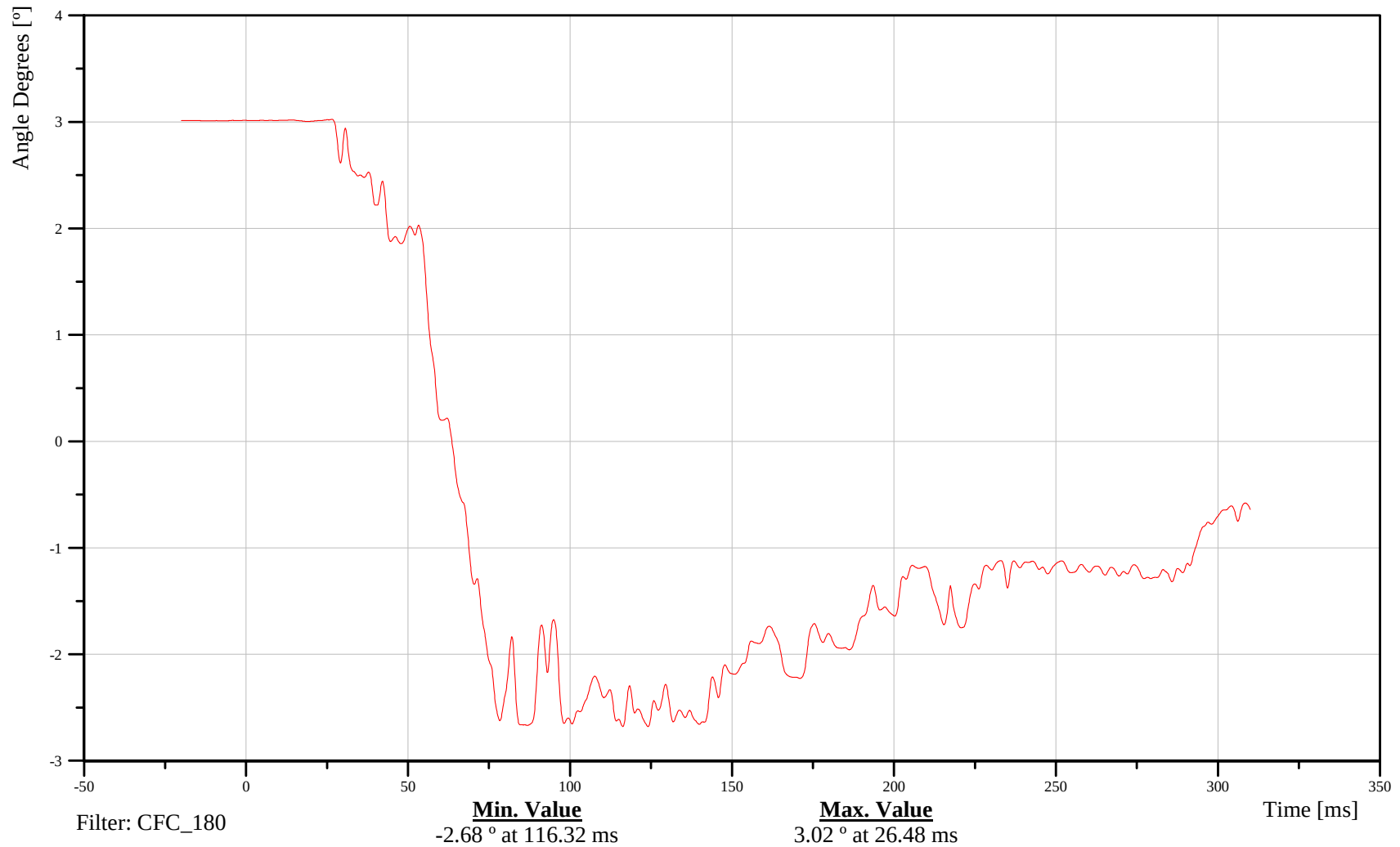
Target Vehicle Driver Lower Abdomen DGSP Right Yaw

Customer: VRTC

21ABDORL00THANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-253

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver Lower Abdomen DGSP Left Displacement

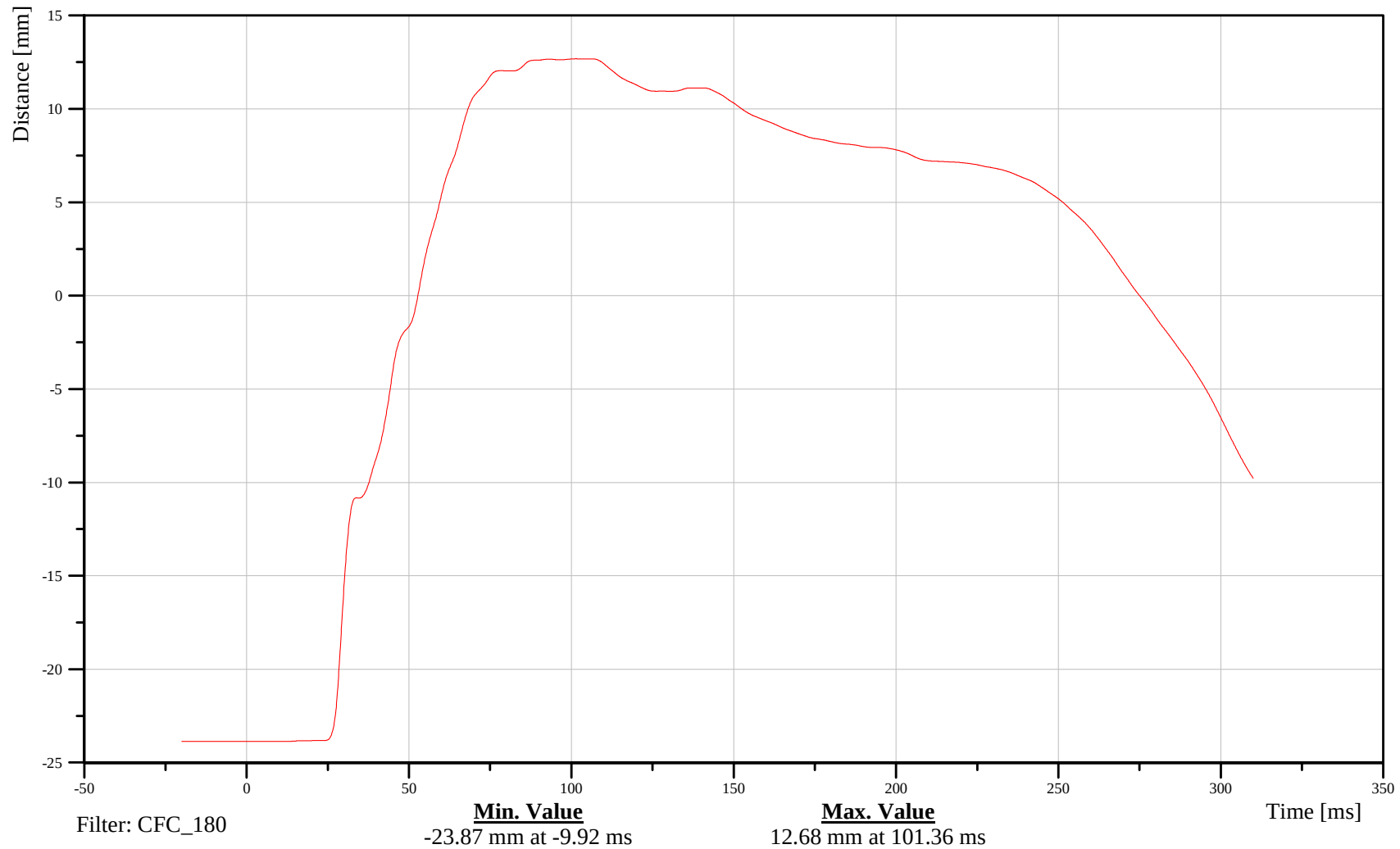
Date: 10/30/2009
Time: 16:48

Customer: VRTC

21ABDOLL00THDS0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-254

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Lower Abdomen DGSP Left Pitch

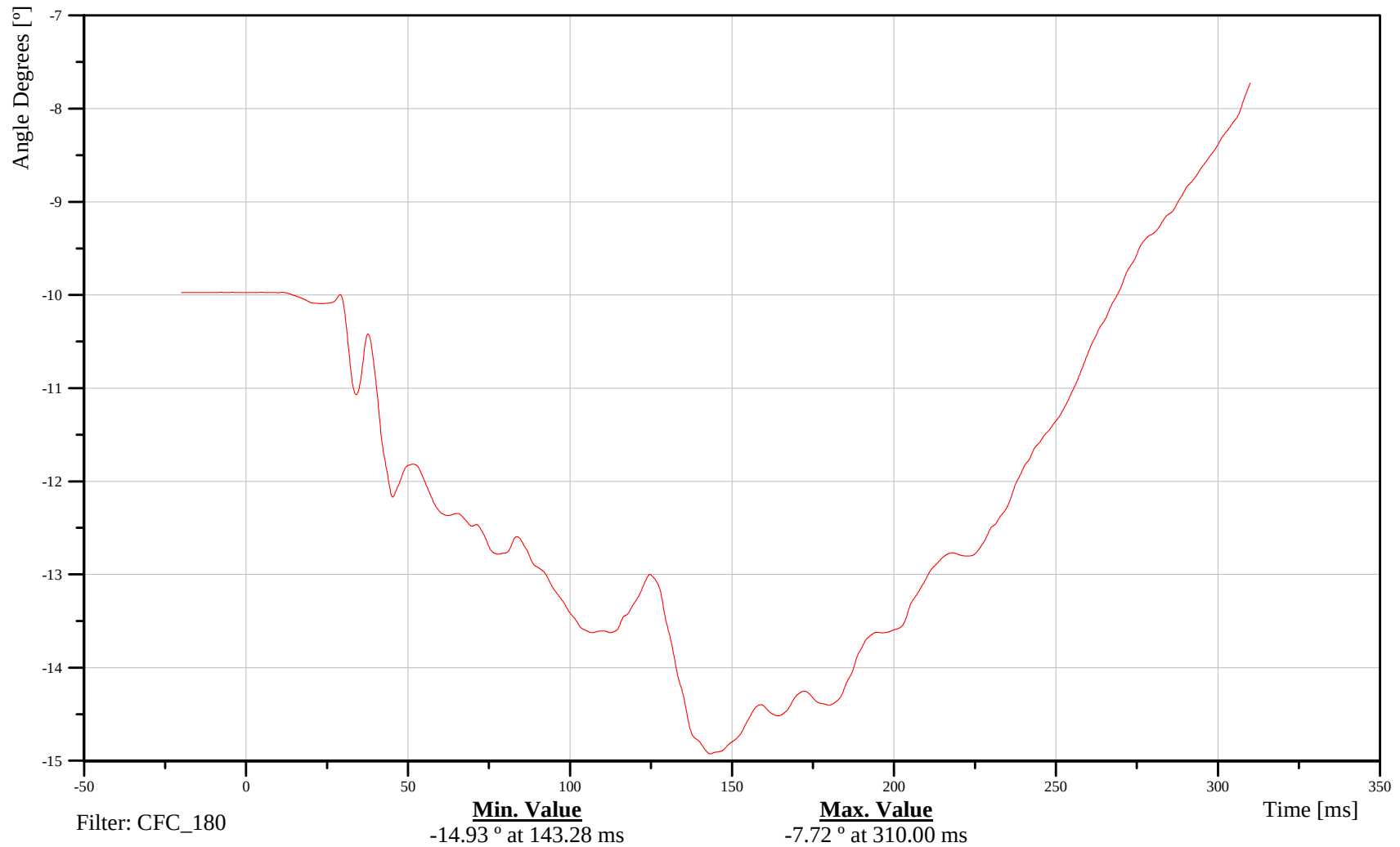
Time: 16:48

Customer: VRTC

21ABDOLL00THANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-255

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Lower Abdomen DGSP Left Yaw

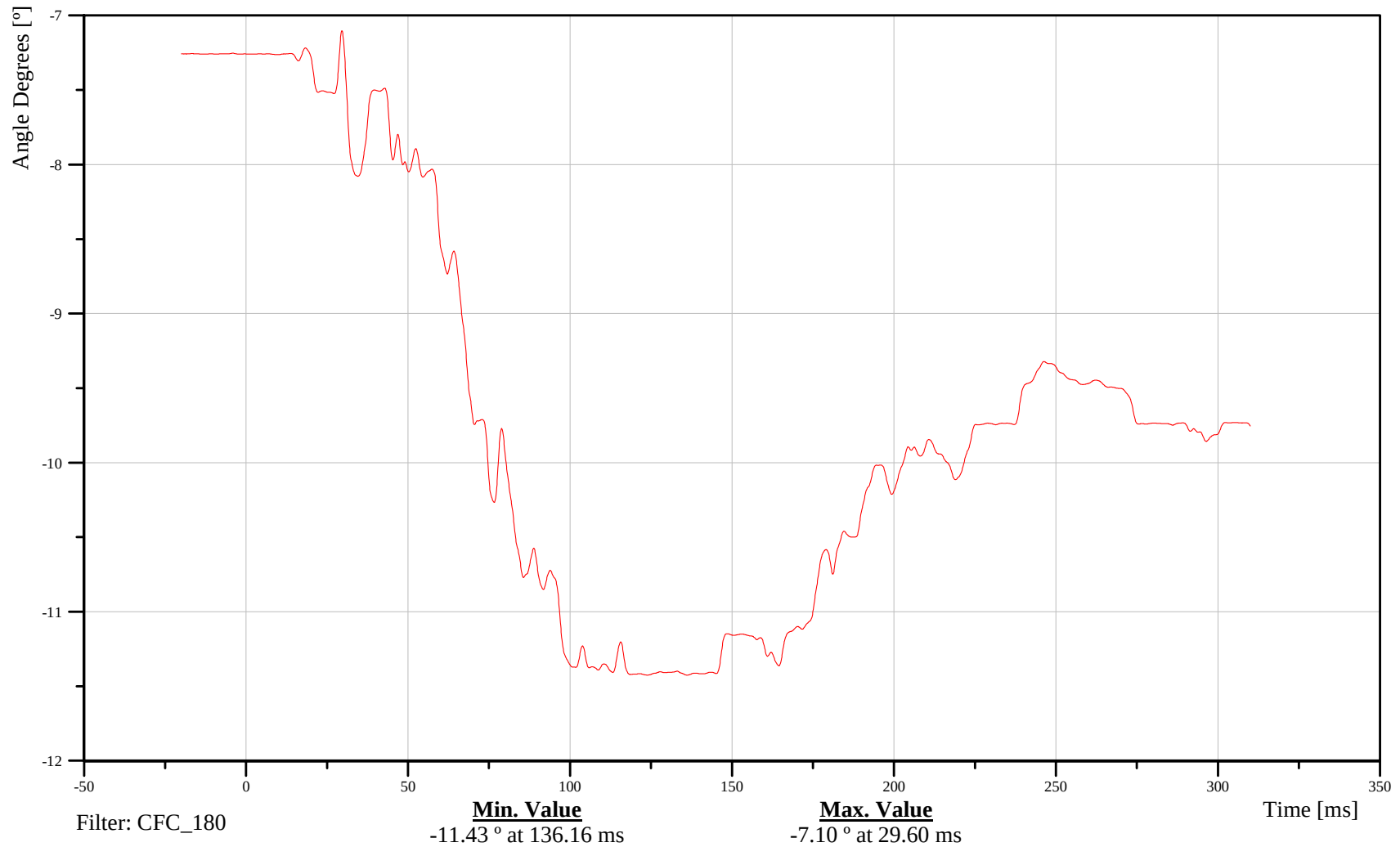
Time: 16:48

Customer: VRTC

21ABDOLL00THANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-256

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

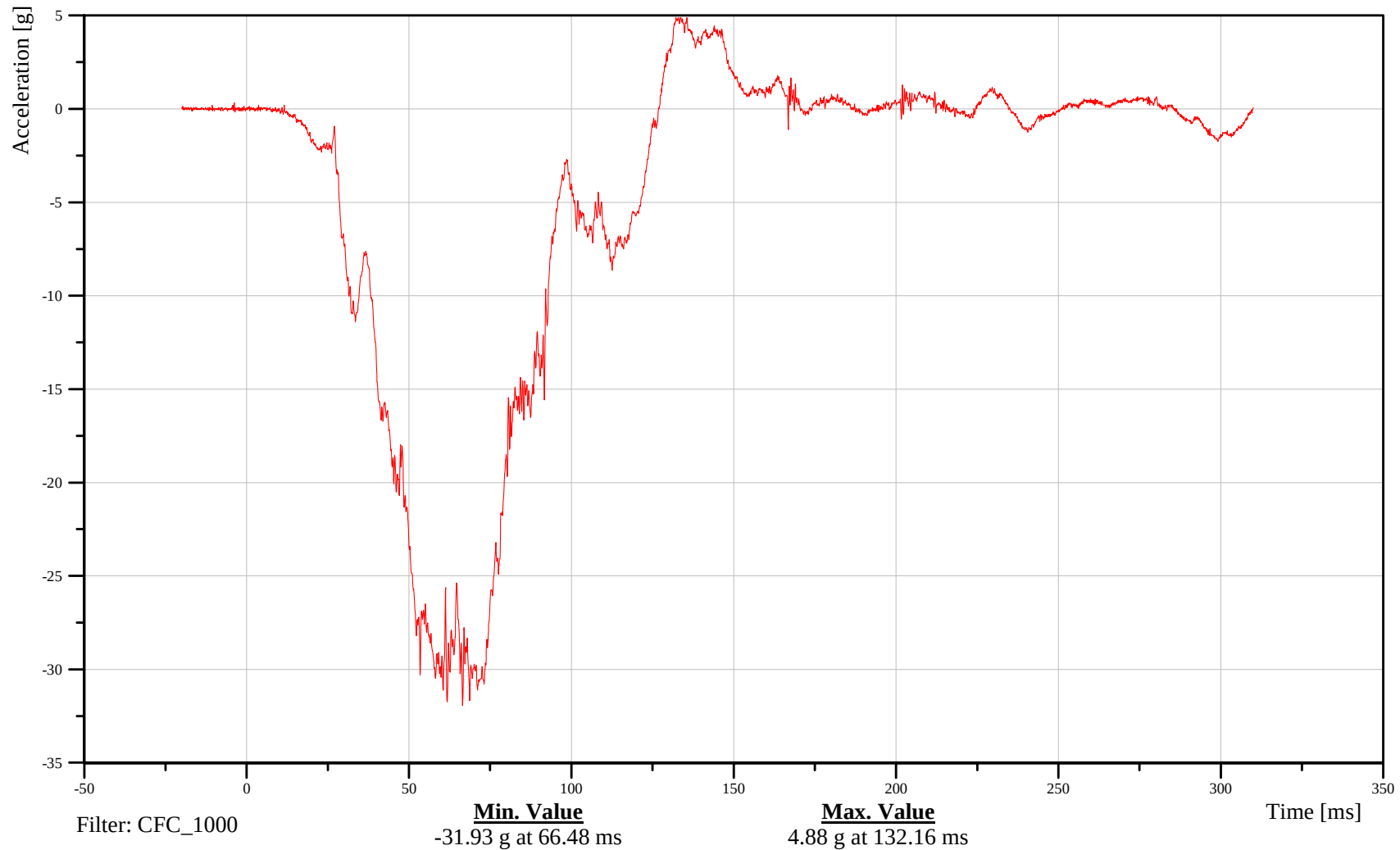
Target Vehicle Driver Thorax CG X-Axis Acceleration

Customer: VRTC

21TRRICG00THACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-257

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Thorax CG Y-Axis Acceleration

Date: 10/30/2009

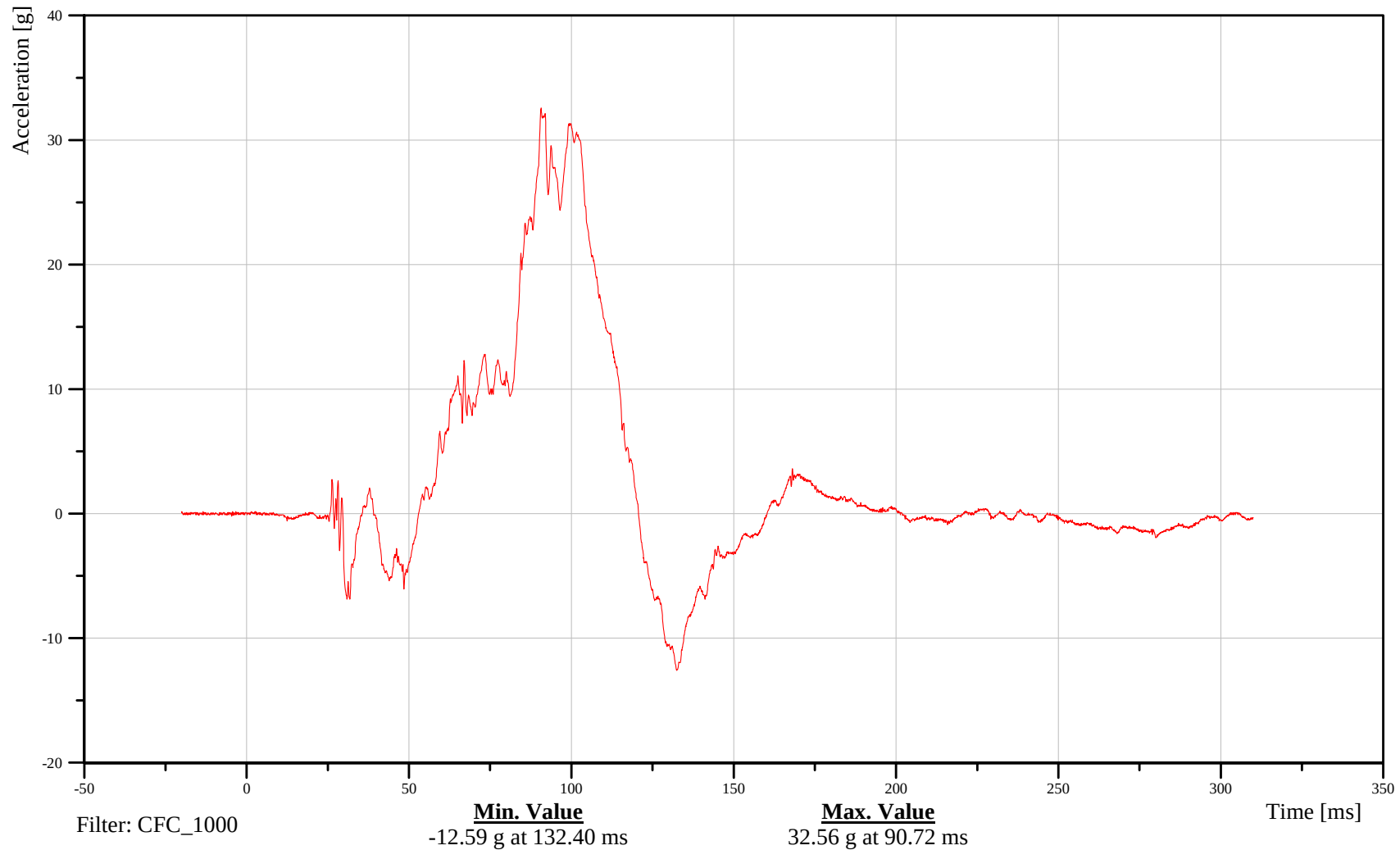
Time: 16:48

Customer: VRTC

21TRRICG00THACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-258

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Thorax CG Z-Axis Acceleration

Date: 10/30/2009

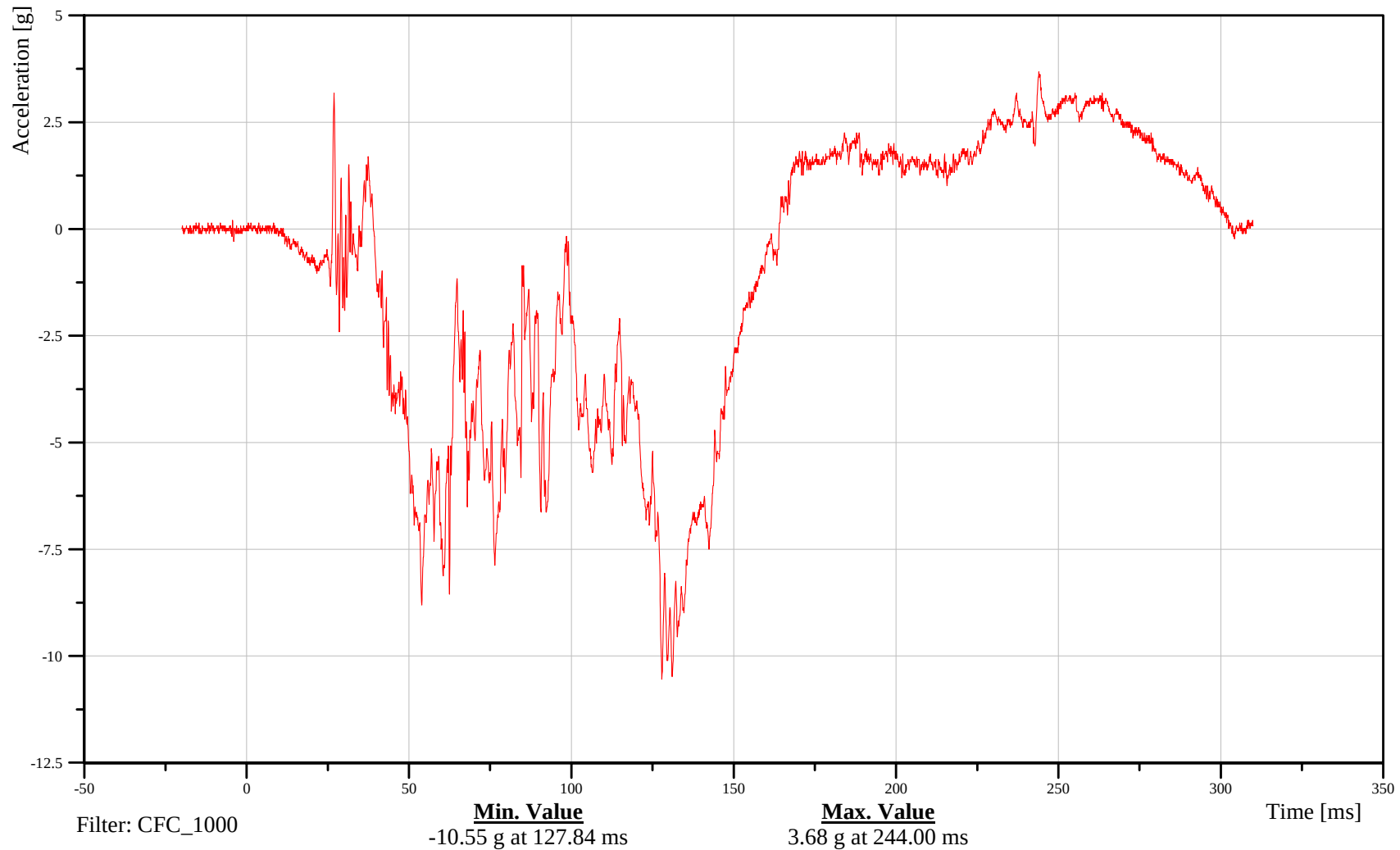
Time: 16:48

Customer: VRTC

21TRRICG00THACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-259

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

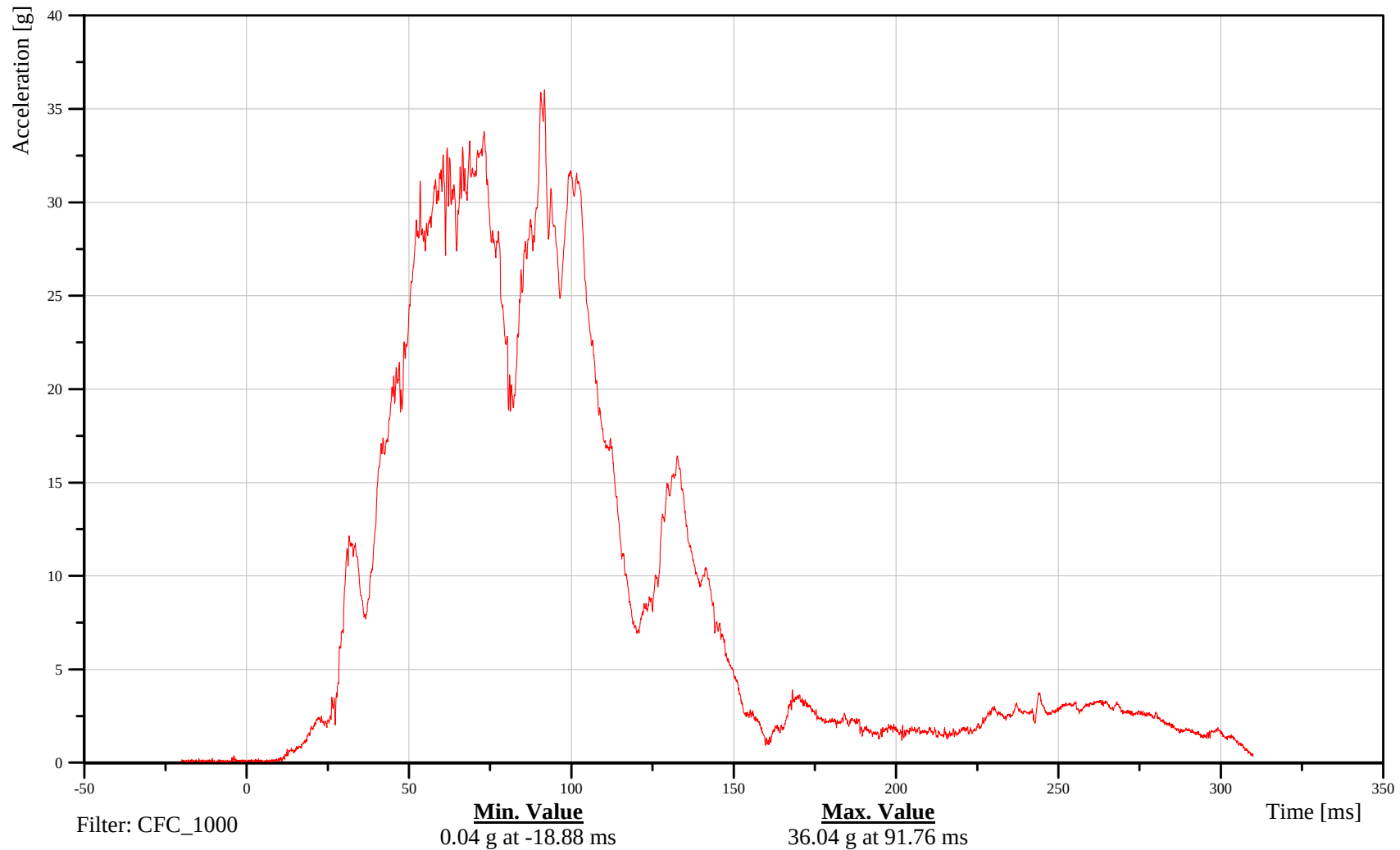
Target Vehicle Driver Thorax CG Resultant Acceleration

Customer: VRTC

21TRRICG00THACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-260

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver CRUX T015 Base Upper Left Thorax Pot

Date: 10/30/2009

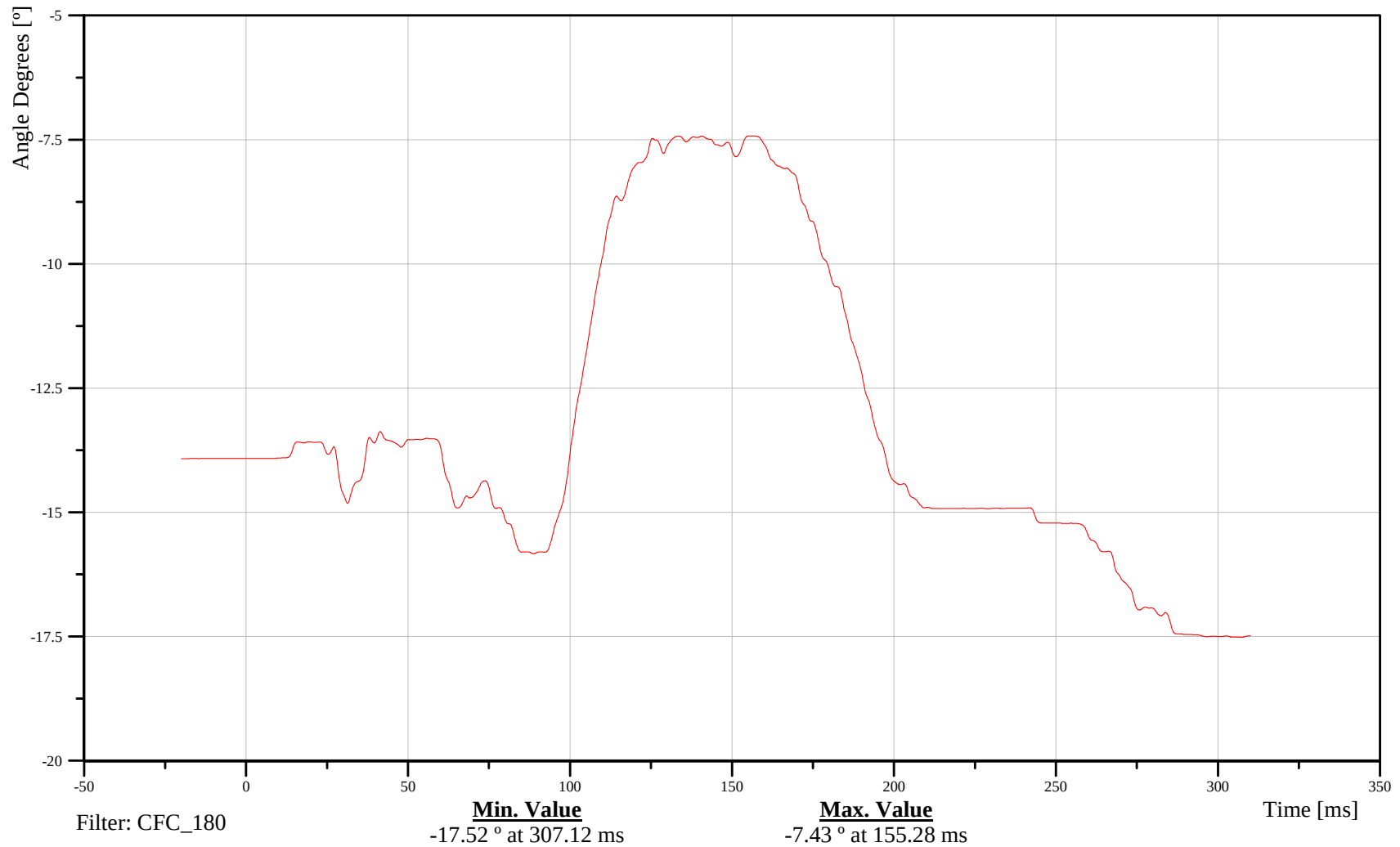
Time: 16:48

Customer: VRTC

21CHRILU01THAN0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-261

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver CRUX T015 Mid Upper Left Thorax Pot

Date: 10/30/2009

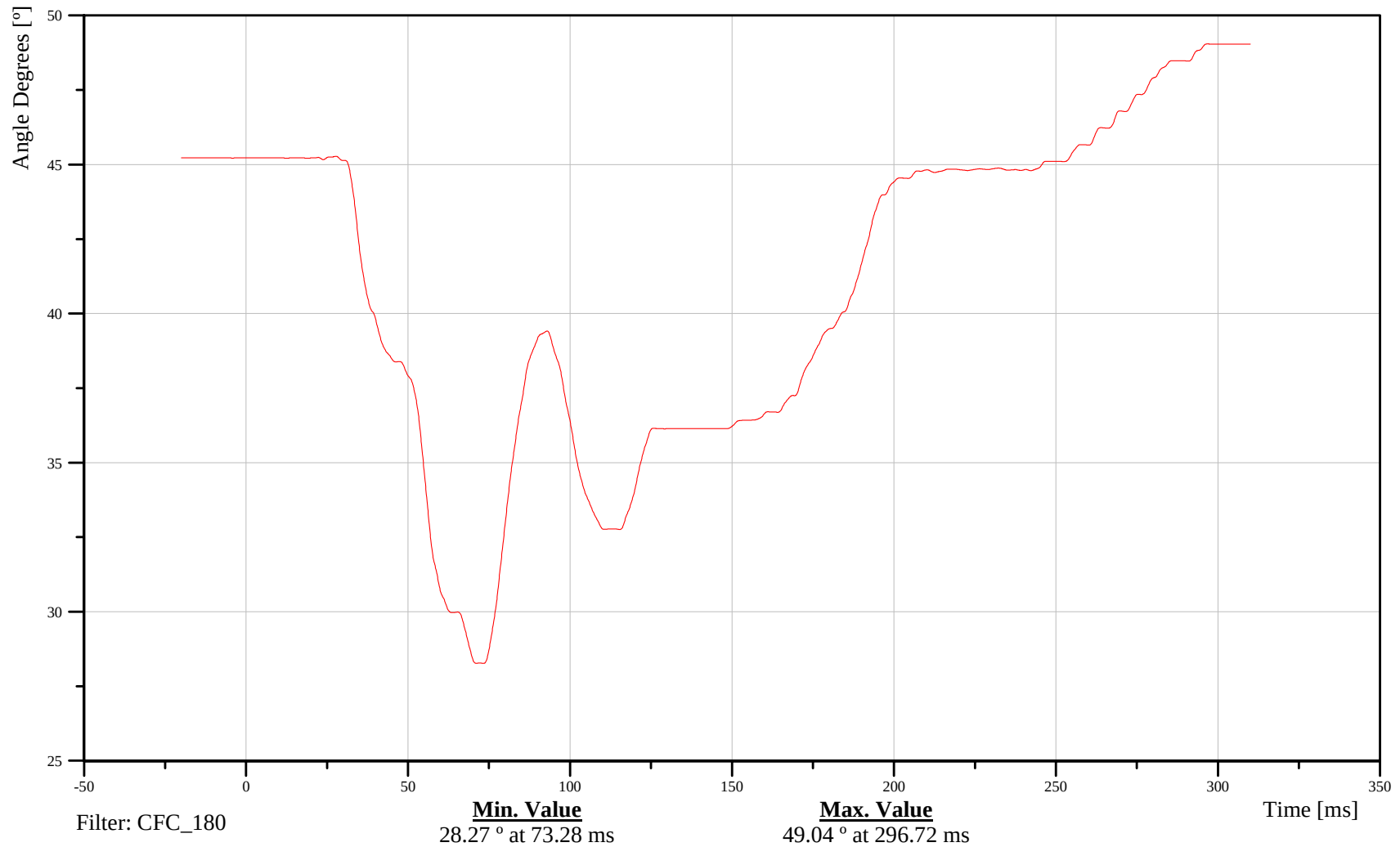
Time: 16:48

Customer: VRTC

21CHRILU02THAN0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-262

091030



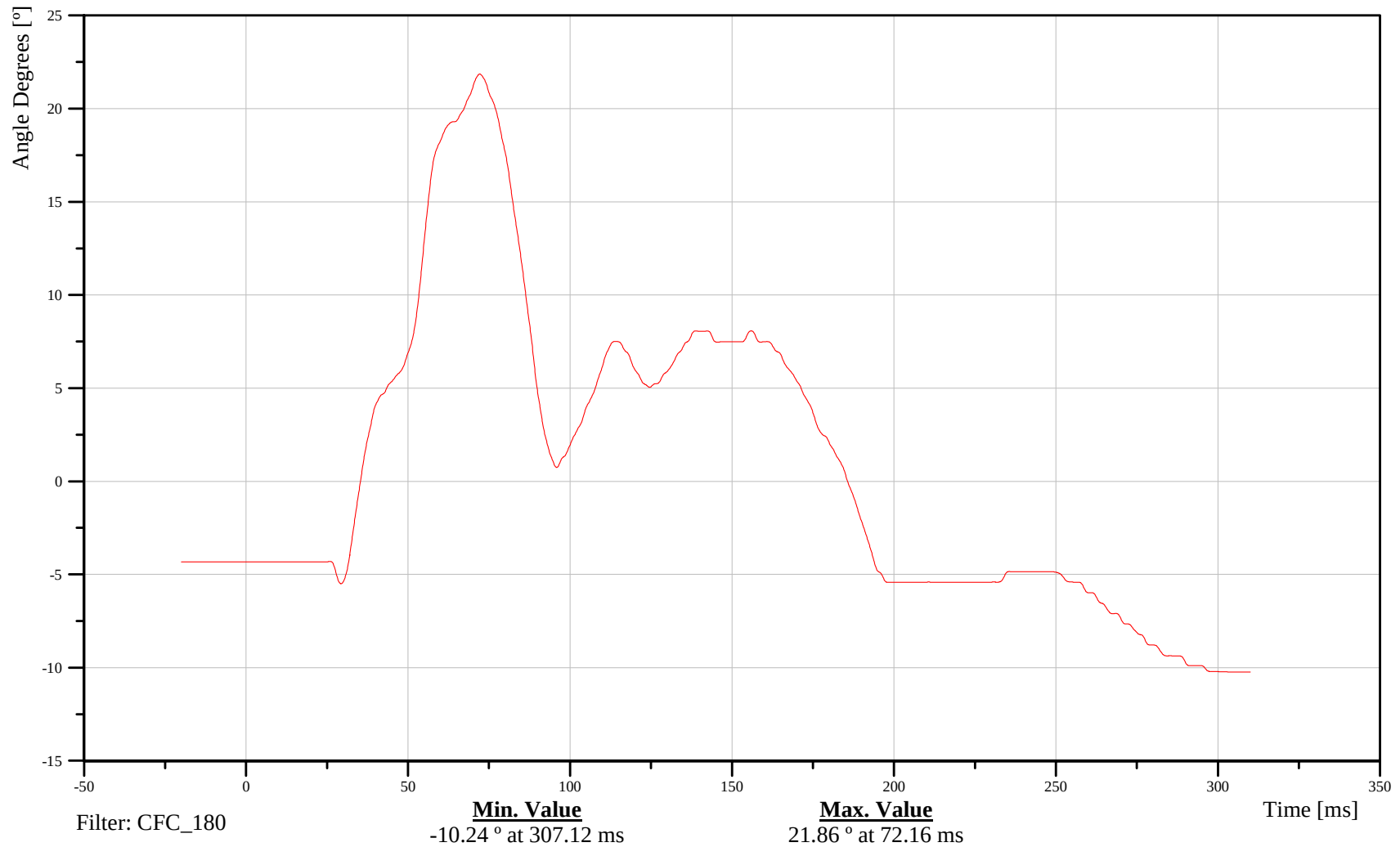
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Elbow Upper Left Thorax Pot

Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRILU03THAN0C

TRC Inc. Test Lab: CTF
Test Number: 091030



B-263

091030



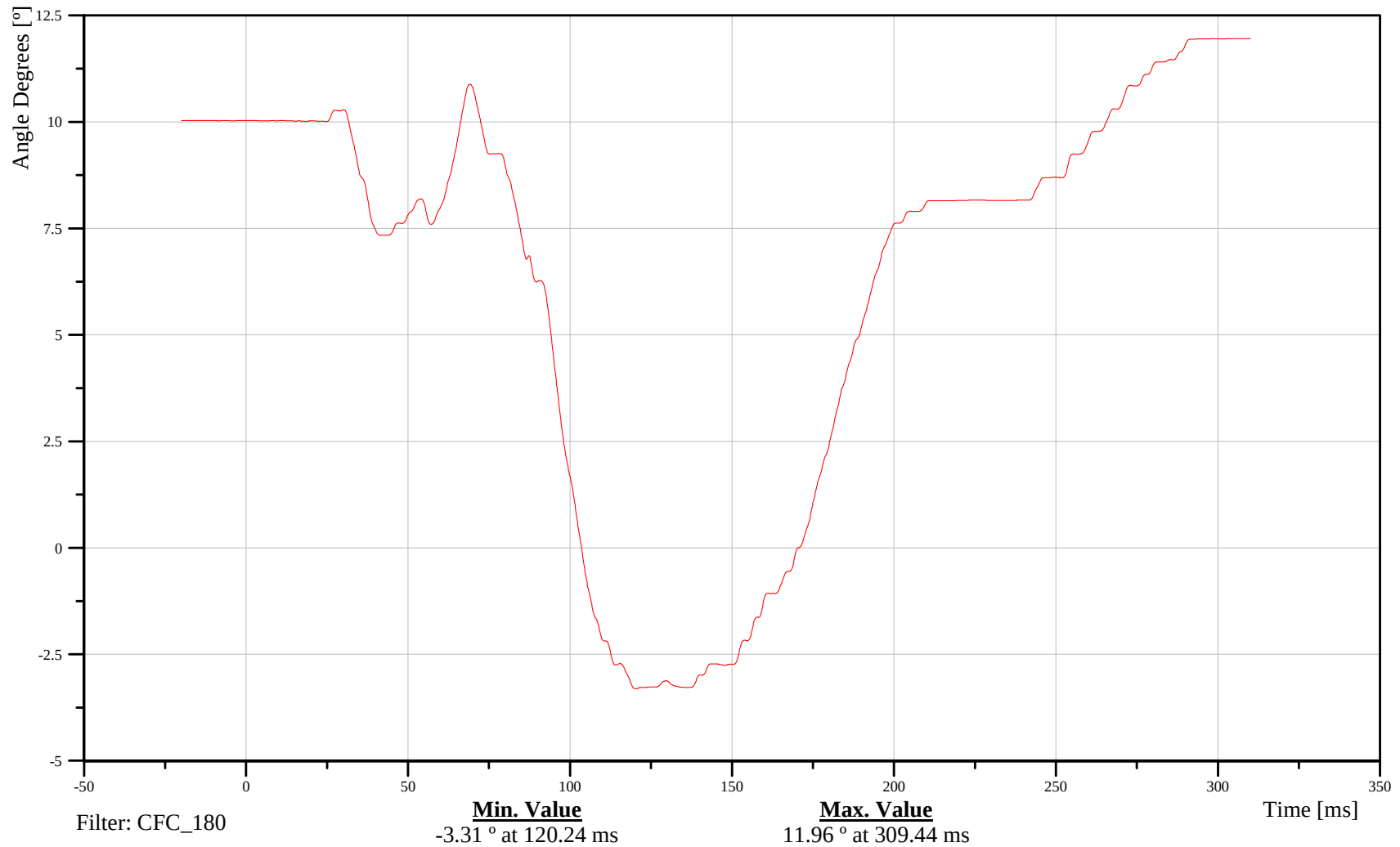
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Base Upper Right Thorax Pot

Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRIRU01THAN0C

TRC Inc. Test Lab: CTF
Test Number: 091030



B-264

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver CRUX T015 Mid Upper Right Thorax Pot

Date: 10/30/2009

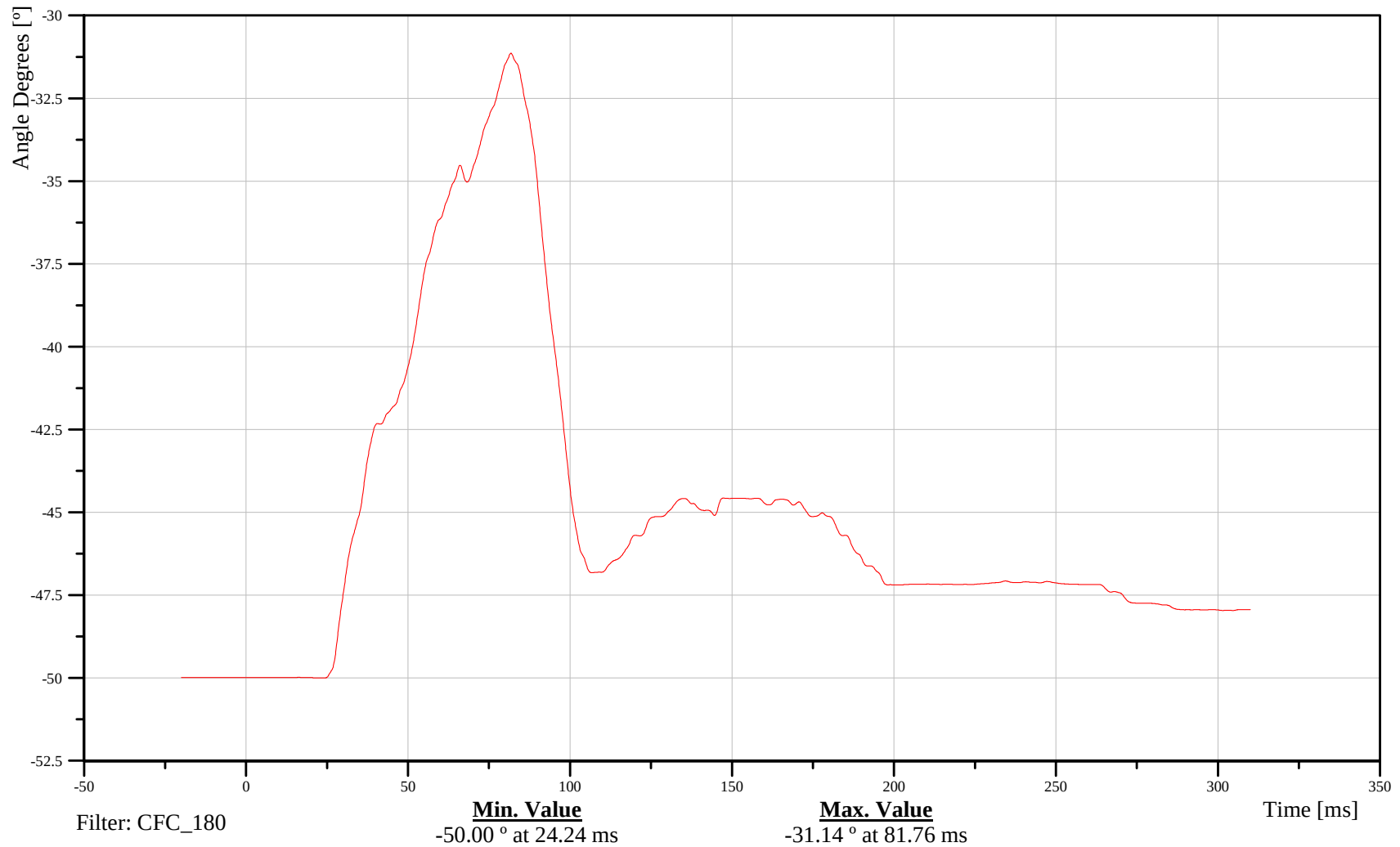
Time: 16:48

Customer: VRTC

21CHRIRU02THAN0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-265

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Elbow Upper Right Thorax Pot

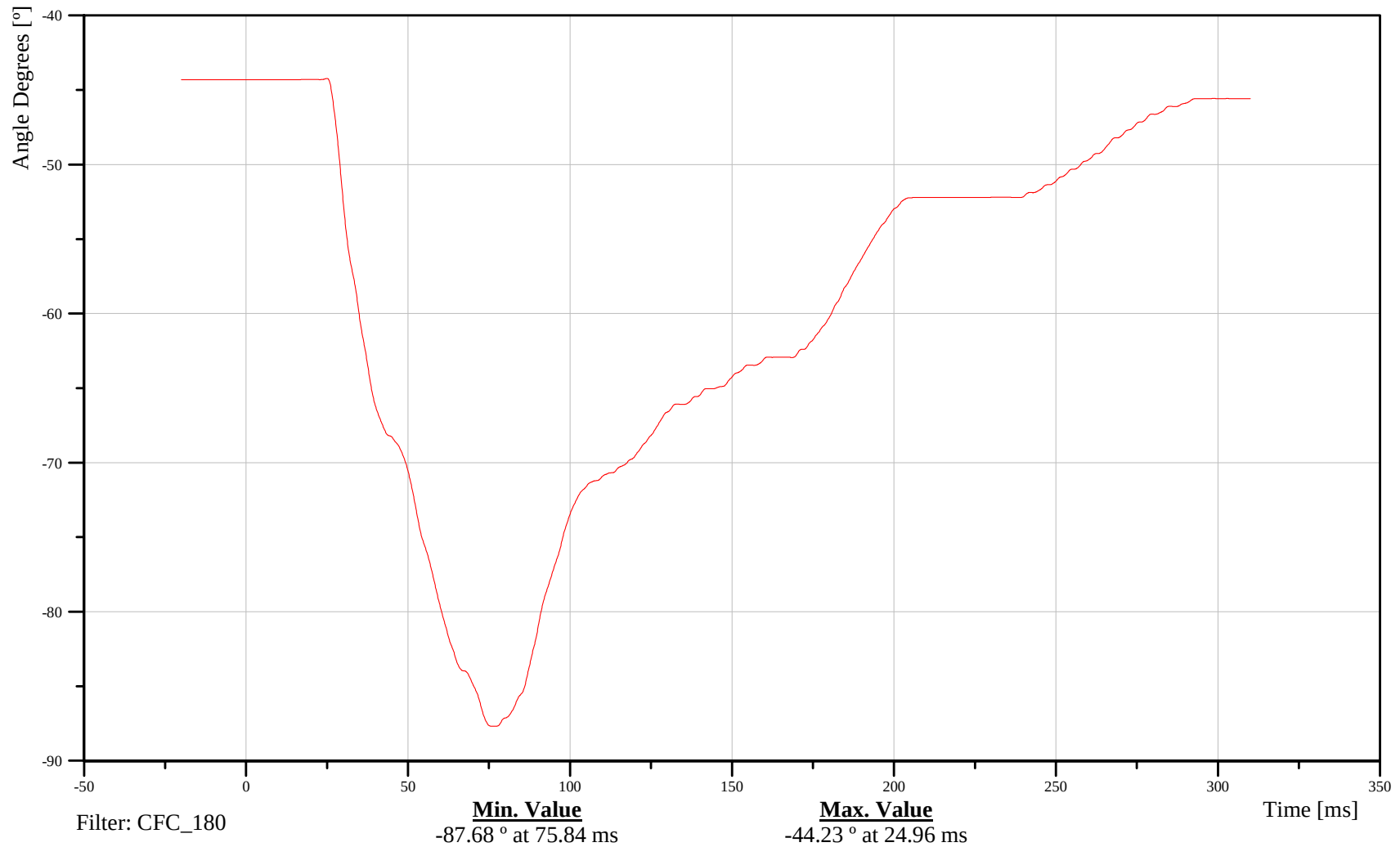
Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRIRU03THAN0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-266

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver CRUX T015 Base Lower Left Thorax Pot

Date: 10/30/2009

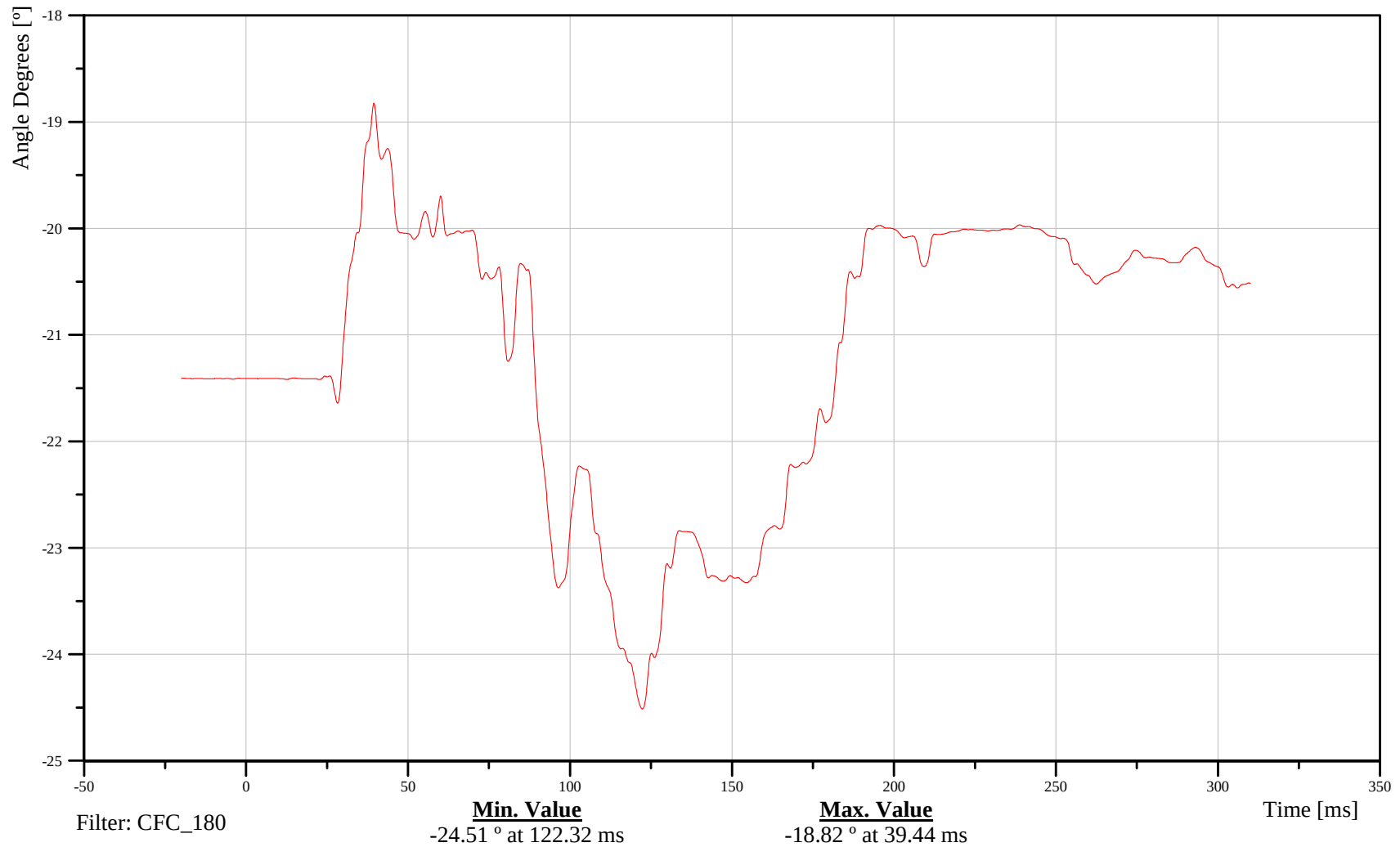
Time: 16:48

Customer: VRTC

21CHRILL01THAN0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-267

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver CRUX T015 Mid Lower Left Thorax Pot

Date: 10/30/2009

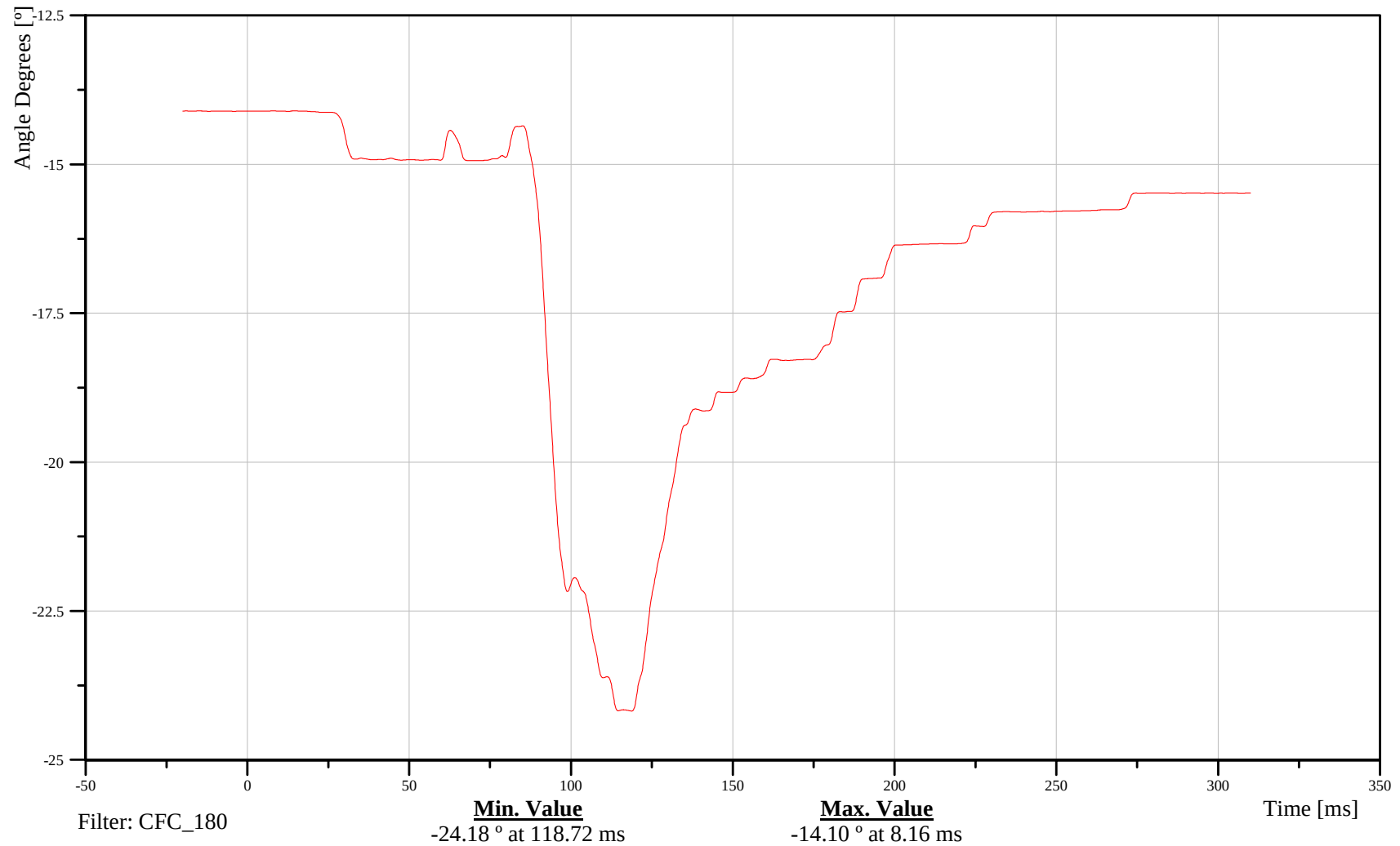
Time: 16:48

Customer: VRTC

21CHRILL02THAN0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-268

091030



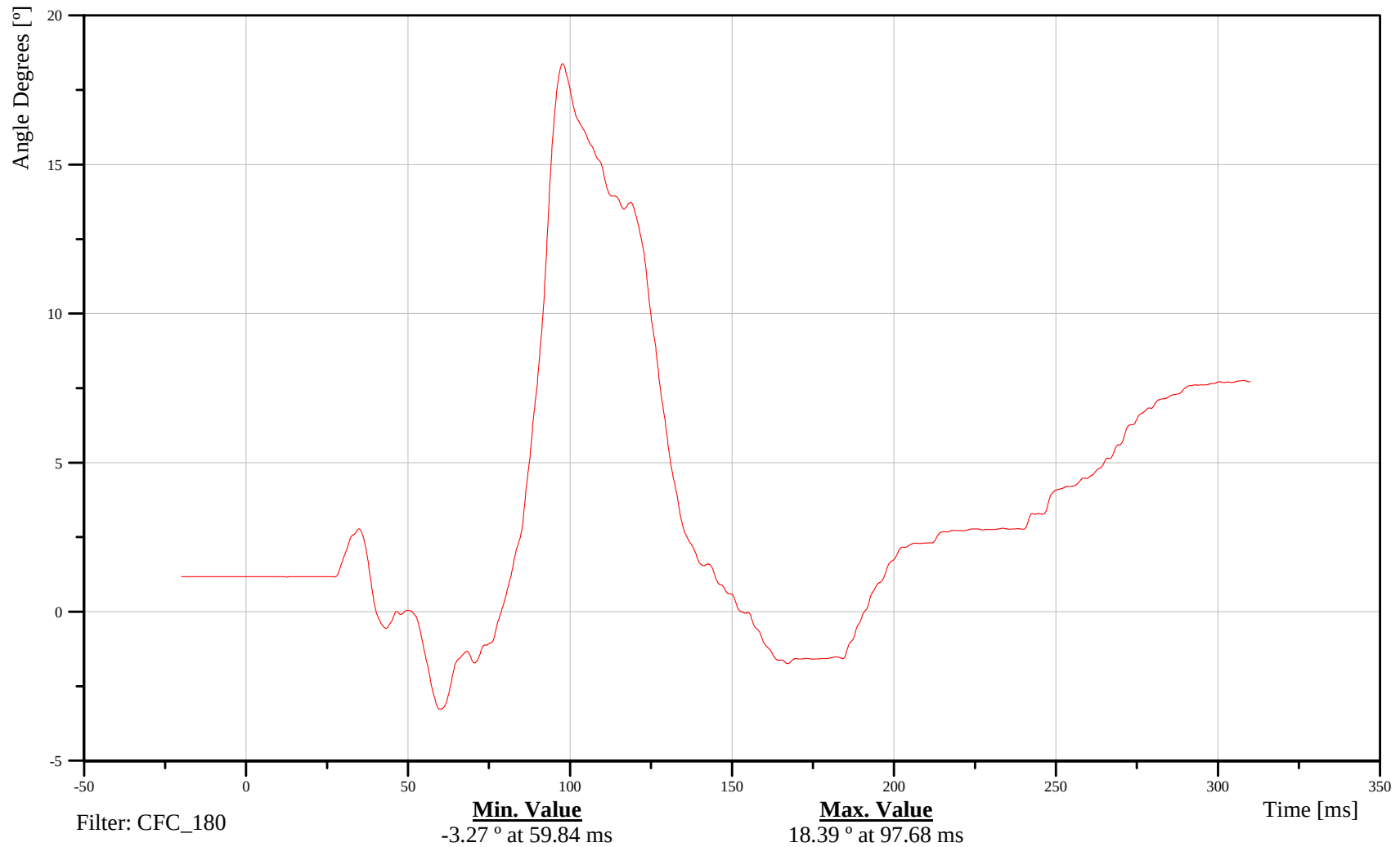
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Elbow Lower Left Thorax Pot

Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRILL03THAN0C

TRC Inc. Test Lab: CTF
Test Number: 091030



B-269

091030



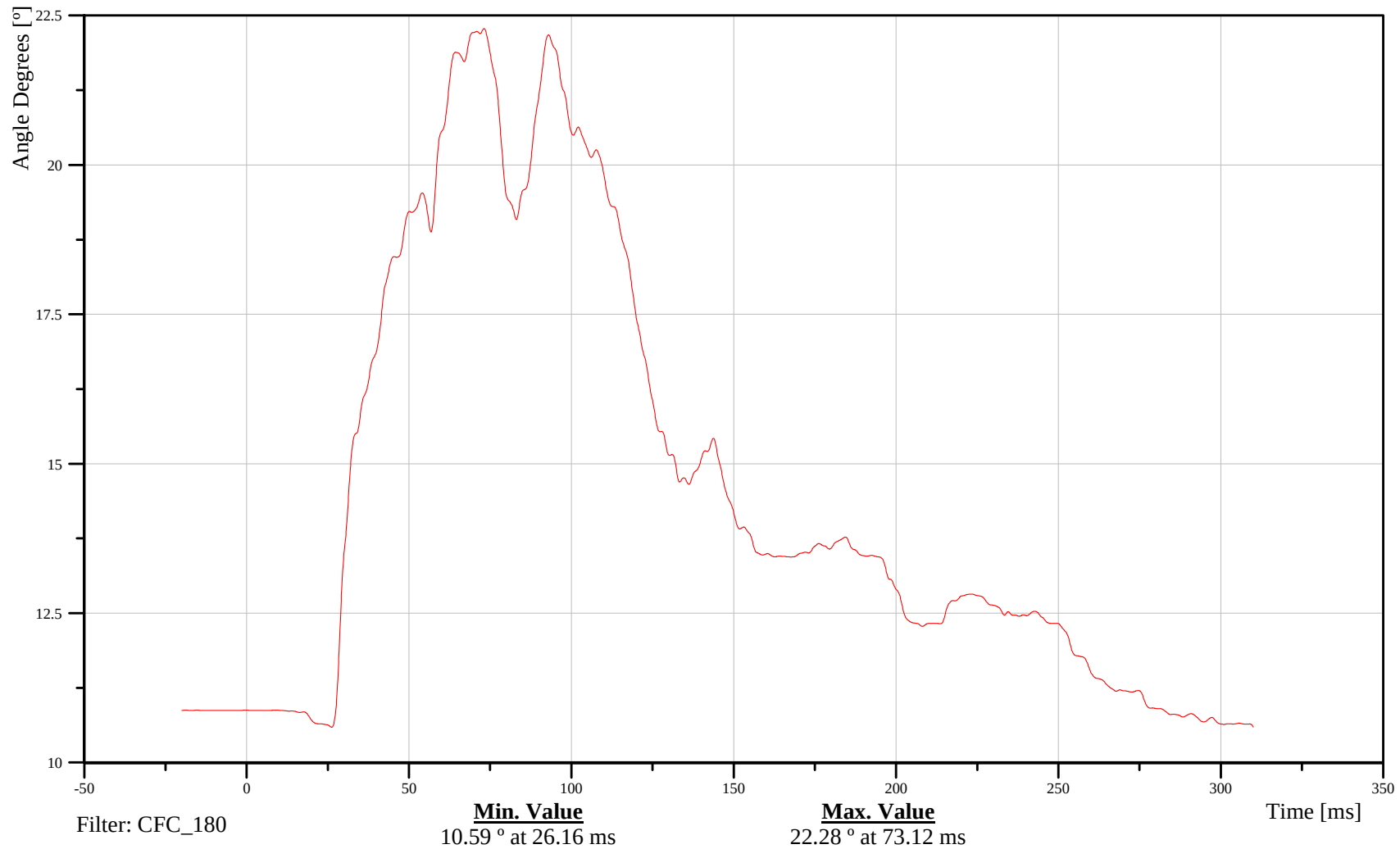
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Base Lower Right Thorax Pot

Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRIRL01THAN0C

TRC Inc. Test Lab: CTF
Test Number: 091030



B-270

091030



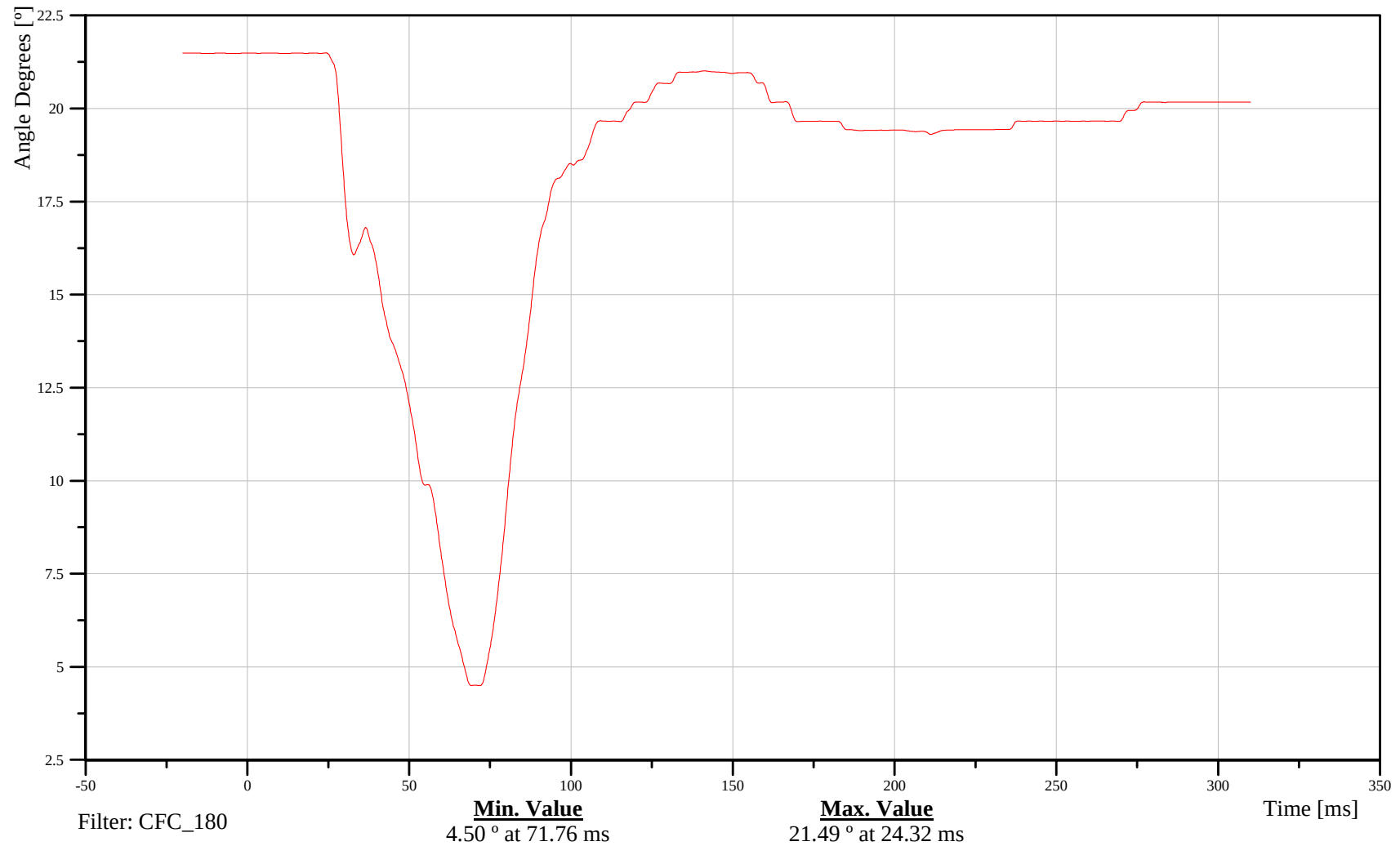
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Mid Lower Right Thorax Pot

Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRIRL02THAN0C

TRC Inc. Test Lab: CTF
Test Number: 091030



B-271

091030



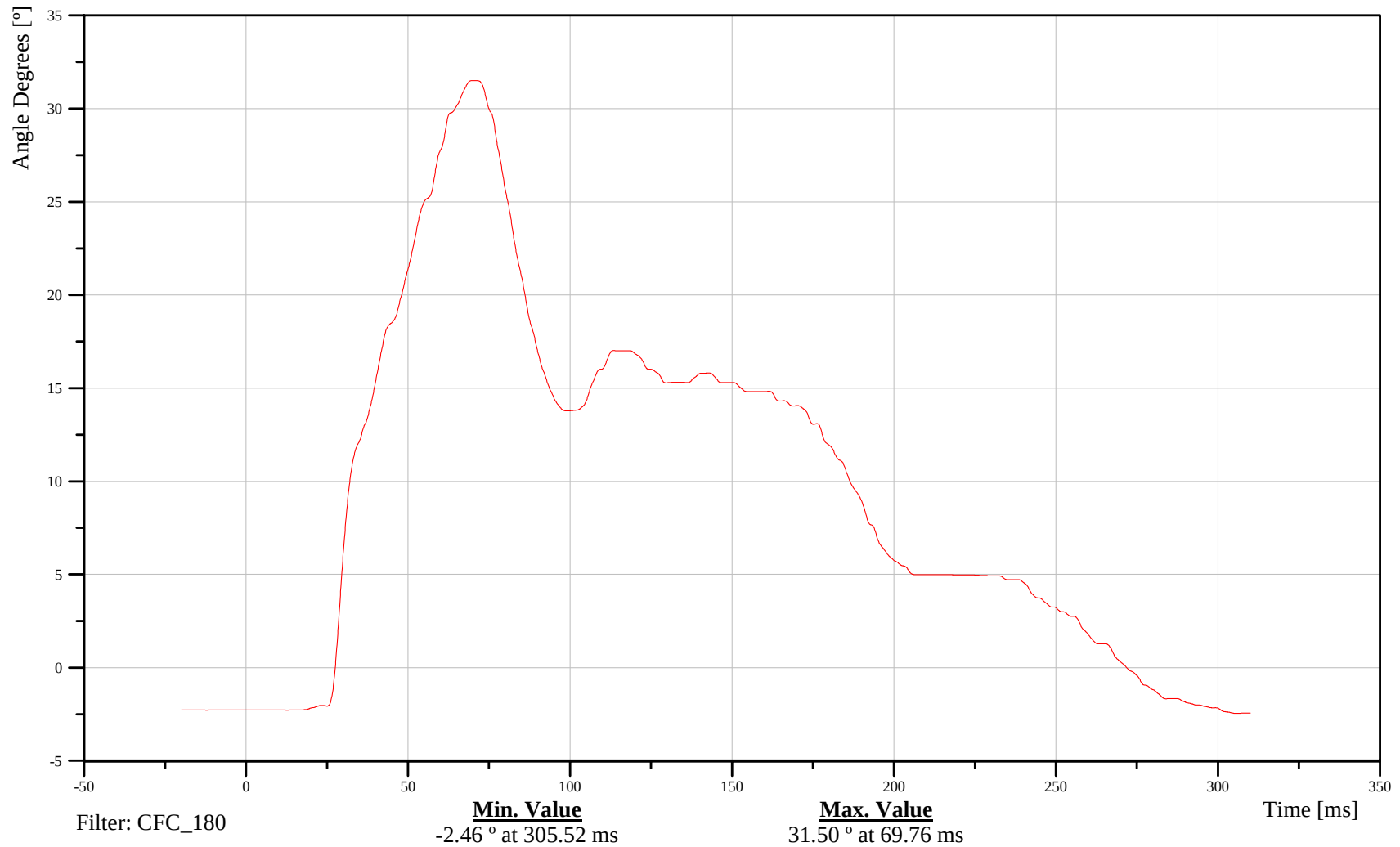
Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver CRUX T015 Elbow Lower Right Thorax Pot

Date: 10/30/2009
Time: 16:48

Customer: VRTC

21CHRIRL03THAN0C

TRC Inc. Test Lab: CTF
Test Number: 091030



B-272

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

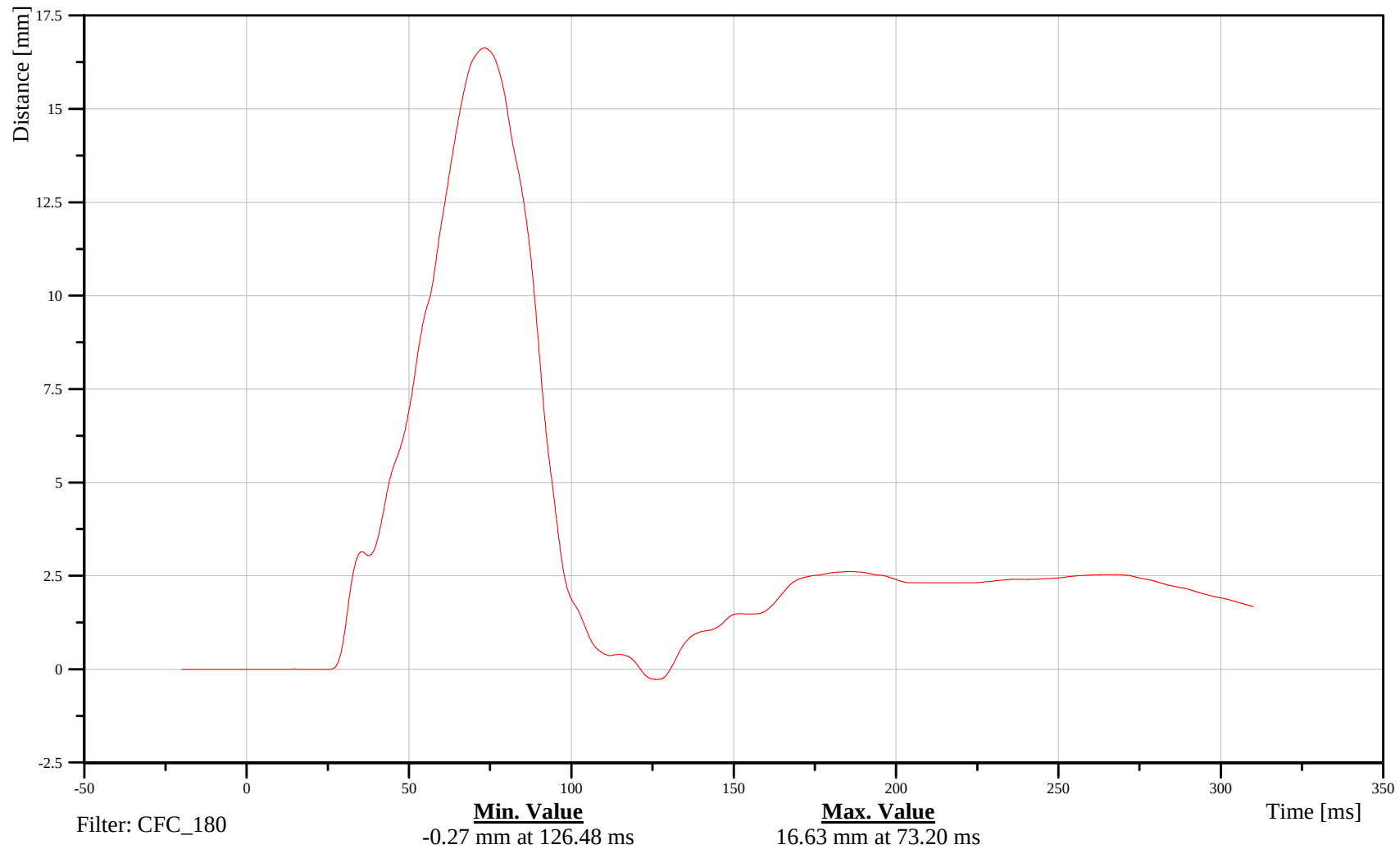
Target Vehicle Driver Upper Abdomen String Pot

Customer: VRTC

21ABDOUP00THDS0C

TRC Inc. Test Lab: CTF

Test Number: 091030



B-273

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

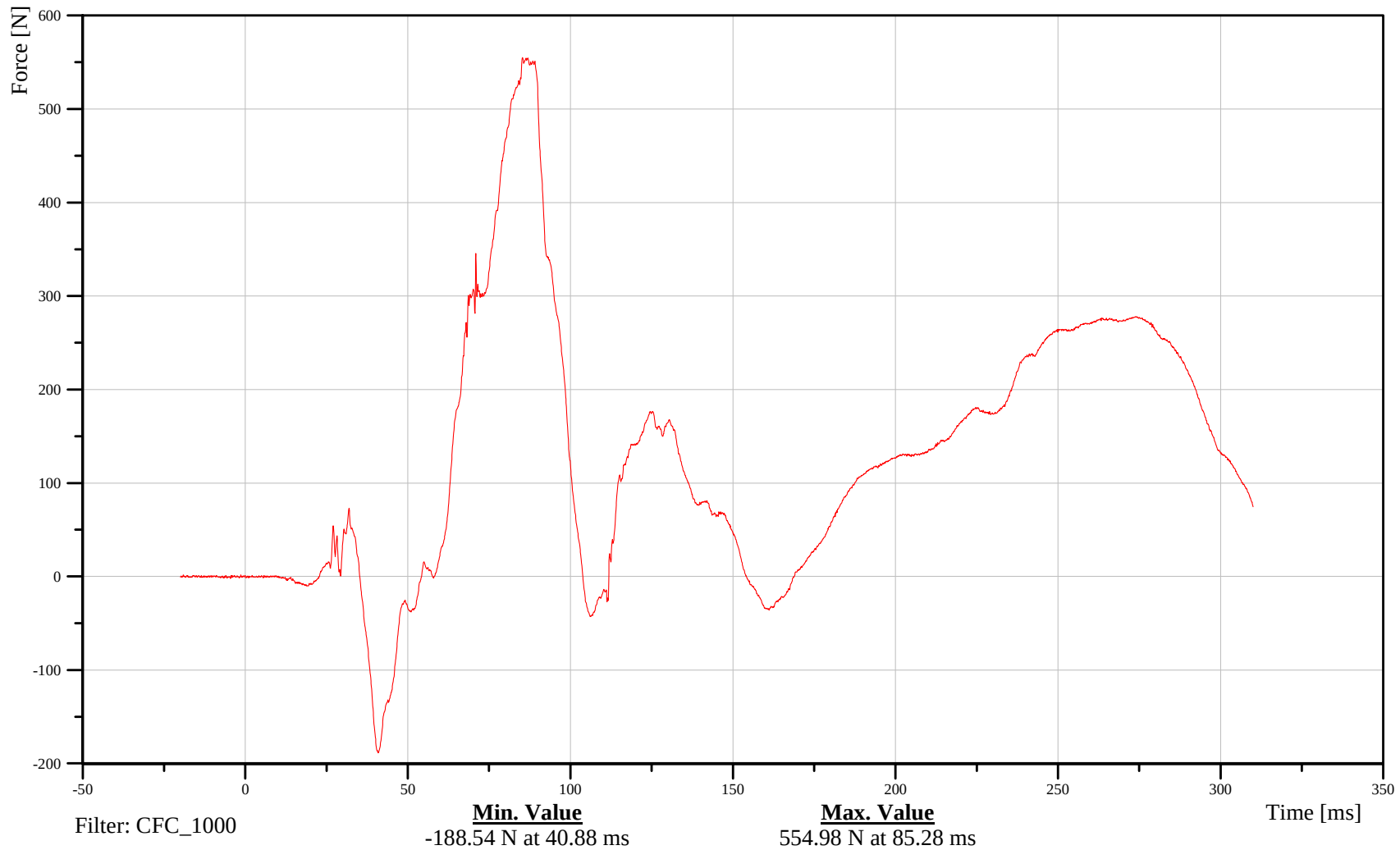
Target Vehicle Driver T12 Thoracic Spine X-Axis Force

Customer: VRTC

21THSP1200THFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-274

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

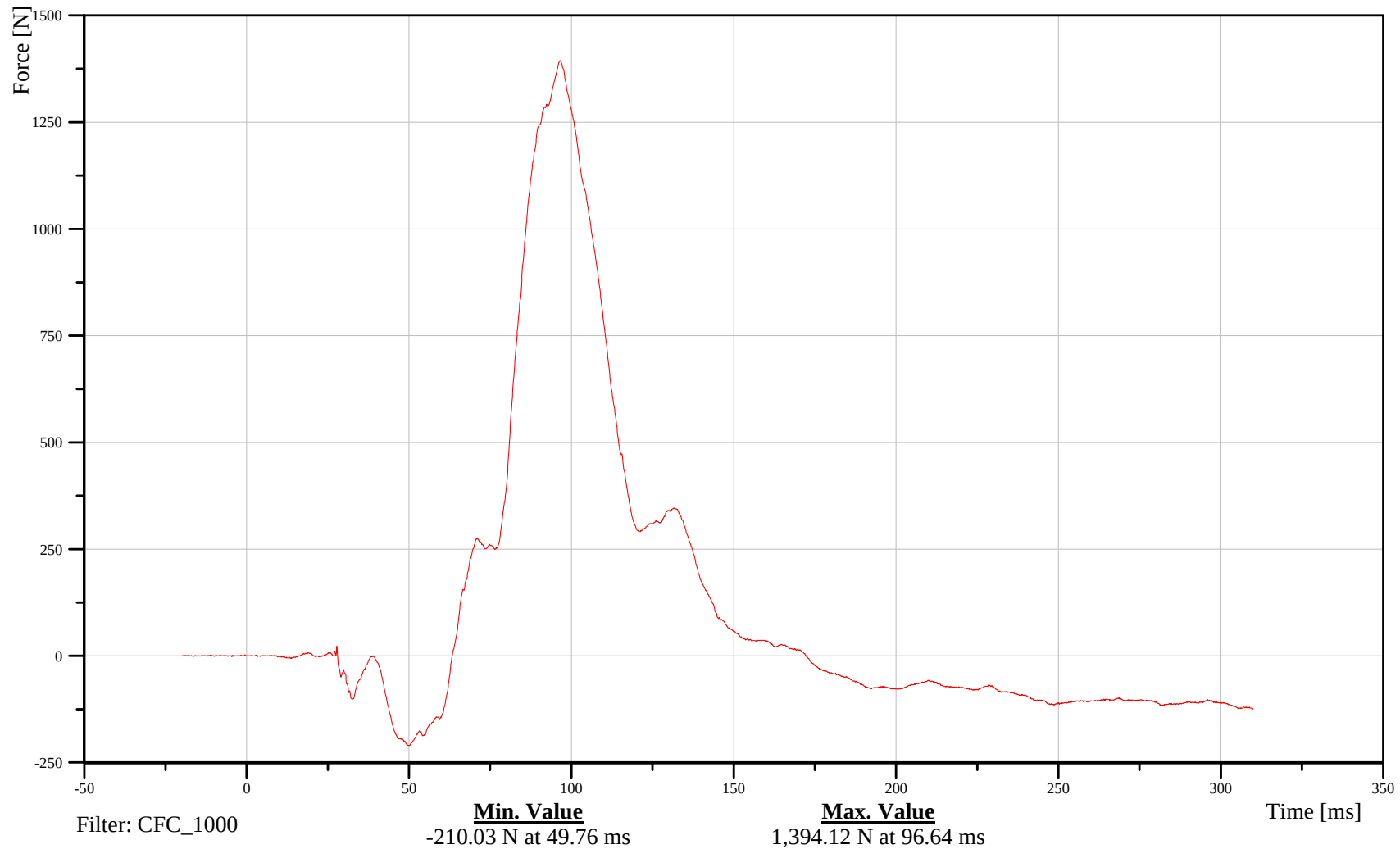
Target Vehicle Driver T12 Thoracic Spine Y-Axis Force

Customer: VRTC

21THSP1200THFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-275

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

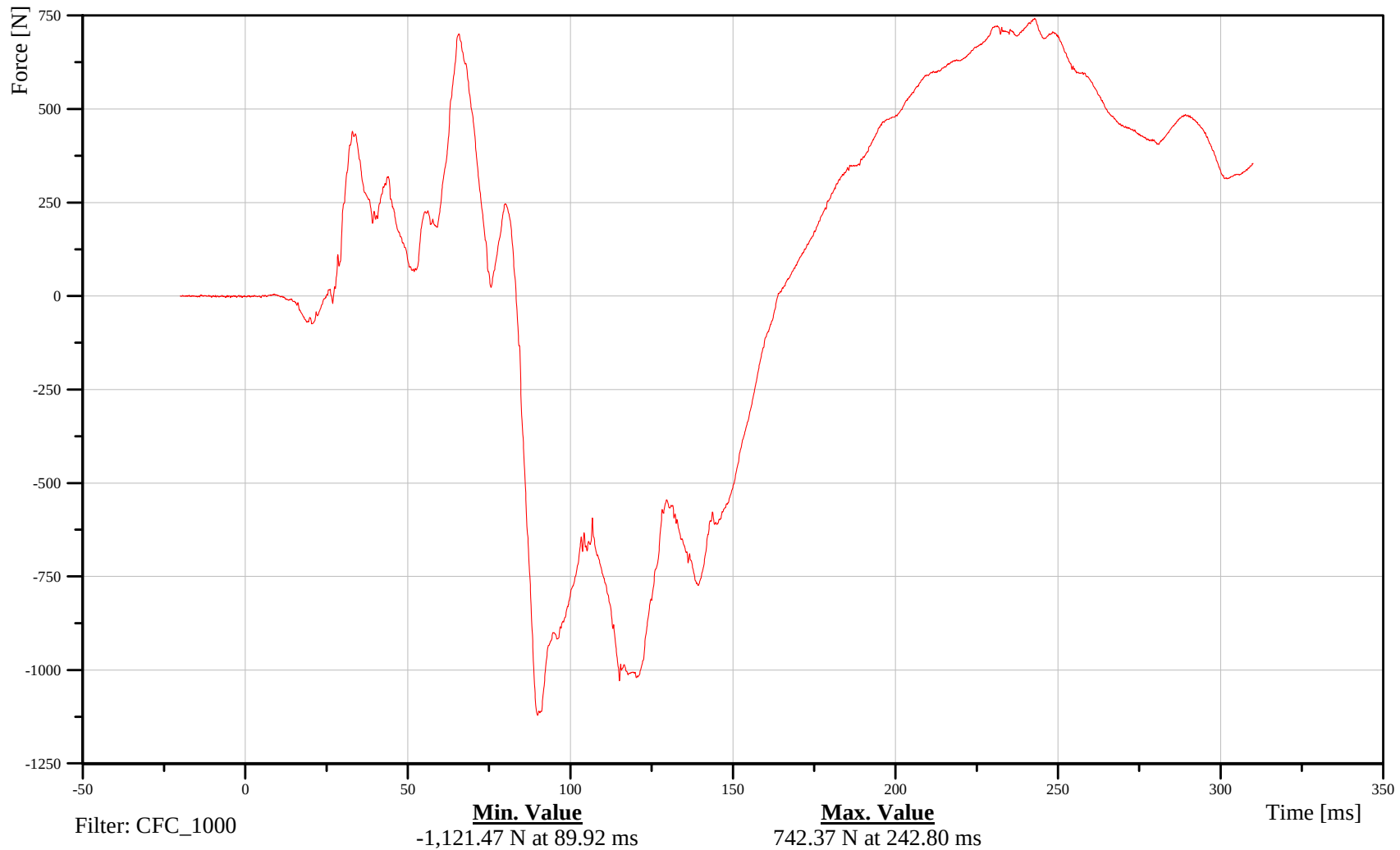
Target Vehicle Driver T12 Thoracic Spine Z-Axis Force

Customer: VRTC

21THSP1200THFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-276

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver T12 Thoracic Moment About X Axis

Date: 10/30/2009

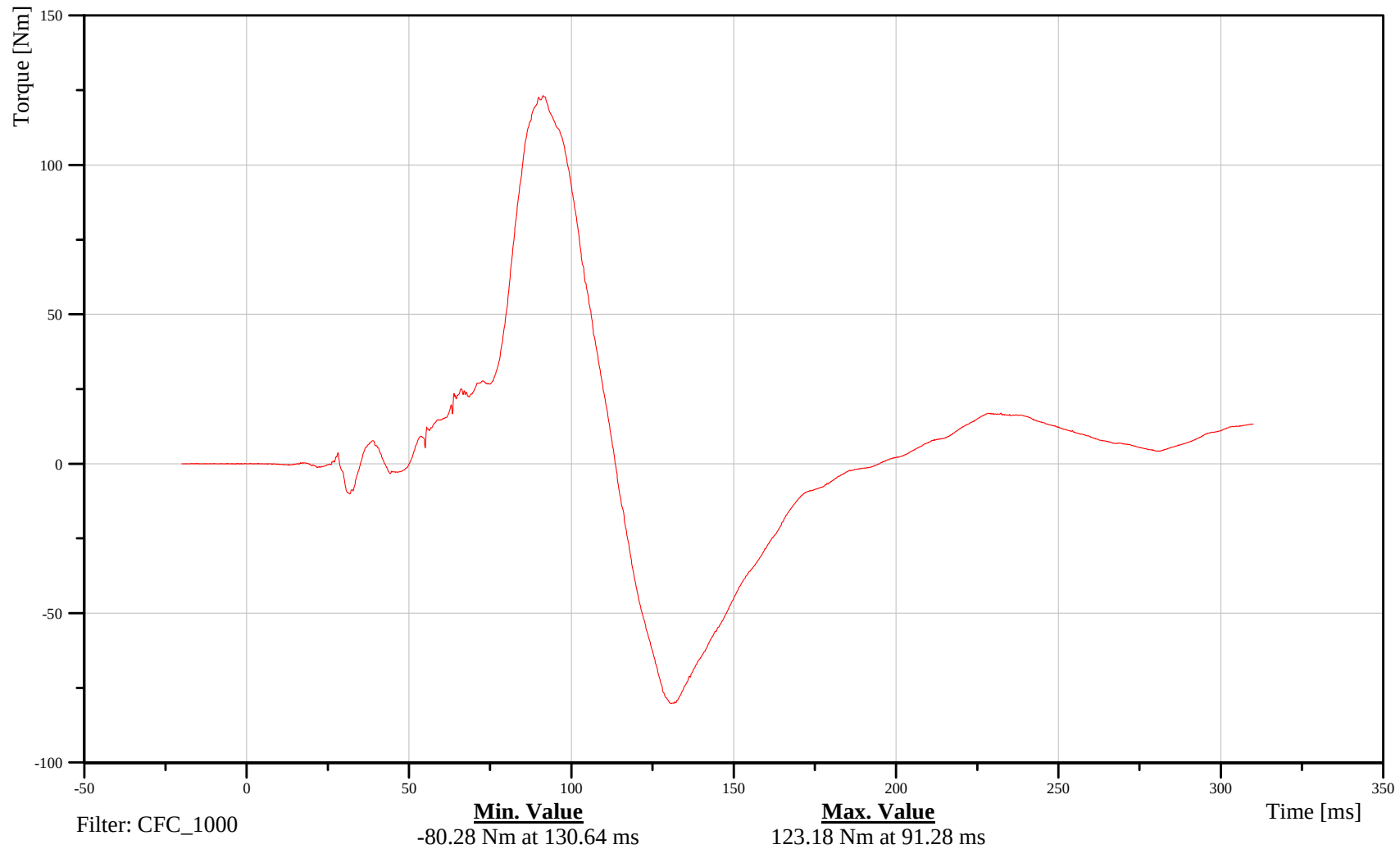
Time: 16:48

Customer: VRTC

21THSP12000HMOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-277

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver T12 Thoracic Moment About Y Axis

Date: 10/30/2009

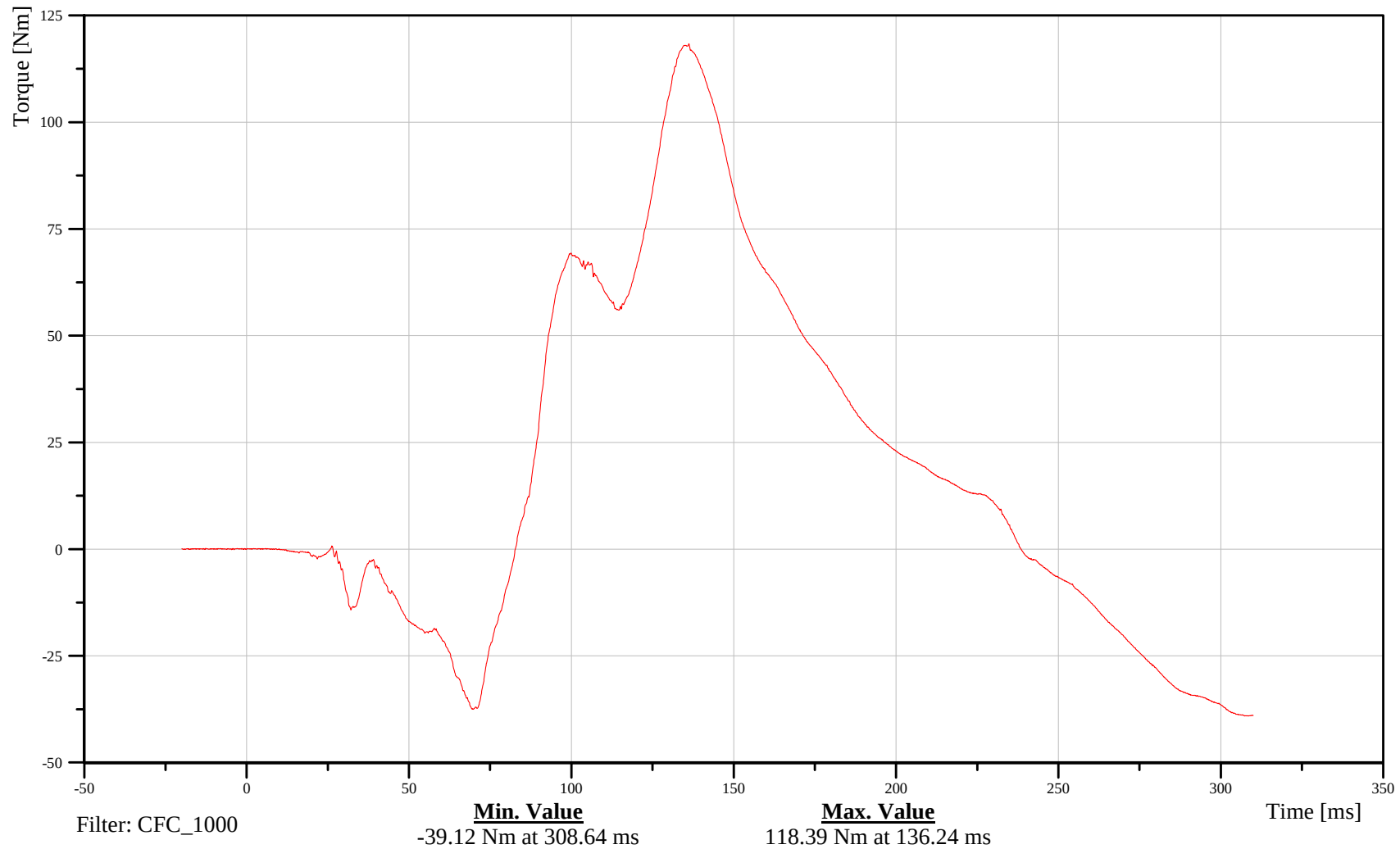
Time: 16:48

Customer: VRTC

21THSP12000HMOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-278

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver T1 Upper Spine X-Axis Acceleration

Date: 10/30/2009

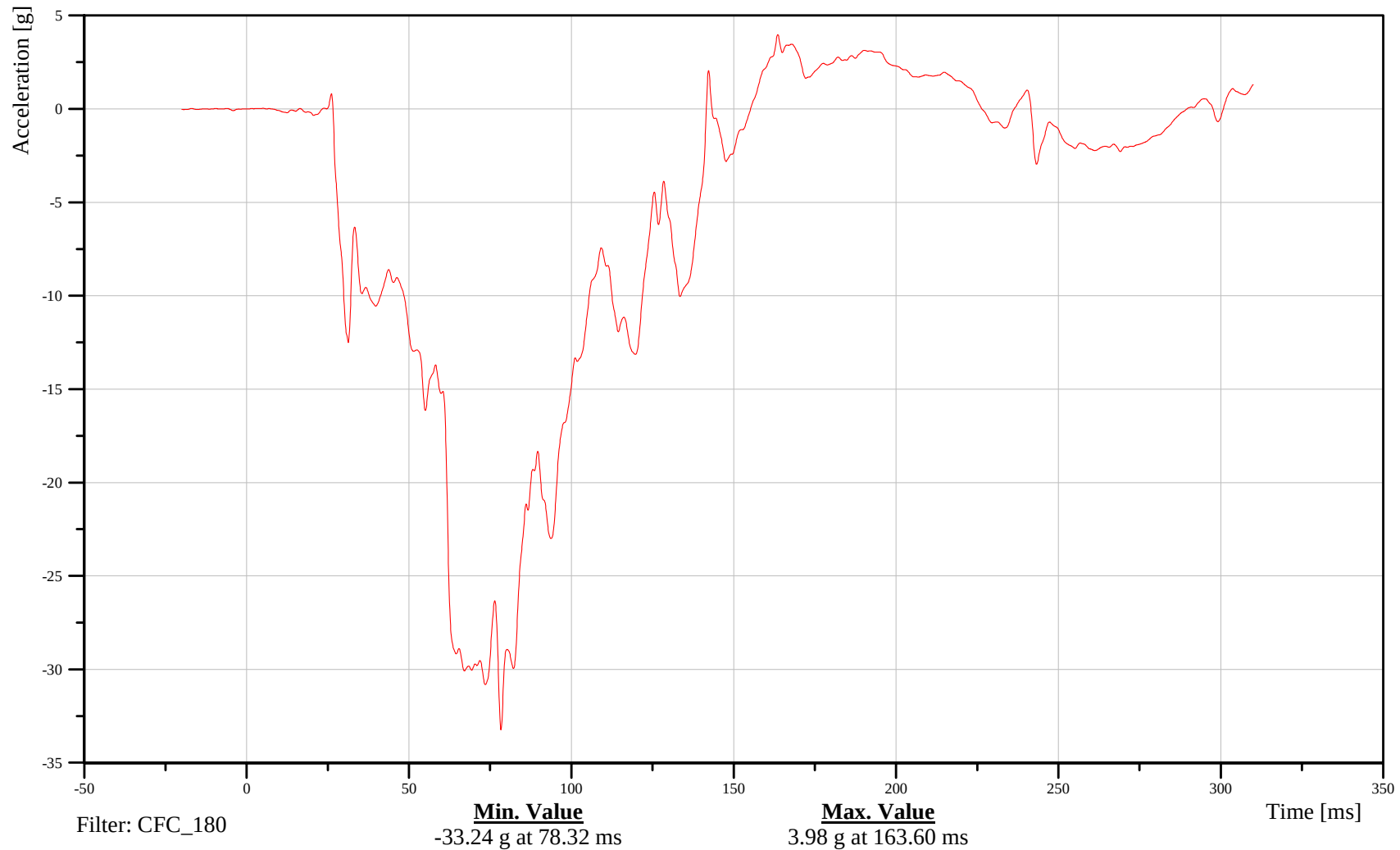
Time: 16:48

Customer: VRTC

21SPINUP00THACXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-279

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

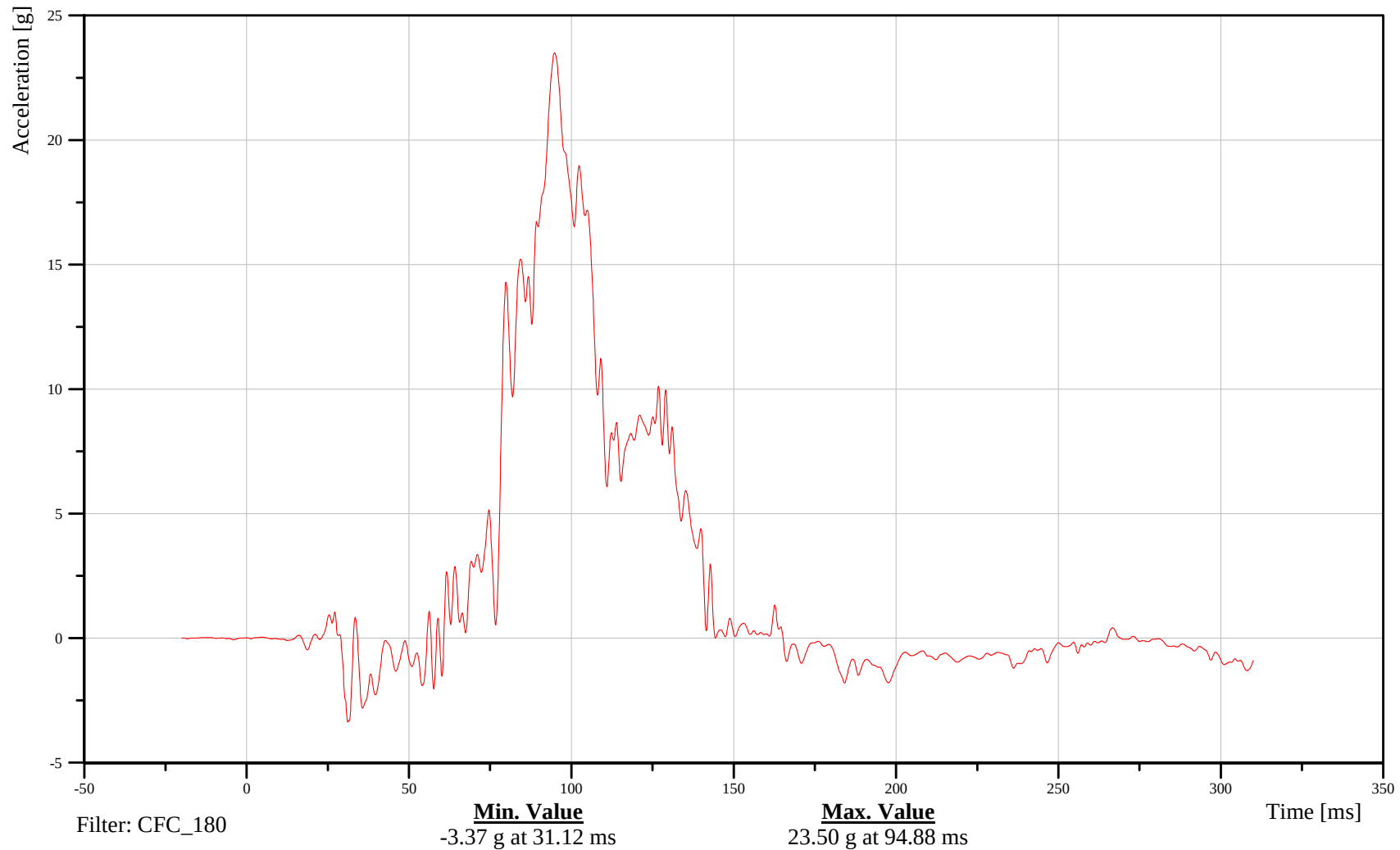
Target Vehicle Driver T1 Upper Spine Y-Axis Acceleration

Customer: VRTC

21SPINUP00THACYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-280

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver T1 Upper Spine Z-Axis Acceleration

Date: 10/30/2009

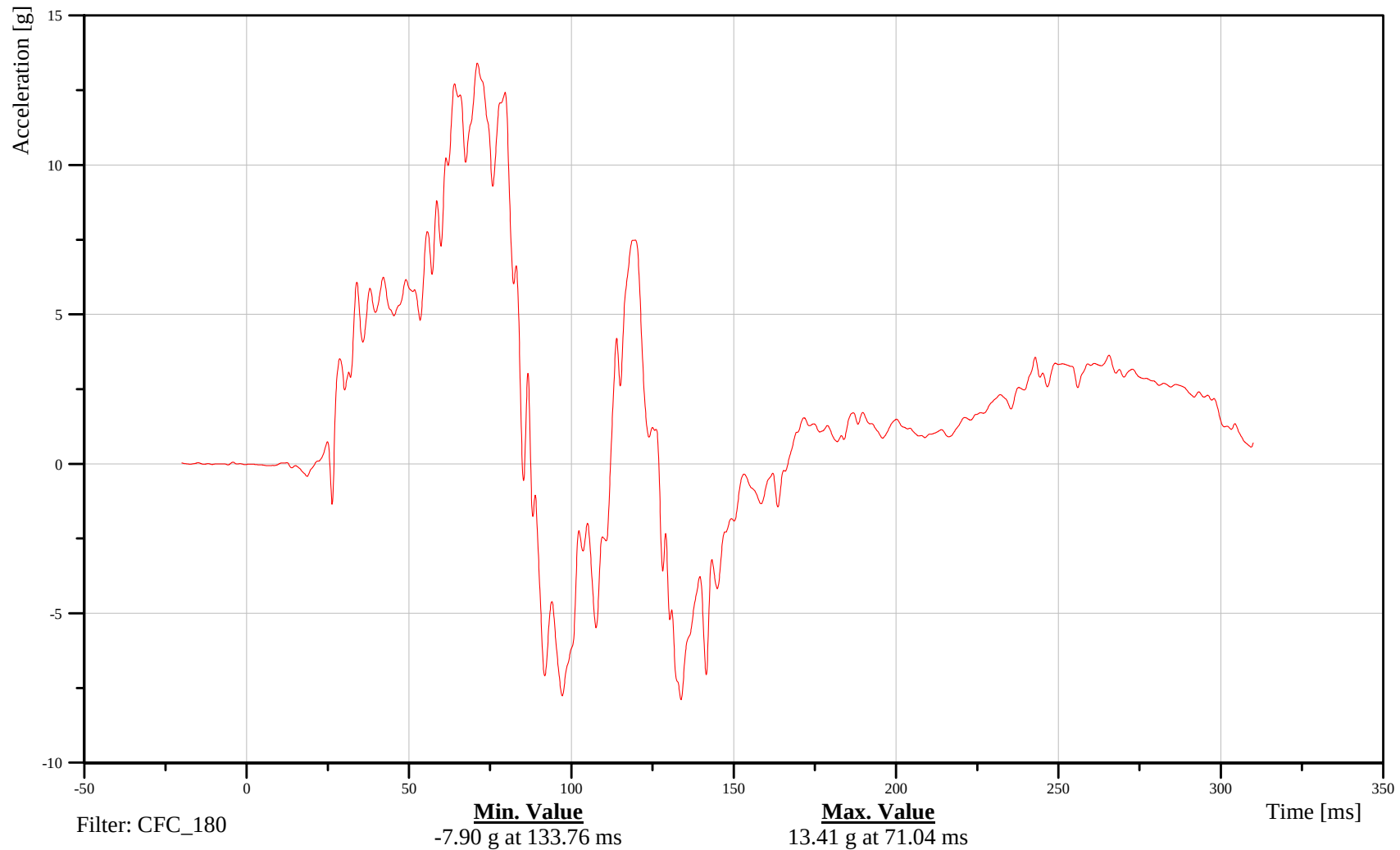
Time: 16:48

Customer: VRTC

21SPINUP00THACZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-281

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver T1 Upper Spine Resultant Acceleration

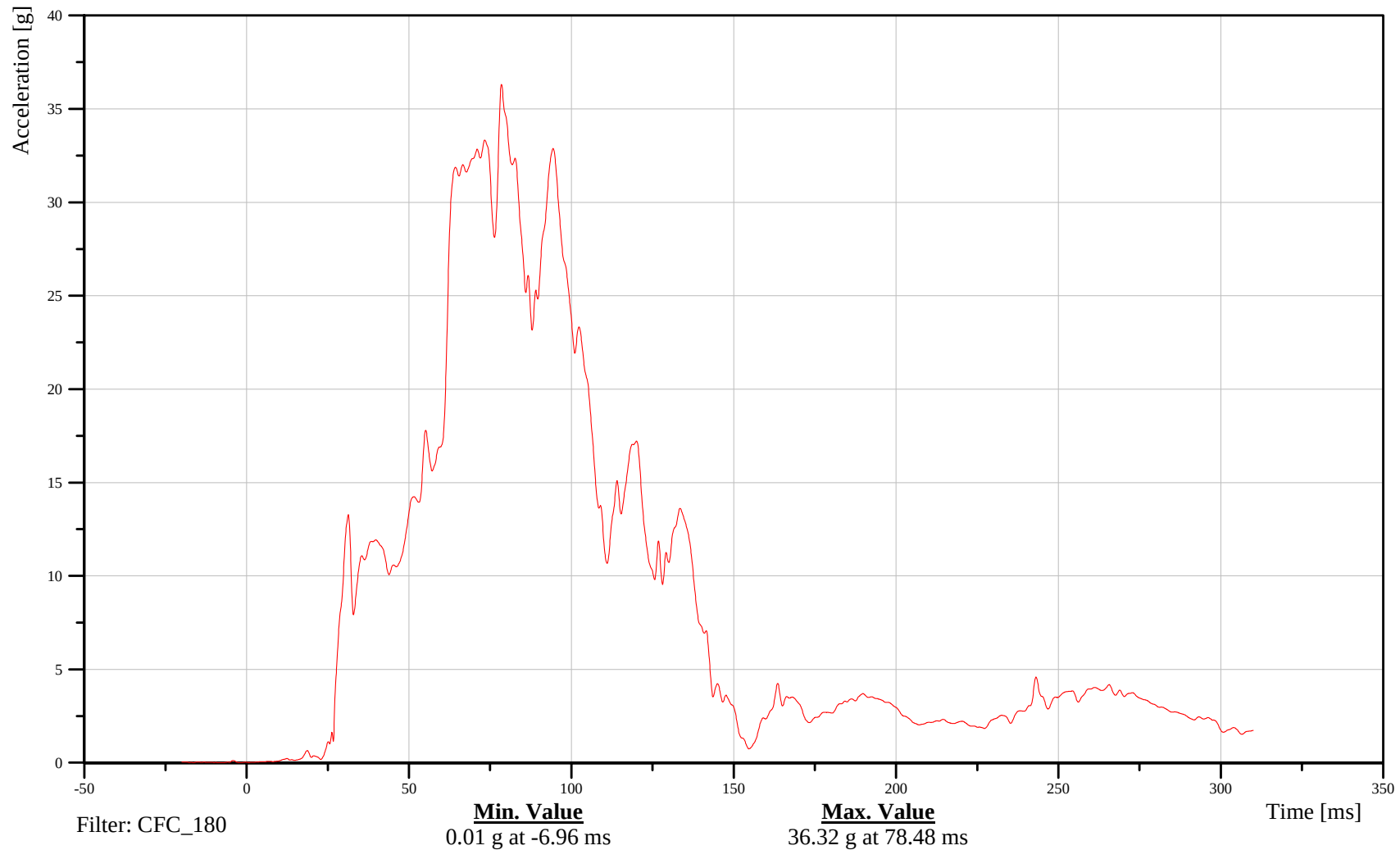
Time: 16:48

Customer: VRTC

21SPINUP00THACRC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-282

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

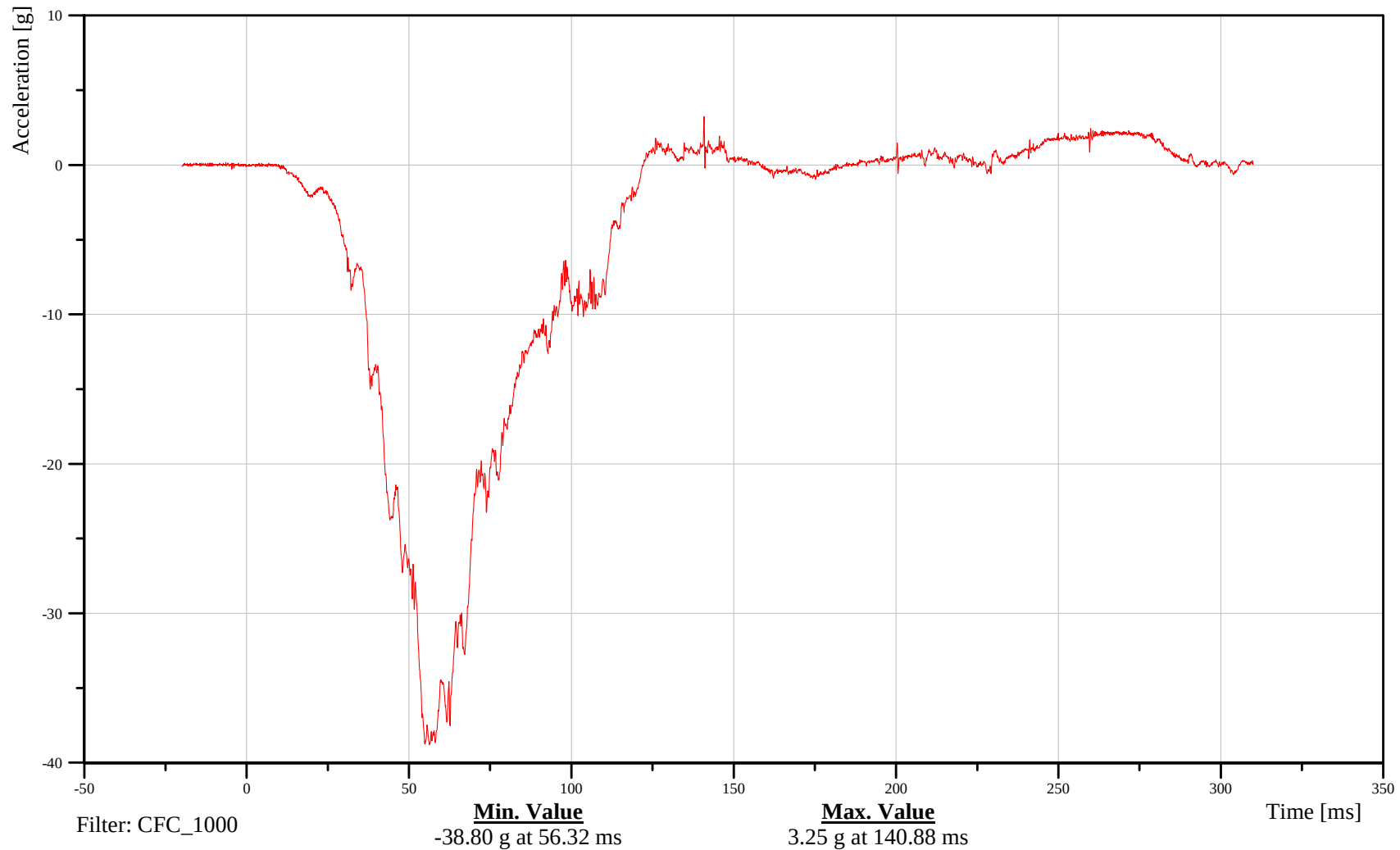
Target Vehicle Driver Pelvis X-Axis Acceleration

Customer: VRTC

21PELV0000THACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-283

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

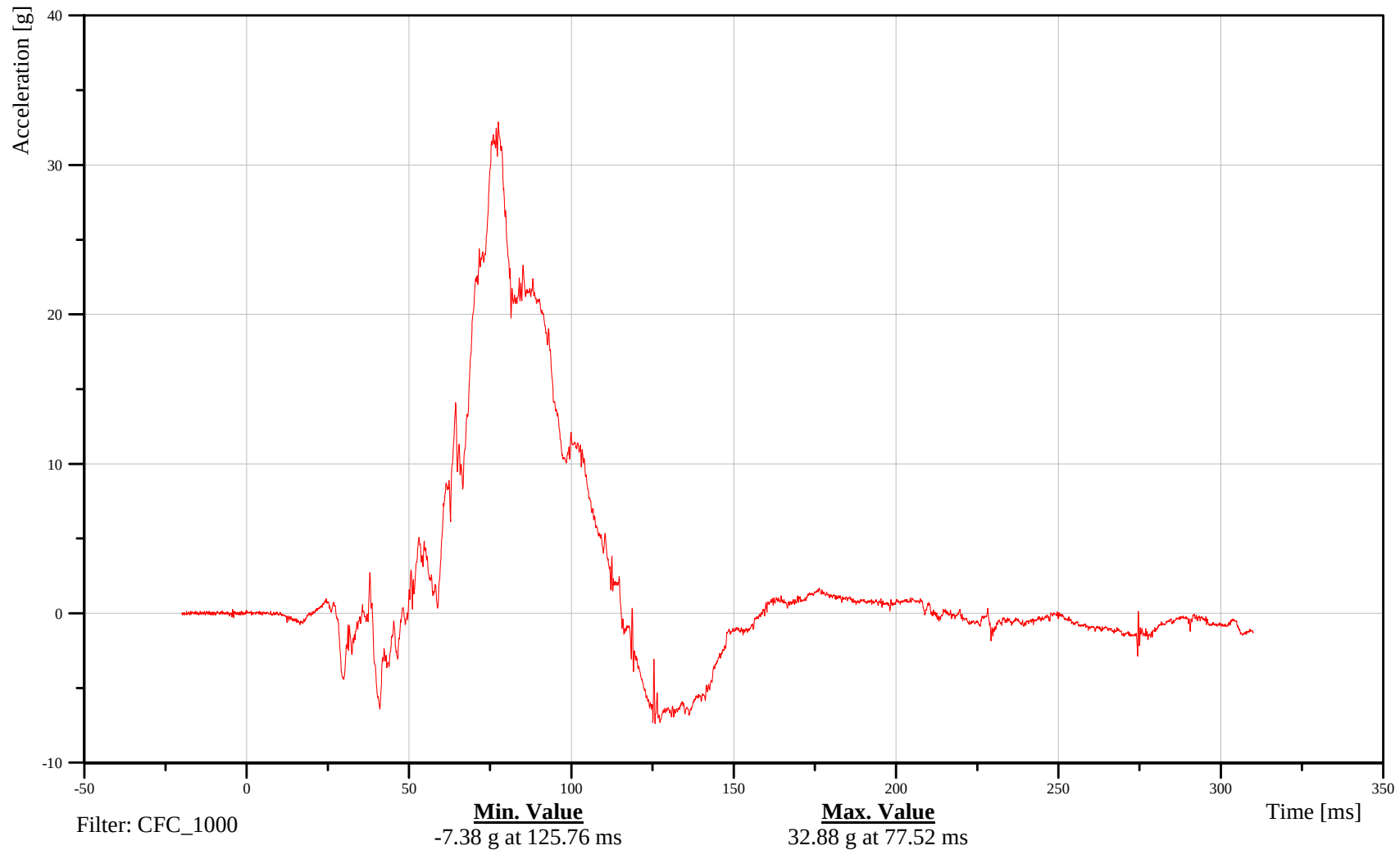
Target Vehicle Driver Pelvis Y-Axis Acceleration

Customer: VRTC

21PELV0000THACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-284

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

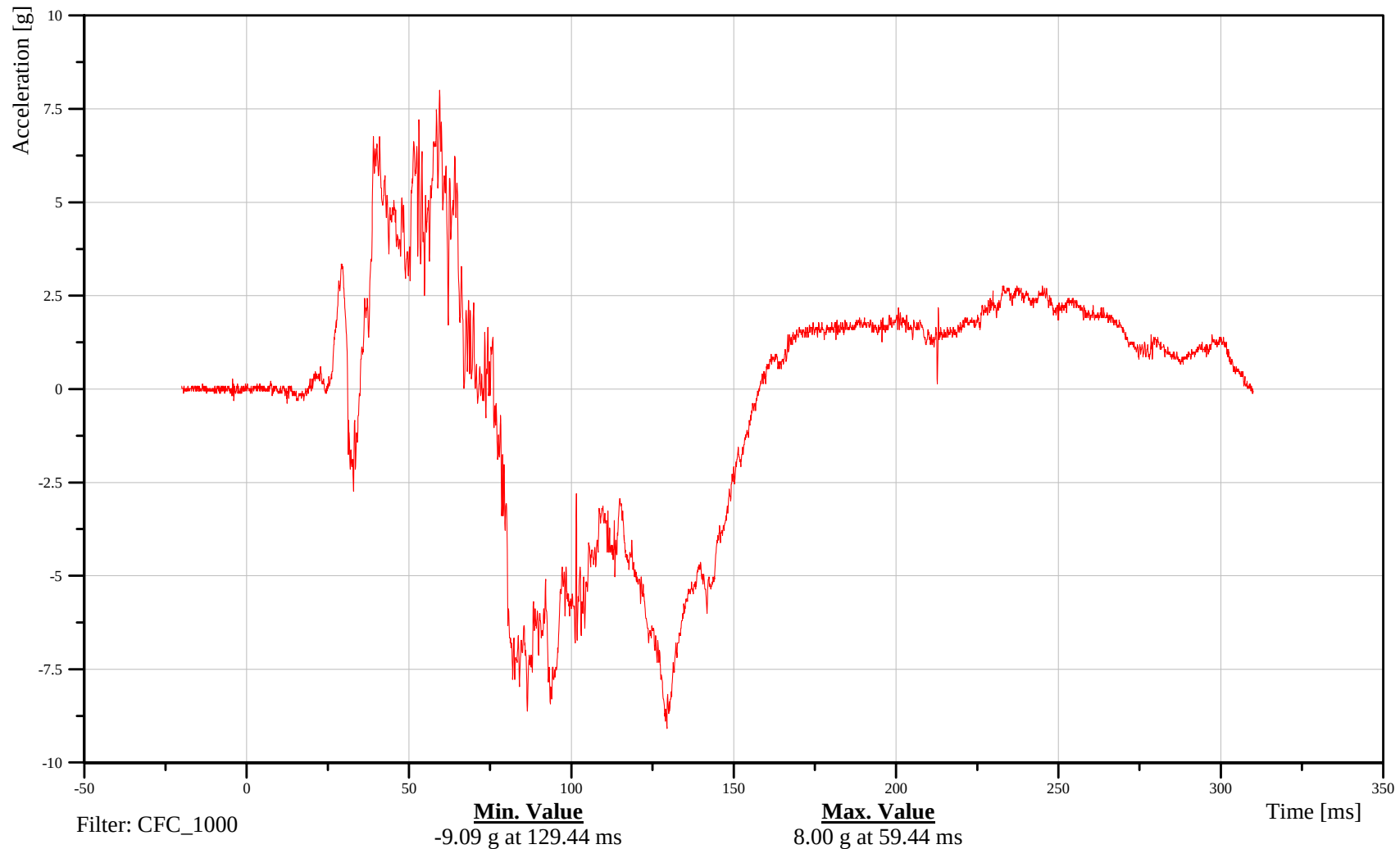
Target Vehicle Driver Pelvis Z-Axis Acceleration

Customer: VRTC

21PELV0000THACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-285

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

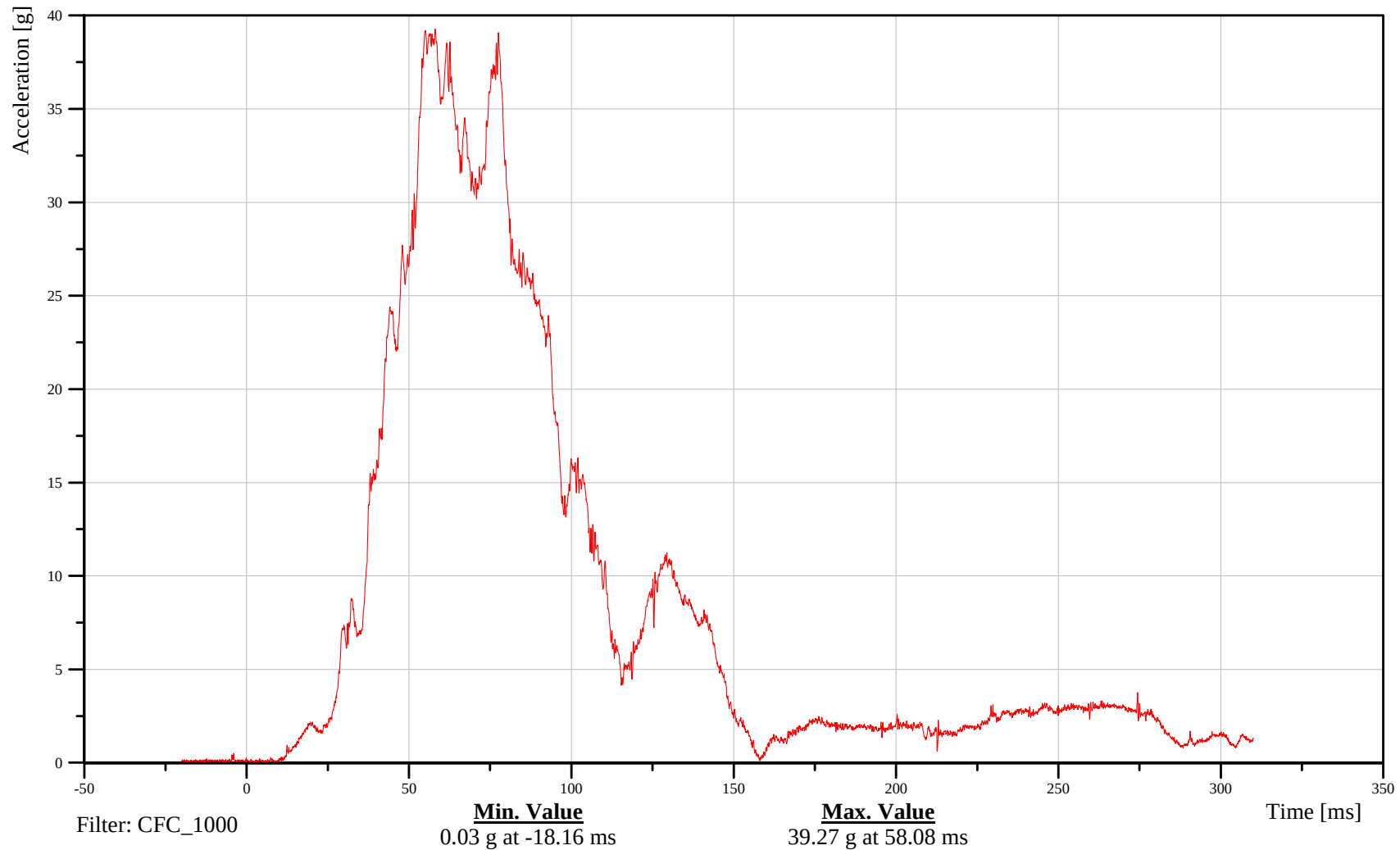
Target Vehicle Driver Pelvis Resultant Acceleration

Customer: VRTC

21PELV0000THACRA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-286

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Pelvis/Acetabulum Left X-Axis Force

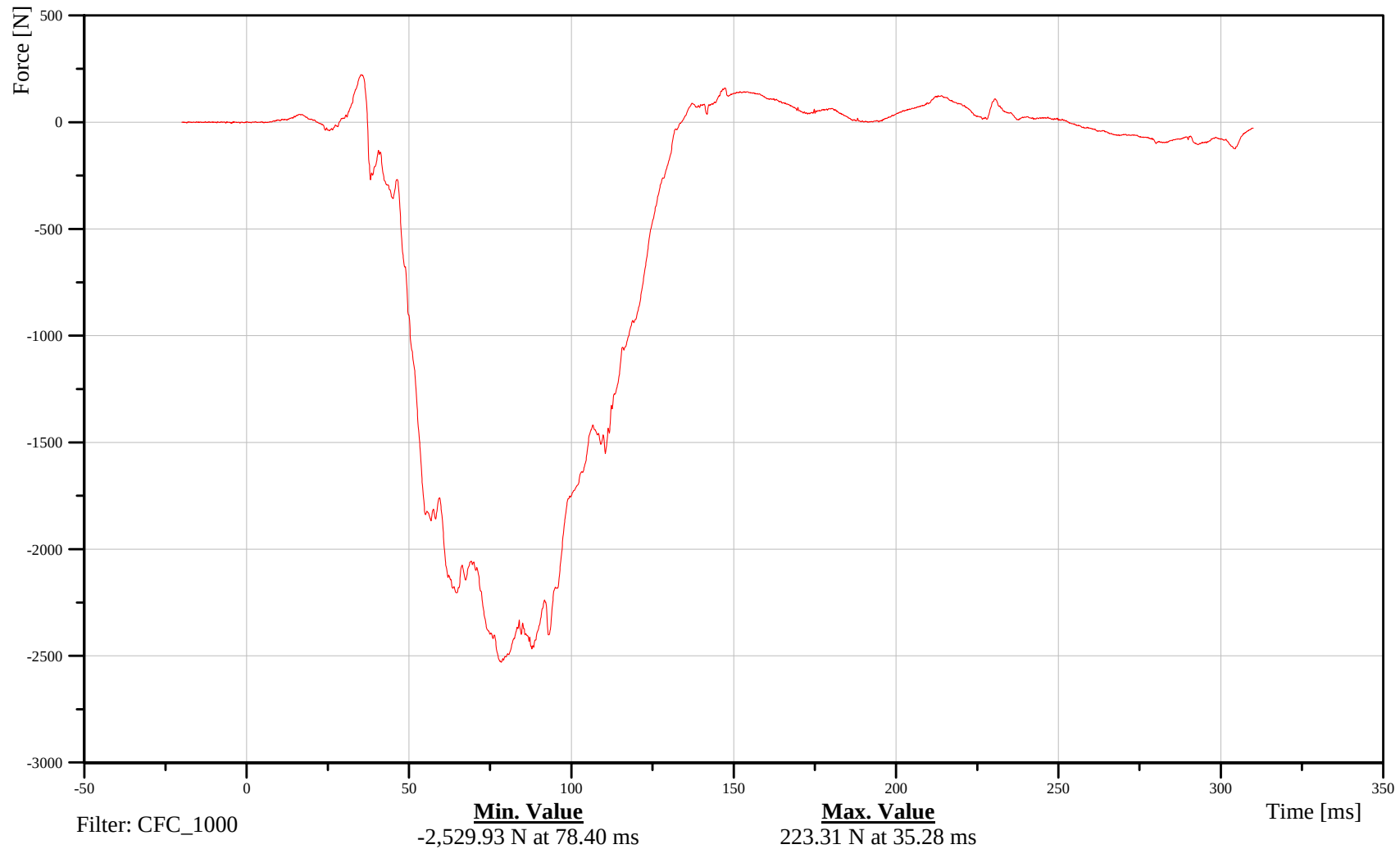
Time: 16:48

Customer: VRTC

21ACTBLE00THFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-287

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Pelvis/Acetabulum Left Y-Axis Force

Date: 10/30/2009

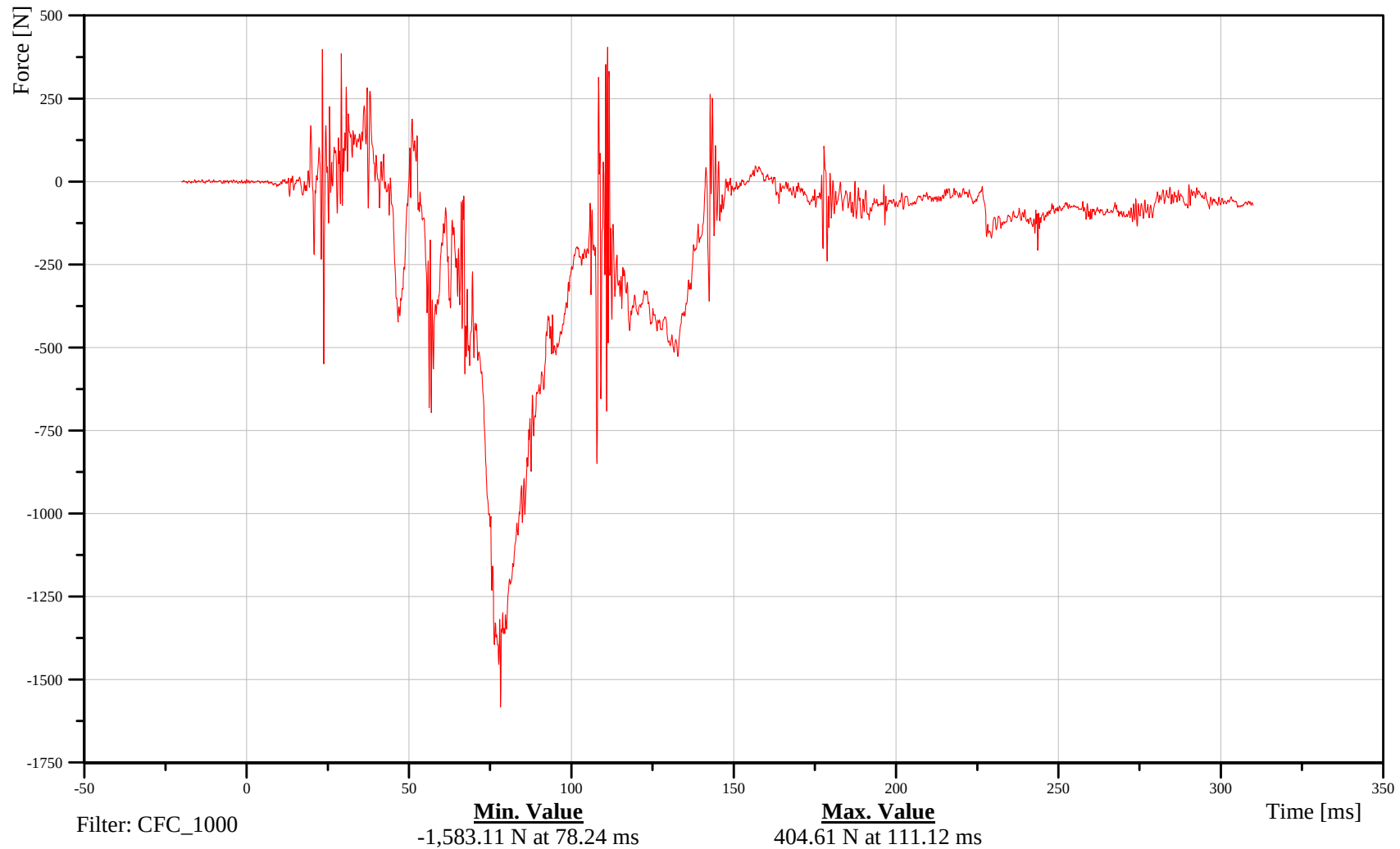
Time: 16:48

Customer: VRTC

21ACTBLE00THFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-288

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

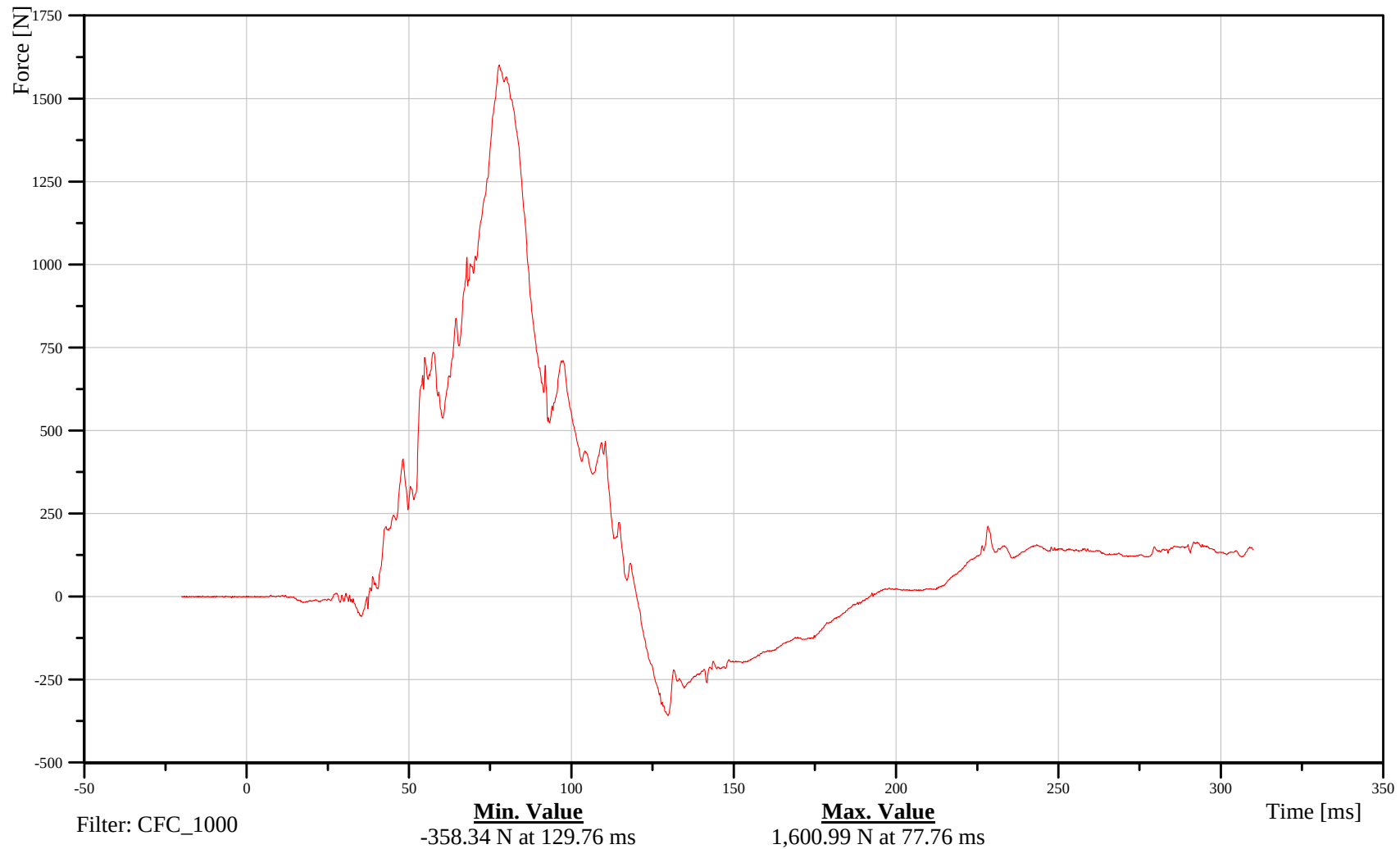
Target Vehicle Driver Pelvis/Acetabulum Left Z-Axis Force

Customer: VRTC

21ACTBLE00THFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-289

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Pelvis/Acetabulum Right X-Axis Force

Date: 10/30/2009

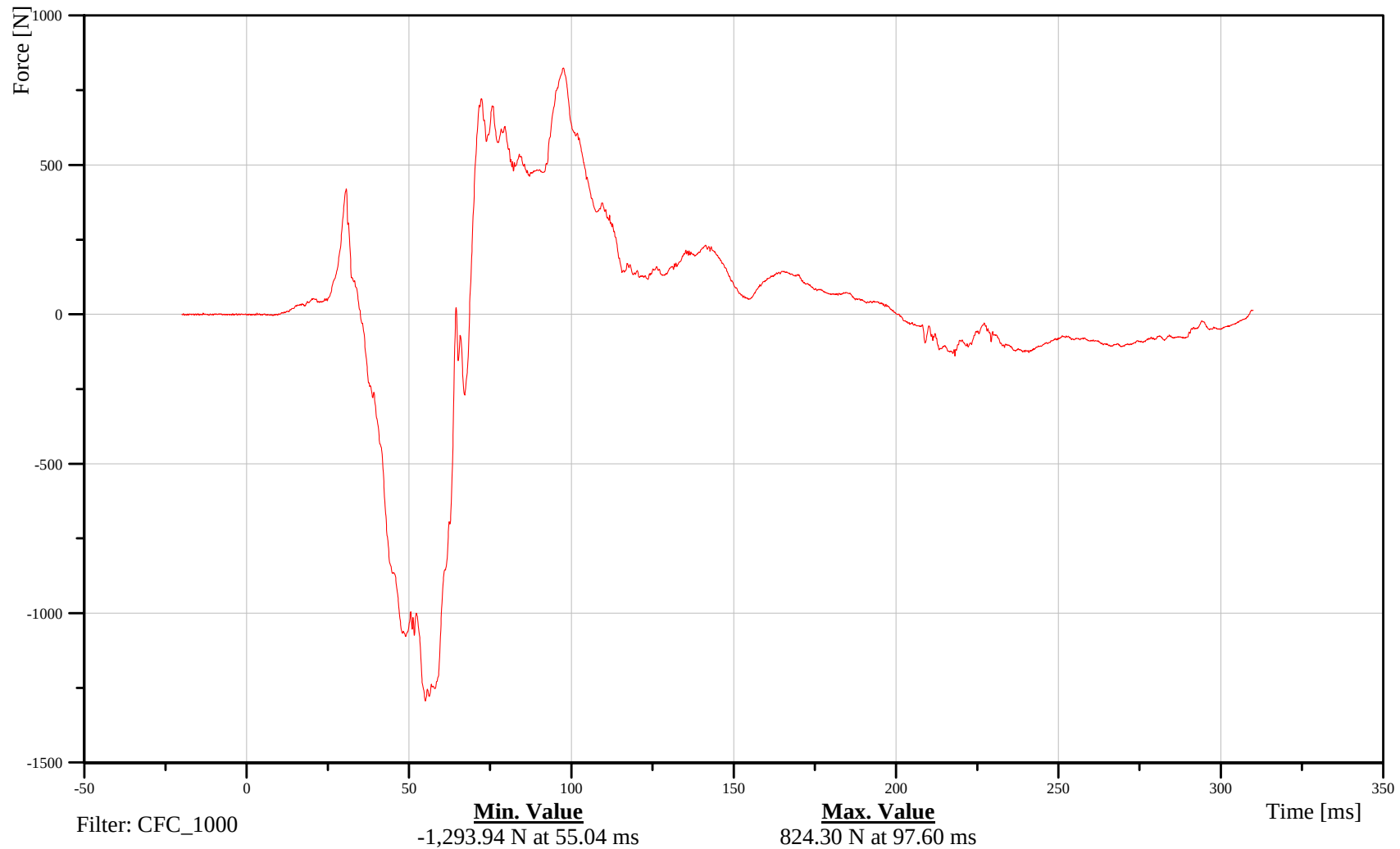
Time: 16:48

Customer: VRTC

21ACTBRI00THFOXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-290

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Pelvis/Acetabulum Right Y-Axis Force

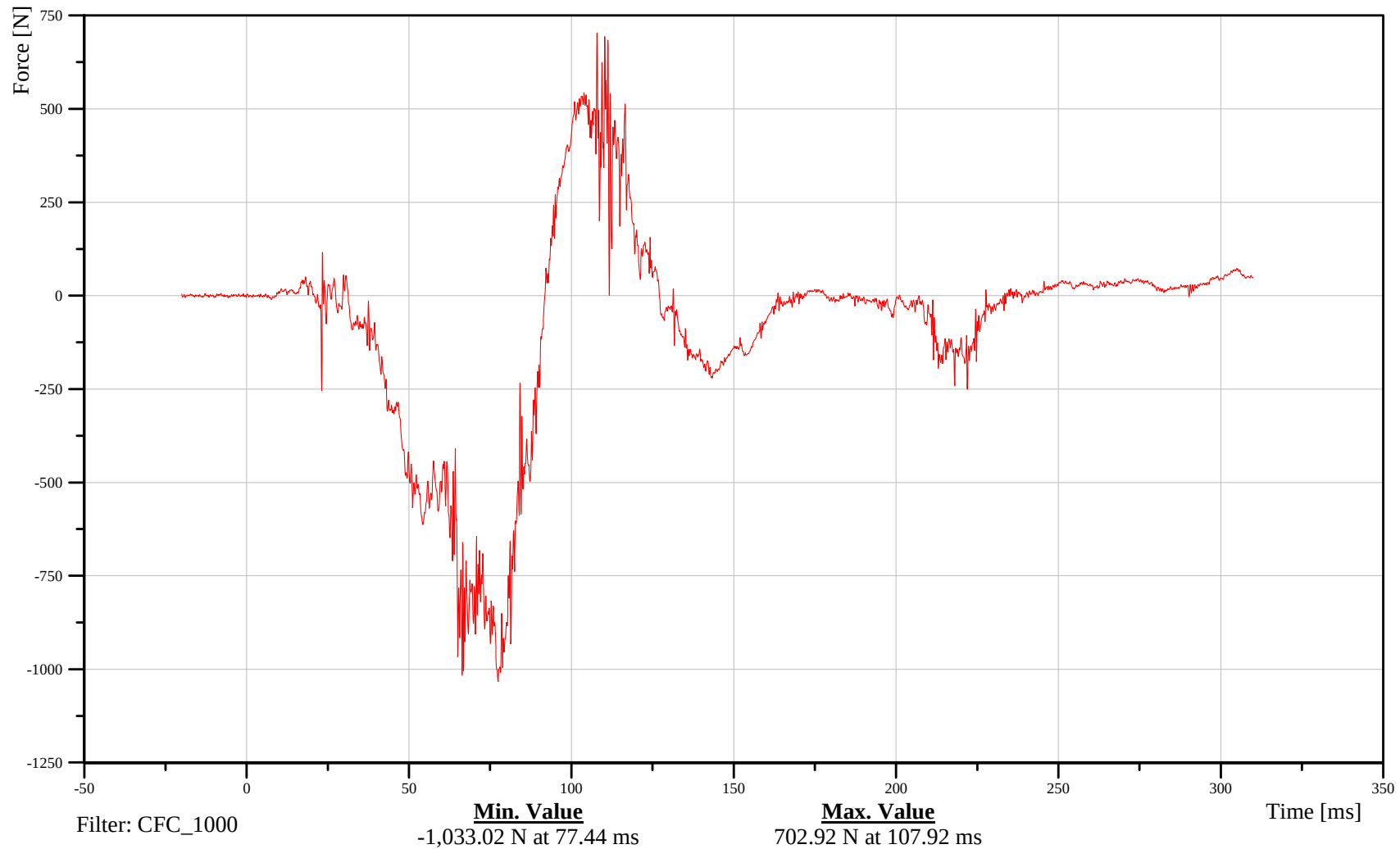
Time: 16:48

Customer: VRTC

21ACTBRI00THFOYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-291

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Pelvis/Acetabulum Right Z-Axis Force

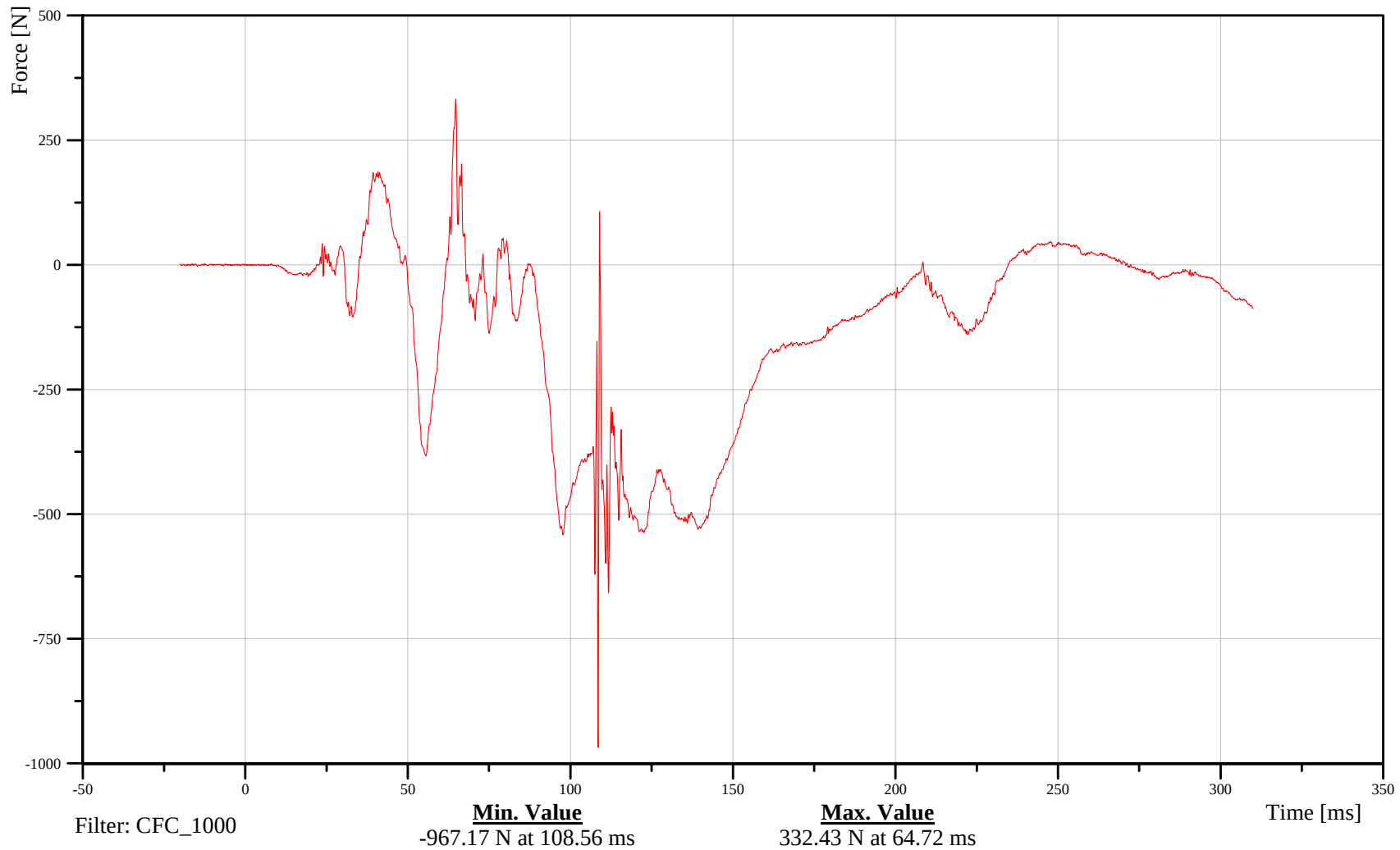
Time: 16:48

Customer: VRTC

21ACTBRI00THFOZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-292

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Left Femur X-Axis Force

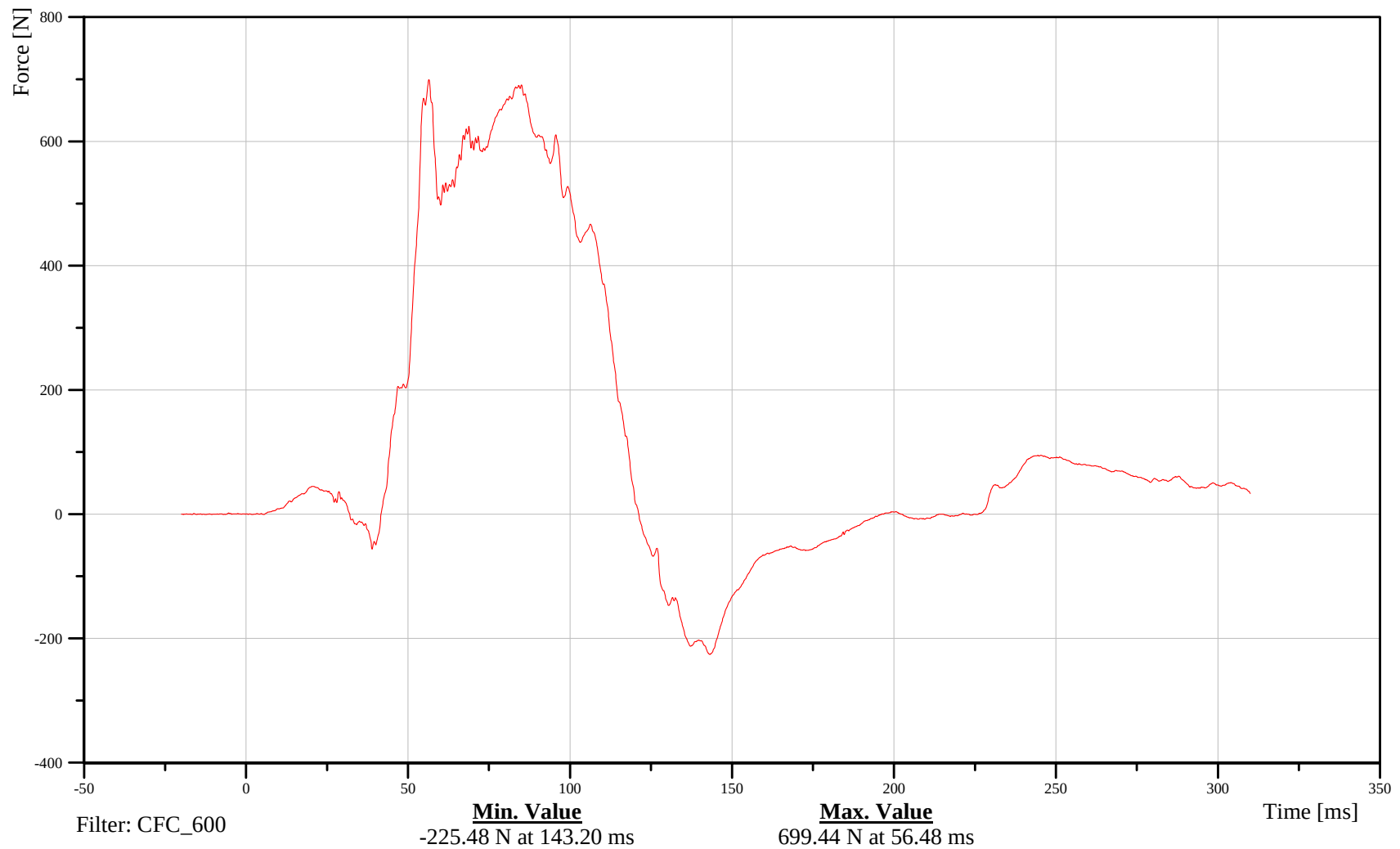
Time: 16:48

Customer: VRTC

21FEMRLL00THFOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-293

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Left Femur Y-Axis Force

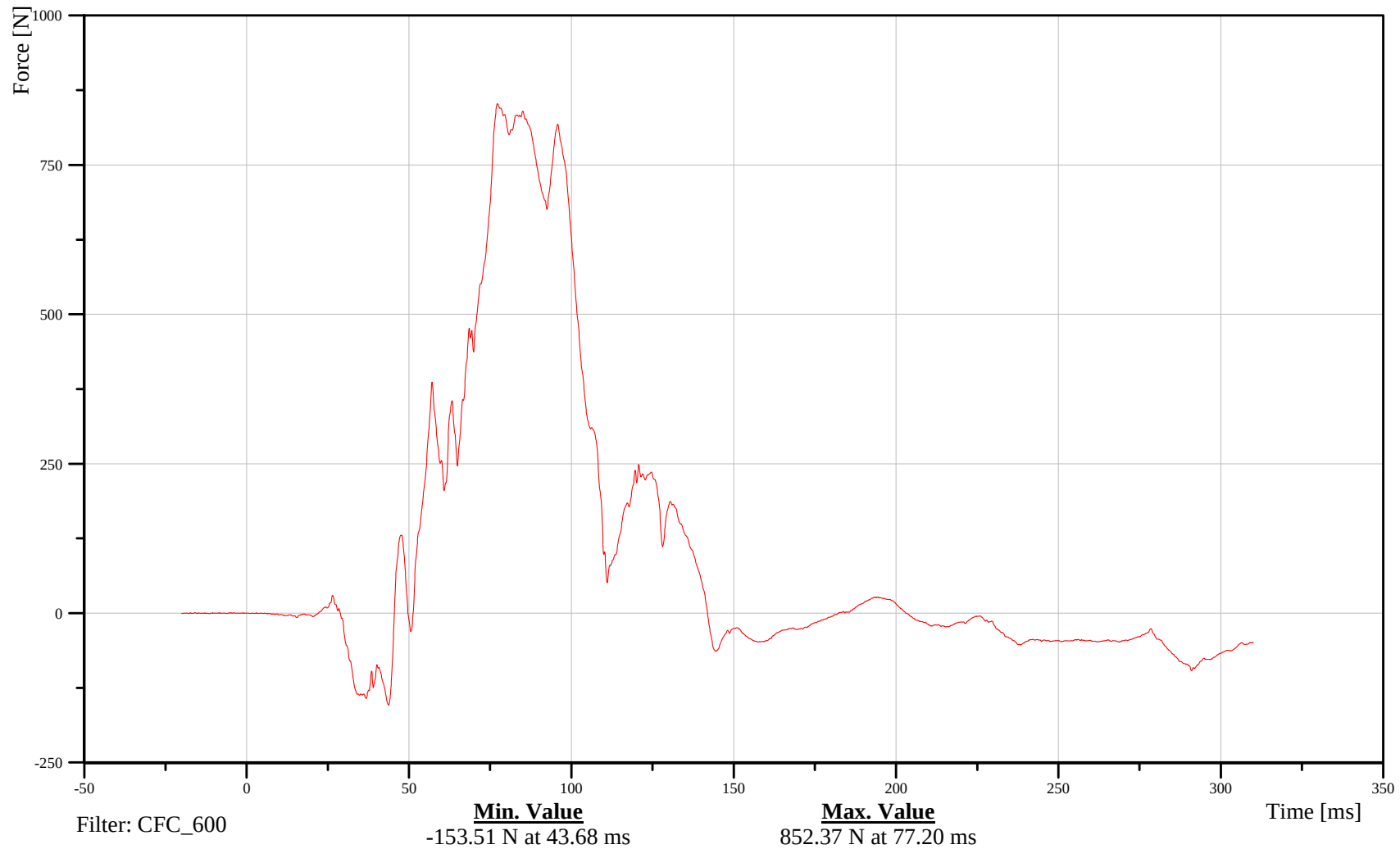
Time: 16:48

Customer: VRTC

21FEMRLL00THFOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-294

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Driver Left Femur Z-Axis Force

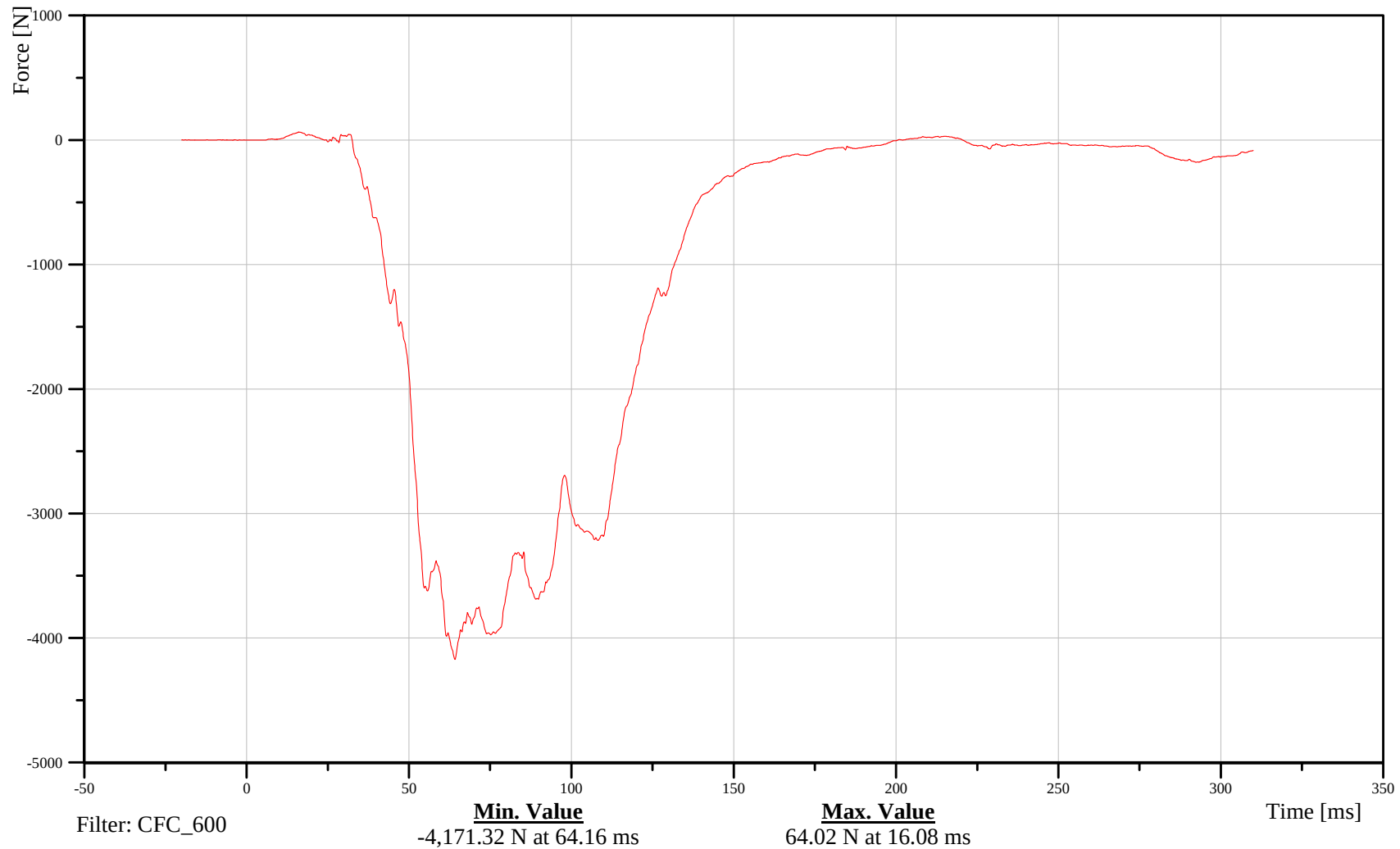
Time: 16:48

Customer: VRTC

21FEMRLL00THFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-295

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

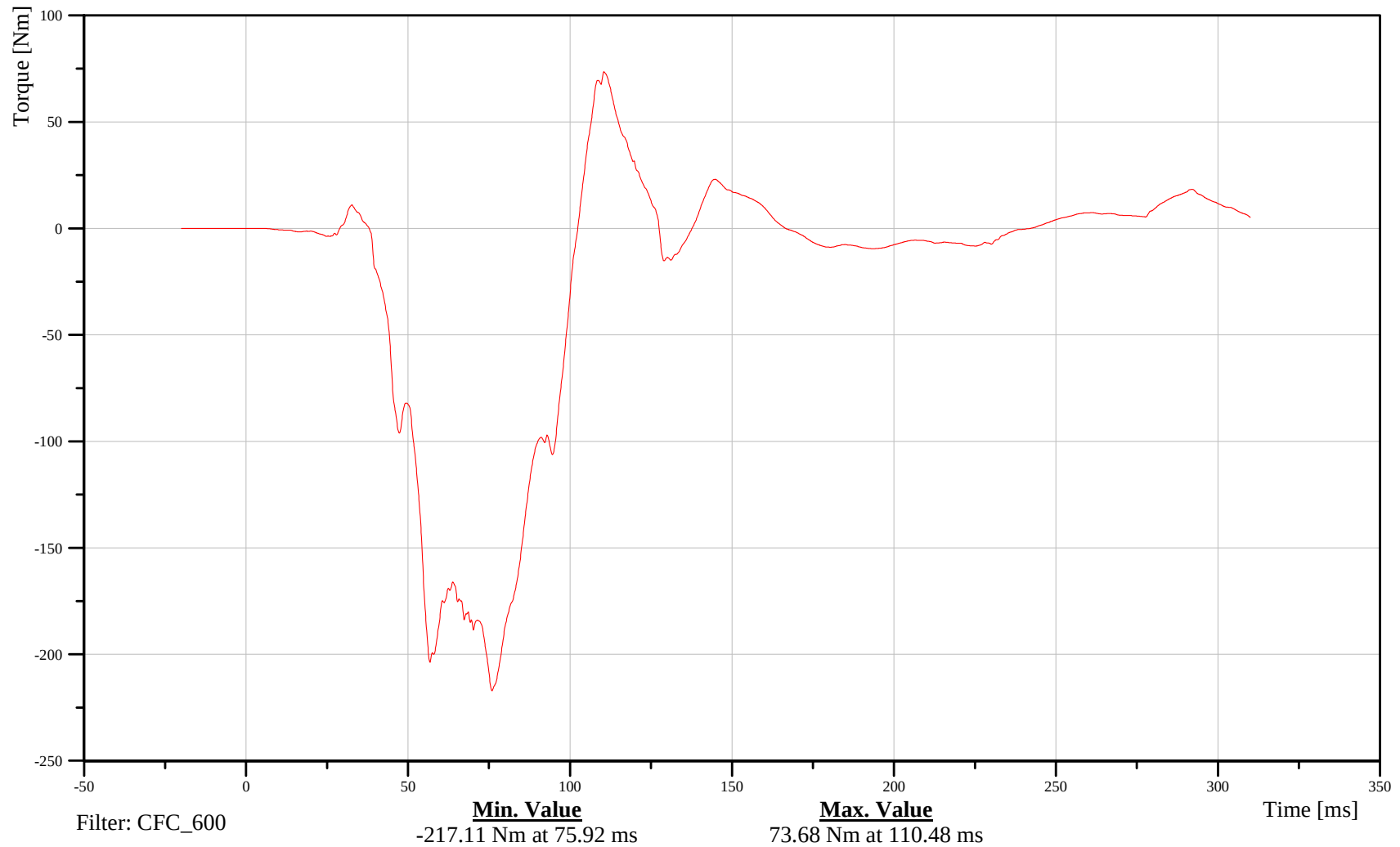
Target Vehicle Driver Left Femur Moment About X-Axis

Customer: VRTC

21FEMRLL00THMOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-296

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

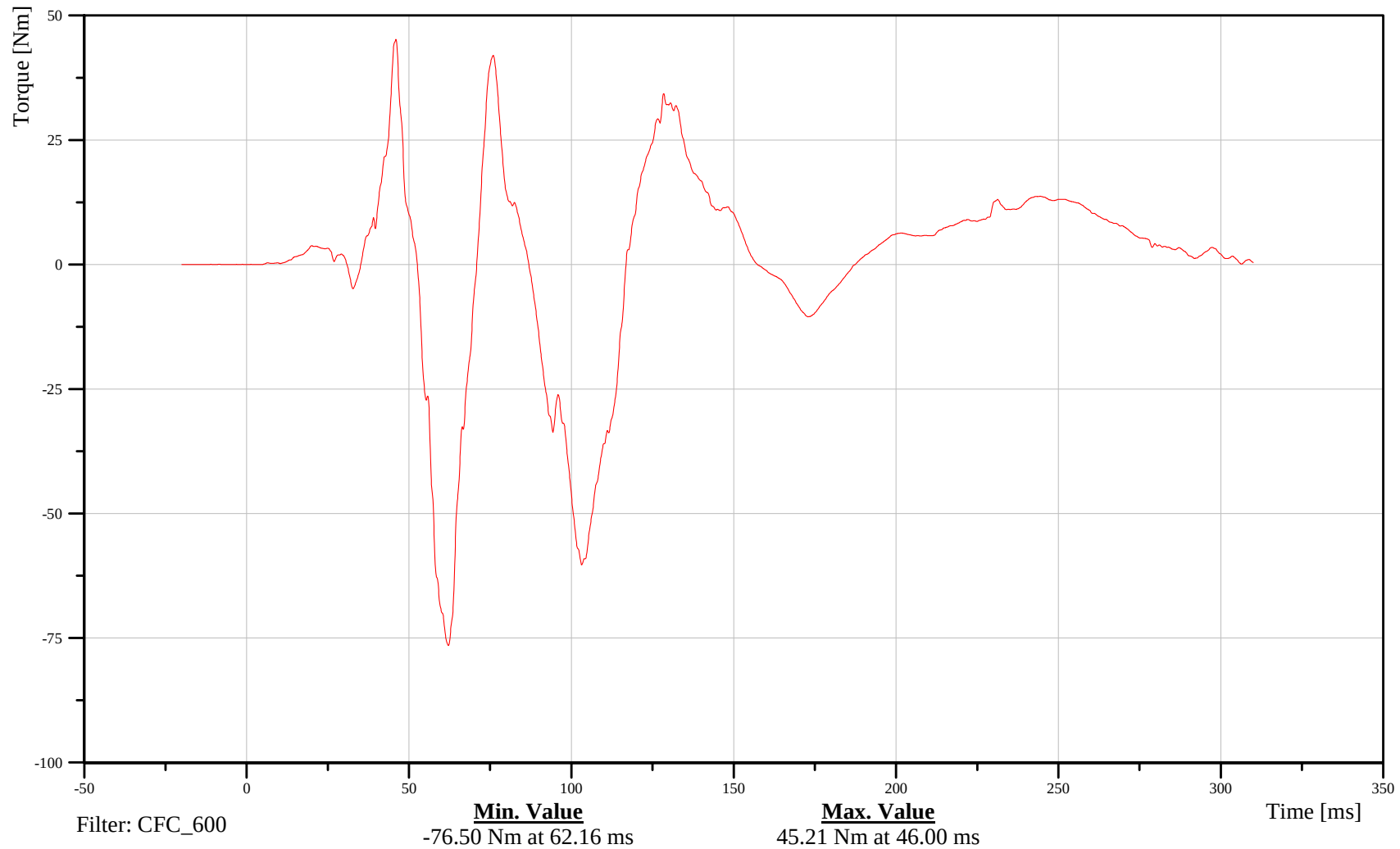
Target Vehicle Driver Left Femur Moment About Y-Axis

Customer: VRTC

21FEMRLL00THMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-297

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

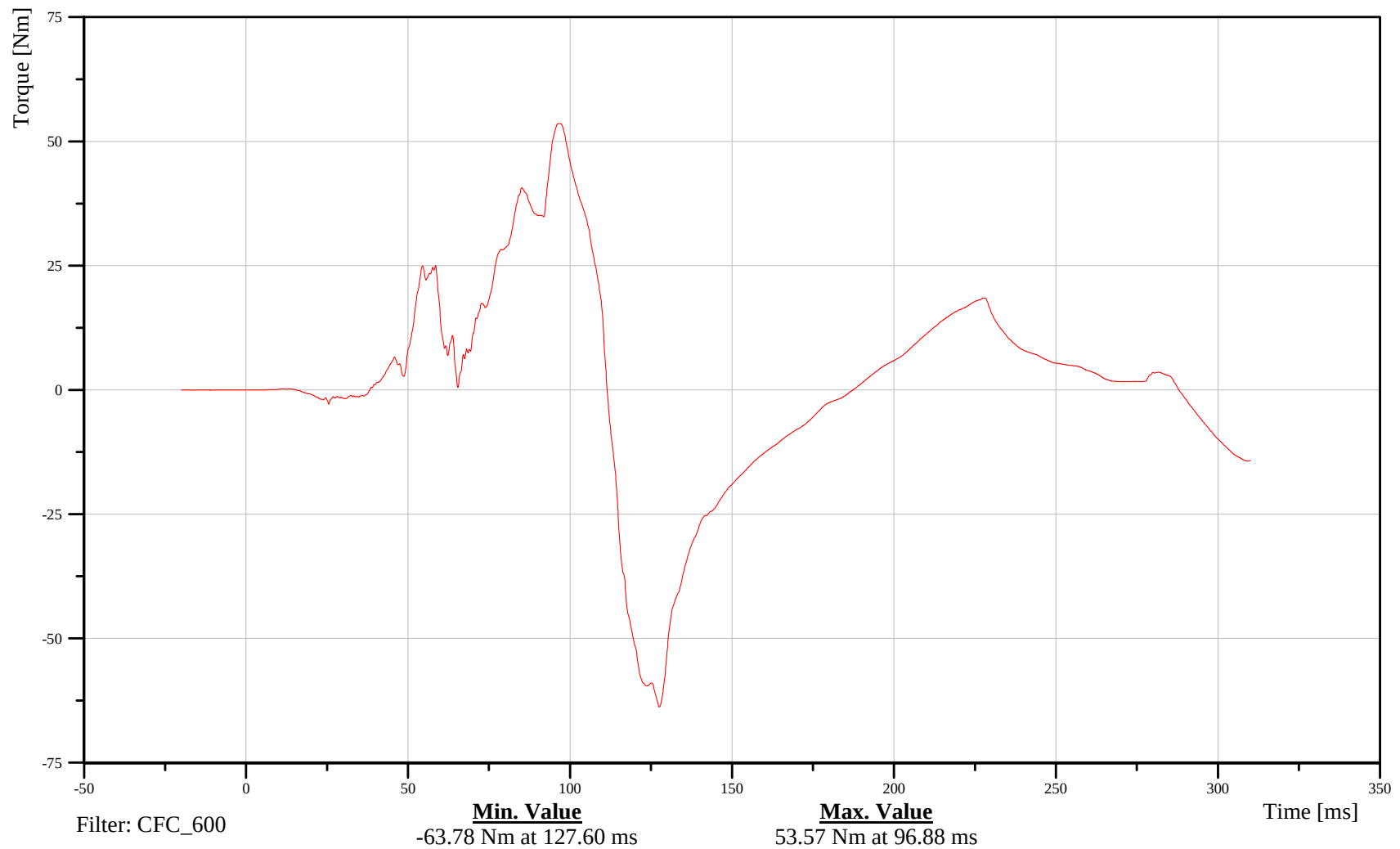
Target Vehicle Driver Left Femur Moment About Z-Axis

Customer: VRTC

21FEMRLL00THMOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-298

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

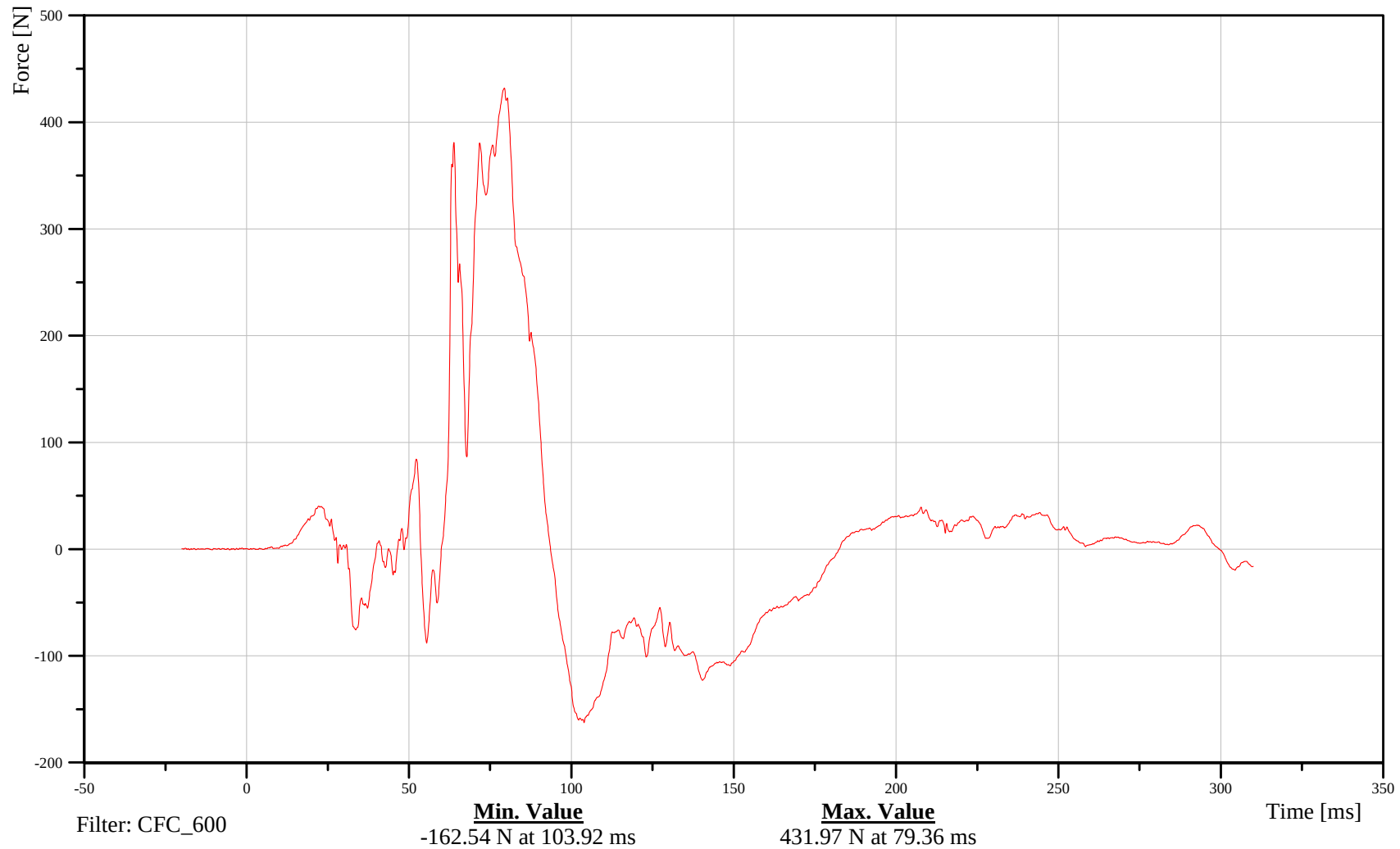
Target Vehicle Driver Right Femur X-Axis Force

Customer: VRTC

21FEMRRL00THFOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-299

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

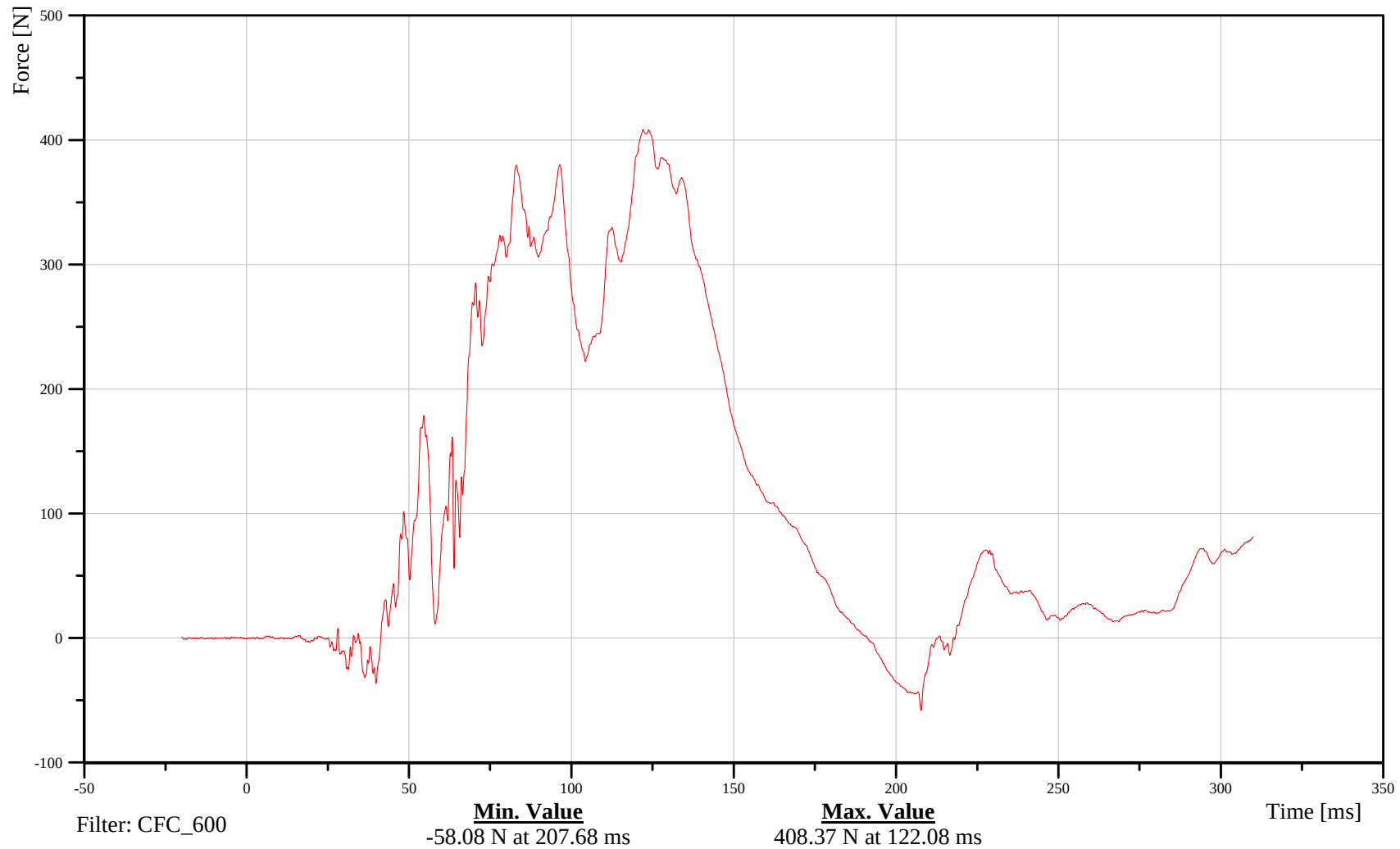
Target Vehicle Driver Right Femur Y-Axis Force

Customer: VRTC

21FEMRRL00THFOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-300

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

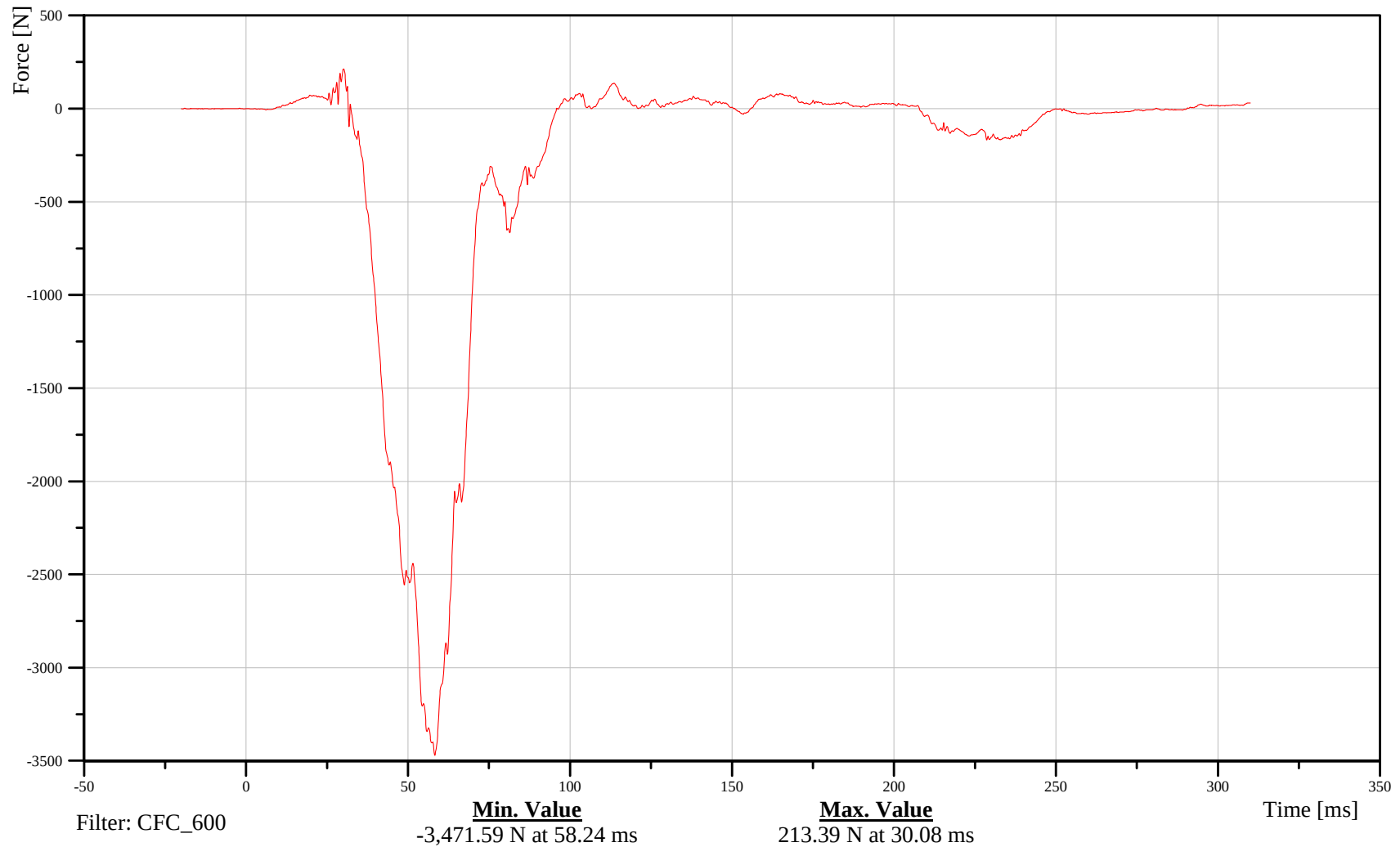
Target Vehicle Driver Right Femur Z-Axis Force

Customer: VRTC

21FEMRRL00THFOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-301

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

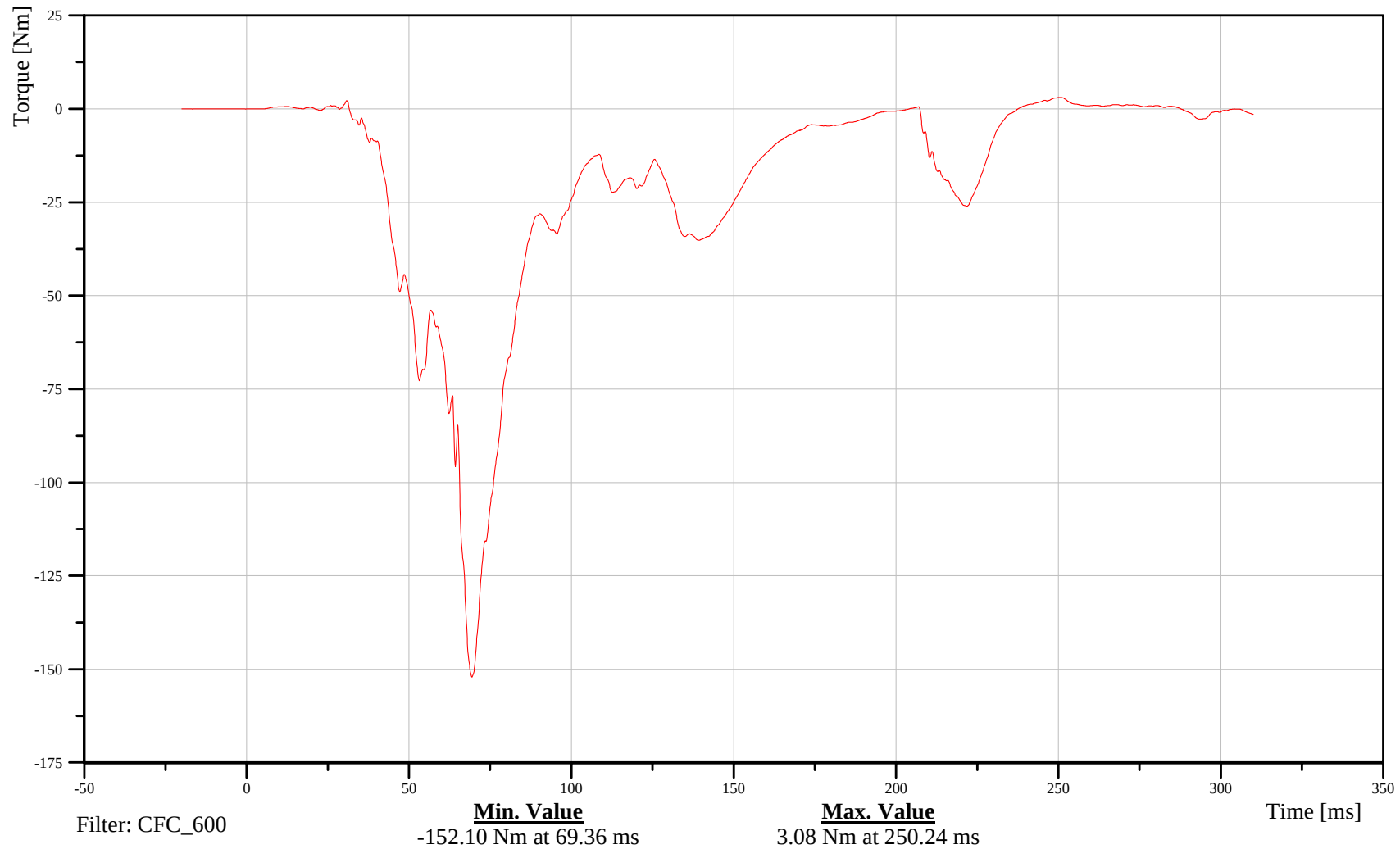
Target Vehicle Driver Right Femur Moment About X-Axis

Customer: VRTC

21FEMRRL00THMOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-302

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

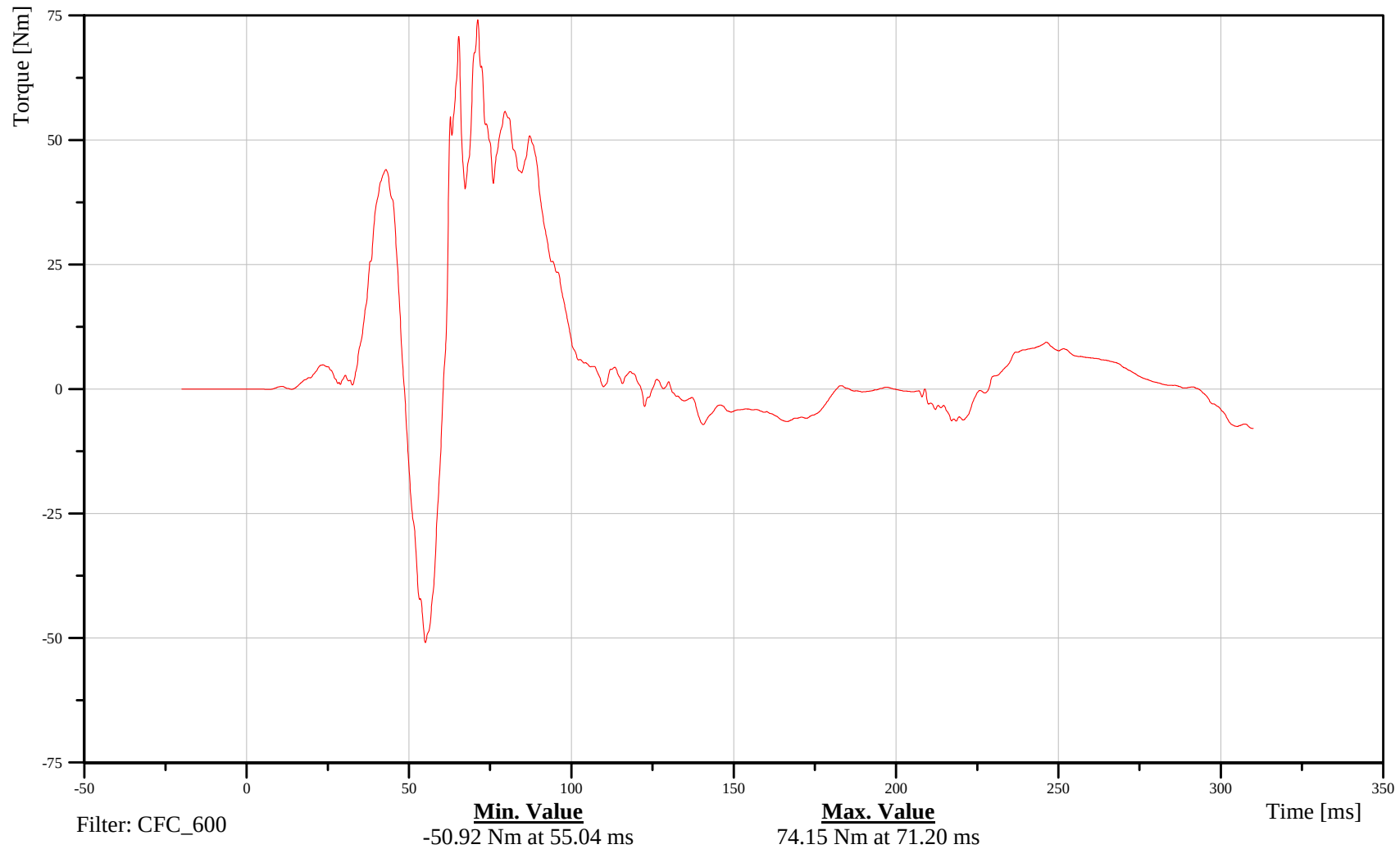
Target Vehicle Driver Right Femur Moment About Y-Axis

Customer: VRTC

21FEMRRL00THMOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-303

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

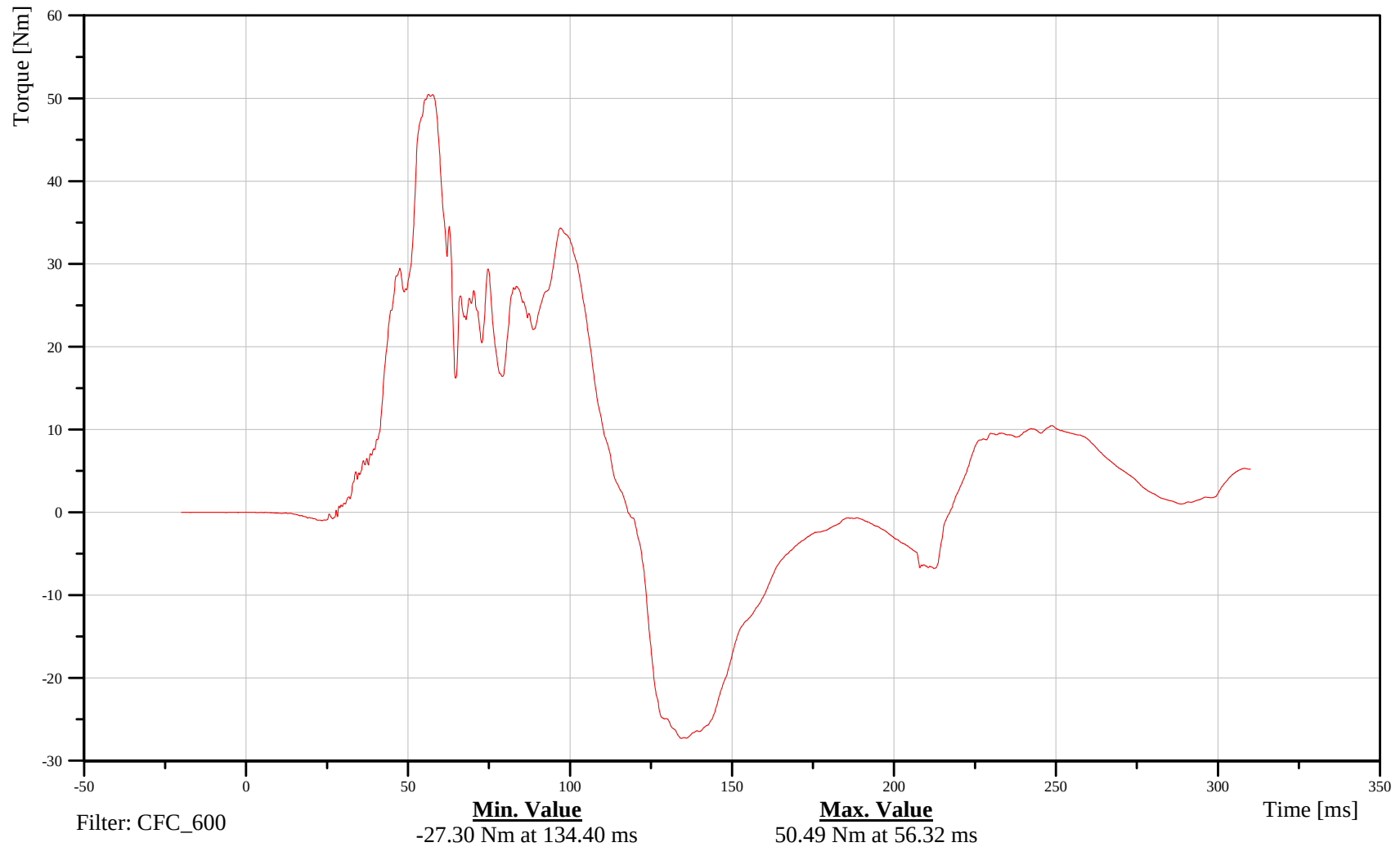
Target Vehicle Driver Right Femur Moment About Z-Axis

Customer: VRTC

21FEMRRL00THMOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-304

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

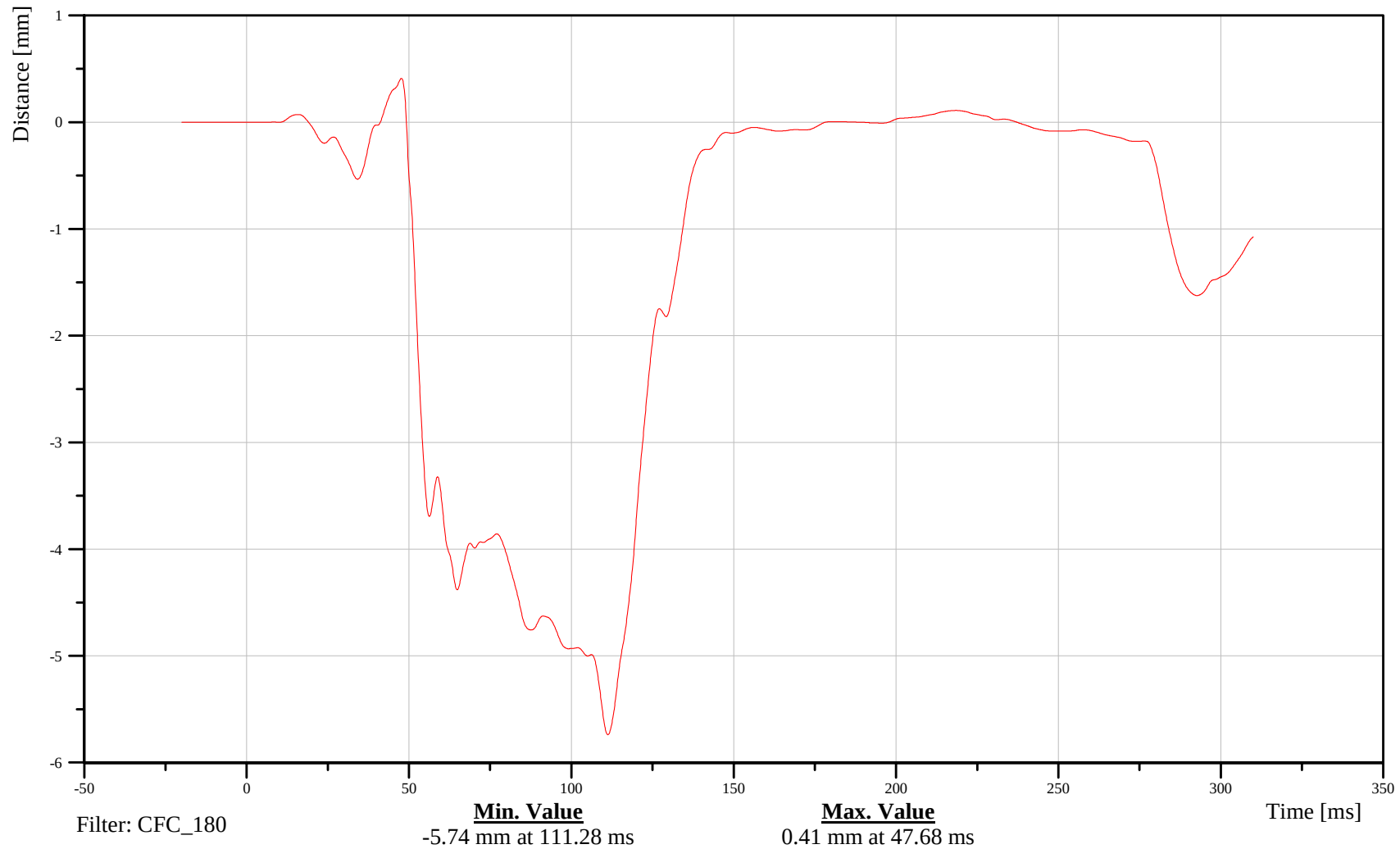
Target Vehicle Driver Left Knee X-Axis Displacement

Customer: VRTC

21KNSLLE00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-305

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

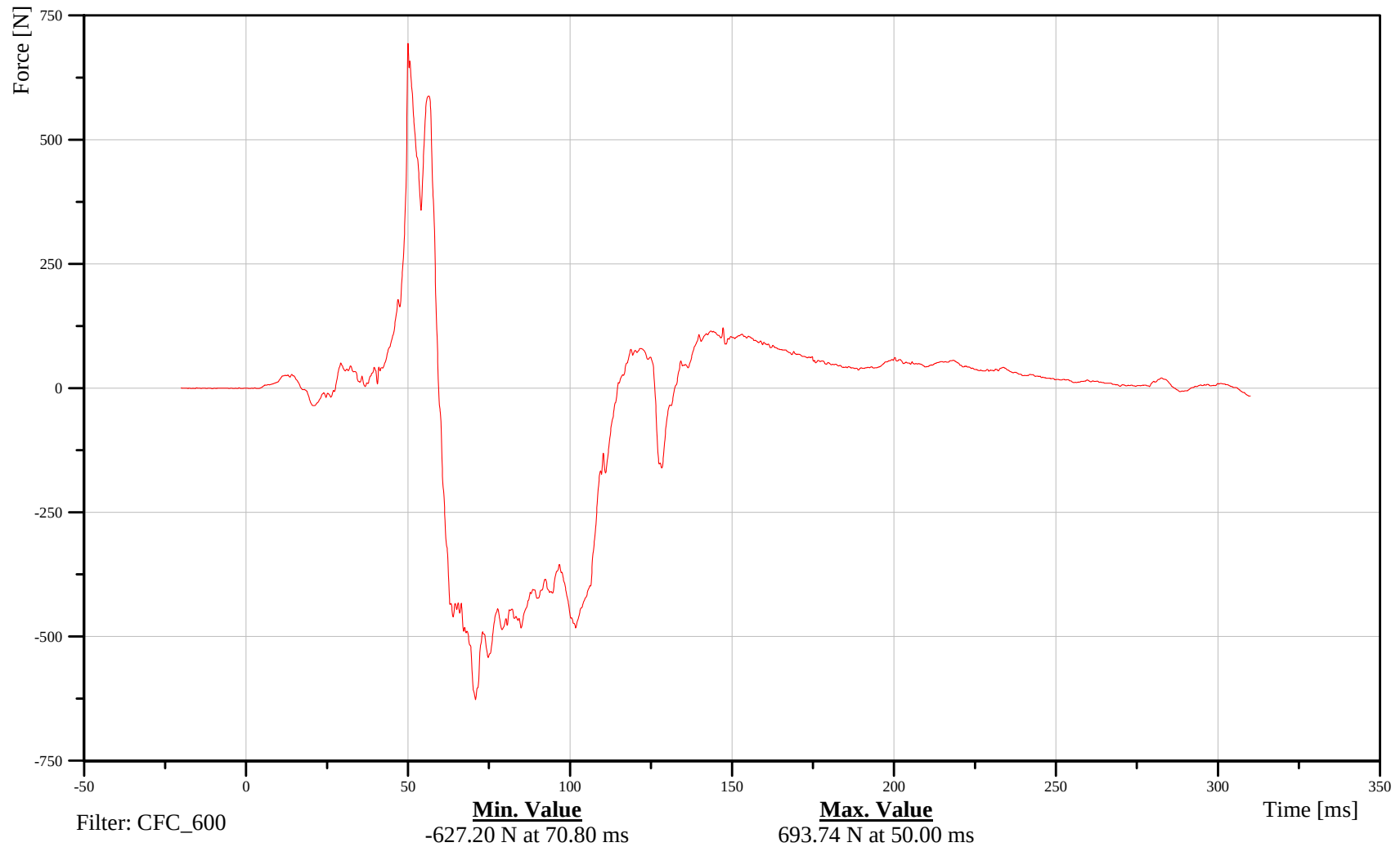
Target Vehicle Driver Left Upper Tibia X-Axis Force

Customer: VRTC

21TIBILULXH3FOX B

TRC Inc. Test Lab: CTF

Test Number: 091030



B-306

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

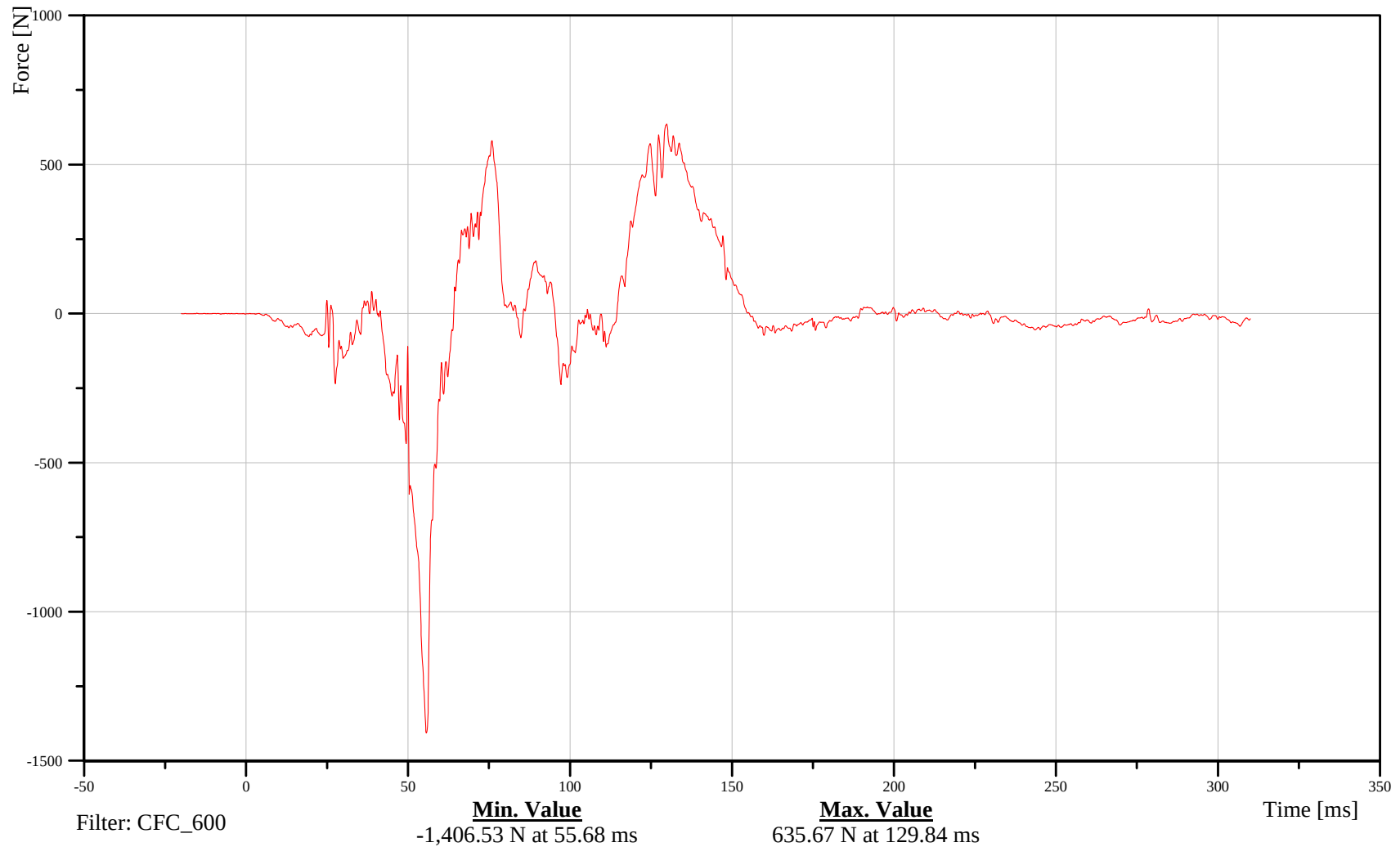
Target Vehicle Driver Left Upper Tibia Z-Axis Force

Customer: VRTC

21TIBILULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-307

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Left Upper Tibia Moment About X Axis

Date: 10/30/2009

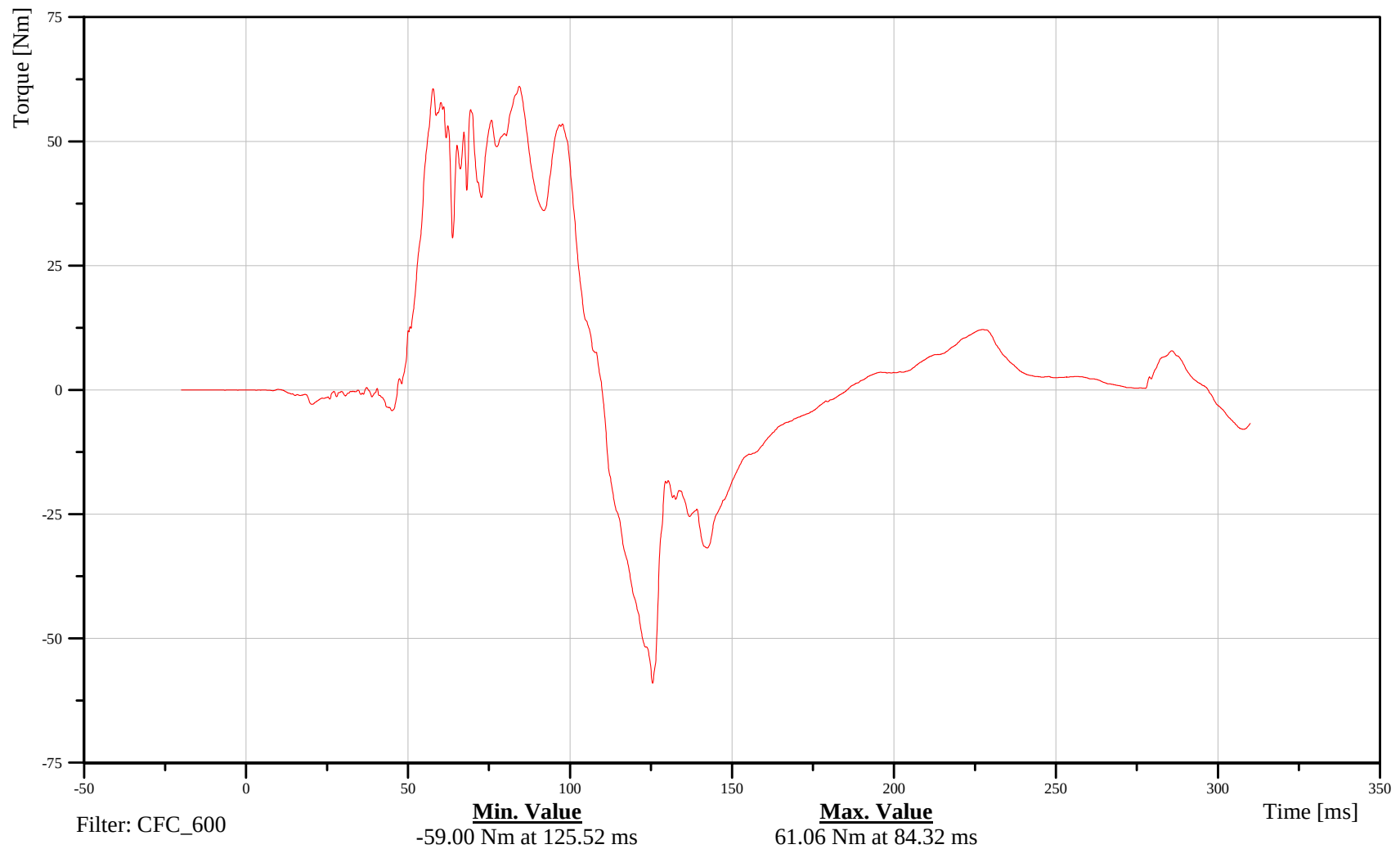
Time: 16:48

Customer: VRTC

21TIBILULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-308

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Left Upper Tibia Moment About Y Axis

Date: 10/30/2009

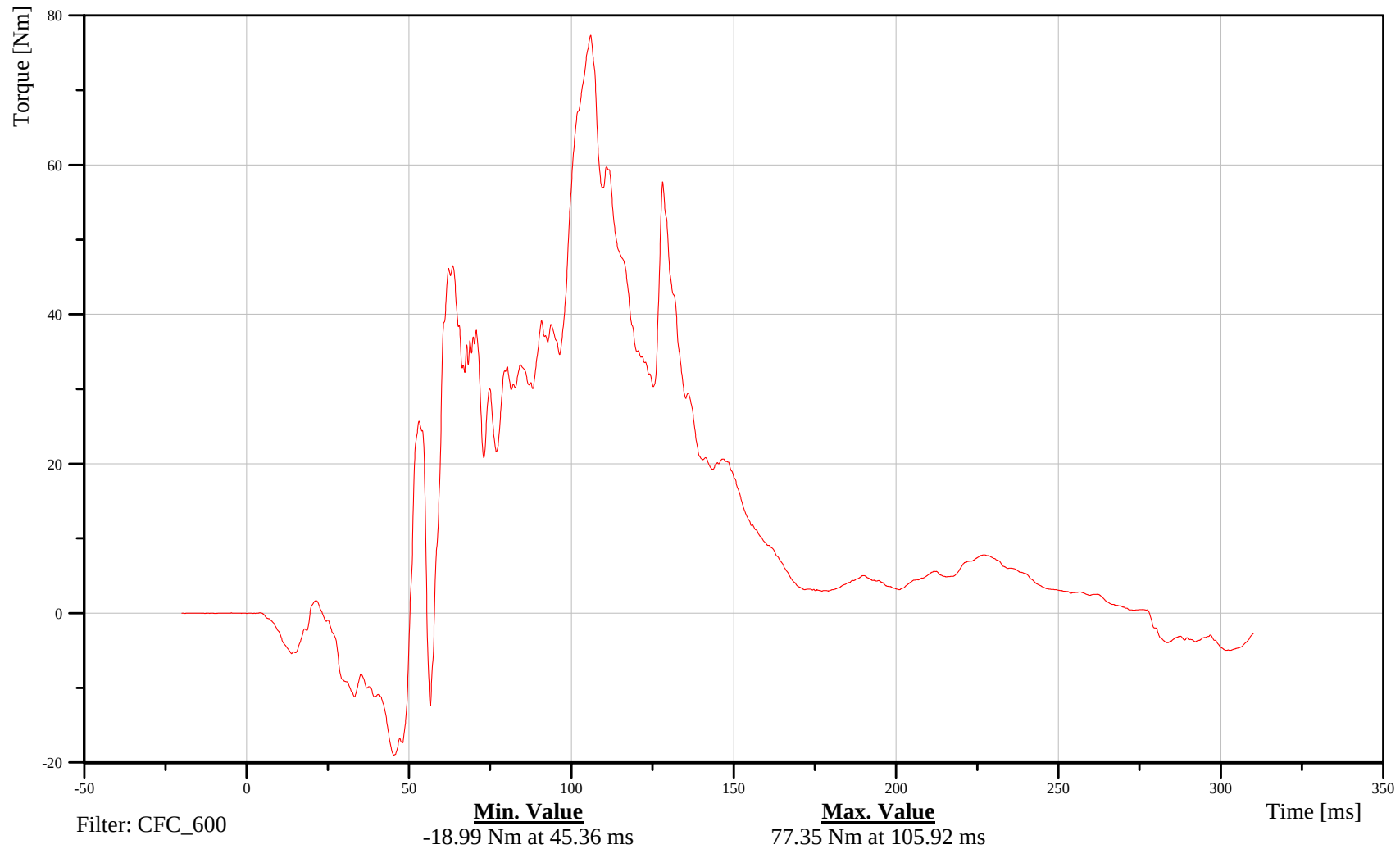
Time: 16:48

Customer: VRTC

21TIBILULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-309

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

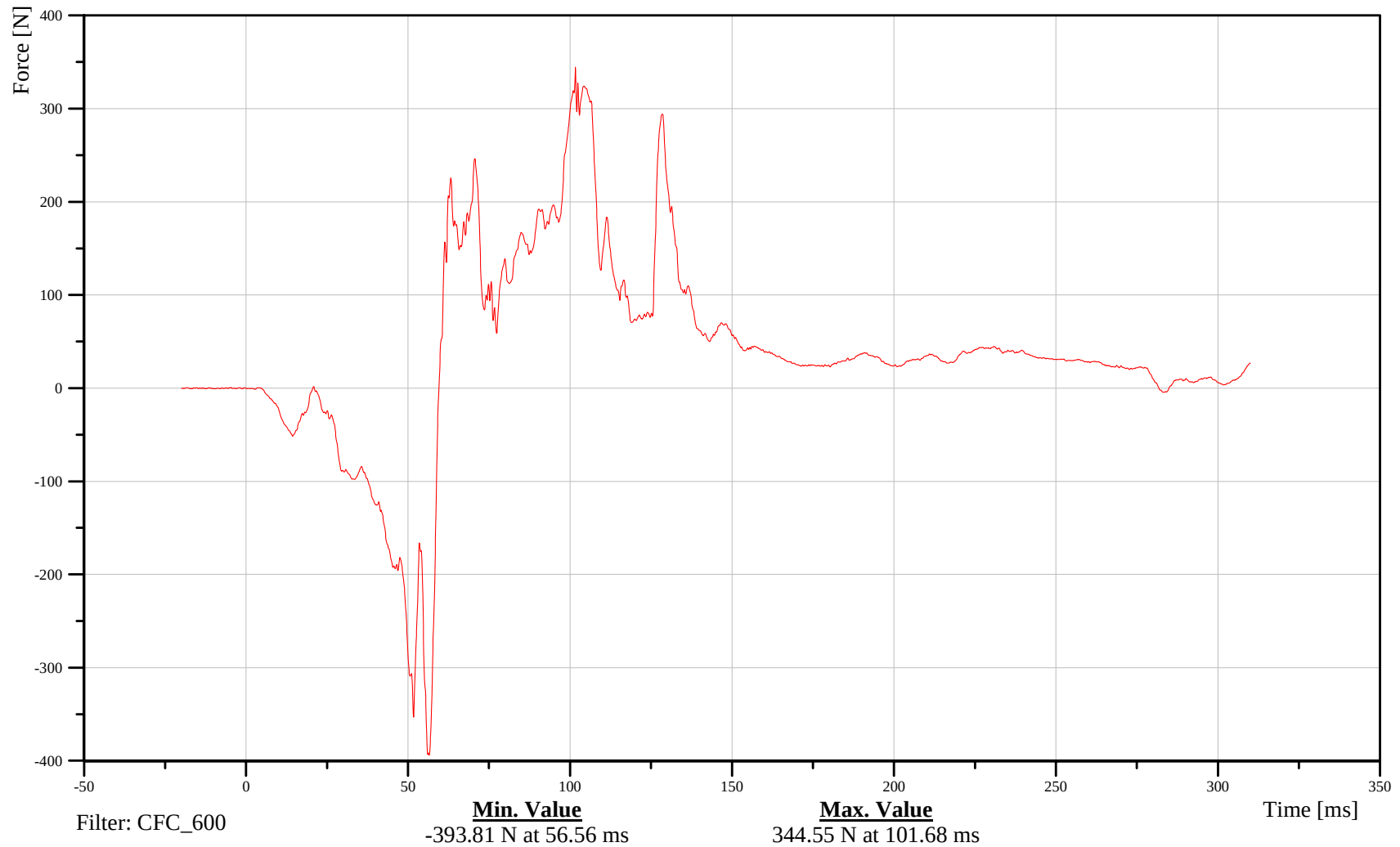
Target Vehicle Driver Left Lower Tibia X-Axis Force

Customer: VRTC

21TIBILLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-310

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

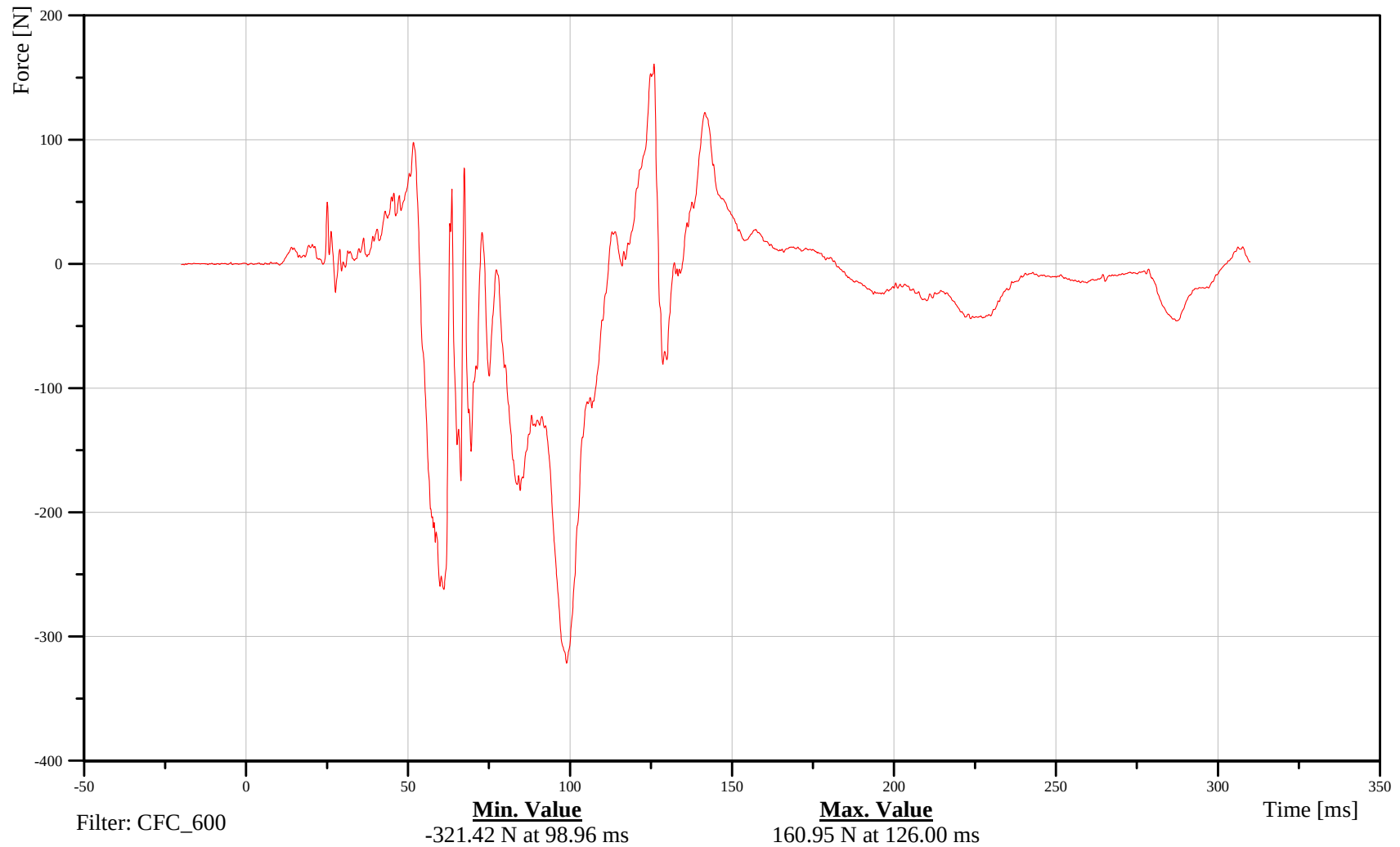
Target Vehicle Driver Left Lower Tibia Y-Axis Force

Customer: VRTC

21TIBILLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-311

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

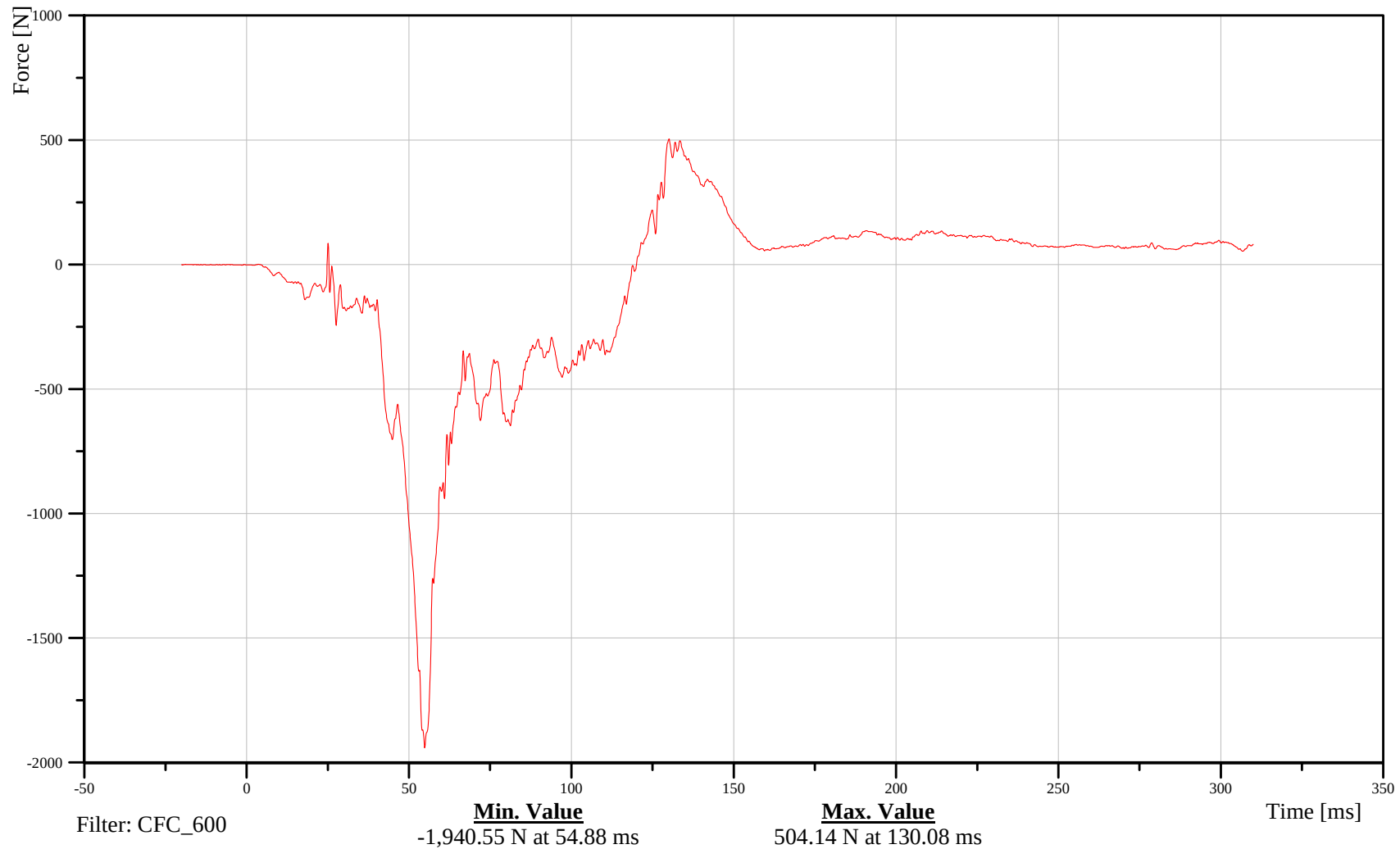
Target Vehicle Driver Left Lower Tibia Z-Axis Force

Customer: VRTC

21TIBILLX3H3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-312

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Left Lower Tibia Moment About X Axis

Date: 10/30/2009

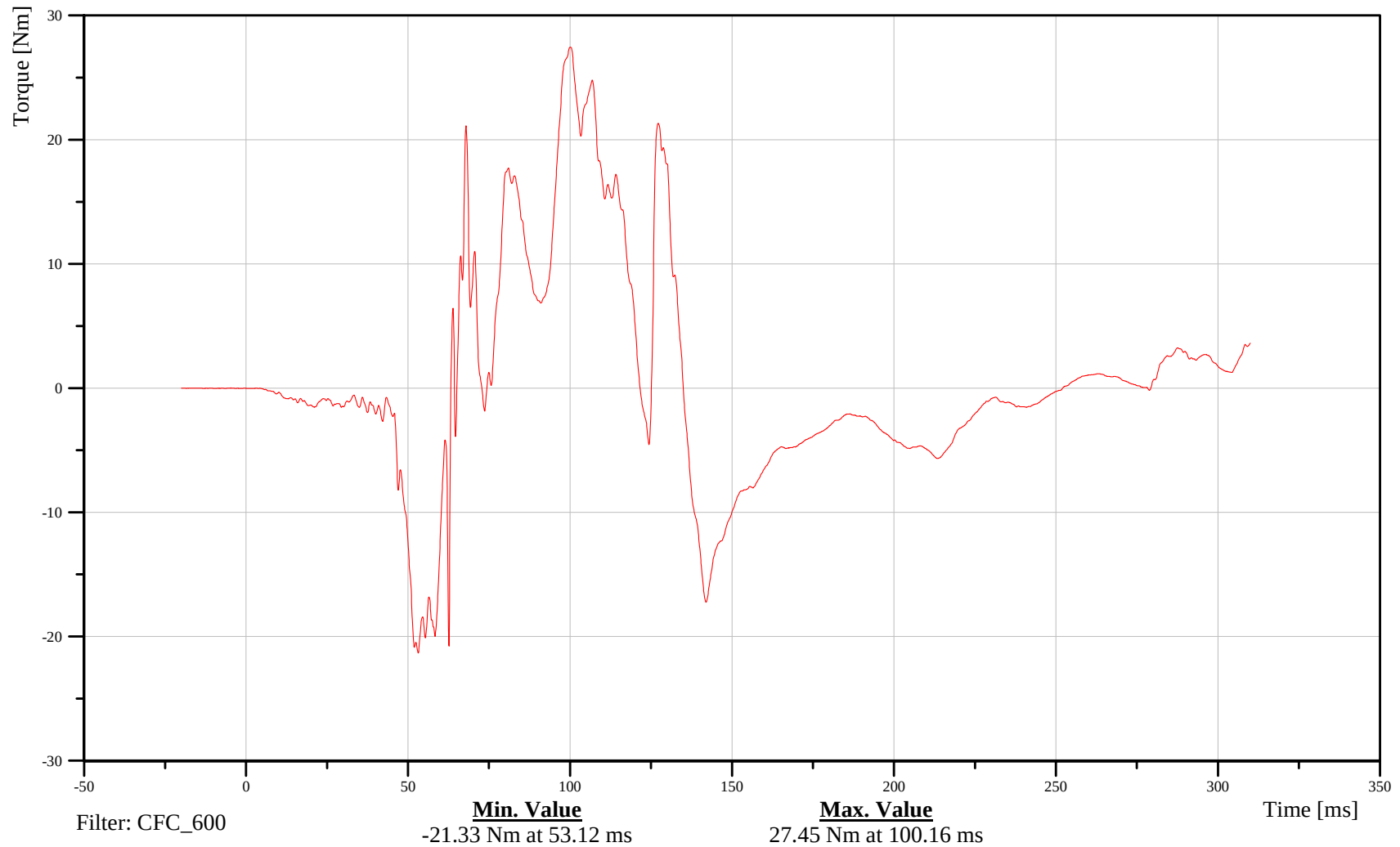
Time: 16:48

Customer: VRTC

21TIBILLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-313

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver Left Lower Tibia Moment About Y Axis

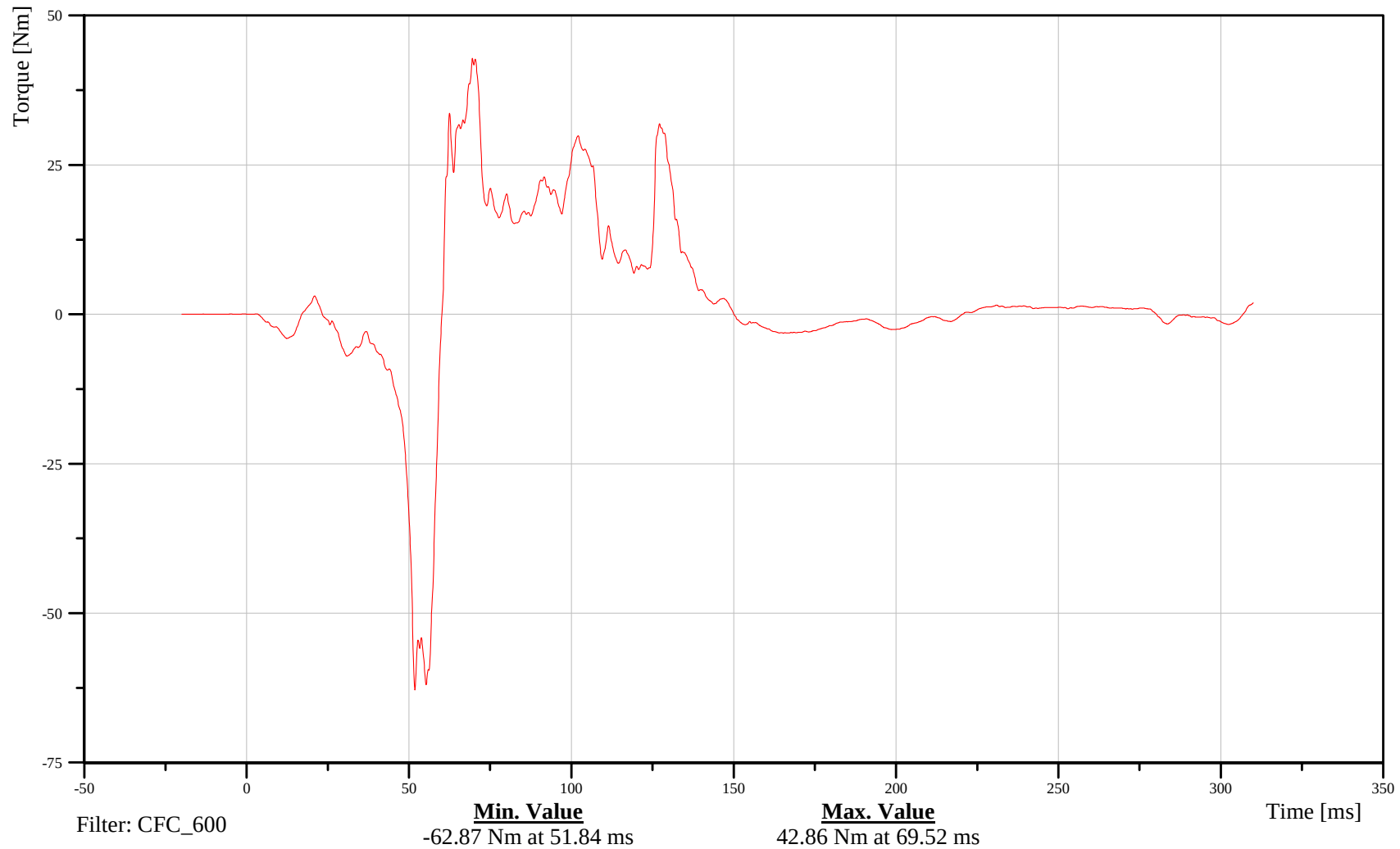
Date: 10/30/2009
Time: 16:48

Customer: VRTC

21TIBILLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-314

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Left Foot Angular X-Axis Displacement

Date: 10/30/2009

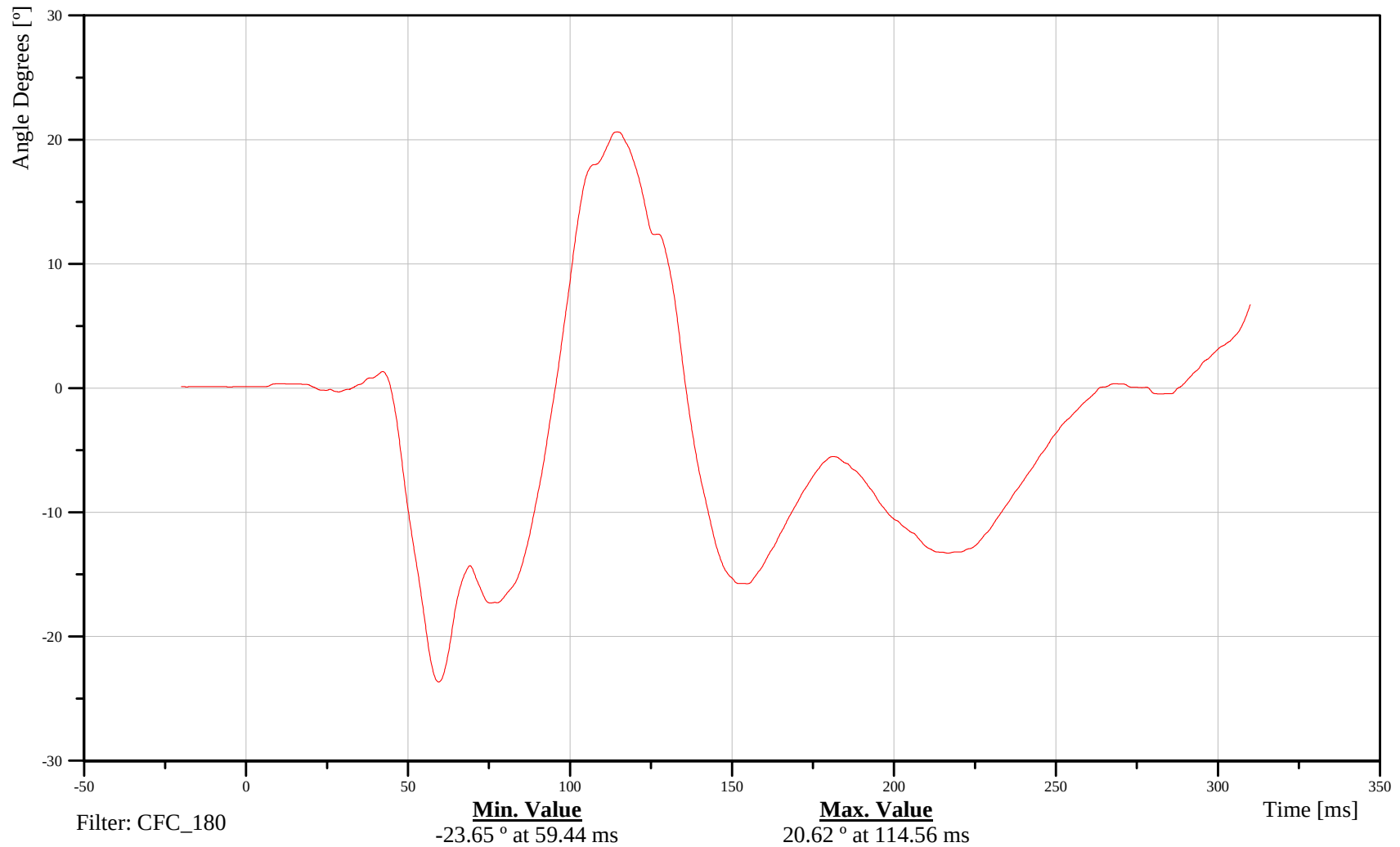
Time: 16:48

Customer: VRTC

21FOOTLELXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-315

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Left Foot Angular Y-Axis Displacement

Date: 10/30/2009

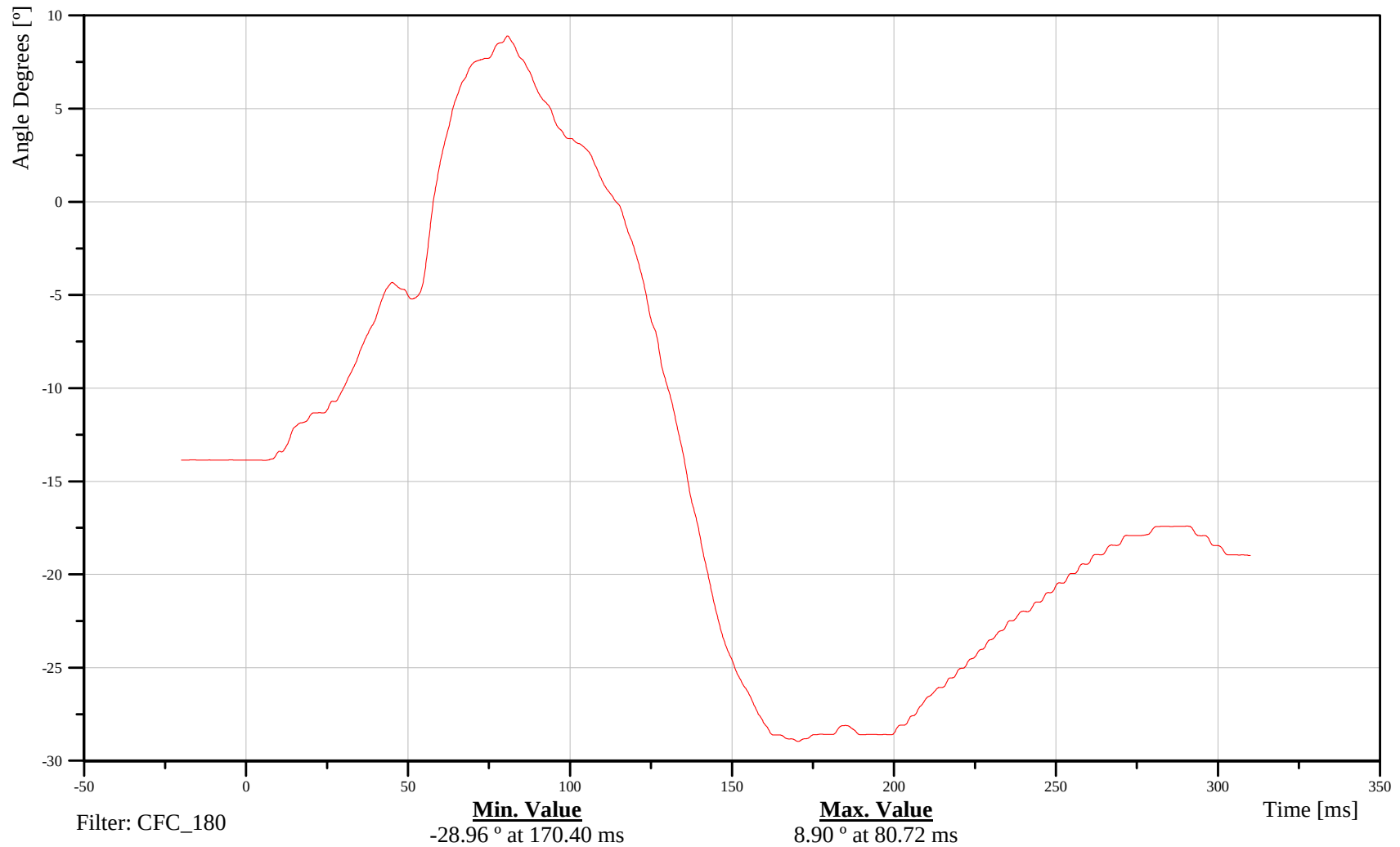
Time: 16:48

Customer: VRTC

21FOOTLELXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-316

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Left Foot Angular Z-Axis Displacement

Date: 10/30/2009

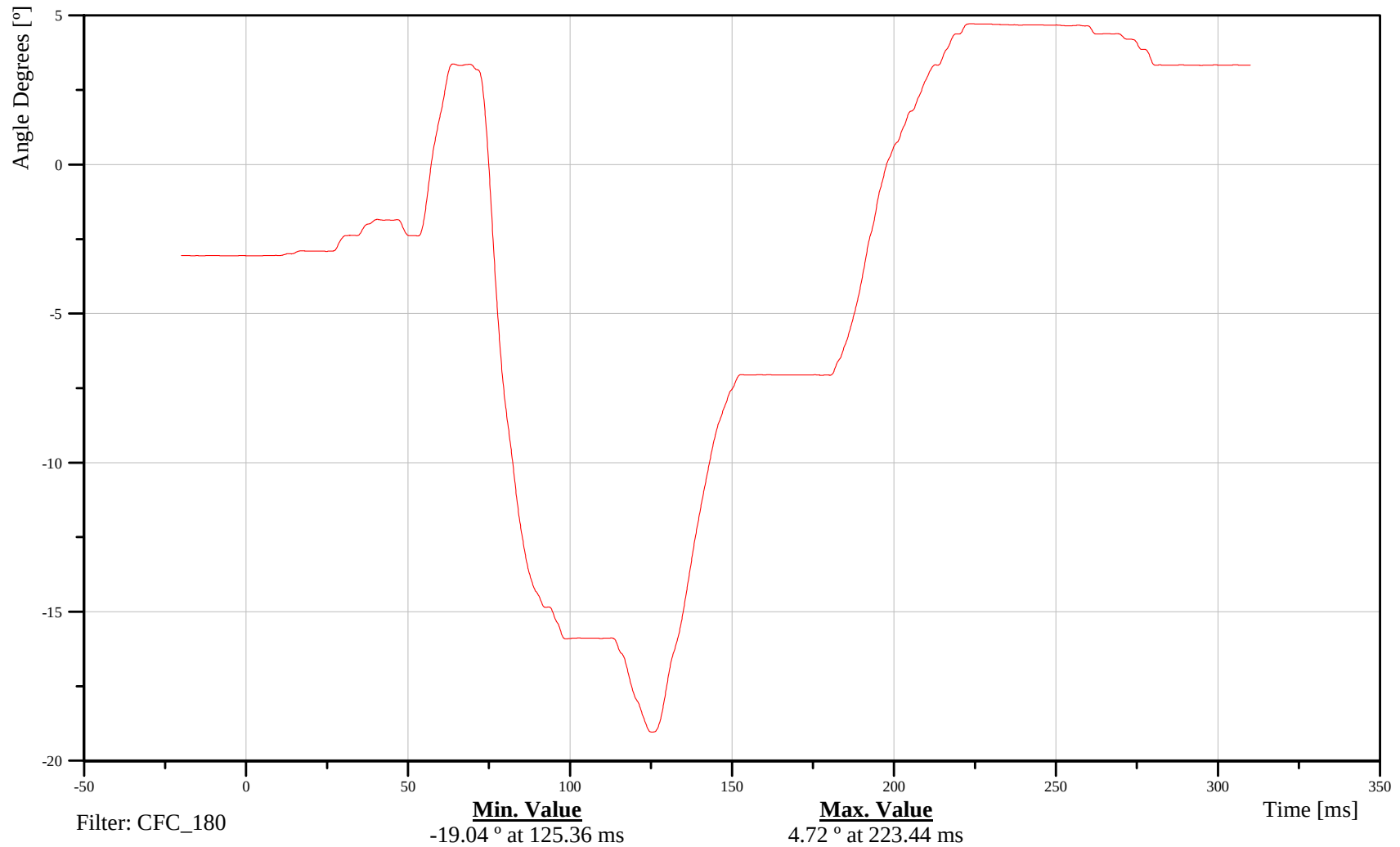
Time: 16:48

Customer: VRTC

21FOOTLELXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-317

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

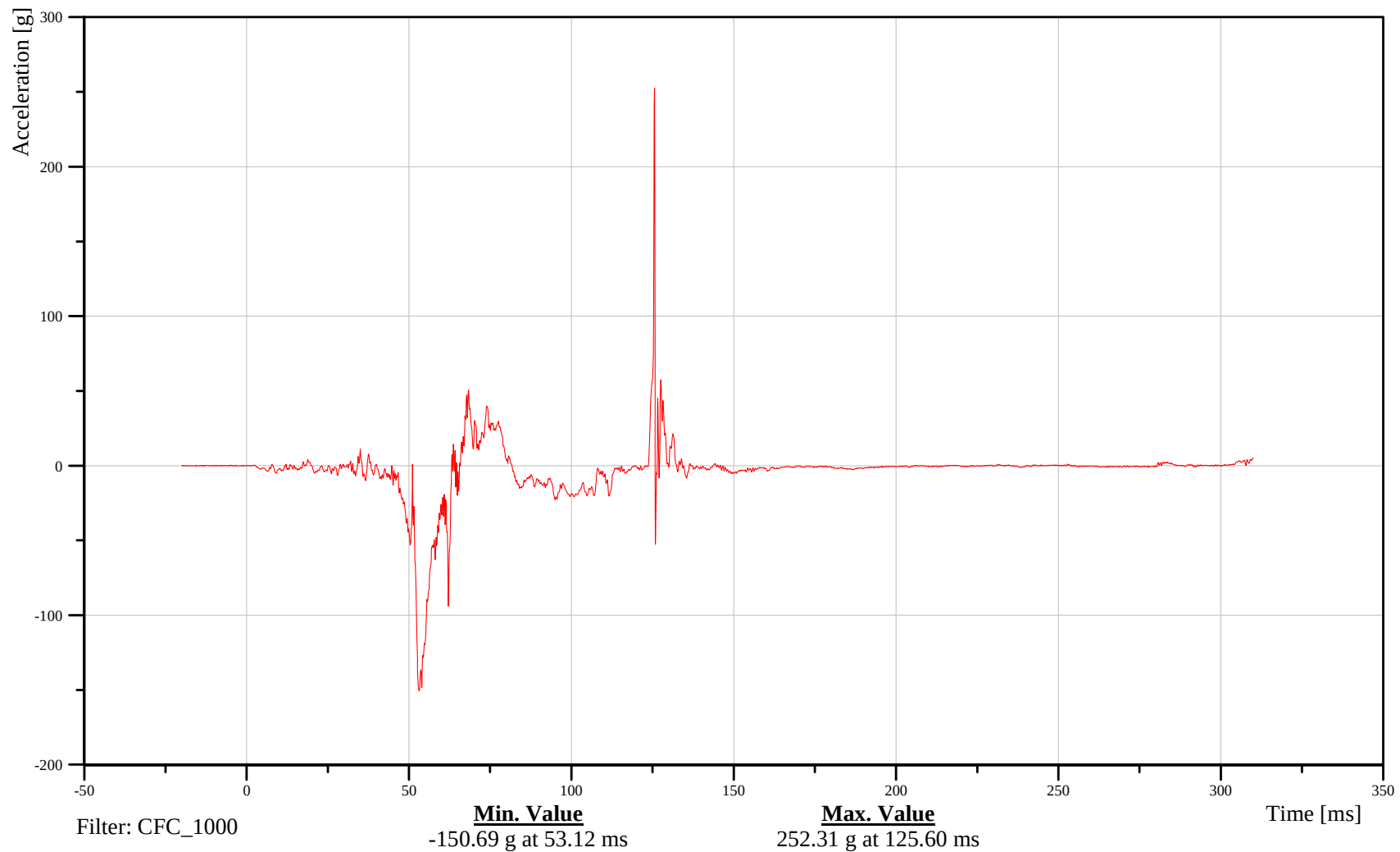
Target Vehicle Driver Left Foot X-Axis Acceleration

Customer: VRTC

21FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-318

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

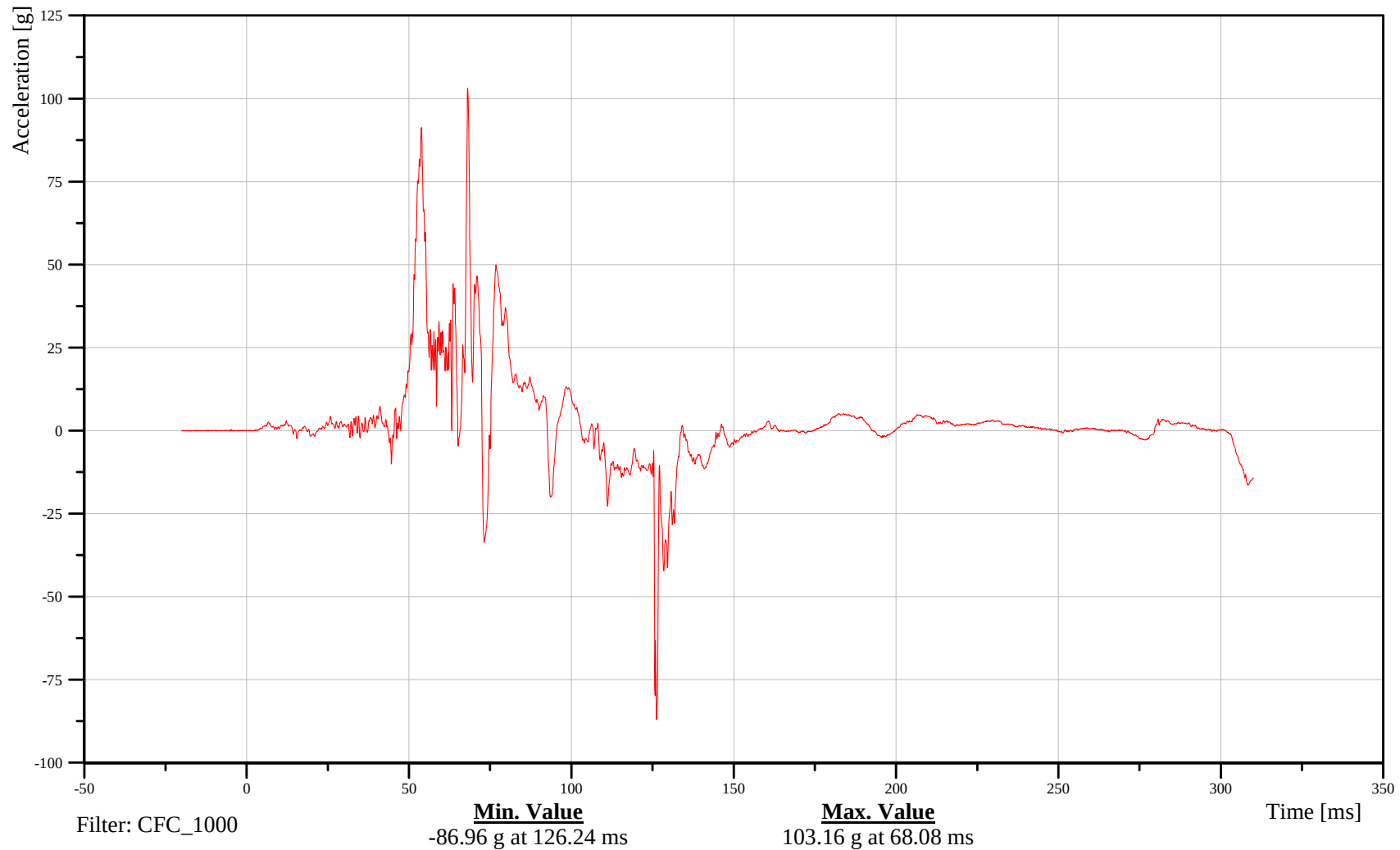
Target Vehicle Driver Left Foot Y-Axis Acceleration

Customer: VRTC

21FOOTLELXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-319

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

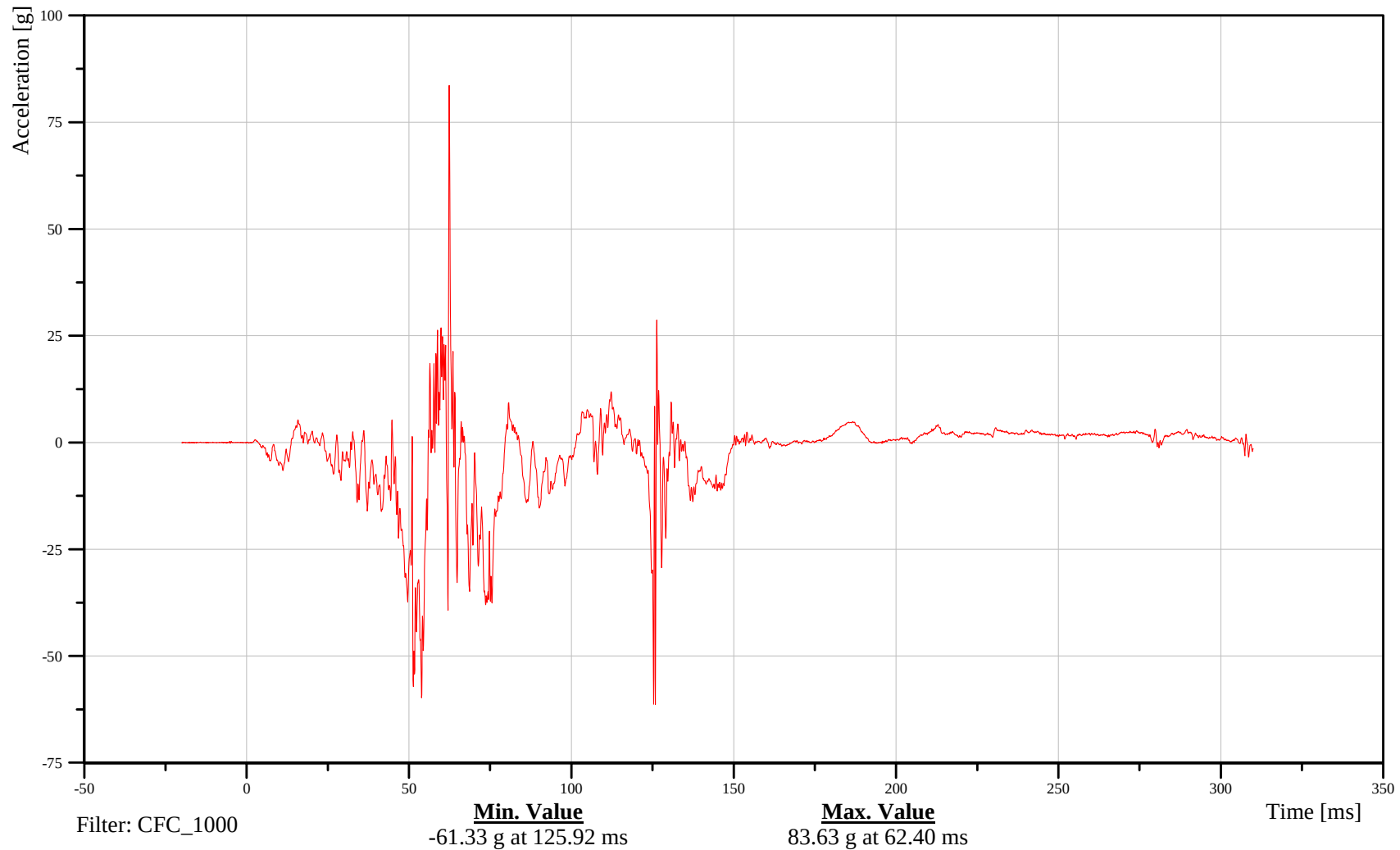
Target Vehicle Driver Left Foot Z-Axis Acceleration

Customer: VRTC

21FOOTLELXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-320

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

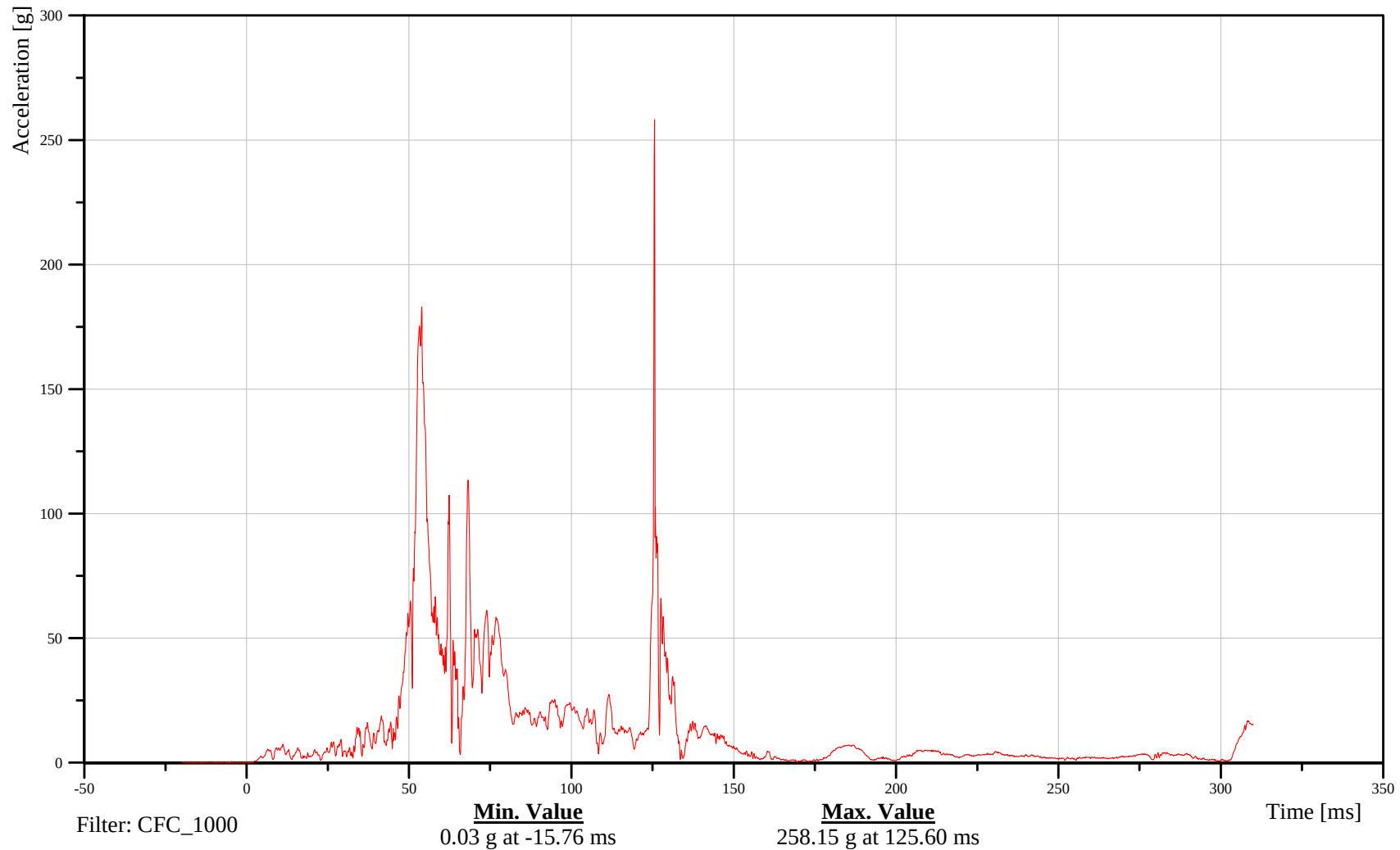
Target Vehicle Driver Left Foot Resultant Acceleration

Customer: VRTC

21FOOTLELXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-321

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

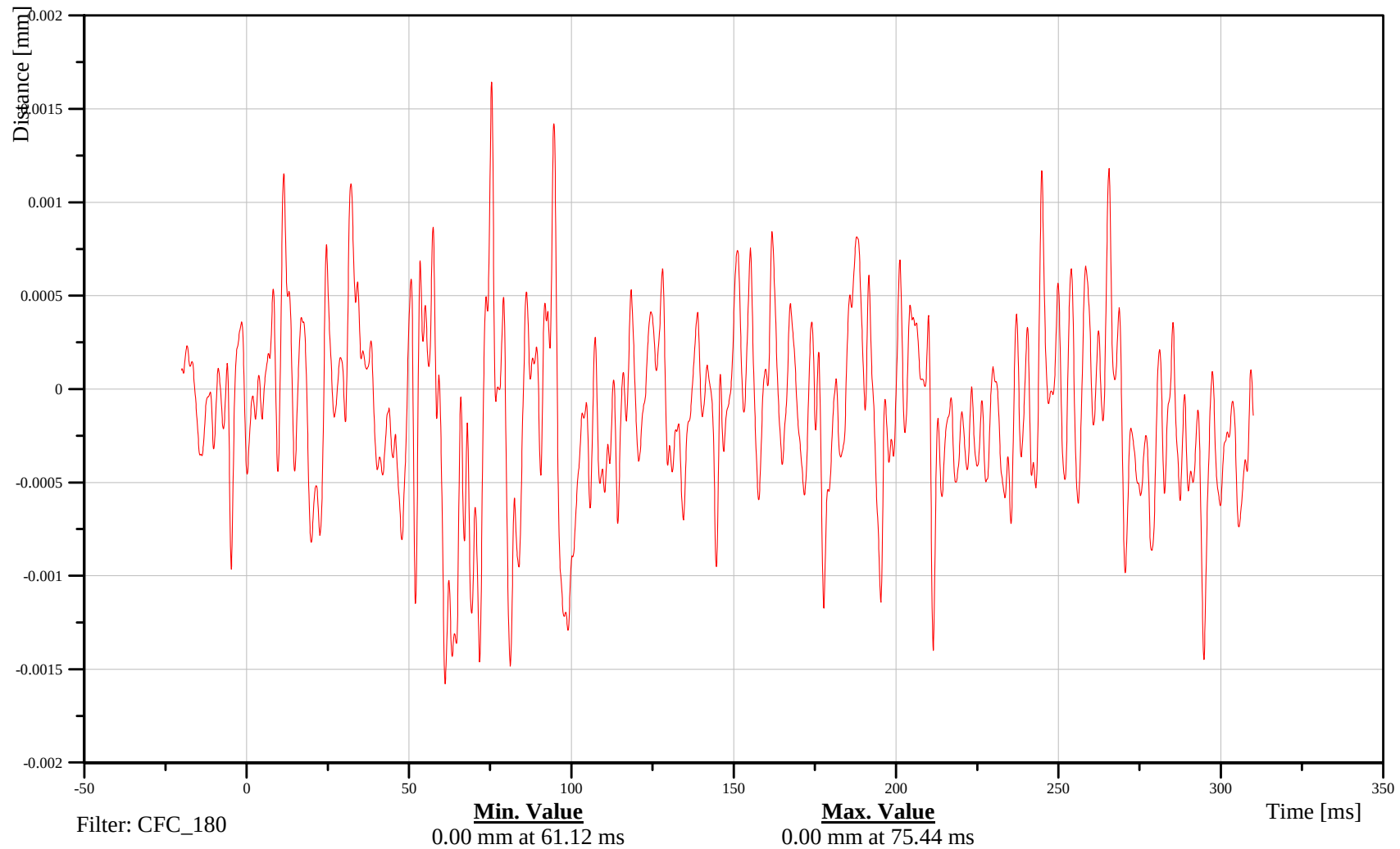
Target Vehicle Driver Right Knee X-Axis Displacement

Customer: VRTC

21KNSLRI00H3DSXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-322

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

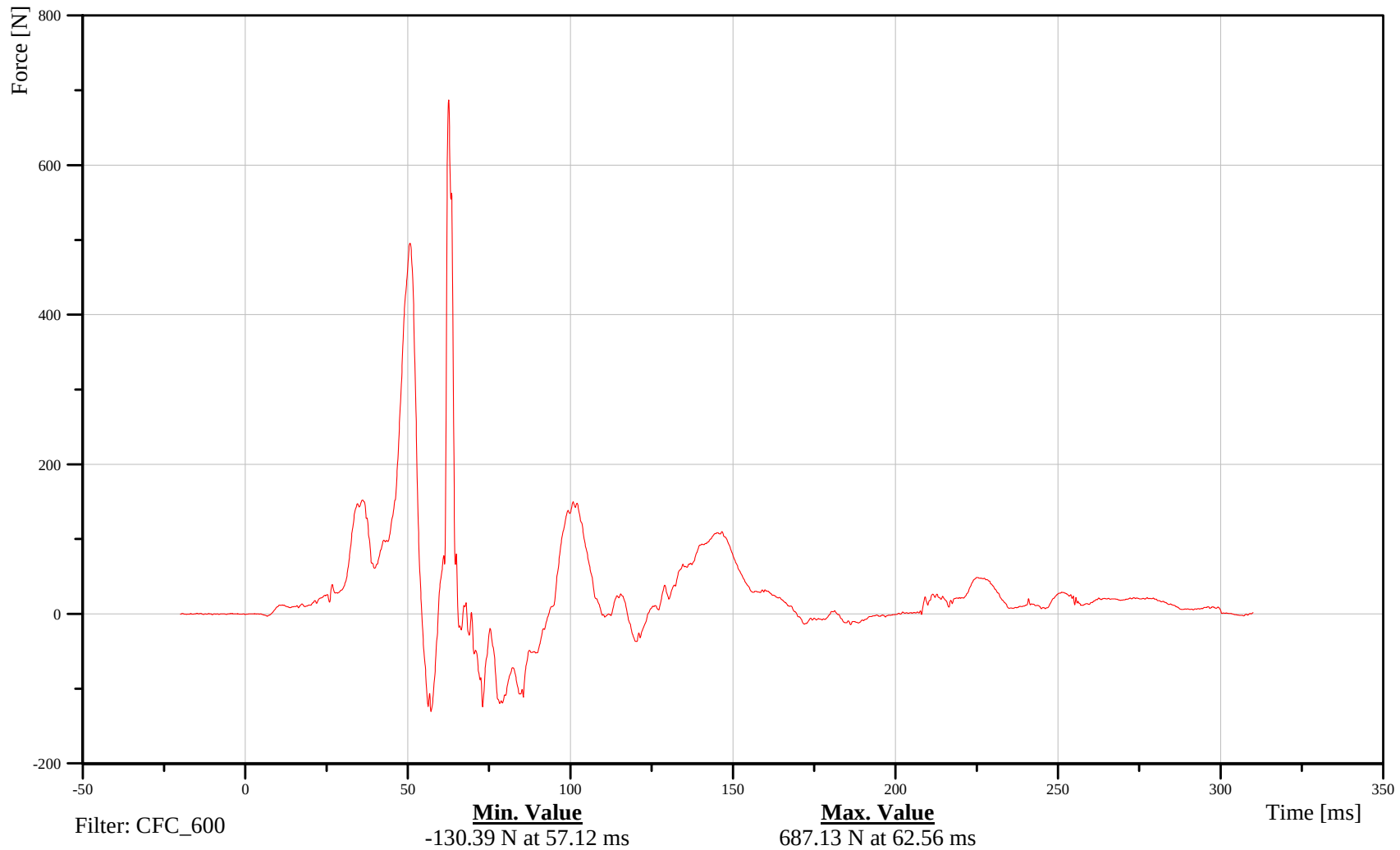
Target Vehicle Driver Right Upper Tibia X-Axis Force

Customer: VRTC

21TIBIRULXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-323

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

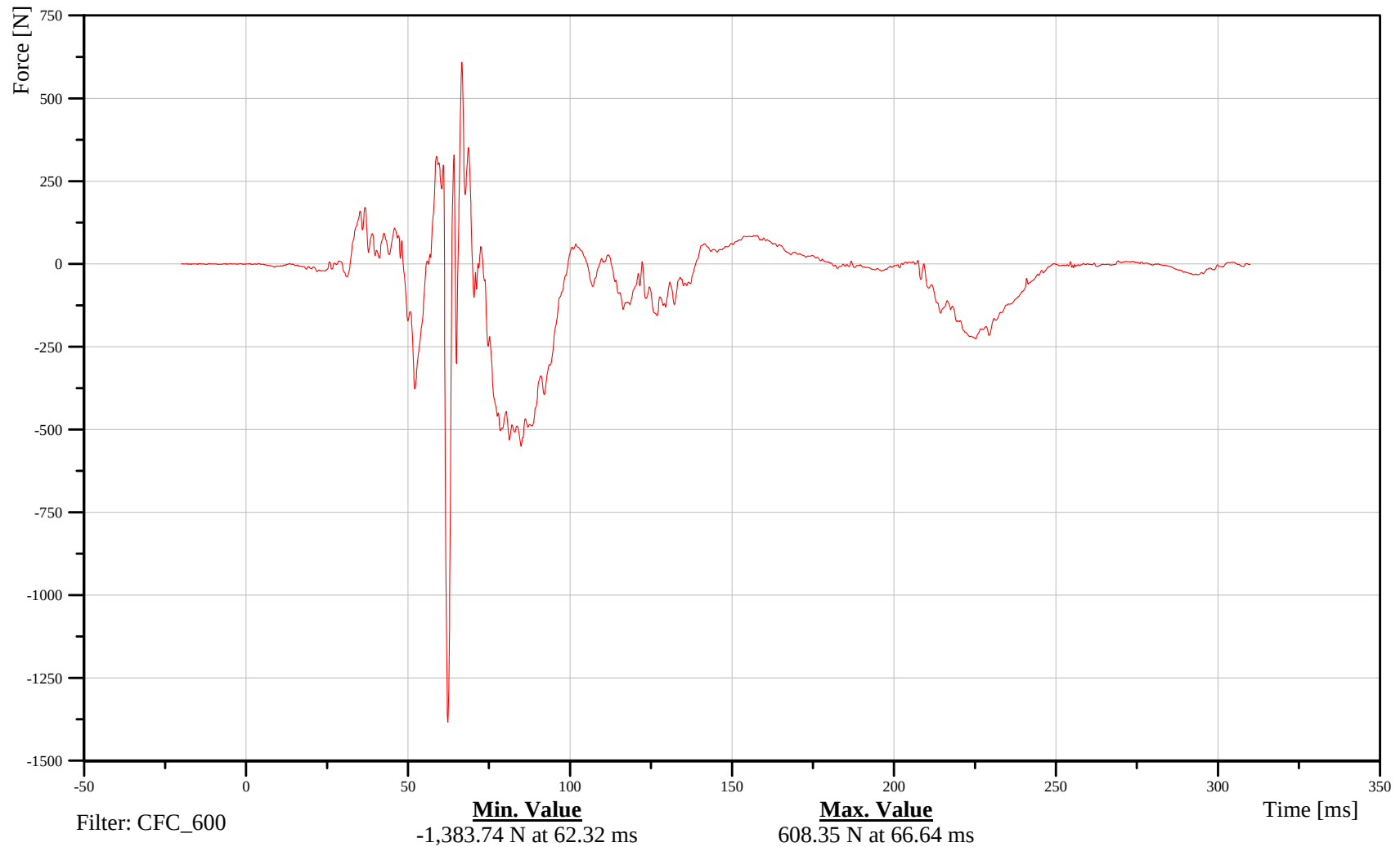
Target Vehicle Driver Right Upper Tibia Z-Axis Force

Customer: VRTC

21TIBIRULXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-324

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Right Upper Tibia Moment About X Axis

Date: 10/30/2009

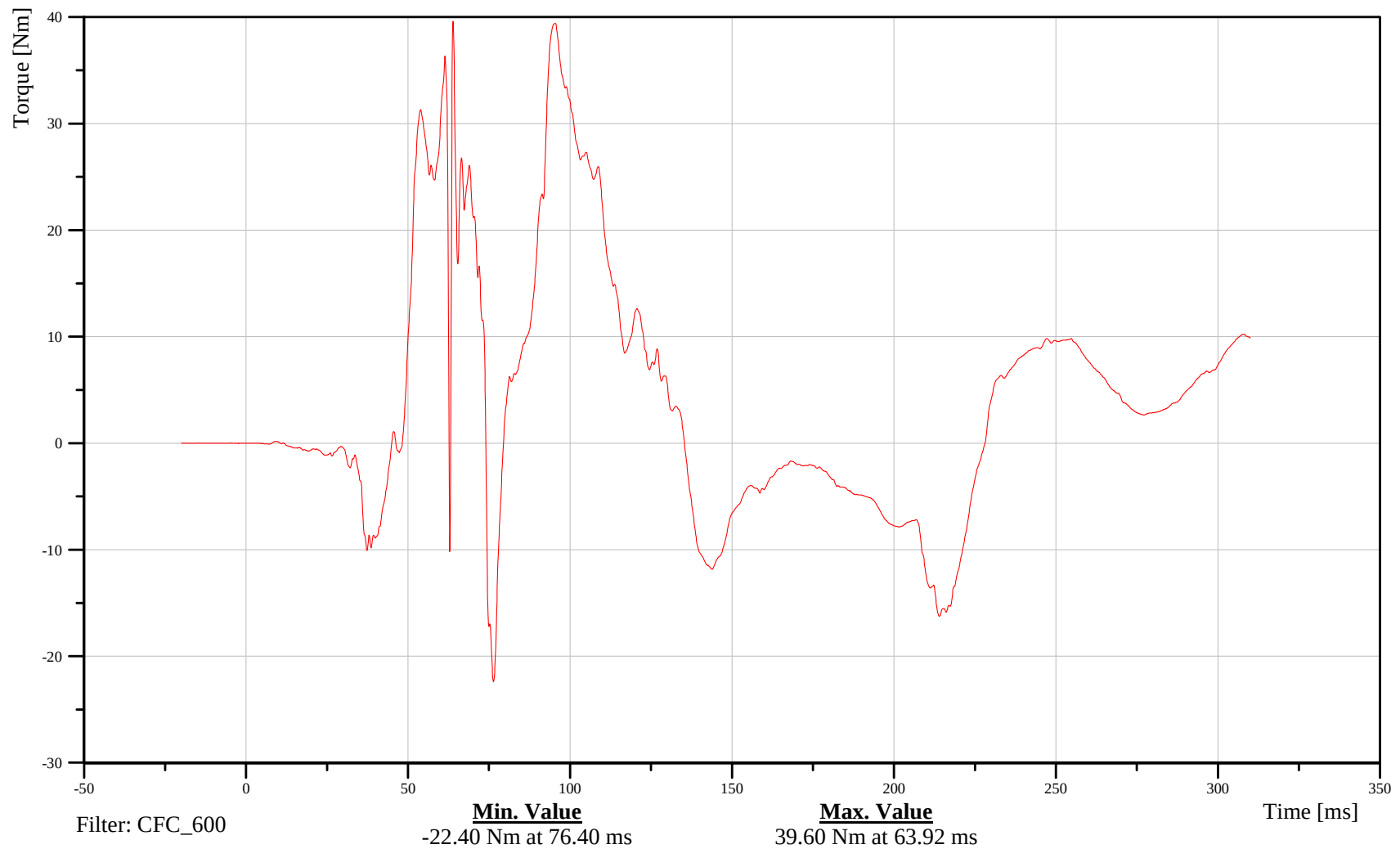
Time: 16:48

Customer: VRTC

21TIBIRULXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-325

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Right Upper Tibia Moment About Y Axis

Date: 10/30/2009

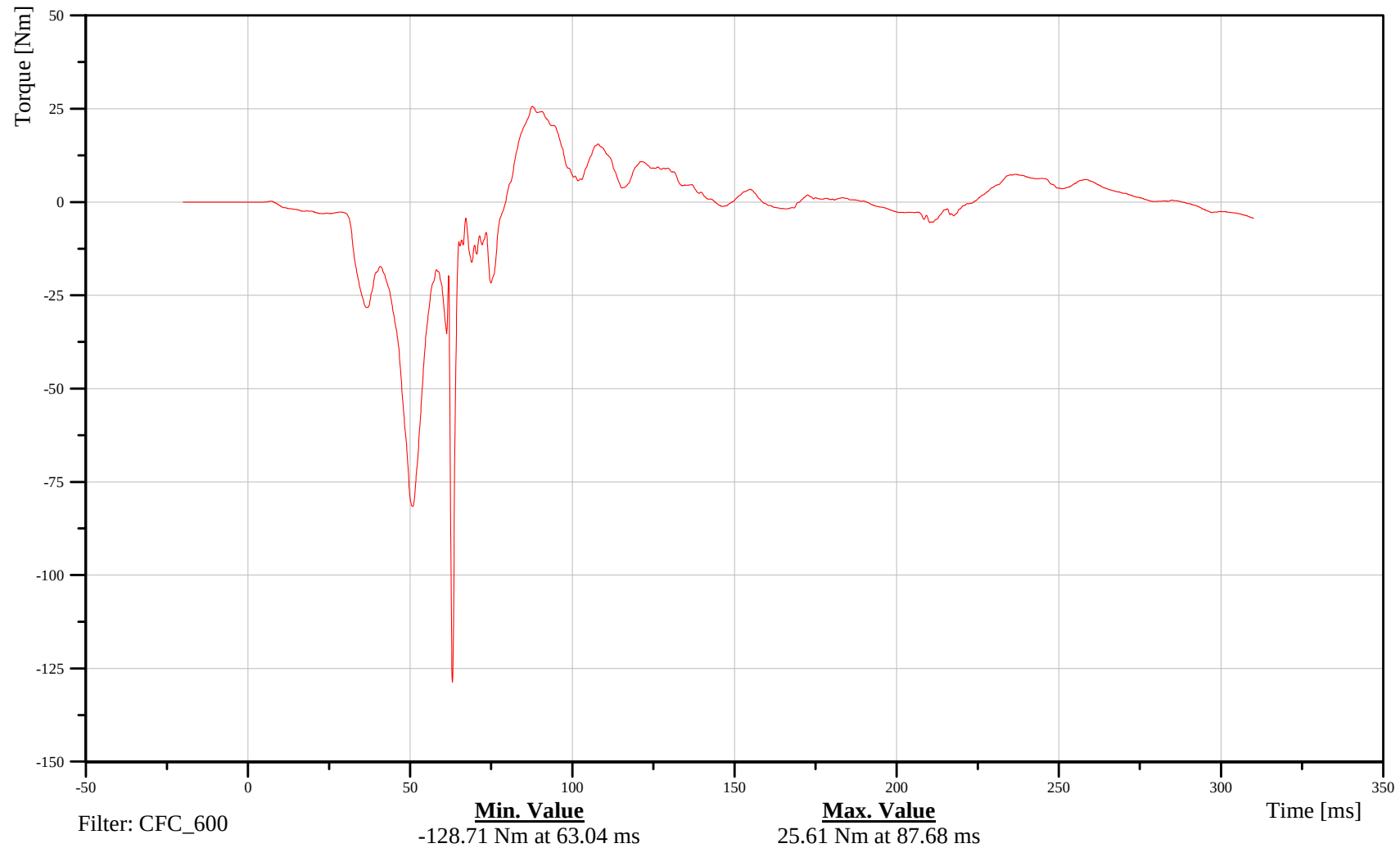
Time: 16:48

Customer: VRTC

21TIBIRULXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-326

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

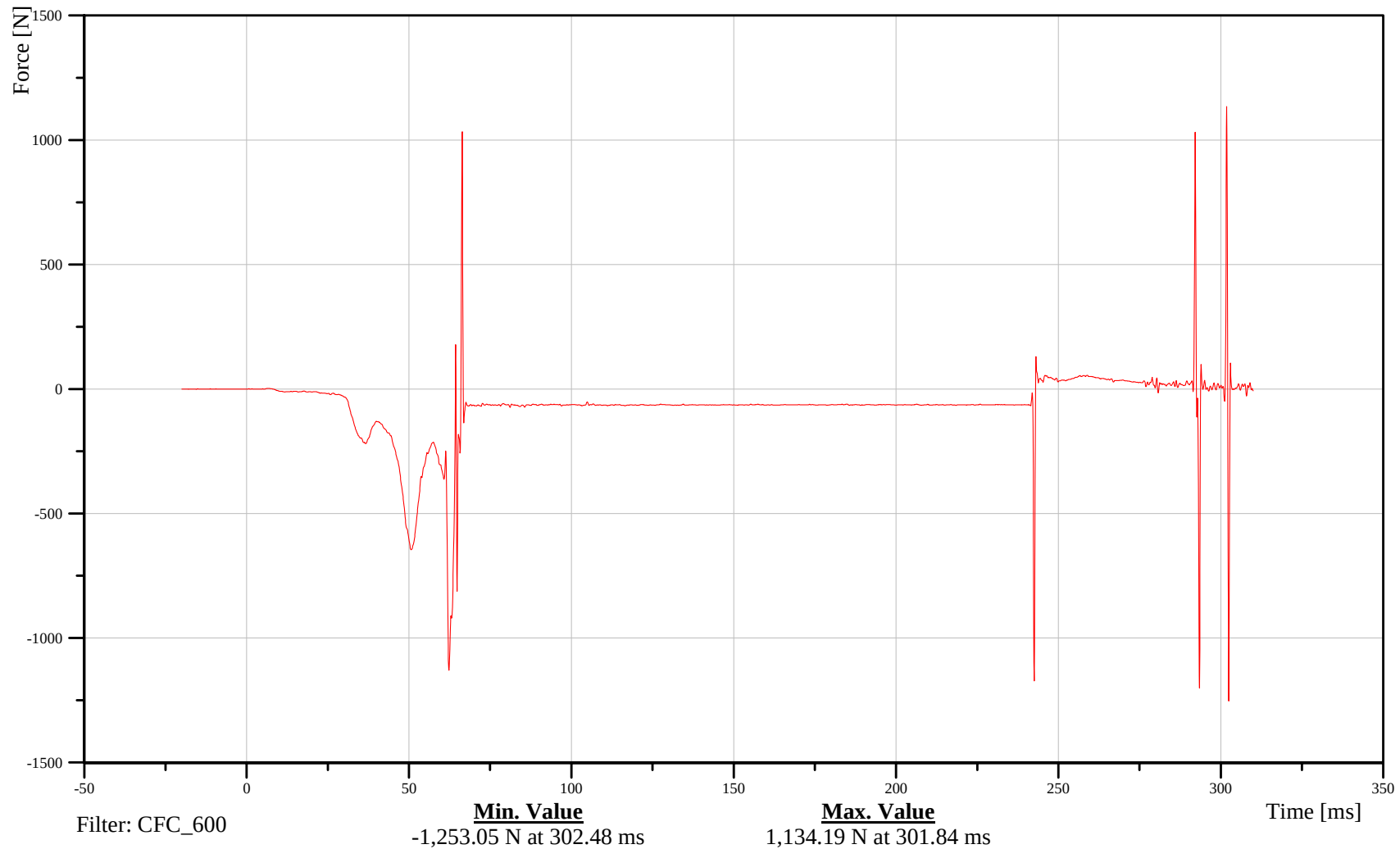
Target Vehicle Driver Right Lower Tibia X-Axis Force

Customer: VRTC

21TIBIRLLXH3FOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-327

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

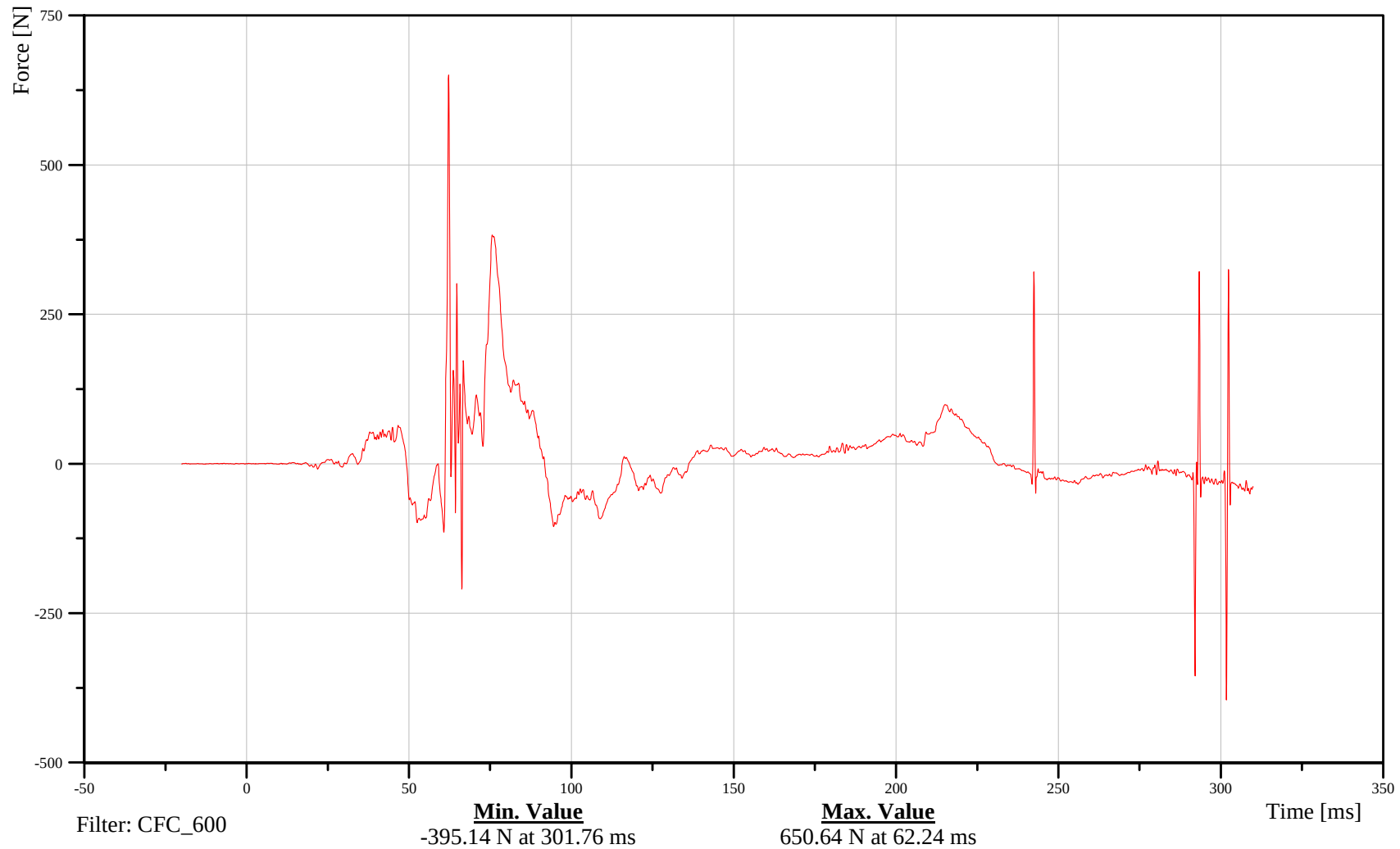
Target Vehicle Driver Right Lower Tibia Y-Axis Force

Customer: VRTC

21TIBIRLLXH3FOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-328

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

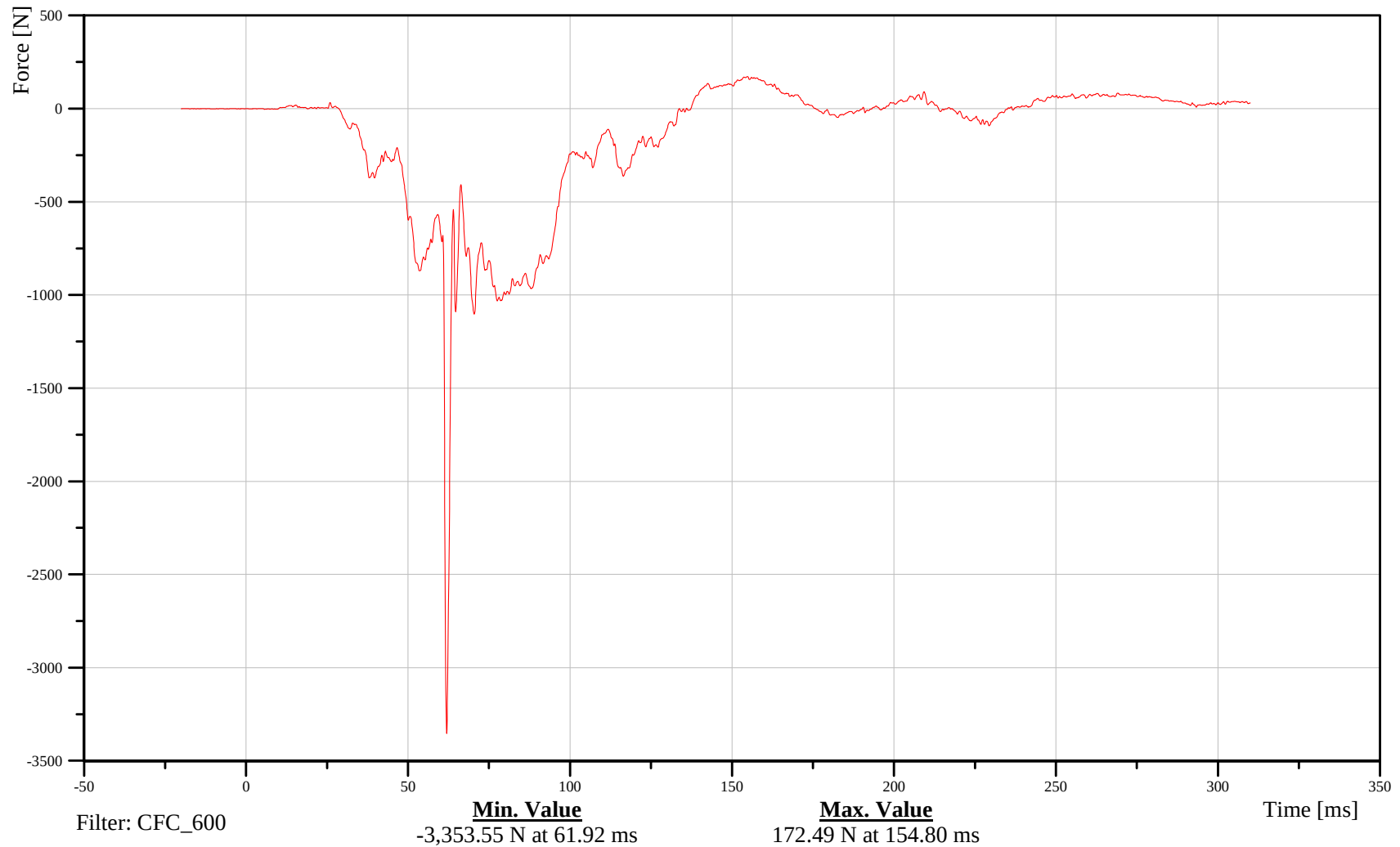
Target Vehicle Driver Right Lower Tibia Z-Axis Force

Customer: VRTC

21TIBIRLLXH3FOZB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-329

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver Right Lower Tibia Moment About X Axis

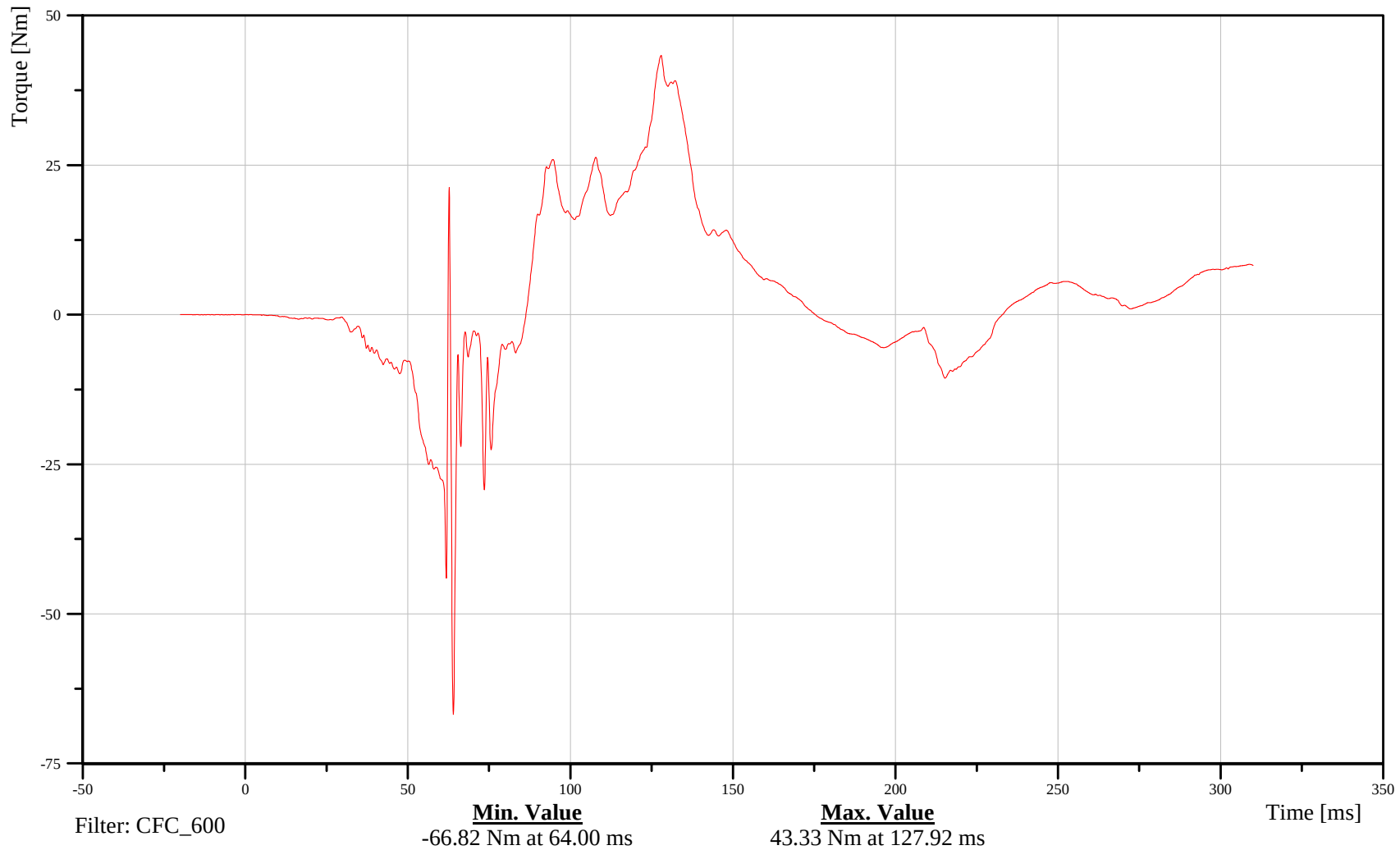
Date: 10/30/2009
Time: 16:48

Customer: VRTC

21TIBIRLLXH3MOXB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-330

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Driver Right Lower Tibia Moment About Y Axis

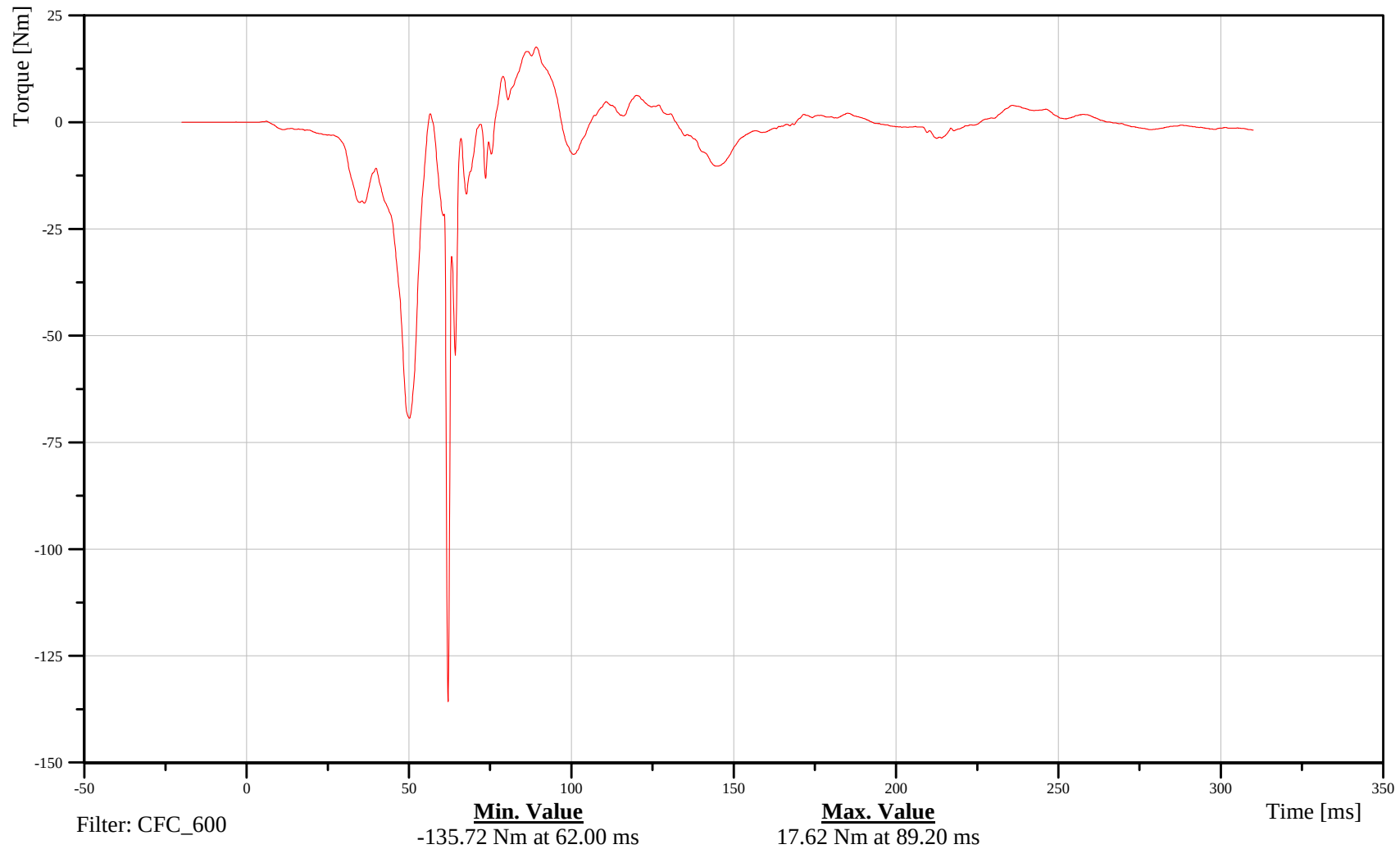
Date: 10/30/2009
Time: 16:48

Customer: VRTC

21TIBIRLLXH3MOYB

TRC Inc. Test Lab: CTF

Test Number: 091030



B-331

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Right Foot Angular X-Axis Displacement

Date: 10/30/2009

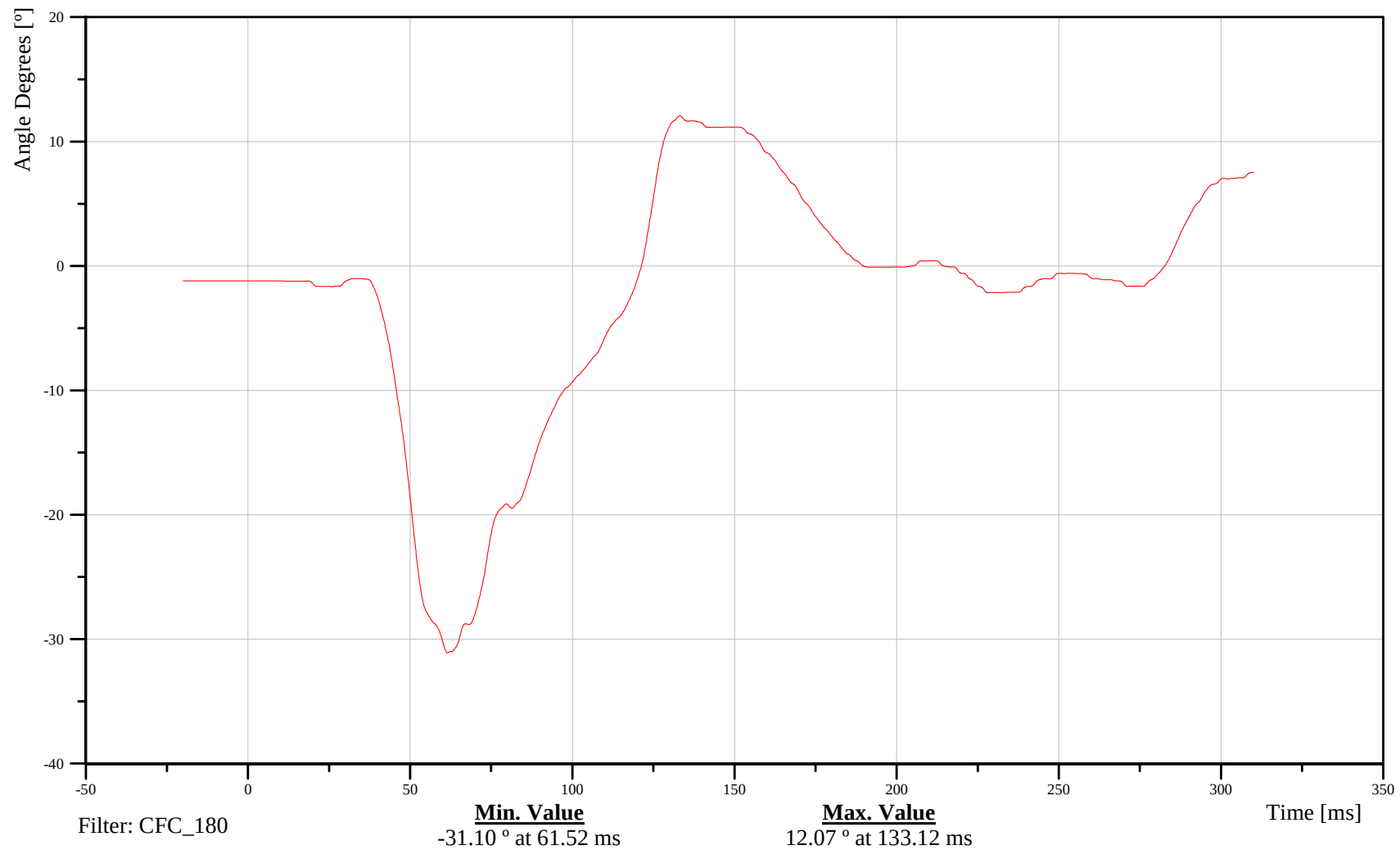
Time: 16:48

Customer: VRTC

21FOOTRILXH3ANXC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-332

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Right Foot Angular Y-Axis Displacement

Date: 10/30/2009

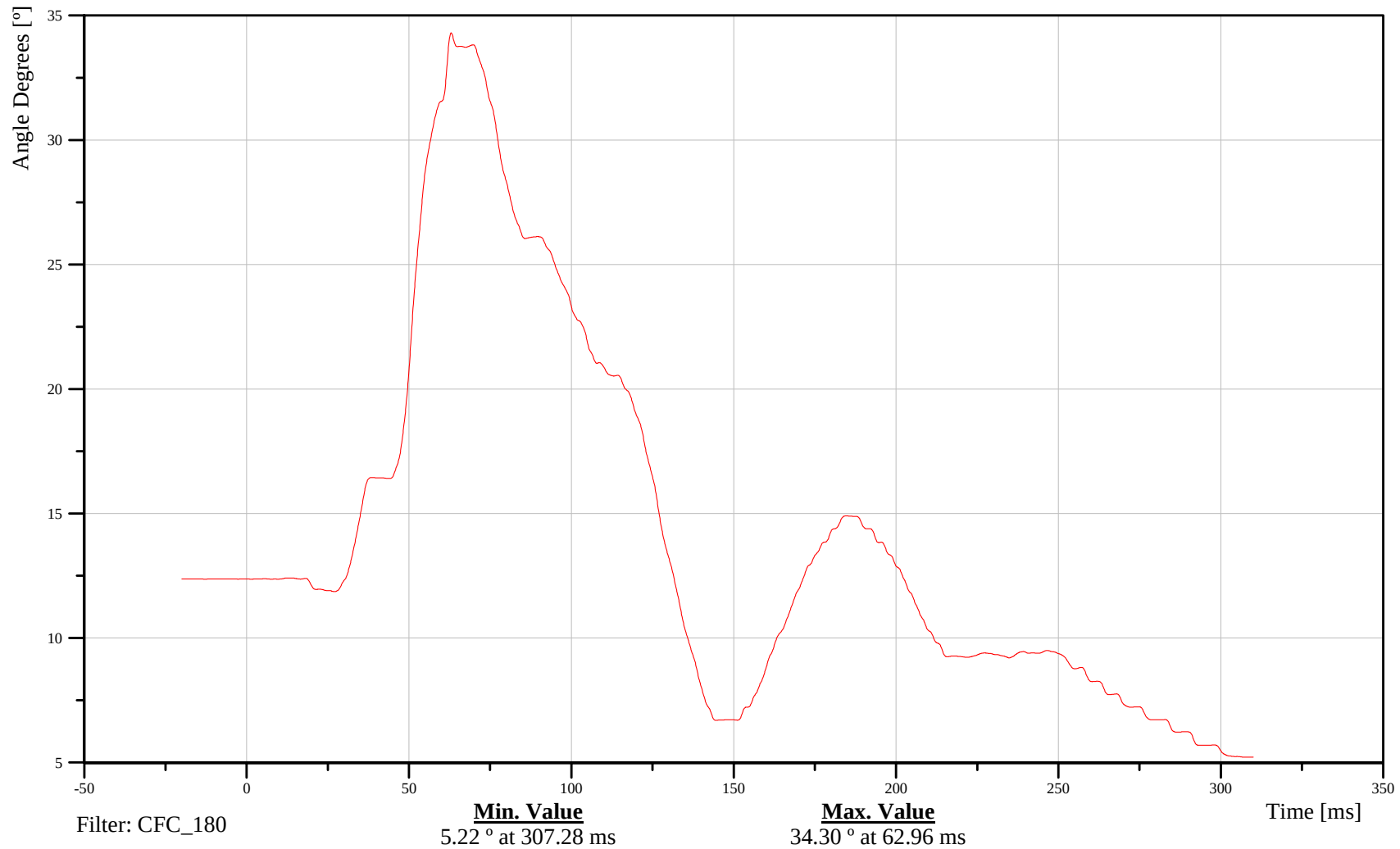
Time: 16:48

Customer: VRTC

21FOOTRILXH3ANYC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-333

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Driver Right Foot Angular Z-Axis Displacement

Date: 10/30/2009

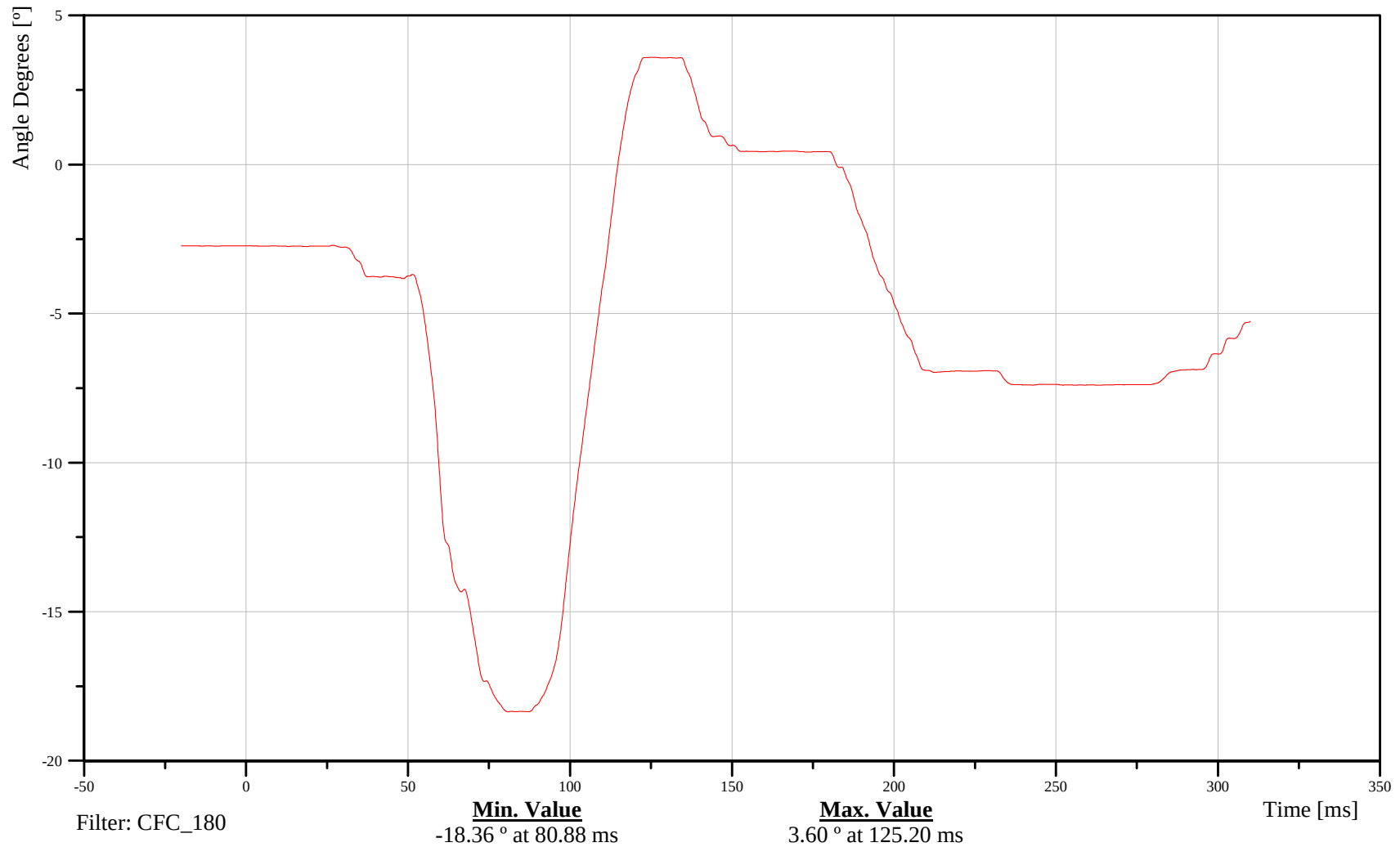
Time: 16:48

Customer: VRTC

21FOOTRILXH3ANZC

TRC Inc. Test Lab: CTF

Test Number: 091030



B-334

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

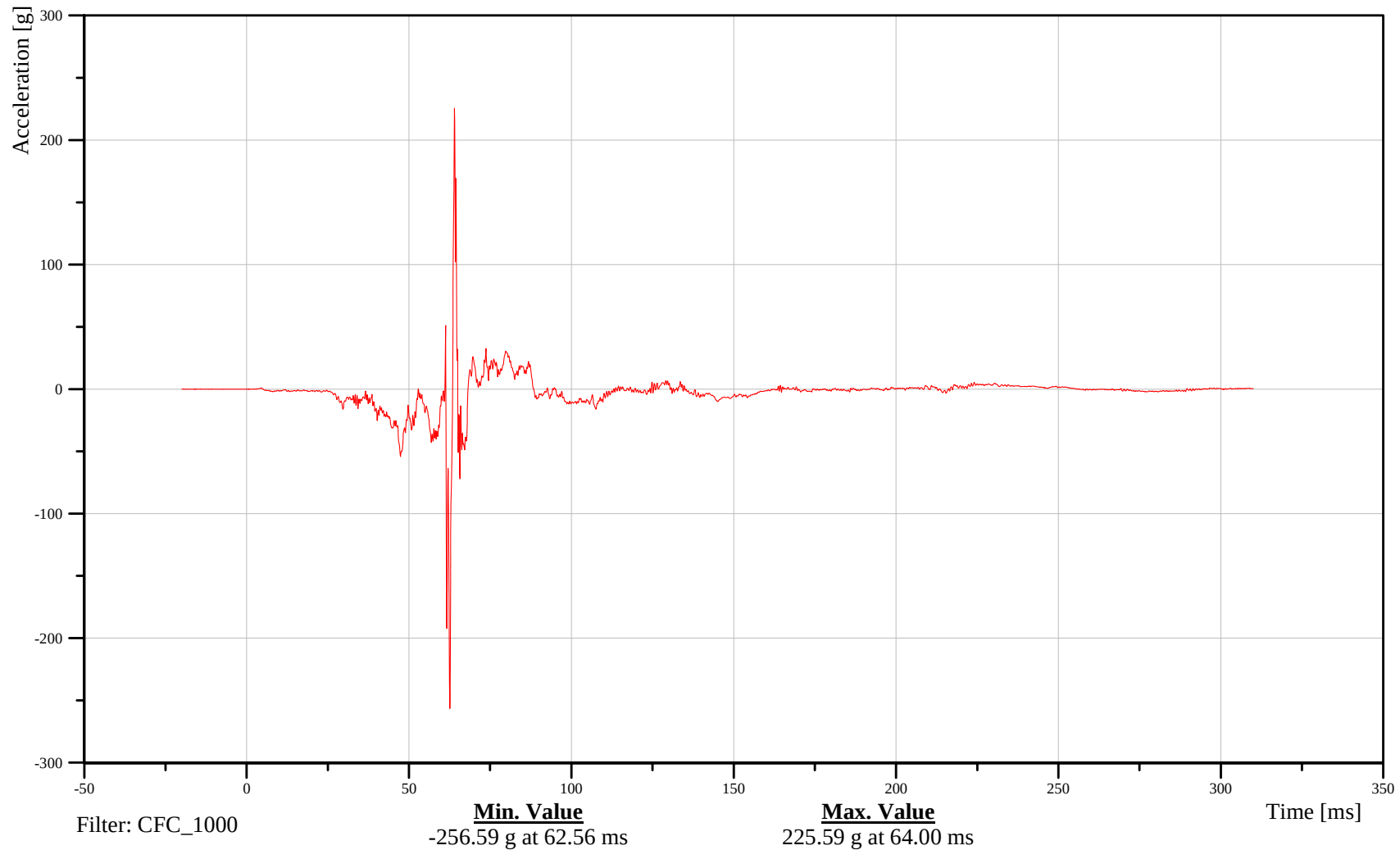
Target Vehicle Driver Right Foot X-Axis Acceleration

Customer: VRTC

21FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-335

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

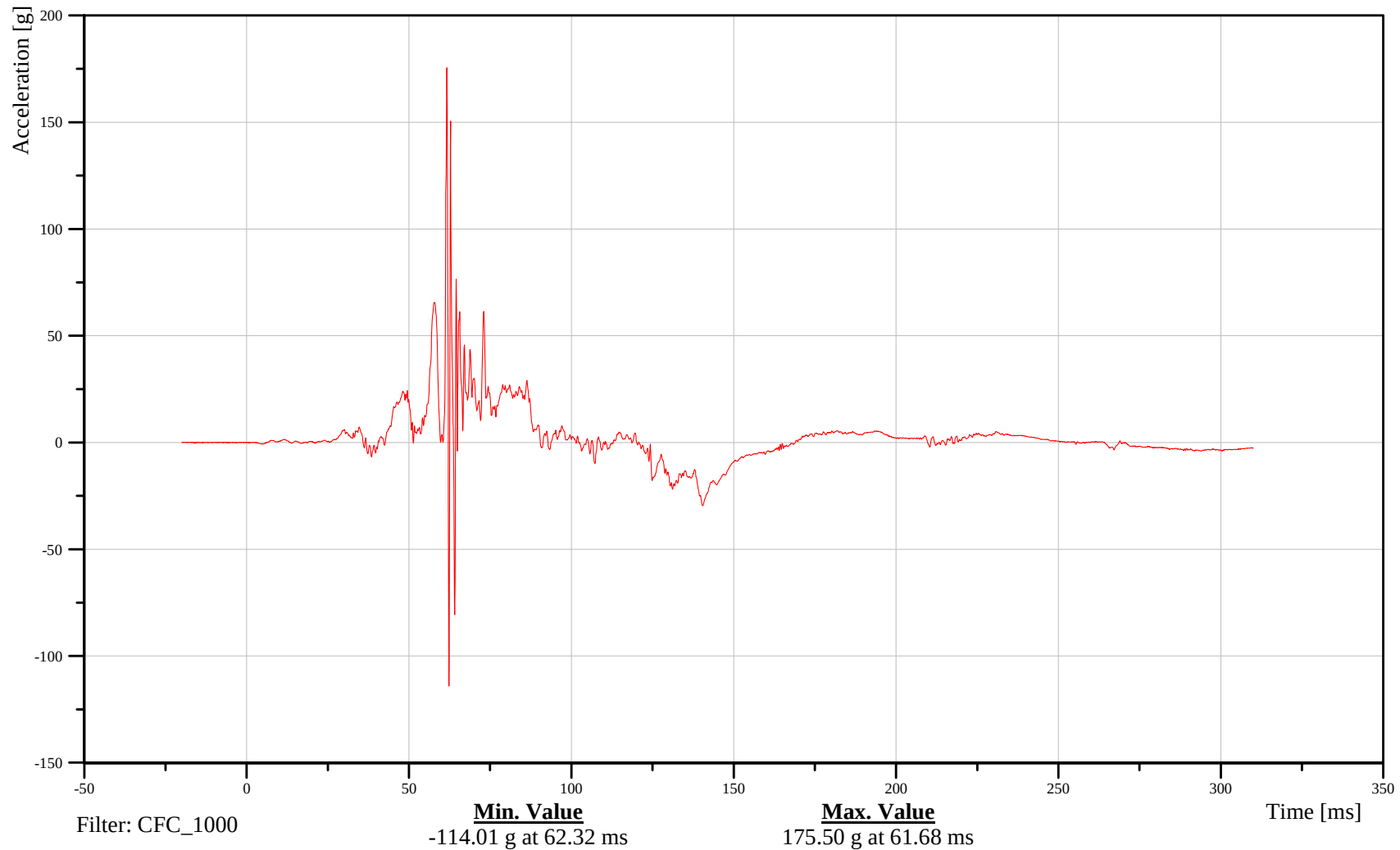
Target Vehicle Driver Right Foot Y-Axis Acceleration

Customer: VRTC

21FOOTRILXH3ACYA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-336

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

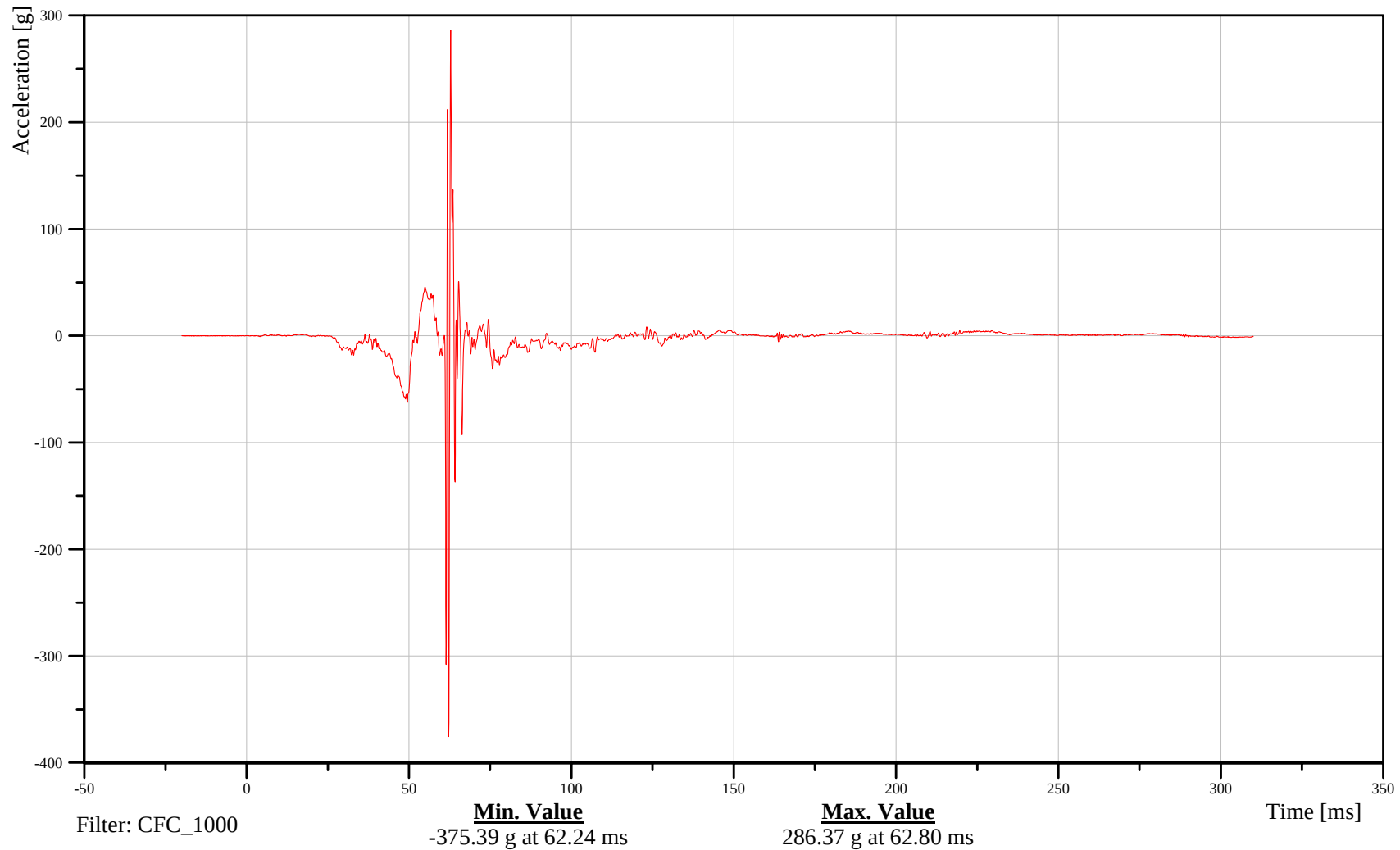
Target Vehicle Driver Right Foot Z-Axis Acceleration

Customer: VRTC

21FOOTRILXH3ACZA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-337

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

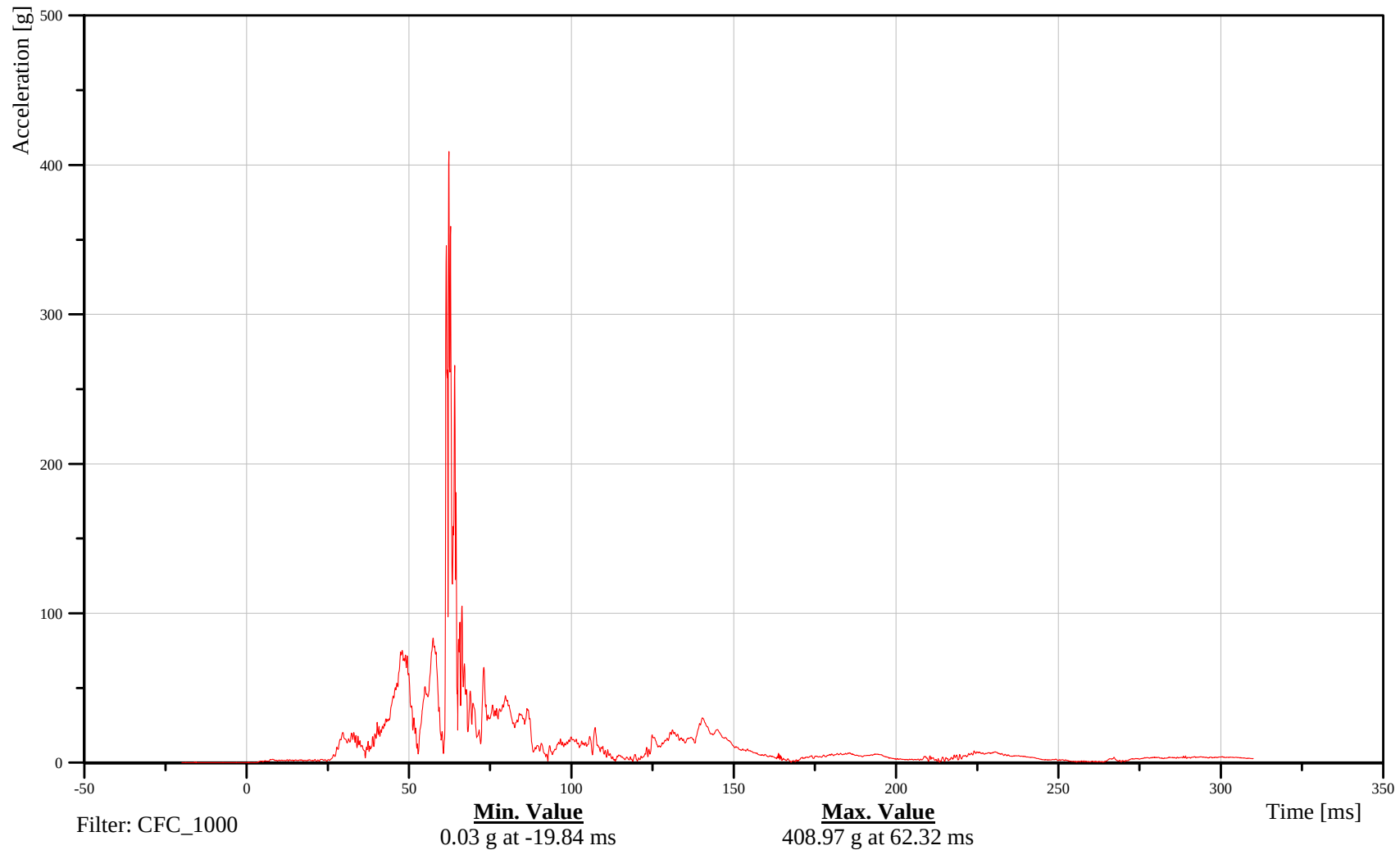
Target Vehicle Driver Right Foot Resultant Acceleration

Customer: VRTC

21FOOTRILXH3ACXA

TRC Inc. Test Lab: CTF

Test Number: 091030



B-338

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Head Injury Criterion (HIC)

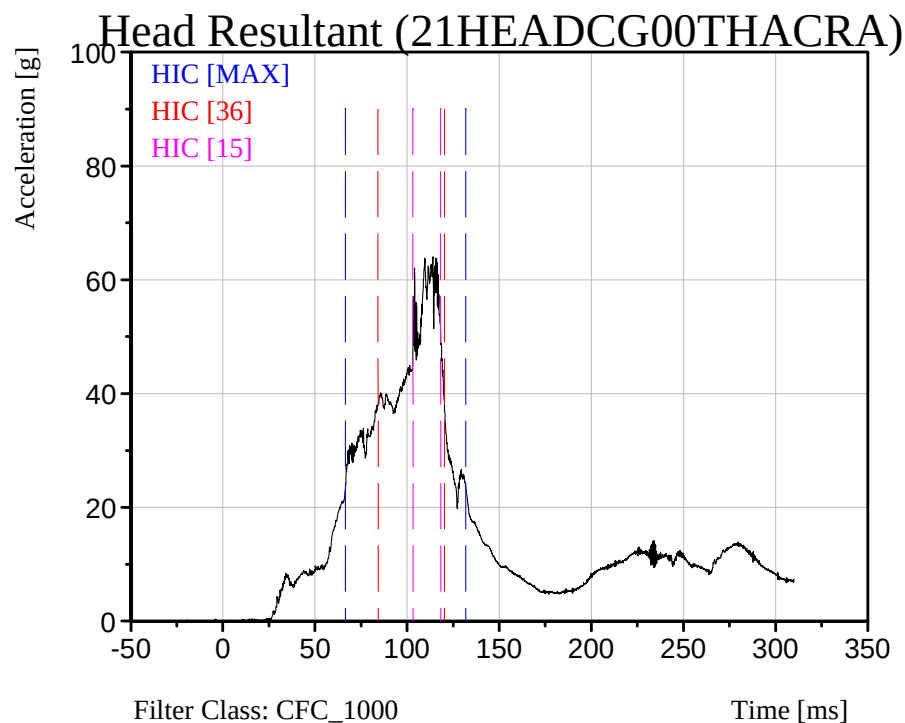
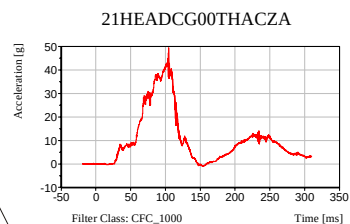
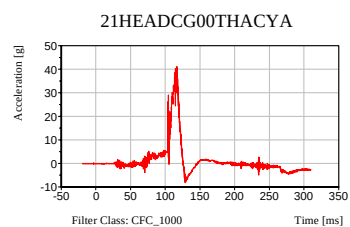
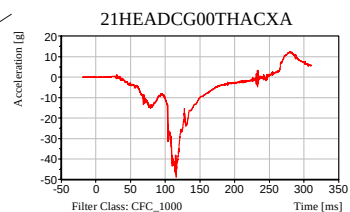
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



	<u>T1</u> (Begin)	<u>T2</u> (End)	<u>Avg. g T1 to T2</u>
HIC [Max.] = 636.23	66.64 ms	131.84 ms	39.40 g
HIC [36] = 552.82	84.24 ms	120.24 ms	47.24 g
HIC [15] = 362.83	103.20 ms	118.24 ms	56.59 g

Dummy:THOR Male
Seating Position:
Driver

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

B-339

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap Neck Moment about the Occipital Condyle (NECK OM)

Date: 10/30/2009
Time: 16:48

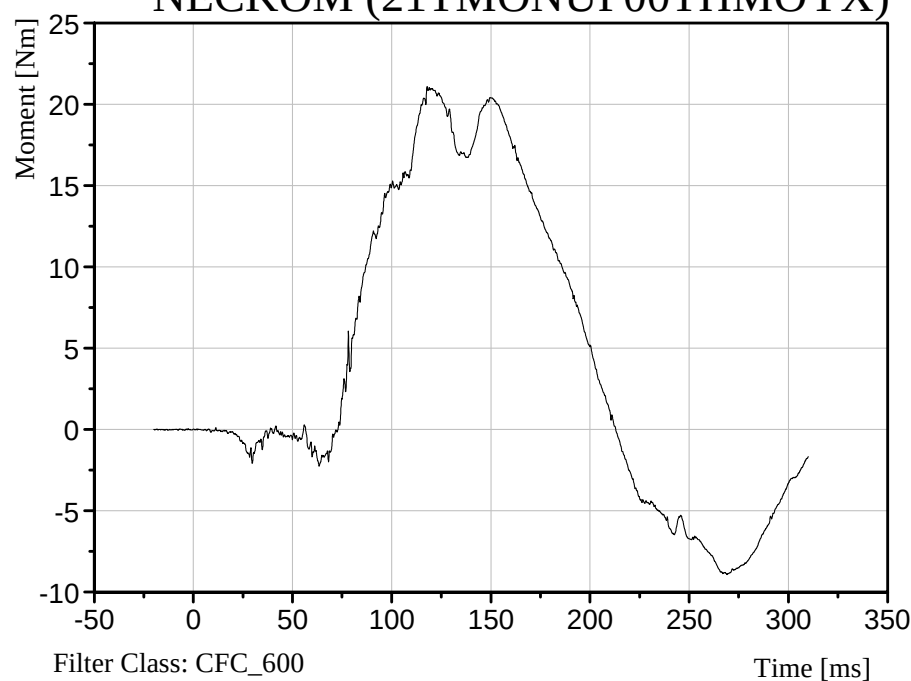
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

NECKOM (21TMONUP00THMOYX)



Dummy: THOR Male
Seating Position:
Driver

Neck OM Source Code: My - (D*Fx)

[Max.] 21.10 Nm at 117.84 ms

[Min.] -8.91 Nm at 269.04 ms

B-340

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

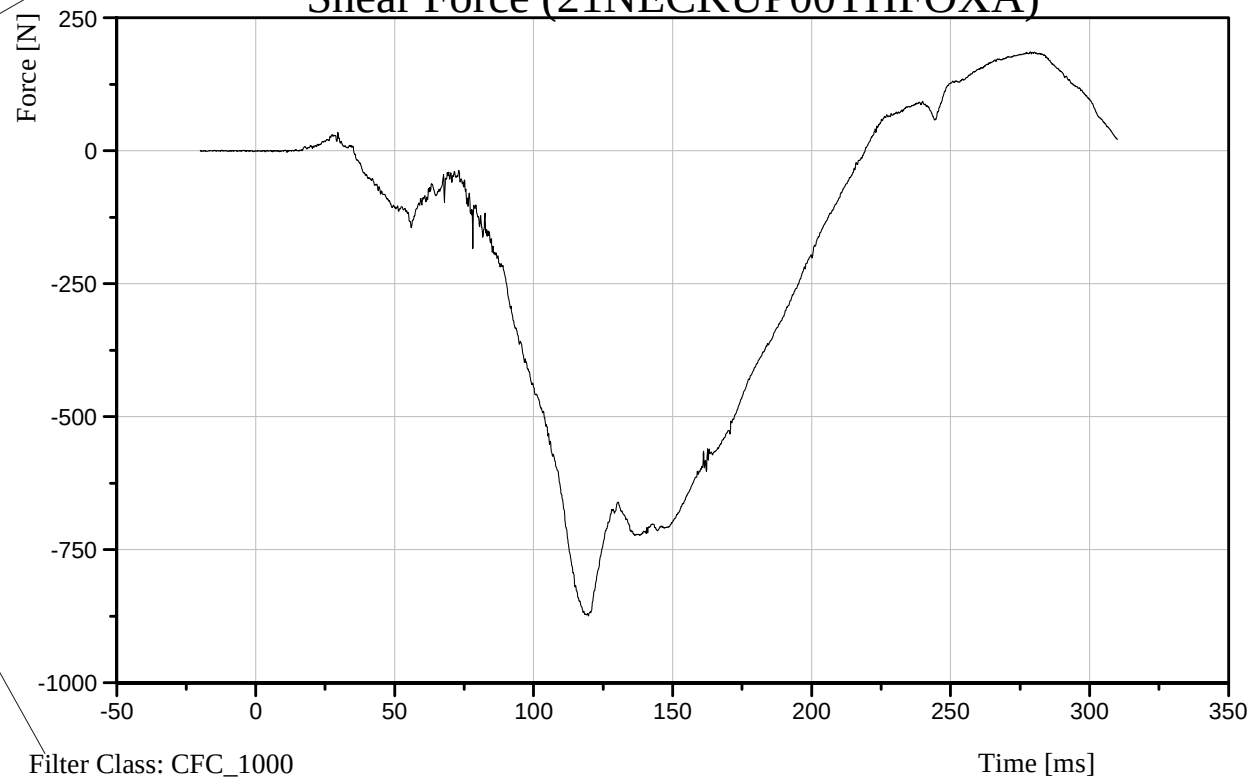
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (21NECKUP00THFOXA)



Dummy: THOR Male

Seating Position:

Driver

[Max.] 186.19 N at 278.64 ms

[Min.] -874.65 N at 119.68 ms

Neck Shear Force Source Code: Min/Max of 21NECKUP00THFOXA

B-341

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Shear Force

Date: 10/30/2009

Time: 16:48

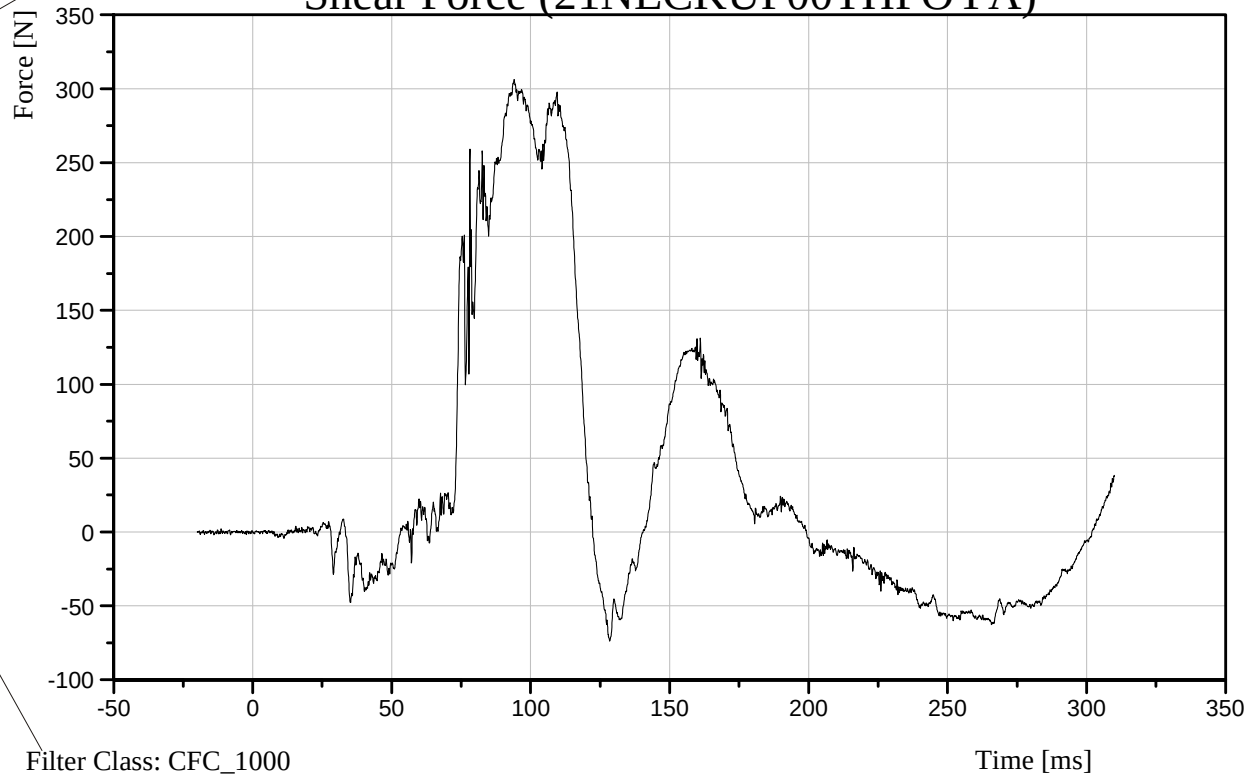
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Shear Force (21NECKUP00THFOYA)



Dummy:THOR Male
Seating Position:
Driver

[Max.] 306.28 N at 94.00 ms

[Min.] -73.83 N at 128.40 ms

Neck Shear Force Source Code: Min/Max of 21NECKUP00THFOYA

B-342

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Neck Axial Force

Date: 10/30/2009

Time: 16:48

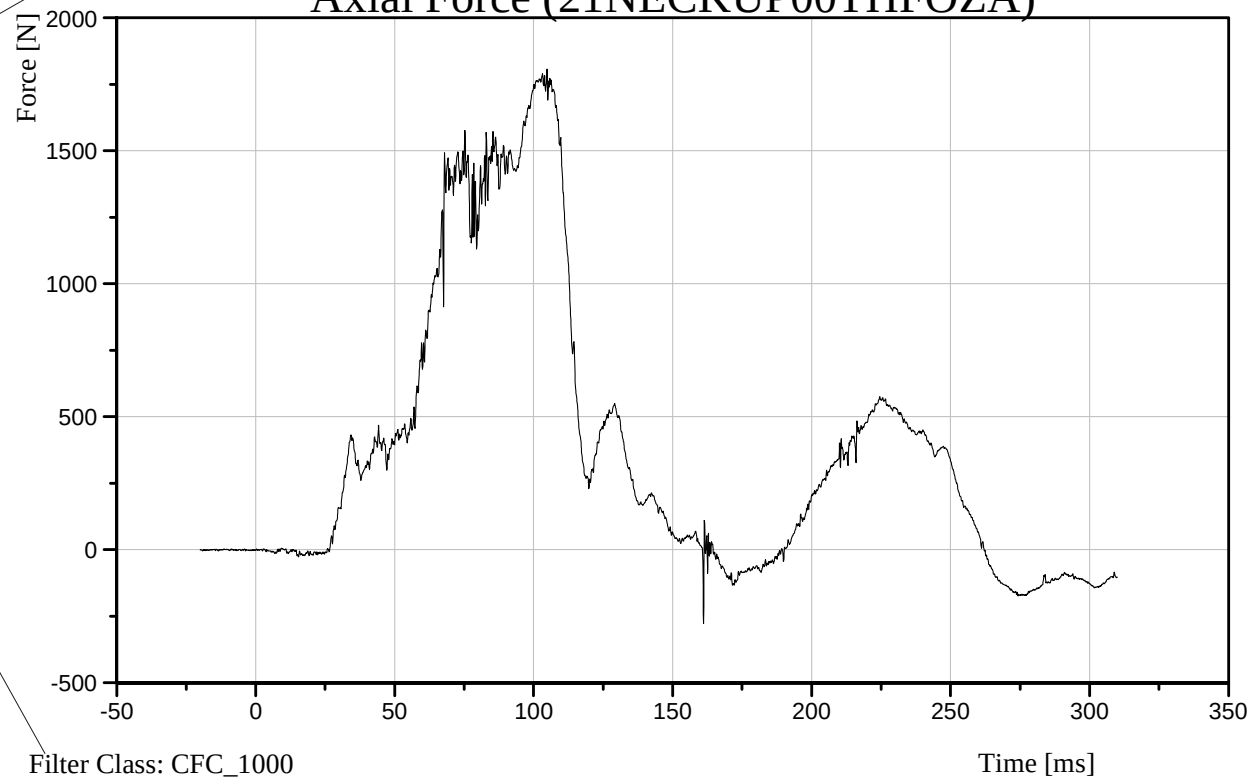
Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030

Test Orientation = Frontal

Axial Force (21NECKUP00THFOZA)



Dummy:THOR Male
Seating Position:
Driver

[Max.] 1,807.56 N at 104.80 ms

[Min.] -277.42 N at 161.12 ms

Neck Axial Force Source Code: Min/Max of 21NECKUP00THFOZA

B-343

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Femur Load

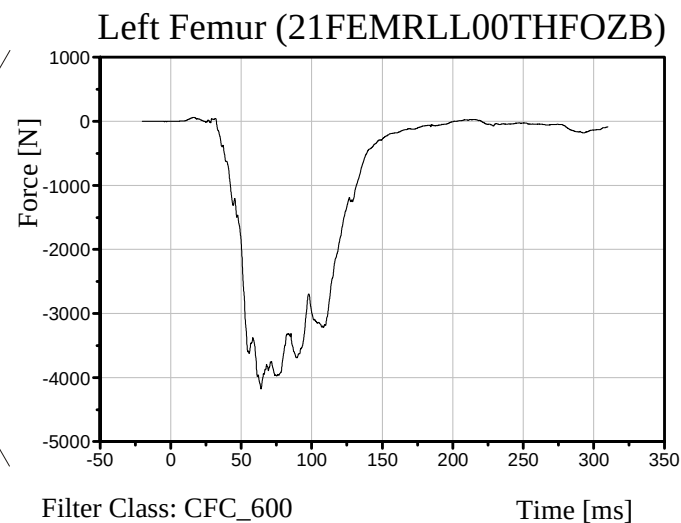
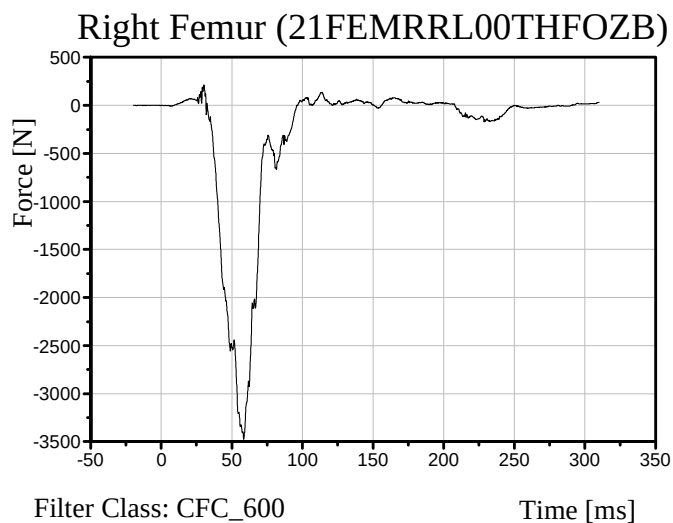
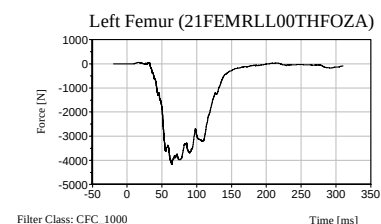
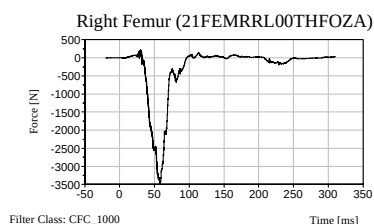
Date: 10/30/2009

Time: 16:48

Customer: VRTC

TRC Inc. Test Lab: CTF

Test Number: 091030



Max [Tension] 213.39 N at 30.08 ms
Min [Compression] -3,471.59 N at 58.24 ms

Dummy:THOR Male
Seating Position:
Driver

Max [Tension] 64.02 N at 16.08 ms
Min [Compression] -4,171.32 N at 64.16 ms

Femur Load Source Code : Min/Max of 21FEMRRL00THFOZB and 21FEMRLL00THFOZB (CFC 600)

B-344

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Tibia Index (TI)

Date: 10/30/2009

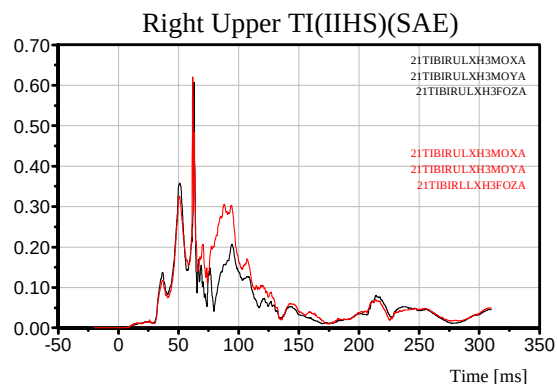
Time: 16:48

Customer: VRTC

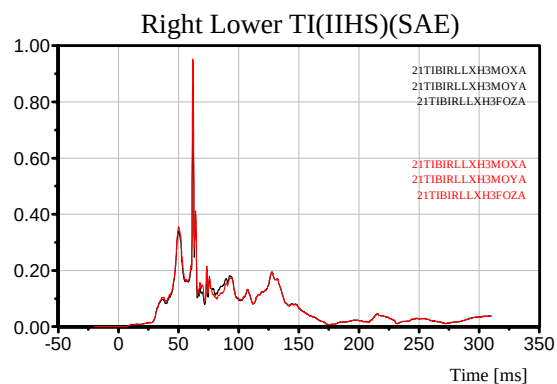
TRC Inc. Test Lab: CTF

Test Number: 091030

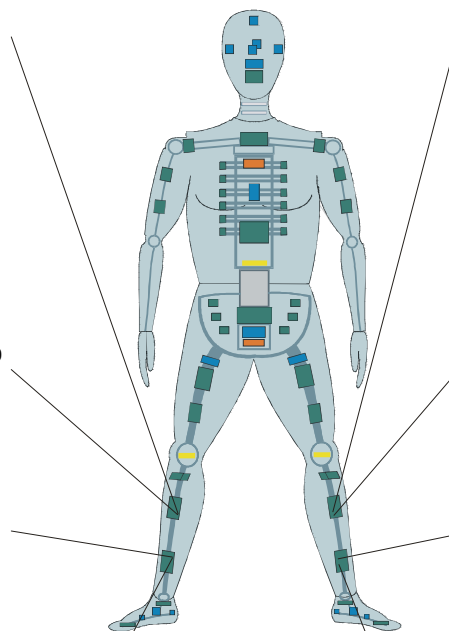
Critical Bending Moment = 240 N·m
Critical Compression Force = 12000 N



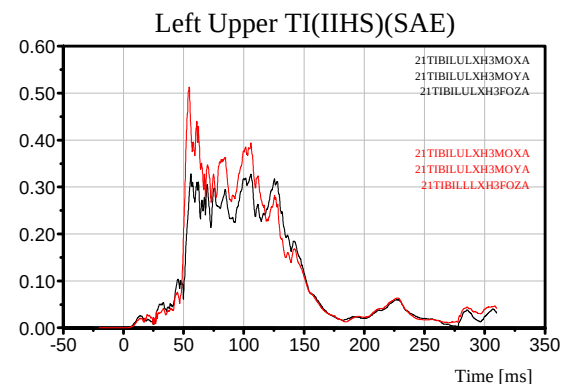
Max = 0.61 at 62.96 ms (SAE)
Max = 0.62 at 61.92 ms (IIHS)



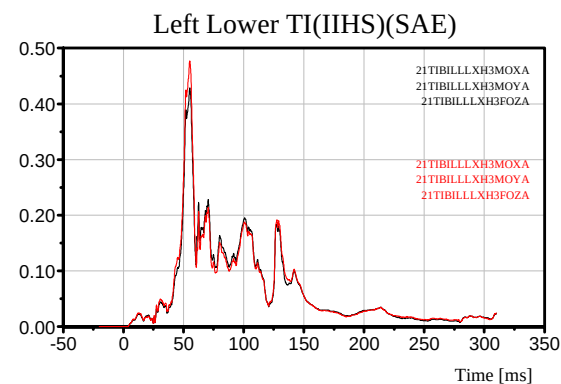
Max = 0.87 at 62.00 ms (SAE)
Max = 0.95 at 62.00 ms (IIHS)



Dummy: HIII 50th Male
Seating Position:
Driver



Max = 0.33 at 56.16 ms (SAE)
Max = 0.51 at 54.72 ms (IIHS)



Max = 0.43 at 55.20 ms (SAE)
Max = 0.48 at 55.20 ms (IIHS)

Tibia Index Source Code : Guideline 96/79/EC; SAE J1727 AUG96; and IIHS Crashworthiness Evaluation Offset Barrier Crash Test Protocol (Version X)

B-345

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Target Vehicle Left Sill X-Axis Acceleration

Date: 10/30/2009

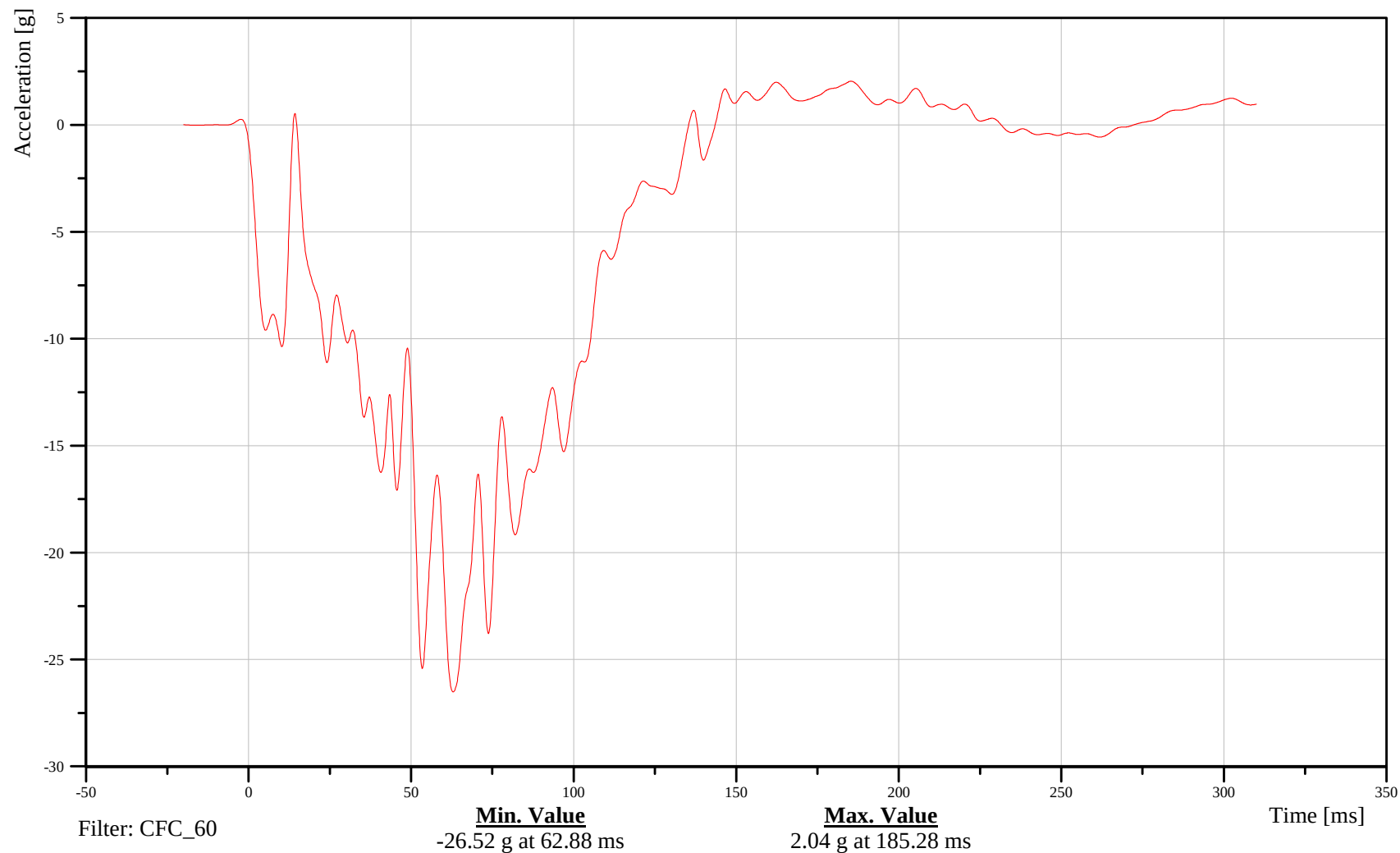
Time: 16:48

Customer: VRTC

20SILLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-346

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

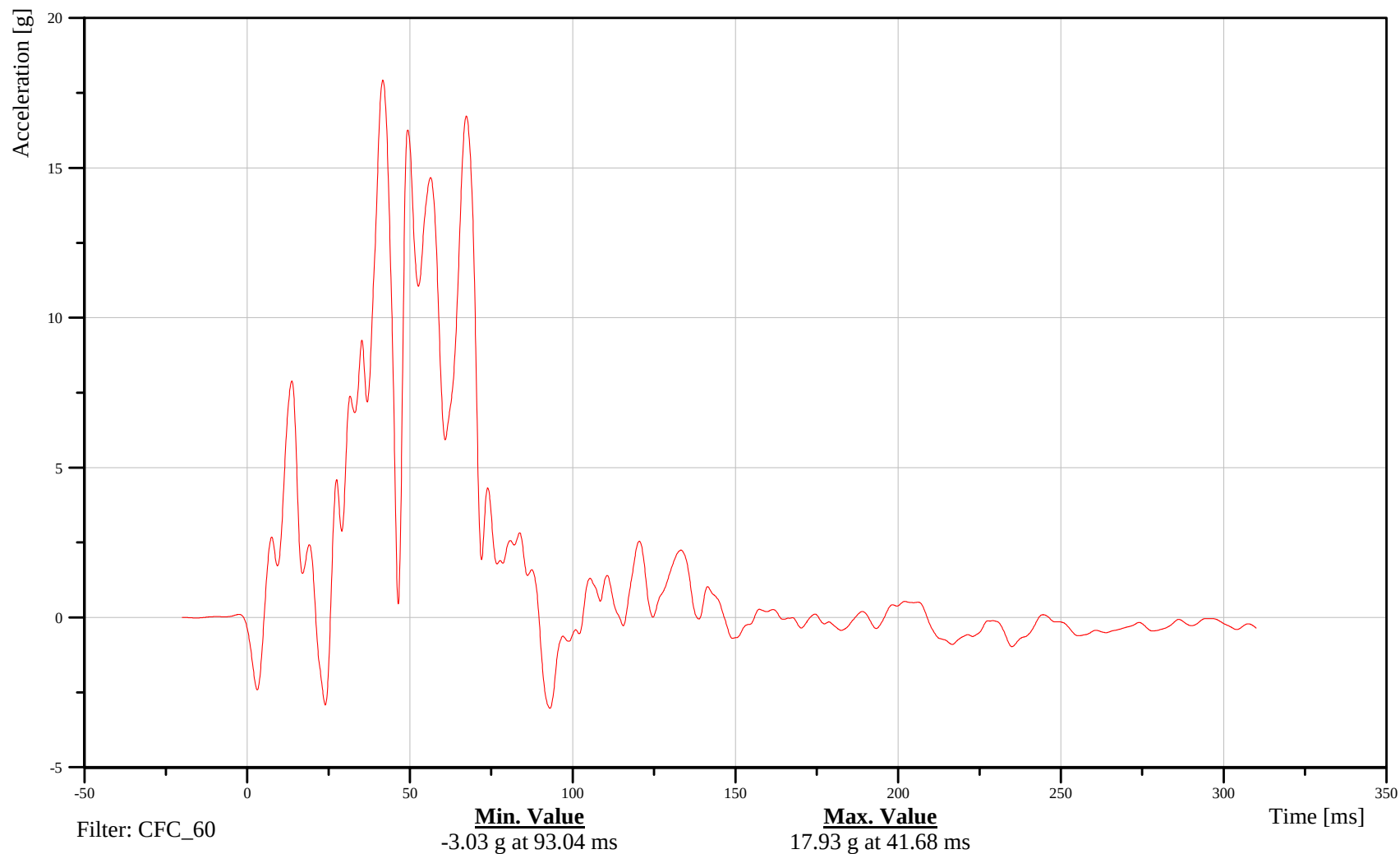
Target Vehicle Left Sill Y-Axis Acceleration

Customer: VRTC

20SILLE0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-347

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

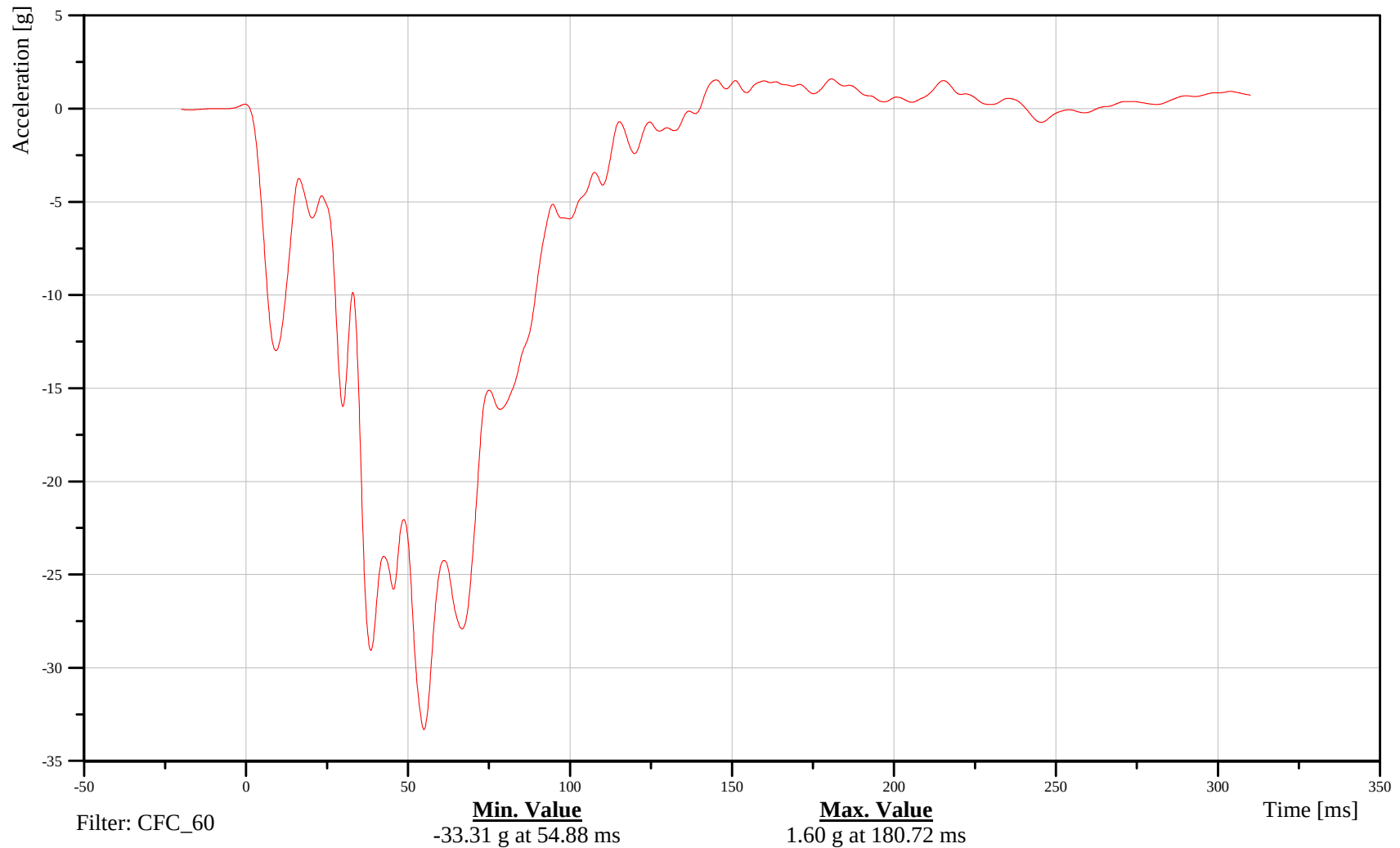
Target Vehicle Right Sill X-Axis Acceleration

Customer: VRTC

20SILLRI0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-348

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

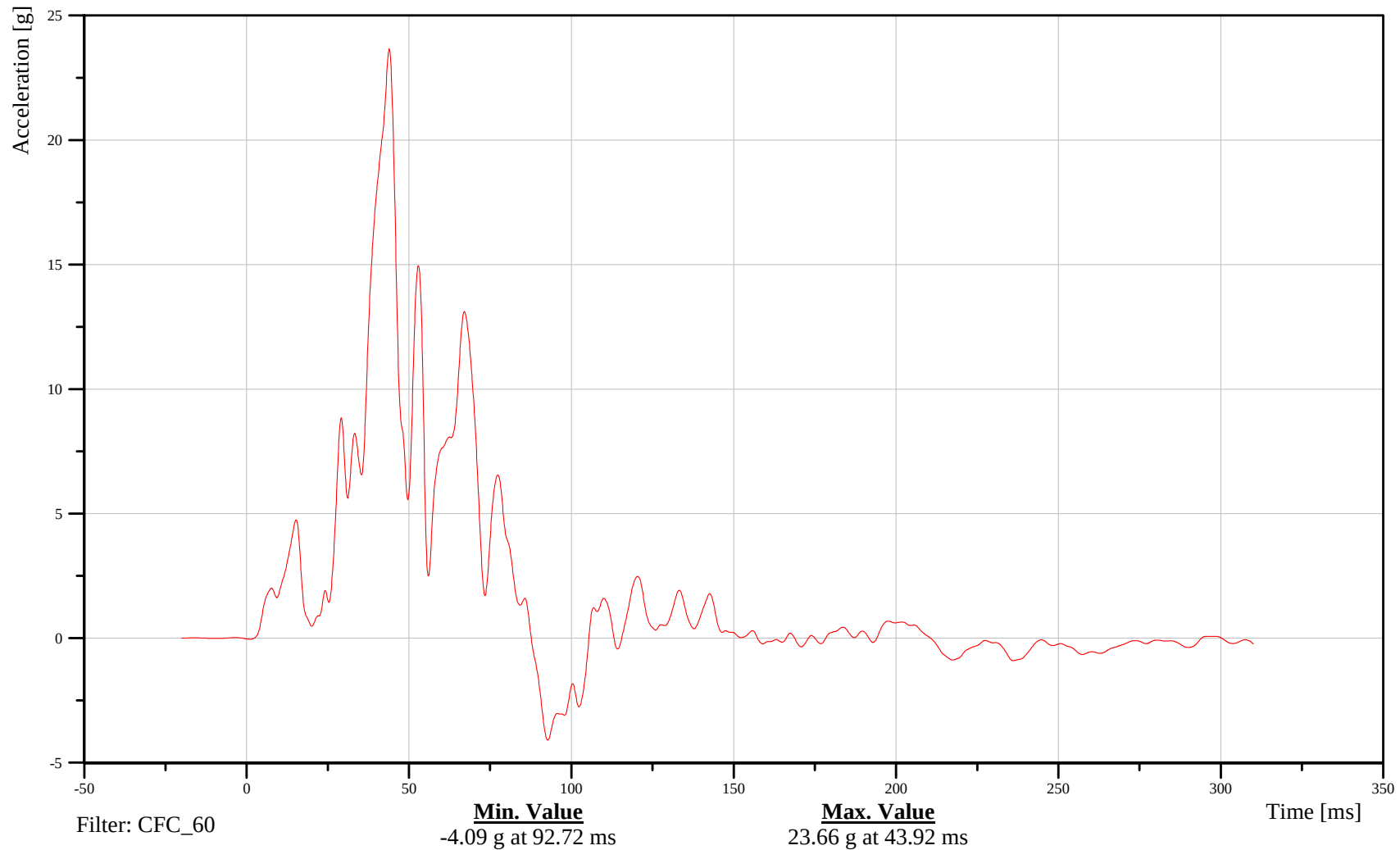
Target Vehicle Right Sill Y-Axis Acceleration

Customer: VRTC

20SILLRI0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-349

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Vehicle Center of Gravity X-Axis Acceleration

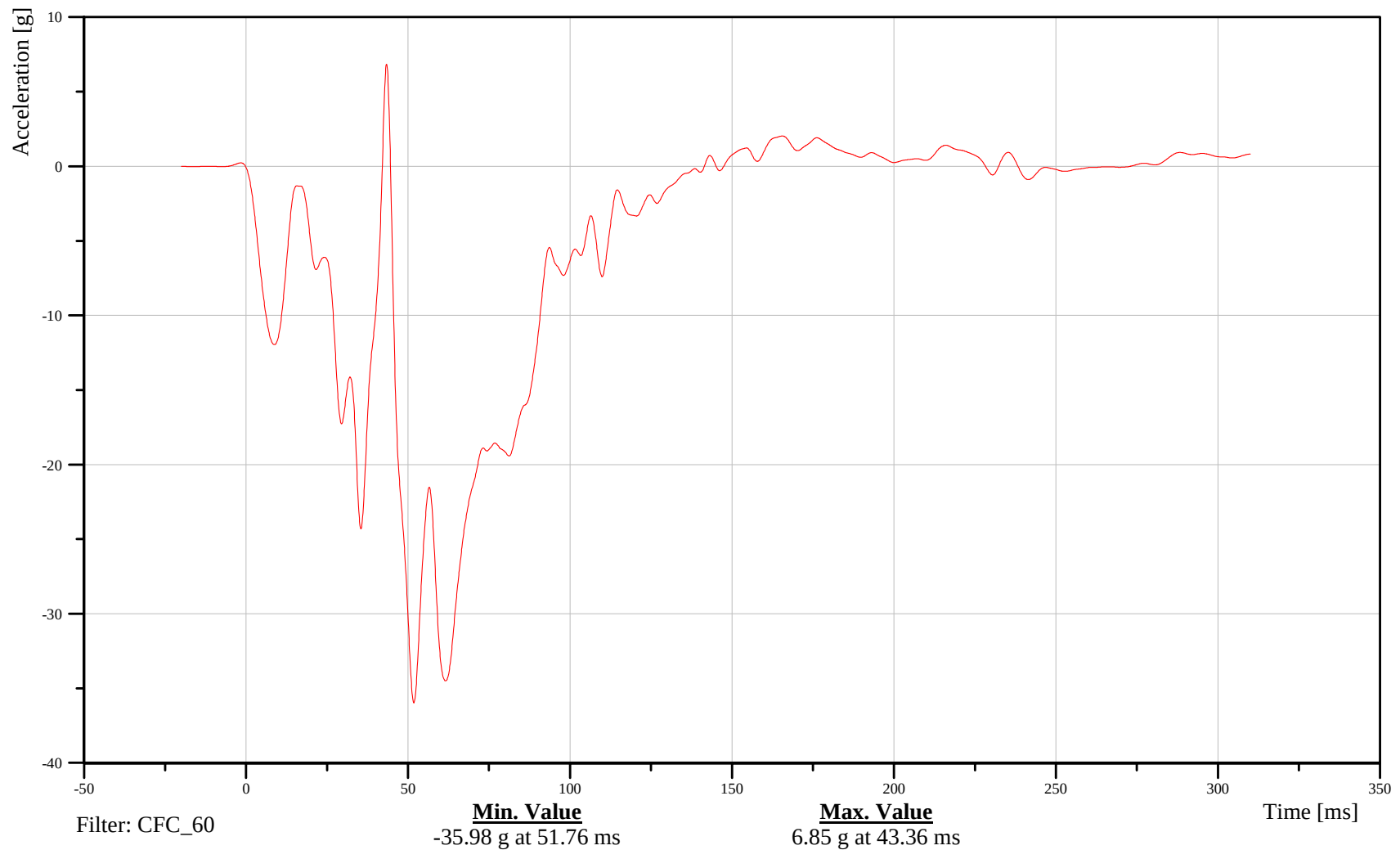
Time: 16:48

Customer: VRTC

20VEHCCG0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-350

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Target Vehicle Vehicle Center of Gravity Y-Axis Acceleration

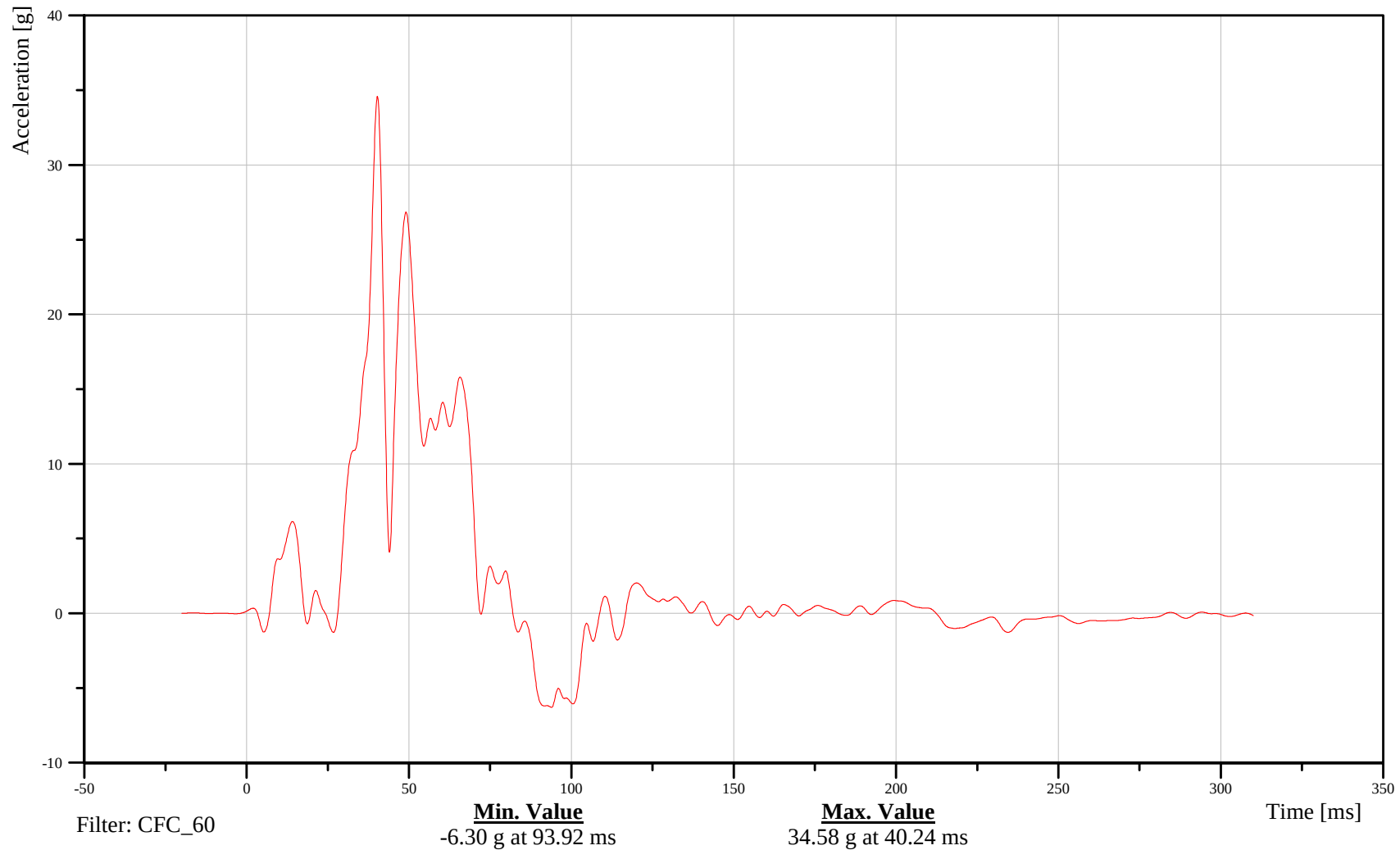
Time: 16:48

Customer: VRTC

20VEHCCG0000ACYD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-351

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

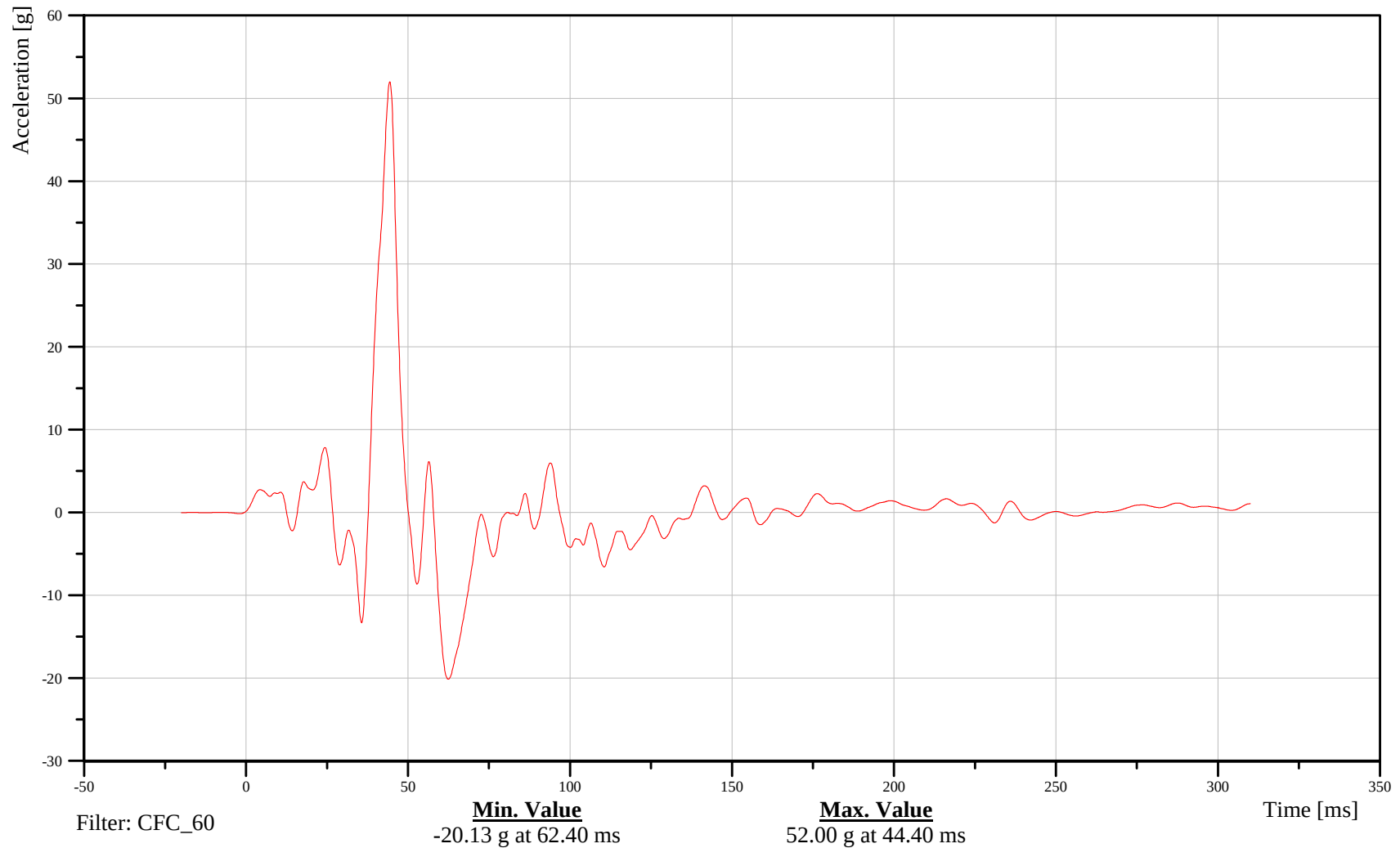
Target Vehicle Vehicle Center of Gravity Z-Axis Acceleration

Customer: VRTC

20VEHCCG0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-352

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Vehicle Center of Gravity Resultant Acceleration

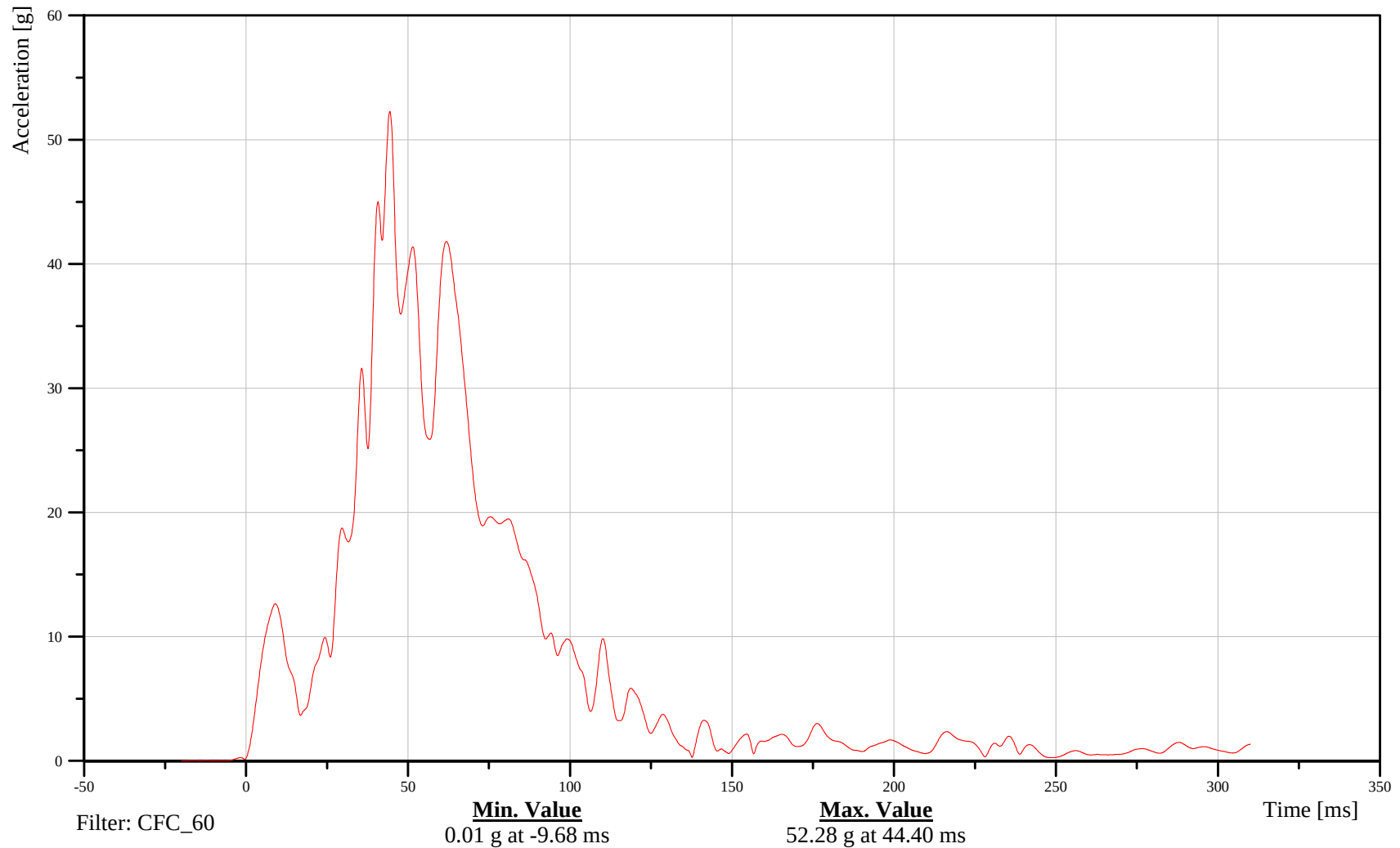
Date: 10/30/2009
Time: 16:48

Customer: VRTC

20VEHCCG0000ACRD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-353

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

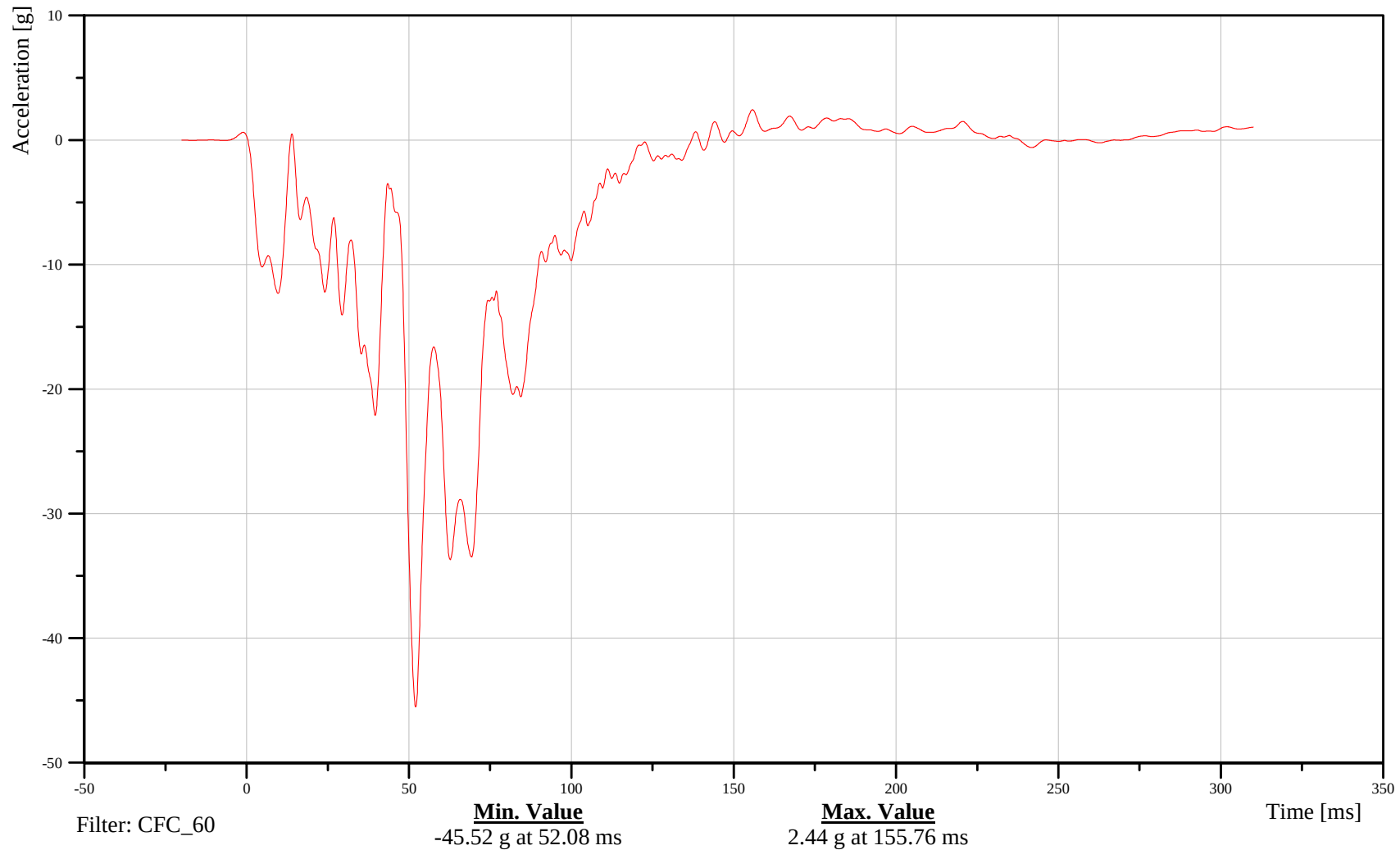
Target Vehicle Driver Footrest X-Axis Acceleration

Customer: VRTC

20FOOTLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-354

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

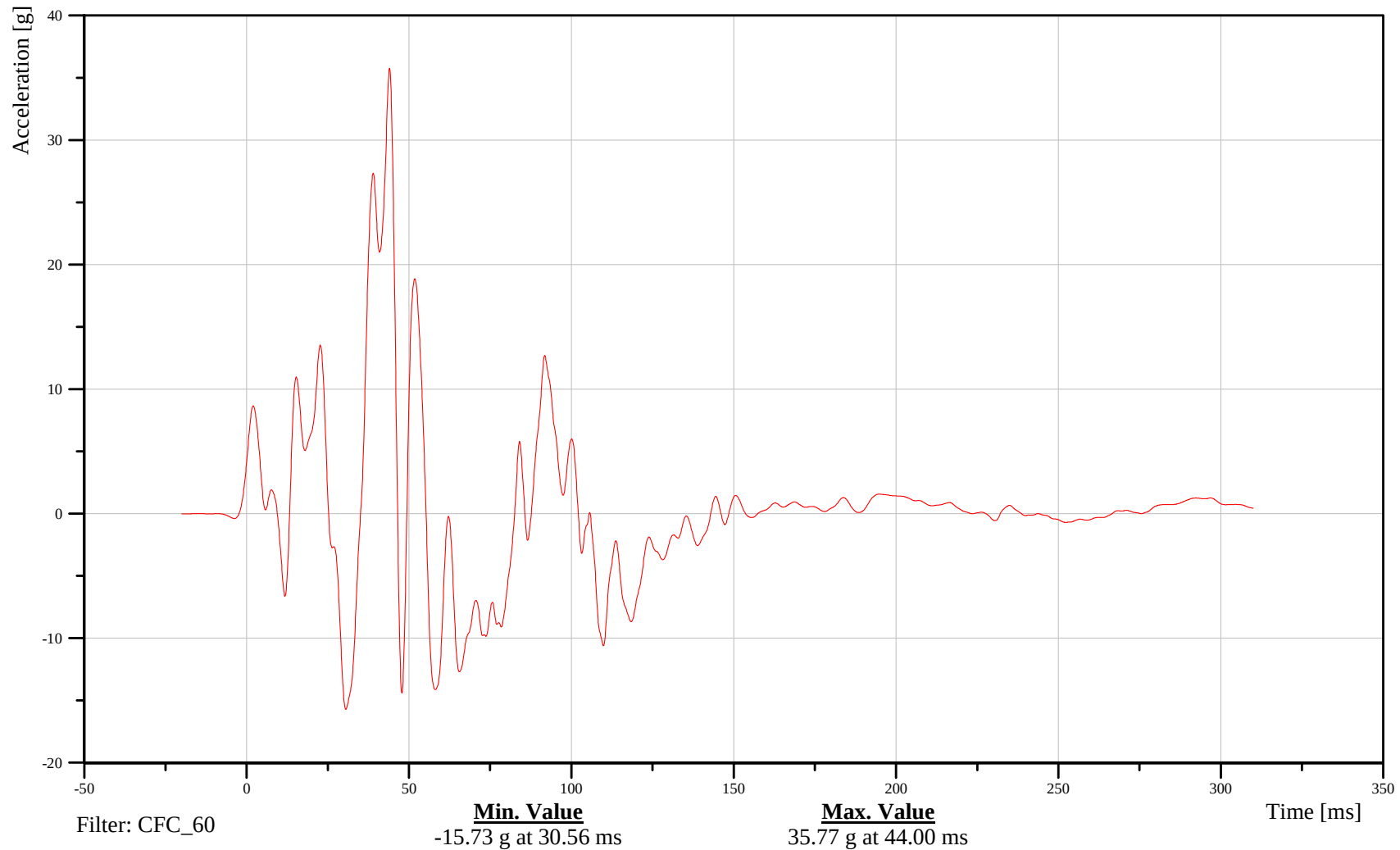
Target Vehicle Driver Footrest Z-Axis Acceleration

Customer: VRTC

20FOOTLE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-355

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Toepan Behind Center of Accelerator X-Axis Acceleration

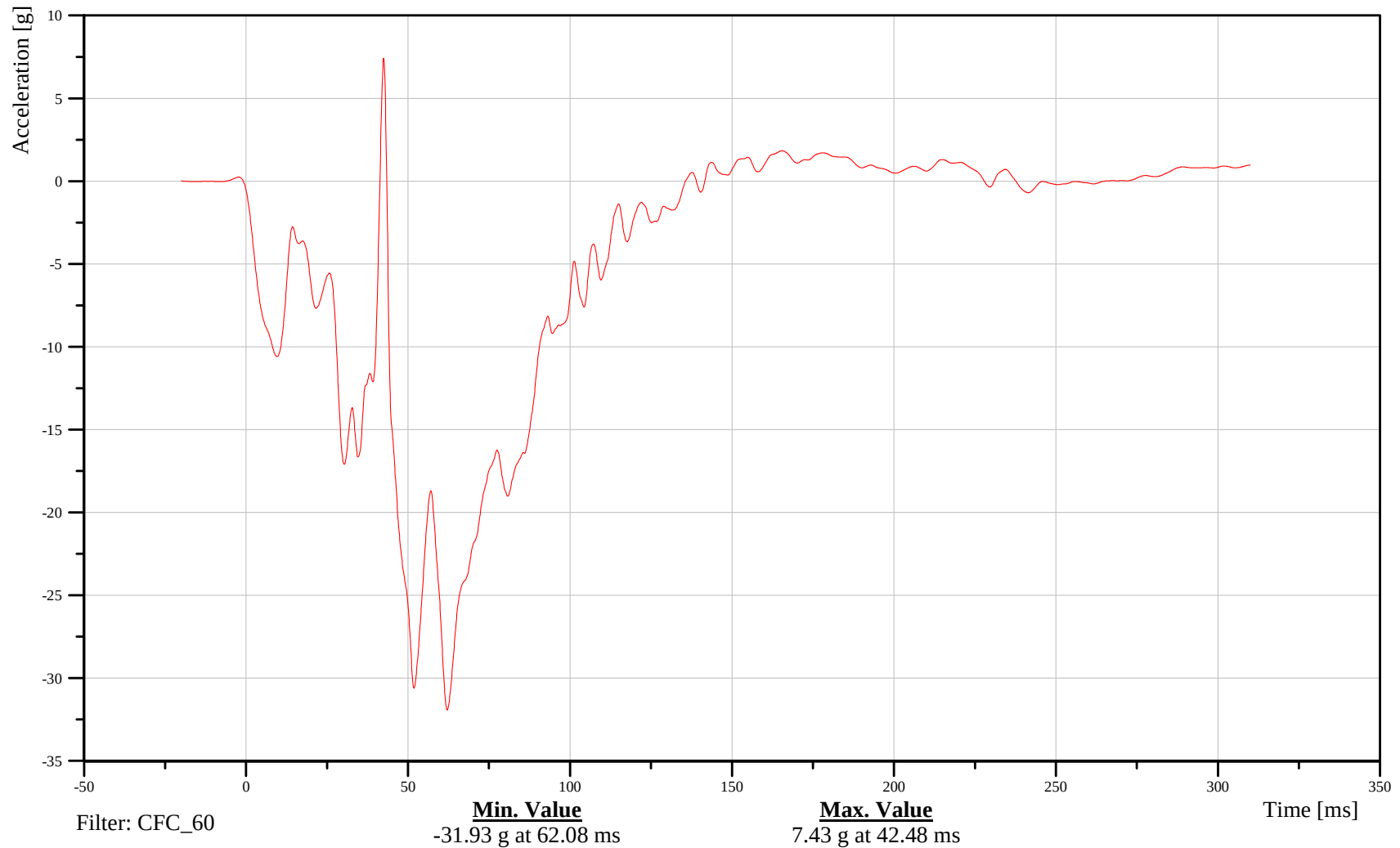
Date: 10/30/2009
Time: 16:48

Customer: VRTC

20TPANLE0000ACXD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-356

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap
Target Vehicle Toepan Behind Center of Accelerator Z-Axis Acceleration

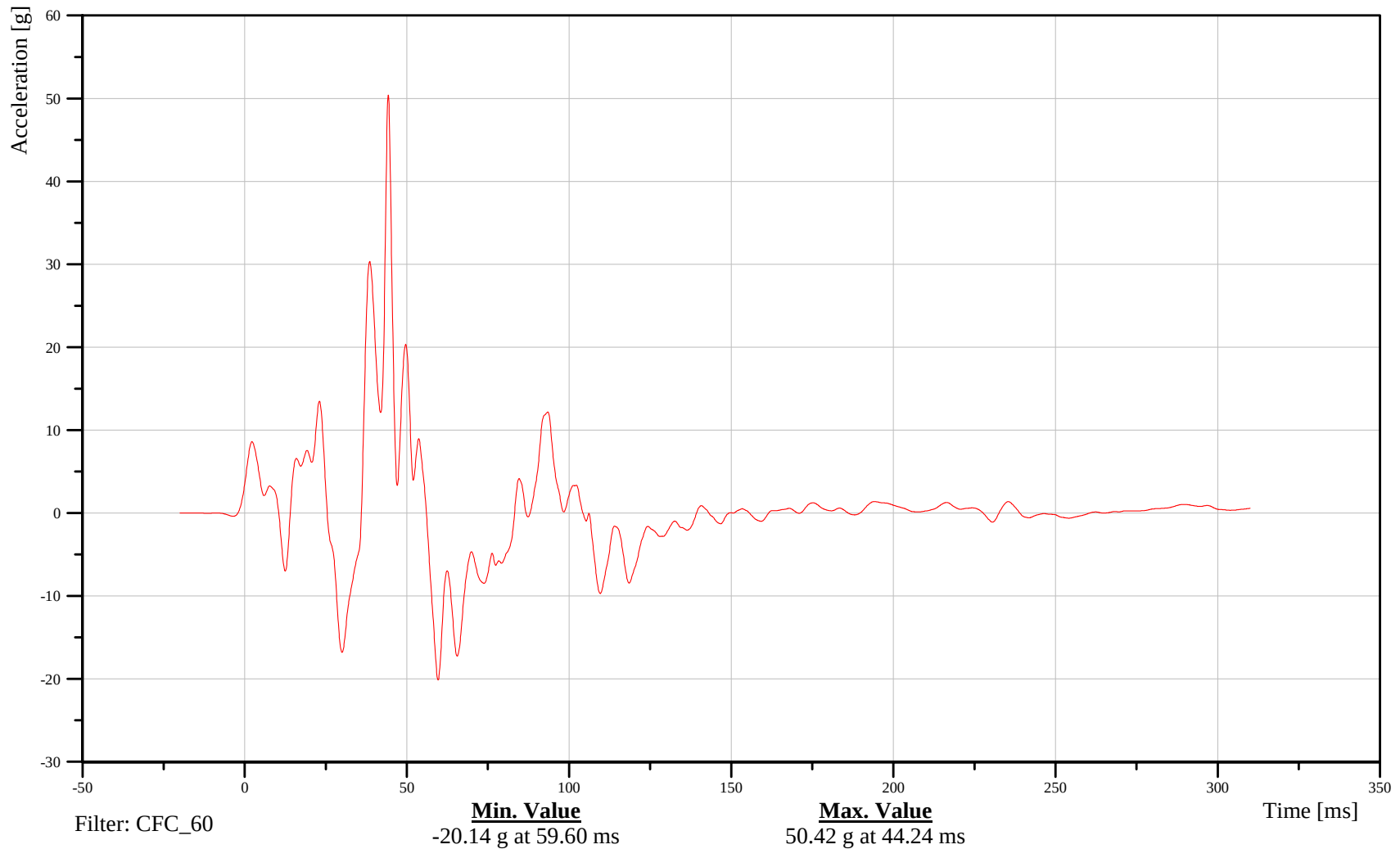
Date: 10/30/2009
Time: 16:48

Customer: VRTC

20TPANLE0000ACZD

TRC Inc. Test Lab: CTF

Test Number: 091030



B-357

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

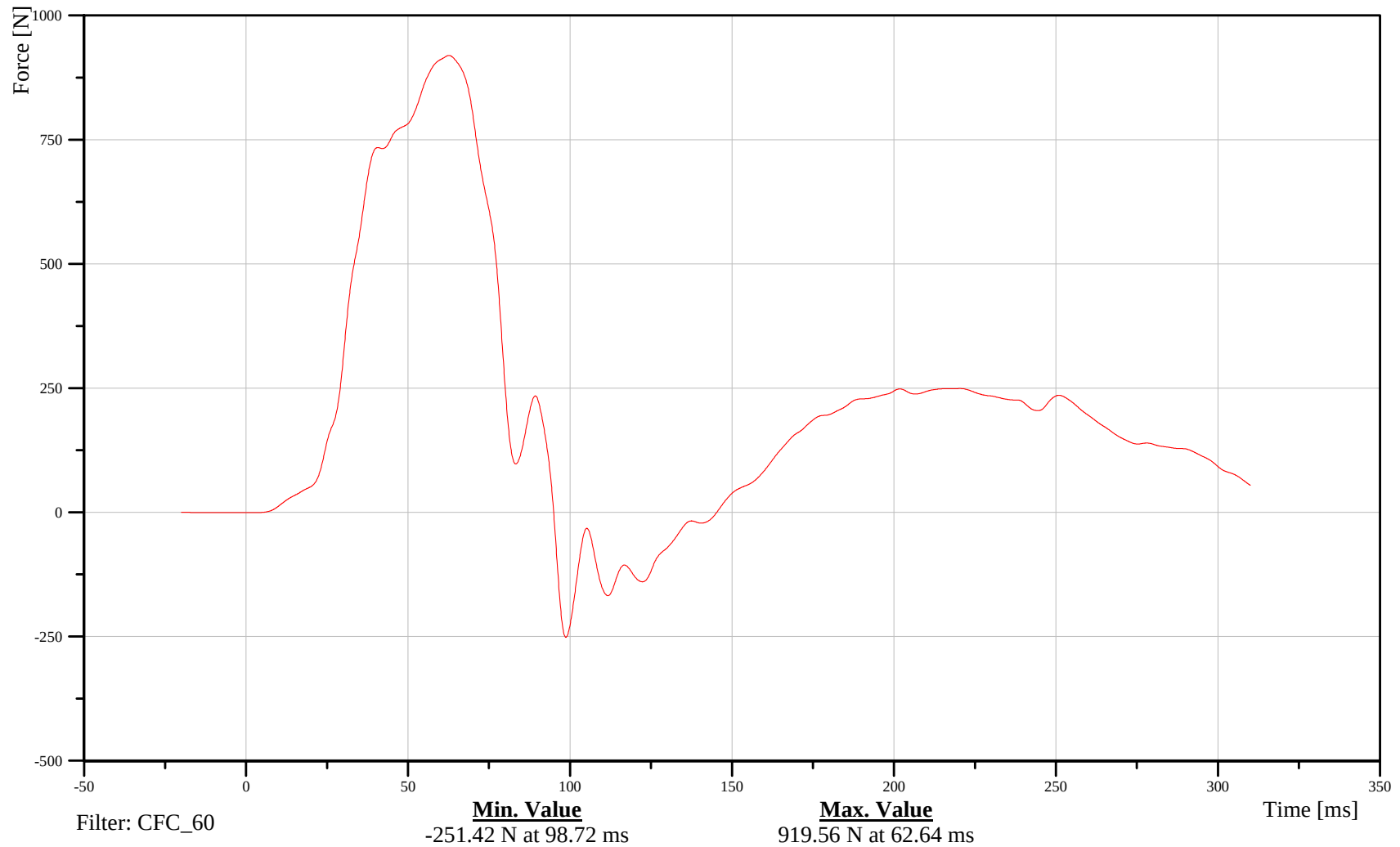
Target Vehicle Driver Lap Belt Force

Customer: VRTC

21SEBE0000B5FO0D

TRC Inc. Test Lab: CTF

Test Number: 091030



B-358

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

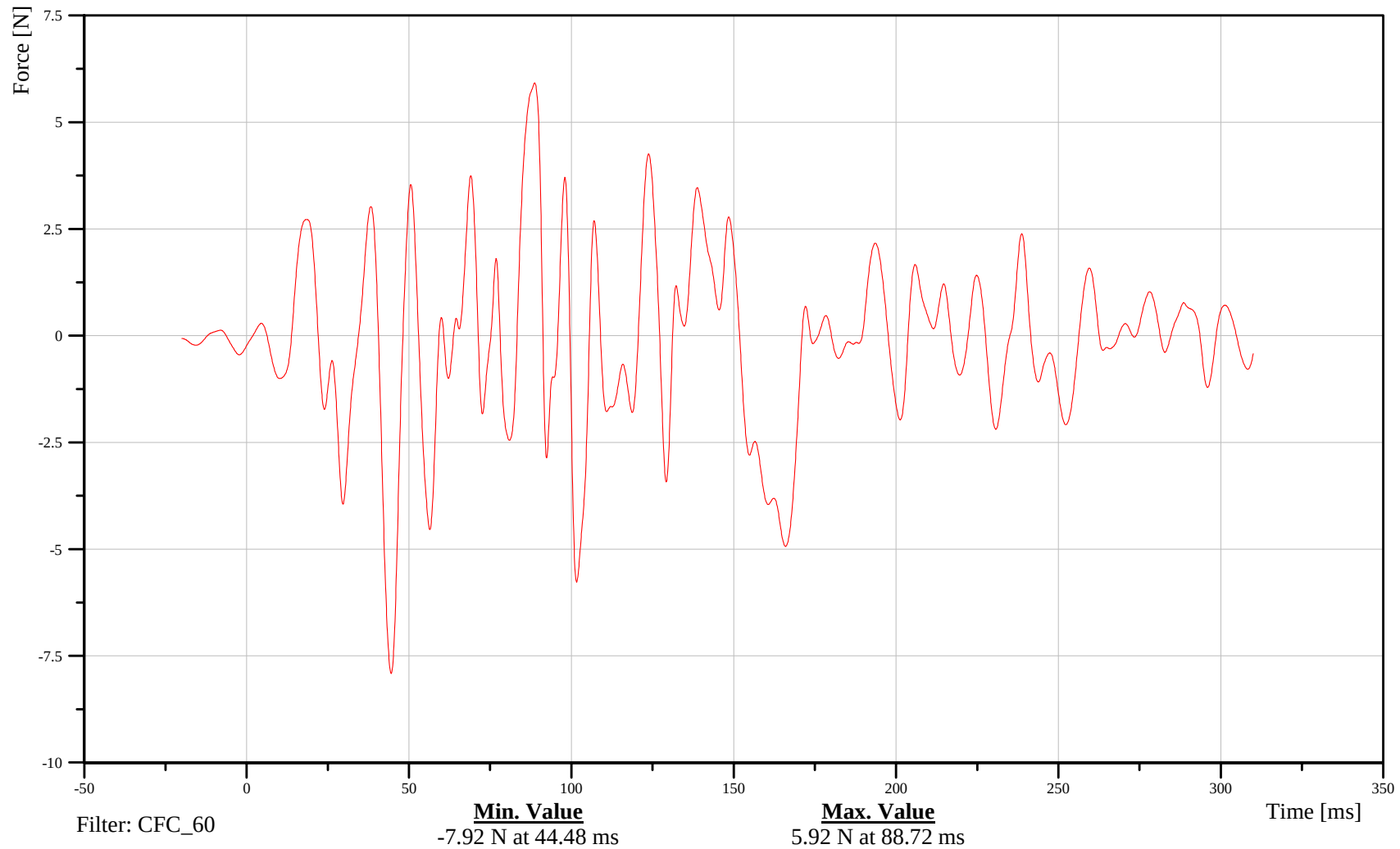
Target Vehicle Driver Shoulder Belt Force

Customer: VRTC

21SEBE0000B3FO0D

TRC Inc. Test Lab: CTF

Test Number: 091030



B-359

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

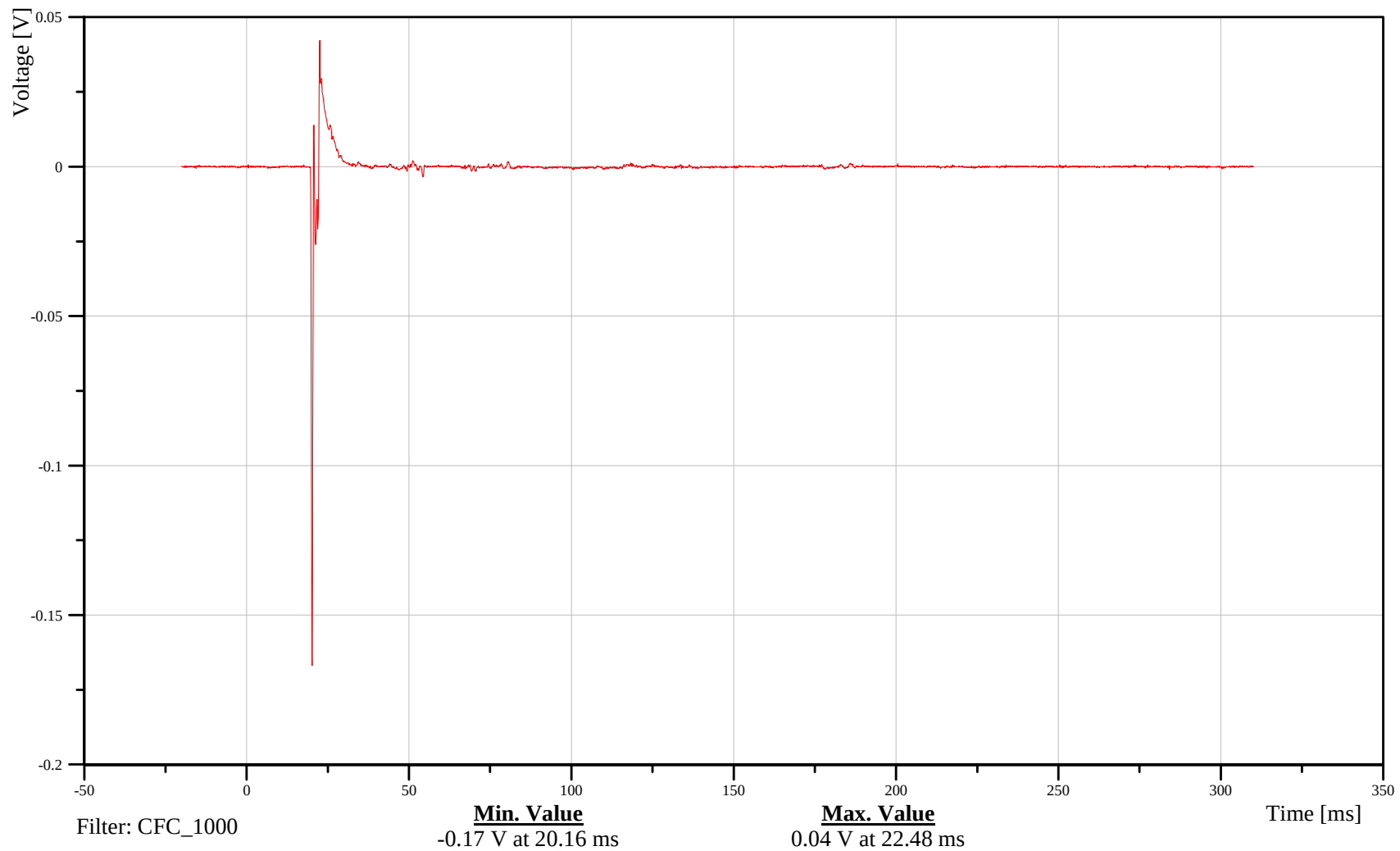
Target Vehicle Driver Airbag 1st Stage Fire Time

Customer: VRTC

20AIRBLEFR25VO0A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-360

091030



Ford 500 into Ford 500 at 15 Degrees, 50% Overlap

Date: 10/30/2009

Time: 16:48

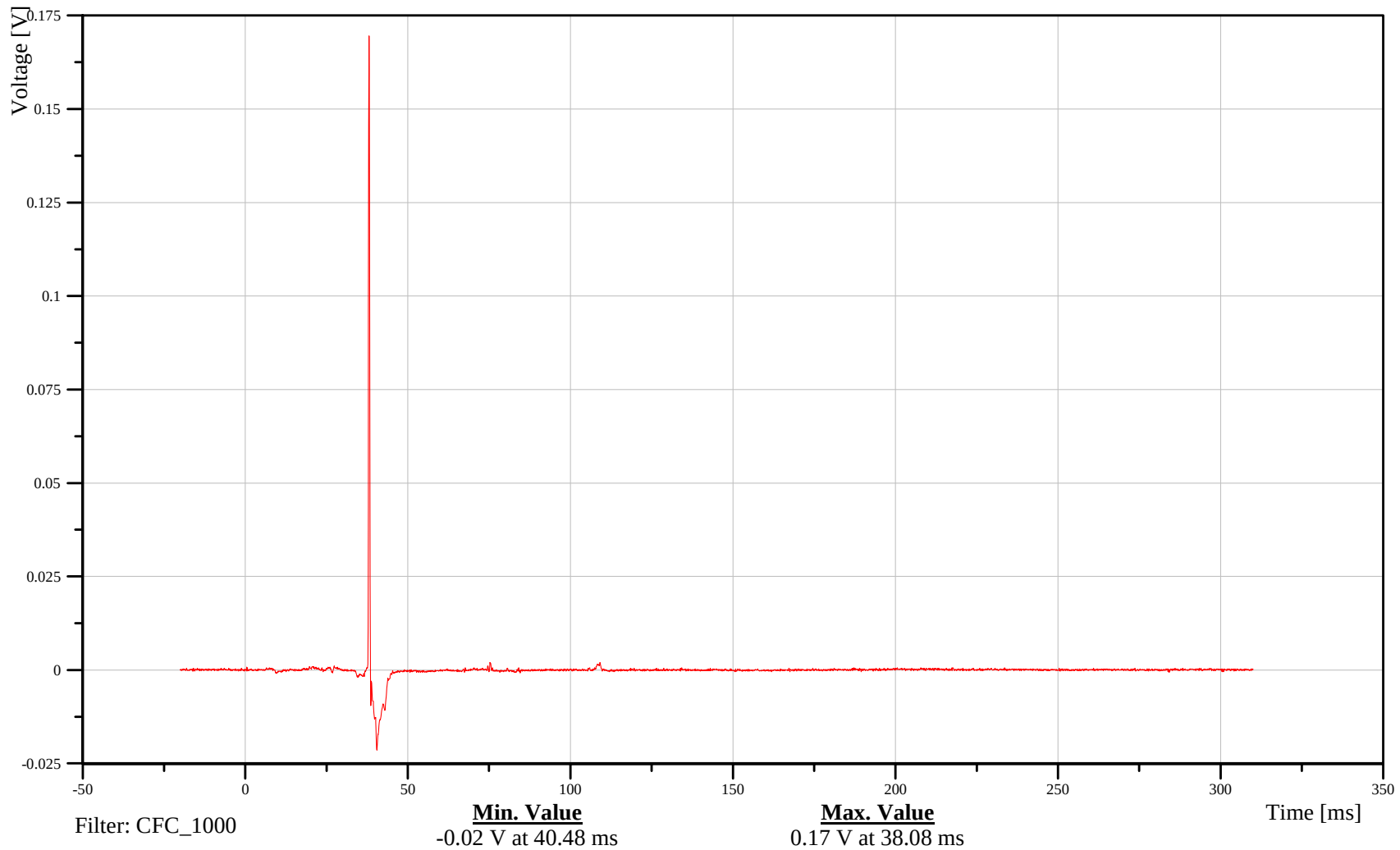
Target Vehicle Driver Airbag 2nd Stage Fire Time

Customer: VRTC

20AIRBLEFR26VO0A

TRC Inc. Test Lab: CTF

Test Number: 091030



B-361

091030

Appendix C

Dummy Configuration and Performance Verification Data

Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Driver Dummy S/N: 206

Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 206 Certification No. 21-1

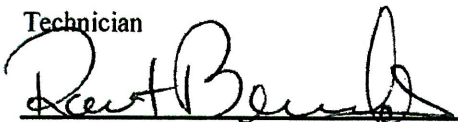
Test Date: 8/31/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Peak Head Resultant Acceleration	225 - 275 g	267.7 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	4.9 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

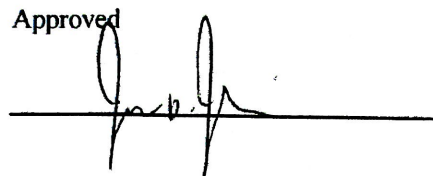
Test meets specifications.

Comments:

Technician



Approved



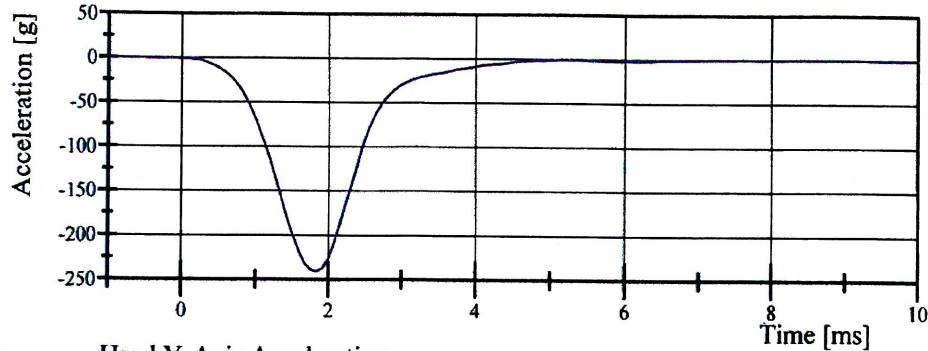
Transportation Research Center Inc.

Front Head Drop

HIII 50th Serial No. 206 Certification No. 21-1

Test Date: 8/31/2009

Head X-Axis Acceleration

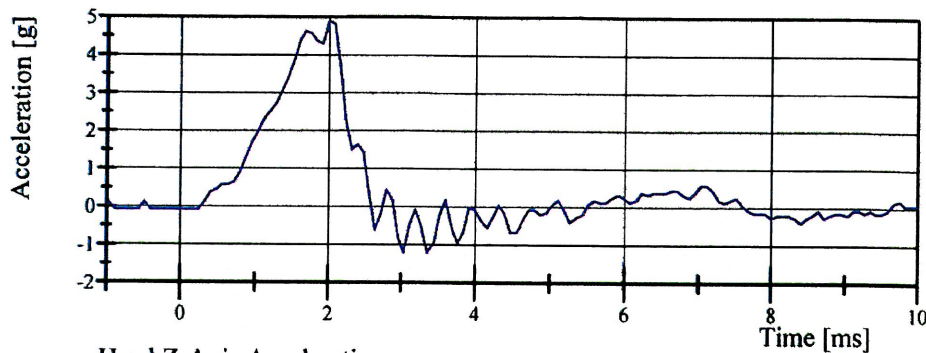


Filter Class: CFC_1000

Max: 0.1 g at 7.4 ms

Min: -240.7 g at 1.8 ms

Head Y-Axis Acceleration

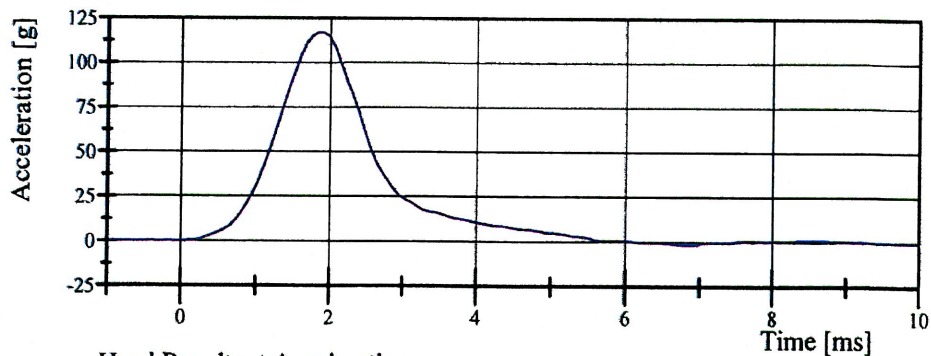


Filter Class: CFC_1000

Max: 4.9 g at 2.0 ms

Min: -1.2 g at 3.0 ms

Head Z-Axis Acceleration

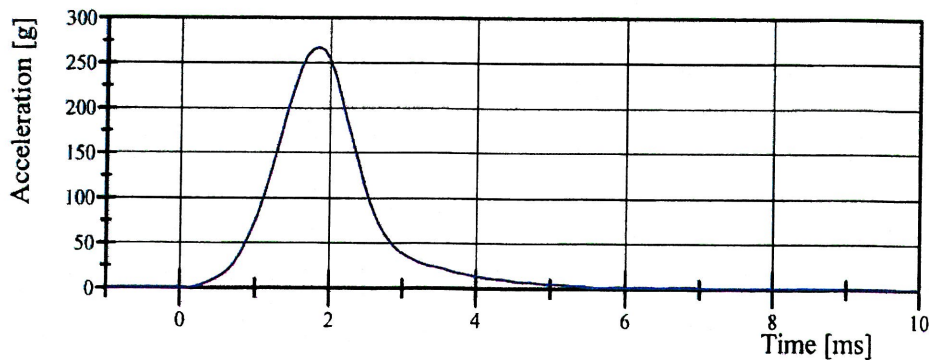


Filter Class: CFC_1000

Max: 117.1 g at 1.8 ms

Min: -1.8 g at 6.9 ms

Head Resultant Acceleration



Filter Class: CFC_1000

Max: 267.7 g at 1.8 ms

Min: 0.1 g at -0.9 ms

Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 206 Certification No. 21-1

Test Date: 8/31/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	46 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	6.937 m/s	Yes
Pendulum Acceleration Decay Crossing -5g	34 - 42 ms	41.1 ms	Yes
Pendulum Acceleration at 10ms	(-22.5) - (-27.5) g	-26.24 g	Yes
Pendulum Acceleration at 20ms	(-17.6) - (-22.6) g	-20.90 g	Yes
Pendulum Acceleration at 30ms	(-12.5) - (-18.5) g	-14.79 g	Yes
Pendulum Acceleration > 30ms	>= (-29.0) g	-14.79 g	Yes
Total Head D-Plane Rotation Peak	(-64) - (-78) °	-75.4 °	Yes
Time of Peak	57 - 64 ms	60.6 ms	Yes
Total Head D-Plane Rotation Decay to 0°	113 - 128 ms	118.5 ms	Yes
Total Neck Occipital Condyles Moment Peak	88 - 108 N·m	97.2 N·m	Yes
Time of Peak	47 - 58 ms	53.5 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	97 - 107 ms	106.7 ms	Yes

Test meets specifications.

Comments:

Technician

Technician
Raul B. B.

Approved

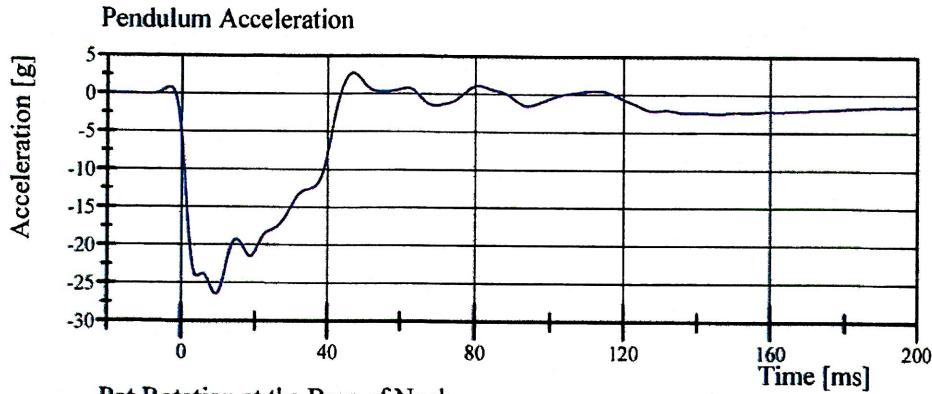
Approved _____

Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 206 Certification No. 21-1

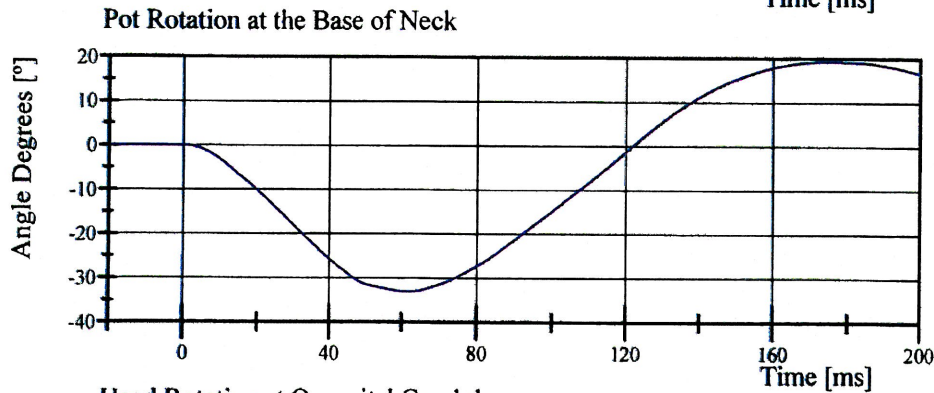
Test Date: 8/31/2009



Filter Class: CFC_60

Max: 2.8 g at 47.1 ms

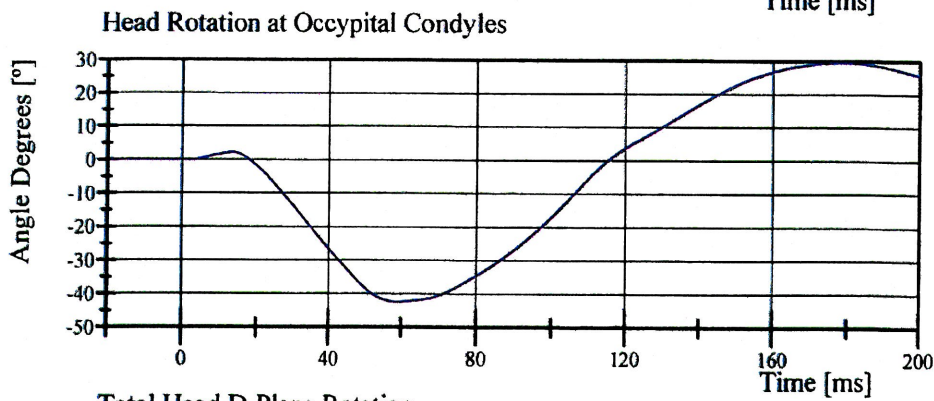
Min: -26.4 g at 9.5 ms



Filter Class: CFC_60

Max: 19.3 ° at 174.6 ms

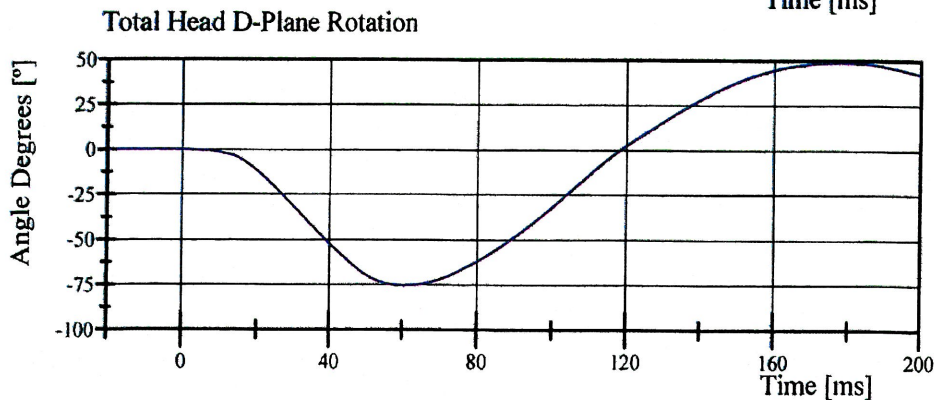
Min: -33.1 ° at 62.0 ms



Filter Class: CFC_60

Max: 29.6 ° at 178.8 ms

Min: -42.4 ° at 59.2 ms



Filter Class: CFC_60

Max: 48.9 ° at 177.8 ms

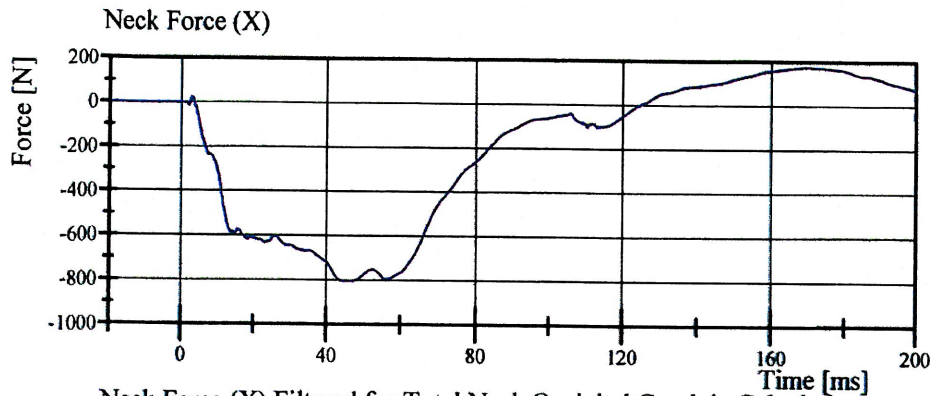
Min: -75.4 ° at 60.6 ms

Transportation Research Center Inc.

Neck Flexion

HIII 50th Serial No. 206 Certification No. 21-1

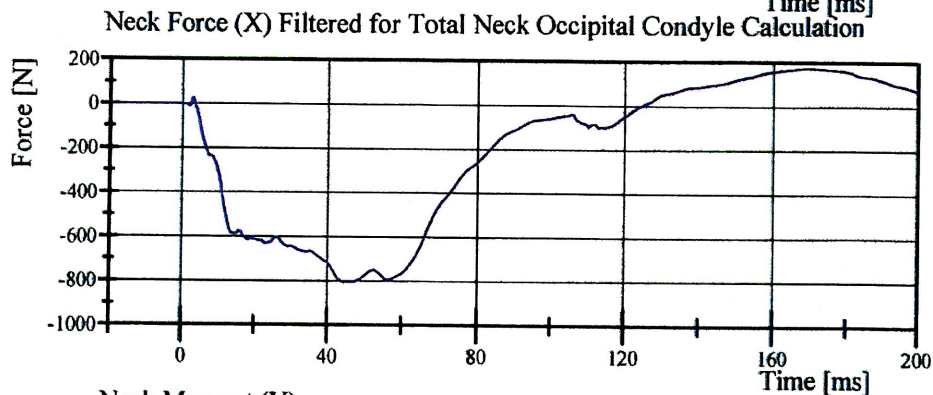
Test Date: 8/31/2009



Filter Class: CFC_1000

Max: 175.6 N at 170.1 ms

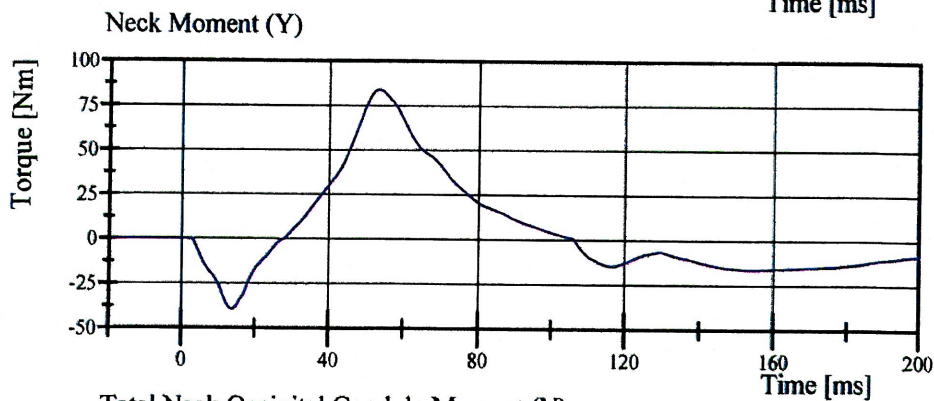
Min: -804.9 N at 46.7 ms



Filter Class: CFC_600

Max: 175.2 N at 170.1 ms

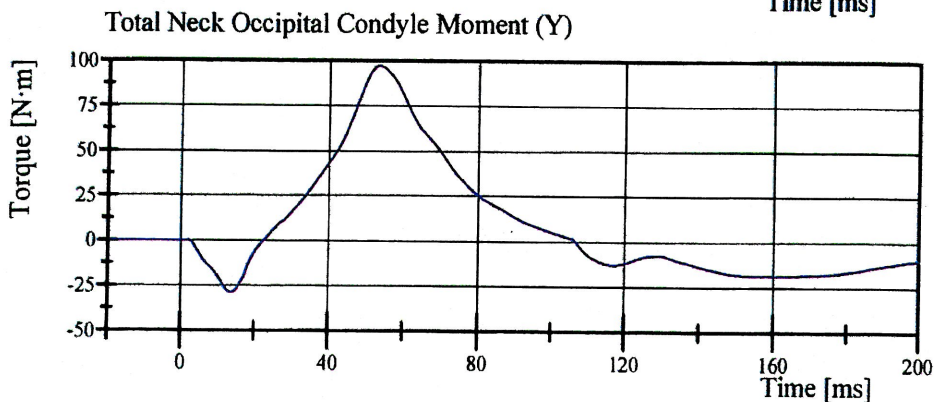
Min: -804.6 N at 46.7 ms



Filter Class: CFC_600

Max: 83.9 Nm at 53.3 ms

Min: -39.3 Nm at 13.9 ms



Filter Class: CFC_600

Max: 97.2 N·m at 53.5 ms

Min: -29.0 N·m at 13.8 ms

Transportation Research Center Inc.

Neck Extension

HIII 50th Serial No. 206 Certification No. 21-1

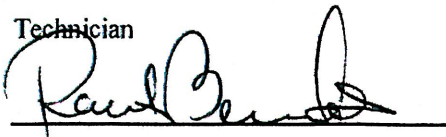
Test Date: 8/31/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.5 °C	Yes
Relative Humidity	10 - 70 %	45 %	Yes
Pendulum Velocity	(-5.95) - (-6.18) m/s	-5.968 m/s	Yes
Pendulum Acceleration Decay Crossing 5g	38 - 46 ms	39.7 ms	Yes
Pendulum Acceleration at 10ms	17.2 - 21.2 g	20.55 g	Yes
Pendulum Acceleration at 20ms	14.0 - 19.0 g	17.51 g	Yes
Pendulum Acceleration at 30ms	11.0 - 16.0 g	13.43 g	Yes
Pendulum Acceleration > 30ms	<= 22.0 g	13.43 g	Yes
Total Head D-Plane Rotation Peak	81 - 106 °	96.5 °	Yes
Time of Peak	72 - 82 ms	75.2 ms	Yes
Total Head D-Plane Rotation Decay to 0°	147 - 174 ms	153.9 ms	Yes
Total Neck Occipital Condyles Moment Peak	(-53) - (-80) N·m	-67.2 N·m	Yes
Time of Peak	65 - 79 ms	70.4 ms	Yes
Total Neck Occipital Condyles Moment Decay to 0 N·m	120 - 148 ms	141.1 ms	Yes

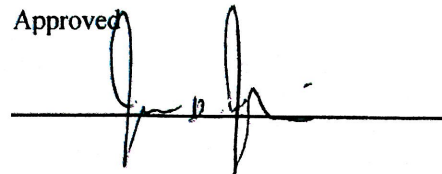
Test meets specifications.

Comments:

Technician



Approved



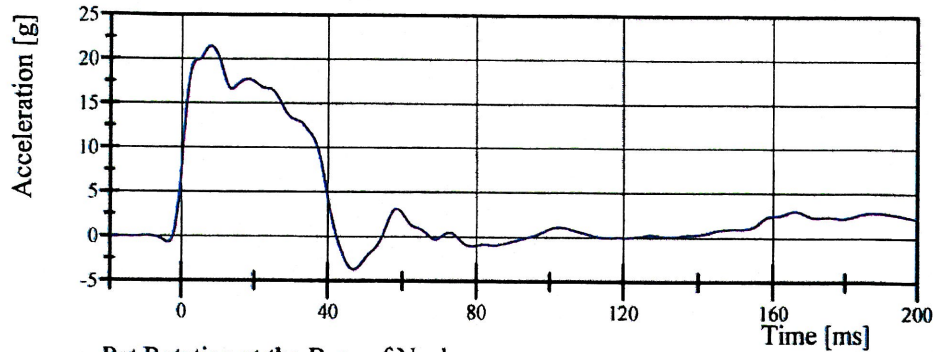
Transportation Research Center Inc.

Neck Extension

HIH 50th Serial No. 206 Certification No. 21-1

Test Date: 8/31/2009

Pendulum Acceleration

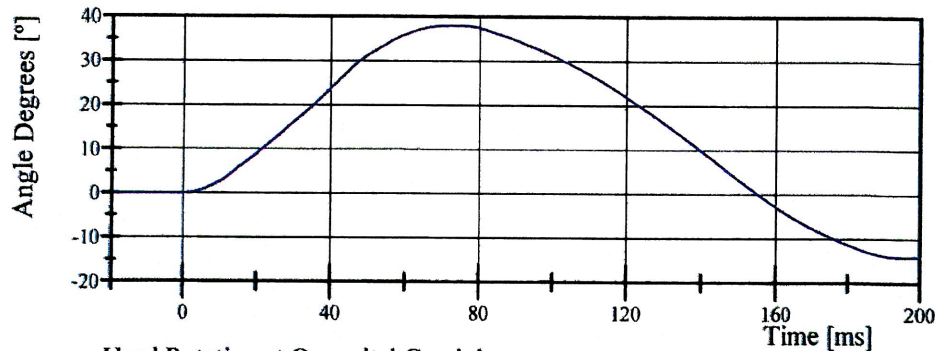


Filter Class: CFC_60

Max: 21.5 g at 8.2 ms

Min: -3.7 g at 47.0 ms

Pot Rotation at the Base of Neck

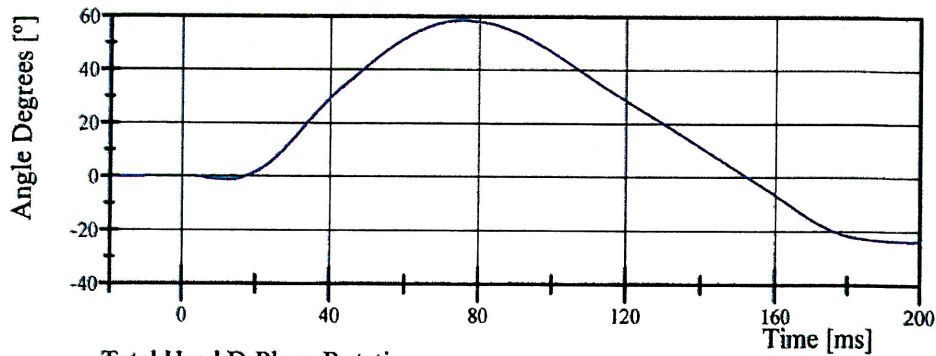


Filter Class: CFC_60

Max: 38.0 ° at 73.5 ms

Min: -14.1 ° at 196.8 ms

Head Rotation at Occypital Condyles

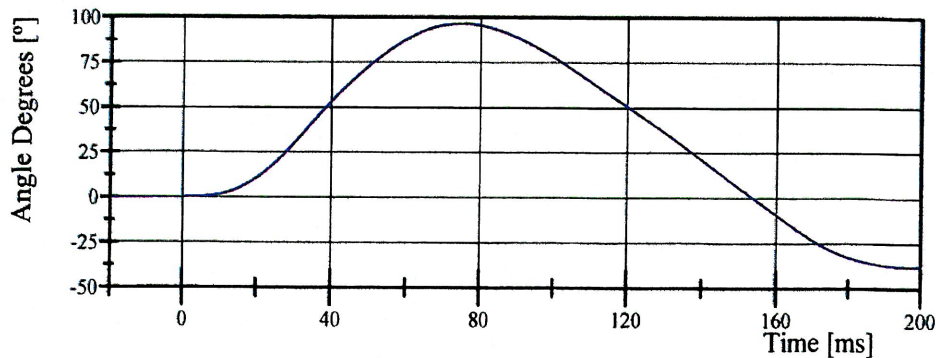


Filter Class: CFC_60

Max: 58.6 ° at 75.6 ms

Min: -23.7 ° at 197.8 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 96.5 ° at 75.2 ms

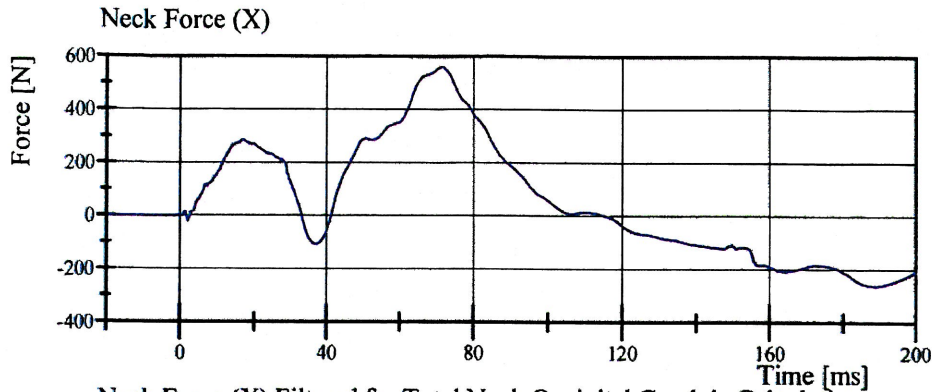
Min: -37.8 ° at 197.3 ms

Transportation Research Center Inc.

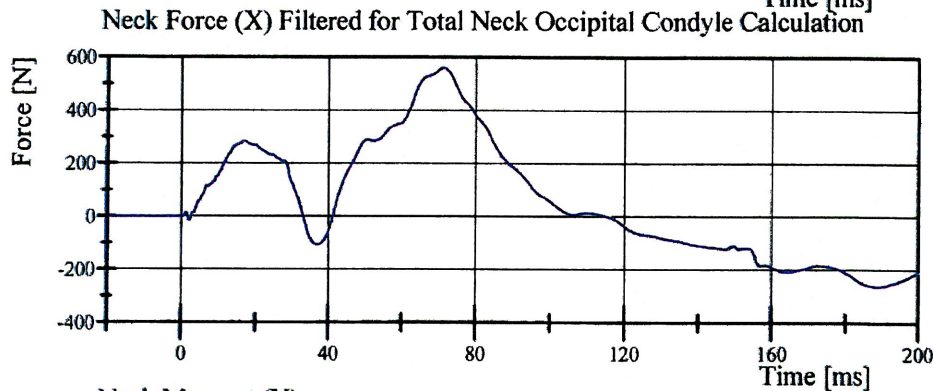
Neck Extension

HIII 50th Serial No. 206 Certification No. 21-1

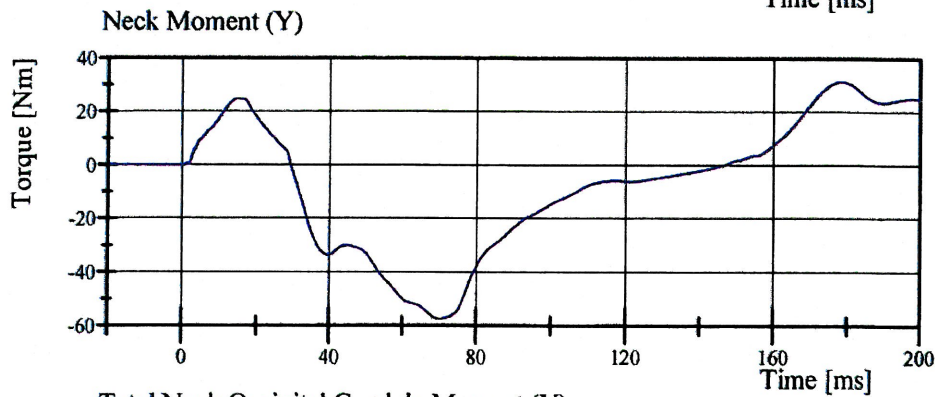
Test Date: 8/31/2009



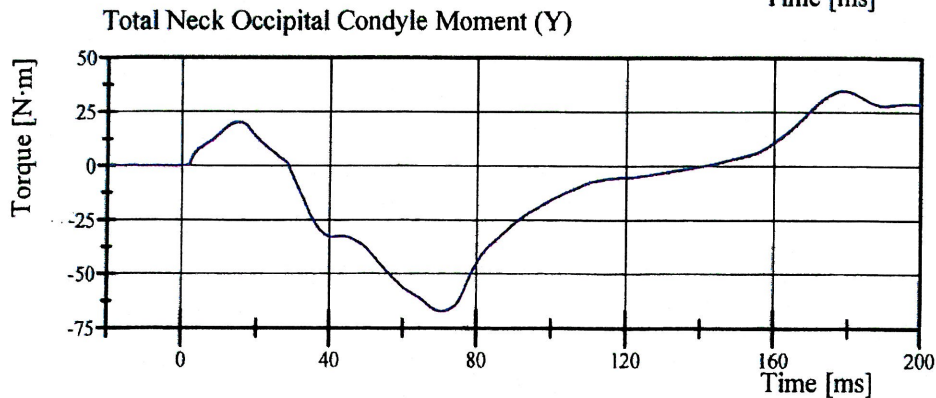
Filter Class: CFC_1000
Max: 561.6 N at 71.1 ms
Min: -263.3 N at 189.4 ms



Filter Class: CFC_600
Max: 561.3 N at 71.2 ms
Min: -262.9 N at 189.3 ms



Filter Class: CFC_600
Max: 31.4 Nm at 178.3 ms
Min: -57.4 Nm at 70.1 ms



Filter Class: CFC_600
Max: 34.9 N·m at 178.8 ms
Min: -67.2 N·m at 70.4 ms

Transportation Research Center Inc.

Front Thorax

HIH 50th Serial No. 206 Certification No. 21-1

Test Date: 9/1/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.741 m/s	Yes
Probe Force Peak	(-5,160) - (-5,893) N	-5,740.3 N	Yes
Maximum Chest Compression	(-63.5) - (-72.6) mm	-70.11 mm	Yes
Internal Hysteresis	65 - 85 %	71.3 %	Yes

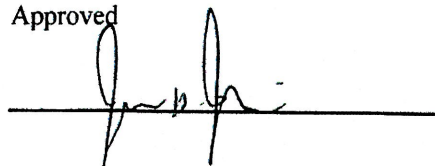
Test meets specifications.

Comments:

Technician



Approved



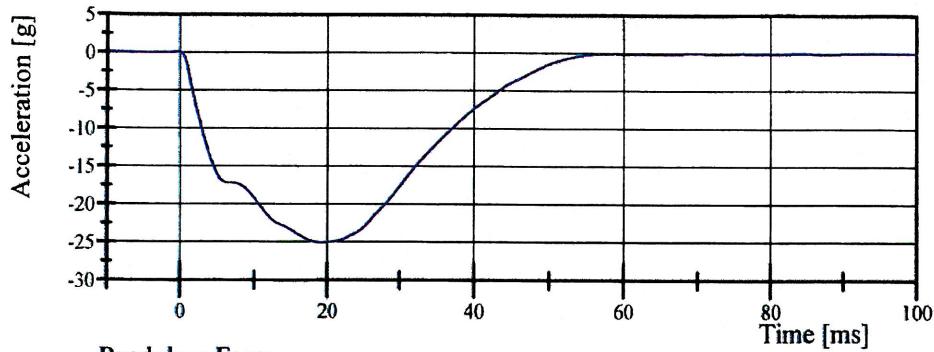
Transportation Research Center Inc.

Front Thorax

HIII 50th Serial No. 206 Certification No. 21-1

Test Date: 9/1/2009

Pendulum Acceleration

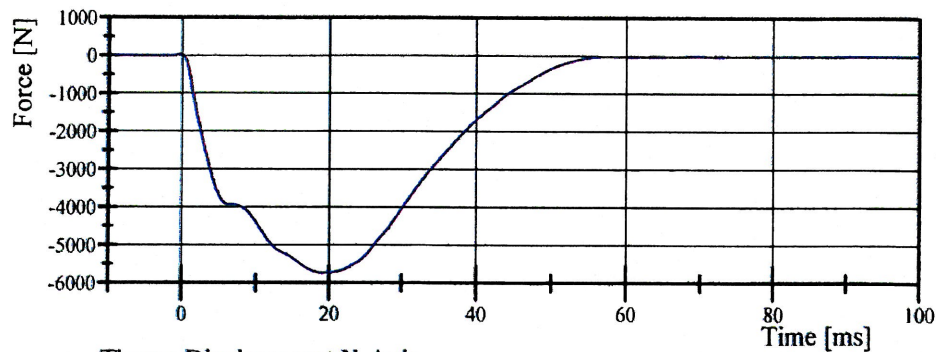


Filter Class: CFC_180

Max: 0.1 g at -0.2 ms

Min: -25.0 g at 19.0 ms

Pendulum Force

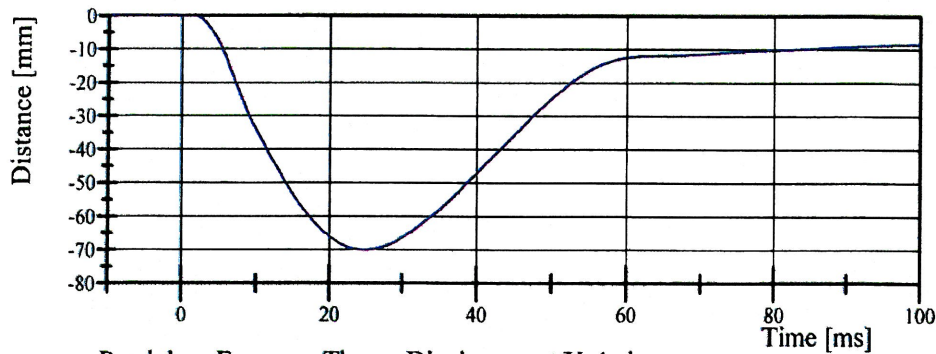


Filter Class: CFC_180

Max: 31.2 N at -0.2 ms

Min: -5,740.3 N at 19.0 ms

Thorax Displacement X-Axis

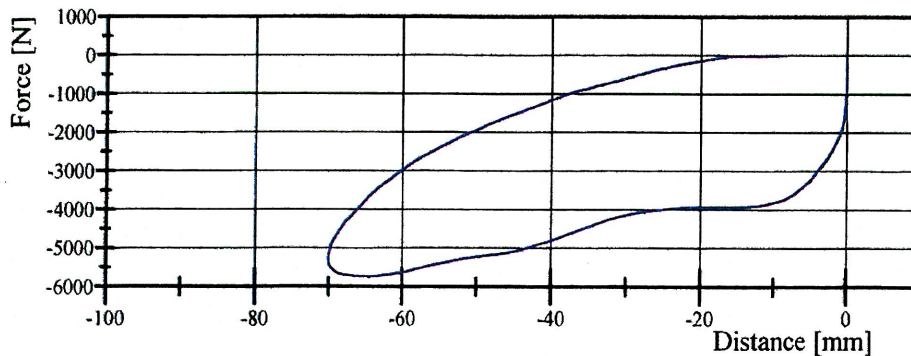


Filter Class: CFC_600

Max: 0.0 mm at -9.0 ms

Min: -70.1 mm at 25.0 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180

Max: 31.2 N at -0.0 mm

Min: -5,740.3 N at -64.4 mm

Transportation Research Center Inc

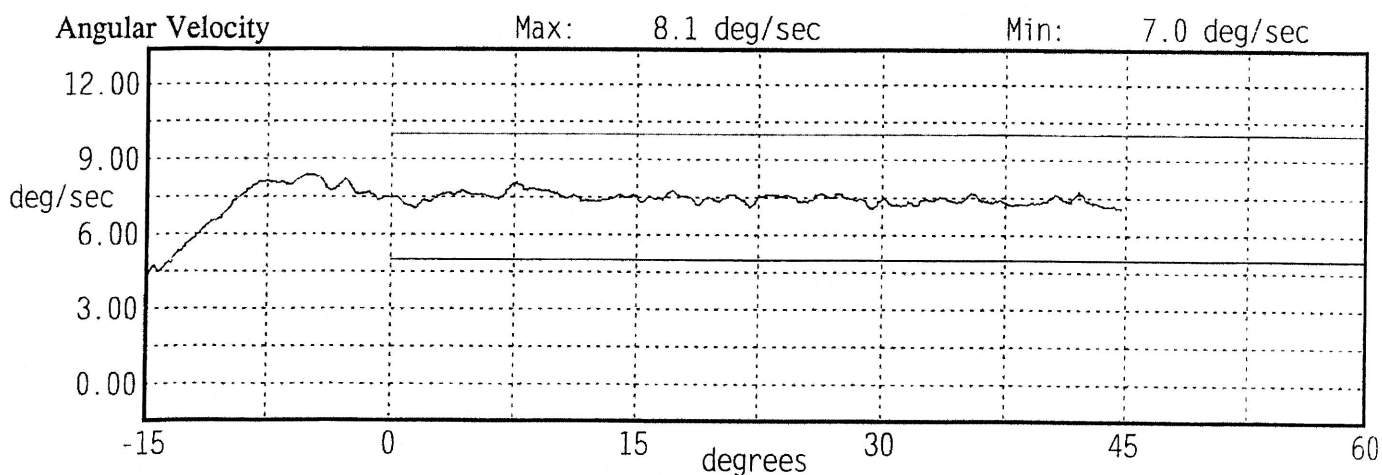
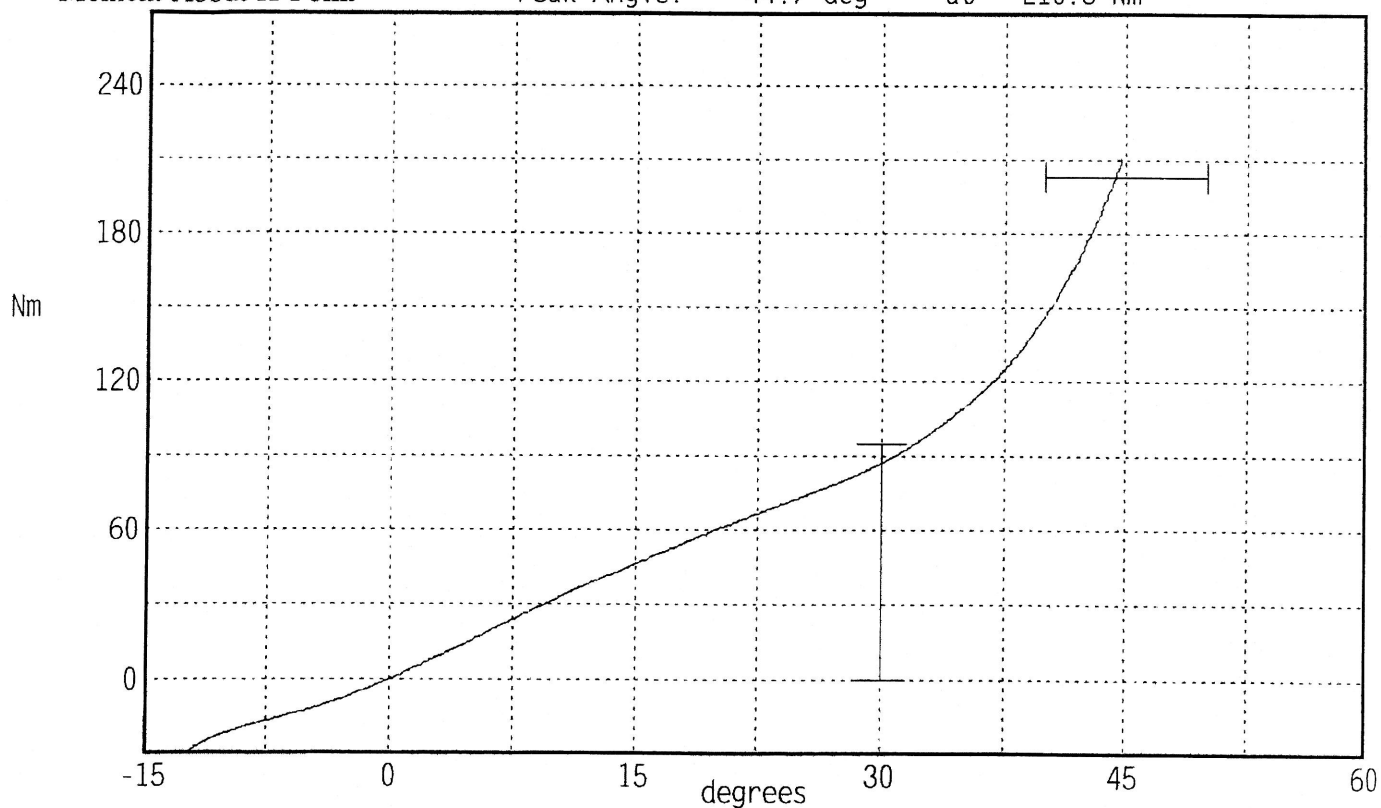
Hybrid III Hip Range of Motion

Serial Number: 206L
Test Number: 206C21
Comments:

Date: 08/31/2009
Time: 16:59

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9 - 25.6	21.6 °C Pass
Humidity	10 - 70	45 % Pass
Moment at 30 deg	<= 94.9	87.3 Nm Pass
Angle at 203 Nm	40.0 - 50.0	44.4 deg Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec Pass

Moment About H-Point
Peak Moment: 210.3 Nm at 44.7 deg
Peak Angle: 44.7 deg at 210.3 Nm



Transportation Research Center Inc

Hybrid III Hip Range of Motion

Serial Number: 206R

Date: 08/31/2009

Test Number: 206C21

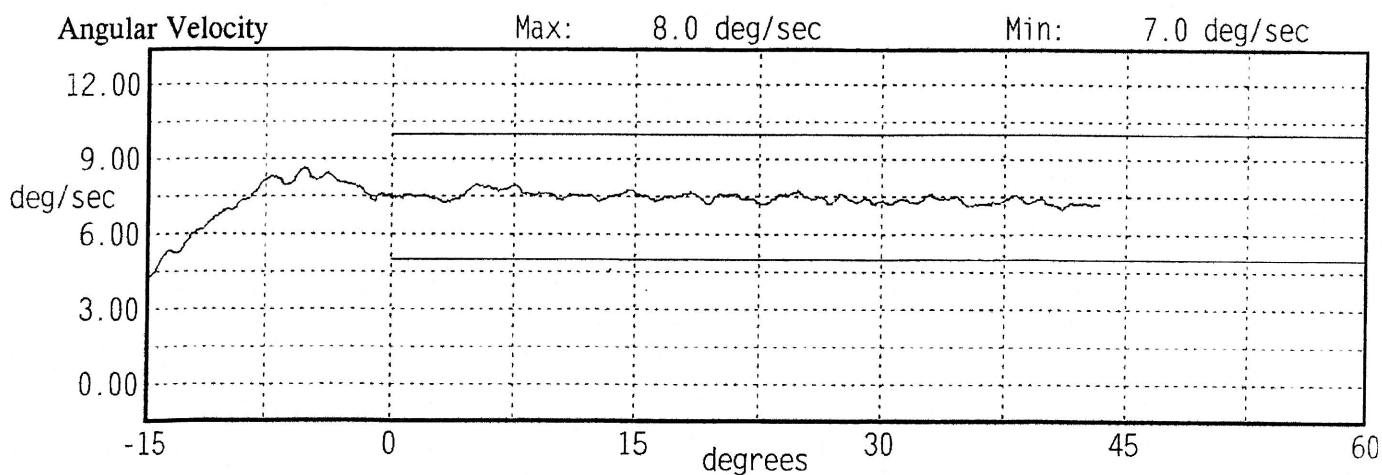
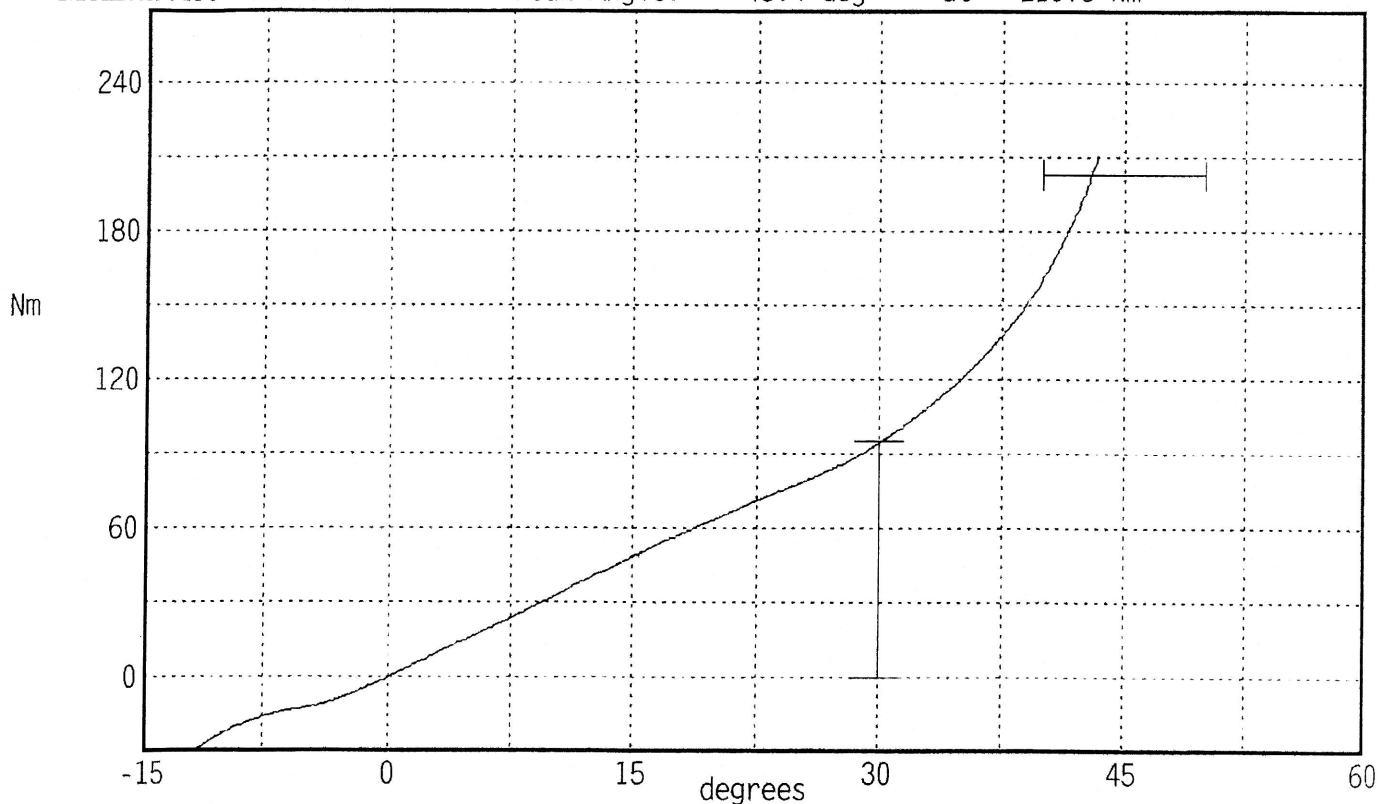
Time: 17:35

Comments:

TEST PARAMETER	SPECIFICATION	TEST RESULTS	
Temperature	18.9 - 25.6	21.6 °C	Pass
Humidity	10 - 70	45 %	Pass
Moment at 30 deg	<= 94.9	94.1 Nm	Pass
Angle at 203 Nm	40.0 - 50.0	43.0 deg	Pass
Average Velocity	5.0 - 10.0	7.4 deg/sec	Pass

Moment About H-Point

Peak Moment: 210.5 Nm at 43.4 deg
Peak Angle: 43.4 deg at 210.5 Nm

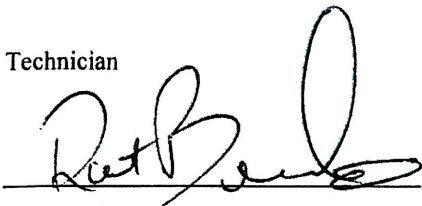


Transportation Research Center Inc.
572E HIII 50th Male Dummy
External Dimensions
Serial No. 206 Calibration No. 21

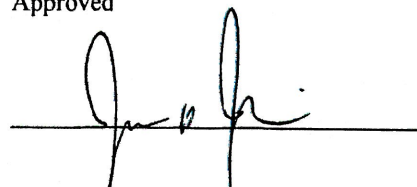
Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	878.8 - 889.0	880	Yes
B	Shoulder Pivot Height	505.5 - 520.7	510	Yes
C	H-Point Height	83.8 - 88.9	88	Yes
D	H-Point From Seatback	134.6 - 139.7	138	Yes
E	Shoulder Pivot From Backline	83.8 - 94.0	93	Yes
F	Thigh Clearance	139.7 - 154.9	152	Yes
G	Back Of Elbow To Wrist Pivot	289.6 - 304.8	292	Yes
H	Skull Cap To Backline	40.6 - 45.7	45	Yes
I	Shoulder-Elbow Length	330.2 - 345.4	331	Yes
J	Elbow Rest Height	190.5 - 210.8	198	Yes
K	Buttock Knee Length	579.1 - 604.5	600	Yes
L	Popliteal Height	429.3 - 454.7	420	No
M	Knee Pivot Height	485.1 - 500.4	490	Yes
N	Buttock Popliteal Length	452.1 - 477.5	475	Yes
O	Chest Depth	213.4 - 228.6	220	Yes
P	Foot Length	251.5 - 266.7	252	Yes
V	Shoulder Breadth	421.6 - 436.9	422	Yes
W	Foot Breadth	91.4 - 106.7	100	Yes
Y	Chest Circumference	970.3 - 1000.8	990	Yes
Z	Waist Circumference	835.7 - 866.1	860	Yes
AA	Location For Chest Circumference	429.3 - 434.3	430	Yes
BB	Location For Waist Circumference	226.1 - 231.1	230	Yes

Thor leg used

Technician



Approved



Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Right Front Passenger Dummy S/N: 329

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 329 Certification No. 12-3

Test Date: 5/5/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	274.9 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	2.6 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

Test meets specifications.

Comments:

Technician

Robert Beranides

Approved

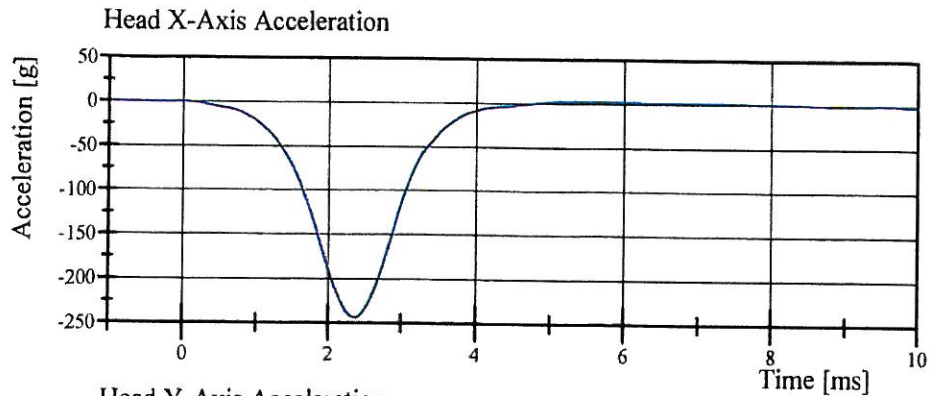
James J. [Signature]

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 329 Certification No. 12-3

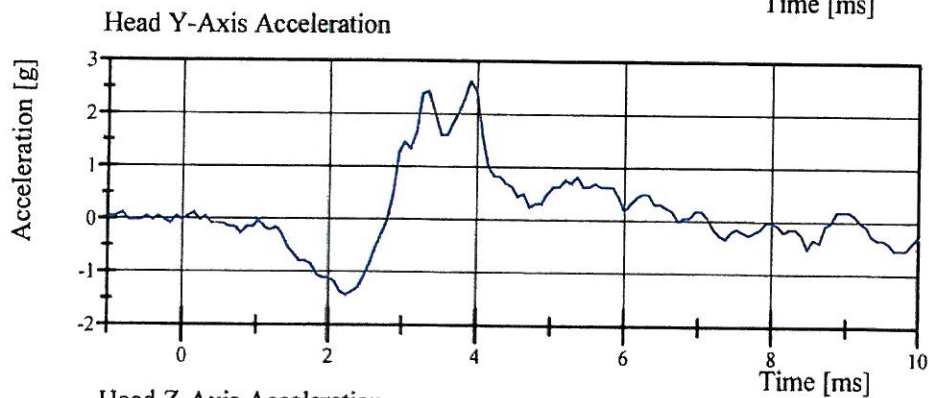
Test Date: 5/5/2009



Filter Class: CFC_1000

Max: 2.7 g at 5.8 ms

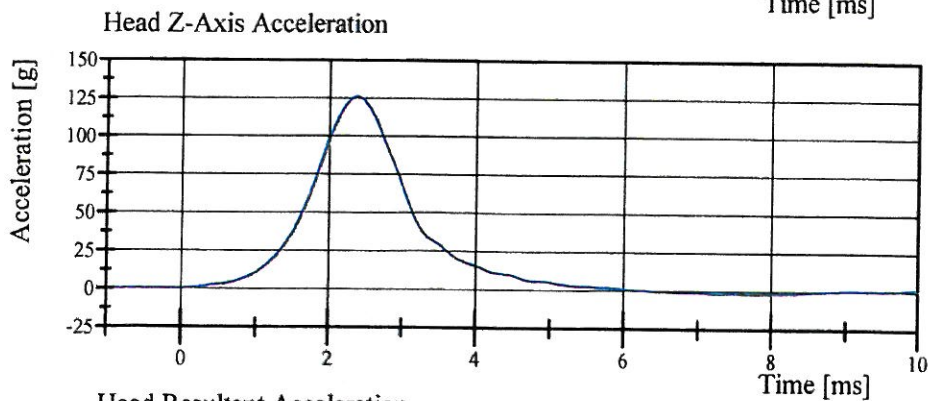
Min: -244.2 g at 2.4 ms



Filter Class: CFC_1000

Max: 2.6 g at 3.9 ms

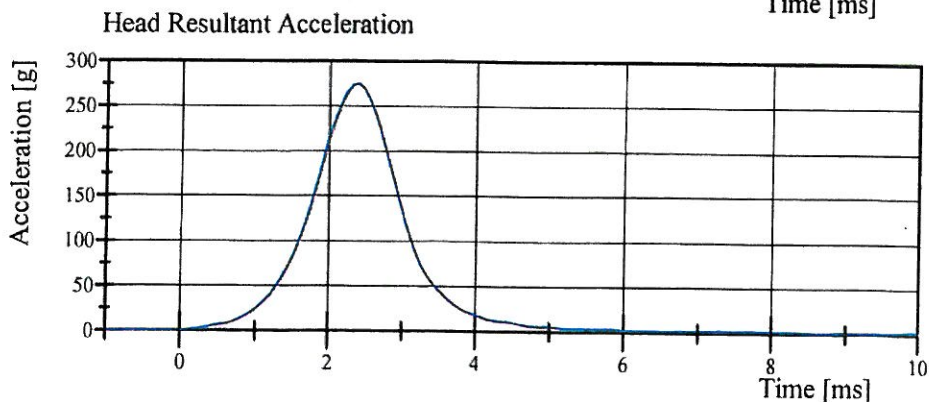
Min: -1.4 g at 2.2 ms



Filter Class: CFC_1000

Max: 126.4 g at 2.4 ms

Min: -1.9 g at 7.8 ms



Filter Class: CFC_1000

Max: 274.9 g at 2.4 ms

Min: 0.0 g at -0.4 ms

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 329 Certification No. 12-4

Test Date: 5/5/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	41 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.010 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.26 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.31 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.02 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-78.4 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	81.2 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	85.8 ms	Yes

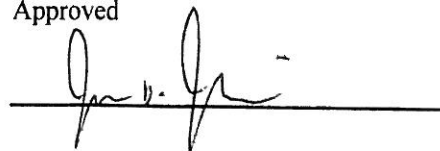
Test meets specifications.

Comments:

Technician



Approved

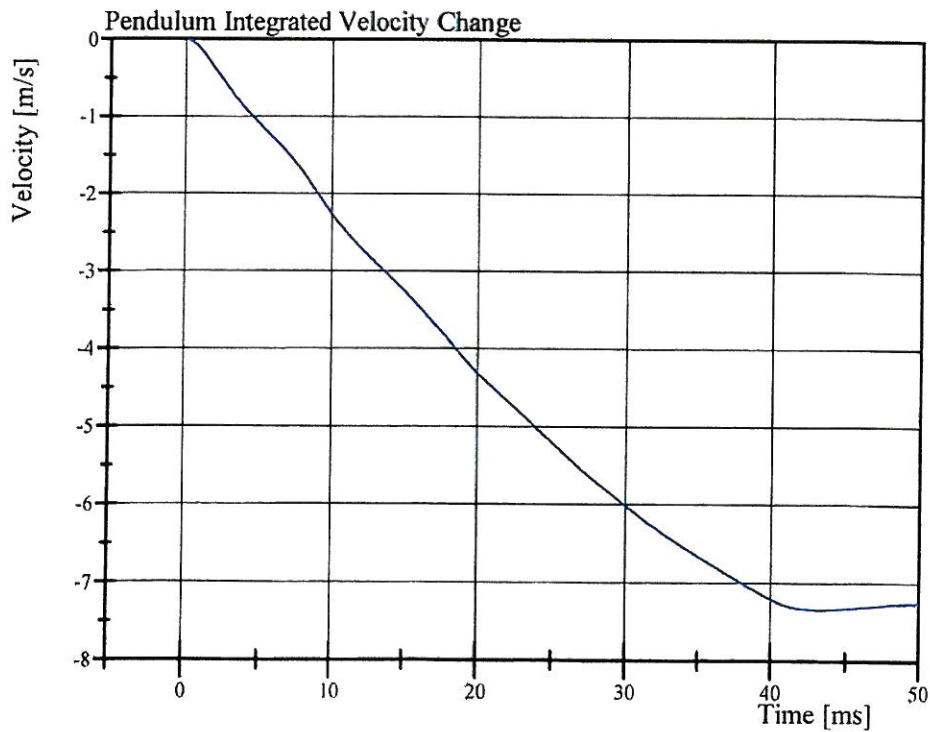
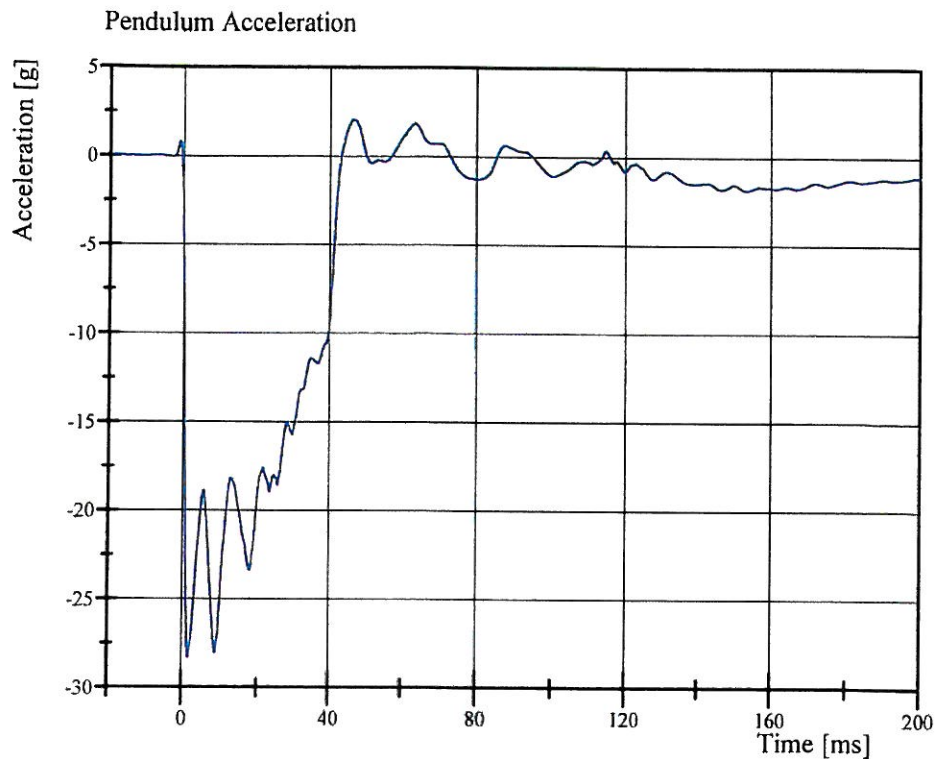


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 329 Certification No. 12-4

Test Date: 5/5/2009



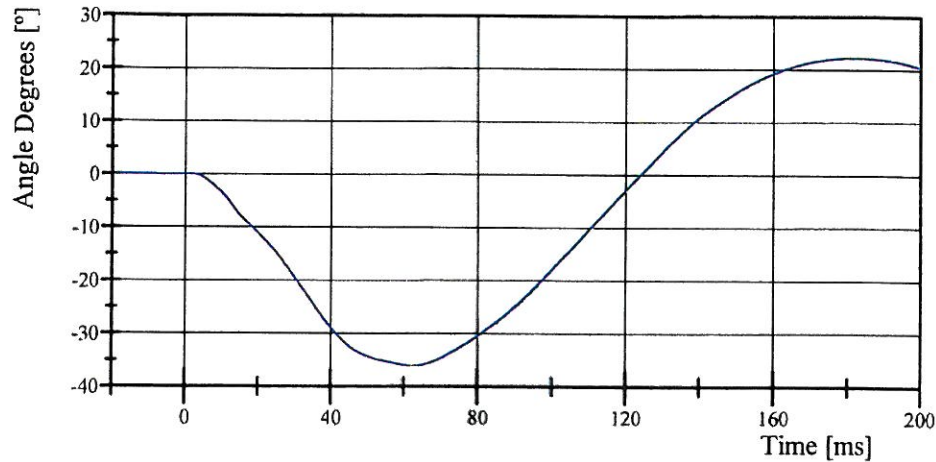
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 329 Certification No. 12-4

Test Date: 5/5/2009

Pot Rotation at the Base of Neck

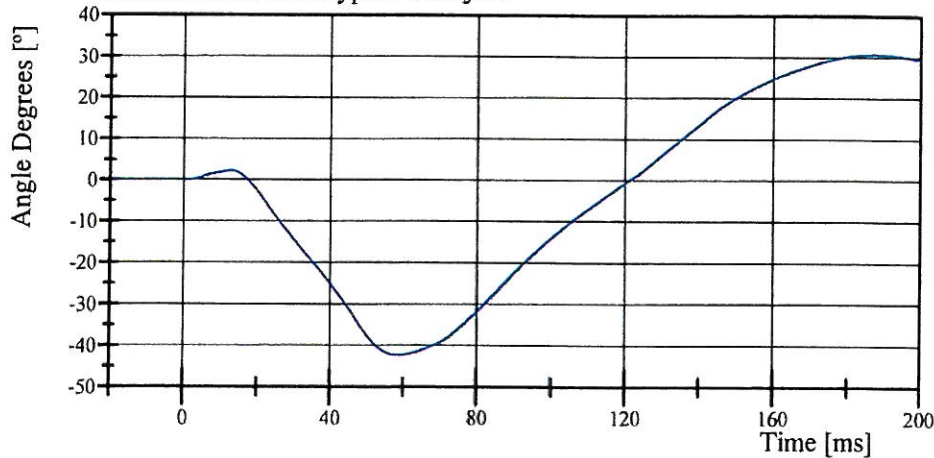


Filter Class: CFC_60

Max: 22.3 ° at 182.6 ms

Min: -36.1 ° at 62.8 ms

Head Rotation at Occypital Condyles

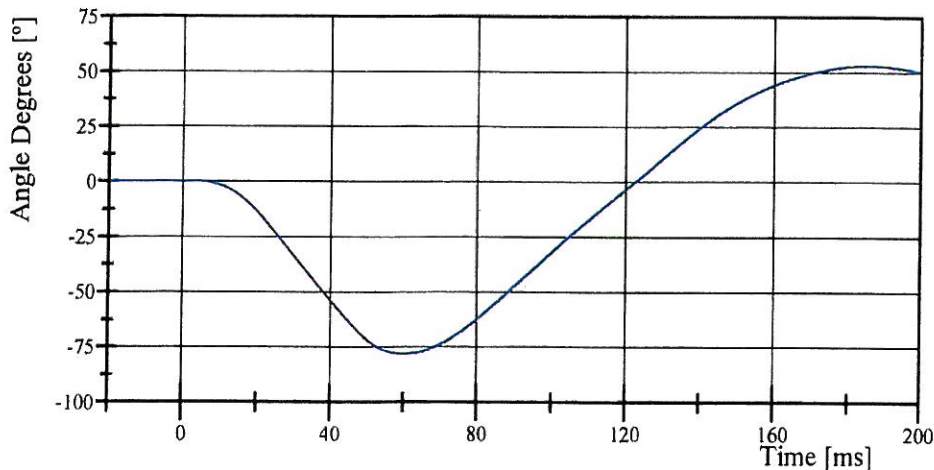


Filter Class: CFC_60

Max: 30.7 ° at 187.8 ms

Min: -42.4 ° at 58.9 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 52.9 ° at 185.8 ms

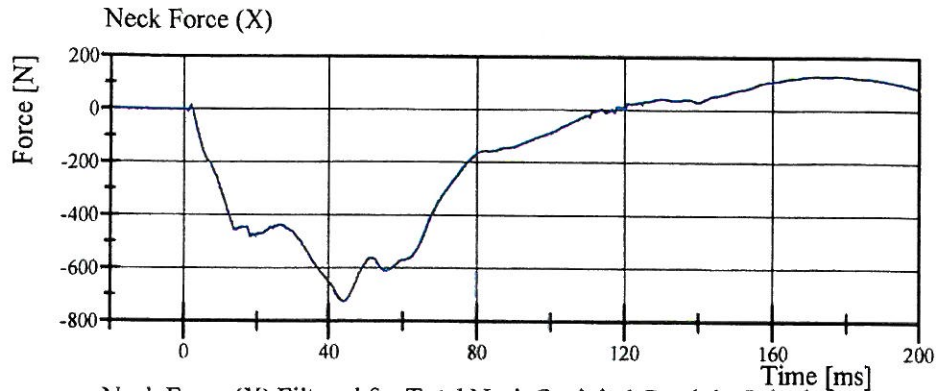
Min: -78.4 ° at 60.3 ms

Transportation Research Center Inc.

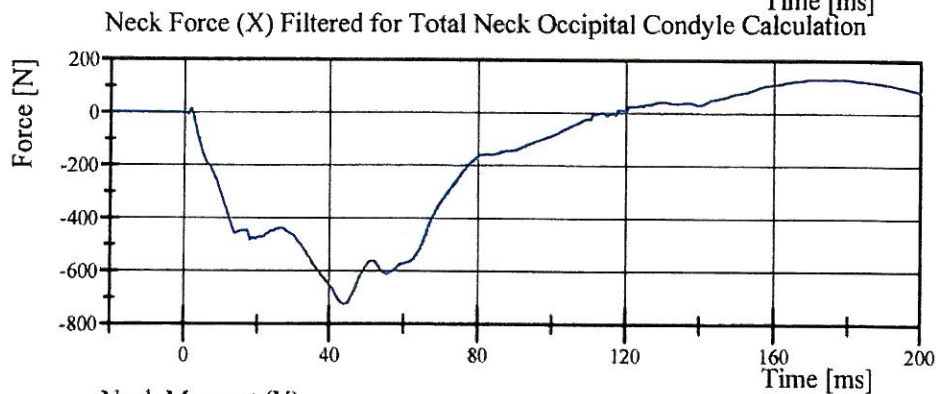
Neck Flexion

IIII 5th Serial No. 329 Certification No. 12-4

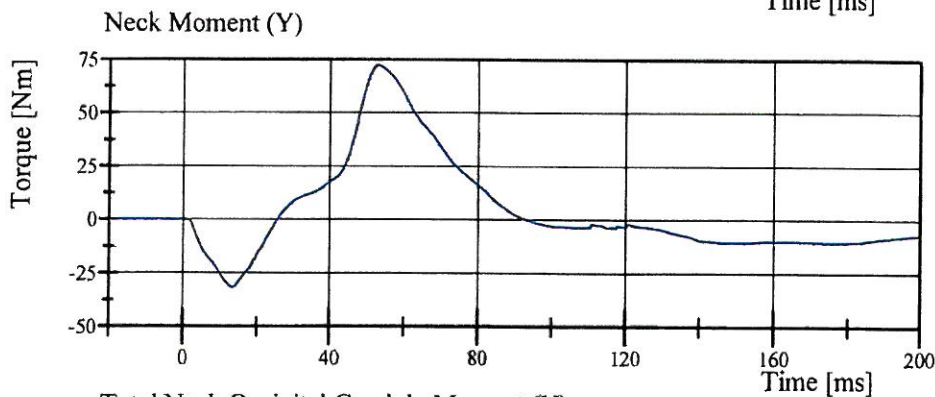
Test Date: 5/5/2009



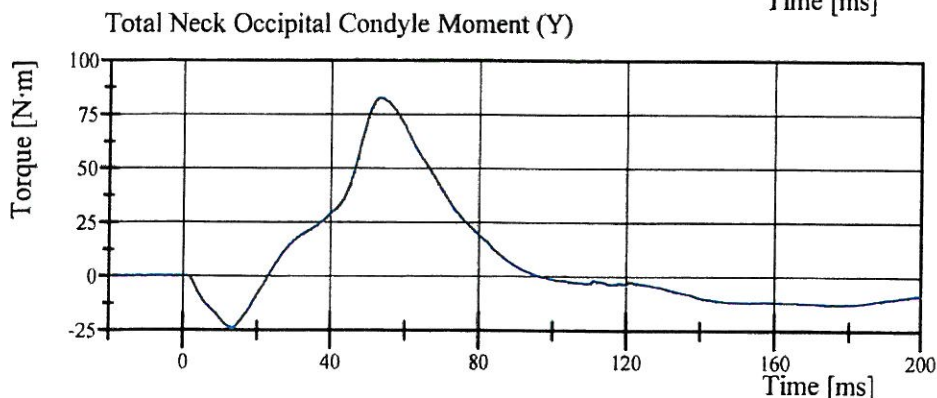
Filter Class: CFC_1000
Max: 130.2 N at 171.6 ms
Min: -726.2 N at 44.0 ms



Filter Class: CFC_600
Max: 129.7 N at 171.6 ms
Min: -725.5 N at 44.0 ms



Filter Class: CFC_600
Max: 72.3 Nm at 53.2 ms
Min: -31.9 Nm at 13.7 ms



Filter Class: CFC_600
Max: 82.6 N·m at 53.5 ms
Min: -24.0 N·m at 13.4 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 329 Certification No. 12-2

Test Date: 5/5/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.6 °C	Yes
Relative Humidity	10 - 70 %	42 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.042 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.88 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.65 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.28 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	106.8 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-59.0 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	102.3 ms	Yes

Test meets specifications.

Comments:

Technician

Robert Baran

Approved

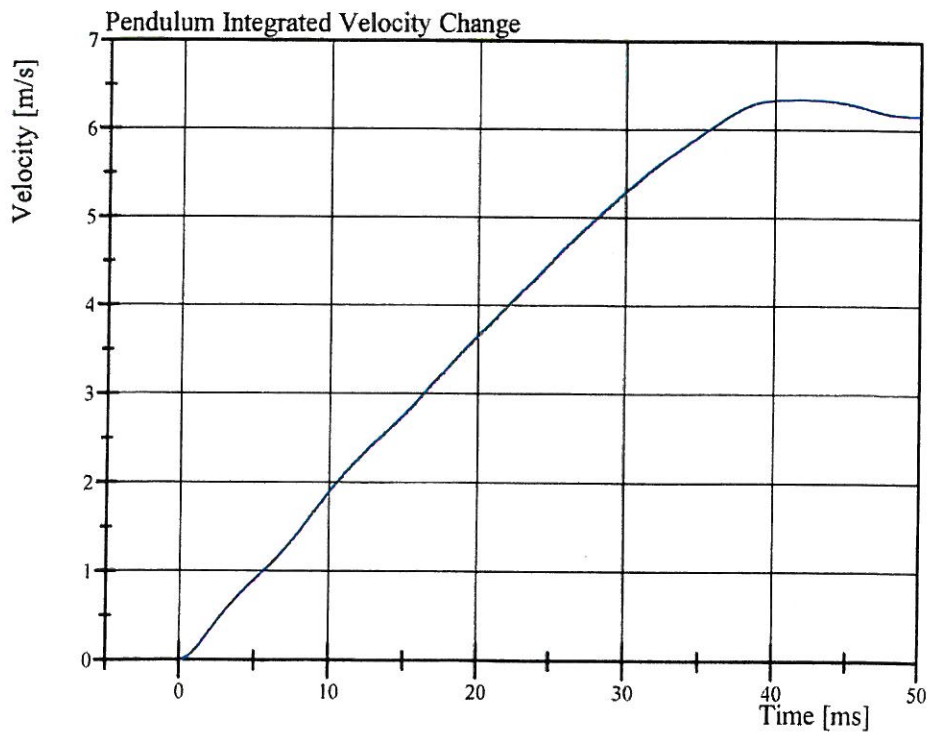
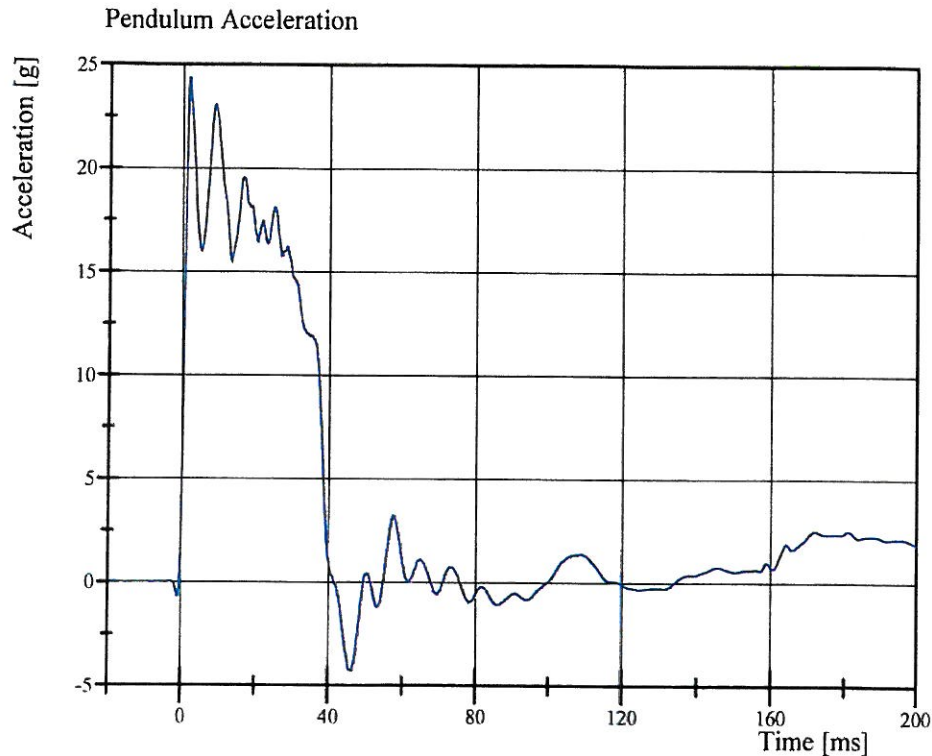
J. D. Johnson

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 329 Certification No. 12-2

Test Date: 5/5/2009



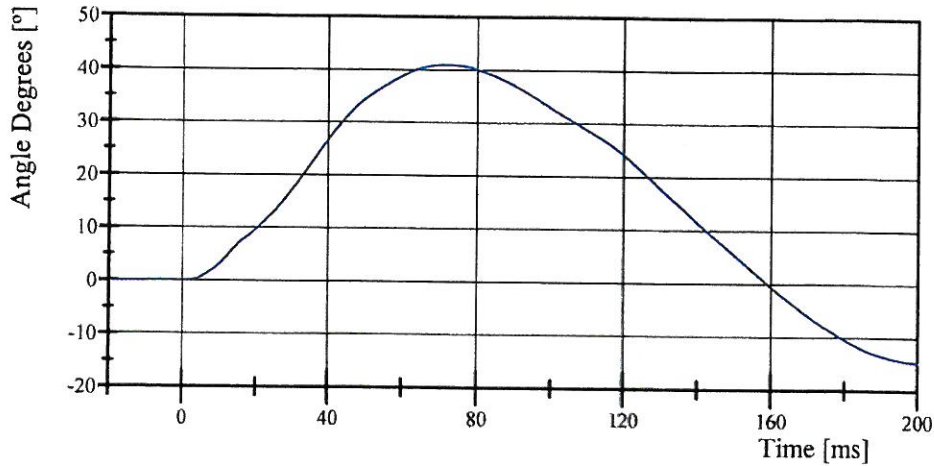
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 329 Certification No. 12-2

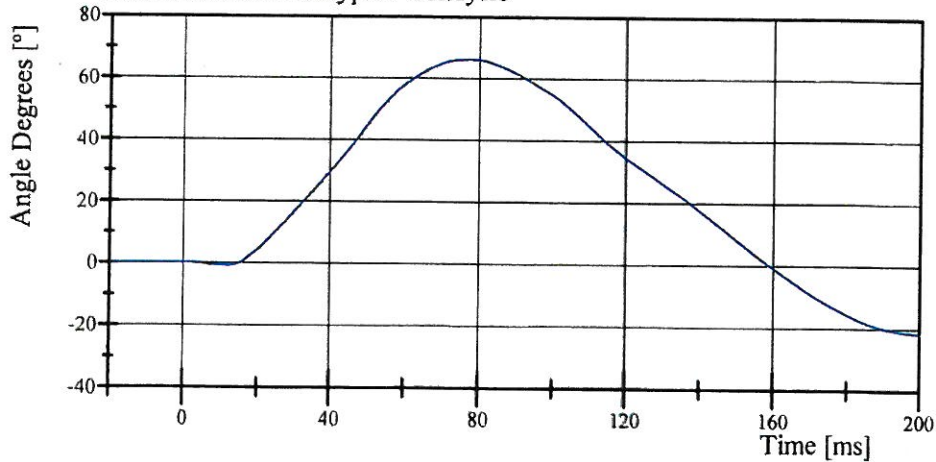
Test Date: 5/5/2009

Pot Rotation at the Base of Neck



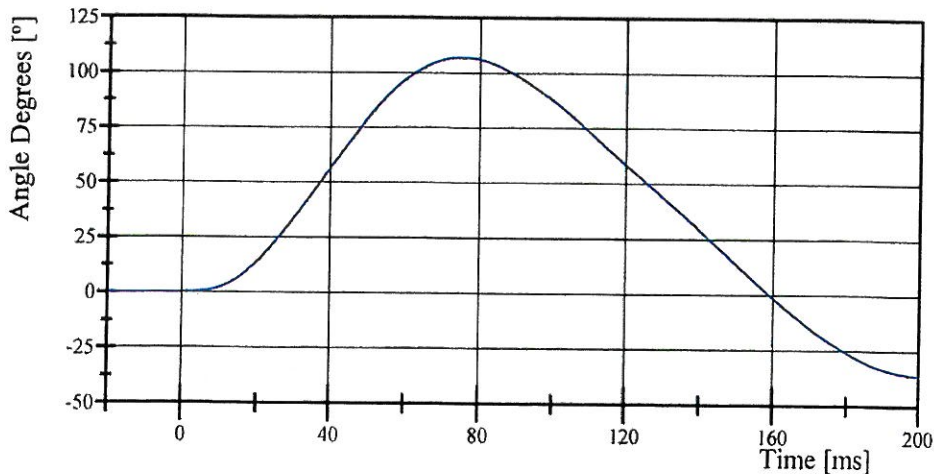
Filter Class: CFC_60
Max: 41.0 ° at 71.9 ms
Min: -14.7 ° at 200.0 ms

Head Rotation at Occypital Condyles



Filter Class: CFC_60
Max: 66.1 ° at 77.8 ms
Min: -21.7 ° at 200.0 ms

Total Head D-Plane Rotation



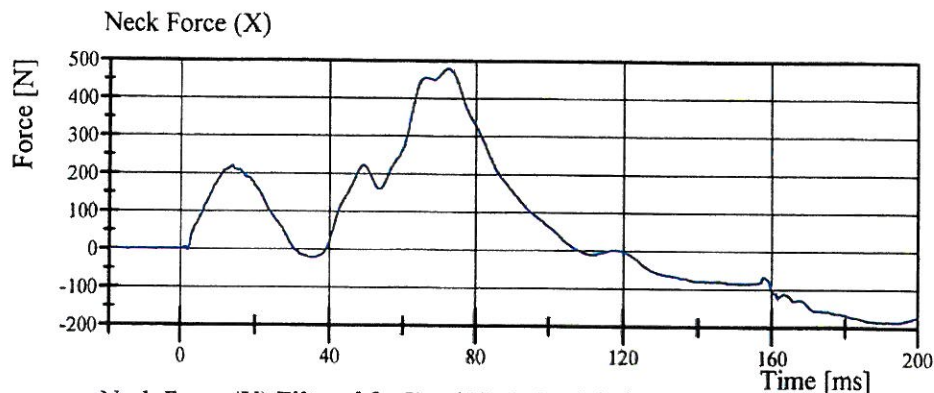
Filter Class: CFC_60
Max: 106.8 ° at 75.0 ms
Min: -36.4 ° at 200.0 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 329 Certification No. 12-2

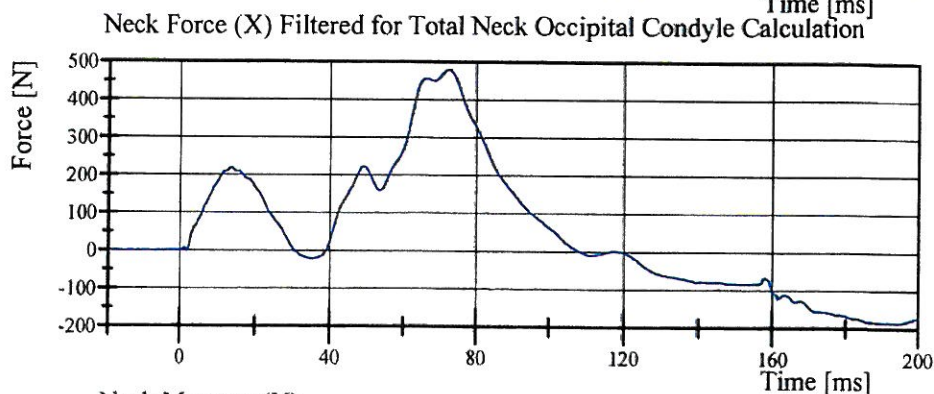
Test Date: 5/5/2009



Filter Class: CFC_1000

Max: 480.1 N at 72.2 ms

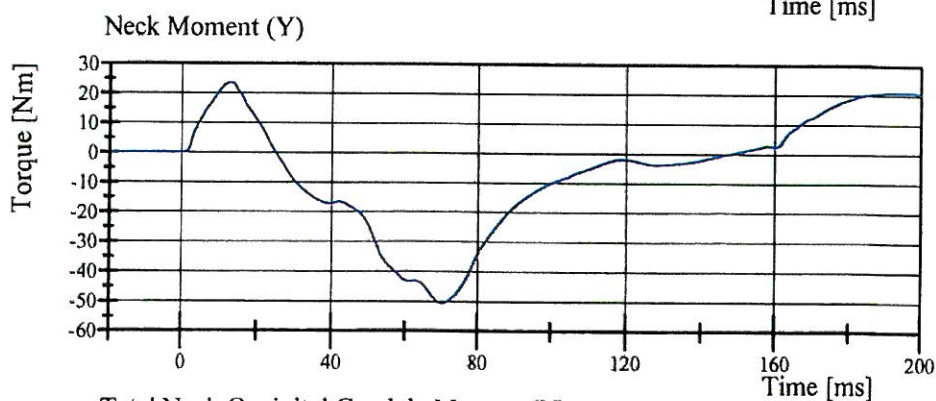
Min: -186.2 N at 193.8 ms



Filter Class: CFC_600

Max: 480.0 N at 72.4 ms

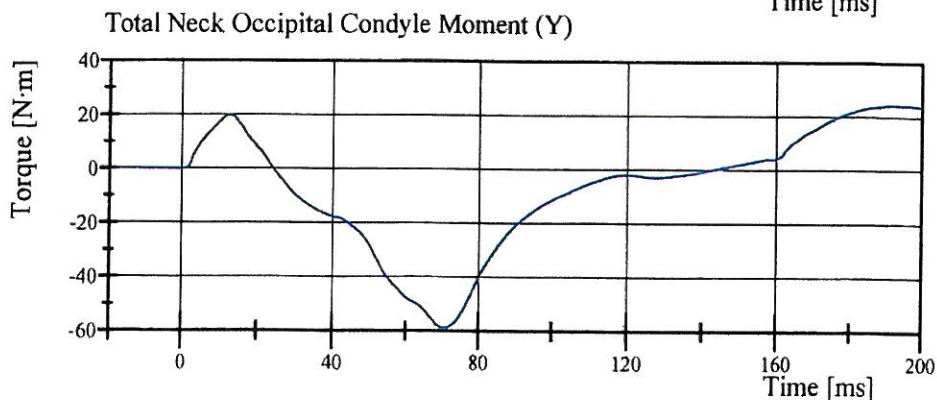
Min: -185.8 N at 193.7 ms



Filter Class: CFC_600

Max: 23.5 Nm at 13.2 ms

Min: -50.7 Nm at 70.4 ms



Filter Class: CFC_600

Max: 24.2 N·m at 192.6 ms

Min: -59.0 N·m at 70.7 ms

Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 329 Certification No. 12-2

Test Date: 5/6/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	50 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.712 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,263.1 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	>= (-4,600) N	-4,263.0 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-52.1 mm	Yes
Internal Hysteresis	69 - 85 %	72.0 %	Yes

Test meets specifications.

Comments:

Technician

Robert Braund

Approved

[Signature]

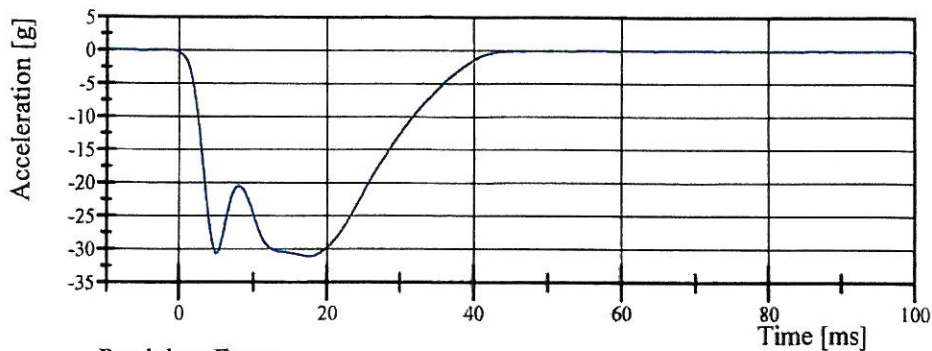
Transportation Research Center Inc.

Front Thorax

HIH 5th Serial No. 329 Certification No. 12-2

Test Date: 5/6/2009

Pendulum Acceleration

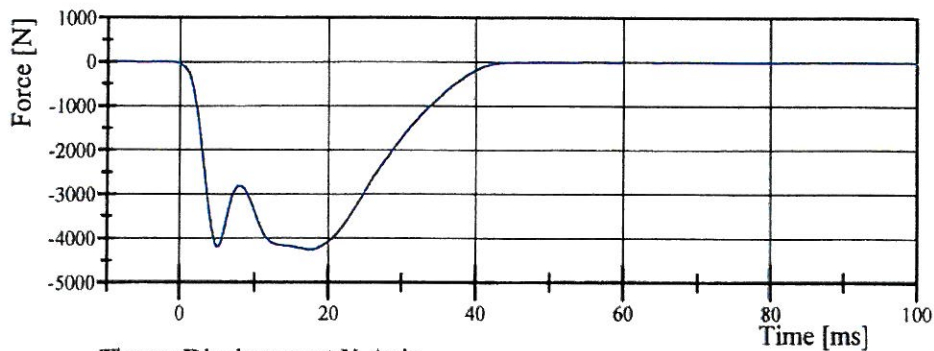


Filter Class: CFC_180

Max: 0.0 g at 63.0 ms

Min: -31.1 g at 17.6 ms

Pendulum Force

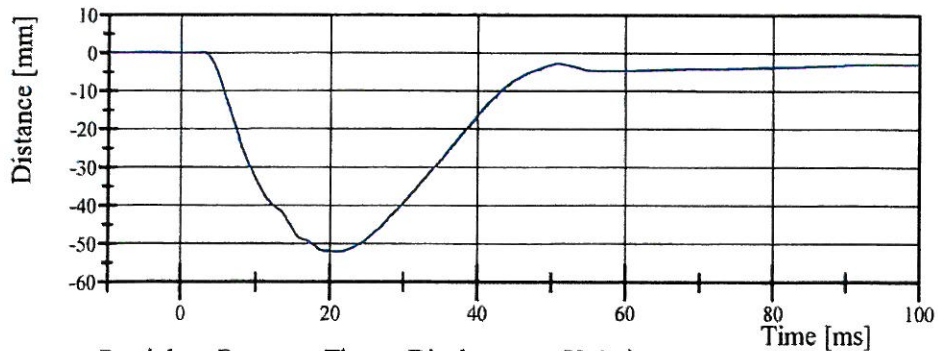


Filter Class: CFC_180

Max: 1.9 N at 63.0 ms

Min: -4,263.1 N at 17.6 ms

Thorax Displacement X-Axis

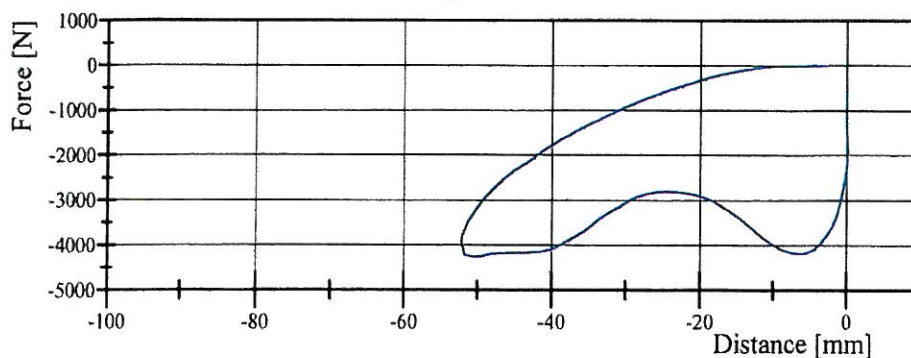


Filter Class: CFC_600

Max: 0.2 mm at 3.0 ms

Min: -52.1 mm at 20.9 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180

Max: 1.9 N at -4.5 mm

Min: -4,263.1 N at -50.1 mm

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 05-May-09

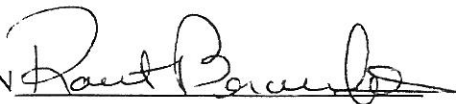
TRC, INC. TEST NO: TOFL-01 572 O SN329 TORSO FLEX CAL 12

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TIME		1607
TEMPERATURE	20.6 – 22.2° C	21.3 ° C
RELATIVE HUMIDITY	10 – 70 %	41 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY <u>START ANGLE</u>	<= 20° REFERENCED TO VERTICAL	196 °
DIFFERENCE BETWEEN <u>RETURN</u> <u>ANGLE</u> & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	4.4 °
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	373.3 N
RATE	0.5° - 1.5 °/sec	.97°/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN



Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 329 Certification No. 12-1
Test Date: 5/4/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.8 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.099 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,999.2 N	Yes

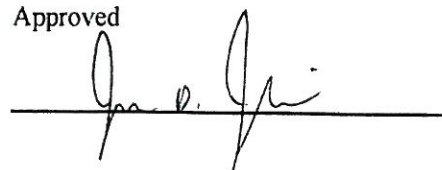
Test meets specifications.

Comments:

Technician



Approved

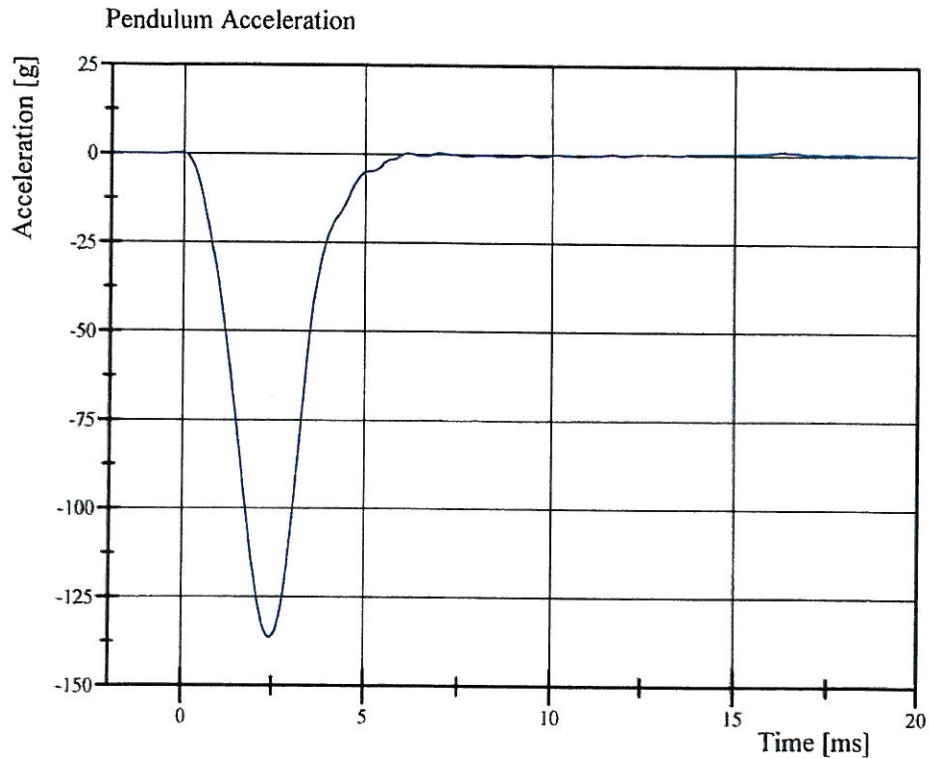


Transportation Research Center Inc.

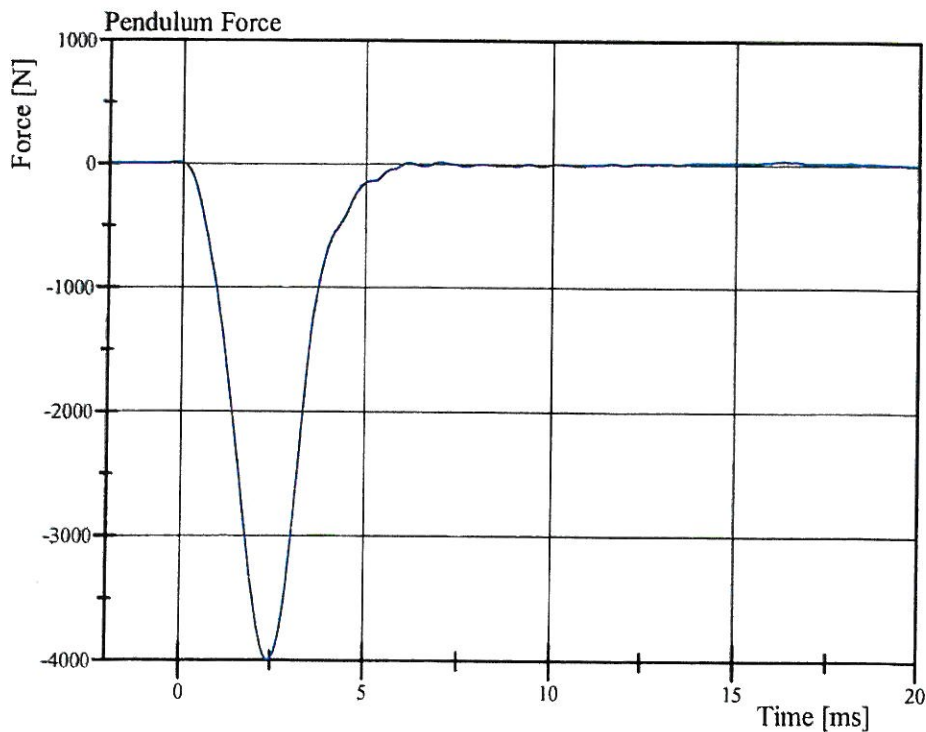
Left Knee Femur Response Test

HIII 5th Serial No. 329 Certification No. 12-1

Test Date: 5/4/2009



Filter Class: CFC_600
Max: 1.1 g at 16.2 ms
Min: -136.4 g at 2.4 ms



Filter Class: CFC_600
Max: 30.9 N at 16.2 ms
Min: -3,999.2 N at 2.4 ms

Transportation Research Center Inc.

Right Knee Femur Response Test

HIII 5th Serial No. 329 Certification No. 12-1

Test Date: 5/4/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.9 °C	Yes
Relative Humidity	10 - 70 %	32 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.096 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,903.4 N	Yes

Test meets specifications.

Comments:

Technician

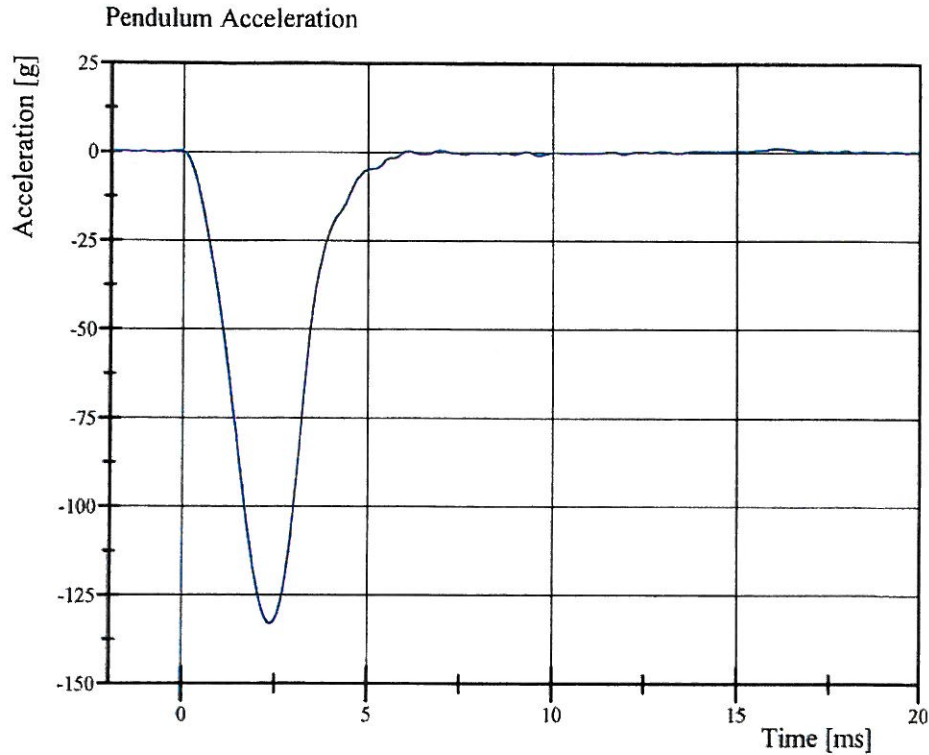
Roland Berauds

Approved

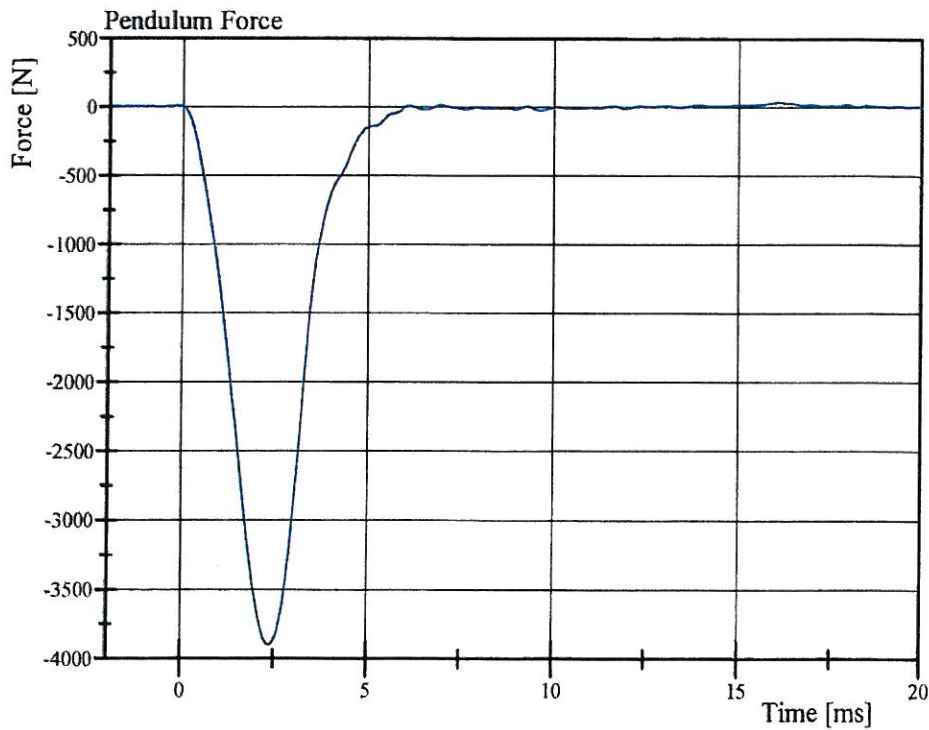
Jan. Jari

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 329 Certification No. 12-1
Test Date: 5/4/2009



Filter Class: CFC_600
Max: 1.2 g at 16.1 ms
Min: -133.1 g at 2.4 ms



Filter Class: CFC_600
Max: 35.6 N at 16.1 ms
Min: -3,903.4 N at 2.4 ms

Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 329 Calibration No. 12

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	777	Yes
B	Shoulder Pivot Height	431.8 - 457.2	450	Yes
C	Hip Pivot Height	81.3 - 86.3	83	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	128	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	245	Yes
H	Head Back to Backline	43.2 - 48.2	45	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	281	Yes
J	Elbow Rest Height	182.8 - 203.2	183	Yes
K	Buttock Knee Length	520.7 - 546.1	543	Yes
L	Popliteal Height	355.6 - 376.0	357	Yes
M	Knee Pivot Height	393.7 - 419.1	395	Yes
N	Buttock Popliteal Length	414.0 - 439.4	430	Yes
O	Chest Depth without Jacket	175.3 - 190.5	184	Yes
P	Foot Length	218.5 - 233.7	225	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	471	Yes
S	Head Breadth	137.1 - 147.3	141	Yes
T	Head Depth	177.8 - 188.0	182	Yes
U	Hip Breadth	299.7 - 314.9	306	Yes
V	Shoulder Breadth	350.5 - 365.7	361	Yes
W	Foot Breadth	78.8 - 94.0	85	Yes
X	Head Circumference	528.3 - 548.7	532	Yes
Y	Chest Circumference with Jacket	850.9 - 881.3	870	Yes
Z	Waist Circumference	759.5 - 789.9	773	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

Rand Barend

Approved

J. J. J.

Pre-Test Dummy Configuration and Performance Verification Data

Bullet Vehicle Left Rear Passenger Dummy S/N: 416

Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 416 Certification No. 48-1

Test Date: 7/20/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.5 °C	21.4 °C	Yes
Relative Humidity	10 - 70 %	47 %	Yes
Peak Head Resultant Acceleration	250 - 300 g	268.1 g	Yes
Peak Head Lateral Acceleration	(-15) - 15 g	-0.8 g	Yes
Is Acceleration Curve Unimodal within 10% of Peak?	Yes	Yes	Yes

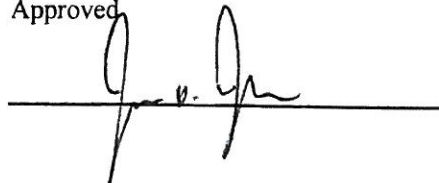
Test meets specifications.

Comments:

Technician



Approved

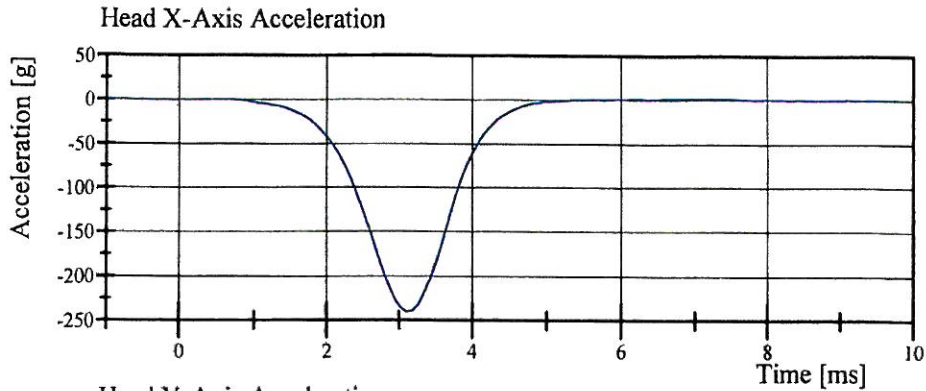


Transportation Research Center Inc.

Front Head Drop

HIII 5th Serial No. 416 Certification No. 48-1

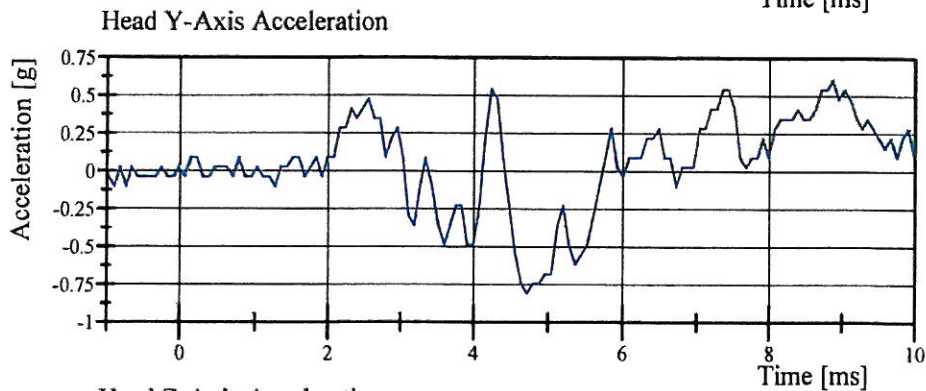
Test Date: 7/20/2009



Filter Class: CFC_1000

Max: 1.4 g at 7.1 ms

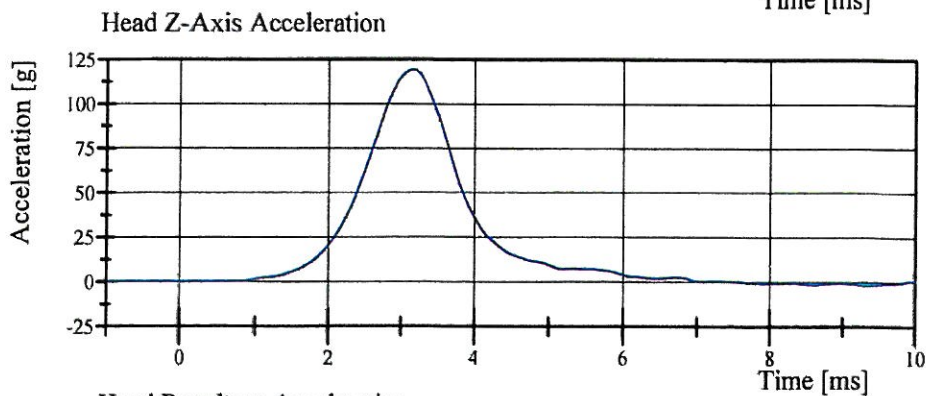
Min: -240.2 g at 3.1 ms



Filter Class: CFC_1000

Max: 0.6 g at 8.9 ms

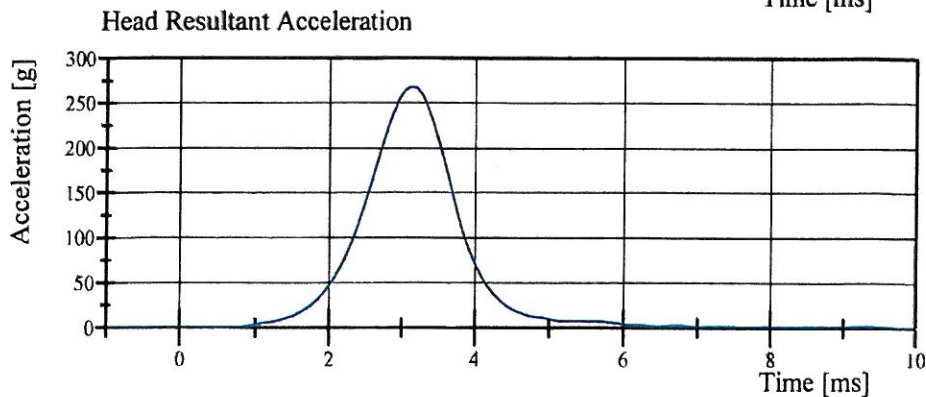
Min: -0.8 g at 4.7 ms



Filter Class: CFC_1000

Max: 119.3 g at 3.2 ms

Min: -1.8 g at 9.4 ms



Filter Class: CFC_1000

Max: 268.1 g at 3.1 ms

Min: 0.0 g at 0.0 ms

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 48-2

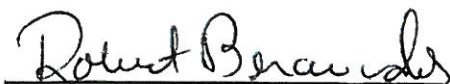
Test Date: 7/21/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Pendulum Velocity	6.89 - 7.13 m/s	7.070 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	(-2.1) - (-2.5) m/s	-2.44 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	(-4.0) - (-5.0) m/s	-4.84 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	(-5.8) - (-7.0) m/s	-6.77 m/s	Yes
Total Head D-Plane Rotation	(-77) - (-91) °	-80.9 °	Yes
Total Neck Occipital Condyles Moment Between -77° and -91° Rotation	69 - 83 N·m	77.9 N·m	Yes
Total Neck Occipital Condyles Moment Decay to 10 N·m	80 - 100 ms	86.0 ms	Yes

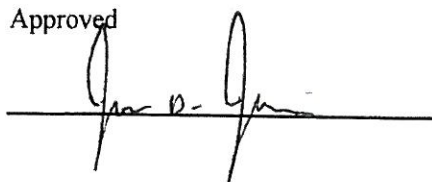
Test meets specifications.

Comments:

Technician



Approved

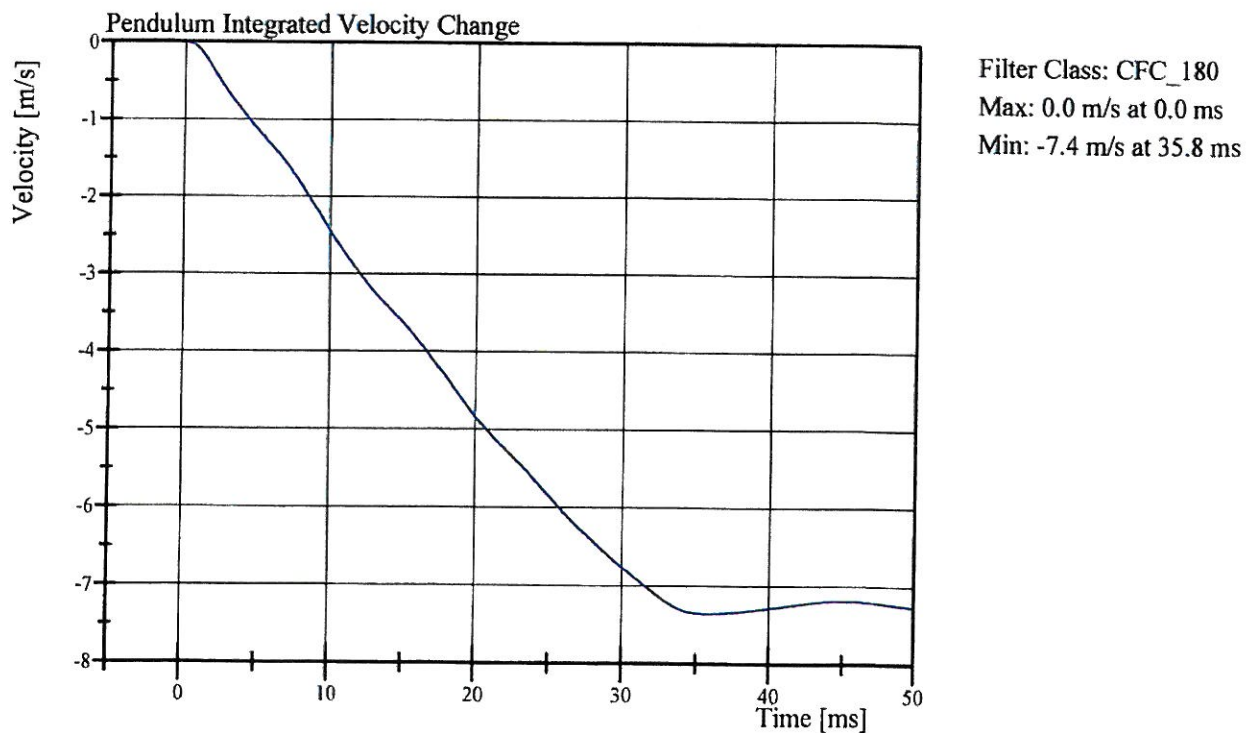
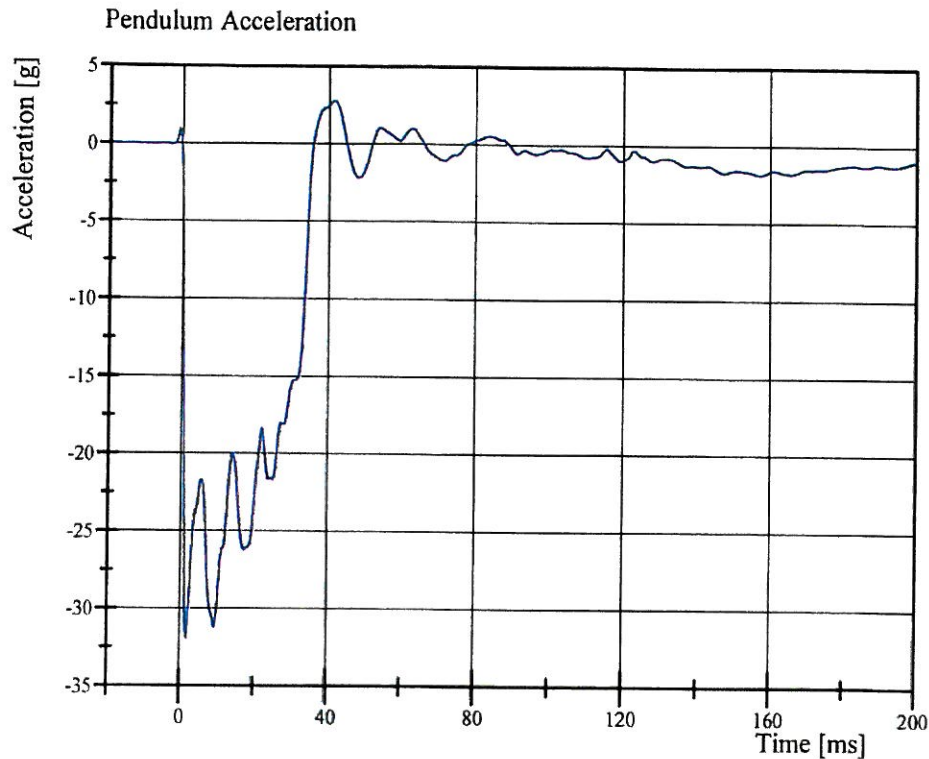


Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 48-2

Test Date: 7/21/2009



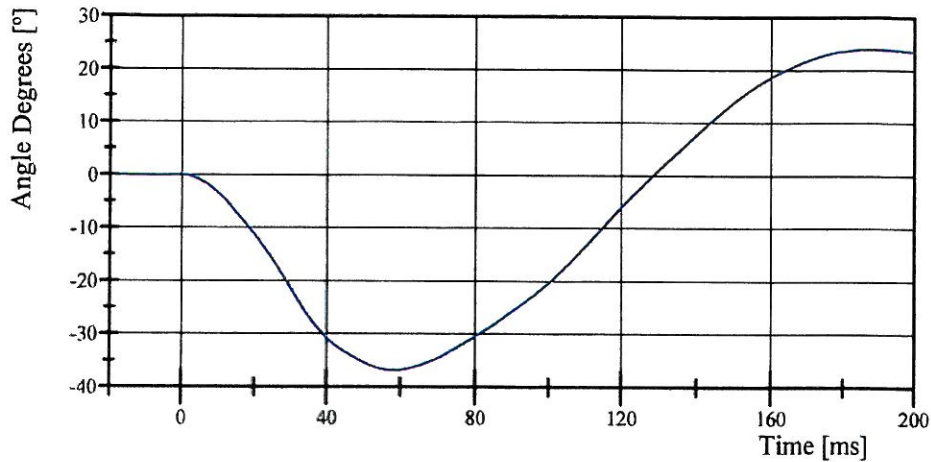
Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 48-2

Test Date: 7/21/2009

Pot Rotation at the Base of Neck

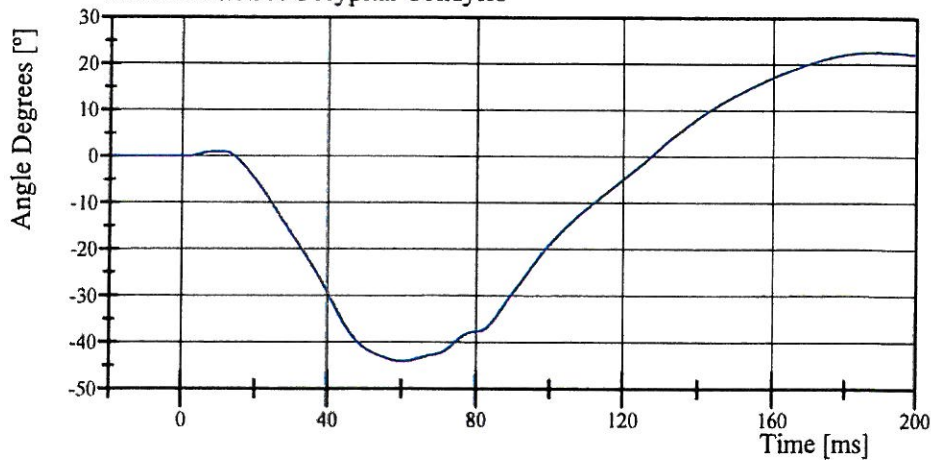


Filter Class: CFC_60

Max: 24.1 ° at 187.8 ms

Min: -36.8 ° at 58.4 ms

Head Rotation at Occypital Condyles

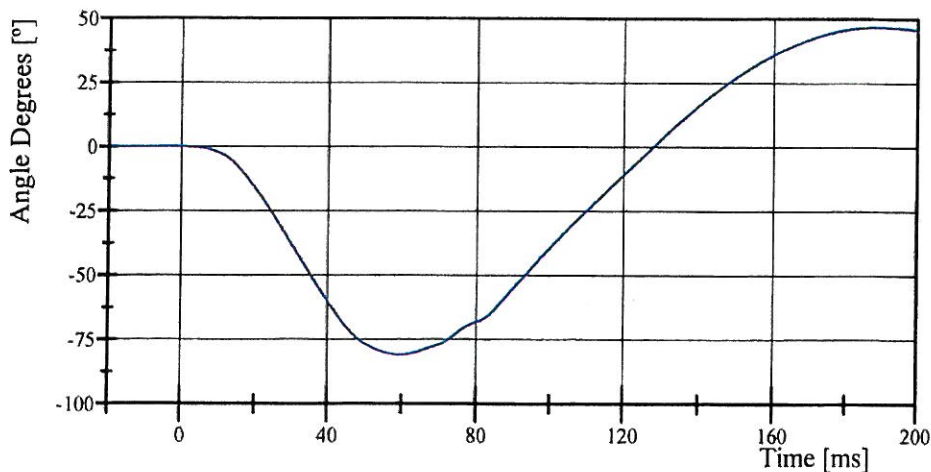


Filter Class: CFC_60

Max: 22.7 ° at 189.7 ms

Min: -44.1 ° at 60.4 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 46.8 ° at 188.7 ms

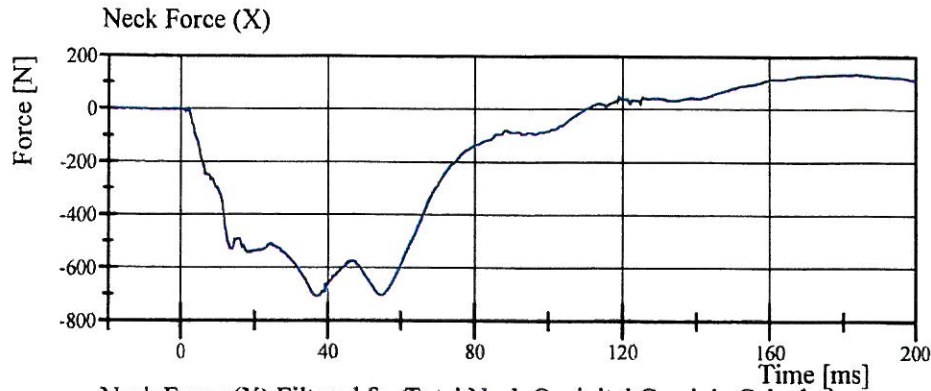
Min: -80.9 ° at 59.8 ms

Transportation Research Center Inc.

Neck Flexion

HIII 5th Serial No. 416 Certification No. 48-2

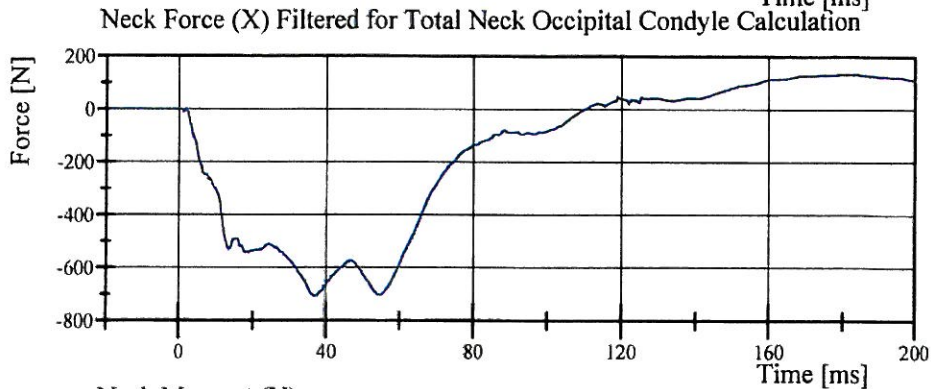
Test Date: 7/21/2009



Filter Class: CFC_1000

Max: 136.2 N at 183.7 ms

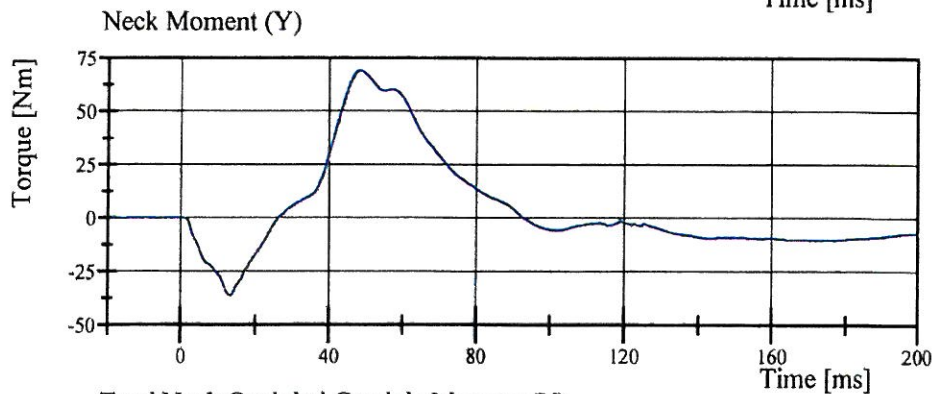
Min: -707.7 N at 37.0 ms



Filter Class: CFC_600

Max: 136.0 N at 183.8 ms

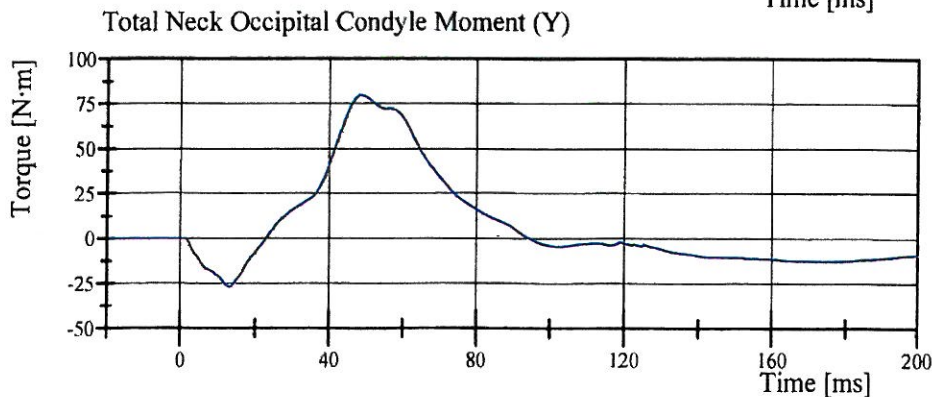
Min: -707.3 N at 37.0 ms



Filter Class: CFC_600

Max: 69.1 Nm at 48.4 ms

Min: -36.3 Nm at 13.5 ms



Filter Class: CFC_600

Max: 79.6 N·m at 48.7 ms

Min: -27.0 N·m at 13.4 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 48-2

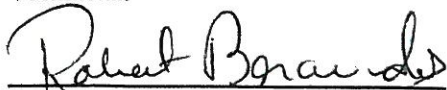
Test Date: 7/21/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	54 %	Yes
Pendulum Velocity	(-5.95) - (-6.19) m/s	-6.001 m/s	Yes
Pendulum Integrated Velocity Change at 10ms	1.5 - 1.9 m/s	1.80 m/s	Yes
Pendulum Integrated Velocity Change at 20ms	3.1 - 3.9 m/s	3.57 m/s	Yes
Pendulum Integrated Velocity Change at 30ms	4.6 - 5.6 m/s	5.09 m/s	Yes
Total Head D-Plane Rotation	99 - 114 °	105.5 °	Yes
Total Neck Occipital Condyles Moment Between 99° and 114° Rotation	(-53) - (-65) N·m	-55.7 N·m	Yes
Total Neck Occipital Condyles Moment Decay to -10 N·m	94 - 114 ms	104.7 ms	Yes

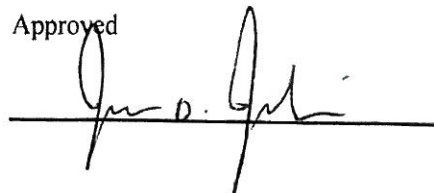
Test meets specifications.

Comments:

Technician



Approved



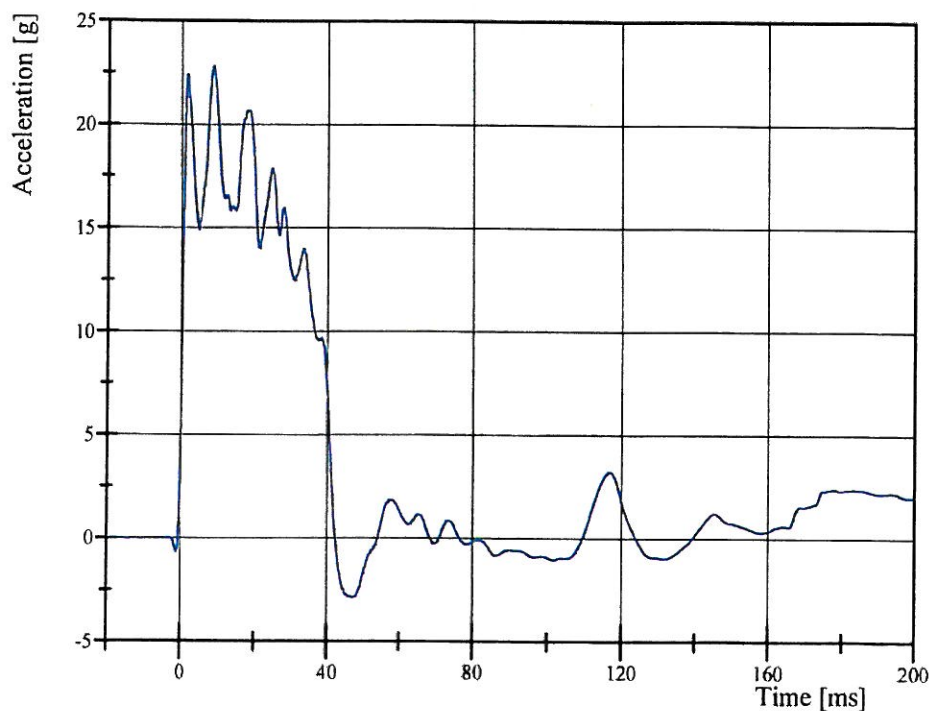
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 48-2

Test Date: 7/21/2009

Pendulum Acceleration

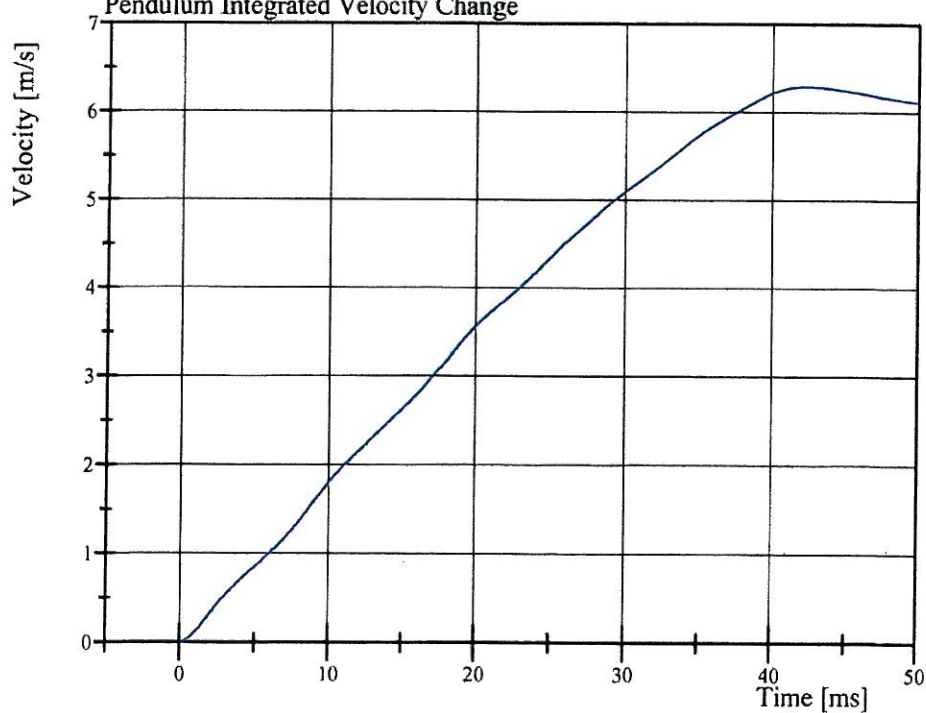


Filter Class: CFC_180

Max: 22.8 g at 8.8 ms

Min: -2.9 g at 47.2 ms

Pendulum Integrated Velocity Change



Filter Class: CFC_180

Max: 6.3 m/s at 42.3 ms

Min: 0.0 m/s at 0.0 ms

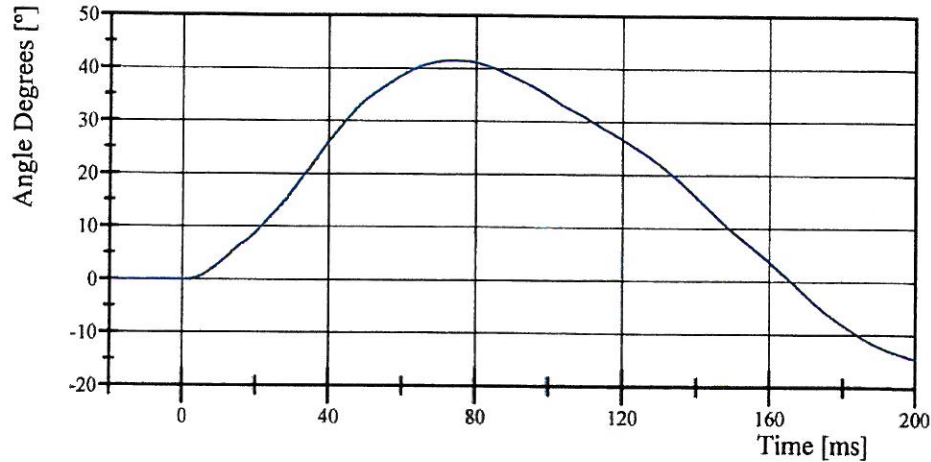
Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 48-2

Test Date: 7/21/2009

Pot Rotation at the Base of Neck

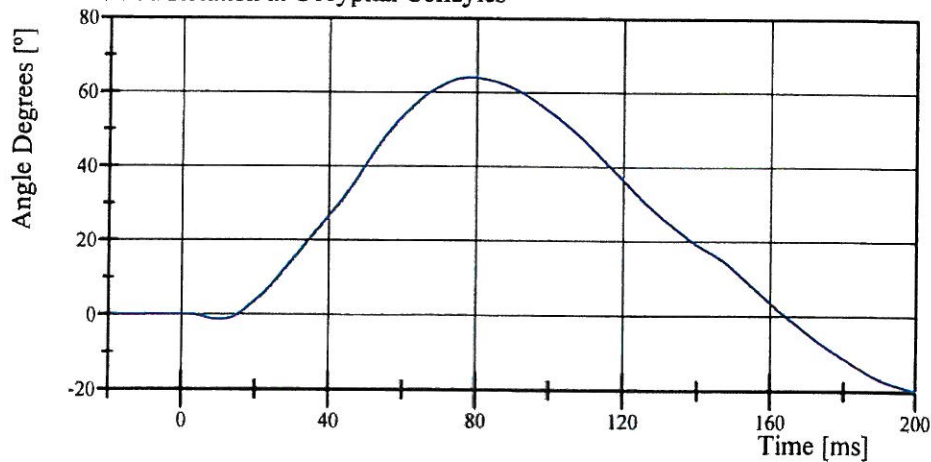


Filter Class: CFC_60

Max: 41.6 ° at 73.3 ms

Min: -14.4 ° at 200.0 ms

Head Rotation at Occypital Condyles

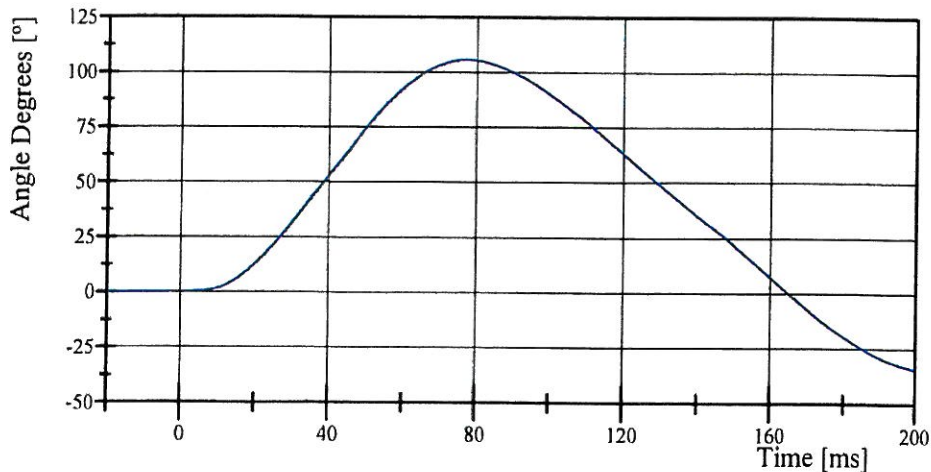


Filter Class: CFC_60

Max: 64.1 ° at 78.4 ms

Min: -19.7 ° at 200.0 ms

Total Head D-Plane Rotation



Filter Class: CFC_60

Max: 105.5 ° at 77.4 ms

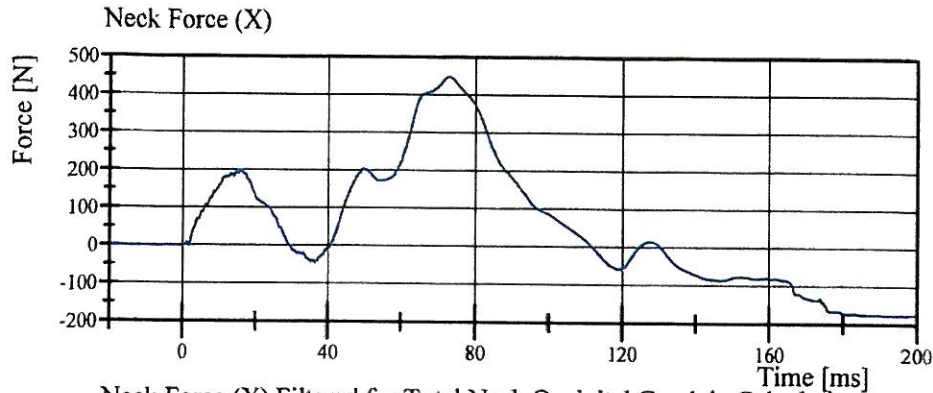
Min: -34.2 ° at 200.0 ms

Transportation Research Center Inc.

Neck Extension

HIII 5th Serial No. 416 Certification No. 48-2

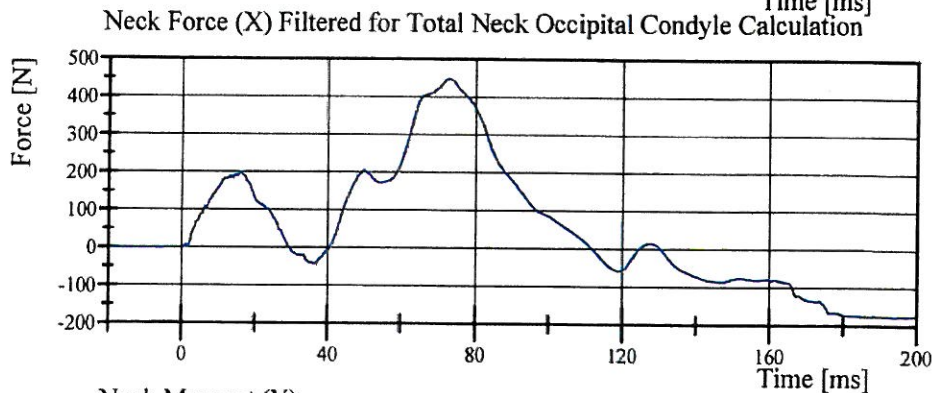
Test Date: 7/21/2009



Filter Class: CFC_1000

Max: 449.2 N at 72.8 ms

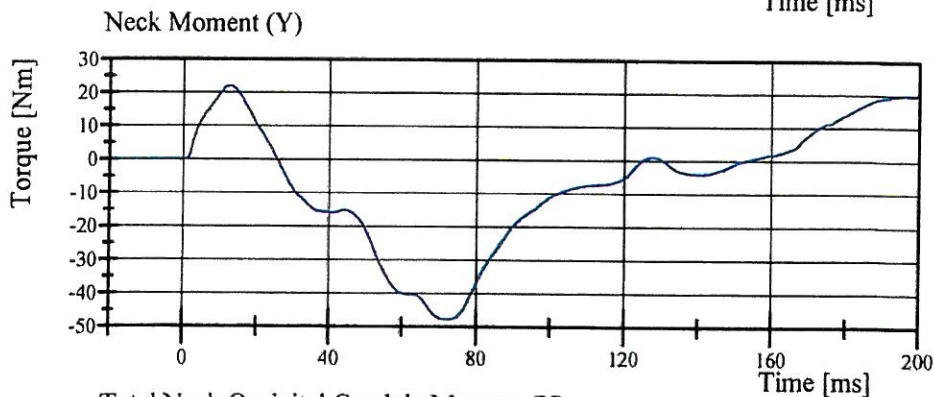
Min: -176.8 N at 193.6 ms



Filter Class: CFC_600

Max: 448.9 N at 72.9 ms

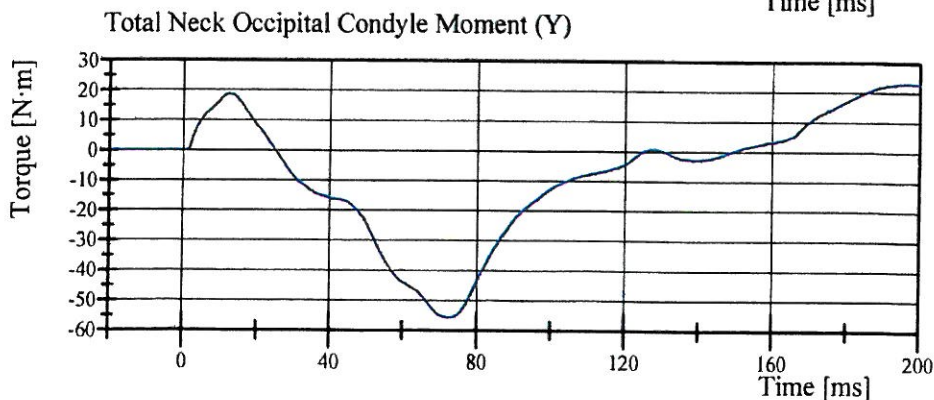
Min: -176.4 N at 194.5 ms



Filter Class: CFC_600

Max: 22.0 Nm at 13.2 ms

Min: -47.7 Nm at 72.1 ms



Filter Class: CFC_600

Max: 23.0 N·m at 196.9 ms

Min: -55.7 N·m at 72.5 ms

Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 416 Certification No. 48-1

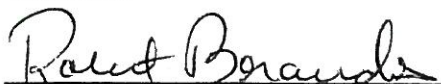
Test Date: 7/21/2009

Test Parameter	Specification	Test Results	Pass
Temperature	20.6 - 22.2 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Probe Velocity	6.59 - 6.83 m/s	6.691 m/s	Yes
Probe Force Peak Between 50.0 mm and 58.0 mm Chest Deflection	(-3,900) - (-4,400) N	-4,021.6 N	Yes
Probe Force Peak Between 18.0 mm and 50.0 mm Chest Deflection	$\geq$ (-4,600) N	-4,003.8 N	Yes
Maximum Chest Compression	(-50) - (-58) mm	-54.7 mm	Yes
Internal Hysteresis	69 - 85 %	72.0 %	Yes

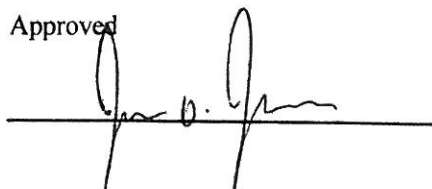
Test meets specifications.

Comments:

Technician



Approved



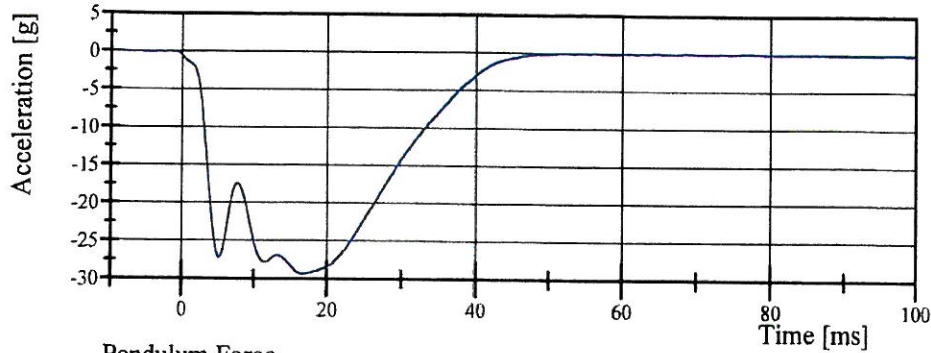
Transportation Research Center Inc.

Front Thorax

HIII 5th Serial No. 416 Certification No. 48-1

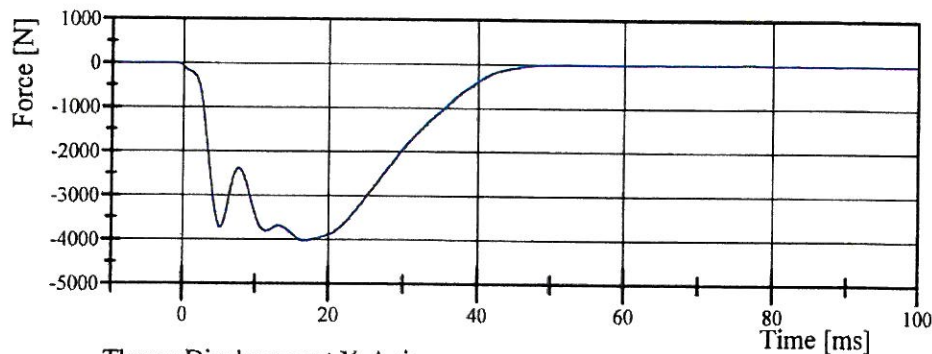
Test Date: 7/21/2009

Pendulum Acceleration



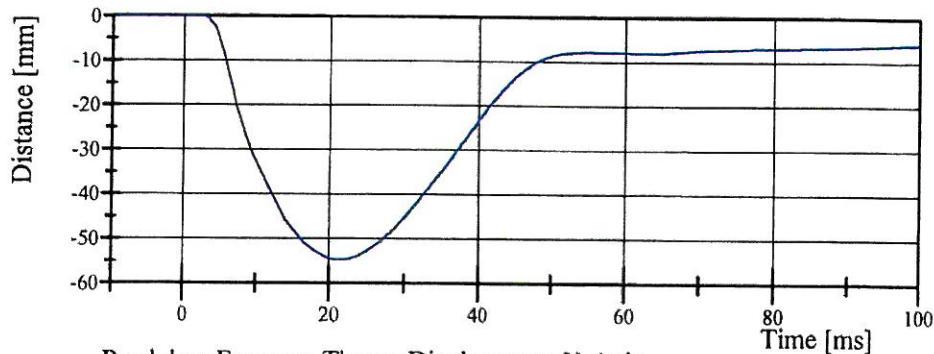
Filter Class: CFC_180
Max: 0.1 g at 76.7 ms
Min: -29.4 g at 16.7 ms

Pendulum Force



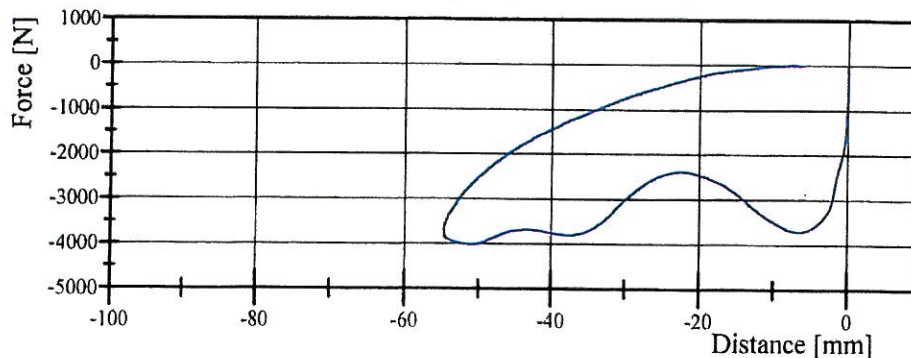
Filter Class: CFC_180
Max: 9.3 N at 76.7 ms
Min: -4,021.6 N at 16.7 ms

Thorax Displacement X-Axis



Filter Class: CFC_600
Max: 0.0 mm at -2.3 ms
Min: -54.7 mm at 21.6 ms

Pendulum Force vs. Thorax Displacement X-Axis



Filter Class: CFC_180
Max: 9.3 N at -7.0 mm
Min: -4,021.6 N at -51.1 mm

TRANSPORTATION RESEARCH CENTER INC.

TORSO FLEXION TEST

HYBRID III SMALL FEMALE

CAL DATE: 20-Jul-09

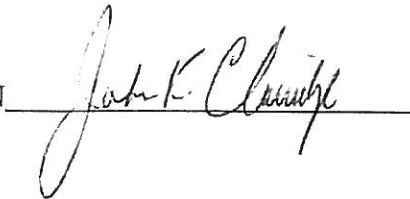
TRC, INC. TEST NO: TOFL-01 572 O SN416 TORSO FLEX CAL 48

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE	20.6 – 22.2° C	21.3° C
RELATIVE HUMIDITY	10 – 70 %	49 %
INITIAL ANGLE OF UNSUPPORTRED DUMMY	<= 20° REFERENCED TO VERTICAL	14.2°
MAXIMUM FORCE AT 45 DEG. DURING 10 SECOND PERIOD	320 – 390 N	369.4 N
DIFFERENCE BETWEEN RETURN ANGLE & INTIAL ANGLE	+/- 8 ° OF INTIAL ANGLE	4.4 °
RATE	0.5° - 1.5°/sec	0.97 °/sec

TEST MEETS SPECIFICATIONS

Comments:

TECHNICIAN



Transportation Research Center Inc.

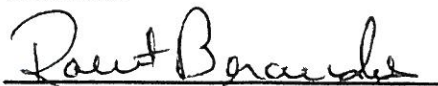
Left Knee Femur Response Test
HIII 5th Serial No. 416 Certification No. 48-1
Test Date: 7/21/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	52 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.130 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,719.3 N	Yes

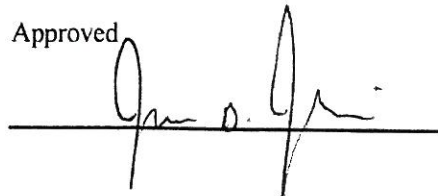
Test meets specifications.

Comments:

Technician

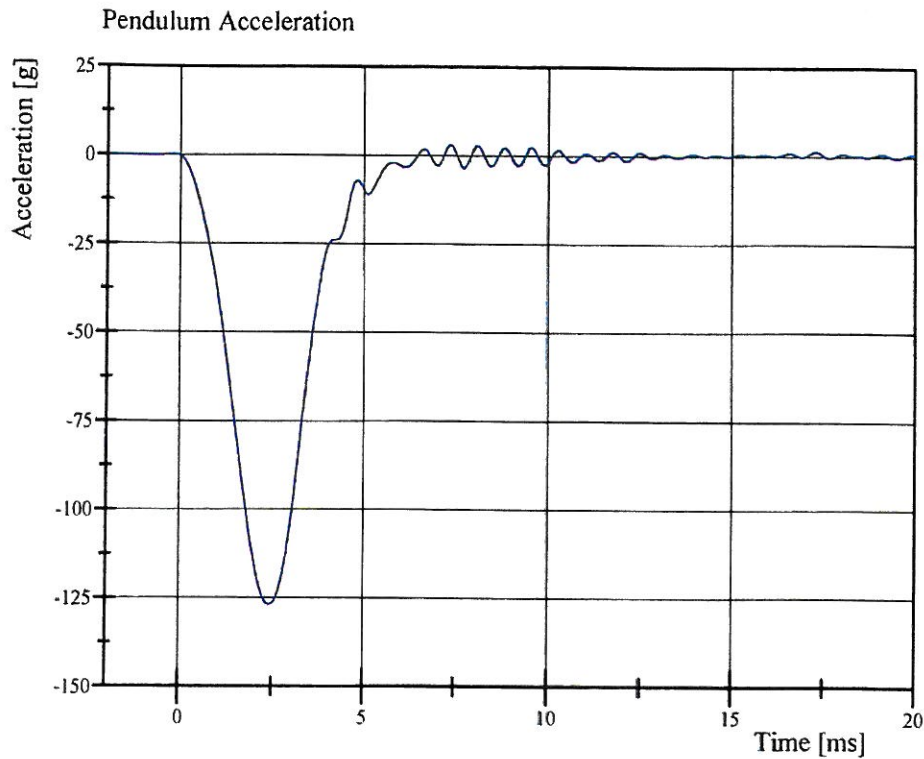


Approved

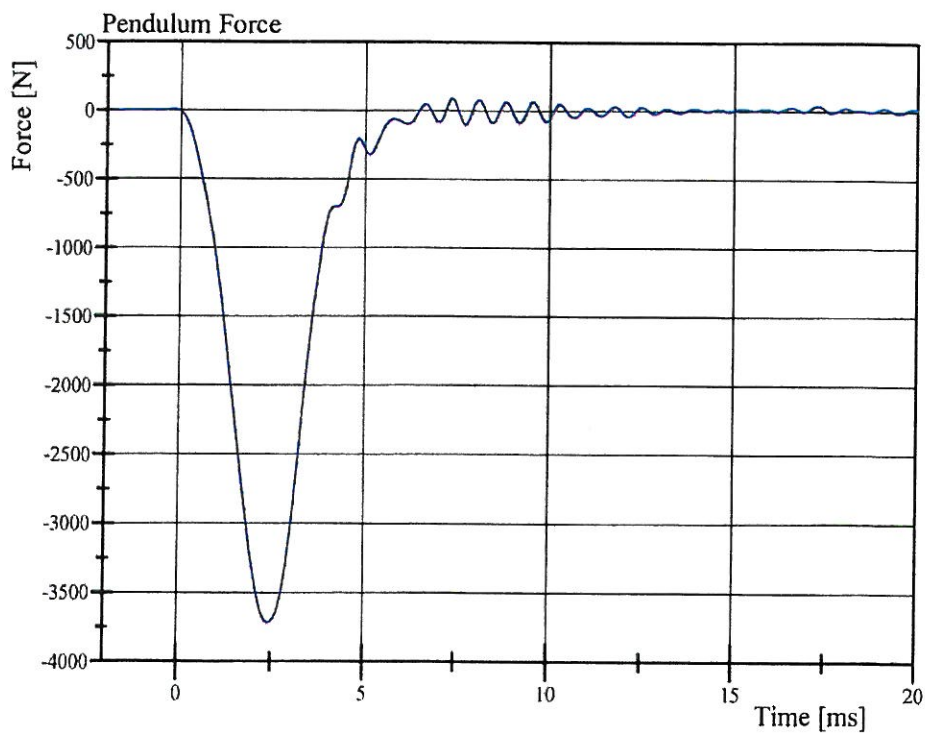


Transportation Research Center Inc.

Left Knee Femur Response Test
HIII 5th Serial No. 416 Certification No. 48-1
Test Date: 7/21/2009



Filter Class: CFC_600
Max: 3.1 g at 7.4 ms
Min: -126.8 g at 2.4 ms



Filter Class: CFC_600
Max: 91.2 N at 7.4 ms
Min: -3,719.3 N at 2.4 ms

Transportation Research Center Inc.

Right Knee Femur Response Test
HIII 5th Serial No. 416 Certification No. 48-1
Test Date: 7/21/2009

Test Parameter	Specification	Test Results	Pass
Temperature	18.9 - 25.6 °C	21.7 °C	Yes
Relative Humidity	10 - 70 %	53 %	Yes
Probe Velocity	2.08 - 2.13 m/s	2.122 m/s	Yes
Peak Femur Force	(-3,450) - (-4,060) N	-3,614.2 N	Yes

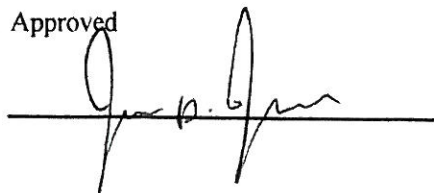
Test meets specifications.

Comments:

Technician

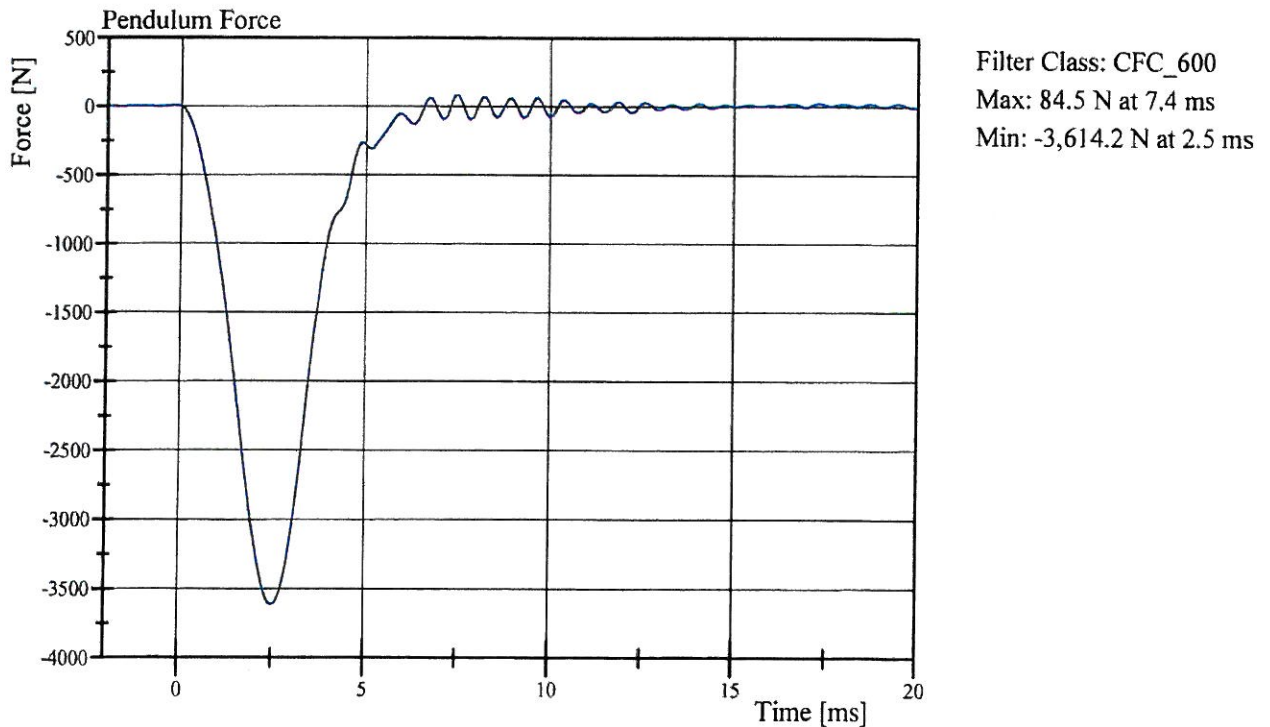
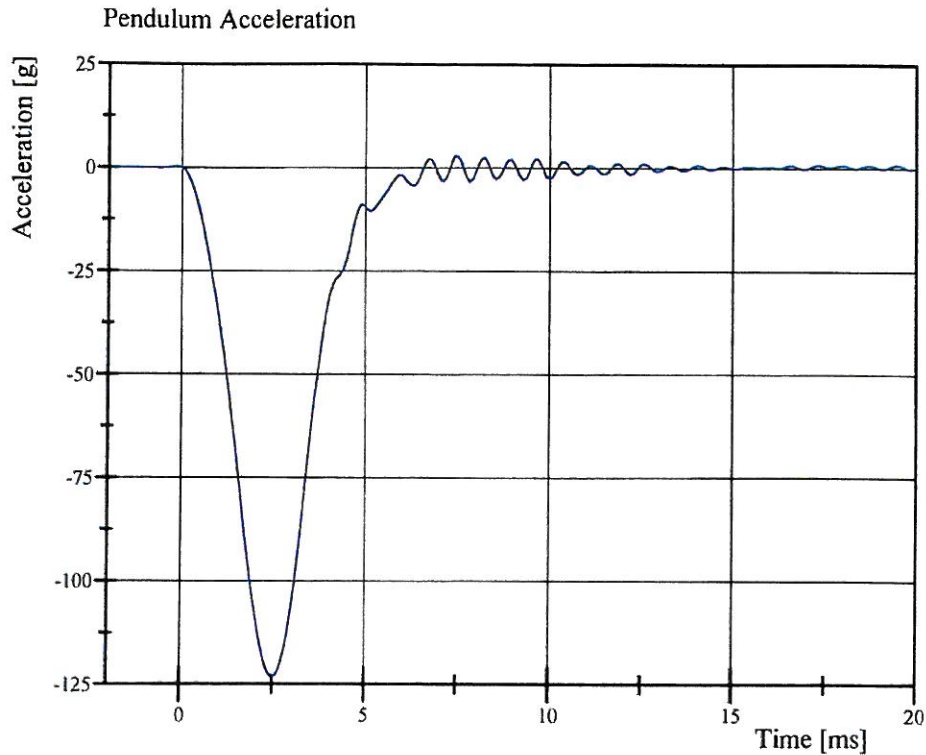


Approved



Transportation Research Center Inc.

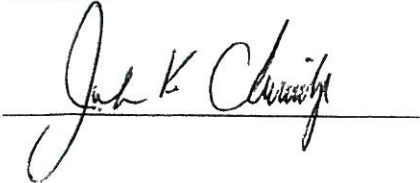
Right Knee Femur Response Test
HIII 5th Serial No. 416 Certification No. 48-1
Test Date: 7/21/2009



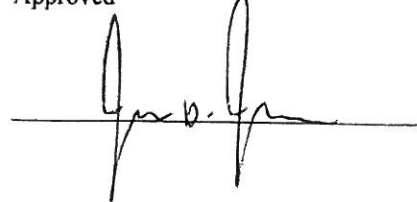
Transportation Research Center Inc.
5720 HIII 5th Female Dummy
External Dimensions
Serial No. 416 Calibration No. 48

Symbol	Description	Specification	Results	Pass
		mm	mm	
A	Total Sitting Height	774.7 - 800.1	782	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	145	Yes
E	Shoulder Pivot from Backline	68.6 - 83.8	83	Yes
F	Thigh Clearance	119.4 - 134.6	128	Yes
G	Back of Elbow to Wrist Pivot	243.9 - 259.1	254	Yes
H	Head Back to Backline	43.2 - 48.2	46	Yes
I	Shoulder to Elbow Length	276.8 - 297.2	284	Yes
J	Elbow Rest Height	182.8 - 203.2	184	Yes
K	Buttock Knee Length	520.7 - 546.1	540	Yes
L	Popliteal Height	355.6 - 376.0	369	Yes
M	Knee Pivot Height	393.7 - 419.1	415	Yes
N	Buttock Popliteal Height	414.0 - 439.4	433	Yes
O	Chest Depth without Jacket	175.3 - 190.5	183	Yes
P	Foot Length	218.5 - 233.7	221	Yes
R	Buttock to Knee Pivot Length	457.2 - 482.6	468	Yes
S	Head Breadth	137.1 - 147.3	139	Yes
T	Head Depth	177.8 - 188.0	180	Yes
U	Hip Breadth	299.7 - 314.9	302	Yes
V	Shoulder Breadth	350.5 - 365.7	351	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	866	Yes
Z	Waist Circumference	759.5 - 789.9	771	Yes
AA	Reference Location for Chest Circumference	332.7 - 358.1	354	Yes
BB	Reference Location for Waist Circumference	160.0 - 170.2	167	Yes

Technician



Approved



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.

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
1	Trig D1	10ZERO00000VO0A	EVENT	1	Logic	Bipolar	
2	J32100	11HEADCG00H3ACXA	Head Accel X	2000	g	-Bipolar	1-206 HIII 50th ASTC.001
3	J36741	11HEADCG00H3ACYA	Head Accel Y	2000	g	-Bipolar	1-206 HIII 50th ASTC.002
4	J19925	11HEADCG00H3ACZA	Head Accel Z	2000	g	-Bipolar	1-206 HIII 50th ASTC.003
5	J14189	11HEADCGRDH3ACXA	Head Accel X Red	2000	g	Bipolar	1-206 HIII 50th ASTC.004
6	ALAB9	11HEADCGRDH3ACYA	Head Accel Y Red	2000	g	-Bipolar	1-206 HIII 50th ASTC.005
7	ACC62	11HEADCGRDH3ACZA	Head Accel Z Red	2000	g	-Bipolar	1-206 HIII 50th ASTC.006
8	1716A-2192-FX	11NECKUP00H3FOXA	Neck Force X	8896	N	-Bipolar	1-206 HIII 50th ASTC.007
9	1716A-2192-FY	11NECKUP00H3FOYA	Neck Force Y	8896	N	Bipolar	1-206 HIII 50th ASTC.008
10	1716A-2192-FZ	11NECKUP00H3FOZA	Neck Force Z	13344	N	Bipolar	1-206 HIII 50th ASTC.009
11	1716A-2192-MX	11NECKUP00H3MOXA	Neck Moment X	282	Nm	-Bipolar	1-206 HIII 50th ASTC.010
12	1716A-2192-MY	11NECKUP00H3MOYA	Neck Moment Y	282	Nm	Bipolar	1-206 HIII 50th ASTC.011
13	1716A-2192-MZ	11NECKUP00H3MOZA	Neck Moment Z	282	Nm	Bipolar	1-206 HIII 50th ASTC.012
14	J18662	11CHSTCG00H3ACXA	Chest Accel X	2000	g	Bipolar	1-206 HIII 50th ASTC.013
15	J23997	11CHSTCG00H3ACYA	Chest Accel Y	2000	g	-Bipolar	1-206 HIII 50th ASTC.014
16	J20209	11CHSTCG00H3ACZA	Chest Accel Z	2000	g	-Bipolar	1-206 HIII 50th ASTC.015
17	ACC82	11CHSTCGRDH3ACXA	Chest Accel X Red.	2000	g	-Bipolar	1-206 HIII 50th ASTC.016
18	J27366	11CHSTCGRDH3ACYA	Chest Accel Y Red.	2000	g	-Bipolar	1-206 HIII 50th ASTC.017
19	ACC63	11CHSTCGRDH3ACZA	Chest Accel Z Red.	2000	g	-Bipolar	1-206 HIII 50th ASTC.018
20	14CB1-2897-CST206	11CHST0000H3DSXA	Chest Deflection X	84	mm	Bipolar	1-206 HIII 50th ASTC.019
21	P17912	11PELVCG00H3ACXA	Pelvis Accel X	2000	g	-Bipolar	1-206 HIII 50th ASTC.020
22	J18059	11PELVCG00H3ACYA	Pelvis Accel Y	2000	g	-Bipolar	1-206 HIII 50th ASTC.021
23	ACC59	11PELVCG00H3ACZA	Pelvis Accel Z	2000	g	-Bipolar	1-206 HIII 50th ASTC.022
24	2430-741	11FEMRLL00H3FOZA	Left Femur Force Z	13344	N	Bipolar	1-206 HIII 50th ASTC.023
25	2430 726	11FEMRRL00H3FOZA	Right Femur Force Z	13344	N	Bipolar	1-206 HIII 50th ASTC.024
26	150-0121VR-022689	11KNSLLE00H3DSXA	Left Knee Displacement	33	mm	-Bipolar	1-LX045-046 VOLPE THOR LEGS.001
27	4509J- 88-FX	11TIBILULXH3FOXA	Left Upper Tibia Force X	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.002
28	4509J-88-FZ	11TIBILULXH3FOZA	Left Upper Tibia Force Z	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.004
29	4509J-88MX	11TIBILULXH3MOXA	Left Upper Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.005
30	4509J-88-MY	11TIBILULXH3MOYA	Left Upper Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.006
31	4929J-139-FX	11TIBILLXH3FOXA	Left Lower Tibia Force X	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.009
32	4929J-139-FY	11TIBILLXH3FOYA	Left Lower Tibia Force Y	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.010
33	4929J-139-FZ	11TIBILLXH3FOZA	Left Lower Tibia Force Z	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.011
34	4929J-139-MX	11TIBILLXH3MOXA	Left Lower Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.012
35	4929J-139-MY	11TIBILLXH3MOYA	Left Lower Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.013
36	J19440	11TIBILELXH3ACXA	Left Tibia Accel X	1000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.007

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
37	J29006	11TIBILELXH3ACYA	Left Tibia Accel Y	1000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.008
38	AJ5R0	11FOOTLELXH3ACXA	Left Foot Accel X	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.017
39	J18733	11FOOTLELXH3ACYA	Left Foot Accel Y	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.018
40	J19927	11FOOTLELXH3ACZA	Left Foot Accel Z	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.019
41	PD210-4B-7921-0525	11FOOTLELXH3ANXA	Left Foot Angular Dis. X	180	°	-Bipolar	1-LX045-046 VOLPE THOR LEGS.014
42	PD210-4B-7921-0524	11FOOTLELXH3ANYA	Left Foot Angular Dis. Y	180	°	Bipolar	1-LX045-046 VOLPE THOR LEGS.015
43	PD210-4B-7921-0523	11FOOTLELXH3ANZA	Left Foot Angular Dis. Z	180	°	-Bipolar	1-LX045-046 VOLPE THOR LEGS.016
44	150-0121VL-033646	11KNSLR100H3DSXA	Right Knee Displacement	33	mm	-Bipolar	1-LX045-046 VOLPE THOR LEGS.020
45	4509J-95-FX	11TIBIRULXH3FOXA	Right Upper Tibia Force	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.021
46	4509J-95-FZ	11TIBIRULXH3FOZA	Right Upper Tibia Force	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.023
47	4509J-95-MX	11TIBIRULXH3MOXA	Right Upper Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.024
48	4509J-95-MY	11TIBIRULXH3MOYA	Right Upper Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.025
49	4929J-138-FX	11TIBIRLLXH3FOXA	Right Lower Tibia Force	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.028
50	4929J-138-FY	11TIBIRLLXH3FOYA	Right Lower Tibia Force	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.029
51	4929J-138-FZ	11TIBIRLLXH3FOZA	Right Lower Tibia Force	11120.5	N	Bipolar	1-LX045-046 VOLPE THOR LEGS.030
52	4929J-138-MX	11TIBIRLLXH3MOXA	Right Lower Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.031
53	4929J-138-MY	11TIBIRLLXH3MOYA	Right Lower Tibia Moment	395.4	Nm	Bipolar	1-LX045-046 VOLPE THOR LEGS.032
54	J14688	11TIBIRILXH3ACYA	Right Tibia Accel Y	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.027
55	J35987	11TIBIRILXH3ACXA	Right Tibia Accel X	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.026
56	J36611	11FOOTRILXH3ACXA	Right Foot Accel X	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.036
57	ACB45	11FOOTRILXH3ACYA	Right Foot Accel Y	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.037
58	00L13-F25	11FOOTRILXH3ACZA	Right Foot Accel Z	2000	g	Bipolar	1-LX045-046 VOLPE THOR LEGS.038
59	PD210-4B-7921-0528	11FOOTRILXH3ANXA	Right Foot Angular Dis. X	180	°	-Bipolar	1-LX045-046 VOLPE THOR LEGS.033
60	PD210-4B-7921-0526	11FOOTRILXH3ANYA	Right Foot Angular Dis. Y	180	°	Bipolar	1-LX045-046 VOLPE THOR LEGS.034
61	PD210-4B-7921-0527	11FOOTRILXH3ANZA	Right Foot Angular Dis. Z	180	°	-Bipolar	1-LX045-046 VOLPE THOR LEGS.035
62	02I02I05-F07	13HEADCG00HFACXA	Head Accel X	2000	g	-Bipolar	?-329 HIII 5th VRTC.001
63	P63985	13HEADCG00HFACYA	Head Accel Y	2000	g	-Bipolar	?-329 HIII 5th VRTC.002
64	05H06-L14	13HEADCG00HFACZA	Head Accel Z	2000	g	-Bipolar	?-329 HIII 5th VRTC.003
65	P59000	13HEADCGRDHFACXA	Head Accel Redundant X	2000	g	-Bipolar	?-329 HIII 5th VRTC.004
66	P58787	13HEADCGRDHFACYA	Head Accel Redundant Y	2000	g	-Bipolar	?-329 HIII 5th VRTC.005
67	P58786	13HEADCGRDHFACZA	Head Accel Redundant Z	2000	g	-Bipolar	3-329 VRTC 5th Female.006
68	1716A-1911-FX	13NECKUP00HFFOXA	Neck Force X	8896	N	-Bipolar	?-329 HIII 5th VRTC.007
69	1716A-1911-FY	13NECKUP00HFFOYA	Neck Force Y	8896	N	Bipolar	?-329 HIII 5th VRTC.008
70	1716A-1911-FZ	13NECKUP00HFFOZA	Neck Force Z	13344	N	Bipolar	?-329 HIII 5th VRTC.009
71	1716A-1911-MX	13NECKUP00HFMOXA	Neck Moment X	282.5	Nm	-Bipolar	?-329 HIII 5th VRTC.010
72	1716A-1911-MY	13NECKUP00HFMOYA	Neck Moment Y	282.5	Nm	Bipolar	?-329 HIII 5th VRTC.011

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
73	1716A-1911-MZ	13NECKUP00HFMOZA	Neck Moment Z	282.5	Nm	Bipolar	?-329 HIII 5th VRTC.012
74	P52154	13CHSTCG00HFACXA	Chest Accel X	2000	g	Bipolar	?-329 HIII 5th VRTC.013
75	01G25-N16	13CHSTCG00HFACYA	Chest Accel Y	2000	g	-Bipolar	?-329 HIII 5th VRTC.014
76	02I02I05-F01	13CHSTCG00HFACZA	Chest Accel Z	2000	g	-Bipolar	?-329 HIII 5th VRTC.015
77	P52069	13CHSTCGRDHFACXA	Chest Accel Redundant X	2000	g	-Bipolar	?-329 HIII 5th VRTC.016
78	P51668	13CHSTCGRDHFACYA	Chest Accel Redundant Y	2000	g	-Bipolar	?-329 HIII 5th VRTC.017
79	P58883	13CHSTCGRDHFACZA	Chest Accel Redundant Z	2000	g	-Bipolar	?-329 HIII 5th VRTC.018
80	14CB1-2897-CST329	13CHST0000HFDSXA	Chest Deflection X	75	mm	Bipolar	?-329 HIII 5th VRTC.019
81	P50062	13PELVCG00HFACXA	Pelvis Accel X	2000	g	Bipolar	?-329 HIII 5th VRTC.020
82	P50073	13PELVCG00HFACYA	Pelvis Accel Y	2000	g	Bipolar	?-329 HIII 5th VRTC.021
83	P58885	13PELVCG00HFACZA	Pelvis Accel Z	2000	g	Bipolar	?-329 HIII 5th VRTC.022
84	2121AJ-1702	13FEMRLU00HFFOZA	Left Femur Force Z	13344	N	Bipolar	?-329 HIII 5th VRTC.023
85	2121A-1396	13FEMRRU00HFFOZA	Right Femur Force Z	13344	N	Bipolar	?-329 HIII 5th VRTC.024
86	150-0121VR-030587	13KNSLLE00HFDSXA	Left Knee Displacement X	33	mm	-Bipolar	3-FLX001A & FLX001B VRTC.001
87	4825J-75-FX	13TIBILULXHFFOXA	Left Upper Tibia Force X	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.002
88	4825J-75-FZ	13TIBILULXHFFOZA	Left Upper Tibia Force Z	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.003
89	4825J-75-MX	13TIBILULXHFMOMA	Left Upper Tibia Moment	282.5	Nm	Bipolar	3-FLX001A & FLX001B VRTC.004
90	4825J-75-MY	13TIBILULXHFMOMA	Left Upper Tibia Moment	282.5	Nm	Bipolar	3-FLX001A & FLX001B VRTC.005
91	J32157	13TIBILELXHFAACXA	Left Tibia Accel X	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.006
92	AGR67	13TIBILELXHFAACYA	Left Tibia Accel Y	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.007
93	4826J-75-FX	13TIBILLLXHFFOXA	Left Lower Tibia Force X	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.008
94	4826J-75-FY	13TIBILLLXHFFOYA	Left Lower Tibia Force Y	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.009
95	4826J-75-FZ	13TIBILLLXHFFOZA	Left Lower Tibia Force Z	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.010
96	4826J-75-MX	13TIBILLLXHFMOMA	Left Lower Tibia Moment	282	Nm	Bipolar	3-FLX001A & FLX001B VRTC.011
97	4826J-75-MY	13TIBILLLXHFMOMA	Left Lower Tibia Moment	282	Nm	Bipolar	3-FLX001A & FLX001B VRTC.012
98	PD210-4B-7921-P011	13FOOTLELXHAFANXA	Left Foot Angular Dis. X	318	°	Bipolar	3-FLX001A & FLX001B VRTC.013
99	PD210-4B-7921-P012	13FOOTLELXHAFANYA	Left Foot Angular Dis. Y	318	°	Bipolar	3-FLX001A & FLX001B VRTC.014
100	PD210-4B-7921-P013	13FOOTLELXHAFANZA	Left Foot Angular Dis. Z	318	°	Bipolar	3-FLX001A & FLX001B VRTC.015
101	J20382	13FOOTLELXHFAACXA	Left Foot Accel X	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.016
102	J14667	13FOOTLELXHFAACYA	Left Foot Accel Y	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.017
103	AAKD0	13FOOTLELXHFAACZA	Left Foot Accel Z	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.018
104	150-0121VL-023435	13KNSLRIO0HFDSXA	Right Knee Displacement X	33	mm	-Bipolar	3-FLX001A & FLX001B VRTC.019
105	4825J-88-FX	13TIBIRULXHFFOXA	Right Upper Tibia Force X	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.020
106	4825J-88-FZ	13TIBIRULXHFFOZA	Right Upper Tibia Force Z	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.021
107	4825J-88-MX	13TIBIRULXHFMOMA	Right Upper Tibia Moment	282	Nm	Bipolar	3-FLX001A & FLX001B VRTC.022
108	4825J-88-MY	13TIBIRULXHFMOMA	Right Upper Tibia Moment	282	Nm	Bipolar	3-FLX001A & FLX001B VRTC.023

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
109	ACCW9	13TIBIRILXHFACXA	Right Tibia Accel X	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.024
110	J28708	13TIBIRILXHFACYA	Right Tibia Accel Y	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.025
111	4826J-88-FX	13TIBIRLLXHFFOXA	Right Lower Tibia Force X	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.026
112	4826J-88-FY	13TIBIRLLXHFFOYA	Right Lower Tibia Force Y	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.027
113	4826J-88-FZ	13TIBIRLLXHFFOZA	Right Lower Tibia Force Z	8896	N	Bipolar	3-FLX001A & FLX001B VRTC.028
114	4826J-88-MX	13TIBIRLLXHFMOXA	Right Lower Tibia Moment X	282	Nm	Bipolar	3-FLX001A & FLX001B VRTC.029
115	4826J-88-MY	13TIBIRLLXHFMOYA	Right Lower Tibia Moment Y	282	Nm	Bipolar	3-FLX001A & FLX001B VRTC.030
116	PD210-4B-7921-P008	13FOOTRILXHFANXA	Right Foot Angular Dis. X	318	°	Bipolar	3-FLX001A & FLX001B VRTC.031
117	PD210-4B-7921-P009	13FOOTRILXHFANYA	Right Foot Angular Dis. Y	318	°	Bipolar	3-FLX001A & FLX001B VRTC.032
118	PD210-4B-7921-P010	13FOOTRILXHFANZA	Right Foot Angular Dis. Z	318	°	Bipolar	3-FLX001A & FLX001B VRTC.033
119	J35562	13FOOTRILXHFACXA	Right Foot Accel X	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.034
120	J34330	13FOOTRILXHFACYA	Right Foot Accel Y	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.035
121	P15334	13FOOTRILXHFACZA	Right Foot Accel Z	2000	g	Bipolar	3-FLX001A & FLX001B VRTC.036
122	P50097	14HEADCG00HFACXA	Head Accel X	2000	g	-Bipolar	4-416 HIII 5th FTSS.001
123	P52123	14HEADCG00HFACYA	Head Accel Y	2000	g	-Bipolar	4-416 HIII 5th FTSS.002
124	P50089	14HEADCG00HFACZA	Head Accel Z	2000	g	-Bipolar	4-416 HIII 5th FTSS.003
125	P58799	14HEADCGRDHFACXA	Head Accel X Redundant	2000	g	Bipolar	4-416 HIII 5th FTSS.004
126	P49211	14HEADCGRDHFACYA	Head Accel Y Redundant	2000	g	-Bipolar	4-416 HIII 5th FTSS.005
127	P59002	14HEADCGRDHFACZA	Head Accel Z Redundant	2000	g	-Bipolar	4-416 HIII 5th FTSS.006
128	1716A-499-FX	14NECKUP00HFFOXA	Neck Force X	8896	N	-Bipolar	4-416 HIII 5th FTSS.007
129	1716A-499-FY	14NECKUP00HFFOYA	Neck Force Y	8896	N	Bipolar	4-416 HIII 5th FTSS.008
130	1716A-499-FZ	14NECKUP00HFFOZA	Neck Force Z	13344	N	Bipolar	4-416 HIII 5th FTSS.009
131	1716A-499-MX	14NECKUP00HFMOXA	Neck Moment X	282.5	Nm	-Bipolar	4-416 HIII 5th FTSS.010
132	1716A-499-MY	14NECKUP00HFMOYA	Neck Moment Y	282.5	Nm	Bipolar	4-416 HIII 5th FTSS.011
133	1716A-499-MZ	14NECKUP00HFMOZA	Neck Moment Z	282.5	Nm	Bipolar	4-416 HIII 5th FTSS.012
134	P49463	14CHSTCG00HFACXA	Chest Accel X	2000	g	Bipolar	4-416 HIII 5th FTSS.013
135	P50065	14CHSTCG00HFACYA	Chest Accel Y	2000	g	-Bipolar	4-416 HIII 5th FTSS.014
136	P49186	14CHSTCG00HFACZA	Chest Accel Z	2000	g	-Bipolar	4-416 HIII 5th FTSS.015
137	P52040	14CHSTCGRDHFACXA	Chest Accel X Redundant	2000	g	-Bipolar	4-416 HIII 5th FTSS.016
138	P51979	14CHSTCGRDHFACYA	Chest Accel Y Redundant	2000	g	-Bipolar	4-416 HIII 5th FTSS.017
139	P51280	14CHSTCGRDHFACZA	Chest Accel Z Redundant	2000	g	-Bipolar	4-416 HIII 5th FTSS.018
140	14CB1-2897-CST416	14CHST0000HFDSXA	Chest Deflection X-S30	80	mm	Bipolar	4-416 HIII 5th FTSS.019
141	J14234	14PELVCG00HFACXA	Pelvis Accel X	2000	g	-Bipolar	4-416 HIII 5th FTSS.020
142	J23914	14PELVCG00HFACYA	Pelvis Accel Y	2000	g	-Bipolar	4-416 HIII 5th FTSS.021
143	P64004	14PELVCG00HFACZA	Pelvis Accel Z	2000	g	-Bipolar	4-416 HIII 5th FTSS.022
144	2121AJ-1700	14FEMRLL00HFFOZA	Left Femur Force Z #8	13344	N	Bipolar	4-416 HIII 5th FTSS.023

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
145	2430-560	14FEMRRL00HFFOZA	Right Femur Force Z Ext	13344	N	Bipolar	4-416 HIII 5th FTSS.024
146	08TC1-2702-9242A	14KNSLLE00HFDSXA	Left slider	25.4	mm	Bipolar	4-416 HIII 5th FTSS.025
147	08TC1-2702-9230	14KNSLRI00HFDSXA	right slider	25.4	mm	Bipolar	4-416 HIII 5th FTSS.026
148	P61325	10SILLLE0000ACXA	Left Sill X Acceleration	2000	g	Bipolar	
149	P62627	10SILLLE0000ACYA	Left Sill Y Acceleration	2000	g	Bipolar	
150	P64806	10SILLRI0000ACXA	Right Sill X Acceleration	2000	g	Bipolar	
151	P63123	10SILLRI0000ACYA	Right Sill Y Acceleration	2000	g	-Bipolar	
152	P62241	10VEHCCG0000ACXA	Vehicle Center of Gravity	2000	g	Bipolar	
153	P63133	10VEHCCG0000ACYA	Vehicle Center of Gravity	2000	g	-Bipolar	
154	P62232	10VEHCCG0000ACZA	Vehicle Center of Gravity	2000	g	-Bipolar	
155	P62225	10FOOTLE0000ACXA	Driver Foot Rest X Acce	2000	g	Bipolar	
156	P62197	10FOOTLE0000ACZA	Driver Foot Rest Z Acce	2000	g	-Bipolar	
157	P63158	10TPANLE0000ACXA	Toe Pan Behind Center c	2000	g	Bipolar	
158	P61767	10TPANLE0000ACZA	Toe Pan Behind Center c	2000	g	-Bipolar	
159	X08013	11SEBE0000B5FO0A	Driver Lap Belt Load Cell	16000	N	Bipolar	
160	X08014	13SEBE0000B5FO0A	Passenger Lap BeltLoad	16000	N	Bipolar	
161	X08012	11SEBE0000B3FO0A	Driver Shoulder Belt Loa	16000	N	Bipolar	
162	3419-830	13SEBE0000B3FO0A	Passenger Shoulder Belt	15568	N	Bipolar	
163	ABFire1	10AIRBLEFR25VO0A	Bullet Vehicle Driver Airb	5	V	Bipolar	
164	ABFire2	10AIRBLEFR26VO0A	Bullet Vehicle Driver Airb	5	V	Bipolar	
165	ABFire3	10AIRBRIFR25VO0A	Bullet Vehicle Right Fron	5	V	Bipolar	
166	ABFire4	10AIRBRIFR26VO0A	Bullet Vehicle Right Fron	5	V	Bipolar	
167	P63991	21HEADCG00THACXA	Head Accel X	2000	g	Bipolar	1-VRTC Thor NT T 015.001
168	P64001	21HEADCG00THACYA	Head Accel Y	2000	g	Bipolar	1-VRTC Thor NT T 015.002
169	P64002	21HEADCG00THACZA	Head Accel Z	2000	g	Bipolar	1-VRTC Thor NT T 015.003
170	P63847	21HEADLE00THACXA	Head (LT) Accel X	2000	g	Bipolar	1-VRTC Thor NT T 015.004
171	P63954	21HEADLE00THACZA	Head (LT) Accel Z	2000	g	Bipolar	1-VRTC Thor NT T 015.005
172	P63988	21HEADUP00THACXA	Head (TP) Accel X	2000	g	Bipolar	1-VRTC Thor NT T 015.006
173	P63987	21HEADUP00THACYA	Head (TP) Accel Y	2000	g	Bipolar	1-VRTC Thor NT T 015.007
174	P63989	21HEADRE00THACYA	Head (RR) Accel Y	2000	g	Bipolar	1-VRTC Thor NT T 015.008
175	P64008	21HEADRE00THACZA	Head (RR) Accel Z	2000	g	Bipolar	1-VRTC Thor NT T 015.009
176	3454-77-FX	21NECKUP00THFOXA	Upr Neck Force X	8900	N	Bipolar	1-VRTC Thor NT T 015.010
177	3454-77-FY	21NECKUP00THFOYA	Upr Neck Force Y	8900	N	Bipolar	1-VRTC Thor NT T 015.011
178	3454-77-FZ	21NECKUP00THFOZA	Upr Neck Force Z	13340	N	Bipolar	1-VRTC Thor NT T 015.012
179	3454-77-MX	21NECKUP00THMOXA	Upr Neck Moment X	282	Nm	Bipolar	1-VRTC Thor NT T 015.013
180	3454-77-MY	21NECKUP00THMOYA	Upr Neck Moment Y	282	Nm	Bipolar	1-VRTC Thor NT T 015.014

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
181	3454-77-MZ	21NECKUP00THMOZA	Upr Neck Moment Z	282	Nm	Bipolar	1-VRTC Thor NT T 015.015
182	4366J-79-FX	21NECKLO00THFOXA	Lwr Neck Force X	13340	N	Bipolar	1-VRTC Thor NT T 015.016
183	4366J-79-FY	21NECKLO00THFOYA	Lwr Neck Force Y	13340	N	Bipolar	1-VRTC Thor NT T 015.017
184	4366J-79-FZ	21NECKLO00THFOZA	Lwr Neck Force Z	13340	N	Bipolar	1-VRTC Thor NT T 015.018
185	4366J-79-MX	21NECKLO00THMOXA	Lwr Neck Moment X	452	N	Bipolar	1-VRTC Thor NT T 015.019
186	4366J-79-MY	21NECKLO00THMOYA	Lwr Neck Moment Y	452	N	Bipolar	1-VRTC Thor NT T 015.020
187	4366J-79-MZ	21NECKLO00THMOZA	Lwr Neck Moment Z	226	N	Bipolar	1-VRTC Thor NT T 015.021
188	6005J-76	21NECKRE00THFO0A	Rear Skull Spring Comp	4448	N	Bipolar	1-VRTC Thor NT T 015.022
189	6005J-79	21NECKFR00THFO0A	Front Skull Spring Comp	4448	N	Bipolar	1-VRTC Thor NT T 015.023
190	PD210-4B-0392	21NECKUP00THANYA	Occipital Condile Rotary	180	°	Bipolar	1-VRTC Thor NT T 015.024
191	DGSP-029489	21ABDORL00THDS0A	Lwr Abd DGSP Rgt Disp	100	mm	Bipolar	1-VRTC Thor NT T 015.025
192	DGSP-0108	21ABDORL00THANYA	Lwr Abd DGSP Rgt Ptch	180	°	Bipolar	1-VRTC Thor NT T 015.026
193	DGSP-0353	21ABDORL00THANZA	Lwr Abd DGSP Rgt Yaw	180	°	Bipolar	1-VRTC Thor NT T 015.027
194	DGSP-029174	21ABDOLL00THDS0A	Lwr Abd DGSP Lft Disp	100	mm	Bipolar	1-VRTC Thor NT T 015.028
195	DGSP-0111	21ABDOLL00THANYA	Lwr Abd DGSP Lft Ptch	180	°	Bipolar	1-VRTC Thor NT T 015.029
196	DGSP-0419-1	21ABDOLL00THANZA	Lwr Abd DGSP Lft Yaw	180	°	Bipolar	1-VRTC Thor NT T 015.030
197	P58836	21TRRICG00THACXA	Thorax CG X	2000	g	Bipolar	1-VRTC Thor NT T 015.031
198	P51925	21TRRICG00THACYA	Thorax CG Y	2000	g	Bipolar	1-VRTC Thor NT T 015.032
199	P52061	21TRRICG00THACZA	Thorax CG Z	2000	g	Bipolar	1-VRTC Thor NT T 015.033
200	CRUX-0366	21CHRILU01THAN0A	CRUX T015 Base Upper	180	°	Bipolar	1-VRTC Thor NT T 015.034
201	CRUX-0367	21CHRILU02THAN0A	CRUX T105 Mid Upper L	180	°	Bipolar	1-VRTC Thor NT T 015.035
202	CRUX-0369	21CHRILU03THAN0A	CRUX T105 Elbow Uppe	180	°	Bipolar	1-VRTC Thor NT T 015.036
203	CRUX-0253	21CHRIRU01THAN0A	CRUX T105 Base Upper	180	°	Bipolar	1-VRTC Thor NT T 015.037
204	CRUX-0303	21CHRIRU02THAN0A	CRUX T105 Mid Upper F	180	°	Bipolar	1-VRTC Thor NT T 015.038
205	CRUX-0304	21CHRIRU03THAN0A	CRUX T105 Elbow Uppe	180	°	Bipolar	1-VRTC Thor NT T 015.039
206	CRUX-0312	21CHRILL01THAN0A	CRUX T015 Base Lower	180	°	Bipolar	1-VRTC Thor NT T 015.040
207	CRUX-0319	21CHRILL02THAN0A	CRUX T015 Mid Lower L	180	°	Bipolar	1-VRTC Thor NT T 015.041
208	CRUX-0397	21CHRILL03THAN0A	CRUX T015 Elbow Lowe	180	°	Bipolar	1-VRTC Thor NT T 015.042
209	CRUX-0390	21CHRIRL01THAN0A	CRUX T015 Base Lower	180	°	Bipolar	1-VRTC Thor NT T 015.043
210	CRUX-0354	21CHRIRL02THAN0A	CRUX T015 Mid Lower F	180	°	Bipolar	1-VRTC Thor NT T 015.044
211	CRUX-0377	21CHRIRL03THAN0A	CRUX T015 Elbow Lowe	180	°	Bipolar	1-VRTC Thor NT T 015.045
212	300647-034644	21ABDOUP00THDS0A	Upper Abdomen Sring Pt	100	mm	Bipolar	1-VRTC Thor NT T 015.046
213	1911A-173-FX	21THSP1200THFOXA	T12 Thoracic Spine FX	13344	N	Bipolar	1-VRTC Thor NT T 015.047
214	1911A-173-FY	21THSP1200THFOYA	T12 Thoracic Spine FY	13344	N	Bipolar	1-VRTC Thor NT T 015.048
215	1911A-173-FZ	21THSP1200THFOZA	T12 Thoracic Spine FZ	20000	N	Bipolar	1-VRTC Thor NT T 015.049
216	1911A-173-MX	21THSP12000HMOXA	T12 Thoracic Moment X	565	Nm	Bipolar	1-VRTC Thor NT T 015.050

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
217	1911A-173-MY	21THSP12000HMOYA	T12 Thoracic Moment Y	904	Nm	Bipolar	1-VRTC Thor NT T 015.051
218	P51921	21SPINUP00THACXA	T1 Upper Spine X	2000	g	Bipolar	1-VRTC Thor NT T 015.052
219	P52068	21SPINUP00THACYA	T1 Upper Spine Y	2000	g	Bipolar	1-VRTC Thor NT T 015.053
220	P51884	21SPINUP00THACZA	T1 Upper Spine Z	2000	g	-Bipolar	1-VRTC Thor NT T 015.054
221	P59001	21PELV0000THACXA	Pelvis Accel X	2000	g	Bipolar	1-VRTC Thor NT T 015.055
222	P51635	21PELV0000THACYA	Pelvis Accel Y	2000	g	Bipolar	1-VRTC Thor NT T 015.056
223	P51947	21PELV0000THACZA	Pelvis Accel Z	2000	g	Bipolar	1-VRTC Thor NT T 015.057
224	3855-81-FX	21ACTBLE00THFOXA	Pelvis/Acetabulum Left F	22240	N	Bipolar	1-VRTC Thor NT T 015.058
225	3855-81-FY	21ACTBLE00THFOYA	Pelvis/Acetabulum Left F	13340	N	Bipolar	1-VRTC Thor NT T 015.059
226	3855-81-FZ	21ACTBLE00THFOZA	Pelvis/Acetabulum Left F	13340	N	Bipolar	1-VRTC Thor NT T 015.060
227	3455J-84-FX	21ACTBRI00THFOXA	Pelvis/Acetabulum Right	22240	N	Bipolar	1-VRTC Thor NT T 015.061
228	3455J-84-FY	21ACTBRI00THFOYA	Pelvis/Acetabulum Right	13340	N	Bipolar	1-VRTC Thor NT T 015.062
229	3455J-84-FZ	21ACTBRI00THFOZA	Pelvis/Acetabulum Right	13340	N	Bipolar	1-VRTC Thor NT T 015.063
230	1914A-362-FX	21FEMRLL00THFOXA	Left Femur FX	13344	N	Bipolar	1-VRTC Thor NT T 015.064
231	1914A-362-FY	21FEMRLL00THFOYA	Left Femur FY	13344	N	Bipolar	1-VRTC Thor NT T 015.065
232	1914A-362-FZ	21FEMRLL00THFOZA	Left Femur FZ	22240	N	Bipolar	1-VRTC Thor NT T 015.066
233	1914A-362-MX	21FEMRLL00THMOXA	Left Femur MX	339	Nm	Bipolar	1-VRTC Thor NT T 015.067
234	1914A-362-MY	21FEMRLL00THMOYA	Left Femur MY	339	Nm	Bipolar	1-VRTC Thor NT T 015.068
235	1914A-362-MZ	21FEMRLL00THMOZA	Left Femur MZ	339	Nm	Bipolar	1-VRTC Thor NT T 015.069
236	1914A-383-FX	21FEMRRL00THFOXA	Right Femur FX	13344	N	Bipolar	1-VRTC Thor NT T 015.070
237	1914A-383-FY	21FEMRRL00THFOYA	Right Femur FY	13344	N	Bipolar	1-VRTC Thor NT T 015.071
238	1914A-383-FZ	21FEMRRL00THFOZA	Right Femur FZ	22240	N	Bipolar	1-VRTC Thor NT T 015.072
239	1914A-383-MX	21FEMRRL00THMOXA	Right Femur MX	339	Nm	Bipolar	1-VRTC Thor NT T 015.073
240	1914A-383-MY	21FEMRRL00THMOYA	Right Femur MY	339	Nm	Bipolar	1-VRTC Thor NT T 015.074
241	1914A-383-MZ	21FEMRRL00THMOZA	Right Femur MZ	339	Nm	Bipolar	1-VRTC Thor NT T 015.075
242	150-0121VR-019664	21KNSLLE00H3DSXA	Left Knee Displacement	30	mm	-Bipolar	1-LX0018 & 0019 VRTC.001
243	4509J-89-FX	21TIBILULXH3FOXA	Left Upper Tibia Force X	11120	N	Bipolar	1-LX0018 & 0019 VRTC.002
244	4509J-89-FZ	21TIBILULXH3FOZA	Left Upper Tibia Force Z	11120	N	Bipolar	1-LX0018 & 0019 VRTC.004
245	4509J-89-MX	21TIBILULXH3MOXA	Left Upper Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.005
246	4509J-89-MY	21TIBILULXH3MOYA	Left Upper Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.006
247	4929J-127-FX	21TIBILLXH3FOXA	Left Lower Tibia Force X	11120	N	Bipolar	1-LX0018 & 0019 VRTC.009
248	4929J-127-FY	21TIBILLXH3FOYA	Left Lower Tibia Force Y	11120	N	Bipolar	1-LX0018 & 0019 VRTC.010
249	4929J-127-FZ	21TIBILLXH3FOZA	Left Lower Tibia Force Z	11120	N	Bipolar	1-LX0018 & 0019 VRTC.011
250	4929J-127-MX	21TIBILLXH3MOXA	Left Lower Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.012
251	4929J-127-MY	21TIBILLXH3MOYA	Left Lower Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.013
252	PD210-4B-7921-LX0019X	21FOOTLELXH3ANXA	Left Foot Angular Dis. X	318		-Bipolar	1-LX0018 & 0019 VRTC.014

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Ref	Transducer ID	ISO Signal Identifier	Description	FScale	Units	Polarity	Assembly
253	PD210-4B-7921-LX0019Y	21FOOTLELXH3ANYA	Left Foot Angular Dis. Y	318	mm	Bipolar	1-LX0018 & 0019 VRTC.015
254	PD210-4B-7921-LX0019Z	21FOOTLELXH3ANZA	Left Foot Angular Dis. Z	318	mm	-Bipolar	1-LX0018 & 0019 VRTC.016
255	P63853	21FOOTLELXH3ACXA	Left Foot Accel X	2000	g	Bipolar	1-LX0018 & 0019 VRTC.017
256	P51924	21FOOTLELXH3ACYA	Left Foot Accel Y	2000	g	Bipolar	1-LX0018 & 0019 VRTC.018
257	P52017	21FOOTLELXH3ACZA	Left Foot Accel Z	2000	g	Bipolar	1-LX0018 & 0019 VRTC.019
258	150-0121VL-019597	21KNSLR100H3DSXA	Right Knee Displacement	33	mm	-Bipolar	1-LX0018 & 0019 VRTC.020
259	4353-77-FX	21TIBIRULXH3FOXA	Right Upper Tibia Force	11120	N	Bipolar	1-LX0018 & 0019 VRTC.021
260	4353-77-FZ	21TIBIRULXH3FOZA	Right Upper Tibia Force	11120	N	Bipolar	1-LX0018 & 0019 VRTC.023
261	4353-77-MX	21TIBIRULXH3MOXA	Right Upper Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.024
262	4353-77-MY	21TIBIRULXH3MOYA	Right Upper Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.025
263	4929J-120-FX	21TIBIRLLXH3FOXA	Right Lower Tibia Force	11120	N	Bipolar	1-LX0018 & 0019 VRTC.028
264	4929J-120-FY	21TIBIRLLXH3FOYA	Right Lower Tibia Force	11120	N	Bipolar	1-LX0018 & 0019 VRTC.029
265	4929J-120-FZ	21TIBIRLLXH3FOZA	Right Lower Tibia Force	11120	N	Bipolar	1-LX0018 & 0019 VRTC.030
266	4929J-120-MX	21TIBIRLLXH3MOXA	Right Lower Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.031
267	4929J-120-MY	21TIBIRLLXH3MOYA	Right Lower Tibia Moment	395	Nm	Bipolar	1-LX0018 & 0019 VRTC.032
268	PD210-4B-7921-LX0018X	21FOOTRILXH3ANXA	Right Foot Angular Dis. X	318	mm	-Bipolar	1-LX0018 & 0019 VRTC.033
269	PD210-4B-7921-LX0018Y	21FOOTRILXH3ANYA	Right Foot Angular Dis. Y	318	mm	Bipolar	1-LX0018 & 0019 VRTC.034
270	PD210-4B-7921-LX0018Z	21FOOTRILXH3ANZA	Right Foot Angular Dis. Z	318	mm	-Bipolar	1-LX0018 & 0019 VRTC.035
271	P52050	21FOOTRILXH3ACXA	Right Foot Accel X	2000	g	Bipolar	1-LX0018 & 0019 VRTC.036
272	P52037	21FOOTRILXH3ACYA	Right Foot Accel Y	2000	g	Bipolar	1-LX0018 & 0019 VRTC.037
273	P51913	21FOOTRILXH3ACZA	Right Foot Accel Z	2000	g	Bipolar	1-LX0018 & 0019 VRTC.038
274	P63131	20SILLLE0000ACXA	Left Sill X Acceleration	2000	g	Bipolar	
275	P34982	20SILLLE0000ACYA	Left Sill Y Acceleration	2000	g	Bipolar	
276	P63147	20SILLRI0000ACXA	Right Sill X Acceleration	2000	g	Bipolar	
277	P63139	20SILLRI0000ACYA	Right Sill Y Acceleration	2000	g	-Bipolar	
278	P62213	20VEHCCG0000ACXA	Vehicle Center of Gravity	2000	g	Bipolar	
279	P45012	20VEHCCG0000ACYA	Vehicle Center of Gravity	2000	g	-Bipolar	
280	P61394	20VEHCCG0000ACZA	Vehicle Center of Gravity	2000	g	-Bipolar	
281	P62573	20FOOTLE0000ACXA	Driver Foot Rest X Accel	2000	g	Bipolar	
282	P62630	20FOOTLE0000ACZA	Driver Foot Rest Z Accel	2000	g	-Bipolar	
283	P61405	20TPANLE0000ACXA	Toe Pan Behind Center of Gravity	2000	g	Bipolar	
284	P61384	20TPANLE0000ACZA	Toe Pan Behind Center of Gravity	2000	g	-Bipolar	
285	3419T-828	21SEBE0000B5FO0A	Driver Lap Belt Load Cell	15568	N	Bipolar	
286	X08010	21SEBE0000B3FO0A	Driver Shoulder Belt Load Cell	16000	N	Bipolar	
287	ABFire5	20AIRBLEFR25VO0A	Driver Airbag 1st Stage Force	5	V	Bipolar	
288	ABFire6	20AIRBLEFR26VO0A	Driver Airbag 2nd Stage Force	5	V	Bipolar	

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Channel	ISO mnemonic	Channel Title	Filter	Flip	Zero	Full Scale
	1 11HEADCG00H3ACXA	Bullet Vehicle Driver Head X-Axis Acceleration	1000	+	yes	2000
	2 11HEADCG00H3ACYA	Bullet Vehicle Driver Head Y-Axis Acceleration	1000	+	yes	2000
	3 11HEADCG00H3ACZA	Bullet Vehicle Driver Head Z-Axis Acceleration	1000	+	yes	2000
3A	11HEADCG00H3ACRA	Bullet Vehicle Driver Head Resultant Acceleration	1000			
	4 11HEADCGRDH3ACXA	Bullet Vehicle Driver Head Redundant X-Axis Accelerat	1000	+	yes	2000
	5 11HEADCGRDH3ACYA	Bullet Vehicle Driver Head Redundant Y-Axis Accelerat	1000	+	yes	2000
	6 11HEADCGRDH3ACZA	Bullet Vehicle Driver Head Redundant Z-Axis Accelerat	1000	+	yes	2000
6A	11HEADCGRDH3ACRA	Bullet Vehicle Driver Head Redundant Resultant Accel	1000			
	7 11NECKUP00H3FOXA	Bullet Vehicle Driver Upper Neck X-Axis Force	1000	+	yes	8896
	8 11NECKUP00H3FOYA	Bullet Vehicle Driver Upper Neck Y-Axis Force	1000	+	yes	8896
	9 11NECKUP00H3FOZA	Bullet Vehicle Driver Upper Neck Z-Axis Force	1000	+	yes	13340
	10 11NECKUP00H3MOXA	Bullet Vehicle Driver Upper Neck Moment About X Axis	600	+	yes	282
	11 11NECKUP00H3MOYA	Bullet Vehicle Driver Upper Neck Moment About Y Axis	600	+	yes	282
	12 11NECKUP00H3MOZA	Bullet Vehicle Driver Upper Neck Moment About Z Axis	600	+	yes	282
	13 11CHSTCG00H3ACXA	Bullet Vehicle Driver Chest X-Axis Acceleration	180	+	yes	2000
	14 11CHSTCG00H3ACYA	Bullet Vehicle Driver Chest Y-Axis Acceleration	180	+	yes	2000
	15 11CHSTCG00H3ACZA	Bullet Vehicle Driver Chest Z-Axis Acceleration	180	+	yes	2000
15A	11CHSTCG00H3ACRA	Bullet Vehicle Driver Chest Resultant Acceleration	180			
	16 11CHSTCGRDH3ACXA	Bullet Vehicle Driver Chest Redundant X-Axis Accelerat	180	+	yes	2000
	17 11CHSTCGRDH3ACYA	Bullet Vehicle Driver Chest Redundant Y-Axis Accelerat	180	+	yes	2000
	18 11CHSTCGRDH3ACZA	Bullet Vehicle Driver Chest Redundant Z-Axis Accelerat	180	+	yes	2000
18A	11CHSTCGRDH3ACRA	Bullet Vehicle Driver Chest Redundant Resultant Accel	180			
	19 11CHST0000H3DSXA	Bullet Vehicle Driver Chest X-Axis Displacement	600	+	yes	84
	20 11PELVCG00H3ACXA	Bullet Vehicle Driver Pelvis X-Axis Acceleration	1000	+	yes	2000
	21 11PELVCG00H3ACYA	Bullet Vehicle Driver Pelvis Y-Axis Acceleration	1000	+	yes	2000
	22 11PELVCG00H3ACZA	Bullet Vehicle Driver Pelvis Z-Axis Acceleration	1000	+	yes	2000
22A	11PELVCG00H3ACRA	Bullet Vehicle Driver Pelvis Resultant Acceleration	1000			
	23 11FEMRLL00H3FOZA	Bullet Vehicle Driver Left Femur Z-Axis Force	600	+	yes	13344
	24 11FEMRRL00H3FOZA	Bullet Vehicle Driver Right Femur Z-Axis Force	600	+	yes	13344
	25 11KNSLLE00H3DSXA	Bullet Vehicle Driver Left Knee X-Axis Displacement	180	+	yes	33
	26 11TIBILULXH3FOXA	Bullet Vehicle Driver Left Upper Tibia X-Axis Force	600	+	yes	11120.5
	27 11TIBILULXH3FOZA	Bullet Vehicle Driver Left Upper Tibia Z-Axis Force	600	+	yes	11120.5
	28 11TIBILULXH3MOXA	Bullet Vehicle Driver Left Upper Tibia Moment About X	600	+	yes	395.4
	29 11TIBILULXH3MOYA	Bullet Vehicle Driver Left Upper Tibia Moment About Y	600	+	yes	395.4
	30 11TIBILLLLXH3FOXA	Bullet Vehicle Driver Left Lower Tibia X-Axis Force	600	+	yes	11120.5
	31 11TIBILLLLXH3FOYA	Bullet Vehicle Driver Left Lower Tibia Y-Axis Force	600	+	yes	11120.5
	32 11TIBILLLLXH3FOZA	Bullet Vehicle Driver Left Lower Tibia Z-Axis Force	600	+	yes	11120.5
	33 11TIBILLLLXH3MOXA	Bullet Vehicle Driver Left Lower Tibia Moment About X	600	+	yes	395.4
	34 11TIBILLLLXH3MOYA	Bullet Vehicle Driver Left Lower Tibia Moment About Y	600	+	yes	395.4

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35	11TIBILELXH3ACXA	Bullet Vehicle Driver Left Tibia X-Axis Acceleration	1000 +	yes	1000
36	11TIBILELXH3ACYA	Bullet Vehicle Driver Left Tibia Y-Axis Acceleration	1000 +	yes	1000
37	11FOOTLELXH3ACXA	Bullet Vehicle Driver Left Foot X-Axis Acceleration	1000 +	yes	2000
38	11FOOTLELXH3ACYA	Bullet Vehicle Driver Left Foot Y-Axis Acceleration	1000 +	yes	2000
39	11FOOTLELXH3ACZA	Bullet Vehicle Driver Left Foot Z-Axis Acceleration	1000 +	yes	2000
39A	11FOOTLELXH3ACRA	Bullet Vehicle Driver Left Foot Resultant Acceleration	1000		
40	11FOOTLELXH3ANXA	Bullet Vehicle Driver Left Foot X-Axis Angular Displacement	180 +	no	180
41	11FOOTLELXH3ANYA	Bullet Vehicle Driver Left Foot Y-Axis Angular Displacement	180 +	no	180
42	11FOOTLELXH3ANZA	Bullet Vehicle Driver Left Foot Z-Axis Angular Displacement	180 +	no	180
43	11KNSLRI00H3DSXA	Bullet Vehicle Driver Right Knee X-Axis Displacement	180 +	yes	33
44	11TIBIRULXH3FOXA	Bullet Vehicle Driver Right Upper Tibia X-Axis Force	600 +	yes	11120.5
45	11TIBIRULXH3FOZA	Bullet Vehicle Driver Right Upper Tibia Z-Axis Force	600 +	yes	11120.5
46	11TIBIRULXH3MOXA	Bullet Vehicle Driver Right Upper Tibia Moment About	600 +	yes	395.4
47	11TIBIRULXH3MOYA	Bullet Vehicle Driver Right Upper Tibia Moment About	600 +	yes	395.4
48	11TIBIRLLXH3FOXA	Bullet Vehicle Driver Right Lower Tibia X-Axis Force	600 +	yes	11120.5
49	11TIBIRLLXH3FOYA	Bullet Vehicle Driver Right Lower Tibia Y-Axis Force	600 +	yes	11120.5
50	11TIBIRLLXH3FOZA	Bullet Vehicle Driver Right Lower Tibia Z-Axis Force	600 +	yes	11120.5
51	11TIBIRLLXH3MOXA	Bullet Vehicle Driver Right Lower Tibia Moment About	600 +	yes	395.4
52	11TIBIRLLXH3MOYA	Bullet Vehicle Driver Right Lower Tibia Moment About	600 +	yes	395.4
53	11TIBIRILXH3ACXA	Bullet Vehicle Driver Right Tibia X-Axis Acceleration	1000 +	yes	2000
54	11TIBIRILXH3ACYA	Bullet Vehicle Driver Right Tibia Y-Axis Acceleration	1000 +	yes	2000
55	11FOOTRILXH3ACXA	Bullet Vehicle Driver Right Foot X-Axis Acceleration	1000 +	yes	2000
56	11FOOTRILXH3ACYA	Bullet Vehicle Driver Right Foot Y-Axis Acceleration	1000 +	yes	2000
57	11FOOTRILXH3ACZA	Bullet Vehicle Driver Right Foot Z-Axis Acceleration	1000 +	yes	2000
57A	11FOOTRILXH3ACRA	Bullet Vehicle Driver Right Foot Resultant Acceleration	1000		
58	11FOOTRILXH3ANXA	Bullet Vehicle Driver Right Foot X-Axis Angular Displacement	180 +	no	180
59	11FOOTRILXH3ANYA	Bullet Vehicle Driver Right Foot Y-Axis Angular Displacement	180 +	no	180
60	11FOOTRILXH3ANZA	Bullet Vehicle Driver Right Foot Z-Axis Angular Displacement	180 +	no	180
61	13HEADCG00HFACXA	Bullet Vehicle Right Front Passenger Head X-Axis Acceleration	1000 +	yes	2000
62	13HEADCG00HFACYA	Bullet Vehicle Right Front Passenger Head Y-Axis Acceleration	1000 +	yes	2000
63	13HEADCG00HFACZA	Bullet Vehicle Right Front Passenger Head Z-Axis Acceleration	1000 +	yes	2000
63A	13HEADCG00HFACRA	Bullet Vehicle Right Front Passenger Head Resultant Acceleration	1000		
64	13HEADCGRDHFACXA	Bullet Vehicle Right Front Passenger Head Redundant X-Axis Acceleration	1000 +	yes	2000
65	13HEADCGRDHFACYA	Bullet Vehicle Right Front Passenger Head Redundant Y-Axis Acceleration	1000 +	yes	2000
66	13HEADCGRDHFACZA	Bullet Vehicle Right Front Passenger Head Redundant Z-Axis Acceleration	1000 +	yes	2000
66A	13HEADCGRDHFACRA	Bullet Vehicle Right Front Passenger Head Redundant Resultant Acceleration	1000		
67	13NECKUP00HFFOXA	Bullet Vehicle Right Front Passenger Upper Neck X-Axis Force	1000 +	yes	8896
68	13NECKUP00HFFOYA	Bullet Vehicle Right Front Passenger Upper Neck Y-Axis Force	1000 +	yes	8896
69	13NECKUP00HFFOZA	Bullet Vehicle Right Front Passenger Upper Neck Z-Axis Force	1000 +	yes	13344
70	13NECKUP00HFMOXA	Bullet Vehicle Right Front Passenger Upper Neck Moment	600 +	yes	282.5

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71	13NECKUP00HFMOYA	Bullet	Vehicle	Right	Front	Passenger	Upper Neck Momer	600 +	yes	282.5
72	13NECKUP00HFMOZA	Bullet	Vehicle	Right	Front	Passenger	Upper Neck Momer	600 +	yes	282.5
73	13CHSTCG00HFACXA	Bullet	Vehicle	Right	Front	Passenger	Chest X-Axis Acc	180 +	yes	2000
74	13CHSTCG00HFACYA	Bullet	Vehicle	Right	Front	Passenger	Chest Y-Axis Acc	180 +	yes	2000
75	13CHSTCG00HFACZA	Bullet	Vehicle	Right	Front	Passenger	Chest Z-Axis Acc	180 +	yes	2000
75A	13CHSTCG00HFACRA	Bullet	Vehicle	Right	Front	Passenger	Chest Resultant	180		
76	13CHSTCGRDHFACXA	Bullet	Vehicle	Right	Front	Passenger	Chest Redundant	180 +	yes	2000
77	13CHSTCGRDHFACYA	Bullet	Vehicle	Right	Front	Passenger	Chest Redundant	180 +	yes	2000
78	13CHSTCGRDHFACZA	Bullet	Vehicle	Right	Front	Passenger	Chest Redundant	180 +	yes	2000
78A	13CHSTCGRDHFACRA	Bullet	Vehicle	Right	Front	Passenger	Chest Redundant	180		
79	13CHST0000HFDSXA	Bullet	Vehicle	Right	Front	Passenger	Chest X-Axis Dis	600 +	yes	75
80	13PELVCG00HFACXA	Bullet	Vehicle	Right	Front	Passenger	Pelvis X-Axis Ac	1000 +	yes	2000
81	13PELVCG00HFACYA	Bullet	Vehicle	Right	Front	Passenger	Pelvis Y-Axis Ac	1000 +	yes	2000
82	13PELVCG00HFACZA	Bullet	Vehicle	Right	Front	Passenger	Pelvis Z-Axis Ac	1000 +	yes	2000
82A	13PELVCG00HFACRA	Bullet	Vehicle	Right	Front	Passenger	Pelvis Resultant	1000		
83	13FEMRLU00HFFOZA	Bullet	Vehicle	Right	Front	Passenger	Left Femur Z-Axi	600 +	yes	13344
84	13FEMRRU00HFFOZA	Bullet	Vehicle	Right	Front	Passenger	Right Femur Z-Ax	600 +	yes	13344
85	13KNSLLE00HFDSXA	Bullet	Vehicle	Right	Front	Passenger	Left Knee X-Axis	180 +	yes	33
86	13TIBILULXHFFOXA	Bullet	Vehicle	Right	Front	Passenger	Left Upper Tibia	600 +	yes	8896
87	13TIBILULXHFFOZA	Bullet	Vehicle	Right	Front	Passenger	Left Upper Tibia	600 +	yes	8896
88	13TIBILULXHFMOMA	Bullet	Vehicle	Right	Front	Passenger	Left Upper Tibia	600 +	yes	282.5
89	13TIBILULXHFMOMA	Bullet	Vehicle	Right	Front	Passenger	Left Upper Tibia	600 +	yes	282.5
90	13TIBILELXHFFACXA	Bullet	Vehicle	Right	Front	Passenger	Left Tibia X-Axi	1000 +	yes	2000
91	13TIBILELXHFFACYA	Bullet	Vehicle	Right	Front	Passenger	Left Tibia Y-Axi	1000 +	yes	2000
92	13TIBILLLXHFFOXA	Bullet	Vehicle	Right	Front	Passenger	Left Lower Tibia	600 +	yes	8896
93	13TIBILLLXHFFOYA	Bullet	Vehicle	Right	Front	Passenger	Left Lower Tibia	600 +	yes	8896
94	13TIBILLLXHFFOZA	Bullet	Vehicle	Right	Front	Passenger	Left Lower Tibia	600 +	yes	8896
95	13TIBILLLXHFMOMA	Bullet	Vehicle	Right	Front	Passenger	Left Lower Tibia	600 +	yes	282
96	13TIBILLLXHFMOMA	Bullet	Vehicle	Right	Front	Passenger	Left Lower Tibia	600 +	yes	282
97	13FOOTLELXHFFANXA	Bullet	Vehicle	Right	Front	Passenger	Left Foot X-Axis	180 +	no	318
98	13FOOTLELXHFFANYA	Bullet	Vehicle	Right	Front	Passenger	Left Foot Y-Axis	180 +	no	318
99	13FOOTLELXHFFANZA	Bullet	Vehicle	Right	Front	Passenger	Left Foot Z-Axis	180 +	no	318
100	13FOOTLELXHFFACXA	Bullet	Vehicle	Right	Front	Passenger	Left Foot X-Axis	1000 +	yes	2000
101	13FOOTLELXHFFACYA	Bullet	Vehicle	Right	Front	Passenger	Left Foot Y-Axis	1000 +	yes	2000
102	13FOOTLELXHFFACZA	Bullet	Vehicle	Right	Front	Passenger	Left Foot Z-Axis	1000 +	yes	2000
102A	13FOOTLELXHFFACRA	Bullet	Vehicle	Right	Front	Passenger	Left Foot Result	1000		
103	13KNSLRIO0HFDSXA	Bullet	Vehicle	Right	Front	Passenger	Right Knee X-Axi	180 +	yes	33
104	13TIBIRULXHFFOXA	Bullet	Vehicle	Right	Front	Passenger	Right Upper Tibi	600 +	yes	8896
105	13TIBIRULXHFFOZA	Bullet	Vehicle	Right	Front	Passenger	Right Upper Tibi	600 +	yes	8896
106	13TIBIRULXHFMOMA	Bullet	Vehicle	Right	Front	Passenger	Right Upper Tibi	600 +	yes	282

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107	13TIBIRULXHFMoya	Bullet Vehicle	Right Front Passenger	Right Upper Tibi	600 +	yes	282
108	13TIBIRILXHFACXA	Bullet Vehicle	Right Front Passenger	Right Tibia X-Ax	1000 +	yes	2000
109	13TIBIRILXHFACYA	Bullet Vehicle	Right Front Passenger	Right Tibia Y-Ax	1000 +	yes	2000
110	13TIBIRLLXHFFOXA	Bullet Vehicle	Right Front Passenger	Right Lower Tibi	600 +	yes	8896
111	13TIBIRLLXHFFOYA	Bullet Vehicle	Right Front Passenger	Right Lower Tibi	600 +	yes	8896
112	13TIBIRLLXHFFOZA	Bullet Vehicle	Right Front Passenger	Right Lower Tibi	600 +	yes	8896
113	13TIBIRLLXHFMoya	Bullet Vehicle	Right Front Passenger	Right Lower Tibi	600 +	yes	282
114	13TIBIRLLXHFMoya	Bullet Vehicle	Right Front Passenger	Right Lower Tibi	600 +	yes	282
115	13FOOTRILXHFANXA	Bullet Vehicle	Right Front Passenger	Right Foot X-Axi	180 +	no	318
116	13FOOTRILXHFANYA	Bullet Vehicle	Right Front Passenger	Right Foot Y-Axi	180 +	no	318
117	13FOOTRILXHFANZA	Bullet Vehicle	Right Front Passenger	Right Foot Z-Axi	180 +	no	318
118	13FOOTRILXHFACXA	Bullet Vehicle	Right Front Passenger	Right Foot X-Axi	1000 +	yes	2000
119	13FOOTRILXHFACYA	Bullet Vehicle	Right Front Passenger	Right Foot Y-Axi	1000 +	yes	2000
120	13FOOTRILXHFACZA	Bullet Vehicle	Right Front Passenger	Right Foot Z-Axi	1000 +	yes	2000
120A	13FOOTRILXHFACRA	Bullet Vehicle	Right Front Passenger	Right Foot Resul	1000		
121	14HEADCG00HFACXA	Bullet Vehicle	Left Rear Passenger	Head X-Axis Accele	1000 +	yes	2000
122	14HEADCG00HFACYA	Bullet Vehicle	Left Rear Passenger	Head Y-Axis Accele	1000 +	yes	2000
123	14HEADCG00HFACZA	Bullet Vehicle	Left Rear Passenger	Head Z-Axis Accele	1000 +	yes	2000
123A	14HEADCG00HFACRA	Bullet Vehicle	Left Rear Passenger	Head Resultant Acc	1000		
124	14HEADCGRDHFACXA	Bullet Vehicle	Left Rear Passenger	Head Redundant X-Z	1000 +	yes	2000
125	14HEADCGRDHFACYA	Bullet Vehicle	Left Rear Passenger	Head Redundant Y-Z	1000 +	yes	2000
126	14HEADCGRDHFACZA	Bullet Vehicle	Left Rear Passenger	Head Redundant Z-Z	1000 +	yes	2000
126A	14HEADCGRDHFACRA	Bullet Vehicle	Left Rear Passenger	Head Redundant Res	1000		
127	14NECKUP00HFFOXA	Bullet Vehicle	Left Rear Passenger	Upper Neck X-Axis	1000 +	yes	8896
128	14NECKUP00HFFOYA	Bullet Vehicle	Left Rear Passenger	Upper Neck Y-Axis	1000 +	yes	8896
129	14NECKUP00HFFOZA	Bullet Vehicle	Left Rear Passenger	Upper Neck Z-Axis	1000 +	yes	13344
130	14NECKUP00HFMOXA	Bullet Vehicle	Left Rear Passenger	Upper Neck Moment	600 +	yes	282.5
131	14NECKUP00HFMOYA	Bullet Vehicle	Left Rear Passenger	Upper Neck Moment	600 +	yes	282.5
132	14NECKUP00HFMOZA	Bullet Vehicle	Left Rear Passenger	Upper Neck Moment	600 +	yes	282.5
133	14CHSTCG00HFACXA	Bullet Vehicle	Left Rear Passenger	Chest X-Axis Acce	180 +	yes	2000
134	14CHSTCG00HFACYA	Bullet Vehicle	Left Rear Passenger	Chest Y-Axis Acce	180 +	yes	2000
135	14CHSTCG00HFACZA	Bullet Vehicle	Left Rear Passenger	Chest Z-Axis Acce	180 +	yes	2000
135A	14CHSTCG00HFACRA	Bullet Vehicle	Left Rear Passenger	Chest Resultant Ac	180		
136	14CHSTCGRDHFACXA	Bullet Vehicle	Left Rear Passenger	Chest Redundant X-	180 +	yes	2000
137	14CHSTCGRDHFACYA	Bullet Vehicle	Left Rear Passenger	Chest Redundant Y-	180 +	yes	2000
138	14CHSTCGRDHFACZA	Bullet Vehicle	Left Rear Passenger	Chest Redundant Z-	180 +	yes	2000
138A	14CHSTCGRDHFACRA	Bullet Vehicle	Left Rear Passenger	Chest Redundant Re	180		
139	14CHST0000HFDSXA	Bullet Vehicle	Left Rear Passenger	Chest X-Axis Displ	600 +	yes	80
140	14PELVCG00HFACXA	Bullet Vehicle	Left Rear Passenger	Pelvis X-Axis Acce	1000 +	yes	2000
141	14PELVCG00HFACYA	Bullet Vehicle	Left Rear Passenger	Pelvis Y-Axis Acce	1000 +	yes	2000

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142	14PELVCG00HFACZA	Bullet Vehicle Left Rear Passenger Pelvis Z-Axis Accel	1000 +	yes	2000
142A	14PELVCG00HFACRA	Bullet Vehicle Left Rear Passenger Pelvis Resultant A	1000		
143	14FEMRL00HFFOZA	Bullet Vehicle Left Rear Passenger Left Femur Z-Axis	600 +	yes	13344
144	14FEMRL00HFFOZA	Bullet Vehicle Left Rear Passenger Right Femur Z-Axis	600 +	yes	13344
145	14KNSLLE00HFDSXA	Bullet Vehicle Left Rear Passenger Left Knee X-Axis I	180 +	yes	25.4
146	14KNSLRI00HFDSXA	Bullet Vehicle Left Rear Passenger Right Knee X-Axis	180 +	yes	25.4
147	10SILLLE0000ACXA	Bullet Vehicle Left Sill X-Axis Acceleration	60 +	yes	2000
148	10SILLLE0000ACYA	Bullet Vehicle Left Sill Y-Axis Acceleration	60 +	yes	2000
149	10SILLRI0000ACXA	Bullet Vehicle Right Sill X-Axis Acceleration	60 +	yes	2000
150	10SILLRI0000ACYA	Bullet Vehicle Right Sill Y-Axis Acceleration	60 +	yes	2000
151	10VEHCCG0000ACXA	Bullet Vehicle Vehicle Center of Gravity X-Axis Accel	60 +	yes	2000
152	10VEHCCG0000ACYA	Bullet Vehicle Vehicle Center of Gravity Y-Axis Accel	60 +	yes	2000
153	10VEHCCG0000ACZA	Bullet Vehicle Vehicle Center of Gravity Z-Axis Accel	60 +	yes	2000
153A	10VEHCCG0000ACRA	Bullet Vehicle Vehicle Center of Gravity Resultant Ac	60		
154	10FOOTLE0000ACXA	Bullet Vehicle Driver Footrest X-Axis Acceleration	60 +	yes	2000
155	10FOOTLE0000ACZA	Bullet Vehicle Driver Footrest Z-Axis Acceleration	60 +	yes	2000
156	10TPANLE0000ACXA	Bullet Vehicle Toepan Behind Center of Accelerator X-	60 +	yes	2000
157	10TPANLE0000ACZA	Bullet Vehicle Toepan Behind Center of Accelerator Z-	60 +	yes	2000
158	11SEBE0000B5FO0A	Bullet Vehicle Driver Lap Belt Force	60 +	yes	15568
159	13SEBE0000B5FO0A	Bullet Vehicle Right Front Passenger Lap Belt Force	60 +	yes	15568
160	11SEBE0000B3FO0A	Bullet Vehicle Driver Shoulder Belt Force	60 +	yes	16000
161	13SEBE0000B3FO0A	Bullet Vehicle Right Front Passenger Shoulder Belt Fo	60 +	yes	16000
162	10AIRBLEFR25VO0A	Bullet Vehicle Driver Airbag 1st Stage Fire Time	1000 +	no	5
163	10AIRBLEFR26VO0A	Bullet Vehicle Driver Airbag 2nd Stage Fire Time	1000 +	no	5
164	10AIRBRIFR25VO0A	Bullet Vehicle Right Front Passenger Airbag 1st Stage	1000 +	no	5
165	10AIRBRIFR26VO0A	Bullet Vehicle Right Front Passenger Airbag 2nd Stage	1000 +	no	5
166	21HEADCG00THACXA	Target Vehicle Driver Head X-Axis Acceleration	1000 +	yes	2000
167	21HEADCG00THACYA	Target Vehicle Driver Head Y-Axis Acceleration	1000 +	yes	2000
168	21HEADCG00THACZA	Target Vehicle Driver Head Z-Axis Acceleration	1000 +	yes	2000
168A	21HEADCG00THACRA	Target Vehicle Driver Head Resultant Acceleration	1000		
169	21HEADLE00THACXA	Target Vehicle Driver Head Left X-Axis Acceleration	1000 +	yes	2000
170	21HEADLE00THACZA	Target Vehicle Driver Head Left Z-Axis Acceleration	1000 +	yes	2000
171	21HEADUP00THACXA	Target Vehicle Driver Head Top X-Axis Acceleration	1000 +	yes	2000
172	21HEADUP00THACYA	Target Vehicle Driver Head Top Y-Axis Acceleration	1000 +	yes	2000
173	21HEADRE00THACYA	Target Vehicle Driver Head Rear Y-Axis Acceleration	1000 +	yes	2000
174	21HEADRE00THACZA	Target Vehicle Driver Head Rear Z-Axis Acceleration	1000 +	yes	2000
175	21NECKUP00THFOXA	Target Vehicle Driver Upper Neck X-Axis Force	1000 +	yes	8900
176	21NECKUP00THFOYA	Target Vehicle Driver Upper Neck Y-Axis Force	1000 +	yes	8900
177	21NECKUP00THFOZA	Target Vehicle Driver Upper Neck Z-Axis Force	1000 +	yes	13340
178	21NECKUP00THMOXA	Target Vehicle Driver Upper Neck Moment About X Axis	600 +	yes	282

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179	21NECKUP00THMOYA	Target Vehicle Driver	Upper Neck Moment About Y Axis	600 +	yes	282
180	21NECKUP00THMOZA	Target Vehicle Driver	Upper Neck Moment About Z Axis	600 +	yes	282
181	21NECKLO00THFOXA	Target Vehicle Driver	Lower Neck X-Axis Force	1000 +	yes	13340
182	21NECKLO00THFOYA	Target Vehicle Driver	Lower Neck Y-Axis Force	1000 +	yes	13340
183	21NECKLO00THFOZA	Target Vehicle Driver	Lower Neck Z-Axis Force	1000 +	yes	13340
184	21NECKLO00THMOXA	Target Vehicle Driver	Lower Neck Moment About X Axis	600 +	yes	452
185	21NECKLO00THMOYA	Target Vehicle Driver	Lower Neck Moment About Y Axis	600 +	yes	452
186	21NECKLO00THMOZA	Target Vehicle Driver	Lower Neck Moment About Z Axis	600 +	yes	226
187	21NECKRE00THFO0A	Target Vehicle Driver	Rear Skull Spring Z-Axis Force	600 +	yes	4448
188	21NECKFR00THFO0A	Target Vehicle Driver	Front Skull Spring Z-Axis Force	600 +	yes	4448
189	21NECKUP00THANYA	Target Vehicle Driver	Occipital Condyle Rotary Pot	180 +	yes	180
190	21ABDORL00THDS0A	Target Vehicle Driver	Lower Abdomen DGSP Right Displa	180 +	no	100
191	21ABDORL00THANYA	Target Vehicle Driver	Lower Abdomen DGSP Right Pitch	180 +	no	180
192	21ABDORL00THANZA	Target Vehicle Driver	Lower Abdomen DGSP Right Yaw	180 +	no	180
193	21ABDOLL00THDS0A	Target Vehicle Driver	Lower Abdomen DGSP Left Displac	180 +	no	100
194	21ABDOLL00THANYA	Target Vehicle Driver	Lower Abdomen DGSP Left Pitch	180 +	no	180
195	21ABDOLL00THANZA	Target Vehicle Driver	Lower Abdomen DGSP Left Yaw	180 +	no	180
196	21TRRICG00THACXA	Target Vehicle Driver	Thorax CG X-Axis Acceleration	1000 +	yes	2000
197	21TRRICG00THACYA	Target Vehicle Driver	Thorax CG Y-Axis Acceleration	1000 +	yes	2000
198	21TRRICG00THACZA	Target Vehicle Driver	Thorax CG Z-Axis Acceleration	1000 +	yes	2000
198A	21TRRICG00THACRA	Target Vehicle Driver	Thorax CG Resultant Acceleratio	1000		
199	21CHRILU01THAN0A	Target Vehicle Driver	CRUX T015 Base Upper Left Thora	180 +	no	180
200	21CHRILU02THAN0A	Target Vehicle Driver	CRUX T015 Mid Upper Left Thora	180 +	no	180
201	21CHRILU03THAN0A	Target Vehicle Driver	CRUX T015 Elbow Upper Left Thoi	180 +	no	180
202	21CHRIRU01THAN0A	Target Vehicle Driver	CRUX T015 Base Upper Right Thoi	180 +	no	180
203	21CHRIRU02THAN0A	Target Vehicle Driver	CRUX T015 Mid Upper Right Thora	180 +	no	180
204	21CHRIRU03THAN0A	Target Vehicle Driver	CRUX T015 Elbow Upper Right Tho	180 +	no	180
205	21CHRILL01THAN0A	Target Vehicle Driver	CRUX T015 Base Lower Left Thora	180 +	no	180
206	21CHRILL02THAN0A	Target Vehicle Driver	CRUX T015 Mid Lower Left Thora	180 +	no	180
207	21CHRILL03THAN0A	Target Vehicle Driver	CRUX T015 Elbow Lower Left Thoi	180 +	no	180
208	21CHRIRL01THAN0A	Target Vehicle Driver	CRUX T015 Base Lower Right Thoi	180 +	no	180
209	21CHRIRL02THAN0A	Target Vehicle Driver	CRUX T015 Mid Lower Right Thora	180 +	no	180
210	21CHRIRL03THAN0A	Target Vehicle Driver	CRUX T015 Elbow Lower Right Tho	180 +	no	180
211	21ABDOUP00THDS0A	Target Vehicle Driver	Upper Abdomen String Pot	180 +	yes	100
212	21THSP1200THFOXA	Target Vehicle Driver	T12 Thoracic Spine X-Axis Force	1000 +	yes	13344
213	21THSP1200THFOYA	Target Vehicle Driver	T12 Thoracic Spine Y-Axis Force	1000 +	yes	13344
214	21THSP1200THFOZA	Target Vehicle Driver	T12 Thoracic Spine Z-Axis Force	1000 +	yes	20000
215	21THSP12000HMOXA	Target Vehicle Driver	T12 Thoracic Moment About X Axi	1000 +	yes	565
216	21THSP12000HMOYA	Target Vehicle Driver	T12 Thoracic Moment About Y Axi	1000 +	yes	904
217	21SPINUP00THACXA	Target Vehicle Driver	T1 Upper Spine X-Axis Accelerat	180 +	yes	2000

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218	21SPINUP00THACYA	Target Vehicle Driver T1 Upper Spine Y-Axis Accelerat	180 +	yes	2000
219	21SPINUP00THACZA	Target Vehicle Driver T1 Upper Spine Z-Axis Accelerat	180 +	yes	2000
219A	21SPINUP00THACRA	Target Vehicle Driver T1 Upper Spine Resultant Accele	180		
220	21PELV0000THACXA	Target Vehicle Driver Pelvis X-Axis Acceleration	1000 +	yes	2000
221	21PELV0000THACYA	Target Vehicle Driver Pelvis Y-Axis Acceleration	1000 +	yes	2000
222	21PELV0000THACZA	Target Vehicle Driver Pelvis Z-Axis Acceleration	1000 +	yes	2000
222A	21PELV0000THACRA	Target Vehicle Driver Pelvis Resultant Acceleration	1000		
223	21ACTBLE00THFOXA	Target Vehicle Driver Pelvis/Acetabulum Left X-Axis F	1000 +	yes	22240
224	21ACTBLE00THFOYA	Target Vehicle Driver Pelvis/Acetabulum Left Y-Axis F	1000 +	yes	13340
225	21ACTBLE00THFOZA	Target Vehicle Driver Pelvis/Acetabulum Left Z-Axis F	1000 +	yes	13340
226	21ACTBRI00THFOXA	Target Vehicle Driver Pelvis/Acetabulum Right X-Axis F	1000 +	yes	22240
227	21ACTBRI00THFOYA	Target Vehicle Driver Pelvis/Acetabulum Right Y-Axis	1000 +	yes	13340
228	21ACTBRI00THFOZA	Target Vehicle Driver Pelvis/Acetabulum Right Z-Axis	1000 +	yes	13340
229	21FEMRLL00THFOXA	Target Vehicle Driver Left Femur X-Axis Force	600 +	yes	13344
230	21FEMRLL00THFOYA	Target Vehicle Driver Left Femur Y-Axis Force	600 +	yes	13344
231	21FEMRLL00THFOZA	Target Vehicle Driver Left Femur Z-Axis Force	600 +	yes	22240
232	21FEMRLL00THMOXA	Target Vehicle Driver Left Femur Moment About X-Axis	600 +	yes	339
233	21FEMRLL00THMOYA	Target Vehicle Driver Left Femur Moment About Y-Axis	600 +	yes	339
234	21FEMRLL00THMOZA	Target Vehicle Driver Left Femur Moment About Z-Axis	600 +	yes	339
235	21FEMRRL00THFOXA	Target Vehicle Driver Right Femur X-Axis Force	600 +	yes	13344
236	21FEMRRL00THFOYA	Target Vehicle Driver Right Femur Y-Axis Force	600 +	yes	13344
237	21FEMRRL00THFOZA	Target Vehicle Driver Right Femur Z-Axis Force	600 +	yes	22240
238	21FEMRRL00THMOXA	Target Vehicle Driver Right Femur Moment About X-Axis	600 +	yes	339
239	21FEMRRL00THMOYA	Target Vehicle Driver Right Femur Moment About Y-Axis	600 +	yes	339
240	21FEMRRL00THMOZA	Target Vehicle Driver Right Femur Moment About Z-Axis	600 +	yes	339
241	21KNSLLE00H3DSXA	Target Vehicle Driver Left Knee X-Axis Displacement	180 +	yes	30
242	21TIBILULXH3FOXA	Target Vehicle Driver Left Upper Tibia X-Axis Force	600 +	yes	11120
243	21TIBILULXH3FOZA	Target Vehicle Driver Left Upper Tibia Z-Axis Force	600 +	yes	11120
244	21TIBILULXH3MOXA	Target Vehicle Driver Left Upper Tibia Moment About X	600 +	yes	395
245	21TIBILULXH3MOYA	Target Vehicle Driver Left Upper Tibia Moment About Y	600 +	yes	395
246	21TIBILLLLXH3FOXA	Target Vehicle Driver Left Lower Tibia X-Axis Force	600 +	yes	11120
247	21TIBILLLLXH3FOYA	Target Vehicle Driver Left Lower Tibia Y-Axis Force	600 +	yes	11120
248	21TIBILLLLXH3FOZA	Target Vehicle Driver Left Lower Tibia Z-Axis Force	600 +	yes	11120
249	21TIBILLLLXH3MOXA	Target Vehicle Driver Left Lower Tibia Moment About X	600 +	yes	395
250	21TIBILLLLXH3MOYA	Target Vehicle Driver Left Lower Tibia Moment About Y	600 +	yes	395
251	21FOOTLELXH3ANXA	Target Vehicle Driver Left Foot Angular X-Axis Displa	180 +	no	318
252	21FOOTLELXH3ANYA	Target Vehicle Driver Left Foot Angular Y-Axis Displa	180 +	no	318
253	21FOOTLELXH3ANZA	Target Vehicle Driver Left Foot Angular Z-Axis Displa	180 +	no	318
254	21FOOTLELXH3ACXA	Target Vehicle Driver Left Foot X-Axis Acceleration	1000 +	yes	2000
255	21FOOTLELXH3ACYA	Target Vehicle Driver Left Foot Y-Axis Acceleration	1000 +	yes	2000

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256	21FOOTLELXH3ACZA	Target Vehicle Driver Left Foot Z-Axis Acceleration	1000 +	yes	2000
256A	21FOOTLELXH3ACRA	Target Vehicle Driver Left Foot Resultant Acceleration	1000		
257	21KNSLRI00H3DSXA	Target Vehicle Driver Right Knee X-Axis Displacement	180 +	yes	33
258	21TIBIRULXH3FOXA	Target Vehicle Driver Right Upper Tibia X-Axis Force	600 +	yes	11120
259	21TIBIRULXH3FOZA	Target Vehicle Driver Right Upper Tibia Z-Axis Force	600 +	yes	11120
260	21TIBIRULXH3MOXA	Target Vehicle Driver Right Upper Tibia Moment About	600 +	yes	395
261	21TIBIRULXH3MOYA	Target Vehicle Driver Right Upper Tibia Moment About	600 +	yes	395
262	21TIBIRLLXH3FOXA	Target Vehicle Driver Right Lower Tibia X-Axis Force	600 +	yes	11120
263	21TIBIRLLXH3FOYA	Target Vehicle Driver Right Lower Tibia Y-Axis Force	600 +	yes	11120
264	21TIBIRLLXH3FOZA	Target Vehicle Driver Right Lower Tibia Z-Axis Force	600 +	yes	11120
265	21TIBIRLLXH3MOXA	Target Vehicle Driver Right Lower Tibia Moment About	600 +	yes	395
266	21TIBIRLLXH3MOYA	Target Vehicle Driver Right Lower Tibia Moment About	600 +	yes	395
267	21FOOTRILXH3ANXA	Target Vehicle Driver Right Foot Angular X-Axis Displ	180 +	no	318
268	21FOOTRILXH3ANYA	Target Vehicle Driver Right Foot Angular Y-Axis Displ	180 +	no	318
269	21FOOTRILXH3ANZA	Target Vehicle Driver Right Foot Angular Z-Axis Displ	180 +	no	318
270	21FOOTRILXH3ACXA	Target Vehicle Driver Right Foot X-Axis Acceleration	1000 +	yes	2000
271	21FOOTRILXH3ACYA	Target Vehicle Driver Right Foot Y-Axis Acceleration	1000 +	yes	2000
272	21FOOTRILXH3ACZA	Target Vehicle Driver Right Foot Z-Axis Acceleration	1000 +	yes	2000
272A	21FOOTRILXH3ACRA	Target Vehicle Driver Right Foot Resultant Acceleration	1000		
273	20SILLLE0000ACXA	Target Vehicle Left Sill X-Axis Acceleration	60 +	yes	2000
274	20SILLLE0000ACYA	Target Vehicle Left Sill Y-Axis Acceleration	60 +	yes	2000
275	20SILLRI0000ACXA	Target Vehicle Right Sill X-Axis Acceleration	60 +	yes	2000
276	20SILLRI0000ACYA	Target Vehicle Right Sill Y-Axis Acceleration	60 +	yes	2000
277	20VEHCCG0000ACXA	Target Vehicle Vehicle Center of Gravity X-Axis Accel	60 +	yes	2000
278	20VEHCCG0000ACYA	Target Vehicle Vehicle Center of Gravity Y-Axis Accel	60 +	yes	2000
279	20VEHCCG0000ACZA	Target Vehicle Vehicle Center of Gravity Z-Axis Accel	60 +	yes	2000
279A	20VEHCCG0000ACRA	Target Vehicle Vehicle Center of Gravity Resultant Acc	60		
280	20FOOTLE0000ACXA	Target Vehicle Driver Footrest X-Axis Acceleration	60 +	yes	2000
281	20FOOTLE0000ACZA	Target Vehicle Driver Footrest Z-Axis Acceleration	60 +	yes	2000
282	20TPANLE0000ACXA	Target Vehicle Toepan Behind Center of Accelerator X-	60 +	yes	2000
283	20TPANLE0000ACZA	Target Vehicle Toepan Behind Center of Accelerator Z-	60 +	yes	2000
284	21SEBE0000B5FO0A	Target Vehicle Driver Lap Belt Force	60 +	yes	16000
285	21SEBE0000B3FO0A	Target Vehicle Driver Shoulder Belt Force	60 +	yes	16000
286	20AIRBLEFR25VO0A	Target Vehicle Driver Airbag 1st Stage Fire Time	1000 +	no	5
287	20AIRBLEFR26VO0A	Target Vehicle Driver Airbag 2nd Stage Fire Time	1000 +	no	5

Appendix E

Dummy FARO Measurements

Bullet Vehicle Dummy FARO Measurements

Driver	Xmm	Ymm	Zmm
M_HEAD_CENTER_OF_GRAVITY1	2447.7	-464.3	-564.3
M_NOSE_BRIDGE1	2538.9	-397.1	-577.6
M_NOSE_TIP1	2559.3	-394.9	-534.0
M_HEAD_CHIN1	2535.3	-393.4	-461.4
M_ARM1	2437.3	-613.9	-262.7
M_HIP_POINT1	2564.2	-574.7	92.5
M_PELV_FORE1	2520.9	-586.0	29.0
M_PELV_AFT1	2459.3	-583.4	57.5
M_KNEE_OUTBOARD1	2945.7	-572.1	-28.7
M_KNEE_INBOARD1	2960.9	-204.6	-39.3
M_ANKLE_OUTBOARD1	3247.5	-558.7	263.2
M_HEADRESTTOP1	2196.2	-464.1	-515.6
M_HEADRESTBOTTOM1	2204.2	-462.4	-421.5
M_ROOF1	2538.9	-397.1	-804.2
M_HEADER_FRONT1	2859.4	-395.4	-759.1
M_WINDOW_FRONT1	3222.3	-397.1	-577.6
M_STEERING_WHEEL_RIM_TOP1	2973.4	-382.0	-472.6
M_DASH_TOP1	3137.9	-383.2	-455.0
M_STEERING_WHEEL_CENTER1	2891.2	-382.6	-275.1
M_CHEST_CENTER1	2576.8	-382.6	-275.1
M_STEERING_WHEEL_RIM_BOTTOM1	2834.9	-381.1	-147.8
M ABDOMEN1	2597.6	-381.1	-147.8
M_DASH_BOTTOM1	3163.4	-508.2	-65.4
M_HEADER_SIDE1	2540.6	-576.4	-730.7
M_WINDOW_SIDE1	2538.9	-746.2	-577.6
M_DOOR_TOP1	2437.3	-740.2	-262.7
M_DOOR_BOTTOM1	2564.2	-708.7	92.5
M_STRIKER1	2372.3	-829.0	-92.4

Front Passenger

M_HEAD_CENTER_OF_GRAVITY3	2582.2	440.4	-505.1
M_NOSE_BRIDGE3	2675.4	381.9	-517.0
M_NOSE_TIP3	2698.9	379.8	-485.1
M_HEAD_CHIN3	2681.0	375.8	-410.6
M_ARM3	2582.0	568.3	-226.7
M_HIP_POINT3	2747.6	638.8	53.1
M_PELV_FORE3	2695.5	649.4	-3.4
M_PELV_AFT3	2625.3	650.5	19.1
M_KNEE_OUTBOARD3	3080.7	513.3	2.2
M_KNEE_INBOARD3	3090.8	259.4	-8.9

M_ANKLE_OUTBOARD3	3301.1	496.8	248.8
M_HEADRESTTOP3	2355.2	461.8	-533.6
M_HEADRESTBOTTOM3	2361.8	461.9	-441.4
M_ROOF3	2675.4	381.9	-731.2
M_HEADER_FRONT3	2860.4	380.6	-746.3
M_WINDOW_FRONT3	3314.7	381.9	-517.0
M_DASH_TOP3	3090.9	380.7	-208.1
M_DASH_BOTTOM3	3183.1	467.8	-45.4
M_HEADER_SIDE3	2678.8	569.9	-703.4
M_WINDOW_SIDE3	2675.4	752.4	-517.0
M_DOOR_TOP3	2582	745.8	-227
M_DOOR_BOTTOM3	2747.6	766.3	53.1
M_STRIKER3	2379.0	814.6	-91.4

Left Rear Passenger

M_HEAD_CENTER_OF_GRAVITY4	1441.2	-444.7	-504.3
M_NOSE_BRIDGE4	1522.8	-372.2	-512.3
M_NOSE_TIP4	1547.2	-372.2	-475.8
M_HEAD_CHIN4	1532.9	-374.0	-402.8
M_ARM4	1421.9	-575.5	-216.1
M_HIP_POINT4	1588.7	-584.7	45.7
M_KNEE_OUTBOARD4	1948.1	-521.6	-4.0
M_KNEE_INBOARD4	1953.1	-246.0	0.5
M_ANKLE_OUTBOARD4	2110.3	-489.6	282.1
M_HEADRESTTOP4	1252.6	-571.5	-373.8
M_HEADRESTBOTTOM4	1375.9	-570.9	-146.2
M_ROOF4	1522.8	-372.2	-839.6
M_HEADER_FRONT4	2153.3	-370.6	-536.3
M_WINDOW_FRONT4	2164.0	-372.2	-512.3
M_DASH_TOP4	2155.0	-390.1	-395.9
M_DASH_BOTTOM4	2269.8	-448.5	-31.2
M_HEADER_SIDE4	1525.0	-604.7	-704.5
M_WINDOW_SIDE4	1522.8	-752.5	-512.3
M_DOOR_TOP4	1421.9	-683.6	-216.1
M_DOOR_BOTTOM4	1588.7	-711.6	45.7
M_STRIKER4	1348.1	-828.0	-218.7

Target Vehicle Dummy FARO Measurements

Driver	Xmm	Ymm	Zmm
M_HEAD_CENTER_OF_GRAVITY1	2644.1	-444.9	-736.5
M_NOSE_BRIDGE1	2738.9	-378.4	-733.1
M_NOSE_TIP1	2738.7	-377.4	-694.5
M_HEAD_CHIN1	2731.1	-378.6	-608.3
M_ARM1	2665.1	-536.8	-502.6
M_HIP_POINT1	2795.8	-559.2	-52.1
M_PELV_FORE1	2791.2	-611.0	-60.7
M_PELV_AFT1	2730.5	-608.7	-93.9
M_KNEE_OUTBOARD1	3178.5	-547.8	-237.7
M_KNEE_INBOARD1	3187.2	-151.5	-222.1
M_ANKLE_OUTBOARD1	3389.9	-533.1	144.5
M_HEADRESTTOP1	2430.4	-453.3	-629.0
M_HEADRESTBOTTOM1	2431.6	-452.8	-564.2
M_ROOF1	2738.9	-378.4	-921.2
M_HEADER_FRONT1	3032.8	-370.8	-892.7
M_WINDOW_FRONT1	3375.4	-378.4	-733.1
M_STEERING_WHEEL_RIM_TOP1	3157.4	-367.5	-623.0
M_DASH_TOP1	3310.5	-384.6	-590.3
M_STEERING_WHEEL_CENTER1	3067.5	-370.2	-433.6
M_CHEST_CENTER1	2752.8	-370.2	-433.6
M_STEERING_WHEEL_RIM_BOTTOM1	3001.9	-376.8	-302.9
M ABDOMEN1	2813.8	-376.8	-302.9
M_DASH_BOTTOM1	3282.7	-486.8	-261.4
M_HEADER_SIDE1	2743.7	-573.8	-863.6
M_WINDOW_SIDE1	2738.9	-733.0	-733.1
M_DOOR_TOP1	2665.1	-734.0	-502.6
M_DOOR_BOTTOM1	2795.8	-686.2	-52.1
M_STRIKER1	2543.4	-817.0	-225.7
M_NECK_PIVOT	2630.5	-398.4	-680.5
M_LEFT_KNEE_TOP	3163.1	-491.0	-300.7
M_RIGHT_KNEE_TOP	3191.4	-231.9	-285.9
M_OB_UPPER_TIBIA	3207.0	-527.7	-181.8